

KIC 003644505

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})
003644505-01	OBS	4641.01	119.698388	175.960849	110.7	20.631	9.5	9.2	1.18	5963	1.28	6.68

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003644505-01	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_SKYE—CENT_FEW_DIFFS—HALO_GHOST—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 003644505-01

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
003644505-01	3644505	3511.01	3644542	1:1	198.3	38	32	8.35	13.59	2693.80	Direct-PRF	0	2.36	1.88

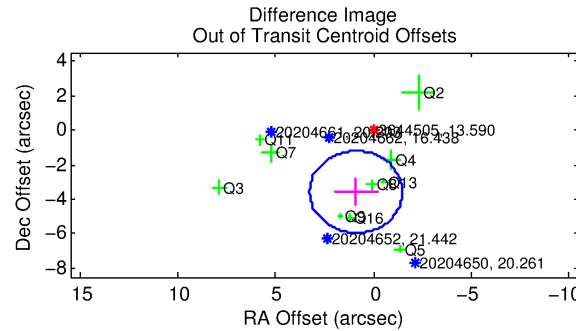
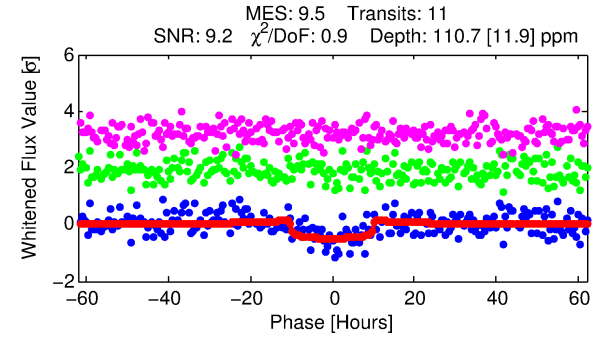
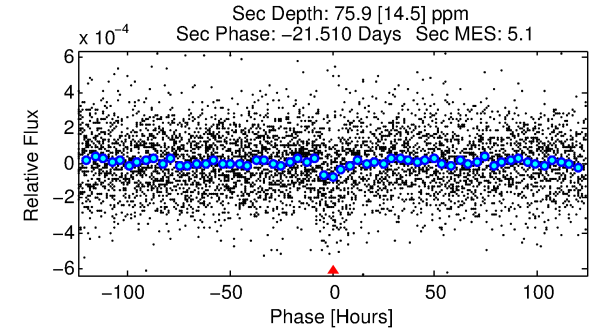
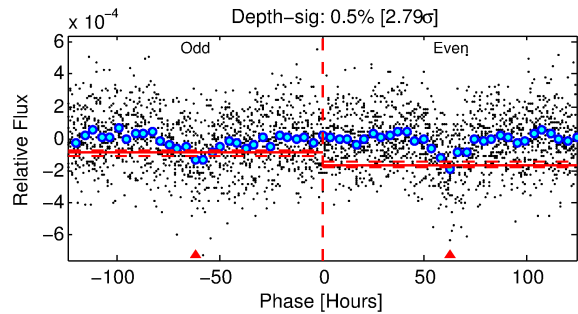
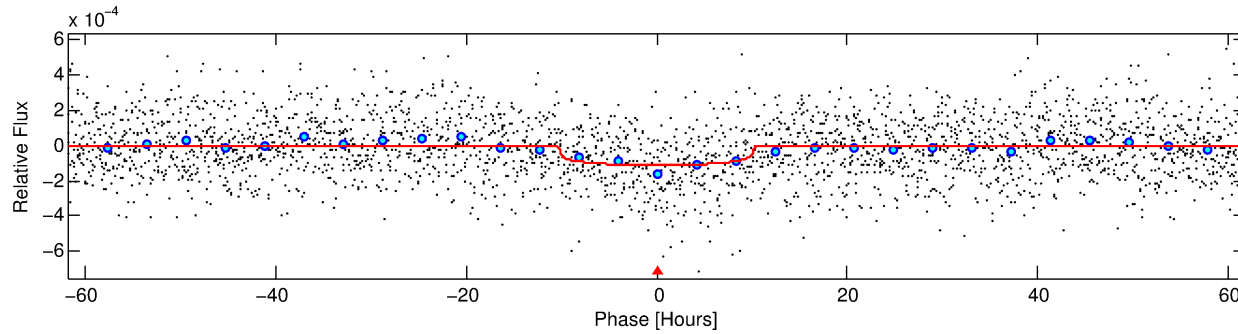
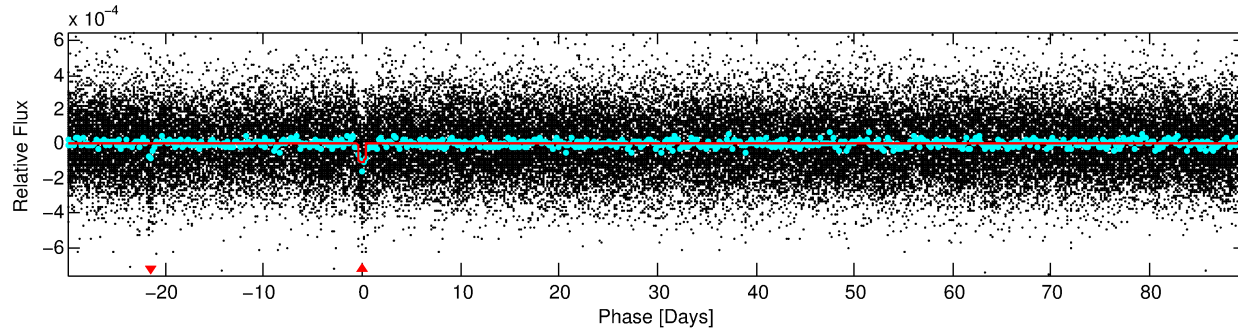
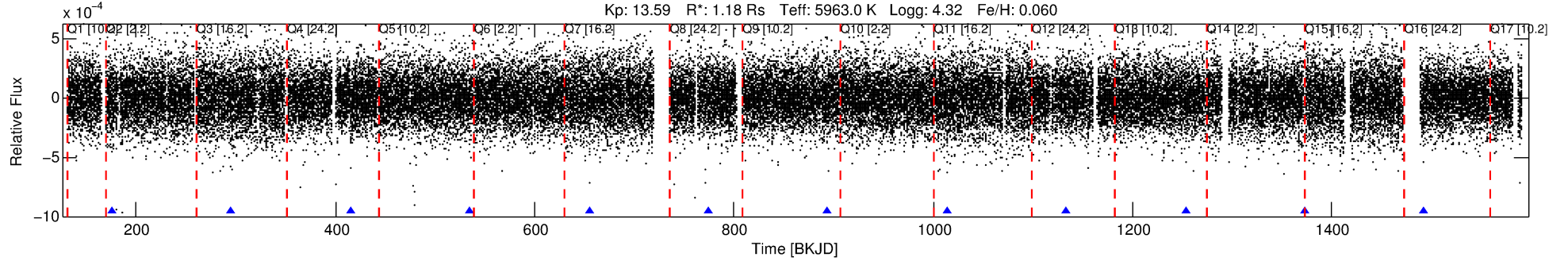
Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match 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: 3644505 Candidate: 1 of 1 Period: 119.698 d

KOI: K04641 Corr: No Ephemeris Match

Kp: 13.59 R*: 1.18 Rs Teff: 5963.0 K Logg: 4.32 Fe/H: 0.060



DV Fit Results:

Period = 119.69839 [0.00376] d
Epoch = 175.9608 [0.0232] BKJD
Rp/R* = 0.0100 [0.0056]
a/R* = 36.62 [94.51]
b = 0.58 [2.96]
Seff = 6.68 [2.60]
Teq = 410 [40] K
Rp = 1.28 [0.82] Re
a = 0.4842 [0.1232] AU
Ag = 5929.81 [7076.59] [0.84σ]
Teffp = 5562 [1590] K [3.24σ]

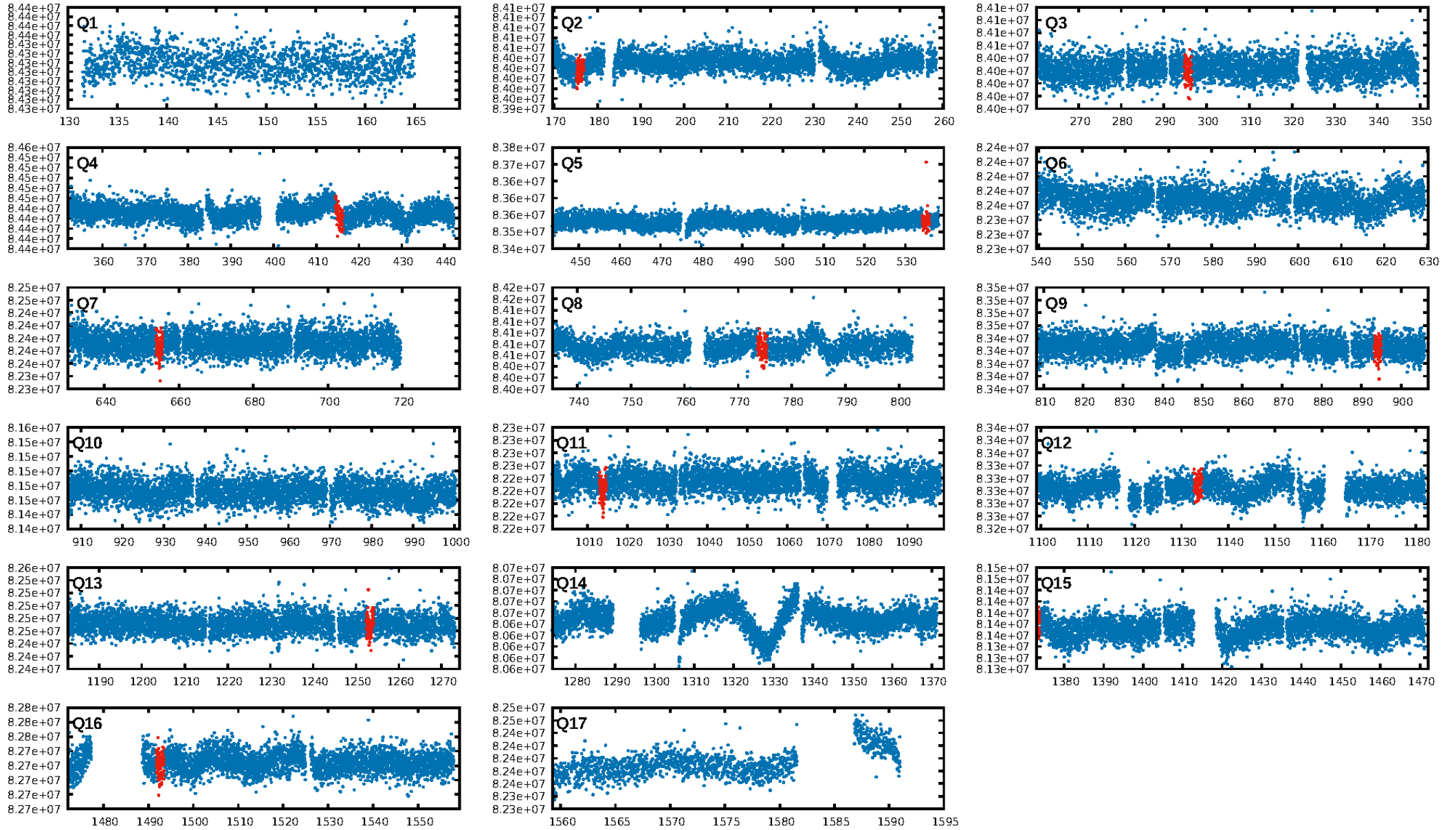
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 17.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 8.96e-17
RollingBand-fgt: 1.00 [11/11]
GhostDiagnostic-chr: -0.1374
Centroid-sig: 0.0%
Centroid-so: 4.878 arcsec [3.06σ]
OotOffset-rm: 3.687 arcsec [4.67σ]
KicOffset-rm: 3.722 arcsec [4.80σ]
OotOffset-st: 1/3/3/3 [10]
KicOffset-st: 1/3/3/3 [10]
DiffImageQuality-fgm: 0.20 [2/10]
DiffImageOverlap-fno: 1.00 [10/10]

