

KIC 009009373

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})
009009373-01	OBS	No	368.230791	180.656631	801.3	18.067	7.4	7.2	1.04	6273	2.98	1.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009009373-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—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.

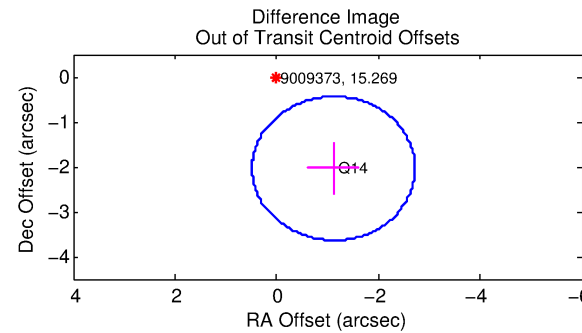
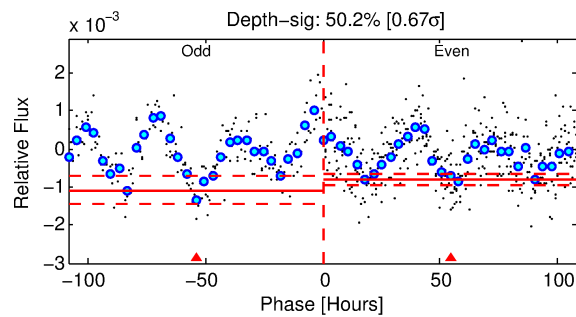
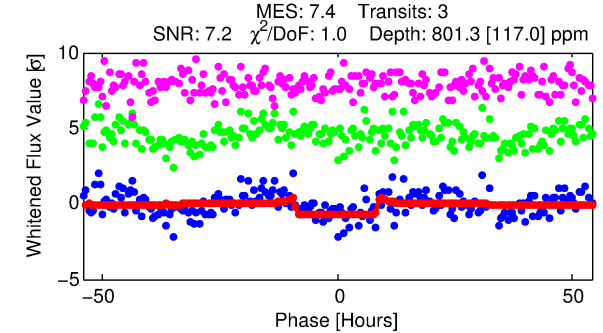
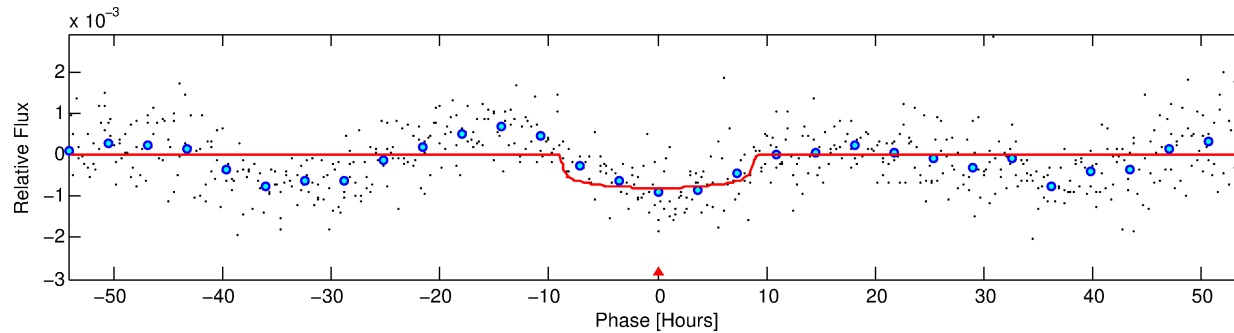
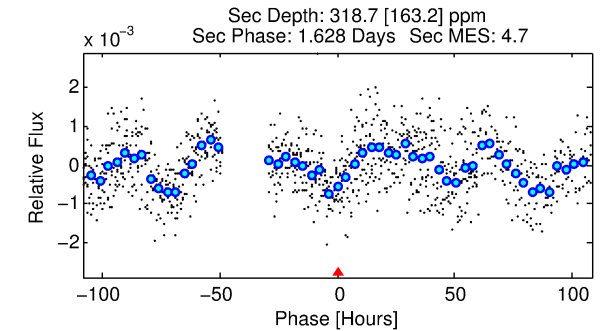
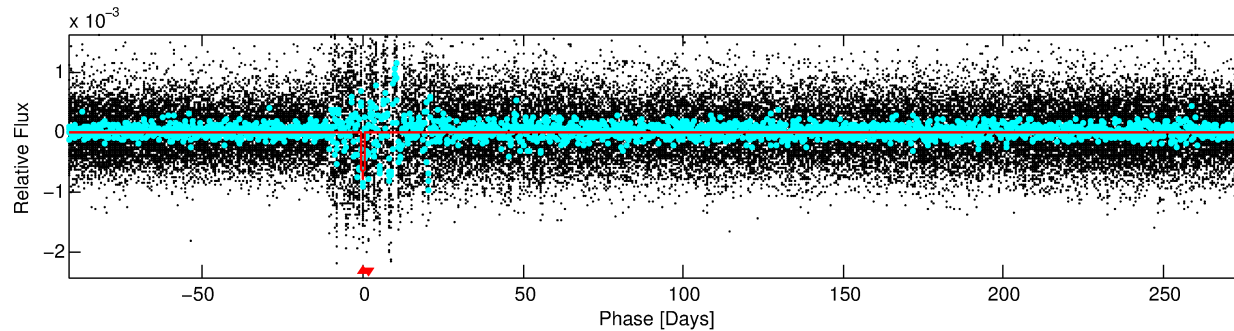
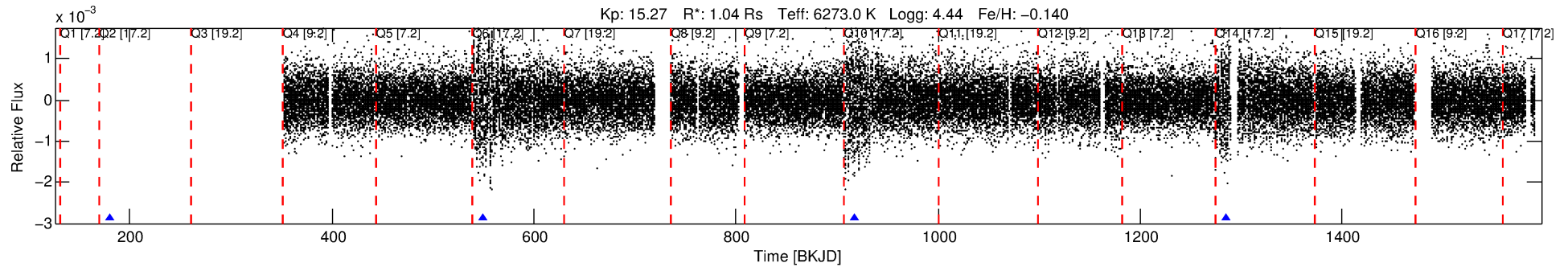
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009009373-01

No Significant Match Found

DV One-Page Summary

KIC: 9009373 Candidate: 1 of 1 Period: 368.231 d



DV Fit Results:

Period = 368.23079 [0.01346] d
Epoch = 180.6566 [0.0286] BKJD
Rp/R* = 0.0261 [0.0117]
a/R* = 154.66 [344.39]
b = 0.26 [8.10]
Seff = 1.40 [0.62]
Teq = 278 [31] K
Rp = 2.98 [1.67] Re
a = 1.0381 [0.2922] AU
Ag = 21301.06 [23662.69] [0.90σ]
Teffp = 5184 [1356] K [3.62σ]

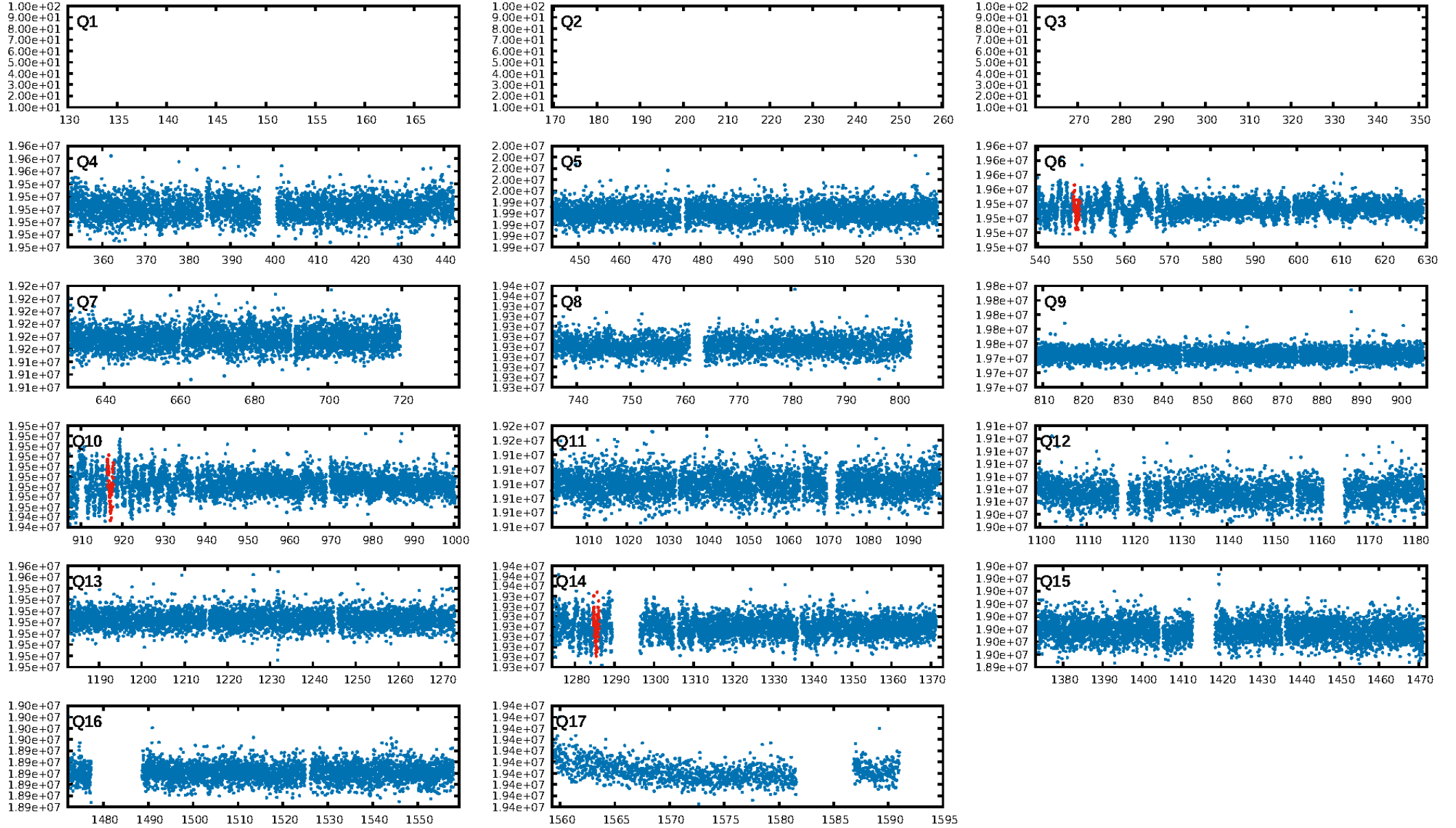
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 89.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.93e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.5898
Centroid-sig: 0.1%
Centroid-so: 5.548 arcsec [3.32σ]
OotOffset-rm: 2.326 arcsec [4.36σ]
KicOffset-rm: 2.156 arcsec [4.06σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [3/3]

