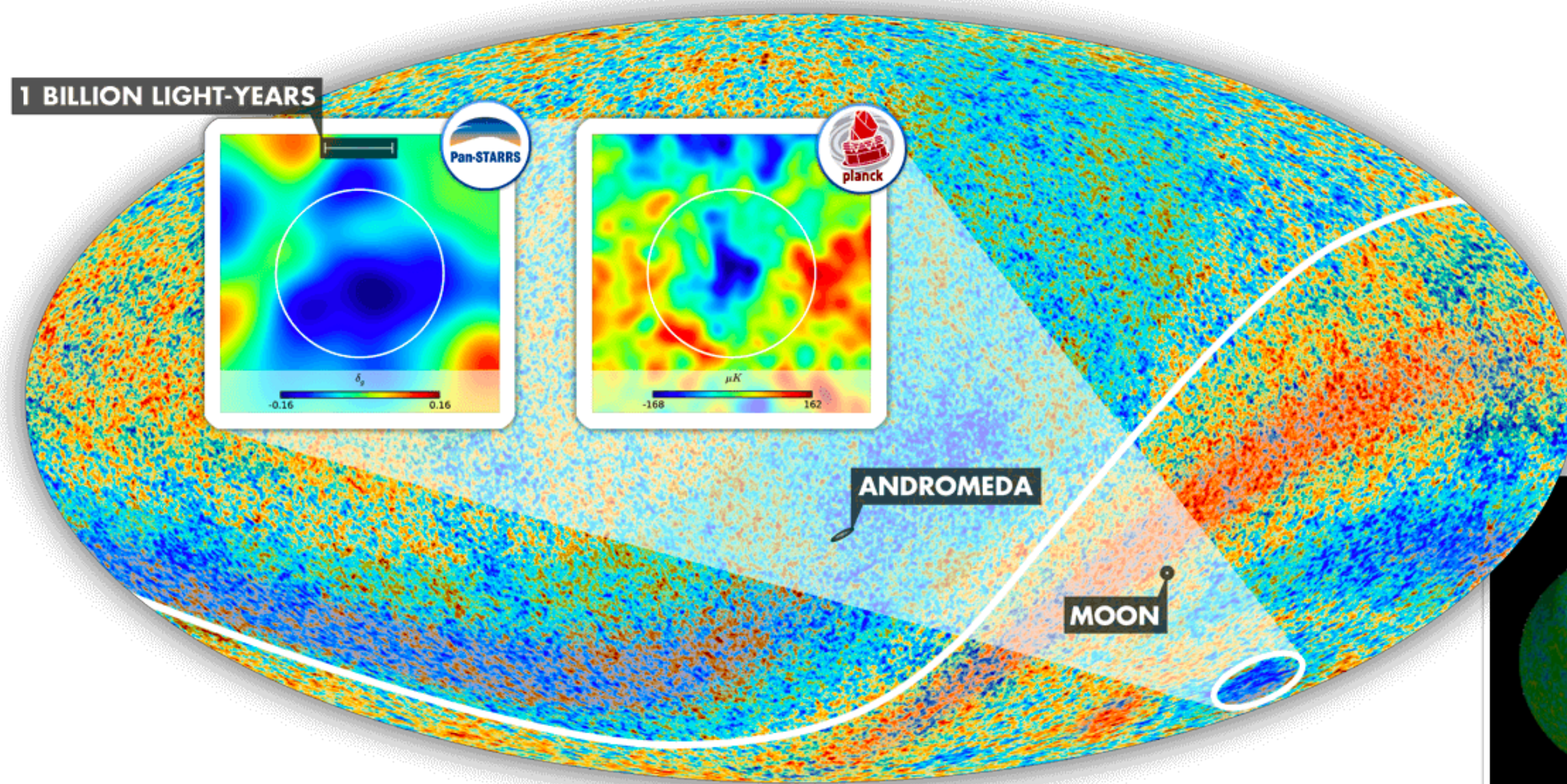
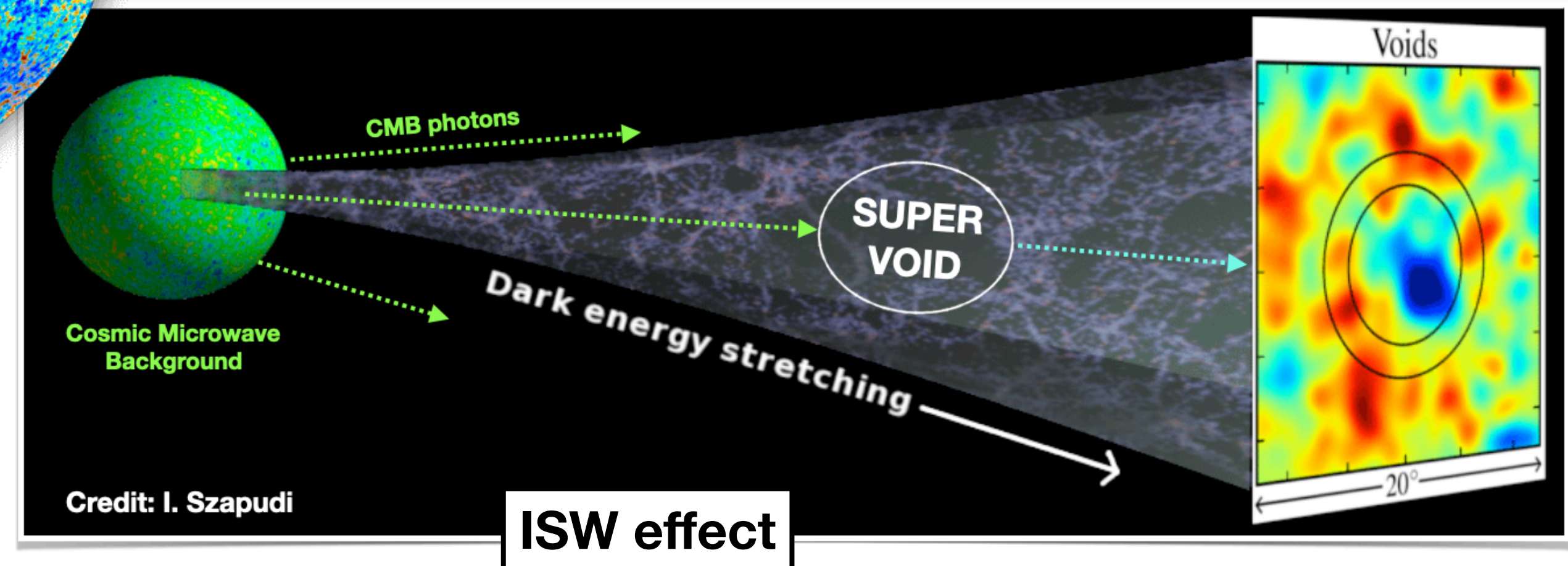


