

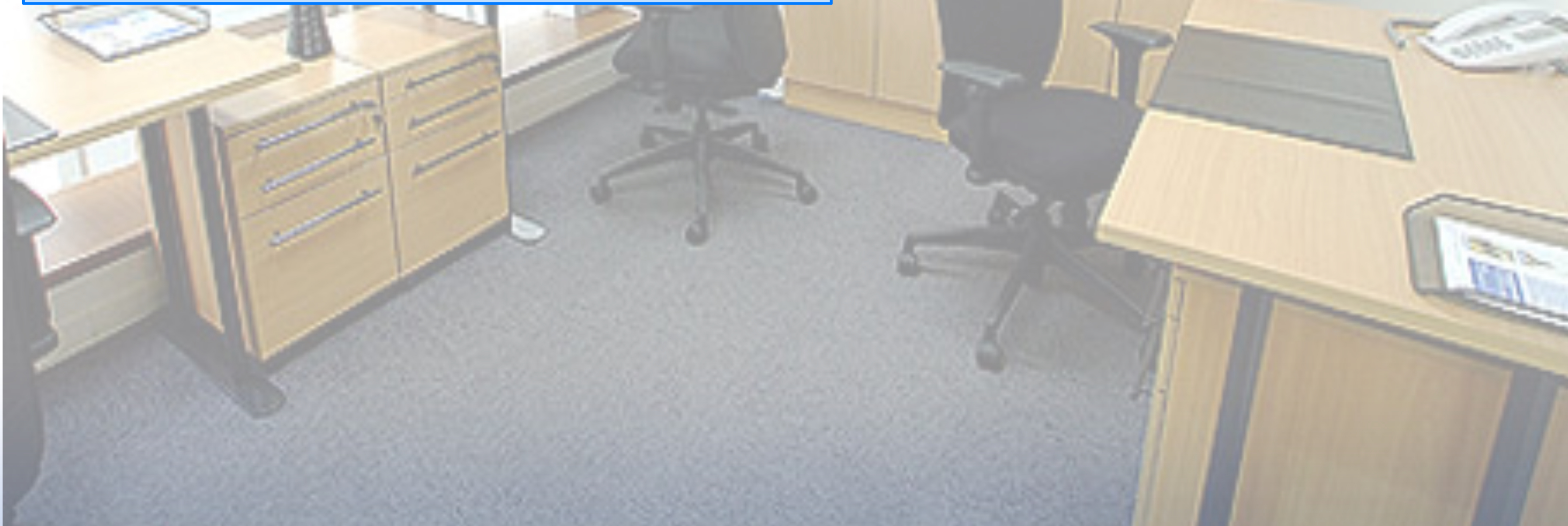
Announcements

- MP1 is out today.
- Don't have a lab access yet? Check piazza.
- Read chapter 1 of Mather book.
- Contact students from the previous semester to get the book.

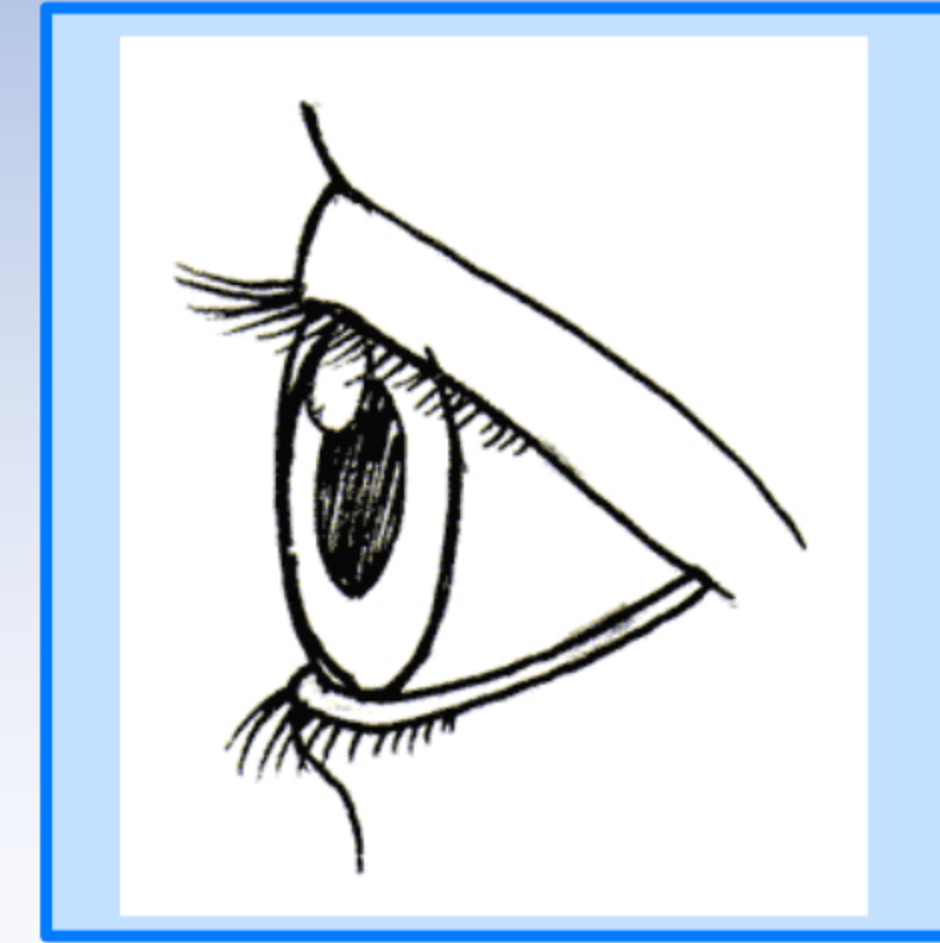
<https://www.ifixit.com/Teardown/Oculus+Rift+Development+Kit+2+Teardown/27613>



