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	e_b, K_b, e_c, K_c, σ, γ	24	761	4.35	-2024.44	4185.13	4075.53	0.00
Ruled Out	e_b, K_b, K_c, σ, γ	22	761	4.42	-2041.44	4205.85	4105.26	29.73
	e_b, K_b, σ, γ	19	761	5.77	-2360.48	4824.04	4737.00	661.47
	K_b, e_c, K_c, σ, γ	22	761	6.10	-2392.52	4908.02	4807.43	731.90
	K_b, K_c, σ, γ	20	761	6.15	-2398.84	4907.38	4815.83	740.30
	K_b, σ, γ	17	761	7.13	-2543.20	5176.20	5098.24	1022.71
	e_b, K_b, e_c, K_c, γ	17	761	4.35	-2813.69	5717.19	5639.23	1563.70
	e_b, K_b, K_c, γ	15	761	4.42	-2922.00	5920.54	5851.66	1776.13
	e_c, K_c, σ, γ	19	761	13.20	-3103.70	6310.47	6223.44	2147.91
	K_c, σ, γ	17	761	13.23	-3106.83	6303.47	6225.51	2149.98
	σ, γ	14	761	13.86	-3164.24	6398.38	6334.05	2258.52
	e_b, K_b, γ	12	761	5.84	-6048.92	12154.46	12099.27	8023.74
	K_b, e_c, K_c, γ	15	761	6.26	-6766.82	13610.18	13541.30	9465.77
	K_b, K_c, γ	13	761	6.31	-6920.49	13904.24	13844.48	9768.95
	K_b, γ	10	761	7.32	-10271.26	20585.88	20539.83	16464.30
	e_c, K_c, γ	12	761	13.48	-47925.46	95907.56	95852.36	91776.83
	K_c, γ	10	761	13.51	-48606.65	97256.66	97210.61	93135.08
	γ	7	761	14.02	-54615.84	109255.14	109222.85	105147.32

TABLE 2
MCMC Posteriors

Parameter	Credible Interval	Maximum Likelihood	Units
Modified MCMC Step Parameters			
P_b	$2887.9^{+3.0}_{-3.1}$	2887.8	days
$T\mathrm{conj_b}$	$2459638.0^{+6.8}_{-6.1}$	2459637.9	BJD
$T\mathrm{peri_b}$	2459286 ± 12	2459285	BJD
e_b	$0.329^{+0.0063}_{-0.0066}$	0.3288	
ω_b	$0.201^{+0.026}_{-0.027}$	0.2	radians
K_b	22.74 ± 0.26	22.75	m s^{-1}
P_c	$17.11696^{+0.00063}_{-0.00064}$	17.11696	days
$T\mathrm{conj_c}$	2458998.35 ± 0.22	2458998.34	BJD
$T\mathrm{peri_c}$	$2458993.37^{+0.5}_{-0.52}$	2458993.35	BJD
e_c	0.163 ± 0.028	0.164	
ω_c	$-0.55^{+0.18}_{-0.19}$	-0.56	radians
K_c	5.5 ± 0.17	5.5	m s^{-1}
Orbital Parameters			
P_b	$2887.9^{+3.0}_{-3.1}$	2887.8	days
$T\mathrm{conj_b}$	$2459638.0^{+6.8}_{-6.1}$	2459637.9	BJD
$T\mathrm{peri_b}$	2459286 ± 12	2459285	BJD
e_b	$0.329^{+0.0063}_{-0.0066}$	0.3288	
ω_b	$0.201^{+0.026}_{-0.027}$	0.2	radians
K_b	22.74 ± 0.26	22.75	m s^{-1}
P_c	$17.11696^{+0.00063}_{-0.00064}$	17.11696	days
$T\mathrm{conj_c}$	2458998.35 ± 0.22	2458998.34	BJD
$T\mathrm{peri_c}$	$2458993.37^{+0.5}_{-0.52}$	2458993.35	BJD
e_c	0.163 ± 0.028	0.164	
ω_c	$-0.55^{+0.18}_{-0.19}$	-0.56	radians
K_c	5.5 ± 0.17	5.5	m s^{-1}
Other Parameters			
γ_{SOPHIE}	-45214.68 ± 0.41	-45214.69	m s−1
$\gamma_{\mathrm{Hamilton}}$	$-3.76^{+0.75}_{-0.76}$	-3.76	m s−1
$\gamma_{\mathrm{HIRES-pre}}$	$-1.56^{+0.38}_{-0.39}$	-1.58	m s−1
$\gamma_{\mathrm{HIRES-post}}$	-2.51 ± 0.28	-2.51	m s−1
γ_{ELODIE}	-45347.5 ± 1.2	-45347.5	m s−1
γ_{APF}	1.13 ± 0.17	1.13	m s−1
γ_{AFOE}	$-45350.1^{+3.8}_{-3.7}$	-45349.9	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_{SOPHIE}	$2.02^{+0.35}_{-0.3}$	1.9	m s^{-1}
$\sigma_{\mathrm{Hamilton}}$	$5.33^{+0.71}_{-0.64}$	5.18	m s^{-1}
$\sigma_{\mathrm{HIRES-pre}}$	$3.02^{+0.33}_{-0.29}$	2.93	m s^{-1}
$\sigma_{\mathrm{HIRES-post}}$	$2.64^{+0.23}_{-0.2}$	2.58	m s^{-1}
σ_{ELODIE}	$3.1^{+2.2}_{-7.1}$	4.1	m s^{-1}
σ_{APF}	$2.19^{+0.14}_{-0.13}$	2.17	m s^{-1}
σ_{AFOE}	$7.5^{+4.4}_{-16.0}$	8	m s^{-1}

