

KIC 009159198

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})
009159198-01	OBS	7929.01	3.044724	132.439366	41.6	6.370	8.6	8.1	0.98	6181	0.81	722.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009159198-01	OBS	FP	0.00	0	0	1	1	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.

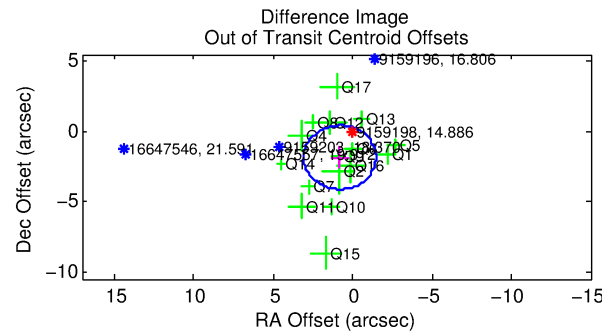
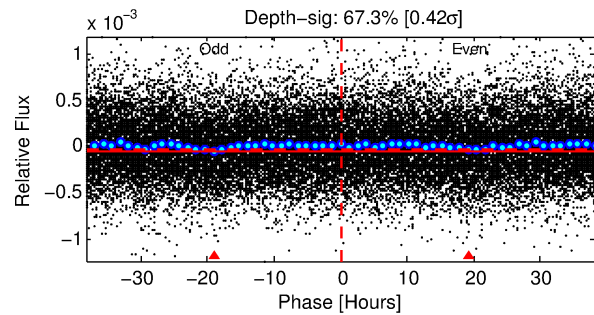
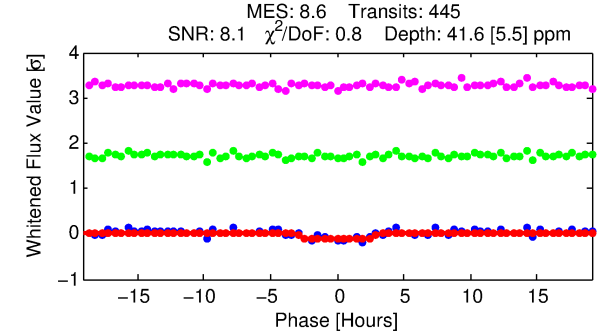
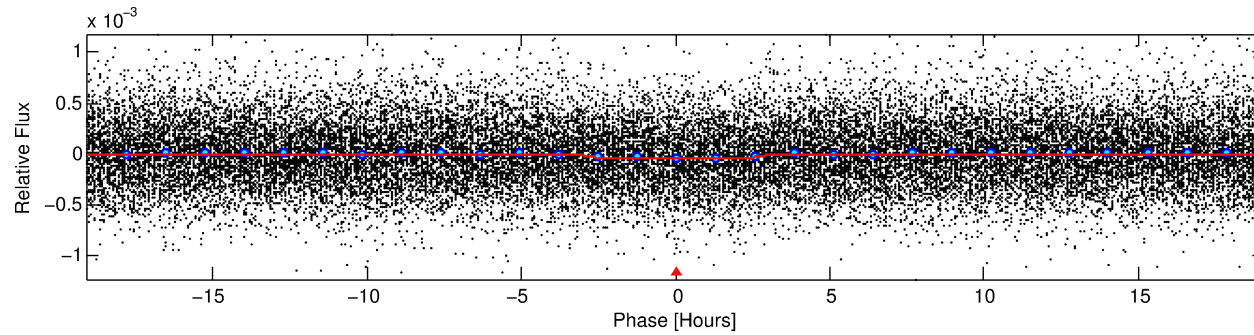
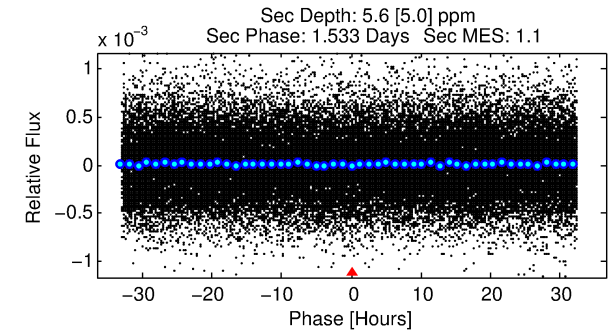
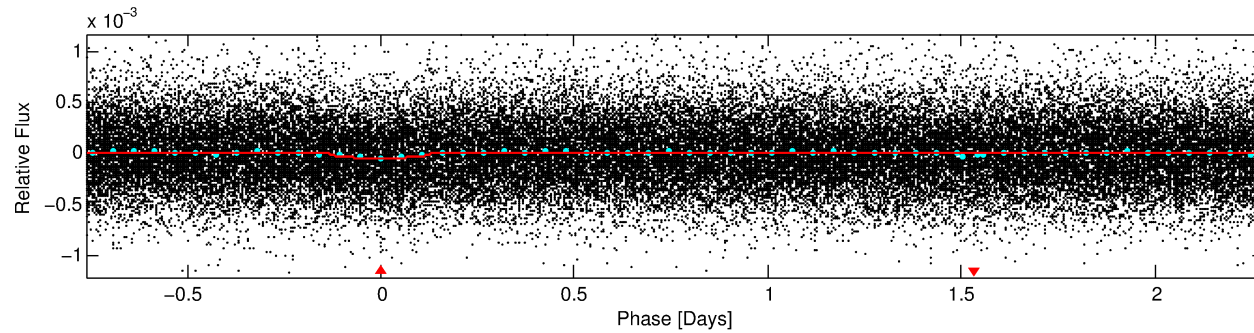
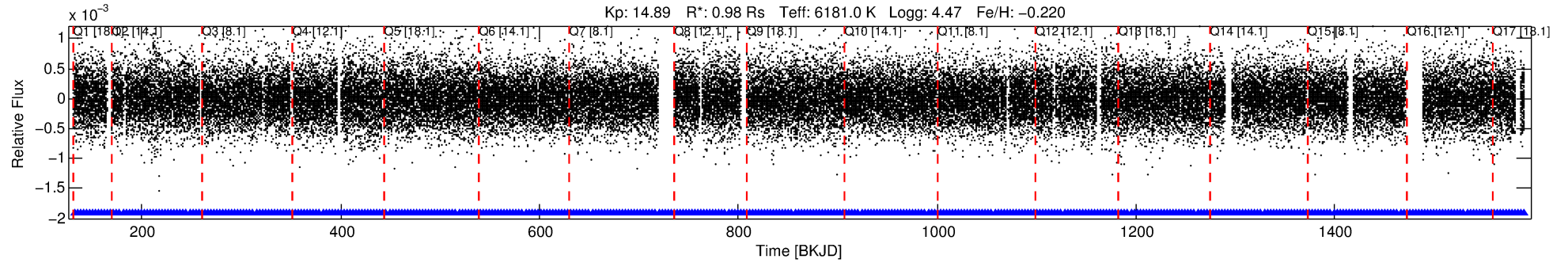
Ephemeris Match Information For 009159198-01

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
009159198-01	9159198	009159301-pri	9159301	1:1	97.0	-23	8	12.15	14.89	11638.00	Direct-PRF	0	0.92	0.12

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: 9159198 Candidate: 1 of 1 Period: 3.045 d



DV Fit Results:

Period = 3.04472 [0.00005] d
Epoch = 132.4394 [0.0109] BKJD
Rp/R* = 0.0076 [0.0013]
a/R* = 1.43 [0.67]
b = 0.97 [0.06]
Seff = 722.02 [288.25]
Teff = 1322 [132] K
Rp = 0.81 [0.29] Re
a = 0.0417 [0.0108] AU
Ag = 8.15 [8.32] [0.86σ]
Teffp = 3453 [829] K [2.54σ]

