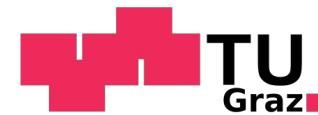


The cloudy climate of HATS-6b

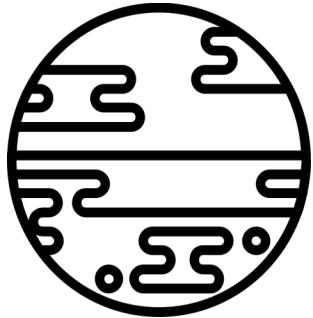
Sven Kiefer

N. Bach-Møller, D. Samra, D. A. Lewis, A. D. Schneider, F. Amido,
H. Lecoq Molinos, L. Decin, L. Carone, U. Jørgensen, Ch. Helling

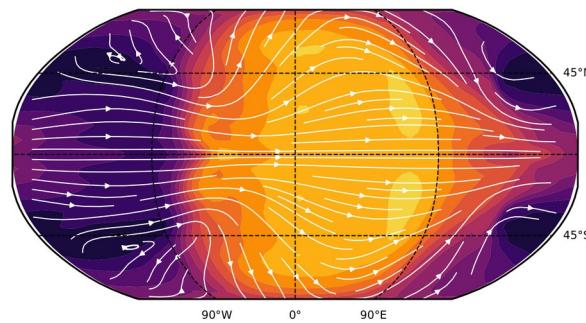


Overview

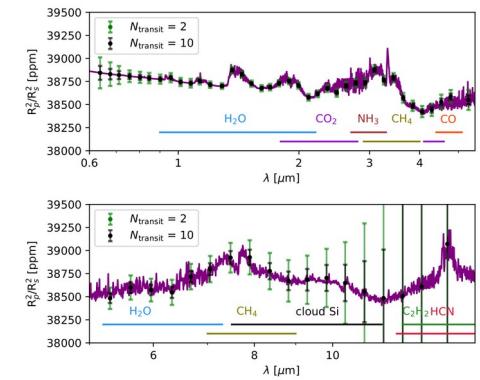
Why HATS-6b?



The cloudy-climate of
a warm Saturn



Observations

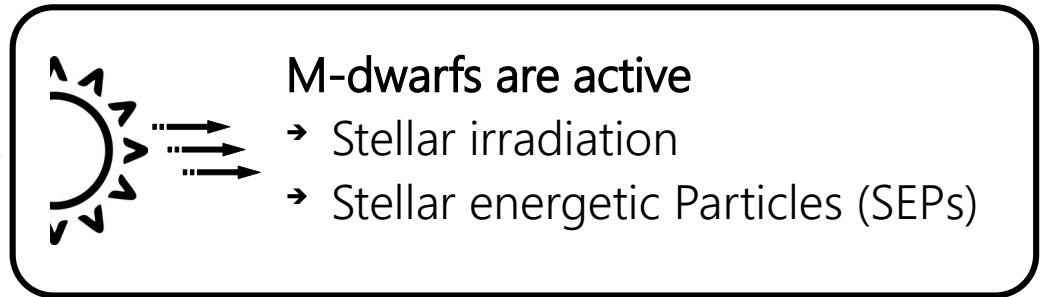


Why HATS-6b?

HATS-6 b	
Star:	
 0.57 M_{\odot}	
 0.57 R_{\odot}	
 3724 K	
 M-dwarf	
Planet:	
 0.319 M_J	
 0.998 R_J	
 700 K	
 Warm Saturn	

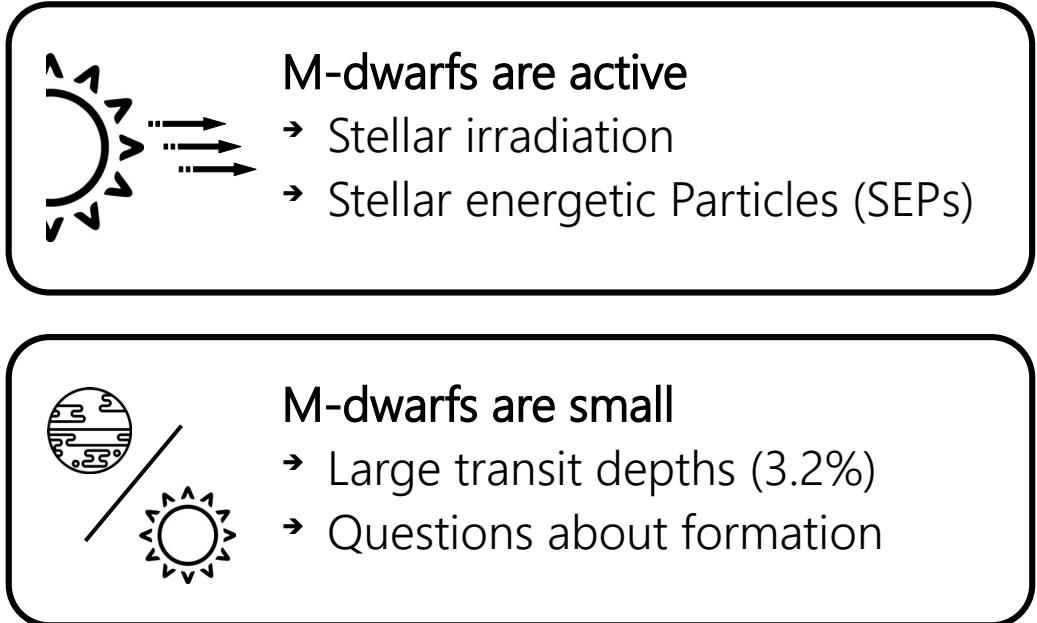
Why HATS-6b?

HATS-6 b	
Star:	
■ Mass: $0.57 M_{\odot}$	
○ Radius: $0.57 R_{\odot}$	
🌡 Temperature: 3724 K	
≡ Type: M-dwarf	
Planet:	
■ Mass: $0.319 M_J$	
○ Radius: $0.998 R_J$	
🌡 Temperature: 700 K	
≡ Type: Warm Saturn	



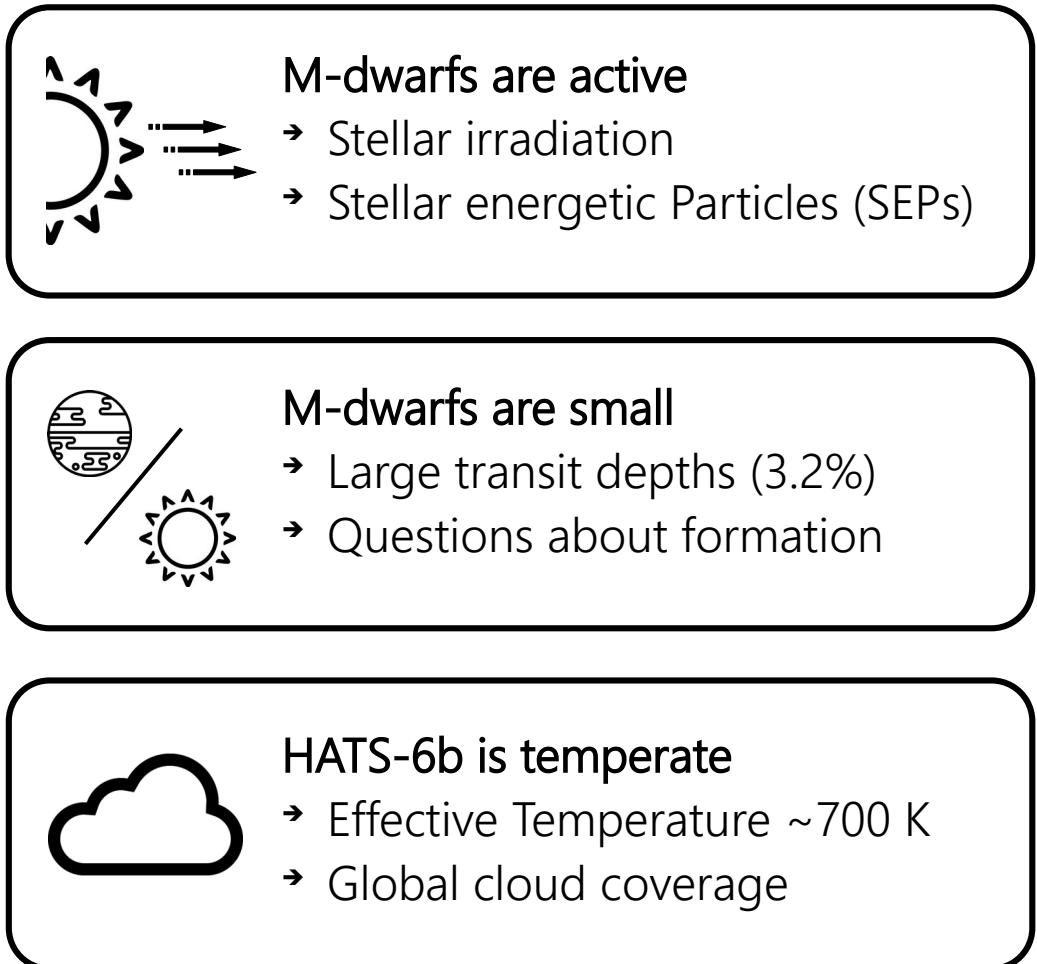
Why HATS-6b?

HATS-6 b	
Star:	
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 3724 K	
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Planet:	
 0.319 M_J	
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 700 K	
 Warm Saturn	

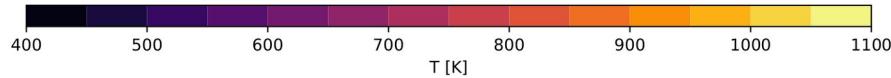


Why HATS-6b?

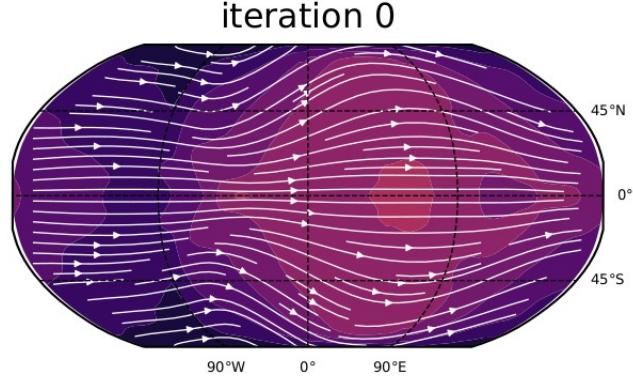
HATS-6 b	
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 0.998 R_J	
 700 K	
 Warm Saturn	



