

KIC 010015534

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})
010015534-01	OBS	No	67.705799	172.179404	49.5	45.646	9.1	11.9	2.19	8128	2.02	114.79

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010015534-01	OBS	FP	0.00	1	0	1	1	LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED—HALO_GHOST—EPHEM_MATCH

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.

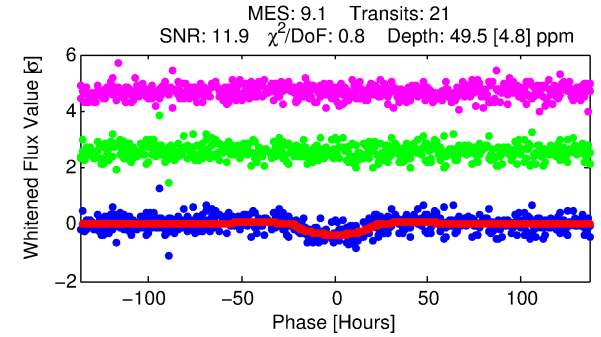
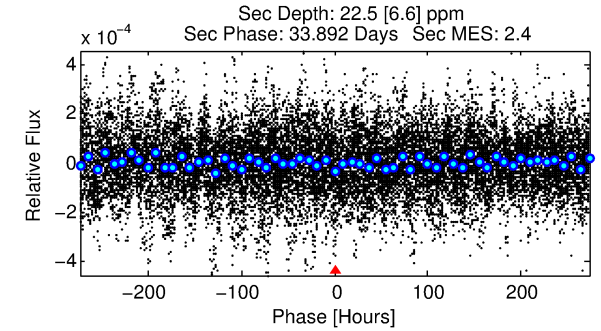
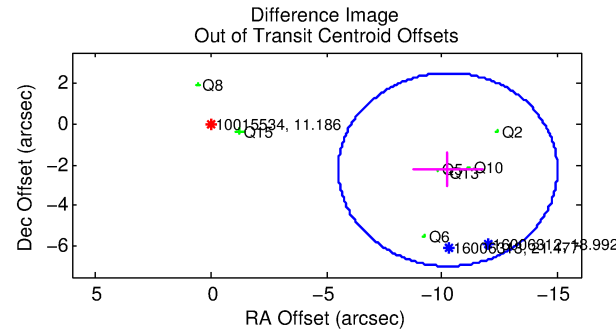
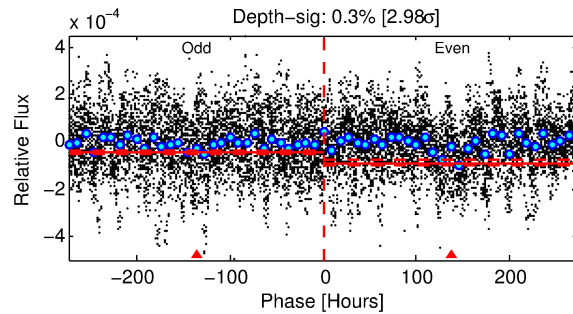
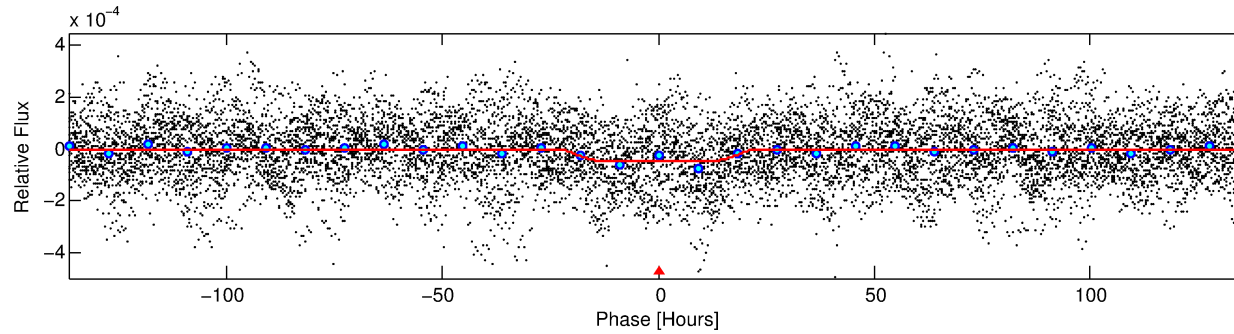
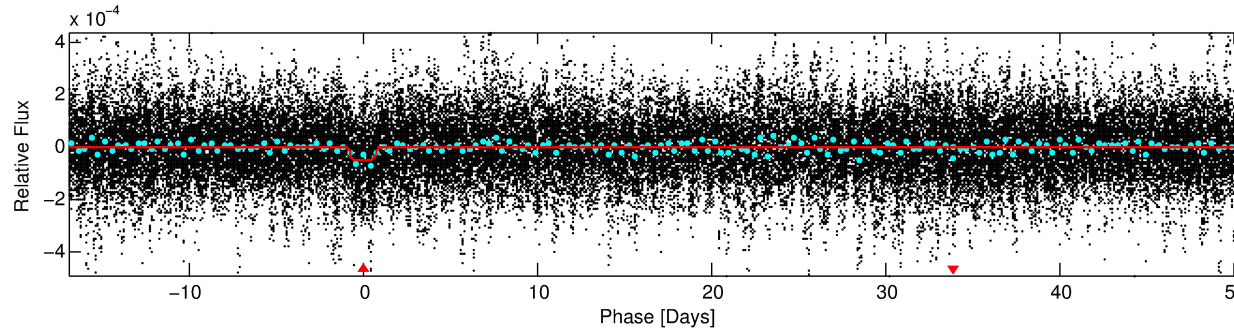
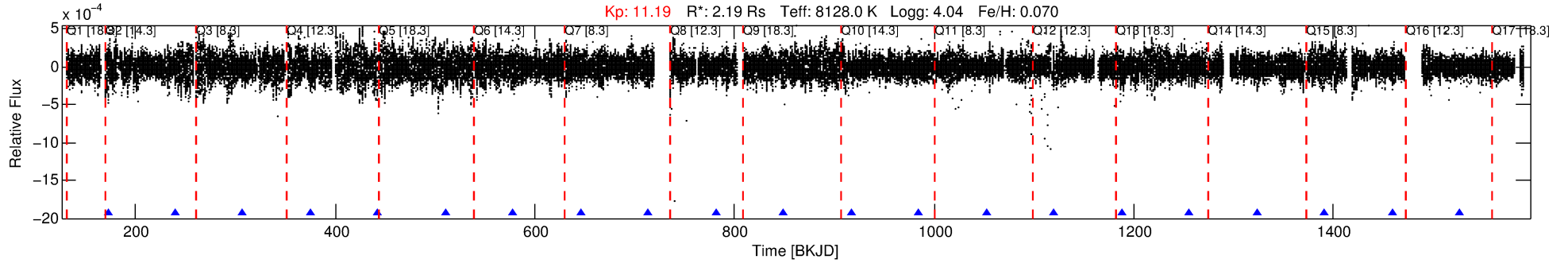
Ephemeris Match Information For 010015534-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
010015534-01	10015534	010015516-pri	10015516	1:1	24.5	-6	1	10.70	11.19	2210.20	Direct-PRF	0	3.81	3.19

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 10015534 Candidate: 1 of 1 Period: 67.706 d



DV Fit Results:

Period = 67.70580 [0.00820] d
Epoch = 172.1794 [0.1012] BKJD
Rp/R* = 0.0084 [0.0006]
a/R* = 2.79 [0.58]
b = 0.98 [0.01]
Seff = 114.79 [39.89]
Teq = 835 [73] K
Rp = 2.02 [0.49] Re
a = 0.4046 [0.0813] AU
Ag = 499.02 [218.09] [2.28 σ]
Teffp = 6099 [560] K [9.33 σ]

