

KIC 005036537

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})
005036537-01	OBS	3718.01	1.061000	132.526209	6641.7	2.339	448.2	245.4	0.95	5080	9.56	1433.16

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005036537-01	OBS	FP	0.00	0	1	1	1	MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—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 005036537-01

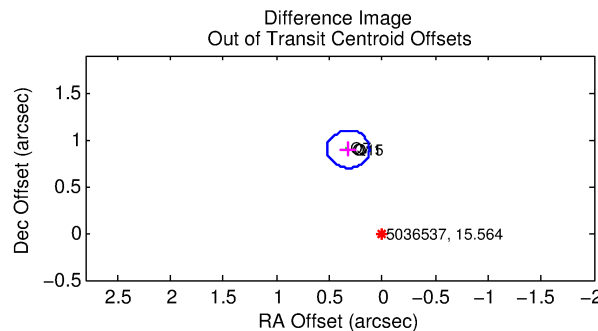
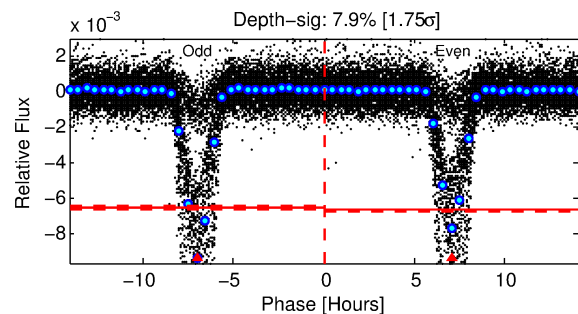
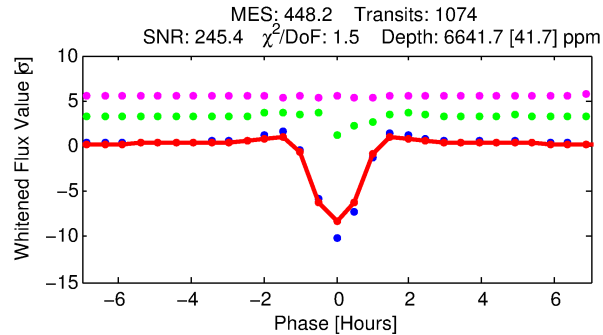
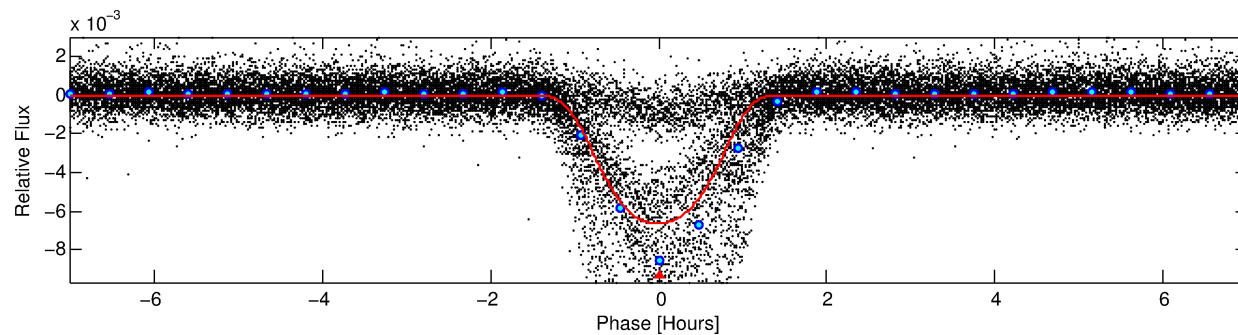
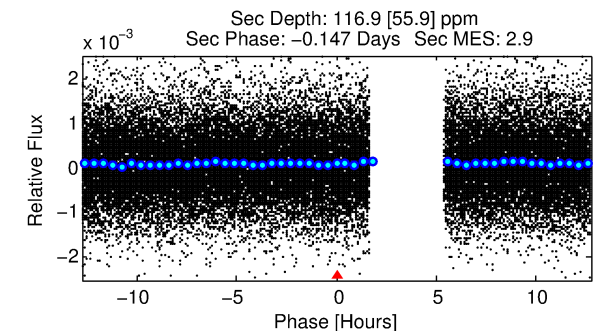
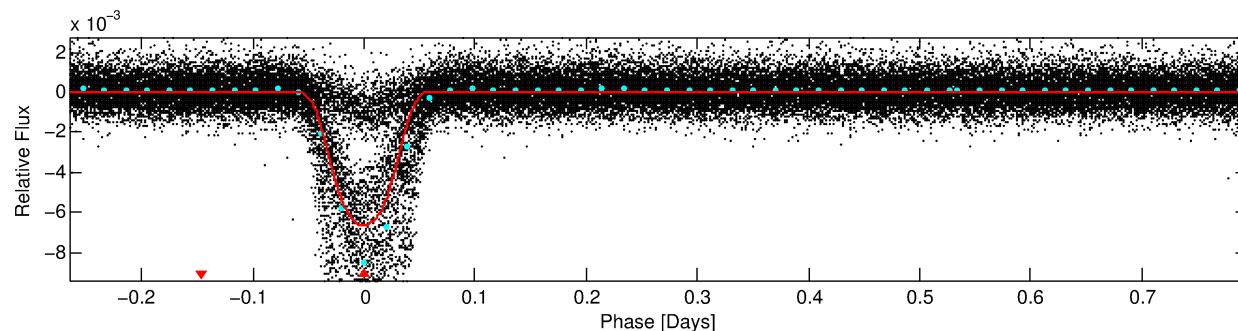
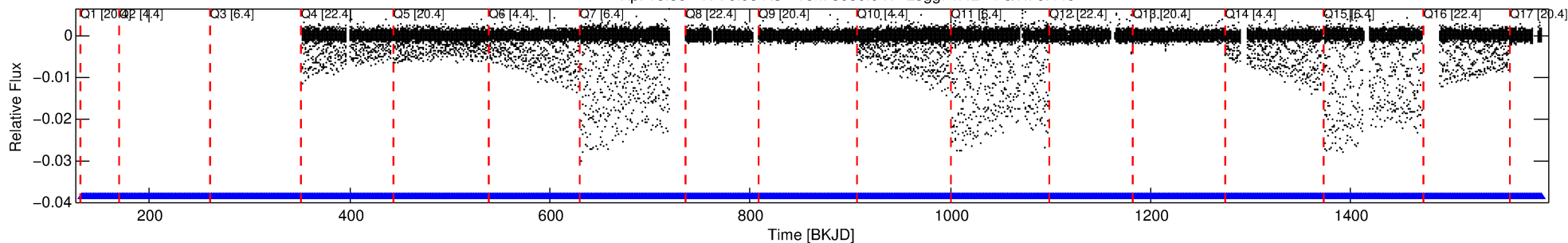
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
005036537-01	5036537	6504.01	5036538	1:1	11.7	-3	-1	13.35	15.56	63.30	Direct-PRF	0	0.73	0.35

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: 5036537 Candidate: 1 of 1 Period: 1.061 d
KOI: K03718.01 Corr: 0.915

Kp: 15.56 R*: 0.95 Rs Teff: 5080.0 K Logg: 4.42 Fe/H: 0.440



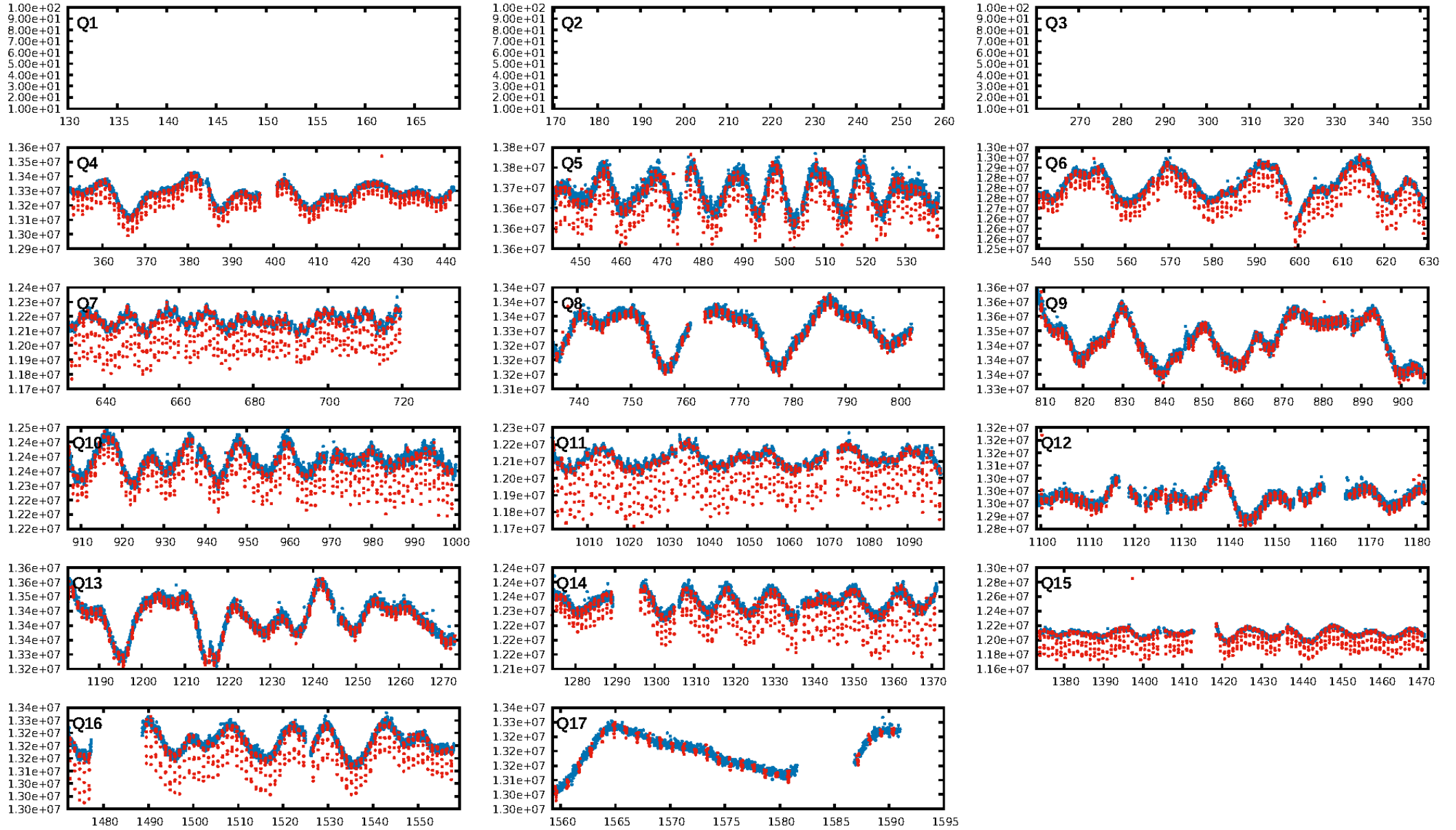
DV Fit Results:

Period = 1.06100 [0.00000] d
Epoch = 132.5262 [0.0001] BKJD
Rp/R* = 0.0926 [0.0006]
a/R* = 2.36 [0.02]
b = 0.90 [0.00]
Seff = 1433.16 [654.82]
Teq = 1569 [179] K
Rp = 9.57 [2.39] Re
a = 0.0193 [0.0050] AU
Ag = 0.26 [0.17] [-4.36σ]
Teffp = 1736 [218] K [0.59σ]

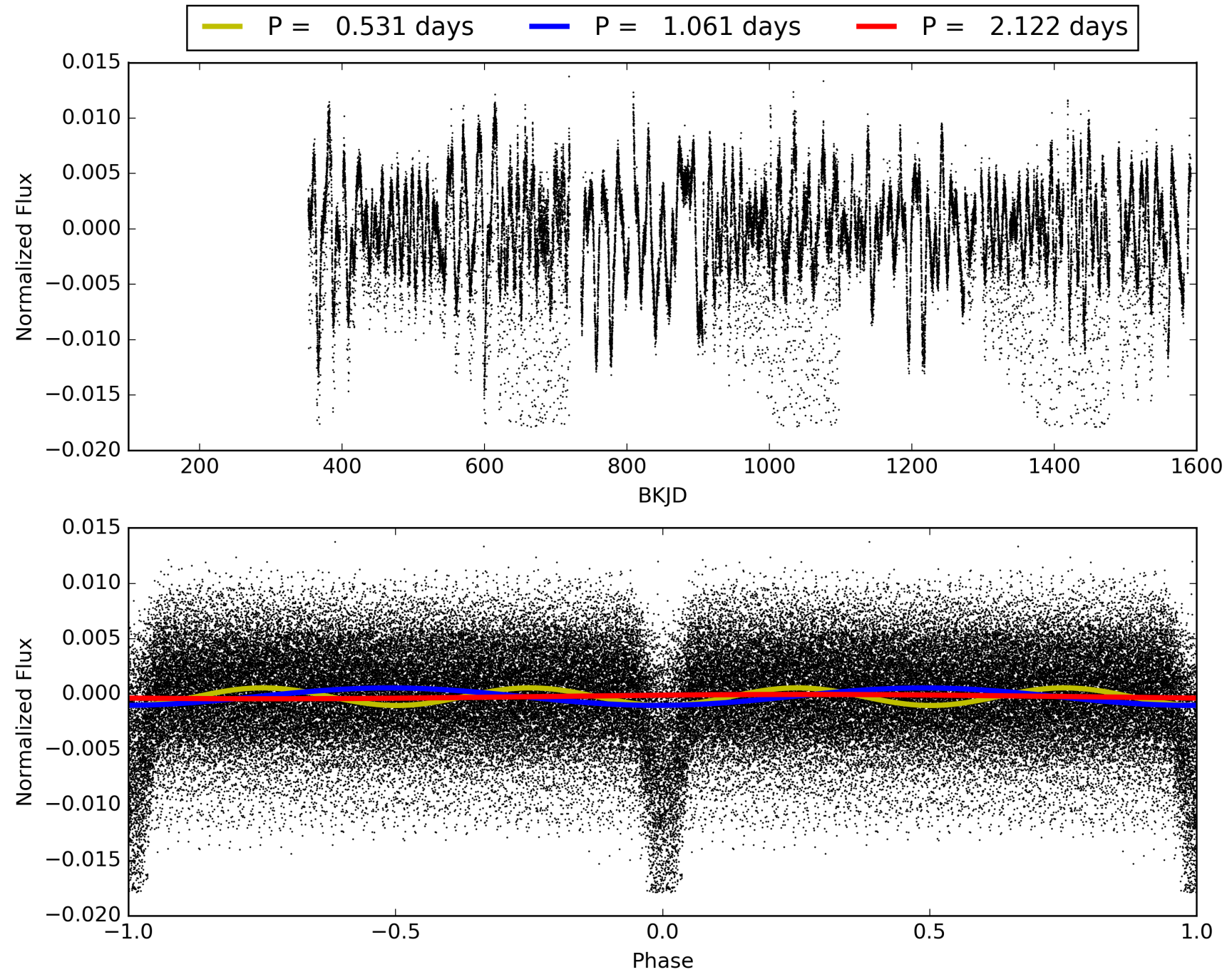
DV Diagnostic Results:

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 [1049/1049]
GhostDiagnostic-chr: -0.2505
Centroid-sig: 0.0%
Centroid-so: 66.495 arcsec [1910.91σ]
OotOffset-rm: 0.952 arcsec [14.23σ]
KicOffset-rm: 7.684 arcsec [110.77σ]
OotOffset-st: 0/3/0/0 [3]
KicOffset-st: 0/3/0/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 005036537-01, PDC Light Curves

