

KIC 009849884

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R _★ (R _☉)	T _★ (K)	R _p (R _⊕)	S _p (S _⊕)
009849884-01	OBS	4516.01	5.357469	131.621053	73.4	2.697	15.7	16.7	1.86	6123	1.89	1067.78

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009849884-01	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.

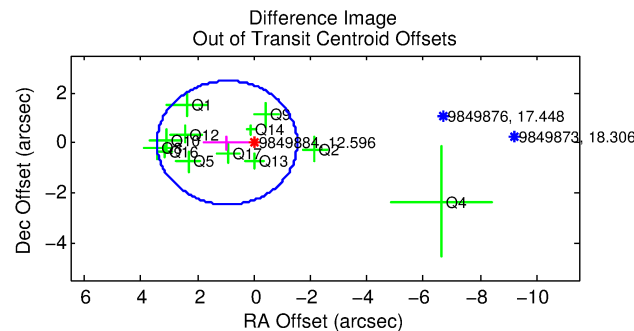
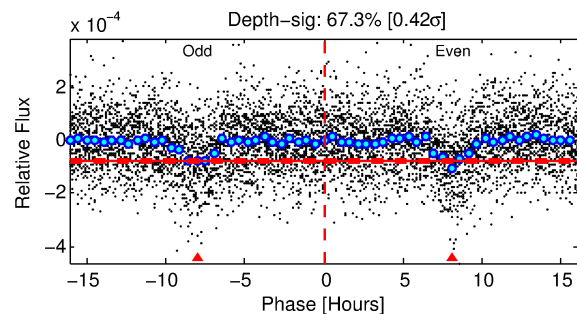
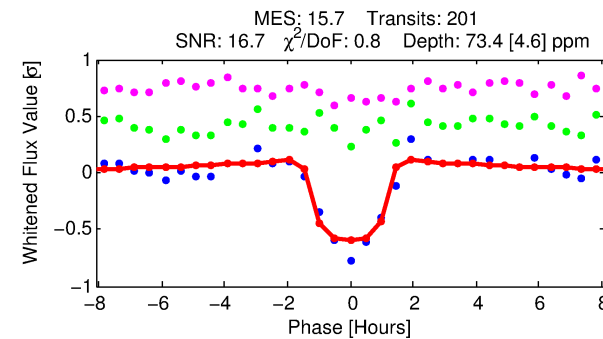
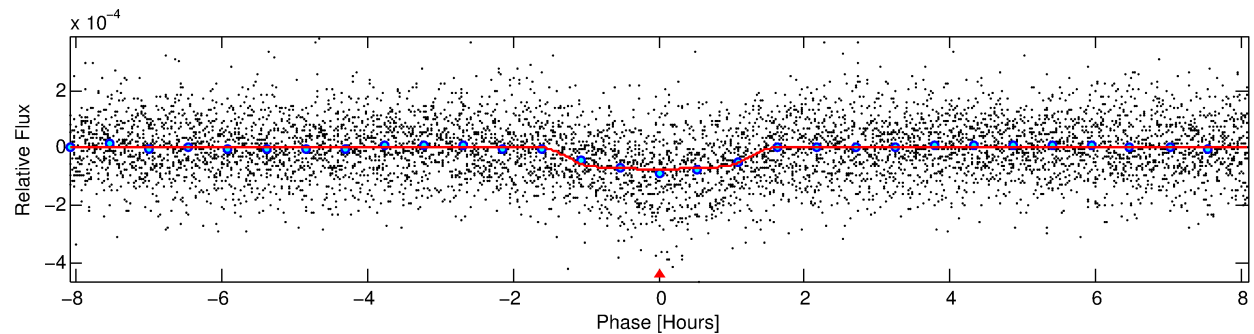
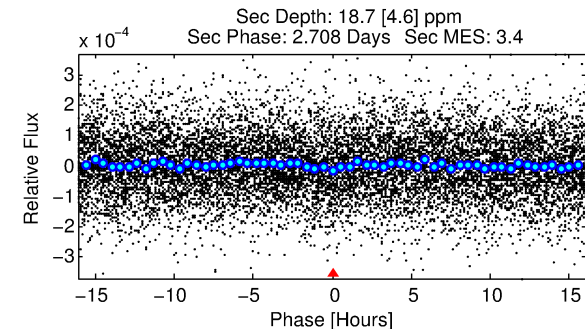
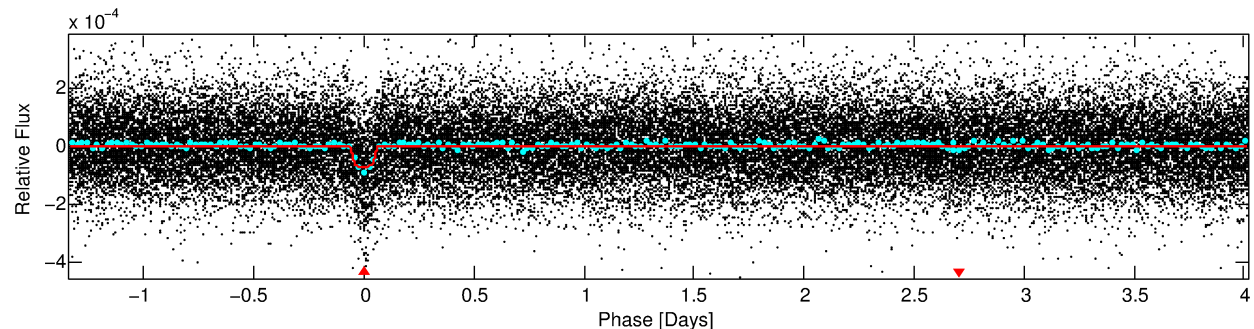
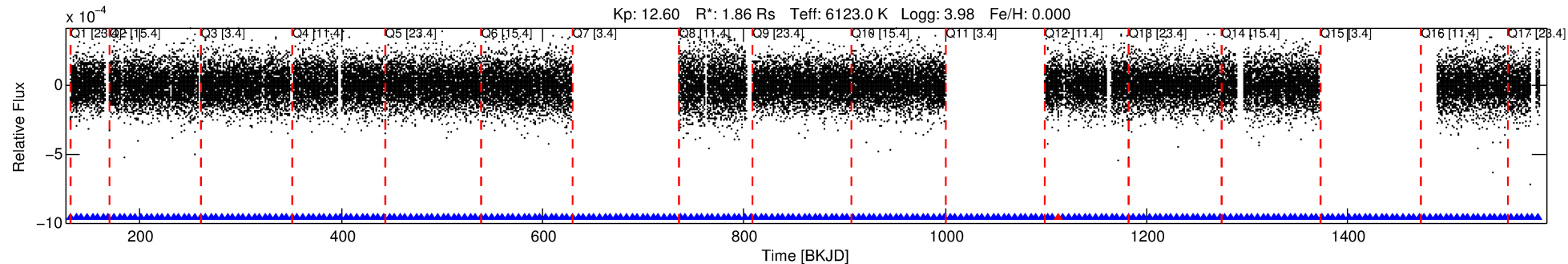
Ephemeris Match Information For 009849884-01

TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (″)	ΔRow	ΔCol	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ _P	σ _T
009849884-01	9849884	7268.01	9971475	1:1	1507.6	379	0	13.17	12.60	2737.00	Col-Anomaly	0	0.54	0.65

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ 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 σ_P < 5.0 and σ_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: 9849884 Candidate: 1 of 1 Period: 5.357 d
KOI: K04516.01 Corr: 0.954



DV Fit Results:

Period = 5.35747 [0.00002] d
Epoch = 131.6211 [0.0025] BKJD
Rp/R* = 0.0093 [0.0026]
a/R* = 6.82 [9.96]
b = 0.91 [0.30]
Seff = 1067.78 [474.20]
Teq = 1458 [162] K
Rp = 1.89 [0.75] Re
a = 0.0639 [0.0173] AU
Ag = 11.81 [8.85] [1.22σ]
Teffp = 4178 [651] K [4.05σ]

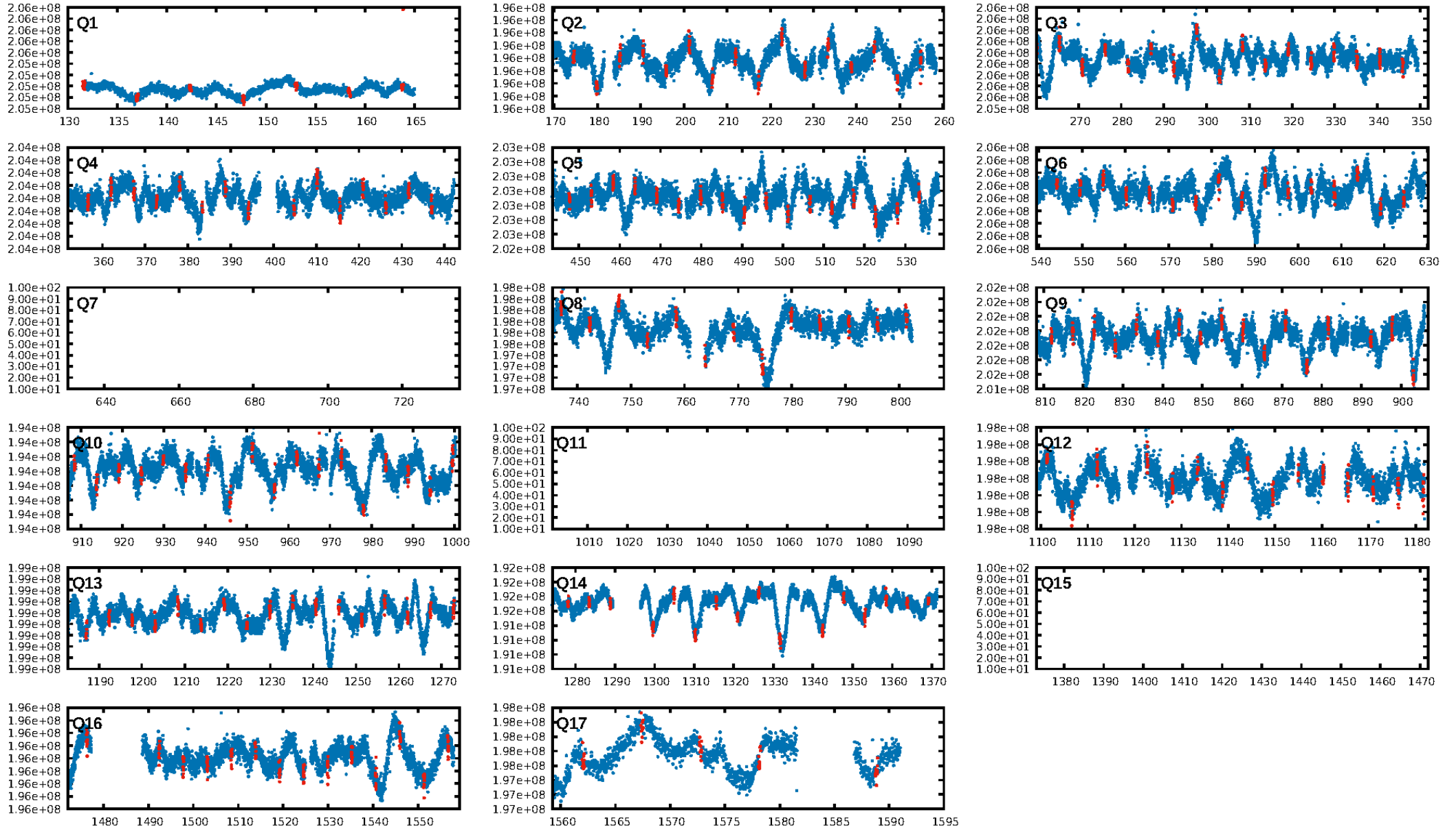
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.18e-54
RollingBand-fgt: 0.99 [188/189]
GhostDiagnostic-chr: 2.95
Centroid-sig: 34.9%
Centroid-so: 0.684 arcsec [1.04σ]
OotOffset-rm: 0.952 arcsec [1.15σ]
KicOffset-rm: 0.973 arcsec [1.22σ]
OotOffset-st: 3/0/4/5 [12]
KicOffset-st: 3/0/4/5 [12]
DiffImageQuality-fgm: 0.75 [9/12]
DiffImageOverlap-fno: 1.00 [14/14]

