Project 1: Tangibles with Digital

MAS.834

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Inspiration

The magnifying glass is a device which we have historically used to reveal information not easily visible to the naked eye. Users move the magnifying glass closer and further away to reveal different levels of detail for the item being examined.

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Concept

A physical magnifying glass with "focused" digital augmentation allowing users to interactively learn more about the world around them. This "tangible magnifying glass" shows users details about the item as they peer through the lens.

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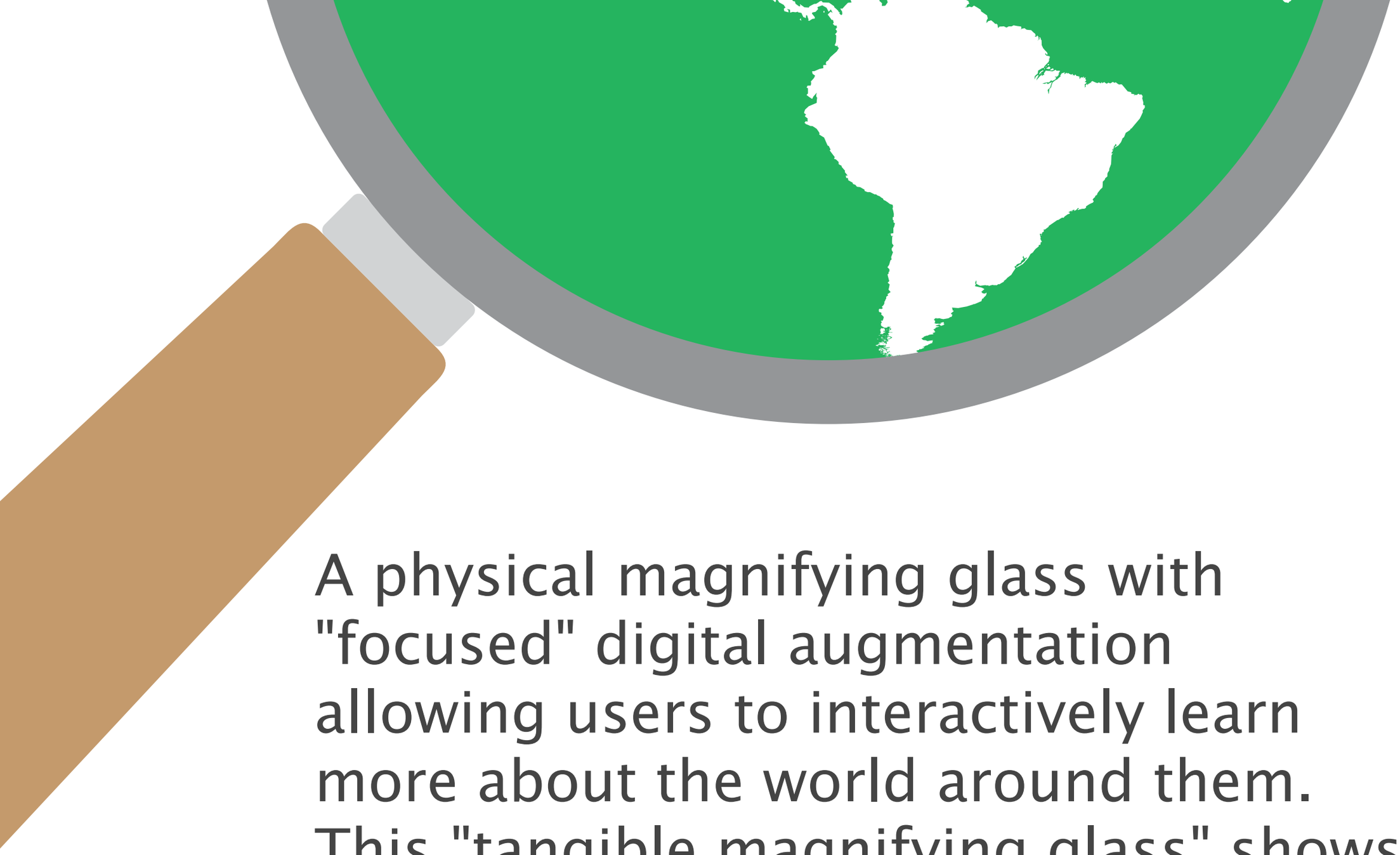

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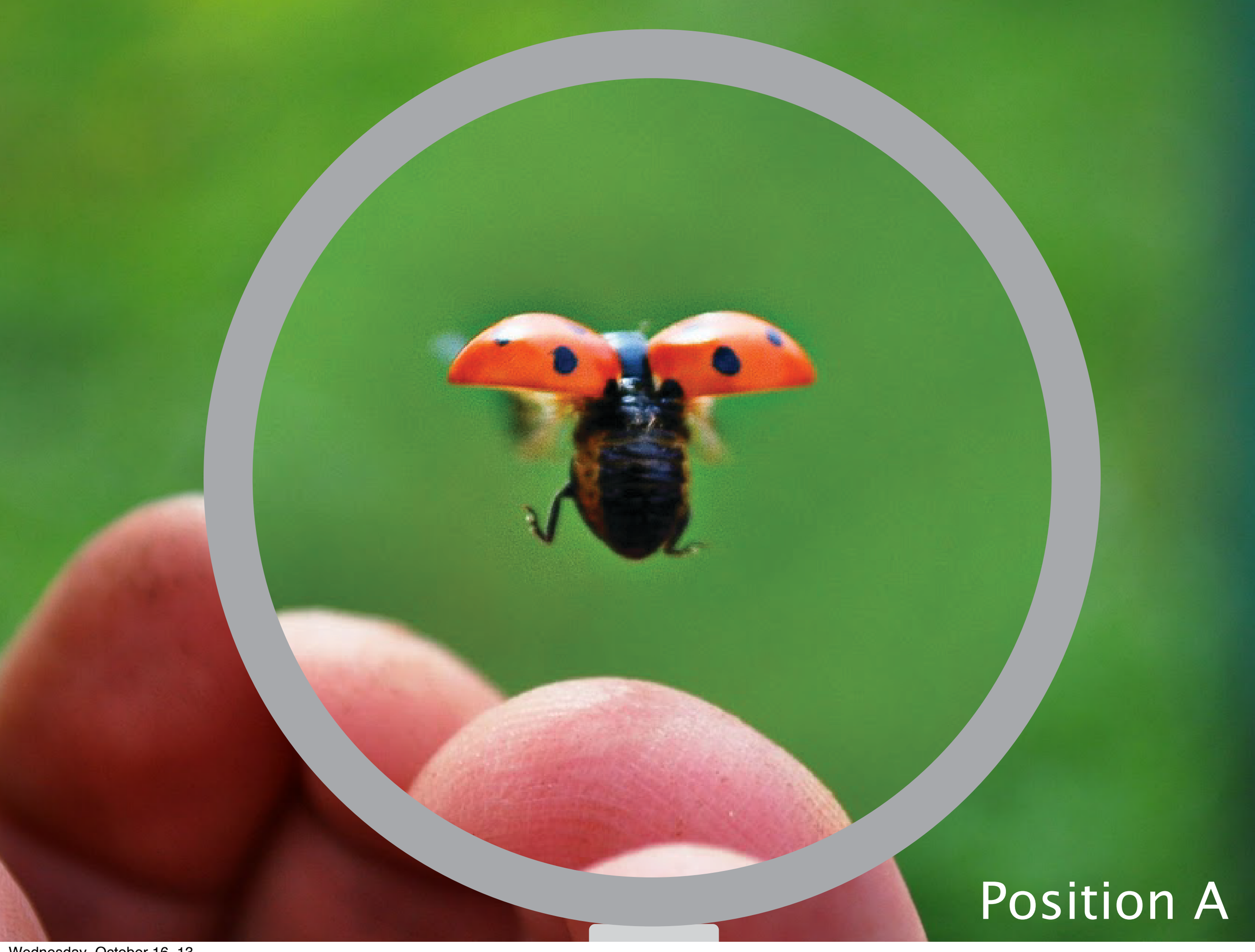
Position A


