

KIC 006182846

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})
006182846-01	OBS	3591.01	6.399107	134.701602	91632.9	4.980	1948.8	1541.3	0.99	6233	49.26	279.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006182846-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED—SEASONAL_DEPTH_DV—SEASONAL_DEPTH_ALT—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 006182846-01

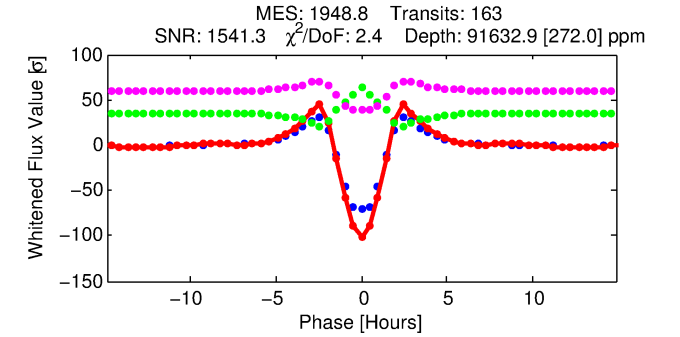
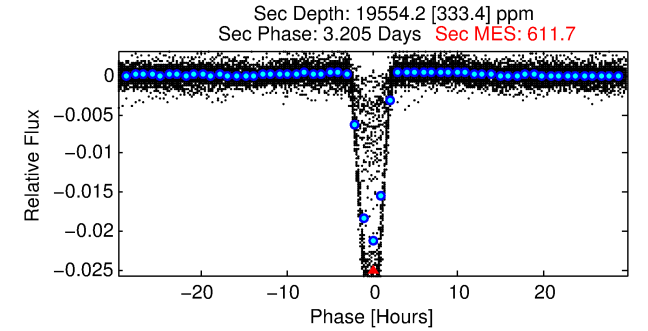
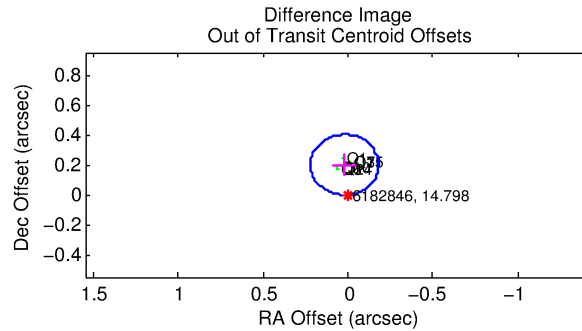
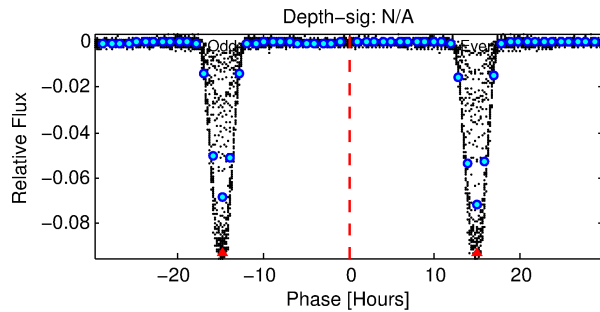
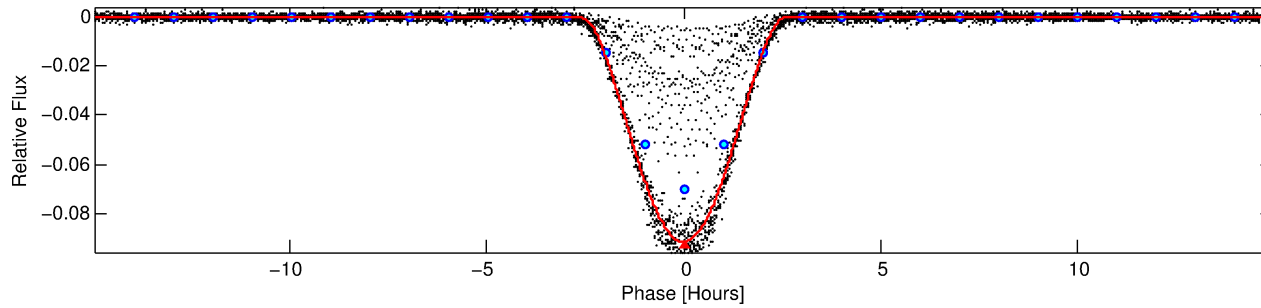
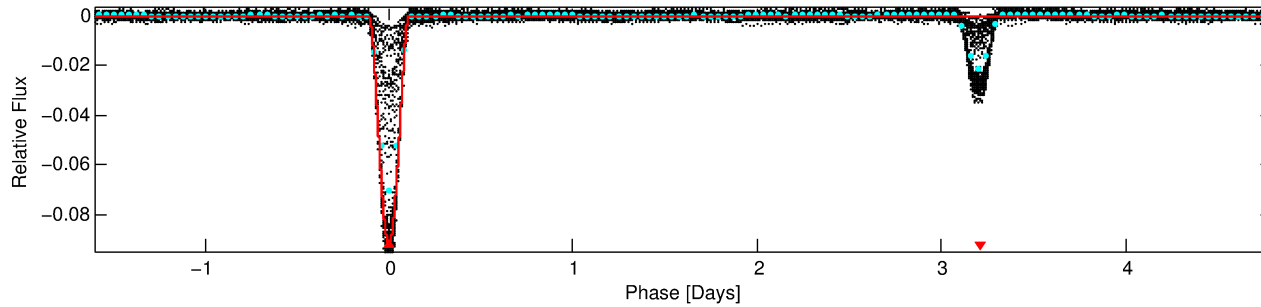
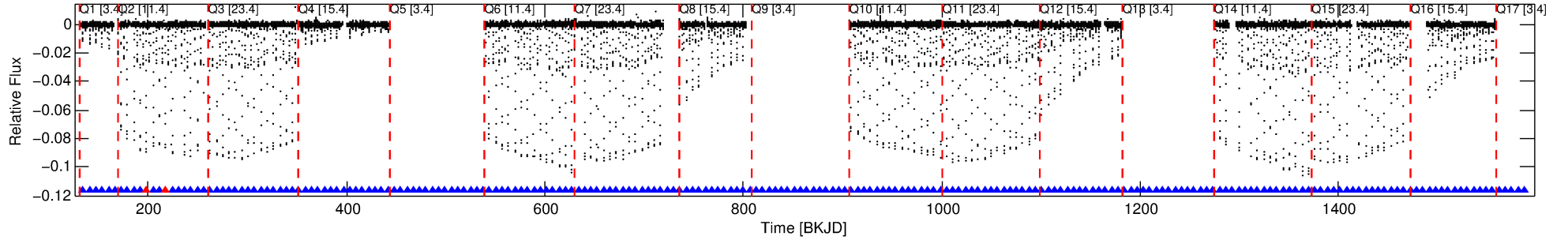
TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (″)	Δ Row	Δ Col	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ_P	σ_T
006182846-01	6182846	3512.01	6182849	1:1	8.2	-2	1	13.72	14.80	4.16	Direct-PRF	0	0.00	0.00

Notes: P₁:P₂ 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. 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 $\sigma_P < 5.0$ 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: 6182846 Candidate: 1 of 1 Period: 6.399 d
KOI: K03591.01 Corr: 0.986

