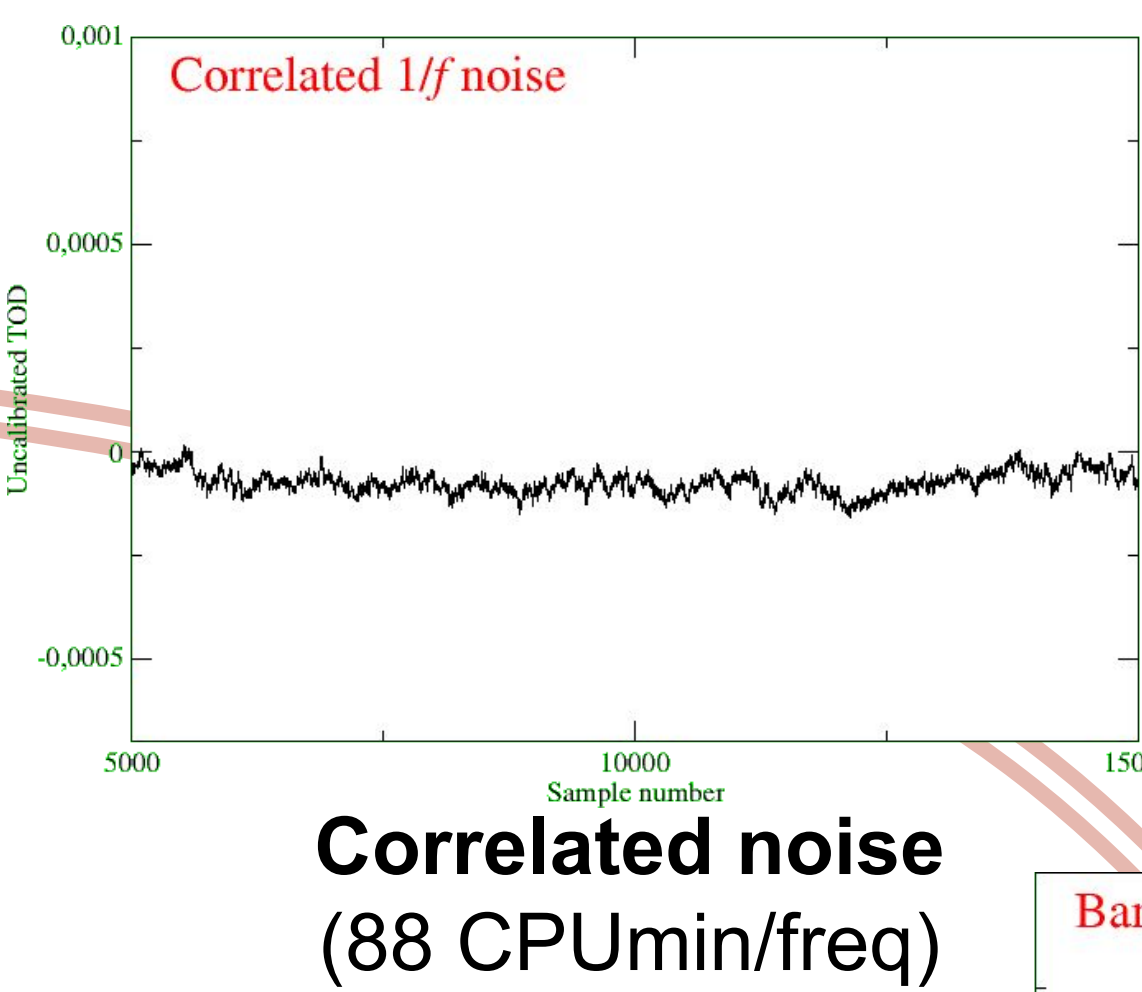
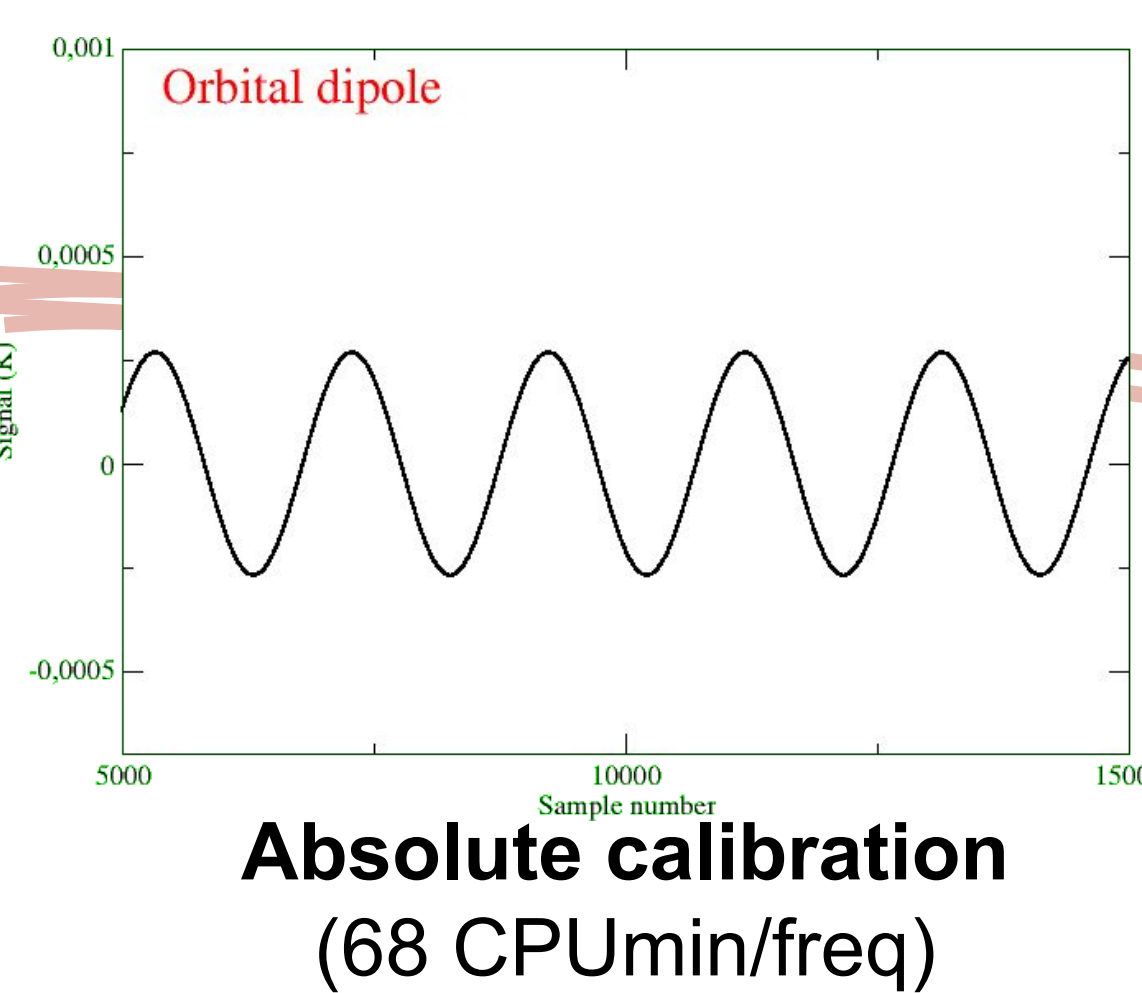
