Caltech Chinese Association hosts Moon Festival

Photos Courtesy of Katherine Guo
Upcoming Events

1. Inspiration Point Hike
   Saturday | October 29th | 8:00 AM – 2:00 PM
   Join the Y-Outdoors for a hike up Echo Mountain all the way to Inspiration Point on Saturday. We will pass the historic ruins of hotel, railroad, observatory and powerhouse. We should also be able to see the Pacific Ocean and more at our destination. We will meet at Caltech Y at 8am and should be back no later than 2:00 pm.

2. Inspiration Point Hike
   Saturday | October 29th | 8:00 AM – 2:00 PM
   Join us for an exploration into Science Policy in the nation's capital! Our five day trip includes lodgings and most meals; flights – if you choose; educational discussion sessions, and of course the opportunity to the Washington, DC landmarks like the White House, the Memorials; Smithsonian Museums; the National Archives; and the Capitol. Discussion leaders include those who have played a role in setting and implementing science policy for the United States including: Academics, Lobbyists, Scientists, Politicians, and Caltech Alumni. Don't miss this opportunity!

Visit: https://www.caltech.edu/programs_services/science_policy_trip

Cost Options:
- $350 (with round trip flight to DC and back to LA)
- $300 (with one-way flight to DC – go your way at the end or)
- $150 (no travel – join us in DC)

The Washington, DC Science Policy Trip is coordinated by the Caltech Y with generous support from the George Hounfer Fund. Questions and applications may be directed to caltechy@caltech.edu.

3. Hathaway Sycamores
   Every Wednesday | 5:30 - 8:00 PM | Highland Park
   Volunteer at Hathaway Sycamores, a group that supports local underprivileged but motivated high school students. There are a variety of ages and subjects being tutored. The service trip includes about an hour of travel time and 1.5 hours of tutoring. Transportation is included. For more info and to RSVP email Sherwood Richter at srichers@tapi.caltech.edu. Eligible for Federal Work Study.

4. Pasadena LEARNs
   Every Friday | 3:00 - 5:00 PM | Pasadena
   Volunteer at Pasadena LEARNs program and work with their Science Olympiad team or do regular tutoring along with occasional hands-on science experiments. Transportation is provided. For more information and to RSVP, contact urte@caltech.edu. Eligible for Federal Work Study.

Beyond the Y

1. Volunteering with PCC
   The Veteran students at PCC would appreciate a little extra support to prepare themselves for their civilian and academic careers. Having been out of school for several years creates special challenges that you can help them overcome.

**ANOUNCEMENTS**

**Caltech Y Column**

The Caltech Y Column serves to inform students of upcoming events and volunteer opportunities. The list is compiled by Katherine Guo from information given by the Caltech Y and its student leaders.

Founded by students in 1916, the Y was organized to provide extracurricular activities planned and implemented by students as an opportunity to lead leadership skills and to discover themselves. The mission of today’s Y remains the same—to provide opportunities that will prepare students to become engaged, responsible citizens of the world. The Y seeks to broaden students’ worldviews, raise social, ethical, and cultural awareness through teamwork, community engagement, activism, and leadership. More information about the Caltech Y and its programs can be found at https://caltechy.org. The office is located at 505 S. Wilson Avenue – Ongoing and past programs hosted by the Caltech Y:

- Alternative Spring Breaks: Peru, Costa Rica, New York, Yosemite, San Diego, San Francisco
- Make-A-Difference Day: Hillsides Home for Children, LA LA, Arboetum and Botanic Garden, Children’s Hospital Los Angeles (Coachart), Eaton Canyon, Lifeline for Pets
- Explore LA: Lakers game, Next to Normal musical, Norton Simon Museum trip
- RISE Tutoring program (an afterschool math and science-focused tutoring program that serves public school students between grades 8 and 12)
Rounding up the third debate

RAMYA DUSHPANDE AND TANVI GUPTA
Page Editors

CLINTON: And I’ll say something about the Affordable Care Act, which he wants to repeal. The Affordable Care Act extended the solvency of the Medicare Trust Fund. So if repeals it, our Medicare problem gets worse. What we need to do is go after... 

