TABLE 1
Model Comparison

AICc Qualitative Comparison	Free Parameters	$N_{\rm free}$	$N_{\rm data}$	RMS	$\ln \mathcal{L}$	BIC	AICc	ΔAICc
AICc Favored Model	K_b, e_c, K_c, σ, γ	18	768	2.61	-1772.69	3630.99	3548.32	0.00
Nearly Indistinguishable	K_b, K_c, σ, γ	16	768	2.62	-1774.89	3622.12	3548.54	0.22
	e_b, K_b, K_c, σ, γ	18	768	2.63	-1772.90	3631.42	3548.75	0.43
	e_b, K_b, e_c, K_c, σ, γ	20	768	2.62	-1771.00	3640.90	3549.15	0.83
Ruled Out	K_b, σ, γ	13	768	2.87	-1878.44	3809.28	3749.39	201.07
	e_b, K_b, σ, γ	15	768	2.87	-1878.23	3822.14	3753.13	204.81
	K_c, σ, γ	13	768	3.04	-1923.45	3899.31	3839.42	291.10
	e_c, K_c, σ, γ	15	768	3.04	-1922.96	3911.60	3842.58	294.26
	σ, γ	10	768	3.27	-1993.78	4020.02	3973.87	425.55
	e_b, K_b, e_c, K_c, γ	15	768	2.64	-7222.76	14511.20	14442.18	10893.86
	e_b, K_b, K_c, γ	13	768	2.64	-7264.58	14581.57	14521.68	10973.36
	K_b, e_c, K_c, γ	13	768	2.63	-7269.03	14590.45	14530.57	10982.25
	K_b, K_c, γ	11	768	2.63	-7324.75	14688.61	14637.88	11089.56
	e_b, K_b, γ	10	768	2.90	-10901.73	21835.94	21789.79	18241.47
	K_b, γ	8	768	2.88	-10990.29	21999.75	21962.79	18414.47
	e_c, K_c, γ	10	768	3.06	-12617.59	25267.65	25221.50	21673.18
	K_c, γ	8	768	3.05	-12693.80	25406.79	25369.82	21821.50
	γ	5	768	3.28	-15637.81	31274.88	31251.74	27703.42

TABLE 2
MCMC Posteriors

Parameter	Credible Interval	Maximum Likelihood	Units
Modified MCMC Step Parameters			
P_b	74.276 ± 0.041	74.279	days
$T\mathrm{conj_b}$	$2455174.0^{+1.2}_{-1.1}$	2455174.3	JD
$T\mathrm{peri_b}$	$2455178.6^{+7.6}_{-8.3}$	2455178.7	JD
e_b	$0.08^{+0.064}_{-0.053}$	0.101	
ω_b	$2.07^{+0.79}_{-0.6}$	2.03	radians
K_b	$2.37^{+0.13}_{-0.12}$	2.39	m s^{-1}
P_c	$547.7^{+5.2}_{-17.0}$	548	days
$T\mathrm{conj_c}$	2439394^{+520}_{-150}	2439396	JD
$T\mathrm{peri_c}$	2439417^{+450}_{-160}	2439416	JD
e_c	$0.092^{+0.067}_{-0.061}$	0.103	
ω_c	$1.95^{+1.2}_{-0.89}$	1.9	radians
K_c	1.8 ± 0.13	1.83	m s^{-1}
Orbital Parameters			
P_b	74.276 ± 0.041	74.279	days
$T\mathrm{conj_b}$	$2455174.0^{+1.2}_{-1.1}$	2455174.3	JD
$T\mathrm{peri_b}$	$2455178.6^{+7.6}_{-8.3}$	2455178.7	JD
e_b	$0.08^{+0.064}_{-0.053}$	0.101	
ω_b	$2.07^{+0.79}_{-0.6}$	2.03	radians
K_b	$2.37^{+0.13}_{-0.12}$	2.39	m s^{-1}
P_c	$547.7^{+5.2}_{-17.0}$	548	days
$T\mathrm{conj_c}$	2439394^{+520}_{-150}	2439396	JD
$T\mathrm{peri_c}$	2439417^{+450}_{-160}	2439416	JD
e_c	$0.092^{+0.067}_{-0.061}$	0.103	
ω_c	$1.95^{+1.2}_{-0.89}$	1.9	radians
K_c	1.8 ± 0.13	1.83	m s^{-1}
Other Parameters			
γ_{UCLES}	$-2.43^{+0.32}_{-0.31}$	-2.46	m s−1
$\gamma_{\mathrm{PFS-Pre}}$	$-2.27^{+0.58}_{-0.6}$	-2.25	m s−1
$\gamma_{\mathrm{HIRES-post}}$	-0.23 ± 0.23	-0.21	m s−1
$\gamma_{\mathrm{HARPS-pre}}$	$-0.05^{+0.13}_{-0.11}$	-0.07	m s−1
$\gamma_{\mathrm{HARPS-post}}$	$1.27^{+0.39}_{-0.5}$	1.34	m s−1
$\dot{\gamma}$	$\equiv 0.0$	$\equiv 0.0$	m s^{-1} d^{-1}
$\ddot{\gamma}$	$\equiv 0.0$	$\equiv 0.0$	m s^{-1} d^{-2}
σ_{UCLES}	$3.63^{+0.23}_{-0.22}$	3.58	m s^{-1}
$\sigma_{\mathrm{PFS-Pre}}$	$2.3^{+0.59}_{-0.42}$	2.0	m s^{-1}
$\sigma_{\mathrm{HIRES-post}}$	$2.62^{+0.18}_{-0.17}$	2.57	m s^{-1}
$\sigma_{\mathrm{HARPS-pre}}$	$1.747^{+0.085}_{-0.077}$	1.701	m s^{-1}
$\sigma_{\mathrm{HARPS-post}}$	$2.43^{+0.22}_{-0.2}$	2.37	m s^{-1}

