

MACS0416_Y1

dust and carbon
in the EoR

SAZERAC 2020

Questions?

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Nagoya University
www.tombak.xyz

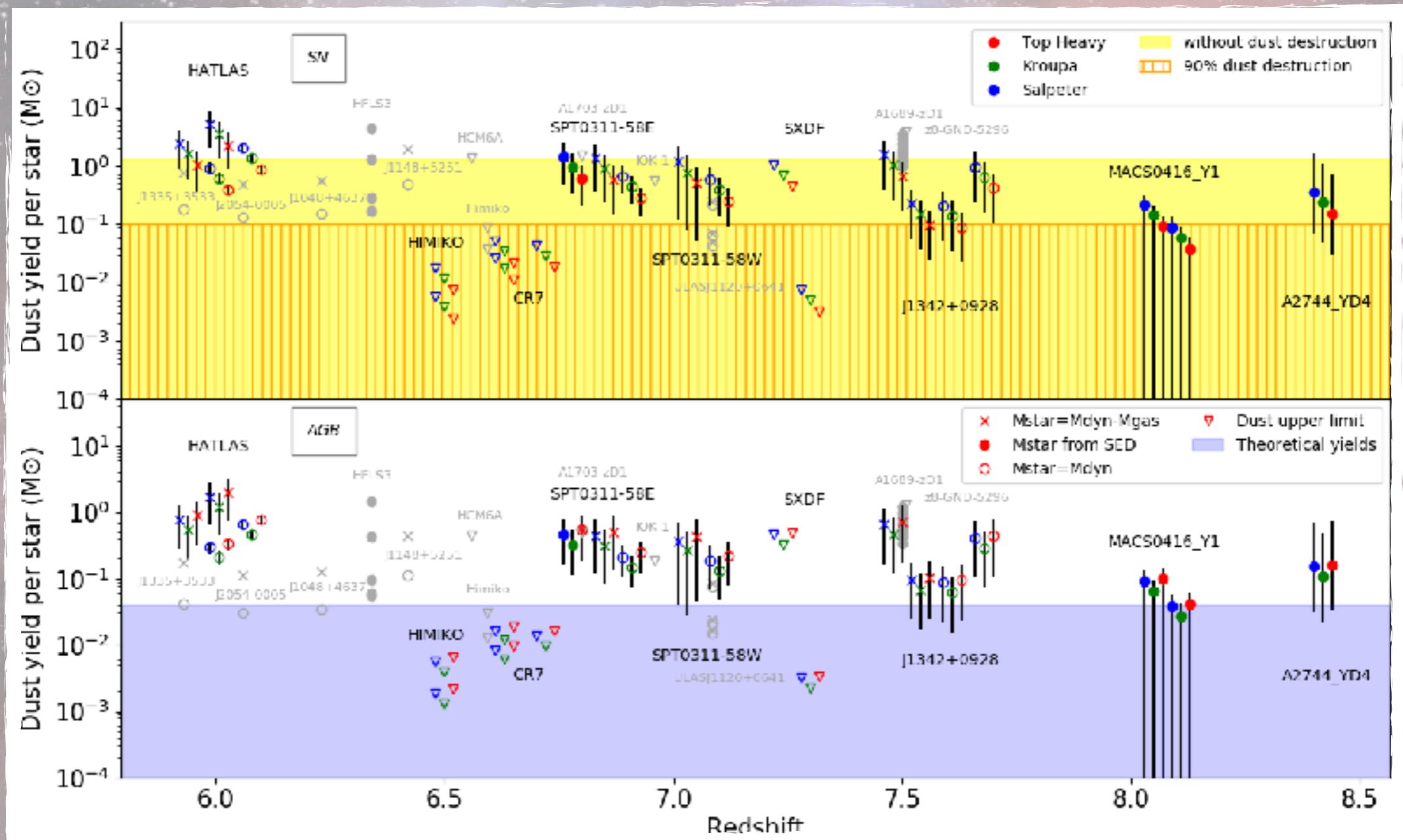


Credit: National Astronomical Observatory of Japan

Dust Budget Crisis

SNe don't produce enough dust!

Leśniewska+19

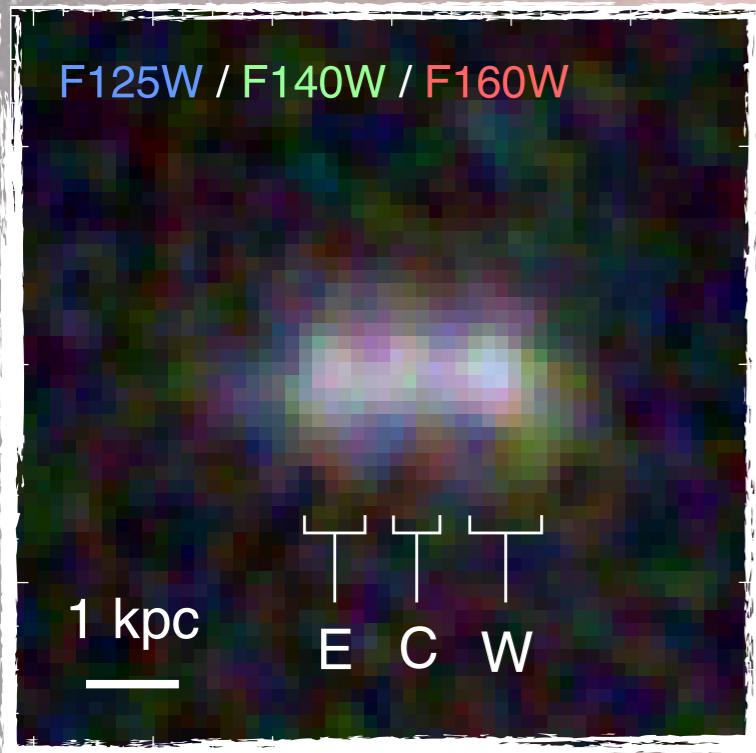


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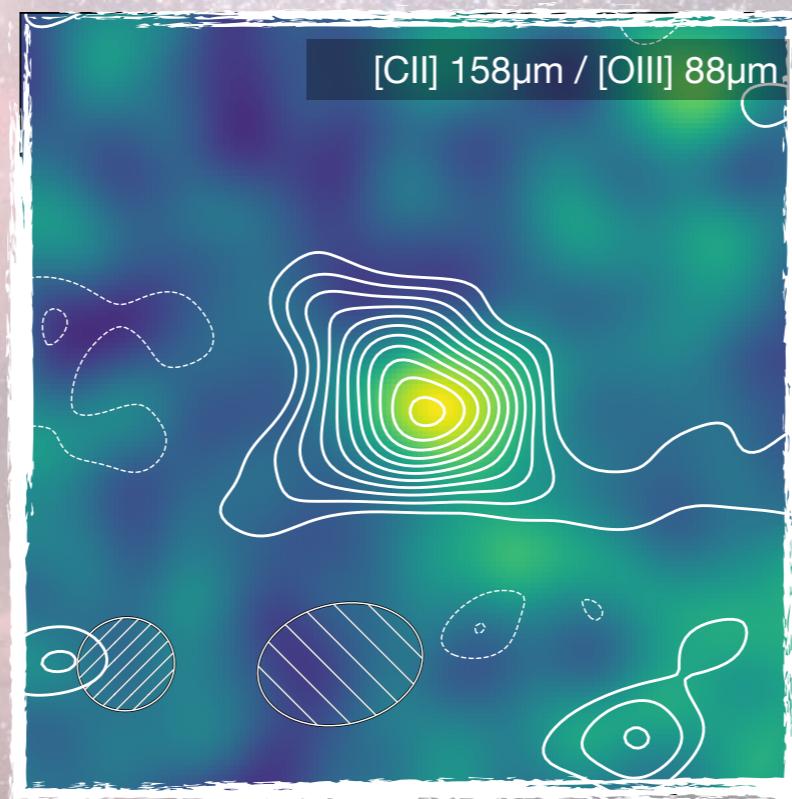
dust and carbon at z = 8.3



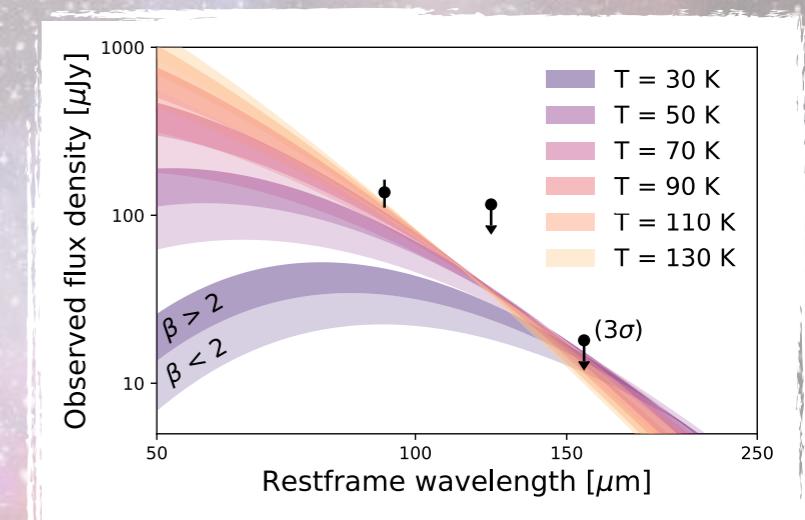
The source ...



... the lines ...



