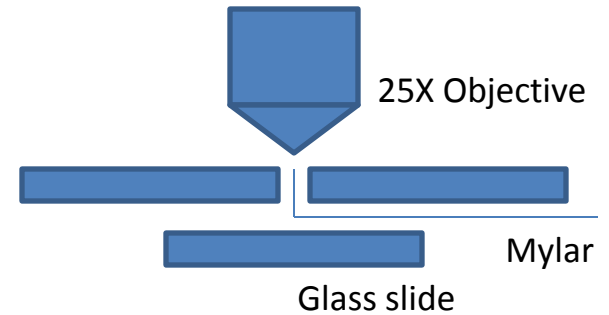


Mylar Thickness Measurements – Microscope

- Mylar sheet held vertical between two glass slides
- Edge cut with a razor blade
- Measurements taken at different places along Mylar edge
- Magnification: 25X objective, 10X eyepiece micrometer
- Eyepiece micrometer calibration: $0.3646 \mu\text{m}/\text{division}$



Results

- Average of ten measurements each day with standard deviation error

June 27	Divisions	Microns	June 28	Divisions	Microns
Average	19.1	6.9639	Average	18.2	6.6357
Error	2.38	0.8671	Error	1.18	0.4314

Limitations

- No digital camera attachment, measurements made by eye
- Illumination from below using sunlight, flashlight, and mirror
 - No bulb for microscope lamp
 - Not enough illumination for 53X objective magnification
- Only measured one sample of Mylar so far
- Used existing micrometer calibration
 - Crude check with $20 \mu\text{m}$ wire



Removal of Straw Tubes from Leak Test Chambers

- Method: attach magnetic metal to straw tube and use telescoping magnet tool to drag tube out of leak test chamber
- Cut and bend a piece of a washer
- Attach to straw tube with heat shrink tubing
 - Shrink tubing diameter: approx. 16mm before shrinking
- Telescoping magnet is strong enough to drag out full length tube with junk straw inside
- Use the non-magnetic handle of the tool to push straw tube into chamber



Straw Stretching: Length vs. Tension Measurements

- Attach CO₂ endpieces with viton to straw and clamp into pre-tensioning apparatus
- Clamp at one end is fixed and the other is attached to a spring and a tension meter
- Force decreases as viton stretches, and measurement is taken when force is stable to $\leq 0.1\text{N}$
- Tape on each end of the straw casts a shadow, and the changes in shadow positions are measured