VR System: Hardware, Software and Perceptual Psychology



Rendering Hardware: Vision Displays



Rendering

Artificial stimulus

Rendering Hardware: Audio Displays



Rendering _____

Artificial stimulus _____

Birds-Eye View: Hardware

Rendering hardware (displays):

- Visual:
- Audio:
- Touch:
- Smell? Taste? Vestibular?

Lens:

Tracking hardware:

-
-
-

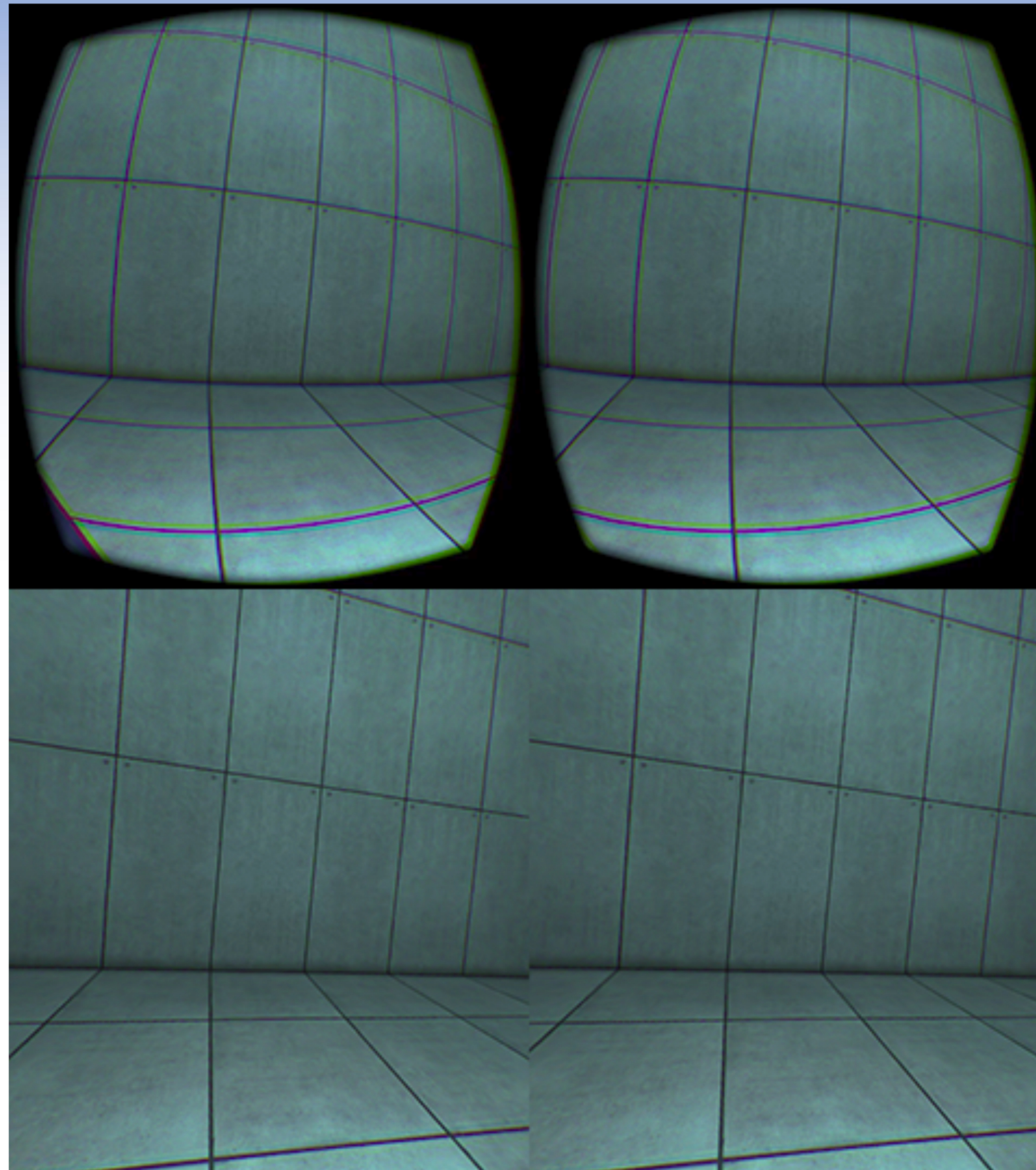
Controllers:

Computer:

- CPU
- GPU



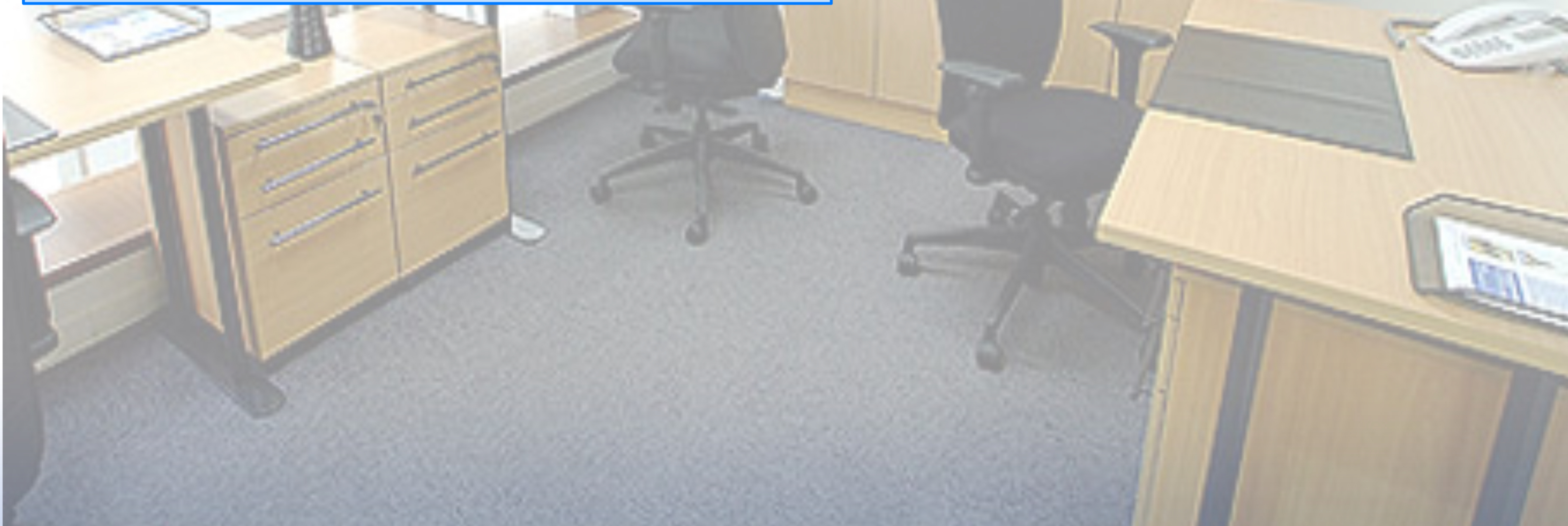
Hardware: Lens



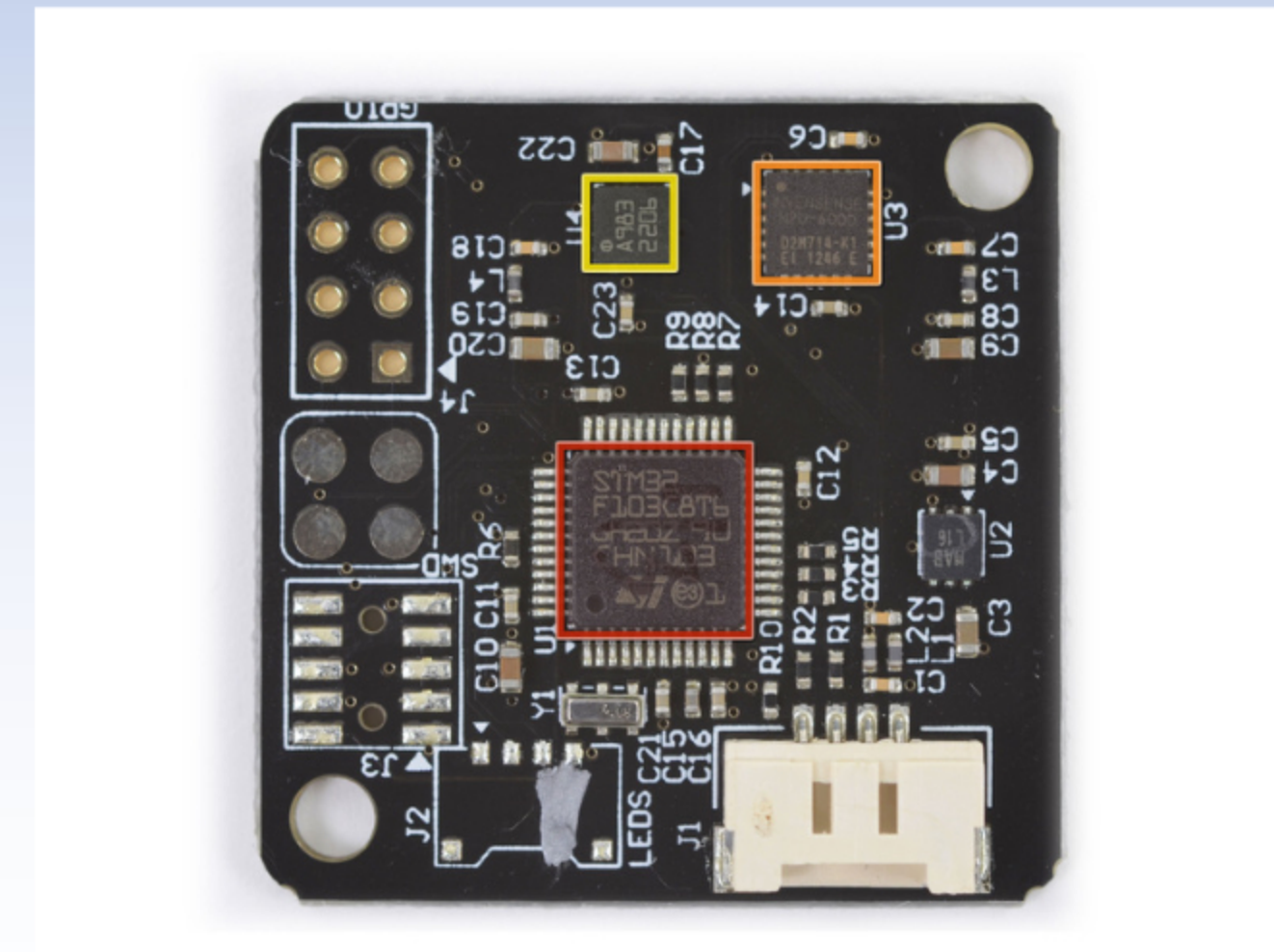
FOV: _____

Distortion: _____

