

Mirror Stability Studies

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Setup

Optino
Sensor

Room
Temperature

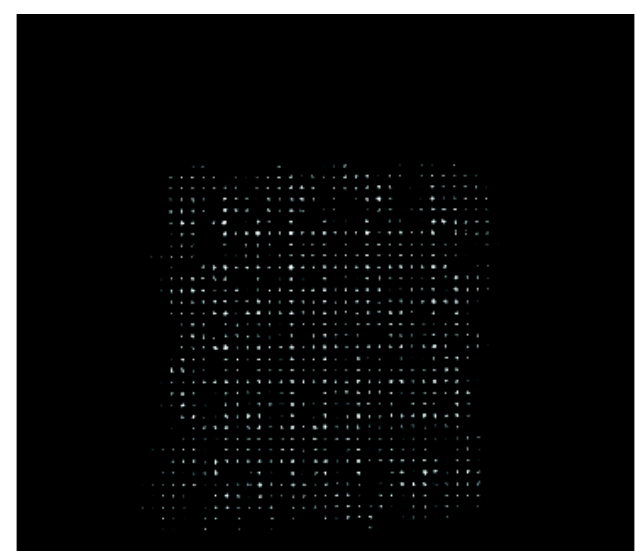
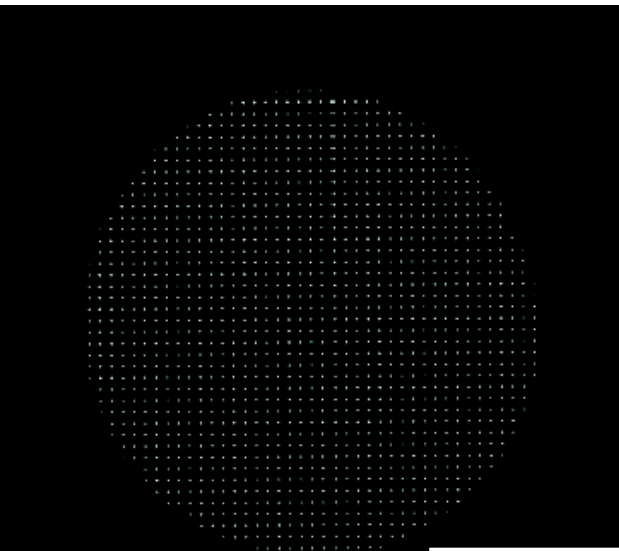
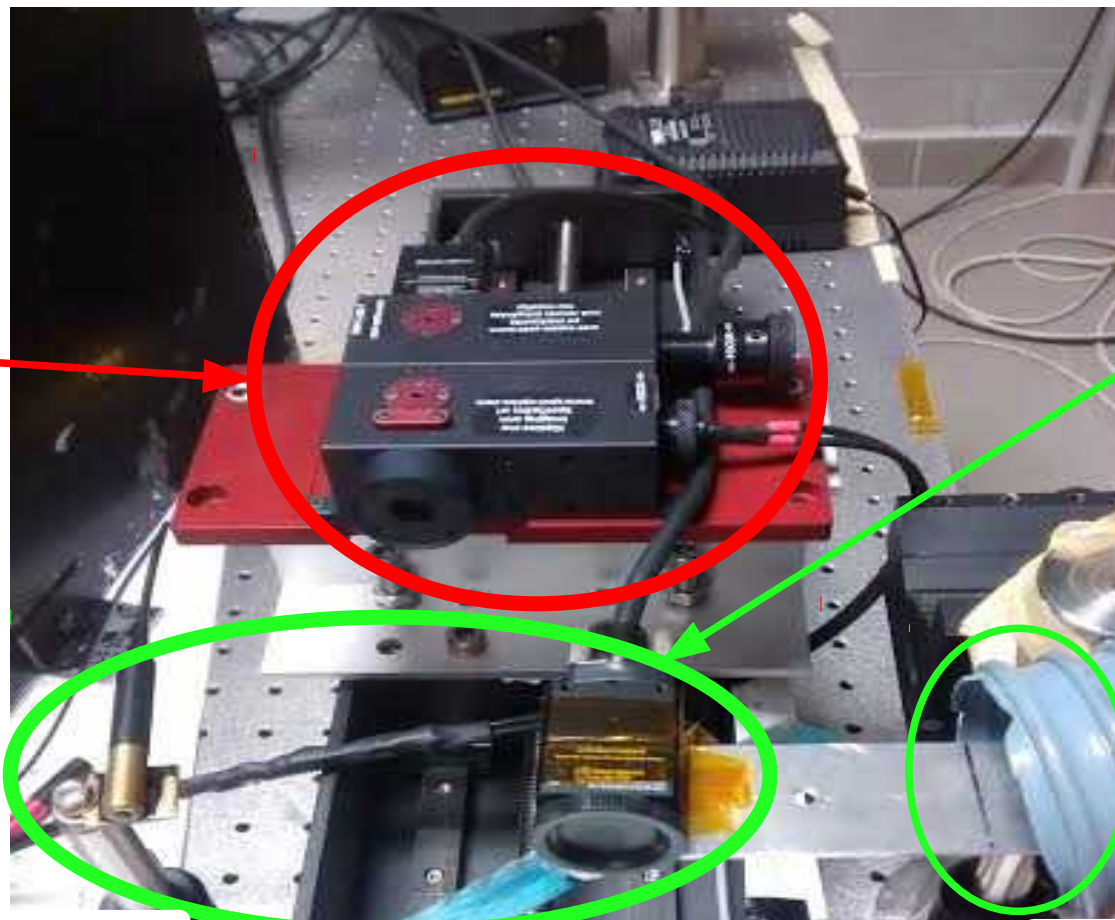
D0
Sensor

