

KIC 012357074

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
012357074-01	OBS	No	537.645957	355.780849	153.6	7.694	8.6	7.8	1.60	5659	2.31	1.37

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012357074-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

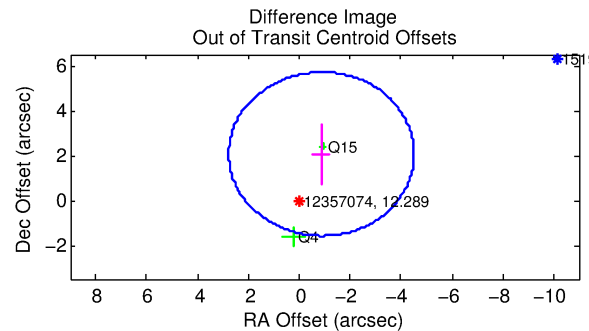
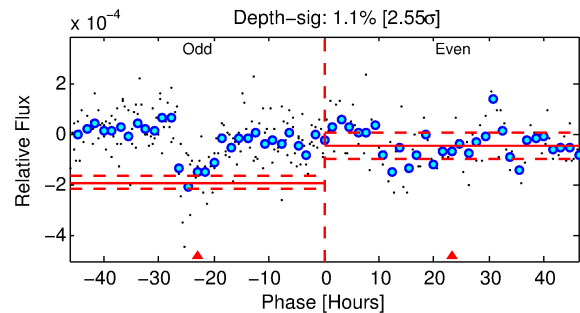
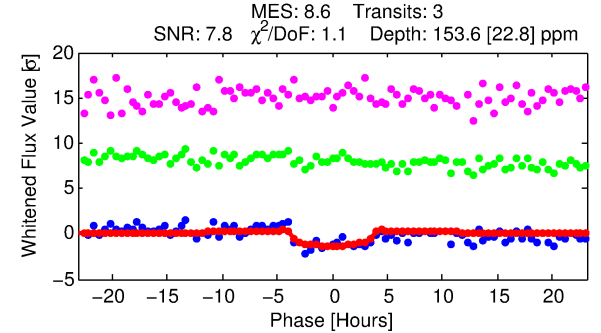
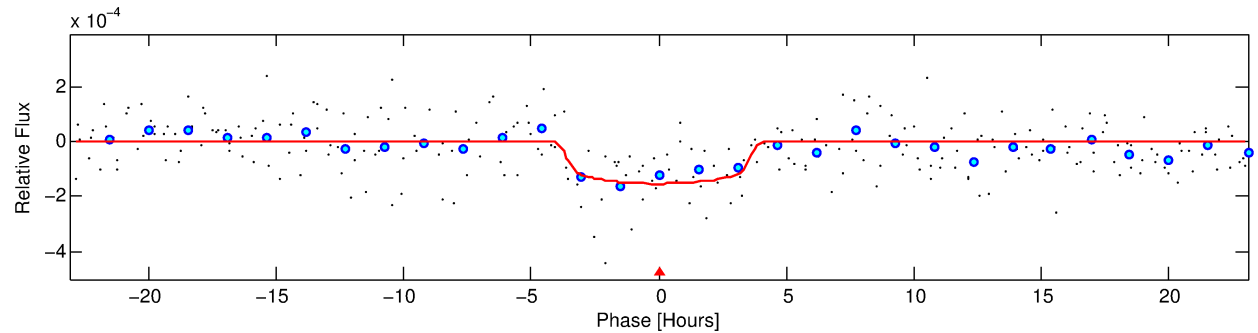
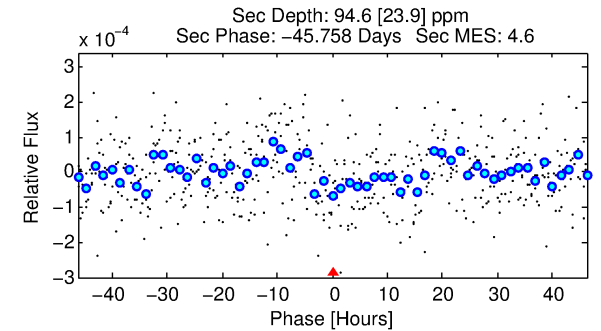
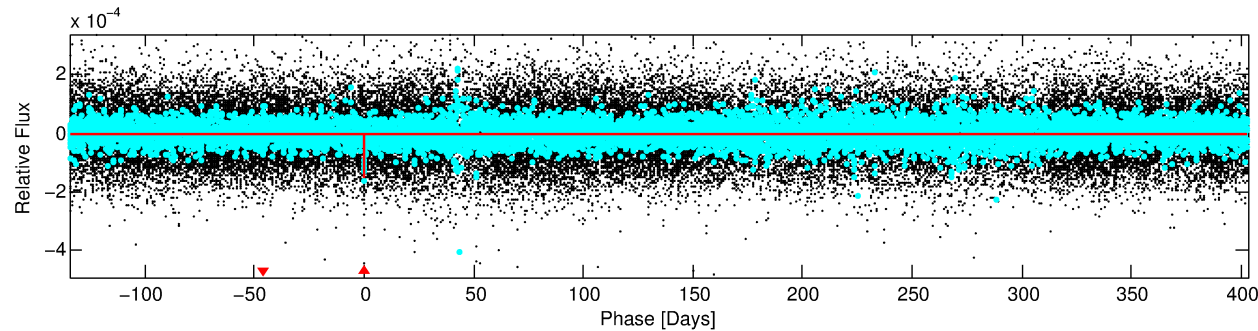
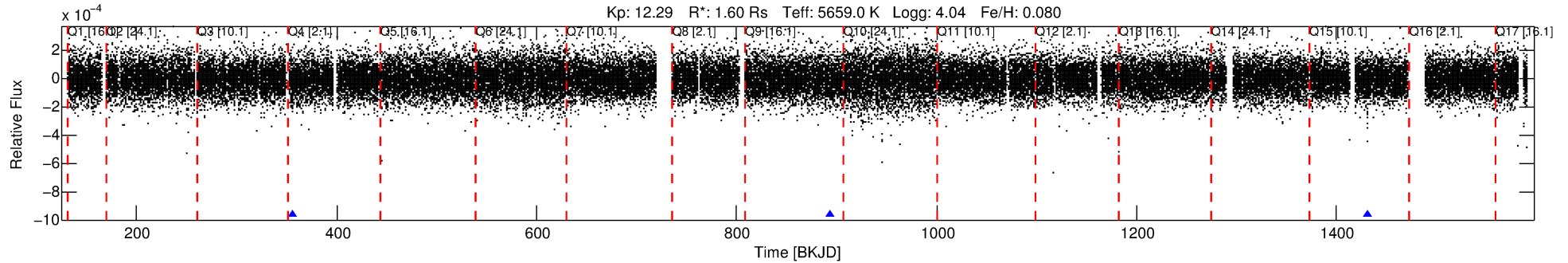
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012357074-01

No Significant Match Found

DV One-Page Summary

KIC: 12357074 Candidate: 1 of 1 Period: 537.646 d



DV Fit Results:

Period = 537.64596 [0.01083] d
Epoch = 355.7808 [0.0128] BKJD
Rp/R* = 0.0132 [0.0087]
a/R* = 274.16 [813.18]
b = 0.87 [0.82]
Seff = 1.37 [0.66]
Teq = 276 [33] K
Rp = 2.31 [1.69] Re
a = 1.3085 [0.3870] AU
Ag = 16706.28 [23752.49] [0.70σ]
Teffp = 4853 [1635] K [2.80σ]

