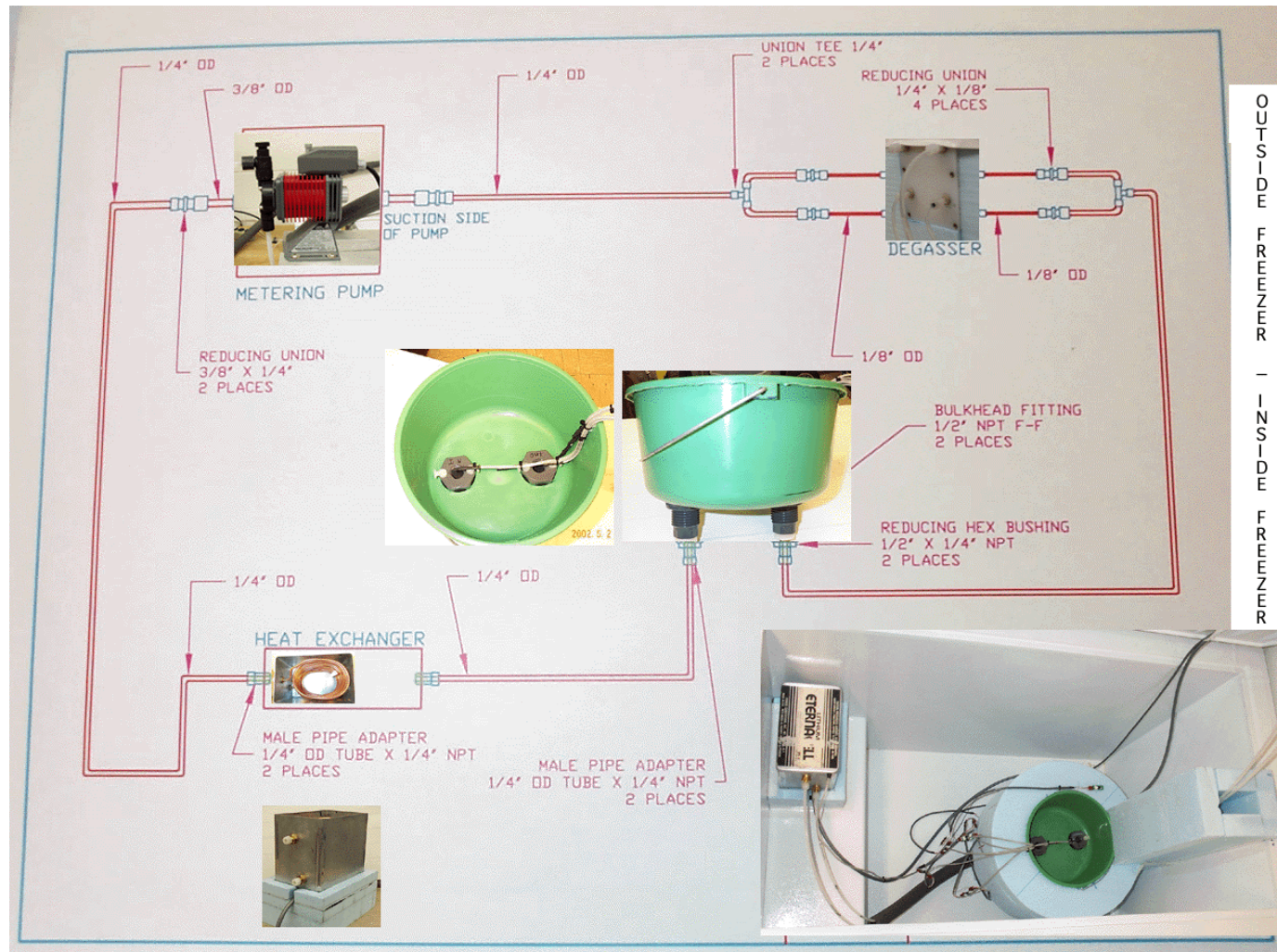


Recent SPASE/AMANDA/IceCube activity at Delaware (Bartol)

1. Ice tanks & freezing clear ice.
2. DOM modifications.
3. SPASE DAQ upgrade.
4. Proposal to improve composition studies.

