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, K_c, K_d, K_e, K_f, $\dot{\gamma}$, σ, γ	12	127	3.54	-331.12	738.92	707.53	0.00
Somewhat Disfavored	K_b, K_c, K_d, K_e, K_f, σ, γ	11	127	3.60	-333.46	738.76	709.77	2.24
Strongly Disfavored	K_b, K_c, K_e, K_f, $\dot{\gamma}$, σ, γ	11	127	3.70	-336.60	745.04	716.04	8.51
	K_b, K_c, K_e, K_f, σ, γ	10	127	3.73	-337.84	742.67	716.12	8.59
Ruled Out	K_b, K_c, K_d, K_e, $\dot{\gamma}$, σ, γ	9	127	4.10	-350.23	762.61	738.55	31.02
	K_b, K_c, K_d, K_f, $\dot{\gamma}$, σ, γ	11	127	4.04	-348.27	768.37	739.38	31.85
	K_b, K_c, K_d, K_e, σ, γ	8	127	4.15	-351.85	761.02	739.48	31.95
	K_b, K_c, K_d, K_f, σ, γ	10	127	4.12	-350.62	768.24	741.70	34.17
	K_b, K_c, K_e, σ, γ	7	127	4.27	-355.50	763.46	744.50	36.97
	K_b, K_c, K_e, $\dot{\gamma}$, σ, γ	8	127	4.24	-354.49	766.29	744.76	37.23
	K_c, K_d, K_e, K_f, $\dot{\gamma}$, σ, γ	11	127	4.19	-352.83	777.49	748.50	40.97
	K_c, K_d, K_e, K_f, σ, γ	10	127	4.28	-355.55	778.10	751.56	44.03
	K_b, K_c, K_f, σ, γ	9	127	4.34	-357.27	776.69	752.63	45.10
	K_b, K_c, K_f, $\dot{\gamma}$, σ, γ	10	127	4.31	-356.14	779.28	752.74	45.21
	K_c, K_e, K_f, $\dot{\gamma}$, σ, γ	10	127	4.31	-356.31	779.61	753.07	45.54
	K_b, K_d, K_e, K_f, $\dot{\gamma}$, σ, γ	11	127	4.30	-355.75	783.34	754.35	46.82
	K_c, K_e, K_f, σ, γ	9	127	4.37	-358.15	778.45	754.39	46.86
	K_b, K_d, K_e, K_f, σ, γ	10	127	4.34	-357.17	781.34	754.80	47.27
	K_b, K_e, K_f, σ, γ	9	127	4.46	-360.28	782.72	758.66	51.13
	K_b, K_e, K_f, $\dot{\gamma}$, σ, γ	10	127	4.43	-359.50	786.00	759.46	51.93
	K_c, K_d, K_f, $\dot{\gamma}$, σ, γ	10	127	4.62	-365.36	797.71	771.17	63.64
	K_b, K_c, K_d, $\dot{\gamma}$, σ, γ	8	127	4.71	-367.80	792.90	771.37	63.84
	K_b, K_c, K_d, σ, γ	7	127	4.77	-369.55	791.56	772.59	65.06