The DES view of the Eridanus supervoid and the CMB Cold Spot



Existing data: galaxy counts at the Cold Spot

Hypothesis: a supervoid might contribute to the signal



András Kovács

Postdoctoral Fellow at IAC Tenerife

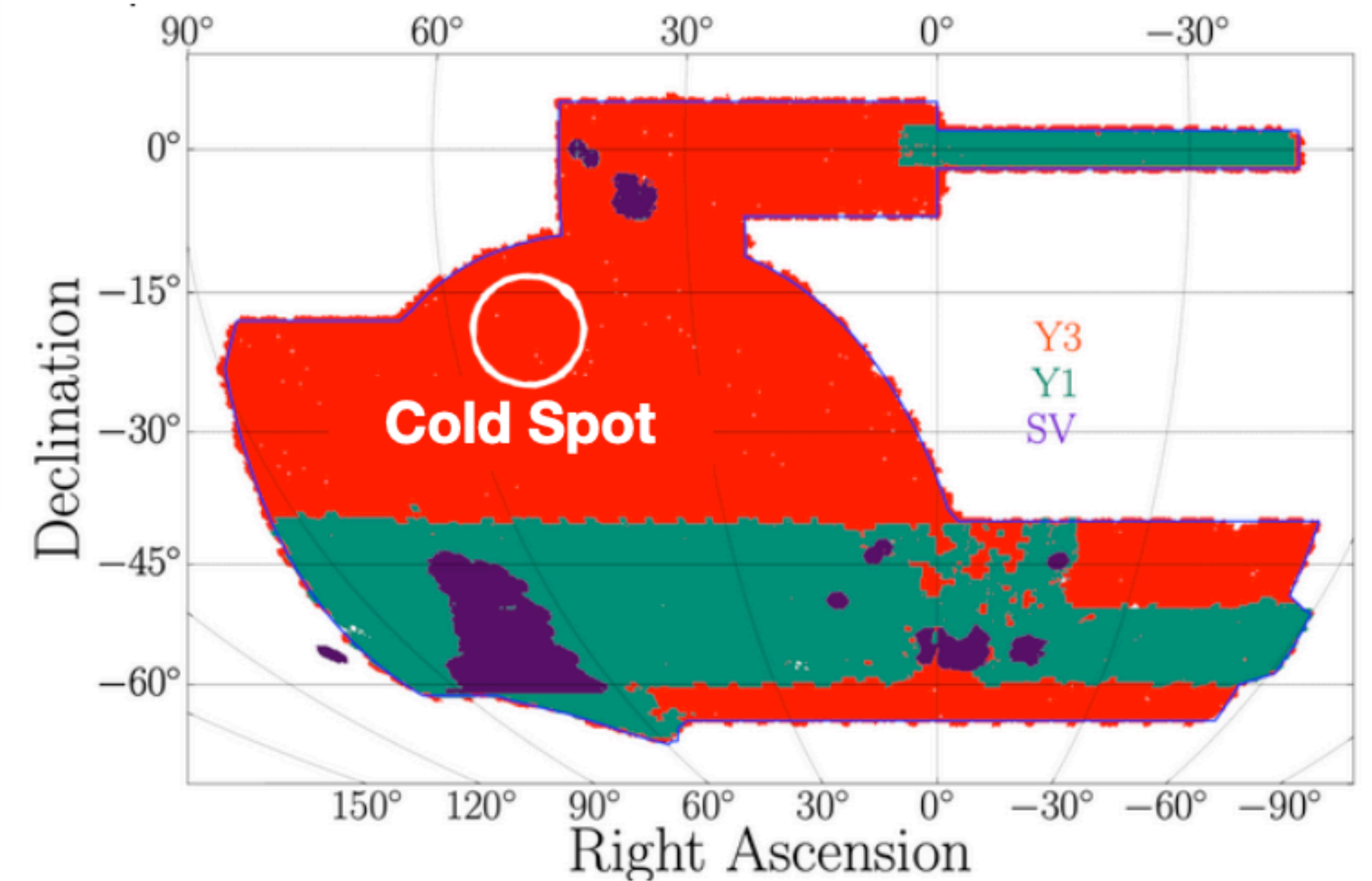
