

Radiation test setup in Hall A during CREX

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New radiation detector



View to target

NDX I-400 EPICS Expert Screen

IOC: **iocsoftRadNDX**

10/25/2018 14:31:11 1736831
bootdate heartbeat

Acquisition Switch: **ABORT** / **ACQUIRE** Integration Period: **1.40000** Capacitor Switch: **1000pF**

| NDX Detector 1 | | NDX Detector 2 | |
|----------------|--------------|----------------|--|
| | Currents (A) | | Dose Rates (mrem/h) |
| n Bias (Bn) | -2.4601e-12 | nCur | 1.1006e-09 neutron (nDsRt) 1.2988e+04 |
| g Bias (Bg) | 4.0468e-13 | gCur | 1.1731e-11 gamma (gDsRt) 1.2992e+04 |
| n Calibr (Cn) | 1.1910e+13 | | total (DsRt) 2.5979e+04 |
| g Calibr (Cg) | 1.1470e+15 | | |
| g Factor (Fg) | 1.11200 | | |
| NDX Detector 2 | | NDX Detector 1 | |
| n Bias (Bn) | -4.4413e-13 | nCur | 9.0969e-11 neutron (nDsRt) 1.0764e+03 |
| g Bias (Bg) | -2.6309e-13 | gCur | -1.0220e-12 gamma (gDsRt) -8.4831e+02 |
| n Calibr (Cn) | 1.1670e+13 | | total (DsRt) 2.2812e+02 |
| g Calibr (Cg) | 1.1179e+15 | | |
| g Factor (Fg) | 1.08900 | | |

Auto Bias Time Begin: 2018-11-14 06:00:00 **AutoBias**

Auto Bias Time End: 2018-11-14 09:00:00

Time Format: VVVV-MM-DD HH:MM:SS
-xx, ^xxx^y> where xx is an integer and y is s,h,m,d or w
second,minute,hour,day,week

AutoBias: Successful

For both Detector1 and Detector2:
 $nDsRt = Cn * [(nCur - Bn) - Fg * (gCur - Bg)]$
 $gDsRt = Cg * (gCur - Bg)$
 $DsRt = nDsRt + gDsRt$

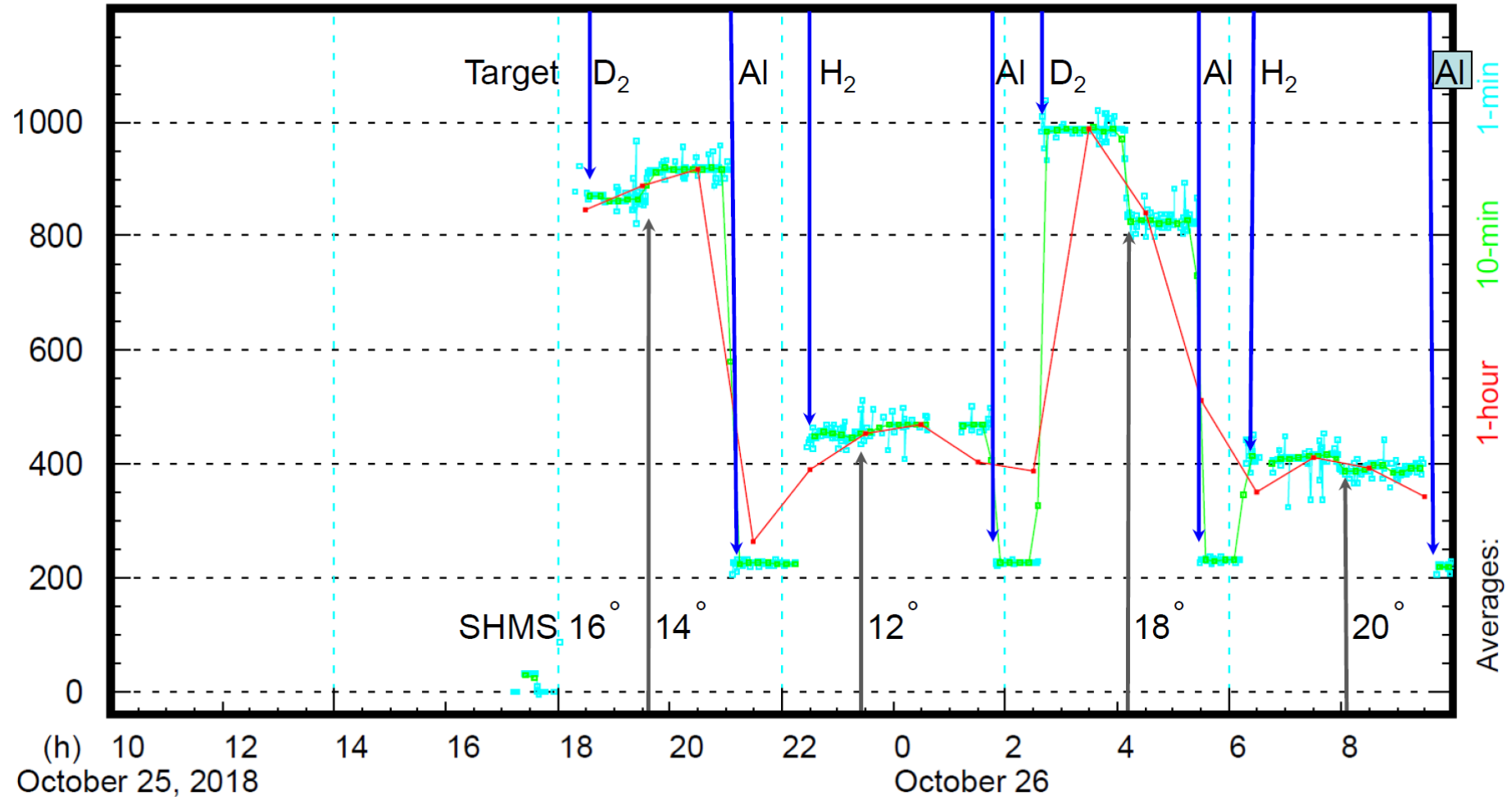
Mean: -2.4601e-12 4.0468e-13 -4.4413e-13 -2.6309e-13

- Neutron dose
- Photon dose

NDX01 Dose Rates per Beam Current

2018/10/26 10:4

Hall C: NDX1 neutron DsRt per Beam Current (mrem/h/ μ A)



Possible test

- Will test GEM electronics and NALU Hawai TOF chip
- High background in PbWO₄
- Irradiation and curing PbWO₄
- Study anode current with new base in high background
- CREX run starts July 26th for 6 weeks