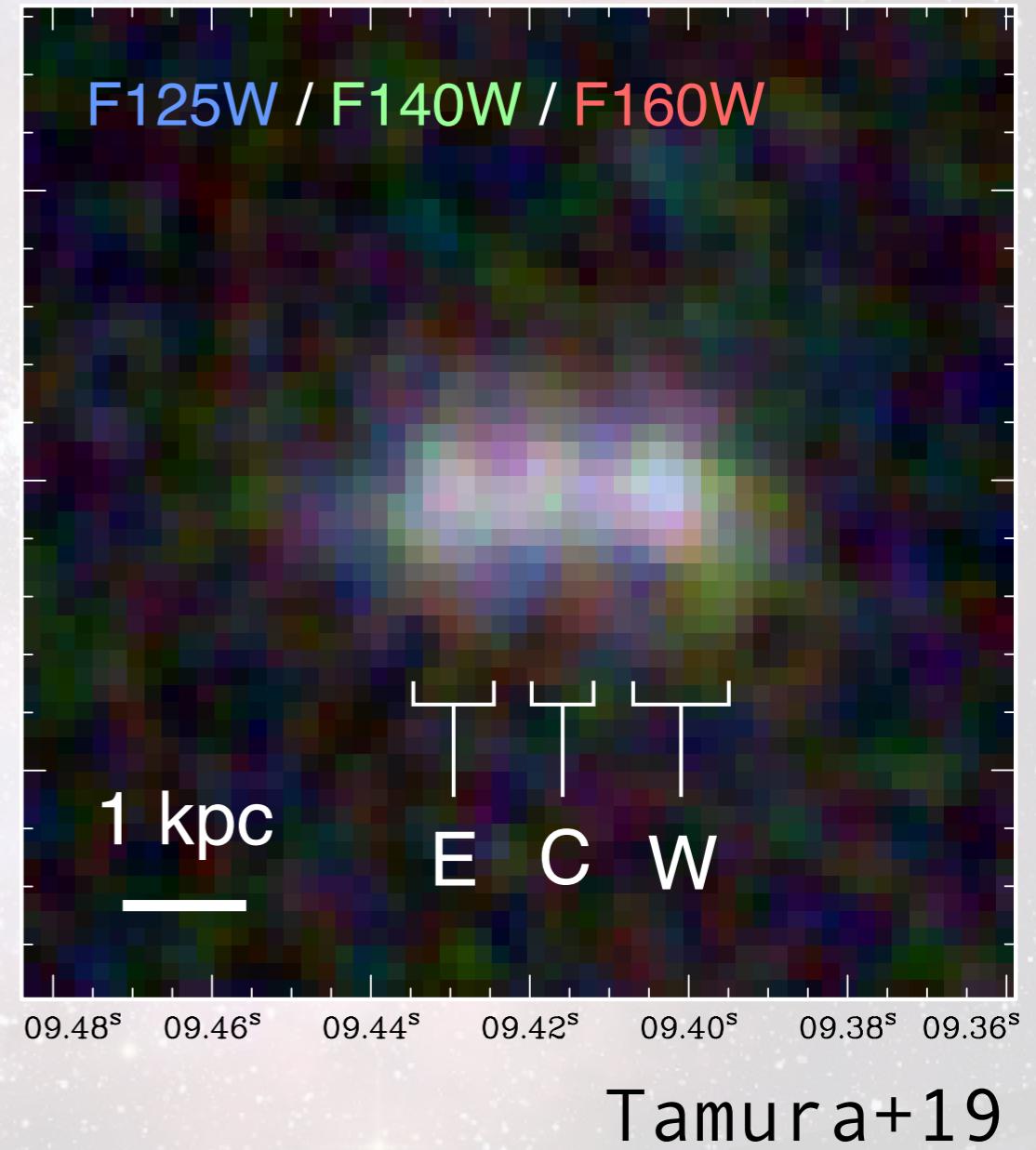
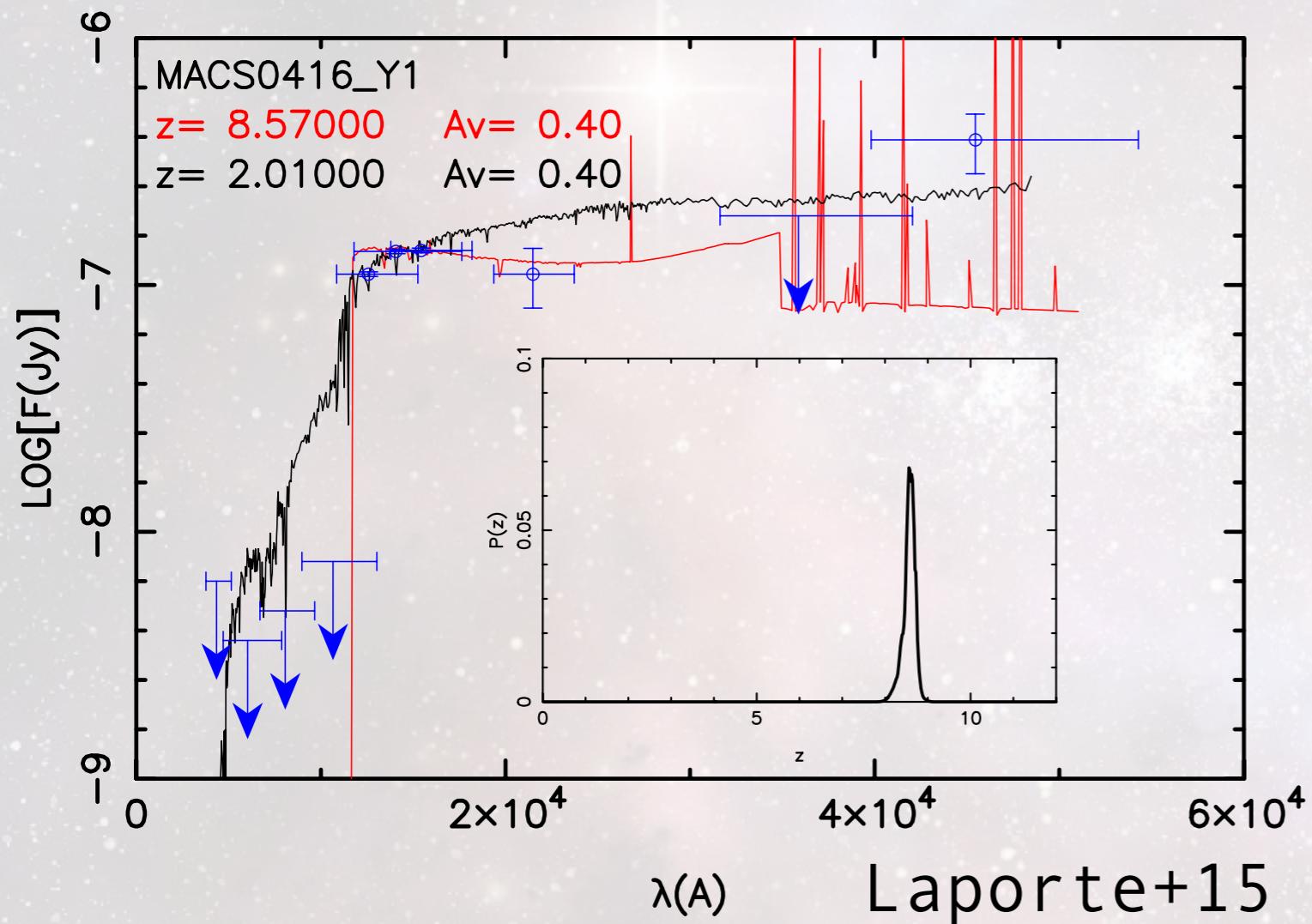
... and the spectrum!



Bakx+2020:
2001.02812

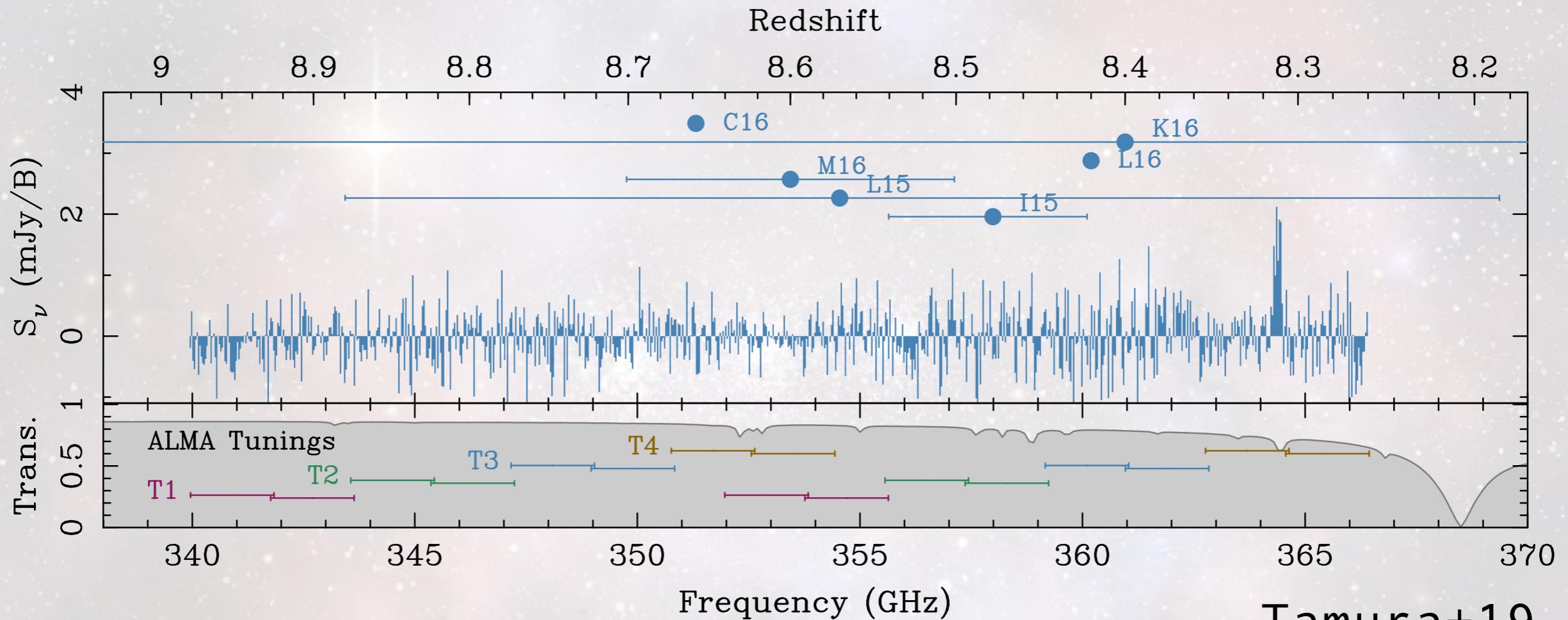
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A Y-band drop-out LBG found behind the Hubble Frontier Field

