OGSE mounting and dismounting procedure for all configuration

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Summary	
Annexes	

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1. GENERAL ASPECT

1.1. Scope of the document

This document explains step by step the mounting, the dismounting of the OGSE and its installation on the balancing tool. It explains also the assembly of all tests configuration and their assembly on the OGSE.

1.2. Applicable documents

Applicable Documents (AD)			
AD	**Title**	**Reference**	**Version**
1	OGSE Interfaces plates 2D drawing	COLIBRI_CEA_MAM_2_OGSE Interfaces plates 2D drawing	1.0
2	OGSE 3D Mounting configuration	COLIBRI_CEA_MAM_1_OGSE 3D Mounting configuration.STEP	1.0
3	OGSE 2D Drawing Counterweight	COLIBRI_OHP_DRW_1_OGSE 2D drawing_Counterweight	1.0
4	OGSE 2D Drawing_MainStructure	COLIBRI_OHP_DRW_1_OGSE 2D Drawing_MainStruct	1.0
5	OGSE 3D Design 30-09-19	COLIBRI_OHP_MAM_1_OGSE 3D Design 30-09-19.STEP	2.0
6	Hartman mask 3D drawing	COLIBRI_OHP_MAM_3_Hartman mask 3D drawing	1.0
7	Hartman mask 2D drawing	COLIBRI_OHP_DRW_4_Hartman mask 2D drawing	1.0

1.3. Reference documents

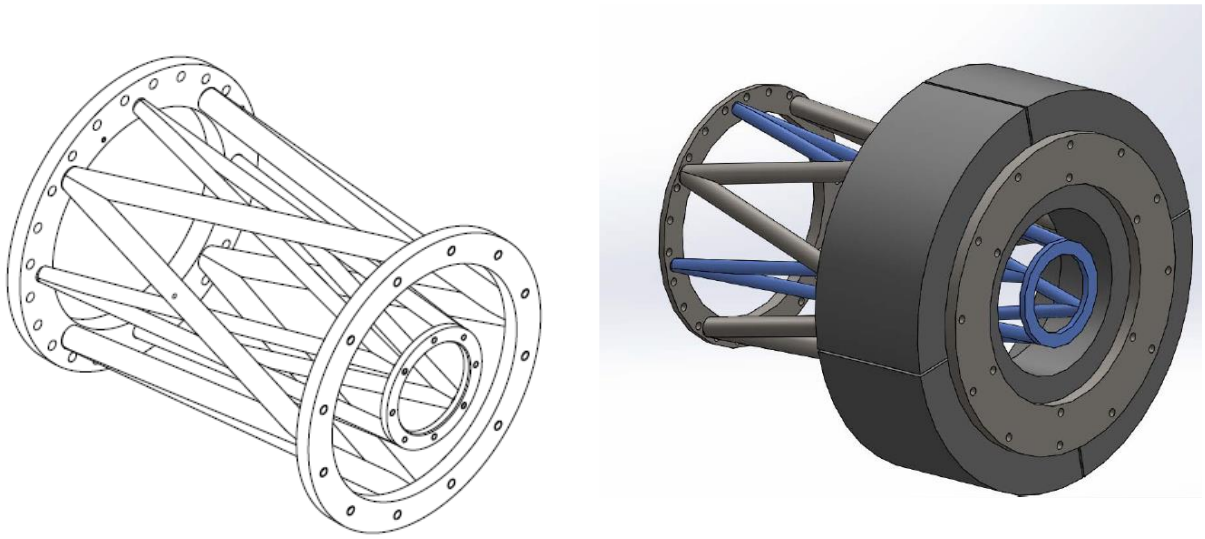
Reference Documents (RD)			
RD	**Title**	**Reference**	**Version**

2. OGSE MOUNTING PROCEDURE

2.1. 3D view of the OGSE

[AD3], [AD4] and [AD5] present the 2D drawing and the 3D design of the OGSE.

Figure 1 shows the OGSE without and with counterweight. The test instrument will be placed on the central ring of the main structure.



Main structure without counterweight *Main structure with counterweight*

Figure 1: 3D View of the OGSE

2.2. Dimension

Weight ≈ 350kg

- Circular counterweight: 5.072kg
- Lateral counterweight: 3.02kg

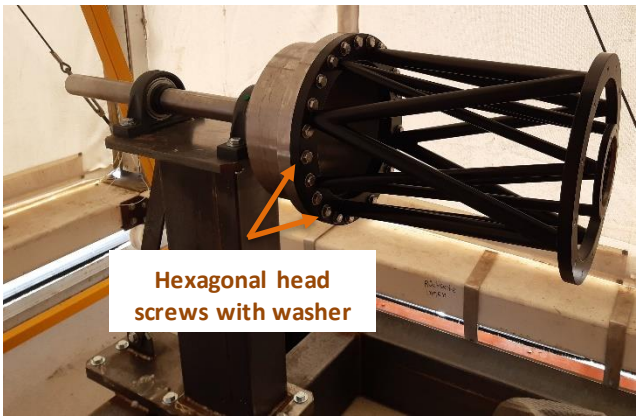
Overall dimensions:

- Length: 525.5mm
- Diameter without lateral counterweight: 480mm
- Diameter with lateral counterweight: 620mm

2.3. List of material

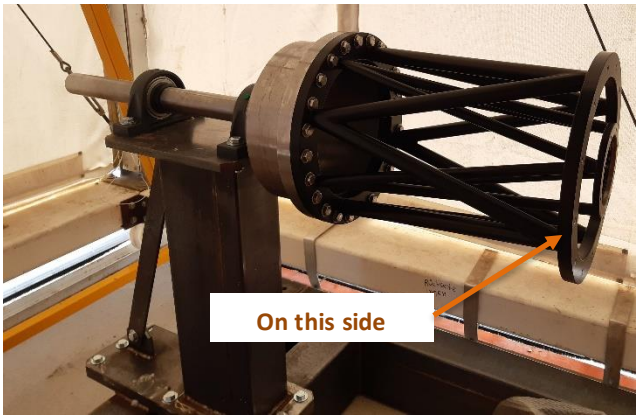
- OGSE parts: main structure, counterweights: circular (x10) and lateral (x80)
- M12 threaded stems x12 short (length: 175mm)
- M12 threaded stems x12 long (length: 250mm)
- M12x40 hexagonal head screws x24
- Flat key or socket spanner of 19

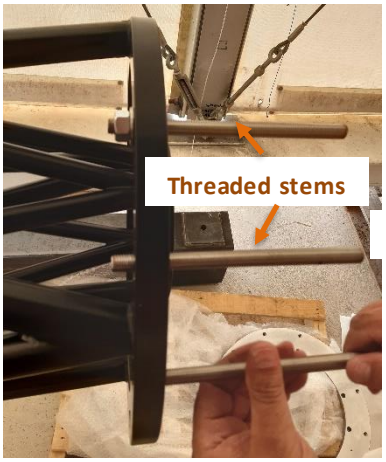
2.4. Procedure of mounting step by step



1

Installation on the main structure of the balancing tool or derotator with 24 hexagonal head screws and washers of 12mm.





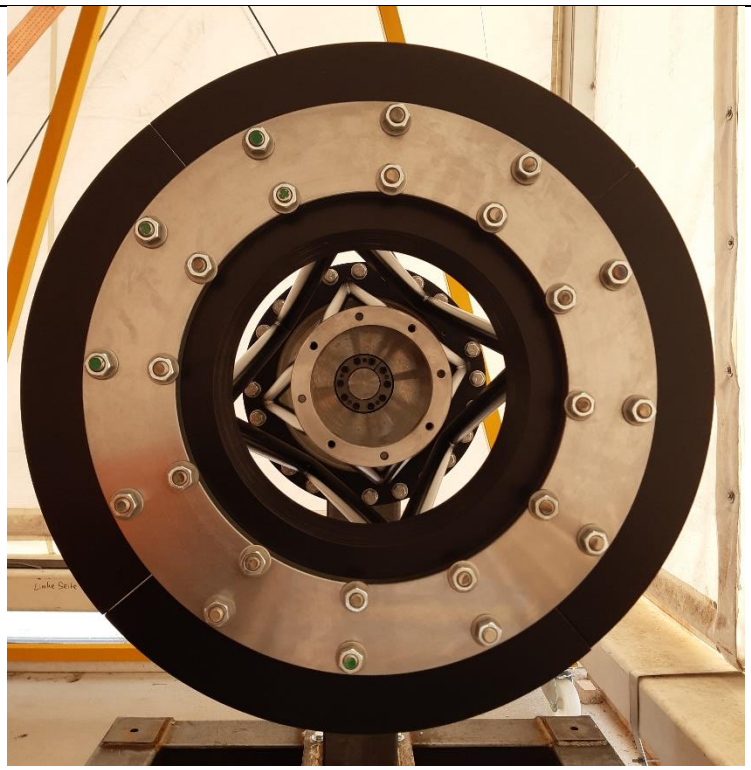
2

Installation of the M12 threaded stems short (x12) at the opposite extremity of the derotator interface.

Secure each threaded stem with washer and nut as shown on the picture. Take care to adjust the position of the threaded stem in regards of the nut edge.

	**3** Installation of the 10 circulars counterweights on the 12 threaded stems.
	**4** Installation of the interface plate for the lateral counterweight on the 12 threaded stems. Secure each threaded stem with a washer and a nut (orange circle on the photo).

	**5** Installation of the 12 M12 threaded stems long on the interface plate. Secure each threaded stem with a washer and a nut. Take care to adjust the position of the threaded stem in regards of the nut edge.
	**6** Installation on the lateral counterweight. Each counterweight uses 3 threaded stems for positioning. When all the counterweights are installed (or the number wanted), secure each threaded stem with a washer and nut.



