

KIC 005962509

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 _⊕)
005962509-01	OBS	7754.01	0.790047	132.115386	63.1	3.260	10.6	11.1	0.81	5427	0.77	2091.88

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005962509-01	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.

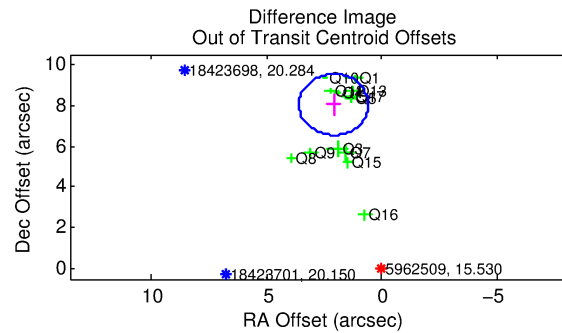
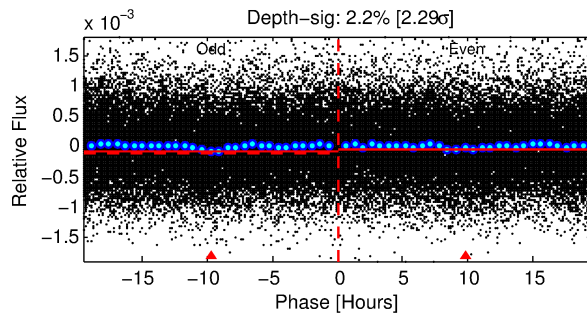
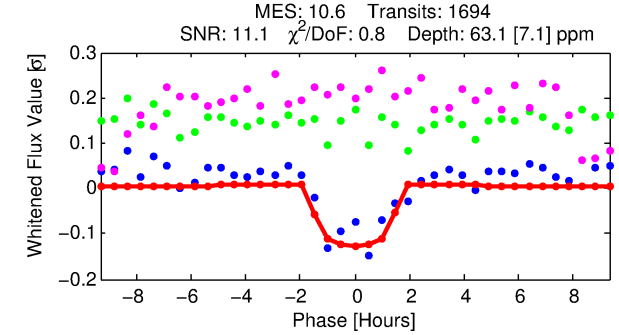
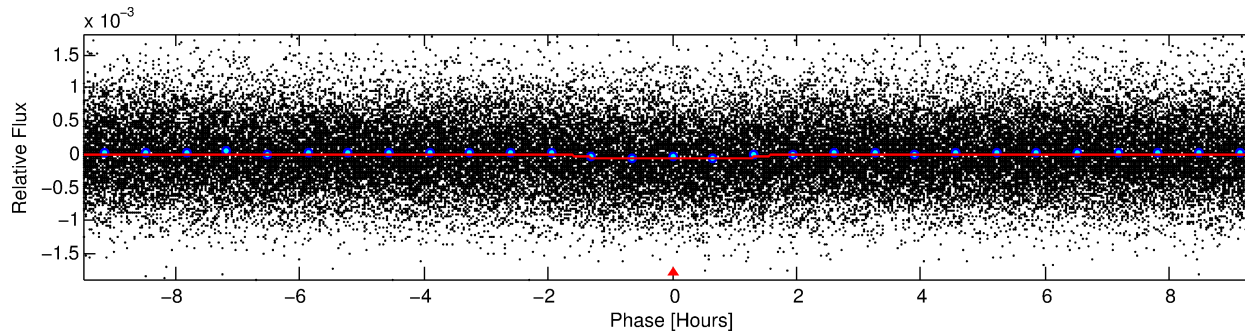
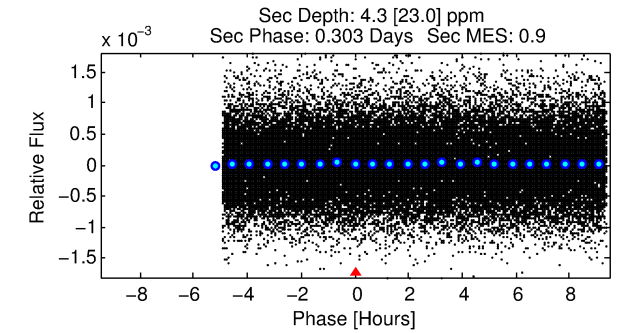
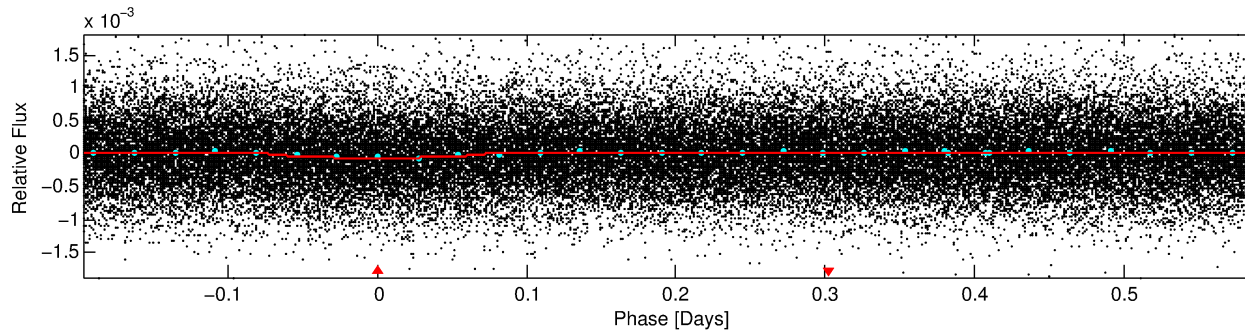
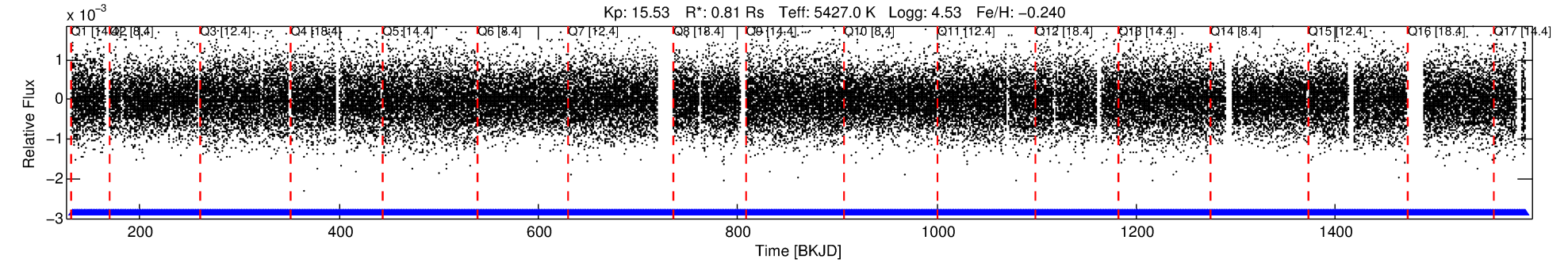
Ephemeris Match Information For 005962509-01

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
005962509-01	5962509	005962514-pri	5962514	1:2	18.6	-3	-4	14.84	15.53	3403.20	Direct-PRF	0	0.59	0.12

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: 5962509 Candidate: 1 of 1 Period: 0.790 d



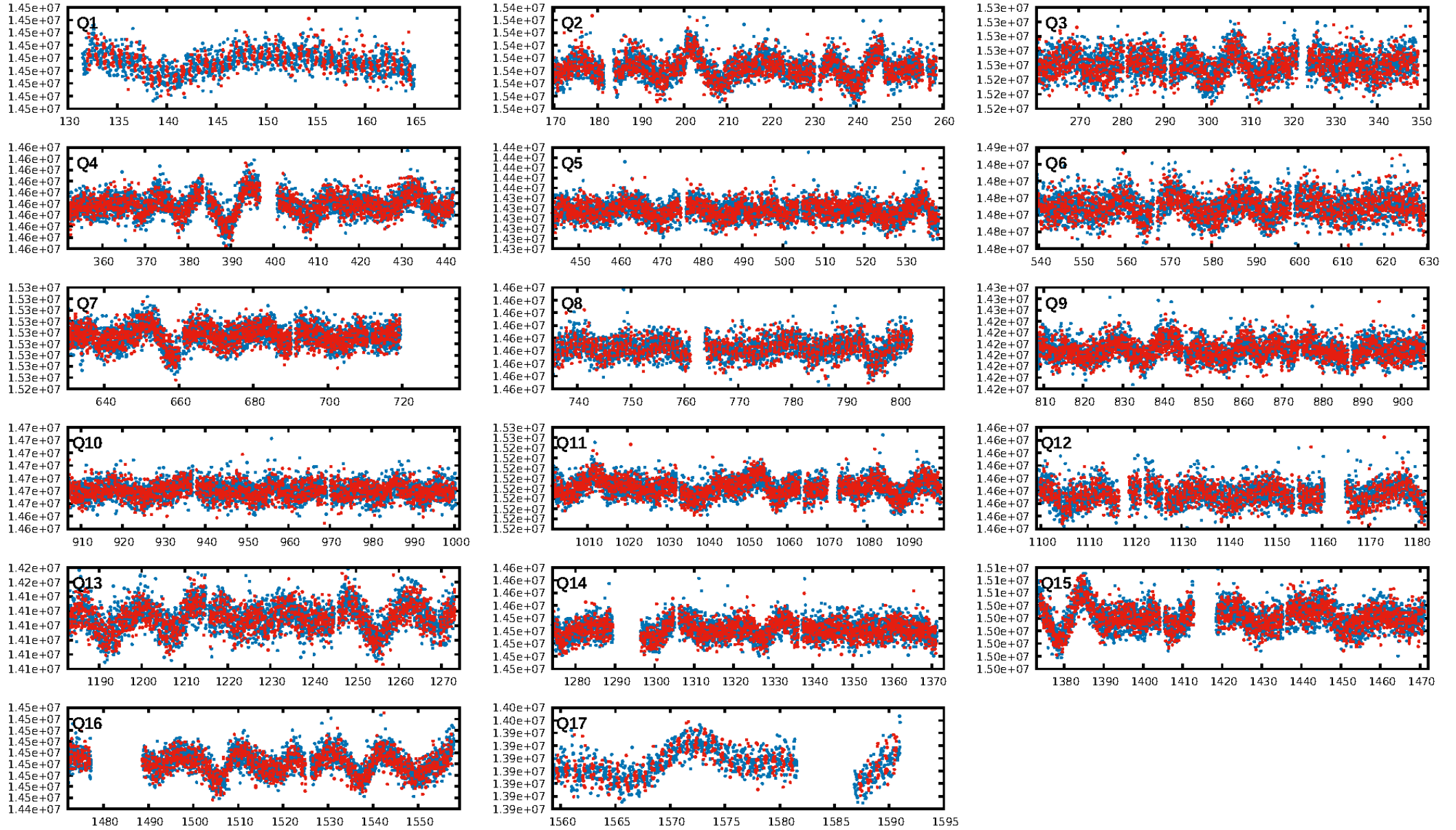
DV Fit Results:

Period = 0.79005 [0.00001] d
Epoch = 132.1154 [0.0036] BKJD
Rp/R* = 0.0088 [0.0060]
a/R* = 1.25 [1.42]
b = 0.91 [0.64]
Seff = 2091.88 [517.61]
Teq = 1724 [107] K
Rp = 0.77 [0.55] Re
a = 0.0156 [0.0024] AU
Ag = 0.95 [5.29] [-0.01σ]
Teffp = 2631 [3665] K [0.25σ]

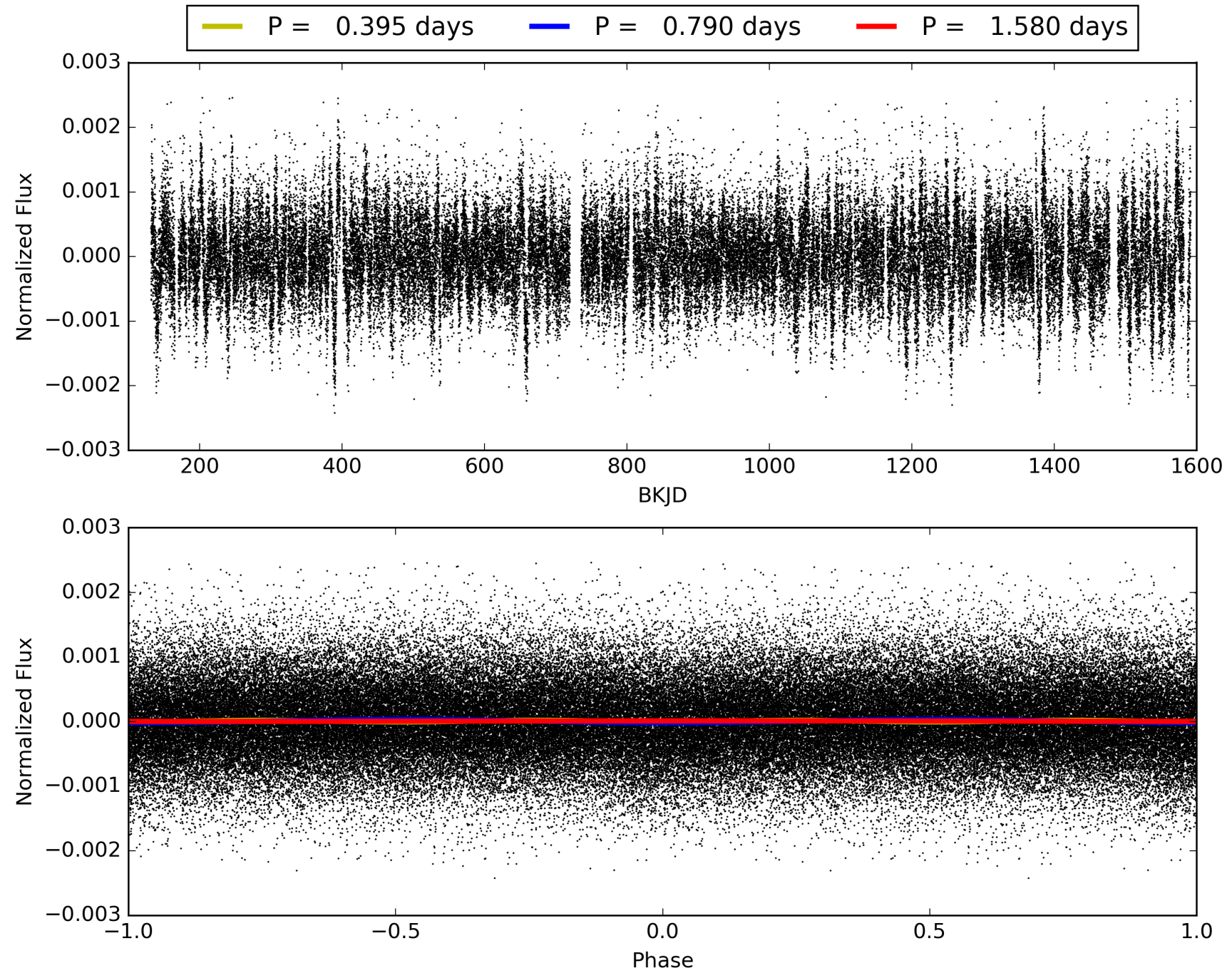
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 8.23e-25
RollingBand-fgt: 1.00 [1619/1619]
GhostDiagnostic-chr: -0.1305
Centroid-sig: 0.0%
Centroid-so: 13.528 arcsec [9.88σ]
OotOffset-rm: 8.313 arcsec [16.63σ]
KicOffset-rm: 8.426 arcsec [16.40σ]
OotOffset-st: 1/3/4/5 [13]
KicOffset-st: 1/3/4/5 [13]
DiffImageQuality-fgm: 0.85 [11/13]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 005962509-01, PDC Light Curves

