Possible Planet Found
by Astronomer
at Palomar

Charles Kowal of Caltech was responsible for the discovery of a possible new planet. The object, which is 100 to 400 miles in diameter circles the sun between the orbits of Uranus and Saturn, according to astronomers' preliminary calculations. It orbits the sun in approximately the same plane of the other planets—at an inclination of four degrees from the ecliptic—and it appears from early orbital calculations that the object may cross the orbit of Uranus in its path around the sun.

"Object-Kowal," as the body has been provisionally designated, takes 115 years to circle the sun. It is currently about 1 billion miles from earth. The newly discovered object is unusual in its peculiar orbit, which is unlike any other known comet or asteroid, said Mr. Kowal. It is approximately the size of the largest asteroids, which are a few hundred miles in diameter.

Mr. Kowal discovered the object on November 1, as he was examining photographic plates taken through the 48-inch Schmidt telescope at Palomar Observatory.

The size of the object was calculated from its brightness. Although it is possible that the object could be a comet, captured by our solar system on its journey through space, this is very unlikely, said Mr. Kowal. For one thing, the object gives an extremely sharp image, while comets give a fuzzier appearance. Also, the object orbits the sun in approximately the same plane as the other planets, which would be an extremely unlikely coincidence if the object were captured from the fringes of the solar system. Continued on Page Six.

Vienna Boys Boy's Choir:
Good and Human

The Vienna Boys Choir appeared Saturday night in Beckman Auditorium. They performed a medley of songs and a musical opera.

They included works by Mendelssohn, Schubert, Mozart, Bruckner, and Bartok, as well as "The Blue Danube," by Johann Strauss and "America, the Beautiful." Most of these works were in German or Latin, but some were in English.

The musical opera, "By Royal Command," was by Conrad Kreutzer. It concerned a poor schoolmaster in a small village, whose three sons, with the aid of his niece, disguise themselves as the four sons a prince thinks he has. The town clerk and mayor uncover the hoax, but the pretty niece manages to placate the prince, and everyone but the clerk and mayor live happily ever after. The opera was mostly in German, and was quite hard to follow. The acting seemed quite good.

The boys' singing was, as is to be expected, excellent. However, at times they gave the impression of wanting to be somewhere else doing something more normal for boys their age (about 9 to 13). This is understandable in light of the long hours of practice they must put in, as well as being almost continually on the move.

The Vienna Choir Boys were founded in 1498 by Emperor Maximilian I. They were originally intended as choristers in the royal chapel. Over the next 400 years they grew and prospered. Franz Schubert was once numbered among their members. With the collapse of the Austro-Hungarian empire in 1918, their future seemed dubious, until Joseph Schmidt resumed them from dissolution. Over the last 50 years they have grown, and become more famous, and have begun giving concert tours all over the world.

Beavers Split Last Two Games

By LCA

Our mighty soccer team closed out the season with exciting games last weekend. On Saturday the team journeyed to La Verne, where, thanks to Ed Chan, they quickly jumped to a 1–0 lead. La Verne was in the running for a playoff berth, however, and took advantage of Bruce Baker's absence to abuse our Beavers, mounting a 4–1 lead in the first half. At this point, Tech made things exciting, with both Mike Nelson and Ed (AGAIN) scoring within a 4–3. Time ran out before they could get it in again however, and that was the final score.

Monday afternoon saw our heroes determined to go out with a win. With the appearance of a de-fuzzed Baker the game turned into a tight defensive drew. The Tech offense just couldn't get around enough to put it in, and so the game drew to a close with the setting sun with visions of Redlands dancing before their eyes. Finally Ed Chan (there he is again) found himself in front of the open goal with the ball, and after some thought, scored. With less than two minutes remaining, the defense held to give the long-suffering Tech a shutout for their retire­ ment. It is possible that there will be three wins and a tie for the season.

For the unheard-of feat of scoring twice in the two games, Ed Chan is named Beaver of the Week! Honorable mention goes to graduating (?) senior Bruce Baker, Joel Okazaki, Suwai Tham­ iyavorn, and Joe Aydelotte. Be sure to come see our exciting Beavers extend their streak next year! (Who needs a football team?) Continued on Page Two.

Julia: Suffers From Writer's Cramp

"Can't write Ed, I just can't write (puff, puff, drink some whiskey)." The above line is a slight paraphrase from 20th Century Fox's newest release, Julia. The film stars Jane Fonda, Vanessa Redgrave, and Jason Robards. The reason that I chose that particular line above is that I've been trying to write this review for the last three weeks and have encountered various degrees of difficulties.

The film is based on a novel by Lillian Hellman, Pentimento. For those of you who wonder what "pentimento" means, it refers to the ability to see beneath the artist's work and learn his first impressions. The film itself is concerned with the relationship between Lillian and her life-long friend, Julia. The story is set in the 30s and uses numerous flashbacks throughout the film to tell childhood days the girls spent together.

