

KIC 003542222

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})
003542222-01	OBS	4137.01	0.504419	131.902831	200.4	1.039	20.3	27.5	0.90	6043	1.51	7090.33

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003542222-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_ALT—CENT_RESOLVED_OFFSET

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 003542222-01

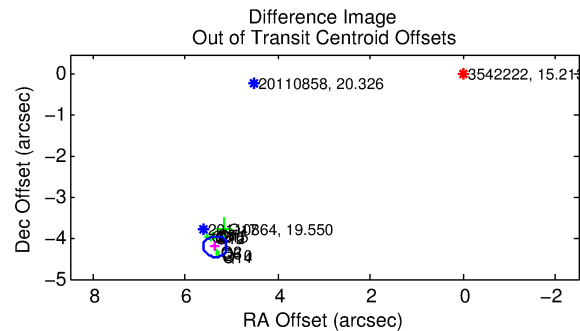
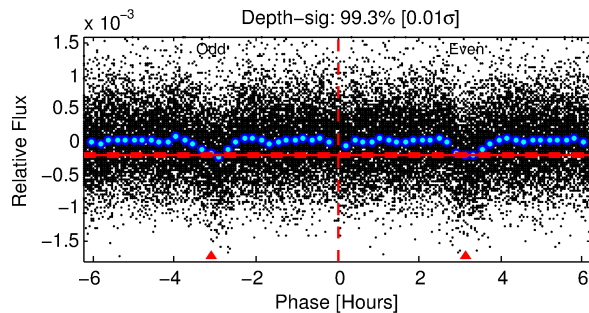
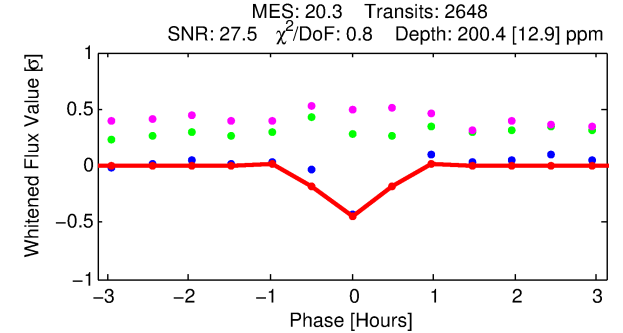
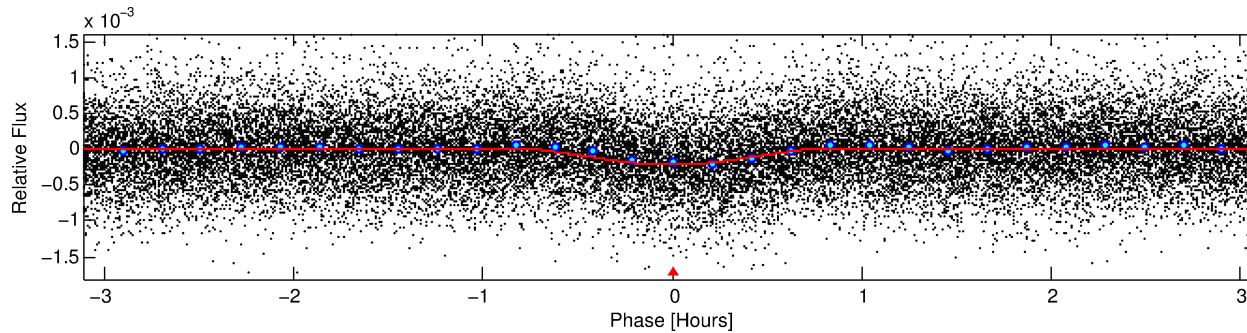
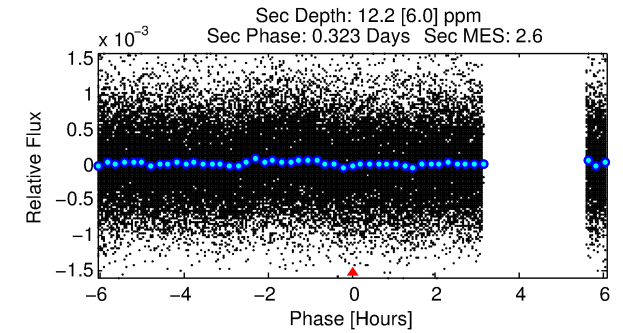
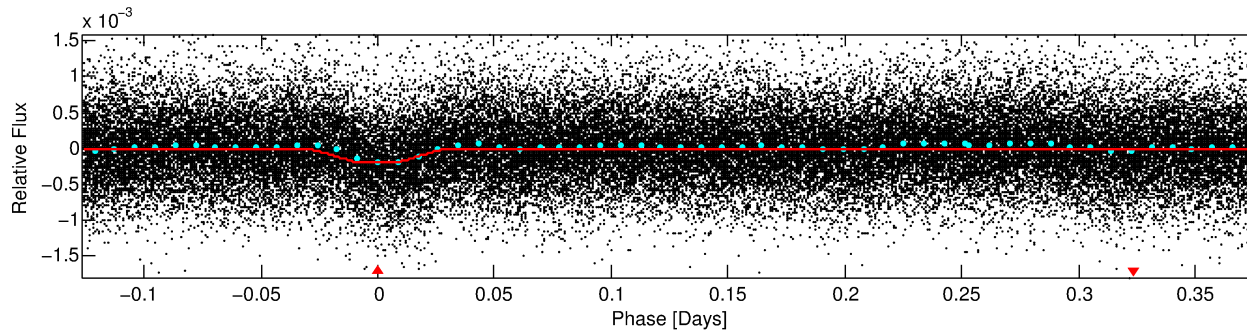
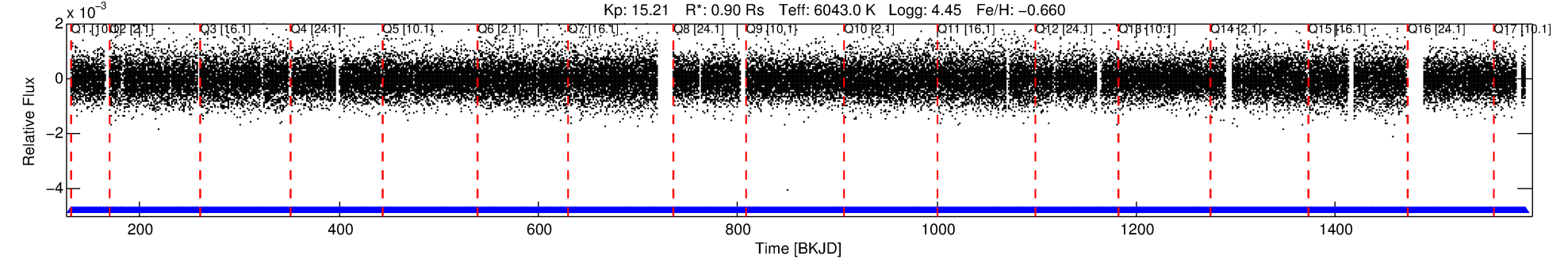
No Significant Match Found

DV One-Page Summary

KIC: 3542222 Candidate: 1 of 1 Period: 0.504 d

KOI: K04137.01 Corr: 0.806

Kp: 15.21 R*: 0.90 Rs Teff: 6043.0 K Logg: 4.45 Fe/H: -0.660



DV Fit Results:

Period = 0.50442 [0.00000] d
Epoch = 131.9028 [0.0006] BKJD
Rp/R* = 0.0153 [0.0039]
a/R* = 1.98 [2.03]
b = 0.90 [0.30]
Seff = 7090.33 [2394.67]
Teff = 2340 [198] K
Rp = 1.51 [0.54] Re
a = 0.0117 [0.0025] AU
Ag = 0.40 [0.31] [-1.90σ]
Teffp = 2883 [519] K [0.98σ]

