

KIC 005649215

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})
005649215-01	OBS	0839.01	2.446738	131.520889	729.9	4.320	98.8	66.0	0.86	5764	3.74	599.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005649215-01	OBS	FP	0.00	0	0	1	1	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.

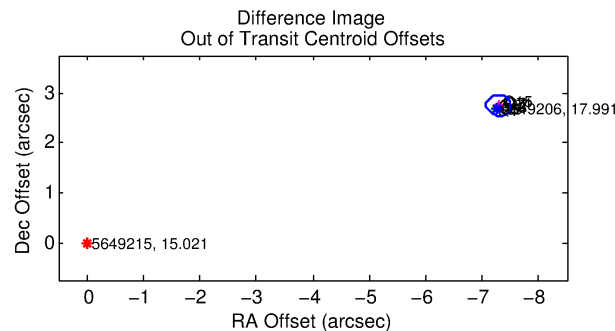
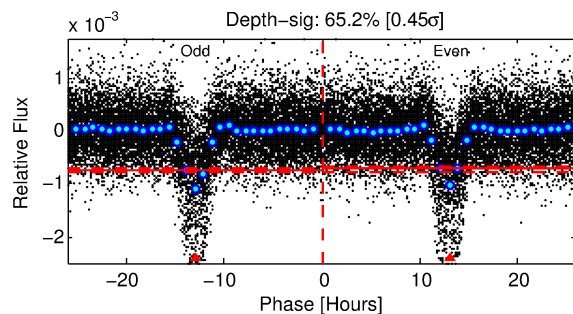
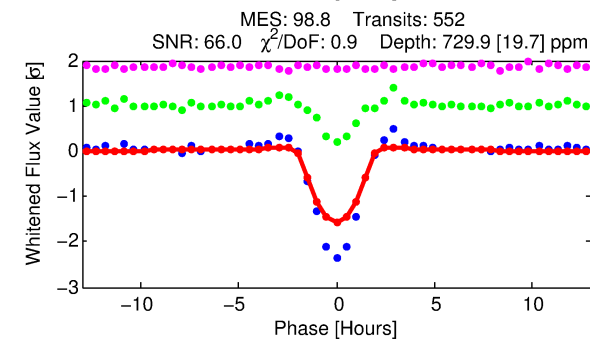
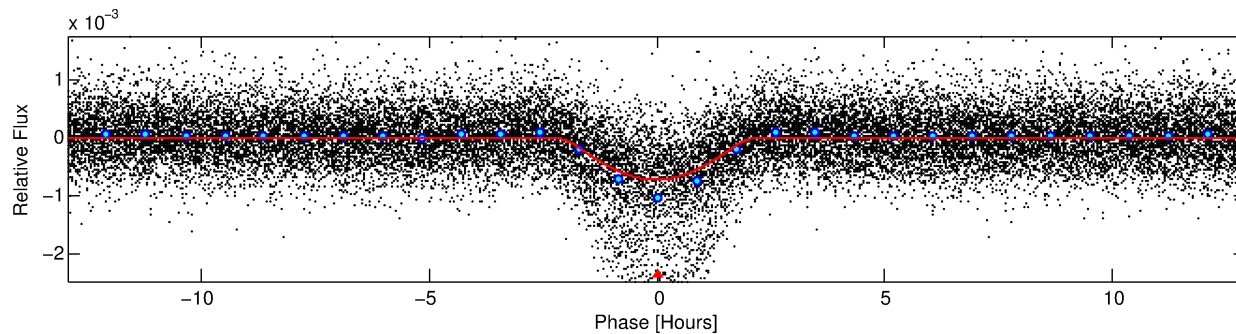
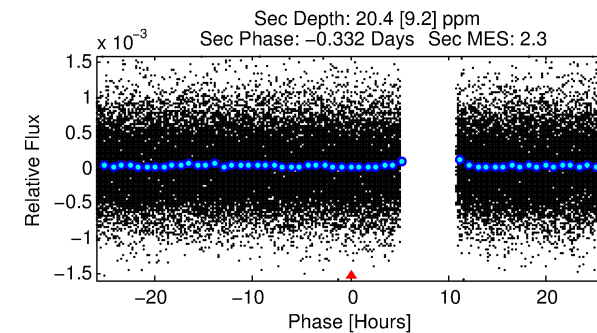
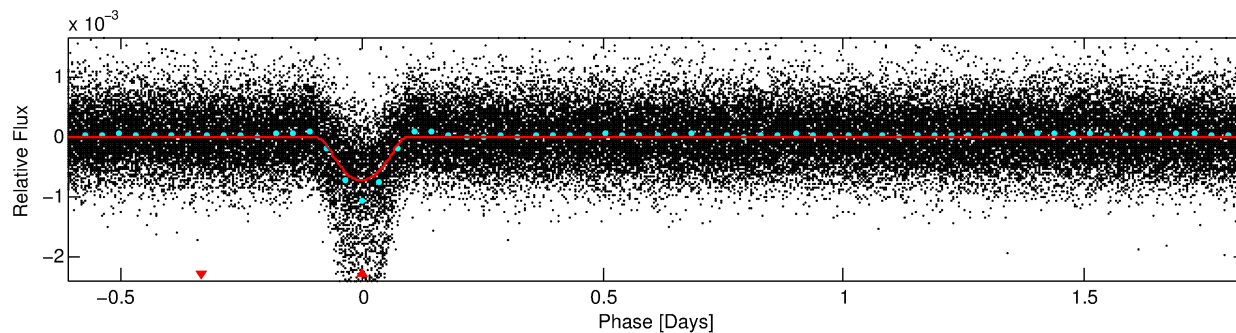
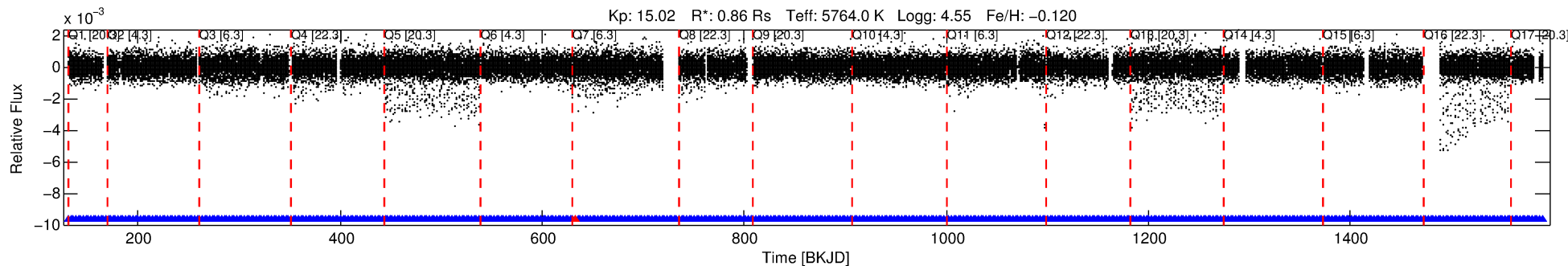
Ephemeris Match Information For 005649215-01

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
005649215-01	5649215	3636.01	5649206	1:1	7.7	-1	-1	17.99	15.02	821.03	Direct-PRF	0	0.06	0.07

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: 5649215 Candidate: 1 of 1 Period: 2.447 d
KOI: K00839.01 Corr: 0.960



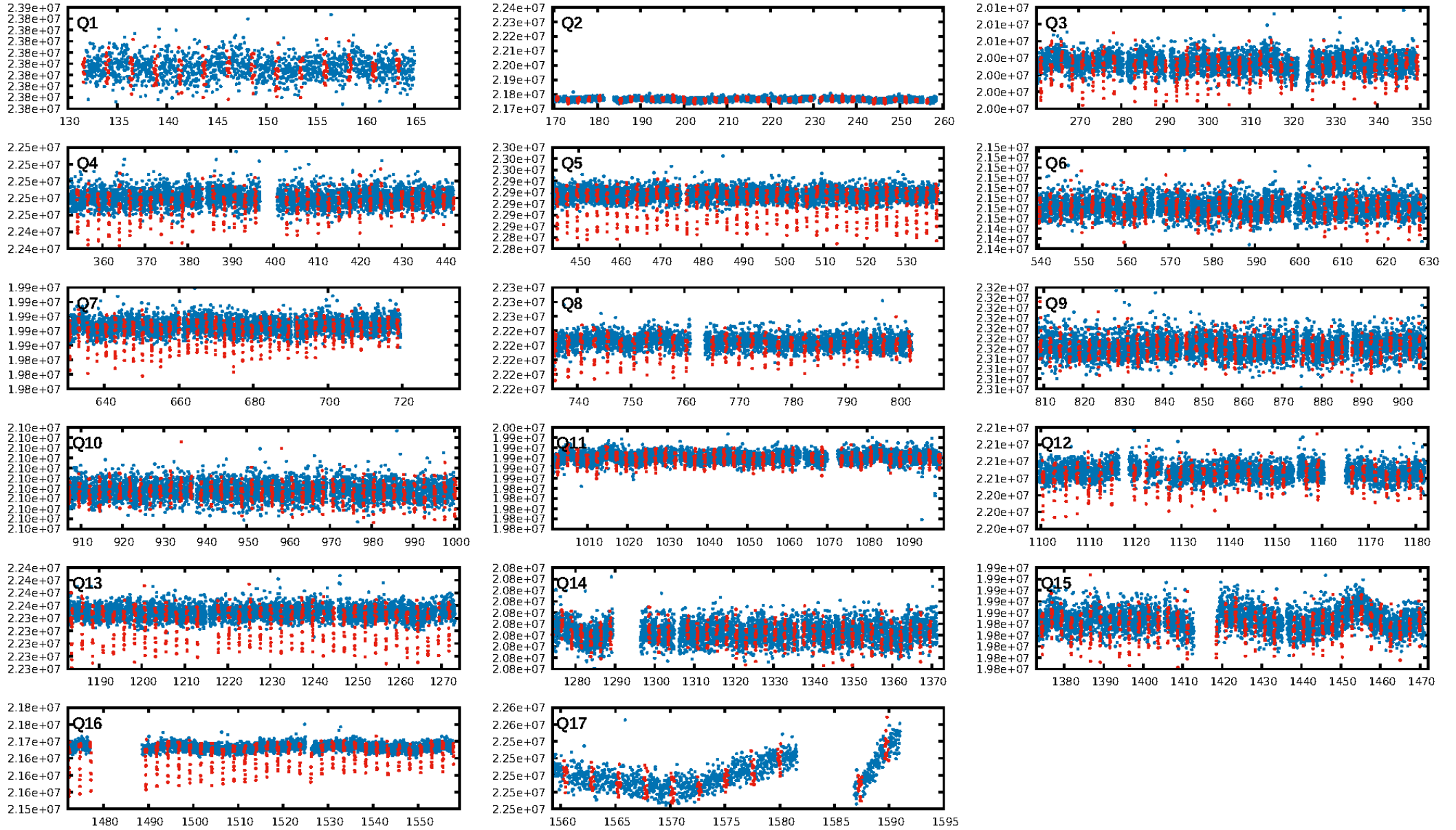
DV Fit Results:

Period = 2.44674 [0.00000] d
Epoch = 131.5209 [0.0012] BKJD
Rp/R* = 0.0397 [0.0100]
a/R* = 1.75 [0.10]
b = 0.99 [0.02]
Seff = 599.35 [211.57]
Teff = 1262 [111] K
Rp = 3.74 [1.36] Re
a = 0.0351 [0.0079] AU
Ag = 0.99 [0.74] [-0.02σ]
Teffp = 1943 [332] K [1.94σ]

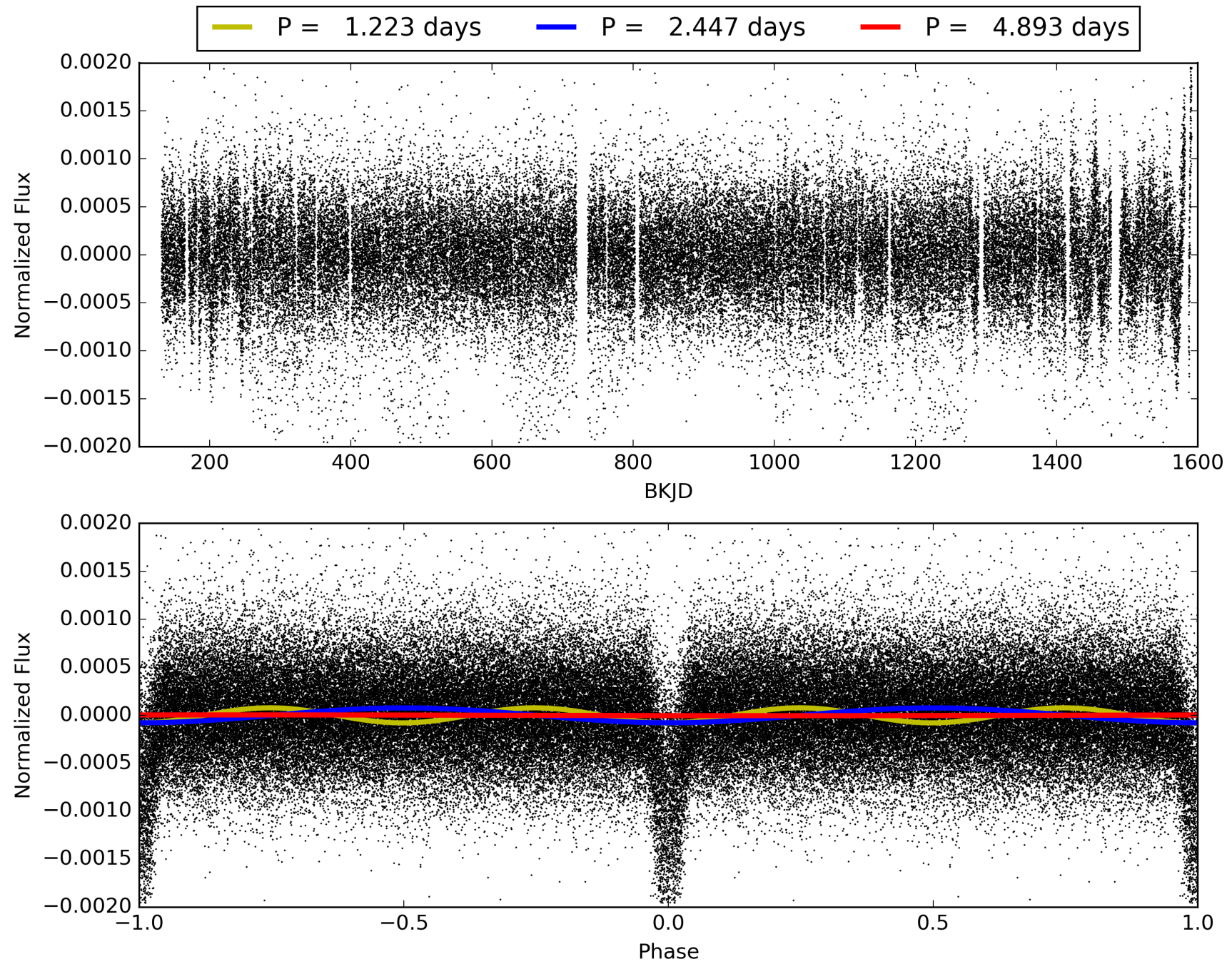
DV Diagnostic Results:

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 [526/527]
GhostDiagnostic-chr: -0.4915
Centroid-sig: 0.0%
Centroid-so: 100.880 arcsec [547.91σ]
OotOffset-rm: 7.787 arcsec [110.59σ]
KicOffset-rm: 7.841 arcsec [106.49σ]
OotOffset-st: 0/4/0/5 [9]
KicOffset-st: 0/4/0/5 [9]
DiffImageQuality-fgm: 1.00 [9/9]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 005649215-01, PDC Light Curves