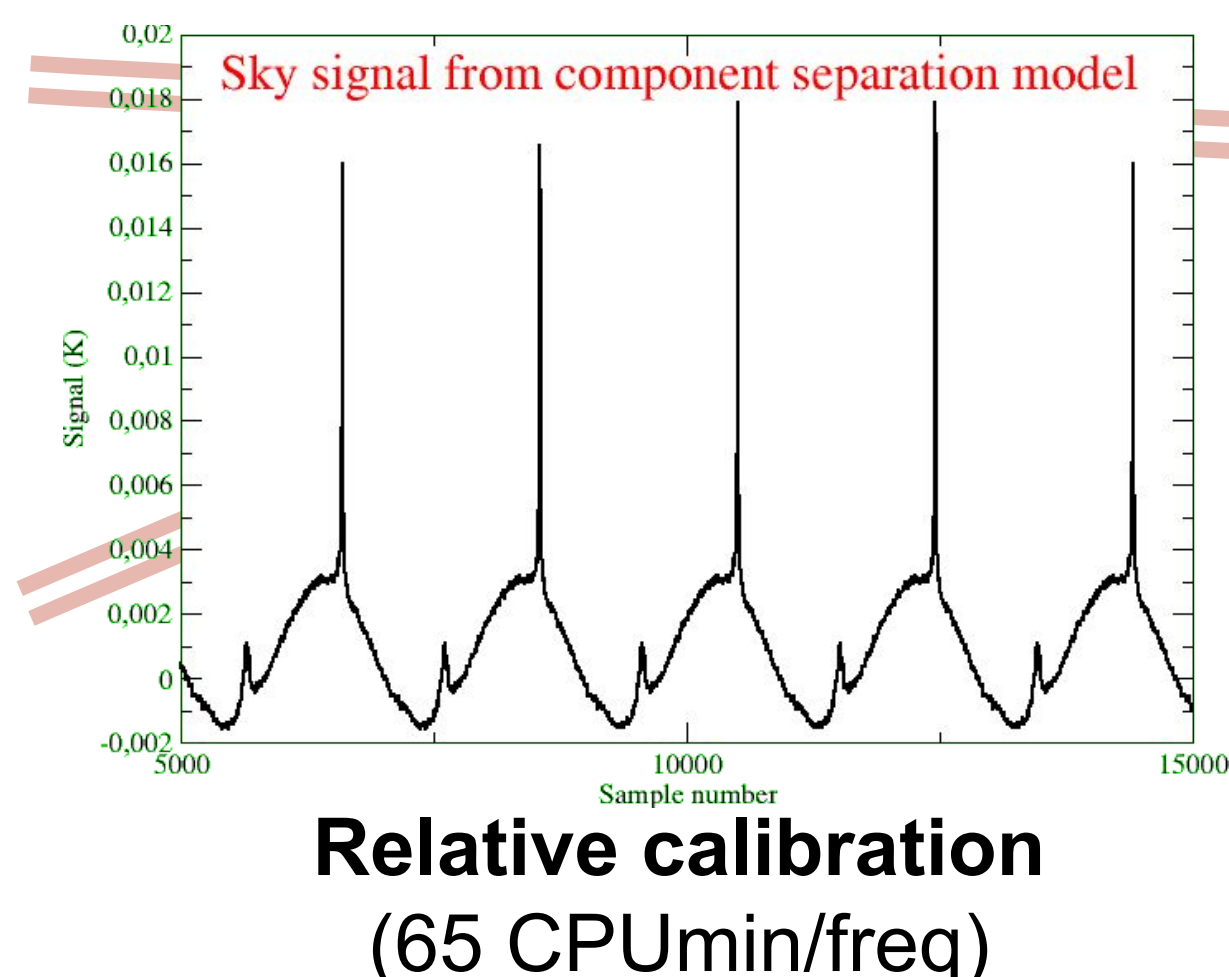
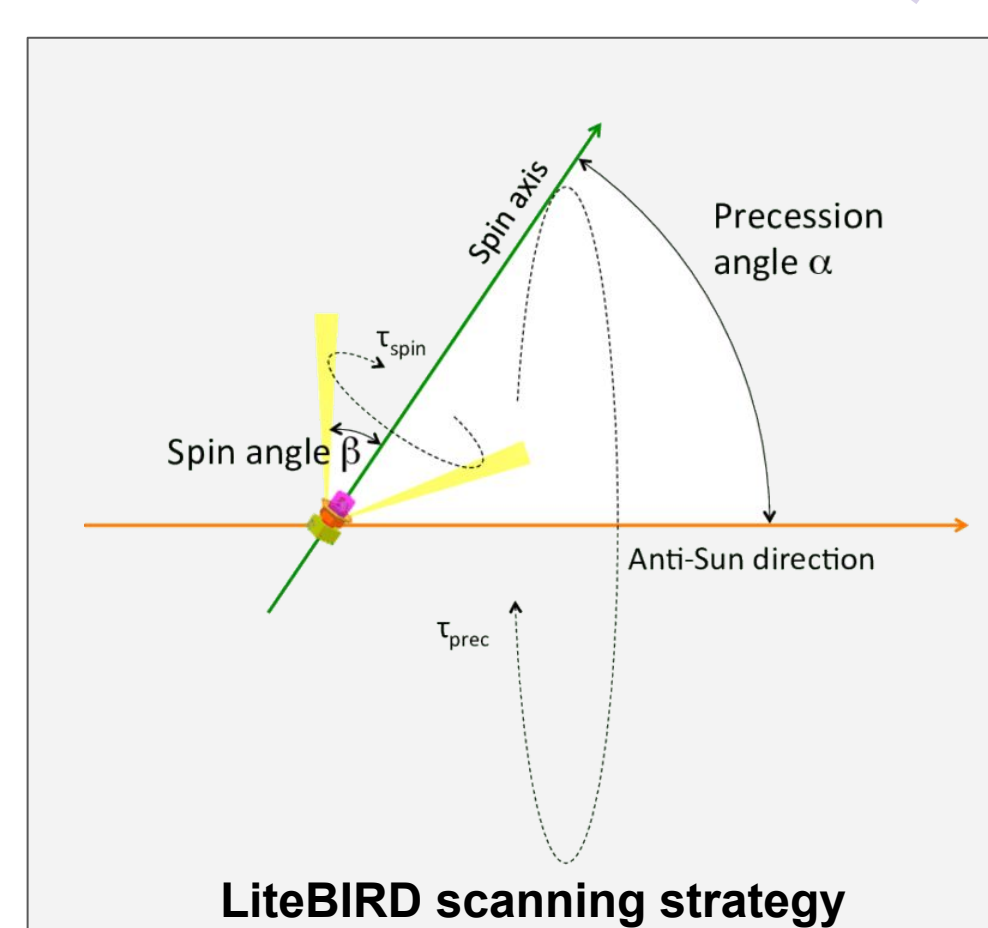