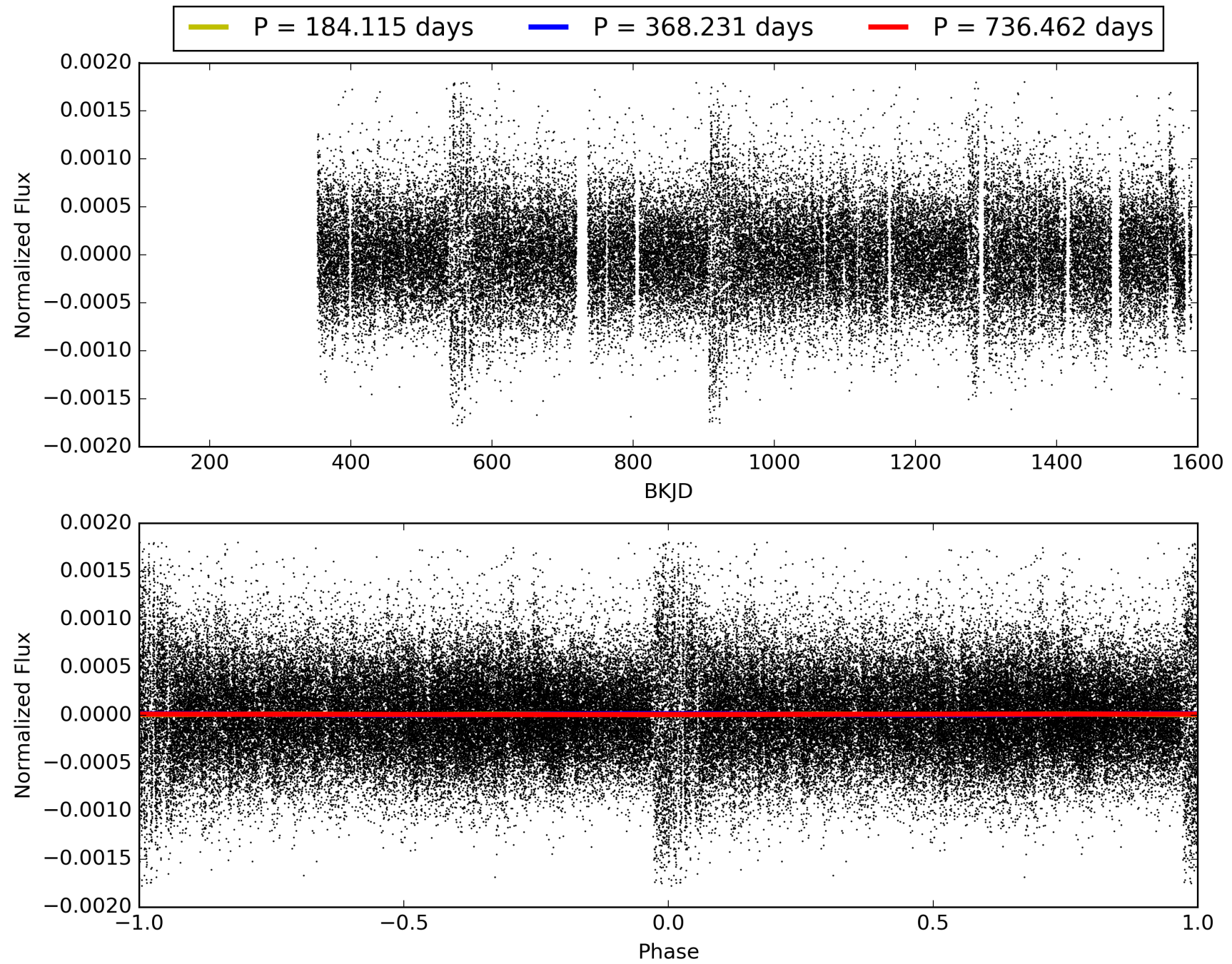
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:52:39 Z

