Second dig site for Curiosity is chosen

GUY WEBSTER
JPL Science Writer

The team operating NASA’s Curiosity Mars rover has selected a second target rock for drilling and sampling. The rover will set course to the drilling location in coming days.

This second drilling target, called “Cumberland,” lies about nine feet (2.75 meters) west of the rock where Curiosity’s drill first touched Martian stone in February.

Curiosity took the first rock sample ever collected on Mars from that rock, called “John Klein.” The rover found evidence of an ancient environment favorable for microbial life. Both rocks are flat, with pale veins and a bumpy surface.

They are embedded in a layer of rock on the floor of a shallow depression called “Yellowknife Bay.”

This second drilling is intended to confirm results from the first drilling.

That first drilling indicated the chemistry of the first powdered sample from John Klein was much less oxidizing than that of a soil sample the rover scooped up before it began drilling.

“We know there is some cross-contamination from the previous sample each time,” said Dawn Sumner, a long-term planner for Curiosity’s science team at the University of California at Davis. “For the Cumberland sample, we expect to have most of that cross-contamination come from a similar rock, rather than from very different soil.”

Although Cumberland and John Klein are very similar, Cumberland appears to have more of the erosion-resistant granules that cause the surface bumps.

The bumps are concretions, or clumps of minerals, which formed when water soaked the rock long ago. Analysis of a sample containing more material from these concretions could provide information about the variability within the rock layer that includes both John Klein and Cumberland.

Mission engineers at NASA’s Jet Propulsion Laboratory recently finished upgrading Curiosity’s operating software following a four-week break. The rover continued monitoring the Martian atmosphere during the break, but the team did not send any new commands because Mars and the sun were positioned in such a way the sun could have blocked or corrupted commands sent from Earth.

Curiosity is about nine months into a two-year prime mission since landing inside Gale Crater on Mars in August 2012.

After the second rock drilling in Yellowknife Bay and a few other related investigations nearby, the rover will drive toward the base of Mount Sharp, a 3-mile-tall (5-kilometers) layered mountain inside the crater.

News briefs from around the globe
Helping readers burst out of the Caltech bubble

Need to know

< 100 words about the world this week – topics sorted from good to bad by The Tech Eds

**NEWS**

- Caltech Y Column

**OPINION**

- Miceala checks out “The Hysterectomy Waltz”

**FEATURE**

- Class travels to LA Philharmonic

**SPORTS**

- Wright breaks record, Kitto off to NCAAs

---

**Teen enters Paralympics**

- 16-year-old swimmer Kayla Wheeler competes with no legs, one arm

**Survivor found in rubble**

- 17 days after a Bangladesh factory collapse, a woman was found alive

**Rios Montt found guilty**

- 1,700 were killed in genocide during the Guatemalan dictator’s rule

**Meteorite lands in CT**

- 2nd meteorite in a mile radius lands in Connecticut 19 days after first

**Search ends for tourists**

- 2 Carnival Cruise ship passengers fell overboard and were not found

**Shots fired at parade**

- 17 people were hurt in shooting at New Orleans Mother’s Day parade

**Blast hits political rally**

- 18 killed, 56 wounded in Taliban’s blast at Pakistani political rally
Food with Mannion!

Do you like eating food? How about free food at nice restaurants? Ever want to tell the world exactly what you think of said food? The Tech will be beginning a new column to chronicle the foodie experiences of new writers every other week...The Catch: They'll be going head-to-head with Tom Mannion who will be reviewing the same restaurant. If you have ever thought you were more of a gourmand than our resident master chef, now's your chance to prove it! Email us for a spot on the list at tech@caltech.edu

ASCIT Minutes

Minutes for May 6th, 2013. Taken by Allika Walvekar

Officers present: Diego Caporale, Zach Rivkin, Pushpa Neppala, Malvika Verma, Mario Zubia, Connie Hsheh, Michelle Tang, Puikes Cheng, Monica Enlow, Connor Coley, Allika Walvekar

Guests: Alexander Mouschovias, Catherine Jamshidi, Connor Rosen, Austin Mayron, Anna Ross

Call to Order: 10:03pm

President's Report (Diego / Zach):
The Presidential Search UG Town Hall meeting occurred on Wednesday. Many undergraduates contributed helpful opinions to the panel. The current freshman class consists of 248 freshmen.

