

KIC 004456622

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})
004456622-01	OBS	6417.01	0.751408	131.948983	15083.3	2.277	1223.8	849.9	0.90	5697	14.54	3256.64

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004456622-01	OBS	FP	0.00	0	1	0	0	DEPTH_ODDEVEN_DV—DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED

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 004456622-01

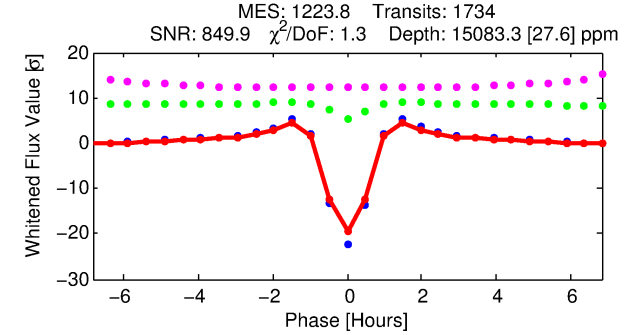
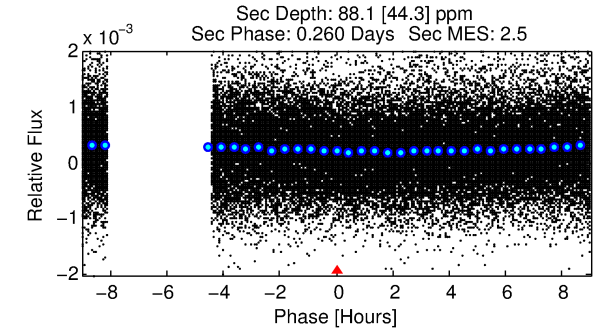
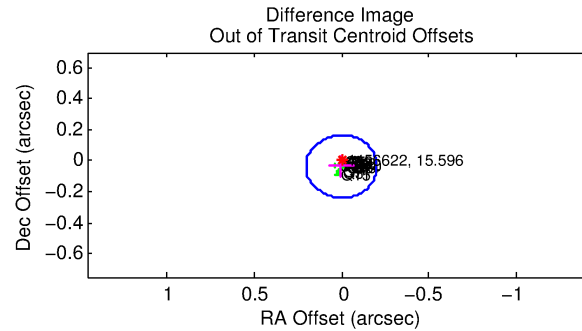
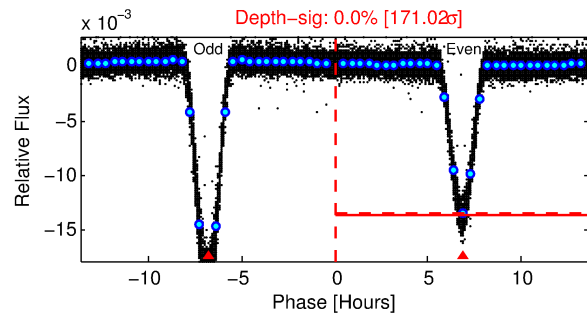
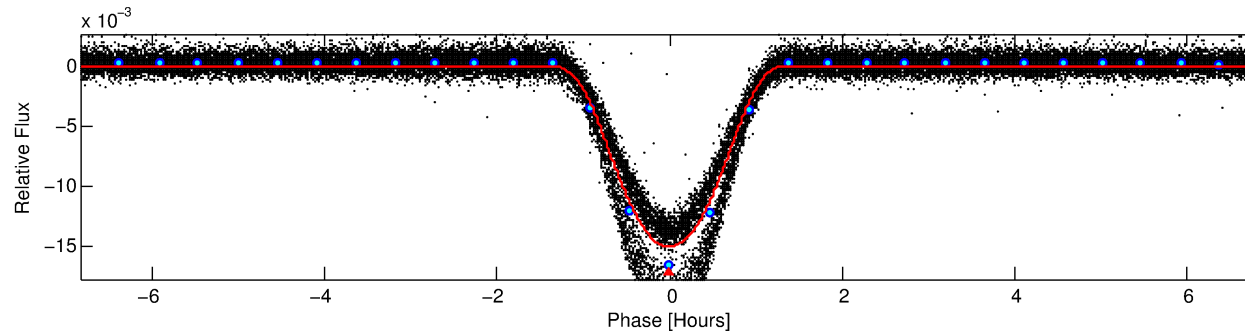
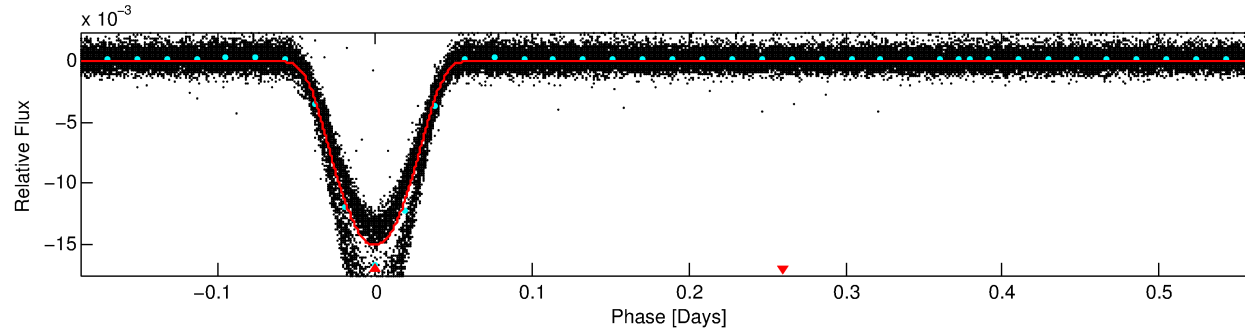
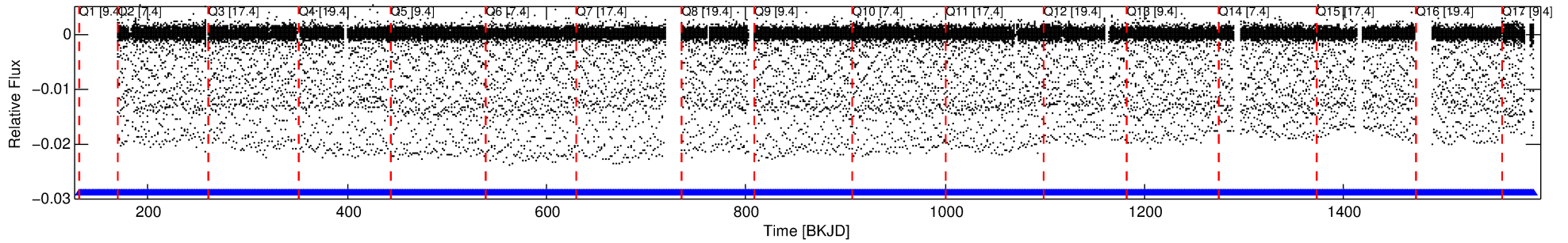
No Significant Match Found

DV One-Page Summary

KIC: 4456622 Candidate: 1 of 1 Period: 0.751 d

KOI: K06417.01 Corr: 0.994

Kp: 15.60 R*: 0.90 Rs Teff: 5697.0 K Logg: 4.46 Fe/H: -0.260



DV Fit Results:

Period = 0.75141 [0.00000] d
Epoch = 131.9490 [0.0000] BKJD
Rp/R* = 0.1476 [0.0018]
a/R* = 2.03 [0.01]
b = 0.91 [0.00]
Seff = 3256.64 [1118.58]
Teq = 1926 [165] K
Rp = 14.54 [3.87] Re
a = 0.0154 [0.0034] AU
Ag = 0.05 [0.03] [-29.24σ]
Teffp = 1437 [186] K [-1.97σ]

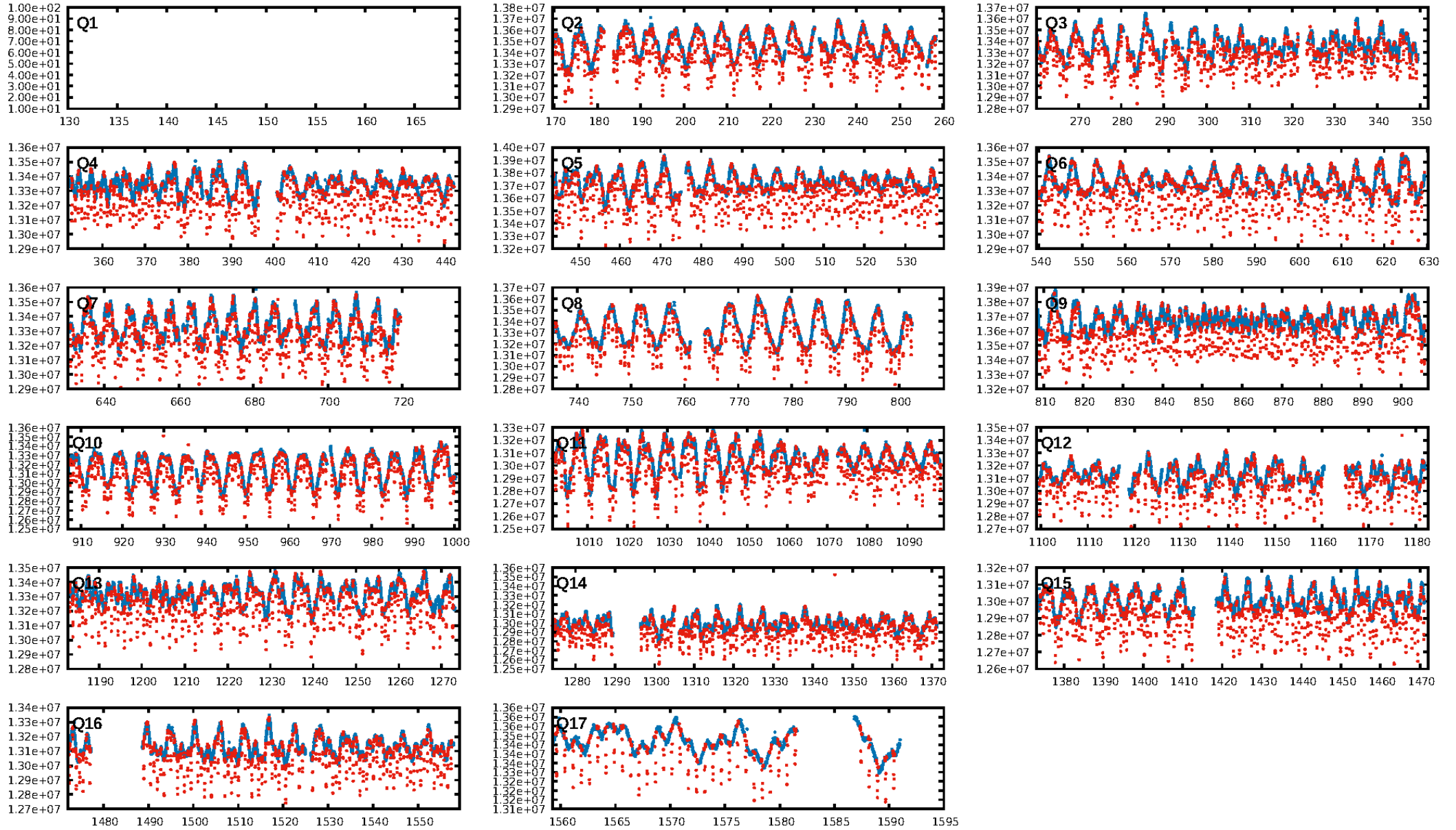
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [1699/1699]
GhostDiagnostic-chr: 8.68
Centroid-sig: 0.0%
Centroid-so: 0.111 arcsec [12.88σ]
OotOffset-rm: 0.037 arcsec [0.55σ]
KicOffset-rm: 0.093 arcsec [1.36σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 1.00 [16/16]

