

KIC 012306687

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})
012306687-01	OBS	No	417.771471	431.523444	324.2	10.122	8.2	7.6	1.05	6210	2.04	1.18

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012306687-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—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.

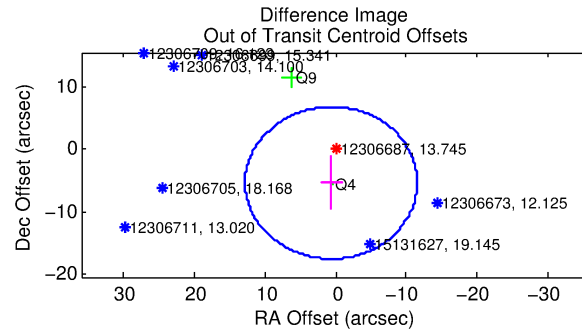
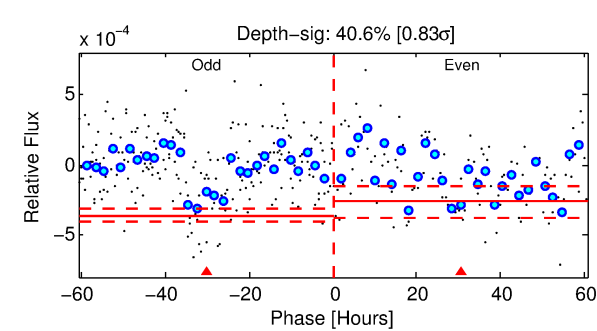
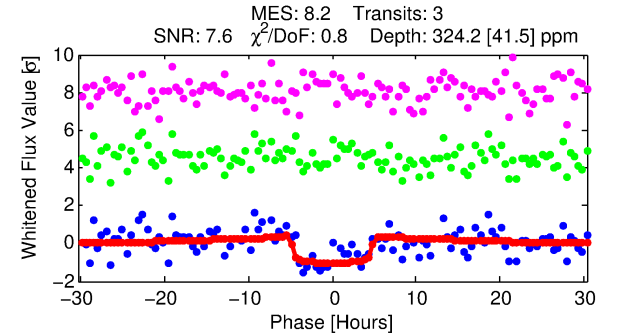
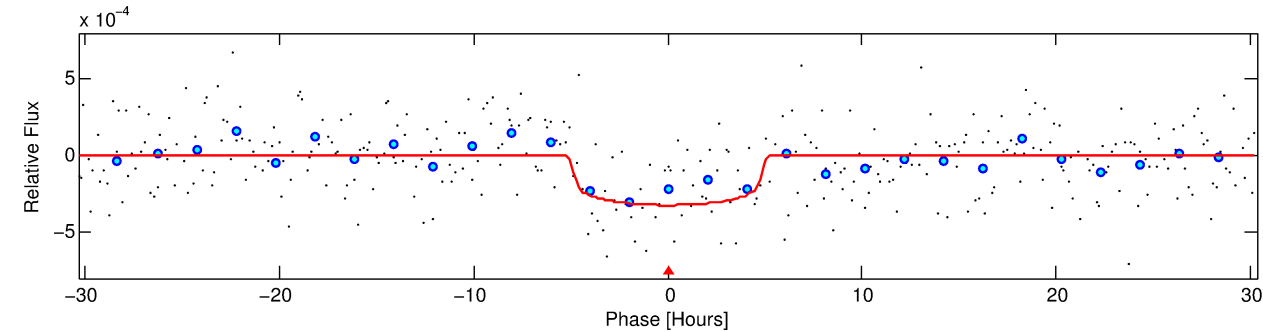
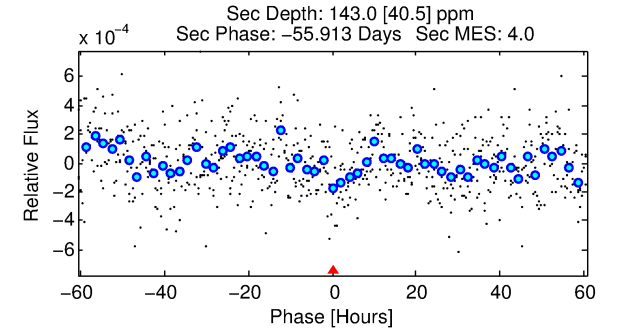
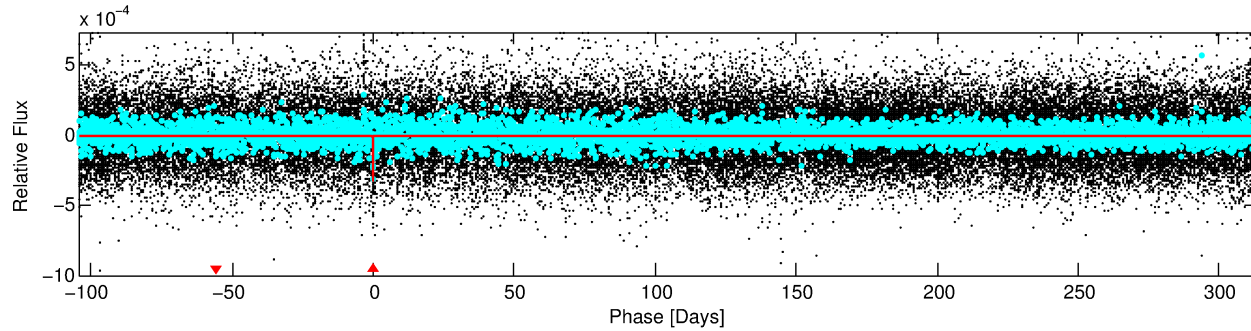
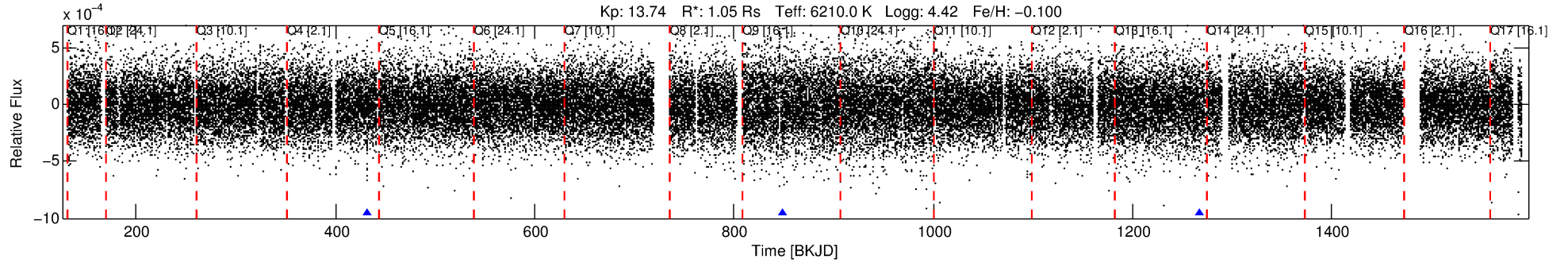
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012306687-01

No Significant Match Found

DV One-Page Summary

KIC: 12306687 Candidate: 1 of 1 Period: 417.771 d



DV Fit Results:

Period = 417.77147 [0.01285] d
Epoch = 431.5234 [0.0137] BKJD
Rp/R* = 0.0178 [0.0079]
a/R* = 224.92 [501.27]
b = 0.73 [1.46]
Seff = 1.18 [0.51]
Teq = 266 [29] K
Rp = 2.04 [1.15] Re
a = 1.1209 [0.3197] AU
Ag = 23658.89 [24023.65] [0.98σ]
Teffp = 5094 [1199] K [4.02σ]