Fosselman's Ice Cream will hopefully be featured at Midnight Donuts.

Officer's Reports:

V.P. of Academic Affairs (ARC Chair: Malvika):
CUE meeting: Susan Hall did a presentation on what the writing center does, encourage students to use this resource; All options have been invited to hold meetings for core except for ChemE:
The ARC received a $200000 program which will allow ARC reps to set up meetings with professors for lunch a couple times per term and explain what they do.

Sign-ups will be released soon for the Undergraduate Honor Code Committee.

Professor Guo (BE 159) will be the next Professor of the Month.

Social Director (Michelle):
ASCIT and the IHC are looking for comments regarding the Counseling Center and mental health support network in general. An anonymous comment box can be found online at ihc.caltech.edu/counseling/ The details of summer board have been distributed to each house.

May 16th-19th is Alumni Weekend. Be sure to ask your president if you have any special events that weekend.

Office Chair appointments have been made. Consult the IHC chair email for specific positions/names.

Director of Operations (Connie):
Blacker borrowed lights but did not return all of them. Connie is going to establish a new system that will charge houses that do not return the lights on time.

New BoD should have received their codes to SAC15.

Totem is currently over budget, and Connie is working on securing money.

Treasurer (Monica):
Monica reimbursed checks to BoD members.

New BoD should have received their codes to SAC15.

Director of Operations (Connie):
Blacker borrowed lights but did not return all of them. Connie is going to establish a new system that will charge houses that do not return the lights on time.

New BoD should have received their codes to SAC15.

Totem is currently over budget, and Connie is working on securing money.

Treasurer (Monica):
Monica reimbursed checks to BoD members.

New BoD should have received their codes to SAC15.

Director of Operations (Connie):
Blacker borrowed lights but did not return all of them. Connie is going to establish a new system that will charge houses that do not return the lights on time.

New BoD should have received their codes to SAC15.

Totem is currently over budget, and Connie is working on securing money.

Treasurer (Monica):
Monica reimbursed checks to BoD members.

New BoD should have received their codes to SAC15.

Director of Operations (Connie):
Blacker borrowed lights but did not return all of them. Connie is going to establish a new system that will charge houses that do not return the lights on time.

New BoD should have received their codes to SAC15.

Totem is currently over budget, and Connie is working on securing money.

Treasurer (Monica):
Monica reimbursed checks to BoD members.

New BoD should have received their codes to SAC15.

Director of Operations (Connie):
Blacker borrowed lights but did not return all of them. Connie is going to establish a new system that will charge houses that do not return the lights on time.

New BoD should have received their codes to SAC15.

Totem is currently over budget, and Connie is working on securing money.

Treasurer (Monica):
Monica reimbursed checks to BoD members.

New BoD should have received their codes to SAC15.

Director of Operations (Connie):
Blacker borrowed lights but did not return all of them. Connie is going to establish a new system that will charge houses that do not return the lights on time.

New BoD should have received their codes to SAC15.

Totem is currently over budget, and Connie is working on securing money.

Treasurer (Monica):
Monica reimbursed checks to BoD members.

New BoD should have received their codes to SAC15.

Director of Operations (Connie):
Blacker borrowed lights but did not return all of them. Connie is going to establish a new system that will charge houses that do not return the lights on time.

New BoD should have received their codes to SAC15.

Totem is currently over budget, and Connie is working on securing money.

Treasurer (Monica):
Monica reimbursed checks to BoD members.

New BoD should have received their codes to SAC15.

Director of Operations (Connie):
Blacker borrowed lights but did not return all of them. Connie is going to establish a new system that will charge houses that do not return the lights on time.

New BoD should have received their codes to SAC15.

Totem is currently over budget, and Connie is working on securing money.

Treasurer (Monica):
Monica reimbursed checks to BoD members.

New BoD should have received their codes to SAC15.

Director of Operations (Connie):
Blacker borrowed lights but did not return all of them. Connie is going to establish a new system that will charge houses that do not return the lights on time.

New BoD should have received their codes to SAC15.

Totem is currently over budget, and Connie is working on securing money.

Treasurer (Monica):
Monica reimbursed checks to BoD members.

New BoD should have received their codes to SAC15.

