

KIC 006421008

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})
006421008-01	OBS	No	258.720715	267.049807	397.1	3.470	9.2	7.3	0.75	5544	1.62	0.96

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006421008-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

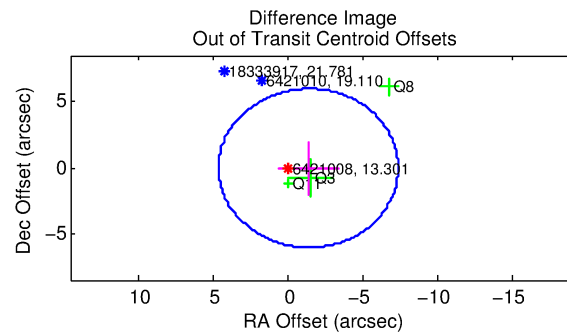
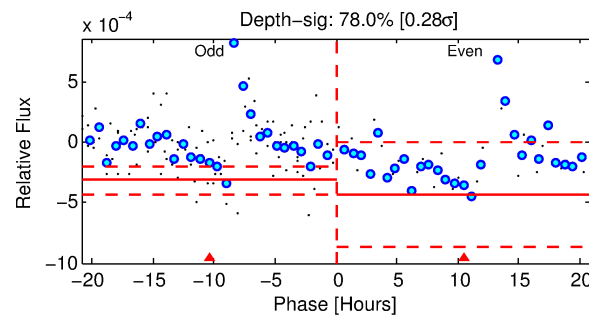
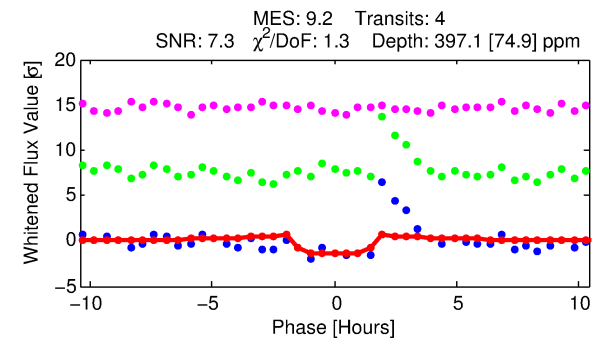
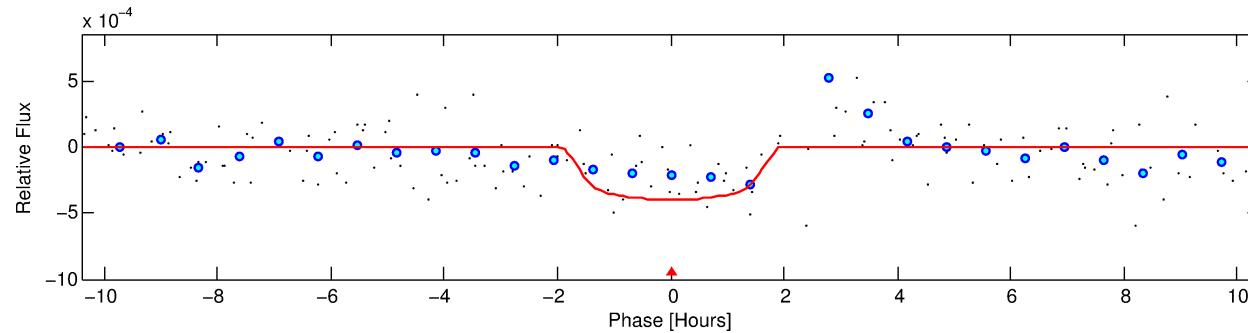
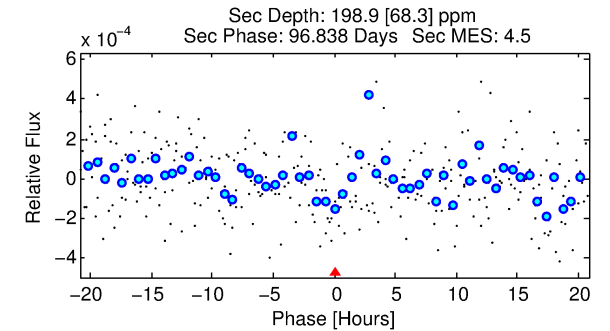
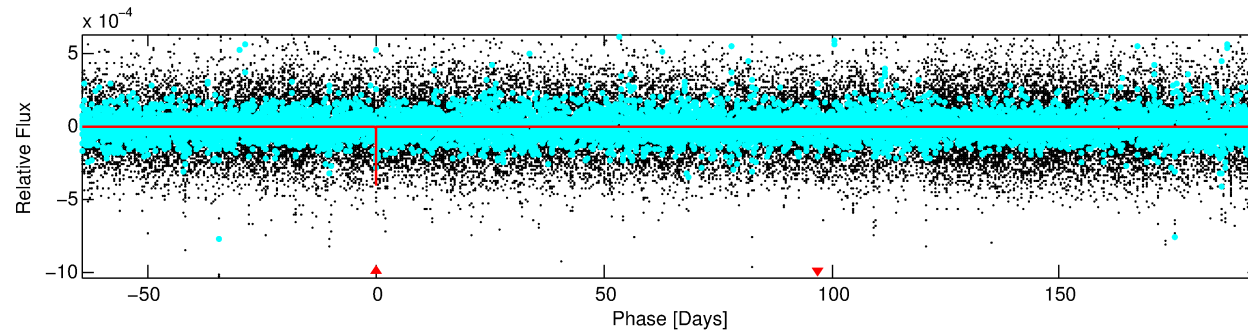
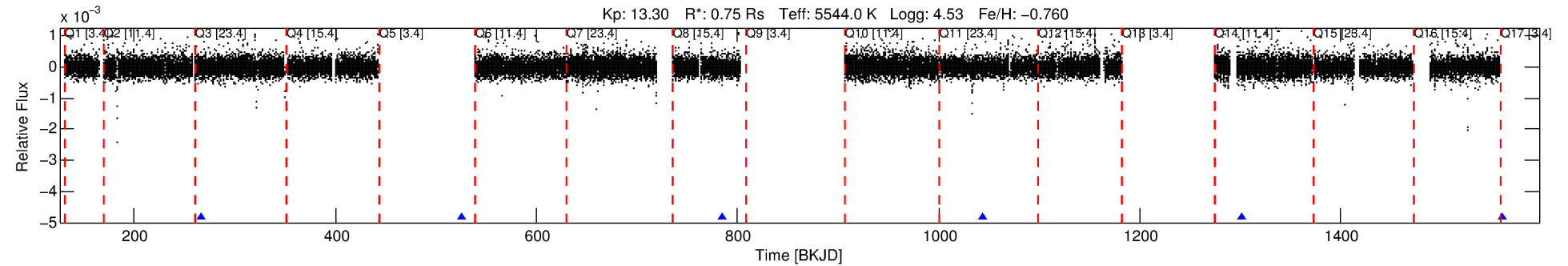
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006421008-01

No Significant Match Found

DV One-Page Summary

KIC: 6421008 Candidate: 1 of 1 Period: 258.721 d



DV Fit Results:

Period = 258.72071 [0.00388] d
Epoch = 267.0498 [0.0102] BKJD
Rp/R* = 0.0198 [0.0242]
a/R* = 393.86 [2261.62]
b = 0.75 [3.40]
Seff = 0.96 [0.22]
Teq = 253 [14] K
Rp = 1.62 [1.99] Re
a = 0.7035 [0.0890] AU
Ag = 20574.03 [50876.33] [0.40σ]
Teffp = 4676 [2885] K [1.53σ]

