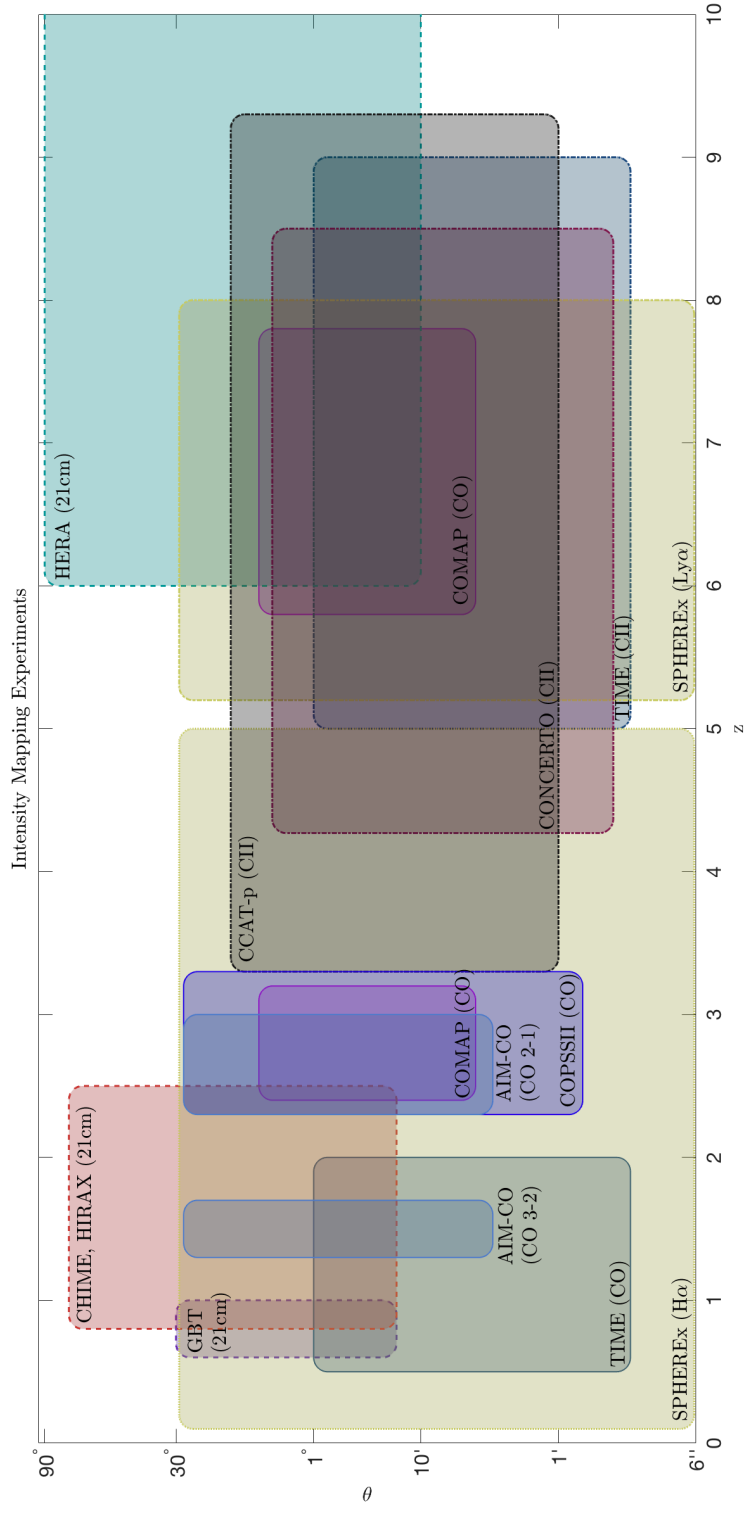
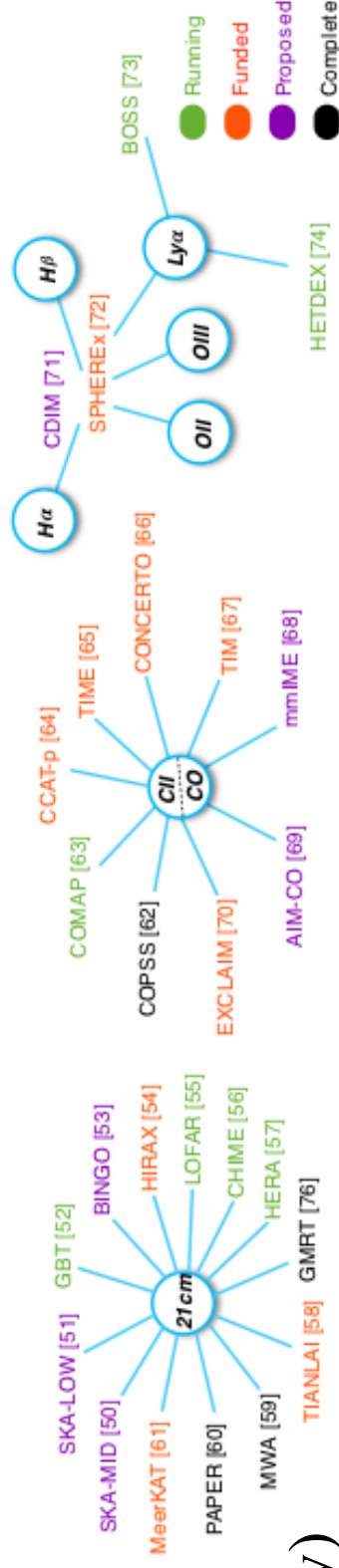


Experimental Landscape*:

(Bird's-Eye View)

