

# Progress Report

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Week 2

# Working with water

- Started with empty plastic box at large distance (approx 6m).
- The box mostly spread the beam.
  - Even at largest difference, very small angle.
- The box/air combo 's refractive index is  $1.002 \pm 0.001$ 
  - Little plastic, lots of air.
  - For all intents and purposes...
    - Water's refractive index being measured at much smaller distances.
    - Estimated change due to box is 3mm.

# Results

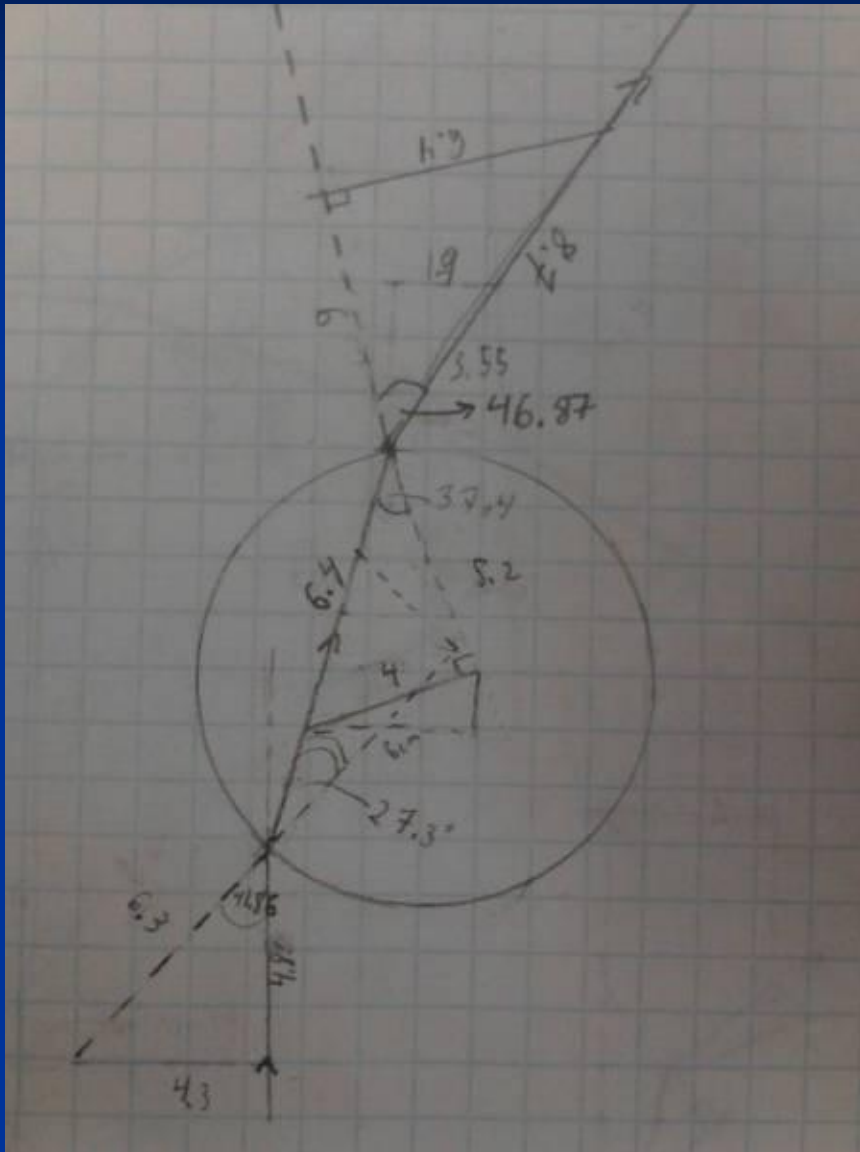
- Set up to measure water's “unknown” refractive index.
- $n_{\text{water}} = 1.33 \pm 0.01$
- This is less than one percent error!



# The Scintillator



# Results



- Snell's Law
- Ran many tests
- Index of Refraction is  $1.45 \pm 0.1$
- Large uncertainty...