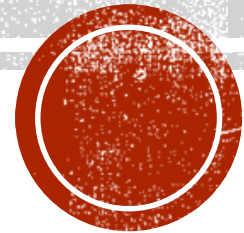


ISOLDE CHAMBER STATUS

07th April 2017

Vacuum and Si-Det testing



STATUS QUO

- Preamp, Amp DAQ checked
- Vacuum test



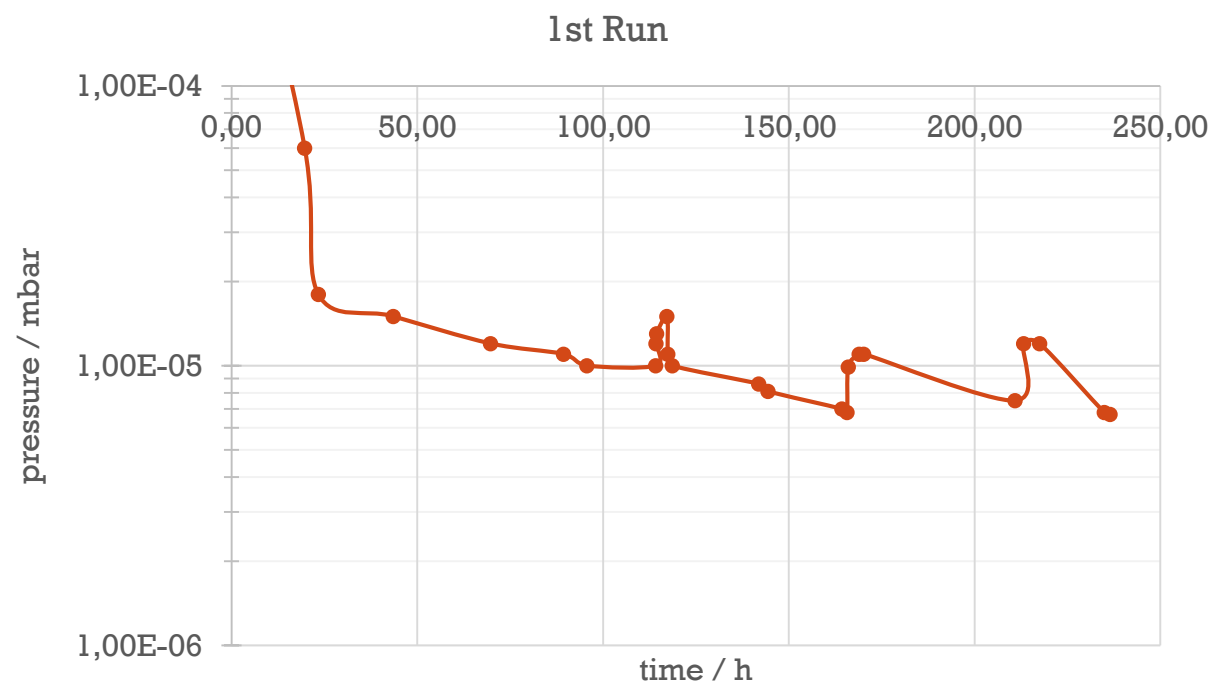
TARGETHOLDER POSITION

- Alignment test → marker on scale
- Additional block of metal to align target holder inside chamber ($\Delta L = 15.8\text{mm}$)
- Extrapolation for other sample positions

POS	Marker on scale	Marker on scale *NEW*
Pos 1 (bottom of ladder)	34.54	19.74
Pos 2 (middle of ladder)	94.05	78.25
Pos 3 (top of ladder)	Bottom .8	???