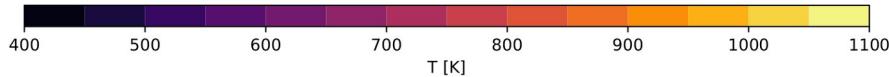
Clouds in 3D



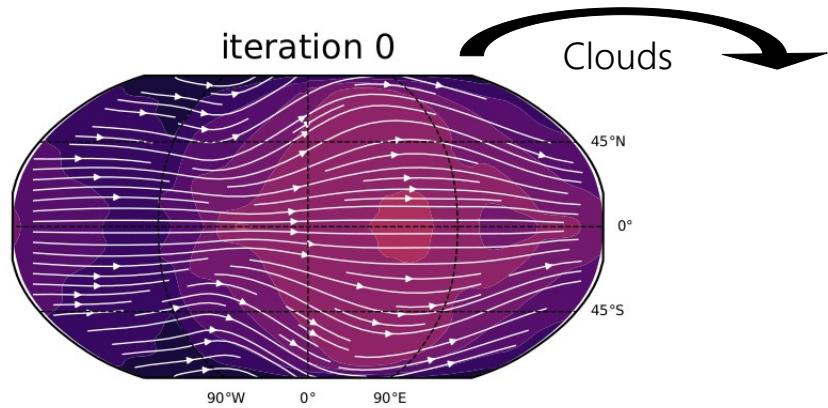
10^{-3} bar



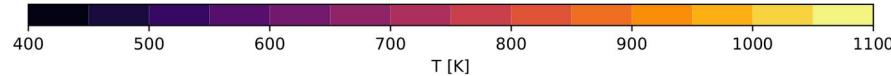
Clouds in 3D



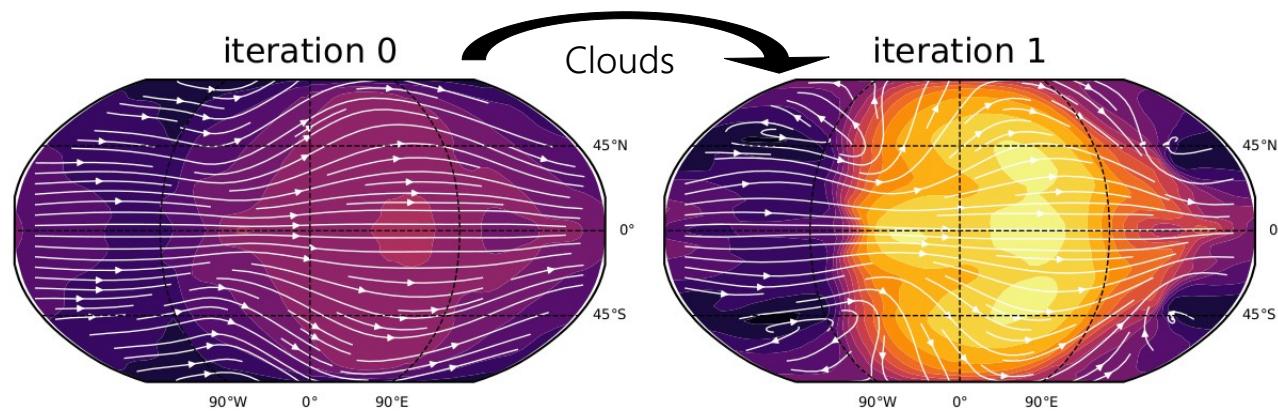
10^{-3} bar



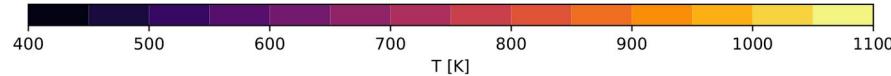
Clouds in 3D



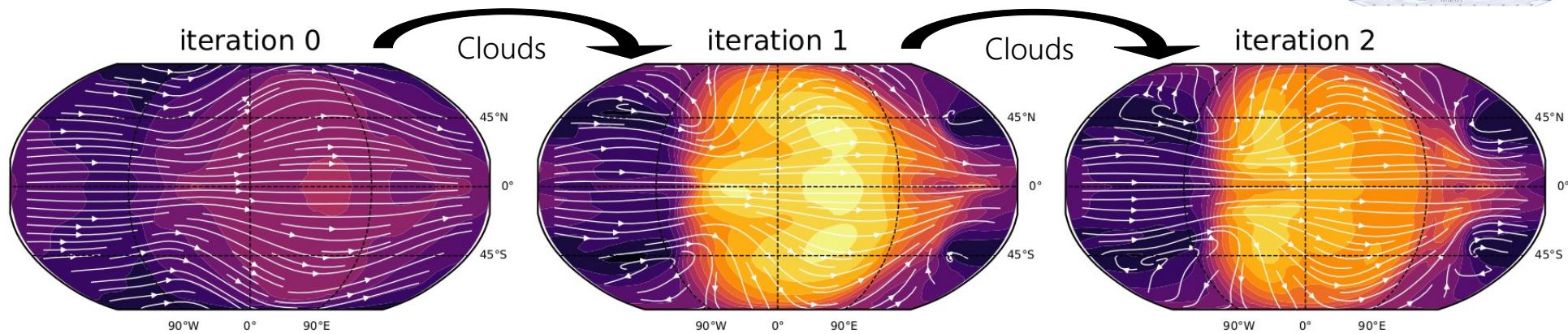
10^{-3} bar



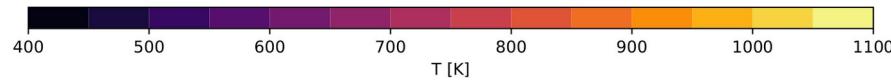
Clouds in 3D



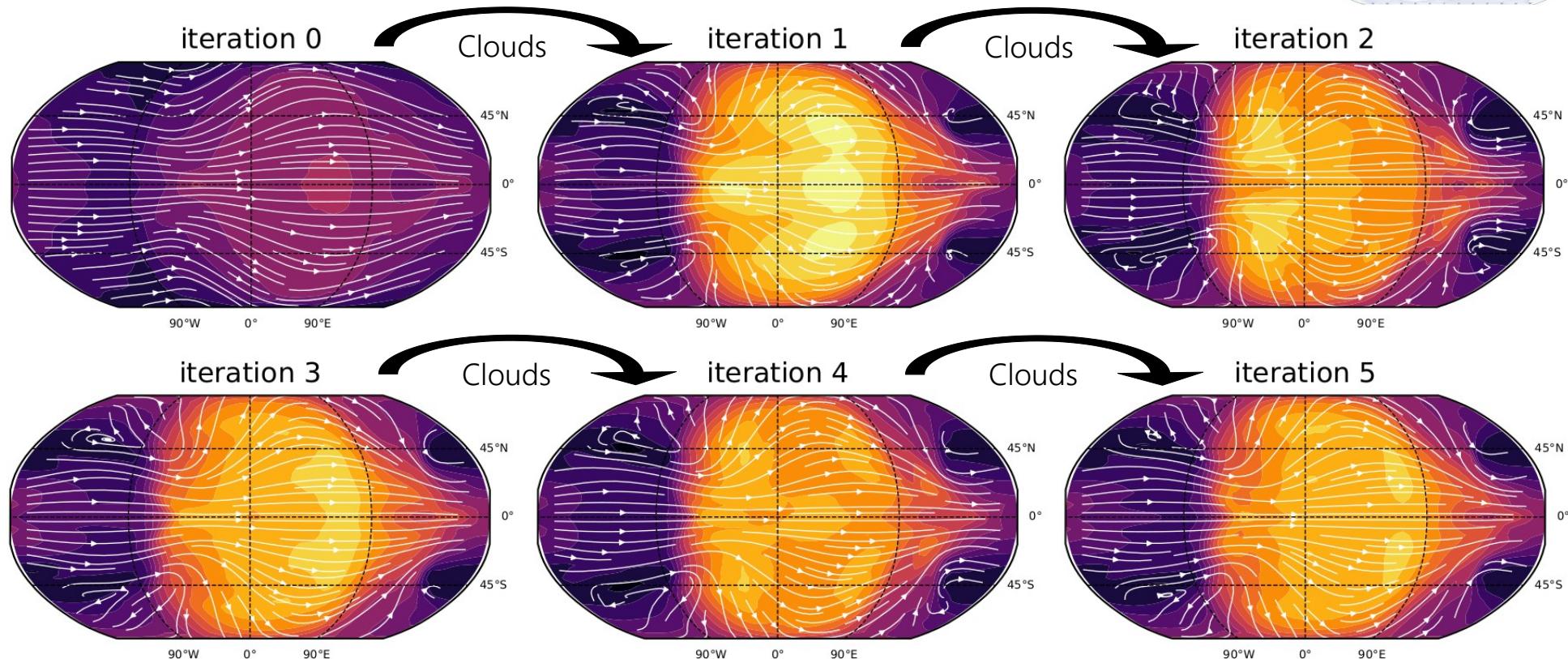
10^{-3} bar



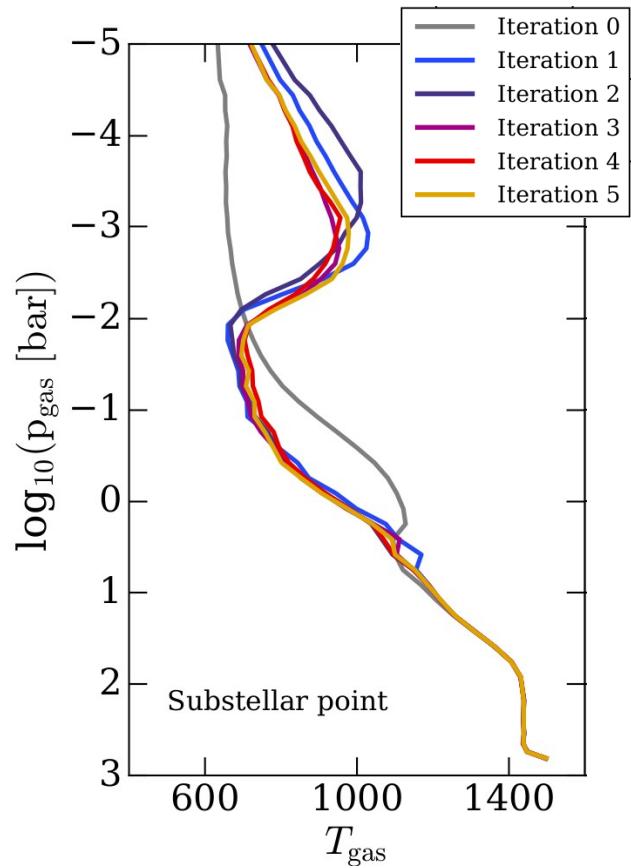
Clouds in 3D



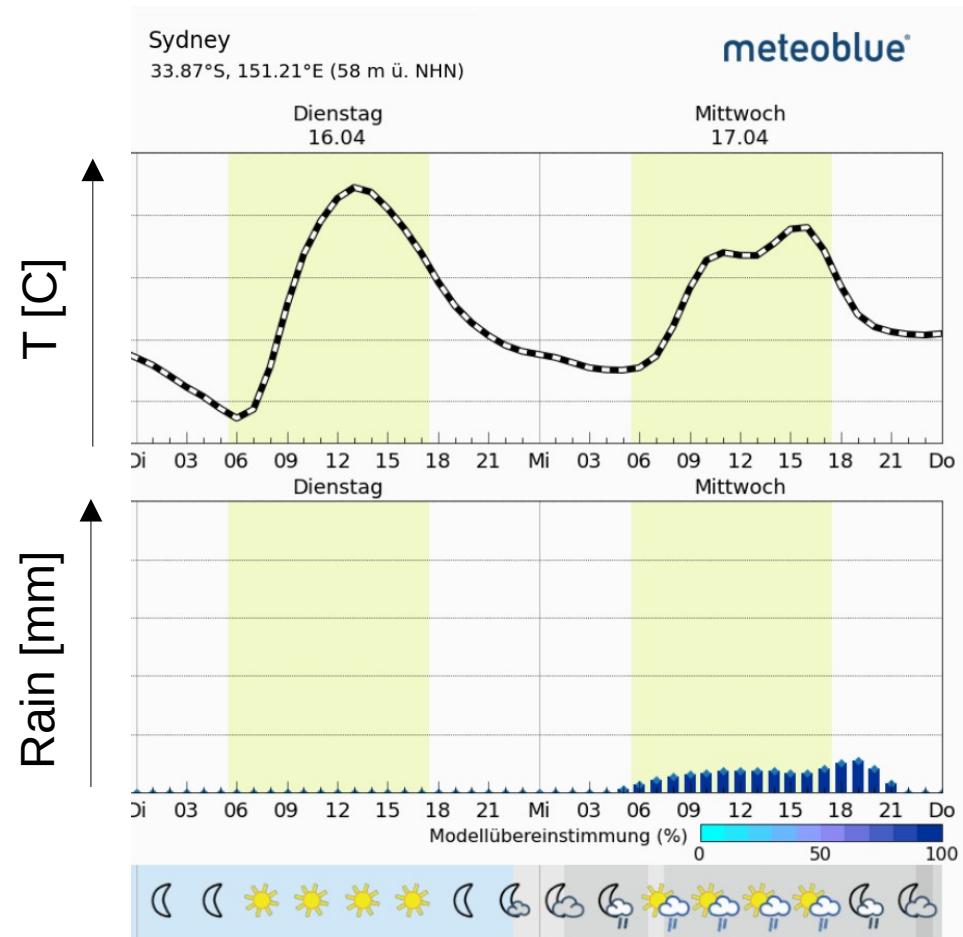
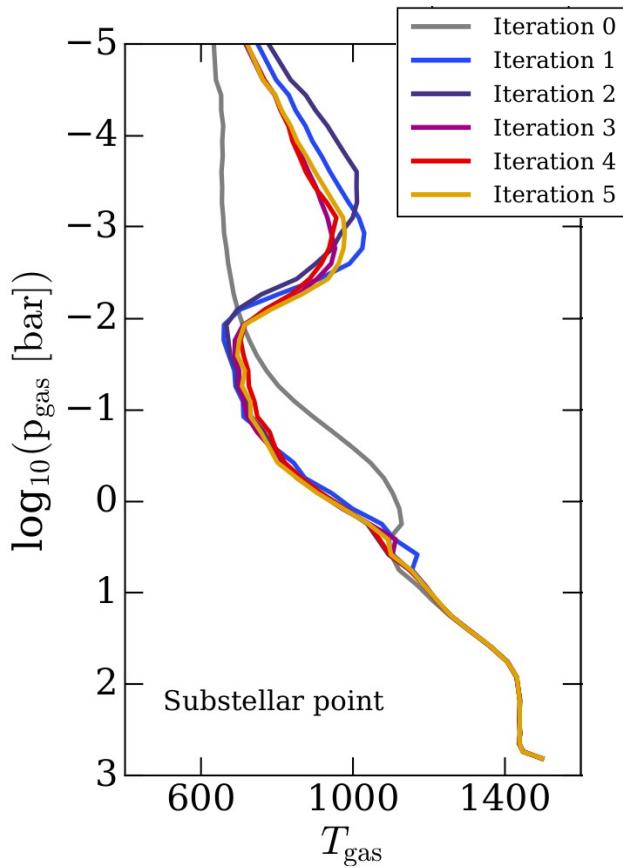
10^{-3} bar



