

KIC 012257999

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})
012257999-01	OBS	2577.01	18.555951	132.063825	563.8	5.400	21.0	22.9	8.84	5988	22.64	2445.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012257999-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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.

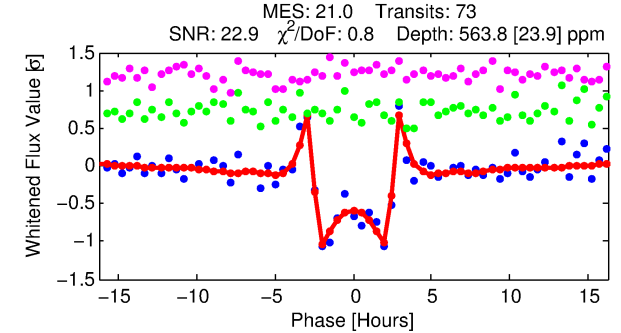
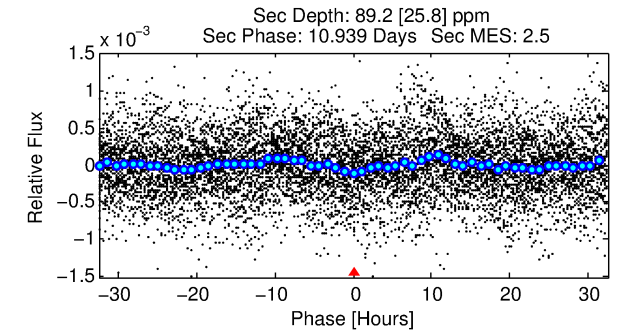
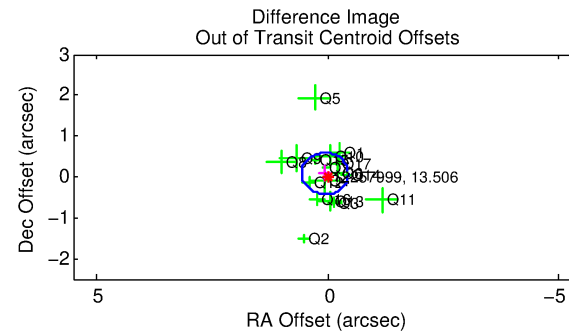
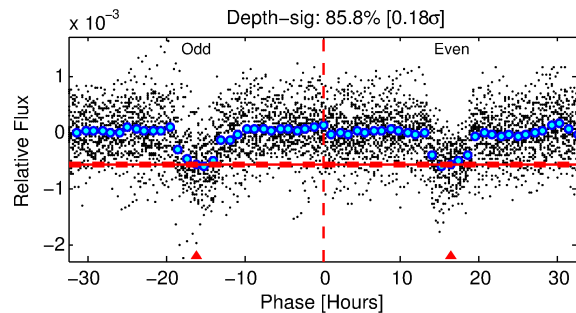
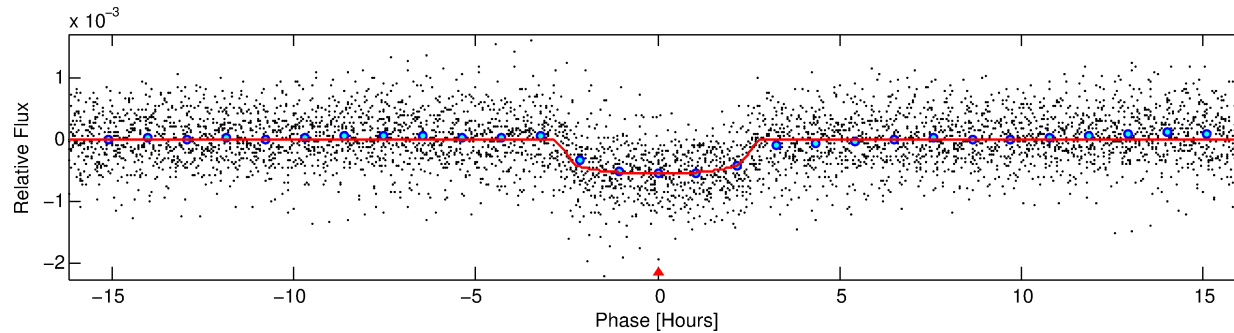
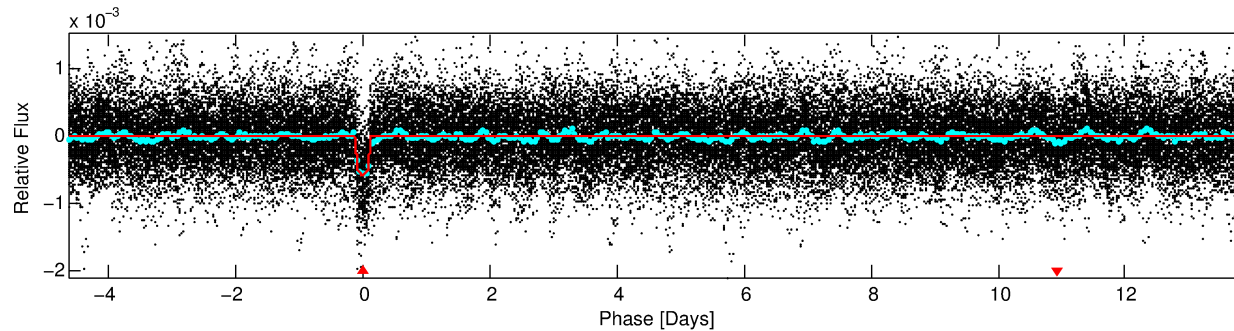
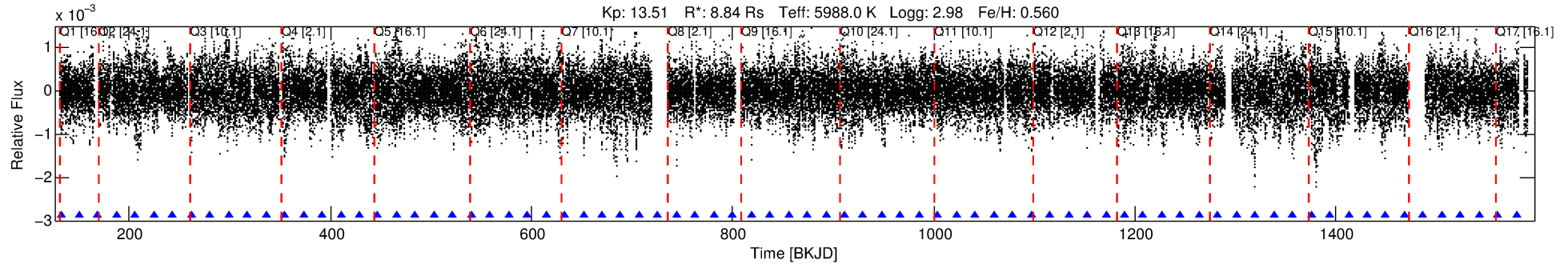
Ephemeris Match Information For 012257999-01

No Significant Match Found

DV One-Page Summary

KIC: 12257999 Candidate: 1 of 1 Period: 18.556 d

KOI: K02577.01 Corr: 0.983



DV Fit Results:

Period = 18.55595 [0.00004] d
Epoch = 132.0638 [0.0018] BKJD
Rp/R* = 0.0235 [0.0024]
a/R* = 18.85 [8.49]
b = 0.73 [0.29]
Seff = 2445.56 [1442.50]
Teq = 1793 [264] K
Rp = 22.64 [8.60] Re
a = 0.1919 [0.0617] AU
Ag = 3.53 [2.12] [1.19 σ]
Teffp = 3799 [465] K [3.75 σ]

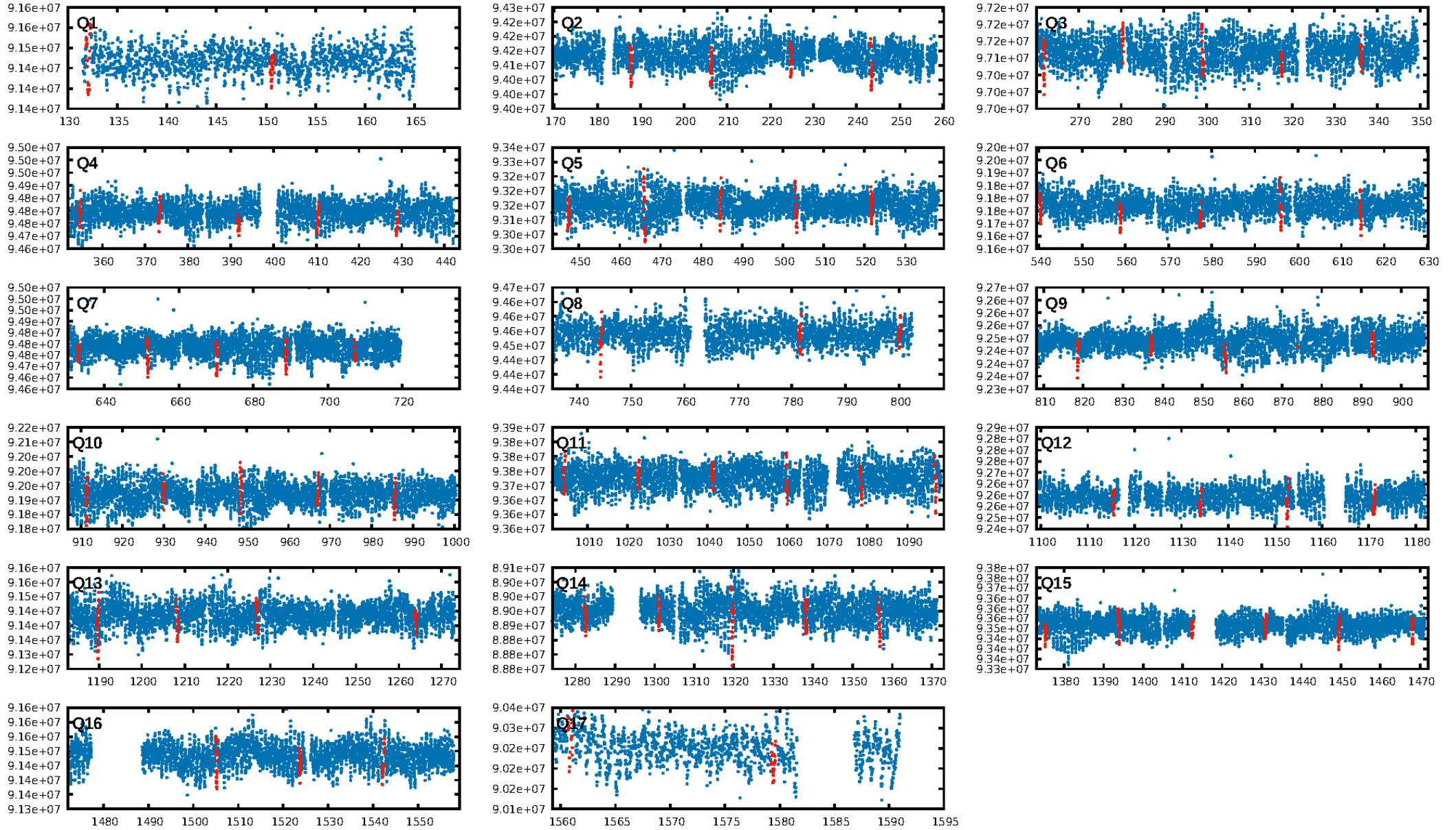
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.21e-87
RollingBand-fgt: 1.00 [69/69]
GhostDiagnostic-chr: 2.037
Centroid-sig: 64.3%
Centroid-so: 0.130 arcsec [0.74 σ]
OotOffset-rm: 0.097 arcsec [0.58 σ]
KicOffset-rm: 0.012 arcsec [0.07 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

