No Such Media

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Outline

- Aesthetic and Motivation

- Interests and Training

- The Works

Aesthetic?

- Maker

- Cross functional (software, hardware, music, visual)

- Experimenting with new things

- Fail early and often

- Deploy and document

  - Performances

  - Installations

  - Web site

- Refine, Rework, Remix

Motivation?

- Fun
- Freedom
- Personal taste
- Learning
- Socialization
- Deadlines

Interests

- Algorithmic composition

- Selective Randomization

- Languages

- User Interfaces (both soft and hard)

- Networking

Initial Training

- Musician

- Software Engineer

… and then there was MIDI

Graphics gets interesting

- Affordable equipment
  - Webcams
  - Video mixers
  - Security cameras
  - Video processors
- GPUs and CPUs fast enough for realtime

Bay Area opportunities

- Woodstockhausen
- Skronkathon
- Y2Kx LoopFest
- Dorkbot
- Illuminated Corridor
- Maker Faire
- BArCMuT (Bay Area Computer Music Technology) Meetup
- Visual Music Meetup
- LoveTechSF
- SHARE San Jose
- Zero1.org, ZER01, 01SJ Biennial, SubZero Street Faire

The Mother of All Opportunities

Dance Pads at Burning Man 2002

Movie

Burning Man 2003

Dancing under the Stars of Lyra

Dancing Under the Stars of Lyra
Burning Man 2003

Movie1
Movie2

Dance Pads at Burning Man 2003

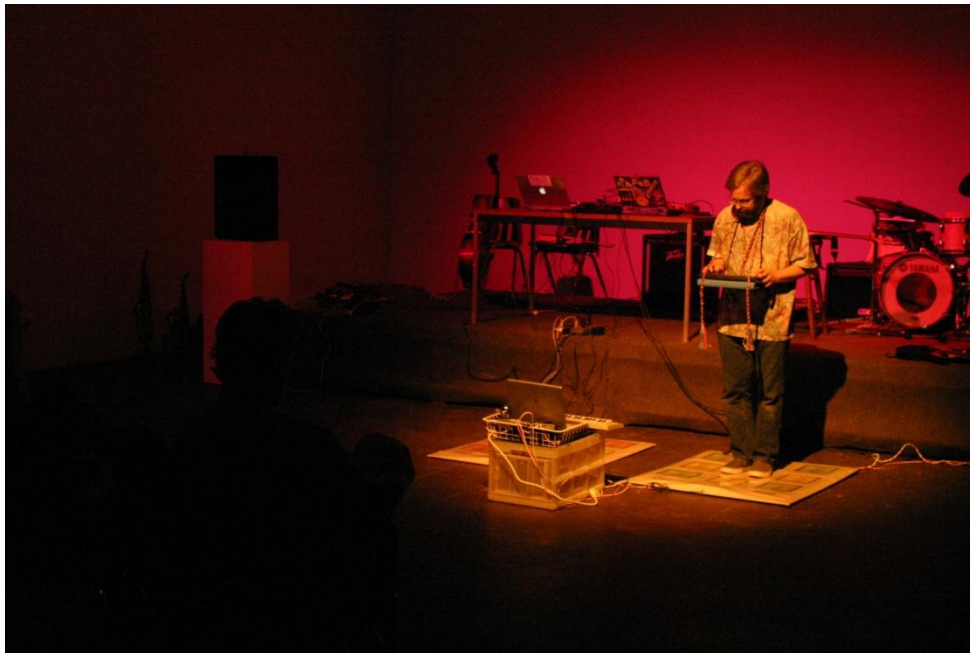- Electronics and dance pads were very reliable
- Generator was not

Burning Man 2004 - Radio Free Quasar

Audio

Performances with dance pads

- Woodstockhausen performance – Happy Feet
    - Done entirely on 4 dance pads
    - No hands, No light, and EL-wire-outlined pants
- With Wireless QWERTY keyboard

Oops, I made a typo

- Woodstockhausen 2001

- All-QWERTY Performance

An Algorithmic music "instrument" used for "21st Century Caffeine-based Life Form" at Woodstockhausen 2000

Other Algorithmic music

- Algorithms create lots of possibilities, but I choose which ones to keep

- Example using L-Systems (fractal expressions)
  - [23 Shots of Expresso](#)

- Example using the digits of PI (3.14…)
  - [Irrational](#)
  - [Irrational Too](#)

Dud

- Organized by Herb Heinz, I joined in 2005
- Improvisational group of musicians
- New opportunity to perform realtime graphics
- Software and hardware controller exploration
  - FreeFrame plugins for realtime video
  - Python-based OpenGL graphics
  - Multitouch pads
  - Images dynamically selected to match improvised words
- No clips

Dud - examples

- Chico : multitouch drawing, Python OpenGL graphics, webcam
  - movie
- Illuminated Corridor : Photoshop realtime drawing, one camera, dancer
  - movie
- Novato : two cameras
  - movie
- Musicians' Union : camera, Python OpenGL graphics
  - movie1
  - movie2

Dud - examples

- John Patrick's : drum-triggered graphics, camera
  - movie
- Musician's Union : dancer, FreeFrame, tracking
  - movie
- 21 Grand : dancers, indoor/outdoor cameras, four projectors, FreeFrame video looping
  - movie

A Custom Controller for Performing Graphics

- Fingerworks iGesture pads
  - Multitouch with area-detection
  - Extremely responsive

Different Skies 2007

- 20 Electronic musicians and one visual performer gathered for a week-long workshop at Arcosanti in Arizona