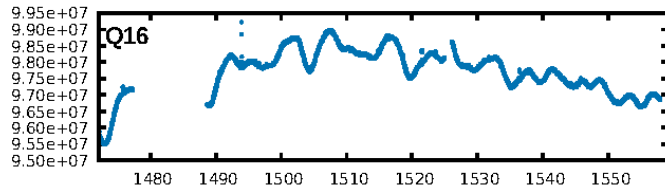
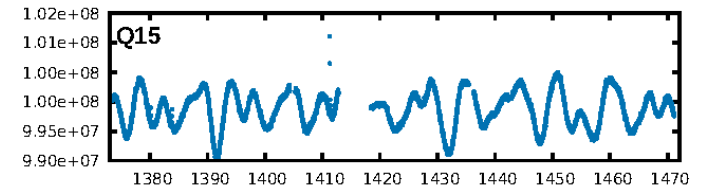
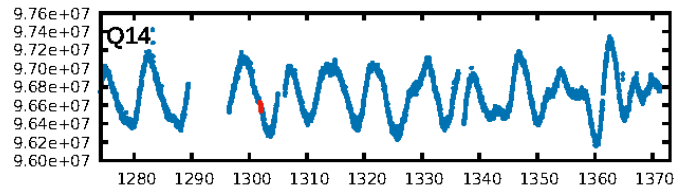
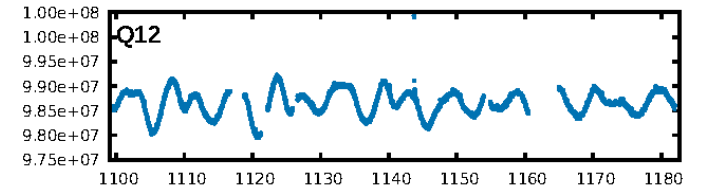
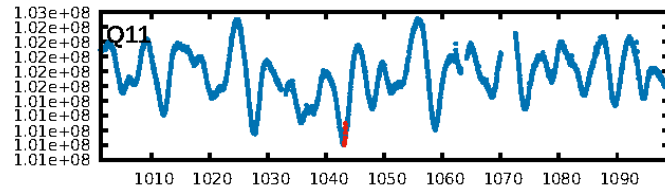
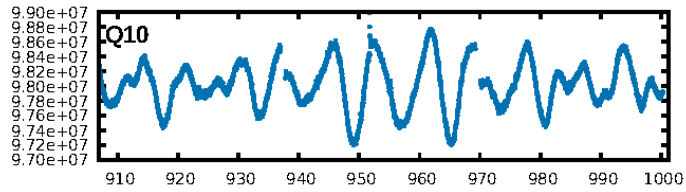
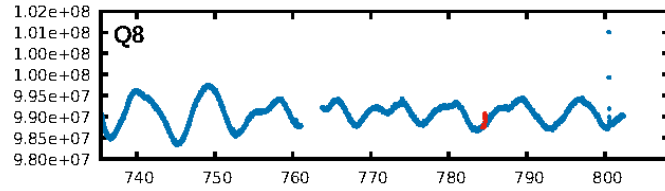
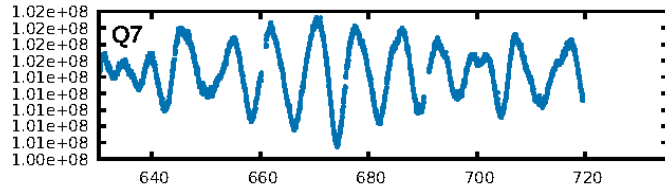
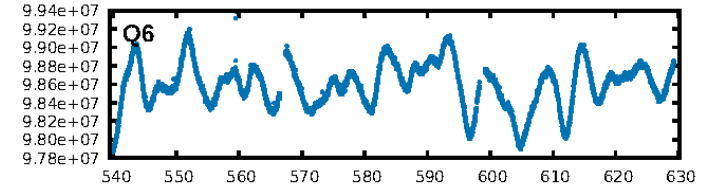
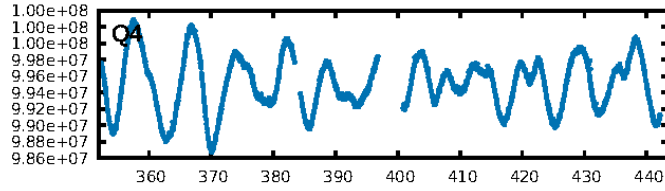
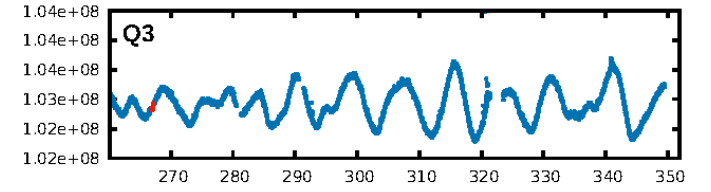
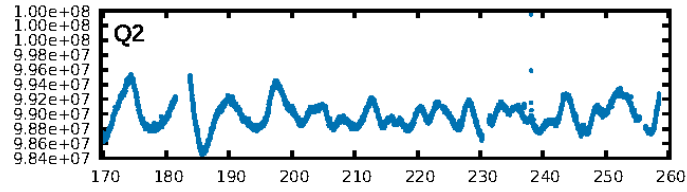
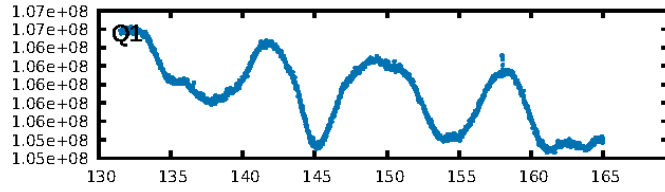
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 13.1%
ModelChiSquareGof-sig: 84.8%
Bootstrap-pfa: 1.71e-10
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.0257
Centroid-sig: 8.8%
Centroid-so: 1.834 arcsec [1.44σ]
OotOffset-rm: 1.415 arcsec [0.71σ]
OotOffset-st: 0.2/1/0 [3]
KicOffset-rm: 1.435 arcsec [0.73σ]
KicOffset-st: 0.2/1/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [4/4]

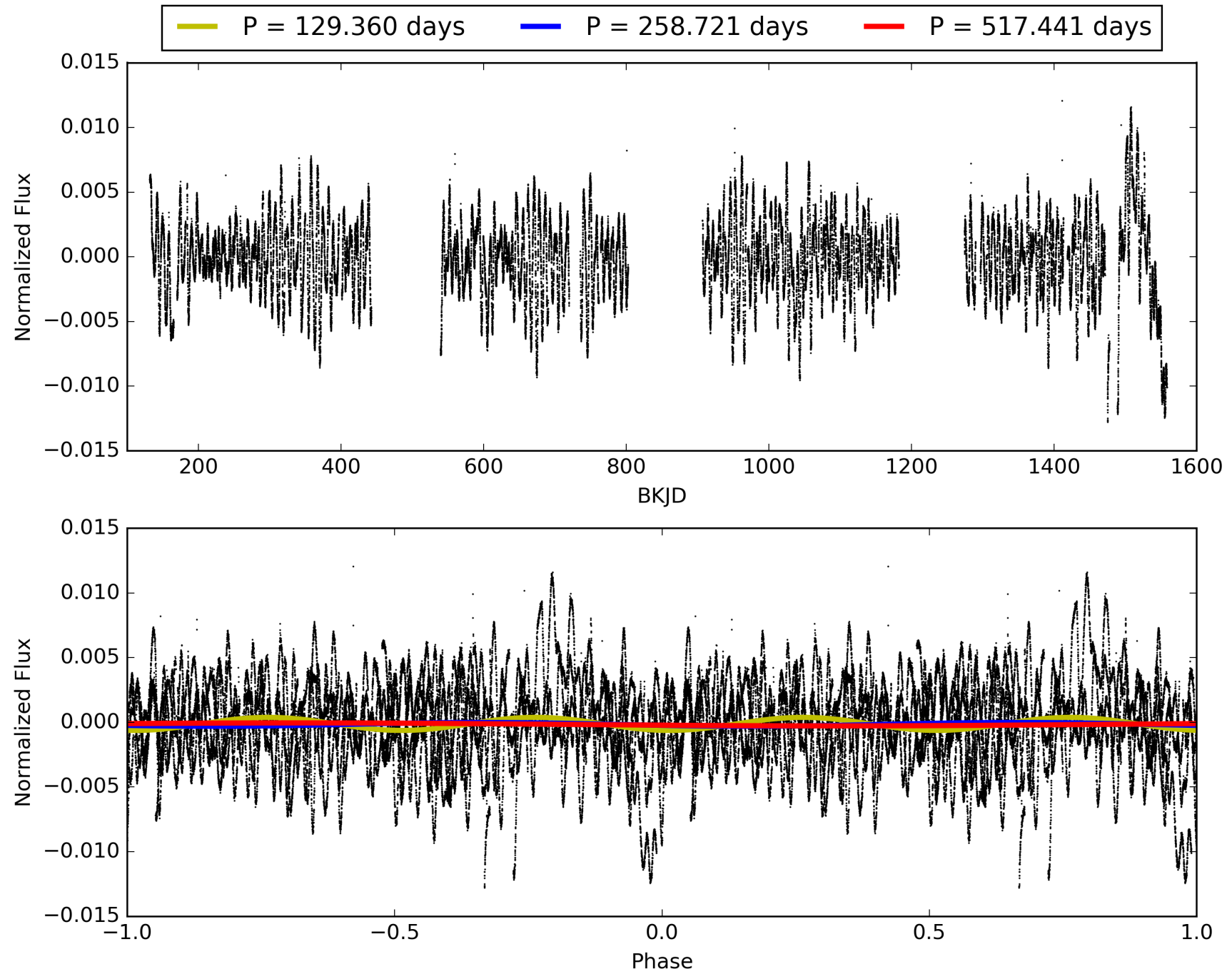
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 00:36:50 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 006421008-01, PDC Light Curves