Kp: 14.80 R*: 0.99 Rs Teff: 6233.0 K Logg: 4.47 Fe/H: -0.240



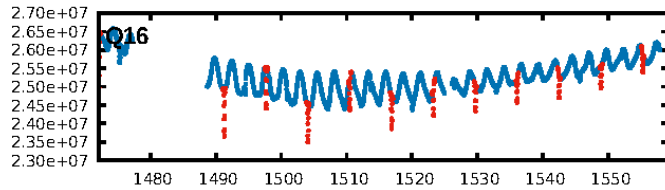
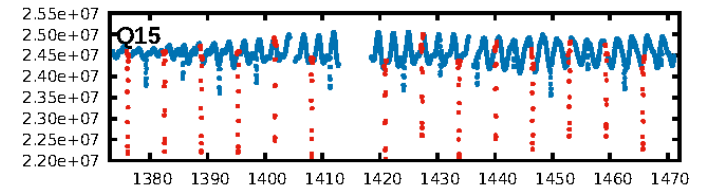
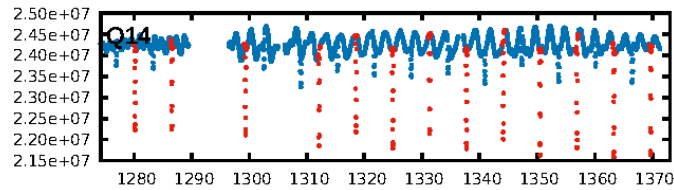
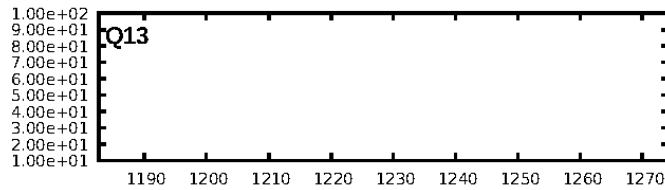
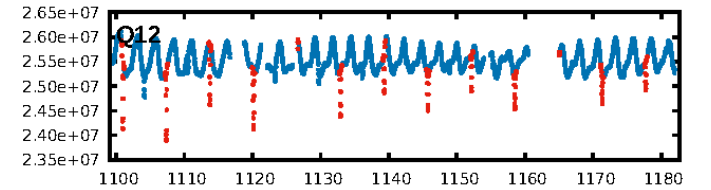
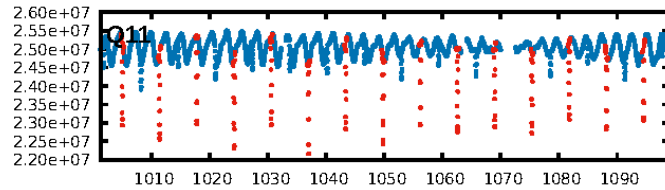
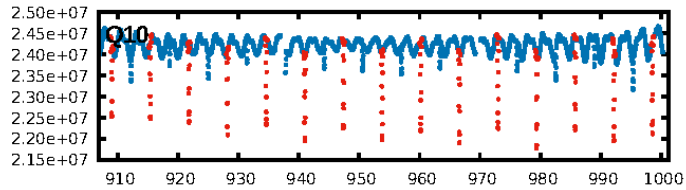
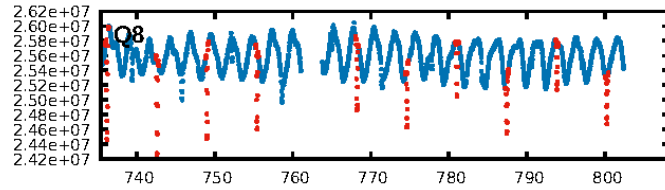
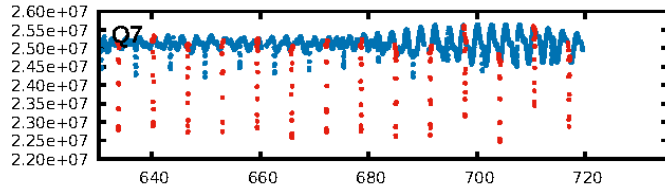
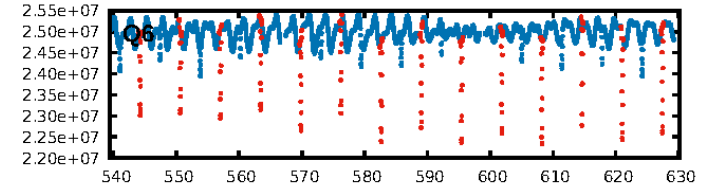
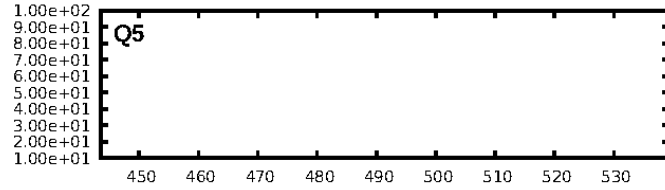
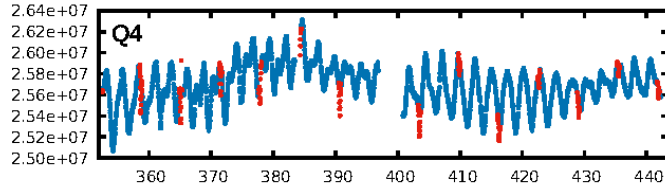
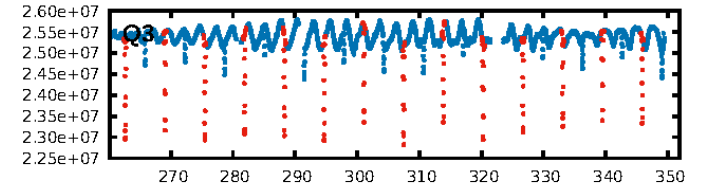
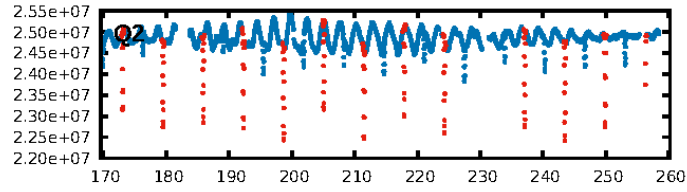
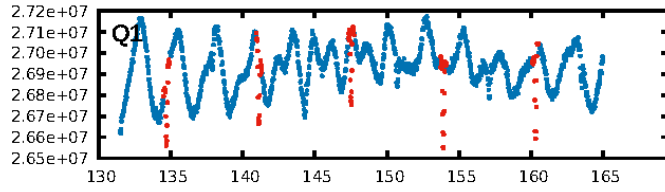
DV Fit Results:

Period = 6.39911 [0.00000] d
Epoch = 134.7016 [0.0001] BKJD
Rp/R* = 0.4569 [0.0628]
a/R* = 10.63 [0.08]
b = 0.98 [0.08]
Seff = 279.70 [121.00]
Teq = 1043 [113] K
Rp = 49.26 [18.30] Re
a = 0.0687 [0.0197] AU
Ag = 20.92 [10.40] [1.92σ]
Teffp = 3448 [261] K [8.45σ]

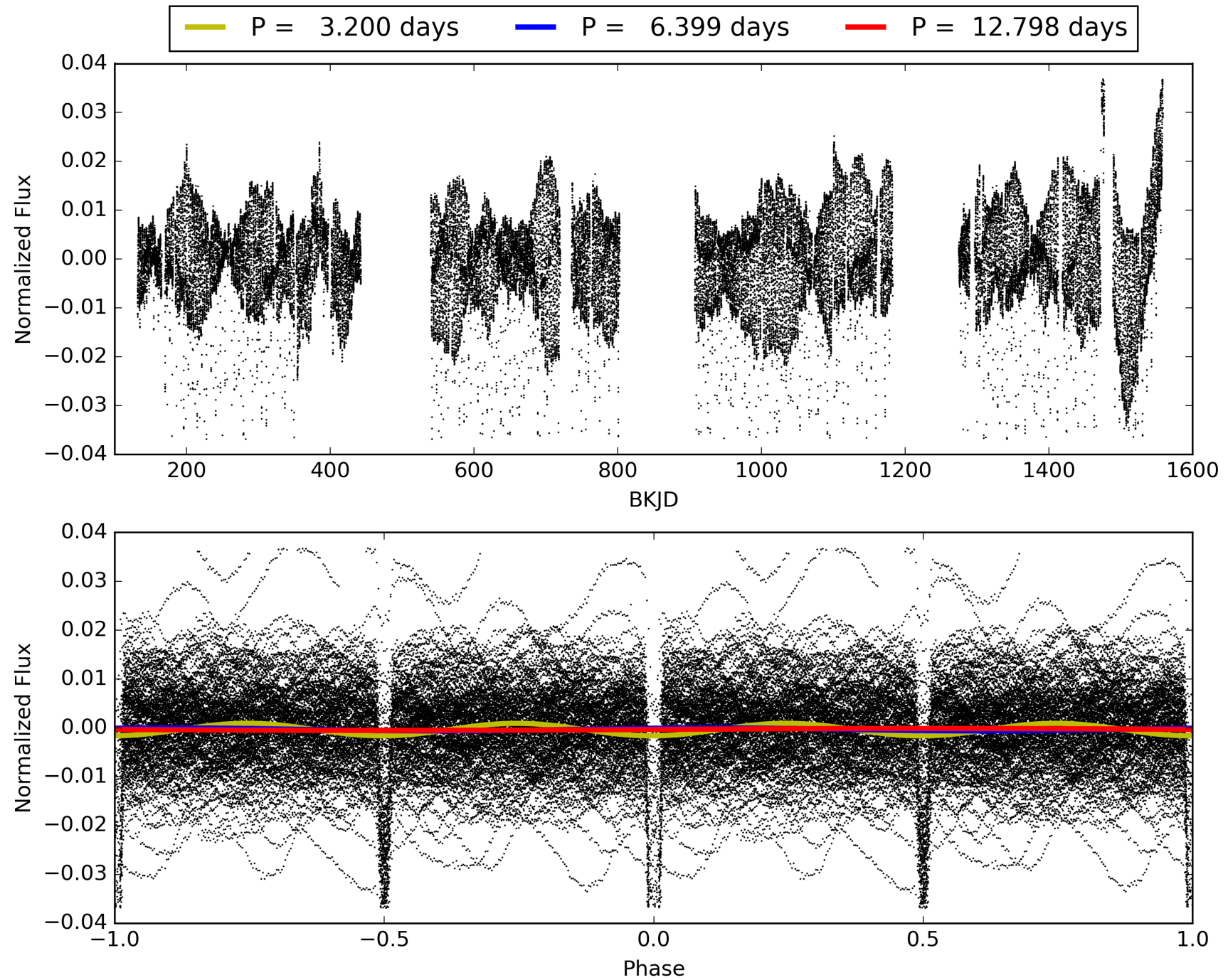
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [156/158]
GhostDiagnostic-chr: -0.2643
Centroid-sig: 0.0%
Centroid-so: 11.398 arcsec [3447.38σ]
OotOffset-rm: 0.200 arcsec [2.97σ]
OotOffset-st: 4/4/0/1 [9]
KicOffset-rm: 8.008 arcsec [117.48σ]
KicOffset-st: 4/4/0/1 [9]
DiffImageQuality-fgm: 1.00 [9/9]
DiffImageOverlap-fno: 1.00 [13/13]

