

KIC 009291378

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})
009291378-01	OBS	3776.01	3.796453	135.159315	2361.8	9.785	215.0	125.6	1.02	6137	9.23	547.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009291378-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_ALT—DEEP_V_SHAPED—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 009291378-01

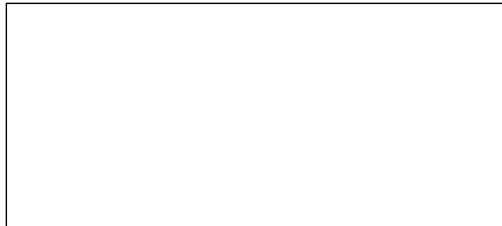
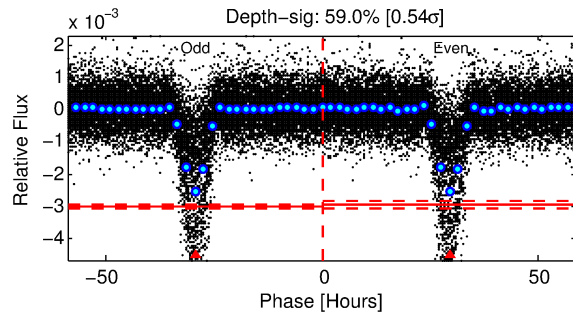
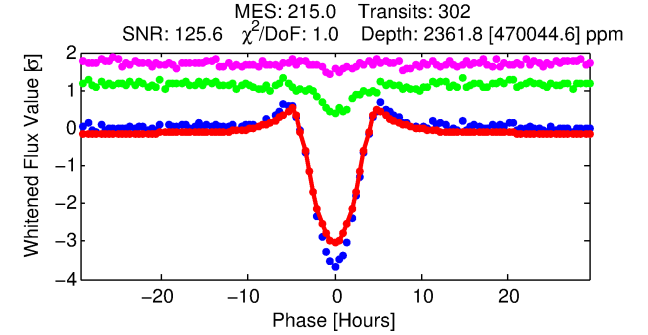
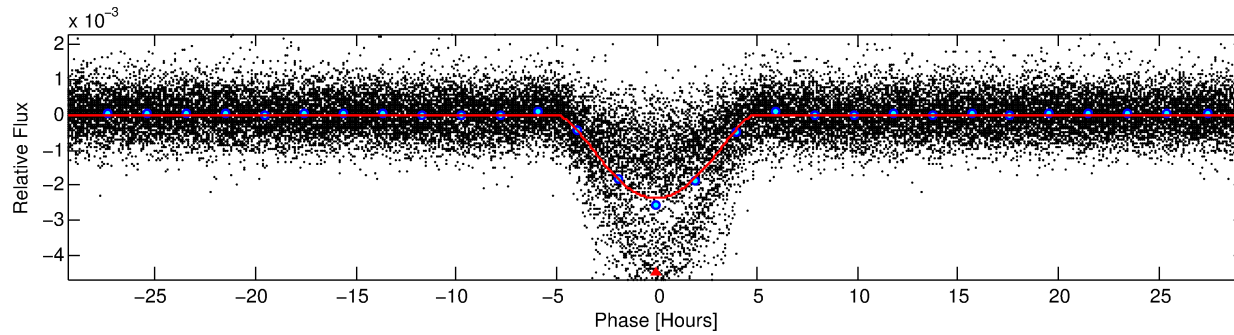
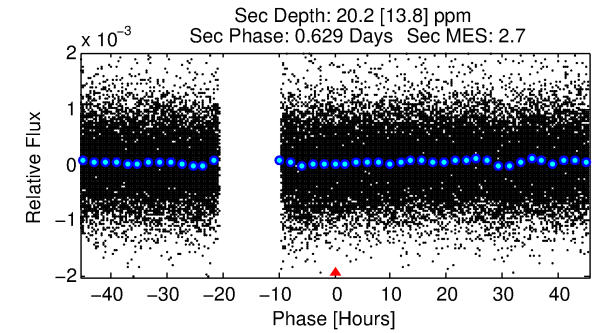
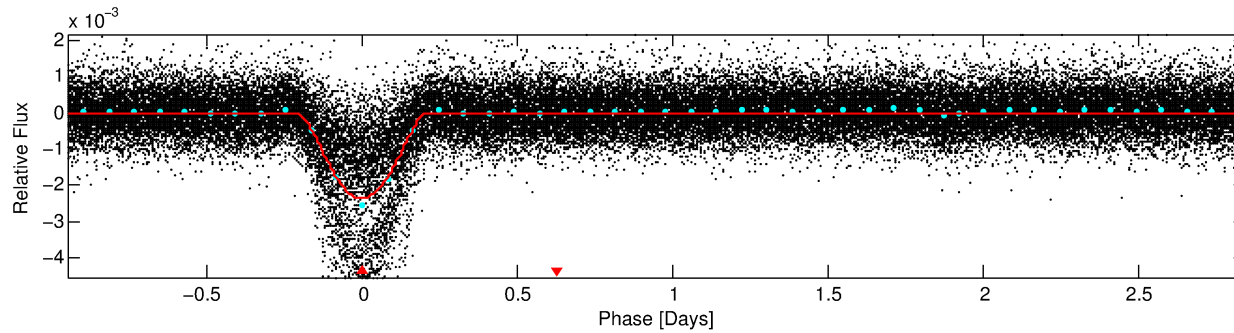
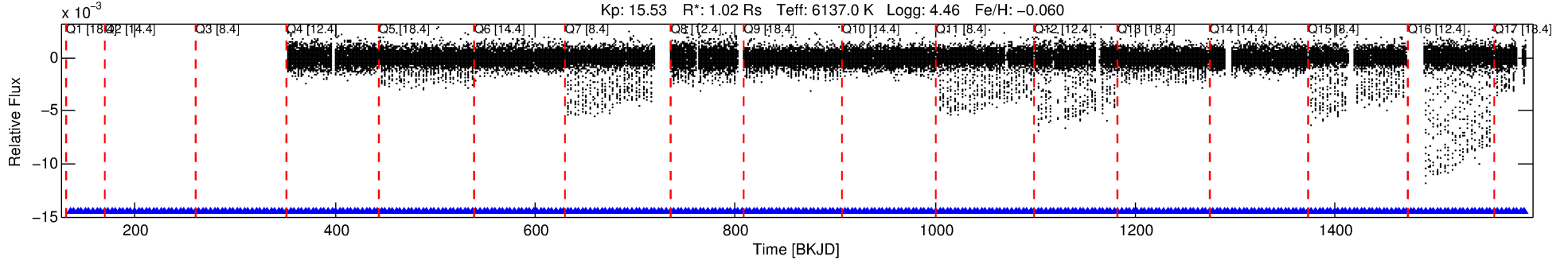
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
009291378-01	9291378	7155.01	9291368	1:1	12.6	-3	0	14.01	15.54	230.77	Direct-PRF	0	1.88	1.85

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: 9291378 Candidate: 1 of 1 Period: 3.796 d
KOI: K03776.01 Corr: 0.986

Kp: 15.53 R*: 1.02 Rs Teff: 6137.0 K Logg: 4.46 Fe/H: -0.060



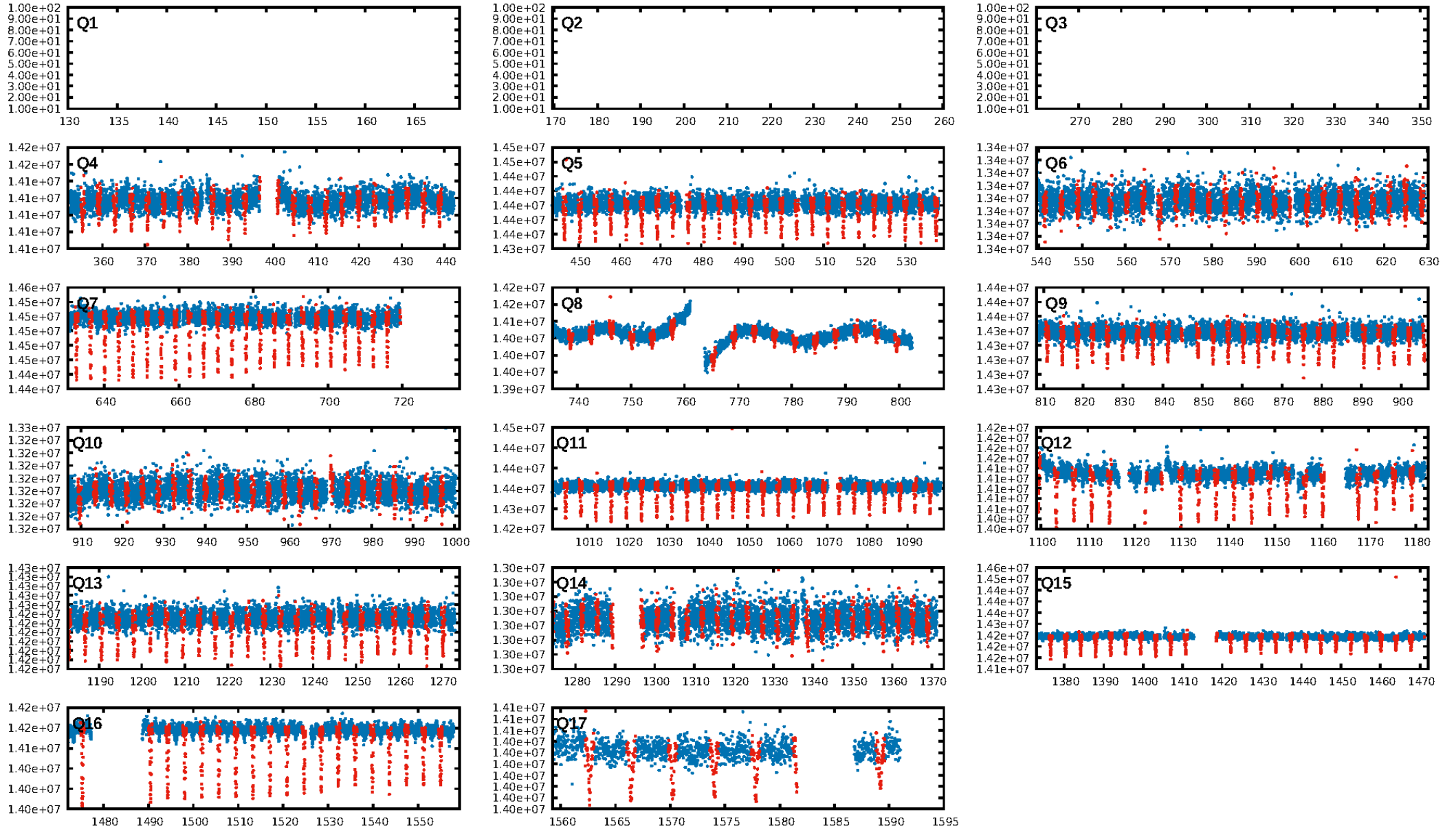
DV Fit Results:

Period = 3.79645 [0.00001] d
Epoch = 135.1593 [0.0018] BKJD
Rp/R* = 0.0831 [0.0191]
a/R* = 1.61 [0.03]
b = 1.00 [11.09]
Seff = 547.92 [234.40]
Teq = 1234 [132] K
Rp = 9.23 [3.62] Re
a = 0.0490 [0.0132] AU
Ag = 0.31 [0.29] [-2.40σ]
Teffp = 1427 [300] K [0.59σ]

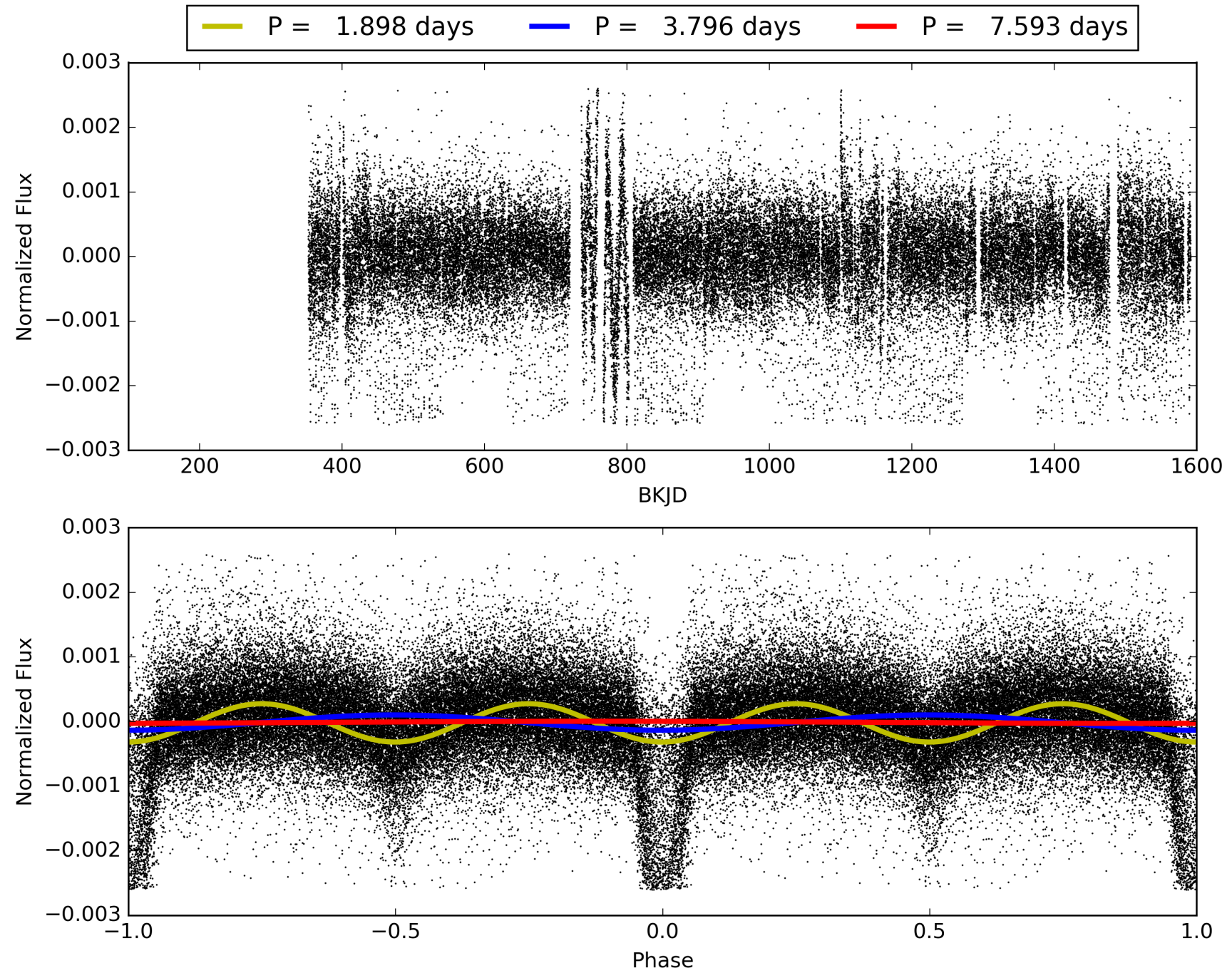
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [295/295]
GhostDiagnostic-chr: -0.8003
Centroid-sig: N/A
Centroid-so: 41.687 arcsec [405.90σ]
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 [14/14]