- Music was composed for a concert at the end of the week

- Interactive graphics (no clips) was composed to match each piece of music

- The graphics performance rig:

  – Interview

- The two-hour concert:

  – Movie

- A time-compressed video of the two-hour concert:

  – Two hours in two minutes

Different Skies 2007

Other uses of Fingerworks iGesture pads

- Finger Fresco at Maker Faire 2007

Movie

Finger Painting with Planets

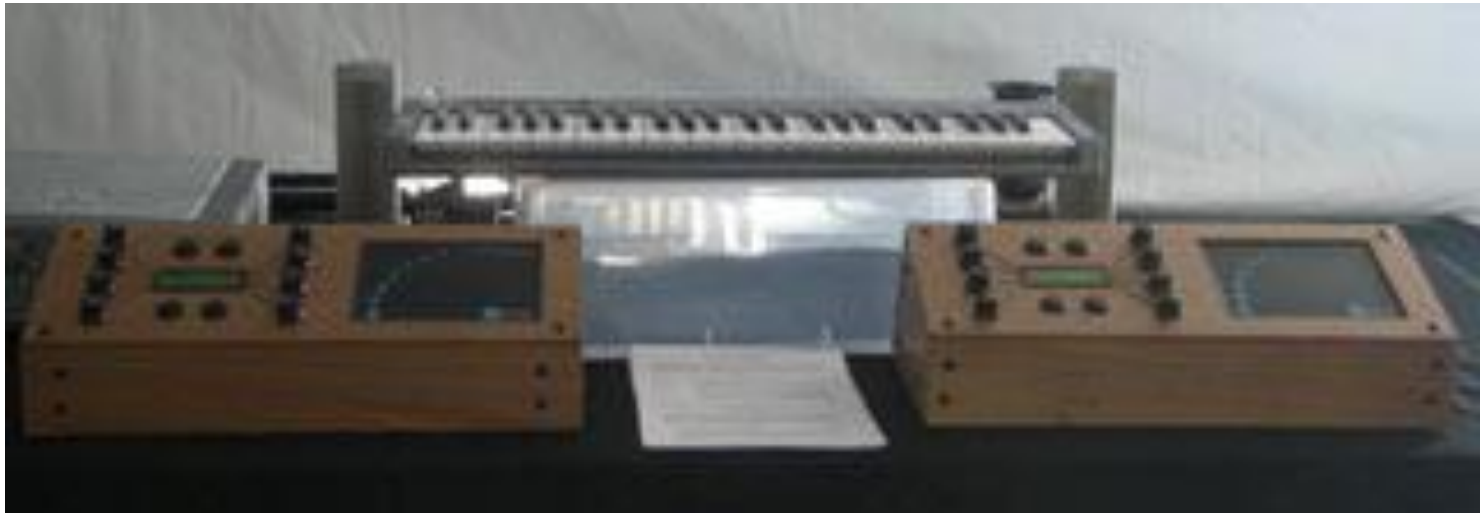- Maker Faire 2008

Movie

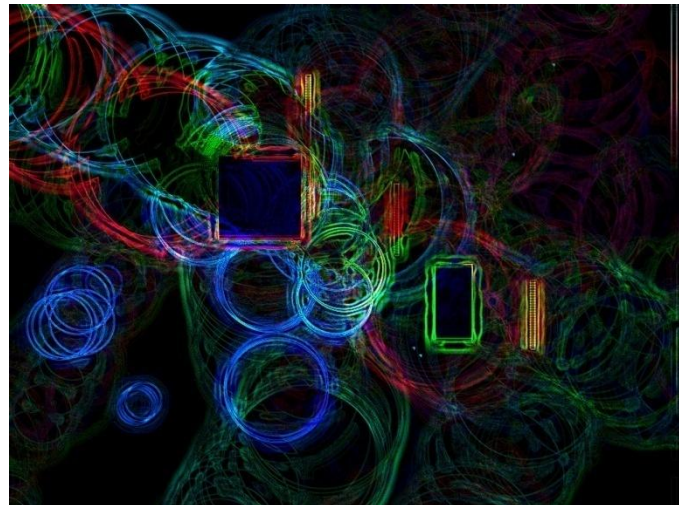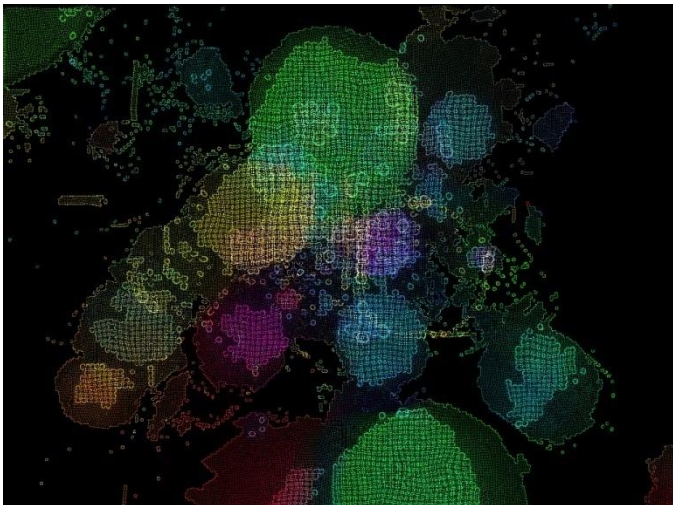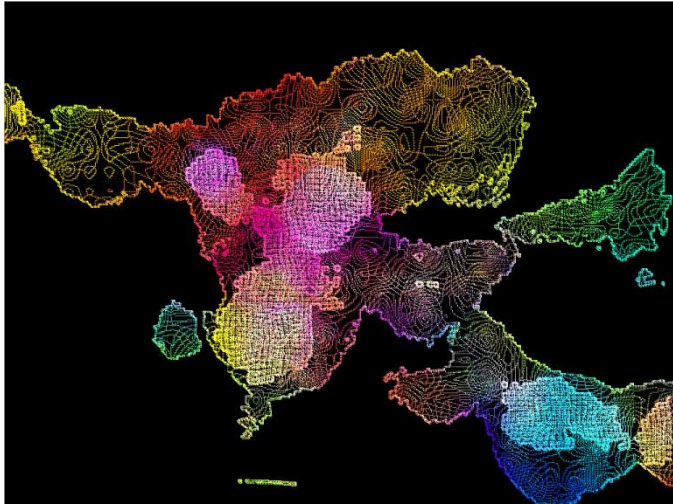# Finger Painting with Planets