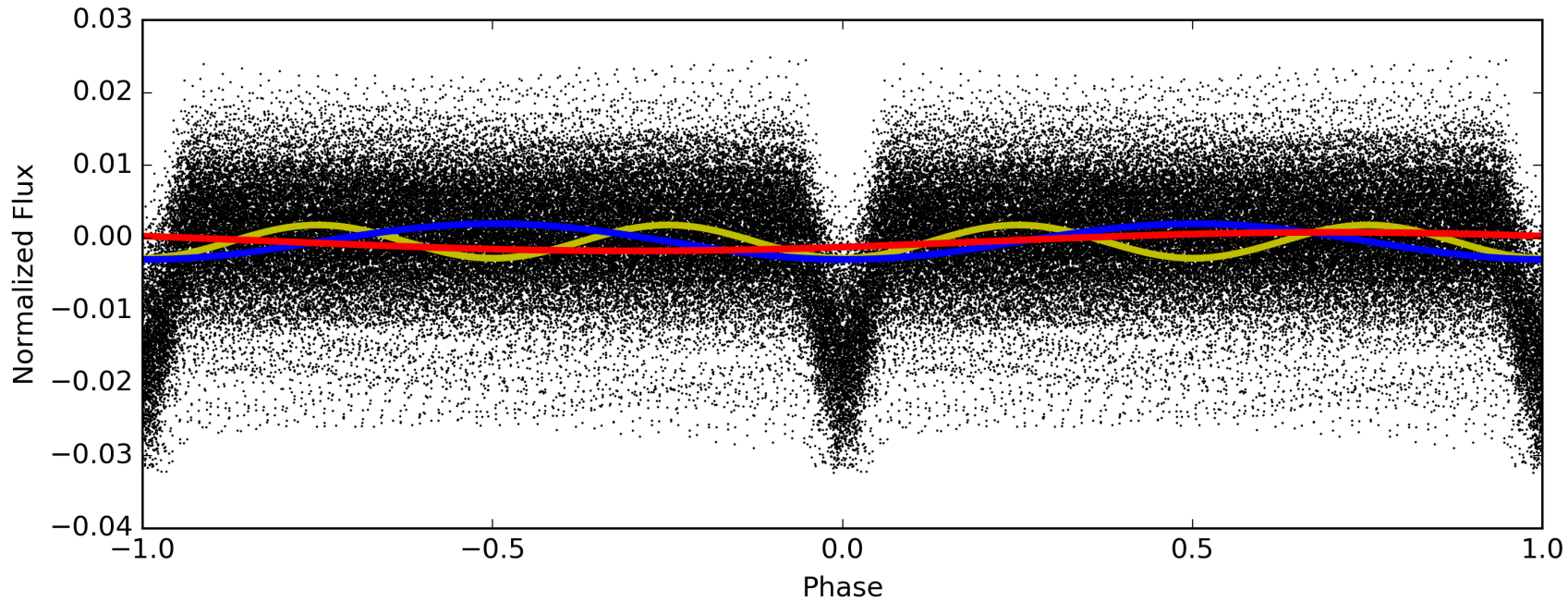
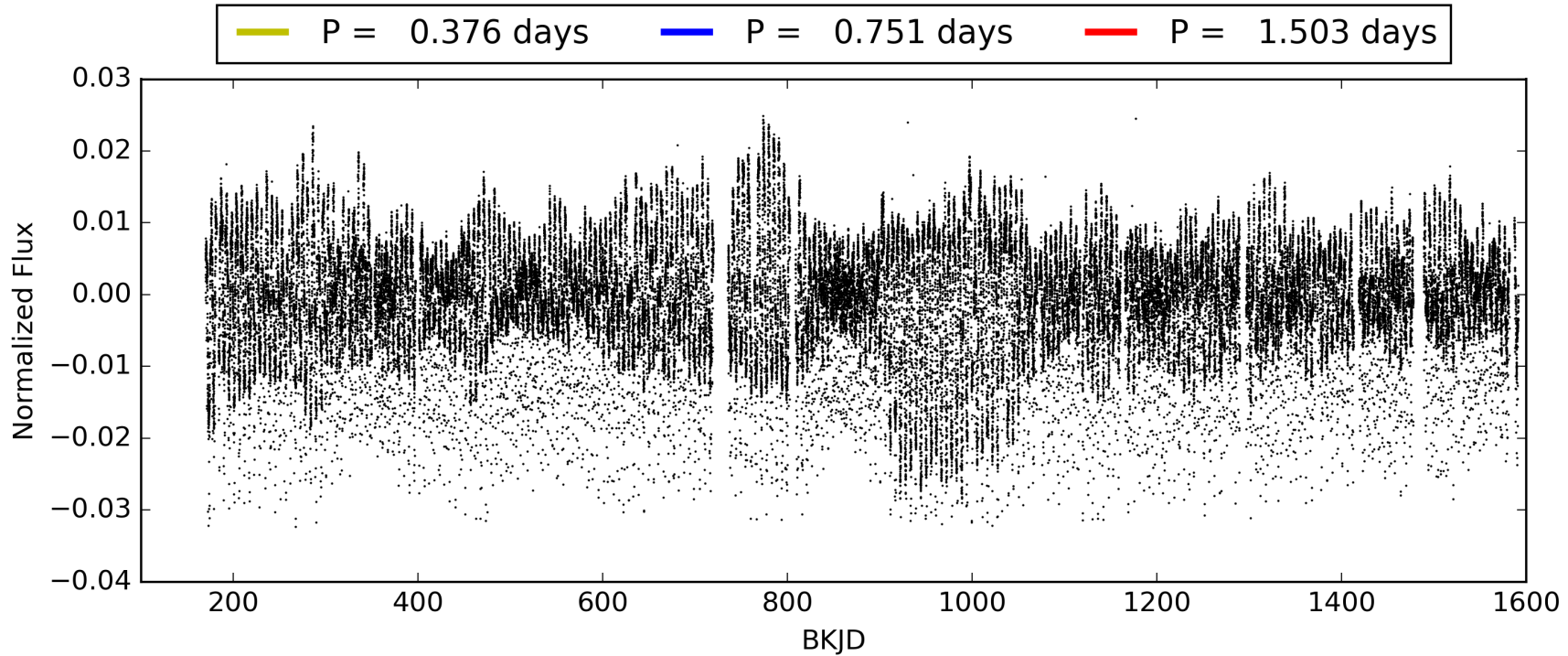
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 08:38:40 Z