Collaborators: N. Jeffrey, M. Gatti, C. Chang, L. Whiteway, N. Hamaus, O. Lahav, G. Pollina and the DES collaboration

The DES view of the Eridanus supervoid and the CMB Cold Spot

The Dark Energy Survey Collaboration



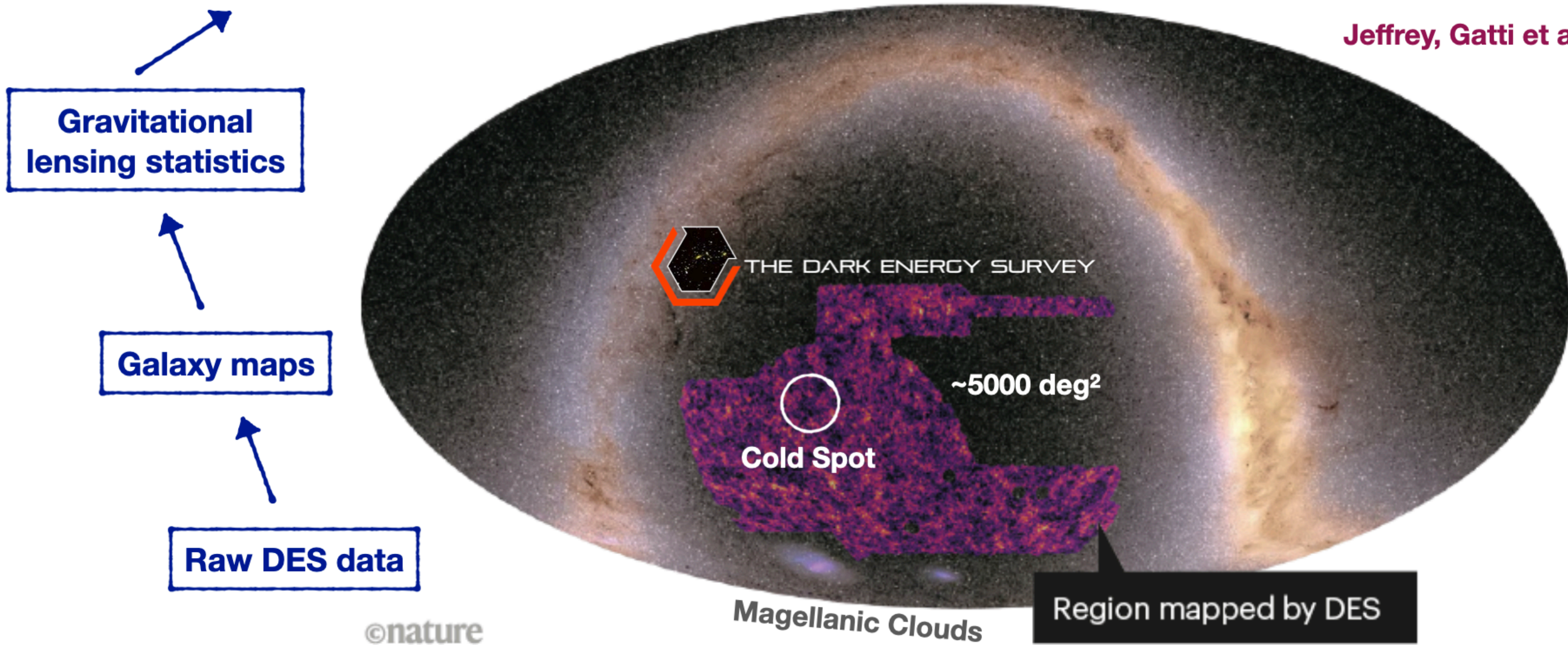
Survey progress, data releases: Science Validation (SV), Y1, Y3:



The DES view of the Eridanus supervoid and the CMB Cold Spot

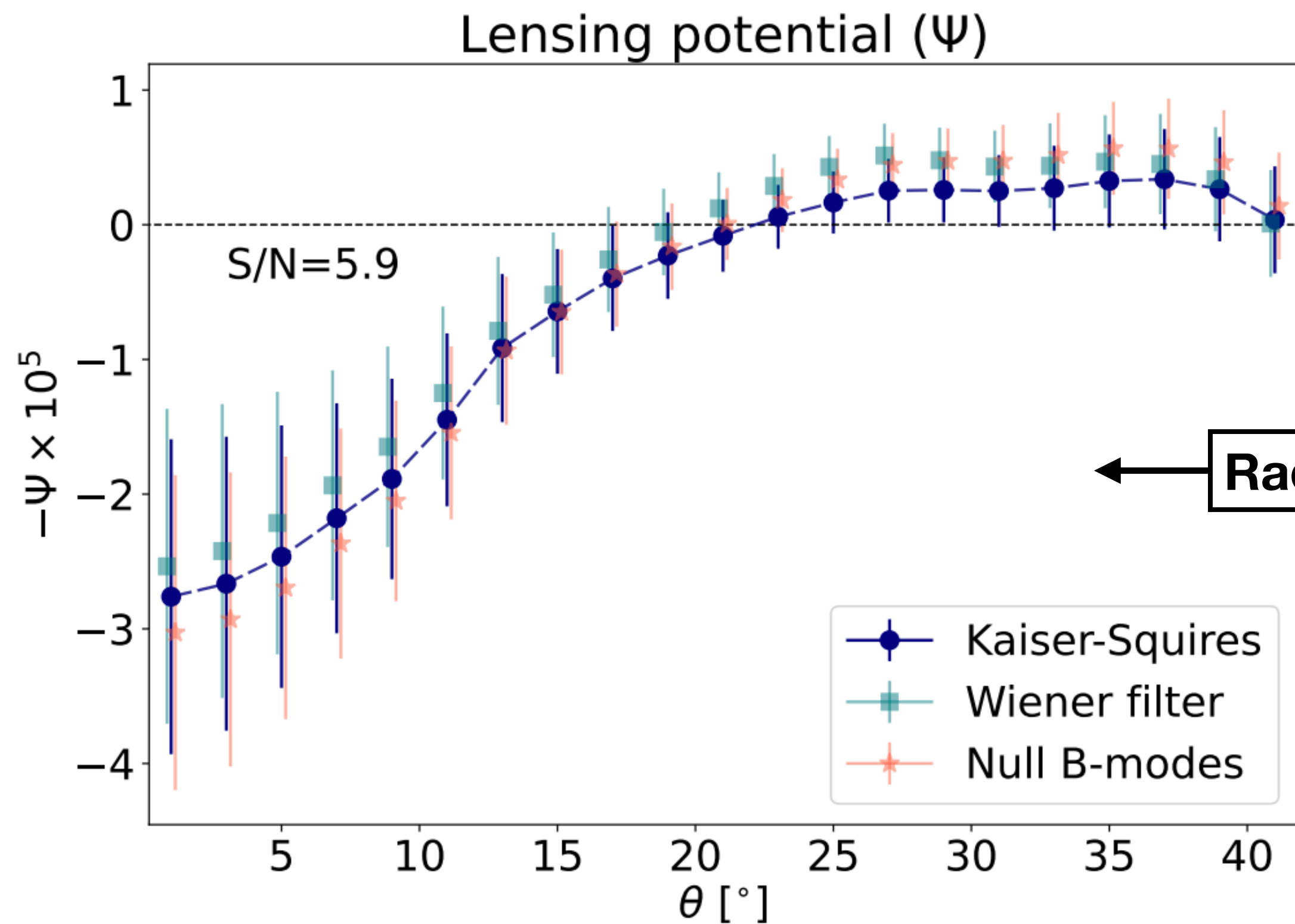
Reconstructed dark matter mass map on the Southern Galactic sky
Lensing convergence (κ) map = weighted map of all the line-of-sight matter in each pixel