Birds-Eye View: Tracking Hardware



Tracking Hardware: IMUs



Used for _____

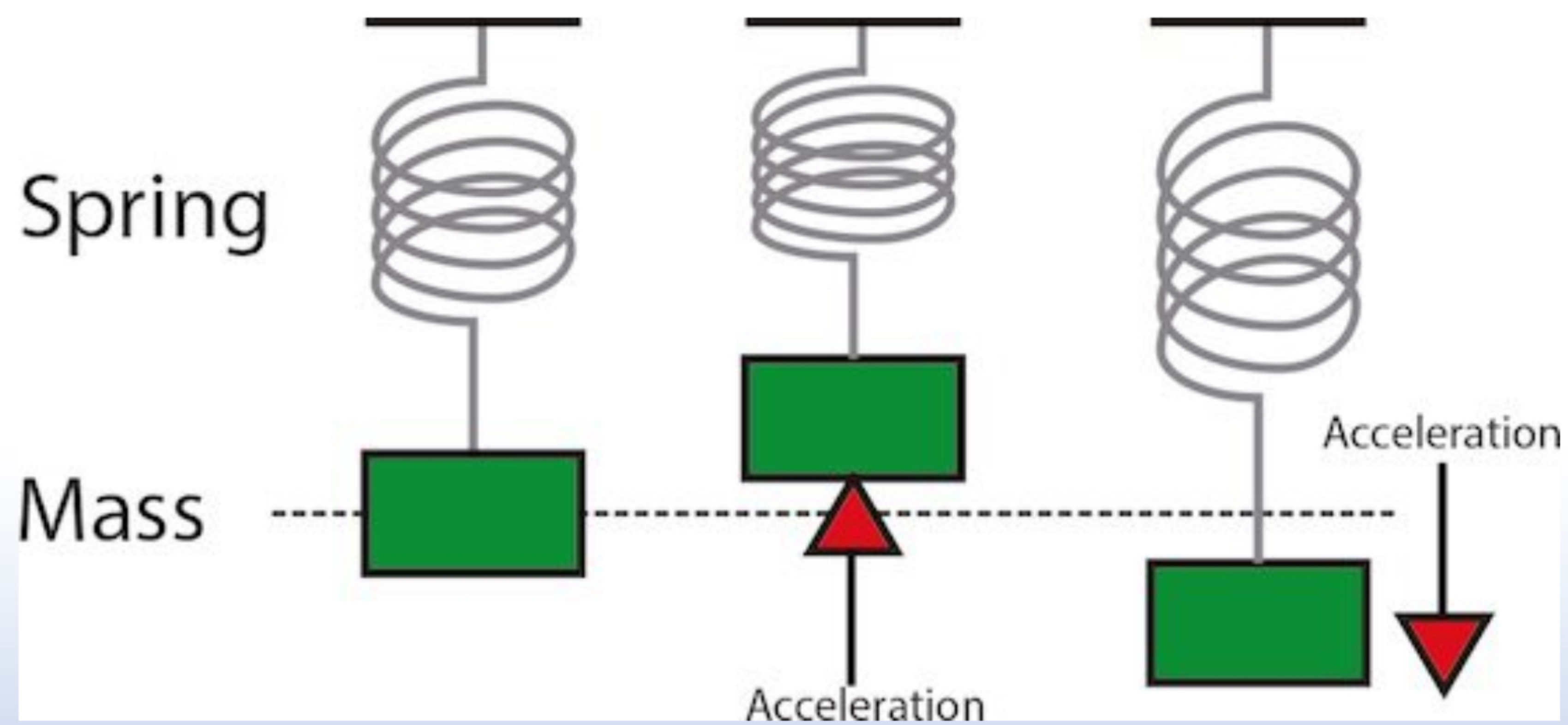
Consists of: _____

Tracking Hardware: IMUs



