# Aerogel

8/6/13

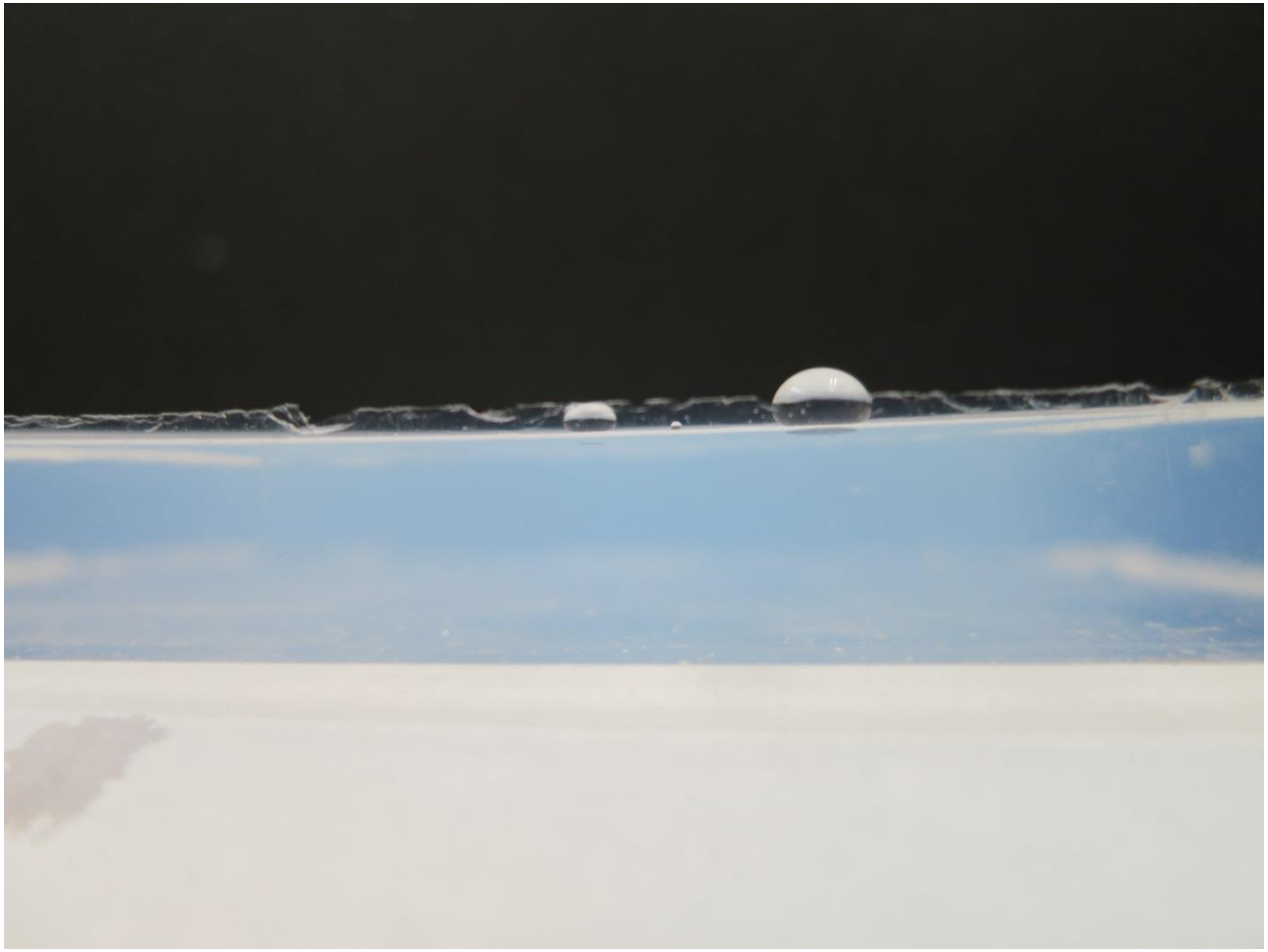
# Humidity Testing

| Tile Number | Refractive Index Before | Average Humidity | Refractive Index After | Difference in Refractive Index |
|---|---|---|---|---|
| Control | | | | |
| 20.012T | 1.02+/-.0001 | 55%+/- | 1.019+/-.0001 | -.001 |
| Tests | | | | |
| 15.022B | 1.0152+/-.0001 | 84% +/-2 | 1.015+/-.0001 | -.0002 |
| 15.112B | 1.0158+/-.0001 | 83% +/-2 | 1.0156+/-.0001 | +.0004 |
| 15.122B | 1.0153+/-.0001 | 84% +/-2 | 1.0153+/-.0001 | +.0001 |
| 15.127B | 1.0149+/-.0001 | 83% +/-2 | 1.0151+/-.0001 | -.0001 |
| 30.035B | 1.036+/-.0002 | 83%+/-2 | 1.036+/-.0002 | 0 |
| 20.035B | 1.02+/-.00015 | 92%+/-2 | 1.0201+/-.00015 | +.0001 |
| 20.02B (Dry) | 1.02+/-.00015 | 95%+/-2 | 1.0203+/-.00015 | +.0003 |
| 20.02B (Wet) | 1.02+/-.00015 | 100% | 1.0203+/-.00015 | +.0003 |

