

KIC 004365442

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})
004365442-01	OBS	2787.01	1.714415	131.863415	49.5	3.355	18.5	20.3	2.50	6340	2.04	10034.41

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004365442-01	OBS	FP	0.00	0	0	1	1	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 004365442-01

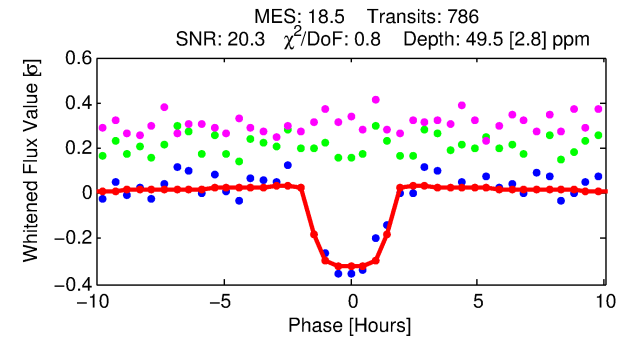
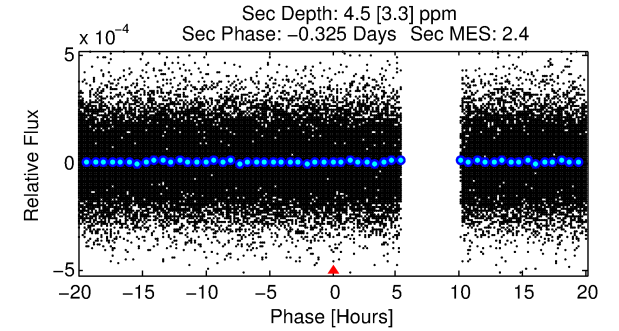
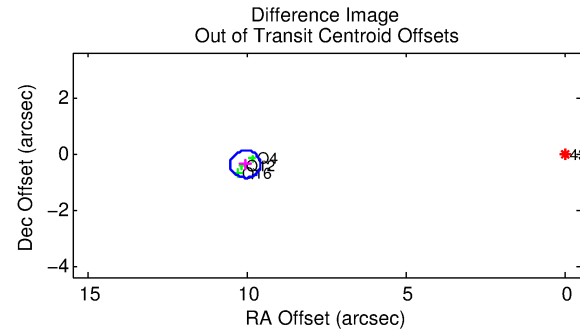
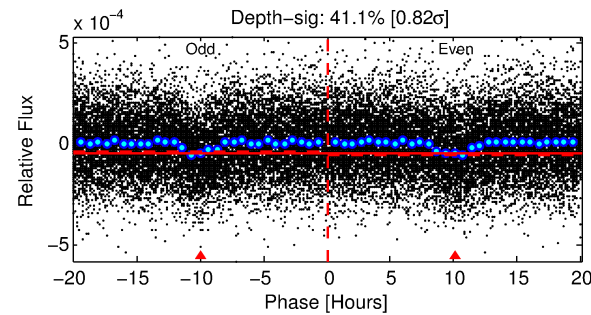
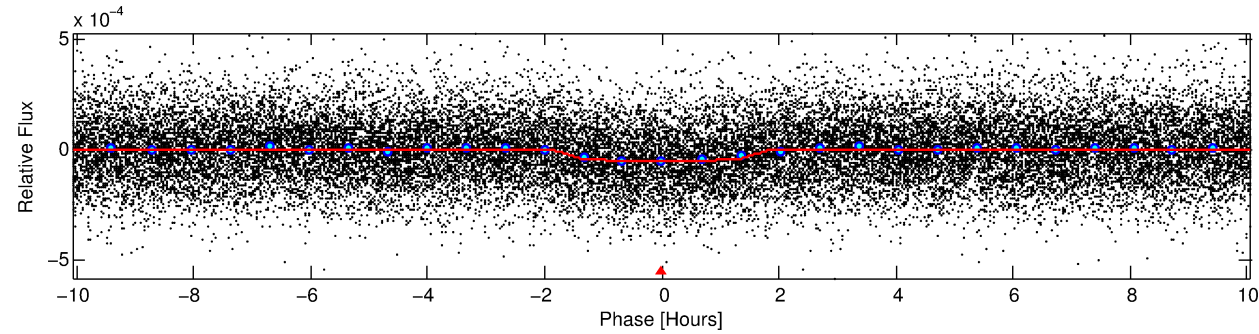
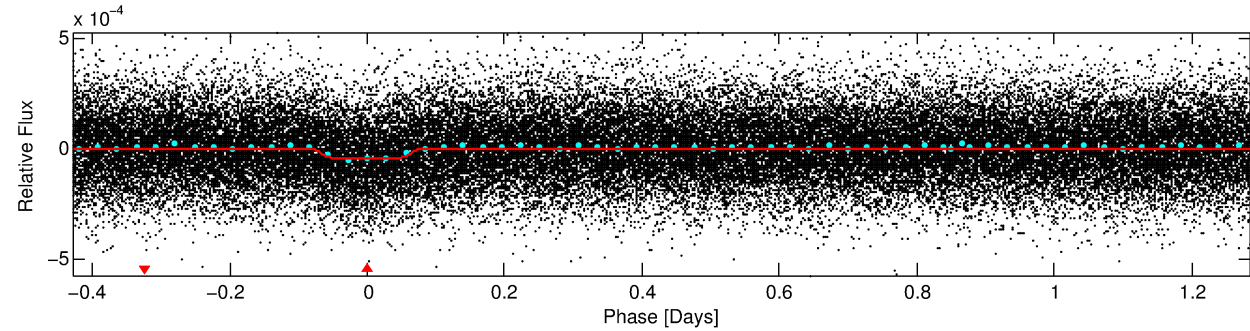
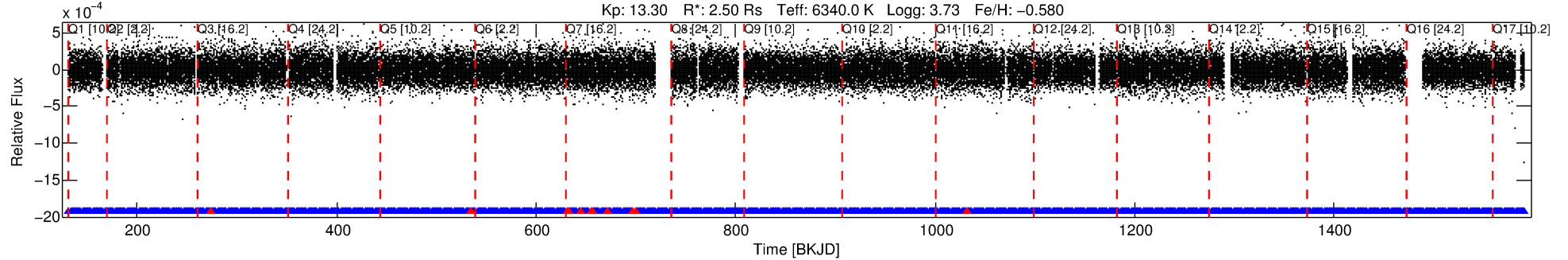
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
004365442-01	4365442	5058.01	4365461	1:1	19.0	-5	1	13.31	13.30	2254.70	Direct-PRF	0	0.02	0.16

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: 4365442 Candidate: 1 of 1 Period: 1.714 d
KOI: K02787.01 Corr: 0.992

Kp: 13.30 R*: 2.50 Rs Teff: 6340.0 K Logg: 3.73 Fe/H: -0.580



DV Fit Results:

Period = 1.71441 [0.00001] d
Epoch = 131.8634 [0.0021] BKJD
Rp/R* = 0.0075 [0.0017]
a/R* = 2.06 [2.07]
b = 0.89 [0.31]
Seff = 10034.41 [5799.18]
Teq = 2552 [369] K
Rp = 2.04 [0.90] Re
a = 0.0300 [0.0107] AU
Ag = 0.54 [0.55] [-0.83σ]
Teffp = 3382 [731] K [1.01σ]

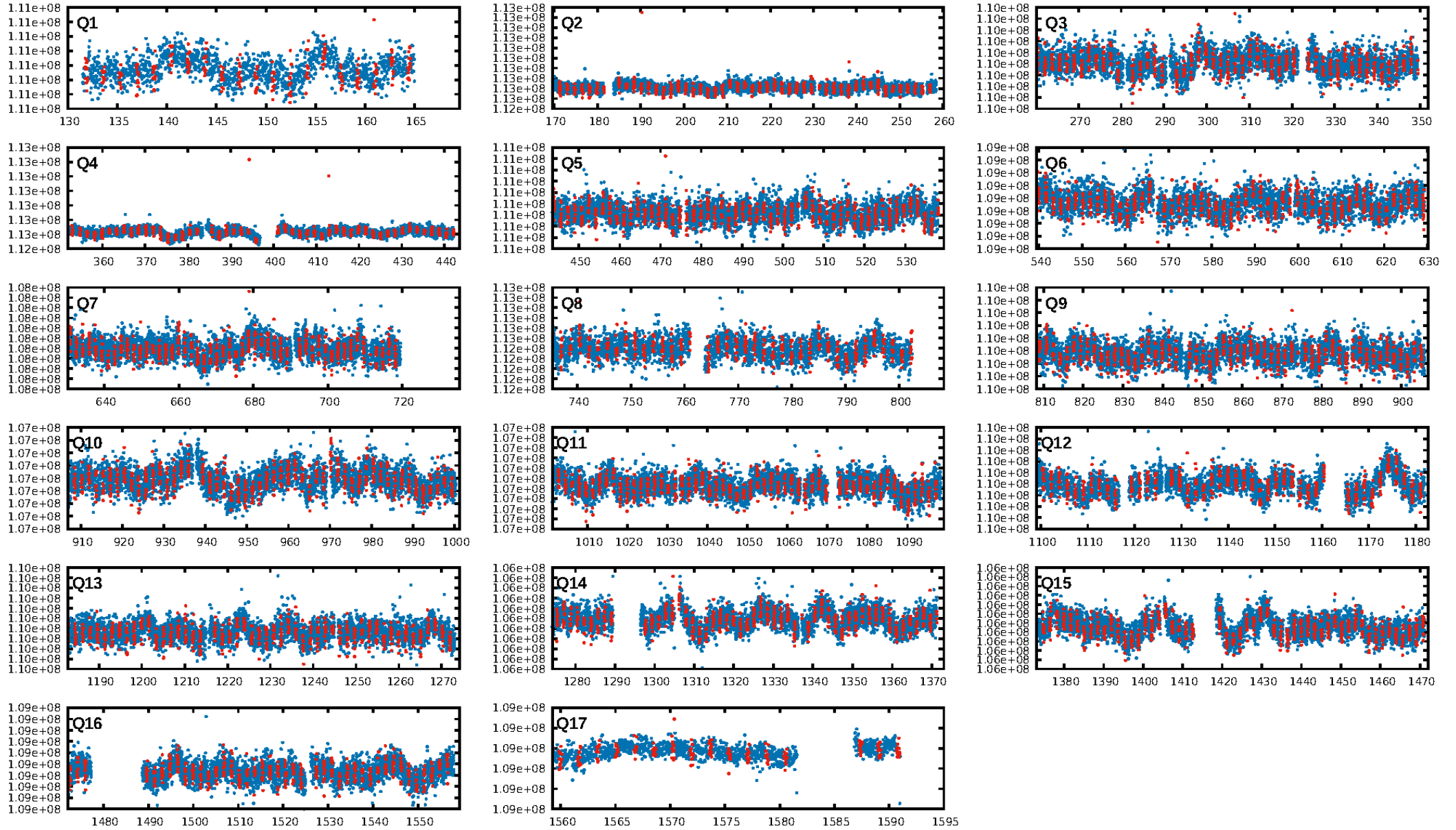
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: 4.99e-72
RollingBand-fgt: 0.99 [739/750]
GhostDiagnostic-chr: -0.2328
Centroid-sig: 0.0%
Centroid-so: 75.642 arcsec [116.93σ]
OotOffset-rm: 10.077 arcsec [62.41σ]
KicOffset-rm: 10.048 arcsec [61.01σ]
OotOffset-st: 0/0/3/0 [3]
KicOffset-st: 0/0/3/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [17/17]

