

FCC Retro-Alignment Procedure S-AB-P-181 Rev A

Intent: This document provides a quarterly maintenance procedure to ensure the FCC's are aligned and tuned. Temperature correction will be integrated into the procedure at a later date.

Frequency: Quarterly

Personnel Required: One

Prerequisites:

- Ensure the UVAT laser is ON (per S-AB-P-151) and the UVAT Startup Alignment Check is complete per S-AB-P-178.
- Ensure the PMA is aligned to the UVDP ASP in the required beamline (per S-AB-P-195).
- If automated temperature compensation is available, it should be turned OFF during the alignment procedure. It may be turned ON after the alignment procedure has been completed.

Procedure

1	Turn OFF automated temperature compensation.	<input type="checkbox"/>
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	Propagate the UVAT FCC alignment beam (small beam) to the UVDP ASP pointing camera.	
2	<ul style="list-style-type: none">• Insert the 5-inch mirror at the output of the UVAT into the beam path.• Remove the compensating plate from the beam path.• Rotate the rotating wedge assembly in the FCC alignment beam path on the UVAT to the "open" position (i.e.: no wedge in the beam).	<input type="checkbox"/>
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3	If necessary, make minor adjustments to the 5-inch mirror at the output of the UVAT to place the FCC alignment beam onto the 'fine' pointing UVDP ASP reference to within ± 1 -pixel in both x and y directions.	<input type="checkbox"/>
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4	Command the FCC to go to the [0,0] (tripler first surface) retro position.	<input type="checkbox"/>
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	Ensure that the FCC tripler retro is on the UVAT fine pointing reference (UVAT pointing camera) to within ± 1 pixel.	
5	<ul style="list-style-type: none">• If it is not, move the FCC X and Y motors to bring the retro spot to the pointing reference and then zero the X and Y motors.	<input type="checkbox"/>

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		Low	High
6	Move the FCC to the "low intensity tuned" position using the most recent tuned X and Y coordinate values.	<input type="checkbox"/>	<input type="checkbox"/>
7	Rotate the UVAT wedge wheel to insert the UVAT doubler wedge into the beam.	<input type="checkbox"/>	<input type="checkbox"/>
8	Run <i>centroid</i> and place the software pointing reference onto the FCC doubler retro to within ± 1 pixel on the UVAT ASP fine pointing camera.	<input type="checkbox"/>	<input type="checkbox"/>
9	Record the pointing reference coordinates and motor positions as "tuned doubler low-intensity position".	<input type="checkbox"/>	<input type="checkbox"/>
10	Rotate the UVAT wedge wheel to insert the UVAT tripler wedge into the beam.	<input type="checkbox"/>	<input type="checkbox"/>
11	Run <i>centroid</i> and place the software pointing reference onto the FCC tripler retro to within ± 1 pixel on the UVAT ASP fine pointing camera.	<input type="checkbox"/>	<input type="checkbox"/>
12	Record the pointing reference coordinates and motor positions as "tuned tripler low-intensity position".	<input type="checkbox"/>	<input type="checkbox"/>
13	Repeat Steps 6 - 12 for the "high intensity tuned" position.		<input type="checkbox"/>
14	Turn on automated temperature compensation.		<input type="checkbox"/>
15	Move the FCC to the required position for shots.		<input type="checkbox"/>
16	Enter the Beamline checked and the date into the Beamlines log.		<input type="checkbox"/>

(End)