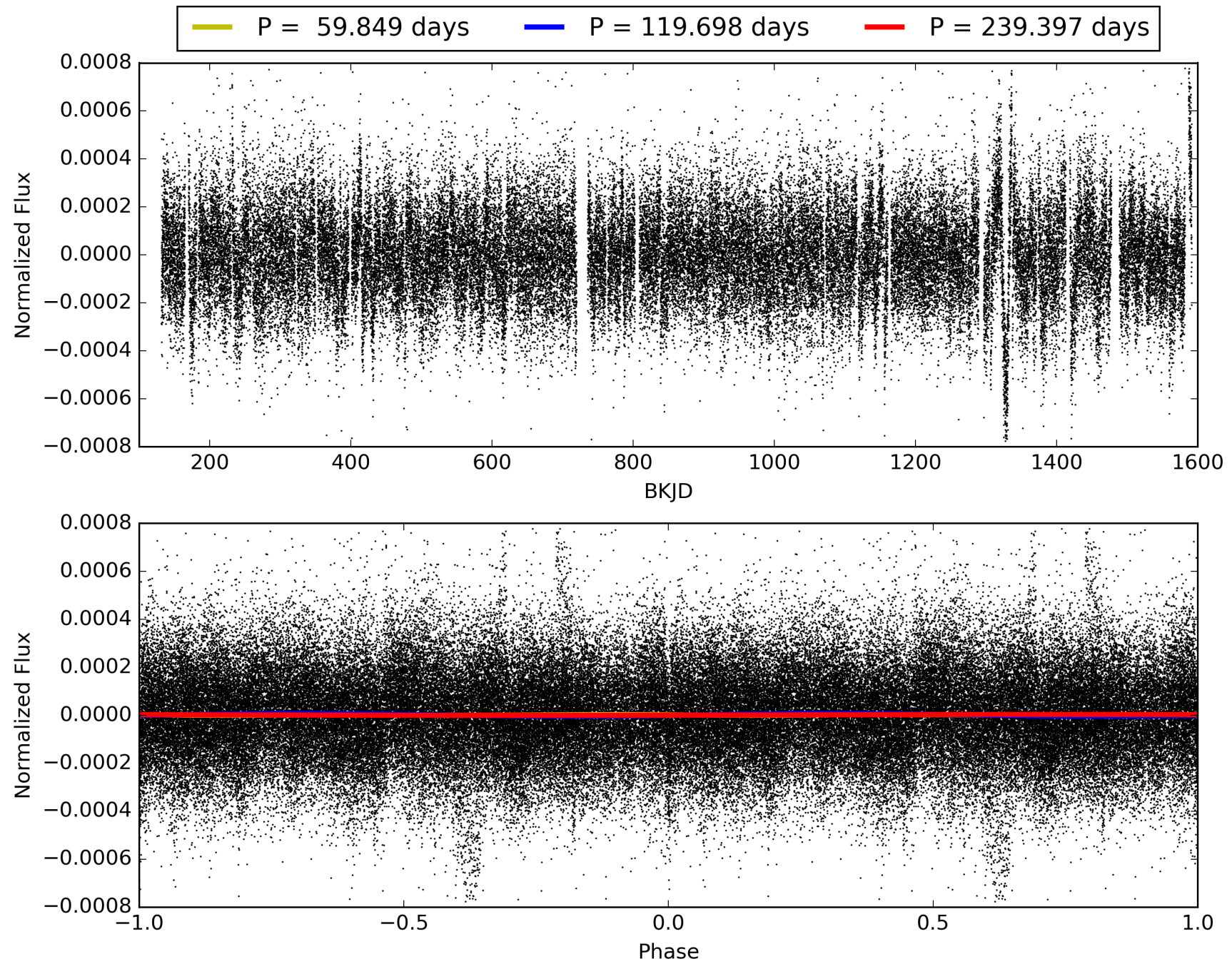
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 20:58:08 Z