Coccinellidae
The Coccinellidae are a family of small beetles, ranging from 1 to 10 mm.
Wikipedia.org
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Coccinellidae

The Coccinellidae are a family of small beetles, ranging from 1 to 10 mm. They are commonly yellow, orange, or scarlet with small black spots on their wing covers, with black legs, heads and antennae.

Wikipedia.org

Position A


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Passion fruit

Passiflora edulis is a vine species of passion flower.

Wikipedia.org

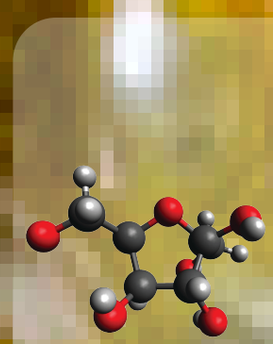
Position A

Passion fruit

Passiflora edulis is a vine species of passion flower that is native to Brazil, Paraguay, Uruguay and northern Argentina. Its common names include passion fruit, passionfruit, and purple granadilla.

Wikipedia.org

Position A

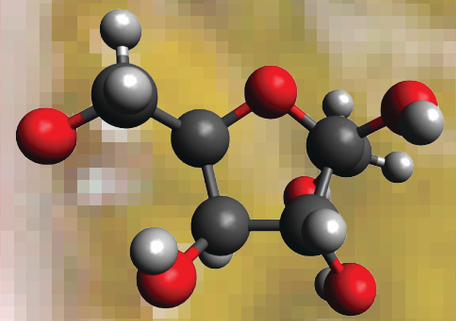


Fructose

Fruit sugar, is a simple monosac-charide found in many plants

Wikipedia.org

Position B



Fructose

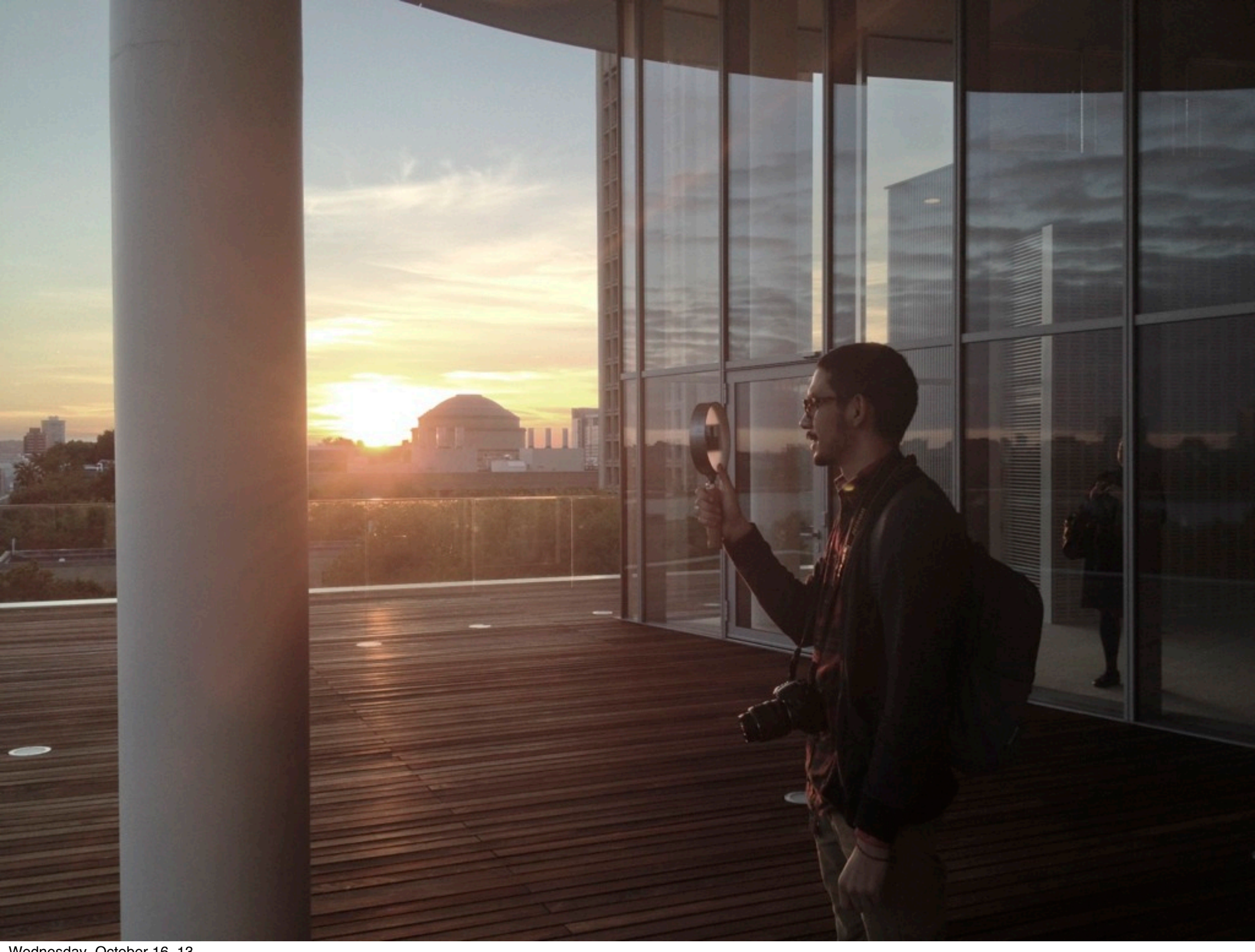
Fructose, of fruit sugar, is a simple monosaccharide found in many plants, where it is often bonded to glucose to form the disaccharide sucrose.