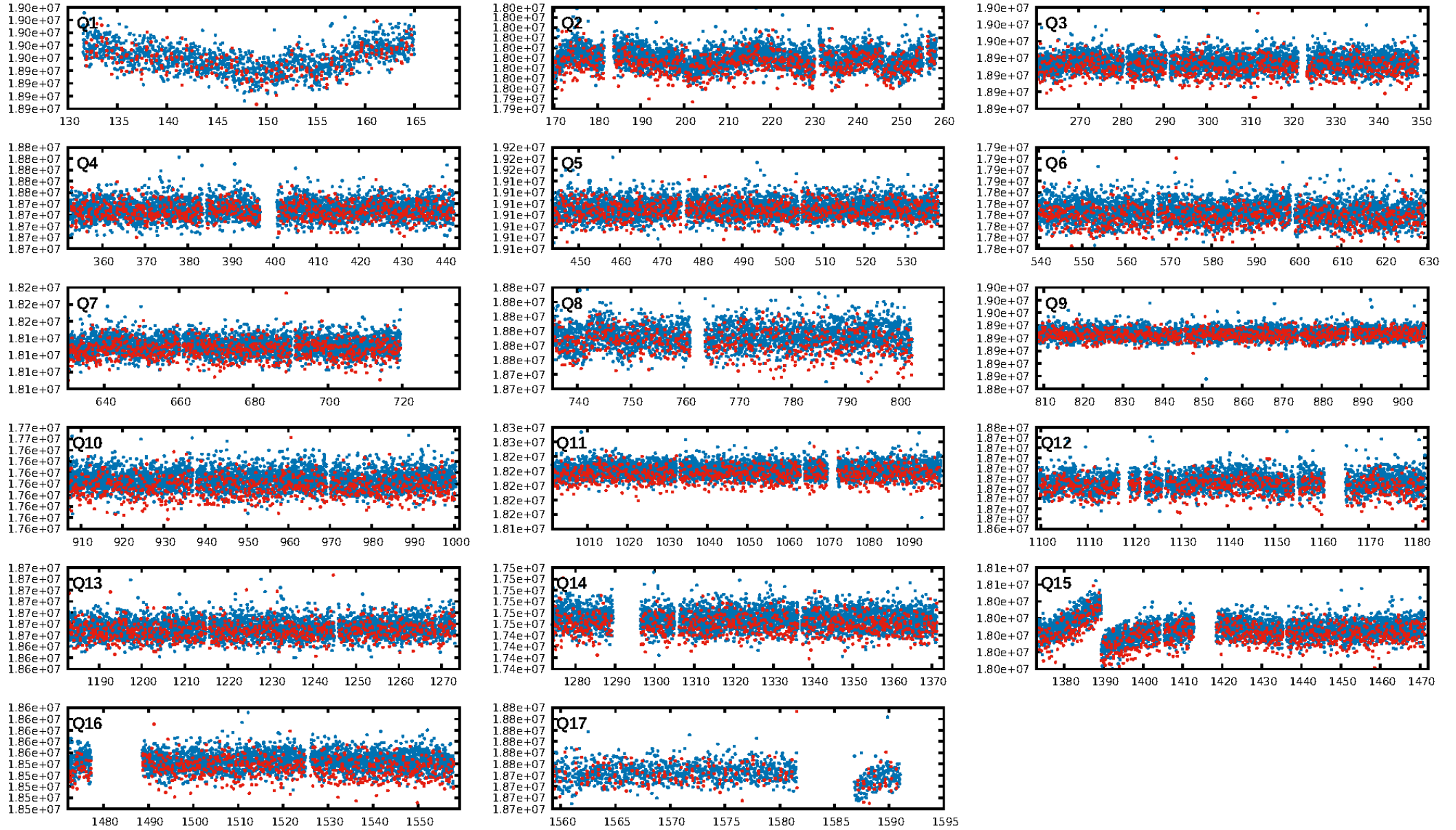
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.50e-84
RollingBand-fgt: 1.00 [2530/2530]
GhostDiagnostic-chr: -0.3655
Centroid-sig: 0.0%
Centroid-so: 24.956 arcsec [44.89σ]
OotOffset-rm: 6.813 arcsec [80.42σ]
KicOffset-rm: 6.930 arcsec [81.70σ]
OotOffset-st: 4/4/2/1 [11]
KicOffset-st: 4/4/2/1 [11]
DiffImageQuality-fgm: 1.00 [11/11]
DiffImageOverlap-fno: 1.00 [17/17]

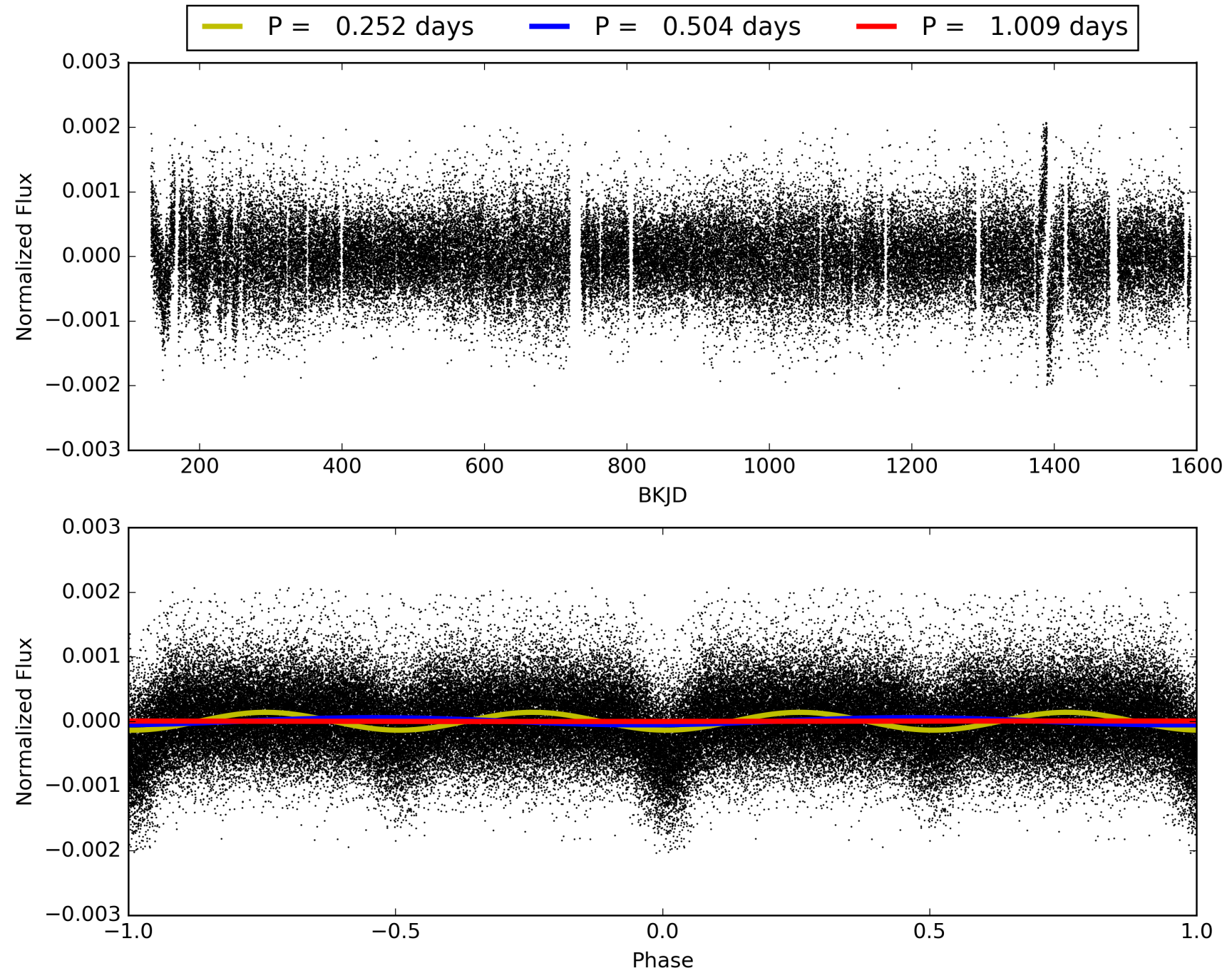
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:01:45 Z

