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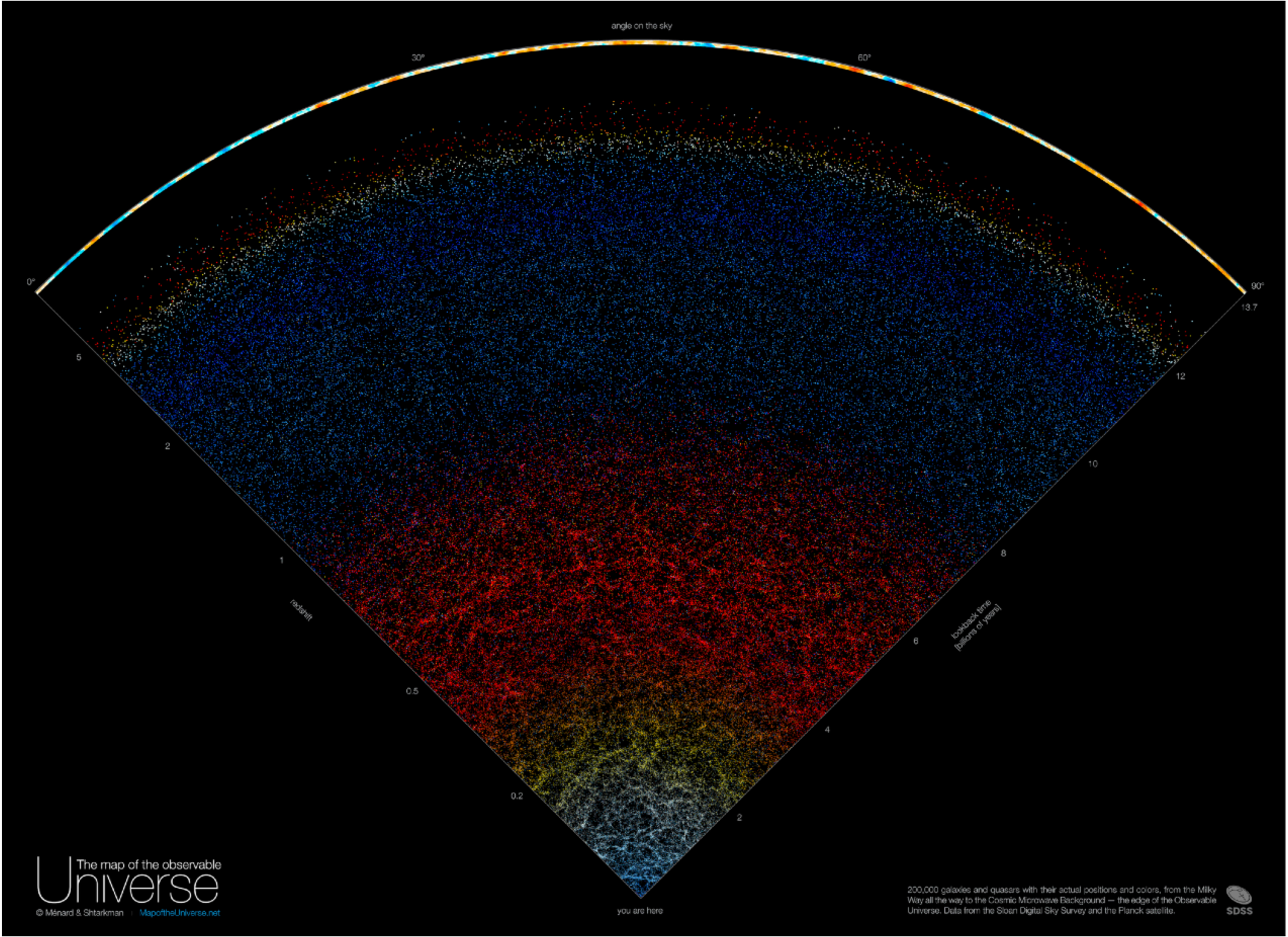

