

KIC 006471230

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 _⊕)
006471230-01	OBS	6720.01	1.752423	132.809998	42.1	2.843	9.8	9.7	0.99	5779	0.75	1373.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006471230-01	OBS	FP	0.00	0	0	1	1	CENT_RESOLVED_OFFSET—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 006471230-01

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
006471230-01	6471230	006471229-01	6471229	1:1	4.1	1	1	13.98	13.30	1.98	Direct-PRF	0	0.36	0.55

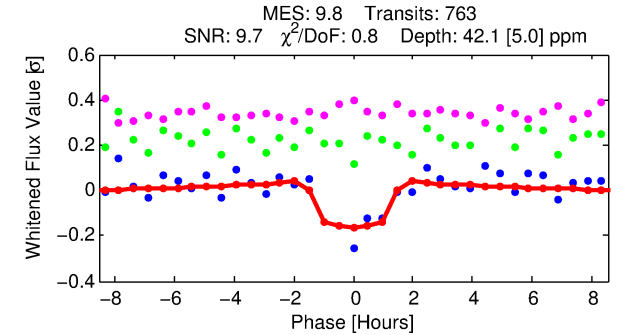
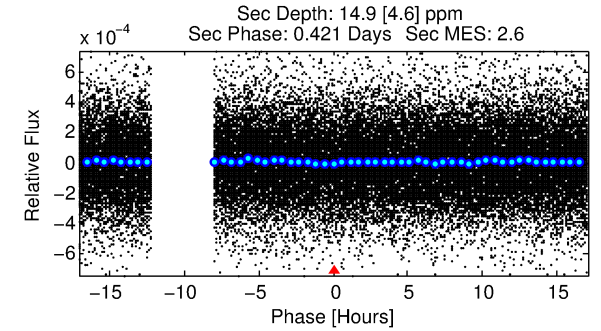
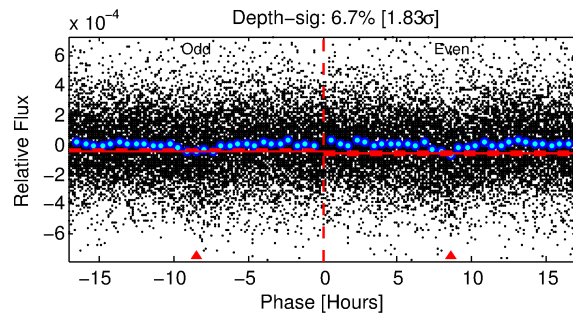
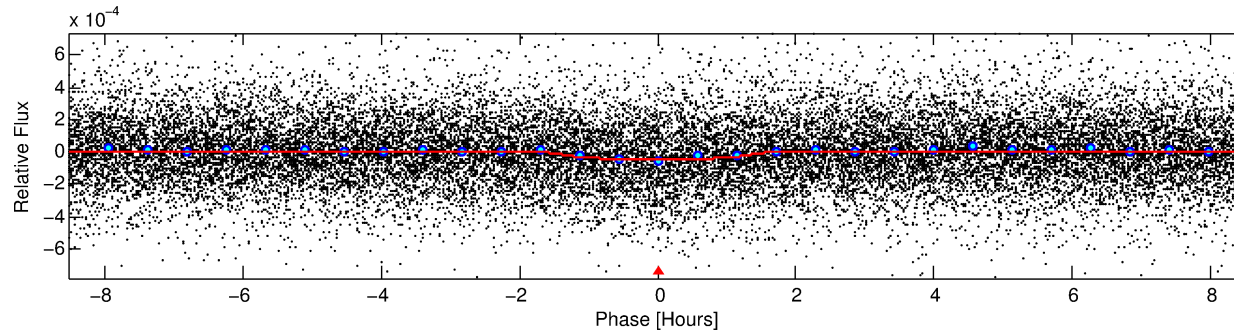
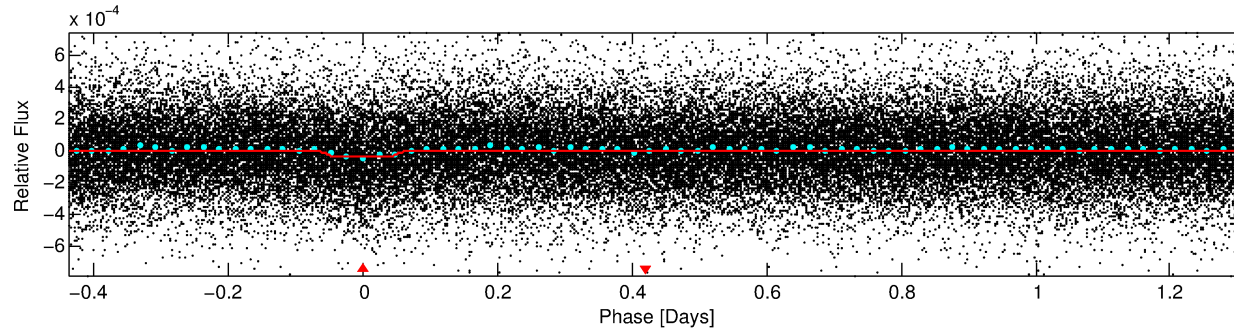
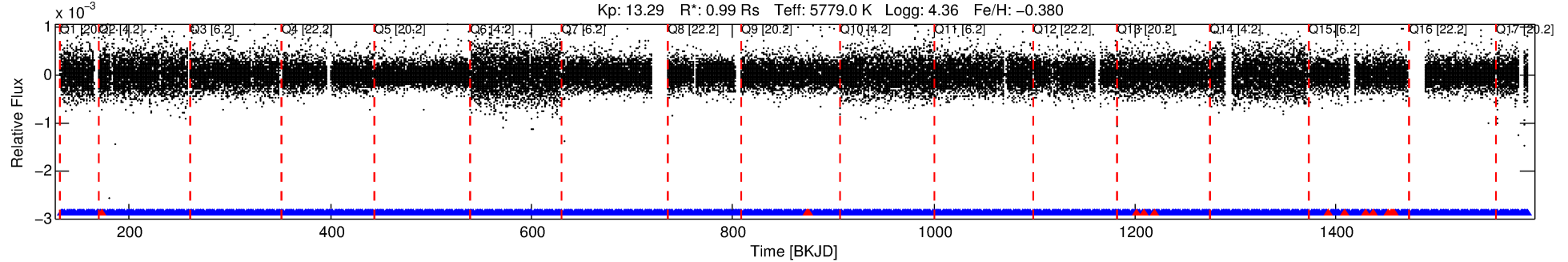
Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period 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: 6471230 Candidate: 1 of 1 Period: 1.752 d

KOI: K06720 Corr: No Ephemeris Match

Kp: 13.29 R*: 0.99 Rs Teff: 5779.0 K Logg: 4.36 Fe/H: -0.380



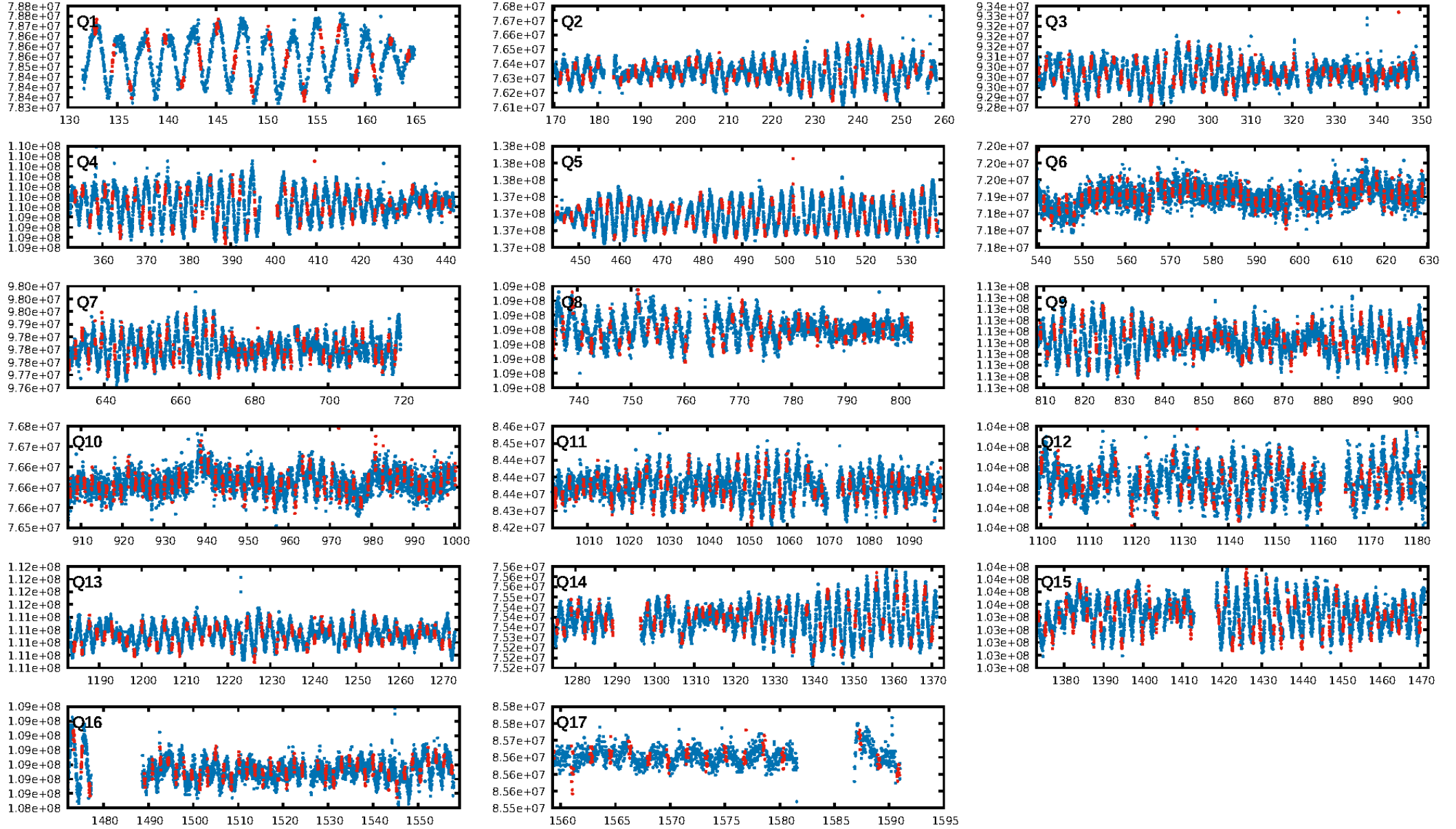
DV Fit Results:

Period = 1.75242 [0.00001] d
Epoch = 132.8100 [0.0033] BKJD
Rp/R* = 0.0070 [0.0031]
a/R* = 2.41 [4.53]
b = 0.89 [0.54]
Seff = 1373.65 [509.17]
Teq = 1552 [144] K
Rp = 0.75 [0.40] Re
a = 0.0267 [0.0063] AU
Ag = 10.29 [10.50] [0.89σ]
Teffp = 4299 [1035] K [2.63σ]

