

KIC 009357375

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})
009357375-01	OBS	7166.01	1.588254	132.192384	73.4	2.749	7.5	7.7	0.54	3931	0.55	130.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009357375-01	OBS	FP	0.00	0	0	0	1	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.

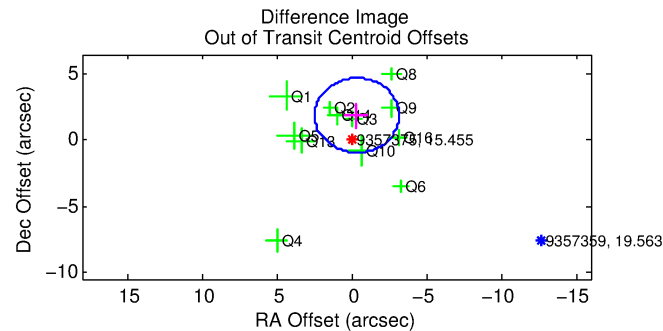
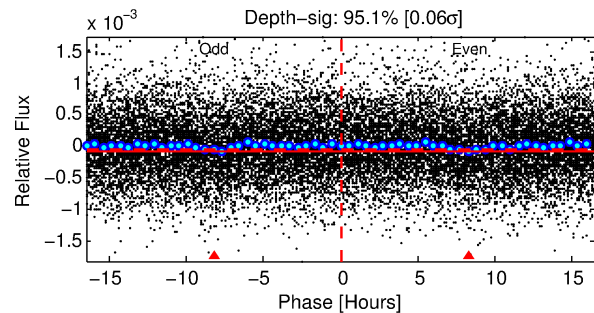
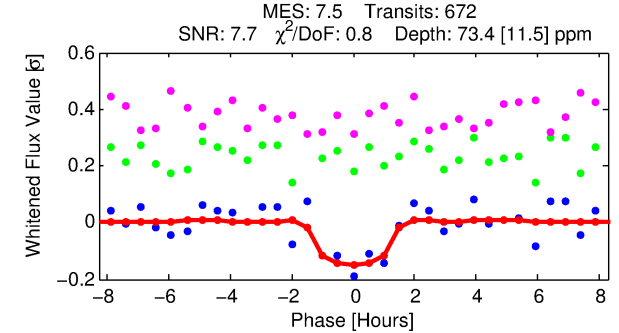
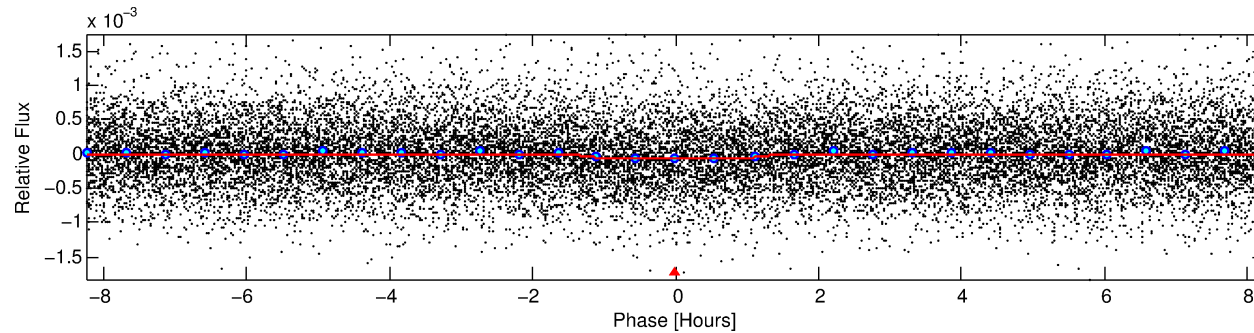
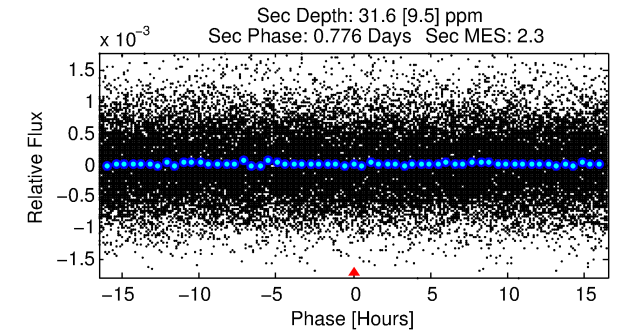
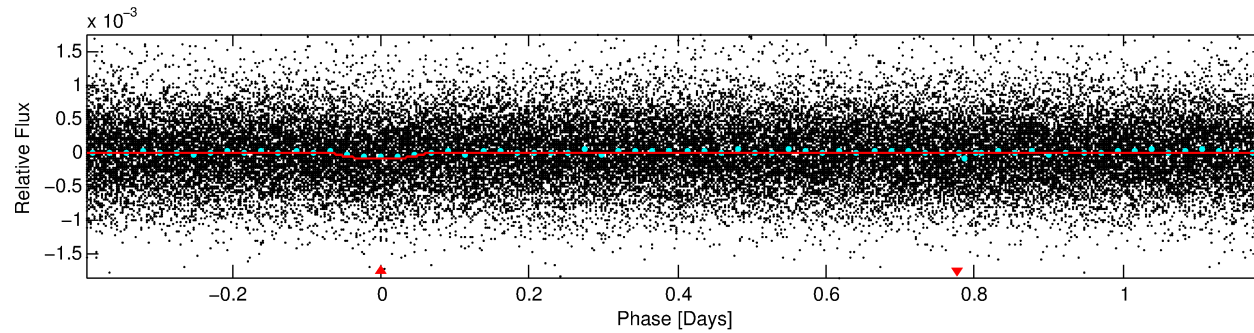
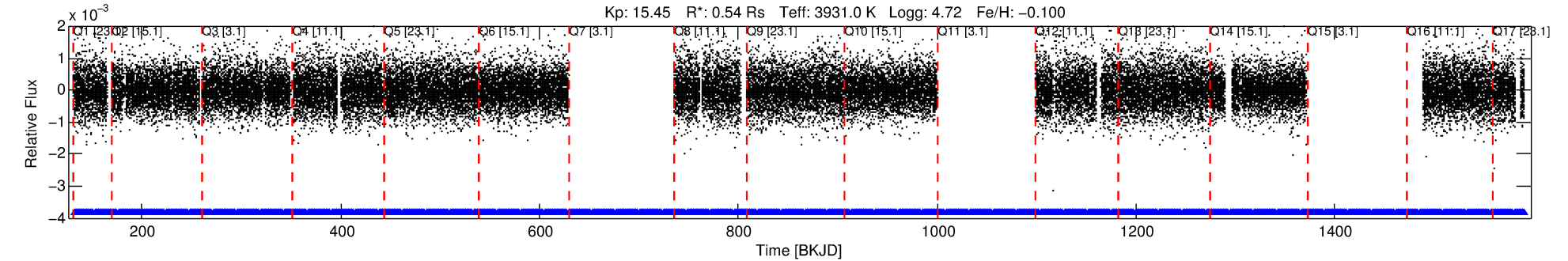
Ephemeris Match Information For 009357375-01

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
009357375-01	9357375	009357275-pri	9357275	1:1	81.5	15	-15	12.19	15.46	2291.80	Direct-PRF	0	2.13	0.55

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: 9357375 Candidate: 1 of 1 Period: 1.588 d
KOI: K07166.01 Corr: 0.940



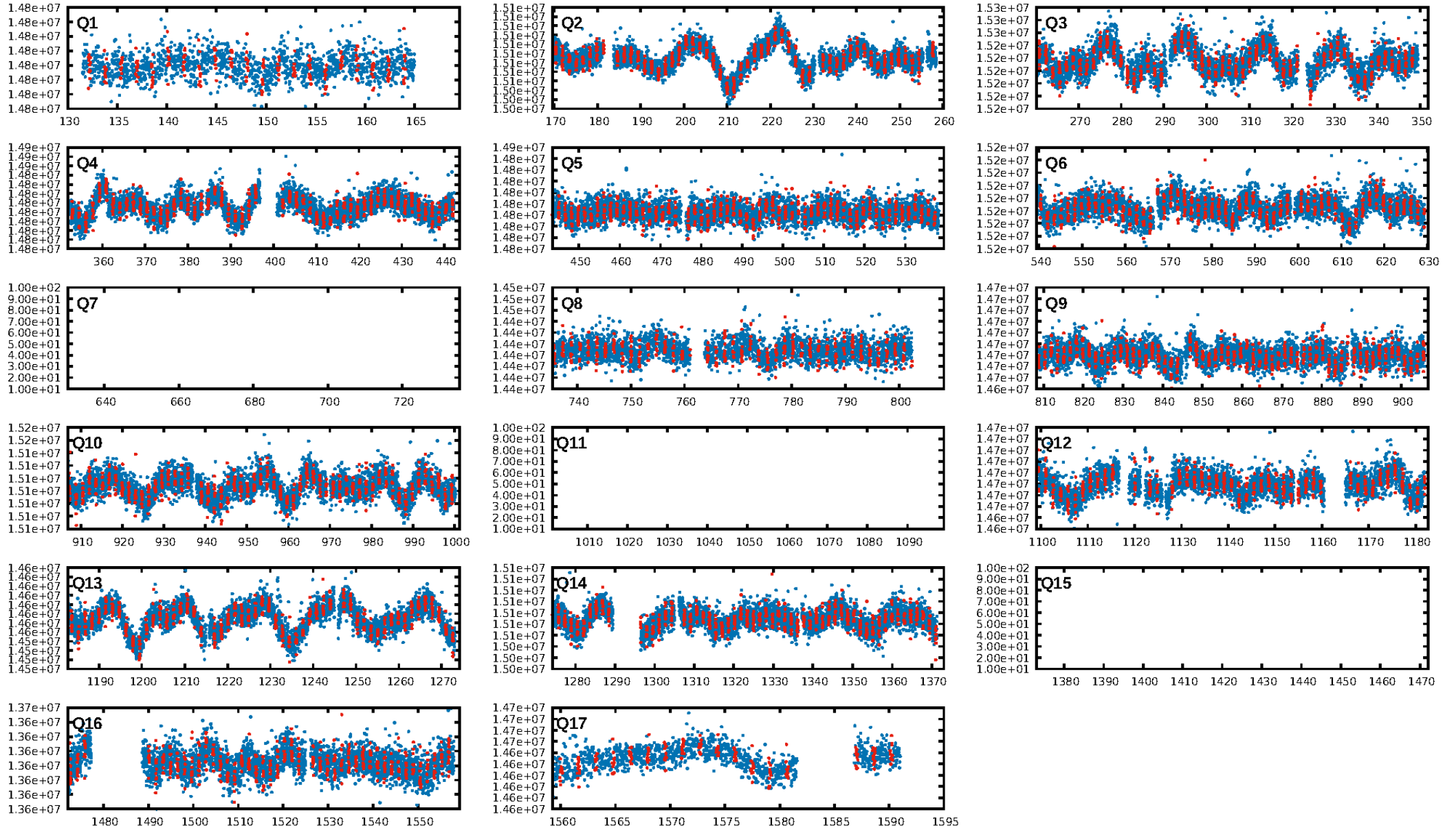
DV Fit Results:

Period = 1.58825 [0.00002] d
Epoch = 132.1924 [0.0051] BKJD
Rp/R* = 0.0093 [0.0090]
a/R* = 2.26 [7.96]
b = 0.90 [0.99]
Seff = 130.84 [13.32]
Teff = 862 [22] K
Rp = 0.55 [0.54] Re
a = 0.0220 [0.0011] AU
Ag = 27.42 [53.72] [0.49σ]
Teffp = 3051 [1495] K [1.46σ]

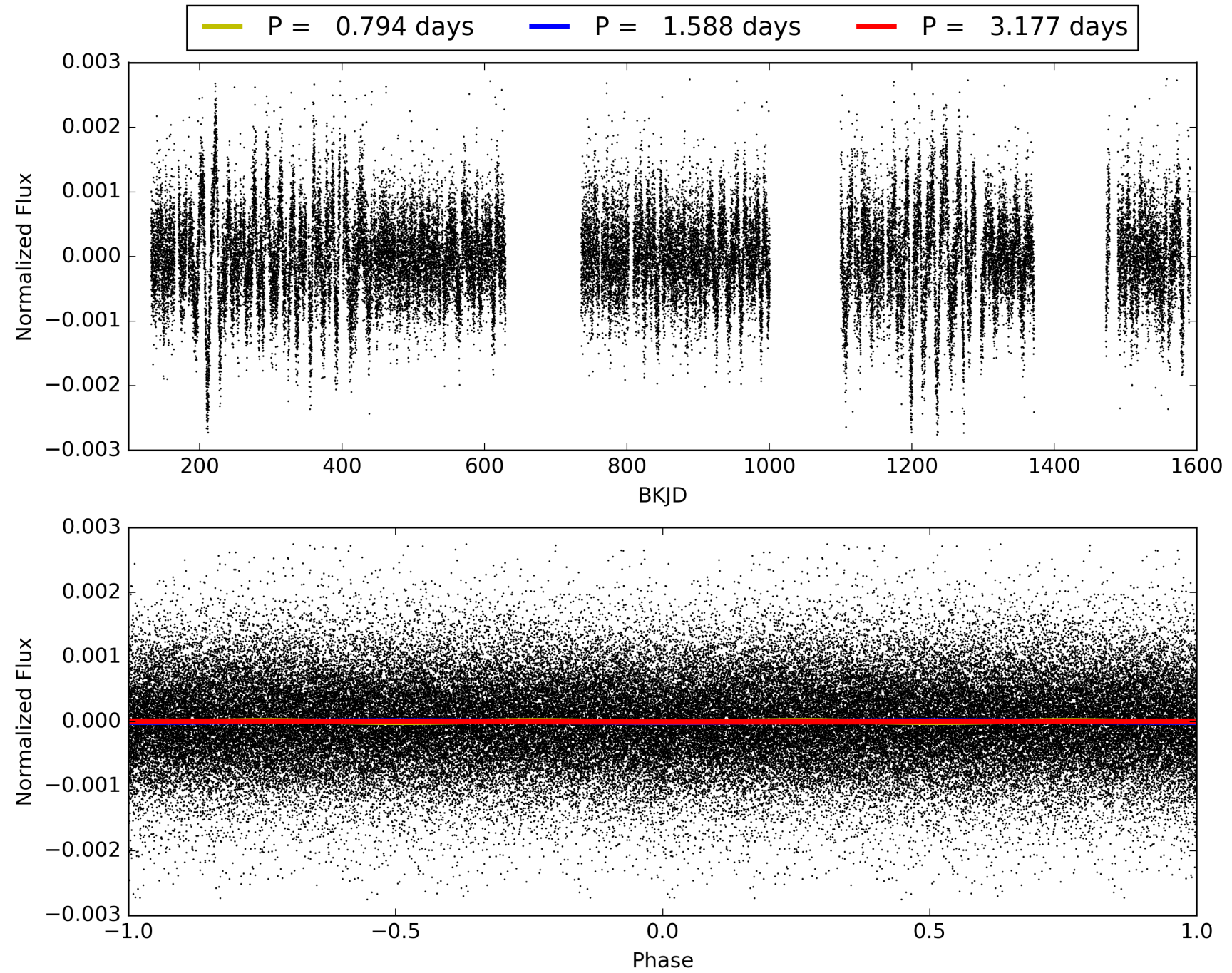
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.71e-14
RollingBand-fgt: 1.00 [634/634]
GhostDiagnostic-chr: 0.2765
Centroid-sig: 85.6%
Centroid-so: 0.223 arcsec [0.11σ]
OotOffset-rm: 1.917 arcsec [2.04σ]
KicOffset-rm: 1.679 arcsec [1.86σ]
OotOffset-st: 4/1/3/4 [12]
KicOffset-st: 4/1/3/4 [12]
DiffImageQuality-fgm: 0.08 [1/12]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 009357375-01, PDC Light Curves

