Polarimetry

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Two domains

90 -120 nm: FUV

Only reflective optics

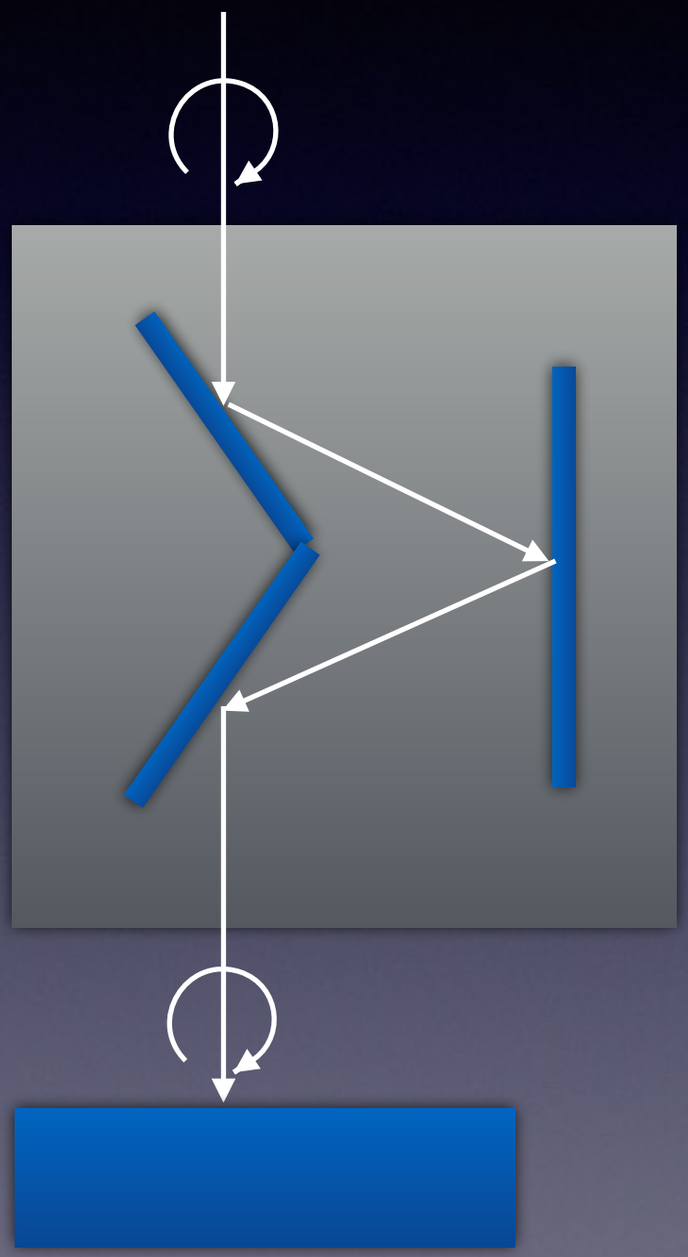
Both transmission and polarimetric efficiency at issue

120-400 nm: NUV

Birefringent MgF2 available

Main constraint is to improve transmission

NUV: 120-400



Modulator

Analyser

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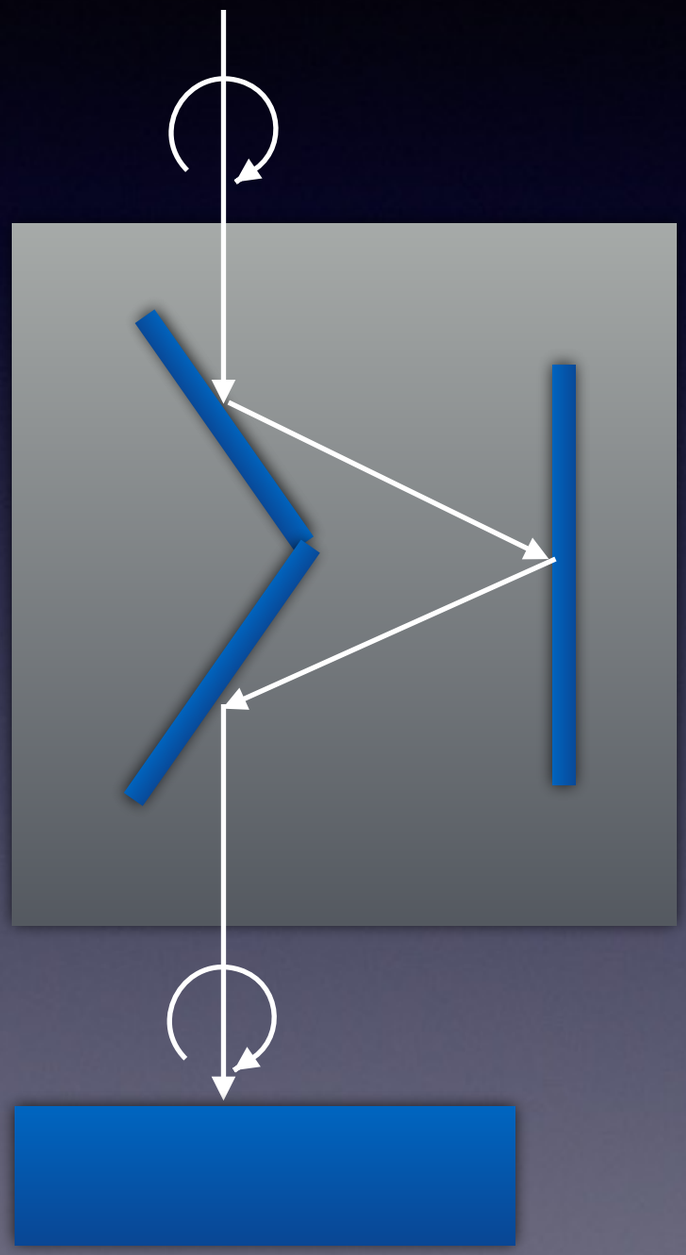
NUV: 120-400

