

KIC 012164564

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})
012164564-01	OBS	2780.01	3.351792	131.655580	334.7	2.149	18.3	19.7	1.00	6198	2.14	663.20

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012164564-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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

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

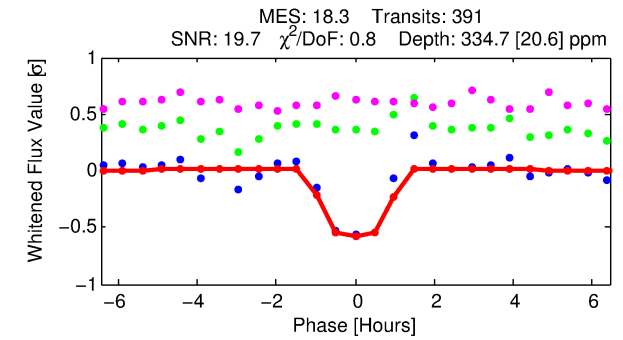
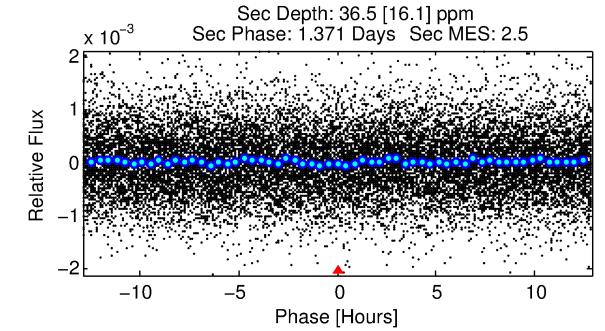
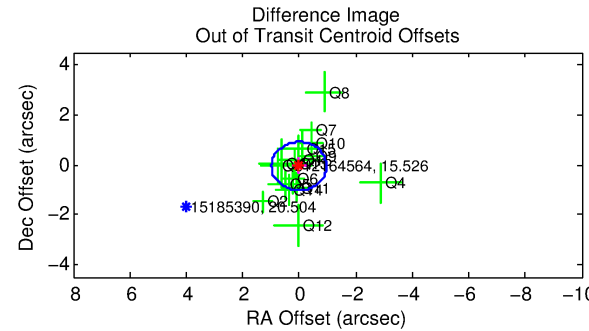
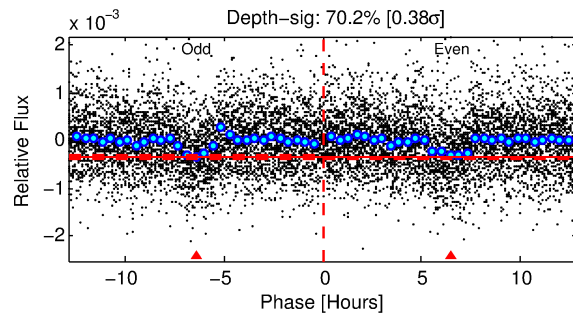
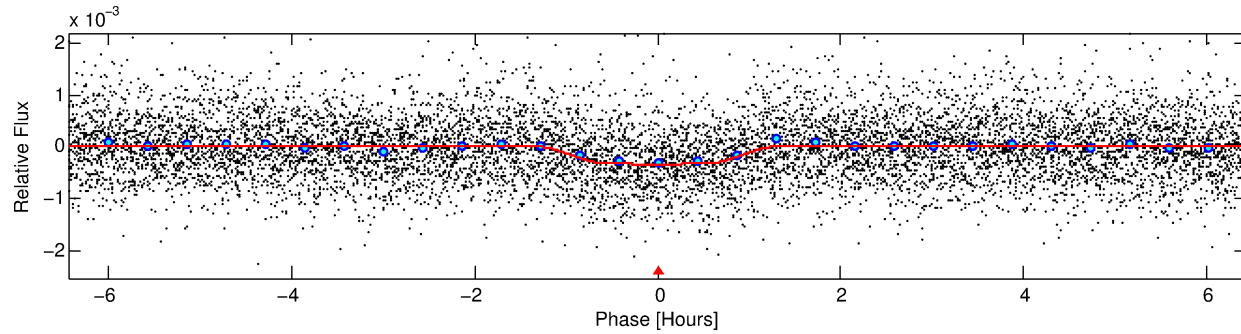
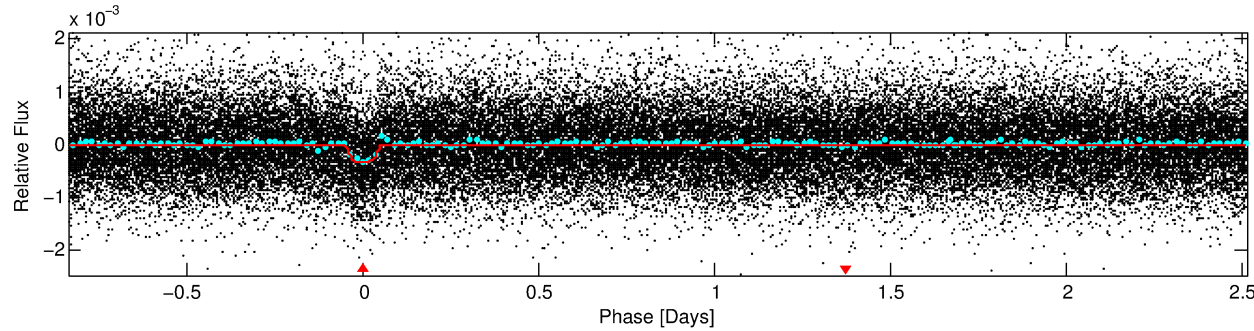
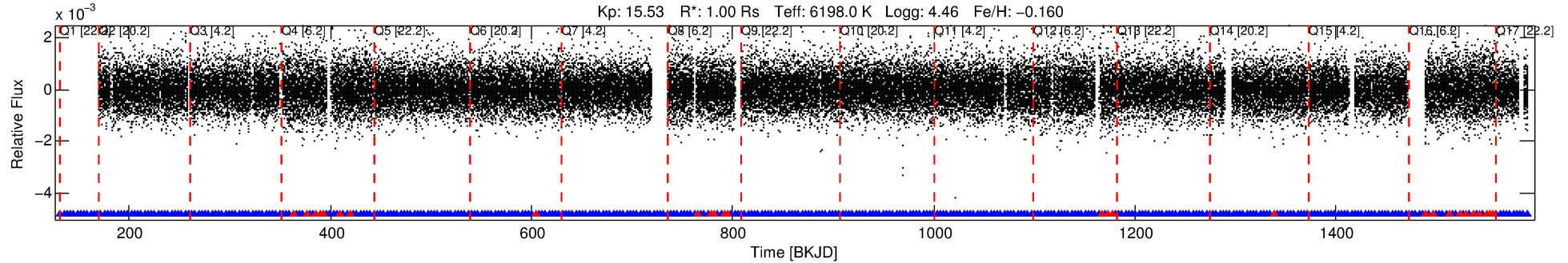
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012164564-01

No Significant Match Found

DV One-Page Summary

KIC: 12164564 Candidate: 1 of 1 Period: 3.352 d
KOI: K02780.01 Corr: 0.937



DV Fit Results:

Period = 3.35179 [0.00001] d
Epoch = 131.6556 [0.0019] BKJD
Rp/R* = 0.0195 [0.0058]
a/R* = 6.08 [9.20]
b = 0.89 [0.38]
Seff = 663.20 [272.24]
Teq = 1294 [133] K
Rp = 2.14 [0.94] Re
a = 0.0449 [0.0121] AU
Ag = 8.83 [7.35] [1.07 σ]
Teffp = 3449 [647] K [3.26 σ]

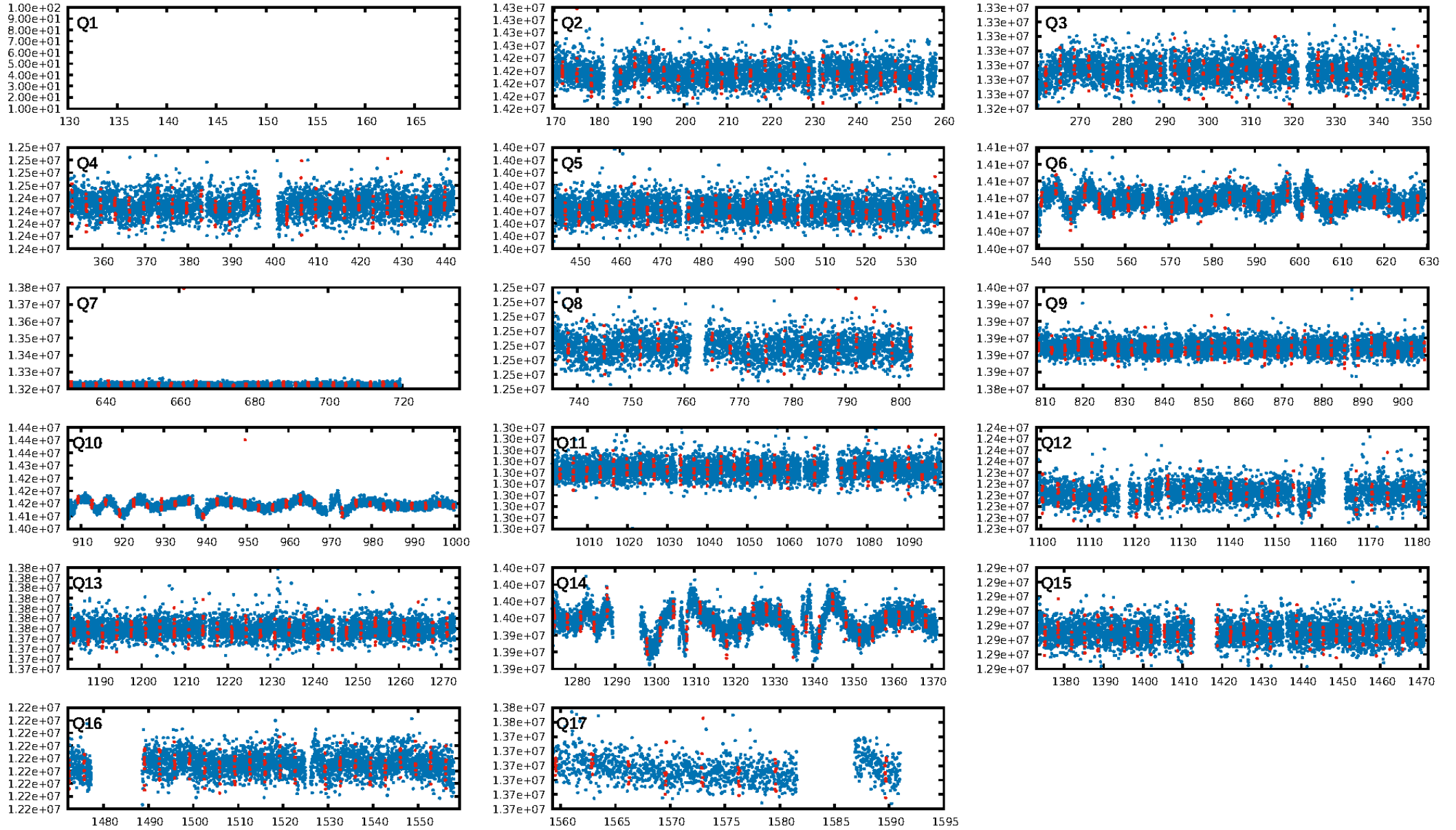
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.11e-75
RollingBand-fgt: 0.93 [356/383]
GhostDiagnostic-chr: 18.03
Centroid-sig: 21.6%
Centroid-so: 0.915 arcsec [1.15 σ]
OotOffset-rm: 0.061 arcsec [0.19 σ]
KicOffset-rm: 0.100 arcsec [0.46 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.69 [11/16]
DiffImageOverlap-fno: 1.00 [16/16]