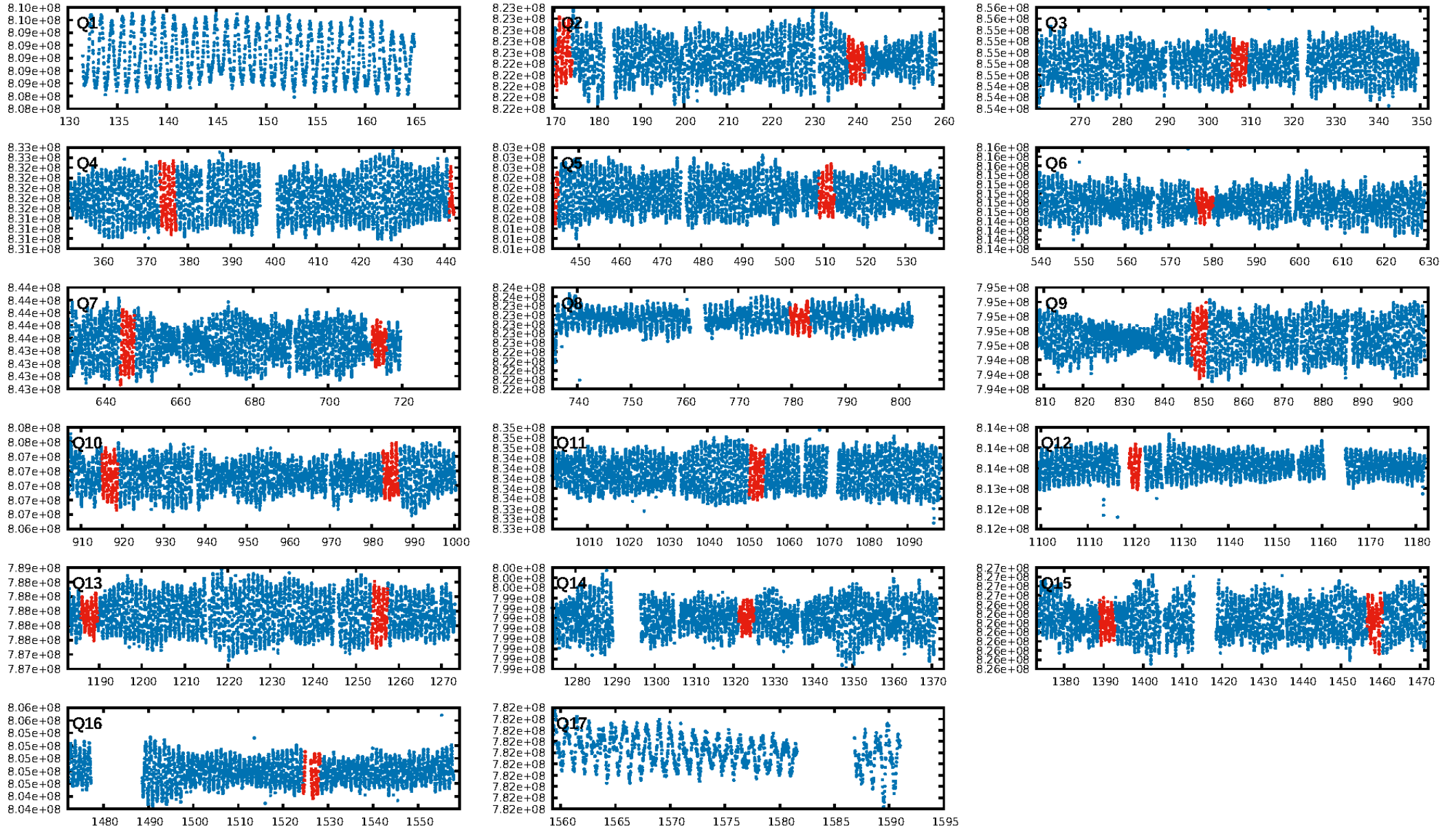
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 9.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.47e-19
RollingBand-fgt: 1.00 [21/21]
GhostDiagnostic-chr: -0.1389
Centroid-sig: 0.0%
Centroid-so: 13.230 arcsec [8.61 σ]
OotOffset-rm: 10.494 arcsec [6.65 σ]
KicOffset-rm: 10.935 arcsec [5.90 σ]
OotOffset-st: 3/1/1/2 [7]
KicOffset-st: 3/1/1/2 [7]
DiffImageQuality-fgm: 0.00 [0/7]
DiffImageOverlap-fno: 1.00 [10/10]

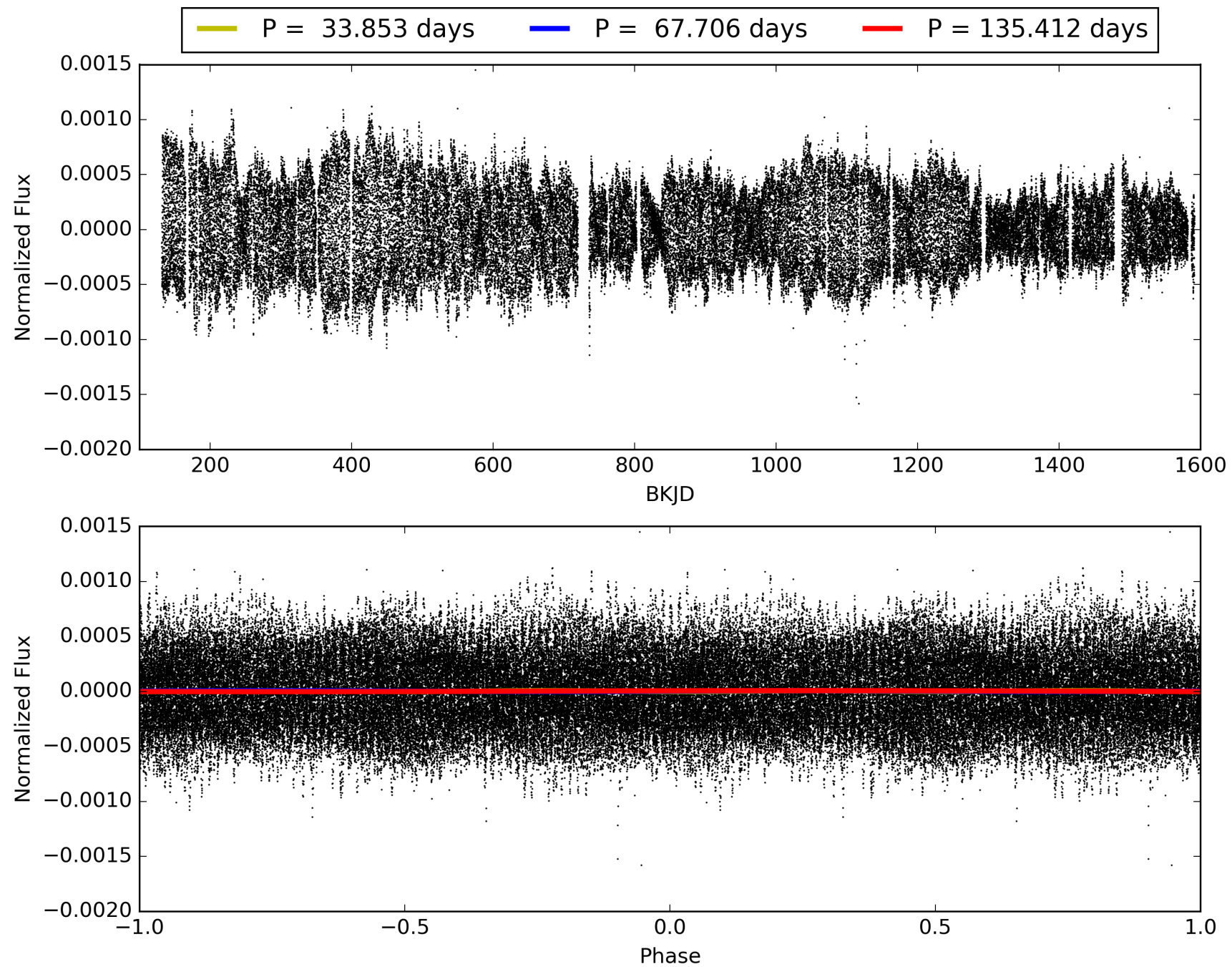
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:39:26 Z