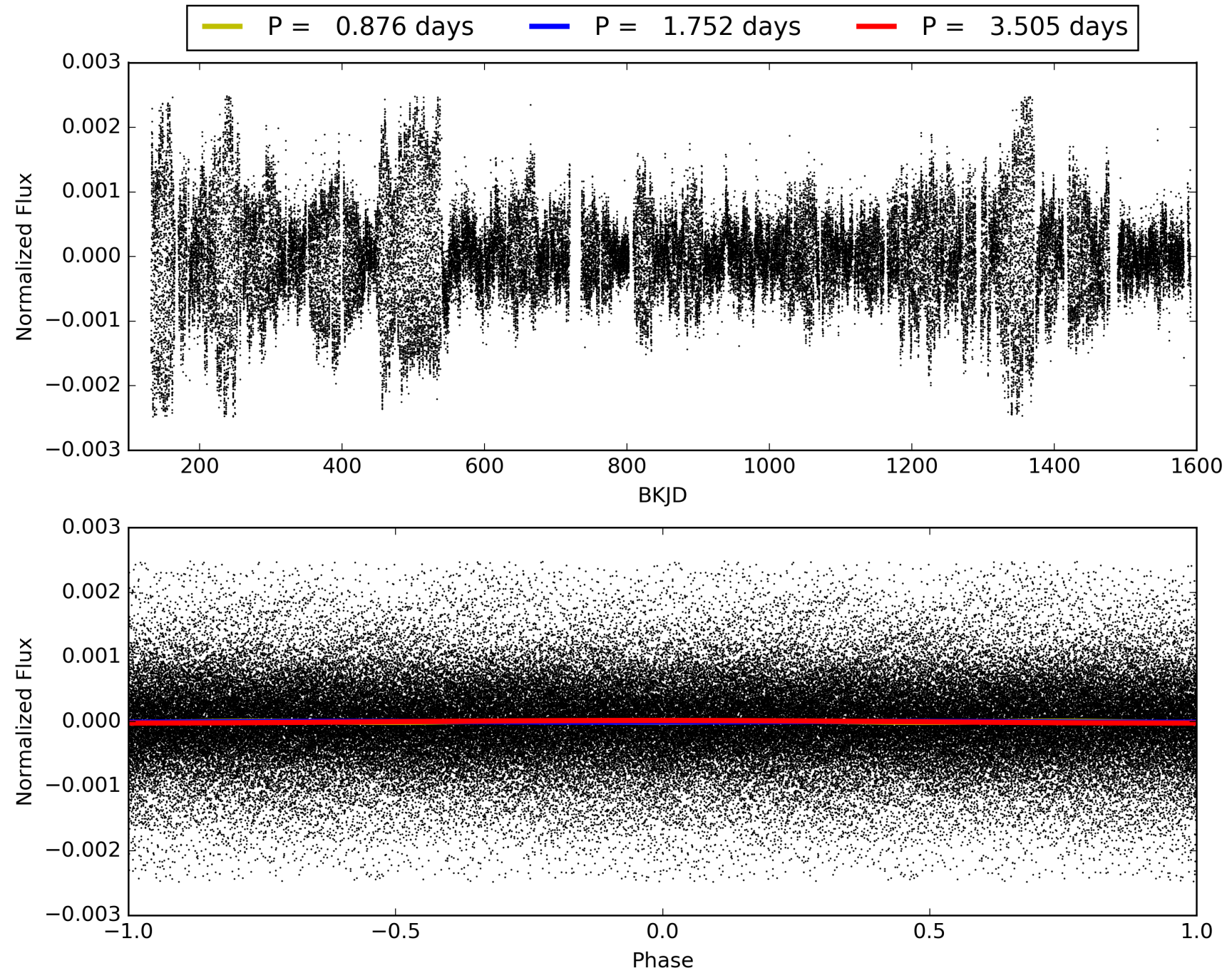
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.13e-19
RollingBand-fgt: 0.98 [714/728]
GhostDiagnostic-chr: 0.8723
Centroid-sig: 0.0%
Centroid-so: 4.402 arcsec [4.68σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [17/17]