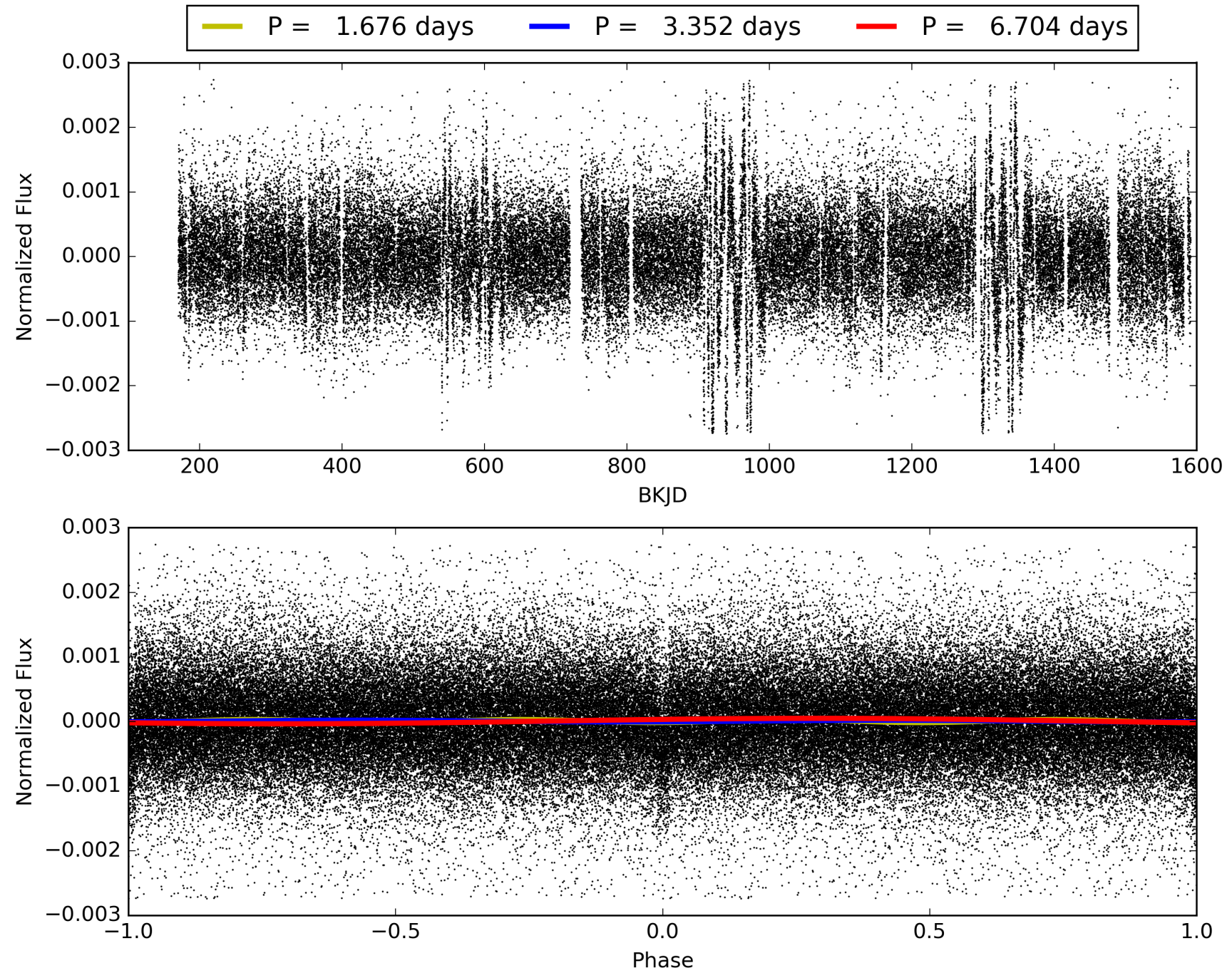
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 21:51:19 Z