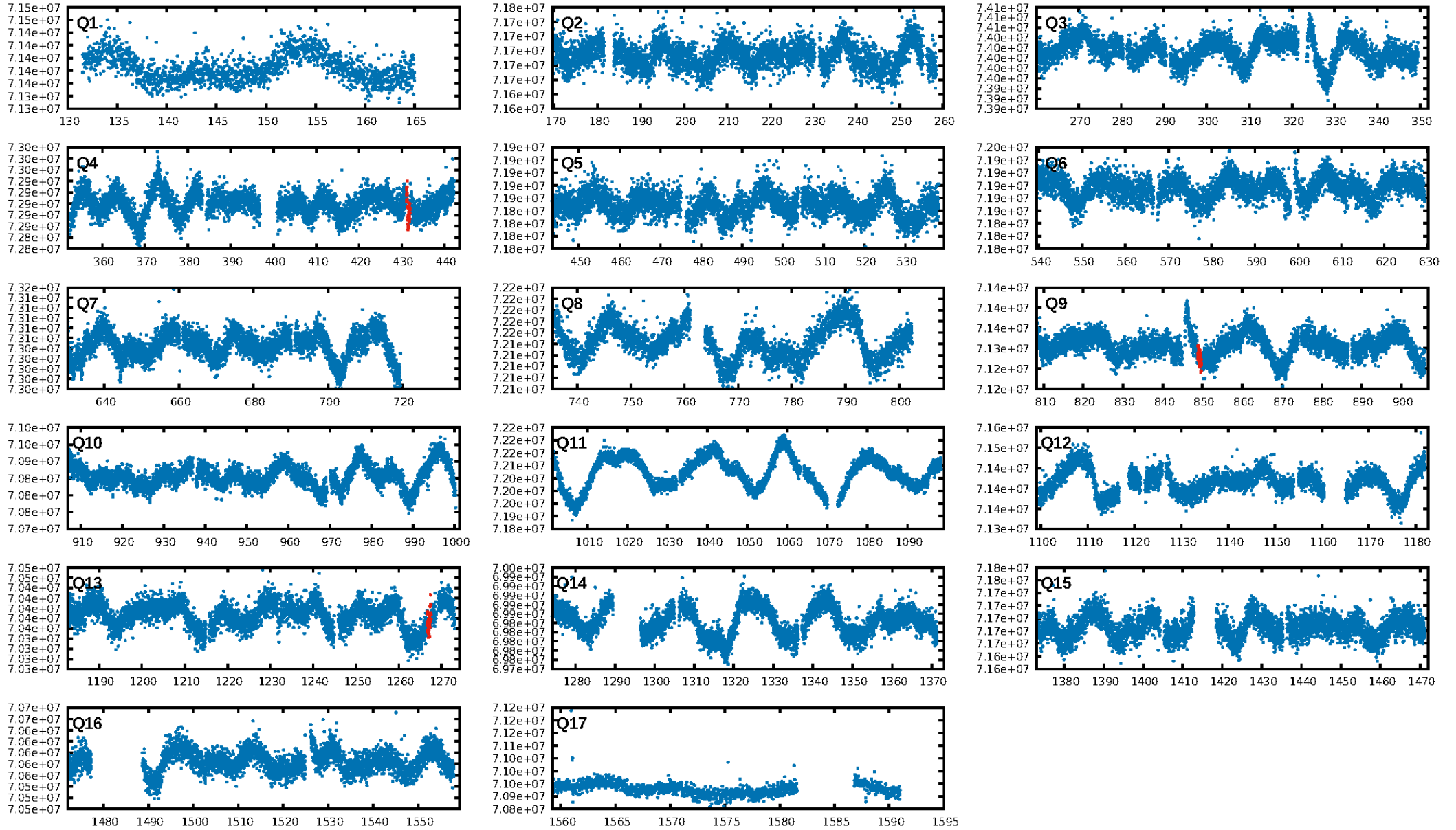
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 22.4%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 3.68e-17
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.141
Centroid-sig: 1.6%
Centroid-so: 2.880 arcsec [1.99σ]
OotOffset-rm: 5.457 arcsec [1.34σ]
OotOffset-st: 0/0/1/1 [2]
KicOffset-rm: 5.476 arcsec [1.36σ]
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

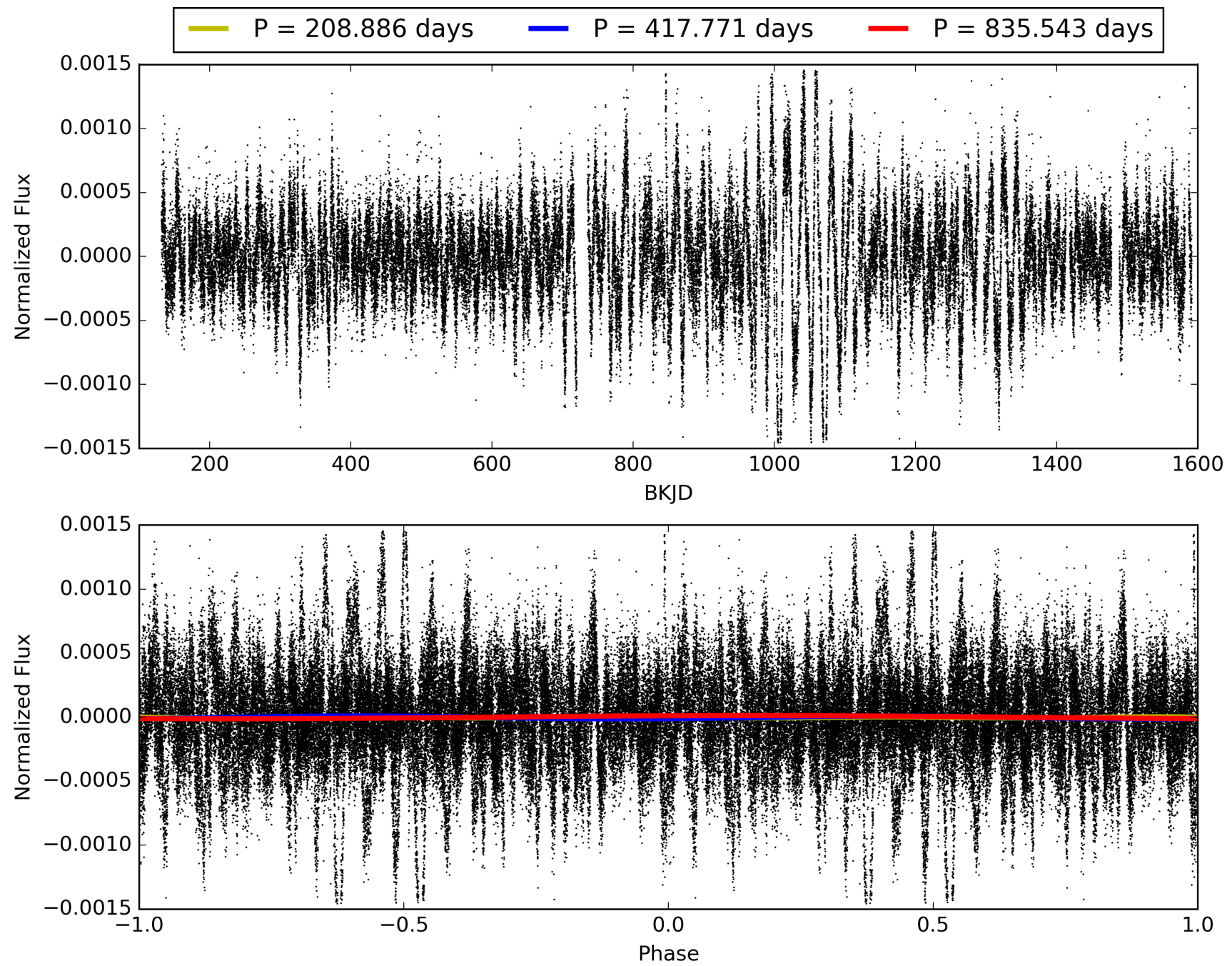
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 19:47:07 Z

