LASER INTERFEROMETER GRAVITATIONAL WAVE OBSERVATORY

LIGO Laboratory / LIGO Scientific Collaboration

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Figure measurement of 6” aLIGO Transmission Monitor Flats

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LIGO Scientific Collaboration

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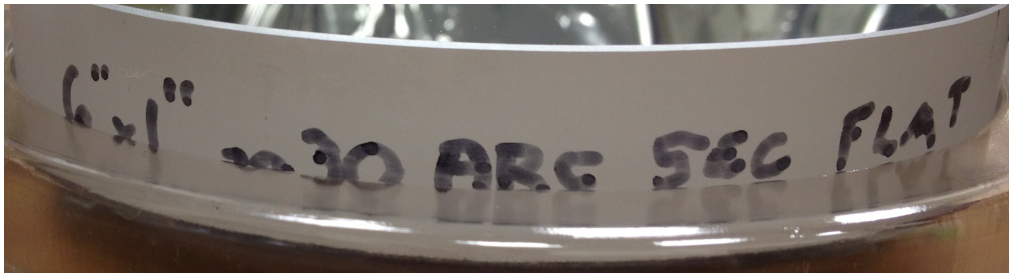
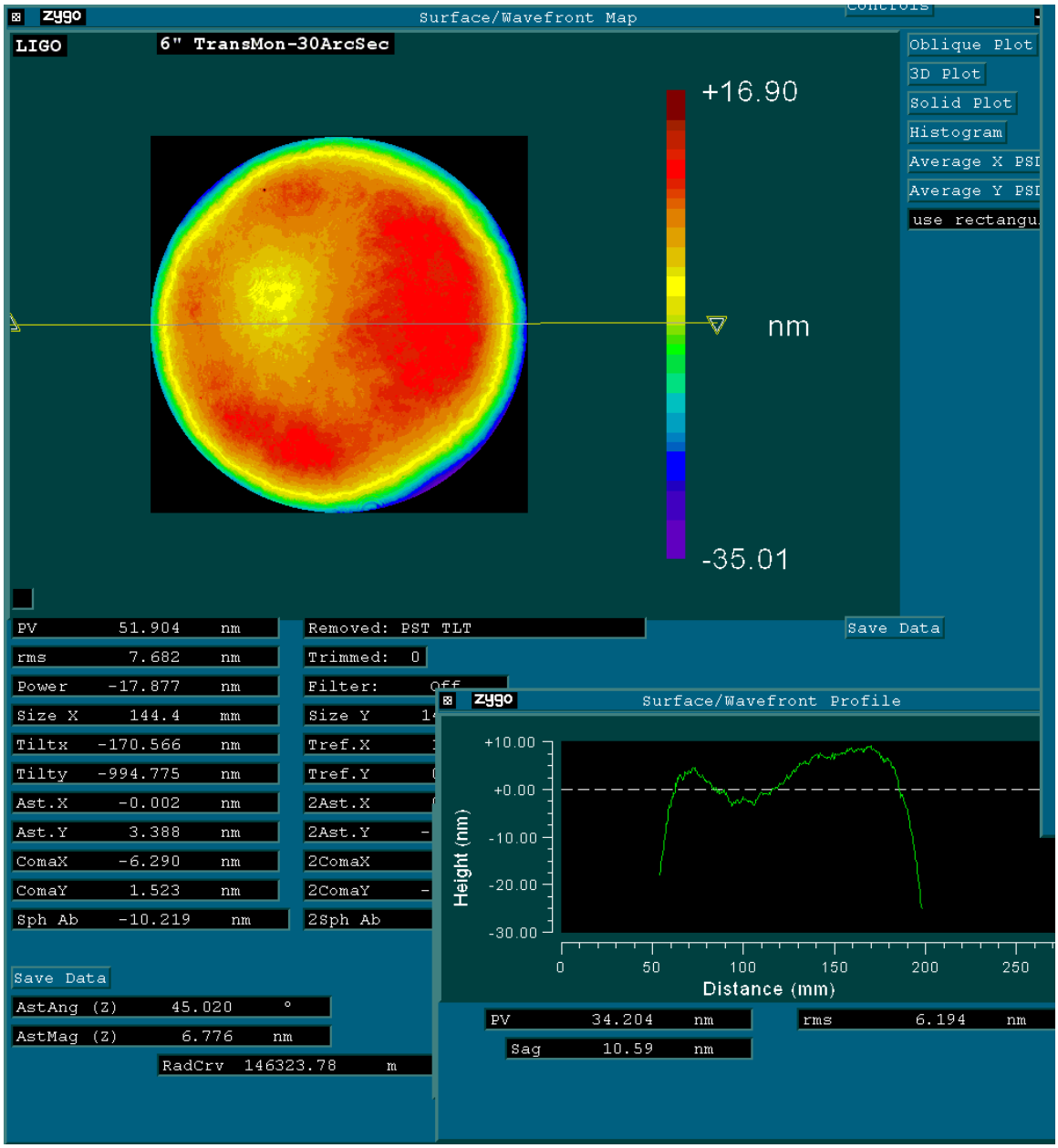
1 Introduction

Two silver coated 6" x 1" flats were measured on the Zygo interferometer. The data were analyzed over 144 mm and 100 mm apertures and found to be at worst lambda by 12 (at 633nm) over 144 mm aperture and at best lambda by 48 on 100mm aperture.

