

TABLE 1
MODEL COMPARISON

Statistic	0 planets	1 planets	2 planets	3 planets (adopted)
N_{data} (number of measurements)	654	654	654	654
N_{free} (number of free parameters)	4	9	14	19
RMS (RMS of residuals in m s^{-1})	48.67	14.65	11.35	9.08
χ^2 (jitter fixed)	20617.58	1870.69	1101.71	681.43
χ^2_{ν} (jitter fixed)	31.72	2.9	1.72	1.07
$\ln \mathcal{L}$ (natural log of the likelihood)	-12321.21	-2947.77	-2563.28	-2353.14
BIC (Bayesian information criterion)	24652.9	5911.02	5147.04	4731.76

TABLE 2
MCMC POSTERiors

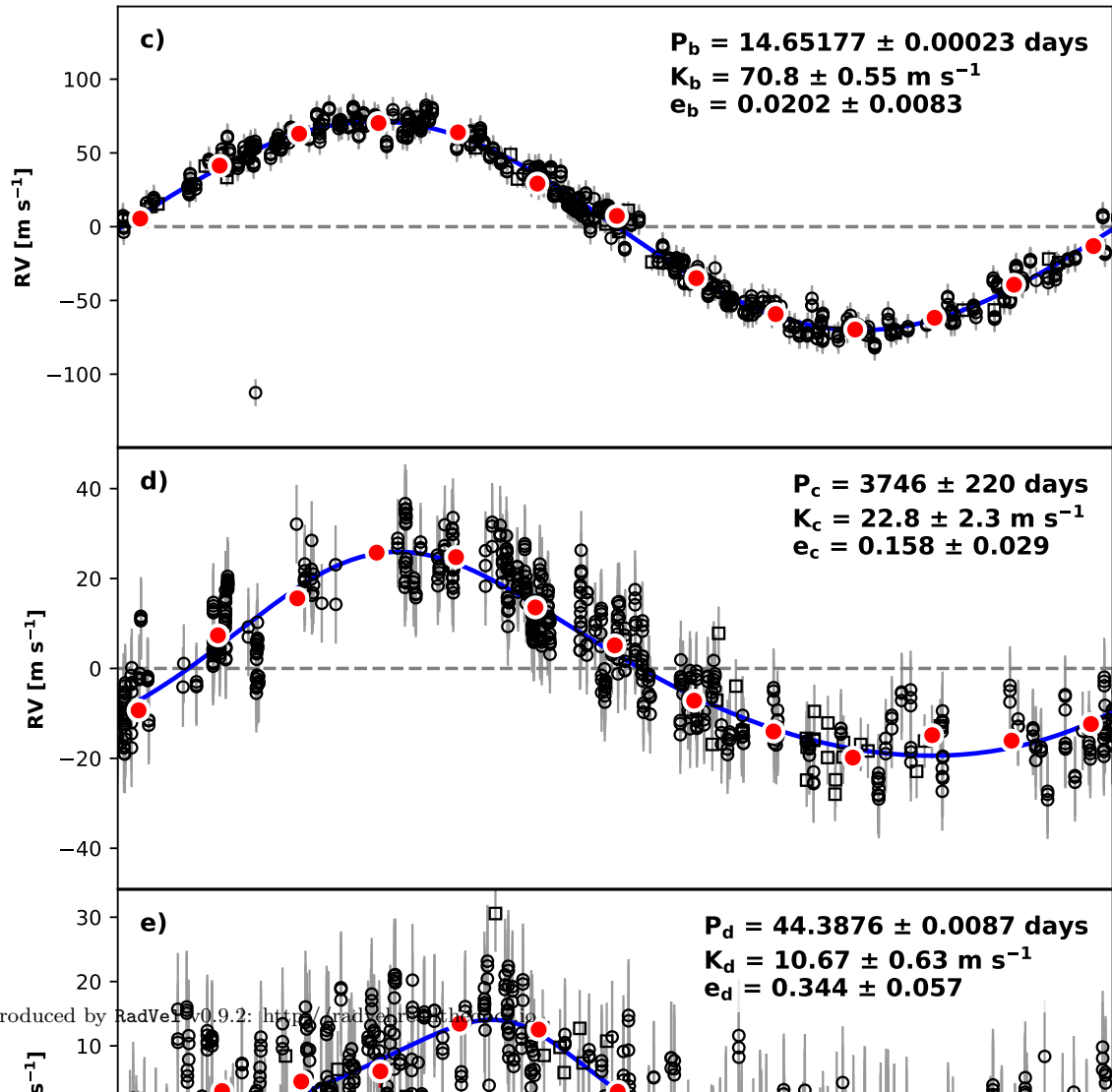
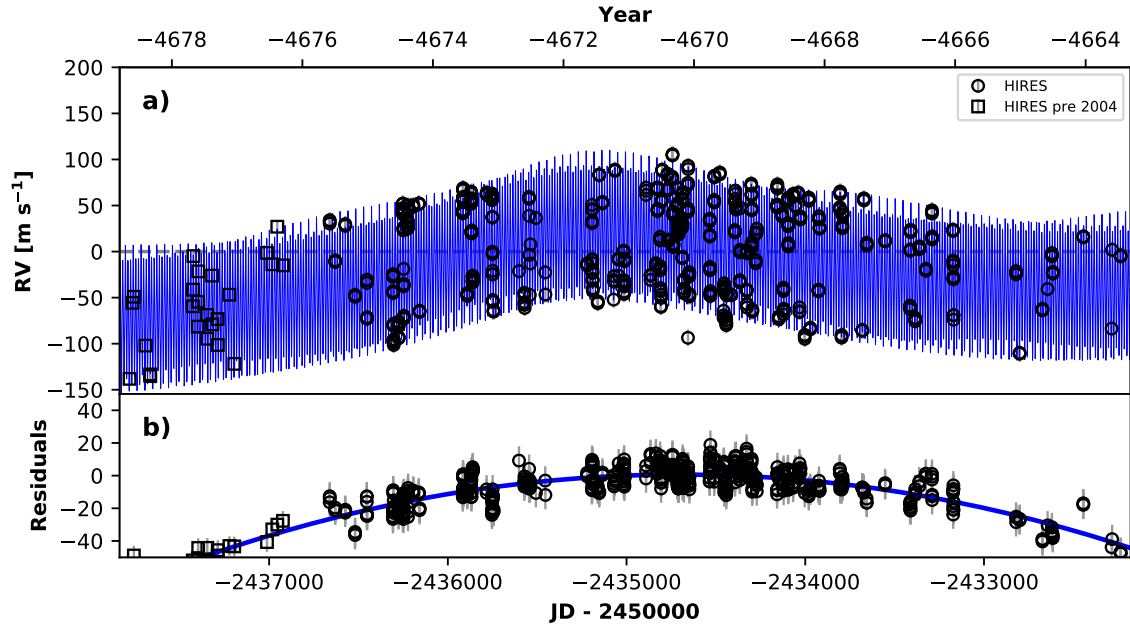
Parameter	Credible Interval	Maximum Likelihood	Units
Modified MCMC Step Parameters			
$\sqrt{e} \cos \omega_b$	0.056 $^{+0.045}_{-0.055}$	0.06	
$\sqrt{e} \sin \omega_b$	0.122 $^{+0.029}_{-0.041}$	0.134	
$\sqrt{e} \cos \omega_c$	0.366 $^{+0.039}_{-0.046}$	0.366	
$\sqrt{e} \sin \omega_c$	-0.139 $^{+0.076}_{-0.069}$	-0.144	
$\sqrt{e} \cos \omega_d$	0.519 $^{+0.061}_{-0.072}$	0.526	
$\sqrt{e} \sin \omega_d$	0.262 $^{+0.077}_{-0.08}$	0.26	