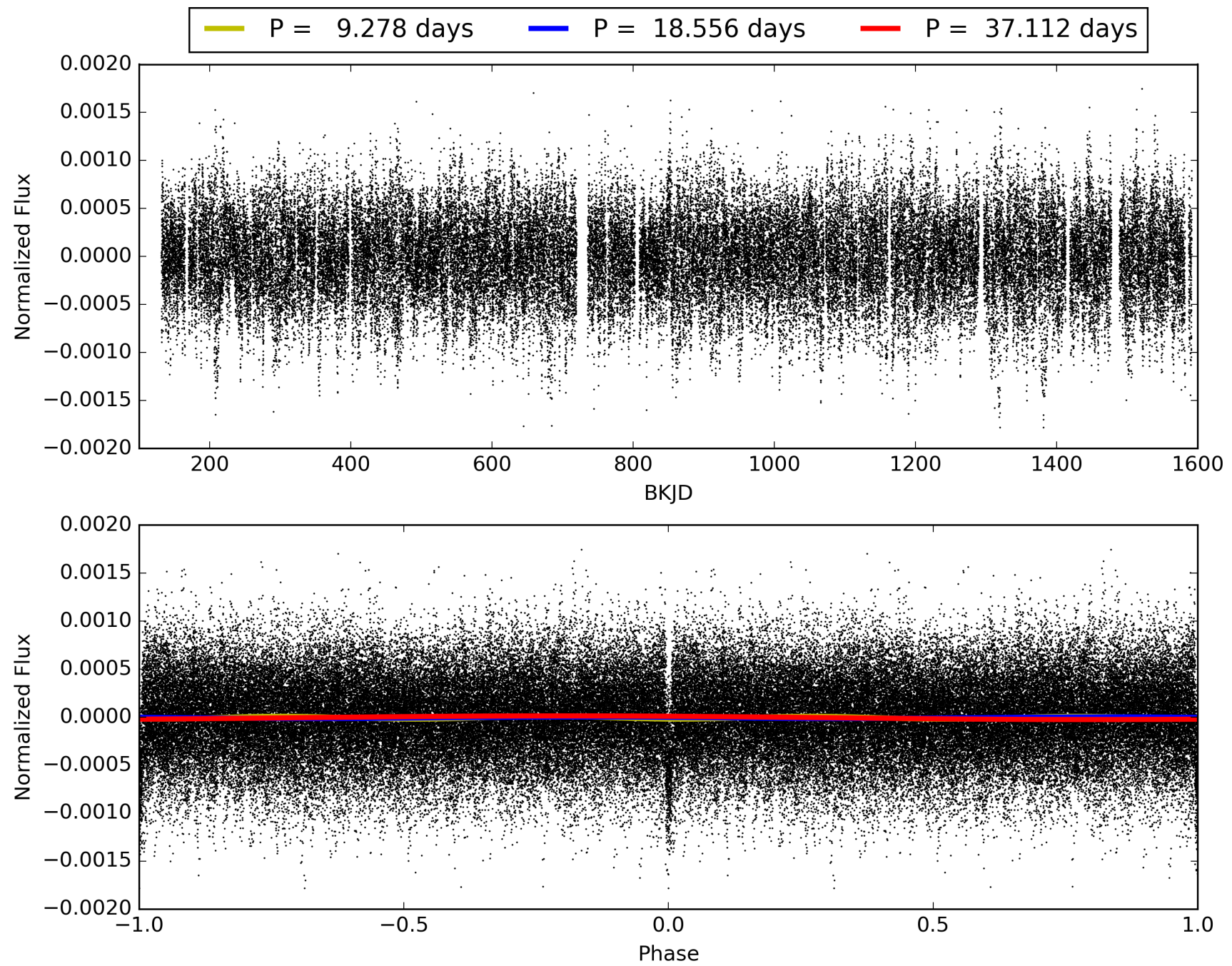
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:39:14 Z