TCE 006471230-01, PDC Light Curves

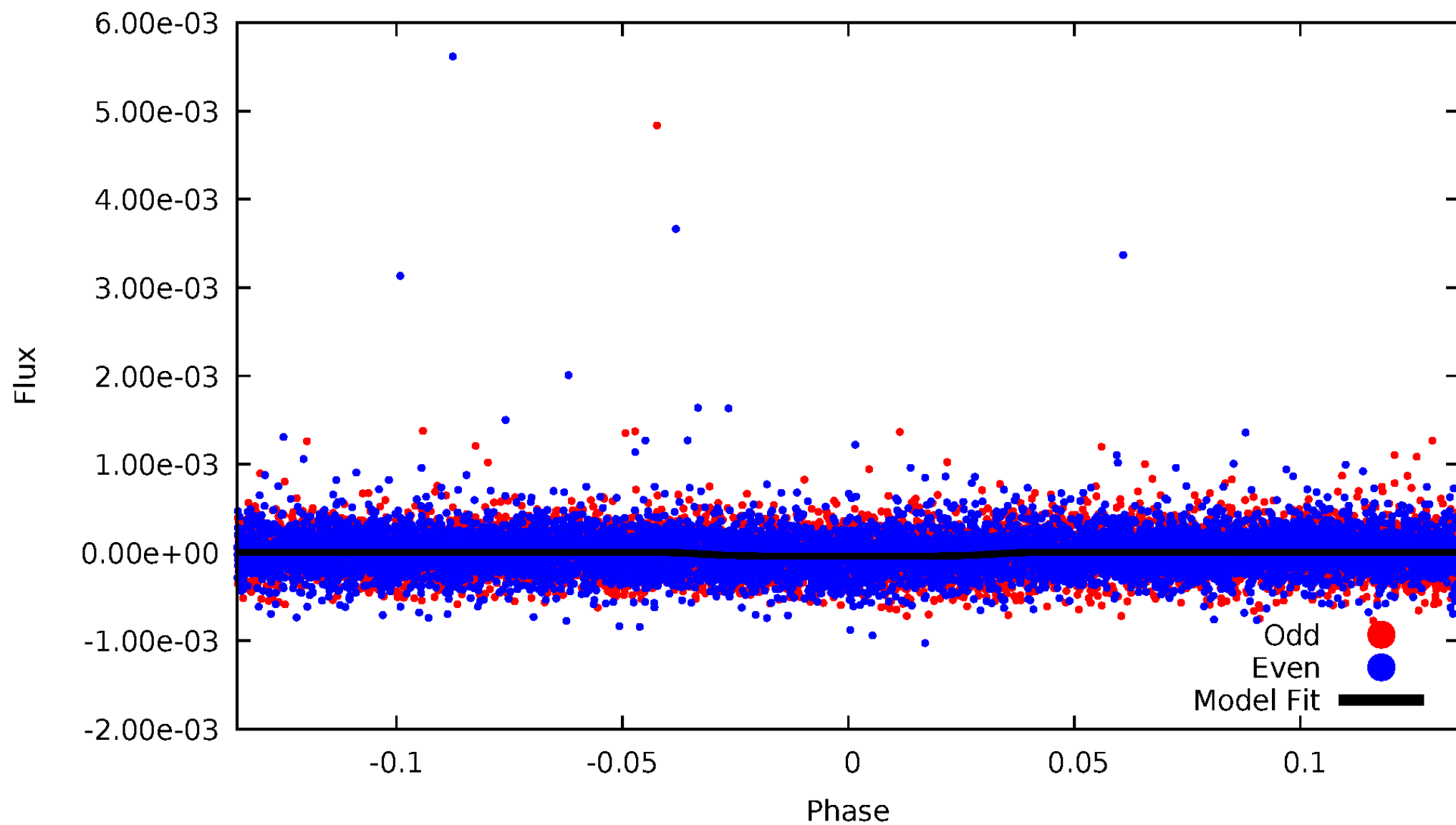


TCE 006471230-01



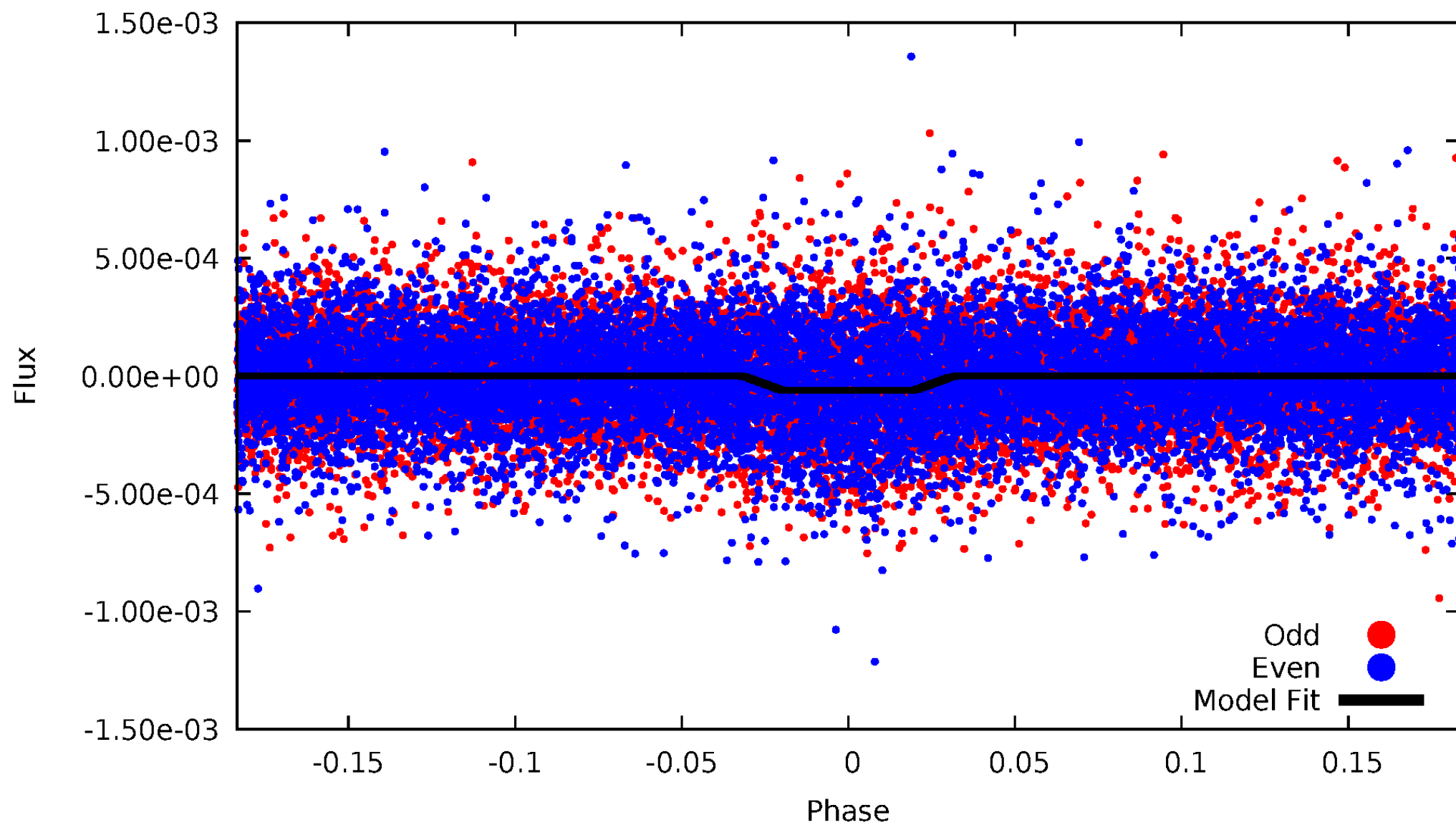
DV Odd/Even

TCE 006471230-01



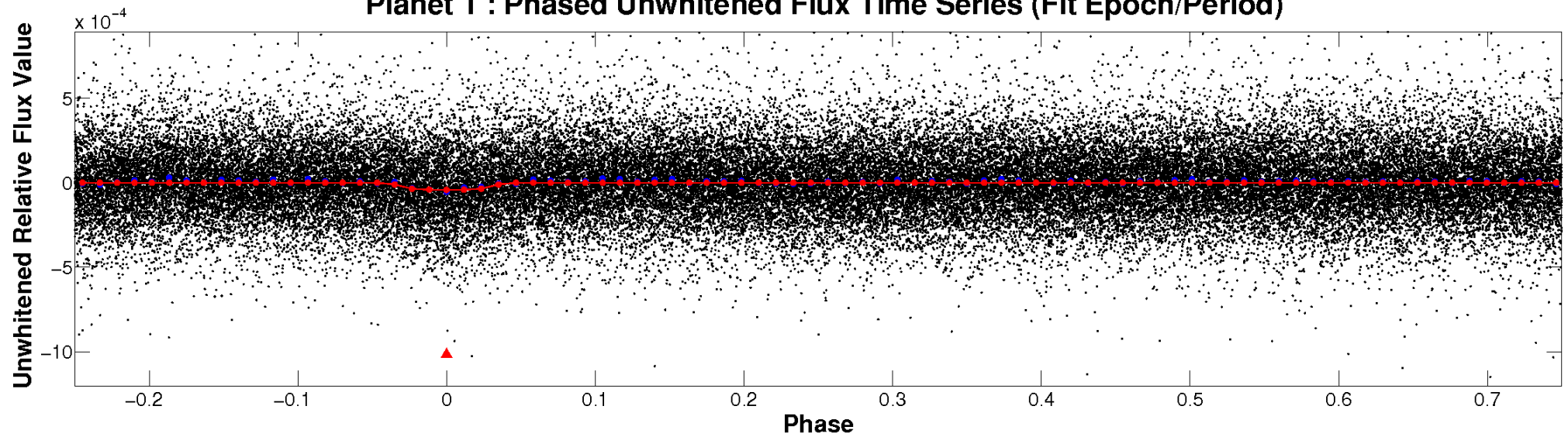
ALT Odd/Even

TCE 006471230-01

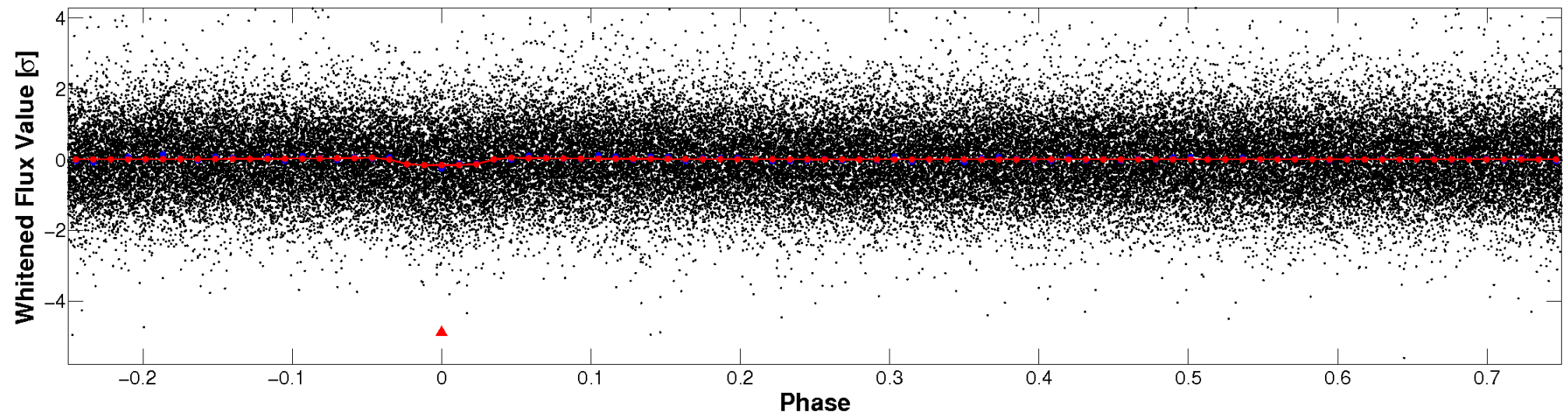


Non-Whitened Vs. Whitened Light Curve

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

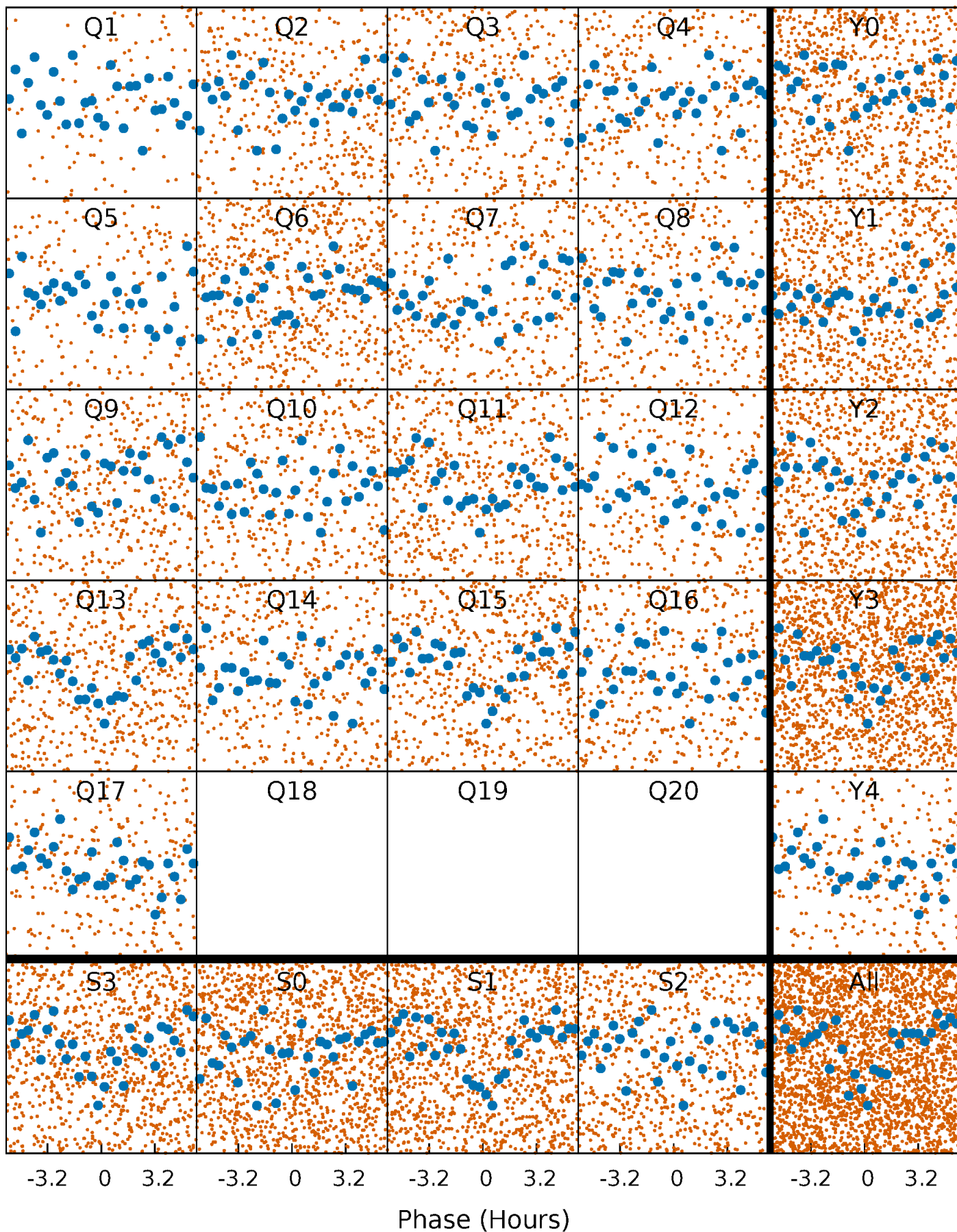


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



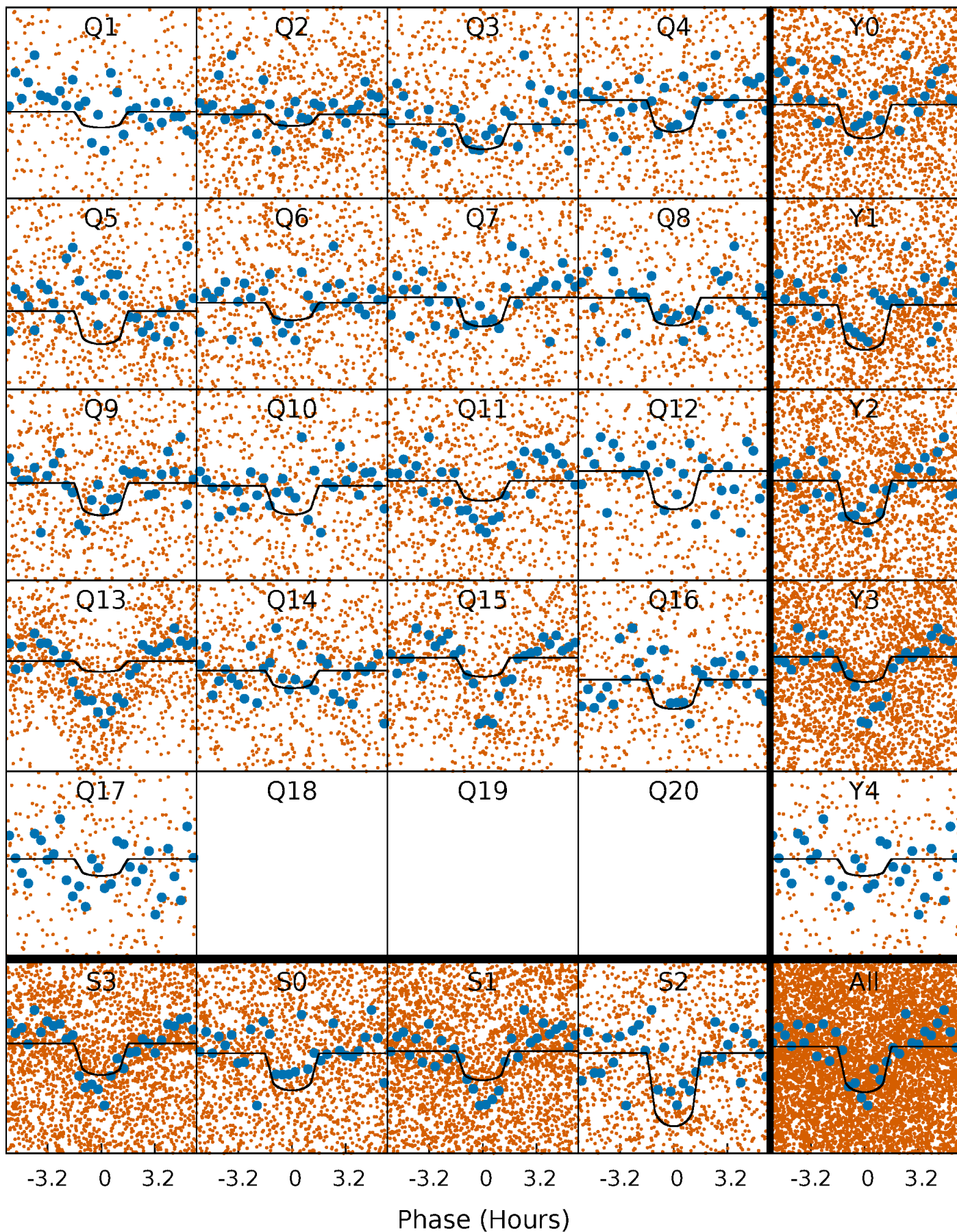
PDC Quarter-Phased Transit Curves

TCE 006471230-01 P= 1.752423 Days $T_0=132.809998$ (BKJD)