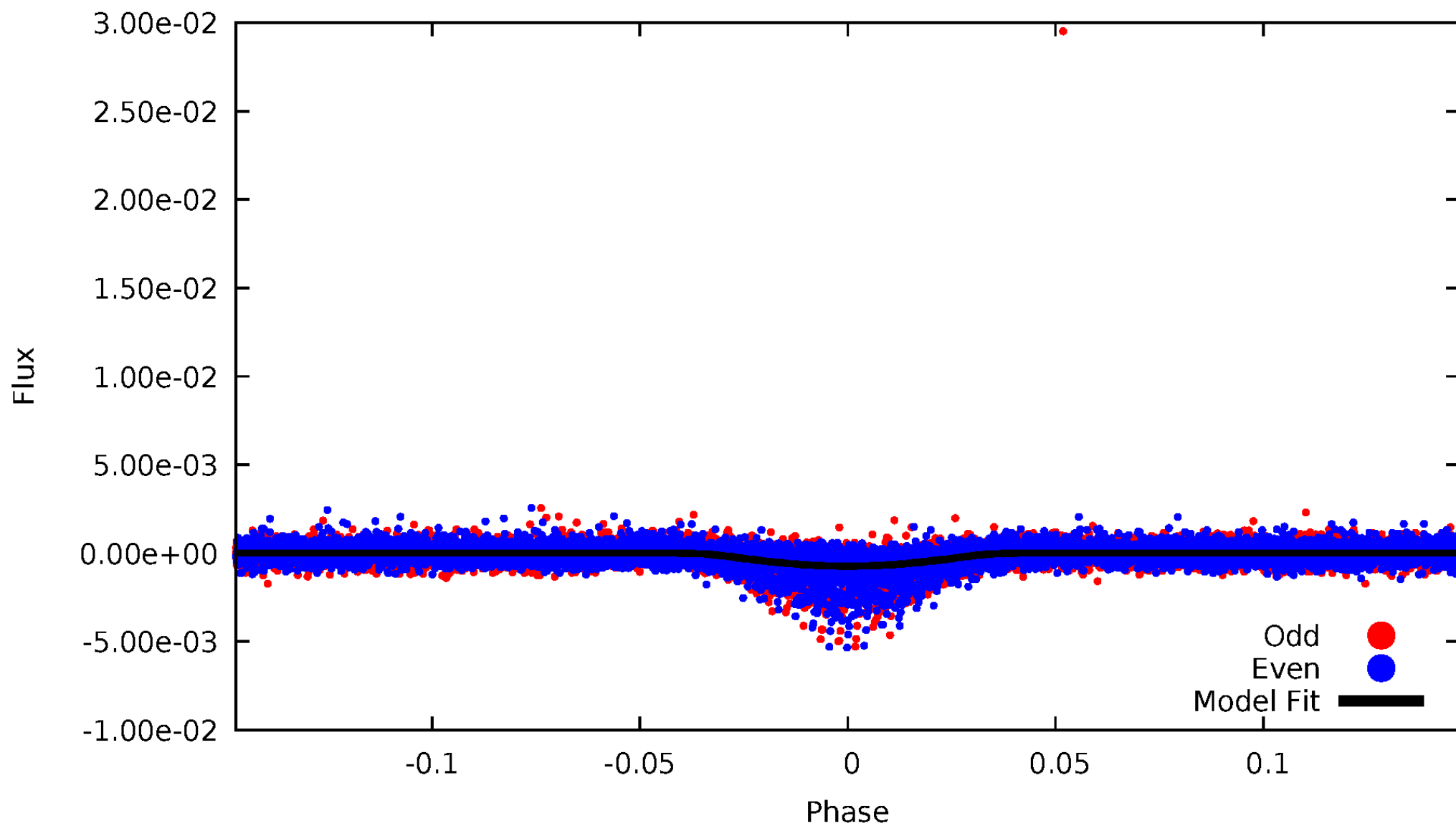


TCE 005649215-01



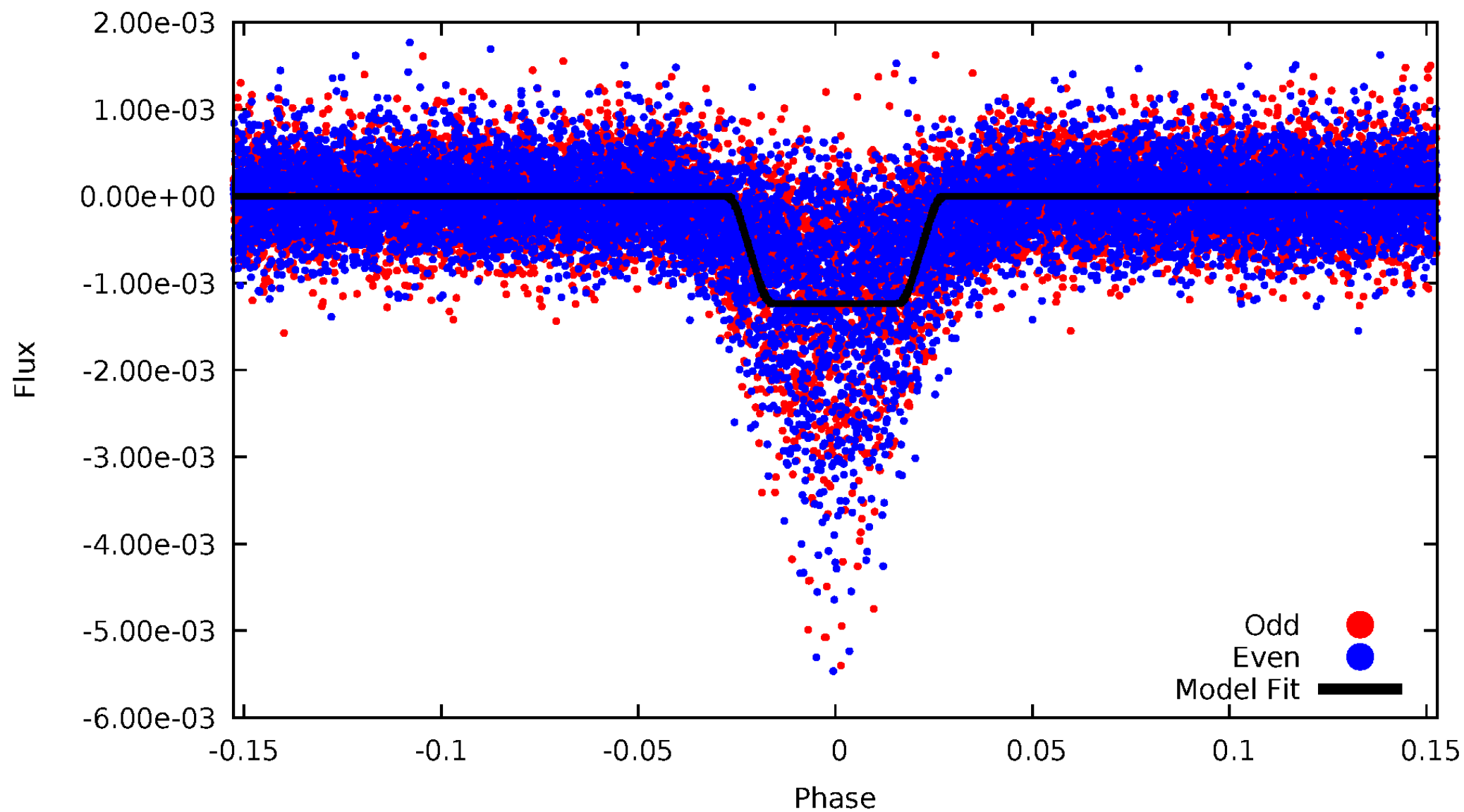
DV Odd/Even

TCE 005649215-01



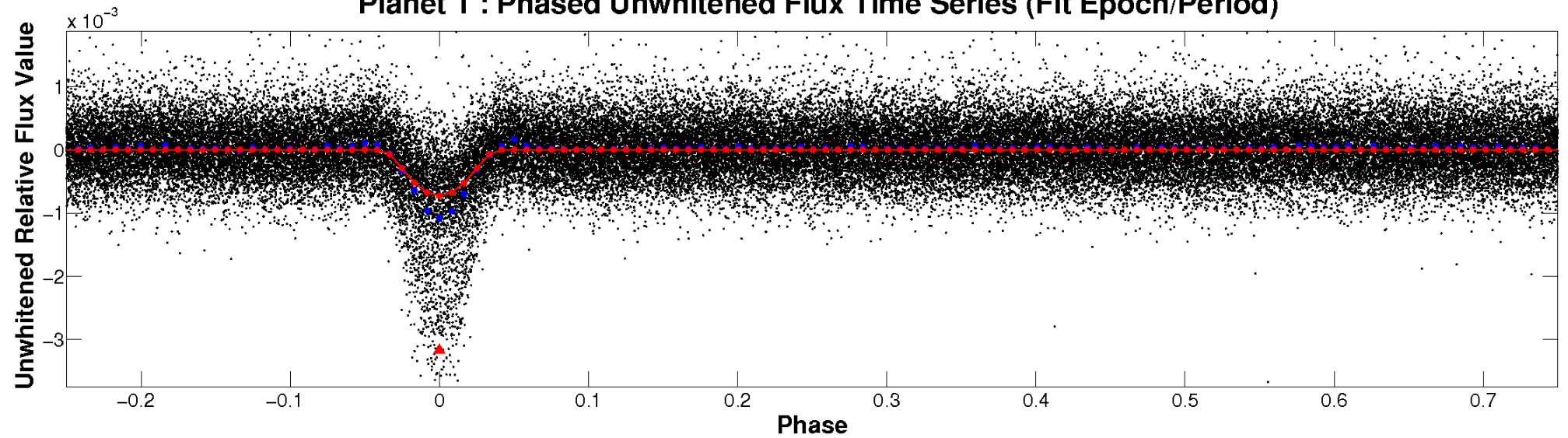
ALT Odd/Even

TCE 005649215-01

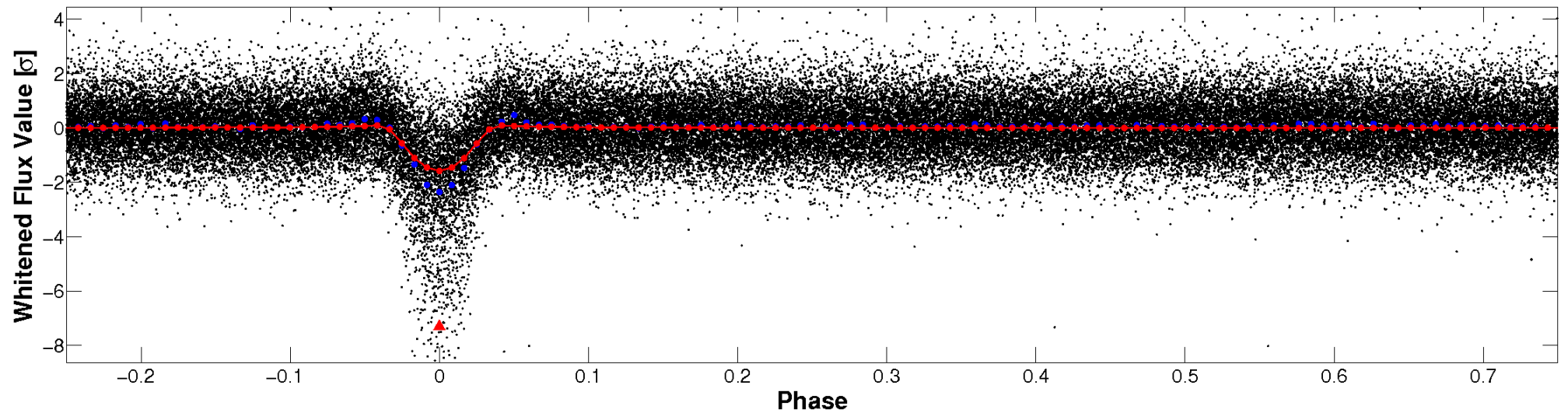


Non-Whitened Vs. Whitened Light Curve

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

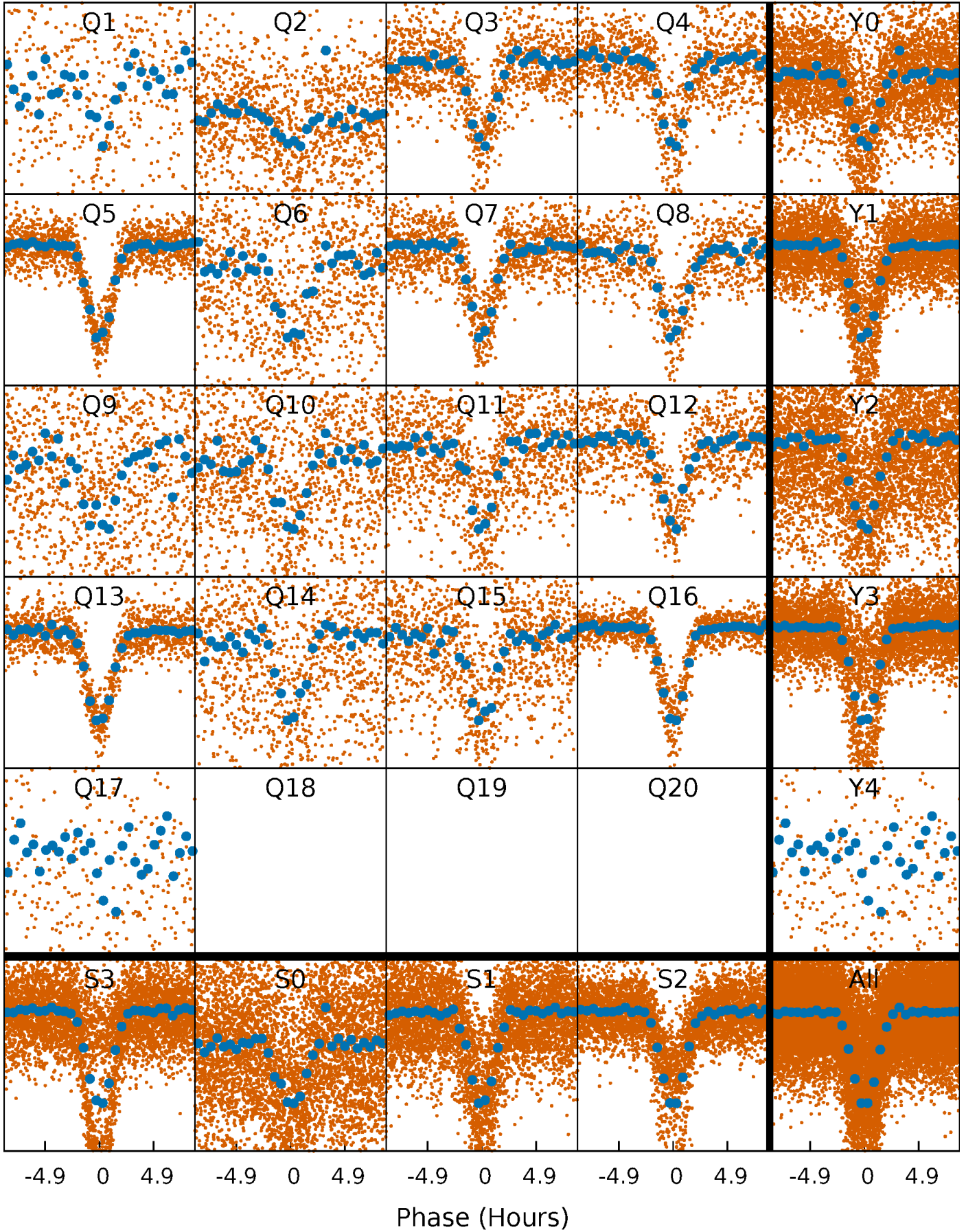


