

XRISM mission status

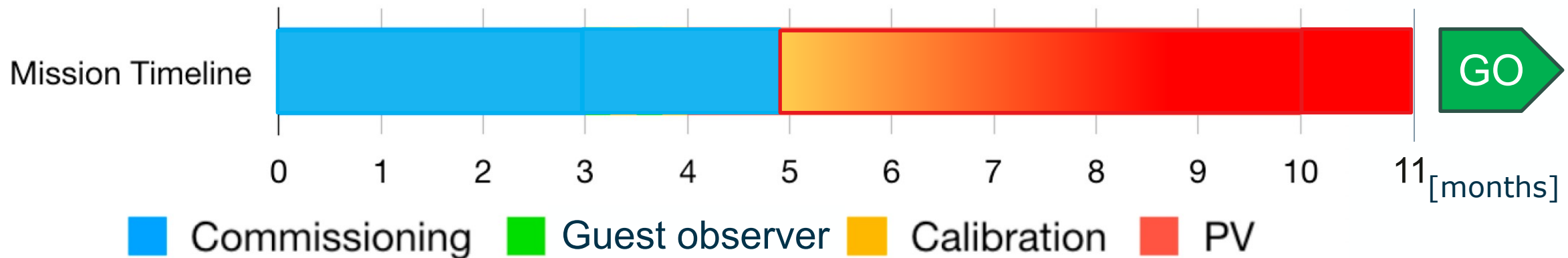


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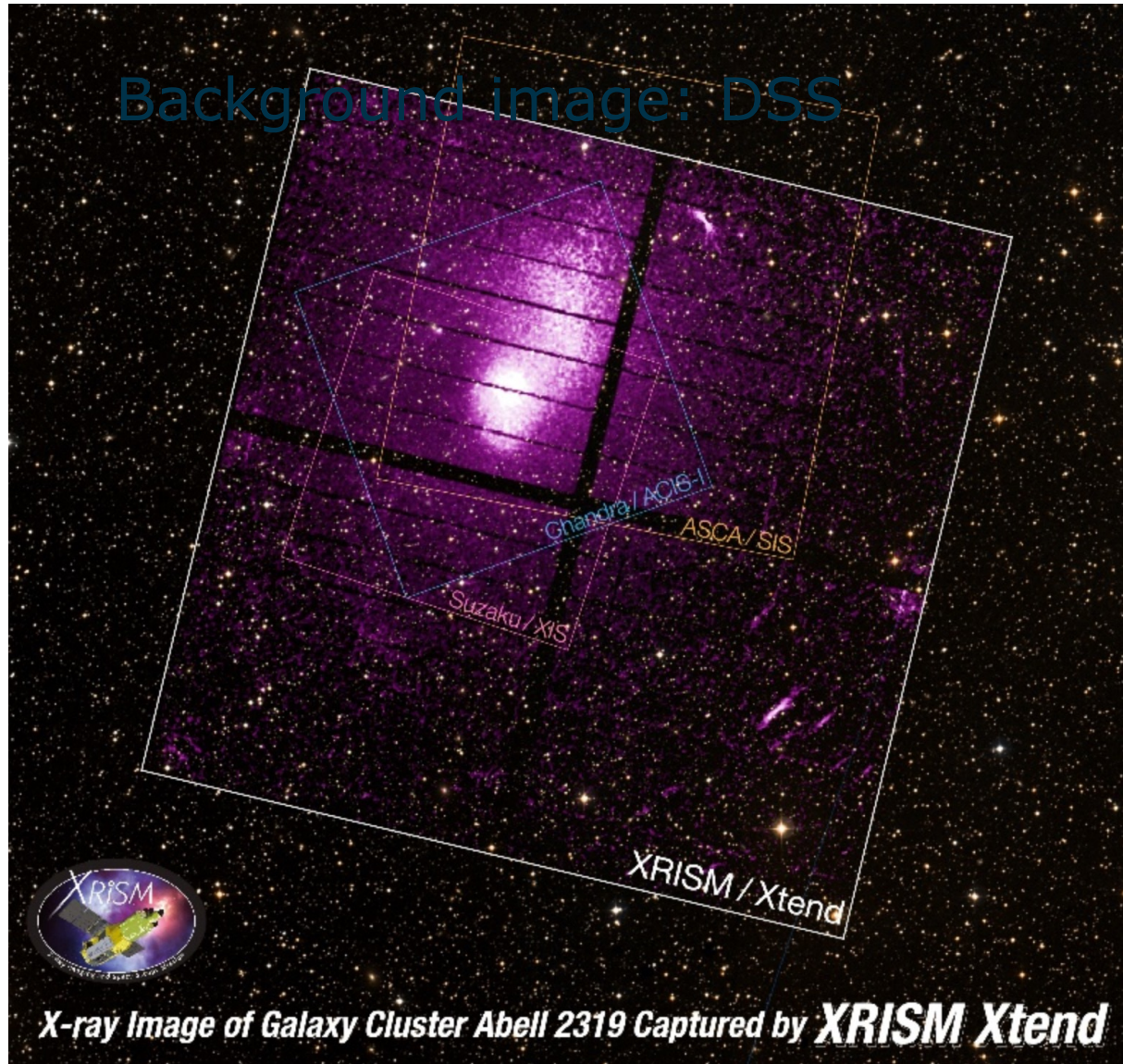
Mission status