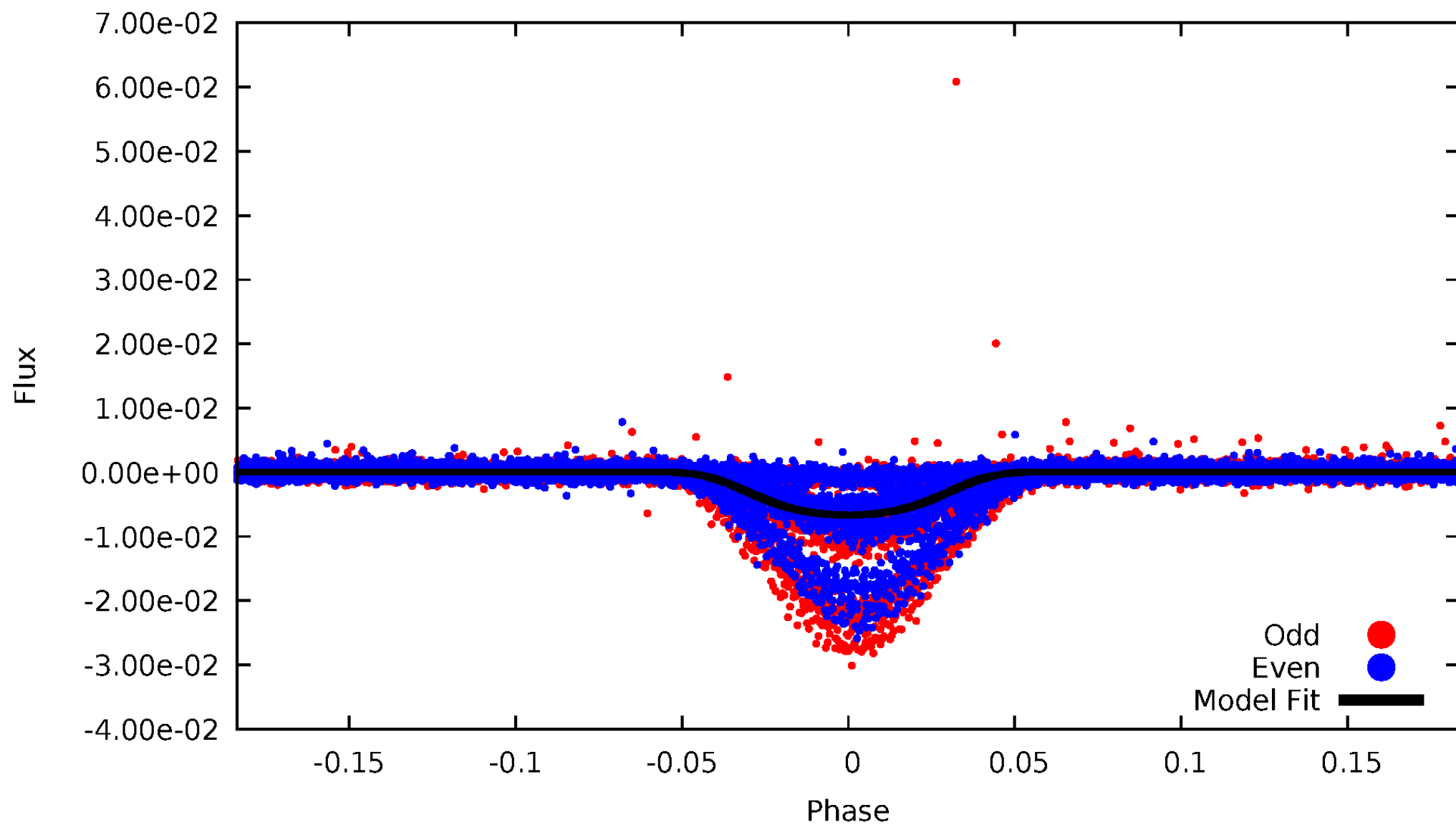


TCE 005036537-01



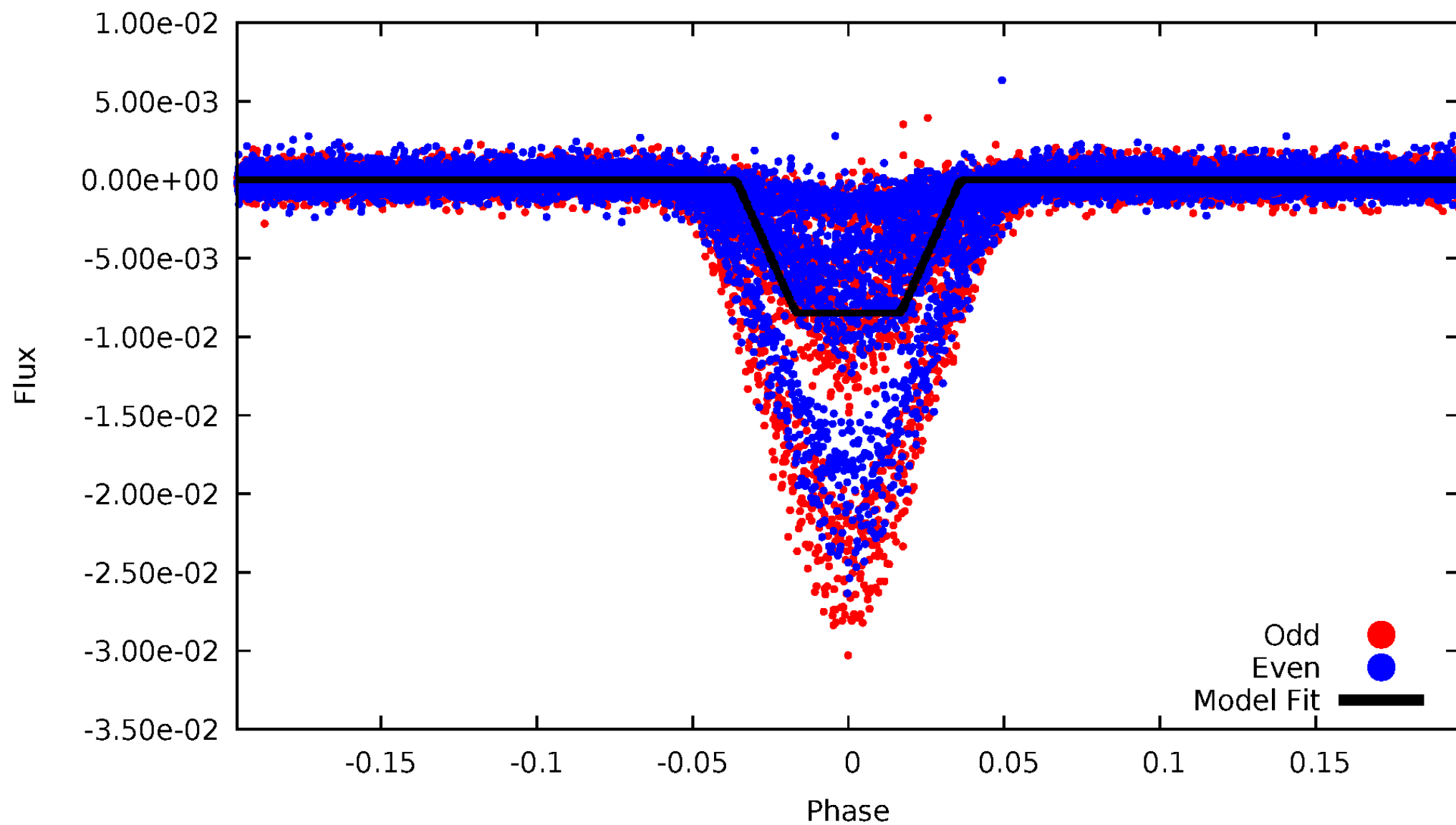
DV Odd/Even

TCE 005036537-01



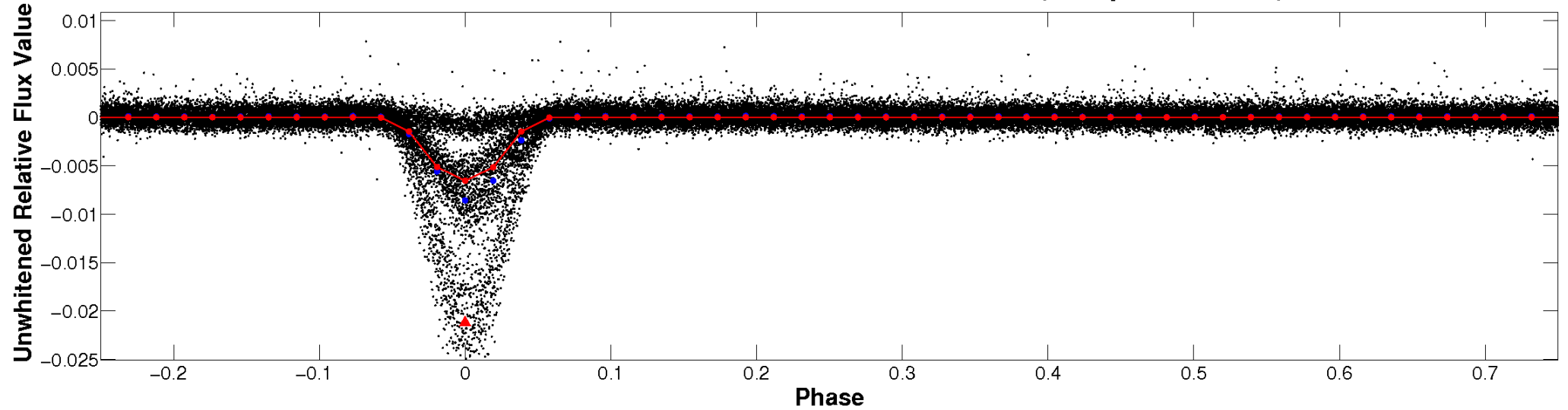
ALT Odd/Even

TCE 005036537-01

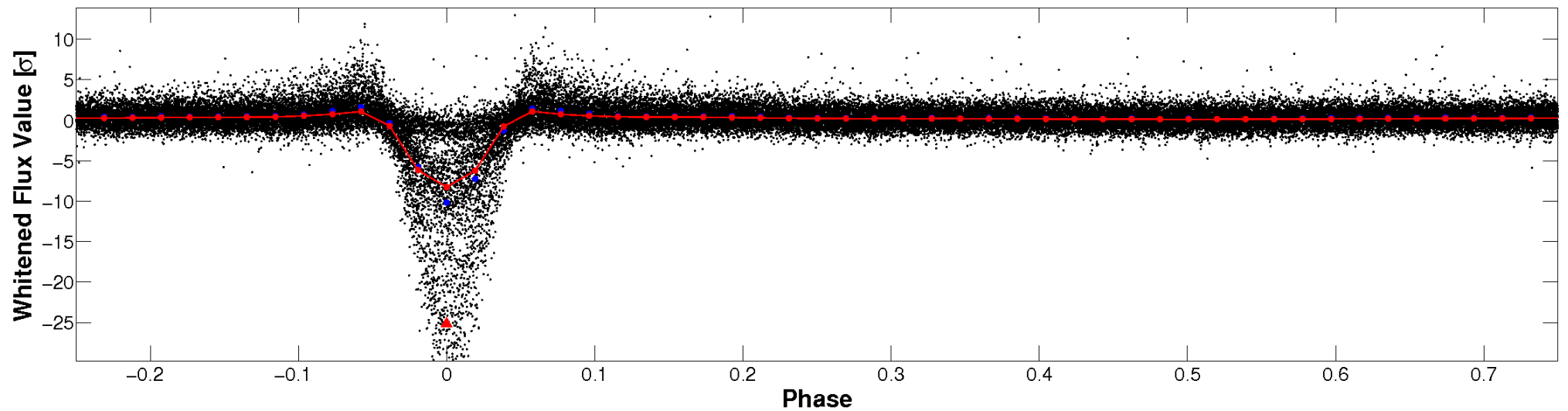


Non-Whitened Vs. Whitened Light Curve

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

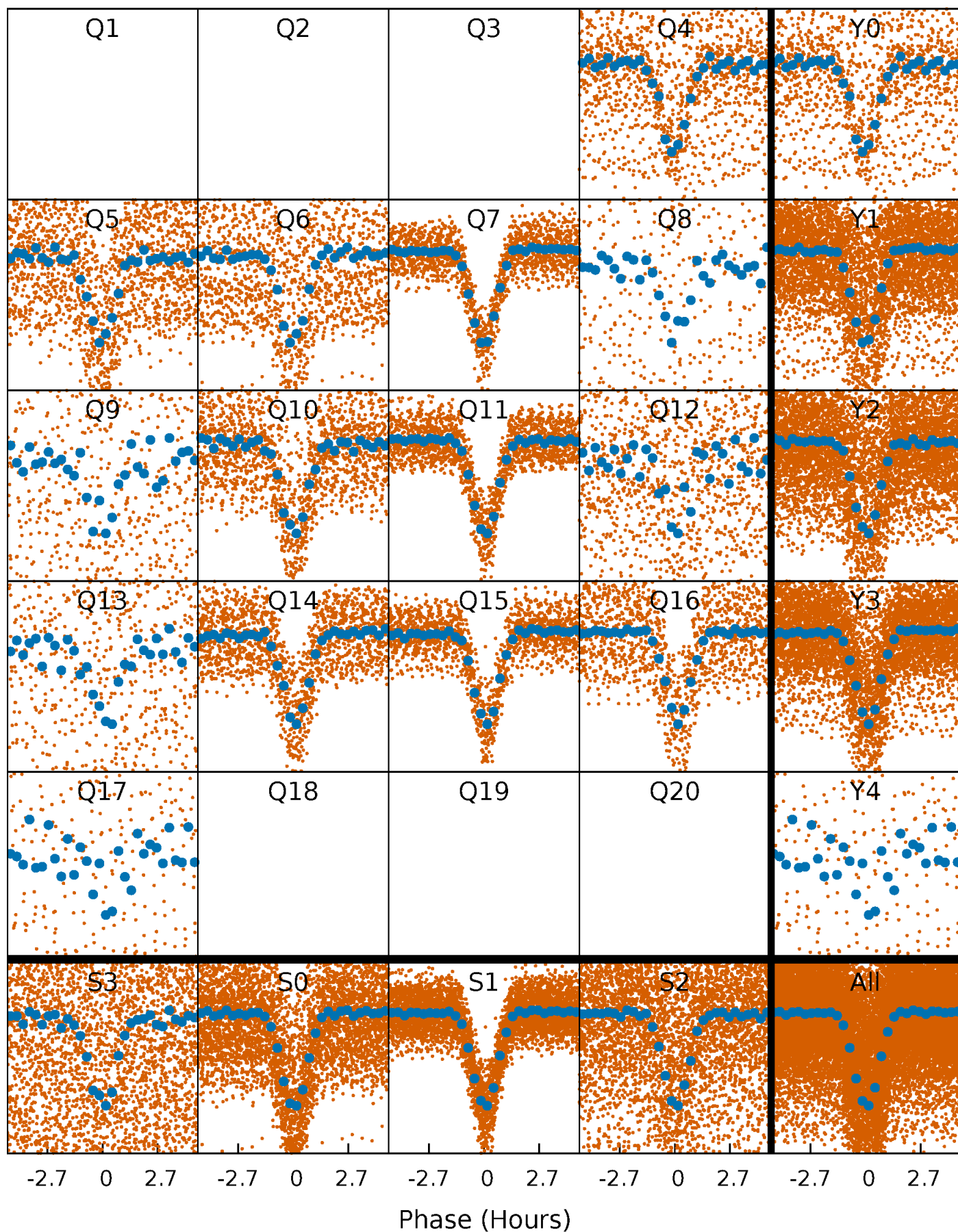


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