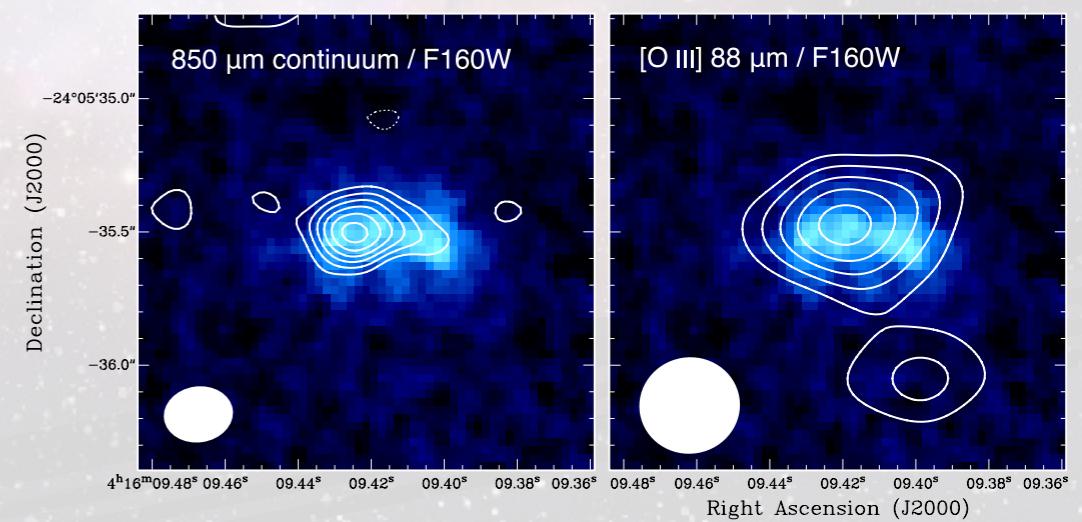


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ALMA redshift sweep found [OIII]88um at z = 8.31

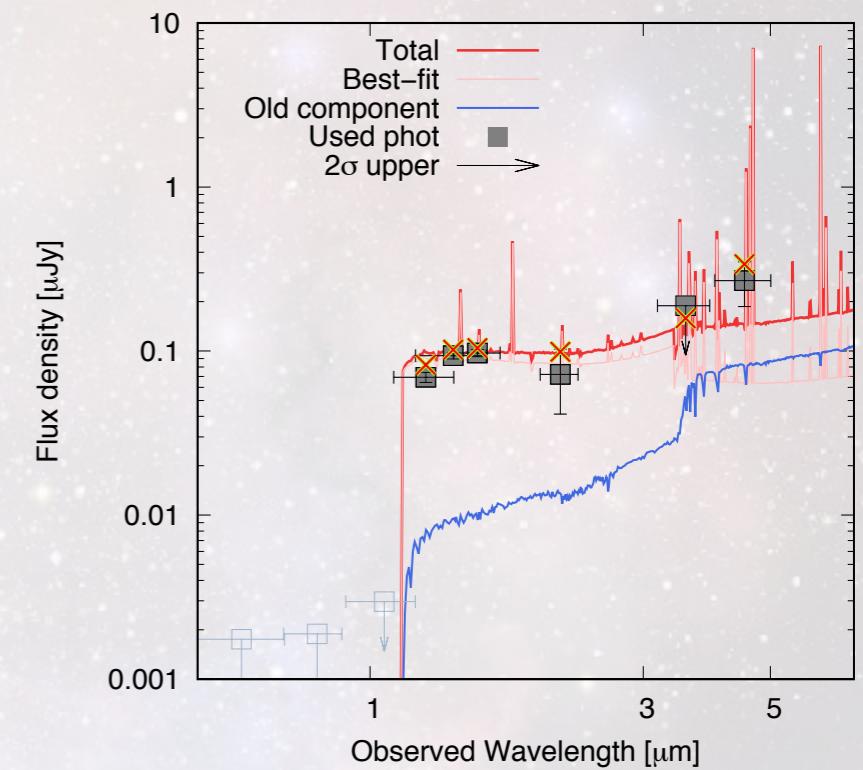
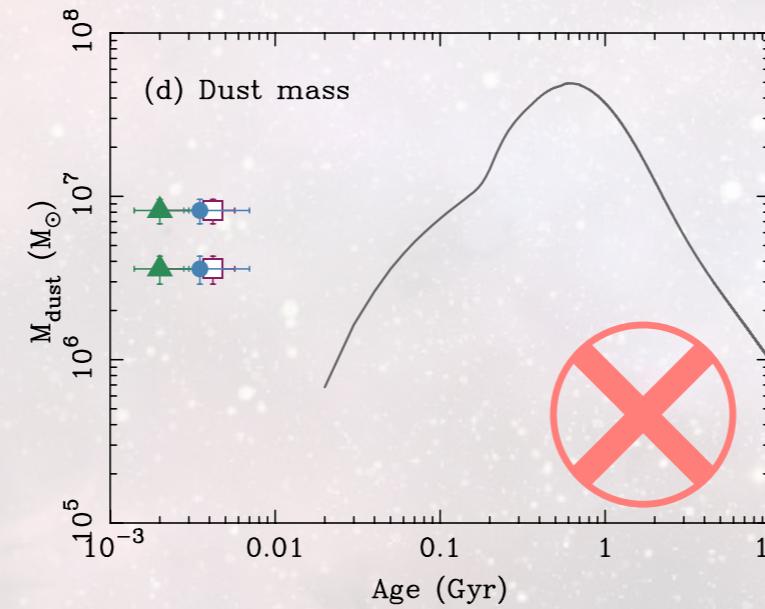
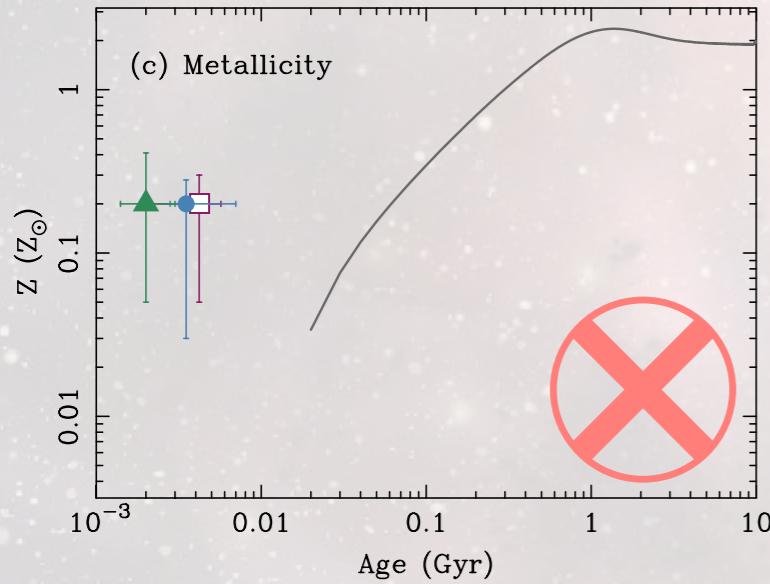
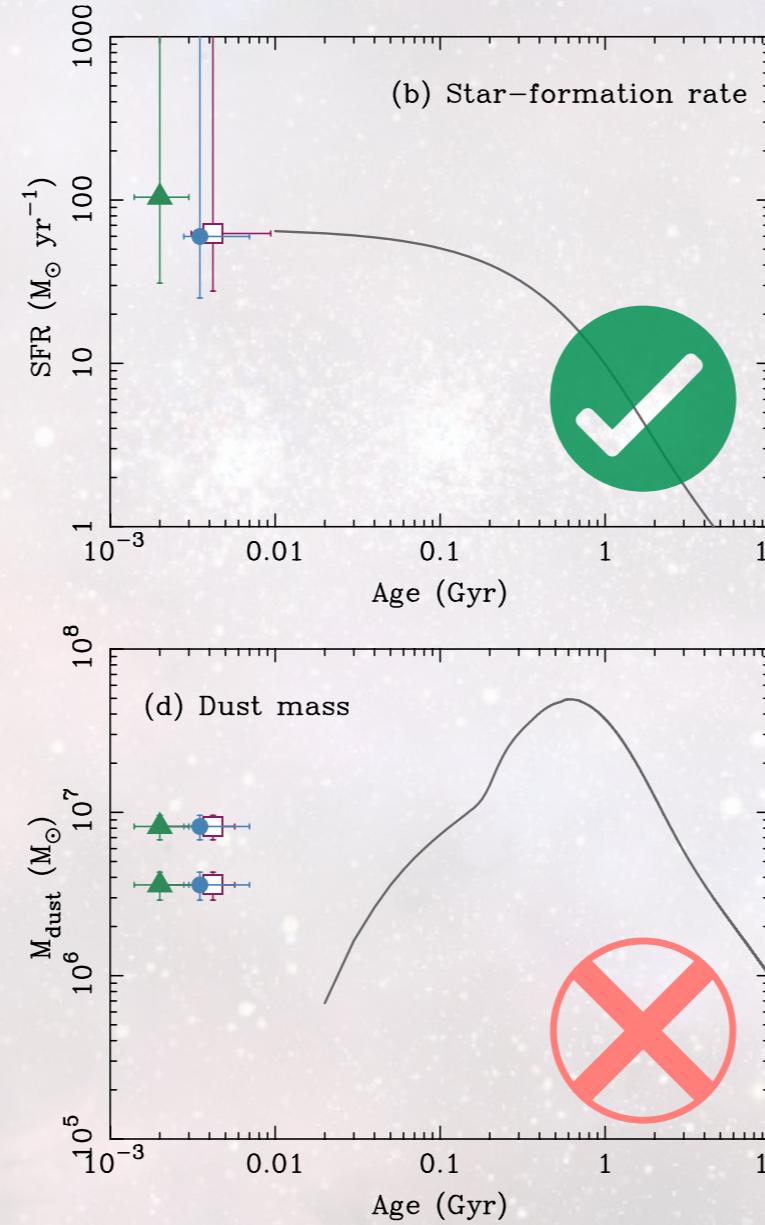
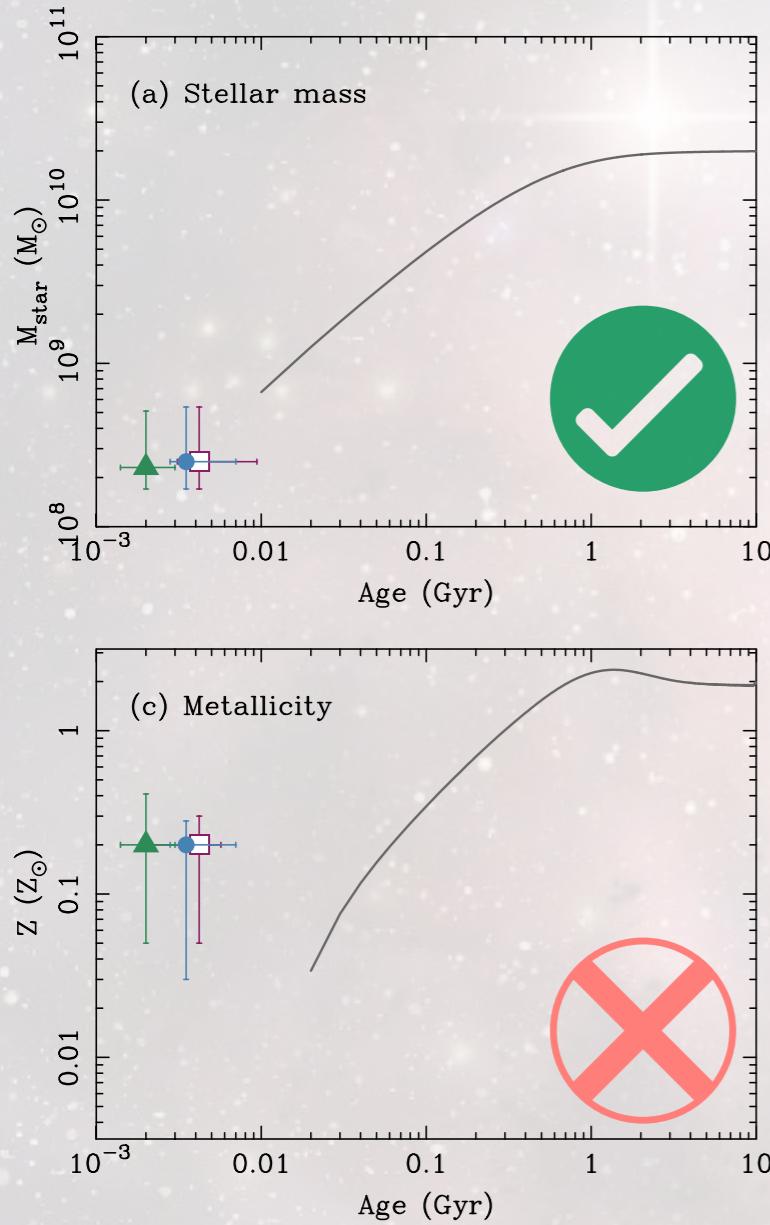