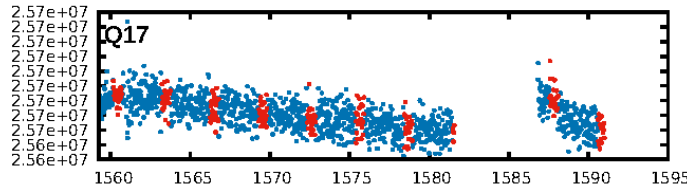
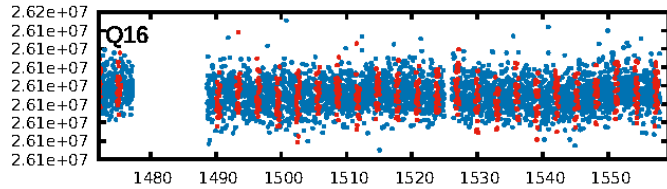
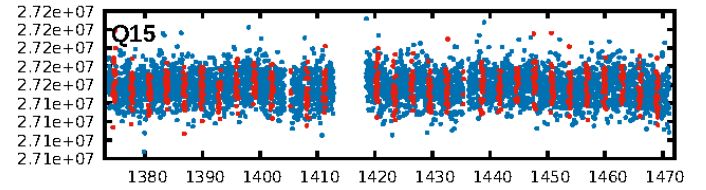
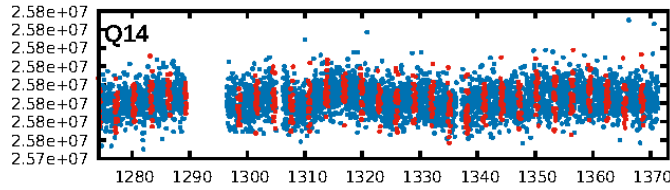
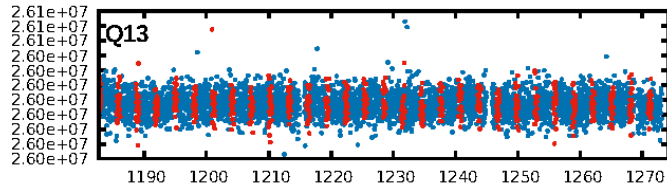
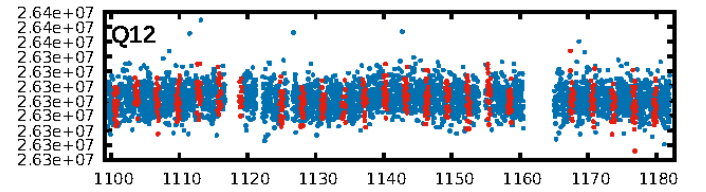
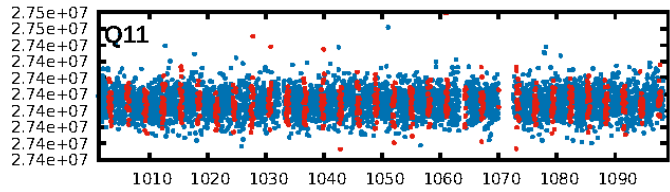
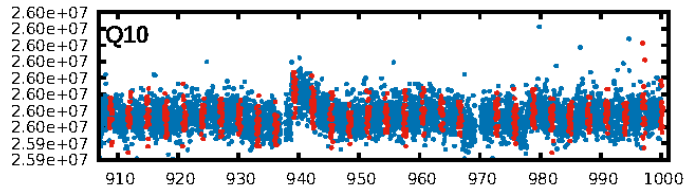
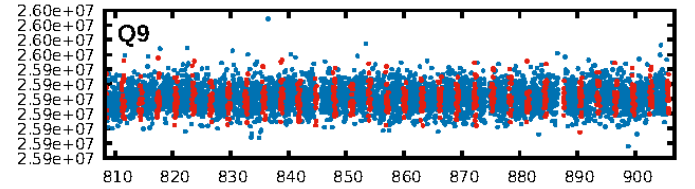
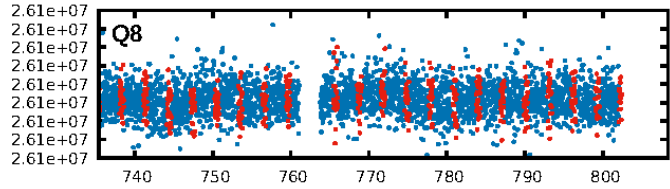
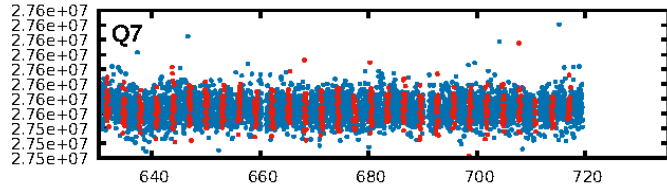
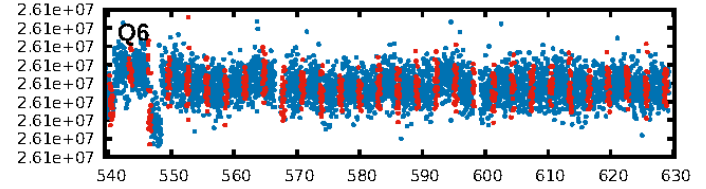
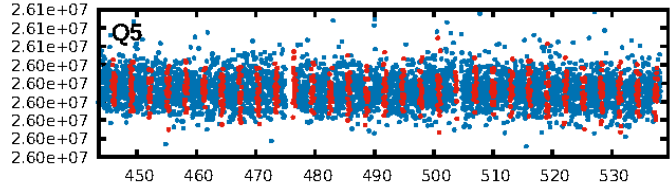
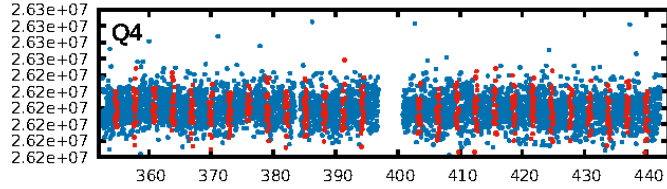
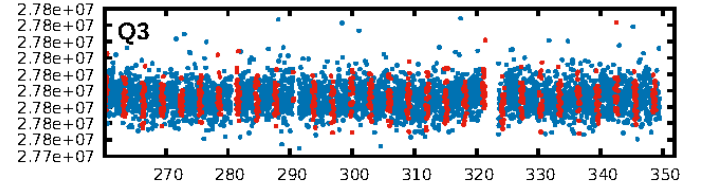
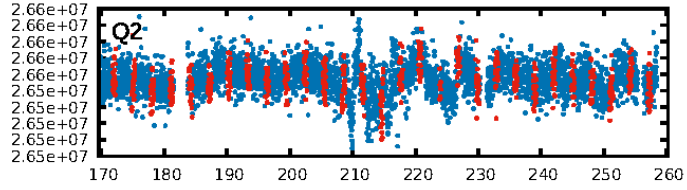
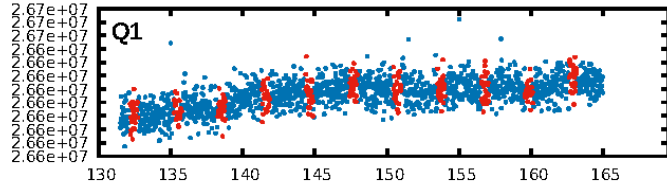
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.18e-18
RollingBand-fgt: 1.00 [425/425]
GhostDiagnostic-chr: -0.01422
Centroid-sig: 0.0%
Centroid-so: 5.142 arcsec [3.46σ]
OotOffset-rm: 1.998 arcsec [2.63σ]
KicOffset-rm: 1.940 arcsec [2.55σ]
OotOffset-st: 4/3/4/5 [16]
KicOffset-st: 4/3/4/5 [16]
DiffImageQuality-fgm: 0.25 [4/16]
DiffImageOverlap-fno: 1.00 [17/17]

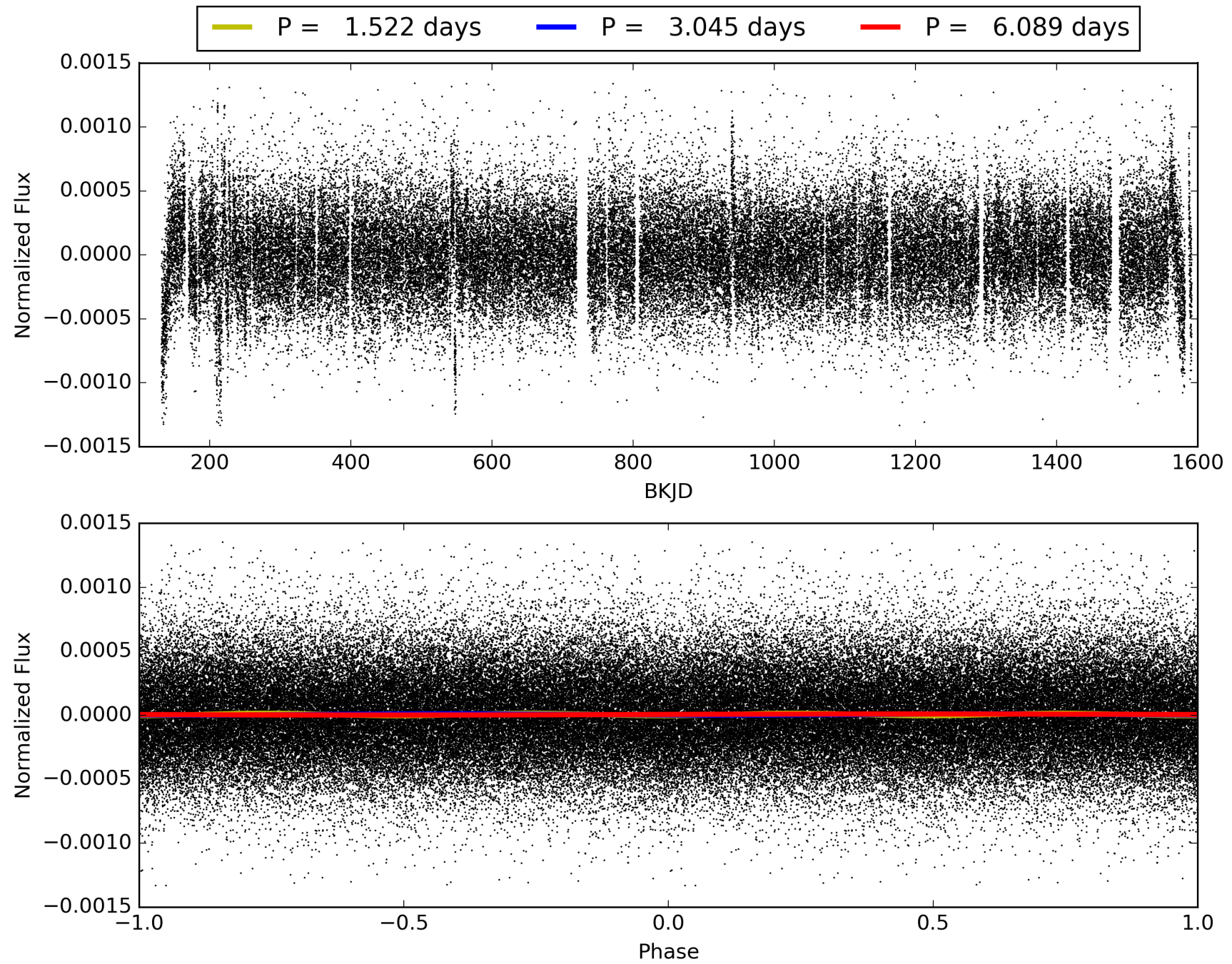
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:18:51 Z

