Transit Timing Observations from *Kepler*: VII. Potentially interesting candidate systems from Fourier-based statistical tests

Jason H. Steffen[1], Eric B. Ford[2], Jason F. Rowe[8,9], Daniel C. Fabrycky[3,4], Matthew J. Holman[5], William F. Welsh[6], William J. Borucki[8], Natalie M. Batalha[7], Steve Bryson[8], Douglas A. Caldwell[8,9], David R. Ciardi[10], Jon M. Jenkins[8,9], Hans Kjeldsen[11], David G. Koch[8], Andrej Prša[12], Dwight T. Sanderfer [8], Shawn Seader[8], Joseph D. Twicken[8,9],
jsteffen@fnal.gov

ABSTRACT

We analyze the deviations of transit times from a linear ephemeris for the Kepler Objects of Interest (KOI) through Quarter six (Q6) of science data. We conduct two statistical tests for all KOIs and a related statistical test for all pairs of KOIs in multi-transiting systems. These tests identify several systems which show potentially interesting transit timing variations (TTVs). Strong TTV systems have been valuable for the confirmation of planets and their mass measurements. Many of the systems identified in this study should prove fruitful for detailed TTV studies.

Subject headings: planetary systems; planets and satellites: detection, dynamical evolution, and stability; techniques; miscellaneous

1. Introduction

In transiting exoplanet systems, the deviations from a constant orbital period caused by planet-planet dynamical interactions have proven to be very useful in detecting and characterizing the constituent planets. Transit timing variations (TTVs) for short-timescale and resonant interactions are particularly useful (Agol et al. 2005; Holman and Murray 2005) though secularly induced TTVs have also been studied (Miralda-Escudé 2002; Heyl and Gladman 2007). The *Kepler* mission has profited greatly by the use of TTVs, having used them extensively in the confirmation of a significant fraction of its currently confirmed planets: Kepler-9 (Holman et al. 2010), Kepler-11 (Lissauer et al. 2011), and Kepler-18 (Cochran et al. 2011), with many more to come (Ford et al. 2012a; Fabrycky et al. 2011; Steffen et al. 2012a, *in press*). TTVs have given: important mass measurements for smaller planets that would be exceedingly difficult to obtain through radial velocity (RV) measurements; stringent limits on the presence of small planets near mean-motion resonance (MMR) with hot Jupiters (Steffen and Agol 2005; Steffen et al. 2012b) with consequent constraints on planet formation and dynamical evolution; and the identification of a

[1]Fermilab Center for Particle Astrophysics, P.O. Box 500, MS 127, Batavia, IL 60510

[2]Astronomy Department, University of Florida, 211 Bryant Space Sciences Center, Gainesville, FL 32111, USA

[3]UCO/Lick Observatory, University of California, Santa Cruz, CA 95064, USA

[4]Hubble Fellow

[5]Harvard-Smithsonian Center for Astrophysics, 60 Garden Street, Cambridge, MA 02138, USA

[6]Astronomy Department, San Diego State University, San Diego, CA 92182-1221 , USA

[7]San Jose State University, San Jose, CA 95192, USA

[8]NASA Ames Research Center, Moffett Field, CA, 94035, USA

[9]SETI Institute, Mountain View, CA, 94043, USA

[10]NASA Exoplanet Science Institute/California Institute of Technology, Pasadena, CA 91125 USA

[11]Department of Physics and Astronomy, Aarhus University, DK-8000 Aarhus C, Denmark

[12]Department of Astronomy and Astrophysics, Villanova University, 800 East Lancaster Avenue, Villanova, PA 19085, USA

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non-transiting planet, Kepler-19 (Ballard et al. 2011), with as-yet undetermined orbital properties.

With the inital release of two quarters of data in 2011 (Borucki et al. 2011) there was an accompanying paper discussing potential TTV candidates (Ford et al. 2011). Now, with the release of more than a year of additional data, we revisit task of identifying systems that show interesting TTV signatures here and in a companion paper (Ford et al. 2012b) using transit times reported in (Rowe et al. 2012). A number of these systems have already been identified, studied, and announced. However, several new systems have been the subject of only cursory investigation and merit further scrutiny. The increased time baseline of the *Kepler* data through Q6 provides many more systems with interesting TTV features as typical timescales for large TTV signals are tens of orbits—which are only now avaiable. With continued operations the scientific yield from *Kepler* and from TTVs specifically will be particularly valuable to the study of planets as many of the orbital and physical properties of planets with small sizes and masses can only be gleaned through TTV analysis. A possible extension to the *Kepler* mission, with its increased time baseline for TTV studies, will present an opportunity to learn about planets—notably including terrestrial planets and planets near the habitable zone—that will not be rivaled for many decades.

In what follows we present the results of a few straightforward statistical tests on the transit times of known Kepler Objects of Interest (KOI). Two of these tests are applied to all individual KOIs while a third test is applied to pairs of KOIs in the same system in an effort to use correlated TTV signals as a means to improve our sensitivity to dynamical interactions. The point of these tests is not to assign rigorous absolute probabilities for the detection of a TTV signal; rather it is to identify systems that merit additional scrutiny. The results of the tests are presented in a single, large table for all analyzed systems (Table 1).

2. Data Reduction

We use KOIs from the planet candidate table reported in (Borucki et al. 2011) and include a number of recently identified candidates associated with the target stars published therein. These new candidates appear in (Batalha et al. 2012). The transit times for each KOI are determined following the method described in (Ford et al. 2011) and are given in tabular form in (Rowe et al. 2012). Frequently with that method there are some transit times that have anomalously large deviations from a linear ephemeris or that have unusually large error bars. In most cases these anomalies are due to some source of photometric noise or transit detections with low significance rather than from planetary dynamics. However, in cases in which TTVs are larger than the transit duration, the algorithm may fail to find the correct solution, with the optimization algorithm not reaching the global minimum even if the individual transits are highly significant. In those cases, we rerun the algorithm with the initial guesses close enough to the true transit times so the algorithm can model them correctly. For the case of Kepler-9 and KOI-142, we apply the method used in the discovery of Kepler-9 (Holman et al. 2010).

In order to remove non-planetary anomalous TTVs from our analysis, we reduce our timing data by requiring that the mean signal-to-noise ratio (SNR) per transit for a given KOI exceed 3. We eliminate all transit times where the timing residuals deviate from a linear ephemeris by more than four times the Median Absolute Deviation (MAD) of all timing residuals. We also eliminate all transit times where the timing uncertainty is larger than twice the MAD of all timing uncertainties for that system. Once this data reduction criteria has been applied, we fit a new linear ephemeris and conduct our remaining analysis on the resulting timing residuals. Table 1 shows the KOIs studied here (1040 total) along with the results of the statistical tests outlined below.

3. Individual Objects

The first analysis we present is applied to each individual KOI. Here we look for a sinusoidal TTV signal with arbitrary amplitude, phase, and period. We compare this model to the null model where the transit times are fit to a linear ephemeris using the standard F-ratio test with two and five parameters for the null model and the sinusoidal model respectively. This method was first ap-

plied to a sample of hot Jupiter candidates in (Steffen et al. 2012b). We do not claim that the results of this test give an accurate estimate of the statistical significance of a TTV signal, rather that this test can identify interesting systems that merit further scrutiny—as is the goal of this letter. The results of the F-ratio test (p-values that represent the probability that the two-parameter, null model is the correct model of the two models being compared) are shown in Figure 1. We note that the KOIs in light colors in this and all figures are for known planets or well studied KOIs and include: 84 (Kepler-19), 137 (Kepler-18), 157 (Kepler-11), 168, 244, 250, 377 (Kepler-9), 738, 806, 841, 870, 935, 952, and 1102.

There are a few planet candidates among the group of well studied objects that have relatively small p-values, notably KOI-806 (Tingley et al. 2011; Fabrycky et al. 2011) and Kepler-9 (Holman et al. 2010). However, it is noteworthy that most of the multi-transiting systems that are being studied for anticorrelated TTV signatures in (Ford et al. 2012a; Fabrycky et al. 2011; Steffen et al. 2012a) and the planets in Kepler-11 (Lissauer et al. 2011) do not have particularly low p-values. This is further indication of the importance of multi-transiting planetary systems for the purposes of planet confirmation and dynamical interpretation. A correlation analysis, as is done in (Ford et al. 2012a; Fabrycky et al. 2011; Steffen et al. 2012a) and in the next section of this work, can identify otherwise weak individual candidates. For the F-ratio test, systems that have p-values below 0.05 and that have 10 or more transits are likely to be the most interesting and include (in order of significance) KOIs: 377 (Kepler-9), 142, 1573, 227, 448, 277, 918, 319, 308, 872, 103, 904, 817, and 764—while still others have undoubtedly interesting signals.