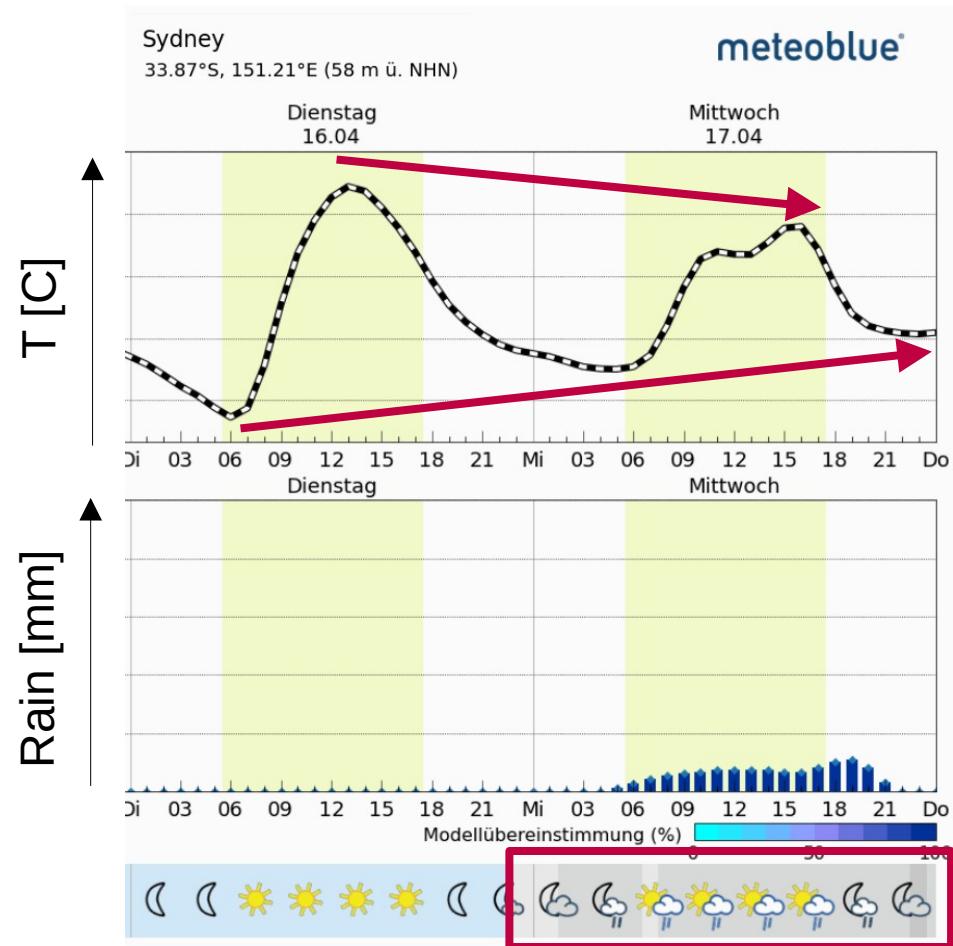
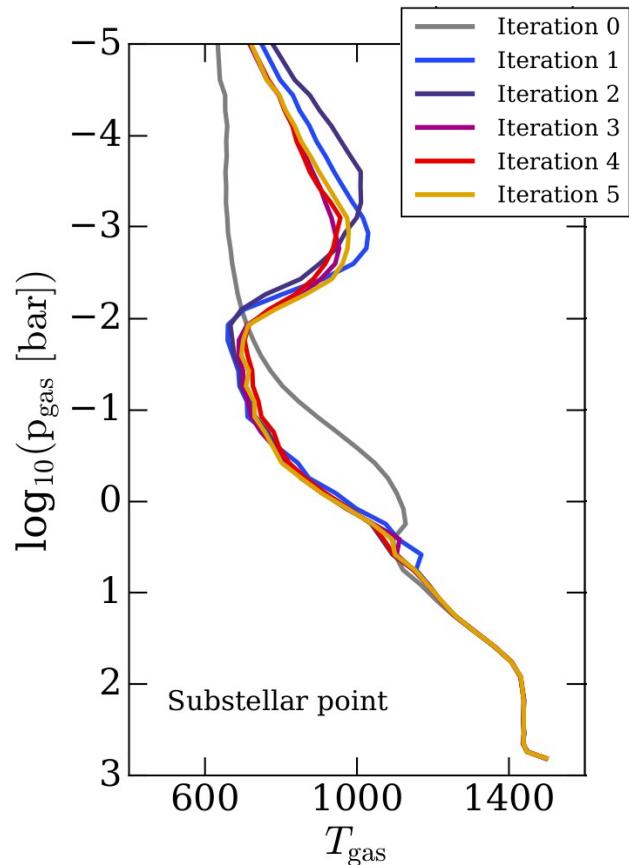
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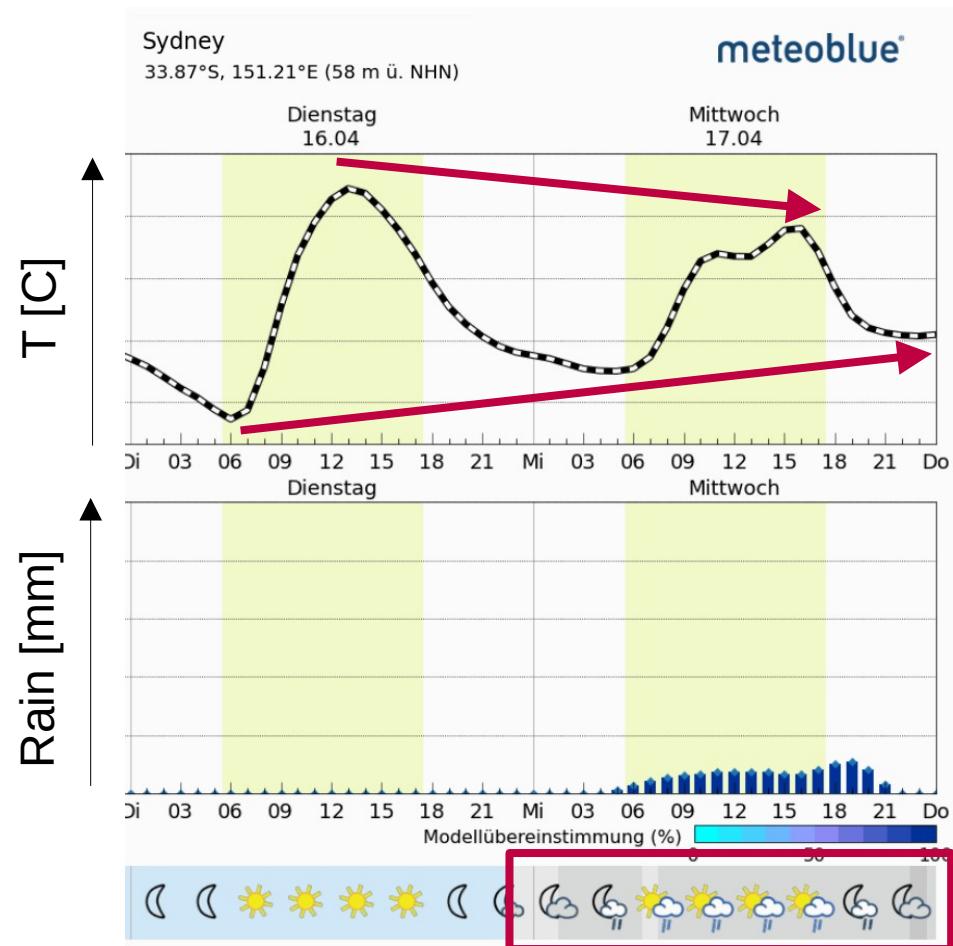
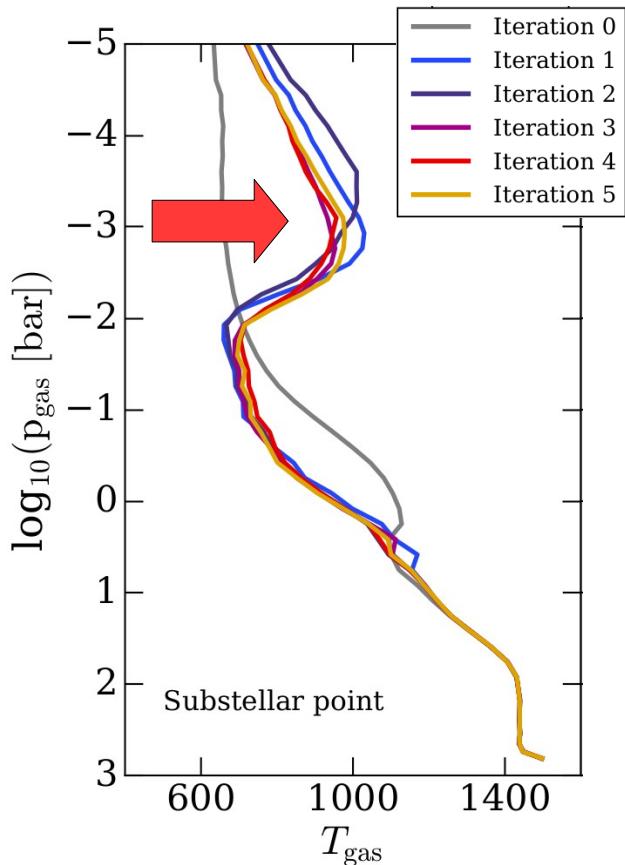
Clouds in 3D



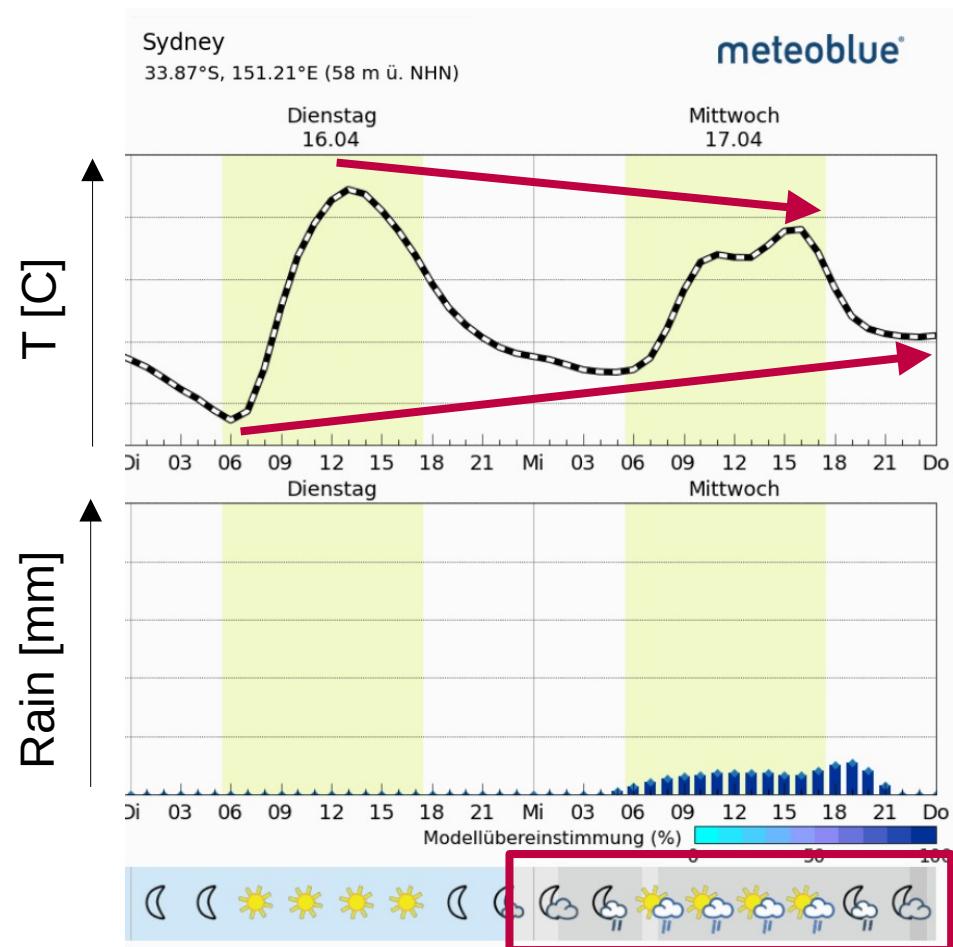
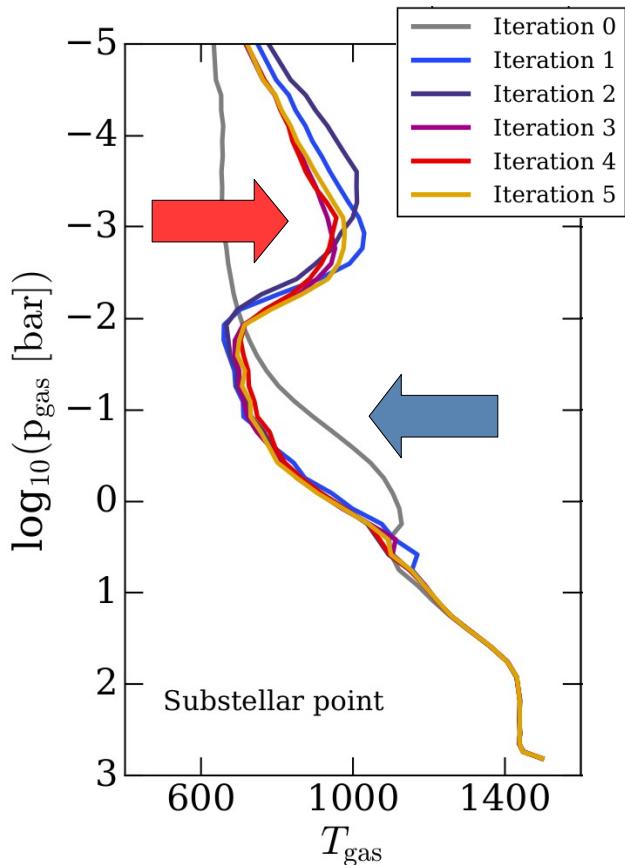
Clouds in 3D



