EE 491 WEEKLY REPORT 6

Date: 02/29/2016

Group number: DEC1616

Project title: Surveillance of dairy animals using a smartphone-based system

Advisor: Meng Lu

Team member:
Xin Tong
Di Zhao
Tianqi Luo
Le Wei

Weekly Summary

In this week, we do a lot further adjustments for the optical design. We added two pieces of

lens after the mirror. This allows more light gathering. After we getting the data from optical

design. Everyone begin to focus on each own part.

(The database of the optical design)

In order to make the experiment to achieve practical results. We cannot use the ideal mirrors.

Thus we find a concave spherical glass mirror form amazon. It is a 50mm diameter, 15cm

focal length mirror.

American Educational Concave Spherical Glass Mirror, 50mm Diameter, 15cm Focal
Length (Pack of 5)
Sold by: Amazon.com LLC

We use this mirror instead the normal glass mirror which we used in last week. Because the concave

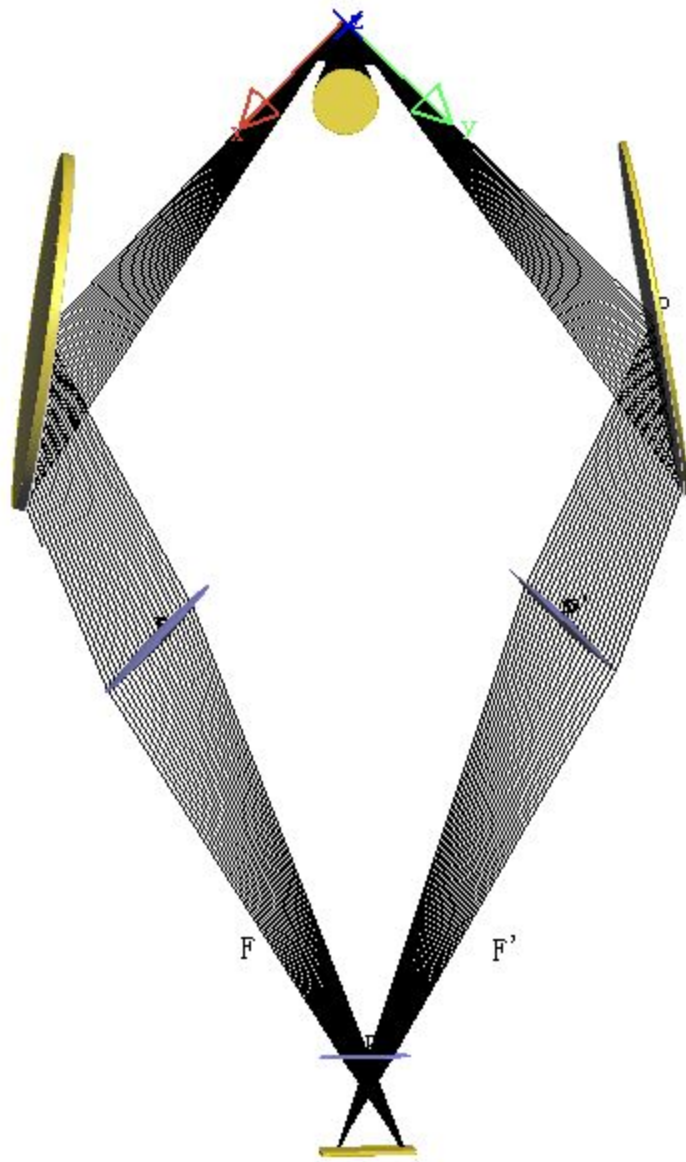mirror can make more lights getting together.

