

KIC 008766009

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})
008766009-01	OBS	No	19.734973	142.483747	151.1	43.807	9.2	15.1	1.24	6397	2.08	100.21

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008766009-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS

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

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

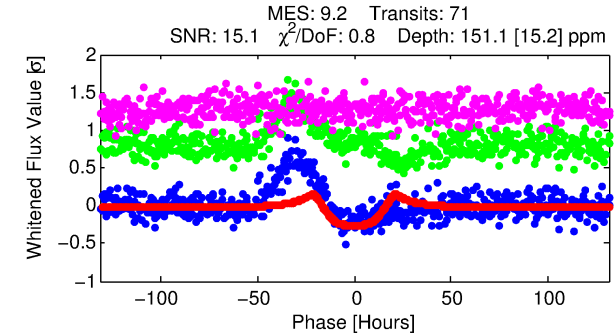
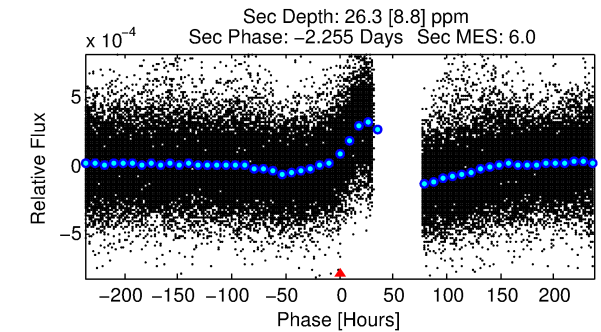
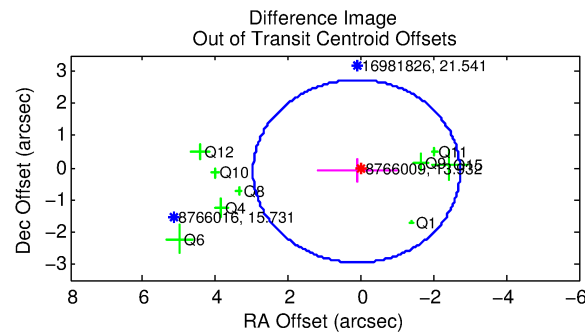
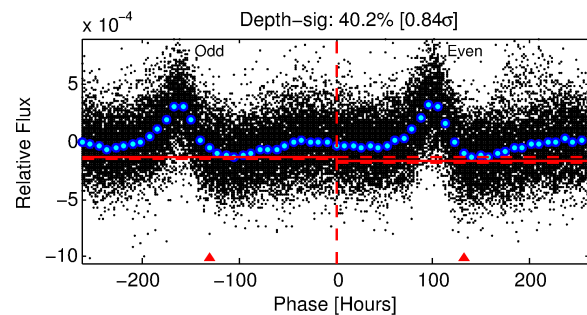
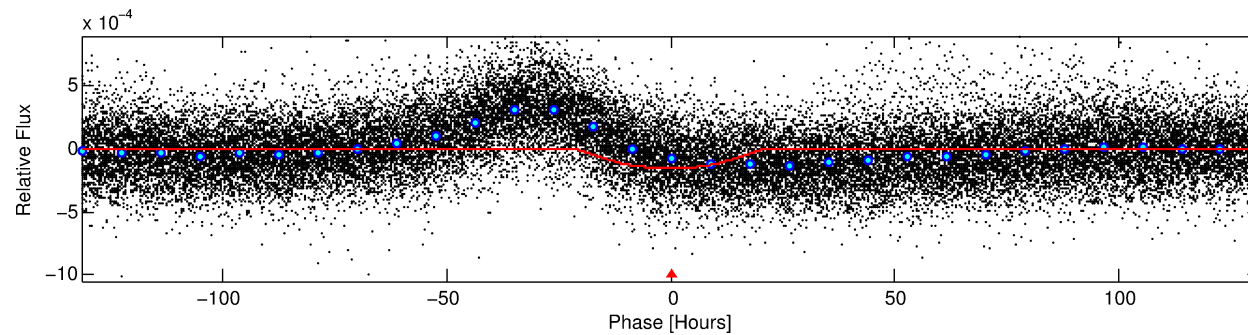
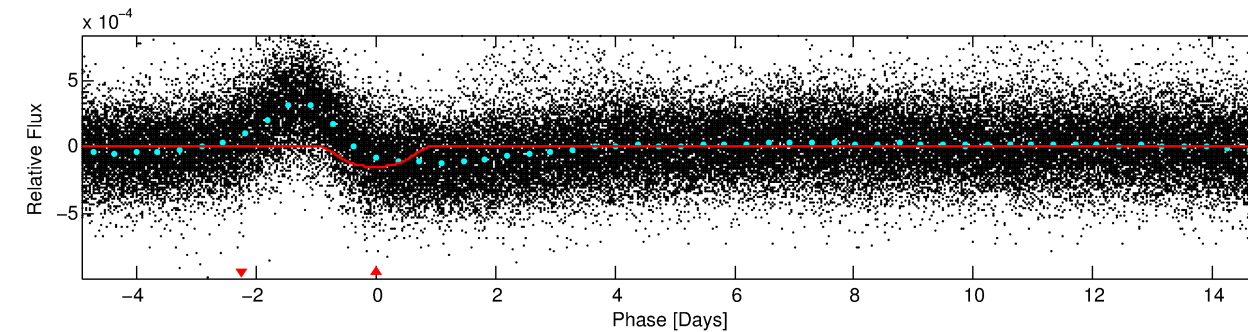
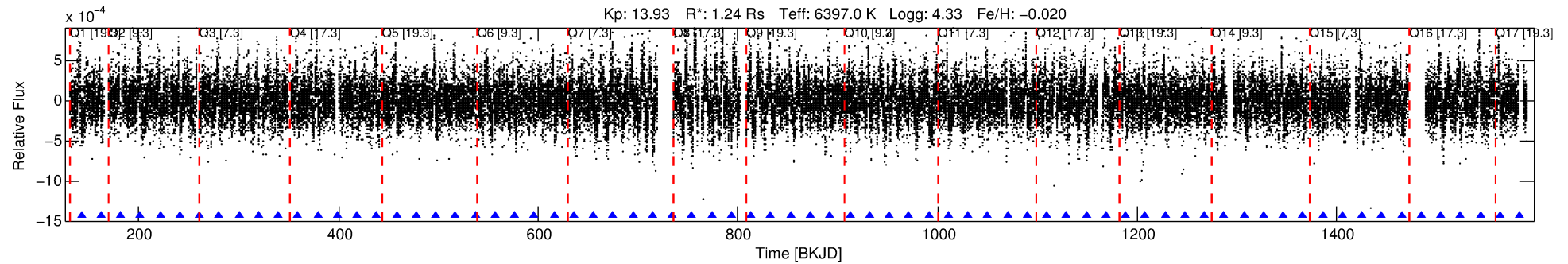
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008766009-01

No Significant Match Found

DV One-Page Summary

KIC: 8766009 Candidate: 1 of 1 Period: 19.735 d



DV Fit Results:

Period = 19.73497 [0.00105] d
Epoch = 142.4837 [0.0431] BKJD
Rp/R* = 0.0154 [0.0010]
a/R* = 1.31 [0.04]
b = 0.98 [0.00]
Seff = 100.21 [41.89]
Teq = 807 [84] K
Rp = 2.08 [0.73] Re
a = 0.1511 [0.0426] AU
Ag = 76.68 [41.10] [1.84 σ]
Teffp = 3691 [354] K [7.92 σ]

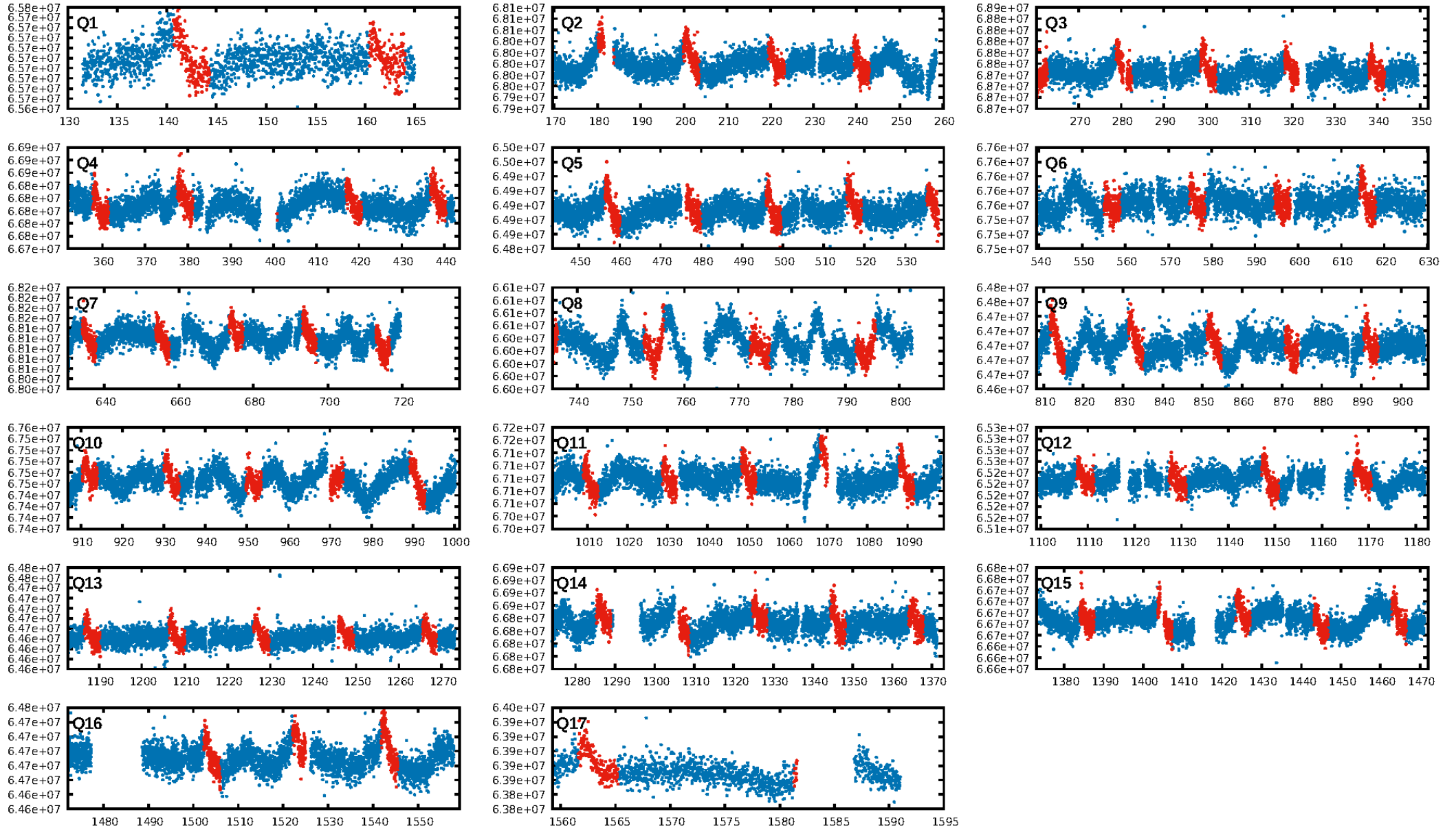
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.59e-20
RollingBand-fgt: 1.00 [68/68]
GhostDiagnostic-chr: 0.2767
Centroid-sig: 0.1%
Centroid-so: 1.179 arcsec [1.34 σ]
OotOffset-rm: 0.162 arcsec [0.17 σ]
KicOffset-rm: 0.471 arcsec [0.57 σ]
OotOffset-st: 2/2/3/2 [9]
KicOffset-st: 2/2/3/2 [9]
DiffImageQuality-fgm: 0.56 [5/9]
DiffImageOverlap-fno: 1.00 [15/15]