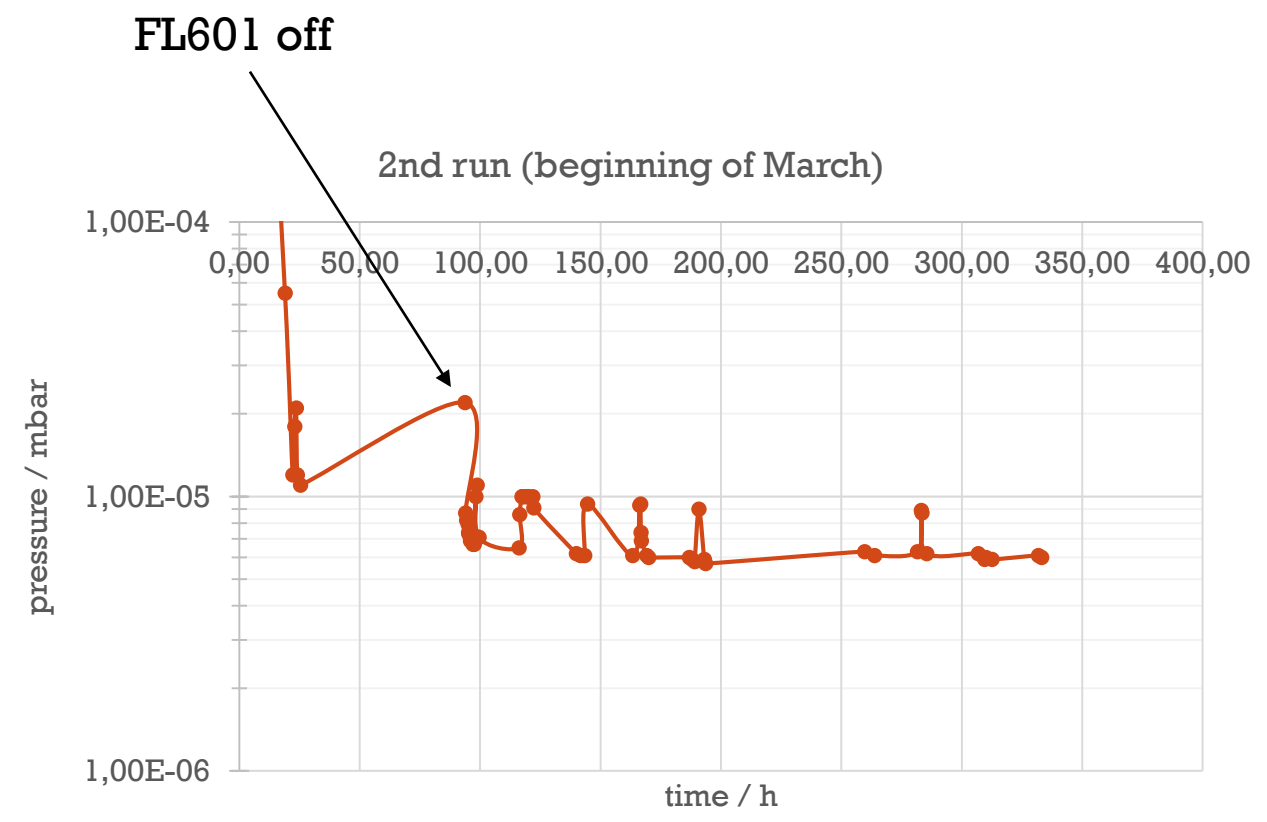


PRESSURE TEST I



Minimum:
p = 6.7E-06 mbar (>6-9 days)
T ~ -2.4° C

→ Add alcohol



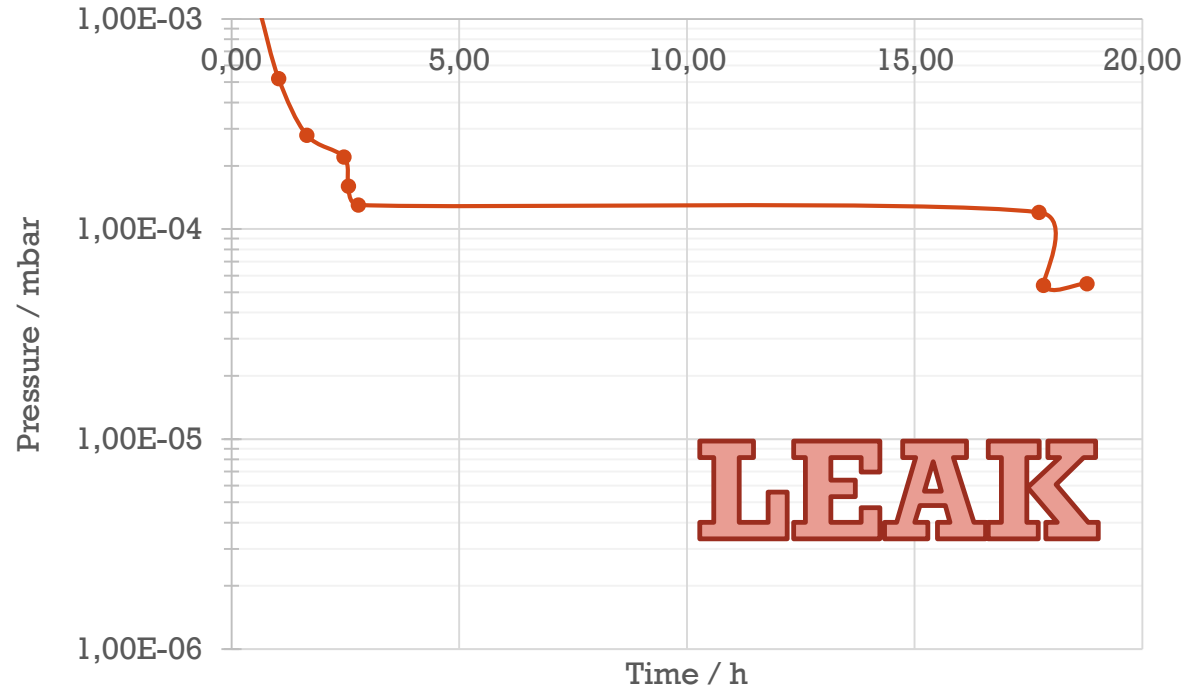
Minimum:
p = 6.0E-06 mbar
T ~ -10.0° C (>100 h)