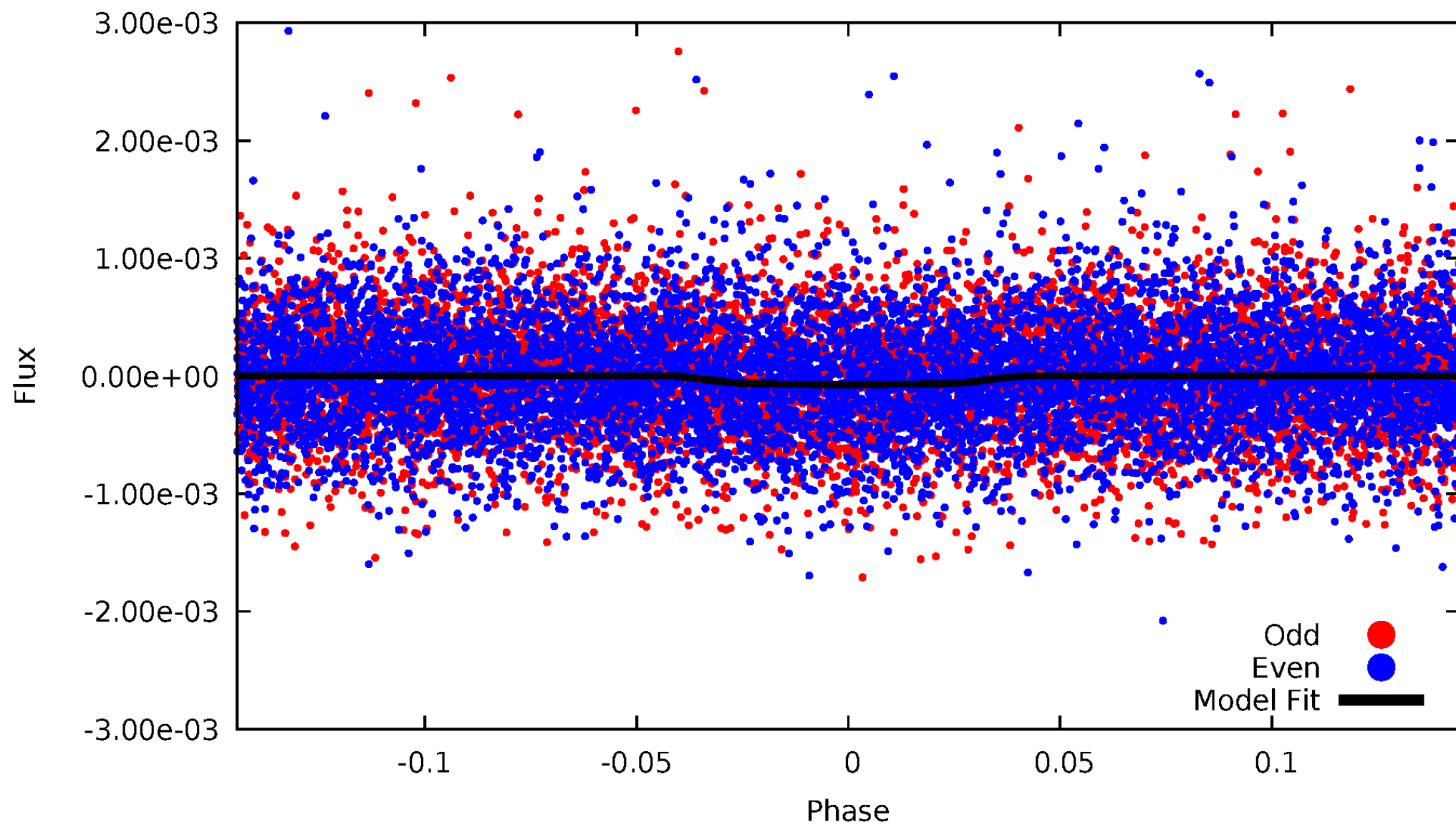


TCE 009357375-01



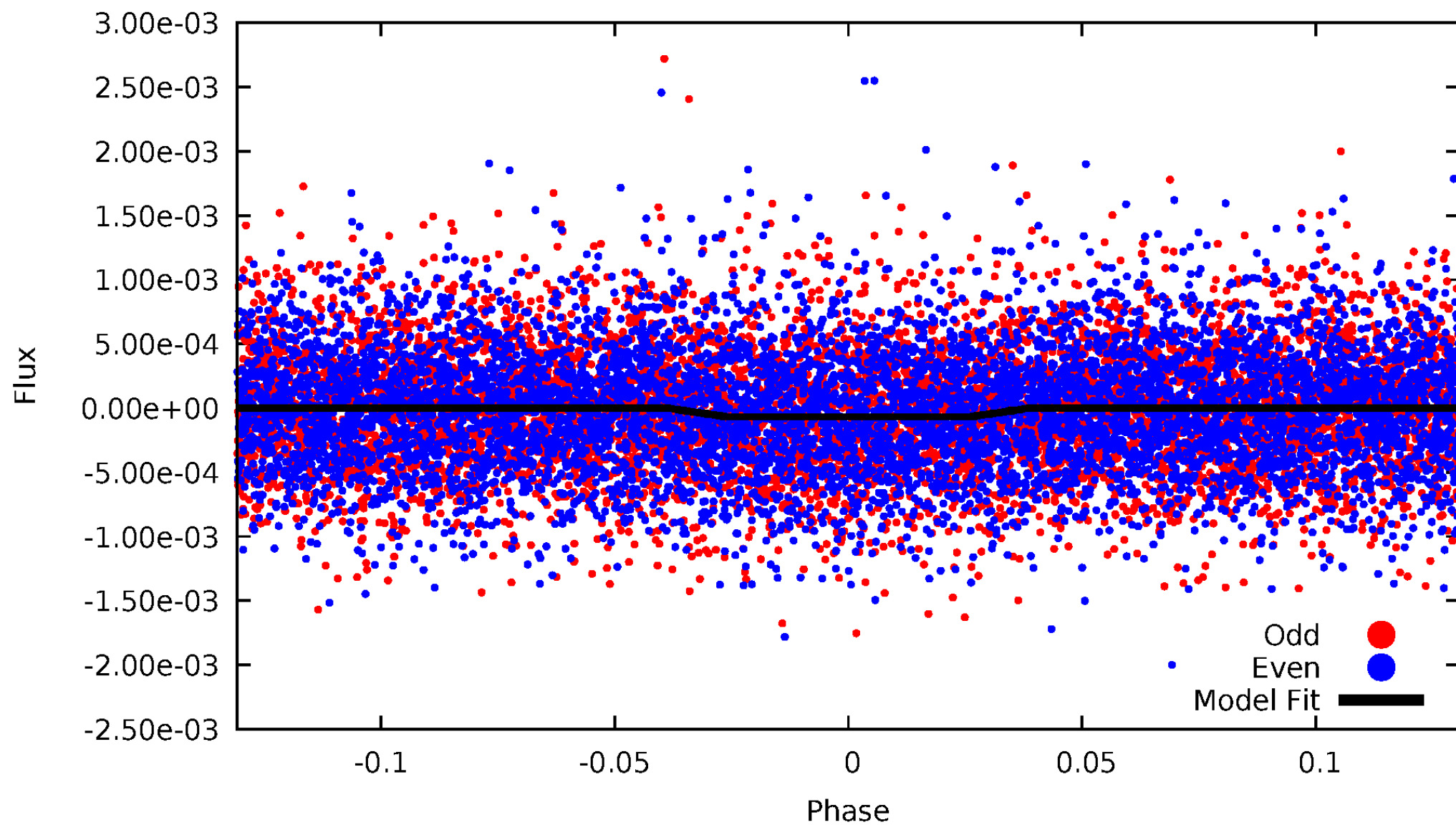
DV Odd/Even

TCE 009357375-01



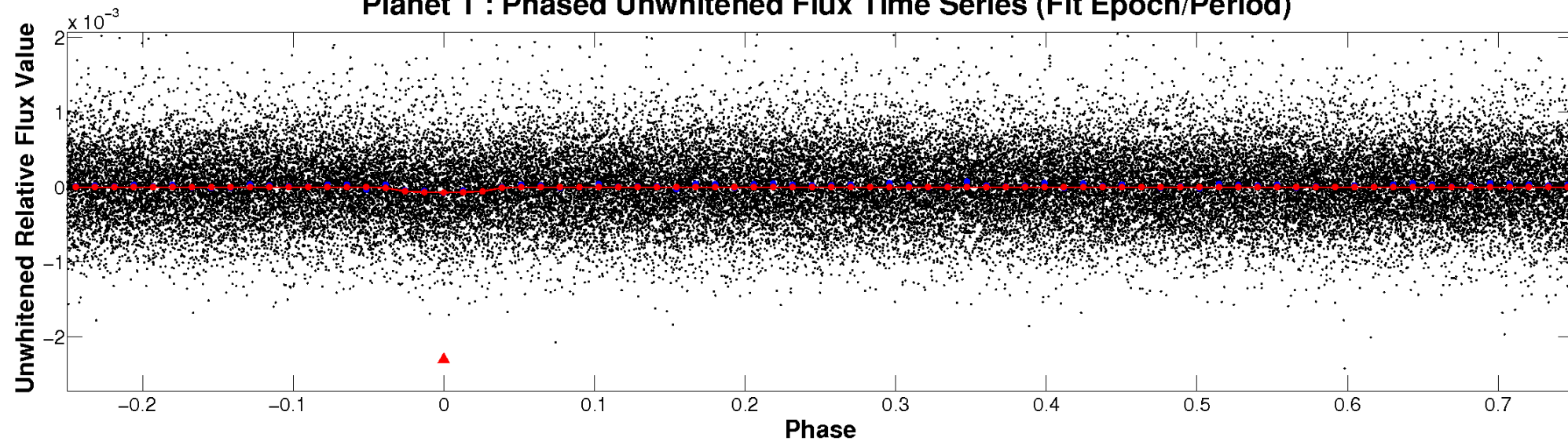
ALT Odd/Even

TCE 009357375-01

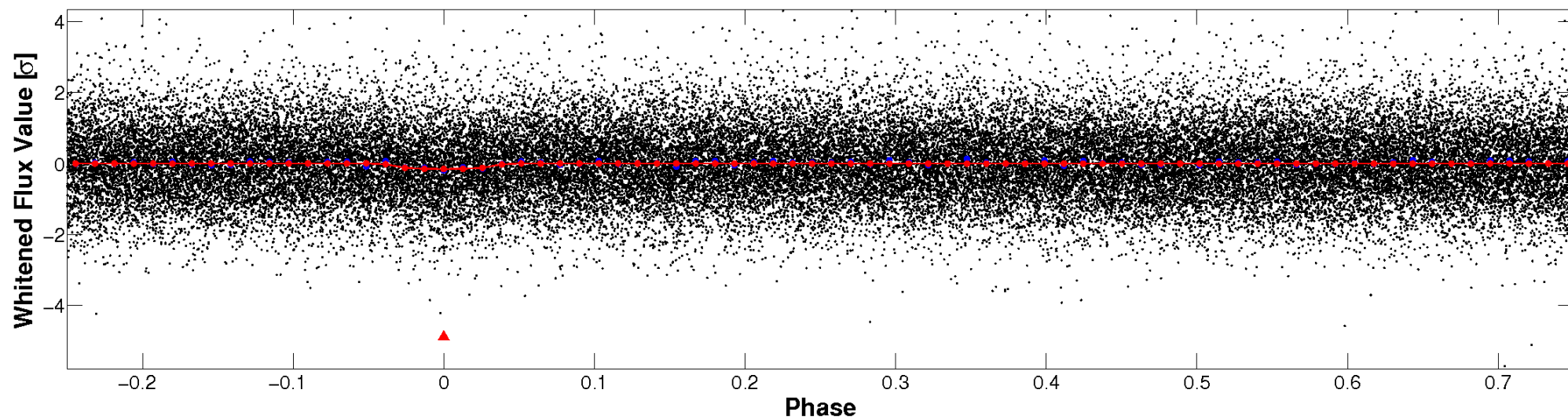


Non-Whitened Vs. Whitened Light Curve

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

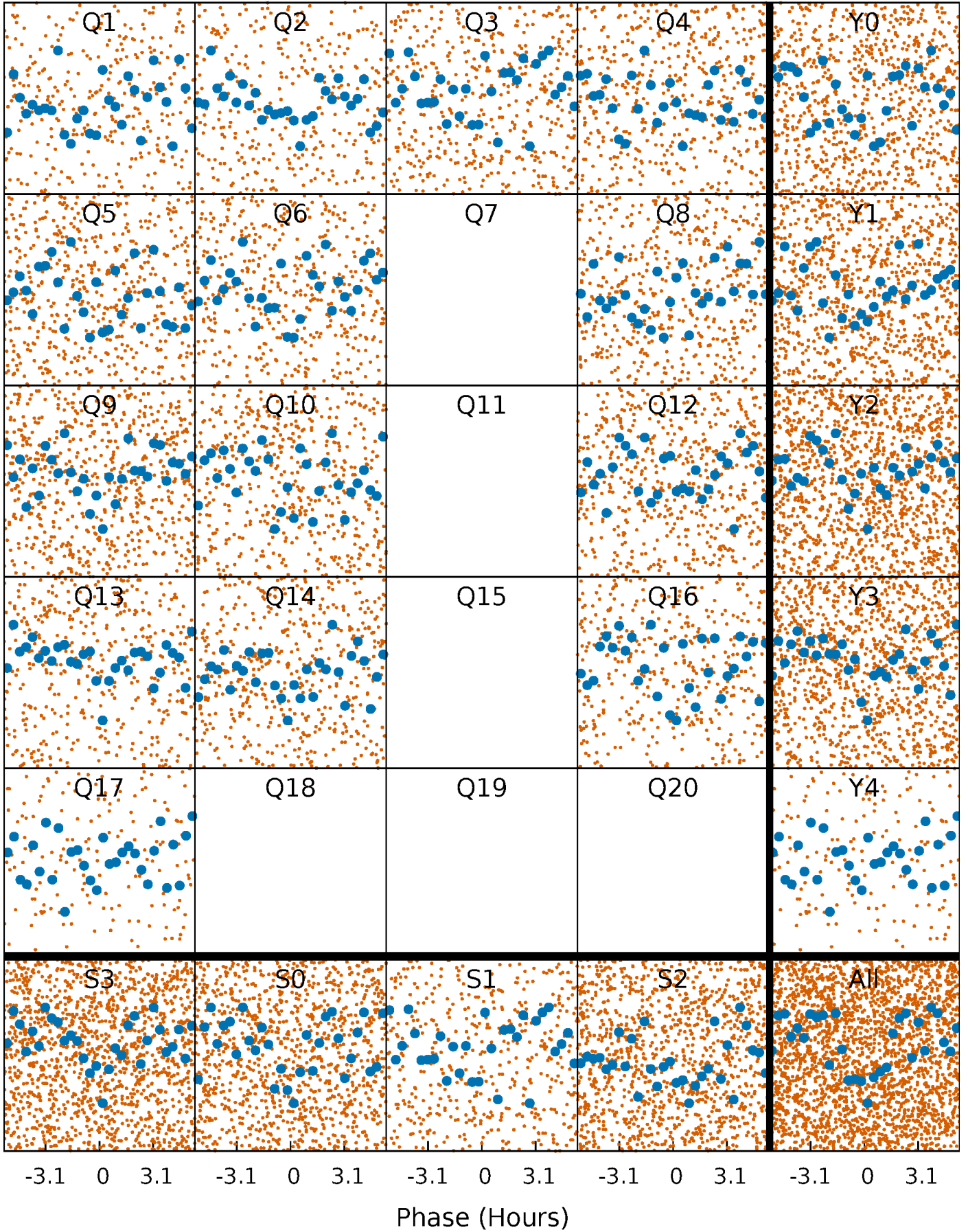