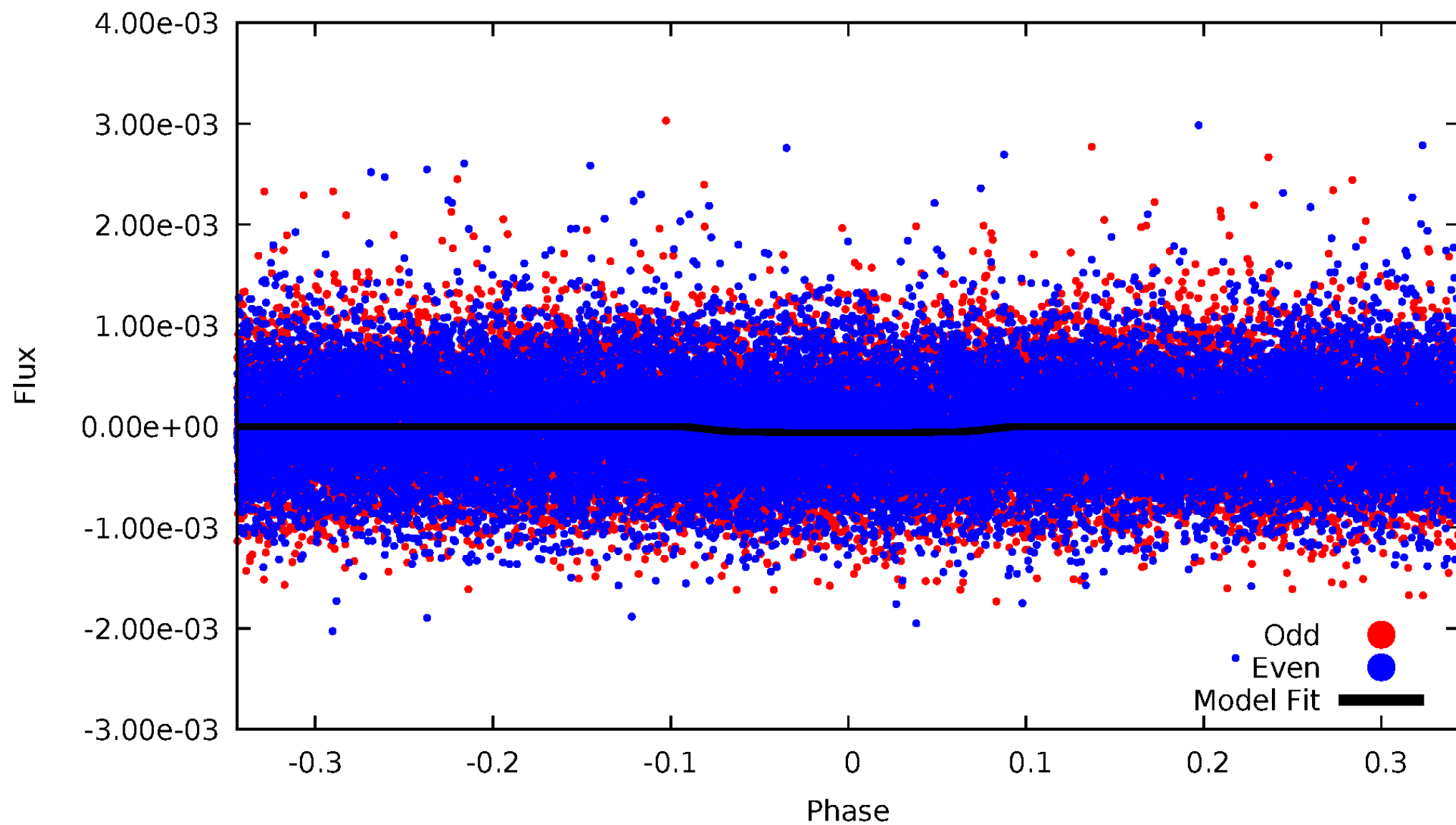


TCE 005962509-01



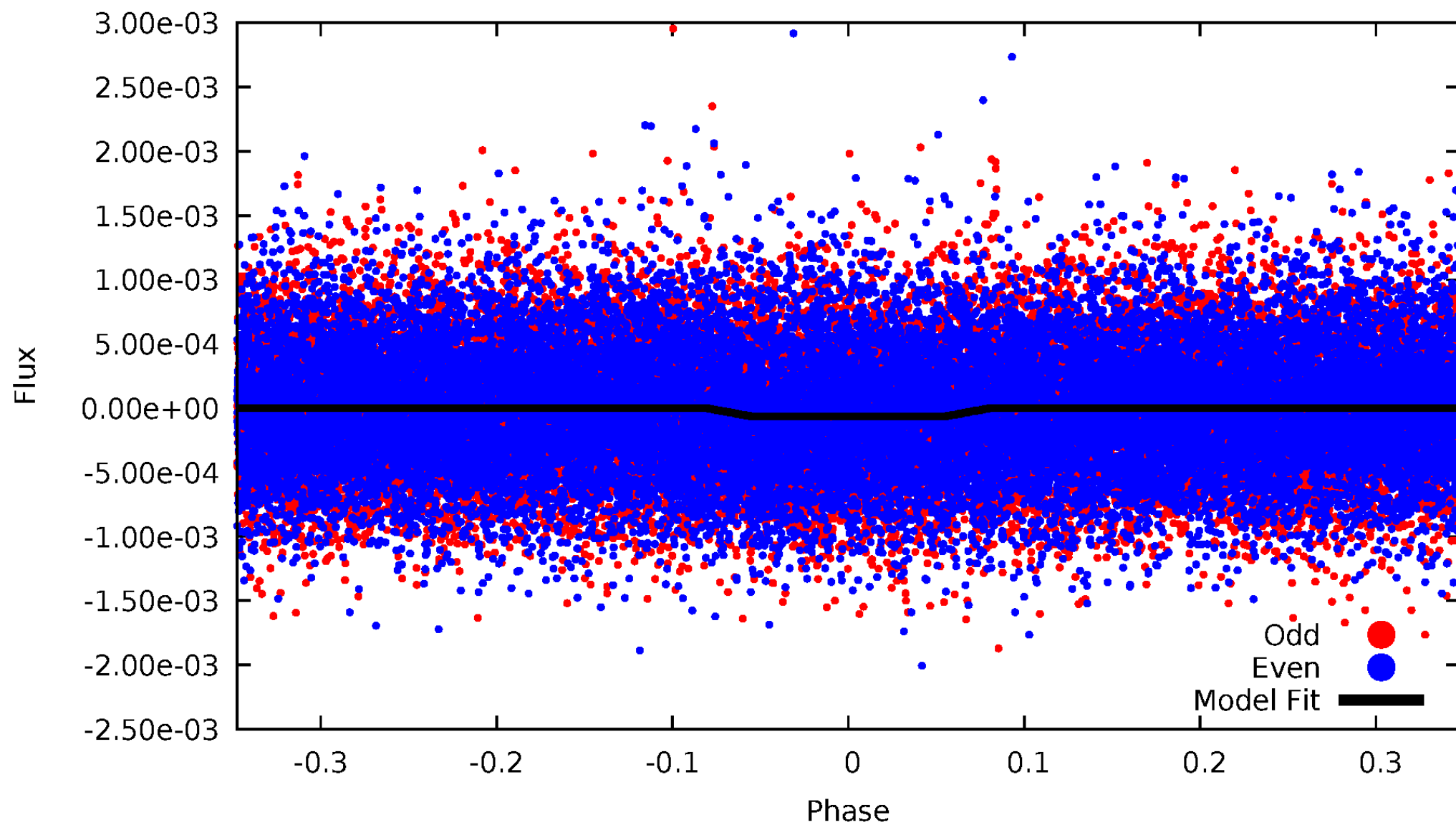
DV Odd/Even

TCE 005962509-01



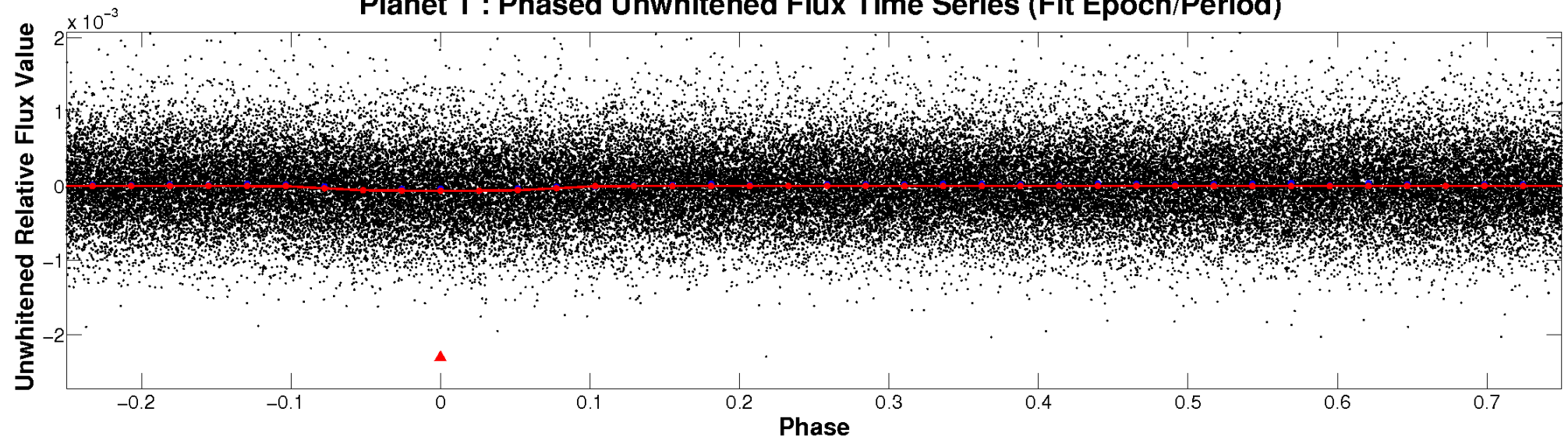
ALT Odd/Even

TCE 005962509-01

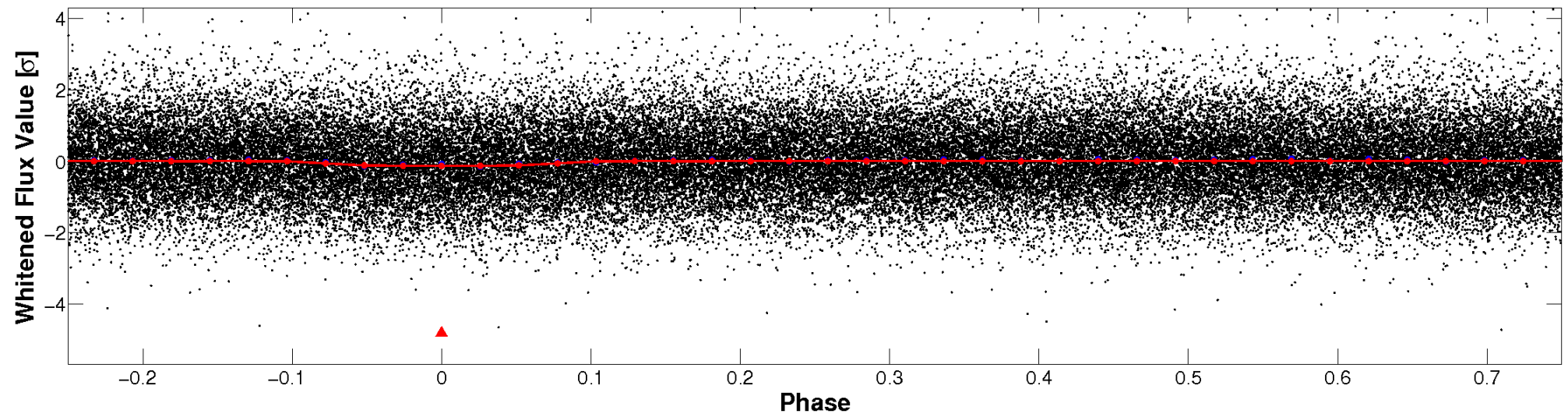


Non-Whitened Vs. Whitened Light Curve