Mirrors in AL+LiF



Modulator

Wollaston in MgF2

Analyser

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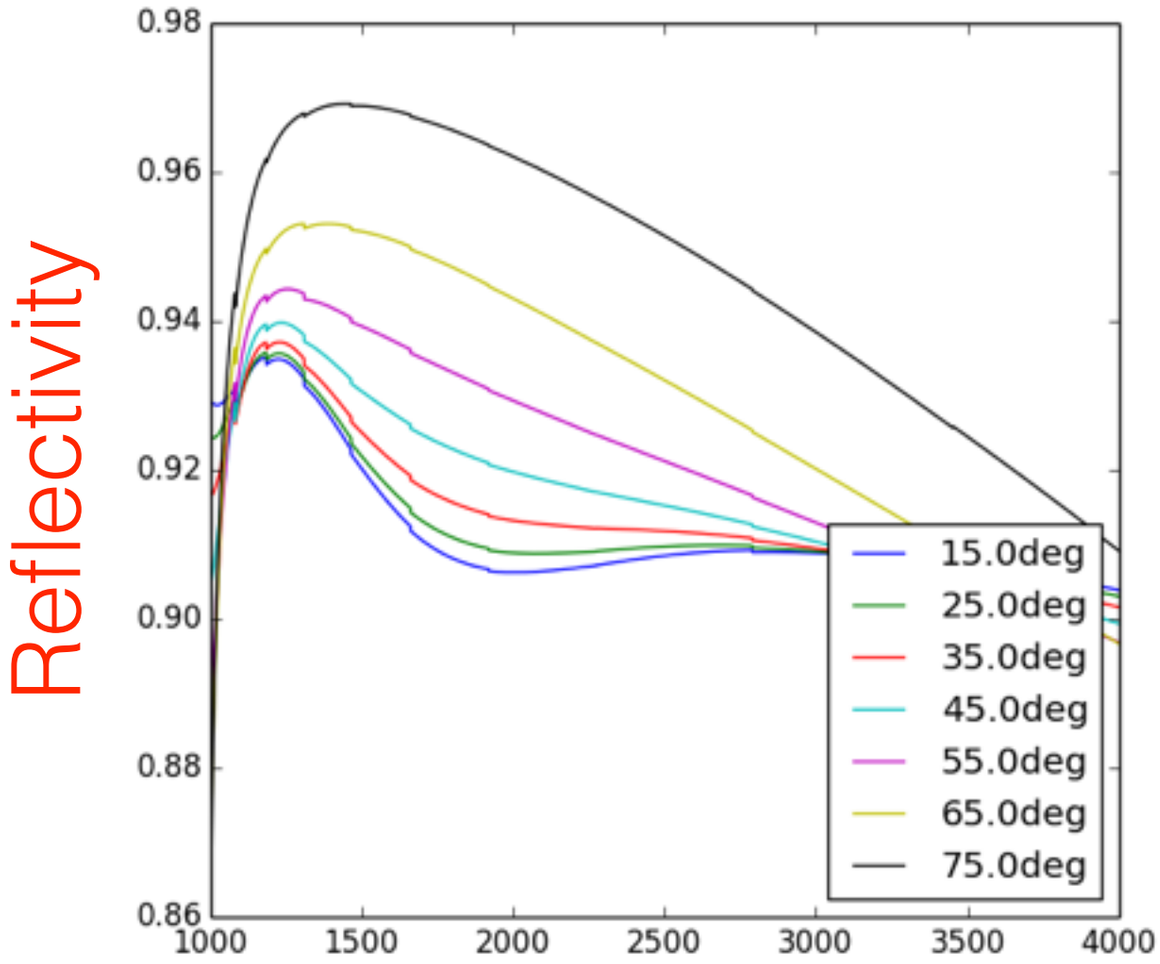
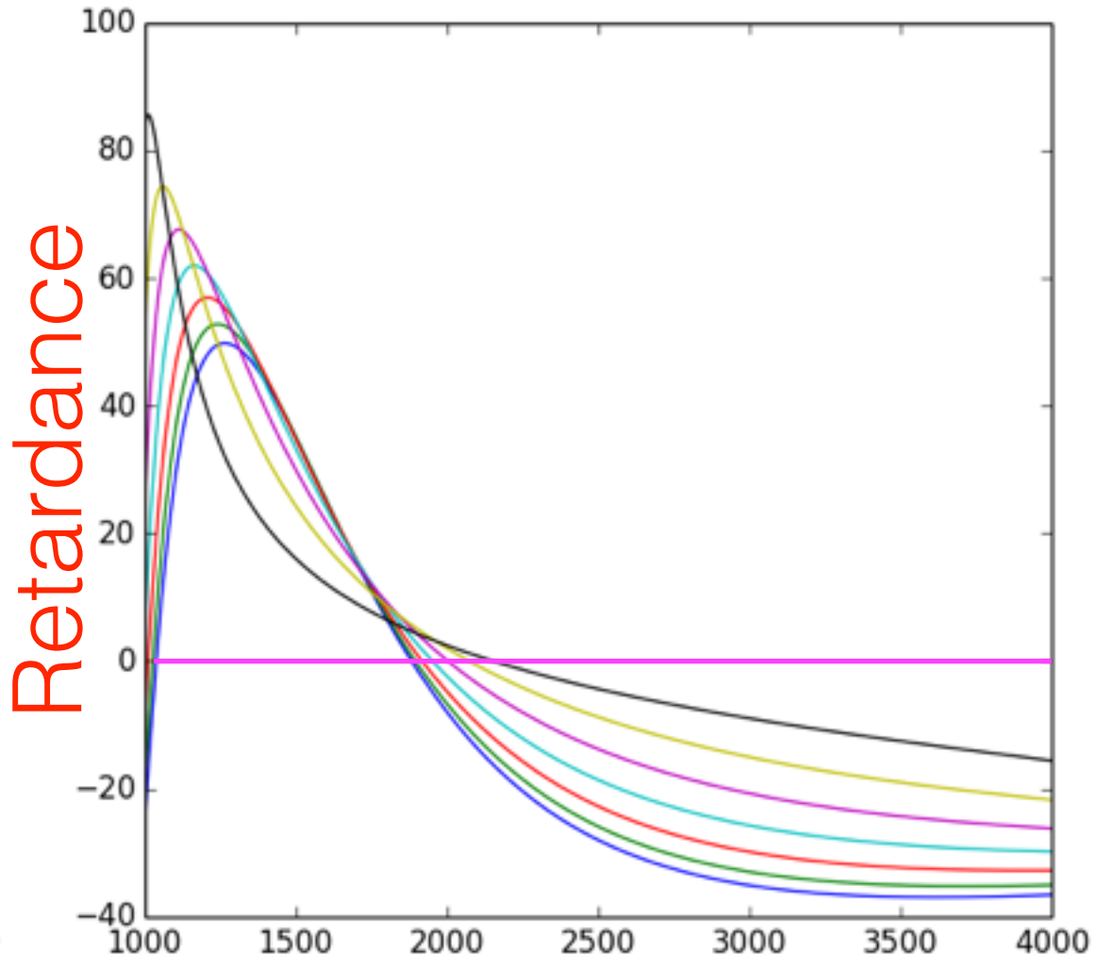
NUV 123-400





Reflectivities 10% larger than NASA .....