TCE 009291378-01, PDC Light Curves

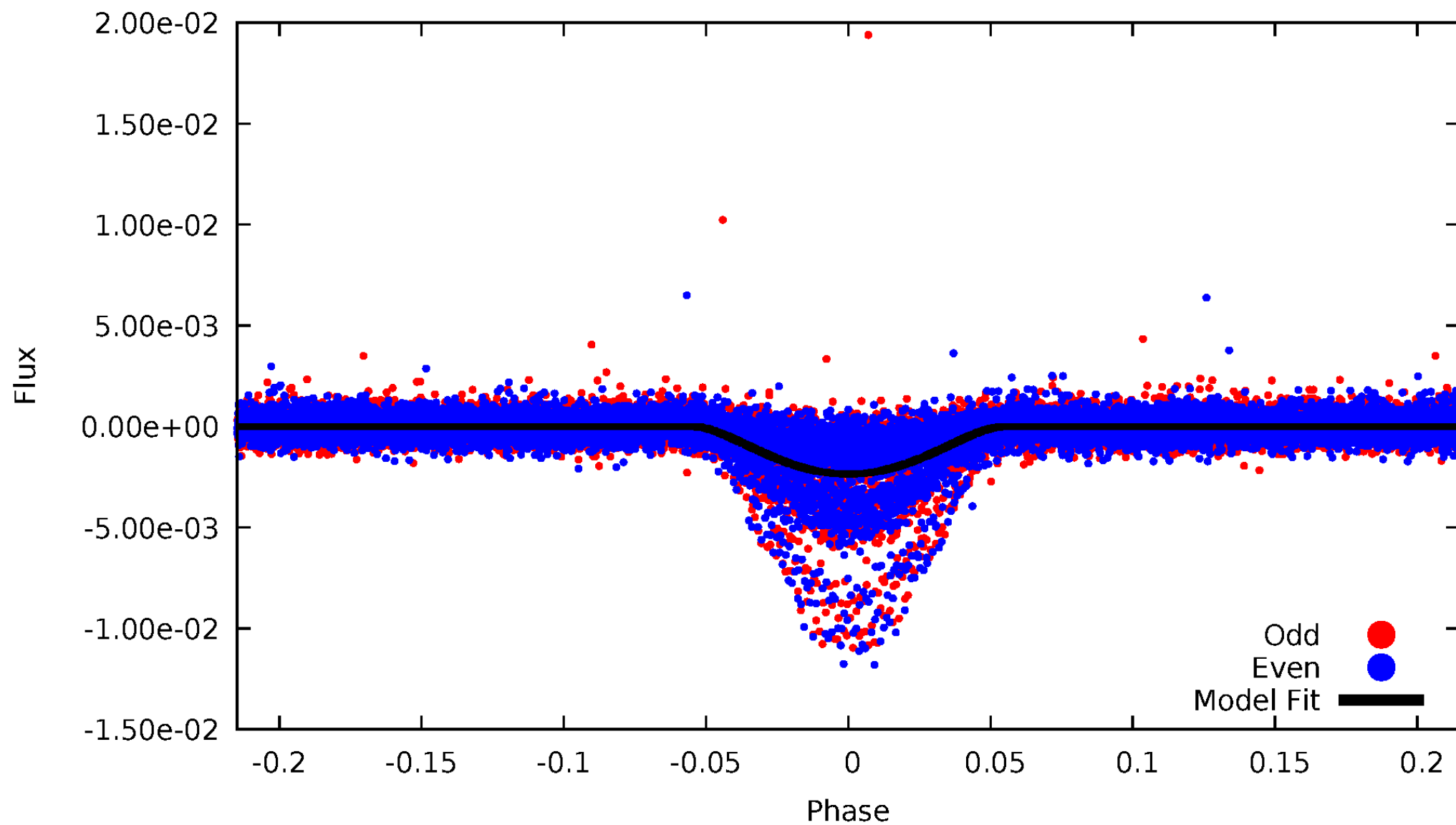


TCE 009291378-01



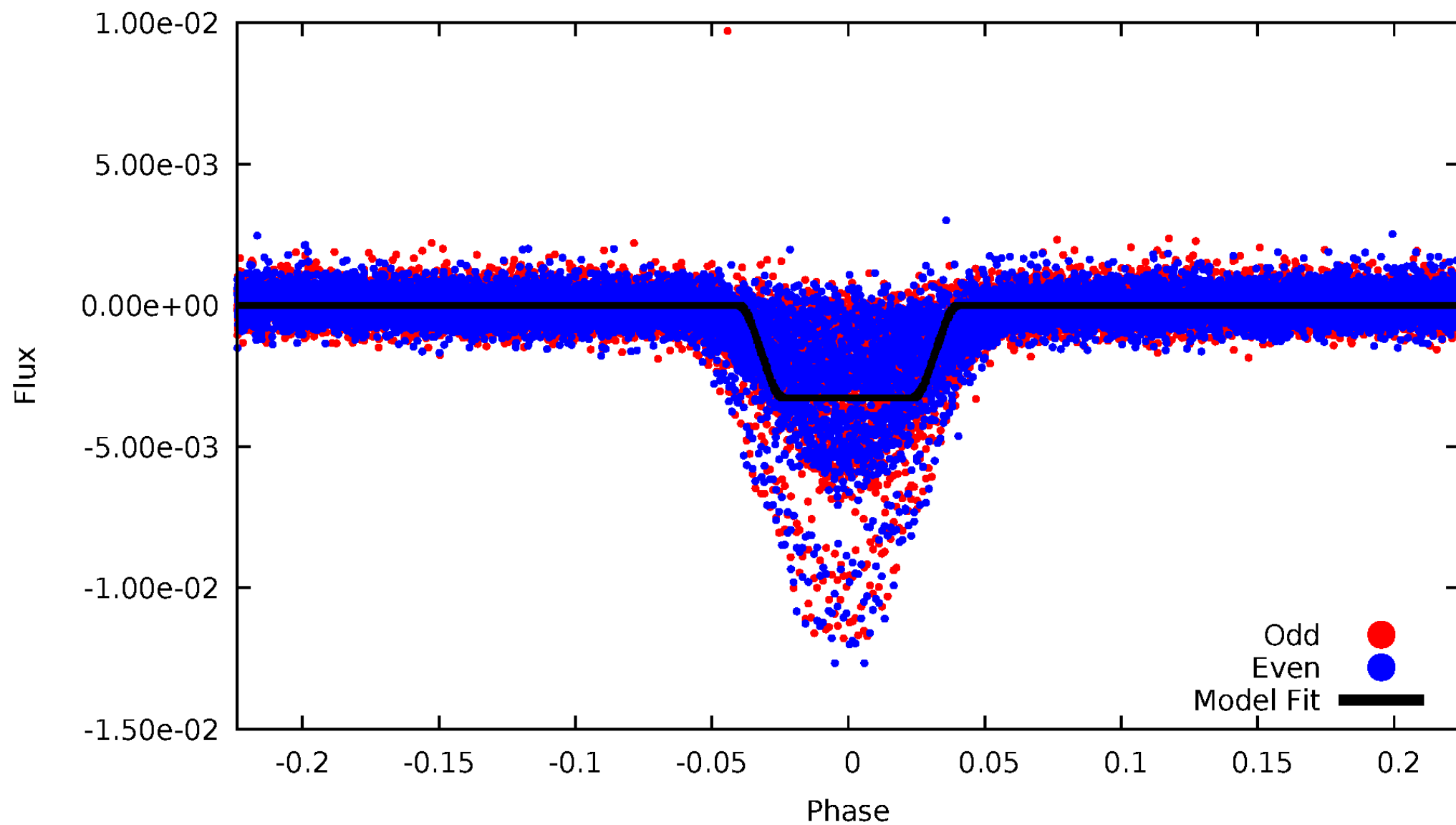
DV Odd/Even

TCE 009291378-01



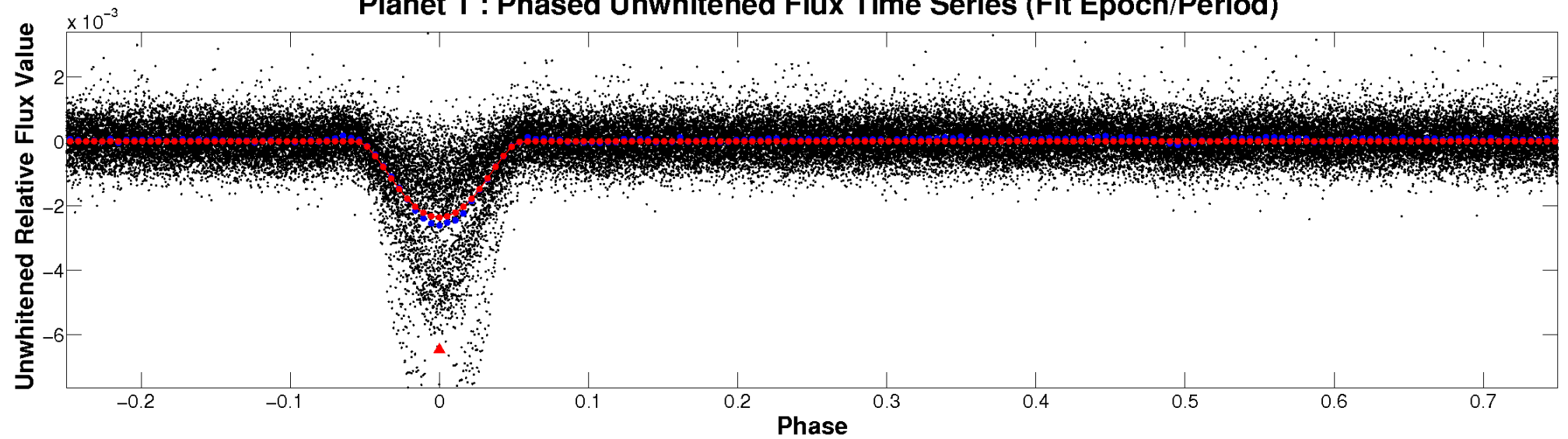
ALT Odd/Even

TCE 009291378-01

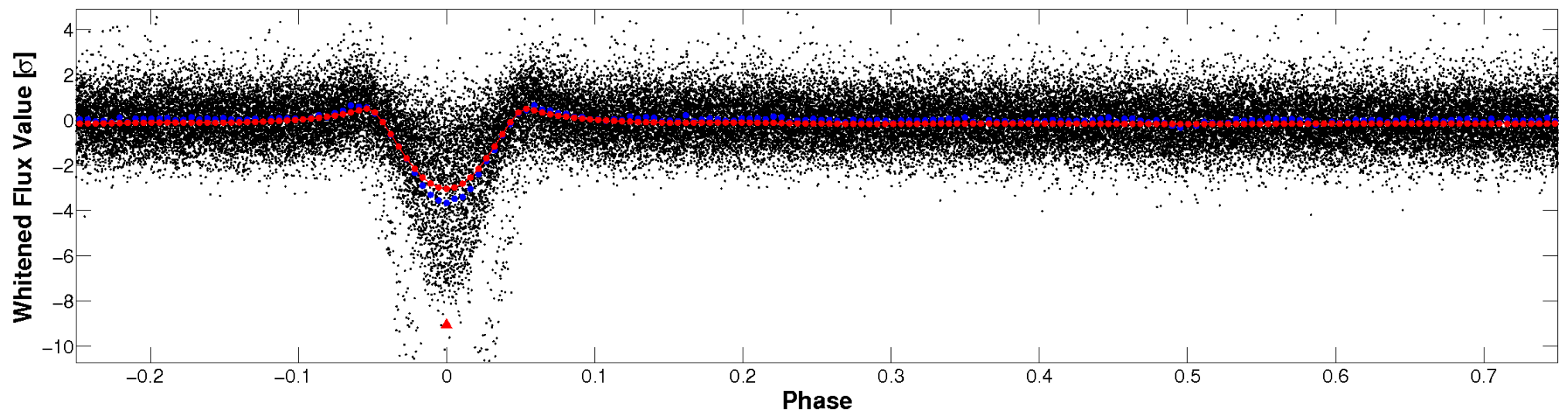


Non-Whitened Vs. Whitened Light Curve

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