The map of the observable Universe

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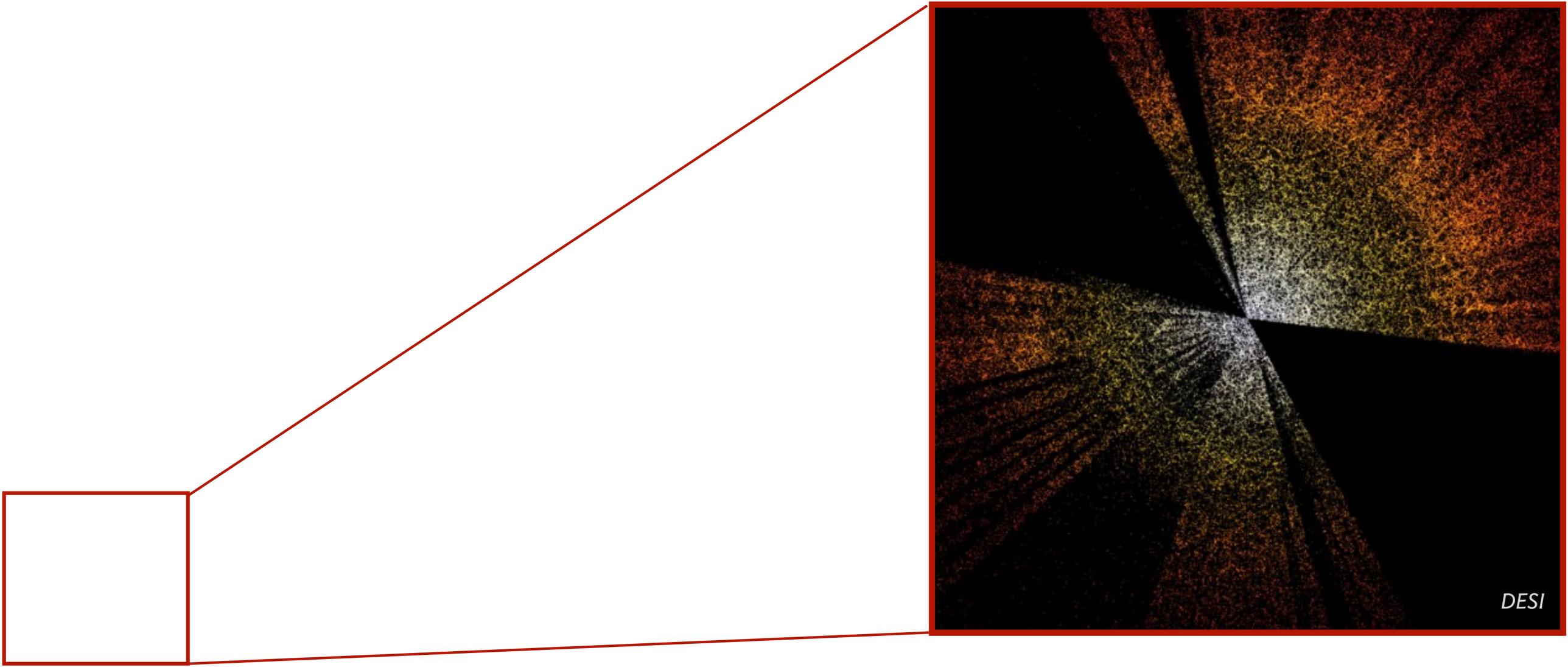
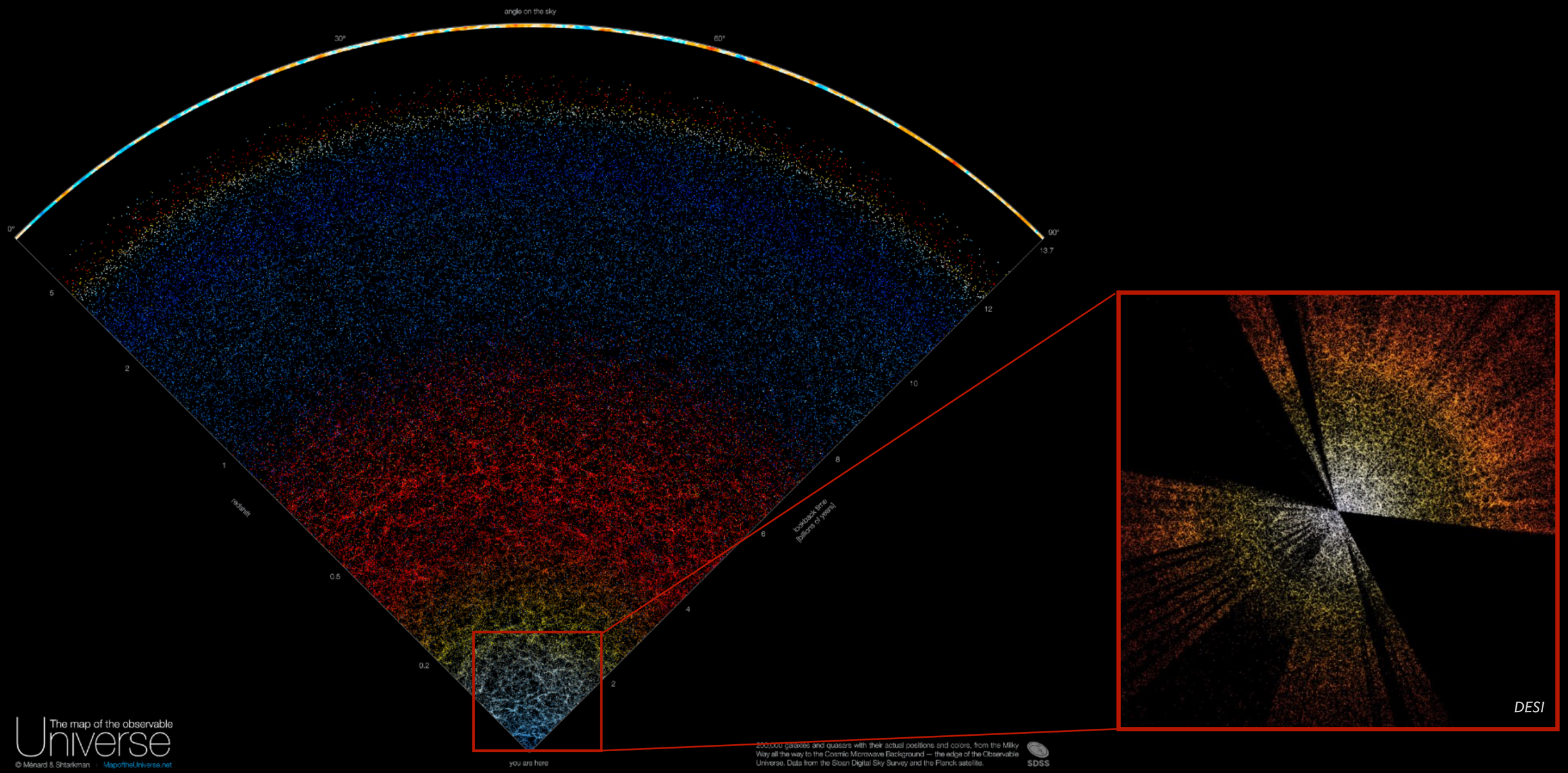
200,000 galaxies and quasars with their actual positions and colors, from the Milky Way all the way to the Cosmic Microwave Background — the edge of the Observable Universe. Data from the Sloan Digital Sky Survey and the Planck satellite.