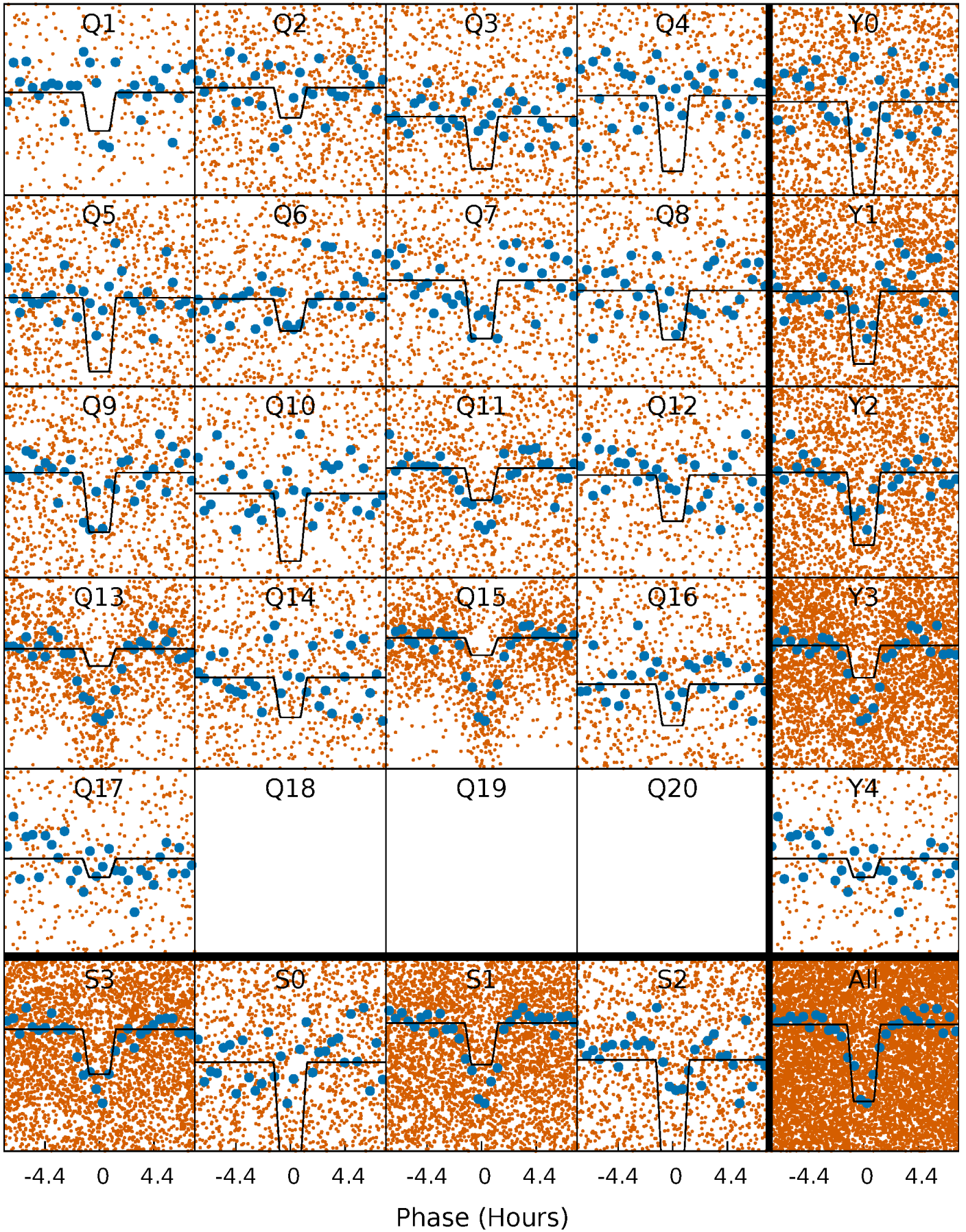
DV Quarter-Phased Transit Curves

TCE 006471230-01 P= 1.752423 Days $T_0=132.809998$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

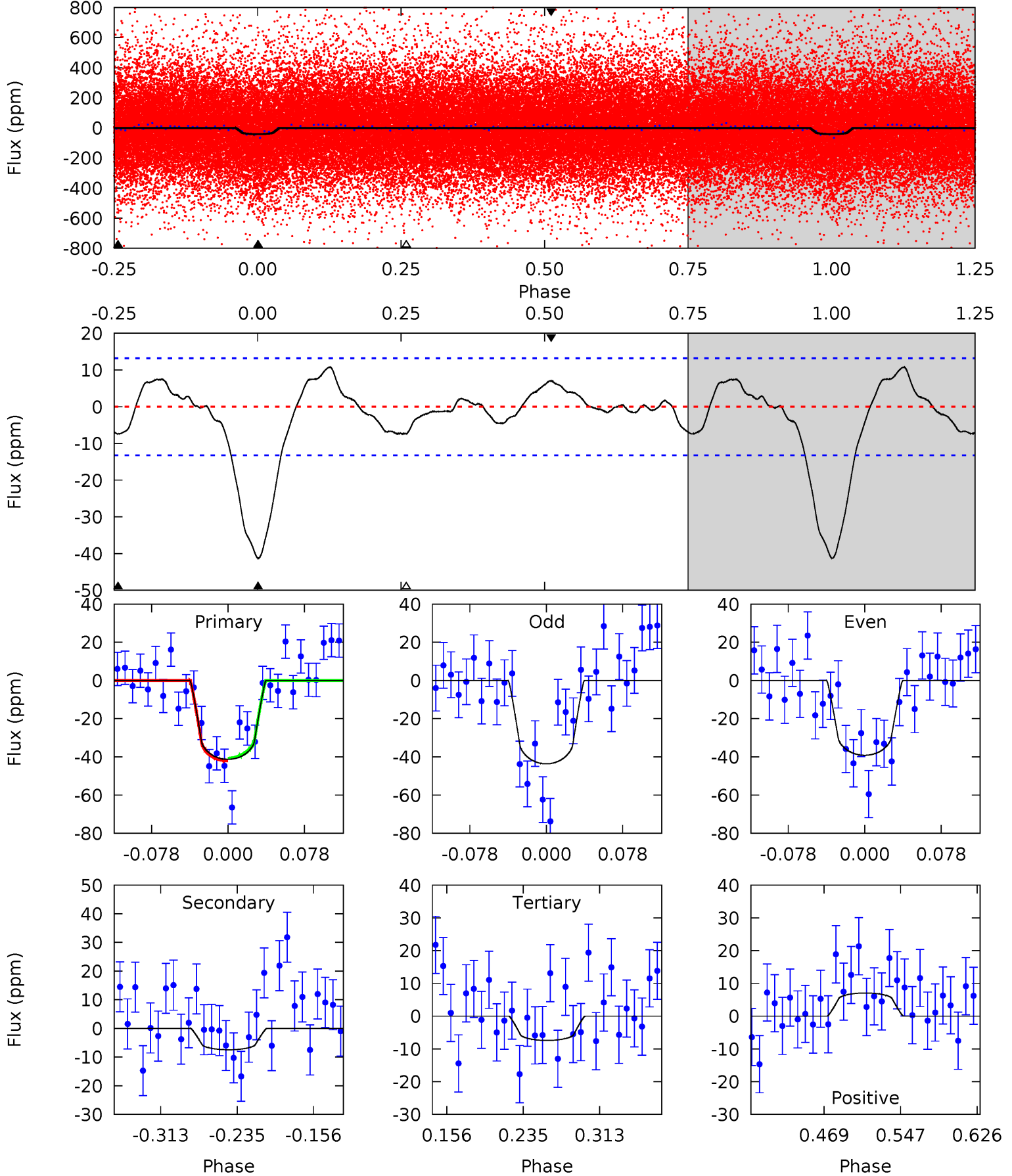
TCE 006471230-01 P= 1.752484 Days $T_0=132.775854$ (BKJD)



DV Model-Shift Uniqueness Test

006471230-01, P = 1.752423 Days, E = 131.057575 Days

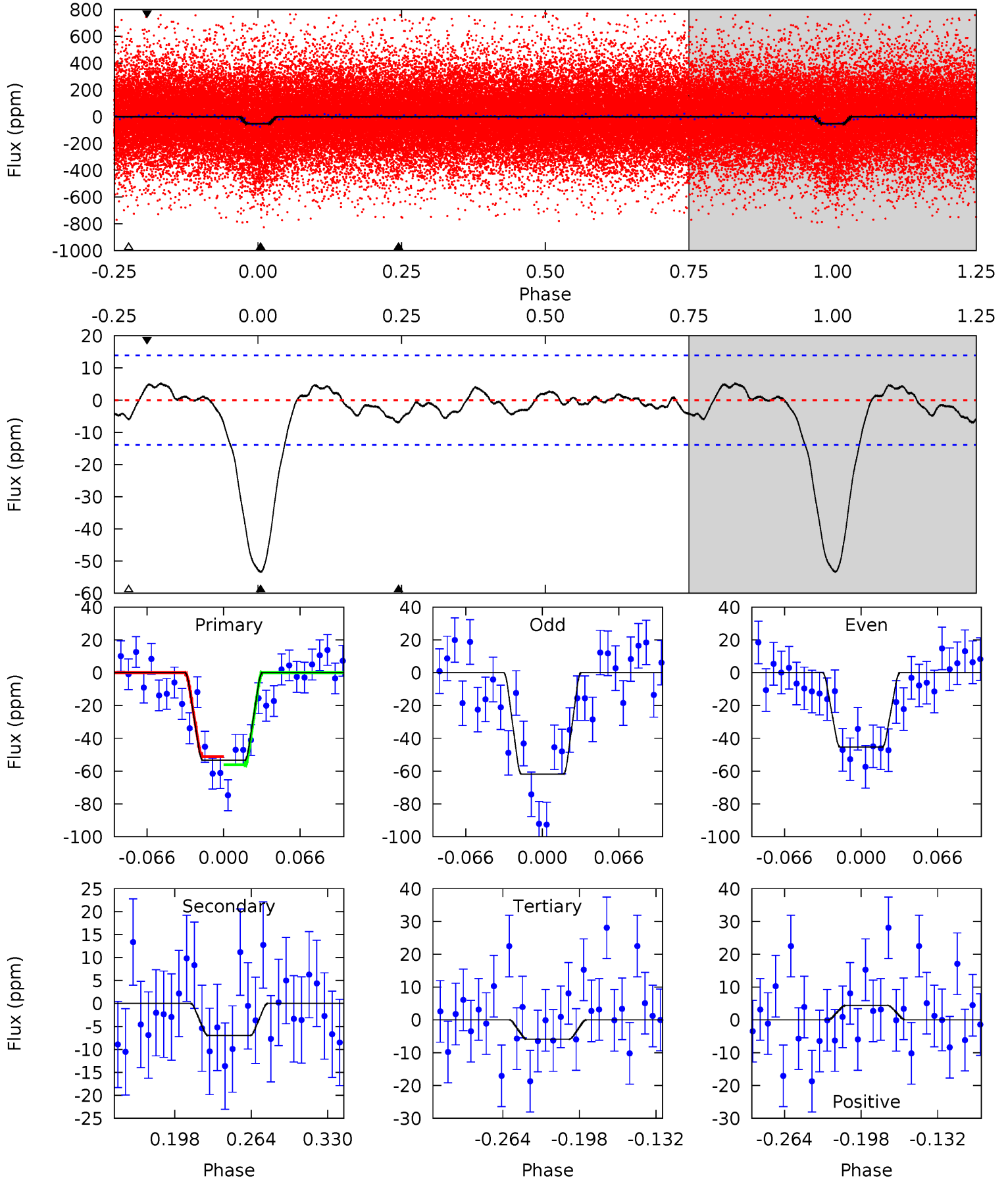
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.4	2.60	2.59	2.47	4.62	1.76	1.40	11.8	12.0	0.01	0.14	0.78	0.99	0.21	0.24