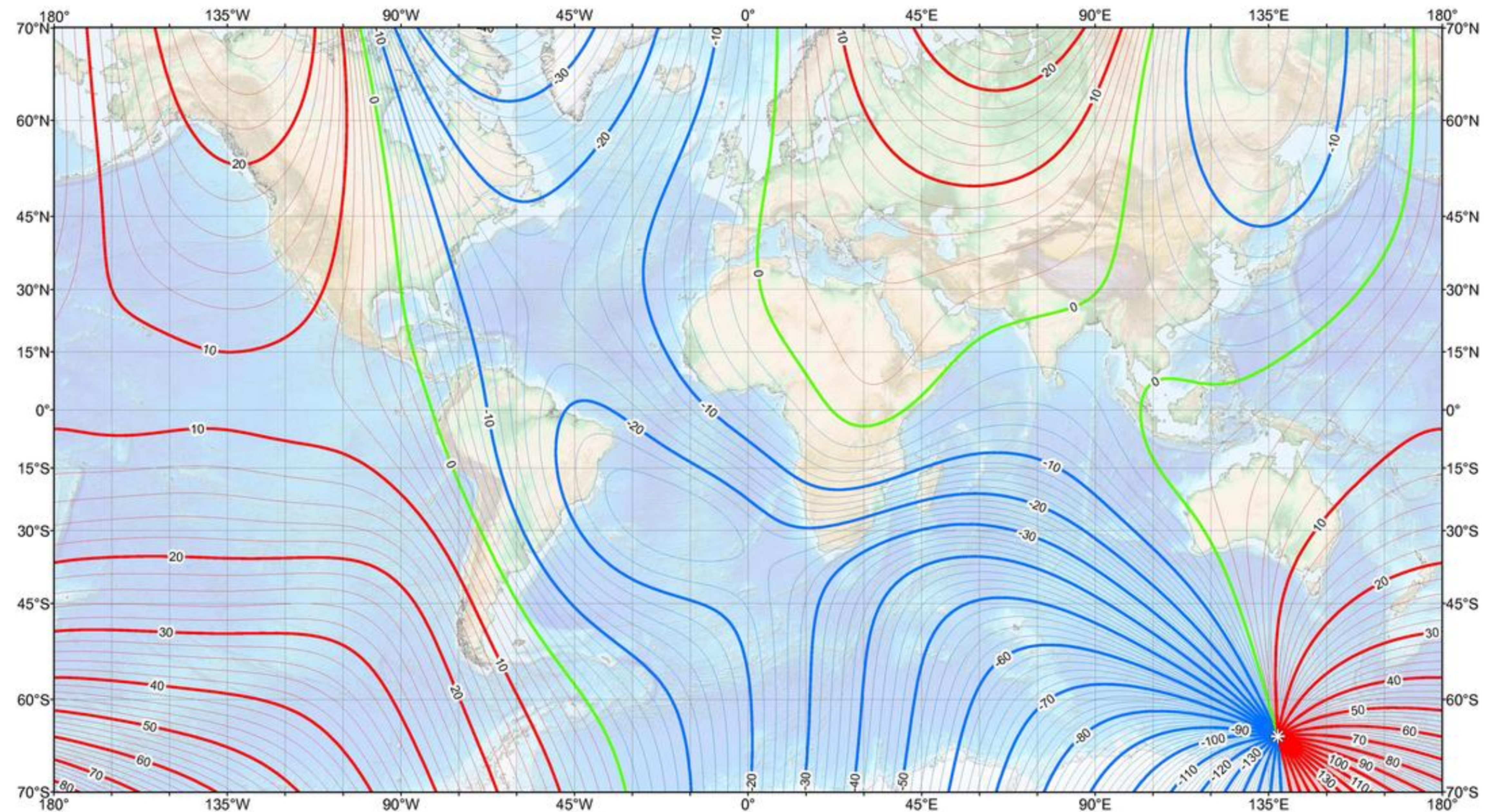
Gyroscope

https://www.youtube.com/watch?v=cquvA_lpEsA



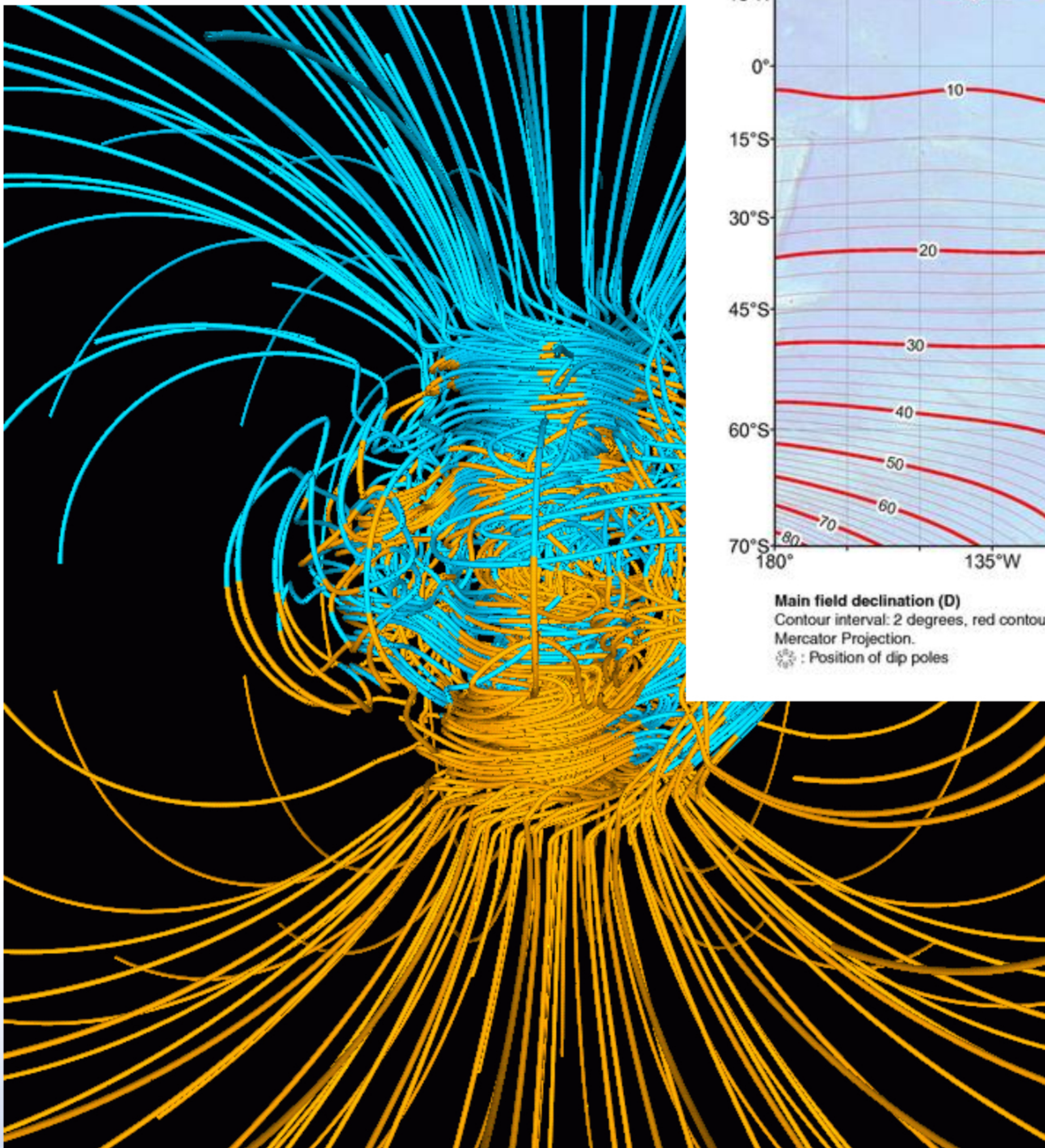