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

TCE 012257999-01, PDC Light Curves

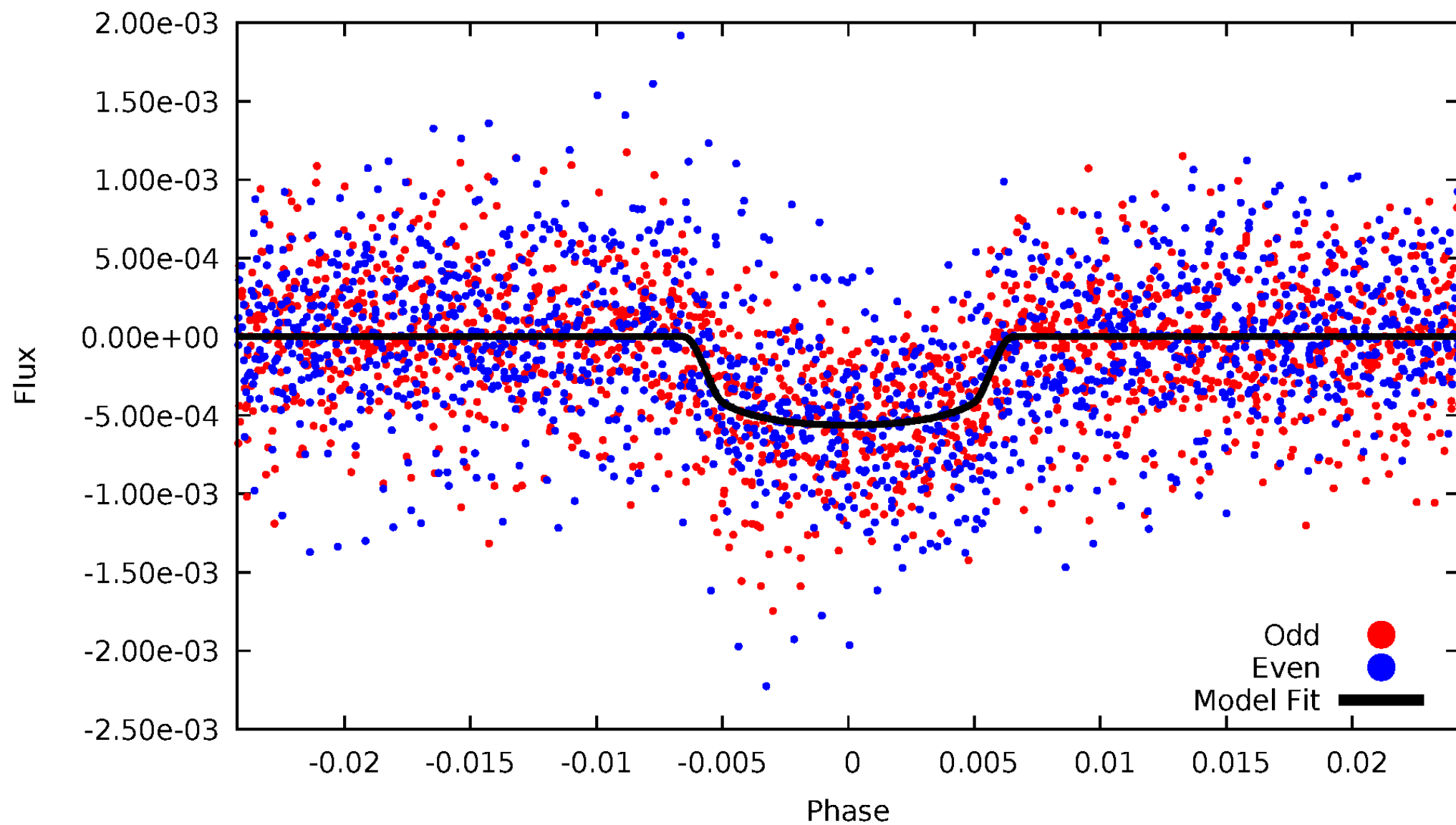


TCE 012257999-01



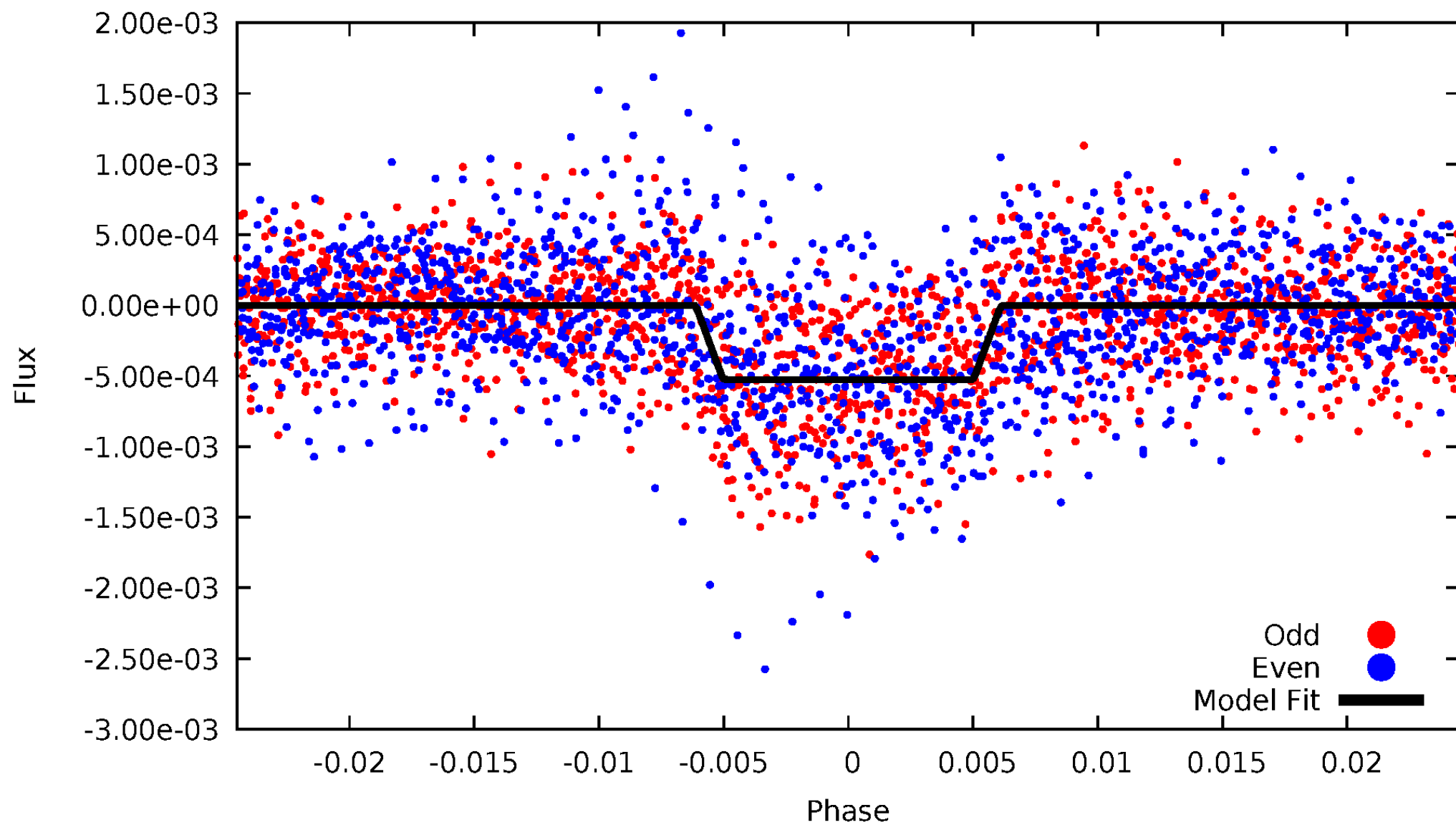
DV Odd/Even

TCE 012257999-01

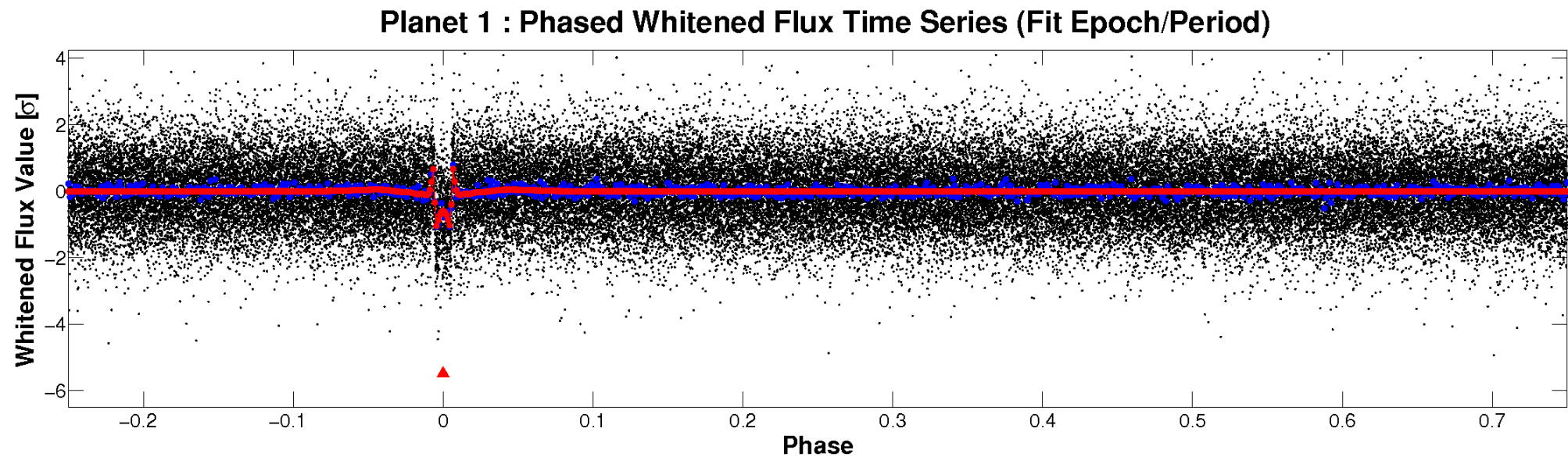
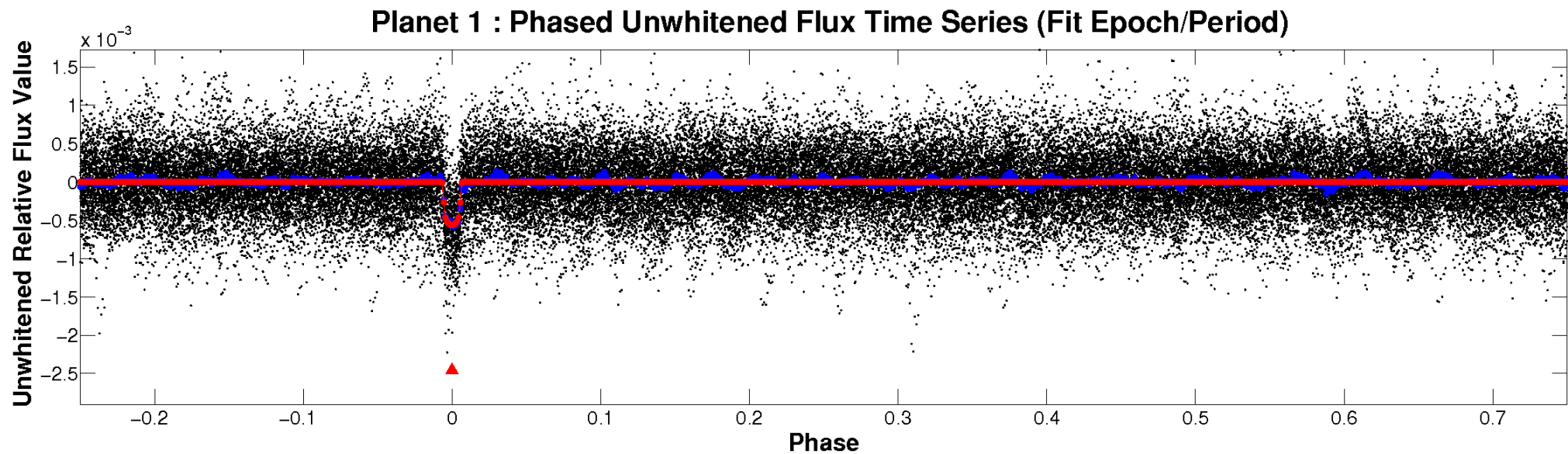