- Night Lights show at Climate Theater
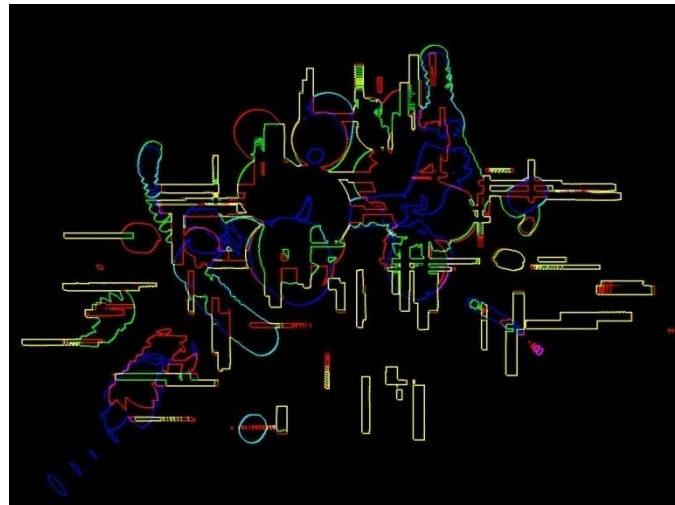

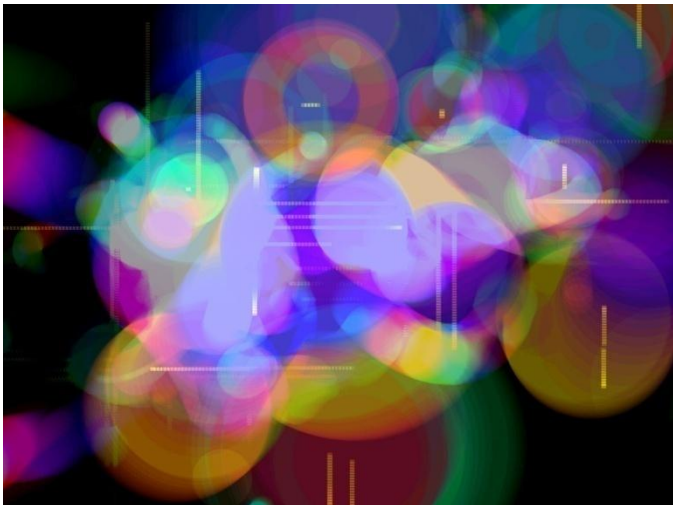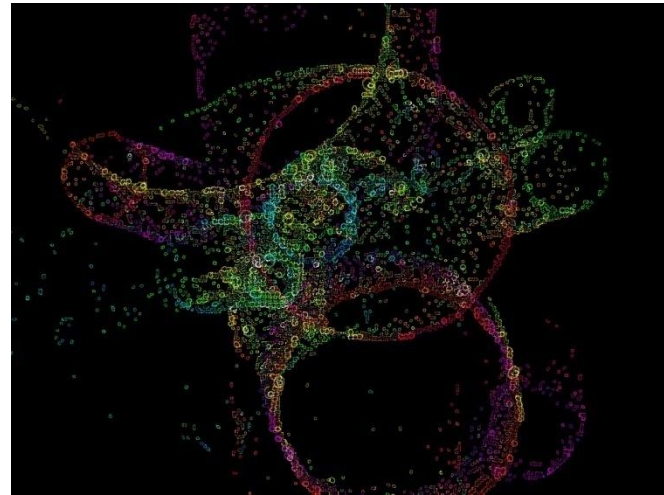Movie