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

TCE 003542222-01, PDC Light Curves

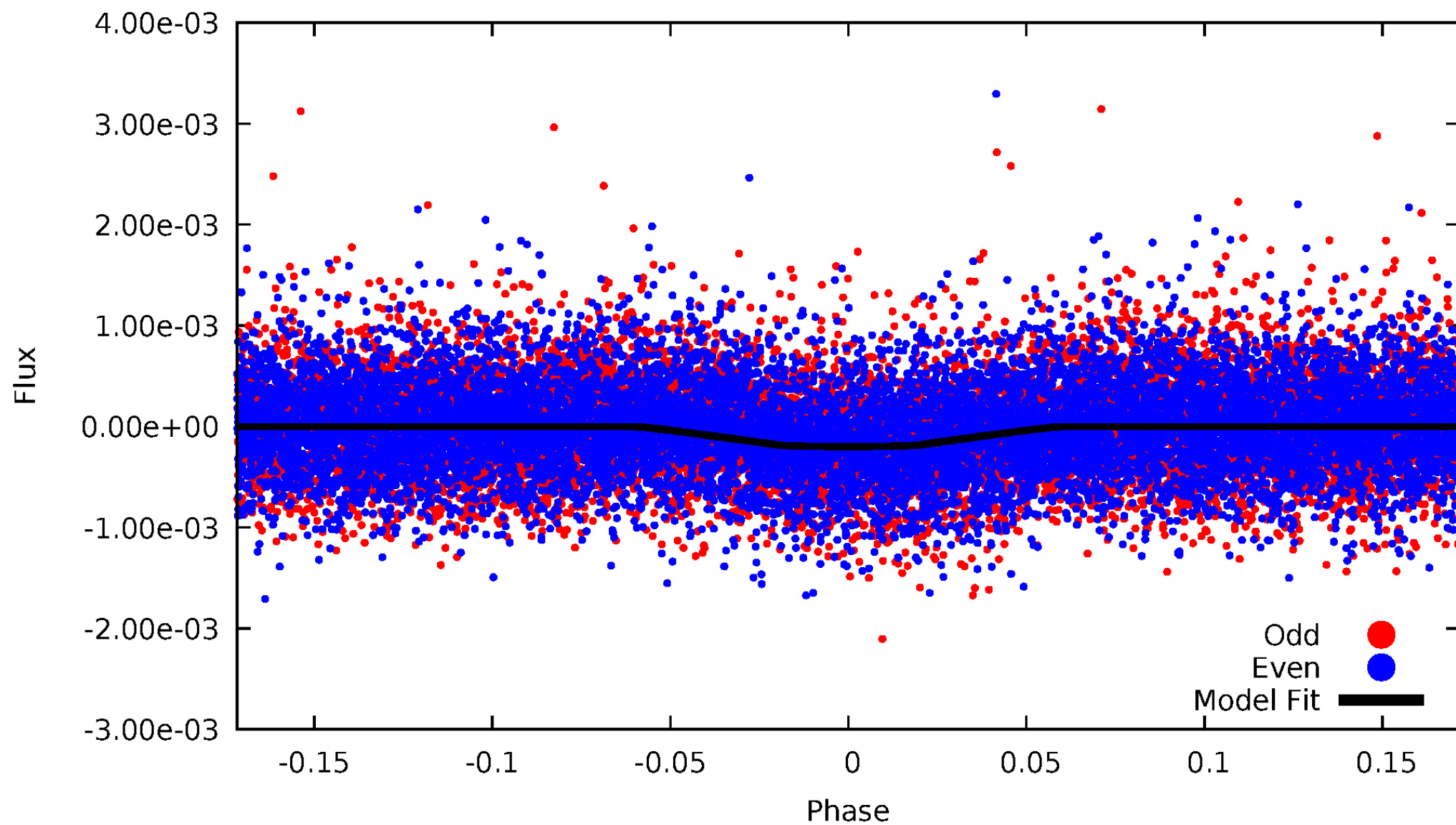


TCE 003542222-01



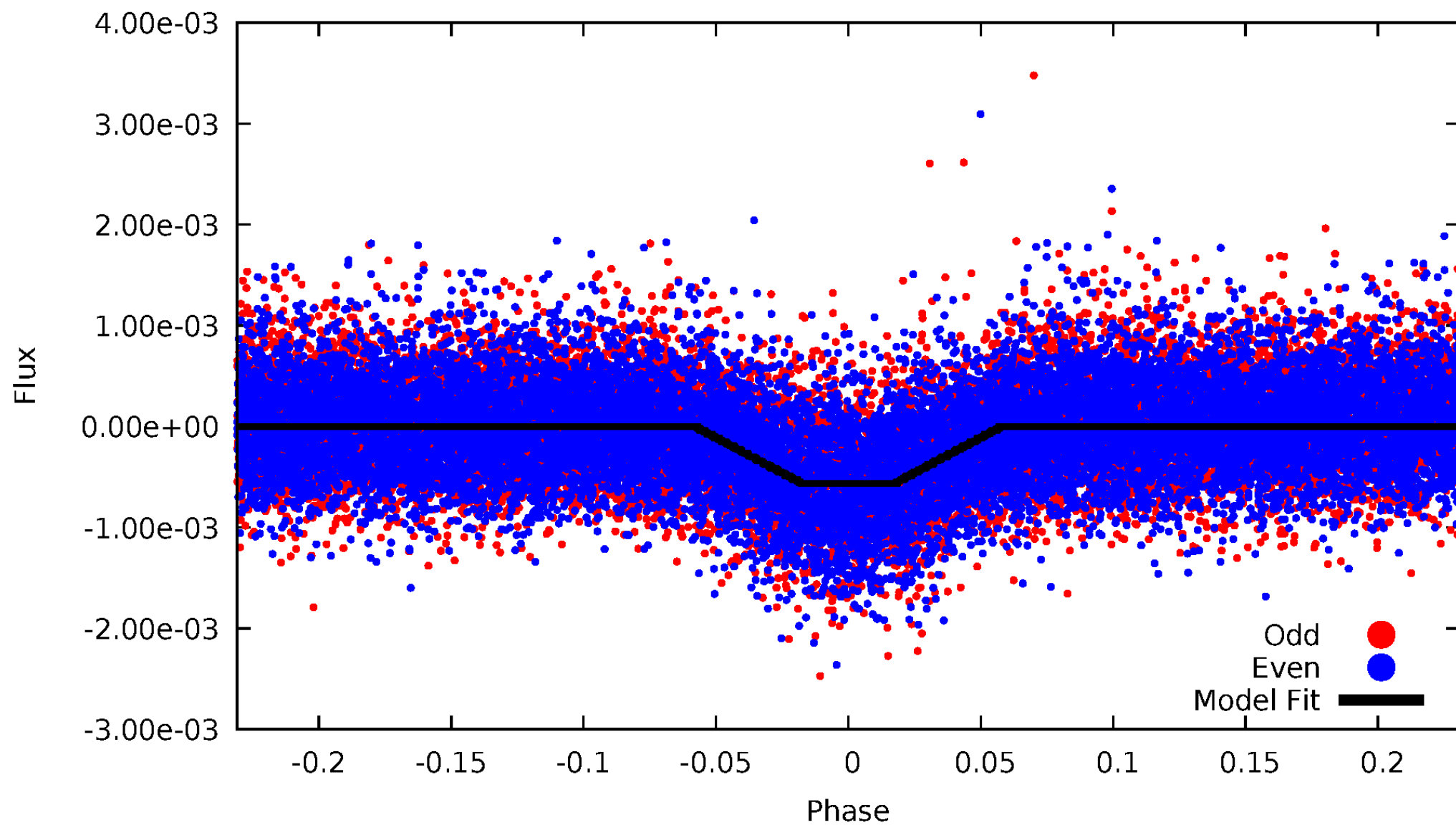
DV Odd/Even

TCE 003542222-01



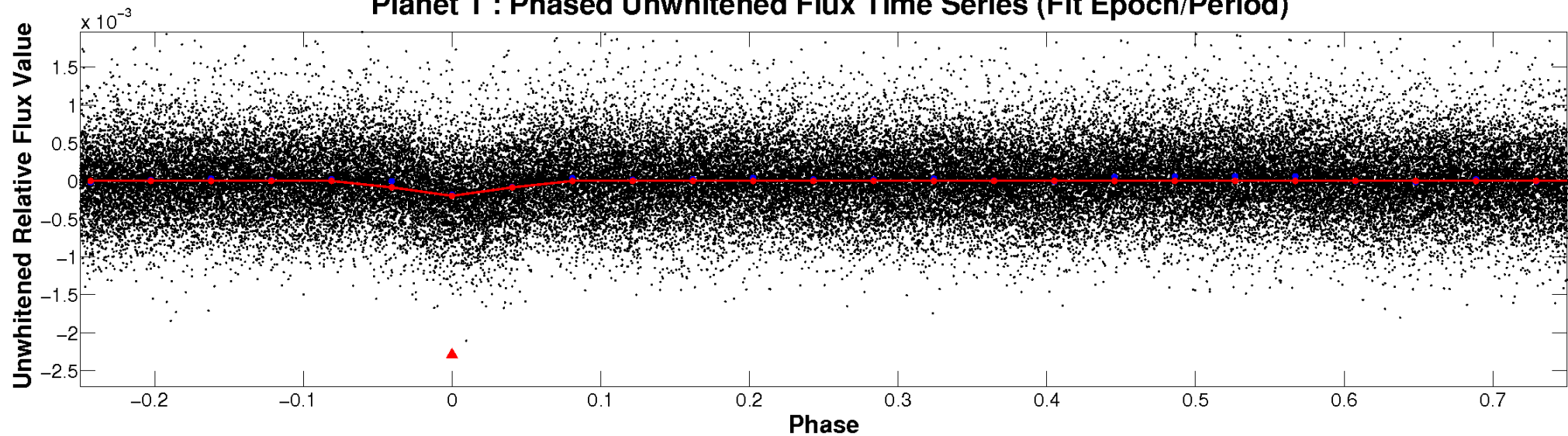
ALT Odd/Even

TCE 003542222-01

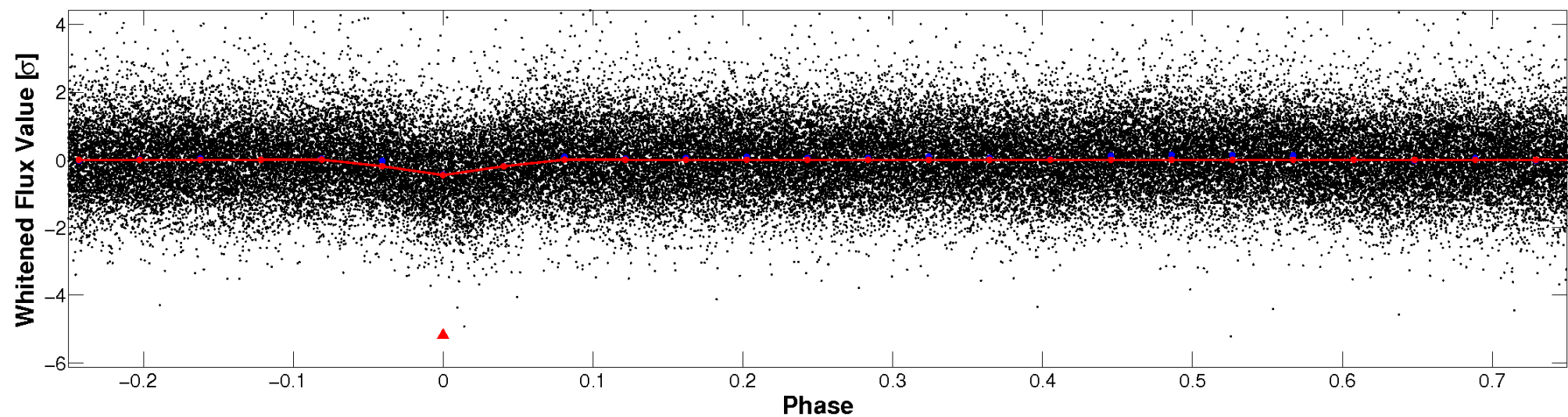


Non-Whitened Vs. Whitened Light Curve

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

