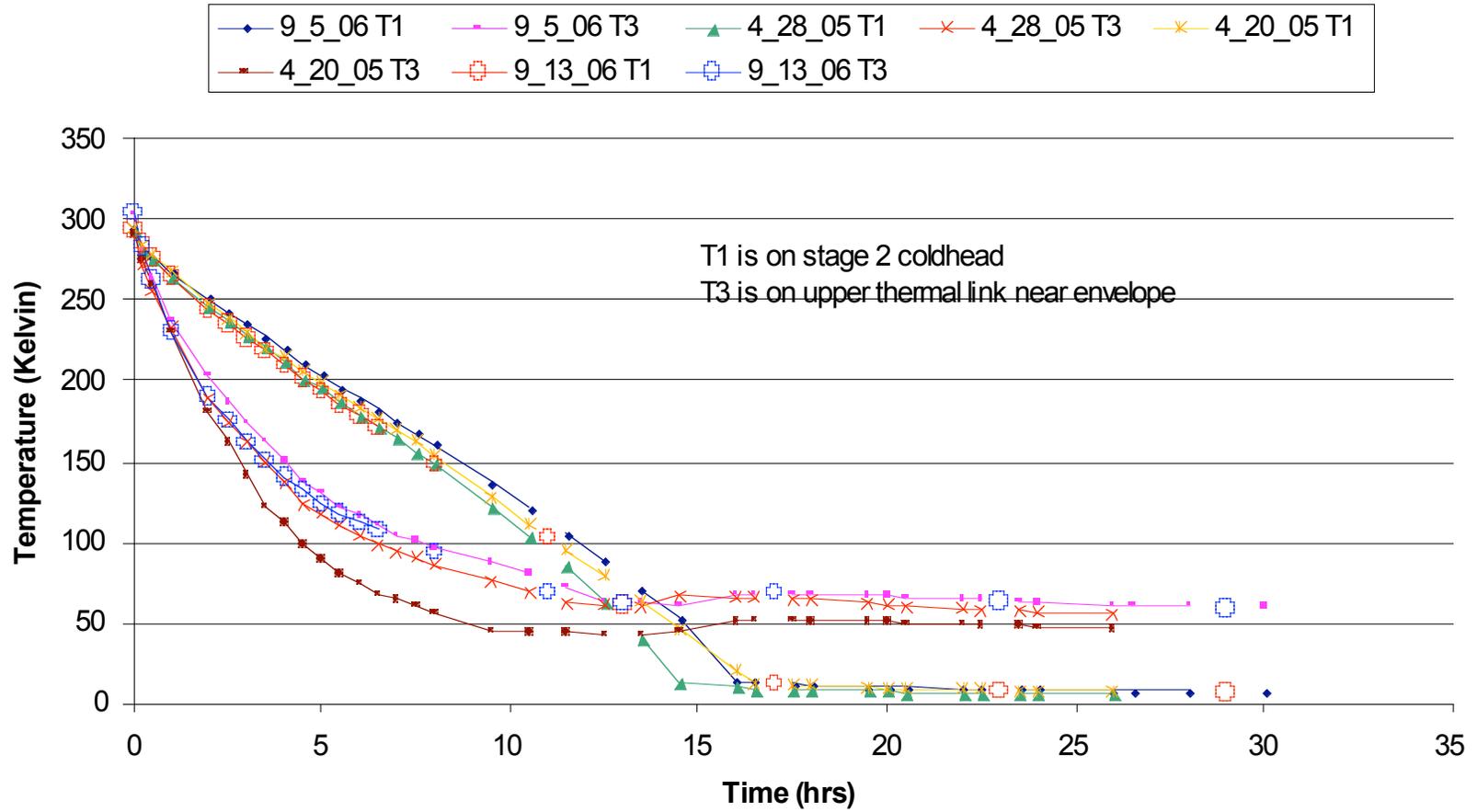


Snap shot of cryo status

- The prototype cryostat is cold and operating with Cassette #105 and new cassette #112. Both cassettes are within operational temperature range and can be successfully controlled to 9.0 Kelvin.
- However, the cryostat performance is somewhat poorer than in the past. Temperatures at the cold end of the cassette are about 0.5 Kelvin higher than previously achieved. With no heater control, Cassette #105 is 7.83 K and cassette #112 is 8.19 K.
- While this is adequate margin for operation here in the U.S., it may be a problem overseas at 50 Hz compressor power. Some cryogenic tests have been done and Russ Rucinski is analyzing the data to determine areas where improvements can be made.