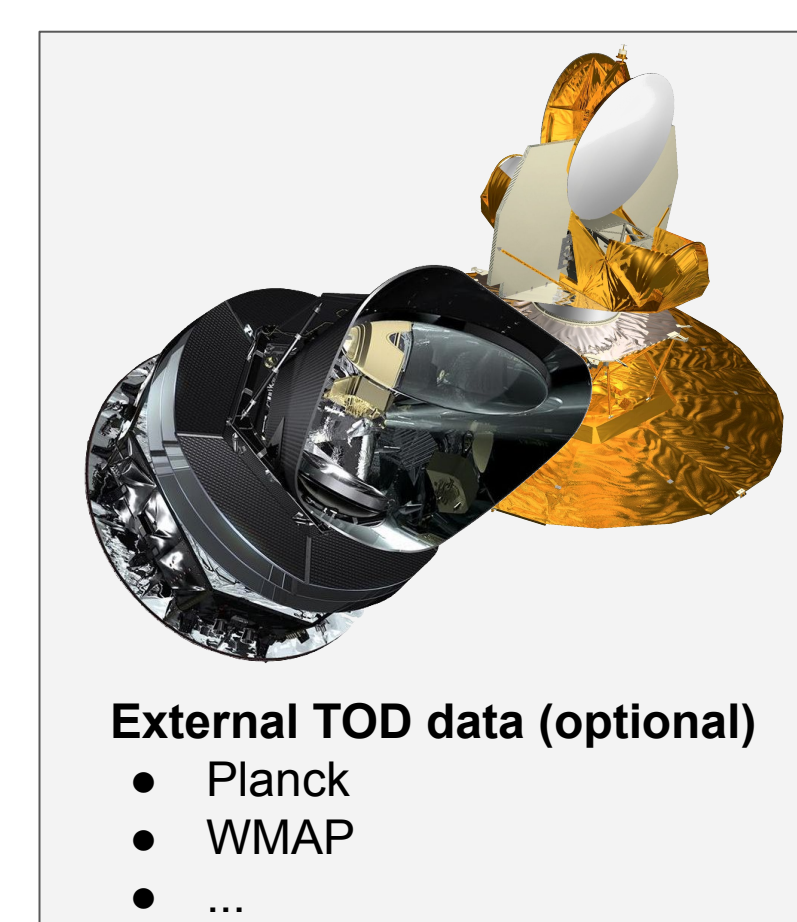
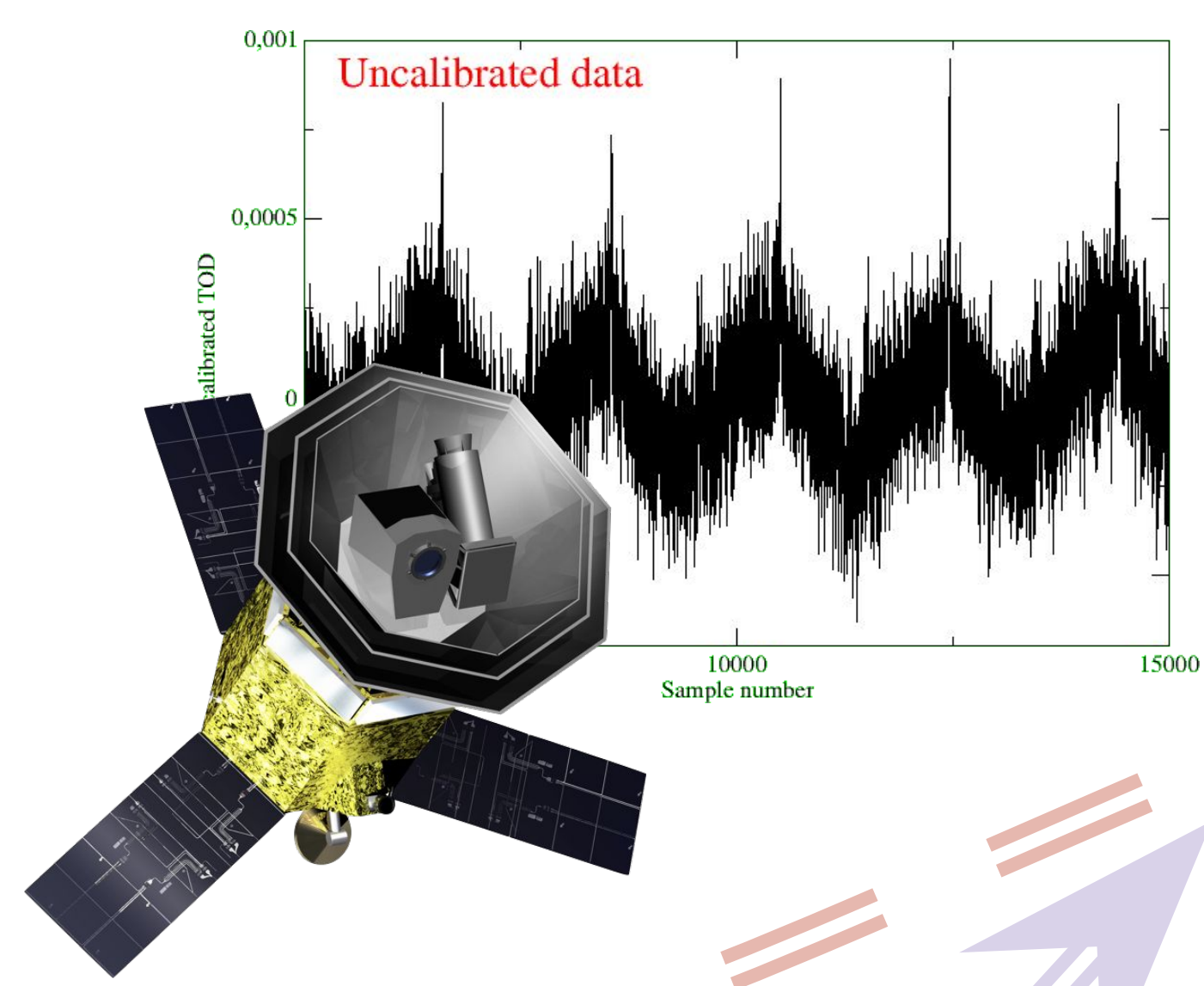


