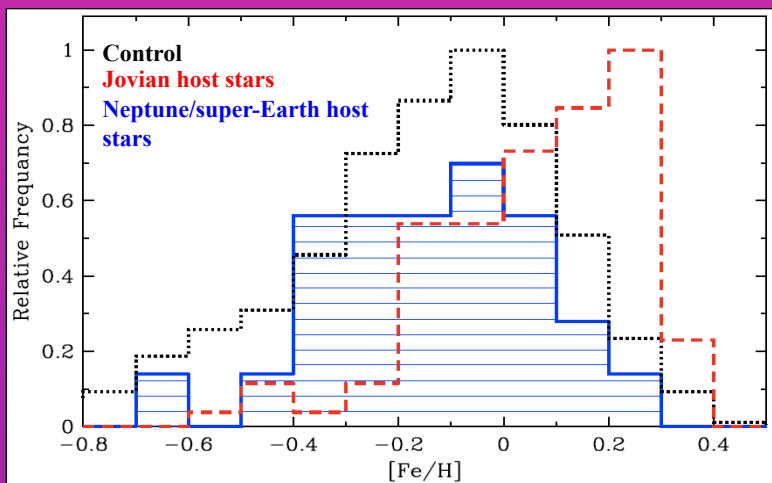


C/O Ratios of Stars with Transiting Hot Jupiters: Connecting Stars to Planets

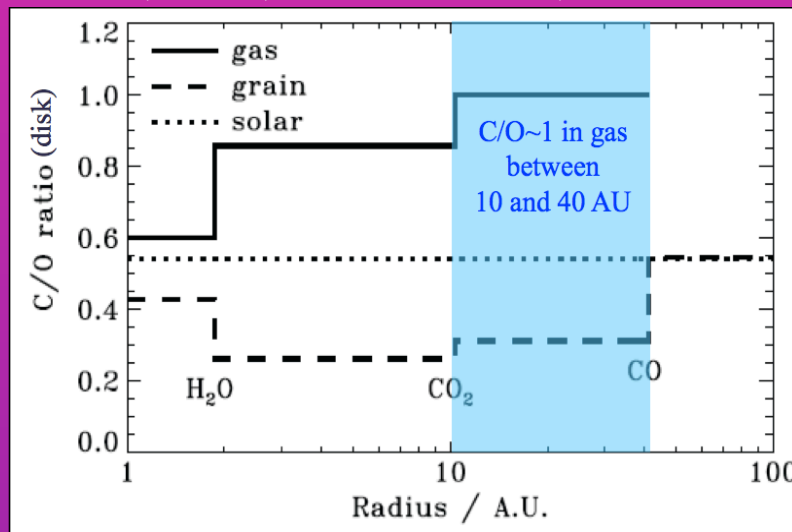
arXiv:1304.0395

Johanna Teske (Steward Observatory, University of AZ), Simon Schuler (University of Tampa), Katia Cunha (Observatório Nacional, Rio de Janeiro, Brazil), Verne Smith (NOAO), Caitlin Griffith (LPL, University of AZ)

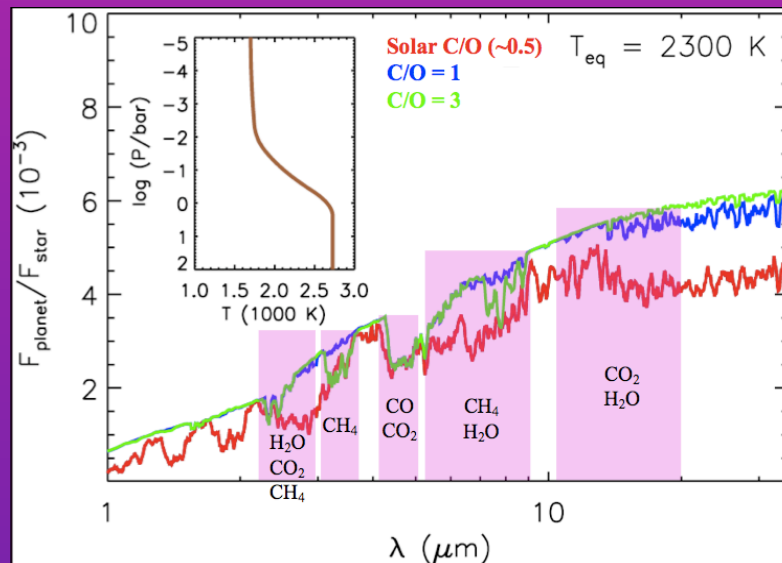
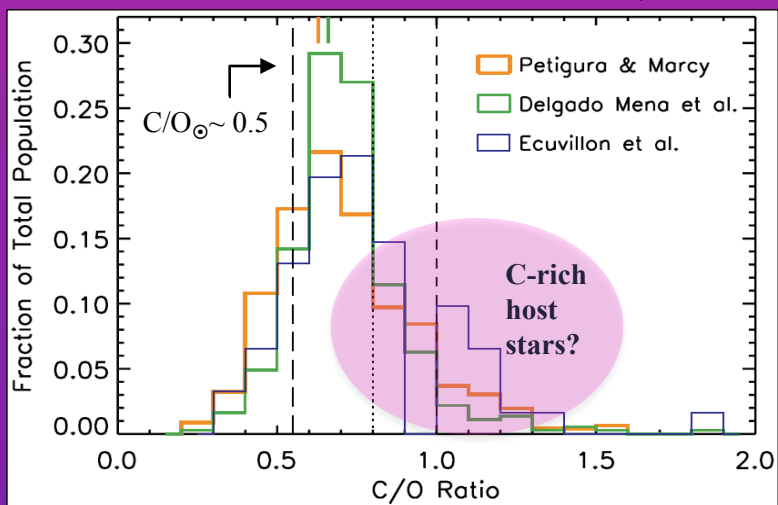