The film opens with Lillian's difficulties in writing. At the suggestion of Dash, her close friend and a veteran writer, she leaves for Europe to finish her play. Meanwhile, flashbacks are used to introduce Julia's character. As the story progresses, the audience sees the character of Julia develop into a strong-willed person obsessed with human rights. Several scenes show Julia fighting against the rise of Hitler. Julia's last appearance in the film is a climactic scene in which she appears unexpectedly after Lillian has smuggled a country to be used by the resistance movement.

For an historical film, it is particularly lacking in Lillian's portrayal. Not only is Jane Fonda's acting slightly less than expected, it is downright inaccurate. Continued on Page Two.
The Big T Budget

The Big T has arrived, and it has brought with it some very serious problems. We do not refer to the general quality of the book, but rather to the fact that its production cost is over budget, very over budget. In fact, the 1977 Big T is at least three thousand dollars over budget. When you stop to consider that this is out of a total budget of around ten thousand dollars, it becomes apparent that something is very, very wrong.

Budgets, admittedly, are not always easy to meet, but they must be met, or at the very least kept close to. A 30% over-run is not even close to budget. A 30% over-run is large enough to be seen far in advance, and avoided.

In the 1977 Big T, there were many ways it could have been avoided. For this over-run to occur the people in charge had to either be blind to all financial matters, or not care about them, which is far, far worse.

The 1977 Big T had 50 color pages. This compares with 32 in the 1975 edition, and 20 in the 1976 edition. We are really not sure what made last year so different from the previous two that it justified such a large and excessive increase in the color section, at about 70 dollars a page.

In 1975, the 32 color pages held 125 photos, and in 1976, the 20 pages held 82 photos, but in 1977, the 50 color pages had only 149 photos on them. Loose lay-out of photos is, of course, the editor's choice, but when it costs an extra 800 dollars, and you're 3000 dollars over budget, it is out of the question.

The BOD, we are told, will be looking into this matter. We only hope that they look long and hard, and take whatever steps to make sure this does not happen again.

The repercussions of this situation, you may rest assured, are severe. To make up this over-expenditure, the Big T may have to take out a long-term Institute loan, or it may be forced to publish small, cheap, paperback yearbooks. No matter what happens, the next several years' yearbooks will suffer as a direct result of the management, or lack thereof of the 1977 Big T.

Bakke Is Wrong

To the Editor:

I am somewhat disturbed at your greater propensity to print a letter of mine of a personal nature than one of a more political nature. My letter concerning Mr. Bakke and others was quite long, though, and in the interest of publication I would like to summarize the argument I put forth a few weeks ago.

Greed is not make the man and neither do MCAT scores. In the case of Mr. Bakke, I believe this to be a valid characterization. The advocate of Mr. Bakke, who wrote to the Tech a while back left us in doubt as to their true position by suggesting that other facts concerning qualifications might be taken into consideration on a case-by-case basis. However, the testimony in the University of Washington case (DeParle v. Odekirk) established the existence of a class of people with severe problems. To make up this over-expenditure, the

Don't forget the ASCIT movie this week in Billy Jack. Any holdovers from the 60's out there will be sure not to miss this one. The film takes one back to the time when people actually fought for something they believed. ASCIT is Friday night at 7:30 pm and 9:30 pm and it's only 50 cents. Cheap entertainment for a Friday night—it's r-bad.

-Michael Kurilla

Thuncan

Continued from Page One

bale inere in certain scenes. Her frustration from her failure to write, and her impatience in realizing what is going on when she is struggling the money, actually detracts from her role. Jason Robards is simply excellent as Dush, and usually dominates all the scenes he is in.

Part of the difficulty for Miss Fonda is the script, which does not do justice to the personage of Lillian Hellman. Instead of a hard, fighting woman, she is portrayed as a submissive child, led about by all her close friends. Her one scene of dominance comes against a drunk who makes scandalous allusions to her relationship with Julia. She knocks him down.

The film as a whole, removed from the historical background, is rather well done. The camera work is commendable. Don't be misled by any previews you see of this film; contrary to them, most of the film does not take place at a railroad station.

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Letters to The Tech

my letter, I referred to those who hold the arrogant view of Mr. Bakke that this is not the case as reactionaries of pedagogy. I believe this to be a valid characterization. The advocates of Mr. Bakke, who wrote to the Tech a while back left us in doubt as to their true position by suggesting that other facts concerning qualifications might be taken into consideration on a case-by-case basis. However, the testimony in the University of Washington case (DeParle v. Odekirk) established the existence of a class of people with severe problems. To make up this over-expenditure, the

Julia' Well Done, Fonda Inept

I still think it was a touch of the old 1960s to forgive and forget, but you can't do it.