A second analysis for the individual KOIs was to record the ratio of the amplitude of the best fitting sinusoidal model to the uncertainty in that amplitude (the signal-to-noise ratio (SNR) of the sinusoid amplitude fit). This SNR statistic is given by:

$$SNR = \left((A^2 + B^2)(\sigma_A^{-2} + \sigma_B^{-2})\right)^{1/2} \quad (1)$$

where A and B are the amplitudes of the best fitting sine and cosine components and σ_A and σ_B are the uncertainties in those amplitudes (cf., equation (2) below).

Figure 2 shows the results of this test for all KOIs. As with the F-ratio test, the SNR test shows several systems with sinusoidal amplitudes detected with a large SNR—including many that have not been investigated in depth. The top candidates from this test with SNR greater than 15 and more than 10 transits include (in order of significance) KOIs: 377 (Kepler-9), 142, 1573, 784, 13, 984, 277, 227, 103, 524, and 137 (Kepler-18). It is noteworthy that not all of the top candidates from the F-ratio test are top candidates for the SNR test and vice versa. We also point out that in some cases the tests identify some clearly bad candidate systems. For example, the SNR test identifies KOI-13 with high significance—while its timing residuals are caused by an interesting mix of stellar variability and planet-star dynamics, but not an additional planet (Szabó et al. 2011).

4. Object Pairs

For pairs of planets, an additional diagnostic is to look for anticorrelation in the TTV signal. Using an anticorrelation measurement can have much more power to distinguish real TTV signals from noise as one would expect timing noise to be positively correlated at best and uncorrelated at worst for minimally-interacting planets (some dynamical scenarios can produce positively correlated residuals on short timescales). Following the procedure outlined in (Steffen et al. 2012a) we calculate $\Xi_{\rm max}$ for each pair of KOIs that satisfy the selection criteria outlined above for all of the systems with multiple transiting objects. This is 168 systems with 236 total pairs. The statistic $\Xi_{\rm max}$ is found from a periodogram generated by fitting the TTV signal to a set of sinusoidal functions with specific periods:

$$f_i = A \sin\left(\frac{2\pi t P_i}{P}\right) + B \cos\left(\frac{2\pi t P_i}{P}\right) + C \quad (2)$$

where A, B, and C are model parameters, P is the mean orbital period of the planet in question, and P_i is the test timescale.

The fitted values for A and B and their measured uncertainties, σ_A and σ_B are then used to calculate Ξ for each of the sampled periods using

$$\Xi = -\left(\frac{A_1 A_2}{\sigma_{A1}\sigma_{A2}} + \frac{B_1 B_2}{\sigma_{B1}\sigma_{B2}}\right) \quad (3)$$

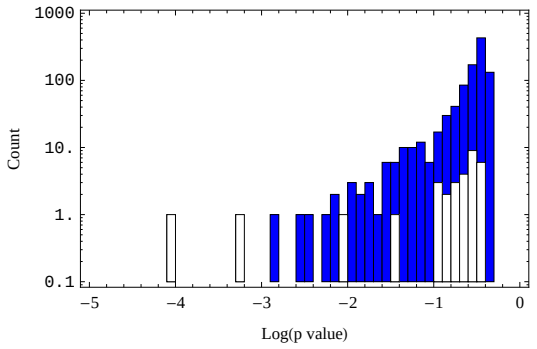

Fig. 1.— Histogram of the p-values resulting from the F-Ratio test. The p-value from known multi-planet systems are the light colored bars. The two most significant systems with this test are the two planets in Kepler-9b.

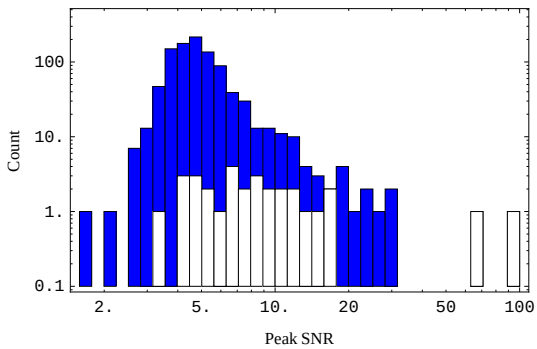

Fig. 2.— Histogram of the SNR values resulting from the SNR test. Known multibody systems are the light colored bars. Again, the two most significant systems with this test are the two planets in Kepler-9b. However, KOI-1573 and KOI-784 also have very large SNR detections.

where the "1" and "2" subscripts correspond to the two objects. Finally, the maximum value that Ξ has for a given candidate pair, $\Xi_{\rm max}$, is the statistic we choose to determine the significance of any interaction between the two objects. The square root of $\Xi_{\rm max}$ is approximately the significance in terms of σ for Gaussian deviates, though we note that an accurate determination of the significance is best done via Monte Carlo simulation (see Ford et al. 2012a; Fabrycky et al. 2011; Steffen et al. 2012a).

Figure 3 shows the results of this analysis for all KOI pairs. Many of the most significant pairs are in previously identified systems (denoted by the light bars) with Kepler-9 and Kepler-18 being the most significant detections. Still, several have not been previously identified in the literature including KOI-904. Other significant pairs may be found by including systems with fewer transits (e.g., KOI-806) or with transits detected with less significance, however expanding the analysis down to such systems results in many more spurious detections. Table 1 includes a subset of all calculated $\Xi_{\rm max}$ values—specifically, the $\Xi_{\rm max}$ value found for a given candidate and its neighbor with the next largest orbital period that satisfies the sample selection criteria.

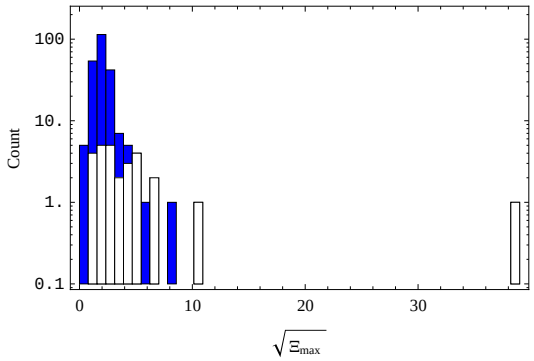

Fig. 3.— Histogram of $\sqrt{\Xi_{\rm max}}$ for all pairs of candidates. Pairs from well studied multiobject systems are shown with light-colored bars.

5. Conclusions

With the public release of *Kepler* data through Q6, many opportunities are available to study the detailed dynamics of *Kepler* candidate systems.

We have conducted some straightforward statistical tests in an effort to identify systems that may be particularly fruitful. Some of the most interesting systems have been identified previously. However, many remain unexplored. Table 1 gives the results of each of these tests and can be used to identify systems that are worthy of additional scrutiny.

Kepler's unique data have enabled unprecedented scientific advances in the study of exoplanets and TTV analyses have played a central role in this endeavor. With these new data and the identification of additional TTV candidate systems several important opportunities are enabled such as the measurement of planetary masses, dynamical studies of mean-motion resonance, the constraints on mutual inclinations, and the discovery of non-transiting exoplanets. These can, in turn, inform models of planet formation and dynamical evolution. Ultimately, TTV analysis is the only means currently available that can measure planet masses of terrestrial planets in the habitable zone of a Sun-like star. At present, its full potential has not been realized.

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TABLE 1

PERIOD, NUMBER OF TRANSITS, THE RESULTS OF THE SNR OF THE BEST-FIT SINUSOIDAL AMPLITUDE, THE P-VALUE FOR THE F-RATIO TEST, AND $\Xi_{\rm MAX}$ FOR EACH KOI.