Cooled with
air conditioning

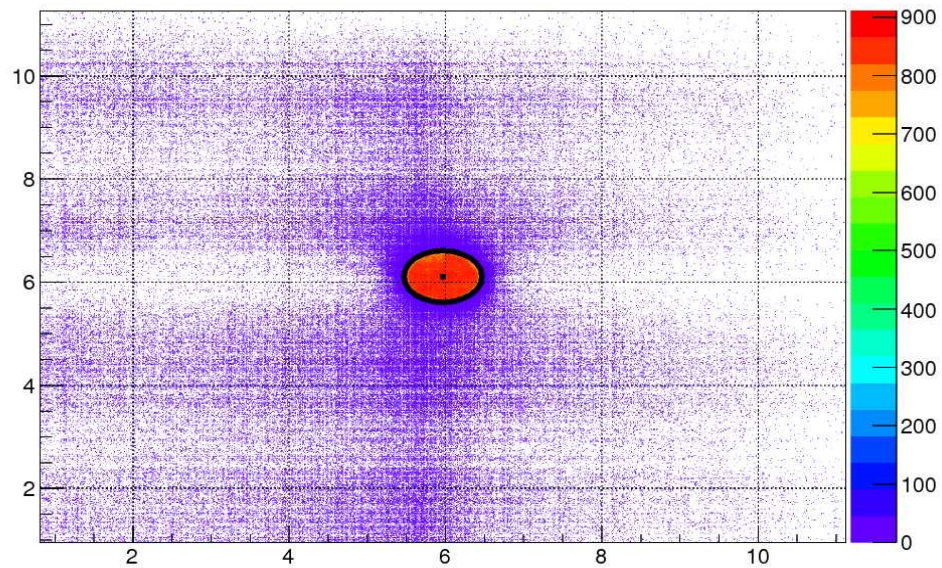
Mirror

Edmund Mirror

CMA2 Mirror

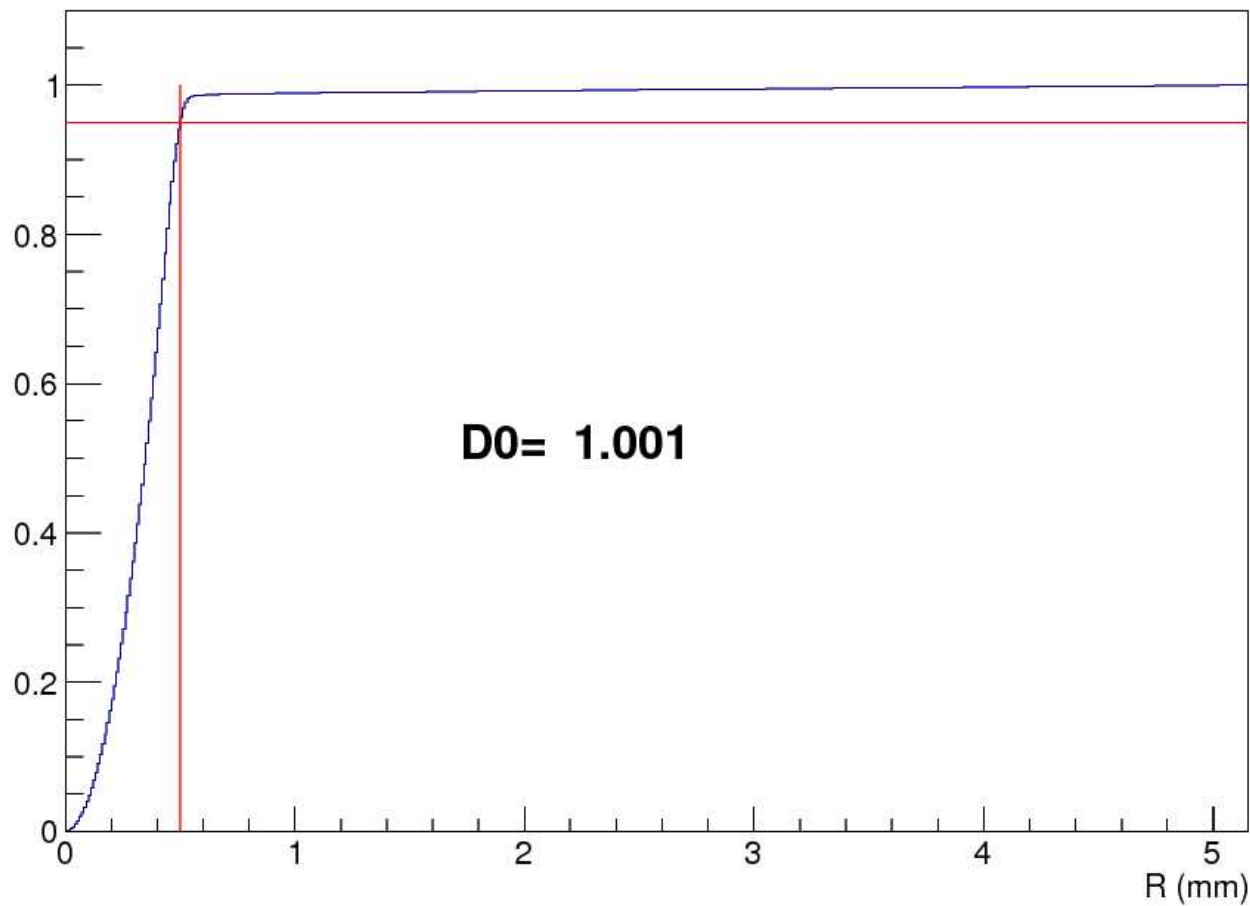


Spot 2D Histogram



