

KIC 010724569

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R _★ (R _☉)	T _★ (K)	R _p (R _⊕)	S _p (S _⊕)
010724569-01	OBS	5823.01	0.745064	131.838861	63.0	3.173	14.2	12.1	0.75	5325	0.71	1772.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010724569-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_ALT—CENT_RESOLVED_OFFSET—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 010724569-01

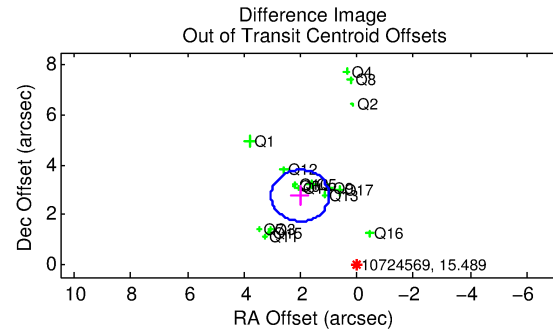
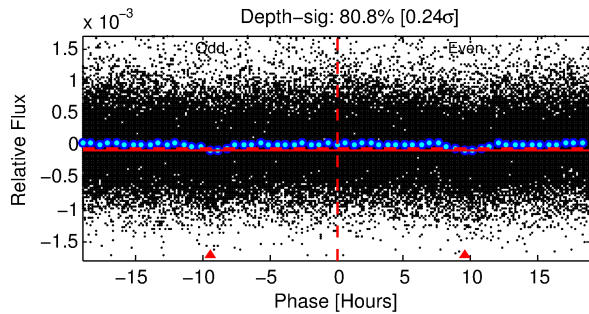
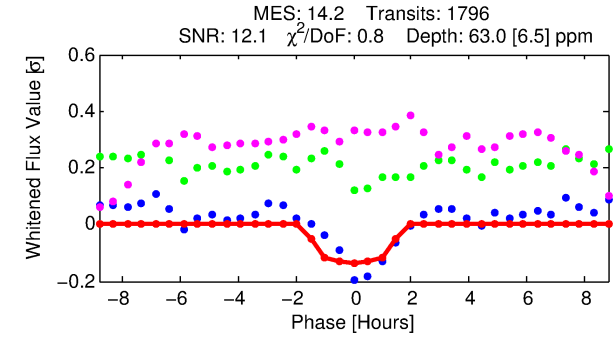
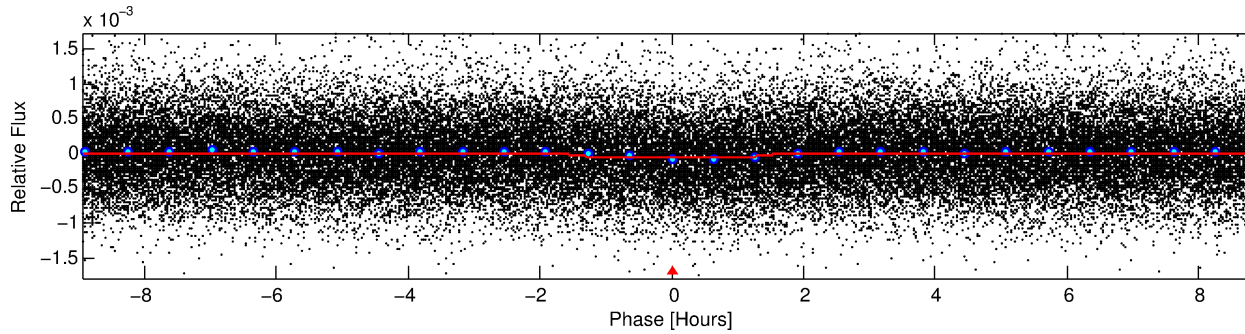
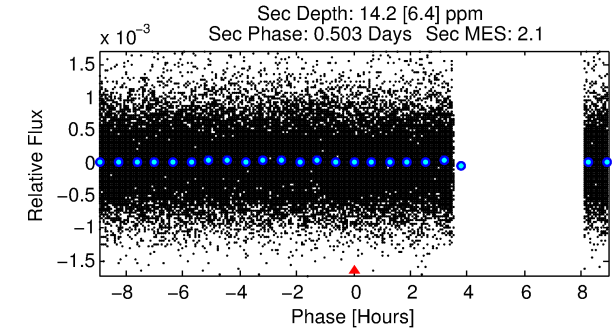
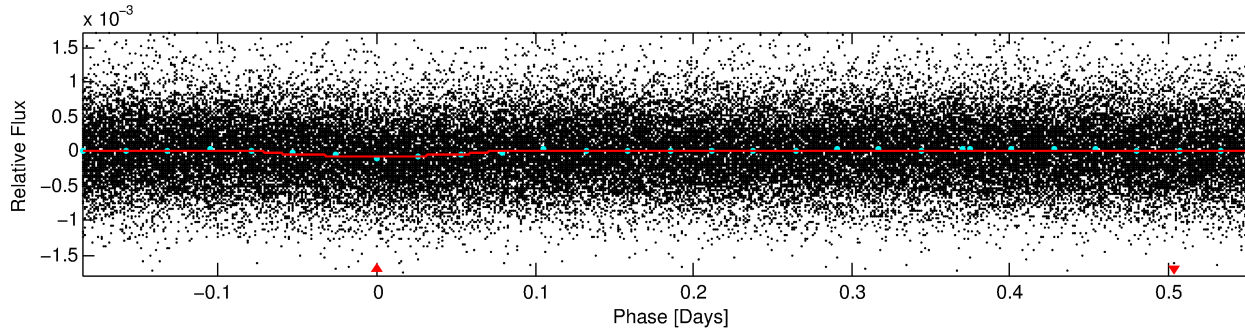
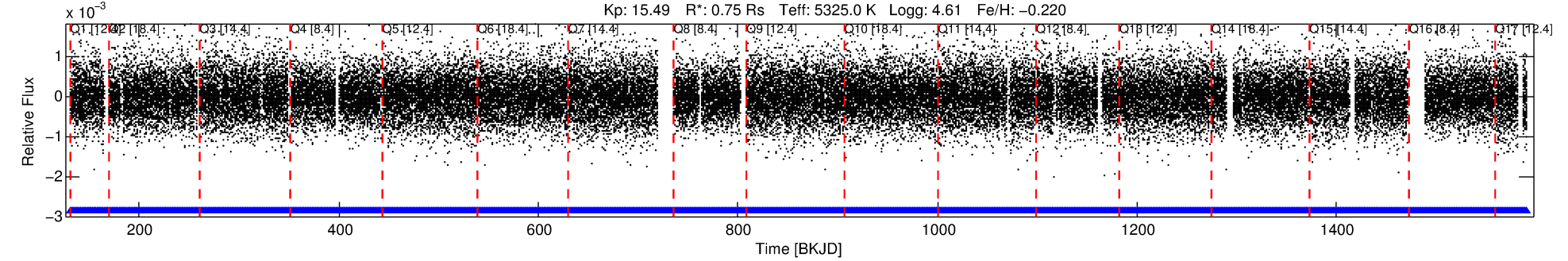
TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (″)	ΔRow	ΔCol	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ _P	σ _T
010724569-01	10724569	010724533-pri	10724533	1:1	112.7	27	10	9.04	15.49	2015.90	Direct-PRF	0	3.91	1.33

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ 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 σ_P < 5.0 and σ_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: 10724569 Candidate: 1 of 1 Period: 0.745 d
KOI: K05823 Corr: No Ephemeris Match

Kp: 15.49 R*: 0.75 Rs Teff: 5325.0 K Logg: 4.61 Fe/H: -0.220



DV Fit Results:

Period = 0.74506 [0.00001] d
Epoch = 131.8389 [0.0032] BKJD
Rp/R* = 0.0087 [0.0059]
a/R* = 1.25 [1.33]
b = 0.90 [0.65]
Seff = 1772.65 [402.33]
Teq = 1655 [94] K
Rp = 0.72 [0.50] Re
a = 0.0151 [0.0020] AU
Ag = 3.49 [5.01] [0.50σ]
Teffp = 3497 [1246] K [1.47σ]

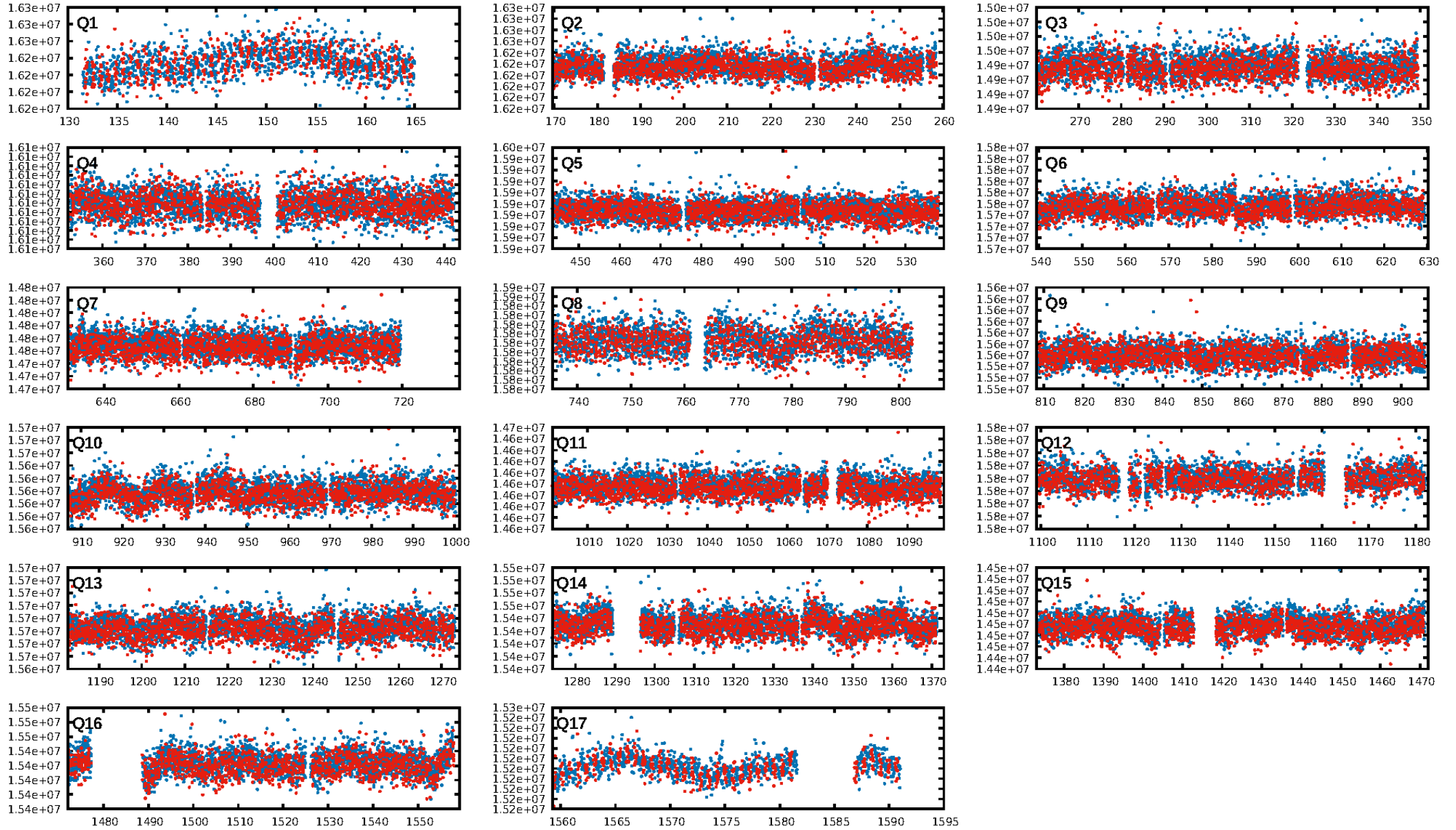
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.54e-44
RollingBand-fgt: 1.00 [1715/1715]
GhostDiagnostic-chr: -0.1477
Centroid-sig: 0.0%
Centroid-so: 3.712 arcsec [3.12σ]
OotOffset-rm: 3.416 arcsec [9.95σ]
KicOffset-rm: 3.643 arcsec [10.53σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.00 [0/17]
DiffImageOverlap-fno: 1.00 [17/17]