TABLE 3
Derived Posteriors

Parameter	Credible Interval	Maximum Likelihood	Units
a_b	$0.3276^{+0.0025}_{-0.0026}$	0.3272	AU
$M_b \sin i$	$13.88^{+0.78}_{-0.76}$	13.96	$M_\oplus$
a_c	$1.238^{+0.015}_{-0.021}$	1.244	AU
$M_c \sin i$	$20.5^{+1.5}_{-1.6}$	21.0	$M_\oplus$

TABLE 4
Summary of Priors

e_b constrained to be < 0.99
e_c constrained to be < 0.99
K constrained to be > 0
Bounded prior: $0.0 < \sigma_{\mathrm{HARPS-post}} < 30.0$
Bounded prior: $0.0 < \sigma_{\mathrm{HARPS-pre}} < 30.0$
Bounded prior: $0.0 < \sigma_{\mathrm{HIRES-post}} < 30.0$
Bounded prior: $0.0 < \sigma_{\mathrm{PFS-Pre}} < 30.0$
Bounded prior: $0.0 < \sigma_{\mathrm{UCLES}} < 30.0$

TABLE 5
Final Convergence Criterion

Criterion	Final Value
minAfactor	51.566
maxArchange	0.022
maxGR	1.009
minTz	3054.201

TABLE 6
Radial Velocities

Time (JD)	RV (m s^{-1})	RV Unc. (m s^{-1})	Inst.
2457181.86401	-1.48	0.44	HARPS-post
2457182.71703	-2.12	0.35	HARPS-post
2457183.70525	-5.20	0.57	HARPS-post
2457184.78973	-3.10	0.30	HARPS-post
2457196.91300	2.95	0.66	HARPS-post
2457198.91467	1.51	0.90	HARPS-post
2457199.83493	5.33	0.45	HARPS-post
2457200.80377	3.46	0.46	HARPS-post
2457202.75263	6.63	0.58	HARPS-post
2457203.81043	6.22	0.45	HARPS-post
2457204.80444	4.27	0.47	HARPS-post
2457210.88642	-3.26	0.97	HARPS-post
2457211.89973	-2.57	0.75	HARPS-post
2457212.86077	-1.53	0.70	HARPS-post
2457218.77109	-0.22	0.75	HARPS-post
2457219.70307	1.20	1.31	HARPS-post
2457220.77224	1.70	0.89	HARPS-post
2457221.84507	1.54	1.10	HARPS-post
2457222.76389	3.55	0.38	HARPS-post
2457248.79352	3.54	0.82	HARPS-post
2457249.73734	1.16	0.48	HARPS-post
2457250.65044	2.01	0.51	HARPS-post
2457252.65406	2.17	0.41	HARPS-post
2457255.62030	2.26	0.64	HARPS-post
2457256.64043	0.72	0.48	HARPS-post
2457258.66953	-0.91	0.51	HARPS-post
2457259.59369	-1.13	0.97	HARPS-post
2457260.61933	-0.30	0.43	HARPS-post
2457263.63595	-0.76	0.77	HARPS-post
2457264.63850	1.09	0.57	HARPS-post
2457265.63006	0.84	0.47	HARPS-post
2457266.68091	0.11	0.58	HARPS-post
2457267.73233	-0.43	0.50	HARPS-post
2457268.67008	0.14	0.56	HARPS-post
2457269.69807	0.67	0.42	HARPS-post
2457270.63583	2.37	0.31	HARPS-post
2457271.51903	2.05	0.41	HARPS-post
2457273.68168	4.13	0.27	HARPS-post
2457276.63096	4.49	0.29	HARPS-post
2457277.61101	4.01	0.50	HARPS-post
2457278.67704	3.83	0.51	HARPS-post
2457291.61488	3.53	0.23	HARPS-post
2457292.63245	4.97	0.32	HARPS-post
2457293.61762	3.48	0.22	HARPS-post
2457294.61918	2.72	0.24	HARPS-post
2457295.64185	2.77	0.45	HARPS-post
2457604.64174	0.30	0.45	HARPS-post
2457605.80172	1.60	0.28	HARPS-post
2457606.78797	1.50	0.40	HARPS-post
2457607.77142	0.65	0.31	HARPS-post