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

TCE 012164564-01, PDC Light Curves

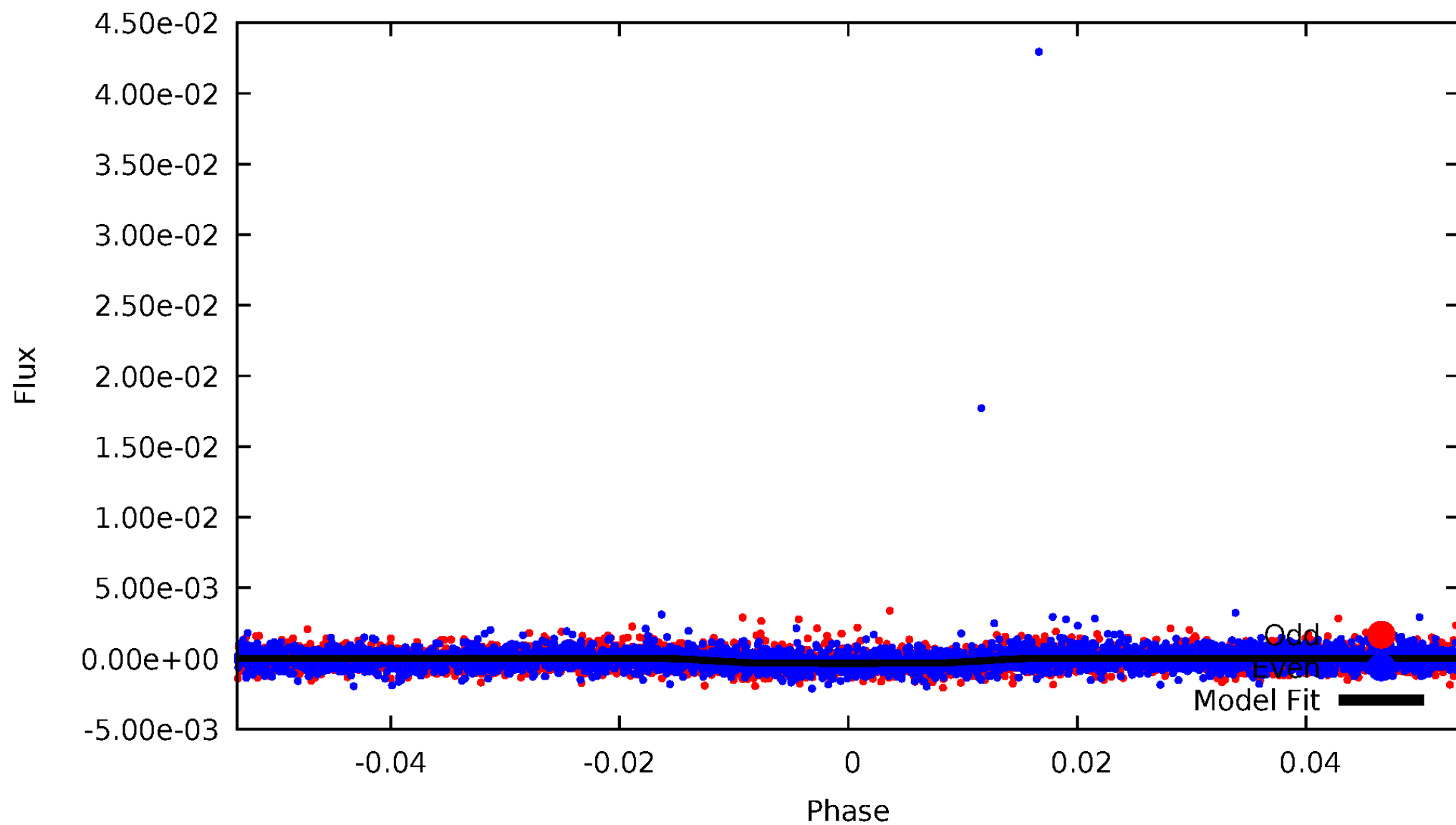


TCE 012164564-01



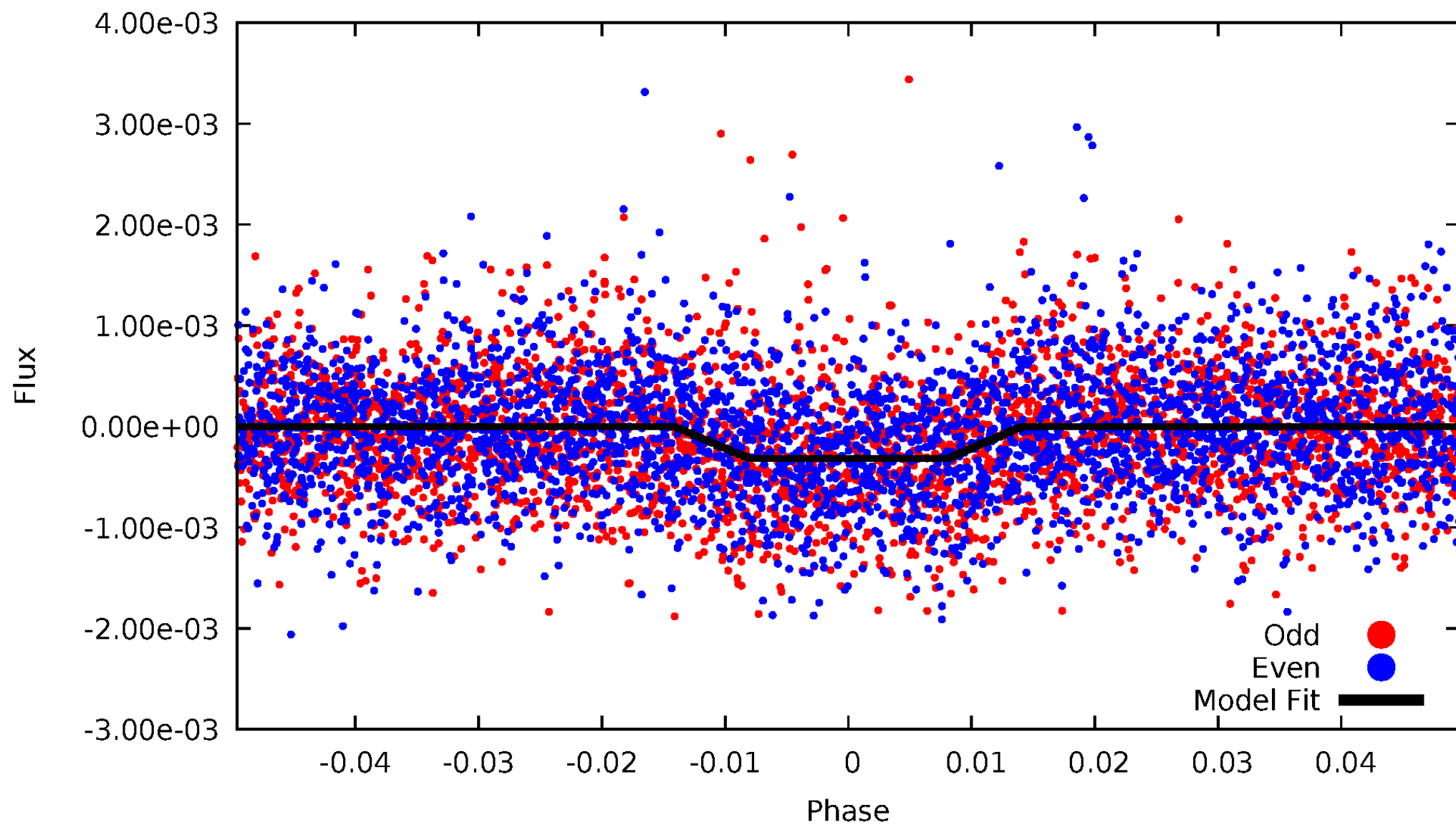
DV Odd/Even

TCE 012164564-01

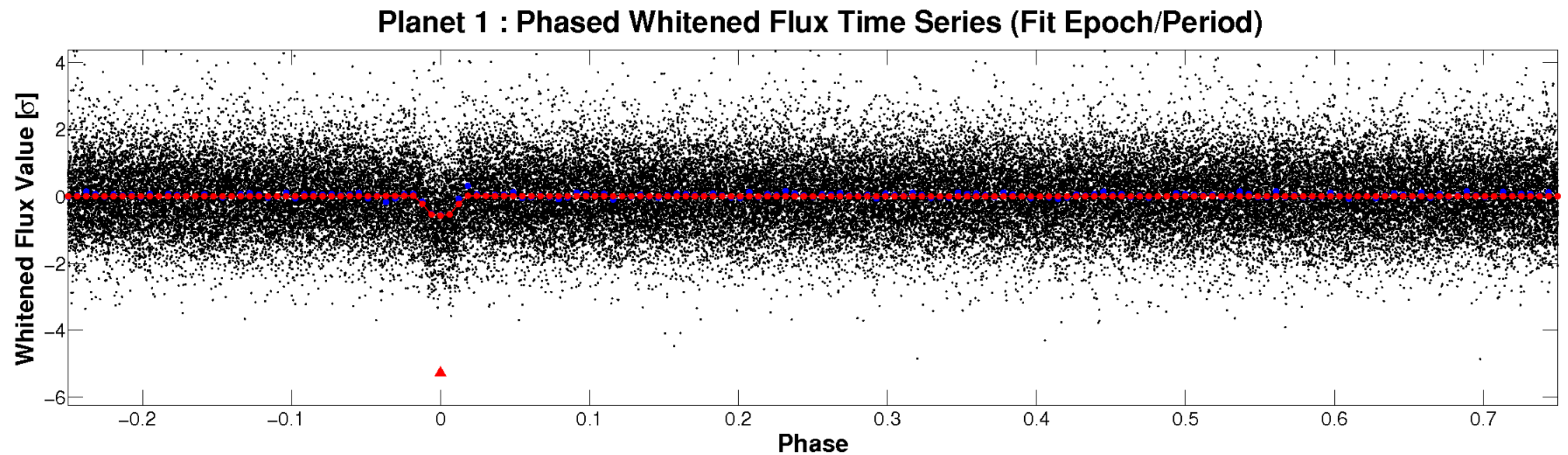
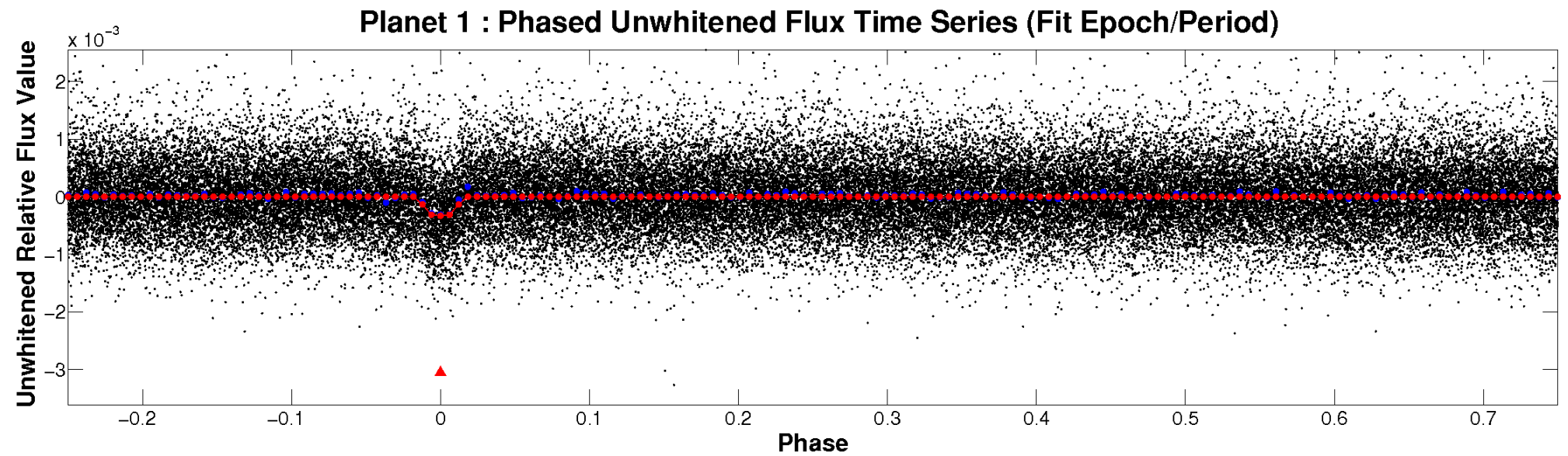


