

Summary of Current Situation of In-vacuum Steering Mirrors

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In-vac Steering Mirrors

- In-vac steering mirrors summarized in this document
 - Around MCF and IFI (REFL related)
 - Around IMMT1 (ISS related)
 - Around PR2 and SR2 (ALS related)
 - Around OFI and OMC (AS RF, OMC REFL, OMC TRANS related)

- Other in-vac steering mirrors not included in this document
 - TMS related
 - Pcal related
 - ...

Around MCF and IFI

- STM1,2 to steer beam to IFI and POM1,2 for REFL beam

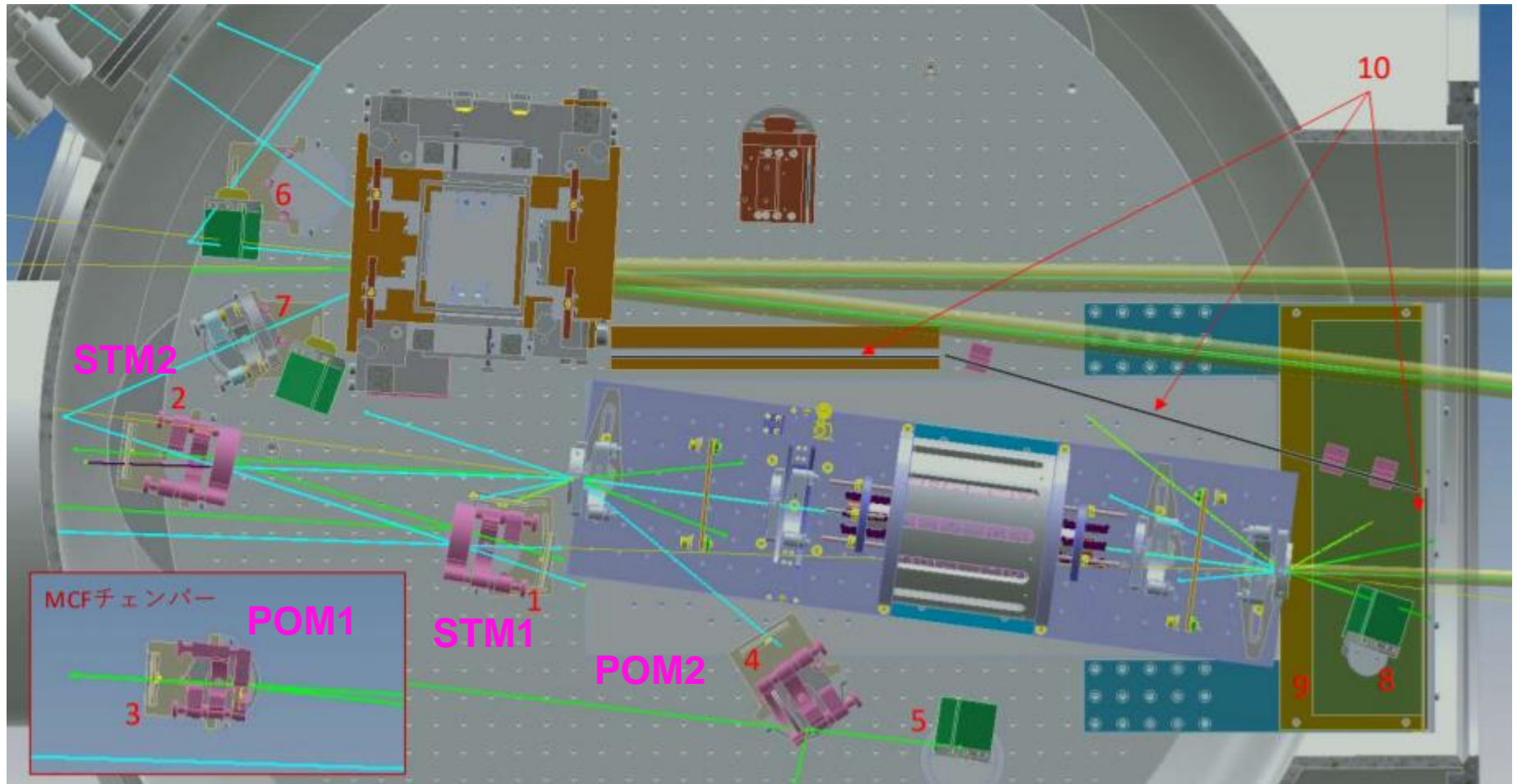


Figure from [JGW-D2112527](#)
See also [JGW-T1706953](#)

