

KIC 009156585

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})
009156585-01	OBS	2054.01	22.324266	134.447246	1177.5	3.515	26.4	26.7	0.91	5648	4.14	32.92

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009156585-01	OBS	FP	0.00	0	0	1	0	CENT_UNRESOLVED_OFFSET—HALO_GHOST

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 009156585-01

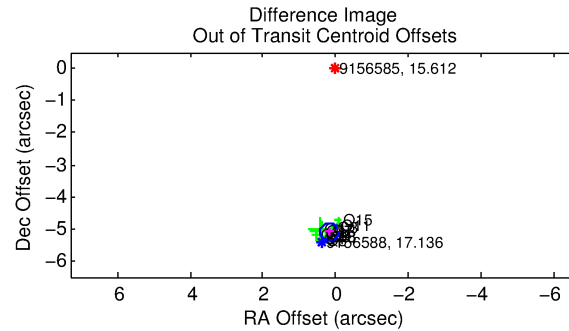
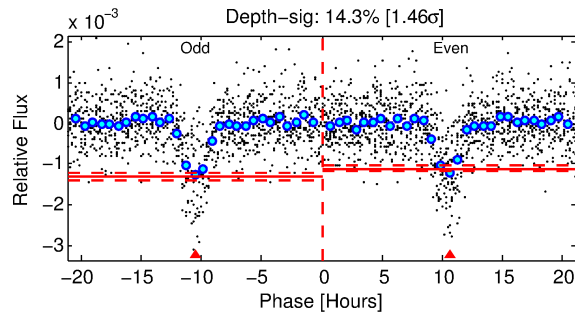
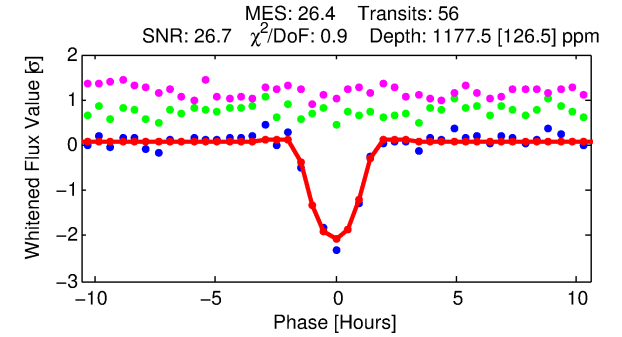
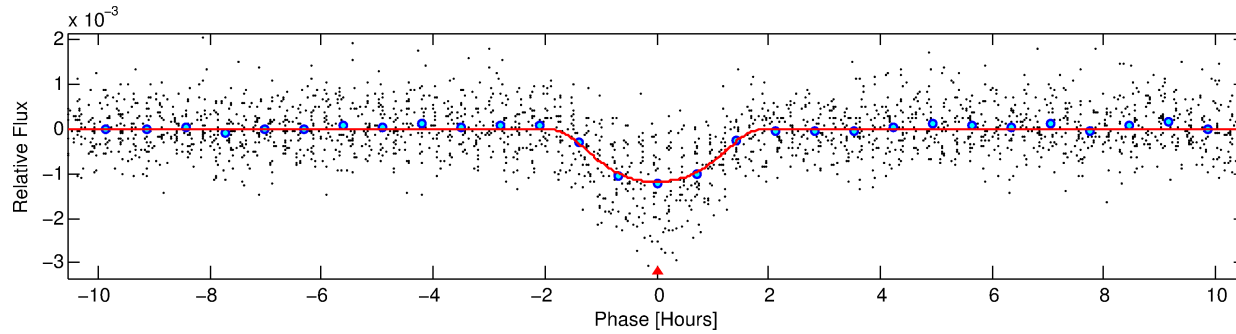
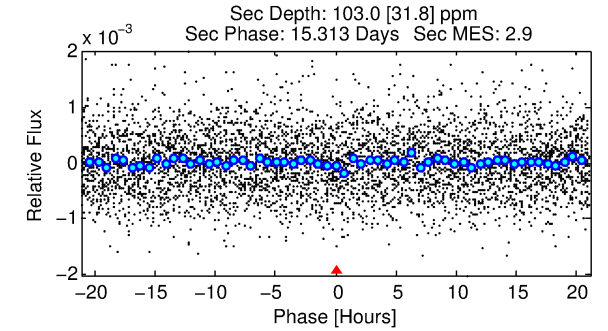
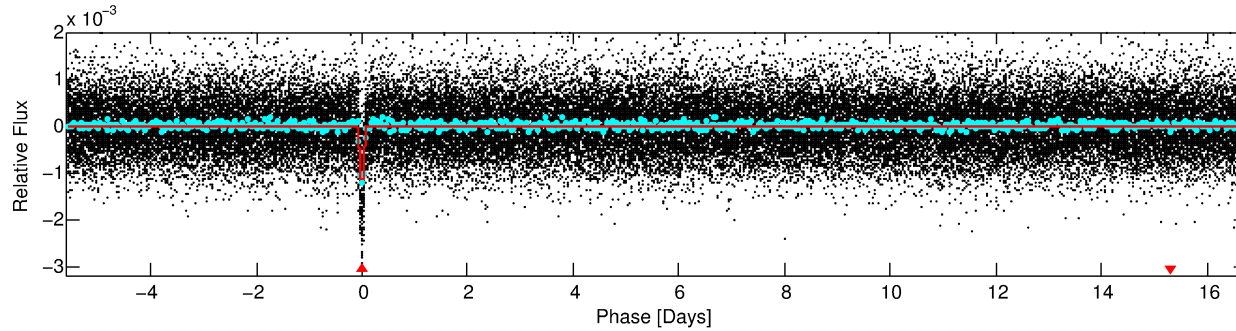
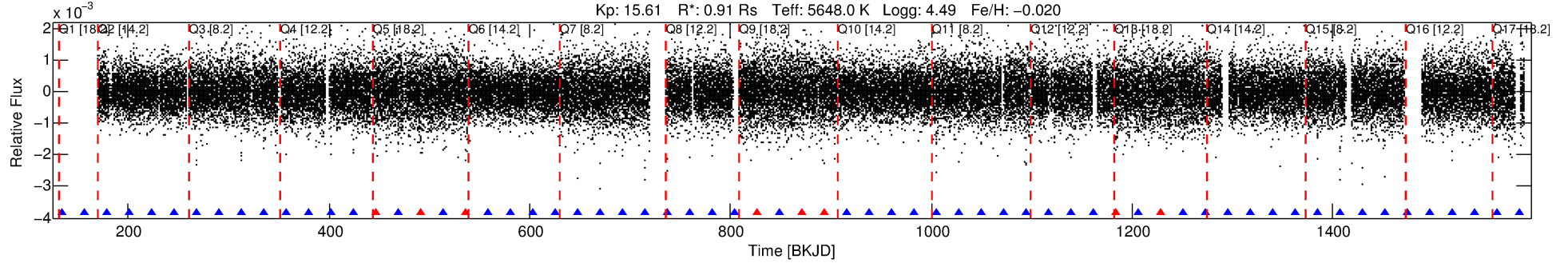
No Significant Match Found

DV One-Page Summary

KIC: 9156585 Candidate: 1 of 1 Period: 22.324 d

KOI: K02054.01 Corr: 0.994

Kp: 15.61 R*: 0.91 Rs Teff: 5648.0 K Logg: 4.49 Fe/H: -0.020



DV Fit Results:

Period = 22.32427 [0.00009] d
Epoch = 134.4472 [0.0032] BKJD
Rp/R* = 0.0416 [0.0046]
a/R* = 19.60 [2.24]
b = 0.96 [0.02]
Seff = 32.92 [11.82]
Teq = 611 [55] K
Rp = 4.14 [1.19] Re
a = 0.1518 [0.0346] AU
Ag = 76.03 [38.74] [1.94σ]
Teff = 2788 [278] K [7.68σ]