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

TCE 004456622-01, PDC Light Curves

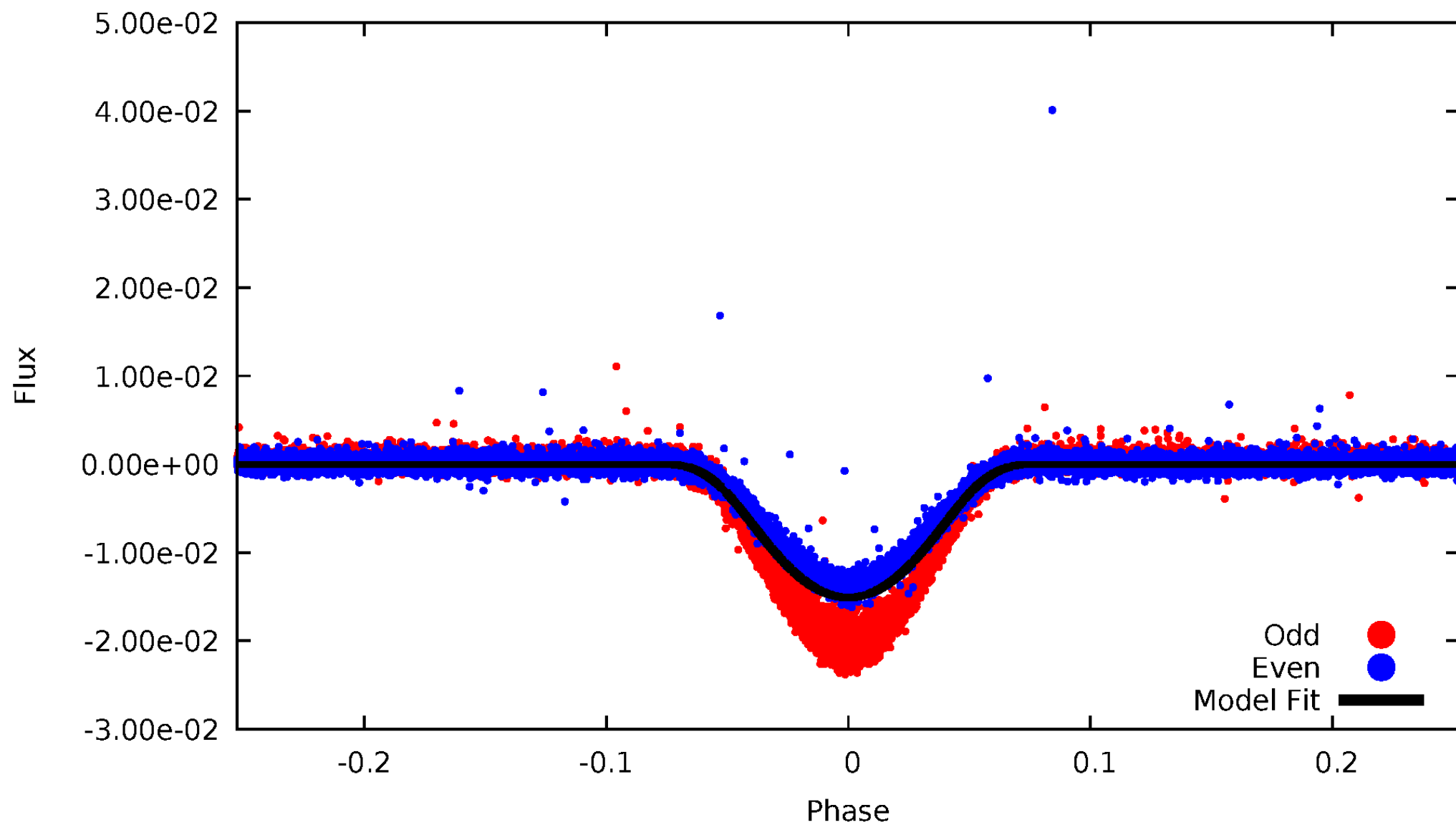


TCE 004456622-01



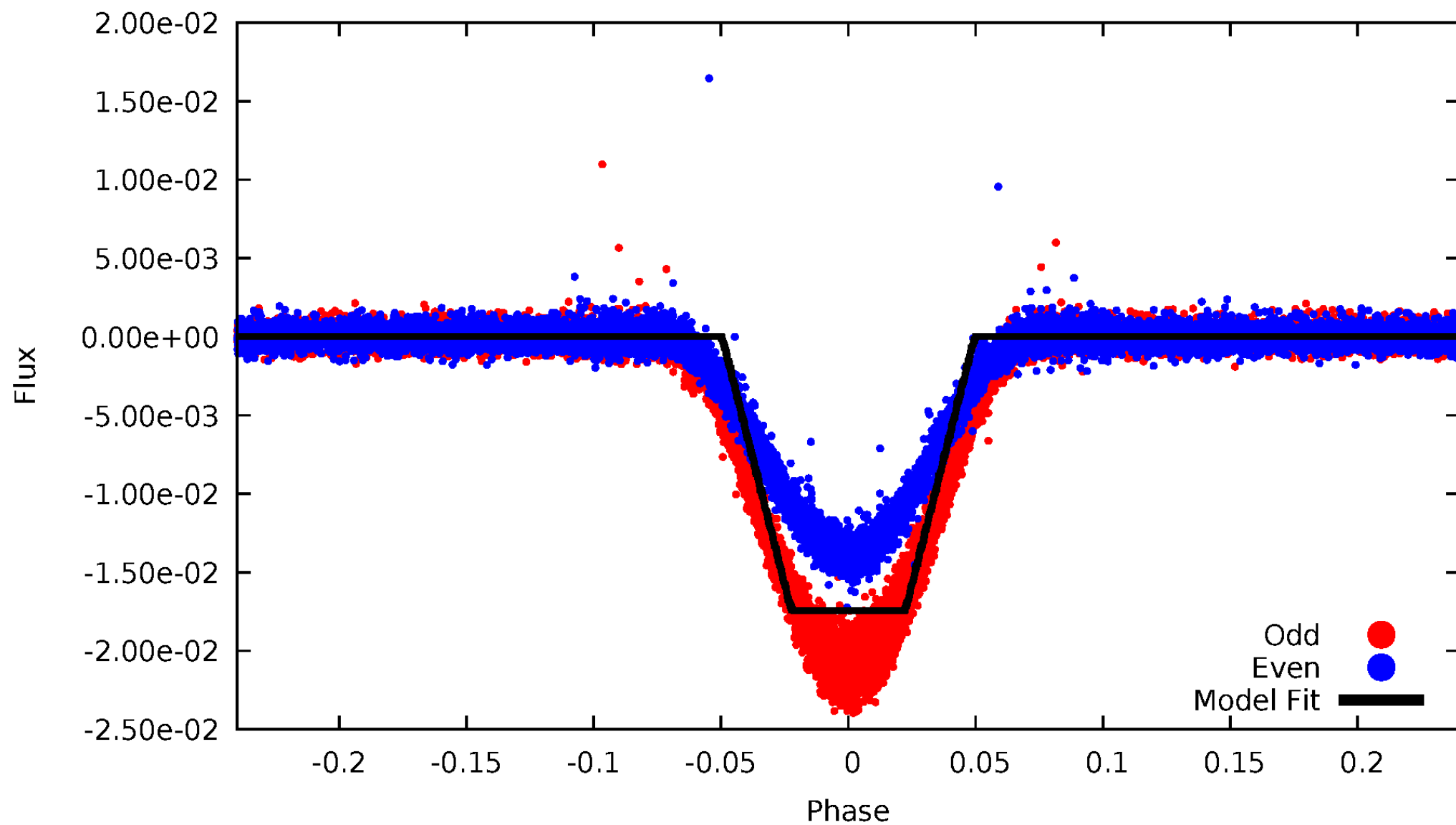
DV Odd/Even

TCE 004456622-01



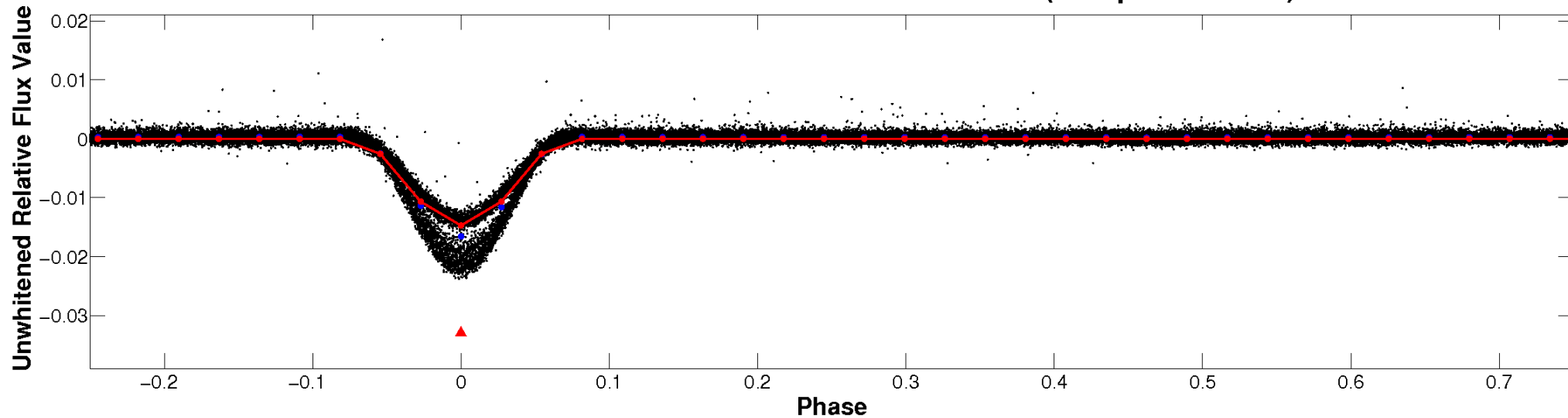
ALT Odd/Even

TCE 004456622-01

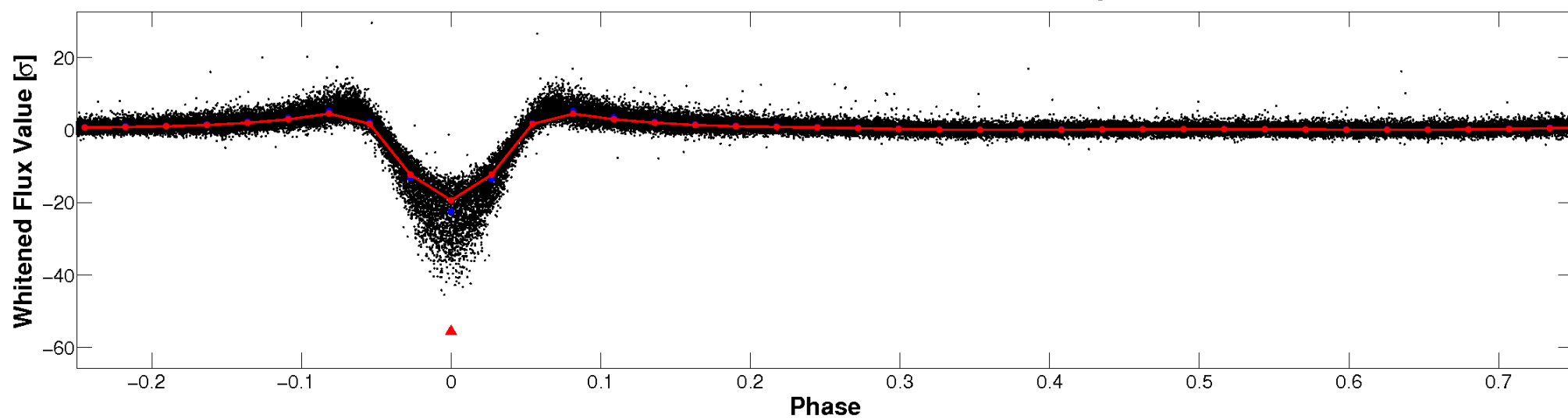


Non-Whitened Vs. Whitened Light Curve

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

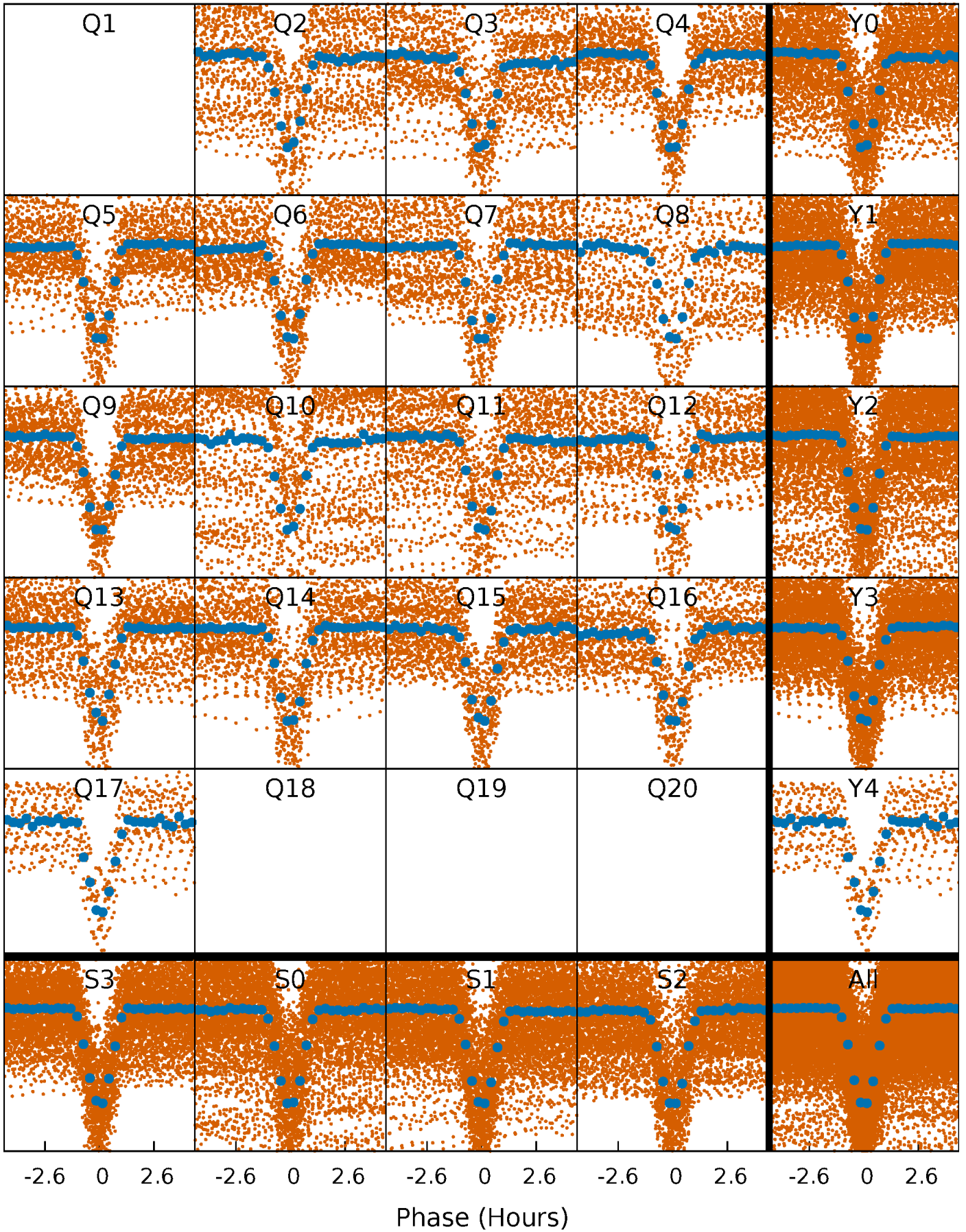