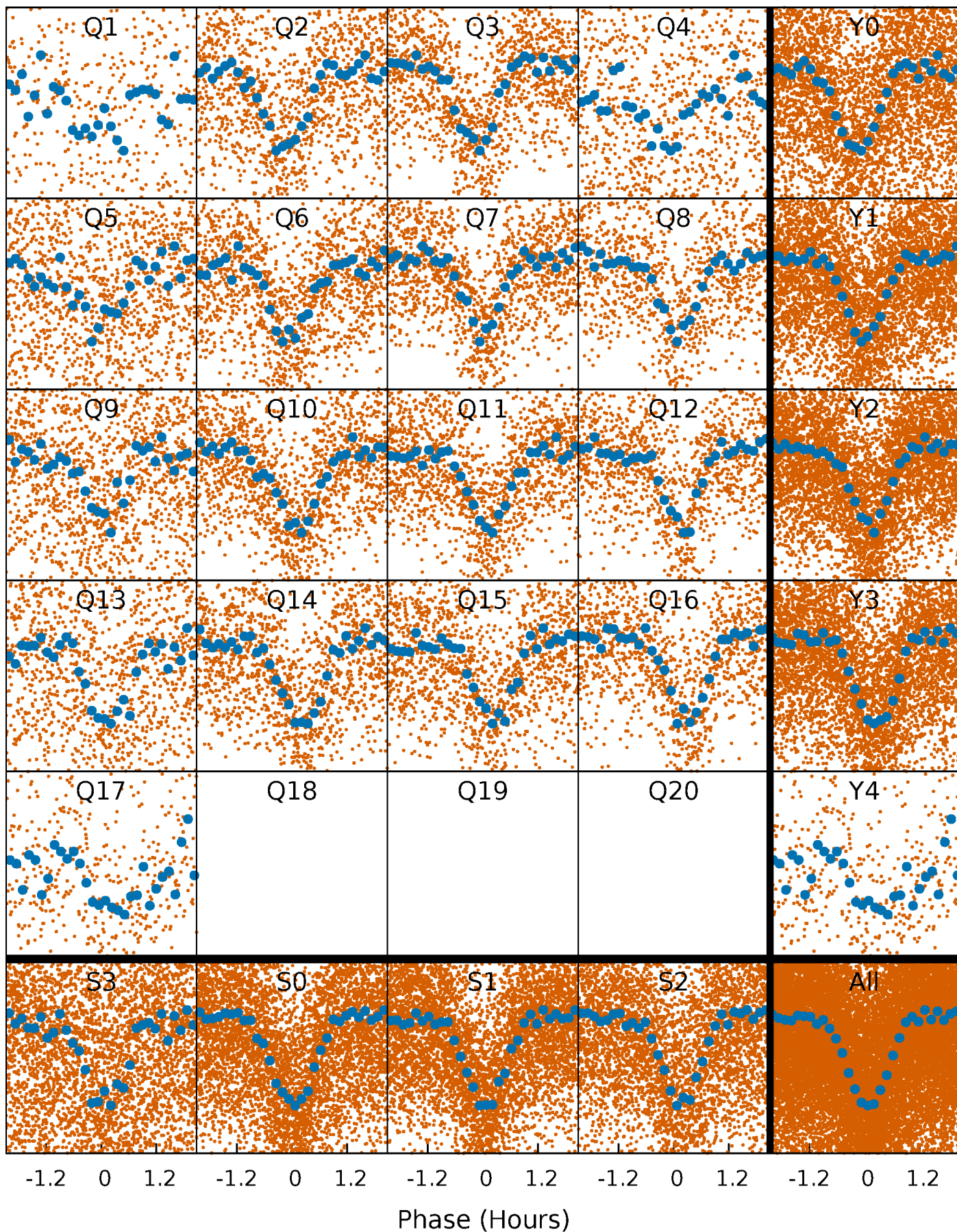


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



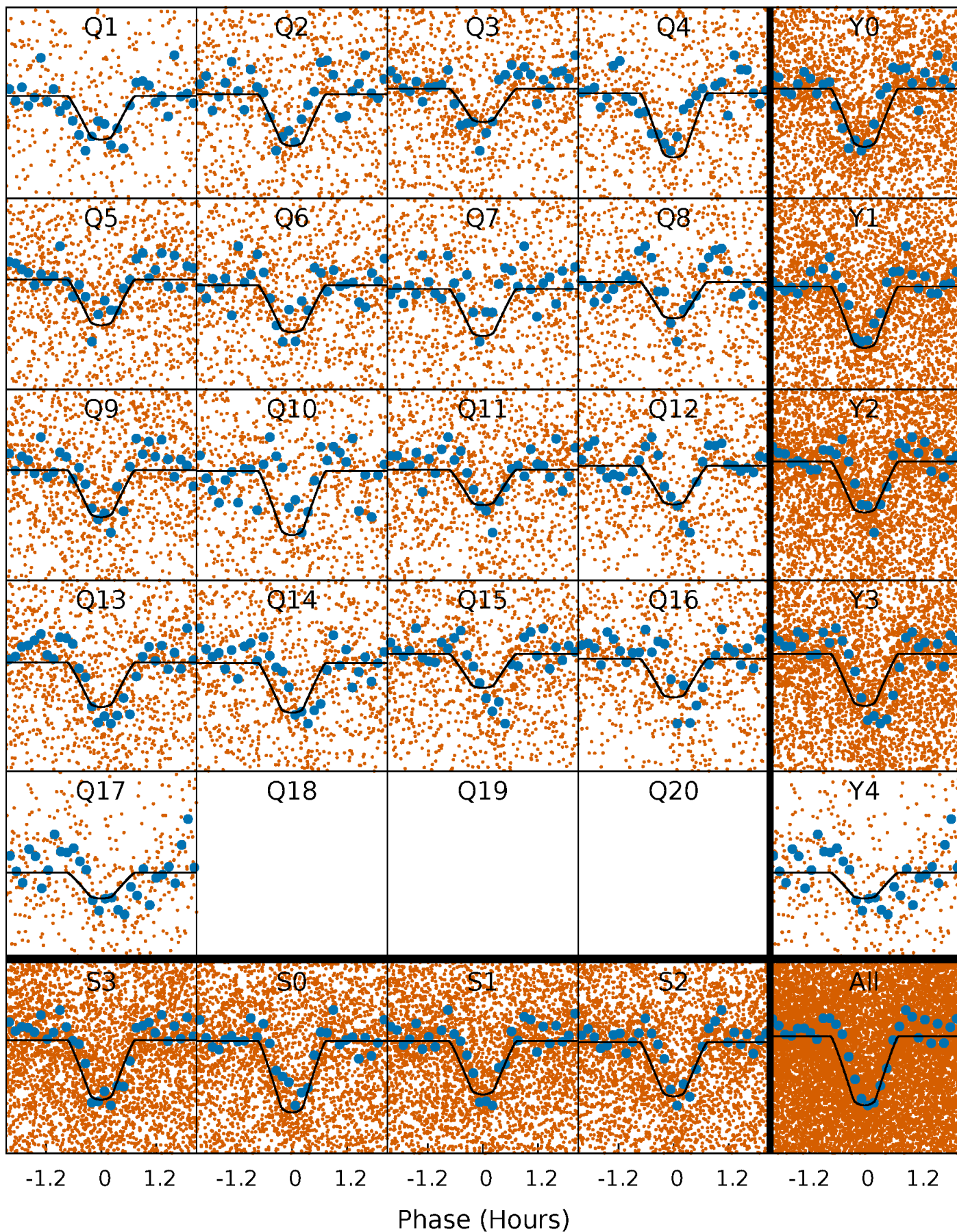
PDC Quarter-Phased Transit Curves

TCE 003542222-01 P= 0.504419 Days $T_0=131.902831$ (BKJD)



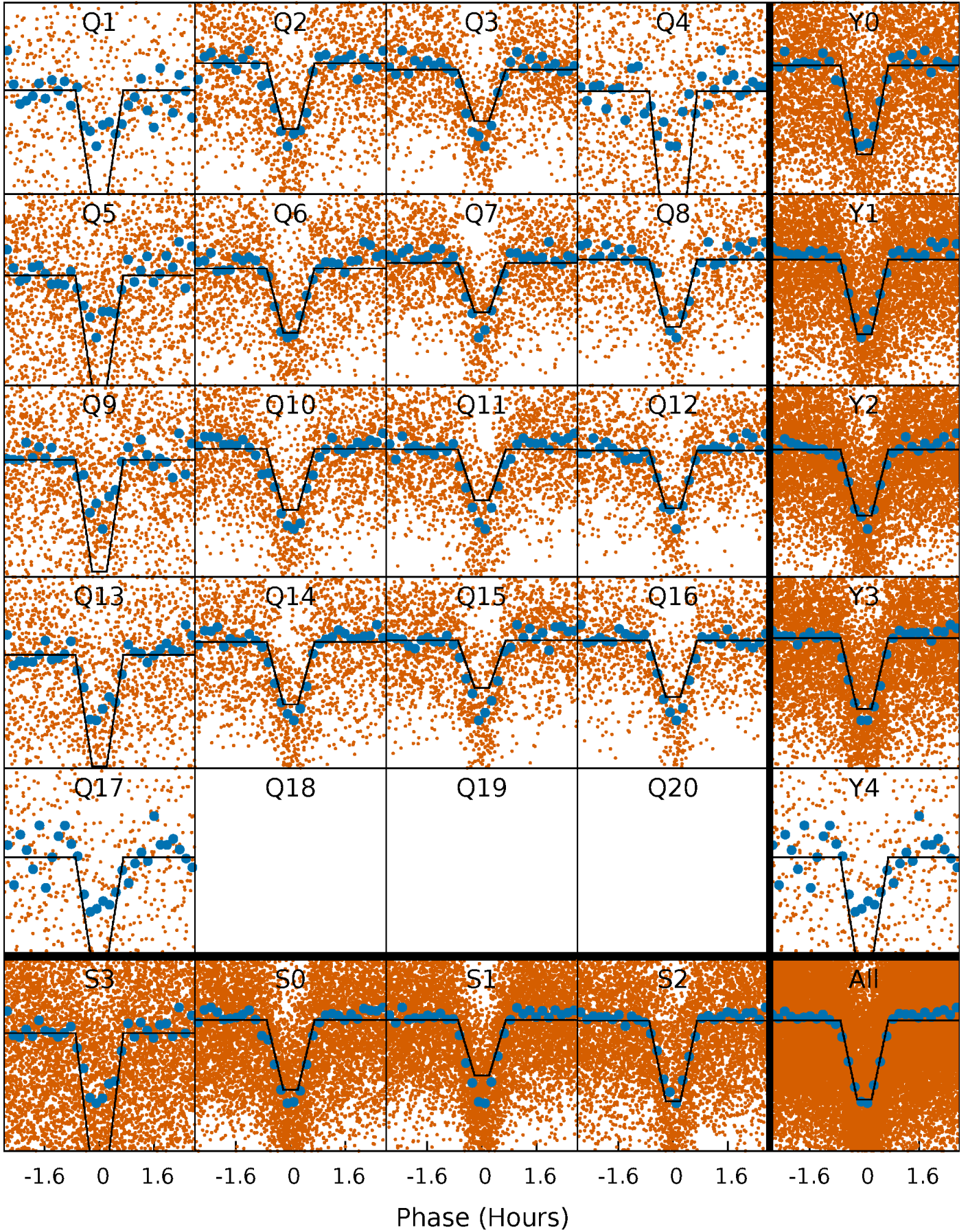
DV Quarter-Phased Transit Curves

TCE 003542222-01 P= 0.504419 Days $T_0=131.902831$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