Data were taken at only one rotational angle, so absolute accuracy is roughly of the order ± 2nm.

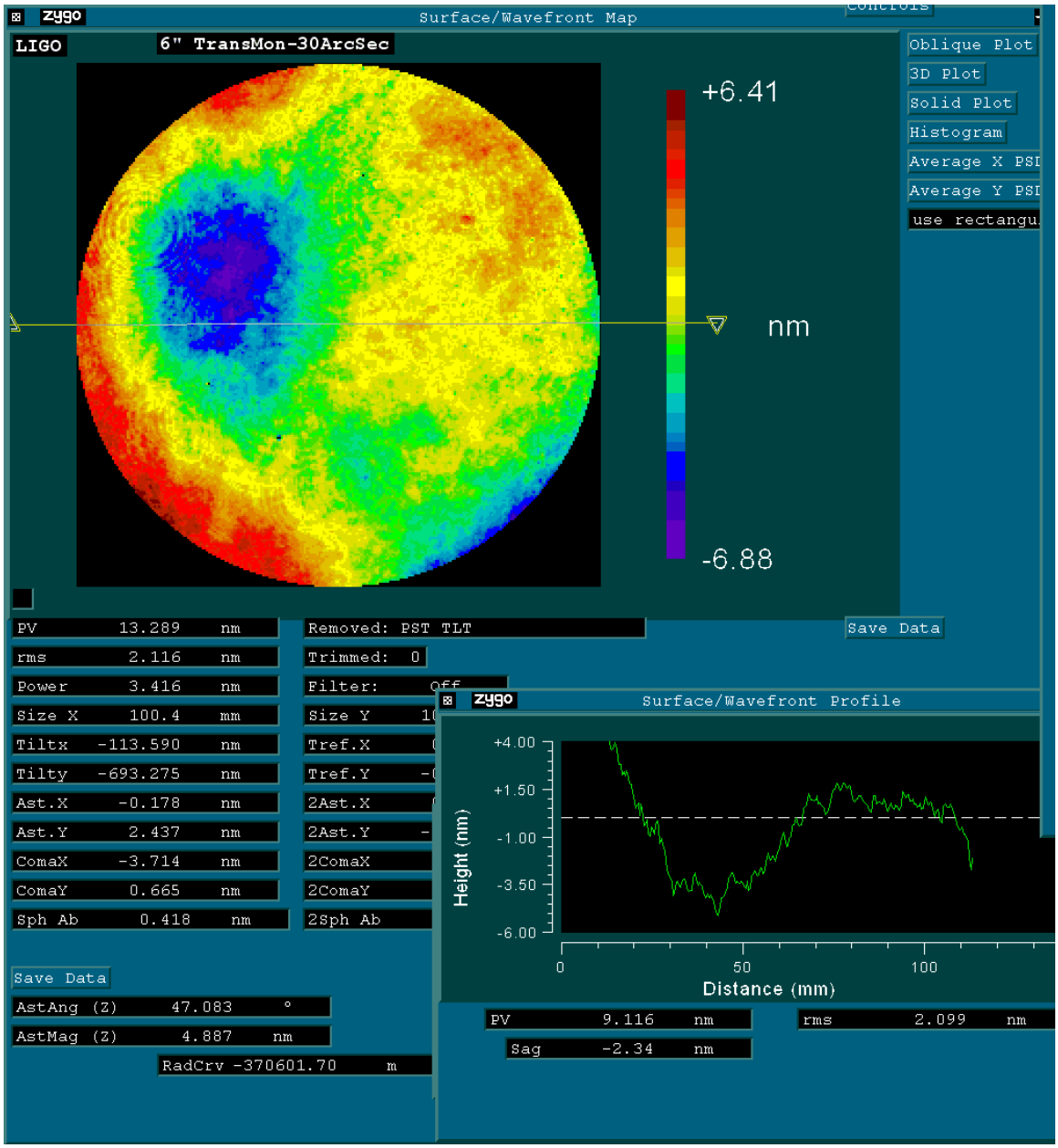
1.1 Results for “30 Arc Sec” flat





"30 arc sec" flat analyzed over 144 mm aperture.

