



Test report on 'A' ears for Advanced LIGO NP-type monolithic suspension

Rev 00, submitted by L Cunningham 09 August 2007

Authors: Liam Cunningham, Russell Jones, Mark Barton

1.0 Summary:

All 20 of the 'A' style ears¹ were tested for flatness of the bonding surface. Only two of the 20 managed to comply with the $\lambda/10$ (0.1λ) specification. A table of flatness is provided below. Measurements were filtered to exclude the outer 5 pixels for all samples, although a smaller measurement area may have resulted in more passing. The fixing screw on the handling jig^{2,3} was not used for any of these measurements. Interferograms for all samples are included.

Table 1 Flatness measurements of 'A' ears with Pass/ Fail based on $\lambda/10$ specification

Sample name	Measured flatness (λ)	Pass/ Fail
A1	0.116	Fail
A2	0.21	Fail
A3	0.162	Fail
A4	0.199	Fail
A5	0.125	Fail
A6	0.112	Fail
A7	0.067	Pass
A8	0.222	Fail
A9	0.198	Fail
A10	0.112	Fail
A11	0.142	Fail
A12	0.124	Fail
A13	0.115	Fail
A14	0.134	Fail
A15	0.177	Fail
A16	0.15	Fail
A17	0.19	Fail
A18	0.164	Fail
A19	0.048	Pass
A20	0.266	Fail

¹D060055-02-K NP-type Refined Ear (Type A)

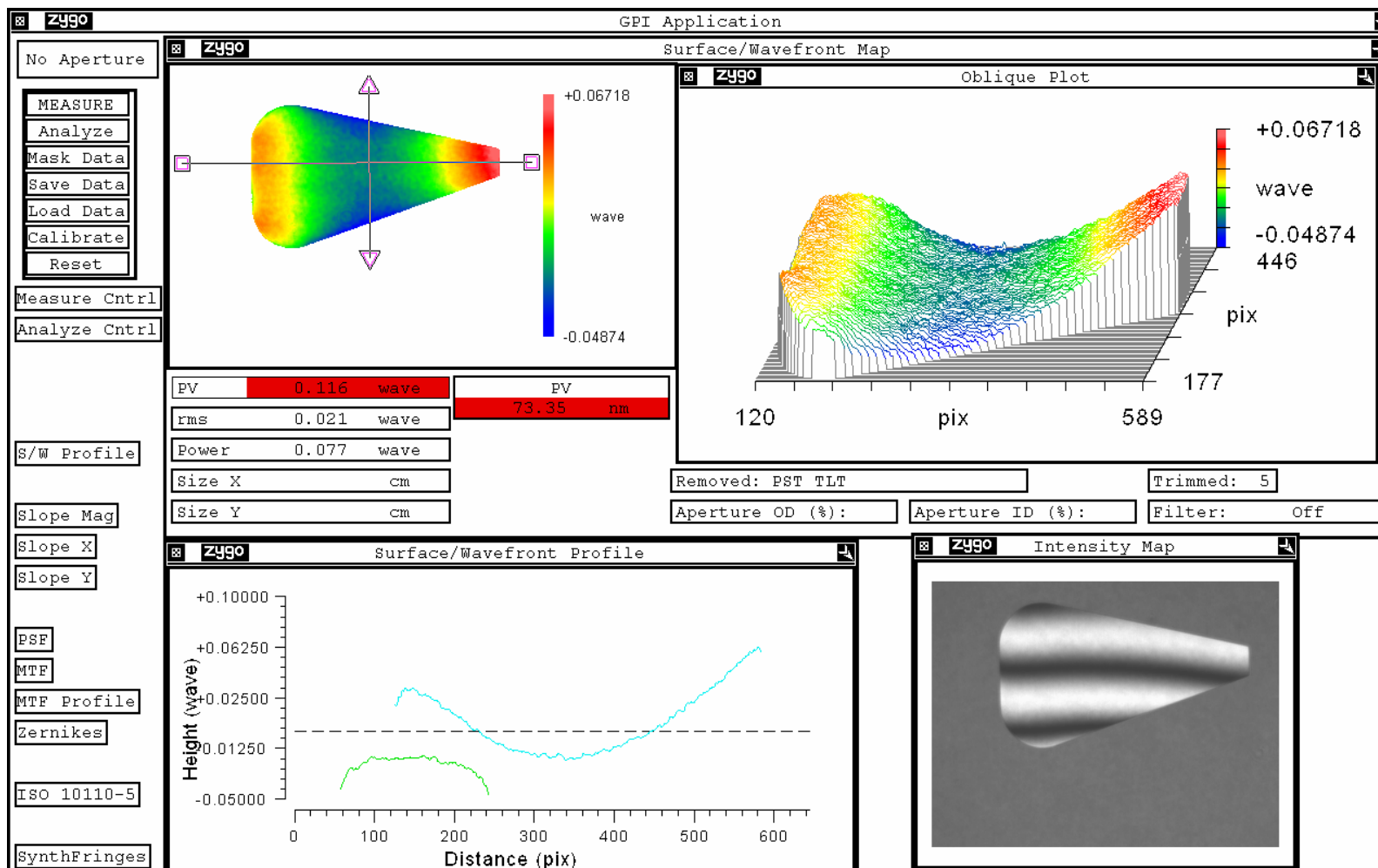
²T070070-00-K Noise Prototype Ear Bonding Jig Review of Draft Design

³T070156-01-K Advanced Testing of Noise Prototype Ear Bonding Jig



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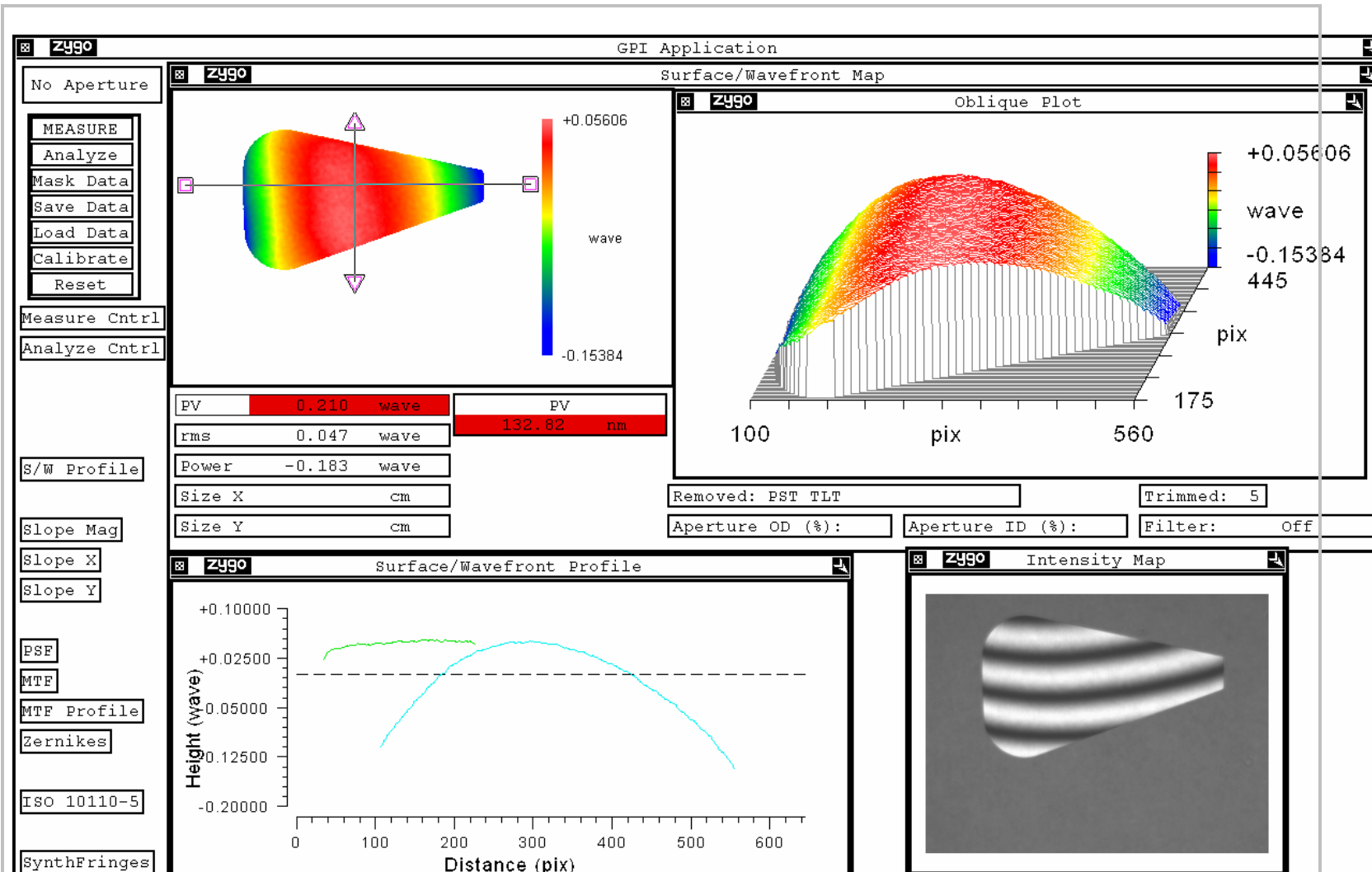
2.0 Interferograms of ears A01- A20