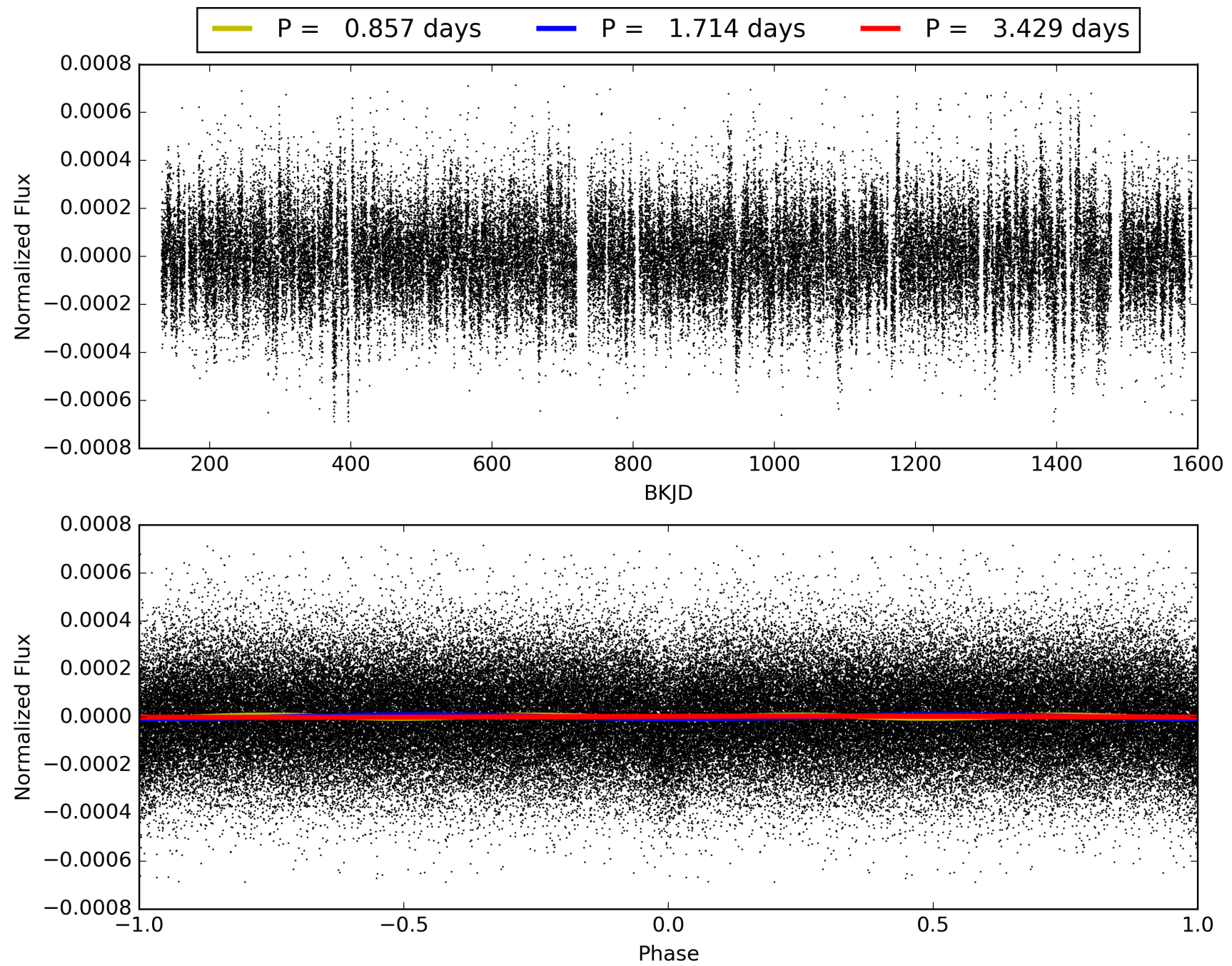
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 23:07:54 Z