Alt Model-Shift Uniqueness Test

006471230-01, P = 1.752484 Days, E = 131.023370 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.8	2.33	1.97	1.46	4.65	1.84	0.90	15.9	16.4	0.36	0.87	2.76	1.09	0.09	0.82



Stellar Parameters For KIC 006471230

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5779^{+158}_{-158}	$4.364^{+0.180}_{-0.198}$	$-0.380^{+0.300}_{-0.300}$	$0.990^{+0.270}_{-0.180}$	$0.827^{+0.123}_{-0.061}$	$1.201^{+0.967}_{-0.625}$
	+3%/-3%	+4%/-5%	+79%/-79%	+27%/-18%	+15%/-7%	+81%/-52%
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 006471230-01 / KOI 6720.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-7 ± 3	$0.77^{+0.38}_{-0.35}$	2173^{+173}_{-130}	3864^{+1076}_{-575}	$4.693^{+12.990}_{-2.803}$
Alt.	-7 ± 3	$0.85^{+0.39}_{-0.32}$	2167^{+175}_{-135}	3667^{+779}_{-520}	$3.633^{+6.919}_{-2.150}$

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

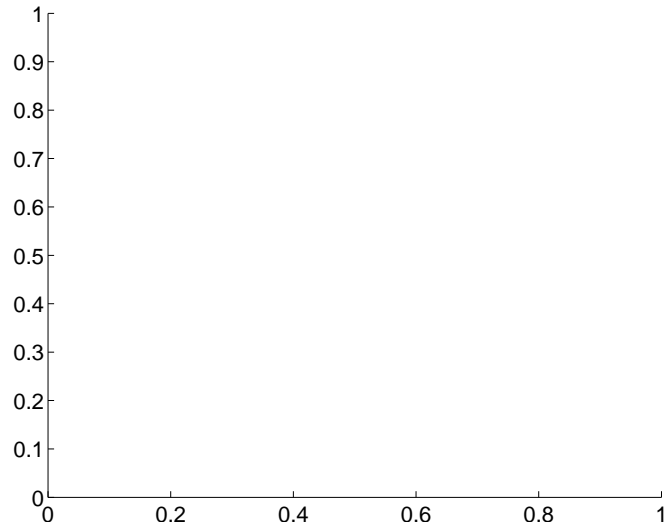
Supplemental centroid analysis for 006471230-01. Kepler magnitude: 13.29. Transit SNR 9.68

There are 0 quarters with good PRF difference image offsets

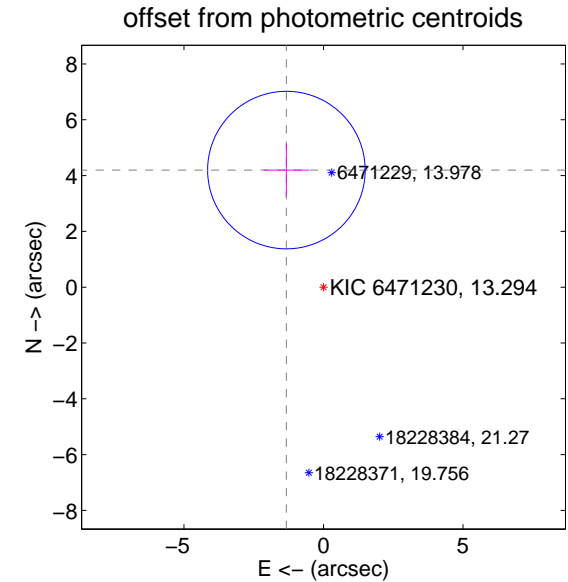
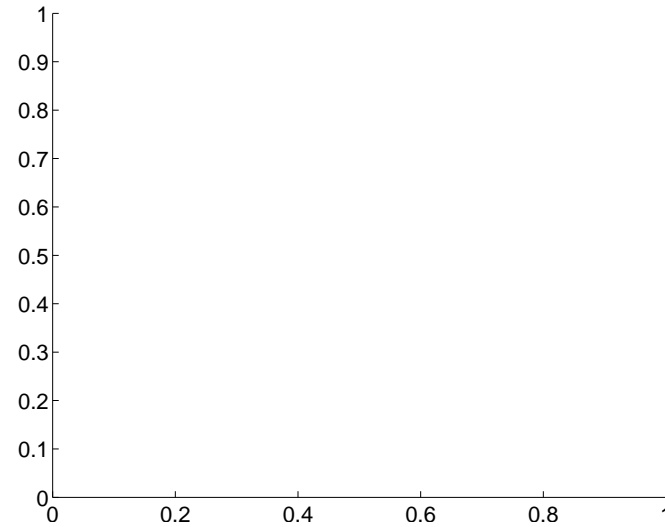
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	4.40 ± 0.94	4.68	1.33 ± 0.82	4.20 ± 0.95

There is no PRF-fit offset from OOT-fit

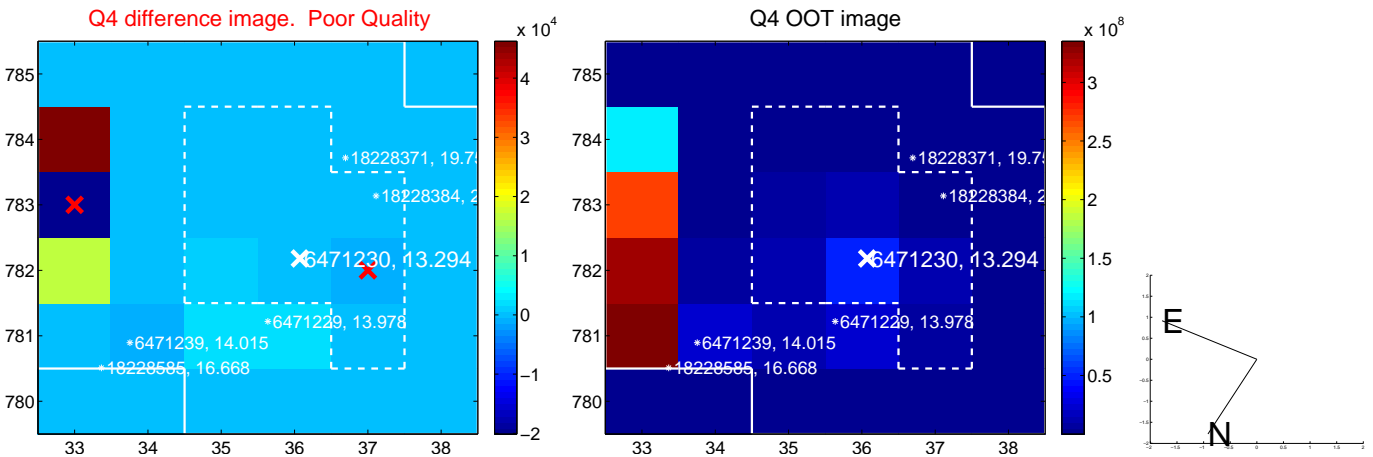
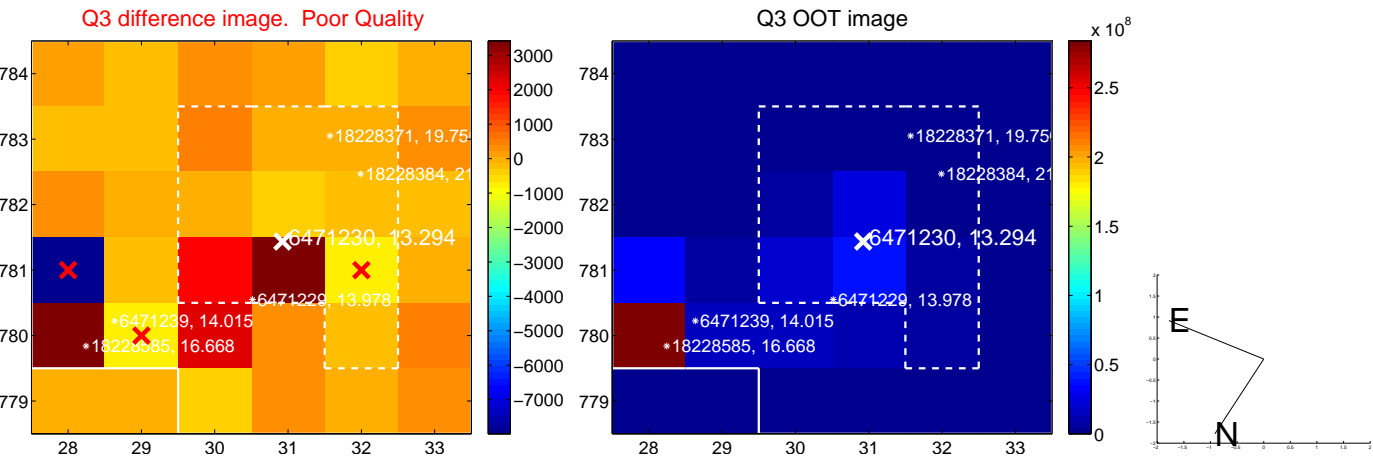
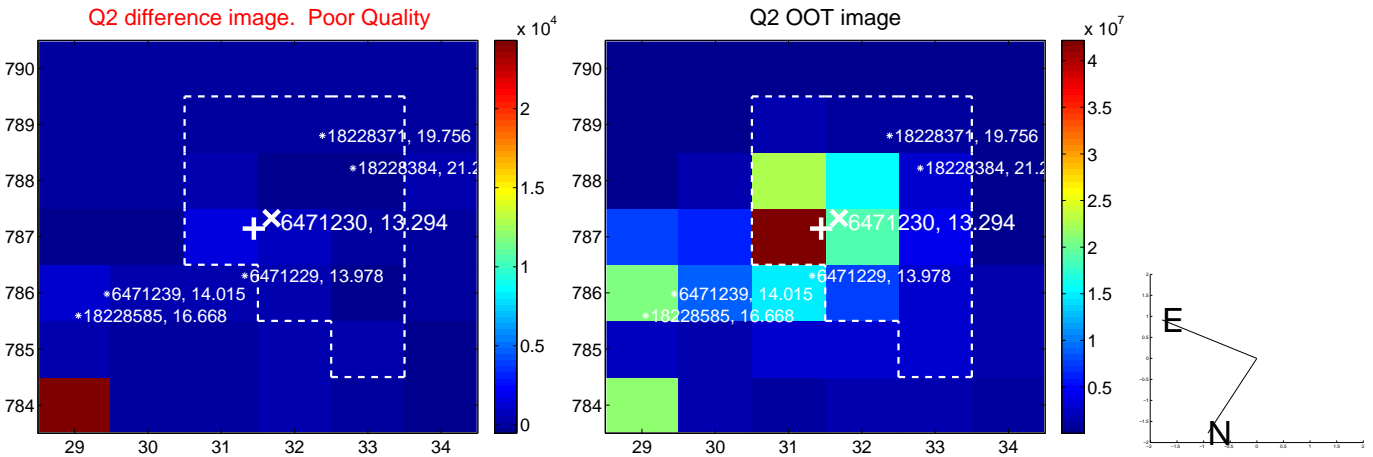
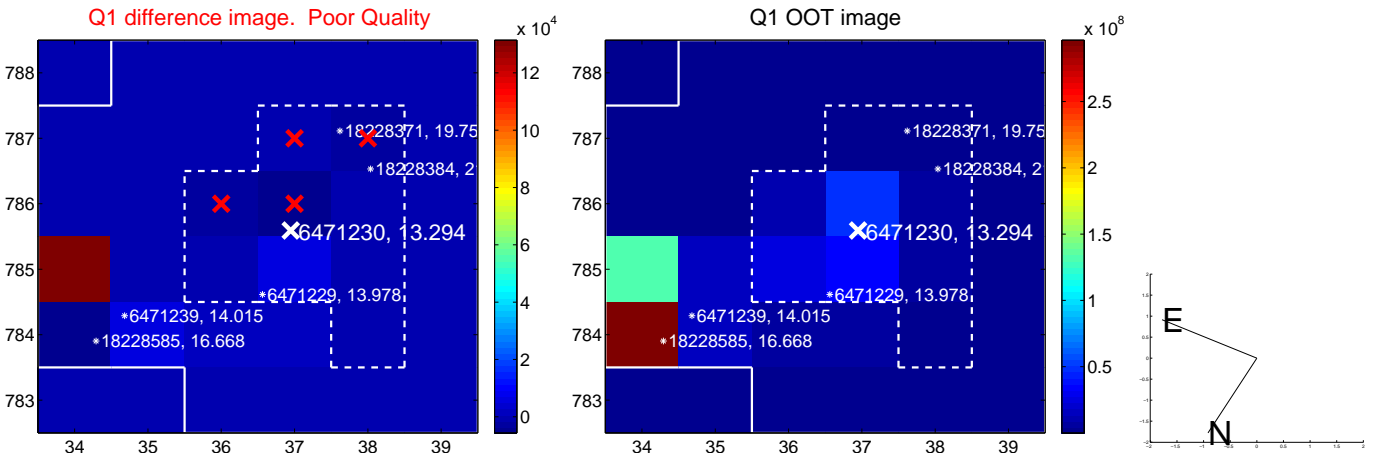