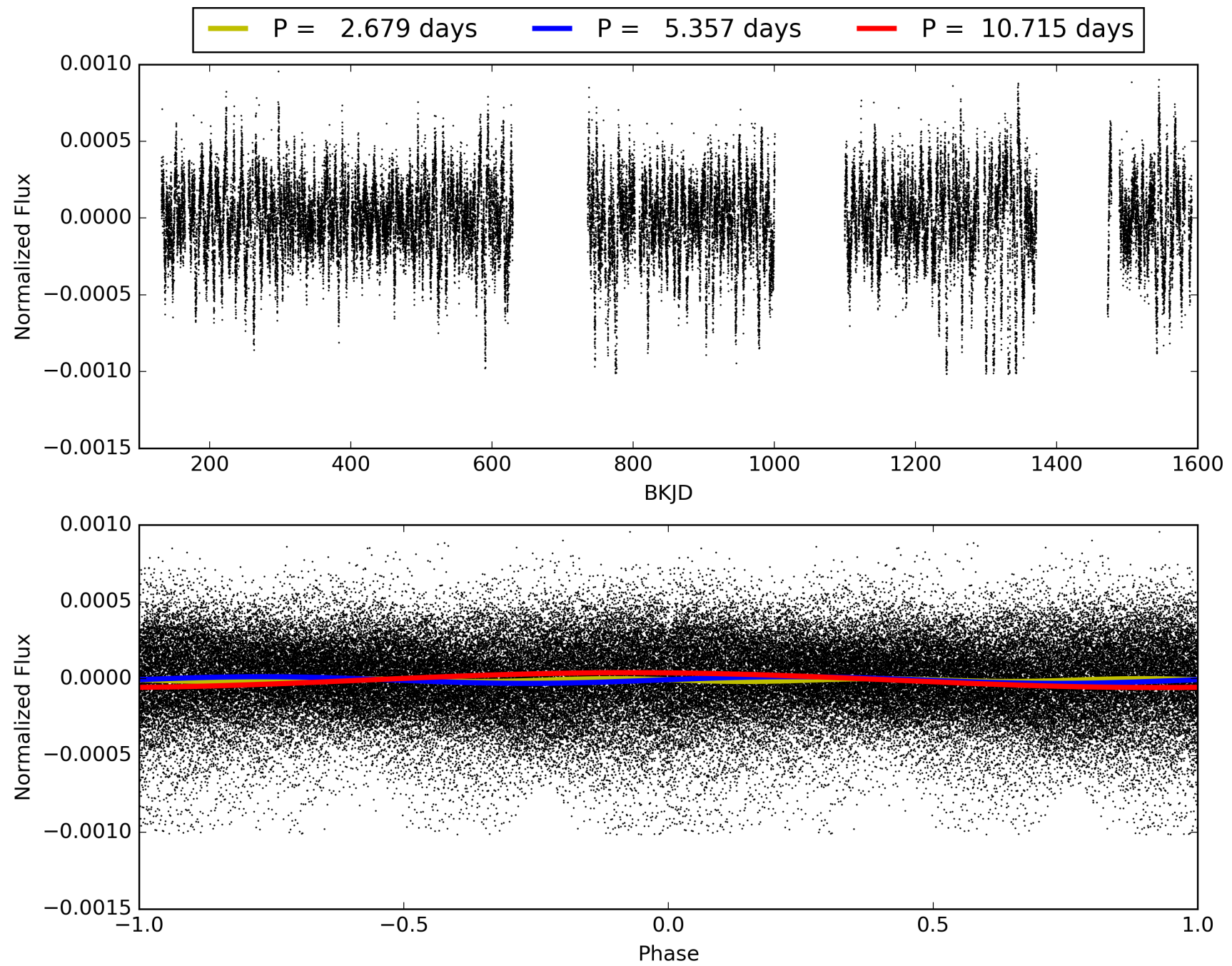
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 09:40:33 Z