→ Additional Turbopump (TP2)



PRESSURE TEST II

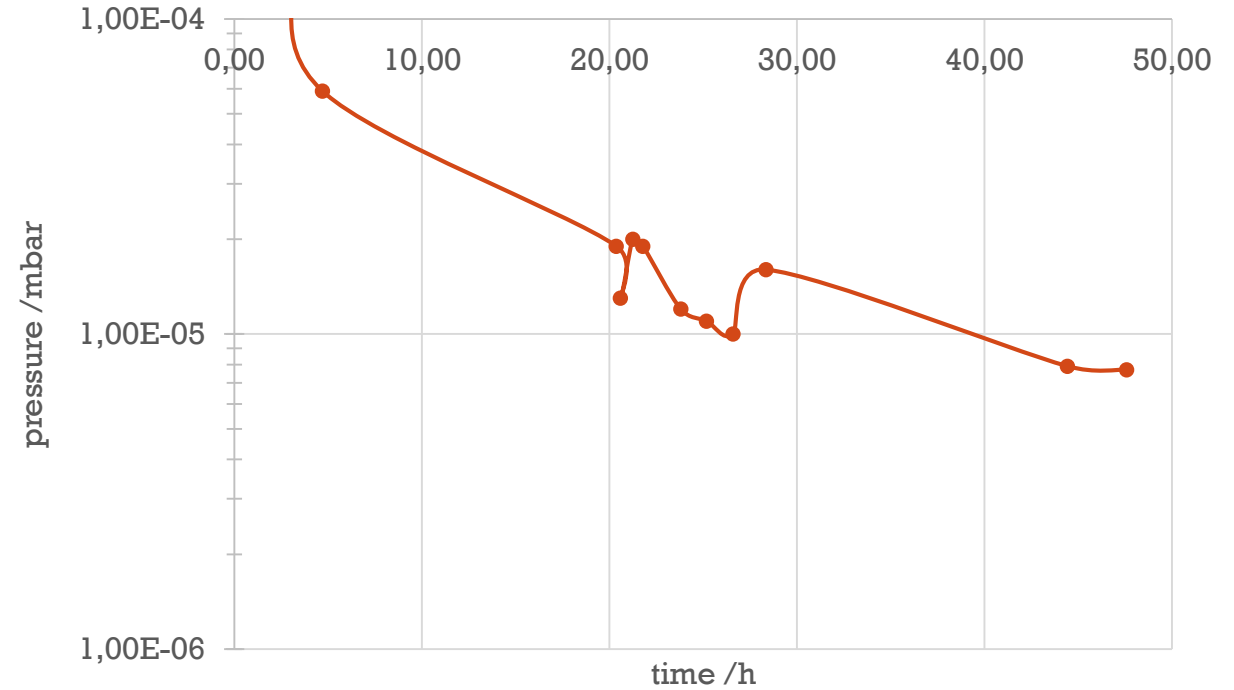
3rd try - loose screw and dust on o-ring



Minimum:
p = 5.5E-05 mbar
T ~ -9.7° C

→ Cleaning and check!!!