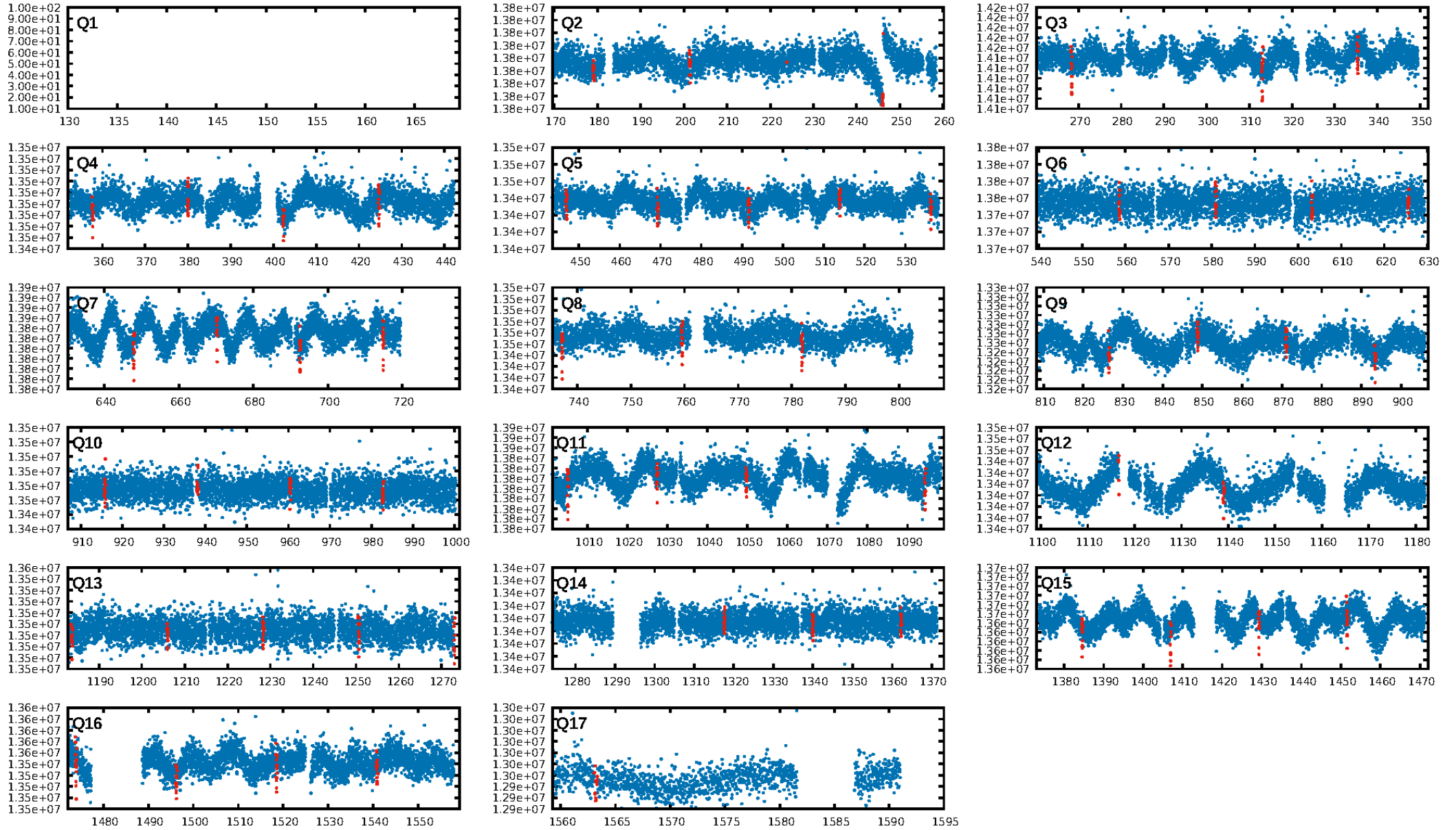
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 1.17e-151
RollingBand-fgt: 0.85 [47/55]
GhostDiagnostic-chr: -0.01072
Centroid-sig: 0.0%
Centroid-so: 12.531 arcsec [23.73σ]
OotOffset-rm: 5.098 arcsec [59.29σ]
KicOffset-rm: 5.522 arcsec [68.79σ]
OotOffset-st: 0/4/4/4 [12]
KicOffset-st: 0/4/4/4 [12]
DiffImageQuality-fgm: 1.00 [12/12]
DiffImageOverlap-fno: 1.00 [16/16]

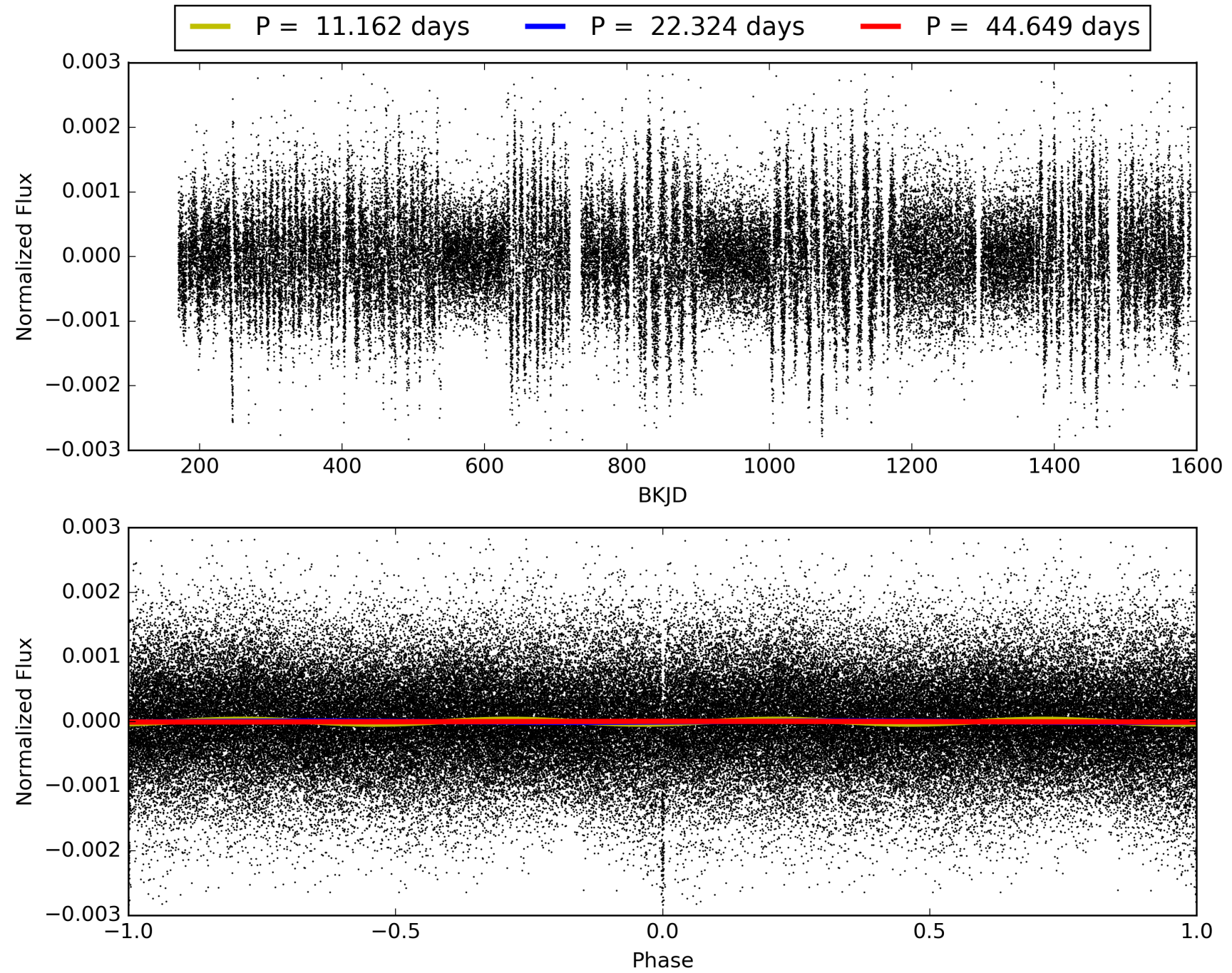
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 12:42:08 Z