A 1 flatness 0.116 λ



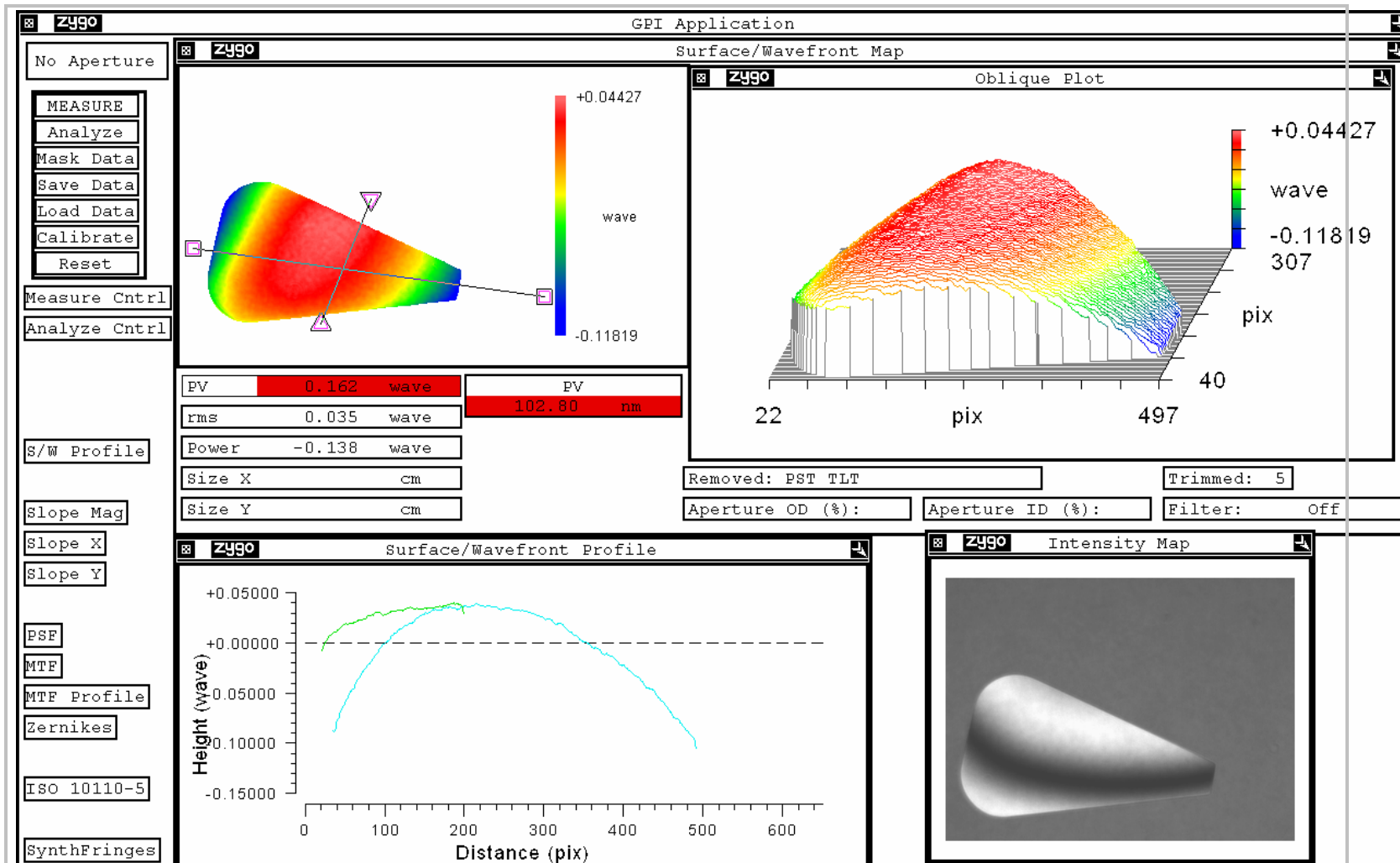
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A 2 flatness 0.21 λ



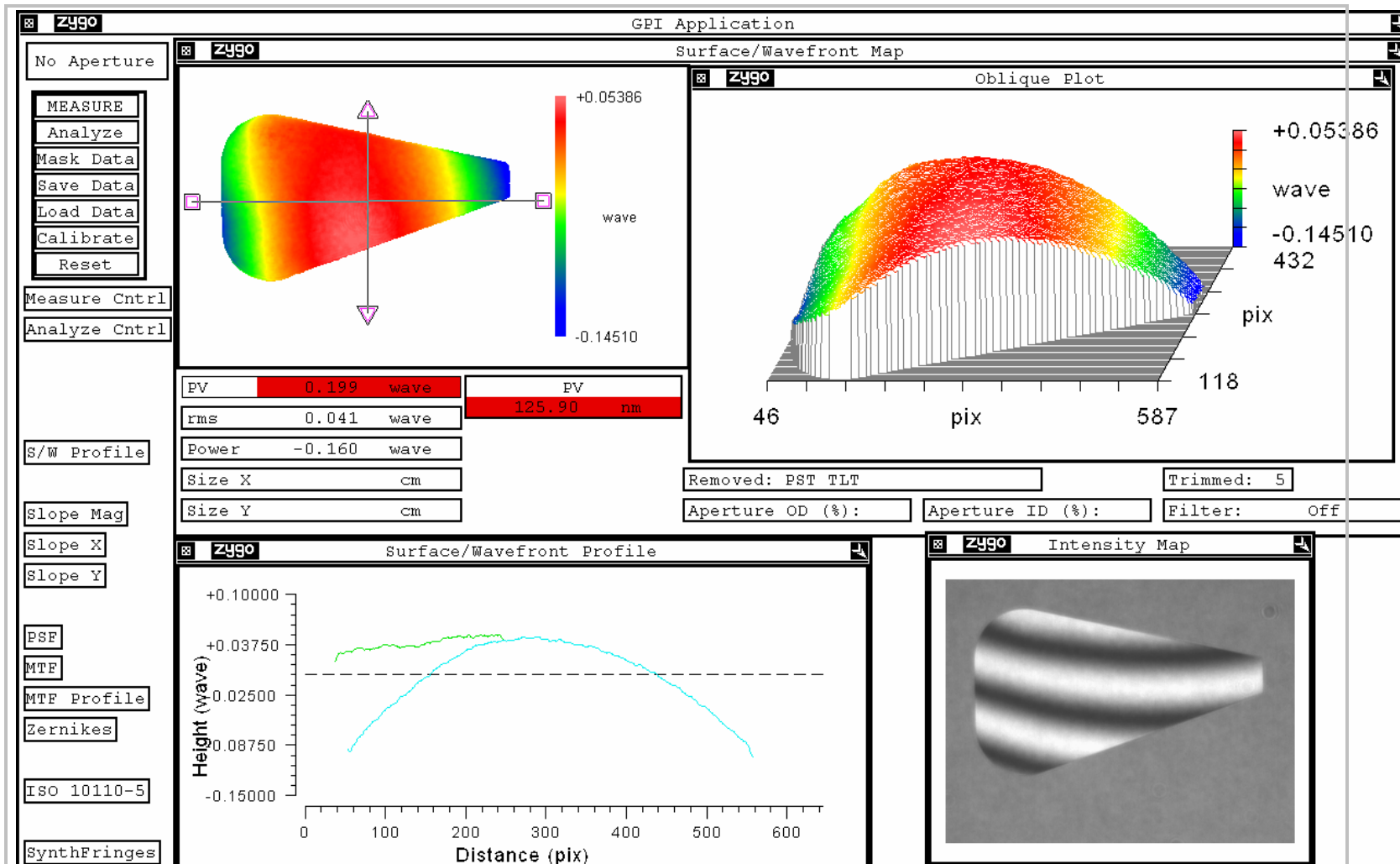
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A 3 flatness 0.1 λ



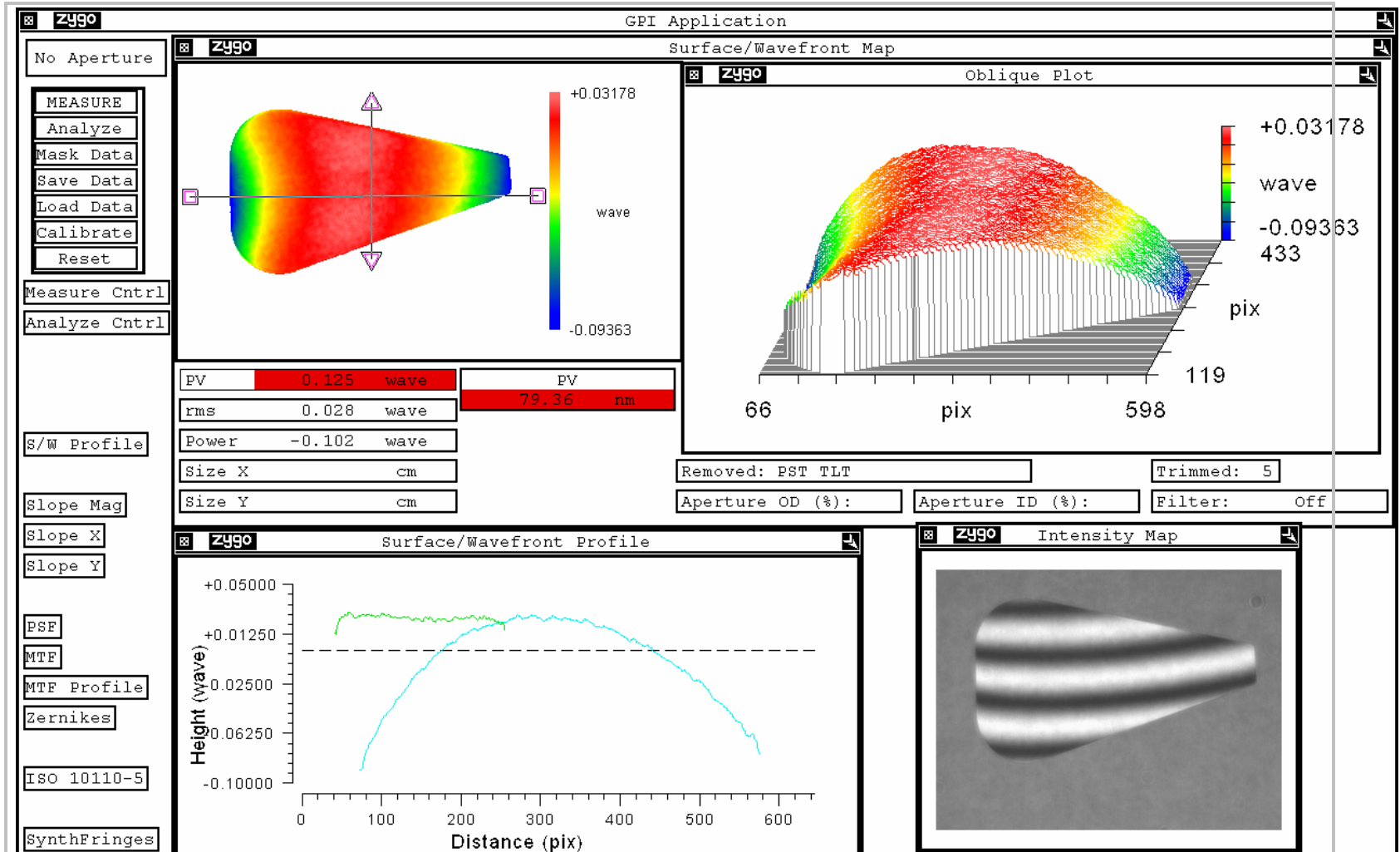
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A 4 flatness 0.199 λ