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

TCE 012306687-01, PDC Light Curves

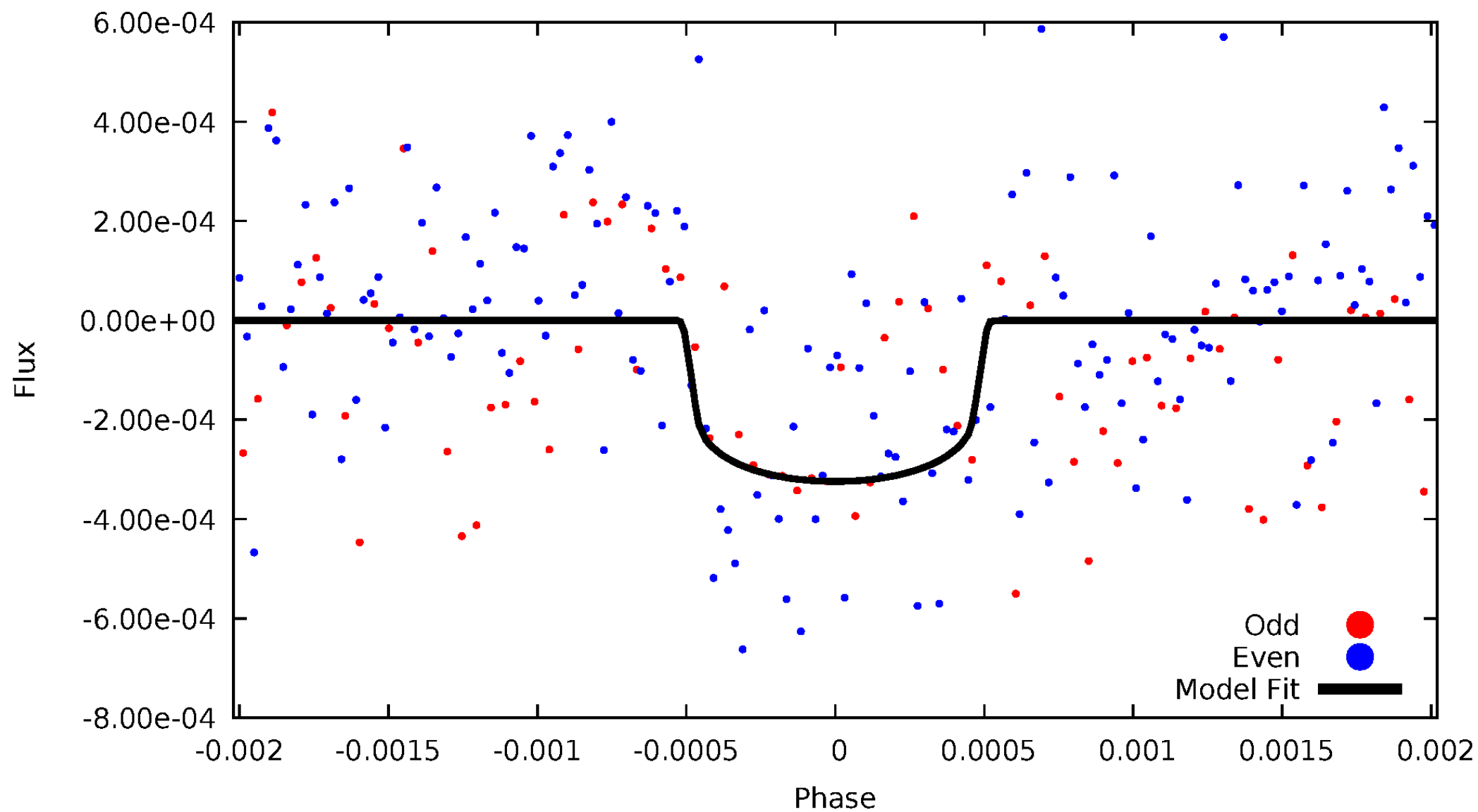


TCE 012306687-01



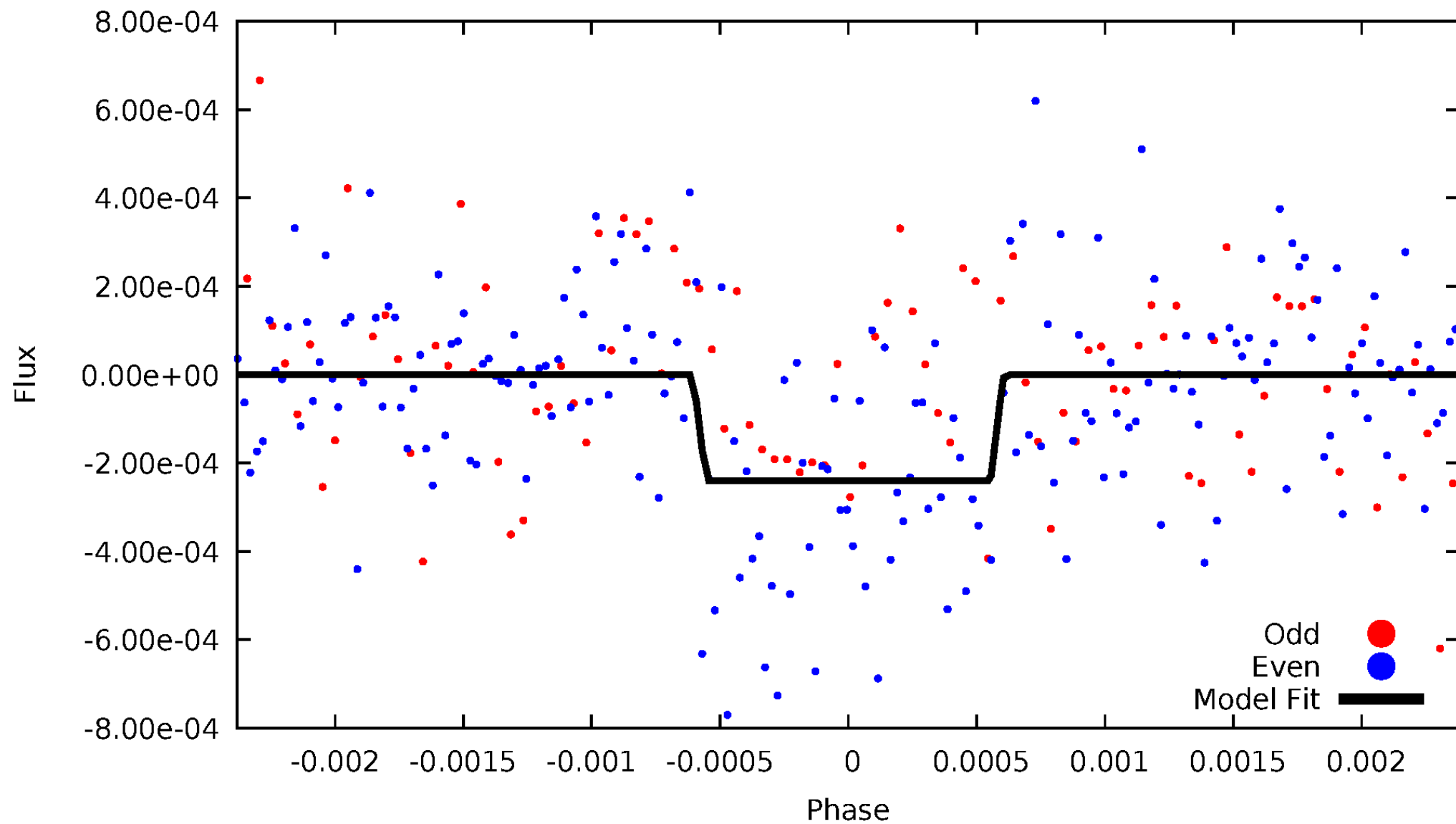
DV Odd/Even

TCE 012306687-01

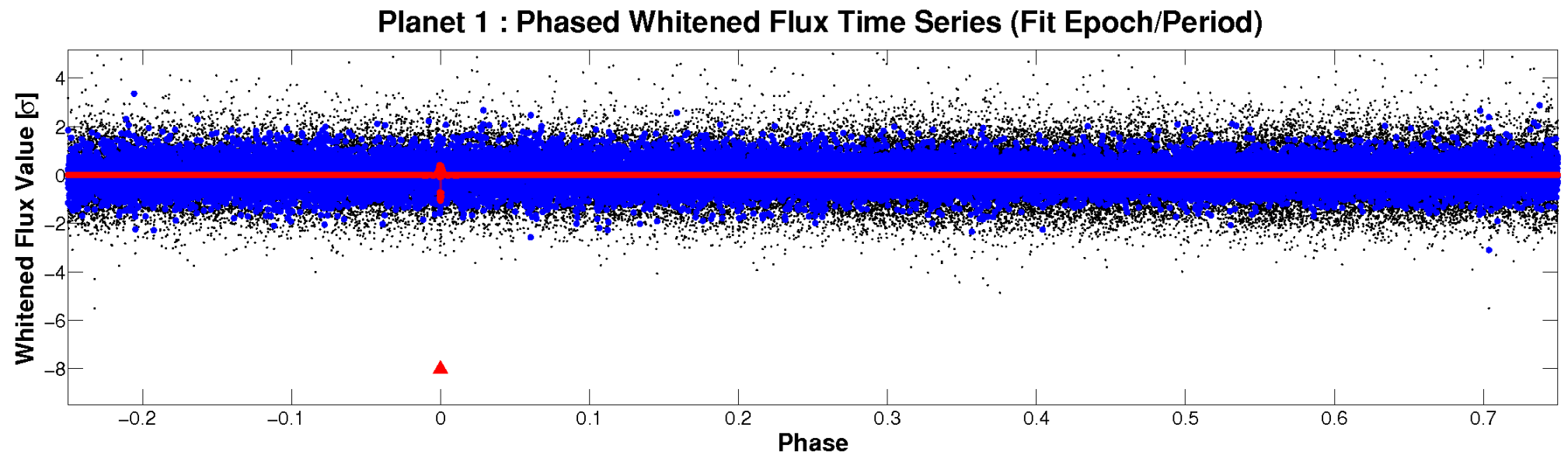