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



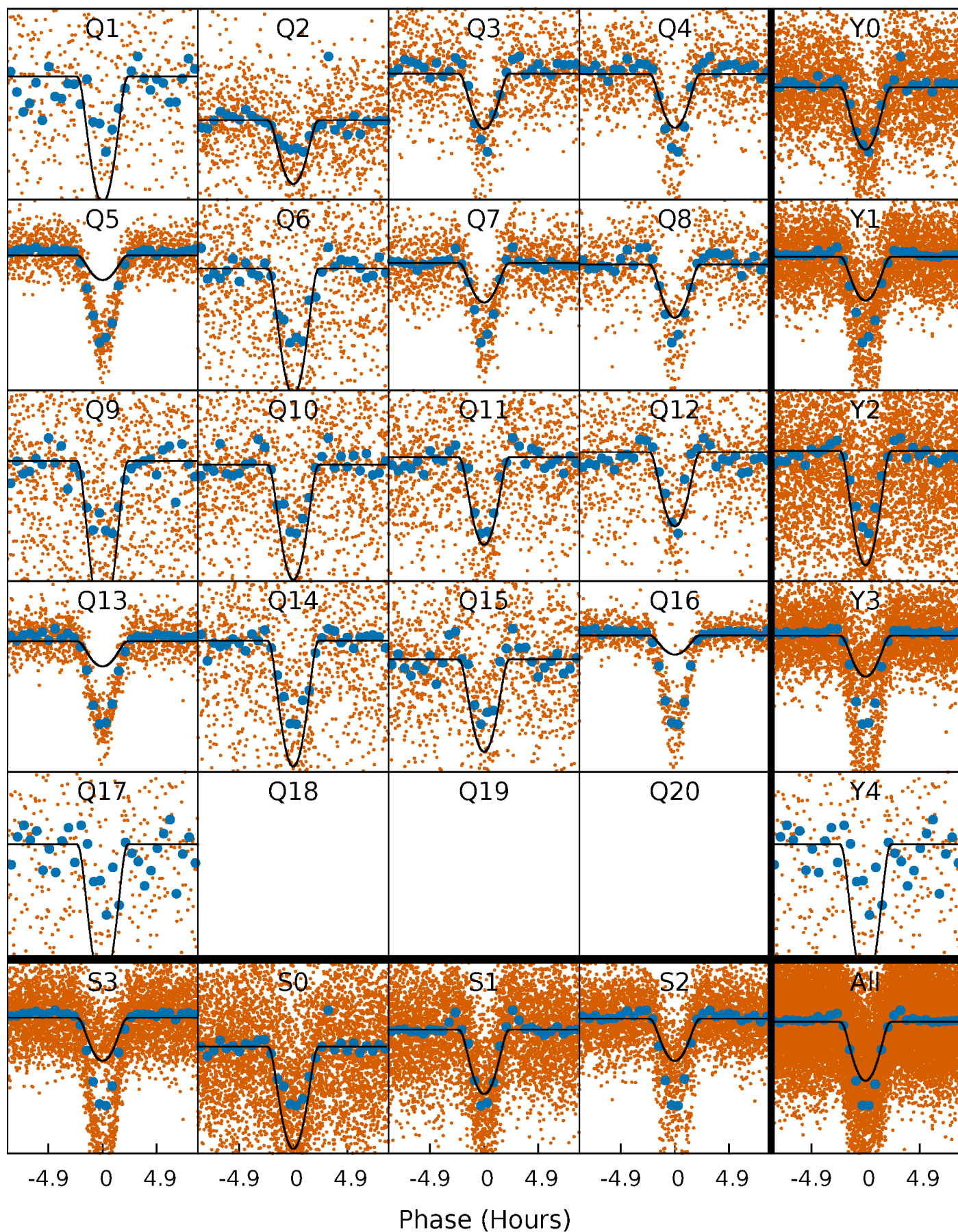
PDC Quarter-Phased Transit Curves

TCE 005649215-01 P= 2.446738 Days $T_0=131.520889$ (BKJD)



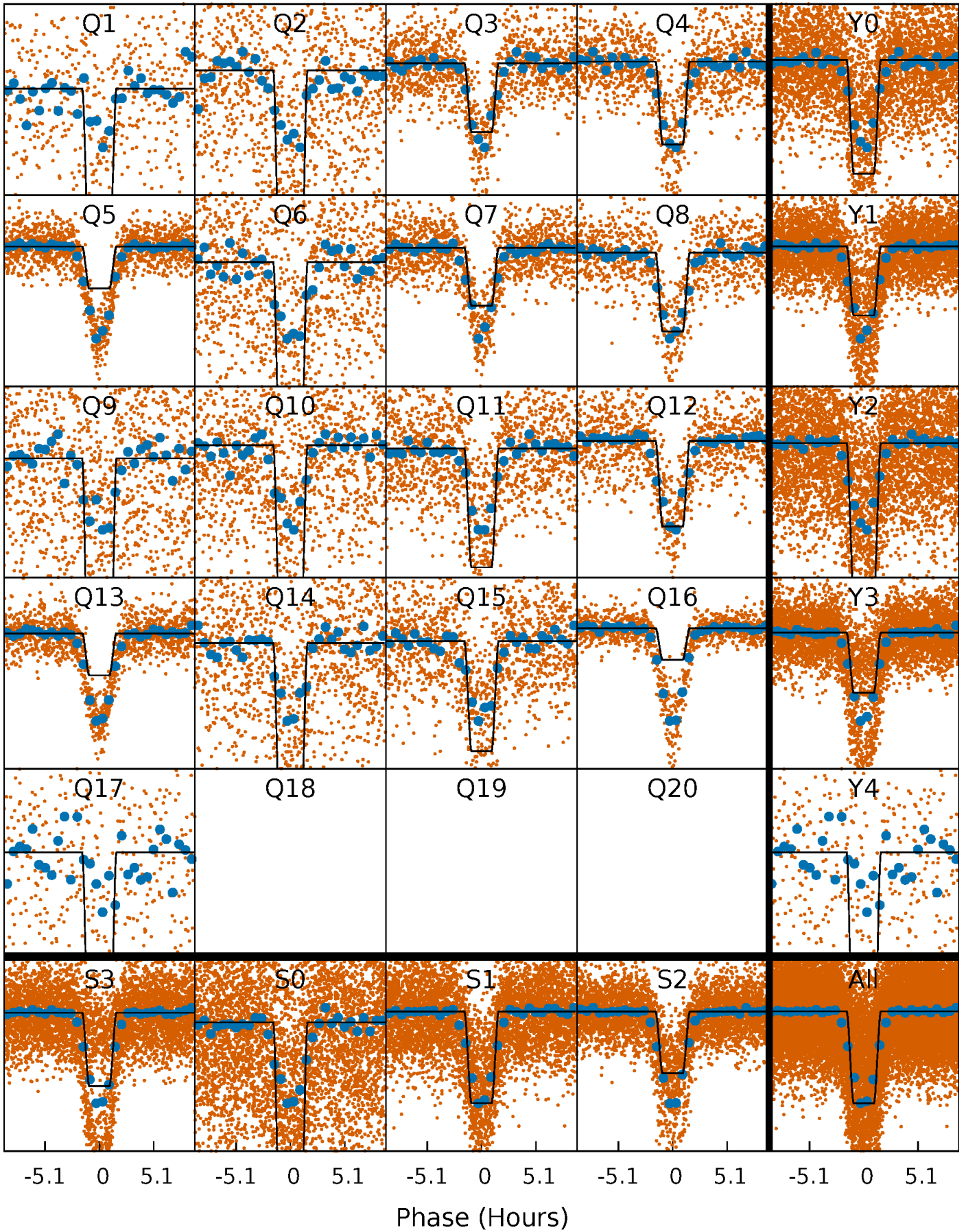
DV Quarter-Phased Transit Curves

TCE 005649215-01 P= 2.446738 Days $T_0=131.520889$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