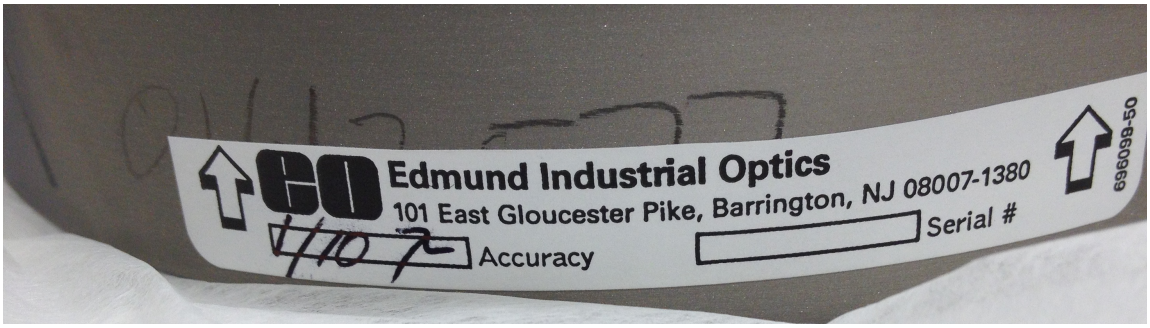
PV: 52 nm, rms: 7.6 nm

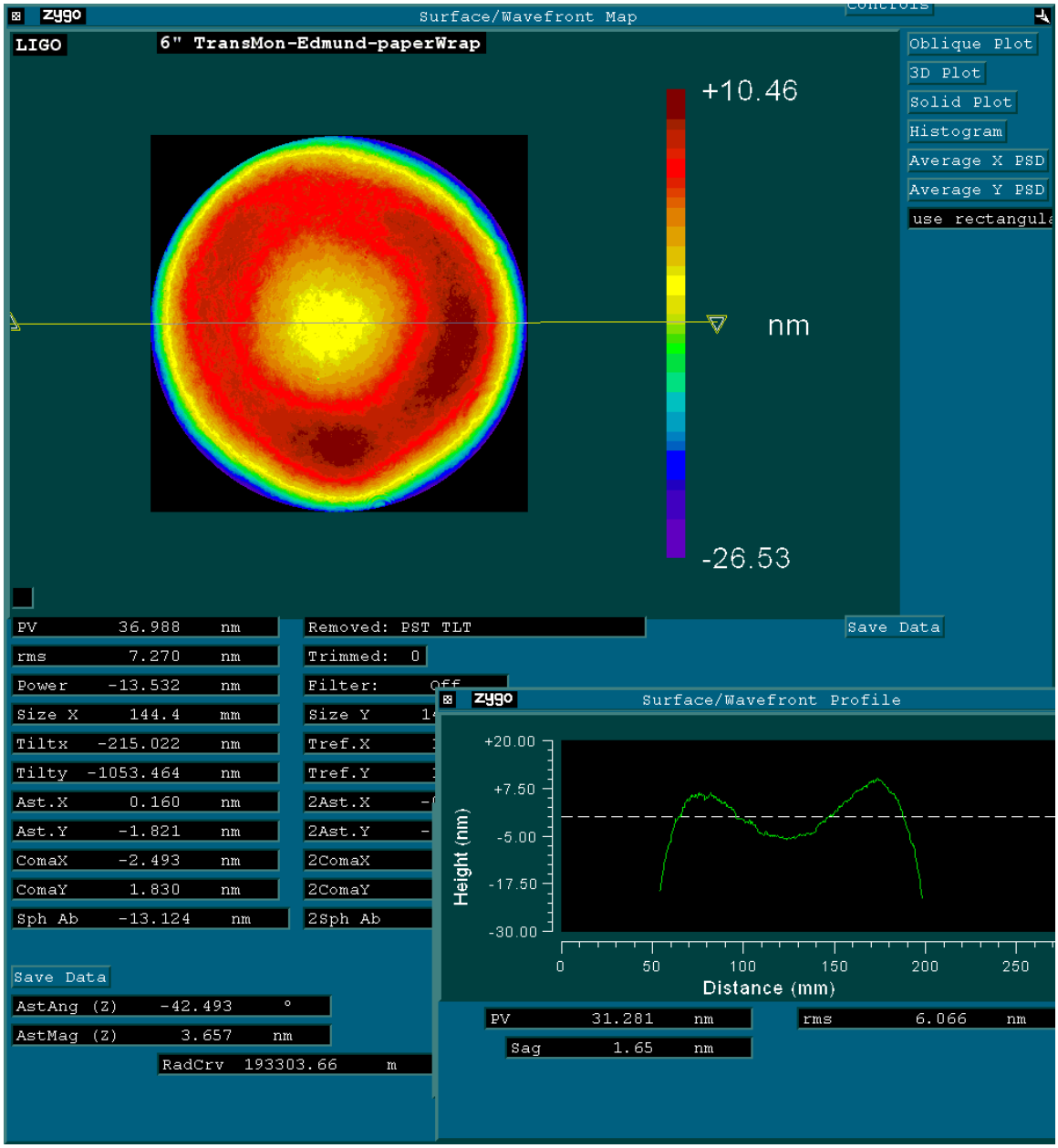


“30 arc sec” flat analyzed over 100mm aperture.