- 7 September 2023: Launch (L)
- **L-L+5 months**: commissioning
 - Successfully **completed on 8 February 2024** (with one exception item, see later)
 - First light observations performed November/December 2024
- **L+5 months-L+11 months**: in-flight calibration and Performance Verification (PV) phases
- **L+11 months**: start of the GO program (8±7 August 2024)



- ~70 observations so far, ~20 sky targets, no public data yet.
 - Public schedule available from: <https://www.darts.isas.jaxa.jp/astro/xrism/>

XRISM First Light: *Xtend* imaging



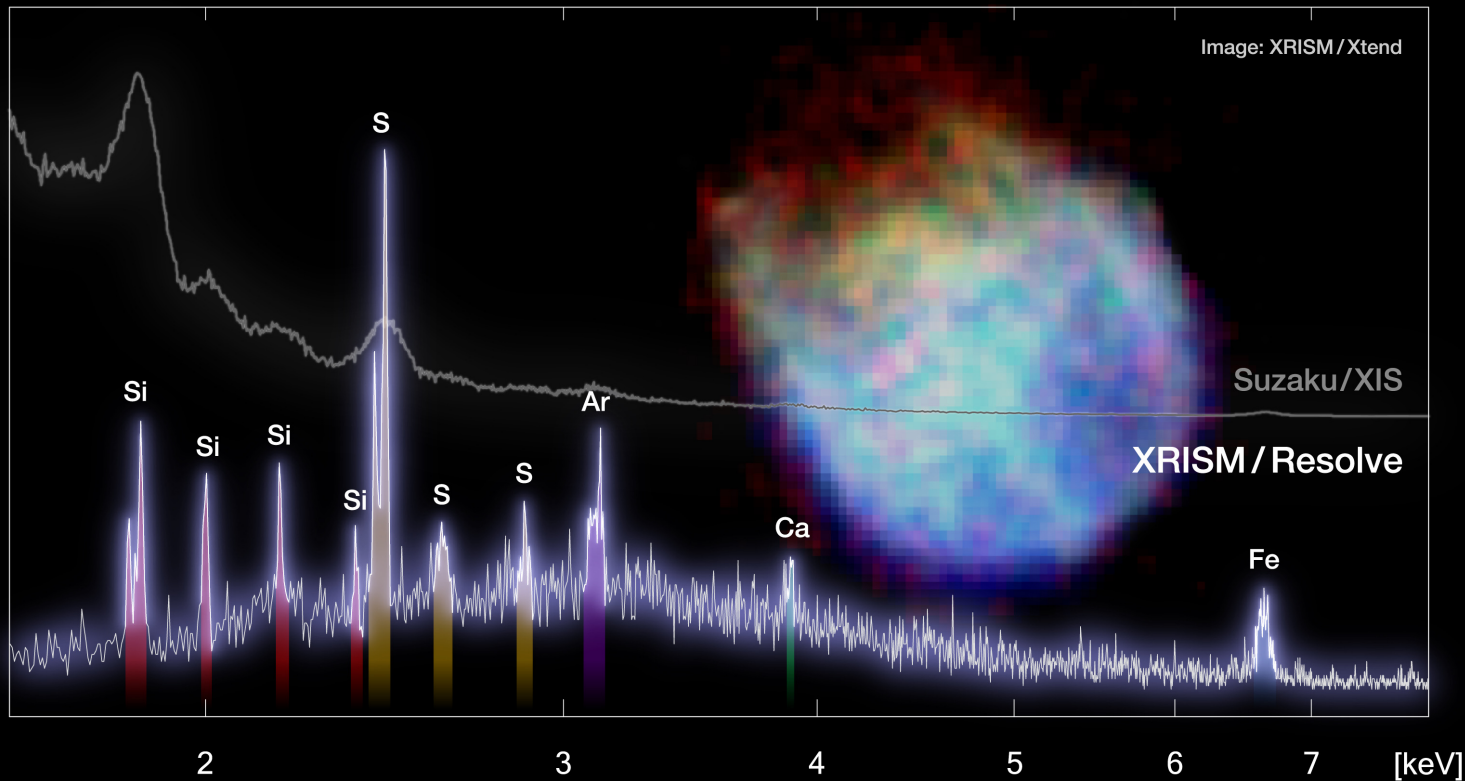
- *Xtend*: large Field-of-view (**38'x38'**) X-ray CCD to:
 - Study extended emission surrounding the *Resolve* FoV
 - Identify transient sources
- *Xtend* was successfully commissioned:
 - Energy resolution **≤ requirement**
(cf. presentation by H.Suzuki later today)
- First light on the $\sim 10^7$ K temperature intra-cluster medium **Abell 2319**
 - Morphology probe cold fronts and plasma instabilities, possible remnant of an AGN-driven bubble