TCE 006182846-01, PDC Light Curves

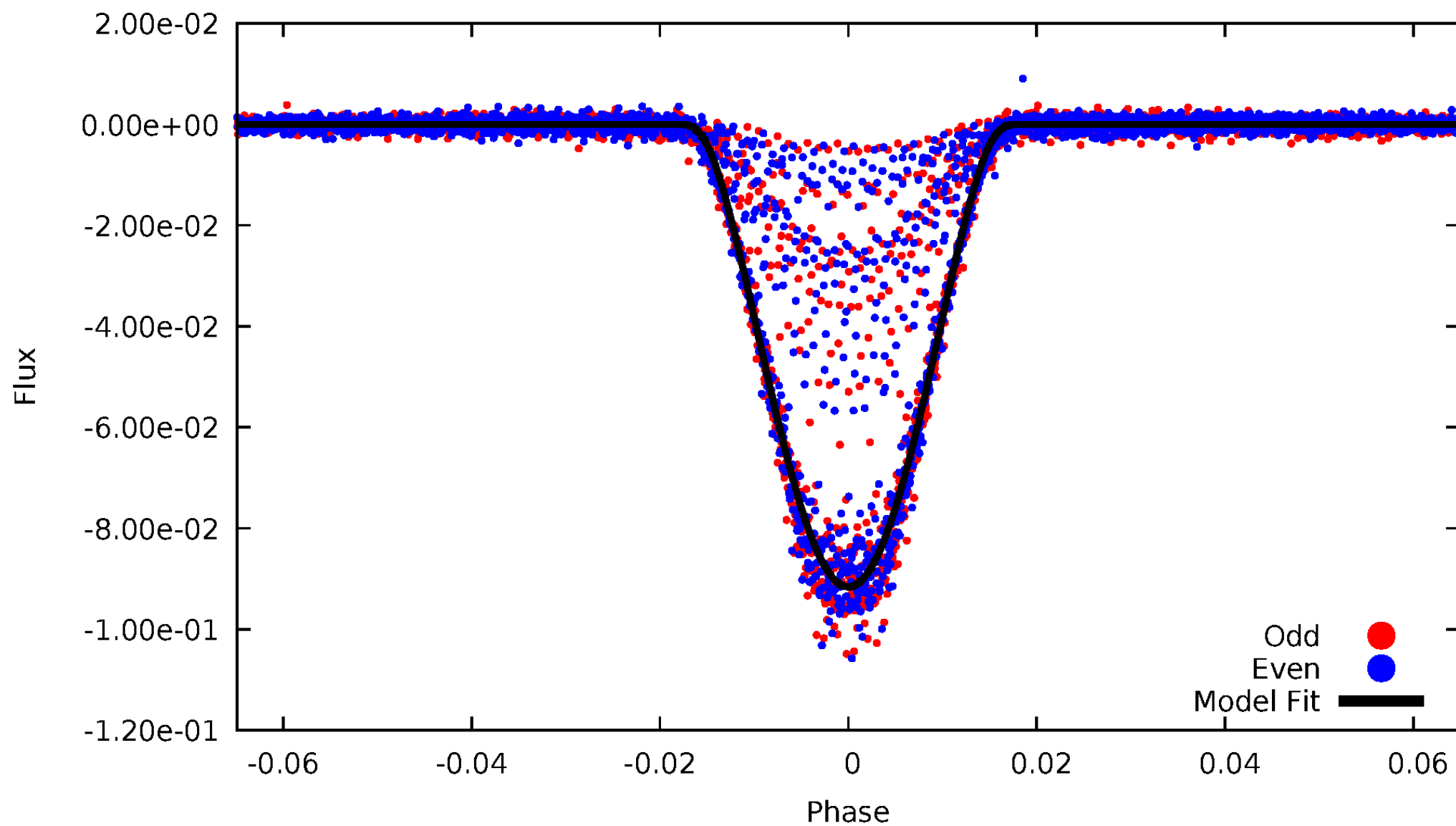


TCE 006182846-01



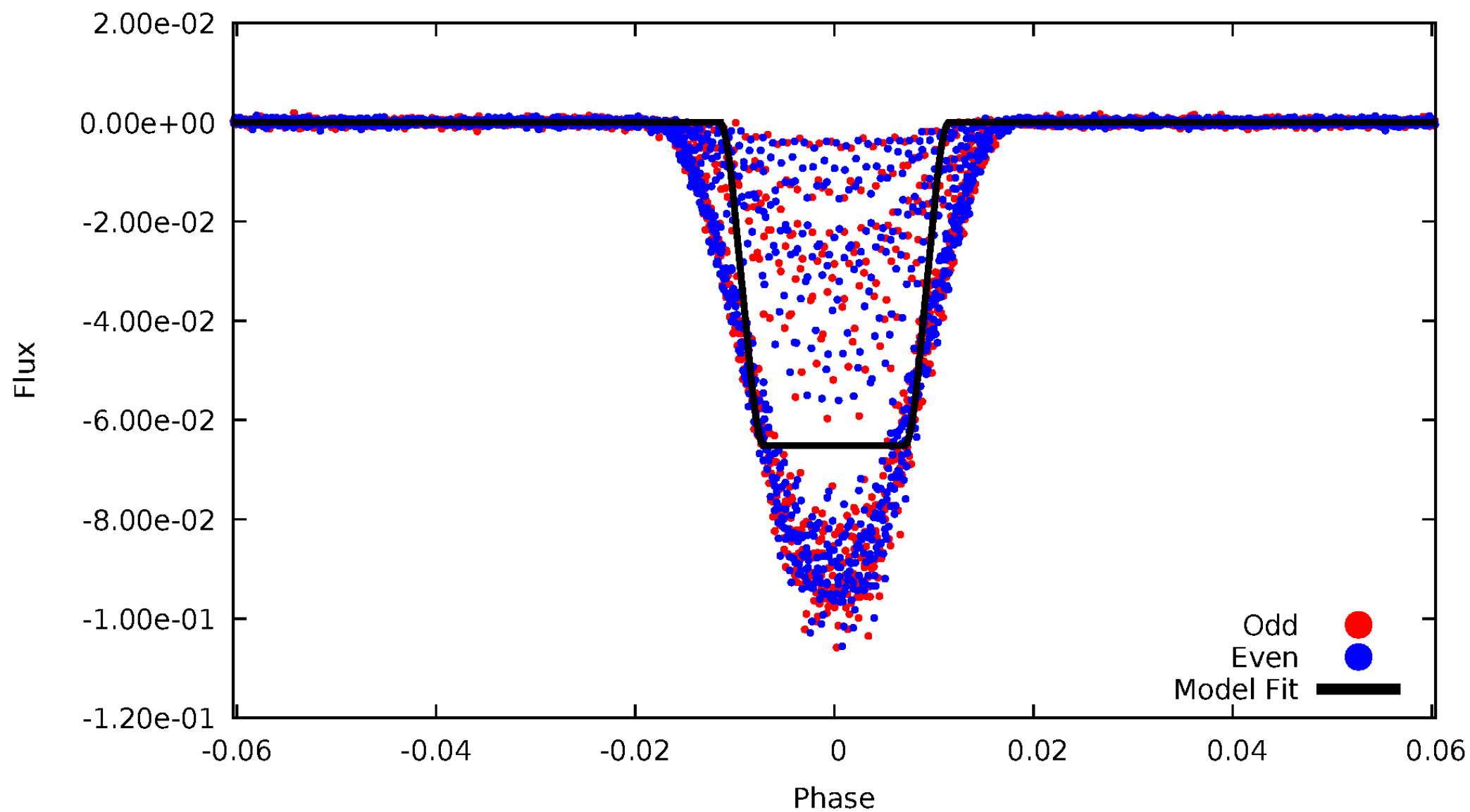
DV Odd/Even

TCE 006182846-01



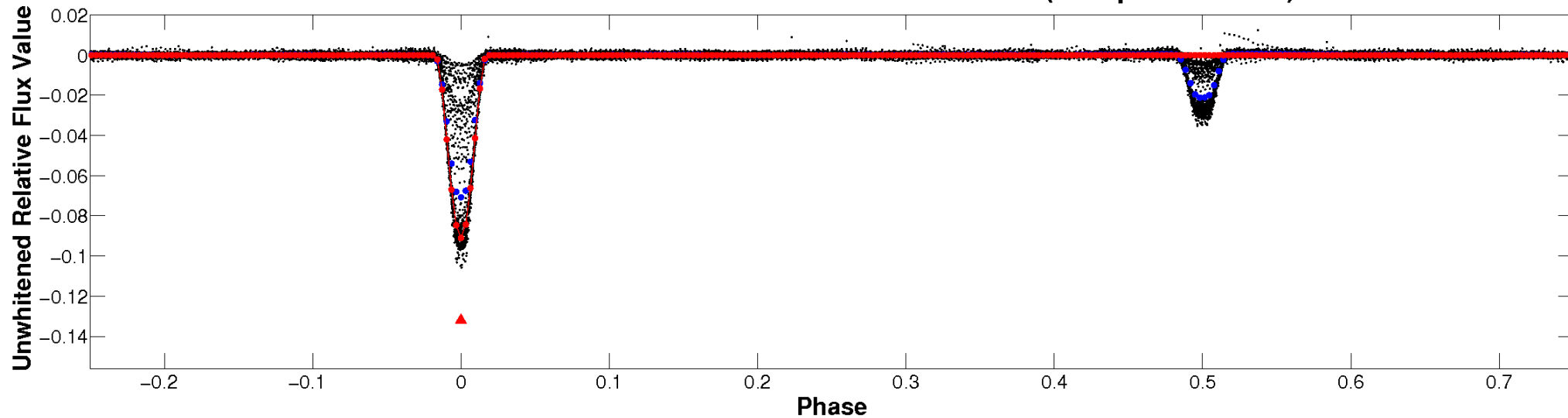
ALT Odd/Even

TCE 006182846-01

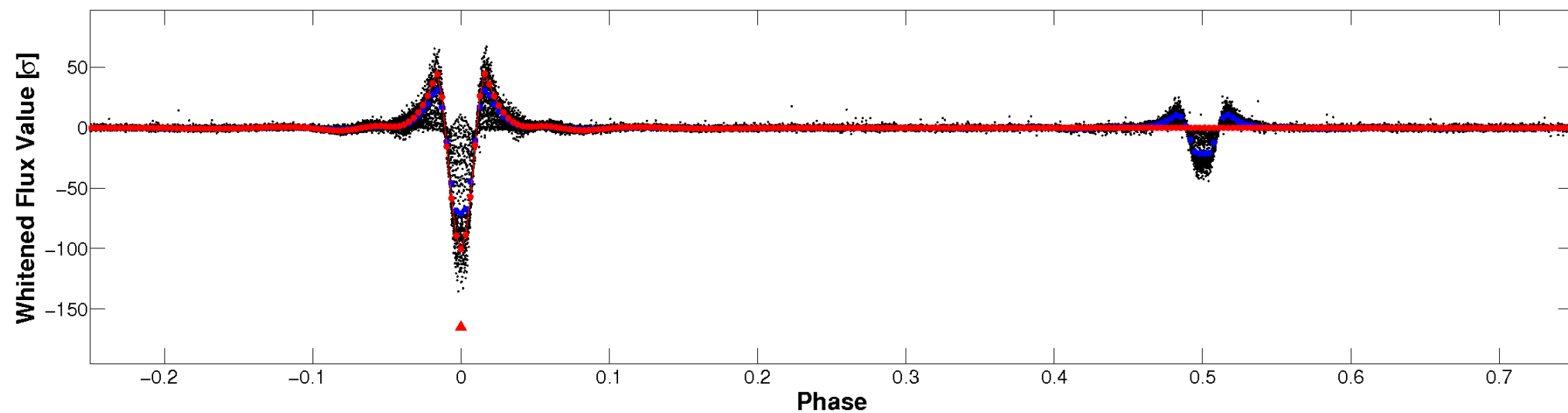


Non-Whitened Vs. Whitened Light Curve

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