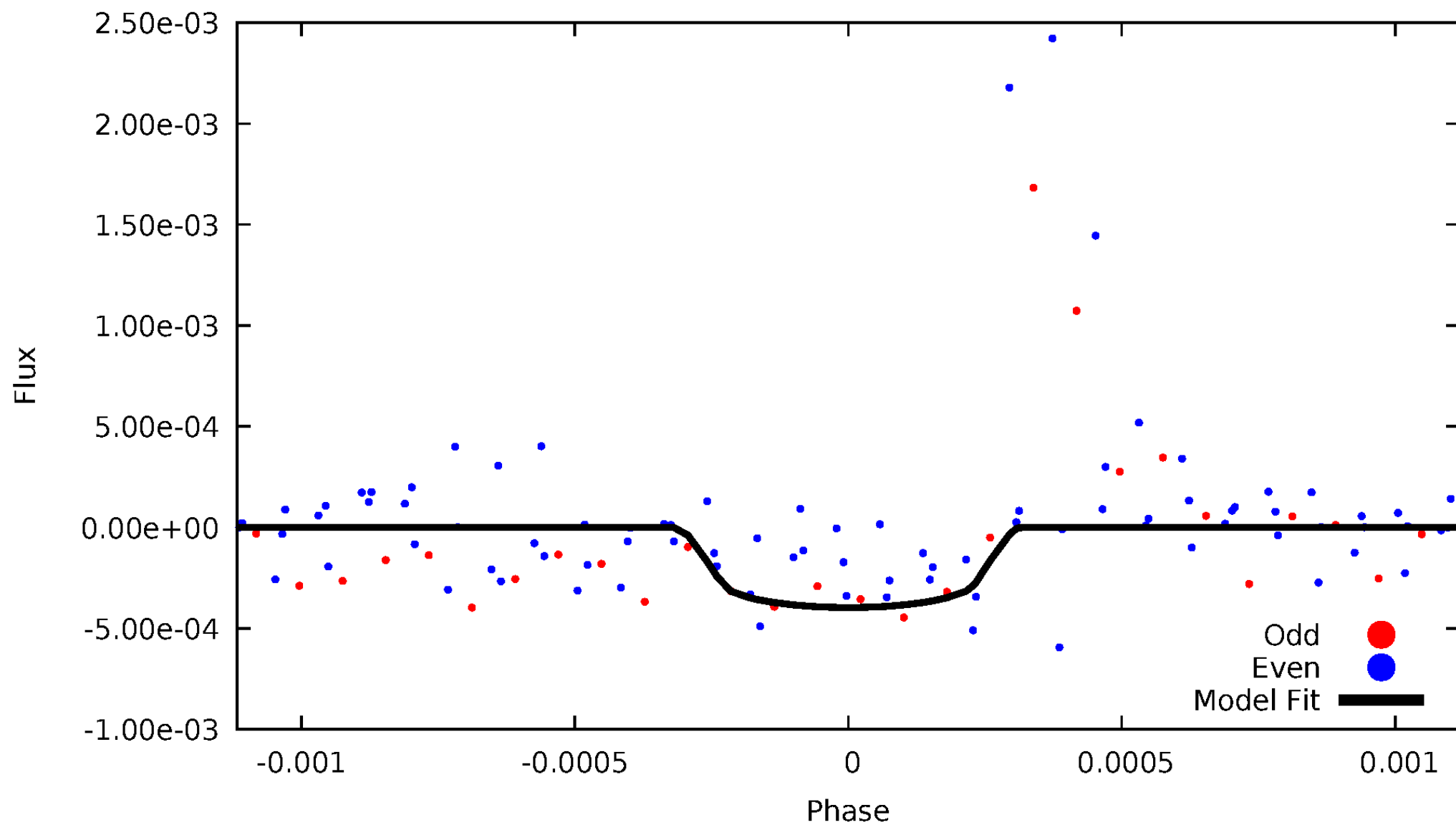


TCE 006421008-01



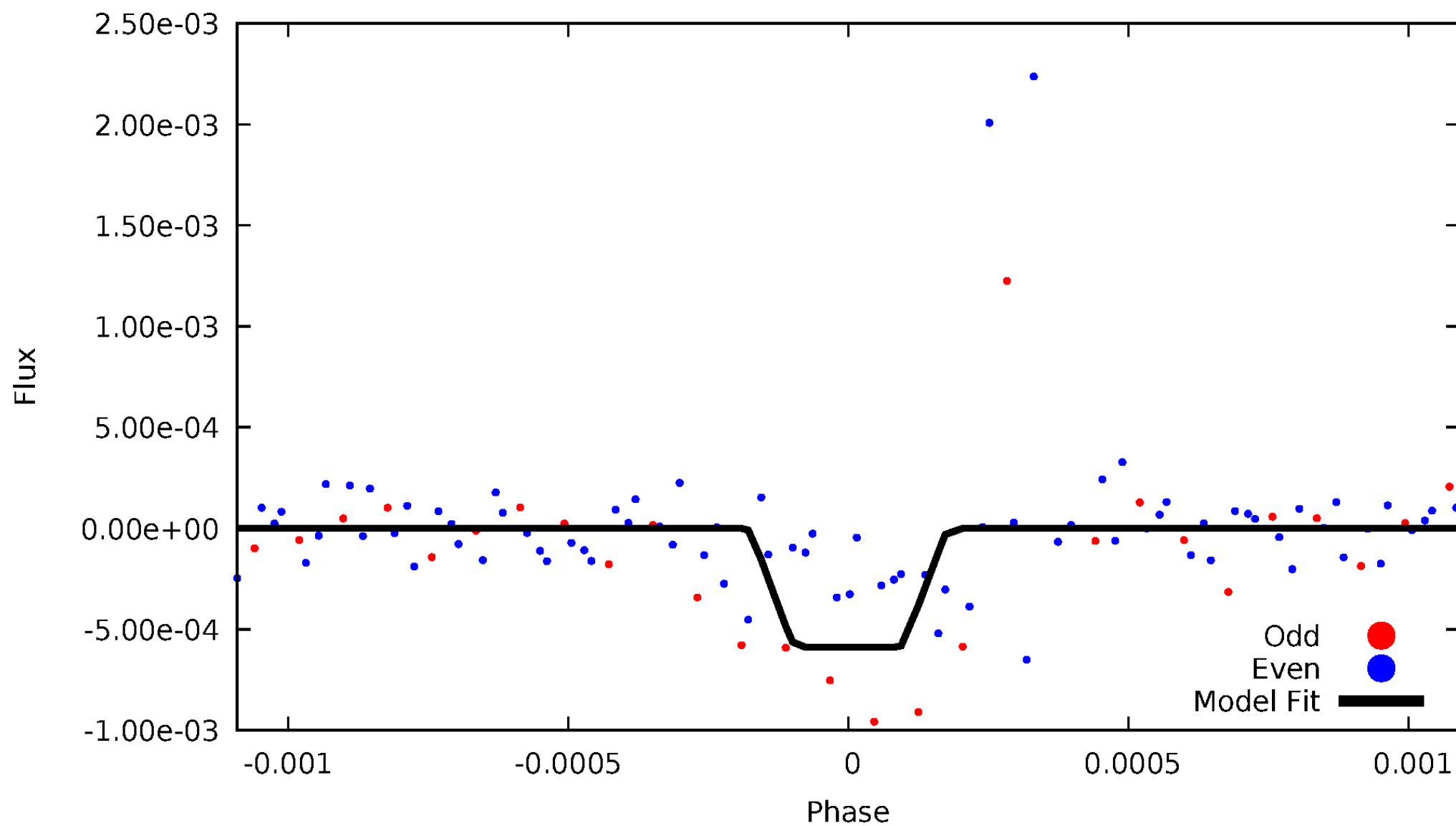
DV Odd/Even

TCE 006421008-01



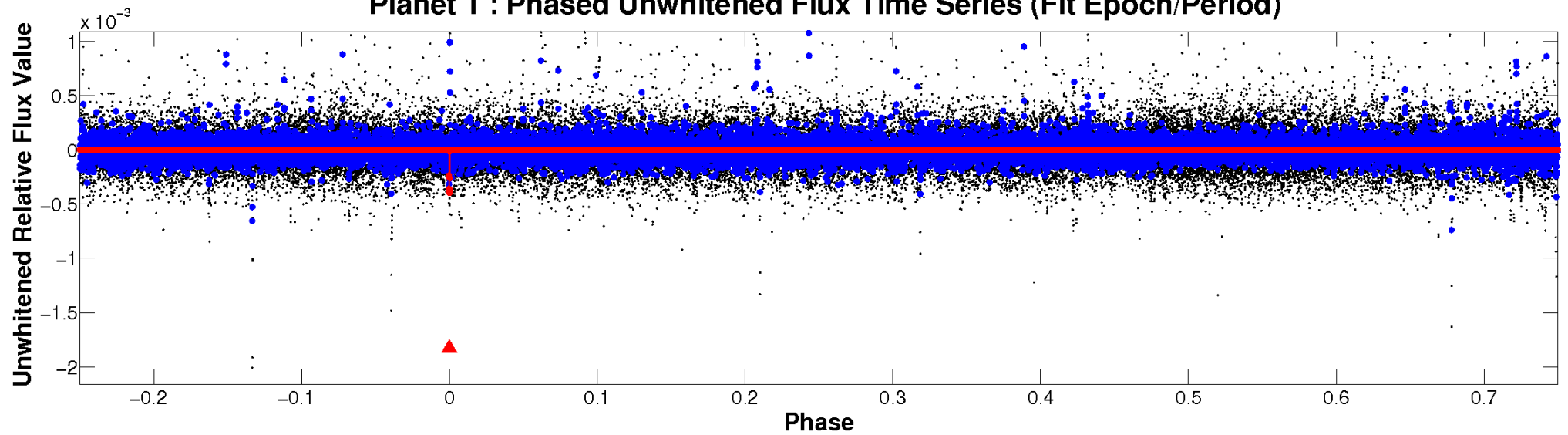
ALT Odd/Even

TCE 006421008-01

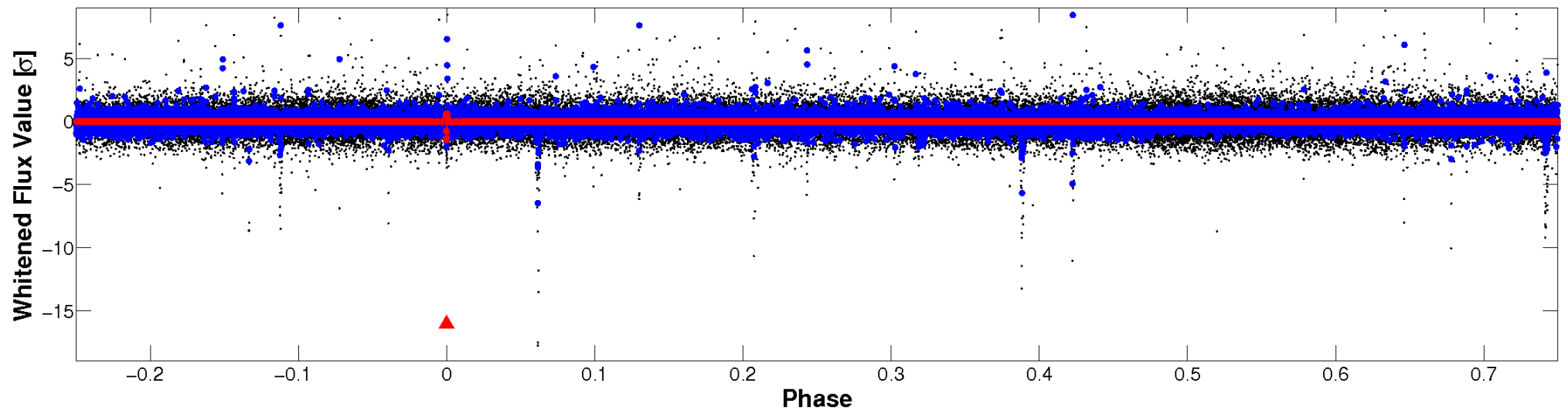


Non-Whitened Vs. Whitened Light Curve