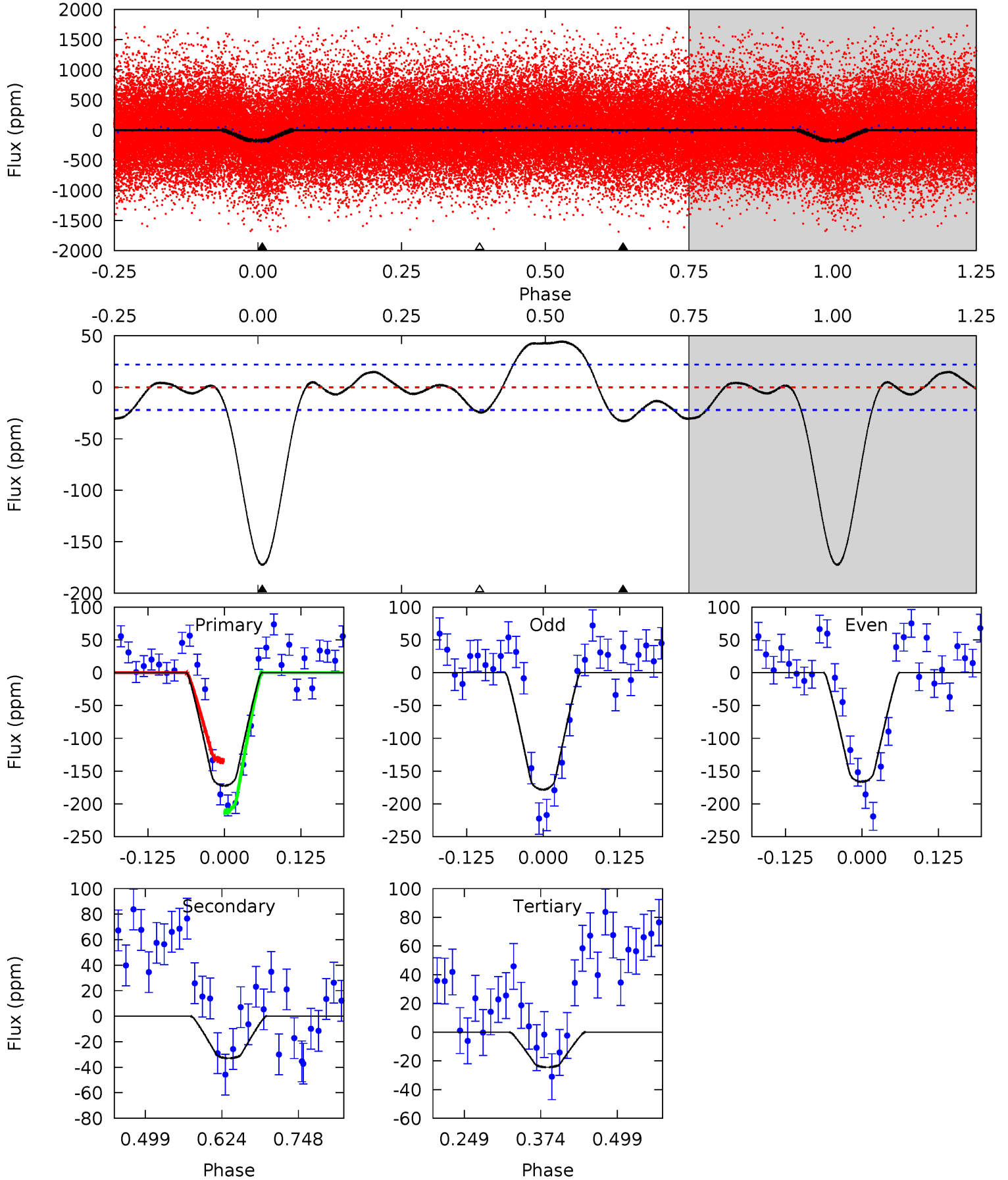
TCE 003542222-01 P= 0.504425 Days $T_0=131.896339$ (BKJD)



DV Model-Shift Uniqueness Test

003542222-01, P = 0.504419 Days, E = 131.398412 Days

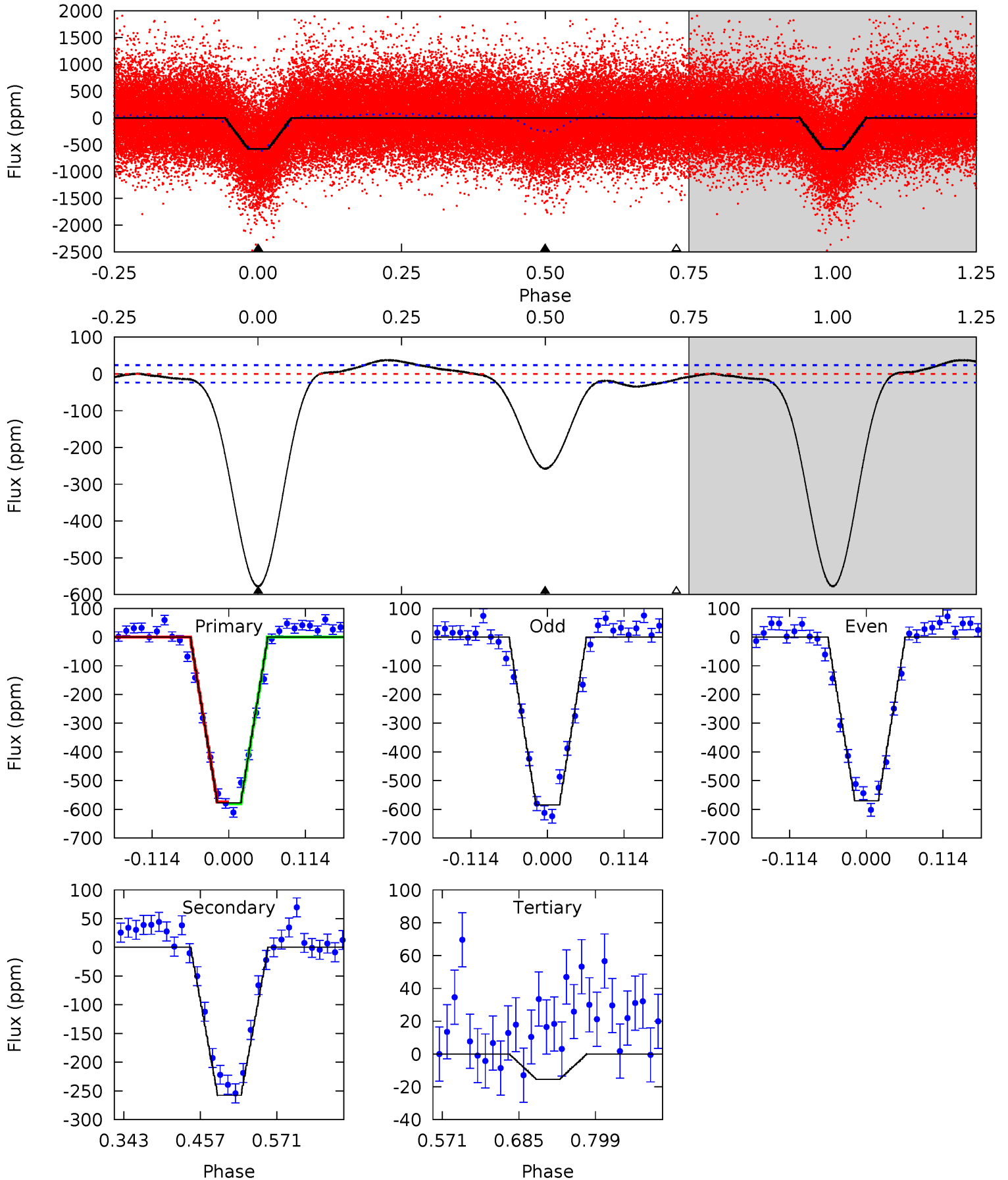
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.4	6.75	5.01	0	4.52	1.54	3.64	30.3	35.4	1.74	6.75	1.22	0.96	0.21	7.96



Alt Model-Shift Uniqueness Test

003542222-01, P = 0.504425 Days, E = 131.391914 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
110.8	49.4	2.95	0	4.54	1.58	3.91	107.8	110.8	46.5	49.4	1.38	1.00	0.06	0.59



Stellar Parameters For KIC 003542222

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6043^{+182}_{-182}	$4.452^{+0.116}_{-0.174}$	$-0.660^{+0.300}_{-0.300}$	$0.901^{+0.227}_{-0.122}$	$0.837^{+0.099}_{-0.072}$	$1.613^{+0.787}_{-0.717}$
	+3%/-3%	+3%/-4%	+45%/-45%	+25%/-14%	+12%/-9%	+49%/-44%
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 003542222-01 / KOI 4137.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-33 ± 5	$1.55^{+0.45}_{-0.40}$	3296^{+216}_{-186}	3777^{+551}_{-481}	$1.039^{+0.860}_{-0.434}$
Alt.	-258 ± 5	$2.37^{+0.47}_{-0.45}$	3300^{+220}_{-181}	4962^{+480}_{-366}	$3.460^{+1.796}_{-1.062}$