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

TCE 009156585-01, PDC Light Curves

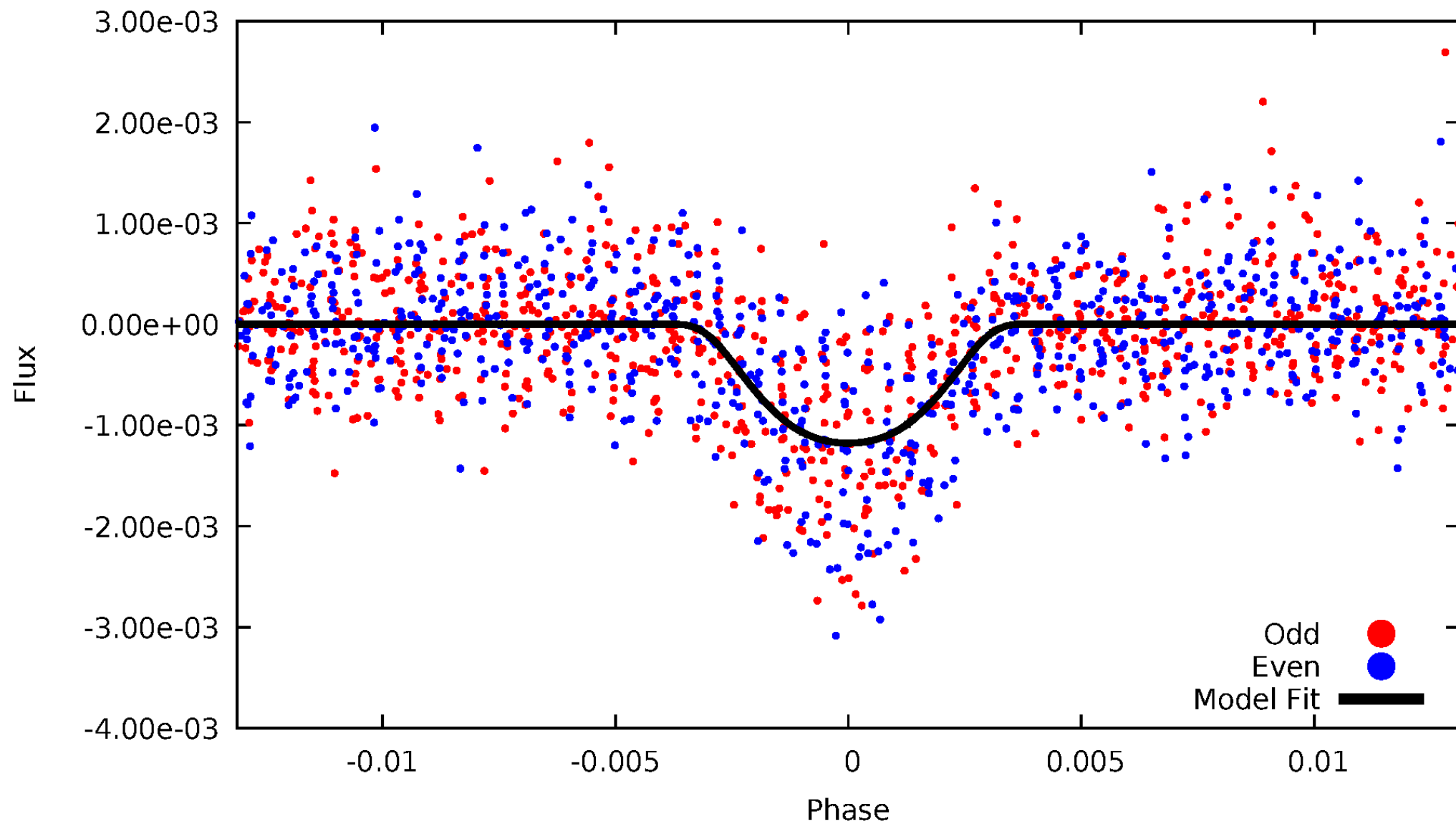


TCE 009156585-01



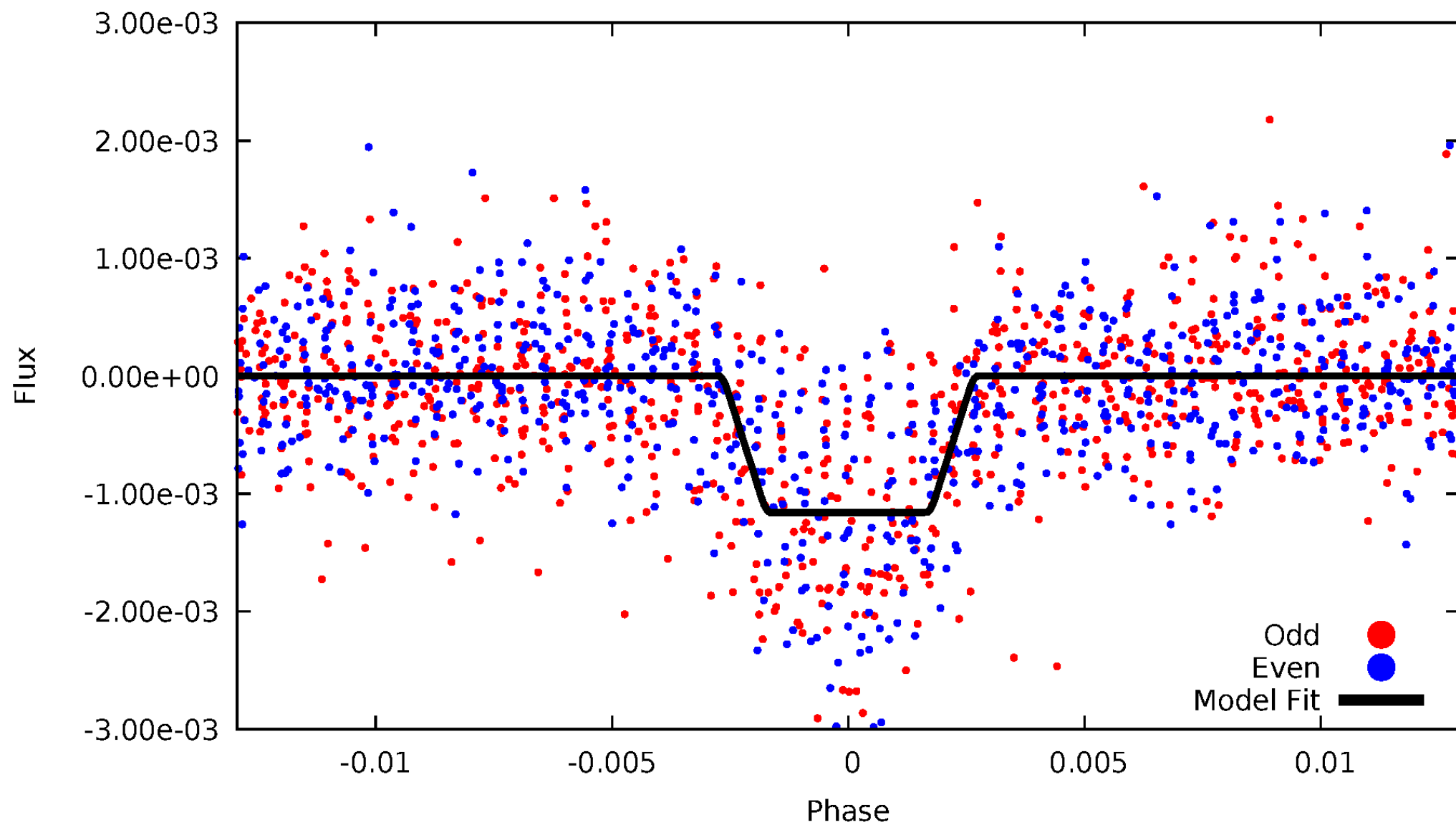
DV Odd/Even

TCE 009156585-01



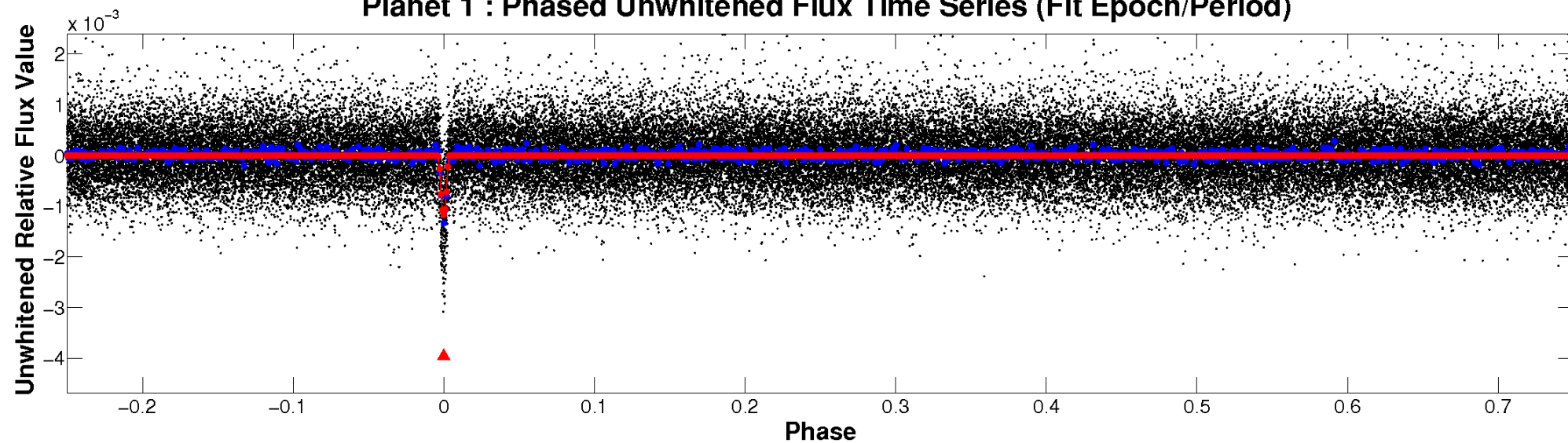
ALT Odd/Even

TCE 009156585-01

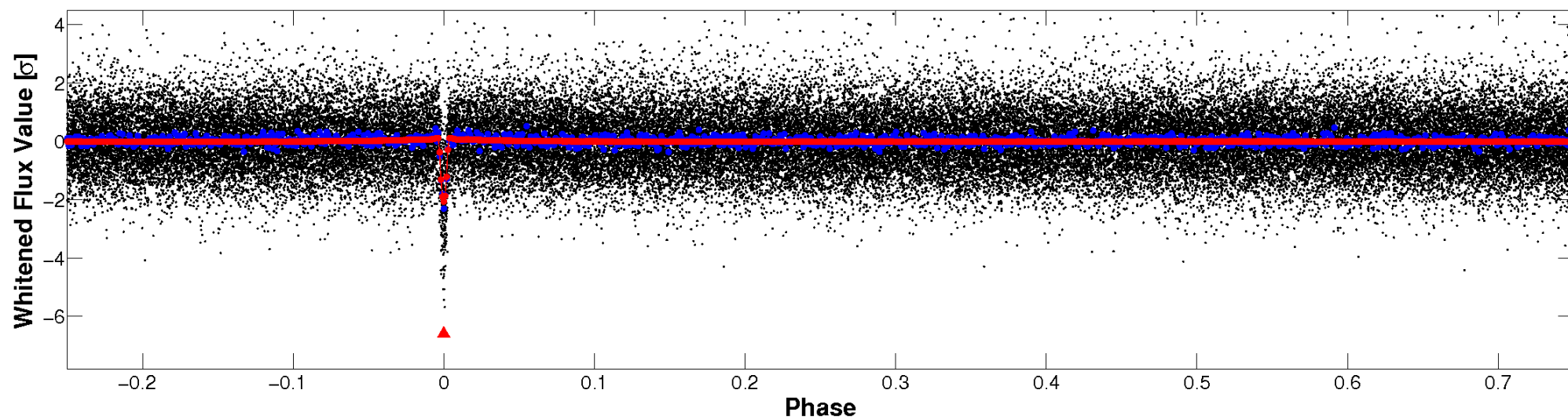


Non-Whitened Vs. Whitened Light Curve

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