Zero retardance around 200 nm

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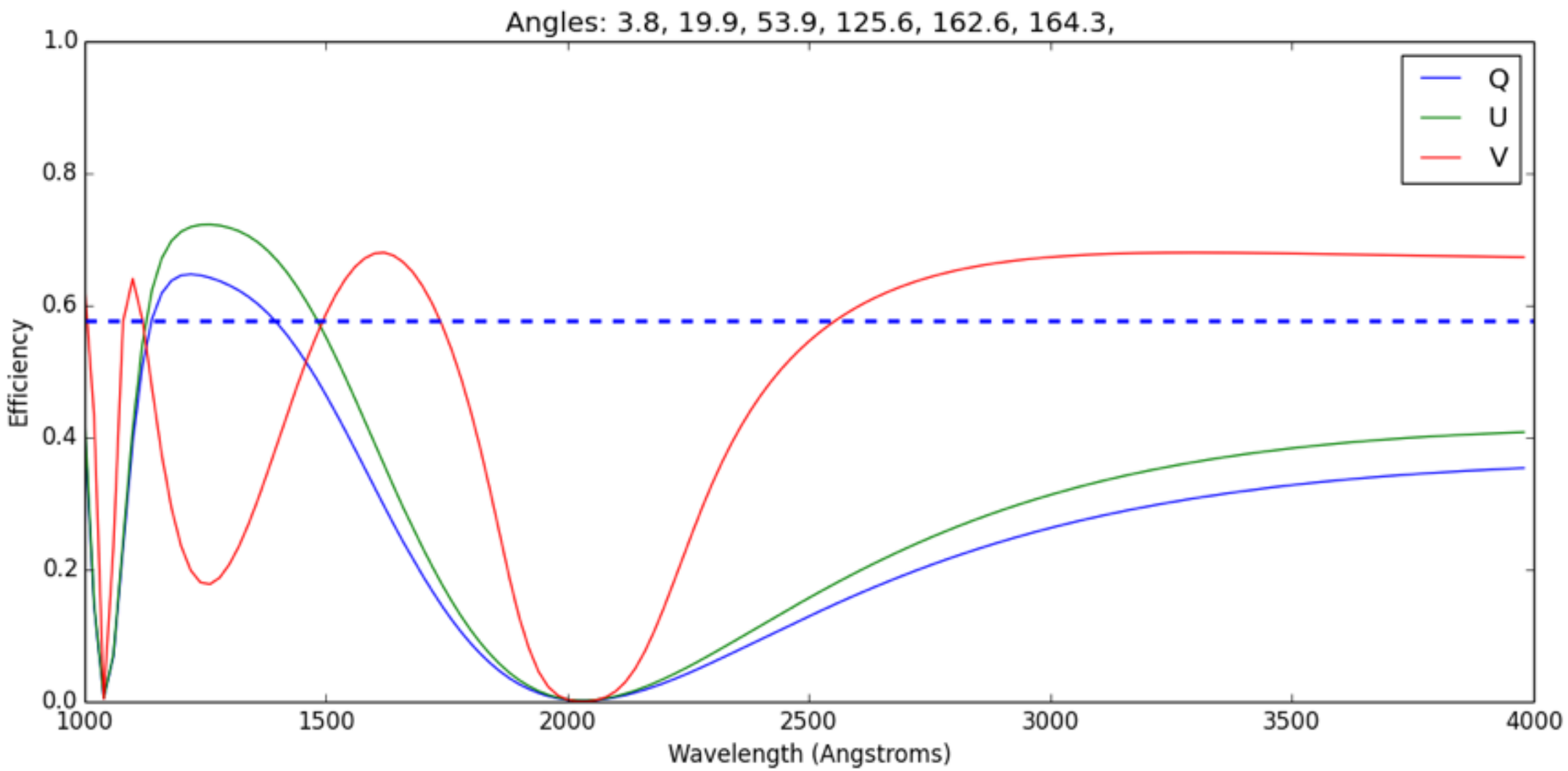
NUV 123-400