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



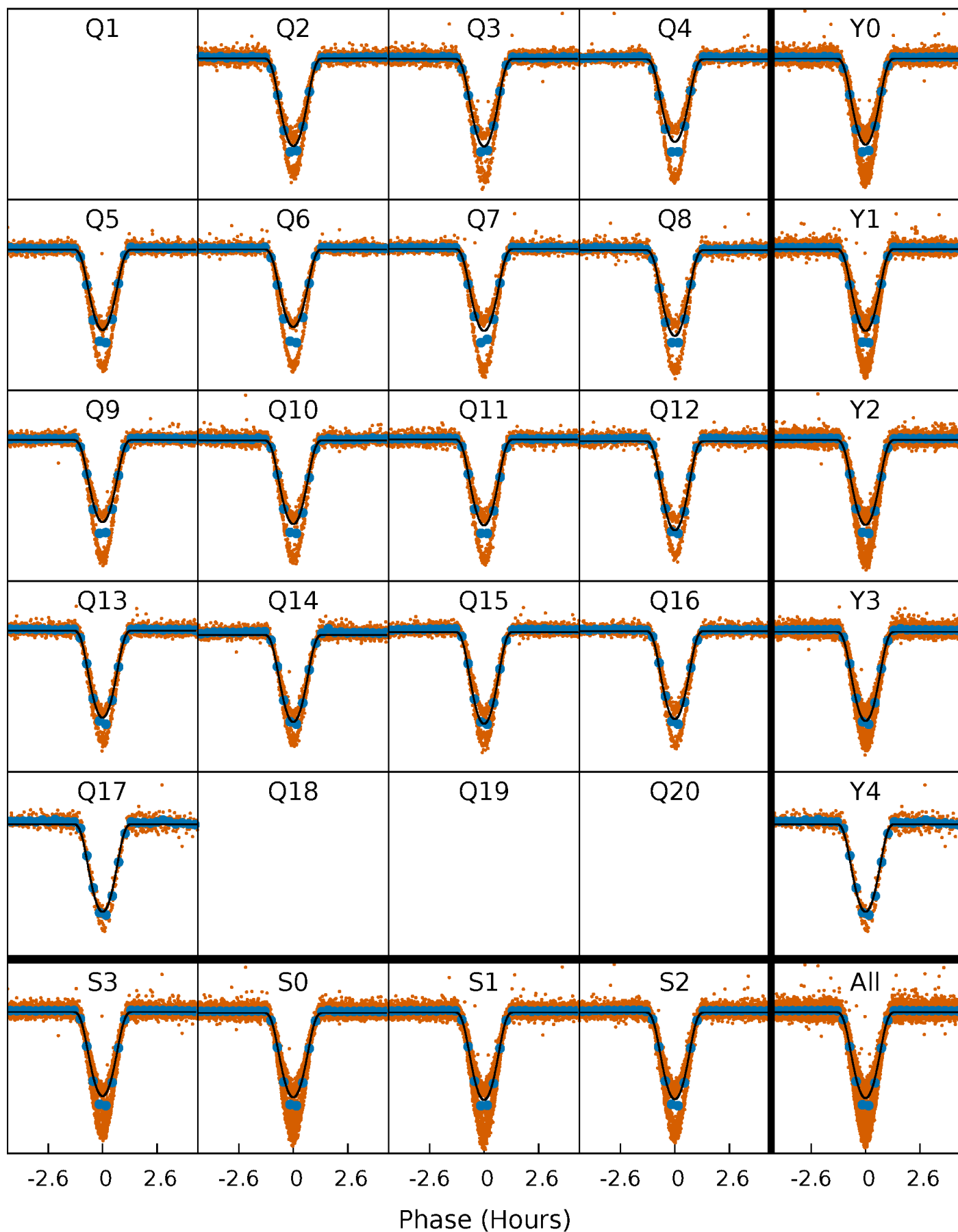
PDC Quarter-Phased Transit Curves

TCE 004456622-01 P= 0.751408 Days $T_0=131.948983$ (BKJD)



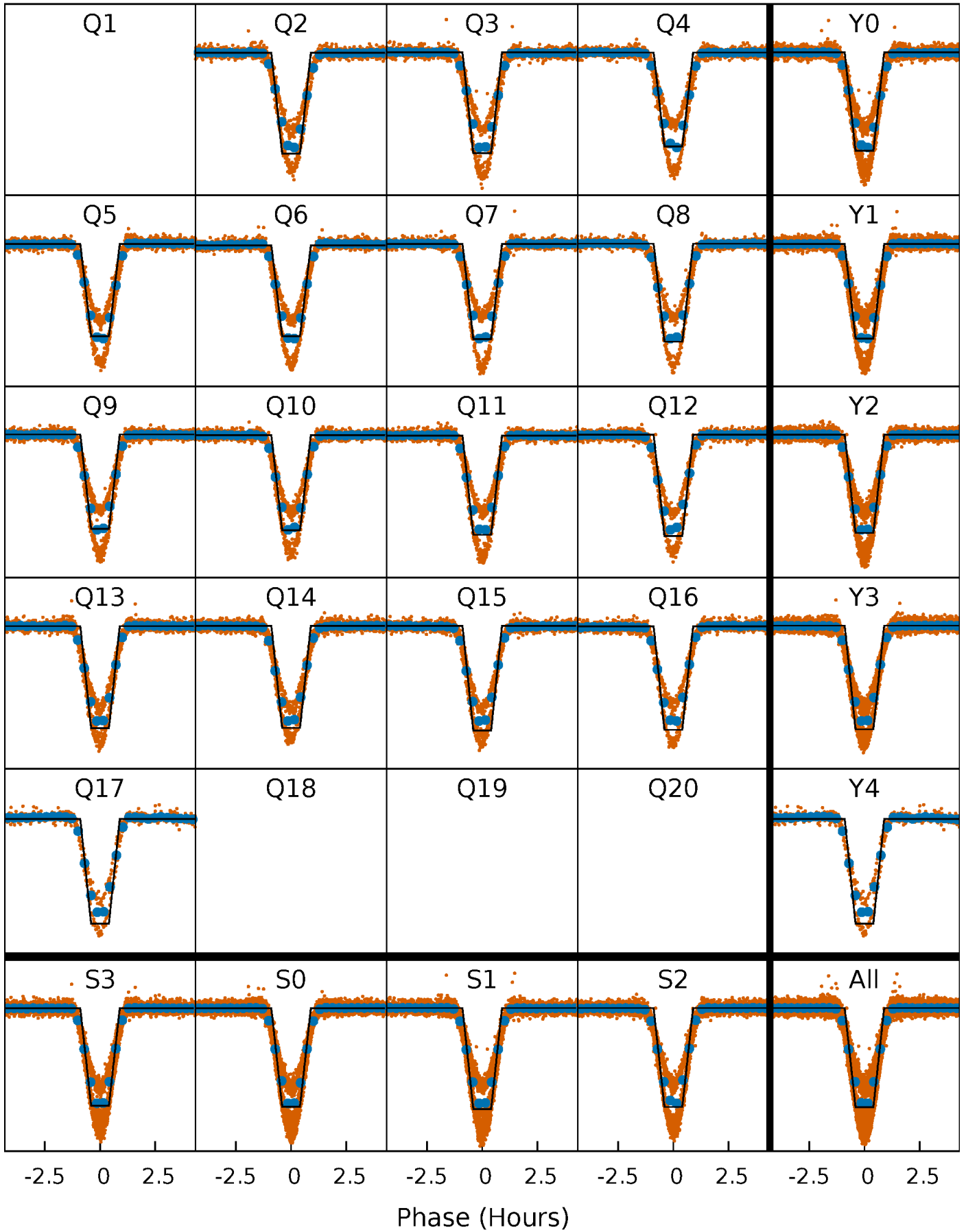
DV Quarter-Phased Transit Curves

TCE 004456622-01 P= 0.751408 Days $T_0=131.948983$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

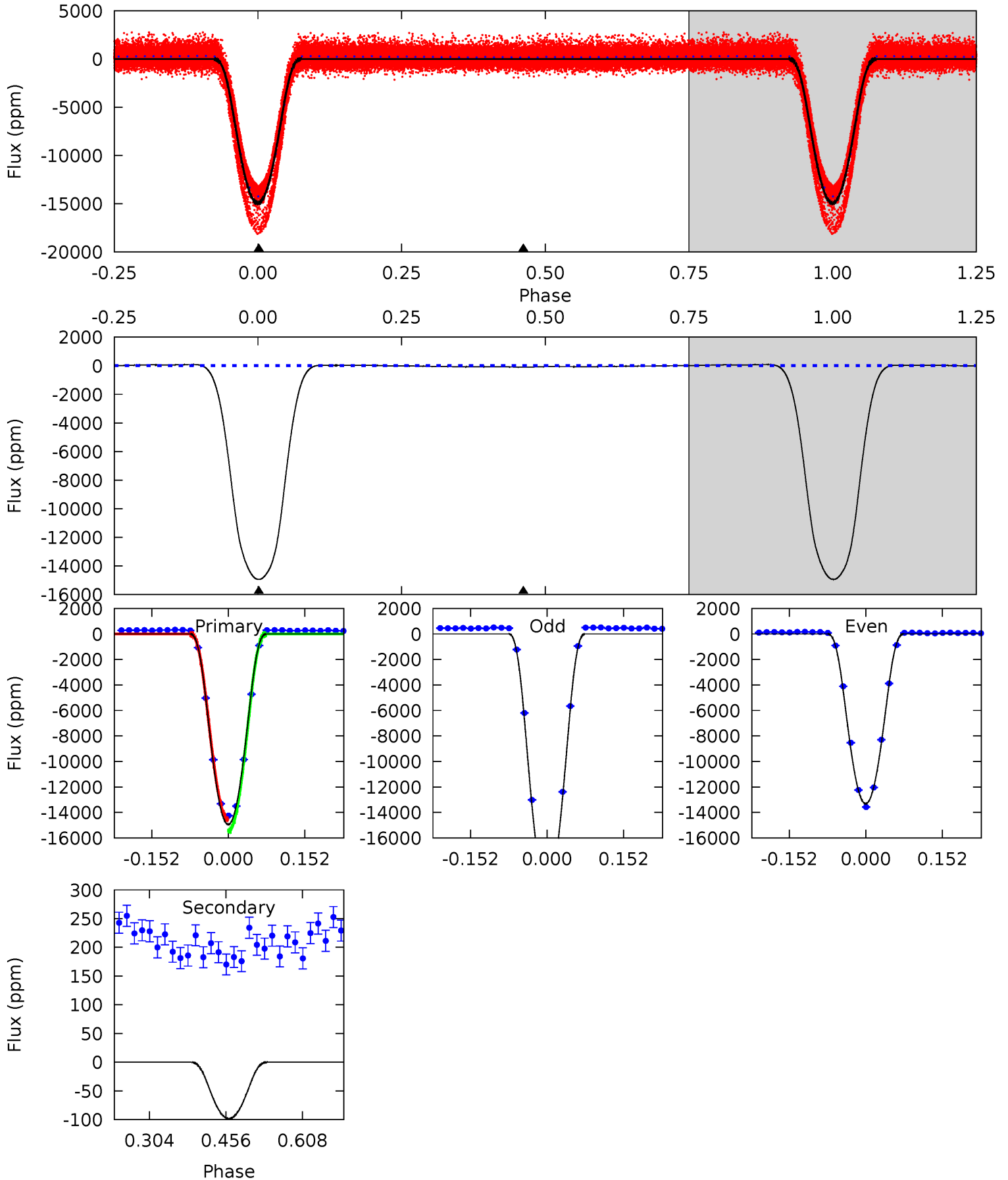
TCE 004456622-01 P= 0.751410 Days $T_0=131.947132$ (BKJD)



