



4e Fashion Report

Carly Narlesky and Andrew Westerdale

Look out Fourth East! This Spring's hottest fashions feature bright jewelry and cropped bubble dresses. Professional model Ethan Sterling was spotted sporting his fashionable bling in the context of the Walcott Lounge. Crowds flocked to admire his personalized pendant. Concurrently, Erik Chen explored a modern approach to a minimalist ensemble. His cowled-necked halter of HDPE complemented his slender physique. Later, he was caught posing for the camera. Watch out, because this is one trend you won't want to miss!



Don't ask Emoglasses!

Emoglasses

It seems that my prolific career of making mailing lists has gone awry. Earlier this year I created the mailing list askemoglasses@mit.edu, but I made the mistake of using the Mailman list creator, and I never configured the list. Now, I get an email every day at approximately 8 am from the Mailman server telling me that I, the administrator of this list, have a message waiting. To check this message, I must log in. I don't have the password. Apparently these emails will never end. The moral: keep your Mailman password, or don't use Mailman!

Erik Chen Disease

Boyd

There appears to be another disease spreading among slugs, yet surprisingly enough this one seems to not originate from a specific unnamed doctor. As classes enter full swing, not everyone enjoys creating noms in the kitchen. Once-quite-competent-chefs try desperately to cling on to someone else to cook for them-even if all the only thing he knows how to do is push buttons on a microwave. The illness doesn't seem to have any cure, but it has an interesting treatment: if the infirm finds another student with the same phonetic name, he has the amazing ability to force the other student to cook for the infirm. Unfortunately if you catch Erik Chen disease, and you have an uncommon name, there is no known treatment.

Be careful around Erick. Unless your name is also Eric.



Featured Foreigner

Andrew Westerdale

In this space, we have often taken the time to share the stories behind some of our freshman, but we can't forget that those aren't the only newcomers to the hall. This year, we are lucky enough to be in the presence of a Cambridge exchange student, and it is in his honor that The Weekly Awesome would like to feature our first Featured Foreigner: Mr. Andrew "UK" Abrams. Growing up in Scotland, young Andrew Abrams yearned had but one dream, to one day make it to the United States. More than 20 years after that journey started, he finally made it. When whether the states lived up to his expectations, Mr. Abrams merely said "Donlan". Andrew UK is also well known on 4e for introducing pennyng and his fondness of saltberries.

Math Corner: Diffraction and the Dirac Train

Tucker Chan

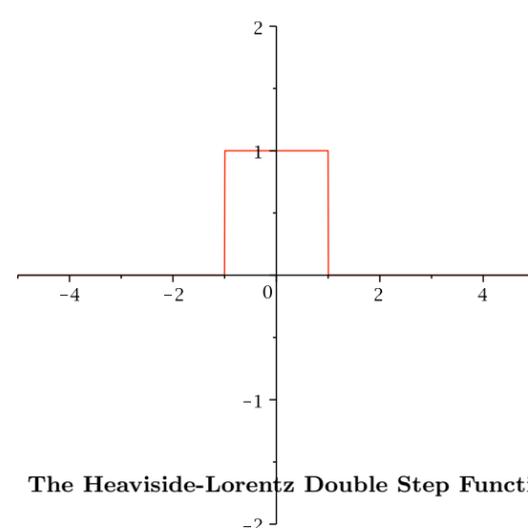
A Dirac delta function is an improper function, $\delta(x)$ such that $\delta(x)$ is the additive identity on the abscissa except at the origin, where it is infinite, and such that

$$\int_{-\infty}^{\infty} \delta(x) dx = 1. \quad (1)$$

A delta train, more commonly known as a Dirac comb, is defined as

$$\xi(x) = \sum_{k=-\infty}^{\infty} \delta(x - ka). \quad (2)$$

The most useful property of the Dirac comb is that its Fourier transform is another Dirac comb. Since diffraction is a Fourier transform in the far field limit, the Dirac comb is useful for optics applications. When a laser is shined on a 2D periodic array, i.e. a Dirac comb such as a CD, the diffraction pattern is a delta comb. However, the Fourier transform of the Heaviside-Lorentz double step function (see figure) is $\sin(x)/x$, which corresponds to diffraction from a single obstruction. Delta comb expert Walker Chan points out that as a result, a periodic lattice gives more intense interference fringes at high order than a single obstruction gives.



The Heaviside-Lorentz Double Step Function



Alumni Corner

Walker Chan

Joseph Graham replaced the old black stove at the rear of the kitchen with a new one due to a suspected vermin infestation. Fourth East residents were dissatisfied with the stove's lack of features. Residents went so far as to suggest that the range was purchased from Craigslist or had been sitting in a warehouse for 30 years. Through a generous donation of a recent alum, Fourth East upgraded to the latest *Joseph Graham III* model. It sports digital oven control and a live status display for all three members of DONLAN.

Word of the week

Sebastian Donlan

Donland - the promised land as prophesied by his holiness John Escrow. Every slug must make a pilgrimage to Donland at least once in their life during the holy month of Ramadonlan.s

Ask Dr. Dice

Dr. Dice

Q: What is going to happen in 2012?

A: The short answer, is that no one knows.

Most prophecies linked to the year 2012 are end-of-days prophecies. However, in the digital age, this has taken on new meaning, with the singularity. The singularity is the supposed point in the future where computers surpass human intelligence, with the ability to design and build iteratively better computers. When this occurs, it is believed life will change quickly and dramatically, in ways we cannot even begin to comprehend. This would effectively be "the end of life as we know it," and could thus account for many of these prophecies.

This is far from the only theory, however. Some who have claimed to have direct contact with alien species have stated these species also acknowledge 2012 as a major point in human history. This has led to a second group competing with the singularitans over non-terminal answers to the prophecy: namely, a major first contact event, where human life again changes suddenly and dramatically, but only due to sudden exposure to alien species.

This theory is bolstered by images from NASA's Stereo Science center. A series of images from the Behind COR-1 telescope show what appear to be 6 half-moon shaped objects that emerge from behind the sun and rapidly travel outwards. This theory has also gained popularity, as images for the same period have supposedly disappeared from other sun-monitoring databases.

There are, however, some more fatalistic theories. There is the traditional grab-bag of nuclear war, meteor impact, and the like, but one of the rapidly growing and intriguing theories stems from the photos above. This theory states that the hydrogen in Jupiter's atmosphere (which is now hidden behind the sun) ignited, producing a shockwave that launched several Jovian moons out of Jupiter orbit and on a very long, very slow path to Earth.

Whatever theory is true, it is safe to say 2012 will be a big year for humanity.

If you have a question for the doctor, email ask-dr-dice@mit.edu.