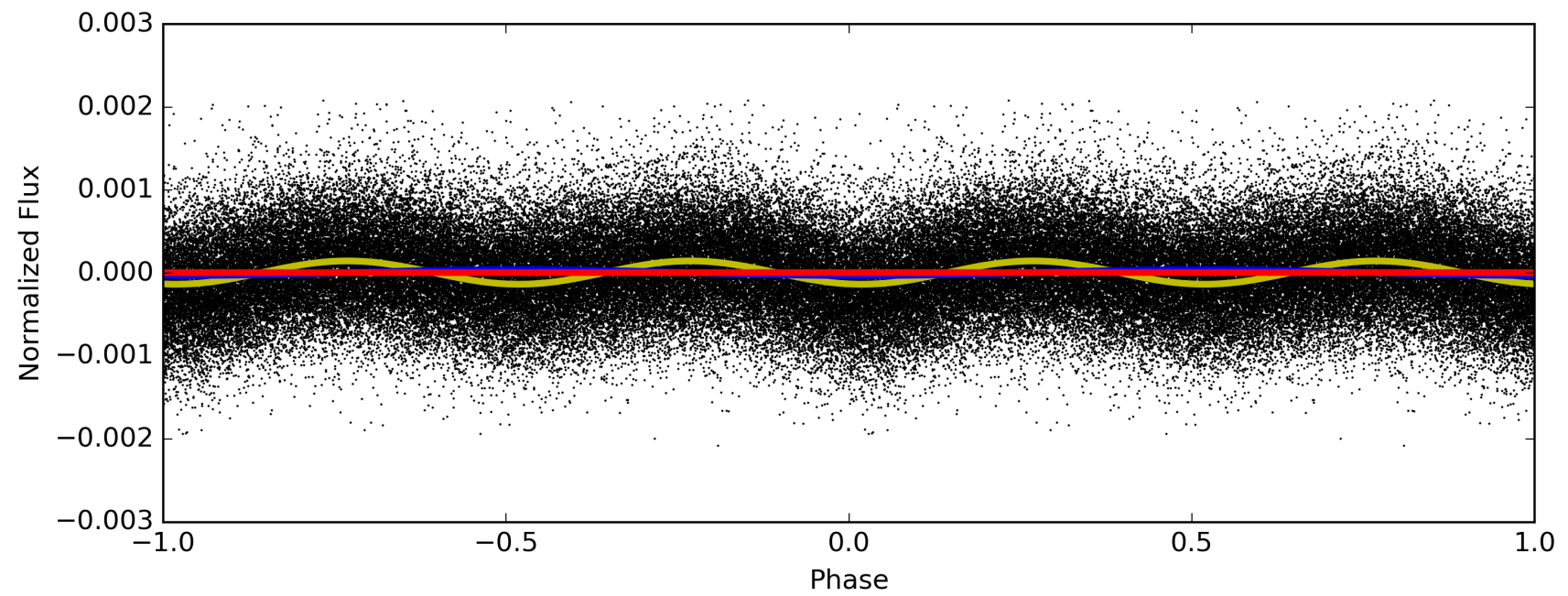
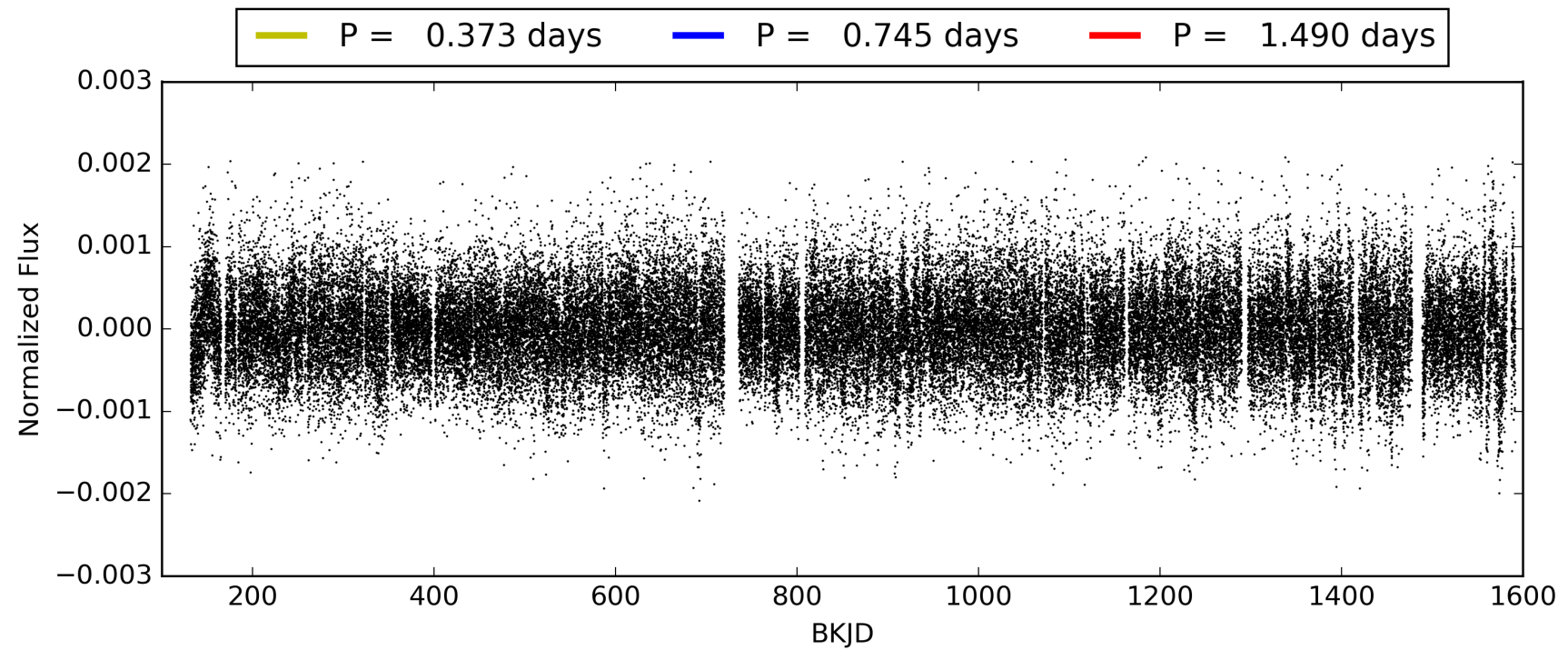
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 03:39:53 Z