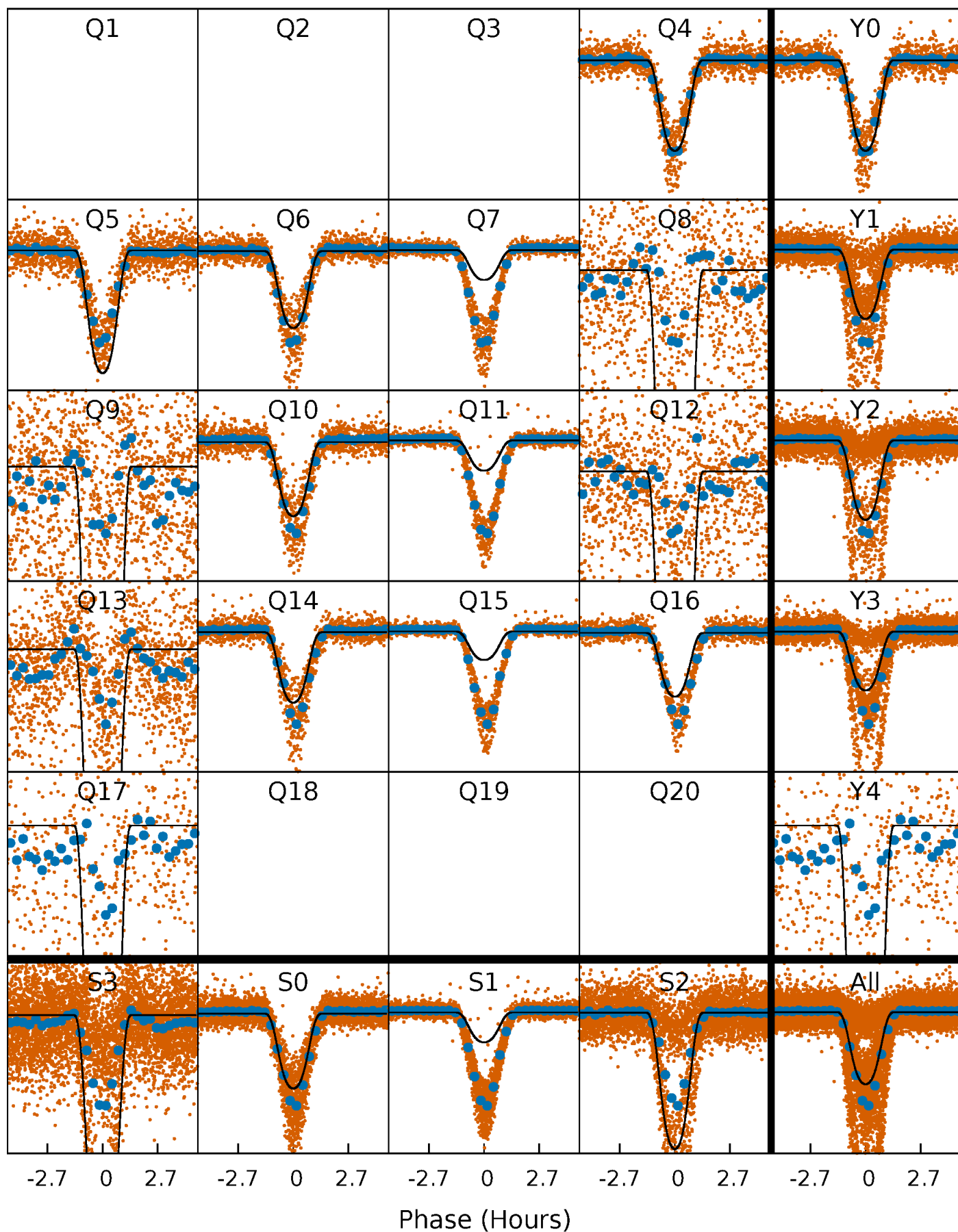
PDC Quarter-Phased Transit Curves

TCE 005036537-01 P= 1.061000 Days $T_0=132.526209$ (BKJD)



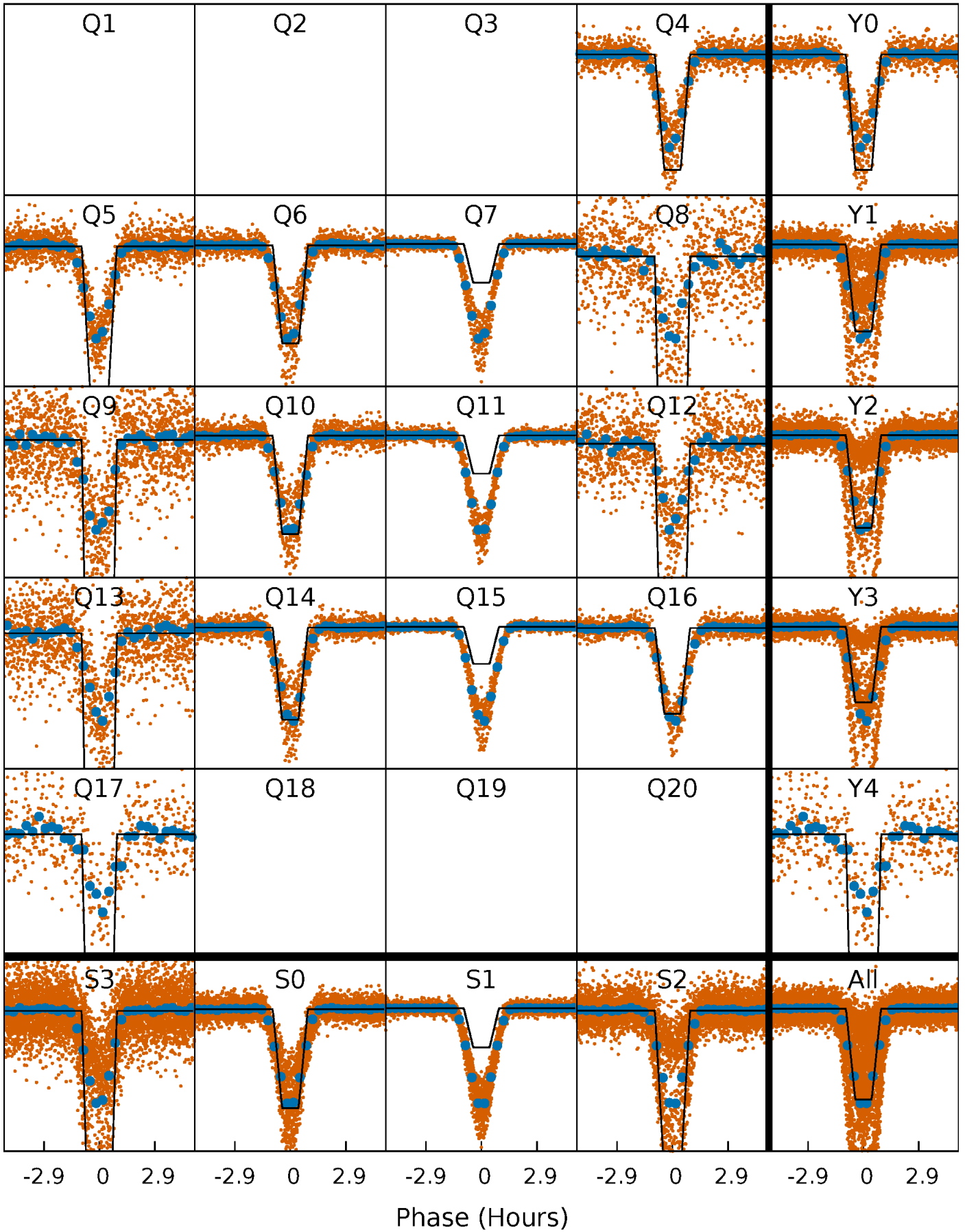
DV Quarter-Phased Transit Curves

TCE 005036537-01 P= 1.061000 Days $T_0=132.526209$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

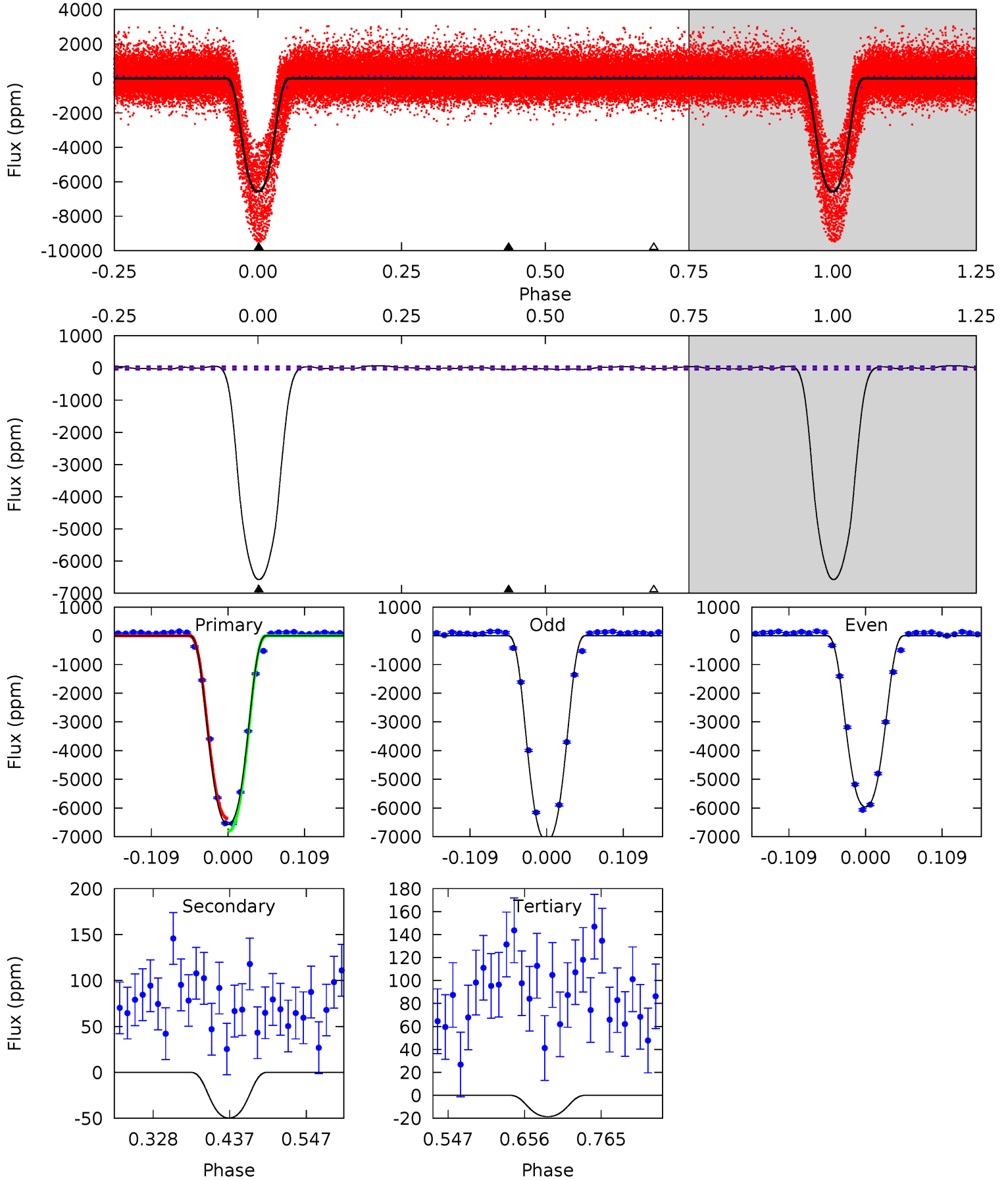
TCE 005036537-01 P= 1.061003 Days $T_0=132.526206$ (BKJD)