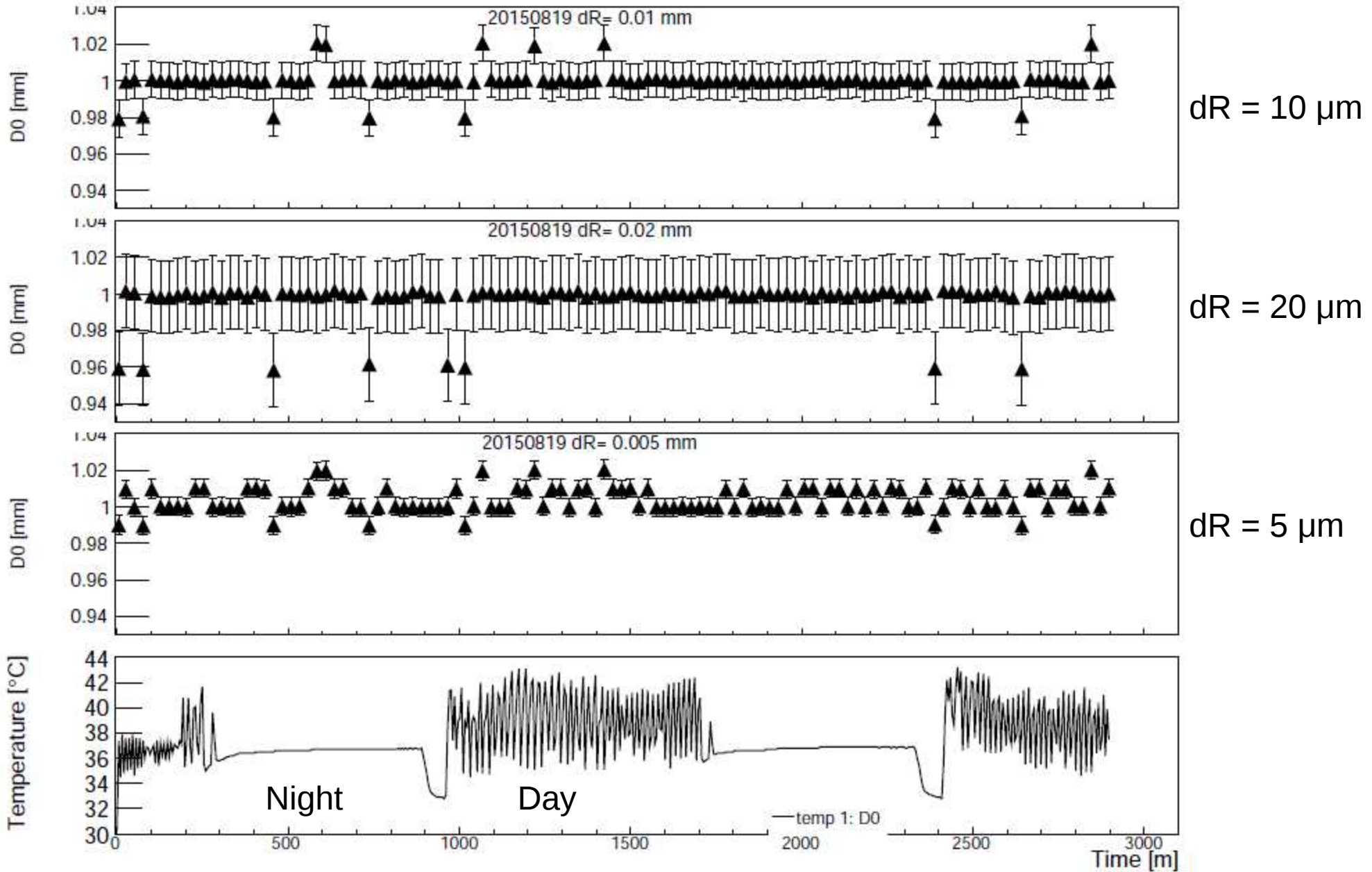
D0 Analysis

Total Normalized Intensity



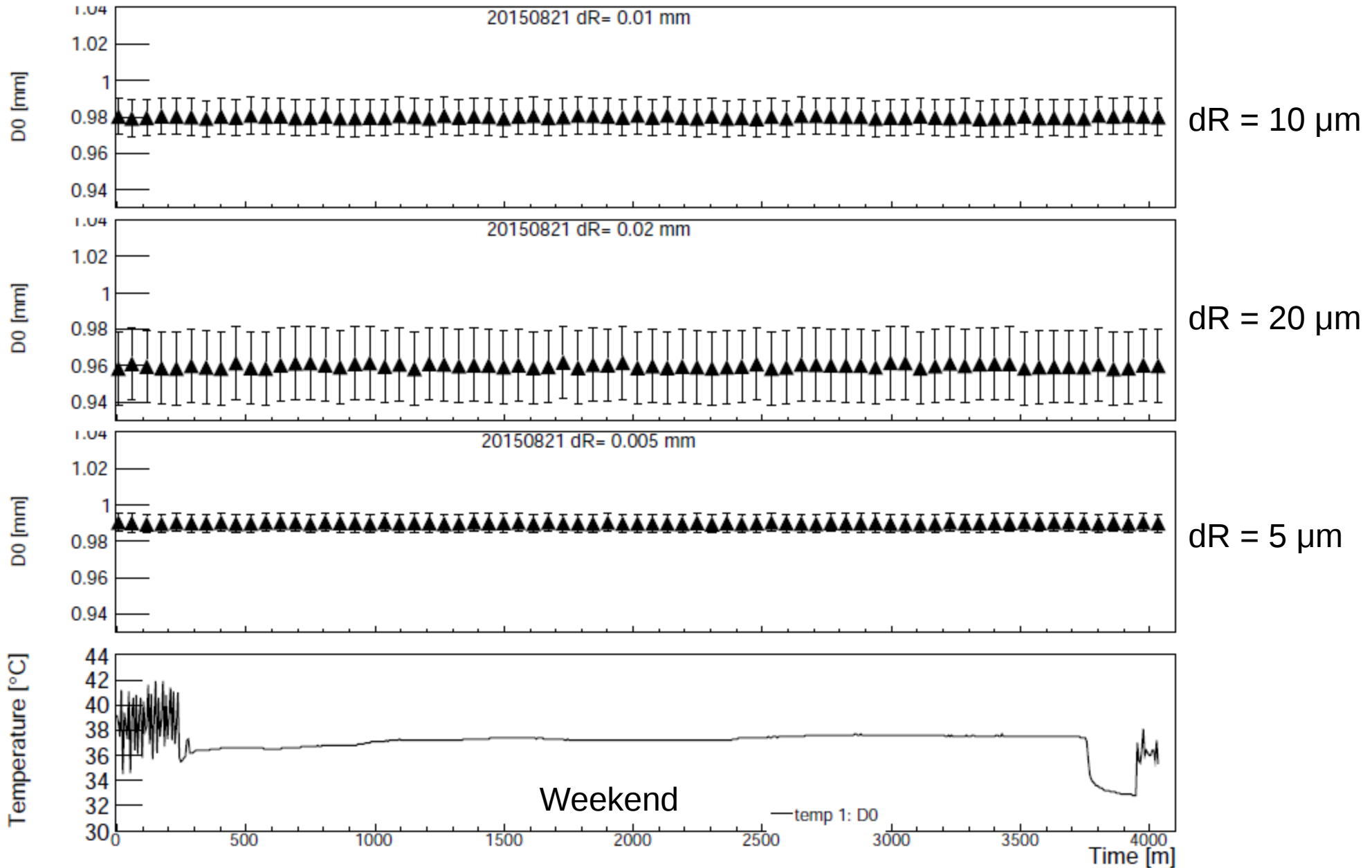
D0 sensor VS Temperature