SDSS

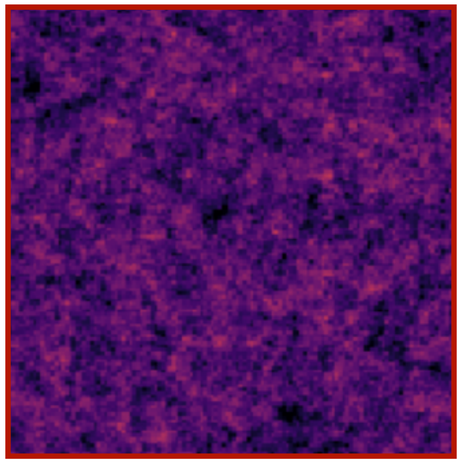

DESI


angle on the sky
30°
60°
0°
90°
13.7
5
2
1
0.5
0.2
redshift
12
10
8
6
4
2
lookback time
[billions of years]
you are here
The map of the observable
Universe
© Ménard & Shtarkman | MaptheUniverse.net
200,000 galaxies and quasars with their actual positions and colors, from the Milky Way all the way to the Cosmic Microwave Background — the edge of the Observable Universe. Data from the Sloan Digital Sky Survey and the Planck satellite.
SDSS
DESI

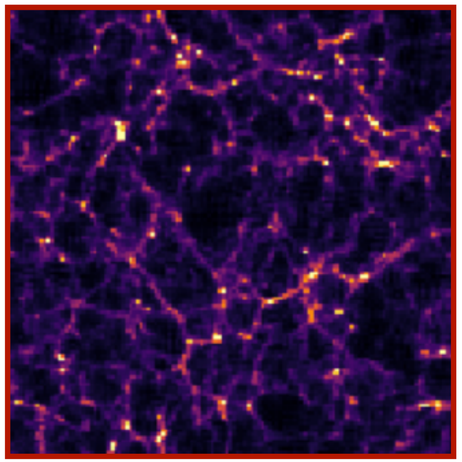
Forward modeling

Slide: Chirag Modi

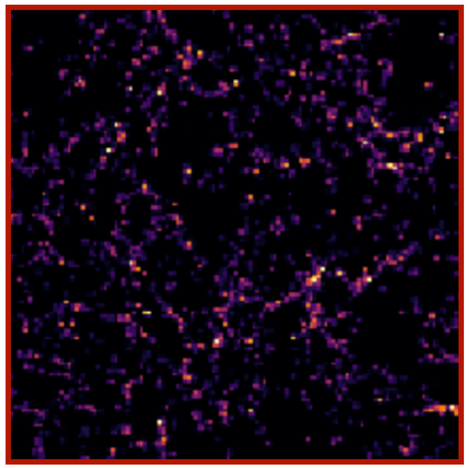
Gaussian field



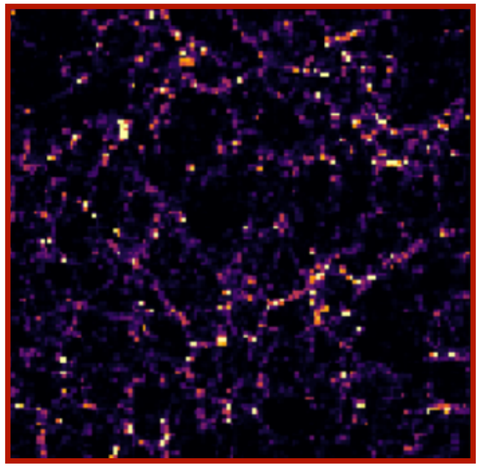
Dark matter field



Dark matter halos



Galaxies



+ Observational effects…

N-body simulation

Group-finding algorithms

Galaxy-halo connection