ALT Odd/Even

TCE 012164564-01

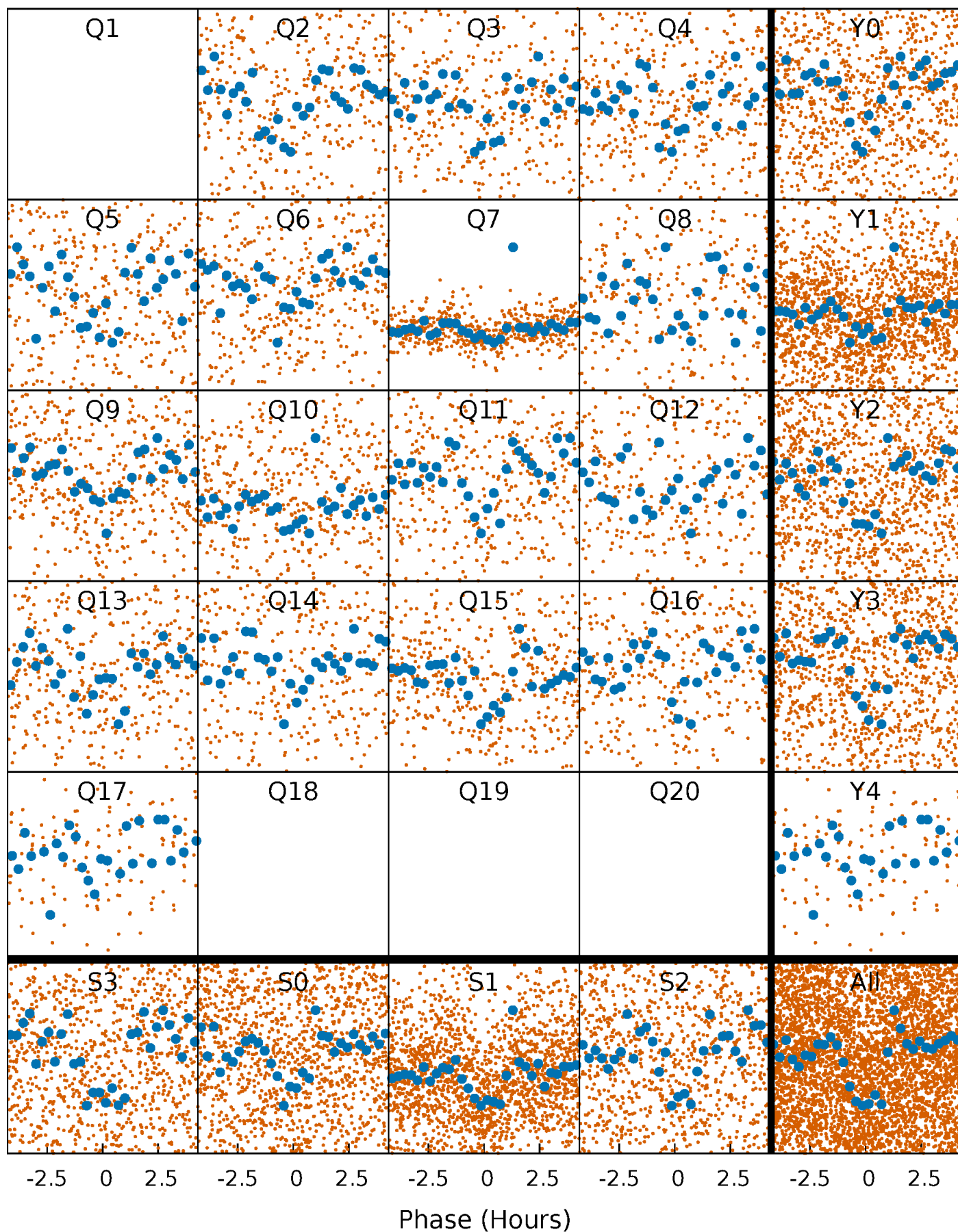


Non-Whitened Vs. Whitened Light Curve



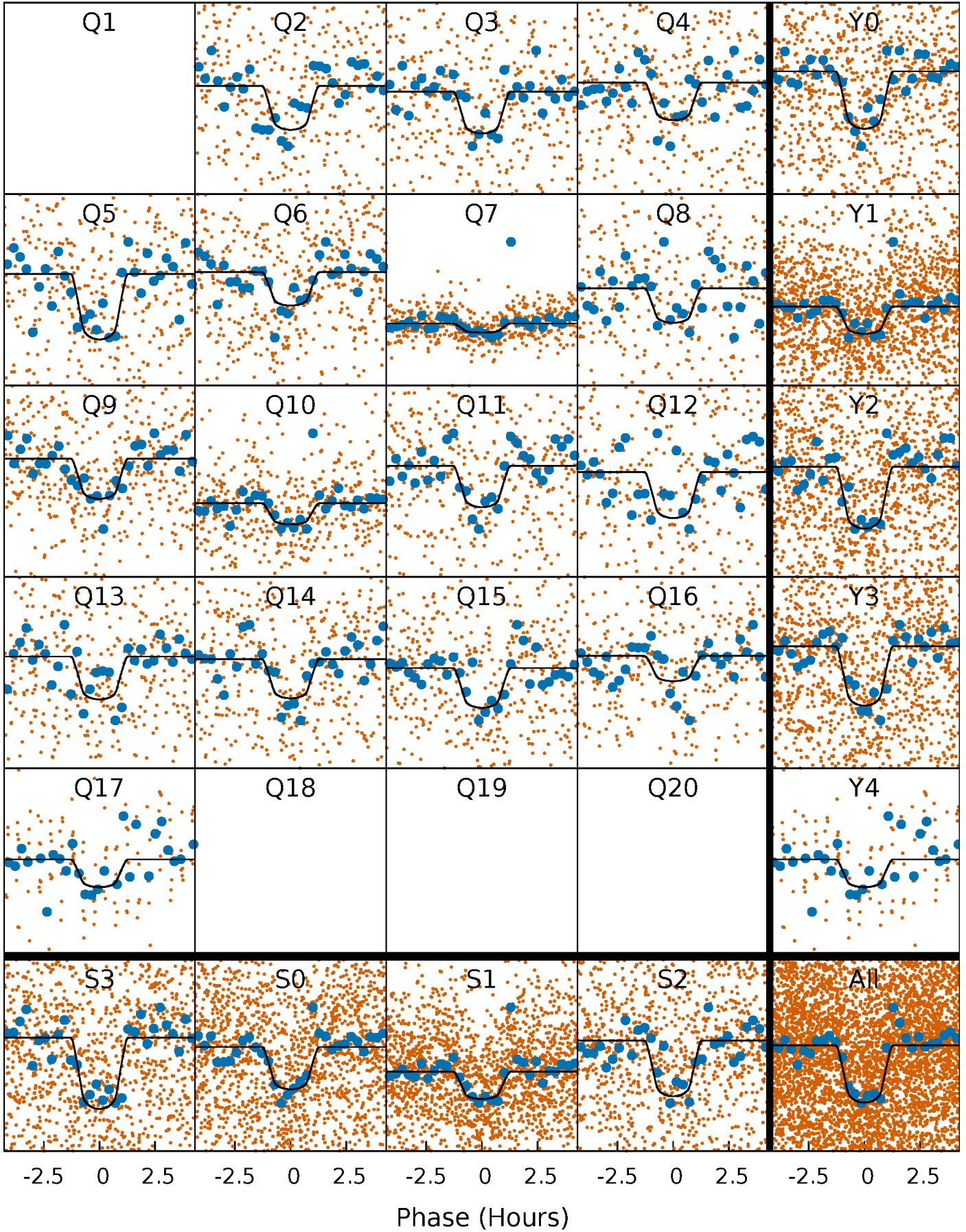
PDC Quarter-Phased Transit Curves

TCE 012164564-01 P= 3.351792 Days $T_0=131.655580$ (BKJD)



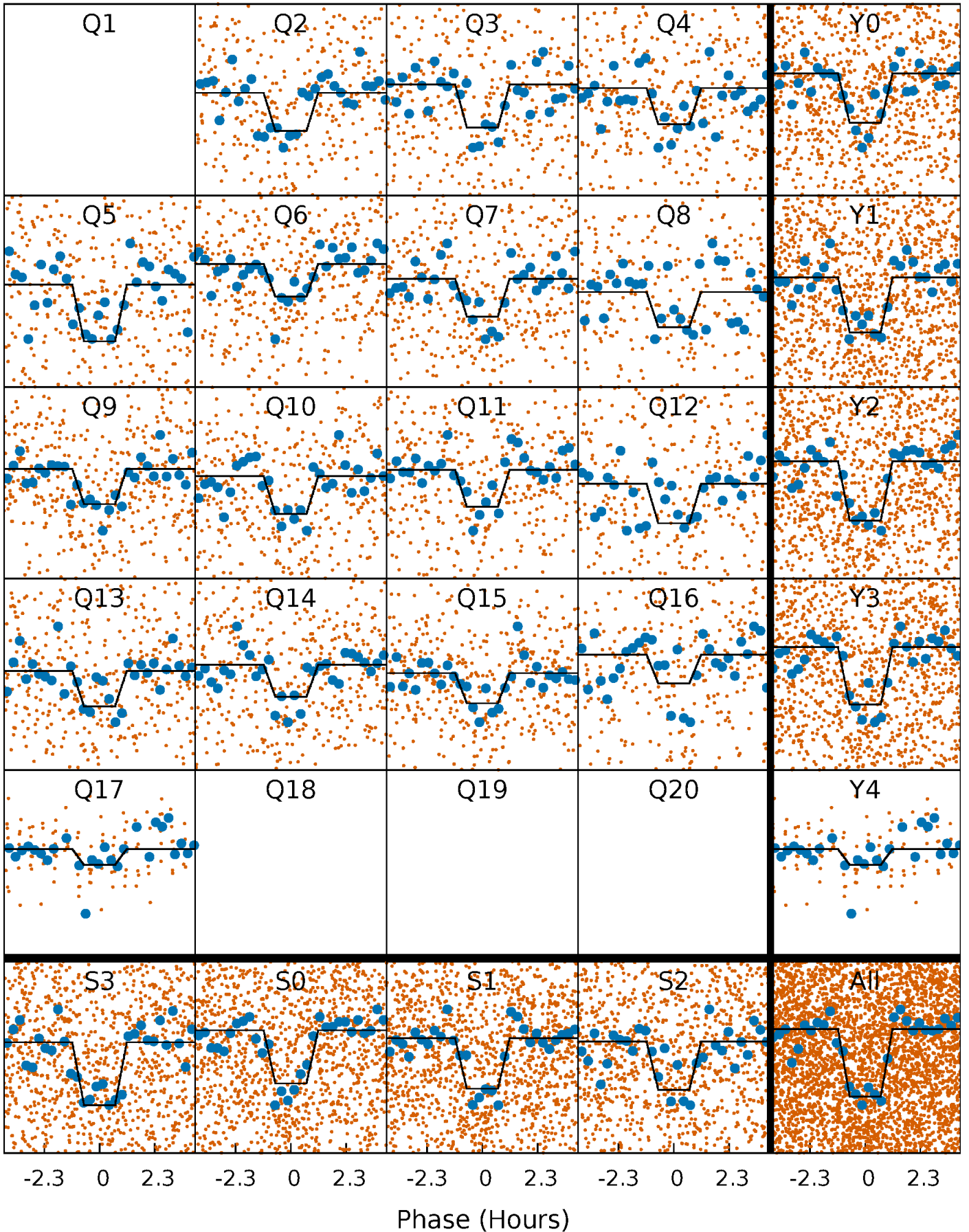
DV Quarter-Phased Transit Curves

TCE 012164564-01 P= 3.351792 Days $T_0=131.655580$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

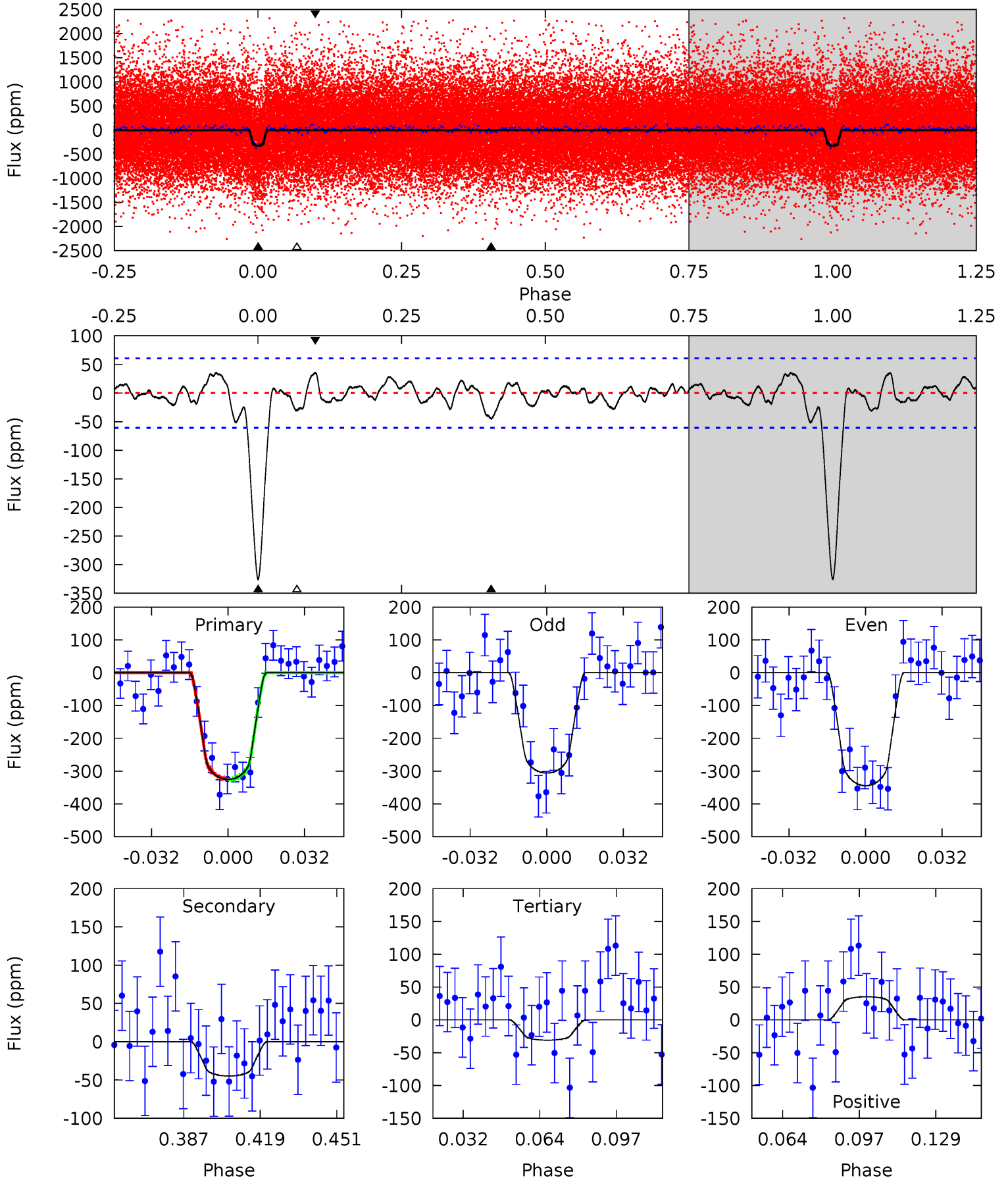
TCE 012164564-01 P= 3.351820 Days $T_0=131.650883$ (BKJD)