TRUMP: Your husband disagrees with you.

RAMYA: Feminists everywhere must have winced at these words. How are a female candidate’s policy points delegitimised in any way by her husband? In fact, attacking Clinton through her husband seems to be a recurring theme with the Trump campaign: in the last debate, it invited three women who accused President Clinton of sexual misconduct, in an attempt to somehow intimidate Hillary Clinton.

CLINTON: We have 11 million undocumented people... [Trump] said as recently as a few weeks ago in Phoenix that every undocumented person would be subject to deportation... law enforcement officers would be going to school, to home, to business, to round up people who are undocumented. And we would then have to put them on trains, on buses to get them out of our country.

TANVI: This is in reply to Trump’s plan for mass deportation, and it’s a very clever move. Clinton’s phrasing of the situation provokes an image disturbingly close to Trump’s statement of the future, in which mass deportation would then having to put them on trains, on buses to get them out of our country.

CLINTON: We learned in the last debate he has not paid a penny in federal income tax.

TRUMP: We’re entitled because of the laws that people like her passed to take massive amounts of depreciation on other charges, and we do it. And all of her donors...[do it too]... If you don’t like what I did, you should have changed the laws.

TANVI: While “not paid a penny” might be a stretch, Trump openly concedes using his money to offset his tax payments for an unspecified period of time. His only justification seems to be the government didn’t stop him – he is implying that if the law didn’t allow him to enjoy it, it’s okay to bypass it? This might not be the best way to way to appeal to middle class voters with frustrations about the tax disparity between them and the wealthy.

CLINTON: The next question, then, is how did Planet Nine achieve its unusual orbit? Though that remains to be determined, Batygin suggests that the planet may have been ejected from its original orbit by the migration of Planet Nine into objects orbiting a central star. Mathematically, given the hypothesized size and distance of Planet Nine, a six-degree tilt perfectly fits, Brown says.

Brown and Batygin’s discovery of evidence that the sun is orbited by an as-yet-unseen planet—that is about to times the size of Earth with an orbit that is about 20 times farther from the sun on average than Neptune’s—changes the physics. Planet Nine, based on their calculations, appears to orbit at about 30 degrees off from the other planets’ orbital plane—in the process, influencing the orbit of a large population of objects in the Kuiper Belt, which is how Brown and Batygin came to suspect a planet existed there in the first place.

ROBERT PERKINS
Caltech Media Relations

This article is adapted from a story that was originally published online at caltech.edu.

Planet Nine—the undiscovered planet at the edge of our solar system that was predicted by the work of Caltech’s Konstantin Batygin and Mike Brown in January 2016—appears to be responsible for the unusual tilt of the sun, according to a new study.

The large and distant planet may be adding a wobble to the solar system, giving the appearance that the sun is tilted slightly.

“Because Planet Nine is so massive and has an orbit tilted compared to the other planets, the solar system has no choice but to slowly twist out of alignment,” says Elizabeth Bailey, a graduate student at Caltech and lead author of a study announcing the discovery.

All of the planets orbit in a flat plane with respect to the sun, roughly within a couple degrees of each other. That plane, however, rotates at a six-degree tilt with respect to the sun—giving the appearance that the sun itself is cocked off at an angle. Until now, no one had found a compelling explanation to produce such an effect. “It’s such a deep-rooted mystery and so difficult to explain that people just don’t talk about it,” says Brown, the Richard and Barbara Rosenberg Professor of Planetary Astronomy.

Brown and Batygin’s discovery of evidence that the sun is orbited by an as-yet-unseen planet—that is about to times the size of Earth with an orbit that is about 20 times farther from the sun on average than Neptune’s—changes the physics. Planet Nine, based on their calculations, appears to orbit at about 30 degrees off from the other planets’ orbital plane—in the process, influencing the orbit of a large population of objects in the Kuiper Belt, which is how Brown and Batygin came to suspect a planet existed there in the first place.