ALT Odd/Even

TCE 012257999-01

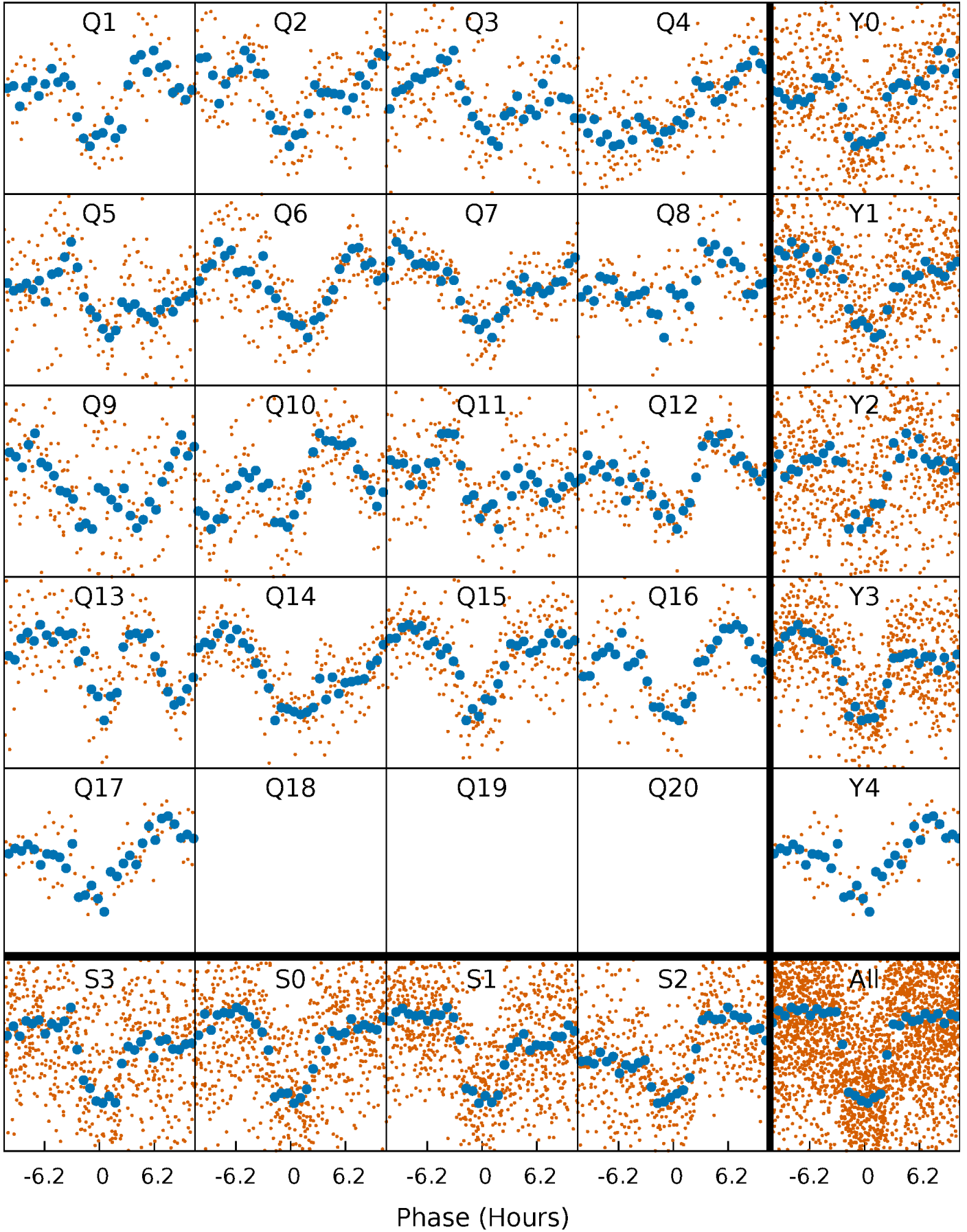


Non-Whitened Vs. Whitened Light Curve



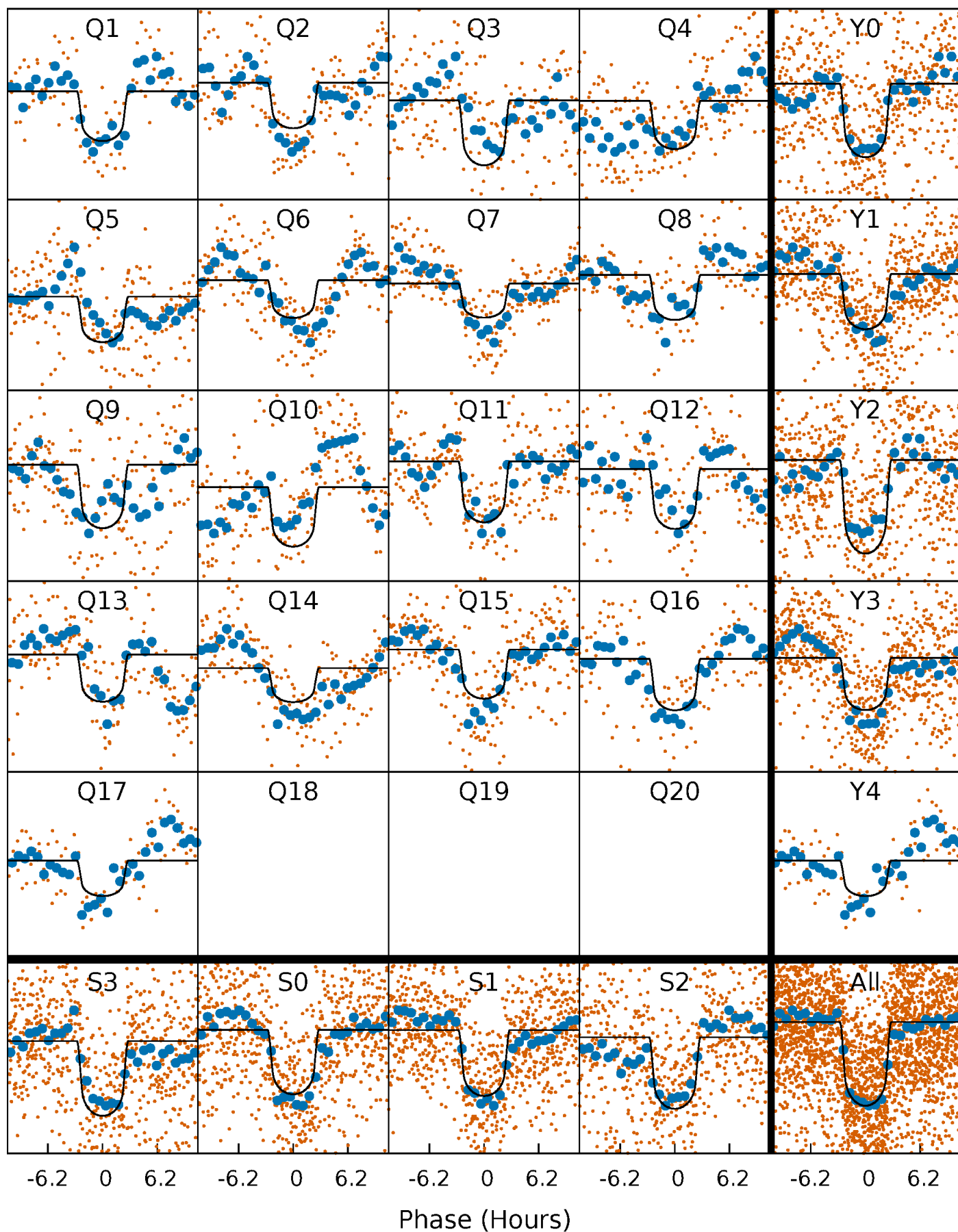
PDC Quarter-Phased Transit Curves

TCE 012257999-01 P= 18.555951 Days $T_0=132.063825$ (BKJD)



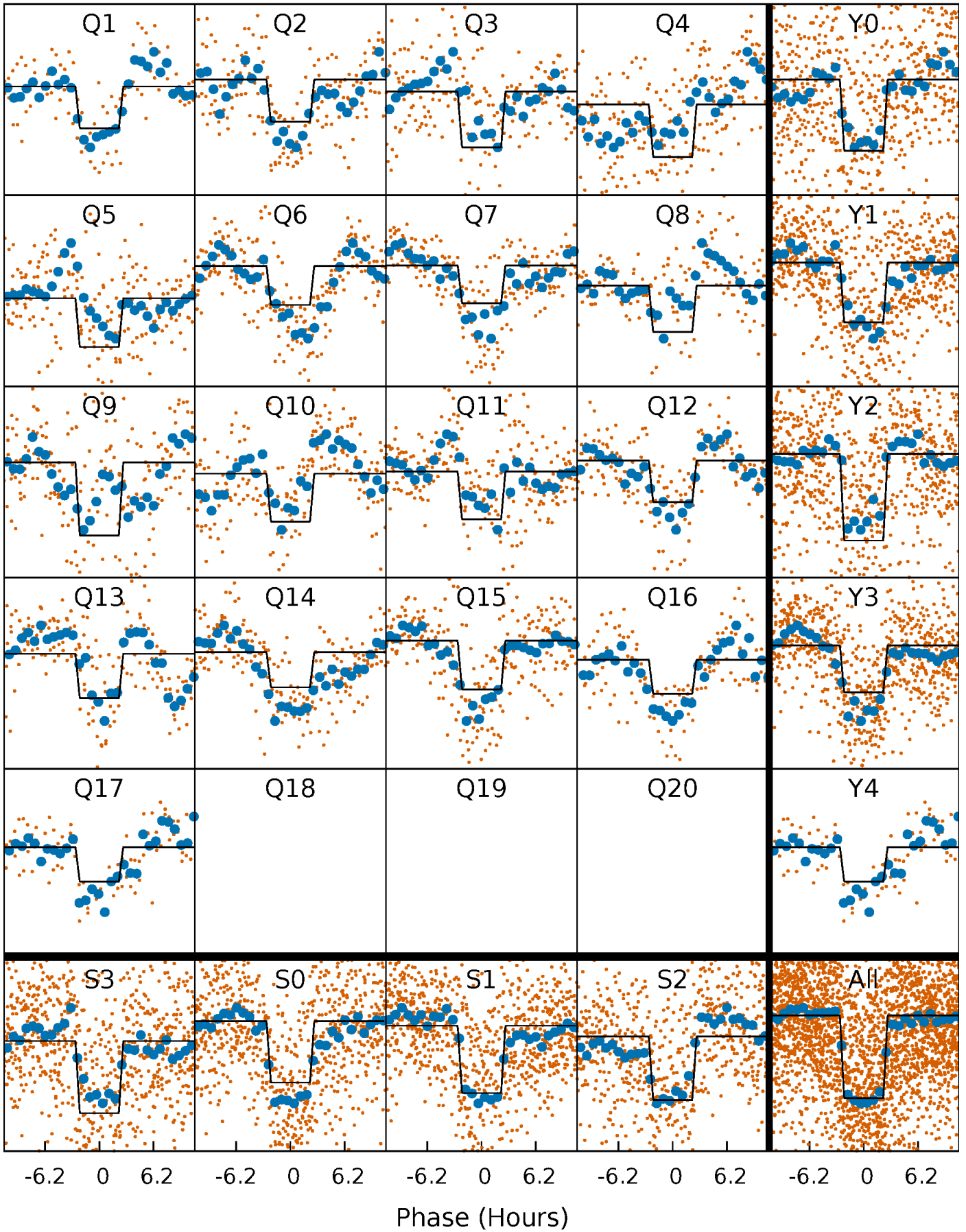
DV Quarter-Phased Transit Curves

TCE 012257999-01 P= 18.555951 Days $T_0=132.063825$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