DV Model-Shift Uniqueness Test

005036537-01, P = 1.061000 Days, E = 132.526209 Days

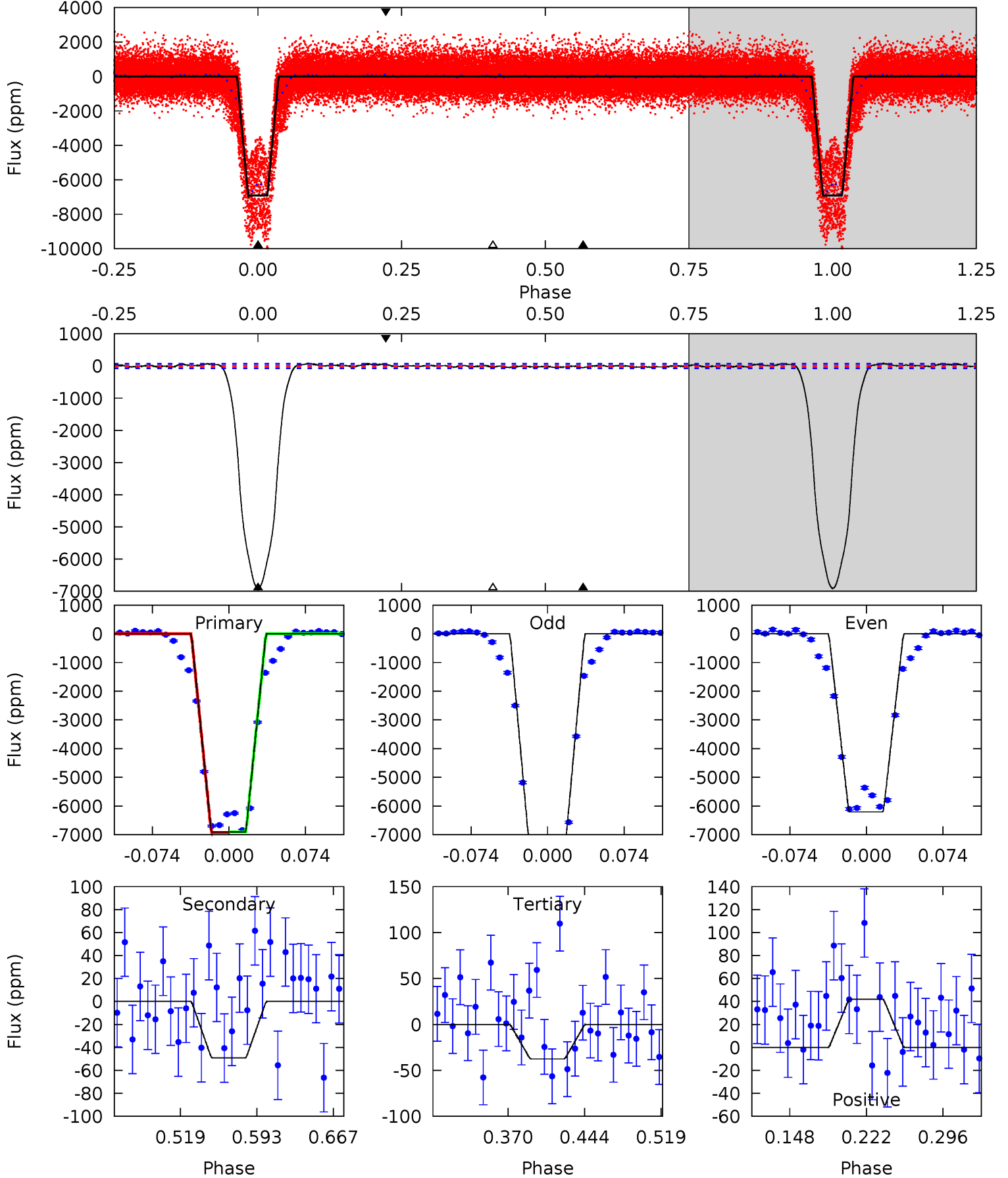
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
578.1	4.36	1.63	0	4.55	1.60	2.41	576.5	578.1	2.74	4.36	52.1	1.27	0.01	0



Alt Model-Shift Uniqueness Test

005036537-01, P = 1.061003 Days, E = 132.526206 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
463.7	3.30	2.52	2.81	4.63	1.79	1.75	461.1	460.8	0.78	0.48	49.4	1.33	0.01	0



Stellar Parameters For KIC 005036537

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5080^{+192}_{-174}	$4.417^{+0.148}_{-0.259}$	$0.440^{+0.050}_{-0.300}$	$0.947^{+0.237}_{-0.146}$	$0.855^{+0.068}_{-0.055}$	$1.418^{+0.888}_{-0.741}$
	+4%/-3%	+3%/-6%	+11%/-68%	+25%/-15%	+8%/-6%	+63%/-52%
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 005036537-01 / KOI 3718.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-50 ± 11	$9.64^{+1.67}_{-0.94}$	2207^{+194}_{-144}	-2458^{+124}_{-159}	$0.104^{+0.042}_{-0.033}$
Alt.	-49 ± 15	$9.70^{+1.55}_{-0.95}$	2229^{+184}_{-152}	-2473^{+136}_{-148}	$0.105^{+0.045}_{-0.041}$

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 $A_{obs} \gg 1.0$

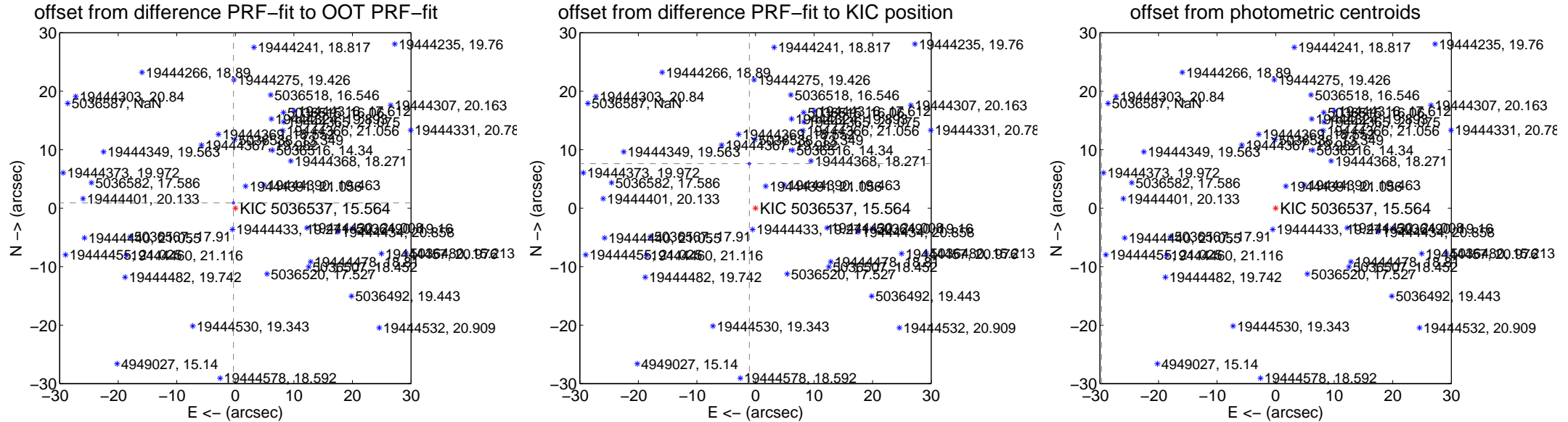
DV Centroid Data

Supplemental centroid analysis for 005036537-01. Kepler magnitude: 15.56. Transit SNR 245.37