Edmund Mirror - Single Frame



D0 sensor VS Temperature

Edmund Mirror - 20 Frame

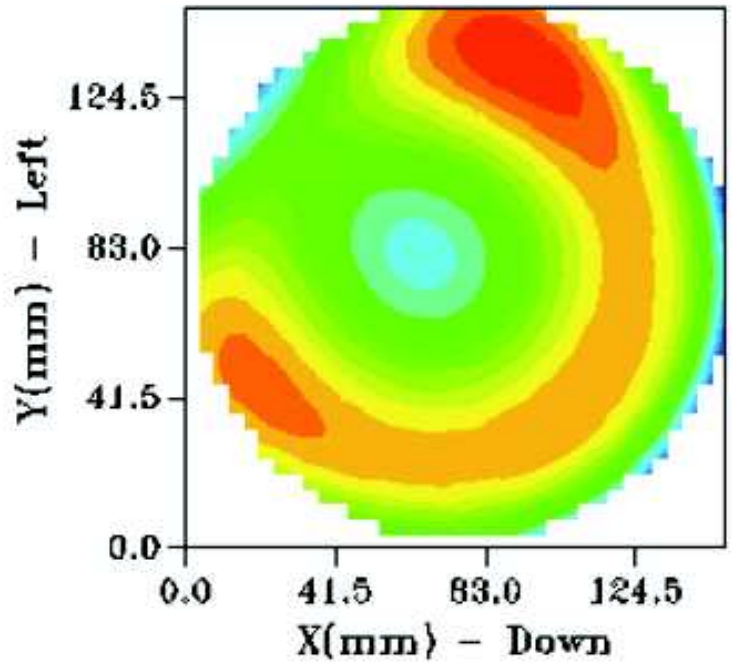
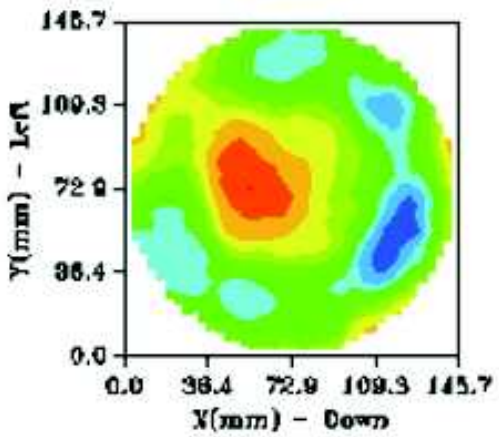