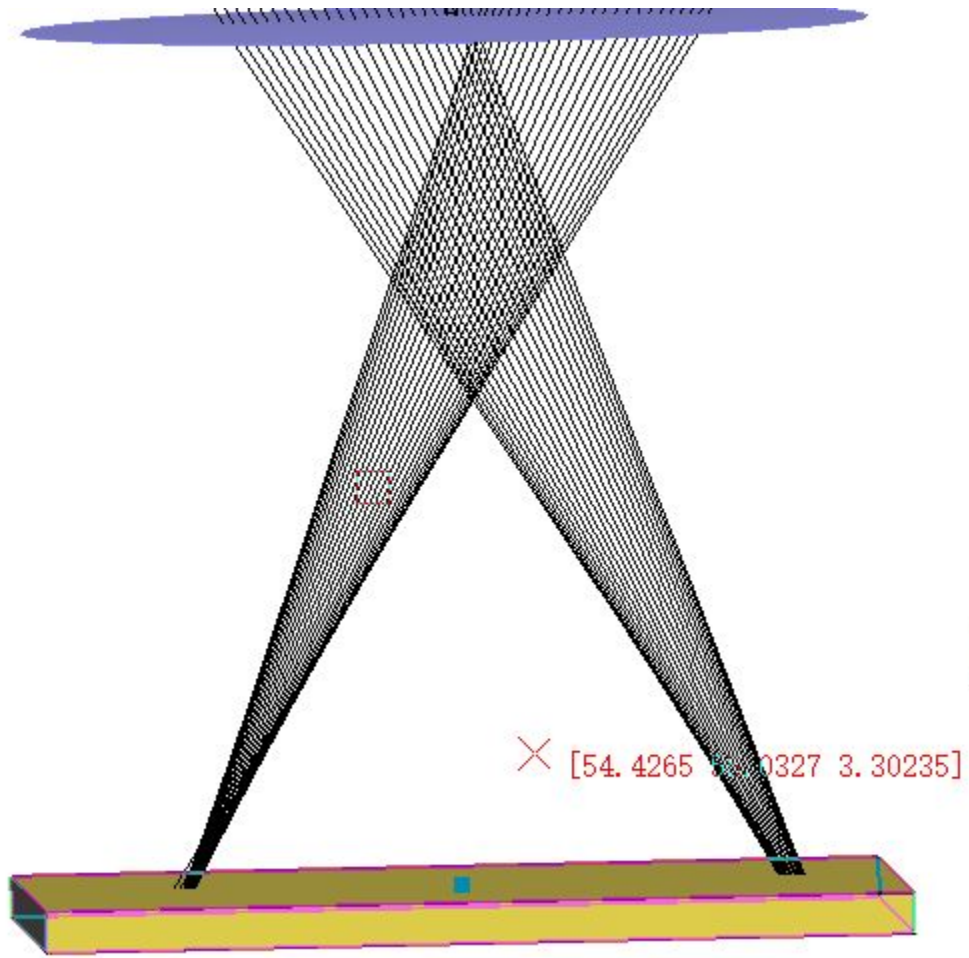**50mm diameter, 15cm focal length concave mirror.**

