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GP-B Telescope Image Divider Assembly (IDA) "Align Channel A Plate with Laser" P0289 Rev -

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ALIGN CHANNEL A PLATE WITH LASER

- preliminary to all IDA assembly work required for SUGP-B dwg# 25445
- follows *Set up basic IDA assembly fixtures* (SUGP-B P0283)
- also use *GP-B Telescope Image Divider Assembly (IDA) General Alignment and Bonding Procedures* (SUGP-B P0282).

1) Verify cleanliness of all fixturing.
2) Adjust focus of channel A laser diode to minimize spot size at infinity (>20').
3) Center laser body in holder such that beam is coaxial with body by rotating the holder in a v-block and observing the spot travel at a distant location.
4) Center 0.010" (50 micron) pinhole in holder such that spot is coaxial with body by rotating the holder in a v-block and observing the spot travel at a distant location.
5) Mount long (10") legs on Basic IDA Fixtures.
6) Assemble channel A laser assembly and mount on Basic IDA Fixtures per OID dwg# 800-0066A.
7) Mount custom four axis stage assembly over Basic IDA Fixtures.
8) Mount DOI Model 271 Alignment Scope in custom four axis stage.
9) Verify cleanliness of all fixturing.
10) Install Centering Reticle Plate (CRP) into IDA Fixtures and center (<0.002") with respect to fixture body by gap measurement (should be ~0.025").
11) In autocollimation mode, adjust tip-tilt of Alignment Scope (AS) such that it is normal to CRP (<15 arc-seconds).
12) Focus AS on CRP and adjust x-y position of AS such that it is centered on CRP pattern (<0.002"); verify normality.
13) Lock four axis stage and verify alignment; repeat steps 11 and 12 as necessary.
14) Remove CRP from IDA Fixtures.
15) Apply power to laser and adjust output to comfortable levels for viewing through AS.
16) Focus AS on to laser pinhole and adjust upper four screw push-push array until laser pinhole is centered in AS (<0.002").
17) Adjust lower four screw push-push array such that laser beam is parallel to AS in autocollimation mode (<30 arc-seconds).
18) Repeat steps 16 and 17 until both conditions are met.
19) Verify cleanliness of all fixturing.
20) Install Channel A Plate (SUGP-B dwg# 25399) in IDA Fixtures with coated aperture stop up; verify chirality; clock (<1°) and center (<0.005") with respect to fixture body; verify normality (<30 arc-seconds) to AS.

Attachments: SUGP-B dwg#'s 25445, 25399; OID dwg# 800-0066A.