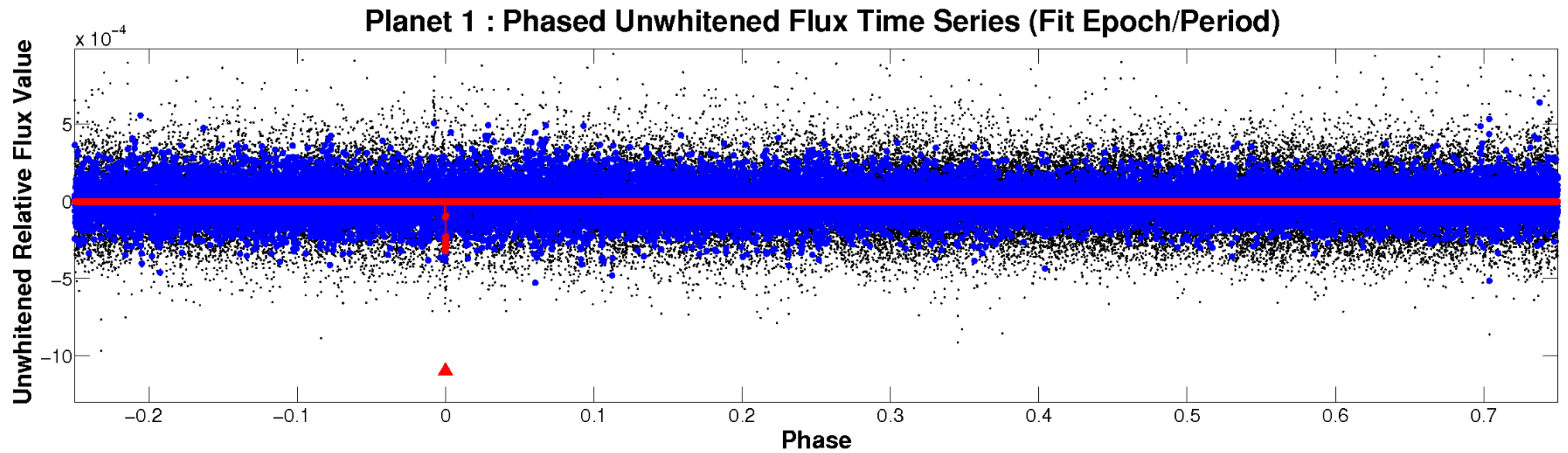


ALT Odd/Even

TCE 012306687-01

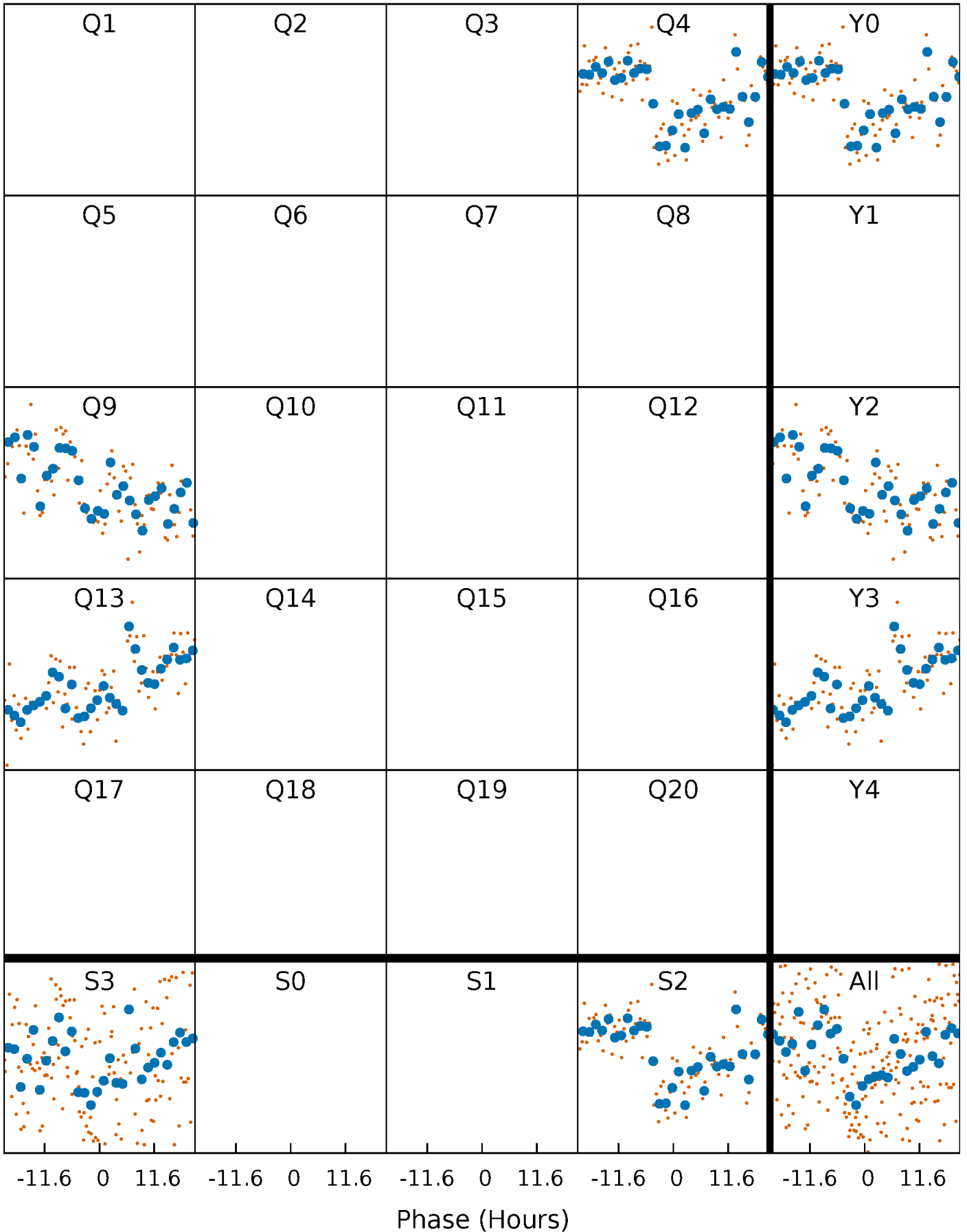


Non-Whitened Vs. Whitened Light Curve



PDC Quarter-Phased Transit Curves

TCE 012306687-01 P=417.771471 Days $T_0=431.523444$ (BKJD)