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

TCE 009159198-01, PDC Light Curves

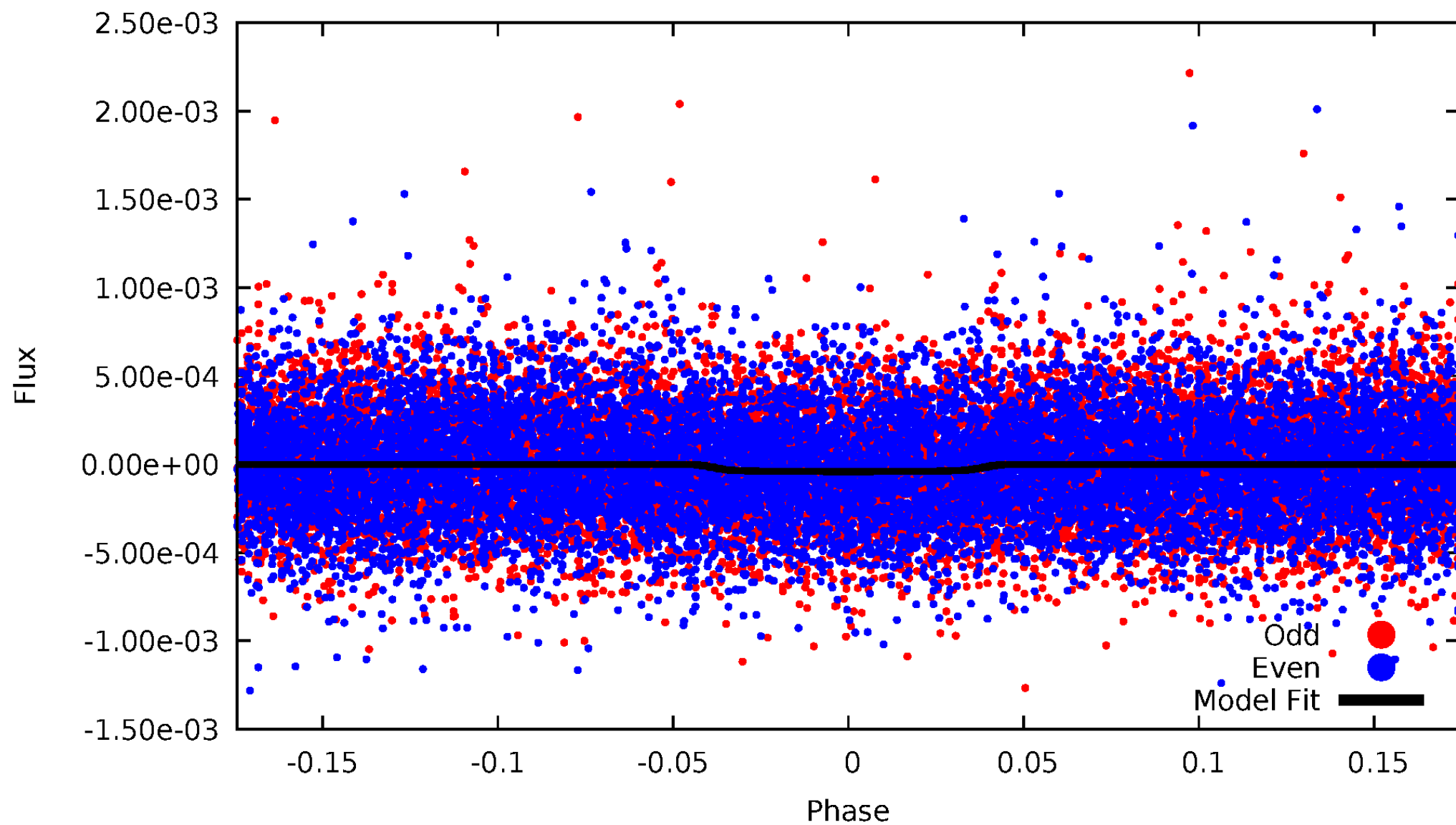


TCE 009159198-01



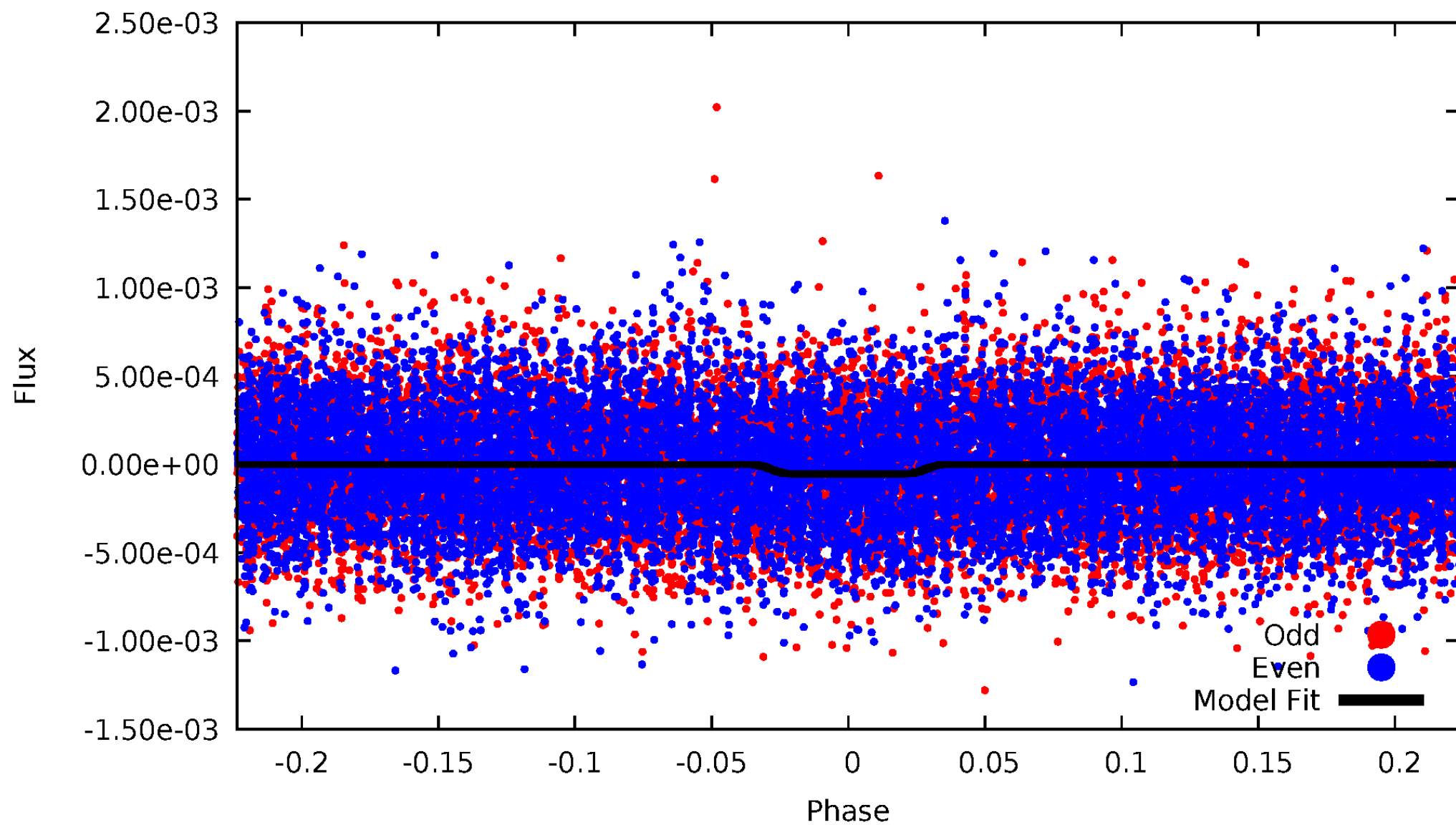
DV Odd/Even

TCE 009159198-01

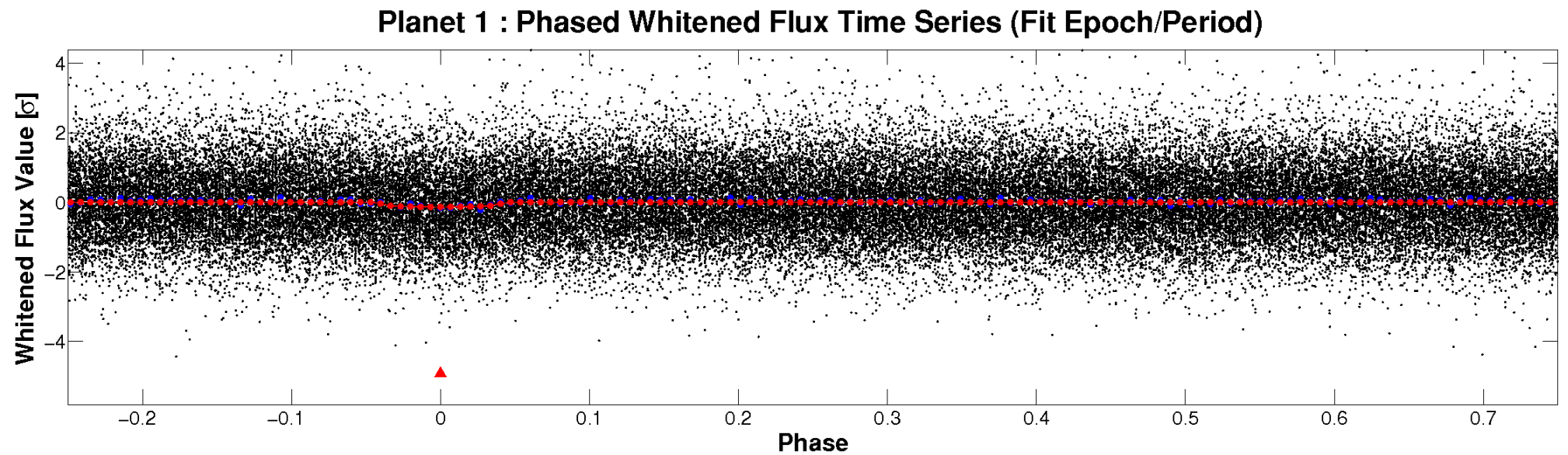
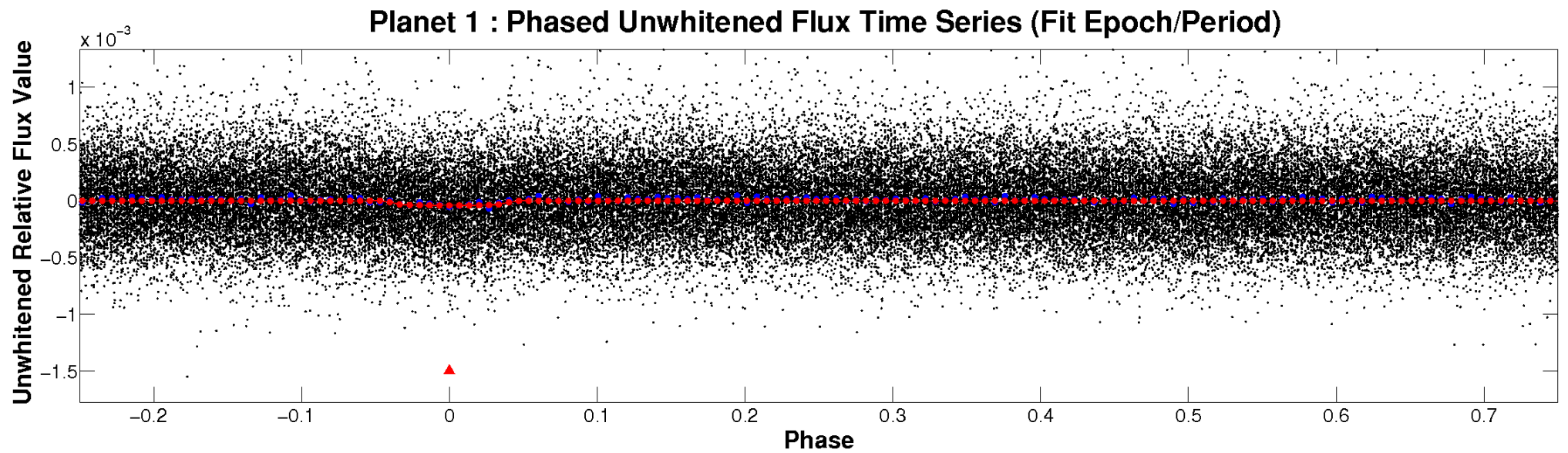