Shack Hartmann Optino Analysis

Parameters
SH - rms and SH - P-V

Zonal WF - AQ, P-V=362.9, rms=76.6 nm

Contour of Modal wavefront - AQ (Tilt, Defocus subtracted) = 632.8 nm



P-V=420.0, rms=83.4nm

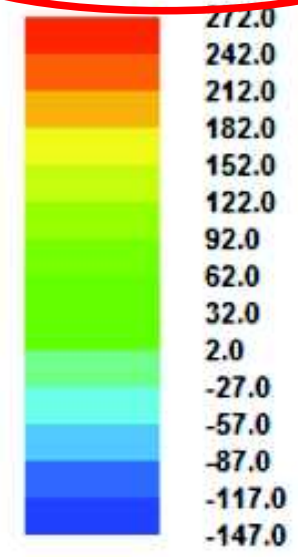


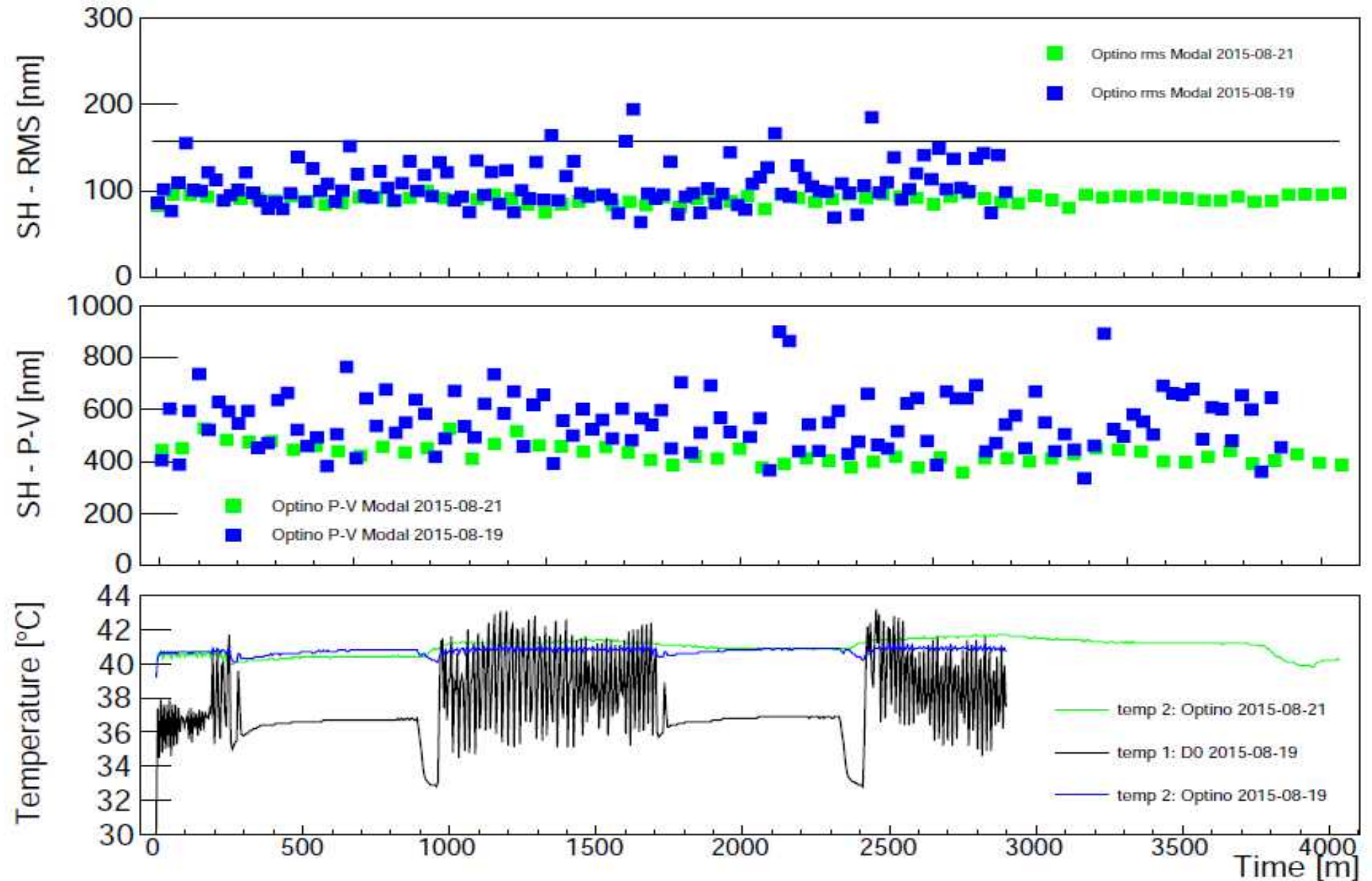
Image: edmund_100fl 06/08/2015 - Analyzed: 06/08/2015 - No. of spots 1317 (41x42)
Lens: Company/User: - - Instr: SpotOptics OptinoSensoft
Mirror at rad. curvature - SP. fl=1800mm, d=149.4mm, Coll: fl=100mm. Lenslet: (7mm, 0.2mm)

Standard Zernike coefficients (nm, °)