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



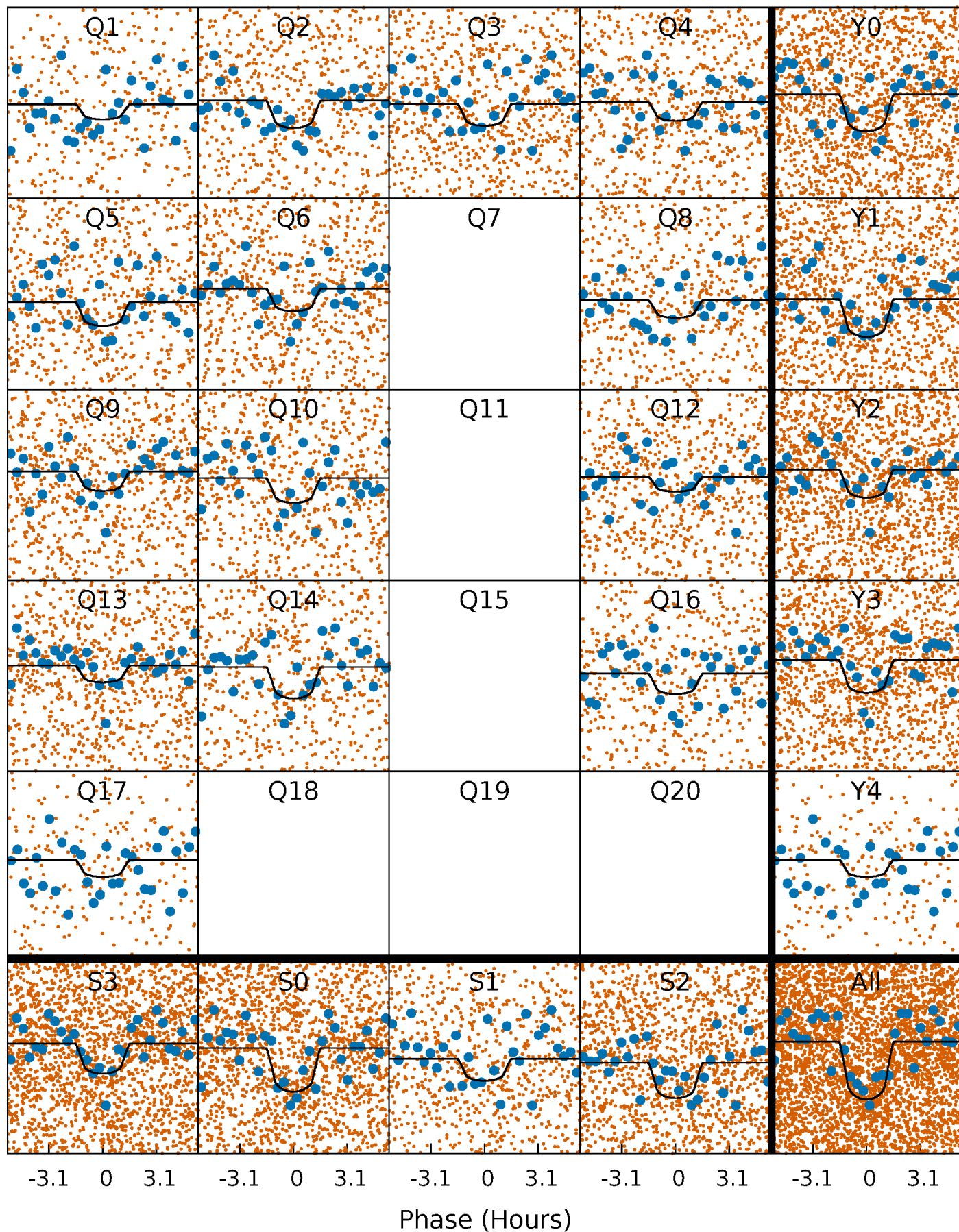
PDC Quarter-Phased Transit Curves

TCE 009357375-01 P= 1.588254 Days $T_0=132.192385$ (BKJD)



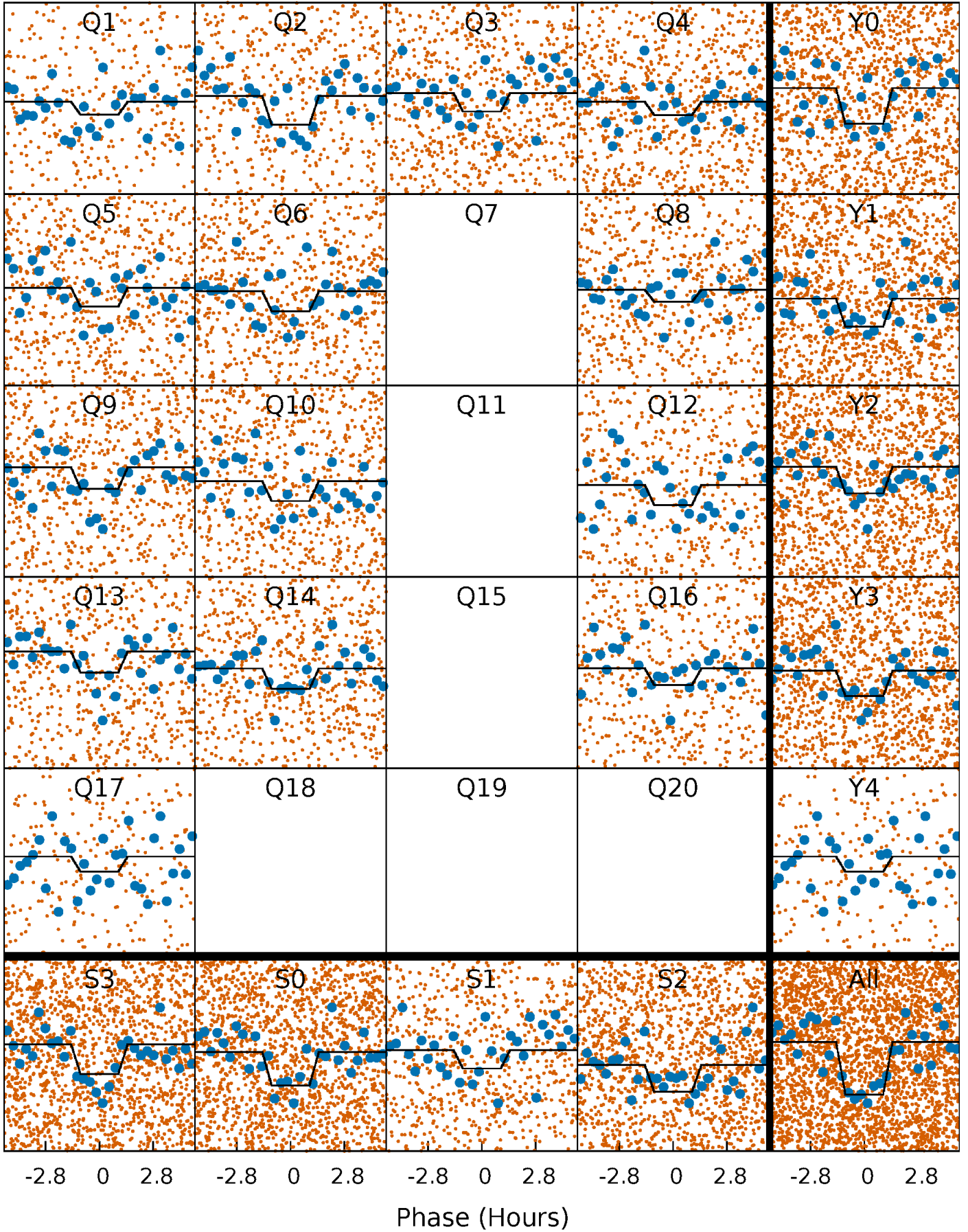
DV Quarter-Phased Transit Curves

TCE 009357375-01 P= 1.588254 Days $T_0=132.192385$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