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

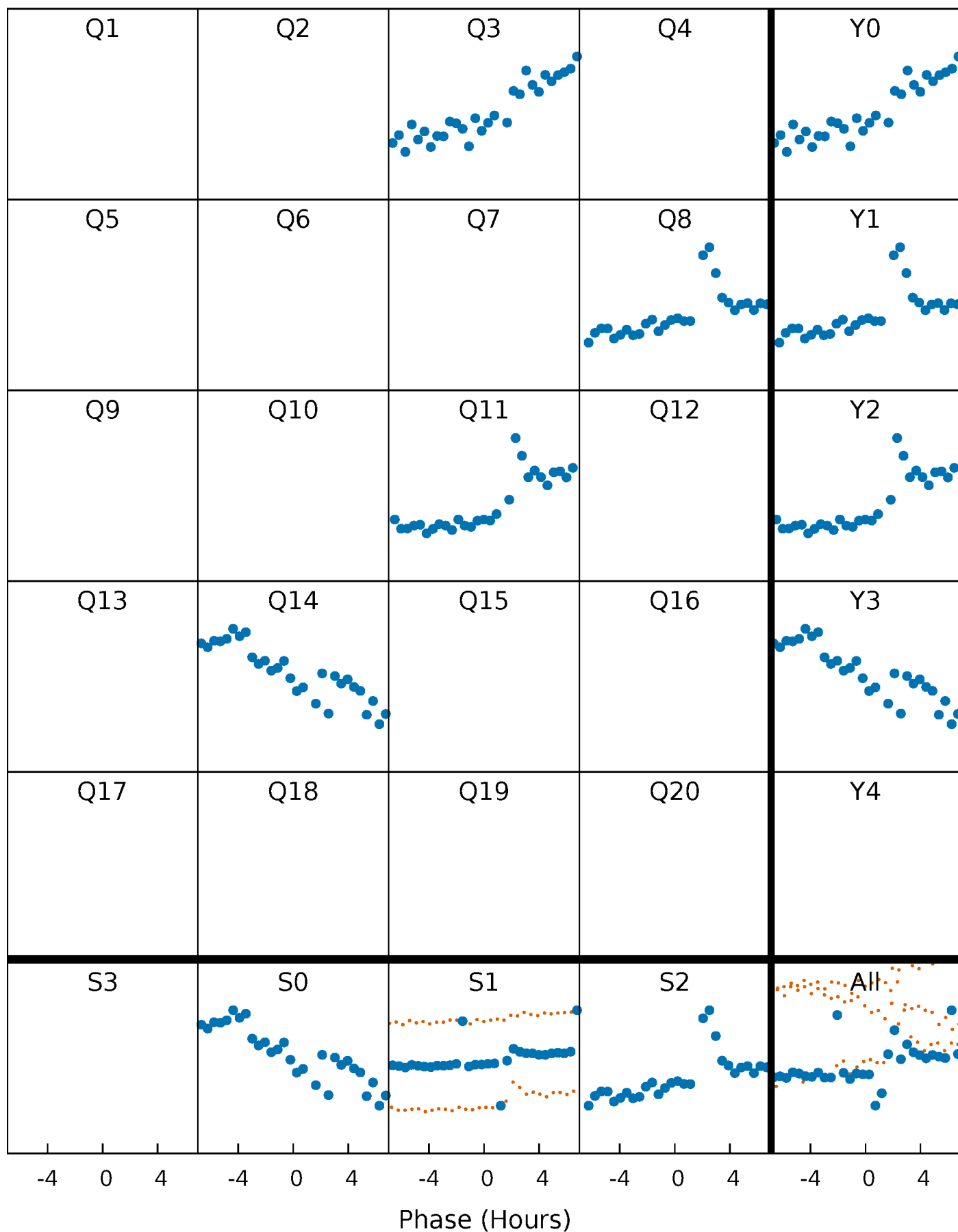


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



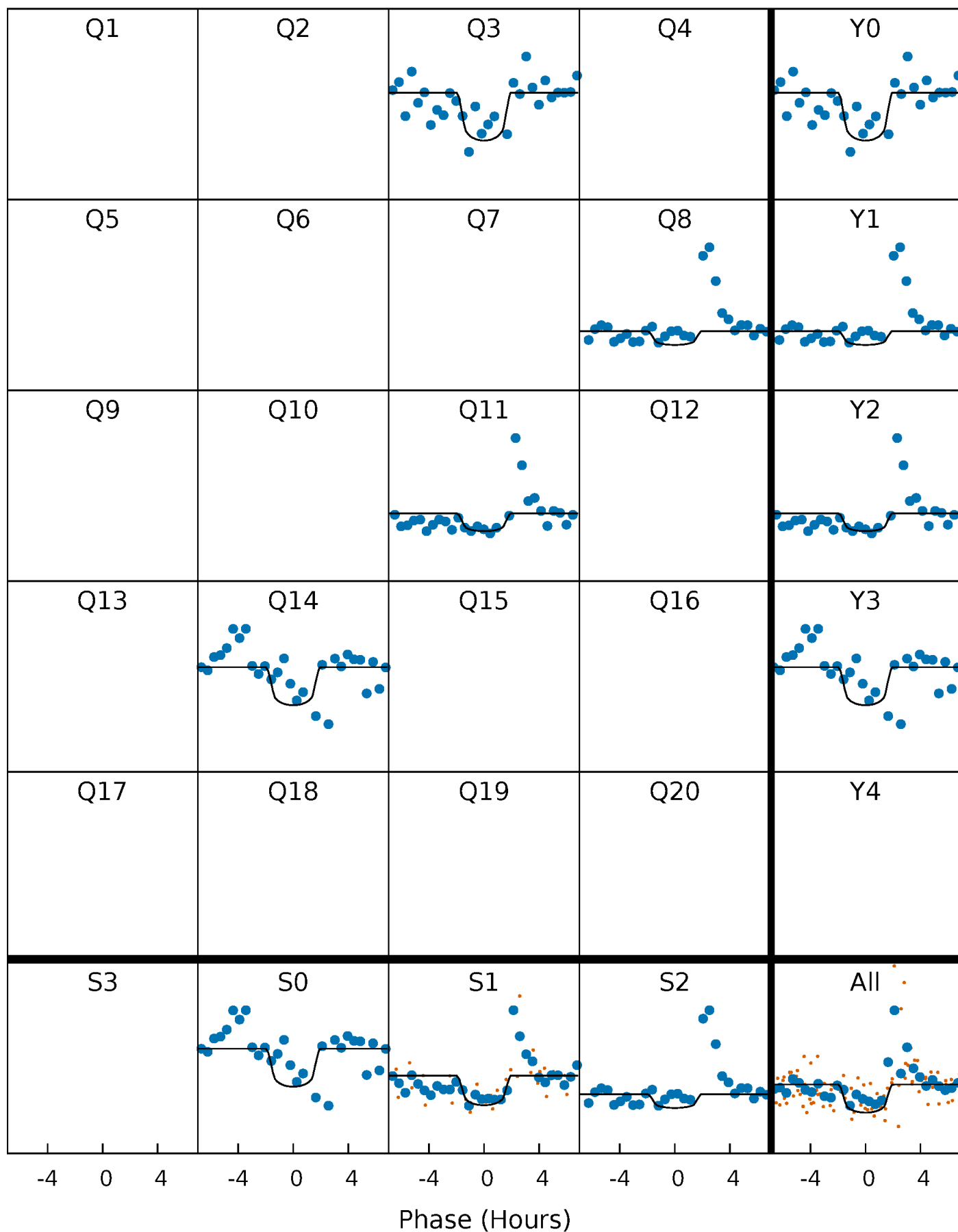
PDC Quarter-Phased Transit Curves

TCE 006421008-01 P=258.720715 Days $T_0=267.049807$ (BKJD)