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Reference epoch for γ,$\dot{\gamma}$,$\ddot{\gamma}$: 2454283.6562181404

TABLE 3
Derived Posteriors

Parameter	Credible Interval	Maximum Likelihood	Units
$M_b \sin i$	1.492 ± 0.042	1.441	$\mathrm{M_{Jup}}$
a_b	$3.952^{+0.052}_{-0.053}$	3.881	AU
$M_c \sin i$	$21.62^{+0.88}_{-0.87}$	20.95	$\mathrm{M_\oplus}$
a_c	0.1294 ± 0.0017	0.1271	AU

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: $0.0 < \sigma_{\rm SOPHIE} < 10.0$
Bounded prior: $0.0 < \sigma_{\rm Hamilton} < 10.0$
Bounded prior: $0.0 < \sigma_{\rm HIRES-pre} < 10.0$
Bounded prior: $0.0 < \sigma_{\rm HIRES-post} < 10.0$
Bounded prior: $0.0 < \sigma_{\rm APF} < 10.0$

TABLE 5
Final Convergence Criterion

Criterion	Final Value
minAfactor	40.714
maxArchange	0.008
maxGR	1.007
minTz	4132.719

TABLE 6
Radial Velocities

Time (JD)	RV (m s^{-1})	RV Unc. (m s^{-1})	Inst.
2449611.42780	-45377.00	10.00	ELODIE
2449851.61450	-45353.00	8.00	ELODIE
2449910.50390	-45334.00	7.00	ELODIE
2449974.41100	-45346.00	7.00	ELODIE
2450023.30410	-45339.00	7.00	ELODIE
2450264.60140	-45329.00	8.00	ELODIE
2450265.54520	-45333.00	7.00	ELODIE
2450326.45680	-45341.00	7.00	ELODIE
2450382.27090	-45325.00	7.00	ELODIE
2450648.60500	-45337.00	7.00	ELODIE
2450654.42260	-45315.00	7.00	ELODIE
2450675.52290	-45317.00	7.00	ELODIE
2450701.43110	-45331.00	7.00	ELODIE
2450731.37870	-45332.00	7.00	ELODIE
2450944.60340	-45329.00	7.00	ELODIE
2450970.60330	-45340.00	7.00	ELODIE
2451025.51480	-45344.00	7.00	ELODIE
2451035.52050	-45327.00	7.00	ELODIE
2451054.42880	-45358.00	7.00	ELODIE
2451123.35430	-45339.00	8.00	ELODIE
2451153.22830	-45353.00	8.00	ELODIE
2451353.55720	-45355.00	7.00	ELODIE
2451417.43830	-45365.00	7.00	ELODIE
2451506.27700	-45359.00	8.00	ELODIE
2451693.56620	-45352.00	7.00	ELODIE
2451755.48200	-45344.00	8.00	ELODIE
2451781.46860	-45376.00	7.00	ELODIE
2451802.41950	-45372.00	8.00	ELODIE
2451853.27510	-45358.00	7.00	ELODIE
2451908.25540	-45347.00	11.00	ELODIE
2452075.57580	-45349.00	7.00	ELODIE
2452080.58270	-45348.00	7.00	ELODIE
2452081.59150	-45355.00	7.00	ELODIE
2452111.50410	-45352.00	7.00	ELODIE
2452142.54060	-45366.00	7.00	ELODIE
2452158.46700	-45370.00	7.00	ELODIE
2452160.50080	-45370.00	8.00	ELODIE
2452164.33660	-45353.00	8.00	ELODIE
2452194.37540	-45357.00	7.00	ELODIE
2452196.38040	-45359.00	7.00	ELODIE
2452220.35830	-45359.00	8.00	ELODIE
2452247.23080	-45370.00	7.00	ELODIE
2452250.26450	-45350.00	11.00	ELODIE
2452360.67650	-45354.00	7.00	ELODIE
2452361.67150	-45354.00	7.00	ELODIE
2452454.57510	-45347.00	4.95	ELODIE
2452480.56270	-45361.00	7.00	ELODIE
2452486.50410	-45356.00	7.00	ELODIE
2452513.54610	-45367.00	8.00	ELODIE
2452515.54490	-45376.00	11.00	ELODIE