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

TCE 003644505-01, PDC Light Curves

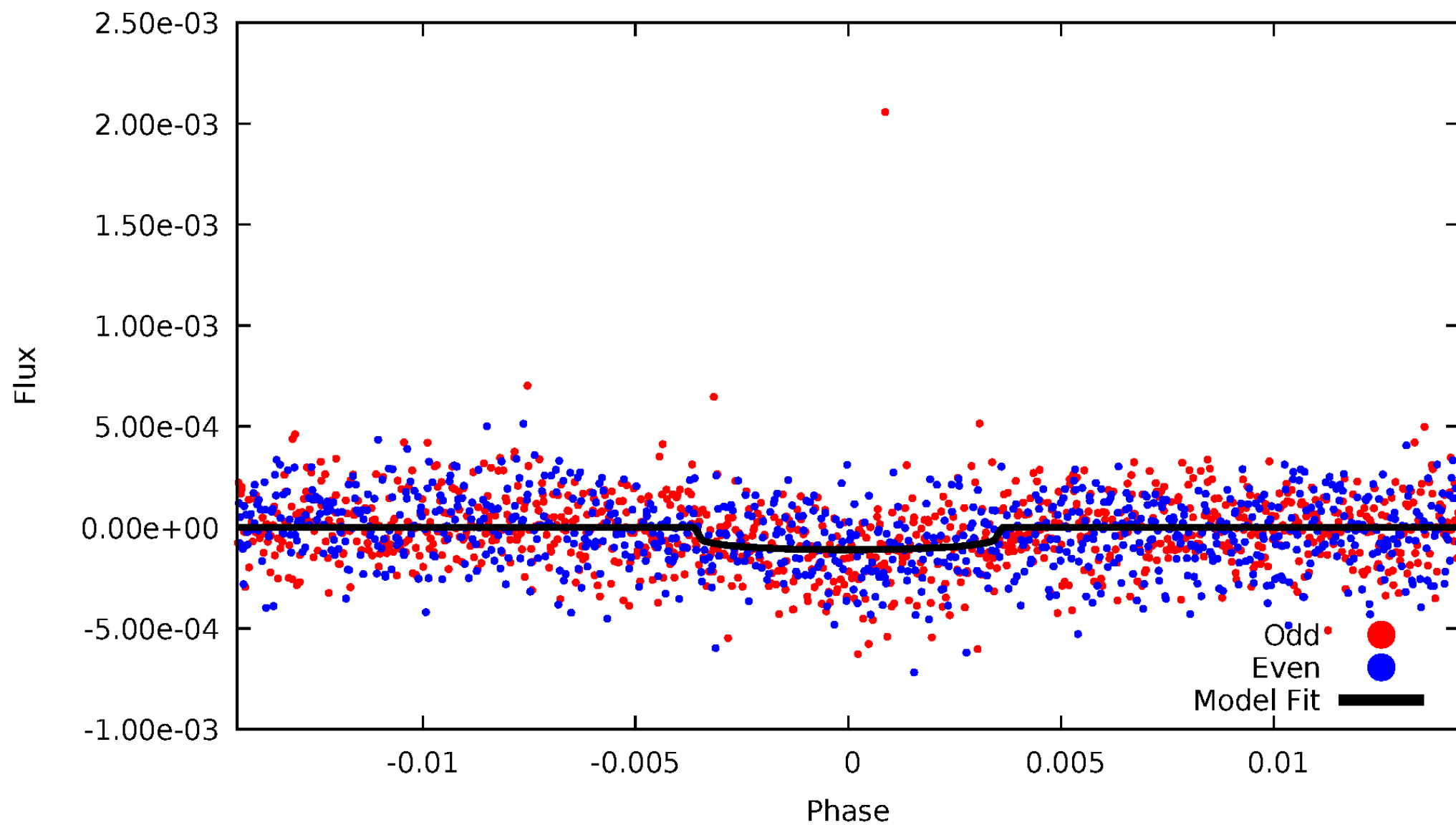


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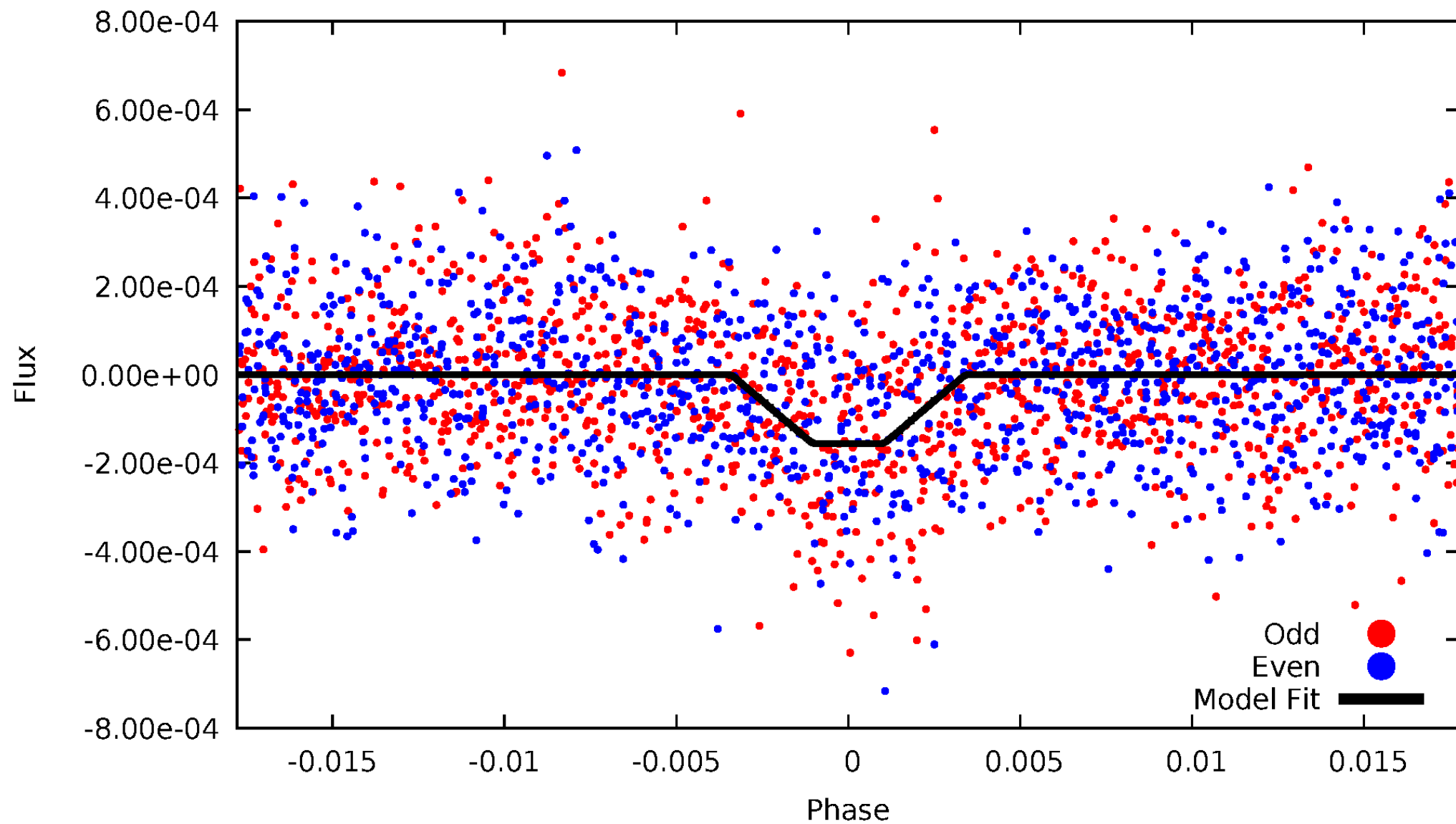
DV Odd/Even

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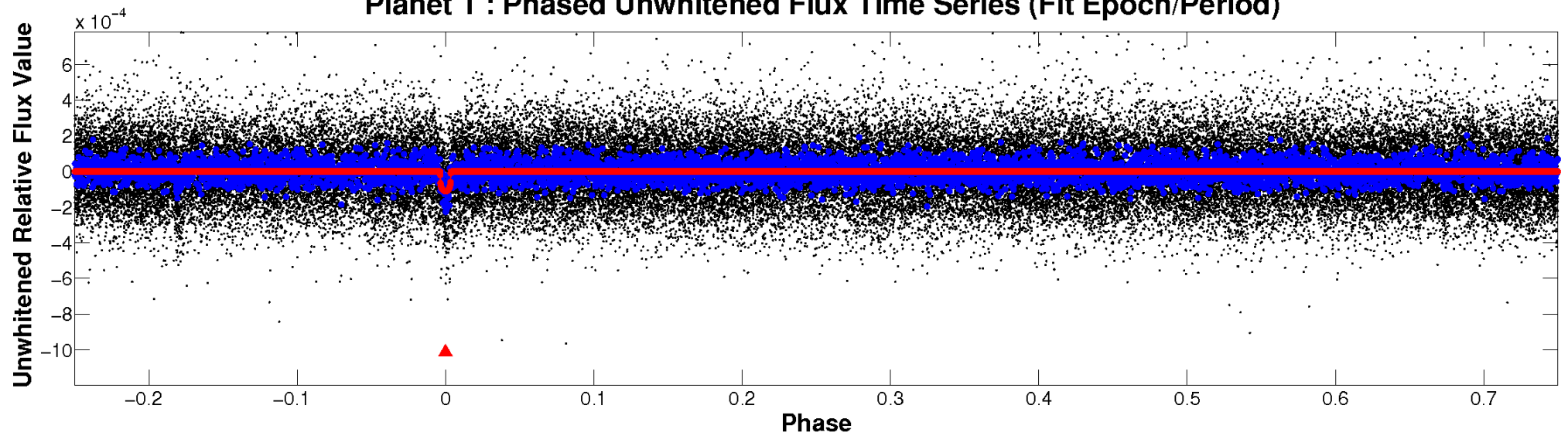
ALT Odd/Even