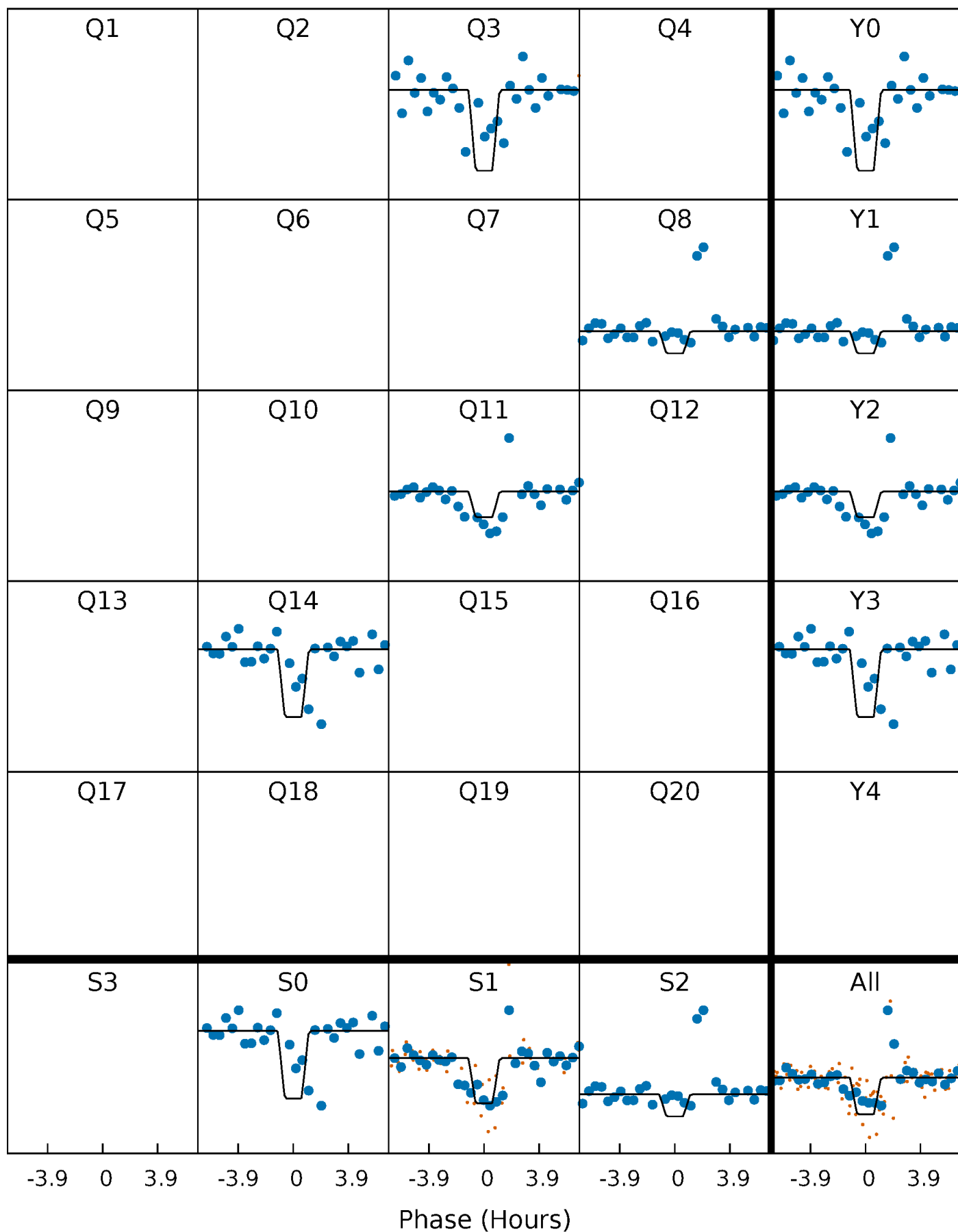
DV Quarter-Phased Transit Curves

TCE 006421008-01 P=258.720715 Days $T_0=267.049807$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

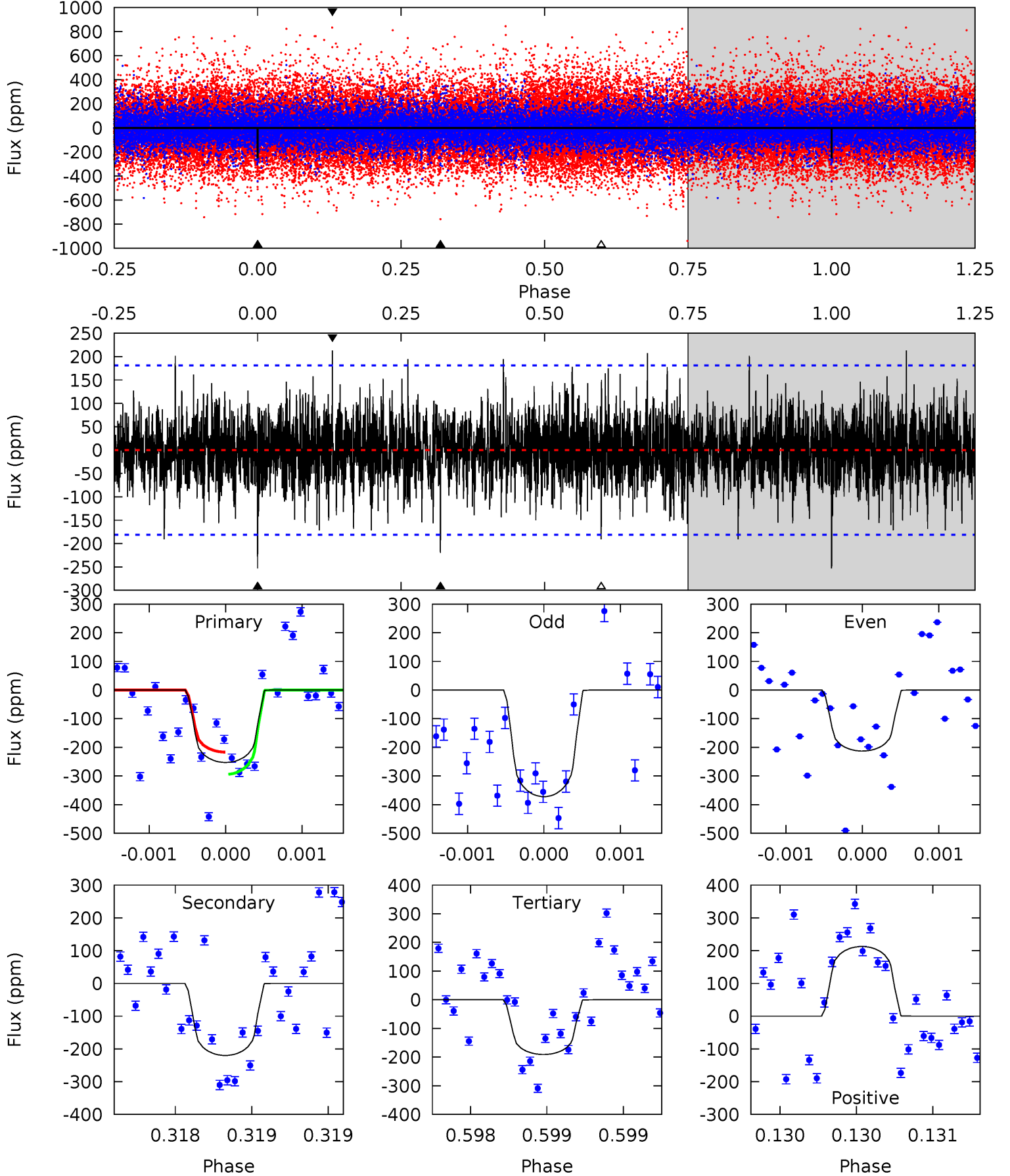
TCE 006421008-01 P=258.723995 Days $T_0=267.054233$ (BKJD)