4th - one preamp board less



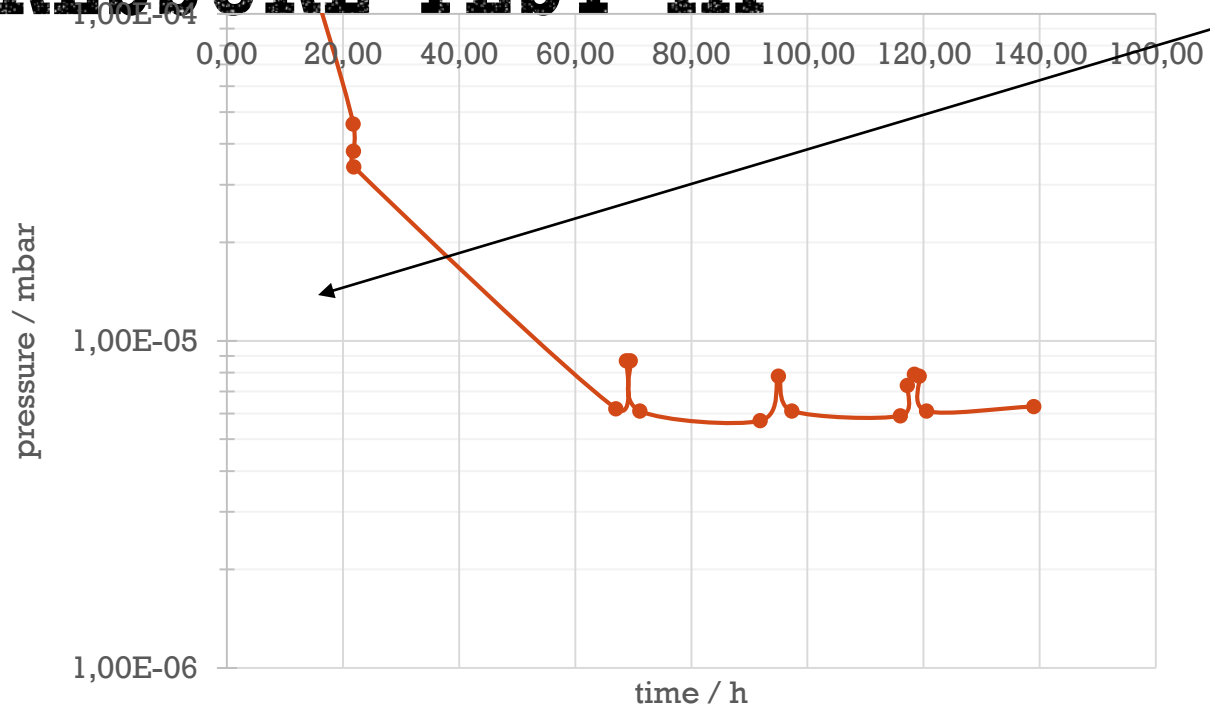
Minimum:
p = 7.7E-06 mbar
T ~ -7.7° C

Less chamber load → <45h
(properly ~30h)



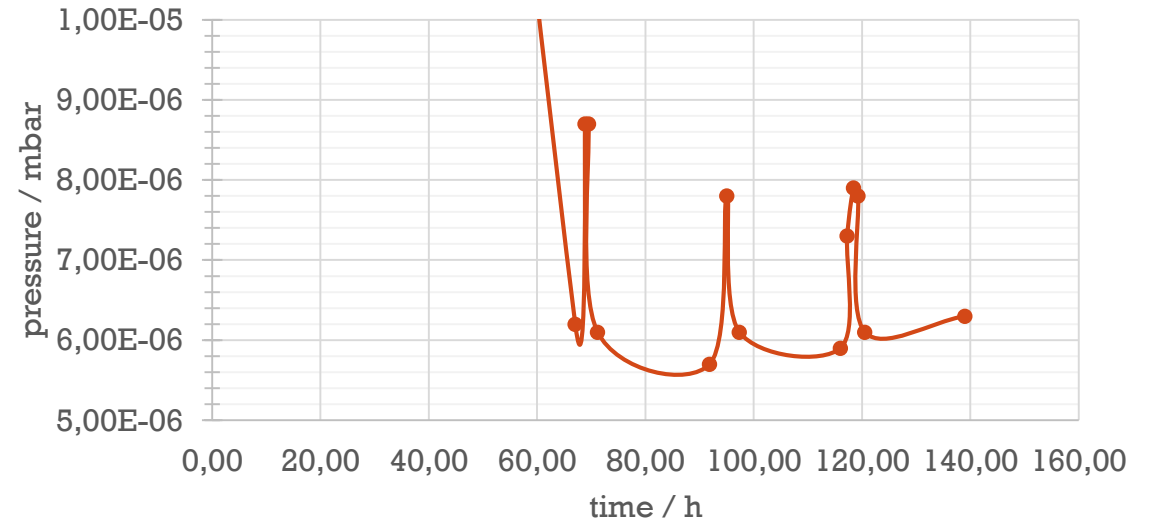
PRESSURE TEST III

5th run - over weekend

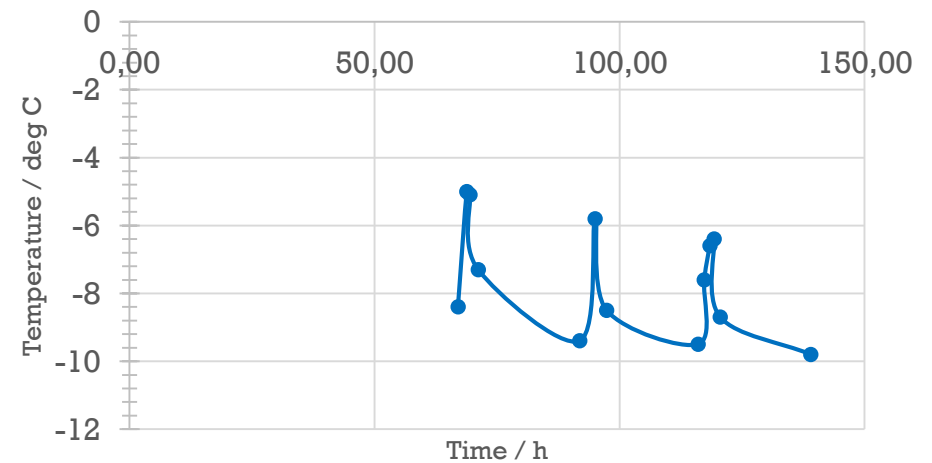


TP2 and FL601
switch on

5th run - over weekend



5th run - Temperature



Minimum:

$p \sim 6.0E-06$ mbar

$T \sim -9.8^\circ$ C (needed some heating cycling)

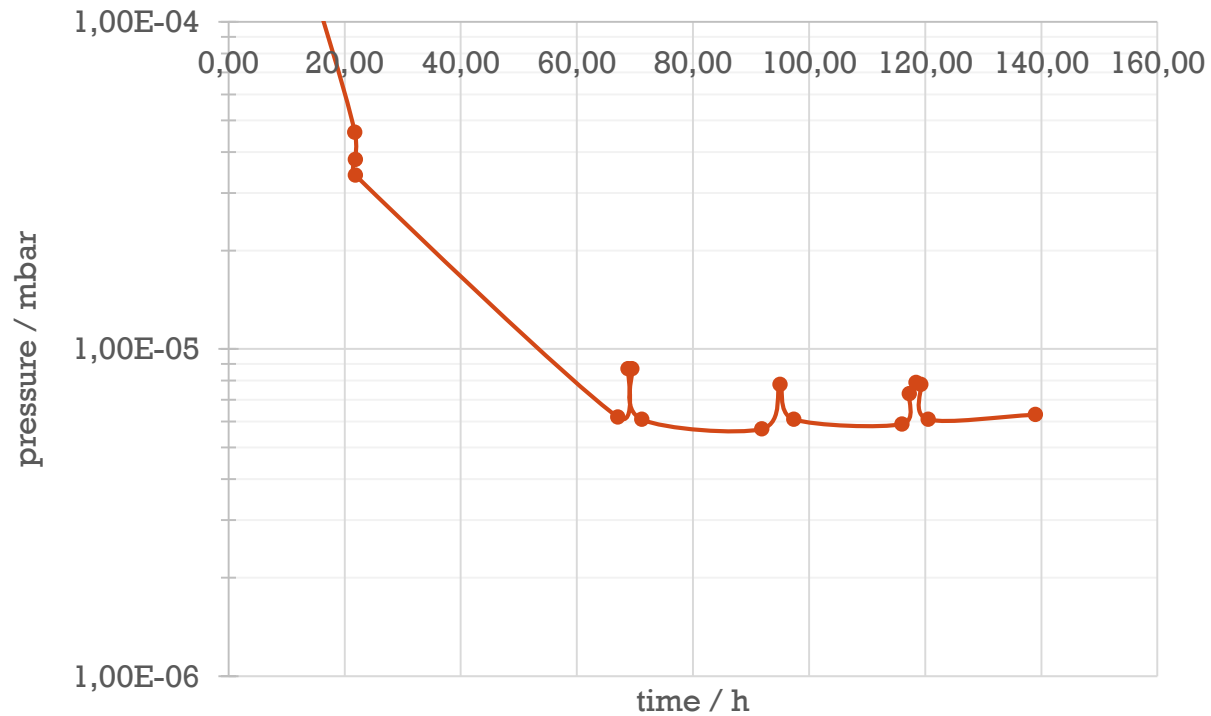
→ not always improvement with preamp heating.

→ Influence of room temperature



PRESSURE TEST III

5th run - over weekend



Minimum:

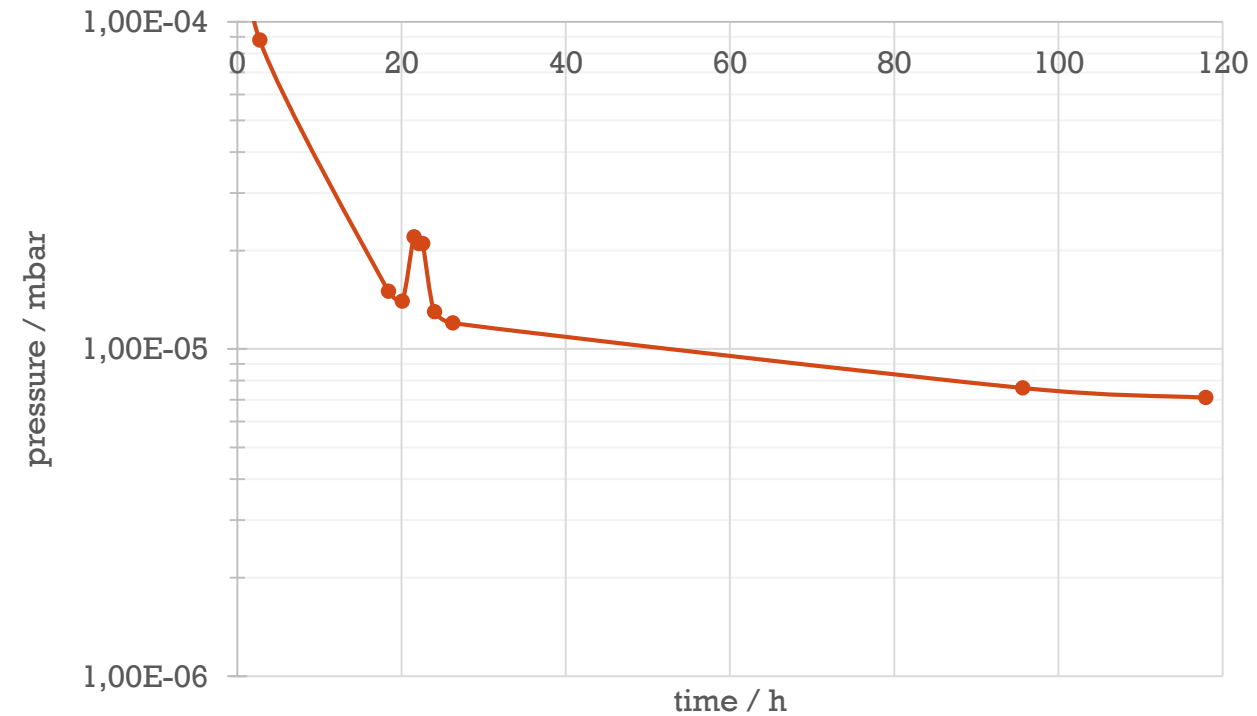
p ~ 6.0E-06 mbar

T ~ -9.8° C (needed some heating cycling)

→ not always improvement with preamp heating.

→ Influence of room temperature

6th run - hardly preamp heating



Minimum:

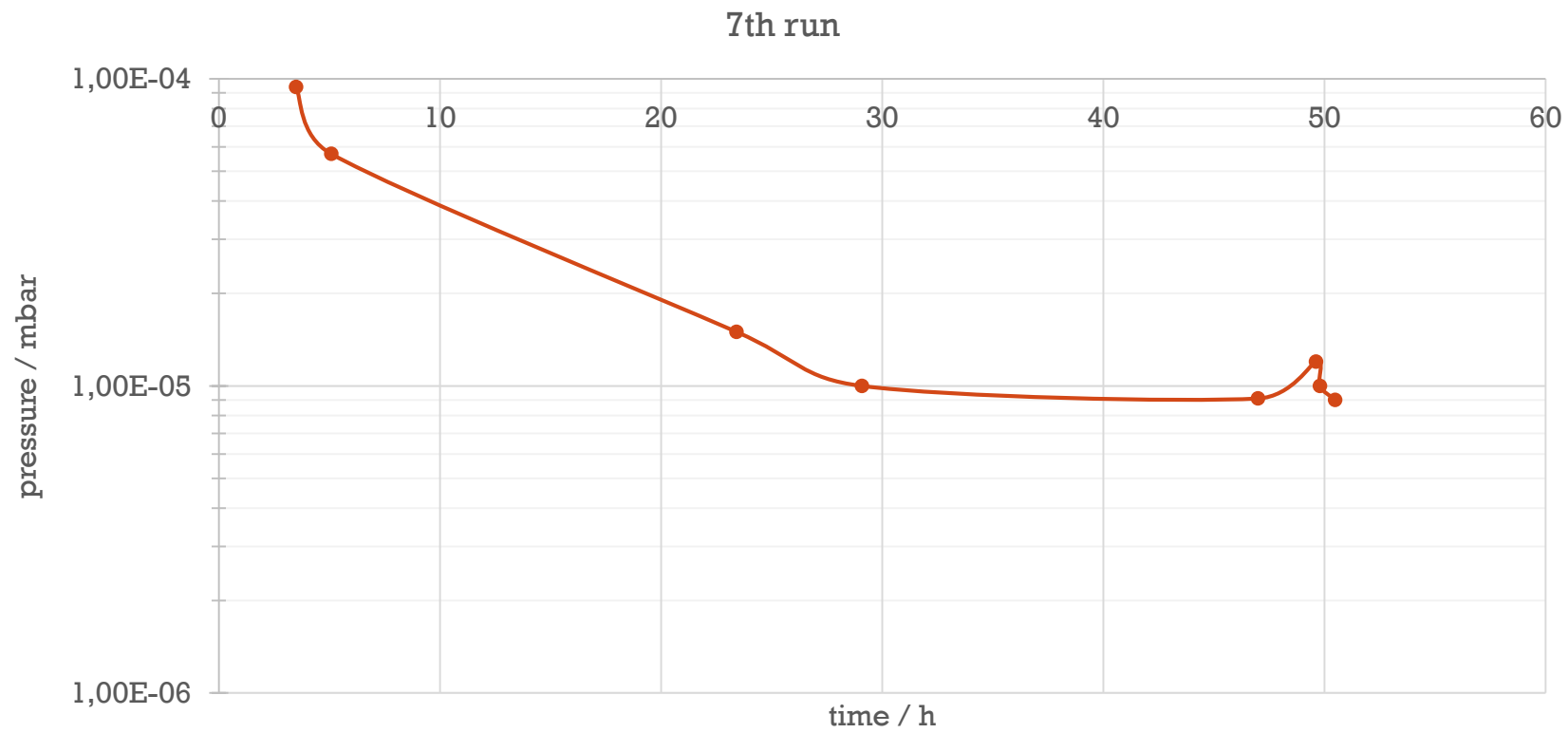
p = 7.1E-06 mbar (120h)

T ~ -7.7° C

Preamp heating improves at least pumping time



PRESSURE TEST IV



Minimum:

p ~ 9.0E-06 mbar

T ~ -9.8° C

→ Influence of TP2 ?