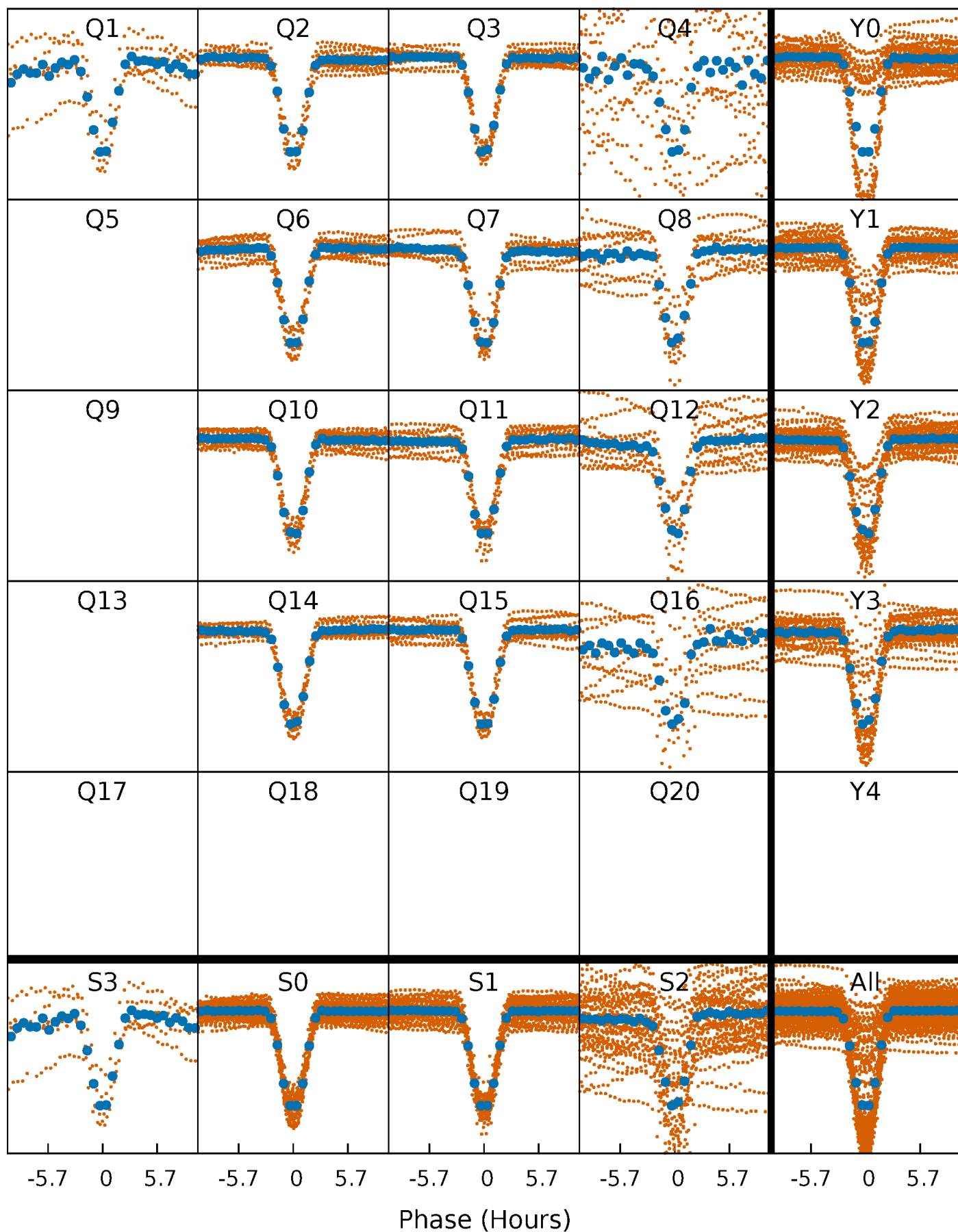


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



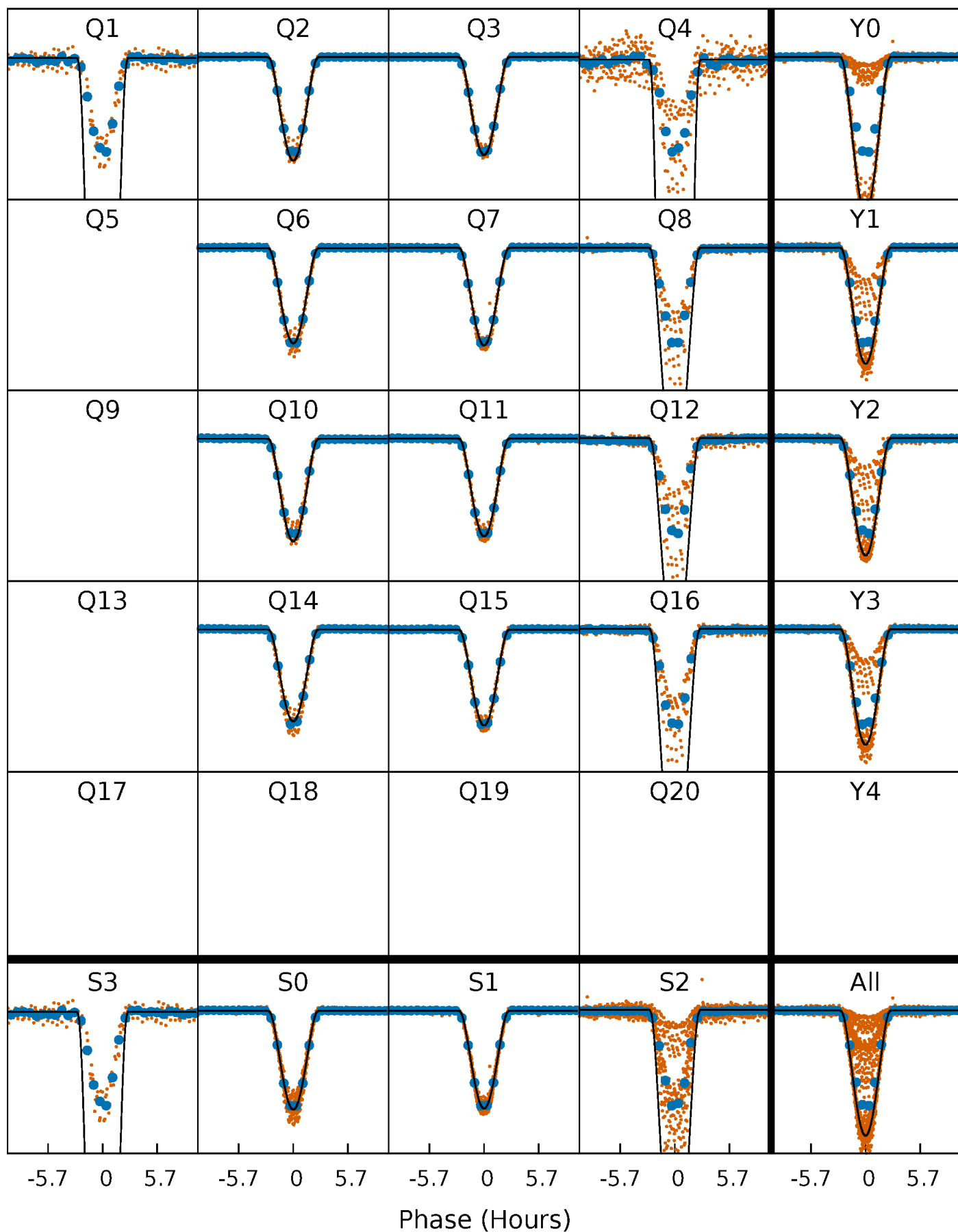
PDC Quarter-Phased Transit Curves

TCE 006182846-01 P= 6.399107 Days $T_0=134.701602$ (BKJD)



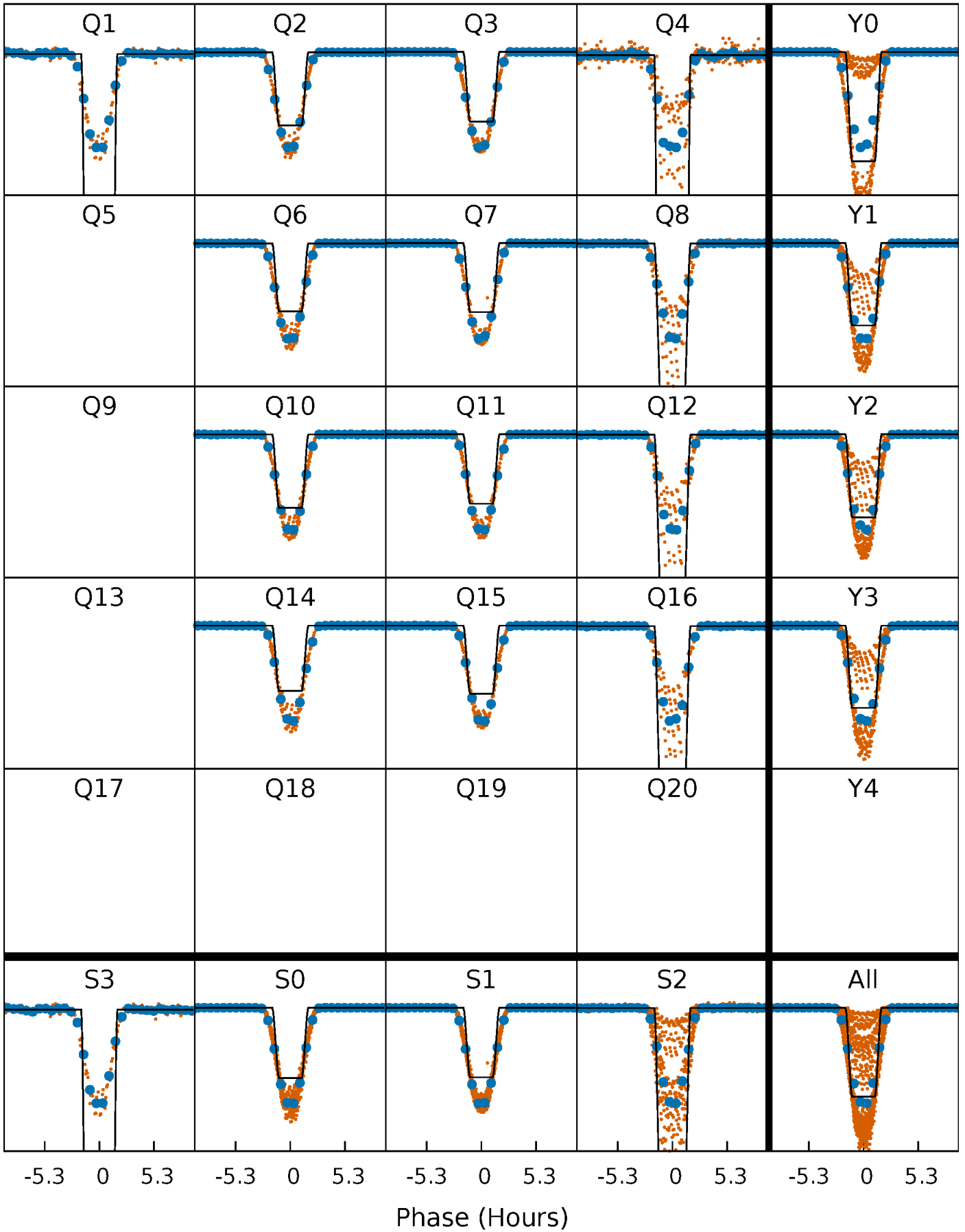
DV Quarter-Phased Transit Curves

TCE 006182846-01 P= 6.399107 Days $T_0=134.701602$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