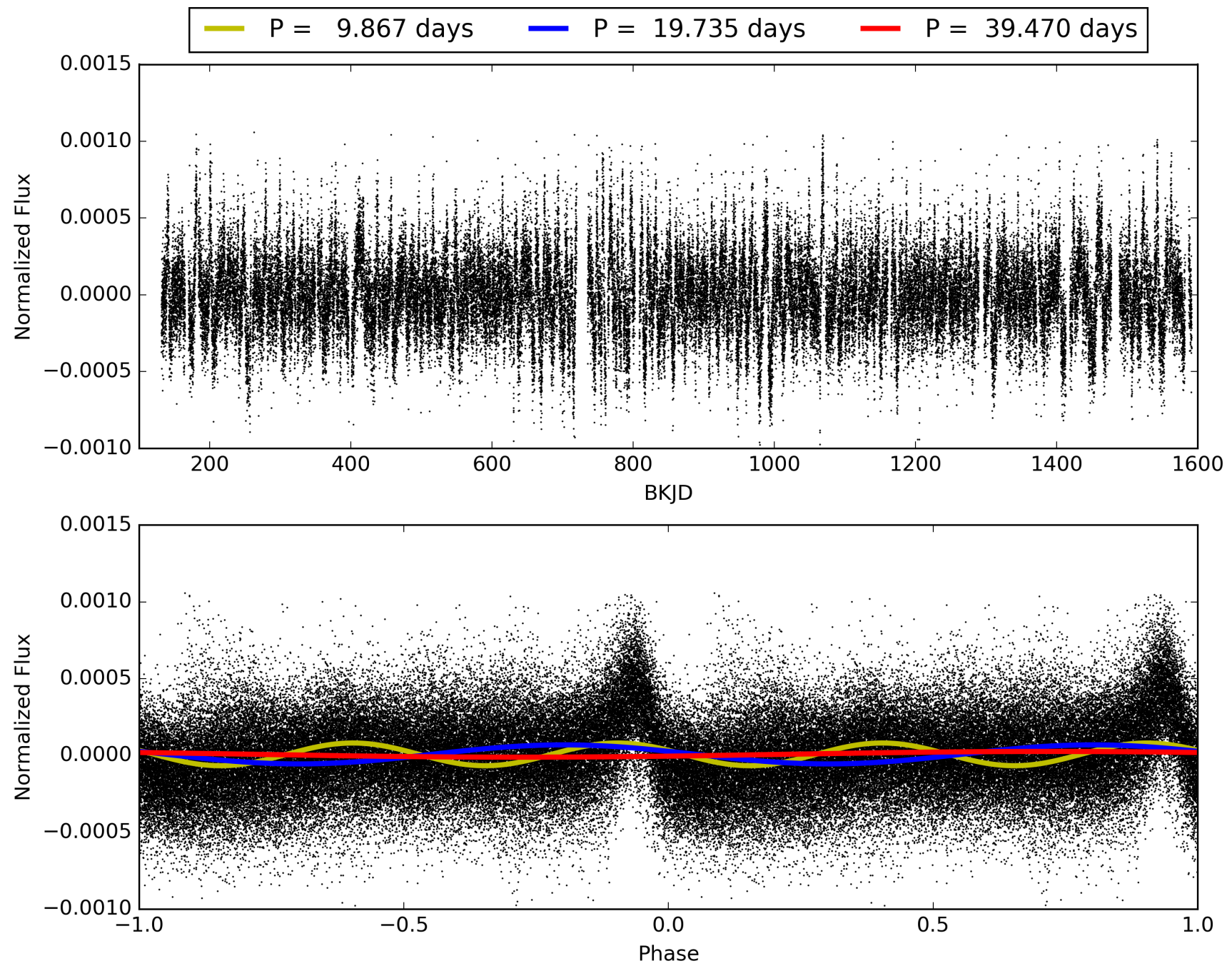
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:17:56 Z