6-exposure Modulation, 3 mirrors in Al-LiF



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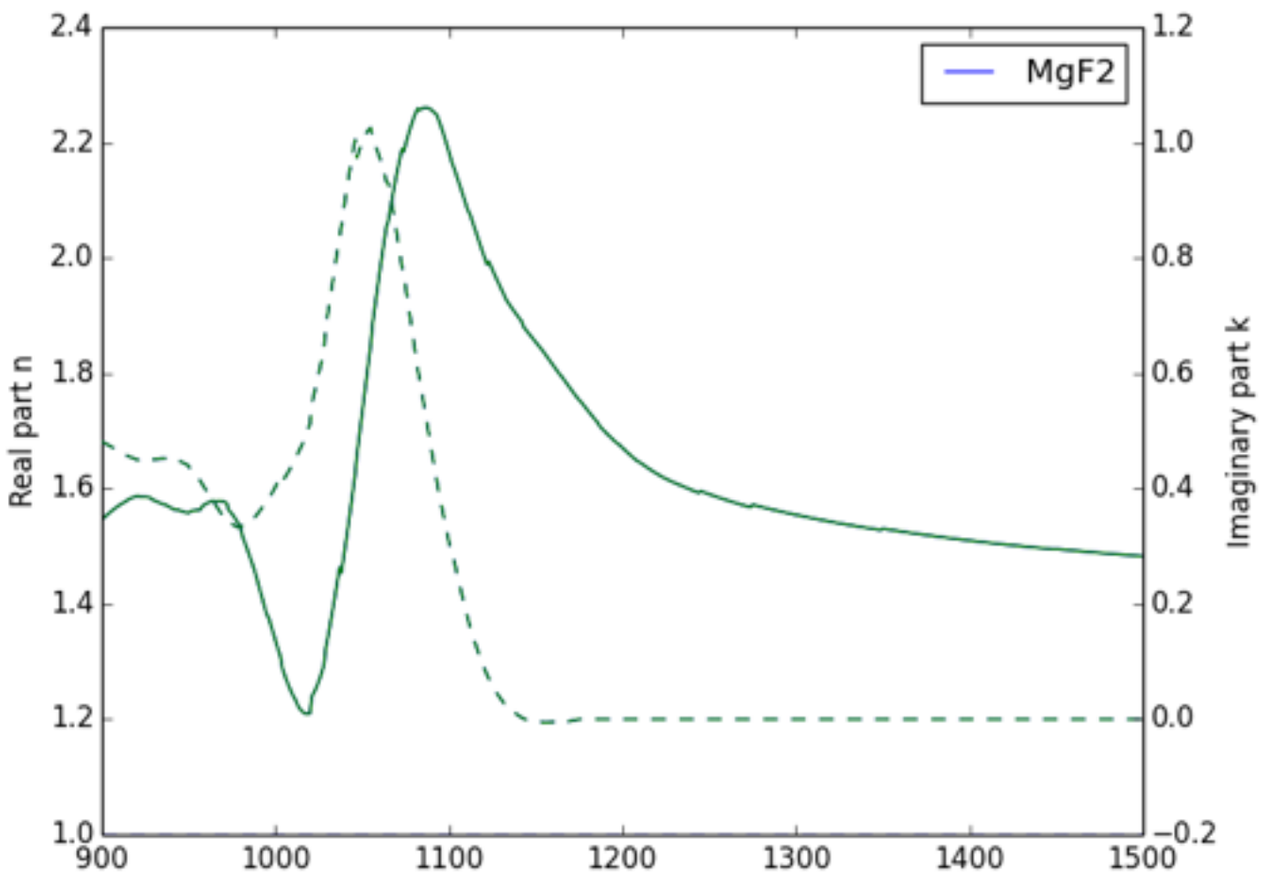
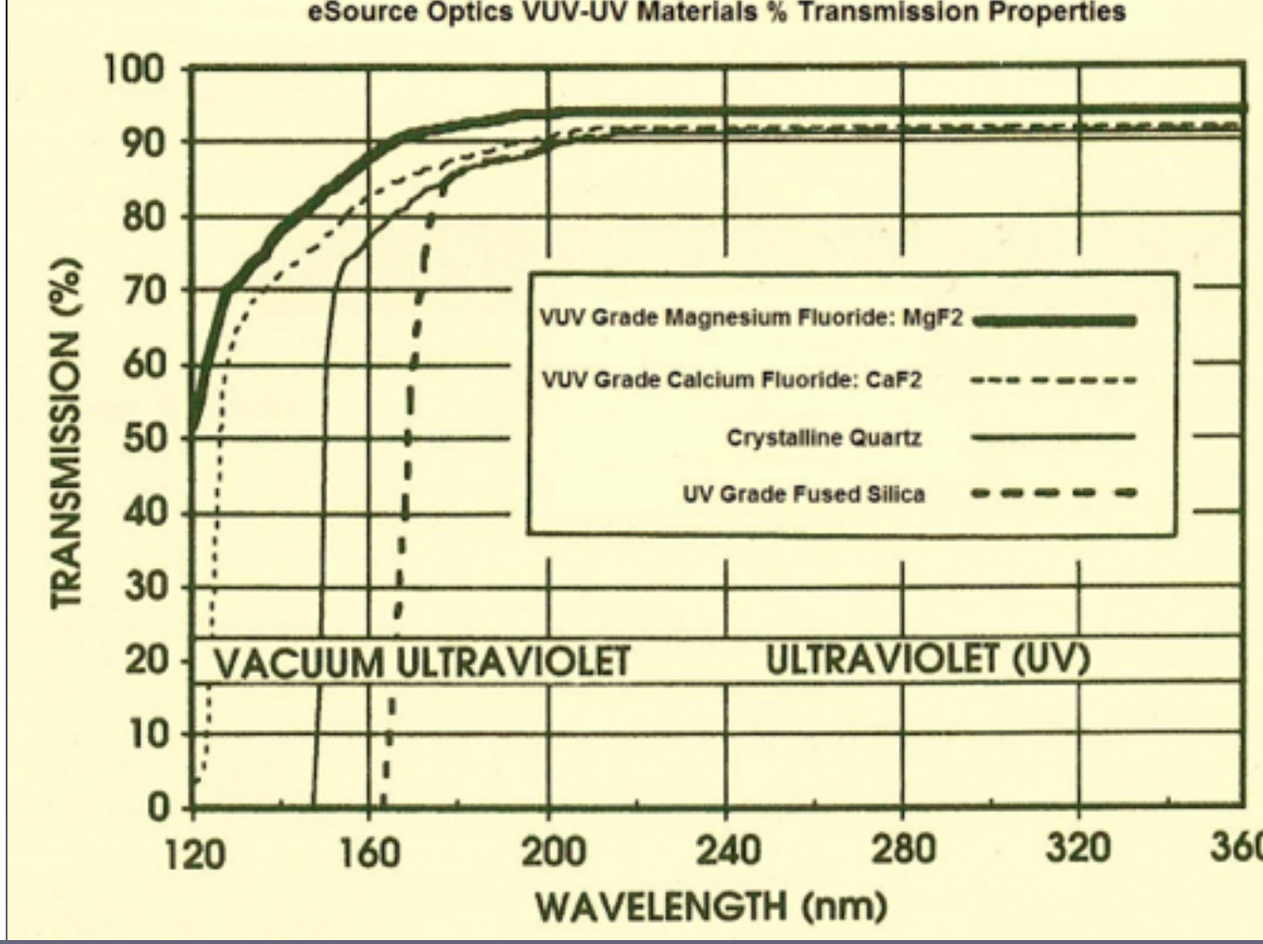
Problème à 200nm

NUV 123-400

Analyser: Wollaston in MgF2
Thickness?





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Summary for NUV

	Throughput	Efficiency
Modulator	50%-70%	0.4 avg with 0 at 200nm
Analyser	60%-90% both beams combined	1
TOTAL	30%-60%	0.4 avg with 0 at 200nm

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FUV: 90-120nm

What materials are available with what optical properties?

