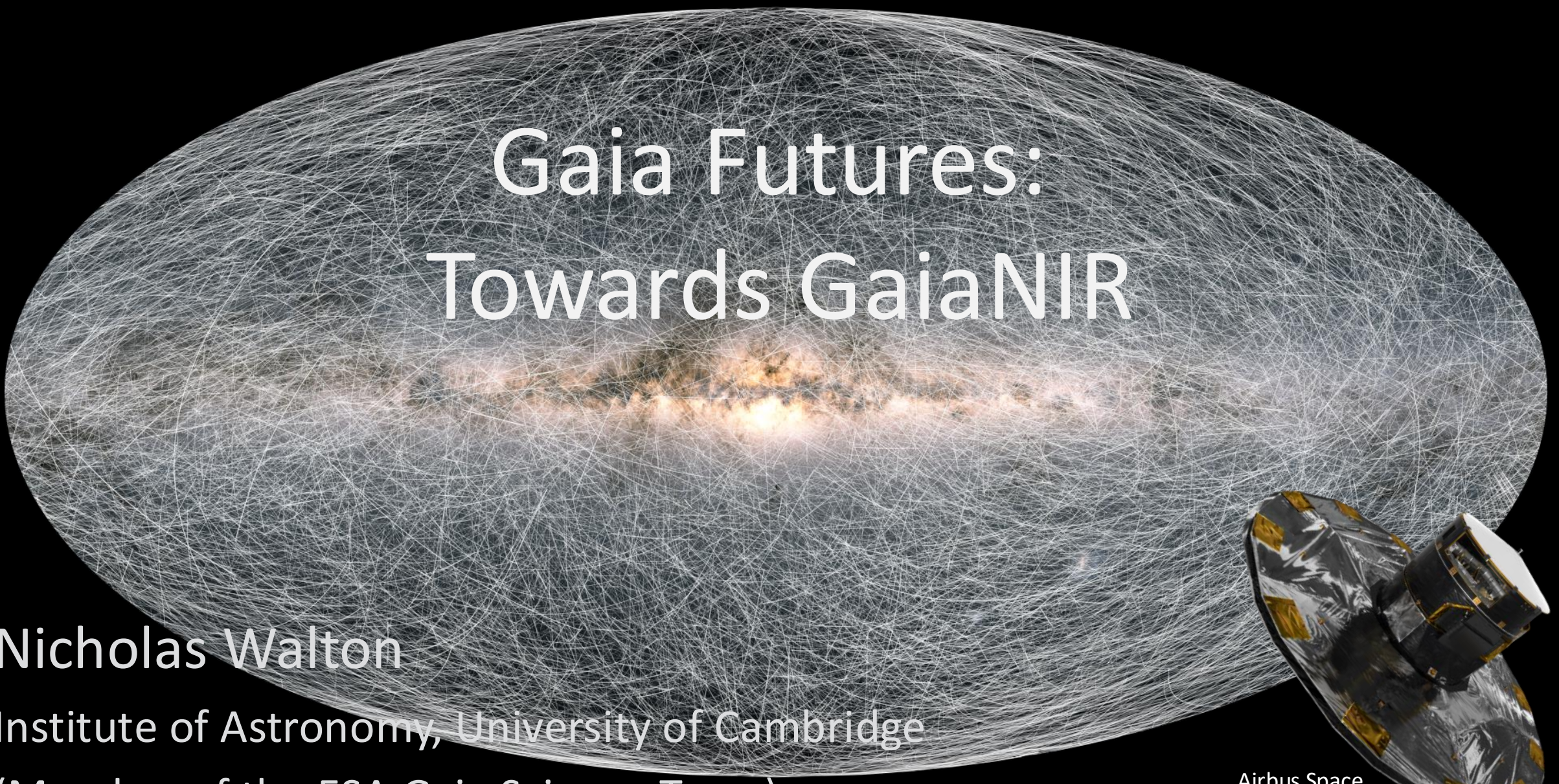




Gaia Futures: Towards GaiaNIR

Nicholas Walton

Institute of Astronomy, University of Cambridge
(Member of the ESA Gaia Science Team)