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

TCE 009849884-01, PDC Light Curves

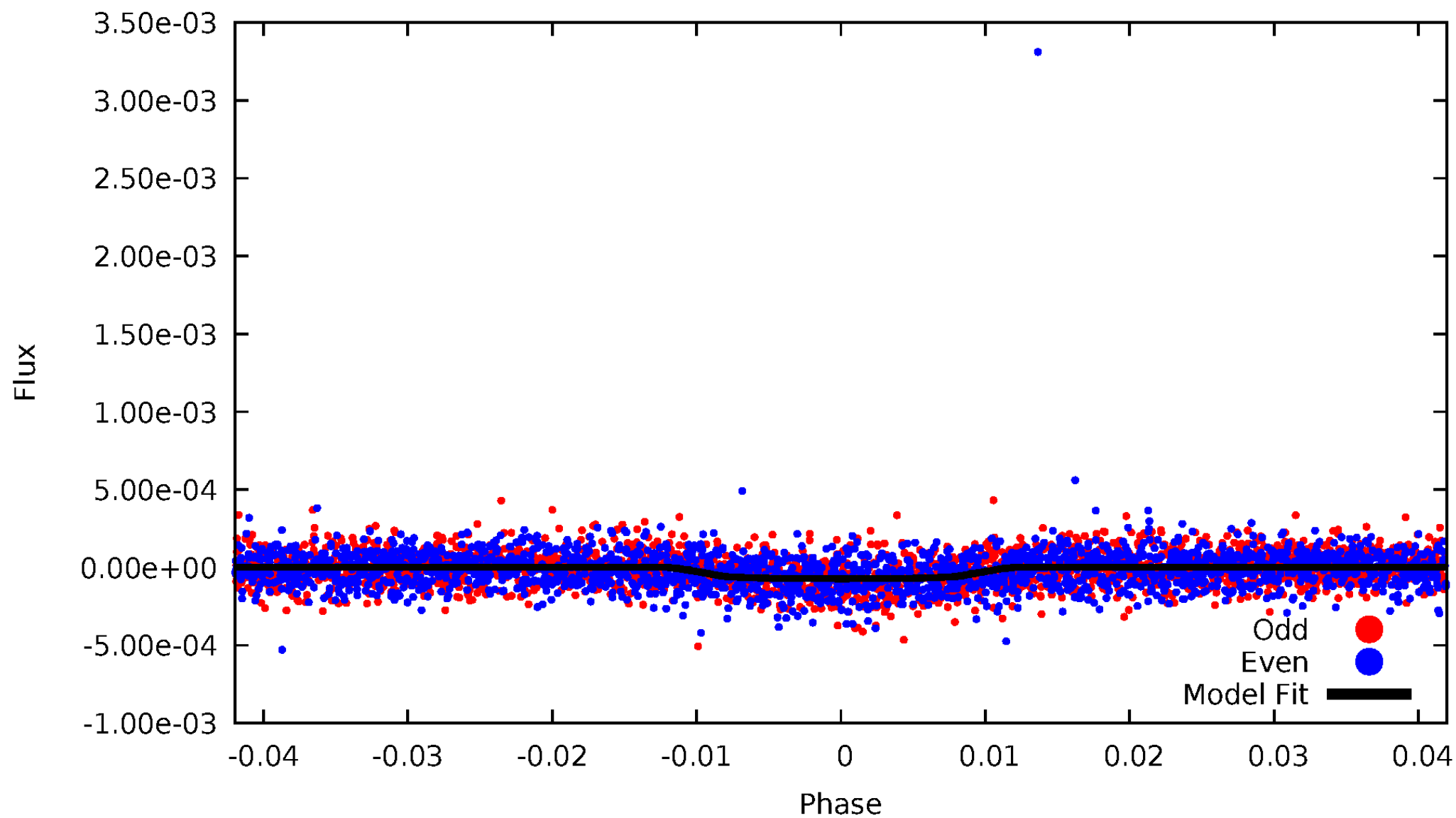


TCE 009849884-01



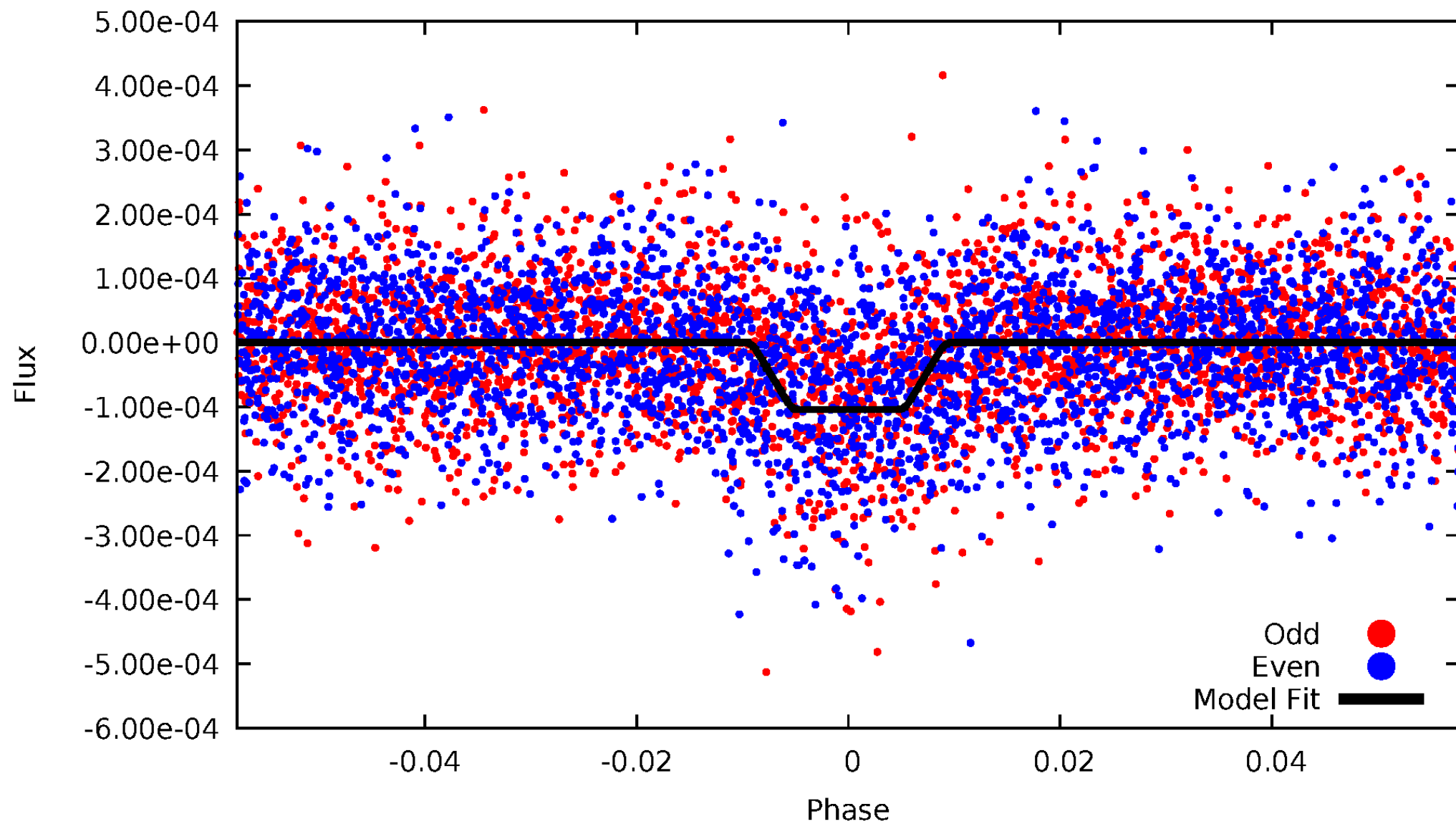
DV Odd/Even

TCE 009849884-01



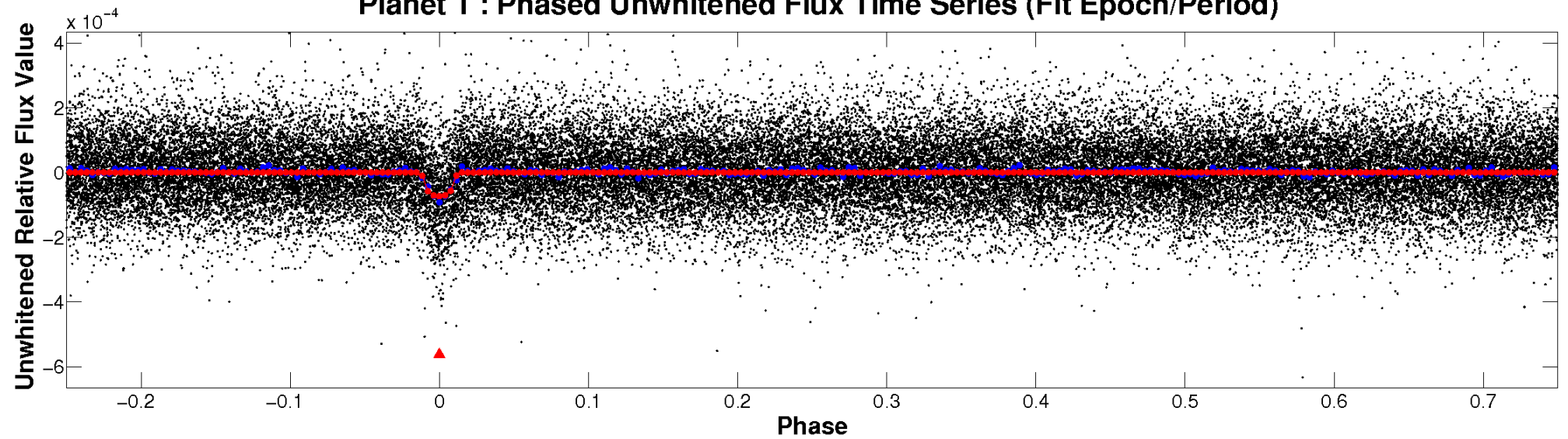
ALT Odd/Even

TCE 009849884-01

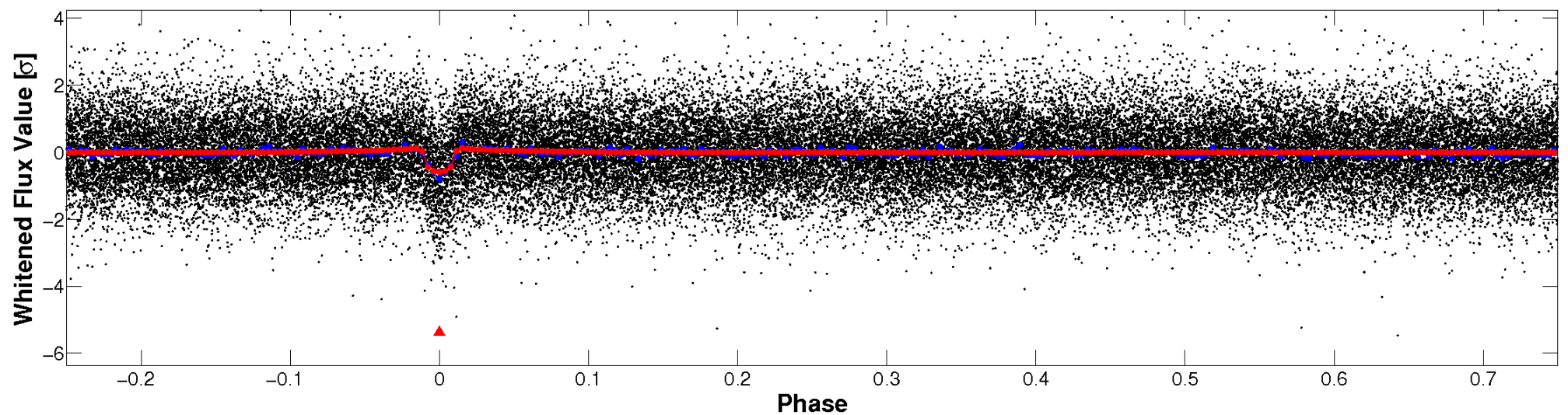


Non-Whitened Vs. Whitened Light Curve

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