# NORWAY

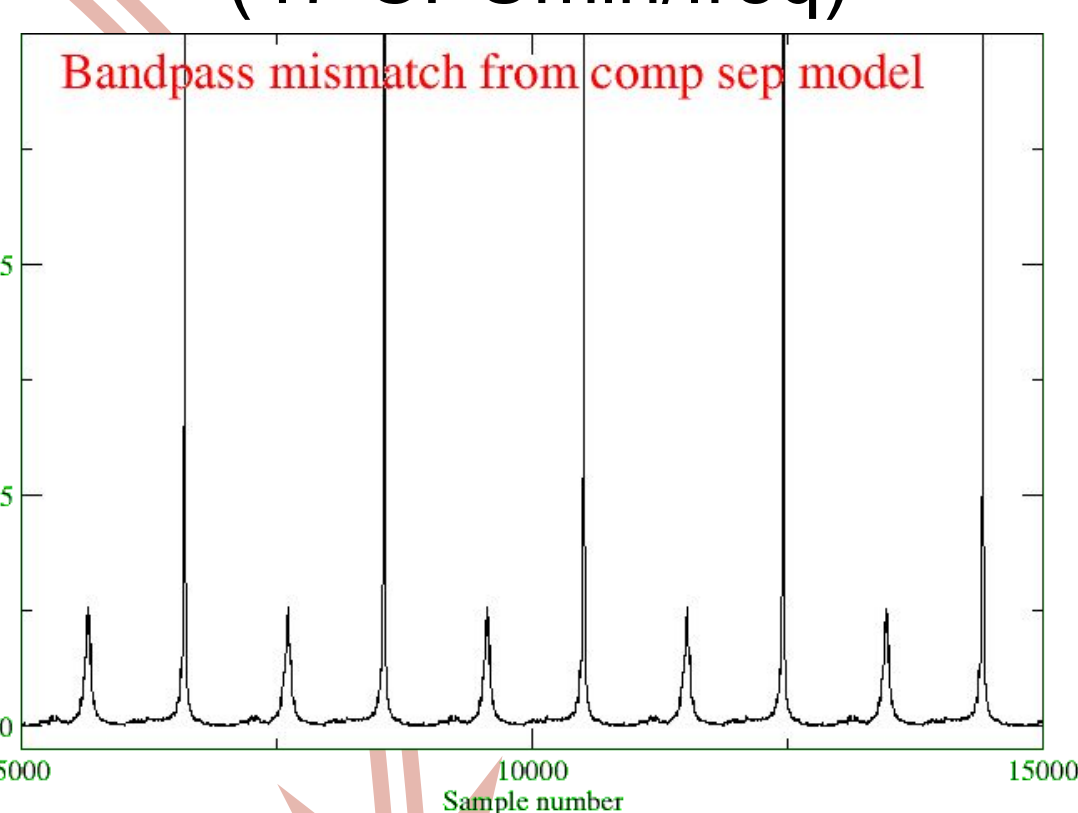


## Expertise: Global Bayesian end-to-end analysis

