

Class of '70 Largest Yet; Still Smarter

With home-state boys accounting this year for 78 out of 210 entering freshmen, California continues its domination of Caltech to an unprecedented 75 consecutive entering classes. Running a close (?) second to California is New Jersey with twelve freshmen, followed by New York with eleven, and Arizona and Colorado, both with nine.

In all, 32 states, the District of Columbia, and four foreign countries (Brazil, Colombia, Greece, and Hong Kong) are represented by this, the largest class ever to enter CIT. Included in the entering class is a student from Colombia who is attending Caltech under the newly instituted Latin American Student Program, ASPAU, which in the past has contributed African students to the Caltech student body.

From public school

According to Dr. Peter Miller, Associate Director of Admissions and Undergraduate Scholarships, 85% of the entering frosh attended public high schools, only 15% coming from private and parochial schools. He also said that 90 freshmen are receiving Institute scholarships totaling \$112,850. In addition, 43 are receiving scholarships from outside sources.

Academically, the entering class is much like last year's. This year's class boasts two Presidential Scholars (there were four last year), 21 National Merit Scholars (27 last year), and 39 California State Scholarship winners (29 last year). It also contains 60 students who were valedictorians of their high school classes, as opposed to 44 valedictorians in the class of '69.

Predicted GPA Higher

According to statistics put out by CEEB, the class of '70 dropped a little on the verbal aptitude test, with an average score of 677 against 688 last year, but stayed exactly even on the math portion (752 both years). It picked up 16 points on the physics achievement test (751 vs. 735), gained slightly on the Level II math (782 vs. 778), fell slightly on the chemistry (730 vs. 734), and dropped ten points on the English composition (661 vs. 671). However, on the basis of College Board scores, rank in class, and high school grades, the mean predicted GPA is 2.83 for the class of '70 vs. 2.79 for the class of '69.

Coffeehouse Re-evaluated

Since the heady, euphoric announcements of last summer, planners of the Coffeehouse project have shifted emphasis from optimistic predictions to less spectacular confrontations with the problems involved in the institution.

Site Selection Difficult

According to Kermit A. Jacobson, Director of Procurement for Caltech, who was interviewed Monday, the problem of developing the Coffeehouse is proving "a toughie." Several promising sites have had to be rejected because they lie in the path of the bulldozer; yet more remote sites

Mathematics Revamped

Bohnenblust Announces Pace-yourself Testing for Ma 1

Dissatisfaction with the old freshman math course (Ma 1) has prompted the math department to redesign the course, according to information obtained from Dean Bohnenblust.

Troubles have existed for the math department for several years now, as evidenced by a rise in the number of students failing Ma 1. The introduction of no-grades did not bring any relief to the flux of failures, but seemed to augment them; this pace-yourself method will be a new approach.

In the old course format, if a student didn't grasp enough of the material in the first quarter, he never had a chance to catch up by reviewing. The faculty expressed the view that freshmen enrolled in the old course did not spend enough effort trying to learn the mathematics presented them, and this apathy wasn't discovered early enough to save such students. The new freshman course tries to remedy the situation by allowing the students to take six exams at his own pace over a year's time. A

student making normal progress would take one at midterms and one at finals. Failures will not be reported to the Registrar, but the student in question will be warned and given an opportunity to take the test over at a later time. If he passes, the Registrar will be informed and the student will be given the credit due him. "To stress active participation"

The course will consist of two lectures and two recitations weekly, in contrast to the old system of three lectures and one recitation per week. Dean Bohnenblust stated that the recitation will "stress active participation on the part of the students". The lectures will aim at giving the freshmen a thorough understanding of the theoretical course materials.

The restructuring of Ma 1 has brought about the abolition of

Ma 1.5, which covered the material of Ma 1 and Ma 2 for well-prepared freshmen. The math dept. will excuse students desiring advanced placement in mathematics from the recitation portion of Math 1 if they pass the first two tests. These students attempted the exams yesterday, September 21, 1966 in 151 Sloan. Those freshmen excused from the recitations may enroll in Ma 3, a course covering different approaches to many topics, taught by Dr. Apostol. This course is scheduled for the same time as the recitations of Ma 1 and Ma 2, in order that no scheduling conflicts would arise.

There will also be a special freshman section of sophomore mathematics for those who qualify by previous math courses. Math 2 will probably change to the new system next year.



Igor Stravinsky, internationally renowned composer and conductor, will appear in Beckman Auditorium November 6th in a concert for Caltech students. Free admission!

Pennario, Stravinsky to Highlight New Beckman Concert Season

by Dave McKay

All aspiring young culturemongers who come to Caltech seeking "refinement" will be pleased to hear that Beckman is again running its one-ring show, bigger and better than ever, with occasional sidelights in Dabney Lounge.

By far the most diversified and available form of culture at Tech is music. On Saturday, October 15, Teckers will be able to snow their dates (or roommates) with

a piano recital by Leonard Pennario, creator of the classical style for people who hate the classics. Even more impressive will be a chamber orchestra concert conducted in part by Robert Craft and in part by the grand old patriarch of organized cacophony, Stravinsky himself. The concert will cost the general public a minimum of \$5 on November 7, but Teckers can hear the same program free Sunday night, November 6.

Culture for the impoverished

For peasants and Scotsmen, a series of free concerts featuring small ensembles and chamber groups is offered in Dabney Lounge. These performances are donated by local, small-name talent on various Sunday evenings throughout the term:

- October 16...Los Angeles Brass Ensemble
 - October 30.....Los Angeles Artists Ensemble
 - November 20.....Goldman Duo
 - January 15.....Coppin Ensemble
 - February 5.....Di Tullio Trio
 - February 26..Wakita Ensemble
 - March 12.....Pacific String Quartet
 - April 9.....Tri Art Trio
 - April 30.....Clarion Ensemble
- For the more sophisticated
(Continued on page 3)

Faculty And Students Plan Elaborate 75th

Caltech will commemorate its 75th anniversary this year in a gala celebration beginning on October 24. Teckers will get a three-day weekend thanks to a Monday convocation in which 26 distinguished scholars from this country and England will discuss "Scientific Progress and Human Values." It is rumored that President Johnson will speak on campus sometime during the event.