TCE 003644505-01

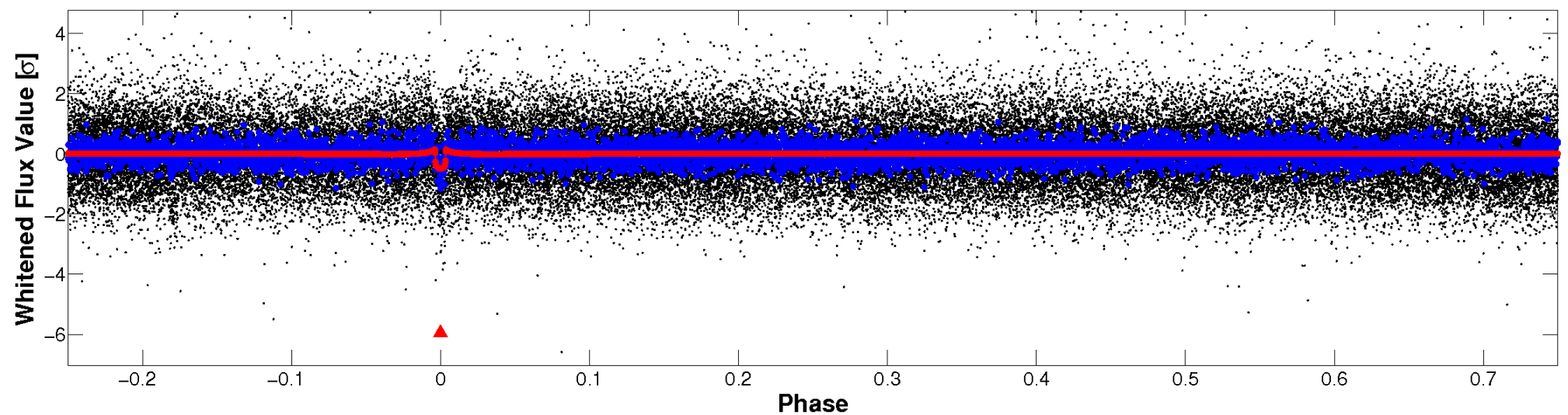


Non-Whitened Vs. Whitened Light Curve

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

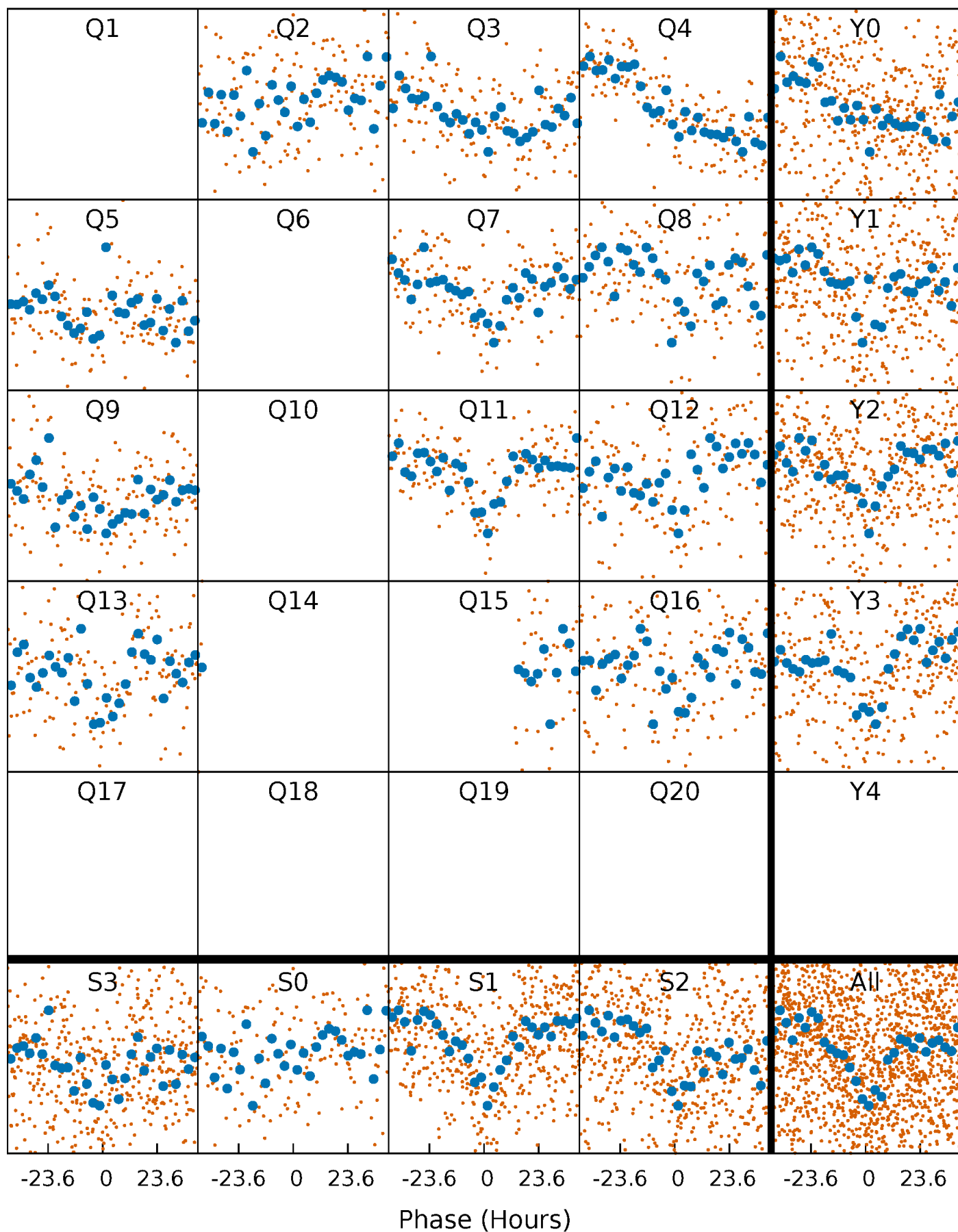


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



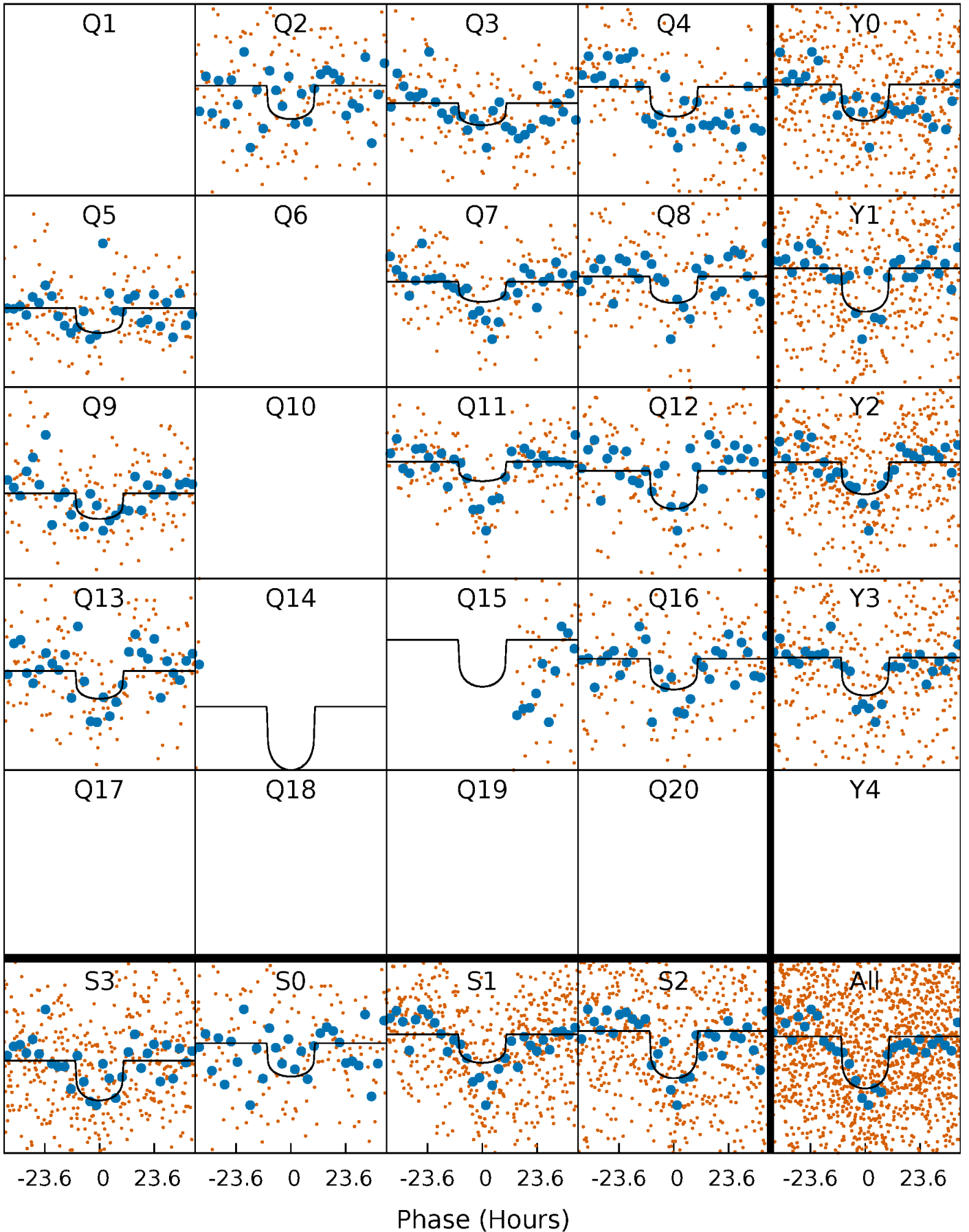
PDC Quarter-Phased Transit Curves

TCE 003644505-01 P=119.698388 Days $T_0=175.960849$ (BKJD)



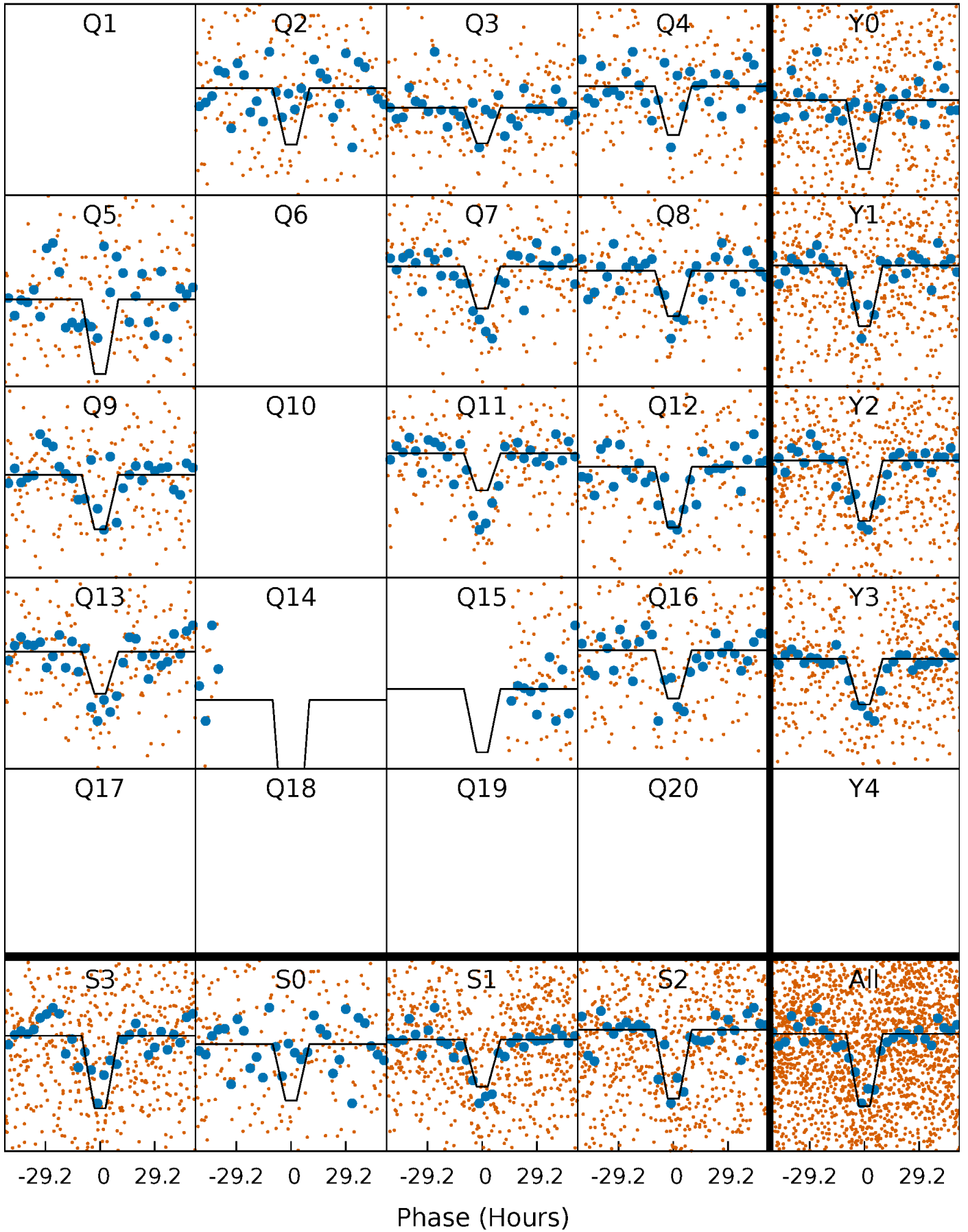
DV Quarter-Phased Transit Curves

TCE 003644505-01 P=119.698388 Days $T_0=175.960849$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

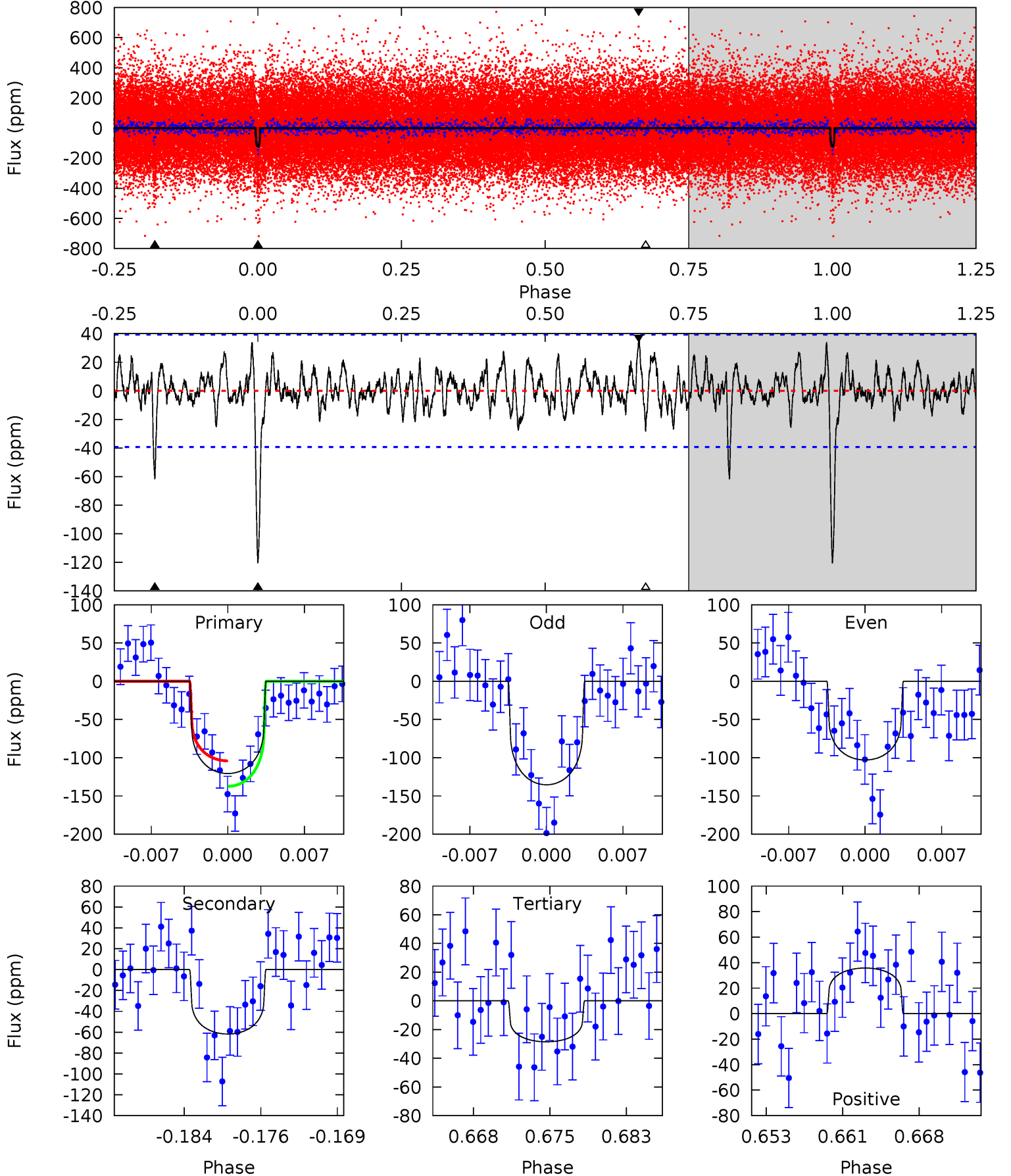
TCE 003644505-01 P=119.686172 Days $T_0=176.066921$ (BKJD)