MICE cryostat cooldowns



Some data comparing recent performance to the past

Upper thermal intercept:

	link at	link near	Gradient	Stage 1
	Stage 1	envelope	upper link	Heat load est.
Date	T4 (K)	T3 (K)	(K)	load map (W)
April 30, 2005	47.3	53.9	6.7	55
Jan. 3, 2006	48.0	55.6	7.6	53
Sept. 07, 2006	49.2	58.6	9.4	53
Sept. 18, 2006	49.0	57.5	8.5	58

Lower thermal intercept and cassettes:

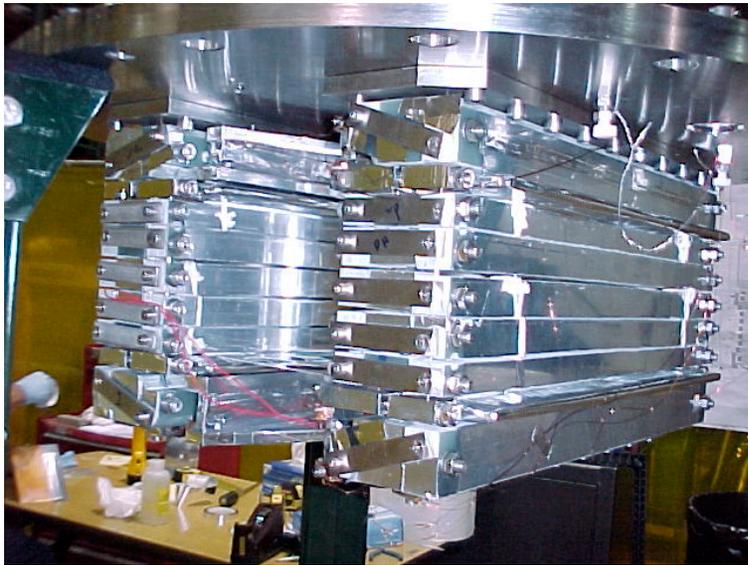
	link at	link near	Gradient	Stage 1	Cass	Cass
	Stage 2	envelope	lower link	Heat load est.	Slot 1	Slot 2
Date	T1 (K)	T2 (K)	(K)	load map (W)	(K)	(K)
April 30, 2005	5.27	5.40	0.13	4.0	7.50	7.10
Jan. 3, 2006	5.40	5.54	0.14	4.0		
Sept. 07, 2006	7.12	7.26	0.14	7.5	8.90	8.95
Sept. 18, 2006	5.86	6.069	0.21	4.5	7.83	8.19

“Improvements” were made before Sept. 07 & Sept. 18 operating periods. Also installed the new cassette #112 for the Sept. 07 operating period.

Snap shot of cryo status

- The thermal connections to the cassette and cryocooler look good but overall heat load seems higher by a few watts at both the upper and lower intercept.
- There is a possibility that Cassette #112 may have higher heat leak characteristics than previous cassettes. The warm end at the lid was measured to be 3 F colder than it is for cassette #105
- Current plans are to keep the cryostat cold for cassette characterization.
- Contemplating cryo performance.

Pictures of the prototype under the lid – Sept. 2006



1.) Stiffeners assembled around the two envelopes. Before hard LN2 radiation shield and MLI is in place.



2.) Multilayer insulation around the hard LN2 shield.



3.) Moving the assembly to the vacuum can

Production cryostats

- All parts for the four production cryostats have been received from Ability Engineering Tech. Inc. except the invar envelopes.
- The lids need additional surface finishing at the slots. This is underway at FNAL shop.
- Technicians at D0 are tinning copper for the thermal links and applying reflective tape to G-10 stiffeners.

Parts for four production cryostats



Russ Rucinski, FNAL, Sept. 20, 2006