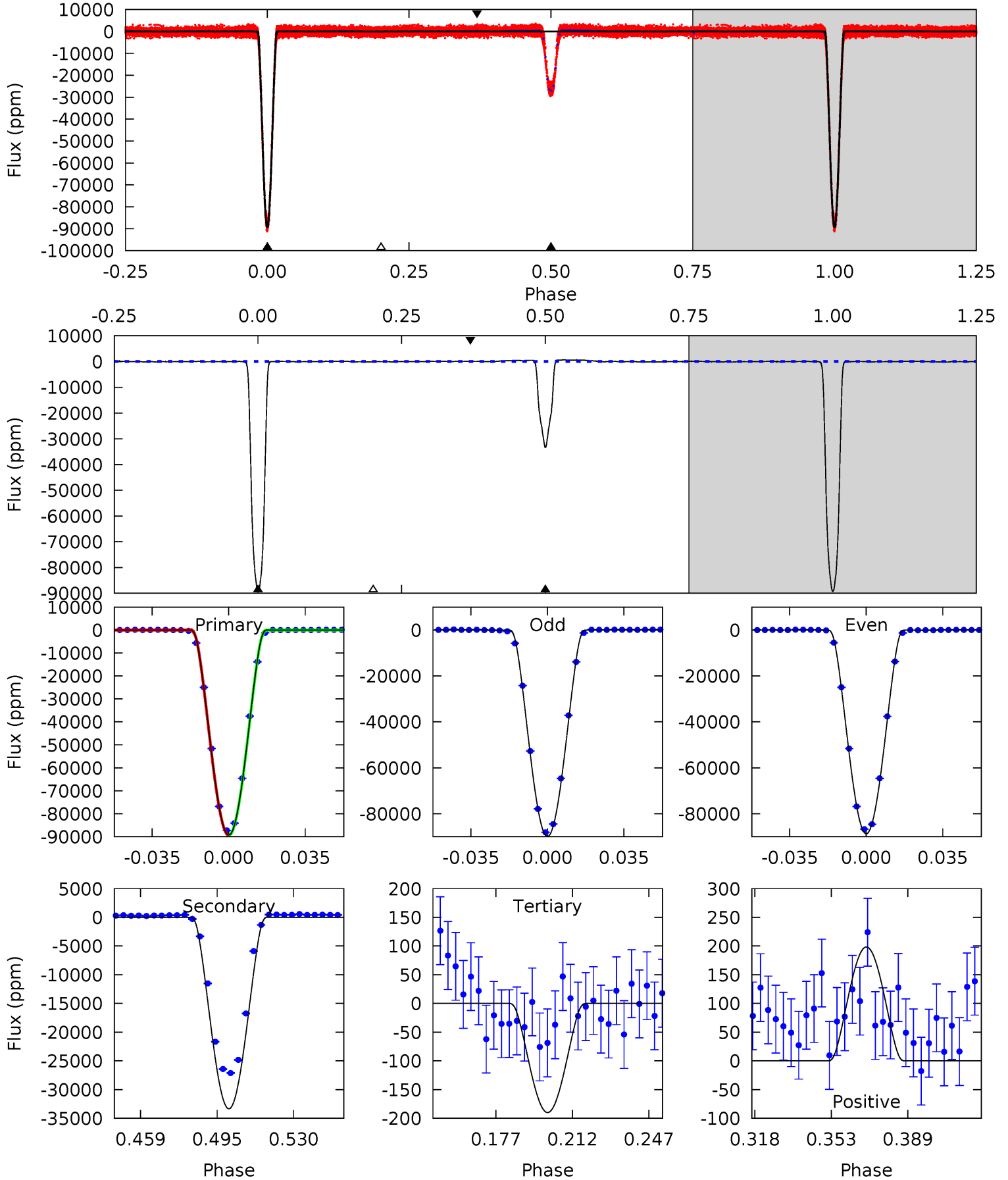
TCE 006182846-01 P= 6.399074 Days $T_0=134.705496$ (BKJD)



DV Model-Shift Uniqueness Test

006182846-01, P = 6.399107 Days, E = 128.302495 Days

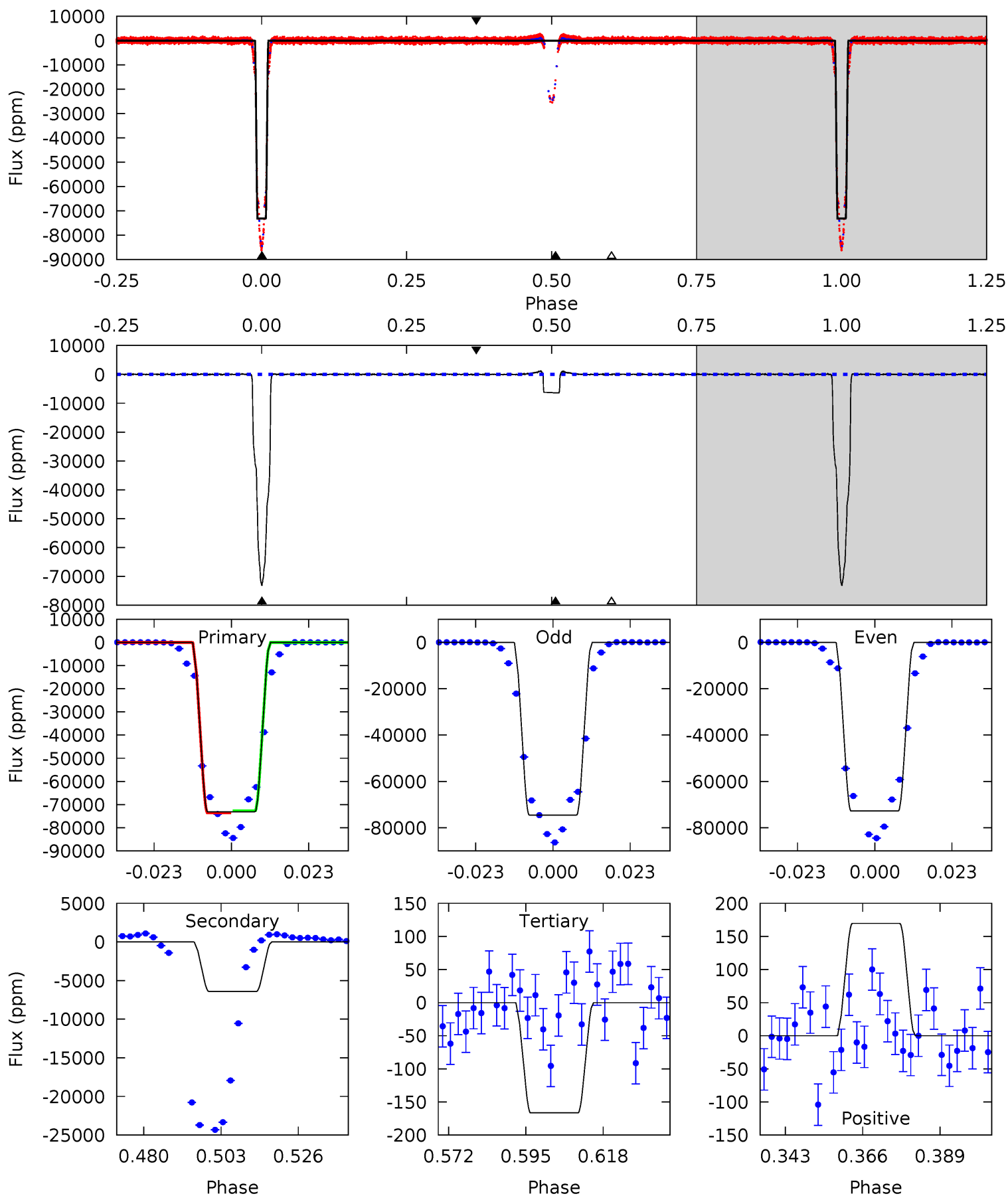
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3201	1195	6.81	7.11	4.78	2.10	5.62	3194	3194	1189	1188	20.6	0.81	0.01	1.16



Alt Model-Shift Uniqueness Test

006182846-01, P = 6.399074 Days, E = 128.306422 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1741	152.6	3.97	4.04	4.87	2.28	2.74	1737	1737	148.6	148.5	21.4	0.81	0.02	0



Stellar Parameters For KIC 006182846

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6233^{+175}_{-197}	$4.472^{+0.056}_{-0.224}$	$-0.240^{+0.250}_{-0.300}$	$0.988^{+0.341}_{-0.107}$	$1.054^{+0.144}_{-0.144}$	$1.541^{+0.359}_{-0.880}$
	+3%/-3%	+1%/-5%	+104%/-125%	+35%/-11%	+14%/-14%	+23%/-57%
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 006182846-01 / KOI 3591.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-33344 ± 28	$52.19^{+10.33}_{-8.33}$	1492^{+123}_{-74}	4210^{+247}_{-221}	32^{+12}_{-9}
Alt.	-6406 ± 42	$29.19^{+8.36}_{-7.18}$	1485^{+124}_{-68}	3822^{+411}_{-261}	19^{+15}_{-7}