PRESSURE TEST OVERVIEW

# run	Time	Minimum pressure	notes
1st	17.2. – 27.2 (236.4h)	6.7E-06	
2nd	2.3 – 16.3 (5.7E-06	
3rd	16.3 – 17.3 (18.8h)	5.5E-05	LEAK
4th	20.3 – 22.3 (48h)	7.7E-06	Reduced load
5th	24.3 – 30.3 (139h)	6.0E-06	
6th	30.3 – 4.4 (118h)	7.1E-06	Hardly preamp heating
7th	5.4 -	9.0E-06	TP2 test

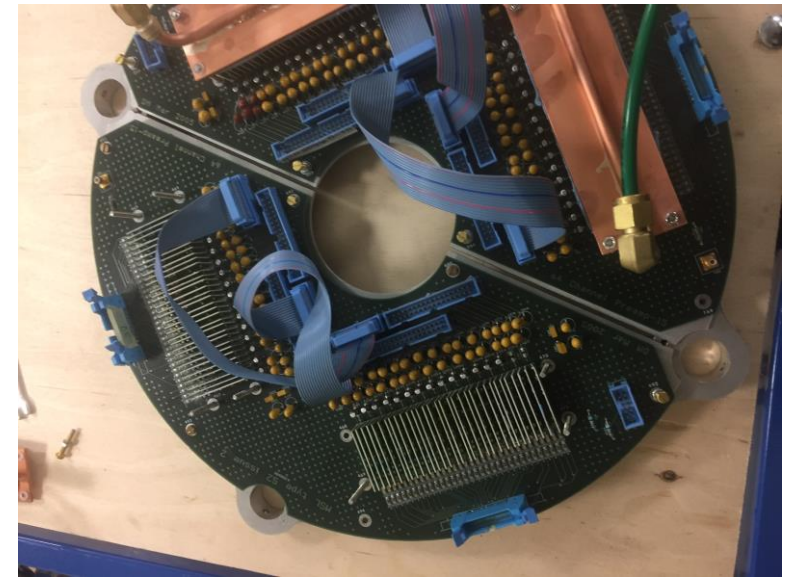
- Tests

- 24.03 Si-Det U1-U4 (new)
- 30.03 Si-Det U5-U8 (new)



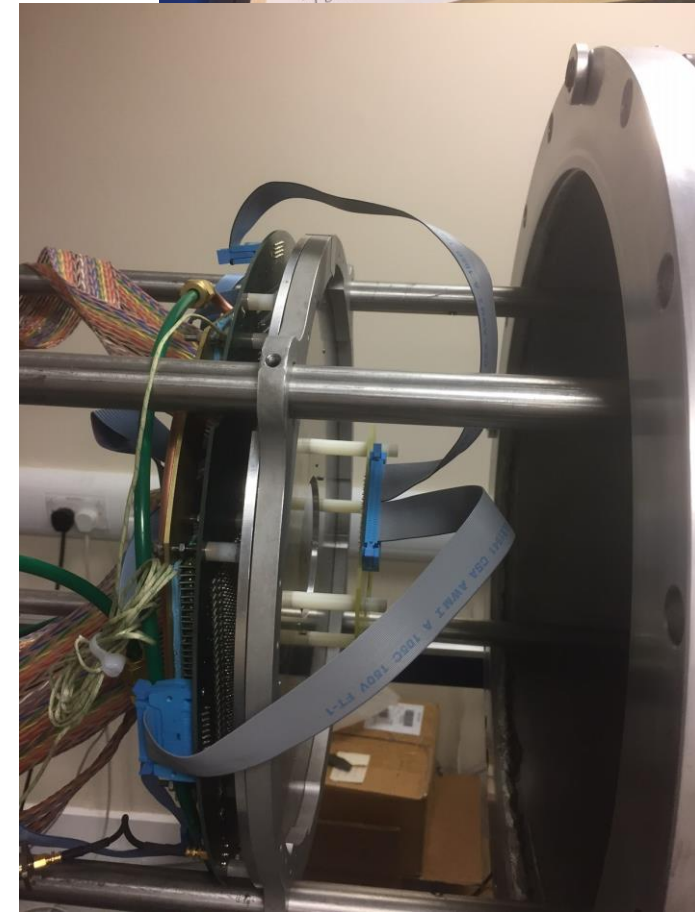
CHANGES ON PREAMPS

- 4 broken channels in a row on the old Upstream preamp board U1 – U4
- Request: 128 channels UPSTREAM
- 64 channels DOWNSTREAM
- → exchange UPSTREAM and DOWNSTREAM boards and removed the old U1-U4