ALT Odd/Even

TCE 009159198-01

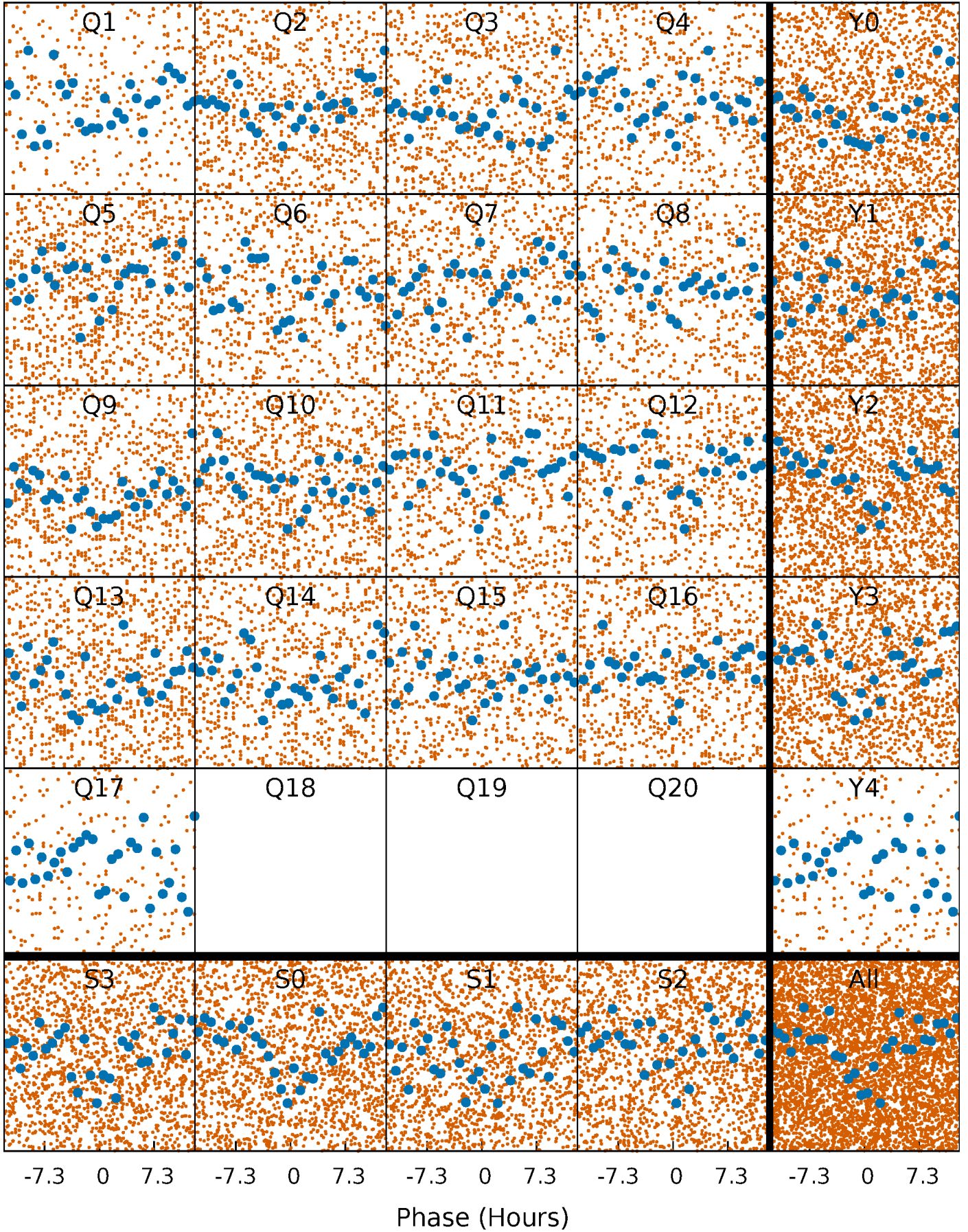


Non-Whitened Vs. Whitened Light Curve



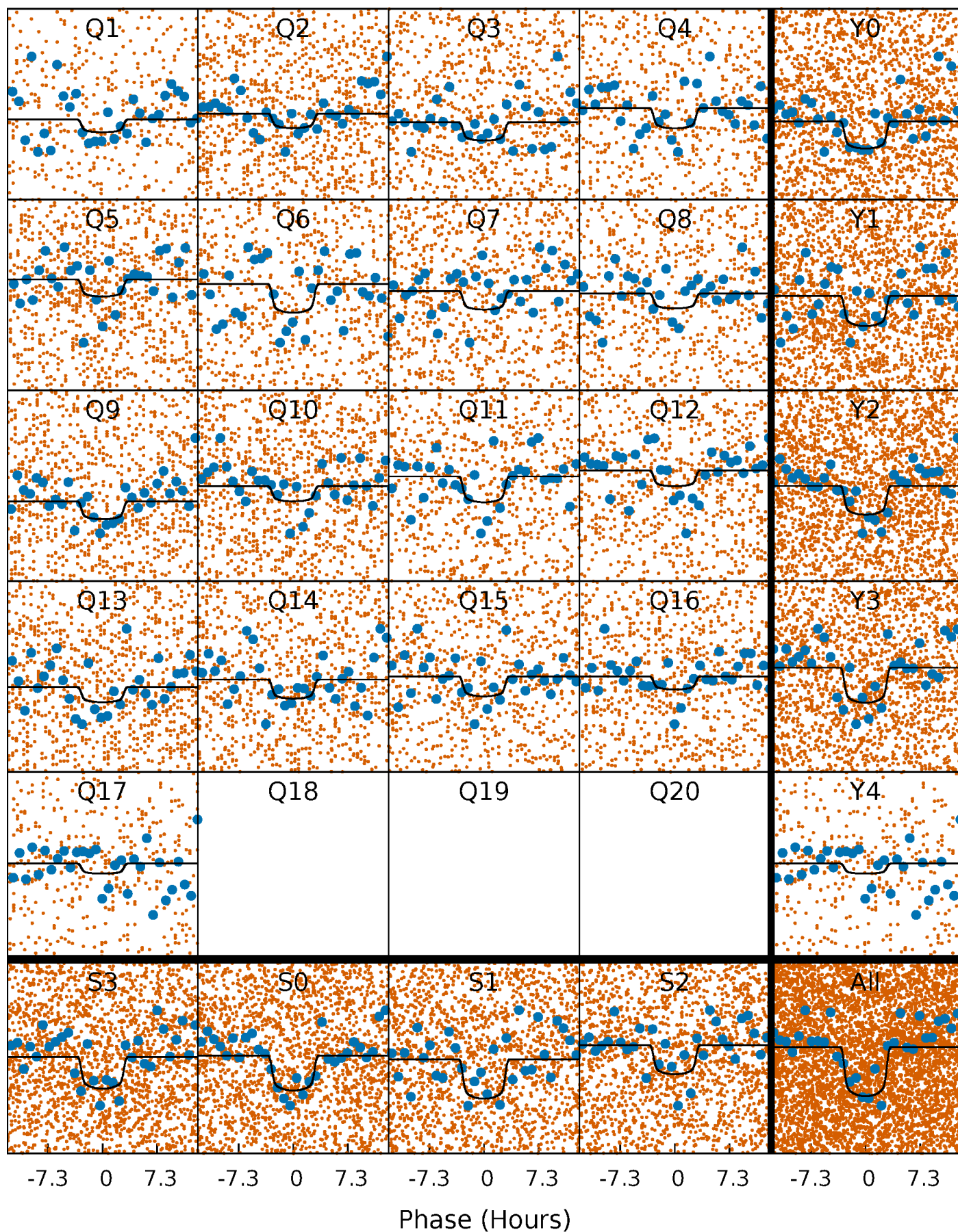
PDC Quarter-Phased Transit Curves

TCE 009159198-01 P= 3.044724 Days $T_0=132.439366$ (BKJD)



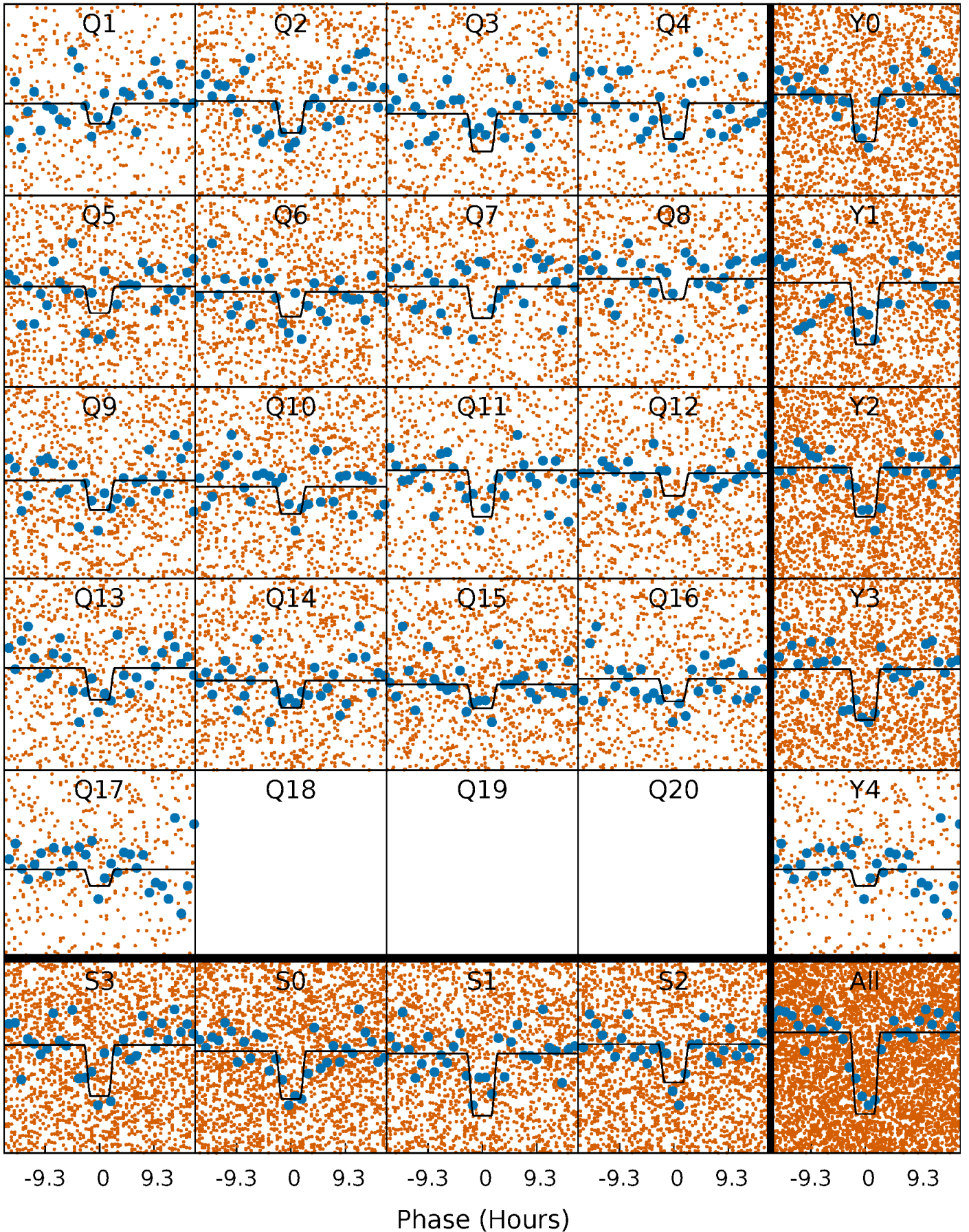
DV Quarter-Phased Transit Curves

TCE 009159198-01 P= 3.044724 Days $T_0=132.439366$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