Finger Painting with Planets
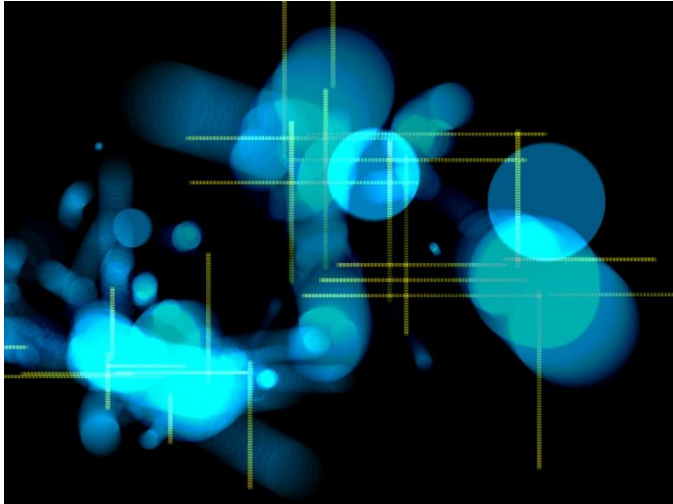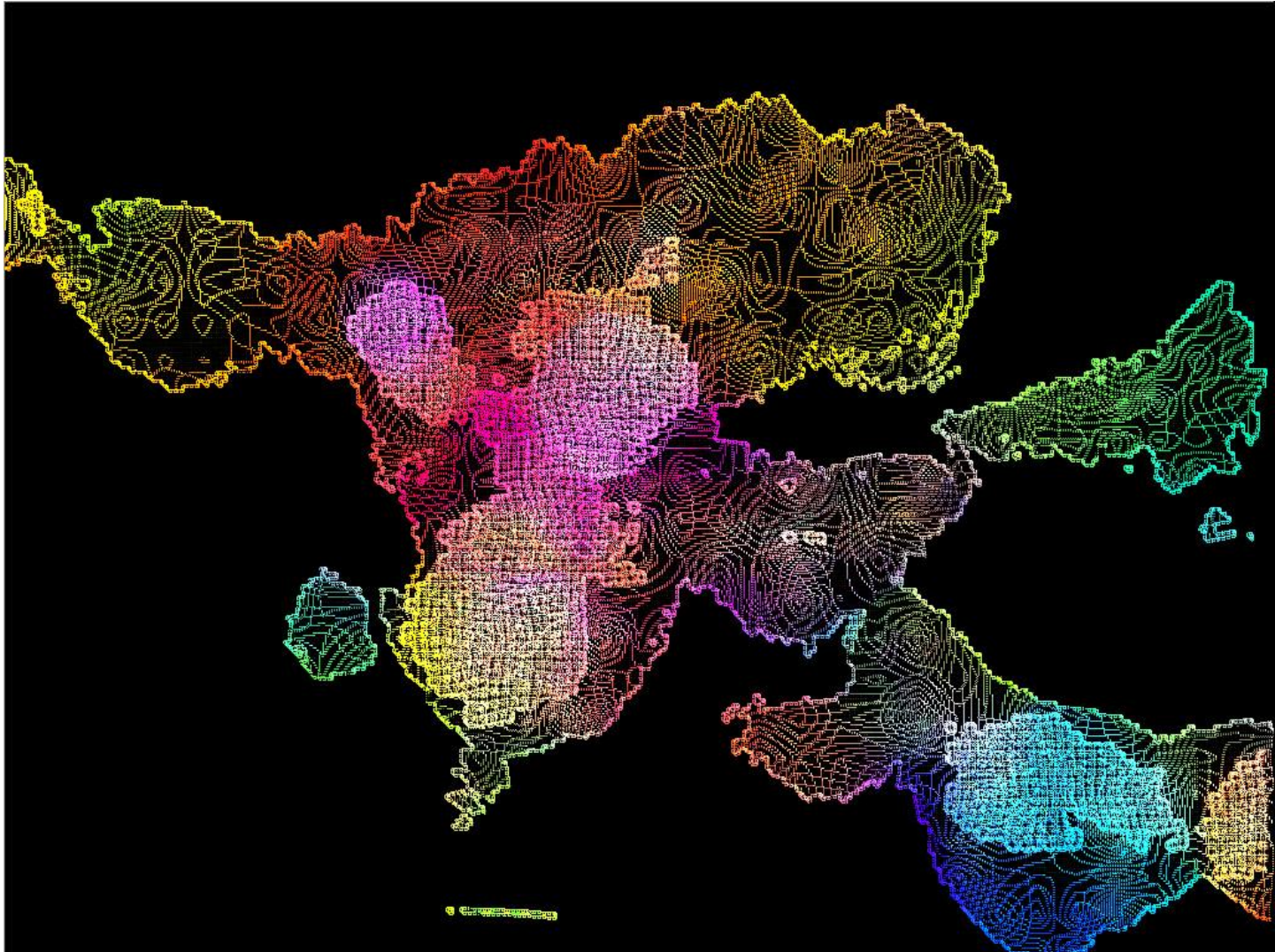
- Yuri's Night