1. Ice tanks and freezing

Controlled top-down freeze



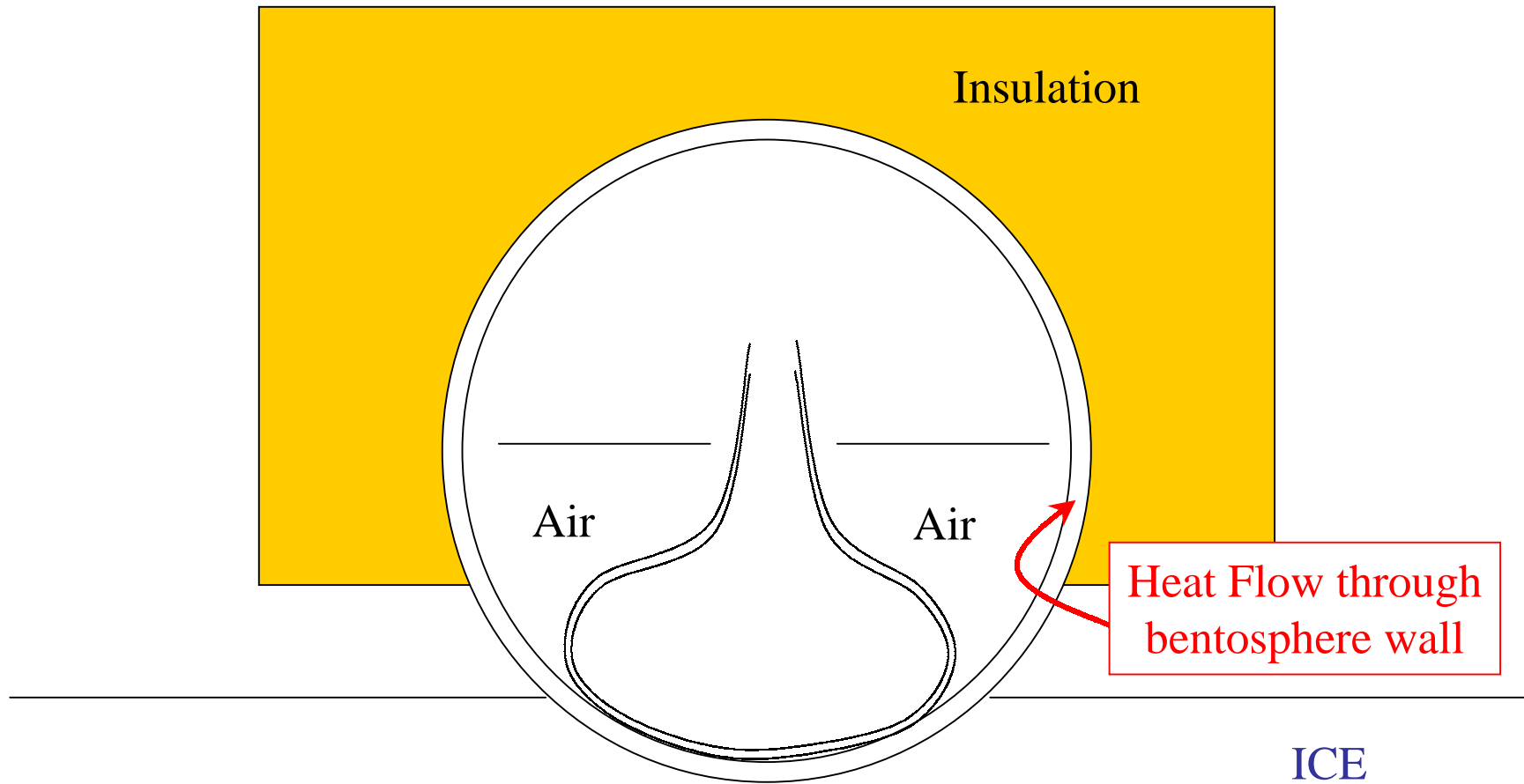
1. Ice tanks and freezing

Test Freeze

- Port of Wilmington
 - 5-7 F
 - 80" diameter
 - 48" deep
 - 8" insulation (R54)
sides and bottom
 - Aug 1- Dec 1, 2002
 - de-gassing as necessary
-
- Second test at Climax
cos-ray lab in Colorado



2. DOM passive thermal control for IceTop



3. SPASE DAQ upgrade

1. Routine hardware maintenance.
2. Replace Macintosh with Linux PC.
3. Associated software upgrade (KMAX -> C)

4. Proposal (03-04) to extend SPASE for improved composition studies (see earlier talk)

Highlights

- Improved live-time (02-03) (factor of 2)
 1. Deploy 30 new low-gain modules
 2. Re-deploy 16 old low gain modules as a guard ring at 60m (A x 2)
 3. Extended SPASE + AMANDA II increase E_{\max} x 5
 4. Simulations show unique advantages to SP2+/AMII