Tamura+19



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UV-to-FIR modeling suggests older stellar component at $z = 15$

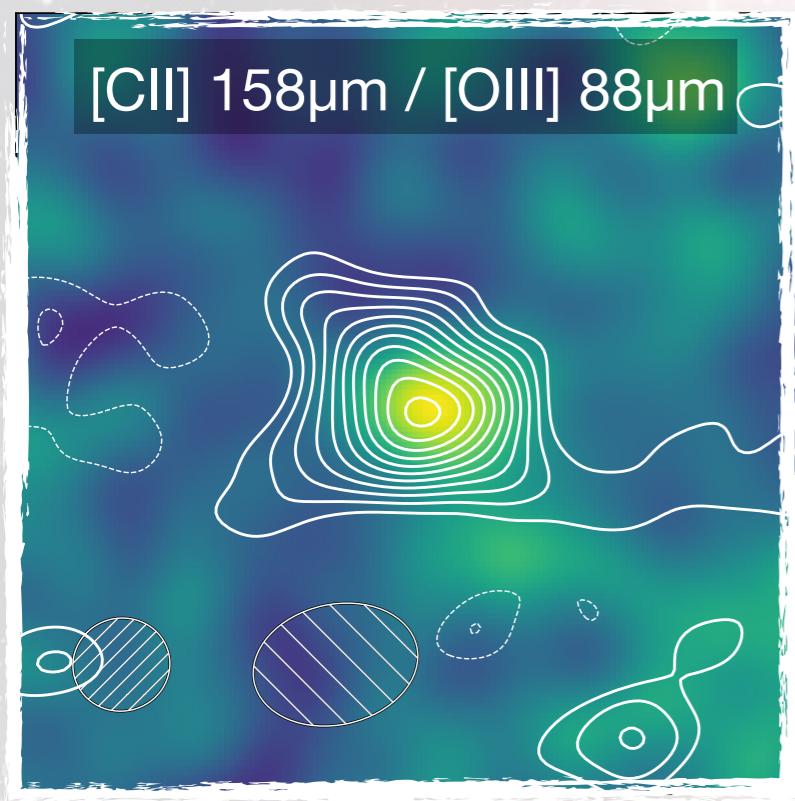


Tamura+19

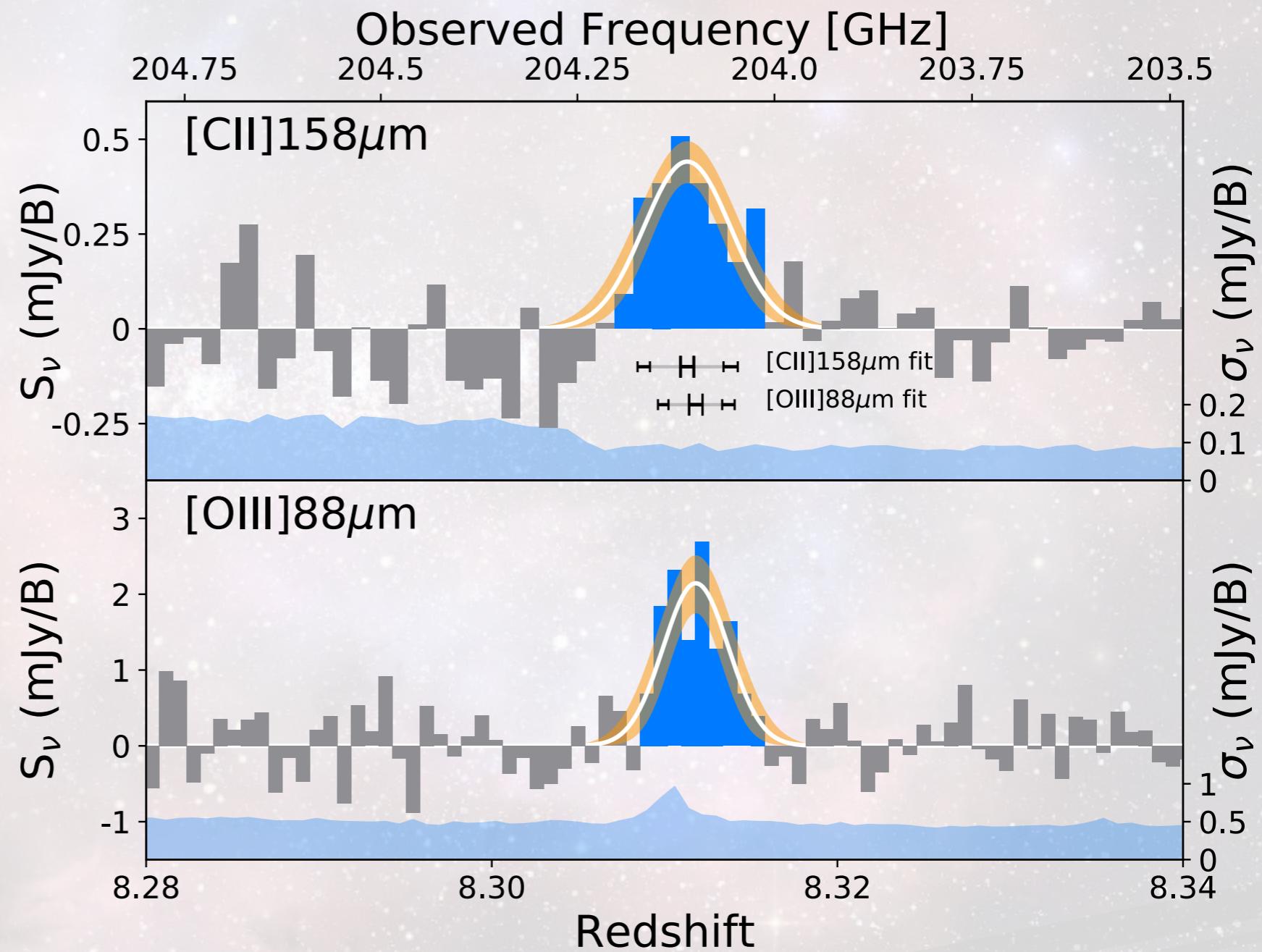
Yesterday's talk:
G. Roberts-Borsani

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No obvious offset between [CII] and [OIII]