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

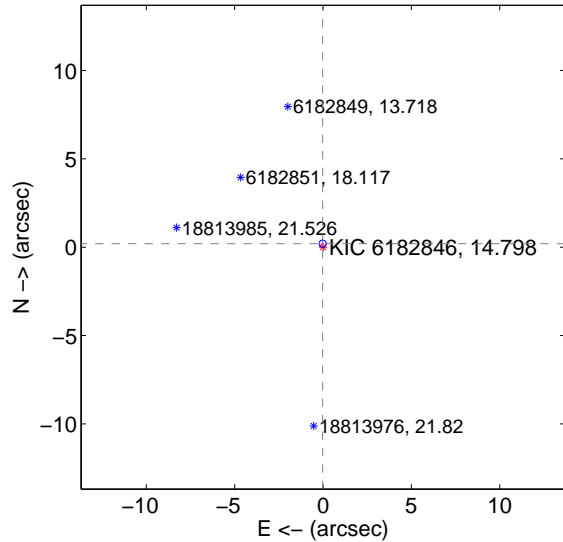
Supplemental centroid analysis for 006182846-01. Kepler magnitude: 14.80. Transit SNR 1541.25

There are 9 quarters with good PRF difference image offsets

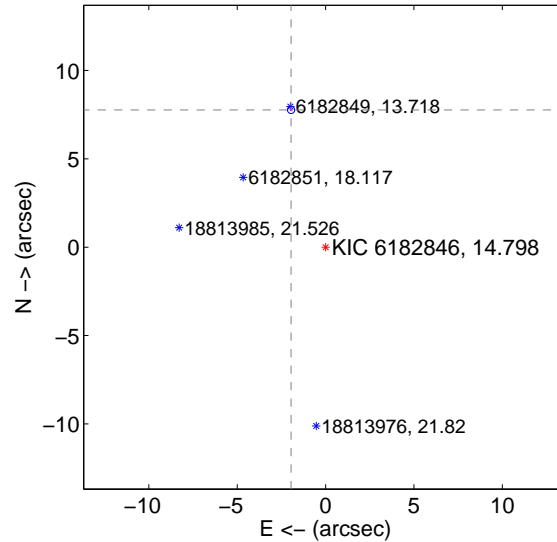
The OOT PRF centroid is offset from the target star catalog position by about 7.80 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.200 ± 0.067	2.97	0.023 ± 0.068	0.199 ± 0.067
PRF-fit source offset from KIC position	8.008 ± 0.068	117.48	1.952 ± 0.068	7.766 ± 0.068
photometric centroid source offset	11.40 ± 0.00	3447.37	2.34 ± 0.00	11.16 ± 0.00

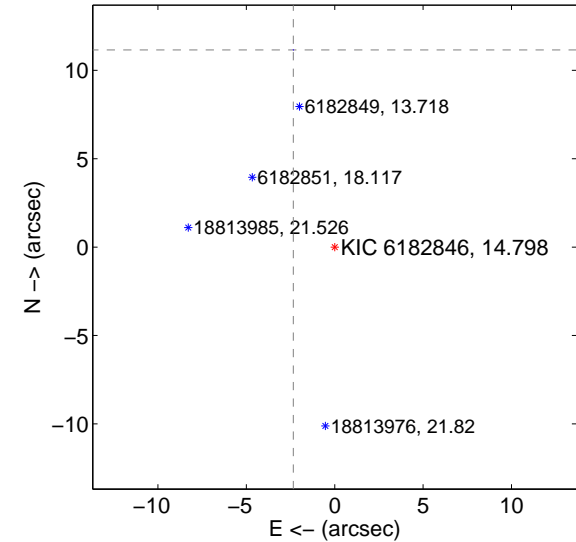
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

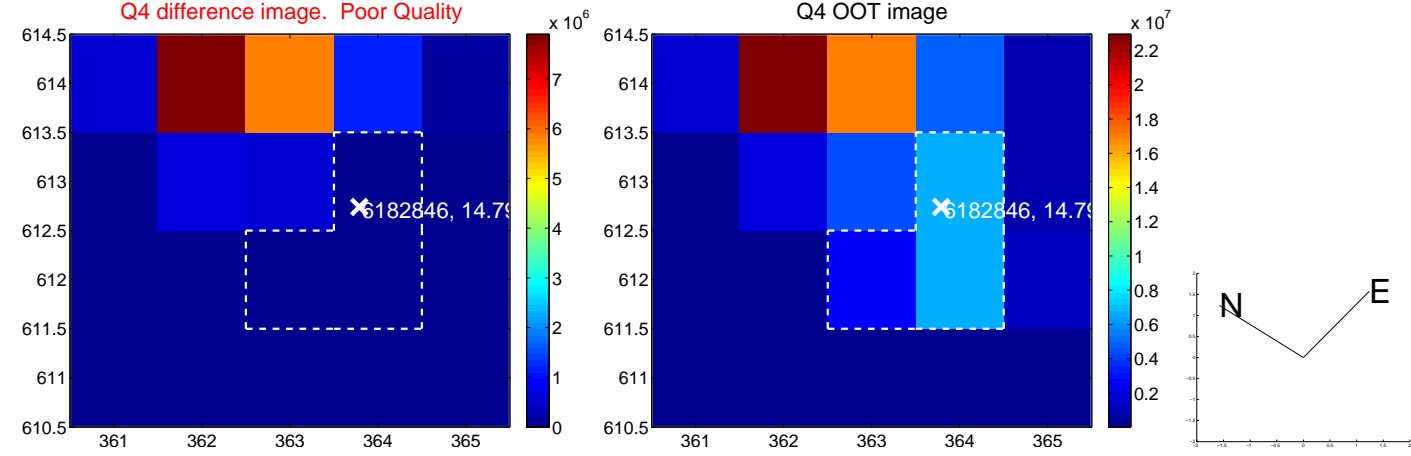
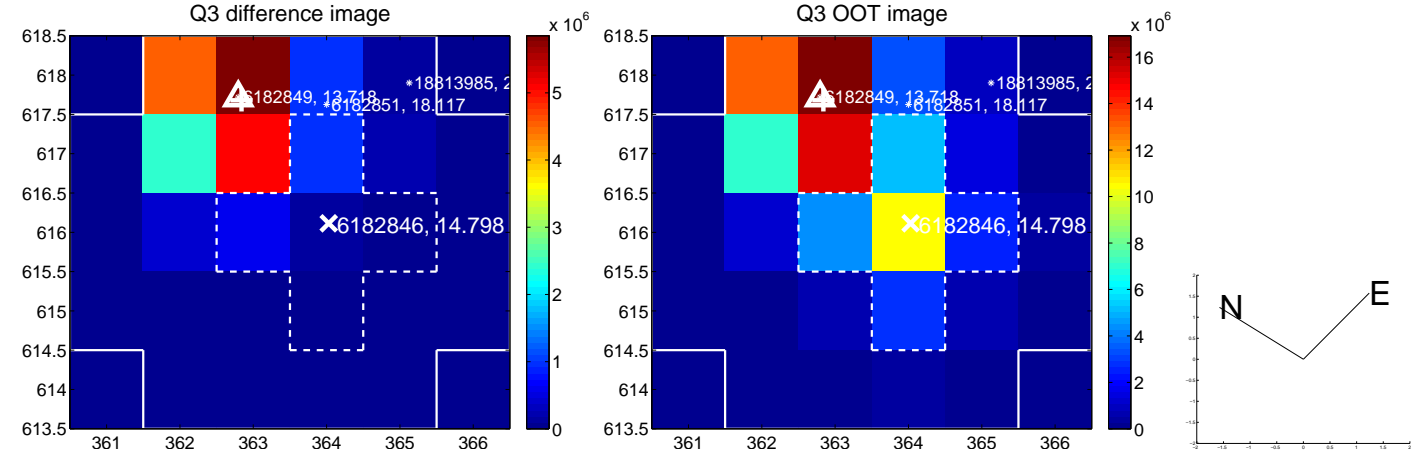
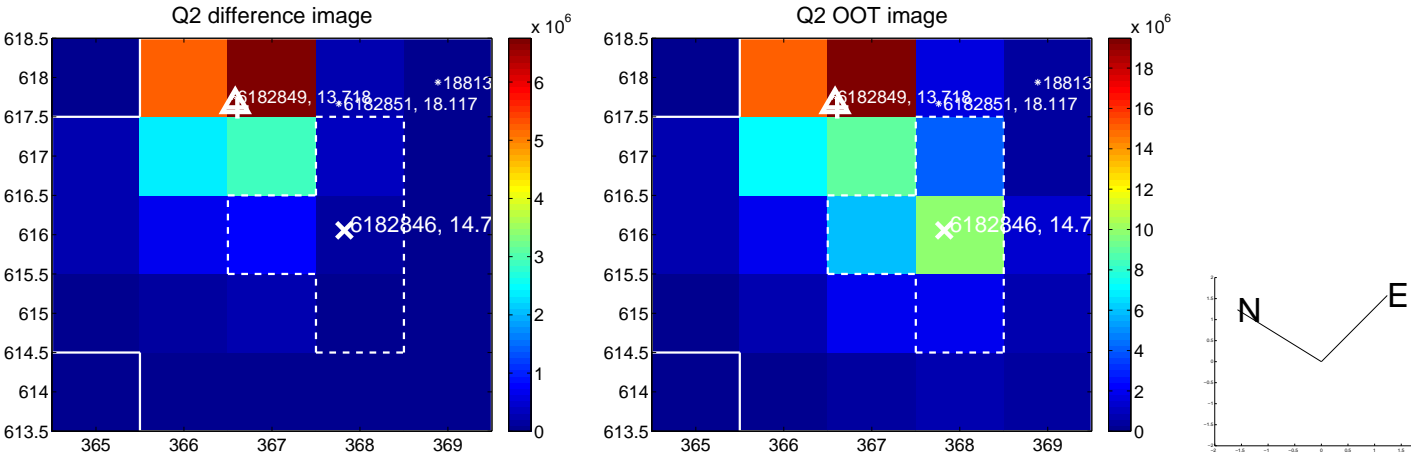
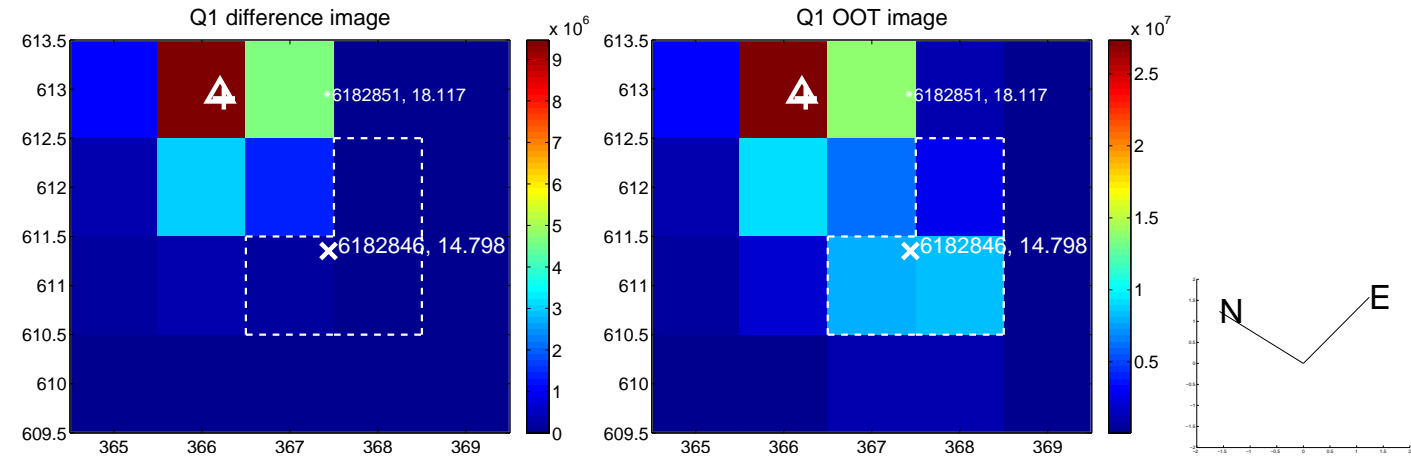


