Swanky Stamps to Show Solitary Scientist’s Snowflake Snapshot

By ROBERT TINDOL

Postage rates may keep going up, but when it comes to natural beauty and scientific wonder, one particular issue of stamps is going to be hard to lick.

Beginning next October, the U.S. Postal Service will issue a set of four commemorative stamps featuring images of snowflakes furnished by that hotbed of snowflake research, the California Institute of Technology. The holiday snowflake stamp will display photographs taken by Caltech physics professor Kenneth Libbrecht.

For several years Libbrecht has been investigating the basic physics of how patterns are created during crystal growth and other simple physical processes. He has delved particularly deeply into a case study of the formation of snowflakes. His research is aimed at better understanding how structures arise in material systems, but it is also visually compelling and, from the start, has been a hit with the public.

“My snowflake website, www.snowcrystals.com, is getting about two million hits a year,” says Libbrecht, “so course, with a big peak during the winter months.”

Libbrecht attributes the site’s popularity to its discussion of some very accessible science, “Snowflake patterns are well known, the snowflakes fall right out of the sky, and you don’t necessarily need a scientific background to appreciate the science behind how these ice structures form. It’s an especially good introduction to science for younger kids,” he says.

Libbrecht began his research by growing synthetic snowflakes in his lab, where they can be created and studied under well-controlled conditions. Precision micro-photography was necessary for this work, and over several years Libbrecht developed some specialized techniques for capturing images of snow crystals. Starting in 2001, he expanded his range to photographing natural snowflakes as well. “A few years ago I mounted my microscope in a suitcase, so I now can take it out into the field,” says Libbrecht. “Sometimes I arrange trips to visit colleagues in the frozen north, and other times I arrange extended ski trips a bargain, depending on how often you use public transportation.

Caltech offers a $25 transit subsidy to any Caltech member, who buys a Metro monthly pass. With parking fees and gas prices on the rise, this is an added incentive to ride public transportation frequently, especially for commuting to Caltech. You can purchase a subsidized Metro monthly pass from the Caltech bookstore for $27.

Students can do even better by scoring a Metro student monthly pass for only $5. That’s cheaper than the cost of two Metro Day Passes! For more information on this bargain and other transit subsidies, see the section “What’s FARE for Me?” on the Caltech Transit Guide site.

In addition, the website covers how to get to the Metro Gold Line from Caltech, how to bring your bike on public transit, and how to stay safe while riding.

The Caltech Transit Guide can help you determine which online trip planner is best for you, and then connect you to it with the click of a button. Students can do even better by scoring a Metro student monthly pass for only $5. That’s cheaper than the cost of two Metro Day Passes! For more information on this bargain and other transit subsidies, see the section “What’s FARE for Me?” on the Caltech Transit Guide site.

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The Caltech Transit Guide is also available in PDF form for convenient printing. If you print the guide two to a page, front and back, you can make a booklet that fits easily in a purse or backpack.

We hope that the Caltech Transit Guide helps you use public transportation to explore Pasadena and the L.A. area. Visit our new website at transitguide.caltech.edu.

Cindy Ko Interviews Jimmy Eat World

(Story on Page 4)
Send your text files and jpegs lest I have cause to ninja write
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Jimmy Eat World at Caltech – This Ain’t No Karaoke Contest

It is beyond me how we got Jimmy Eat World to play here. “What is a hot band like them doing at a school like ours?” is just one of the many questions answered in this interview. I can’t believe I got the chance to meet and interview one of my favorite bands of all time: Dreamy! CALTECH (drums)

CK: So you guys play videogames? I heard you play a lot of Battlefield '94.

ZL: We do, yeah we play that. We play a lot of videogames.

CK: How many hours do you guys spend playing?

ZL: Well, we probably don’t play as much as the average geek in college, but like we probably play a lot for how old we are, you know.

CK: Laughs.

ZL: Yeah, I don’t think it’s age related.

CK: Uhmm, I’m trying to think of something here.

CK: Yeah.

ZL: It’s kind cool, like they make stuff out of tubes that were never designed for audio stuff.