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

TCE 008766009-01, PDC Light Curves

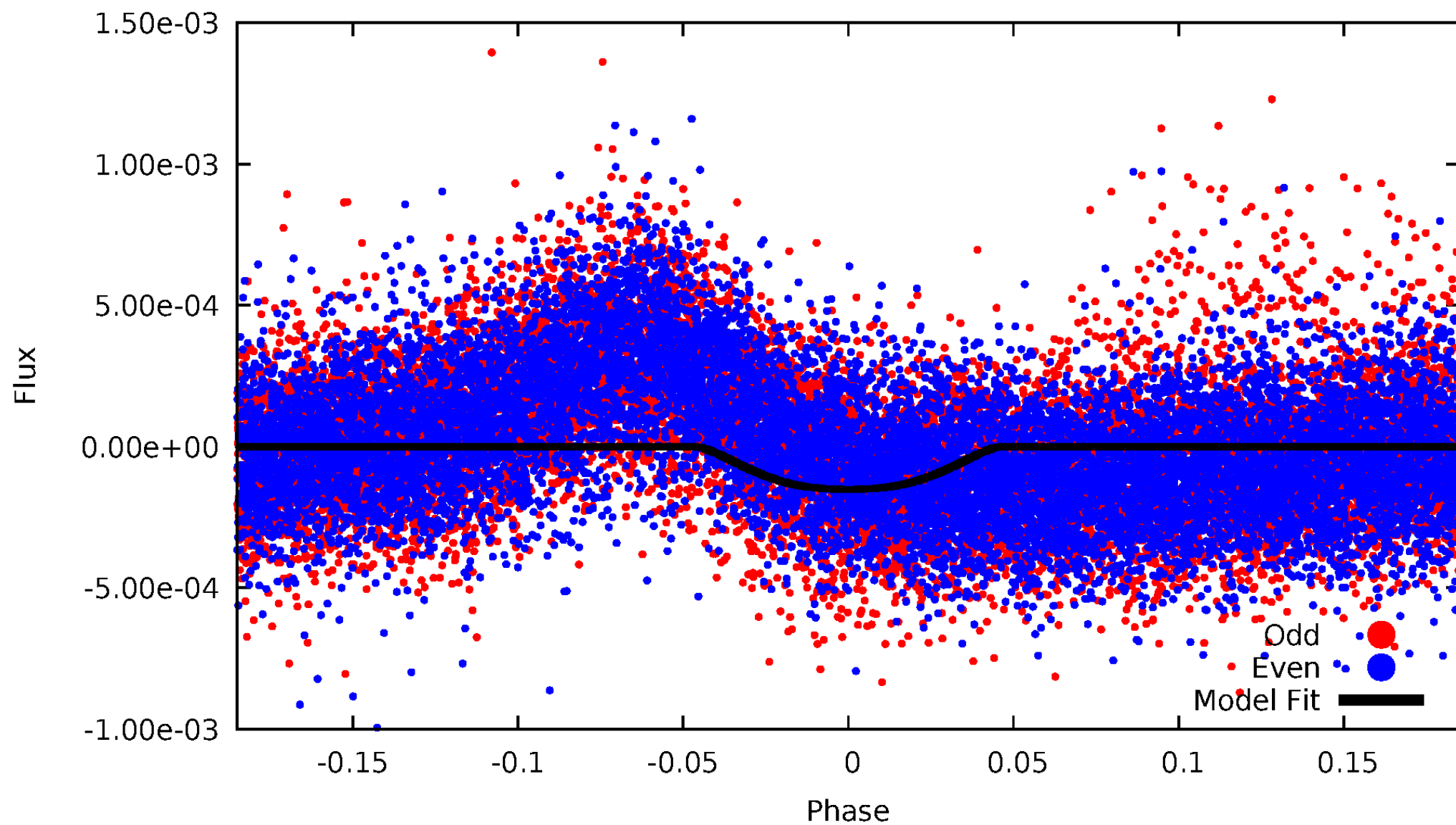


TCE 008766009-01



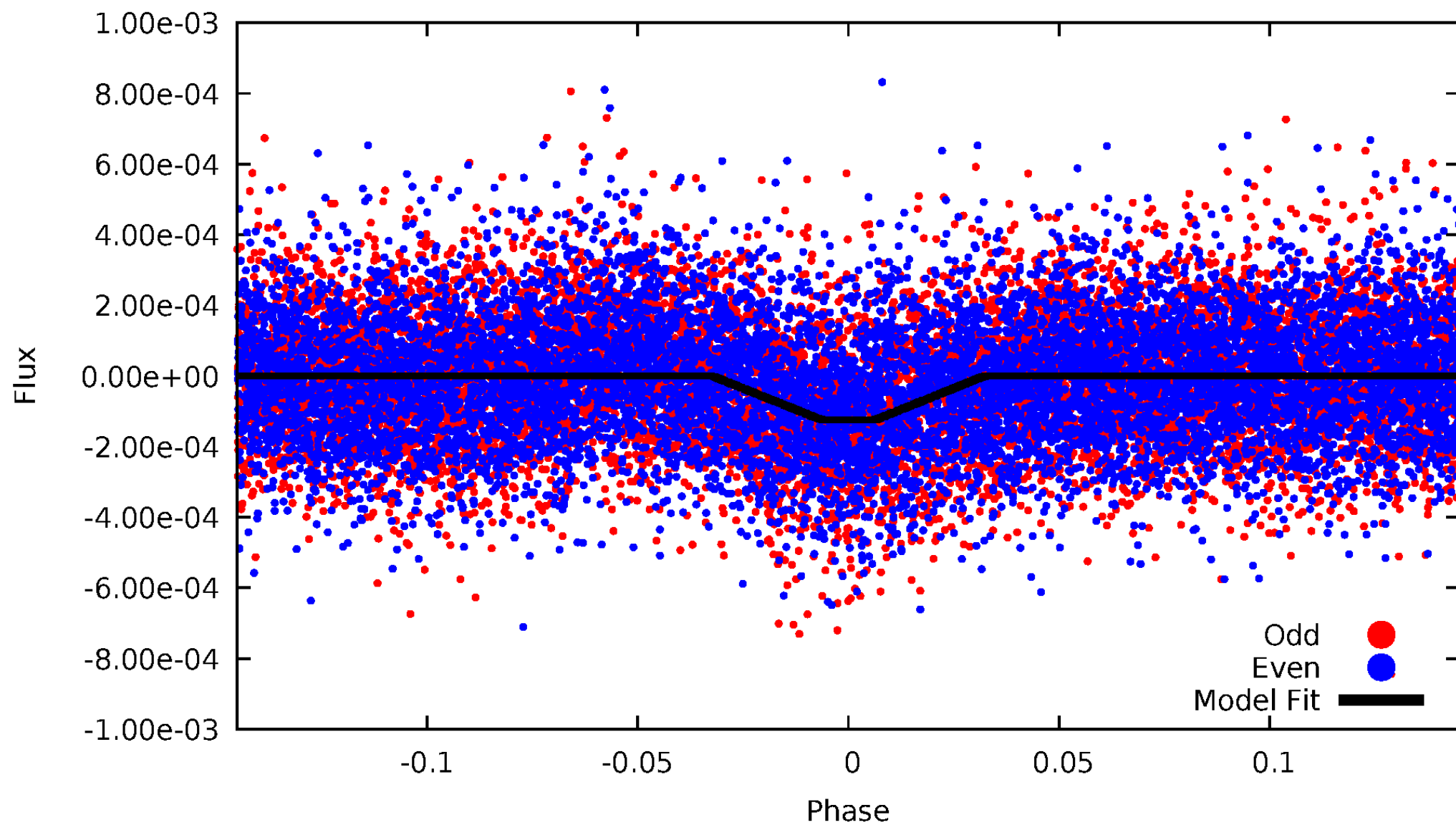
DV Odd/Even

TCE 008766009-01

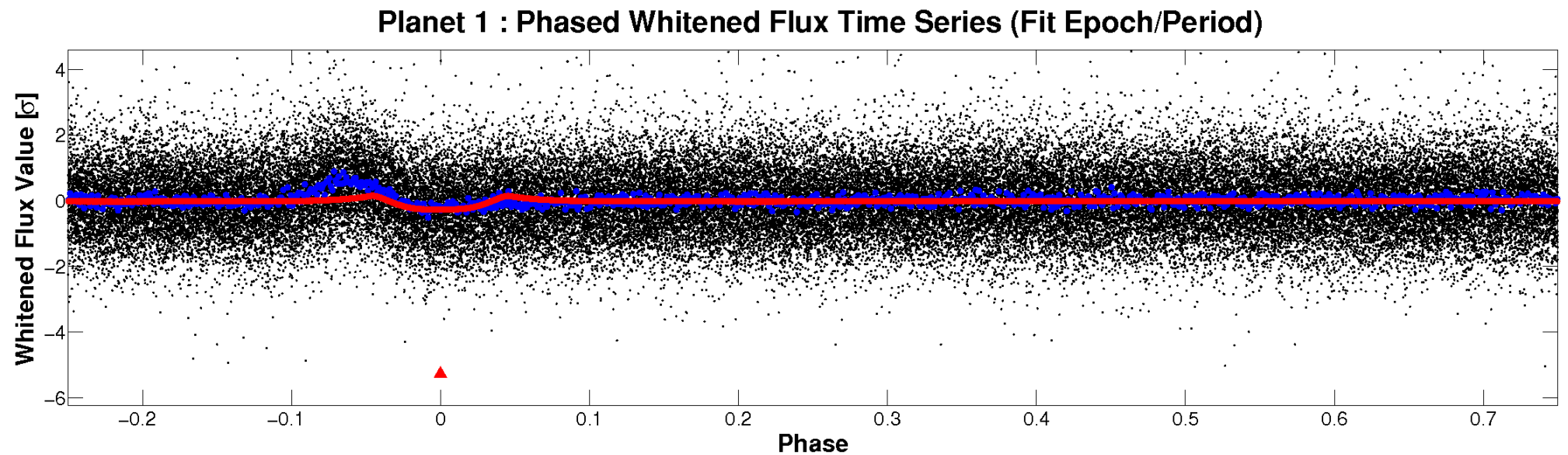
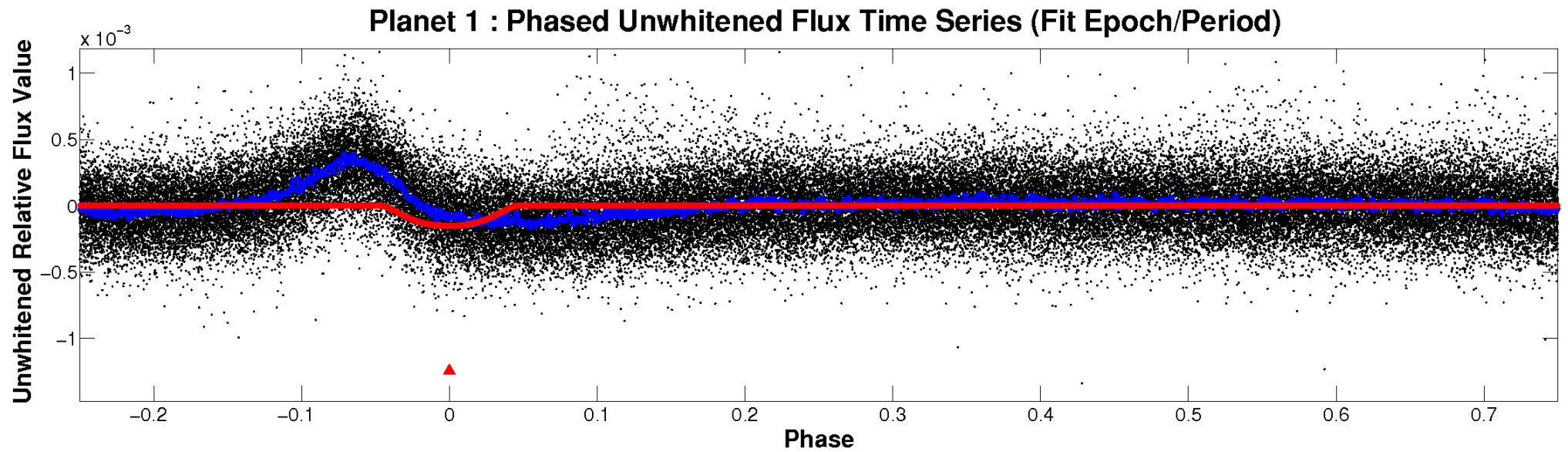