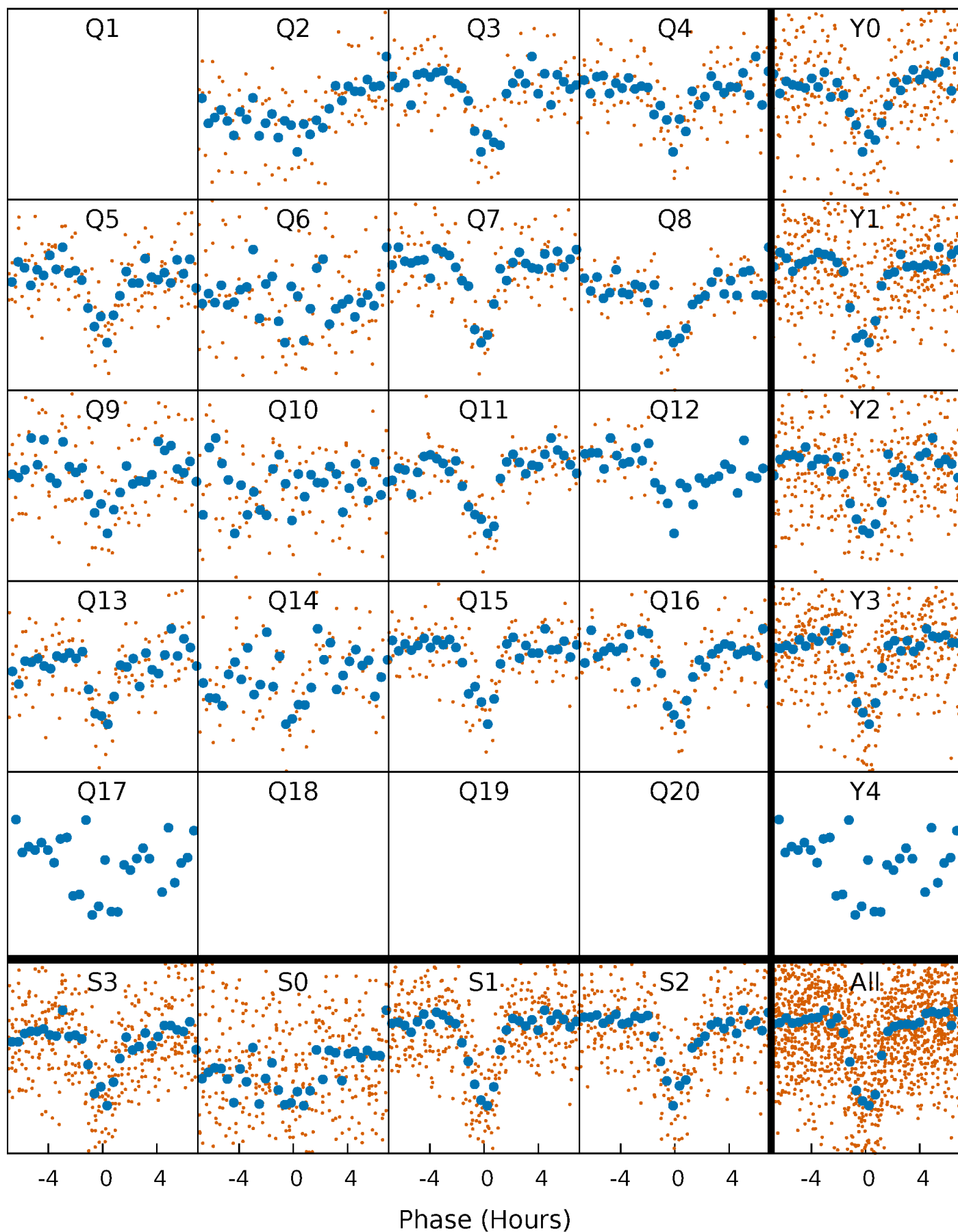


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



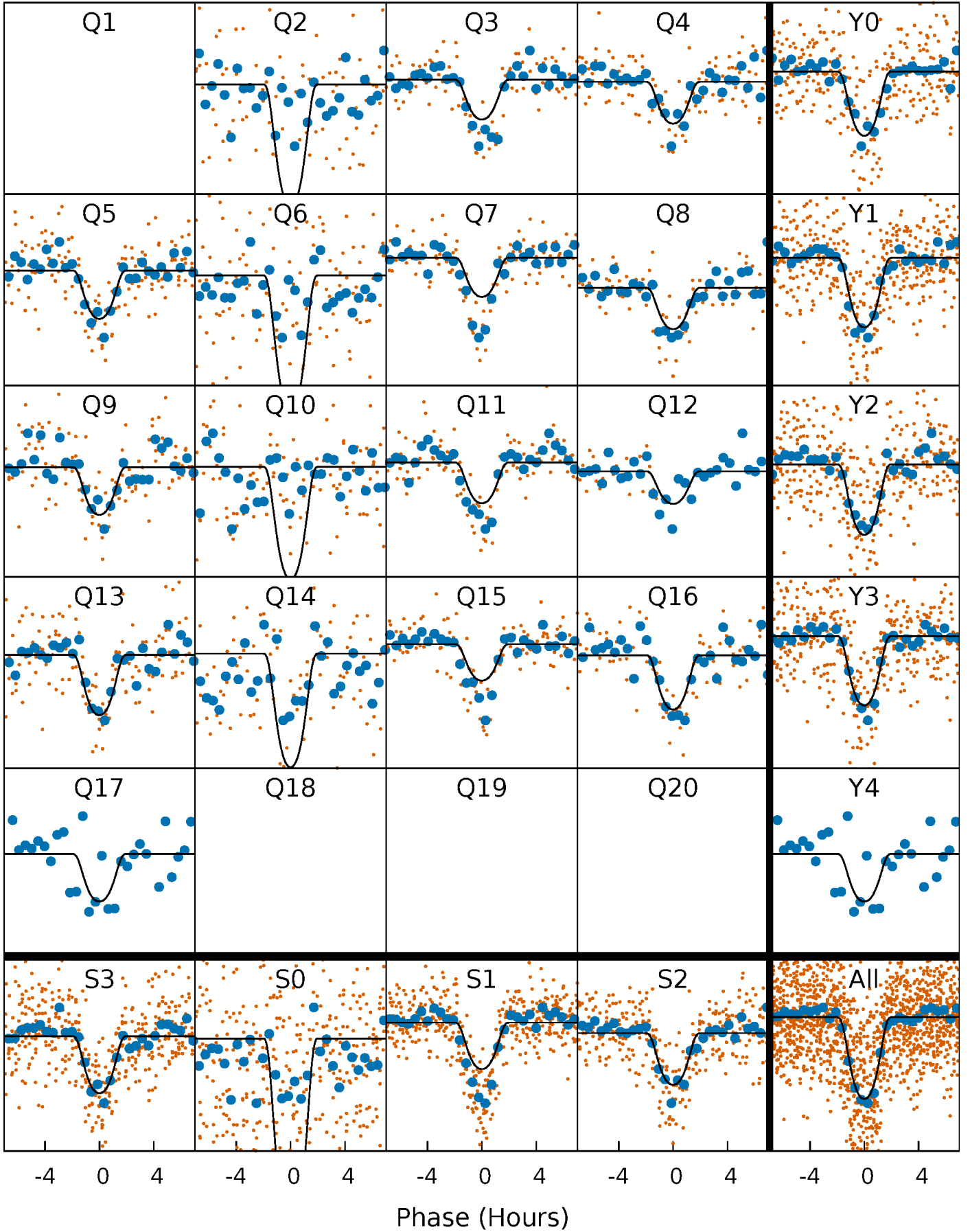
PDC Quarter-Phased Transit Curves

TCE 009156585-01 P= 22.324266 Days $T_0=134.447246$ (BKJD)



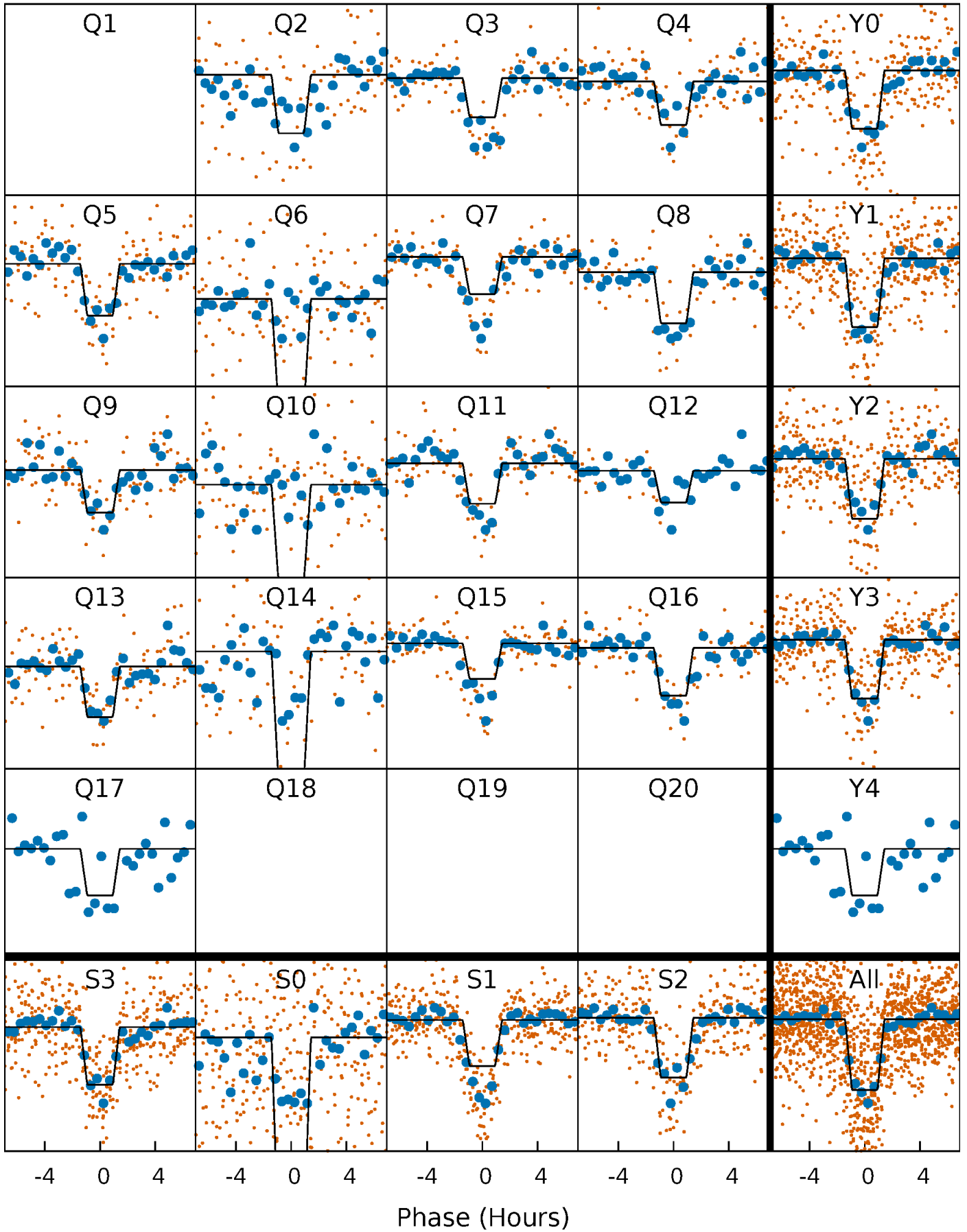
DV Quarter-Phased Transit Curves

TCE 009156585-01 P= 22.324266 Days $T_0=134.447246$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