There are 3 quarters with good PRF difference image offsets

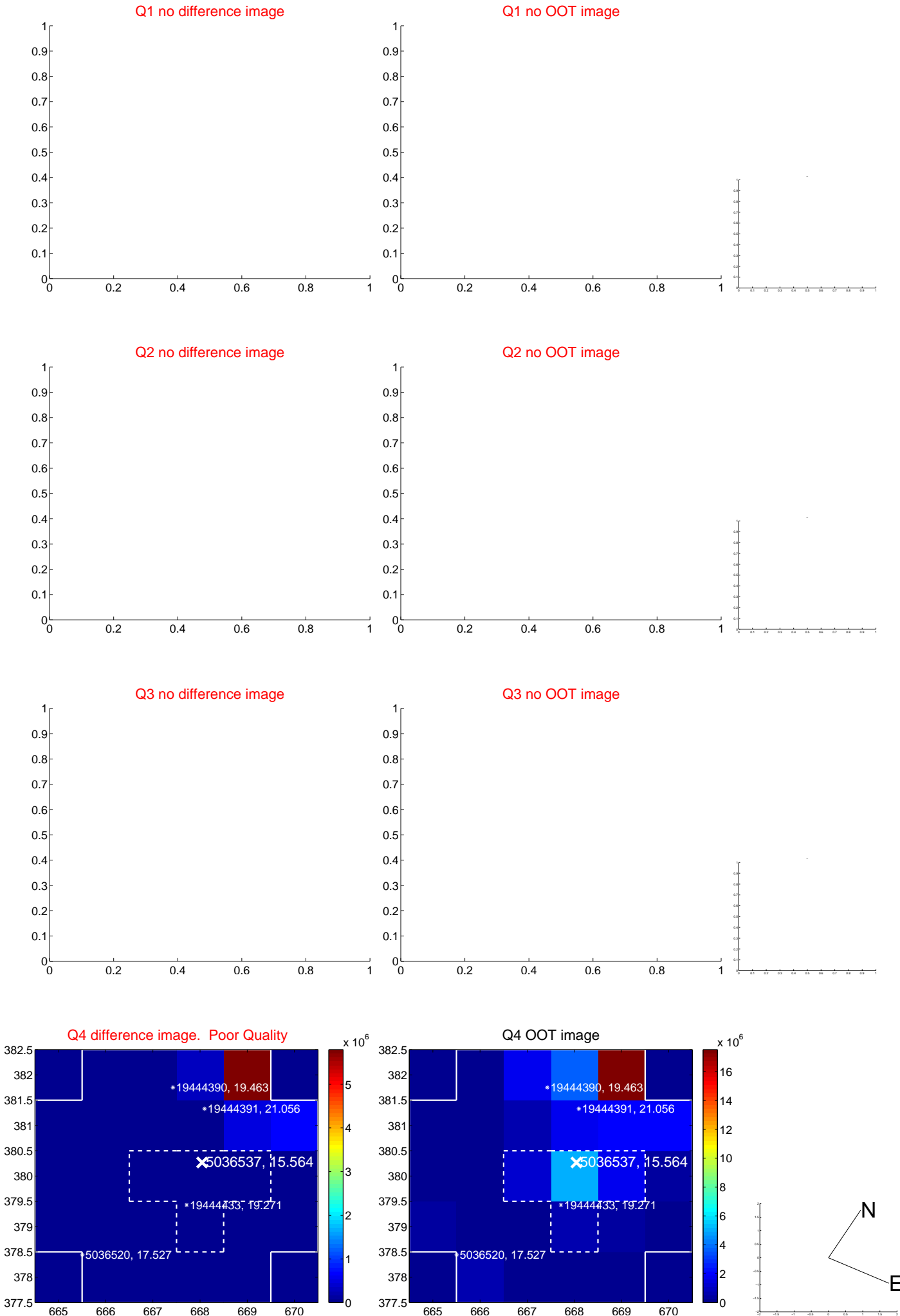
The OOT PRF centroid is offset from the target star catalog position by about 6.74 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.952 ± 0.067	14.23	0.318 ± 0.068	0.897 ± 0.067
PRF-fit source offset from KIC position	7.684 ± 0.069	110.77	1.050 ± 0.067	7.612 ± 0.069
photometric centroid source offset	66.49 ± 0.03	1910.80	29.72 ± 0.02	59.48 ± 0.04

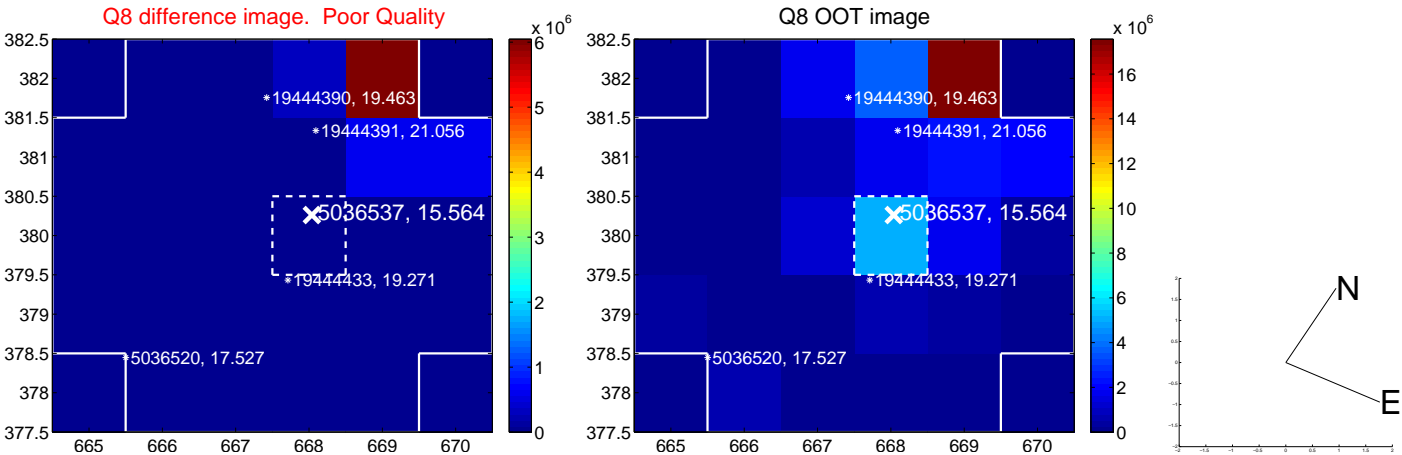
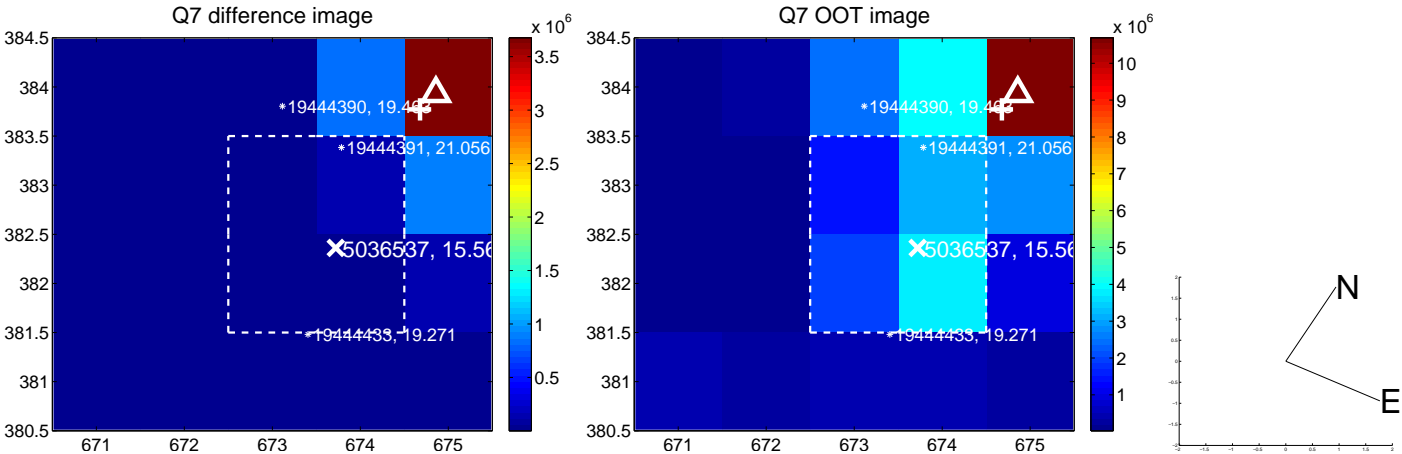
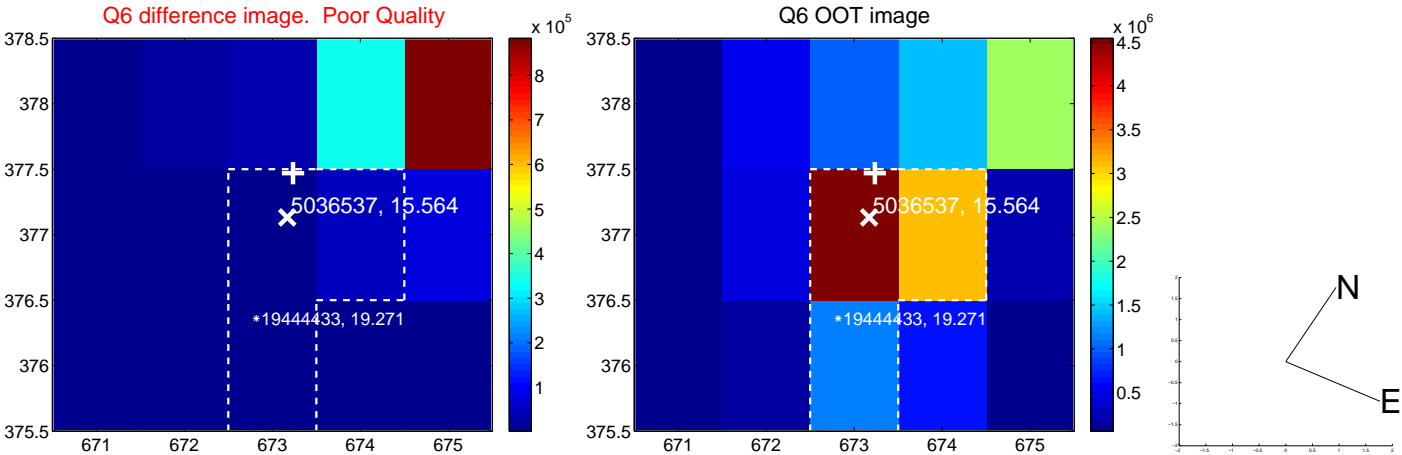
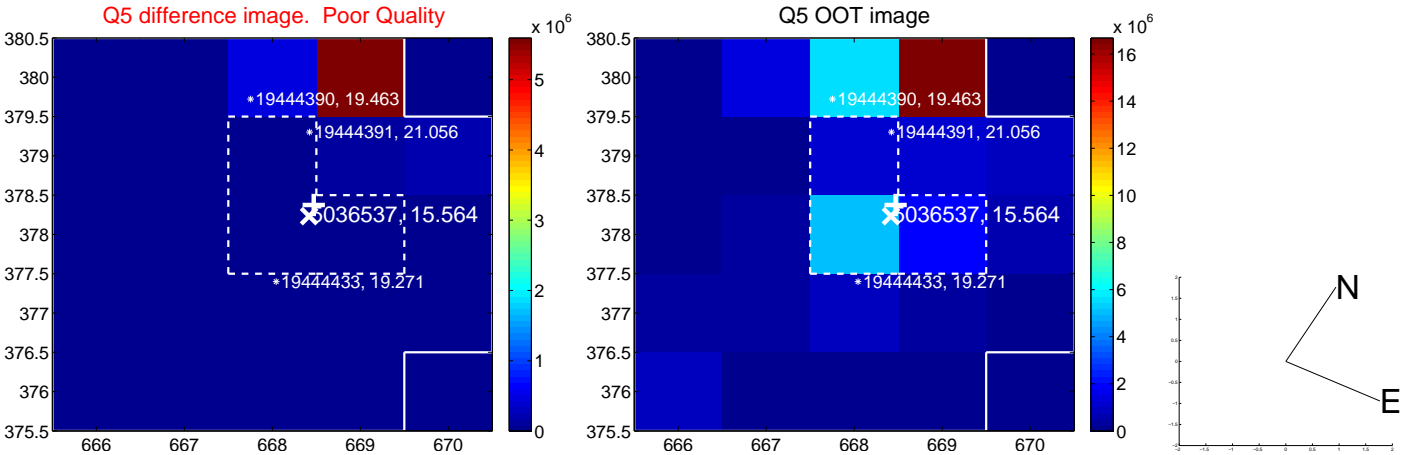