Movie

Examples of Visual Output

Examples of Visual Output

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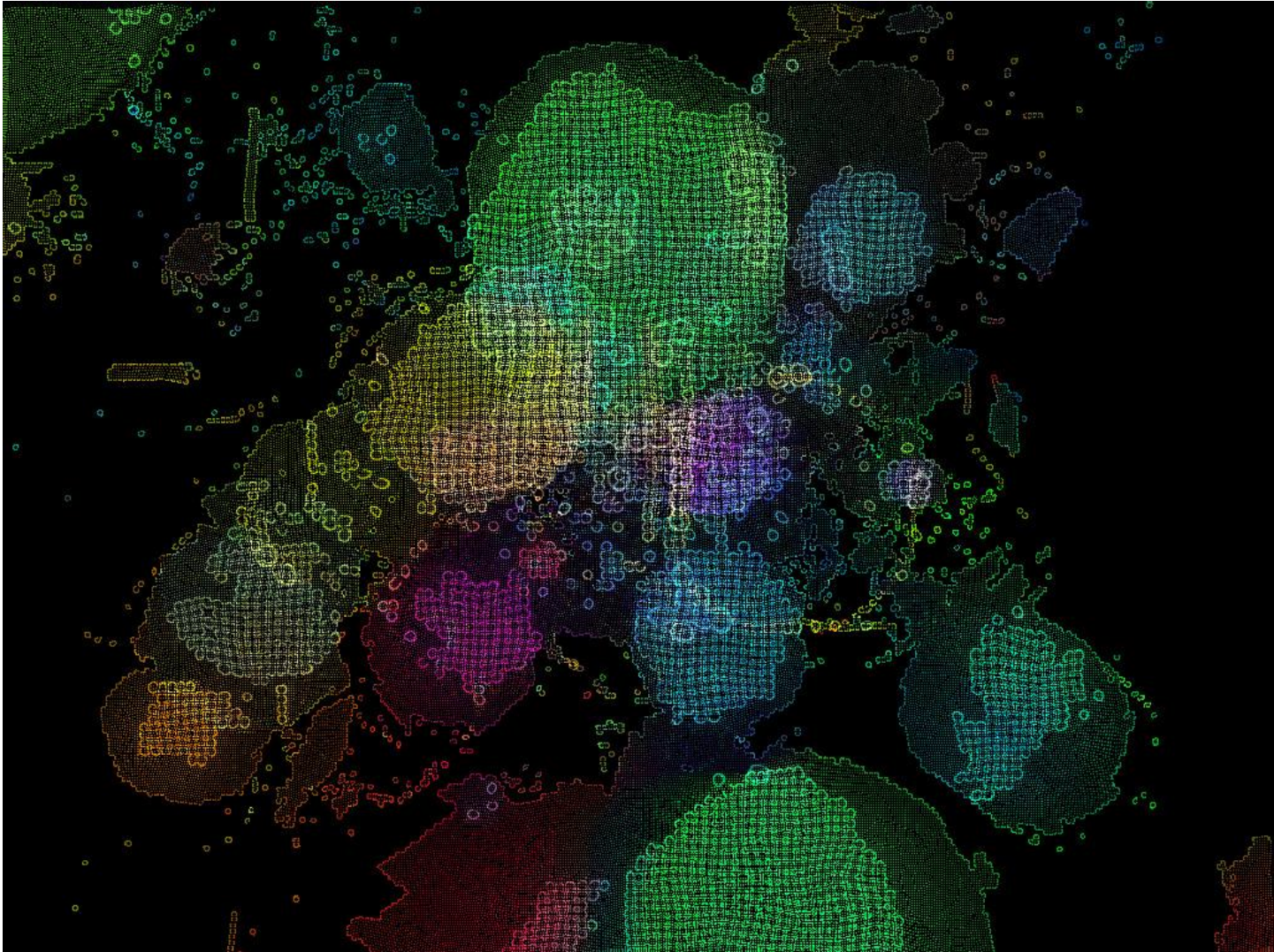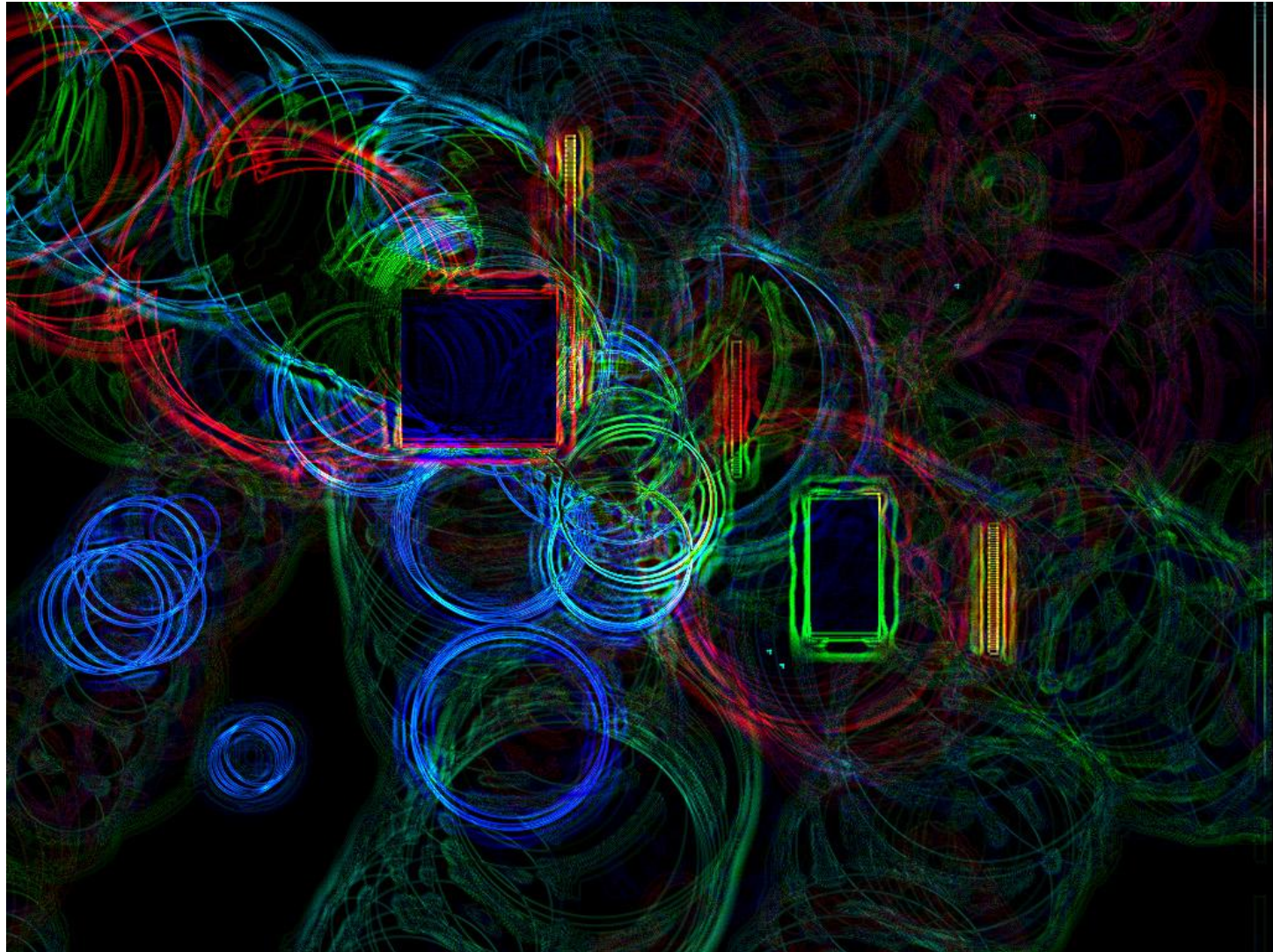# Examples of Visual Output
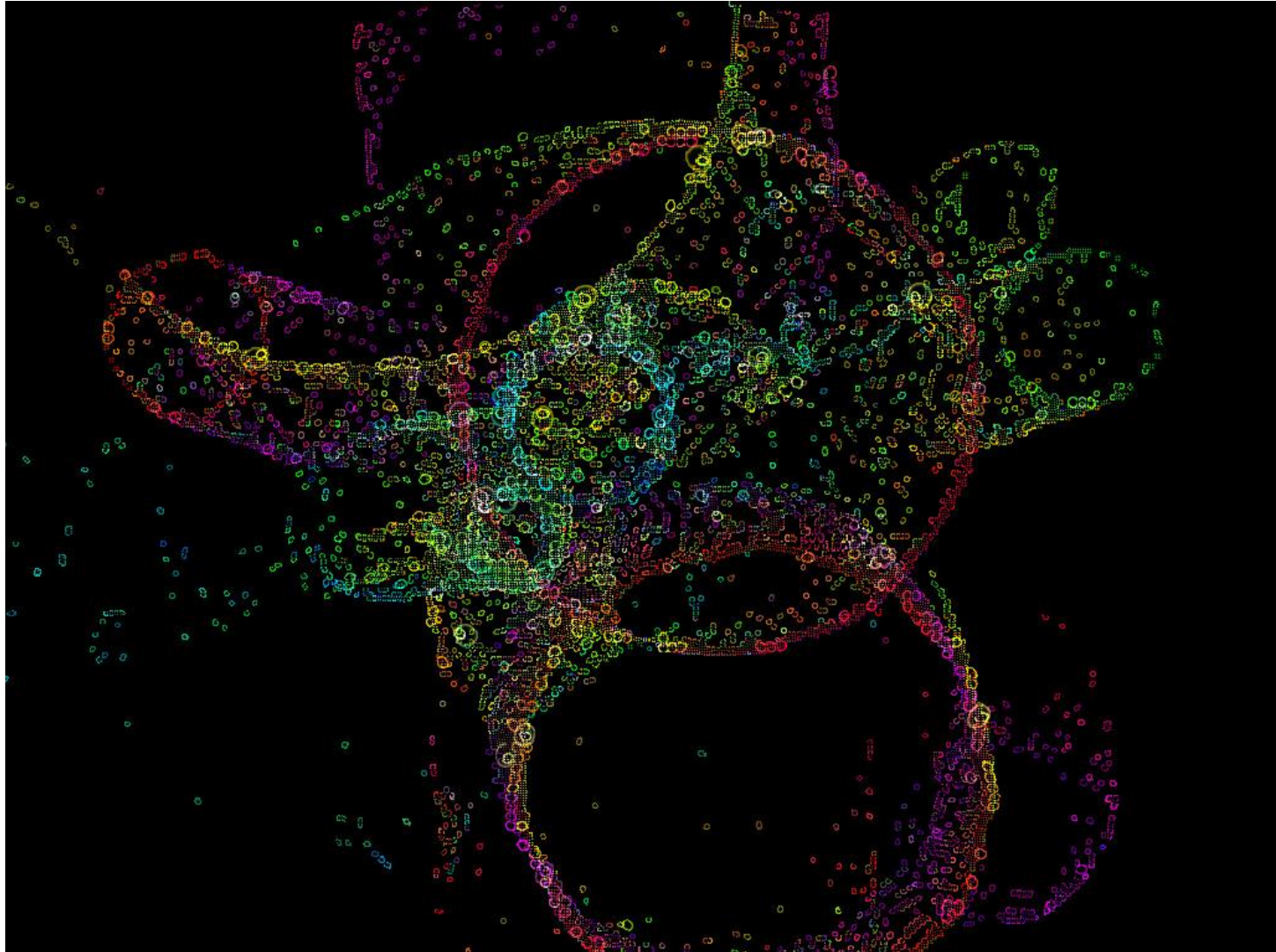
Double Vision