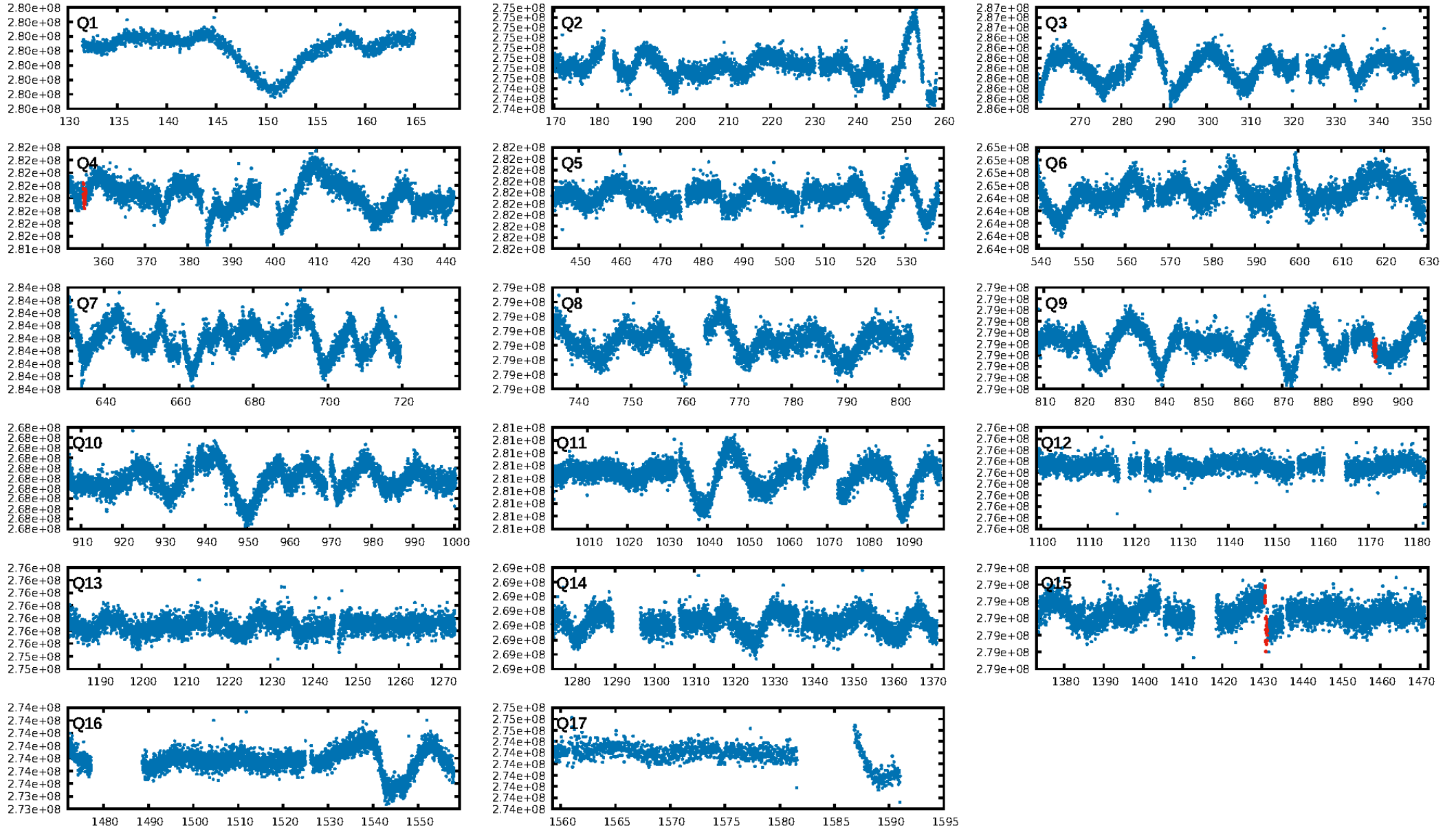
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 3.1%
ModelChiSquareGof-sig: 96.4%
Bootstrap-pfa: 2.47e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 4.853
Centroid-sig: 2.3%
Centroid-so: 3.146 arcsec [1.63σ]
OotOffset-rm: 2.238 arcsec [1.84σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-rm: 2.232 arcsec [1.70σ]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

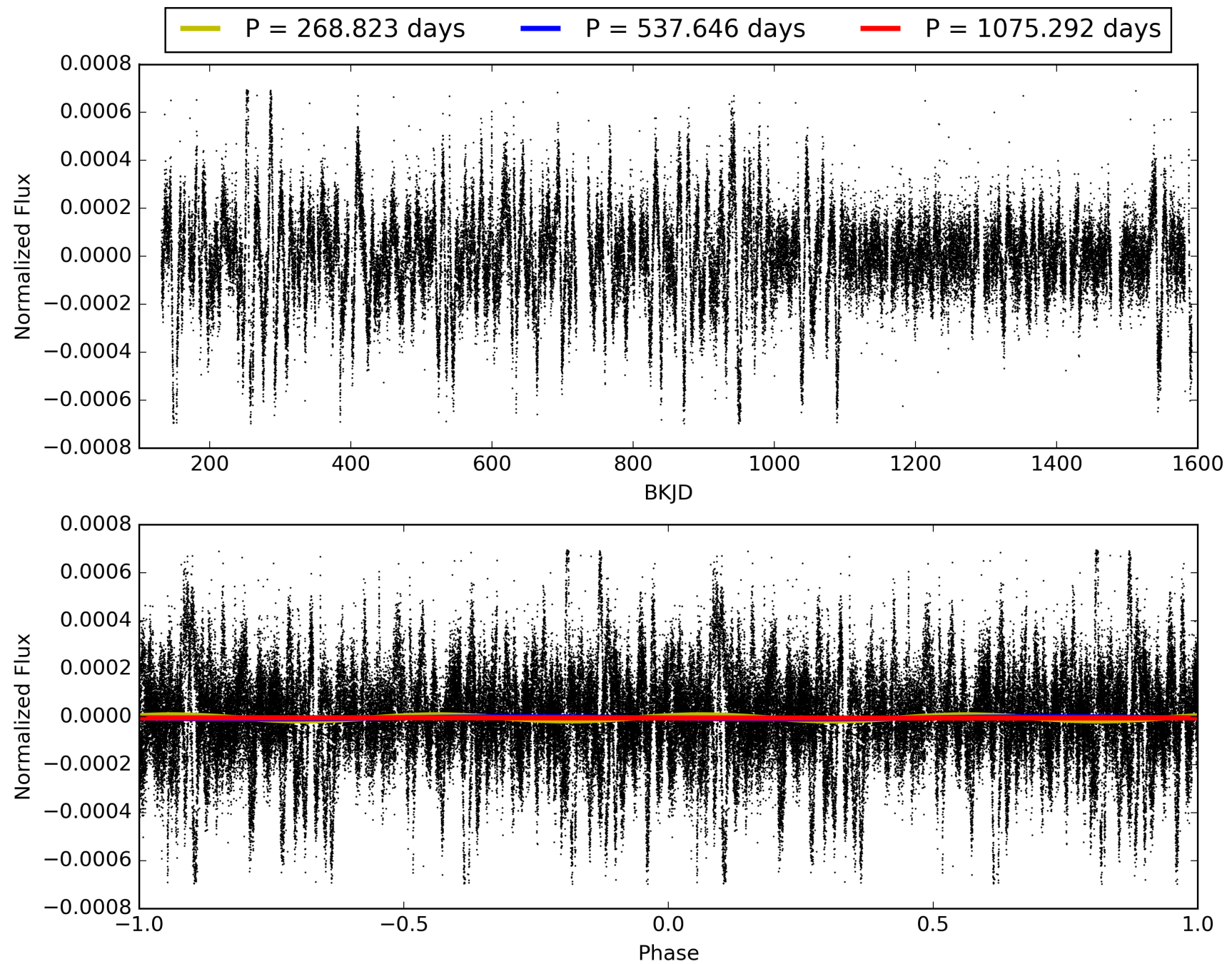
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:14:31 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 012357074-01, PDC Light Curves