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

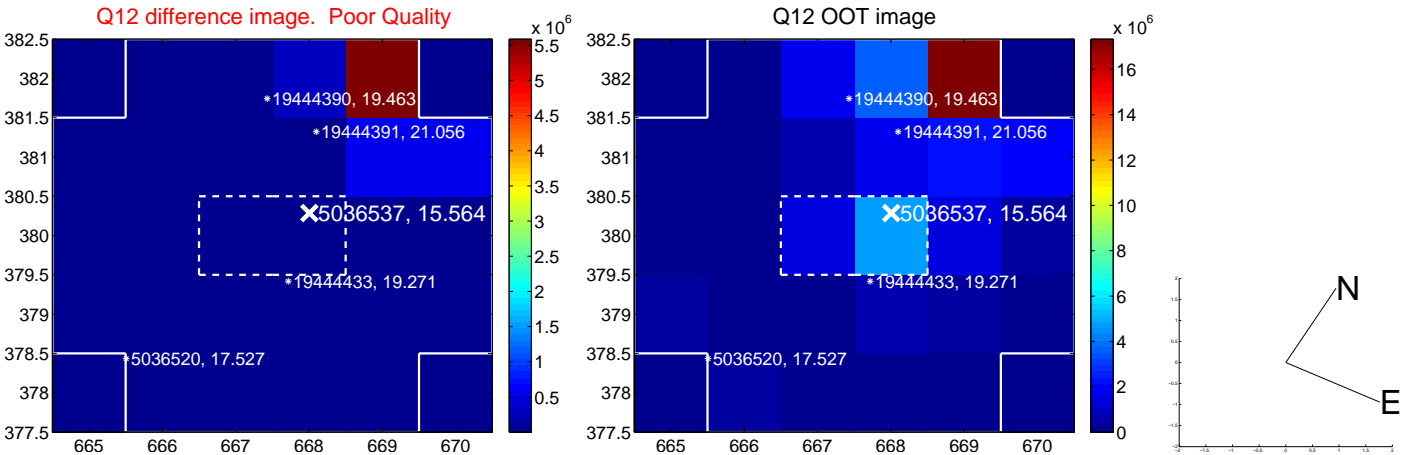
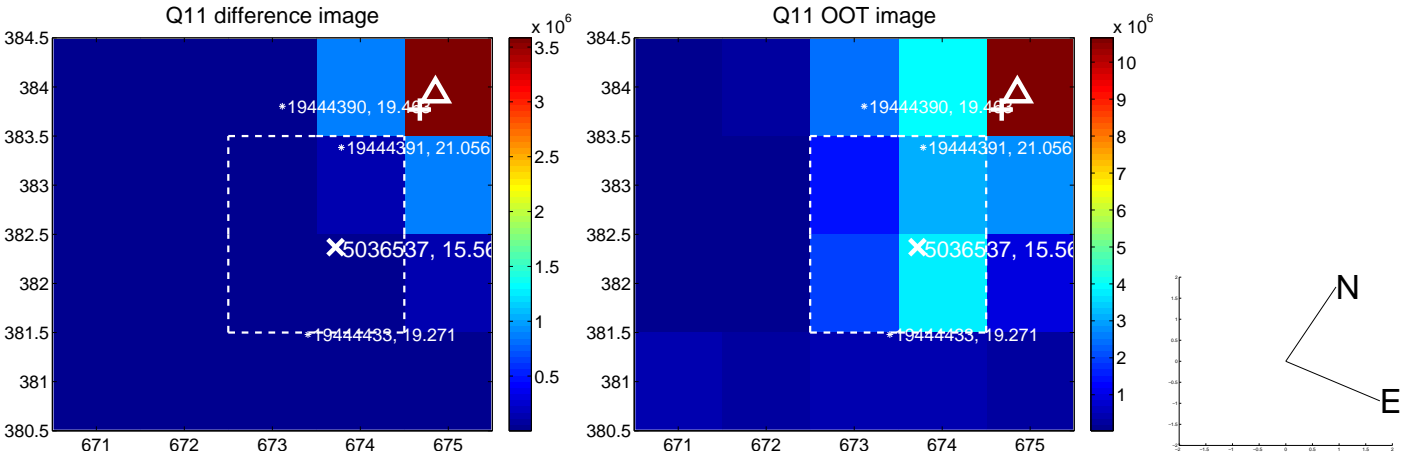
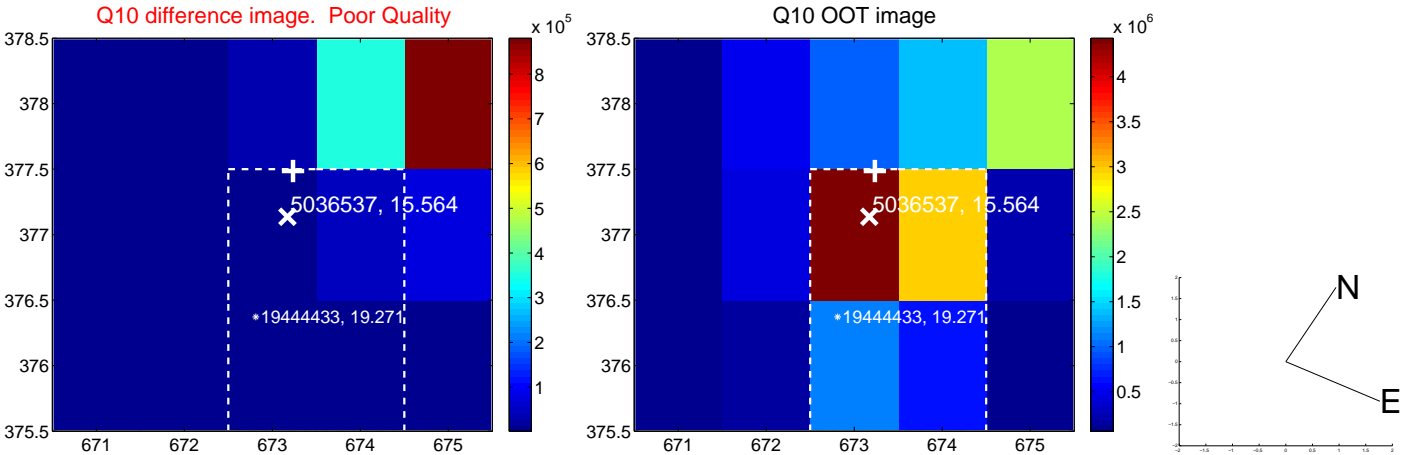
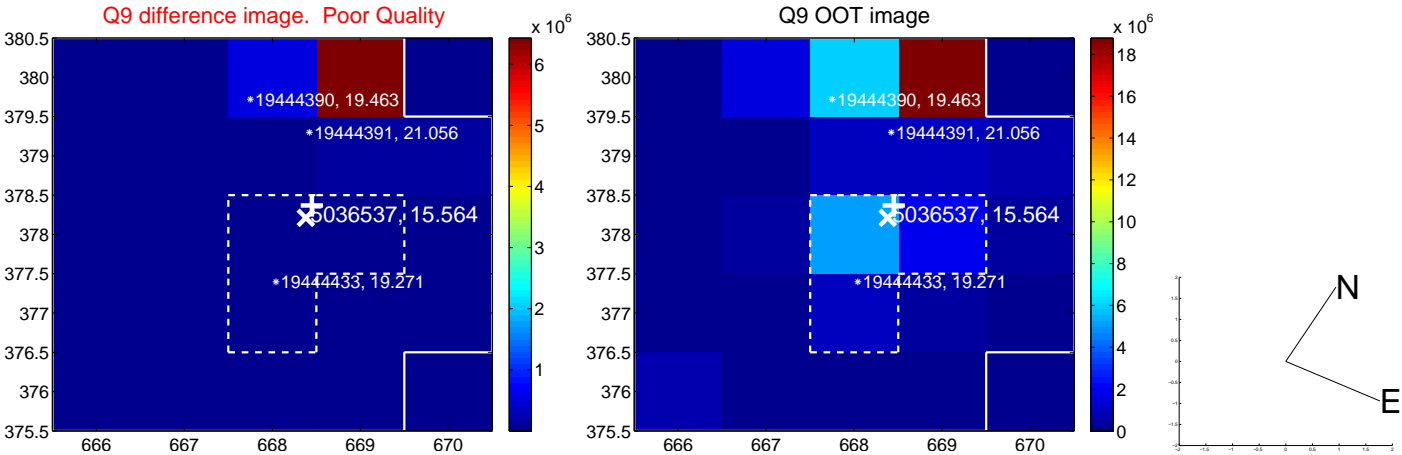
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