ALT Odd/Even

TCE 008766009-01

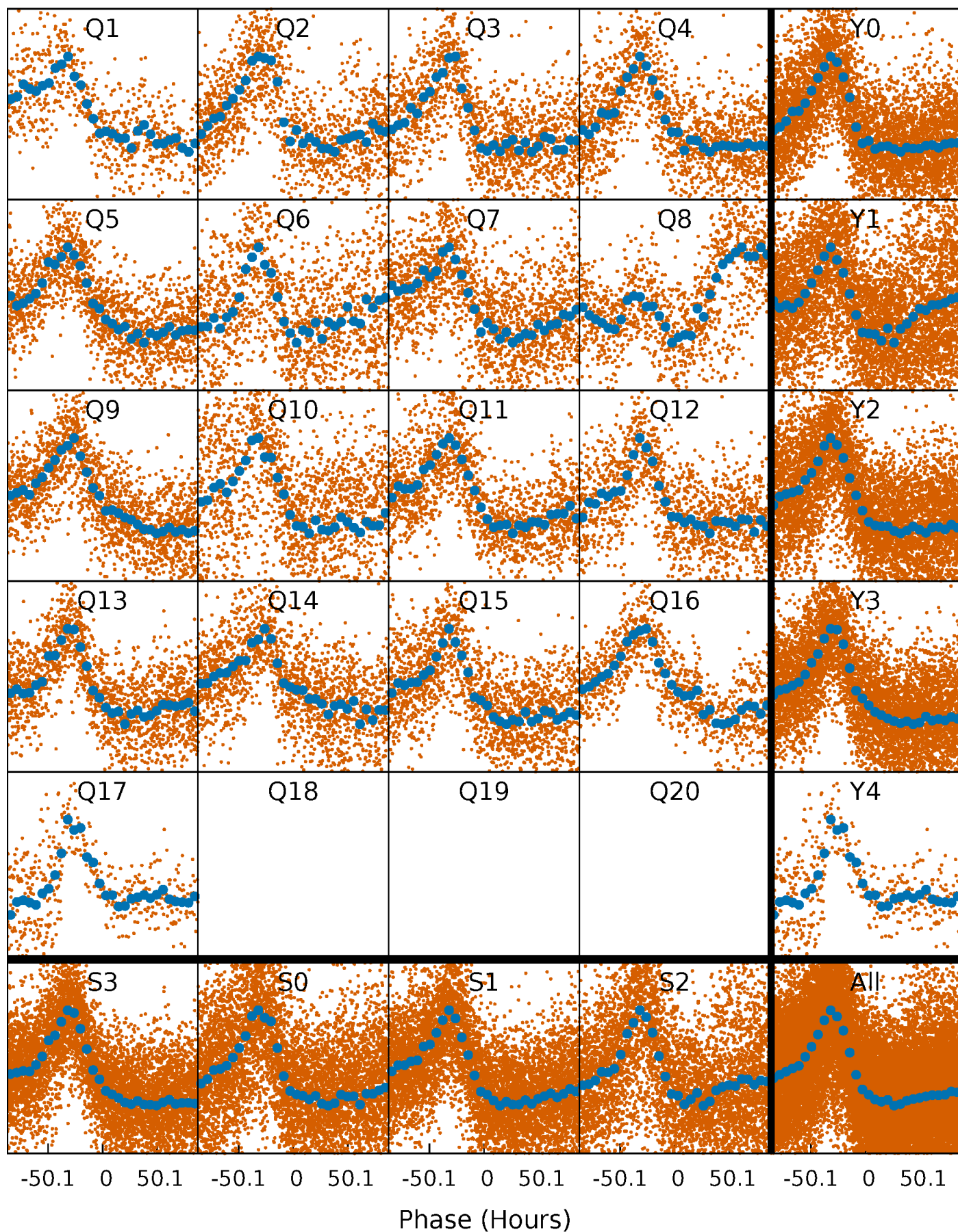


Non-Whitened Vs. Whitened Light Curve



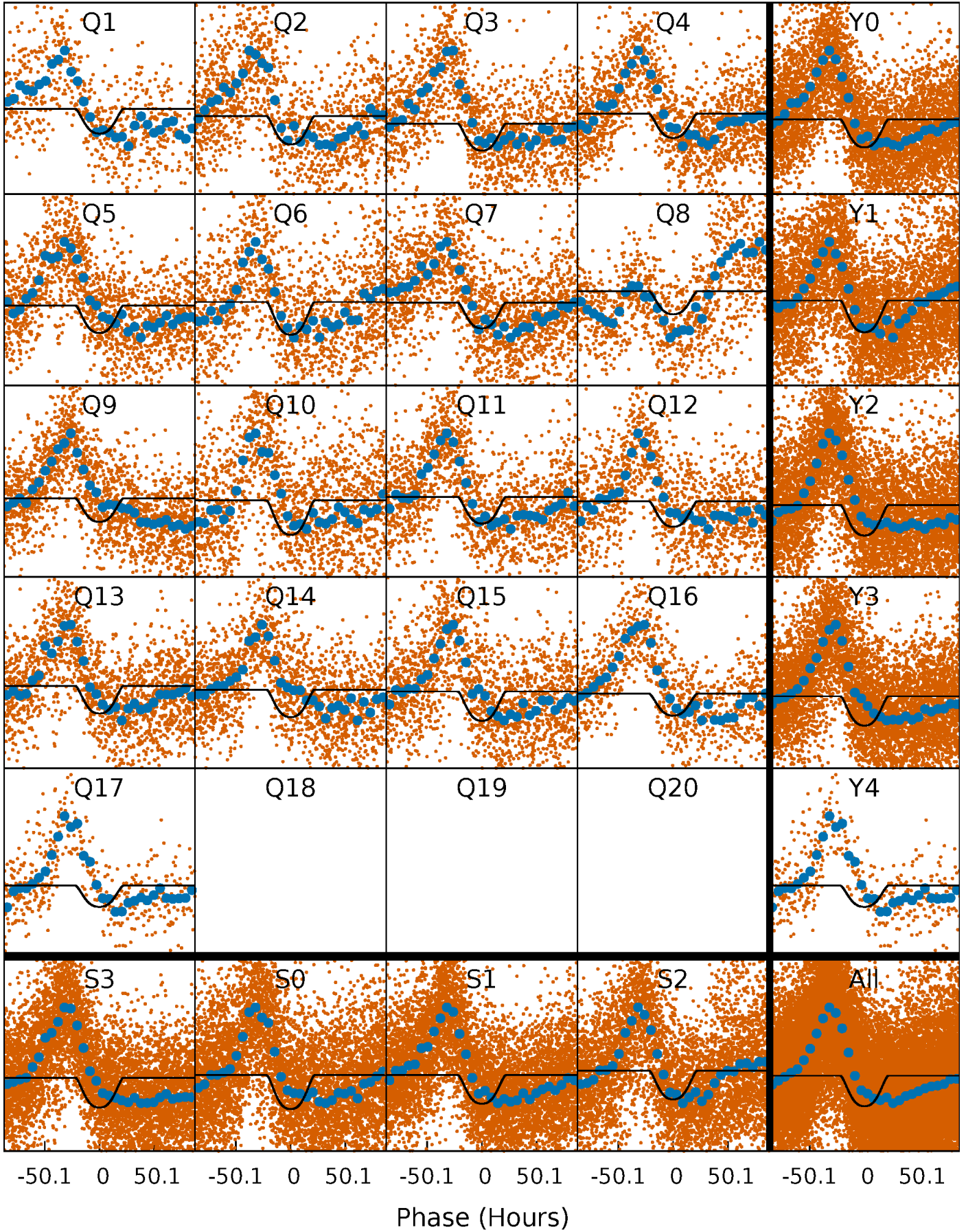
PDC Quarter-Phased Transit Curves

TCE 008766009-01 P= 19.734973 Days $T_0=142.483747$ (BKJD)



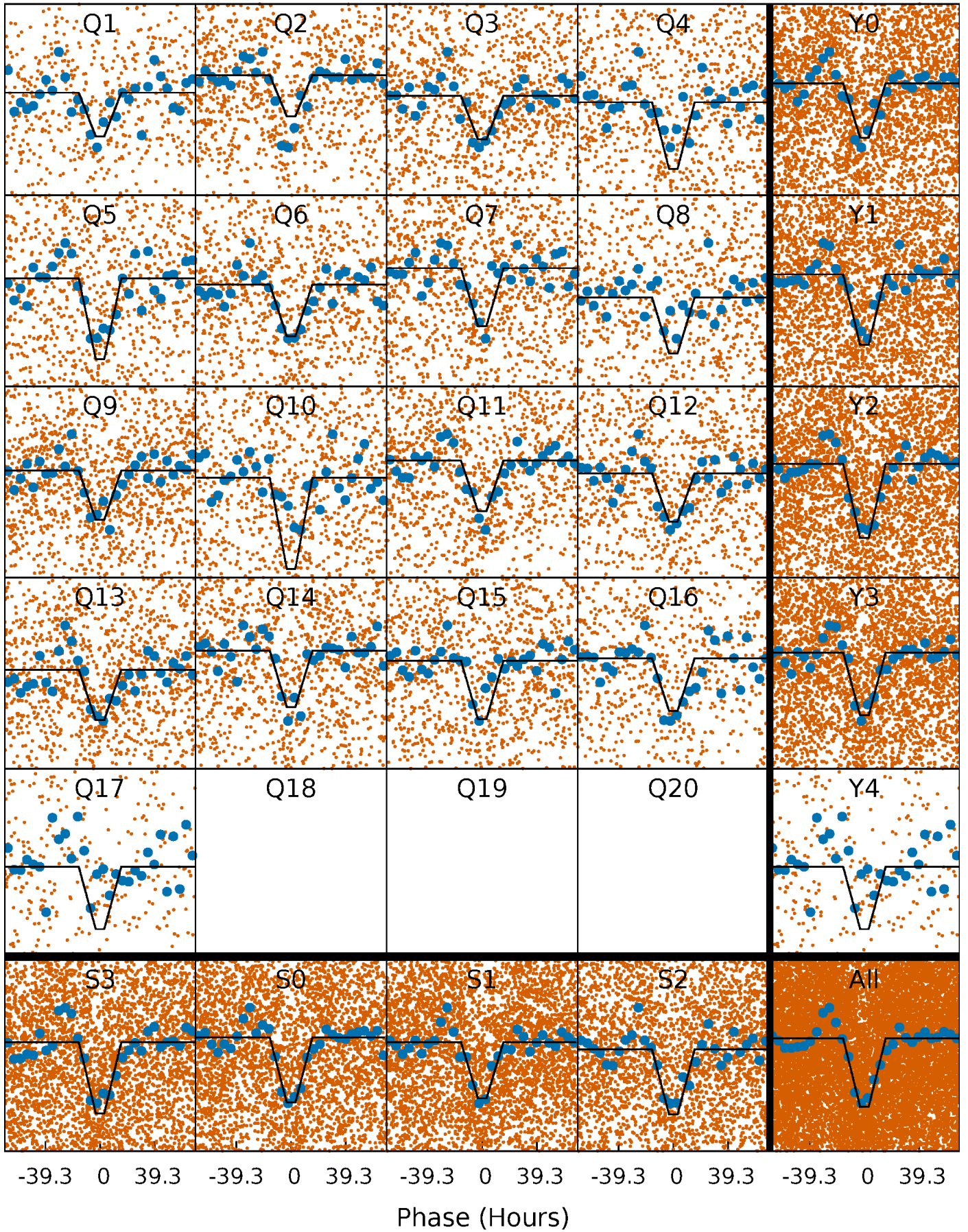
DV Quarter-Phased Transit Curves

TCE 008766009-01 P= 19.734973 Days $T_0=142.483747$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

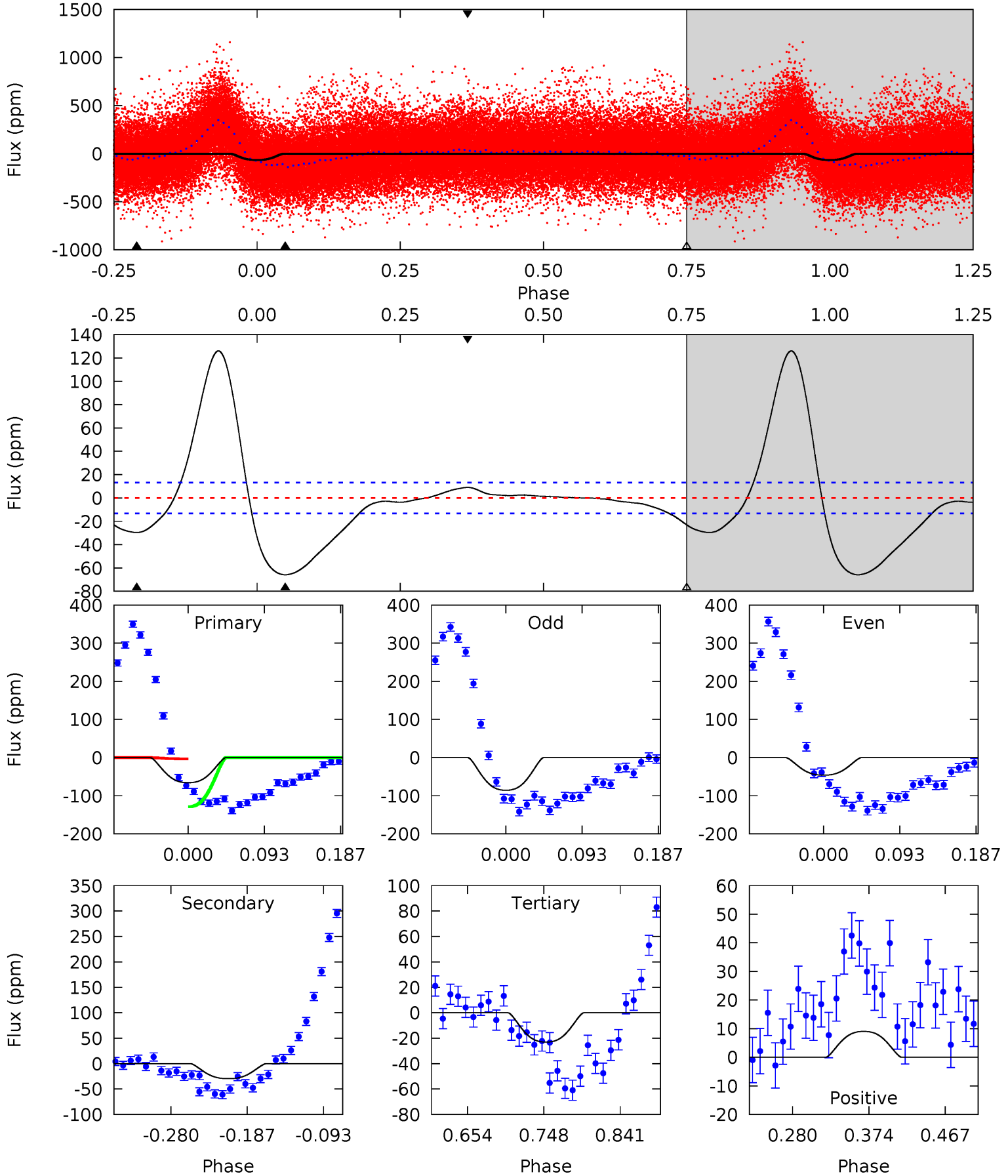
TCE 008766009-01 P= 19.732809 Days $T_0=142.344004$ (BKJD)