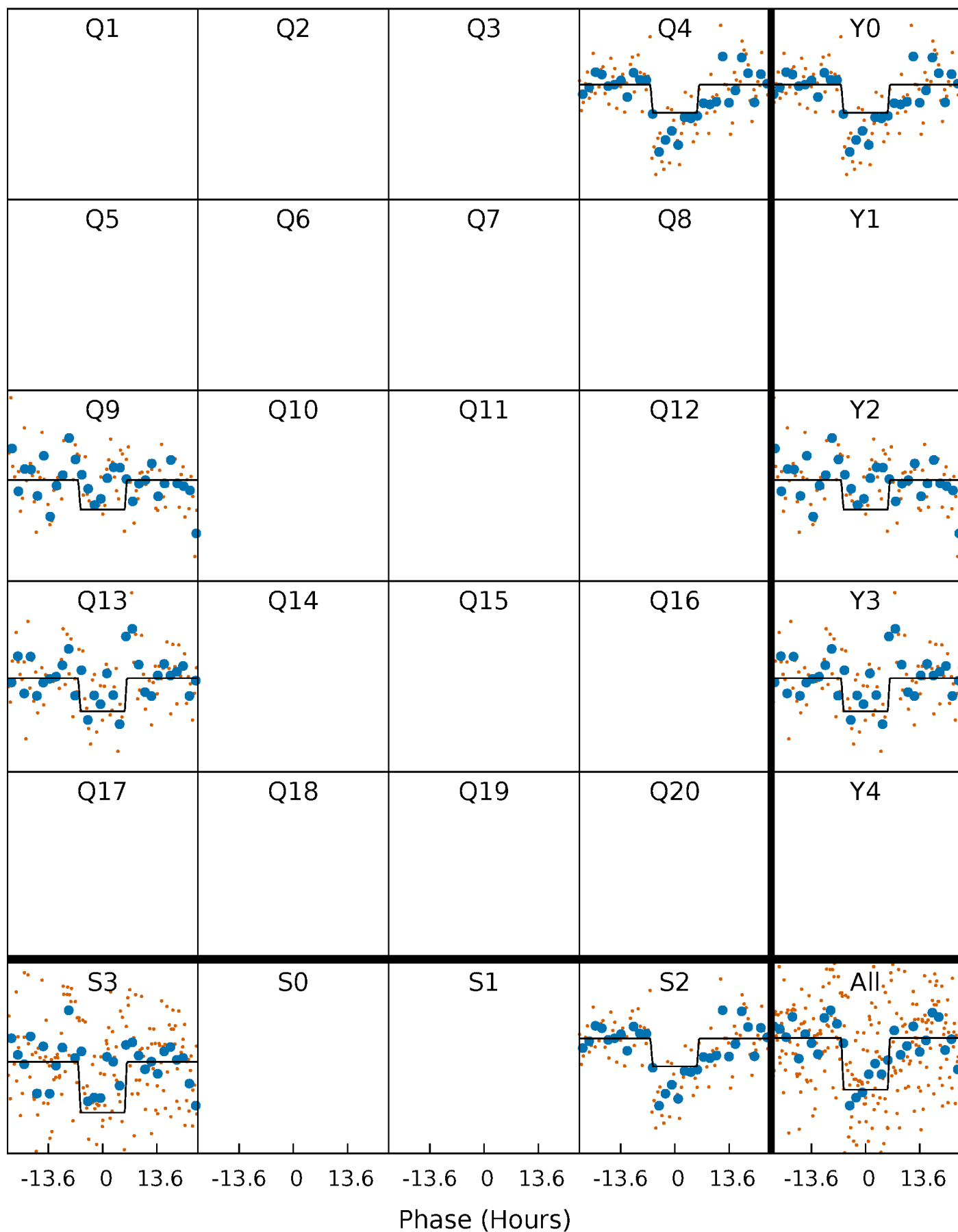
DV Quarter-Phased Transit Curves

TCE 012306687-01 P=417.771471 Days $T_0=431.523444$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

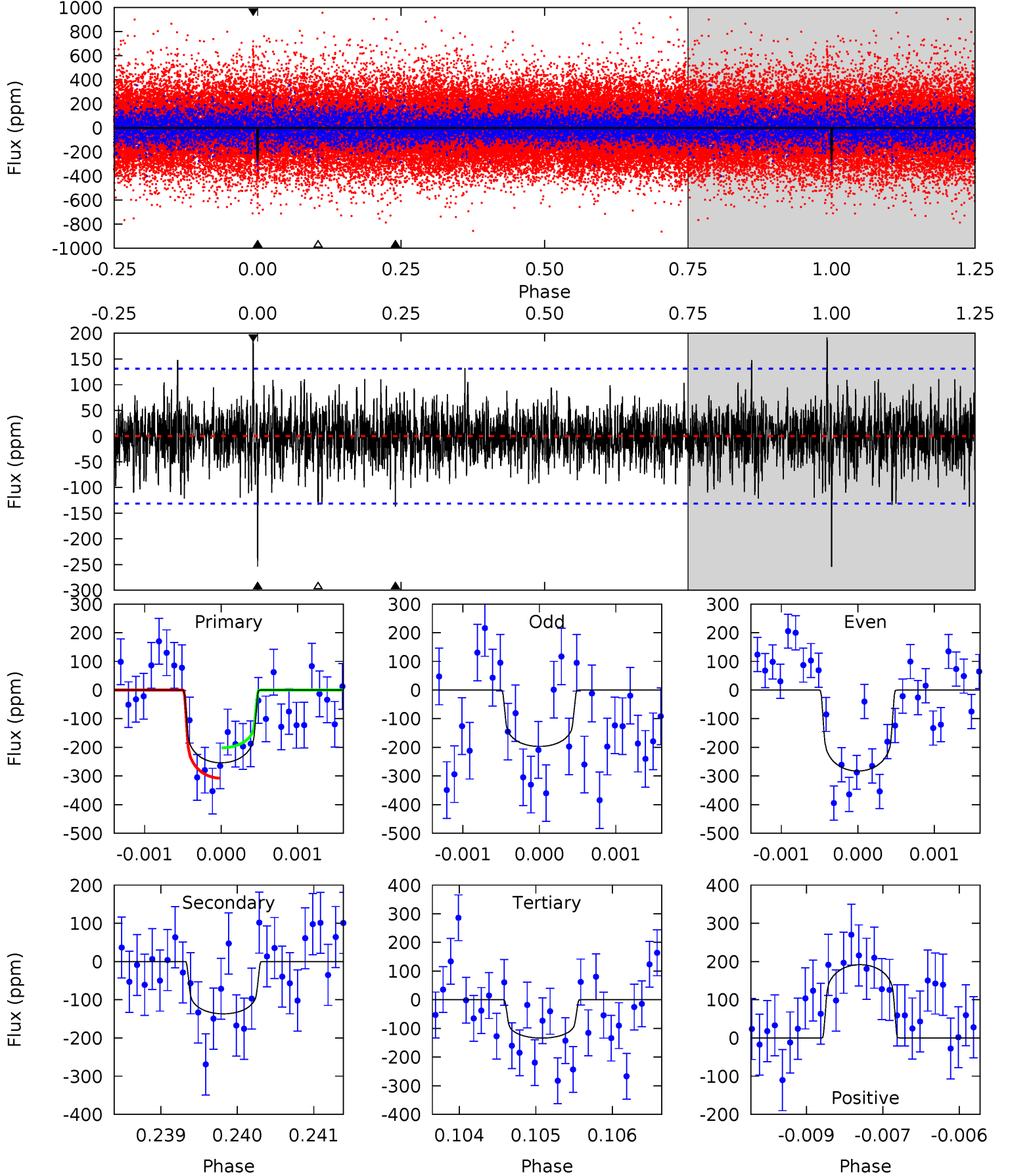
TCE 012306687-01 P=417.730078 Days $T_0=431.590449$ (BKJD)