Adibekyan et al. 2012; HARPS GTO

Fortney et al. 2012



Öberg et al. 2011



Madhusudhan et al. 2011

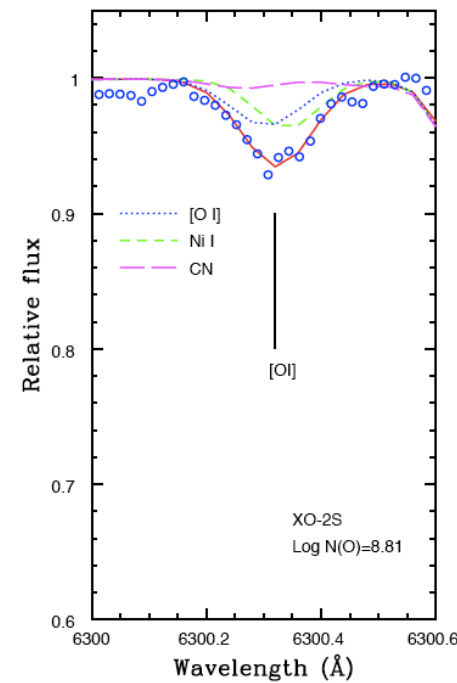
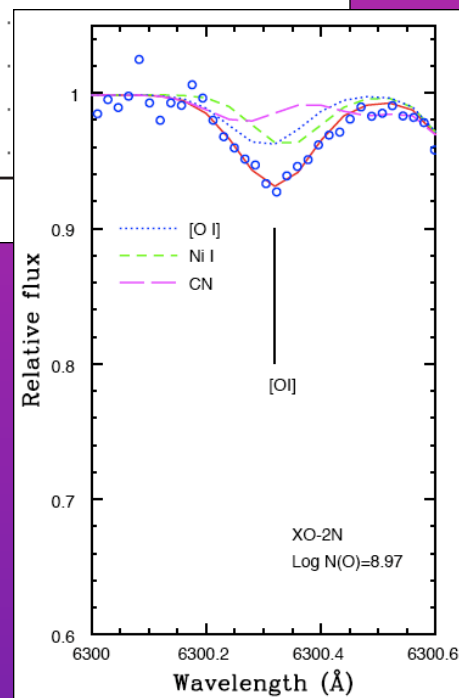
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Parameter ^a	XO-2S		XO-2N			
	this work	Burke et al. 2007	this work	Burke et al. 2007	Ammler-von Eiff et al. 2009	Torres et al. 2012
T_{eff} (K)	5547±59	5500±32	5343±78	5340±32	5350±72	5450±75
$\log g$ (cgs)	4.22 ±0.24	4.62±0.05	4.49±0.25	4.48±0.05	4.14 ±0.22	4.45 ±0.02
ξ (km s ⁻¹)	1.24±0.07	...	1.22±0.09	...	1.10±0.08	...
[Fe/H]	0.28±0.14	0.47±0.02	0.39±0.14	0.45±0.02	0.42 ±0.07	0.27±0.11
[C/H]	0.26±0.11	...	0.42±0.12	...		
[Ni/H]	0.38±0.04	0.52±0.02	0.44±0.04	0.50±0.02		
[O/H]	0.18±0.15	...	0.34±0.16	...		
C/O	0.60±0.19	...	0.60±0.20	...		

^aAdopted solar parameters: $T_{\text{eff}}=5777$ K, $\log g=4.44$, and $\xi=1.38$ km s⁻¹.