There is no PRF-fit offset from KIC

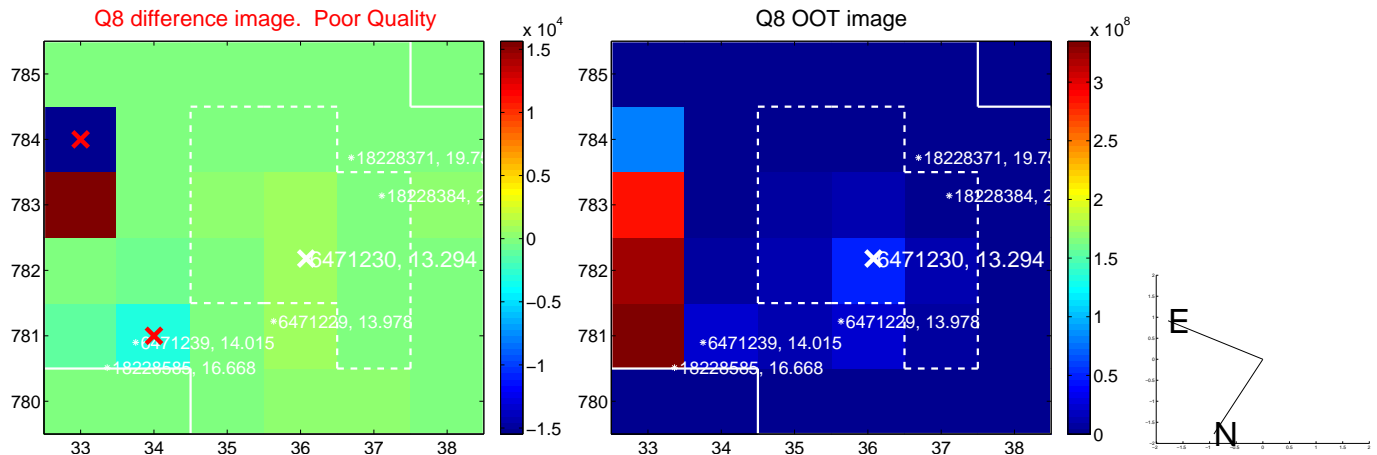
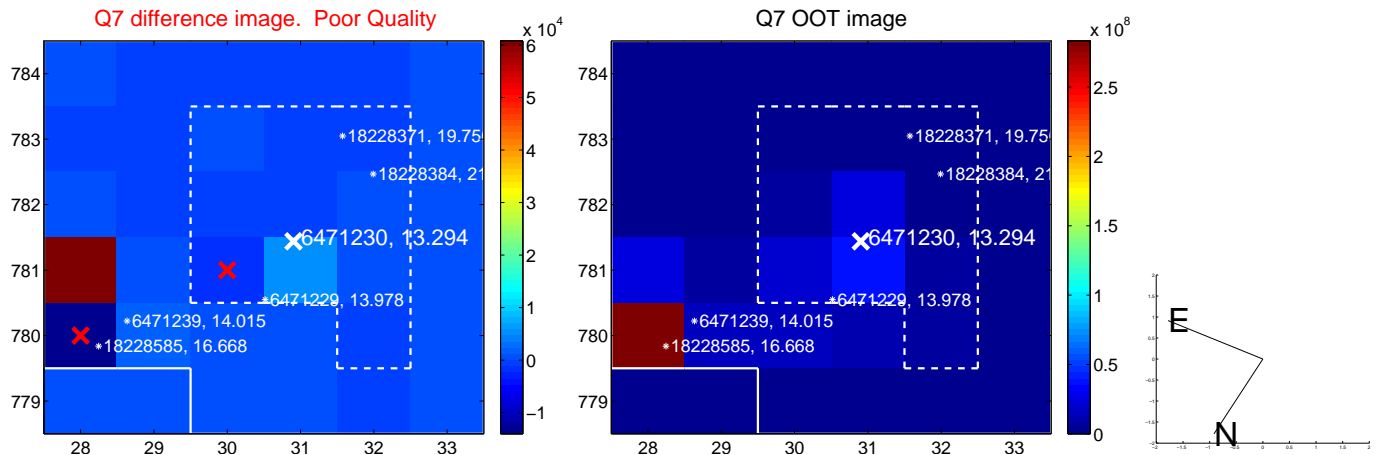
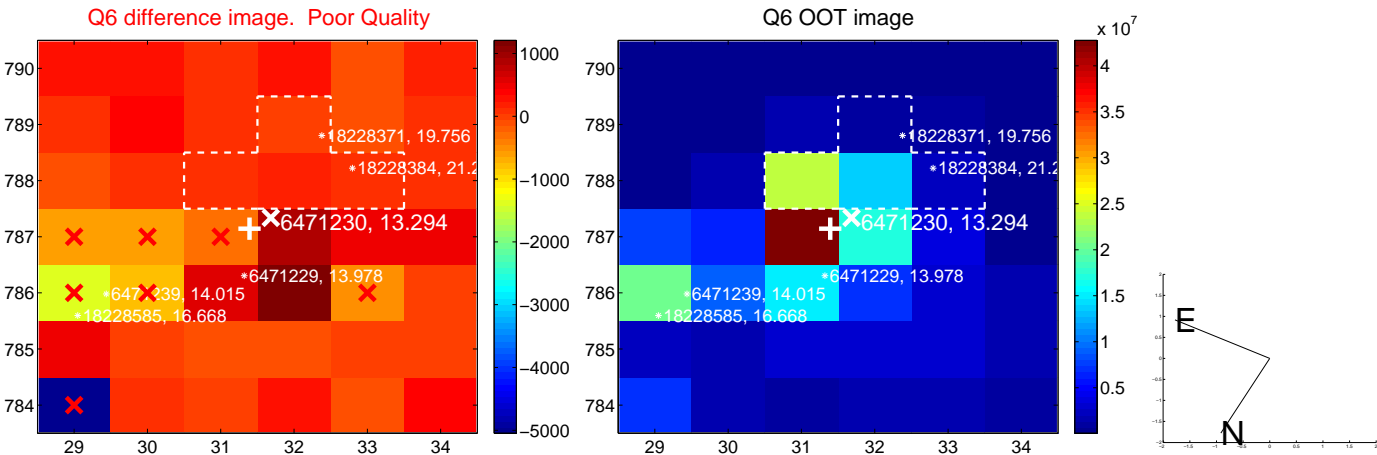
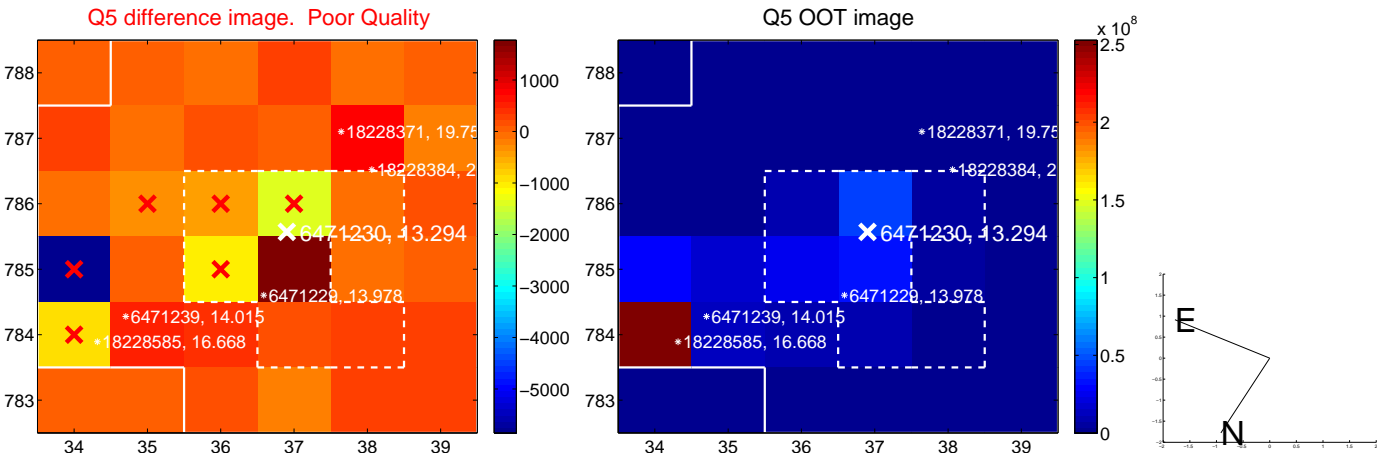