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

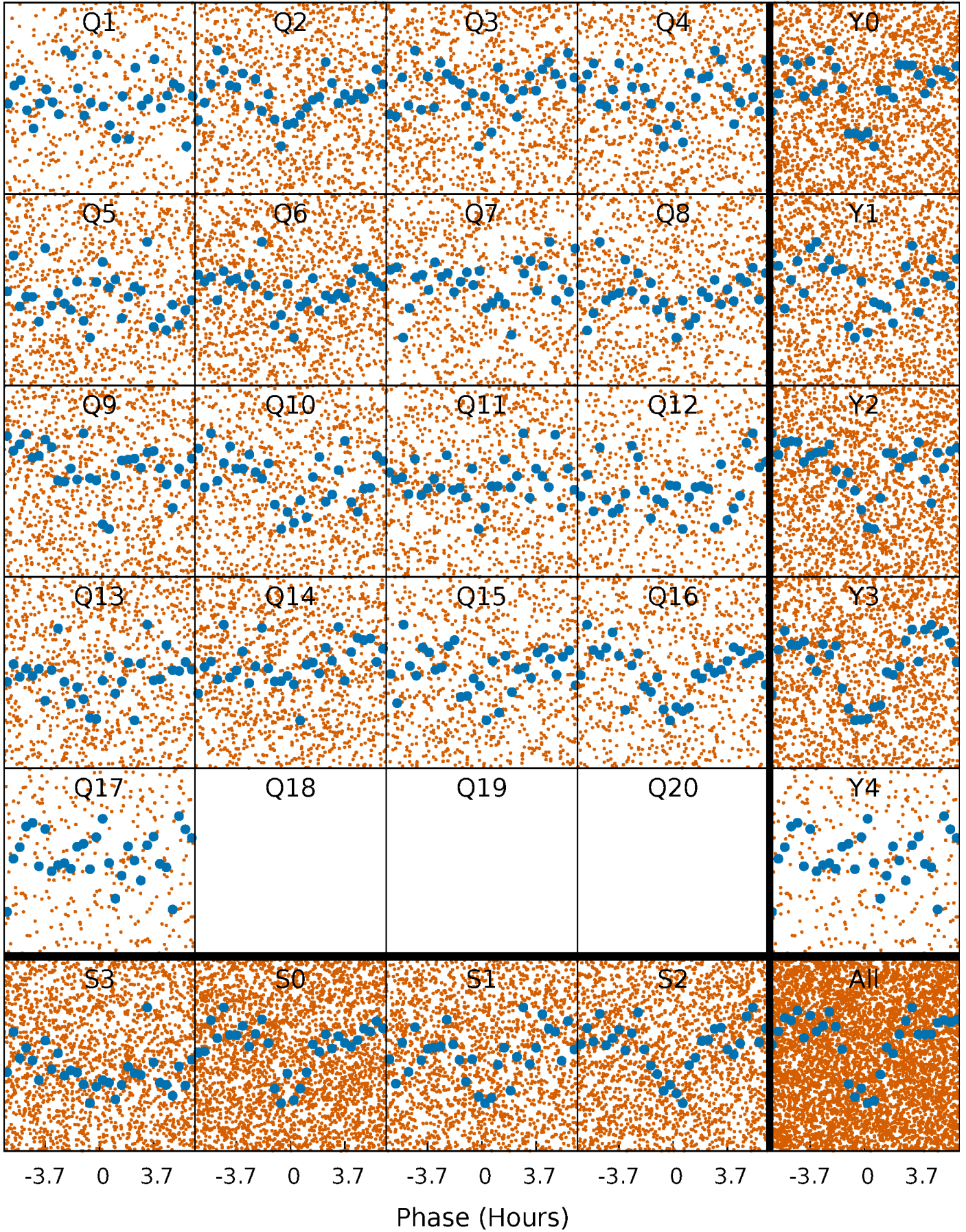


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



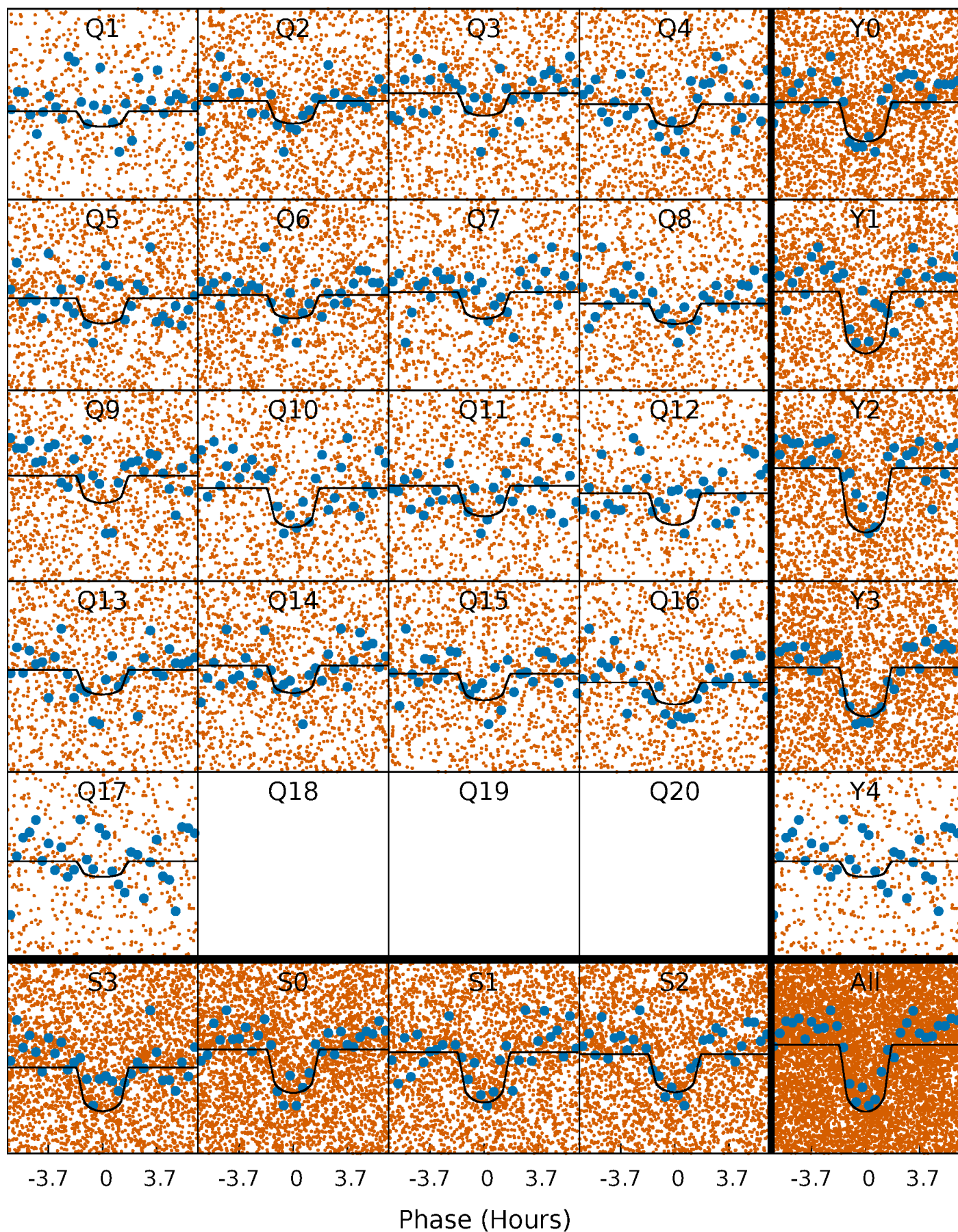
PDC Quarter-Phased Transit Curves

TCE 005962509-01 P= 0.790047 Days $T_0=132.115386$ (BKJD)