"We are proud as we approach this anniversary, which will give us an opportunity to review our history, to examine the place of science and technology in the world of today, and to look forward to the future role of Caltech in the life of southern Cali-

fornia and the nation," commented our fearless president Lee A. DuBridge about the event.

The three-day conference, to be held in Beckman Auditorium, will be attended by more than 1,000 invited educators, government officials, civic leaders, officers of corporations and foundations, and representatives of learned societies. It will focus attention on problems arising from man's advancing knowledge in the physical and life sciences and what values he must apply in confronting them.

"It is hoped," said DuBridge, "that through the meeting of these minds we may be able to contribute observations and insights of real value in this anxious age."

Food Service Transferred

by Kirk Benson

Nothing to do but work,
Nothing to eat but food,
Nothing to wear but clothes,
To keep one from going nude.
—Benjamin Franklin King

Although working and going about clothed (or partially so) may seem to almost everyone to be natural enough processes for passing away the time, one must agree that eating and the attention given to it should surpass

the diligence applied to the first and the meretriciousness inherent in the second, especially in regard to the artistry of its preparation and the fastidiousness of its consumption.

At last the cultured palates of Caltech students may be treated in the proper manner. With the exodus of the Saga Food Service on August 1 and the entrance of a new Institute-operated service in all three food areas, a new chapter in Caltech eating may be
(Continued on page 3)

Notices

WANT A FORTUNE?

You'll need one when you see the prices of the books in the bookstore. Check the YMCA for used books first, then try the bookstore if you need any more.

GAME ROOM KEYS

Because of the large number of game room keys lost or missing and unaccounted-for over the past few years, a lock change is in order. The locks on the Winnett Game

Room, the Fleming game room, and the south door of the ASCIT-YMCA workroom will be changed on October 6. Contact the appropriate key representative in your House.

BIG T AND CRUMPETS

For those students (not Frosh) who have just come back, the Big T's have finally arrived and have been sitting around since July 7th. Please pick yours up in the Winnett office.

Editorials

A Good Investment

Welcome, freshmen and transfer students, to Caltech. The **California Tech** and its devoted (but unfortunately small) staff sincerely hope that your stay here will be a rewarding one. However, to ensure that you will have a good chance of achieving fame, fortune, and happiness, the **California Tech** will assume its exalted position by giving you advice on top of the plethora of the same to which you have been already exposed.

Fact number one: Caltech is a veritable academic rack. The courses will be difficult and challenging. However, the ultimate goal of higher education is the overall development of the individual. Therefore, due to the indifference of the Institute as to your personal development, it will be up to you and you alone to make the most of your tenure. In the face of constant academic pressures (which, fortunately for your sake have been alleviated somewhat by the advent of the pass-fail system) taking such advantage may be harder than it sounds.

Fact number two: Frosh camp will provide the first previews of your imminent metamorphosis, so don't let the words spoken by faculty and student leaders lull you to sleep. Be skeptical; feel free to clarify any doubts which may arise with the faculty members and upperclassmen who will be at camp with you. If no doubts occur naturally, manufacture them yourself and try to corner your discussion leaders with them. Even a healthy cynicism may do you a great deal of good.

When you get back on campus, don't be afraid to open doors. Hunt down faculty members, grad students, and upperclassmen and batter them with your curiosity. This is as much a part of your education as the lectures, labs, and recitation sections.

Take advantage of the numerous activities which are open to you; go to concerts and participate in students activities and organizations (the **Tech** being one of them.) They are for your benefit and if you do not grasp as many of these opportunities as you can handle, you'll be only cheating yourself. Your tuition is high but you can make it go a long way in a lot of different directions. The upperclassmen here feel it is worth the investment, otherwise they wouldn't be around.

—John Middleditch
Mike Meo

ASCIT Non-Visitation

In the days of yesteryear when men were men, giants walked the earth, and Caltech's football team had winning seasons, it was not unreasonable to expect the ASCIT officers to faithfully fulfill their appointed duties. But alas! An era of bureaucratic decadence has stricken this noble institution, and we have slipped into the quagmire of blatant apathy.

The subject of this editorial is, of course, the rueful omission of this year's ASCIT visitation program. Kubit Kermitz, the one-time wonderboy of the physics 2b lecture series, has fallen from the high pedestal of ASCIT secretary to which he had so eagerly aspired. To wit, he has blown it.

The worth of ASCIT visitation is summarily unquestionable. The new frosh always have many questions about Caltech which, if left unanswered, will proceed to burn through their impressionable minds like a hot knife through butter. It is almost as much a part of their orientation as frosh camp. Indeed, only through the experience of frosh camp can we save some vestiges of personal contact in the image of this institution which might otherwise be clouded over with a coldly impersonal austerity.

But lo! There is more yet. The infamous circulation manager of our esteemed **California Tech**, now the notorious **Big T** editor, left hundreds of faithful subscribers waiting in vain for the final (serious) issue of the **California Tech**: a grievous negligence for which he shall be duly chastised!

Such negligence, if left to spread, would, like a cancerous ectoplasm, engulf all of ASCIT in its toxic excretions.

—John Middleditch

Coffeehouse Delay Now Very Likely

(Continued from page 1)
dollars in any house which is short-lived. This reluctance might be interpreted to reflect a feeling that the Coffeehouse is not needed at this time.