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

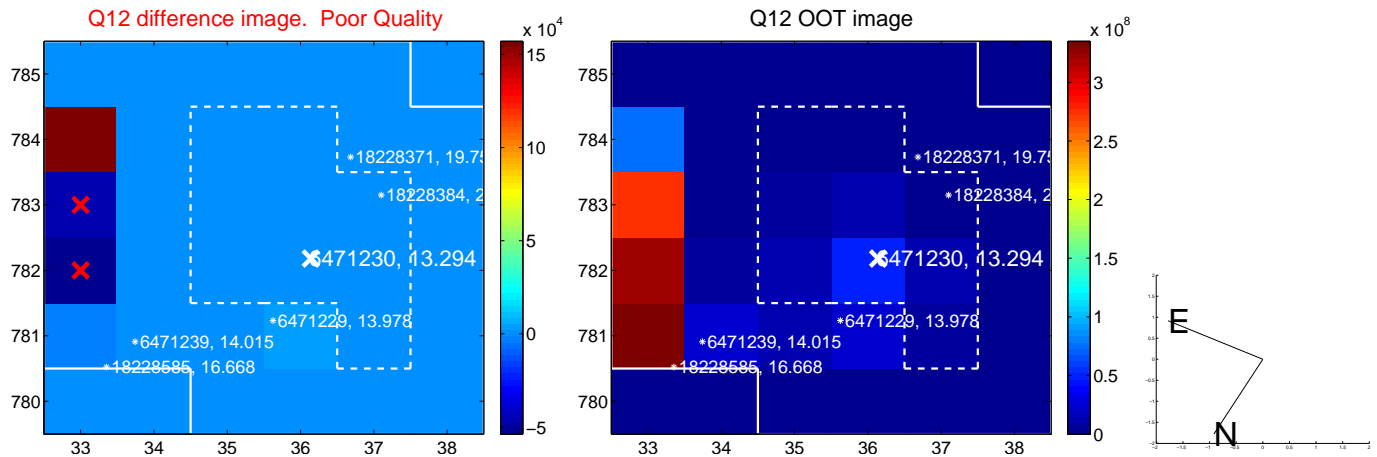
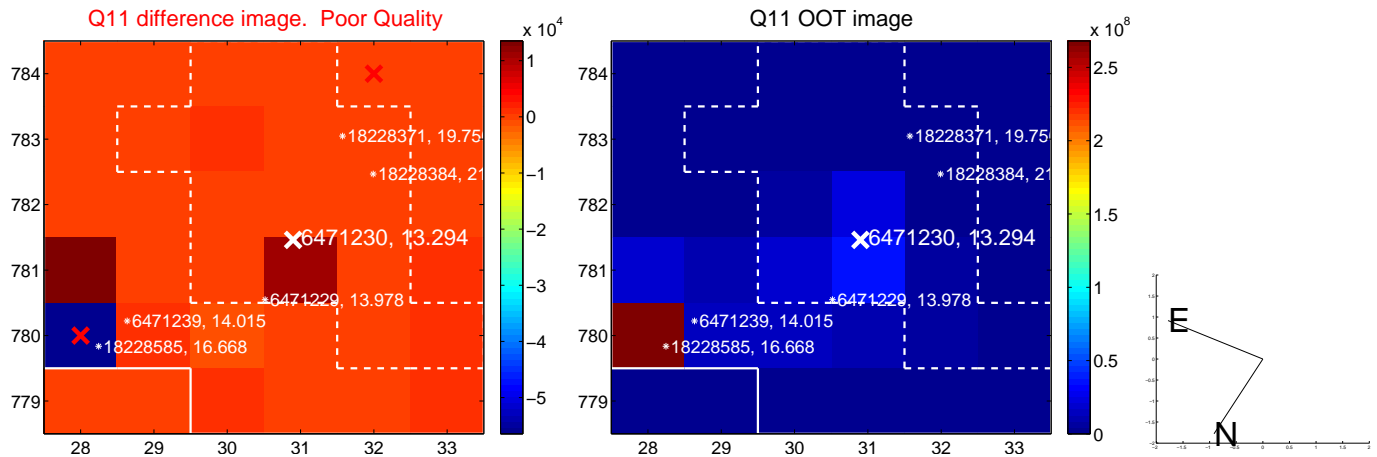
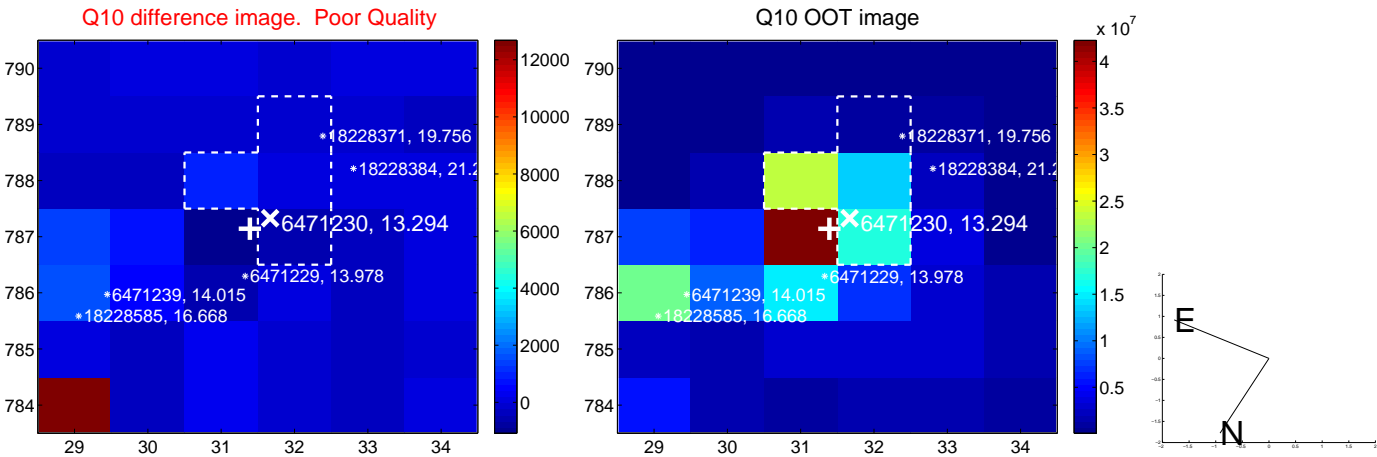
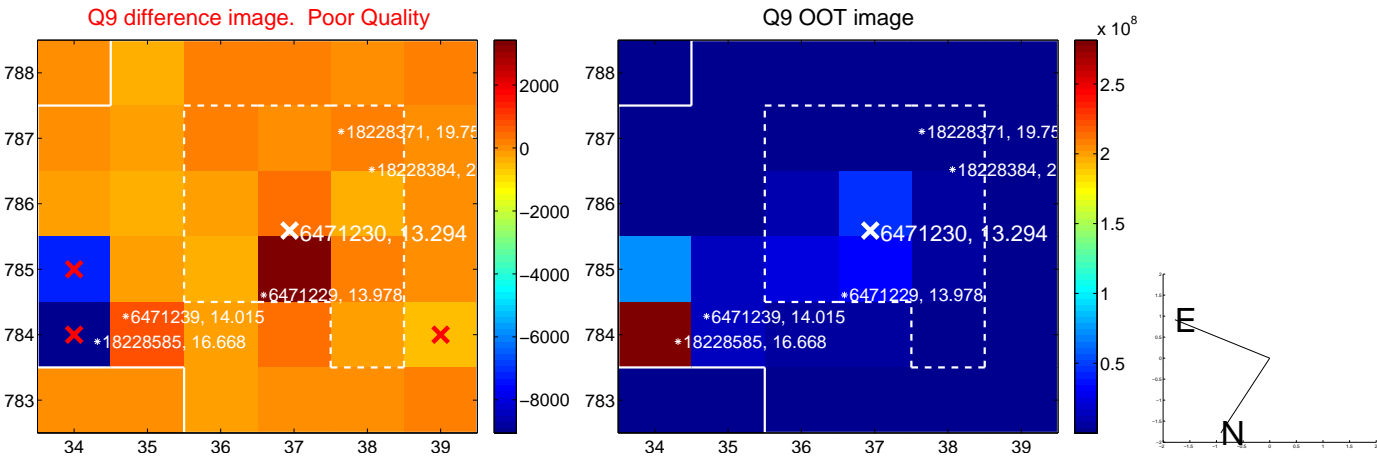
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