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 $A_{obs} \gg 1.0$

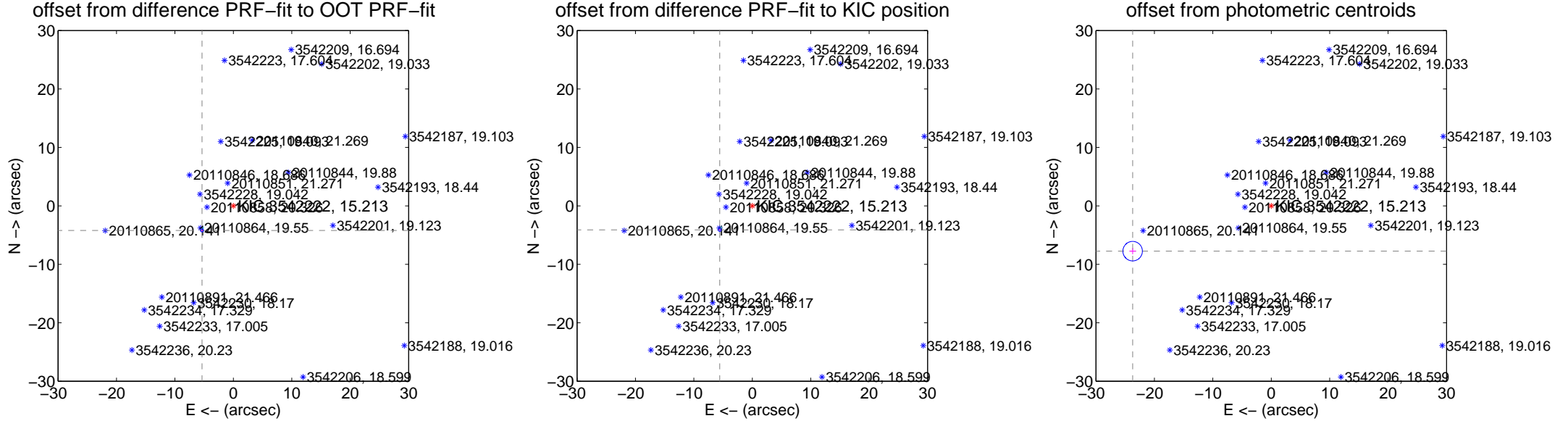
DV Centroid Data

Supplemental centroid analysis for 003542222-01. Kepler magnitude: 15.21. Transit SNR 27.48

There are 11 quarters with good PRF difference image offsets

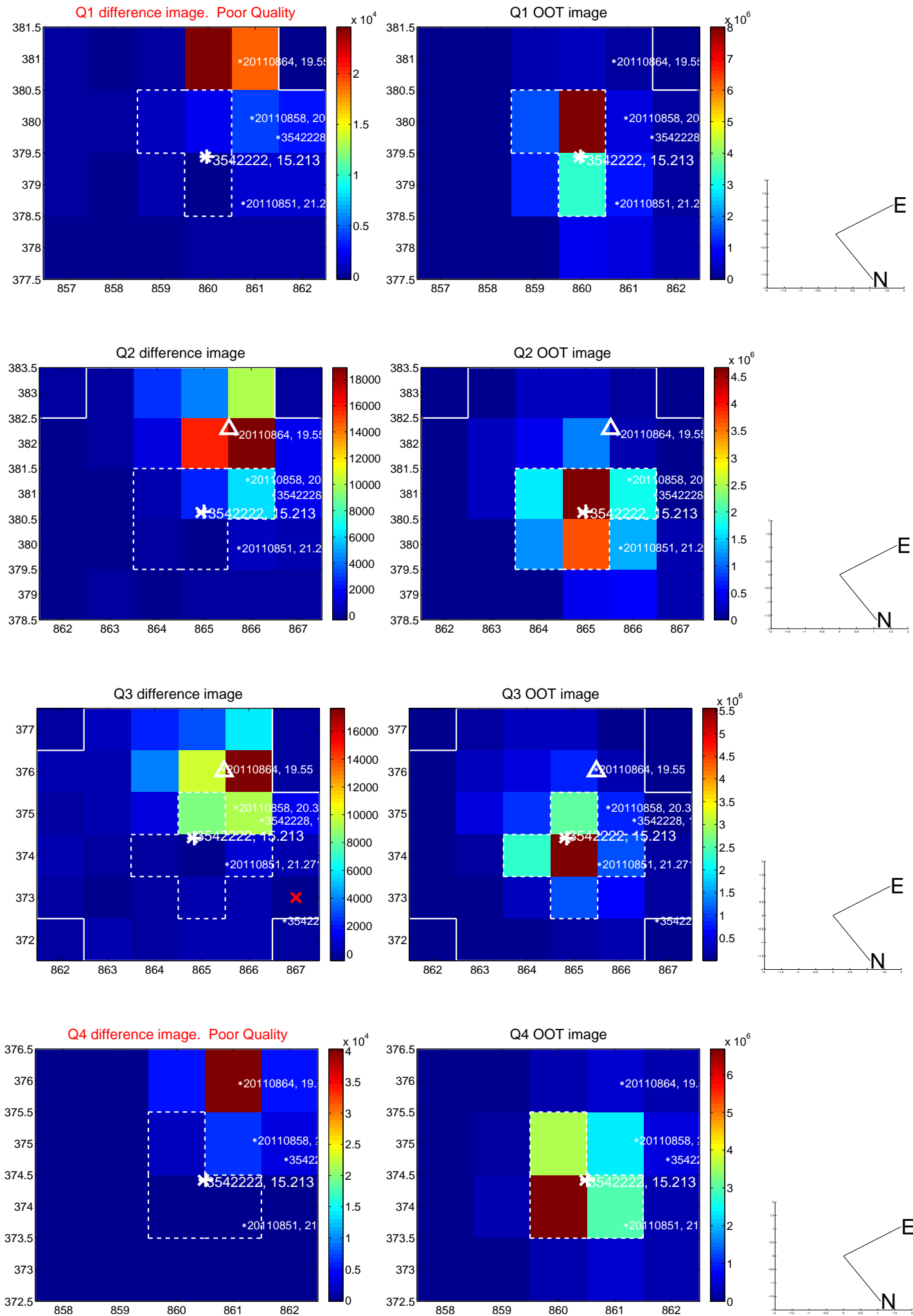
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.813 \pm 0.085	80.42	5.361 \pm 0.072	-4.204 \pm 0.102
PRF-fit source offset from KIC position	6.930 \pm 0.085	81.70	5.578 \pm 0.071	-4.113 \pm 0.099
photometric centroid source offset	24.96 \pm 0.56	44.89	23.72 \pm 0.56	-7.75 \pm 0.52