Defoc	-208.0	Tilt	8755.7, -177.5	Ast3	79.9, 61.9	TComa	61.6, -40.0	QAst	14.9, 2.3	Foil5	---
SA3	-111.5	Coma	78.6, 161.7	Ast5 (X)	13.3, -78.9	TCom5	---	QAst5	---	Foil6	---
SAS (X)	12.2	Com5 (X)	13.9, 0.5	Ast7	---	TCom7	---	QAst7	---	Foil7	---
SA7	---	Com7	---	Ast9	---	TCom9	---	QAst9	---	Foil8	---
SA9	---	Com9	---	Ast11	---	TCom11	---	QAst11	---		
SA11	---	Com11	---	Ast13	---	TCom13	---				
SA13	---	Com13	---	Ast15	---						

Optino sensor VS Temperature

Edmund Mirror - Single Frame and 20 Frame



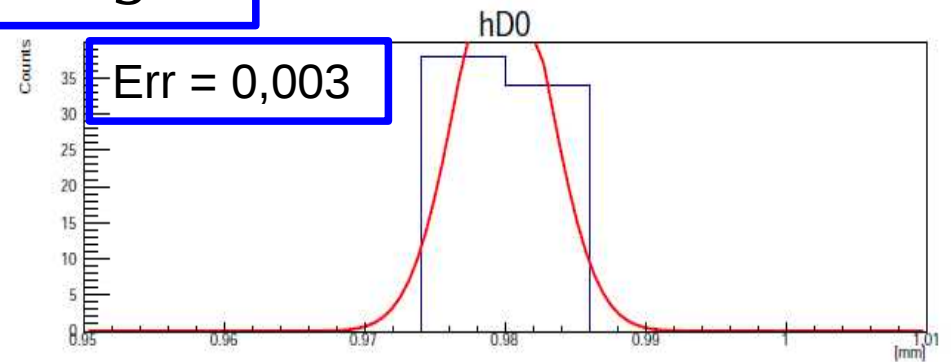
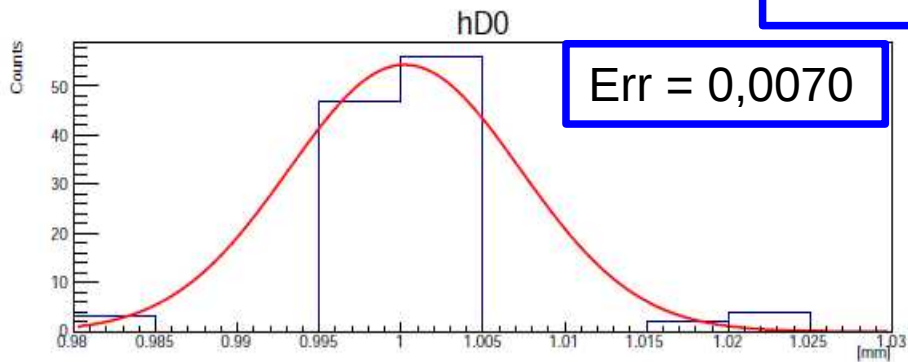
Distribution Results