Orbital Parameters			
P_b	14.65177 $^{+0.00021}_{-0.00025}$	14.65176	days
T_{conj_b}	2074.53 $^{+0.22}_{-0.19}$	2074.53	JD
e_b	0.0202 $^{+0.0082}_{-0.0083}$	0.0216	
ω_b	1.14 $^{+0.4}_{-0.38}$	1.15	radians
K_b	70.8 $^{+0.54}_{-0.55}$	70.83	m s^{-1}
P_c	3746 $^{+340}_{-97}$	3743	days
T_{conj_c}	4367 $^{+270}_{-950}$	4367	JD
e_c	0.158 $^{+0.029}_{-0.03}$	0.155	
ω_c	-0.36 ± 0.19	-0.37	radians
K_c	22.8 $^{+2.9}_{-1.7}$	22.7	m s^{-1}
P_d	44.3876 $^{+0.0098}_{-0.0076}$	44.3872	days
T_{conj_d}	2083.7 $^{+1.9}_{-2.9}$	2083.7	JD
e_d	0.344 $^{+0.055}_{-0.059}$	0.344	
ω_d	0.47 $^{+0.16}_{-0.15}$	0.46	radians
K_d	10.67 $^{+0.63}_{-0.62}$	10.74	m s^{-1}
Other Parameters			
γ_k	-7.5 $^{+6.1}_{-6.4}$	-7.6	m s^{-1}
γ_j	-5.8 $^{+1.7}_{-3.8}$	-5.7	m s^{-1}
$\dot{\gamma}$	0.00447 $^{+0.00089}_{-0.00084}$	0.00435	$\text{m s}^{-1} \text{ day}^{-1}$
$\ddot{\gamma}$	-7e-06 $^{+1.6e-06}_{-1.1e-06}$	-7.1e-06	$\text{m s}^{-1} \text{ day}^{-2}$
σ_k	6.6 $^{+1.3}_{-1.0}$	5.8	m s^{-1}
σ_j	8.83 $^{+0.28}_{-0.27}$	8.69	m s^{-1}