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

TCE 009009373-01, PDC Light Curves

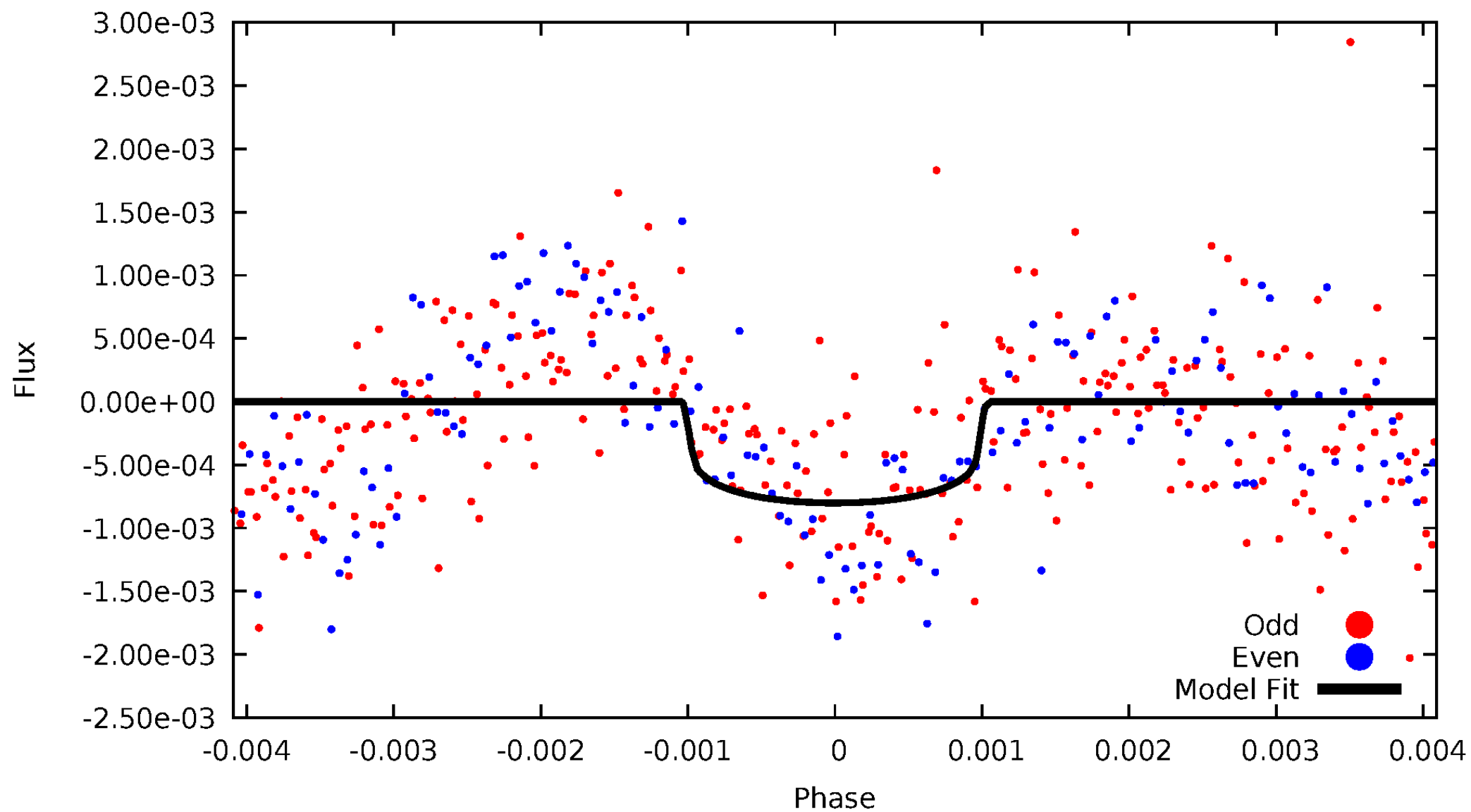


TCE 009009373-01



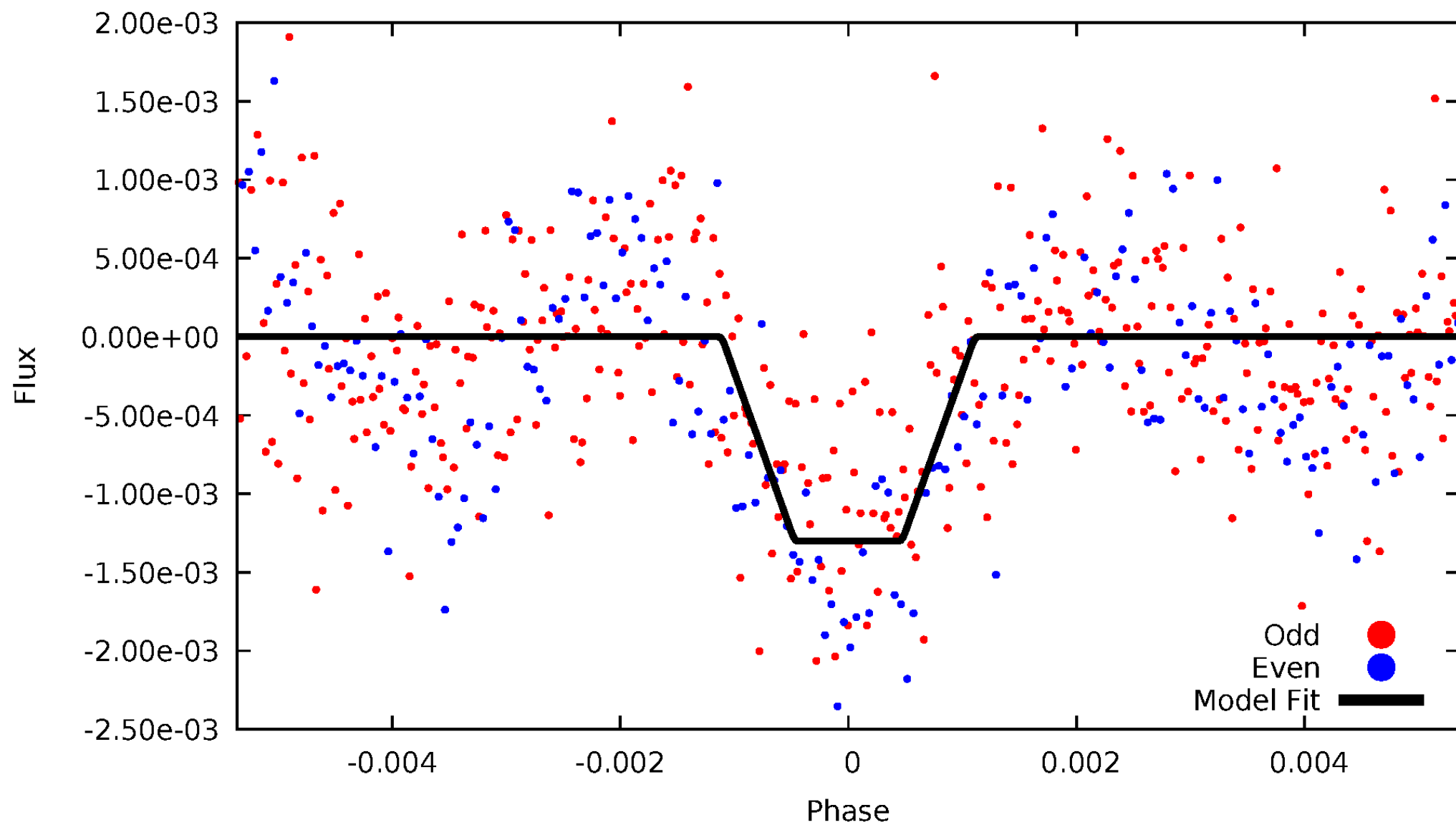
DV Odd/Even

TCE 009009373-01

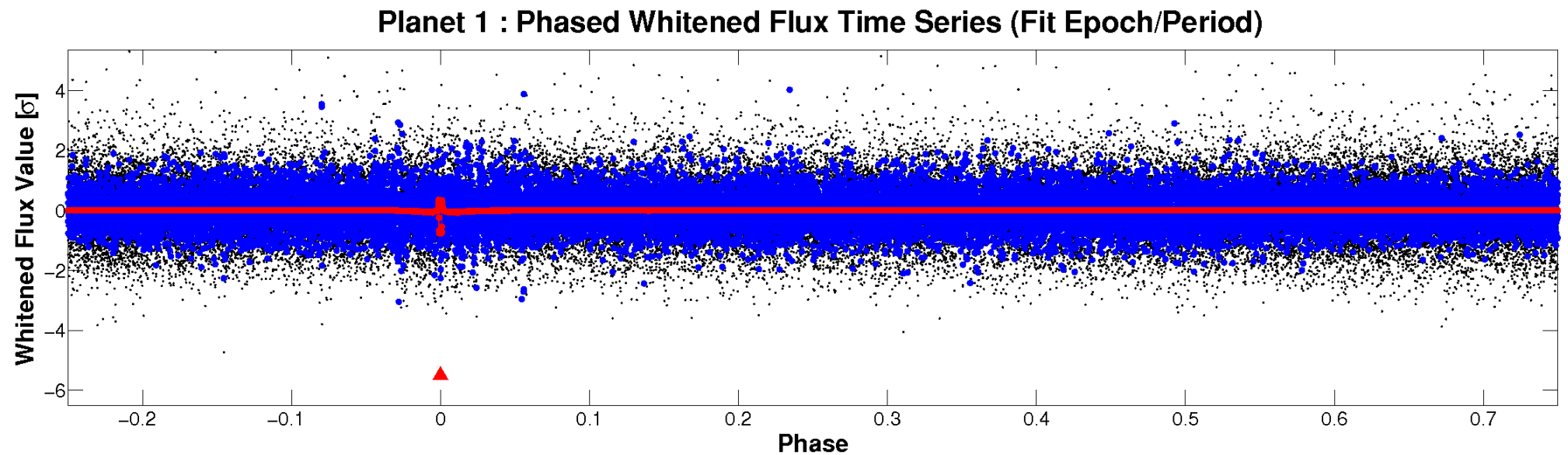
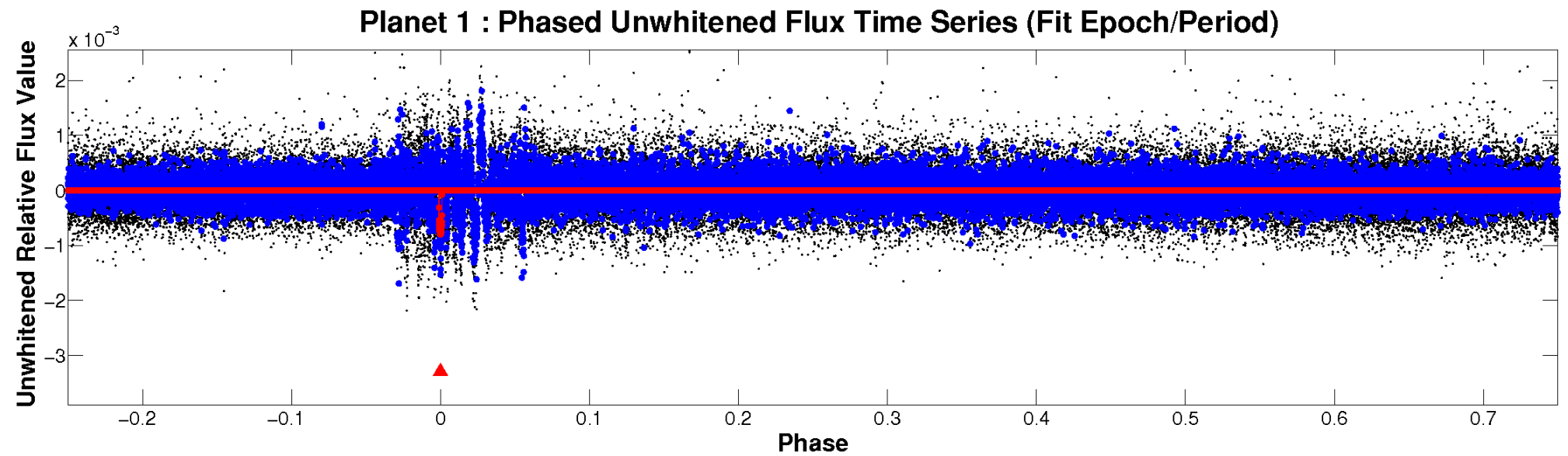