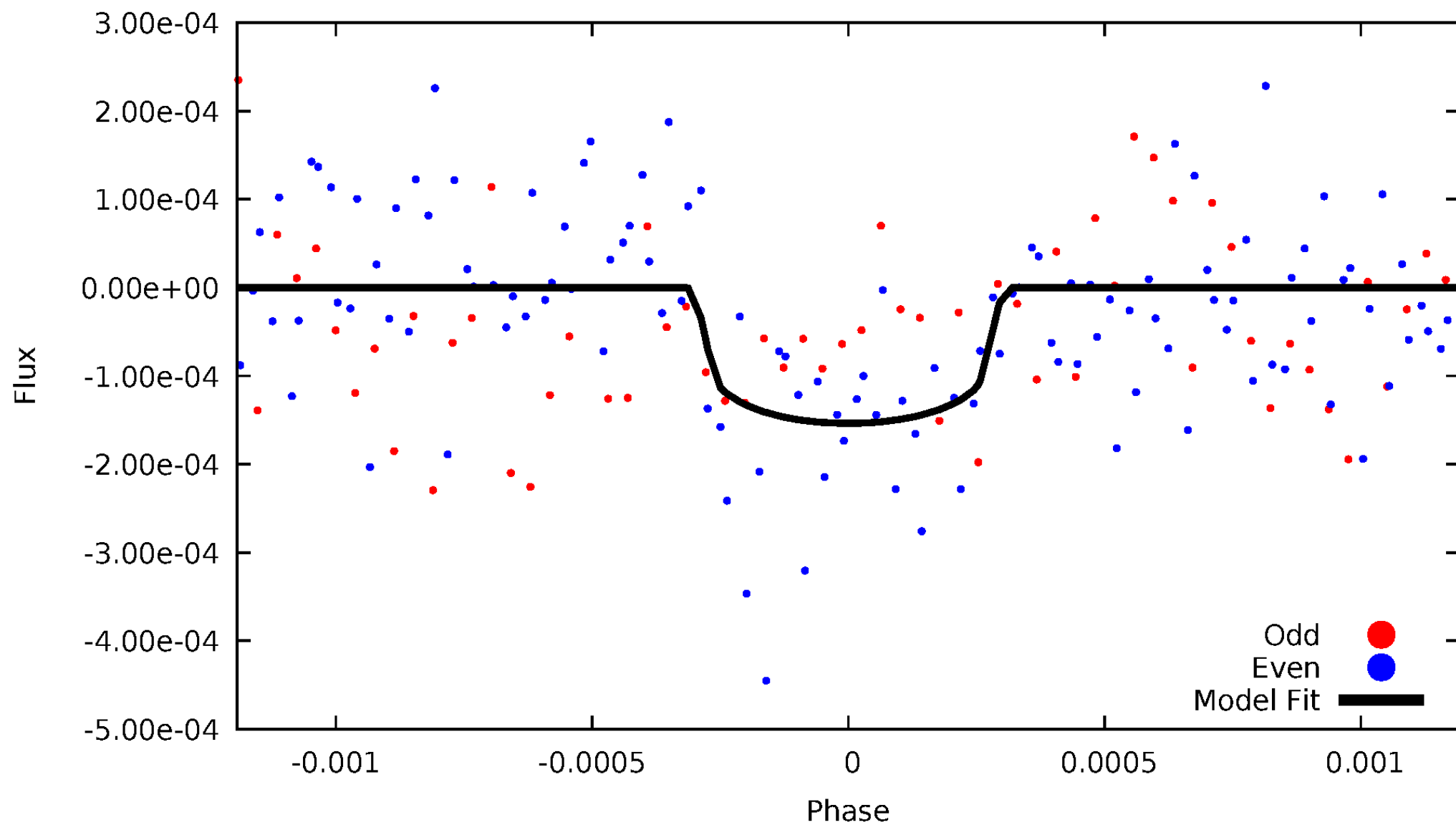


TCE 012357074-01



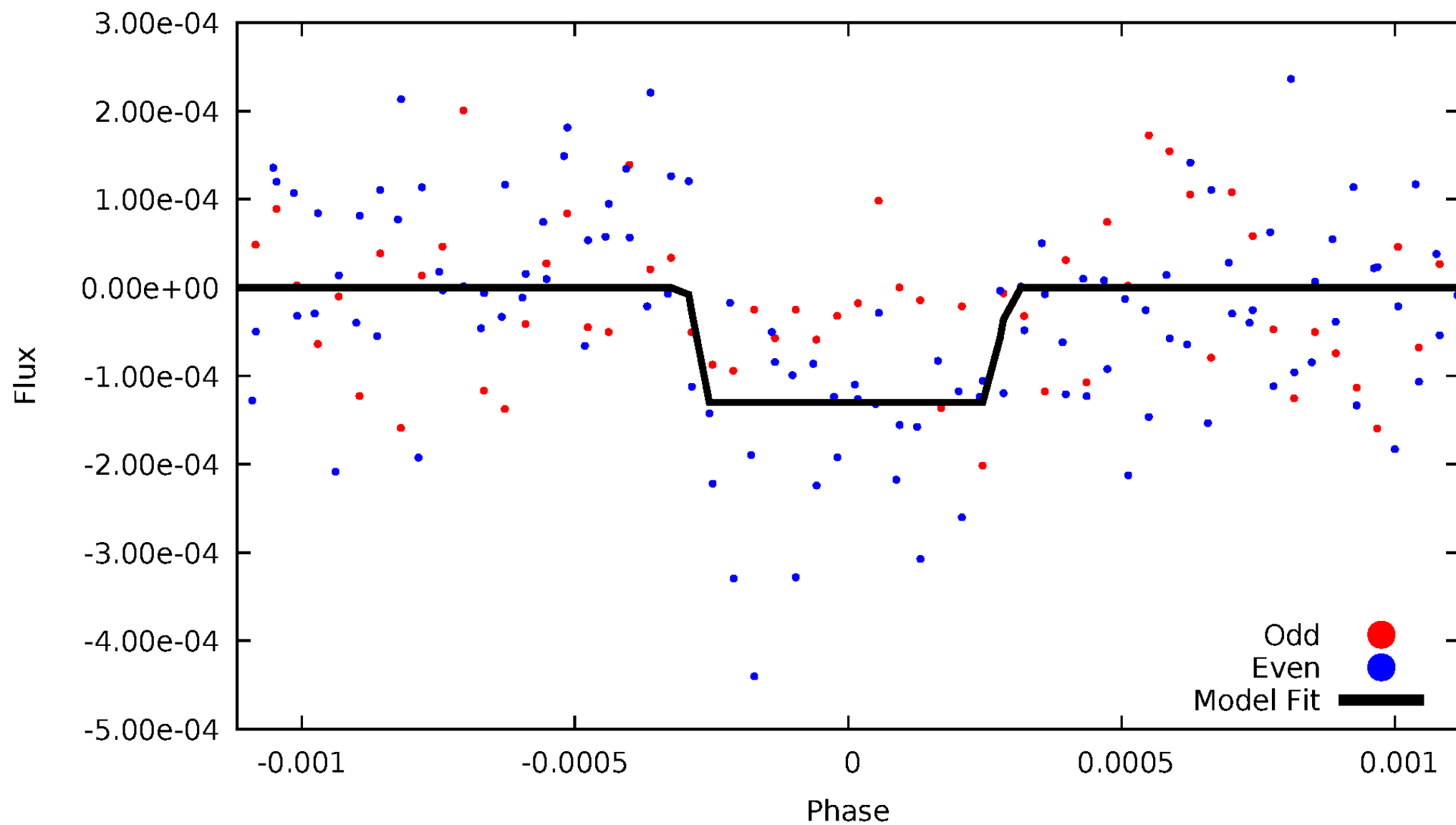
DV Odd/Even

TCE 012357074-01