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

TCE 010724569-01, PDC Light Curves

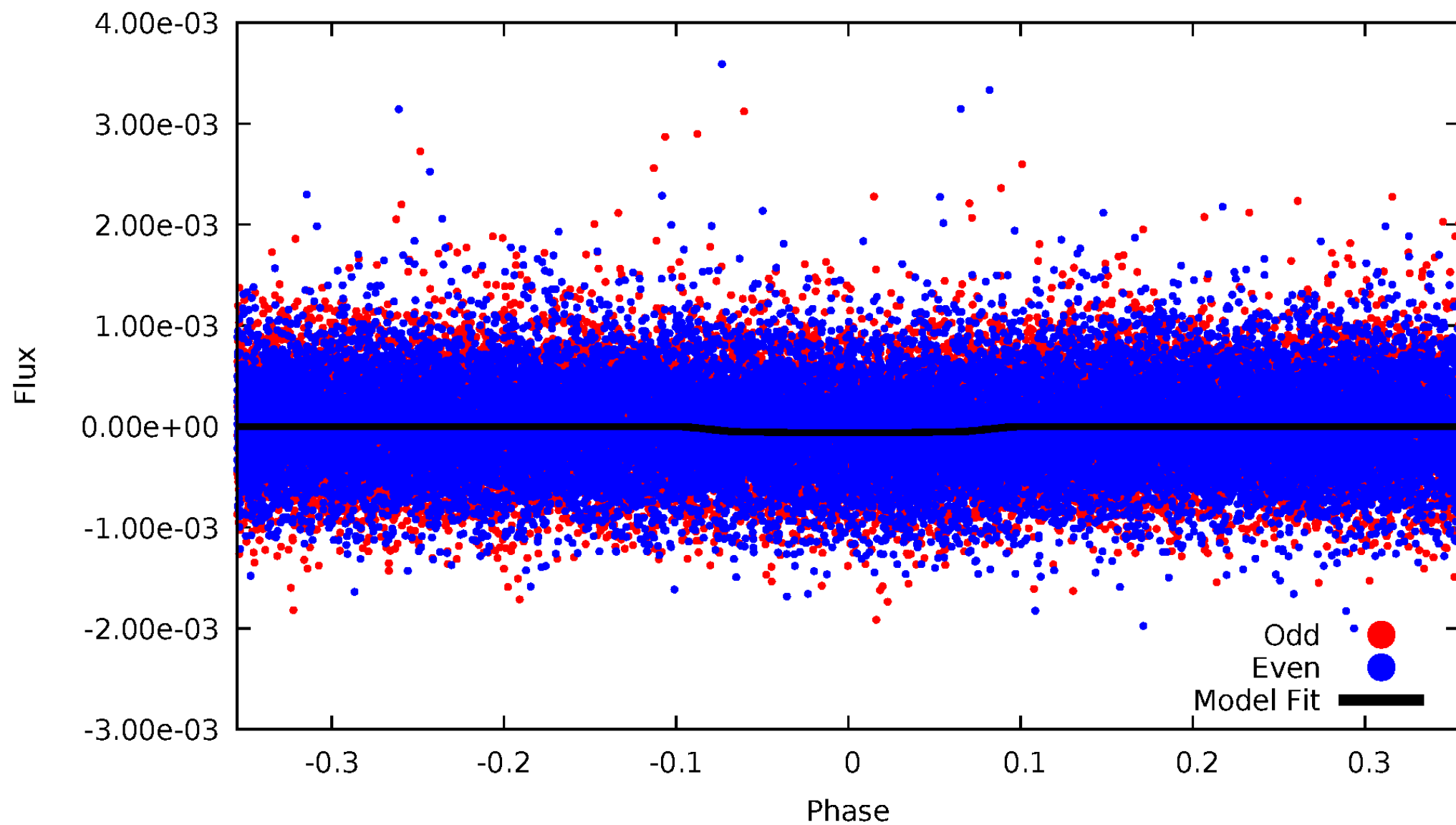


TCE 010724569-01



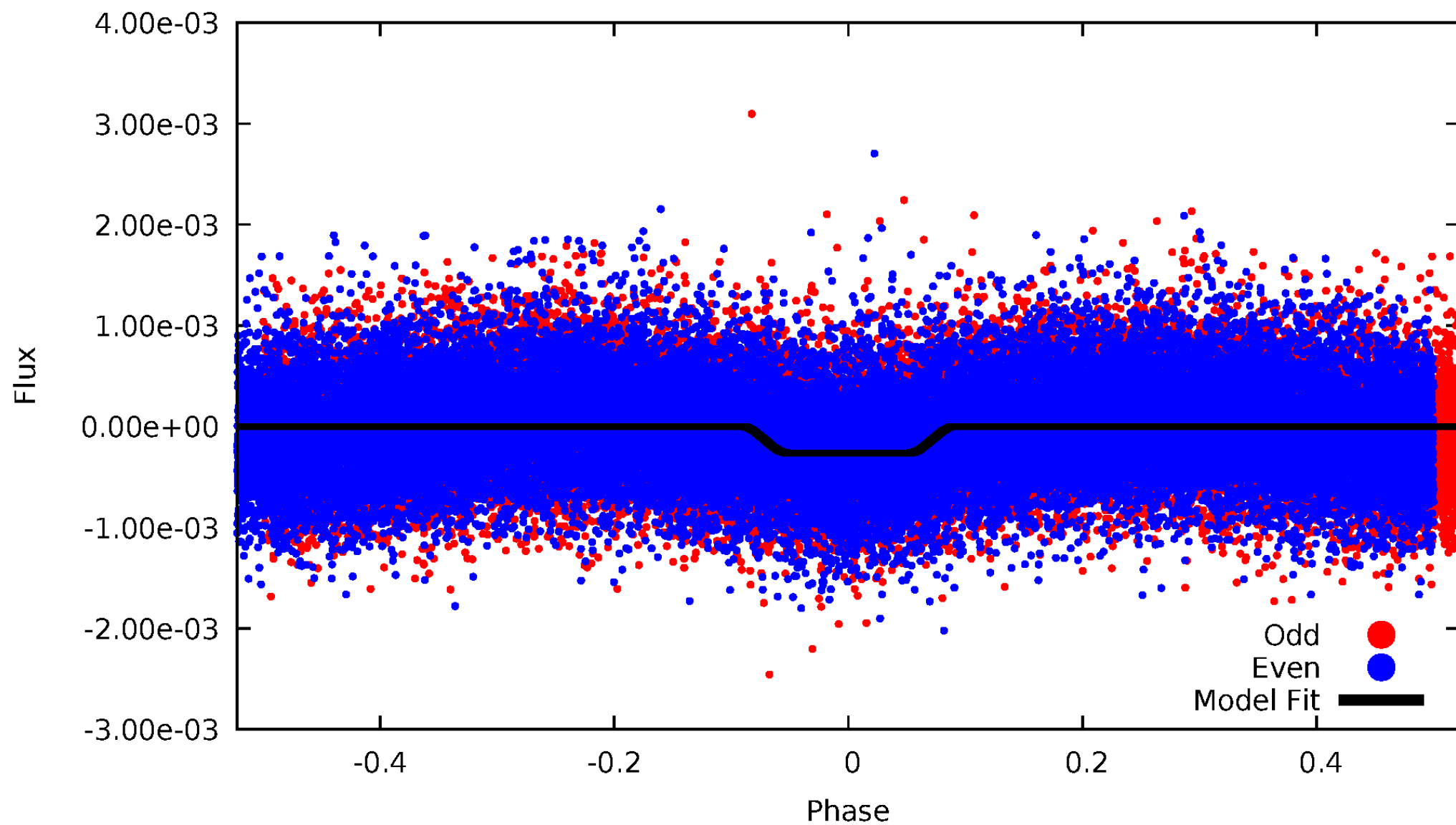
DV Odd/Even

TCE 010724569-01



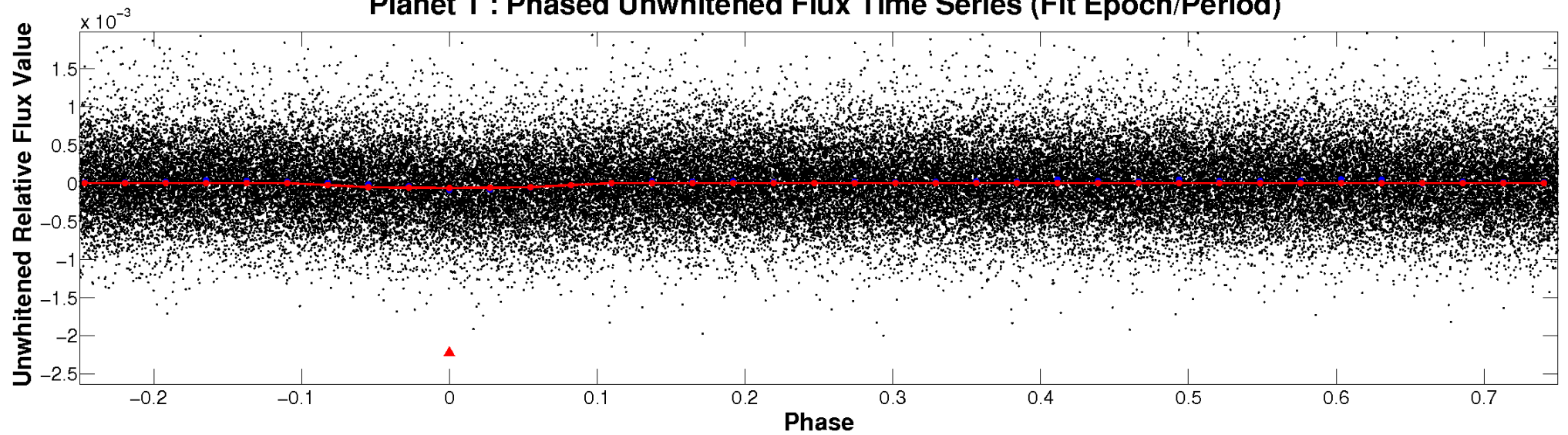
ALT Odd/Even

TCE 010724569-01

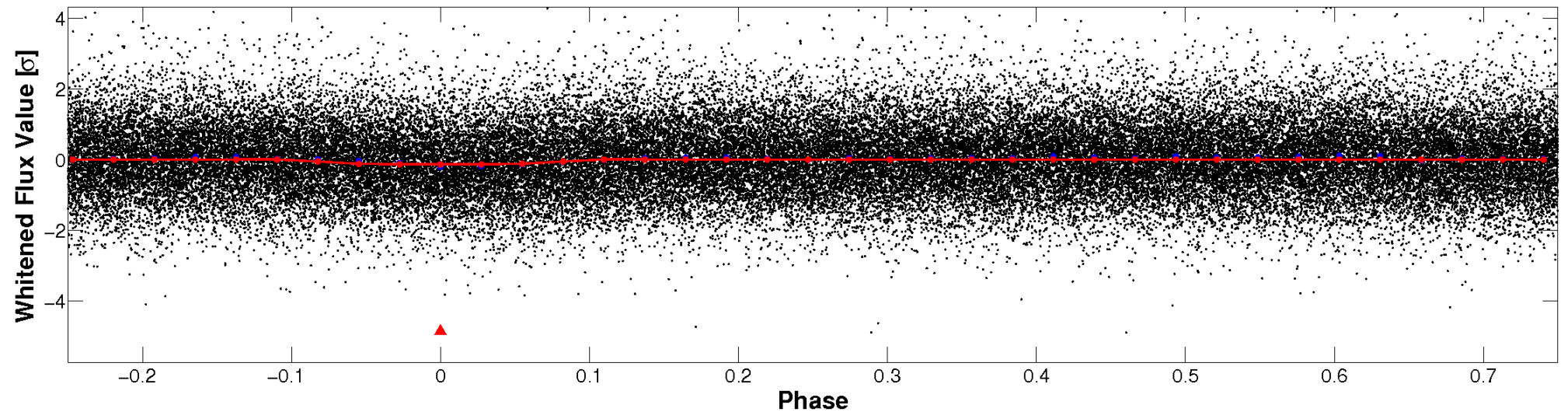


Non-Whitened Vs. Whitened Light Curve

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

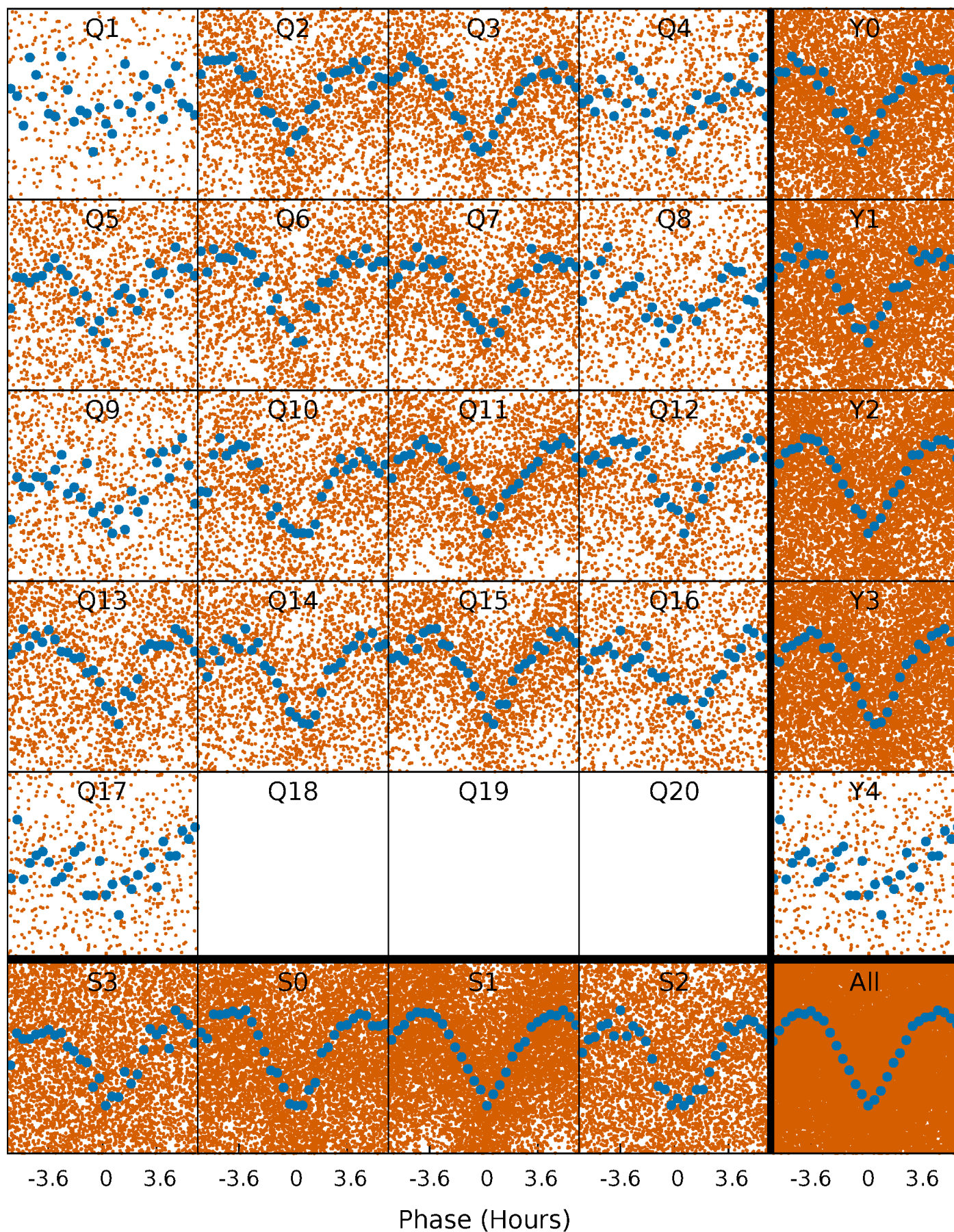