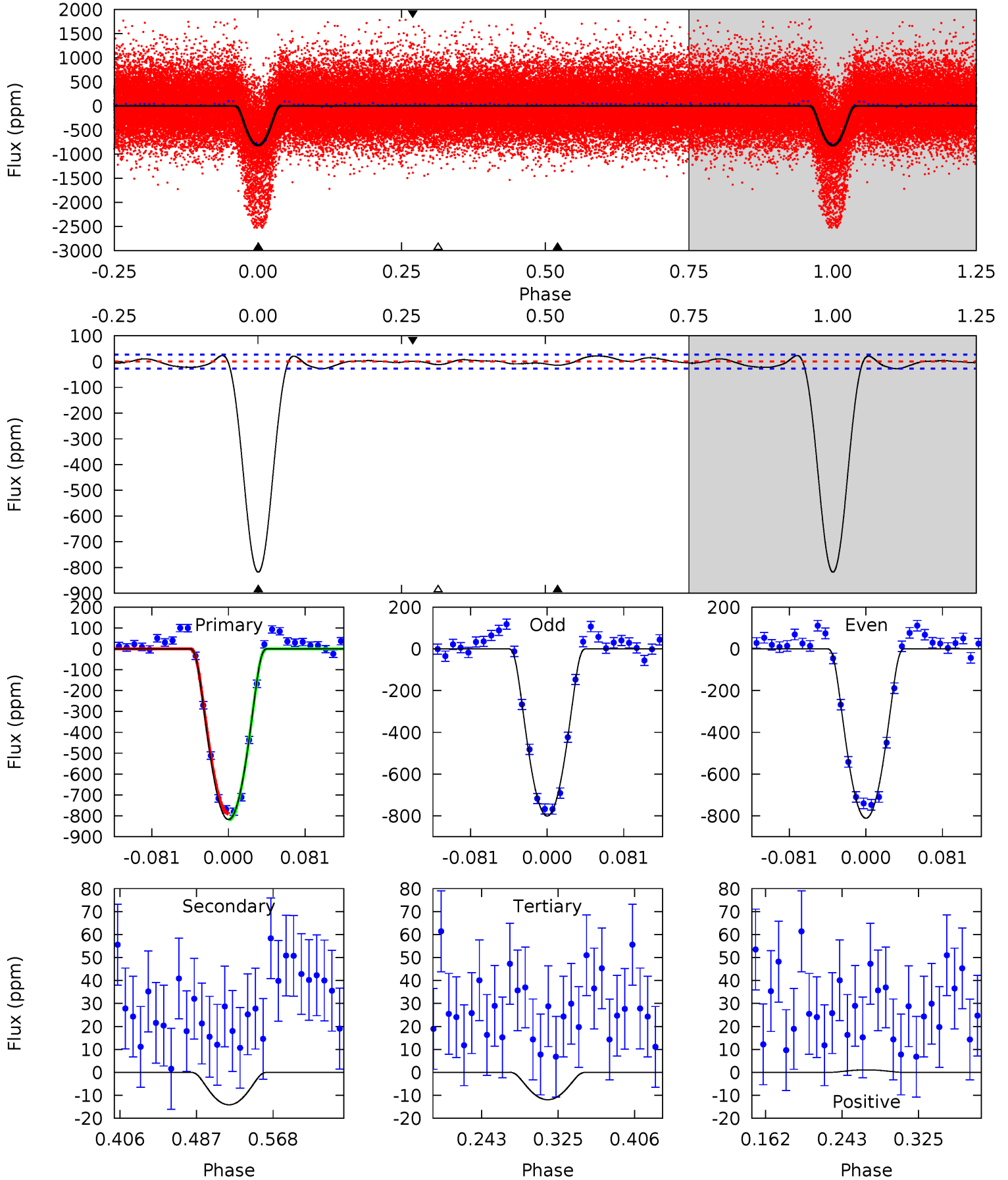
TCE 005649215-01 P= 2.446739 Days $T_0=131.521515$ (BKJD)



DV Model-Shift Uniqueness Test

005649215-01, P = 2.446738 Days, E = 129.074151 Days

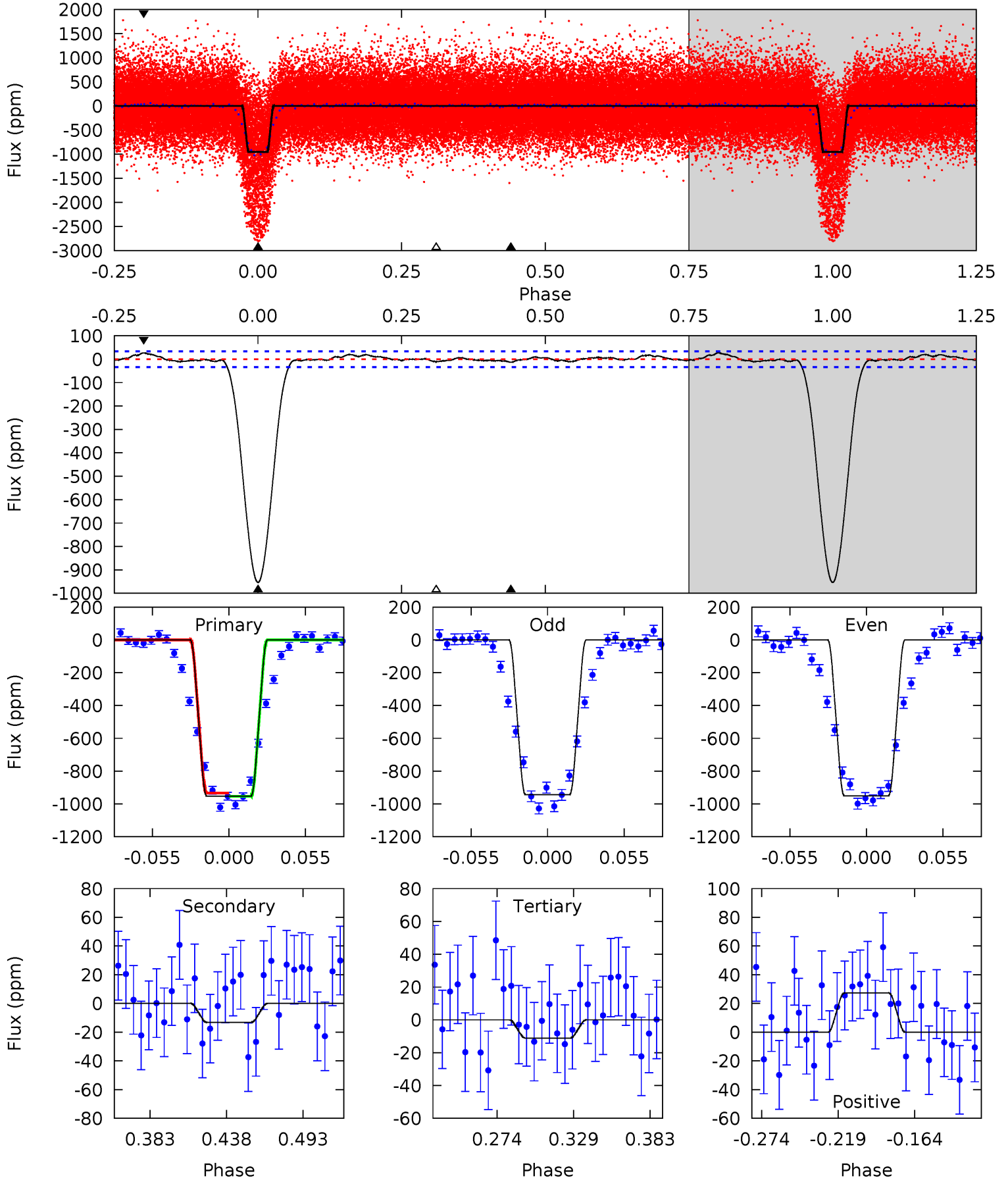
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
138.6	2.39	2.02	0.18	4.61	1.74	1.76	136.6	138.4	0.37	2.21	0.93	1.53	0.03	2.64



Alt Model-Shift Uniqueness Test

005649215-01, P = 2.446739 Days, E = 129.074776 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
133.7	1.84	1.57	3.83	4.69	1.92	1.22	132.2	129.9	0.27	-1.99	0.47	1.30	0.03	1.43



Stellar Parameters For KIC 005649215

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5764^{+154}_{-171}	$4.548^{+0.035}_{-0.184}$	$-0.120^{+0.300}_{-0.300}$	$0.863^{+0.227}_{-0.081}$	$0.959^{+0.103}_{-0.124}$	$2.100^{+0.388}_{-1.033}$
	+3%/-3%	+1%/-4%	+250%/-250%	+26%/-9%	+11%/-13%	+18%/-49%
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 005649215-01 / KOI 0839.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-14 ± 6	$3.96^{+1.09}_{-1.06}$	1801^{+115}_{-76}	2344^{+377}_{-4171}	$0.572^{+0.614}_{-0.296}$
Alt.	-13 ± 7	$3.49^{+1.02}_{-0.99}$	1804^{+116}_{-74}	2454^{+382}_{-4319}	$0.677^{+0.860}_{-0.408}$

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 $A_{obs} \gg 1.0$

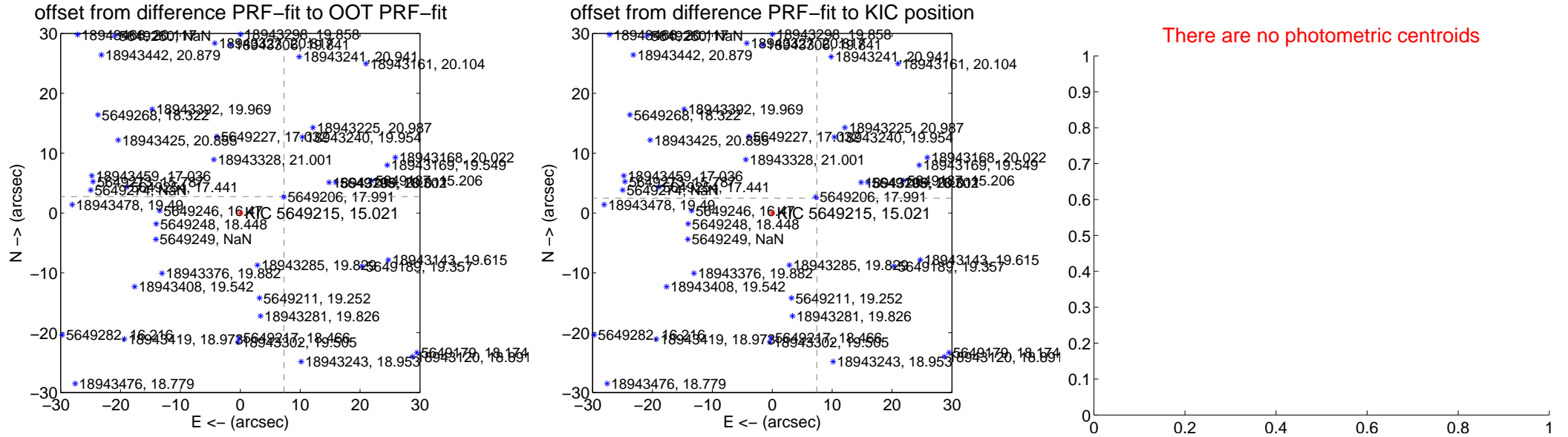
DV Centroid Data

Supplemental centroid analysis for 005649215-01. Kepler magnitude: 15.02. Transit SNR 65.98