	K_c, K_d, K_f, σ, γ	9	127	4.73	-368.25	798.65	774.59	67.06
	K_b, K_d, K_e, $\dot{\gamma}$, σ, γ	8	127	4.79	-369.81	796.94	775.40	67.87
	K_c, K_d, K_e, $\dot{\gamma}$, σ, γ	8	127	4.79	-370.06	797.42	775.89	68.36
	K_b, K_d, K_e, σ, γ	7	127	4.84	-371.34	795.14	776.17	68.64
	K_c, K_d, K_e, σ, γ	7	127	4.89	-372.45	797.36	778.39	70.86
	K_c, K_e, $\dot{\gamma}$, σ, γ	7	127	4.92	-373.21	798.89	779.92	72.39
	K_c, K_f, $\dot{\gamma}$, σ, γ	9	127	4.84	-371.20	804.55	780.49	72.96
	K_b, K_e, σ, γ	6	127	4.97	-374.65	796.92	780.55	73.02
	K_b, K_e, $\dot{\gamma}$, σ, γ	7	127	4.94	-373.69	799.84	780.88	73.35
	K_c, K_e, σ, γ	6	127	4.98	-374.99	797.61	781.24	73.71
	K_b, K_d, K_f, $\dot{\gamma}$, σ, γ	10	127	4.82	-370.53	808.06	781.51	73.98
	K_c, K_f, σ, γ	8	127	4.90	-372.88	803.06	781.53	74.00
	K_b, K_c, σ, γ	6	127	5.00	-375.34	798.29	781.93	74.40
	K_b, K_c, $\dot{\gamma}$, σ, γ	7	127	4.97	-374.34	801.15	782.18	74.65
	K_b, K_d, K_f, σ, γ	9	127	4.88	-372.13	806.40	782.34	74.81
	K_d, K_e, K_f, $\dot{\gamma}$, σ, γ	10	127	4.84	-371.32	809.63	783.08	75.55
	K_d, K_e, K_f, σ, γ	9	127	4.91	-373.15	808.45	784.39	76.86
	K_e, K_f, $\dot{\gamma}$, σ, γ	9	127	4.95	-374.11	810.38	786.32	78.79
	K_e, K_f, σ, γ	8	127	5.00	-375.34	807.99	786.46	78.93
	K_b, K_f, σ, γ	8	127	5.09	-377.50	812.30	790.77	83.24
	K_b, K_f, $\dot{\gamma}$, σ, γ	9	127	5.07	-376.76	815.67	791.61	84.08
	K_c, K_d, $\dot{\gamma}$, σ, γ	7	127	5.36	-384.10	820.66	801.69	94.16
	K_d, K_f, $\dot{\gamma}$, σ, γ	9	127	5.31	-383.17	828.50	804.44	96.91
	K_c, K_d, σ, γ	6	127	5.47	-386.75	821.11	804.75	97.22
	K_d, K_e, $\dot{\gamma}$, σ, γ	7	127	5.42	-385.77	824.01	805.04	97.51
	K_b, K_d, $\dot{\gamma}$, σ, γ	7	127	5.44	-386.13	824.72	805.75	98.22
	K_d, K_f, σ, γ	8	127	5.41	-385.35	828.01	806.48	98.95