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



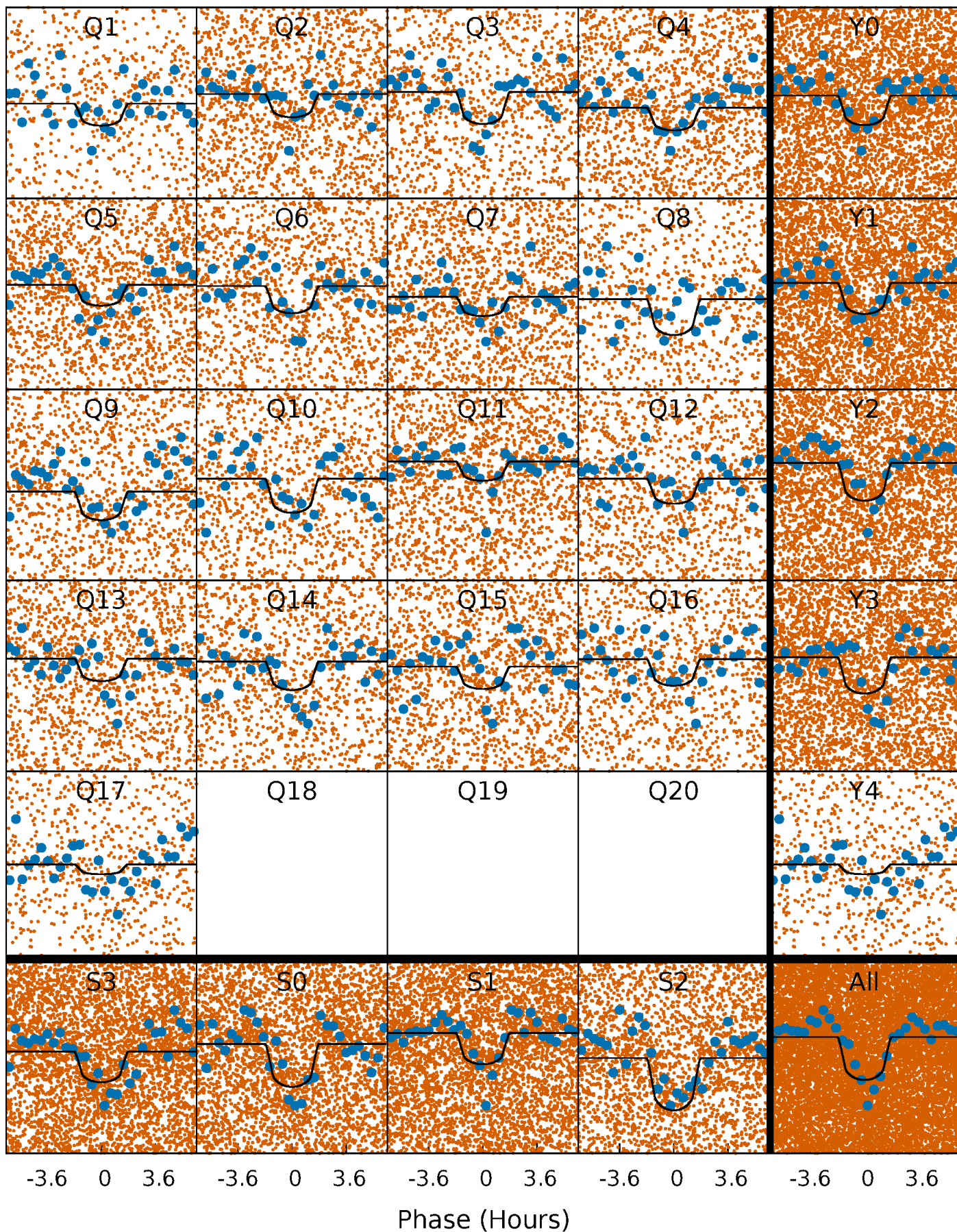
PDC Quarter-Phased Transit Curves

TCE 010724569-01 P= 0.745064 Days $T_0=131.838861$ (BKJD)



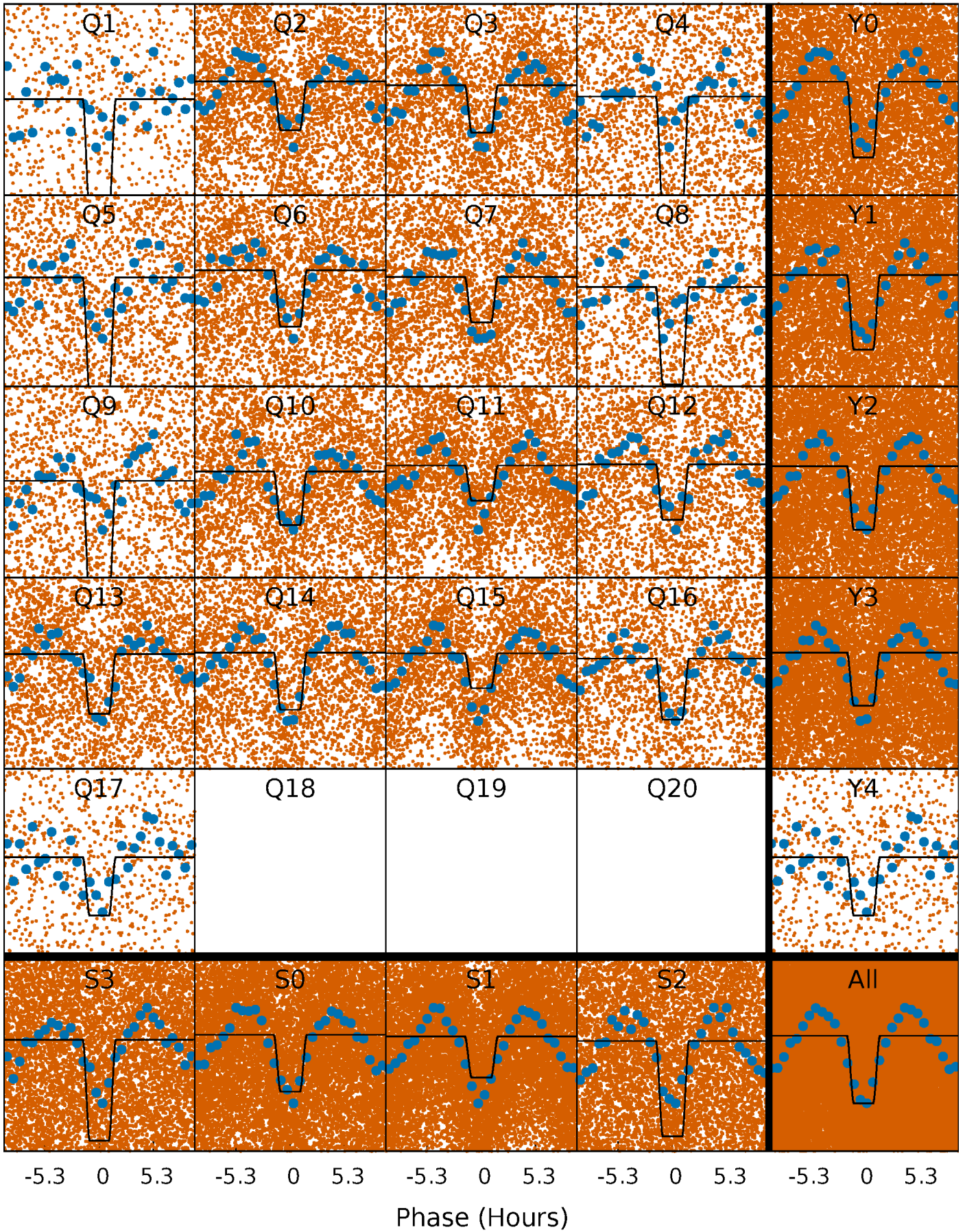
DV Quarter-Phased Transit Curves

TCE 010724569-01 P= 0.745064 Days $T_0=131.838861$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

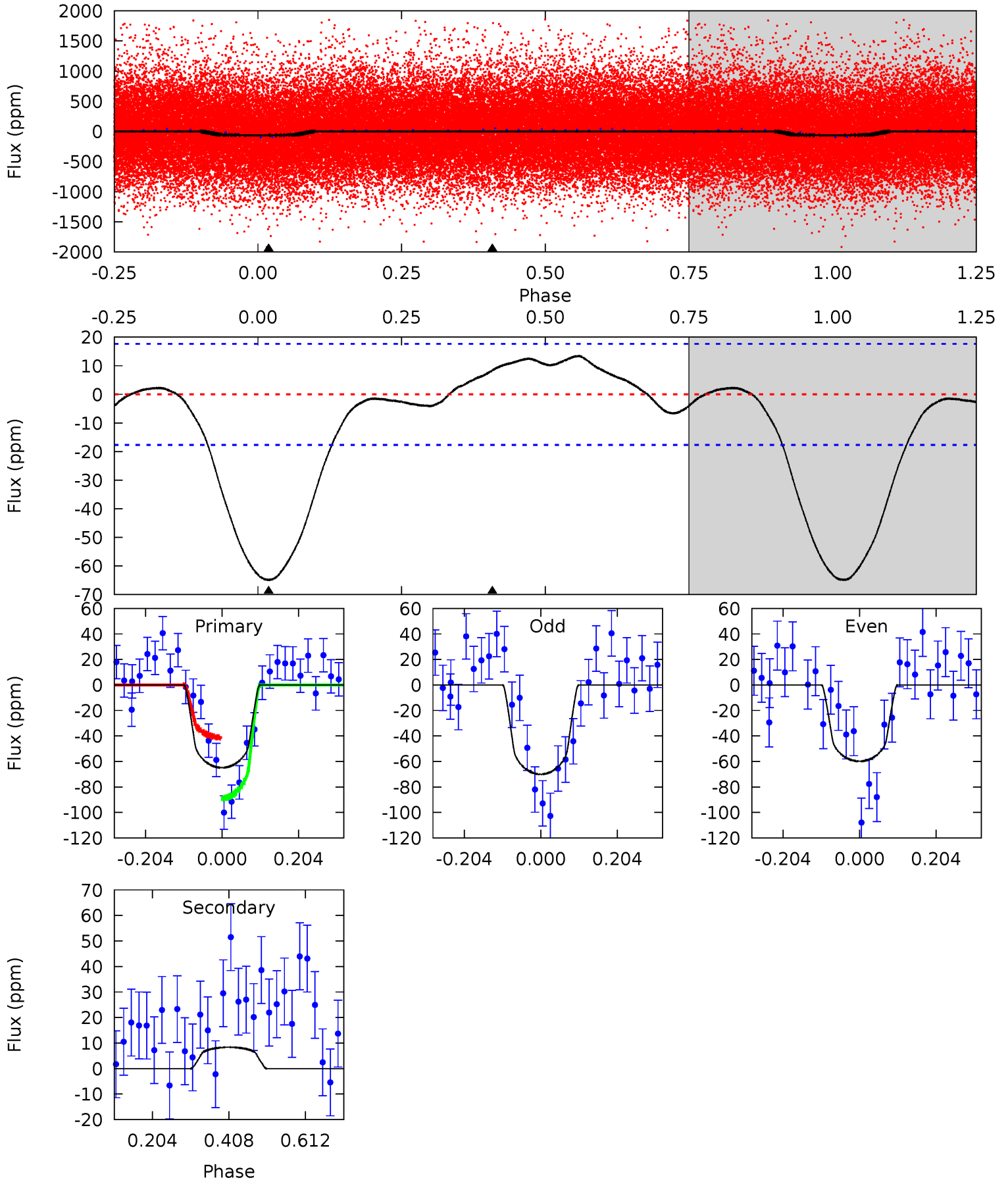
TCE 010724569-01 P= 0.745093 Days $T_0=131.821914$ (BKJD)