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

TCE 010015534-01, PDC Light Curves

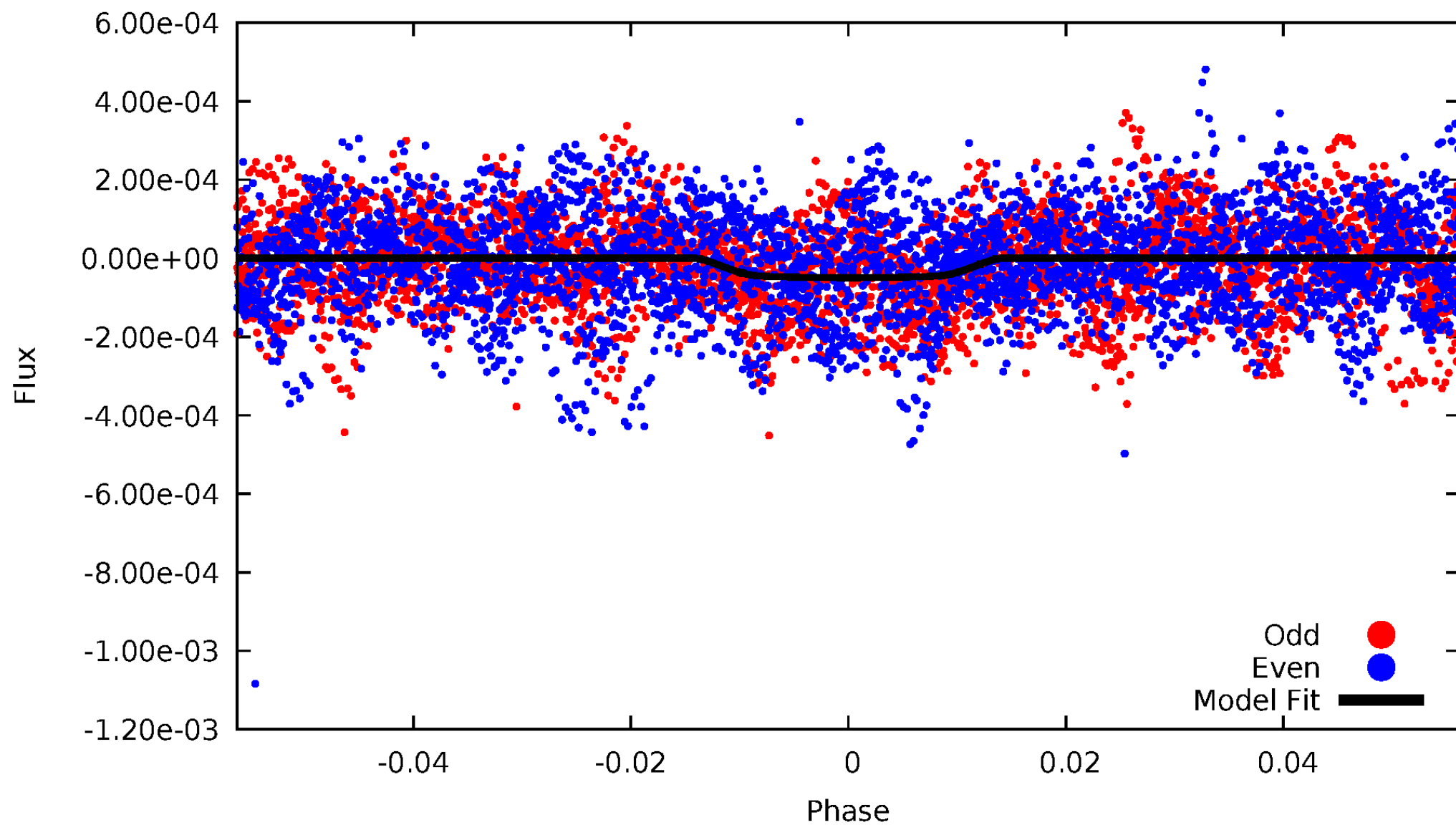


TCE 010015534-01



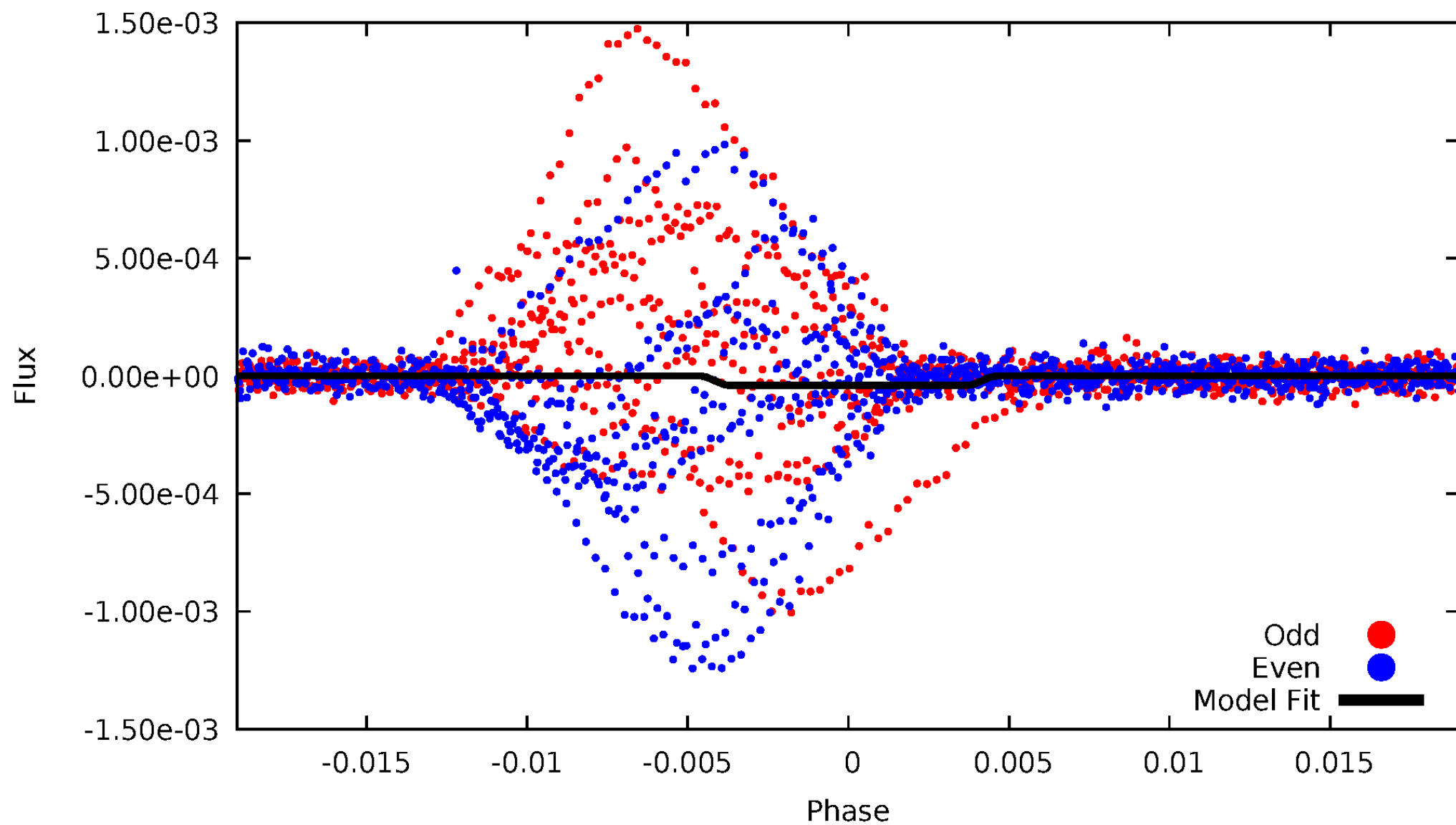
DV Odd/Even

TCE 010015534-01

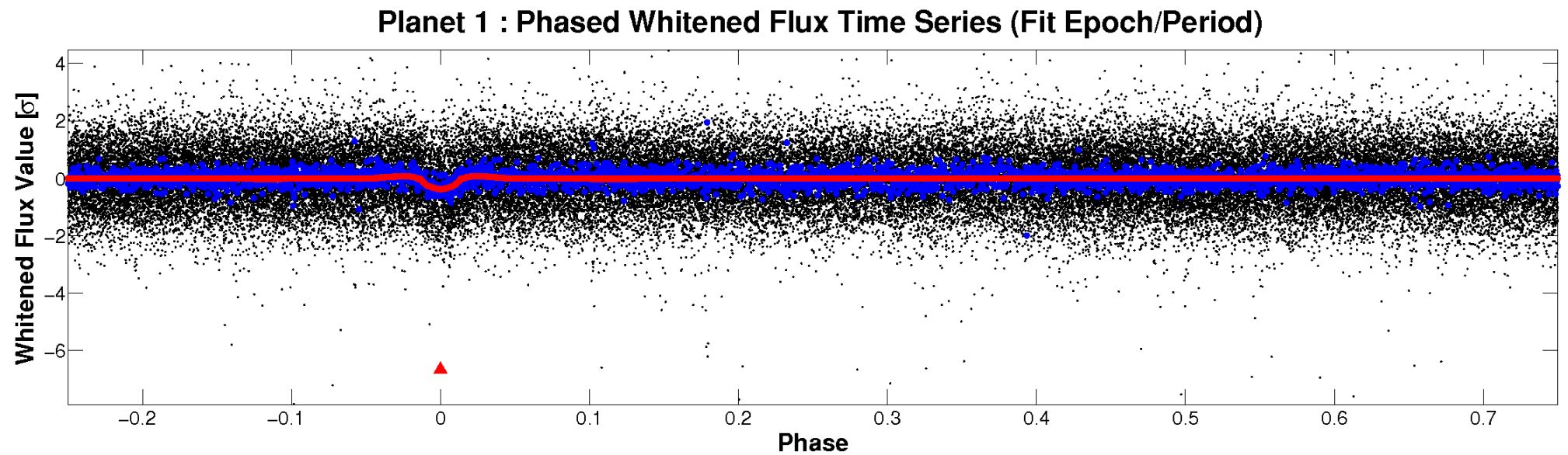
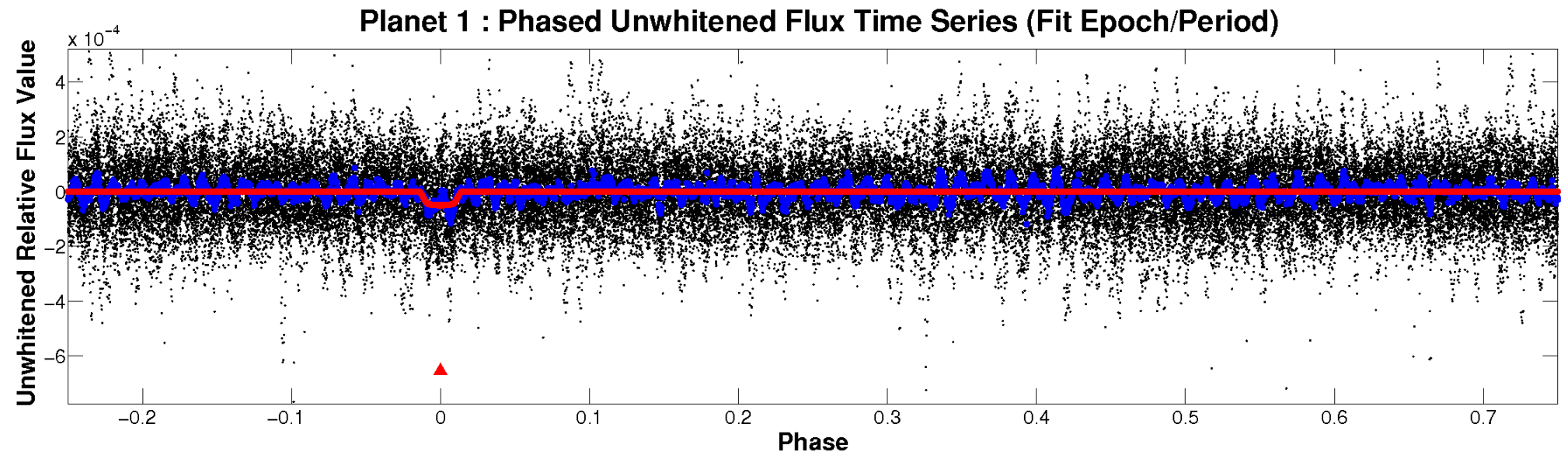