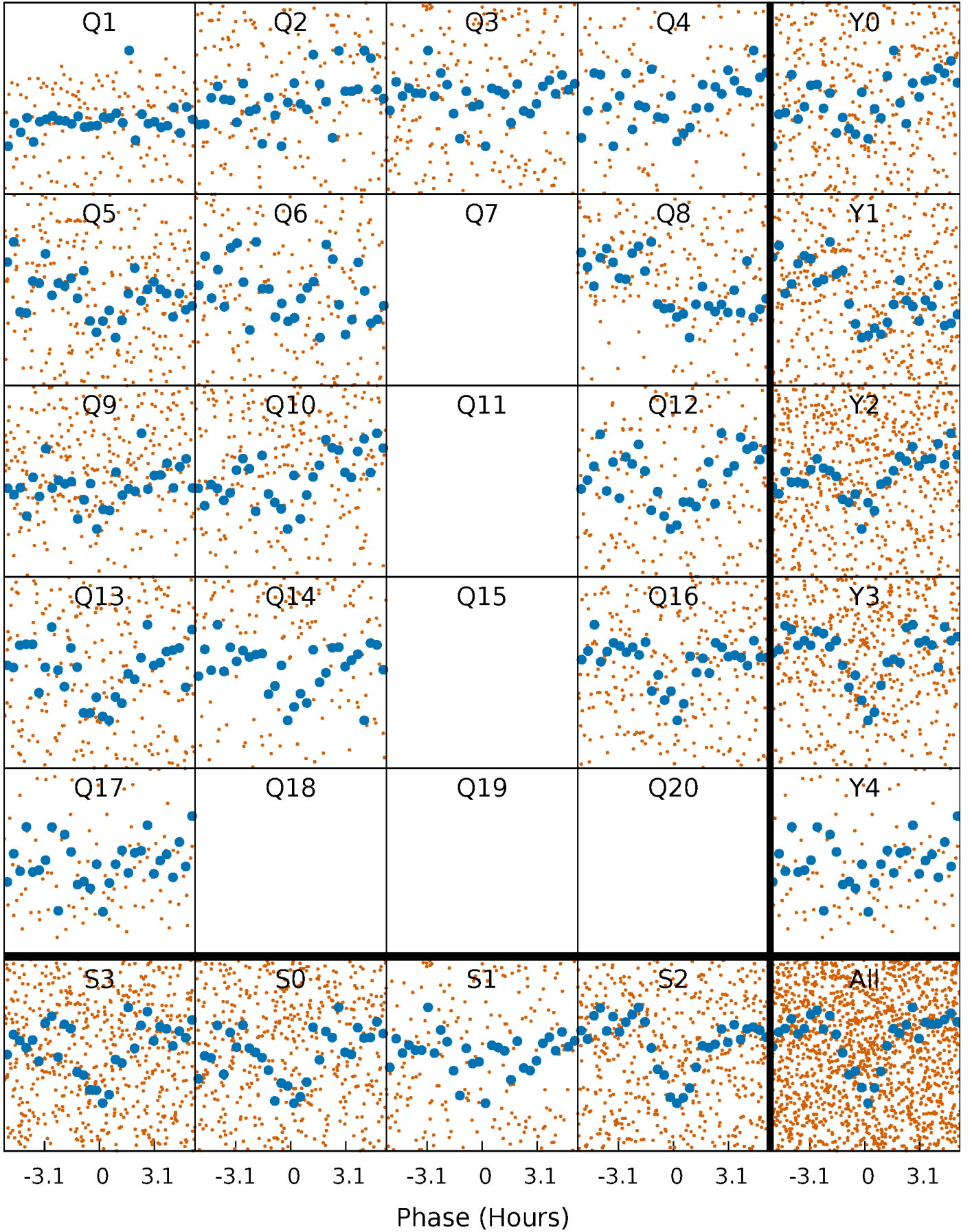


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



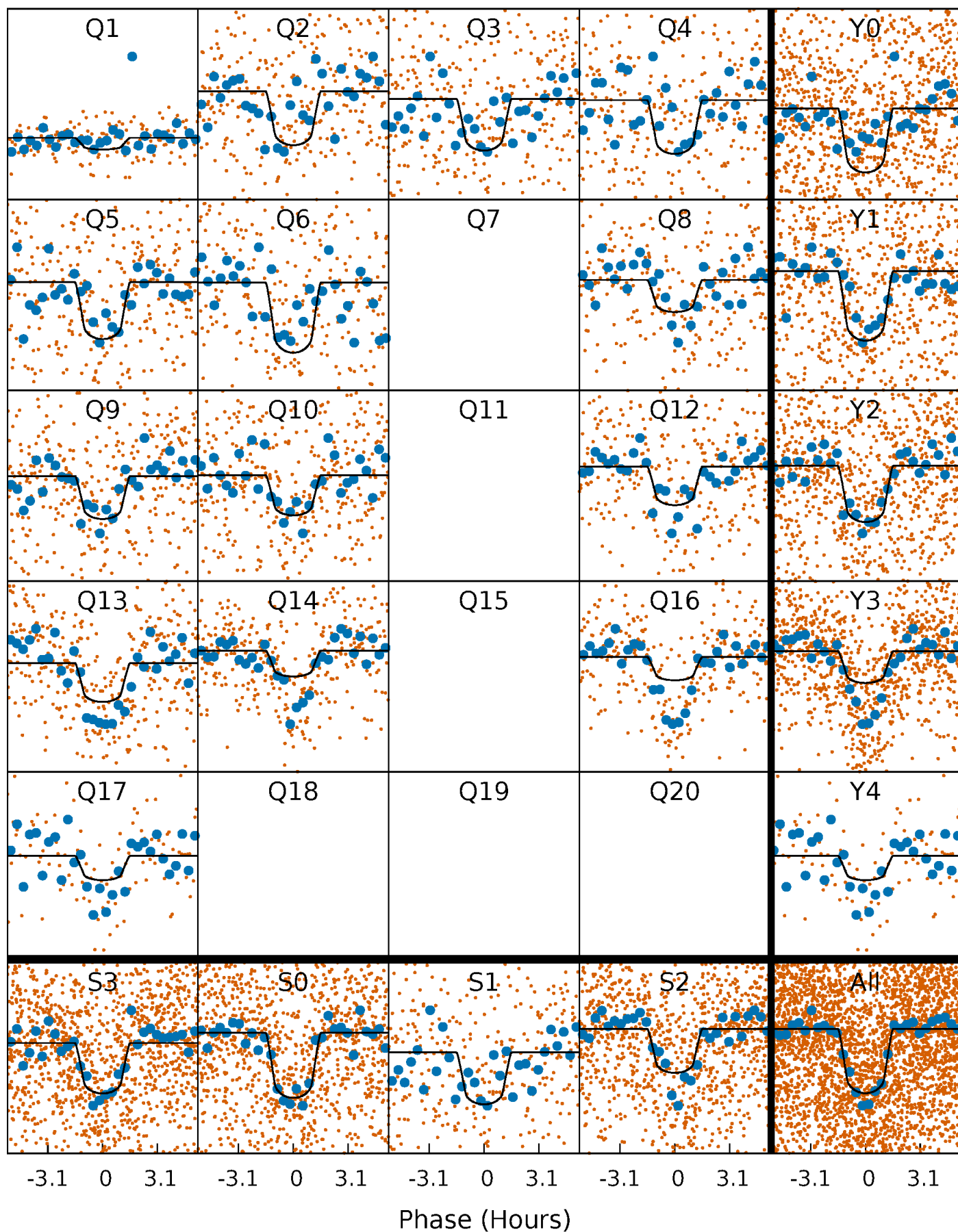
PDC Quarter-Phased Transit Curves

TCE 009849884-01 P= 5.357469 Days $T_0=131.621053$ (BKJD)



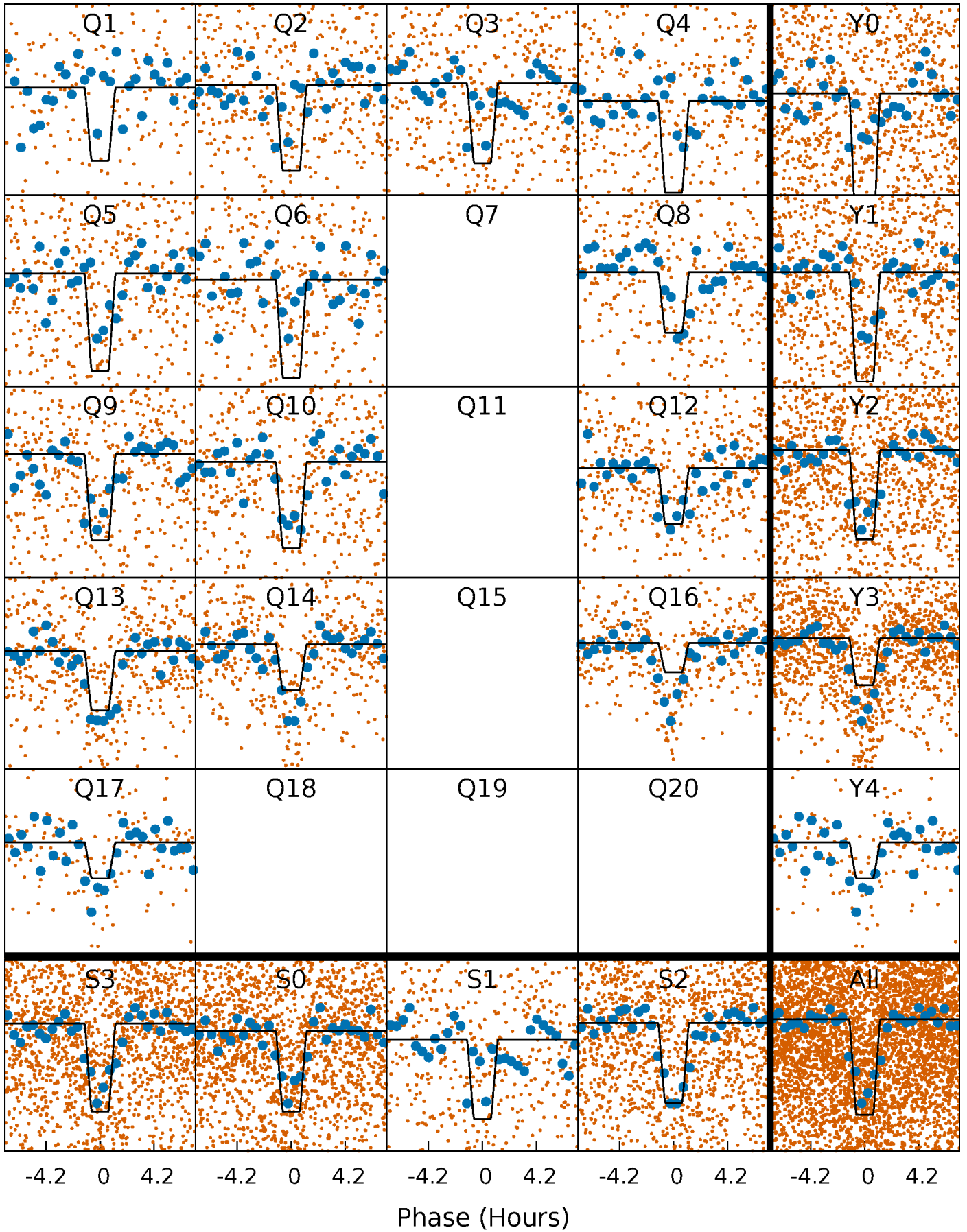
DV Quarter-Phased Transit Curves

TCE 009849884-01 P= 5.357469 Days $T_0=131.621053$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