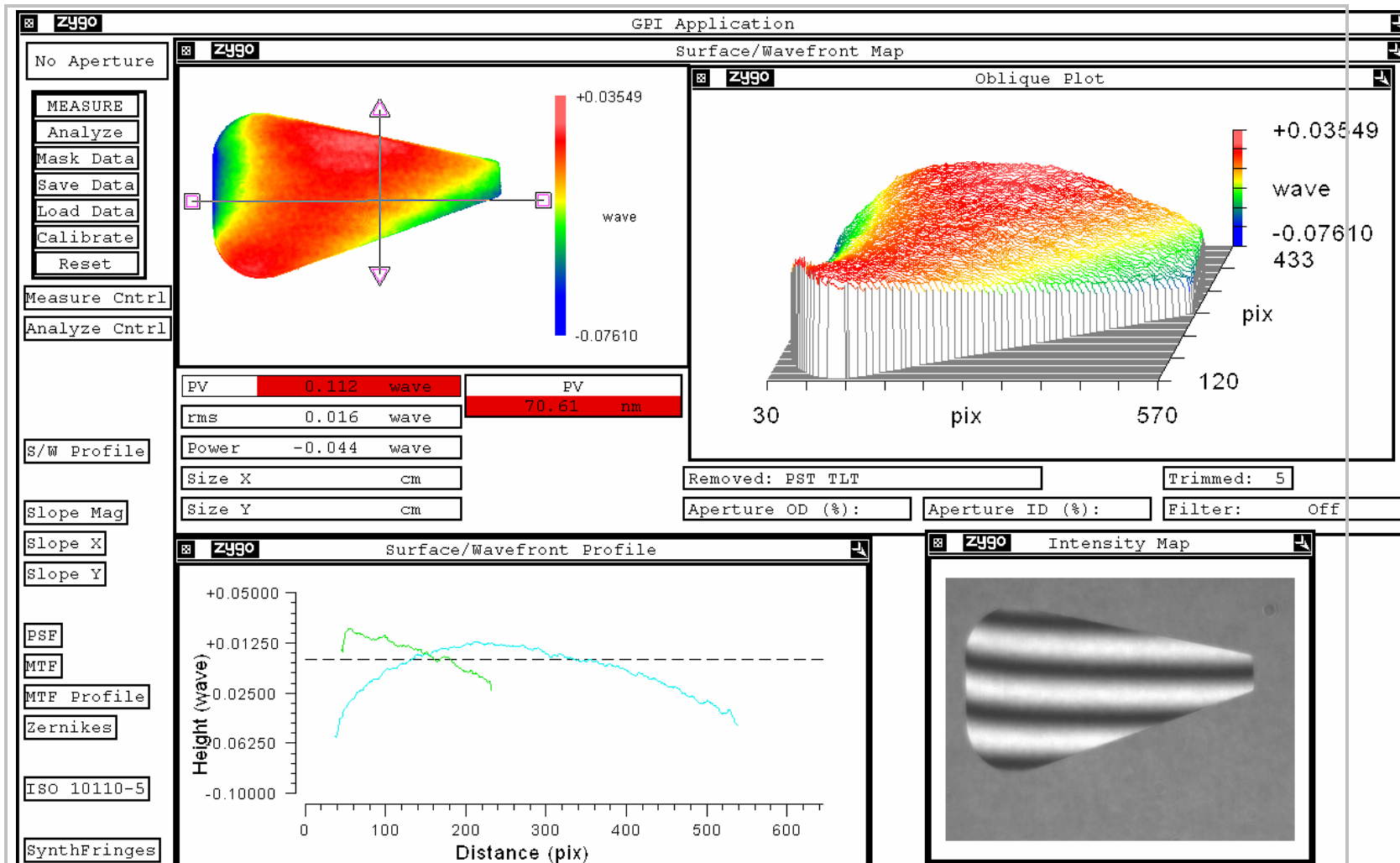
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A 5 flatness 0.125 λ



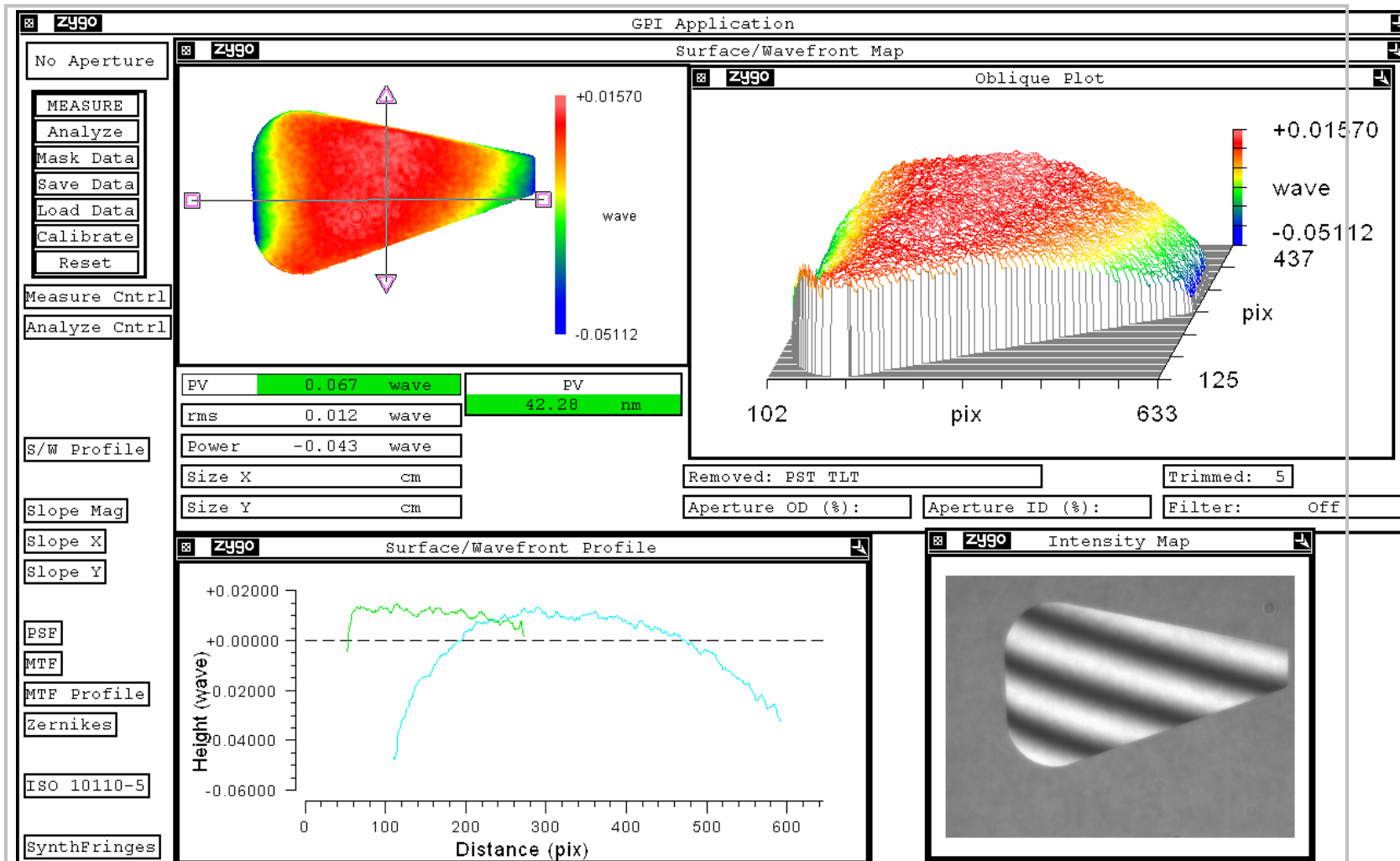
Test report on 'A' ears for Advanced LIGO monolithic suspension