Director of Operations (Connie):
Blacker borrowed lights but did not return all of them. Connie is going to establish a new system that will charge houses that do not return the lights on time.

New BoD should have received their codes to SAC15.

Totem is currently over budget, and Connie is working on securing money.

Treasurer (Monica):
Monica reimbursed checks to BoD members.

New BoD should have received their codes to SAC15.

Director of Operations (Connie):
Blacker borrowed lights but did not return all of them. Connie is going to establish a new system that will charge houses that do not return the lights on time.

New BoD should have received their codes to SAC15.

Totem is currently over budget, and Connie is working on securing money.

Treasurer (Monica):
Monica reimbursed checks to BoD members.

New BoD should have received their codes to SAC15.

Director of Operations (Connie):
Blacker borrowed lights but did not return all of them. Connie is going to establish a new system that will charge houses that do not return the lights on time.

New BoD should have received their codes to SAC15.

Totem is currently over budget, and Connie is working on securing money.

Treasurer (Monica):
Monica reimbursed checks to BoD members.

New BoD should have received their codes to SAC15.
Caltech Y Column: Find what’s new with the Y

PHOEBE ANN LAURA SANTOSO Contributing Writers

Hi everyone! This is the Caltech Y Column, designed to inform you about the Y and the opportunities we provide for you to inspire your passions, whether by participating in our programs or leading your own!

Founded by students in 1916, the Y was organized to provide extracurricular activities planned and implemented by students as an opportunity to gain leadership skills, discover their passions, and learn more about 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 and raise social, ethical, and cultural awareness through teamwork, community engagement, activism, and leadership. The Caltech Y’s mission and core values stand on five key pillars: leadership, civic engagement, service, adventure, and perspective. Regardless of which pillars capture your interest, feel free to attend any of the below programs, or contact us to organize your own!

Upcoming Events:
Social Activism Speaker Series: “When I Die, They’ll Send Me Home” – A Human Rights Perspectives on Juvenile Justice in California
Elizabeth Calvin, an attorney and Senior Advocate for the Children’s Rights Division of Human Rights Watch, works for the rights of children in the juvenile justice and foster care systems.

An advocate for over 25 years, she investigates human rights violations, publishes findings, organizes others to support the change in law, and lobbies legislators to take action.

Y Outdoors Events: Our leaders from the Y-Outdoors committee are also eager toward the summer months’ adventure style. Y Outdoors programs provide Caltech students, including novices and experienced outdoor enthusiasts, an exciting opportunity to explore with guidance.

Bear Creek Trail Day Hike (5/5): A group will be heading out on Bear Creek Trail in the San Gabriel Mountains to take in the views of great wildflowers.

Huntington Gardens Hike (5/19): On the relaxed side, another group will hike the Huntington Gardens and enjoy one of our local treasures.

Henninger Flats Trip (5/26-27): Rounding out the month, plans are underway for a camping and hiking trip to Henninger Flats for a couple of days during the Memorial Day weekend.

Explore LA Events: The Explore LA Series encourages students to join the Caltech Y on an adventure – from the mountains to the ocean – exploring museums, shows, cultural experiences, sporting events, outdoor adventures, and more.

Many of the Explore LA events have been made possible with support from the Master of Student Houses (MOSH).

Norton Simon Museum (5/18): This term, leaders from the ExComm will be organizing a group to visit a local museum – the Norton Simon Museum.

The group will walk or take public transit from campus depending on how eager they are. For more information, please contact yhu@caltech.edu or Laura Santosou at santosou.laura@gmail.com.

Innoworks Science Camp

We are looking for undergraduate students to be mentors for a middle school summer camp on campus from August 5-9th. This year, our activities include working with Lego Mindstorm Robot kits.

Interested? Shoot an email to caltech@innoworks.org!

Join the conversation!

The new Caltech opinion journal, The Hamiltonian, is looking for writers to contribute articles on topics in science, technology, politics, economics, philosophy, history, social issues, foreign policy, and local events.*

Undergraduates, graduate students, faculty, and staff are all invited to participate. We are looking for writers committed to defending and exploring their views in accordance with the rigorous intellectual standards that make Caltech so unique.