DV Model-Shift Uniqueness Test

010724569-01, P = 0.745064 Days, E = 131.093797 Days

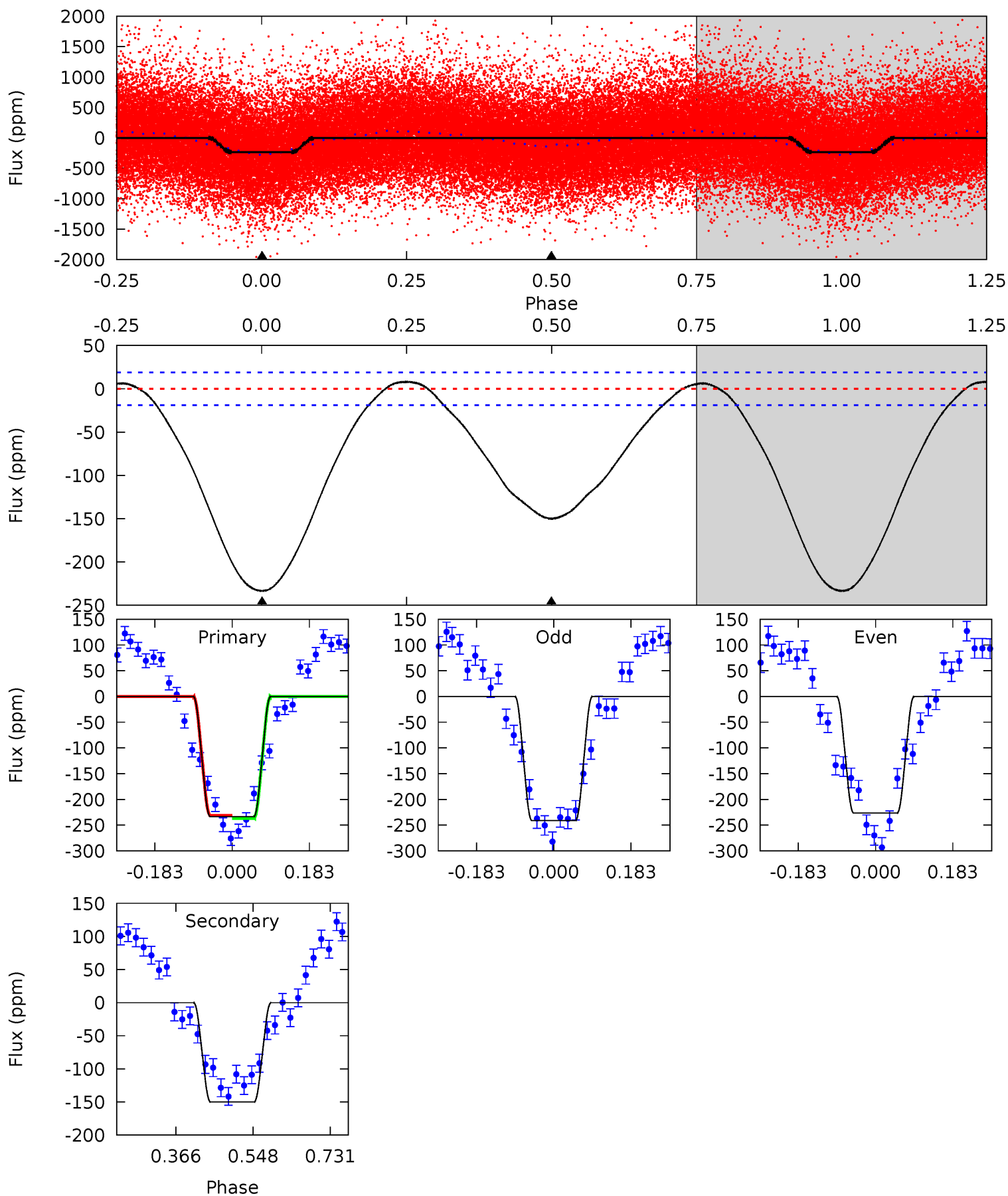
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.2	-2.09	0	0	4.41	1.27	1.02	16.2	16.2	-2.09	-2.09	1.27	1.01	0.17	6.00



Alt Model-Shift Uniqueness Test

010724569-01, P = 0.745093 Days, E = 131.076821 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
54.6	35.1	0	0	4.44	1.33	2.08	54.6	54.6	35.1	35.1	1.73	0.99	0.03	0.73



Stellar Parameters For KIC 010724569

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5325^{+143}_{-159}	$4.607^{+0.032}_{-0.104}$	$-0.220^{+0.300}_{-0.300}$	$0.750^{+0.122}_{-0.057}$	$0.840^{+0.071}_{-0.094}$	$2.803^{+0.477}_{-0.858}$
	+3%/-3%	+1%/-2%	+136%/-136%	+16%/-8%	+8%/-11%	+17%/-31%
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 010724569-01 / KOI 5823.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	8 ± 4	$0.79^{+0.48}_{-0.45}$	2350^{+98}_{-100}	-3505^{+429}_{-1129}	$-1.589^{+1.085}_{-6.848}$
Alt.	-150 ± 4	$1.38^{+0.50}_{-0.44}$	2344^{+95}_{-87}	4676^{+882}_{-530}	$9.771^{+11.654}_{-4.343}$

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

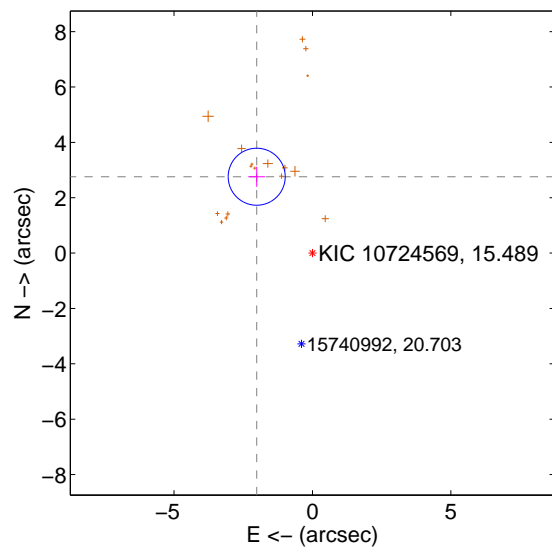
Supplemental centroid analysis for 010724569-01. Kepler magnitude: 15.49. Transit SNR 12.12

There are 0 quarters with good PRF difference image offsets

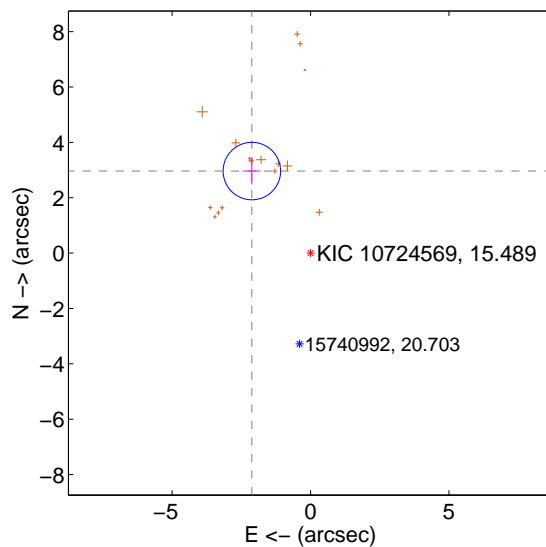
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.416 \pm 0.343	9.95	2.014 \pm 0.308	2.759 \pm 0.361
PRF-fit source offset from KIC position	3.643 \pm 0.346	10.53	2.119 \pm 0.312	2.964 \pm 0.481
photometric centroid source offset	3.71 \pm 1.19	3.12	-2.59 \pm 1.23	2.66 \pm 1.15

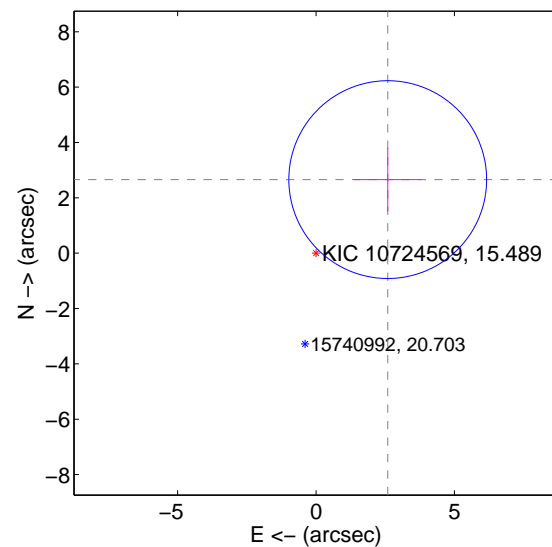
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

