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California Tech

Volume LXVI.
Pasadena, California, Thursday, November 12, 1964
Number 8

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BY DICK TEZAK

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MYLES WALSH, a graduate student in aeronautical engineering and new RA of Hickox House, agrees with Lingane, attributing this pressure to Caltech's emphasis on turning out specialized and highly creative men in the shortest possible time. "At Harvard," according to Walsh, "the student is not encouraged to specialize until later in his college career, when he may choose between the natural sciences, social sciences, and the humanities." Charles David, a product of Harvard's class of '62 and new RA of Page House, feels that in many ways the House life at Caltech is superior to that of Harvard, since "there are more things to do, and one has a greater opportunity to make friends." David is more critical of the Caltech Student Houses, especially in regard to the manner in which meals are served. "At Harvard, food is cafeteria-style, and there is a more relaxed atmosphere." Both agree that at Harvard the conversation during meals is more erudite, with members of the faculty mixing readily with the students. "At Caltech," says Lingane, "there is a tendency to avoid discussing science, humanities, and other intellectual pursuits at the dinner table, while at Harvard no such inhibition exists."

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BY MICHAEL MHO

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At long last it has happened. RemsenCake finally ended its five-year losing streak in football by bumping off Caltech last week. The final score was 19-7. The 1964 win is the first for the team in five years, although RemsenCake was only 19-23-3 in those five years. The victory was a long time coming for RemsenCake fans and the team itself.

There are some people on campus who are unhappy with the Y, because they think it's not serving the entire student body. However, the common opinion is that the Y is serving some students according to their desires or all students, but according to the desires of the Y's leaders. Leaders of Americanization, as speakers famous in a room, have transportation provided to pick up "fair housing," but not against "forced housing." Facilities for writing letters or sticking bumper placards or signing petitions for this cause but not for that.

It may be true that an organization that would cater to all factions would find itself lacking in principles, but the questions remain: Who is to decide what should be supported and what shall not? and, more importantly, Why should the Y expect a gift when it doesn't return service to every student on campus?

We found that the Y's booklet presenting its activities of last year—if taken (like Sago food) with a necessary grain of salt—convinced us what a dreary and unenlightened campus that was. We have sampled every one of its projects conducted and the few that involve the use of nuclear magnetic resonance (NMR) to determine the structure of organic molecules. Their method consists of a double-channel centerpiece in which two subjects are studied by using photoelectric microscopy. In the past, they have used a single-channel centerpiece, which involves the use of a single subject.

Dr. Norman Davidson, professor of chemistry, has developed large molecules such as DNA and RNA. Their method consists of counting the number of DNA particles per unit volume of solution. This involves the use of a single subject. The process is repeated until a single subject is counted. This is the only method that will work for all large molecules.

In biology, studies are of the physical chemistry of large molecules such as DNA and RNA. Dr. Jerome Vinograd, a research associate, has begun to study the properties of these molecules in the study of photoconductivity. Dr. Vinograd has also developed some new techniques in using the technique of the study of DNA and RNA. This procedure, which involves the use of a double-channel centerpiece in the centrifuge, provides a greater number of subjects to move in when the centrifuge is in operation.

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Chemical Physics

The study of energy electrons scattered by molecules has permitted Professor Aron Kupperman, a physical chemist, to make certain electronic changes that take place in molecules. An instrument of his construction has enabled these changes to be measured by studying the low energy electrons.

Funds for these research projects have been contributed by Caltech and by industry. A number are also supported by the National Science Foundation and the Public Health Service.

At the annual fund drive of the Caltech YMCA we are upon, one would consider giving your money to this organization. A natural thing to ask before donating is, What has the Y done for me in the past and what can it do for me in the future?

There are some people on campus who are unhappy with the Y, because they think it's not serving the entire student body. However, the common opinion is that the Y is serving some students according to their desires or all students, but according to the desires of the Y's leaders. Leaders of Americanization, as speakers famous in a room, have transportation provided to pick up "fair housing," but not against "forced housing." Facilities for writing letters or sticking bumper placards or signing petitions for this cause but not for that.