TABLE 2
MCMC Posteriors

Parameter	Credible Interval	Maximum Likelihood	Units
Modified MCMC Step Parameters			
P_b	$\equiv 4.3074$	$\equiv 4.3074$	days
$T\mathrm{conj_b}$	$\equiv 2458686.5648$	$\equiv 2458686.5648$	JD
$T\mathrm{peri_b}$	$\equiv 2458685.488$	$\equiv 2458685.488$	JD
e_b	$\equiv 0.0$	$\equiv 0.0$	
ω_b	$\equiv 0.0$	$\equiv 0.0$	radians
K_b	3.32 ± 0.49	3.3	m s^{-1}
P_c	$\equiv 5.9032$	$\equiv 5.9032$	days
$T\mathrm{conj_c}$	$\equiv 2458683.4746$	$\equiv 2458683.4746$	JD
$T\mathrm{peri_c}$	$\equiv 2458681.9988$	$\equiv 2458681.9988$	JD
e_c	$\equiv 0.0$	$\equiv 0.0$	
ω_c	$\equiv 0.0$	$\equiv 0.0$	radians
K_c	$3.52^{+0.48}_{-0.47}$	3.51	m s^{-1}
P_d	$\equiv 18.6524$	$\equiv 18.6524$	days
$T\mathrm{conj_d}$	$\equiv 2458688.9403$	$\equiv 2458688.9403$	JD
$T\mathrm{peri_d}$	$\equiv 2458684.2772$	$\equiv 2458684.2772$	JD
e_d	$\equiv 0.0$	$\equiv 0.0$	
ω_d	$\equiv 0.0$	$\equiv 0.0$	radians
K_d	$1.59^{+0.5}_{-0.48}$	1.6	m s^{-1}
P_e	$\equiv 37.9198$	$\equiv 37.9198$	days
$T\mathrm{conj_e}$	$\equiv 2458700.7204$	$\equiv 2458700.7204$	JD
$T\mathrm{peri_e}$	$\equiv 2458691.2405$	$\equiv 2458691.2405$	JD
e_e	$\equiv 0.0$	$\equiv 0.0$	
ω_e	$\equiv 0.0$	$\equiv 0.0$	radians
K_e	$2.91^{+0.5}_{-0.48}$	2.89	m s^{-1}
P_f	$76.41^{+0.77}_{-0.76}$	76.35	days
$T\mathrm{conj_f}$	2459383.6 ± 2.2	2459383.5	JD
$T\mathrm{peri_f}$	2459364.5 ± 2.1	2459364.4	JD
e_f	$\equiv 0.0$	$\equiv 0.0$	
ω_f	$\equiv 0.0$	$\equiv 0.0$	radians
K_f	$3.11^{+0.53}_{-0.52}$	3.22	m s^{-1}
Orbital Parameters			
P_b	$\equiv 4.3074$	$\equiv 4.3074$	days
$T\mathrm{conj_b}$	$\equiv 2458686.5648$	$\equiv 2458686.5648$	JD
$T\mathrm{peri_b}$	$\equiv 2458685.488$	$\equiv 2458685.488$	JD
e_b	$\equiv 0.0$	$\equiv 0.0$	
ω_b	$\equiv 0.0$	$\equiv 0.0$	radians
K_b	3.32 ± 0.49	3.3	m s^{-1}
P_c	$\equiv 5.9032$	$\equiv 5.9032$	days
$T\mathrm{conj_c}$	$\equiv 2458683.4746$	$\equiv 2458683.4746$	JD
$T\mathrm{peri_c}$	$\equiv 2458681.9988$	$\equiv 2458681.9988$	JD
e_c	$\equiv 0.0$	$\equiv 0.0$	
ω_c	$\equiv 0.0$	$\equiv 0.0$	radians
K_c	$3.52^{+0.48}_{-0.47}$	3.51	m s^{-1}
P_d	$\equiv 18.6524$	$\equiv 18.6524$	days
$T\mathrm{conj_d}$	$\equiv 2458688.9403$	$\equiv 2458688.9403$	JD
$T\mathrm{peri_d}$	$\equiv 2458684.2772$	$\equiv 2458684.2772$	JD
e_d	$\equiv 0.0$	$\equiv 0.0$	
ω_d	$\equiv 0.0$	$\equiv 0.0$	radians
K_d	$1.59^{+0.5}_{-0.48}$	1.6	m s^{-1}
P_e	$\equiv 37.9198$	$\equiv 37.9198$	days
$T\mathrm{conj_e}$	$\equiv 2458700.7204$	$\equiv 2458700.7204$	JD
$T\mathrm{peri_e}$	$\equiv 2458691.2405$	$\equiv 2458691.2405$	JD
e_e	$\equiv 0.0$	$\equiv 0.0$	
ω_e	$\equiv 0.0$	$\equiv 0.0$	radians
K_e	$2.91^{+0.5}_{-0.48}$	2.89	m s^{-1}
P_f	$76.41^{+0.77}_{-0.76}$	76.35	days
$T\mathrm{conj_f}$	2459383.6 ± 2.2	2459383.5	JD
$T\mathrm{peri_f}$	2459364.5 ± 2.1	2459364.4	JD
e_f	$\equiv 0.0$	$\equiv 0.0$	
ω_f	$\equiv 0.0$	$\equiv 0.0$	radians
K_f	$3.11^{+0.53}_{-0.52}$	3.22	m s^{-1}
Other Parameters			
γ_j	0.18 ± 0.67	0.18	m s−1
$\gamma_\mathrm{harps-n}$	$2.74^{+0.78}_{-0.79}$	2.71	m s−1
$\dot{\gamma}$	-0.0038 ± 0.0018	−0.0037	m s^{-1} d^{-1}
$\ddot{\gamma}$	$\equiv 0.0$	$\equiv 0.0$	m s^{-1} d^{-2}
σ_j	$3.38^{+0.34}_{-0.3}$	3.19	m s^{-1}
$\sigma_\mathrm{harps-n}$	$3.06^{+0.63}_{-0.52}$	2.75	m s^{-1}