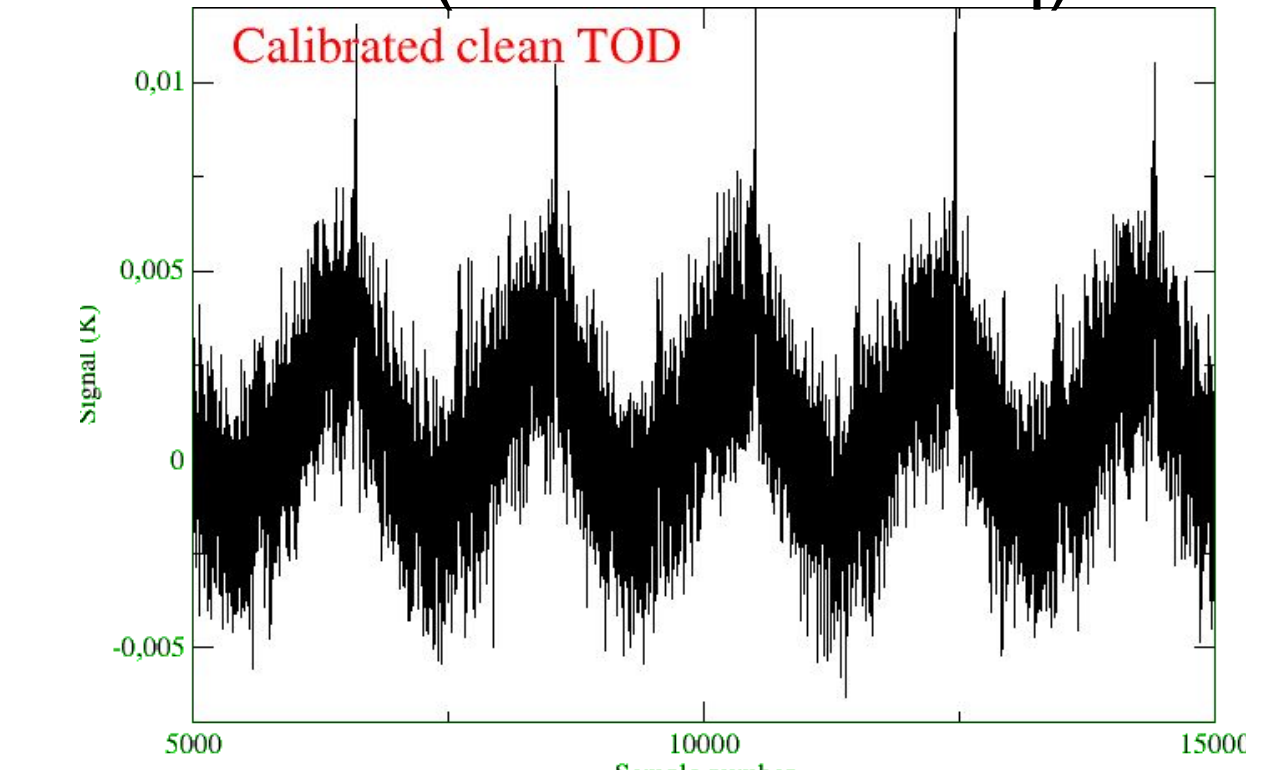


TOD processing

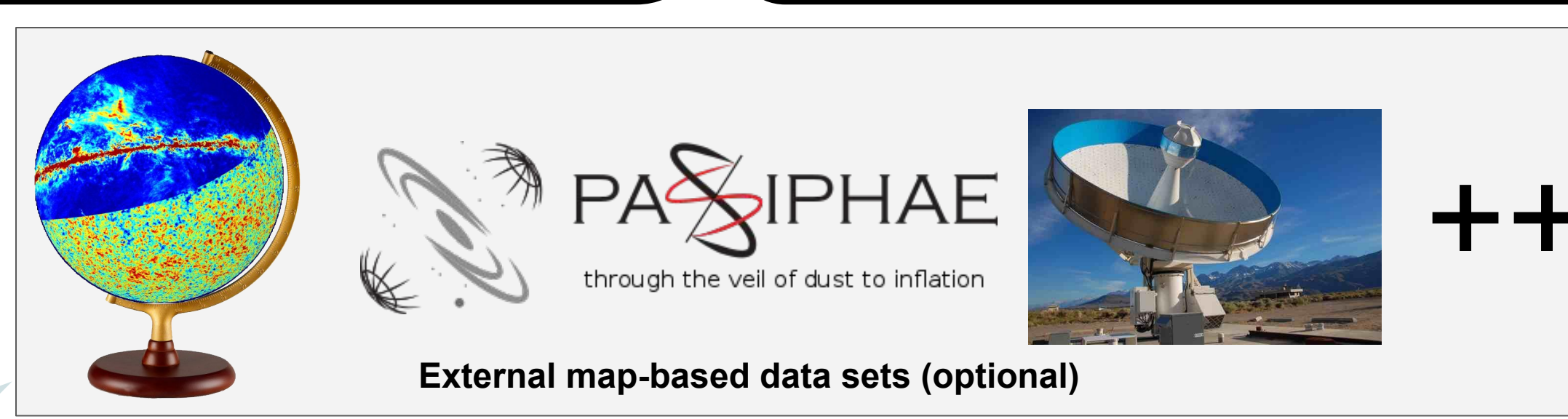