Edmund Mirror

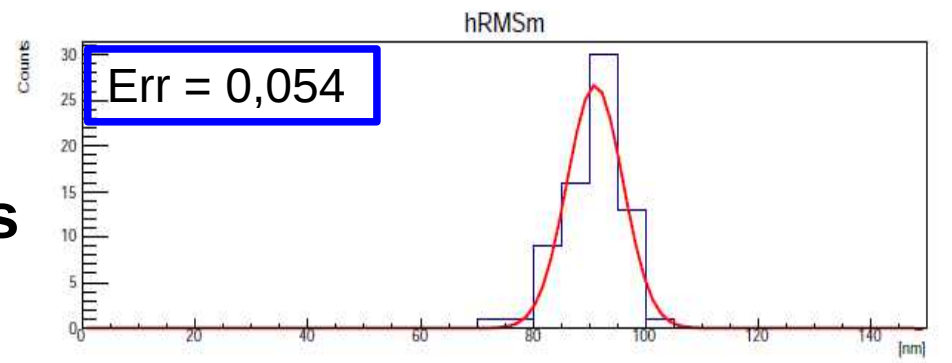
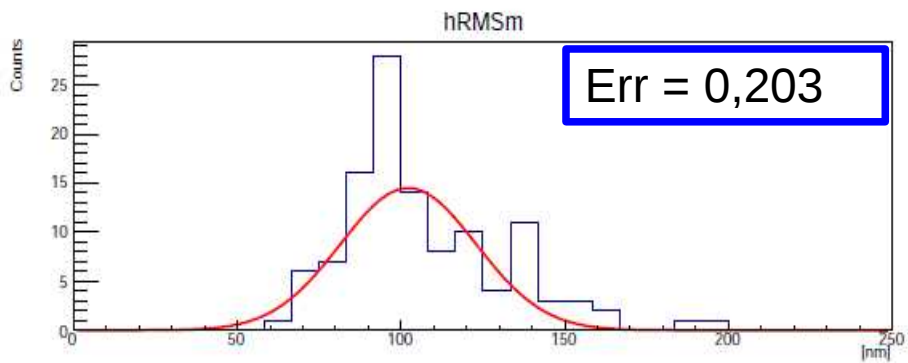
$$Err = \frac{rms}{average}$$

Single Frame

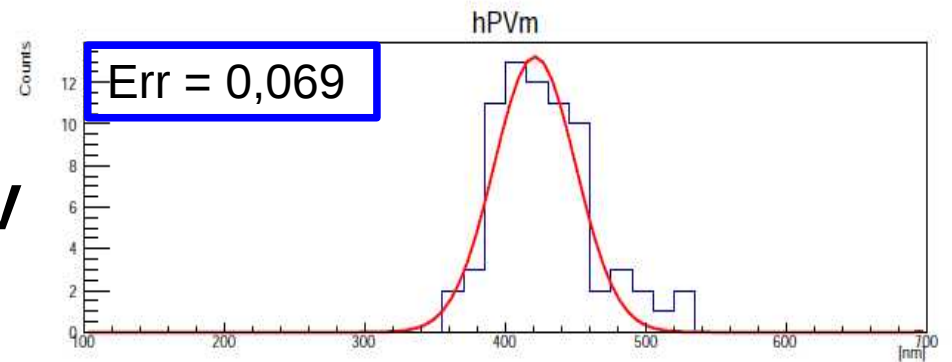
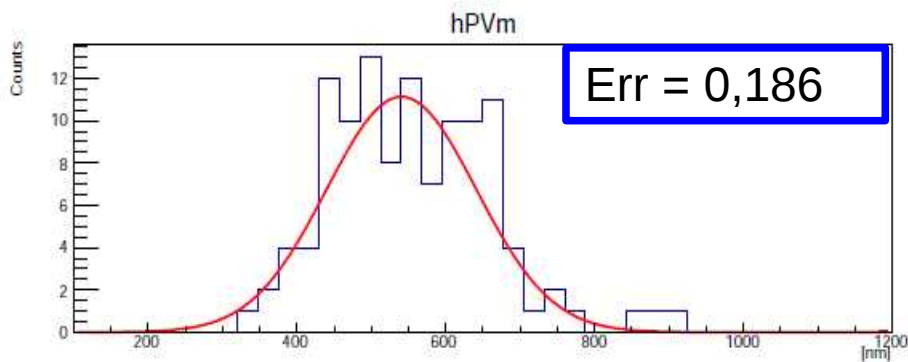
20 Frame