Wikipedia.org

Position B

Tangible Interface

The metaphor of a magnifying glass revealing detail or knowledge is utilized while incorporating the concept of handles and digital shadows: The action of moving our device closer or further away changes the level of detail presented to the user.



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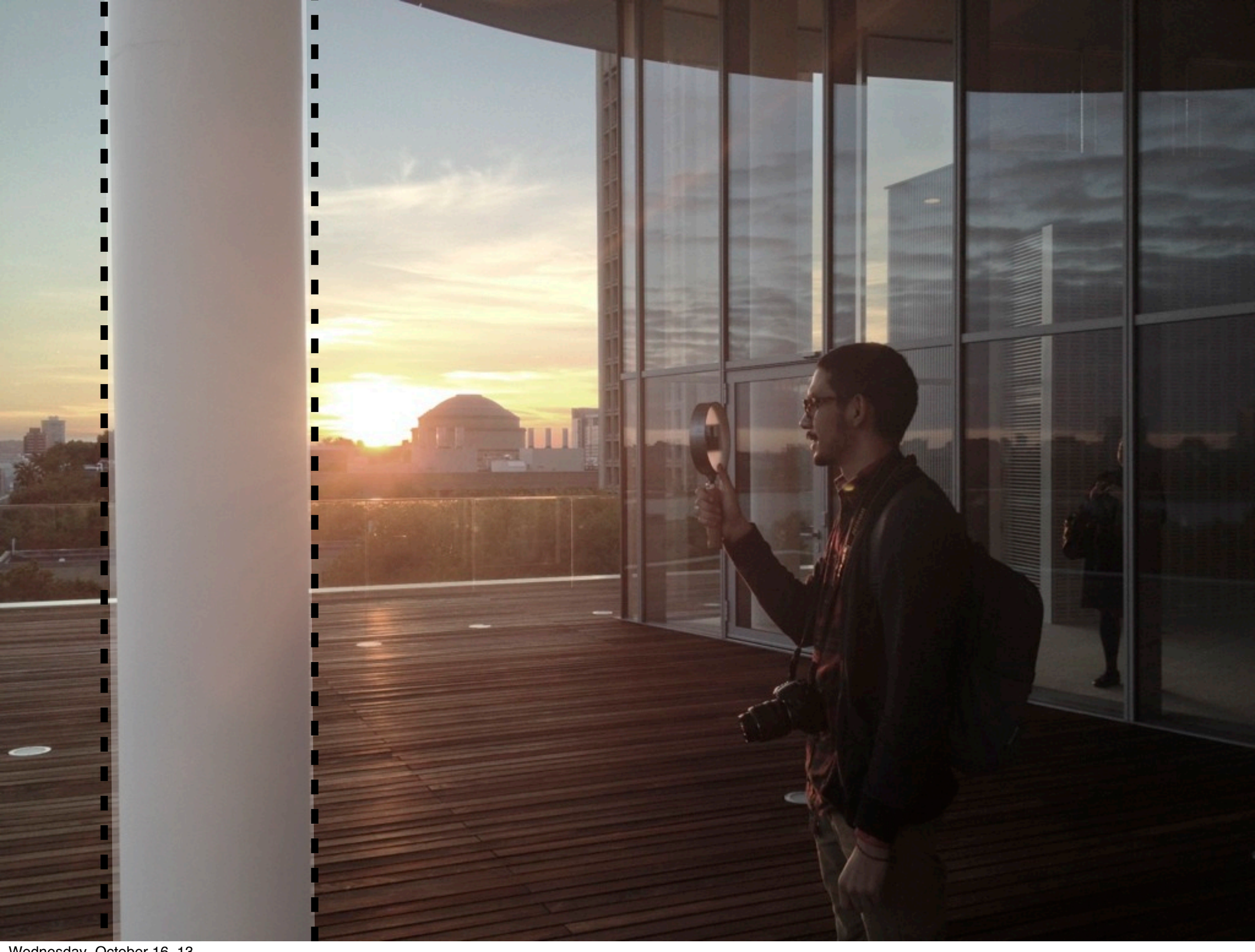