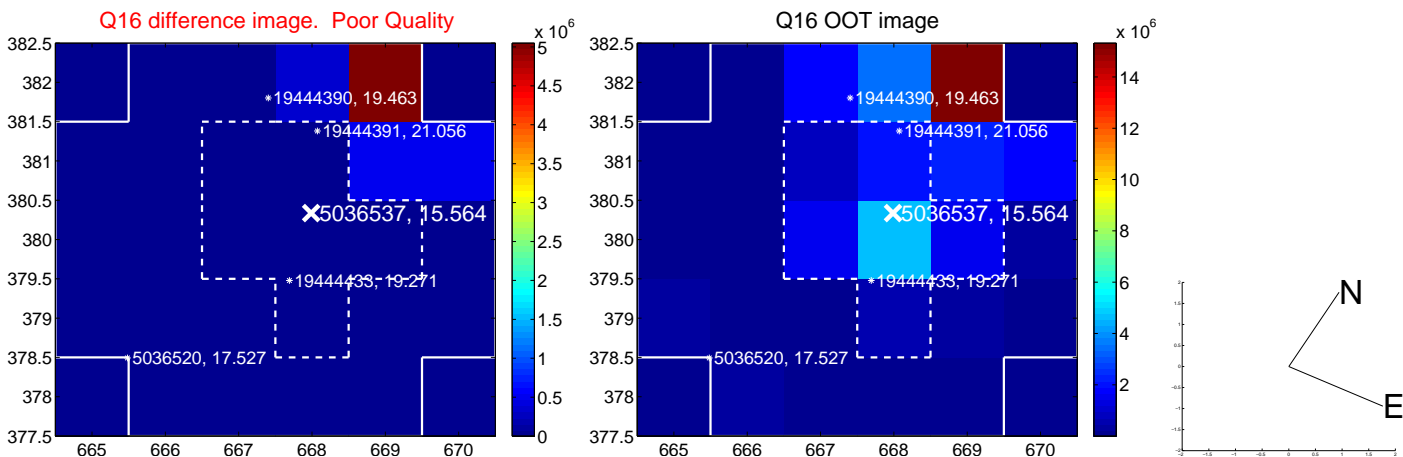
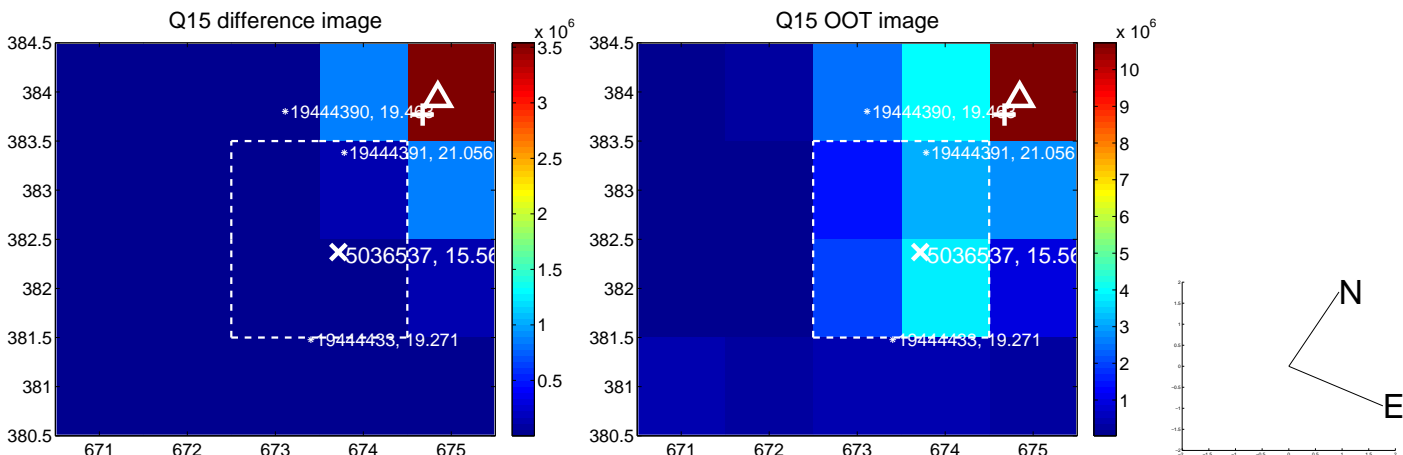
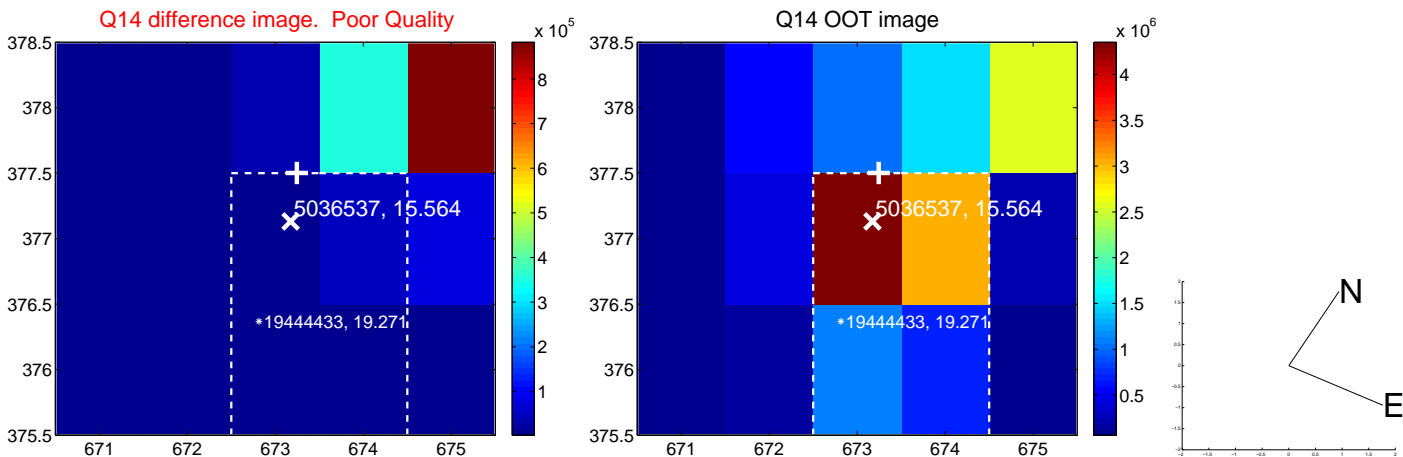
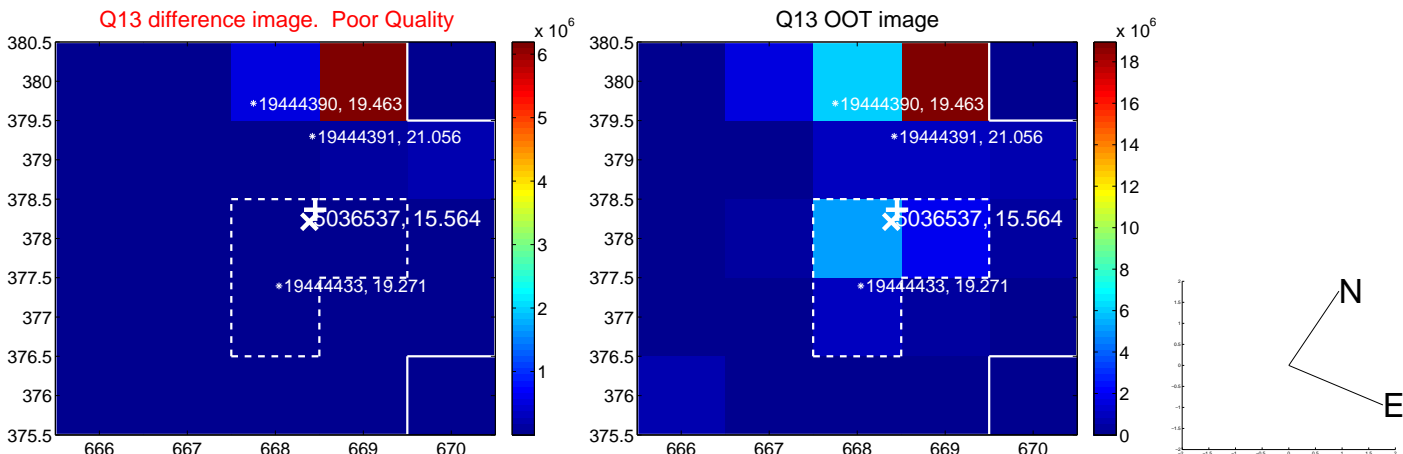
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



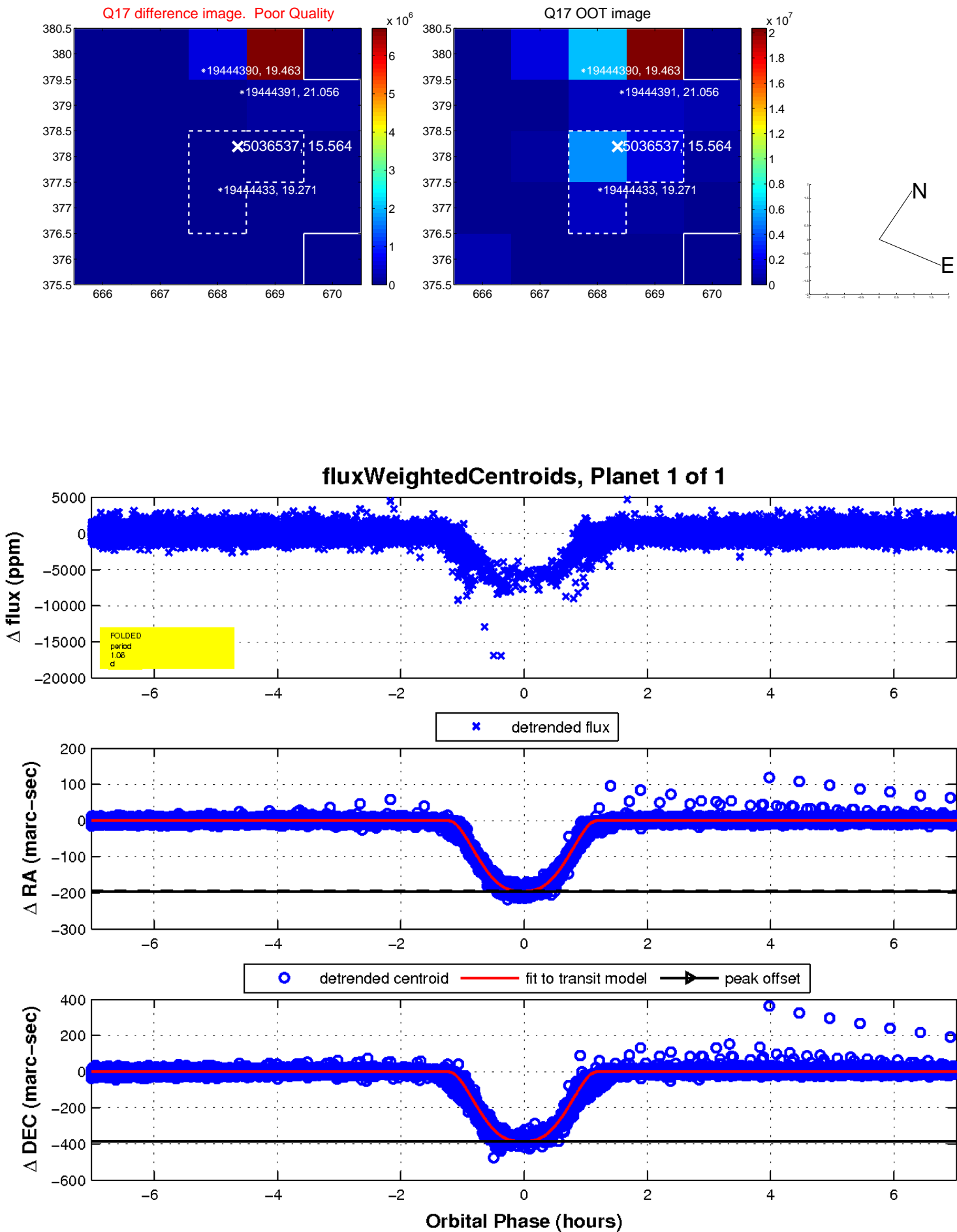
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



UKIRT Image

Declination