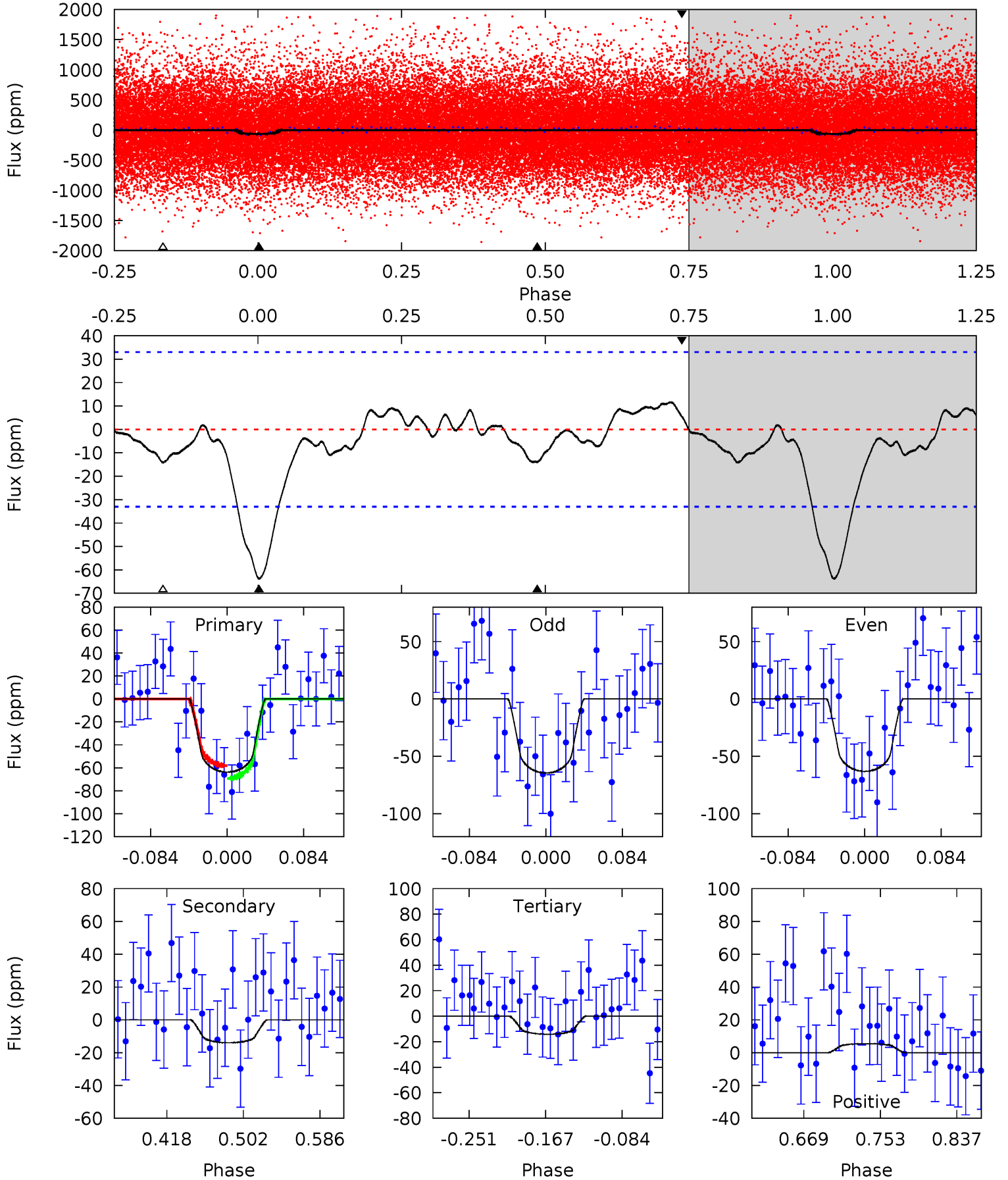
TCE 009357375-01 P= 1.588268 Days $T_0=132.188725$ (BKJD)



DV Model-Shift Uniqueness Test

009357375-01, P = 1.588254 Days, E = 130.604131 Days

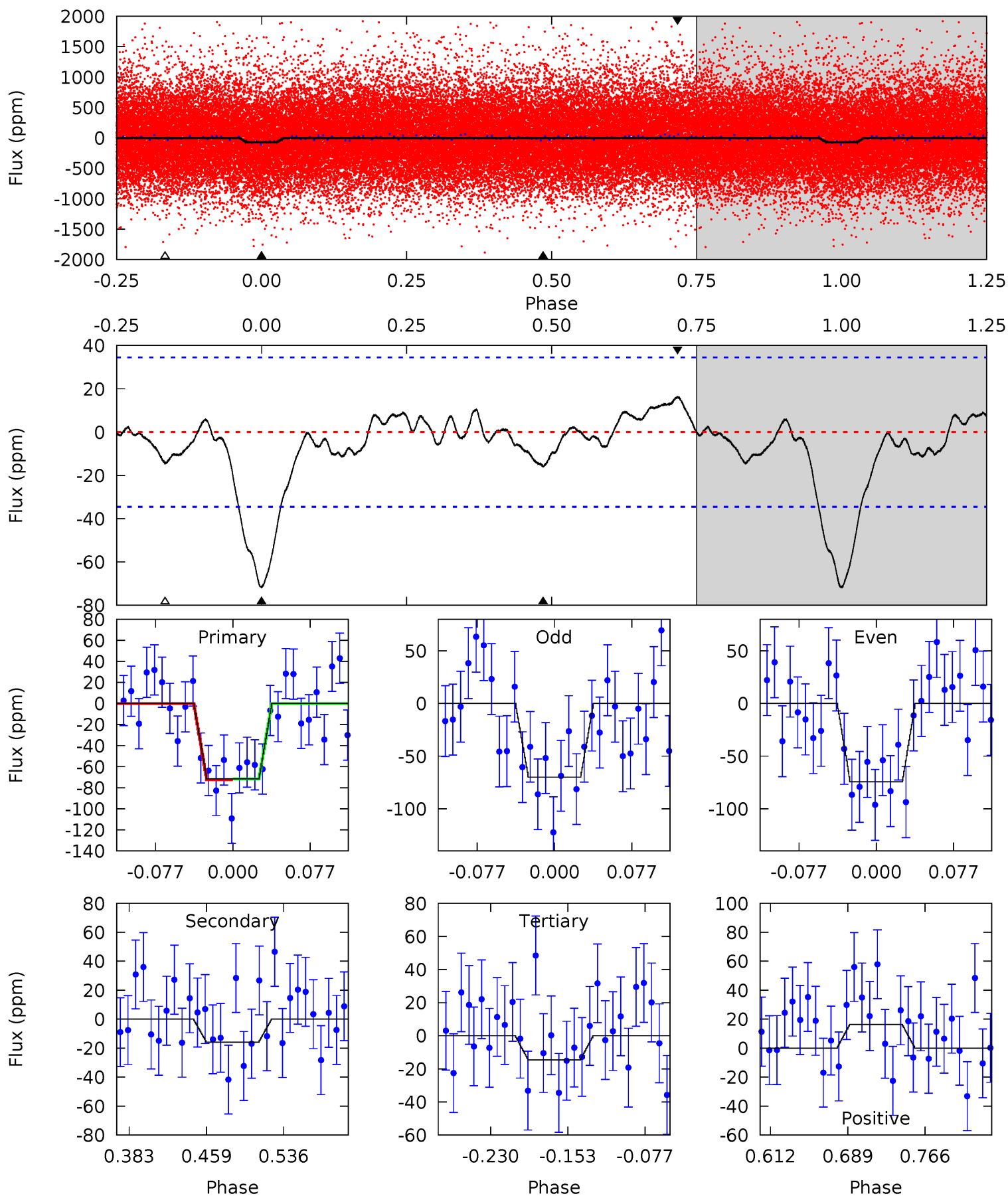
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.89	1.95	1.97	0.76	4.60	1.73	0.96	6.92	8.13	-0.02	1.18	0.10	0.97	0.15	0.78



Alt Model-Shift Uniqueness Test

009357375-01, P = 1.588268 Days, E = 130.600457 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.58	2.13	1.95	2.19	4.62	1.77	0.96	7.64	7.39	0.18	-0.07	0.30	0.92	0.19	0.06