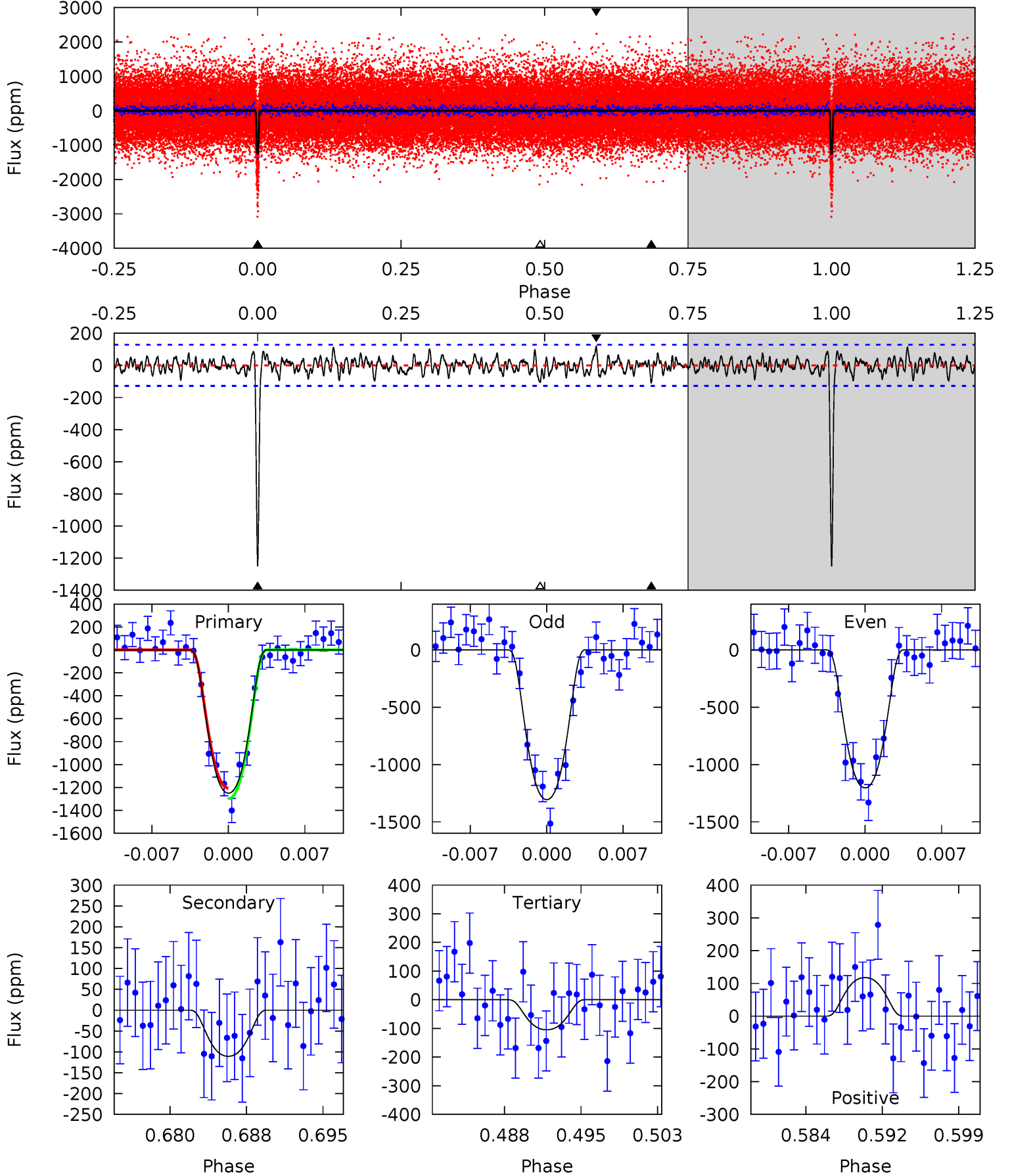
TCE 009156585-01 P= 22.324266 Days $T_0=134.446897$ (BKJD)



DV Model-Shift Uniqueness Test

009156585-01, $P = 22.324266$ Days, $E = 134.447246$ Days

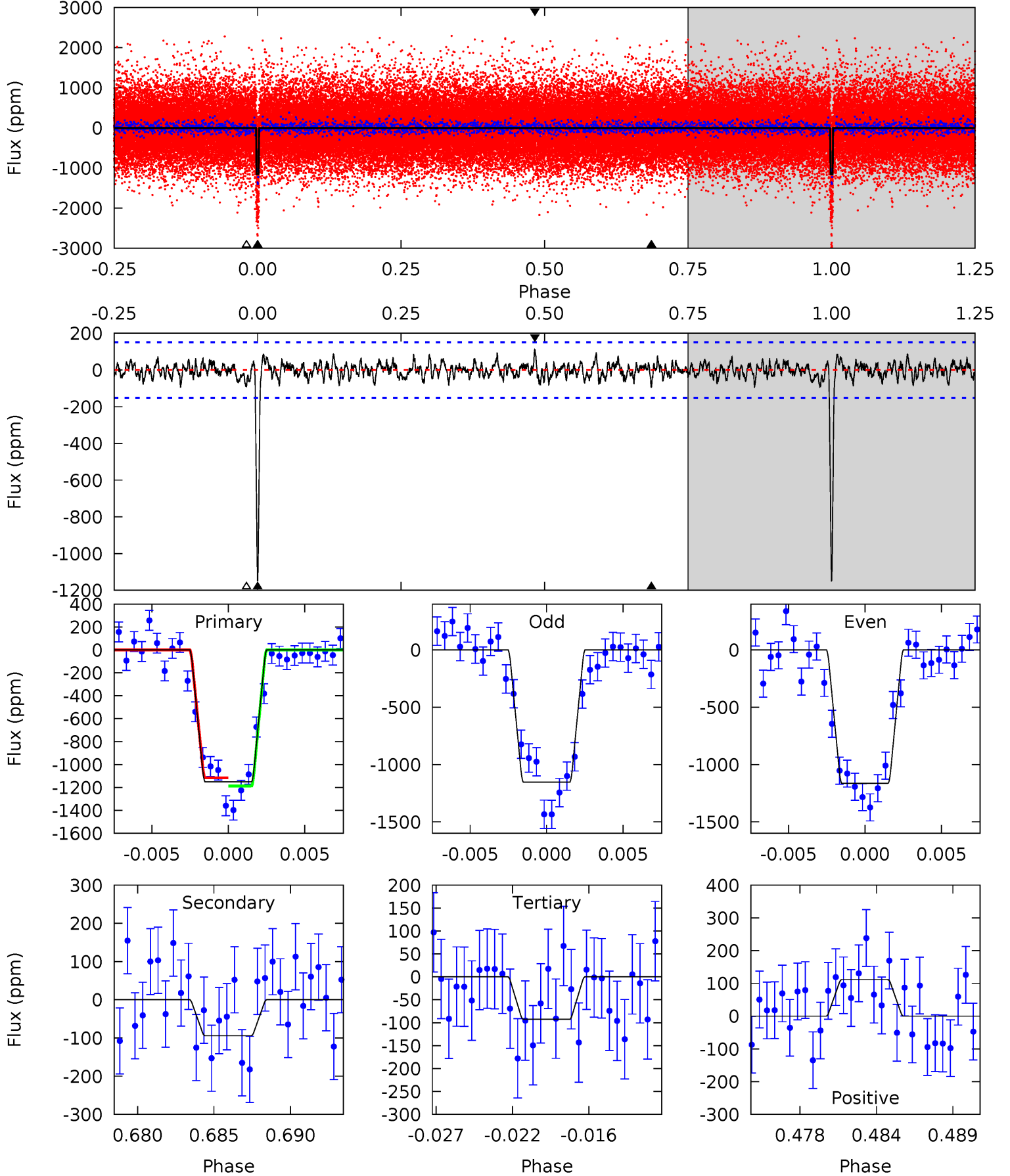
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
49.7	4.40	4.16	4.68	5.08	2.68	1.42	45.5	45.0	0.23	-0.28	2.05	0.95	0.09	1.84



Alt Model-Shift Uniqueness Test

009156585-01, $P = 22.324266$ Days, $E = 134.446897$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
39.1	3.20	3.15	3.79	5.14	2.78	1.10	36.0	35.3	0.06	-0.58	0.16	0.96	0.09	1.21