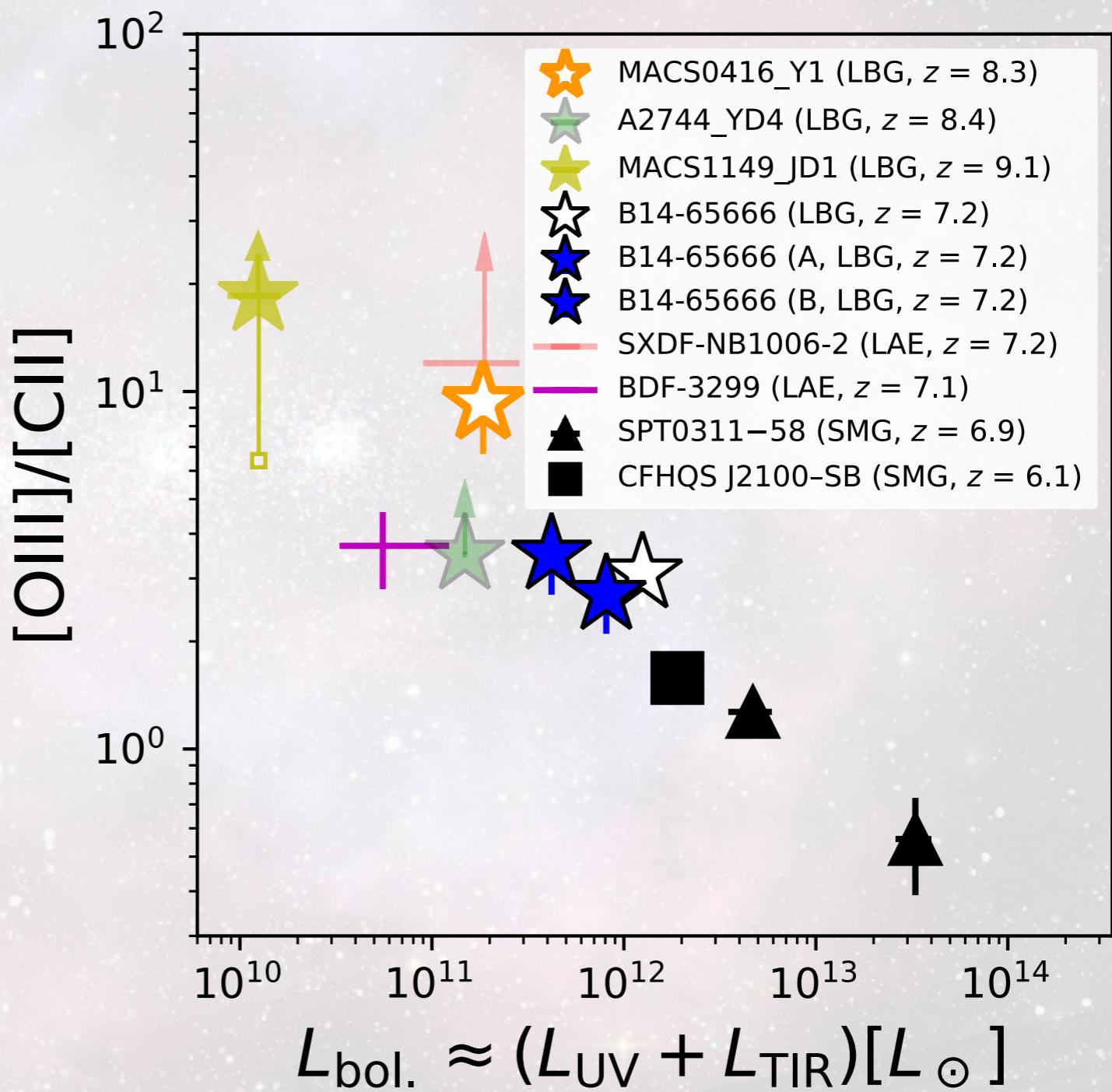
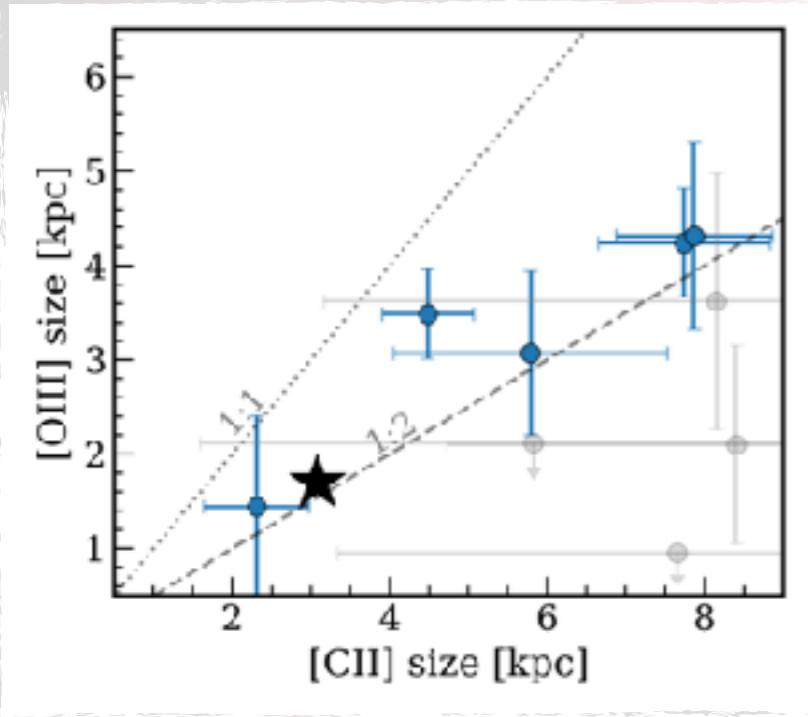
Bakx+2020



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High [OIII]/[CII] ratio suggests strong rad. fields

Carniani+20

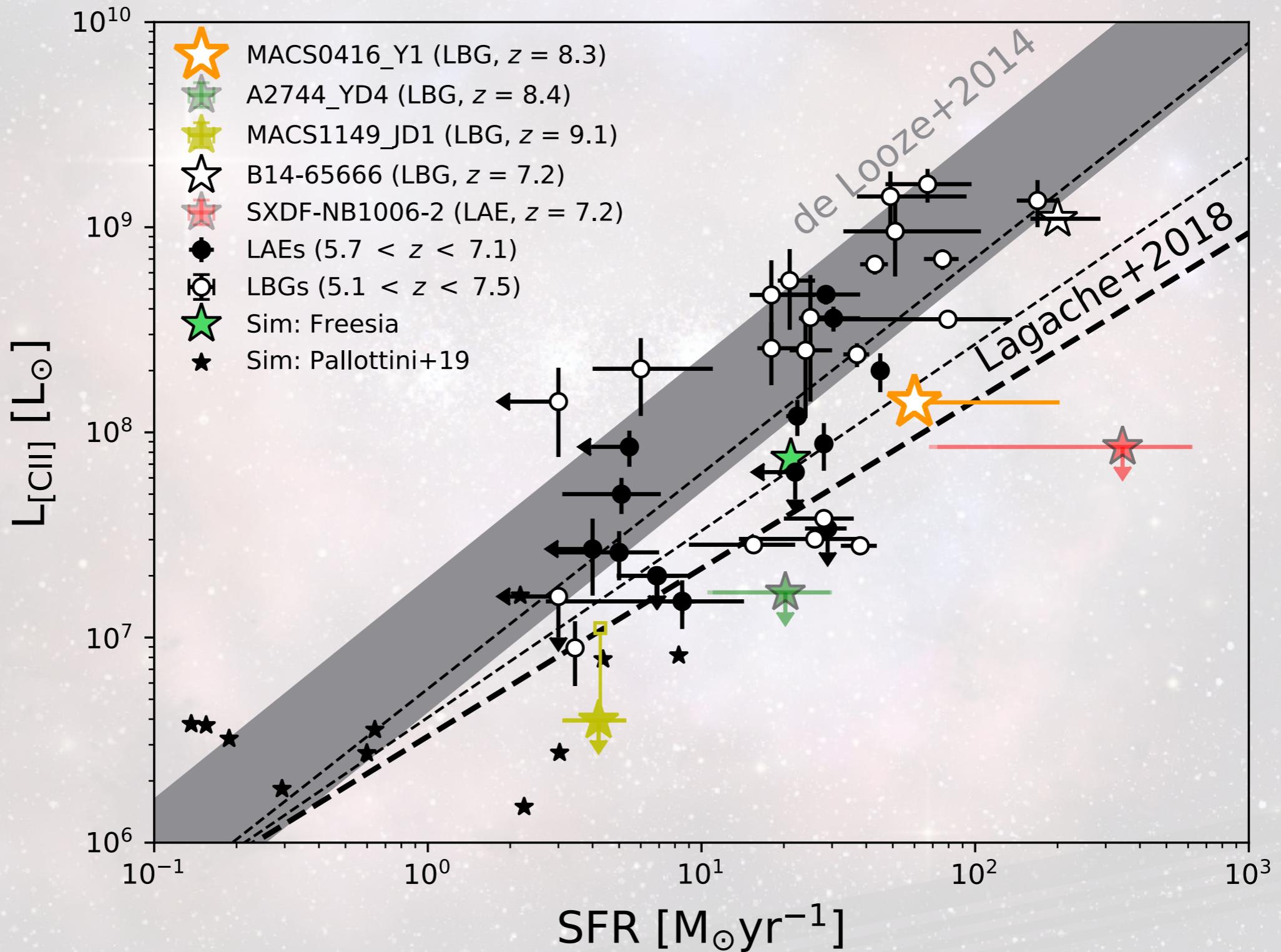


Today's talk:
Y. Harikane
Poster:
M. Hagimoto

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[CII] deficit at high redshift?

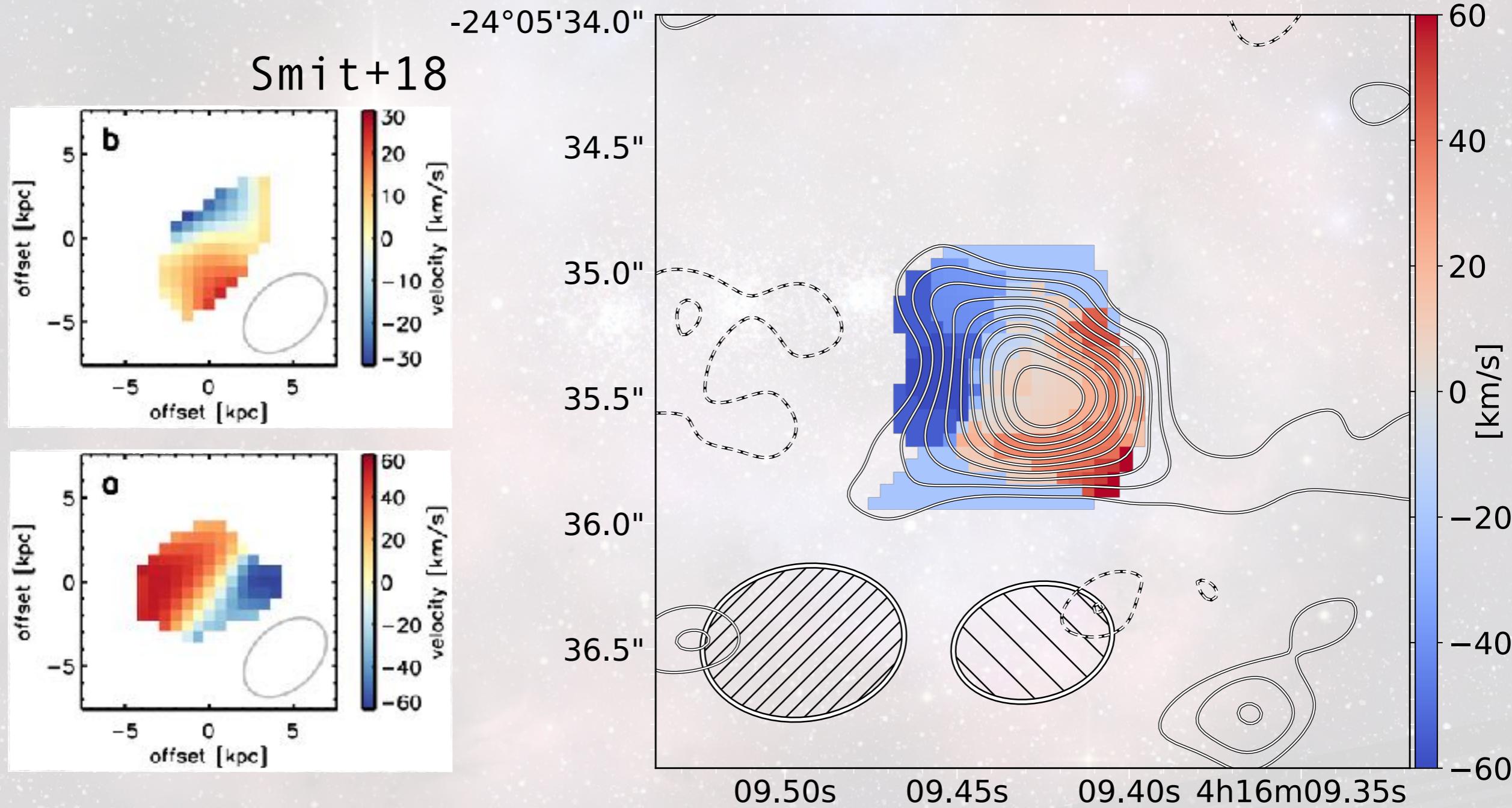
Tomorrow's talk:
Y. Khusanova



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Rotation at $z = 8.31$?