DV Model-Shift Uniqueness Test

004456622-01, P = 0.751408 Days, E = 131.948983 Days

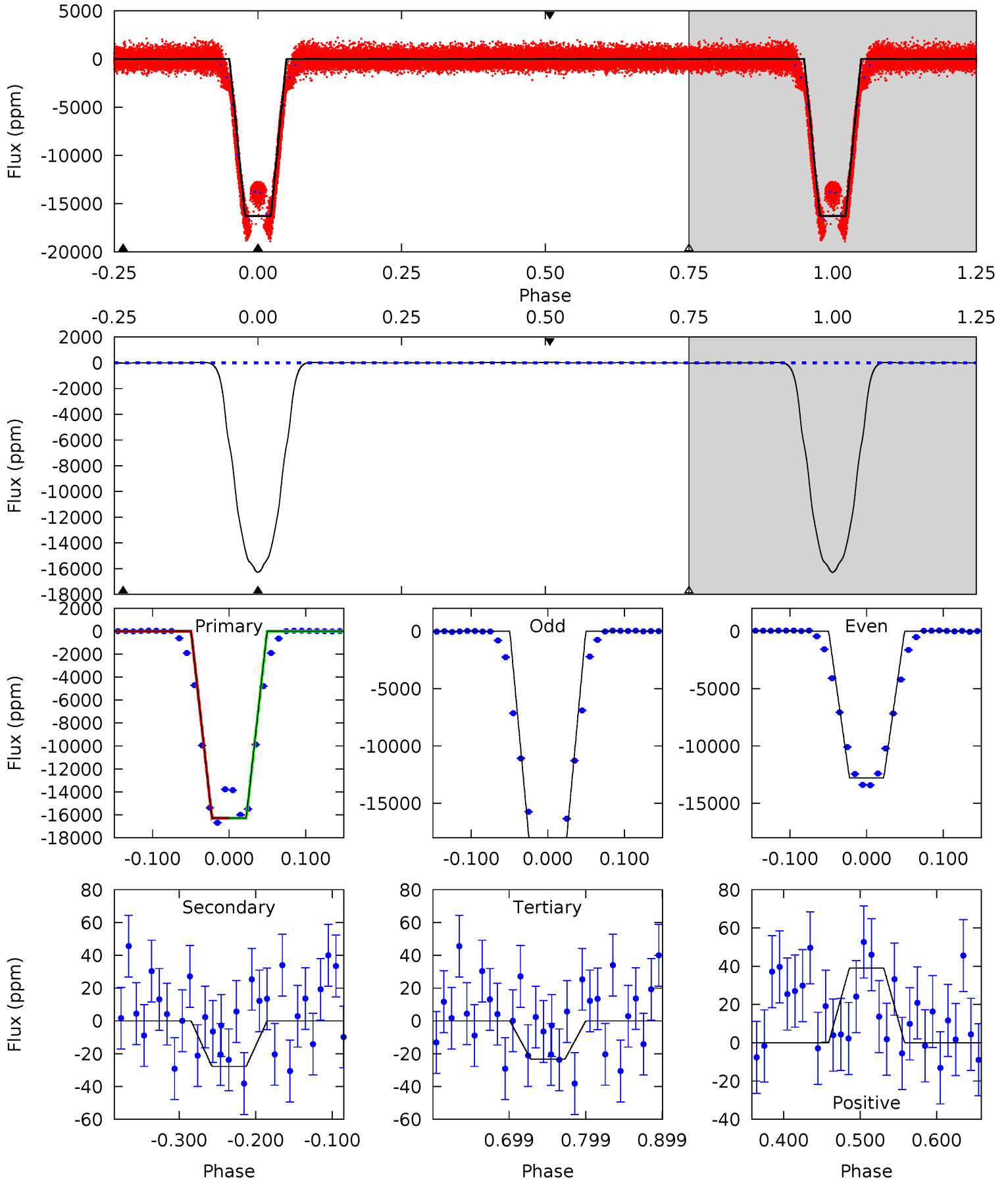
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2075	13.6	0	0	4.48	1.43	4.40	2075	2075	13.6	13.6	516.0	1.07	0.01	64.7



Alt Model-Shift Uniqueness Test

004456622-01, P = 0.751410 Days, E = 131.947132 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1875	3.20	2.68	4.50	4.56	1.65	1.54	1873	1871	0.51	-1.31	491.0	1.04	0.00	0.09



Stellar Parameters For KIC 004456622

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5697^{+171}_{-171}	$4.460^{+0.108}_{-0.175}$	$-0.260^{+0.300}_{-0.300}$	$0.903^{+0.240}_{-0.120}$	$0.857^{+0.117}_{-0.072}$	$1.640^{+0.783}_{-0.764}$
	+3%/-3%	+2%/-4%	+115%/-115%	+27%/-13%	+14%/-8%	+48%/-47%
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 004456622-01 / KOI 6417.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-98 ± 7	$14.69^{+2.08}_{-1.16}$	2715^{+176}_{-139}	-2834^{+94}_{-121}	$0.059^{+0.011}_{-0.013}$
Alt.	-28 ± 9	$13.23^{+1.95}_{-1.17}$	2713^{+194}_{-148}	-2891^{+96}_{-123}	$0.020^{+0.009}_{-0.008}$

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 $A_{obs} \gg 1.0$

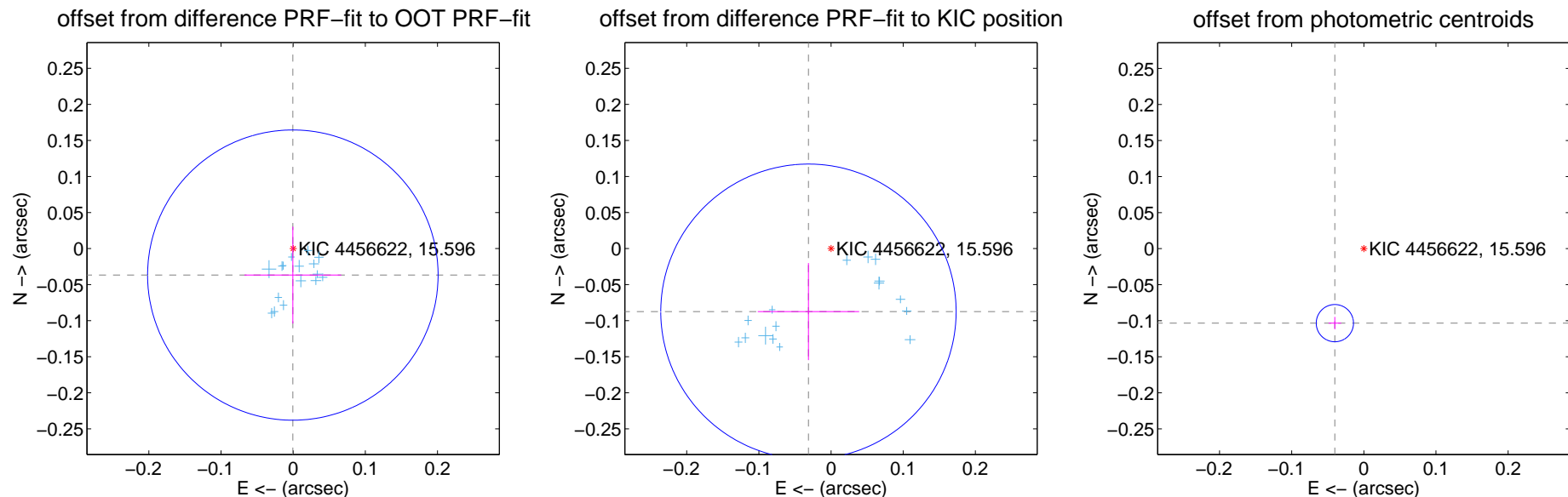
DV Centroid Data

Supplemental centroid analysis for 004456622-01. Kepler magnitude: 15.60. Transit SNR 849.89