ALT Odd/Even

TCE 009009373-01

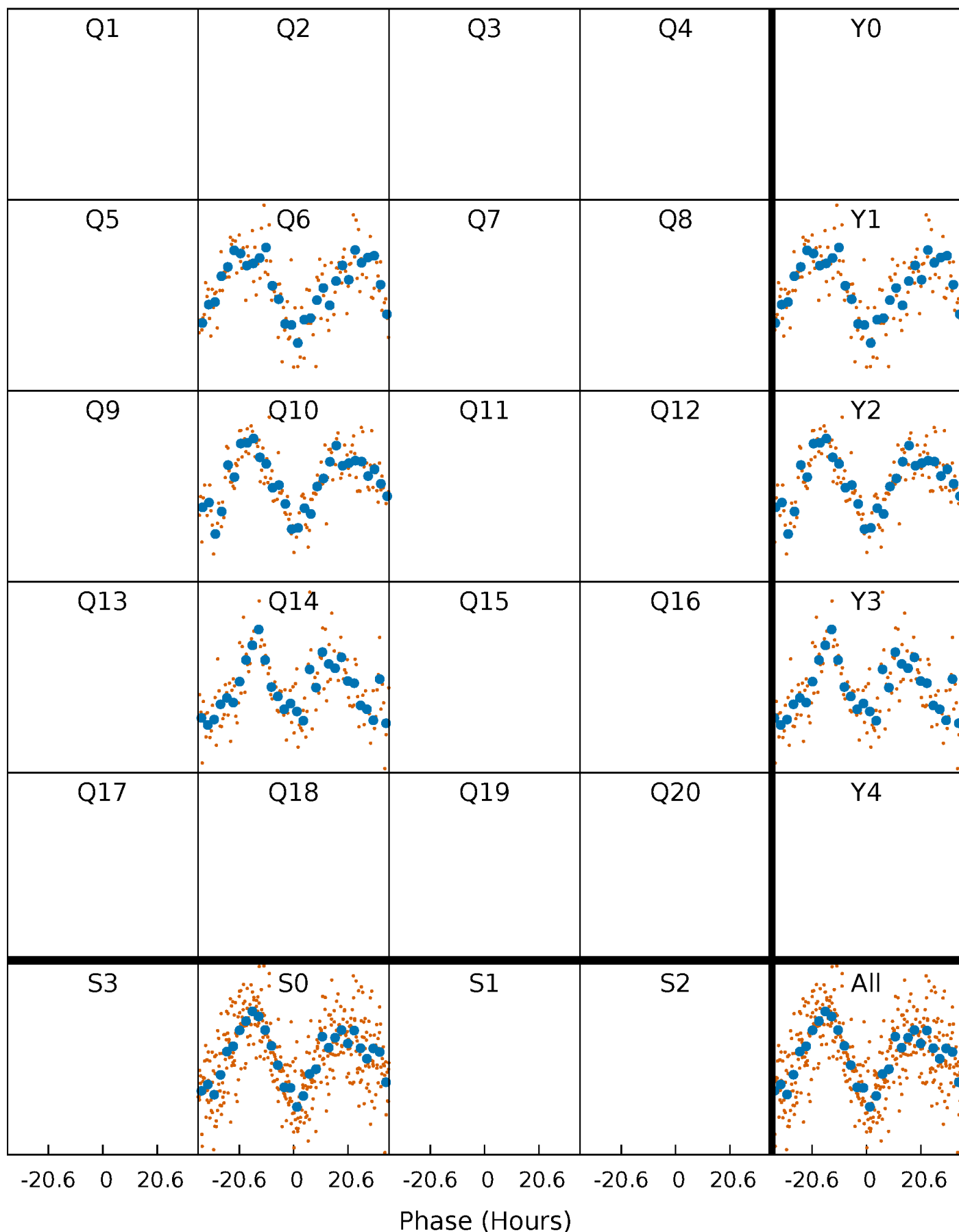


Non-Whitened Vs. Whitened Light Curve



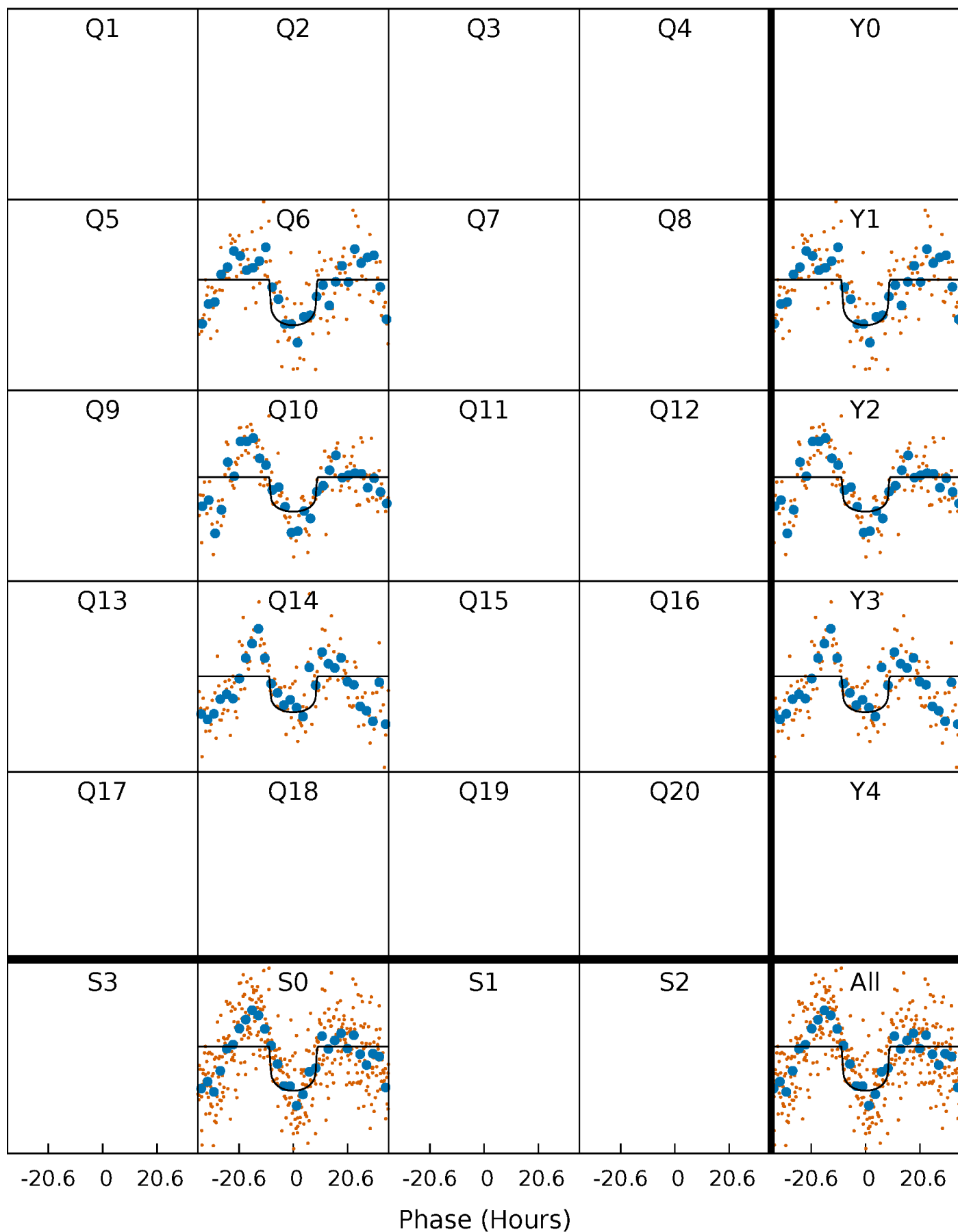
PDC Quarter-Phased Transit Curves

TCE 009009373-01 P=368.230791 Days $T_0=180.656631$ (BKJD)