Installation of the OGSE finished on the balancing tool.

2.5. Procedure of dismounting

1

Two threaded holes can be used to help the dismounting of the OGSE from the derotator interface if needed.

To dismount the counterweight just follow the procedure starting by the last step.

Before installation, each mounting shall be balanced with the balancing tool. Once balanced, the OGSE is directly mount on the derotator.

3. TEST CCD1 MOUNTING PROCEDURE

3.1. 3D view of the CCD1 configuration

[AD1] and [AD2] present the 3D design and the 2D drawing of the different configurations of tests. Figure 2 shows the configuration of the CCD1 test.

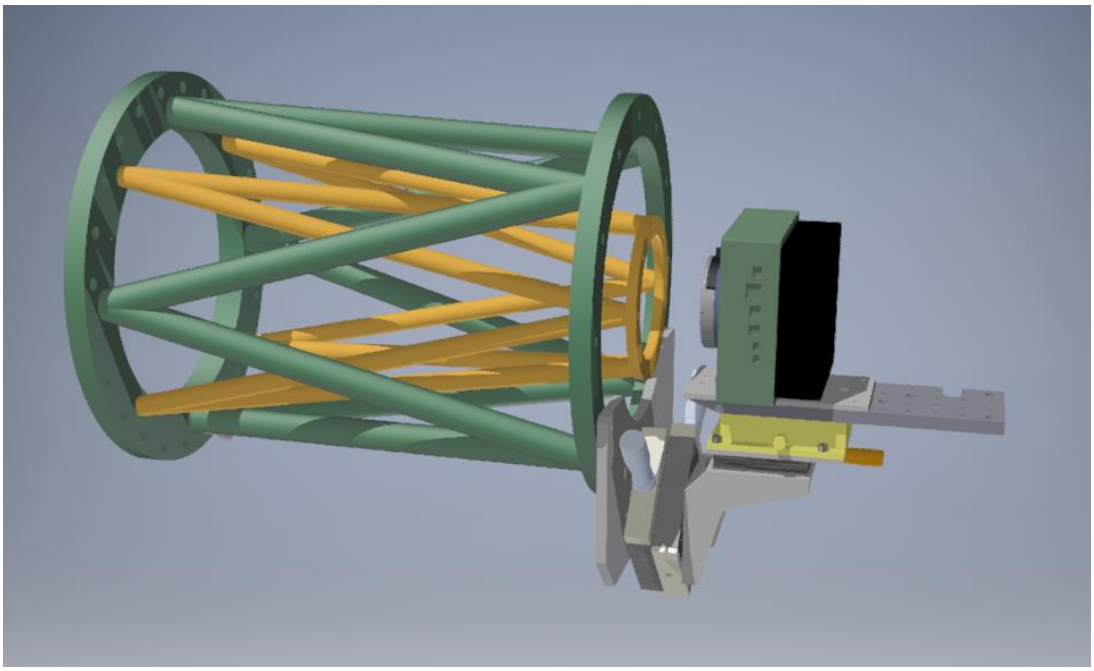
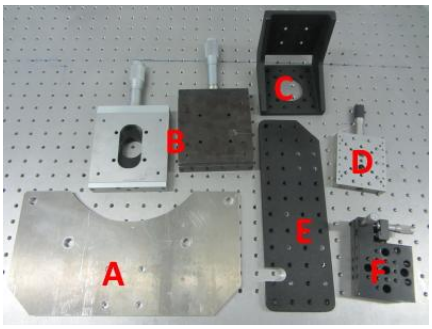
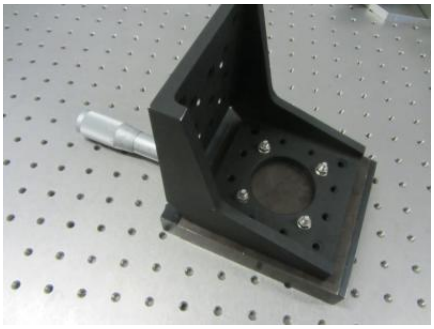
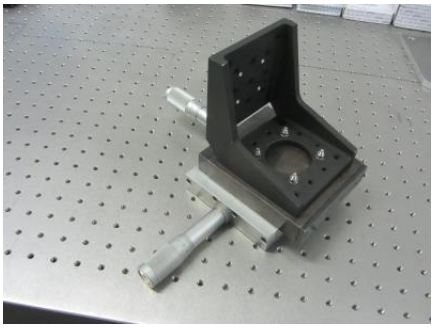
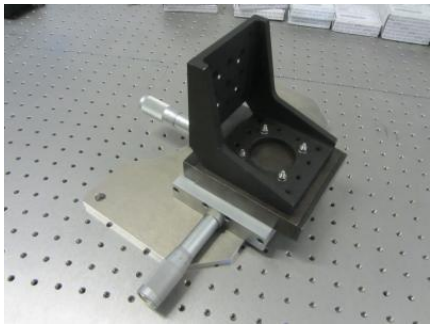
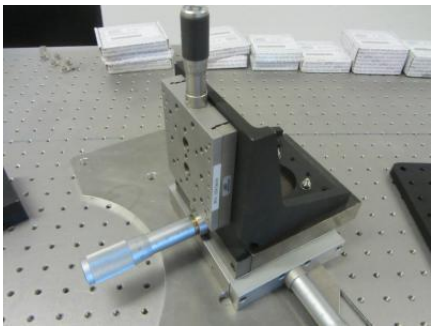
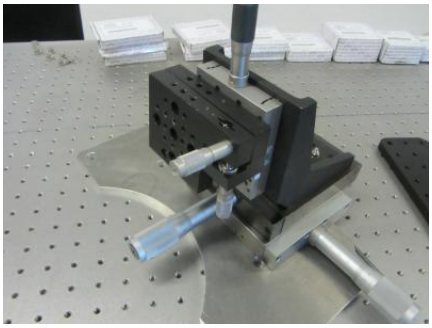
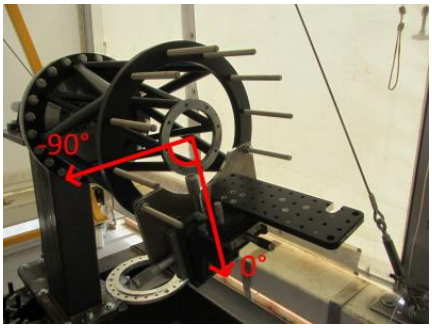