DV Model-Shift Uniqueness Test

008766009-01, $P = 19.734973$ Days, $E = 122.748774$ Days

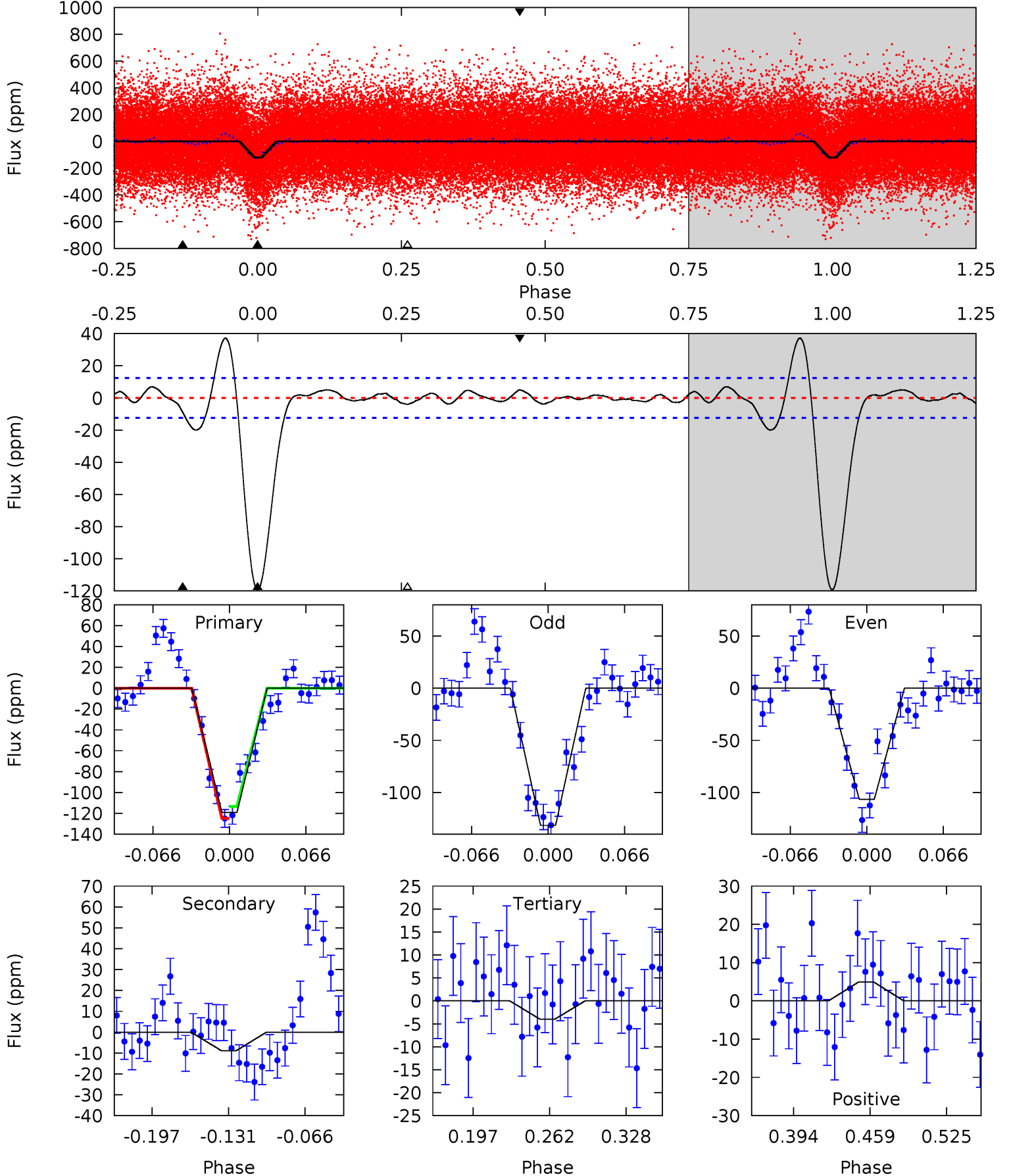
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.8	10.3	7.99	3.13	4.58	1.68	11.5	14.8	19.7	2.27	7.13	6.91	1.65	0.66	21.7



Alt Model-Shift Uniqueness Test

008766009-01, $P = 19.732809$ Days, $E = 122.611195$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
44.7	3.31	1.49	1.85	4.65	1.84	0.85	43.2	42.8	1.82	1.46	4.69	0.94	0.24	2.14



Stellar Parameters For KIC 008766009

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6397^{+153}_{-211}	$4.327^{+0.090}_{-0.210}$	$-0.020^{+0.250}_{-0.300}$	$1.235^{+0.428}_{-0.171}$	$1.181^{+0.181}_{-0.144}$	$0.883^{+0.352}_{-0.483}$
	+2%/-3%	+2%/-5%	+1250%/-1500%	+35%/-14%	+15%/-12%	+40%/-55%
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 008766009-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-30 ± 3	$2.13^{+0.38}_{-0.24}$	1141^{+89}_{-60}	4082^{+156}_{-139}	81^{+23}_{-22}
Alt.	-9 ± 3	$1.53^{+0.28}_{-0.21}$	1138^{+89}_{-61}	3708^{+207}_{-249}	46^{+21}_{-17}

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 $A_{obs} \gg 1.0$

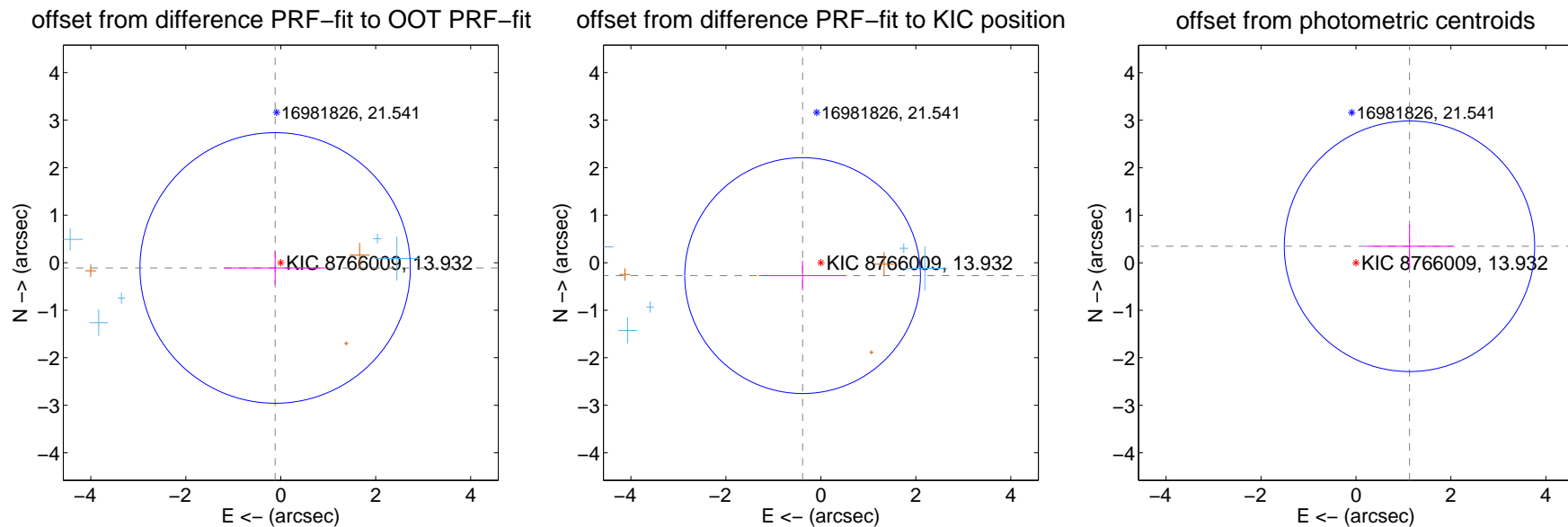
DV Centroid Data

Supplemental centroid analysis for 008766009-01. Kepler magnitude: 13.93. Transit SNR 15.09

