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GP-B Telescope Image Divider Assembly (IDA) "Position Channel A Roof Splitter on Channel A Plate" P0291 Rev -

June 30, 1997

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POSITION CHANNEL A ROOF SPLITTER ON CHANNEL A PLATE

- for SUGP-B dwg# 25445
- follows *Position Beam Splitter Assembly on Channel A Plate* (SUGP-B P0290)
- also use *GP-B Telescope Image Divider Assembly (IDA) General Alignment and Bonding Procedures* (SUGP-B P0282).

1) Verify cleanliness of all fixturing.
2) Assemble fixture #'s 506-0005A, 560-0004A, 560-0003A, and 591-0015A with provided assembly hardware per OID dwg# 800-0044D.
3) Assemble two sets of fixture #'s 505-0034B, 625-0005B, 527-0029A, and 656-0017A(2) with provided assembly hardware per OID dwg# 572-0058B (Tilting Microscope Holders).
4) Mount Tilting Microscope Holders on IDA Fixtures per OID dwg# 800-0066A.
5) Assemble two 10" focal length microscopes with CCD cameras and monitors and focus them such that the double crosshair patterns are clear in the central region.
6) Install 10" microscope assemblies into Tilting Microscope Holders such that cameras are focused on and aligned to targets (note: targets may be of different size).
7) Verify cleanliness of all fixturing.
8) Place a small piece (~2cmsq.) of 2mil 'orange' shim stock over bonding region of Channel A Plate w/beamsplitter assy. (SUGP-B dwg# 25445) to protect surfaces during initial alignment.
9) Place Channel A Roof Splitter (SUGP-B dwg# 25067) on shim over bonding region as shown in OID dwg# 800-0044D.
10) Adjust laser power to comfortable viewing levels through monitors (probably near maximum).
11) Adjust 'end' screw such that a laser spot is visible on one or both targets near the target crosshair. (During all adjustments, frequently realign the Roof Splitter into three point contact with the aligning fixture and verify flat contact with the plate; take great care to avoid touching, contaminating, or damaging critical regions.) Note: some Channel A Roof Splitters have an arrow indicating bonding side etched into the back surface the can interfere with the 'end' screw during adjustments and this must be monitored.
12) Use coarse adjustment of the fine 'side' screw such that spot is visible and of roughly equal size (<30%) on each target (should appear as left and right semicircles with diffraction ring patterns).
13) Adjust the coarse 'side' screw such that both spots are equally off-center on the targets.
14) Adjust the 'end' screw such that both spots are on center on the targets.
15) Use fine adjustment on the fine 'side' screw such that laser spots are of equal size and intensity (<5%) on targets.

16) Repeat steps 13, 14, and 15 until the spots are centered on targets and of equal size and intensity.
17) Remove Roof Splitter and shim. Bond Roof Splitter to plate using *Bonding Procedures for Fused-Quartz Components* (SUGP-B P0218*)*.
18) Continue to monitor laser spots after bonding and make alignment adjustments as required within a few minutes.

19) After curing, remove fixture #'s 506-0005A, 560-0004A, 560-0003A, and 591-0015A, and both Tilting Microscope Assemblies.

Attachments: SUGP-B dwg#'s 25445, 25067; OID dwg#'s 506-0005A, 572-0058B, 800-0044D, 800-0066A.