Figure 2: 3D view of the CCD1 test configuration

3.2. Procedure of mounting step by step of the CCD1 configuration

	**1** Required parts: A. Custom I/F plate B. Microcontrol large translation stages (x2) C. Square bracket EQ-120-I D. Microcontrol small translation stage E. Newport small table F. Newport tip-tilt platform M-36

	**2** Mount the square bracket on the first large translation stage (4x M5 screws + nuts and washers)
	**3** Mount the second large translation stage underneath (4x M5 screws)
	**4** Mount the custom interface plate (4x M5 screws) and the lowest and decentered holes
	**5** Mount the small translation stage on the square bracket

	**6** Mount the tip-tilt platform, using three M6 screws
	**7** Mount the small table, using the set of four counter-bored clear holes.
	8 Mount the FLI camera on its interface plate
	9 Mount the camera on the table
	**10** Mount the assembly on the OGSE structure (outer ring – no counterweights) The assembly must be used with an angle between -90° and 0° (see photo)

3.3. Configuration of the counterweight

This test configuration is balanced using the following counterweight configuration:

TBW

4. TEST CCD2 MOUNTING PROCEDURE

4.1. 3D view of the CCD2 configuration

[AD1] and [AD2] present the 3D design and the 2D drawing of the different configurations of tests. Figure 3 shows the configuration of CCD2 test.

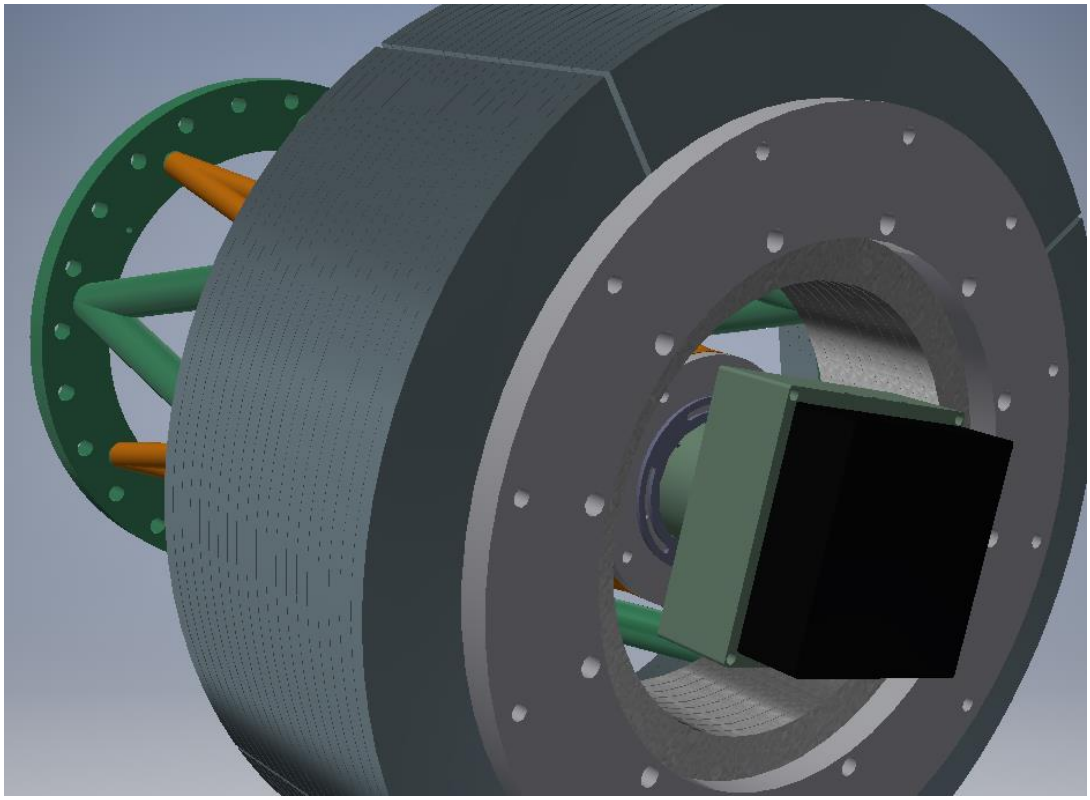
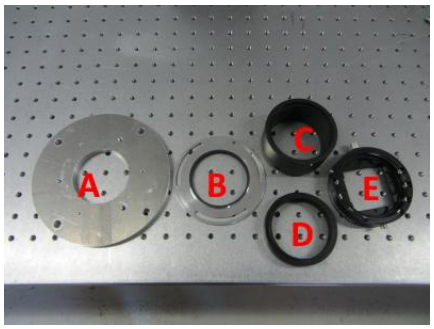


