

POINT SVOM
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Colibri meeting, 2023 Mai 09

- Delivery of VT
- Delivery of ECLAIRs and MXT
- Conclusion of the SVOM Joint steering committee
- Next milestones

Delivery of the VT

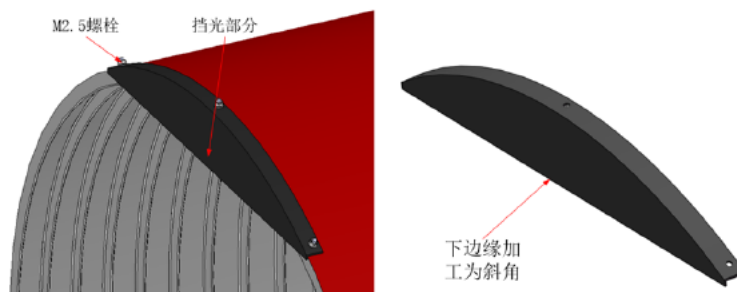
- In 2022, the VT's flight model encountered two issues:
- In December 2021, the VT team discovered a thermoelastic instability in the secondary mirror, resulting in an enlarged PSF.
- In October 2022, the VT team discovered the presence of stray light in the red channel.
- The instability of the secondary mirror was resolved by modifying the spider design (material) and adding a dedicated thermal control (+37w). This issue has a very low impact on the Core Program (GRBs) and is still being evaluated for the General Program (Observatory Science).
- The stray light comes from the reflection of a portion of the field on one face of the prism of the "splitter" that separates the red channel from the blue channel.
- To solve this problem, the VT team and the SVOM project (Chinese side) have chosen the less penalizing solution.

Delivery of the VT

- The problem of stray light was solved by adding a micro-baffle at the entrance of the telescope. This solution has a very low impact on the performance of the VT.

New design of VT to avoid ghost images

- Some tests have been done to measure the size of patch.
- Principles for the modification :
 - efficient
 - not impact on the detection performance



Delivery of the VT

Conclusion of test

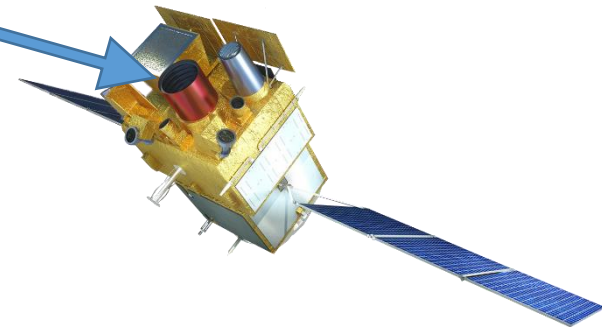
- A height of 38mm patch is very efficient to avoid the 99% false objects in the VT red images. The ghost images will be very faint, the flux of ghost image in the flat field is about 0.02% of the background.
- With a patch of such size, only 2.8% of effective area of VT will be lost. The impact on the performance is negligible.

Delivery of the VT



Integration room at Shanghai

The VT was delivered to Shanghai on February 10, 2023.
About 11 months behind schedule...