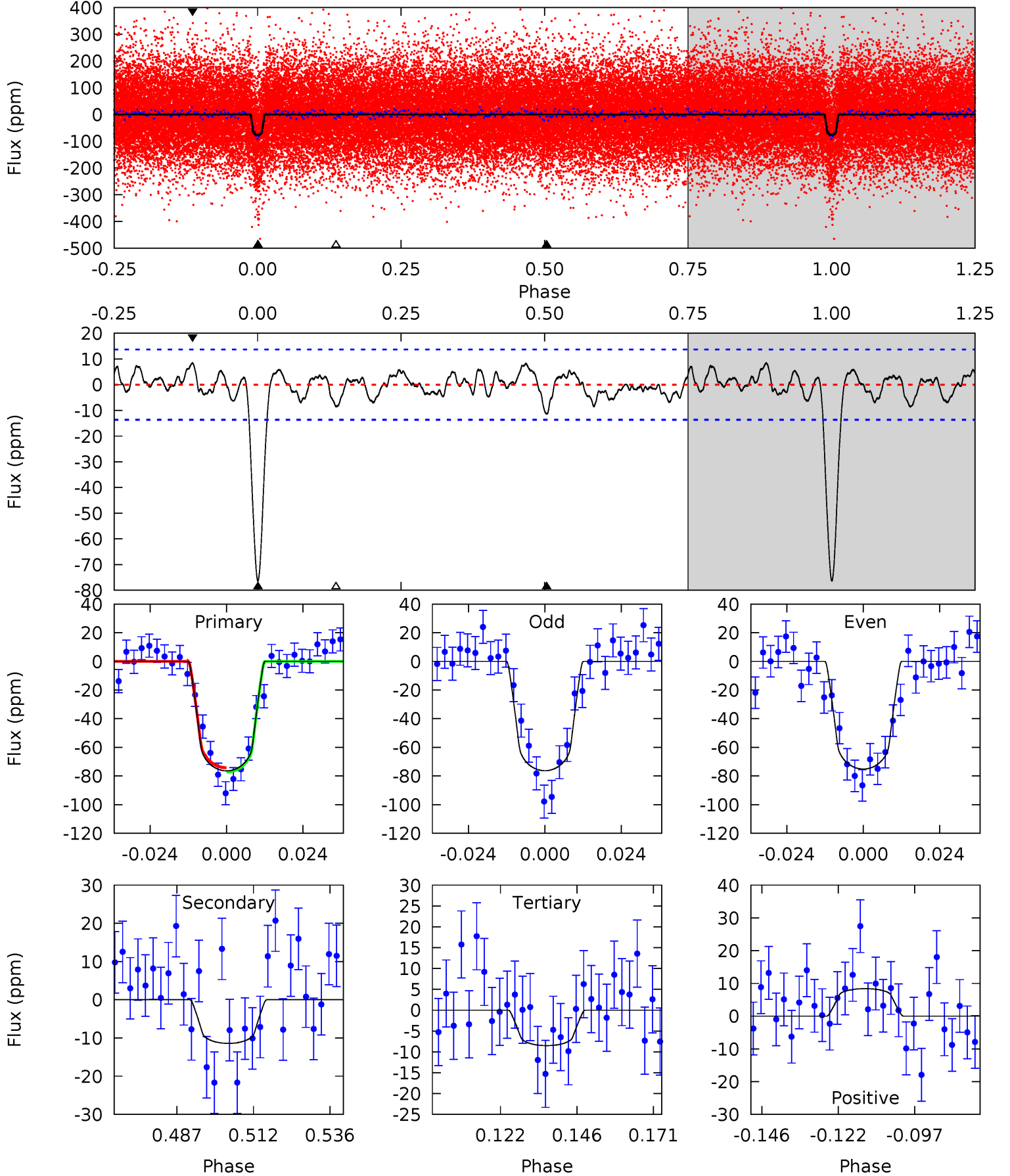
TCE 009849884-01 P= 5.357554 Days $T_0=131.607700$ (BKJD)



DV Model-Shift Uniqueness Test

009849884-01, P = 5.357469 Days, E = 126.263584 Days

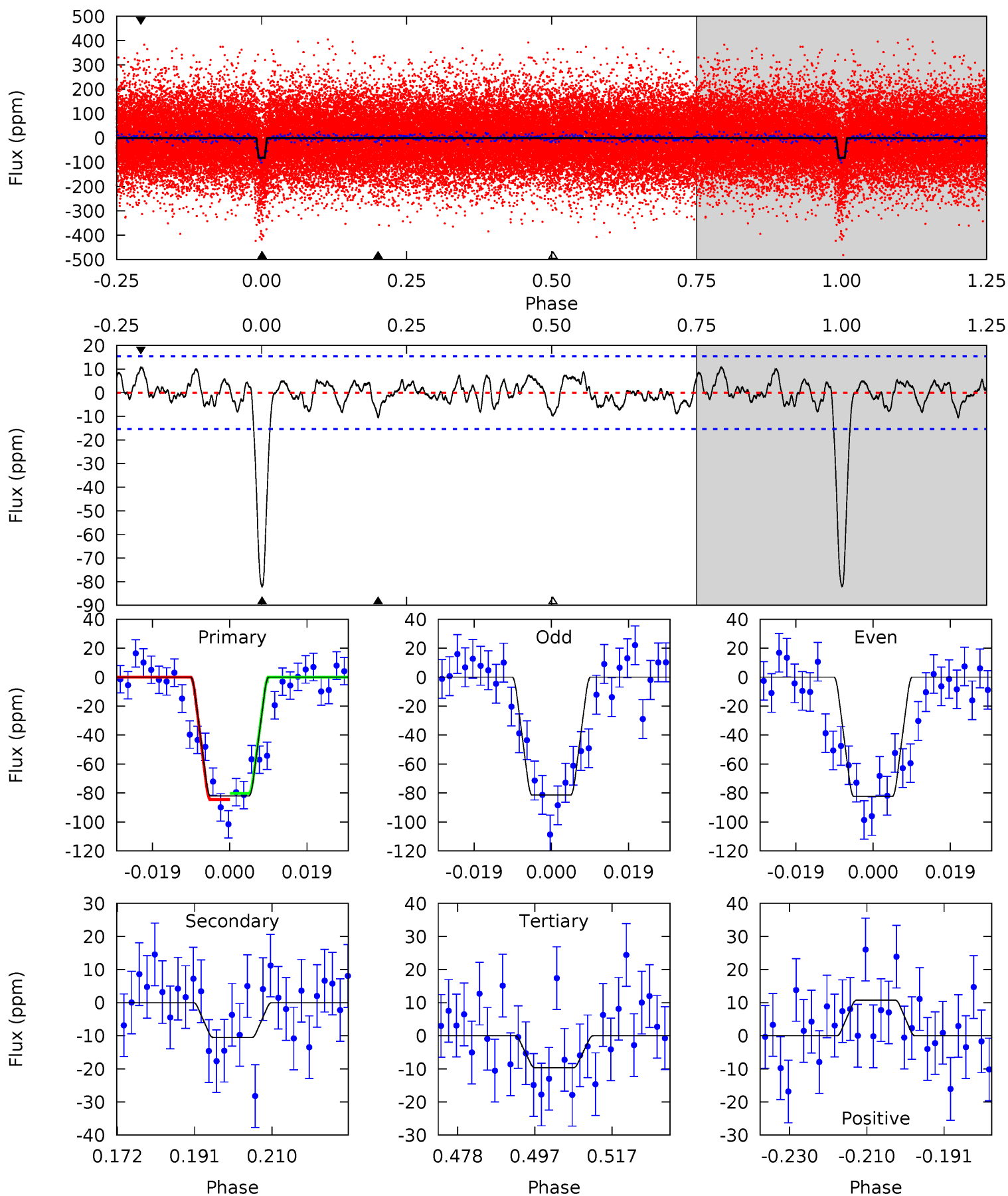
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.1	4.05	3.02	2.98	4.85	2.25	1.29	24.1	24.1	1.03	1.07	0.21	1.07	0.10	0.52



Alt Model-Shift Uniqueness Test

009849884-01, P = 5.357554 Days, E = 126.250146 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.1	3.36	3.08	3.43	4.90	2.34	1.31	23.1	22.7	0.28	-0.07	0.14	1.11	0.12	0.68



Stellar Parameters For KIC 009849884

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6123^{+167}_{-167}	$3.982^{+0.252}_{-0.108}$	$0.000^{+0.250}_{-0.250}$	$1.860^{+0.383}_{-0.527}$	$1.208^{+0.198}_{-0.179}$	$0.265^{+0.394}_{-0.104}$
	+3%/-3%	+6%/-3%	+inf%/-inf%	+21%/-28%	+16%/-15%	+149%/-39%
Source	PHO1	FLK73	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 009849884-01 / KOI 4516.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-11 ± 3	$1.79^{+0.64}_{-0.58}$	2008^{+126}_{-159}	3979^{+553}_{-400}	$8.085^{+9.442}_{-3.923}$
Alt.	-11 ± 3	$1.98^{+0.59}_{-0.56}$	2008^{+132}_{-163}	3798^{+479}_{-361}	$6.070^{+6.489}_{-2.844}$

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

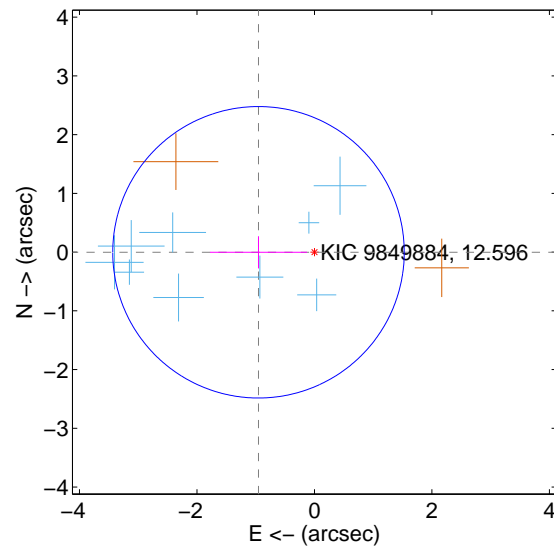
Supplemental centroid analysis for 009849884-01. Kepler magnitude: 12.60. Transit SNR 16.70

There are 9 quarters with good PRF difference image offsets

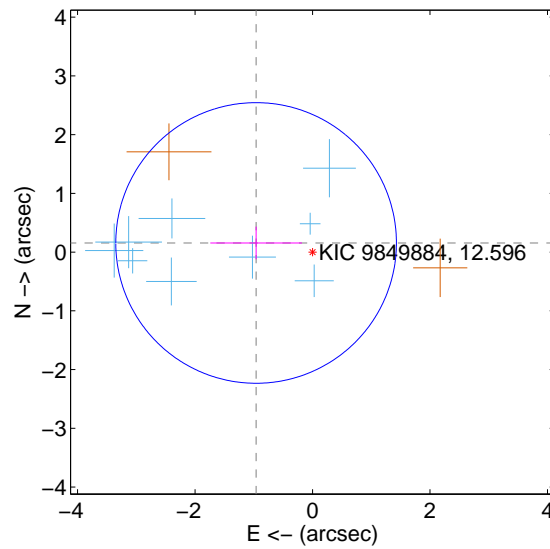
The direct PRF centroid is offset from the target star catalog position by about 0.35 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.952 ± 0.827	1.15	0.952 ± 0.827	-0.003 ± 0.274
PRF-fit source offset from KIC position	0.973 ± 0.796	1.22	0.960 ± 0.780	0.156 ± 0.278
photometric centroid source offset	0.68 ± 0.66	1.04	0.45 ± 0.64	0.52 ± 0.68