Around MCF and IFI

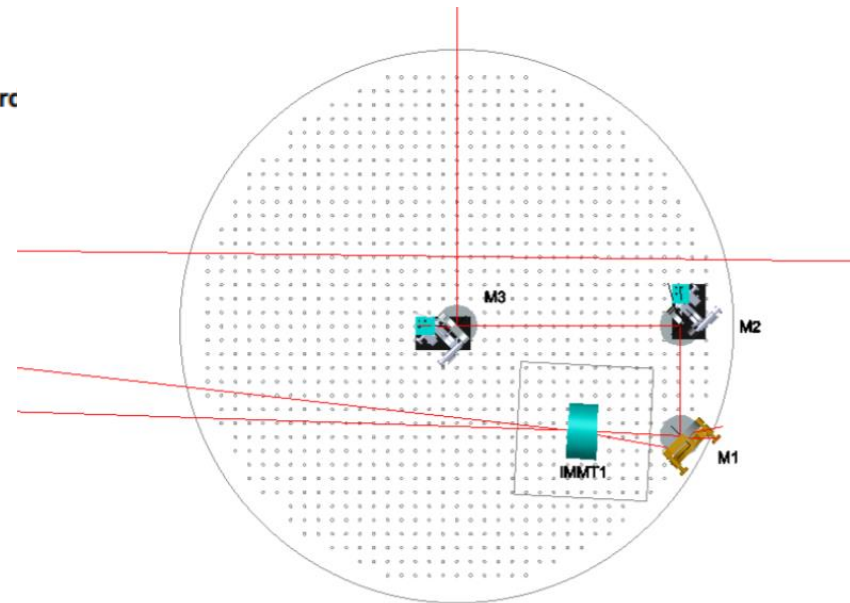
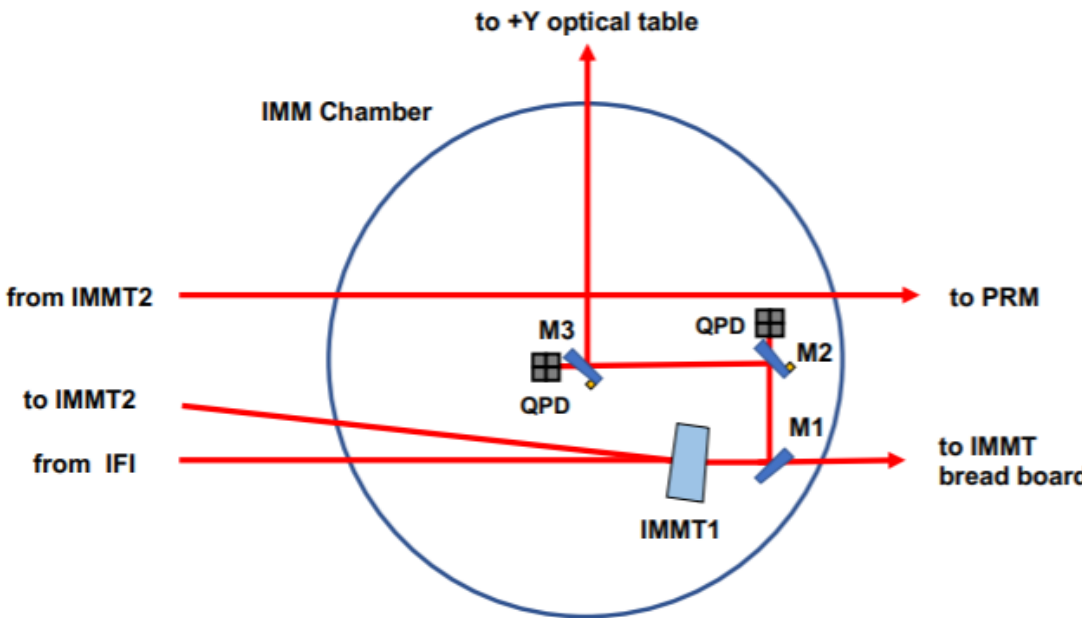
- Autex PYD-20 are used
lambda/20 polished
PR>99% for s-pol and p-pol at 0-45 deg
AR coating ?