Note. — Only the first 50 of 761 RVs are displayed in this table. Use `radvel table -t rv` to save the full LaTeX table as a separate file.

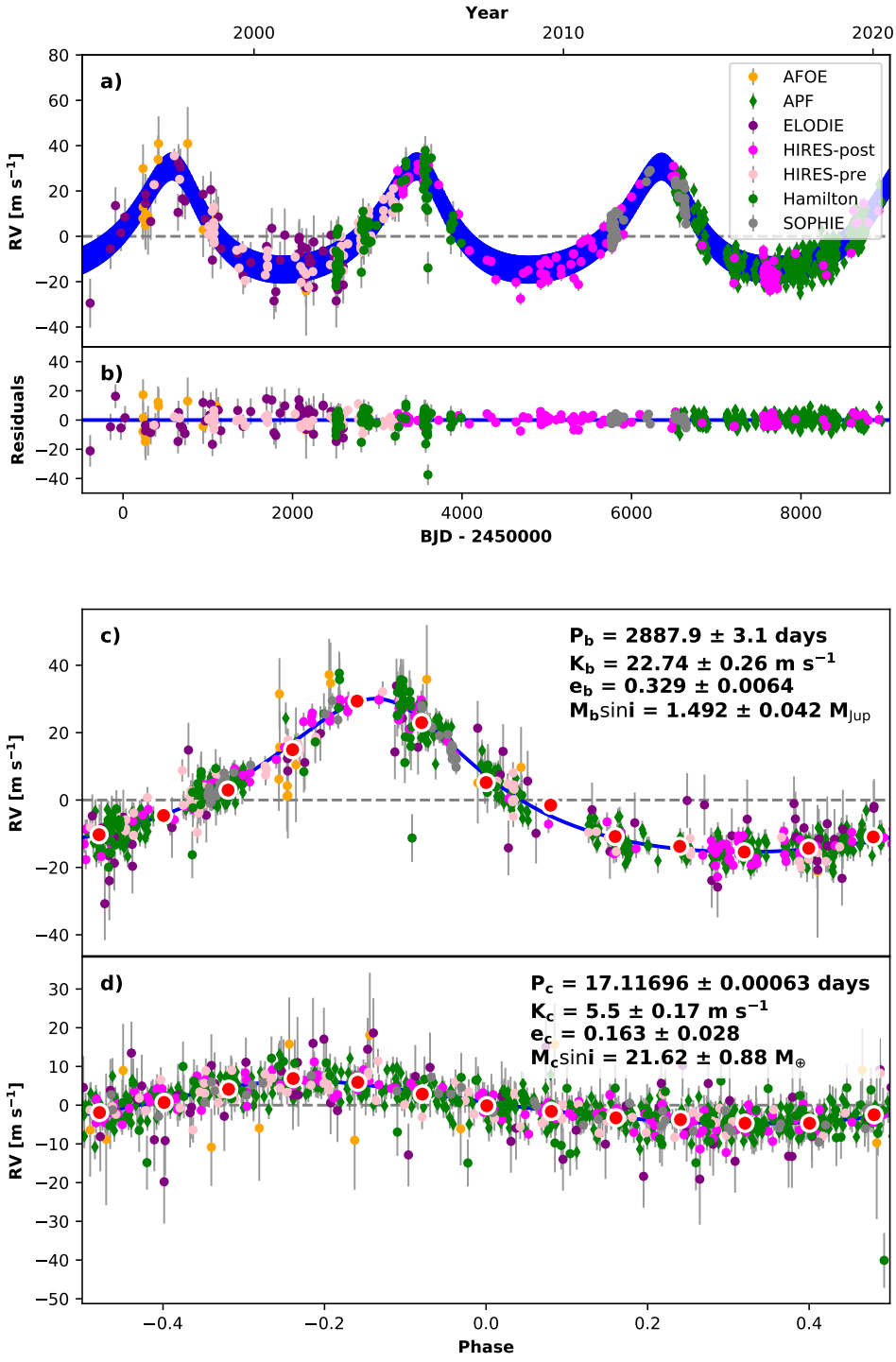

FIG. 1.— Best-fit 2-planet Keplerian orbital model for HD190360. The maximum likelihood model is plotted while the orbital parameters listed