KOI	Period (days)	N_t	SNR	p-value	$\Xi_{\rm max}{}^a$
1.01	2.471	149	5.318	0.4043	
2.01	2.205	203	8.217	0.3844	
3.01	4.888	78	6.953	0.3429	
4.01	3.849	85	4.463	0.3979	
5.01	4.780	88	4.707	0.3928	
7.01	3.214	115	4.944	0.3995	
10.01	3.522	126	4.137	0.4110	
12.01	17.855	24	4.280	0.3219	
13.01	1.764	258	26.747	0.1870	
17.01	3.235	142	4.664	0.4085	
18.01	3.548	125	4.696	0.4042	
20.01	4.438	85	3.886	0.4001	
22.01	7.891	57	5.102	0.3634	
41.01	12.816	34	3.623	0.3720	
42.01	17.834	27	6.479	0.2377	
44.01	66.468	8	3.947	0.1660	
46.01	3.488	129	4.594	0.4044	
49.01	8.314	51	5.343	0.3498	
51.01	10.431	34	5.067	0.3170	
63.01	9.434	48	3.335	0.3921	
64.01	1.951	228	4.908	0.4154	
69.01	4.727	96	4.243	0.4016	
70.01	10.854	36	4.867	0.3273	3.325
70.02	3.696	121	5.869	0.3913	5.186
70.05	19.578	22	4.525	0.3166	
72.01	0.837	450	5.447	0.4206	0.639
72.02	45.294	10	4.586	0.1576	
82.01	16.146	26	4.787	0.3190	
82.02	10.312	40	5.240	0.3454	4.899
82.03	9.151	46	3.783	0.3815	5.440
84.01	9.287	47	11.257	0.1918	
85.01	5.860	76	3.772	0.4032	2.141
85.02	2.155	46	4.411	0.3701	5.250
85.03	8.131	56	5.827	0.3449	
92.01	65.705	7	9.241	0.0159	
94.01	22.343	10	4.232	0.2206	
94.02	10.424	20	7.136	0.2108	2.885
97.01	4.885	91	4.075	0.4024	
98.01	6.790	66	3.621	0.4013	
100.01	9.966	43	6.059	0.3135	
102.01	1.735	254	5.890	0.4108	

TABLE 1—*Continued*

KOI	Period (days)	N_t	SNR	p-value	$\Xi_{\max}{}^a$
103.01	14.911	30	19.051	0.0317	
104.01	2.508	179	5.950	0.4014	
105.01	8.981	45	4.710	0.3662	
107.01	7.257	63	3.768	0.3998	
108.01	15.965	26	3.867	0.3478	
110.01	9.941	46	5.277	0.3498	
111.01	11.428	39	3.609	0.3788	2.593
111.02	23.669	19	3.505	0.3295	6.798
111.03	51.757	6	5.498	0.0426	
112.01	51.079	9	6.500	0.0782	
112.02	3.709	118	4.522	0.4063	3.541
115.01	5.412	80	5.398	0.3785	5.896
115.02	7.126	63	4.536	0.3810	
116.01	13.571	33	3.981	0.3596	1.869
116.02	43.845	11	5.144	0.1502	
117.01	14.749	29	5.151	0.3468	
117.02	4.901	88	4.519	0.3961	3.577
117.03	3.180	142	4.291	0.4114	6.158
118.01	24.993	19	4.860	0.2670	
119.01	49.184	9	3.945	0.1914	
122.01	11.523	38	3.675	0.3742	
123.01	6.482	70	4.535	0.3906	2.359
123.02	21.222	22	3.593	0.3362	
124.01	12.691	35	4.040	0.3732	2.918
124.02	31.720	15	4.720	0.2299	
127.01	3.579	122	6.334	0.3836	
128.01	4.943	88	5.910	0.3764	
131.01	5.014	91	4.569	0.3963	
135.01	3.024	151	5.710	0.3989	
137.01	7.642	62	16.832	0.1101	102.551
137.02	14.859	32	11.432	0.1200	
137.03	3.505	123	5.435	0.3960	2.121
138.01	48.938	10	4.310	0.1996	
141.01	2.624	171	5.059	0.4097	
142.01	10.951	41	47.818	0.0017	
144.01	4.176	88	6.036	0.3738	
148.01	4.778	92	4.432	0.3961	15.820
148.02	9.674	47	8.215	0.2579	0.666
148.03	42.896	11	3.861	0.2434	
149.01	14.557	29	5.149	0.3157	
150.01	8.409	55	5.047	0.3643	5.202

TABLE 1—*Continued*

KOI	Period (days)	N_t	SNR	p-value	$\Xi_{\max}{}^a$
150.02	28.574	10	6.503	0.0968	
151.01	13.447	30	4.011	0.3474	
152.01	52.091	10	4.748	0.1677	
152.02	27.403	17	7.648	0.1460	0.947
152.03	13.484	34	4.015	0.3577	7.645
153.01	8.925	50	5.635	0.3455	
153.02	4.754	94	4.063	0.4048	4.755
155.01	5.661	77	4.455	0.3924	
156.01	8.041	53	4.826	0.3681	5.360
156.02	5.189	71	5.868	0.3623	2.673
156.03	11.776	39	4.760	0.3475	
157.01	13.025	32	4.853	0.3297	9.402
157.02	22.687	19	3.994	0.3075	5.695
157.03	31.995	13	4.292	0.2318	27.729
157.04	46.690	9	14.286	0.0348	
157.06	10.304	42	6.337	0.2961	11.341
159.01	8.991	48	3.736	0.3914	
161.01	3.106	147	6.279	0.3927	
162.01	14.006	31	3.604	0.3658	
163.01	11.120	42	4.540	0.3588	
165.01	13.222	34	3.461	0.3723	
166.01	12.493	35	6.012	0.3030	
167.01	4.920	91	4.099	0.4034	
168.01	10.742	42	13.480	0.1174	
171.01	5.969	73	5.258	0.3807	
172.01	13.722	32	4.369	0.3451	
173.01	10.061	43	3.575	0.3789	
174.01	56.355	8	8.022	0.0464	
176.01	30.229	16	4.339	0.2642	
177.01	21.061	23	3.923	0.3262	
179.01	20.740	21	3.527	0.3328	
180.01	10.046	45	6.018	0.3222	
183.01	2.684	169	4.659	0.4113	
186.01	3.243	139	5.972	0.3919	
187.01	30.883	14	4.809	0.2319	
188.01	3.797	120	4.414	0.4075	
189.01	30.360	14	4.933	0.2221	
190.01	12.265	30	7.439	0.2205	
191.01	15.359	25	3.666	0.3460	-0.059
191.02	2.418	149	4.835	0.4070	1.183
191.04	38.650	10	6.203	0.1130	

TABLE 1—*Continued*

KOI	Period (days)	N_t	SNR	p-value	$\Xi_{\max}{}^a$
192.01	10.291	38	3.329	0.3860	
193.01	37.590	13	4.297	0.2290	
194.01	3.121	137	5.230	0.4011	
195.01	3.218	129	3.893	0.4132	
196.01	1.856	238	4.788	0.4171	
197.01	17.276	24	6.493	0.2361	
199.01	3.269	138	4.522	0.4093	
200.01	7.341	57	3.953	0.3859	
201.01	4.225	100	4.639	0.3999	
202.01	1.721	260	5.496	0.4138	
203.01	1.486	305	4.198	0.4220	
204.01	3.247	131	5.002	0.4032	
205.01	11.720	39	3.405	0.3828	
206.01	5.334	86	4.976	0.3875	
208.01	3.004	121	4.351	0.4071	
209.01	50.791	7	7.474	0.0152	
209.02	18.796	24	4.333	0.3210	0.706
212.01	5.696	48	4.175	0.3781	
214.01	3.312	120	5.622	0.3932	
216.01	20.172	21	4.287	0.2763	
217.01	3.905	116	5.613	0.3920	
219.01	8.025	55	4.962	0.3672	
220.01	2.422	189	4.812	0.4120	
221.01	3.413	130	4.513	0.4090	
222.01	6.312	68	3.714	0.4016	4.599
222.02	12.795	30	3.798	0.3517	
223.01	3.177	139	5.086	0.4033	0.543
223.02	41.007	10	3.556	0.2236	
225.01	0.839	335	7.493	0.4073	
226.01	8.309	57	4.563	0.3772	
227.01	17.665	21	22.176	0.0112	
229.01	3.573	127	4.226	0.4101	
232.01	12.466	37	2.703	0.4003	
232.02	5.766	78	5.685	0.3746	2.605
234.01	9.614	52	5.323	0.3564	
235.01	5.633	81	4.701	0.3879	
237.01	8.508	52	4.088	0.3794	
238.01	17.232	26	3.412	0.3633	
239.01	5.641	75	4.300	0.3934	
240.01	4.287	104	4.164	0.4060	
241.01	13.821	29	5.906	0.2689	