A 6 flatness 0.112 λ



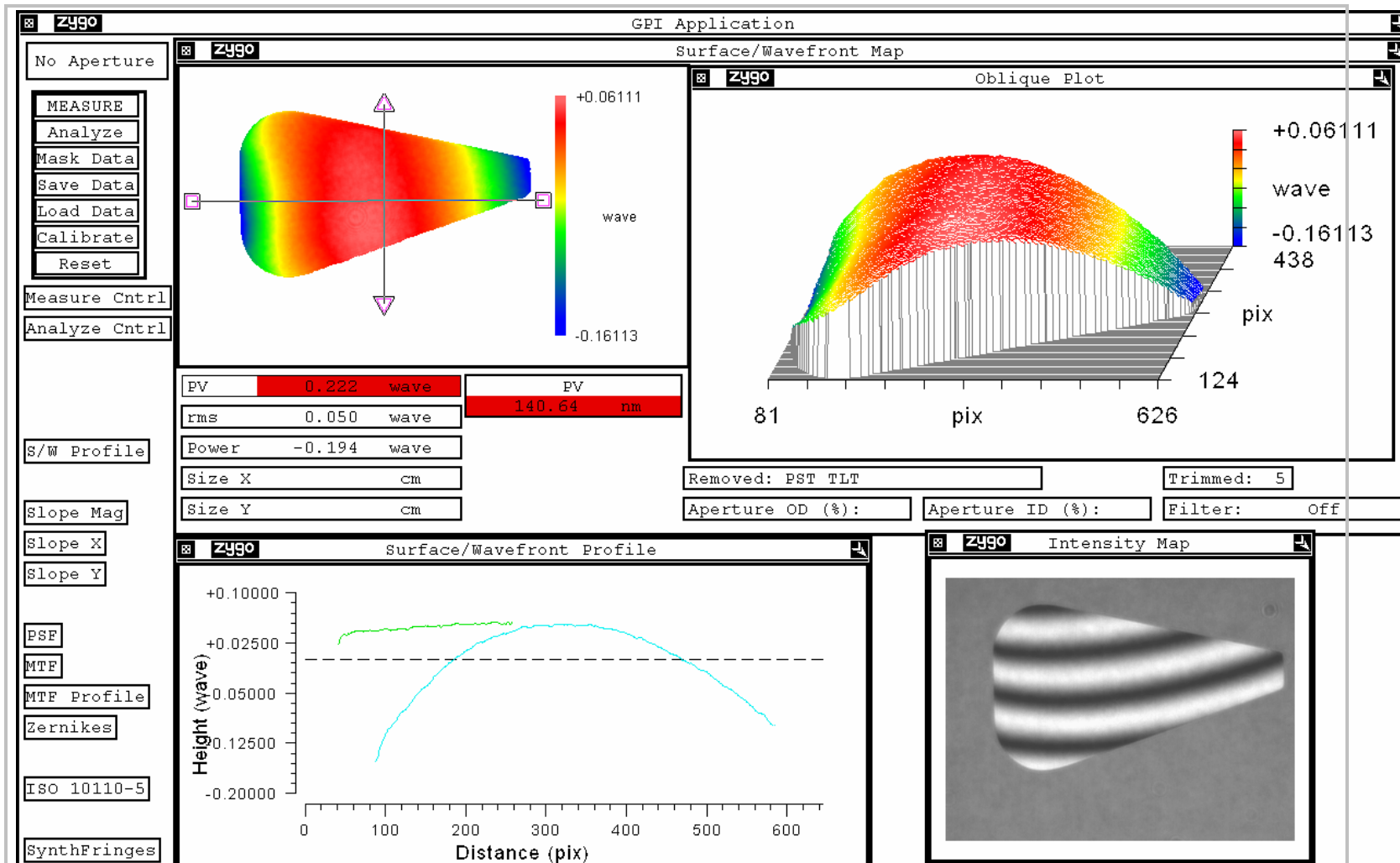
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A 7 flatness 0.067 λ



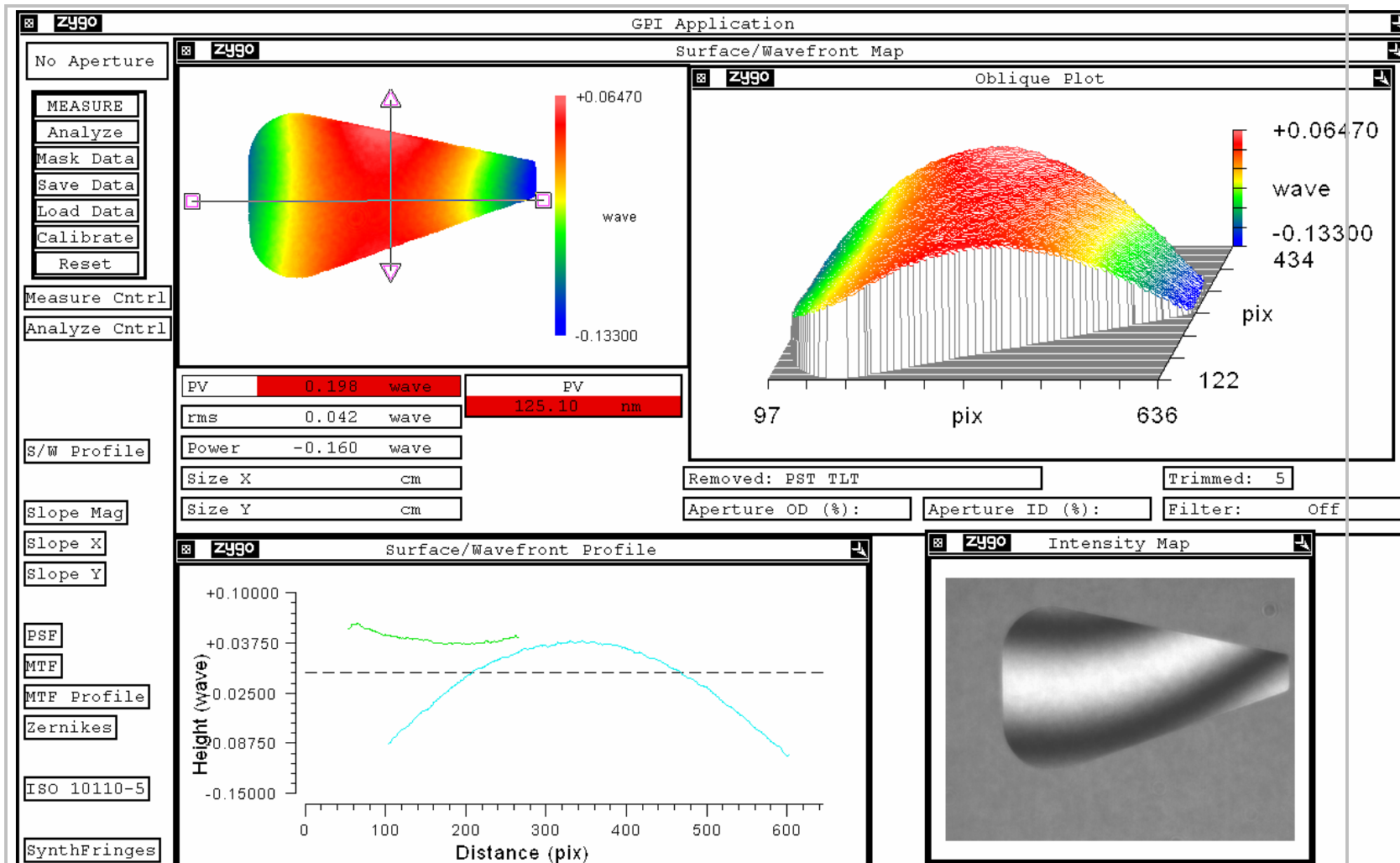
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A 8 flatness 0.222 λ



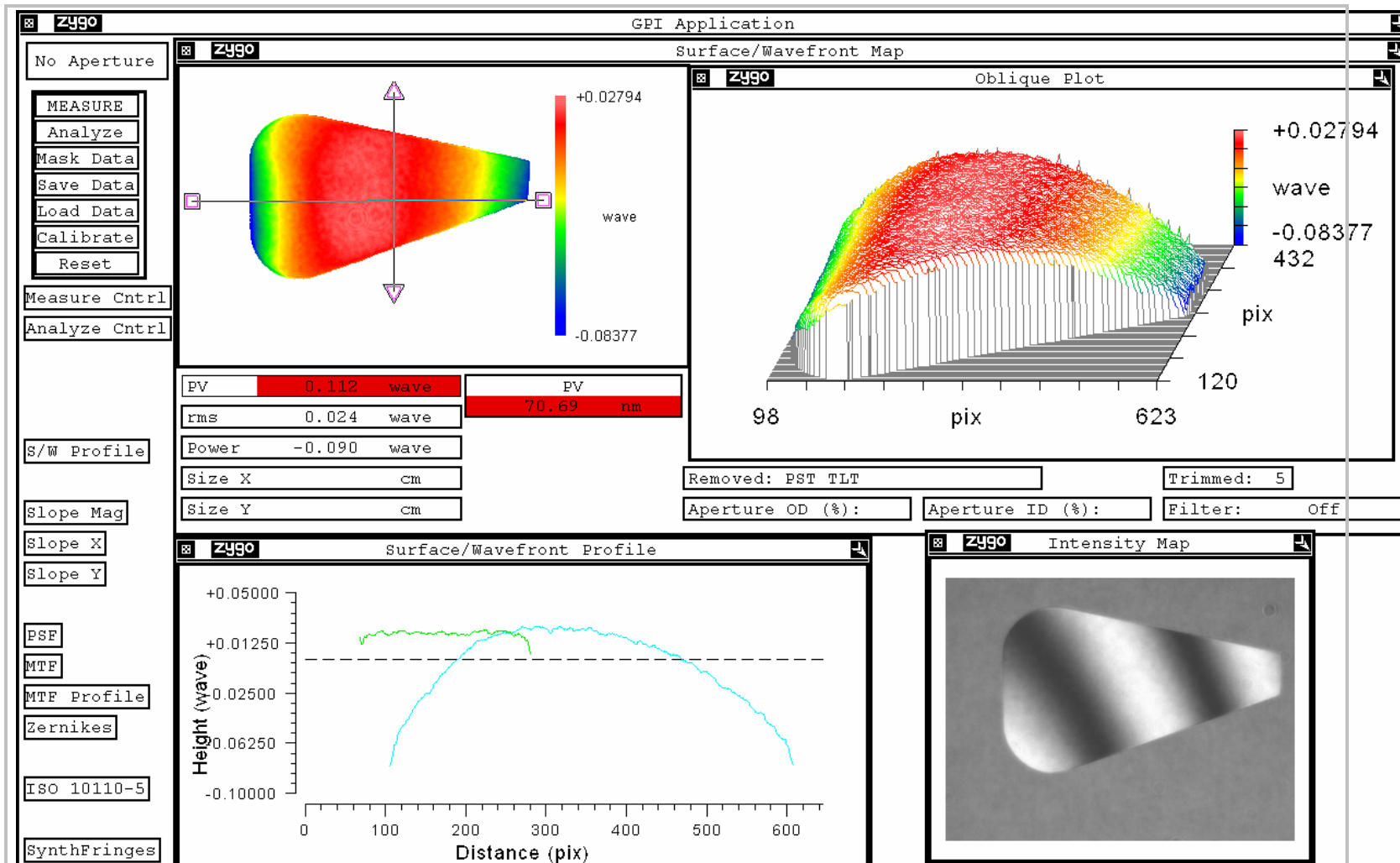
Test report on 'A' ears for Advanced LIGO monolithic suspension