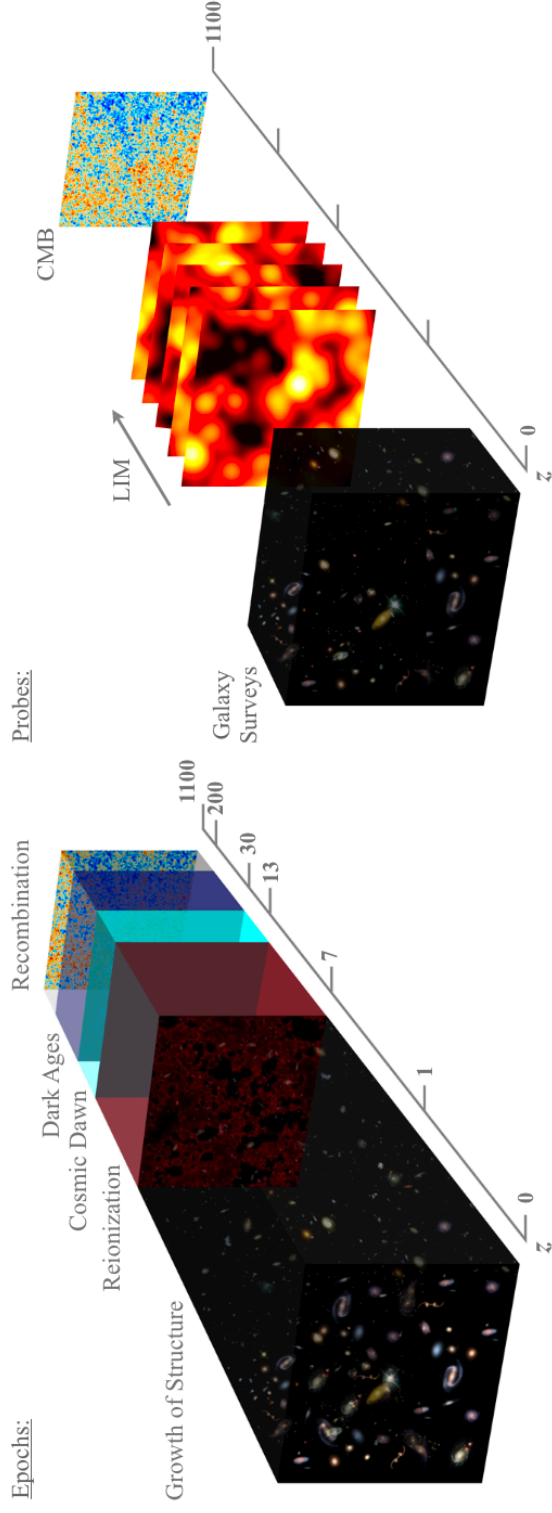


* Updates welcome!

LIM Science Goals (Bird's-Eye View):

Astro2020 Science White Paper: Astrophysics and Cosmology with Line-Intensity Mapping

Ely D. Kovetz,^{1,*} Patrick C. Breysse,^{2,†} Adam Lidz,^{3,‡} Jamie Bock,⁴
Anthony Pullen,⁵ Dominik Riechers,⁶ Eric Switzer,⁷ ..., ^{8,9} and ...¹⁰



We would love your input!

LIM Science Goals (Bird's-Eye View):

- Galaxy Evolution
 - Determine properties of faint, high-redshift objects
 - Measure cosmic star formation history
 - Dissect high-redshift ISM
 - Reionization
 - Map process of reionization tomographically
 - Connect ionizing sources to IGM
 - Cosmology
 - Probe nature of dark energy, modifications to GR
 - Probe inflation, interactions/decay of dark matter
 - Improve Λ CDM constraints
-

List of LIM NASA 2020 decadal survey white papers:

Title	Authors	Main Science Themes
Cosmology and astrophysics from line-intensity mapping	Ely Kovetz, Patrick Breysse, Adam Lidz et al.	Overall promise of LIM for Galaxy evolution, reionization, fundamental cosmology
Understanding the nature of populations behind source-subtracted cosmic infrared background	A. Kashlinsky, R. Arendt, A. Ferrara, J. Mather et al.	Use the ClB to study early galaxies and black holes, reionization, maybe PopIII stars
Cosmic Dawn & Reionization: Astrophysics in the Final Frontier	Asantha Cooray et al.	General science overview paper focused on cosmic dawn/reionization/reheating astrophysics for the next decade+. EBL and LIM are mentioned, among lots other sciences. Happy to refer to other white papers. Open for coauthorship. For a draft contact acooray@uci.edu
The Synergistic Potential of Reionization Measurements and Galaxy Surveys	Steven Furlanetto et al.	Wide area high-z galaxy surveys x 21cm (e.g., with WFIRST or other instruments)
Reionization with the Highly Redshifted 21cm Line	Steven Furlanetto et al.	General science case for EoR measurements with 21cm
Cosmology with the Highly Redshifted 21cm Line	Adrian Liu, James Aguirre et al.	Cosmological opportunities using $z > 6$ measurements of 21cm
First Stars and Black Holes at Cosmic Dawn with Redshifted 21cm Observations	Jordan Mirocha et al.	General science case for Cosmic Dawn measurements with 21cm
Cooking with X-rays: Can X-ray binaries heat the universe?	Antara R. Basu-Zych et al.	Better X-ray measurements to feed into 21cm

Questions for Discussion

- What other science goals are there?
 - What other modeling/simulation efforts are needed?
 - Are there any other lines we should be going after?
 - How do we bridge gaps between 21cm and other lines?
 - How do we advertise to the broader community?
-

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