Airbus Space
ESA/Gaia/DPAC

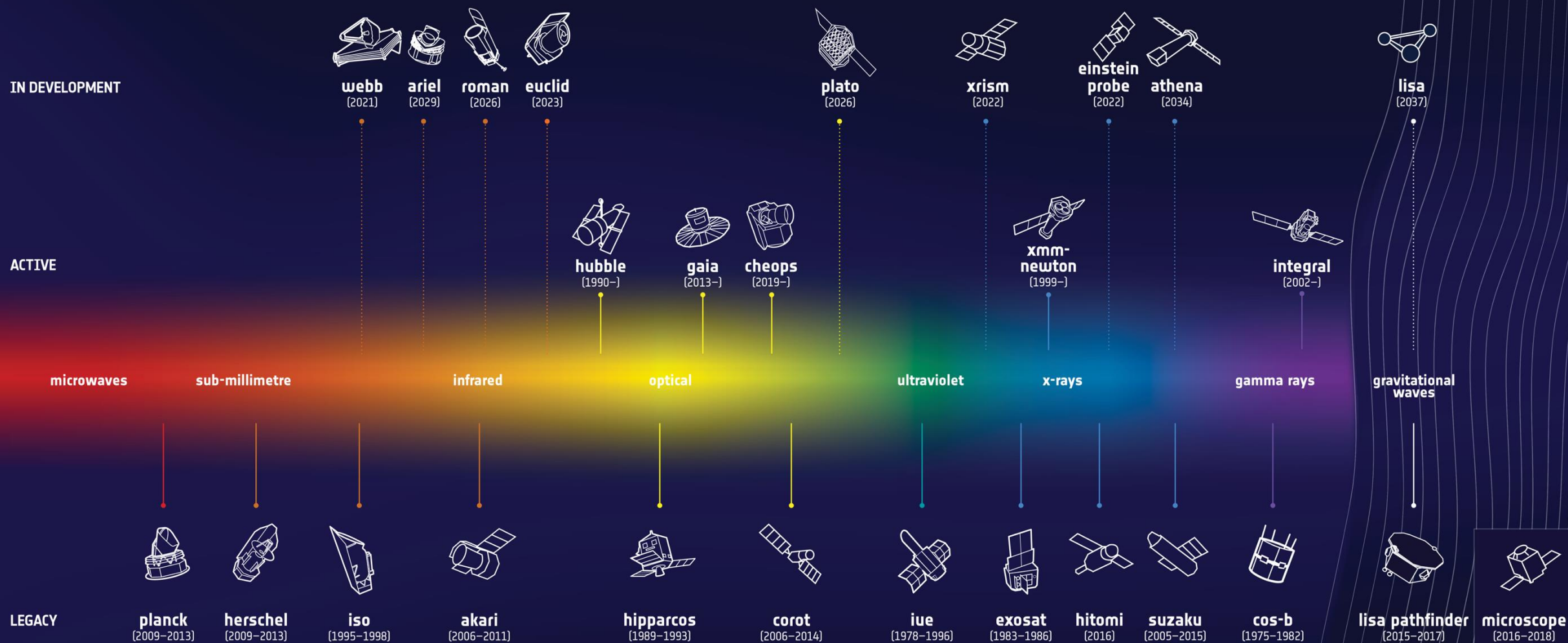
Towards GaiaNIR DR4:

The Voyage 2050 timeline to date

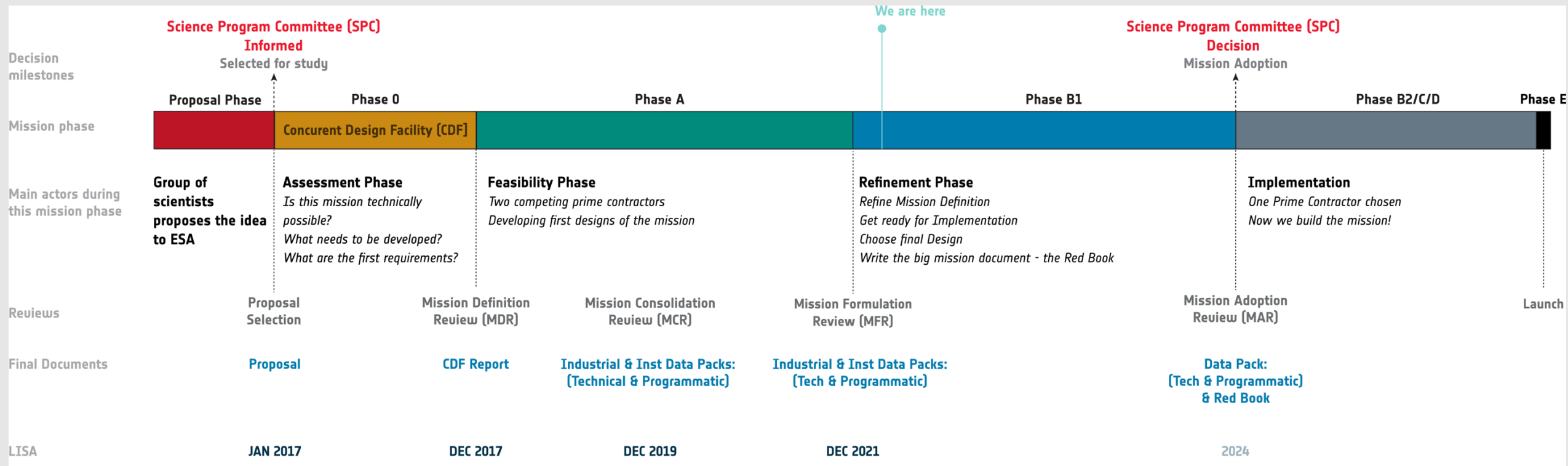
- Initial 'All-sky visible and near infrared space astrometry ' (GaiaNIR) Proposal submitted to the Voyage 2050 process
 - ▶ White papers presented at the Oct 2019 Madrid Workshop
 - ▶ GaiaNIR: Hobbs et al, [Experimental Astronomy \(2021\) 51:783–843](#)
- Science themes for [Voyage 2050 Large missions](#) selected: Jun 2021
 - ▶ L4: Moons of the Giant Planets
 - ▶ L5: From temperate exoplanets to the Milky Way
 - Exoplanet atmospheres OR galactic ecosystems (GaiaNIR)
 - ▶ L6: New physical probes of the early Universe
- L4: Call for membership of Expert Committee: Dec 2021
 - ▶ Expert committee recommends Saturn's moon Enceladus as target for L4: Mar 2024
- L4: Call for L4 Payload Working Group members: Dec 2024