Jeffrey, Gatti et al. 2021



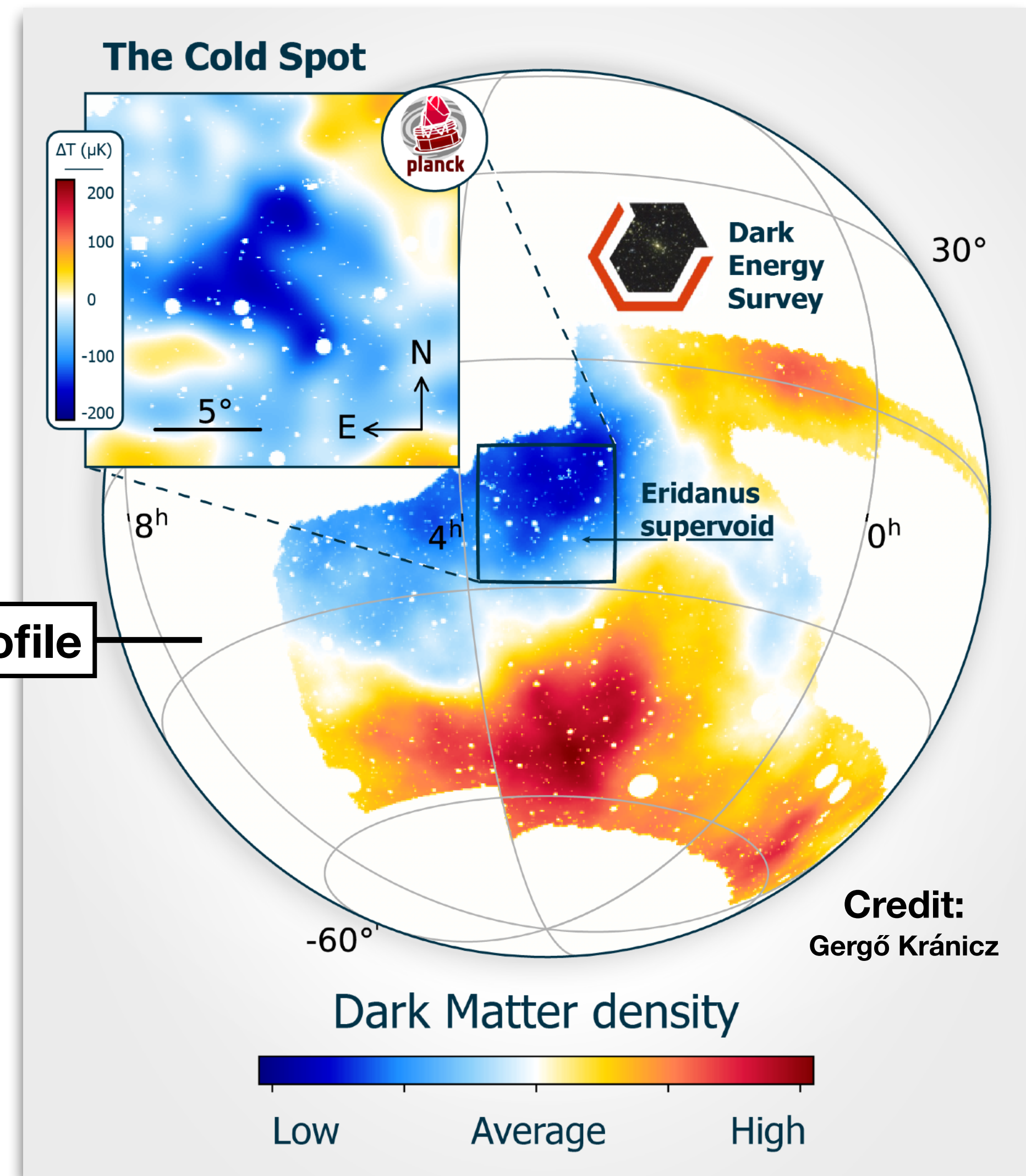
Main new results

The *Cold Spot* in DES Y3 data



Huge under-density at $z < 0.2$ (the Eridanus supervoid)