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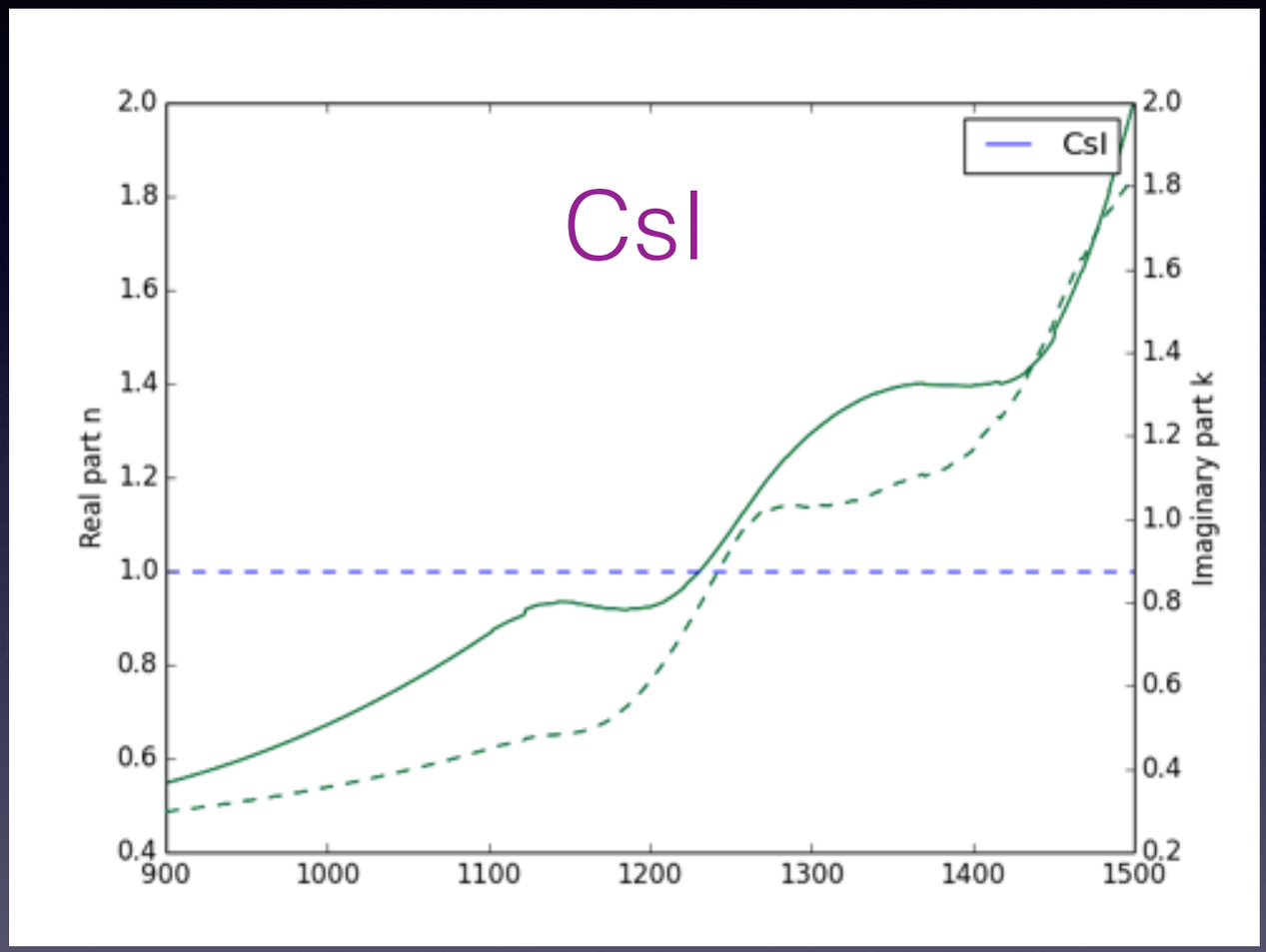
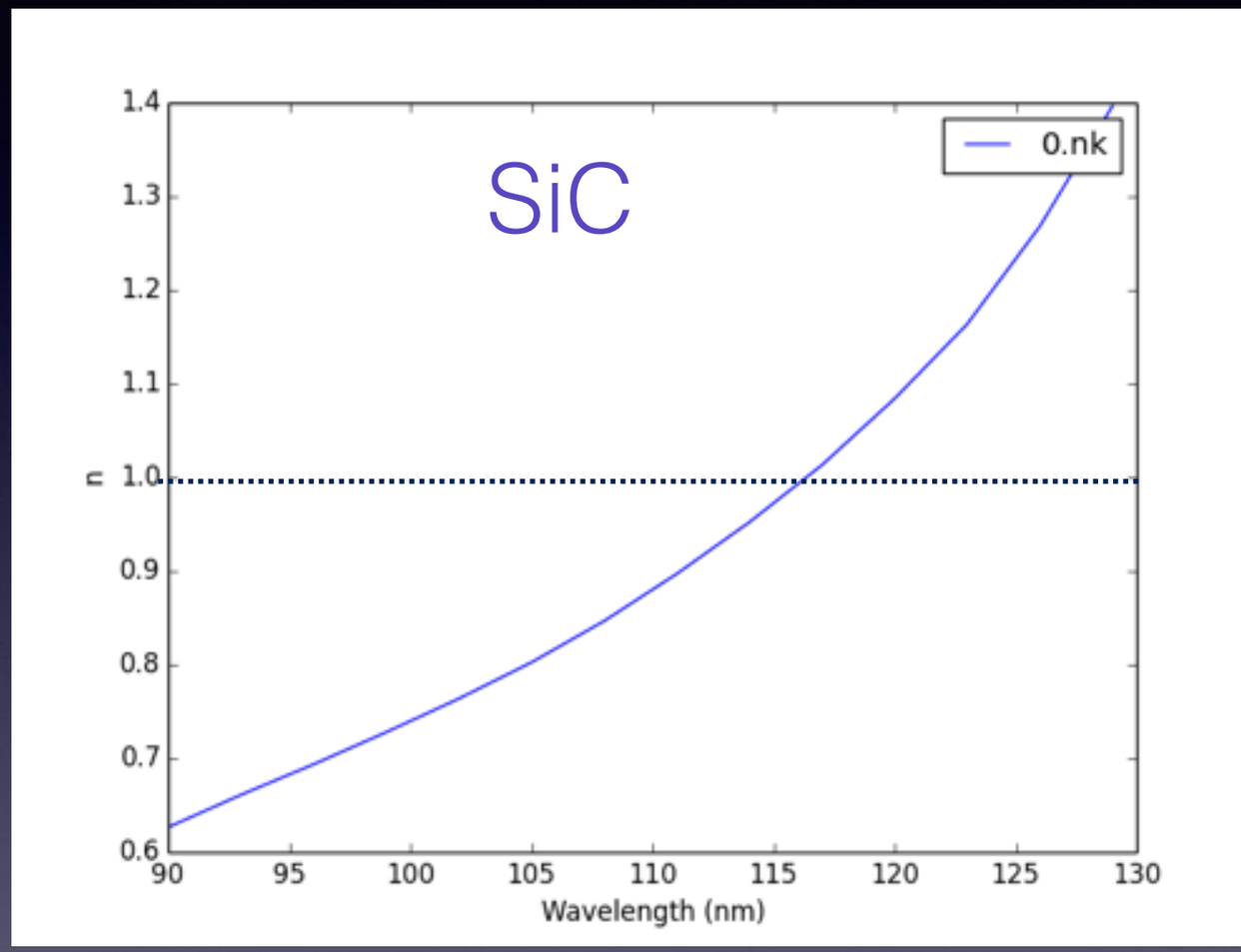
FUV: 90-120nm