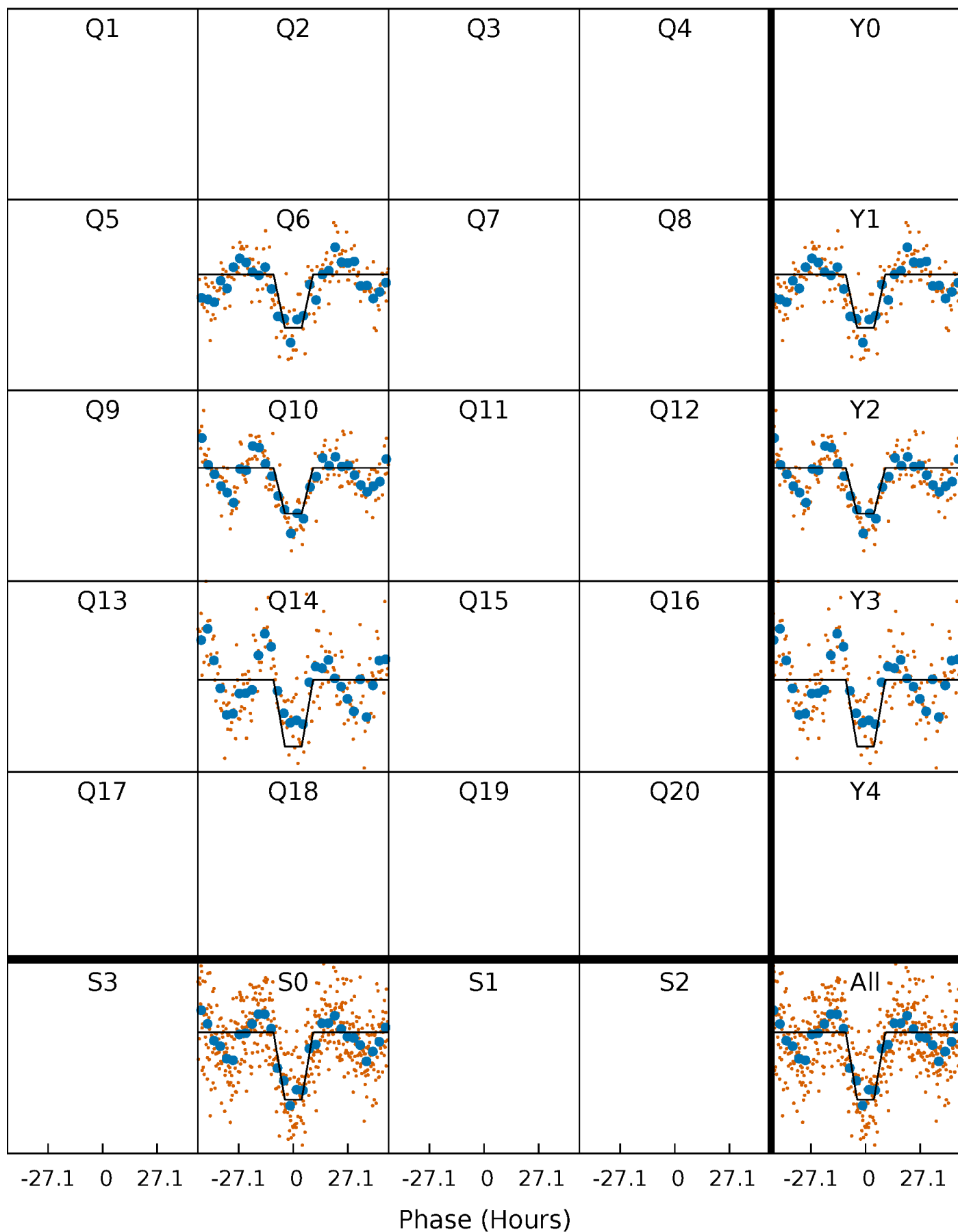
DV Quarter-Phased Transit Curves

TCE 009009373-01 P=368.230791 Days $T_0=180.656631$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

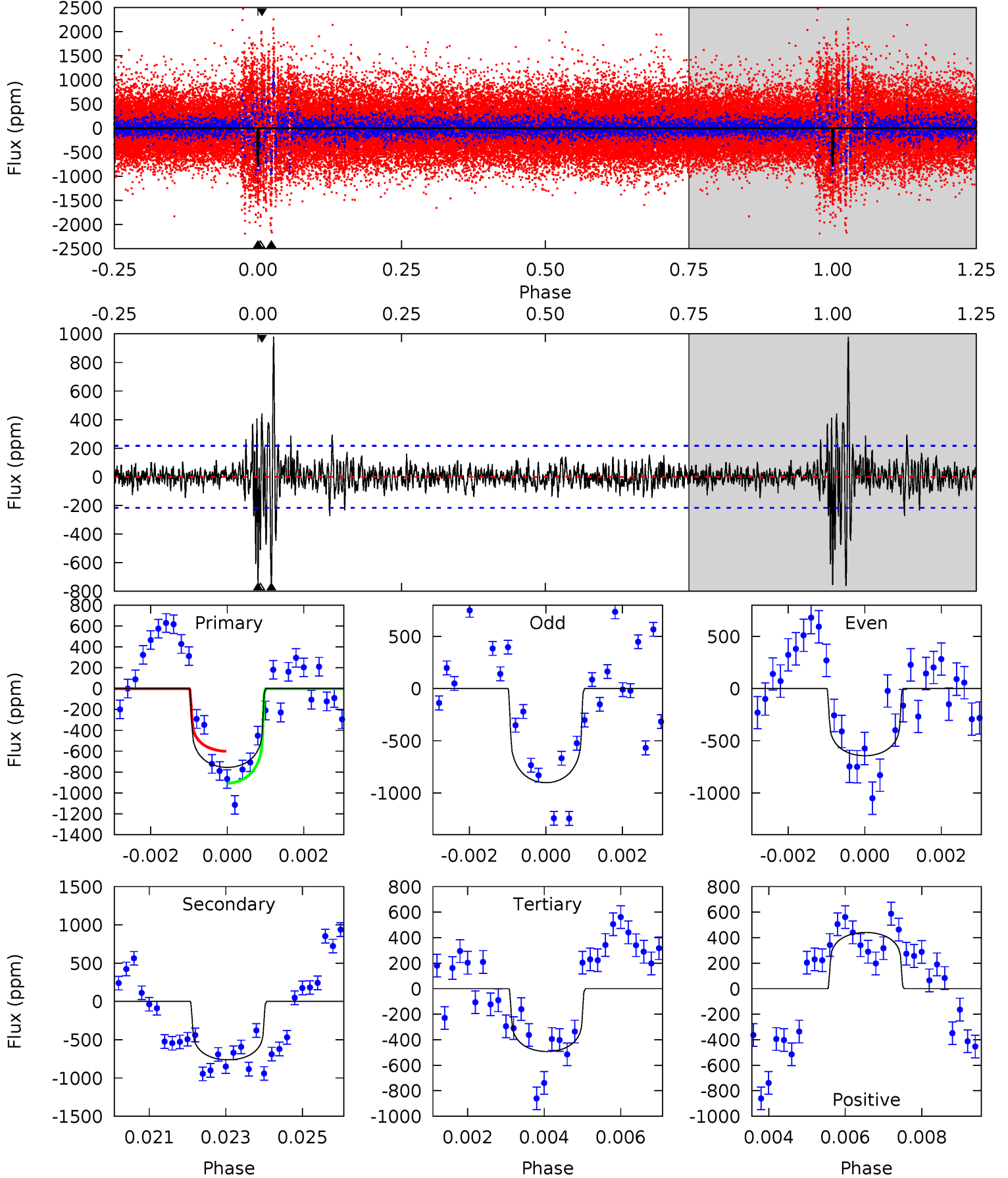
TCE 009009373-01 P=368.165073 Days $T_0=180.828856$ (BKJD)



DV Model-Shift Uniqueness Test

009009373-01, P = 368.230791 Days, E = 180.656631 Days

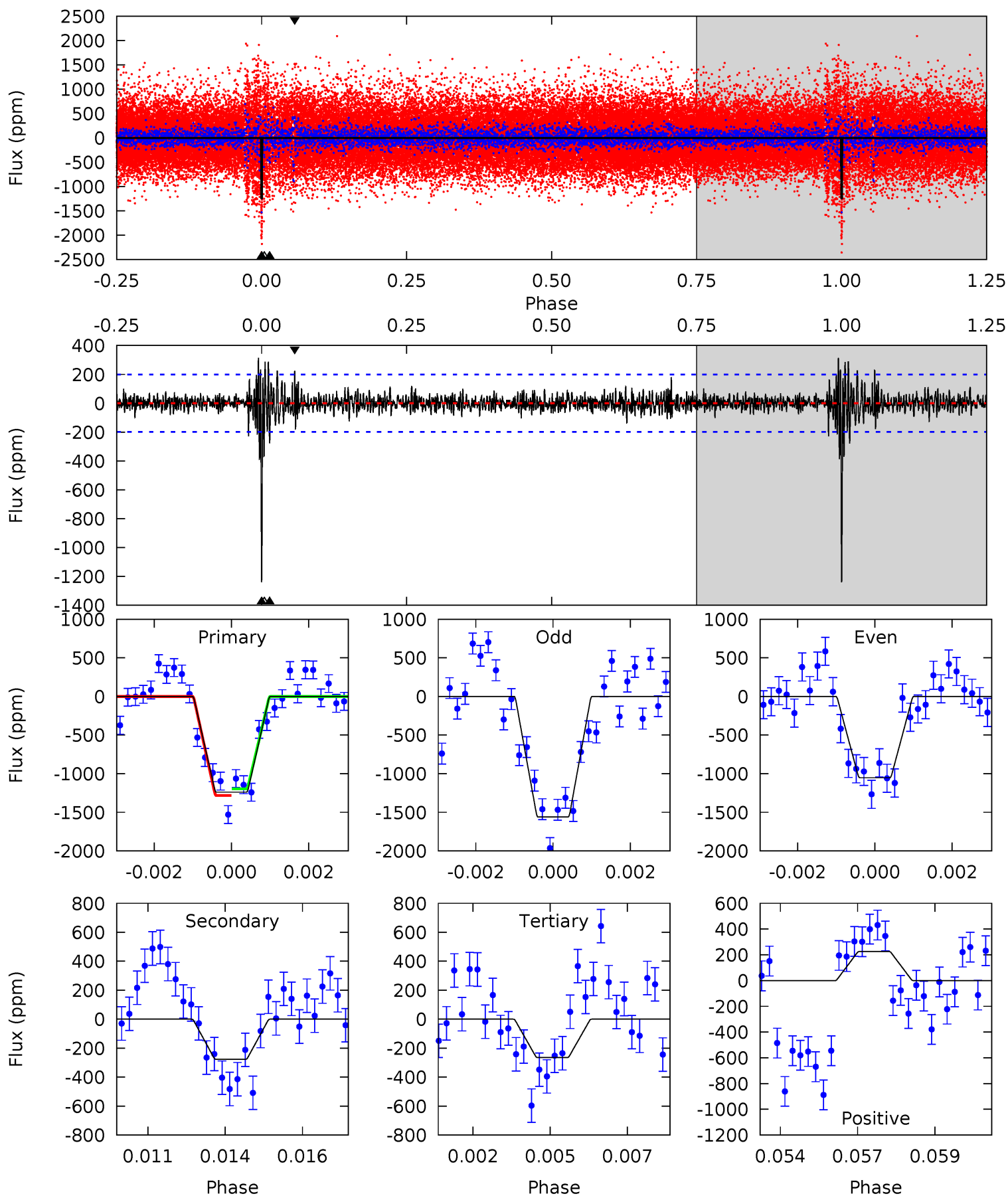
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.5	18.7	12.1	10.8	5.32	3.07	1.99	6.45	7.72	6.64	7.91	3.03	0.96	0.56	3.74