DV Model-Shift Uniqueness Test

003644505-01, P = 119.698388 Days, E = 56.262461 Days

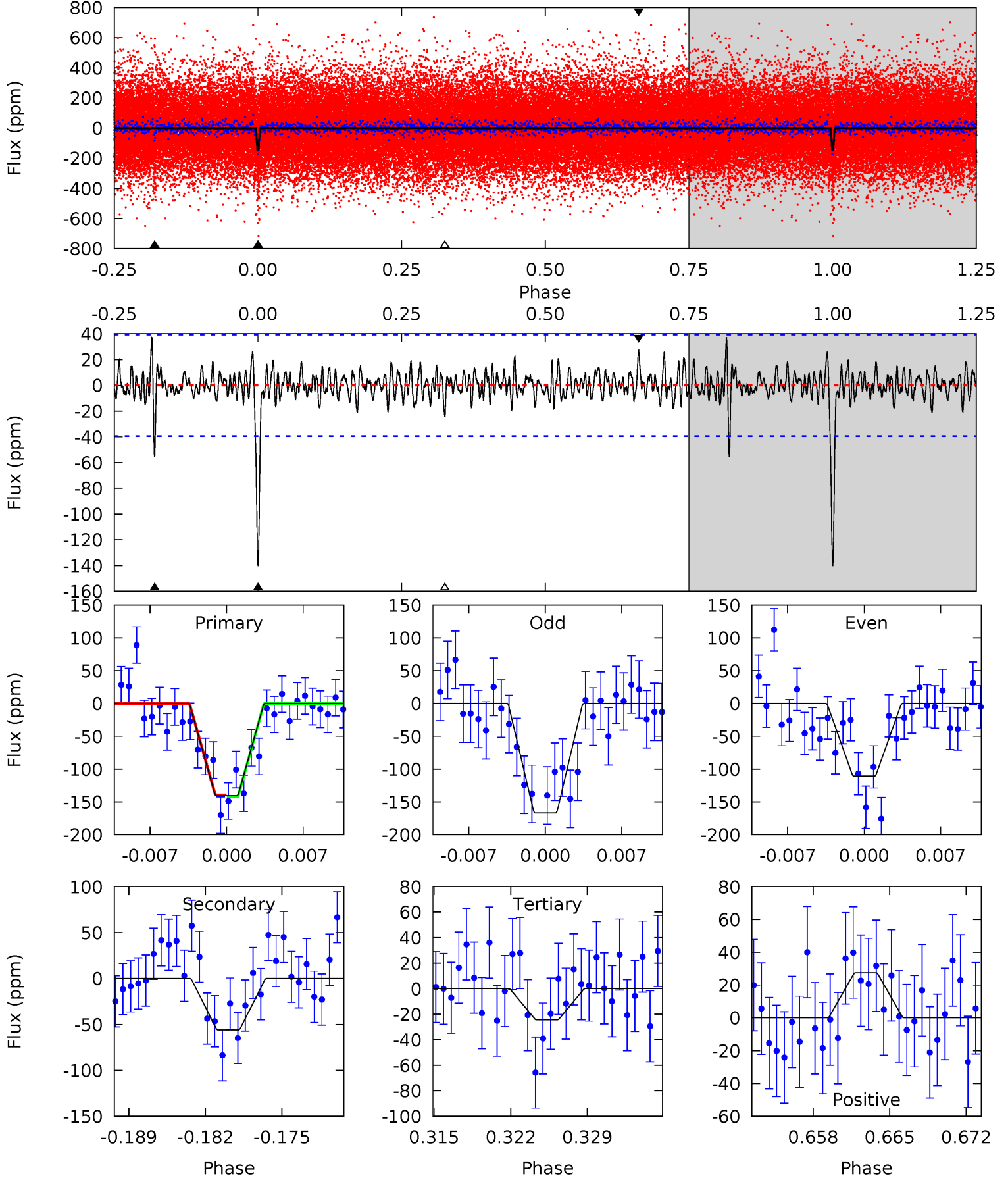
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.6	7.99	3.69	4.62	5.09	2.68	1.37	11.9	11.0	4.30	3.36	2.09	1.03	0.23	2.16



Alt Model-Shift Uniqueness Test

003644505-01, P = 119.686172 Days, E = 56.380749 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.1	7.21	3.15	3.55	5.09	2.70	1.05	15.0	14.6	4.07	3.67	3.60	1.06	0.21	0.18



Stellar Parameters For KIC 003644505

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5963^{+160}_{-196}	$4.321^{+0.132}_{-0.198}$	$0.060^{+0.250}_{-0.300}$	$1.176^{+0.360}_{-0.194}$	$1.056^{+0.149}_{-0.122}$	$0.914^{+0.559}_{-0.466}$
	+3%/-3%	+3%/-5%	+417%/-500%	+31%/-16%	+14%/-12%	+61%/-51%
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 003644505-01 / KOI 4641.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-62 ± 8	$1.33^{+0.80}_{-0.69}$	573^{+46}_{-34}	5229^{+2325}_{-854}	4459^{+14093}_{-2761}
Alt.	-56 ± 8	$1.65^{+0.79}_{-0.73}$	575^{+42}_{-35}	4688^{+1400}_{-606}	2663^{+5845}_{-1486}

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 $A_{obs} \gg 1.0$

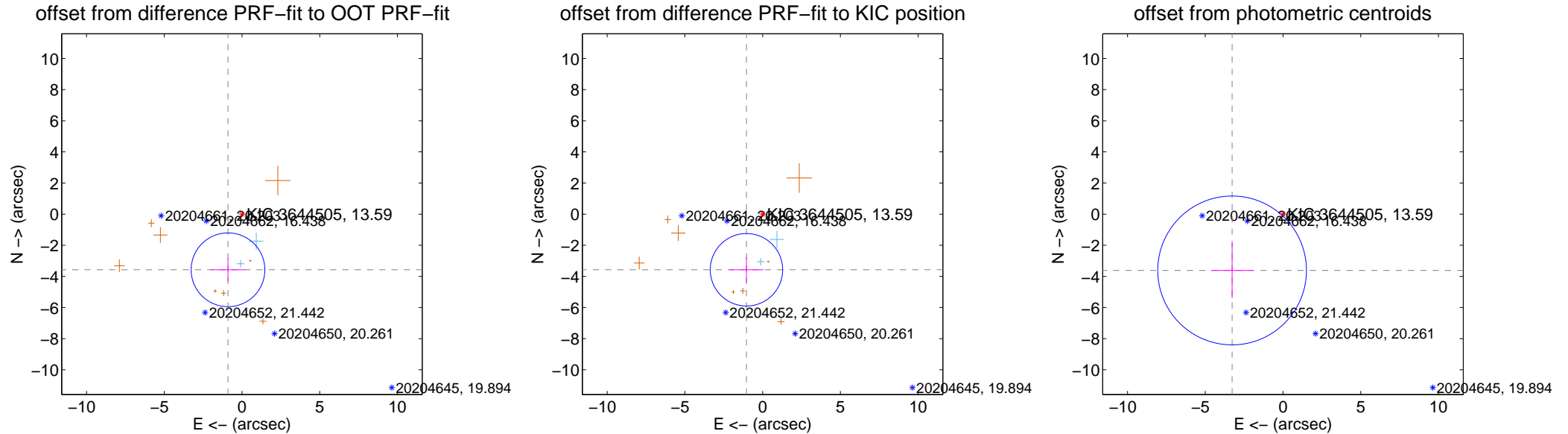
DV Centroid Data

Supplemental centroid analysis for 003644505-01. Kepler magnitude: 13.59. Transit SNR 9.20