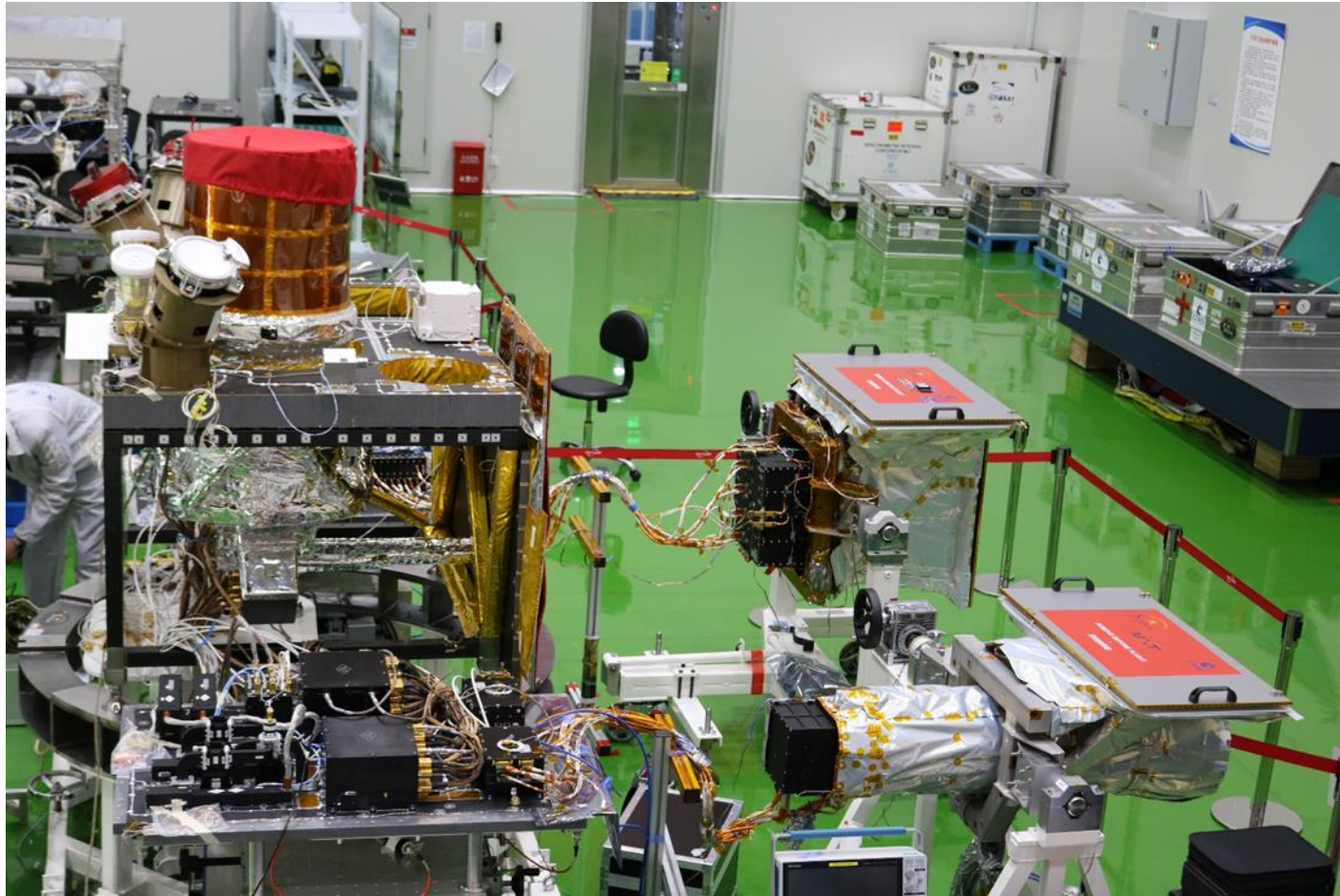
End of March, Integration of the VT on the Payload Module