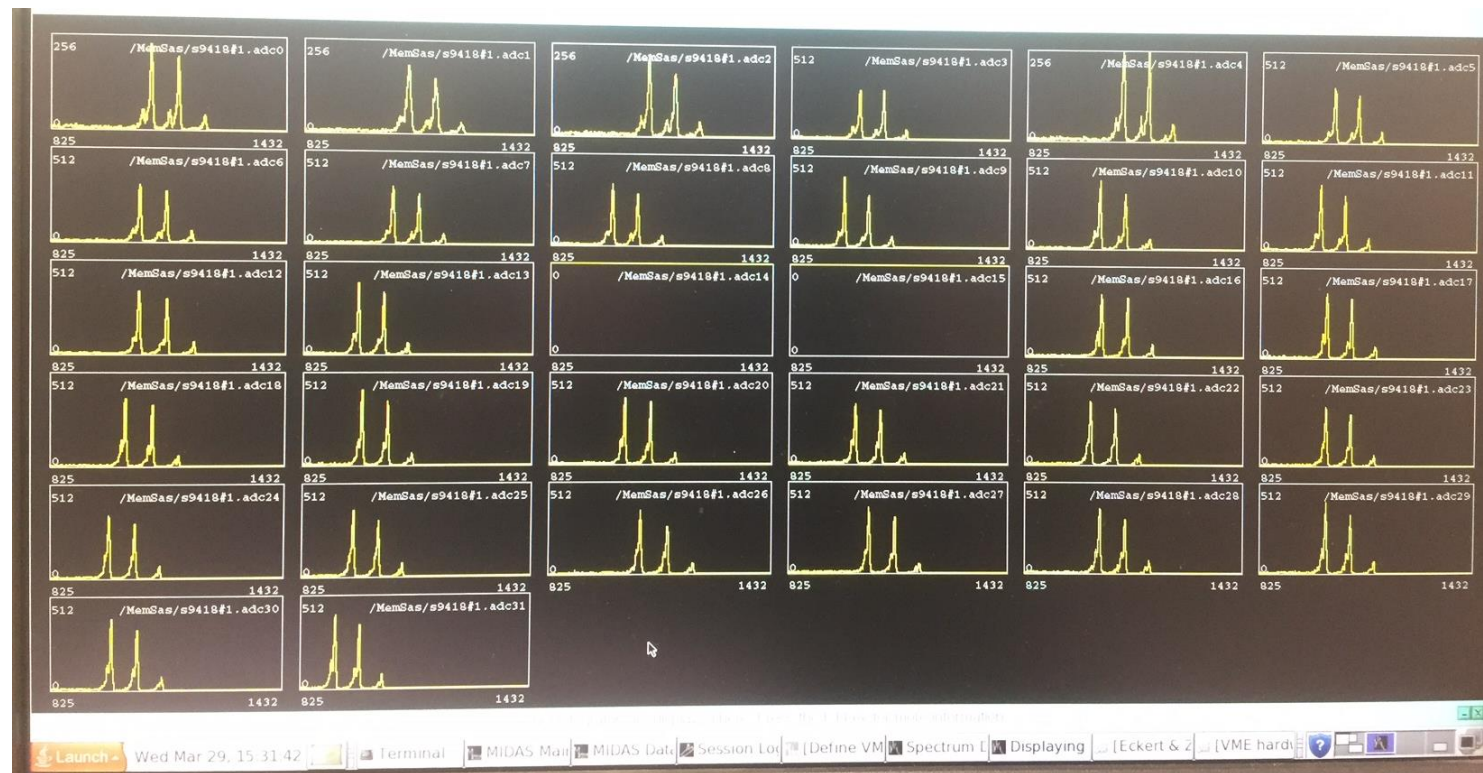
SI-DET TESTING

- Used 74 μ m Si-Det.
 - Dead zone should be orientated oppositely on up- and downstream board
- **QUESTION: MOUNTING** off Δ E-E telescope for alphas \rightarrow CABLING
- Cabling and testing for UPSTREAM BOARD:
- FWHM of test pulse:
 - 2-3ch without Si-Det
 - 7-12 ch with Si-Det, but no BIAS for front side
 - 30 ch with Si-Det, but no BIAS for back side
 - .
 - 4-6 ch with Si-Det and BIAS for front side
 - 7-10 ch with Si-Det and BIAS for back side
- Of course few deviations and #1 adc 14,15



SI-DET TESTING II

- Details on ELOG
- FWHM of alpha source:
 - Problem with #1 adc14, 15 ;
#2 adc 7;
 - #4 adc 6, 7
 - Cabling issue maybe on #2/4 adc 7



OUTLOOK

- Test of DOWNSTREAM board with Si-Det
- N – gas for opening chamber



ATTACHMENT!