A 9 flatness 0.198 λ



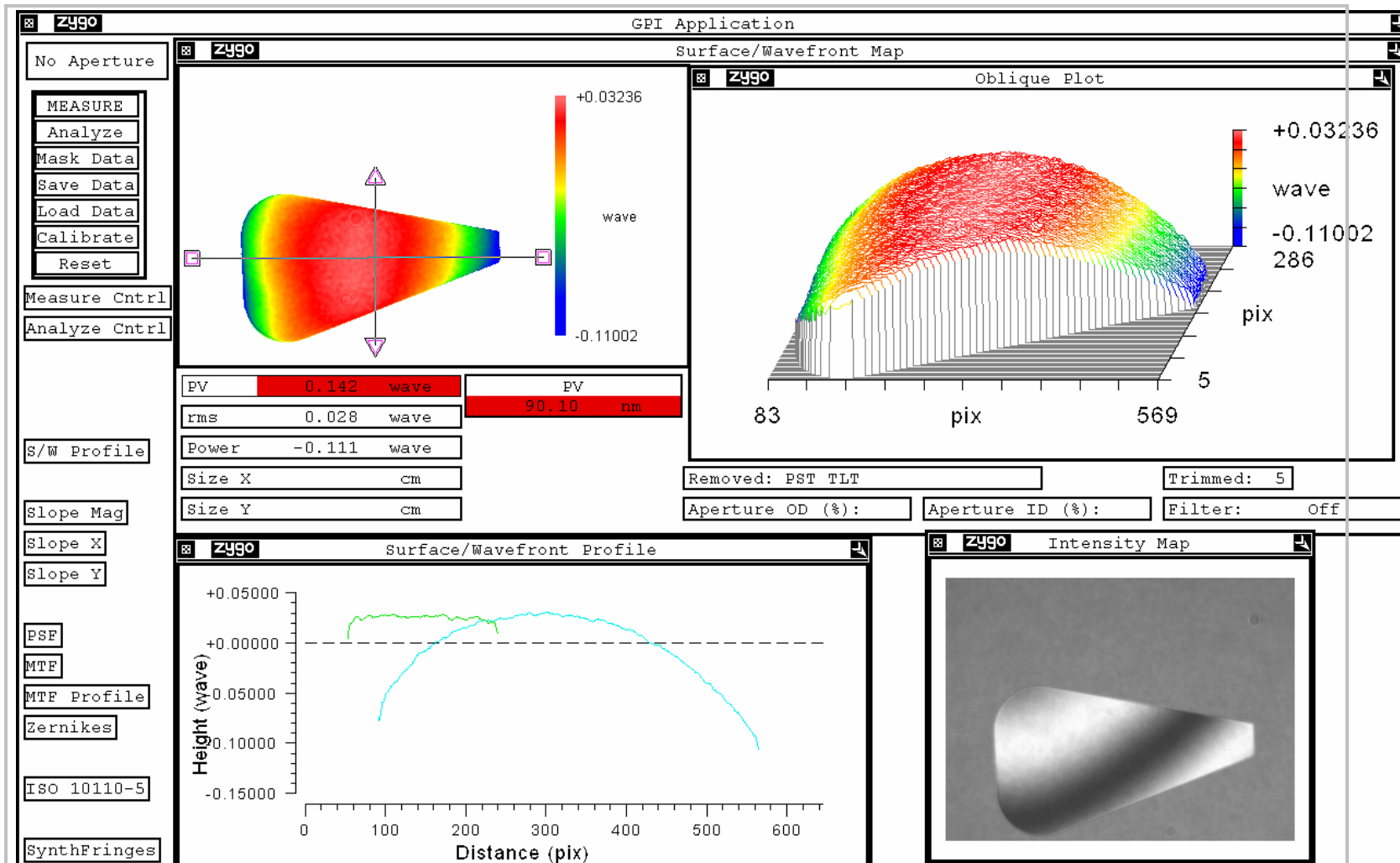
Test report on 'A' ears for Advanced LIGO monolithic suspension



A 10 flatness 0.112 λ



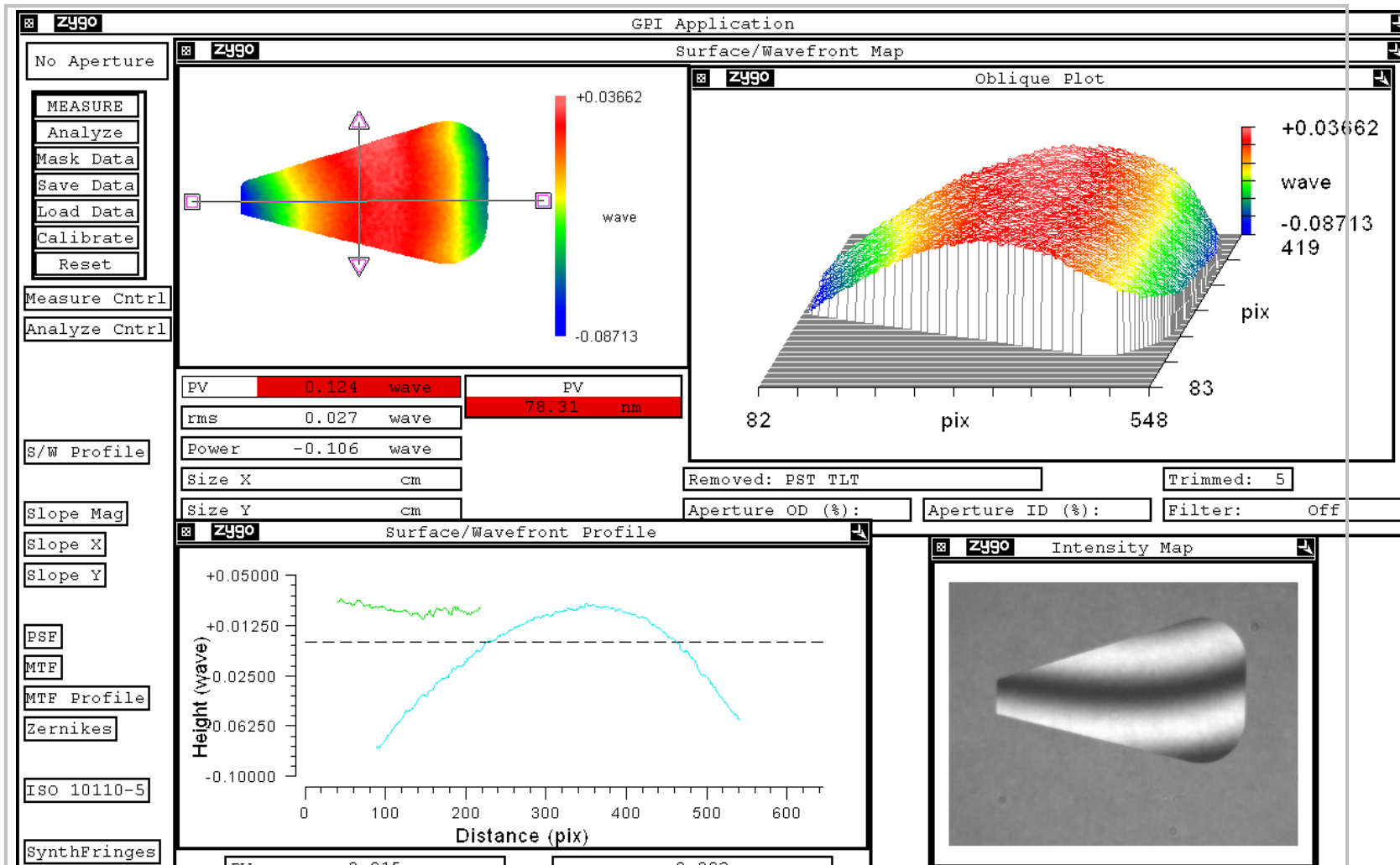
Test report on 'A' ears for Advanced LIGO monolithic suspension



