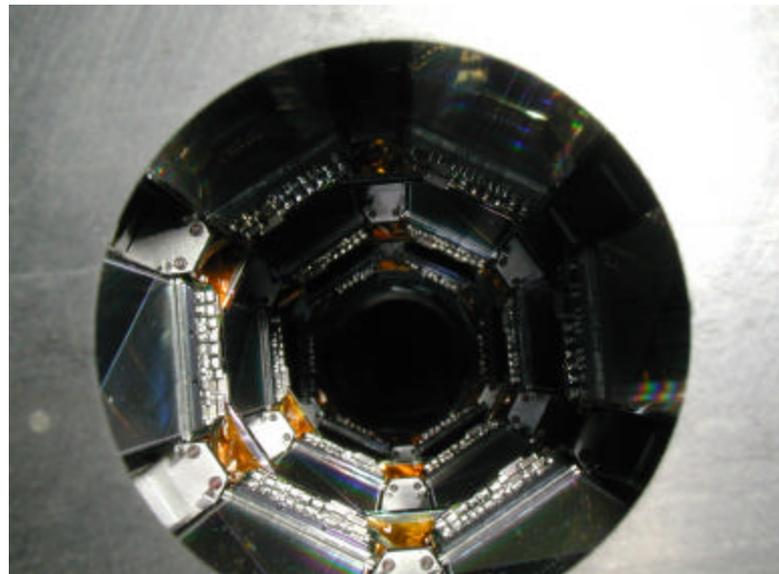




L0 Workshop Goals

Generate a plausible outline design for a L0 detector that:

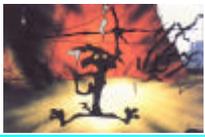
- Is buildable
- Is installable
- Will significantly improve D0 tracking capability
- Is the basis for cost and schedule estimates and proposal to the laboratory and DOE
- Is the basis for quick entry into a design/production phase
- Is the basis for a collaboration decision on whether to pursue this project
- Is a basis for *your* decision on whether to pursue this project





L0 Workshop

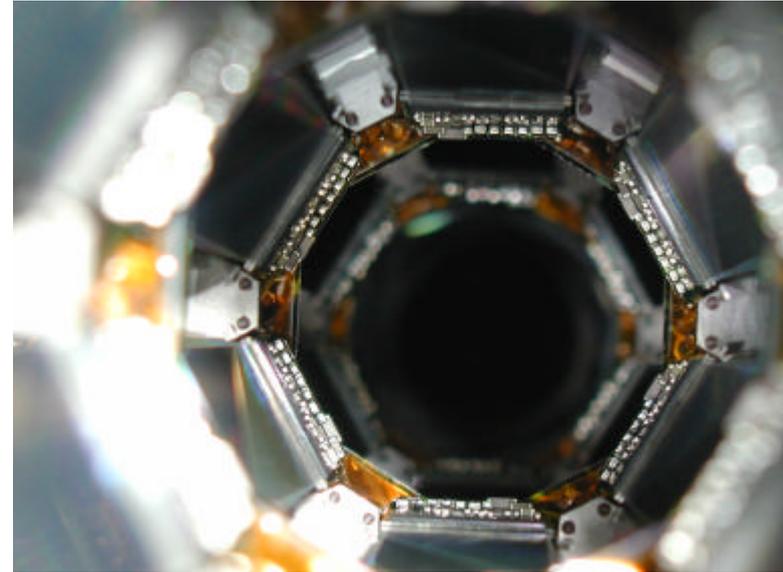
- **Basic Decision: Detector geometry**
- **Components - These all fold into design choices**
 - ◆ **6 vs 12 fold readout**
 - Space issues, angles of incidence
 - ◆ **Readout pitch - coupled to 6 vs 12 designs**
 - ◆ **SVX2 vs SVX4**
 - Performance, HDI redesign issues, space for edge bonds, cable redesign
 - ◆ **Z ganging and length**
 - Cover SMT only? Stackup of cables, analog cable length, noise
 - ◆ **Analog cables vs on-sensor**
 - Noise, space used, multiple scattering, temperature, radiation damage, cable complexity
 - ◆ **Installation scheme (as a unit vs halves)**
 - Turn around cooling? Structure support
 - ◆ **STT constraints?**



L0 Design

Other issues - not necessarily workshop decisions:

- ◆ Support structure
- ◆ Cooling requirements
- ◆ LV and HV distribution
- ◆ Readout and cabling scheme
 - ◆ Adapter cards? New cables
- Worry about details and project structure later (next week)
 - ◆ Responsibilities
 - ◆ Schedule - no longer need to wait for 2006
 - ◆ Cost estimate, contingency ...





LO Conclusions

Delays in making a decision will make the detector impossible to build quickly and dissipate group effort.

Guidelines:

- *Buildability—minimal R&D and maximal use of existing work*
- *Physics performance*
- *Schedule performance - ASAP*

This will be a “best guess” we are relying on the group’s judgment and experience to weigh the tradeoffs and come to a proper decision with (sub)minimal preparation

If a consensus is not reached the project leaders need to choose