← Radial profile

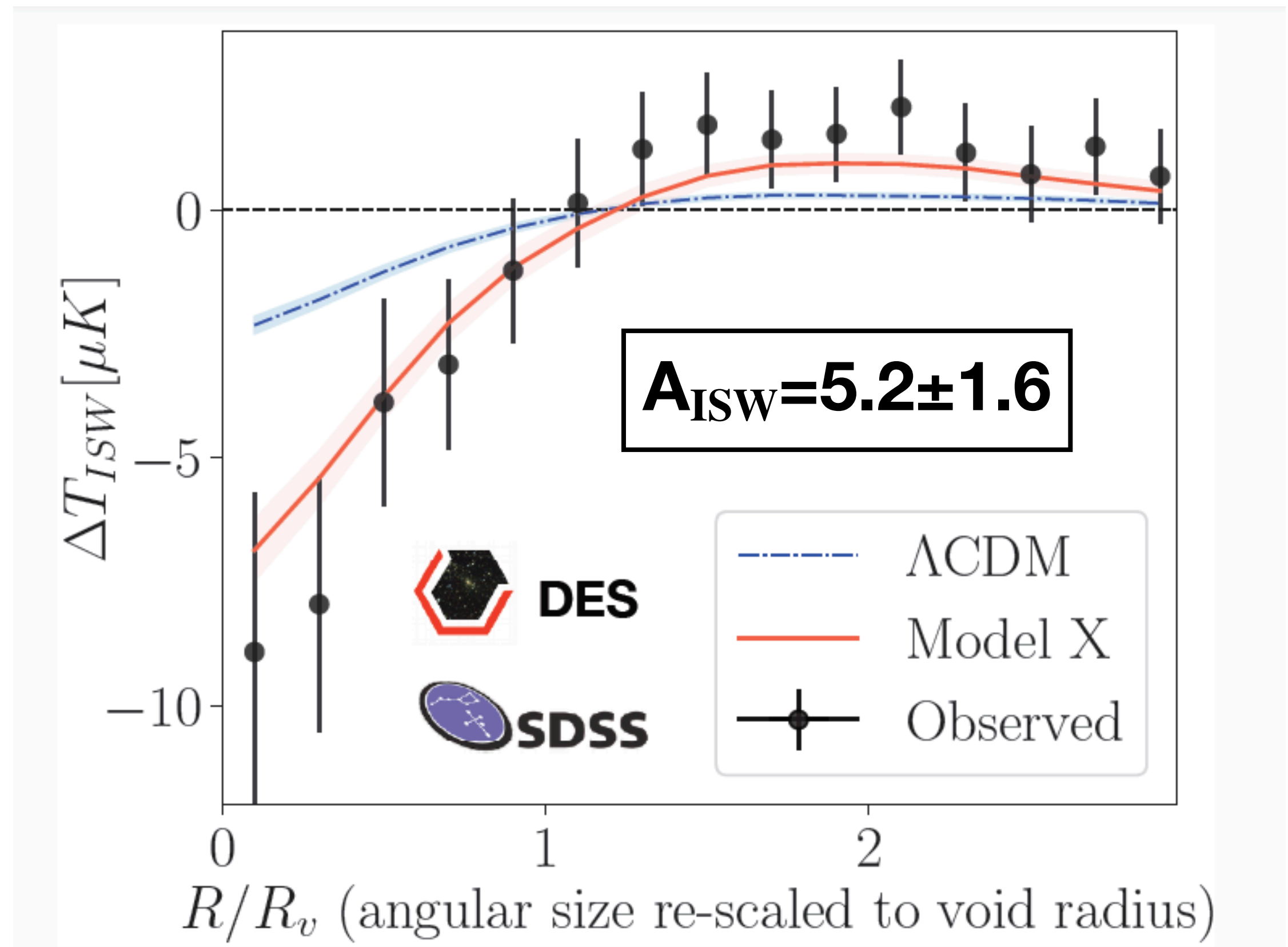
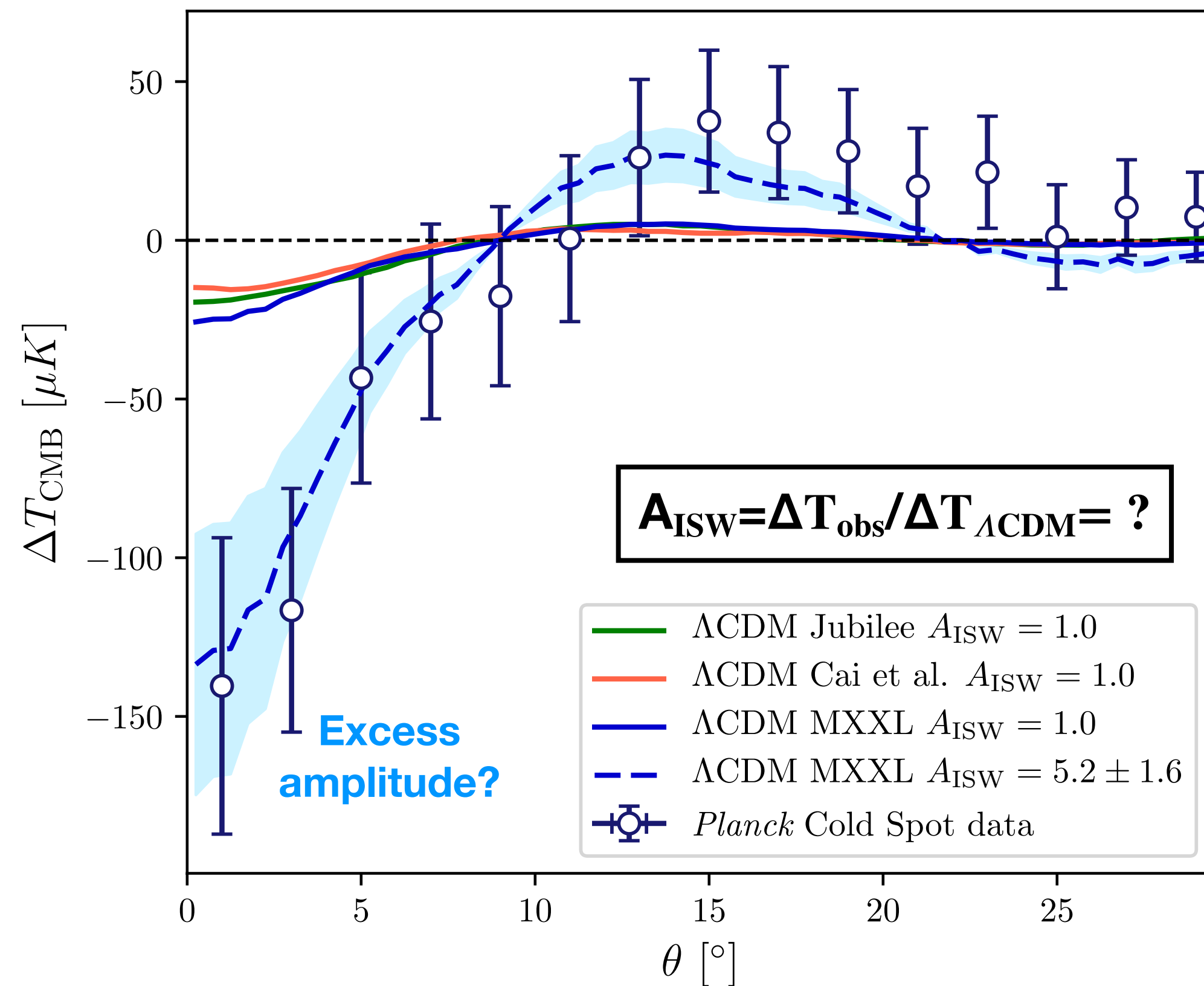


Kovács et al. 2021 (DES collaboration)

Can the supervoid explain the Cold Spot?