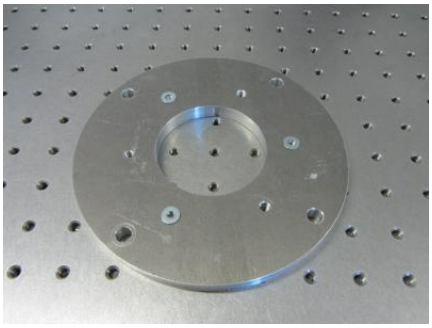
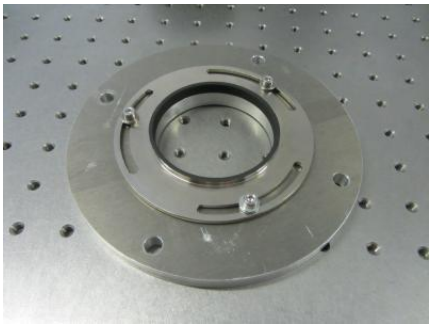
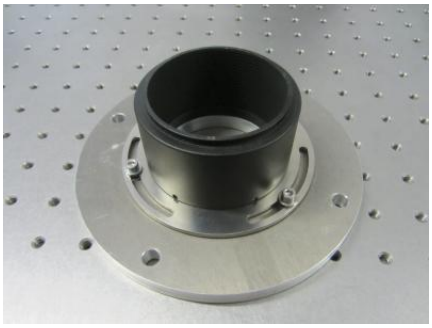
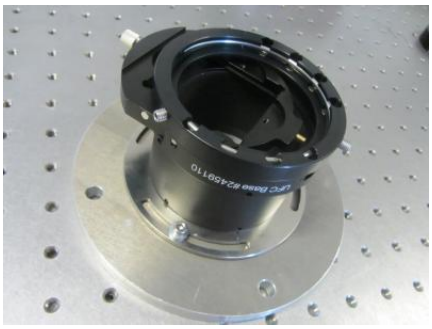
Figure 3: 3D view of the CCD2 test configuration

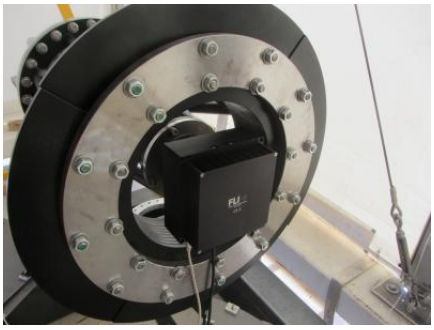
4.1. Procedure of mounting step by step of the CCD2 configuration



1 Required parts:

A. Custom I/F plate
B. Telescope adapter plate
C. 40mm extension
D. 5mm extension
E. Filter holder with FLI camera adapter

	**2** Place three M4 washer of the IF plate
	**3** Mount the telescope adapter plate
	**4** Mount an extension tube (nominally: 40mm)
	**5** Mount the fliter holder
	6 Mount the FLI camera

	**7** Mount on OGSE using four M8 screws (inner ring, counter weights in place)

4.2. Configuration of the counterweight

This test configuration is balanced using the following counterweight configuration:

5. TEST HASO MOUNTING PROCEDURE

5.1. 3D view of the HASO configuration

[AD1] and [AD2] present the 3D design and the 2D drawing of the different configurations of tests.
Figure 4 shows the configuration of the HASO test.