Stellar Parameters For KIC 009156585

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5648^{+169}_{-169}	$4.489^{+0.062}_{-0.188}$	$-0.020^{+0.300}_{-0.300}$	$0.912^{+0.242}_{-0.104}$	$0.934^{+0.104}_{-0.094}$	$1.735^{+0.457}_{-0.839}$
	+3%/-3%	+1%/-4%	+1500%/-1500%	+27%/-11%	+11%/-10%	+26%/-48%
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 009156585-01 / KOI 2054.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-111 ± 25	$4.24^{+0.75}_{-0.56}$	866^{+53}_{-41}	3368^{+183}_{-189}	74^{+35}_{-22}
Alt.	-94 ± 29	$3.51^{+0.64}_{-0.57}$	867^{+59}_{-41}	3481^{+248}_{-242}	94^{+50}_{-36}

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 $A_{obs} \gg 1.0$

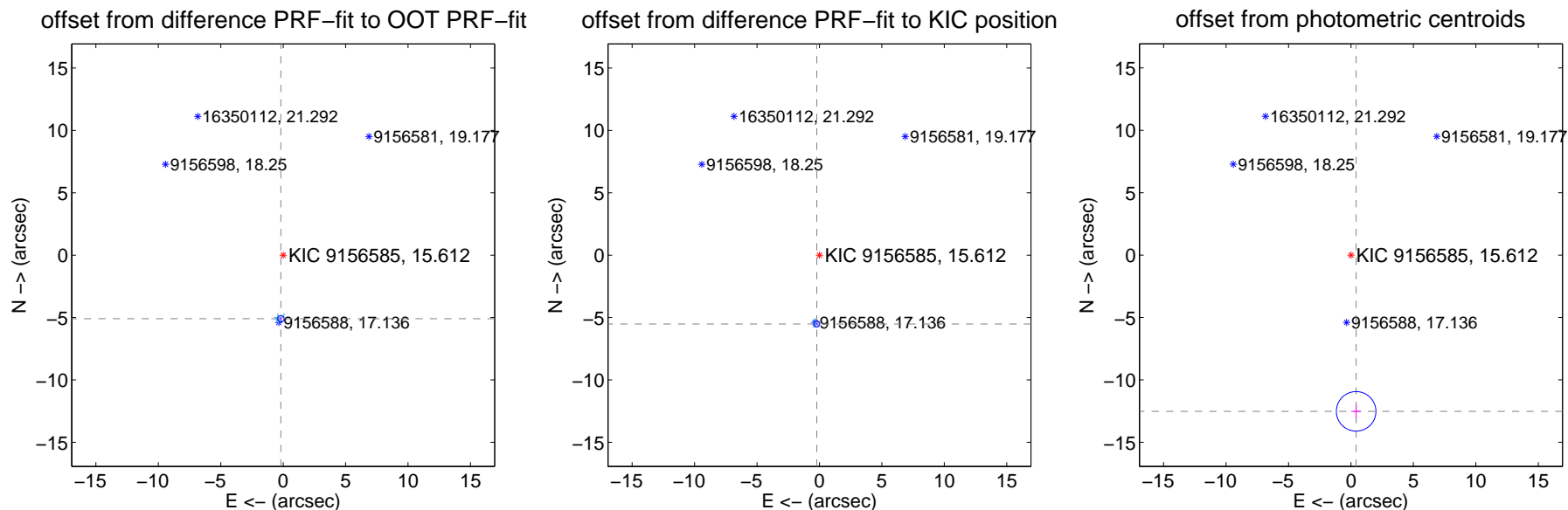
DV Centroid Data

Supplemental centroid analysis for 009156585-01. Kepler magnitude: 15.61. Transit SNR 26.66

There are 12 quarters with good PRF difference image offsets

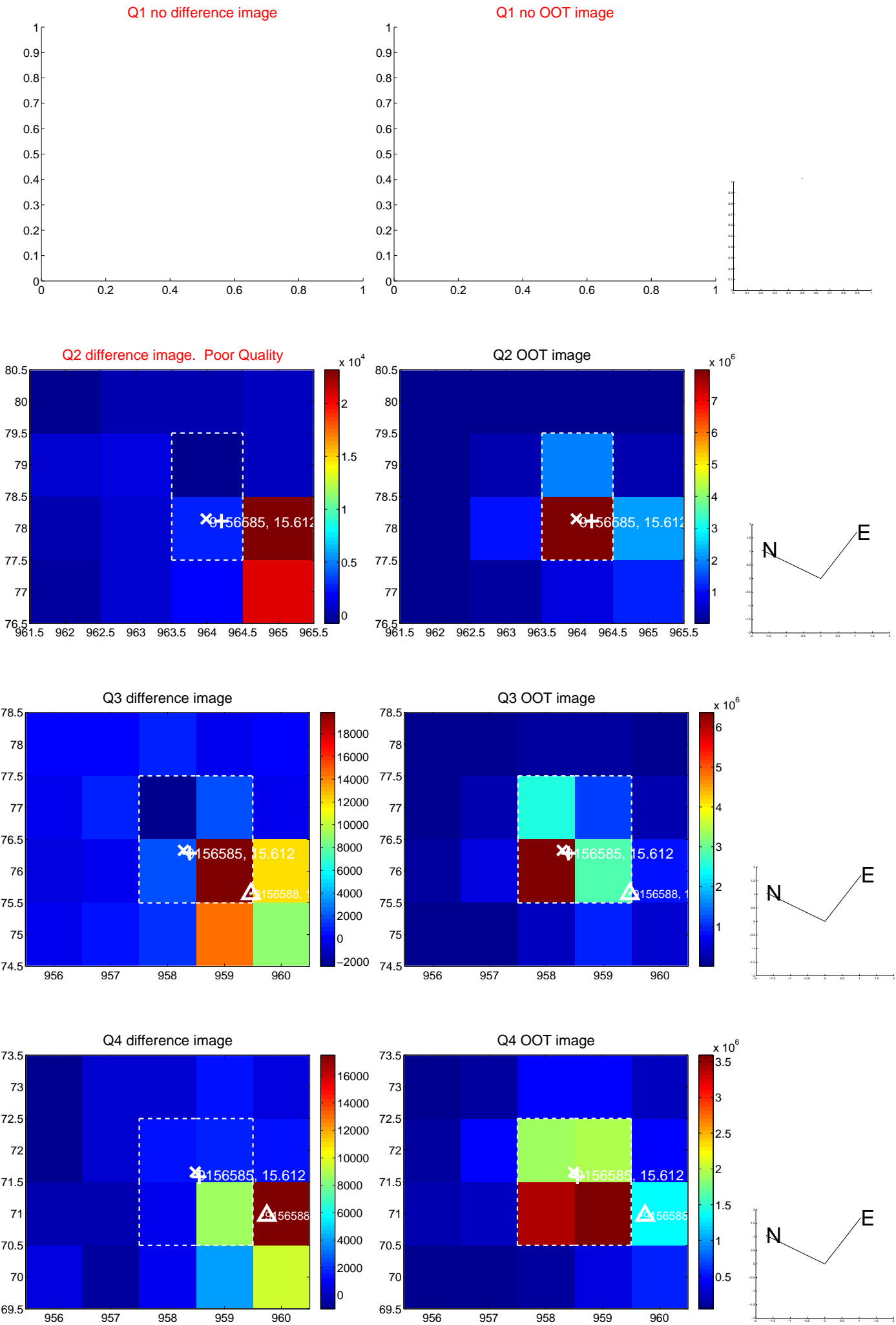
The direct PRF centroid is offset from the target star catalog position by about 0.39 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.098 \pm 0.086	59.29	0.184 \pm 0.091	-5.094 \pm 0.086
PRF-fit source offset from KIC position	5.522 \pm 0.080	68.79	0.216 \pm 0.079	-5.518 \pm 0.080
photometric centroid source offset	12.53 \pm 0.53	23.73	-0.41 \pm 0.39	-12.52 \pm 0.53