D0



SH
rms

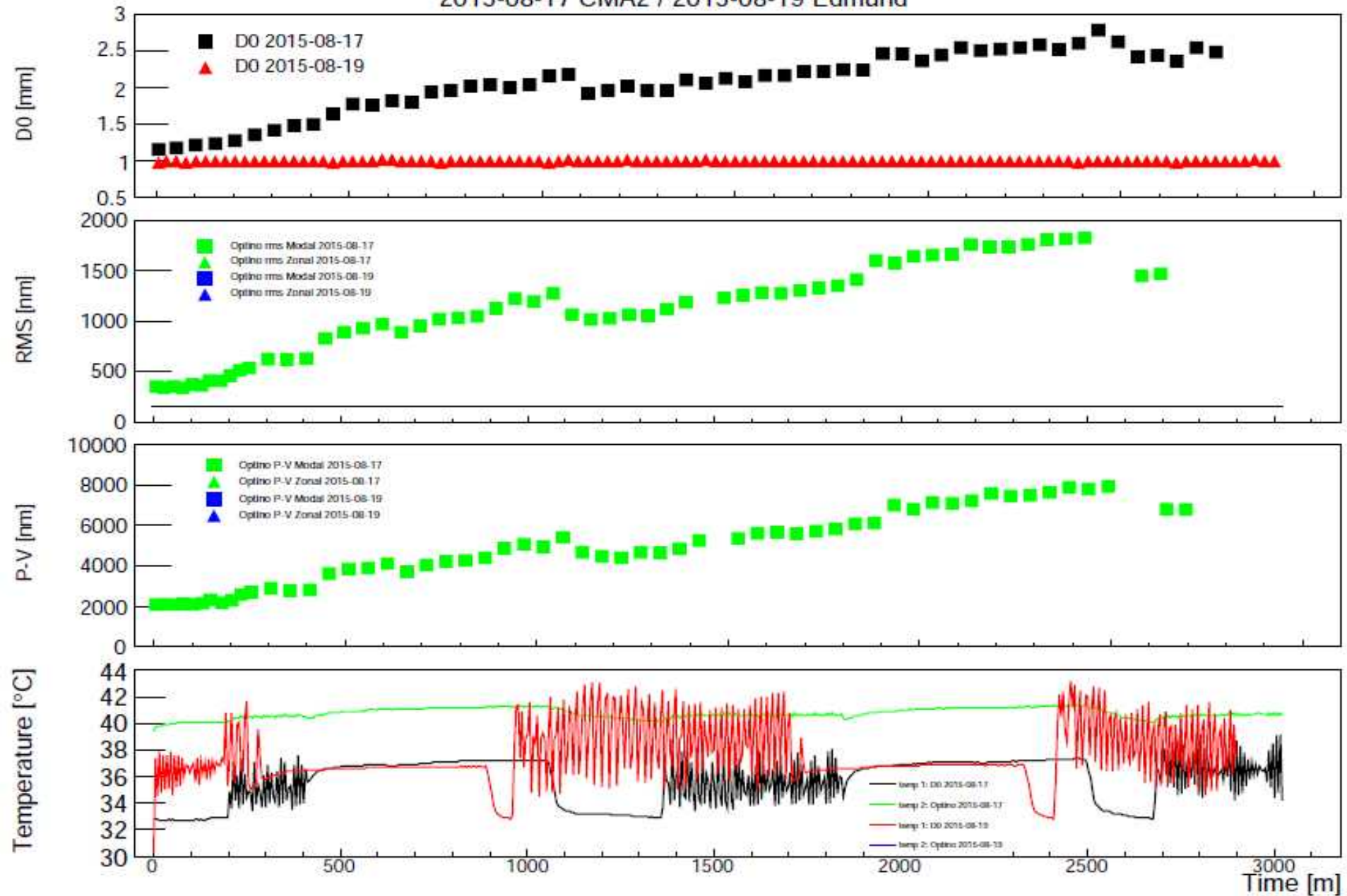


SH
P-V

CMA2 Stability

CMA2 Mirror - Edmund Mirror (single frame)

2015-08-17 CMA2 / 2015-08-19 Edmund



CMA2 Recovery