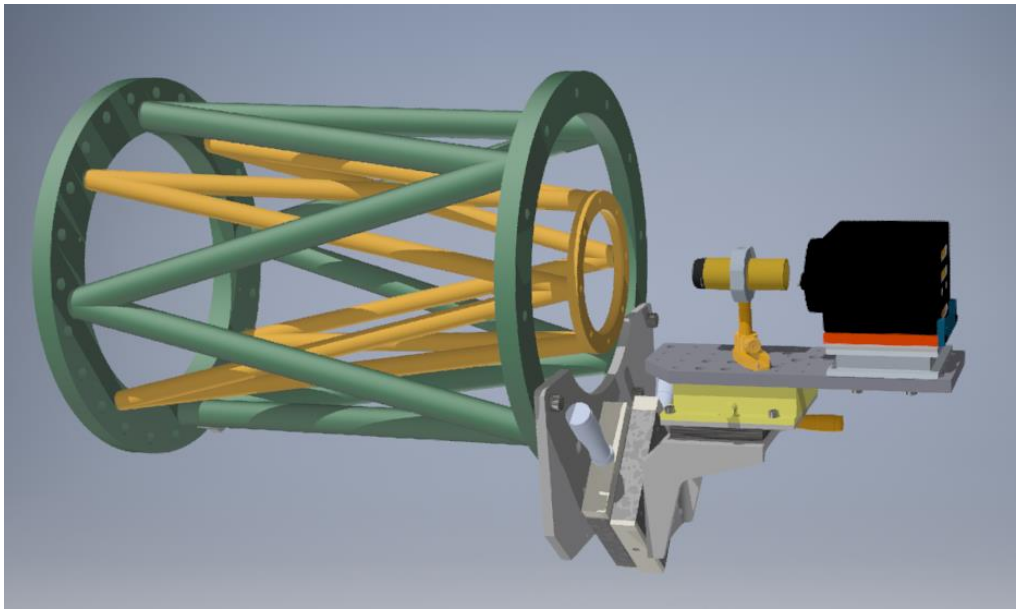


Figure 4: 3D view of the HASO test configuration (TBD)

5.2. Procedure of mounting step by step of the HASO configuration

TBW	**1**

5.3. Configuration of the counterweight

This test configuration is balanced using the following counterweight configuration:

TBW

6. TEST LASER MOUNTING PROCEDURE

6.1. 3D view of the laser configuration

[AD1] and [AD2] present the 3D design and the 2D drawing of the different configurations of tests.

Figure 5 shows the configuration of the laser test.

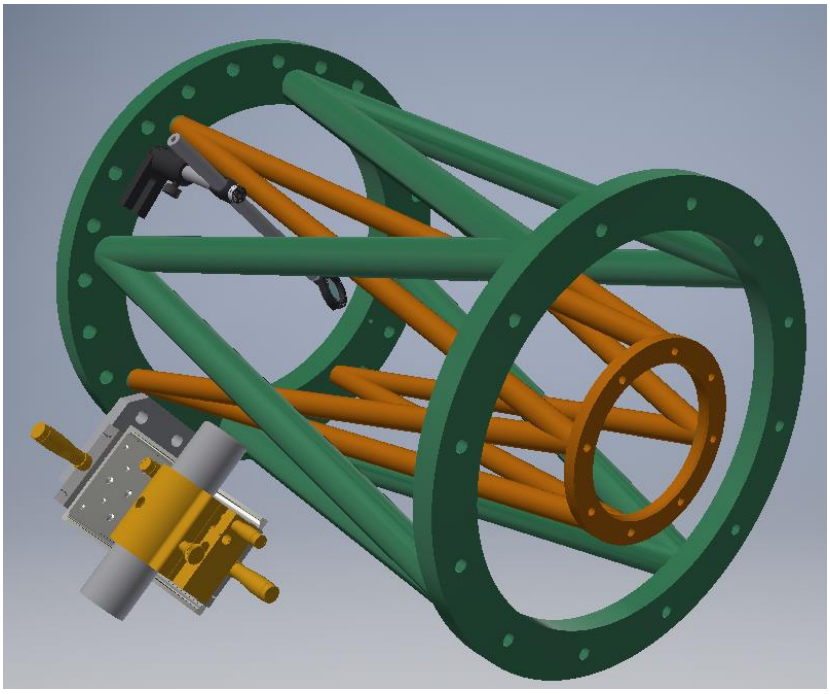
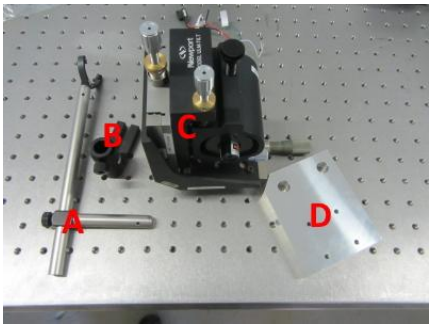
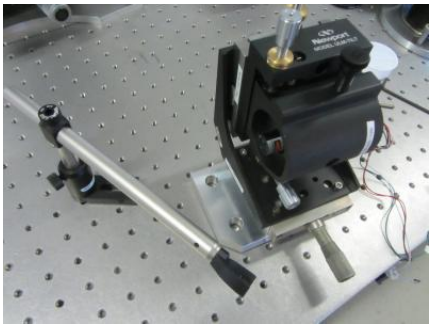
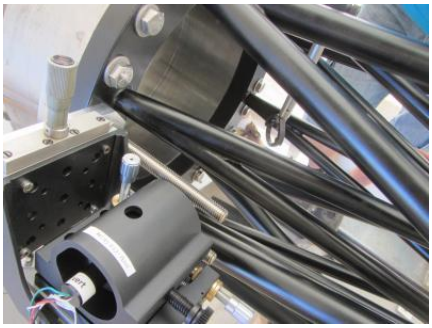
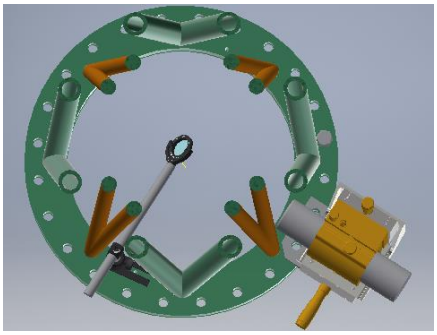