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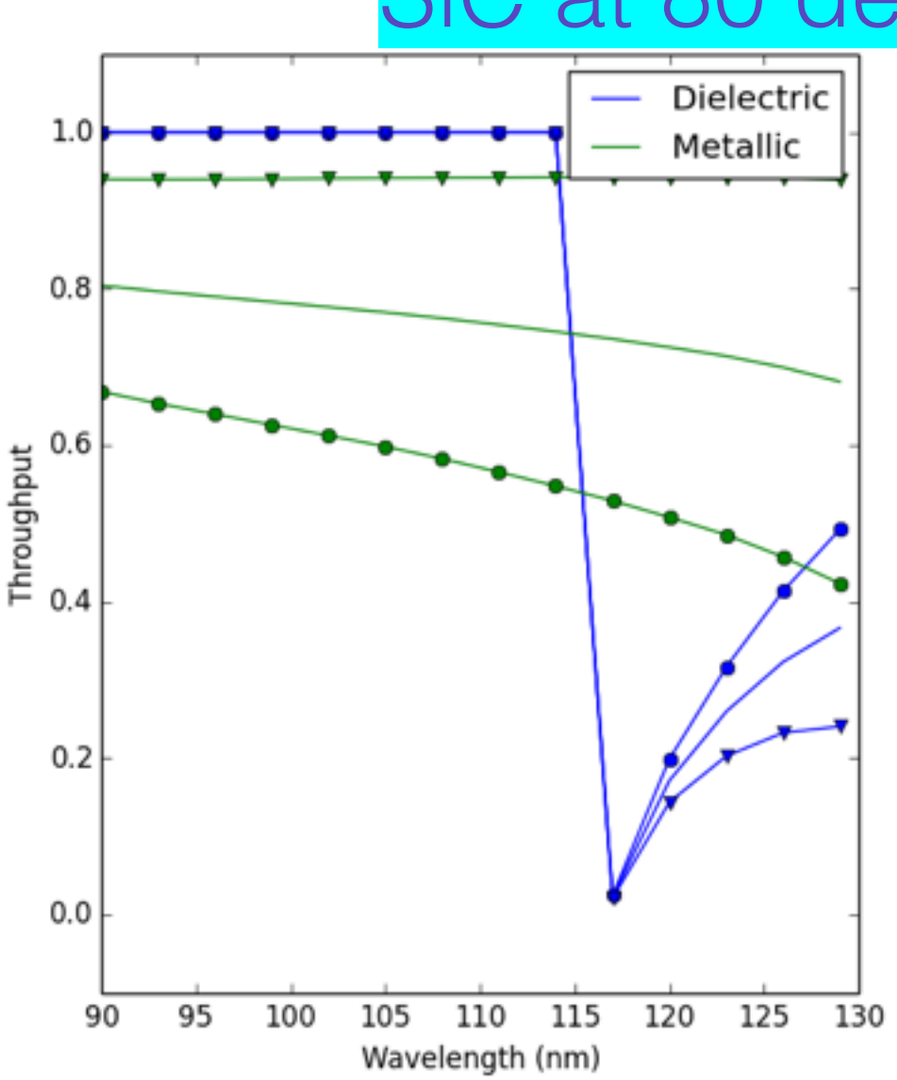
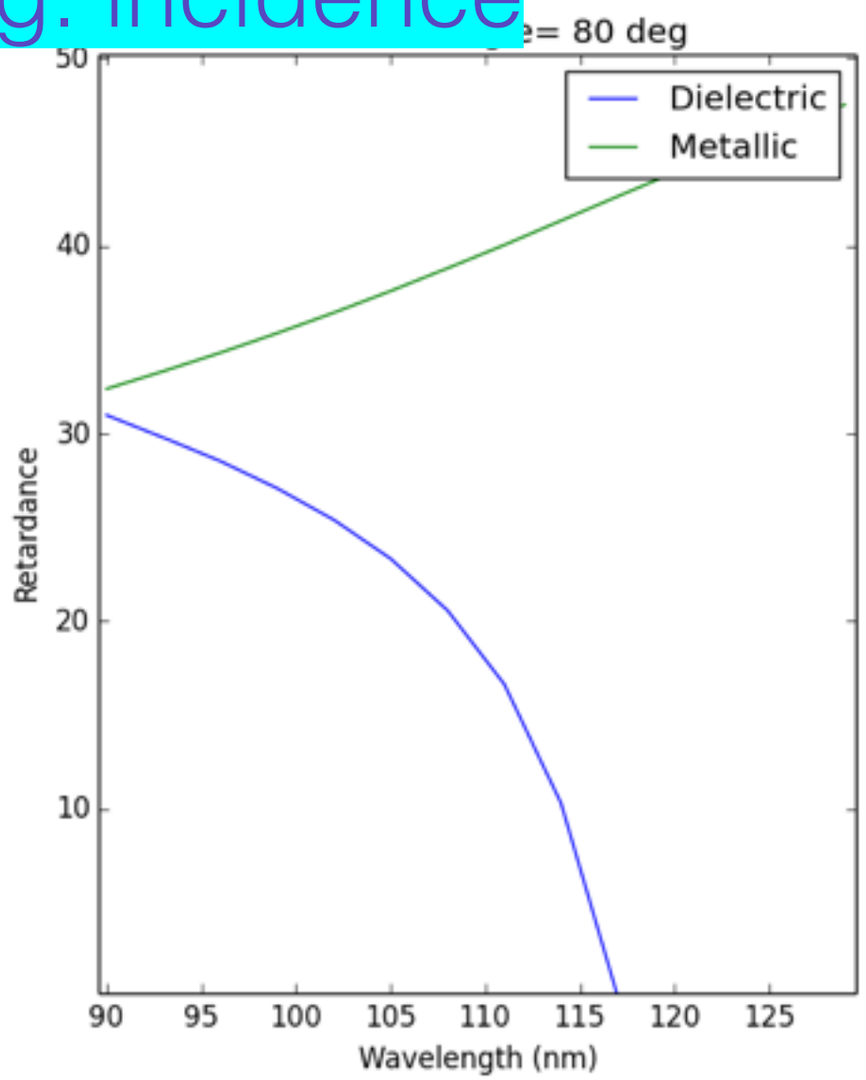
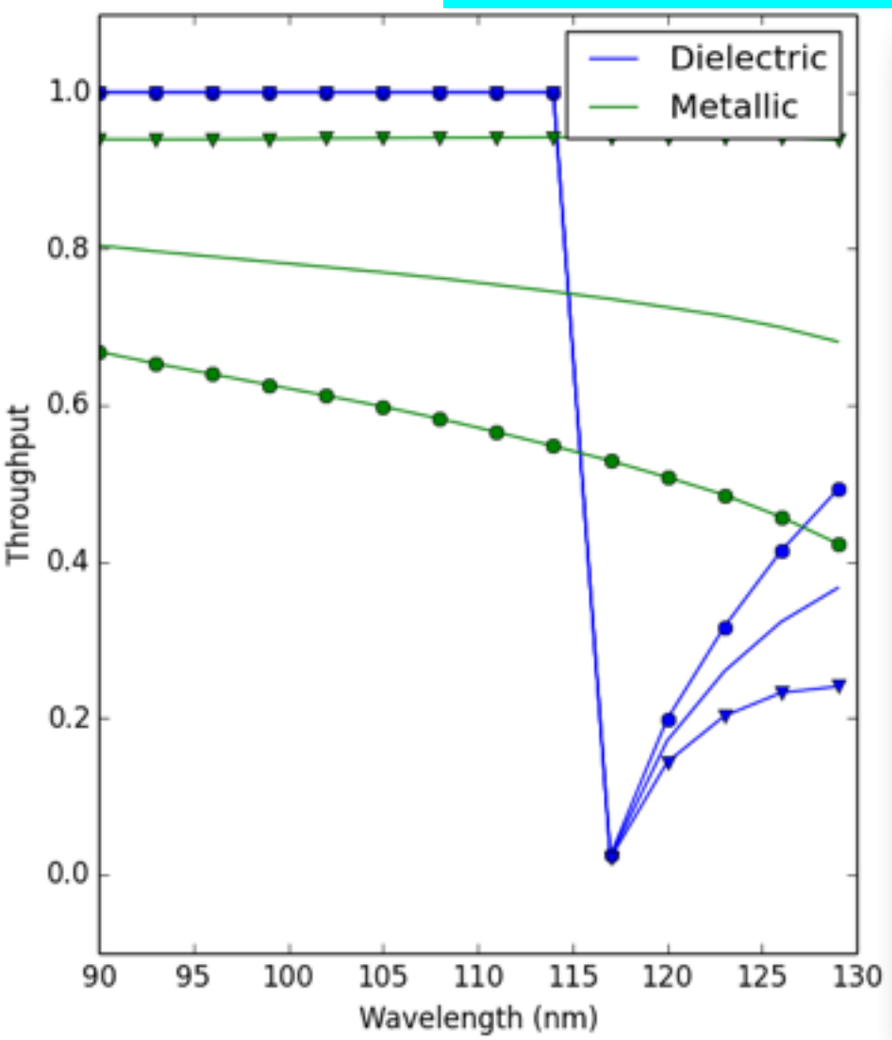
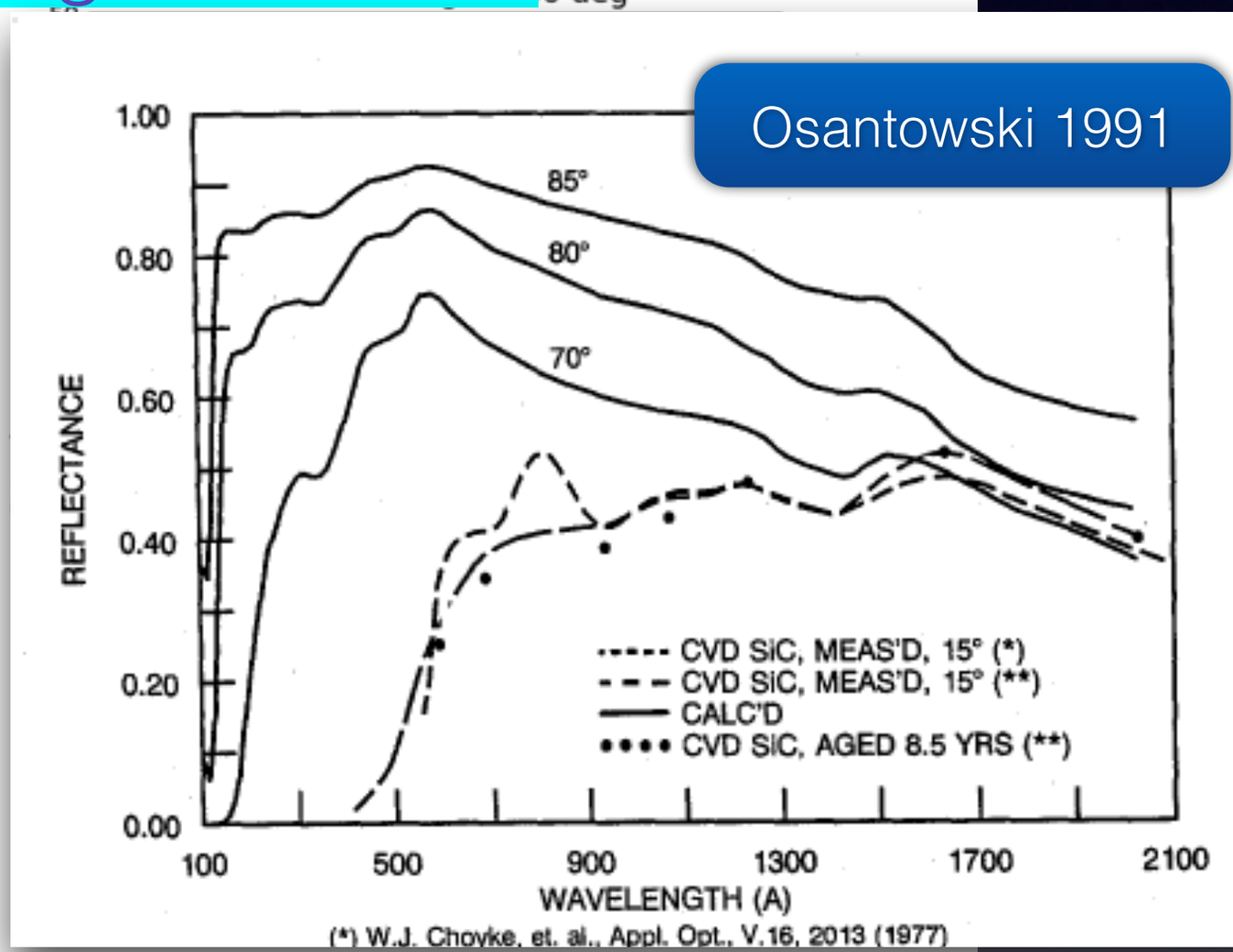
SiC at 80 deg. incidence