Note. — Only the first 50 of 768 RVs are displayed in this table. Use `radvel table -t rv` to save the full LaTeX table as a separate file.

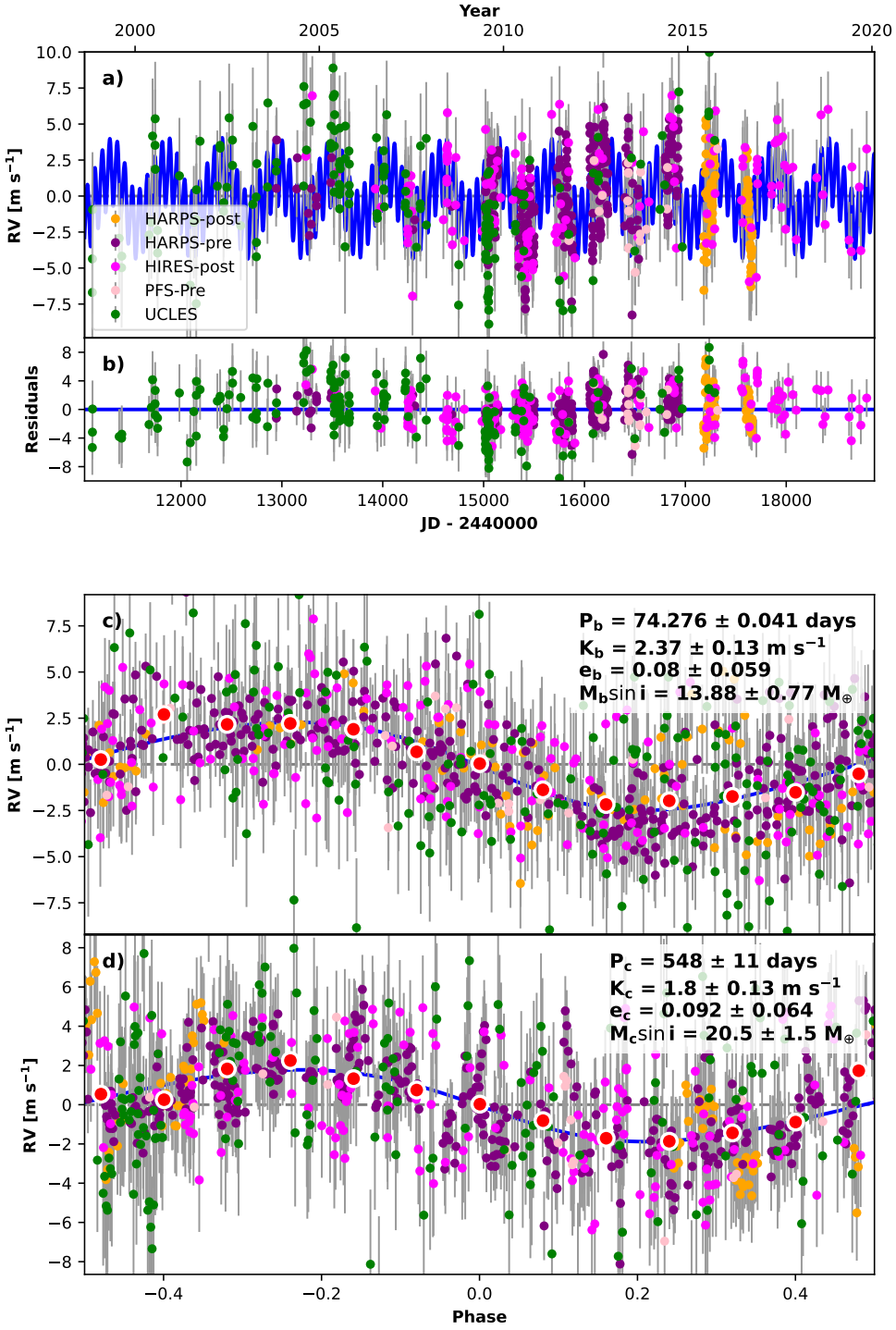

FIG. 1.— Best-fit 2-planet Keplerian orbital model for HD 192310. The maximum likelihood model is plotted while the orbital parameters listed in Table 2 are the median values of the posterior distributions. The thin blue line is the best fit 2-planet model. We add in quadrature the RV jitter term(s) listed in Table 2 with the measurement