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Rogers Speaks In Beckman On Interpersonal Communication

Dr. Carl Rogers spoke Monday night before a capacity crowd on "Some Elements of Effective Interpersonal Communication." It was the fifth program of the Caltech Lecture Series in Beckman Ro-
gers presented a series of his "learnings" in the field of inter-
personal group therapy. He is now head of the Workshop in Human Relations at La Jolla, a position which he has held since early in 1964.

Rogers stated before his lec-
ture began that he would not attempt to tell "about" communica-
tion, but that he would actually com-
muicate with the audience through many examples of people who had actually expe-
rience group therapy and through examples of his own experiences.

Rogersian Theory Simplified

Rogers explained that to be able to communicate at a personal level one must be able to hear not only the words which a per-
son is speaking, but also to hear the deeper meaning of the words; that ability to hear the deeper mean-
ings is an individual's business because it puts one in touch with other human beings; it enriches one and empowers one to make a difference about individuals and know more about inter-personal relationships.

Hearing deeply, Rogers conti-
nued, is "hearing beyond the con-
text" or "hearing a per-
son's inner world" and being able to "resonate" with the per-
son's feelings. He said, "If the mean-
ings implied. During the course of the group ther-
apy, Rogers discovered that the more deeply a person was heard, the more a person would respond to the therapy and recip-
rocate the communication.

In the examples from group therapy, Rogers found many people who had previously ex-
perienced a real lack of personal communication. These people were living in their own "pri-
vate dungeons" of isolation. Rogers explained that, in his opinion, a continued lack of per-
social contact would lead to making our differences more severe, beyond the reach of communication. It is through group therapy that these "emotionally crippled" people have been led to a greater ability in personal com-
munication.

Poetry

Rogers concludes from his ex-
periences that a fundamental basis for communication is learning to trust his feelings; in this sense he defines "congruence" as this awareness of your true feelings. In one case, a lack of such truth-
fulness and integrity of feelings on the part of one of his inter-
viewers so disgusted Rogers that he finally blurted out "Oh poop!" This comment immediately set the therapy on a more honest basis which eventually led to its successful conclusion.

Through the ability to hear deeply, Rogers feels that collection de-

ted from being heard, the abili-
ty to be one's real self and to accept others, even the judgments of others, the deep satisfaction of receiving love from others and likewise the sat-
isfaction derived from giving love to others, Rogers concludes, peo-
ple find their lives both enriched and enhanced.

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Interviews January 12-13

Aerospace, Meteorology, Structural Engineering, Manufacturing Research, Microwaves, Optics, Reliability En-

**Historic Gates’ Heads Pass Into Oblivion As B&G Strikes Again**

BY TIM HENDRICKSON

With the passing of the约翰 in Gates, a new age has begun at Caltech. Let us lament; no more exist theuester regions that steered some of the greatest minds of the twentieth century.

From 1916 — when Gates was constructed and occupied — to 1964, the two restrooms therein have remained essentially unchanged, according to Mr. Wesley Herstein, director of Physiological Plant. Until their remodeling, begun third term last year, they were the eldest of johns on campus; their recent demise marks the end of an era.

**Glans Room the Courts**

The era began with the construction of Gates in 1916; then Dr. Arthur A. Noyes was the first chairman of the Department of Chemistry. Dr. James Sturdivant, professor of chemistry, recalled that Noyes, Dr. Richard Tolman and Dr. Earnest Swift, as well as Dr. Robert Millikan, chairman of the Executive Council, were ardent tennis players. At that time, however, there was no Athenaeum or gymnasium, the only athletic facilities were two asphalt tennis courts in Tournament Park... and the two show stalls in the upper restroom — which also sported saloon-type swinging doors — of the newly constructed Gates.

Later, when Gates Annex was completed in 1927, room 20 (the little cubbyhole next to 22 Gates) was a faculty locker room. After the Athenaeum with its tennis courts and facilities was built in 1936, the lockers in room 20 fell into disuse; when the Scott Brown Gymnasium was completed in 1954, room 20 became a library reference room.

**Champion Swift**

Back in the days of that era, recalled Sturdivant, there were Faculty-Student tennis championships sponsored by the Athenaeum. Several anonymous faculty members pooled out that for some time Swift had the reputation of being “tops on campus.”