A 11 flatness 0.142 λ

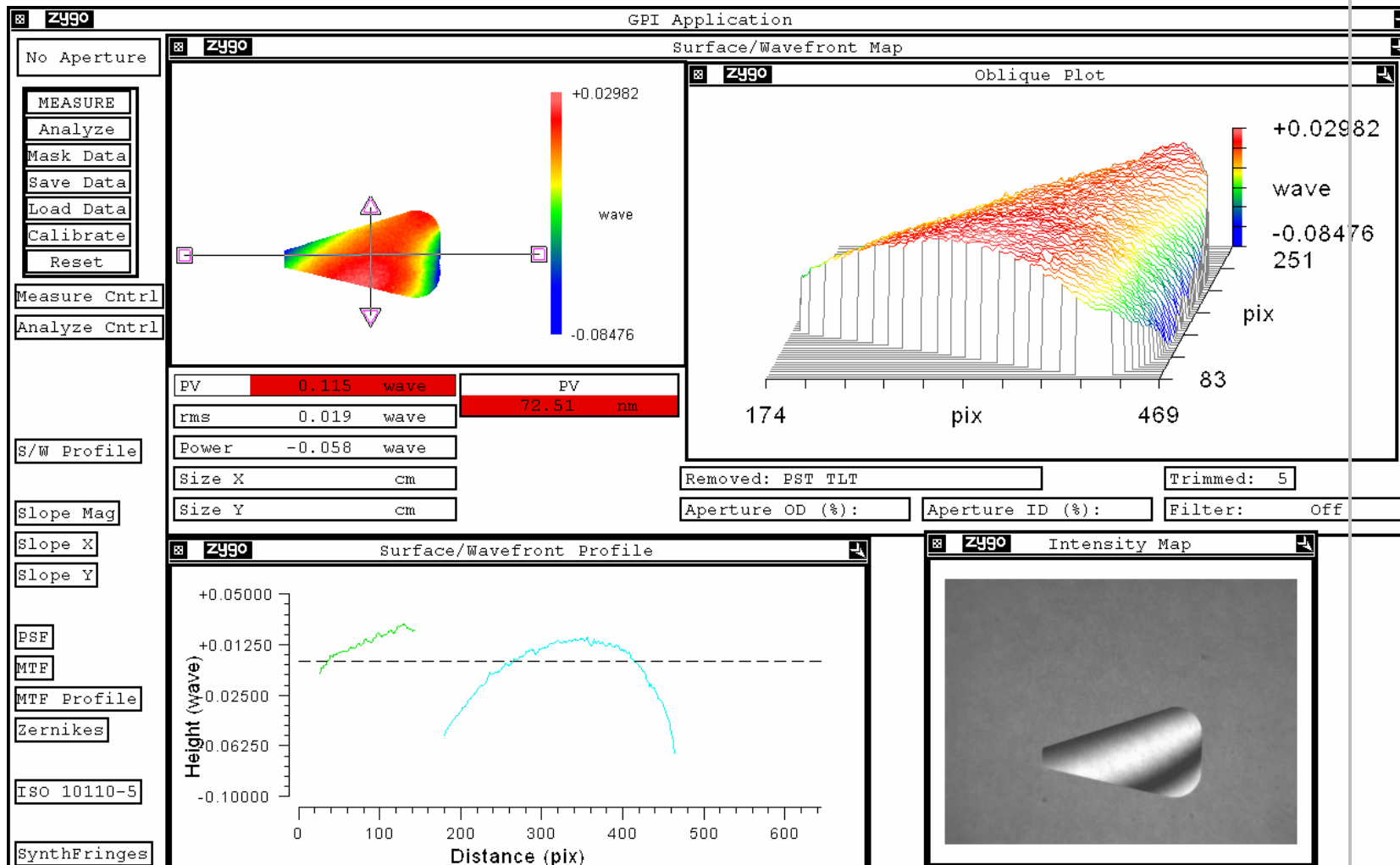


Test report on 'A' ears for Advanced LIGO monolithic suspension





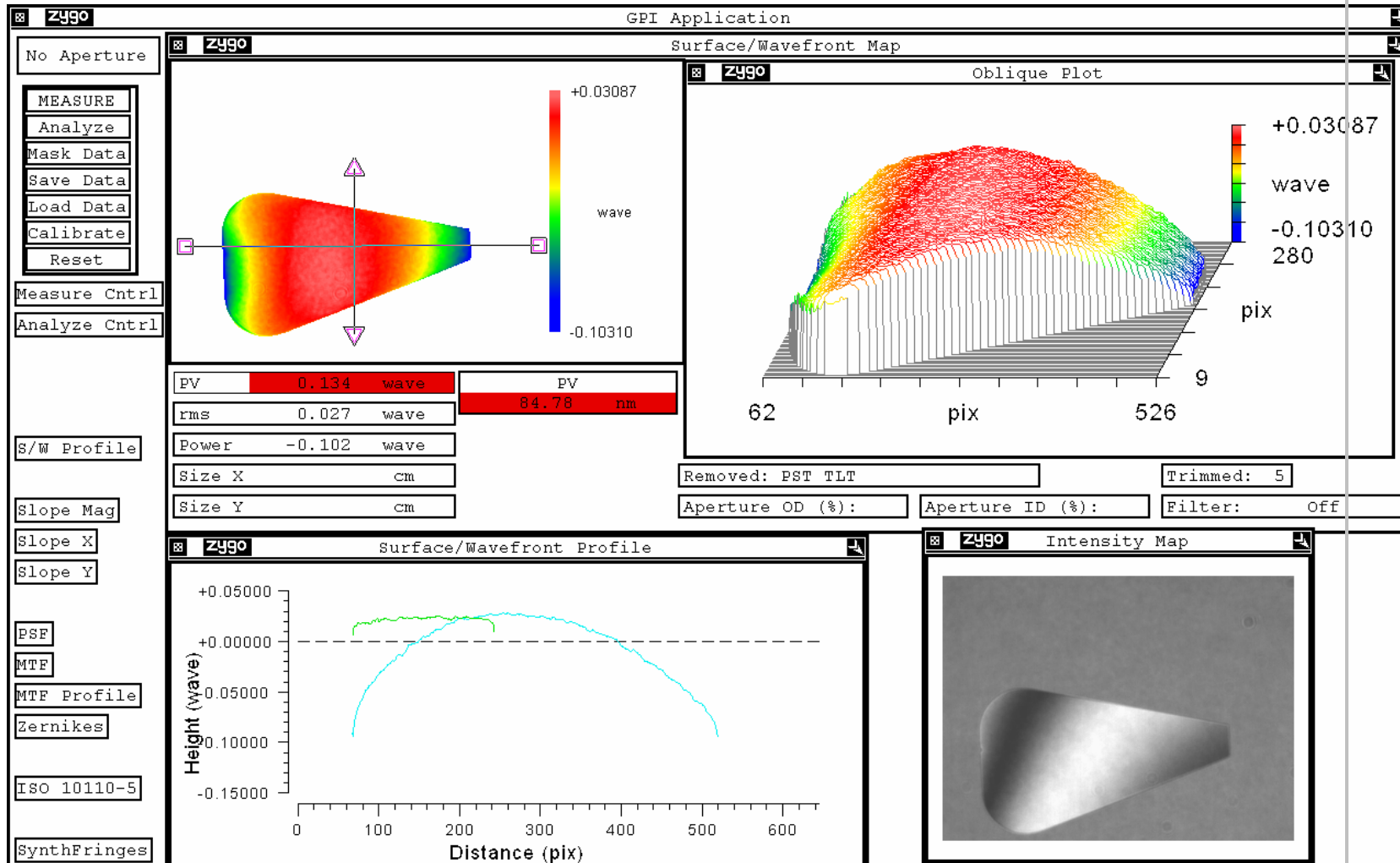
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A 13 flatness 0.115 λ



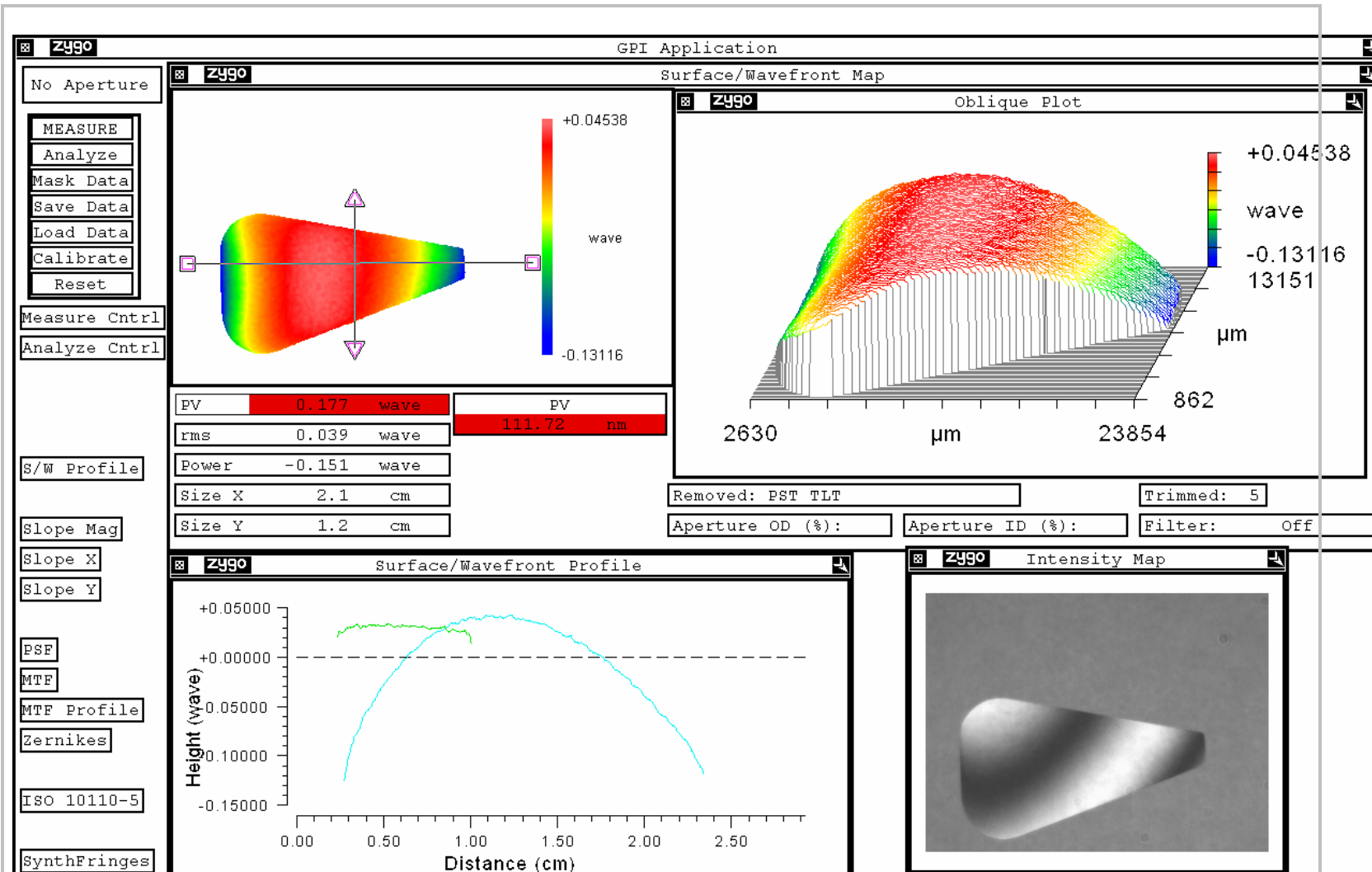
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A 14 flatness 0.134 λ