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

TCE 004365442-01, PDC Light Curves

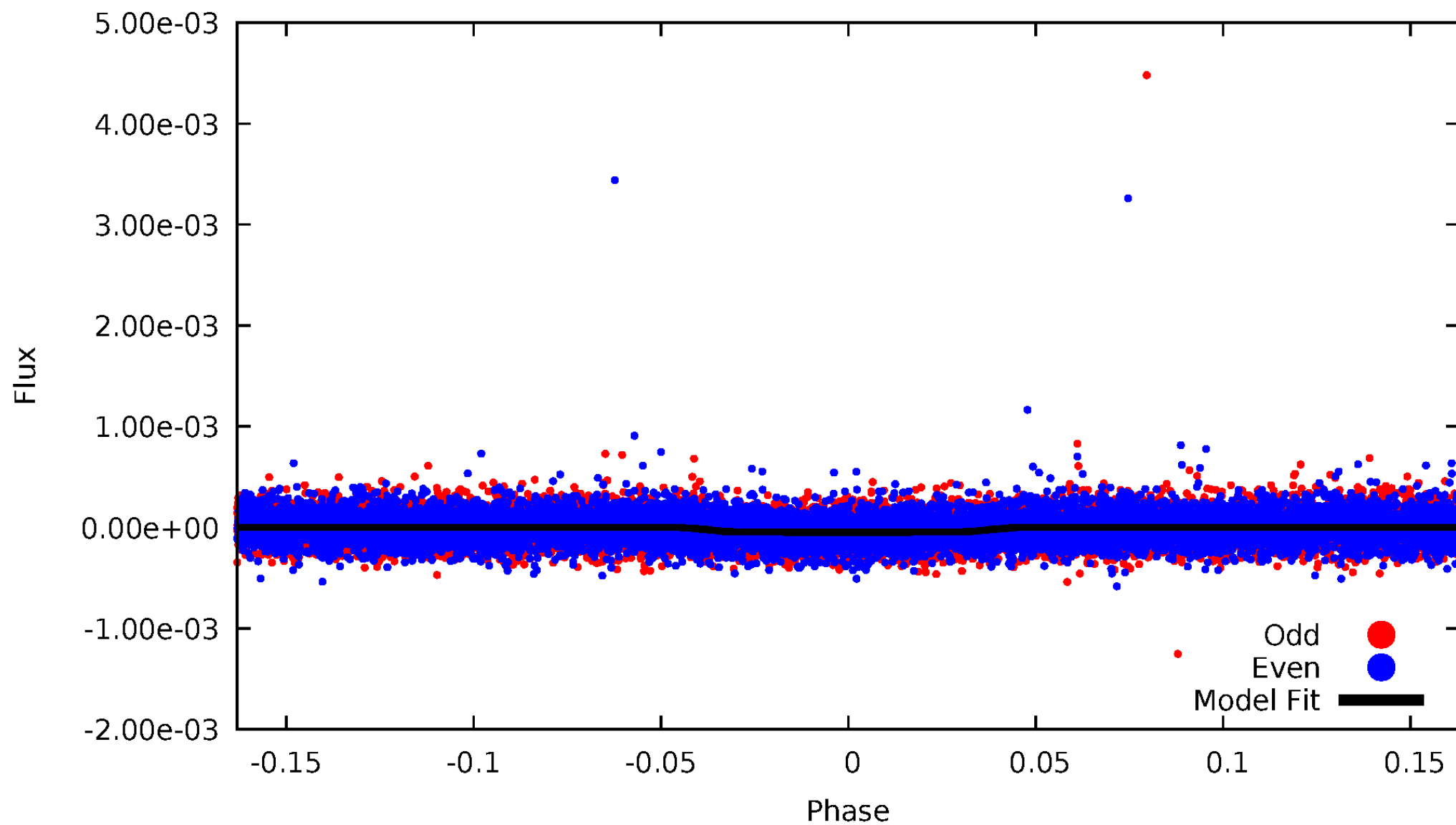


TCE 004365442-01



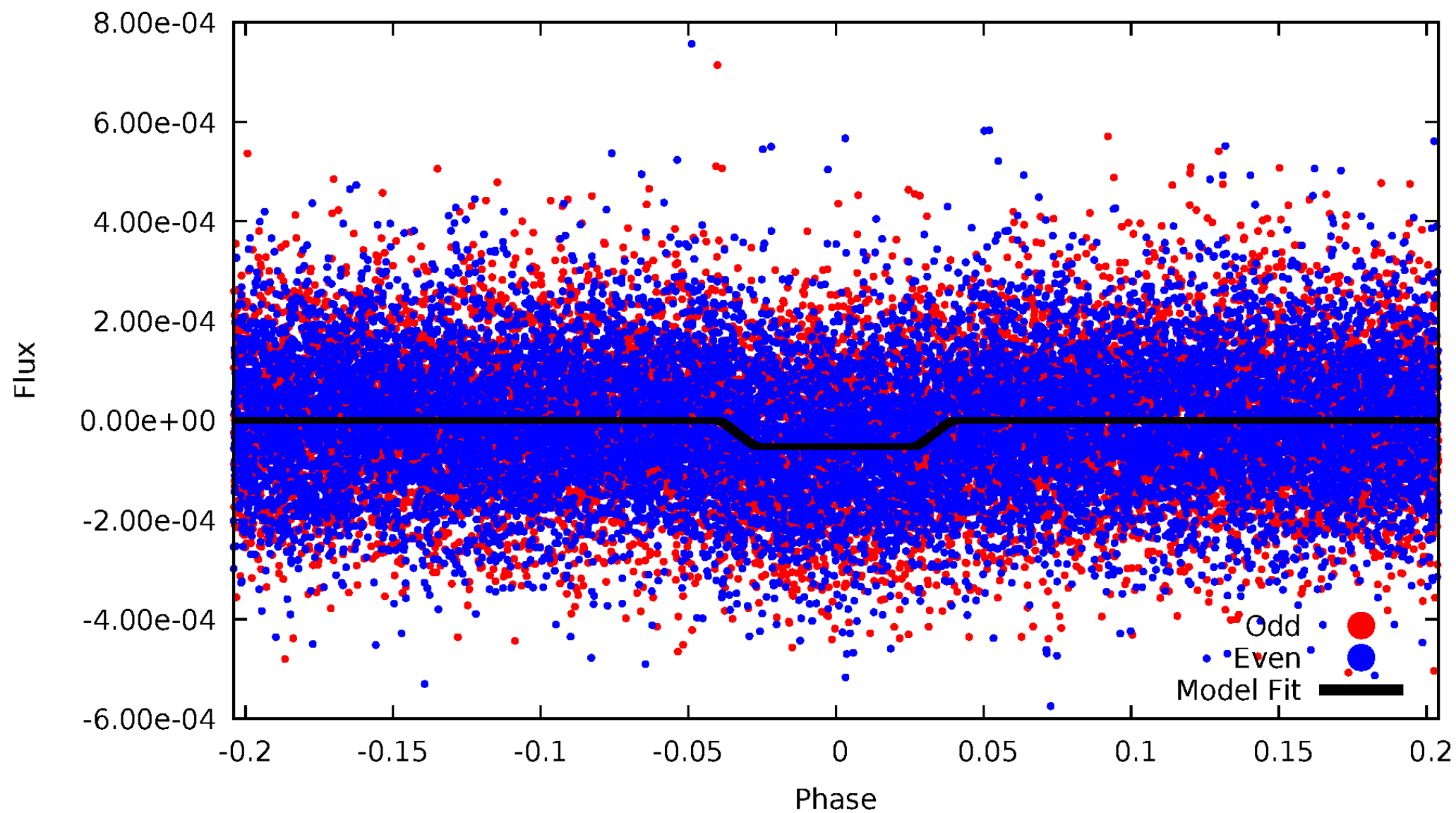
DV Odd/Even

TCE 004365442-01



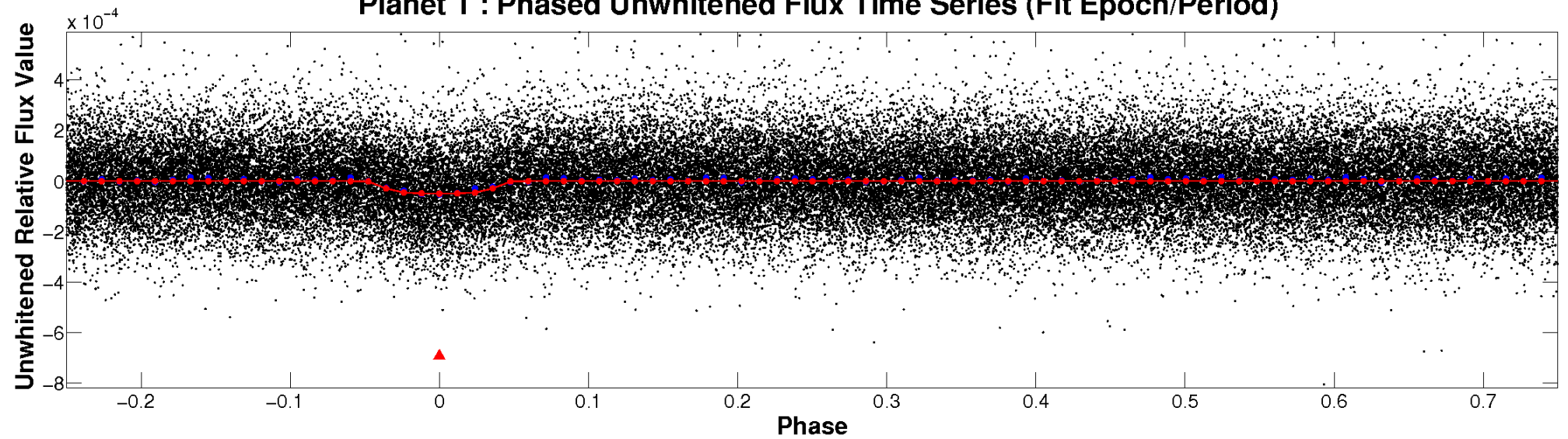
ALT Odd/Even

TCE 004365442-01

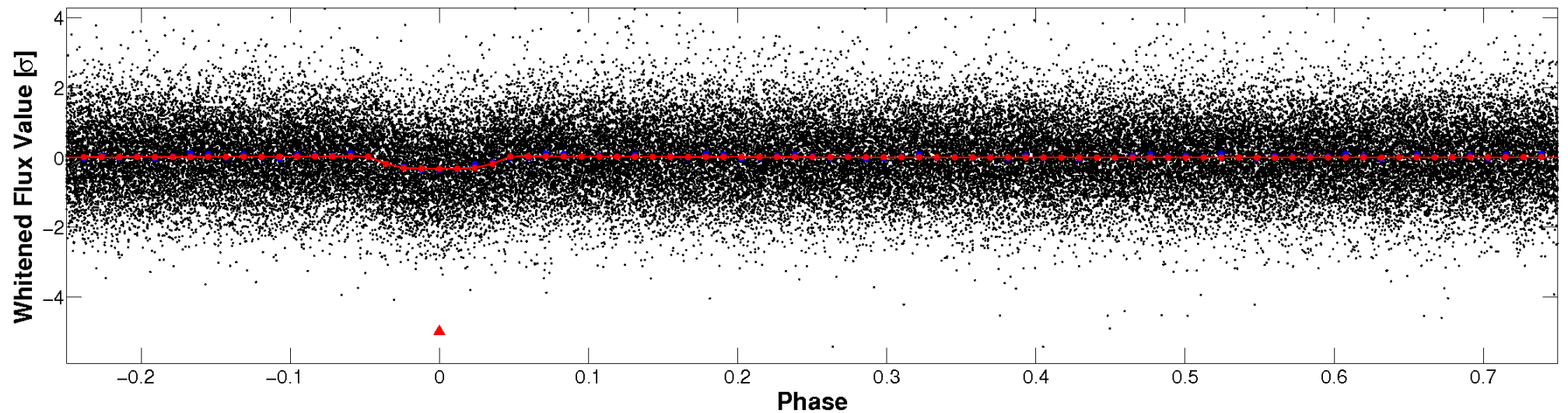


Non-Whitened Vs. Whitened Light Curve

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

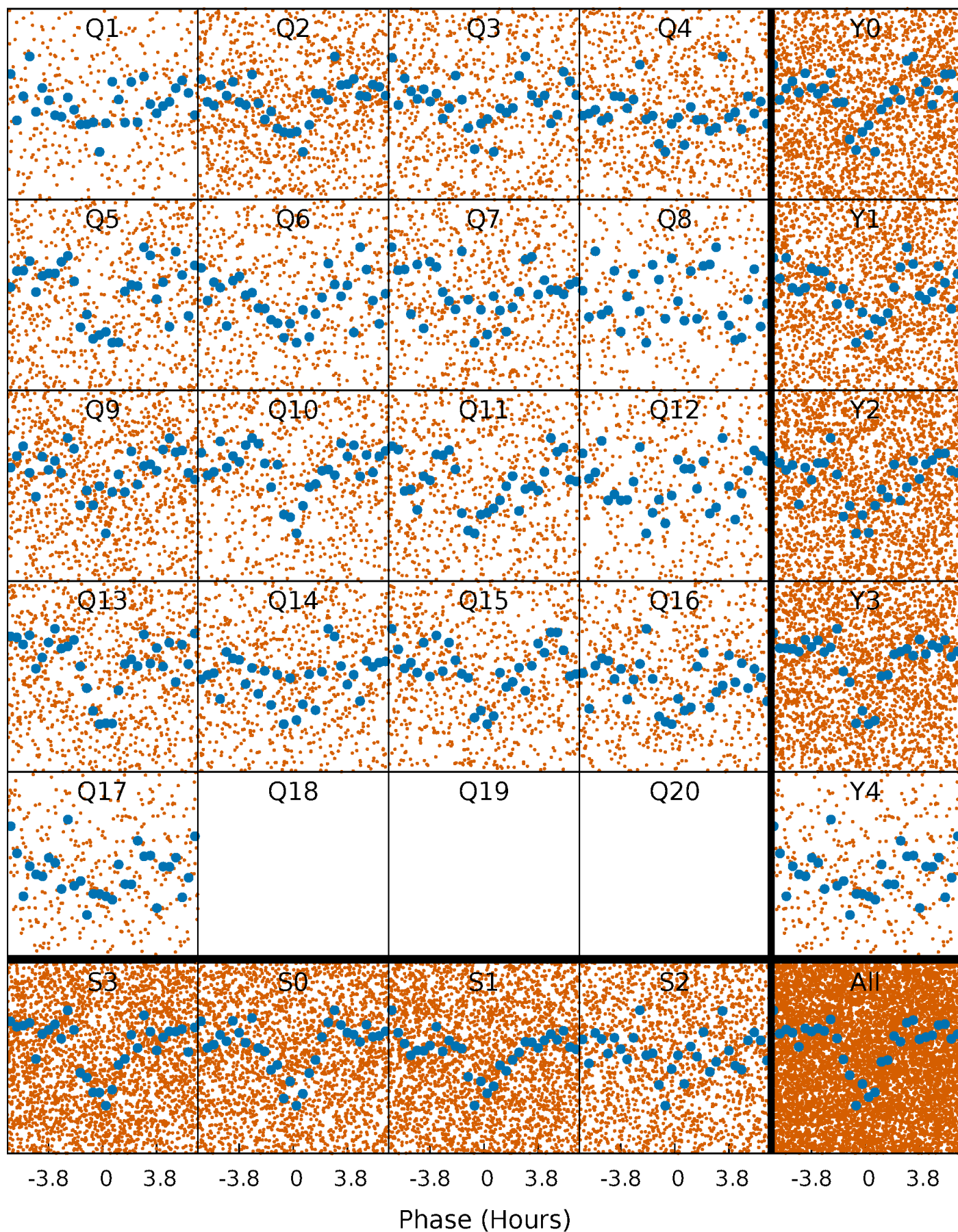