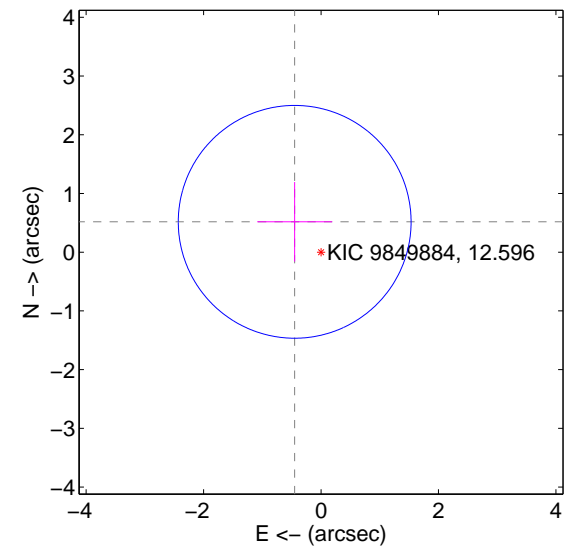
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

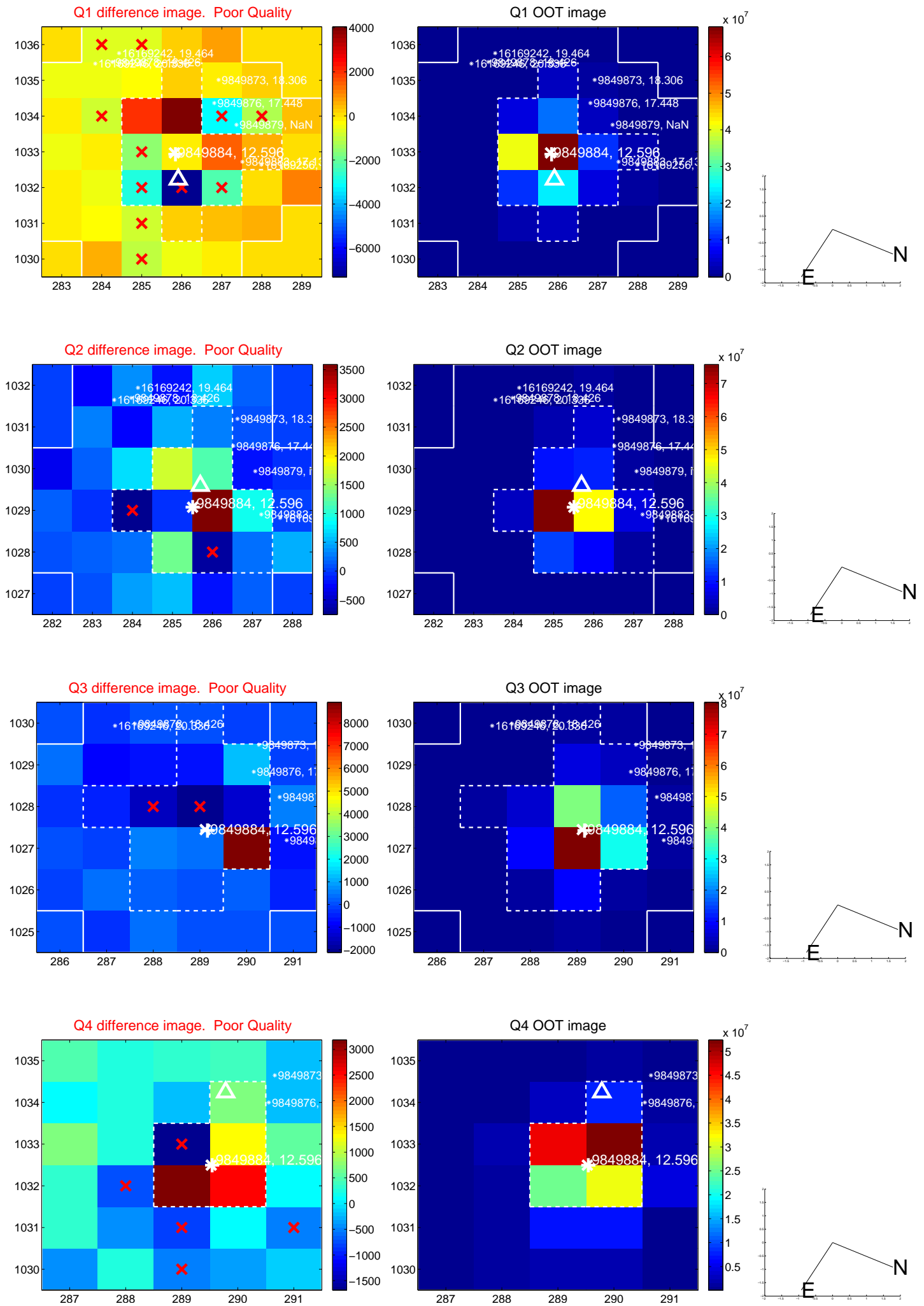


offset from photometric centroids

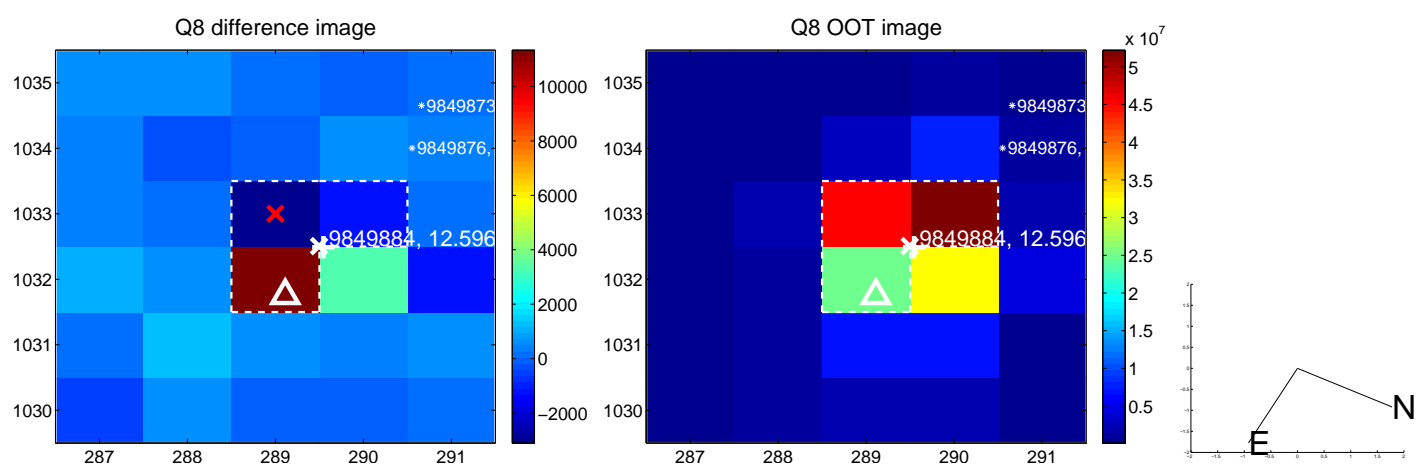
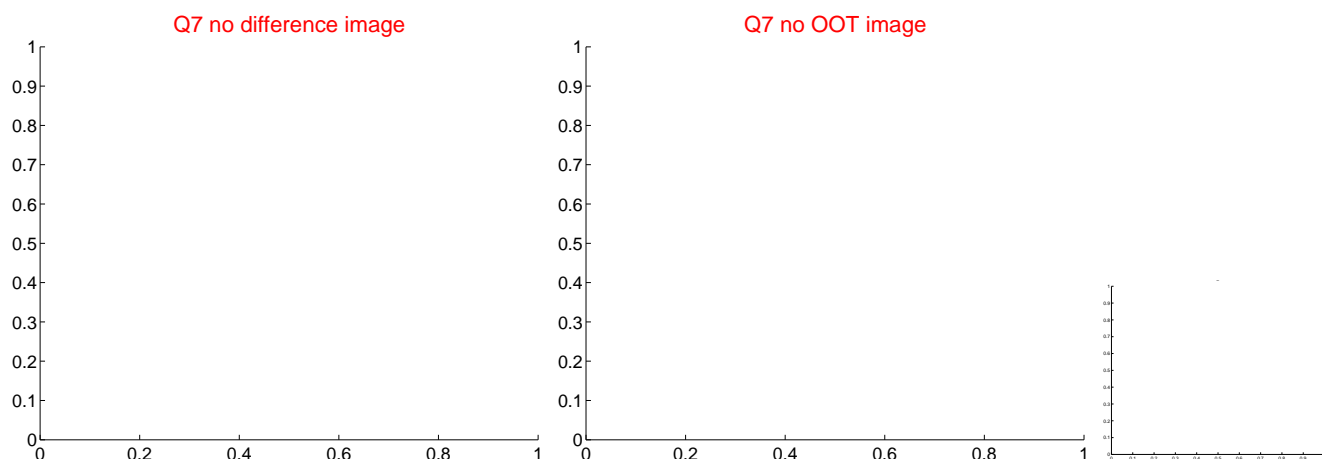
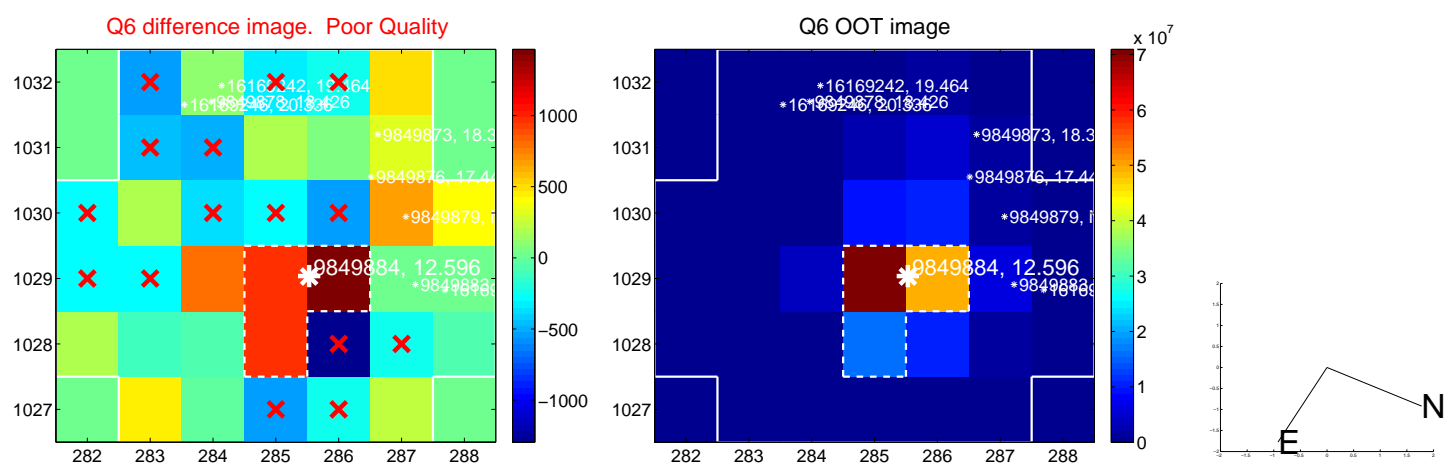
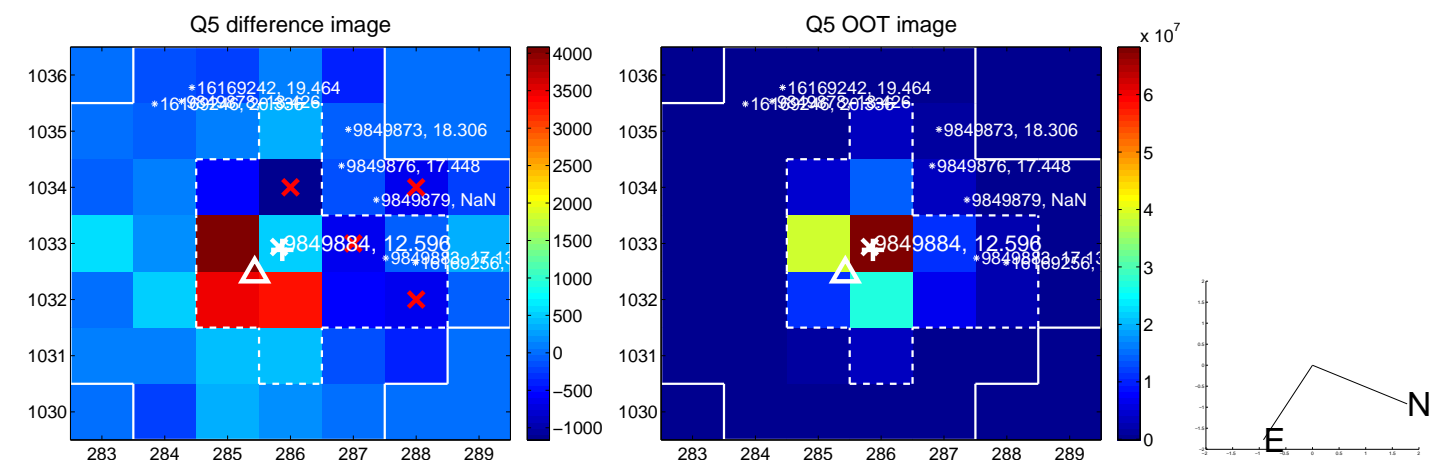