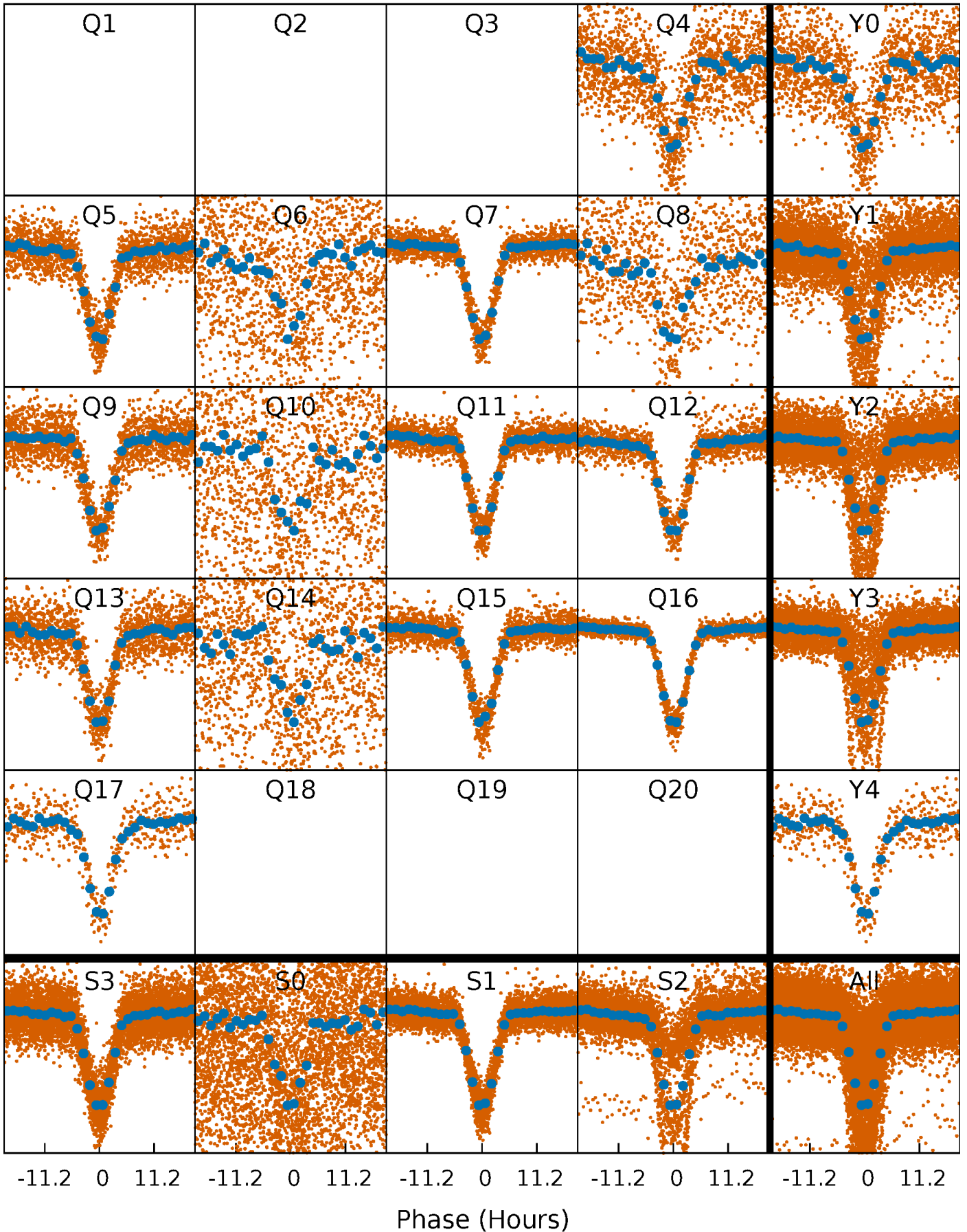


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



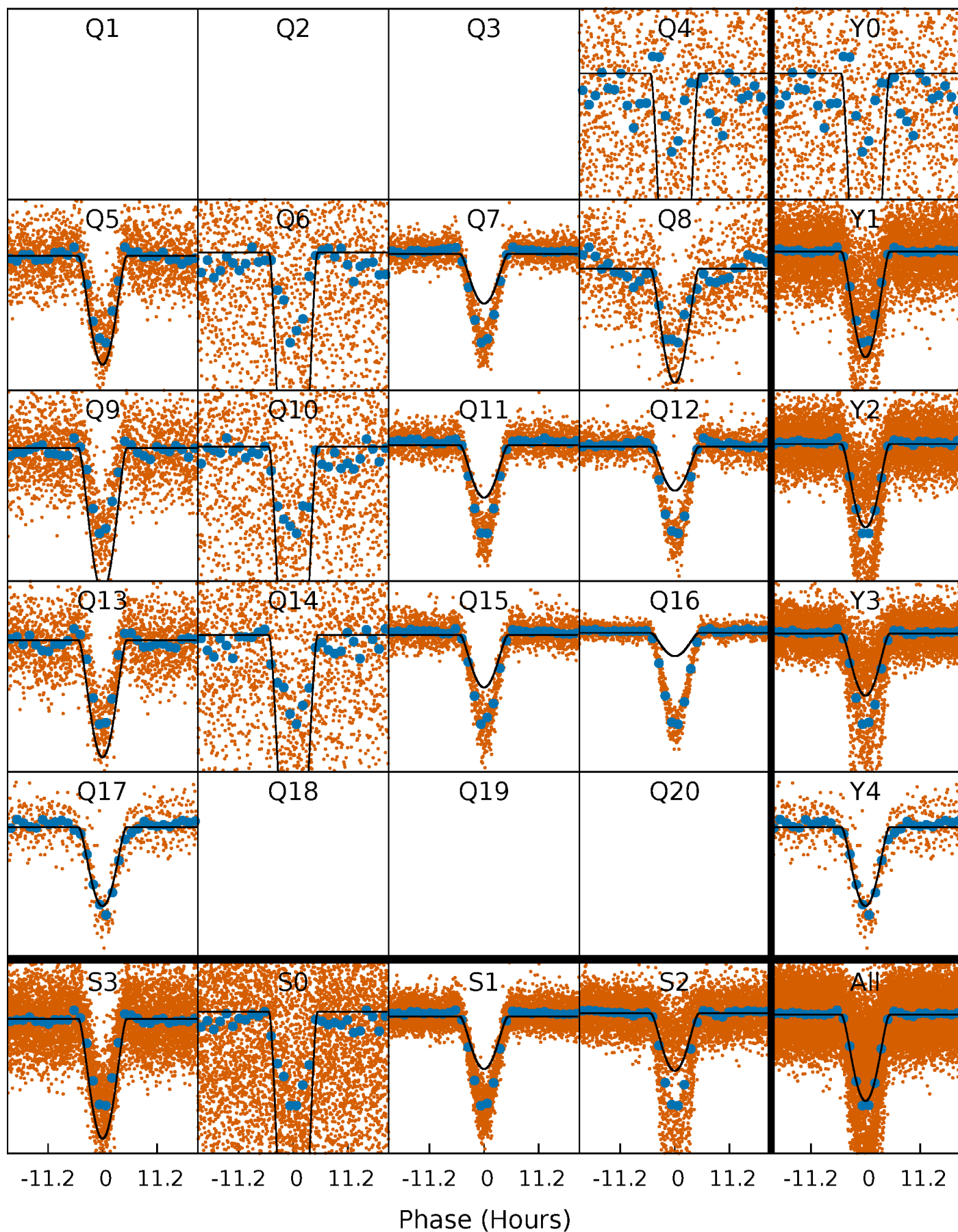
PDC Quarter-Phased Transit Curves

TCE 009291378-01 P= 3.796453 Days $T_0=135.159315$ (BKJD)



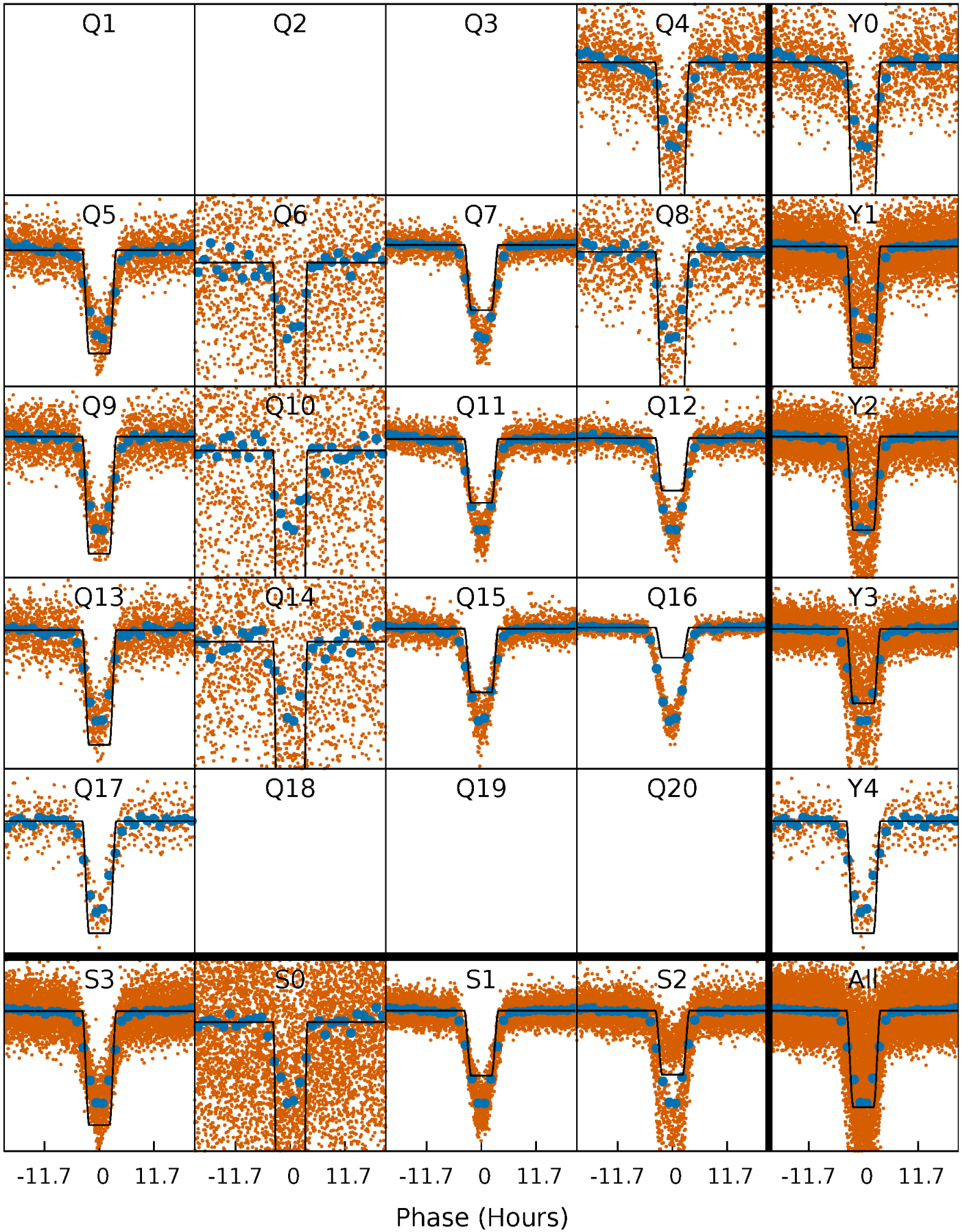
DV Quarter-Phased Transit Curves

TCE 009291378-01 P= 3.796453 Days $T_0=135.159315$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