It continues to amaze us; every time we look carefully we find something new about the solar system that has long been a mystery,” says Batygin, an assistant professor of planetary science.

Their findings have been accepted for publication in an upcoming issue of the Astrophysical Journal, and will be presented on October 18 at the American Astronomical Society’s Division for Planetary Sciences annual meeting, held in Pasadena.

The tilt of the solar system’s orbital plane has long befuddled astronomers because of the way the planets formed: as a spinning cloud slowly collapsing first into a disk and then into objects orbiting a central star.

Planet Nine’s angular momentum is having an outsized impact on the solar system based on its location and size. A planet’s angular momentum equals the mass of an object multiplied by its distance from the sun, and corresponds with the force that the planet exerts on the overall system’s spin.

Because the other planets in the solar system all exist along a flat plane, their angular momentum works to keep the whole disk spinning smoothly.

Planet Nine’s unusual orbit, however, adds a multi-billion-year wobble to that system. Mathematically, given the hypothesized size and distance of Planet Nine, a six-degree tilt perfectly fits, Brown says.

Looking for something exciting to get involved in this new year?
We are looking for more contributors!

We accept reviews, opinion pieces, research, news stories, comics and more!

Email tech@caltech.edu with questions.

VICE PROVOST’S OFFICE HOURS

Victor Provost, Chief Diversity Officer, and Professor of English, Cindy Weinstein, offers weekly office hours. This is an opportunity for undergraduate, graduate students, and postdocs to meet and discuss topics pertaining to the Council on Undergraduate Education; Caltech’s commitment to diversity; to the Center for Teaching, Learning and Outreach; the Caltech Diversity Center; and the Libraries. There are four 15-minute appointments available per hour. Please sign up in Parsons-Gates room 104, or call the Vice Provost’s Office at ext. 6339.

Fall term hours: 12:00-1:00 p.m.
Monday, Nov. 7
Tuesday, Nov. 22
Wednesday, Nov. 30
Thursday, Dec. 8
Tuesday, Dec. 13
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— S. Shankar Sastry, Dean, College of Engineering, University of California, Berkeley

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Feist surpasses 500 career save milestone

**GOCALTECH.COM**
Actual Sports Content Editor

PASADENA, Calif. (Oct. 15, 2016) – Senior J.D. Feist surpassed the rare milestone of 500 career saves with a 13-save performance at the SCIAC-leading University of Redlands on Saturday afternoon.

"Tison outstanding achievement for J.D., and speaks not only to his ability as a goalkeeper and shot stopper – he has consistently been a high performer within the team and leads us by his example – but also to his deliberate approach to his preparation and physical fitness," Head Coach Phil Murray said. "He has been ever-present in his four-year career and will leave a huge void to fill in the backline when he graduates."

A mere five minutes into the first half, the Bulldogs were on the board courtesy of a Casey ChubbFertal header. In the 12th minute, Caltech gave up an own goal to put the score at 2-0. The Bulldogs would strike again that half as Kayvon Parsa tapped in a deflection for the third.

The Beavers defense would hold strong from the 24th to 57th minutes before giving up the final goal of the game. Feist's 13 saves marked his eighth double-digit performance of the season, while freshman Theo Yang recorded the Beavers’ lone shot on goal, which came in the second half.

Sophomore Rohan Choudhury turned in a personal record on a full-length course by four seconds while the majority of the rest of the team also dropped significant chunks of time. Freshman David Fager and Tiger La and junior Mason MacDougall all cut more than two minutes from their previous performance, while sophomore Joey Hong fell just short of that mark but clocked a personal-best as he ran 1:14, respectively.

"Sophie was one of many on the team who turned in strong runs," Head Coach Ben Raphelson said. "It was a really strong team effort. Collectively, we’re moving in the right direction, but we still have work to do in order to realize our full potential."