Name	Chamber	Wavelength	Polarization	Incident angle	Currently installed
STM1	IFI	1064 nm	S-pol (to MIF) P-pol (REFL)	??? ???	PYD-20
STM2	IFI	1064 nm	S-pol (to MIF) P-pol (REFL)	??? ???	PYD-20
POM1	MCF	1064 nm	P-pol (REFL)	~3.5 deg	PYD-20
POM2	IFI	1064 nm	P-pol (REFL)	???	PYD-20

From K. Somiya

Around IMMT1 (ISS related)

- M1, M2 and M3 for steering IMMT1 trans



Figures from [JGW-G2012232](https://www.nasa.gov/licenses/public_domain)

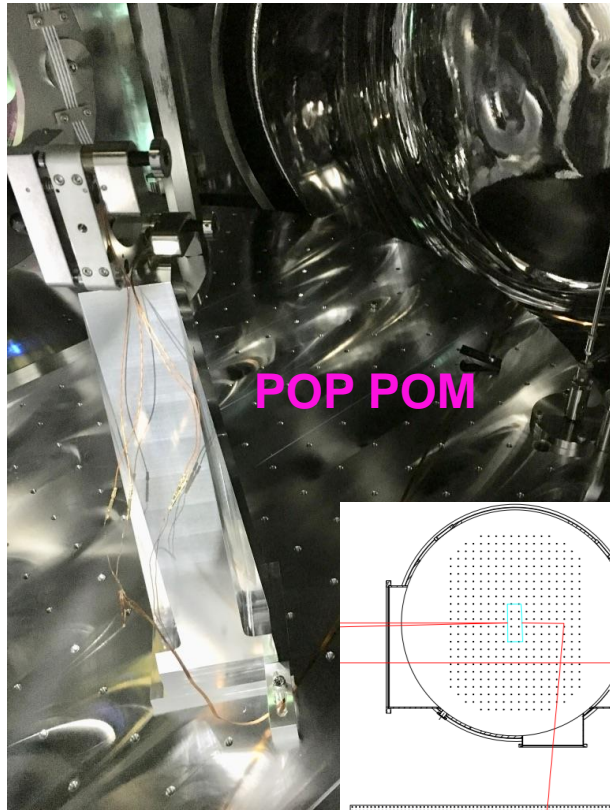
Around IMMT1 (ISS related)

- ?????

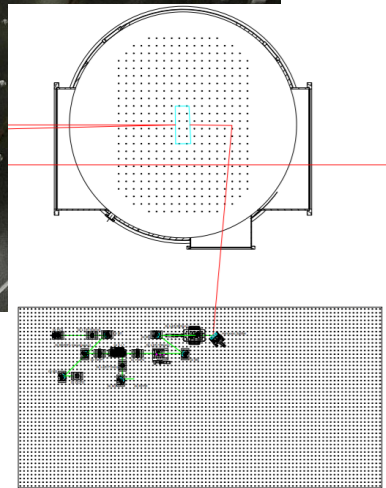
Name	Chamber	Wavelength	Polarization	Incident angle	Currently installed
M1	IMM	1064 nm	S-pol	???	Not yet
M2	IMM	1064 nm	S-pol	???	Not yet
M3	IMM	1064 nm	S-pol	???	Not yet

Around PR2 and SR2 (ALS related)

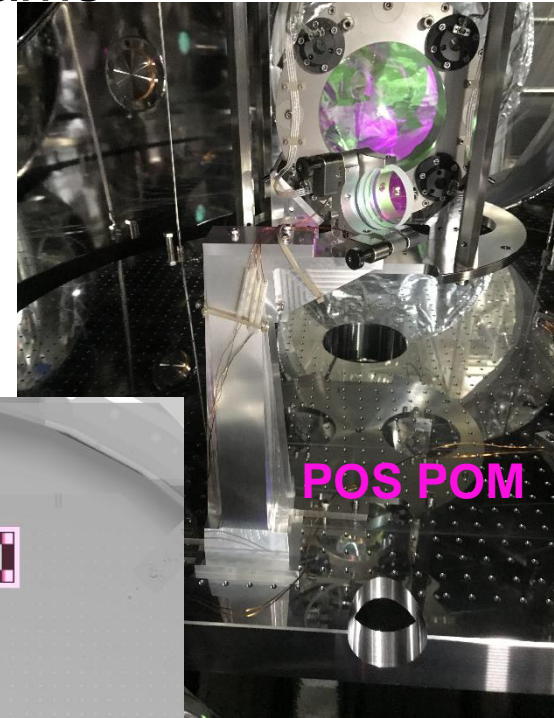
- Dichroic mirrors at the back of PR2 and SR2 for steering POP and POS beams, injecting green beams