There are 9 quarters with good PRF difference image offsets

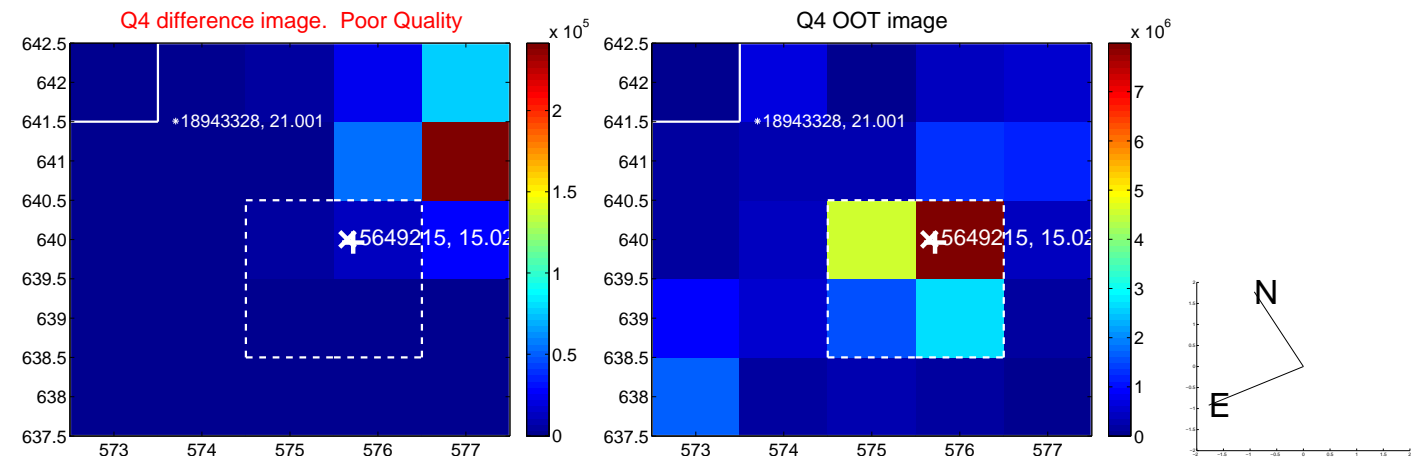
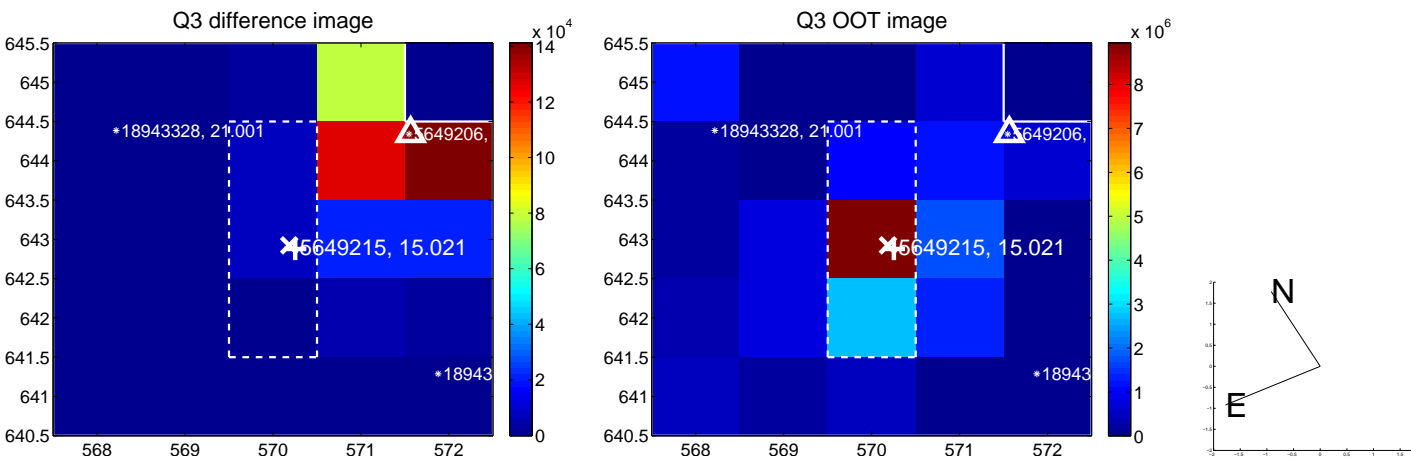
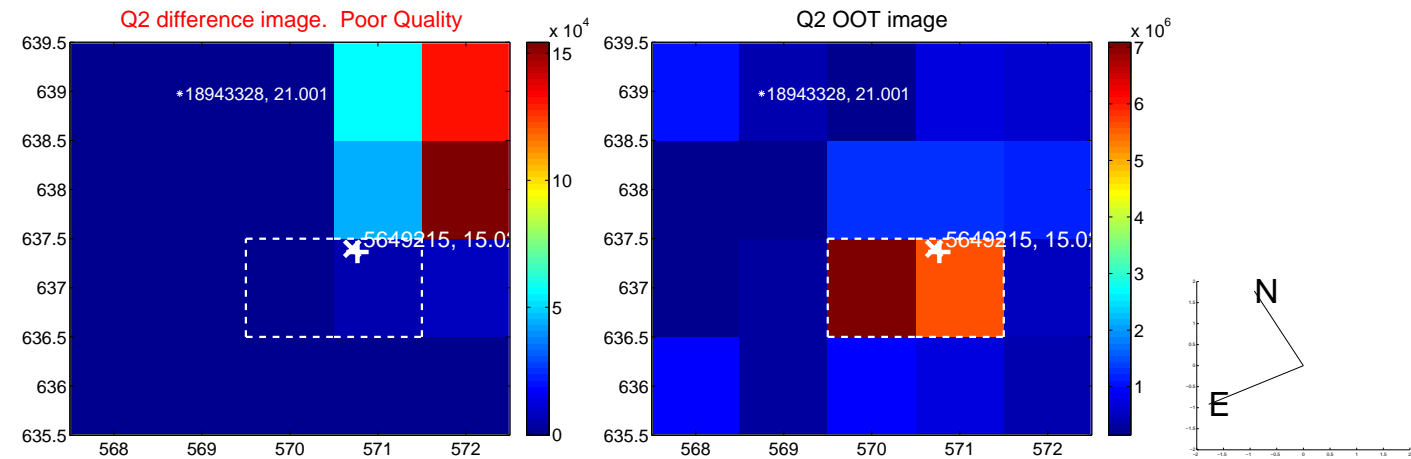
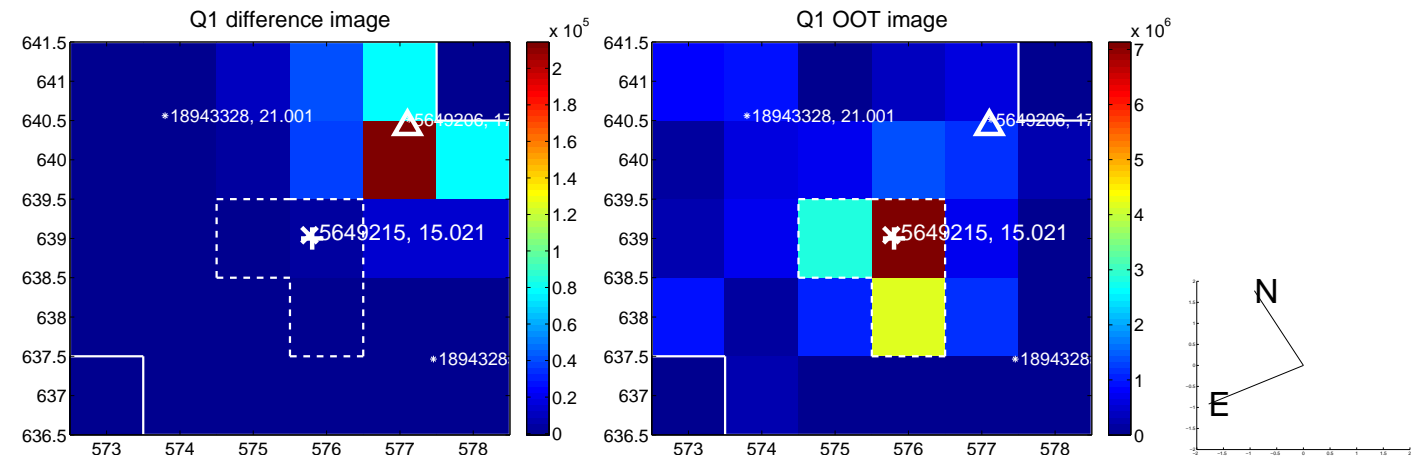
The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.787 \pm 0.070	110.59	-7.286 \pm 0.069	2.749 \pm 0.070
PRF-fit source offset from KIC position	7.841 \pm 0.074	106.49	-7.438 \pm 0.073	2.480 \pm 0.067
photometric centroid source offset	—	—	—	—