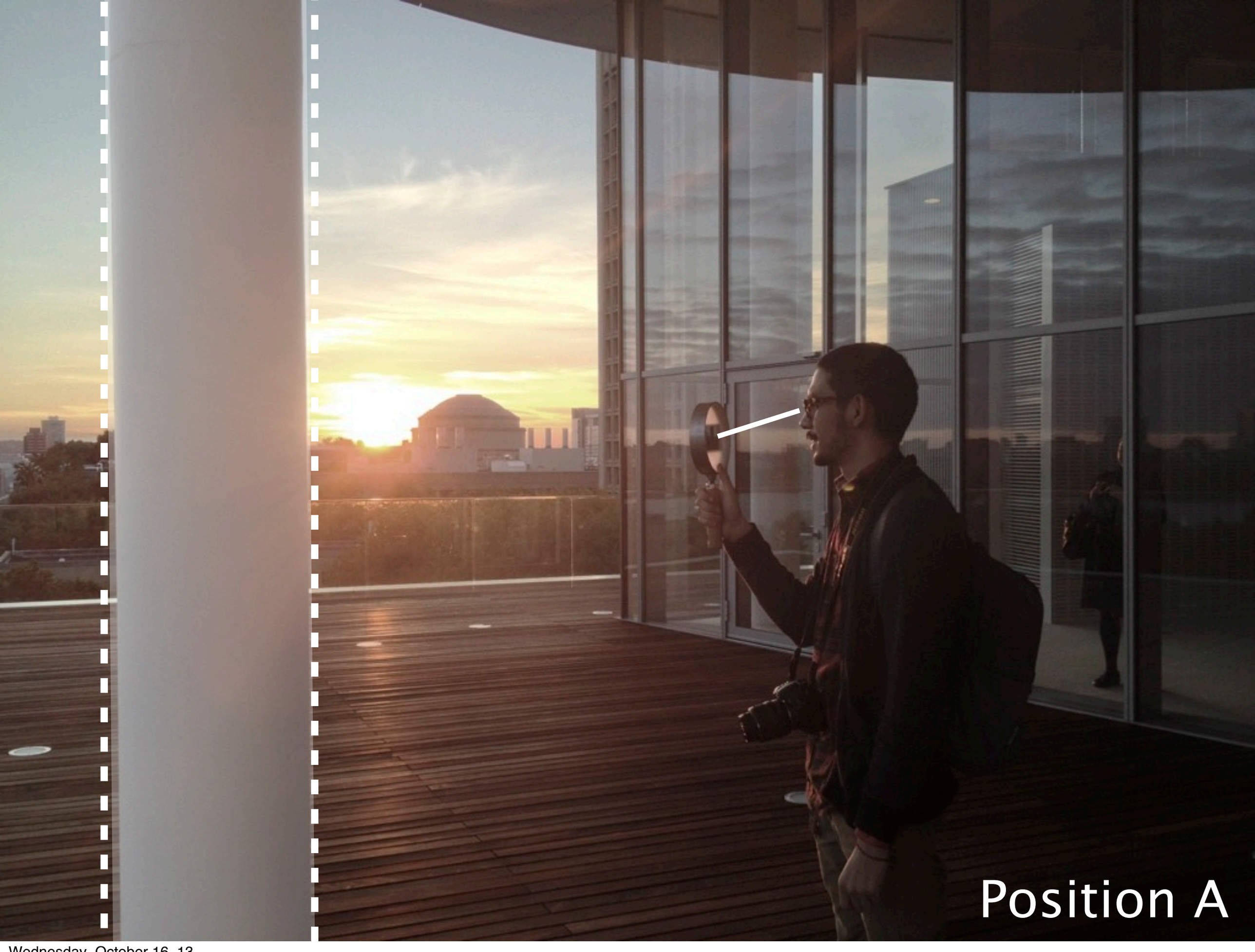
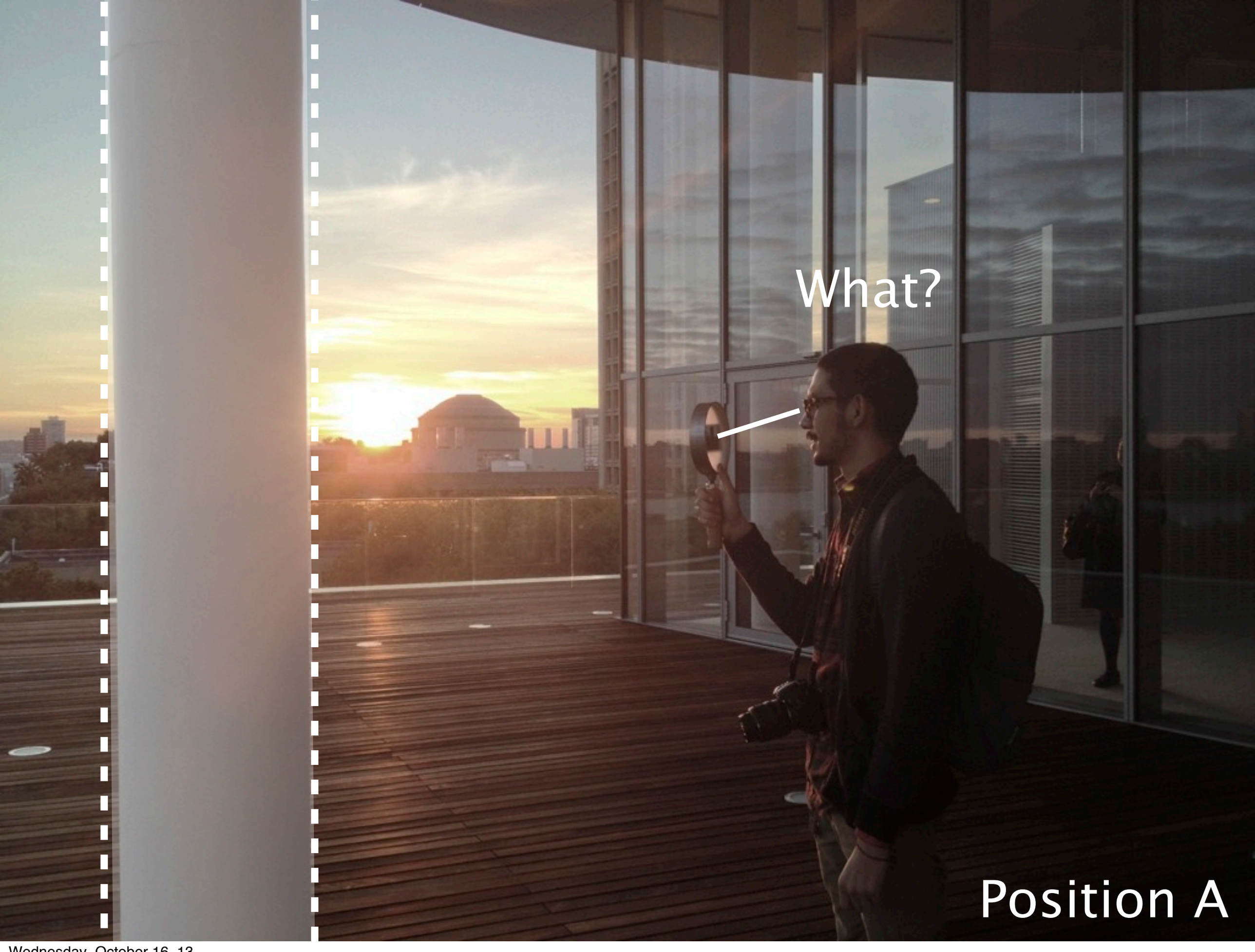
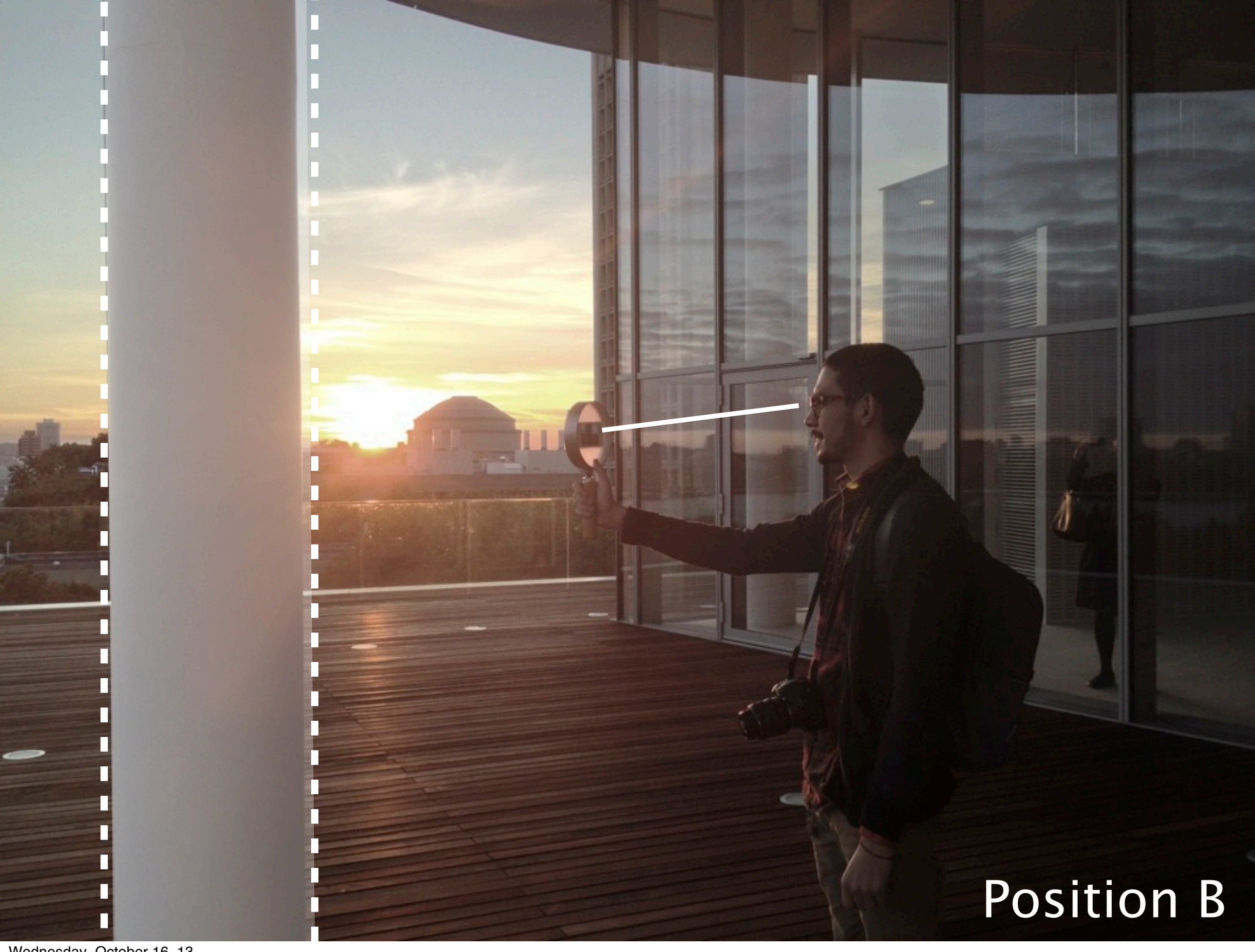
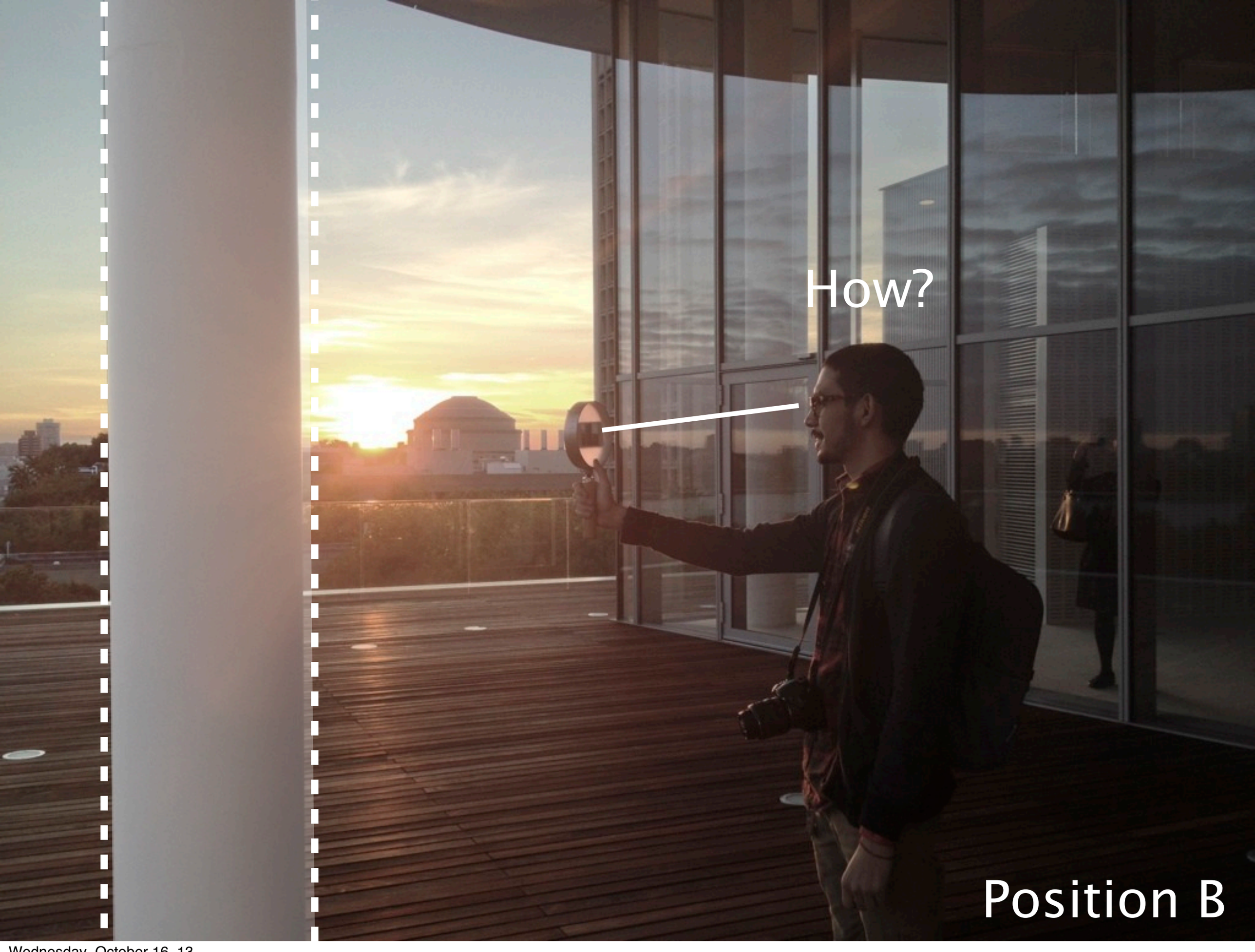