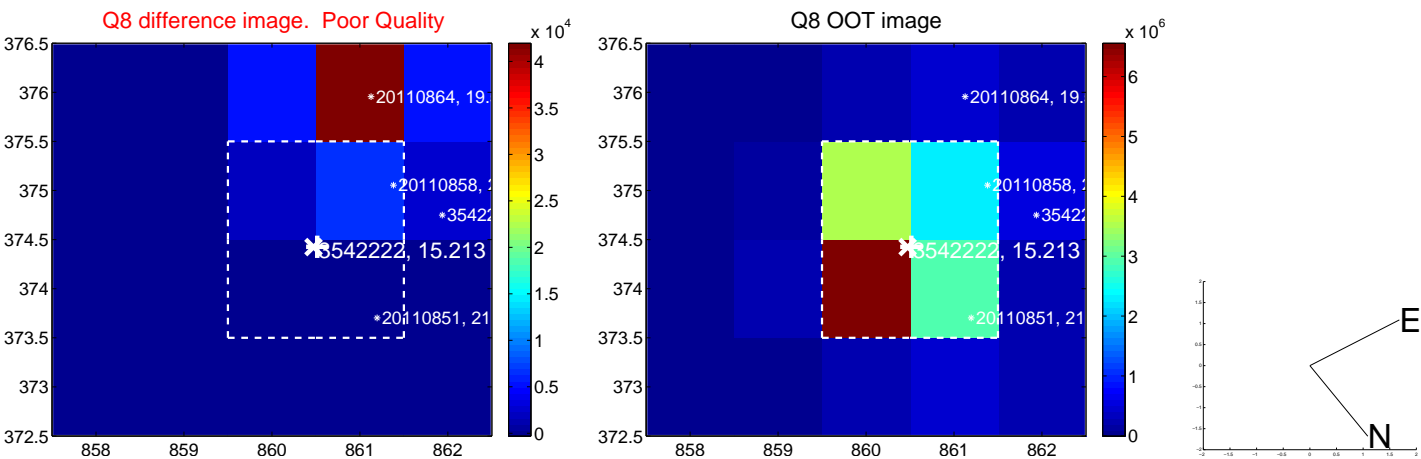
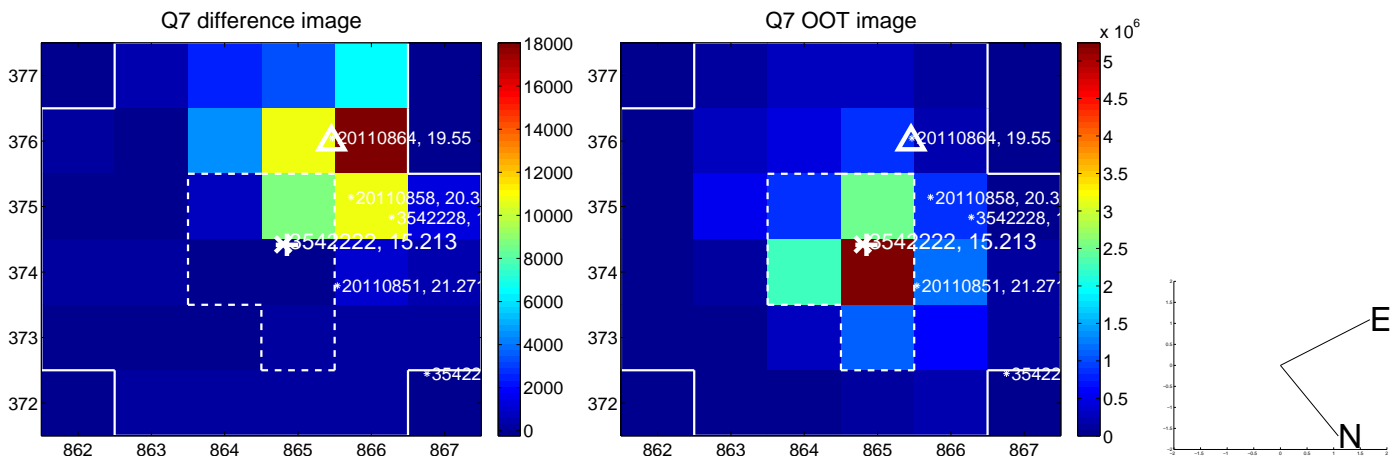
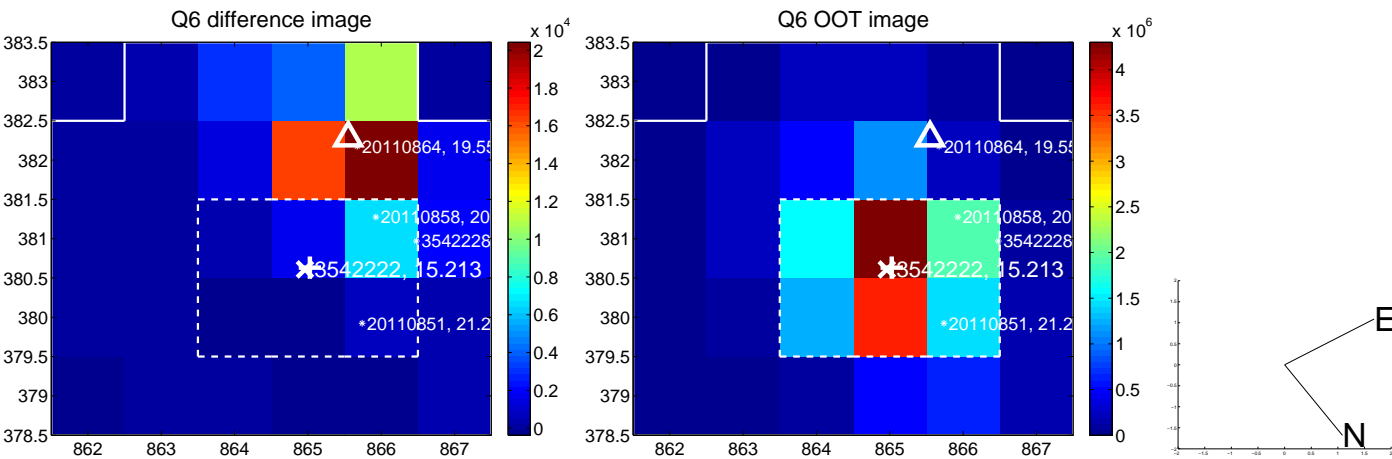
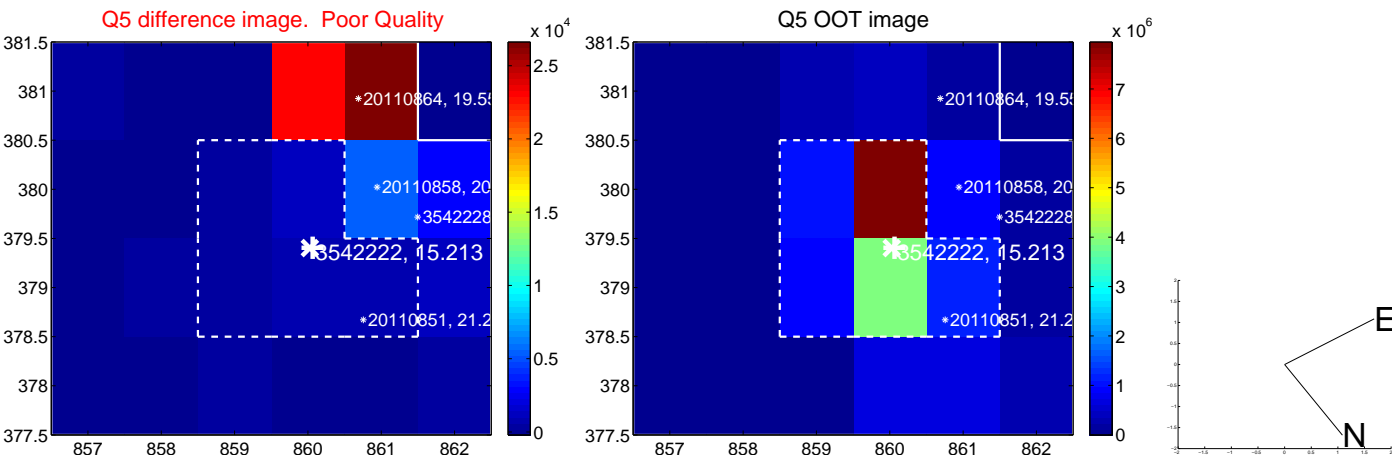


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

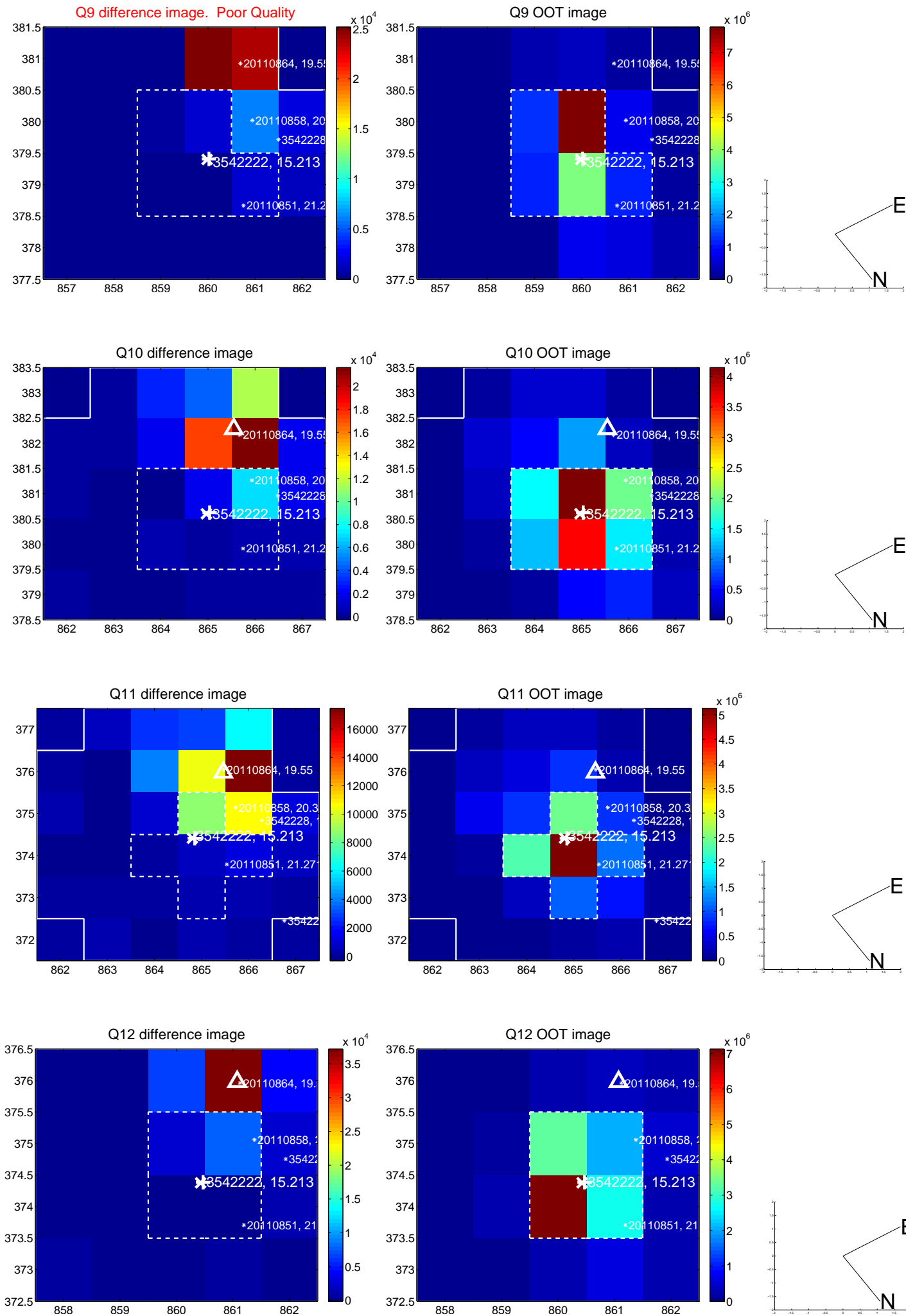
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