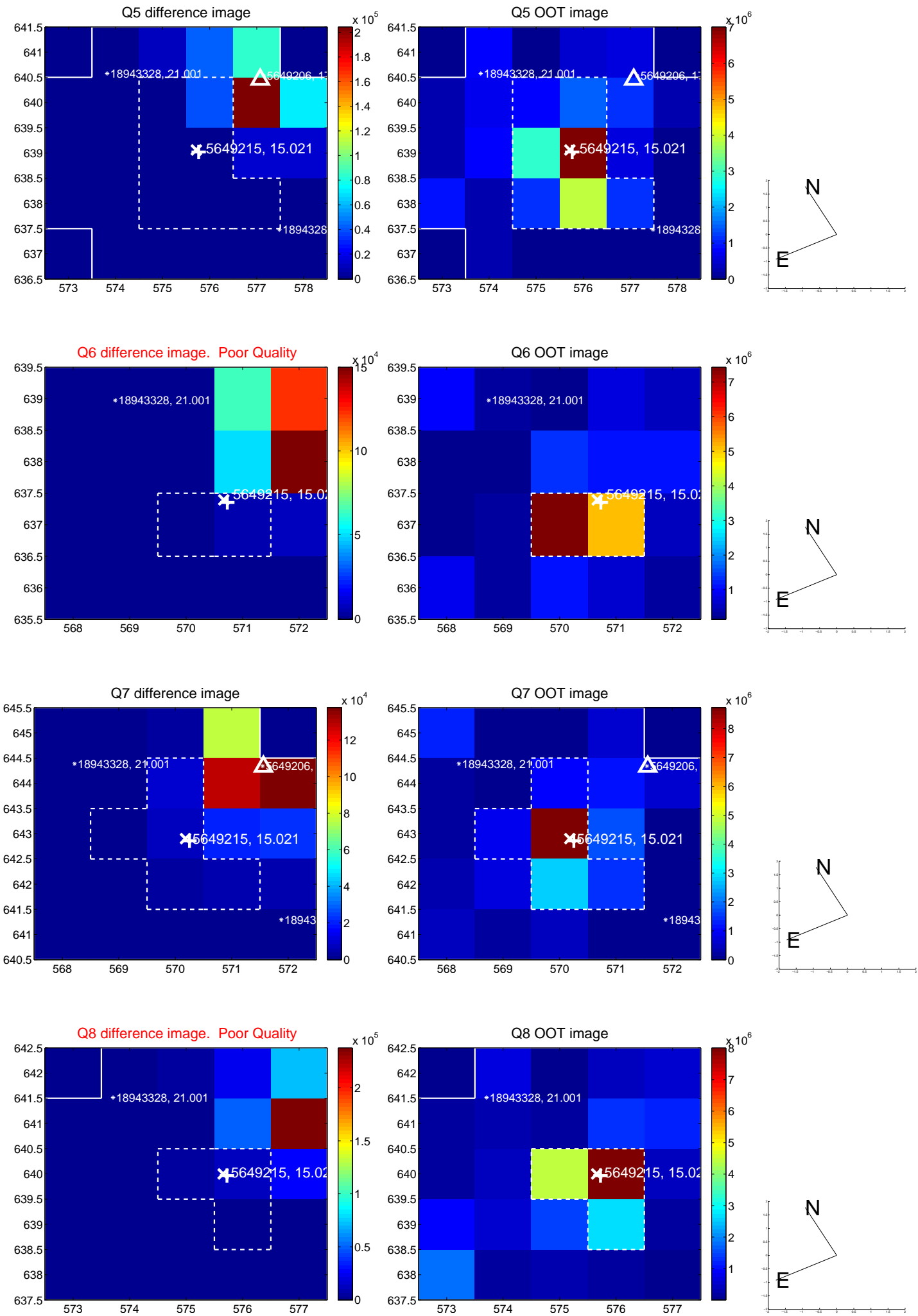


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

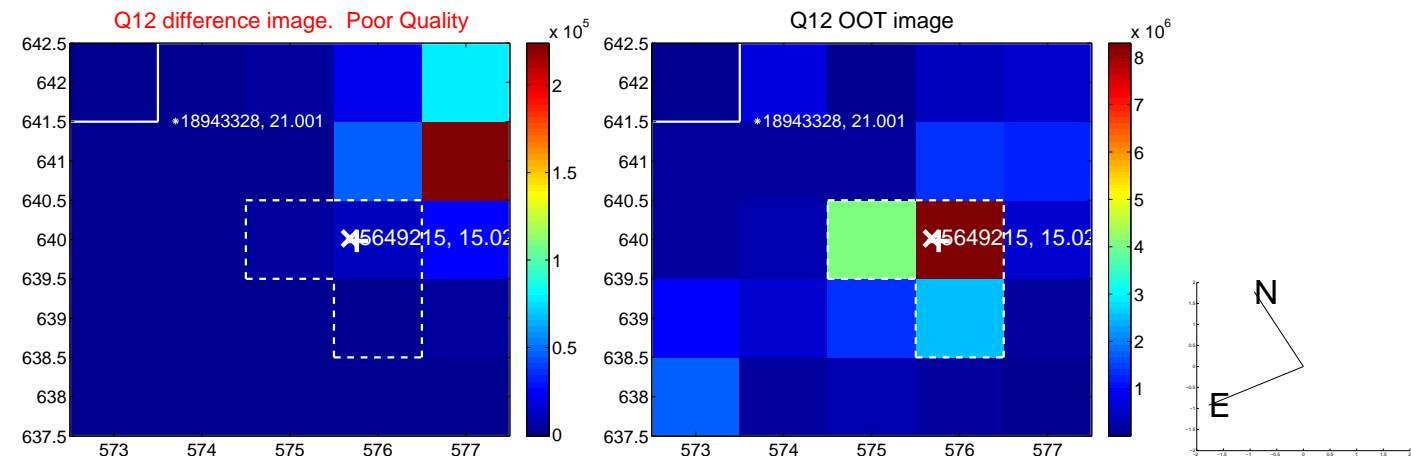
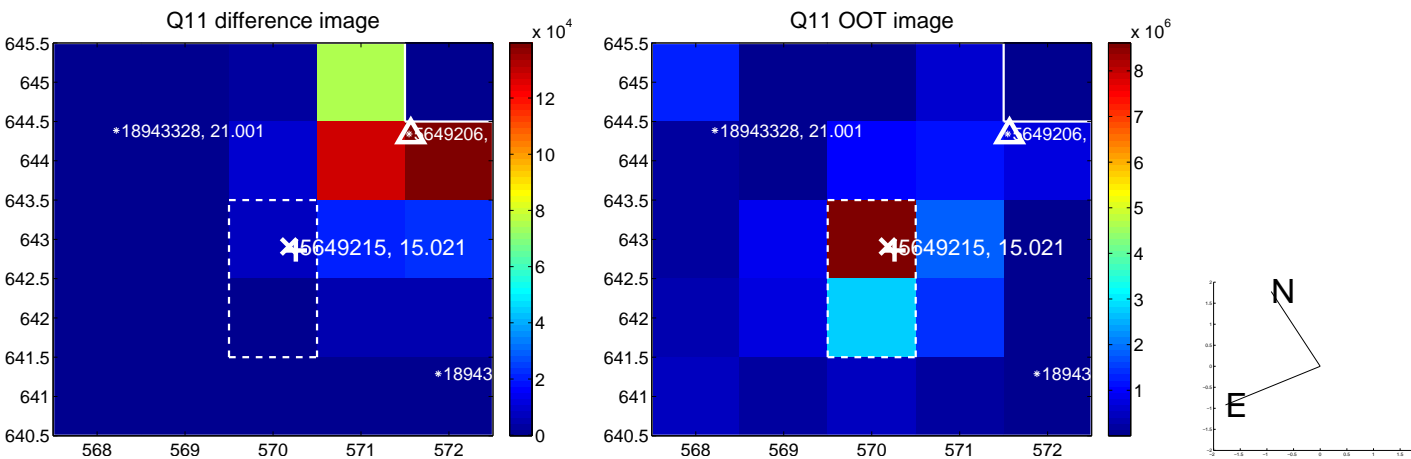
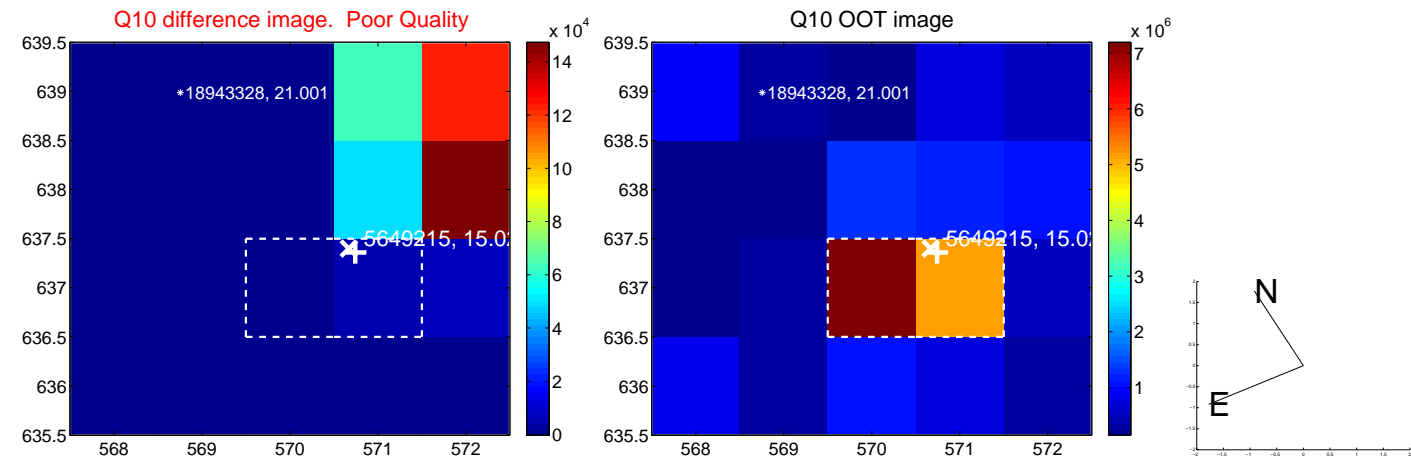
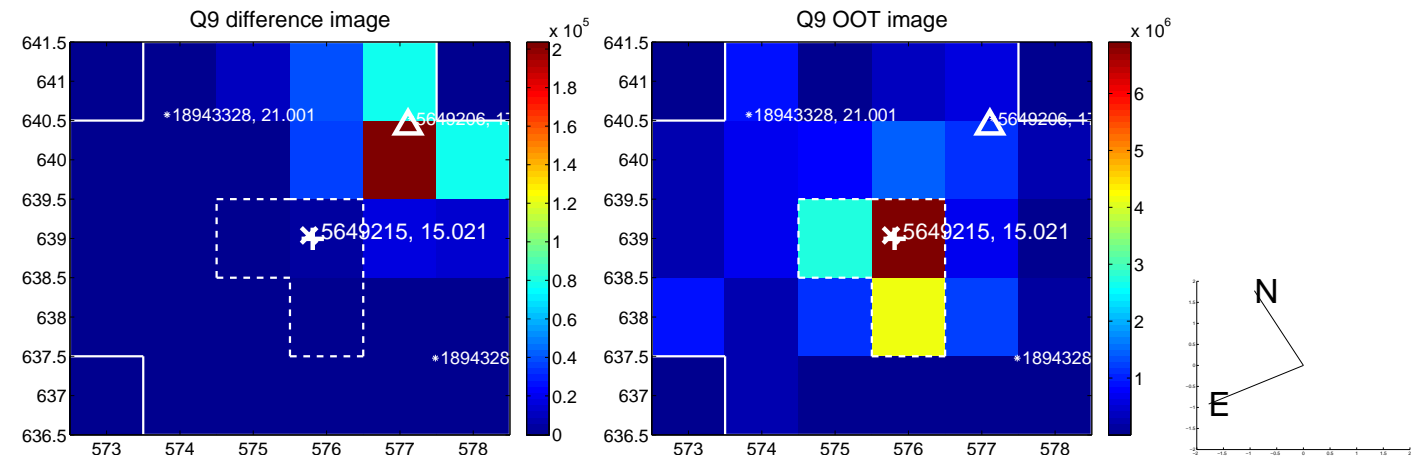
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