About his tennis prowess Swift modestly recollected: “On occasion I was lucky.”

And Millikan?

An interesting observation, mentioned Sturdivant, is the relative increase of women’s restrooms in newer buildings. Gates itself has none. The influence of Noyes’ secretary, however, made itself felt on the Annex to Gates built in 1927, which has one ladies’ room. But Church, which dates to 1965, has a ladies’ restroom and lounge on every floor. At this rate, one tends to wonder about the Millikan Library.

Hertenstein explained that the renovation of the “heads” (nautical Jergen for johns, which presumably became established at Caltech during World War II and the Navy V-2 Program) is financed by the Trustee “Rehabilitation Fund.” Through this fund such general campus improvement is effected as the installation of air conditioning in lecture halls, the replacement of inaccessible lighting by fluorescent, the rewiring of laboratories for more power, and the modernization of restrooms.

And Maxim?

Of course, science being the competitive business that it is, such improvements as the rehabilitation of Johns must necessarily have a lower priority than other campus improvements. For it is an old maxim that old toilous outline old laborious-tortured.

**UNITARIAN PUBLIC FORUM**

“SOVIET PSYCHIATRY AND THE PSYCHOLOGY OF SOVIET MAN”

Recently returned from 12 months at the Psycho-Neurological Institute, Leningrad, USSR, Dr. Arthur A. Noyes was the first professor of chemistry, recalled that Noyes, Dr. Richard Tolman and Dr. Earnest Swift, as well as Dr. Robert Millikan, chairman of the Executive Council, were ardent tennis players. At that time, however, there was no Athenaeum nor gymnasium; the only athletic facilities were two asphalt tennis courts in Tournament Park... and the two show stalls in the upper restroom — which also sported saloon-type swinging doors — of the newly constructed Gates.

Ladies’ Headroom and Forst

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**Coleman Slates Chamber Concerts**

BY JOHN ROUSE

Sixty years ago, the Coleman Chamber Music Association was created. Instrumental in forming the association was Miss Alice Coleman Hatcheker, a well known local music teacher. The association does not perform, but hires world-famous chamber music ensembles to perform at the Pasadena Playhouse.

Also, to stimulate interest among young people, there is a Youth Concert at Civic Auditorium, where young ensembles and performers, and an Audition Performance Award Concert at the Playhouse, both events being held in the spring. The ages of the performers in these concerts range from ten years to beyond college age.

Upcoming concerts include the Societa Corelli, Nov. 29; Vegh Quartet, Feb. 14; Pasequier String Trio, Feb. 28; Budapest Quartet, Mar. 7; and the Dusko Arte Trio, Mar. 28.

Tickets are normally sold in one-year subscriptions, which are already sold out for the season. However, there are usually seats available for any given performance, as season subscription holders are requested to turn in tickets which they do not plan to use. To get a ticket, call the association office at 706-5921, a day or two before the performance, and you will be told if any tickets are available.
Once Upon A Time There Was A...

Once upon a time there was a happy little particle family which lived in the nucleus of a lithium atom. There was Papa Proton, Mama Neutron, the little 1s, and the youngest member of the family, 2s. Little 2s was a merry little fellow whose favorite pastime was spreading out and behaving like a wave, which caused his mother no end of worry. She had always had trouble finding him since the day he was delivered by Dr. Heisenberg.

One day Mama Neutron stuck her head out through the dotted Swiss orbitals covering the window of their happy little nucleus and shouted, "Junior!" She always called 2s Junior because she couldn't remember his name. "Junior," she said, "you may play anywhere you please (as long as you fulfill the Schroedinger wave equation), but don't go near the fluorine atom. He is a horrid, mean, electronegative old ogre who loves to take little 2s electrons and chain them into 2p bonds."

"All right, Mama," said little 2s, skipping merrily up the energy levels in the garden behind the nucleus. It was a wonderful day and 2s was so full of energy (hv) that he gambled about emitting childish ultra-violet waves of joy.

Here, Hee, Hee

Suddenly little 2s felt a tug at his probability function. There, peering over the garden, was the fluorine atom. "Come into my 2p level," said the fluorine atom to the trembling little electron, meanwhile kicking another unfortunate electron back to its orbital. "You'll have lots of little playmates there." And before he knew it, little 2s found himself snatched away screaming as the fluorine atom (now ion) began running down the road chlorinating himself.