XRISM First Light: *Resolve* spectroscopy

https://www.esa.int/Science_Exploration/Space_Science/XRISM_s_first_views_signal_shake-up_for_X-ray_astronomy



X-ray Spectrum of Supernova Remnant N132D Measured by XRISM Resolve

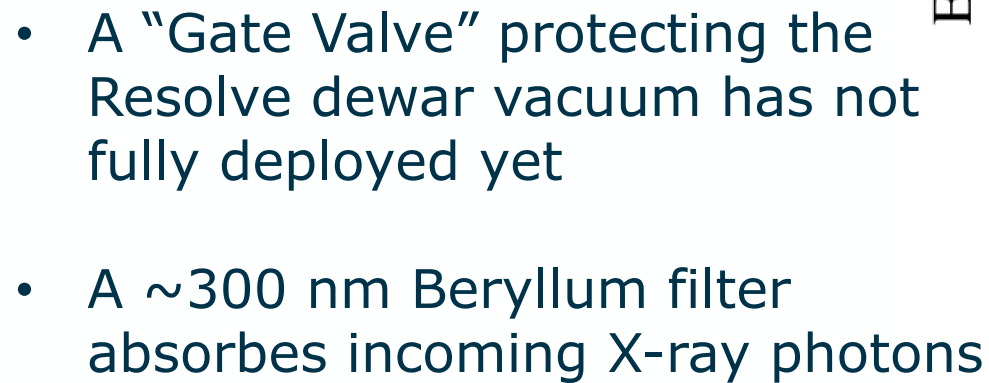


- XRISM **First Light released** on January 5
- Resolve spectrum of the Supernova Remnant N132D
- **First high-resolution non-dispersive spectrum** of a celestial source after the Perseus galaxy clusters with *Hitomi*
- Resolve energy resolution better than requirements: **≤ 5 eV**
(cf. presentation by C. Kilbourne later today)
- Rare elements (S, Ar, Ca) lines identified

Ezoe et al., 2020, Cryogenics, 103016



(a)



Performance Verification Phase



<https://www.cosmos.esa.int/web/xrism/performance-verification-target-list>

- **Verify the key science performance under a representative set of astrophysical and operational conditions**
- **Verify that the science requirements of the mission can be achieved**
- **Showcase the scientific capabilities of the mission**
- Program defined by the XRISM Science Team members, who can access the data
 - Data expected to be **public in Q3/Q4 2025**
- ~40 targets. Cover the whole spectrum of prospective XRISM science:
 - Compact Galactic (X-ray binaries, stars)
 - Diffuse Galactic (supernova remnants, the Galactic Centre)
 - Compact Extra-Galactic (AGN, TDEs)
 - Diffuse Extra-galactic (galaxies, galaxy groups and clusters)
- Limited support for Target of Opportunities (≤ 72 hours response time) – one to be made soon!

- JAXA will release by the *end of February* scientific products of **3 observations** (“Early Release Science”) to enable prospective proposers to directly grasp the performance of the scientific payload
 - **Perseus Cluster** (to be released on **February 14, 7:00 UT**)
 - *Resolve* spectrum and image of the whole array
 - *Xtend* FoV image
 - *Xtend* spectrum from the whole cluster surface brightness
 - Responses will be also released (no NXB)
 - **N132D**
 - **Vela X-1** (High-Mass Neutron Star X-ray Binary)