ALT Odd/Even

TCE 010015534-01

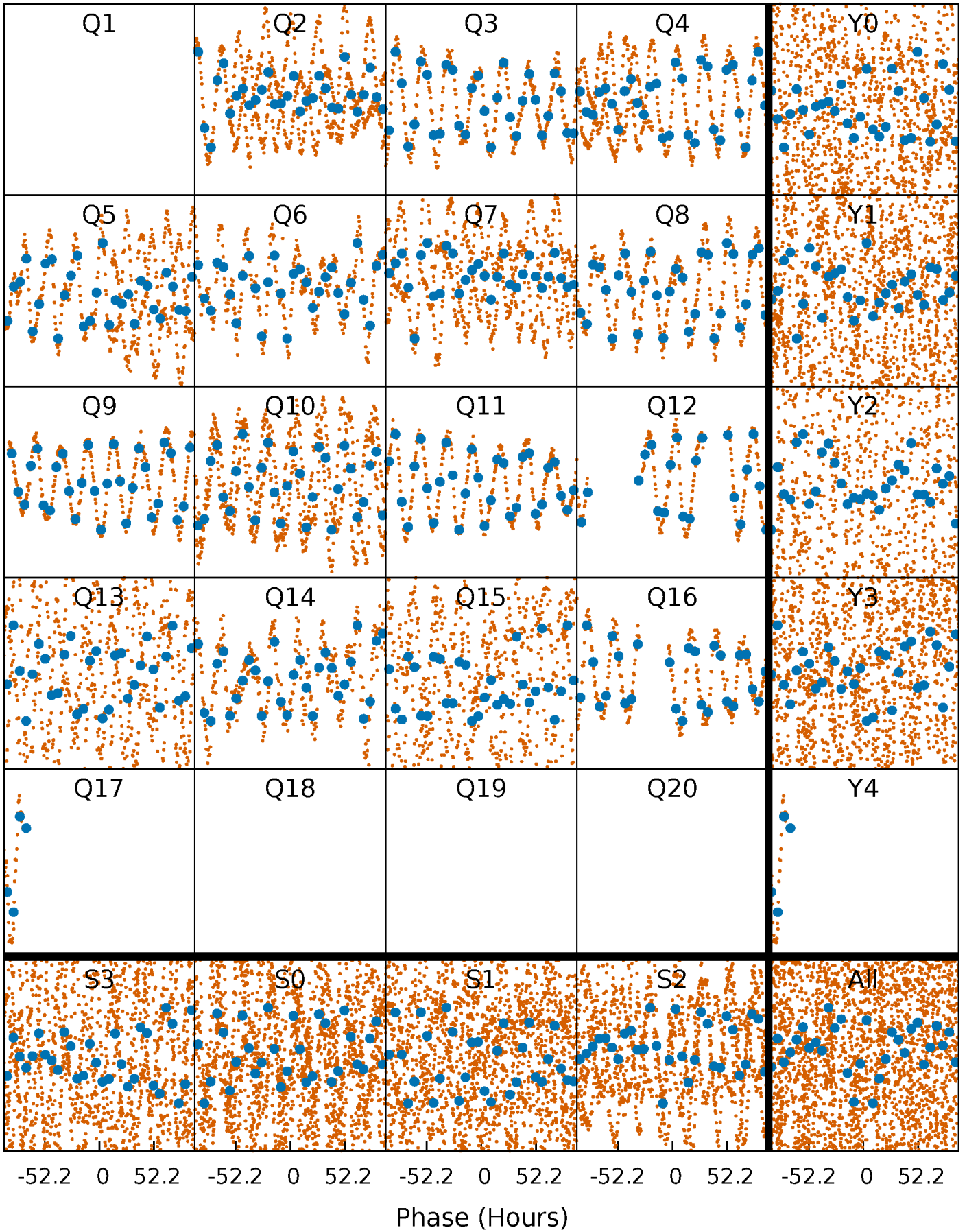


Non-Whitened Vs. Whitened Light Curve



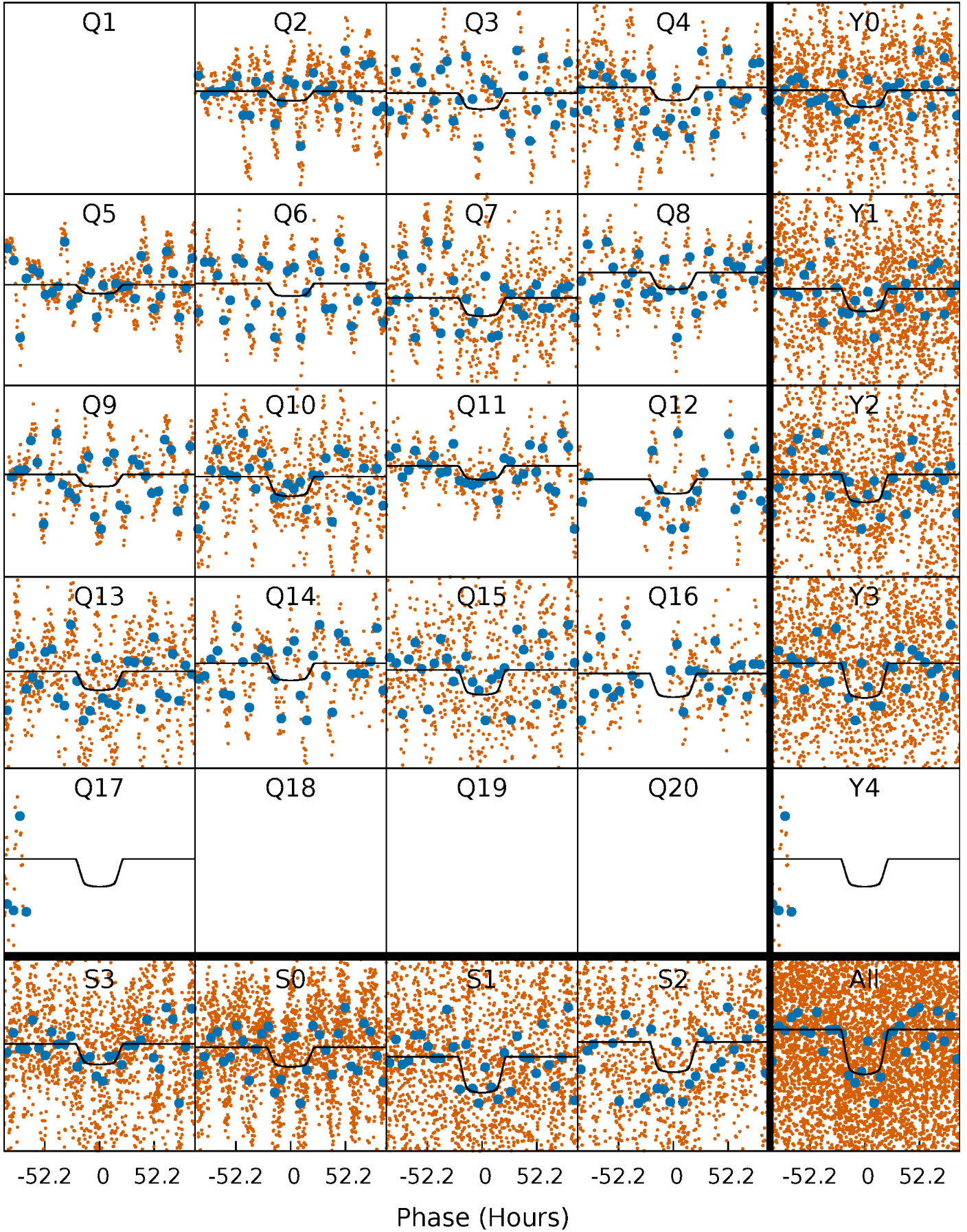
PDC Quarter-Phased Transit Curves

TCE 010015534-01 P= 67.705799 Days $T_0=172.179404$ (BKJD)



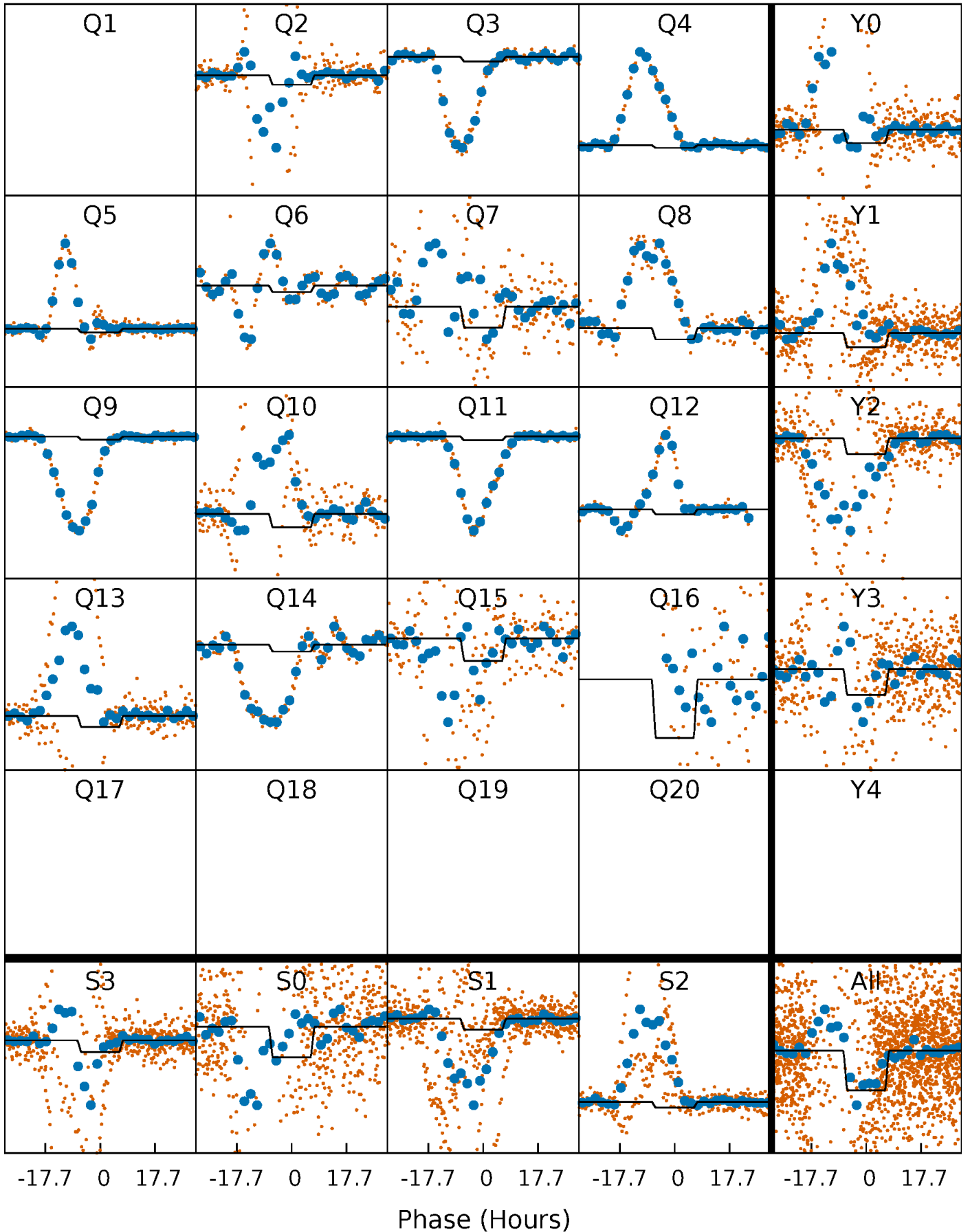
DV Quarter-Phased Transit Curves

TCE 010015534-01 P= 67.705799 Days $T_0=172.179404$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