TABLE 1—*Continued*

KOI	Period (days)	N_t	SNR	p-value	$\Xi_{\max}{}^a$
242.01	7.258	62	4.429	0.3844	
244.01	12.720	33	4.652	0.3319	
244.02	6.239	69	9.471	0.2659	22.910
245.01	39.792	11	3.562	0.2612	
246.01	5.399	76	3.656	0.4031	
247.01	13.815	26	4.576	0.3156	
248.01	7.204	63	11.544	0.2187	3.626
248.02	10.912	8	8.449	0.0610	
249.01	9.549	43	4.264	0.3714	
250.01	12.283	34	9.353	0.1905	33.233
250.02	17.251	24	5.098	0.2944	
251.01	4.164	103	4.915	0.3964	
252.01	17.604	24	3.800	0.3241	
253.01	6.383	59	4.587	0.3784	
254.01	2.455	179	7.212	0.3896	
255.01	27.522	17	3.267	0.3353	
257.01	6.883	52	4.459	0.3697	
258.01	4.158	85	6.100	0.3708	
260.01	10.496	37	4.536	0.3499	
261.01	16.238	27	6.305	0.2569	
262.01	7.813	55	3.616	0.3935	
263.01	20.719	18	3.569	0.3217	
269.01	18.011	23	4.653	0.2984	
270.01	12.583	34	3.495	0.3620	4.766
270.02	33.673	13	4.324	0.2381	
271.01	48.631	8	7.380	0.0557	
271.02	29.392	16	4.437	0.2573	5.061
273.01	10.574	37	5.136	0.3249	
275.01	15.792	20	3.736	0.3204	
276.01	41.746	11	3.864	0.2295	
277.01	16.228	28	24.248	0.0122	
279.01	28.455	15	5.681	0.1888	
279.02	15.413	24	3.830	0.3353	2.898
280.01	11.873	36	2.889	0.3926	
281.01	19.557	19	7.613	0.2438	
282.01	27.508	14	4.784	0.2155	
283.01	16.092	27	3.921	0.3417	
284.01	18.010	19	4.760	0.2676	
284.02	6.415	49	4.552	0.3616	2.743
284.03	6.178	54	4.075	0.3867	5.107
285.01	13.749	33	4.338	0.3528	

TABLE 1—*Continued*

KOI	Period (days)	N_t	SNR	p-value	$\Xi_{\max}{}^a$
288.01	10.275	37	5.947	0.3090	
289.01	26.629	14	3.310	0.3284	
291.01	31.518	15	4.637	0.2409	
292.01	2.587	144	4.969	0.4075	
294.01	34.436	11	4.075	0.2227	
295.01	5.317	68	5.687	0.3626	
296.01	28.862	11	3.387	0.2613	
297.01	5.652	66	4.538	0.3838	
298.01	19.964	22	3.639	0.3445	
299.01	1.542	67	4.870	0.3802	
301.01	6.001	6	4.588	0.0697	
302.01	24.855	11	3.798	0.2582	
303.01	60.929	6	5.548	0.0457	
304.01	8.512	48	3.999	0.3814	
305.01	4.604	92	4.588	0.3968	
306.01	24.308	15	6.075	0.1739	
307.01	19.674	23	5.079	0.2781	
308.01	35.595	12	13.428	0.0312	
312.01	11.579	37	7.735	0.2454	
313.01	18.736	19	4.395	0.2905	
313.02	8.436	51	5.816	0.3346	7.755
314.01	13.781	31	4.662	0.3315	5.601
314.02	23.090	19	6.874	0.3140	
315.01	35.591	11	3.910	0.2446	
317.01	22.208	19	4.073	0.2960	
318.01	38.584	11	4.968	0.1695	
319.01	46.151	10	9.771	0.0293	
321.01	2.426	187	5.031	0.4103	
323.01	5.836	73	5.136	0.3776	
326.01	8.973	48	3.876	0.3884	
327.01	3.254	90	4.722	0.3906	
330.01	7.974	54	3.600	0.3933	
331.01	18.684	23	3.796	0.3322	
332.01	5.459	81	5.474	0.3786	
333.01	13.285	33	3.235	0.3680	
335.01	46.567	9	6.898	0.0698	
337.01	19.784	24	4.402	0.3082	
338.01	7.011	56	3.974	0.3858	
339.01	1.980	196	4.617	0.4143	1.482
339.02	12.834	34	5.222	0.3175	
341.01	14.341	30	7.228	0.2256	

TABLE 1—*Continued*

KOI	Period (days)	N_t	SNR	p-value	$\Xi_{\max}{}^a$
343.01	4.762	91	4.252	0.4007	
343.02	2.024	210	6.071	0.4040	5.263
344.01	39.309	12	4.528	0.2012	
345.01	29.886	12	4.748	0.2053	
346.01	12.925	35	3.579	0.3785	
348.01	28.511	16	5.904	0.1776	
349.01	14.387	29	5.531	0.2907	
350.01	12.991	28	4.187	0.3385	
351.03	59.739	7	9.169	0.0074	
352.01	27.083	17	3.965	0.2819	
354.01	15.960	28	4.714	0.3215	
355.01	4.903	88	4.269	0.3994	
356.01	1.827	241	5.201	0.4140	
361.01	3.248	134	4.492	0.4069	
366.01	75.112	6	3.420	0.1731	
367.01	31.579	11	5.912	0.1319	
370.01	42.882	10	5.311	0.1545	
370.02	22.951	19	5.969	0.2146	3.301
377.01	19.265	24	95.814	0.0006	1478.930
377.02	38.882	13	70.098	0.0001	
379.01	6.717	66	4.347	0.3925	
384.01	5.080	69	4.285	0.3903	
385.01	13.145	34	4.601	0.3429	
386.01	31.158	11	6.315	0.2476	
387.01	13.900	30	4.658	0.3288	
388.01	6.150	65	4.018	0.3928	
392.01	33.418	12	6.284	0.1253	
393.01	21.416	17	3.884	0.3007	
398.01	51.847	8	5.019	0.1015	
398.02	4.180	7	5.004	0.1008	1.920
401.01	29.199	14	6.637	0.1278	
408.01	7.382	58	4.075	0.3911	4.949
408.02	12.561	32	3.777	0.3696	1.688
408.03	30.825	14	4.266	0.2621	
409.01	13.249	31	4.420	0.3409	
410.01	7.217	60	3.665	0.3972	
412.01	4.147	89	4.103	0.4014	
413.01	15.229	29	4.813	0.3090	1.925
413.02	24.675	18	4.500	0.2857	
416.01	18.208	20	4.261	0.3175	4.106
416.02	88.254	6	5.875	0.0482	

TABLE 1—*Continued*

KOI	Period (days)	N_t	SNR	p-value	$\Xi_{\max}{}^a$
417.01	19.193	22	4.762	0.2994	
418.01	22.418	16	4.745	0.2255	
419.01	20.131	21	4.351	0.2958	
420.01	6.010	76	4.234	0.3971	
421.01	4.454	102	5.061	0.3951	
423.01	21.087	18	4.468	0.2947	
425.01	5.428	74	5.841	0.3749	
426.01	16.301	26	3.915	0.3374	
427.01	24.615	16	7.063	0.2081	2.473
427.02	42.951	12	4.178	0.2450	
428.01	6.873	65	3.593	0.4016	
429.01	8.600	55	3.351	0.3980	
430.01	12.377	27	3.072	0.3710	
431.01	18.870	21	4.068	0.2943	1.981
431.02	46.903	11	4.538	0.1945	
432.01	5.263	87	3.424	0.4102	
435.01	20.550	18	4.327	0.2991	
438.01	5.931	75	5.306	0.3761	2.001
438.02	52.663	8	5.298	0.0910	
439.01	1.902	235	4.818	0.4160	
440.01	15.907	27	5.165	0.2876	
440.02	4.973	84	5.069	0.3881	4.344
442.01	13.540	33	3.811	0.3673	
442.02	1.711	7	7.468	0.0309	0.466
443.01	16.217	24	6.373	0.2311	
444.01	11.723	35	3.705	0.3696	
446.01	16.709	24	5.418	0.2843	3.516
446.02	28.551	12	4.245	0.2242	
448.01	10.140	44	5.757	0.3223	6.959
448.02	43.611	10	18.003	0.0115	
452.01	3.706	120	3.793	0.4121	
454.01	29.007	11	5.184	0.1695	
456.01	13.700	31	14.599	0.2176	
457.01	4.921	90	4.715	0.3929	3.622
457.02	7.064	67	7.354	0.3251	
458.01	53.718	7	3.366	0.1850	
459.01	19.446	19	5.753	0.2564	
460.01	17.587	22	3.975	0.3130	
463.01	18.478	23	5.804	0.2610	
464.01	58.362	8	7.535	0.0357	
464.02	5.350	81	4.292	0.3979	2.684