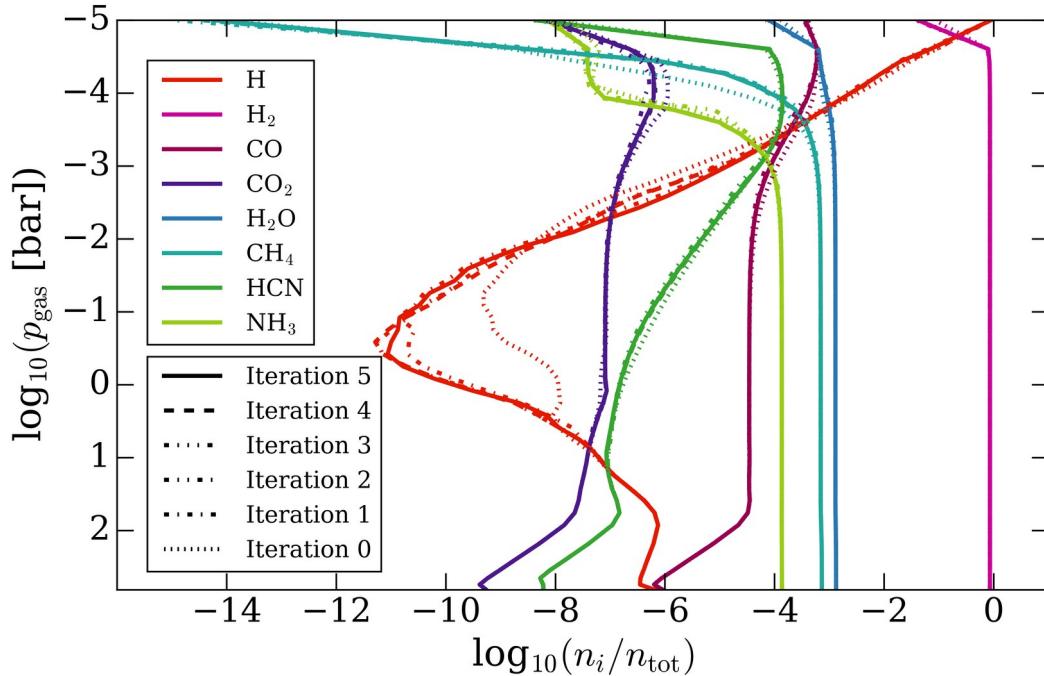
Clouds in 3D



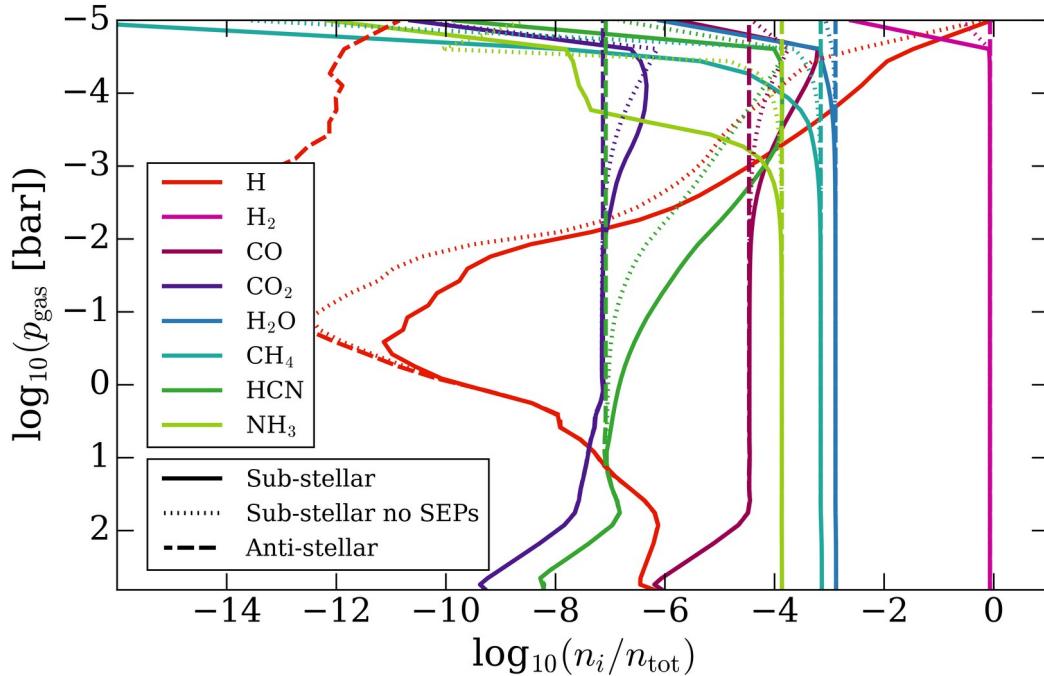
Clouds in 3D



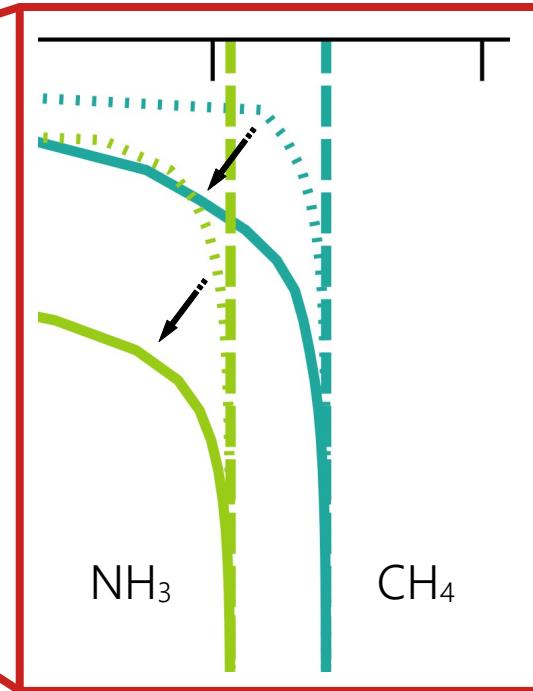
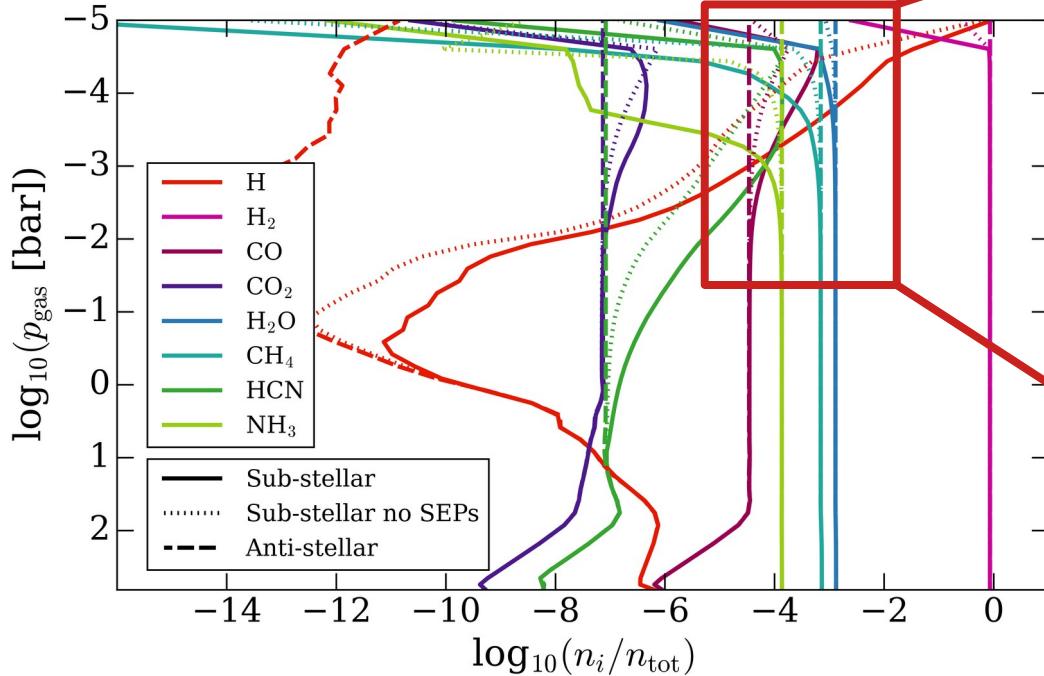
Chemistry