Alt Model-Shift Uniqueness Test

009009373-01, P = 368.165073 Days, E = 180.828856 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.1	7.38	7.06	6.01	5.30	3.05	1.27	26.0	27.1	0.32	1.37	6.48	0.93	0.20	1.17



Stellar Parameters For KIC 009009373

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6273^{+175}_{-263}	$4.442^{+0.056}_{-0.224}$	$-0.140^{+0.250}_{-0.300}$	$1.044^{+0.349}_{-0.116}$	$1.099^{+0.154}_{-0.154}$	$1.359^{+0.394}_{-0.720}$
	+3%/-4%	+1%/-5%	+179%/-214%	+33%/-11%	+14%/-14%	+29%/-53%
Source	KIC0	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 009009373-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-763 ± 41	$3.18^{+1.52}_{-1.29}$	395^{+30}_{-21}	6387^{+2272}_{-1049}	44714^{+80772}_{-24195}
Alt.	-276 ± 37	$4.27^{+1.59}_{-1.47}$	397^{+29}_{-23}	4476^{+813}_{-495}	8921^{+10926}_{-4328}

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 $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

DV Centroid Data

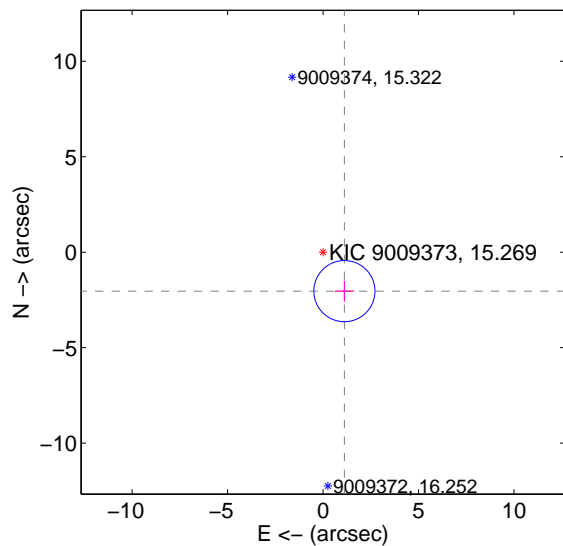
Supplemental centroid analysis for 009009373-01. Kepler magnitude: 15.27. Transit SNR 7.16

There are 0 quarters with good PRF difference image offsets

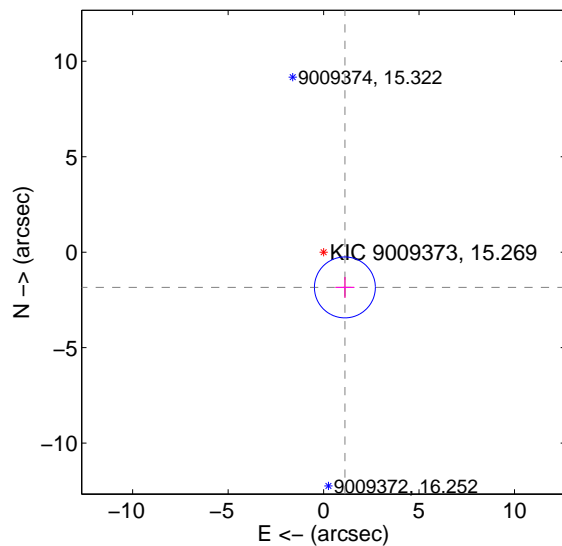
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.326 ± 0.533	4.36	-1.119 ± 0.494	-2.040 ± 0.545
PRF-fit source offset from KIC position	2.156 ± 0.532	4.06	-1.116 ± 0.494	-1.845 ± 0.545
photometric centroid source offset	5.55 ± 1.67	3.32	-2.64 ± 1.32	4.88 ± 1.76

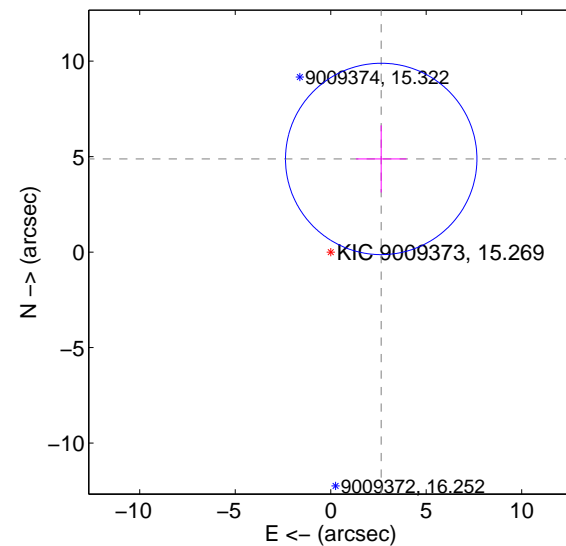
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

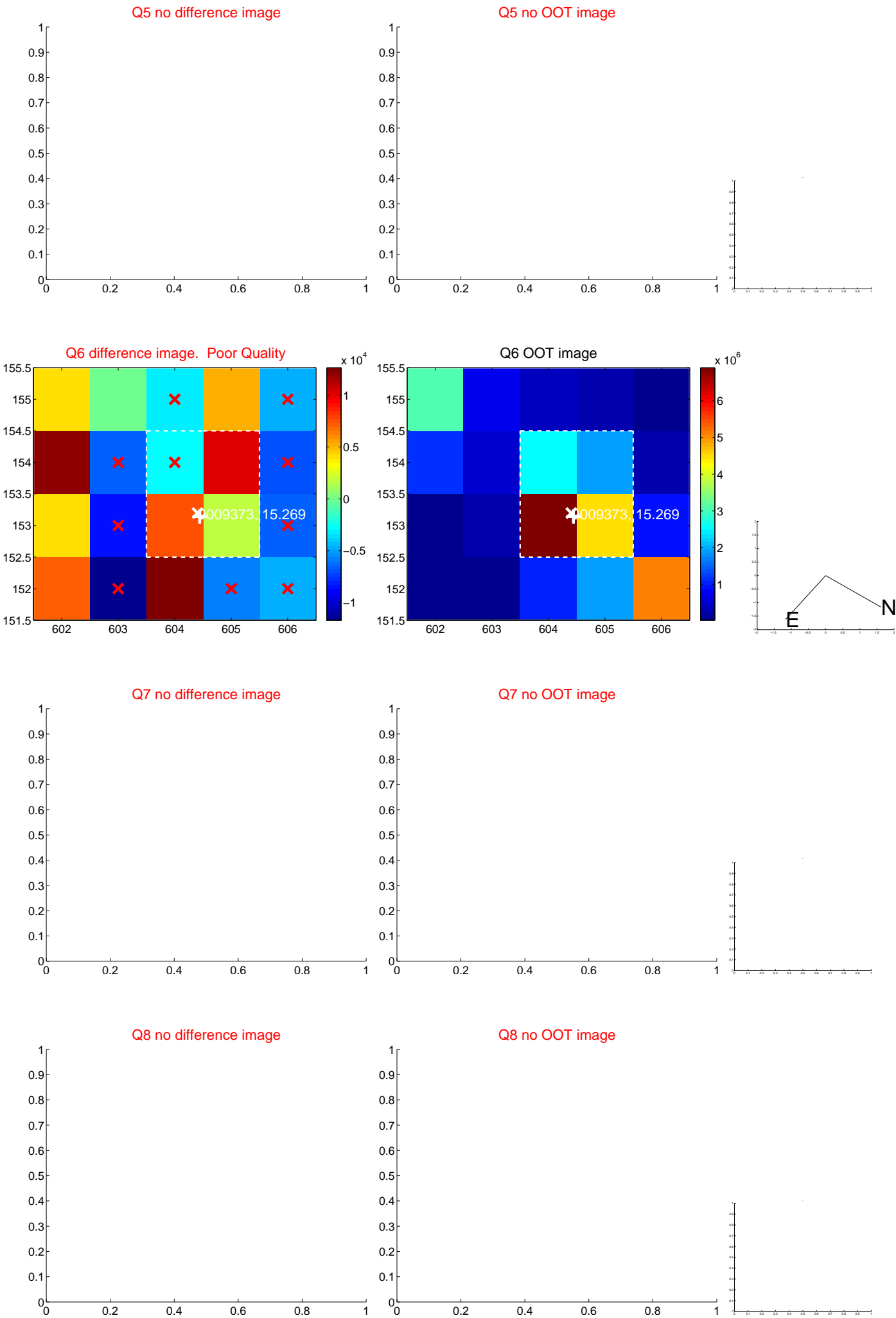


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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.