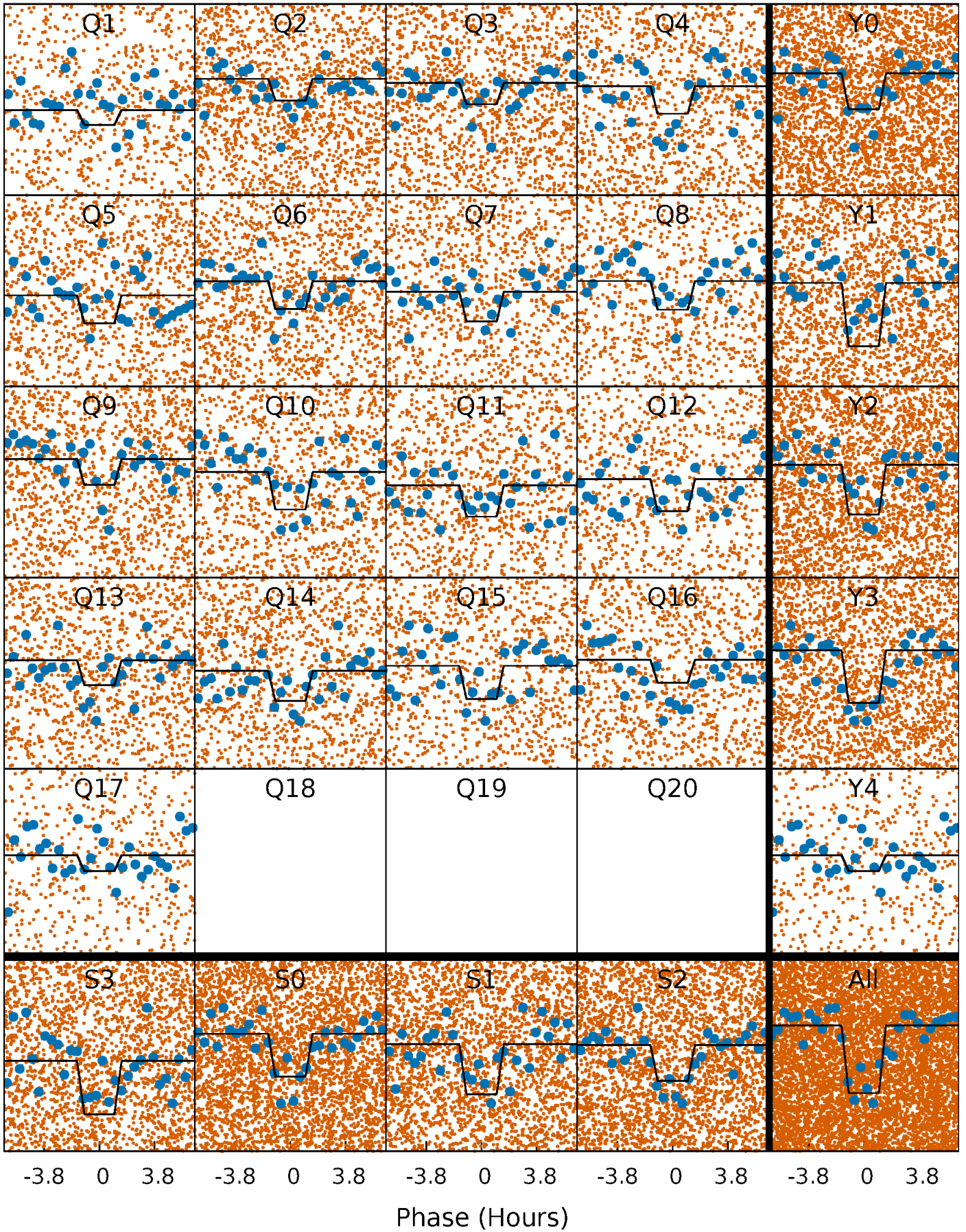
DV Quarter-Phased Transit Curves

TCE 005962509-01 P= 0.790047 Days $T_0=132.115386$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

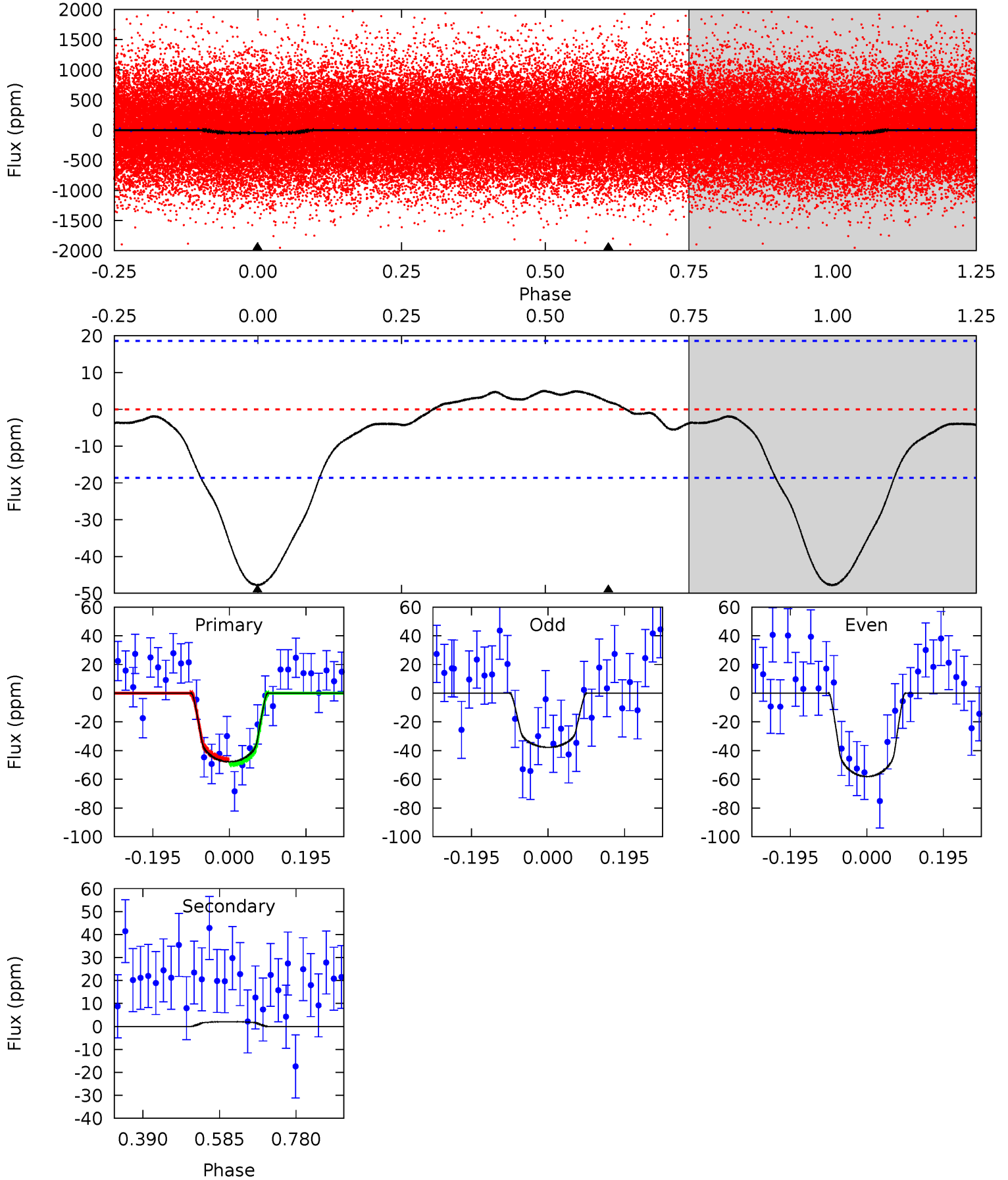
TCE 005962509-01 P= 0.790049 Days $T_0=132.111118$ (BKJD)



DV Model-Shift Uniqueness Test

005962509-01, $P = 0.790047$ Days, $E = 131.325339$ Days

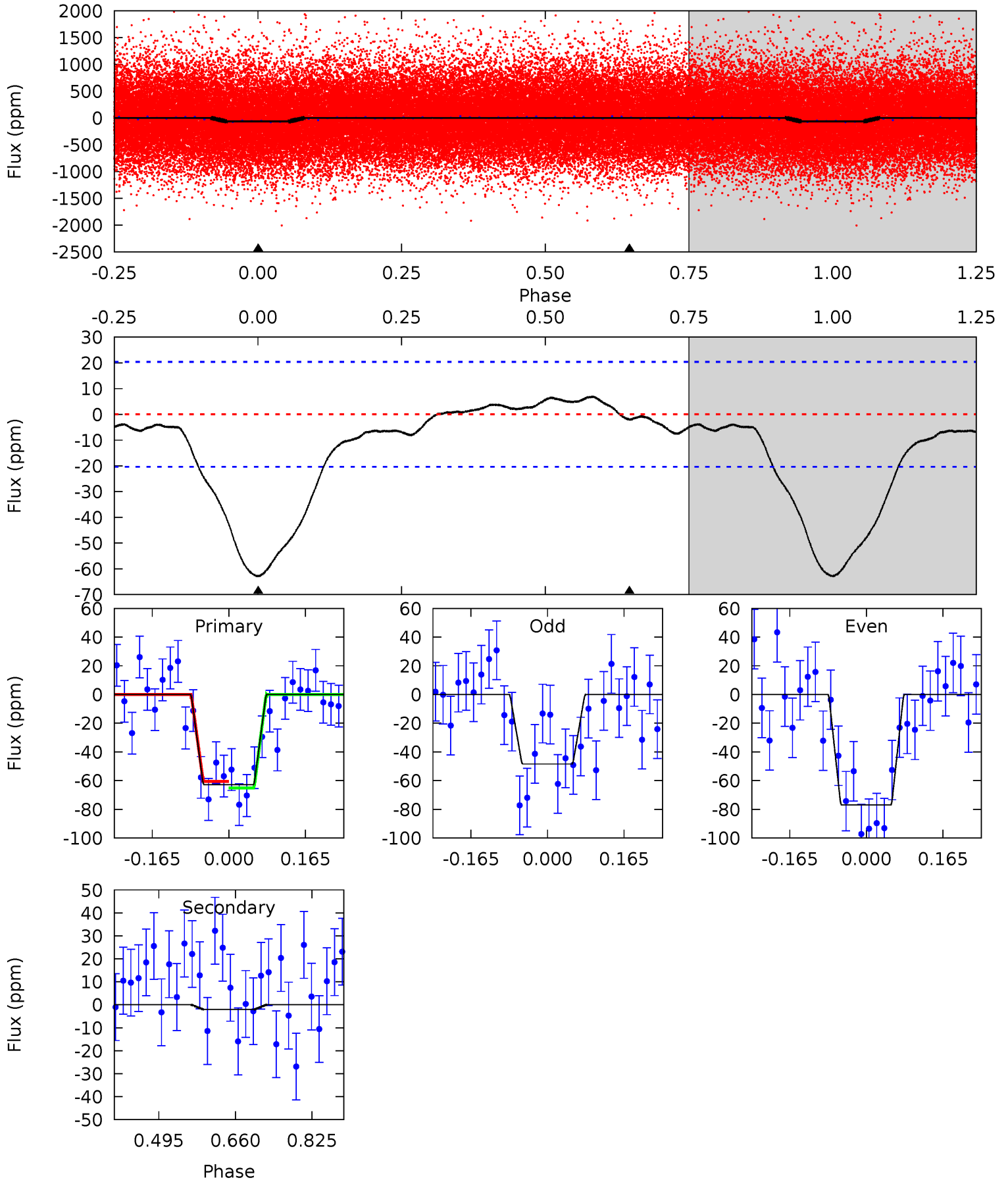
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.3	-0.49	0	0	4.42	1.30	0.75	11.3	11.3	-0.49	-0.49	2.40	1.02	0.09	0.36



