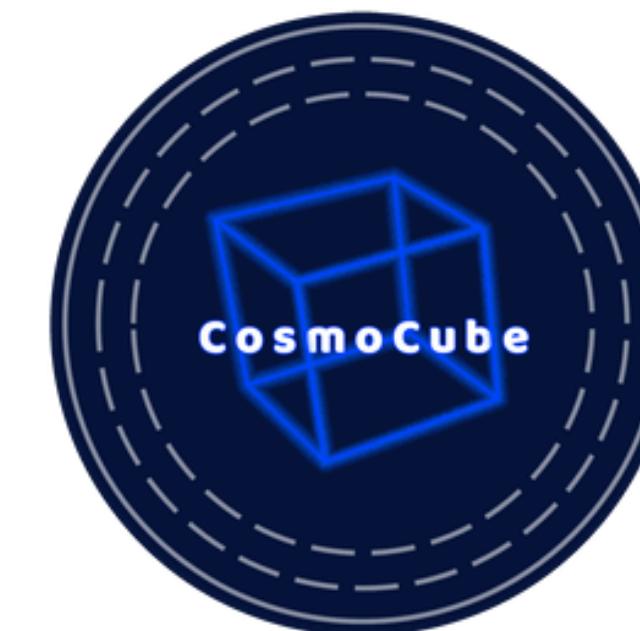
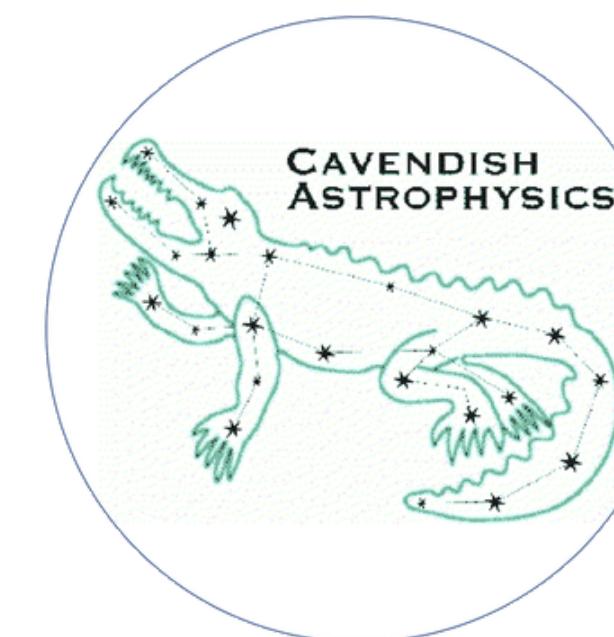