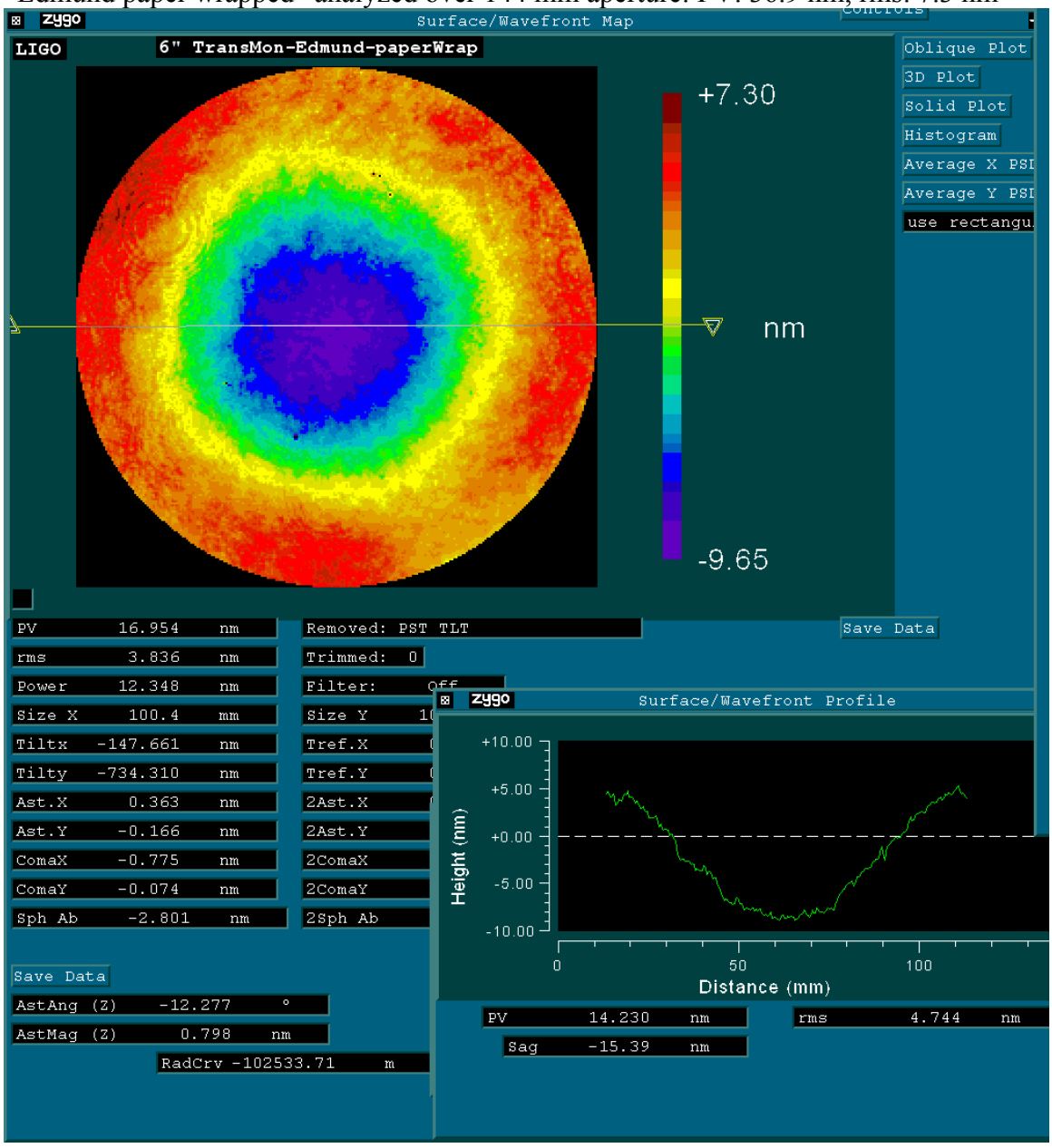
PV: 13 nm, rms: 2 nm

1.2 Results for “Edmund-paper wrapped” flat





"Edmund paper wrapped" analyzed over 144 mm aperture: PV: 36.9 nm, rms: 7.3 nm



"Edmund paper wrapped" analyzed over 144 mm aperture: PV: 17 nm, rms: 3.8 nm