DV Model-Shift Uniqueness Test

006421008-01, P = 258.720715 Days, E = 8.329092 Days

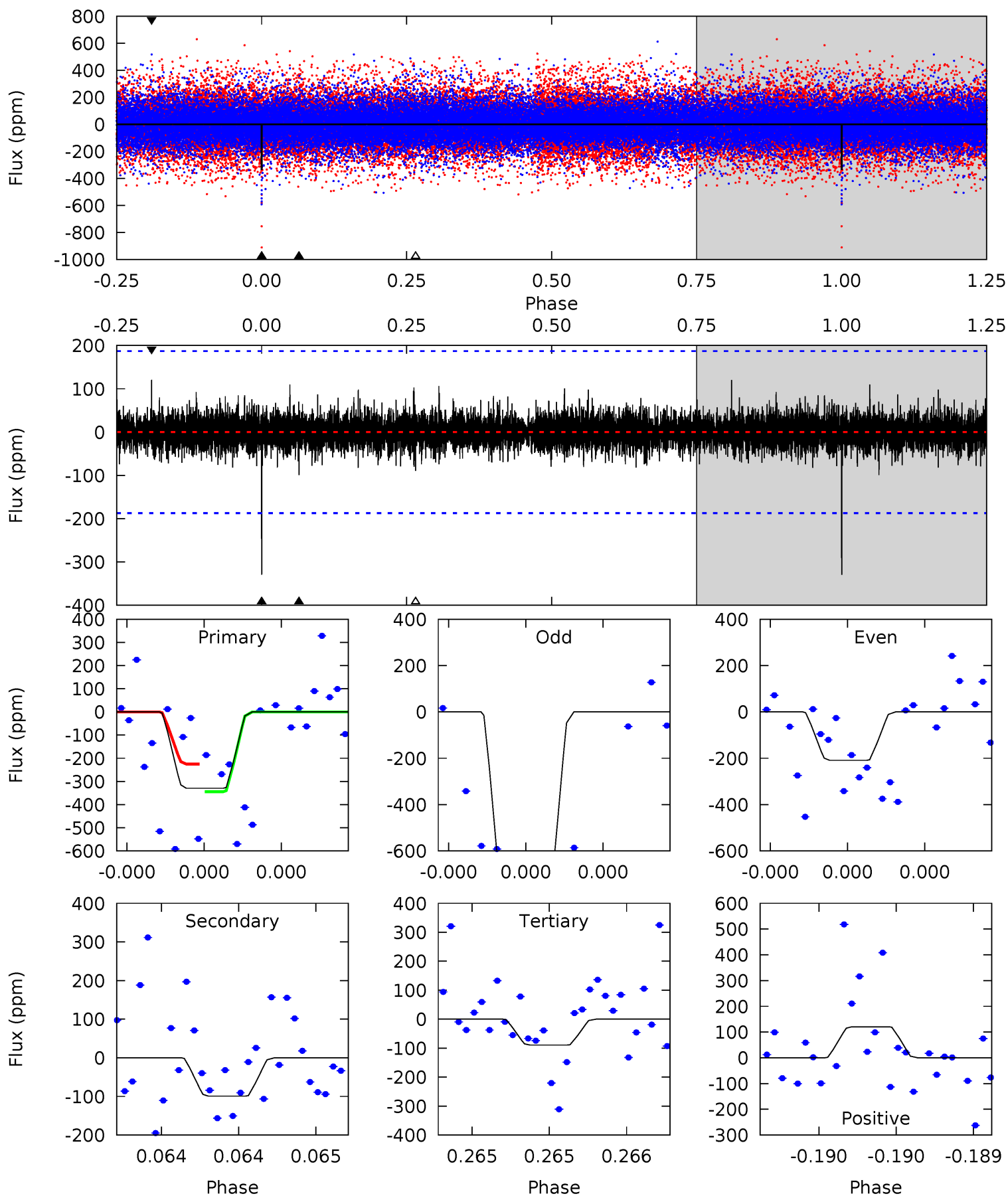
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.72	6.72	5.84	6.50	5.54	3.43	1.52	1.89	1.23	0.89	0.23	2.05	0.93	0.46	1.19



Alt Model-Shift Uniqueness Test

006421008-01, P = 258.723995 Days, E = 8.330238 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.95	2.99	2.70	3.64	5.65	3.59	0.70	7.25	6.32	0.29	-0.64	9.62	1.50	0.27	1.73



Stellar Parameters For KIC 006421008

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5544^{+165}_{-148}	$4.529^{+0.110}_{-0.090}$	$-0.760^{+0.300}_{-0.300}$	$0.750^{+0.106}_{-0.087}$	$0.693^{+0.087}_{-0.029}$	$2.317^{+0.989}_{-0.692}$
	+3%/-3%	+2%/-2%	+39%/-39%	+14%/-12%	+13%/-4%	+43%/-30%
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 006421008-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-220 ± 33	$2.15^{+1.80}_{-1.35}$	353^{+17}_{-17}	4361^{+2517}_{-807}	13234^{+84332}_{-9355}
Alt.	-99 ± 33	$2.44^{+1.70}_{-1.49}$	351^{+16}_{-14}	3610^{+1537}_{-589}	4507^{+24648}_{-3149}

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

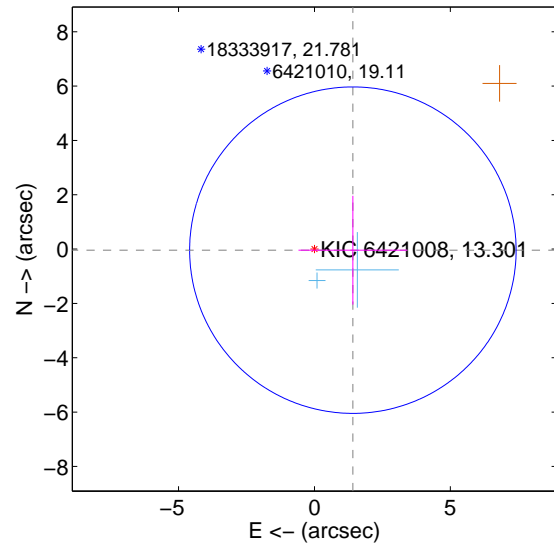
Supplemental centroid analysis for 006421008-01. Kepler magnitude: 13.30. Transit SNR 7.32

There are 2 quarters with good PRF difference image offsets

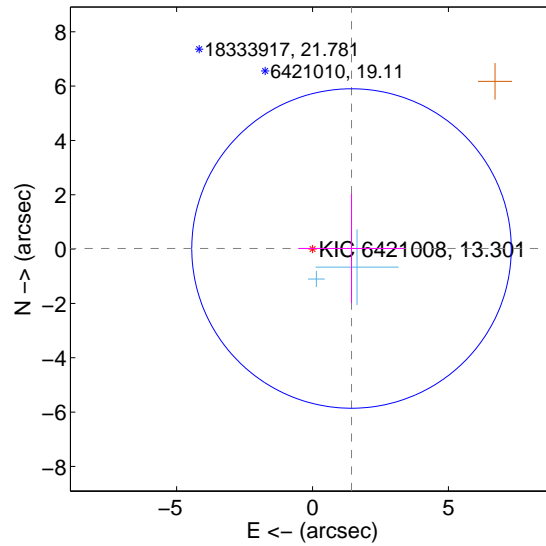
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.415 ± 2.002	0.71	-1.414 ± 2.002	-0.039 ± 2.001
PRF-fit source offset from KIC position	1.435 ± 1.959	0.73	-1.435 ± 1.959	0.022 ± 2.006
photometric centroid source offset	1.83 ± 1.27	1.44	-1.67 ± 1.30	-0.77 ± 1.15

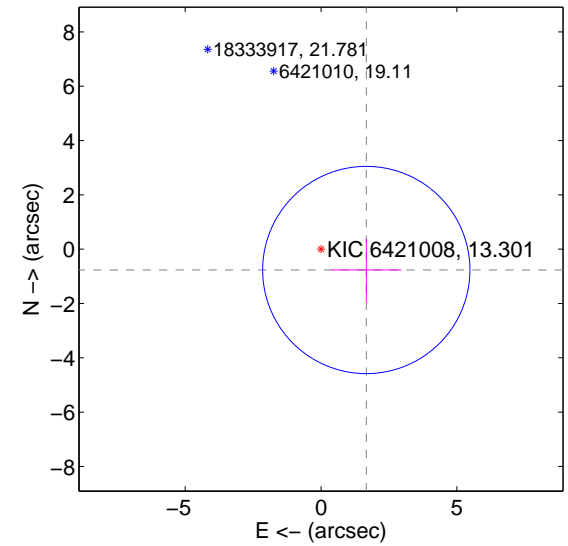
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