offset from photometric centroids



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.

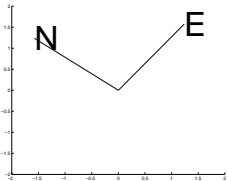
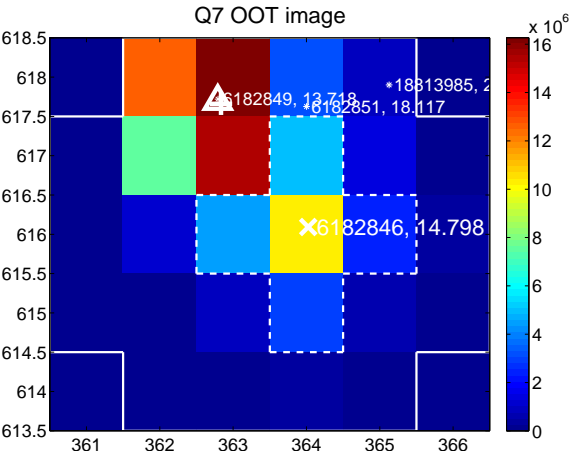
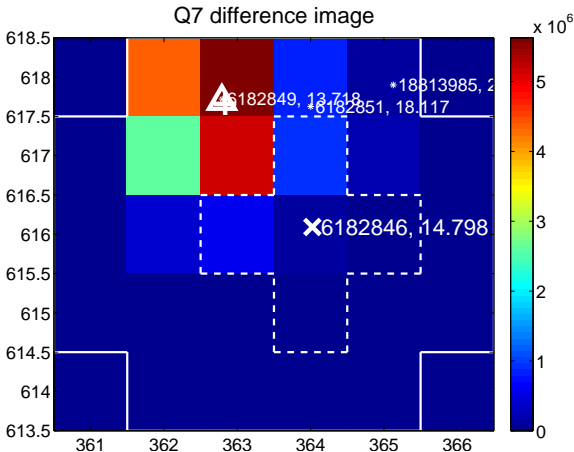
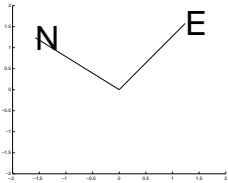
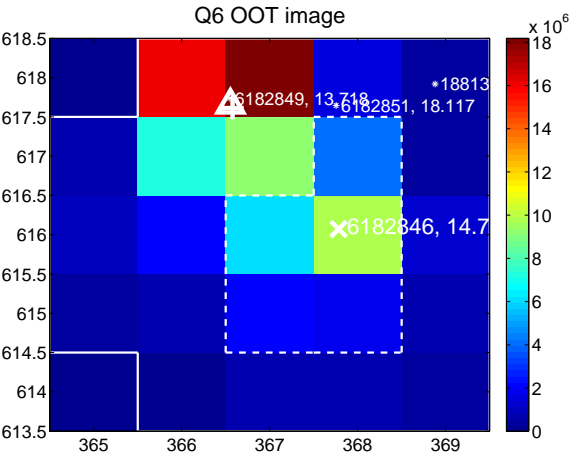
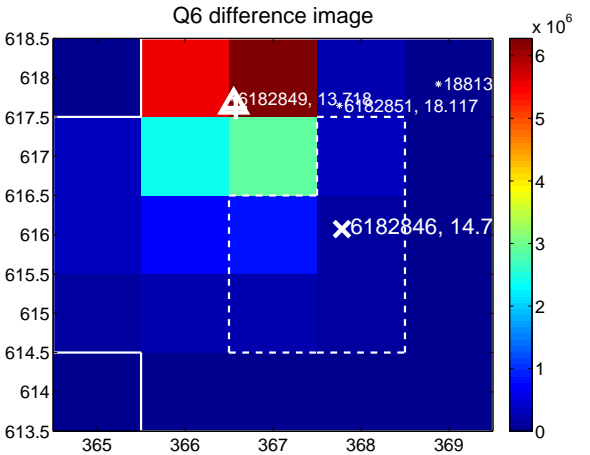


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

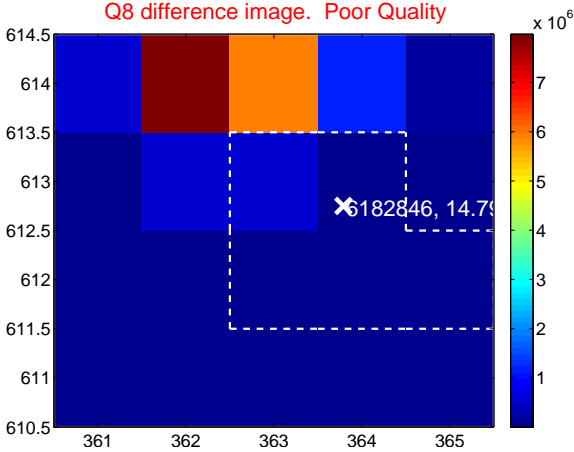
Q5 no difference image



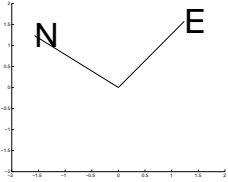
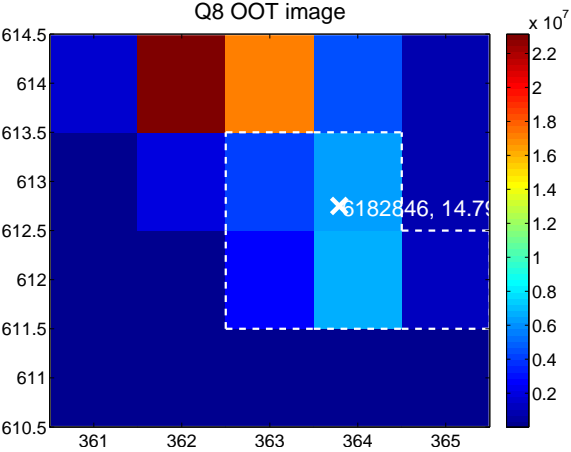
Q5 no OOT image