Alt Model-Shift Uniqueness Test

005962509-01, P = 0.790049 Days, E = 131.321069 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.7	0.45	0	0	4.46	1.39	0.94	13.7	13.7	0.45	0.45	3.10	0.93	0.10	0.51



Stellar Parameters For KIC 005962509

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5427^{+162}_{-162}	$4.530^{+0.063}_{-0.117}$	$-0.240^{+0.300}_{-0.300}$	$0.808^{+0.147}_{-0.079}$	$0.807^{+0.098}_{-0.071}$	$2.156^{+0.663}_{-0.763}$
	+3%/-3%	+1%/-3%	+125%/-125%	+18%/-10%	+12%/-9%	+31%/-35%
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 005962509-01 / KOI 7754.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	2 ± 4	$0.83^{+0.56}_{-0.46}$	2428^{+117}_{-102}	-3014^{+5410}_{-825}	$-0.291^{+0.703}_{-2.274}$
Alt.	-2 ± 5	$0.82^{+0.49}_{-0.46}$	2432^{+118}_{-102}	2081^{+1613}_{-5293}	$0.328^{+2.464}_{-0.891}$

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 $A_{obs} \gg 1.0$

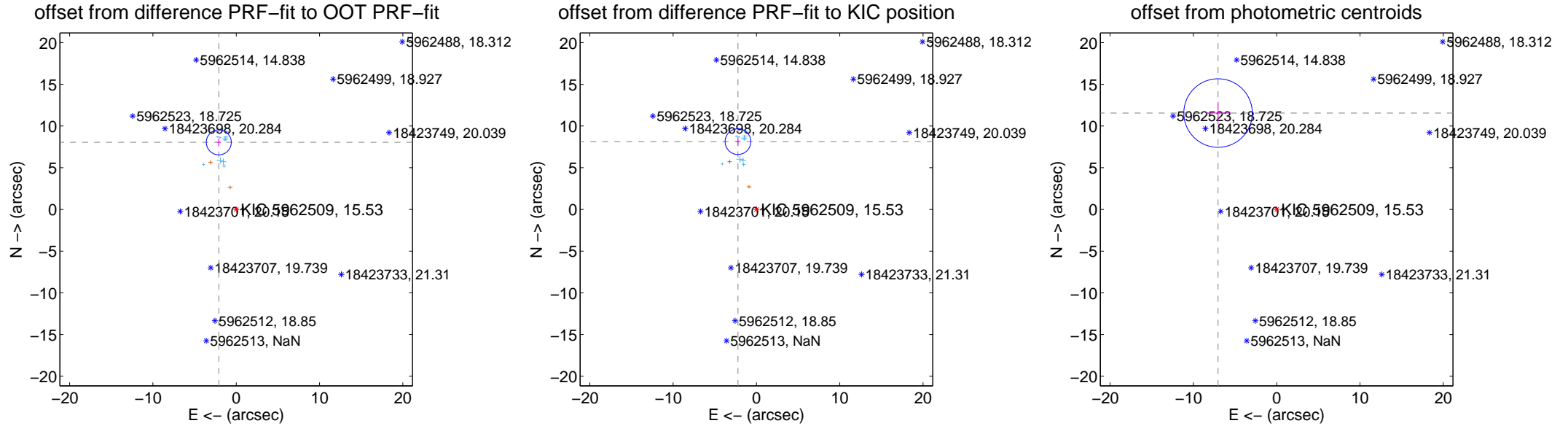
DV Centroid Data

Supplemental centroid analysis for 005962509-01. Kepler magnitude: 15.53. Transit SNR 11.14

There are 11 quarters with good PRF difference image offsets

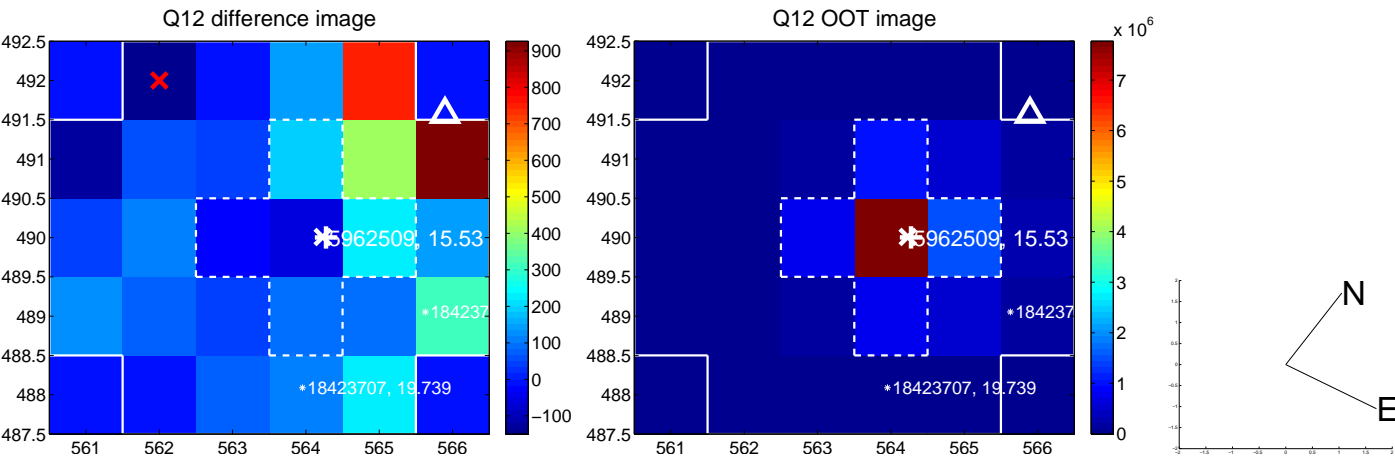
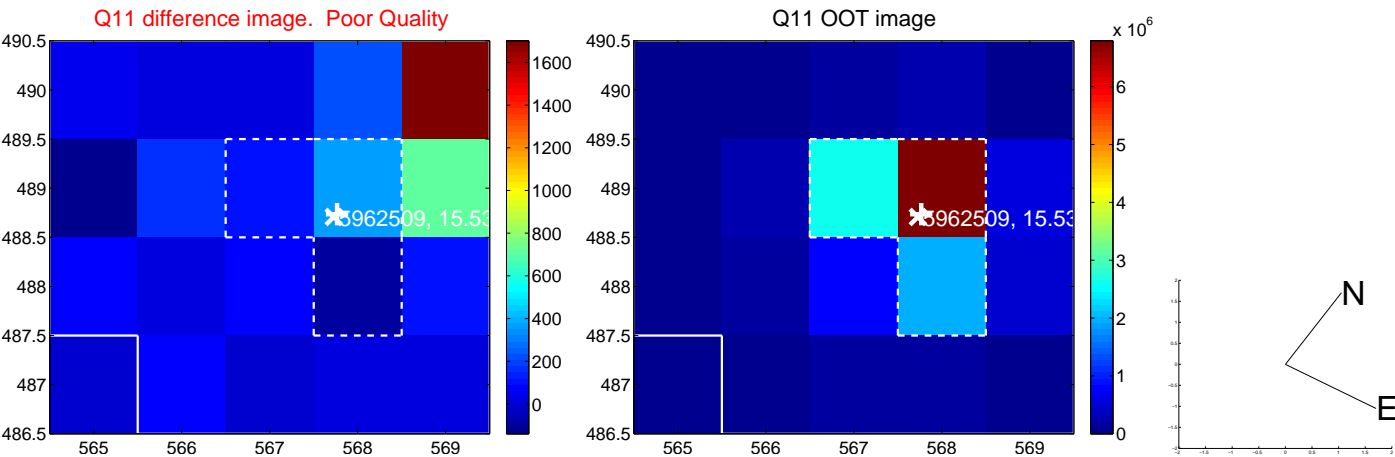
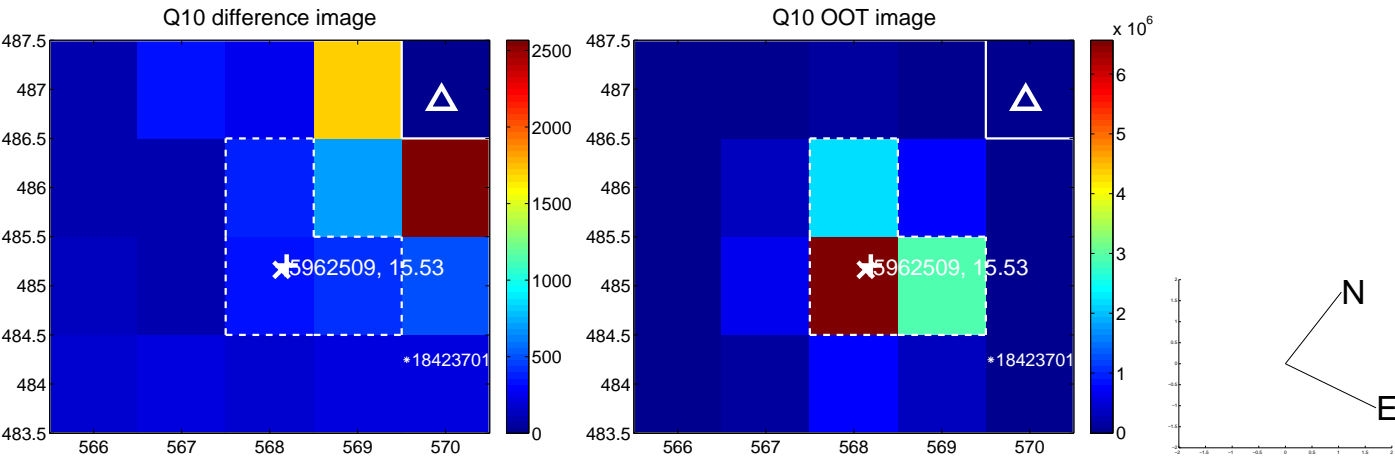
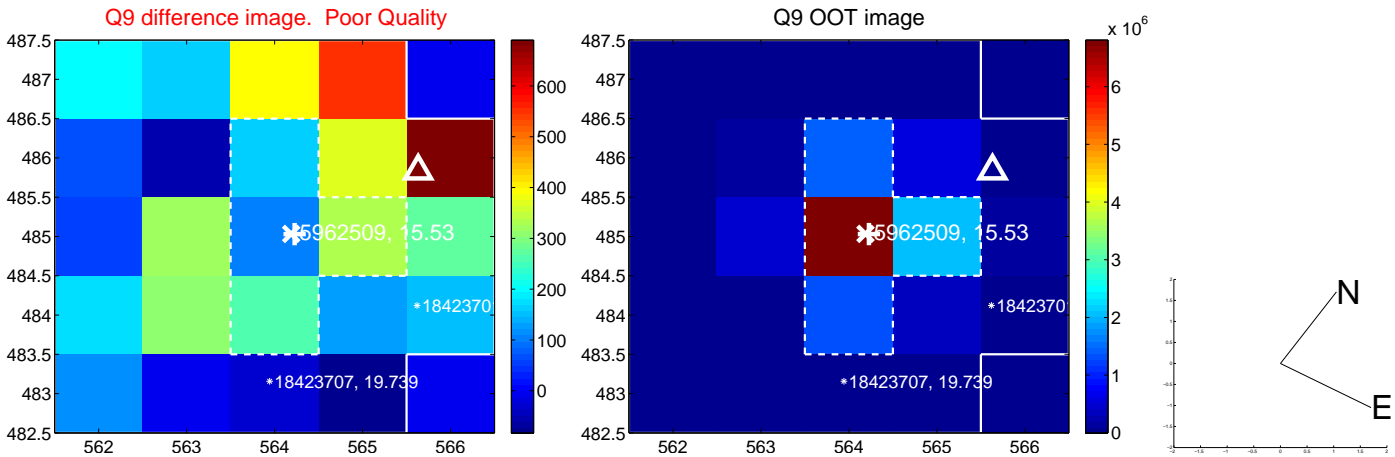
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	8.313 \pm 0.500	16.63	2.093 \pm 0.259	8.045 \pm 0.520
PRF-fit source offset from KIC position	8.426 \pm 0.514	16.40	2.220 \pm 0.230	8.128 \pm 0.536
photometric centroid source offset	13.53 \pm 1.37	9.88	7.03 \pm 1.45	11.56 \pm 1.34