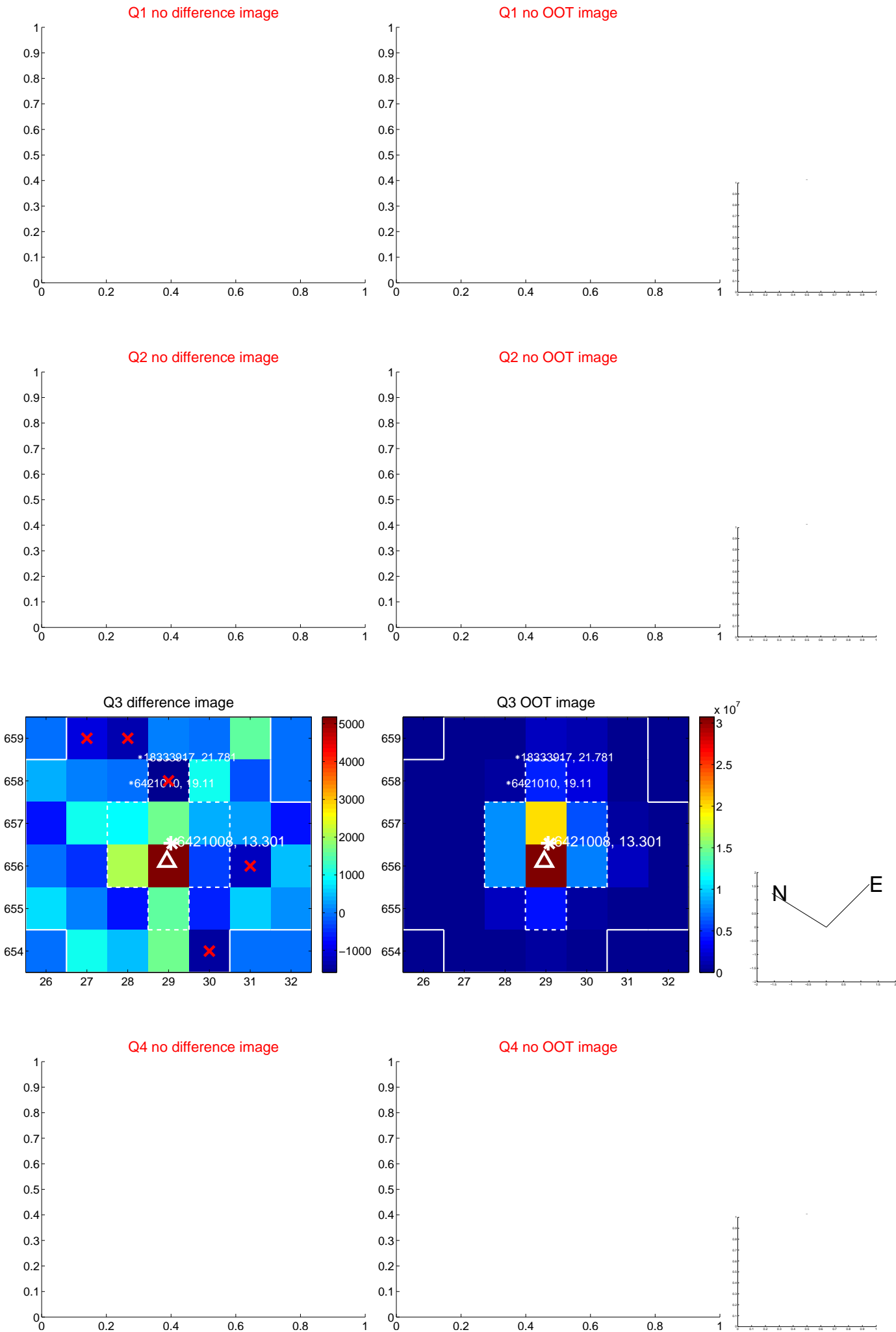


offset from photometric centroids

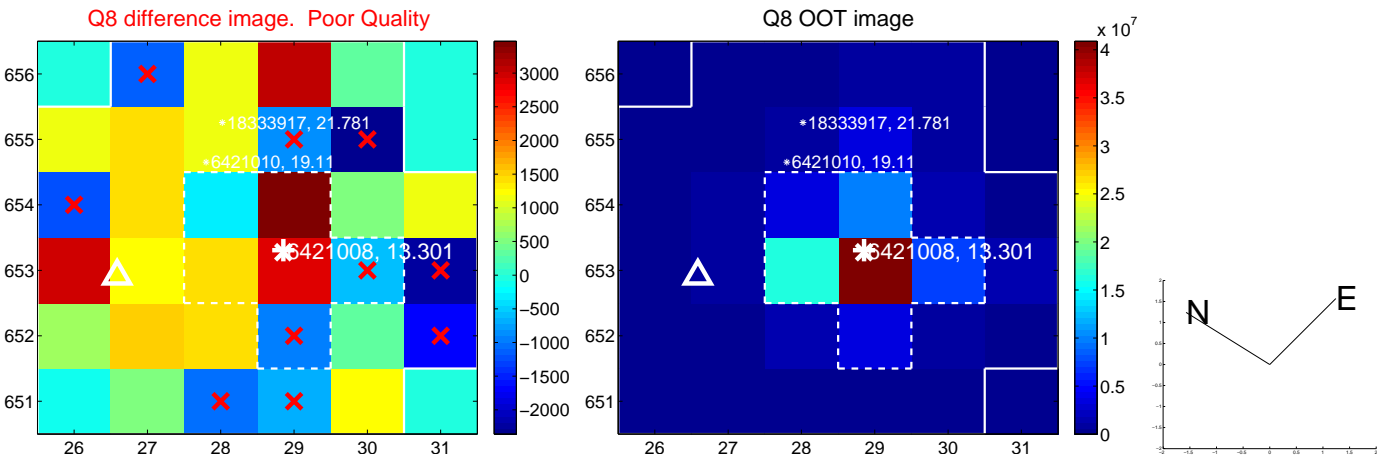
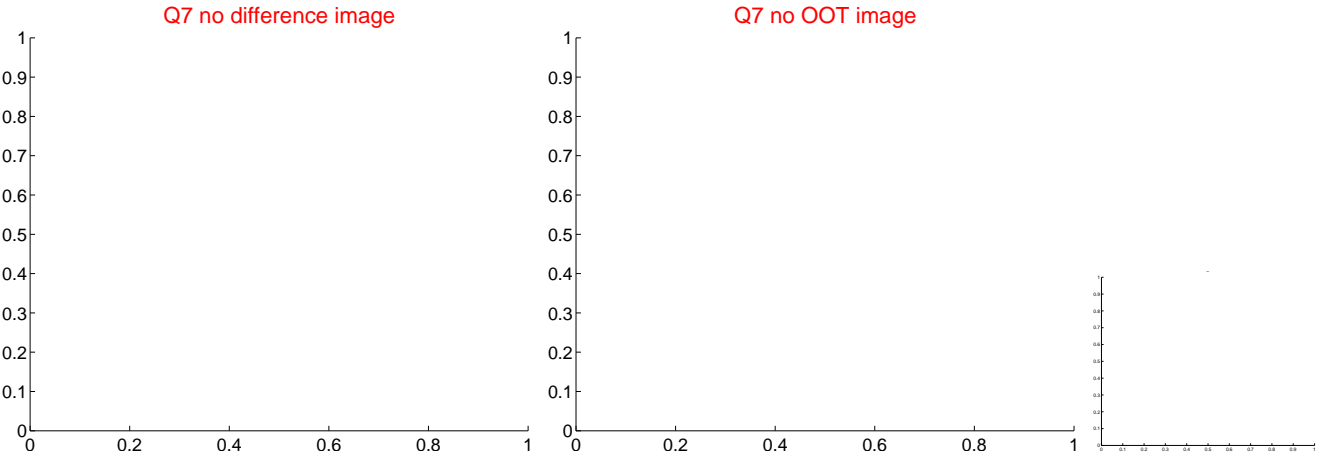
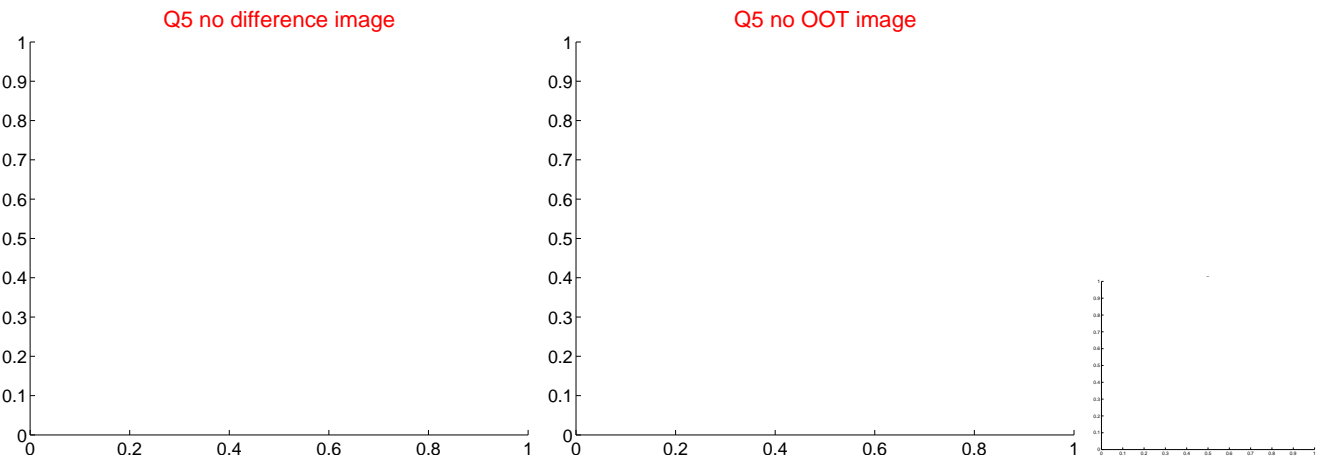