Jacobson pointed to the progress made during the summer however, in arousing the faculty's awareness to the need. "A lot of groundwork has been covered," he said, "in learning about it." A more thorough prepara-

tion ensures a more successful project, he pointed out.

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Play Super Win-a-heck

Reviving an ancient tradition, the **Tech** once again sponsors, for the benefit of its readers, a contest, designed to ferret out those among its vast readership who conceal somewhere within their meek exteriors strange powers and abilities far beyond those of mortal men.

The object of the contest is to form words out of the letters appearing in a well-known name. Any letter that appears in the name may be used as many times as is necessary. The name (for who could longer conceal it?) of the famous personage which is to be scrambled and picked apart belongs to one of the members of the **Tech** staff itself; yea, it might even be said that this person is the best-known mem-

ber of the aforesaid staff. The name is

Thfwvnm Tlendrjgckxsbpnz.

All words formed from it are acceptable, so long as they are not proper nouns, hyphenated, derogatory, obscene, abbreviations, a danger to the health of the community, good usage, or Urdu. Entries must be slipped anonymously under the door of the **Tech** office by midnight, May 4, 1976, or, alternately, they may be used to cover the bottom of one's bird cage.

Prizes will be announced soon; they are guaranteed to be delectable and/or inspiring. Any similarity between names appearing above and real names, living or dead, is purely coincidental.

Move Over, Spiderman... Superfeynman Is Here

Richard P. Feynman, Nobel Laureate, Ph.D., F.R.S., B.S., B.S., notorious bongo wizard, Richard Chase Tolman Professor of Theoretical Physics, has achieved the rating of "Super-Prof" in a listing appearing in the annual September Back-to-College issue of *Esquire Magazine*.

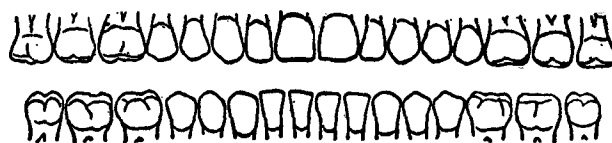
He and 32 other professors, representing schools throughout the country, are the subjects (or objects, as the case may be) of an article in which each prof is depicted in a character sketch as a comic-book type hero.

The article appears in conjunction with a special nineteen-page foldout section in *Esquire* examining the current (?) comic book

craze on college campuses.

The pros were chosen by their respective and respectful college newspaper editors (namely the fearless peerless editors of our beloved scandal sheet) on the basis of possessing that ethereal quality which puts them many notches above other educators in their fields.

It is suggested (though somewhat facetiously) by *Esquire* that students would do well to journey from one end of the country to the other visiting these "Super-Pros" along the way, and thereby get an excellent although unconventional education. There's a bus going east every other day.



Smile Frosh

EDITORIAL POLICY

For the information of its readers, the **Tech** presents the following summary of its editorial policy:

The first signature following an editorial indicates the author of that editorial. The following signature, if any, indicates approval by the other editor. If both editors sign the editorial, that editorial then represents the opinion of the **California Tech**.

In general, column writers have complete freedom as to the content of their columns. No column will be eliminated from any issue of the paper solely because of the opinions represented in that

column. Column writers represent their own opinions only and not necessarily the opinions of the **California Tech**.

The **California Tech** welcomes all letters, whether or not they agree with editorial opinion. All letters must be signed, but the author's name may be withheld from publication on request. Letters are edited (or left out) solely on the bases of space, decency, and the desire to present letter opinions in proportion to the amount of mail received. As with columns, the opinions stated in letters are not necessarily those of the **California Tech**.

Noyes Chemical-Physics Lab To Rise Shortly

by James Cook

Construction began on the Arthur Amos Noyes Laboratory of Chemical Physics. It will be located on San Pasqual Street and, when completed, will be the largest structure on campus. It will be devoted to basic research and will accelerate research greatly in the promising area of chemical physics. The architects are Risley, Gould, and Van Heuklyn of Los Angeles and the general contractor is C. L. Peck, also of Los Angeles.

The building, of contemporary design, manages to be practically designed without seeming unattractive. The west and main wing of the structure will be built around a utility core, and will have a total of five floors, three above and two below ground. The east wing will be adorned by sculptured columns rising three stories. The windows will be of bonze colored glass to minimize glare and heat. A sub-wing will project from the east wing.

The building will have laboratories, offices, lecture rooms, a library, and glass-blowing shop, providing facilities for eighty or more people. As Dr. John D. Roberts, chairman of the Division of Chemistry and Chemical Engineering, stated, the tools of physics will be used to make contributions to biology as well as chemistry.

California Tech

Published weekly during the school year except during holidays and exams by the Associated Students of the California Institute of Technology.

Editors: John Middleditch and Mike Meo, Editors-in-chief; Bob Firestone, Features; "Crash" McCord, Managing; Joe Jeffrey, Copy; Peter Balint, Sports.

Staff: Steve Wierenga, James Cook, Hank Peterson, Kirk Benson, Rich Thornberry, Dave McKay, Glen Doberne, Tim Hendrickson

Business: Bob Berry, Manager; Circulation Managers, Ed Keim, Mike Mike Pollock

California Tech, Publication Offices: 1201 E. California Blvd., Pasadena California, 91109. Second-class postage paid at Pasadena, California. Represented nationally by National Educational Advertising Services, Inc. Subscriptions: \$1.50 per term, \$4.00 per year. Life subscription: \$100.00. Printed by Bickley Printing Co., 25 South Fair Oaks Ave., Pasadena, Calif. Volume LVIII, Number 1, Thursday, September 22, 1966

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Sex And Violence At Beckman

(Continued from page 1)

type of intellectual, there are the Coleman Chamber Concerts in Beckman on certain Sunday afternoons. Usually attended by a regiment of sweet old ladies, these concerts are a long-standing tradition in Pasadena, and offer some internationally renowned groups:

- October 9.....Melos Ensemble
- November 6.....New York Woodwind Quintet
- January 29.....Juilliard Quartet
- February 19.....Quartetto Italiano
- March 5.....Kyndel Quartet
- April 2.....Alma Trio

In an attempt to add variety to the scene, ASCIT will present Chad and Jeremy in Beckman on October 26; rumor has it that Techmen will get their usual discount of \$2 per ticket.