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

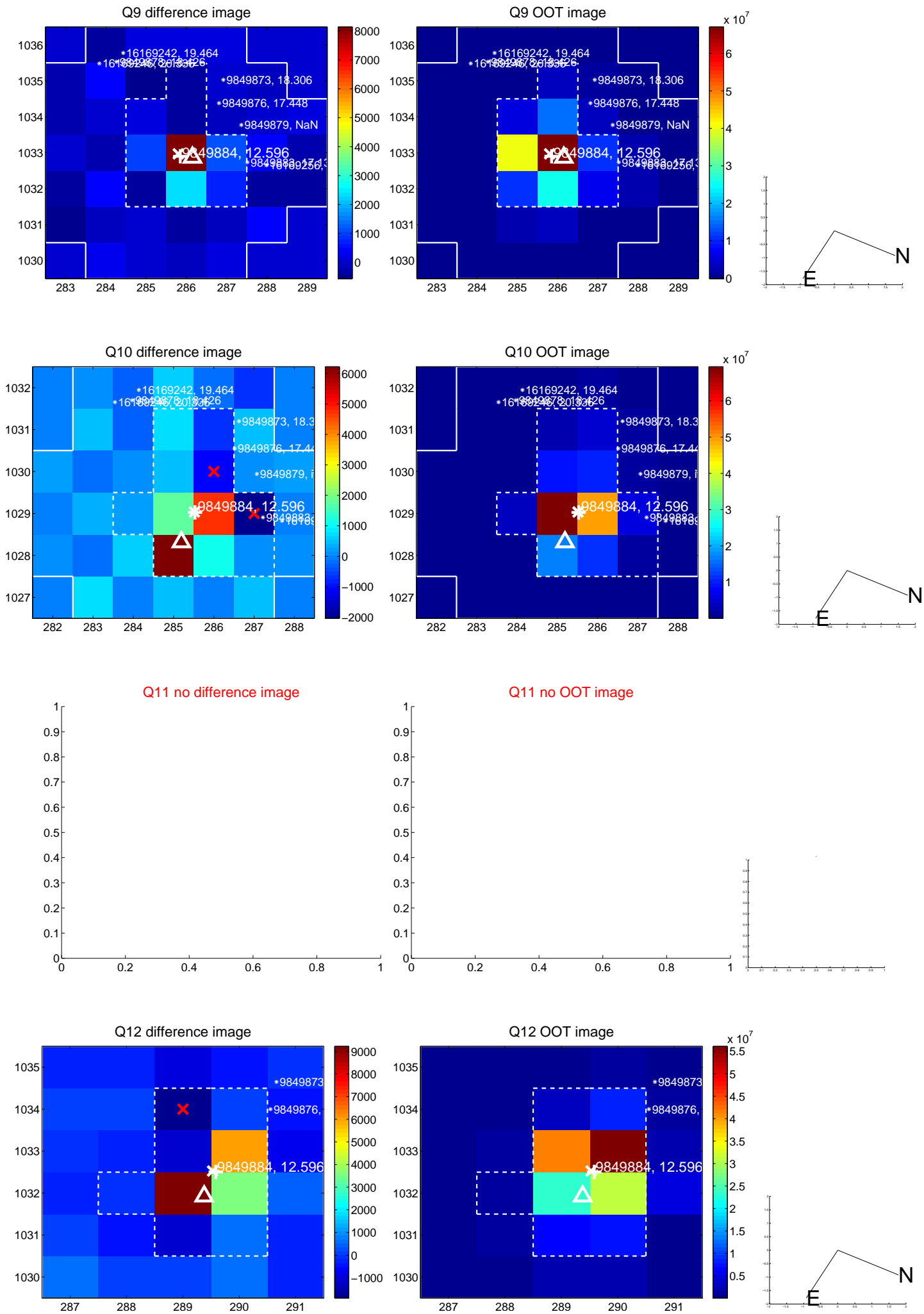
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