Suddenly the fluorine ion stopped short. On the path ahead was a beautiful, obviously irresistible member of the opposite sex. "Hi, Big Boy," she said. "Come up and see me some time."

"All right, Mama," said 2s Junior because he couldn't remember his name. "I want to go down the path in her cadmium hotrod."

"No, dear children, if someday you are shaving away in your laboratory over a hot test tube and you find a lithium atom which won't react, look very closely at it. You will see Papa Proton, Mama Neutron, and three little electrons sitting on the front perch of their happy little nucleus, and you will notice that little 2s always stays near at hand, because he promised never to stray away from home again."

And so, dear children, if someday you are shaving away in your laboratory over a hot test tube and you find a lithium atom which won't react, look very closely at it. You will see Papa Proton, Mama Neutron, and three little electrons sitting on the front perch of their happy little nucleus, and you will notice that little 2s always stays near at hand, because he promised never to stray away from home again. Moral: Never kidnap an electron: it may be a shocking experience!

(From the Journal of Chemical Education, December, 1960.)

YMCA Equality Weekend To Be Held At Malibu

The annual Camp Hess Kramer Conference on Human Relations for college students co-sponsored by the Los Angeles County Commission on Human Relations and Camp Hess Kramer, Inc., will take place this year over the weekend of November 13, 14, and 15, at Camp Hess Kramer located on the Pacific Coast Highway north of Malibu. This year's conference theme is "Equality: realities and illusions."

The program will include dramatic presentations of basic human relations problems, workshops designed to assist in the development of human relations sensitivity and an opportunity to meet leaders of projects and programs which have been developed to offer solutions to human relations and civil rights problems.

Full scholarships valued at $50 each are available to three Caltech students. For further information and application forms contact Tom Huff at the Y.

Book Looks At College Revolt

BY ROGGER WHITLOCK

(Editors' note: The book reviewed below was received from Dell Publishing Company, and our stalwart reviewer took it upon himself to produce the following public service story.)

Droo, Hee said the first novel by one Jeremy Larnner, a graduate of Brandeis University, who has also done graduate work at the University of California at Berkeley, according to the blurb on the back.

"Ridiculous!"

Larnner seems obsessed with the idea of a revolution of college students, overthrowing all the class restrictions on private behavior. It's ridiculous. After starting out with a sort of stream-of-consciousness episode during an inter-collegiate baseball game, the tale degenerates completely. In spite of this, the novel does keep one's interest, perhaps because of the total madness of the writing.

To an estimation, nothing is to be gained by reading Droo. Hee, said except a couple of wasted hours, reading a thing that Jeremy Larnner is insane.

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Standard Oil men are good neighbors to the wilderness.
Gridders Make Mistakes Shut Out By UCR, 13-0

BY J. K. EVANS

Cit's Beavers put up a good fight, but you can't win if you don't score, and that's what the Beaver's failed to do as the UCR Highlanders celebrated Homecoming with a 2-0 victory at Riverside Saturday afternoon. The vaunted Tech defense came through in fine style, stopping UCR's running game several times and completely holding their aerial attack to a respectable total rather than the atrocious sums that have been the rule in past games. Unfortunately, despite the one-man-gang of Frost Frazzini who carried the ball 22 times for 155 yards, Tech points just wouldn't come.

The trouble with CIT's offense can be pinned right on the passing game. One can't complain about a ground attack that rolled up 199 yards, and one can't gripe about a defense that holds the enemy to two total yards at the ends of the game, but one can maintain in a serial game that goes 4 to 10 to the other team. In fact, Tech lost the ball eight times thru passing, four interceptions and four soiled punts when the QB, fading to pass, was out of the pocket. Finally UCR tured the futility and unscored a 41-yard TD pass past Mowery's head to lead 13-0. The game was to all intents and purposes one long defensive line from Josephson and Mowery and two more pass interceptions which killed the last Tech hopes for a last-second come-from-behind miracle. Like I said last week, dreams are dreams.