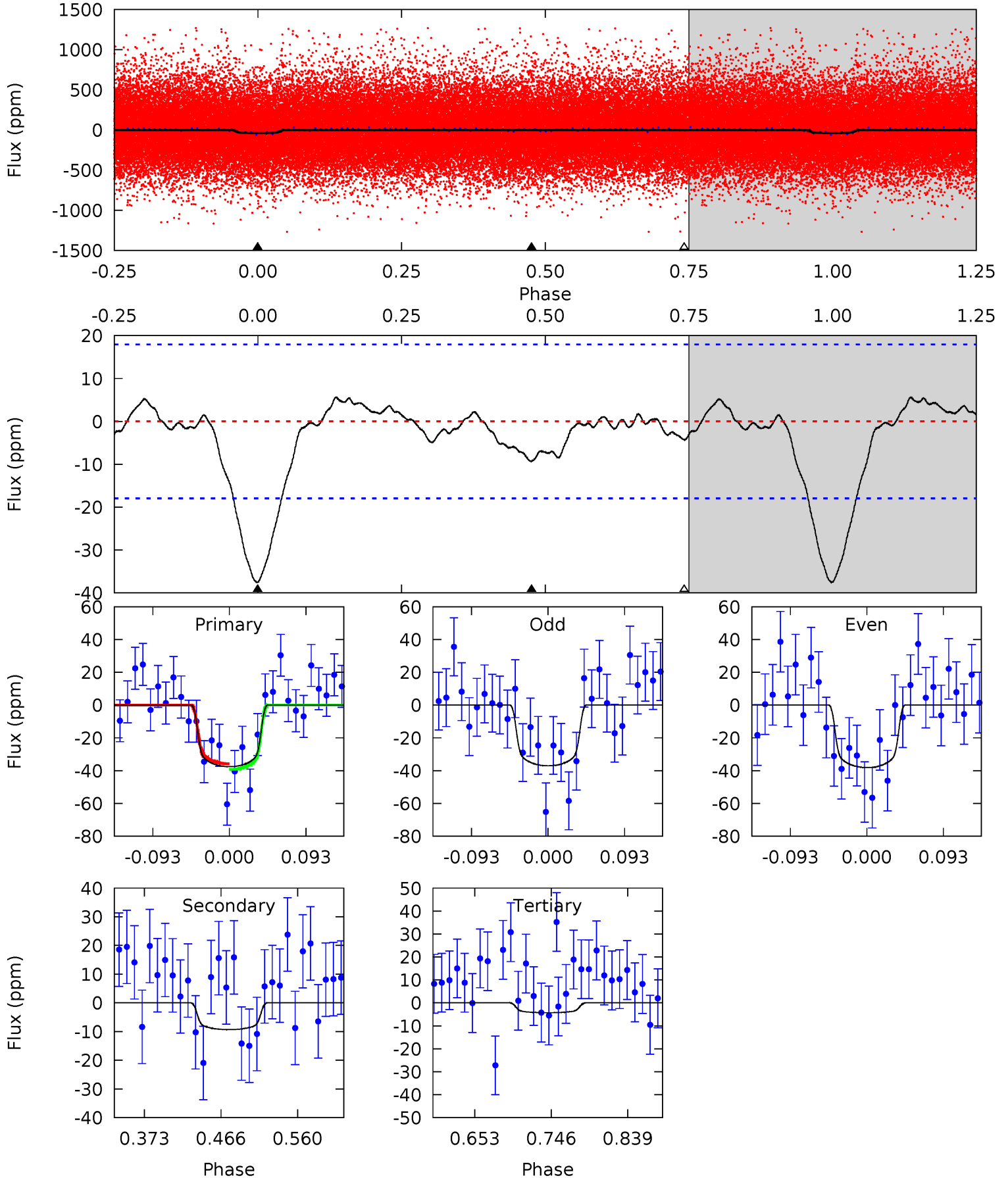
TCE 009159198-01 P= 3.044769 Days $T_0=132.425874$ (BKJD)



DV Model-Shift Uniqueness Test

009159198-01, P = 3.044724 Days, E = 129.394642 Days

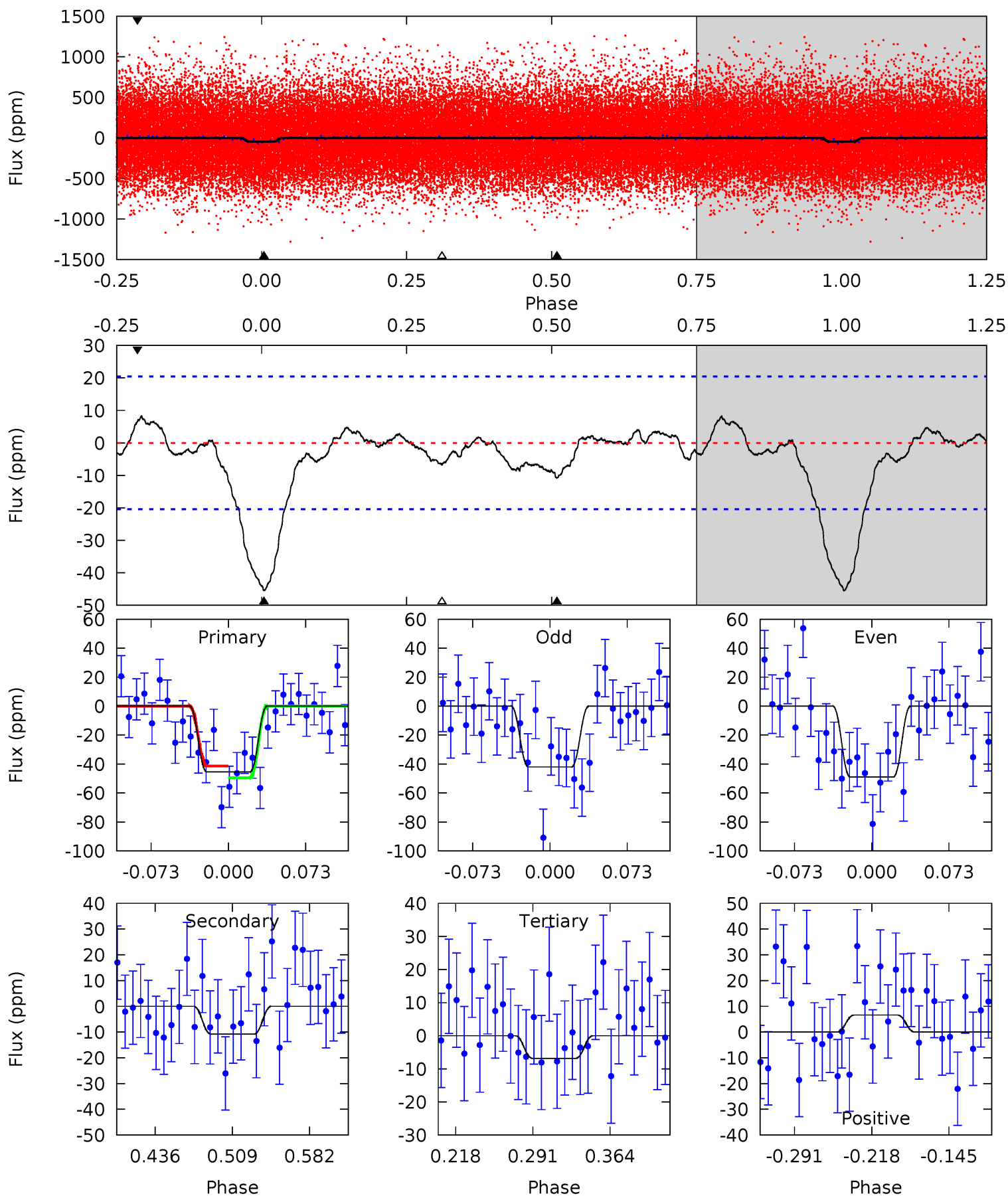
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.57	2.38	1.09	0	4.58	1.68	0.63	8.48	9.57	1.28	2.38	0.14	0.91	0.13	0.44



Alt Model-Shift Uniqueness Test

009159198-01, P = 3.044769 Days, E = 129.381105 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.3	2.45	1.55	1.50	4.63	1.79	0.75	8.76	8.80	0.90	0.95	0.80	1.10	0.15	0.91



Stellar Parameters For KIC 009159198

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6181^{+175}_{-218}	$4.474^{+0.054}_{-0.202}$	$-0.220^{+0.250}_{-0.300}$	$0.980^{+0.306}_{-0.102}$	$1.042^{+0.147}_{-0.134}$	$1.562^{+0.434}_{-0.810}$
	+3%/-4%	+1%/-5%	+114%/-136%	+31%/-10%	+14%/-13%	+28%/-52%
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 009159198-01 / KOI 7929.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-9 ± 4	$0.86^{+0.18}_{-0.16}$	1882^{+128}_{-90}	4177^{+402}_{-496}	12^{+8}_{-6}
Alt.	-11 ± 4	$0.82^{+0.20}_{-0.17}$	1883^{+127}_{-98}	4281^{+537}_{-459}	15^{+11}_{-7}

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

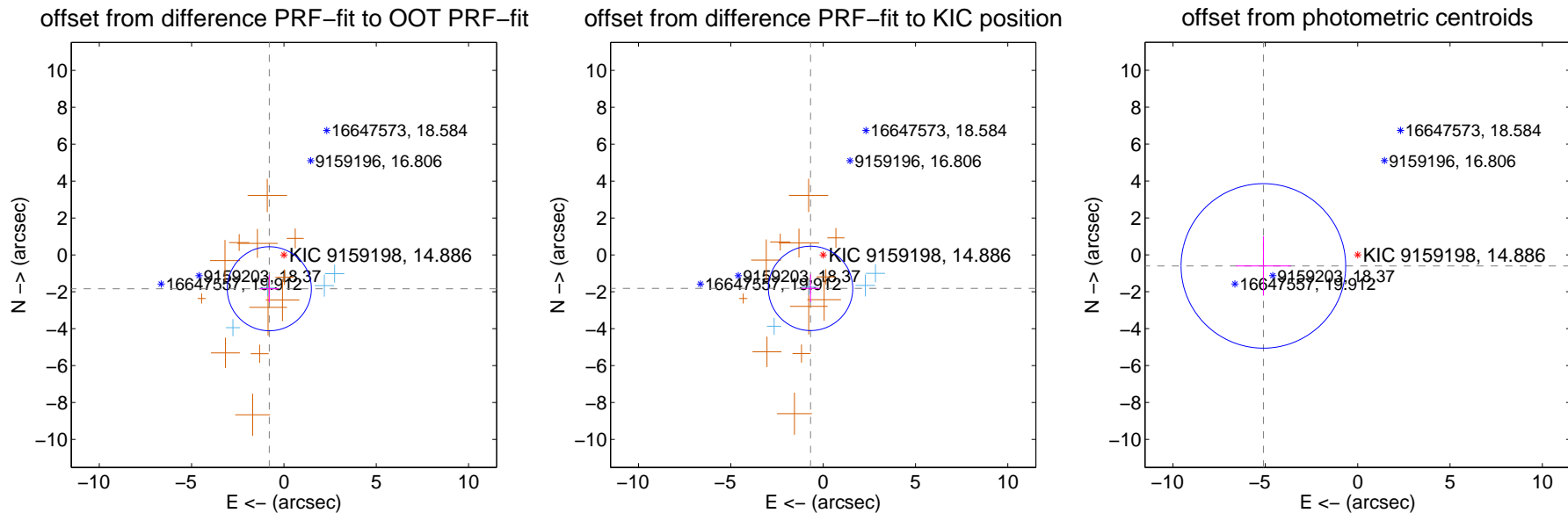
DV Centroid Data

Supplemental centroid analysis for 009159198-01. Kepler magnitude: 14.89. Transit SNR 8.15