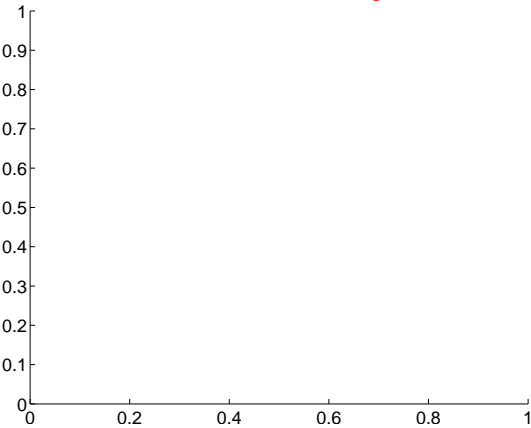


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

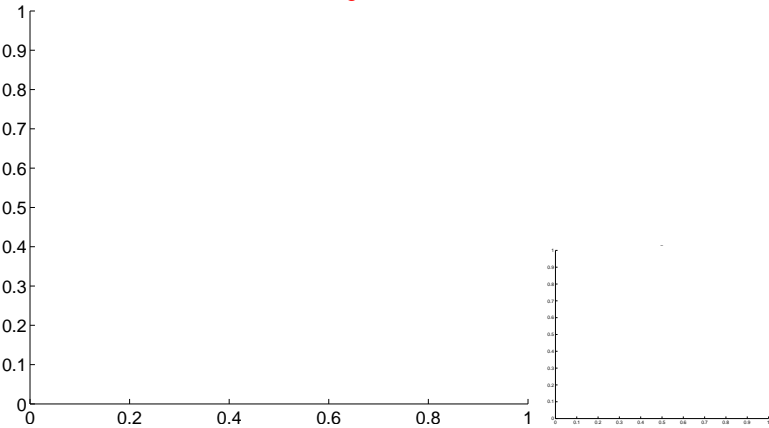


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

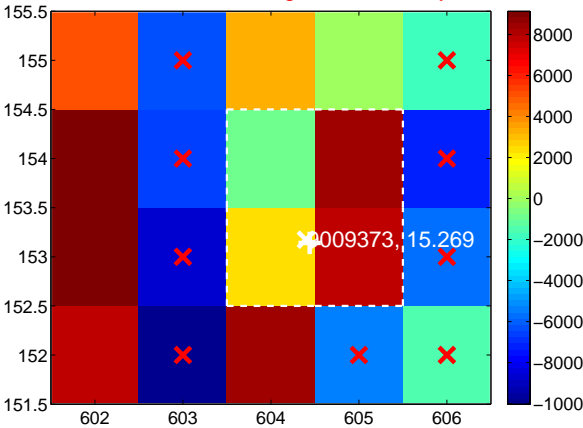
Q9 no difference image



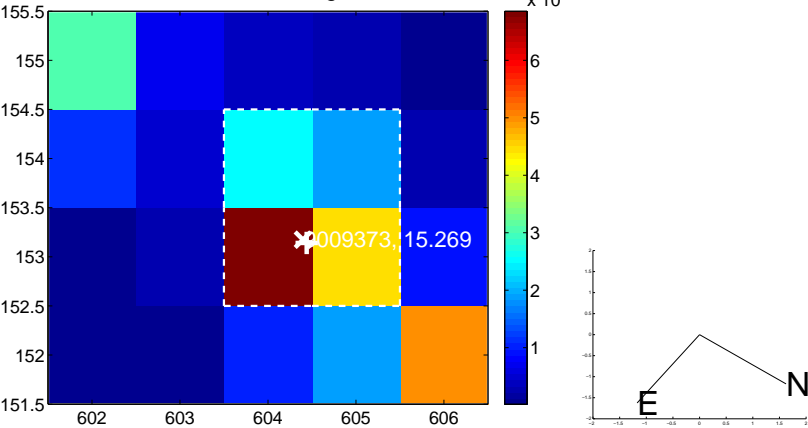
Q9 no OOT image



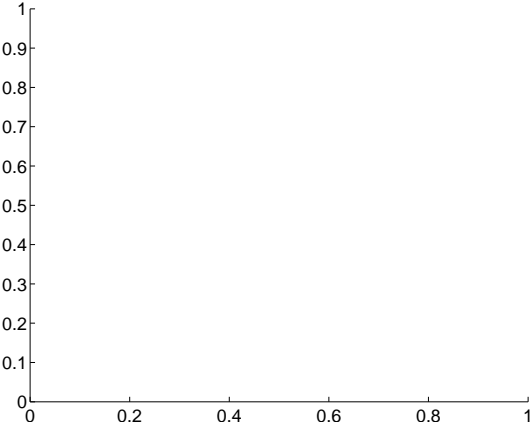
Q10 difference image. Poor Quality



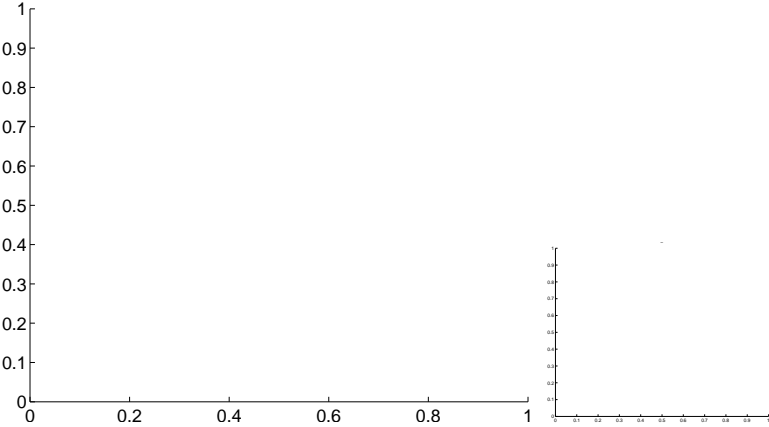
Q10 OOT image