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Reference epoch for γ,$\dot{\gamma}$,$\ddot{\gamma}$: 2458989.783463

TABLE 3
Derived Posteriors

Parameter	Credible Interval	Maximum Likelihood	Units
$M_b \sin i$	7.7 ± 1.2	8.3	$M_\oplus$
a_b	$0.04943^{+0.00093}_{-0.00097}$	0.05089	AU
$M_c \sin i$	9.0 ± 1.3	9.8	$M_\oplus$
a_c	0.061 ± 0.0012	0.0628	AU
$M_d \sin i$	$6.0^{+1.9}_{-1.8}$	5.3	$M_\oplus$
a_d	$0.1313^{+0.0025}_{-0.0026}$	0.1352	AU
$M_e \sin i$	$13.9^{+2.5}_{-2.3}$	15.7	$M_\oplus$
a_e	$0.2108^{+0.004}_{-0.0041}$	0.217	AU
$M_f \sin i$	$18.8^{+3.3}_{-3.2}$	18.9	$M_\oplus$
a_f	$0.3363^{+0.0067}_{-0.007}$	0.3461	AU

TABLE 4
Summary of Priors

K constrained to be > 0
Gaussian prior on P_d: 18.652357 ± 0.00665
Gaussian prior on P_b: 4.307412 ± 0.001355
Gaussian prior on P_c: 5.903194 ± 0.000474
Gaussian prior on P_e: 37.919841 ± 0.001333
Bounded prior: $40 < P_f < 300$
Bounded prior: $-20.0 < \sigma_{\rm j} < 20.0$
Bounded prior: $-20.0 < \sigma_{\rm harps-n} < 20.0$

TABLE 5
Final Convergence Criterion

Criterion	Final Value
minAfactor	62.901
maxArchange	0.023
maxGR	1.003
minTz	10415.477

TABLE 6
Radial Velocities

Time (JD)	RV (m s^{-1})	RV Unc. (m s^{-1})	Inst.
2458896.74755	4.58	2.12	harps-n
2458897.75866	0.61	1.75	harps-n
2458898.74416	-0.37	1.67	harps-n
2458904.73602	3.83	1.65	harps-n
2458905.73390	10.47	1.51	harps-n
2458925.71780	5.64	1.70	harps-n
2458926.71870	9.68	1.32	harps-n
2458929.70046	9.51	1.17	harps-n
2459000.54607	11.88	1.40	harps-n
2459000.63124	14.38	1.48	harps-n
2459002.54860	-0.38	1.08	harps-n
2459002.63607	-2.57	1.28	harps-n
2459012.55197	-0.95	1.37	harps-n
2459012.64142	-1.33	1.10	harps-n
2459014.64077	-9.39	1.44	harps-n
2459087.39446	-6.02	1.73	harps-n
2459089.38672	-3.96	2.59	harps-n
2459248.76044	5.52	1.37	harps-n
2459268.71880	-7.49	2.45	harps-n
2459309.60757	1.47	1.85	harps-n
2459310.61642	-2.39	2.29	harps-n
2459353.69927	5.61	2.07	harps-n
2459353.71693	3.84	1.98	harps-n
2459370.54051	2.13	2.41	harps-n
2459393.63808	-11.84	1.33	harps-n
2459394.53732	-10.61	1.55	harps-n
2459410.47261	4.92	2.14	harps-n
2459450.43500	7.39	1.33	harps-n
2458917.06227	4.32	1.78	j
2458918.06580	8.52	1.66	j
2458919.05511	0.10	1.53	j
2458995.87585	5.54	1.93	j
2458999.89268	15.33	1.72	j
2459002.92823	2.95	1.60	j
2459003.89134	0.30	1.56	j
2459006.88414	-4.17	1.60	j
2459013.87325	-3.55	1.66	j
2459016.87492	-4.46	1.82	j
2459024.86927	-2.41	1.57	j
2459027.83837	-3.46	1.39	j
2459030.89287	2.69	1.63	j
2459034.85573	5.75	1.59	j
2459036.79199	4.47	1.46	j
2459038.84046	-0.08	1.57	j
2459069.00985	4.96	2.56	j
2459071.93664	5.47	1.77	j
2459072.87996	6.98	1.75	j
2459077.88344	11.11	1.67	j
2459086.87479	-9.45	2.27	j
2459089.87543	0.28	1.61	j