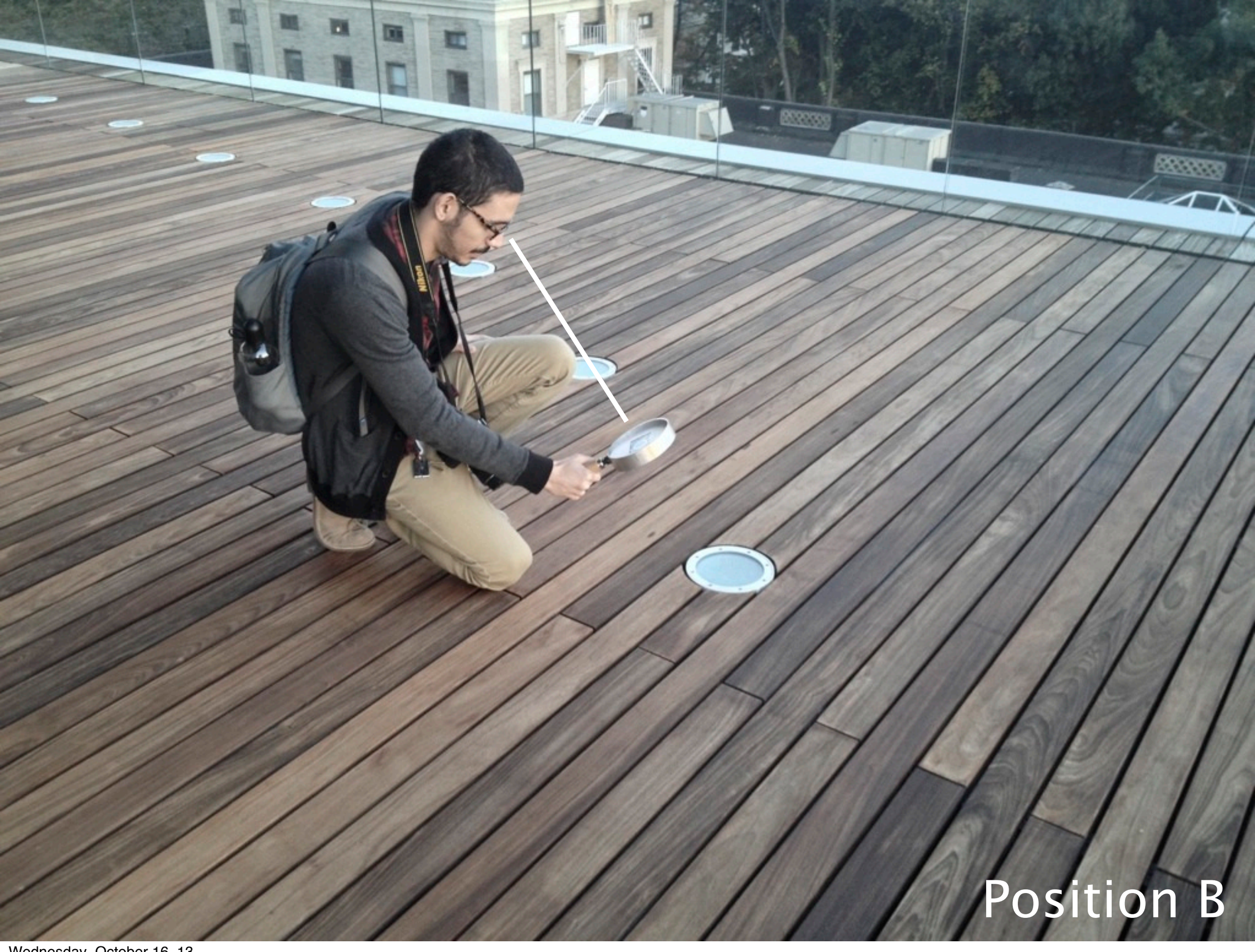

Position A


What?
Position A


Position B


How?
Position B

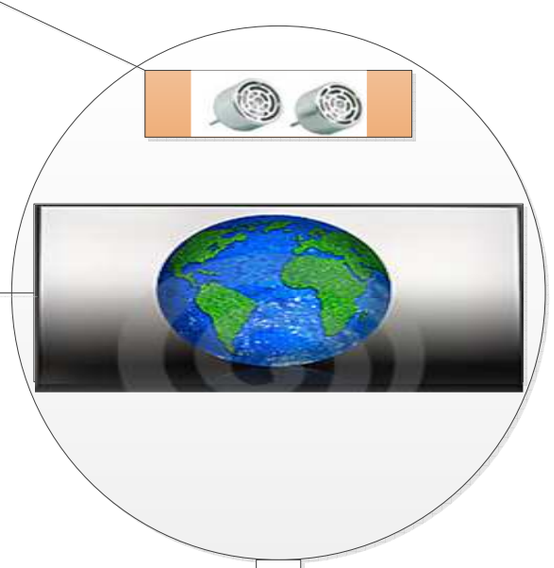

Nikon
Position A


Position B

Overview of Implementation