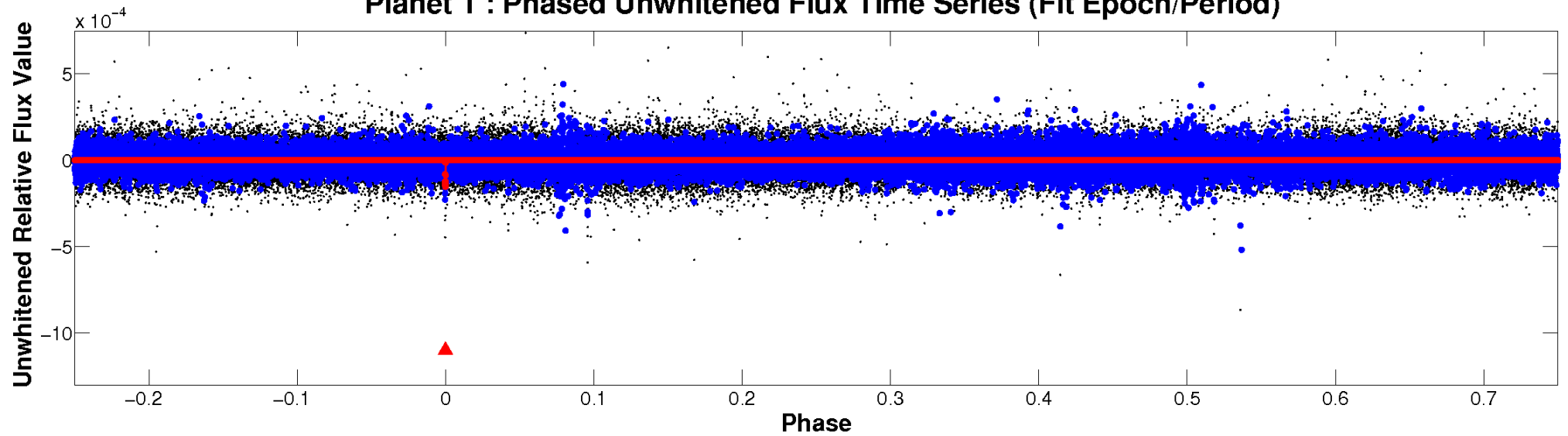
ALT Odd/Even

TCE 012357074-01

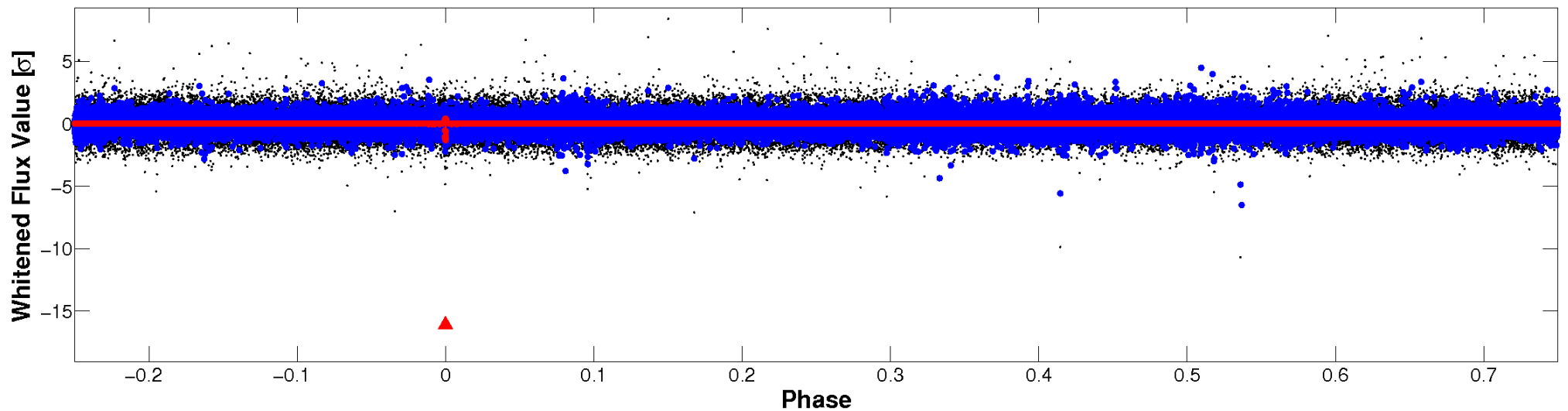


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)



Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



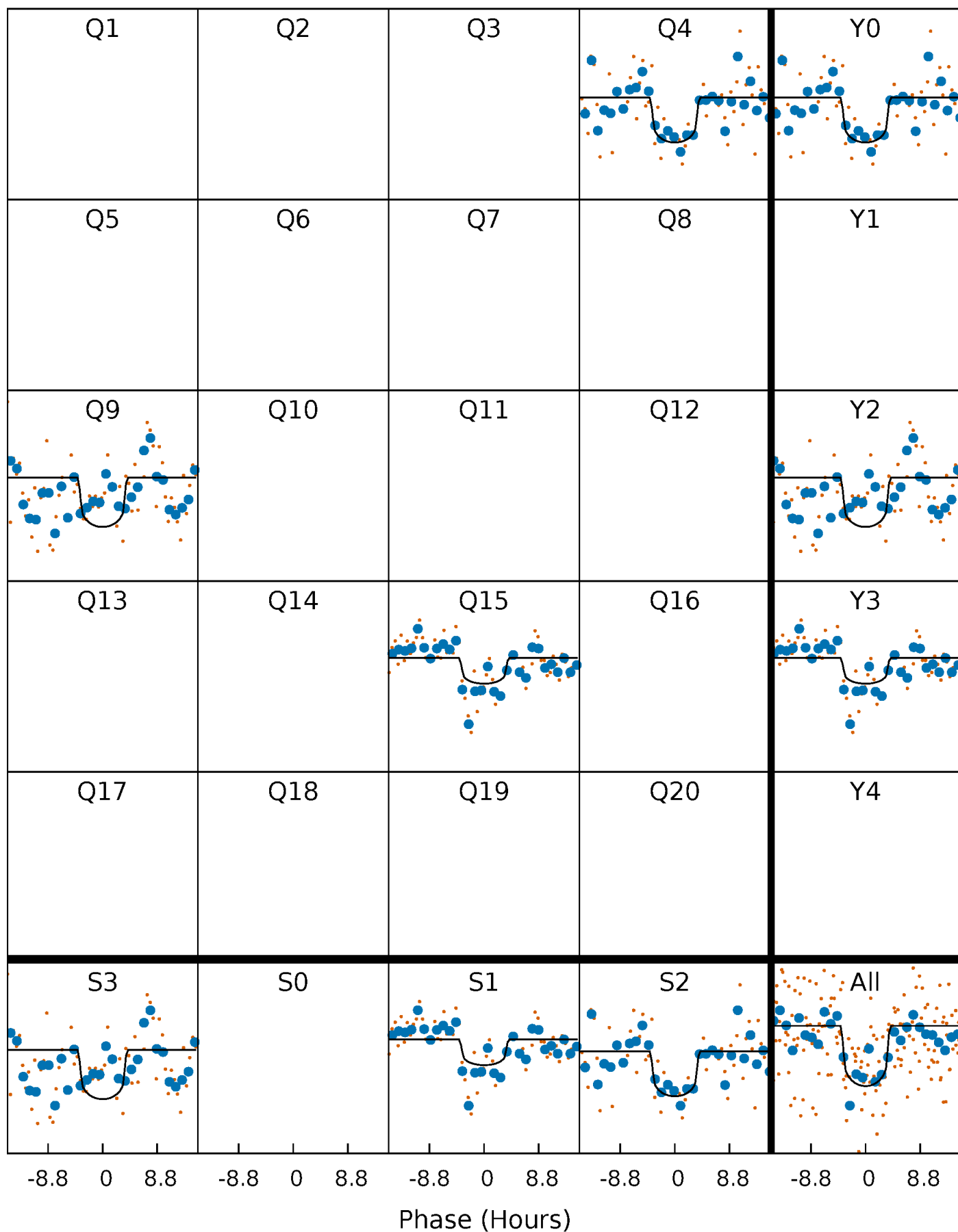
PDC Quarter-Phased Transit Curves

TCE 012357074-01 P=537.645957 Days $T_0=355.780849$ (BKJD)



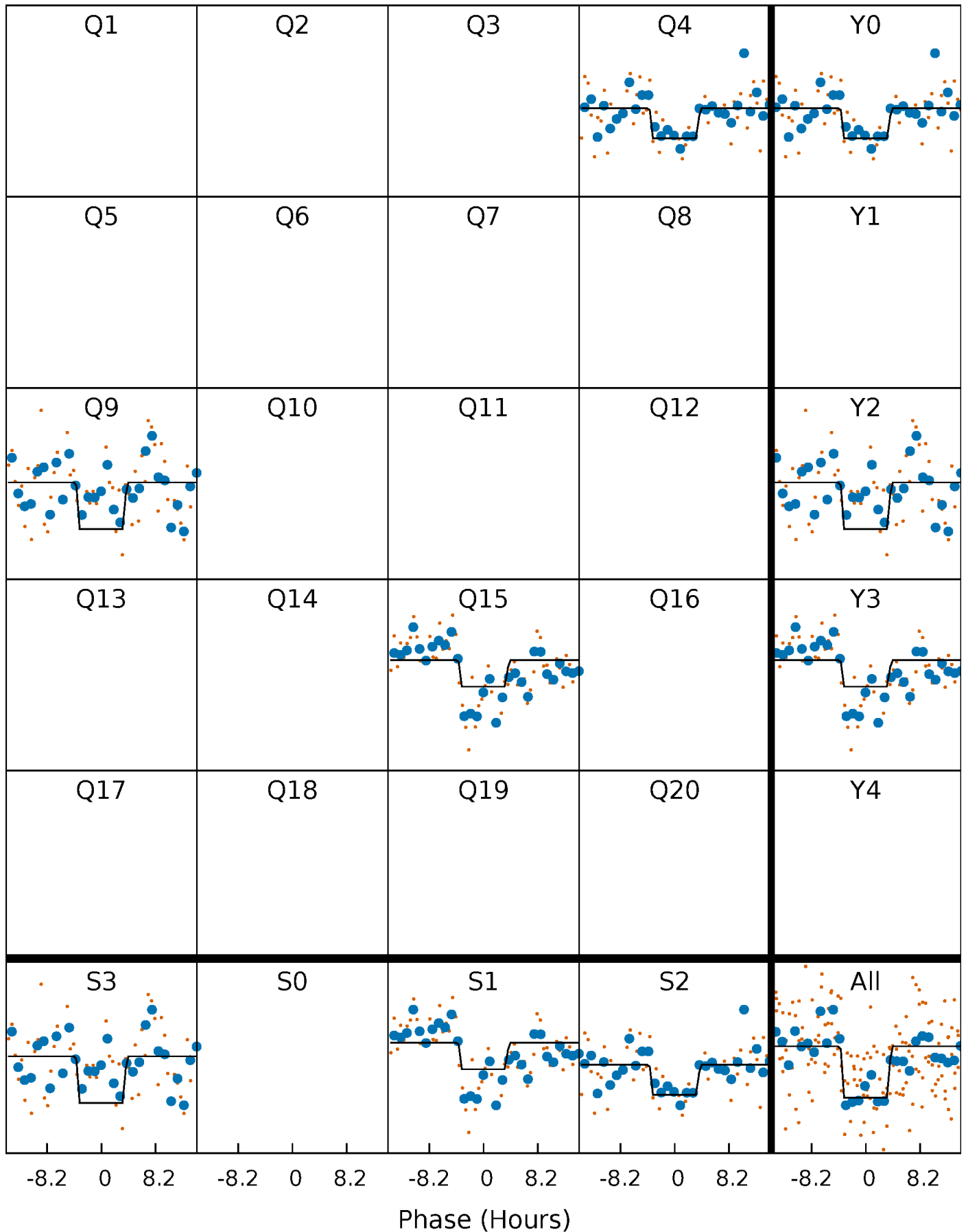
DV Quarter-Phased Transit Curves

TCE 012357074-01 P=537.645957 Days $T_0=355.780849$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