Note. — Only the first 50 of 127 RVs are displayed in this table. Use `radvel table -t rv` to save the full LaTeX table as a separate file.

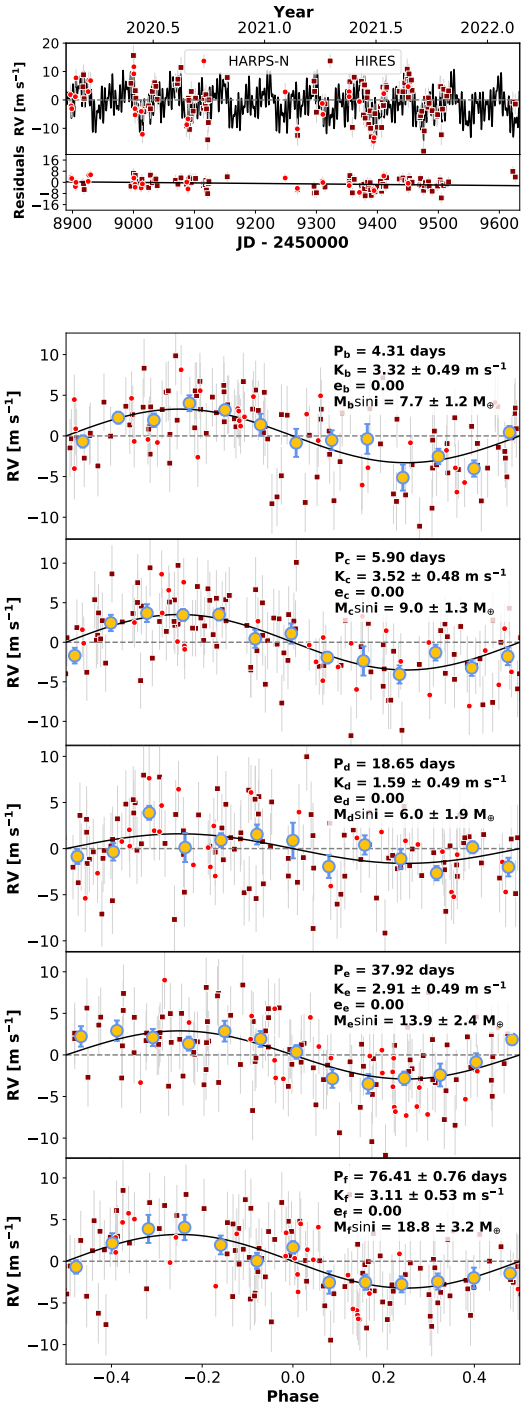

FIG. 1.— Best-fit 5-planet Keplerian orbital model for T001246. The maximum likelihood model is plotted while the orbital parameters listed in Table 2 are the median values of the posterior distributions. The thin blue line is the best fit 5-planet model. We add in quadrature the RV jitter term(s) listed in Table 2 with the measurement uncertainties for all RVs. **b)** Residuals to the best fit 5-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.