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



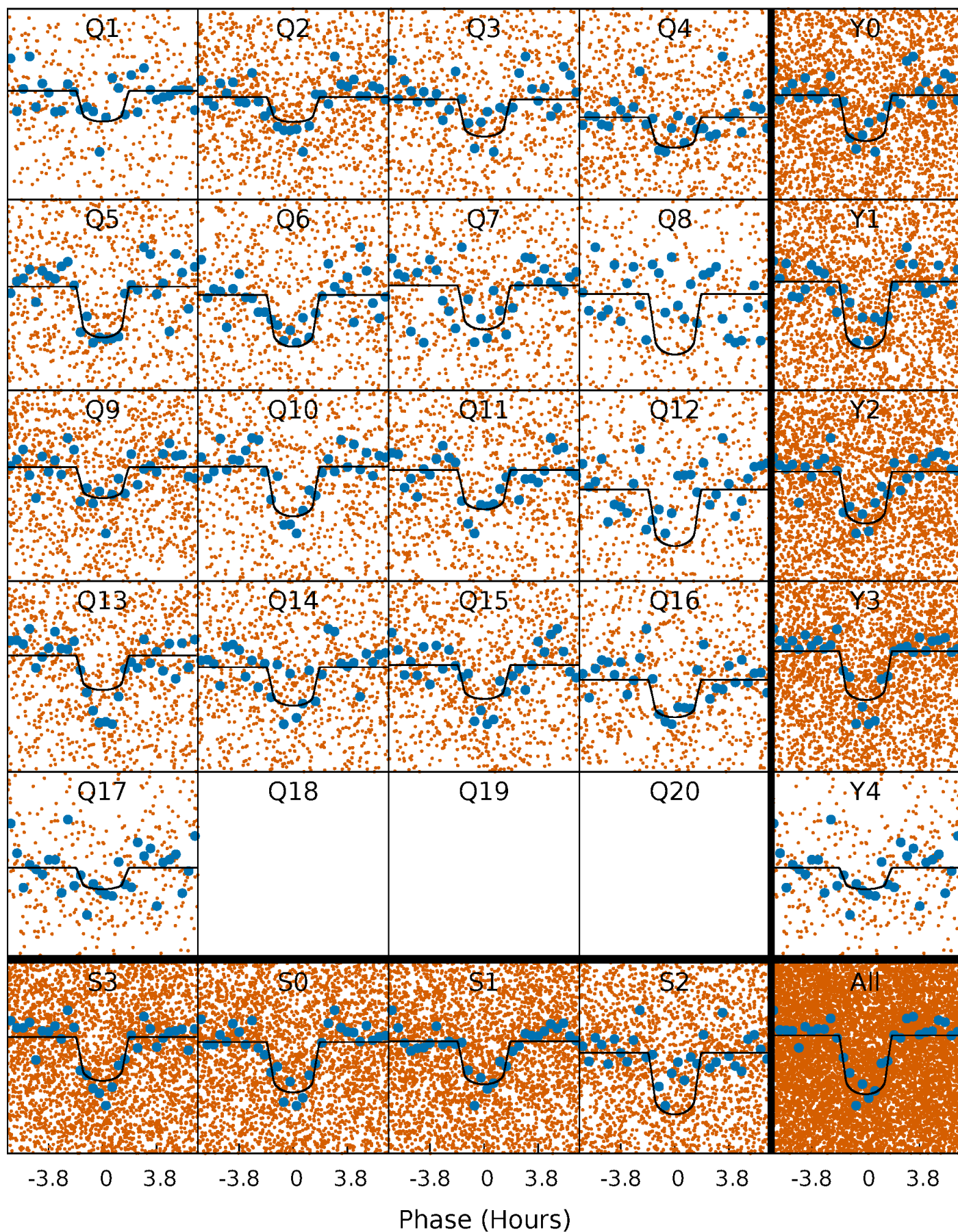
PDC Quarter-Phased Transit Curves

TCE 004365442-01 P= 1.714415 Days $T_0=131.863415$ (BKJD)



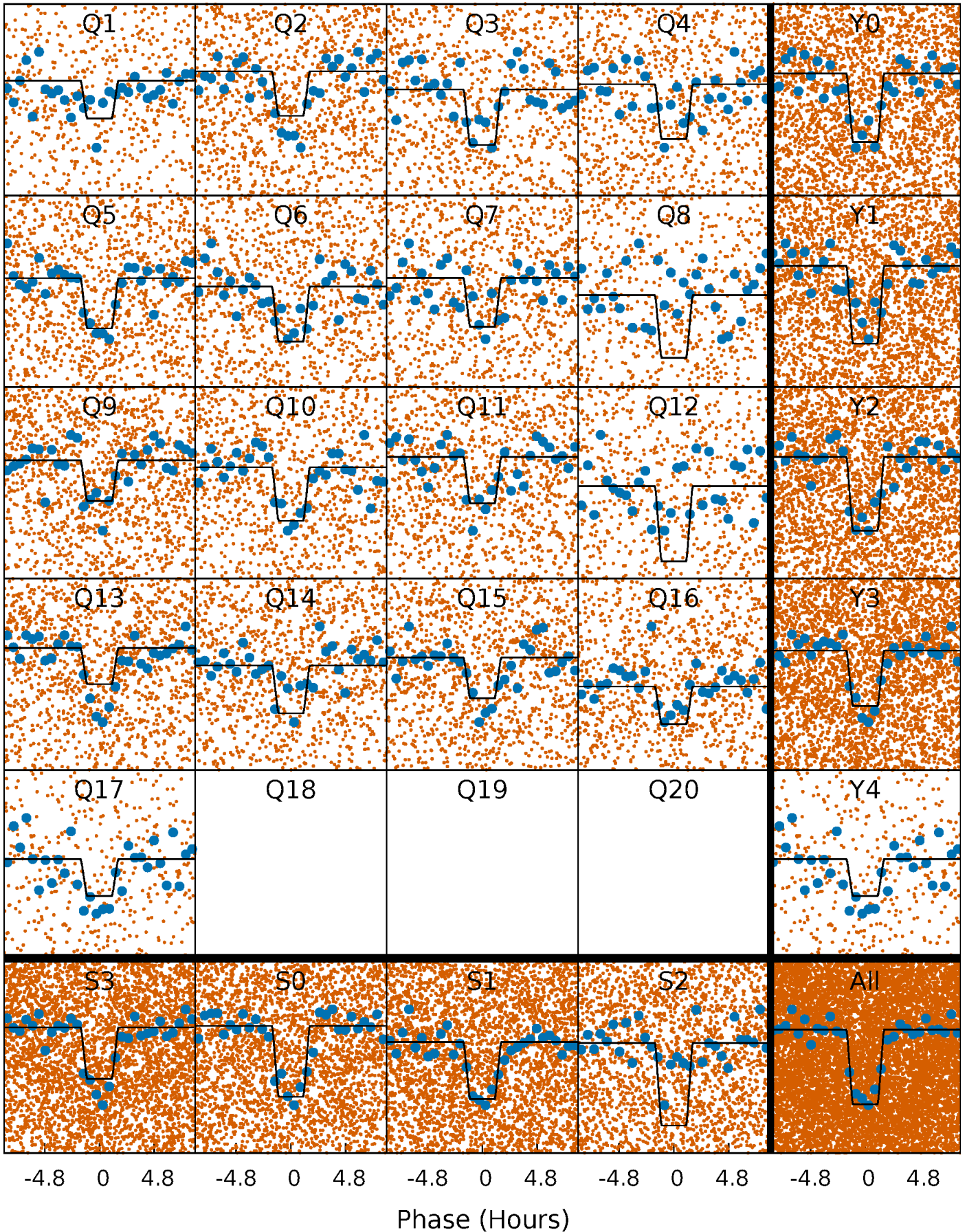
DV Quarter-Phased Transit Curves

TCE 004365442-01 P= 1.714415 Days $T_0=131.863415$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

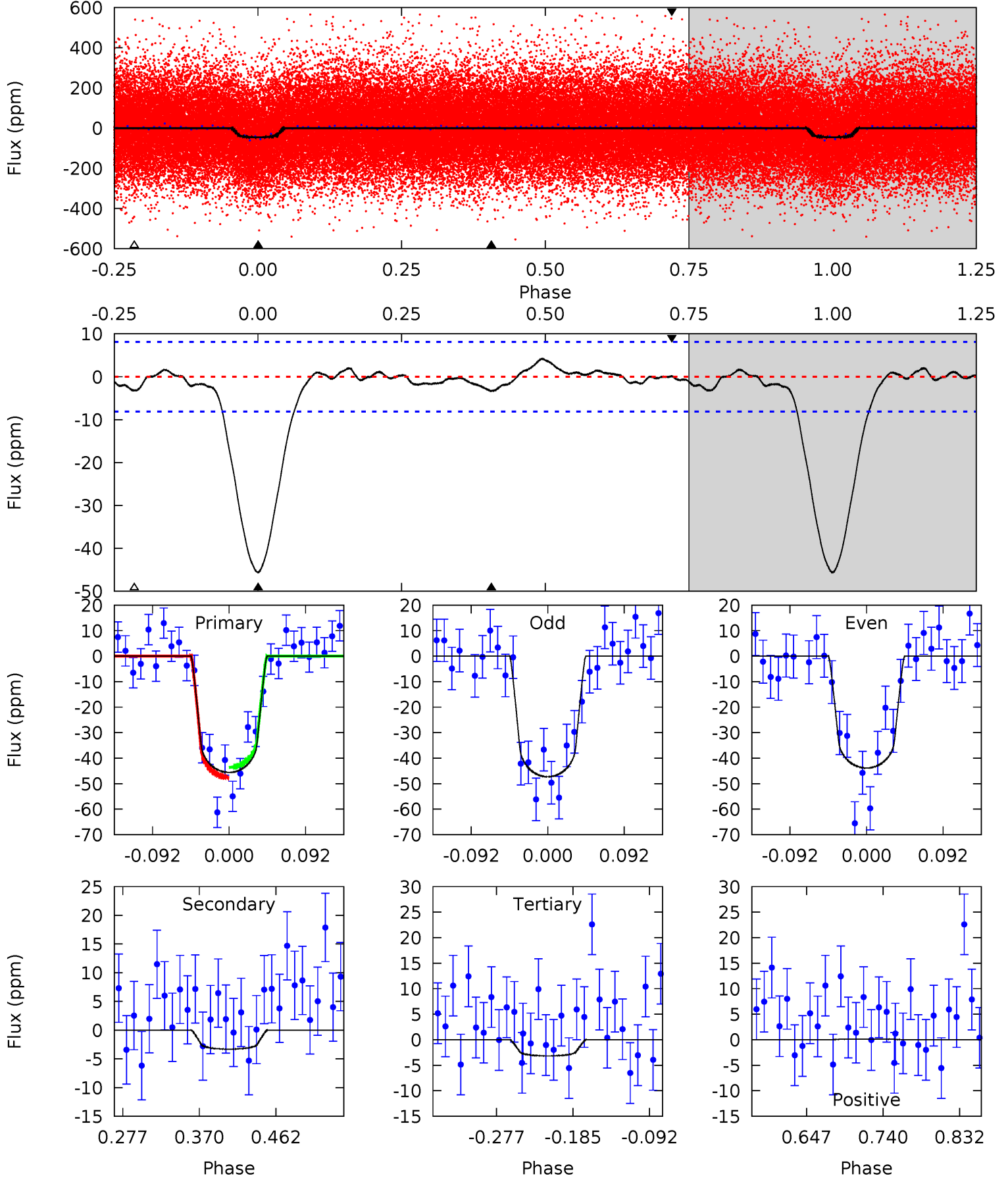
TCE 004365442-01 P= 1.714415 Days $T_0=131.861560$ (BKJD)