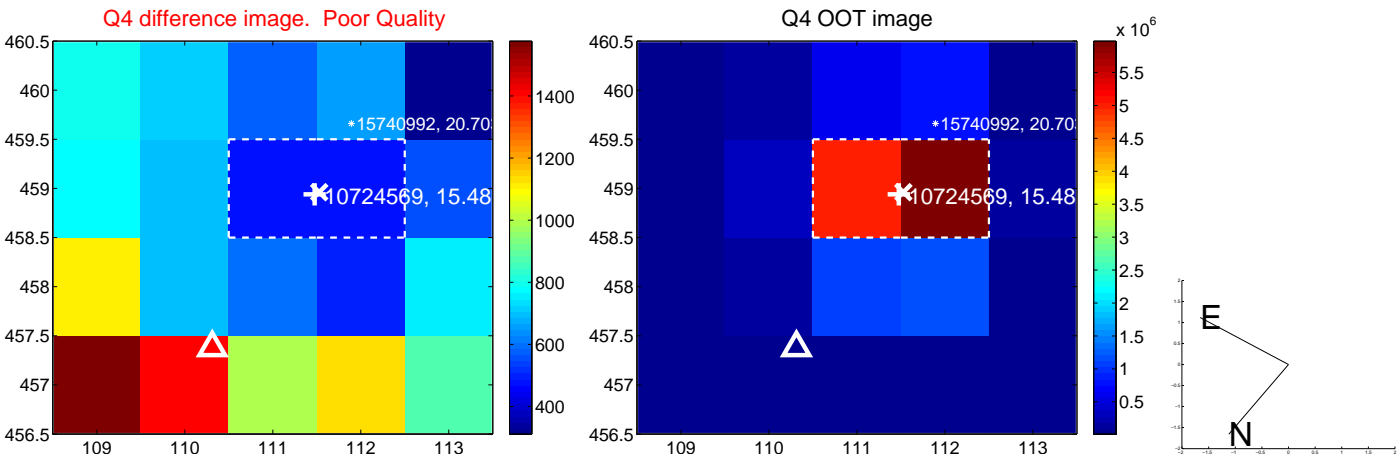
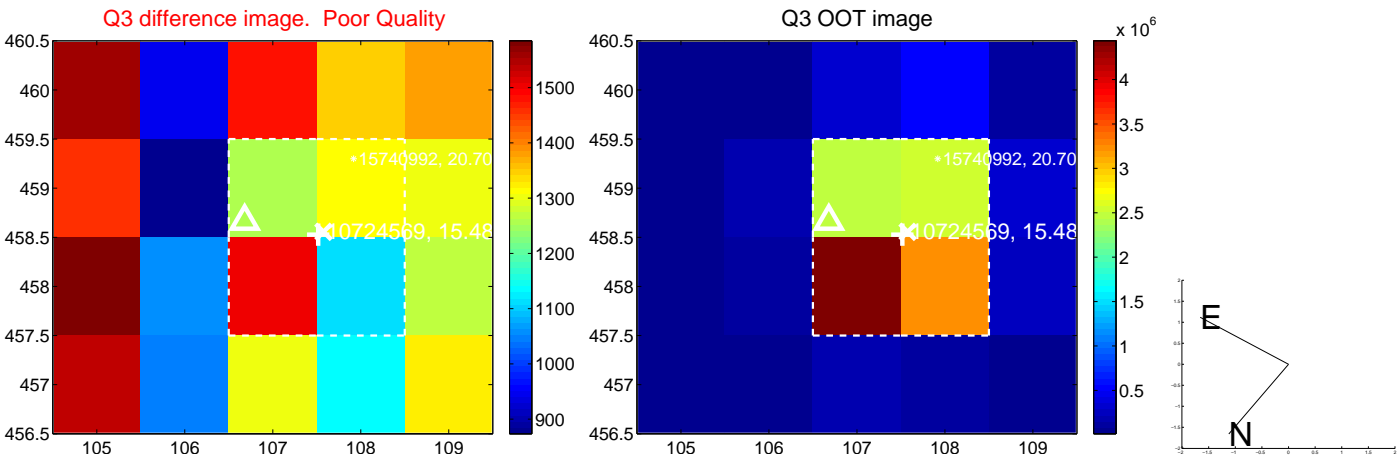
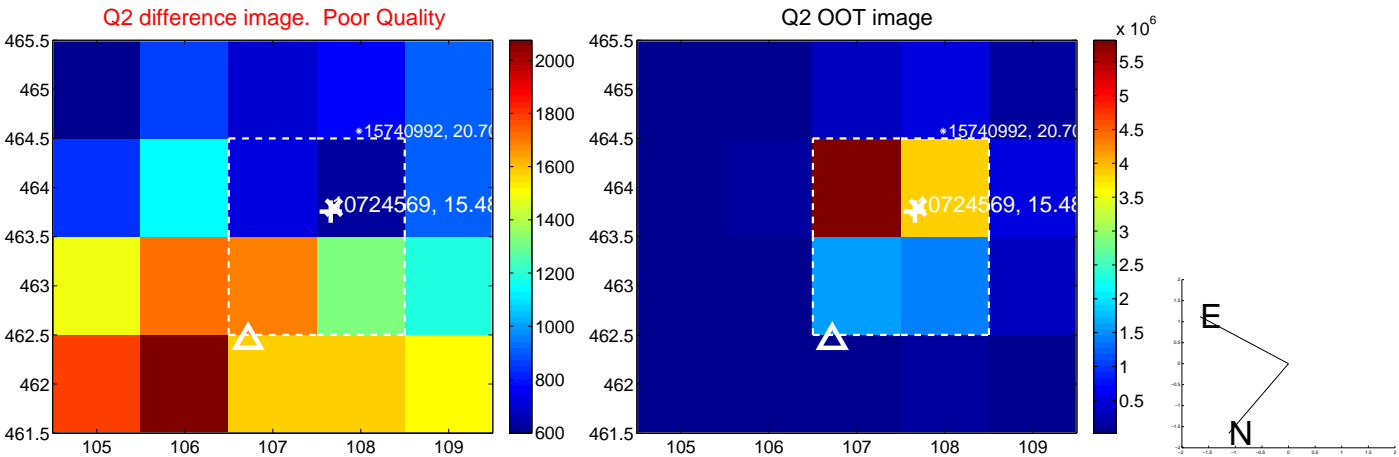
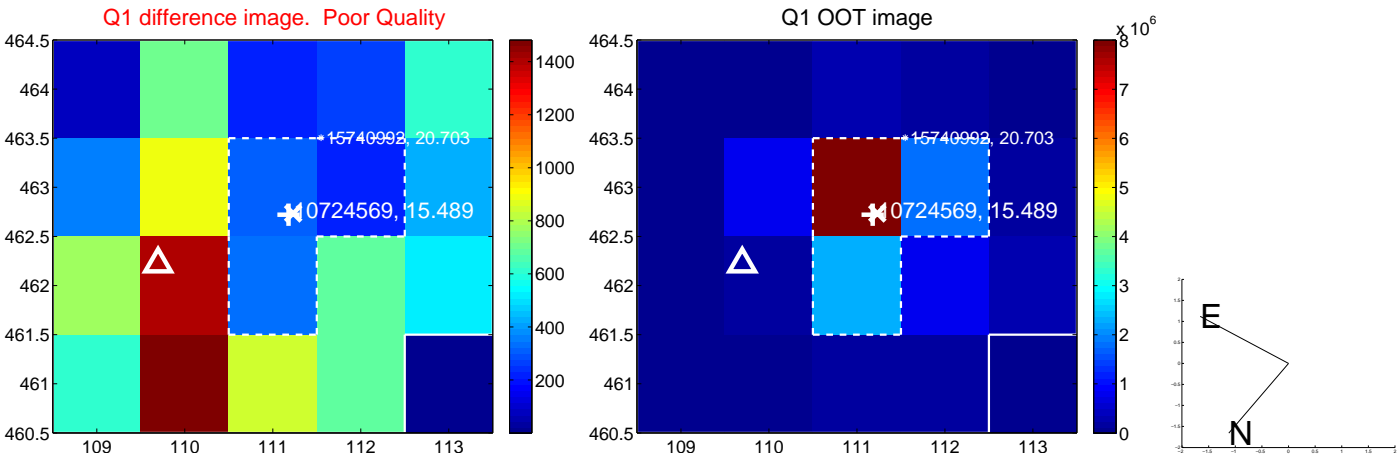


offset from photometric centroids

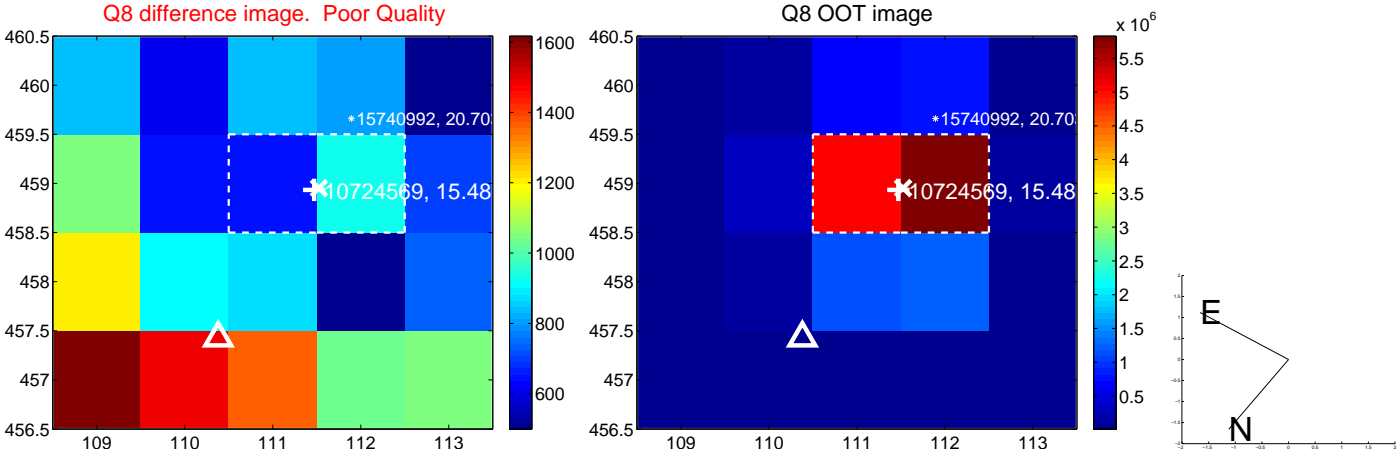
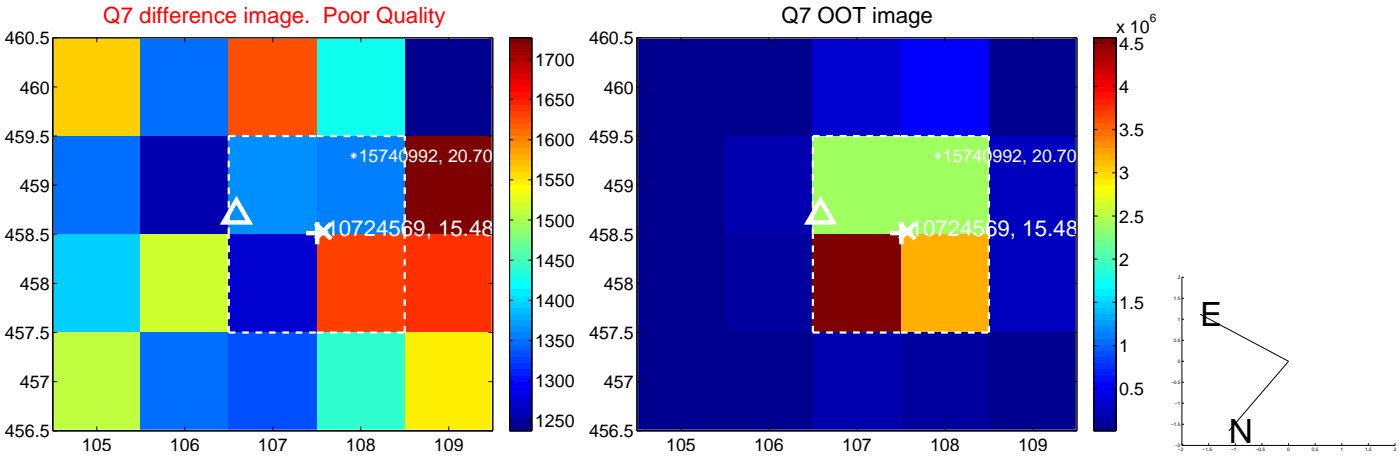
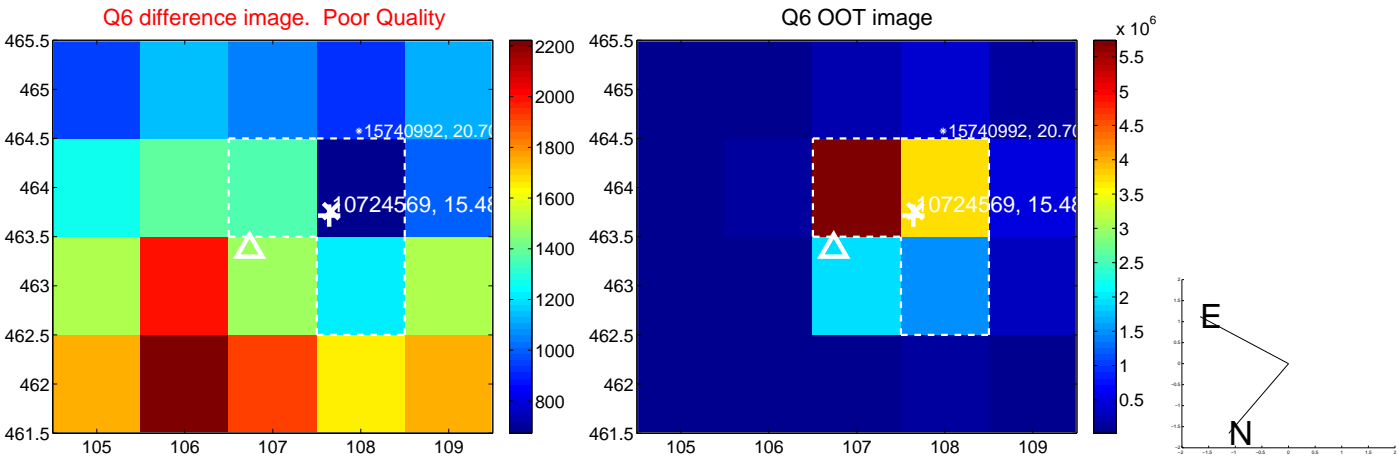
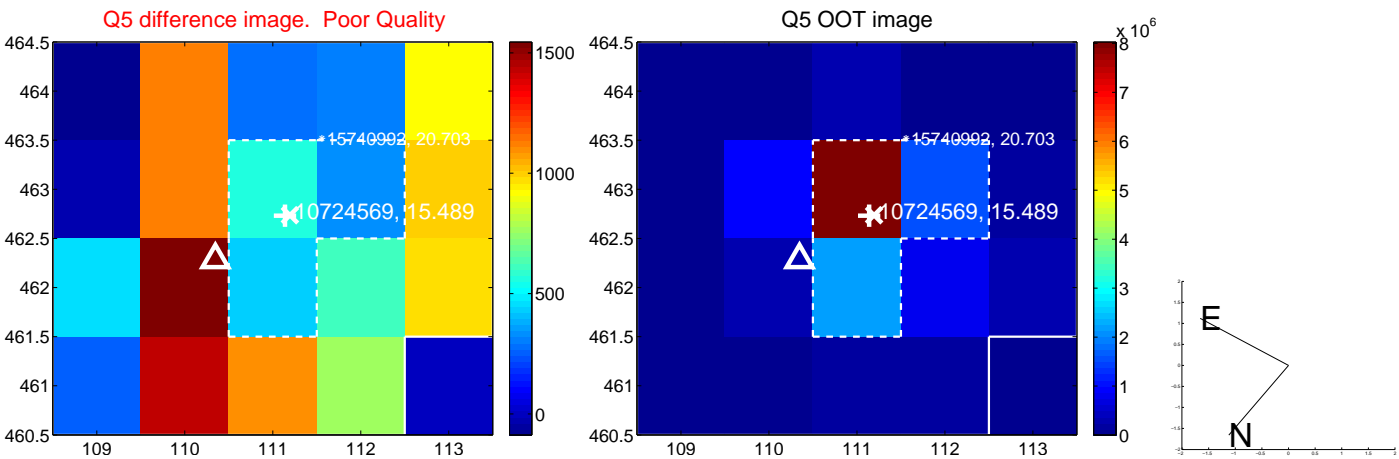