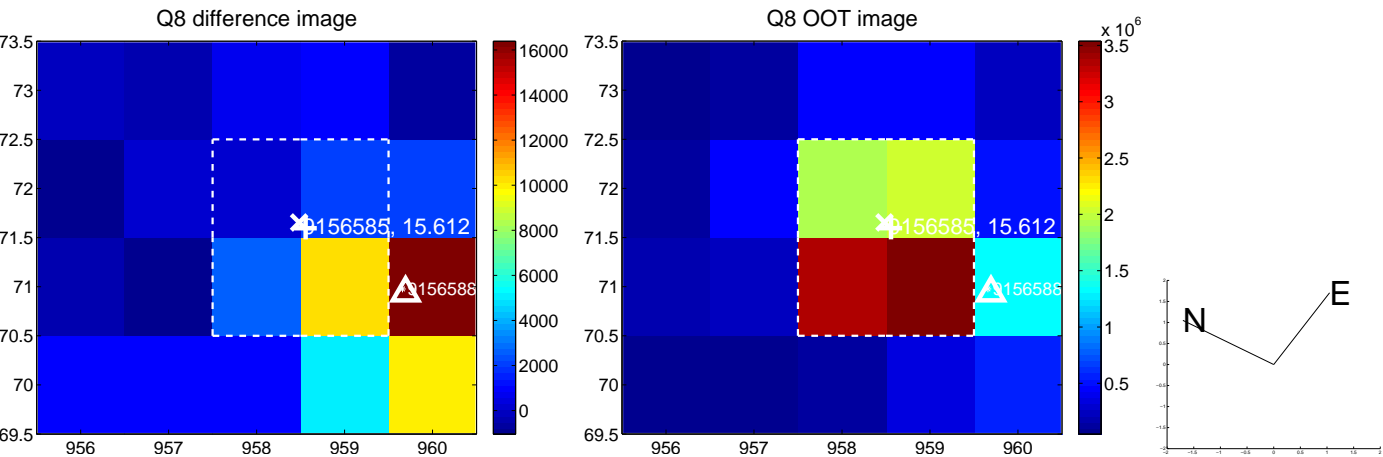
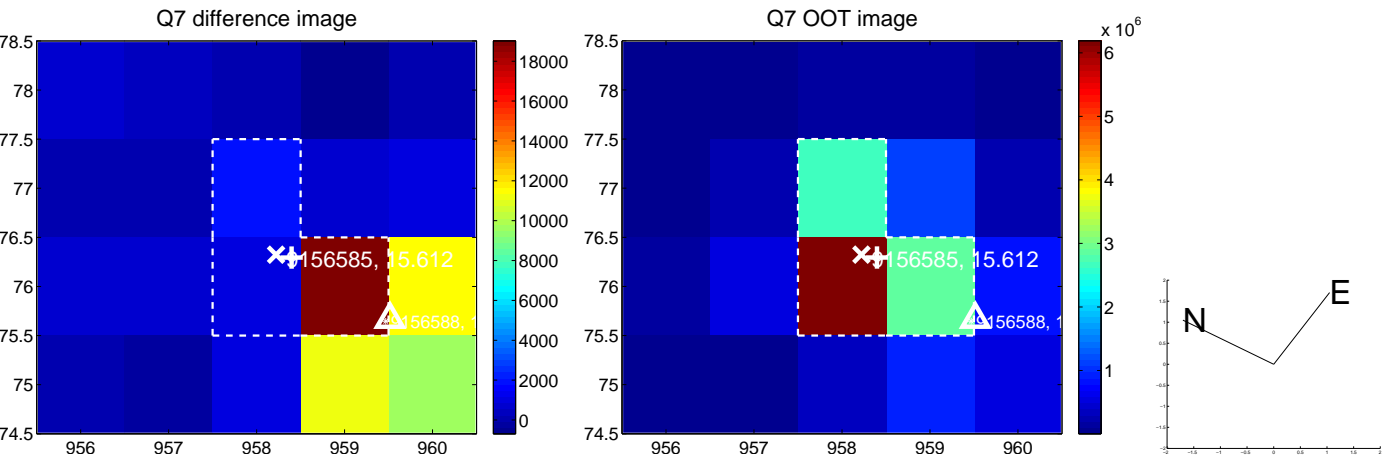
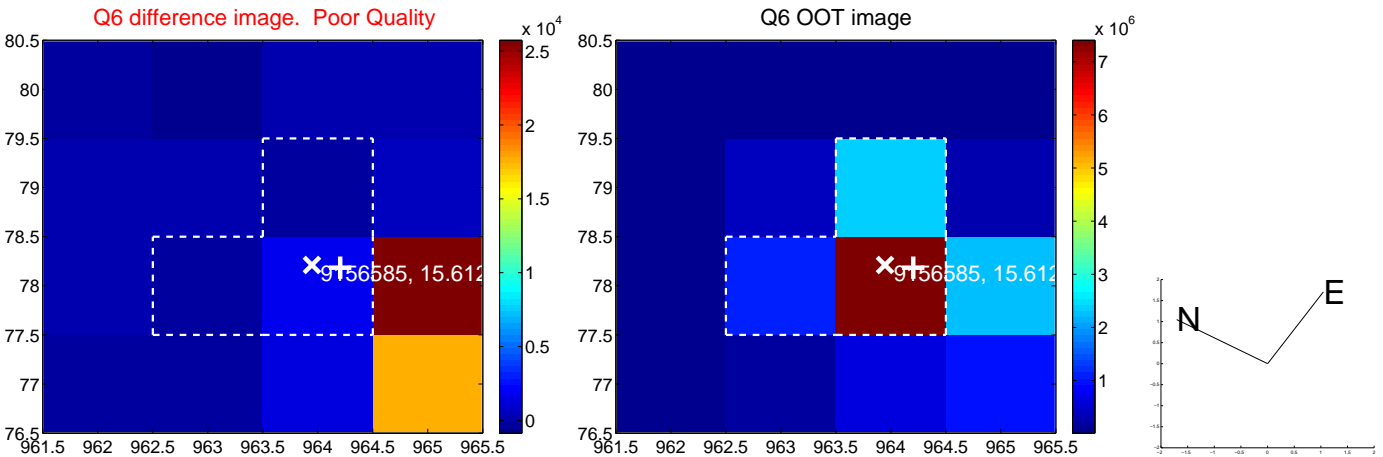
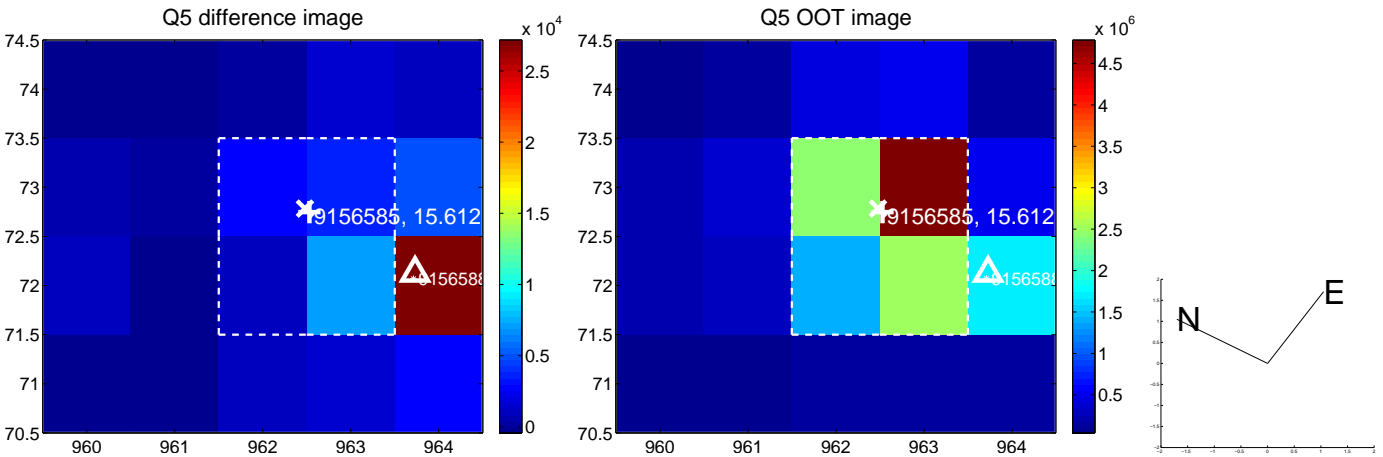