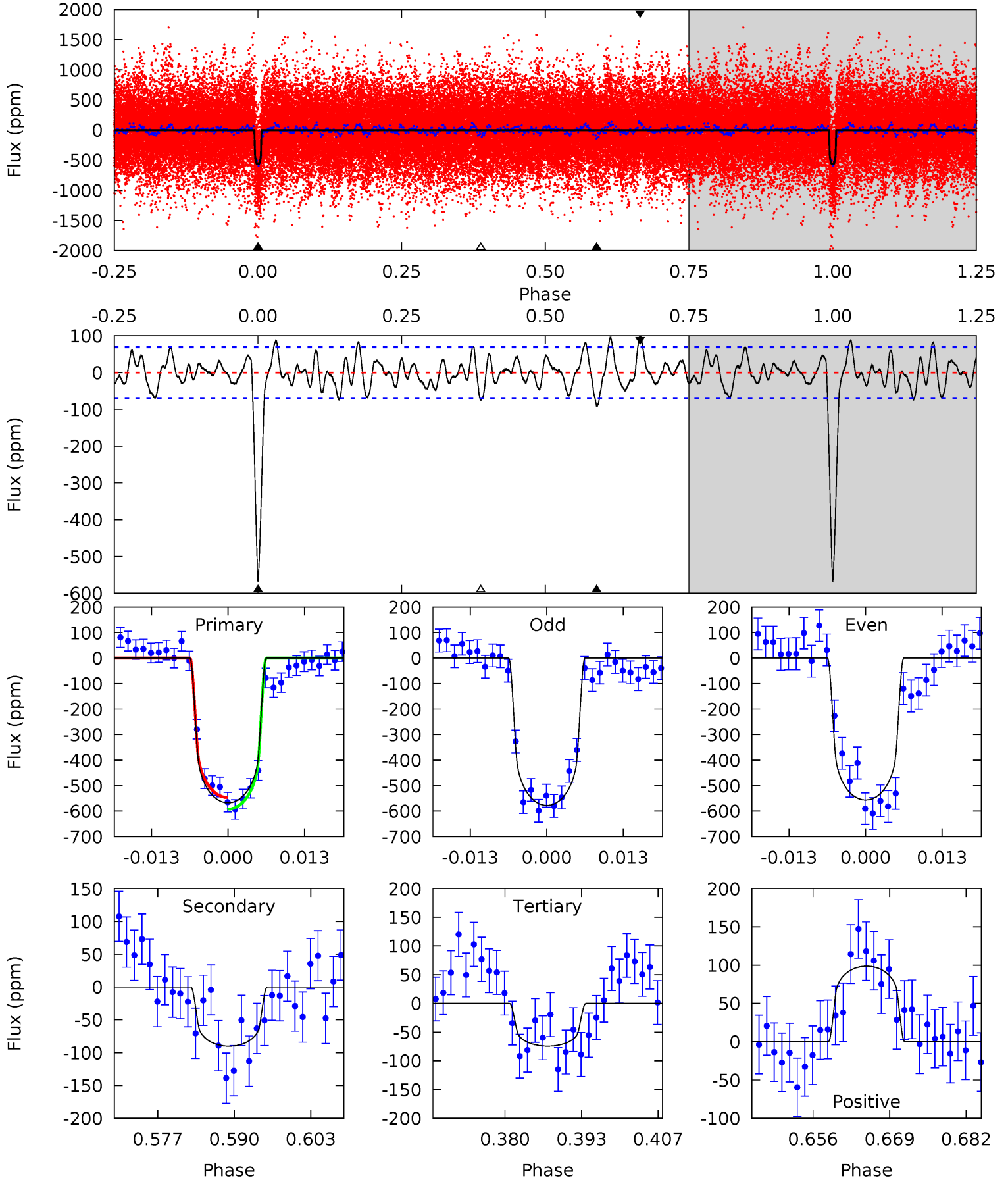
TCE 012257999-01 P= 18.555960 Days $T_0=132.064904$ (BKJD)



DV Model-Shift Uniqueness Test

012257999-01, P = 18.555951 Days, E = 113.507874 Days

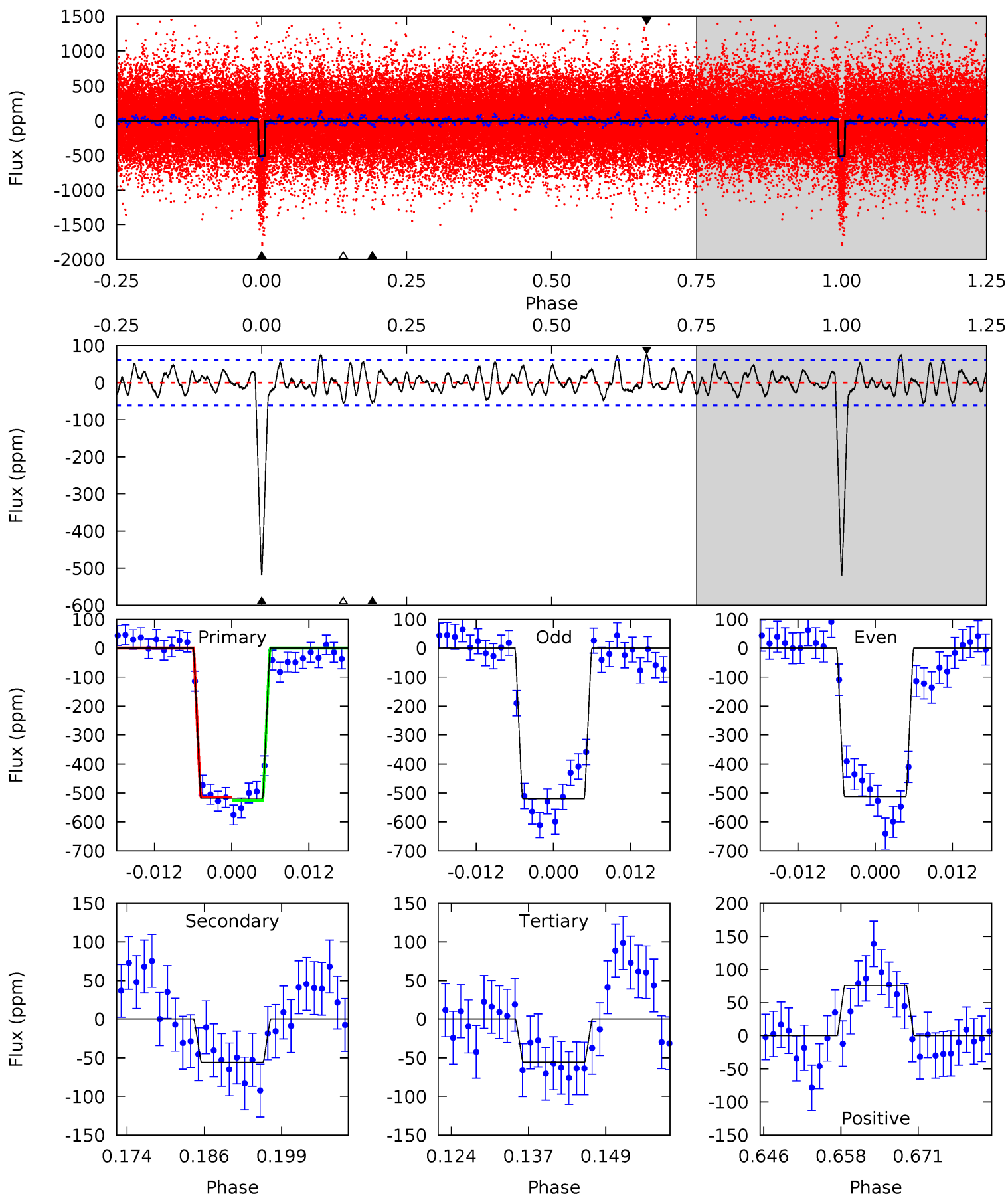
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
40.8	6.47	5.34	7.09	4.97	2.48	2.36	35.4	33.7	1.14	-0.62	0.77	1.08	0.15	1.62



Alt Model-Shift Uniqueness Test

012257999-01, $P = 18.555960$ Days, $E = 113.508944$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
41.8	4.51	4.48	6.13	4.98	2.50	1.91	37.3	35.7	0.03	-1.62	0.30	0.97	0.13	0.46



Stellar Parameters For KIC 012257999

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5988^{+335}_{-503}	$2.982^{+0.273}_{-0.117}$	$0.560^{+0.050}_{-0.150}$	$8.841^{+1.492}_{-3.232}$	$2.734^{+0.212}_{-0.593}$	$0.006^{+0.011}_{-0.002}$
	+6%/-8%	+9%/-4%	+9%/-27%	+17%/-37%	+8%/-22%	+202%/-36%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 012257999-01 / KOI 2577.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-90 ± 14	$21.83^{+4.03}_{-4.19}$	2442^{+234}_{-275}	4009^{+279}_{-297}	$3.763^{+1.971}_{-1.096}$
Alt.	-56 ± 12	$21.19^{+4.22}_{-4.12}$	2450^{+225}_{-278}	3675^{+290}_{-293}	$2.469^{+1.253}_{-0.845}$