uncertainties for all RVs. **b)** Residuals to the best fit 2-planet model. **c)** RVs phase-folded to the ephemeris of planet b. The Keplerian orbital models for all other planets (if any) have been subtracted. The small point colors and symbols are the same as in panel **a**. Red circles (if present) are the same velocities binned in 0.08 units of orbital phase. The phase-folded model for planet b is shown as the blue line.

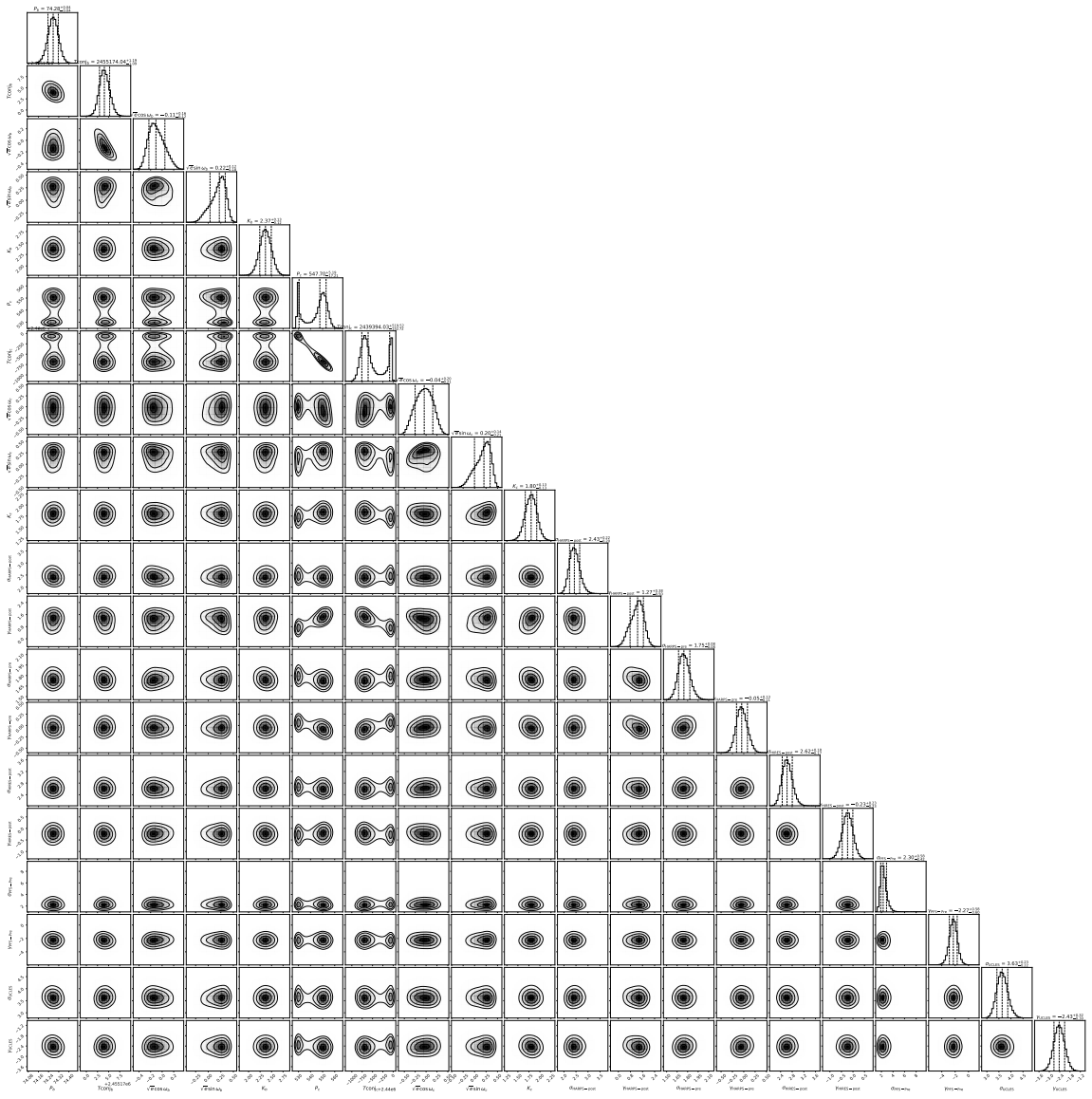

FIG. 2.— Posterior distributions for all free parameters.