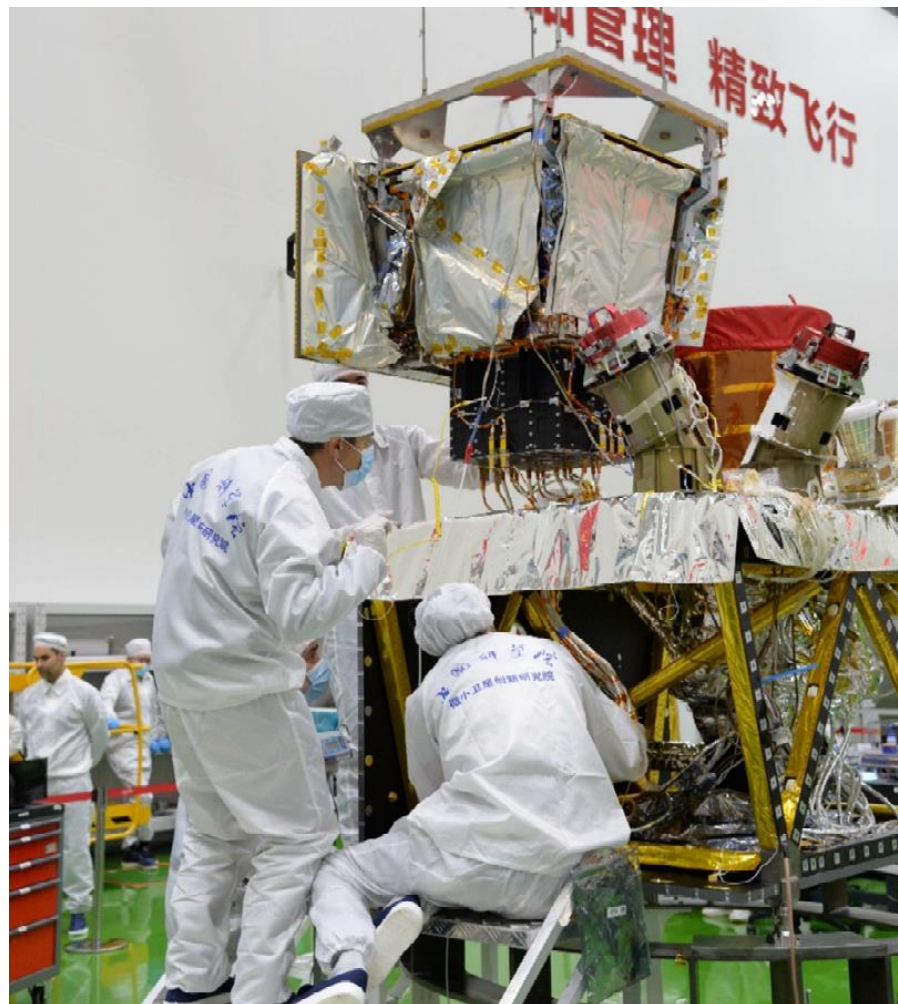
Delivery of ECLAIRs and MXT

- The delivery of French instruments to China (Shanghai) was a complicated task that had to overcome difficulties related to the pandemic and the war in Ukraine.
- After several episodes this summer, CNES finally managed to ship the ECLAIRs and MXT instruments by plane on March 10. The entire set arrived safely in Shanghai on March 11.
- A mixed team (CNES + labs) left at the end of March to start the integration activities of the French instruments on the Payload module (PIM).