- Collective of dancers, musicians, and media artists
- Free innovation within a particular theme
- First show's theme was DNA
- Installation consisted of Conway's game of Life, audience could add DNA letters as patterns to it, and the generations of cells would trigger music and graphics
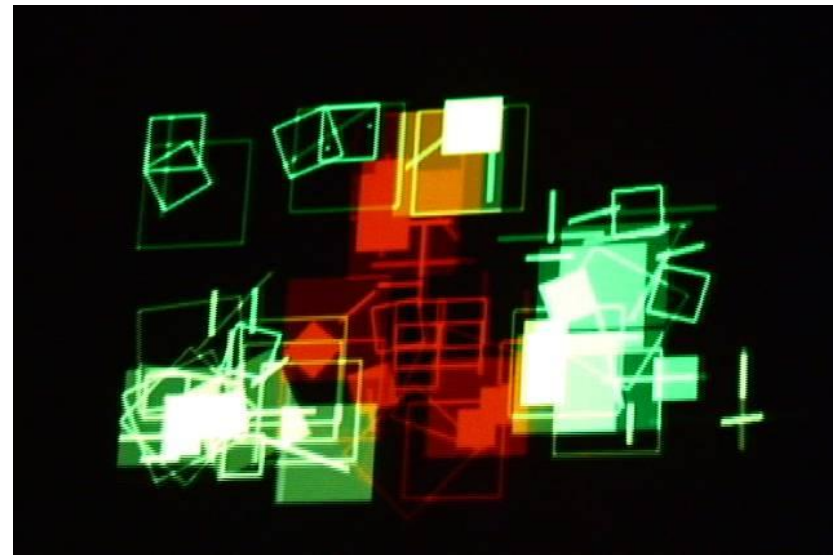
Double Vision – SpectraBall