There are 4 quarters with good PRF difference image offsets

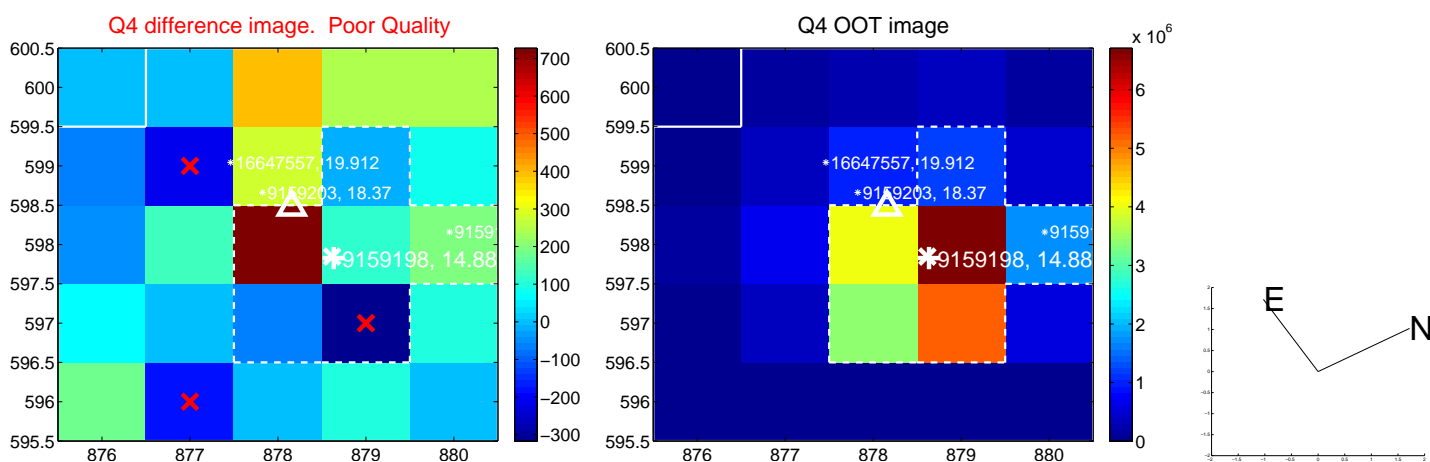
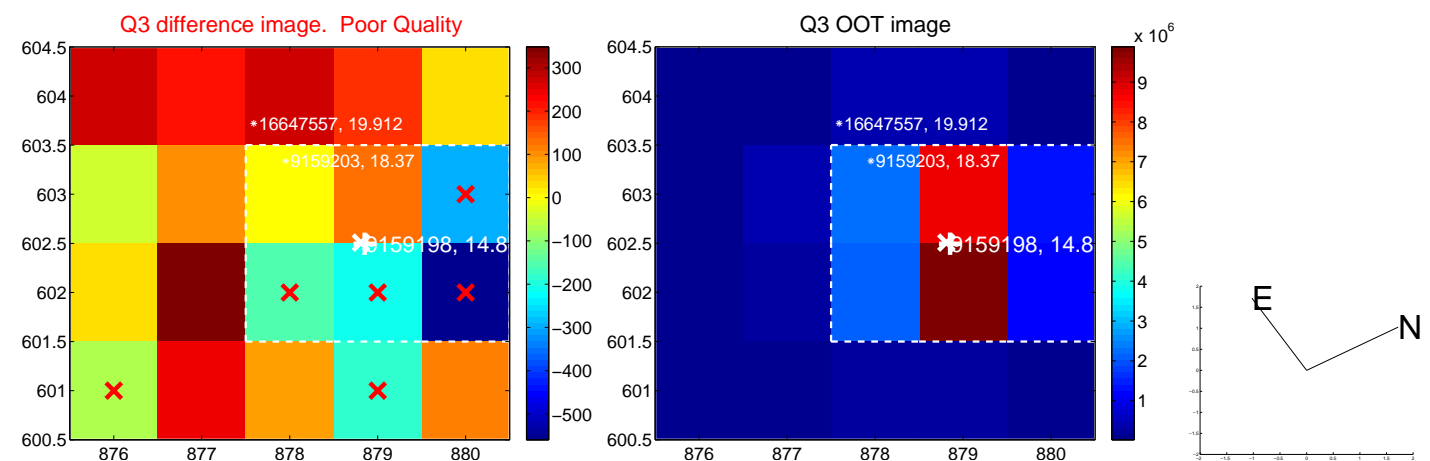
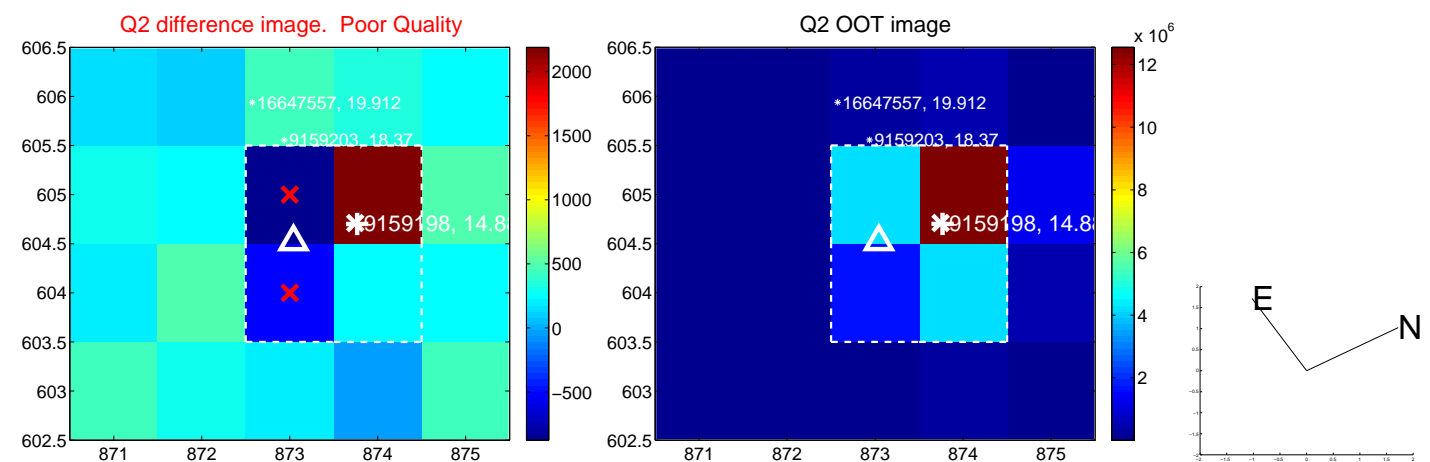
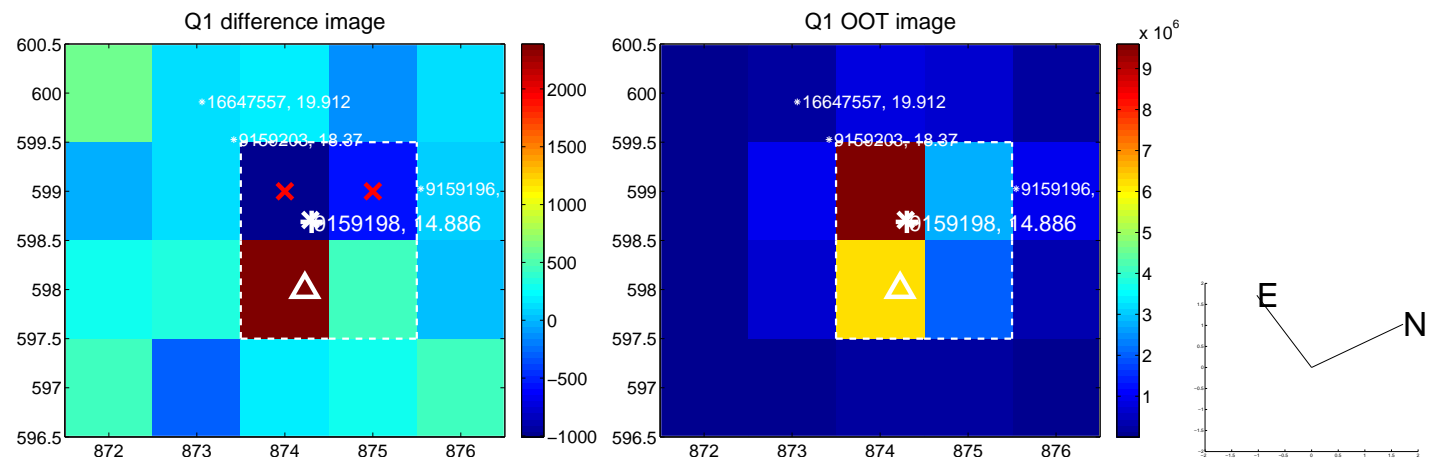
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.998 ± 0.759	2.63	0.791 ± 0.506	-1.835 ± 0.731
PRF-fit source offset from KIC position	1.940 ± 0.762	2.55	0.683 ± 0.500	-1.816 ± 0.744
photometric centroid source offset	5.14 ± 1.49	3.46	5.11 ± 1.48	-0.60 ± 1.61