TABLE 1—*Continued*

KOI	Period (days)	N_t	SNR	p-value	$\Xi_{\max}{}^a$
466.01	9.391	50	4.729	0.3630	
467.01	18.009	23	3.901	0.3364	
468.01	22.184	19	4.562	0.3117	
469.01	10.329	43	4.596	0.3612	
470.01	3.751	119	4.754	0.4026	
471.01	21.348	21	4.131	0.3166	
472.01	4.244	102	4.833	0.3942	
473.01	12.707	35	13.970	0.1809	
474.01	10.946	40	3.562	0.3824	4.156
474.02	28.987	15	5.416	0.2249	
475.01	8.181	54	4.270	0.3810	3.847
475.02	15.313	29	3.710	0.3593	
476.01	18.428	23	5.036	0.2806	
477.01	16.543	25	5.805	0.2532	
478.01	11.023	39	4.459	0.3649	
479.01	34.189	12	5.135	0.1736	
480.01	4.302	108	4.721	0.4016	
481.01	7.650	58	4.507	0.3798	2.336
481.02	1.289	25	3.527	0.3464	3.507
481.03	34.261	12	3.264	0.2835	
483.01	4.799	72	3.844	0.3997	
484.01	17.205	26	5.937	0.2565	
487.01	7.659	60	4.932	0.3718	
488.01	9.379	46	4.076	0.3743	
490.03	7.406	58	4.352	0.3870	
492.01	29.911	12	4.980	0.1931	
494.01	25.696	15	5.781	0.2299	
496.01	1.617	264	5.157	0.4160	
497.01	13.193	27	4.018	0.3414	
497.02	4.426	25	3.867	0.3419	5.910
499.01	9.668	37	3.592	0.3748	
500.01	7.053	49	7.456	0.2871	34.742
500.02	9.522	40	9.477	0.2031	
501.01	24.795	17	4.130	0.2930	
503.01	8.222	44	3.522	0.3848	
504.01	40.605	6	9.209	0.0036	
505.01	13.767	28	5.987	0.2643	
506.01	1.583	280	5.776	0.4136	
507.01	18.492	22	4.623	0.2971	
508.01	7.931	42	4.341	0.3685	2.610
508.02	16.666	19	4.156	0.3065	

TABLE 1—*Continued*

KOI	Period (days)	N_t	SNR	p-value	$\Xi_{\max}{}^a$
509.01	4.168	7	5.161	0.0717	4.112
509.02	11.464	38	3.610	0.3680	
510.01	2.940	121	4.774	0.4011	2.608
510.02	6.389	49	3.069	0.4015	4.352
510.03	14.627	23	4.599	0.3020	
511.01	8.006	54	4.790	0.3720	
512.01	6.510	66	5.151	0.3760	
513.01	35.181	14	2.754	0.3405	
517.01	2.752	152	4.439	0.4104	
518.01	13.982	28	4.302	0.3360	2.361
518.02	44.000	10	3.468	0.2271	
519.01	11.904	34	3.928	0.3652	3.951
519.02	34.036	14	4.455	0.2118	
520.01	12.760	31	3.616	0.3679	4.907
520.03	25.751	18	3.788	0.3027	
521.01	10.161	43	3.416	0.3906	
522.01	12.830	33	5.880	0.2968	
523.01	49.412	8	3.688	0.1983	
523.02	36.854	12	4.777	0.1985	6.741
524.01	4.592	97	18.449	0.1451	
525.01	11.532	39	4.986	0.3353	
526.01	2.105	206	5.226	0.4109	
528.01	9.577	48	5.349	0.3467	2.748
528.02	96.672	6	9.684	0.0053	
528.03	20.553	22	3.826	0.3276	0.158
530.01	10.940	37	4.466	0.3519	
531.01	3.687	101	3.479	0.4125	
532.01	4.222	105	4.374	0.4042	
533.01	16.550	27	5.426	0.2866	
534.01	6.400	67	4.487	0.3887	
535.01	5.853	75	4.507	0.3908	
537.01	2.820	135	5.210	0.4008	
538.01	21.217	18	4.000	0.3076	
541.01	13.646	32	5.826	0.3110	
542.01	41.886	11	4.057	0.2389	
543.01	4.302	102	3.891	0.4079	
546.01	20.684	20	3.097	0.3396	
546.02	9.824	6	6.764	0.0357	4.171
547.01	25.303	19	4.528	0.2789	
548.01	21.300	19	4.080	0.3123	
550.01	13.024	25	3.326	0.3650	

TABLE 1—*Continued*

KOI	Period (days)	N_t	SNR	p-value	$\Xi_{\max}{}^a$
551.01	11.637	31	4.124	0.3488	
552.01	3.055	134	5.357	0.4003	
554.01	3.658	123	5.607	0.3935	
557.01	15.656	24	3.621	0.3523	
558.01	9.178	43	5.512	0.3412	
560.01	23.675	17	4.380	0.2845	
561.01	5.379	80	4.864	0.3870	
563.01	15.284	29	6.621	0.2435	
564.01	21.055	19	5.258	0.2463	
566.01	25.855	9	4.834	0.1691	
567.01	10.688	37	4.816	0.3390	4.902
567.02	20.303	23	4.844	0.2924	
569.01	20.729	20	5.578	0.2369	
569.02	1.633	65	4.398	0.3879	1.592
571.01	7.267	58	6.496	0.3375	2.637
571.02	13.343	32	3.275	0.3510	1.875
571.04	22.408	21	4.063	0.3203	
572.01	10.640	41	4.348	0.3610	
573.01	5.997	70	4.408	0.3897	
574.01	20.135	23	3.712	0.3482	
575.01	24.316	16	4.804	0.2687	
578.01	6.412	70	3.869	0.3995	
580.01	6.521	66	4.647	0.3849	
581.01	6.997	60	5.188	0.3666	
582.01	5.945	75	4.872	0.3867	2.718
582.02	17.739	23	5.732	0.2562	
583.01	2.437	42	4.135	0.3695	
584.01	9.927	43	3.851	0.3845	1.019
584.02	21.223	20	6.091	0.2965	
585.01	3.722	117	6.288	0.3833	
586.01	15.780	22	3.934	0.3436	
587.01	14.035	32	3.891	0.3532	
588.01	10.356	41	3.559	0.3820	
590.01	11.389	36	4.283	0.3655	4.970
590.02	50.697	8	4.636	0.1367	
592.01	39.749	11	3.889	0.2463	
593.01	9.997	43	3.973	0.3781	
596.01	1.683	58	4.622	0.3727	
597.01	17.308	22	3.567	0.3455	
598.01	8.308	56	4.605	0.3726	
599.01	6.454	68	5.622	0.3659	

TABLE 1—*Continued*

KOI	Period (days)	N_t	SNR	p-value	$\Xi_{\max}{}^a$
600.01	3.596	106	5.636	0.3882	
601.01	5.404	77	4.093	0.3972	7.360
601.02	11.679	38	5.864	0.3247	
602.01	12.914	31	4.177	0.3503	
605.01	2.628	170	5.080	0.4073	
607.01	5.894	44	6.156	0.3443	
609.01	4.397	96	5.013	0.3936	
610.01	14.282	23	4.556	0.3176	
611.01	3.252	125	4.436	0.4064	
612.01	20.740	16	4.306	0.2827	2.837
612.02	47.426	7	1.586	0.0501	
614.01	12.875	32	5.884	0.2917	
618.01	9.071	48	4.319	0.3714	
620.01	45.155	9	5.547	0.1325	
623.01	10.350	42	4.530	0.3599	3.910
623.02	15.677	26	5.456	0.2864	
624.01	17.790	23	4.299	0.3272	3.779
624.02	49.567	9	7.490	0.0591	
626.01	14.587	25	4.357	0.3259	
627.01	7.752	57	3.786	0.3965	
628.01	14.486	32	4.520	0.3370	
629.01	40.699	10	2.976	0.2813	
632.01	7.239	57	4.721	0.3737	
635.01	16.720	20	4.165	0.3086	
638.01	23.636	15	3.265	0.2531	
639.01	17.980	20	5.352	0.2694	
640.01	30.997	14	6.197	0.1682	
641.01	14.852	27	5.428	0.3348	
644.01	45.978	7	6.135	0.0701	
645.02	23.784	16	5.049	0.2300	
647.01	5.169	87	4.025	0.4036	
649.01	23.450	19	4.657	0.2872	
650.01	11.955	38	4.591	0.3590	
652.01	16.081	26	4.820	0.3036	
654.01	8.594	42	5.445	0.3385	
655.01	25.672	17	3.217	0.3259	
657.01	4.069	82	7.194	0.3473	6.004
657.02	16.283	22	4.961	0.2877	
658.01	3.163	133	4.669	0.4066	6.595
658.02	5.371	82	4.534	0.3918	
659.01	23.206	19	4.760	0.2793	