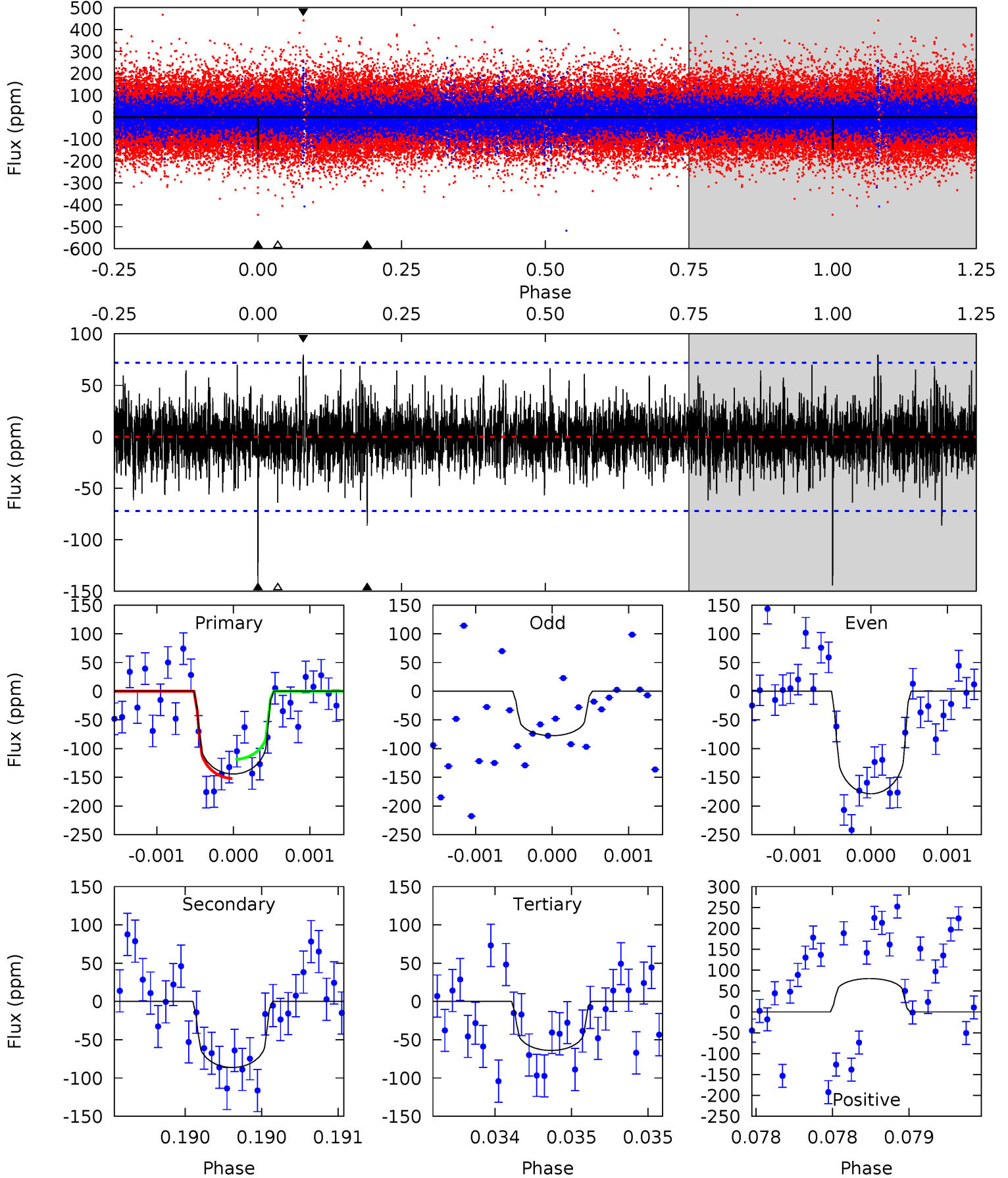
TCE 012357074-01 P=537.647831 Days $T_0=355.783300$ (BKJD)



DV Model-Shift Uniqueness Test

012357074-01, P = 537.645957 Days, E = 355.780849 Days

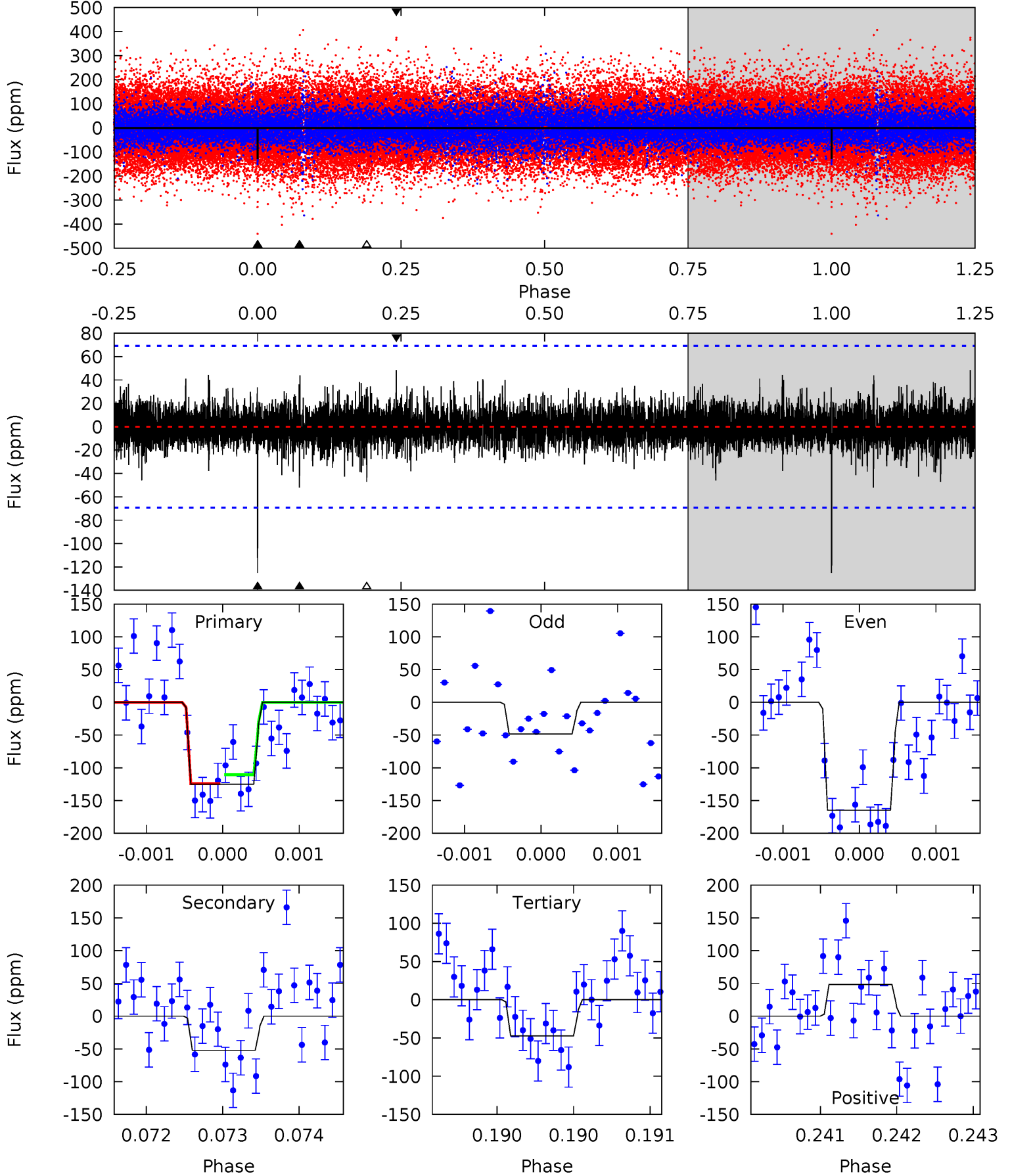
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	6.64	4.92	6.14	5.54	3.43	1.40	6.17	4.96	1.71	0.50	3.67	1.04	0.36	1.26



Alt Model-Shift Uniqueness Test

012357074-01, P = 537.647831 Days, E = 355.783300 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.0	4.17	3.77	3.87	5.54	3.43	0.86	6.24	6.14	0.40	0.30	4.41	1.10	0.28	0.53



Stellar Parameters For KIC 012357074

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5659^{+170}_{-136}	$4.044^{+0.273}_{-0.097}$	$0.080^{+0.250}_{-0.250}$	$1.600^{+0.308}_{-0.501}$	$1.034^{+0.134}_{-0.121}$	$0.356^{+0.631}_{-0.128}$
	+3%/-2%	+7%/-2%	+312%/-312%	+19%/-31%	+13%/-12%	+177%/-36%
Source	PHO1	FLK73	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 012357074-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-86 ± 13	$2.28^{+1.44}_{-1.28}$	380^{+23}_{-31}	4782^{+2117}_{-793}	15379^{+66440}_{-9348}
Alt.	-52 ± 13	$2.14^{+1.34}_{-1.29}$	380^{+22}_{-32}	4436^{+2164}_{-713}	10834^{+56537}_{-6951}