"You won’t!" - JD before save #499.  Photo Courtesy of Michael Wong

"No! Please don't shoot, Chris Bradly! I surrender!" - that goalie.  Photo Courtesy of Michael Wong

Mixed results in final tune-up

**GOCALTECH.COM**
Actual Sports Content Editor

Walton clocked a 22:24 to shatter the previous program record by more than 30 seconds while leading the Beavers to a scoring team average time of 24:34.8, which also cleared the previous mark by over 30 seconds. On a wet course that ran roughly 15 seconds slower than the Multi-Duals at La Mirada Park two weeks prior, Walton chopped off a full 1:30 to place fourth overall and tops among all rookies.

Sophomore Rohan Choudhury was a key contributor to the historic day, making her collegiate debut following her injury as the Beavers’ lone shot on goal, which came in the second half.

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"You won’t!" - JD before save #499.  Photo Courtesy of Michael Wong

"No! Please don't shoot, Chris Bradly! I surrender!" - that goalie.  Photo Courtesy of Michael Wong

Bradley maintains SCIAC lead against No. 17/1 Sagehens

**GOCALTECH.COM**
Actual Sports Content Editor

PASADENA, Calif. (Oct. 15, 2016) – Senior Christopher Bradley scored another six goals to retain the SCIAC lead as the Caltech men's water polo team suffered a 23-11 defeat to national No. 17 and DIII No. 1 Pomona-Pitzer Colleges in the conference opener on Saturday morning.

The Sagehens improve to 11-7 overall and 1-0 in the SCIAC while the Beavers fall to 4-11 (0-1). The Sagehens jumped off to a quick 3-0 lead before the Beavers got on the board, when sophomore Charles Ross and Bradley scored back-to-back goals within a minute to cut the lead down to one. Before the first quarter ended, the Sagehens scored their own consecutive goals to stretch the lead back to three. Pomona-Pitzer turned it up another notch in the second quarter, scoring eight goals and giving up only one.

With only five goals scored in the first half, the Beavers went on a scoring spree to open the third quarter, netting five goals and giving up another three in the fourth. Caltech's offensive resurgence in the second half was for naught, however, as the Sagehens sat on a comfortable lead throughout the game, recording a final score of 21-11.
ASCIT Minutes
Meetings are every week in SAC 13

ASCIT Board of Directors Meeting
Minutes for 19 October 2016. Taken by Alice Zhai.
Officers Present: Andrew Montequin, Tim Liu, Bobby Sanchez, Sakthi Vetrivel, Robin Brown, Alice Zhai
Call to Order: 12:35pm

President’s Report (Andrew):
● BoD retreat is scheduled for Saturday, November 19 - Sunday, November 20
● Got bagels and donuts this week
● IHC Chair and ASCIT president will meet with Deans about end of rotation party
● Planning to have IHC and BoD meet once a term

Officer’s Reports:
V.P. of Academic Affairs (ARC Chair: Tim):
● Student faculty committee option chairs are chosen
● Fresh reps were chosen Sunday, October 16
● Special topic committee chairs will be chosen this weekend (October 22-23)
● Considering to make a list of professors with research projects for freshman

V.P. of Non-Academic Affairs (IHC Chair: Bobby):
● Librarians want to form a new library committee with a student representative from each house - committee will increase student awareness of resources available at the library
● Big I is happening based on survey results

Director of Operations (Sakthi):
● Deadline for club funding forms is Tuesday, October 25
● Club Funding Day is on Sunday, October 30th from 11AM-5PM

Treasurer (Kalyn):
● Absent

Social Director (Robin):
● Movie night for Fantastic Beasts and Where to Find Them on November 18/19
● Nothing to report

If anyone has any questions or concerns about a section of the minutes please email the appropriate officer. We are happy to answer any questions.
Meeting Adjourned: 12:57pm

Join the Meditation Mob!