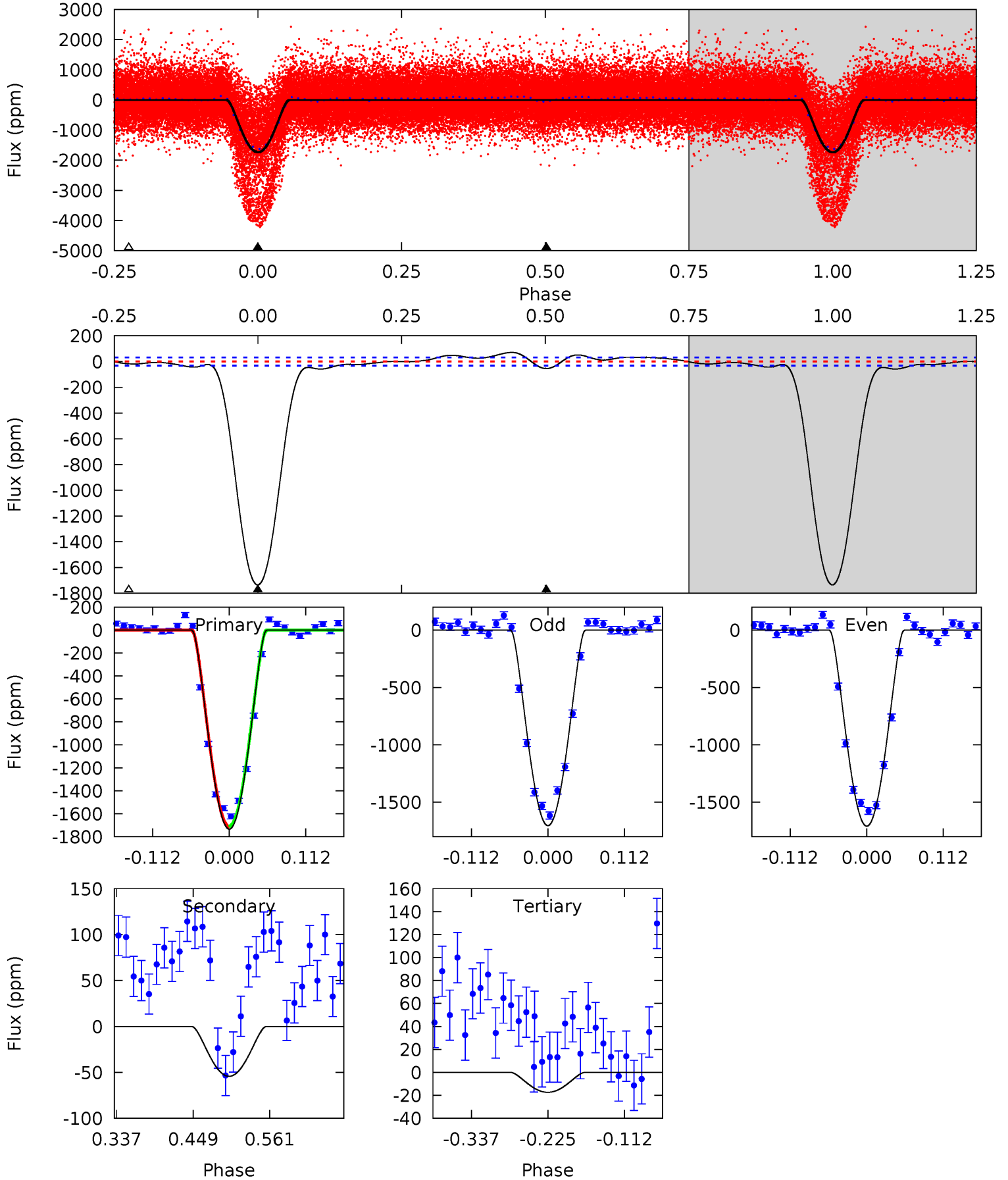
TCE 009291378-01 P= 3.796555 Days $T_0=135.135339$ (BKJD)



DV Model-Shift Uniqueness Test

009291378-01, P = 3.796453 Days, E = 135.159315 Days

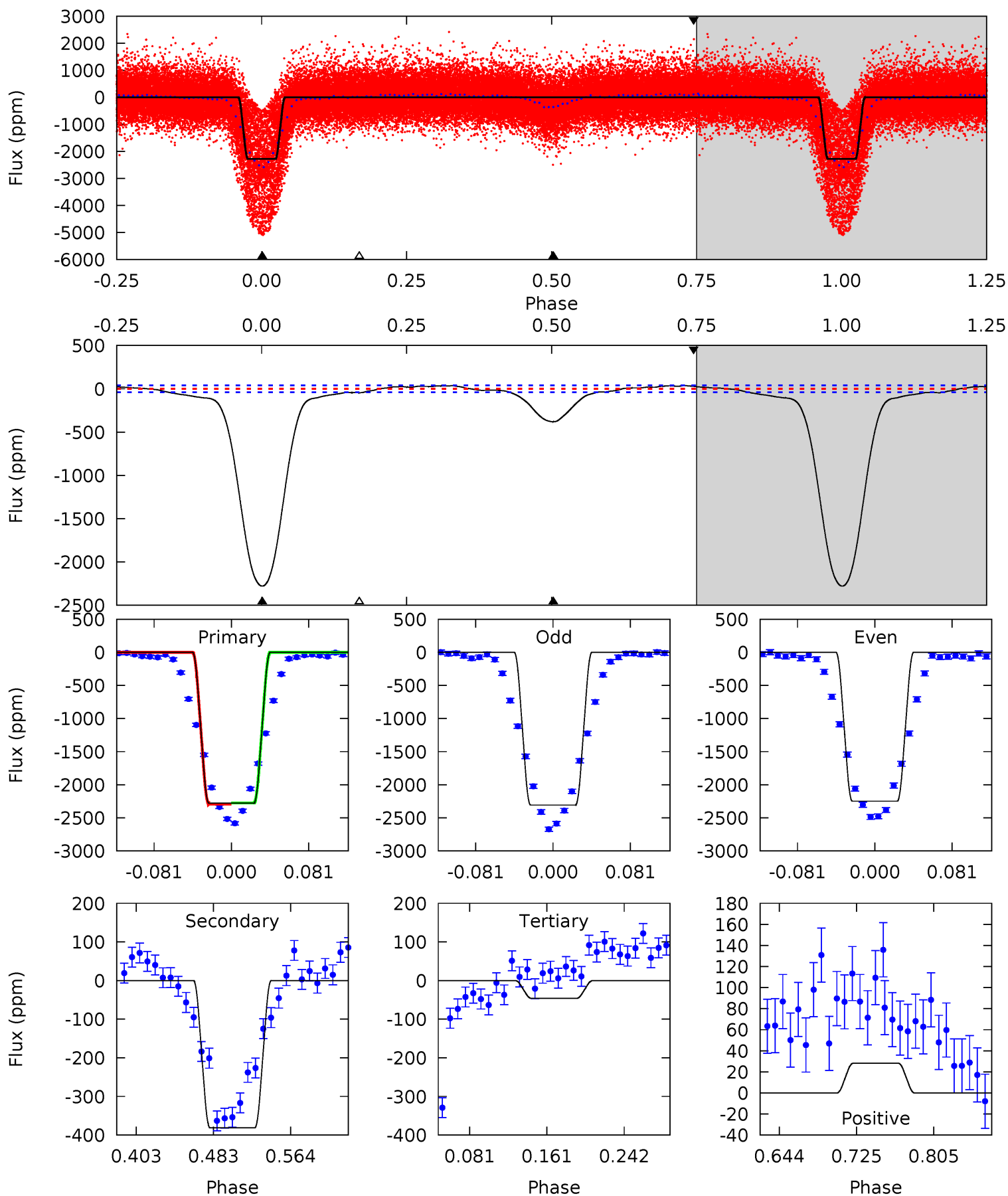
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
244.8	7.67	2.45	0	4.54	1.59	3.59	242.4	244.8	5.22	7.67	0.34	1.52	0.04	0



Alt Model-Shift Uniqueness Test

009291378-01, P = 3.796555 Days, E = 135.135339 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
267.9	44.8	5.41	3.31	4.61	1.75	5.06	262.5	264.6	39.4	41.5	3.43	1.19	0.02	1.05



Stellar Parameters For KIC 009291378

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6137^{+193}_{-257}	$4.460^{+0.054}_{-0.216}$	$-0.060^{+0.250}_{-0.300}$	$1.018^{+0.324}_{-0.108}$	$1.086^{+0.139}_{-0.153}$	$1.452^{+0.415}_{-0.767}$
	+3%/-4%	+1%/-5%	+417%/-500%	+32%/-11%	+13%/-14%	+29%/-53%
Source	KIC0	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 009291378-01 / KOI 3776.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-54 ± 7	$9.62^{+2.67}_{-2.23}$	1758^{+137}_{-90}	2471^{+252}_{-287}	$0.761^{+0.494}_{-0.312}$
Alt.	-381 ± 9	$6.72^{+2.54}_{-2.54}$	1756^{+137}_{-91}	3877^{+721}_{-364}	11^{+17}_{-5}