I sometimes listen to that song of yours, 'that's one of your greatest problems.' I can't do justice to the personage of Lillian Hellman. Instead of a hard, fighting woman, she is portrayed as a submissive child, led about by all her close friends. Her one scene of dominance comes against a drunk who makes scandalous allusions to her relationship with Julia. She knocks him down.

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-Michael Kurilla

This group of merry musicians will be in Lloyd for Interhouse.
News Briefs

Women's Group Discussion
The women's student discussion group will meet Wed., Nov. 16, at 4:15 pm in the Y lounge. Further information can be obtained by calling ext. 2394.

Stand Up And Say Aah!
There is a Student Health Advisory Committee meeting at the Health Center Lounge at 4 pm today. All students, undergraduates and graduate, are welcome to attend. We need more student input regarding Health Center activities! For further information contact Ber Fray, Campus Liaison Nurse, ext. 2904 or see: Walter Hess, Page House; Jim Hunt, Grad Student Rep., ext. 1416; or Leslie Paxton, Fleming House.

Attention Photo Trolls!
The Western Photographic Collectors Association is having a rather impressive display and sale in PCC this Saturday and Sunday, 11:00 am to 5:00 pm both days. The show features antique and classic cameras, old photographs, used equipment for sale and trade, literature, stereo views, special displays, and a silent auction on Sunday at 2 pm. Student admission is $1. The show is in the Cafeteria building near Hill and Colorado, and there will be more cameras there than will Farrah around.

Blood and Beer
The current blood shortage is at Los Angeles hospitals has prompted a second Caltech Blood Drive. The drive will be held on Thursday and Friday, November 17-18, from 11 am to 3:30 pm, in Dahney Lounge. A little incentive will be added for the students—any anonymous donor will present either 3 x 5 card if beer or root beer (your choice) to the student house that donates the most pints of blood during the drive. So, come on down and roll up your sleeves—give!! Please call Gwenn Glass on Ext. 2374 to make an appointment; appointments will eliminate unnecessary waiting.

Medic!
The health center is looking for interested students to fill a limited number of places in the health advocate program. These students' training is to be based on a core course to be given at USC next term which will center on first aid and CPR, general health, and psychiatric crisis intervention. Those interested should contact Dr. Marlene Coleman at the Health Center as soon as possible.

Juniors Take Note
The U. S. Navy recruiting team will be on campus to interview all degree/call option students on Tuesday, November 15. This may be of particular interest to members of the junior class because of the scholarship available. It is for students interested in duty as an officer in the nuclear fleet. The Navy will pay $654 per month during a student's senior year. The scholarship is for students working toward a Bachelors degree in engineering, physics, chemistry, or math. More information is available in the Placement Office, Room 8 Dahney Hall.

Biological Tutorials
The list of biology tutorials (Bi 23) to be offered next term is now available in the Biology Office, 126 Church. The tutorials are staffed by biology faculty, postdocs, and grad students. They provide an opportunity for learning through personal contact in a small group situation and cover a broad range of subjects. Bi 23 may be taken for up to 6 units; grading is pass/fail.

Troubled Waters Stilled
There is no naval miniatures game set for this Saturday night (three guesses why), but regular Friday and Sunday night sessions of Dungeons and Dragons and other games will still be at 7:30 pm in Clubroom 1, Winnett Center. For details, contact Caltech Gamers.

Big Bucks for Future Fatgrads
California State Graduate Fellowship applications are anticipated to be available in the Placement Office in early November. The deadline date for the 1978-79 competition will be February 6, 1978.

Blizzard Lizards!
The Caltech Ski Club will have its first organizational meeting Tuesday, Nov. 15, at 10 pm in Clubroom 1, Winnett Center. It is important that all prospective members try to attend, or send someone to represent them. For more information, contact Mark Fischer, 226 Lloyd, X1280 or 499-9294.

The Big T Is Still Here
Come pick them up in Flora's office in Winnett.

Twinkletoes
The ballroom dancing class will be held Friday, Nov. 11 at 7:30 pm in Winnett lounge.

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- Chemistry
- Electrochemistry
- Material Sciences

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Or write directly to:
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Rolling Meadows, Illinois 60008

Go Camping
Join The Turkeys:
Go Camping
There will be a camping trip from Nov. 25-Nov. 27 to Joshua Tree National Monument. This trip is sponsored by the Caltech Y. There will be a $12 charge to cover food and transportation. All interested persons should sign up in the Y office before Nov. 18.

 eps file out.
Tech’s Sporting Beavers
Photos by:

Marc Berger
ed. Bielecki
Joe DiGiorgio
Steve Kellog
RAVIOLI

KOWAL'S LATEST DISCOVERY

Continued from Page One

system.

Further studies are now under way to locate the object on previous photographic plates in order to obtain better orbital calculations.