DV Model-Shift Uniqueness Test

012306687-01, $P = 417.771471$ Days, $E = 13.751973$ Days

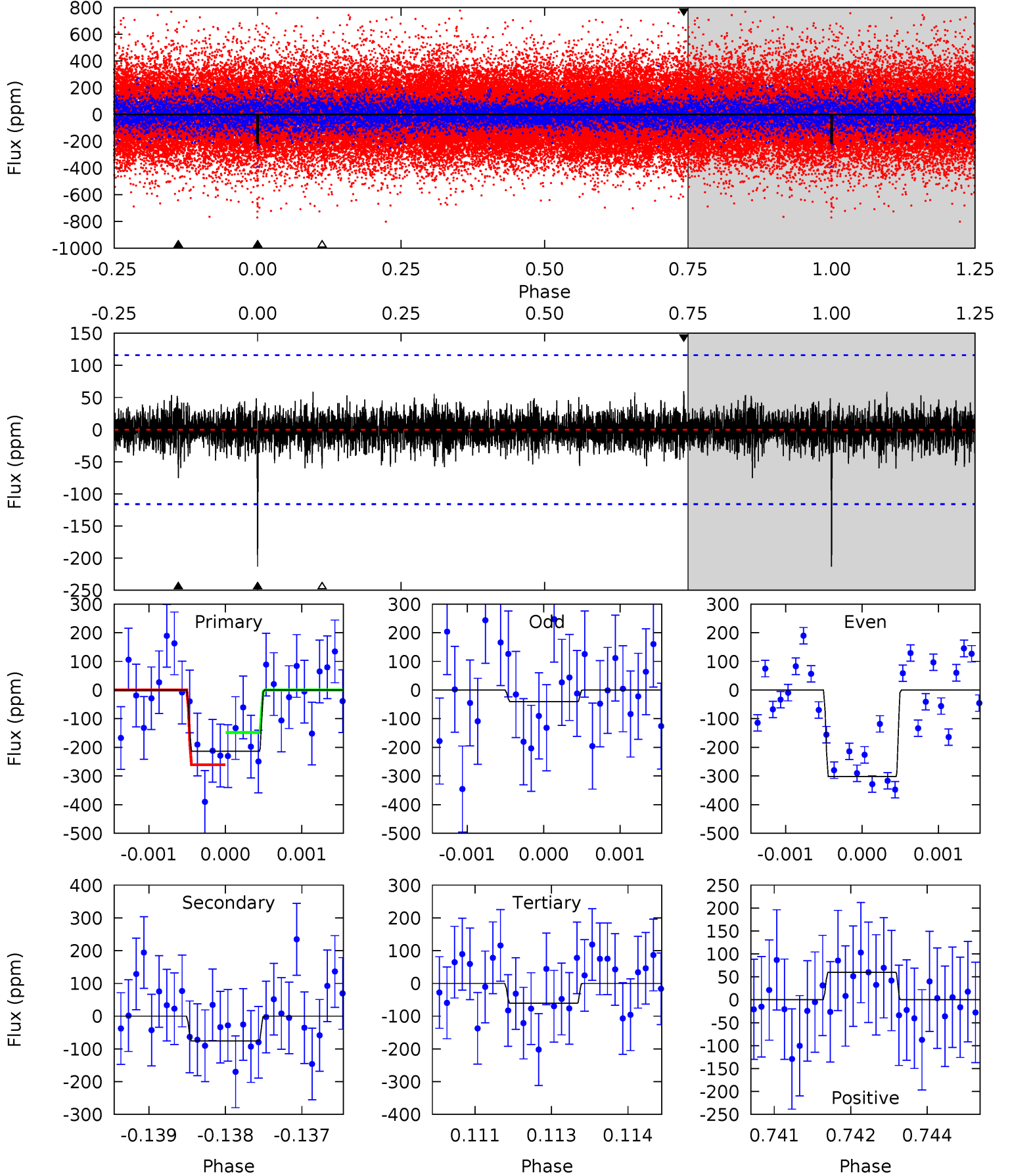
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	5.67	5.54	7.94	5.44	3.27	1.46	4.98	2.58	0.13	-2.27	1.66	1.21	0.43	2.19



Alt Model-Shift Uniqueness Test

012306687-01, $P = 417.730078$ Days, $E = 13.860371$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.97	3.52	2.83	2.81	5.42	3.23	0.77	7.13	7.16	0.69	0.72	5.75	1.33	0.22	2.63



Stellar Parameters For KIC 012306687

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6210^{+166}_{-222}	$4.424^{+0.072}_{-0.217}$	$-0.100^{+0.250}_{-0.300}$	$1.054^{+0.366}_{-0.122}$	$1.070^{+0.168}_{-0.137}$	$1.287^{+0.390}_{-0.666}$
	+3%/-4%	+2%/-5%	+250%/-300%	+35%/-12%	+16%/-13%	+30%/-52%
Source	PHO1	KIC0	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 012306687-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-137 ± 24	$2.15^{+1.00}_{-0.94}$	376^{+32}_{-20}	5045^{+1666}_{-703}	20524^{+45334}_{-11650}
Alt.	-75 ± 21	$1.88^{+1.08}_{-0.89}$	378^{+29}_{-21}	4730^{+1578}_{-737}	14307^{+37854}_{-8819}

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 $A_{\text{obs}} \gg 1.0$

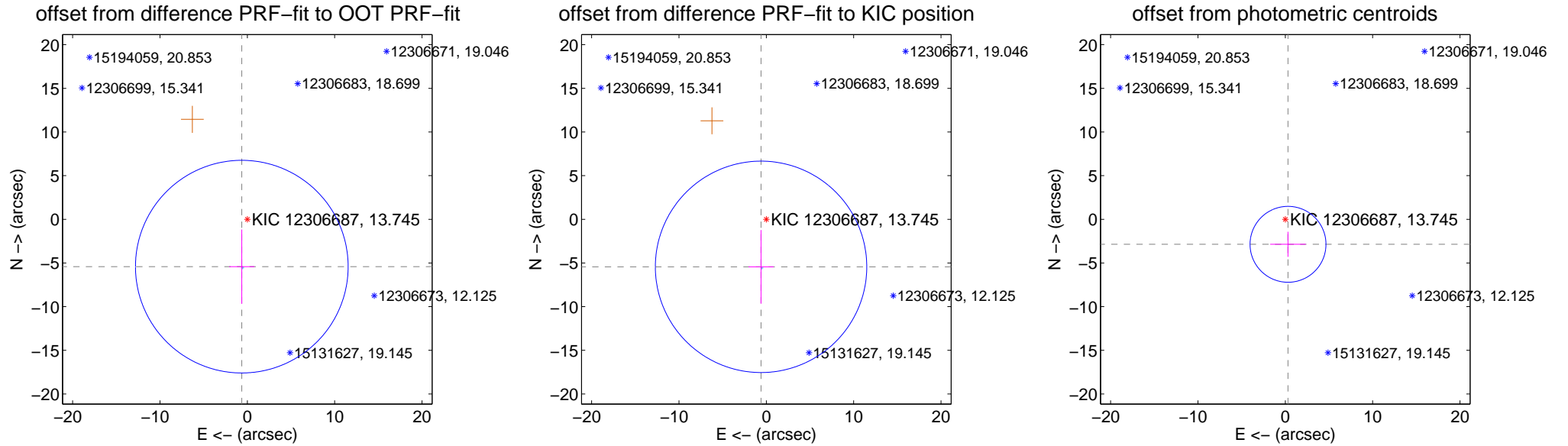
DV Centroid Data

Supplemental centroid analysis for 012306687-01. Kepler magnitude: 13.74. Transit SNR 7.60