CK: Sound engineering, that’s awesome. How’s it different from the other distortion pedals that you have already?

ZL: It’s... uh, it got a really good output, so you gotta be careful, ‘cause you could actually break stuff that you use it with.

CK: Wow, that’s cool! Wow, I sound stupid... oh, I think I’ll have to ask you more questions later, ’cause I’m sort of holding the line up. Is it okay if I come back later?

CK: Yeah sure. --To be continued. (Not really.)--

Adventures with Tom Linton (guitar/backup vox)

CK: So I’m trying to compare you with the stereotype geek at Caltech, and I just wanted to know what your favorite science in school was.

TL: Uhm... probably biology.


TL: Cool.

CK: Also have some other questions, this is unrelated, but what’s the worst song you ever screwed someone over?

TL: Insert awkwardness...

CK: Uhh, What’s the worse I’ve ever screwed someone? Uhh...

TL: Yeah, yeah just so that people have to go up there and Zach went up – Zach’s the Bon Jovi fan—and he did, “Dead or Alive.”

CK: Nice, nice. Hey wait, so like, you guys go out to karaoke, but no one wants to sing? That’s kind of weird.

TL: Yeah, well people get nervous, you know?

CK: Yeah, but why do you get nervous though? You guys are on stage a whole bunch. But in front of each other, is it like, ‘oooh shy’?

TL: Haha, you know what? Actually, about the time we were recording Futures, Jim went over to a karaoke bar that was right across the street from our hotel. And I guess they had, “The Middle” on the karaoke menu. There was also a contest that night, and Jim sang [his song] “The Middle”—but he lost! Laughs.

CK: Oh nooo... that’s terrible. That so... weird.

TL: True story, but kinda funny.

CK: That’s a good story. Hey so, I heard you like playing videogames, yeah?

TL: Yes, I just got the X-Box Live.

CK: So how do you like
Wanted to Know About
rity Wouldn’t Let You Ask

that? What’s your favorite
game?
TL: I like Gun; I also like
Red Dead Revolver. On X-
box Live, I like Call of Duty
2 and I like Madden. We’re
solid, big videogame guys.

CK: I know you spend a
lot of time making your Ad-
vventures, and I just want to
know how many hours you
spend on it. They’re really
well done, I have to say. Es-
pecially that French one...
that has no English... I like
that one quite a bit. (Tom,
his bandmates, and his bud-
dies like to film short mov-
ies about funny stuff, and
title them A World of Adven-
ture. The shorts are posted
for fans to download off of
their website on the Audio-
Video page.)

TL: Laughs. You know
what? As far as the acting
goes, it’s pretty much done
all in one take. But the guy
who directs and edits it,
Marty Flickman, he’s the
one who spends all the work
and time. We don’t really
spend that much time on the
acting, or like our ‘trying to’
to... it’s still fun though.
CK: Yeah, it’s cool.

TL: Enter band manager--
CK: Hey, I’m from the
school newspaper, is it al-
right if I just get three more
minutes?

Manager: No, we gotta get
ready.
CK: Yeah right, you have
an opening band first.
C'mon, you have three min-
tues, gimme some slack...

Manager: proceeds to
shoo me toward the door.--

I had never really got back
to Jim, but I did manage to
make a fool out of myself in
front of him before I left. As
everyone was being shooed
out, I insisted on finishing
up the interview, but their
manager was like, ‘Haha, no
way.’ So instead, I decided
to thank the band by blurt-
ing out Jim, “Thanks for
coming to play here, it’s so
so so... great! Thank you!”
I had originally meant it to
sound less corny or retarded
but whatever, Jim smiled
politely and their manager,
who was being a jerk, prac-
tically pushed me out the
doors.

So, even though their
manager could have been a
little more generous, I still
got an interview of sorts.
Although, I had forgotten
to ask them one key ques-
tion, “Why did they choose
to play at Caltech?” I should
have started the interview
with that question, but my
apologies: I’m an amateur.
You may also notice that I
didn’t ask Rick Burch (bass)
any questions, but I will
remedy that later.