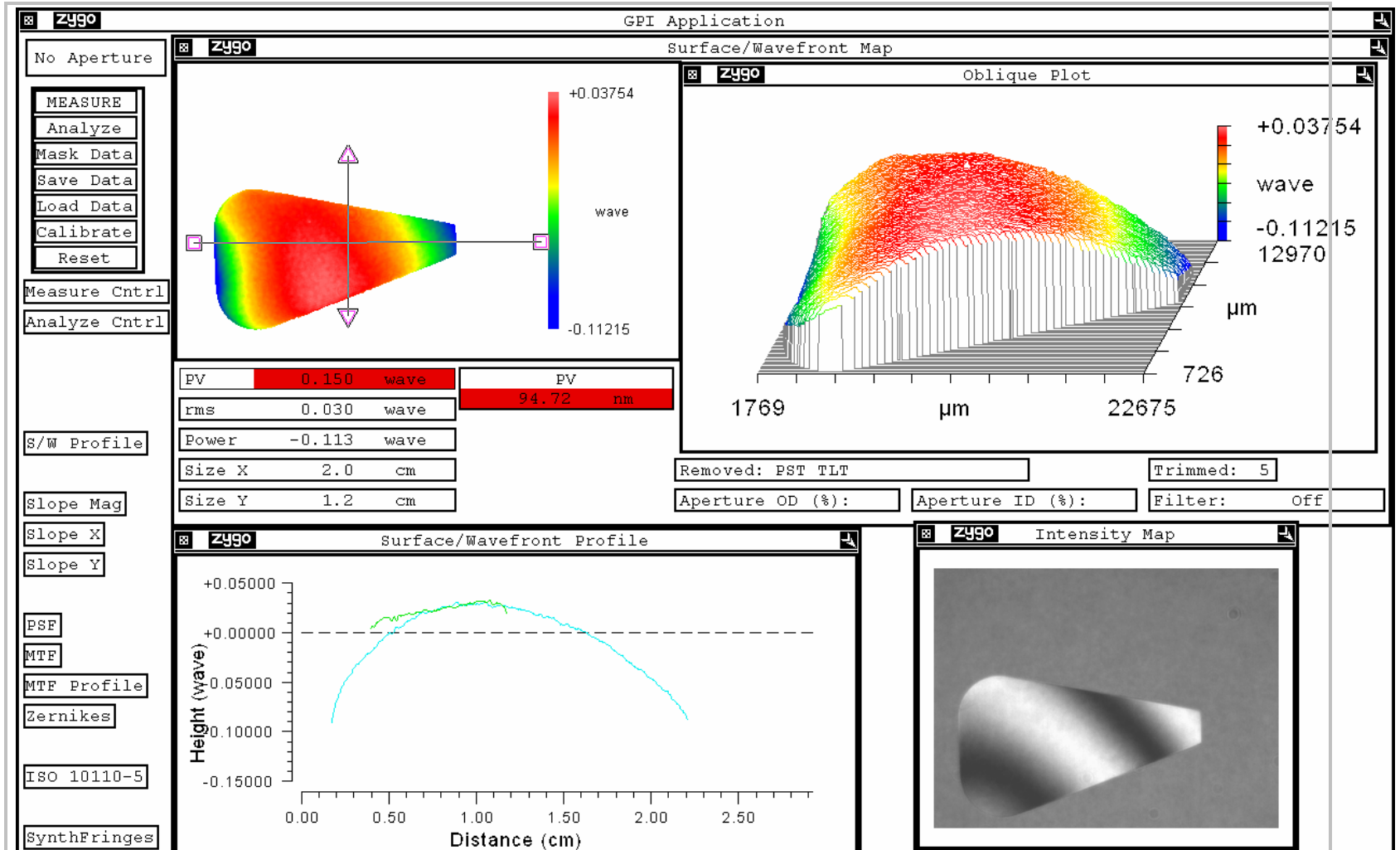
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A 15 flatness 0.177 λ



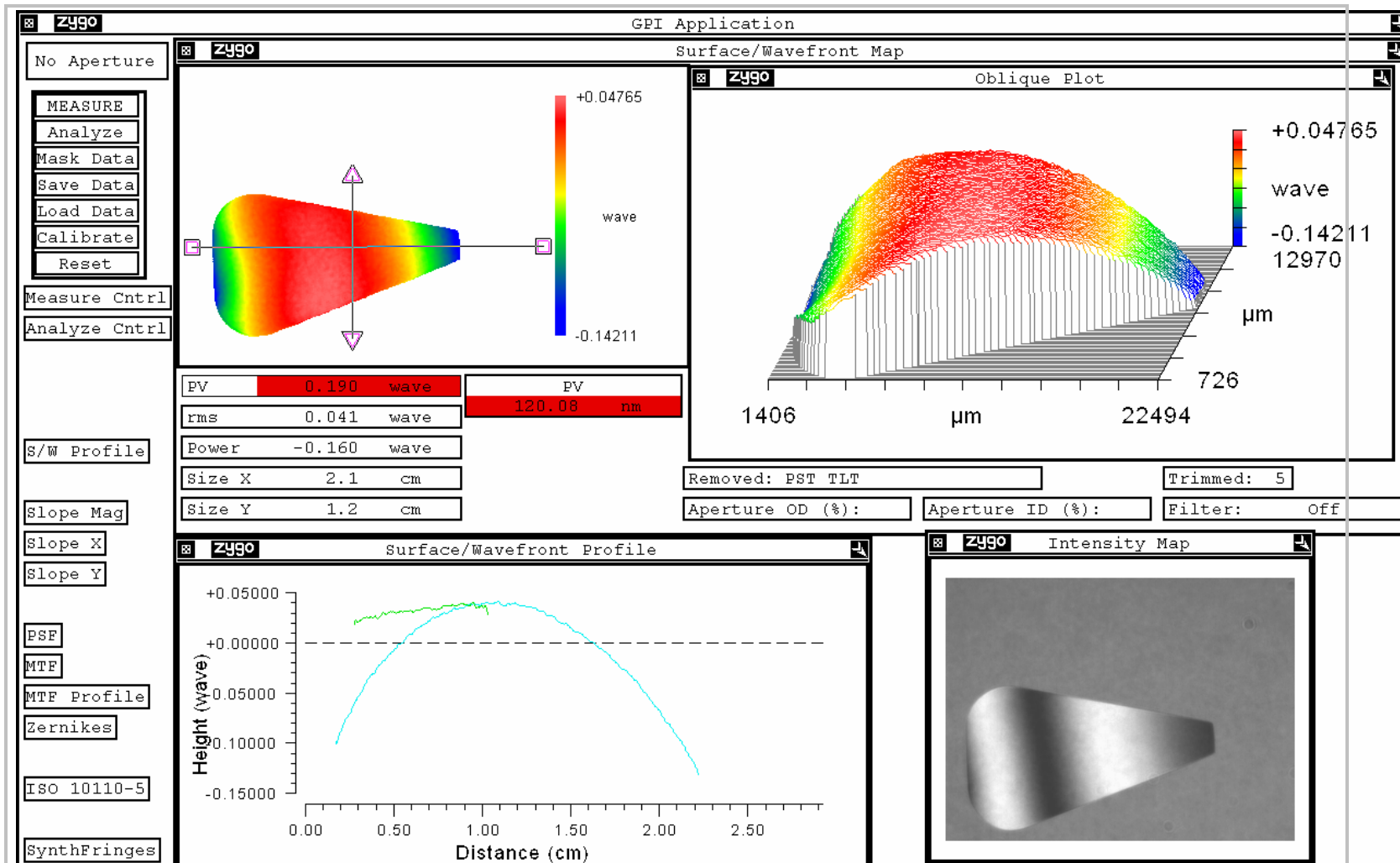
Test report on 'A' ears for Advanced LIGO monolithic suspension