There are 1 quarters with good PRF difference image offsets

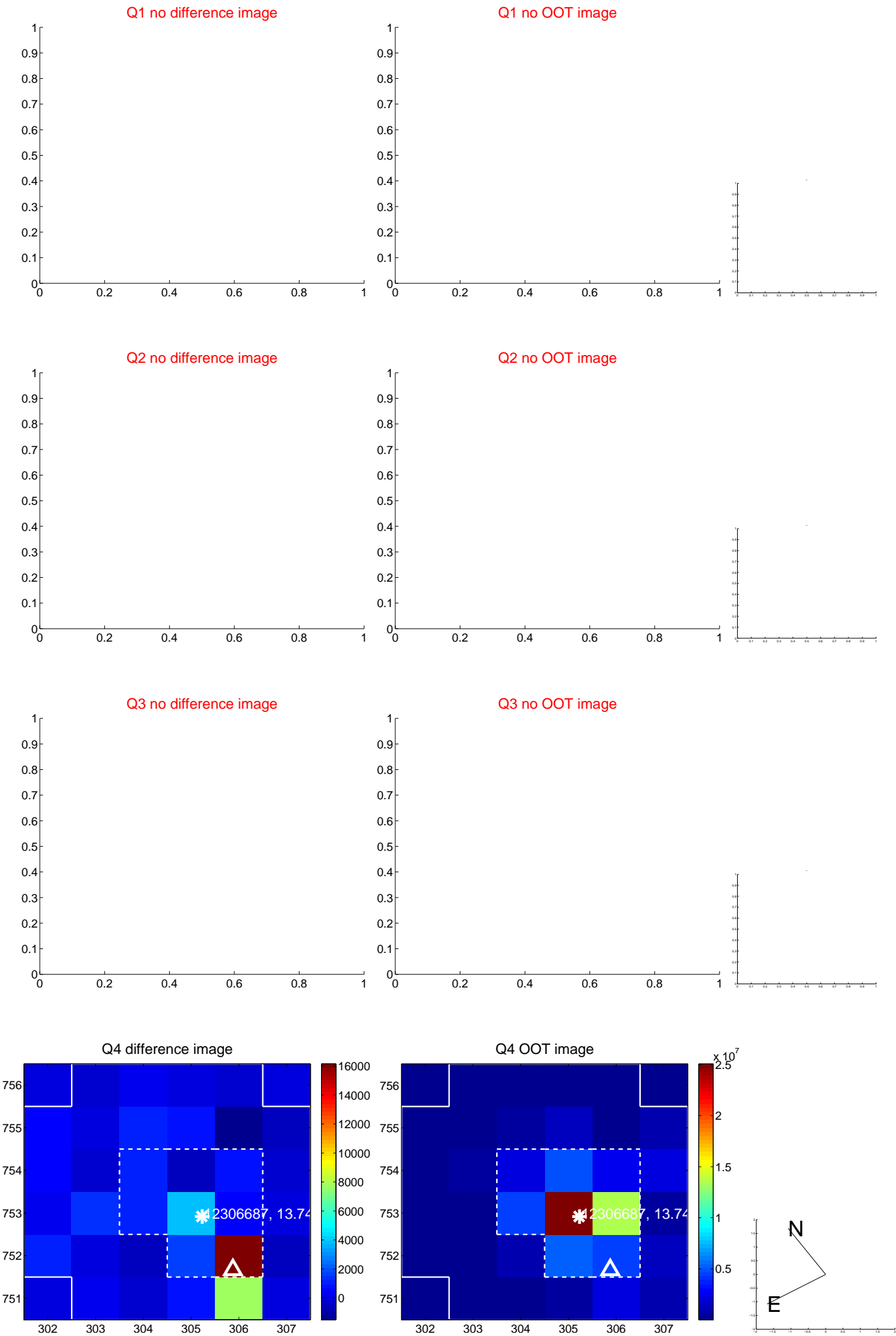
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.457 ± 4.059	1.34	0.632 ± 1.442	-5.420 ± 4.254
PRF-fit source offset from KIC position	5.476 ± 4.035	1.36	0.602 ± 1.431	-5.443 ± 4.218
photometric centroid source offset	2.88 ± 1.45	1.99	-0.31 ± 2.03	-2.86 ± 1.44



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.