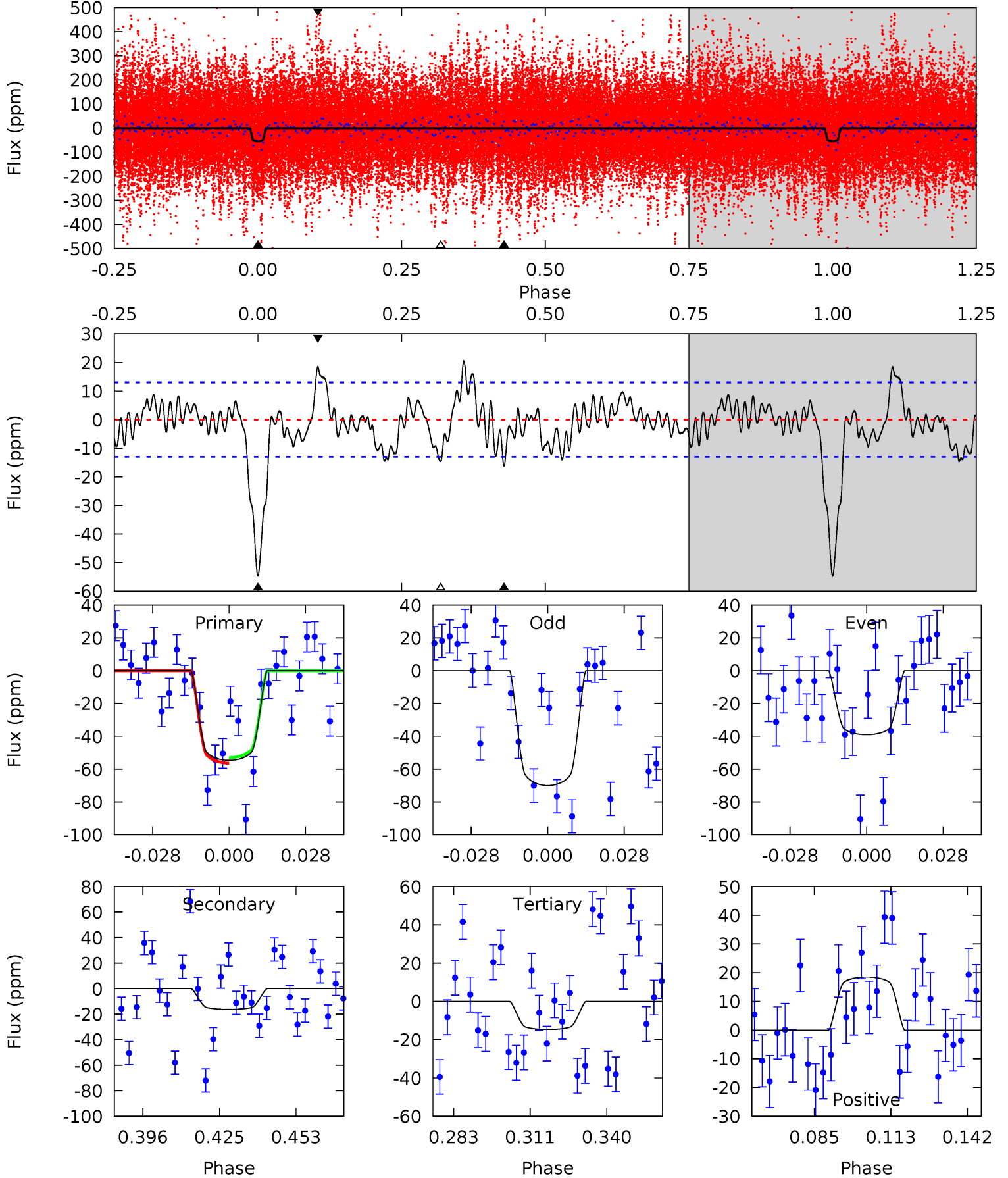
TCE 010015534-01 P= 67.668431 Days $T_0=172.926034$ (BKJD)



DV Model-Shift Uniqueness Test

010015534-01, P = 67.705799 Days, E = 104.473605 Days

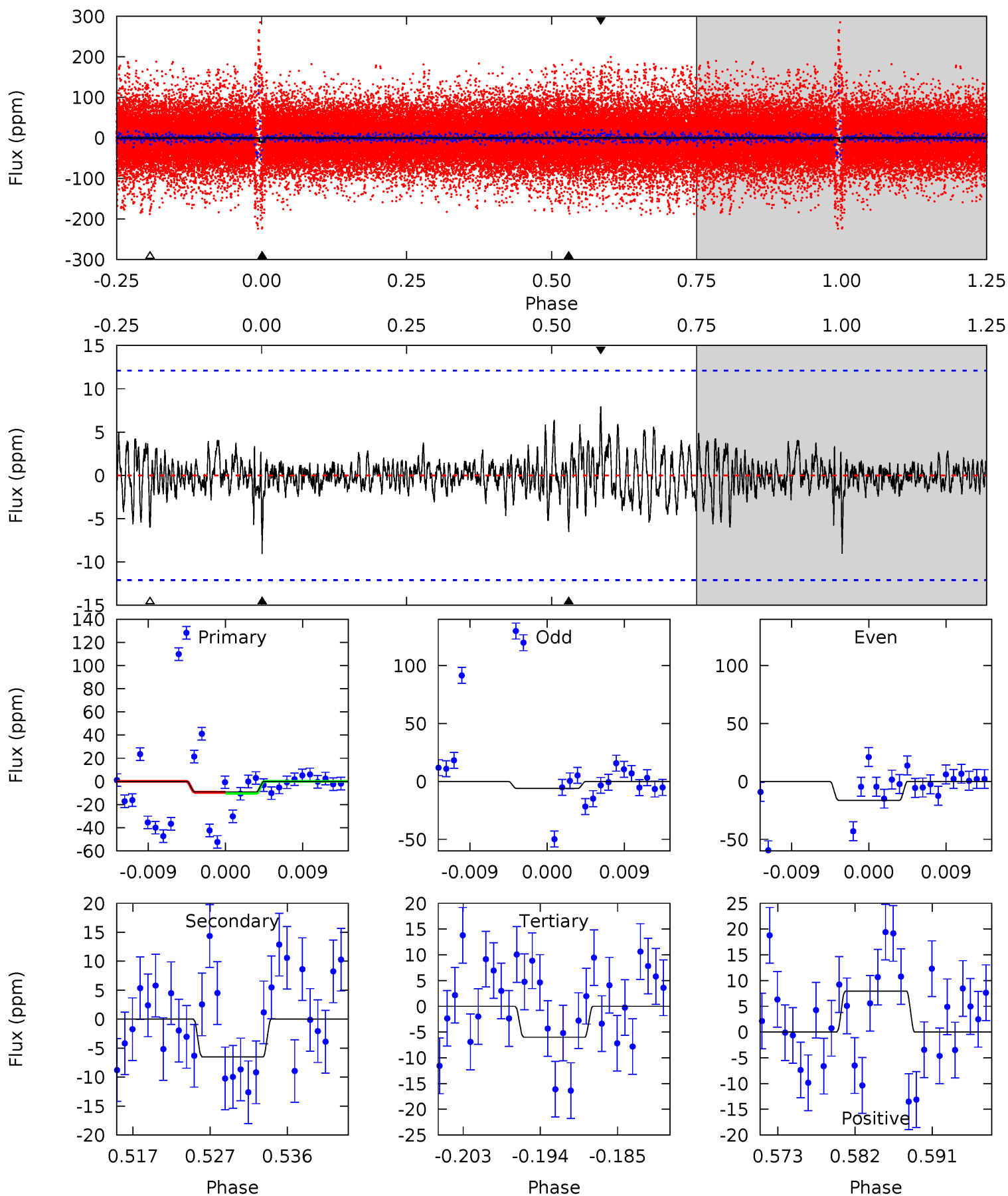
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.2	6.00	5.42	6.85	4.82	2.19	2.29	14.8	13.4	0.58	-0.84	5.73	0.91	0.27	0.63



Alt Model-Shift Uniqueness Test

010015534-01, P = 67.668431 Days, E = 105.257603 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.76	2.71	2.50	3.32	5.04	2.60	0.79	1.26	0.45	0.20	-0.61	2.11	5.80	0.47	0



Stellar Parameters For KIC 010015534

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8128^{+224}_{-365}	$4.041^{+0.165}_{-0.150}$	$0.070^{+0.200}_{-0.450}$	$2.192^{+0.461}_{-0.513}$	$1.926^{+0.271}_{-0.362}$	$0.257^{+0.236}_{-0.105}$
	+3%/-4%	+4%/-4%	+286%/-643%	+21%/-23%	+14%/-19%	+92%/-41%
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 010015534-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-16 ± 3	$2.00^{+0.32}_{-0.25}$	1165^{+71}_{-84}	5461^{+301}_{-305}	359^{+129}_{-95}
Alt.	-6 ± 2	$1.51^{+0.23}_{-0.23}$	1159^{+77}_{-79}	5032^{+457}_{-466}	250^{+135}_{-100}