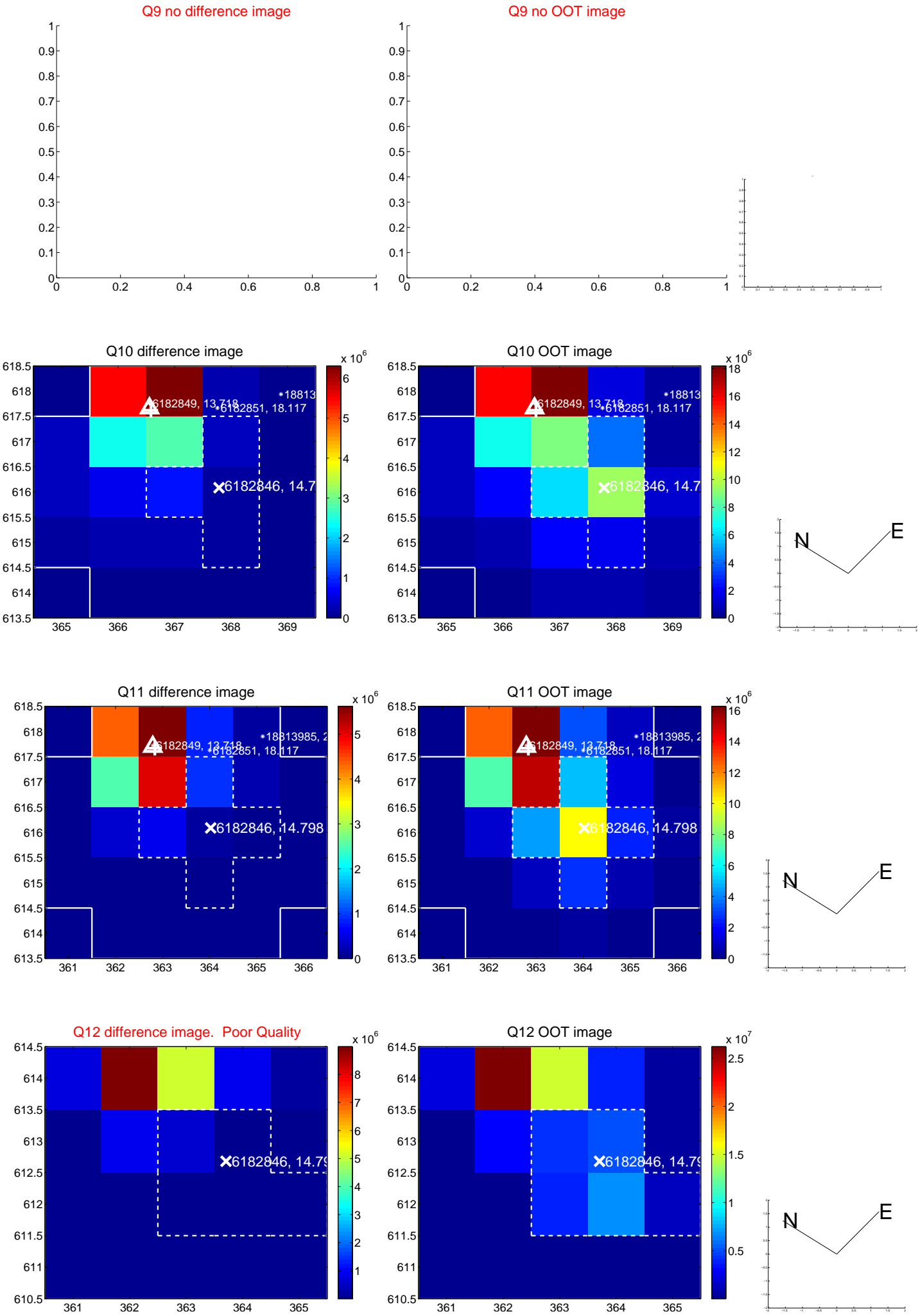
Q8 difference image. Poor Quality



Q8 OOT image



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

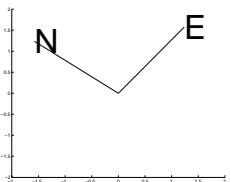
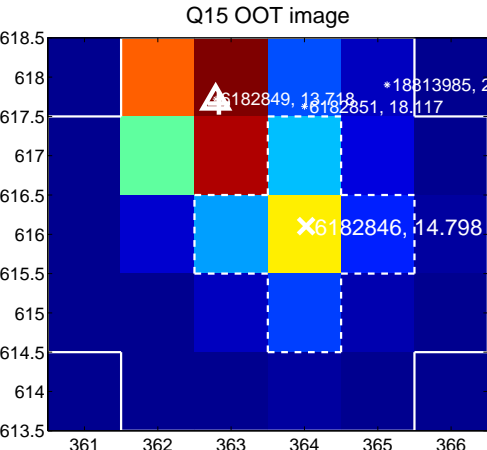
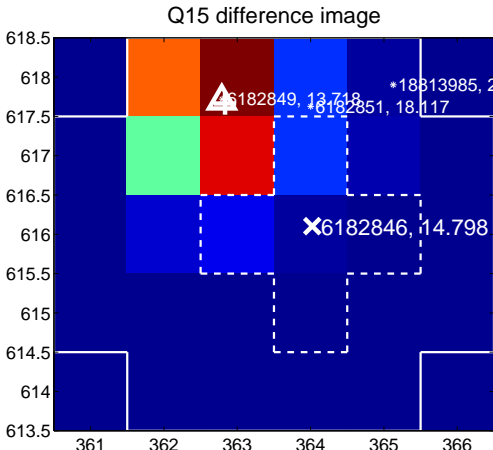
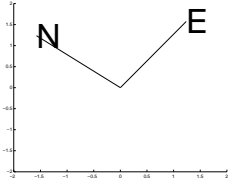
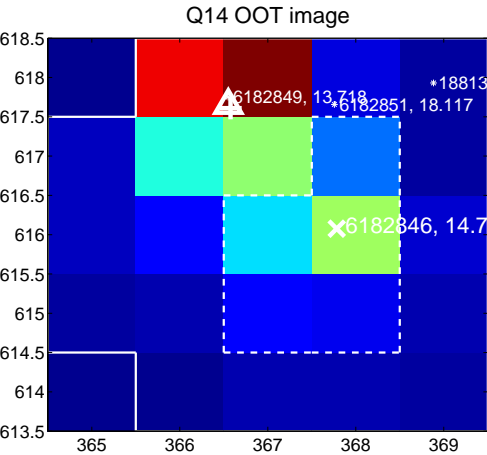
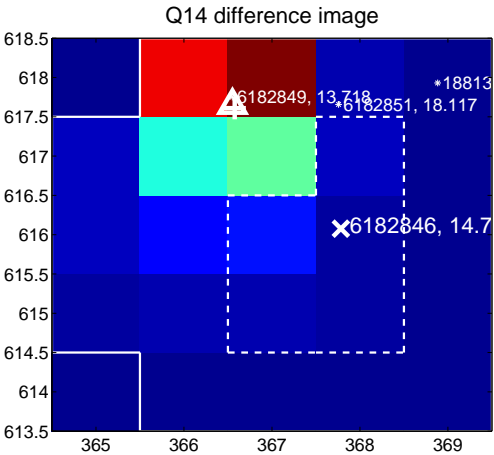


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

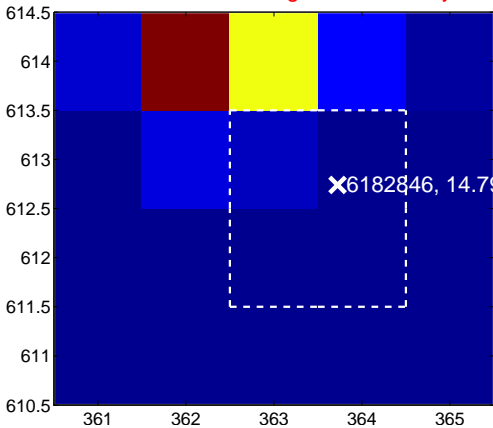
Q13 no difference image



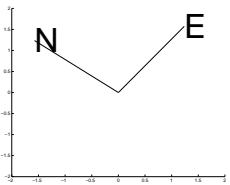
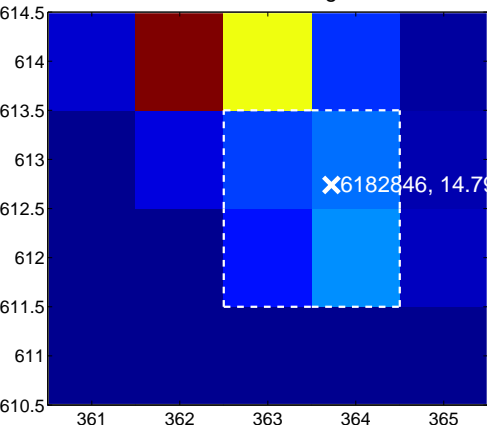
Q13 no OOT image



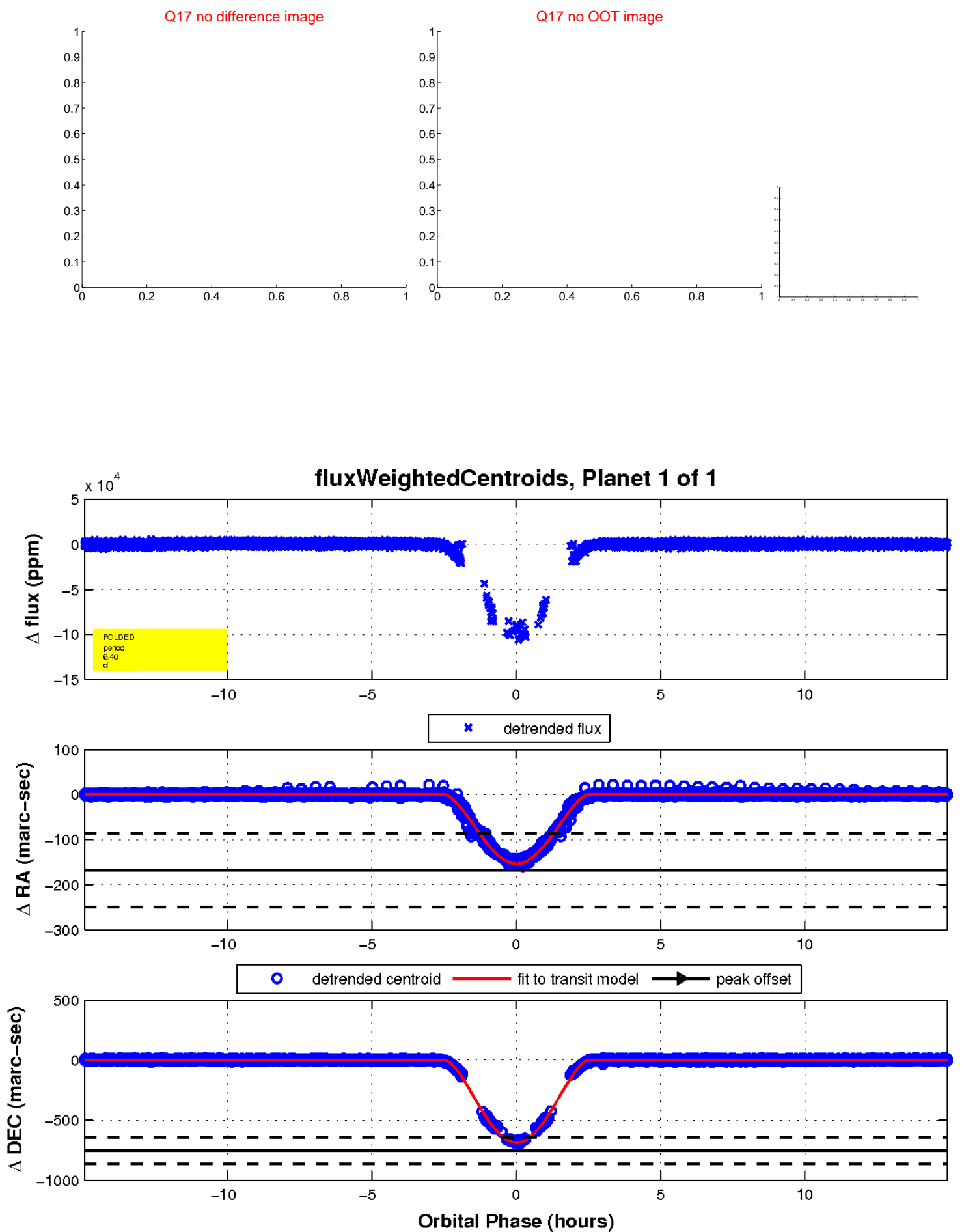
Q16 difference image. Poor Quality



Q16 OOT image



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



UKIRT Image

