
New Folder Name Optic Coating Notes

T950091

LIGO-T950091-00-D



Research Electro-Optics Inc.

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TO:

NAME: Bill Kelly

FAX: 818-304-9834

COMPANY: LIGO

PAGE: _____

FROM:

NAME: Dale Ness

DATE: 21 Sept 95

COMPANY: Research Electro-Optics, Inc.

FAX: (303) 447-3279

MESSAGES:

Double rotation data using mask32

ox65a.mcd
30 Aug 95

j = 0 1 14

R_j	A_j	Err_j
1.4	428.020	0.005
1.6	428.00	0.01
1.8	427.99	0.01
1.8	427.995	0.005
2.0	427.98	0.01
2.2	427.970	0.005
2.2	427.97	0.01
2.4	427.965	0.005
2.6	427.935	0.005
2.6	427.930	0.005
2.8	427.910	0.005
3.0	427.89	0.01
3.0	427.895	0.005
3.2	427.86	0.01
3.5	427.82	0.01
3.5	427.81	0.01

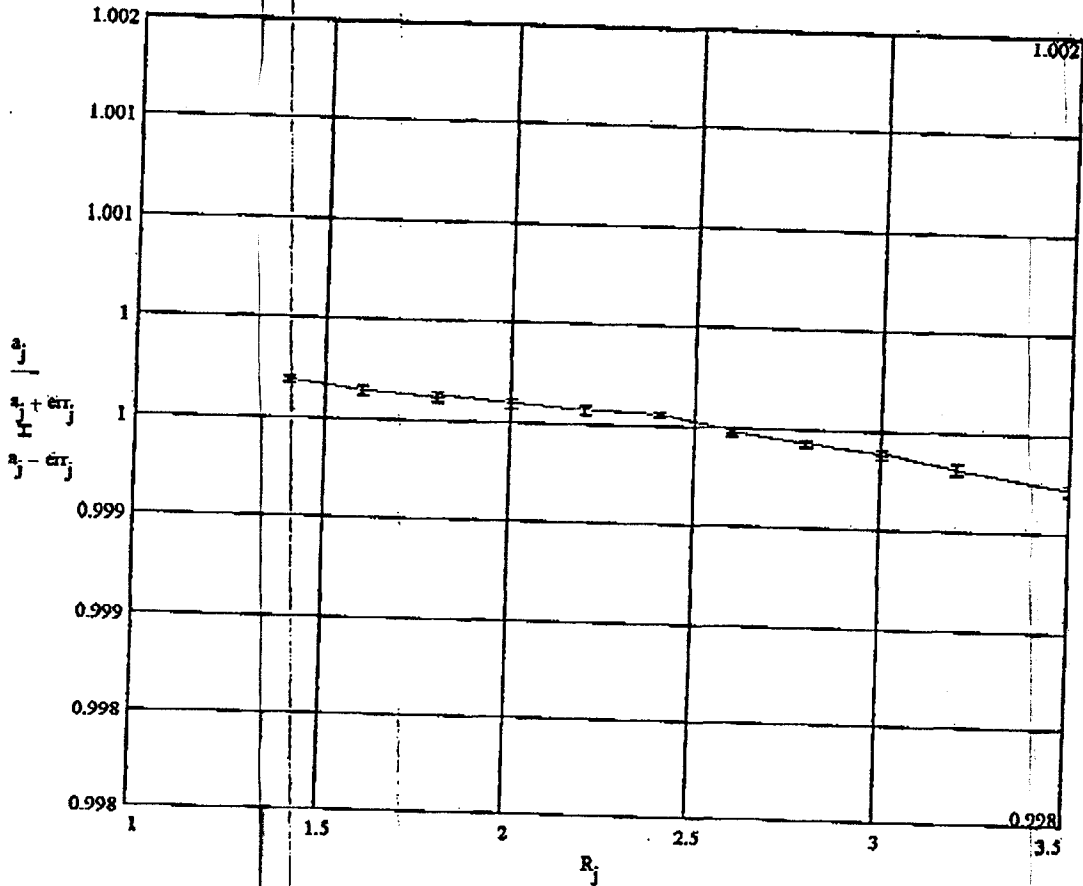
$$A_v := \frac{1}{\text{length}(A)} \sum_j A_j \quad A_v = 427.942$$

$$a_j := \frac{A_j}{A_v} \quad err_j := \frac{Err_j}{A_v}$$

$$RMSerror := \left[\frac{1}{\text{length}(A)} \sum_j [(a_j - 1)^2] \right]^{\frac{1}{2}}$$

RMSerror = 0.013 %

Relative coating thickness as a function of radius, Zr coating on glass slide



B' Slides from run #QX62, scanned at higher resolution

ox62a.mcd
11 Sept 95

$j := 0, 1..12$

$R2_j :=$

1
2
3
4
5
5
6
6
7
8
9
10
11

$A_j :=$

1206.0
1205.9
1206.3
1206.7
1207.2
1206.9
1207.3
1207.3
1207.1
1206.3
1205.1
1201.8
1194.7