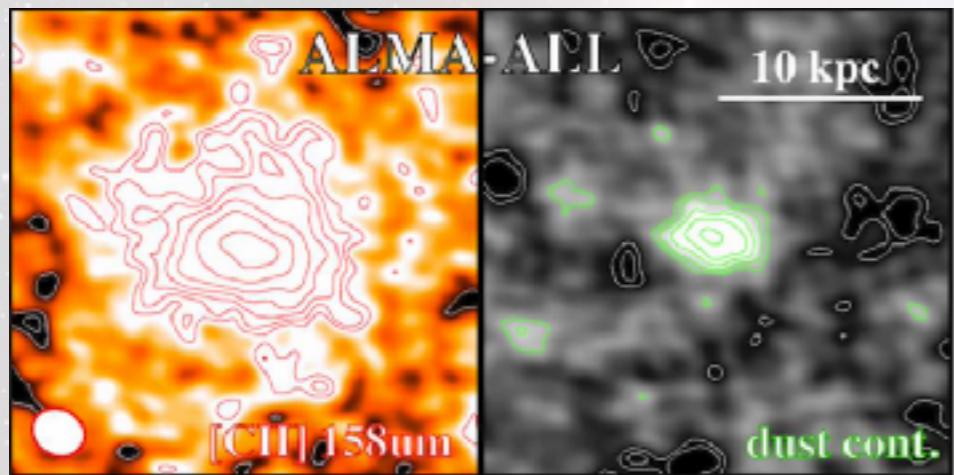
Tomorrow's talk:
G. Jones



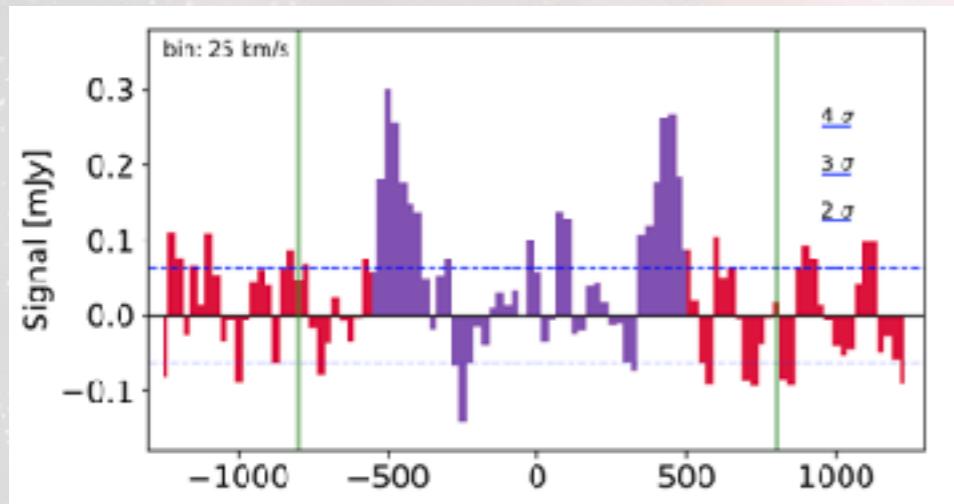
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Or an outflow at $z = 8.31$?

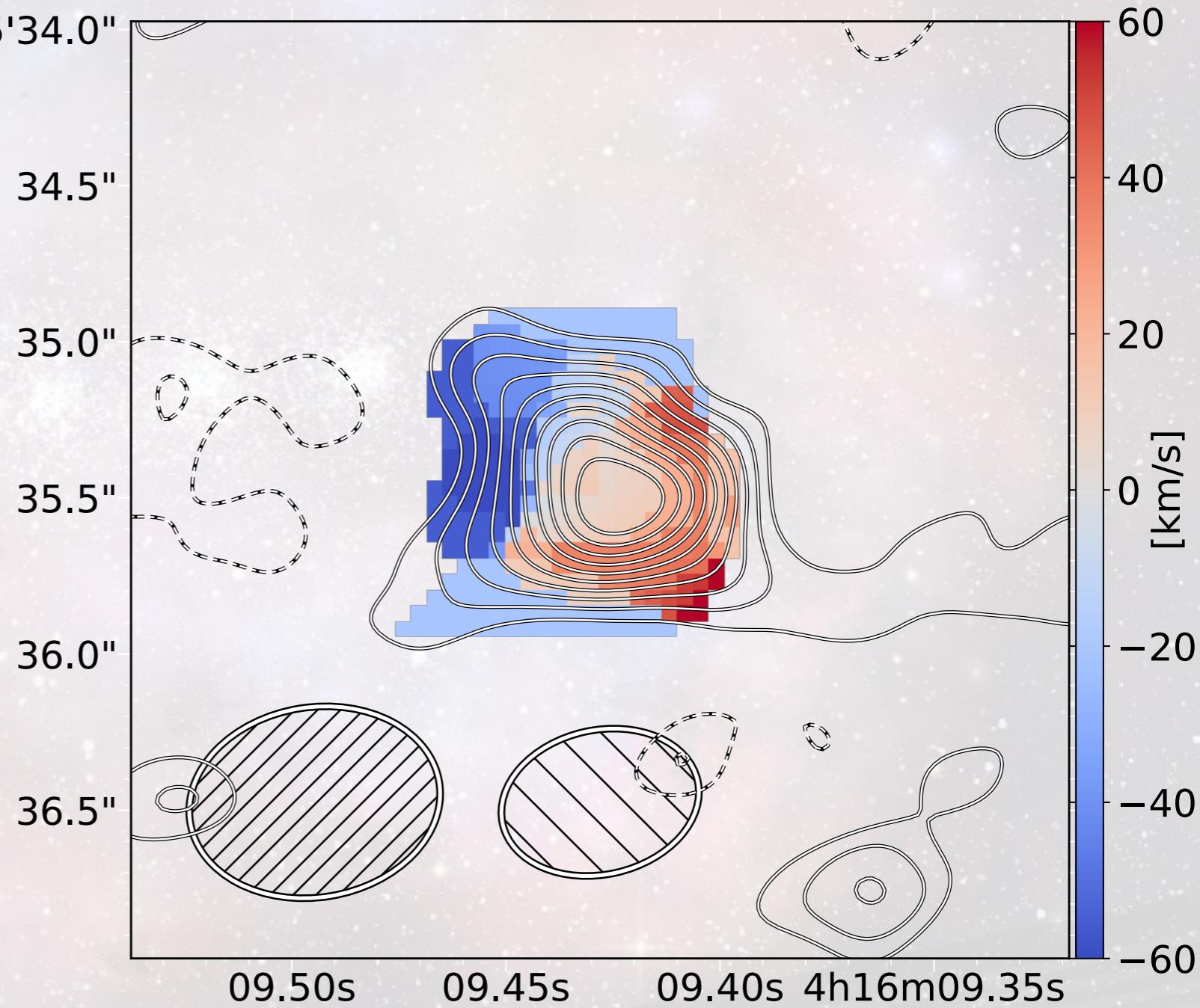
Today's talk:
Y. Sugahara
Tomorrow's talk:
S. Fujimoto