Stellar Parameters For KIC 009357375

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3931^{+78}_{-78}	$4.717^{+0.030}_{-0.030}$	$-0.100^{+0.200}_{-0.200}$	$0.544^{+0.033}_{-0.036}$	$0.564^{+0.035}_{-0.042}$	$4.926^{+0.732}_{-0.578}$
	+2%/-2%	+1%/-1%	+200%/-200%	+6%/-7%	+6%/-7%	+15%/-12%
Source	PHO2	PHO2	PHO2	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 009357375-01 / KOI 7166.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-14 ± 7	$0.61^{+0.51}_{-0.38}$	1207^{+28}_{-29}	2826^{+958}_{-512}	$9.016^{+51.613}_{-6.921}$
Alt.	-16 ± 7	$0.62^{+0.46}_{-0.40}$	1206^{+28}_{-28}	2883^{+1149}_{-470}	10^{+74}_{-8}

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 $A_{obs} \gg 1.0$

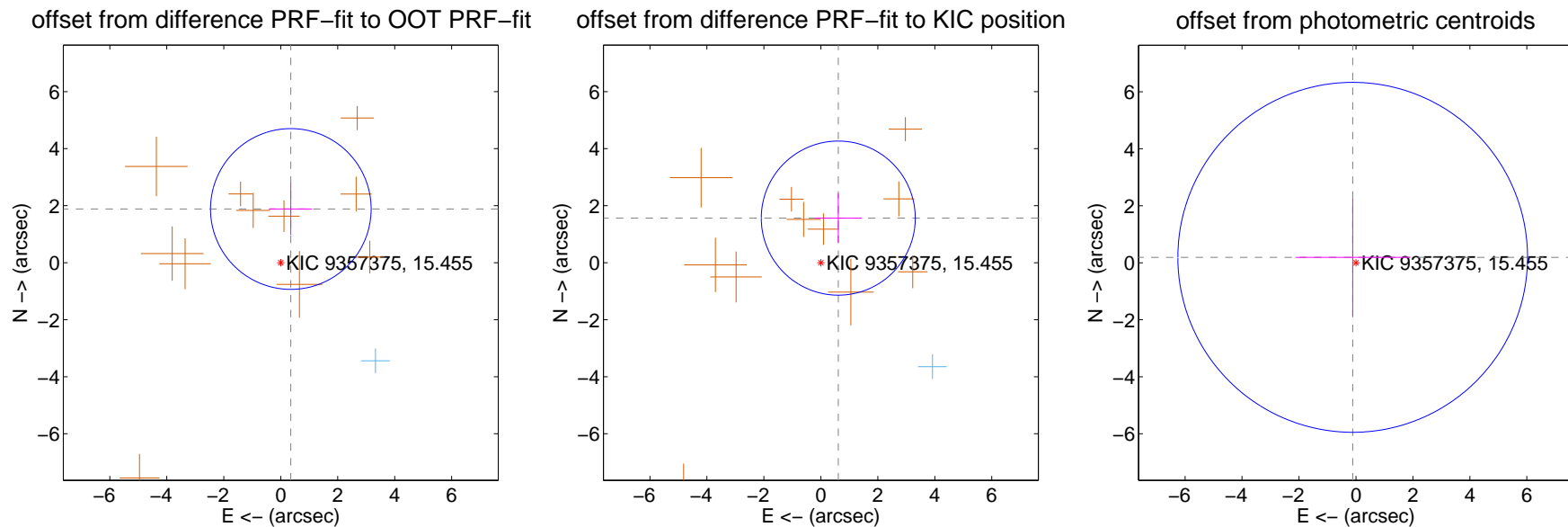
DV Centroid Data

Supplemental centroid analysis for 009357375-01. Kepler magnitude: 15.46. Transit SNR 7.73

There are 1 quarters with good PRF difference image offsets

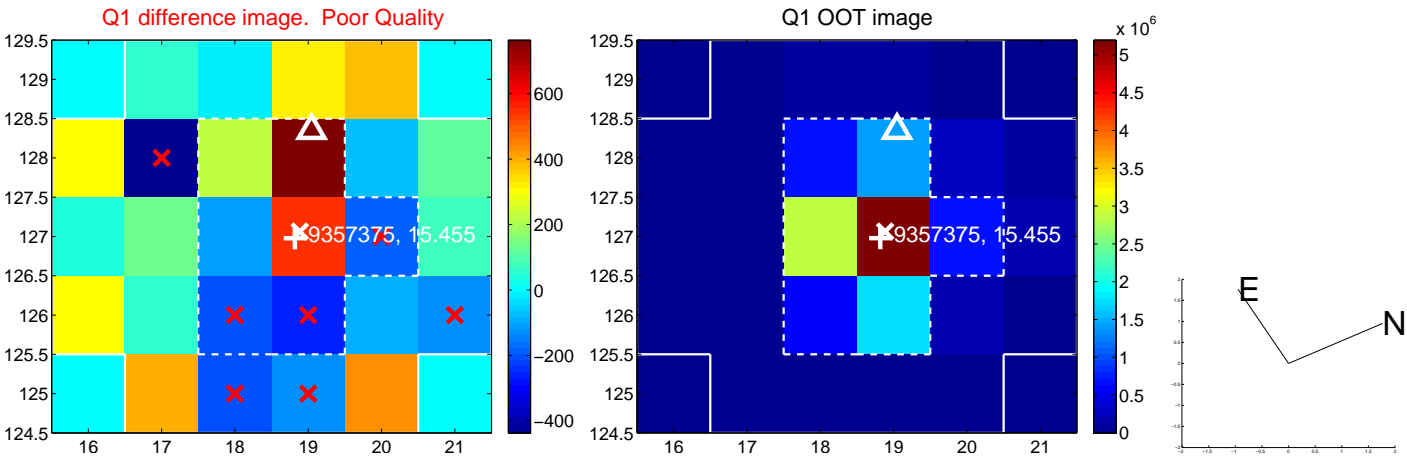
The direct PRF centroid is offset from the target star catalog position by about 0.53 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.917 ± 0.940	2.04	-0.354 ± 0.745	1.884 ± 0.915
PRF-fit source offset from KIC position	1.679 ± 0.901	1.86	-0.611 ± 0.827	1.564 ± 0.864
photometric centroid source offset	0.22 ± 2.05	0.11	0.11 ± 2.01	0.19 ± 2.06

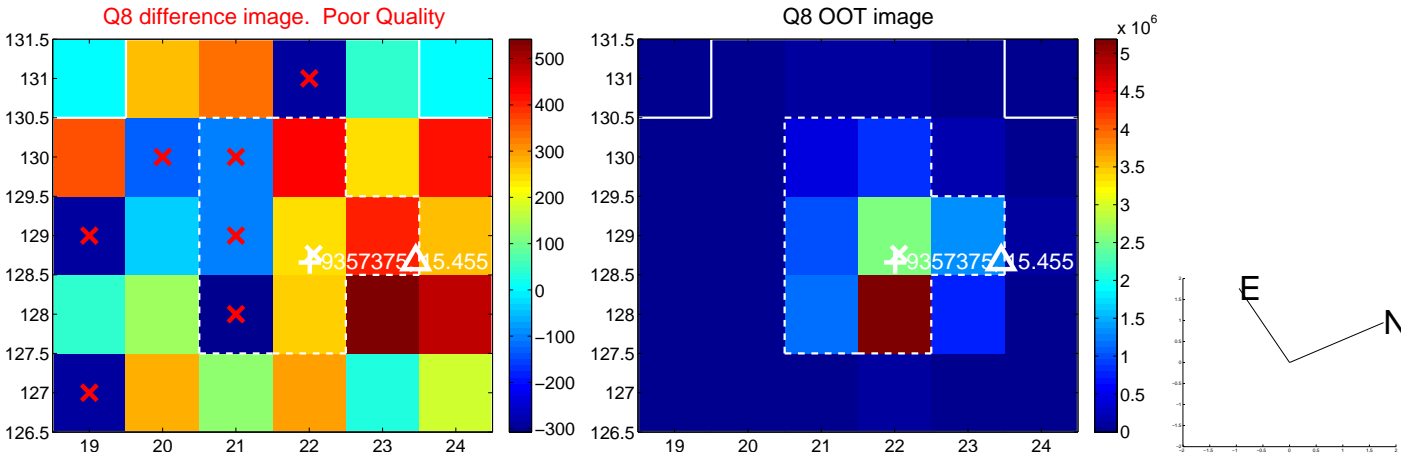
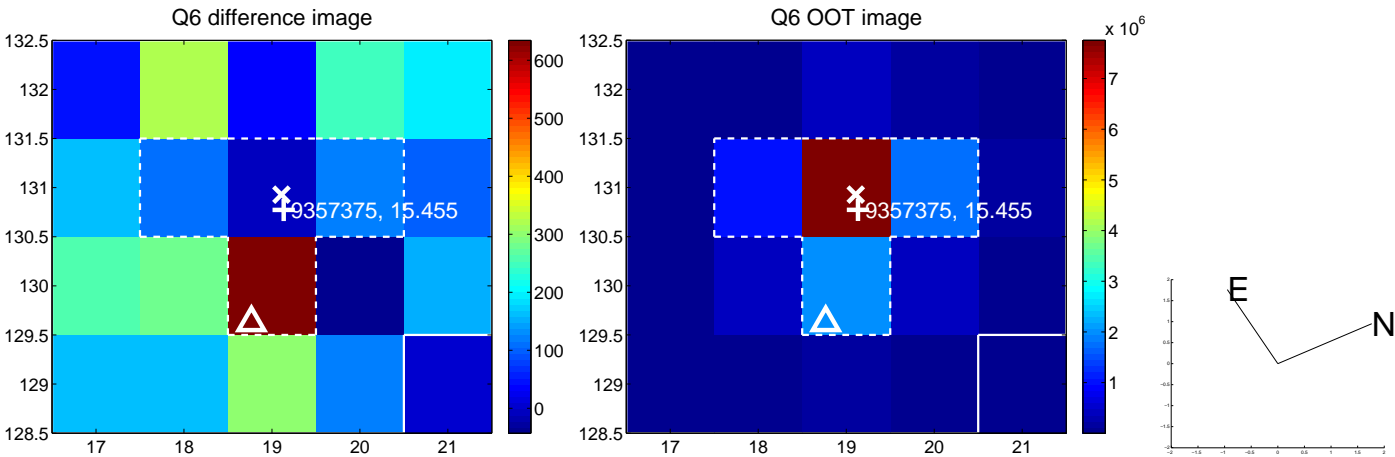
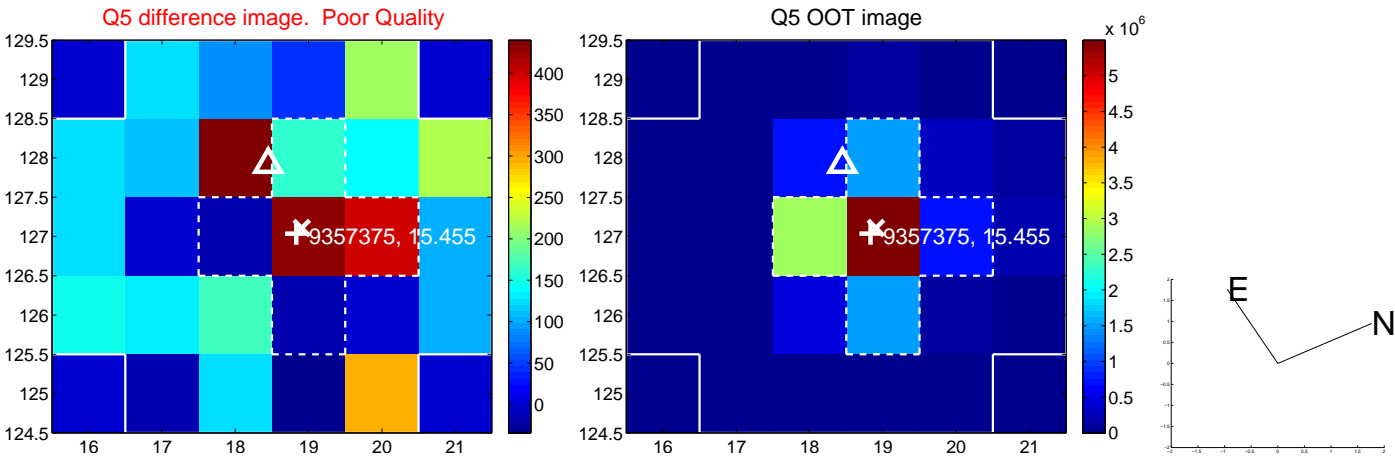