Figure 5: 3D view of the laser test configuration

6.2. Procedure of mounting step by step of the laser configuration

	**1 Required parts** A. Beam splitter holder B. Pedestal for beam splitter holder C. Laser on 4 DOF platform D. Custom I/F plate
	**2** Mount I/F plate underneath the laser platform (note: only 3 out of 4 screws can be mounted) Mount beam splitter holder in pedestal
 	**3** Mount both assembly on the OGSE, at the derotator exit side. The beam splitter is mounted using on the M6 threaded holes For the laser, unscrew two M12 bolts that are used for attaching the OGSE, place the laser I/F plate, and re-screw the bolts. Note: longer M12 screws are necessary. The CAD view shows the relative position of the beam-splitter holder and the laser.

6.3. Configuration of the counterweight

This test configuration is balanced using the following counterweight configuration:

7. TEST MANTA MOUNTING PROCEDURE

7.1. 3D view of the Manta configuration

[AD1] and [AD2] present the 3D design and the 2D drawing of the different configurations of tests.
Figure 6 shows the configuration of the manta camera test.

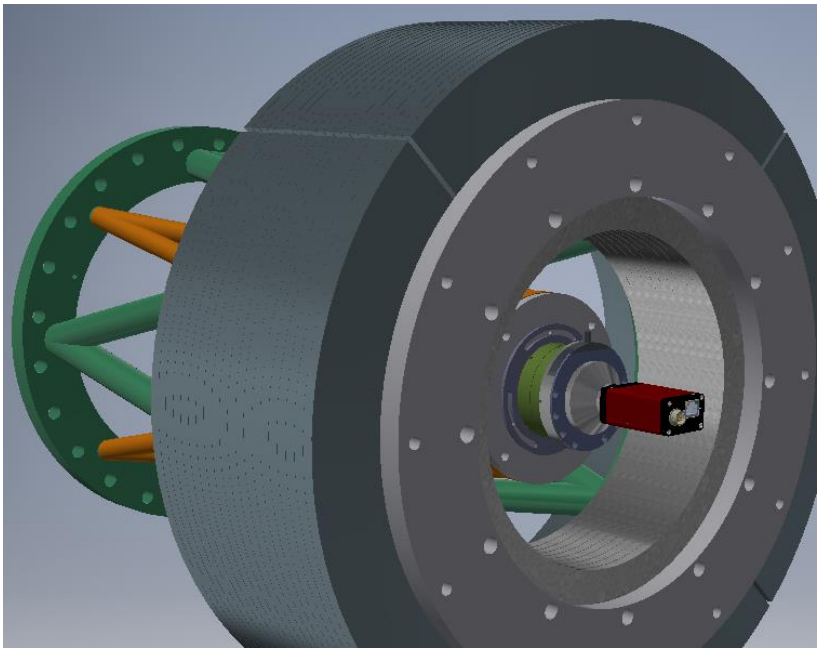
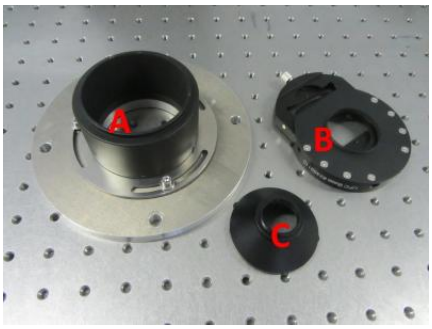
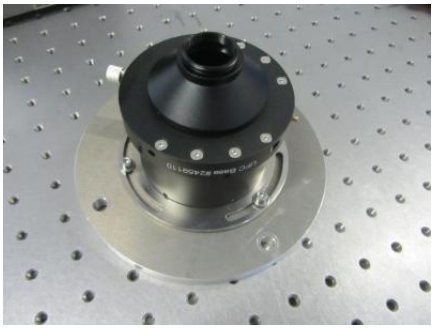