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 $A_{\text{obs}} \gg 1.0$

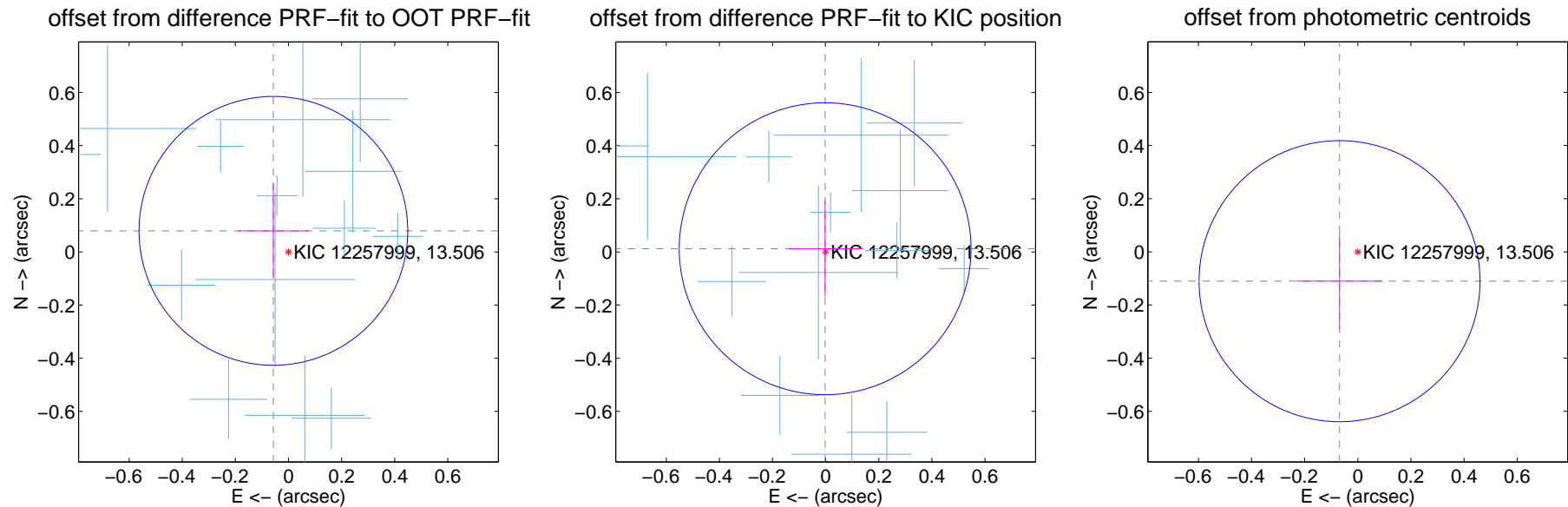
DV Centroid Data

Supplemental centroid analysis for 012257999-01. Kepler magnitude: 13.51. Transit SNR 22.92

There are 17 quarters with good PRF difference image offsets

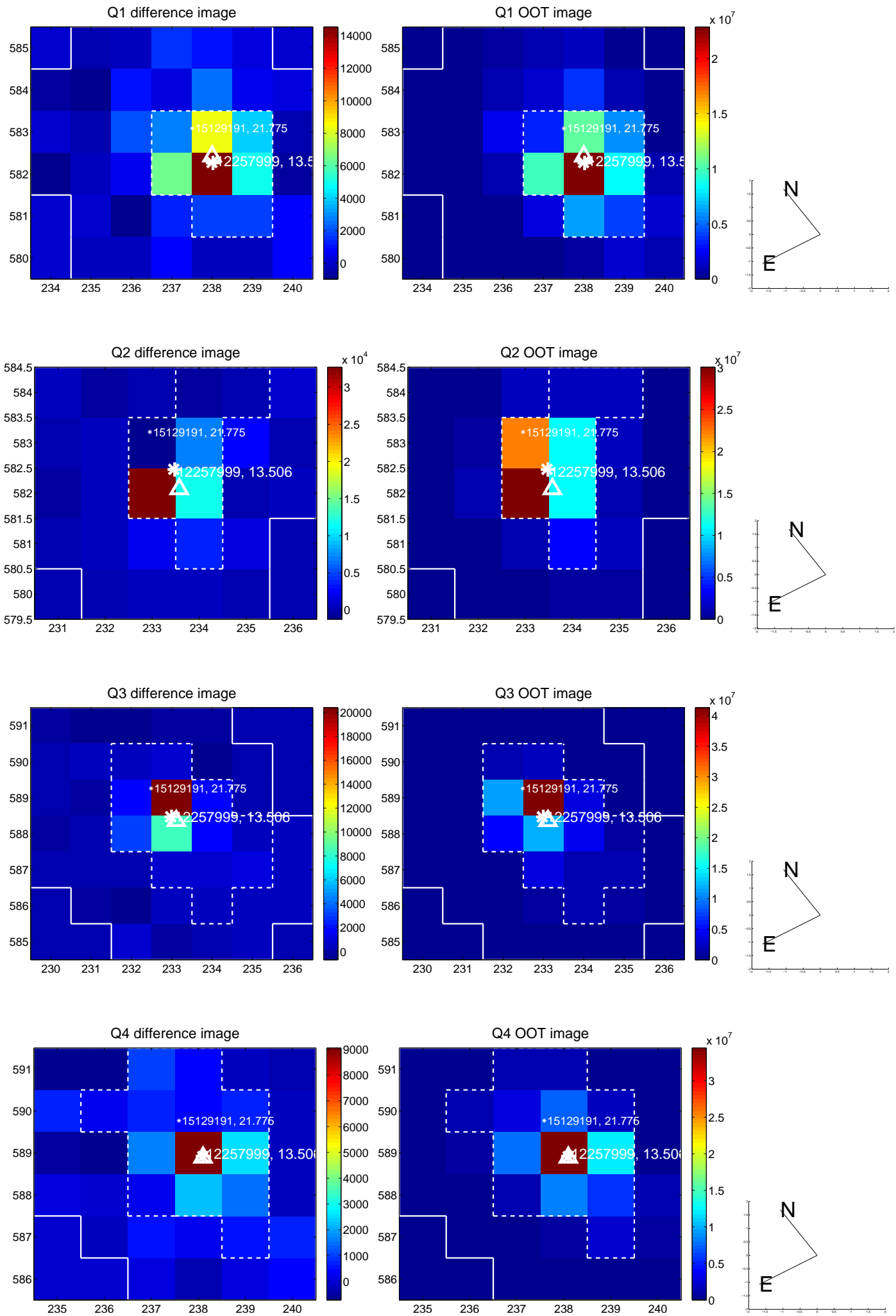
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.097 ± 0.169	0.58	0.057 ± 0.133	0.079 ± 0.179
PRF-fit source offset from KIC position	0.012 ± 0.183	0.07	0.002 ± 0.138	0.012 ± 0.180
photometric centroid source offset	0.13 ± 0.18	0.74	0.07 ± 0.16	-0.11 ± 0.18