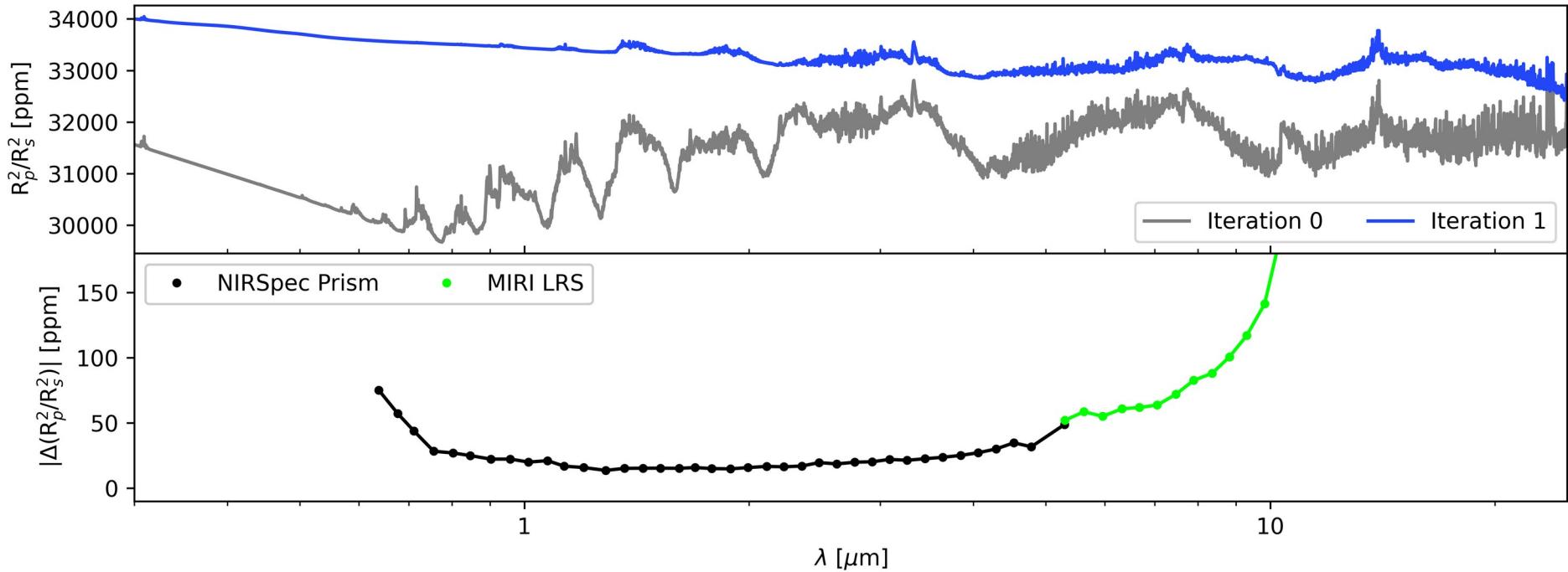
Chemistry



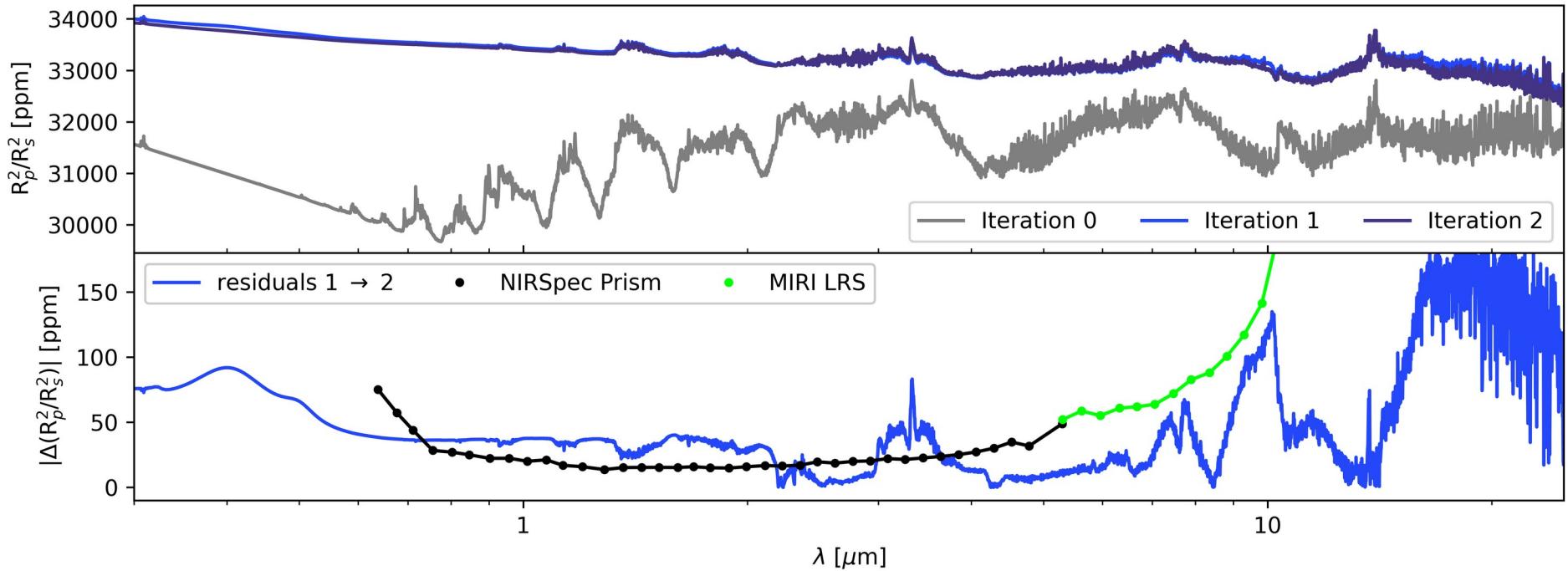
Chemistry



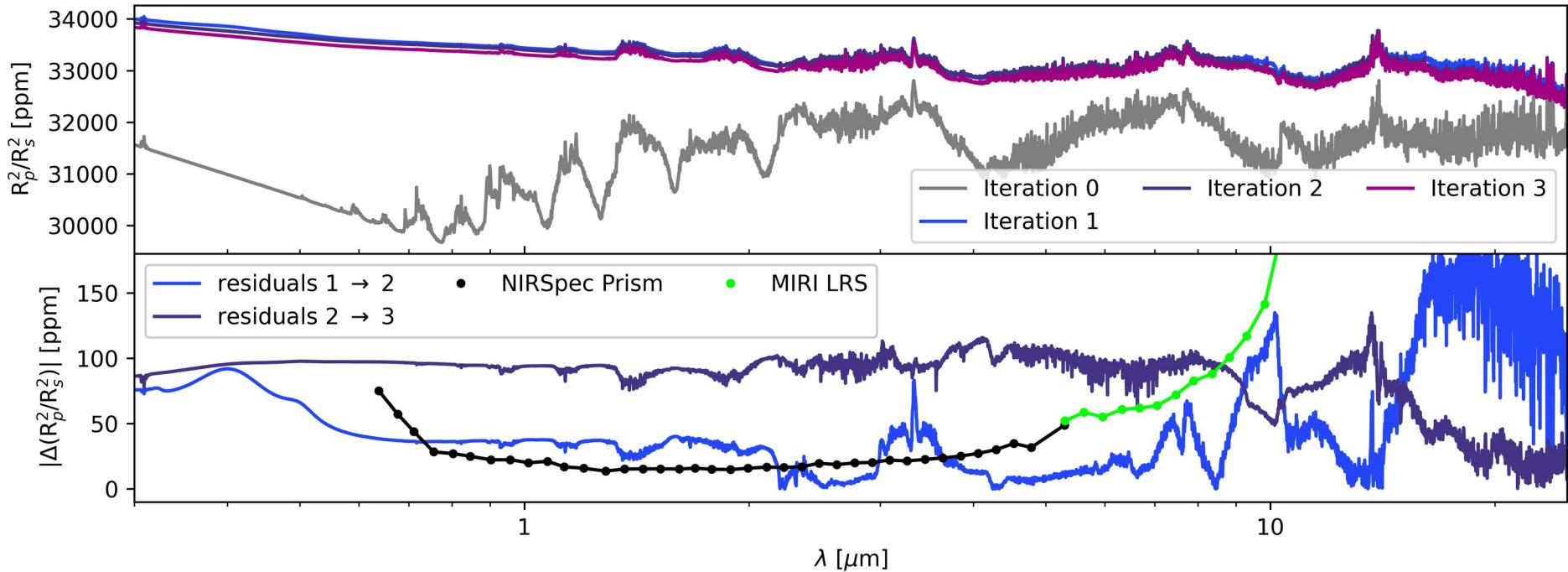
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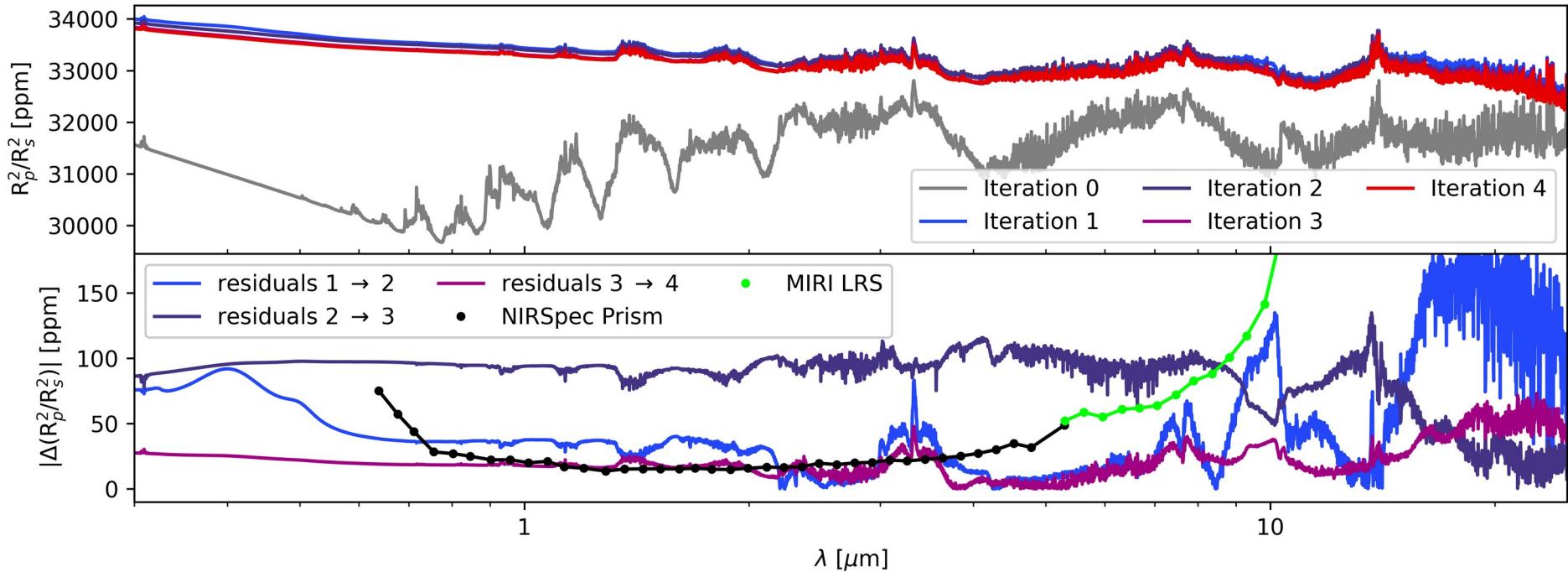
Is it observable?



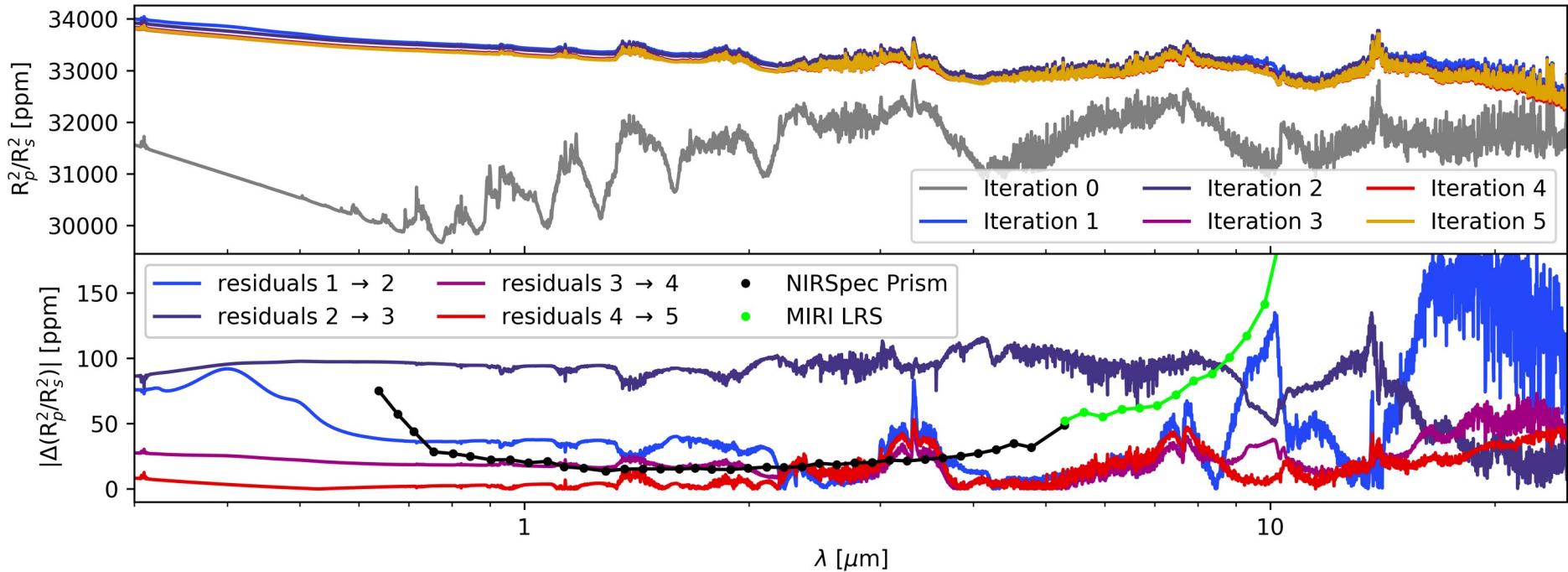
Is it observable?