Figure 6: 3D view of the Manta camera test configuration

7.2. Procedure of mounting step by step of the Manta configuration

	**1 Required parts** A. I/F plate with telescope adapter and extension tube (follow step 1 to 4 of procedure 4.1 “CCD2 configuration”) B. Filter holder with T2 adapter C. T2 to C-mount adapter

	**2** Mount the filter holder on the extension tube, then screw the T2 to C-mount adapter.
	3 Mount the assembly on the OGSE using four M8 screws (inner ring, counter weights in place)

7.3. Configuration of the counterweight

This test configuration is balanced using the following counterweight configuration:

TBW

8. PROCEDURE OF ASSEMBLY AND INSTALLATION ON THE TELESCOPE OF THE HARTMAN MASK

8.1. 3D view of the Hartman mask

[AD6] and [AD7] present the 3D design and the 2D drawing of the Hartman mask.

Figure 7 shows the mask and its installation on the telescope.

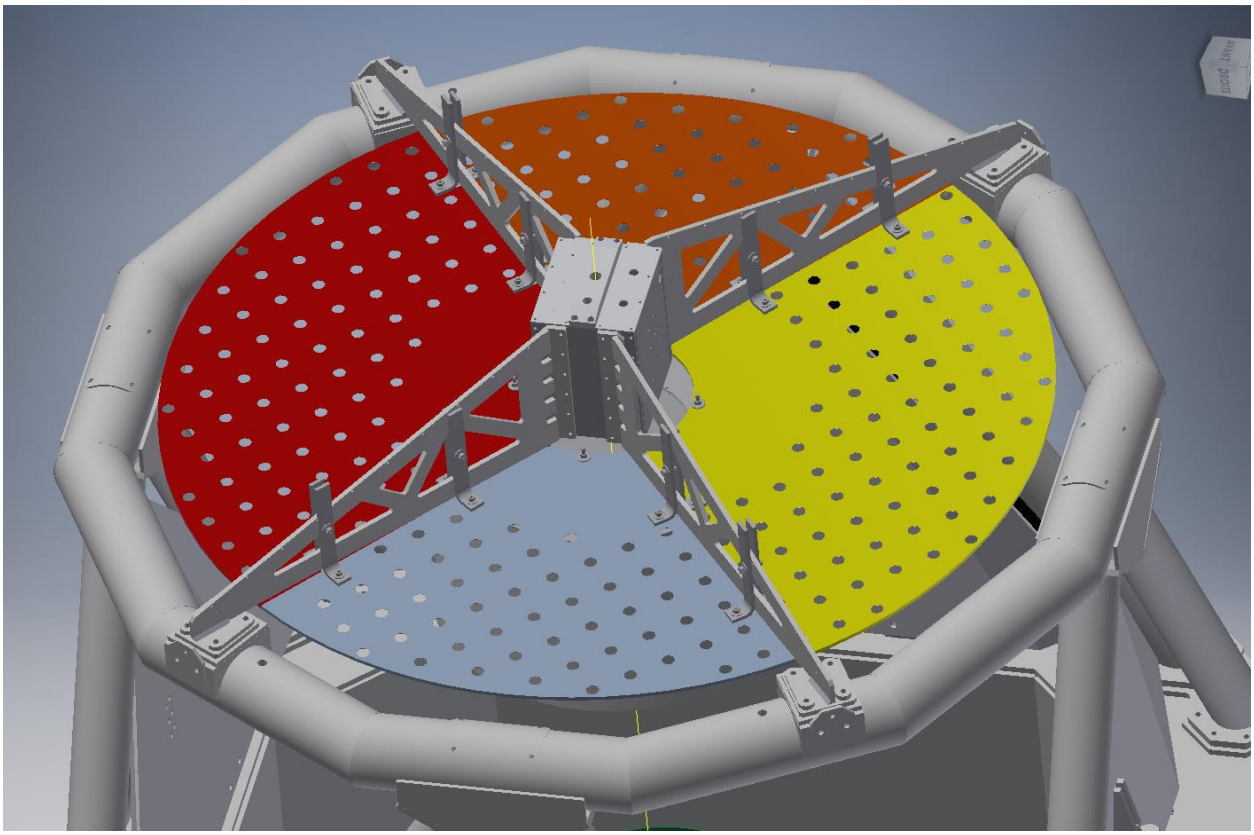


Figure 7: 3D view of the Hartmann mask on the telescope

TBW	**1**