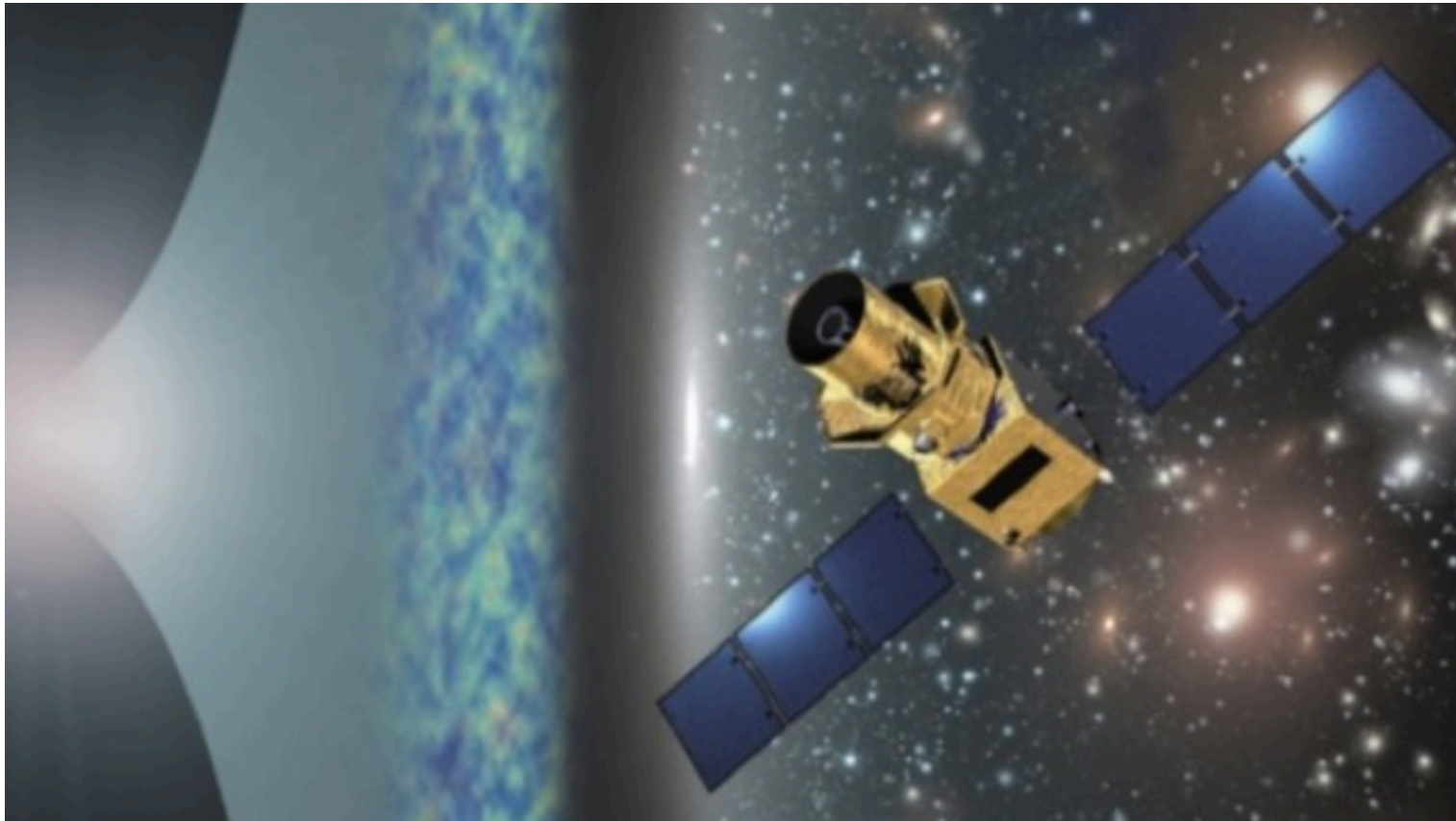


# LiteBIRD and LiteBIRD:Europe

Erminia Calabrese  
Cardiff University



Towards the coordination of the European CMB programme – Florence, September 7<sup>th</sup> 2017