T_{max} = Theoretical Maximum Planetary Temperature
 T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)
 A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

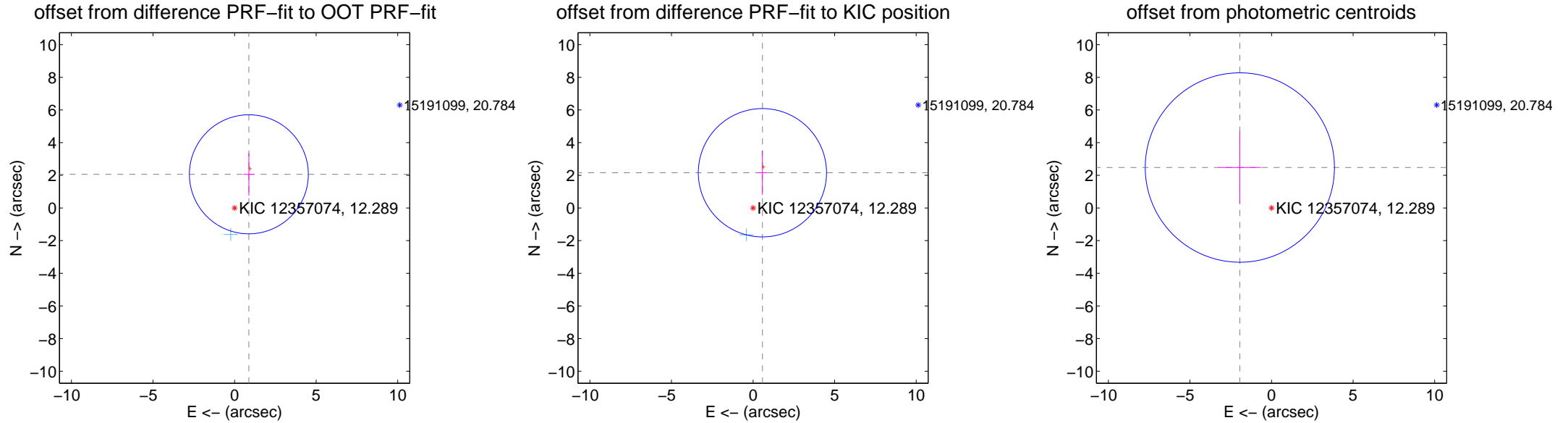
DV Centroid Data

Supplemental centroid analysis for 012357074-01. Kepler magnitude: 12.29. Transit SNR 7.77

There are 1 quarters with good PRF difference image offsets

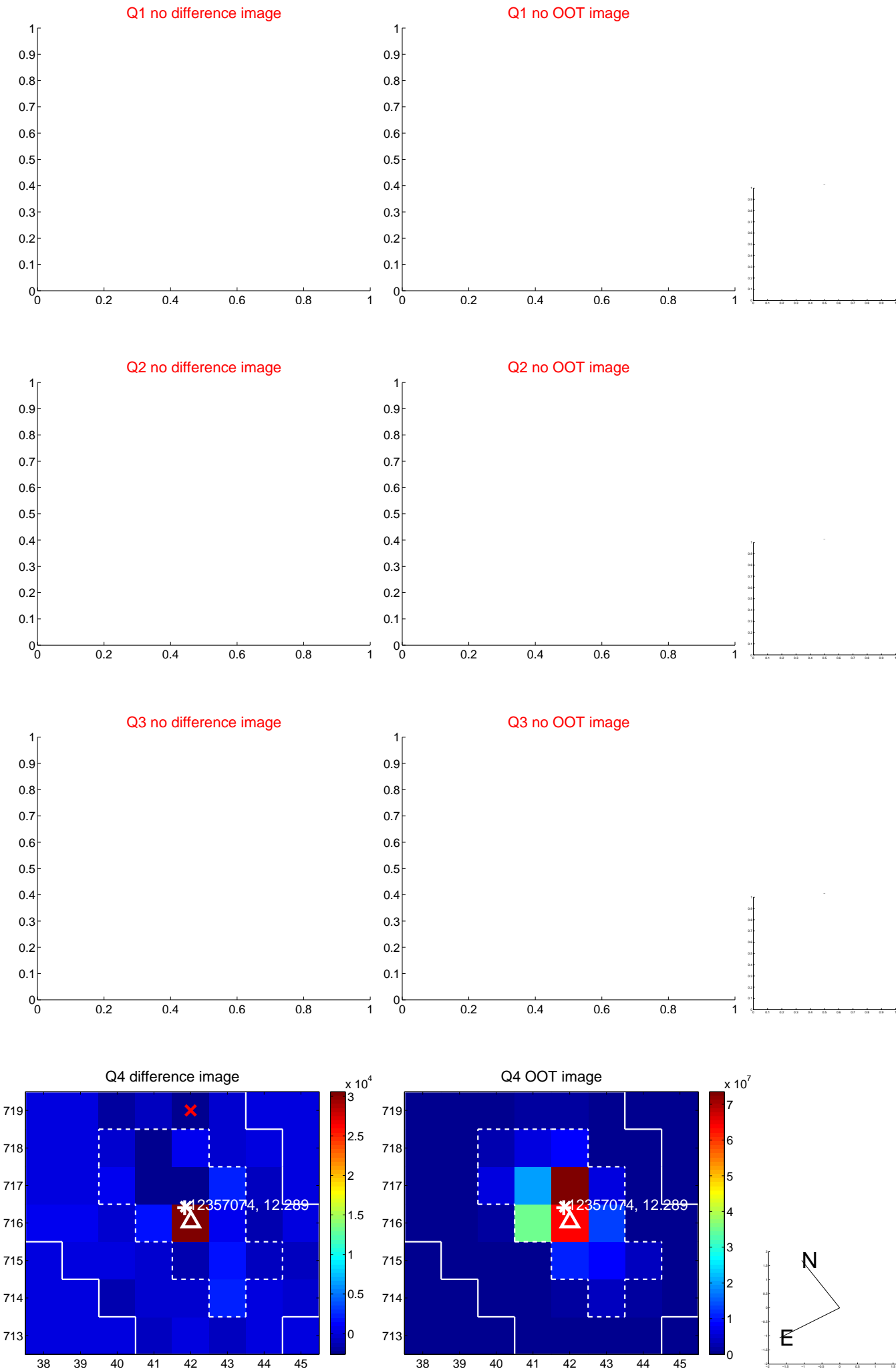
The direct PRF centroid is offset from the target star catalog position by about 0.33 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.238 ± 1.215	1.84	-0.876 ± 0.332	2.060 ± 1.313
PRF-fit source offset from KIC position	2.232 ± 1.310	1.70	-0.574 ± 0.293	2.157 ± 1.353
photometric centroid source offset	3.15 ± 1.93	1.63	1.94 ± 1.30	2.48 ± 2.24



Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

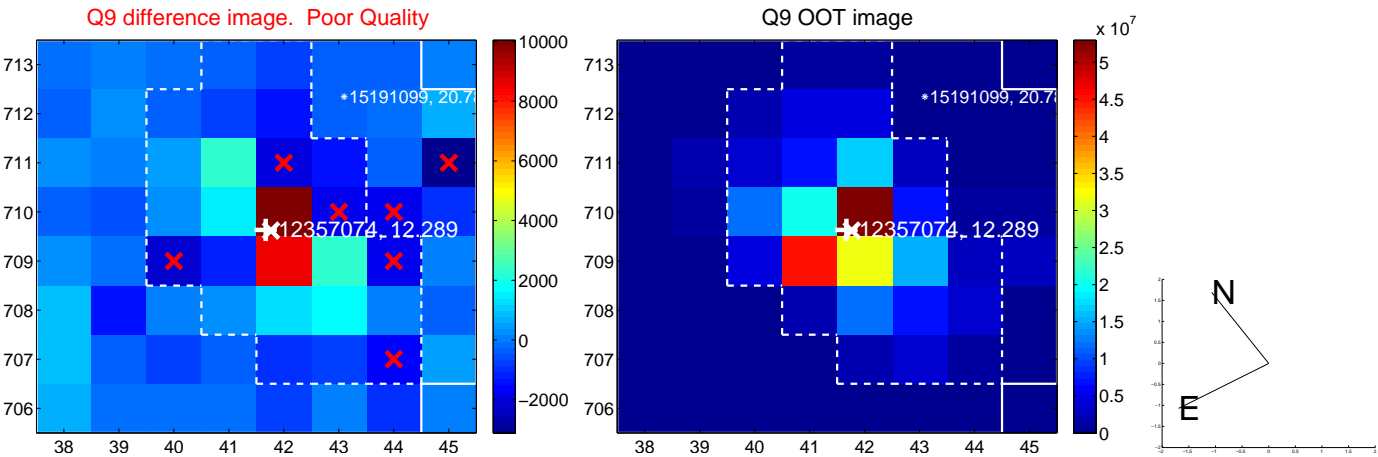
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



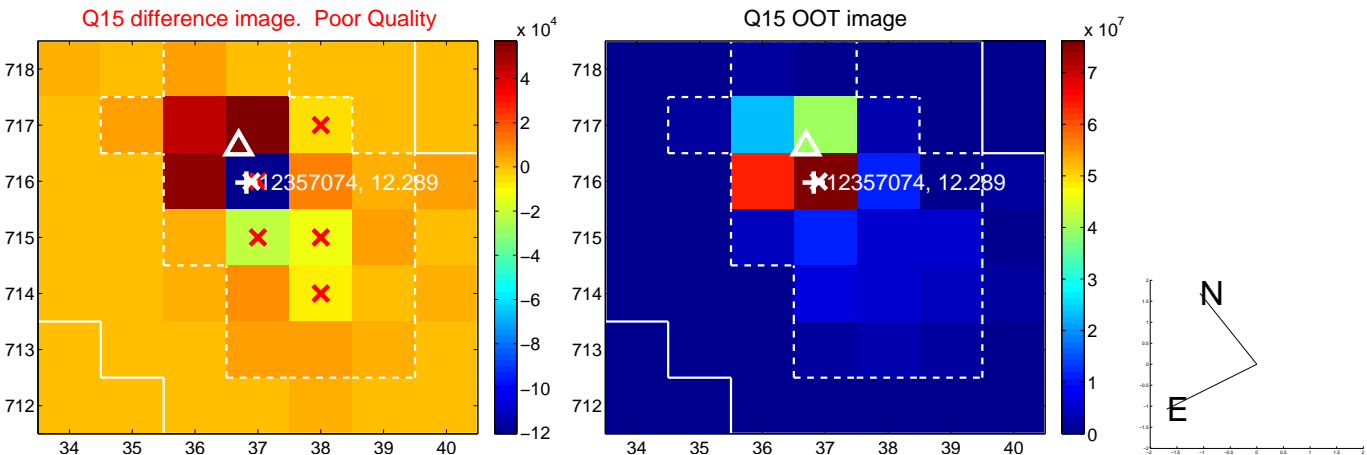
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



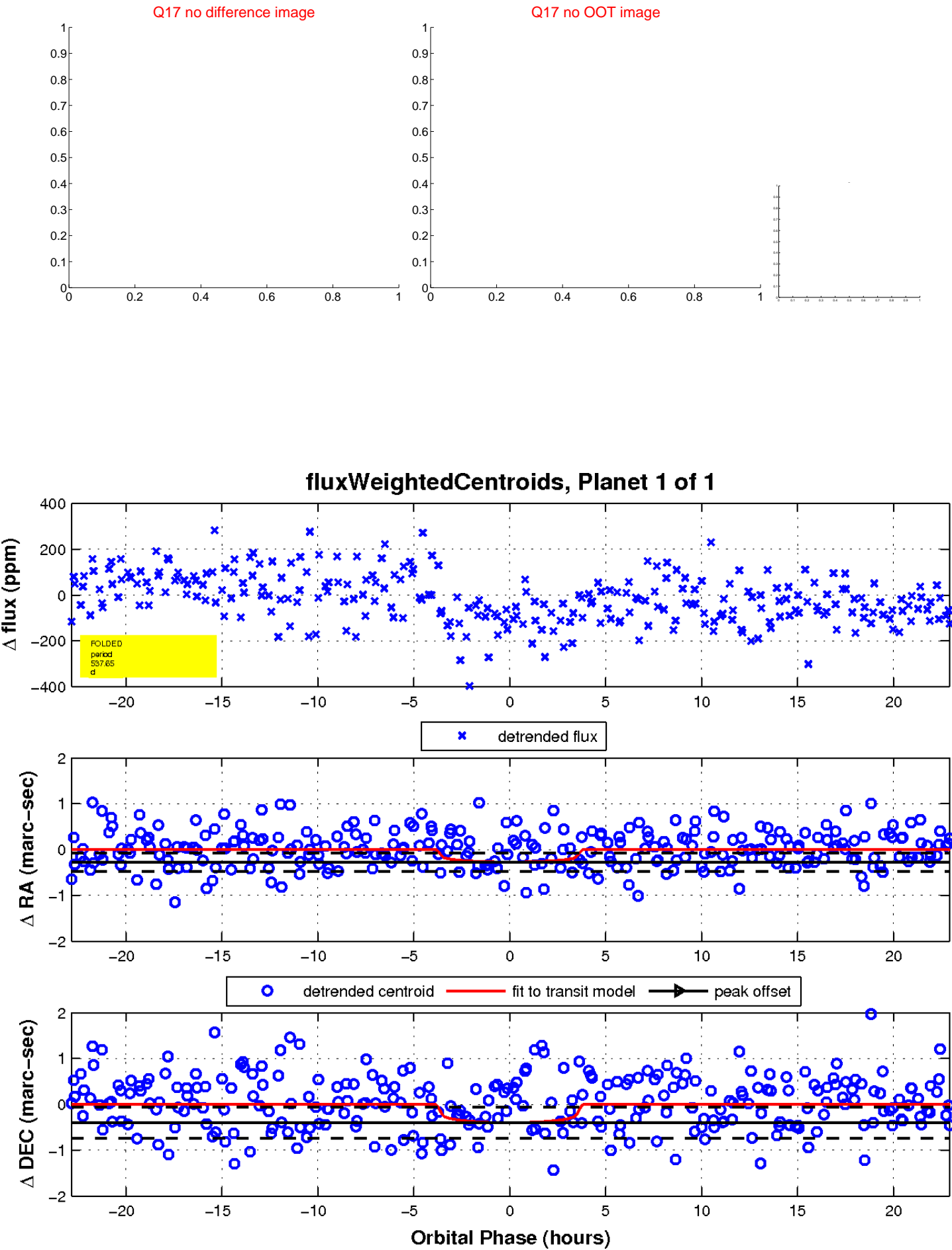
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