Again the seesaw started, highligtsed by Frazzini's 38-yard gallop on a misdirection sweep to the Tech 14, where Powers did his trick. A holding penalty set UCR back to midfield, but a pass 29 got them back in striking range. In fact, a TD pass was nullified by the hold and Tech 15 before Scott intercepted an aerial to momentarily save the bacon.

Rugged Frinks Win Touch Football Game

BY JOSE

Ruddick's senior class challenged the remainder of the House to an eight-man touch football game last week. The Frinks showed their superiority by defeating the underclassmen Sunday afternoon on the varsity football field, 18-12, in a hard fought, but friendly, game that was enjoyed by all.

No-On-Turcheck

Considering the lack of practice, both sides made excellent showings, but the seniors got off to a quicker start and quickly blew the underclassmen Sunset afternoon on the varsity football field, 18-12, in a hard fought, but friendly, game that was enjoyed by all.

Hugh Maynard watches as John Walter fires a shot towards the Claremont goal. Caltech's varsity team beat the Stags to hold the conference lead.

Flems Retain Discobolus

Fleming flattened Loyd in wresting last weekend, 26-10. For Loyd, Forrest won the 123 class and Hayamada, the 130. In the heavier weights 1, Forrest wrestled at 137 for Fleming and won decisively. Wyatt at 145, Falconer at 150, Myers at 175, and Wilson at heavyweight pinned Loyd's challengers. Beave at 105 won the only decision of the match for the Frinks.

This win, besides showing the bravery, if not the wisdom, of the men from Loyd, increased Fleming's Hockebock point total to 12. Not only that, the Frinks were saved from having to take off their sweet socks for at least another week, Fleming seems to have an outside chance of going through whole year without having to wash their athletic supporter's if the other houses don't become co-ordinated.

This week the Darts have offered Fleming a choice between tennis and the ever-popular sports of rifle shooting and handball. Fleming hasn't chosen a sport yet, but is leaning toward handball in which they predict a total wipeout. (Of whom, nobody says.)

Webmen Are Still Unbeaten

In one of their easiest games this year, the varsity water polo team remained in the ranks of the undefeated by swamping Claremont-Harvey 3-2-4 in the Alumni pool last Friday. Tech's second and third teams gained valuable game experience by playing most of the second half.

The game was never close. The Beaver's first team controlled the first half which ended with Tech ahead 3-0. Tech Coach Henary played the second team in the third quarter, but Claremont still could score only one goal, matching the Beavers in that quarter. Claremont managed to get the ball past Tech's goalie three times in the final quarter, outscoring the winners by one, when the Tech second and third teams were in.

In general the Beavers played their usual type of game. A fine team effort and excellent defense led to the five point lodge at the half. The winning strategy, as usual, was the waiting game—controlling the ball until a good shot could be taken; and many times it was.

Dave Jarvis scored his first goal of the season against CHM, while Parnell and Walker, the top two scorers this year, won honors again with four and three goals respectively.

The Webmen were looking past the CHM game to this week's Pomona game. The Sages took a long bus ride home a couple of weeks ago when a last-second goal stunned them at the Alumni pool. It would be an understatement to say that Pomona would love nothing better than to play the Webmen at home. The game is equally important to Tech, but for a different reason—should the Sages fall by the wayside, Caltech will have clinched a tie for first place in the conference this year. Needless to say, the team is "up" for this game.

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Soccer JV’s Lose Twice With 11 Men, 8 Men

The jayvees had a rough go of it last Saturday, bowing to UCLA and UCR within a 24-hour period. The jayvees were played last Fri-
day and Saturday away from home.

No Reporter

The game against UCLA was played Friday afternoon. The Bruins scored quickly on a header for UCLA and the Jayvees were on their heels but easily, containing the UCLA front line while the Bruins’ defense developed an almost non-existent Beaver offense. As a result, the entire first half was an uneasy standoff between the Bruin offense and the Caltech defense.

In the second half, Coach Andrew shifted the positions of several key players, significantly improving the offense at a small expense to the defense. However, this weakening allowed UCLA to score one more goal, as the UCLA defense managed to hold the Beavers scoreless, although serious threats were mounted. The game ended with UCLA 2, Caltech 0, Kick, Mele, Kick.