DV Model-Shift Uniqueness Test

012164564-01, P = 3.351792 Days, E = 131.655580 Days

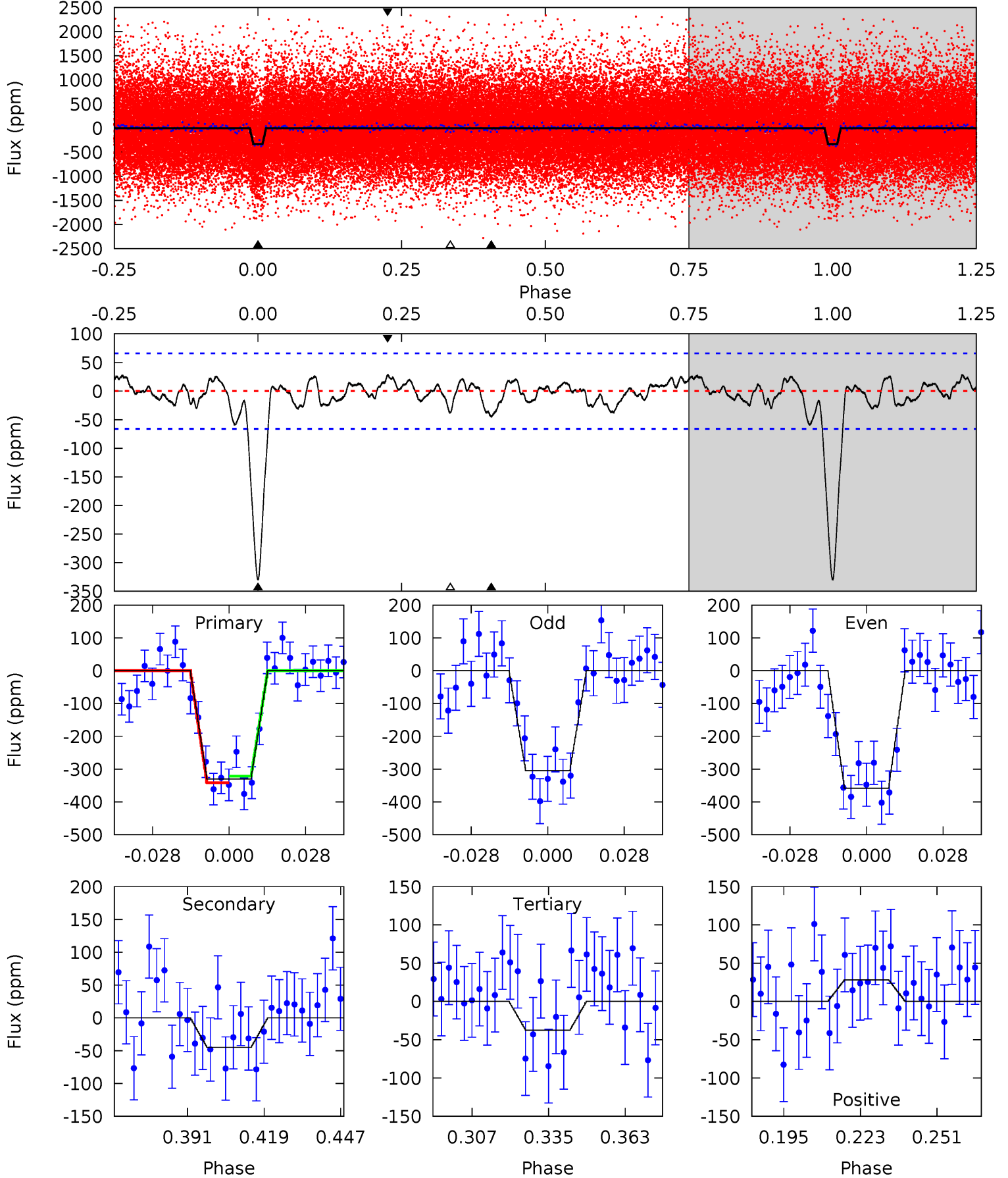
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.7	3.54	2.45	2.79	4.80	2.14	1.17	23.3	22.9	1.09	0.75	1.52	0.97	0.10	0.10



Alt Model-Shift Uniqueness Test

012164564-01, P = 3.351820 Days, E = 131.650883 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.2	3.29	2.76	2.06	4.83	2.20	1.21	21.4	22.1	0.53	1.23	1.95	0.94	0.08	0.72



Stellar Parameters For KIC 012164564

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6198^{+175}_{-218}	$4.464^{+0.052}_{-0.208}$	$-0.160^{+0.250}_{-0.350}$	$1.005^{+0.326}_{-0.102}$	$1.072^{+0.144}_{-0.144}$	$1.489^{+0.402}_{-0.758}$
	+3%/-4%	+1%/-5%	+156%/-219%	+32%/-10%	+13%/-13%	+27%/-51%
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 012164564-01 / KOI 2780.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-45 ± 13	$2.29^{+0.78}_{-0.64}$	1851^{+143}_{-92}	3901^{+586}_{-398}	$9.095^{+9.742}_{-4.180}$
Alt.	-45 ± 14	$2.06^{+0.76}_{-0.65}$	1850^{+135}_{-97}	4037^{+669}_{-463}	11^{+13}_{-6}

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

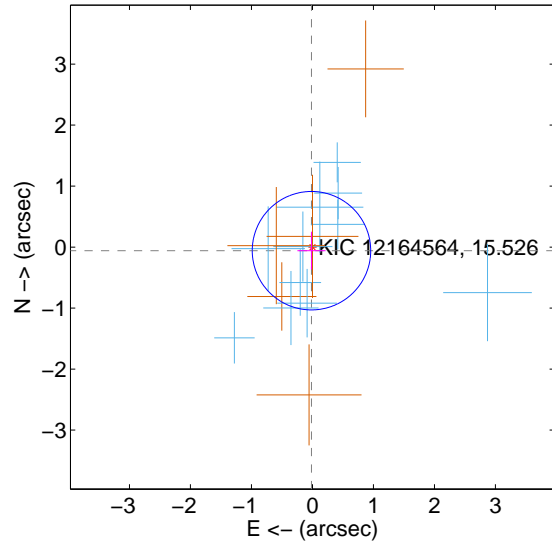
Supplemental centroid analysis for 012164564-01. Kepler magnitude: 15.53. Transit SNR 19.67

There are 11 quarters with good PRF difference image offsets

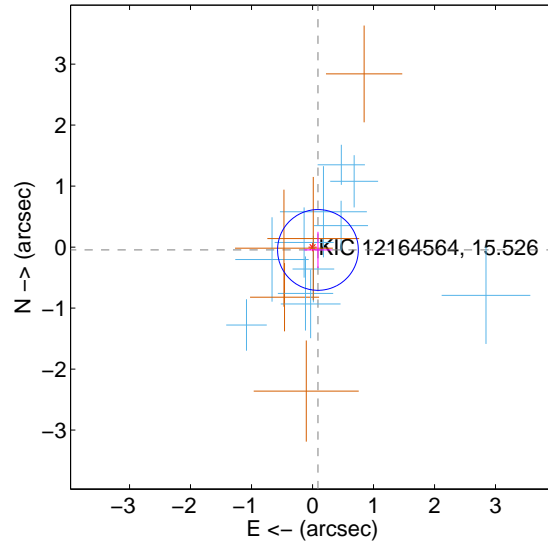
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.061 ± 0.324	0.19	0.016 ± 0.231	-0.059 ± 0.311
PRF-fit source offset from KIC position	0.100 ± 0.221	0.46	-0.089 ± 0.227	-0.047 ± 0.297
photometric centroid source offset	0.91 ± 0.80	1.15	-0.86 ± 0.80	-0.31 ± 0.81

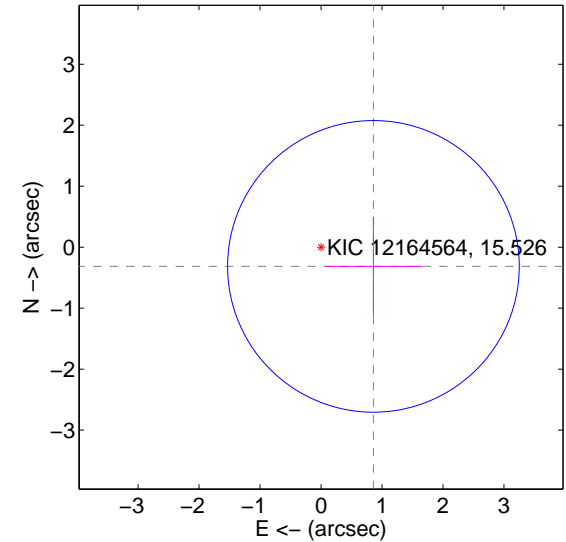
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