- Dance pads used to control balls bouncing around in a maze
- Balls hitting the walls would trigger sounds in 4 speakers surrounding you - the sound location would match the direction in which the wall was hit

Double Vision – Cellspace show

- Steering wheel controllers used in two installations:
  - Art of Driving: drive around and "fire" graphics
  - Bouncing off the Walls: drive around a maze, firing balls, resulting in 4-channel music around you

Movie
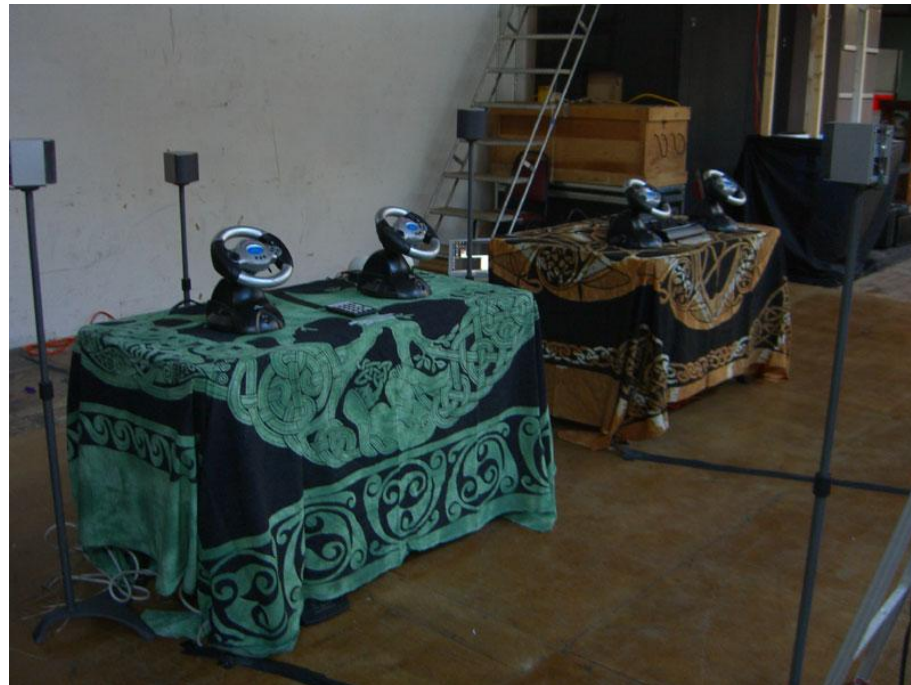
DoubleVision – performing graphics

- Red Ink Studio – performing graphics with dancers and musicians

Finger Fresco 2.0

- First attempt at playing music and generating graphics simultaneously in an actual performance

- Used Fingerworks multitouch pads for playing music (same controller built for performing graphics, previously)

- Music keyboard controlled scales/chords

- Notes of the music triggered graphics
  - Movie

LoopyCam

- Camera-based visual performance instrument

- Performer controls camera position and visual processing with a single integrated device – a security camera screwed onto a $10 game controller

- First version used a USB webcam, but lighting was always an issue.

- Latest version uses a security camera which automatically turns on LEDs in low-light situations.

LoopyCam – how it works

- VVVV hosts FreeFrame plugins for visual effects

- One custom FreeFrame plugin records up to 8 video loops and controls their playback and positions

- KeyKit reads joystick buttons and sends OSC and MIDI messages over to VVVV to control the effects and looping

- Extensive "chording" of the buttons allows a large number of operations to be performed with the game controller's buttons

LoopyCam Evolution

- First version restricted to 4 loops and quadrant positioning

- Was used at a DoubleVision event – showed great promise, especially for use with dancers

- Was installed in "automatic" mode in the window of the ATA Theater for the entire month of December, 2009, capturing and looping passers-by

- Lots of effort spent on making the installation foolproof and able to run reliably, because I was 50 miles away.