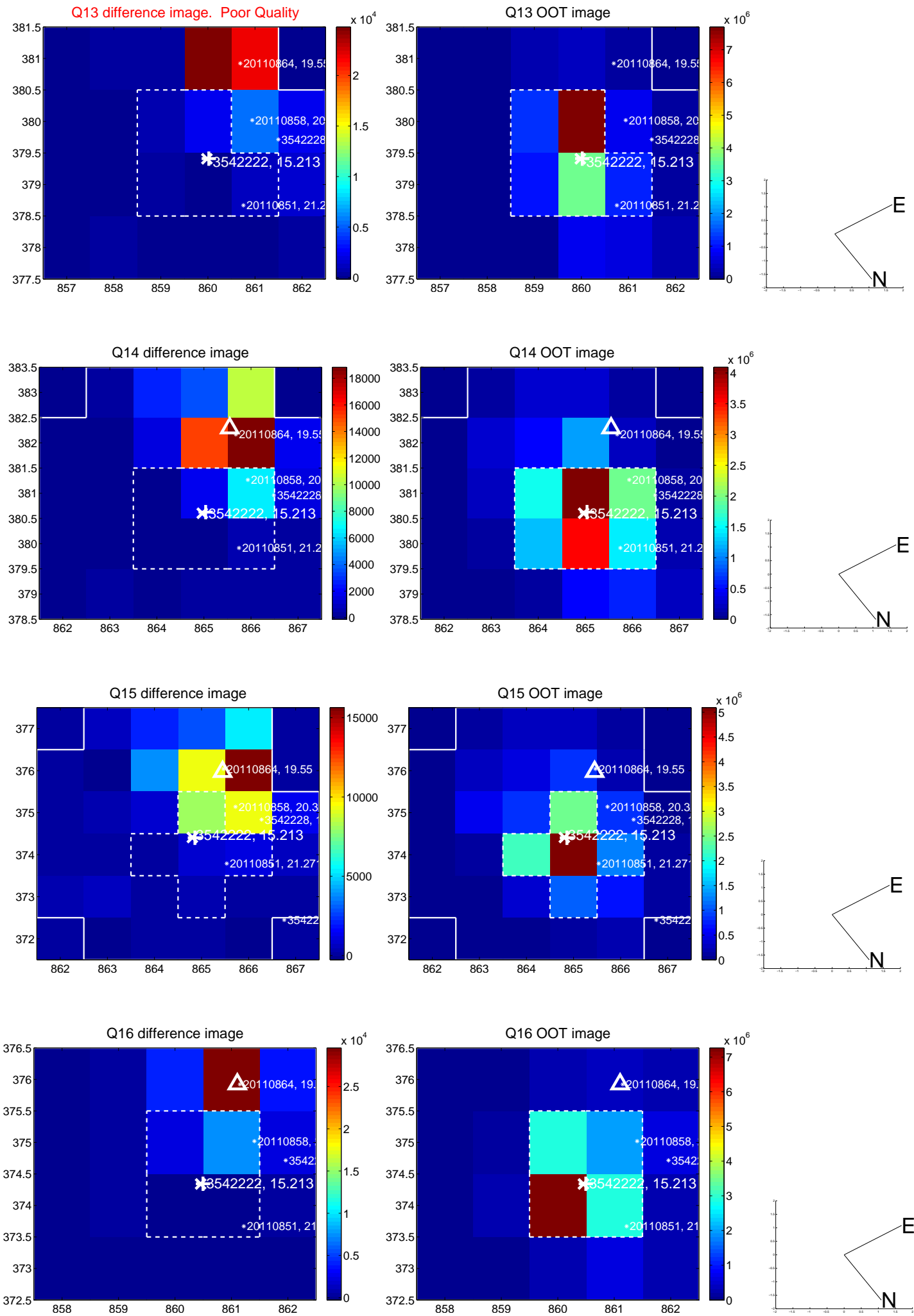
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



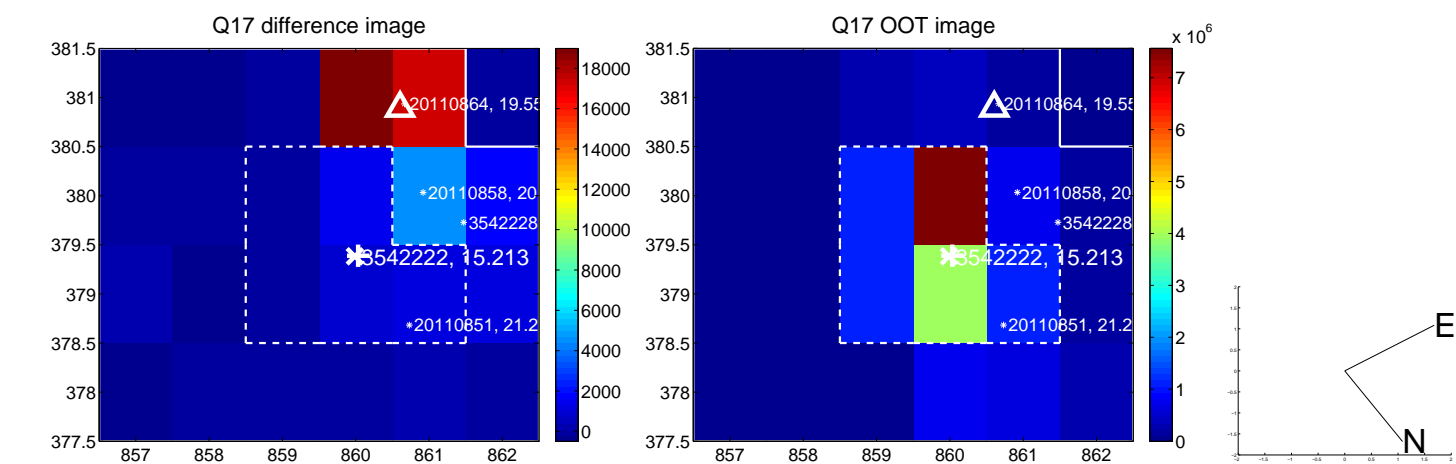
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



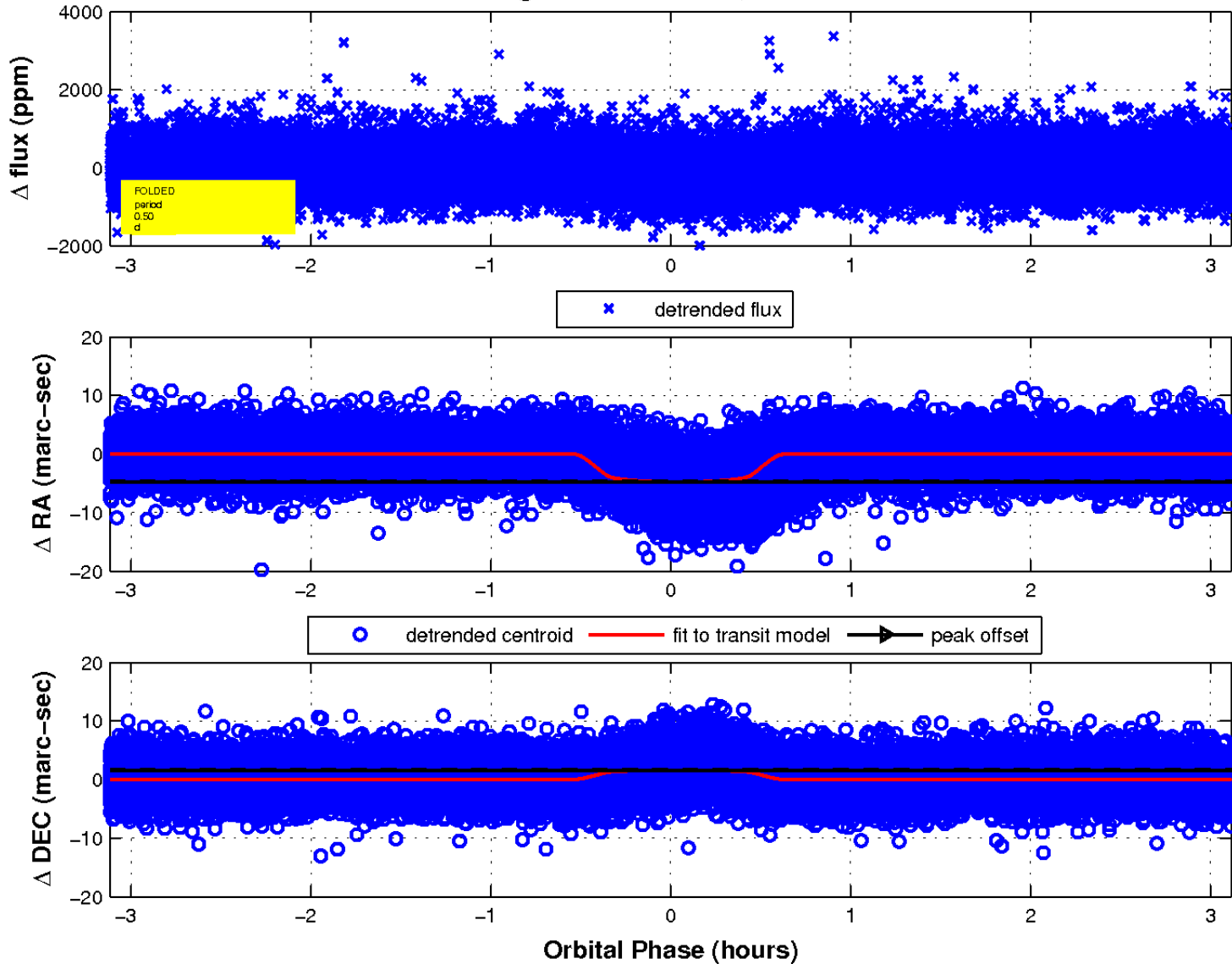
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