A 16 flatness 0.150 λ



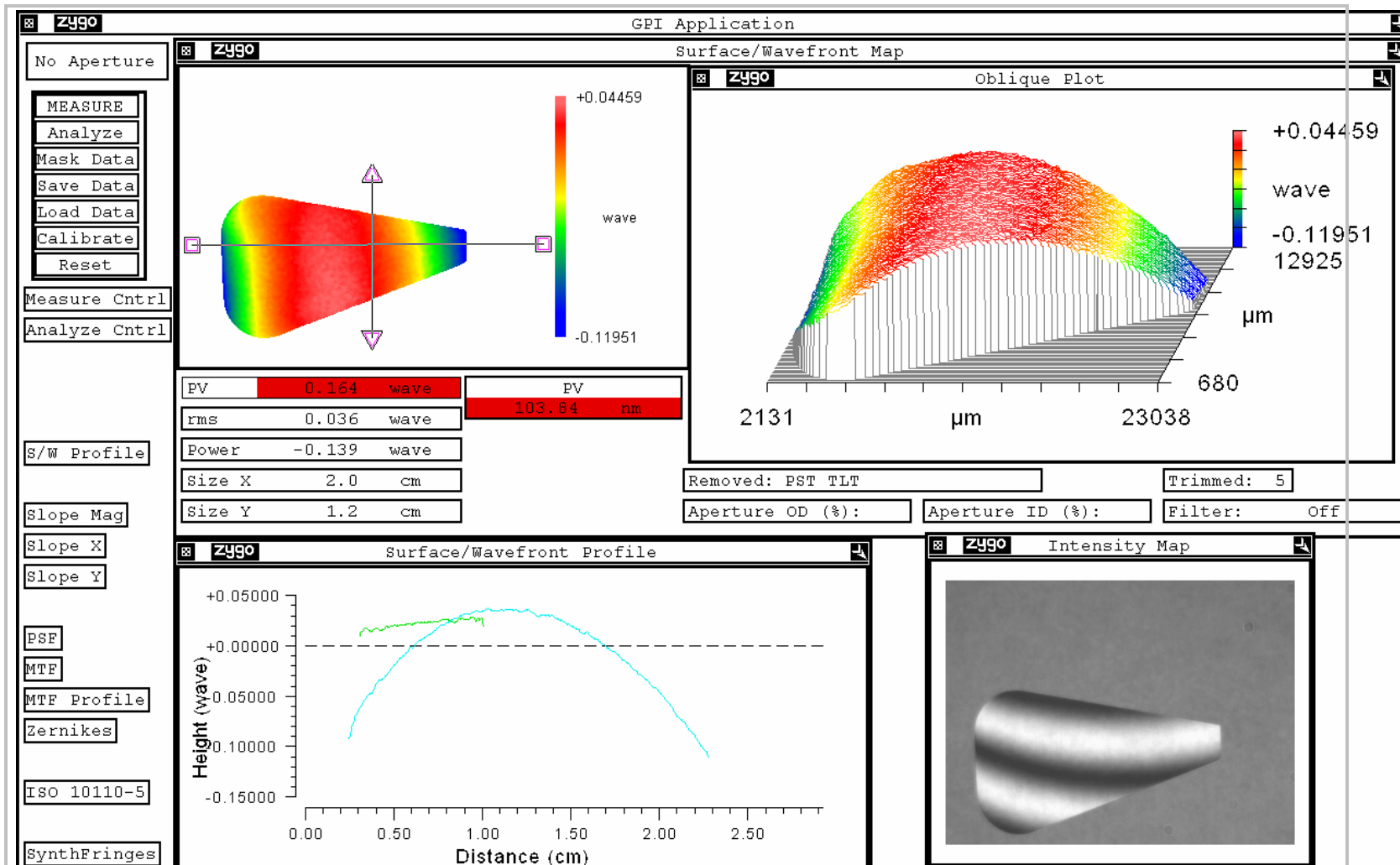
Test report on 'A' ears for Advanced LIGO monolithic suspension



A 17 flatness 0.190 λ



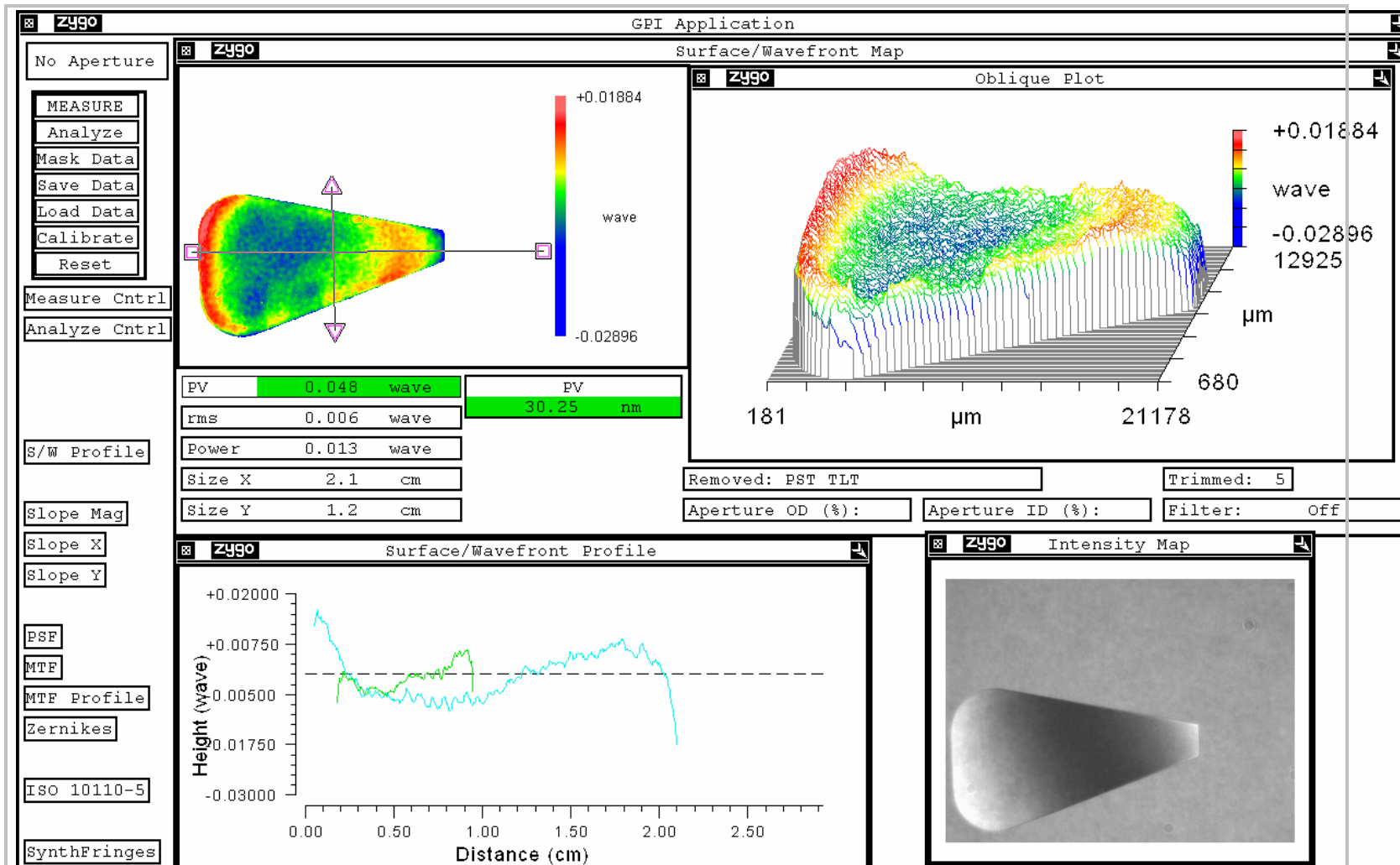
Test report on 'A' ears for Advanced LIGO monolithic suspension



A 18 flatness 0.164 λ



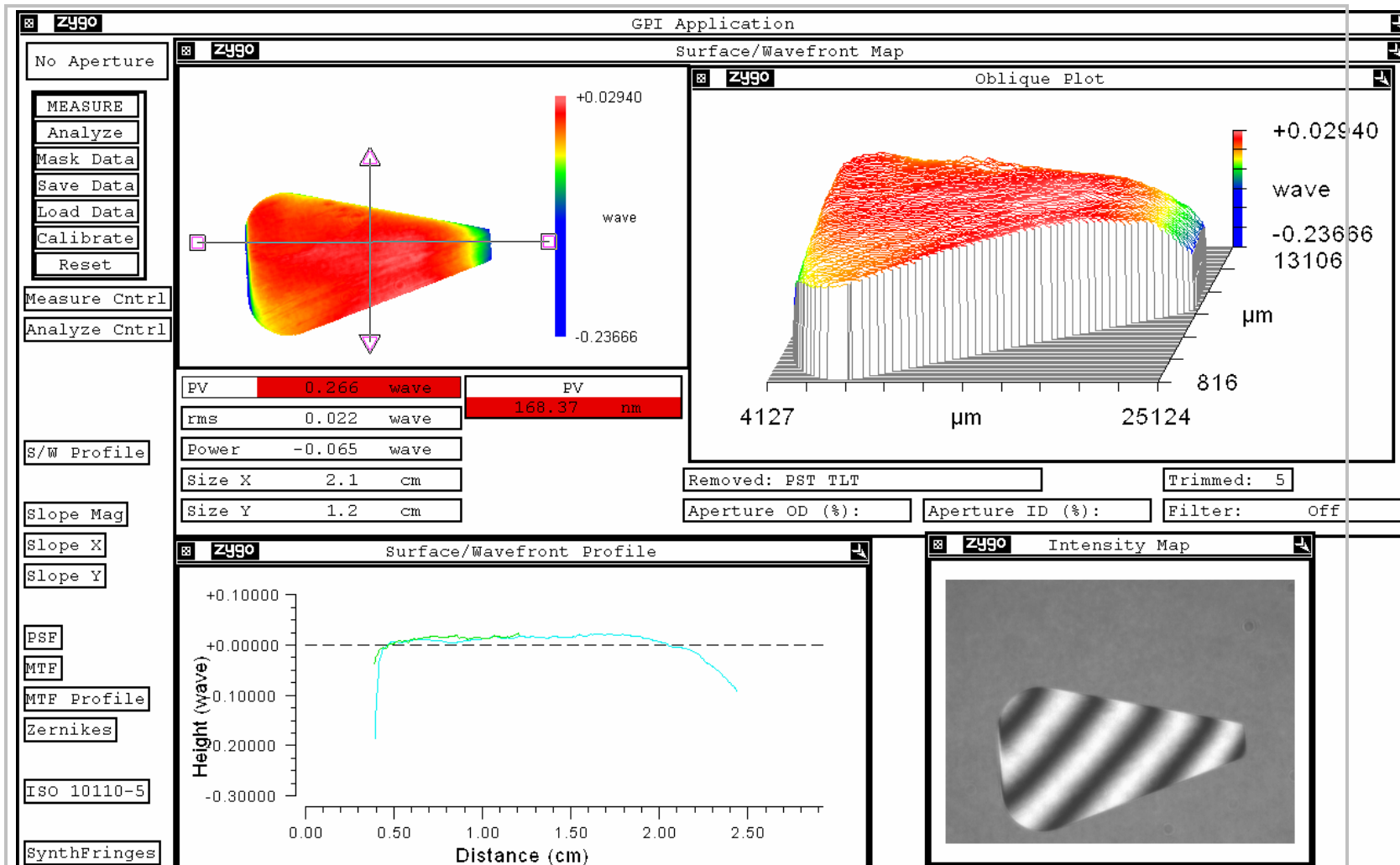
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A 19 flatness 0.048 λ



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A 20 flatness 0.266 λ