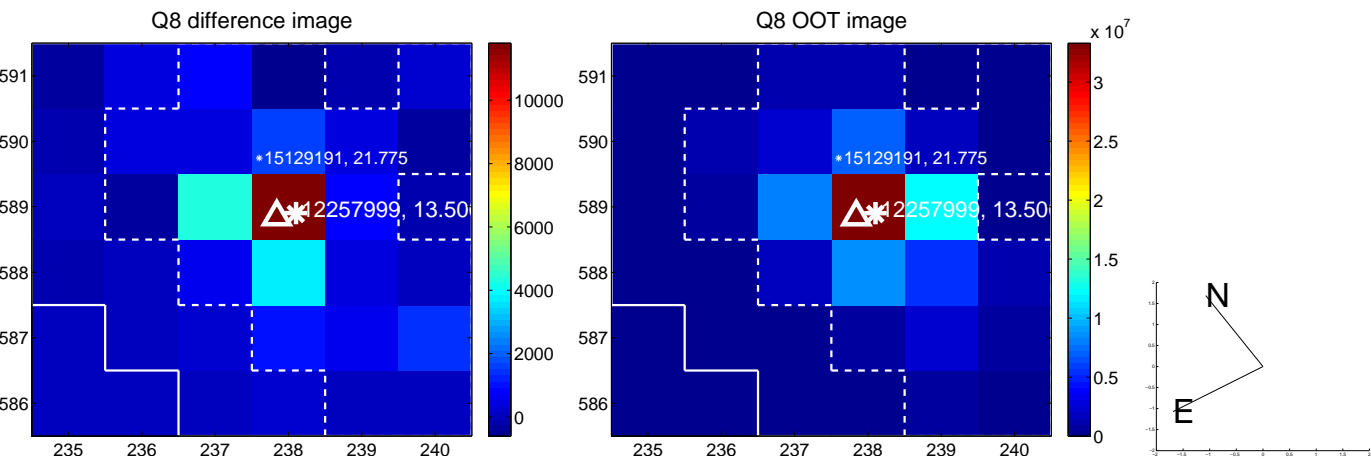
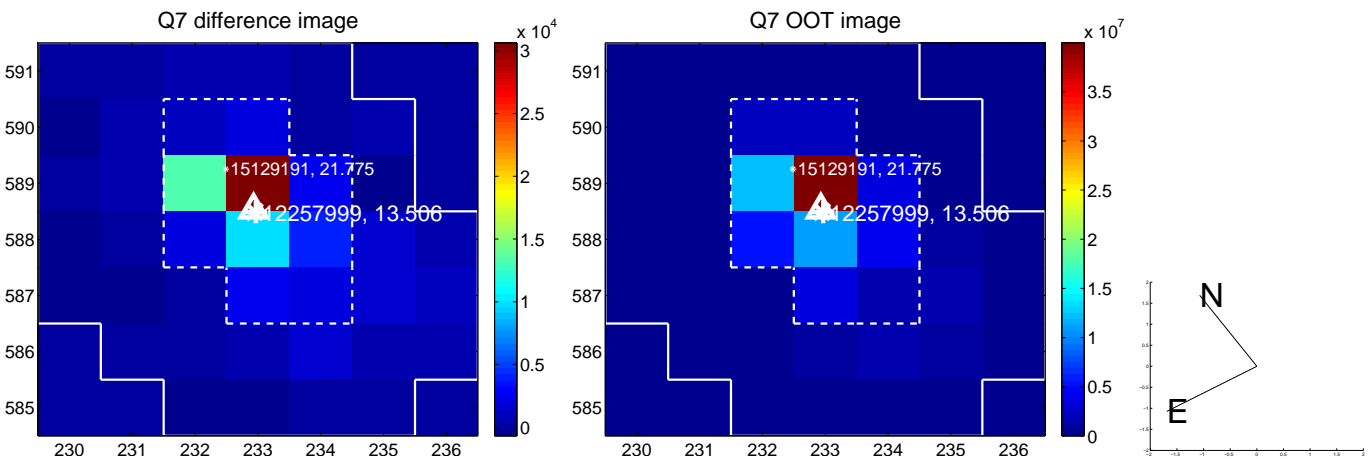
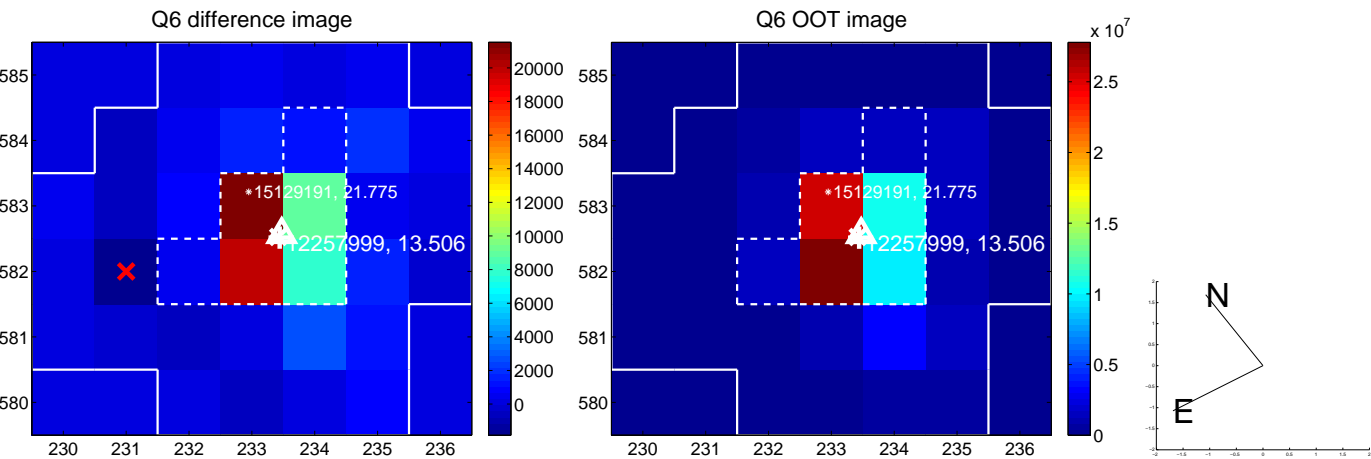
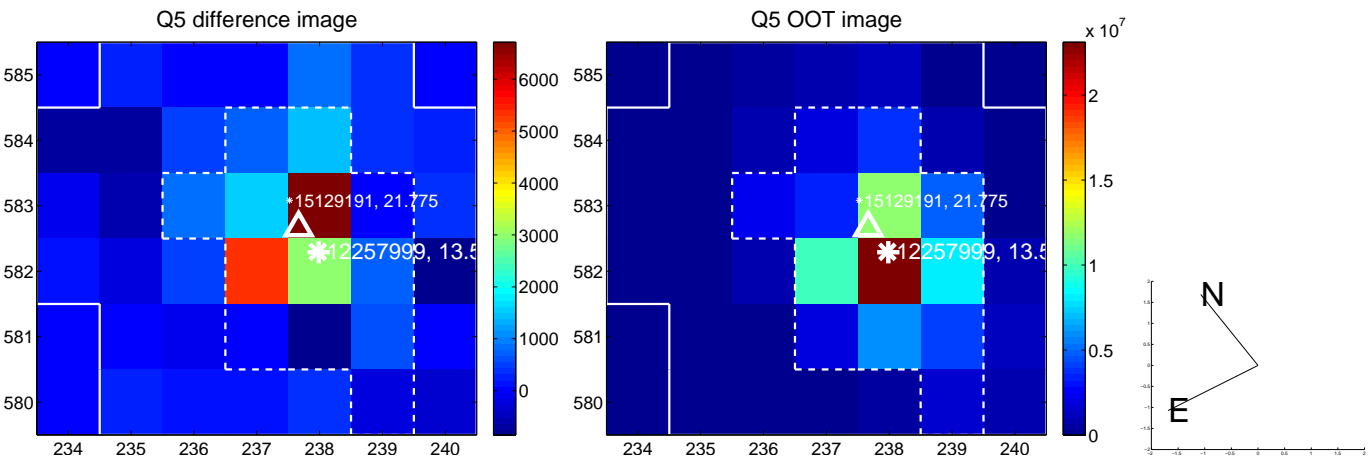


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

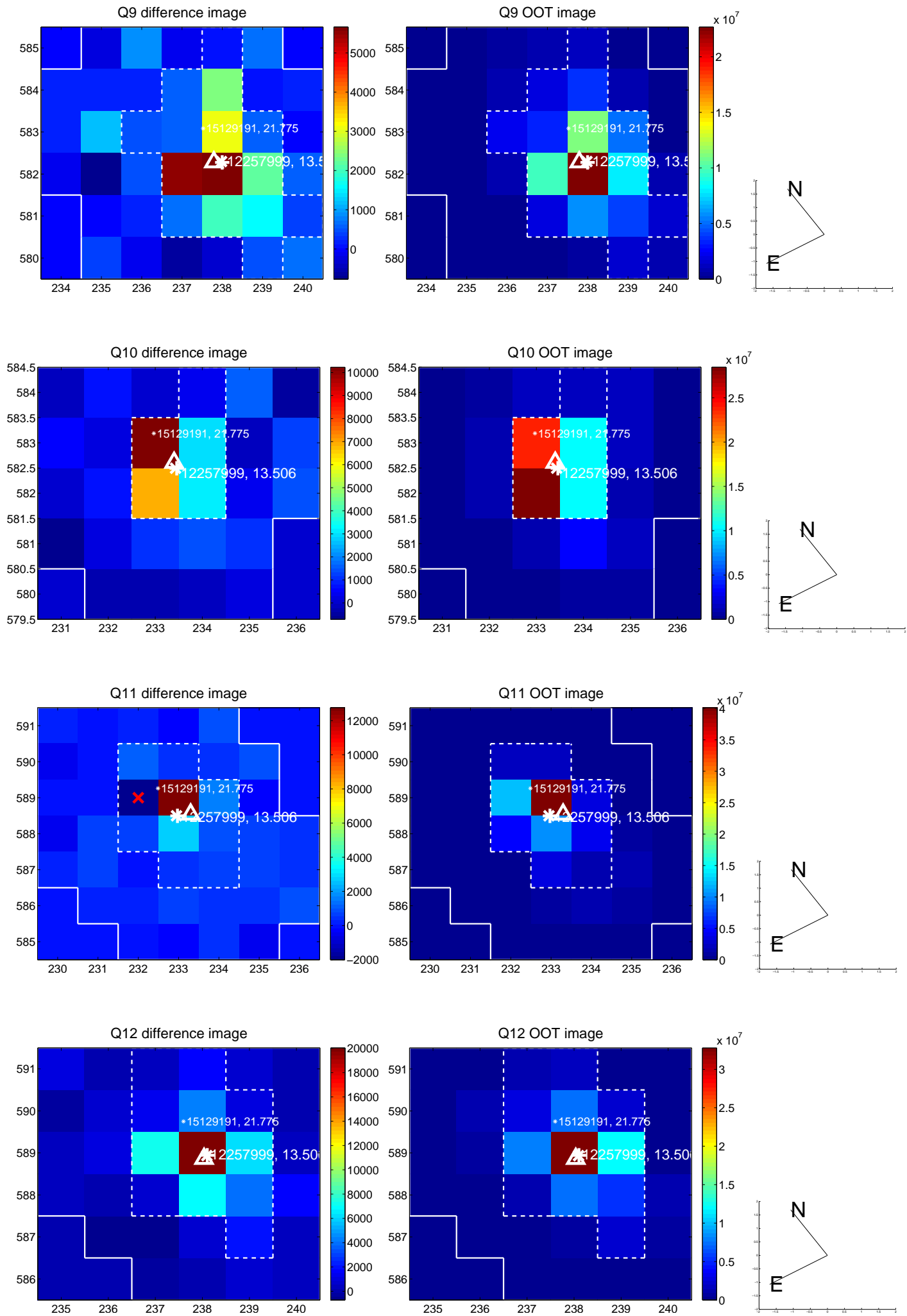
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