Error := 0.2

norm := 1206

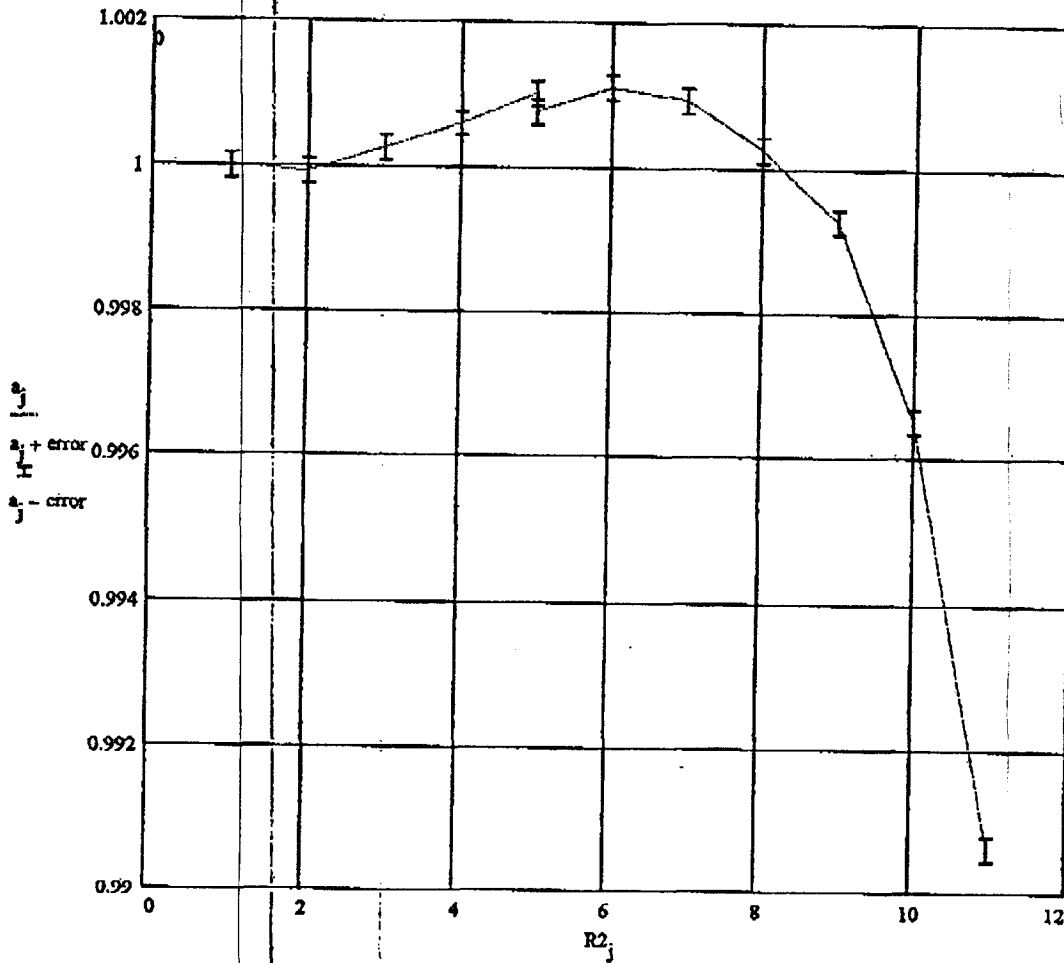
$$A_v := \frac{1}{\text{length}(A)} \sum_j A_j$$

$A_v = 1.205 \cdot 10^3$

$$a_j := \frac{A_j}{\text{norm}}$$

$$\text{error} := \frac{\text{Error}}{A_v}$$

Relative thickness vs R2 radius



21 Sept 95

Bill:

Here is the latest data.

I think you already have the page "OX65a.mcd". I am awaiting tooling which will allow us to check for circumferential variations at the resolution shown on "OX65a.mcd". The tooling is a planet with slides held along a diameter, and slides held ~~along~~ along "concentric" lines.

The page "OX62a.mcd" is a scan of slides from the first test of the first physical mask. I had run 2 planets of slides, and these slides ("B slides") have not previously been scanned.

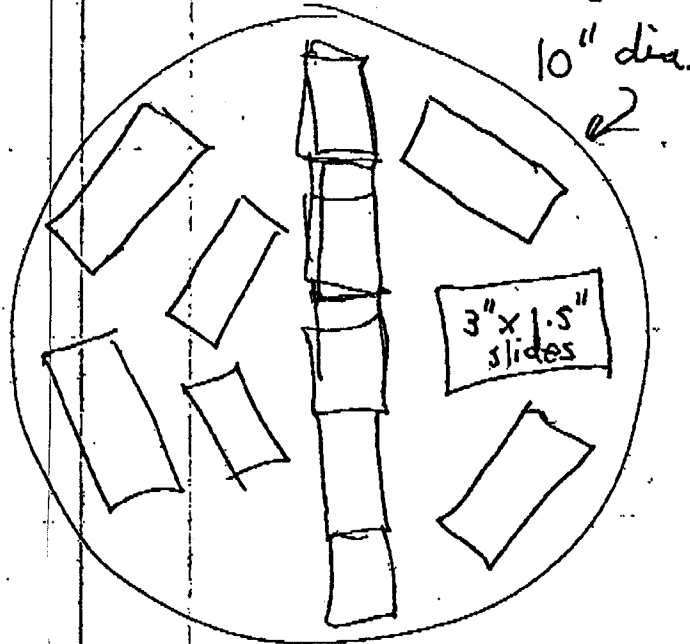
These were scanned at "intermediate" resolution. The Bump at $R2 = 6 \text{ cm}$ ~~is~~ ~~probably due to~~ may be due to the slide not being flat on the surface of the planet, as it was taped in place.



21 Sept 95

The New, machined tooling will ~~the~~ solve the problem, or so I hope. As soon as the New tooling arrives, I will run another test, scan the slides at the resolution shown on "OX65a.mcd", and forward the data to you.

Here is a crude sketch of the tooling. I'll send a real drawing with the data.



Take Care.

DC Voss

50 SHEETS
22-141
100 SHEETS
22-142
200 SHEETS
22-144