DV Model-Shift Uniqueness Test

004365442-01, P = 1.714415 Days, E = 130.149000 Days

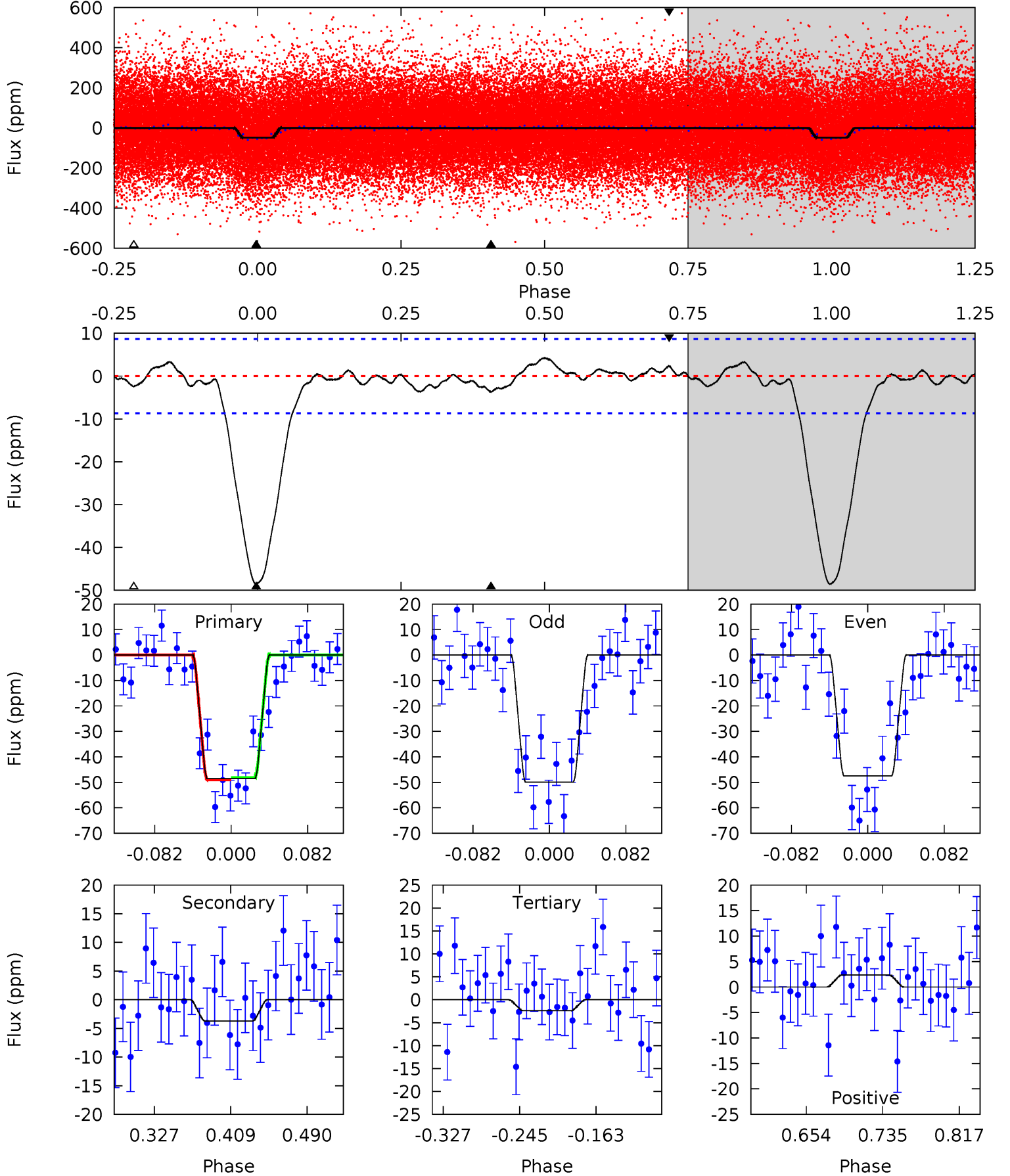
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.7	1.86	1.79	0.07	4.58	1.68	0.74	23.9	25.6	0.08	1.80	0.97	1.03	0.08	1.11



Alt Model-Shift Uniqueness Test

004365442-01, P = 1.714415 Days, E = 130.147145 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	1.96	1.27	1.24	4.61	1.74	0.87	24.5	24.5	0.69	0.72	0.65	0.97	0.08	0.25



Stellar Parameters For KIC 004365442

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6340^{+187}_{-187}	$3.731^{+0.330}_{-0.110}$	$-0.580^{+0.350}_{-0.300}$	$2.498^{+0.404}_{-0.944}$	$1.223^{+0.212}_{-0.259}$	$0.111^{+0.287}_{-0.030}$
	+3%/-3%	+9%/-3%	+60%/-52%	+16%/-38%	+17%/-21%	+260%/-27%
Source	PHO1	FLK73	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 004365442-01 / KOI 2787.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-3 ± 2	$1.94^{+0.56}_{-0.57}$	3514^{+224}_{-345}	2923^{+784}_{-5945}	$0.404^{+0.501}_{-0.240}$
Alt.	-4 ± 2	$1.92^{+0.58}_{-0.56}$	3508^{+227}_{-308}	3129^{+721}_{-6053}	$0.482^{+0.573}_{-0.287}$

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 $A_{obs} \gg 1.0$

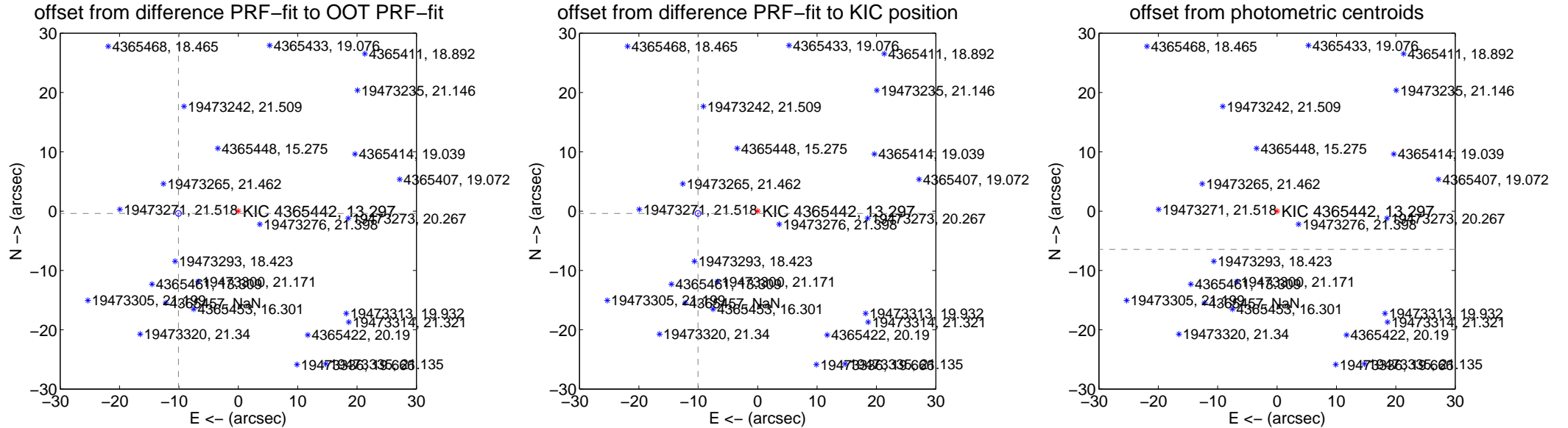
DV Centroid Data

Supplemental centroid analysis for 004365442-01. Kepler magnitude: 13.30. Transit SNR 20.26

There are 3 quarters with good PRF difference image offsets

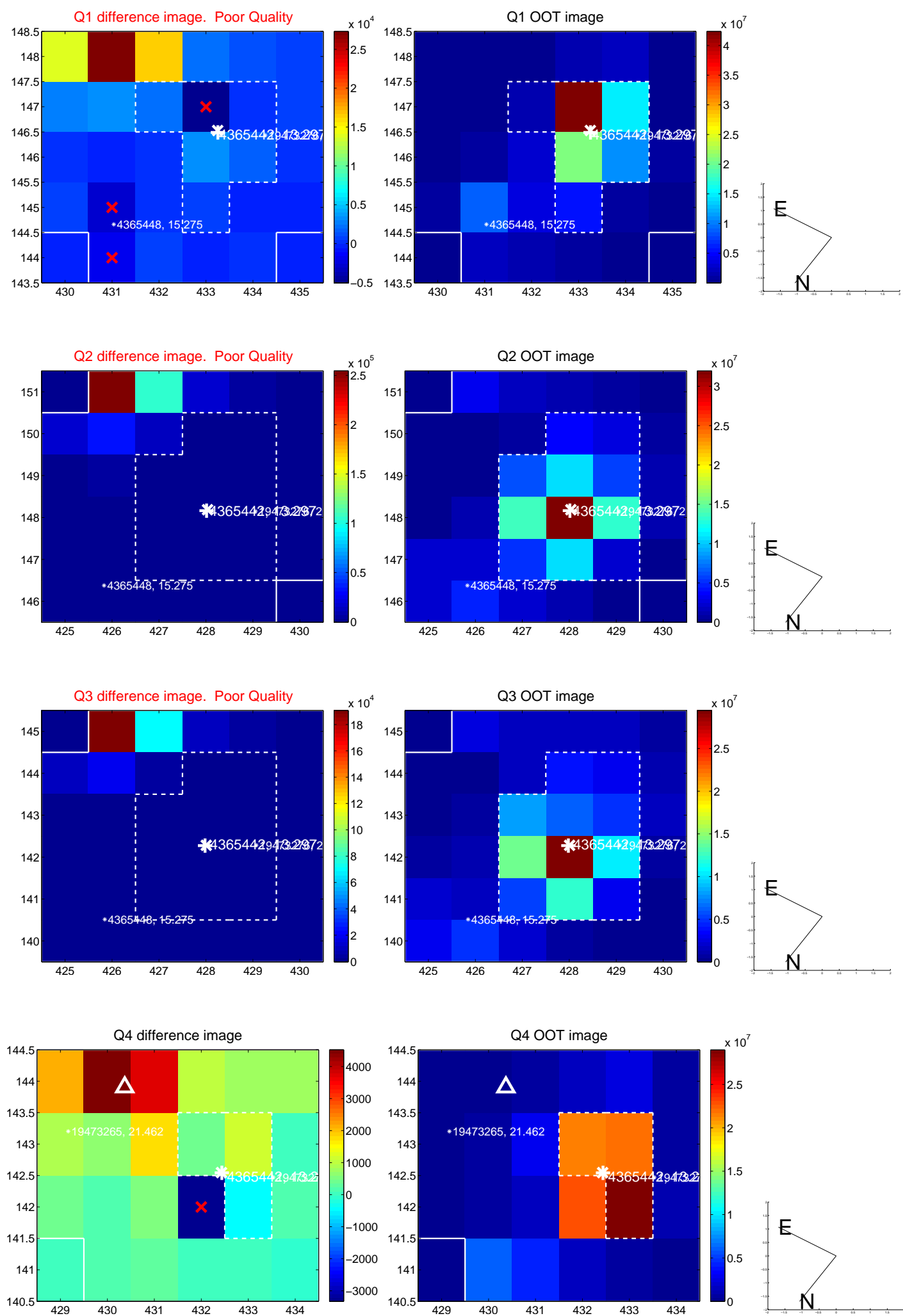
The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	10.077 \pm 0.161	62.41	10.070 \pm 0.161	-0.385 \pm 0.181
PRF-fit source offset from KIC position	10.048 \pm 0.165	61.01	10.041 \pm 0.165	-0.390 \pm 0.183
photometric centroid source offset	75.64 \pm 0.65	116.93	75.37 \pm 0.65	-6.46 \pm 0.60