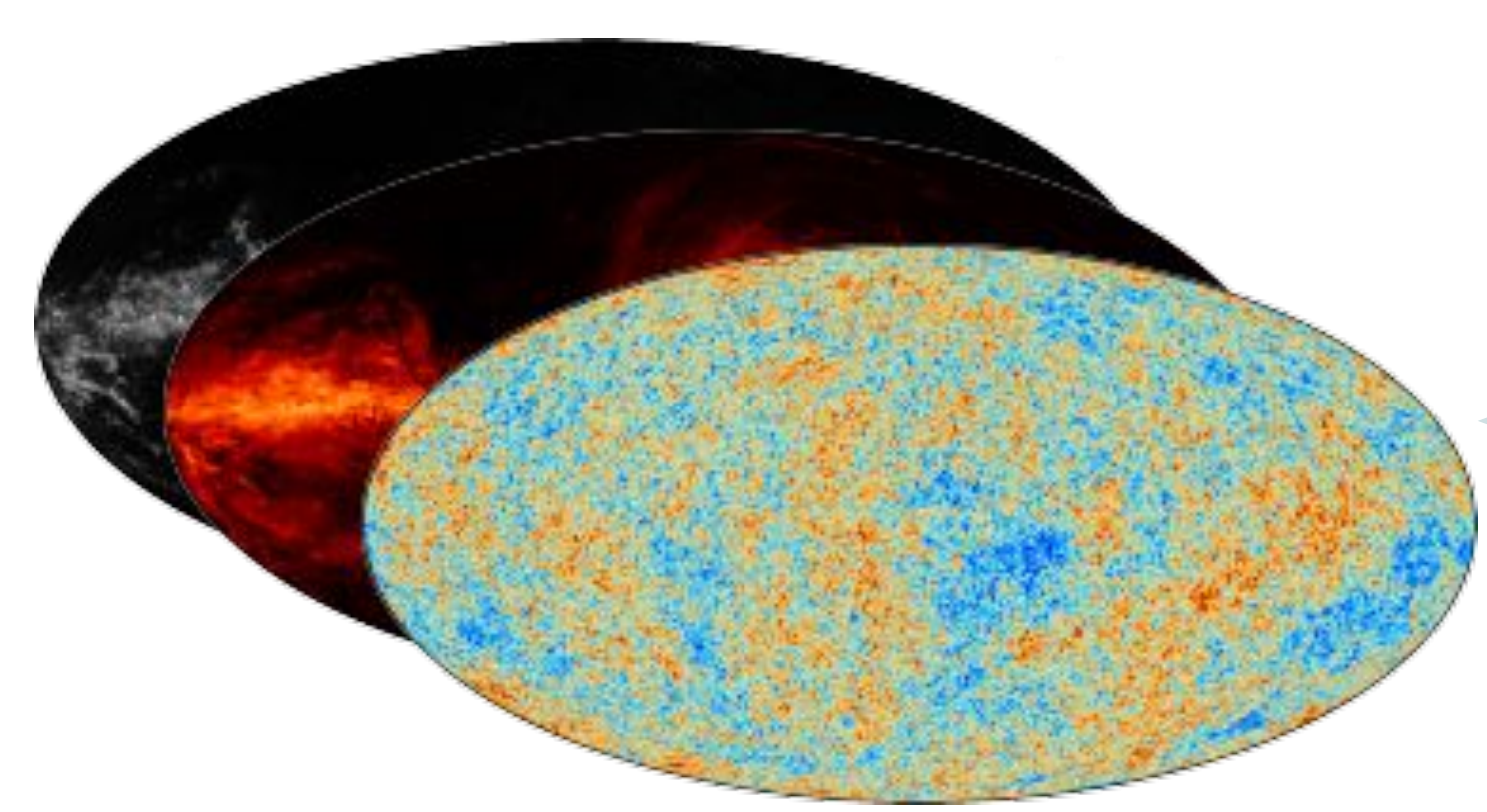
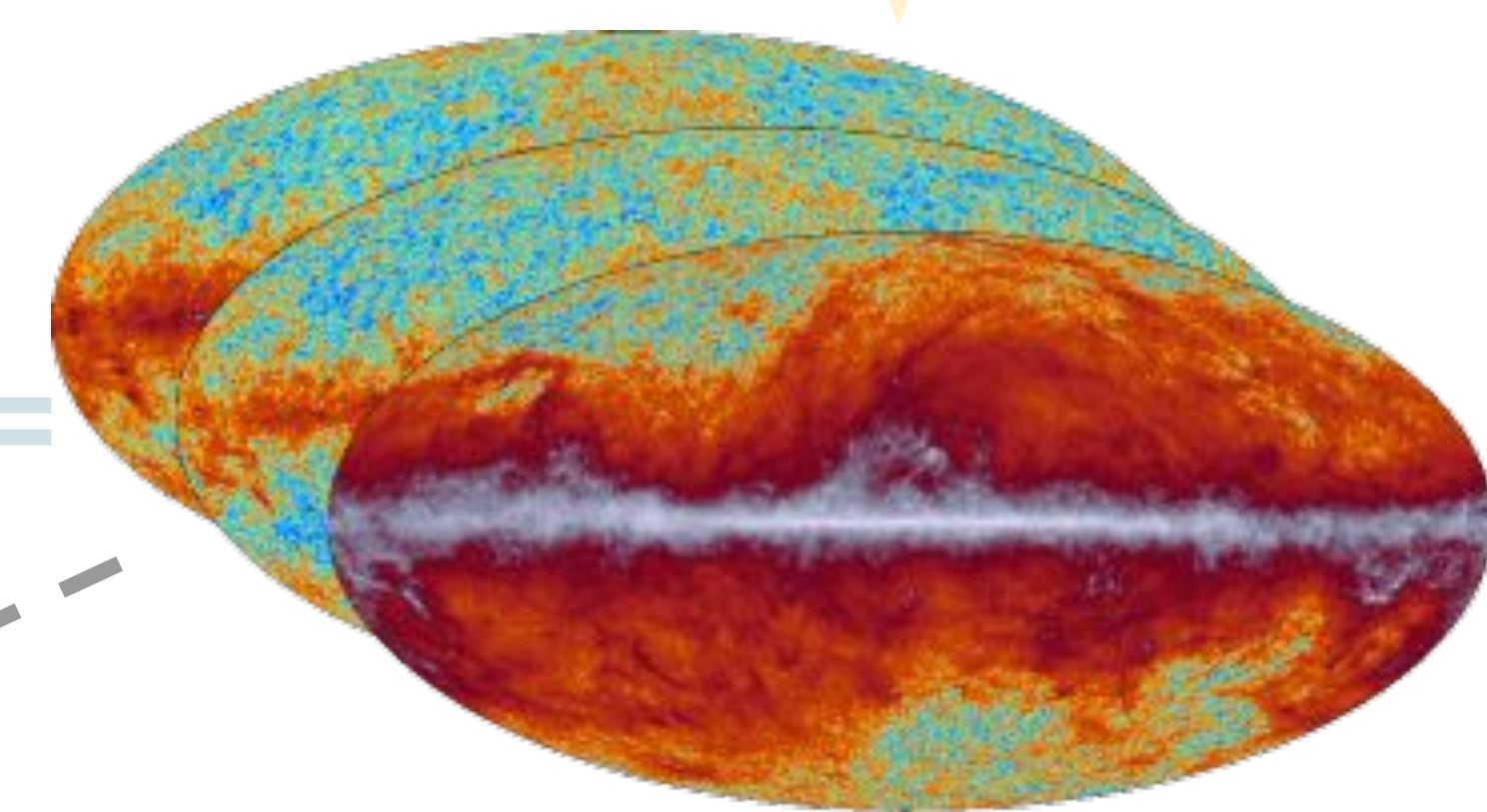
Bandpass correction (47 CPUmin/freq)