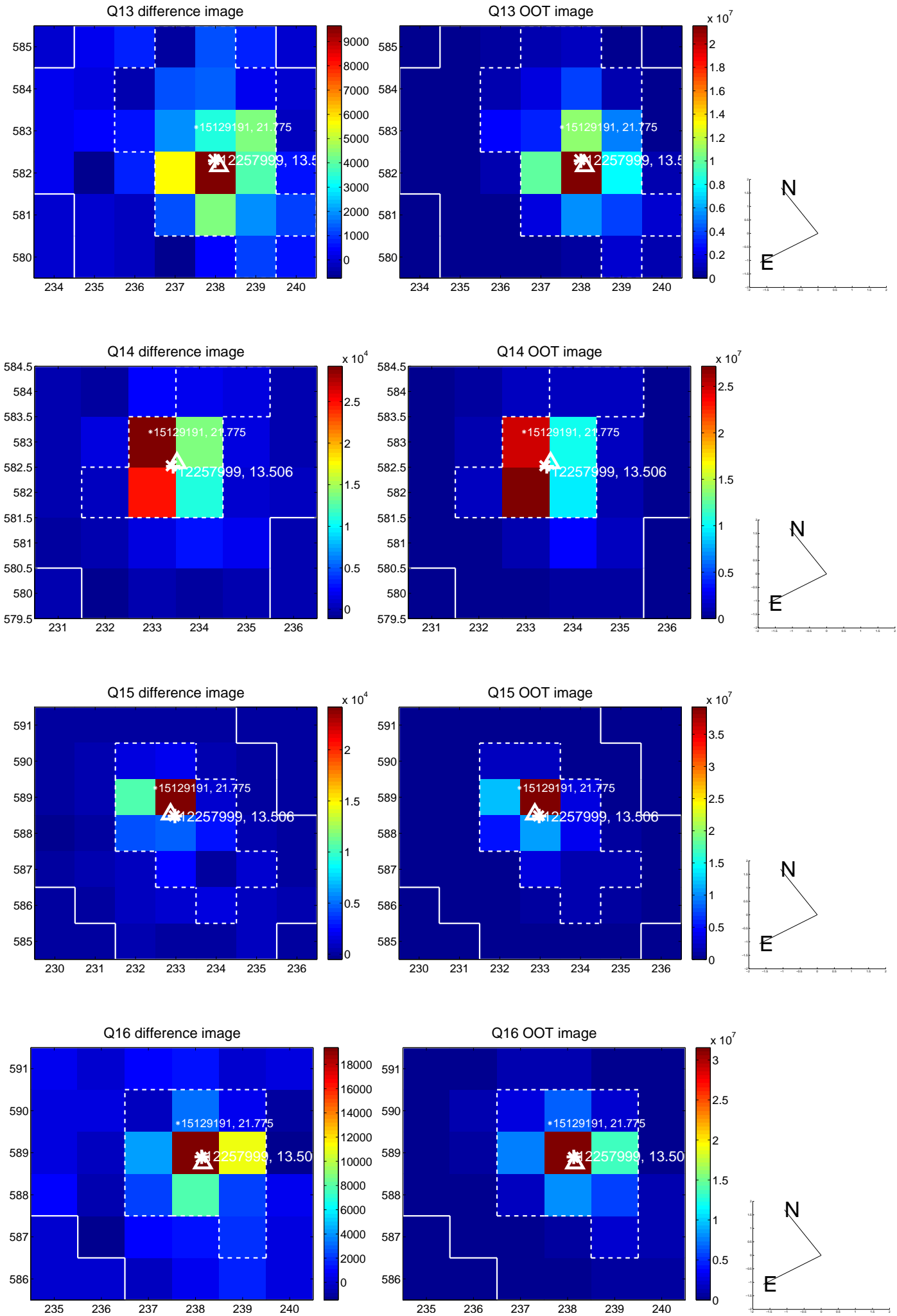
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



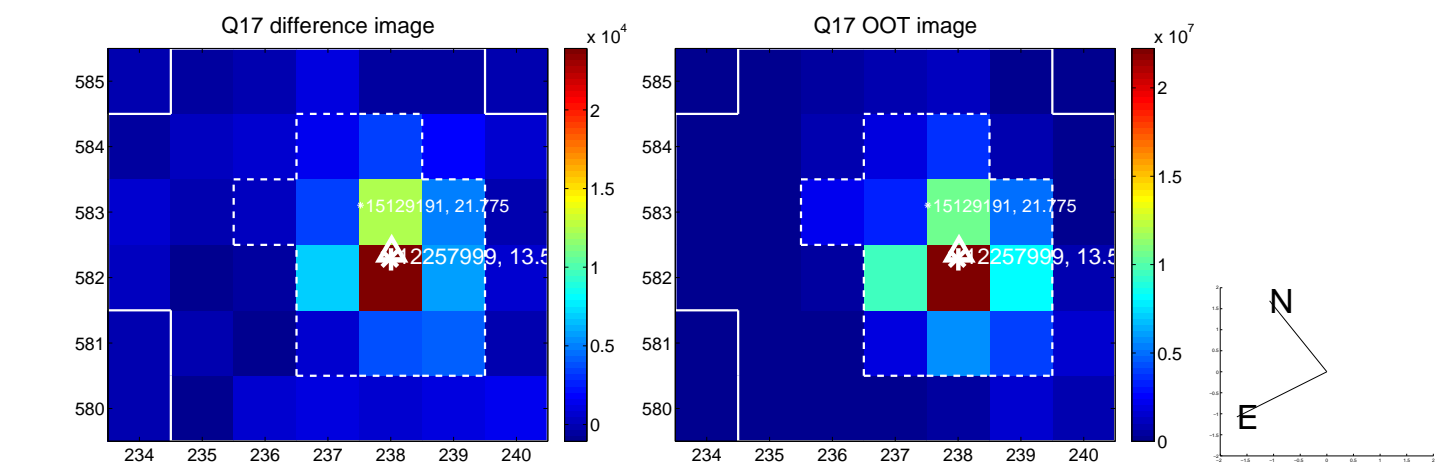
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



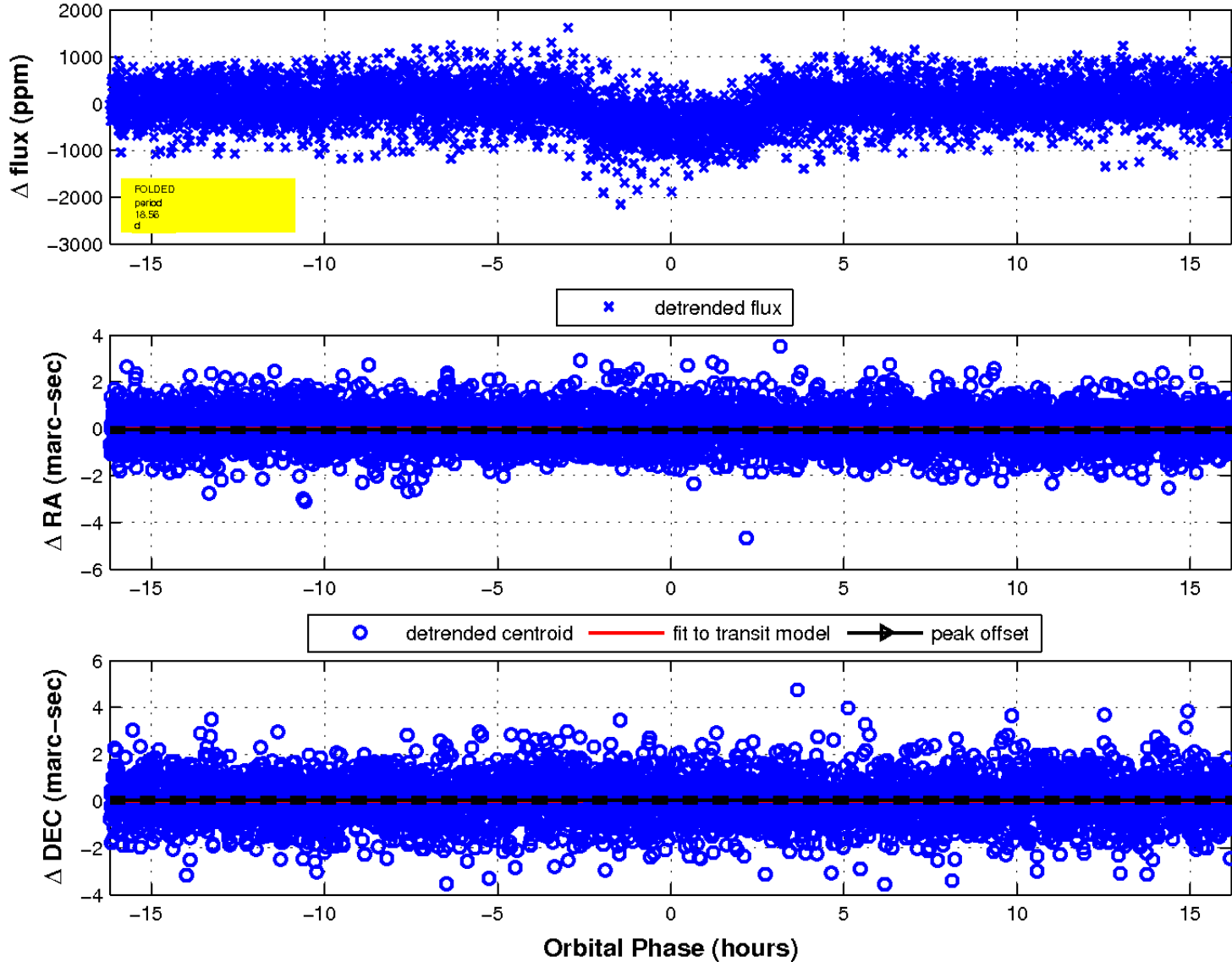
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