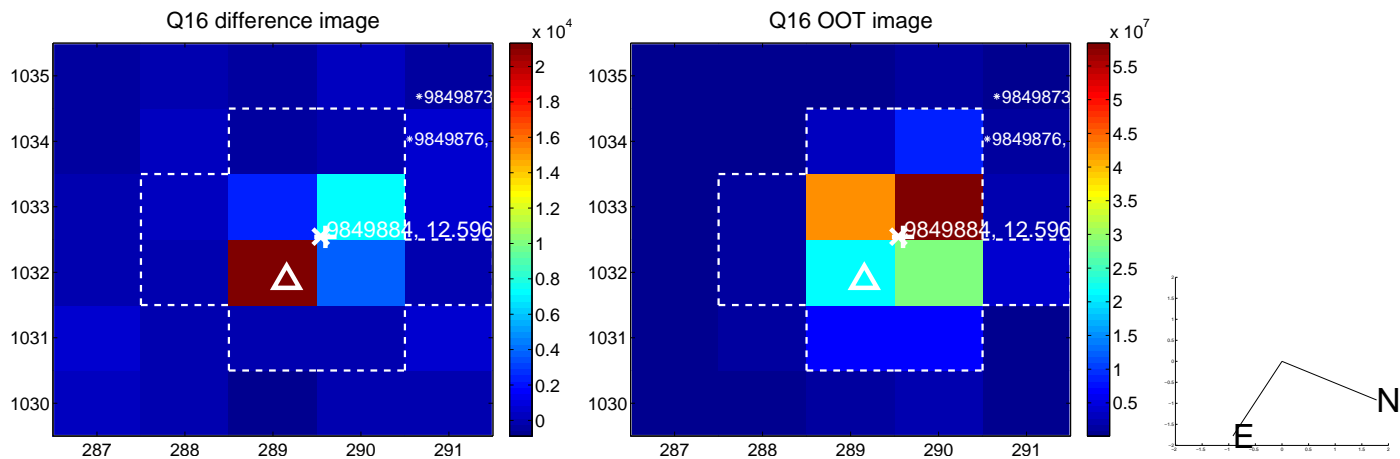
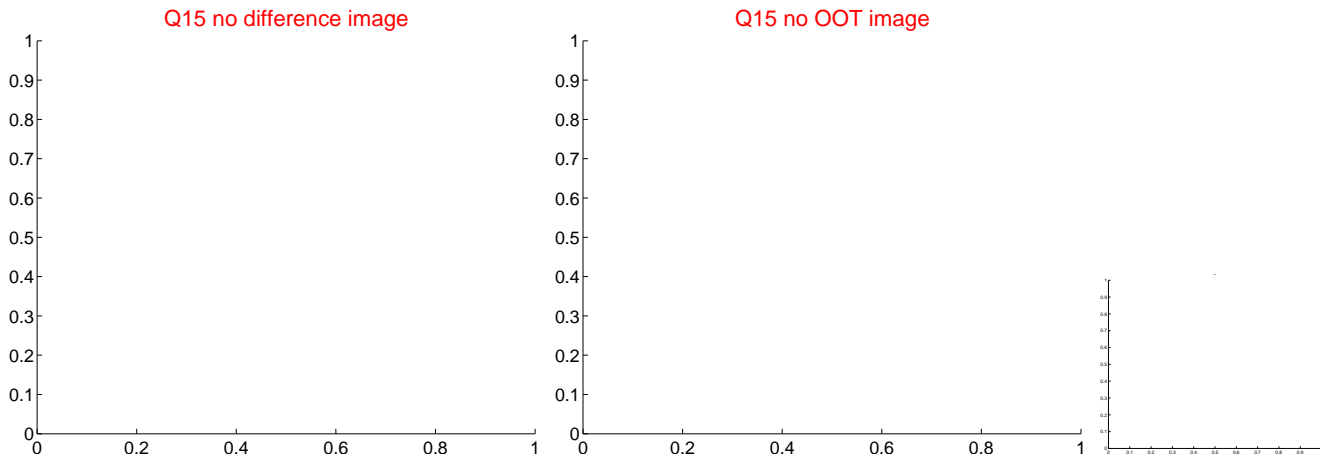
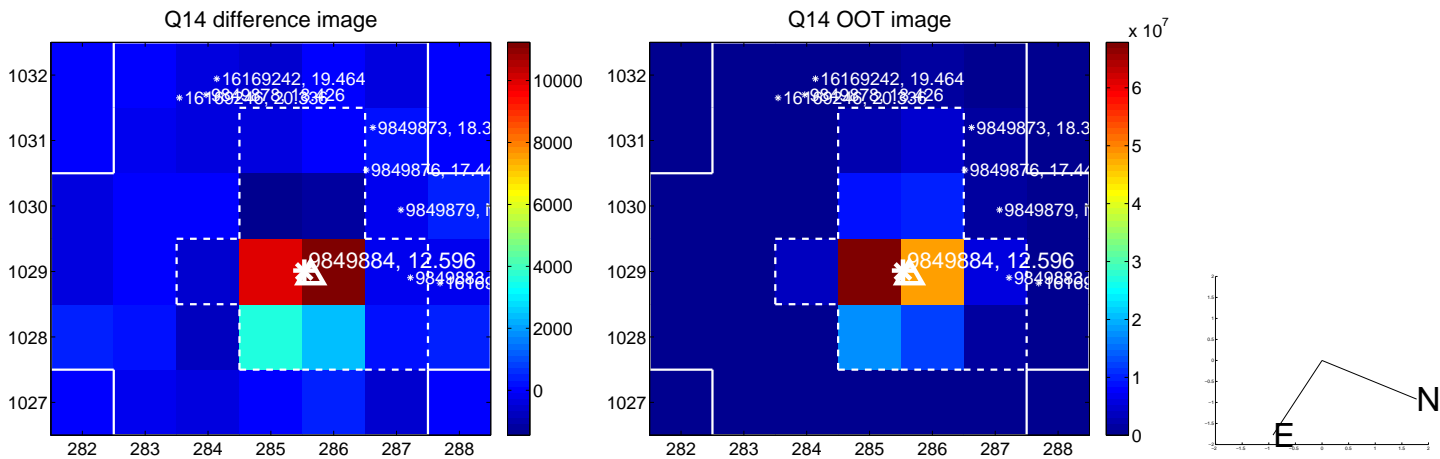
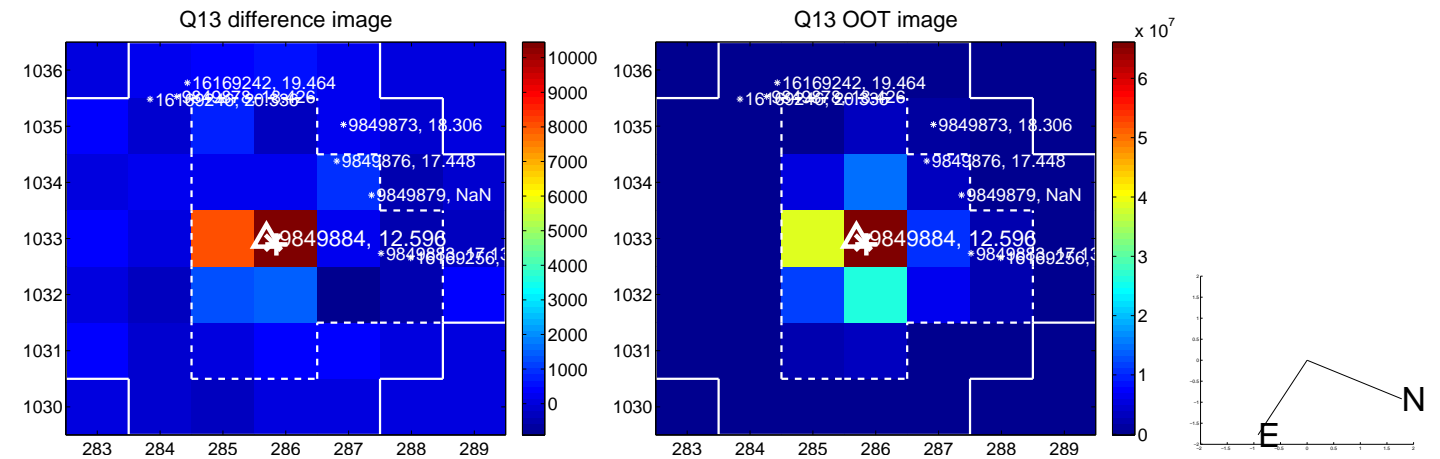
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



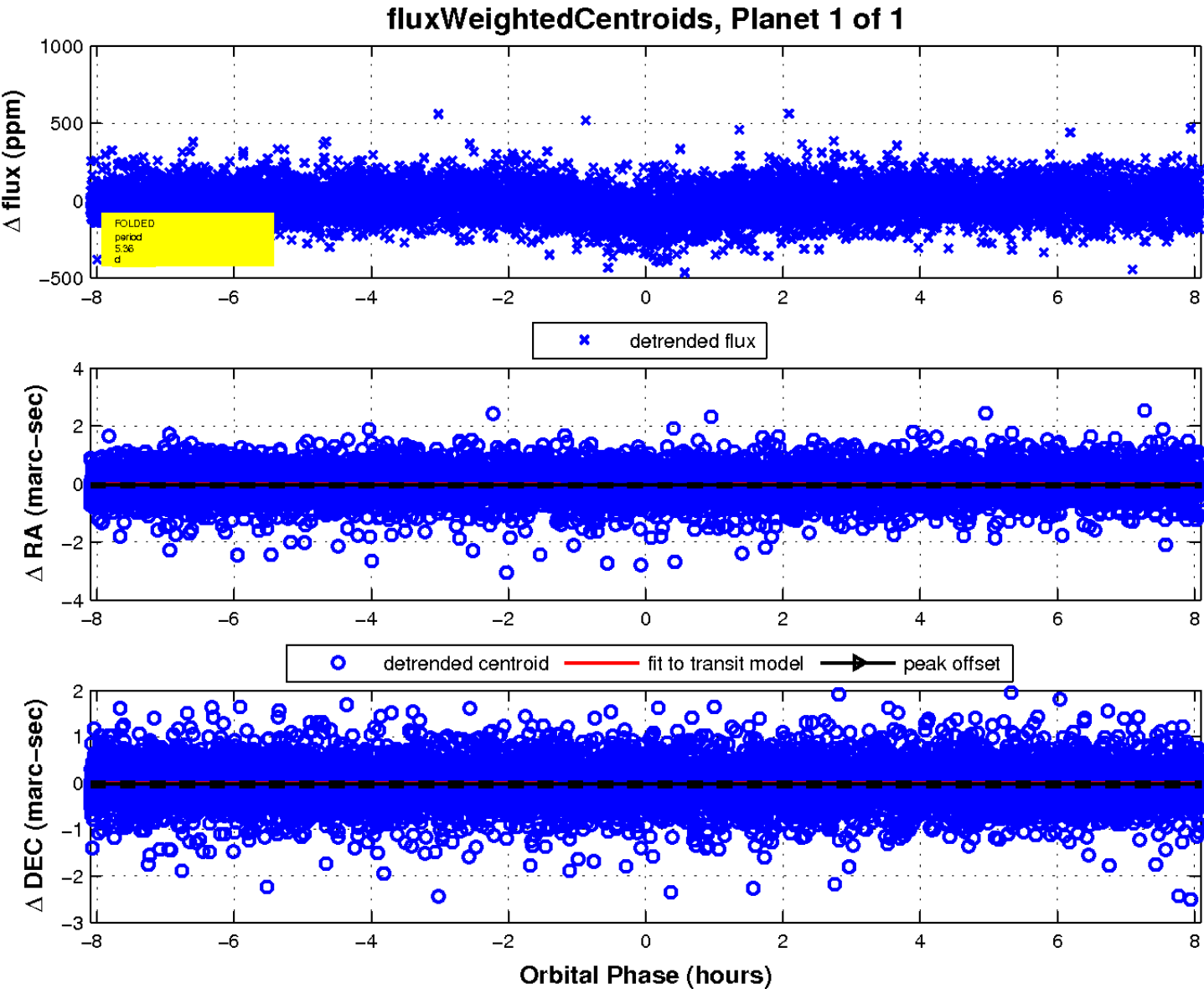
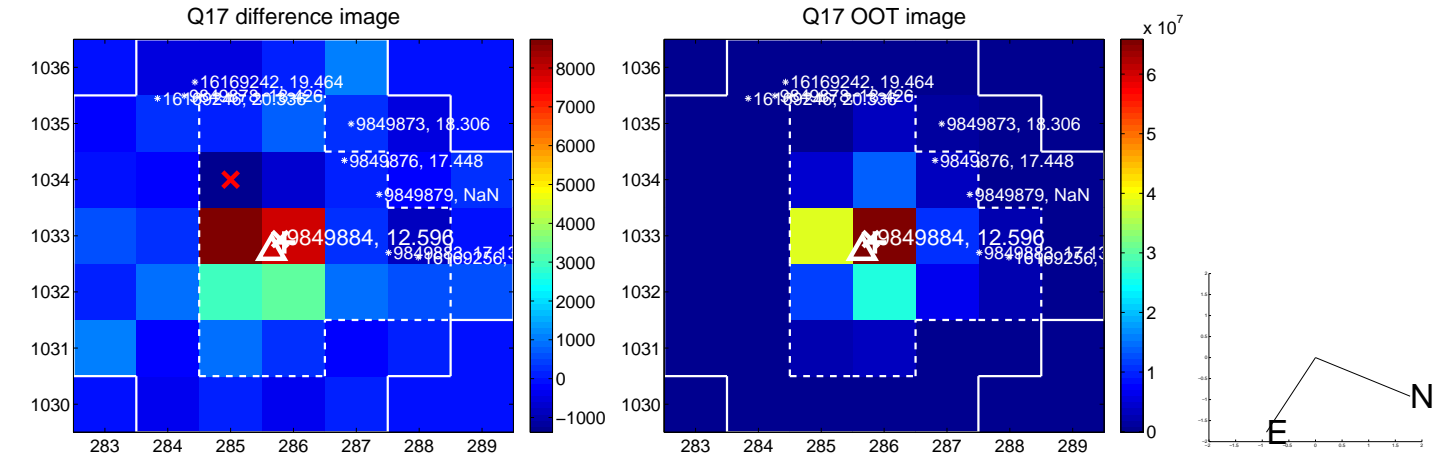
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UKIRT Image

Declination