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 $A_{\text{obs}} \gg 1.0$

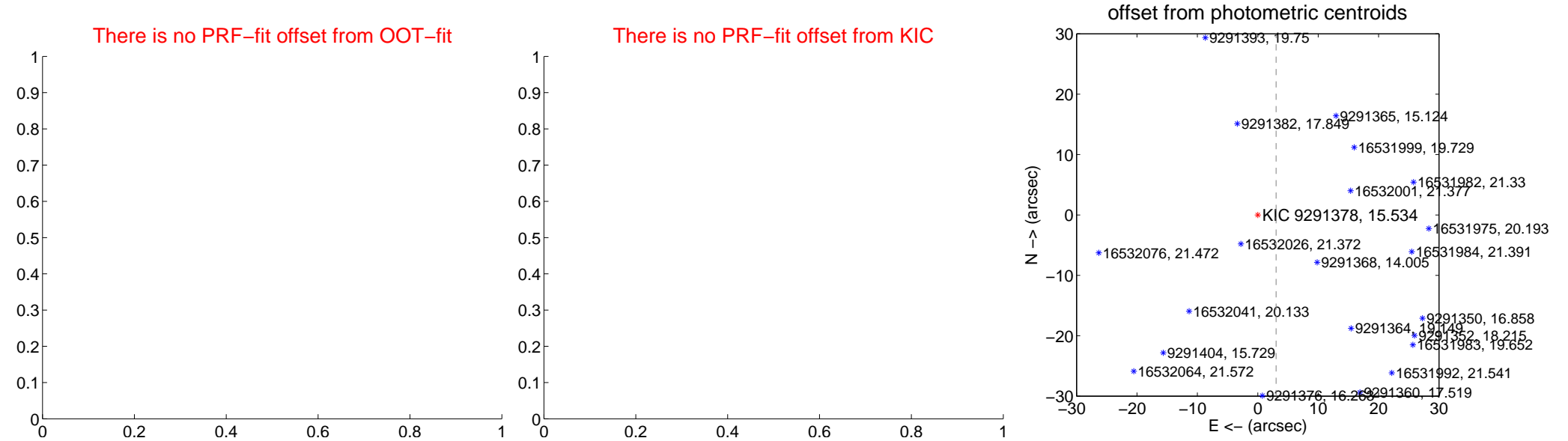
DV Centroid Data

Supplemental centroid analysis for 009291378-01. Kepler magnitude: 15.53. Transit SNR 125.60

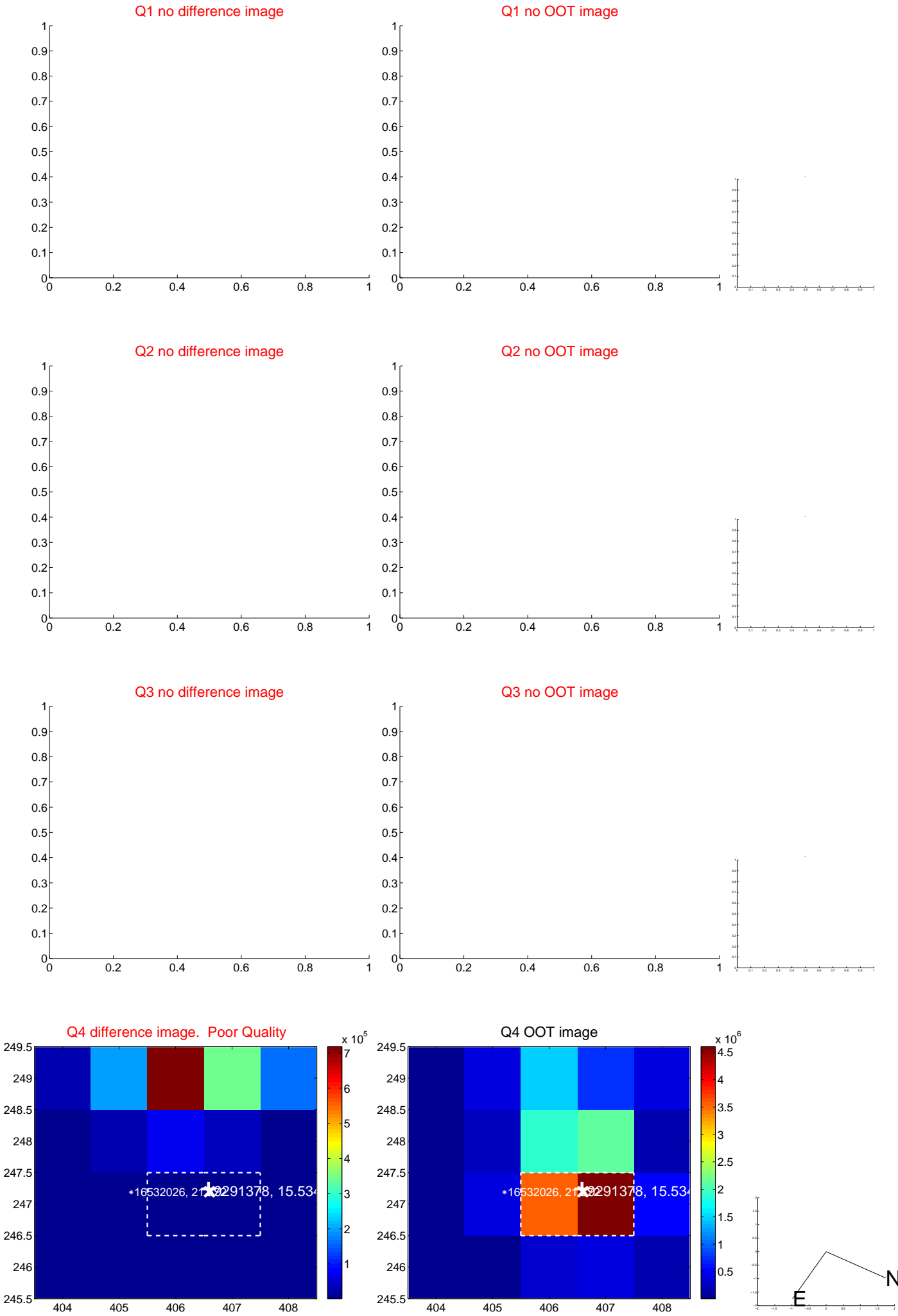
There are 0 quarters with good PRF difference image offsets