For more information, contact us by e-mail at hamiltonian@caltech.edu

*Serial commas appreciated, but not required.
The Irreverent Review: A look at The Hysterectomy Waltz by Merrill Gerber

Brassy and confident, Caltech professor Merrill Gerber once again proves that she is a literary force to be reckoned with in her soon-to-be-released novel, The Hysterectomy Waltz. Equal parts satire and story, the book is no traditional hospital novel. Written three decades ago but only now going public, Gerber’s latest work spurs the oft-used crutch of merely basking in the glow of fluorescent lights or reiterating long-cliché morals of health, wealth, and happiness. Instead, The Hysterectomy Waltz takes a stab at the culture of its time. Gerber flays open the assumptions of religion with a surgical scalpel; she exposes the underbelly of mediocrity that pervades the medical field; and she goes after a mentality that viewed the female anatomy as little more than a tool for kids and a toy for sex. Not one to care much about being politically correct, Gerber cracks open society’s ribcage with the shears of an insider who understands the female condition well.

It is an angry book. Blending dark comedy with magical realism, Merrill Gerber’s new novel blends truth with fiction to, as Gerber puts it, “make the leap from what did happen to what could have happened.” In an interview for Lost in Living, a movie currently screening across the Los Angeles area, Gerber admits that she “has never really been a cautious writer.” She takes the view that if you do not give the writing all you have, then it is frankly just not worth it. Critical and clever, Gerber’s latest production is very much worthwhile. Witty and well-thought-out, even if of a subject outside the typical scope of a Techer’s usual book shelf, Gerber’s The Hysterectomy Waltz earns itself four stars out of five.

Los Angeles locals can meet Merrill Gerber and pick up a copy of The Hysterectomy Waltz at her upcoming book signing at Vroman’s Bookstore on May 13 at 7 p.m.

Not one to care much about being politically correct, Gerber cracks open society’s ribcage with the shears of an insider who understands the female condition well.
ANNA LIU
Contributing Writer

The typical Techer lifestyle does not leave much room for high culture. Between problem sets and lab, our redolence of the arts is the popular music that we blast during homework, and the dance remixes of said pop music played at theATERhouses. But this does not have to be the case. Should one venture beyond the *.5 acres, navigating the serpentine 110 into the bustling throng of Los Angeles, they would find a virtual Mecca of the musical arts. The Walt Disney Concert Hall stands out prominently in this cultural center, and not just because of its wearily-shaped, stainless steel exterior.

It is home to the Los Angeles Philharmonic, an orchestra that I had the privilege to experience a couple weeks ago, on Friday, April 26. Stepping into the concert hall is a unique experience. The hall is grand, yet modern, and is dominated by massive, asymmetric organ pipes that seem to crisscross every which way, while still maintaining an unusual sense of symmetry. The hall was opened with Camille Saint-Saëns’ Piano Concerto No. 5 in F major, Op. 133. Saint-Saëns (who, despite his first name, is in fact a man), has always, in my opinion, consistently delivered beautiful pieces that are entertaining and pleasing to the ear, and this concerto was no exception. However, he has never been considered one of classical music’s big movers and shakers. He does, however, attempt to change things up a bit in this piece by incorporating erotic elements from a Nubian love song, thus earning this concerto the nickname, “The Egyptian.” The performance featured a French conductor, Lionel Bringuier, and soloist, Jean-Yves Thibaudet, to match the French composer. Thibaudet was a most interesting character. Jennifer Zhu, who was seated to my left, declared his hair and outfit to be “fabulous.”

Appearance-wise, he is not your typical concert pianist; his entire concert wardrobe is apparently designed exclusively by Vivienne Westwood, who is famous for clothing that captures the essence of “punk.” Performance-wise, he was certainly more zealous and energetic than most, which sometimes led to strange interpretations (at least according to Jennifer Zhu).

The latter two pieces were both by Maurice Ravel, a Frenchman like Saint-Saëns. Despite being contemporaries in the same country, Ravel and Saint-Saëns are remarkably different composers. This is especially apparent in their approach to life and the world. Ravel, La Valse. In this piece, Ravel contrasts the quintessential waltz with rambunctious, carnival-like sections. It is as if he cannot make up his mind between the refined and the playful. This is especially interesting considering that La Valse is a choreographic poem. Although today it is mostly played in orchestral settings like this one, it was originally intended to be a ballet, meaning that ballerinas had to interpret the starkly contrasting musical passages.