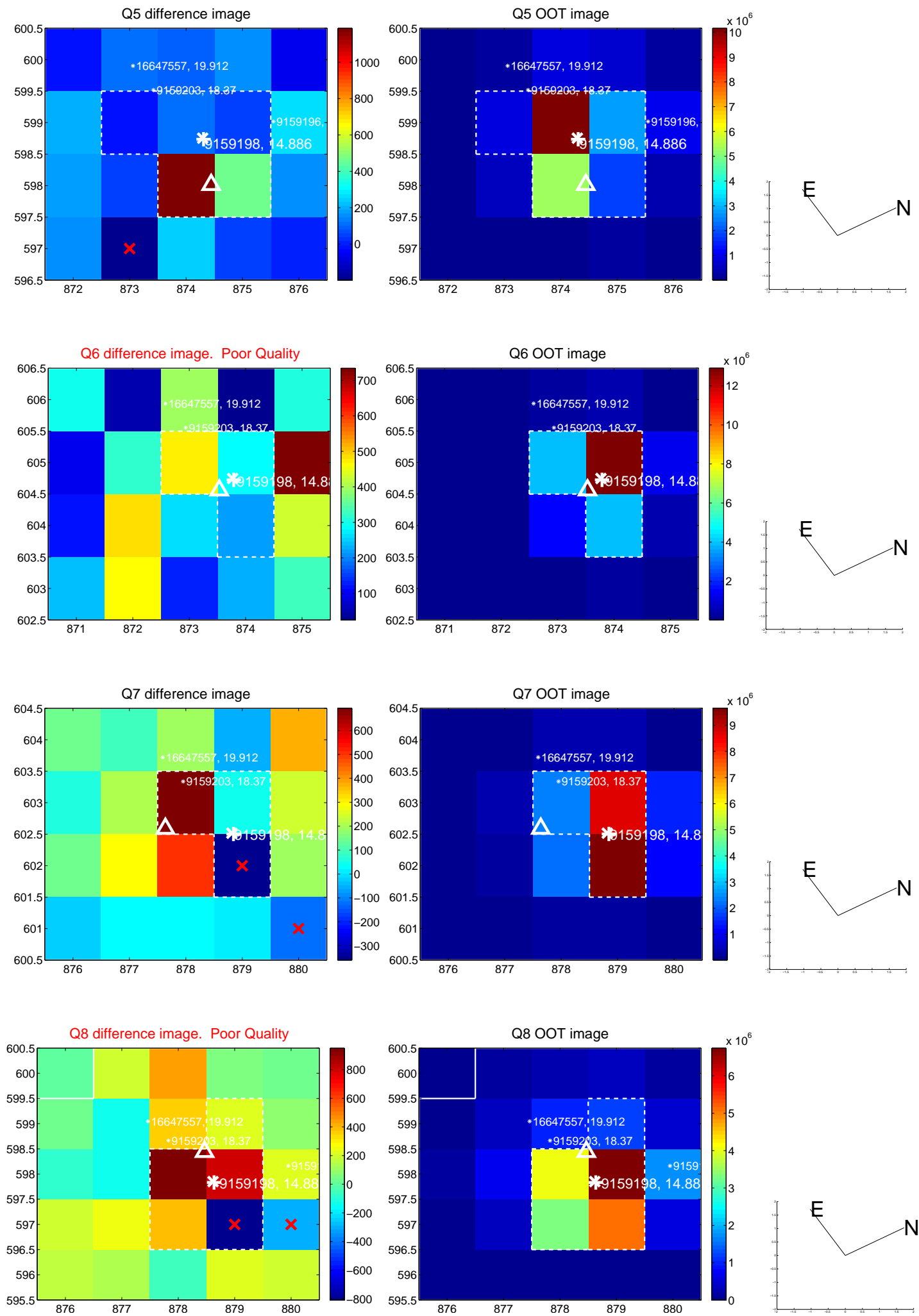


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

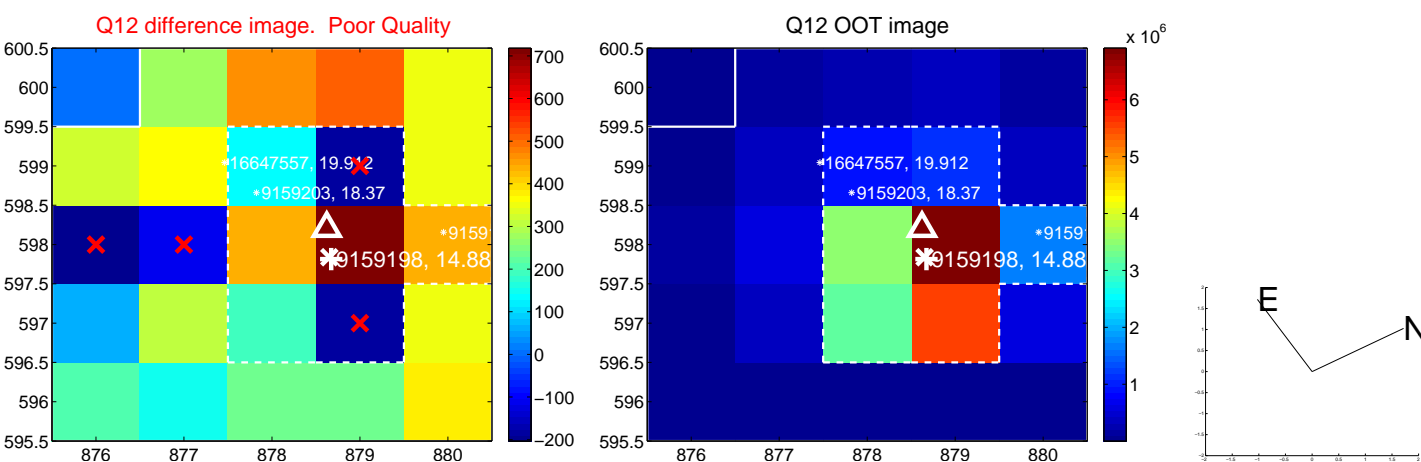
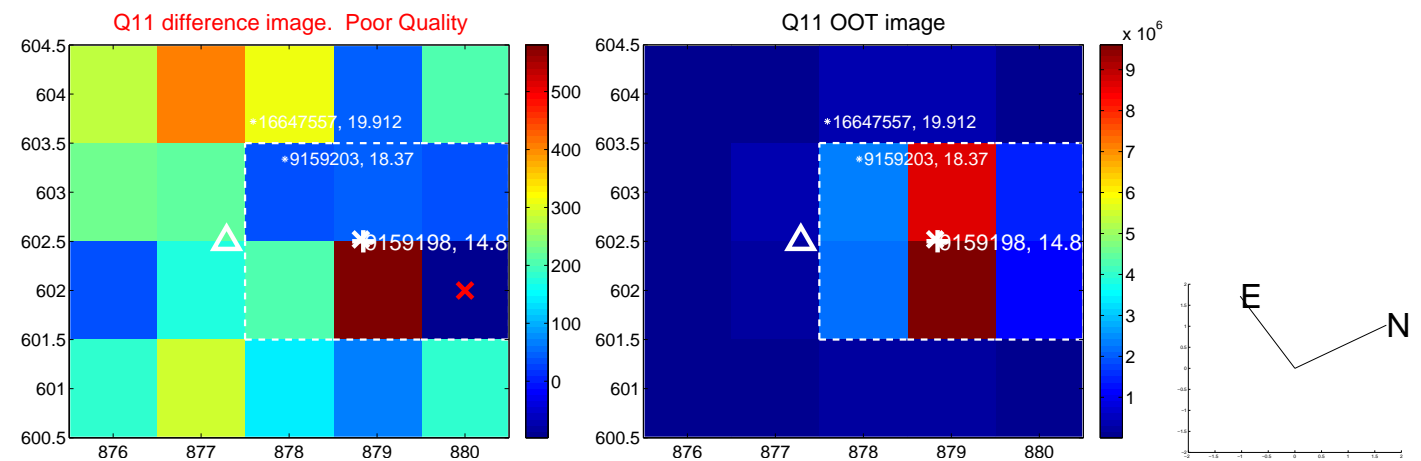
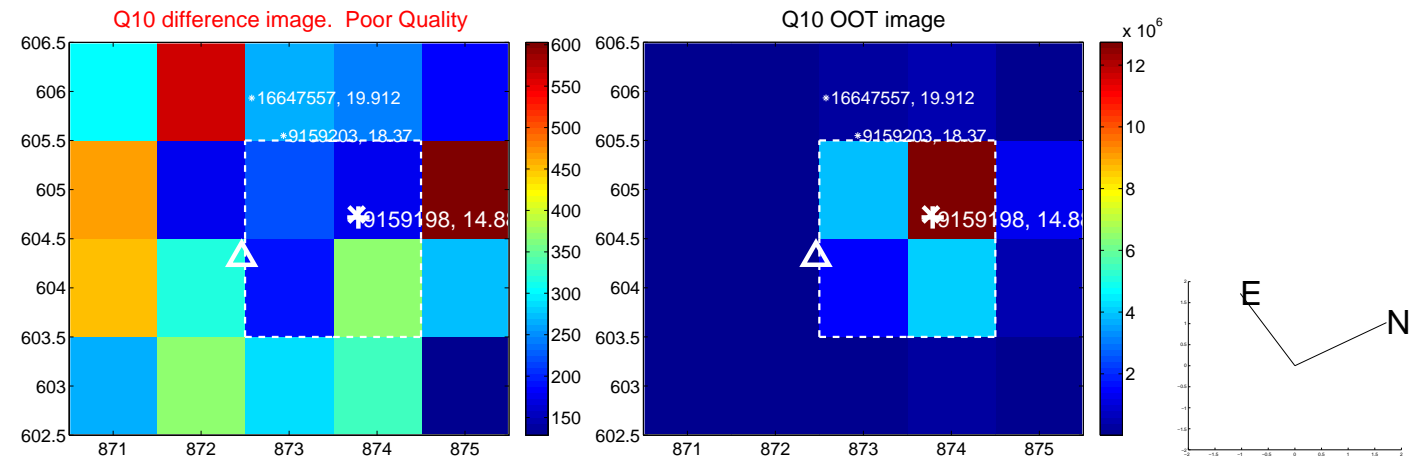
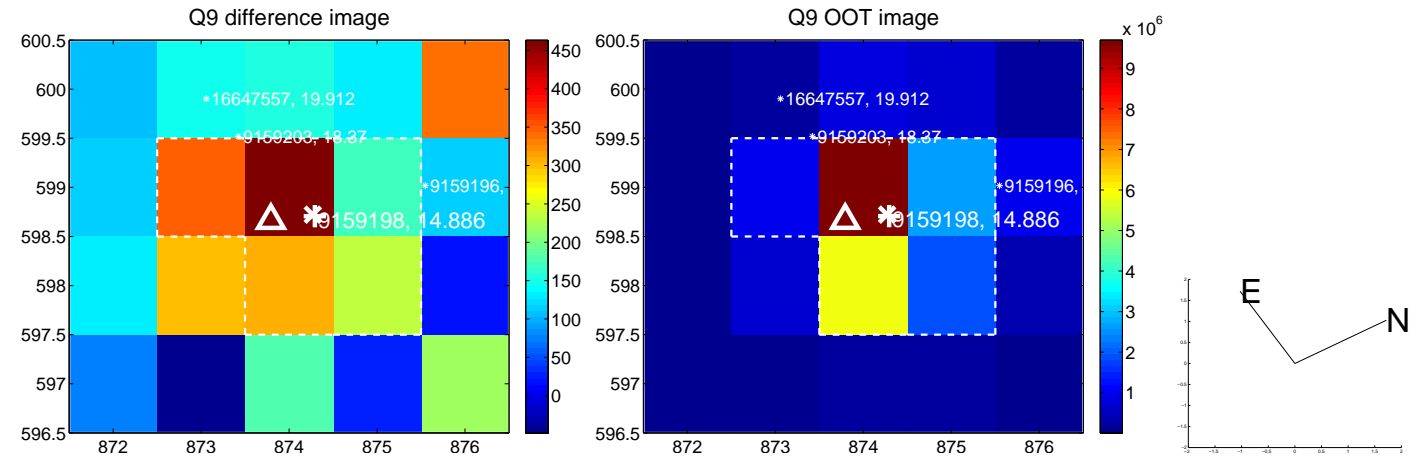
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