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

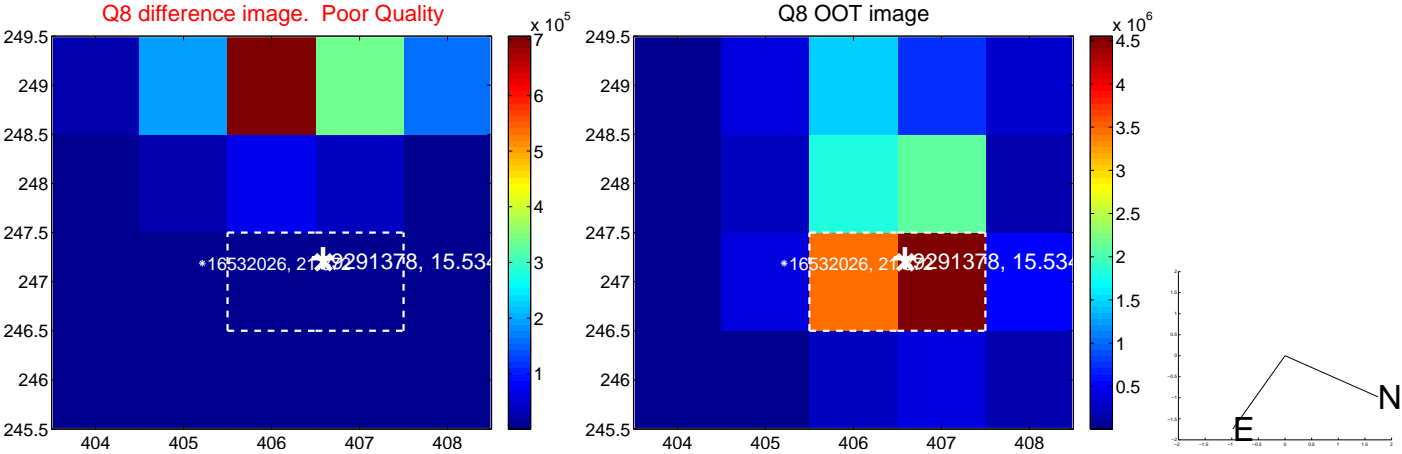
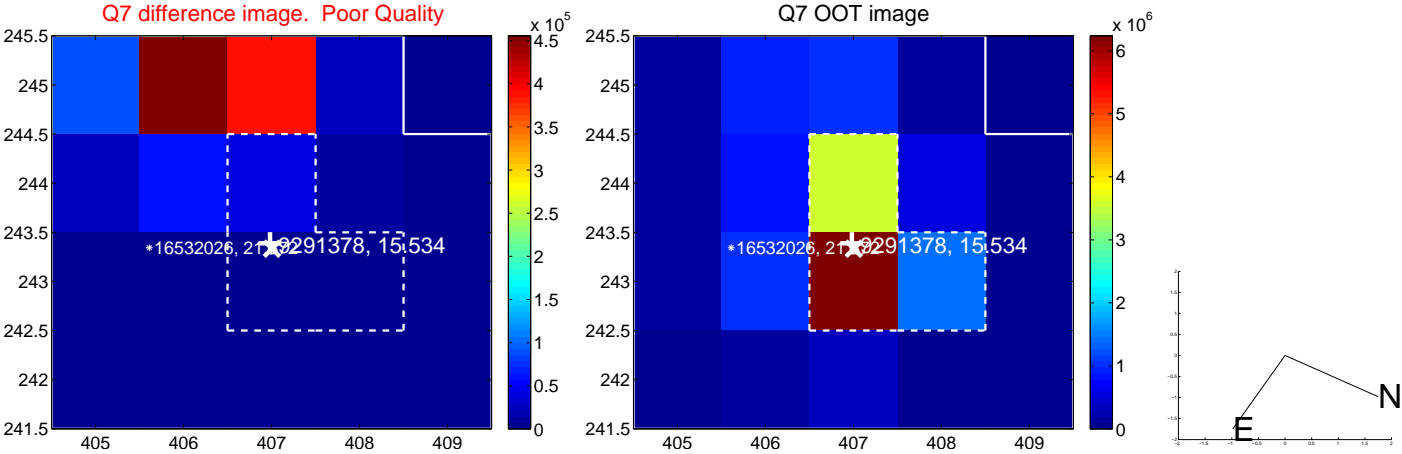
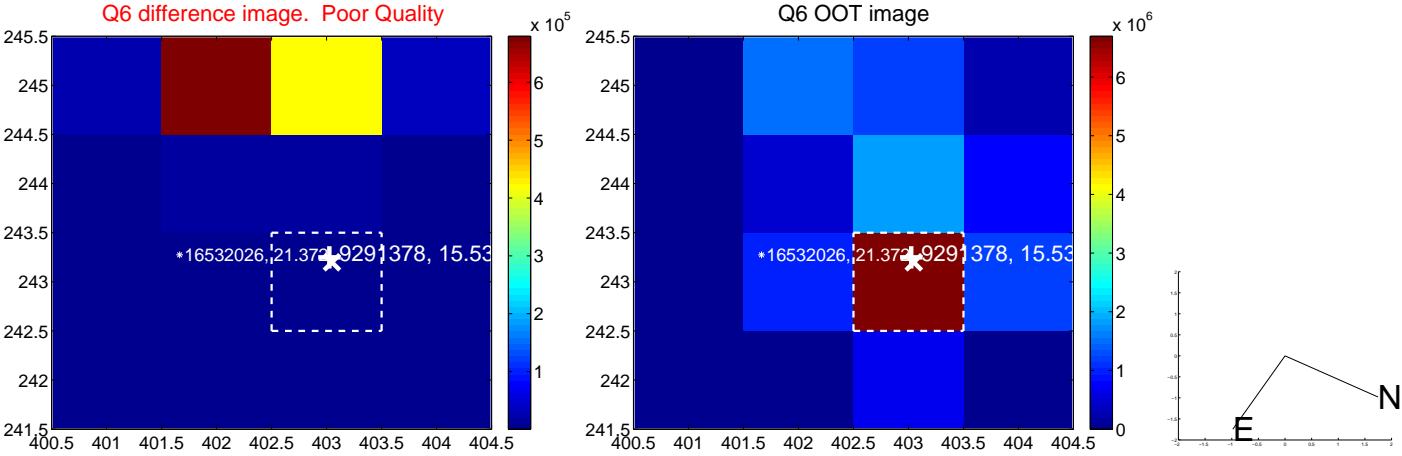
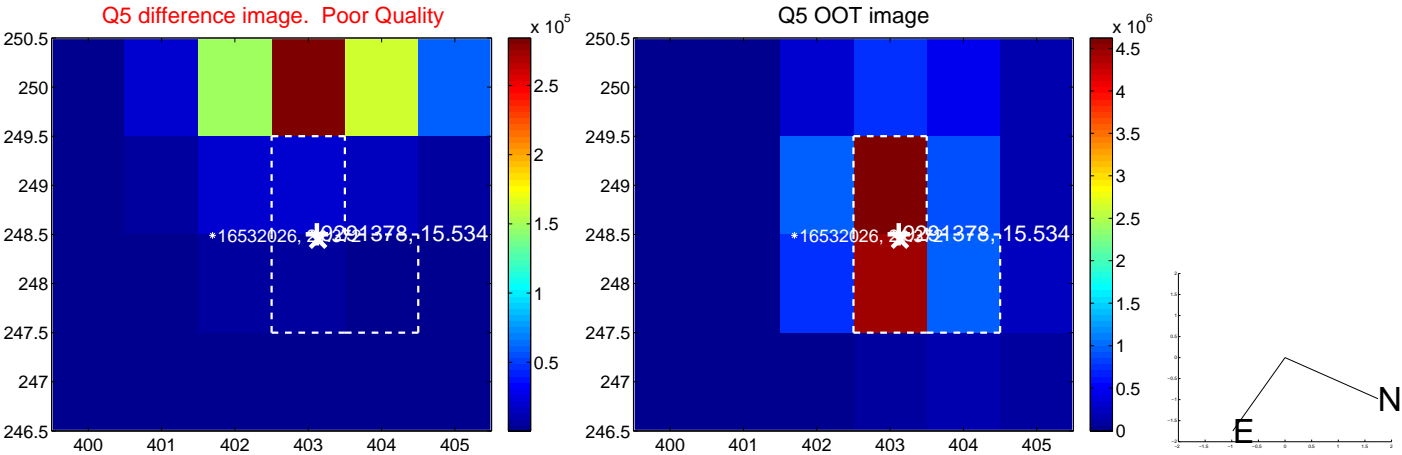
	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	41.69 ± 0.10	405.90	-3.03 ± 0.10	-41.58 ± 0.10



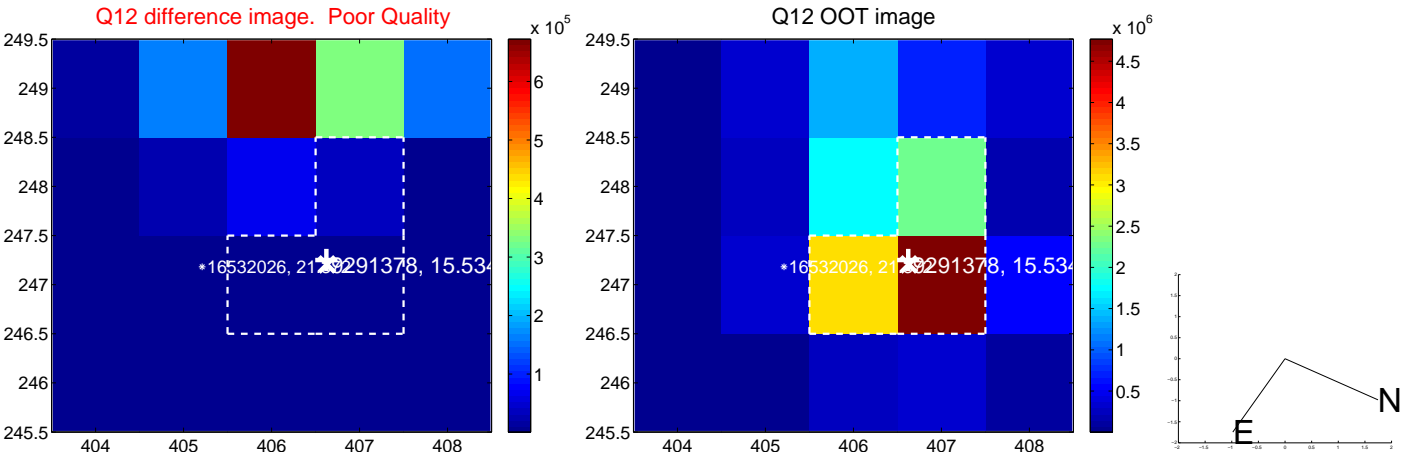
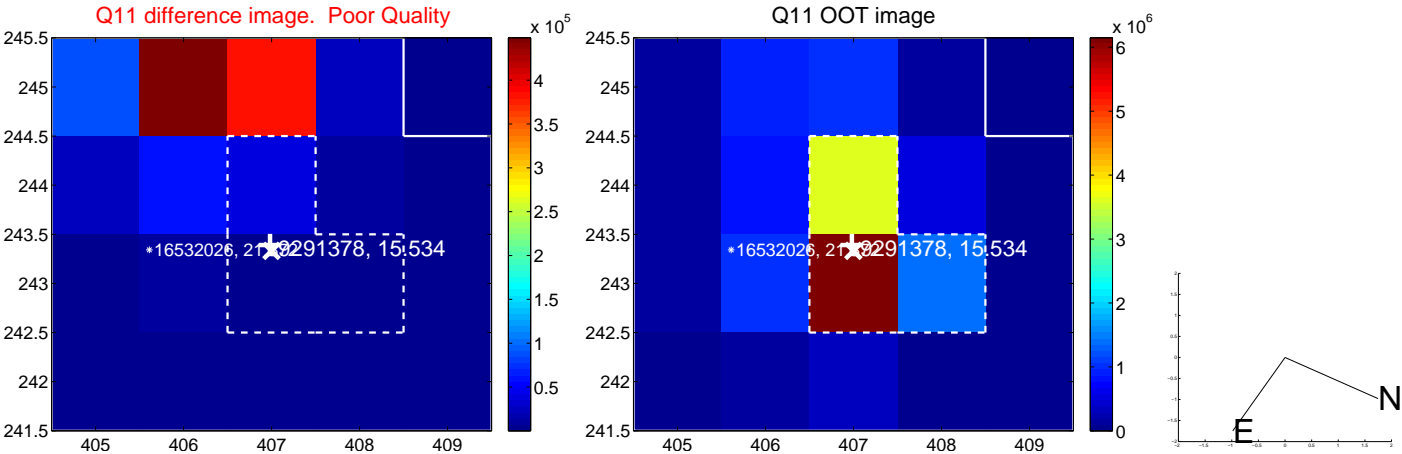
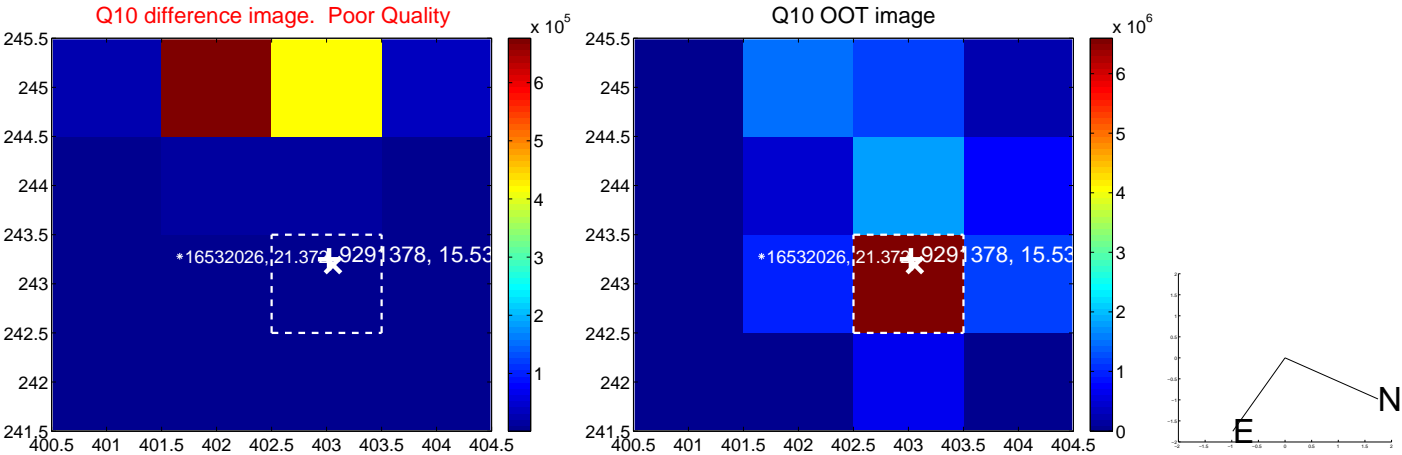
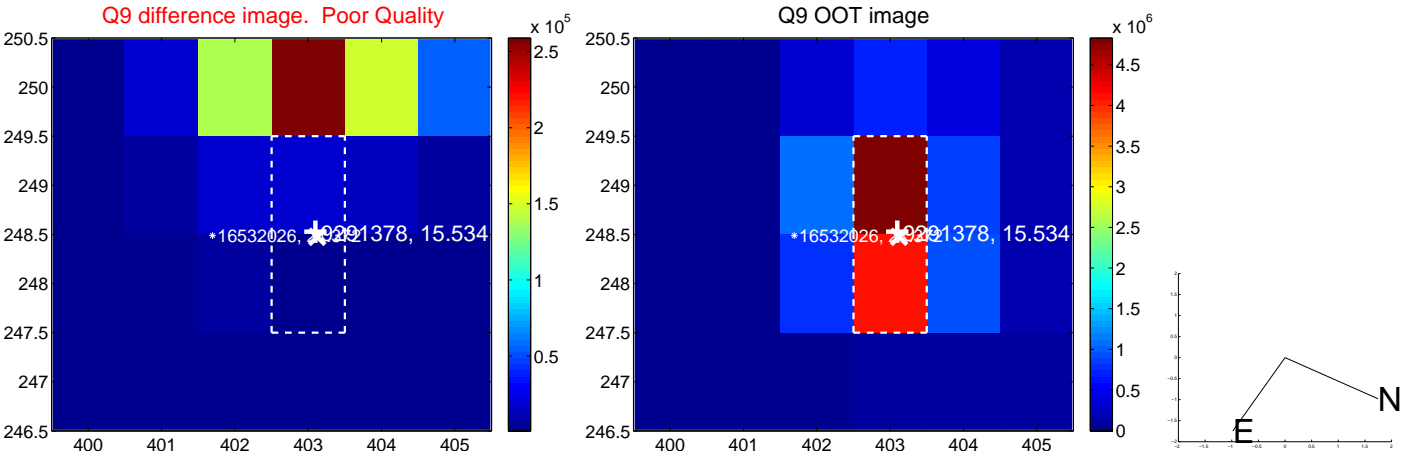
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