Tracking Hardware: IMUs

US/UK World Magnetic Model -- Epoch 2010.0
Main Field Declination (D)

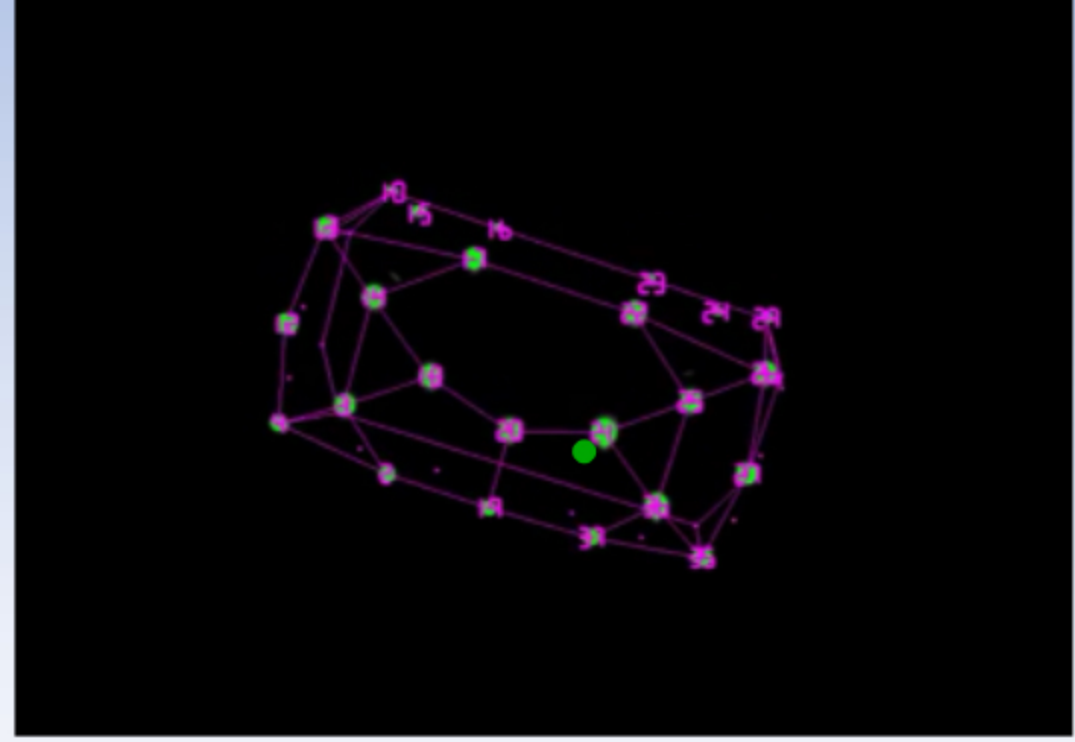


Main field declination (D)
Contour interval: 2 degrees, red contours positive (east); blue negative (west); green (agonic) zero line.
Mercator Projection.
☉ : Position of dip poles