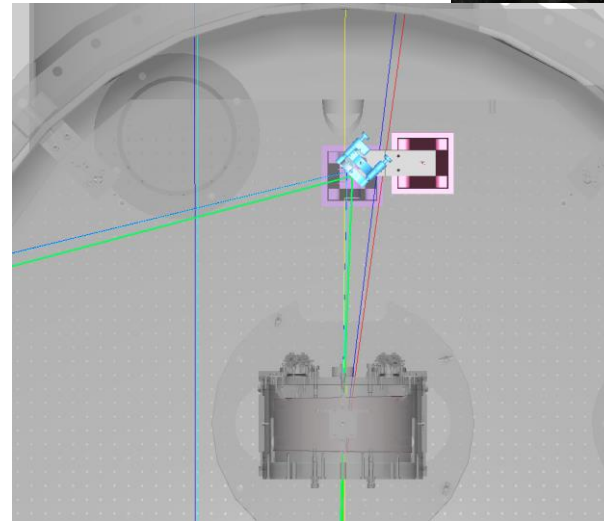
POP POM



[klog #4149](#)
[JGW-G1808954](#)
[JGW-T1605261](#)



POS POM



[klog #7794](#)
[JGW-L1909580](#)
[JGW-T1605967](#)

Around PR2 and SR2 (ALS related)

- Sigma Koki mirrors are used
TFVMQ-50.8C10-20-W1D-532/1064-ARS-30-45D
lambda/20 polished
PR>99% for 1064 nm and 532 nm at 30-45 deg
AR coated (<0.3% for 1064 nm, <2.0% for 532 nm)
specsheet available from [JGW-D1812591](#)

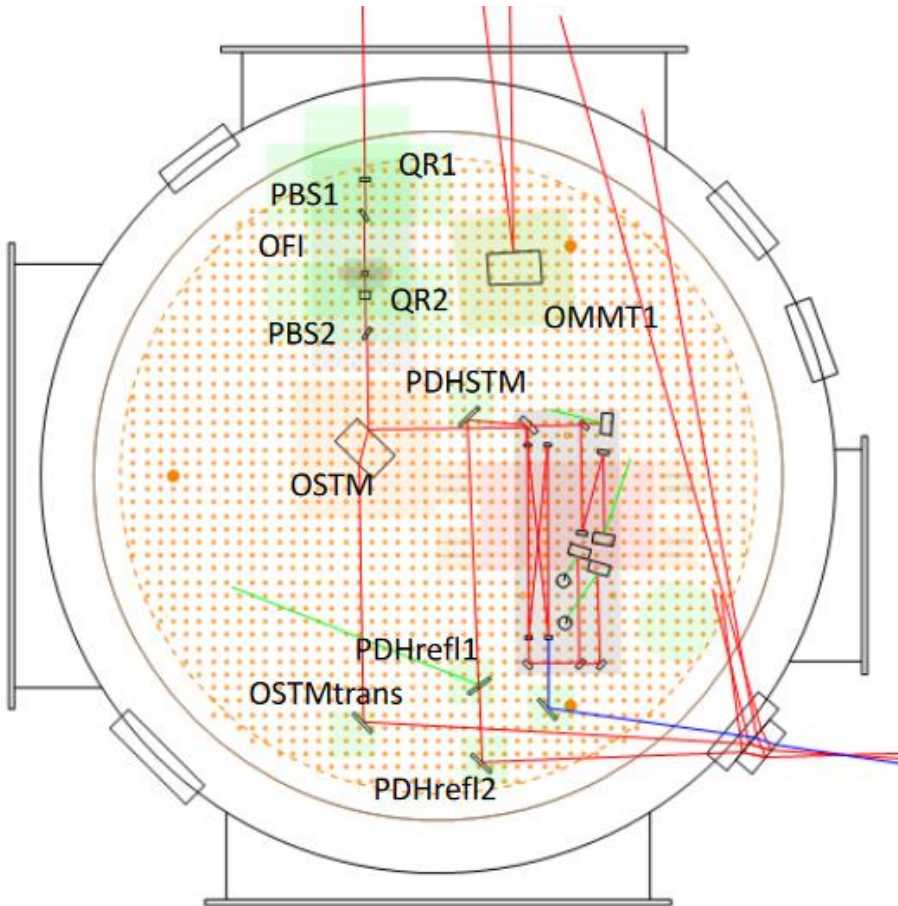
Name	Chamber	Wavelength	Polarization	Incident angle	Currently installed
POP POM	PR2	1064 nm 532 nm	S-pol (POP) S-pol (ALS)	~43 deg ~43 deg	Sigma Koki custom mirror
POS POM	SR2	1064 nm 532 nm	S-pol (POS) S-pol (ALS)	~36.5 deg ~36.5 deg	Sigma Koki custom mirror