SiC at 80 deg. incidence





Osantowski 1991

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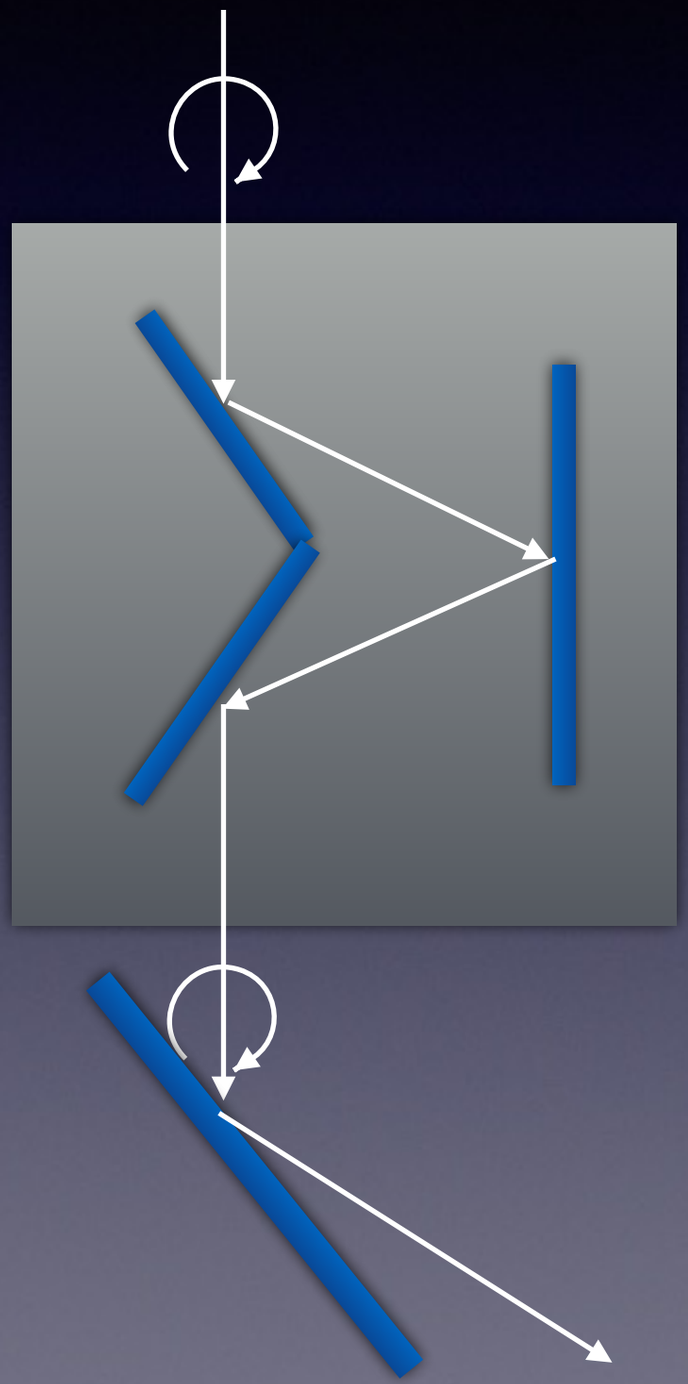
FUV: 90-120nm

SiC mirrors
with incidence ~80 deg



Modulator

Brewster angle polariser?