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

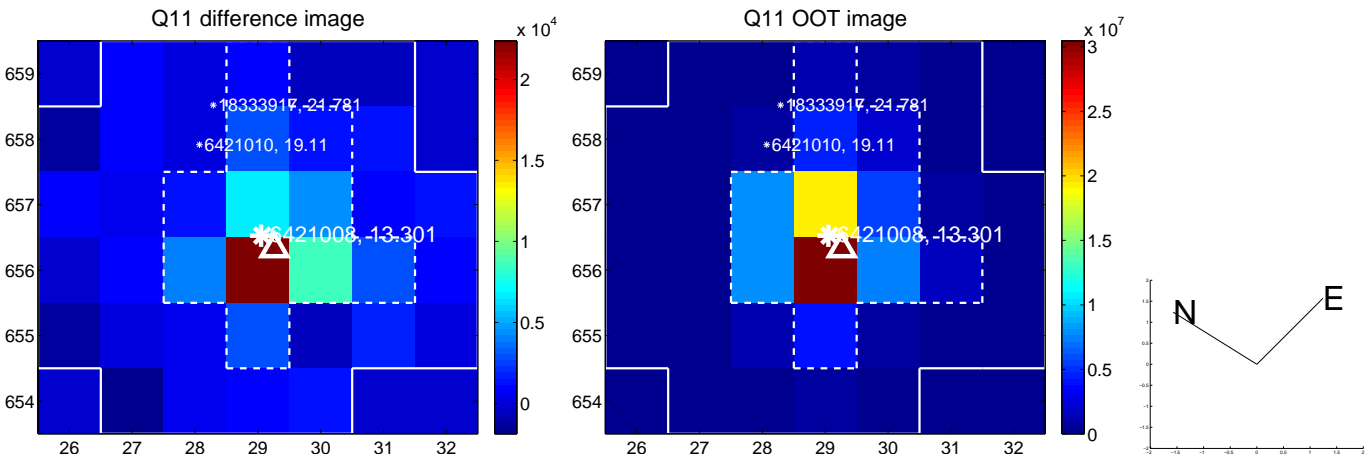
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



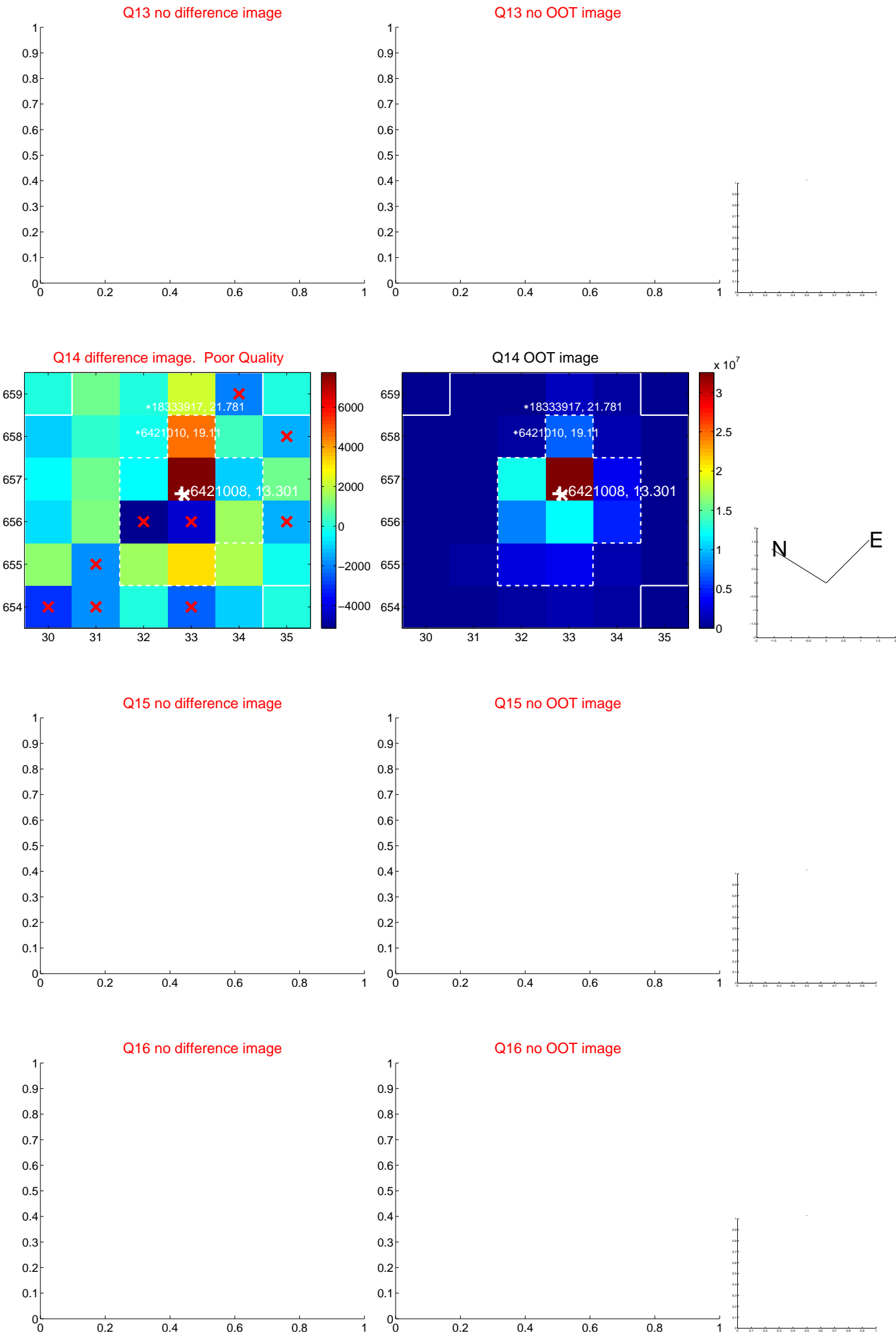
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



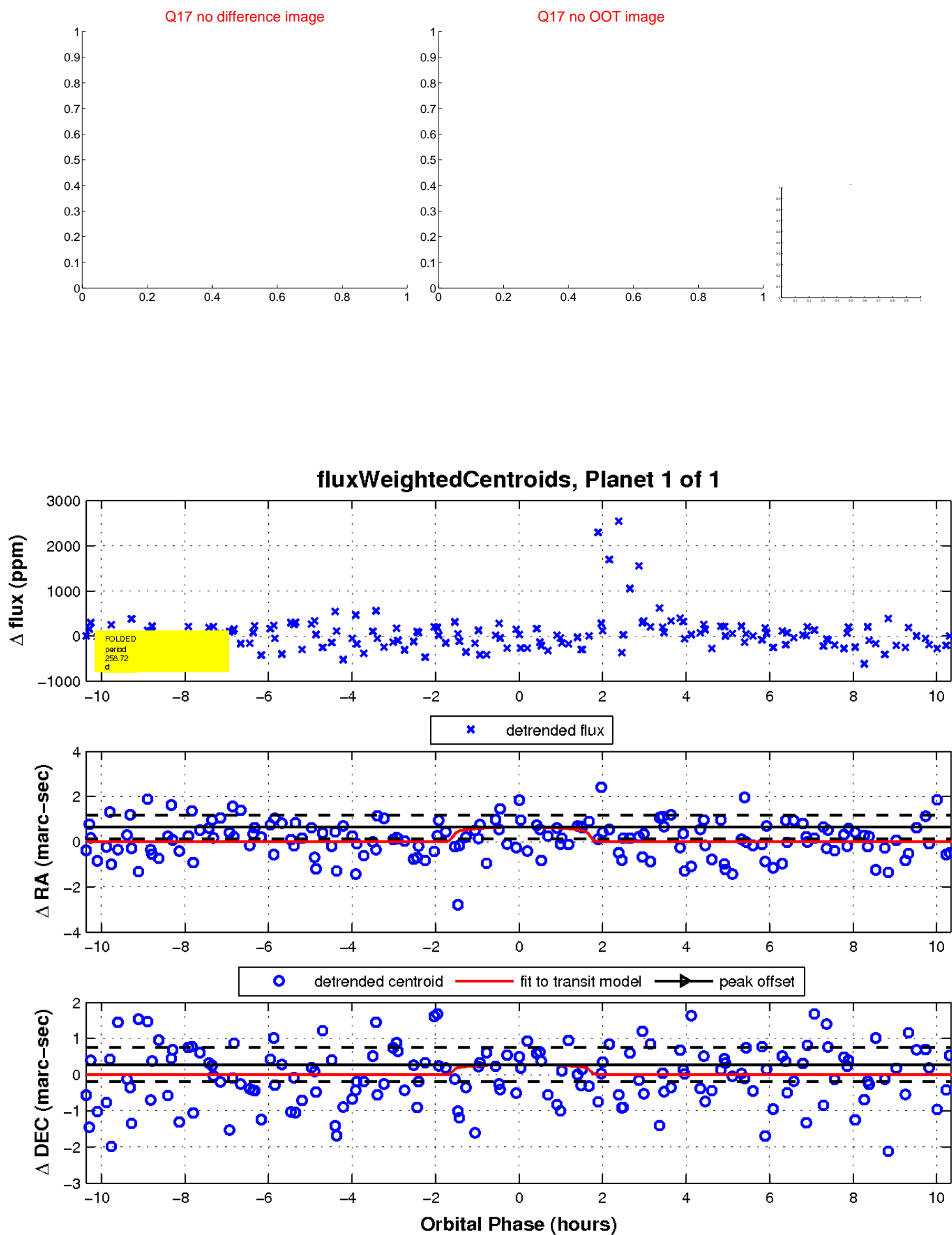
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