There are 5 quarters with good PRF difference image offsets

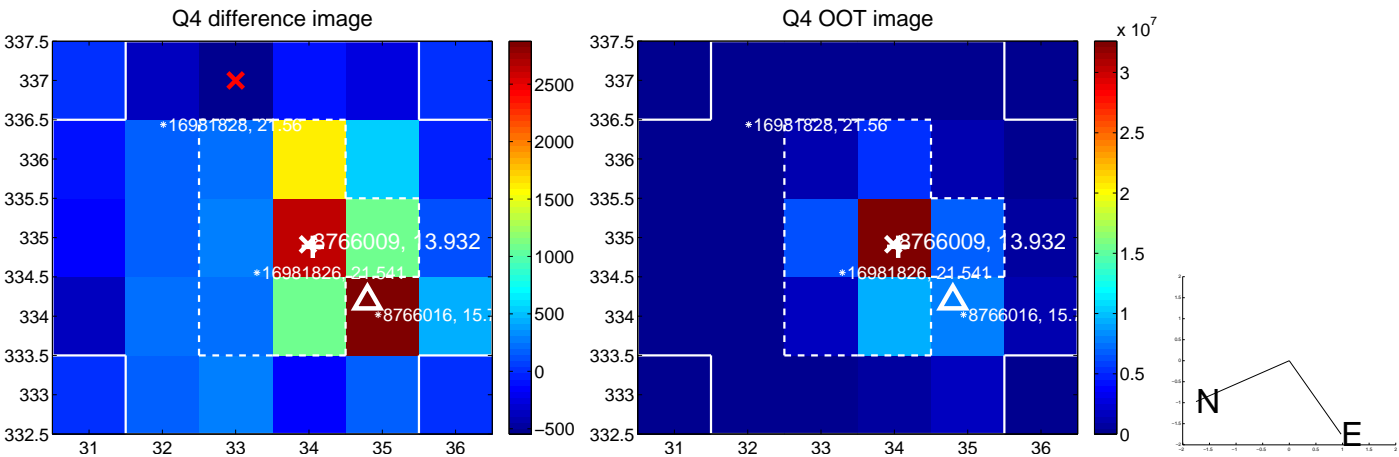
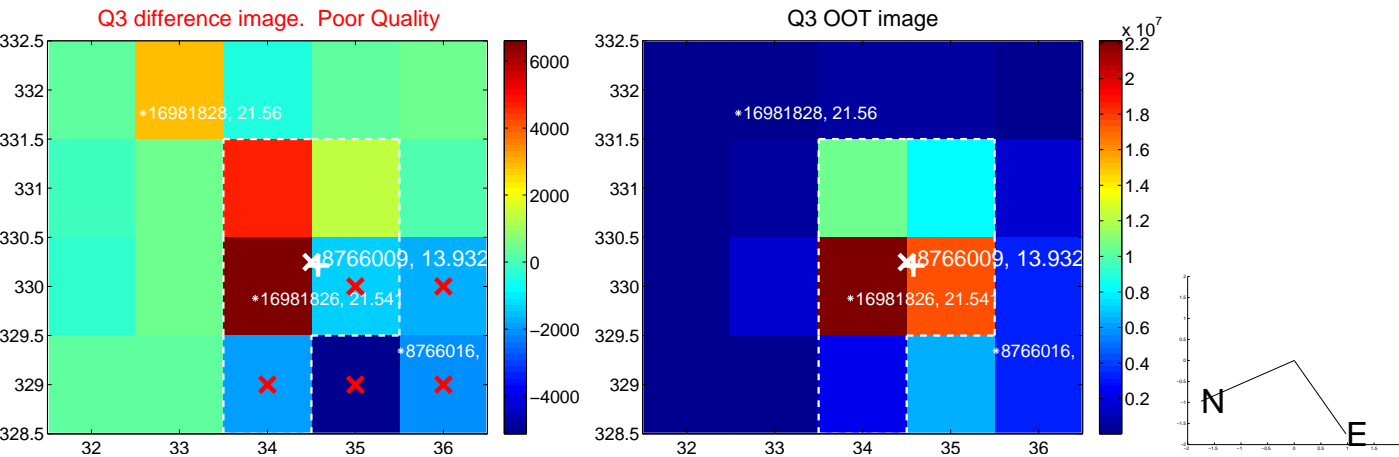
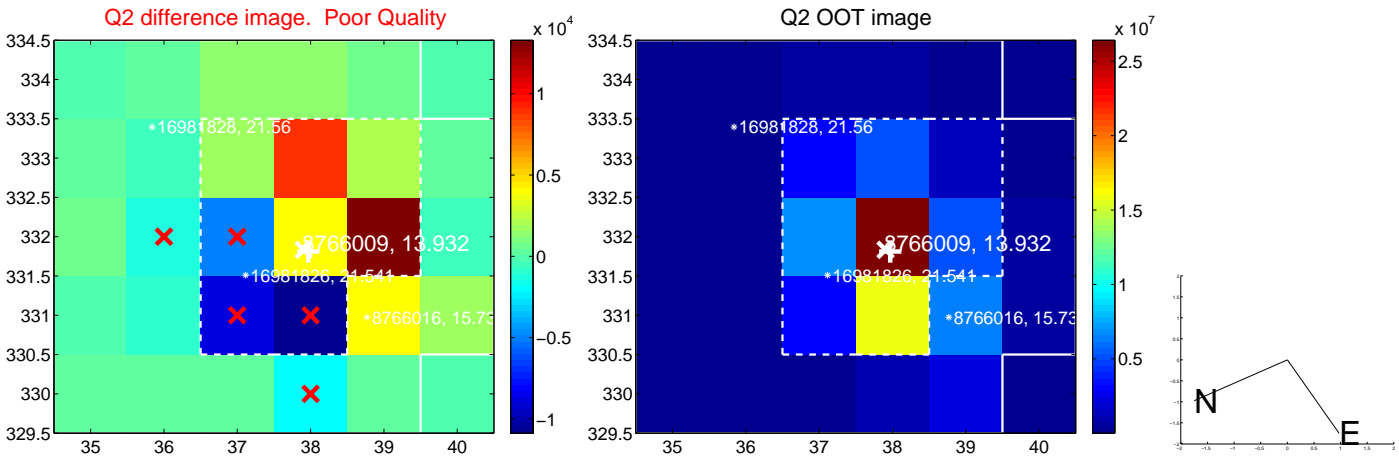
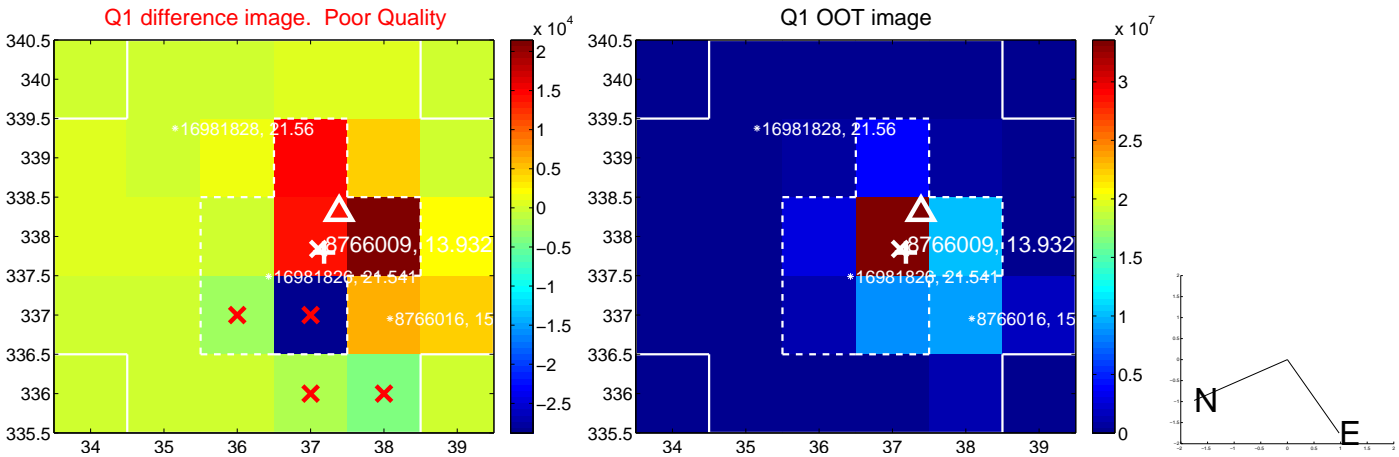
The direct PRF centroid is offset from the target star catalog position by about 0.33 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.162 ± 0.949	0.17	0.118 ± 1.078	-0.111 ± 0.350
PRF-fit source offset from KIC position	0.471 ± 0.827	0.57	0.385 ± 0.920	-0.272 ± 0.309
photometric centroid source offset	1.18 ± 0.88	1.34	-1.13 ± 0.91	0.35 ± 0.46

