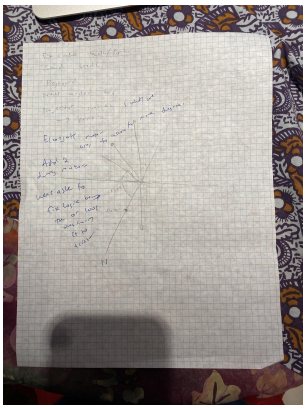
[solar calculation details]

Altazimuth mount vs our design



System changes: 9/1/20
#More rigid, betyter mittor mount with smaller mirrors 2.5"
#the new sceince of strogn materials
#eventuaklly 5 x 5
#finish code
#pick up larger pegboard
#"https://www.google.com/search?client=safari&rls=en&q=diy+heliostat+apparatus&ie=UTF-8&oe=UTF-8"

all of the other desings besides fro the one I used, ut a type of strain or stretch/spring on the system which is bad since it wilkl make it asymettric
ended up using a 2 jointed system mixed with the slider system

#wednesday 5 x 5 mirror setup
5x5, finish code
add writing on top of the adjustment thing
#2 axis movement - put in place of the vetical thoing that I have now
#better mirror mount, easier to get at teh grub screws - 45 degrees,
#the new sceince of strogn materials
#make the top parts bigger and mount to 2.5" mirrors
#eventuaklly 5 x 5
#finish code
#use all the same dowels
#cut mirrors smaller 2.5"

#thursday - 2 axis mirrors setuo with 2x2 and new more rigid parts
#monday - with code 2 axis
#wednesday 5 x 5 mirror setup

what I learned from coding

https://luni64.github.io/TeensyStep/applications2/010_winder/winder#phil-tickers-string-winder

NOAA_Solar_Calculations_day.xls

Open Source Sun Tracking and Heliostat Projects

Pegboard for bottom board, spacing on that, redesign so that the bottom piece can mount to a flat surface (ball bearing doesn't stick out bottom). Also then don't have to use cnc

TRIED 3 designs, 1 min 30 sec printing to just 30 min

How to mount into pegboard — rivet like design? Pressure fit?

Simpler fine adjuster for the top part. Can I find a better design that can fine adjust for the x and y ax's

Bending mirrors? So as to get the focal size smaller than the mirror - worry about later. Or use more mirrors smaller?

Integrate fine adjustment top part into top rotater part for simplicity. Maybe can not have to make custom version of this part for each angle, maybe can adjust angle with screw?

Use standard 1/4" dowels for all dowels

This will allow the plastic parts to be much smaller

How tall does the mechanism have to be? Depends on motor resultuioon. How much does it have to turn?

3d print motor mount

Use a belt mounted to the motor like a 3d printer
Motor is in the middle of the thing, and it uses the under loop to keep tension like in the MPCNC
Then it uses a belt
Hot to get it top move on two axes — see patent. Very complex.
Have to keep in mind the large scale design goal for Ye tao, and also the DIY aspect for me and Chris
Customize angles see drawing written patent
Motor mount
Motor pulley
Redesign top part to print with PETG
Redesign top parts to have a mount for the belt
Add in angled parts
Add a motor pulley mount
Make the motor mount to the pegboard
Use 2.75 " mirrors
Mirrors rotating
Not just going x and y
See emails to ye and chris, see texts with Chris, see bin with the project supplies https://www.builditsolar.com/Projects/Concentrating/concentrating.htm https://drive.google.com/drive/folders/0B_swEoD4gUJ8OTgxOWdvSGhVX1U http://cerebralmeltdown.com/Sun_Tracking_and_Heliostats/# https://github.com/Silas-Asamoah/heliostat-solar-tracking/tree/master/AnglesSimulation/data https://www.esrl.noaa.gov/gmd/grad/solcalc/

Ye Meeting – October 6? 2020

Contour plot of areal reflectiveness

what is optimal shape of mirror array/arrangement?

My design can work with mirrors arranged in any way?

If mirrors are arranged in too steep angles, they become less efficient, effective area as viewed from sun

effective area of mirror array

where to place reactor – reactor shadow. poor design, focuses

plot total solar intercept area as function position of reflector and etc.

Can improve a design

Next summer – devote time – summer funding

more technical details about – send to Ye

– plastic, pricing model
– price / ...
distribute NOx over atmosphere

Solar chimney,

Moving receivers

See screenshots on desktop of image

Current reciever has limited angle adjustment ability for the reciever window. However, I have the parts to extend the chamber out to enable larger ranges of motion. So you can assume in your optimal field shape calculation that the recieve can point straight down normal to the ground.

Cheers, Ye.