Soon after the meet and
greet ended, their opening
band from San Diego, The
Jade Shader, took stage.
They were well received by
the crowd, with their songs
about pirates and Emergen-
C antics. The Jade Shader
had been on tour with them
in the past, but they weren’t
slated to follow JEW on the
next leg of the tour to Aus-
tralia with Green Day and
My Chemical Romance.
With the end of The Jade
Shader’s set, the crowd was
warmed up for when Jimmy
Eat World took stage.

Having seen them play live
a total of three times, twice
in high school and once here
at Tech, the concert five last
Saturdays ago was worlds
better than the other times.
This time, I got to interview
them too, but still the judg-
ment stands. I’d say that
managers could have been
more generous. I still can’t
ask them. It’s already

question?
Manager: No way, you
can’t ask them. It’s already

over.

RB: But what’s the ques-
tion?

RV: Why did you choose
to play at Caltech? Why did
you agree to play here?

RB: Ooh, that’s a hard
question... Well, it sounded
like it could be a fun con-
cert.

RV: Did you have fun?
RB: Yeah, it was awe-
some...

(Thank you, Rocky-- you
saved the interview!)

Overall, I’m pretty happy
that Caltech gave this
private concert and I hope
that they can do more in the
future. Thank you to Jimmy
Eat World for giving us an
awesome concert, and thank
you to ASCIT and everyone
involved for the wonderful
job they did. I had a great
time, and I’m sure that this
opinion is shared among
most all of the students who
attended.

--Cindy Ko

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THE CALIFORNIA TECH

COMICS

JANUARY 9, 2005

G.L.O.M. - Greg's Life of Misery

Well, Caltech is almost starting again.

I can't wait to see my friends again. I miss our deep and meaningful conversations.

Guys, I hate to say it, but it's already 3 a.m.

WHY did we come back?

I hate this place.

Visit G.L.O.M. on the web at http://www.its.caltech.edu/~glooom/

By Nathan Lau

Rational Exuberance

You have to lend me your South master! My final is due right now!

Finals are over. It's second term.

You know, I feel like I've been clean out.

by Zhiyun Guan

Magic Relief #11: Are we there yet?

I'd like to reinforce that this is your fault.

Yeah, yeah.

And she wastes only 6_months deep.

by Dave Zhang

Magic Relief #12: What do you mean, "The artist is here"?

Final. You can tag along, but if you get lost, I'm not looking for you.

by Dave Zhang
Bitches is Hoes Papers Part 2: Bitches is Bitches: The reflexive axiom

By JOSHUA GUTMAN

If you've ever been inside a house besides Fleming or Avery, you've noticed the murals on the walls. Starting last year, the administration started a group called Housing and Administration for a Tolerable Environment, or HATE, to remove murals around campus that could be considered offensive. Since this formation, the administration has been using HATE to combat objectionable material and, as they put it, "prevent harassment." Often the removal takes place with little or no notice to the house involved. In a recent case Ricketts house had a pentagram on a wall in the trailers similar to the one they had in the south houses for many years. The mural in the trailer was removed and the house was informed they would not be able to keep the pentagram when they moved back into the south houses. The reason for this removal: Some individuals interpreted the pentagram as a symbol of Satan and hence an attack on Christianity.

To intelligently discuss this issue though, we need to consider what a person may take offense to. My answer: anything. You are allowed to take offense to absolutely anything. However, realizing that sometimes the view you hold differs from the views of others, it is unreasonable to expect to create an environment to which nobody could take offense. You do have the right to find material objectionable, but you do not have the right never to encounter such material. However, this has not stopped HATE; in fact, it seems that nothing can stop HATE. All of this is pretty ironic considering the symbol was once commonly used to represent the five wounds of Jesus. So clearly the Caltech administration has taken it upon themselves to create their own definition of what we should and should not find offensive. It seems from this example at least any symbols that can be interpreted as an attack on any group associated by race, religion, etc. are not allowed. Alright Caltech, I'll play by your rules:

Since Caltech has no problem limiting worship of a figure, in this case Satan, I hereby request that HATE remove all crosses and bibles from public display and that individuals not be allowed to wear crosses around their necks. I find all of these things offensive and threatening. As a Jew, it is not surprising for me to find offensive a constant reminder that there are around half a billion people on this planet who wear reminders and celebrate the torture and murder of a Jewish man. I find it threatening in the cross signifies the death of one Jewish man and the potential that I might be next. Therefore, unless Caltech is ready to file as a religious university, it would seem quite prejudicial to prescribe one religious symbol because it is offensive and not prohibit other religious symbols.

Some of you out there disagree with my view, some look in the mirror and do not see an anti-Semite. So come on my show and defend your honor. If you don't, you're a coward. Feel free to e-mail the time you would like to come on my show to jegutman@its.caltech.edu or any other hate mail anybody else might have.

In Conclusion: Bitches is bitches.

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In Conclusion: Bitches is bitches.
Every year, a sizeable group of Caltech alumni sign on to watch the Tournament of Roses Parade with the Alumni Association, a reservation that guarantees them prime seating at the corner of Hill and Colorado and a convivial post-parade lunch at the Athenaeum. More than 220 people booked spots for the 2006 parade, and nearly all of them braved the elements on January 2, according to Association assistant director for events and programs Jennifer Schmidt, who accompanied the group. “Everyone showed up in their rain gear, cracking jokes about the weather, and in high spirits overall,” says Schmidt. “By lunchtime the mood was a little more subdued and the people a little more soggy, but some good food, hot soup, and coffee seemed to restore their humor, and everyone started comparing stories.” Somewhat surprisingly, no one brought a precipitation gauge, but Schmidt reports that she did overhear “two men trying to calculate the exact percentage of the surface area of their bodies that was wet to determine who was more soaked.” Alas, no photos exist to commemorate the camaraderie of the inclemently inclined Caltechers. Schmidt says that she wasn’t sure that her digital camera would survive the monsoon.

There’s Snow Reason to Avoid Bad Puns

Continued from Page 1

great distances are larger than what we can easily grow in the lab.” So where does one find really nice snowflakes? Certainly not in Pasadena, where Caltech is located, but Libbrecht says that certain snow places are better than others. The snowflakes chosen for the stamps were photographed in Fairbanks, Alaska, in the Upper Peninsula of Michigan, and in Libbrecht’s favorite spot-Cochrane, Northern Ontario. “Northern Ontario provides some really excellent specimens to photograph,” says Libbrecht. “The temperature is cold, but not too cold, and the weather brings light snow frequently.”

“Fairbanks sometimes offers some unusual crystal types, because it’s so cold. Warmer climates, for example, in New Mexico and the Valley, tend to produce less spectacular crystals.” As for the nitty-gritty of snowflake research, probably the question Libbrecht is asked the most is whether the old story about no two snowflakes being exactly alike is really true. “The answer is basically yes, because there is such an incredibly large number of possible ways to make a complex snowflake,” he says. “In many cases, there are very clear differences between snow crystals, but of course there are many similar crystals as well.”

In the lab we often produce very simple, hexagonal crystals, and these all look very similar. Libbrecht can grow many different snowflake forms at will in his lab, but says there are still many subtle mysteries in crystal growth that are of interest to physicists who are trying to understand and control the formation of various materials. A real-world application of research on crystals is the growth of semiconductors for our electronic gadgets. These semiconductors are made possible in part by painstakingly controlling how certain substances condense into solid structures.

Whether you want Baltimore II or Bizarre Baltimore, the unliv­ing duplicate who does the op­posite of whatever Baltimore would do, this is your last chance to weigh in on the topic at http://presidentialsearch.caltech.edu/.

Parade-Goers Persevere Against Perilous Pluvian Pelting

January 10, 2006 is the last day to tell the faculty search committee and trustee selection committee what kind of president you want Caltech to have.

Last Call for Caltech Presidents

By ADAM CRAIG

The California Tech

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