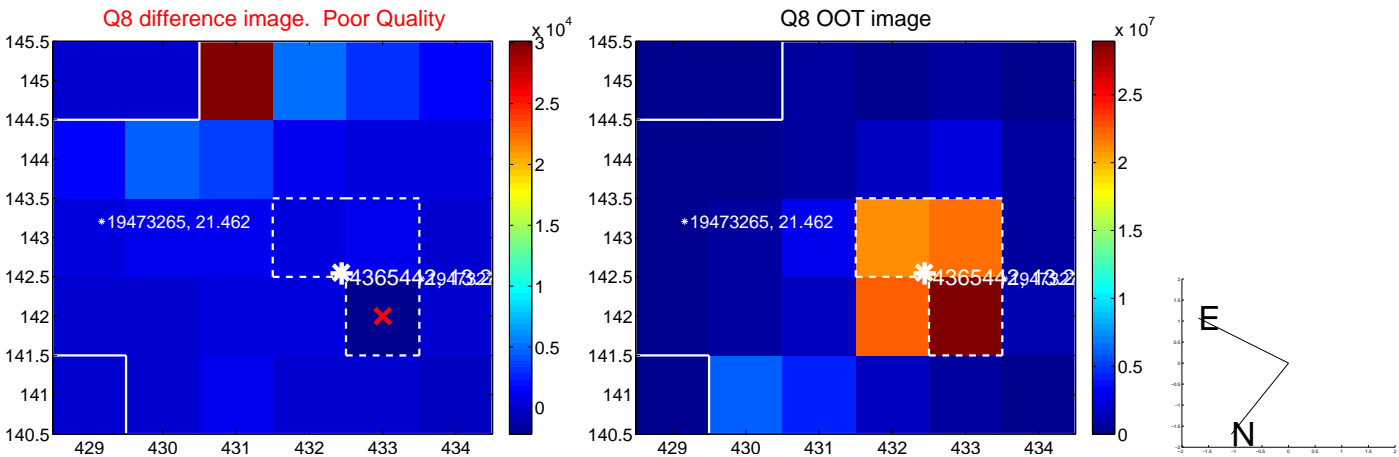
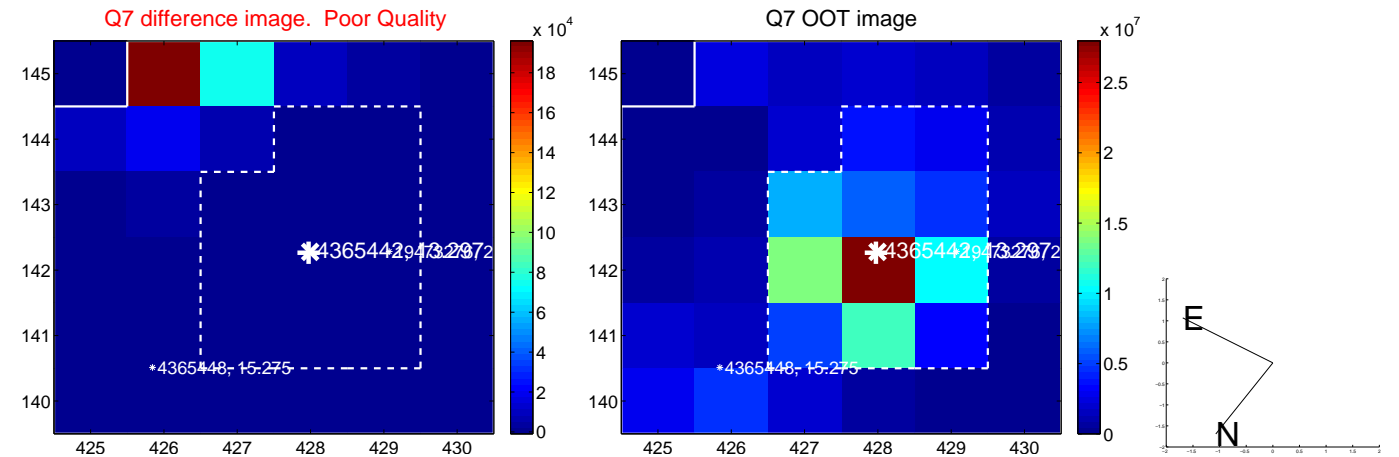
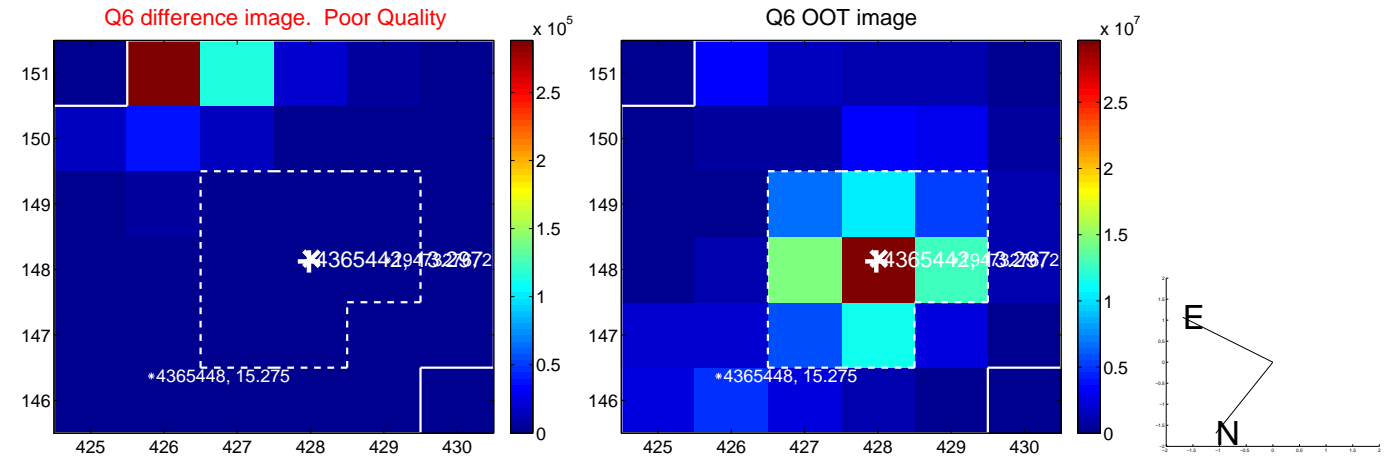
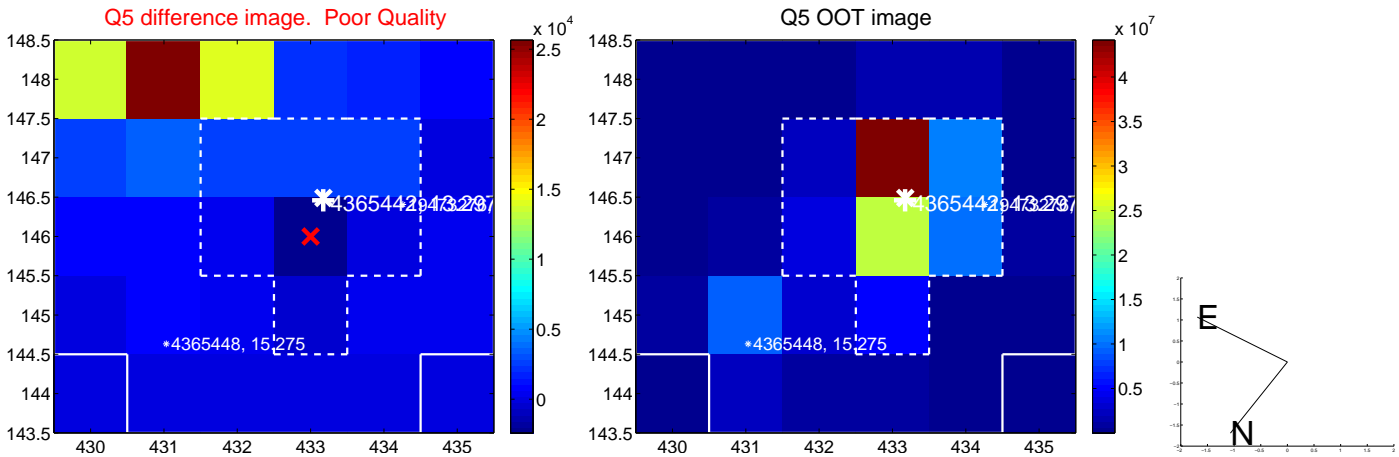