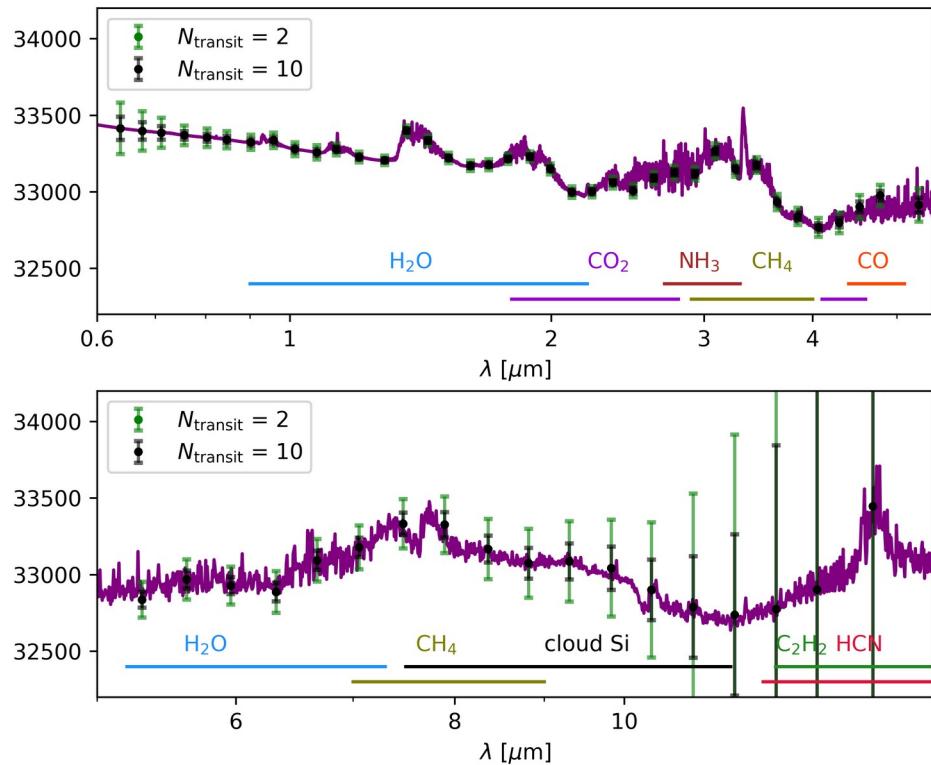
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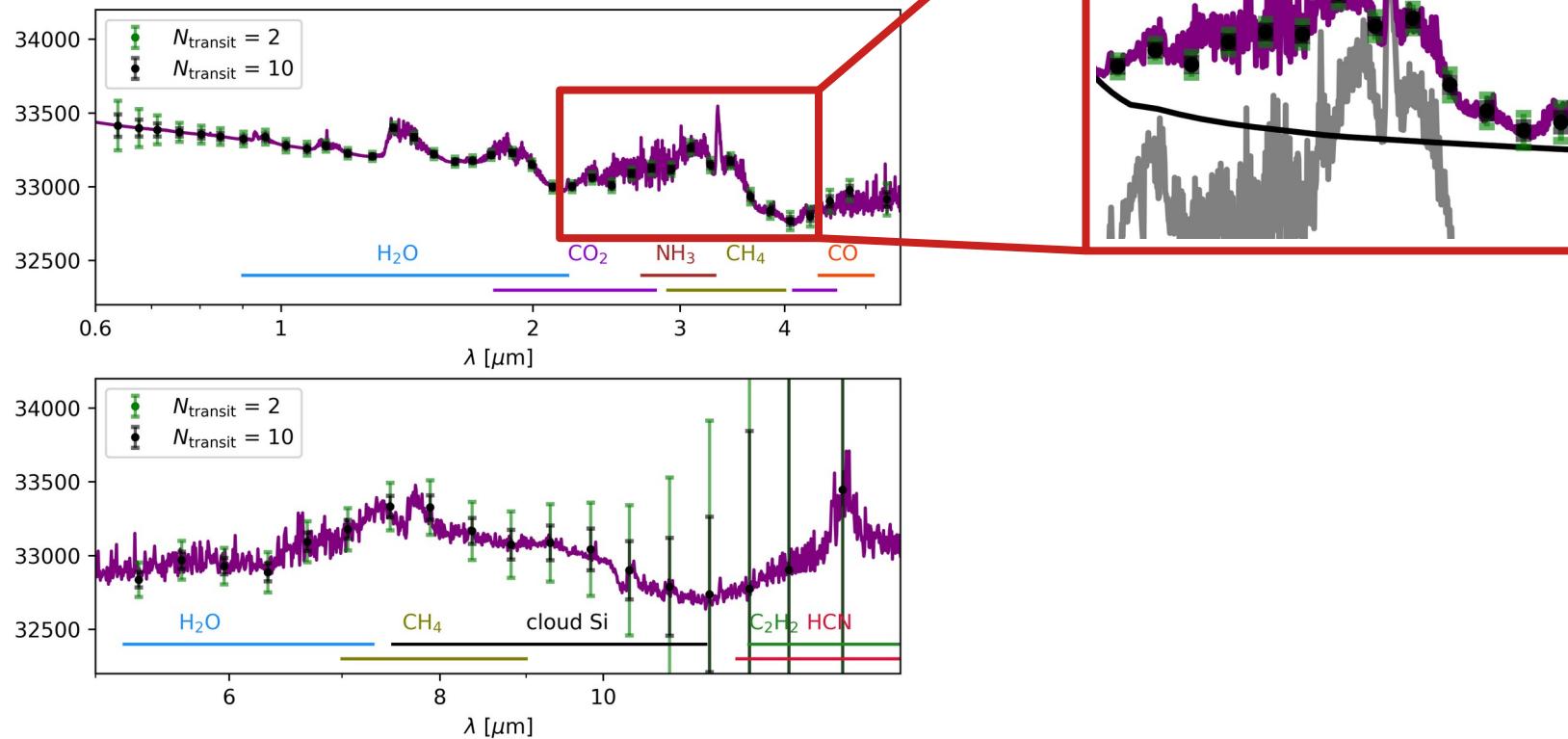
Is it observable?



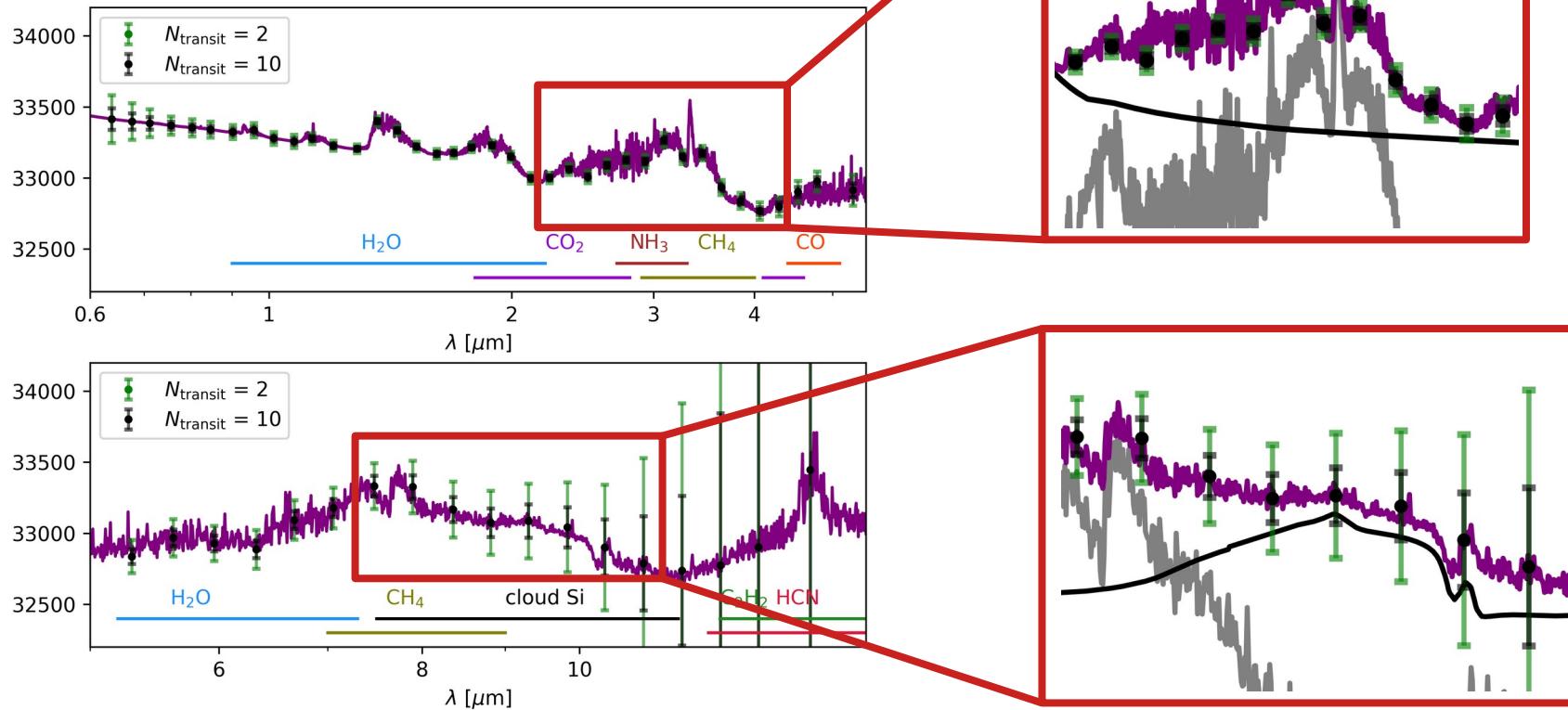
Observing HATS-6b



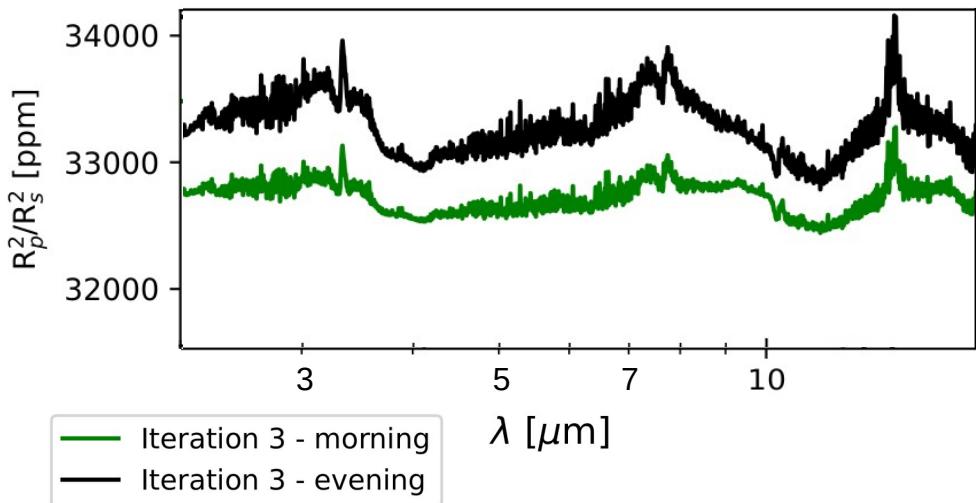
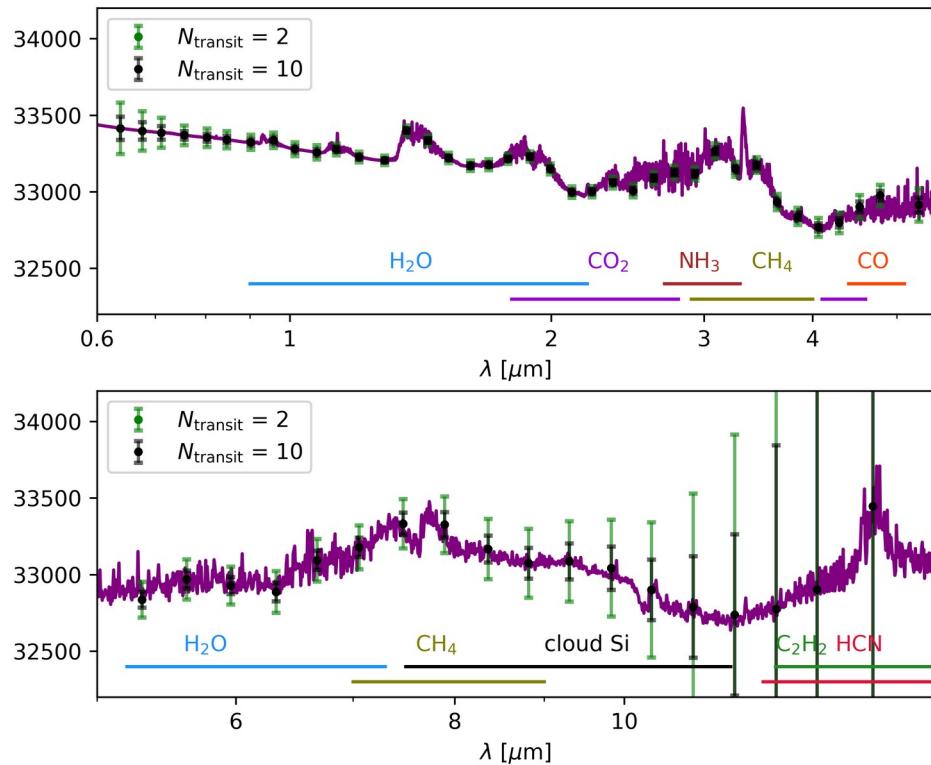
Observing HATS-6b