in Table 2 are the median values of the posterior distributions. The thin blue line is the best fit 2-planet model. We add in quadrature the RV jitter term(s) listed 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.

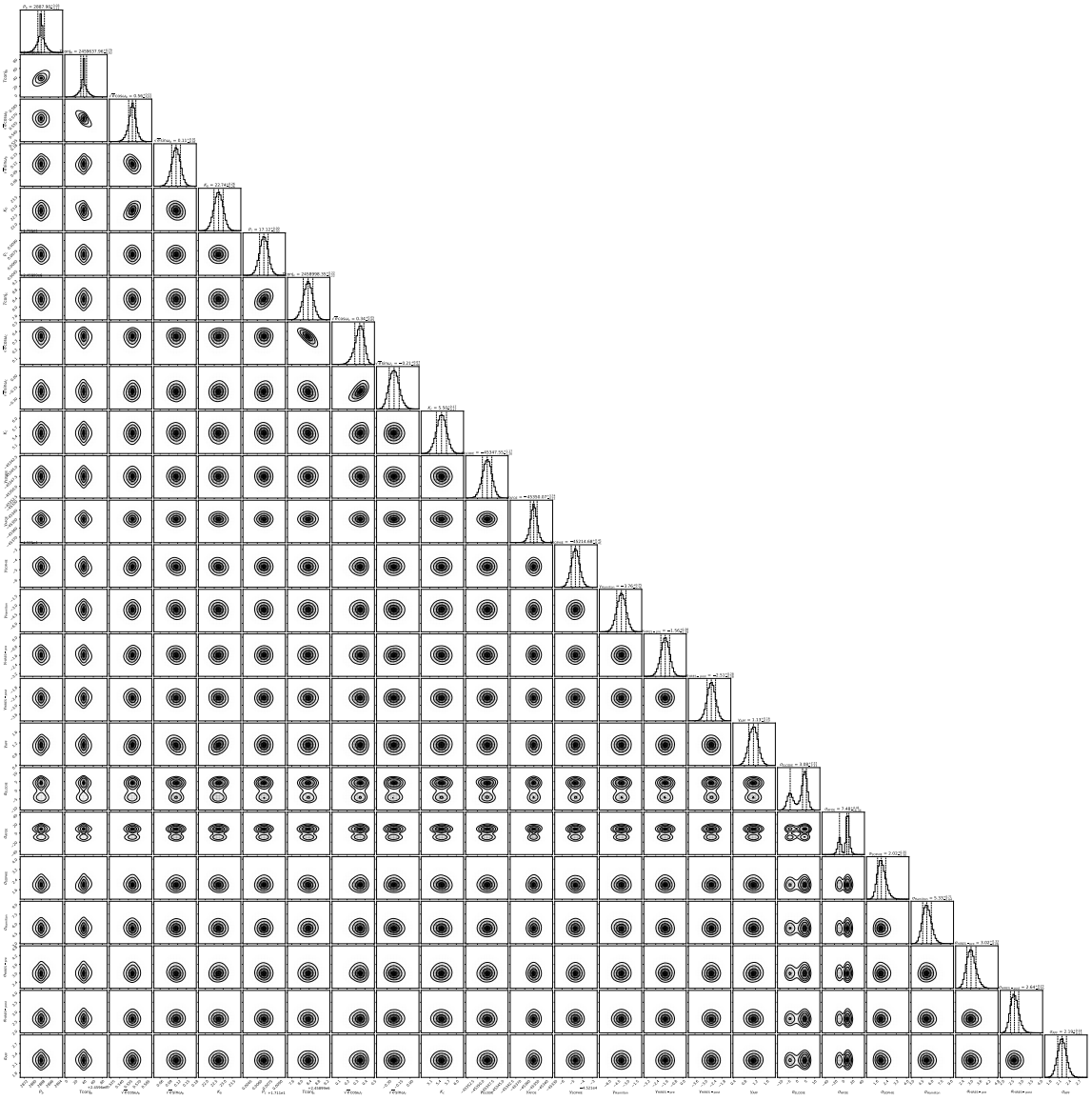

FIG. 2.— Posterior distributions for all free parameters.