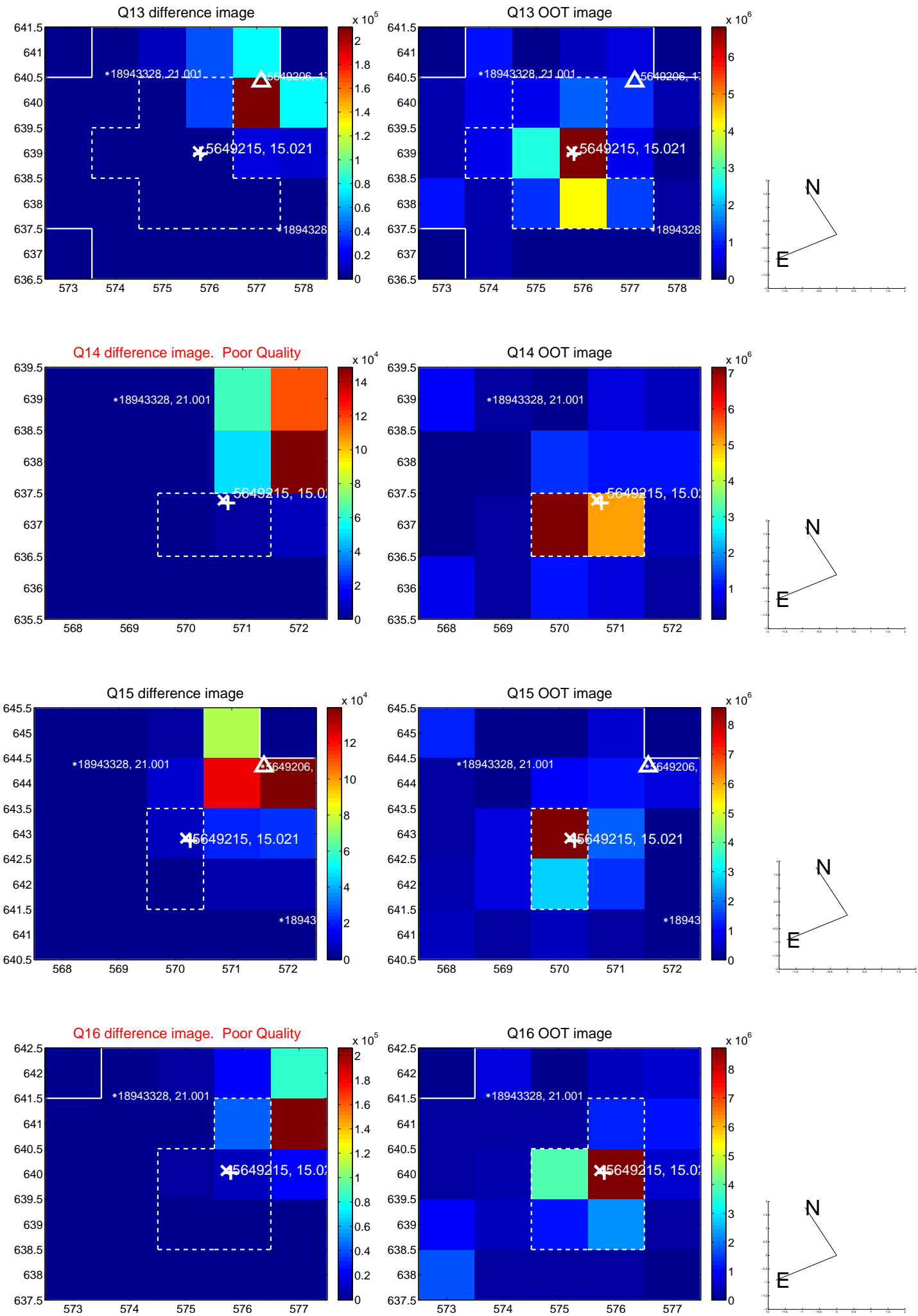
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



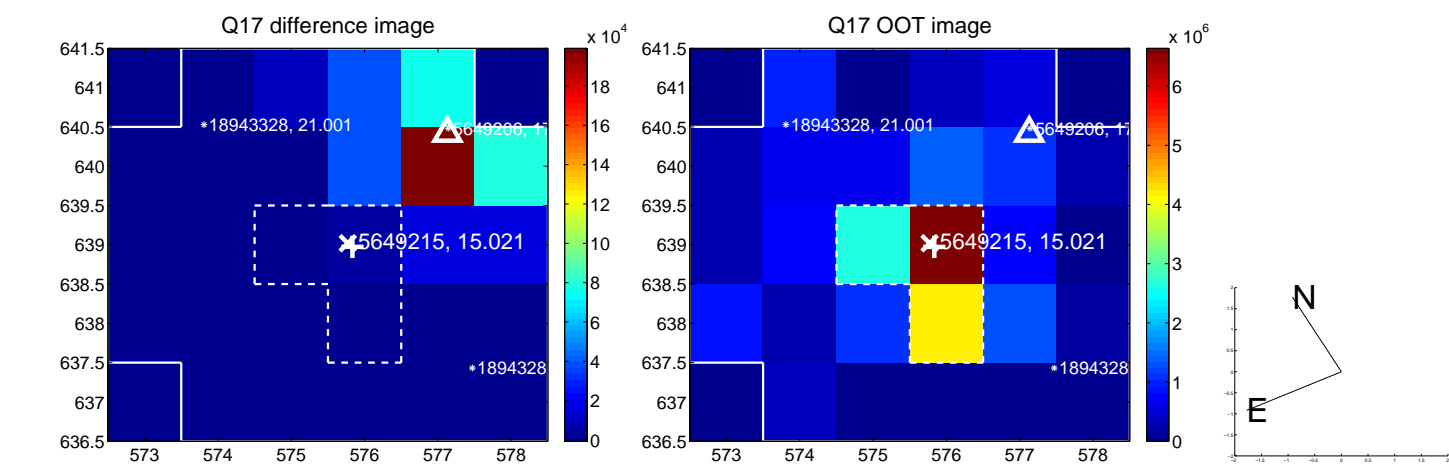
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



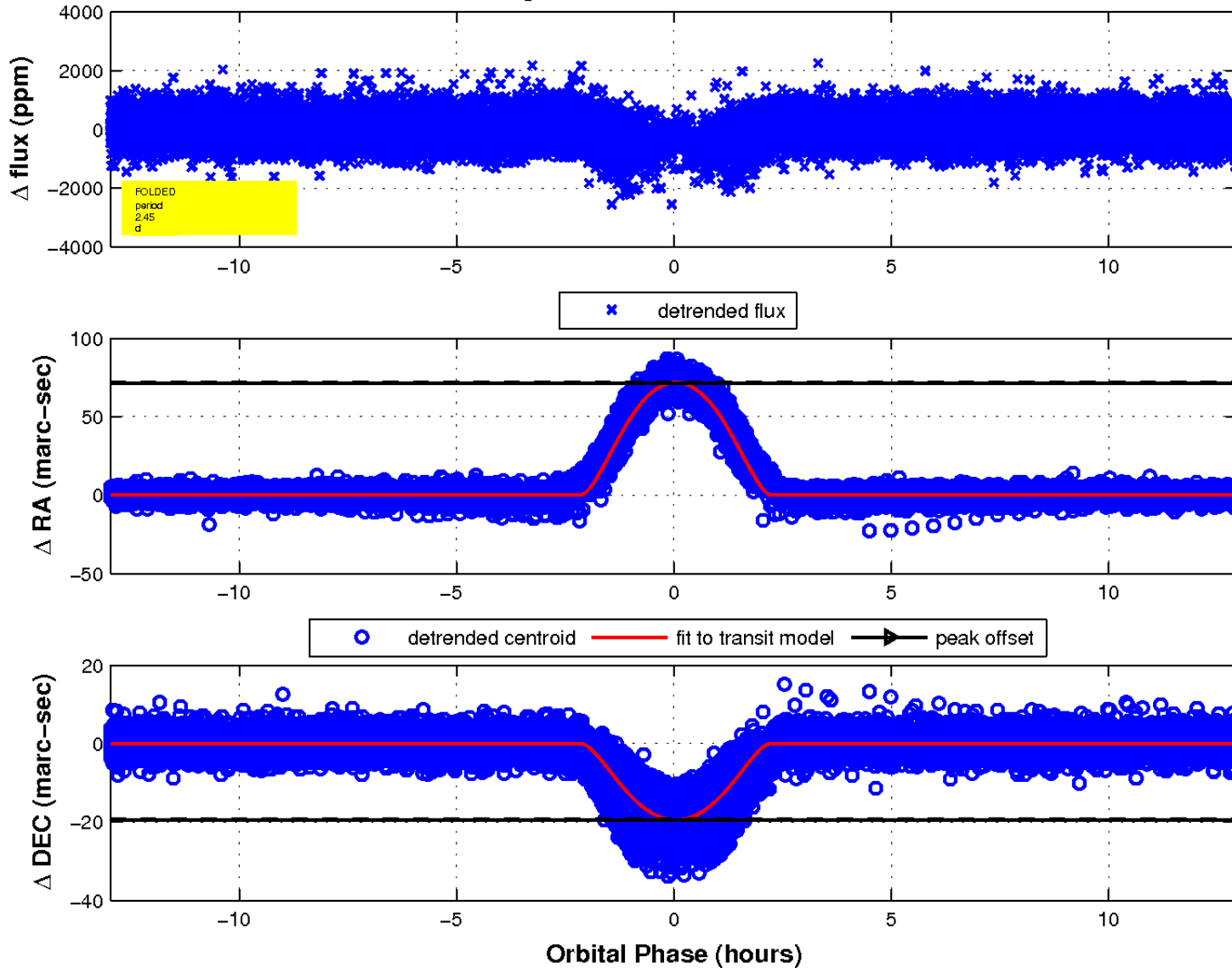
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