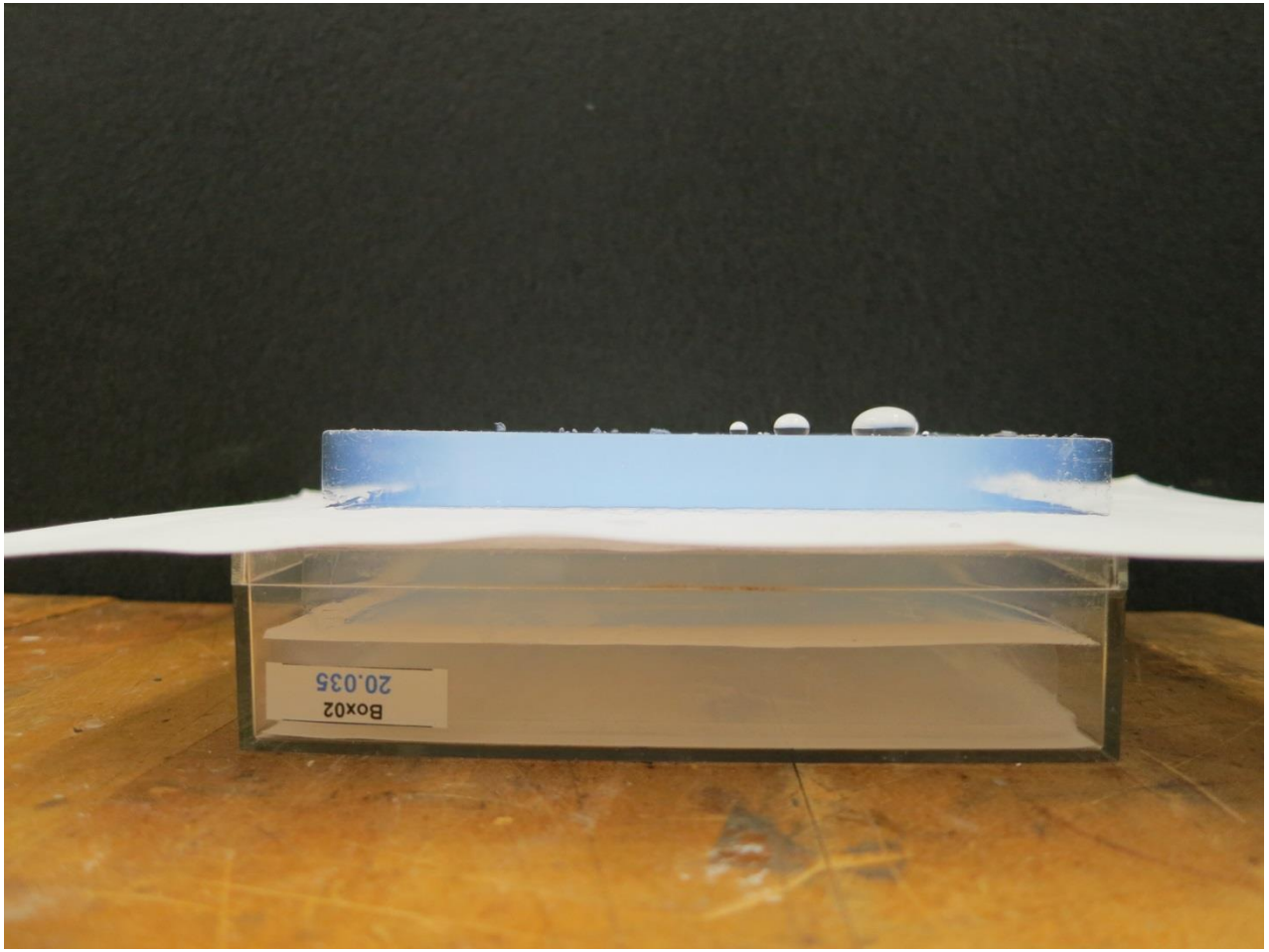
# Water's Effect on Aerogel

- All aerogel from Matsushita Electric Works, Ltd and Japan Fine Ceramic Center (hydrophobic coating)
- Aerogel from Novosibirsk does not have this coating and therefore is hydrophilic
- To test this, put water directly on tiles 30.099B, 20.063B, 15.118B, and Novosibirsk