Analyser

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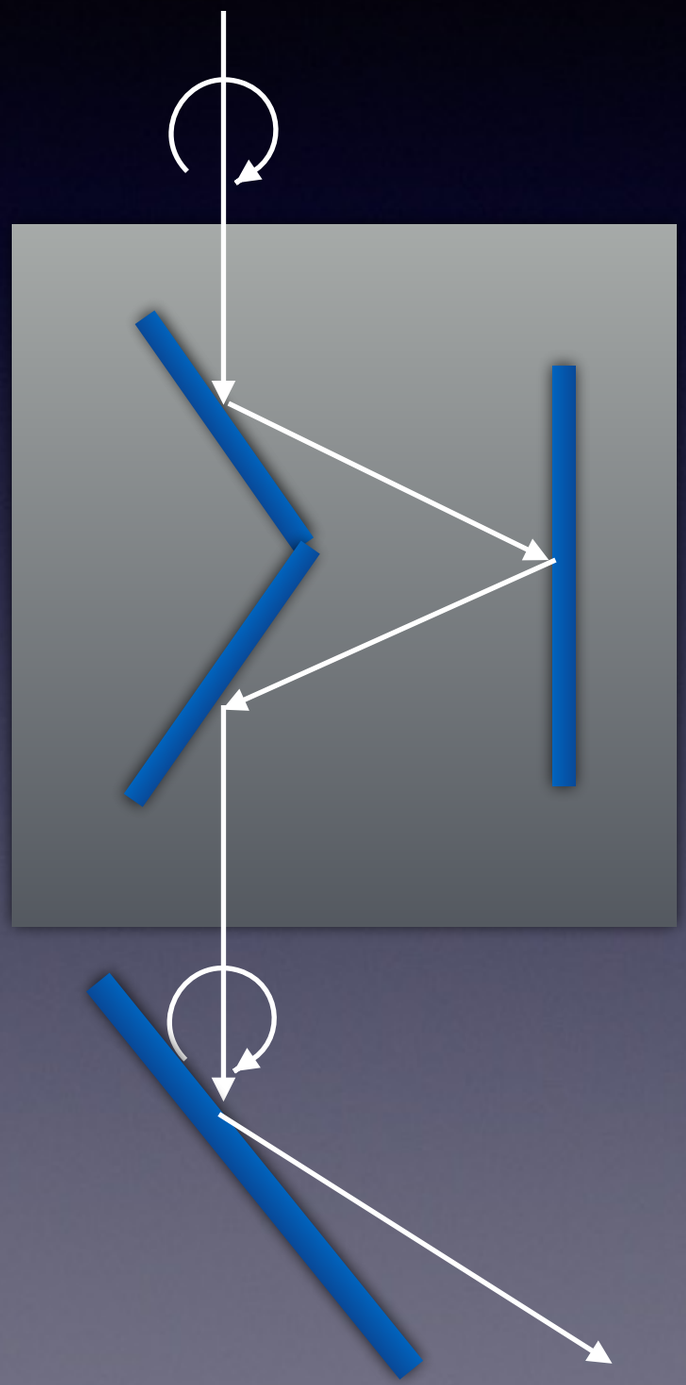
FUV: 90-120nm

SiC mirrors
with incidence ~80 deg



Modulator

0.8x0.8x0.3=0.19

Brewster angle polariser?

Analyser

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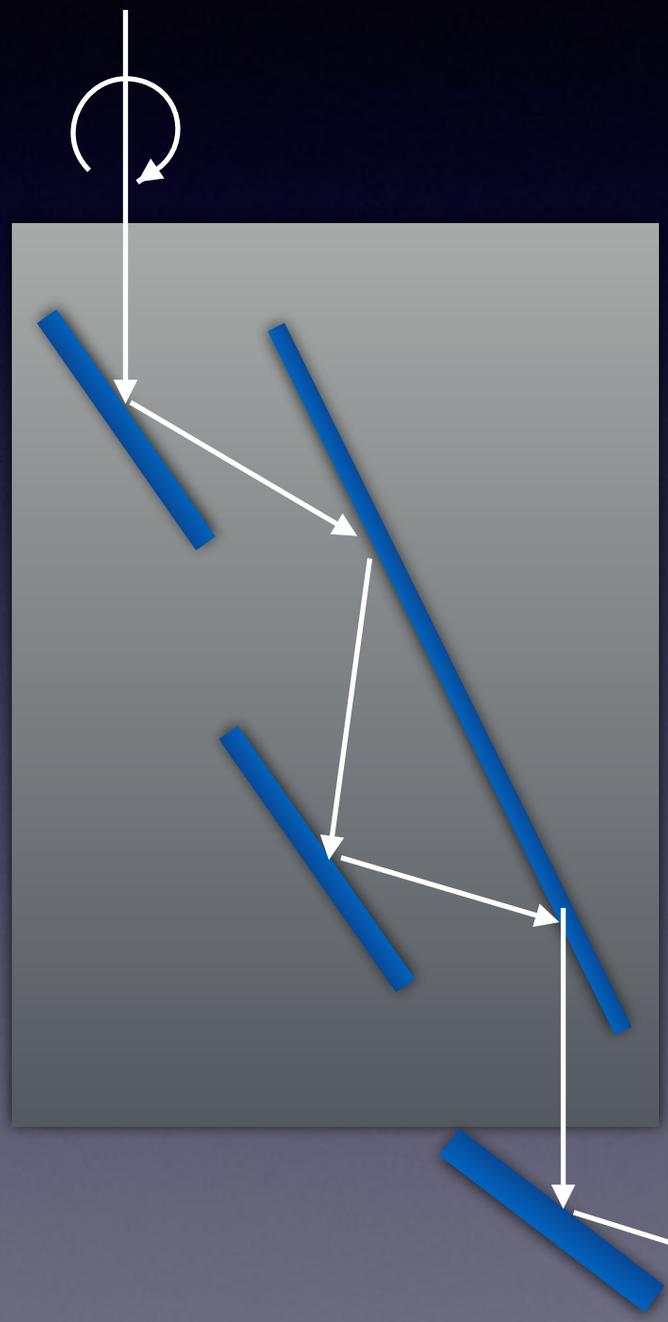
FUV: 90-120nm

SiC mirrors
with incidence ~80 deg



Modulator

$0.8^4=0.4$

Brewster angle polariser?

Analyser

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