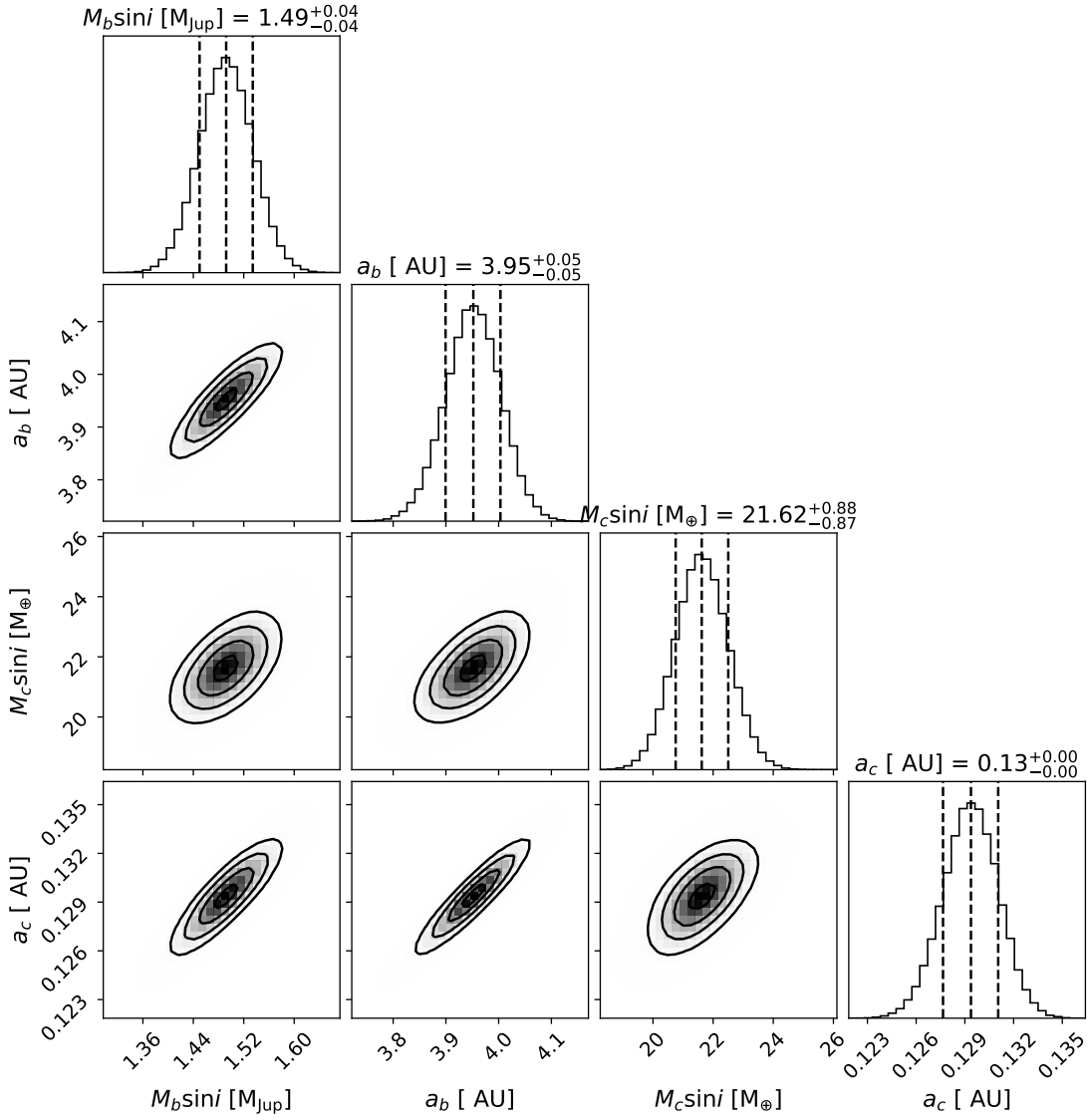

FIG. 3.— Posterior distributions for all derived parameters.