Variety in store

The Norman Luboff Choir will perform on November 19, and John Williams will give a guitar recital on February 18 (so what if we can't attract Andres Segovia?). Composer Karl Kohn and his wife Margaret will give a duo piano recital of February 25 (what a way to spend a honey-

moon). For those who like singing, Salli Terri, a soprano, will give a concert the Saturday of second term exam week, March 11; for those who like singing but who actually snake for finals, Shirley Verrett, another soprano, will give a concert the first weekend after spring vacation, on April 1.

The theatrical events commence a week from next Wednesday with a staging of Goethe's "Iphigenia in Tauris". Starring Evelyn Solann and directed by Michael Egan, the drama is the great German poet's version of the Orestia myth of the Greeks. The CIA (Caltech Intelligence Agency) has word that eager English 7 students can earn brownie points by seeing the play and mentioning it casually in class the next day.

Drama for the erudite

Three other professional dramatic events are scheduled for the year. Beginning Thursday, December 1, John Houseman's "The Honourable Estate", starring Nina Foch (no pun intended), will see five stagings, including a Sunday matinee. On the

second Tuesday of second term, January 10, the Stratford Shakespeare Company of Ontario will present "An Evening with a Well-known Bard". The drama season at Beckman concludes early in third term, April 11, with two plays by Bertolt Brecht: "The Elephant Calf" and "The Exception and the Rule".

Having only a small stage and lacking an orchestra pit, Beckman can scarcely hope to attract the graceful bodes of the Bolshoi or Martha Graham and company; despite this, one dance concert has been scheduled: the team of Sujata and Asoka will pour forth of their Asian repertoire on April 21.

Leaders for we followers

Even the YMCA has something to offer in the Great White Tent, namely, the leaders of its Leaders of America program. On October 12, "community anarchist" Paul Goodman will speak, and on February 23, Rosemary Park, who will also be at the Caltech-Scripps conference, will give a lecture.

For those who not only don't snake for finals, but never bother

to snake at all, there is a series of Monday night lectures, giving a Scientific American type of view of the latest brainstorms at Caltech. This year you don't even need a ticket to see the show, so if you're bored some Monday evening, drop in:

- October 10....Dr. L. A. DuBridge, "Caltech Looks Back—and Ahead"
- October 17....Dr. Edwin H. Land, "New Experiments in Color Vision"
- October 31....Dr. Aron Kupperman, "The Intimate Story of a Chemical Reaction"
- November 14.....Dr. Arnold O. Beckman, "A Trustee Looks at Caltech"
- November 21....Mr. Arthur Raymond, "Over the Horizon in Air Transportation"
- November 28.....Dr. Martin Schmidt, "Quasars and the Universe"

December 5....Dr. Fred Thompson, "What's in the Brain that Ink may Character?"

Finally, this year more than ever before, Teckers themselves will have an opportunity to demonstrate their talent (???) in Beckman. The Drama Club,



Leonard Pennario will appear in concert on Saturday, October 15, in Beckman Auditorium.

Glee Club, and Band have all scheduled performances during third term. In addition, nonconformists who belong to none of the above groups will have the opportunity to display themselves in the second annual ASCIT talent show. So, as the hillbillies say, "Git out there and git cultivated."

1st Prize College Contest!

Congratulations to Paul S. Fingerote, UCLA Junior



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Seeds Yield Animal Hormones

by Steven Kraus

Caltech scientists announced Monday that they have isolated female sex hormones from the date palm and pomegranate (where else at this school!). The announcement was made by a research team headed by Dr. Erich Heftmann, research associate in biology. The hormone, a member of the estrogen family, was found in the seeds of the plants studied. Although the amount of estrogen found in the plants is very small, Heftmann believes that they may prove to be of great importance to the life processes.

According to Heftmann the estrogen found is of identical composition to estrone, an animal estrogen. To prove the activity of the plant hormone the substance was injected into female mice. Their reaction to the hormone was identical to the reaction to animal estrogen.

In pollen from the date palm Dr. Heftmann and his sexually inspired colleagues found not only estrone, but also another more basic compound — cholesterol. Cholesterol is another steroid formerly considered an exclusive animal product. Heftmann con-

siders this finding significant due to the fact that it is the "raw material" from which animals make sex hormones. The biochemist and his colleagues have also found that plants use the same chemical processes that animals do in synthesizing a variety of steroids.

Kay Is New Feeder

(Continued from page 1)

unfolding. Heading the new service is Mr. R. W. Gang, Manager of the Residence and Dining Halls Office, who comes with previous experience gained at UCLA.

Under Gang is Mr. Dennis Kay, Manager of Food Services, who likewise comes from previous employment at UCLA. Working with him are two assistant food service managers, Mr. John Stanuga and Mr. James Burke. Stanuga possesses more than thirty years experience in the field, while Burke was formerly employed by the Ontra restaurant chain.

Gang does not apparently anticipate many drastic changes to accompany his succession. All former Saga employees were offered re-employment, and all but three are returning. Several more are being added to the staff, raising the total work force to fifty. Gang expressed the possibility of eventual choice of entrees, and he plans to continue the practice of meeting with student food committeemen and the employment of student waiters.

The new regime starts September 25, so optimism need not die until that day.