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 $A_{obs} \gg 1.0$

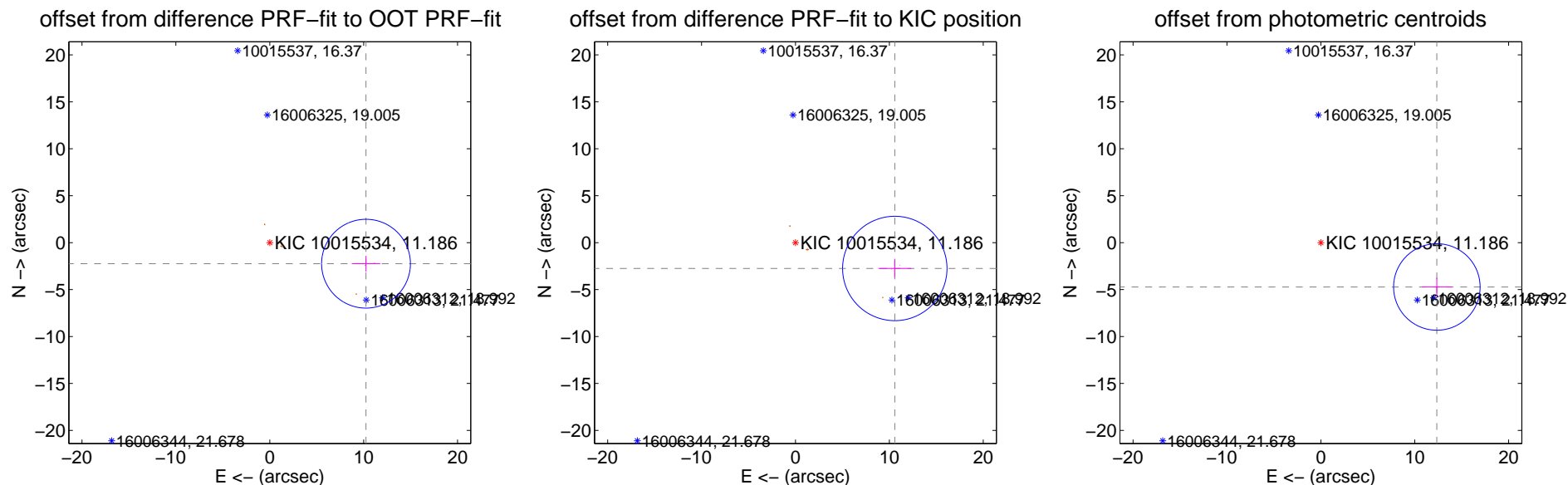
DV Centroid Data

Supplemental centroid analysis for 010015534-01. **Kepler magnitude: 11.19.** Transit SNR 11.87

There are 0 quarters with good PRF difference image offsets

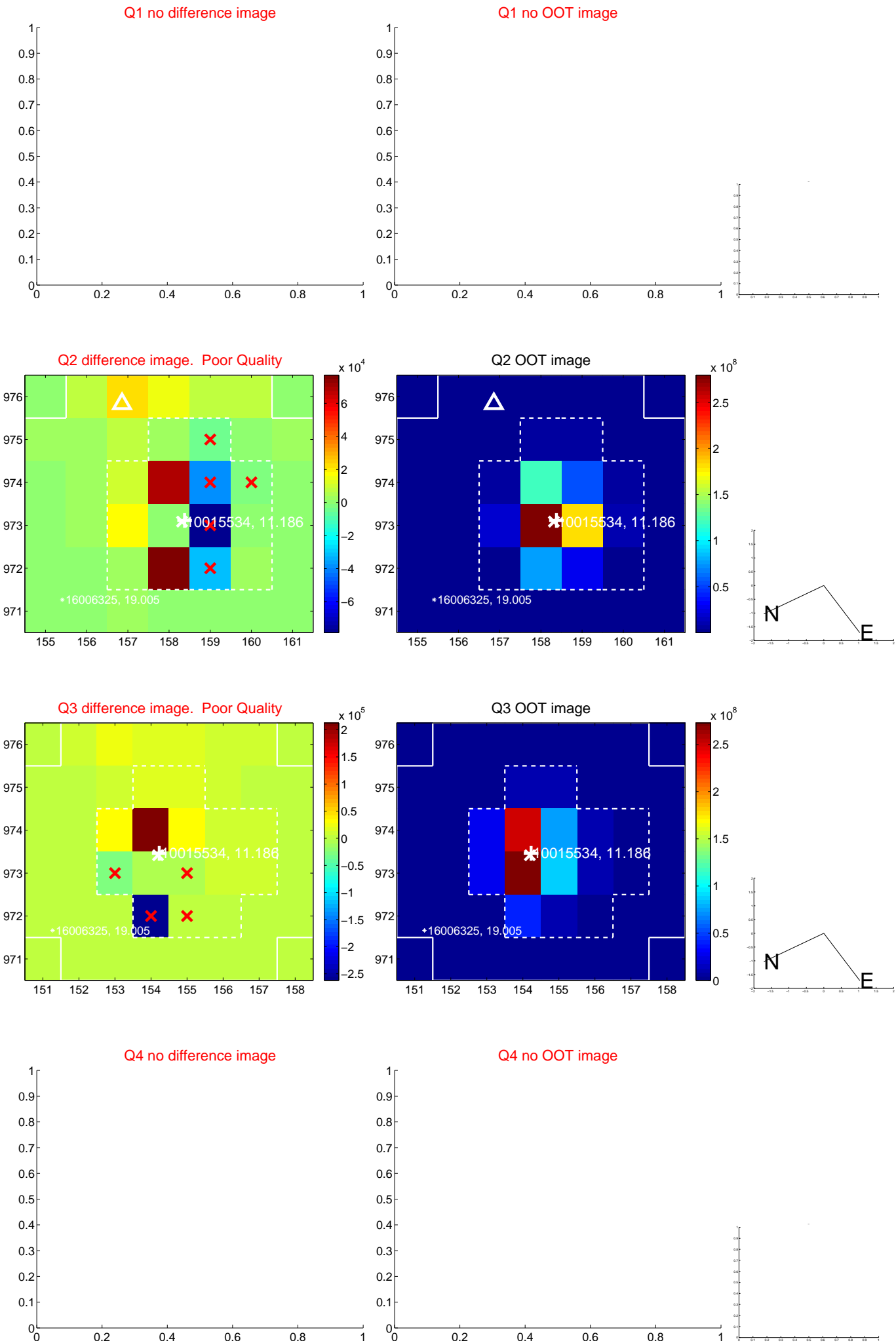
The direct PRF centroid is offset from the target star catalog position by about 0.36 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	10.494 ± 1.577	6.65	-10.252 ± 1.515	-2.242 ± 0.839
PRF-fit source offset from KIC position	10.935 ± 1.854	5.90	-10.583 ± 1.745	-2.752 ± 0.922
photometric centroid source offset	13.23 ± 1.54	8.61	-12.36 ± 1.60	-4.72 ± 0.98