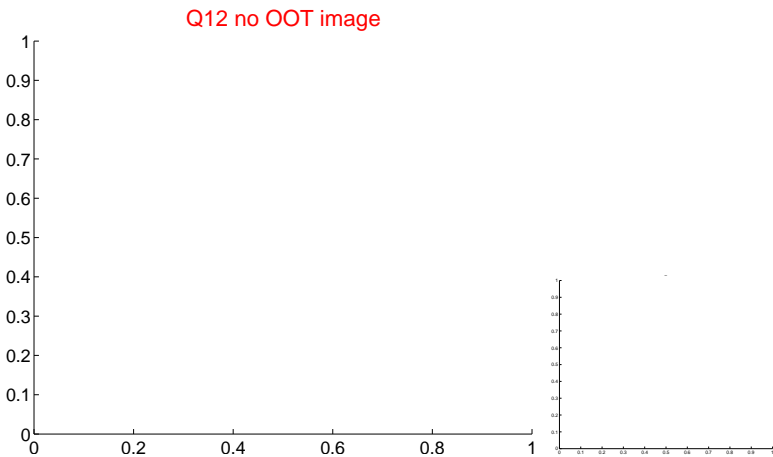
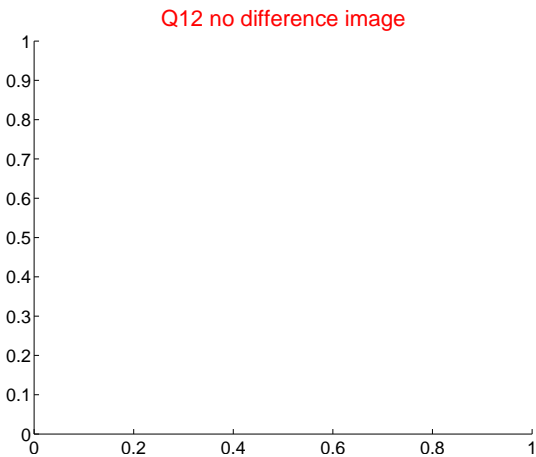
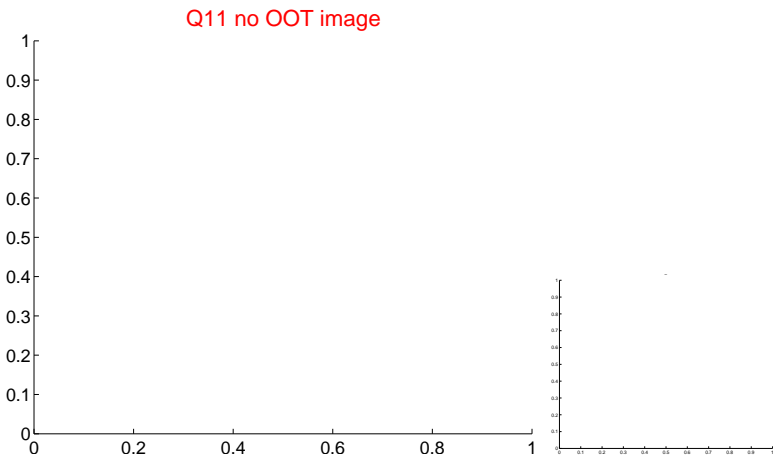
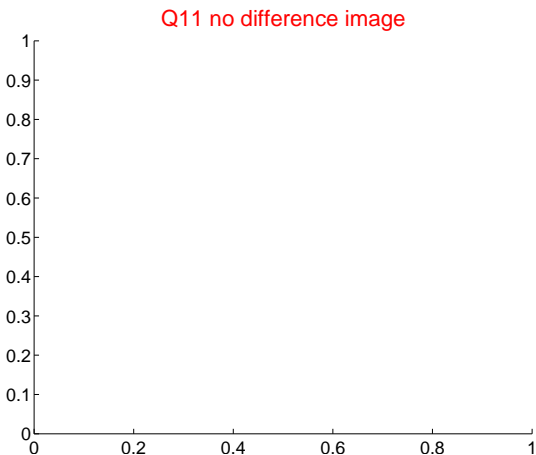
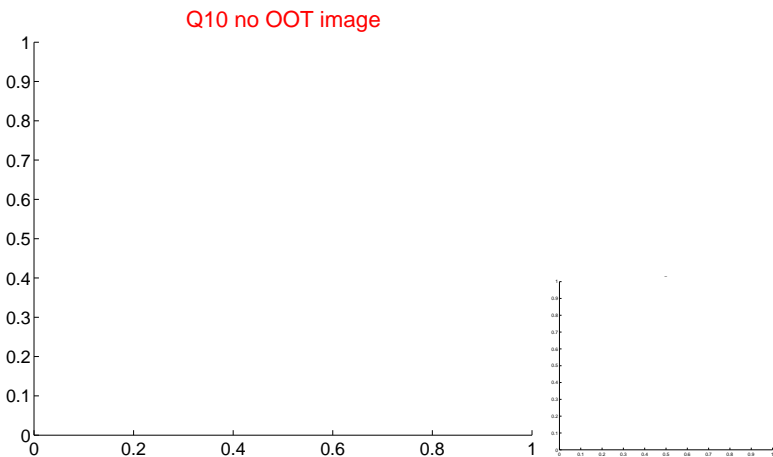
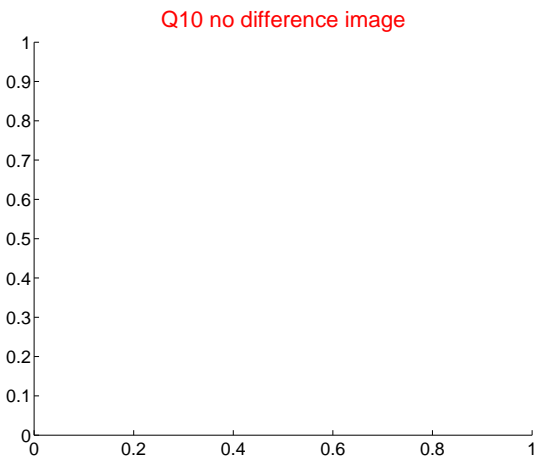
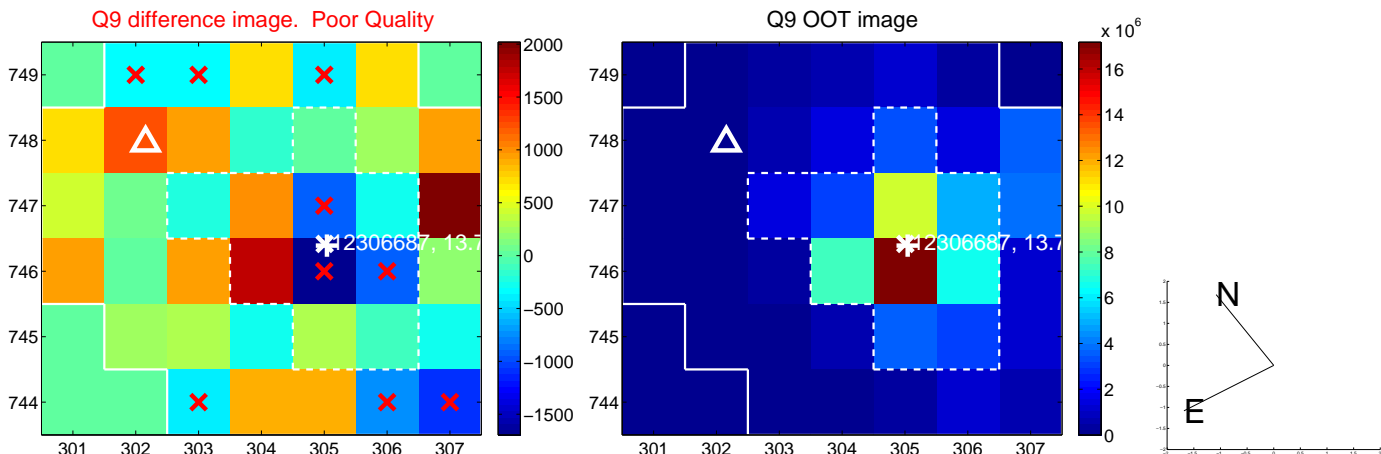
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



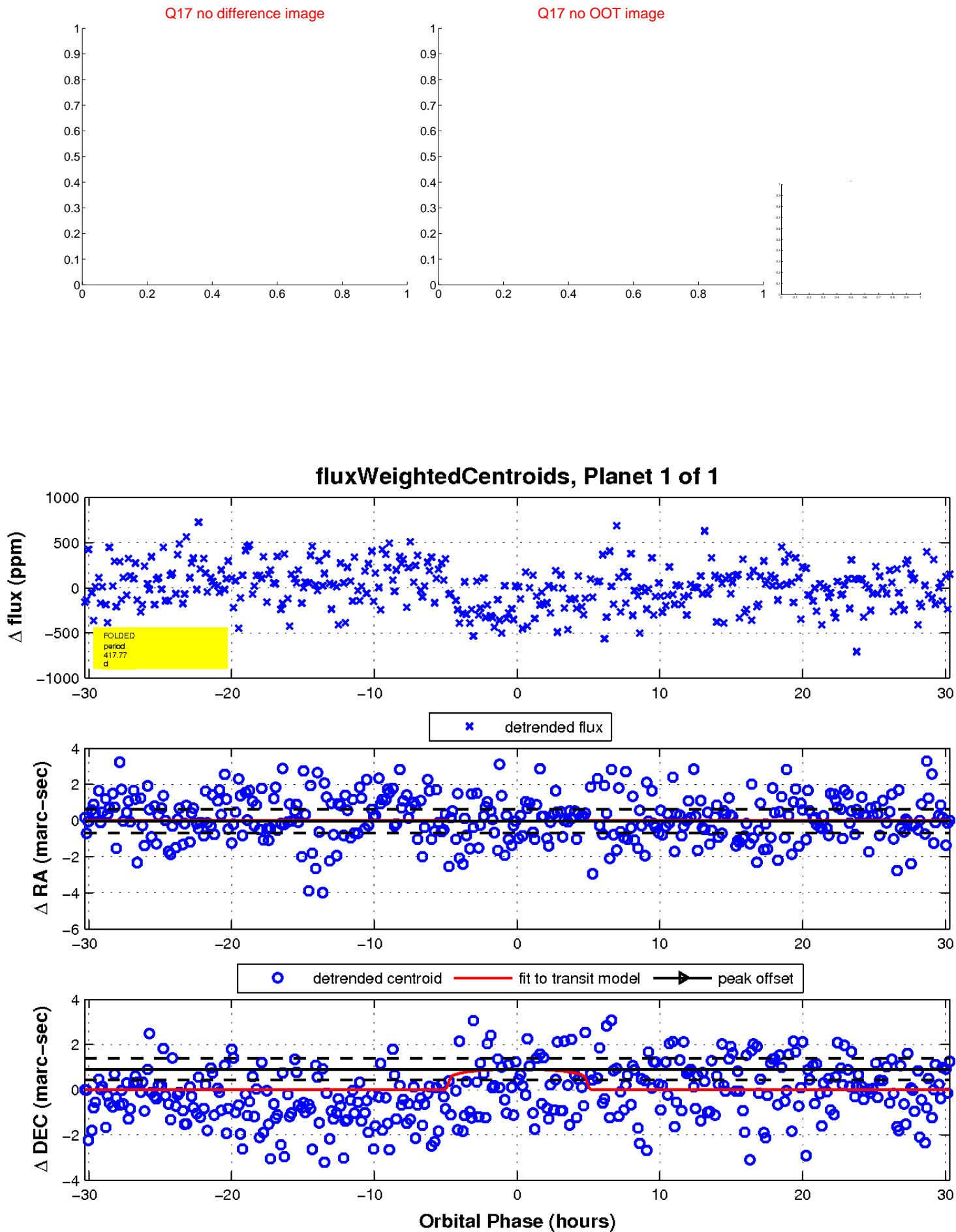
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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UKIRT Image