There are 16 quarters with good PRF difference image offsets

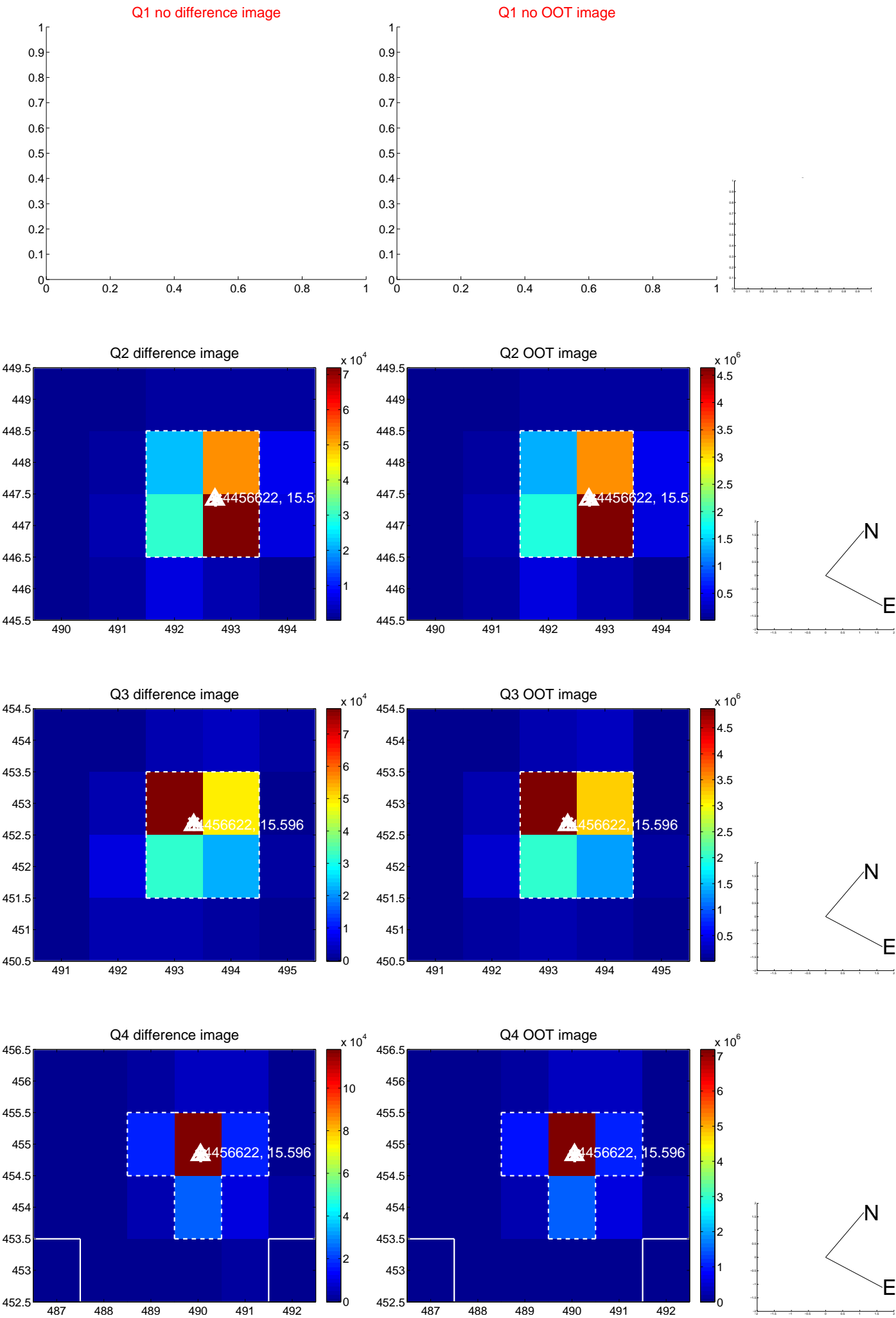
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.037 ± 0.067	0.55	0.000 ± 0.067	-0.037 ± 0.067
PRF-fit source offset from KIC position	0.093 ± 0.068	1.36	0.031 ± 0.070	-0.087 ± 0.067
photometric centroid source offset	0.11 ± 0.01	12.88	0.04 ± 0.01	-0.10 ± 0.01

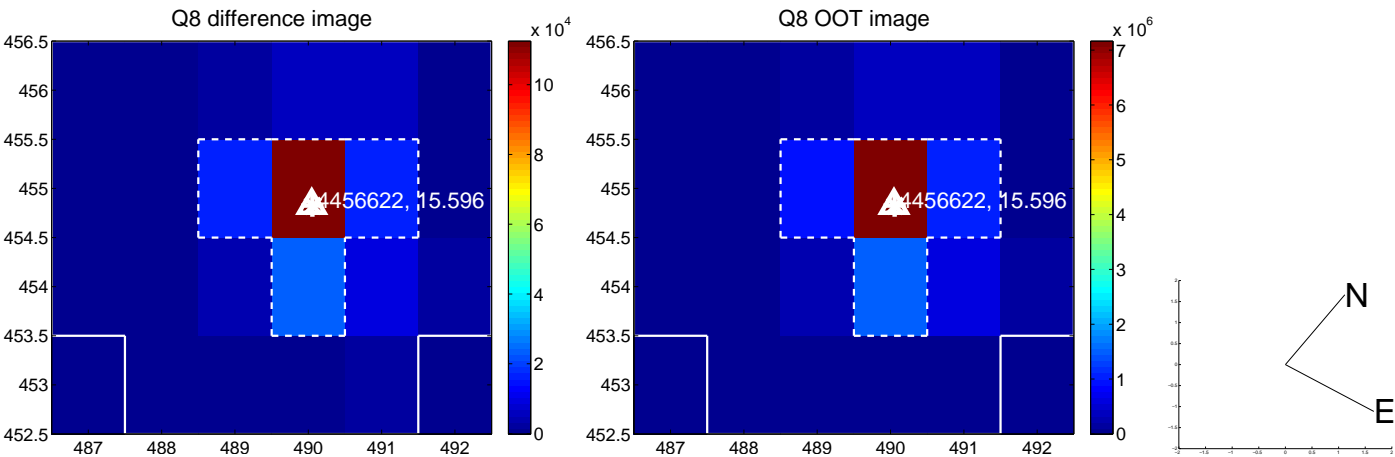
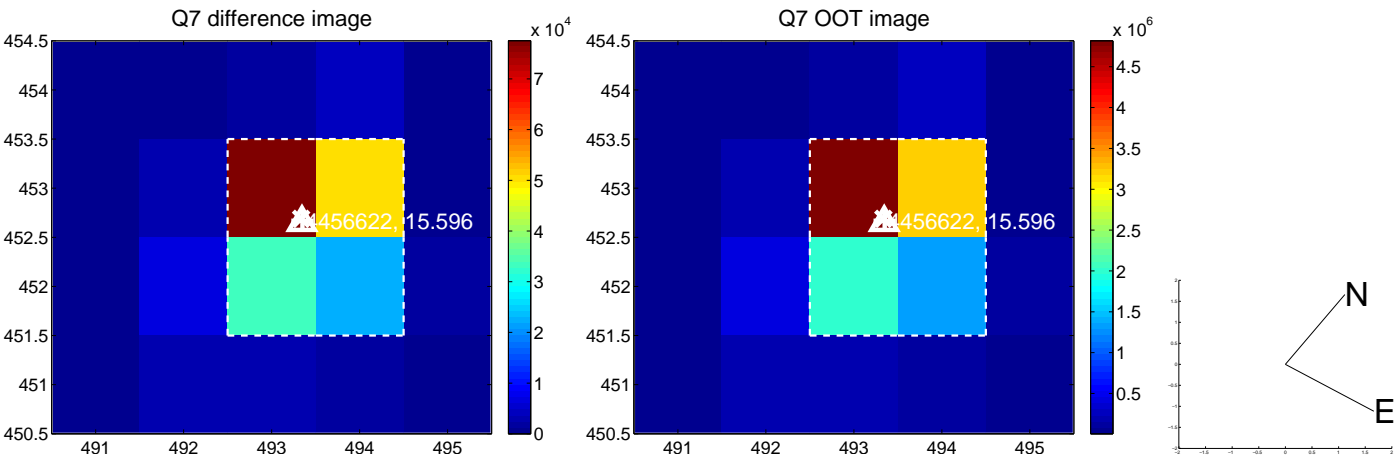
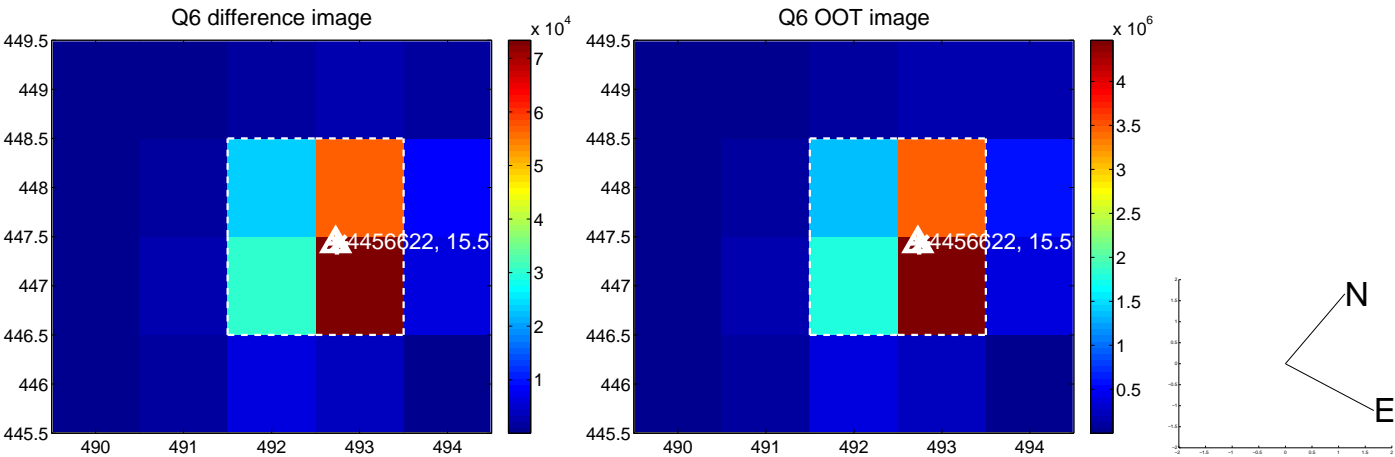
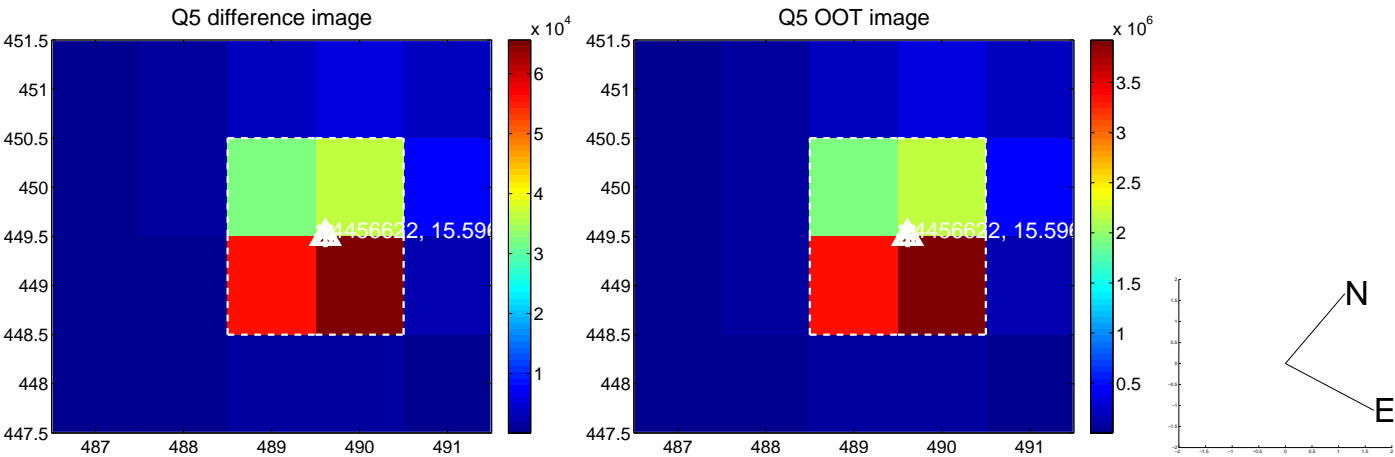