# LiteBIRD status and deadlines

*Lite (Light) Satellite for the Studies of B-mode Polarization and Inflation from Cosmic Background Radiation Detection* – Japanese PI: Masashi Hazumi, US PI: Adrian Lee

- CMB polarization all-sky survey proposed to JAXA in Feb. 2015
- NASA MO for US participation in Dec. 2014
- ISAS/JAXA Phase-A studies started in Aug. 2016
- Final down-selection expected end of 2018 – beginning of 2019
- Expected launch ~2025 for 3-year observations at L2

Focused mission:

- Detect  $r$  with  $\sigma(r=0) < 0.001$ , without the help of delensing
- Multipole coverage  $2 < l < 200$

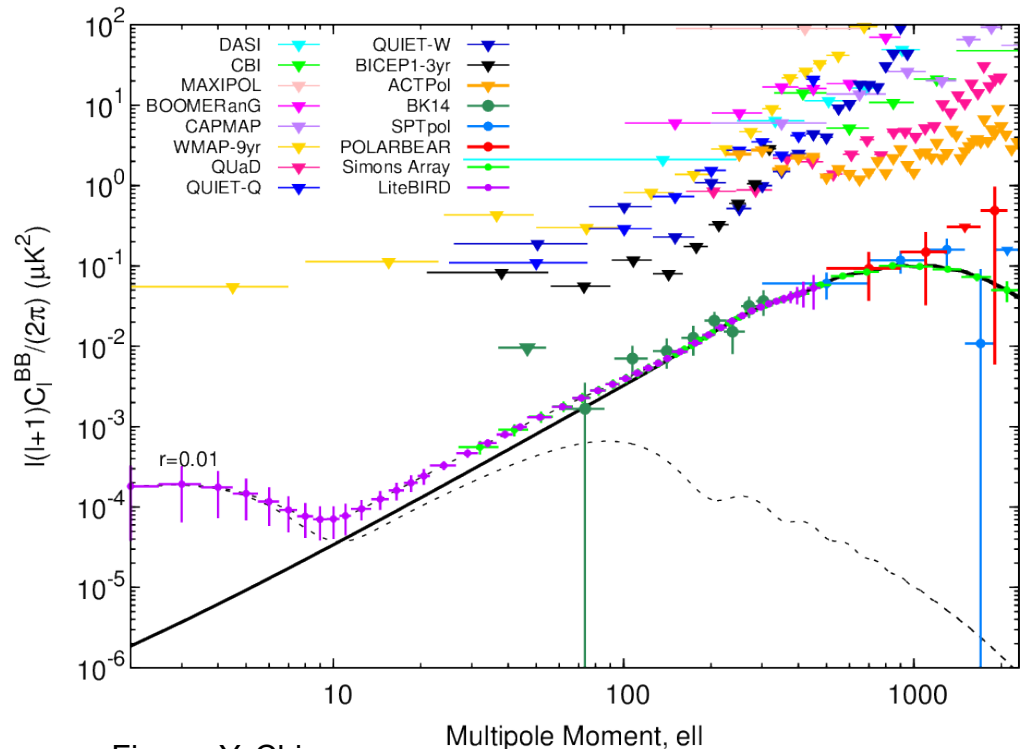


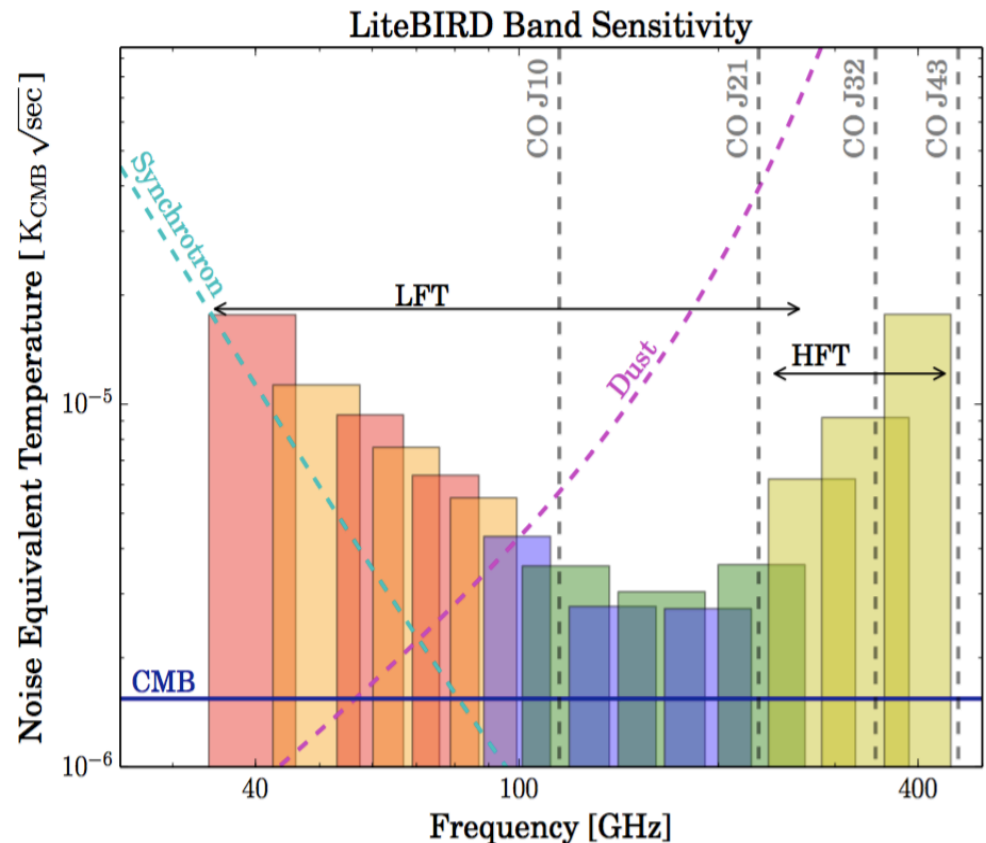
Figure: Y. Chinone

# JAXA's proposed European role

Europe should take charge of delivering the High Frequency Telescope (HFT)

Europe should provide the HFT unit, including: the DM (Design Model), EM (Engineering Model), FM (Flight Model) for the HFT, testing and calibration, a possible backup design for warm readout, a sub-K cooling system, and an additional ground station to achieve 24h monitoring.

The Japanese propose that the detector focal plane be delivered to Europe by the US team, and that the HFT be integrated and tested in Europe and subsequently delivered to Japan for final integration.



# LiteBIRD:Europe

- Probably no single country has the resources to do the HFT single-handedly, so European cooperation and ESA involvement is essential.
- ESA and national agencies are very interested that what they contribute is visible and identifiable, and this should be part of our planning.
- It is much more interesting for Europe to contribute an entire telescope, because this contribution will be very visible.
- Therefore it is important to organize a consortium with a credible management structure capable of delivering the entire HFT.

# LiteBIRD:Europe

- France (National Coordinator: Ludovic Montier, European PoC: Martin Bucher)
- Italy (National Coordinator and European PoC: Nicola Vittorio)
- UK (National Coordinators: Erminia Calabrese and Giampaolo Pisano, European PoC: Erminia Calabrese)
- Germany (National Coordinator and European PoC: Eiichiro Komatsu)
- Norway (National Coordinator: Ingunn Wehus)
- The Netherlands (National Coordinator: Jian-Rong Gao)

Goal of gathering together European scientists interested in joining LiteBIRD (some people are already external collaborators), start discussion for funding opportunities and ESA involvement.

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## Meetings

1. Cardiff on August 2-3 2017 – expression of interest and potential contributions
2. Paris on October 23-24 2017 – more coordinated European contribution and costing
3. Rome 2018?

# LiteBIRD:Europe

Web platform: <http://www.litebird-europe.eu/>