Tuesdays, 12:00 - 12:50
Want to learn more about mindfulness meditation? It’s a great way to improve your attention and to become more grounded in the present moment.

There’s no religious component.
We use secular, evidence-based meditation techniques.

We meet in the small room just off the lounge in Winnett. All students are welcome, from total beginners to more experienced meditators.

Mailing list and MP3 archive: counseling.caltech.edu/students/meditation
From the President’s Desk: Don’t fear Big I

ANDREW MONTEQUIN
ASCIT President

If you think back to about two weeks ago, you will remember a survey sent out by the IHC Chair concerning Big I. For those of you who have never experienced a Big I (e.g. all current freshmen and sophomores), just imagine a different party in each of the south house courtyards happening simultaneously. It sounds pretty awesome until you imagine the struggle of organizing a party with another house, coordinating construction, putting in all the hours of labor necessary to actually build it, and phantasmagorical (one of my favorite adjectives) again.

Now that the survey results are in, though, it looks like we’re not yet ready to give up on Big I just yet. While “Big I as normal” does not quite ready to give up on Big I just yet. While “Big I as normal” and “campus-wide party + another school” were roughly even in first choice votes, “Big I as normal” was the clear winner in second choice votes. As a result, Big I will happen once again. Planning for Big I will begin soon, but because of the timeline, the party itself will almost certainly have to occur during the winter or spring term of this academic year. Although this will hopefully eliminate the massive time crunch that Big I has been in the past, at least three houses will now have two interhouse parties in one term. Additionally, we are looking into the possibility of inviting another local school to our party, but that has not been finalized yet. For the last piece of logistical information, the house pairings for Big I will be as follows:

<table>
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<th>1st Choice</th>
<th>2nd Choice</th>
<th>3rd Choice</th>
<th>4th Choice</th>
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<td>Smaller parties throughout the year</td>
<td>Campus-wide party w/ another school</td>
<td>Do nothing</td>
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<td>26</td>
<td>110</td>
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</tbody>
</table>

Results from the recent Big I survey

Across
1. Accumulate
6. Hand shovel
13. Male sheep
14. Relating to the nose
15. Metal spike used in mountain climbing
16. Self
17. Relish
18. Choose by vote
19. Cooking vessel
20. The night before
21. Scourge
23. Feed container for animals
25. Allow
26. Used to control a horse
27. Transplant
28. Cerise
29. Uphold
32. Earlier in time
33. Enumerate
36. Express displeasure or contempt
37. First class
38. Hag
39. Singing voice
40. Short sleep
41. Seashore
42. A squeaking sound
43. Calibrate
45. Large tub
46. Deed of conveyance
47. Craze
48. Kind of fairy
49. Objective
50. Scintilla
51. Headgear for a horse
52. A squeaking sound
53. District
54. Hawaiian garment
55. Regret
56. On the move
58. Inexperienced
60. Tavern
61. Barely sufficient
62. Beverage made from apples
65. Encountered
64. Woolen fabric
65. Mineral used as an abrasive
Down
1. Someone who invests money
2. A moderate purple
3. Useful resource
4. Was seated
5. Drool
6. Exhausted
7. Heap
8. Consumed
9. School of thought
10. Contestant
11. Honorable
12. Highly excited
13. Nocturnal insect
14. Relating to the nose
15. Metal spike used in mountaineering
16. Self
17. Relish
18. Choose by vote
19. Cooking vessel
20. The night before
21. Scourge
23. Feed container for animals
25. Allow
26. Used to control a horse
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64. Woolen fabric
65. Mineral used as an abrasive

Online puzzles: http://puzzlechoice.com
Monday Punday

This picture represents a common phrase, title, or person.
Think you know the answer? Take a guess at mondaypunday.com/303

Granny's Day Off

How obscene! I must censor this.

Slava, Nina, Lazarina

These should do the trick!

Answers to current crossword (pg 7)

- http://puzzlechoice.com