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Ikeya-Seki Analyzed Bright Season For Soccer Teams

Two Caltech researchers have recorded an astronomical first in the field of comet-tracking. Temperature measurements were obtained of the comet Ikeya-Seki, which passed through a solar arc at the distance of only five hundred thousand miles from the sun.

Eric E. Becklin, graduate student in physics, and James A. Westphal, senior research fellow in planetary science in the Geology Division, observed the comet for nineteen days last October with a 24-inch telescope at the Mount Wilson Observatory. Their infrared studies are confirmed by NASA and are reported in a recent issue of the Astrophysical Journal.

Comet Is Energy-Deficient

They could not track the comet until it came within 45 million miles of the sun due to its relatively low energy output at that radius and the limited sensitivity of the telescope's infrared detectors. When the comet approached to within 20 million miles of the sun, its signals were drowned out by the sun's excessive brilliance.

At the closest distance from which signals could be received, the temperature was found to be 1200 degrees, while at the maximum distance, the temperature was 700 degrees.

"The steady increase and decrease in temperature with distance from the sun strongly suggests that the temperature of the comet was entirely dependent upon the sun," Westphal said. "So does the fact that the nucleus, or head, and the tail had the same temperatures."

Ice Possible In Comet

"Some people have suggested that comets are largely composed of chunks of ice and dust. It is hard to believe that there could be very much of either in the nucleus of Ikeya-Seki," Westphal added. "However, there may have been a small amount of ice to 'glue' the nucleus together. Our observations show that there probably isn't any significant amount of dirt and gravel in this one. Instead, there appears to be lots of metallic material."

Becklin said that the total amount of energy radiated in the infrared by the comet's nucleus dropped to one-half after passing by the sun, but that the temperatures were constant.

"With this information, and assuming that the processes involved are simple and that the nucleus was roughly spherical in shape, then we can derive a mass loss of 65 per cent," Becklin added.

Comet Continually Losing Weight

Thus, by flying by the sun and separating in two, Ikeya-Seki probably lost tons of iron and other metallic substances, the researchers said.

The comet is unusual not only in having flown uncommonly close to the sun but also in having apparently done so at least once before. At that time the intense solar heat probably "boiled away" the nucleus' lighter-weight chemical elements, leaving only the heavier metals.

Is Fragment of Larger Comet

Ikeya-Seki is believed by the astrophysicists to be a fragment of a large comet that long ago passed by the sun on the same orbital path and was broken apart. The resulting pieces are now all comets themselves, six of which have been spotted since 1843 in that very same orbit.

It is estimated that Ikeya-Seki passes through the corona of the

sun once every 700 to 1600 years. Like other comets, it generally resides outside the orbit of the outermost planet, Pluto.

The temperature measurements of the comet were taken in infrared wave lengths longer than those of ordinary light. However, the earth's atmosphere screens out most of the incoming infrared signals, with the exception of a few infrared "windows" in the atmosphere, four of which were used by Becklin and Westphal: at 1.65, 2.2, 3.4 and 10 micron wavelengths. The visible spectrum consists of wavelengths between 0.4 and 0.7 microns (4000 to 7000 A).

Twin Beam Infrared Used

The observations were conducted through twin beam system that looks at the object whose temperature is to be taken and at the same time compares its radiation with that emanating from an adjacent spot in the sky. The difference between the two beams is greeted with a million-power amplification.

A "shield" against background noise from "hot" surroundings on earth is provided by operating the telescope's crystal detectors in containers cooled with liquefied hydrogen and nitrogen.

This is one of the few sport stories that have appeared in the California Tech which do not beg for more participation. Students have shown a great interest in soccer, and over 20 players participated in spring practice. All these people should return and with the addition of several frosh there is no manpower shortage. The big question mark lies in the in the player's abilities.

Most of this year's team will be made up of players from last season's fiasco, but another year's experience plus the addition of inside George Balanis and the return of oft-injured Walt Innes will strengthen the team considerably. Balanis is expected to be the star on offense, the depart-

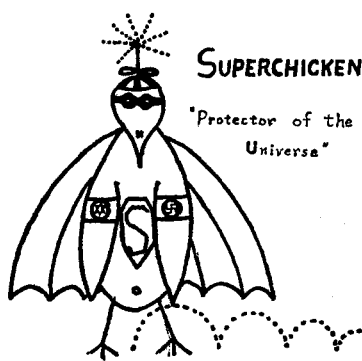
ment in which Beavers were weak in past games.

Although practice has just started many freshmen have appeared to kick the ball around. Most of them are beginners, but there are a few who show promise of being able to help the team. As opposed to last year, there will be quite a number of foreign students on the team.

Since last year several changes, some of them important, have been made in league rules. Instead of two 45-minute halves, the game will be played in four 22-minute quarters plus two 5-minute overtime periods in case of a tie. Also, instead of unlimited substitution, only 16 players will be able to participate in any one game. But the basics of the game are still unchanged; soccer is still the most exciting, fast-moving, and wide-open game in the world.

The open team lost most of its players from last year, but a large crowd of new faces have appeared to take their place. Back from last season's team are Willie Behrens, Dick Wase, and John Trishchuck. There are also new graduate students and employees, plus many players from the rugby team who don't like to sit still in the off season. It is too early to tell how the team will compare to its opposition; the large turnout will create intense competition for each position, but only time will tell quality from quantity.

Both teams start the season with strong opposition from UCLA. The varsity plays the JV's at UCLA on Saturday, October 11. The open teams plays UCLA at Wrigley field on Sunday, October 2 as a preliminary to a game between two Mexican teams.