Suites No. 2, composed of selections from Ravel’s ballet Daphnis et Chloé, was the undisputed crowning jewel of the evening. If you toss away this article recalling only one thing, it should be this piece. Especially the first part, the Lever du jour or Daybreak. Lever du jour is a homage to the beauty of nature, how advanced modern recording technology is nowadays, there is simply no way to replace the experience of sitting in a concert hall and listening to music being made right in front of you. It is the difference between listening to Rihanna on the radio and having your mother sing you to sleep as a baby.

The music that permeated through the hall during Daphnis et Chloé had a quality that you could both hear and feel, a quality that gives you chills and sends tingles through your toes and all the way up your spine. The powerful orchestral melody swells and ebbs melodically as the piece progresses. The Pantomime is a transition to a more playful style, similar to that of La Valse. A flute solo weaves whimsically through the slow, flowing orchestra into your ear. It corresponds with Daphnis and Chloe awakening from a dream and recounting their experiences. The Danse generale is the final, grand celebration of the moment of the two lovers. Ravel fully reveals the vibrant splendor of his music in this festive finale to both the suite and the ballet. The full orchestra builds and crescendos to an epic peak, making for a truly spectacular ending to a stunning piece.

So the next time you are looking to expand your cultural horizons, consider attending a casual Friday concert with discounted student tickets, grab dinner beforehand, and make a night out of it (or a date). I can promise you that it will be worth your while.

TECHERLAND: Minimal makeup is ideal for summer

NINA BUDAEVA
Contributing Writer

As the end of the school year approaches, there are more and more last-time parties and dinners that bring Techers together before we leave for the summer. For seniors, this time is completely chaotic as we begin to cram everything we have done into the one month that remains before graduation. Of course, all of these events call for photos. Whether we are venturing to In-N-Out for the umpteenth time, sneaking out to Santa Monica, or attending one of the many events hosted by Caltech, each step we take is recorded by *some* one’s tiny little camera to help preserve these memories of our time as Caltech undergraduates.

It is a natural instinct to be very photo-conscious at this time and to always be on the ready for a camera lens to pop up out of nowhere. So, if we do not want to look back at these photos in ten years and be disturbed, we should probably keep ourselves prepared, almost 24/7.

For girls, this season poses a great problem. Many bet on thick eyeliner but this is more of an illusion than reality. According to Jennifer Zhu, “A little bit of shimmer at the inner corners of the eyes lights up a tired face. A bit of denser bronzer underneath the cheeks helps give the face and eyes a graceful expression.”

In hot weather, it is best to go with less makeup for the sake of avoiding a sweaty and oily mess (as well as severe pore-clogging). I think that different makeup is appropriate for different events. Most of the time, I believe that makeup should enhance the natural beauty that a face has and never draw attention away from flaws.

Makeup should not be too noticeable, and therefore should not make a girl look like an aspiring painter just tried to turn her face into a masterpiece of cubism. Very good makeup should not be noticed because of the allure it creates; many times it is very fun to slap on a neon eyeshadow, or slather on a line of very thick eyeliner but this is more about fashion, not makeup for summer.

So what is beauty? What is this mysterious and arrestingly beautiful quality so much trouble and joy at the same time? Is it pure genes? Is it pure artistry? Is it only visual? I believe that beauty is an internal state that manifests itself through appearance, artistry, character, attitude, and so on. It is the state of a person.

There is no canon for beauty except for the aura that it radiates, whether with or without the enhancement of makeup.
Two star-studded upcoming Caltech concerts

In the last six years, the Caltech-Occidental Concert Band has performed in Carnegie Hall and at the Great Wall in Beijing. Next year, they will perform in Disney Hall in downtown Los Angeles. You can, however, hear them soon in a venue here on campus.

The Caltech Jazz and Concert Bands will present their annual Bandorama concert on Friday, May 17, and Saturday, May 18 at 8 PM in Ramo Auditorium. This free concert will feature music from the Broadway shows "Les Miserables" and "West Side Story." The jazz bands will play music from the Count Basie Band and Caltech alumnus Les Deutsch.

There is even a short piece by Danny Elfman, who was the music director for the "Mystic Nights of the Oingo Boingo" and wrote the theme music for "The Simpsons." The director, William Bing, has a connection with Elfman’s music because he played trumpet for a Batman movie that was scored by Elfman.