Thickness: 0.1 mm

Angle: 9 degrees with the central axis

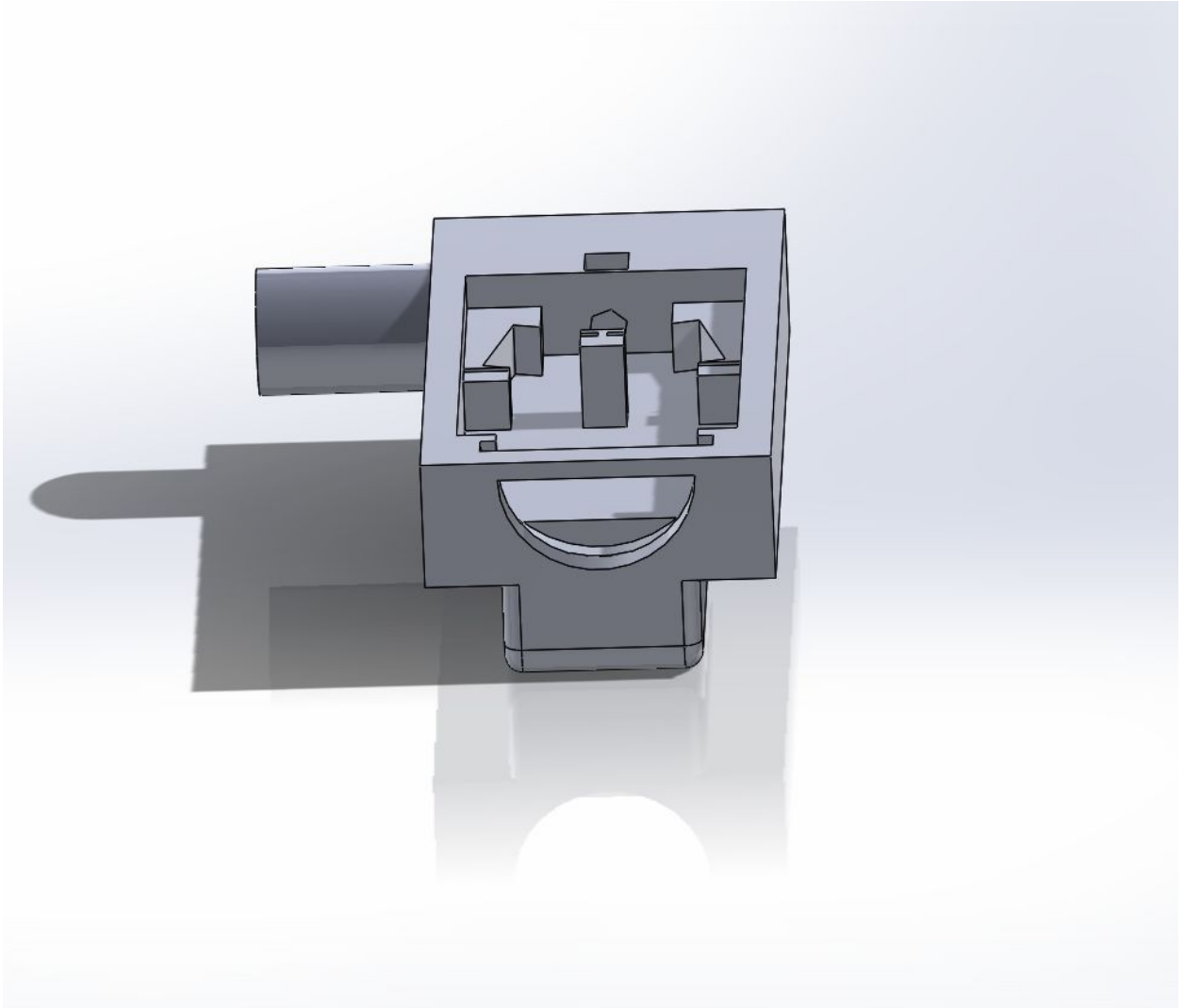**Mirrors center from their respective shaft (green and red axis) of 30 mm.**

Straight line from the center of the mirror as 72.114 mm

F   F'

$\times$ [54.4265 [?]0327 3.30235]

Past week accomplishments

A. Di Zhao: design a perfect solidwork model for our optical design.

B. Xin Tong: 1. Successfully enrolled as an Apple developer.

2. Codes are able to run on his own device.

C. Le Wei: continue the optical design.

D. TianQi Luo: 1. Find the and explain the optical setup for FP assay.

2. Try to replace the photodetecter with CCD.

Individual contributions

NAME	Individual	Hours this	HOURS

	Contributions	week	cumulative
A	Xin Tong	7	35
B	Di Zhao	9	39
C	Le Wei	9	42
D	Tianqi Luo	8	38

Comments for this week

This week everyone focus on each own part. LeWei update the data of the optical design. And then Dizhao use the data build a solidwork model. We hope the mirror can match the 3D model. Tianqi try to find the CCD to replace the photodetector, it will make the light or image more clear. XinTong Successfully enrolled as an Apple developer, he can write the App program on his own computer now. We believe that after two more weeks we read some data through the app on our Iphone. The compare with Tianqi's data, we can analysis the sample.

Planning for next week:

A. Xin Tong: starting develop the X-code program.

B. Tianqi Luo: collect data of the assay.

C. Le Wei: add more components to the optical design.

D. Di Zhao: work with Le, use the data to adjust the 3D structures.

Summary of weekly advisor meeting:

The professor Lu Meng gave us some tasks this week. He want us to make the project more precisely. He want us not only to know how to use the software, but also to try to know how the software worked and the principles of these software. We think this can help us to learn more knowledge.