Distance Esimation: Ultrasonic Transducer,
40 kHz TX + RX ; 0 – 200 in range

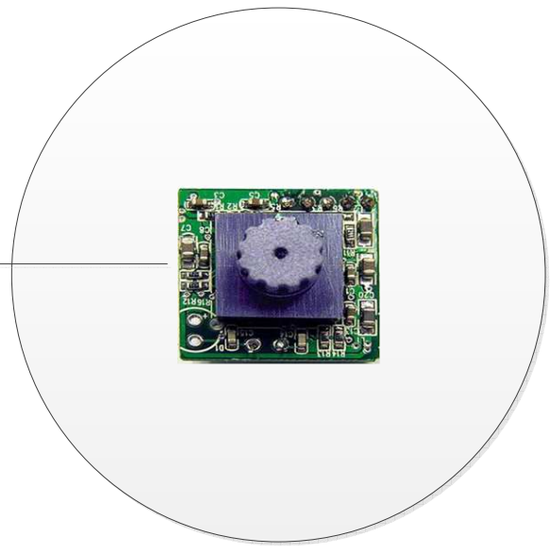
Display:
LCD or OLED



User-view

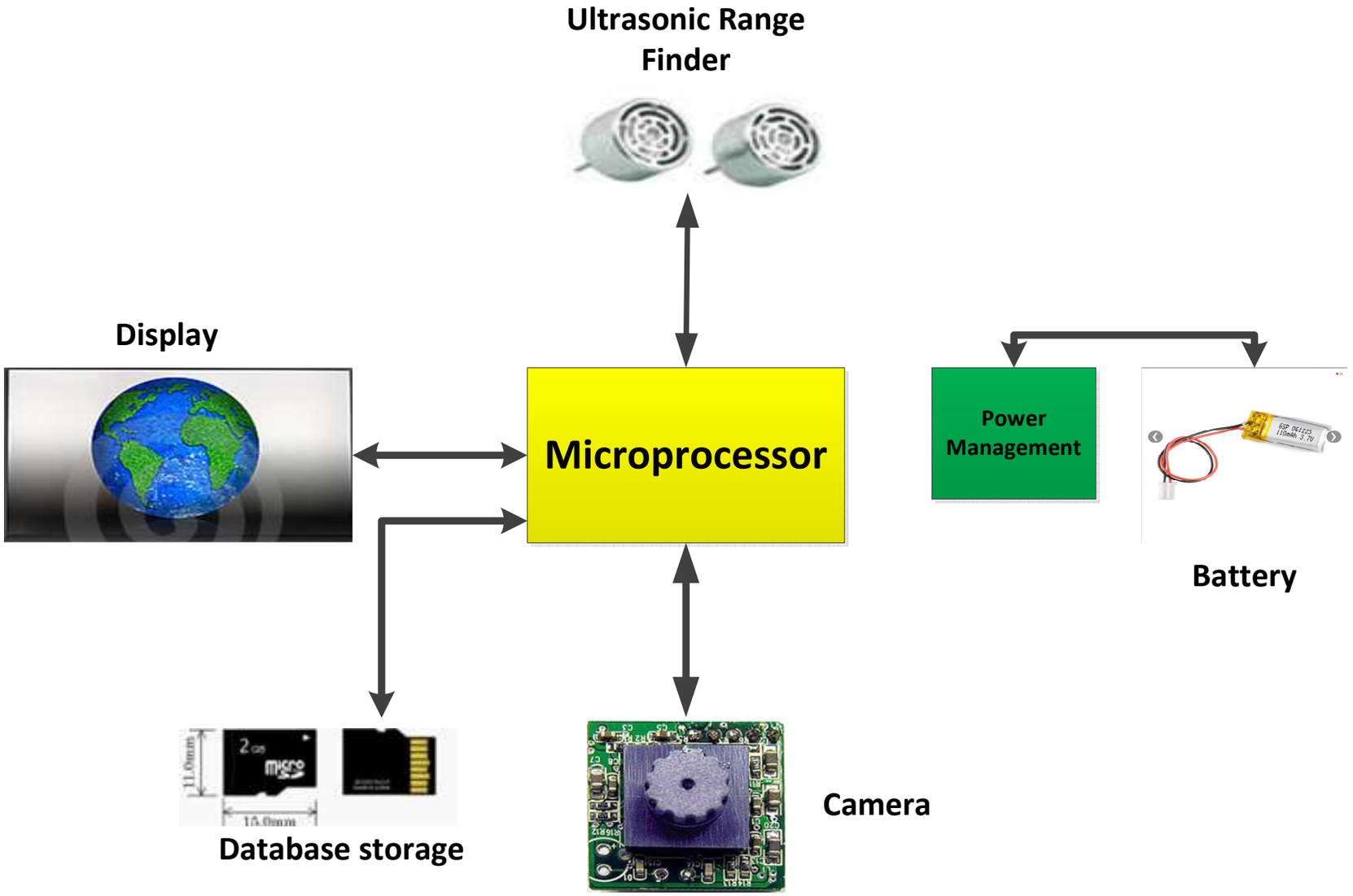
Power source:
Lithium-ion battery [in handle]