LoopyCam Evolution

- FreeFrame plugin enhanced to allow more flexible control and positioning of the loops

- Has been used regularly for the last year
  - Loop Salad solo performance at Luggage Store
  - This Here shows at Temescal Arts Center
  - SHARE San Jose jams at Villa Montalvo
  - With a Butoh dancer at Zeum in SF
  - I, Norton opera at the SF Electronic Music Festival

Galaxy – a Visual Music performance

- New Nothing Theater, part of Visual Music meetup

- Looping music played on a normal keyboard

- Graphics triggered by the notes of the music

- Graphics and music controlled by the "Finger Painting with Planets" controller

- Graphics makes use of Python within a FreeFrame plugin, allowing post-processing of the graphics with other FreeFrame plugins

- Movie 1

- Movie 2

Loop Salad

- Combination of Galaxy and LoopyCam

- Visuals generated by Galaxy were projected, and also fed to LoopyCam (in "automatic" mode) to be processed and projected with a second projector

- Movie

Monolith 2.0

- Burning Man 2009 theme: Evolution
- 2001 Space Odyssey monolith
- One side is a highly evolved musical instrument
    - Two-person looper with over 100 controls
- The other side is a simple visual instrument
    - Chalkboard and chalk
- Built in my back yard over the summer
- Controller panels are usable independently

Monolith 2.0 – the construction
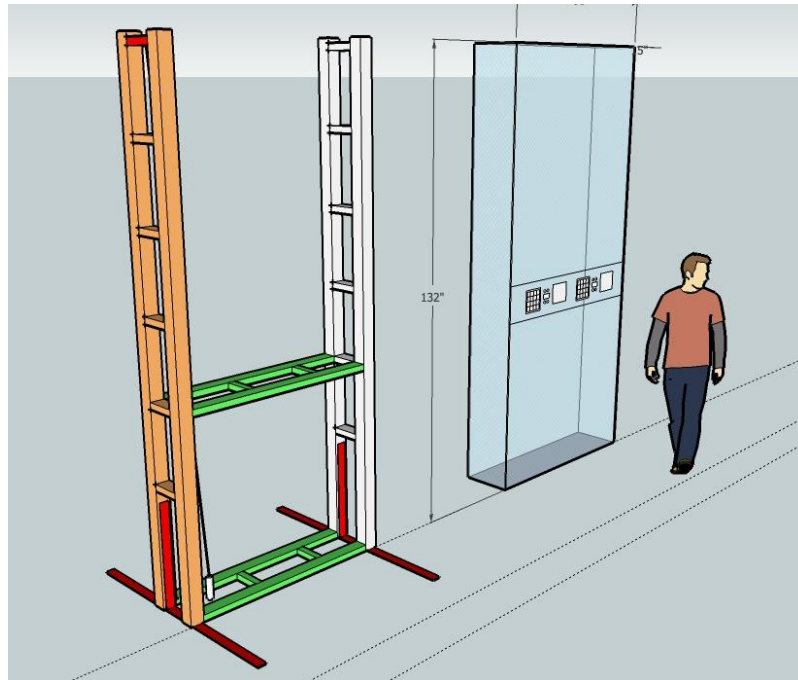
- Built to withstand 80 mph winds

- All battery-powered (swapped daily, recharged with solar panels at camp)

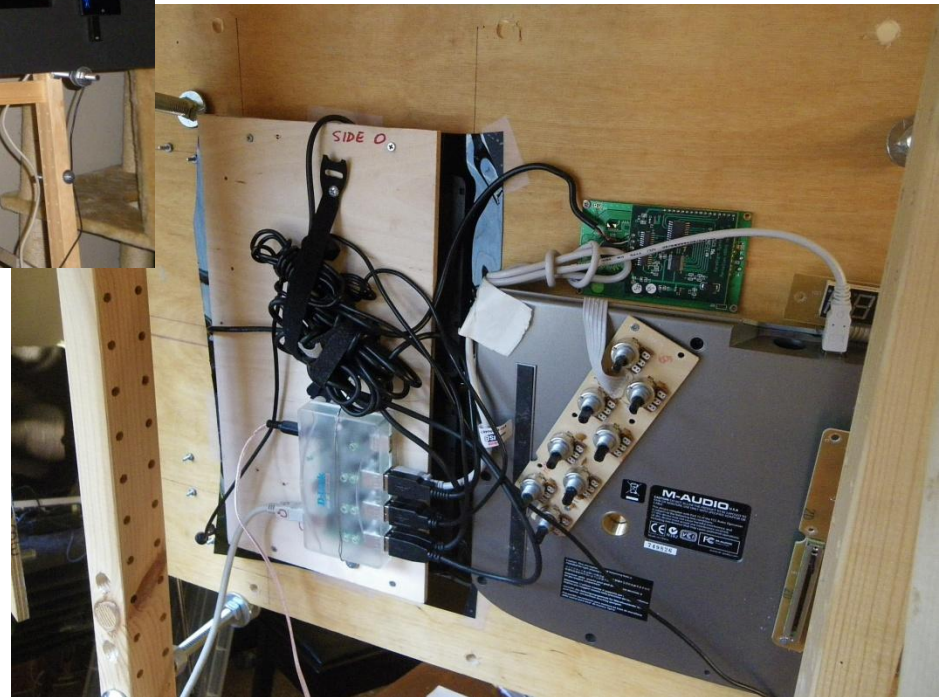- Top had solar-powered fans for ventilation (though not really necessary)

Monolith 2.0 – in my backyard

Monolith 2.0 – the controllers

- Korg Nanokeys used as buttons

- M-Audio Trigger Fingers used for drum pads

Monolith 2.0 – on the playa

Movie

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