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Reference epoch for $\gamma, \dot{\gamma}, \ddot{\gamma}$: 14992.0

TABLE 3
SUMMARY OF PRIORS

e_b constrained to be < 0.99
e_c constrained to be < 0.99
e_d constrained to be < 0.99
K constrained to be > 0
Gaussian prior on P_b : 14.6521 ± 3.663025
Gaussian prior on P_c : 3847.22 ± 961.805
Gaussian prior on P_d : 44.3886 ± 11.09715
Bounded prior: $0.0 < \sigma_j < 15.0$
Bounded prior: $0.0 < \sigma_k < 15.0$



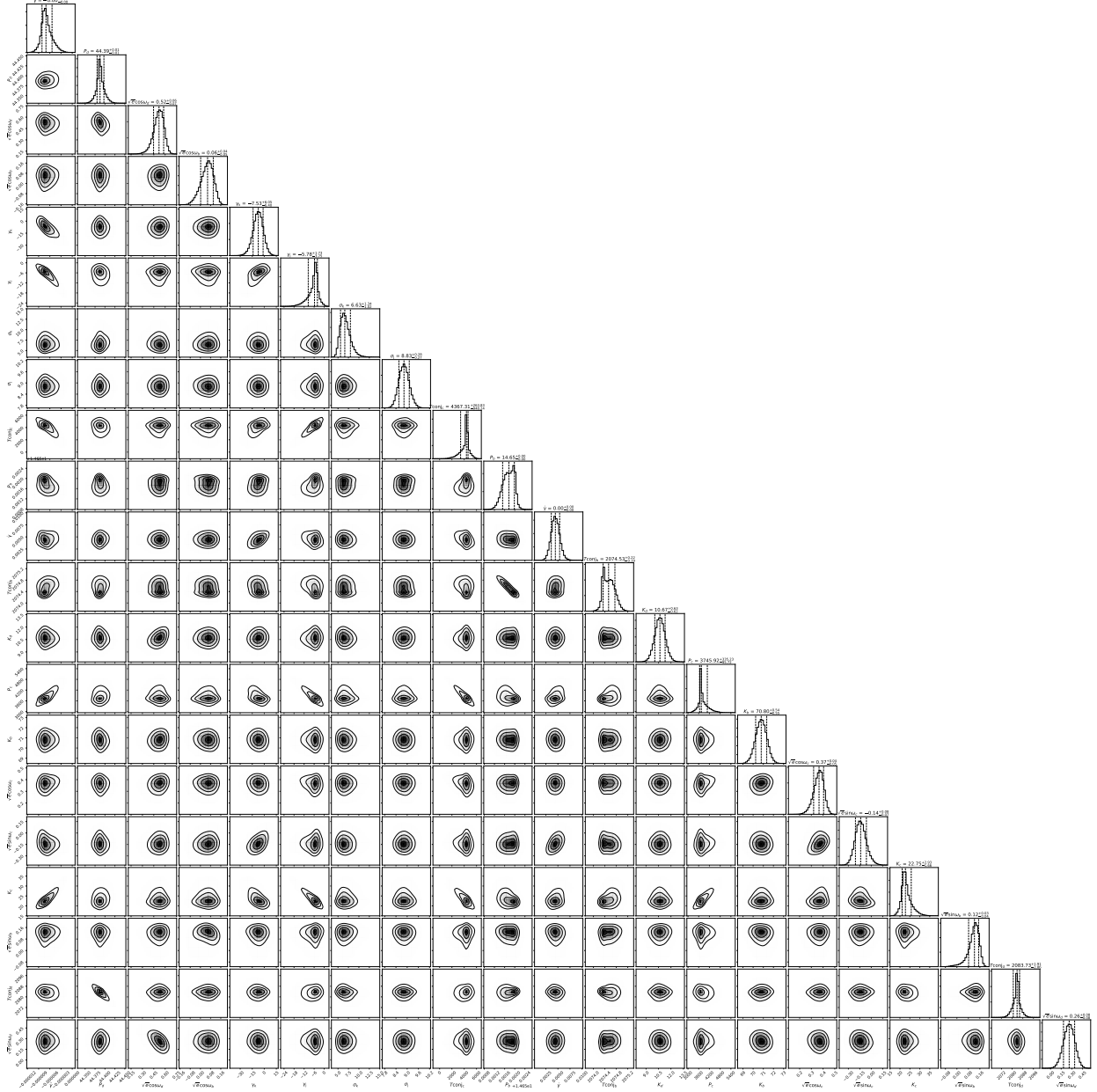


FIG. 2.— Posterior distributions for all free parameters.