



ESA Newsletter

Electrostatics Society of America - The Friendly Society

Current Events

Zap! A Music Review

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"Zap! Music for Van de Graaff Generator, Robots, Instruments and Voices" played to a full house in the Thomson Theater of Electricity at Boston's famed Museum of Science on Friday evening, February 4, 2005. Created by Christine Southworth, a 2002 MIT grad in mathematics and music composition, the hour long event featured fanciful excursions into "post-minimalist acoustic-electronica" coupled with the pyrotechnics of enormous bolts of electrical energy for which the Thomson Theater is famous.

The musicians played from a relatively safe perch overlooking most of the audience and used a flute, two keyboards, a cello, a guitar, a bass, and various percussion instruments. The "robots" consisted of a xylophone-like device, a plucked string instrument and a drone instrument. The Van de Graaff generator, consisting of two massive globes atop twin 40 foot tall insulating columns, and the Tesla coils were controlled by a team led by Ms. Leila Hasan, a robotic engineer also from MIT. The generator dominates the Theater and was flanked on each side by large video screens displaying the band, interspersed with visual effects. Lights dimmed and the audience was silent as we waited for the show to begin.

"Zap!" opened with meters long arcs from the Van de Graaff, accompanied by something that sounded like an Aboriginal Didjeridoo. The bolts alternately cracked from the right and the left as the tinkling of bells (the robotic xylophone perhaps?) mimicked the sound of rainfall on a tin roof. It reminded me of one morning spent in a hotel in Nicaragua, rain pounding relentlessly overhead as thunder bellowed outside.

Christine, the composer, climbed into a protective "bird cage" as a plastic hand-key-kite simulacrum of Franklin's famous experiment drew our attention. A tiny threadlike spark leaped repeatedly from key to ground as the voltage built up overhead on the twin globes. A drumbeat grew and grew to a crescendo. The kite rose upward and the tiny spark became nearly continuous, trying to keep up with the burgeoning voltage buildup, but at last a mighty bolt of indoor lightning closed the gap between kite and Van de Graaff, dwarfing the sound of the drum. A hissing sound drew my attention to two foil-covered balls overhead, close enough to the high voltage to produce noisy sprays of ions from their rough surfaces, propelling the balls away from the generator's summit.

Slowly, the cage containing Christine rose up to the middle level, fearfully close to the electrical display. She sang in a high pitched ululation, an eerie sound that contrasted

with the instrumental music and the electrostatic displays above her. The lightning reached down and struck the cage over and over again, joining her singing in cracks redolent in high frequencies.

Christine stopped and sat down within the cage. The music continued and the tang of ozone became noticeable. Keyboard rhythms mixed with hot guitar licks, a rattling tambourine sound (the robot again?) and hefty sparks jumping faster and faster. Languorously, a horizontal spark climbed Jacob's ladder. Finally, as the twin globes of the Van de Graaff were bathed from underneath in reddish light, the music turned somber, slowing down as if to give the atmosphere a rest from the experiences it had undergone within the confines of the Theater, and the concert drew to a close.

I think most of the audience felt as if they had experienced something unique. I know that I had. With luck, Ms. Southworth will have another opportunity to collaborate with the Museum again and experiment with the multi-sensual compositions of which this, hopefully, was only one.

(for further info. see <http://www.kotekan.com>)