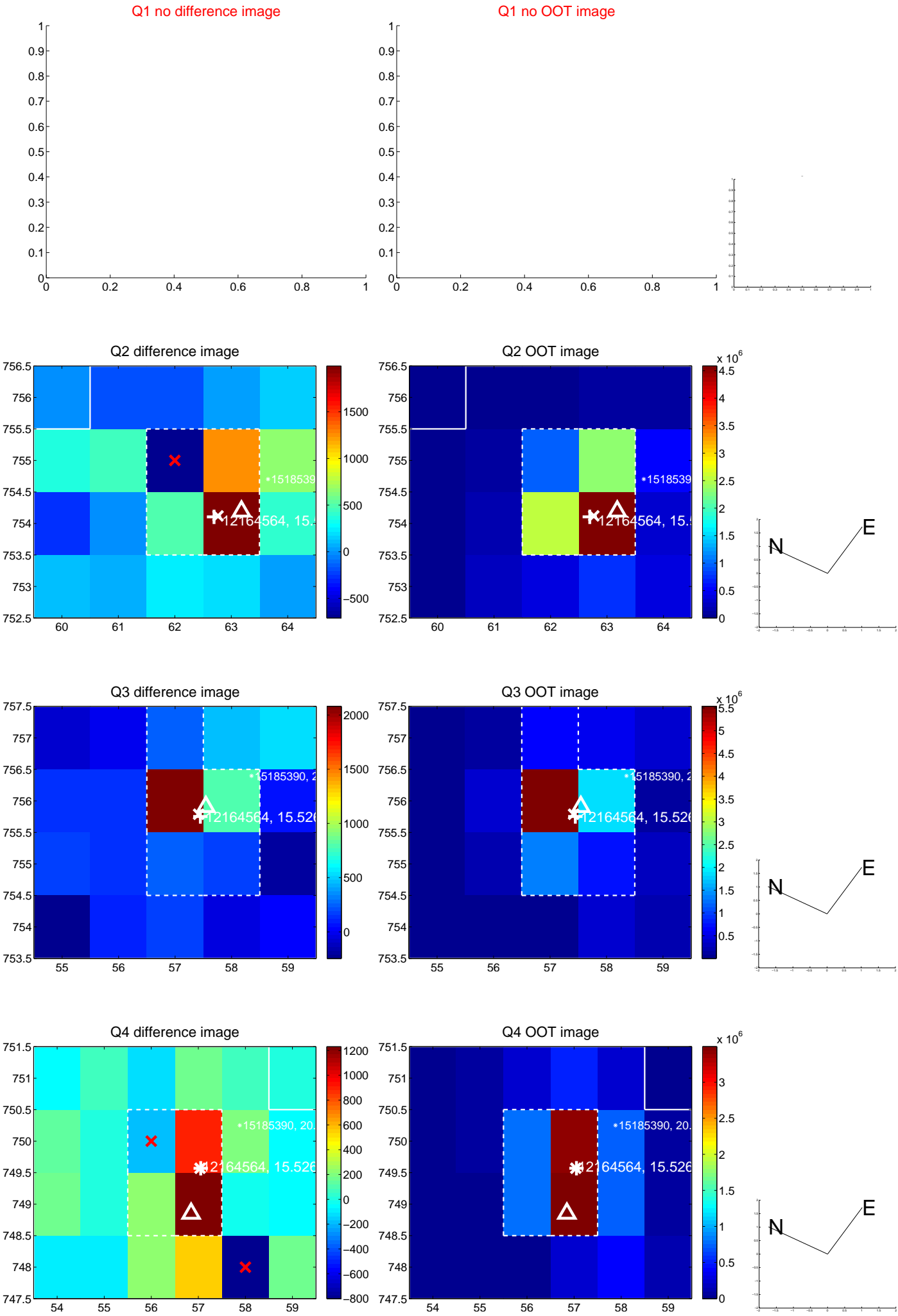


offset from photometric centroids

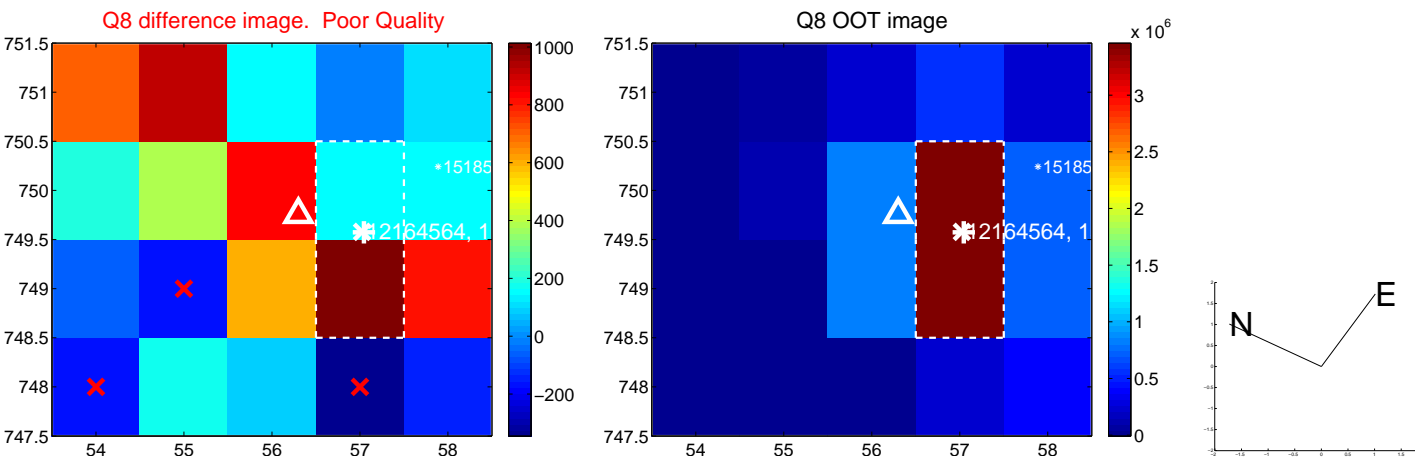
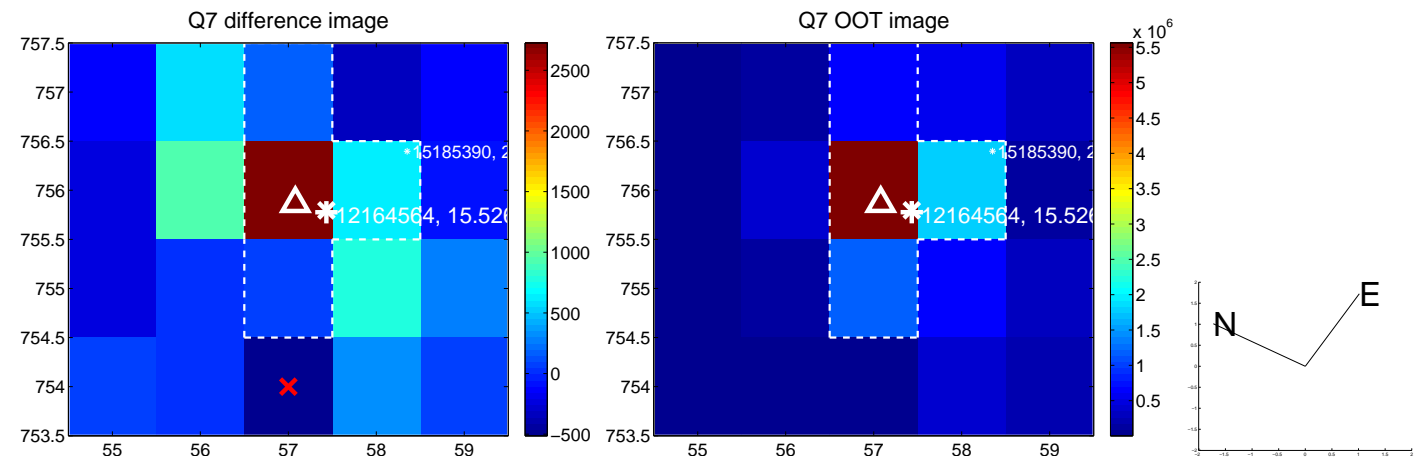
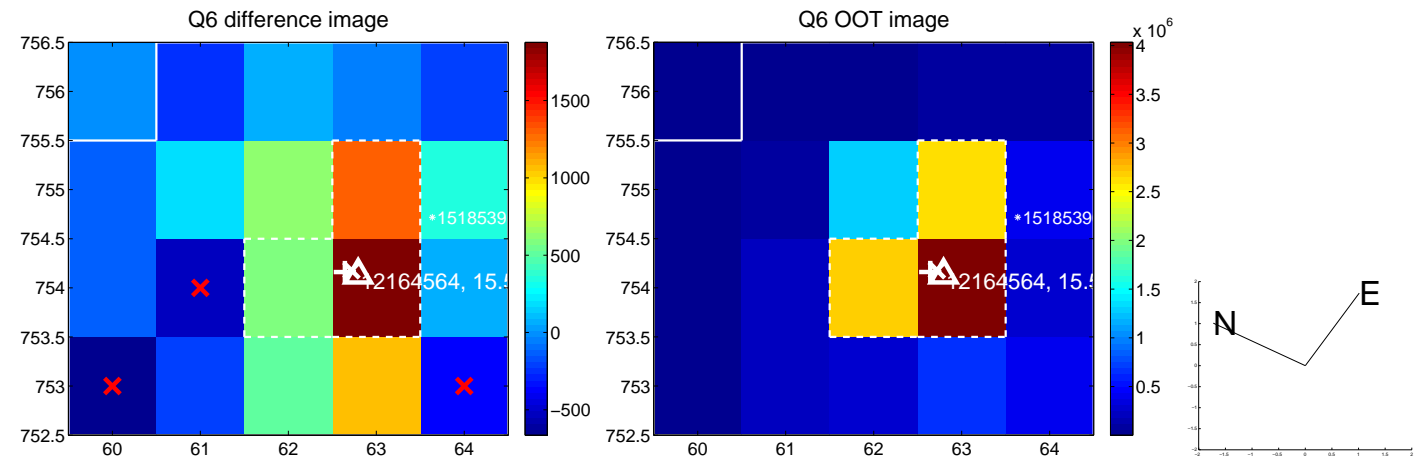
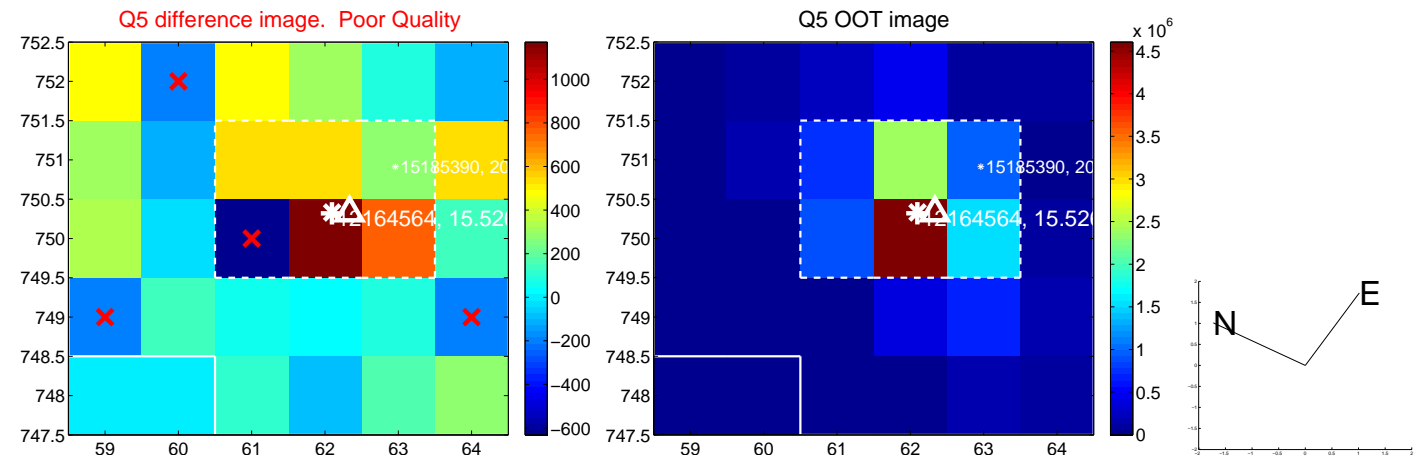