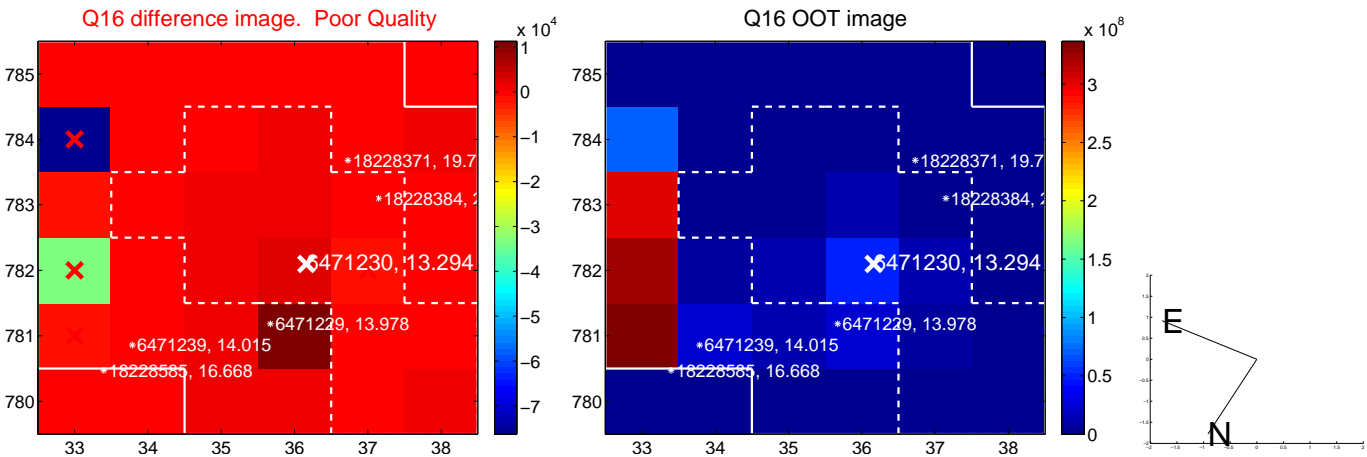
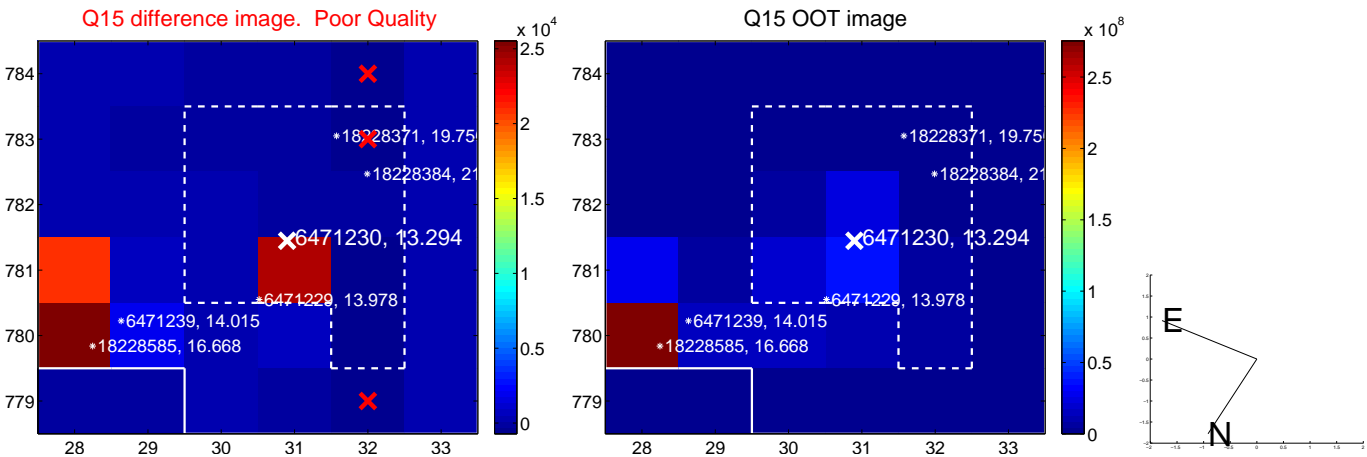
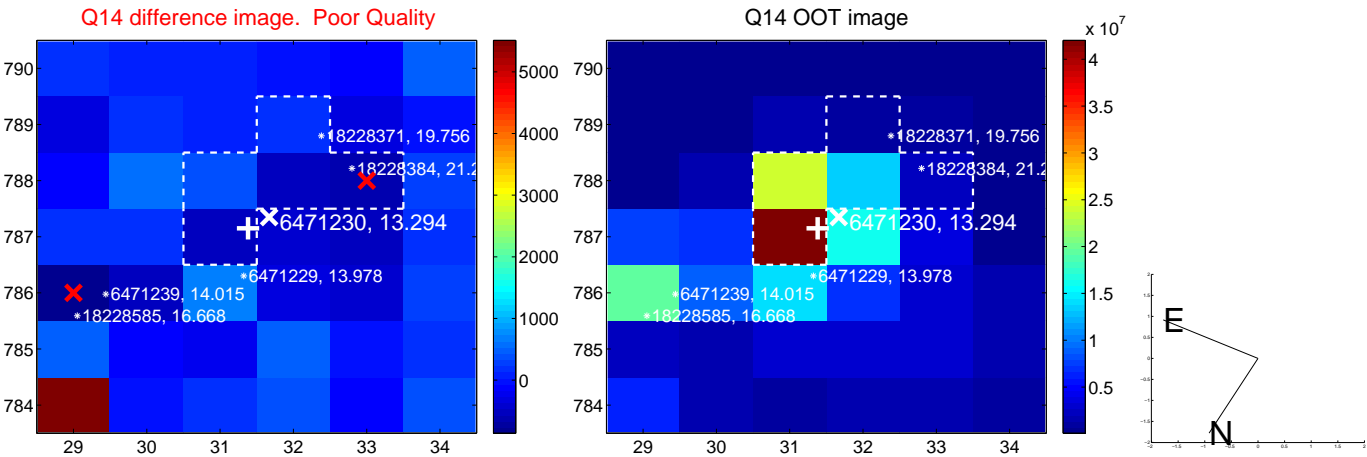
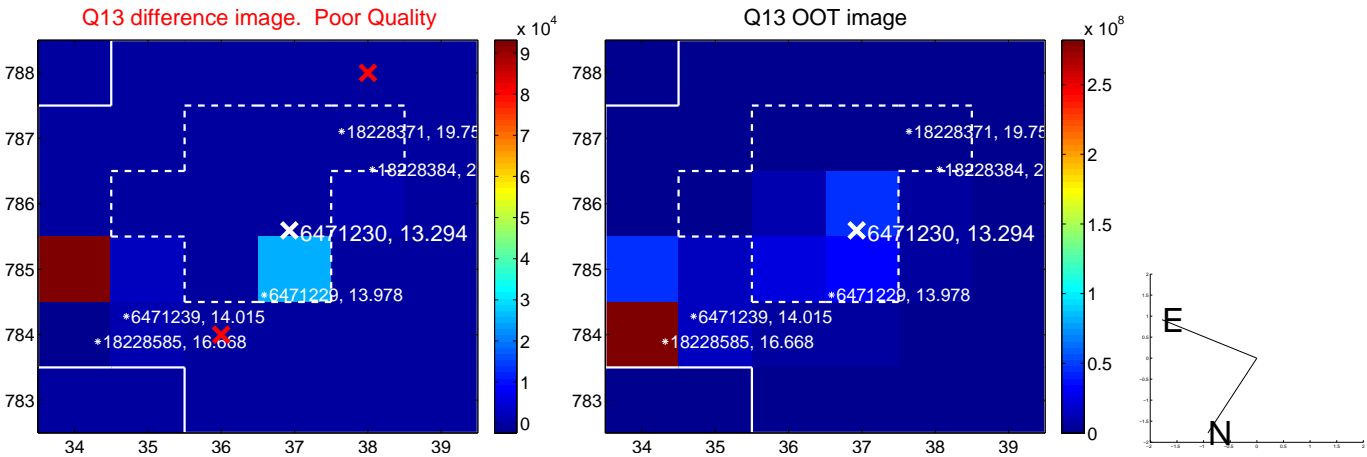
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



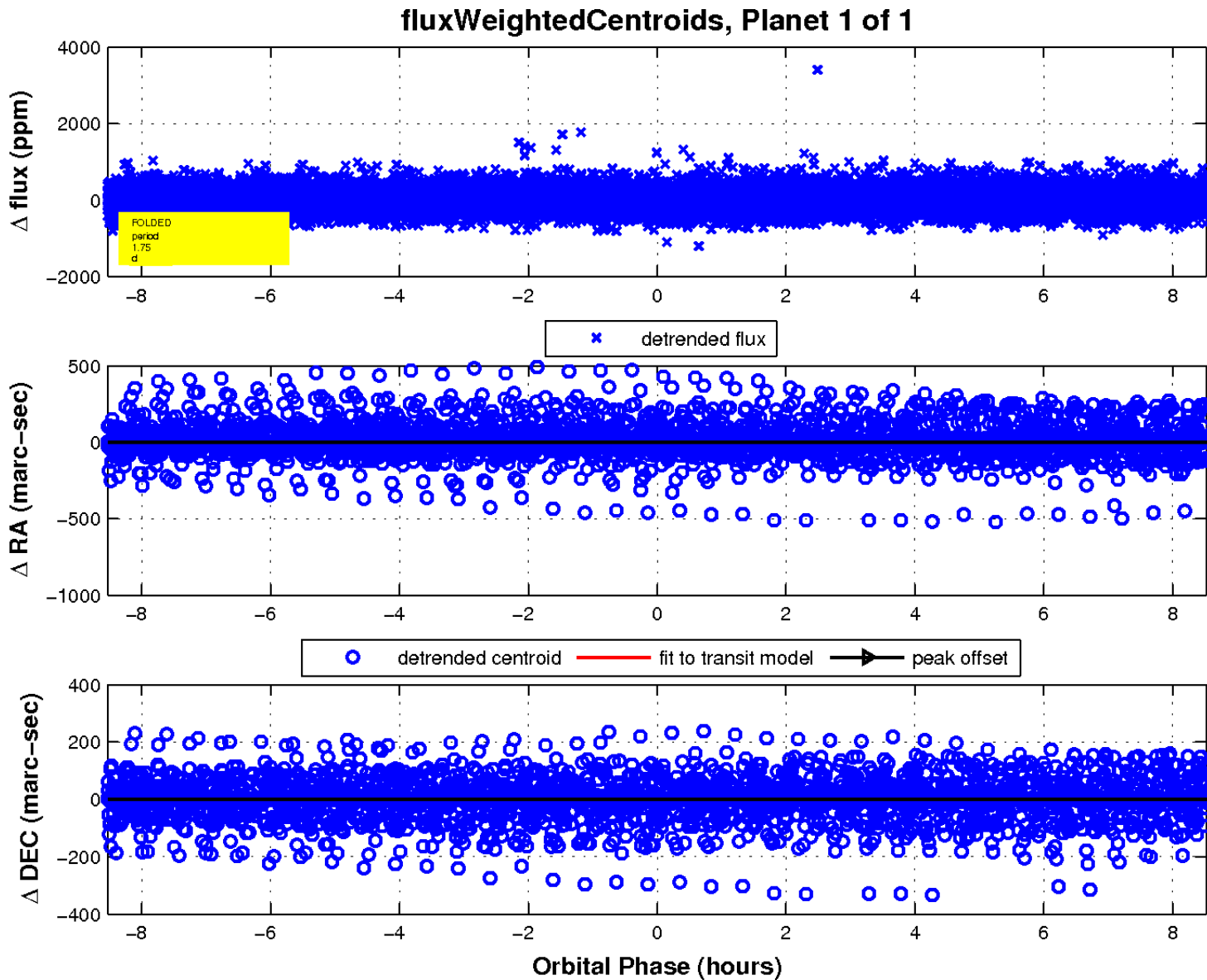
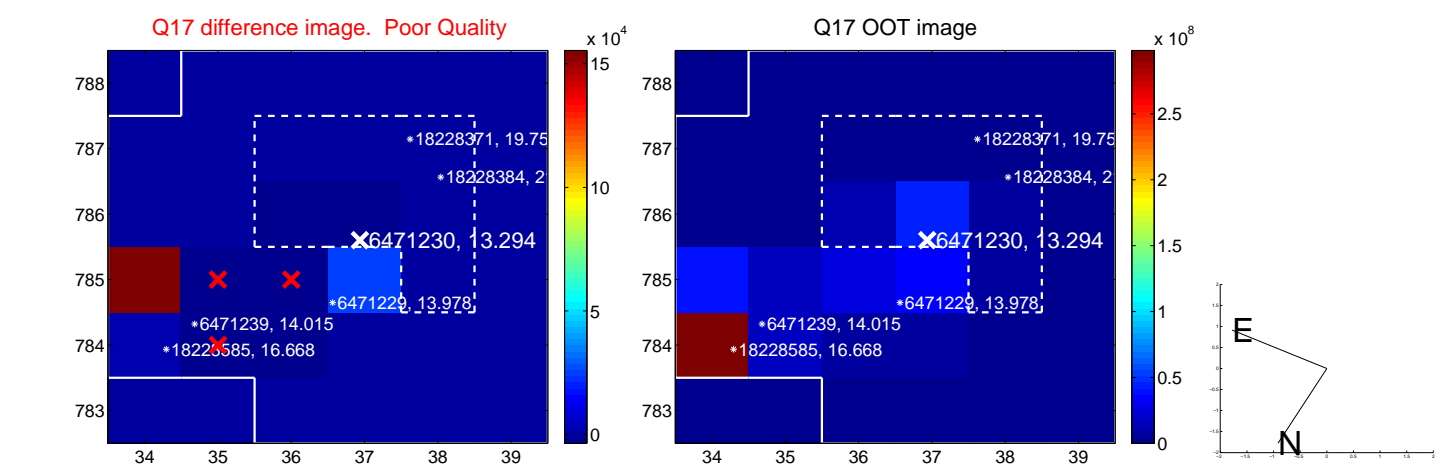
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