From Lighttools
[JGW-L1909580](#)

[JGW-G1808954](#)

Around OFI and OMC

- P-pol after OFI; Steering OTSM trans (AS RF), OMC REFL and OMC TRANS



[JGW-T1808230](#)

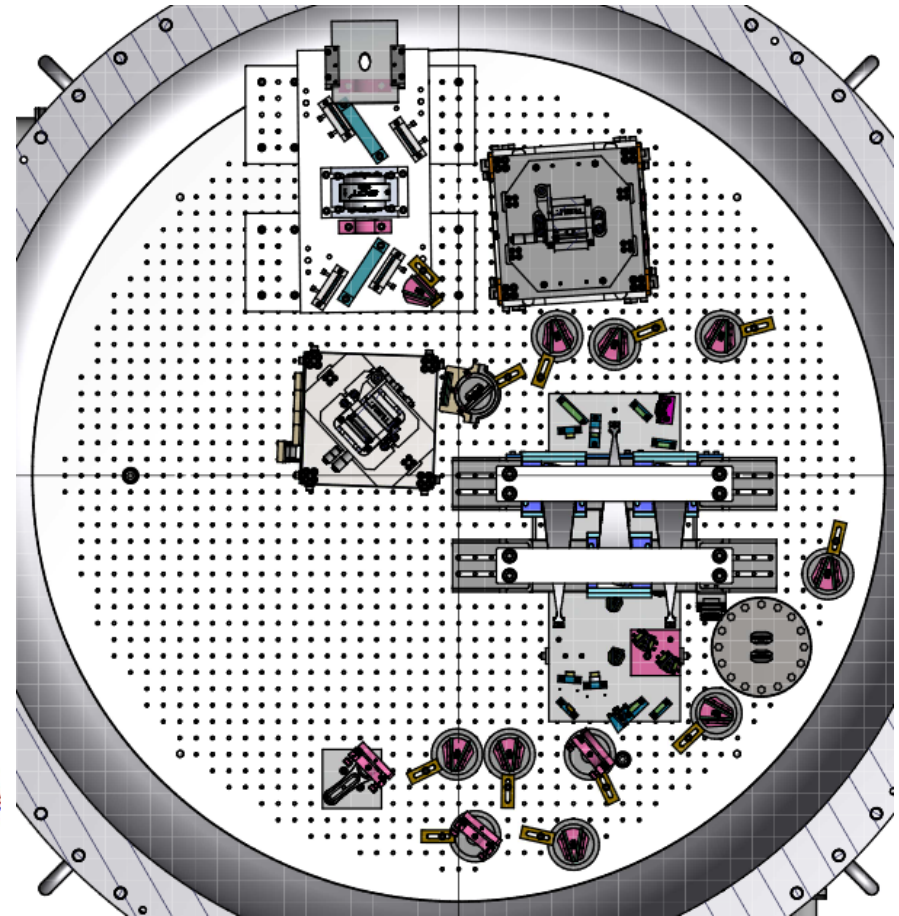


Figure from [JGW-D2011398](#)
See also [JGW-T1605967](#)

Around OFI and OMC

- ?????

Name	Chamber	Wavelength	Polarization	Incident angle	Currently installed
For OSTM TRANS	OMC	1064 nm	P-pol	???	???
For OMC REFL 1	OMC	1064 nm	P-pol	???	???
For OMC REFL 2	OMC	1064 nm	P-pol	???	???
For OMC REFL 3	OMC	1064 nm	P-pol	???	???
For OMC TRANS	OMC	1064 nm	P-pol	???	???