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

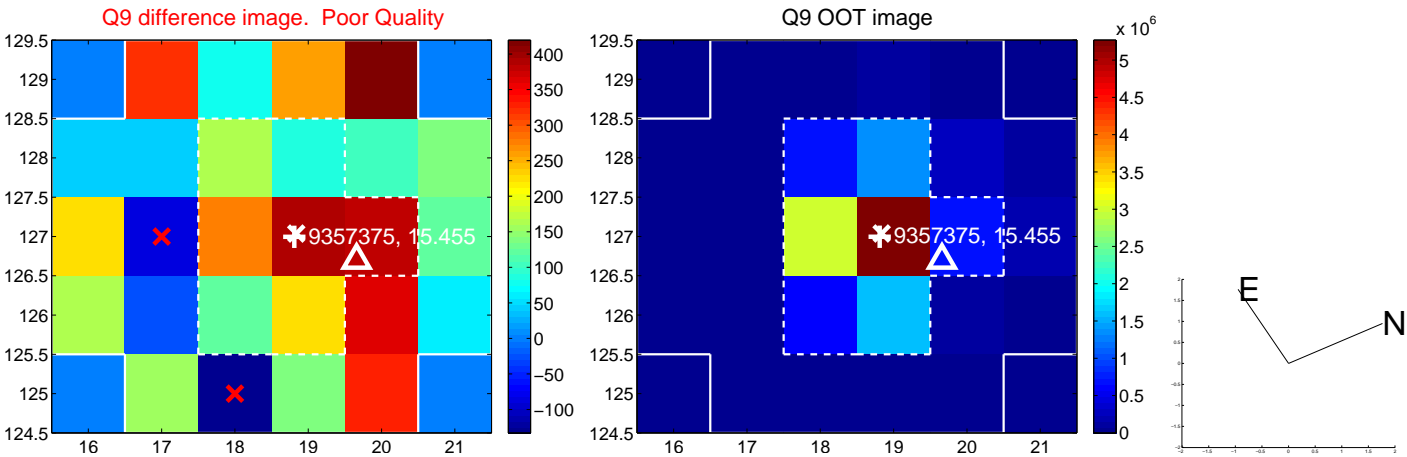
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



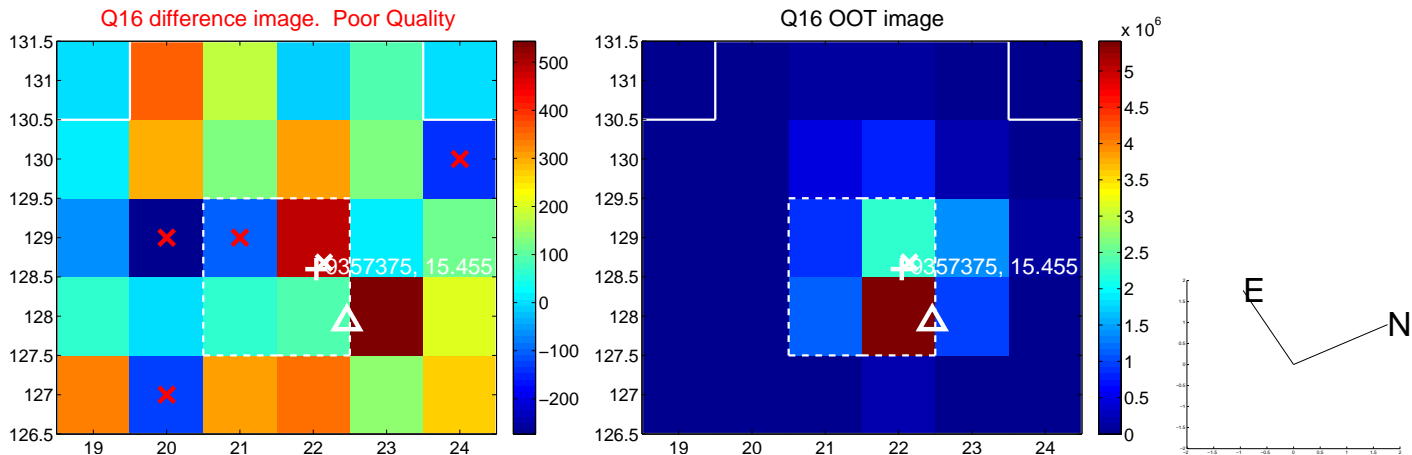
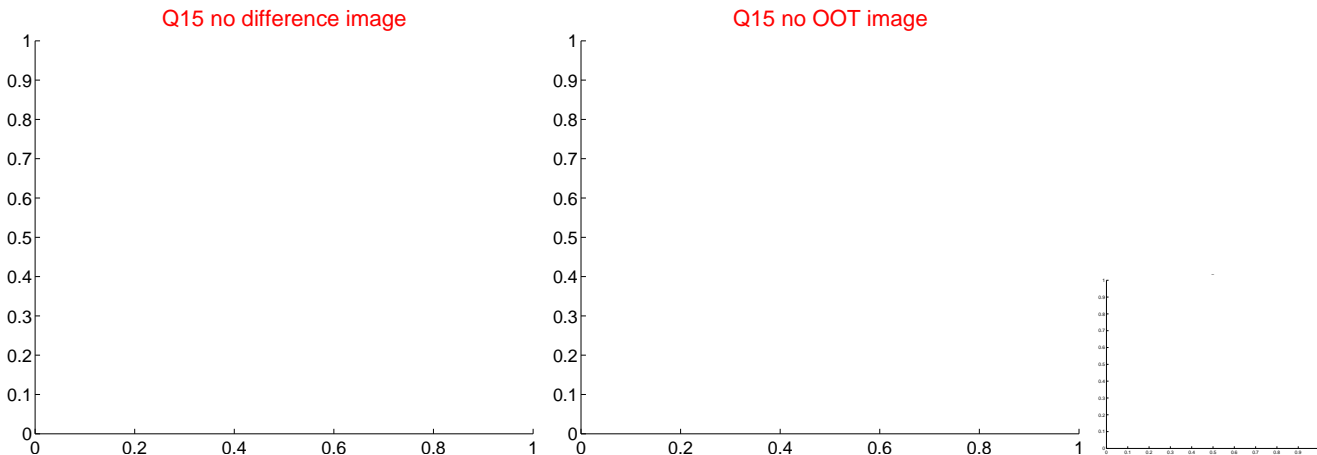
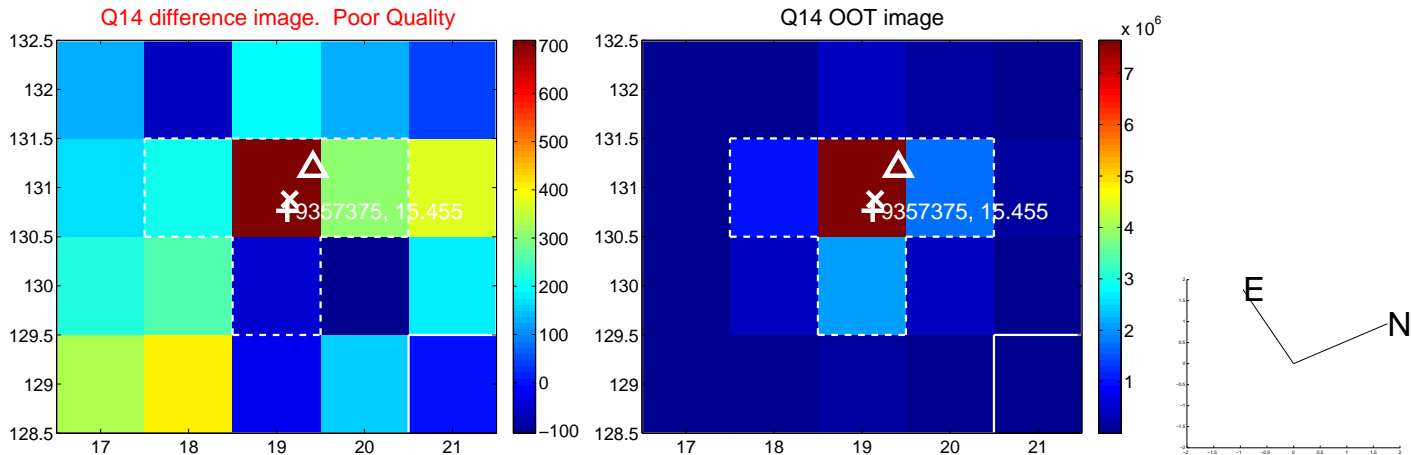
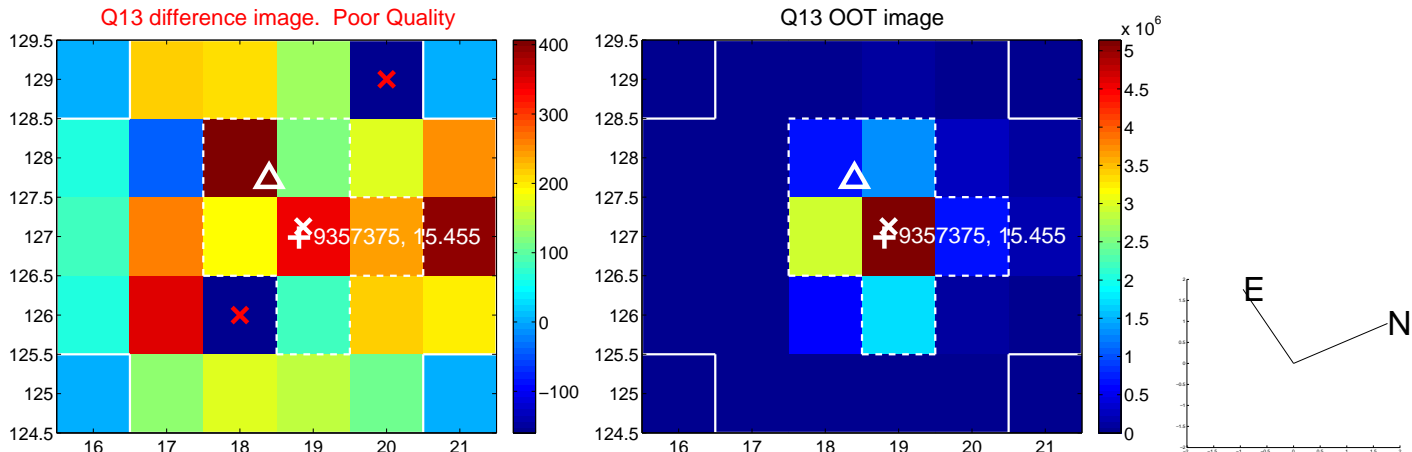
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