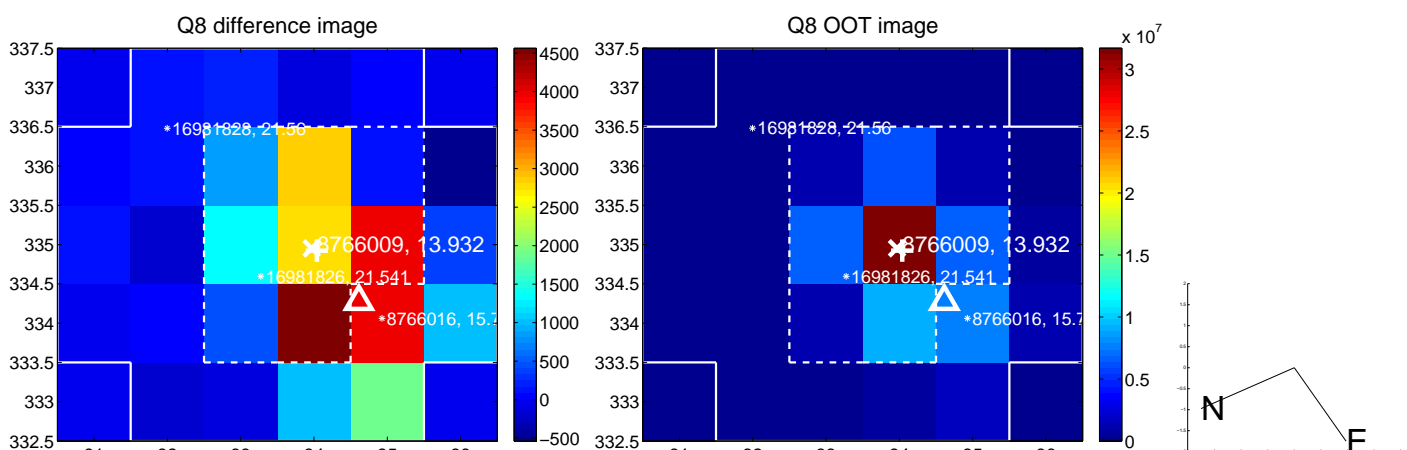
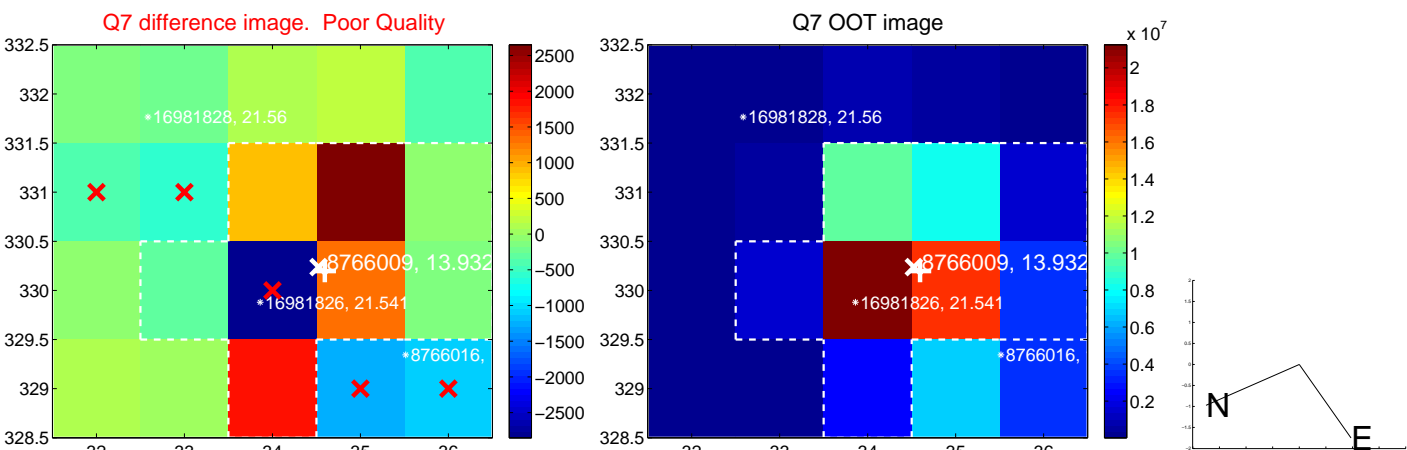
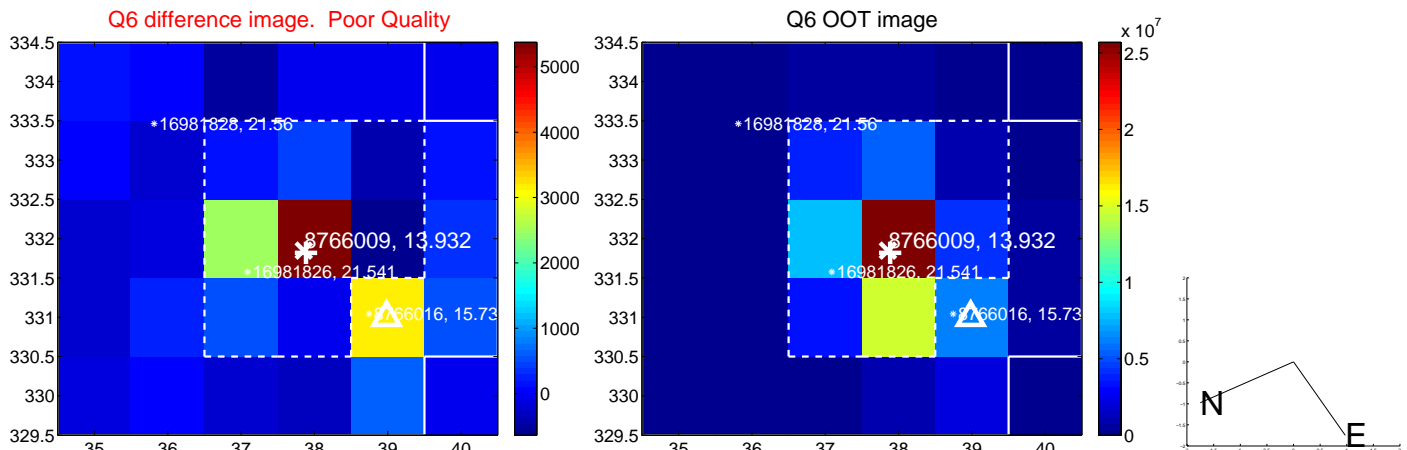
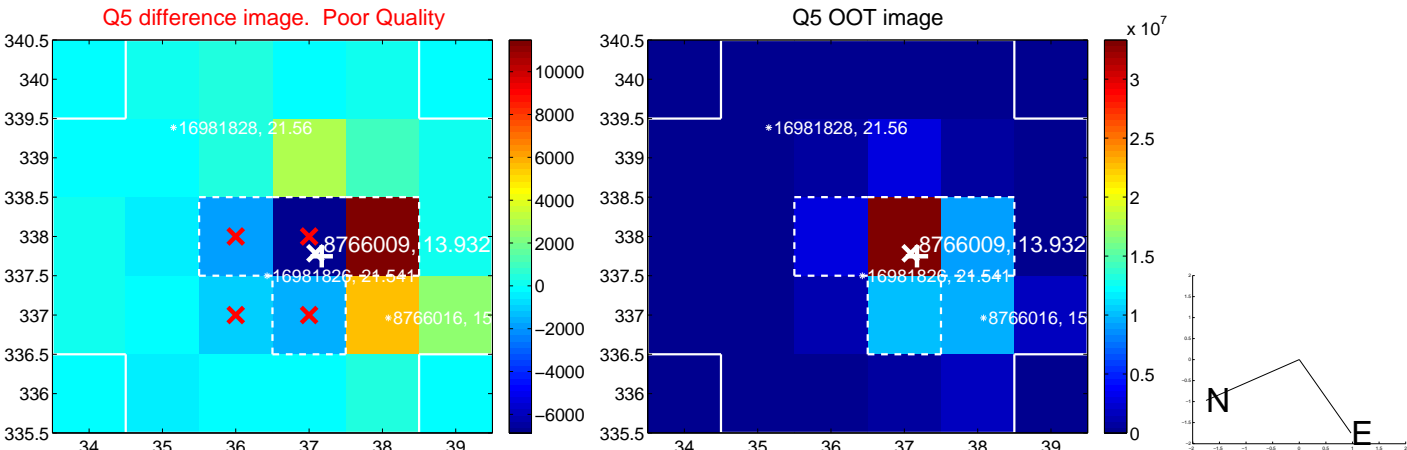


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

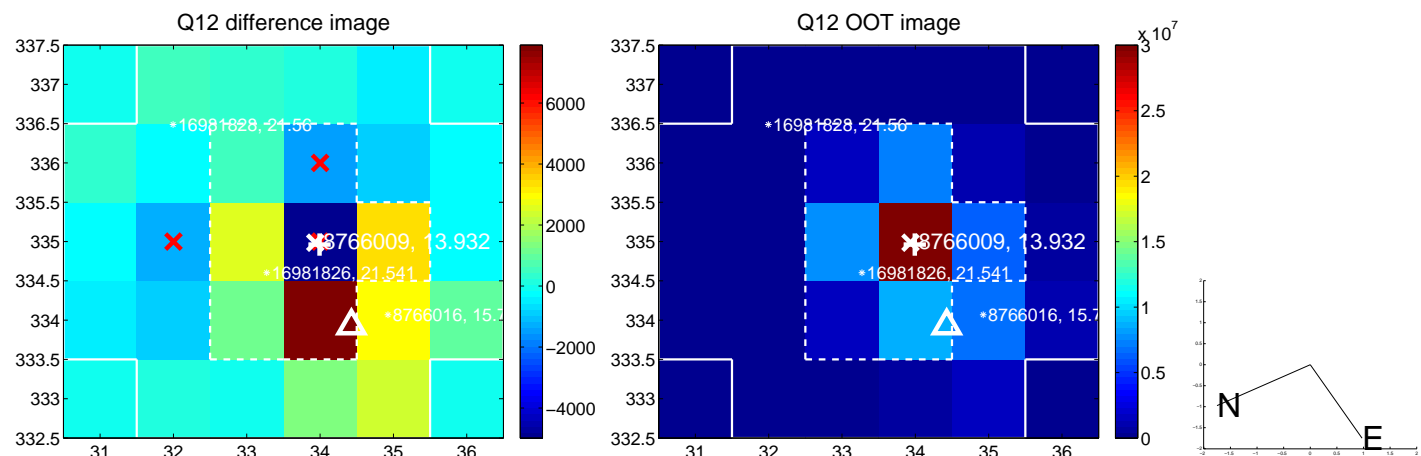
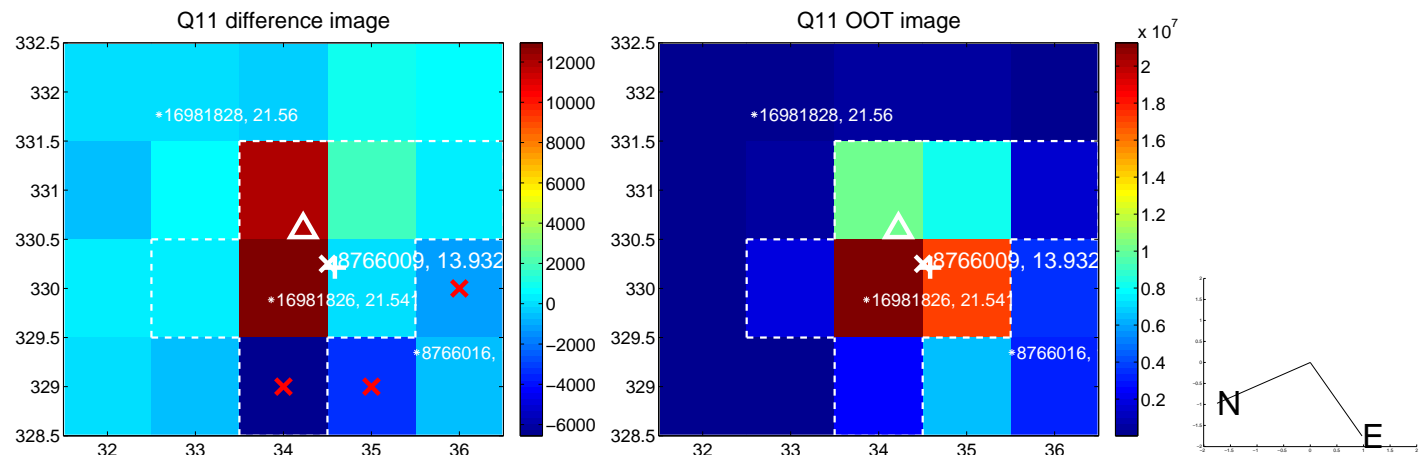
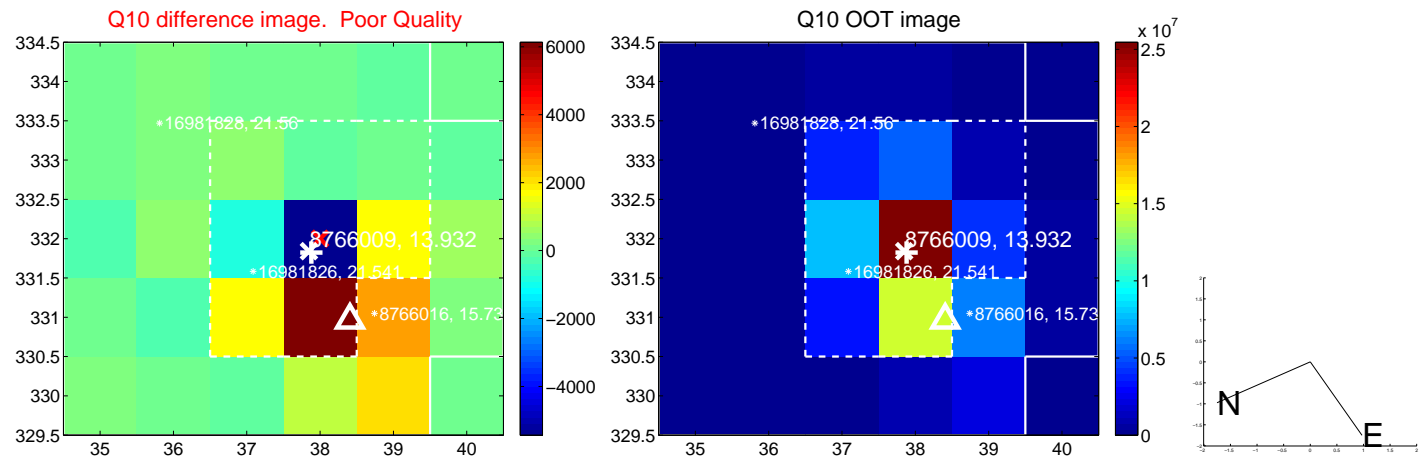
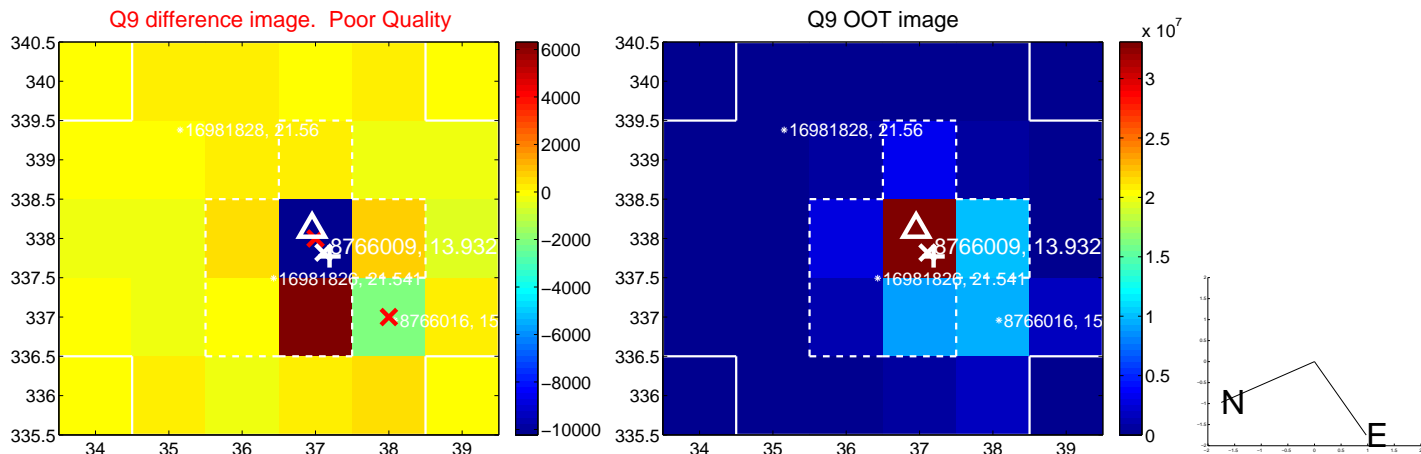
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