Observing the first stars and galaxies

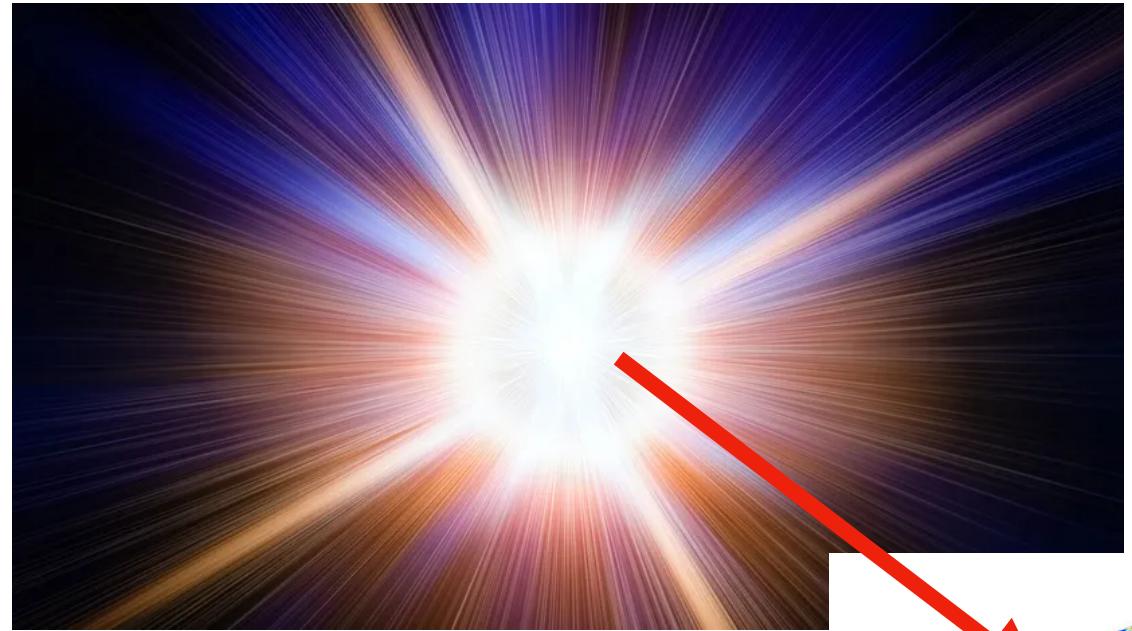
Harry Bevins

Kavli Junior Fellow

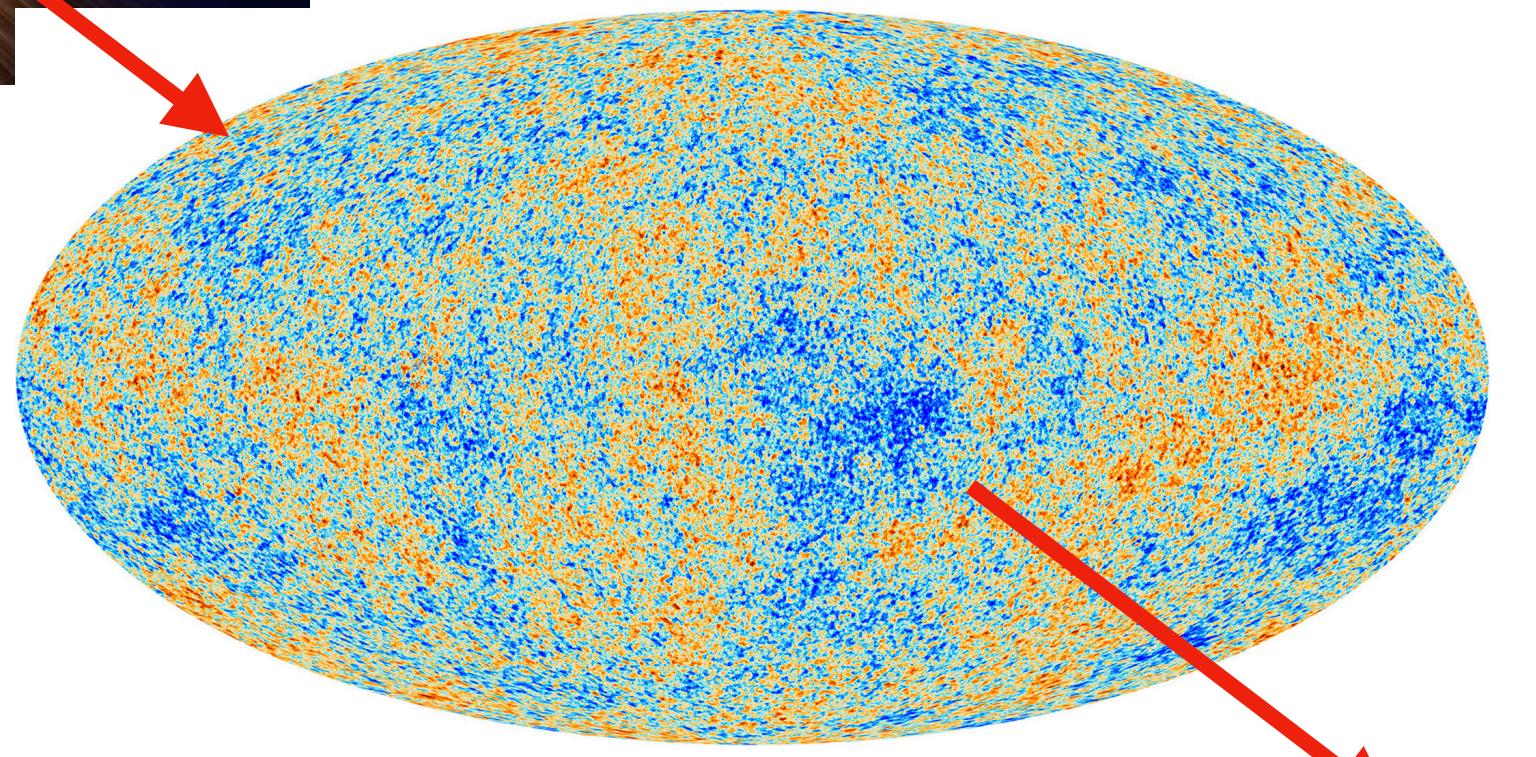
Kavli Institute of Cosmology and Cavendish Astrophysics