TABLE 1—*Continued*

KOI	Period (days)	N_t	SNR	p-value	$\Xi_{\max}{}^a$
660.01	6.080	60	4.887	0.3711	
661.01	14.401	23	3.872	0.3495	
662.01	10.214	43	4.969	0.3500	
663.01	2.756	126	4.673	0.4063	2.063
663.02	20.307	18	4.587	0.2647	
664.01	13.137	34	4.996	0.3281	
665.01	5.868	73	4.737	0.3858	
666.01	22.248	18	4.829	0.2952	
667.01	4.305	97	4.559	0.3999	
670.01	9.489	44	4.033	0.3722	
672.01	16.088	26	4.530	0.3404	0.776
672.02	41.749	10	4.712	0.1605	
673.01	4.417	98	4.235	0.4025	
674.01	16.339	15	3.438	0.2969	
676.01	7.973	43	6.726	0.2858	
676.02	2.453	181	3.985	0.4172	4.087
678.01	6.040	73	4.321	0.3925	
678.02	4.139	95	4.920	0.3922	5.243
679.01	31.805	12	4.521	0.2277	
680.01	8.600	48	4.289	0.3707	
684.01	4.035	108	3.366	0.4148	
685.01	3.174	136	4.814	0.4061	
686.01	52.514	8	19.251	0.0014	
688.01	3.276	134	3.688	0.4162	
689.01	15.874	14	3.793	0.1894	
691.01	29.666	14	4.700	0.2219	
693.01	28.779	16	7.450	0.1370	
693.02	15.660	26	3.968	0.3444	3.195
694.01	17.421	26	3.715	0.3531	
695.01	29.908	13	4.821	0.2370	
697.01	3.032	81	5.942	0.3715	
698.01	12.719	32	5.731	0.3001	
700.01	30.864	15	3.354	0.3210	
700.02	9.361	41	4.667	0.3590	3.934
700.03	14.668	28	3.413	0.3634	0.853
701.01	18.164	23	3.639	0.3487	
701.02	5.715	78	5.042	0.3829	2.560
704.01	18.396	20	6.625	0.3217	
707.01	21.776	18	4.465	0.2952	15.617
707.02	41.027	12	4.769	0.1997	
707.03	31.784	13	7.788	0.1037	1.314

TABLE 1—*Continued*

KOI	Period (days)	N_t	SNR	p-value	$\Xi_{\max}{}^a$
707.04	13.176	34	3.660	0.3659	3.477
708.01	17.407	26	3.316	0.3606	
708.02	7.693	54	4.458	0.3753	3.038
709.01	21.384	22	5.241	0.3047	
710.01	5.375	73	4.878	0.3828	
711.01	44.699	9	4.502	0.2235	
714.01	4.182	111	3.937	0.4086	
716.01	26.893	16	3.708	0.3102	
717.01	14.707	29	4.182	0.3436	
718.01	4.585	99	3.834	0.4062	3.885
718.02	22.715	18	5.455	0.3030	2.941
718.03	47.906	10	5.551	0.1110	
719.01	9.034	48	5.285	0.3515	
720.01	5.691	68	3.928	0.3966	8.281
720.02	10.042	43	4.762	0.3540	4.137
720.03	18.370	23	5.502	0.2581	
720.04	2.796	153	5.280	0.4030	5.275
721.01	13.724	32	4.558	0.3360	
722.01	46.407	10	2.056	0.2879	
723.01	3.937	105	5.112	0.3955	2.519
723.02	28.082	14	3.588	0.2969	
723.03	10.089	41	4.721	0.3546	2.054
725.01	7.305	62	5.978	0.3430	
728.01	7.189	60	6.090	0.3468	
730.01	14.787	26	4.291	0.3368	7.946
730.03	19.722	19	4.835	0.2627	
732.01	1.260	353	4.897	0.4214	
733.01	5.925	71	4.670	0.3877	1.644
733.02	11.349	38	4.094	0.3660	
734.01	24.543	18	4.566	0.2646	
735.01	22.341	19	5.080	0.3012	
736.01	18.794	22	11.640	0.2869	
737.01	14.498	29	8.383	0.3383	
738.01	10.338	46	7.740	0.2679	27.022
738.02	13.291	32	4.749	0.3341	
740.01	17.672	23	5.119	0.2676	
743.01	19.404	22	3.882	0.3296	
745.01	16.470	26	4.300	0.3348	
746.01	9.274	44	3.550	0.3861	
747.01	6.029	70	4.737	0.3874	
749.01	5.350	78	3.881	0.4019	

TABLE 1—*Continued*

KOI	Period (days)	N_t	SNR	p-value	$\Xi_{\max}{}^a$
750.01	21.676	21	7.144	0.1535	
752.01	9.488	46	3.481	0.3929	2.061
752.02	54.416	9	4.201	0.1616	
753.01	19.899	22	5.228	0.2825	
755.01	2.525	36	4.614	0.3495	
756.01	11.094	35	4.265	0.3486	
757.01	16.069	25	4.563	0.3154	2.292
757.02	41.192	10	4.182	0.1798	
757.03	6.253	61	3.680	0.3963	5.139
758.01	16.013	23	4.269	0.3181	
759.01	32.624	9	3.245	0.2395	
760.01	4.959	88	5.471	0.3792	
763.01	19.651	18	5.827	0.2201	
764.01	41.439	11	9.147	0.0474	
765.01	8.354	47	4.567	0.3376	
766.01	4.126	97	5.465	0.3864	
767.01	2.817	156	4.241	0.4145	
769.01	4.281	101	4.208	0.4047	
773.01	38.378	8	3.943	0.1739	
775.01	16.385	23	5.105	0.2685	7.888
775.02	7.877	44	8.155	0.2666	13.816
775.03	36.446	11	9.099	0.1146	
776.01	3.729	122	5.129	0.3983	
777.01	40.420	12	7.407	0.0887	
779.01	10.406	32	4.155	0.3539	
780.01	2.337	185	4.486	0.4149	
781.01	11.598	39	5.103	0.3414	
782.01	6.575	63	6.048	0.3503	
783.01	7.275	61	3.933	0.3936	
784.01	19.271	20	28.584	0.0612	
785.01	12.394	32	6.503	0.2704	
787.01	4.431	96	6.411	0.3734	3.789
787.02	11.379	37	3.962	0.3700	
788.01	26.394	17	2.659	0.3532	
790.01	8.472	46	3.807	0.3864	
791.01	12.612	35	3.015	0.3882	
795.01	6.770	64	3.822	0.3961	
797.01	10.182	40	4.016	0.3721	
799.01	1.627	221	5.713	0.4083	
800.01	2.711	160	4.790	0.4094	2.449
800.02	7.212	53	3.506	0.3954	

TABLE 1—*Continued*

KOI	Period (days)	N_t	SNR	p-value	$\Xi_{\max}{}^a$
801.01	1.626	220	4.917	0.4148	
802.01	19.620	17	4.230	0.2963	
804.01	9.029	46	5.019	0.3572	
805.01	10.328	32	4.164	0.3545	
806.02	60.326	7	17.294	0.0096	
806.03	29.494	14	6.370	0.1483	0.484
809.01	1.595	207	5.656	0.4077	
810.01	4.783	94	4.745	0.3965	
811.01	20.506	22	4.781	0.3008	
812.01	3.340	130	4.634	0.4054	1.288
812.02	20.061	23	3.807	0.3392	2.445
812.03	46.183	8	5.185	0.1055	
813.01	3.896	93	6.865	0.3556	
814.01	22.366	16	2.805	0.2630	
815.01	34.844	14	6.881	0.1258	
816.01	7.748	38	5.811	0.3049	
817.01	23.968	13	10.544	0.0468	
818.01	8.114	53	3.756	0.3909	
821.01	21.813	13	4.996	0.2026	
822.01	7.919	45	4.831	0.3614	
823.01	1.028	325	9.027	0.3968	
824.01	15.375	6	6.960	0.0273	
825.01	8.104	39	4.831	0.3431	
826.01	6.366	72	3.896	0.3986	
827.01	5.976	62	3.650	0.3936	
829.01	18.648	23	5.482	0.2607	2.692
829.03	38.561	12	3.629	0.2679	
830.01	3.526	128	4.873	0.4020	
833.01	3.951	90	3.788	0.4070	
834.01	23.654	19	6.719	0.1945	
834.02	13.233	29	4.892	0.3366	2.279
835.01	11.763	30	5.423	0.2904	9.334
835.02	56.229	8	4.697	0.1345	
837.01	7.954	48	4.291	0.3741	
838.01	4.859	94	4.067	0.4016	
840.01	3.040	148	5.563	0.3999	
841.01	15.335	28	8.486	0.1750	21.493
841.02	31.331	11	6.013	0.1471	
842.01	12.718	30	3.993	0.3618	0.732
842.02	36.065	12	4.548	0.2203	
843.01	4.190	107	5.366	0.3889	