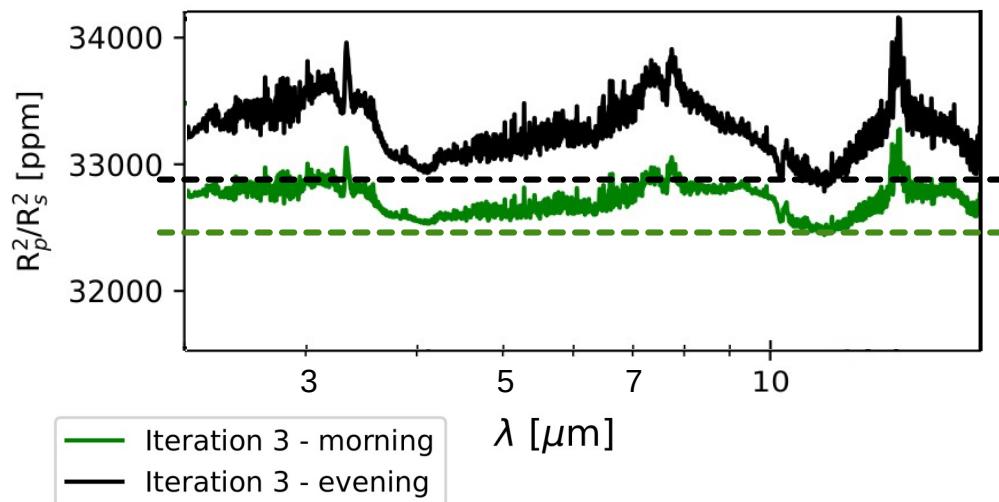
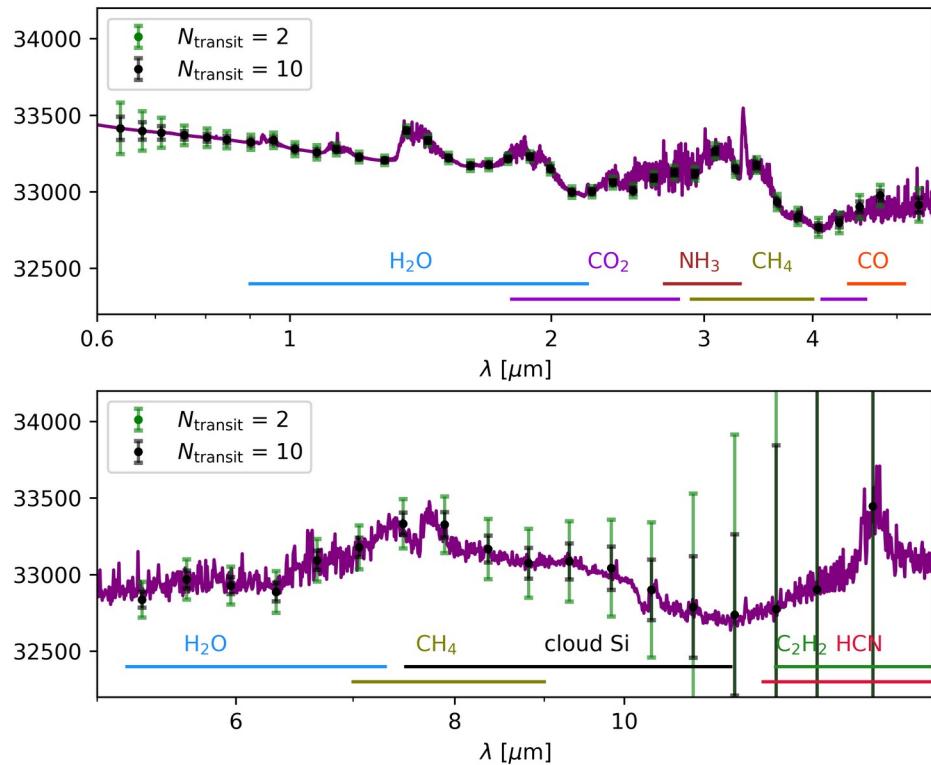
Observing HATS-6b



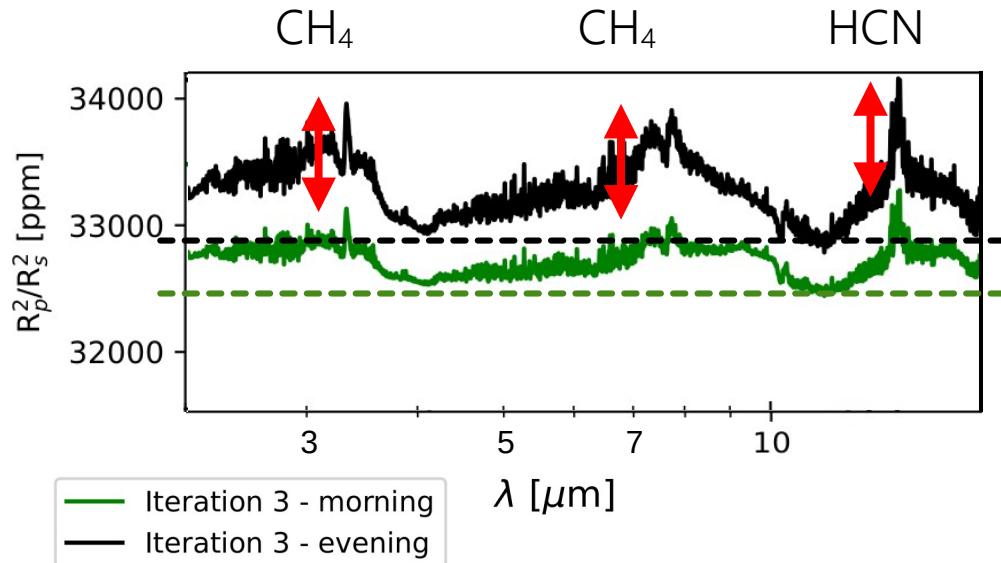
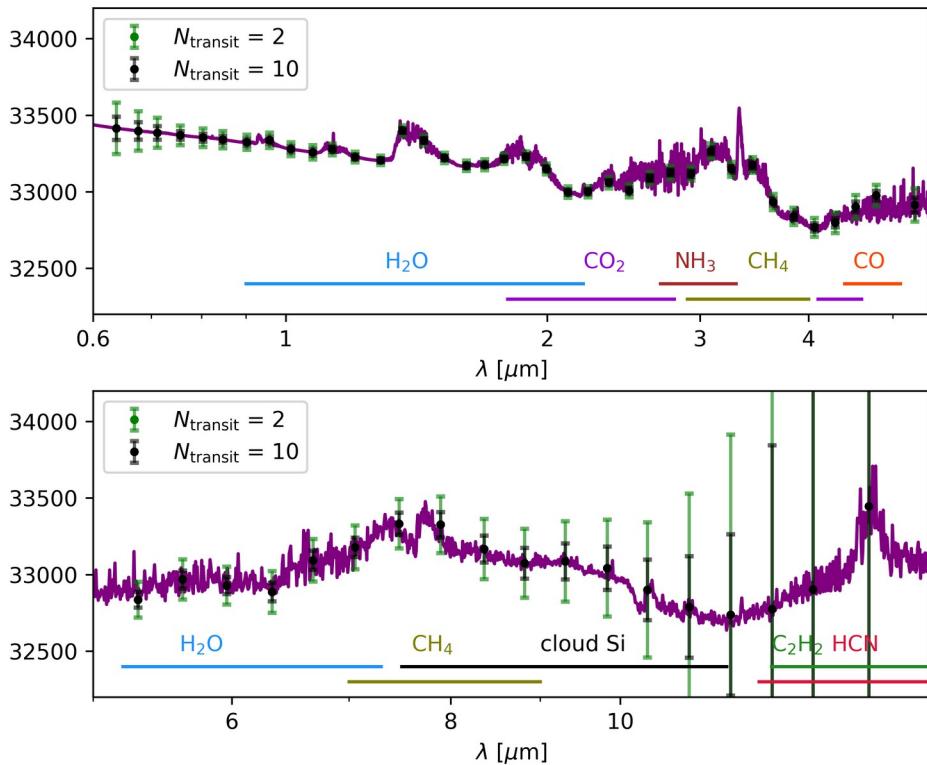
Observing HATS-6b



Observing HATS-6b

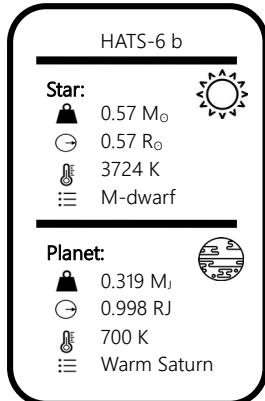


Observing HATS-6b

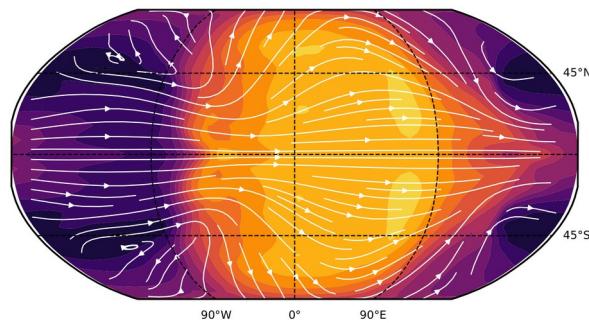


Summary

HATS-6b is a strongly irradiated warm Saturn with a favorable transit depth



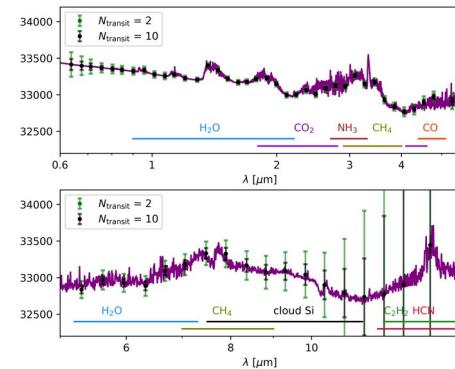
The global cloud coverage strongly impacts the temperature and wind structure



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Kiefersv.github.io
@ExoSvenK



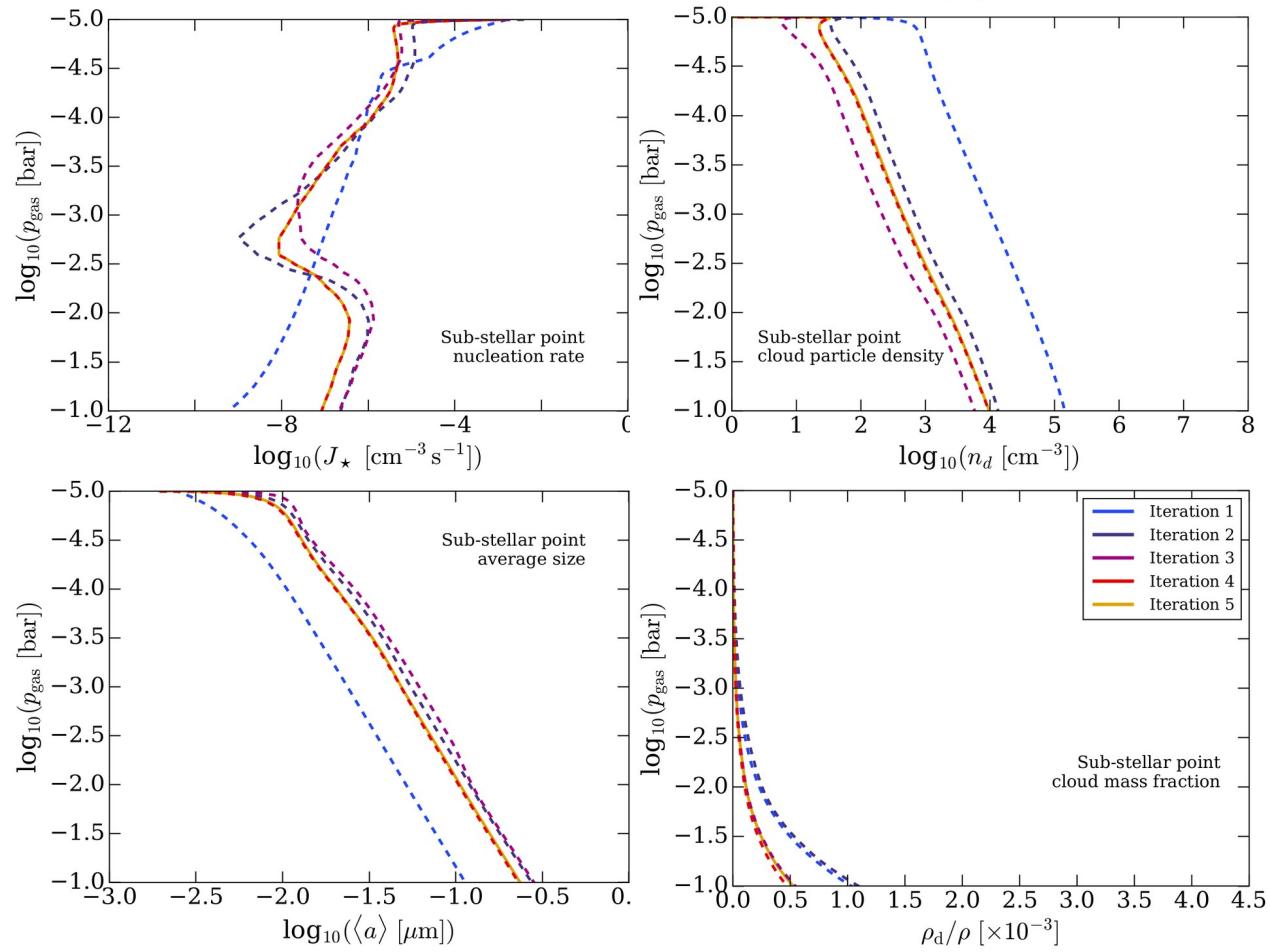
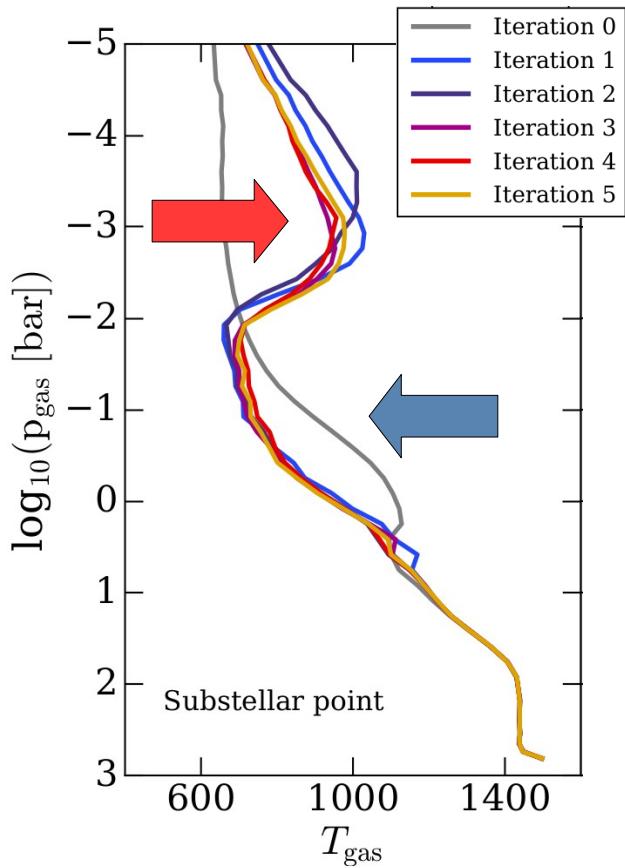
HATS-6b has observable gas-phase and cloud particle features