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

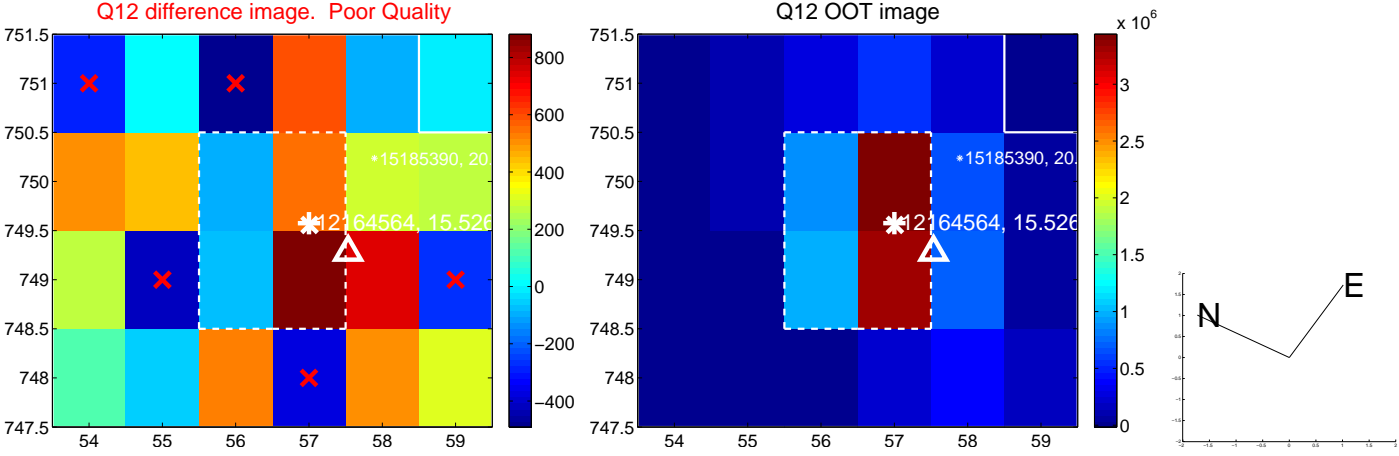
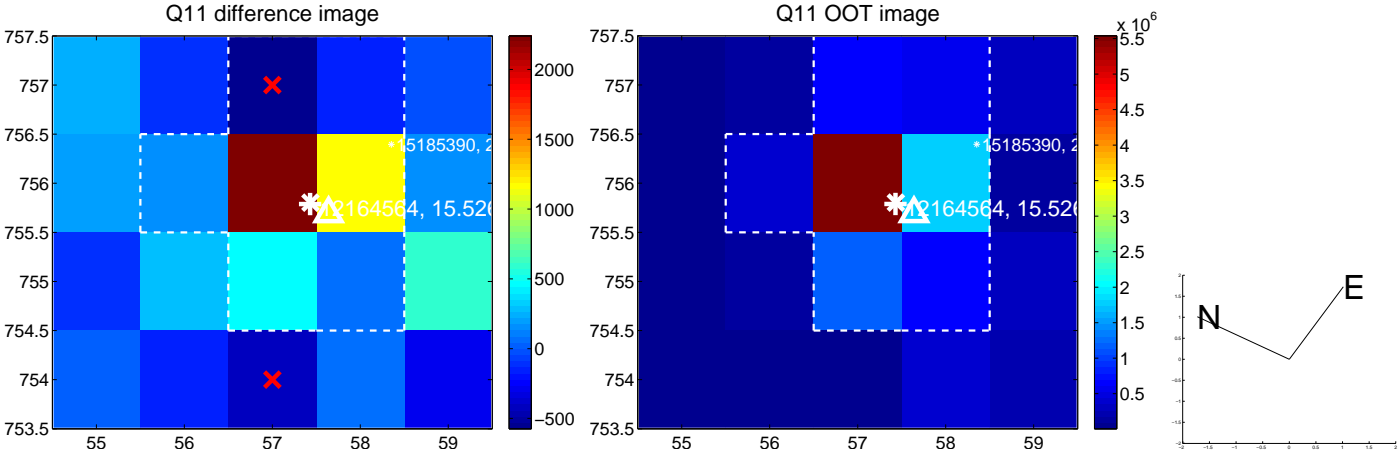
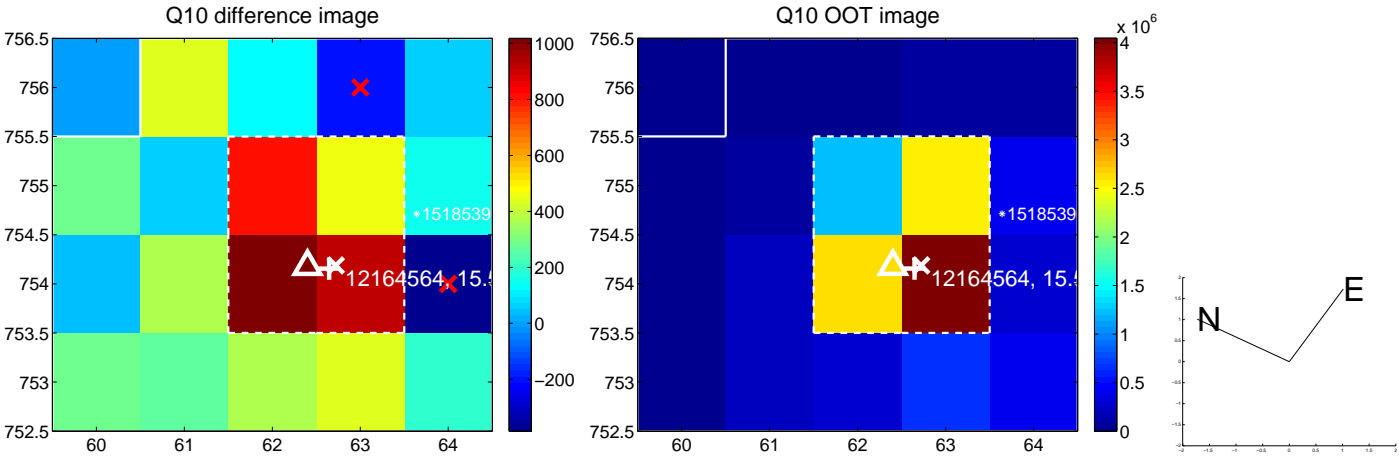
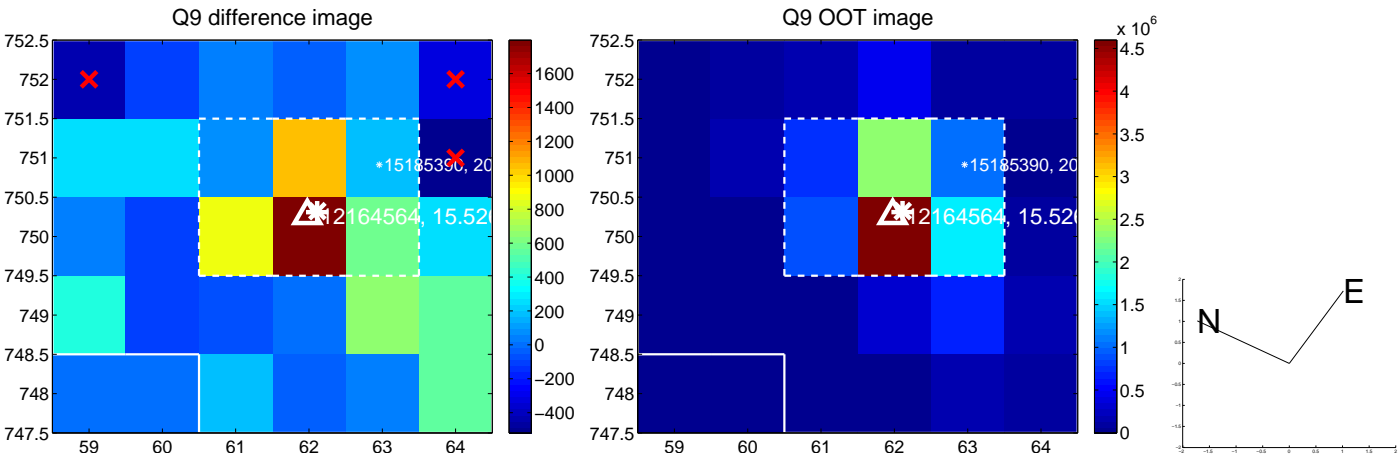
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