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

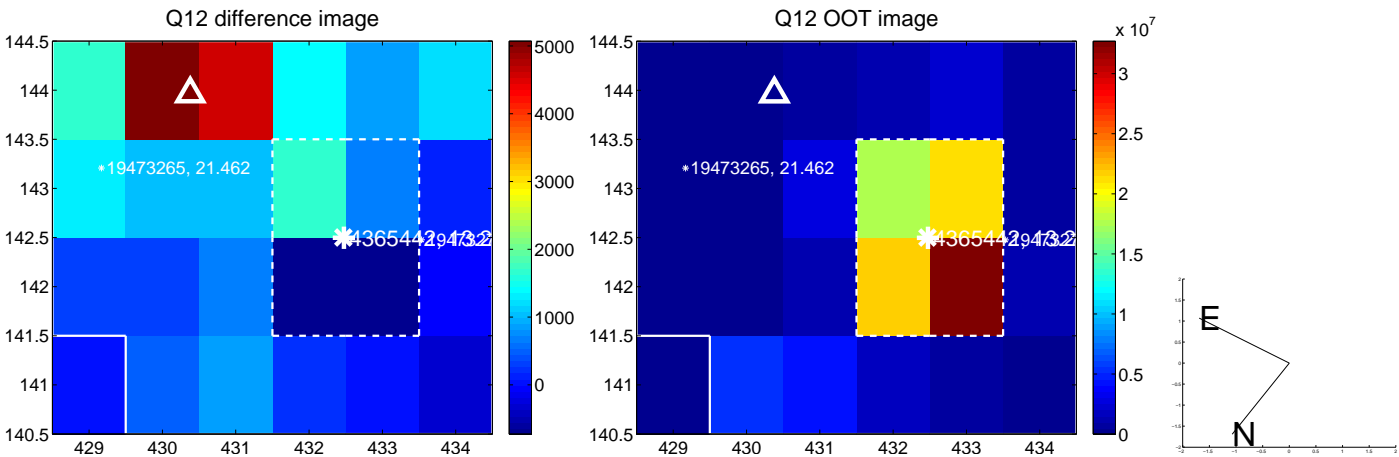
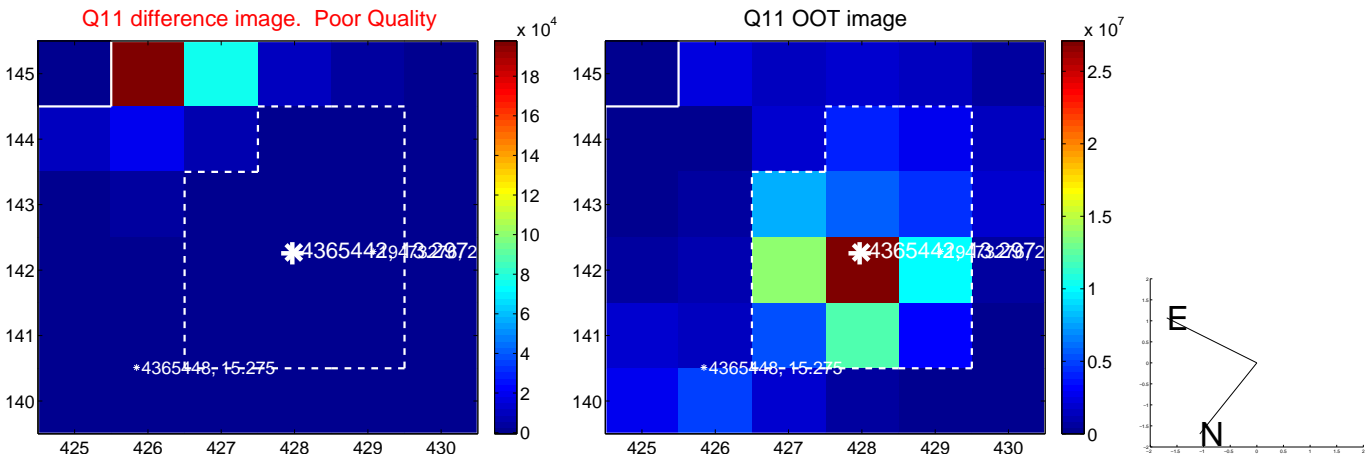
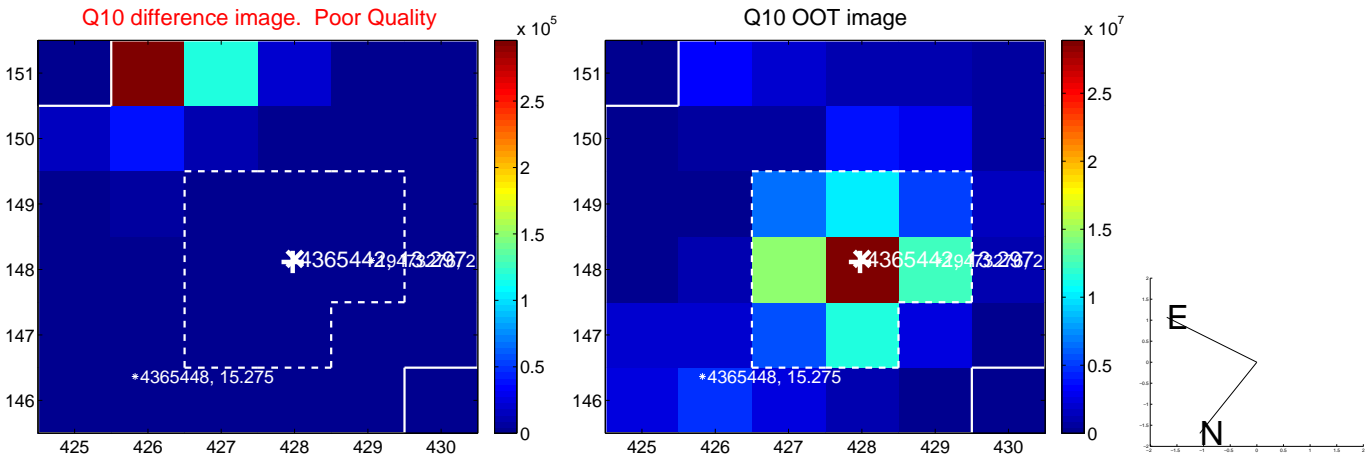
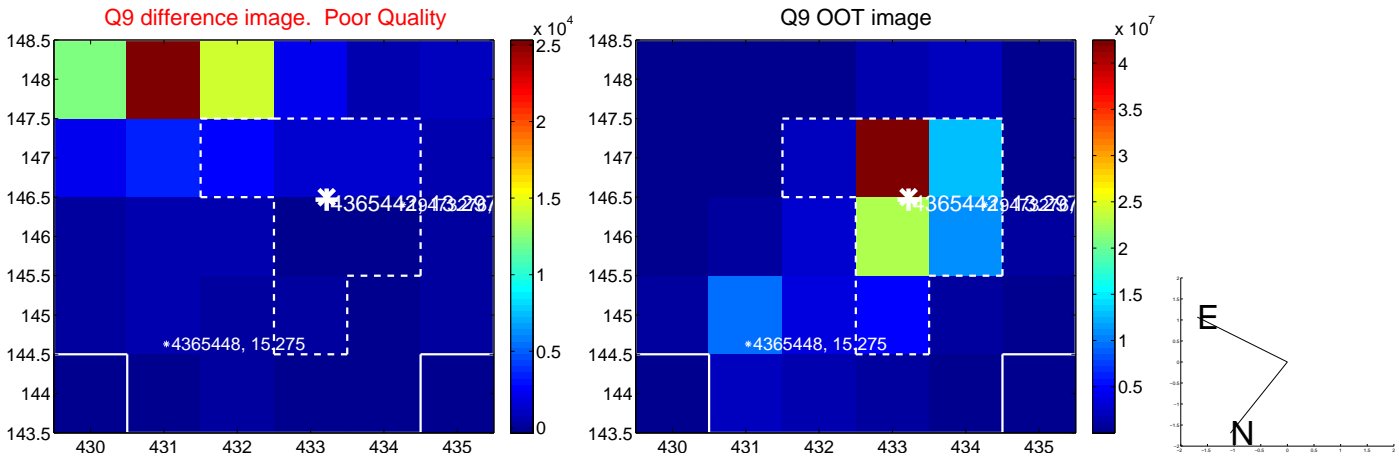
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