Football Schedule

Sat.	Oct. 1	2 p.m.	Azusa-Pacific at Rose Bowl
Sat.	Oct. 8	8 p.m.	Redlands at Rose Bowl
Fri.	Oct. 14	8 p.m.	Pomona at Rose Bowl
Fri.	Oct. 21	8 p.m.	Cal Lutheran at Rose Bowl
Sat.	Oct. 29	2 p.m.	Caltech at La Verne
Fri.	Nov. 4	8 p.m.	Caltech at UC Riverside
Fri.	Nov. 11	8 p.m.	Occidental at Rose Bowl
Sat.	Nov. 19	2 p.m.	Caltech at Claremont-HM

Advice To Frosh

by the Old Rat

Dear Frosh,

You may not appreciate this, but the old Rat is about to perform you a real service. For a starter you'll hear all about the present Physical Education program. Then you'll learn how to get around it.

Hate to tell you this, but frosh could have a rough time with PE. During the course of one year, each frosh section is treated to exactly five weeks each of six exciting sports like weight lifting, wrestling, swimming, gymnastics, golf, and tennis. Most of these probably don't even turn you on. But the unwitting frosh is doomed to exactly this program, thirty weeks of real excitement.

Intercollegiate

Caltech Intercollegiate Athletics is in a class by itself. You don't need to be experienced, athletic, smart, big, strong, fast, or good-looking. All you really have to do is either want to play or want to get out of conventional PE. Satisfaction is guaranteed as no one is ever cut from a Caltech squad. We've got teams in all major sports, not to mention cricket. They aren't usually the best teams in the Southern

California Athletic Conference, but they probably have the most fun.

If you really don't like to play intercollegiate sports, you can meet your PE obligation as a manager. Basically, this amounts to keeping track of equipment and attendance, or assisting in time-keeping. You travel with the team and get delicious training table goodies at the Greasy or at the special dining hall. Coach Emery is currently looking for managers in several sports.

Interhouse

Another noble way to meet your PE requirement is the Interhouse sports program. This is just what it says. One merely tells his PE coach that he's going to play Interhouse for however long the sport lasts and then is excused from his regular classes in PE to attend practices and games against other Houses. The rivalry is intense and the program is well managed by Coach Jim Nerrie. First-term sports consist of softball, and swimming. Later there are football (touch), track, volleyball, tennis, and basketball.

So pick your sport, choose your interest, and have a ball.

The Old Rat

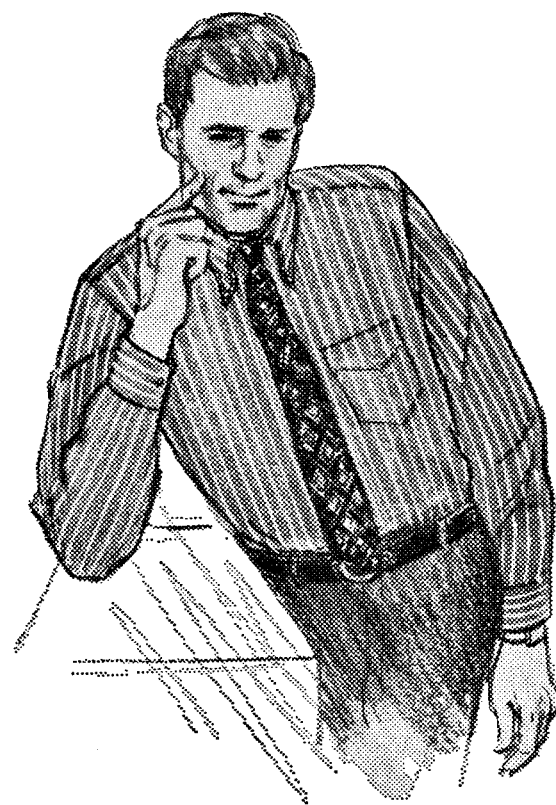
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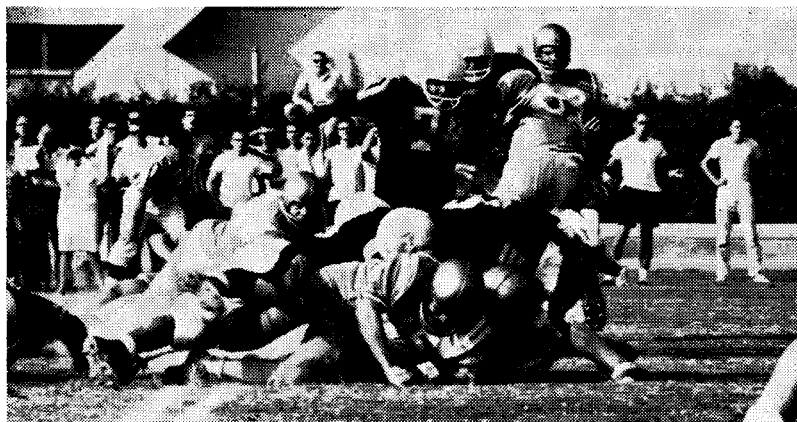
CIT

SPORTS

Football Squad Looking Forward To Improvement of '65 Record

by Rich Thornberry

Hoping to break last year's seven-game losing streak, the Caltech football team, headed by Bert LaBrucherie, has switched to the "I" formation. The team is really melding into what looks like a tough, scrappy group that could give the league a big surprise. The 24 Teckers have a desire to win. They're hitting hard and putting forth a good second effort. Everyone is keyed for the first game with Azusa-Pacific scheduled for the Rose Bowl on Oct. 1 at two p.m. The word is "Win."



VICTORY FOR CALTECH, but not recently, as Barry Dinius scores against LAPC, for 8-6 victory. However, this was the first game of the '64 season. Dinius has departed and the team hasn't won since.

The Beavers scrimmaged a local semi-pro team, the Pasadena Raiders, last Saturday, and although they lost 18-6 they were able to move the ball quite well against the big Raider defense. The only Tech score came on a quick look-in pass from Tom Burton to Lonnie Martin which caught the Raiders completely off guard.