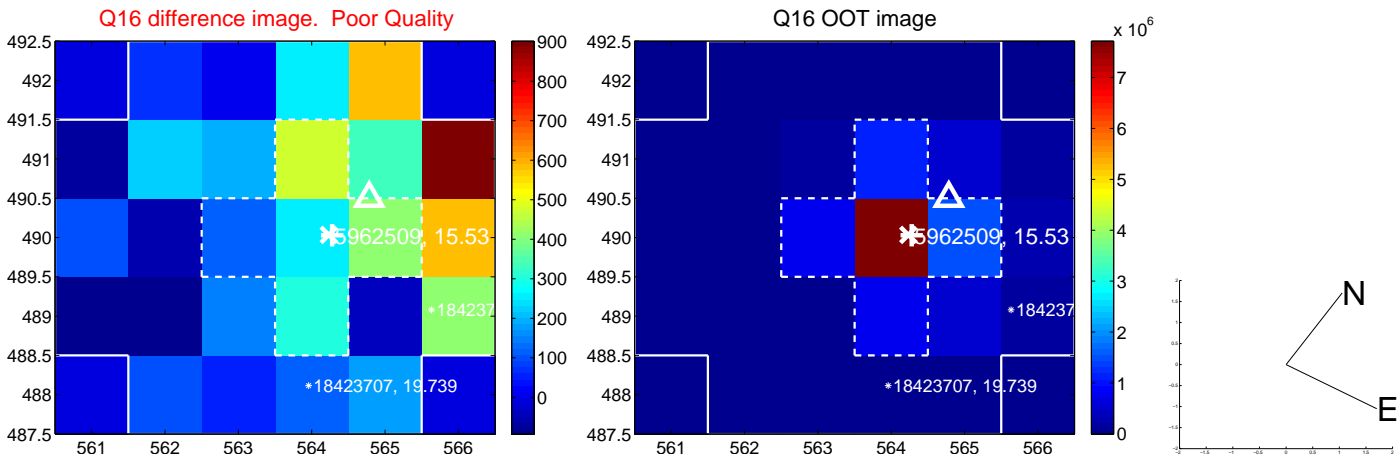
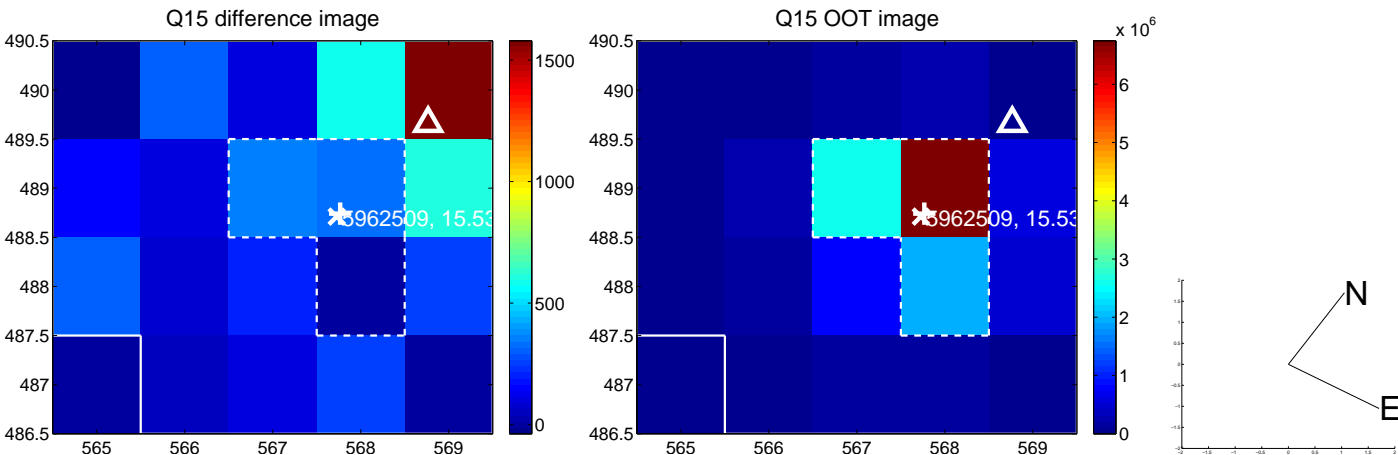
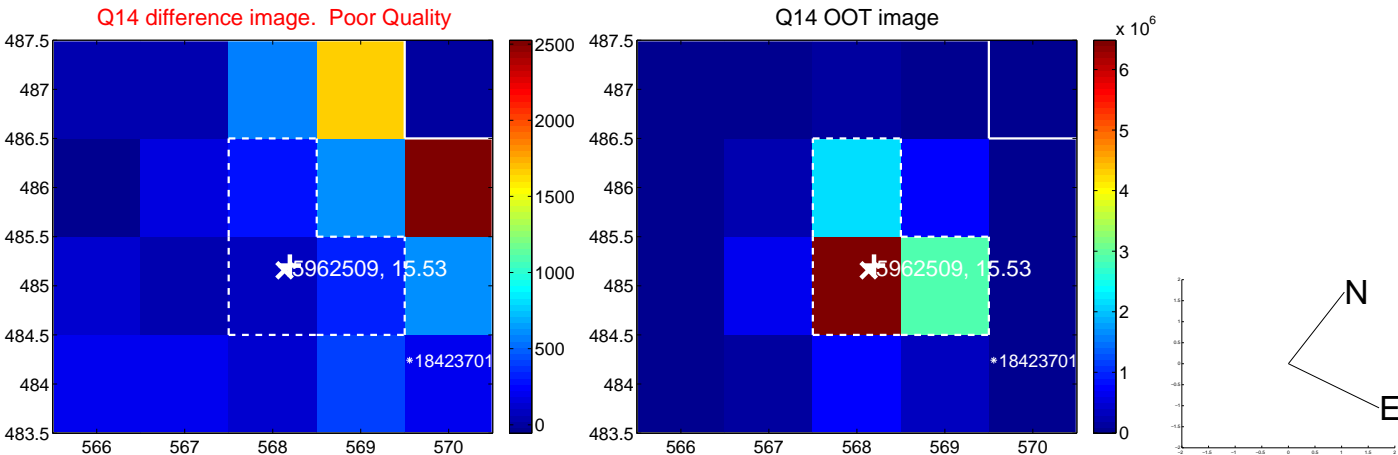
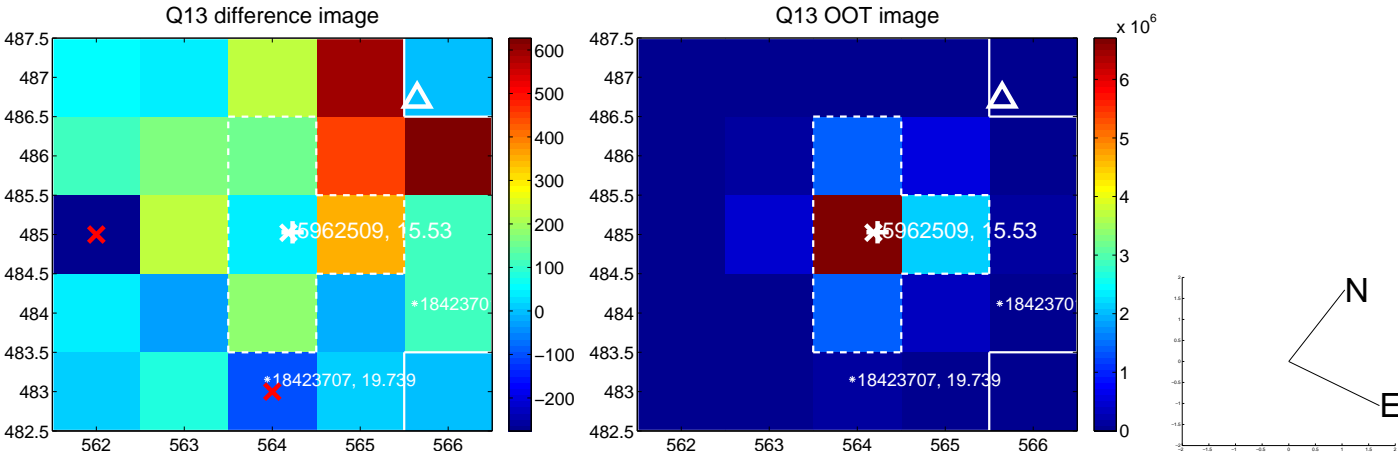