No (in Λ CDM)

But: similar anomalies in other supervoids



Cosmology job opportunities in Budapest

PhD student (4 years, 2023 Sep)

- **Studies:** enrollment at *Eötvös University*, application deadline is about May 2023
- **Tasks:** new cosmic web analyses at high redshifts, cosmology with cosmic voids, CMB cross-correlations, machine learning

Postdoc (2 years, 2023 Jan→)

- **Profile:** experience with Galaxy/QSO surveys, CMB cross-correlation probes
- **Tasks:** cosmological analyses of large-scale structure data, validation of early survey data, Galaxy/QSO/Lya mocks

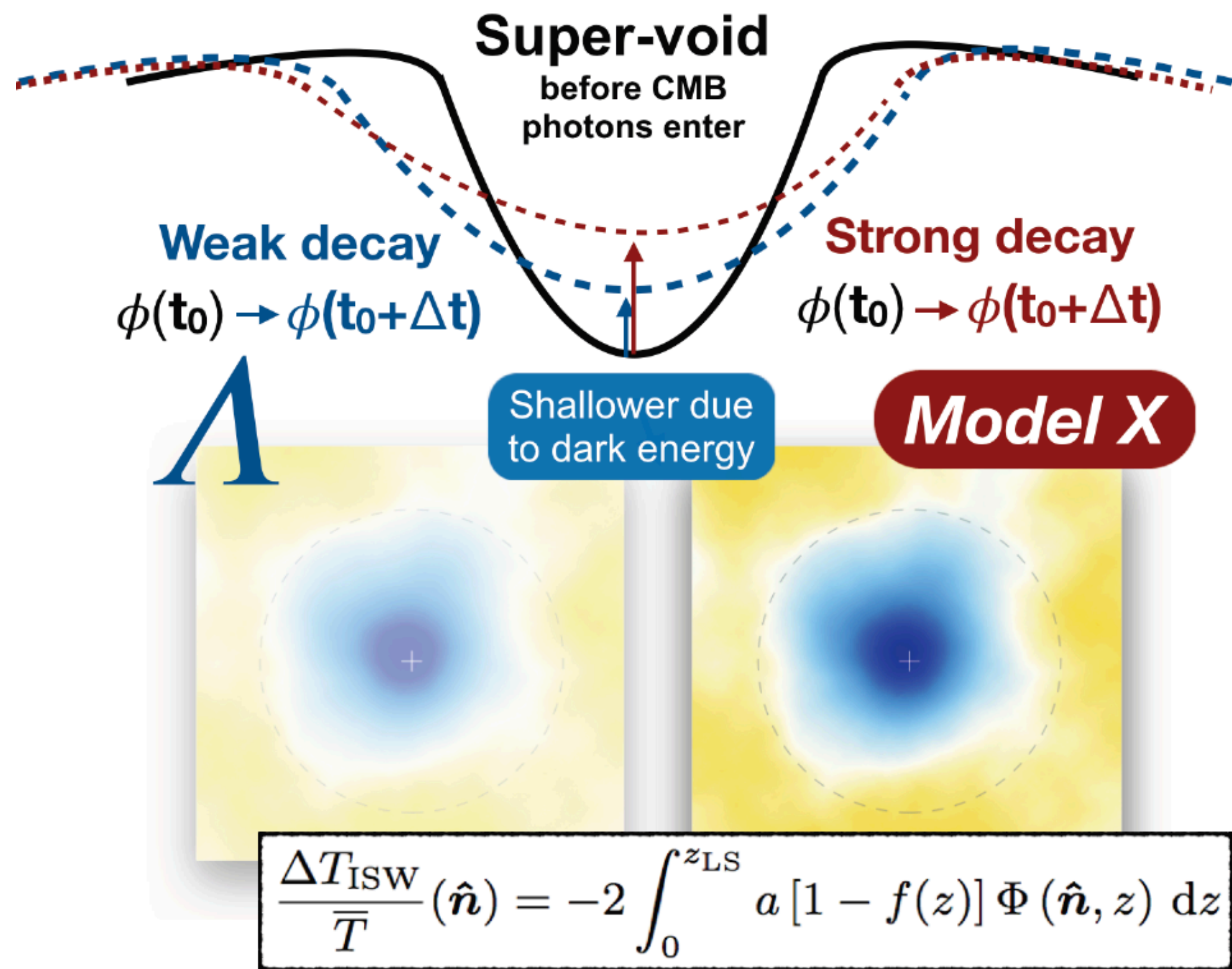
Funded by the Hungarian Academy of Sciences

Main observational projects to work on:



Backup: The ISW effect from super-structures

Cosmology- and redshift-dependence



Growth rate: $f = d \ln D / d \ln a$