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

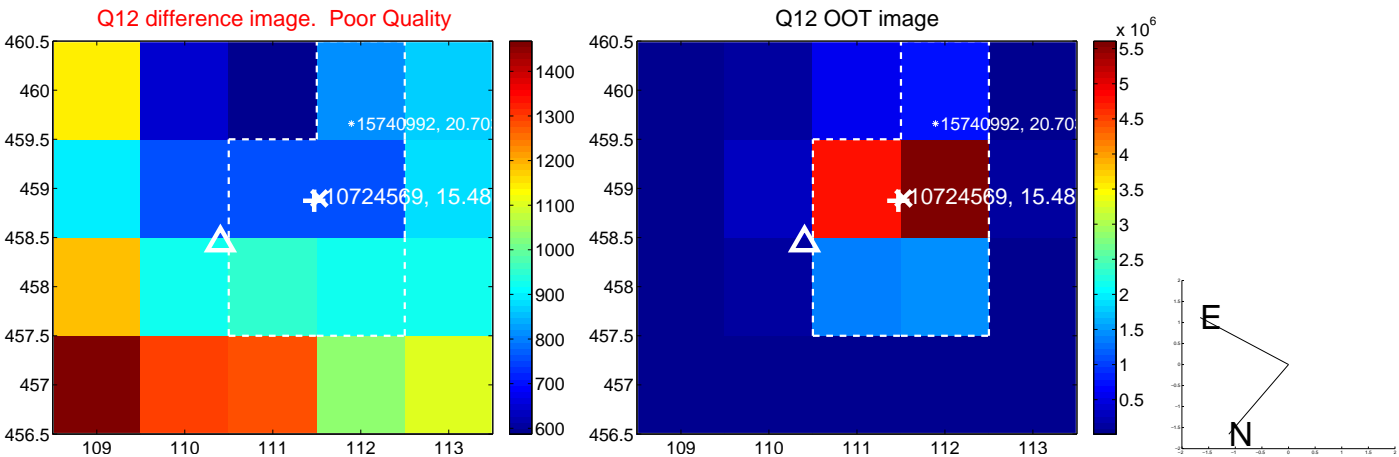
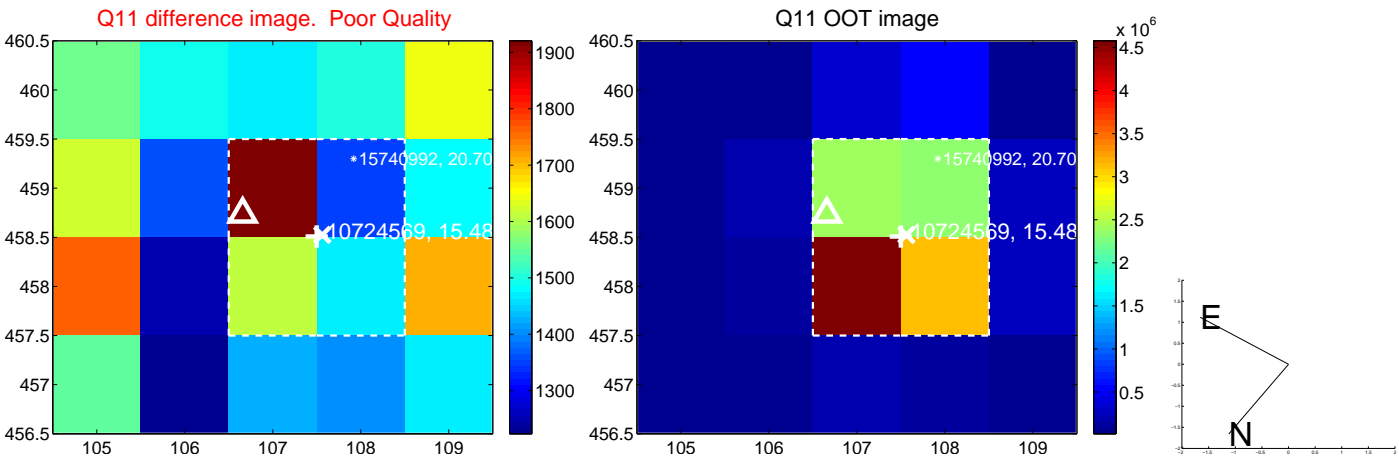
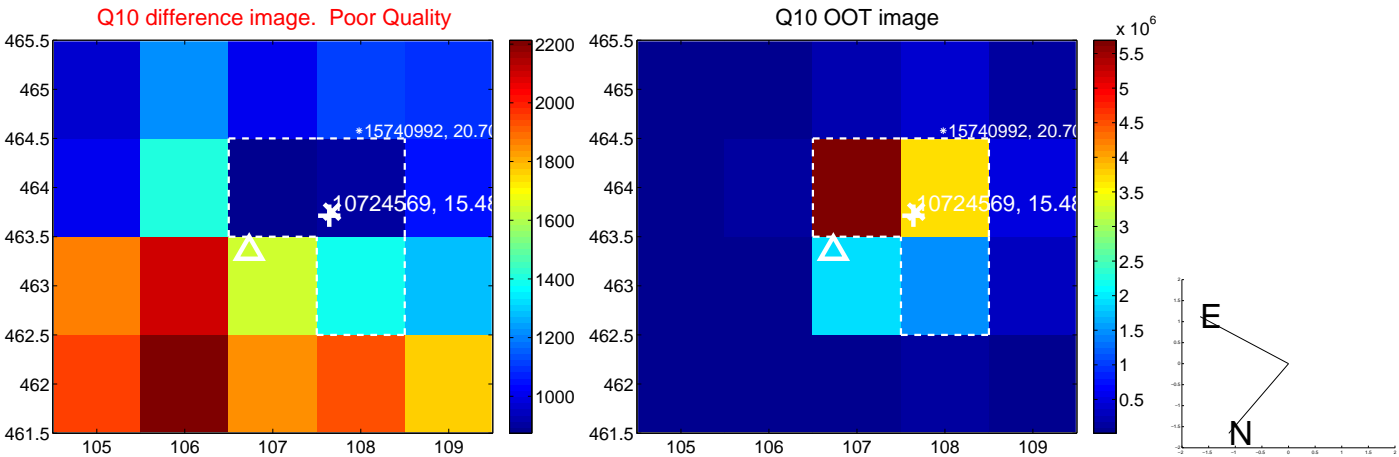
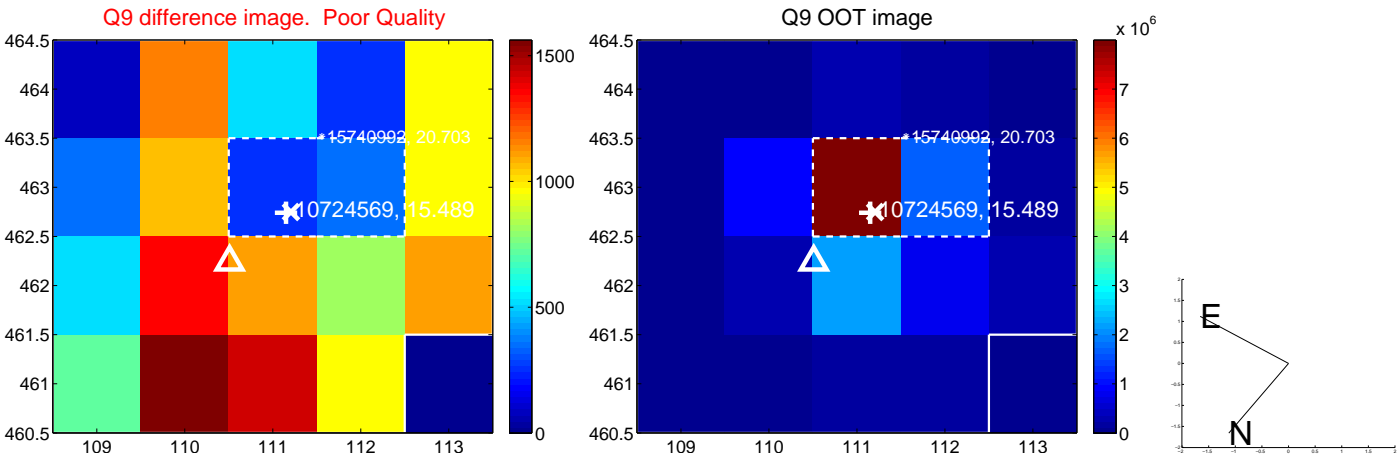
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