Clean TOD (2.4 CPUmin/freq)



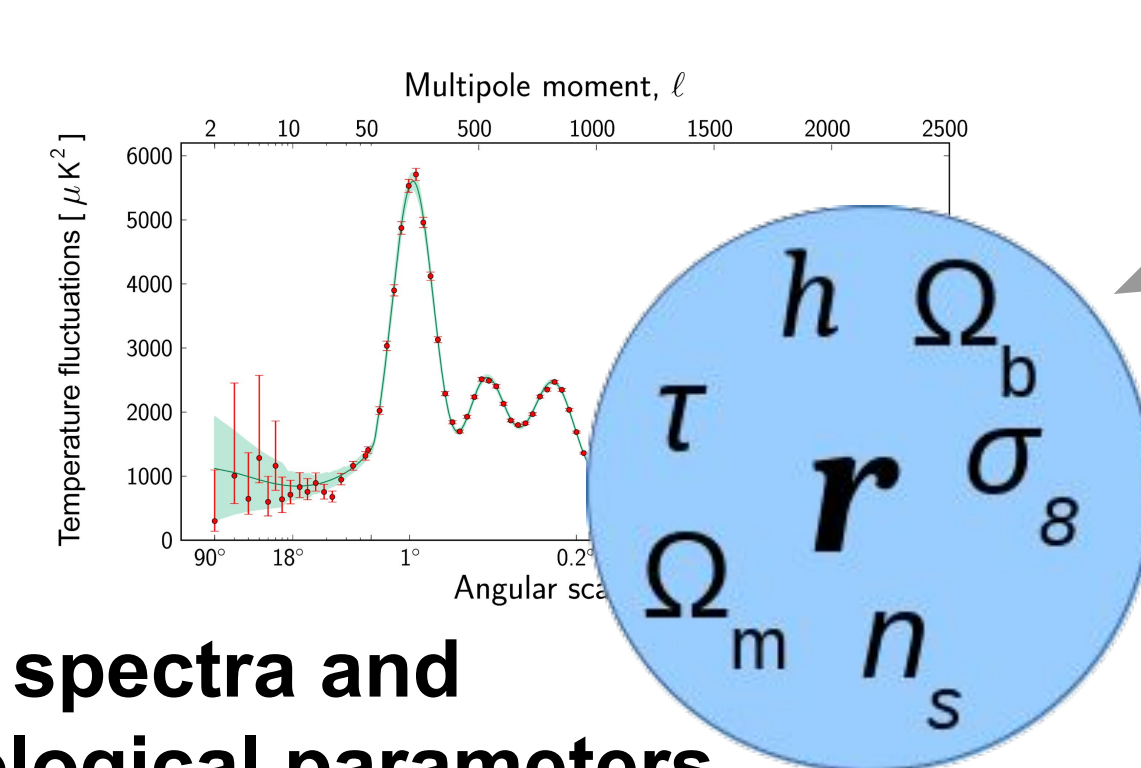
Map making



Component separation

Maximum-likelihood

Pseudo- $C_l$

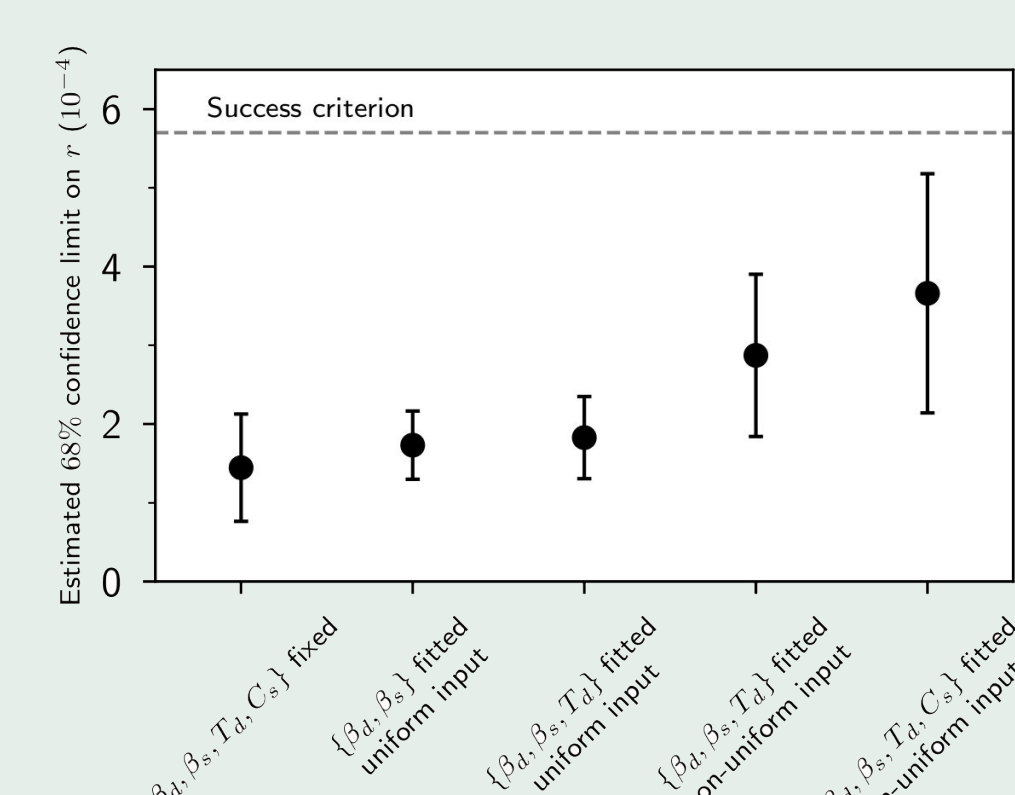


Total amount of LiteBIRD TOD data is assumed to comprise 30-50 TB. Total amount of required RAM is about twice this for end-to-end Gibbs sampling, or 60-100 TB.

CPU times in parantheses refer to on-going Planck LFI Beyond-Planck analysis, with TOD steps indicating times for 4 years of 30 GHz data. All numbers are preliminary, and subject to change.

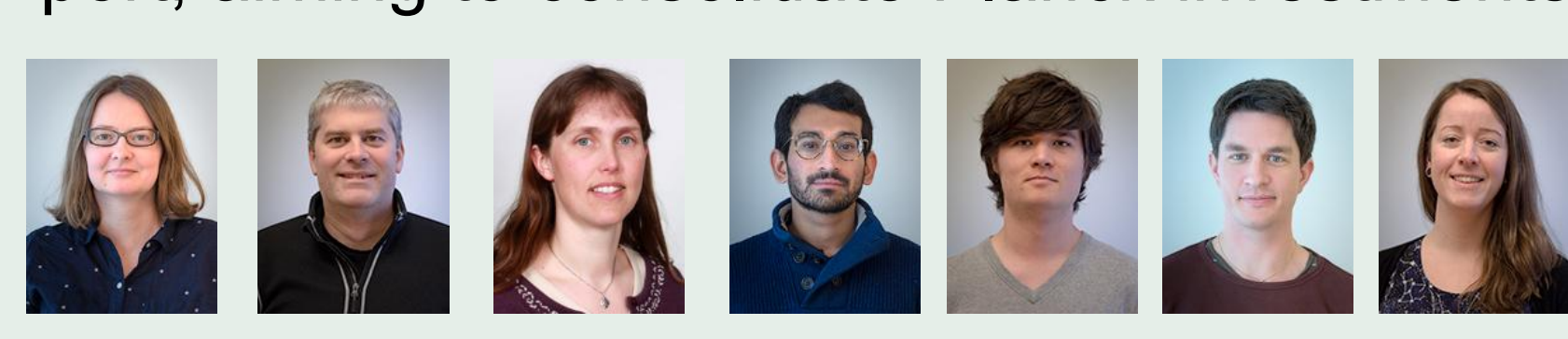
### Past contributions

- Joined the Foregrounds JSG in 2016
- Constrained tensor-to-scalar ratio for several LiteBIRD generations with Commander1
- Demonstrated that the baseline configuration would constrain  $r < 5 \cdot 10^{-4}$  with 95% confidence, in agreement with independent analyses
- Supported systematics analysis through stand-alone TOD simulator, including temperature-to-polarization leakage from bandpass mismatch and beam asymmetries



### Current resources

- The CMB group at University of Oslo currently consists of 21 people, whereof 12 are funded to work on LiteBIRD
- The group owns an in-house computing cluster with 1500 cores and 12 TB RAM
- Existing LiteBIRD funding until 2024, including two ERC Consolidator grants and two national grants (RCN ROMFORSK and INTPART)
- Very strong institutional and governmental support, aiming to consolidate Planck investments



### Future plans

- We propose to implement support for **Bayesian end-to-end processing of LiteBIRD data**
- We are interested in establishing a dedicated **LiteBIRD data center** in Norway with ~1000 CPUs and 20 TB RAM between 2020-24, and ~6000 CPUs and 100 TB RAM between 2025-32, open to all LiteBIRD collaborators
- Data center to be **supported by the Norwegian Space Agency**, and funded by PRODEX/ESA. Science activities to be funded by the Research Council of Norway. This follows the same funding policy as Planck
- We are also exploring options for **additional downlink/satellite monitor** from Svalbard



SC National member: Ingunn Kathrine Wehus  
i.k.wehus@astro.uio.no