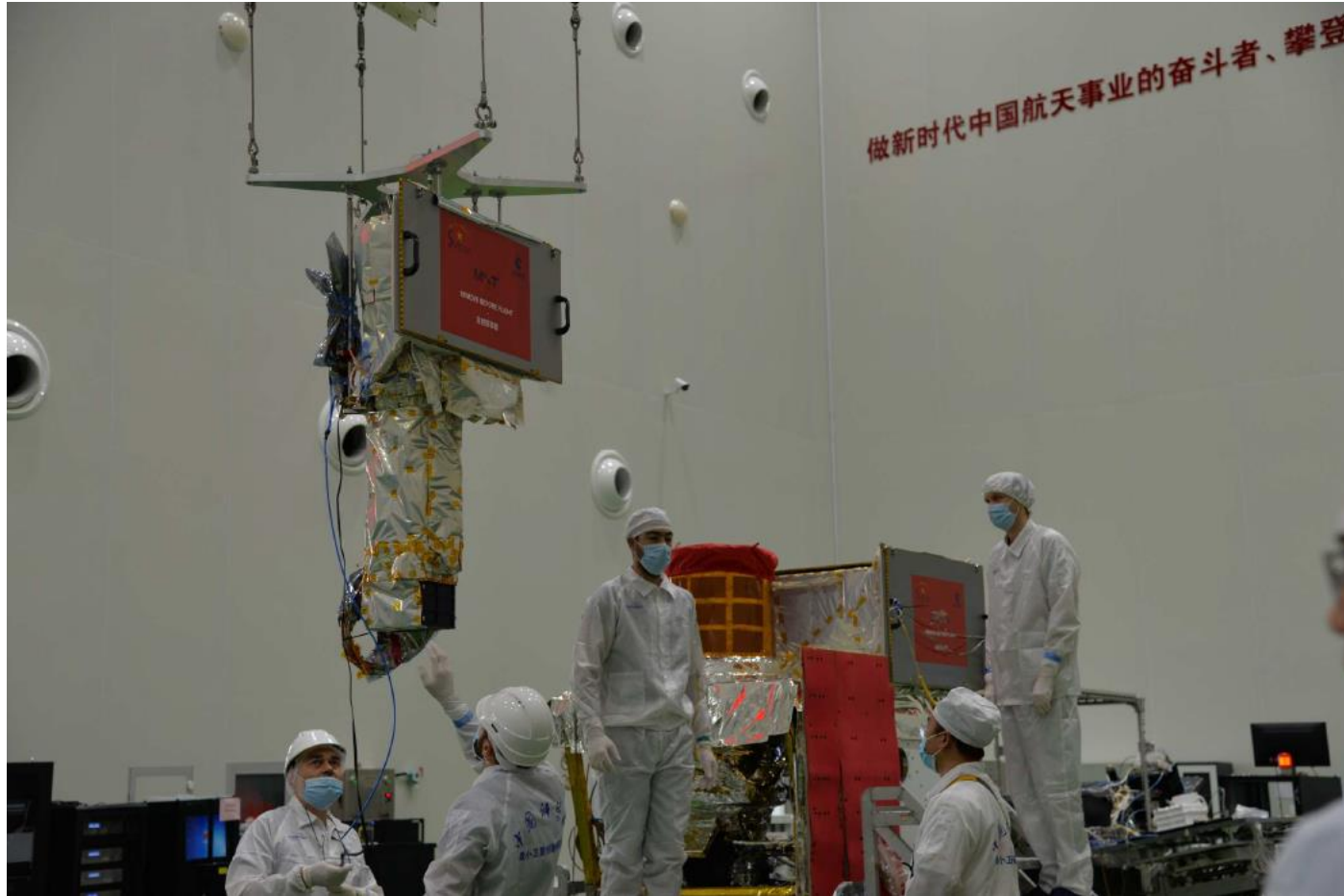
Early April, Preparation of the integration of ECLAIRs and MXT on the PIM



April 24, Integration of ECLAIRs on the PIM



April 26, Integration of MXT on the PIM



All the instruments are there! It's tight, not much room in the case



The 9th SVOM Joint Steering Committee was held in Beijing (NAOC) on April 18. There were 25 Chinese participants and 5 French participants (2 on video, 3 on site).

The objectives of the meeting were to update on the project's development and reach an agreement on the schedule and launch date.



- Satellite integration activities and system tests are continuing normally.
- The satellite is expected to be ready by the end of 2023.
- A 10th JSC will be held in France in late December 2023 to authorize the transfer to the Xichang launch site in January 2024.
- The launch of SVOM is expected to take place before the end of March 2024.
- The exact schedule of the launch campaign will be set in June 2023 by the launch site.



- In a year from now, we should be in-flight commissioning tests!

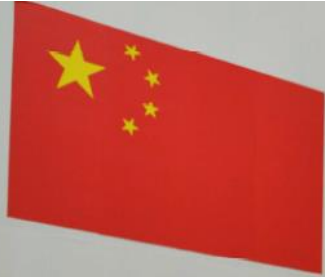
Next milestones

- Satellite integration and associated tests:
 - In May 2023, system tests will be conducted to test the ground segment with a satellite simulator (Nominal Mission Scenario).
 - In late May 2023 to early June 2023, compatibility tests for onboard-to-ground links, X-band, S-band, and VHF (for SVOM and Einstein Probe) will be conducted.
 - At the end of June 2023, an End-to-End system test will be conducted with the flight model of the satellite, but with the instruments at ambient temperature.
 - From July to September, environmental tests will be conducted (at the end of which there will be three weeks of thermal vacuum testing, including two days of instrument performance testing at operating temperature).

- At the end of November to early December, the Final Acceptance Review will be held in China.

- In late December, the SVOM JSC will be held in Paris to authorize the launch campaign.

- One month before the launch, a general rehearsal of the ground segment will be organized by NSSC in Beijing (with all operational loop centers including FSC, MIC EIC and **GIC**).



Go SVOM !