The Caltech defense displayed even more finesse by retrieving several Raider fumbles and intercepting a pass. Senior guard George Sharmon distinguished himself by recovering two fumbles, and senior tackle Billy Mitchell's hard play anchored the strong side of Caltech's line. The last set of downs for the Raiders' offense demonstrated the effectiveness of Tech's defense as they were held to a very few tough yards.

The overall look of this year's Tech team is one of excitement, determination, and much improvement. Who knows, they may even win a couple this year.

Gutman Joins Squad

by Steve Kraus

Warren Emery, Caltech athletic director, has announced the appointment of Tom Gutman to the position of football line coach and head wrestling coach. Gutman (a former end for UCLA) has held the same posts at Beverly Hills High School for the past three years. His success, at least in one department, is attested to by the fact that seven of his wrestlers have made the state finals.

Gutman was a tackle on the 1958 Santa Monica City College team that defeated Texas A. & M. College in the Junior Rose Bowl. The following year he transferred to UCLA and earned the team's "rookie of the year" award. His final season culminated in an appearance in the 1962 Rose Bowl game against Minnesota.

Gutman is being billed as the first fulltime wrestling coach at Caltech. He will spend his extra time as a physical education instructor as well as coaching football. It is hoped that he can also serve as fulltime hurley coach, ice hockey coach, and teach a couple of math sections in his spare time (Editor's note: but this is not very likely).

Gutman is 30 years of age, married, and lives in Beverly Hills.

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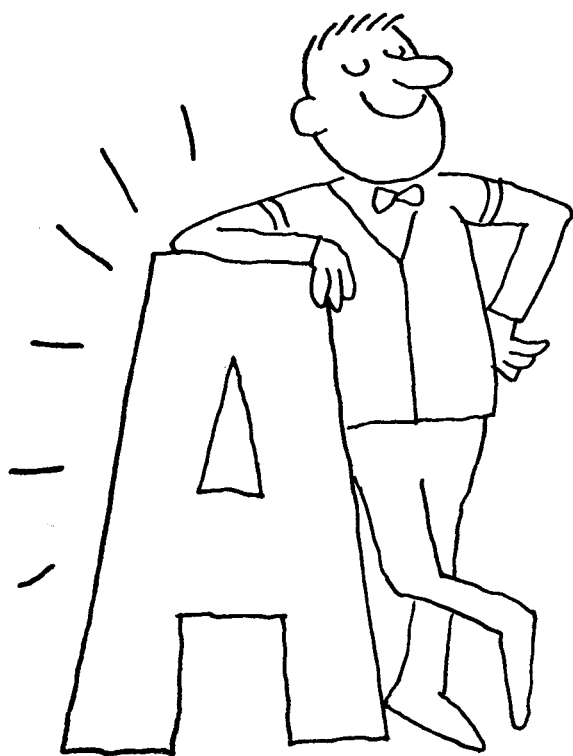
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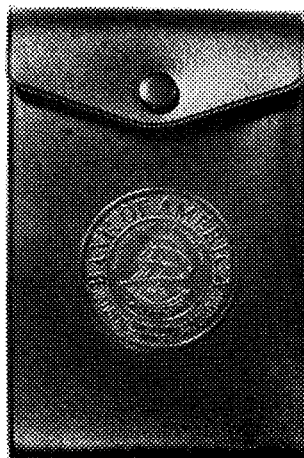
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by Bebe

With increased leisure time resulting from no grades, frosh do seem to be getting off campus more. Last year we noticed packs of them scurrying to operas, concerts, ballets, and art films. However, it didn't seem as if many people were taking advantage of the many excellent jazz and folk clubs around town, and this is a shame because Los Angeles attracts the cream of jazz and folk performers. Furthermore, for about \$1.50 and a drink you can hear any of these people. At some places you have to be 18 to get in, and all but the Ice House are outside of Pasadena, but age and distance are not insurmountable problems, judging from the number of Teckers going out to Hollywood for horny movies which have the same restrictions.

Non-paid Ad

Let's consider the Ice House. They run comedy and folk shows — usually good ones. They consider themselves "delightfully informal" — they are. There's no age restriction, and the Pasadena place is within walking distance. Also they've just opened up a branch in Glendale, so if you don't like the Pasadena show, you can toddle over to the other establishment.

For Jazz Nuts Only

If you like jazz, try the Lighthouse. It's in Hermosa Beach, but the drive is worth it. Try to go down Sunday — spend the morning on the beach and then catch their three p.m. matinee. Admission is \$1.50 per set, except that there is no admission charge on Monday and Tuesday, when the Lighthouse All Stars hold forth. Furthermore, you

get great entertainment for the money. No matter if you're under 18 — if you like jazz, this is the place.

Bebe Bites

There is an 18 year age restriction at Shelly's Manne-Hole, but some really good jazz groups play there, with Shelly Manne and His Men holding forth between featured engagements.

The Ash Grove is another folk house, while the Troubadour appeals to both folk and pop fans.

You say you have no money and no car and yet you must hear good jazz? Get yourself an FM radio and tune in KBCA (105.1). You can listen all night long.