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

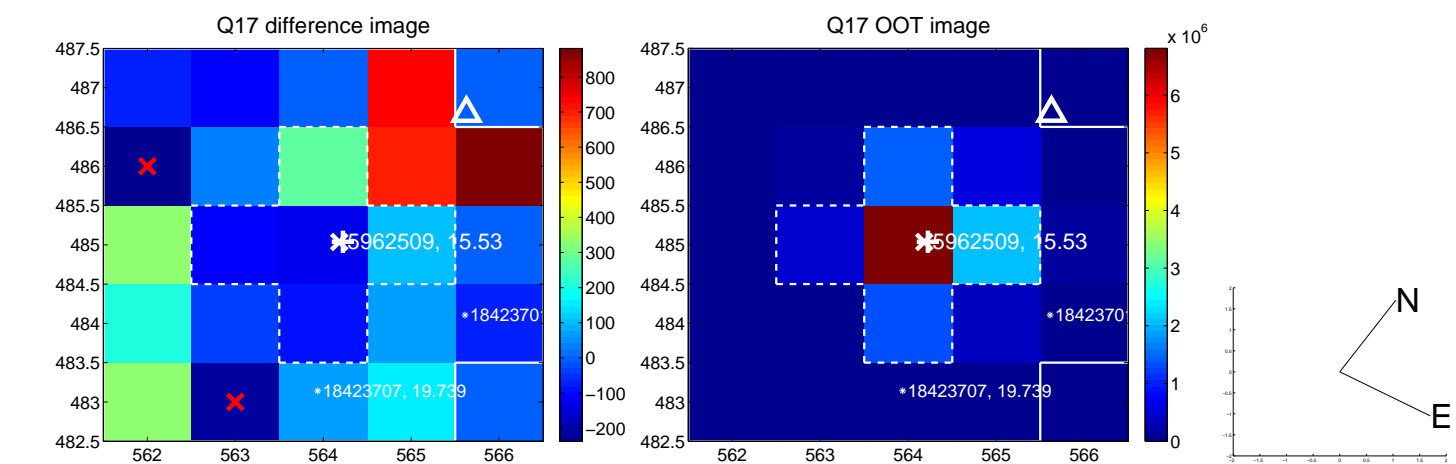
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



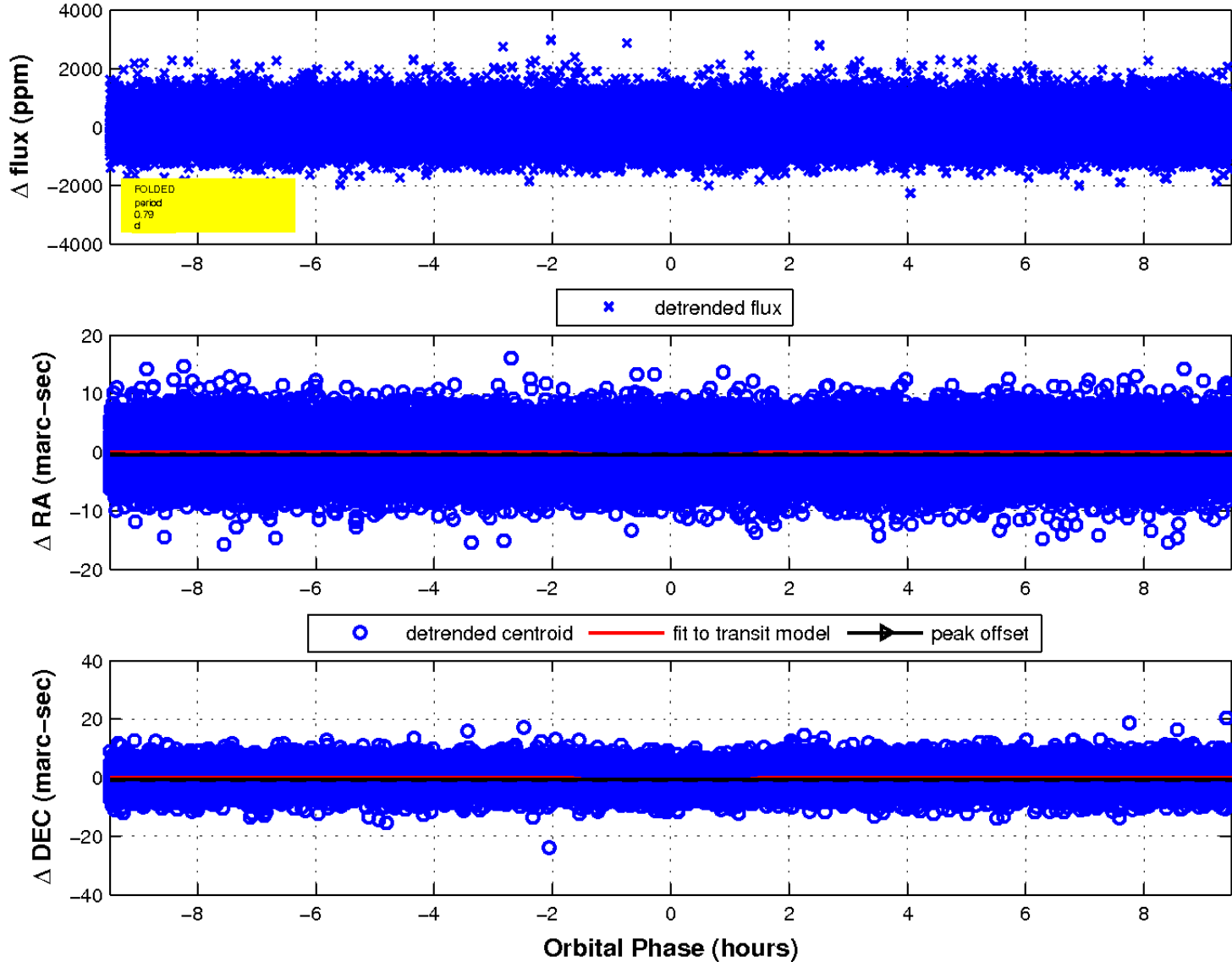
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