Graphic: 11/21

newAthena launch now 2037



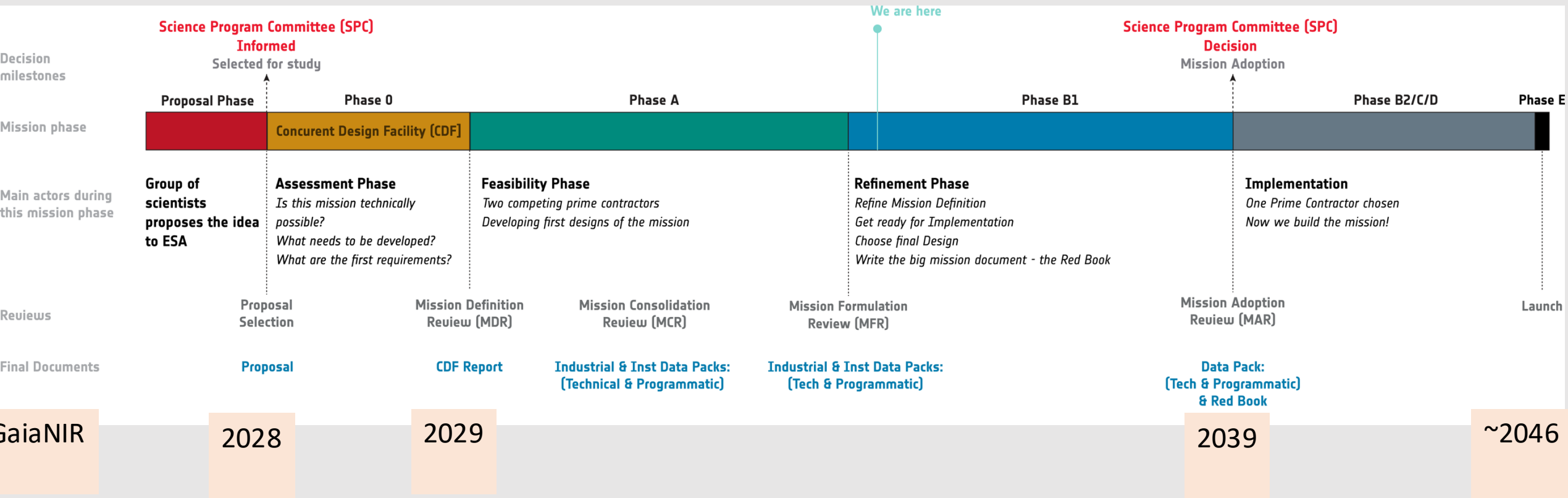
Mission Timelines: Example of L3: LISA



https://www.esa.int/ESA_Multimedia/Images/2022/05/LISA_mission_timeline

Current LISA launch estimate ~2035

Potential Mission Timeline: L5 GaiaNIR



- L4 mission concept/ CDF likely in 2026 → Launch 2043
- Current L5 nearIR detector study complete 2026
- L5 science and mission development likely to commence 2027 for a mission selection in 2028/2029

GaiaNIR Capacity Building

- GaiaNIR consortium expanding out from initial core proposal team
- GaiaNIR communications
 - ▶ Updates at EAS Annual Meetings (typically held within the context of Gaia science symposium)
 - ▶ Updates at national meetings, e.g. UK NAM
- Focus of activity within the Gaia research network
 - ▶ MW-Gaia Doctoral Network → science and technical case development with implications presented at the Athens Jan 2027 MW-Gaia conference
 - ▶ MWGaiaDN workshop on GaiaNIR Science Requirements, Q3 2026 [TBC].
 - ▶ Key focus of potential future COST Action

GaiaNIR Capacity Building at the National Level

- GaiaNIR consortium
- National GaiaNIR activities ...
- In the UK: GaiaNIR:UK is established
 - ▶ Currently with involvement from groups in Cambridge, UCL, Durham, Bath, Edinburgh, Exeter, LivJM, Oxford, Surrey, UCLan ...
 - ▶ Update sessions
 - GaiaNIR special session at the RAS NAM 2025 (see <https://conference.astro.dur.ac.uk/event/7/sessions/138/#20250710>)
 - ▶ Workshops: UK GaiaNIR science – Mar 2026 – Cambridge, UK
 - ▶ Mailing list: <https://lists.cam.ac.uk/sympa/info/ast-gaianir-uk>