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

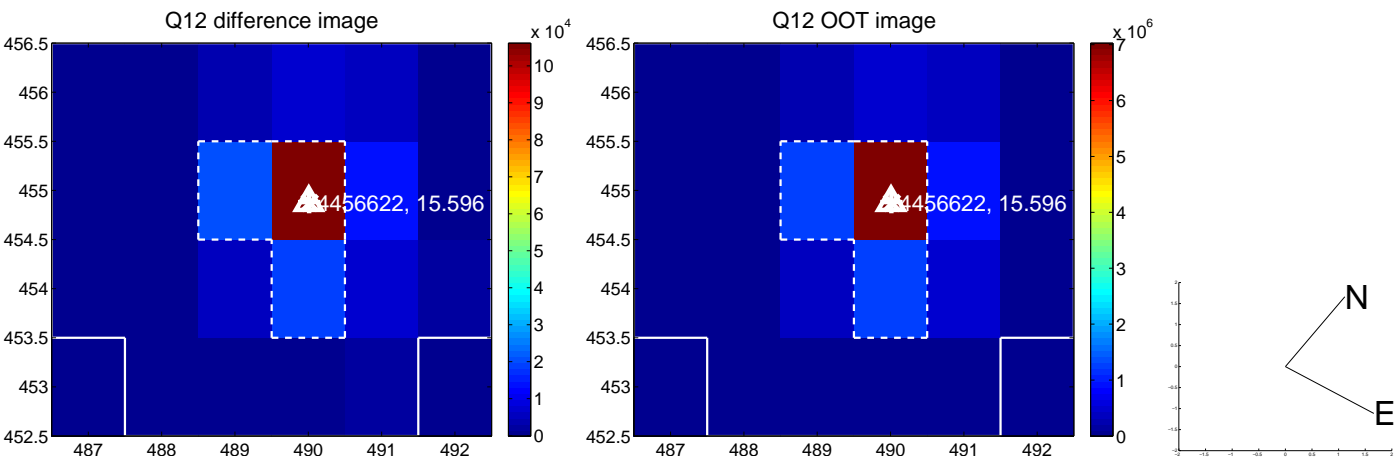
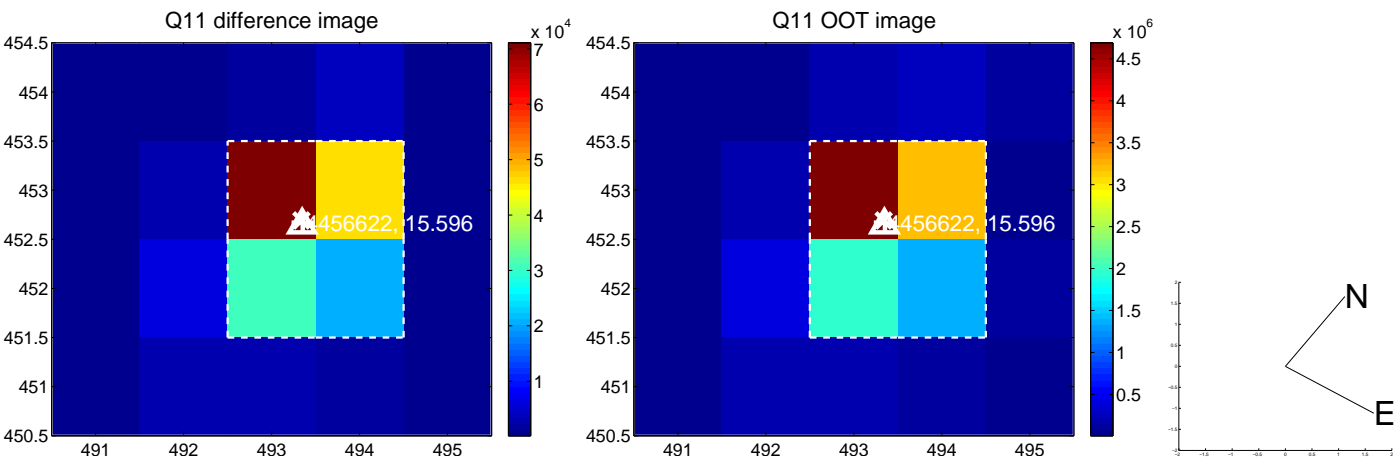
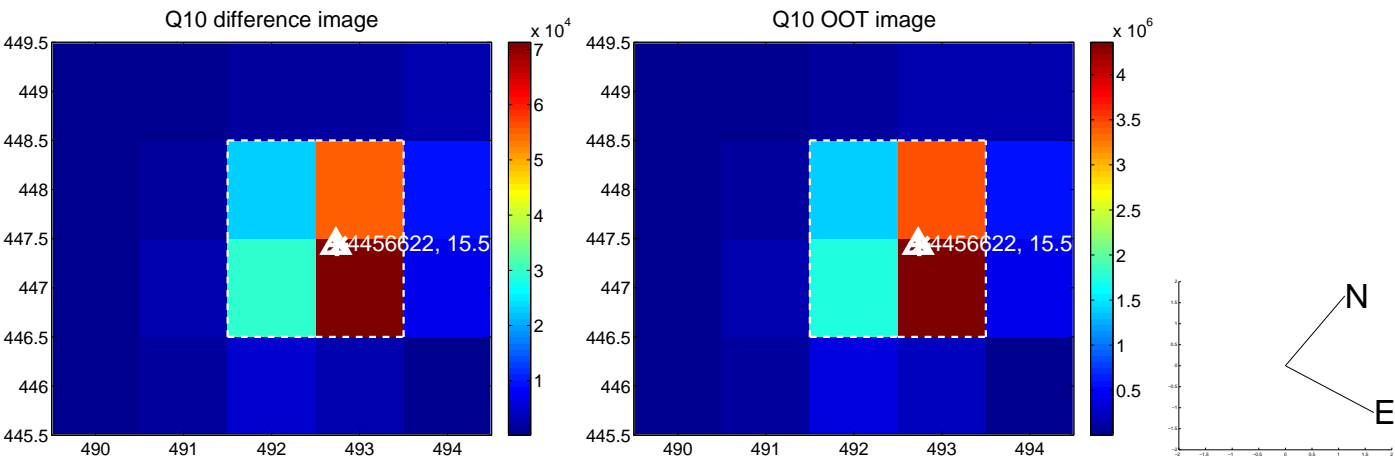
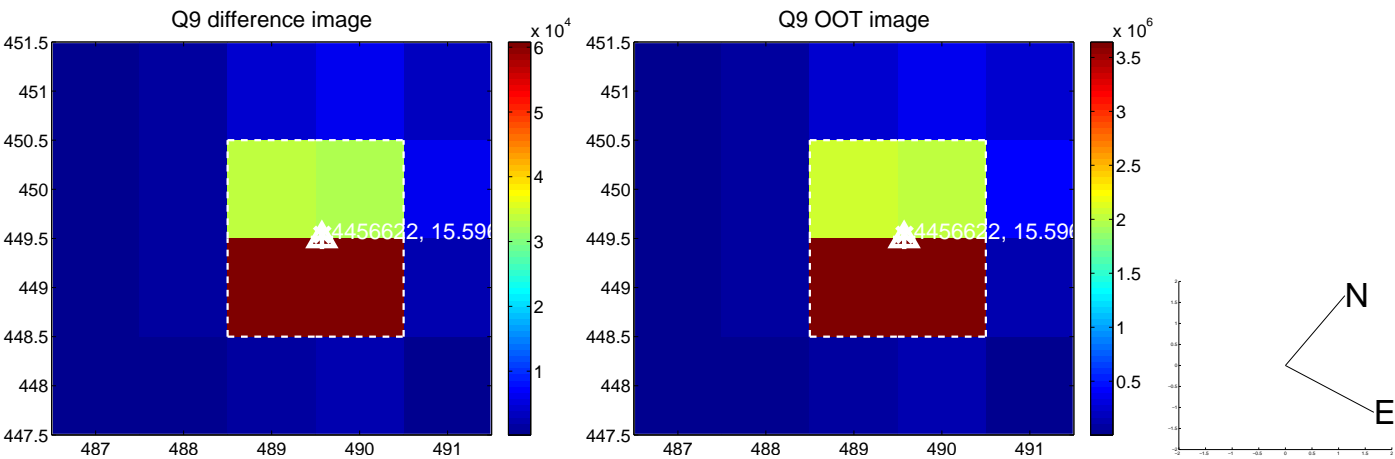
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