Fujimoto+19



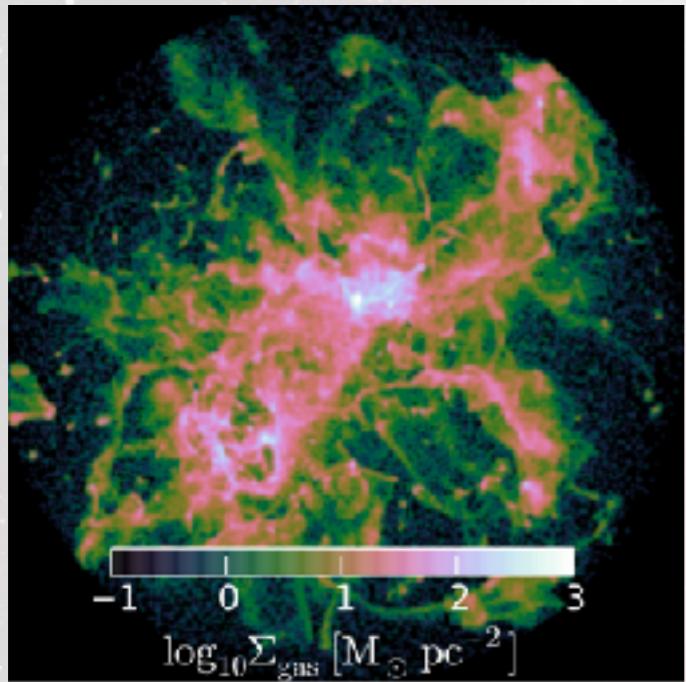
Ginolfi+19



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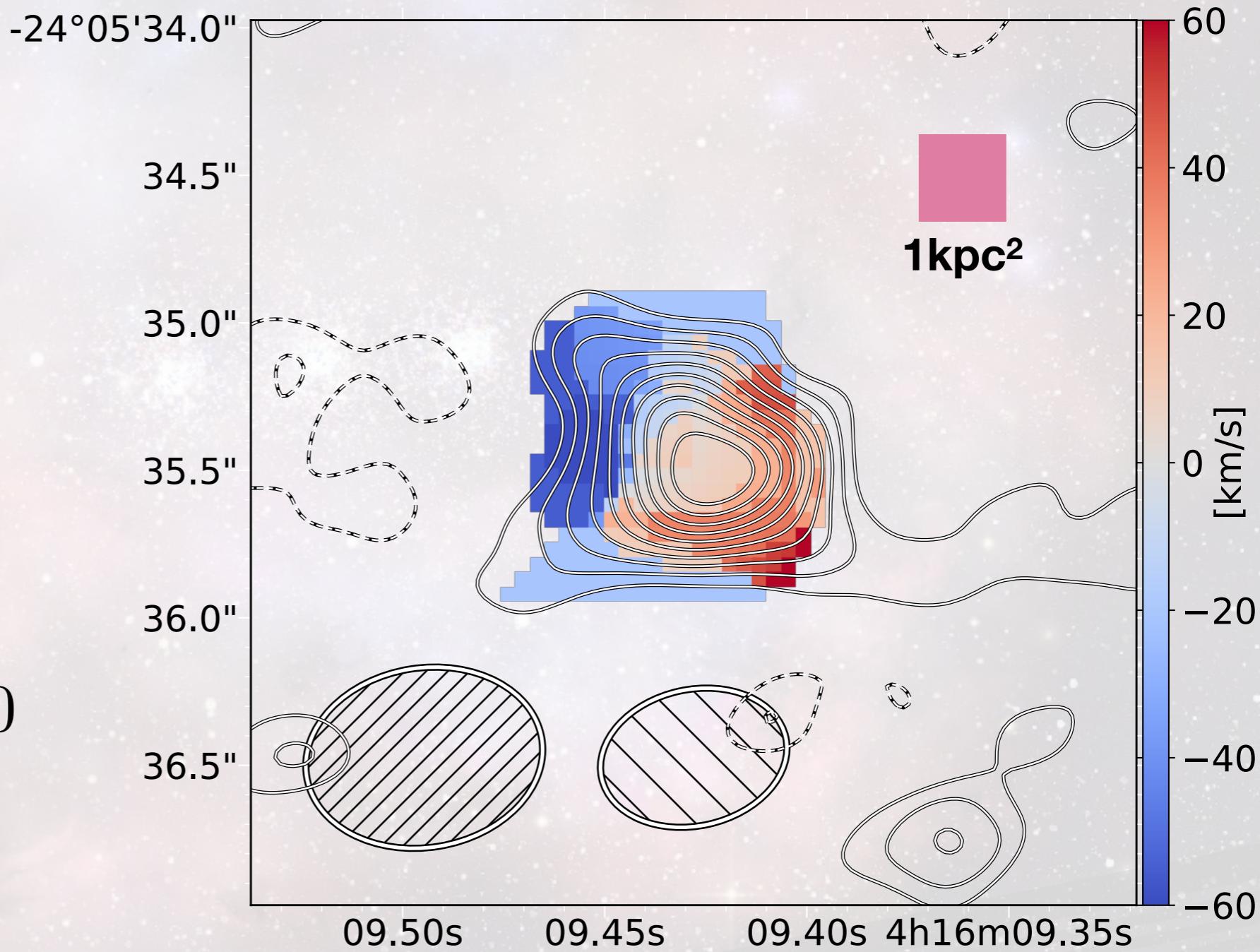
Shallow DM halo cannot keep the gas together

Today's talk:
Y. Sugahara
Tomorrow's talk:
S. Fujimoto



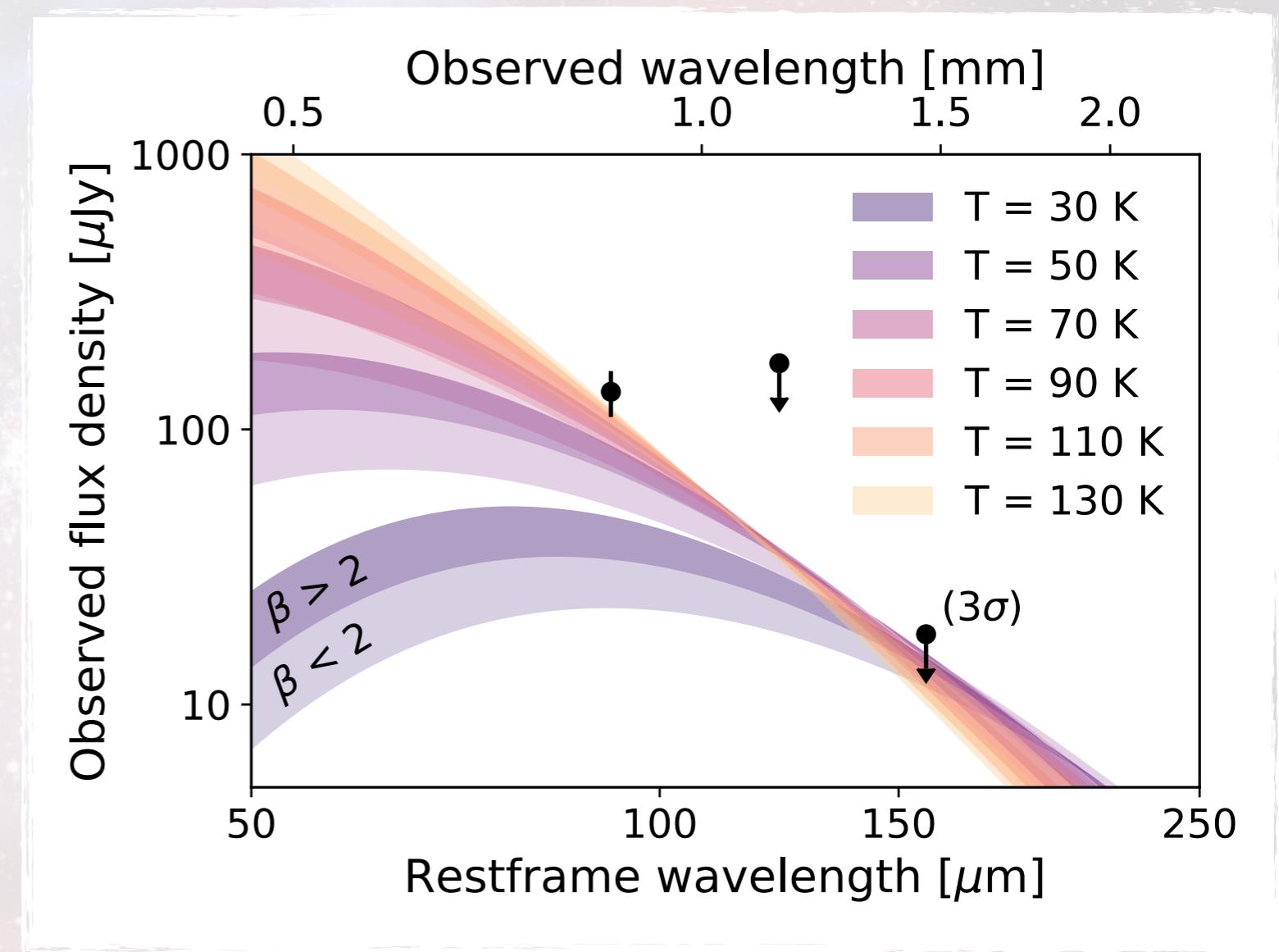
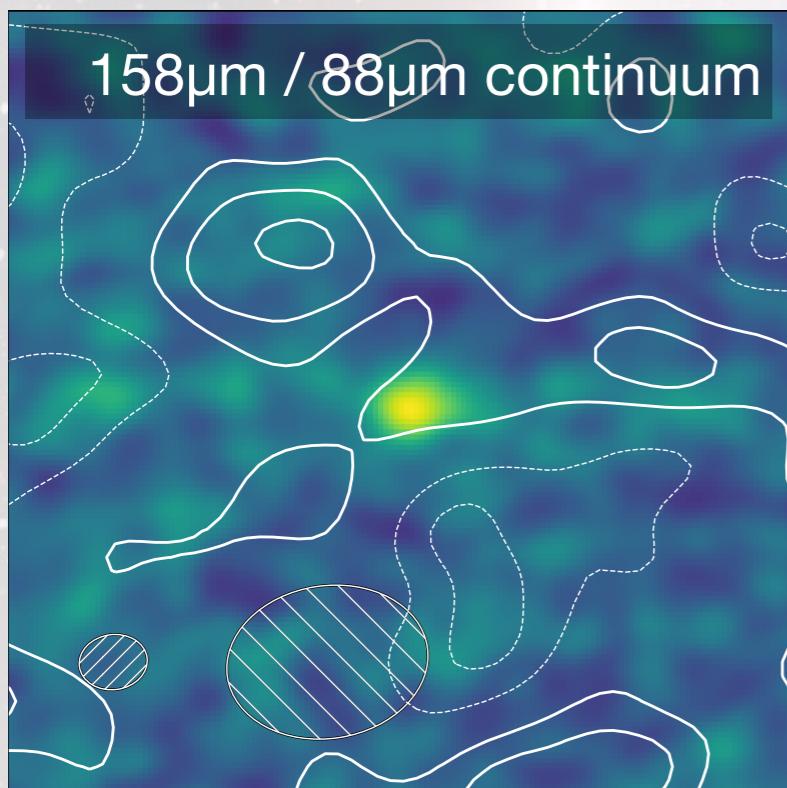
Arata+19

$$\frac{\dot{M}}{\text{SFR}} \sim 0.1 - 100$$



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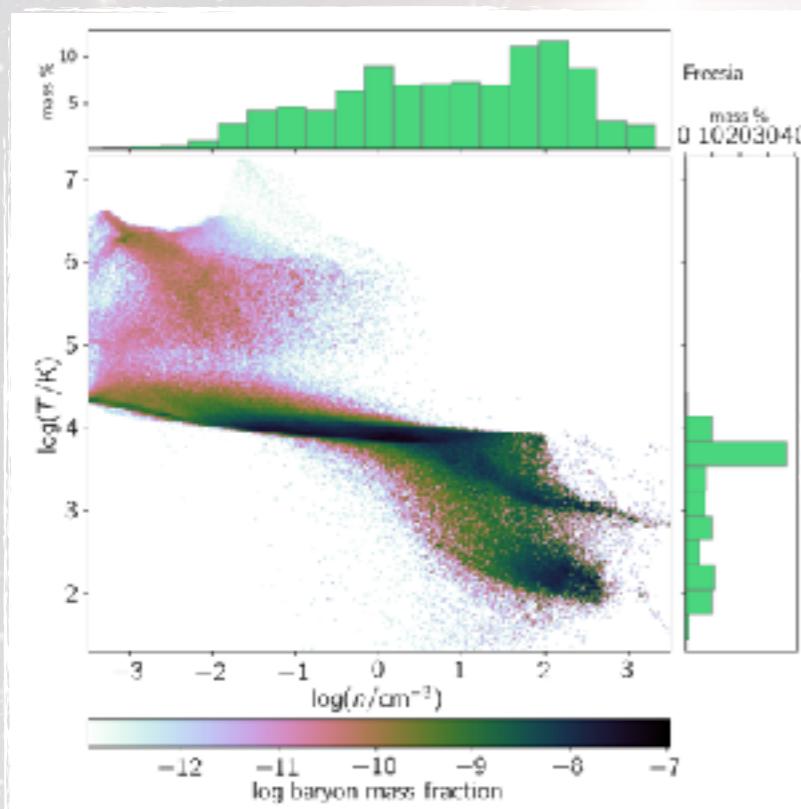
No detection at 158 μ m \therefore high dust temperatures