There are 2 quarters with good PRF difference image offsets

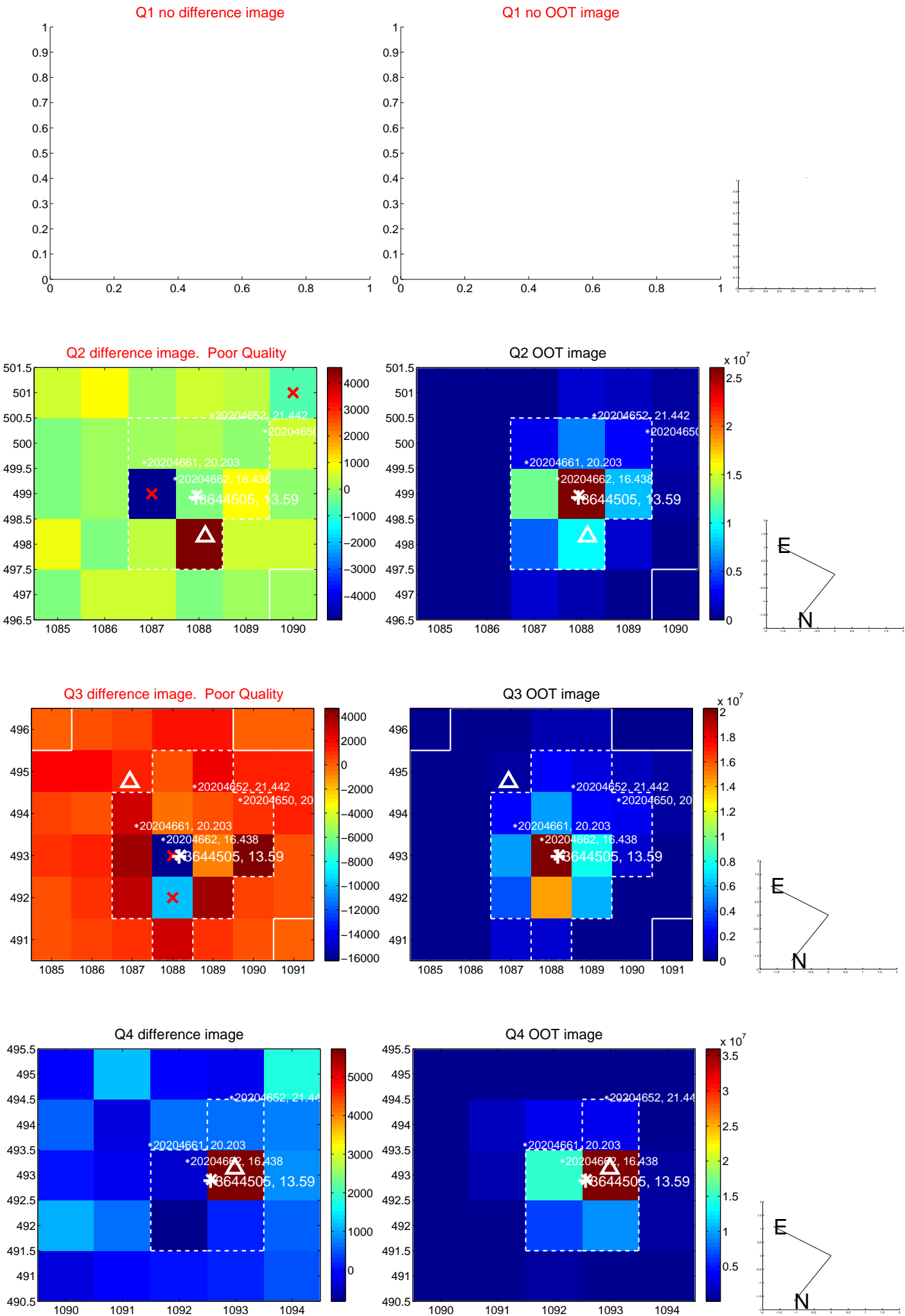
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.687 ± 0.790	4.67	0.901 ± 1.103	-3.575 ± 0.746
PRF-fit source offset from KIC position	3.722 ± 0.776	4.80	1.039 ± 1.091	-3.574 ± 0.810
photometric centroid source offset	4.88 ± 1.59	3.06	3.27 ± 1.34	-3.62 ± 1.77

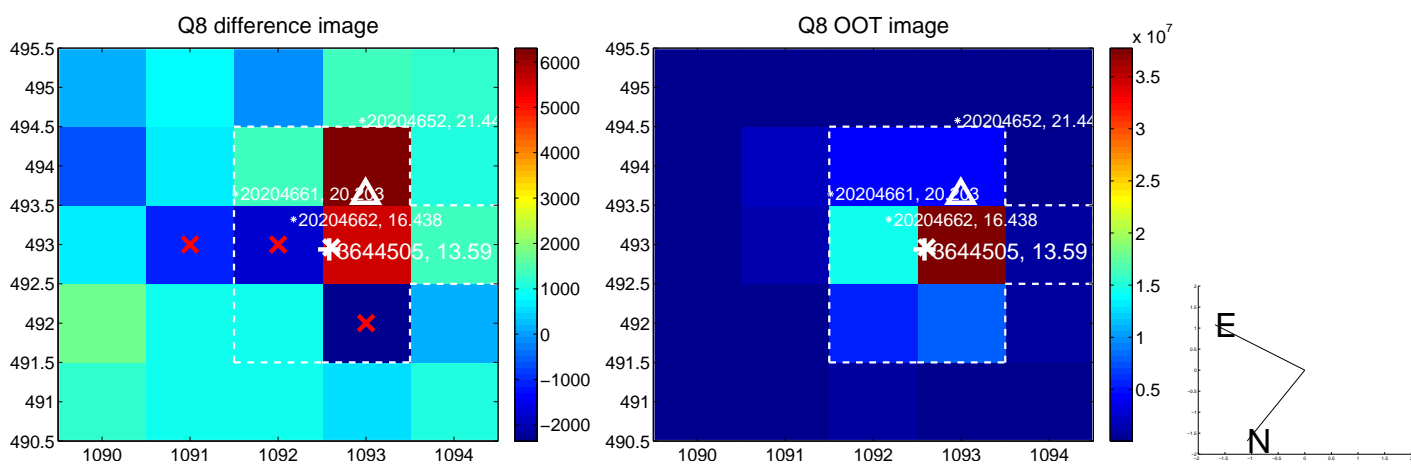
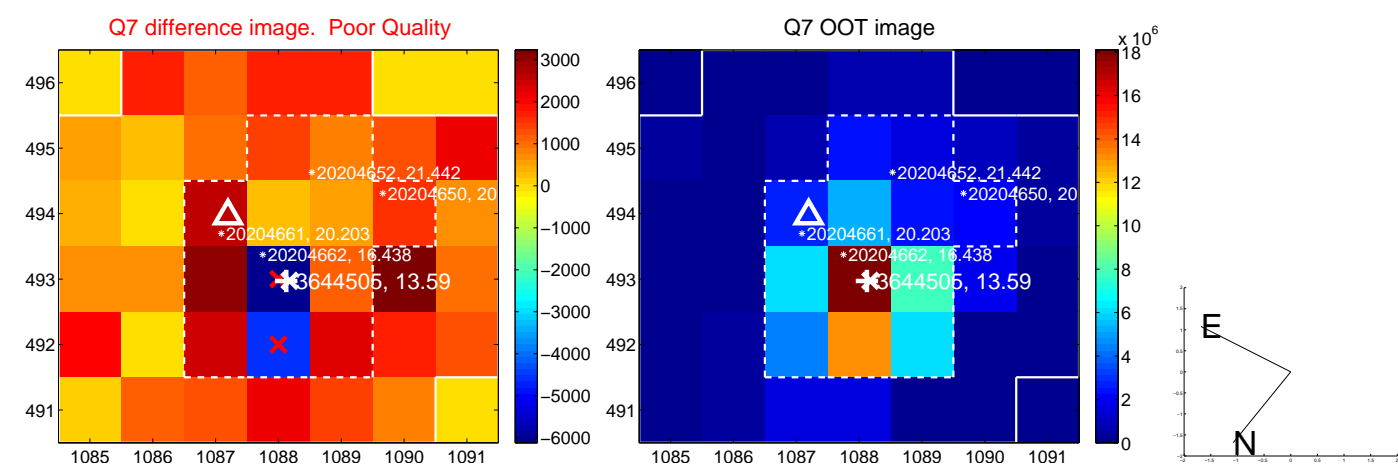
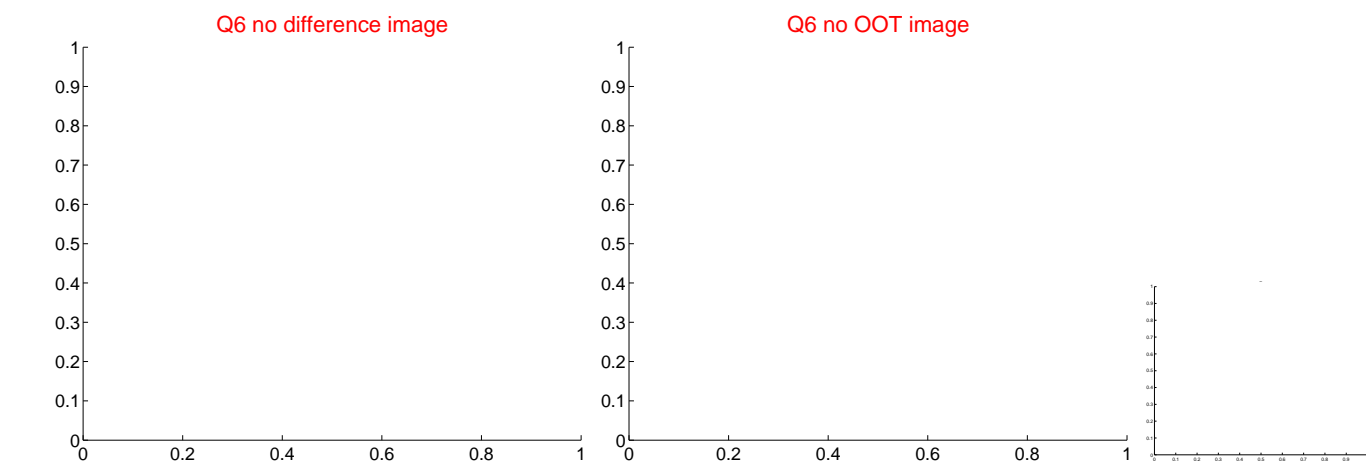
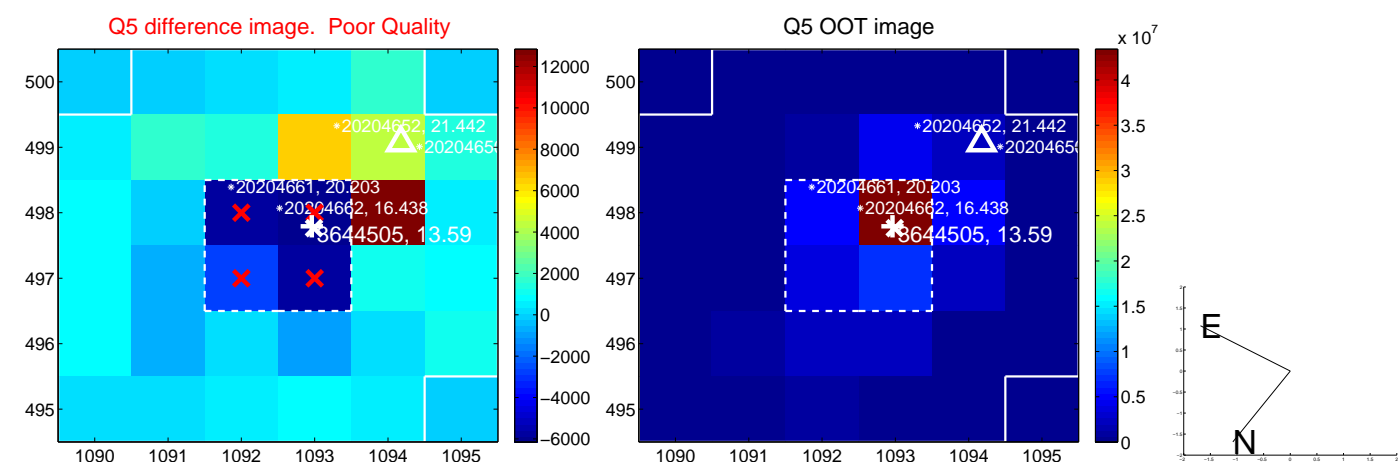