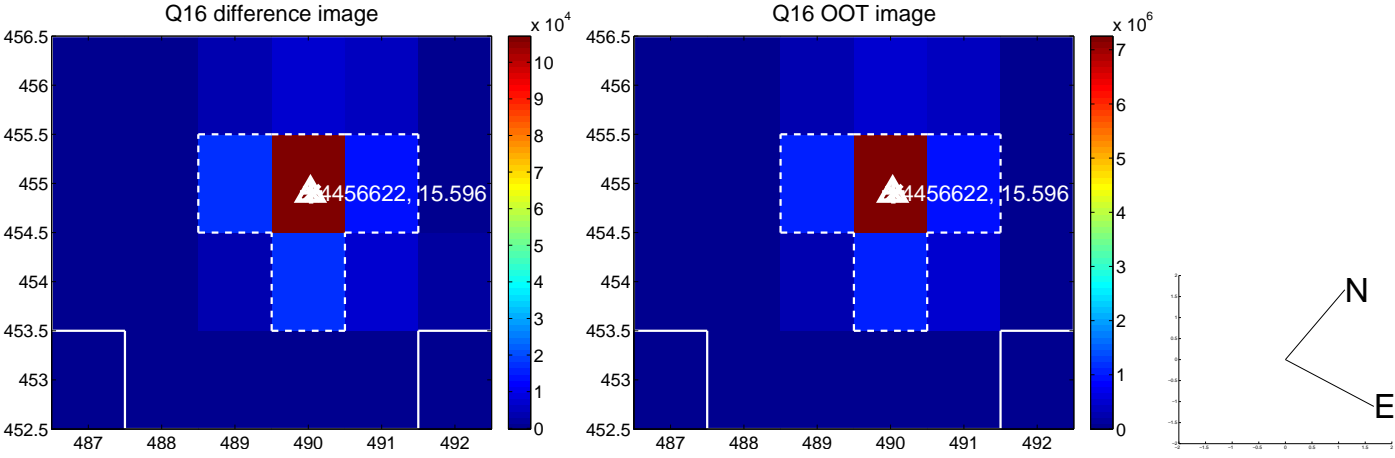
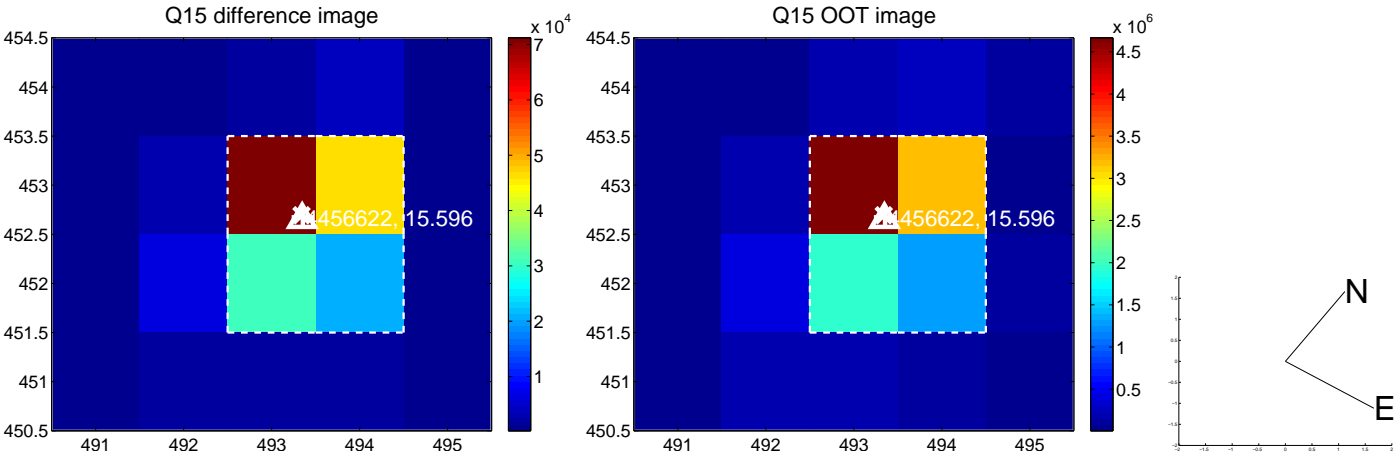
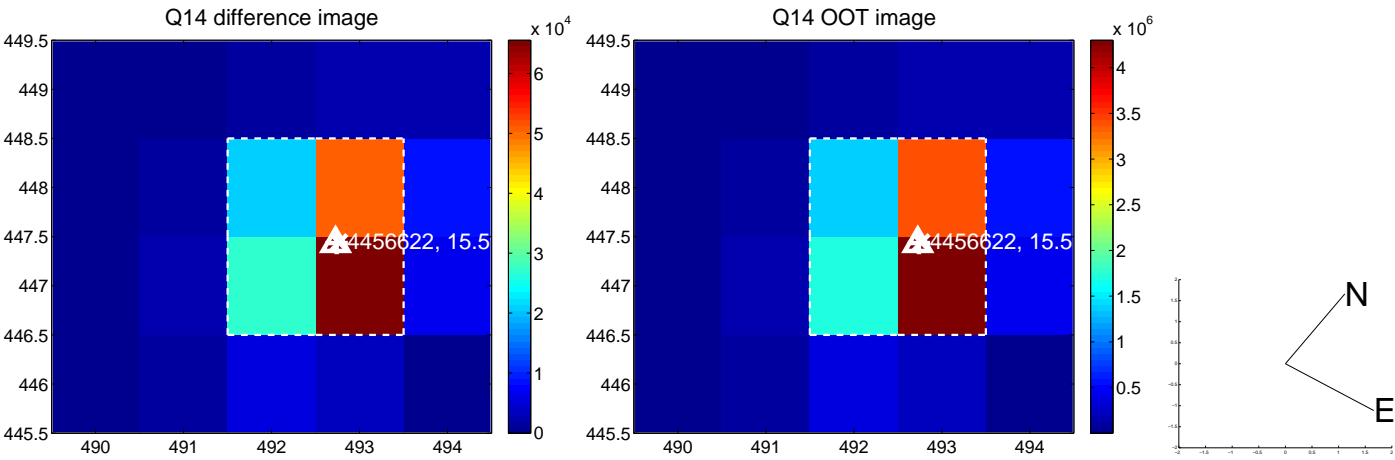
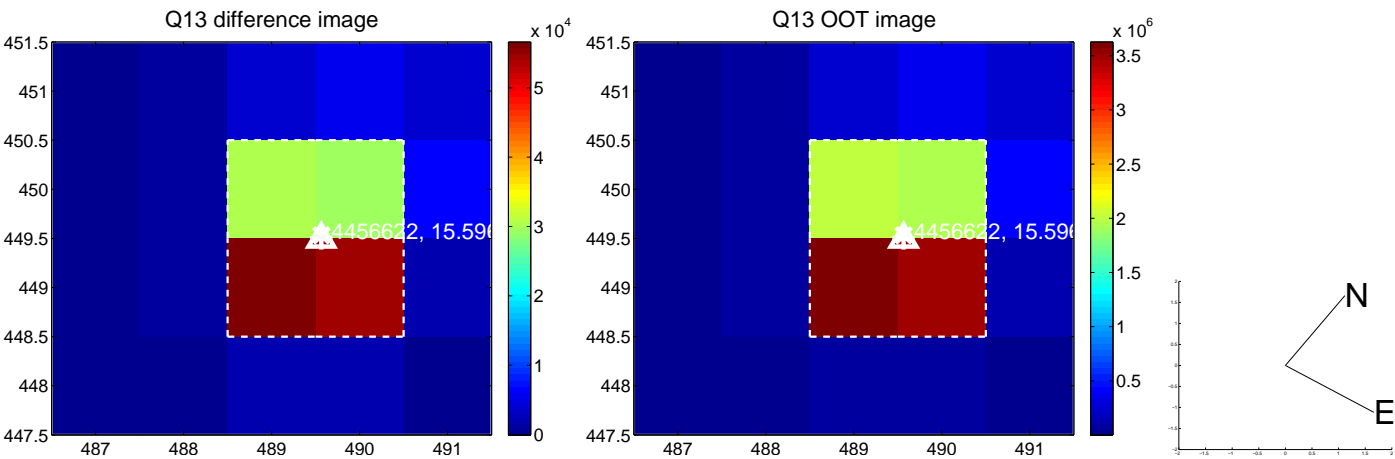
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



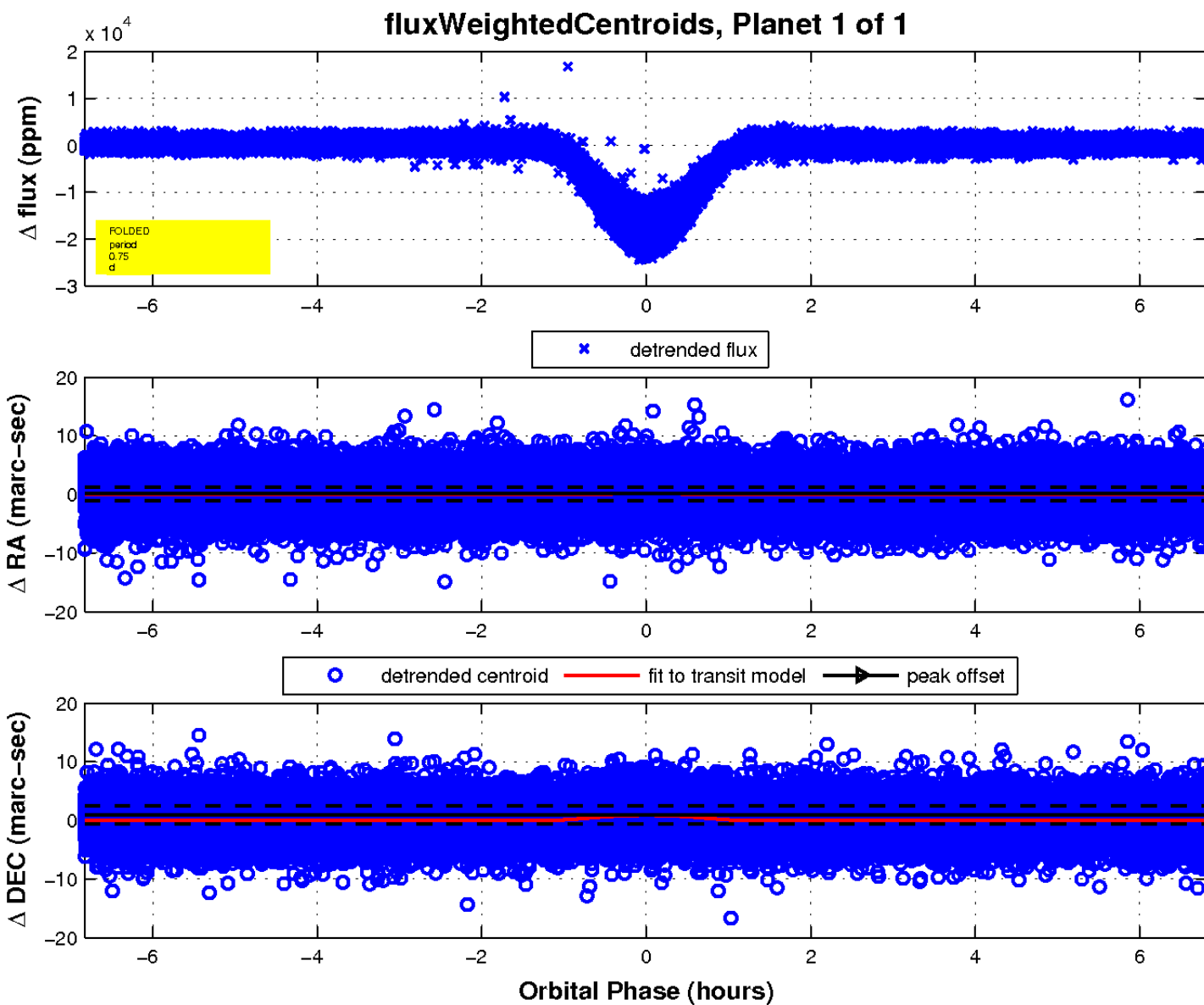
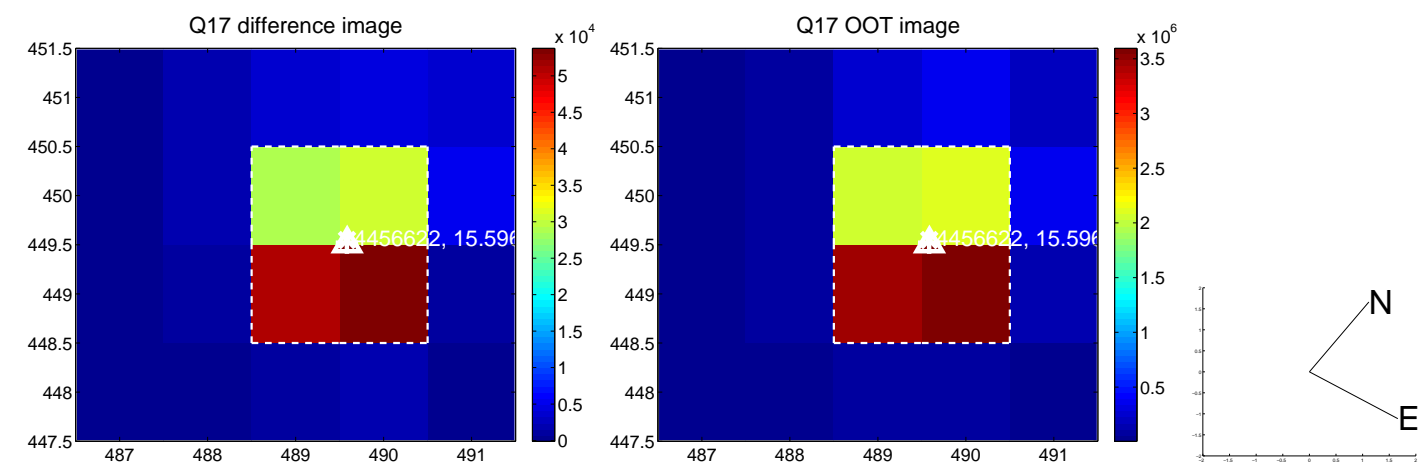
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