FLICK GUIDE

ACADEMY 1003 E. Colorado 796-3191 Admission: \$2.00 (\$1.50 before 5:00) w Fox student card.* Friday and Saturday: Features are Oklahoma and Born Free. No schedule available before press time.
ESQUIRE 2670 E. Colorado 793-6149 Admission: \$1.50 for students Friday: Anna Christie — 7:55, 10:55 Big Star — 6:30, 9:30 Saturday: — 2:00, 5:00, 8:00, 11:00 — 3:30, 6:30, 9:40
UNITED ARTISTS 606 E. Colorado 681-6577 Admission: \$1.50 w United Artists student card. \$1.75 w out. Friday: Walk Don't Run — 1:10, 4:55, 8:40 The Singing Nun — 3:01, 6:46, 10:31 Saturday: Walk Don't Run — 2:50, 7:50, 11:50 The Singing Nun — 1:00, 5:00, 10:00
CROWN 129 N. Raymond 796-3131 Admission: \$1.25 w Statewide student card, \$1.50 without. All week: Moonlighting Wives — 9:00 A New Kind of Love — 10:25
UPTOWN 2316 E. Colorado 793-4330 Admission: \$1.25 w Uptown student card,** \$1.50 w out. Friday and Saturday: This Property Is Condemned — 6:45, 10:25 Assault on a Queen — 8:45
*If you are bereft of a Fox student card, one can be bought, included in an admission price of \$2.00. Good for six months.
**An Uptown student card can be purchased under the following plan — first night: admission plus card, \$1.50; second night: admission, free; following nights: admission, \$1.25.
Ed Note: We could not get the times for the State at 770 E. Colorado. If you are interested, try calling 792-7139 (or 792-7130 after 6 p.m.) or consult the local listings in (shudder!) another newspaper.

The man who led Pickett's Charge was named Armistead. He was killed the fierce fighting at the Bloody Angle, while Pickett awaited the results of the conflict in a farmhouse behind the lines.

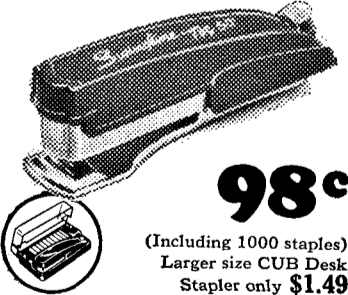
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Swingline Puzzlements: [1] Do they have a 4th of July in England? (Answers below)



[2] Take two TOT Staplers from three TOT Staplers, and what do you have?

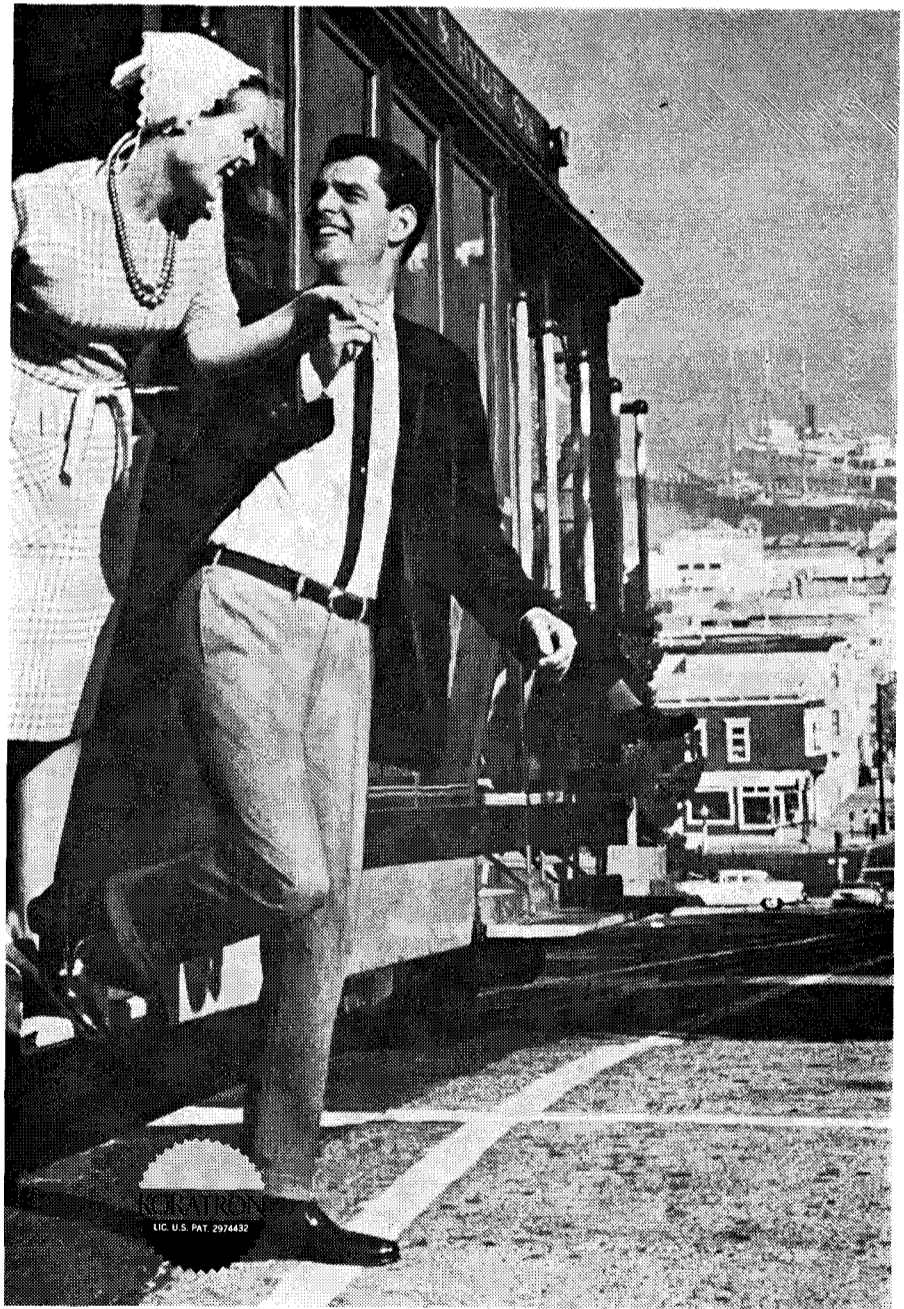
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ANSWERS: 1. Sure, But they don't celebrate Independence Day! 2. The two TOT Staplers you look — which is not a bad idea, because if there is one thing having two of them! They're so handy and useful!



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