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

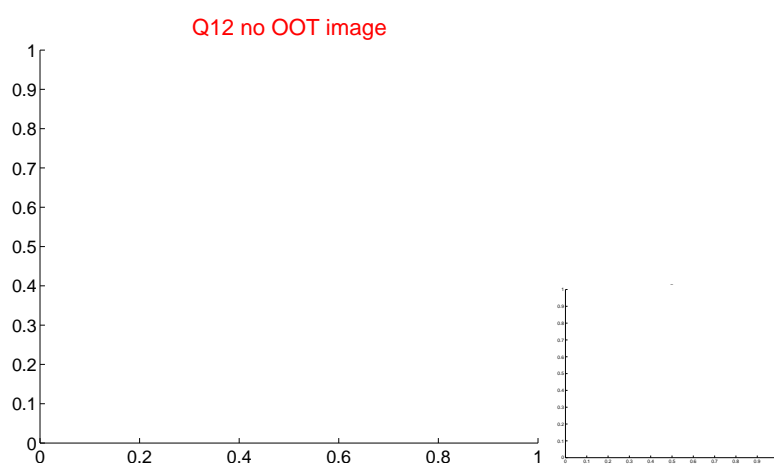
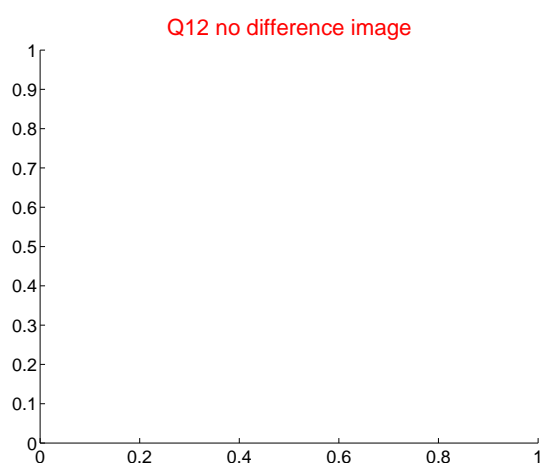
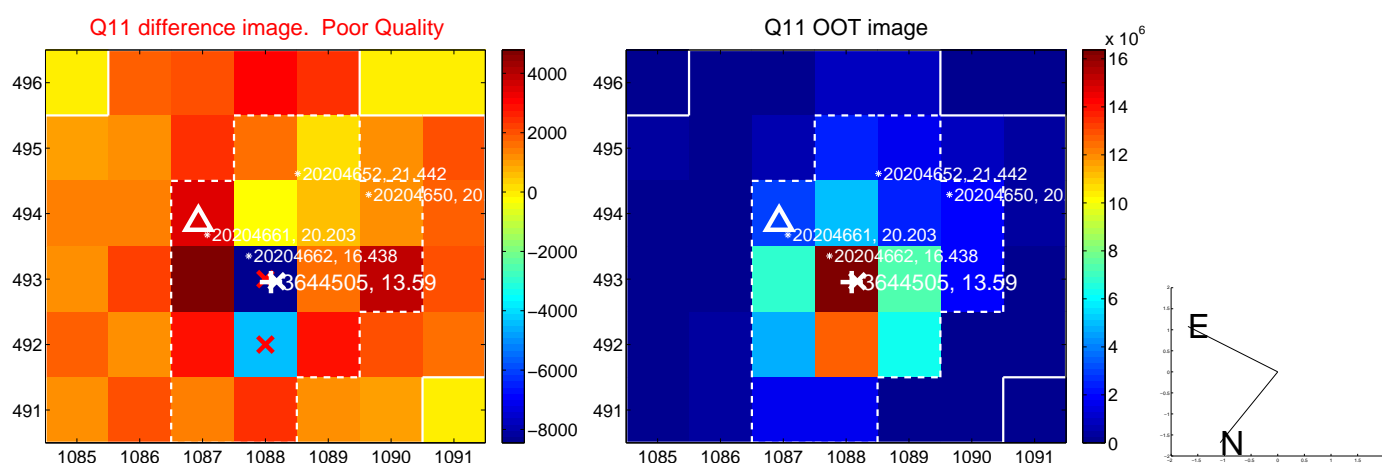
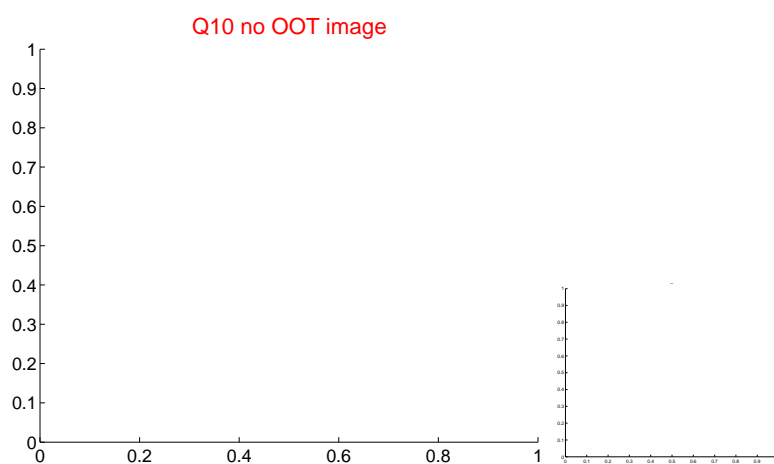
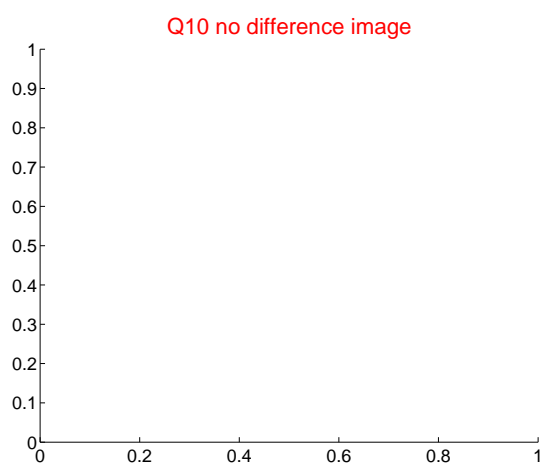
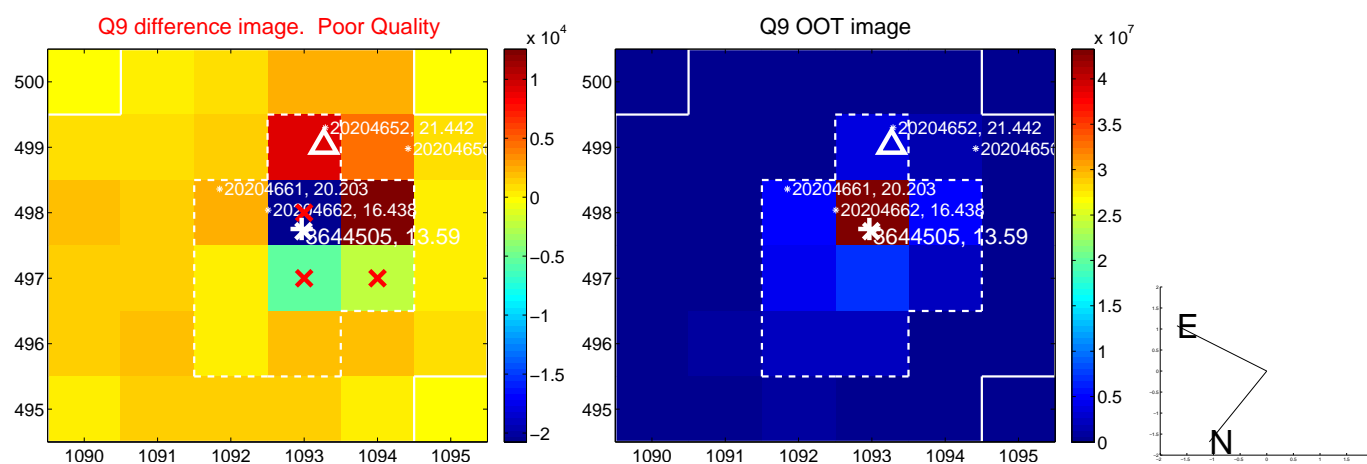
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