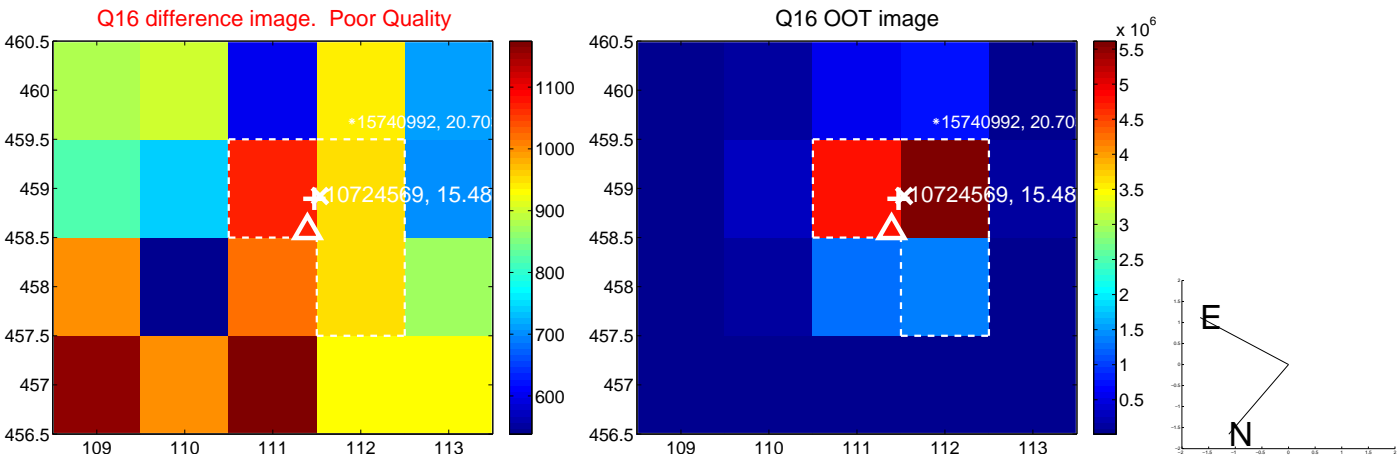
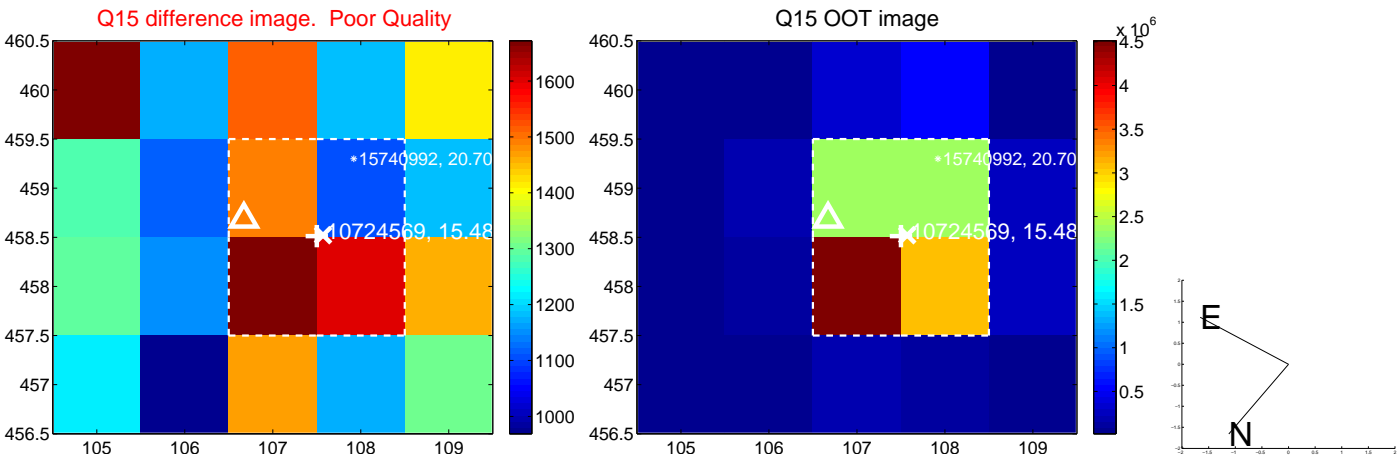
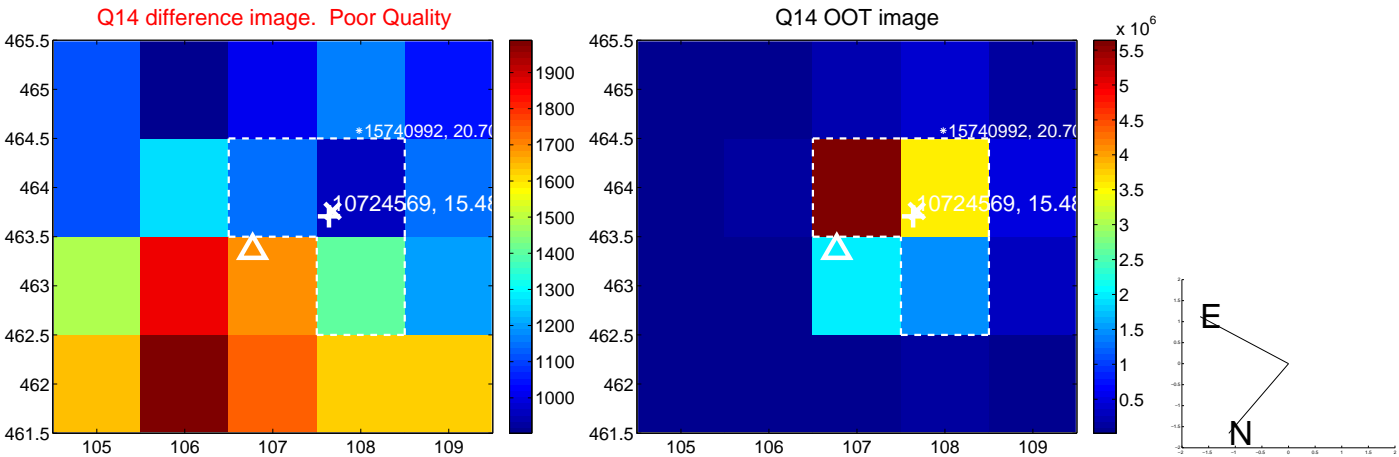
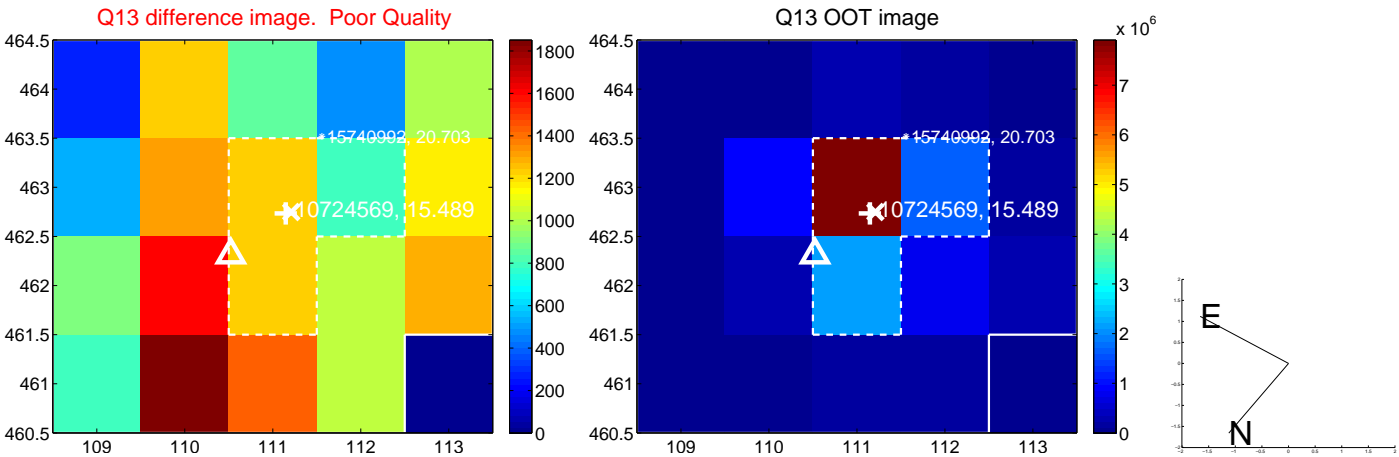
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



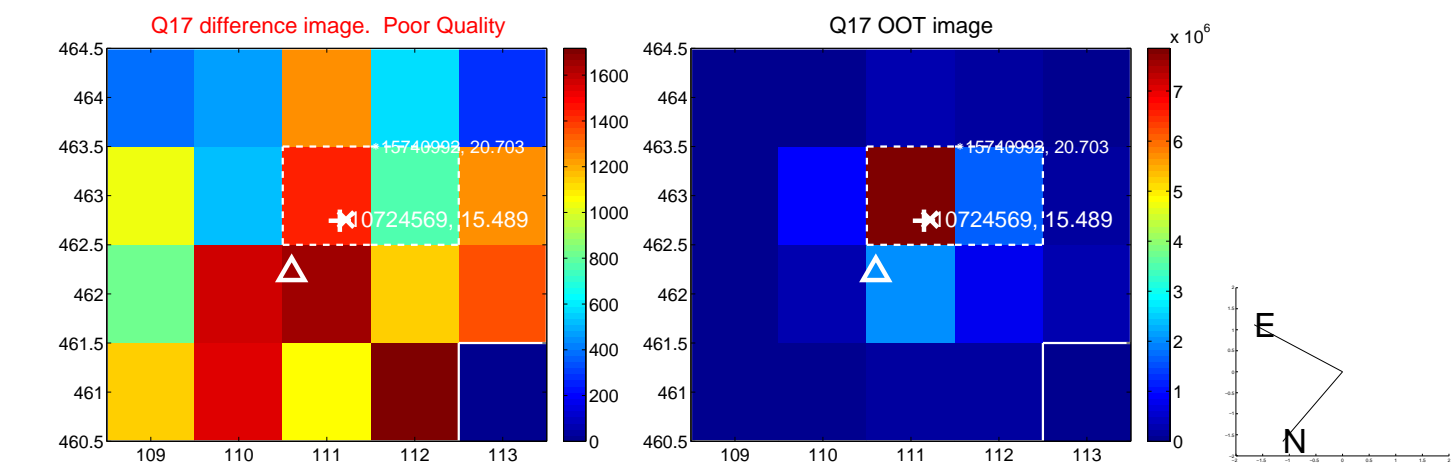
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



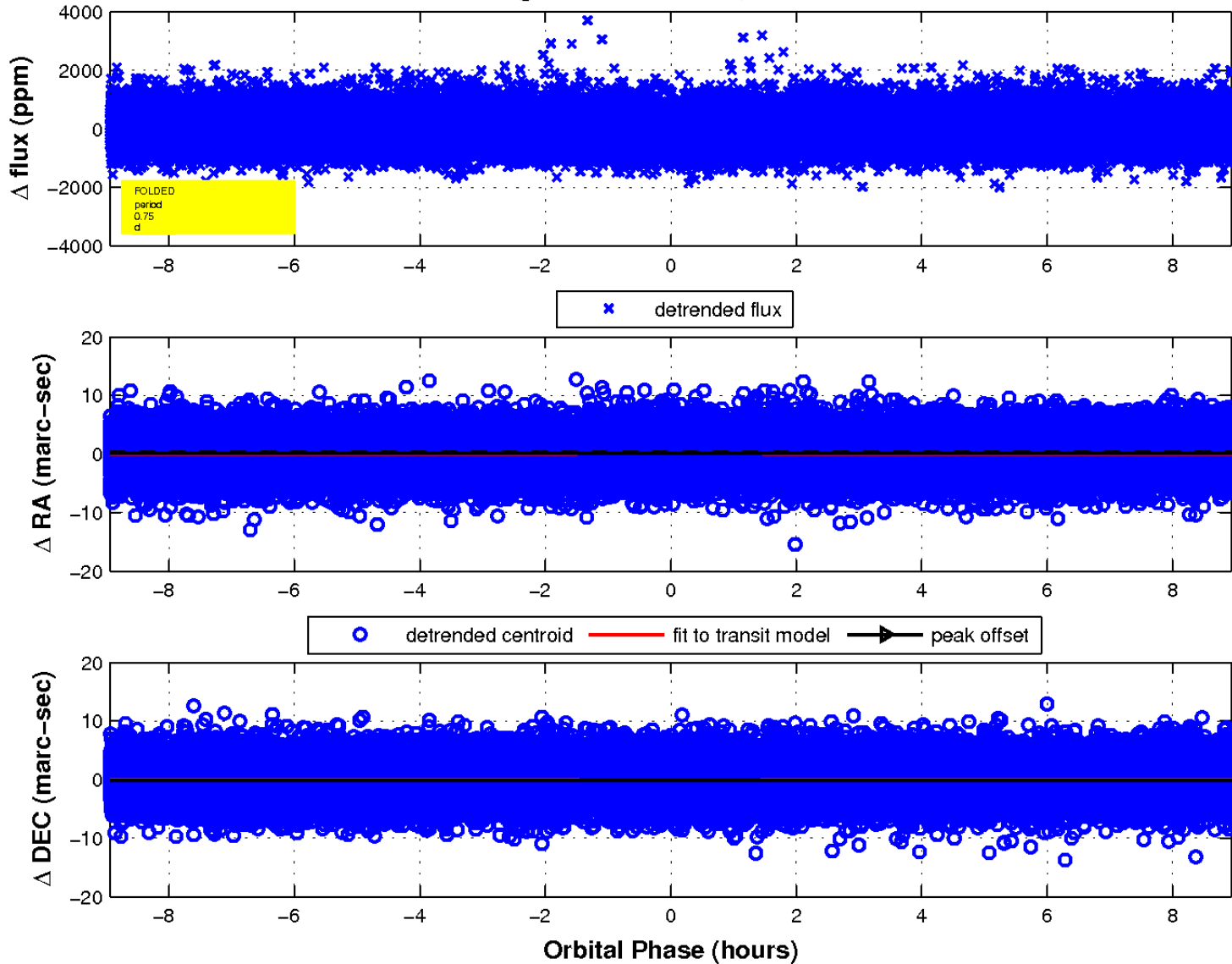
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