The concert will feature the conducting and arranging talents of Jeff Thompson. Jeff is the music director of the Caltech Pep Band, has arranged and will conduct a selection of music that is often heard at athletic events, including the newest rendition of the Caltech Fight Song and the Caltech Alma Mater. If you’re a member of an athletic team that Jeff has played for, here’s your chance to thank him by attending this concert.

Also conducting on the program will be graduate student Christine Loza. Christine will be conducting a piece by Rimsky-Korsakoff, “Procession of the Nobles.” This is a terrific showpiece for concert band and will begin our program.

Teresa Liu and Bilin Zhuang will also perform a special composition for flute and pipa, which is a Chinese lute.

The jazz bands will play a world premiere of local composer Brian Duncan and bring back a jazz treasure written by Caltech Alumnus Les Deutsch. Les wrote the piece while still an undergraduate at Caltech. He plays the organ at every commencement ceremony and is a wonderful all around musician.

Also featured on the jazz portion of the program will be undergrads Katherine Lee, Steven Okai, Ilya Nepomnyashchyi, Sven Bömer, Jonathan Liu, Marcus Lucas, Vishnu Manoranian, and Daniel DeFelippis.

Please try to be there on time because there is limited seating.
Wright gets heptathlon record. Again.

Sarah Wright concluded her decorated Caltech track and field career by re-setting the school’s heptathlon record at the ClaremontMuddScripps Classic. The senior scored 4201 points which surpassed her previous school record of 4109 she set at the Cal State Northridge multi-event two months ago. In addition to her school record, her total score is an NCAA provisional qualifying score.

She started the event with the 100 meter hurdles. Her time of 15.94 was nearly a full second faster than her time in that same event during the CSUN heptathlon in March. Wright followed that by clearing the bar at 4' 9 1/2” in the high jump. During the third event on the first day of competition, she set a personal best mark in the shot put. Her throw of 33' 3 3/4” was 16 inches farther than her previous high. Wright concluded the opening day by running the 200 meter dash in 26.96 which was faster than her previous her March time.

The final event saw her clock a time of 2:37.77 as she clinched the school record of 1:57.81 was the fifth best mark among NCAA Division III schools.

GOCALTECH.COM
The Real Sports Editor

The NCAA Division III Women’s Tennis Committee has selected Rebekah Kitto to compete at the 2013 NCAA tennis championships.

The event begins on May 23 with 32 participants and is hosted by Kalamazoo College at Stowe Stadium in Kalamazoo, MI.

Kitto completed the season with a 21-1 record; including a 19-0 mark in dual matches. She beat six opponents ranked in their respective ITA region.

The junior’s 19 dual match wins are a school record, shattering the previous mark of 13. Her only loss of the season came to UC Santa Cruz’s Ariana Mokhtari at the Ojai Tournament.

Mokhtari was also chosen to compete at the championships. “Being selected to nationals is a tremendous accomplishment for both Rebekah and the tennis program,” head coach Mandy Gamble said. “Rebekah’s talent made nationals a realistic goal, however, going undefeated in 19 dual matches was beyond any expectations I had. This type of program milestone shows that Caltech can achieve success in athletics. I am proud of everyone in the program. Their hard work at practice helped elevate Rebekah’s game.”

Rebekah’s selection to the NCAA championships is a byproduct of the team’s success.” A three-time first-team SCIAC selection, Kitto is the first Caltech tennis player to earn a selection to the NCAA Championships. Last season Kitto was the first alternative from the west region. She is the first Caltech athlete, from any sport, to compete at the NCAA Championships since Laura Decker participated at the 2011 Fencing Championships.

The draw for the individual championship will be done by the women’s tennis committee and will be released on the last day of the team championship (May 22).

Wanna write witty captions just like us? Apply to be Sports Editor!

Senior Sarah Wright runs over giant hurdles faster than most people can run without hurdles there in the first place. This is why we’re gonna try to stay on her good side.

Kitto selected for NCAA Tennis Championships

GOCALTECH.COM
The Real Sports Editor
Acquired Taste

by Dr. Z

For more photos, videos, and archives of previous issues, check out the Tech website!

tech.caltech.edu