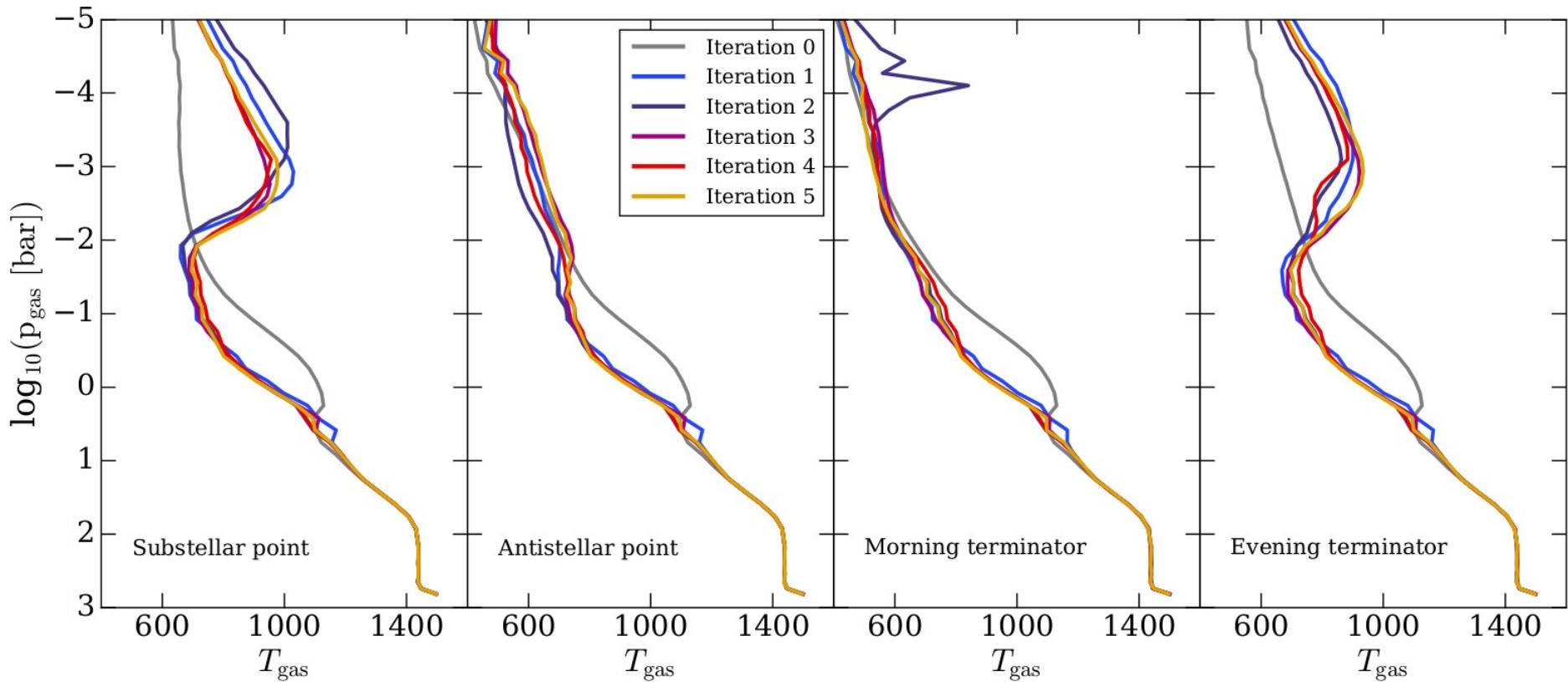
Additional Slides

Clouds in 3D

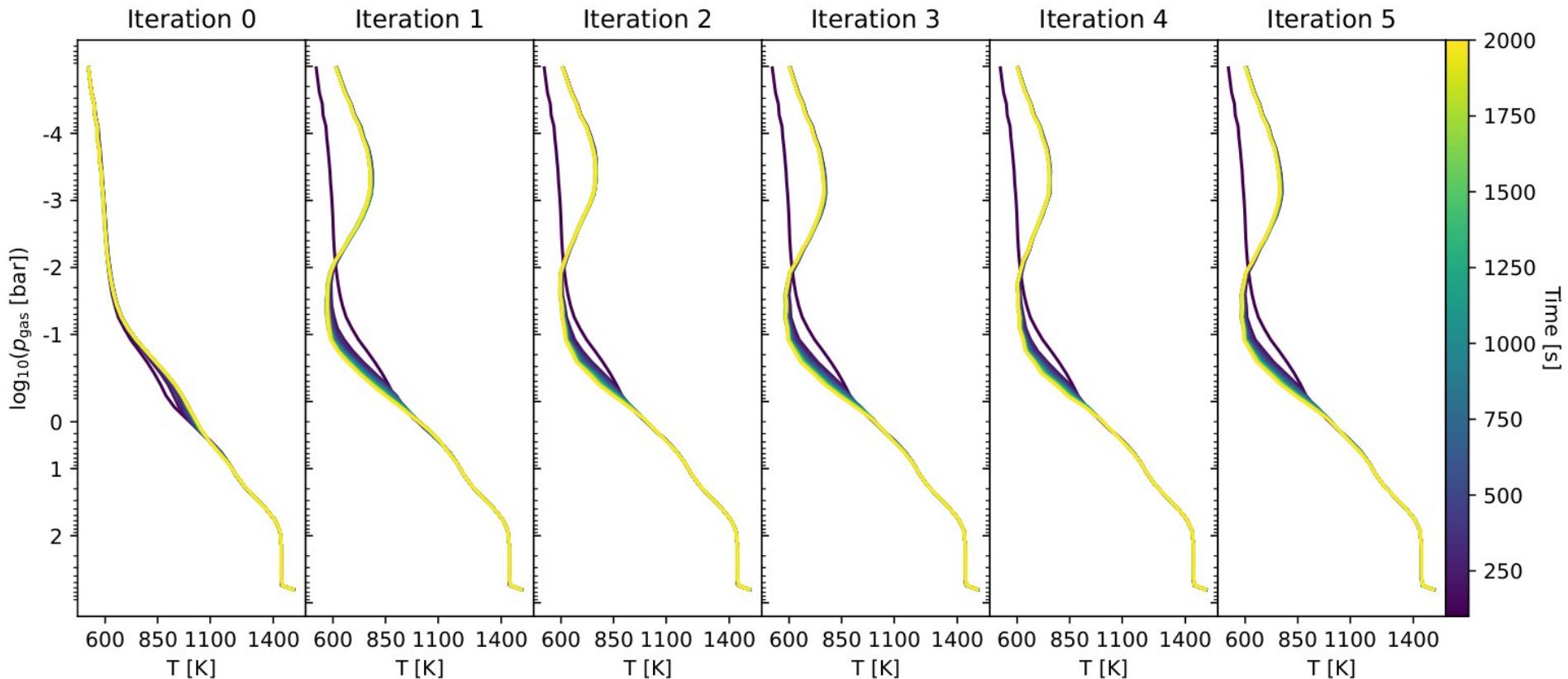
Clouds in 3D



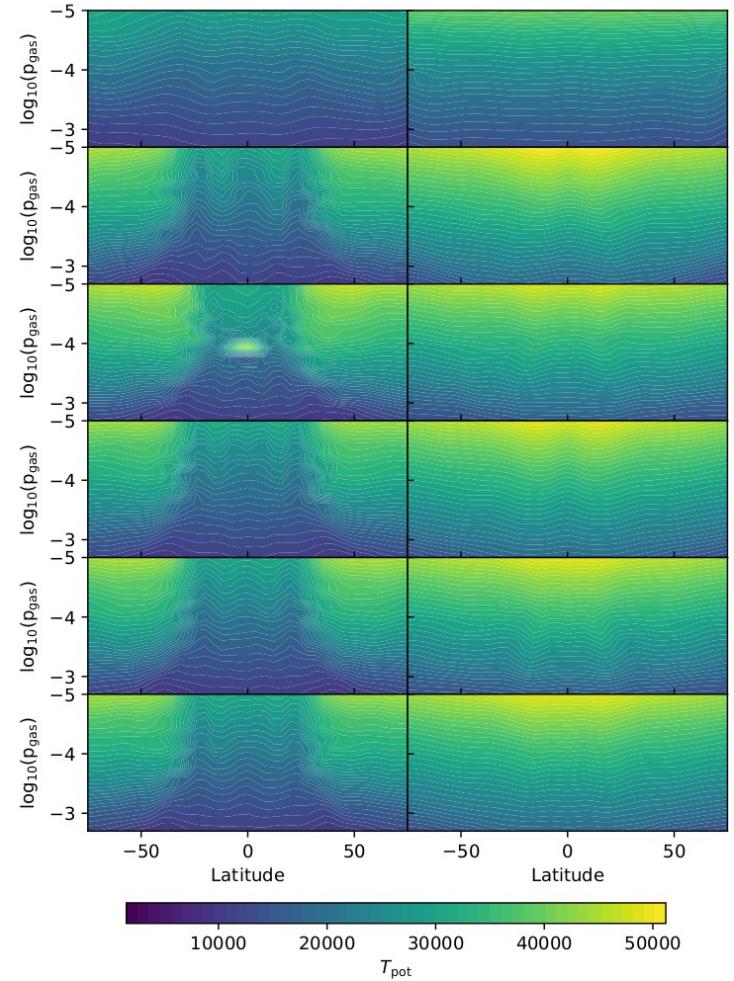
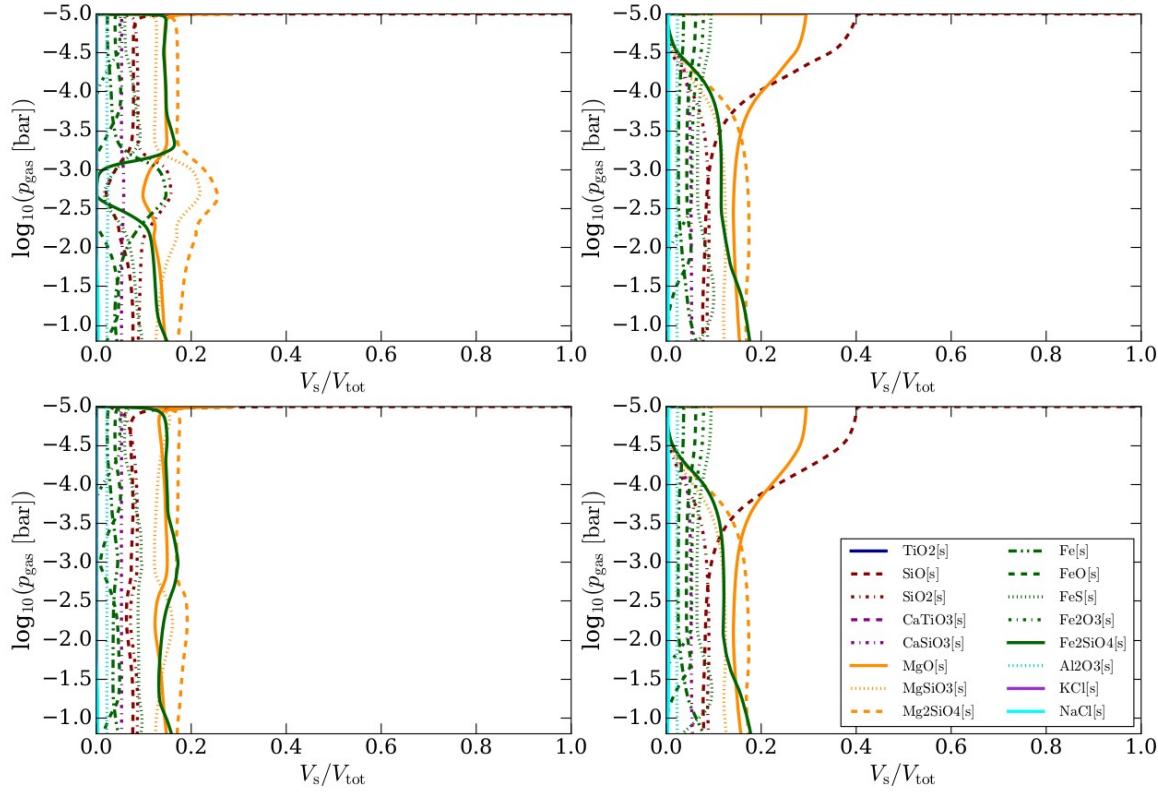
HATS-6b



HATS-6b



HATS-6b



HATS-6b