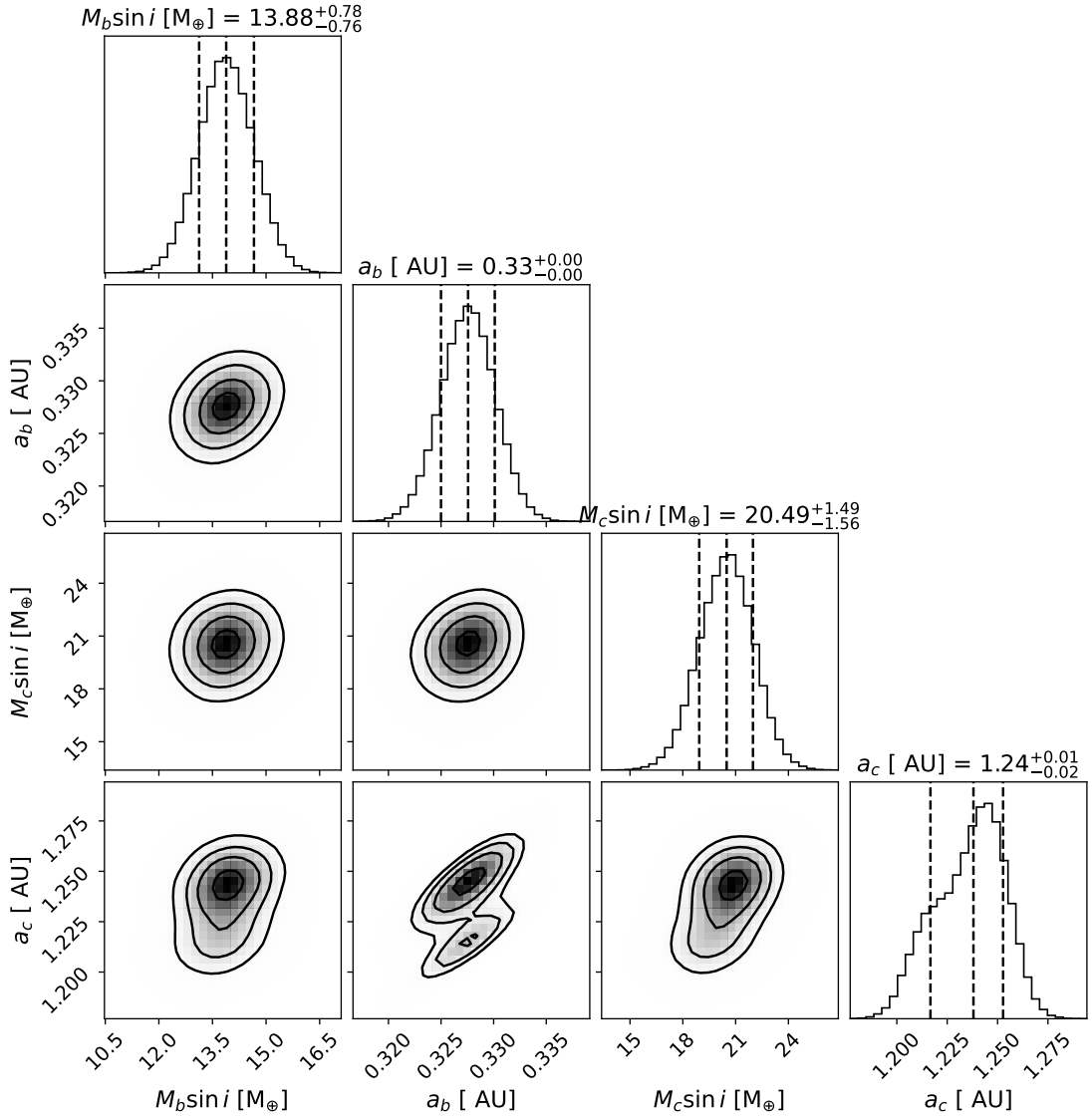

FIG. 3.— Posterior distributions for all derived parameters.