Subject Imaging:
Camera module

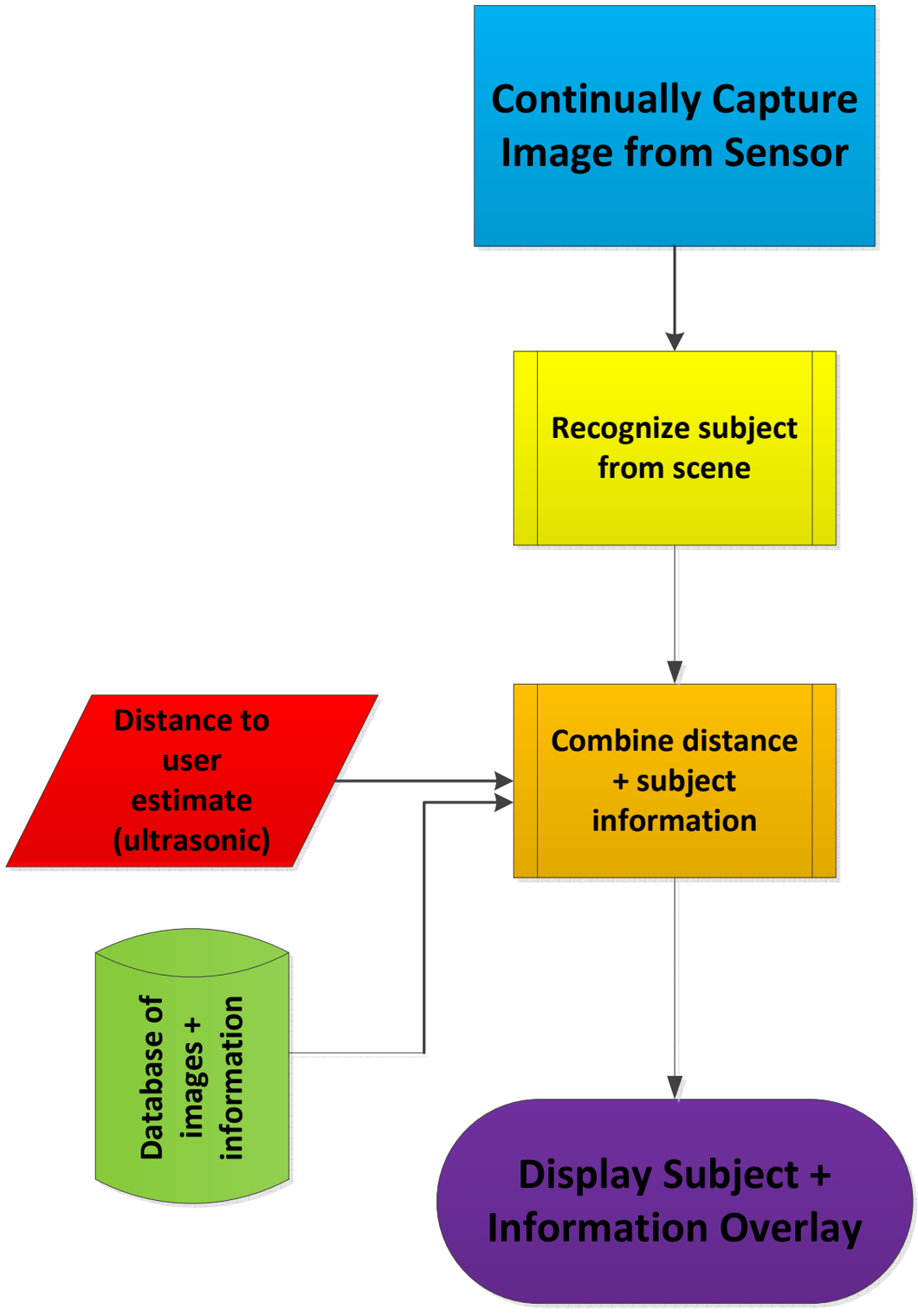


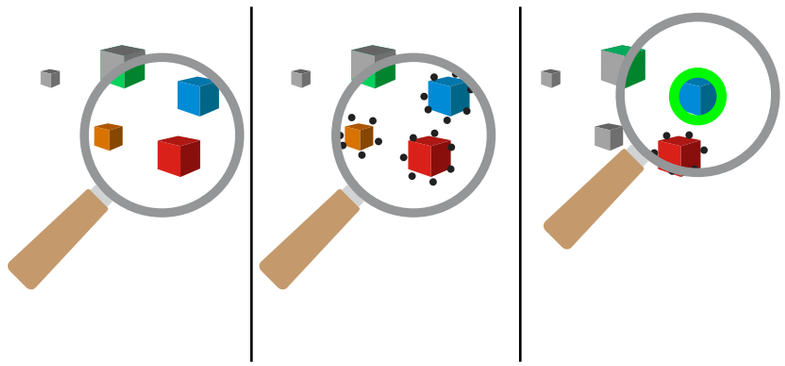
Rear-view

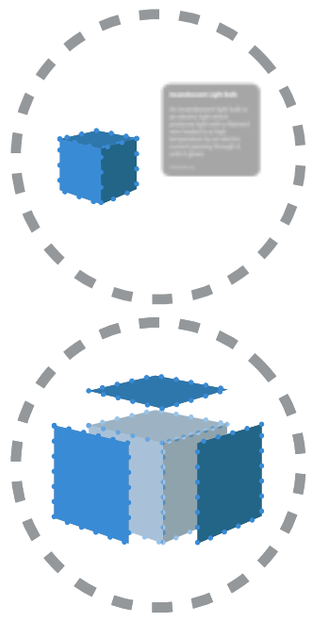
Block Diagram of HW Implementation

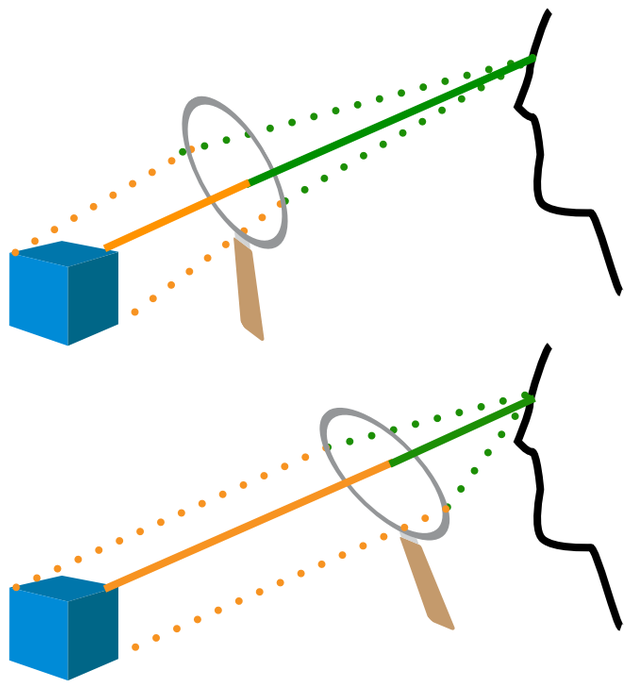


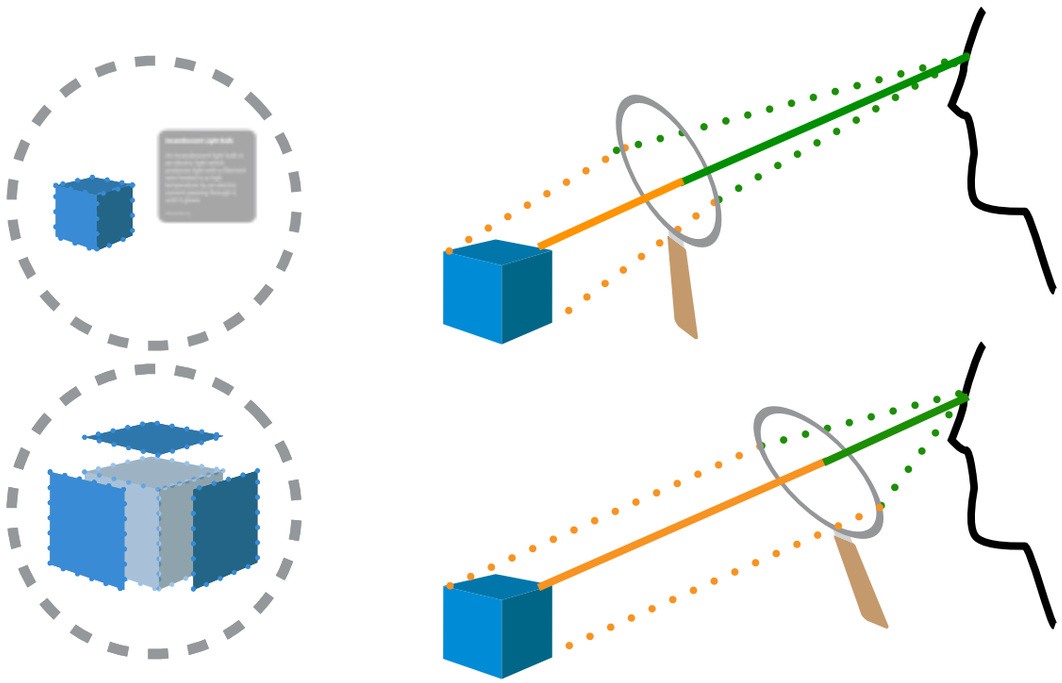
Flowchart of Data Processing











Goals & Objectives

Instill a spirit of exploration which combines the power of digitally archived knowledge with the joy of physical learning.

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Thank
you