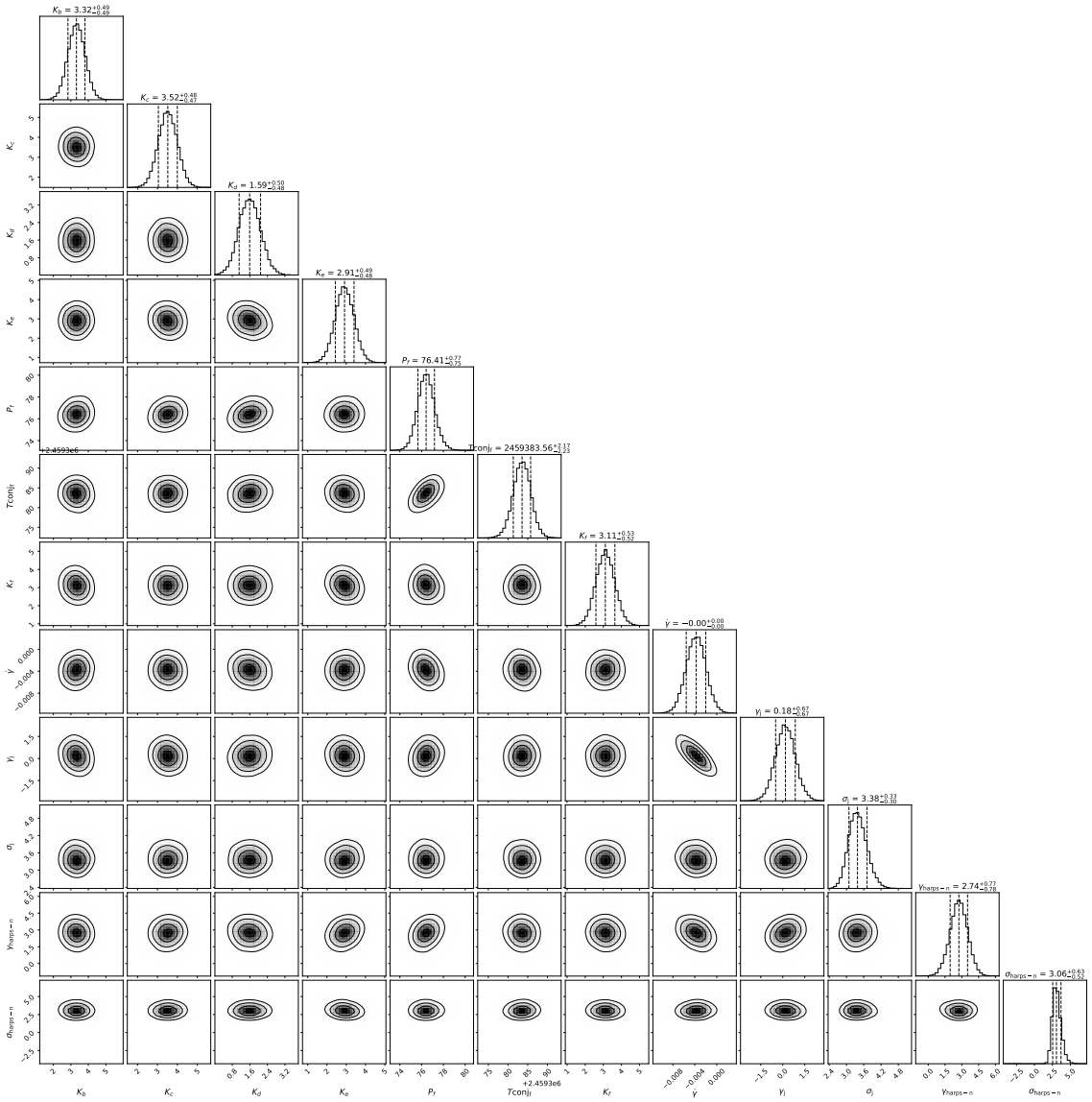

FIG. 2.— Posterior distributions for all free parameters.

