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P.O. Box 3999 Seattle,	WA 98124-2499			- <b>1</b> . <sup>45</sup> -
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See AttachedS	supplemental Information She	et for Additional F	lequirements.	
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## GEORGIA INSTITUTE OF TECHNOLOGY

OFFICE OF CONTRACT ADMINISTRATION

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Georgia Institute of Technology ENGINEERING EXPERIMENT STATION Atlanta, Georgia 30332

September 11, 1984

Boeing Aerospace Company Box 3999 Seattle, Washington 98124-2499 Attn: Fred Burkett Re: P.O. GEO 396

Dear Mr. Burkett:

I have completed metallization on two ZnSe substrates. Several experiments were conducted, in order to provide metallized substrate samples having good adherent metal layers.

Substrate sample number one has been surface etched utilizing a sulfuric, chromic acid etch which roughened the surface somewhat. The ZnSe substrate was then RF sputter coated with titanium and platinum followed by electroplated platinum. The plated platinum was then overcoated with a second layer of RF sputtered titanium. This top layer of titanium should aid the adhesion of the subsequent CVD dielectric overcoat.

Substrate sample number two was treated in a different manner. The substrate ZnSe was lightly surface etched in a ammonium hydroxide, hydrogen peroxide etch. The metal layers were deposited in a similar manner except that the ZnSe substrate was heated to  $350^{\circ}$ C during the RF sputter process. I am hoping that one or both of these methods of deposition will work. If not, we may be able to try some other methods. Please call me at (404) 894-3420 if any problems are encountered concerning the metal films.

Sincerely,

Gerald N. Hill Project Director

GNH:bj

Invoice No. \_\_\_\_\_ Date 9-11-84\_\_\_\_

## SHIPPING DOCUMENT

Georgia Institute of Technology Engineering Experiment Station

Atlanta, Georgia 30332

Ship To:

Fred Burkett Boeing Aerospace Kent Space Center Bldg. 1821 Loc. 13K3 Seattle, Washington 98124-2499

Related Purchase No. 0. GE0396 Related Project No. <u>A-3933</u> Related Contract No. \_\_\_\_\_ Declared Valuation \_\_\_\_\_

Shipping Instructions/Reference:

tem No.	Quantity	Description	Ser./Mfg. No.	Property No.	Unit Price	Total Cost	
1	ן ר	Metallized ZnSe Substrate Sample No. 1					
2	1	Metallized ZnSe Substrate Sample No. 2					
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## Georgia Institute of Technology

ENGINEERING EXPERIMENT STATION

Atlanta, Georgia 30332

October 1, 1984

Boeing Aerospace Company Box 3999 Seattle, Wa. 90124-2499 Attn: Fred Burkett Re: P. 0. 396

Dear Mr. Burkett:

In accordance with our recent telephone conversation concerning early completion of the project, I will close out the research agreement on your P.O. GE0396.

In order to satisfy the terms of the agreement this letter will encompass deliverable item seven and our GTRI monthly status letters two and three.

I am looking forward to the next phase of the program. Good luck.

Sincerely,

Gerald N. Hill

GNH:bj