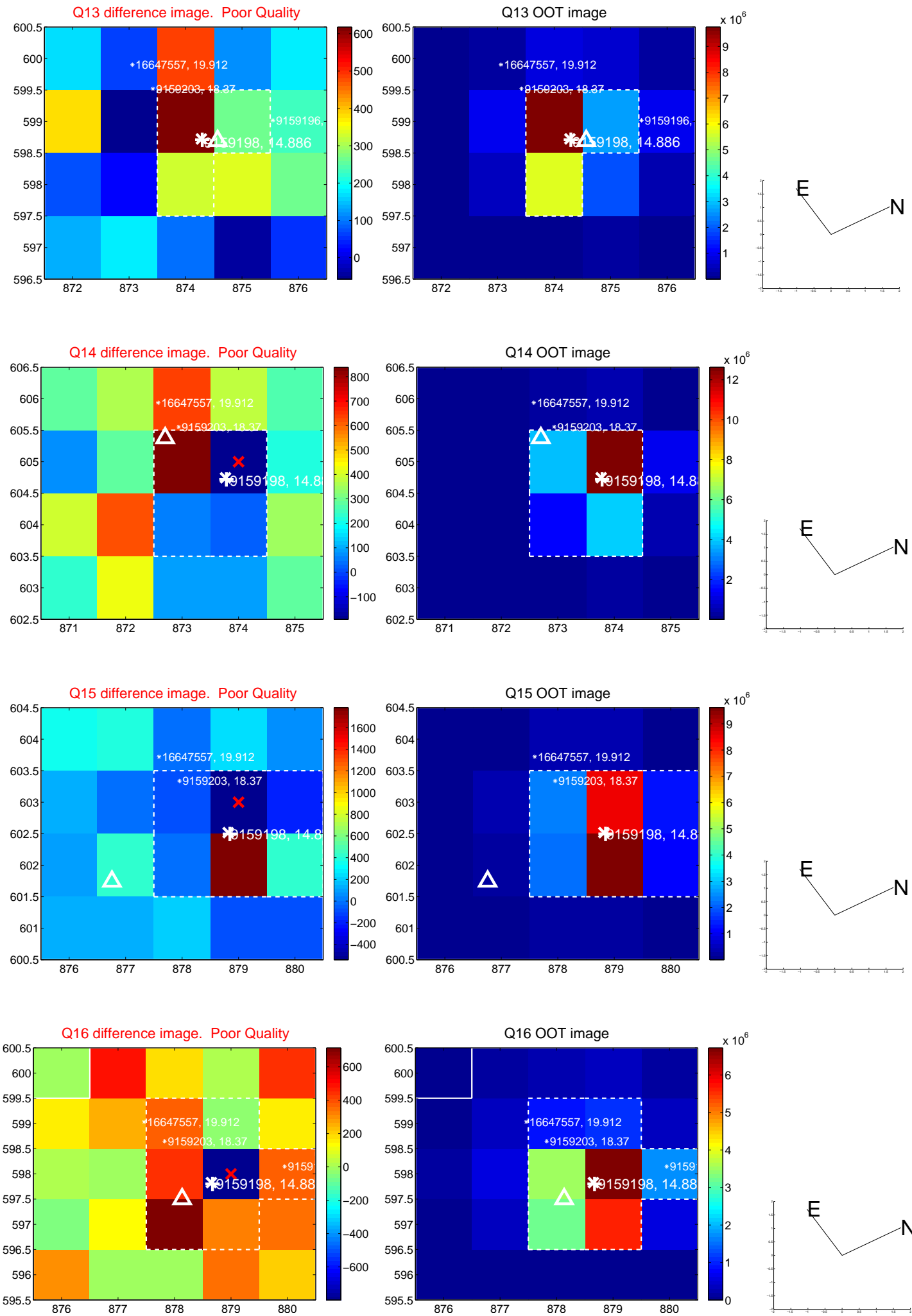
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



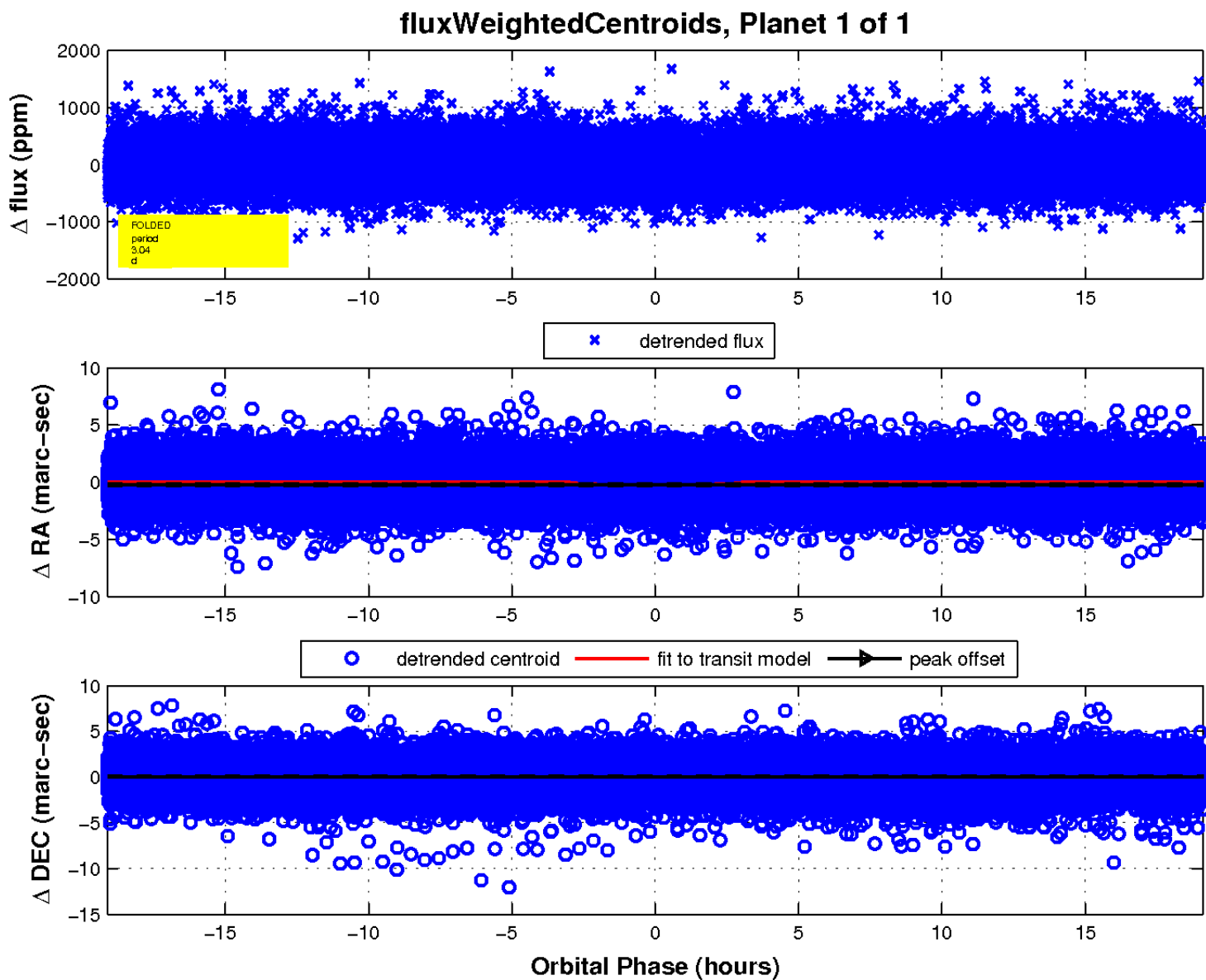
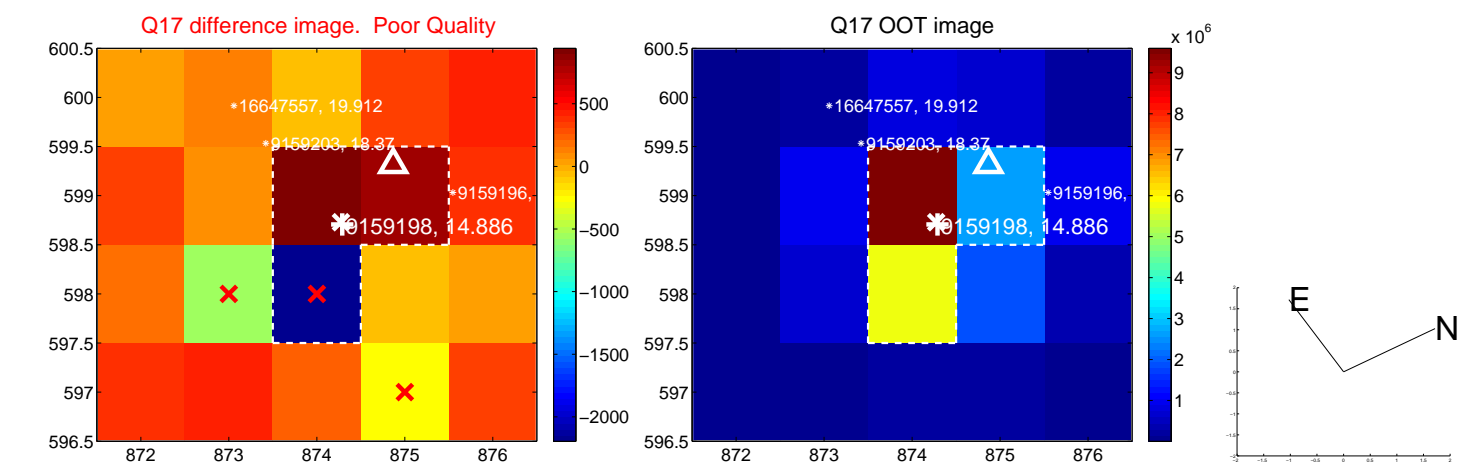
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