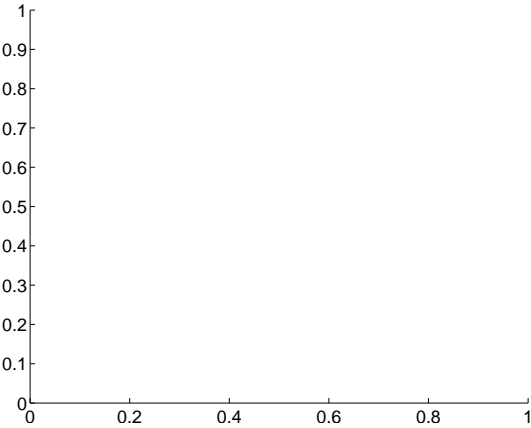
Q11 no difference image



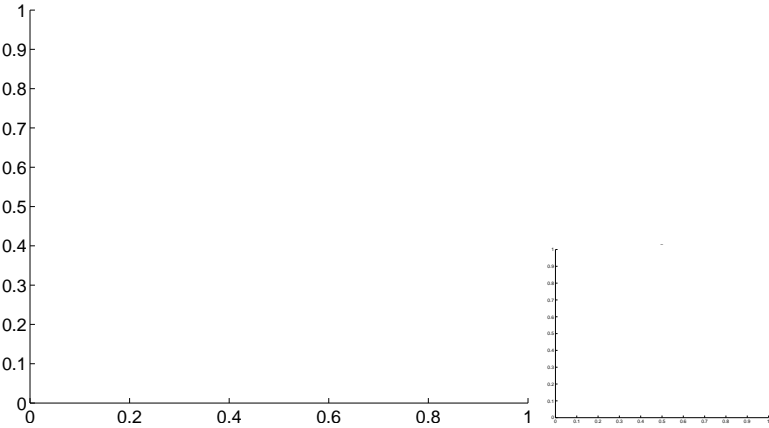
Q11 no OOT image



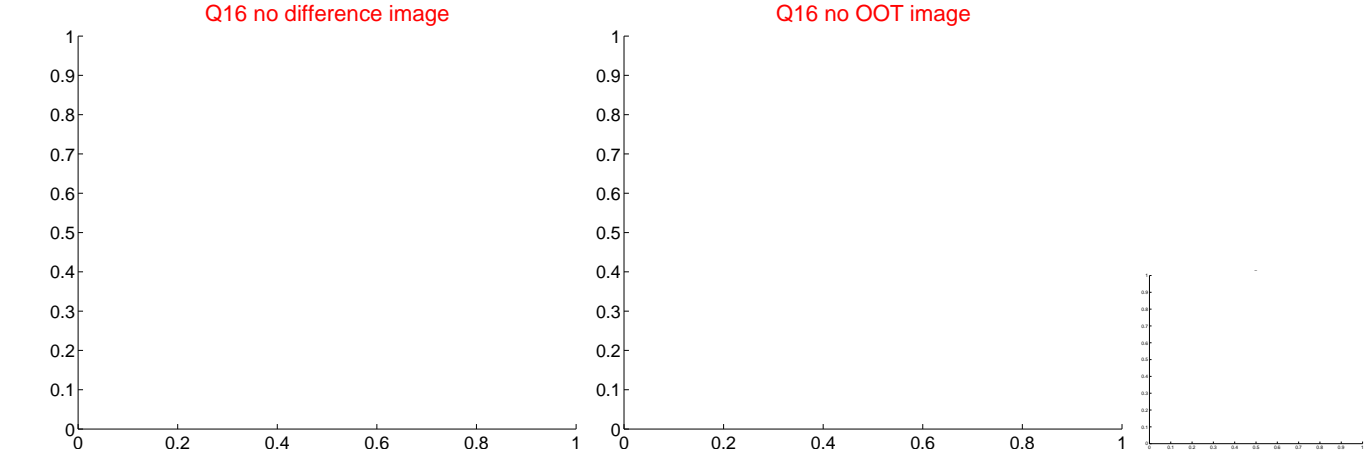
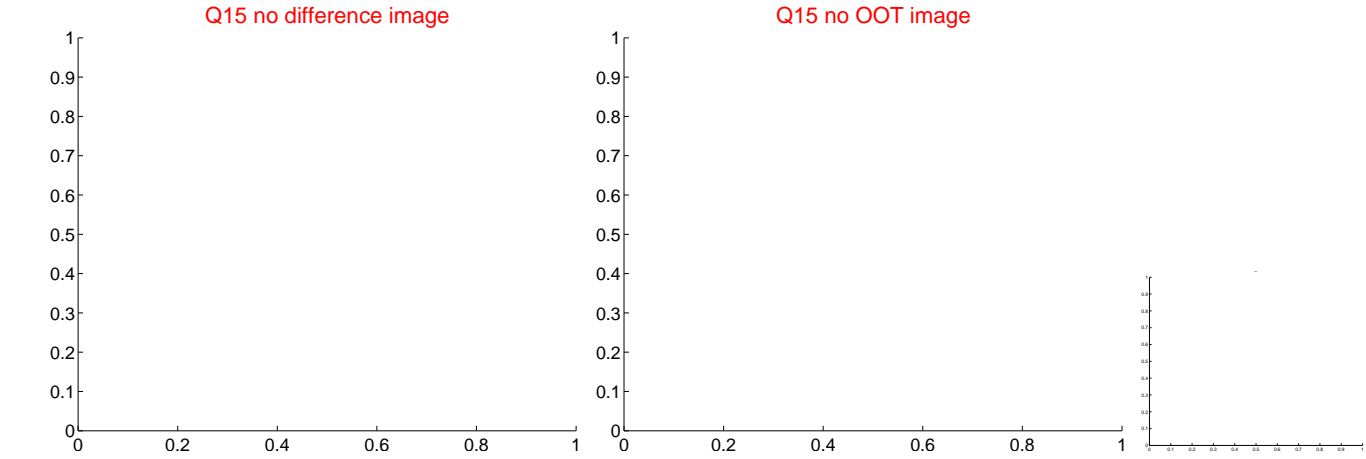
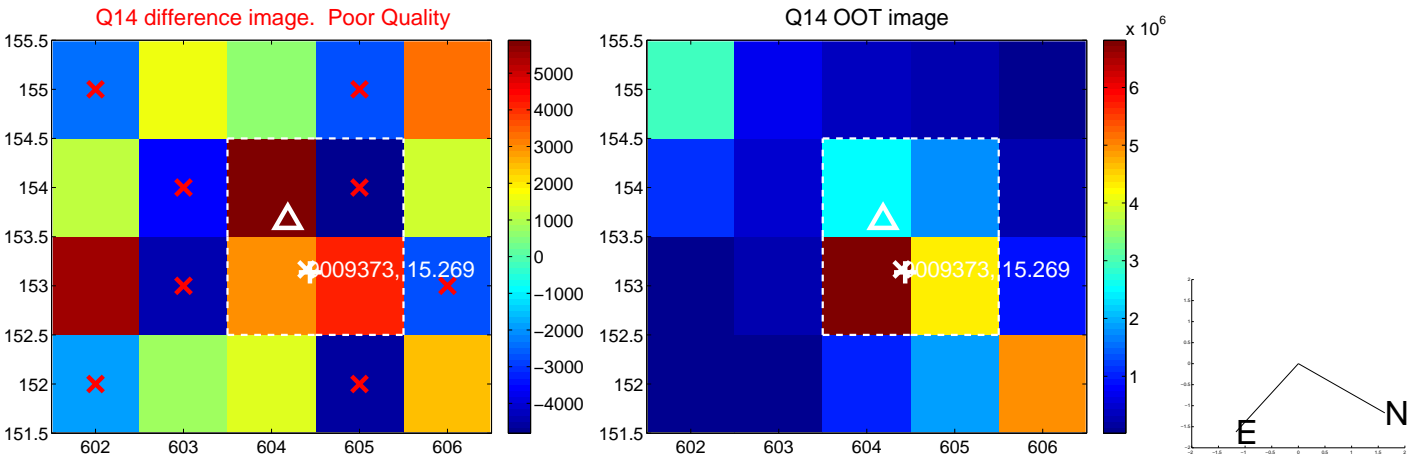
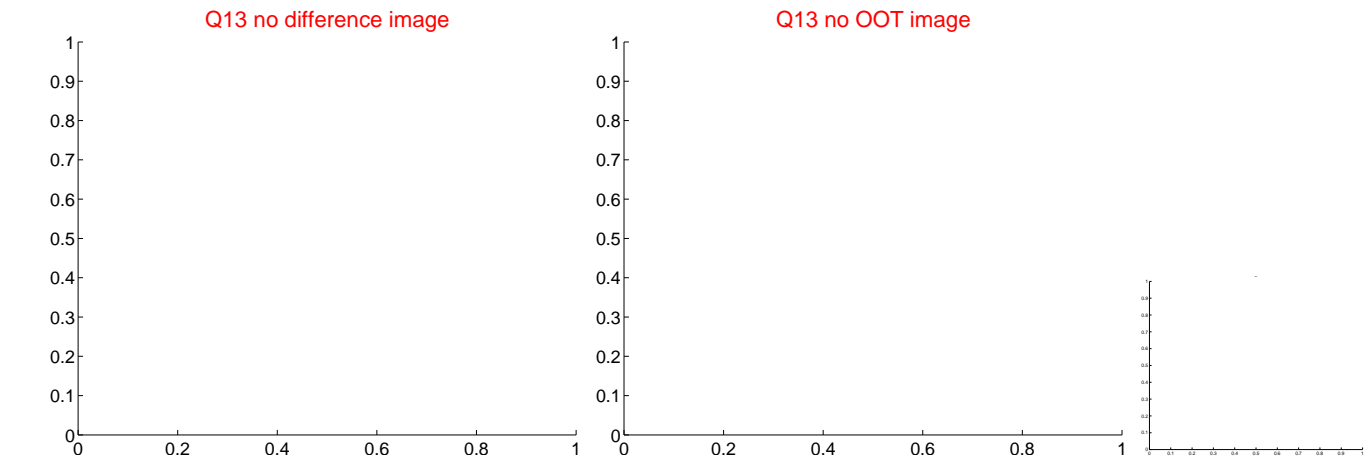
Q12 no difference image



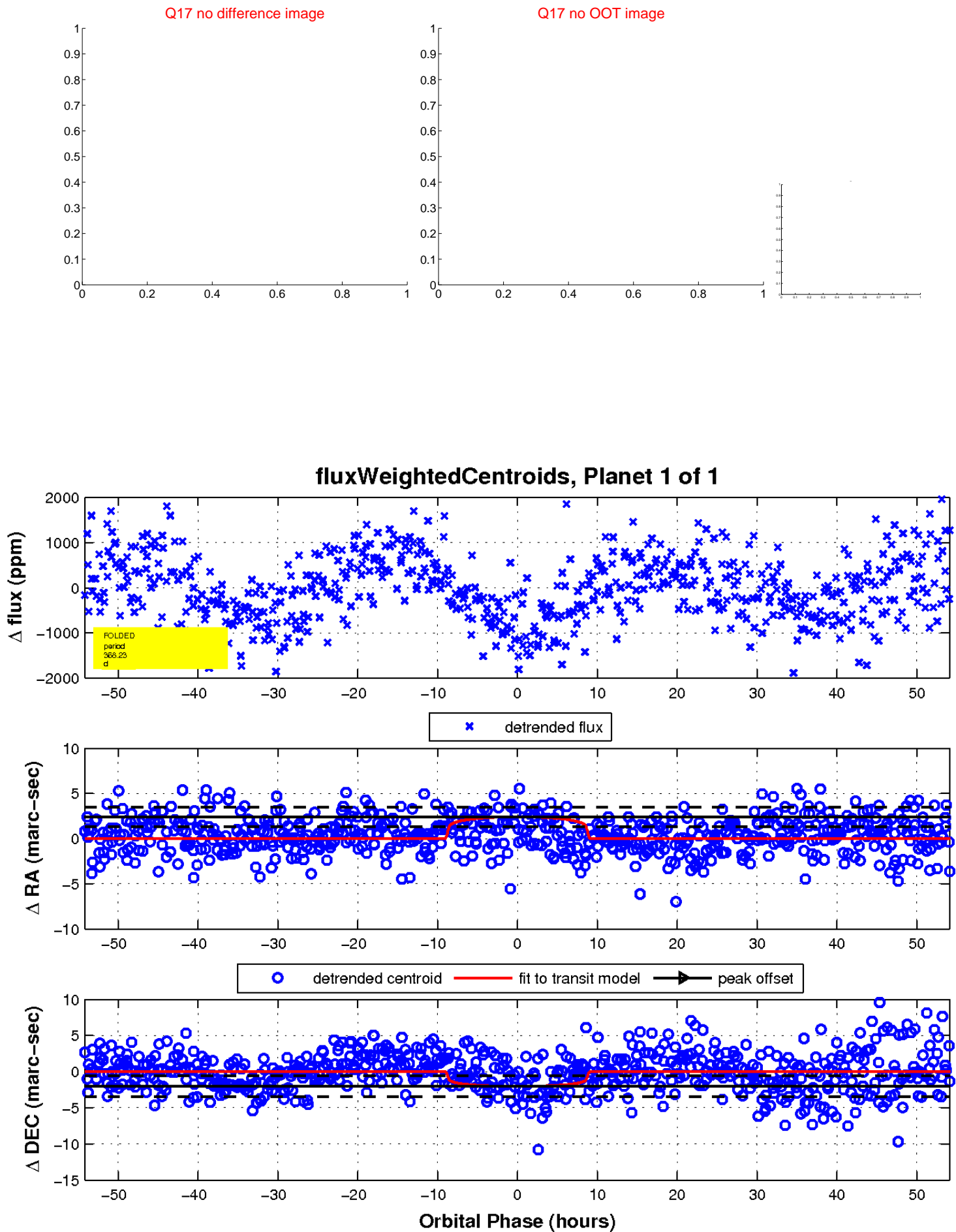
Q12 no OOT image



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.



UKIRT Image

Declination