Charles Kowal is perhaps best known for his discovery of the 13th and probable 14th moons of Jupiter. The 13th moon was discovered in September 1974, and the 14th in October 1975. He has also discovered 80 supernovae in a 13-year search program, including one supernova in 1972 that was the brightest discovered in 35 years and the fourth brightest ever recorded. Only one other astronomer in history—Fritz Zwicky, also of Caltech—has discovered more supernovae. He has also discovered many asteroids, as well as one comet.

Charles Kowal was born in Buffalo, New York, in 1941 and obtained a B.A. degree in astronomy from the University of Southern California in 1961, and that year he began work for the Hale Observatories.

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Dear Mom and Dad,

Things are swell here at college except, of course, the food, which is so bad that I'm □ down to 91 lbs. □ living on salted water □ sending samples to the biology lab □ hoping you'll buy me a prepaid Trailways ticket home to get a decent meal.

I sure could go for some of Mom's good ol' □ apple pie □ Riz de Veau □ to the Trailways station to get a decent meal.

Dad, next time we get together, I want to tell you □ about my part-time job □ how I suddenly realized what a truly wise and magnanimous fellow you are □ where I left your car last New Year's Eve □ thanks for making this trip possible with a prepaid Trailways ticket.

I also need some advice on □ a personal matter □ how I suddenly realized what a truly wise and magnanimous fellow you are □ where I left your car last New Year's Eve □ thanks for making this trip possible with a prepaid Trailways ticket.

Got to sign off now and go □ to class □ to pieces □ drop three or four courses □ to the Trailways station to see if anyone sent me a prepaid ticket to get out of here for the weekend.

Love,

P.S. Just go to the Trailways station and pay for my ticket, tell them who it's for and where I am. I pick the ticket up here when I go to catch the bus.
ASCIT BOD Discusses Money

Minutes of the ASCIT Board of Directors Meeting of October 31, 1977:

1.) McDonnell mentions that he has heard that the Big T staff ran significantly over budget, accumulating a deficit of about $3000. Schwartz concurs, and suggests they work off the deficit themselves. McDonnell attempts to trace the cause of the budget overrun, asking if the action on the part of the yearbook staff had been authorized. Wells replies that he didn’t authorize it. Schwartz counters that at some meeting with the staff “way back when,” it appeared to him that Wells did authorize the move.

In the resulting controversy, it is decided to postpone the discussion until later, when the Big T staff can be brought in.

2.) Wells recalls the matter, tabled at the last meeting, of ASCIT support for the Musical. He states that they will not really need the money until second term. McDonnell reads the funding request for $300 submitted by this year’s producer, Pam Crane (letter submitted). Gutierrez feels that the expense is “not worth it.” Paxton adds that in awarding ASCIT subsidies to other organizations, a loose guideline of $10 per ASCIT member had been followed; she favors a limit of $500.

Kaler: “How about $300-350.”

McDonnell: “Remember, too, that if we give them any money because I think they can get it somewhere else.”

Kaler: “How about $300-350.”

McDonnell readies the funding request for $800 submitted by this year’s producer, Pam Crane (letter submitted). Gutierrez feels that the expense is “not worth it.” Paxton adds that in awarding ASCIT subsidies to other organizations, a loose guideline of $10 per ASCIT member had been followed; she favors a limit of $500.

Kaler: “How about $300-350.”

McDonnell: “Remember, too, that if we give them some funding now, which they could point to, it might help them in getting further funds.”

Slater: “Who picked this, anyway? I mean, really, whoever heard of Firodolo.

Schwartz: “Give them some money if they promise to reserve front row seats for the BOD.”

Slater: “They’re going to be empty anyway!”

Kaler: “I don’t want to give them any money because I think they can get it somewhere else.”

Beausoleil asks why they need the money. Wells replies that it is needed to defray the cost of costumes, scripts, equipment, and maybe to rent Ramo Auditorium. Kaler confirms that they do have to pay to rent Ramo.

Paxton suggests budgeting $250. Wells offers a counter-proposal for $400 but this finds little support. Ultimately, Paxton’s motion to allocate $250 toward the Musical is approved (Paxton/Kaler: 4-2, Sexton, Fish)-

3.) McDonnell reiterates that ASCIT representatives are scheduled to appear in Small Claims Court this Thursday afternoon in the long-standing attempt to recover $550 in unauthorized commissions taken by former ASCIT treasurer and twice Big T business manager Ole L. Anderson. It is not at all certain that there will be a trial amid reports that Anderson has left the state of California. At present, there has been no word from the marshal hired by ASCIT to serve the warrant on Anderson. More news will be available as this story develops.

4.) Wells reminds the BOD that there will be a meeting of the Candidate Interview Committee one week from Wednesday at 10:30 pm in the Y lounge.