TABLE 1—*Continued*

KOI	Period (days)	N_t	SNR	p-value	$\Xi_{\max}{}^a$
844.01	3.710	93	4.449	0.3990	
845.01	16.330	26	4.542	0.3088	
846.01	27.808	16	6.382	0.1552	
847.01	80.871	6	4.621	0.0753	
849.01	10.355	45	5.434	0.3376	
850.01	10.526	45	3.572	0.3864	
851.01	4.584	100	4.919	0.3947	
853.01	8.204	53	3.828	0.3872	11.030
853.02	14.497	30	6.495	0.2994	
854.01	56.056	8	6.811	0.0406	
855.01	41.408	10	6.126	0.1163	
856.01	39.749	10	4.655	0.1154	
857.01	5.715	61	4.005	0.3898	
858.01	13.610	29	3.839	0.3475	
864.01	4.312	91	4.436	0.3997	4.861
864.02	20.050	23	3.790	0.3363	
867.01	16.085	28	5.142	0.2949	
869.01	7.490	60	4.446	0.3778	1.618
869.02	36.286	12	4.884	0.2047	
869.03	17.461	24	5.660	0.2657	3.022
870.01	5.912	72	10.454	0.2613	43.733
870.02	8.986	51	8.380	0.2722	
871.01	12.941	29	4.198	0.3356	
872.01	33.602	14	12.080	0.0315	
874.01	4.602	95	5.229	0.3839	
875.01	4.221	102	3.771	0.4108	
876.01	6.998	59	4.001	0.3899	
877.01	5.955	71	3.865	0.3968	3.008
877.02	12.040	36	5.252	0.3194	
878.01	23.590	17	2.523	0.2966	
880.01	26.442	16	5.901	0.1989	2.465
880.02	51.529	9	4.594	0.1735	
880.03	5.902	75	3.649	0.4031	6.432
881.01	21.022	22	3.892	0.3280	
882.01	1.957	228	8.513	0.3813	
883.01	2.689	167	5.264	0.4047	
884.01	9.439	45	4.725	0.3585	4.505
884.02	20.474	19	9.926	0.0777	
886.01	8.012	54	10.980	0.2370	
887.01	7.411	59	4.933	0.3652	
889.01	8.885	53	4.845	0.3652	

TABLE 1—*Continued*

KOI	Period (days)	N_t	SNR	p-value	$\Xi_{\max}{}^a$
890.01	8.099	56	3.910	0.3918	
891.01	10.007	45	3.954	0.3782	
892.01	10.372	38	3.013	0.3923	
893.01	4.408	77	4.772	0.3890	
895.01	4.409	102	6.211	0.3751	
896.01	16.240	25	4.904	0.3041	
896.02	6.308	69	3.843	0.4005	2.129
897.01	2.052	212	6.071	0.4050	
898.01	9.771	44	5.495	0.3312	9.150
898.02	5.170	84	5.735	0.3733	9.266
898.03	20.091	21	6.229	0.2024	
899.01	7.114	63	5.495	0.3538	9.771
899.03	15.368	32	4.915	0.3133	
900.01	13.810	26	3.863	0.3455	
901.01	12.733	34	4.498	0.3437	
903.01	5.007	85	4.545	0.3926	
904.02	27.946	15	14.987	0.0364	84.481
904.03	42.157	10	12.053	0.0598	
905.01	5.795	75	3.702	0.4013	
906.01	7.157	59	3.785	0.3944	
907.01	16.514	20	4.760	0.2772	2.723
907.02	30.133	11	6.740	0.1042	
908.01	4.708	95	4.947	0.3902	
910.01	5.392	77	4.658	0.3915	
912.01	10.849	38	4.733	0.3484	
913.01	4.082	108	4.711	0.4036	
916.01	3.315	129	5.359	0.3983	
917.01	6.720	65	4.121	0.3829	
918.01	39.644	10	11.695	0.0179	
920.01	21.804	19	4.535	0.2856	
921.01	10.282	42	5.066	0.3400	3.253
921.02	18.119	23	3.712	0.3458	
922.01	5.154	79	3.825	0.4018	
923.01	5.743	78	4.265	0.3953	
924.01	39.476	12	4.775	0.1928	
926.01	3.166	121	4.623	0.4028	
929.01	6.492	55	4.866	0.3687	
931.01	3.856	118	4.354	0.4072	
934.01	5.827	78	4.724	0.3879	1.989
934.03	18.746	21	4.847	0.2995	
935.01	20.861	23	7.416	0.2023	2.474

TABLE 1—*Continued*

KOI	Period (days)	N_t	SNR	p-value	$\Xi_{\max}{}^a$
935.02	42.633	9	3.327	0.2606	
936.01	9.468	47	4.220	0.3775	
937.01	20.835	18	6.489	0.1928	
938.01	9.946	44	4.286	0.3643	
939.03	1.622	10	7.846	0.0649	
940.01	6.105	75	5.245	0.3773	
941.01	6.582	71	3.576	0.4049	3.478
941.03	24.665	18	4.741	0.2644	
942.01	11.515	37	4.004	0.3695	
943.01	3.601	116	4.391	0.4065	
944.01	3.108	145	4.788	0.4072	
945.01	25.847	16	3.952	0.3175	4.293
945.02	40.717	11	7.572	0.0900	
947.01	28.599	14	2.745	0.3504	
949.01	12.533	31	6.159	0.2968	
951.01	13.197	35	3.623	0.3746	2.714
951.02	33.653	12	4.120	0.2635	
952.01	5.901	71	6.679	0.3533	22.201
952.02	8.752	52	7.039	0.3184	5.589
952.03	22.781	19	4.307	0.2867	
953.01	3.584	118	3.926	0.4112	
954.01	8.115	52	4.936	0.3576	2.647
954.02	36.926	10	2.680	0.2718	
955.01	7.039	56	4.030	0.3869	
956.01	8.361	52	3.946	0.3851	
960.01	15.801	25	6.570	0.2477	
961.01	1.214	346	4.863	0.4206	
972.01	13.119	36	3.896	0.3694	
974.01	53.507	9	3.391	0.2525	
975.01	2.786	152	5.052	0.4061	
976.01	52.569	8	4.873	0.1422	
977.01	1.354	290	5.950	0.4136	
981.01	3.995	10	4.782	0.1468	
984.01	4.287	95	24.664	0.0713	
986.01	8.188	53	4.148	0.3865	3.146
986.02	76.051	6	5.444	0.0316	
988.01	10.381	39	3.743	0.3771	3.224
988.02	24.570	17	3.986	0.2917	
991.01	12.062	34	3.316	0.3878	
993.01	21.853	21	4.812	0.2874	
999.01	16.568	27	4.362	0.3393	

TABLE 1—*Continued*

KOI	Period (days)	N_t	SNR	p-value	$\Xi_{\max}{}^a$
1001.01	40.811	11	4.316	0.2122	
1003.01	8.361	49	10.588	0.2245	
1005.01	35.618	13	3.168	0.3177	
1014.01	17.317	22	4.151	0.3149	
1015.01	9.429	22	5.165	0.2694	
1017.01	17.445	23	4.497	0.3079	
1020.01	54.356	8	6.045	0.0774	
1022.01	18.826	19	3.730	0.3149	
1024.01	5.748	73	5.441	0.3755	
1029.01	32.309	13	3.302	0.3079	
1030.01	9.230	11	4.330	0.2256	
1031.01	14.559	11	4.213	0.2610	
1052.01	17.029	24	4.231	0.3268	
1060.01	12.110	36	5.013	0.3342	
1061.01	41.815	10	3.426	0.2270	
1078.02	6.877	63	5.718	0.3585	8.654
1078.03	28.463	15	4.239	0.2638	
1081.01	9.956	47	12.727	0.2069	
1086.01	27.666	13	2.897	0.2738	
1089.02	12.218	31	3.972	0.3538	
1094.01	6.100	72	5.093	0.3759	
1102.01	12.333	37	8.203	0.2468	
1102.02	8.145	53	10.671	0.2107	41.585
1108.01	18.925	24	5.680	0.2596	
1112.01	37.809	12	4.477	0.2156	
1113.01	25.935	16	4.945	0.2494	1.034
1113.02	83.441	6	2.988	0.1812	
1115.01	12.992	32	5.062	0.3273	
1117.01	11.090	37	4.824	0.3421	
1145.01	30.586	16	6.651	0.1400	
1150.01	0.678	43	3.821	0.3754	
1152.01	4.722	86	3.508	0.4115	
1159.01	64.616	6	3.764	0.0959	
1160.01	13.214	33	5.032	0.3182	
1165.01	7.054	59	5.380	0.3595	
1169.01	0.689	232	5.666	0.4112	
1175.01	31.594	15	4.264	0.2716	
1176.01	1.974	205	5.235	0.4116	
1177.01	3.306	118	6.057	0.3843	
1187.01	0.371	1199	5.170	0.4278	
1198.01	16.089	27	5.383	0.2870	2.945