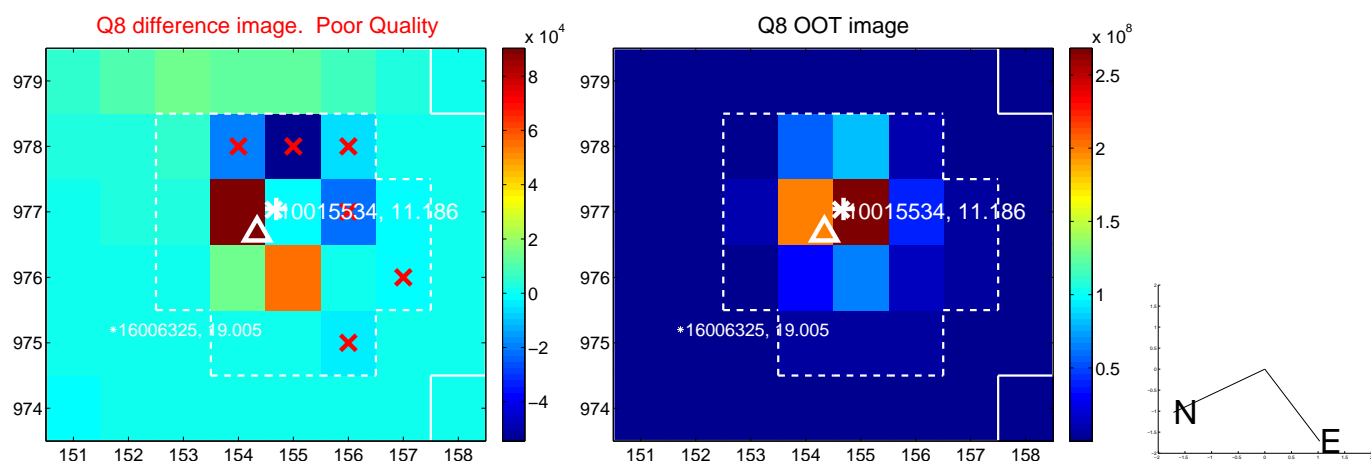
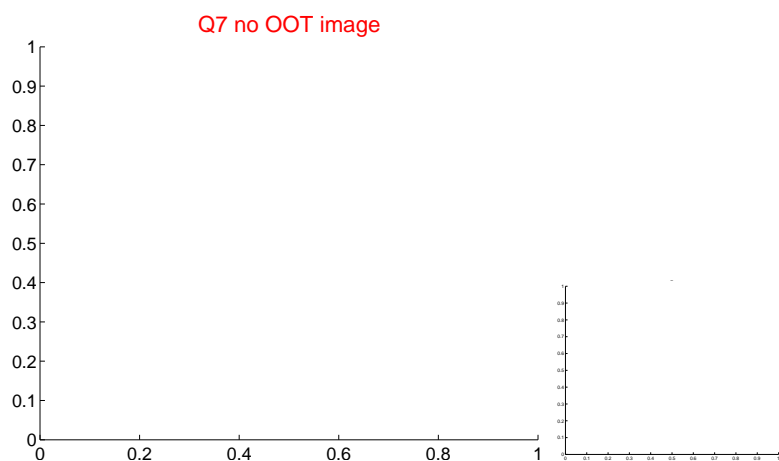
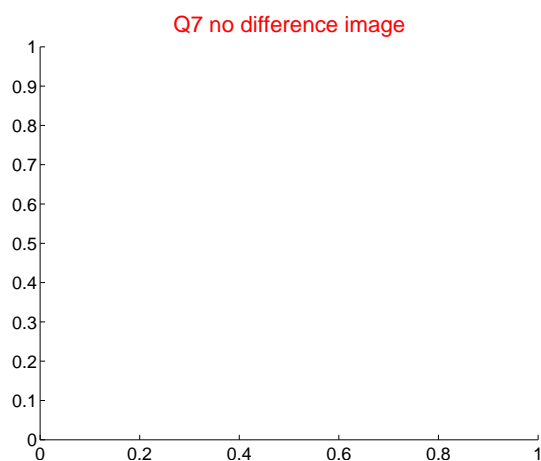
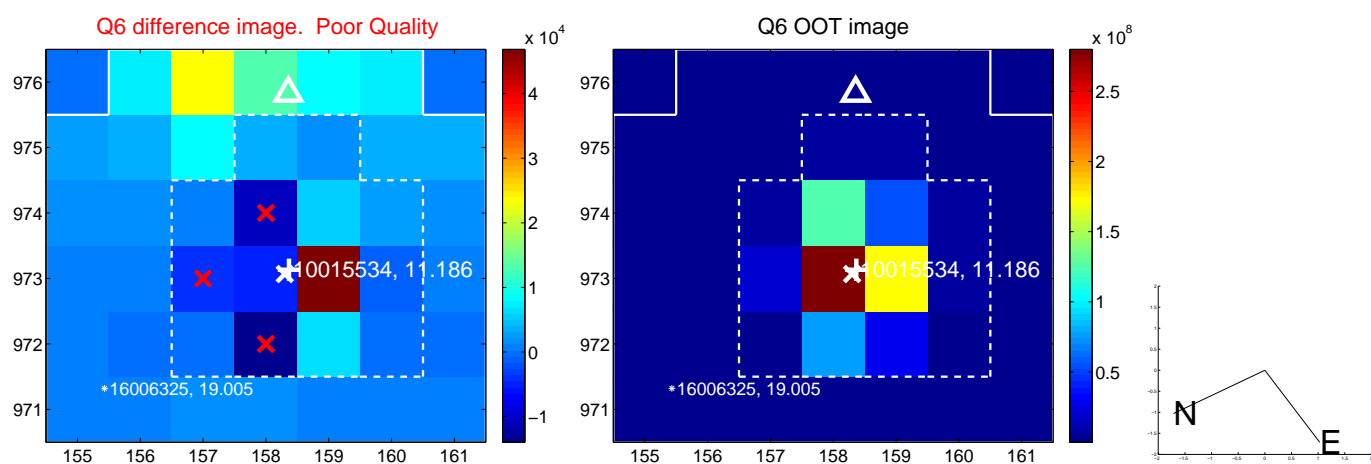
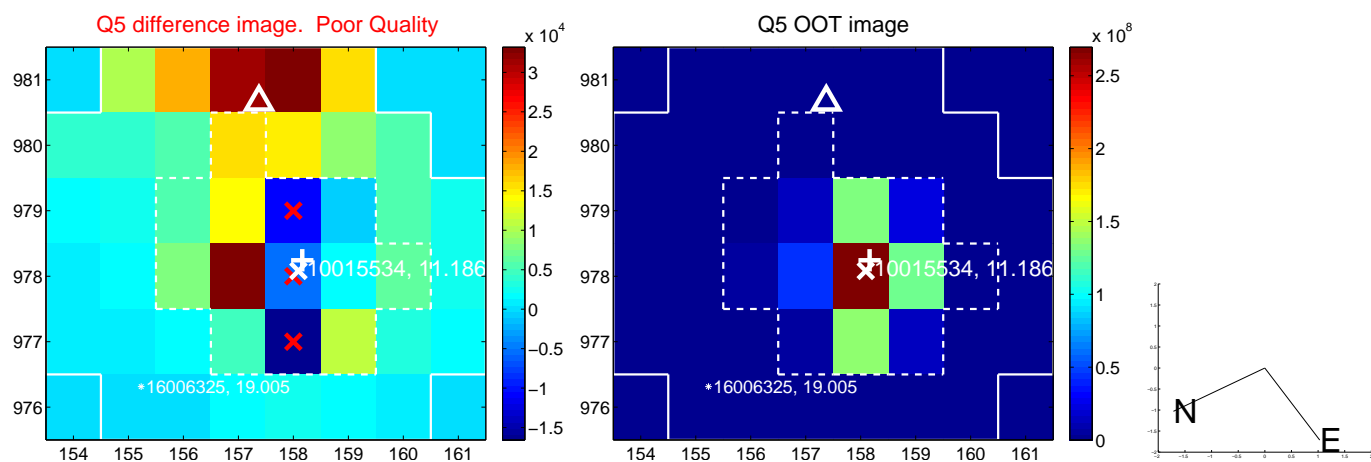