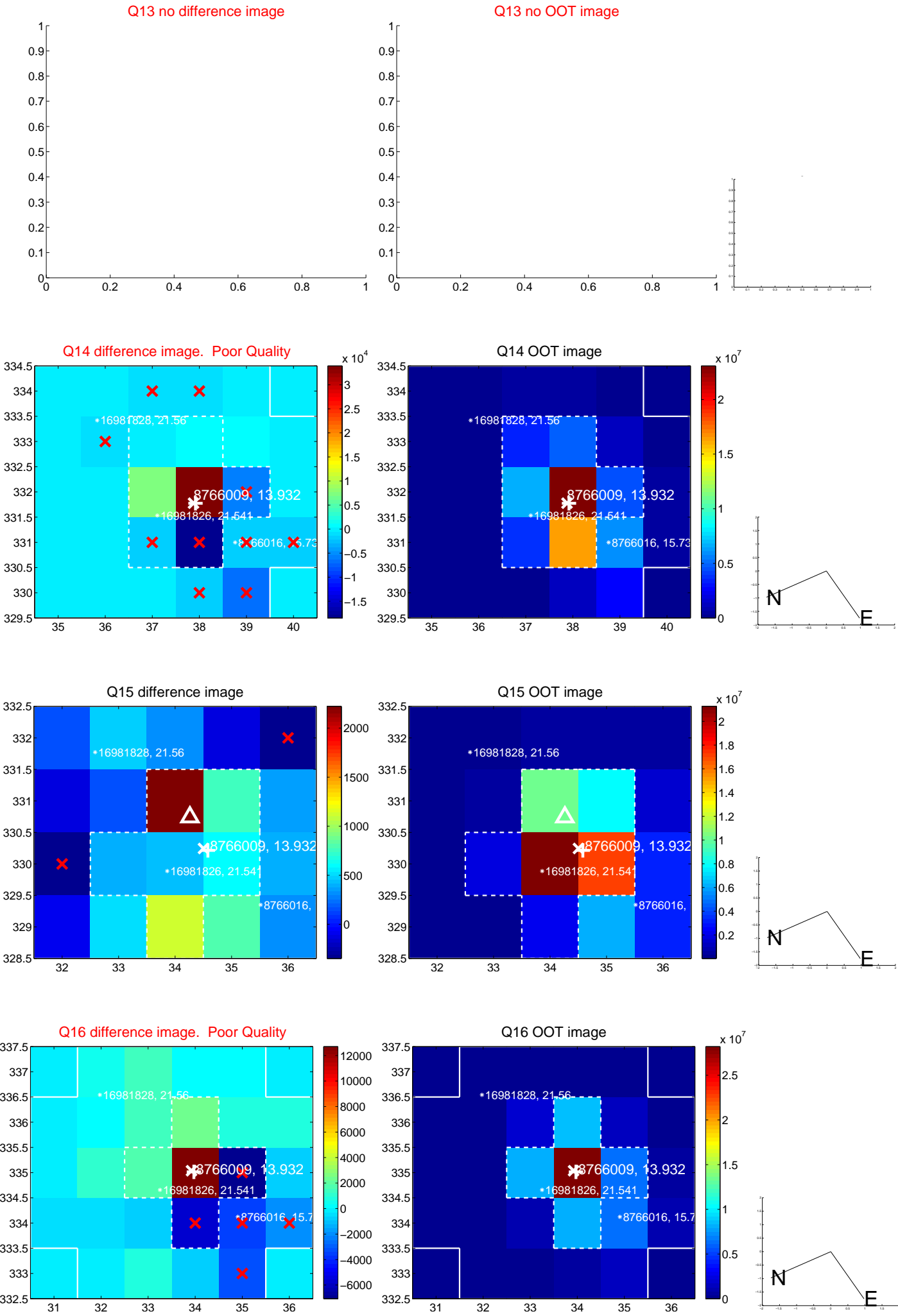
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



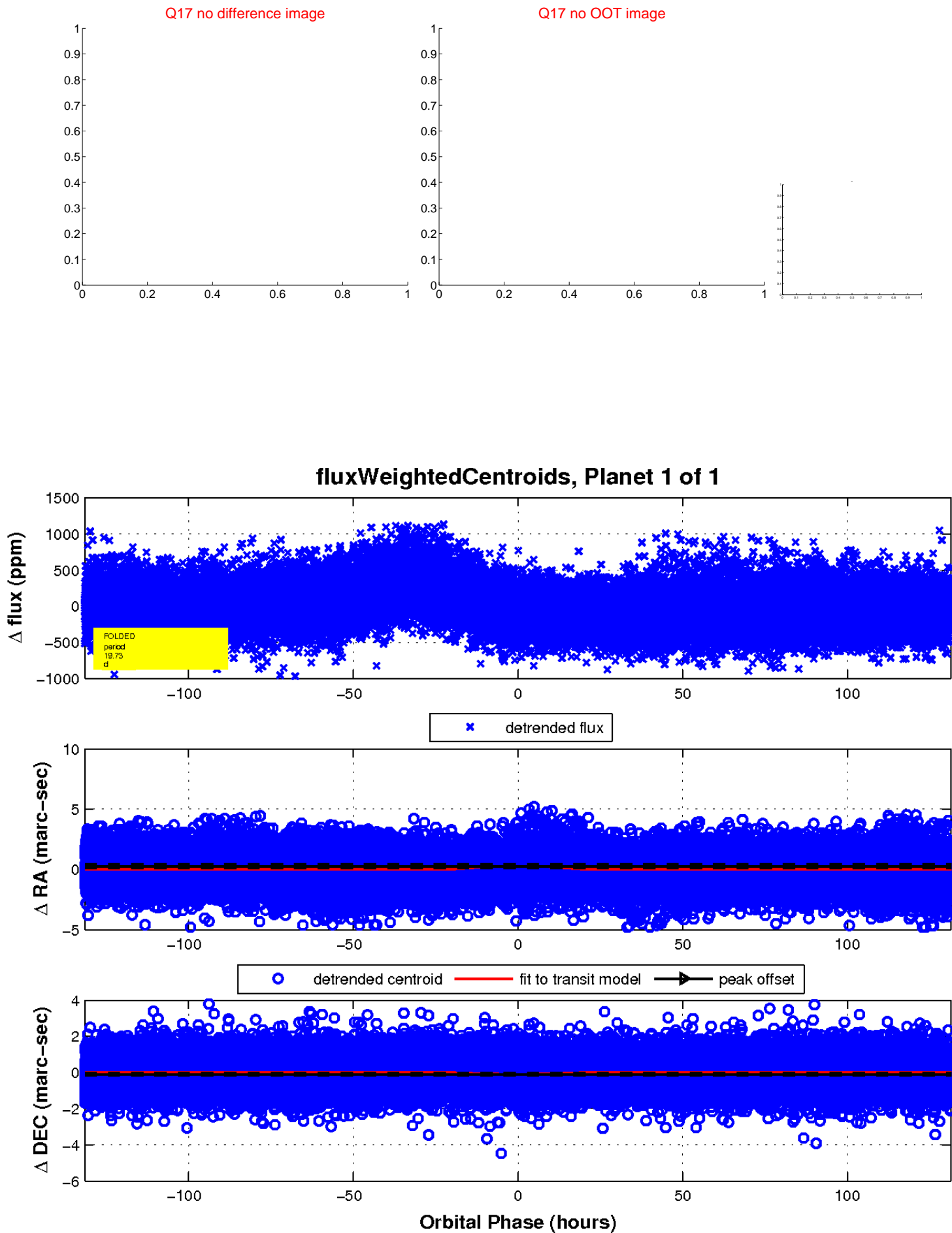
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