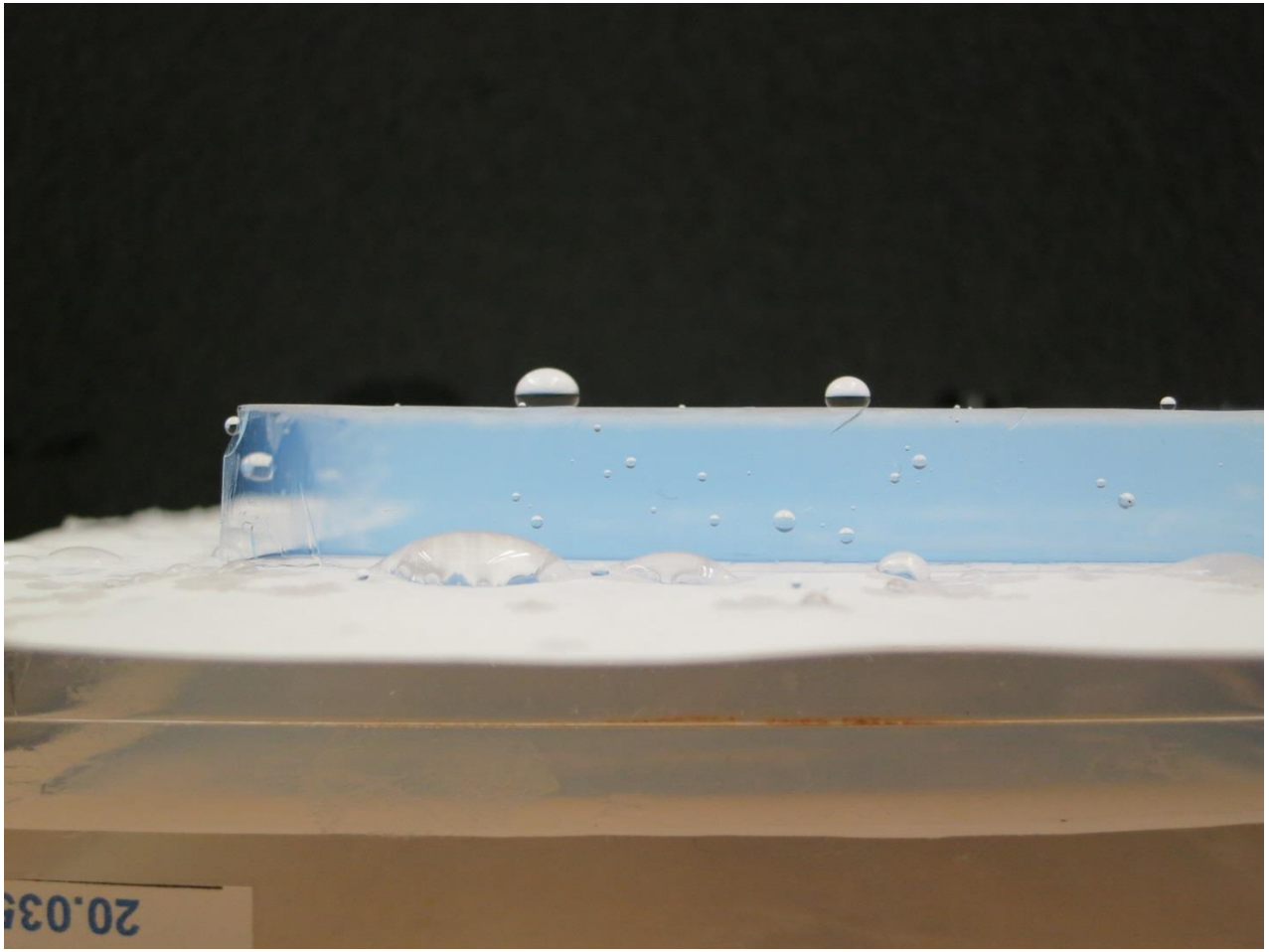
# 30.099 B



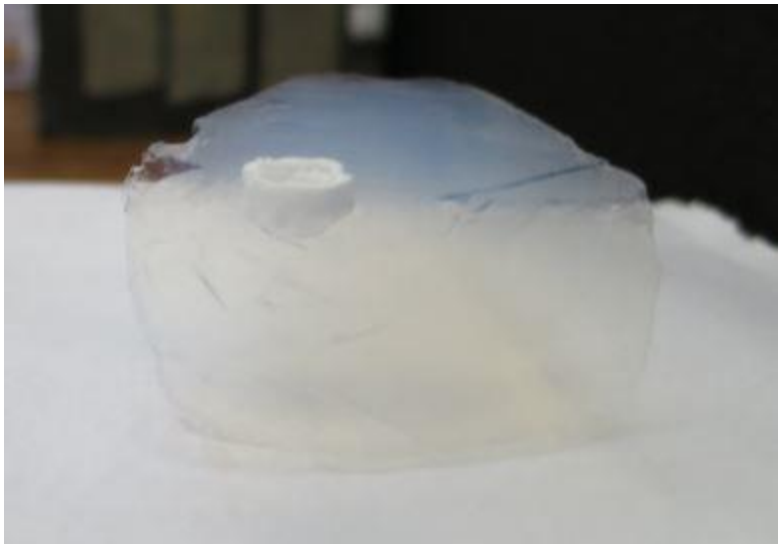
# 20.063B

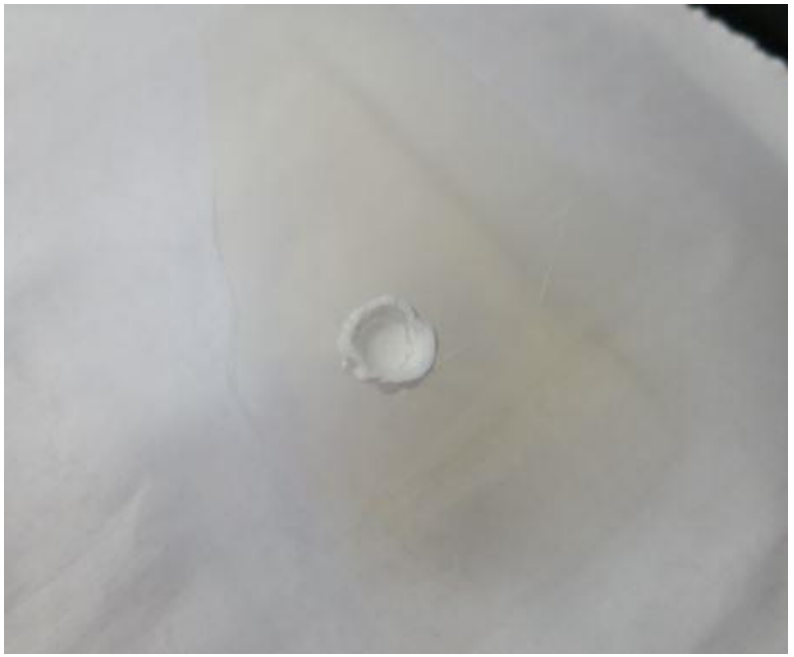


# 15.118B



# Novosibirsk Aerogel





# The Upcoming Week

- Test temperature's effect on aerogel's refractive index with the set-up Marco helped us with
- Possibly test the affect of humidity on the Novosibirsk aerogel
- Test the transmittance of the cloudy tile