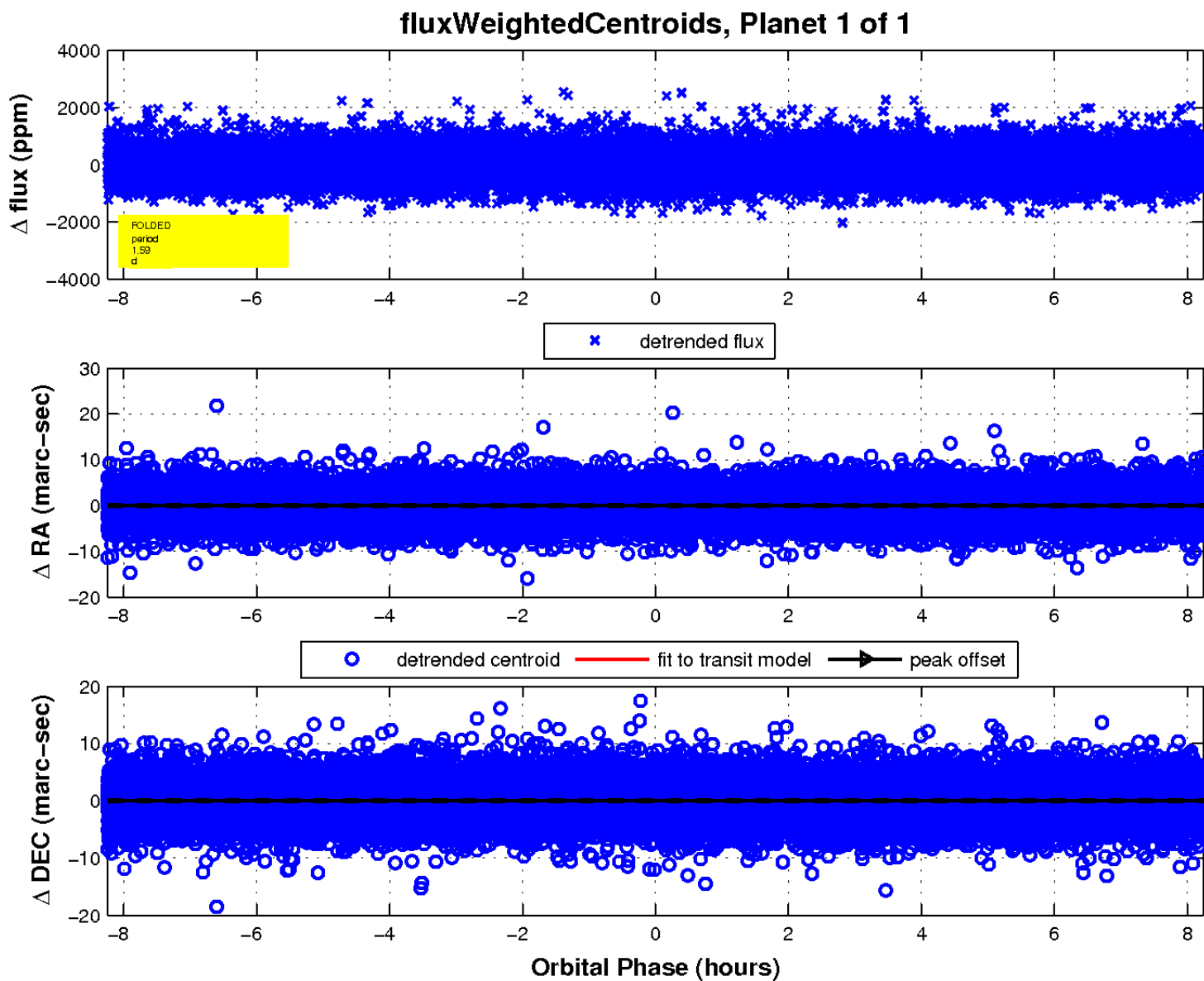
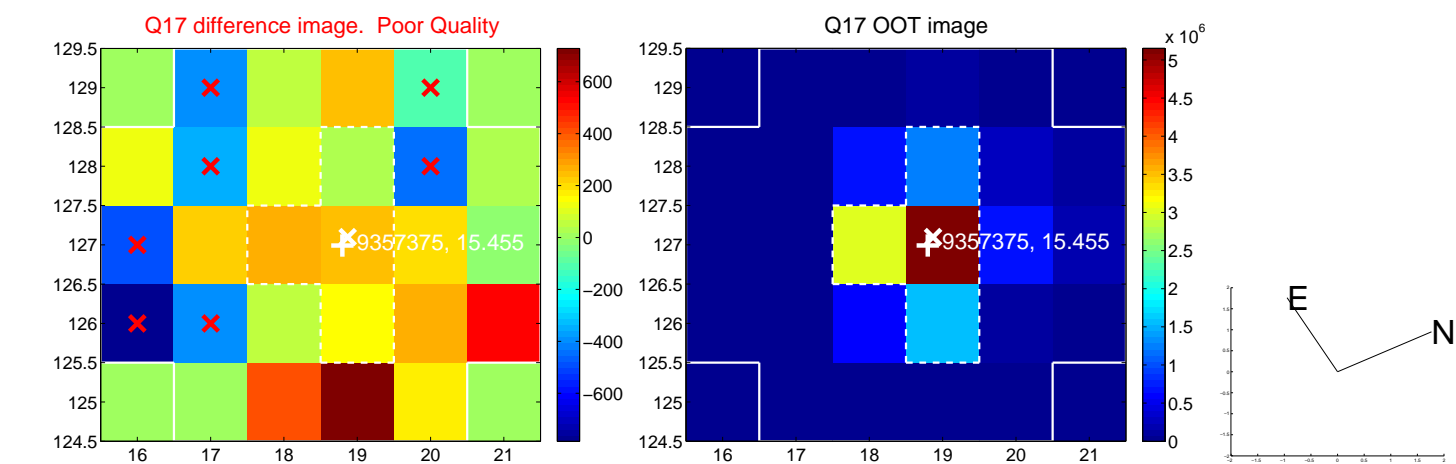
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UKIRT Image

Declination