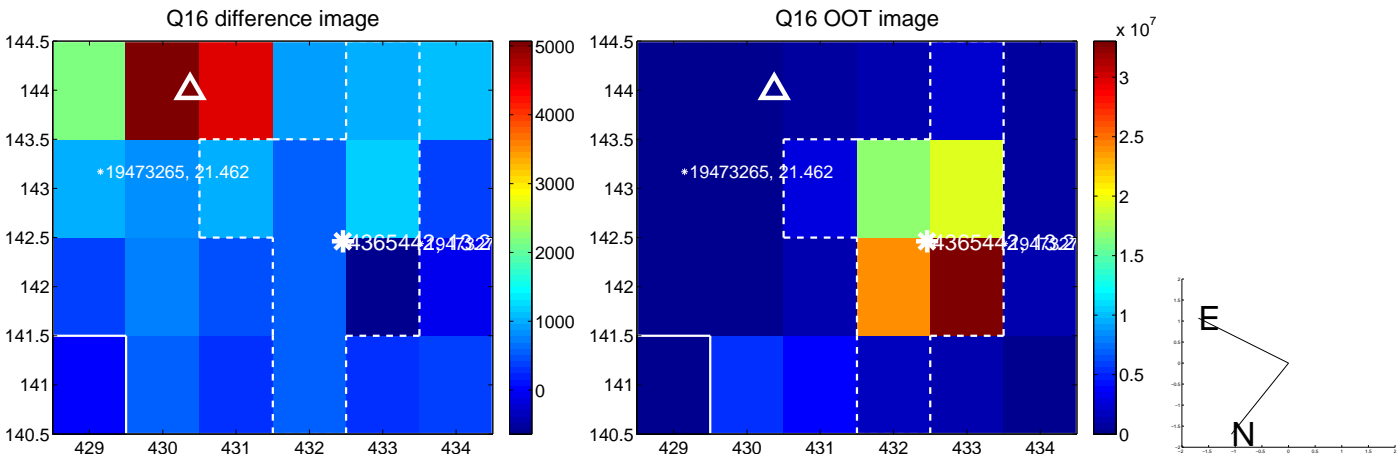
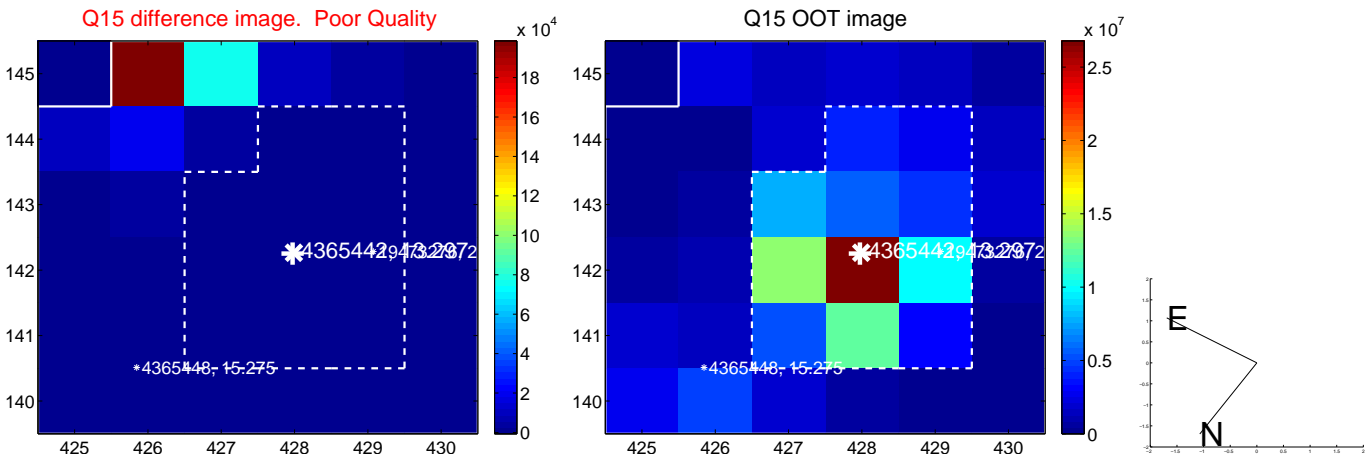
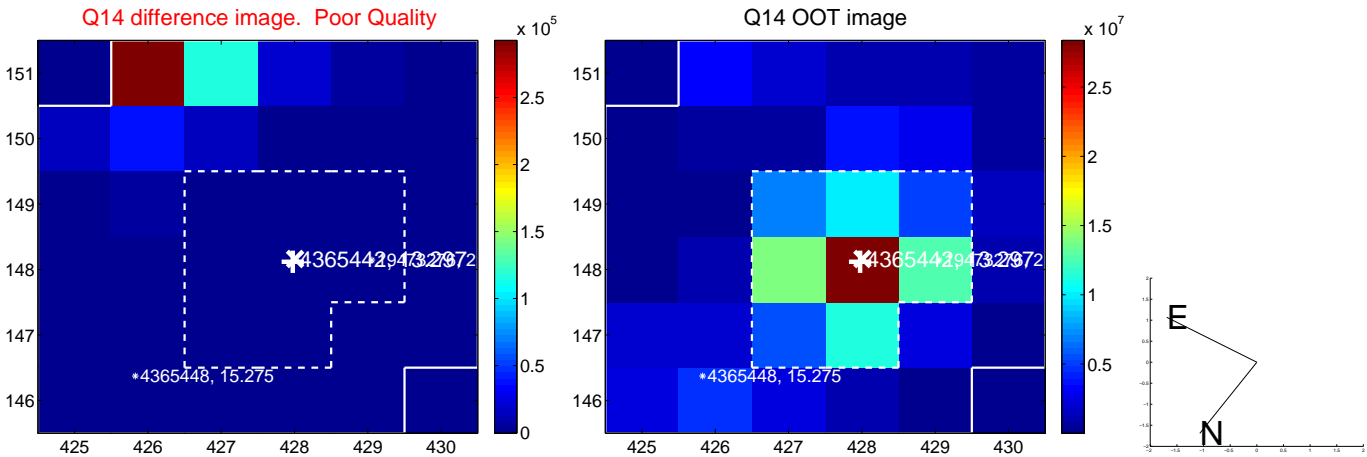
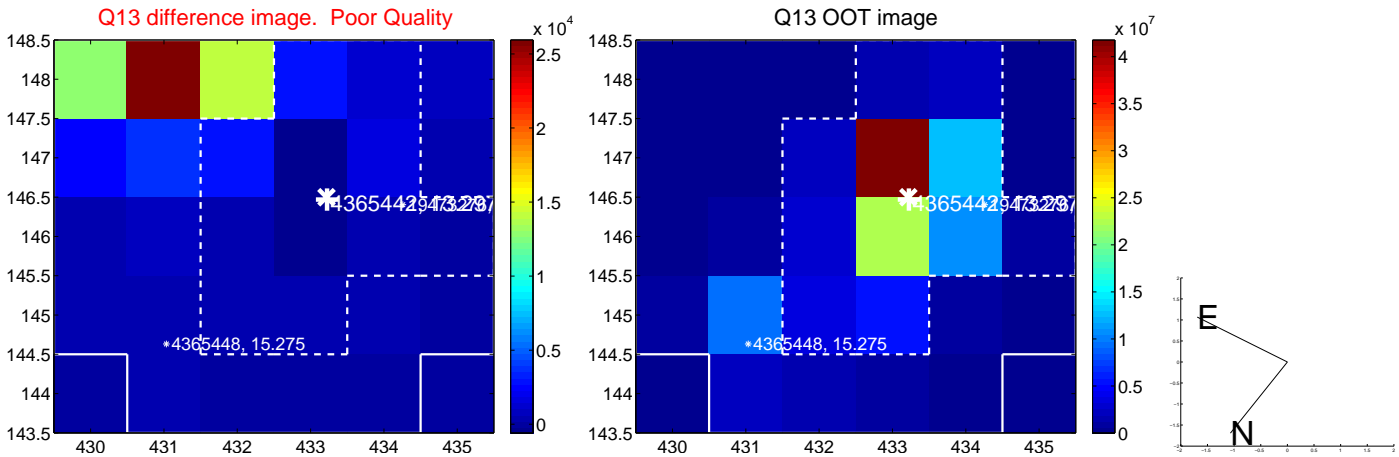
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



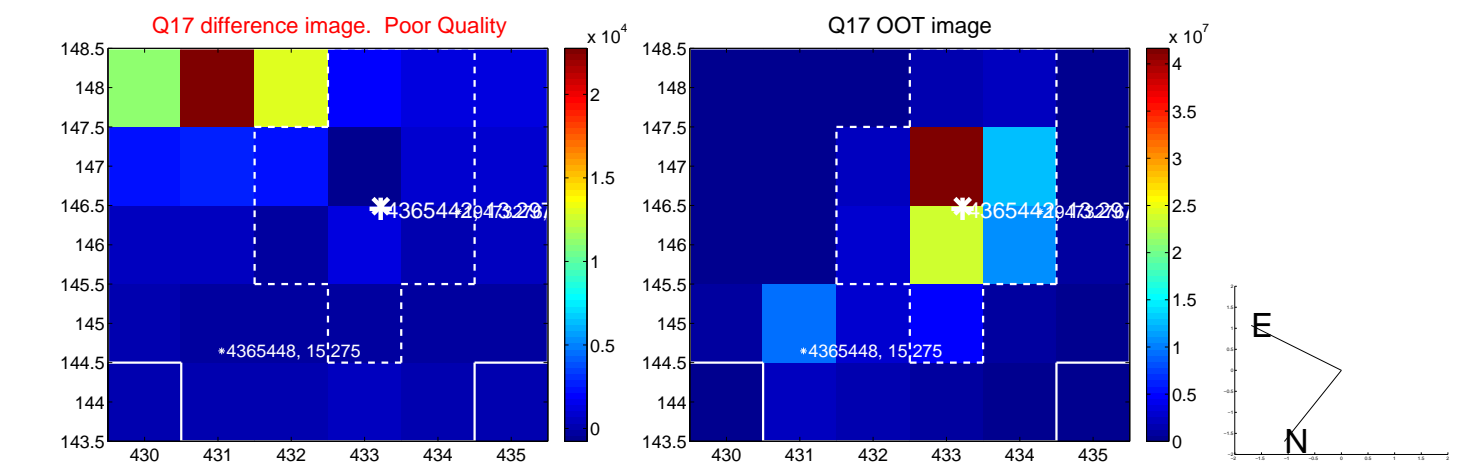
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



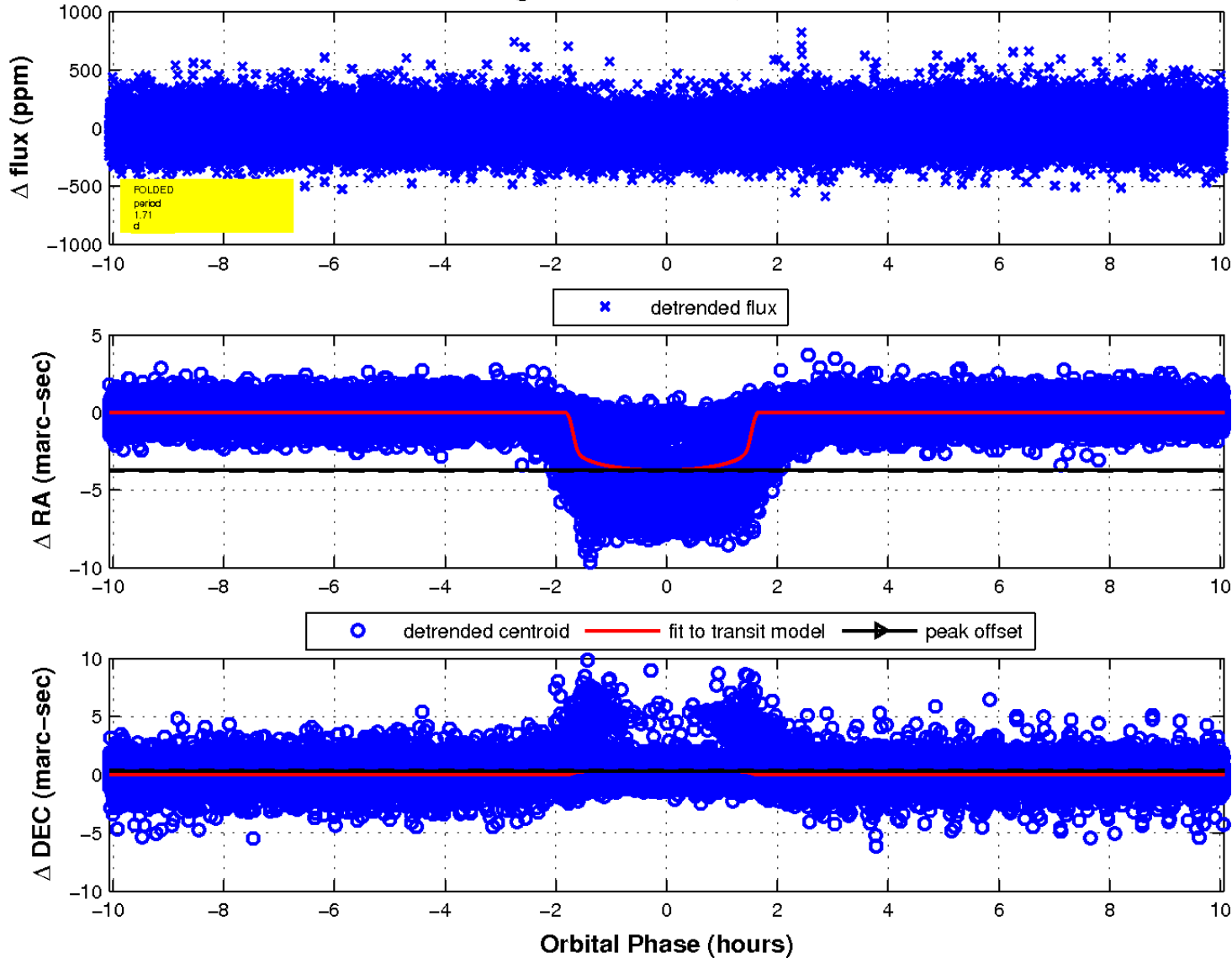
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