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

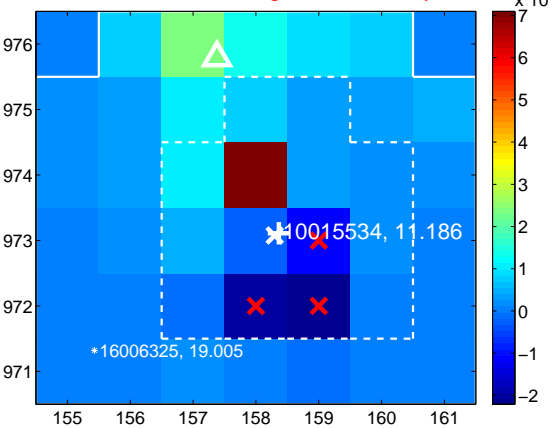
Q9 no difference image



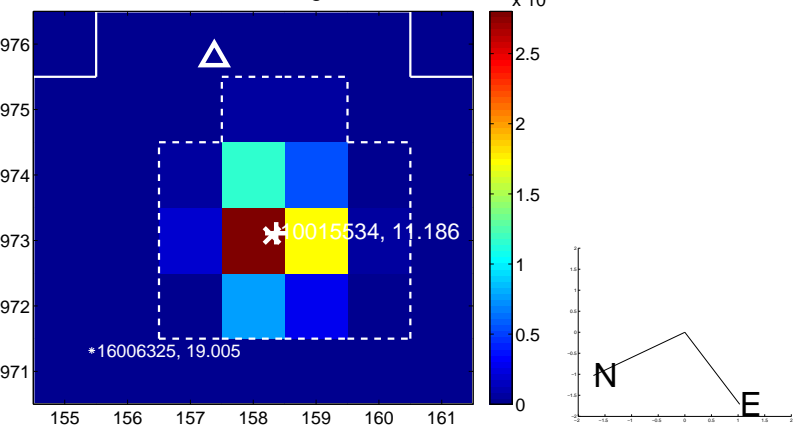
Q9 no OOT image



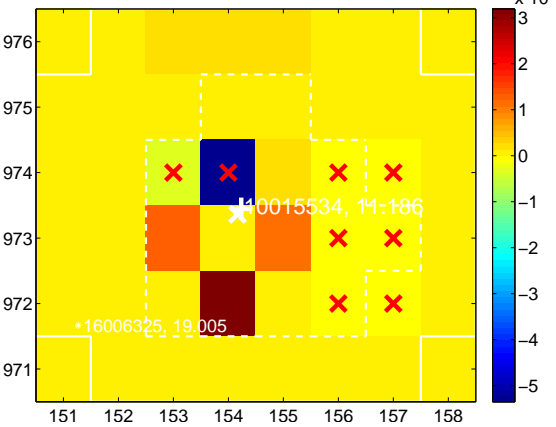
Q10 difference image. Poor Quality



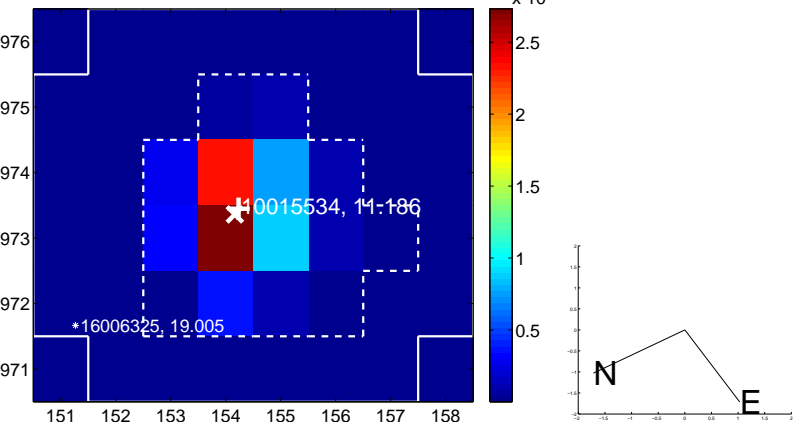
Q10 OOT image



Q11 difference image. Poor Quality



Q11 OOT image



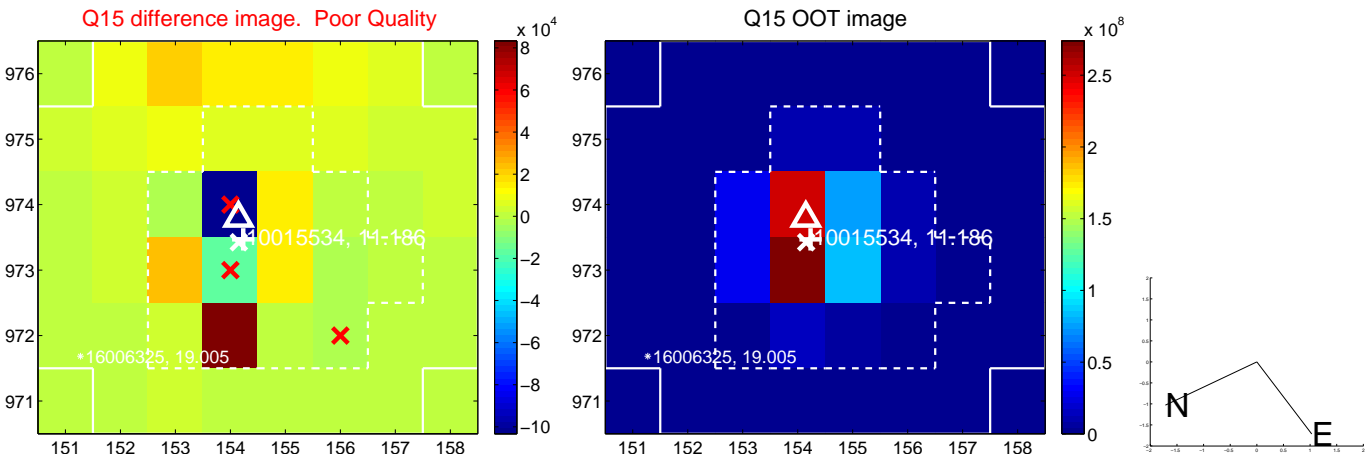
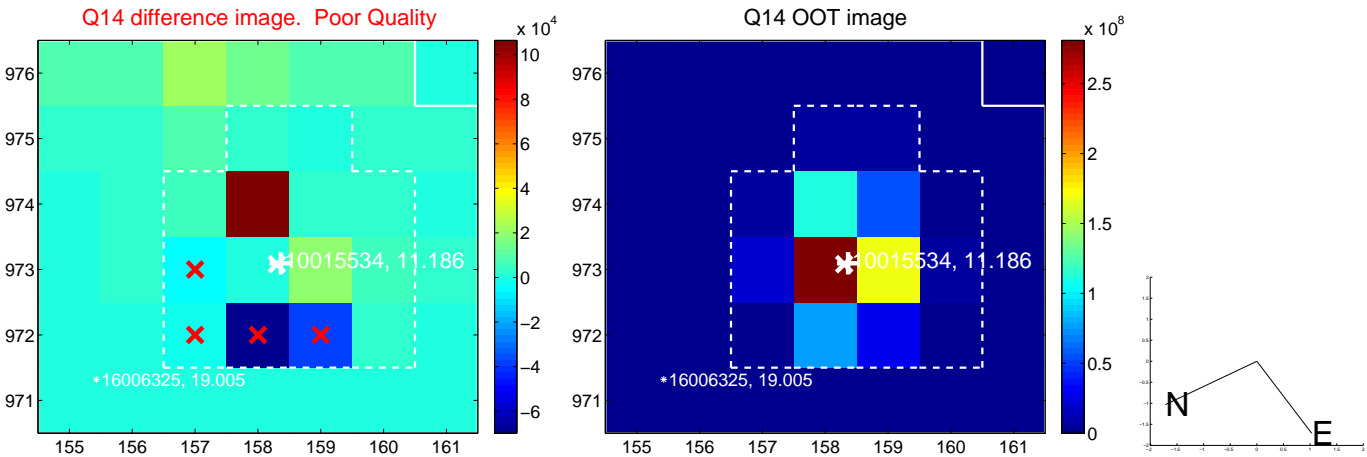
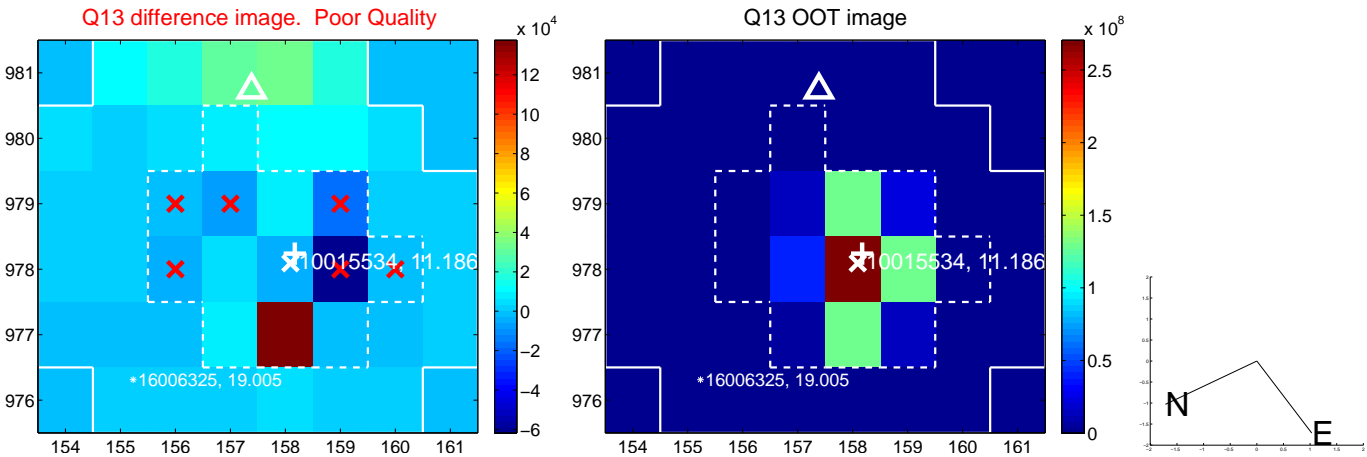
Q12 no difference image



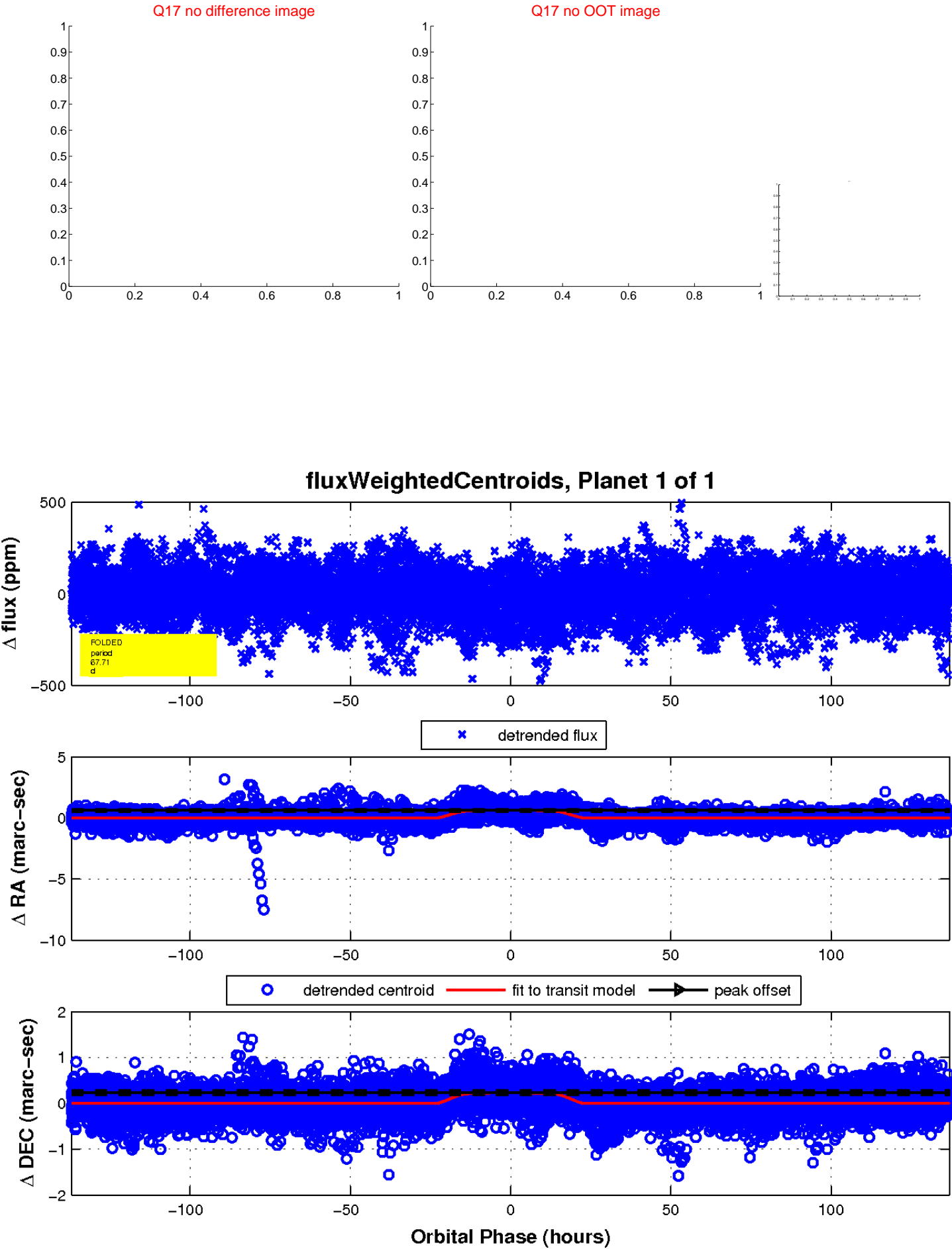
Q12 no OOT image



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