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Star	[Fe/H] this work	[Fe/H] Ammler-von Eiff et al. 2009	[Fe/H] Torres et al. 2012	[C/H] this work	[O/H] this work	[Ni/H] this work	C/O this work
WASP-12	0.06 ± 0.08	...	0.11 ± 0.10	0.09 ± 0.06	0.17 ± 0.07	0.00 ± 0.04	0.41 ± 0.09
XO-2N	0.39 ± 0.14	0.42 ± 0.07	0.27 ± 0.11	0.42 ± 0.12	0.34 ± 0.16	0.44 ± 0.04	0.60 ± 0.20
XO-2S	0.28 ± 0.14	...	...	0.26 ± 0.11	0.18 ± 0.15	0.38 ± 0.04	0.60 ± 0.19
XO-1	-0.11 ± 0.06	-0.01 ± 0.05	-0.10 ± 0.09	-0.19 ± 0.04	-0.07 ± 0.06	-0.11 ± 0.02	0.39 ± 0.07
TrES-3	-0.21 ± 0.08	-0.10 ± 0.19	-0.21 ± 0.08	-0.06 ± 0.06	...	-0.25 ± 0.04	...
HD 189733	0.00 ± 0.20	-0.03 ± 0.04	-0.07 ± 0.10	0.24 ± 0.15	...	-0.02 ± 0.07	...
HD 149026	0.26 ± 0.09	0.36 ± 0.05	0.19 ± 0.10	0.22 ± 0.08	...	0.31 ± 0.03	...
HD 80606	0.28 ± 0.10	0.32 ± 0.09	0.20 ± 0.09	0.29 ± 0.08	0.22 ± 0.10	0.30 ± 0.03	0.59 ± 0.13
HAT-P-7	0.14 ± 0.14	0.31 ± 0.07	...	0.00 ± 0.08	...	0.12 ± 0.05	...
HAT-P-13	0.44 ± 0.09	...	...	0.34 ± 0.08	0.21 ± 0.10	0.56 ± 0.04	0.68 ± 0.12

In process, [O/H] for:

TrES-3

HAT-P-7

HD 149026

HD 189733

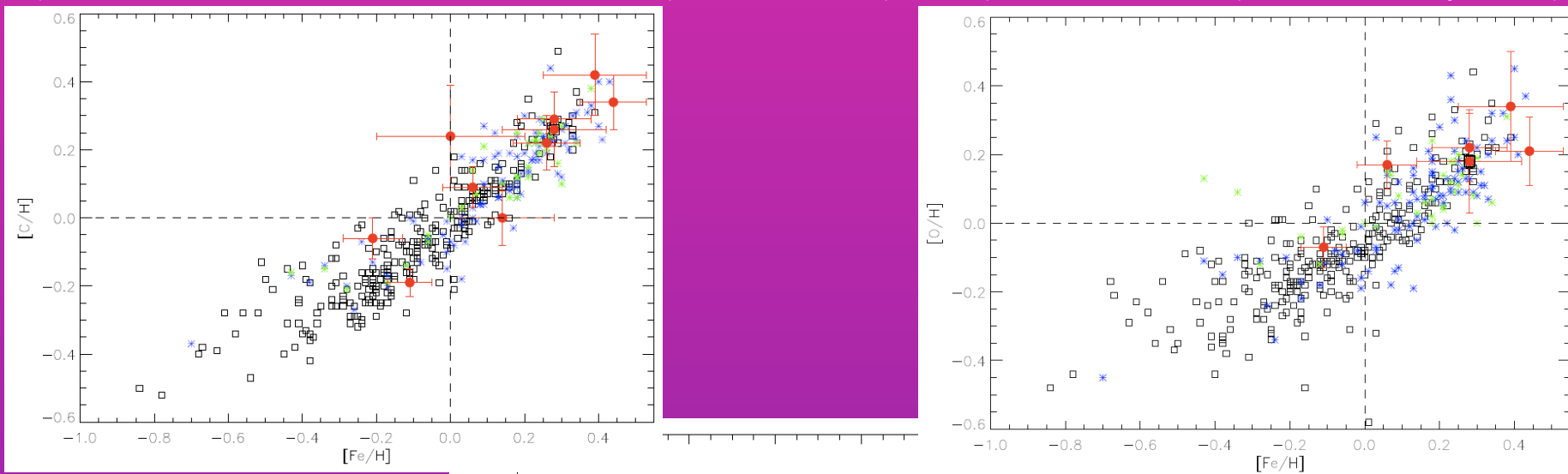
+full analysis of 4 more

HJ host stars

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$[C/H]$, $[O/H]$, and C/O versus $[Fe/H]$ from Delgado Mena et al. (2010) and Nissen (2013) [all Nissen (2013) hosts are in the Delgado Mena et al. (2010) host sample]. Nonhost stars from Delgado Mena et al. (2010) are plotted with black open squares, while host stars from Delgado Mena et al. (2010)/Nissen (2013) are plotted with blue/green asterisks. Measurements from this work are plotted as red filled circles, with error bars included. In particular, XO-2S is plotted as a red circle enclosed by a black square, to indicate that it does not host a known planet (in the C/O plot, XO-2N overlaps XO-2S). Black dashed lines show the solar values.