The UCR game was more of a scrimmage than a game, as Tech could only find 4 players who could make the game, announced at the last-minute. Four “athletes” around campus filled out the team to win in 1:34 on the approximately 5-mile course. Pete Cross and Bob Miller of Caltech placed fourth and fifth, respectively. The final score was 19-31 in favor of Pomona.

Cross-Country Teams Divide Pomona Meet

The cross-country meet between Caltech and Pomona at Pomona last Friday afternoon followed the same script as previous meets of the year. The freight remained undefeated while the varsity remained victorious.

In the varsity race, Steve Gruis of Pomona won by 10 yards. The Beavers were also shut out of the top seven finishers as the top seven were all Bruins.

The Frosh frosh have been having more trouble finding athletes around campus filled out the team in a game of wide-open competition. 

Trophy Standings

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**“The development of management is essential to our goal of great growth”**

BY HORNSWOGLER

Last Saturday afternoon, the Caltech varsity soccer team suffered its first loss of the season at the hands of the ever-growing UCLA team in a close, hard-fought match.

The game started slowly as each team played its characteristic style — Caltech started cautiously feeling out their opponents, while UCLA attempted to overpower the Beavers as they had done to lesser teams. The net result was a stalemate.

Caltech then started playing more cautiously and began a passing game, predomi-
nately by the strong Bruin lines. At the middle of the first half, UCLA caught the Caltech team off-balance and quick pass from the wing position produced an easy goal. After this goal, the Tech team settled down permitting no further costly mistakes and taking control of the middle of the field. Unfortunately, the Beavers consistently pressed their attacks down the middle of the field where the Bruin defense could easily contain any threats. UCLA was also stifled as the strong Caltech defense made no more slips. Thus no more goals were scored.

The second half found Caltech using its usual beginning-of-the-second-half power. The Beavers, displaying their superior passing game down the center where Tri-struck pushed through a goal. The UCLA team, unlike less competent teams, responded to the Caltech drive and stifled the defense and once again contained the threats which the Beavers continued to push down the center. The game then settled down to the stalemate of the first half until once again the Bruins caught the Tech defense off-guard and scored their second goal. This second goal was scored in almost the same way as the first Bruin goal. Following this lap, Tech gradually acquired control of the ball, but time ran out before the desperate Beavers could score.

The game did prove that Caltech played as well as the Bruins, thus giving the Beavers a reasonably good shot at the league title.

If a man who cannot count finds a four-leaf clover, is he entitled to happiness?

At the 1964 shareholders’ meeting, Arjay Miller, President of Ford Motor Company, emphasized the Company’s far-sighted recruitment program and its accent on management development.

“One aspect of our planning is crucial to the success of everything else we do. It engages the best thoughts and efforts of our whole management team, from top to bottom, throughout the world. I am speaking of the development of management. The immediate future of our Company depends heavily upon the abilities of the people who are now key members of our management team.

“In the longer run, our future depends on what we are doing at the present time to attract and develop the people who will be making the major decisions 10 to 20 years from now. We are developing management competence in depth in order to attack the problems of a company of great growth — both in profits and sales — exactly the goal we have established for Ford Motor Company.

“We are continuing to emphasize recruiting. Last spring, 180 of our management people devoted part of their time to recruiting outstanding graduates from colleges and universities throughout the U.S. Last year, these efforts resulted in our hiring over 1,000 graduates, 230 more than the year before.

“We are seeking and we are finding young men — and young women, too — with brains and backbone — people who have the ability and the desire to make room for themselves at the top. We give our trainees challenging assignments with as much responsibility as they can carry. We promote them as fast as they are ready. Those who are interested in easy security soon drop out. Those who have what we want stay with us, and move up quickly to increased responsibility and the pay that goes with it. Thanks to the quality of the people we are recruiting and developing, I am firmly convinced that our outlook is most promising.”

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"Fools have always been governed by fools and dolelessly always will be, but not all scientists and mathematicians are yet fools."

— E. T. Bell
The Andromeda Galaxy of 100 billion stars has been "tilted upright" so that earth-bound scientists can take a better look at it. The galaxy was lifted by mathematicians and unconventional photog...