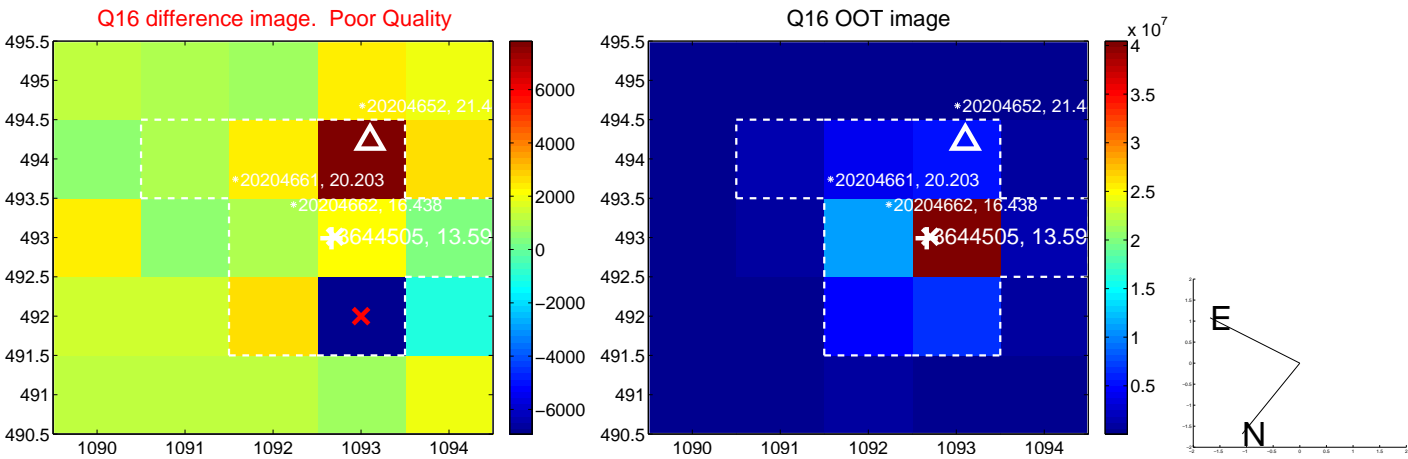
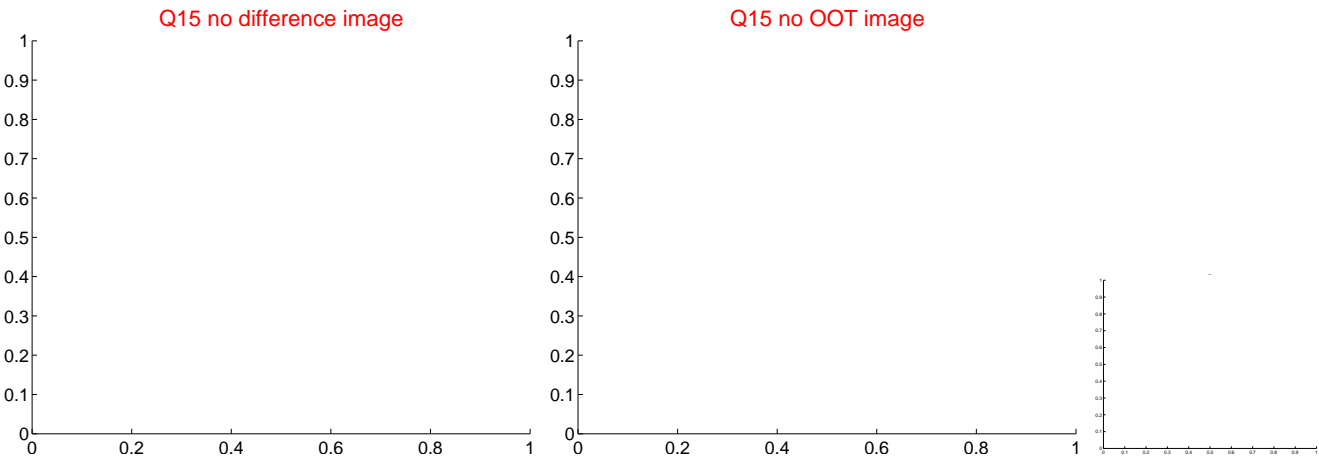
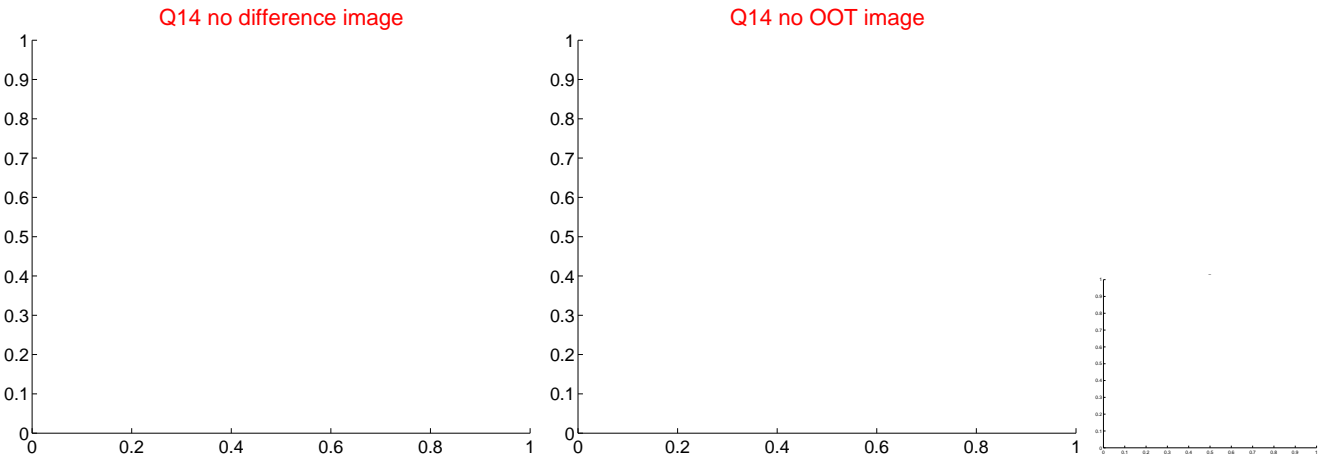
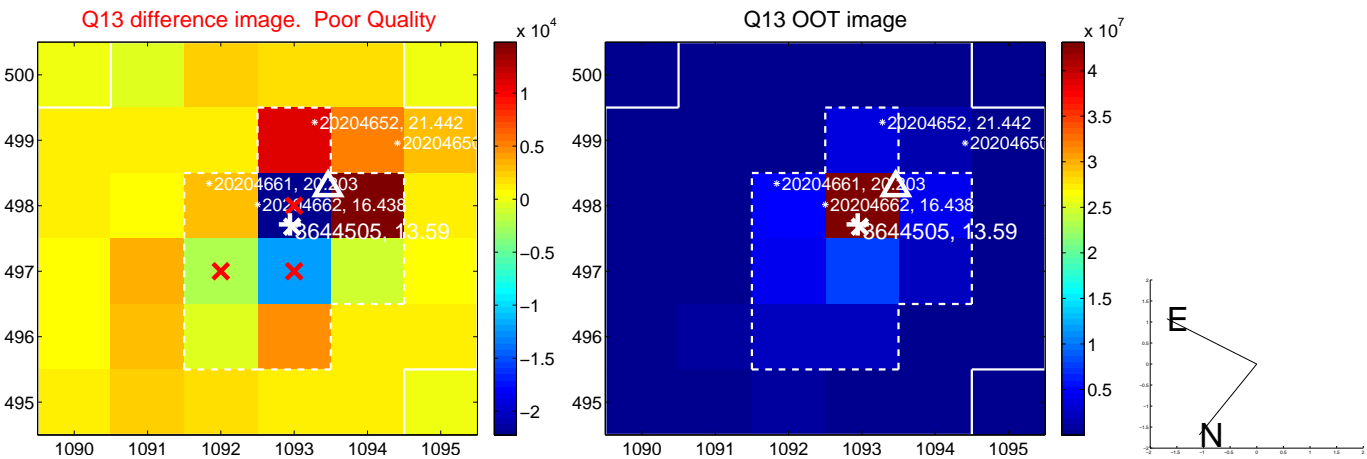
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



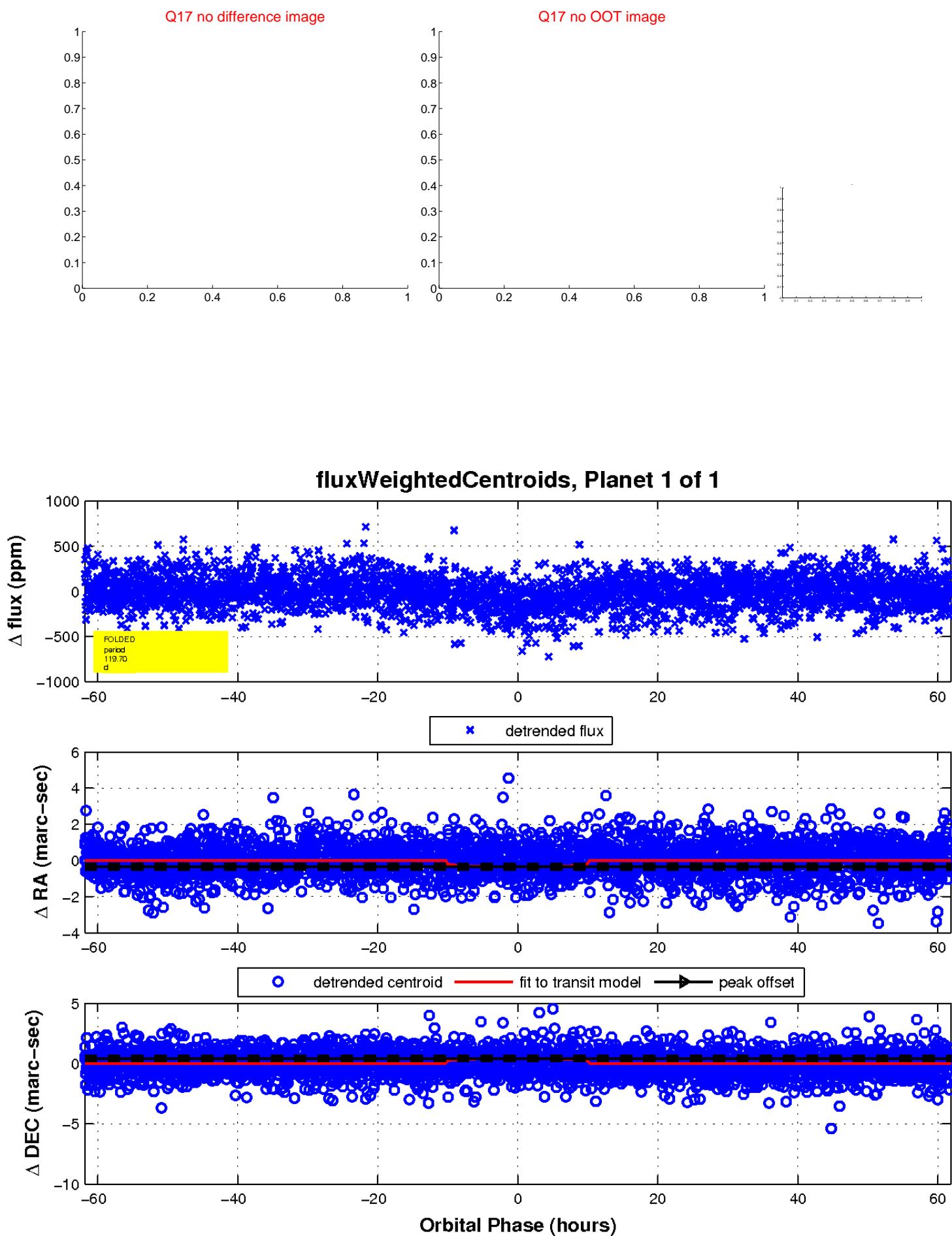
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UKIRT Image

Declination