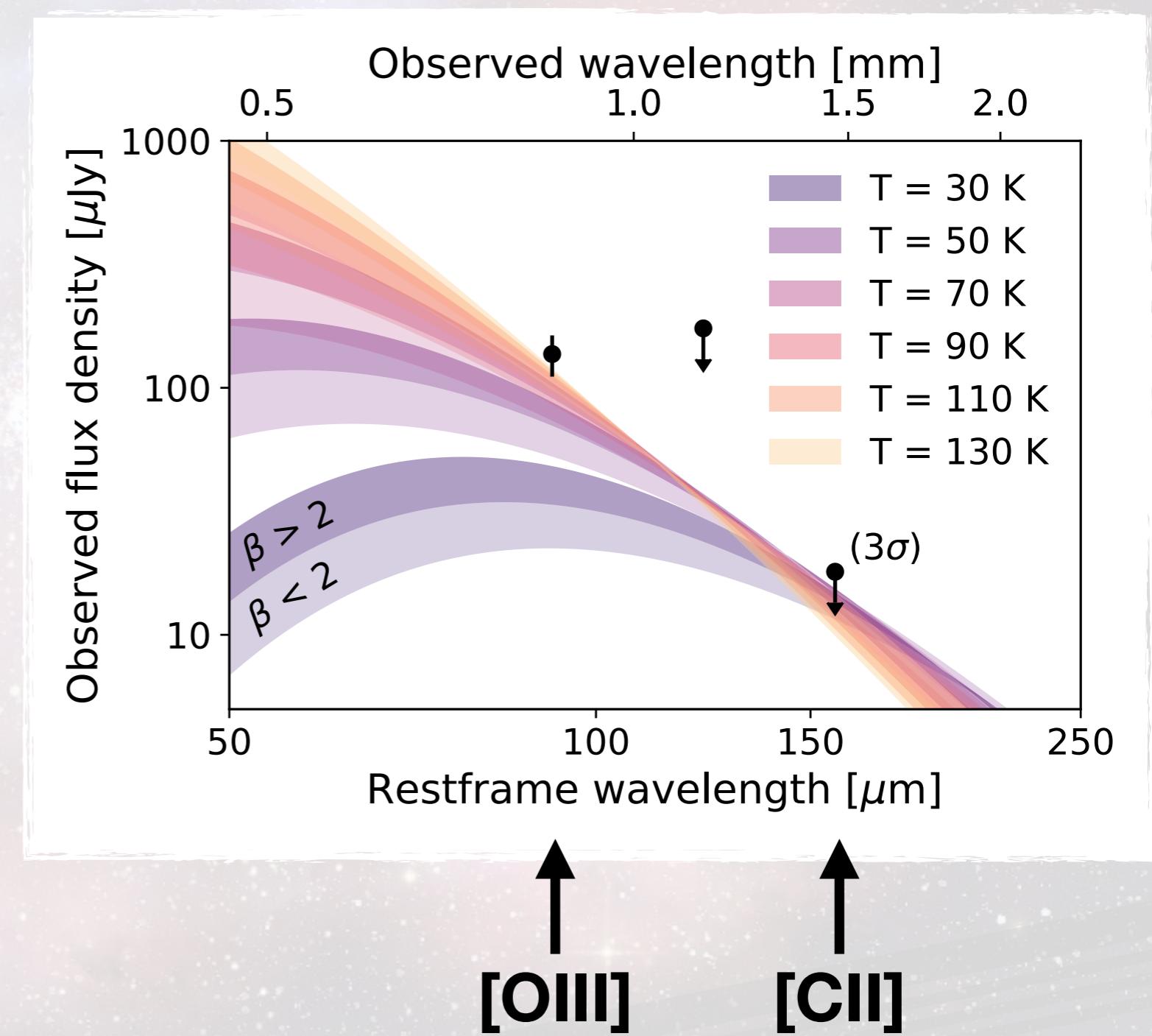
Tomorrow's talk:
L. Sommovigo

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High dust temperatures \therefore lower dust masses



Pallottini+19

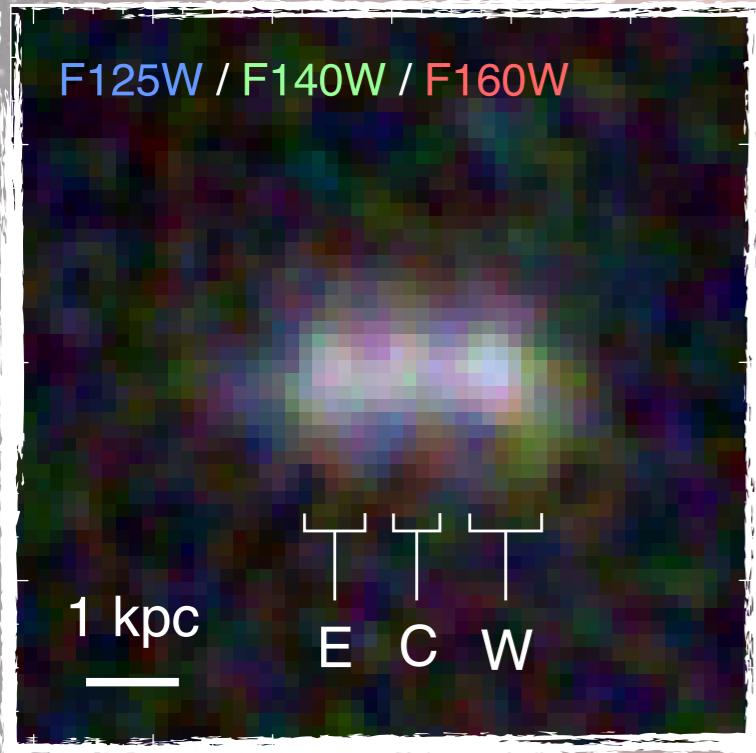


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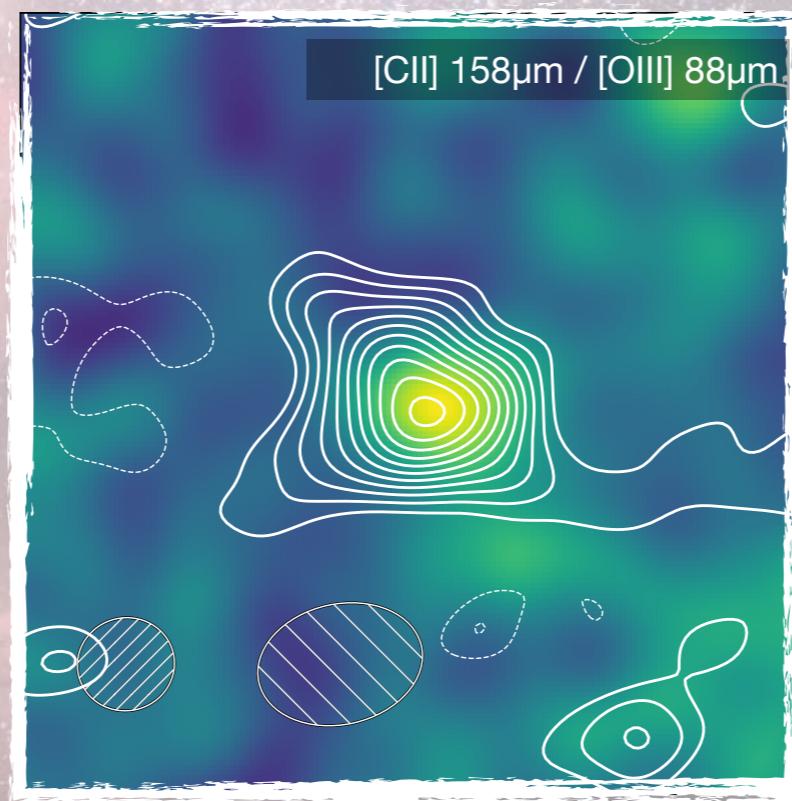
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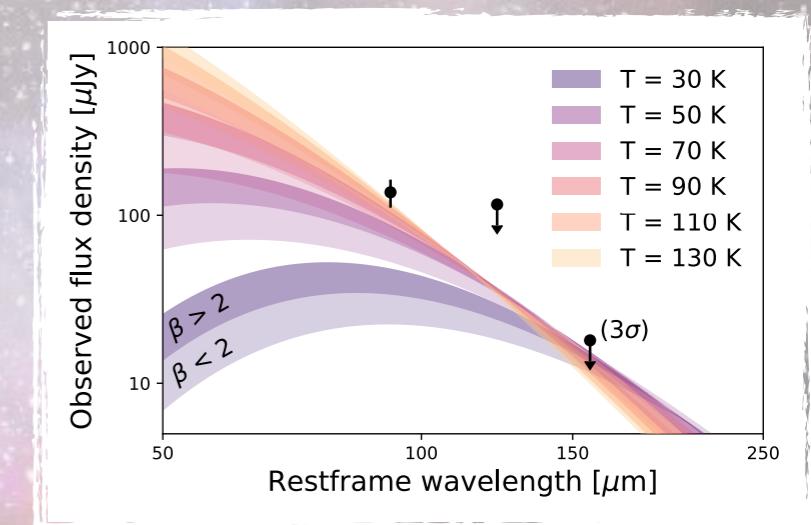
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