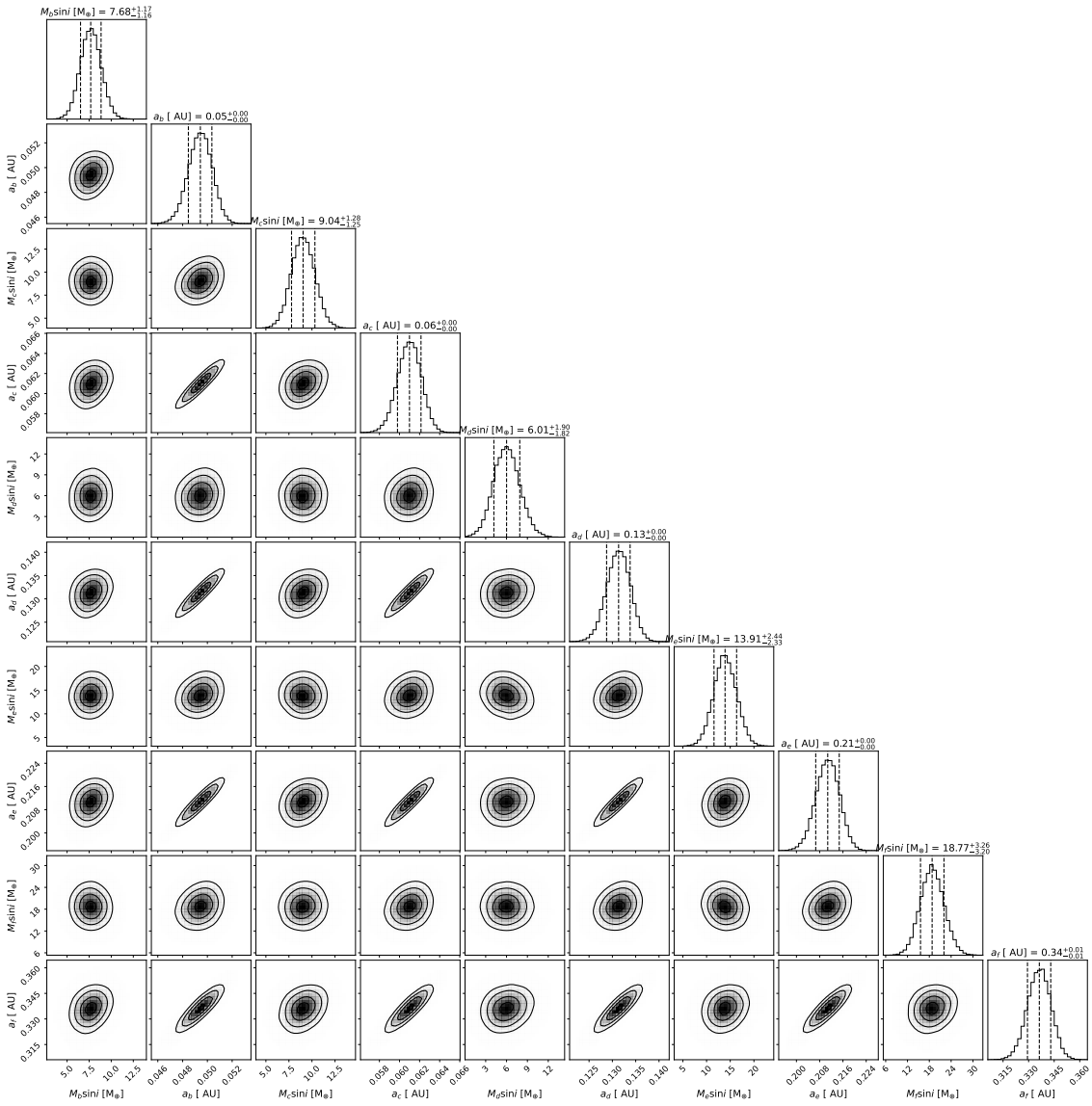

FIG. 3.— Posterior distributions for all derived parameters.