TABLE 1—*Continued*

KOI	Period (days)	N_t	SNR	p-value	$\Xi_{\max}{}^a$
1198.03	35.677	12	5.294	0.1703	
1199.01	53.528	8	6.670	0.0627	
1203.01	31.882	9	4.114	0.1159	0.965
1203.03	48.657	8	4.769	0.1377	
1205.01	8.639	37	3.892	0.3713	
1207.01	13.735	33	4.658	0.3647	
1210.01	14.555	26	4.846	0.3023	
1215.01	17.324	22	6.215	0.2357	7.054
1215.02	33.007	12	7.030	0.1319	
1216.01	11.131	42	4.217	0.3662	
1218.01	29.619	15	5.248	0.2167	
1221.01	30.157	14	4.310	0.2573	5.772
1221.02	51.080	9	4.025	0.1703	
1227.01	2.155	196	6.604	0.3964	
1236.01	35.746	14	5.129	0.2091	
1236.02	12.310	35	5.138	0.3238	3.295
1238.01	27.072	15	4.039	0.2740	
1241.01	21.406	20	4.903	0.2890	
1241.02	10.502	42	8.143	0.2430	10.433
1245.01	13.720	30	4.007	0.3596	
1246.01	19.036	23	5.739	0.2649	
1257.01	86.648	6	7.873	0.0217	
1258.01	36.338	13	4.498	0.2344	
1258.02	14.646	29	4.632	0.3308	3.682
1264.01	14.132	34	3.312	0.3818	
1266.01	11.419	38	4.264	0.3567	
1270.01	5.729	77	4.364	0.3962	19.220
1270.02	11.608	41	12.104	0.1457	
1273.01	40.059	11	3.724	0.2580	
1275.01	50.285	9	3.840	0.1976	
1276.01	22.789	22	4.563	0.3026	
1278.01	24.806	17	6.257	0.1831	3.701
1278.02	44.346	11	3.673	0.2737	
1279.01	14.374	29	4.124	0.3391	
1281.01	49.477	10	4.475	0.1833	
1282.01	30.864	14	4.653	0.2400	
1283.01	8.092	55	4.388	0.3813	
1298.01	11.008	40	4.283	0.3681	
1299.01	52.500	7	4.574	0.1141	
1301.02	37.514	9	6.821	0.0476	
1302.01	55.638	8	4.410	0.1301	

TABLE 1—*Continued*

KOI	Period (days)	N_t	SNR	p-value	$\Xi_{\max}{}^a$
1303.01	34.296	14	4.230	0.2623	
1307.01	44.851	10	5.653	0.1423	
1307.02	20.343	22	3.714	0.3349	2.246
1308.01	23.585	15	4.832	0.2392	
1309.01	10.117	44	4.259	0.3702	
1310.01	19.130	21	6.123	0.3140	
1311.01	83.576	6	5.023	0.0527	
1314.01	8.576	10	5.274	0.1323	
1315.01	6.846	63	5.351	0.3595	
1325.01	10.035	37	5.329	0.3254	
1329.01	33.199	12	5.375	0.1772	
1336.02	15.573	22	5.081	0.2769	
1353.02	34.543	13	4.102	0.2532	
1355.01	51.929	9	5.599	0.2477	
1360.01	36.770	12	2.953	0.3051	
1360.02	14.590	30	5.965	0.2923	4.082
1361.01	59.879	8	5.812	0.0736	
1364.01	20.833	17	4.000	0.2986	
1366.01	19.254	25	4.473	0.3147	7.884
1366.02	54.157	7	7.540	0.0451	
1372.01	69.655	6	12.184	0.0031	
1376.01	7.139	57	6.026	0.3416	
1378.01	19.302	23	4.700	0.3048	
1382.01	4.202	84	10.846	0.2628	
1385.01	18.610	23	4.133	0.3290	
1387.01	23.800	20	4.701	0.2492	
1391.01	7.981	57	3.884	0.3903	
1403.01	18.754	25	3.672	0.3556	
1406.01	11.361	38	2.915	0.3954	
1408.01	14.534	32	5.062	0.3293	
1409.01	16.560	25	3.933	0.3367	
1410.01	15.750	28	3.556	0.3603	
1412.01	37.813	12	7.218	0.1908	
1413.01	12.645	34	4.441	0.3469	
1419.01	1.336	266	4.764	0.4178	
1422.01	5.842	62	3.473	0.3992	4.162
1422.02	19.850	21	5.075	0.2806	
1426.01	38.873	9	5.301	0.1473	
1428.01	0.928	102	4.079	0.4050	
1430.01	10.475	41	5.511	0.3275	2.202
1430.02	22.930	18	5.729	0.2180	0.994

TABLE 1—*Continued*

KOI	Period (days)	N_t	SNR	p-value	$\Xi_{\max}{}^a$
1430.03	77.482	6	3.637	0.1382	
1433.01	19.808	19	4.384	0.2975	
1435.01	40.717	11	5.200	0.1772	
1435.02	10.446	45	6.160	0.3308	1.101
1436.02	13.751	28	9.730	0.1563	
1438.01	6.911	68	5.459	0.3680	
1444.01	44.933	9	3.676	0.2292	
1445.01	7.169	50	6.012	0.3407	
1448.01	2.487	168	4.760	0.4101	
1452.01	1.152	346	6.576	0.4110	
1459.01	0.692	633	4.655	0.4262	
1465.01	9.771	40	4.329	0.3600	
1468.01	8.481	54	4.332	0.3816	
1475.02	9.513	30	3.686	0.3548	
1476.01	56.363	7	6.010	0.0587	
1480.01	20.381	22	4.463	0.3059	
1486.02	30.184	15	3.895	0.2633	
1489.01	16.005	30	5.574	0.2906	
1495.01	15.595	28	3.392	0.3611	
1499.01	14.164	32	5.351	0.3202	
1506.01	40.428	12	4.448	0.2014	
1507.01	21.360	20	3.626	0.3236	
1508.01	22.047	19	3.708	0.3266	
1512.01	9.042	42	5.262	0.3333	
1516.01	20.554	21	3.269	0.3571	
1517.01	40.068	9	3.356	0.2444	
1518.01	27.506	17	5.823	0.2105	
1520.01	18.459	25	4.970	0.2908	
1521.01	25.941	15	4.198	0.2809	
1522.01	33.386	13	5.629	0.1521	
1525.01	7.714	50	3.866	0.3899	
1529.01	17.978	21	5.135	0.2659	
1530.01	12.985	26	3.808	0.3539	
1532.01	18.115	23	4.552	0.3025	
1534.01	20.422	22	3.868	0.3383	
1536.01	3.745	22	4.785	0.2923	
1540.01	1.208	332	10.573	0.3812	
1541.01	2.379	149	6.068	0.3953	
1543.01	3.964	113	8.881	0.3419	
1546.01	0.918	460	10.820	0.3934	
1553.01	52.759	9	7.379	0.0624	

TABLE 1—*Continued*

KOI	Period (days)	N_t	SNR	p-value	$\Xi_{\max}$[a]
1557.01	3.296	108	5.502	0.3927	4.765
1557.02	9.653	39	4.660	0.3505	
1557.03	5.316	68	4.686	0.3834	2.460
1561.01	9.086	27	4.995	0.3069	
1564.01	53.449	8	3.076	0.2476	
1569.01	13.752	32	7.152	0.3188	
1573.01	24.809	17	29.585	0.0066	
1576.01	10.416	41	5.441	0.3319	1.799
1576.02	13.084	33	4.984	0.3259	
1581.01	29.547	14	12.130	0.0628	
1585.01	19.179	24	4.314	0.3132	
1587.01	52.972	8	10.375	0.0190	
1588.01	3.517	129	5.214	0.4006	
1589.01	8.726	52	5.096	0.3625	4.648
1589.02	12.882	35	4.101	0.3664	4.276
1589.03	27.435	17	3.065	0.3436	2.818
1589.04	4.219	7	10.447	0.0150	9.830
1589.05	44.549	11	4.296	0.2117	
1591.01	19.657	25	4.660	0.2731	
1595.01	40.108	12	3.832	0.2252	
1597.01	7.797	54	4.052	0.3830	
1598.02	92.874	6	8.039	0.0326	
1599.01	20.419	20	11.149	0.0835	
1601.01	10.351	40	3.988	0.3722	
1608.01	9.176	44	4.696	0.3622	
1609.01	41.698	10	3.962	0.2408	

[a]$\Xi_{\max}$ values are given for each KOI with its nearest exterior neighbor that satisfies the selection criteria for analysis (i.e., its exterior neighbor that is also reported in this table).