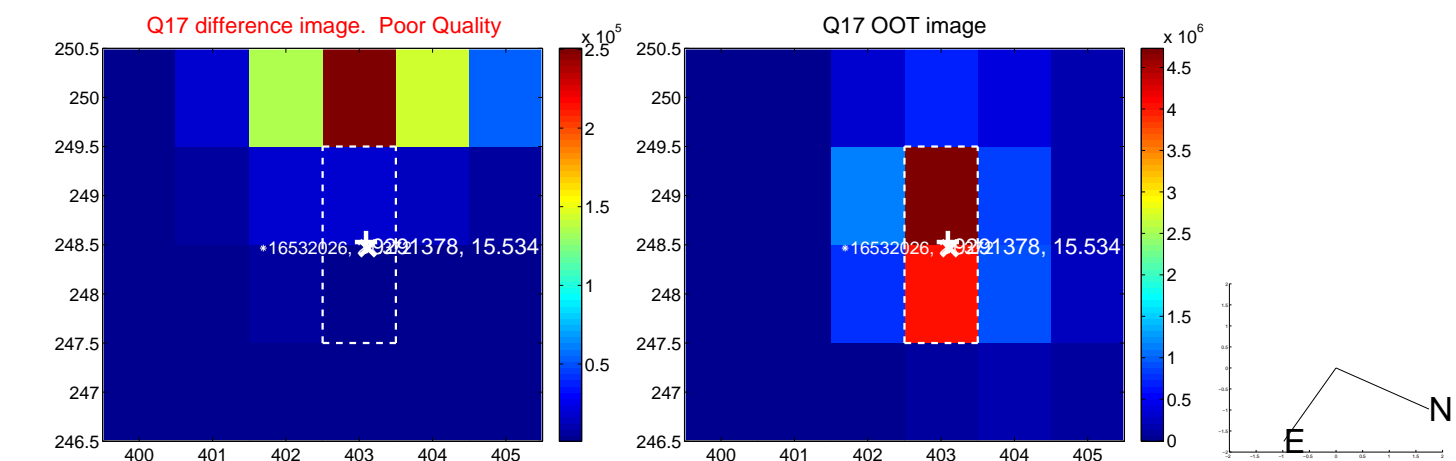
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



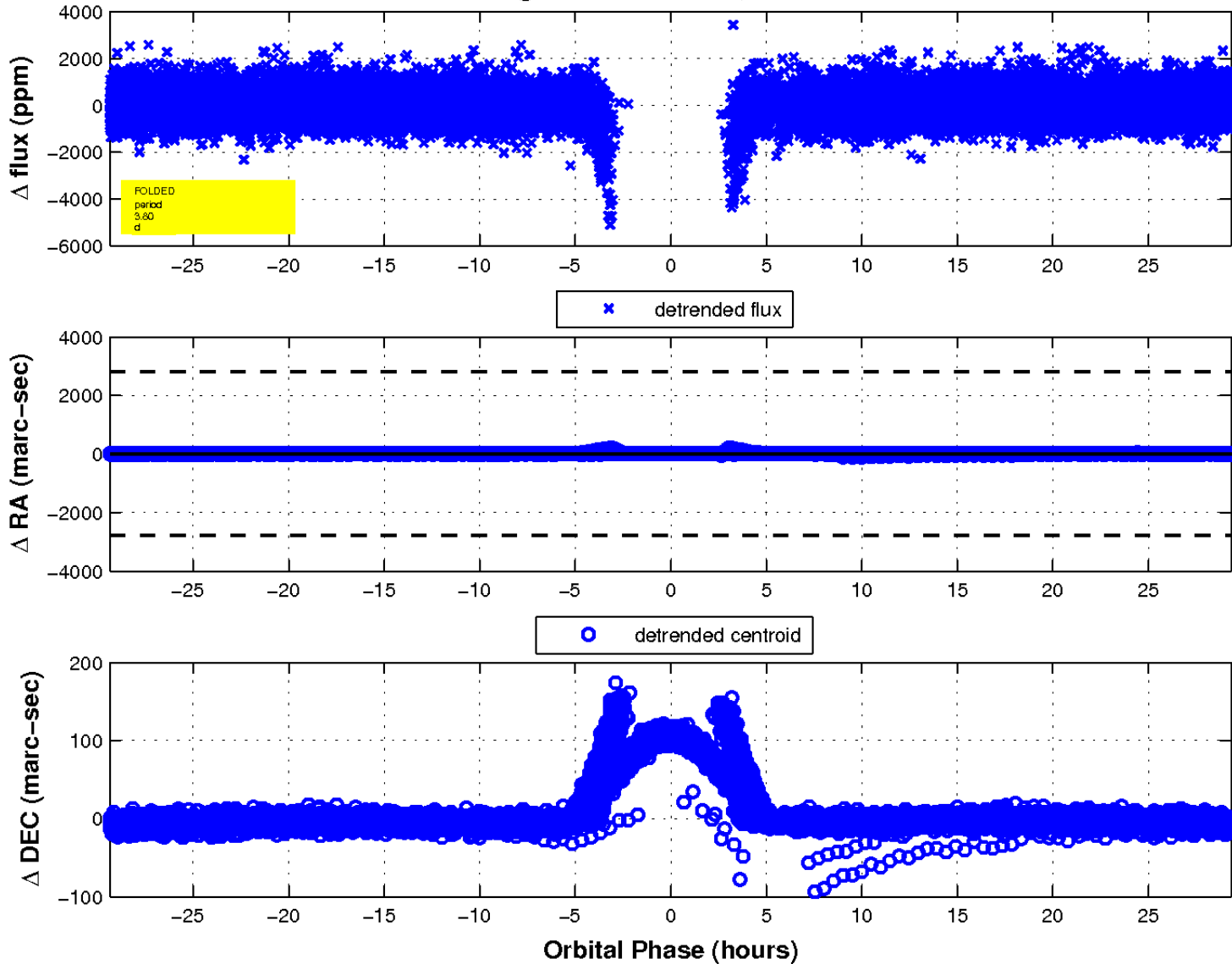
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