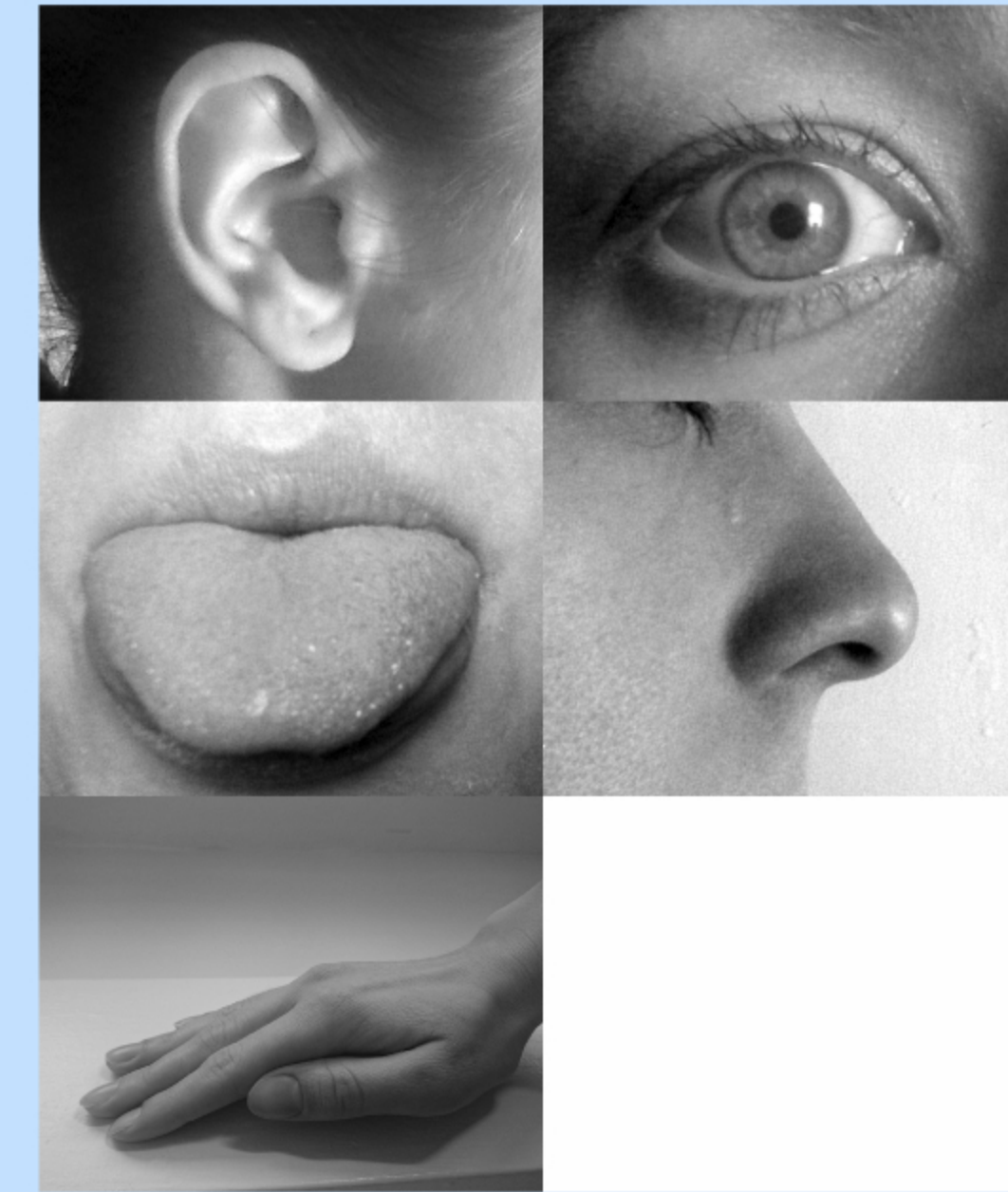
Map developed by NOAA/NGDC & CIRES
<http://ngdc.noaa.gov/geomag/WMM/>
Map reviewed by NGA/BGS
Published January 2010



Tracking Hardware: Cameras



VR System: Software



Birds-Eye View: Hardware

Rendering hardware (displays):

- Visual:
- Audio:
- Touch:
- Smell? Taste? Vestibular?

Lens:

Tracking hardware:

-
-
-

Controllers:

Computer:

- CPU
- GPU



Software: AWG

Types of self motion:

Software: AWG

Gaming engines

Google street viewer

Robot + camera