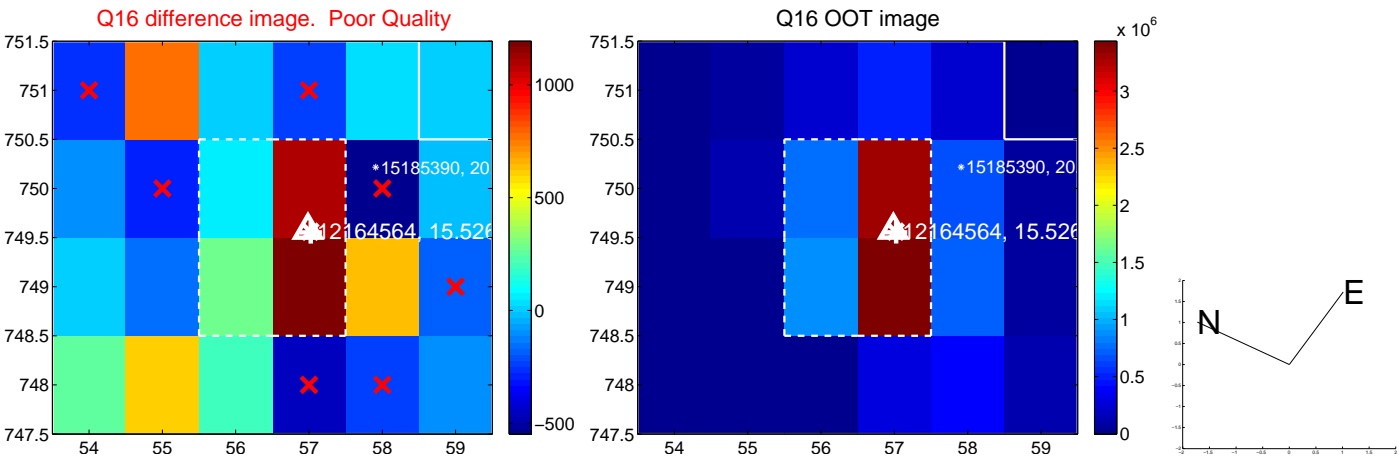
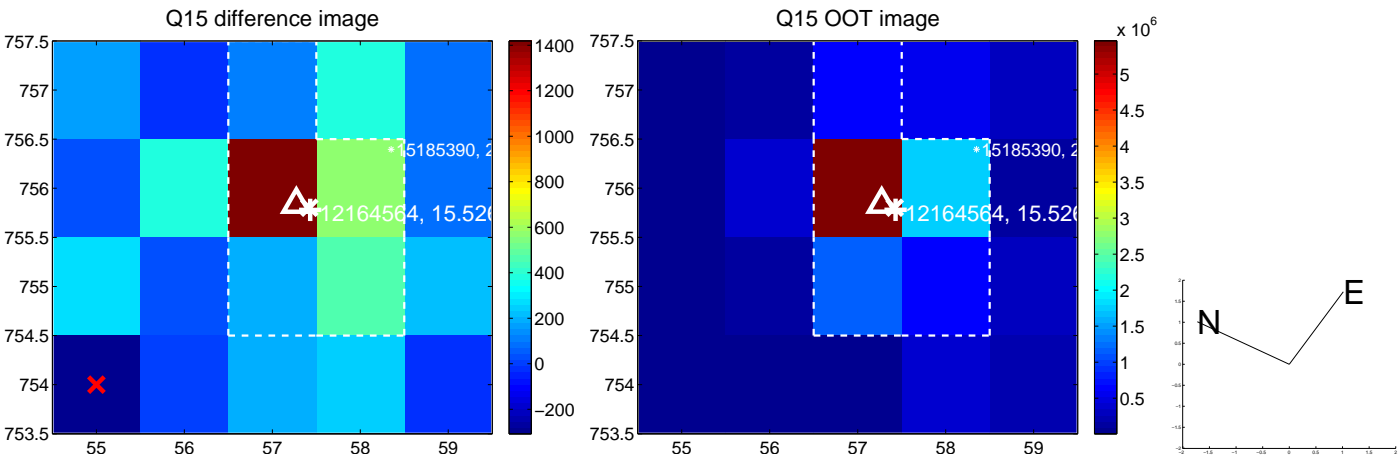
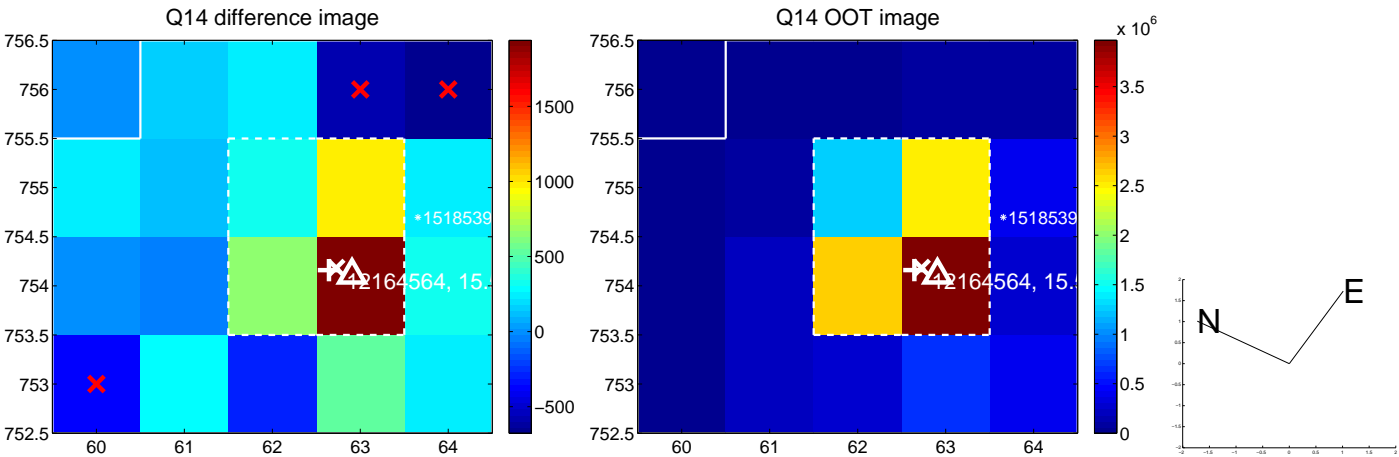
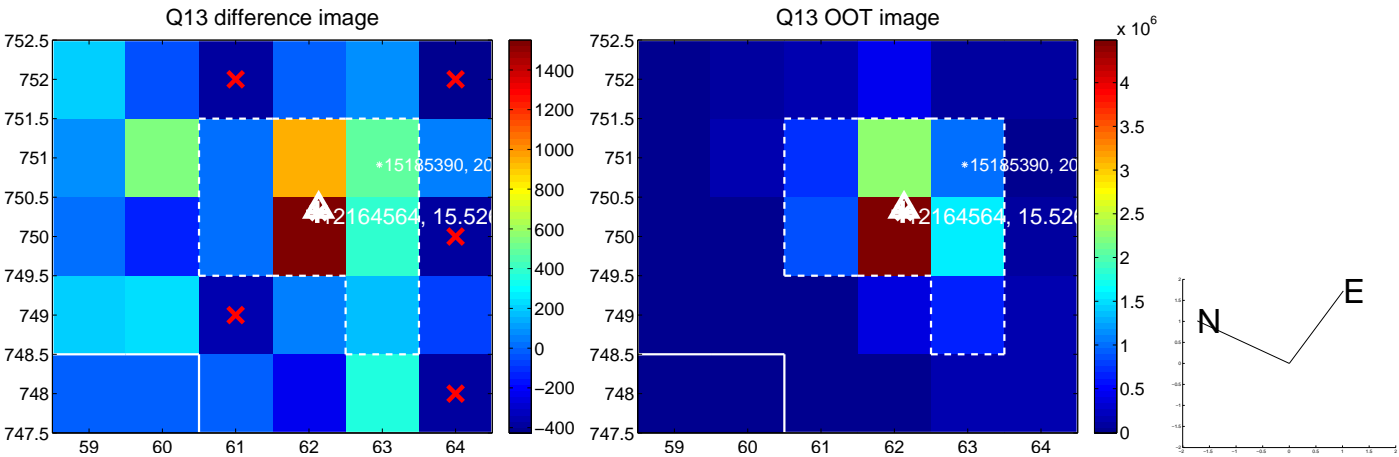
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



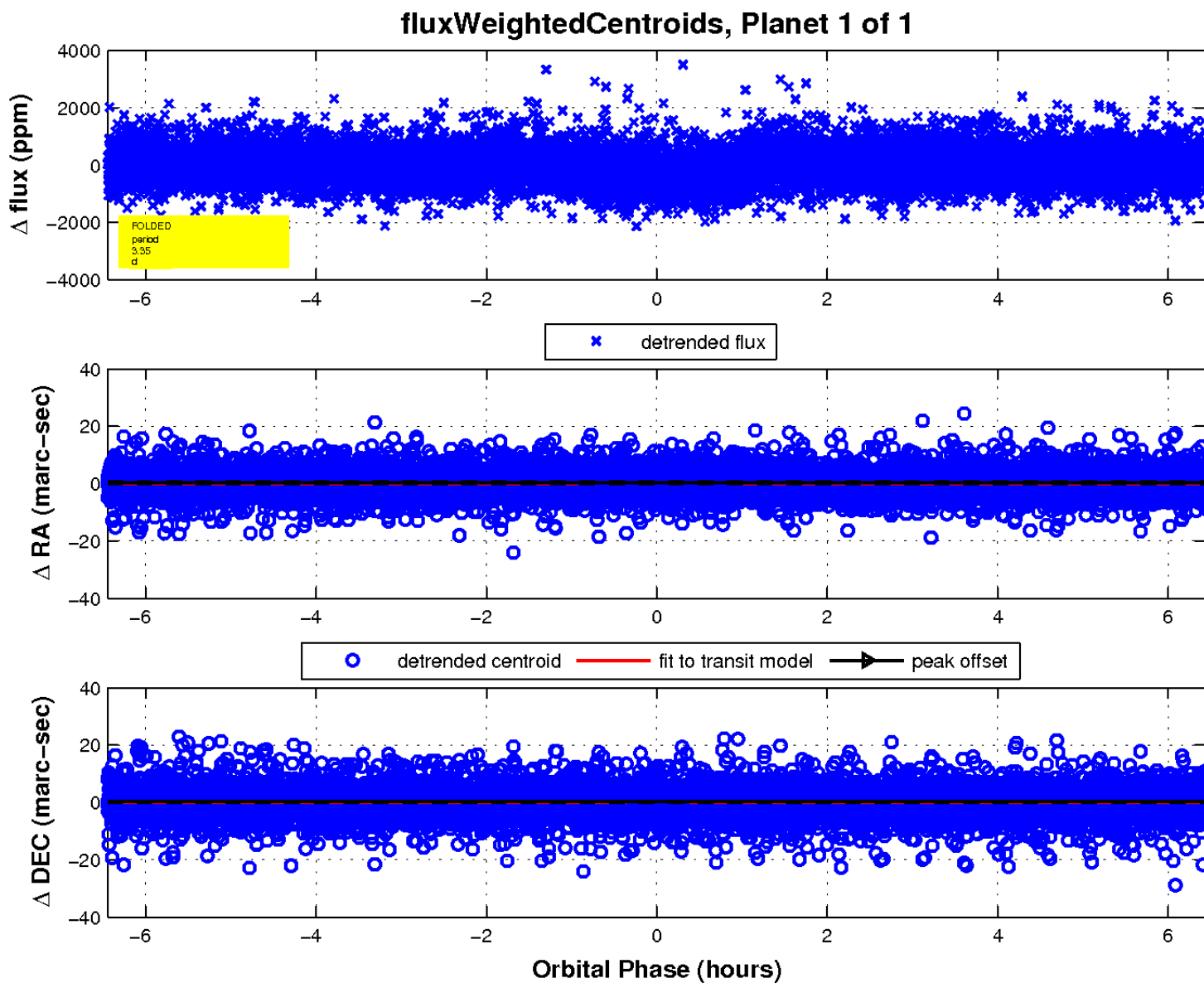
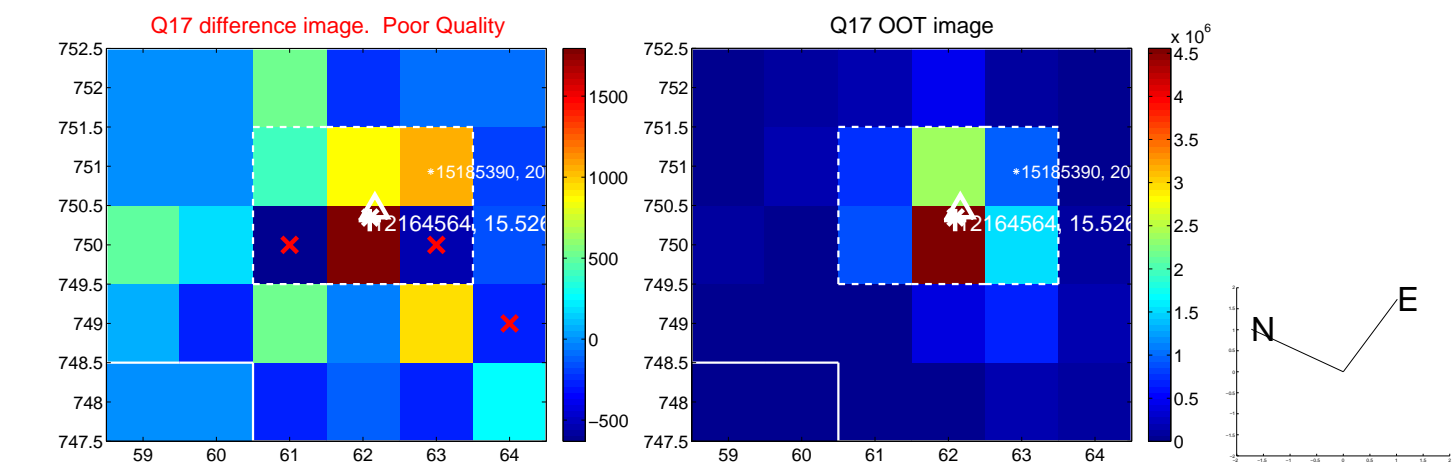
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