A History of the Universe



The Big Bang $t = 0$ yr



The Cosmic Microwave Background
 $t \approx 300,000$ yr

The Dark Ages and Cosmic Dawn



The Present Epoch of the Galaxies
 $t \approx 13,600,000,000$ yr



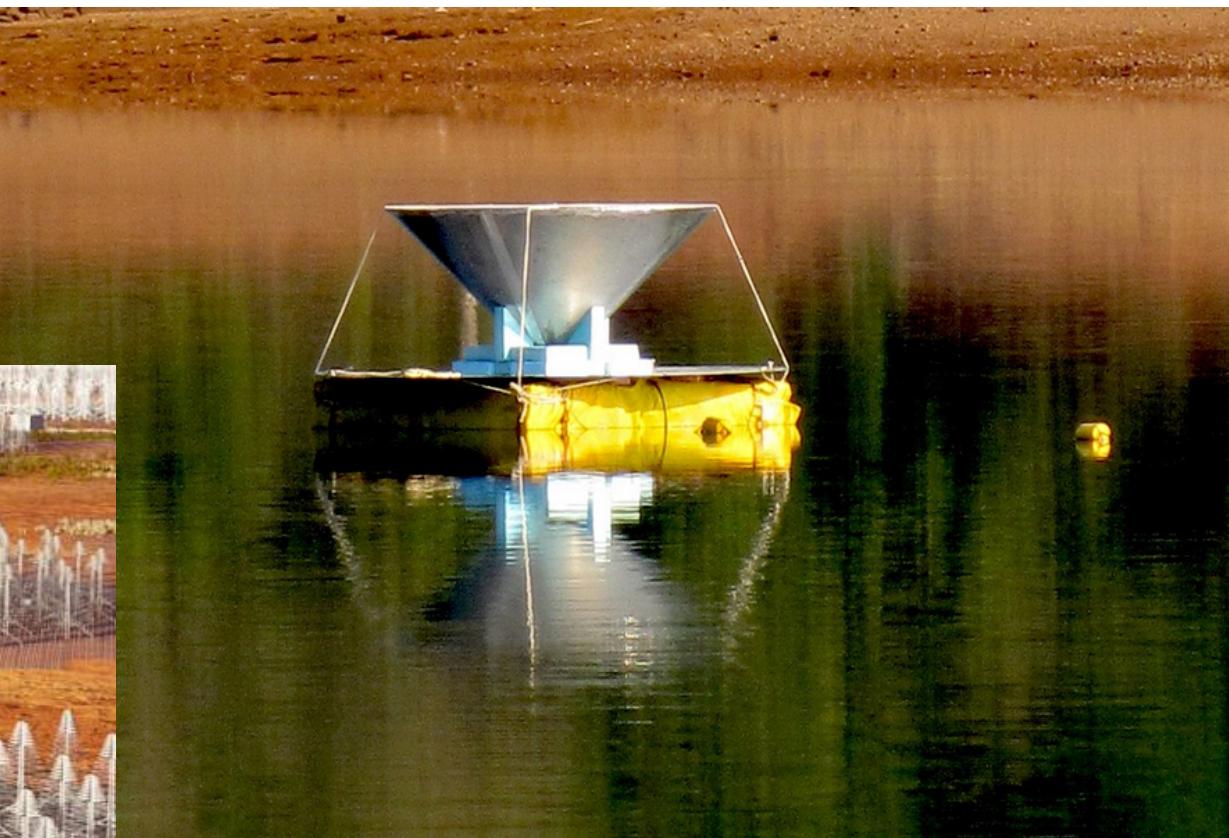
My Research

Answering questions like:

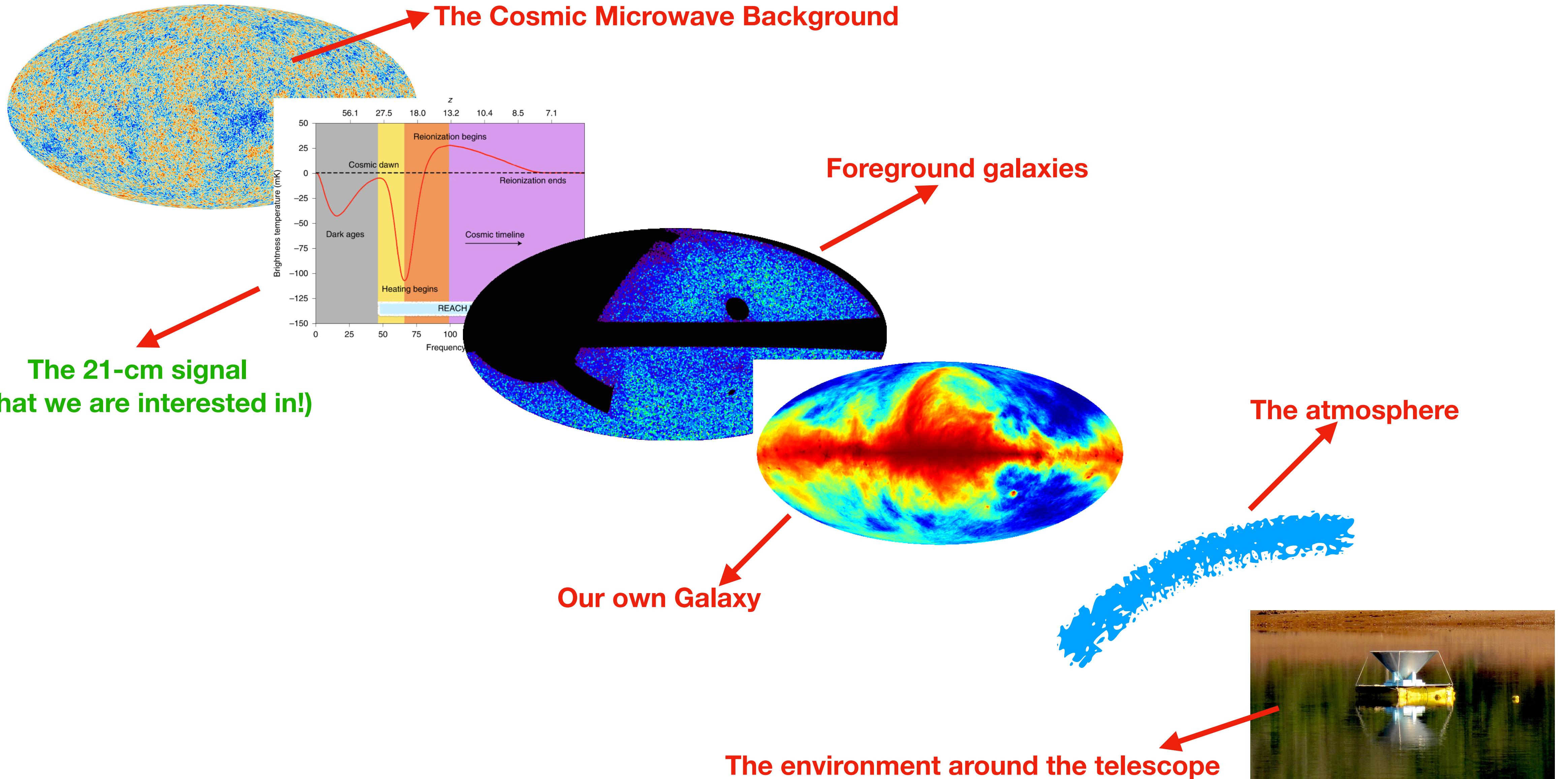
When did the first stars and galaxies form?

How big and how bright were they?

What impact did they have on their surroundings?



The 21-cm Line



Conclusions

Work out when the first stars formed through the 21-cm signal

Significant data analysis challenge

Develop novel statistical methods and apply machine learning techniques