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

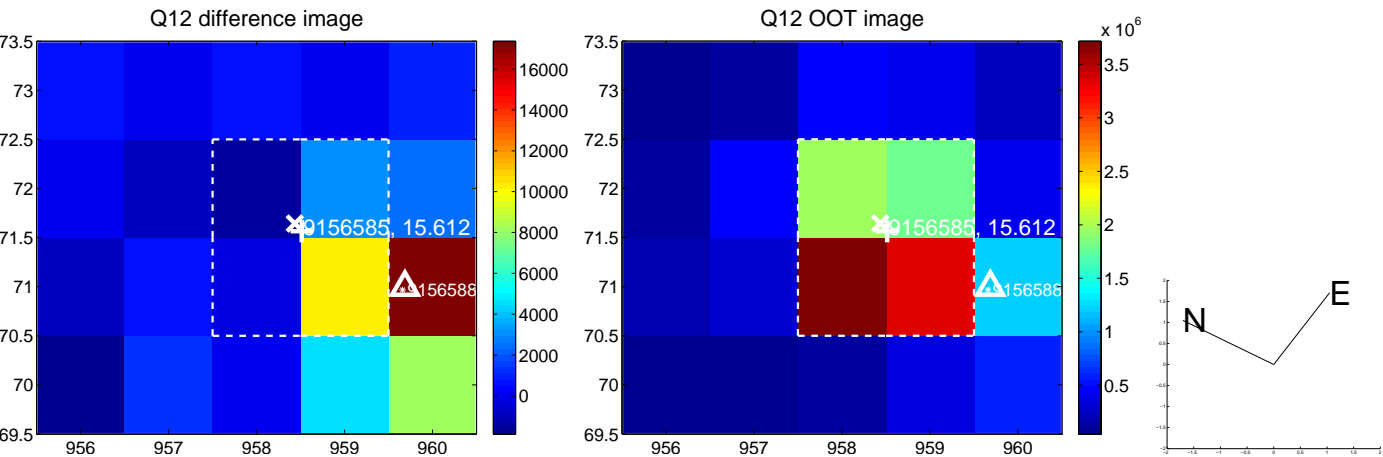
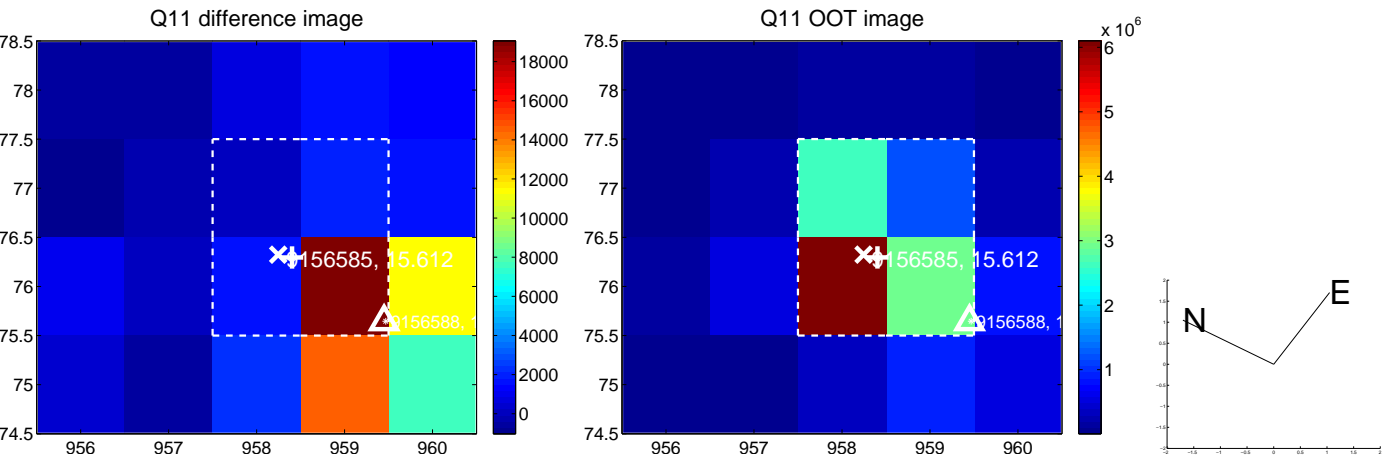
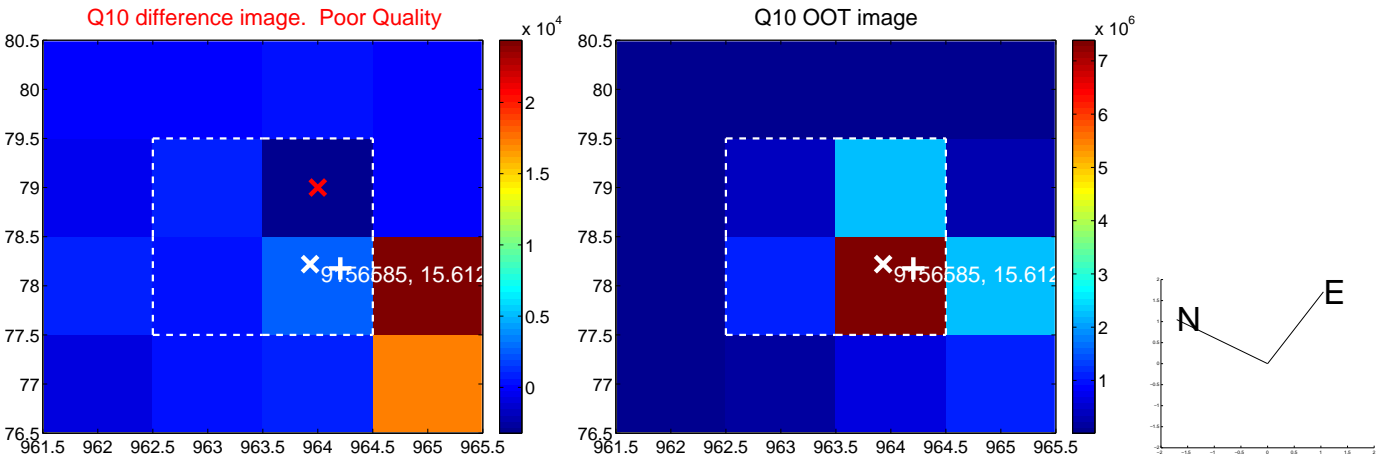
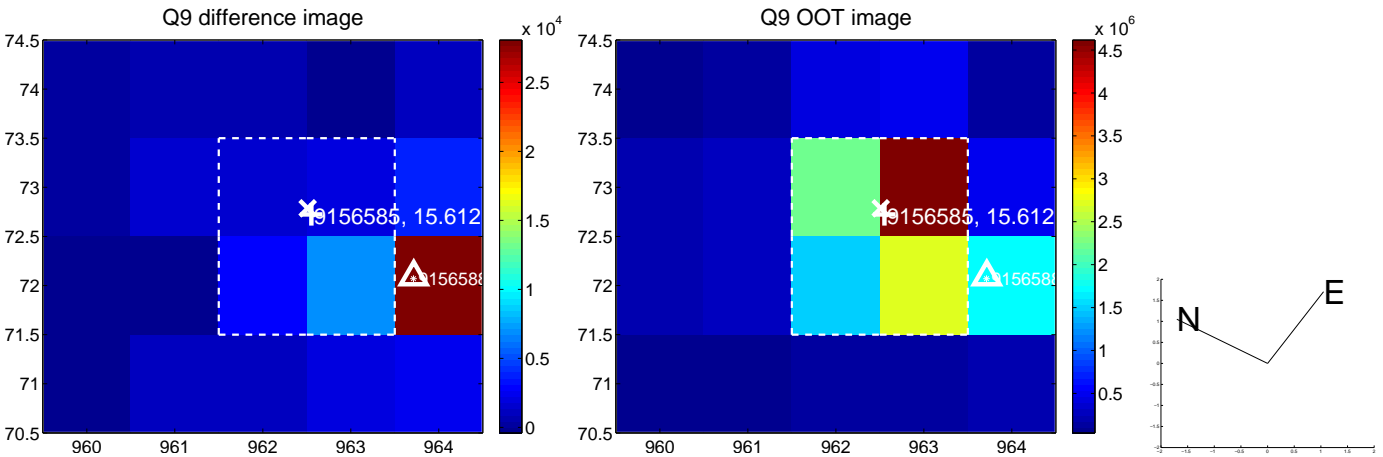
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



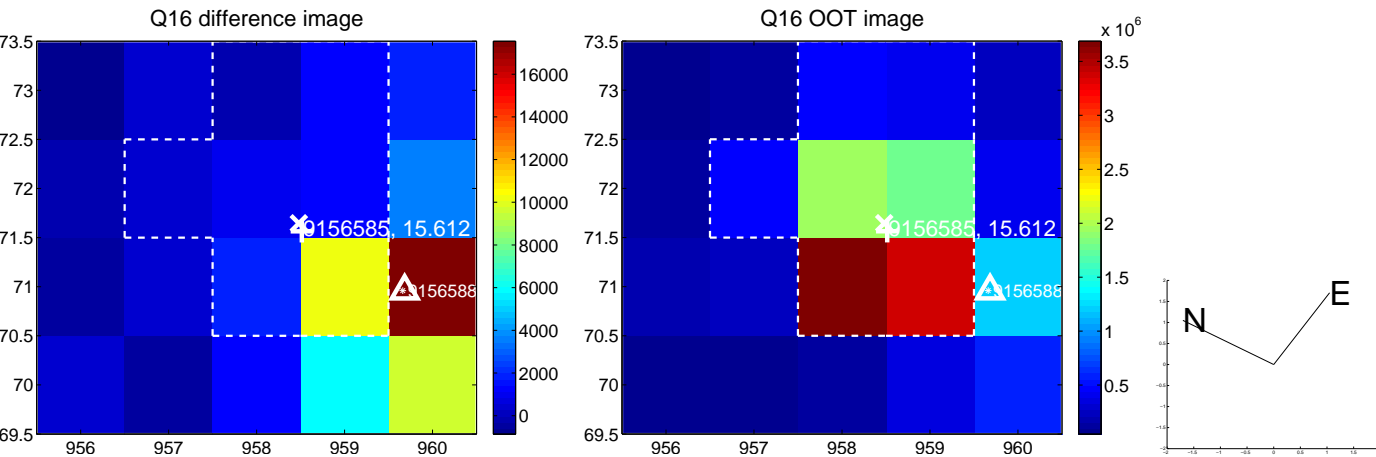
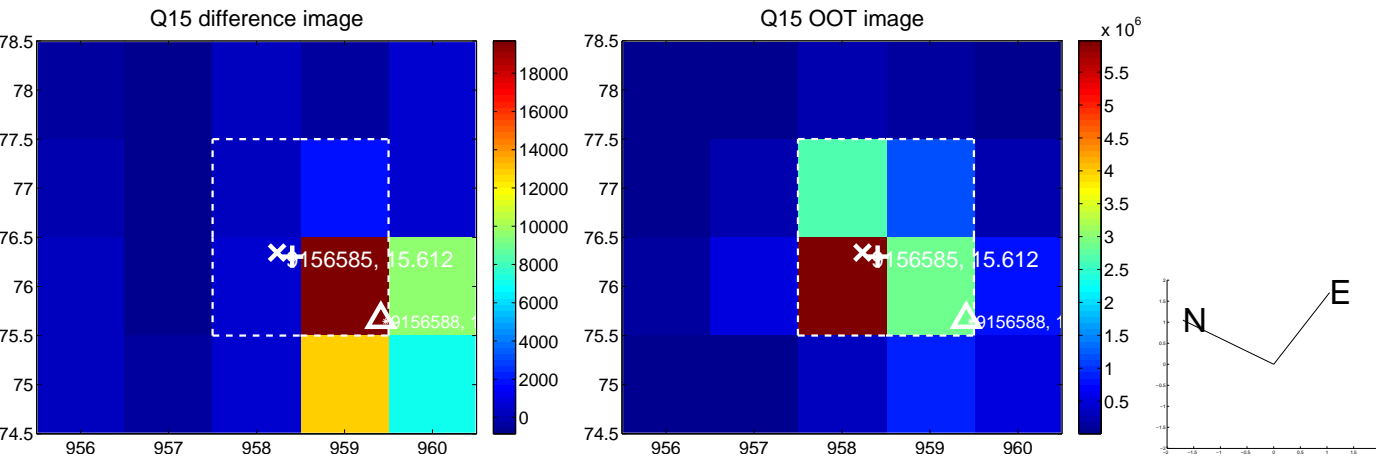
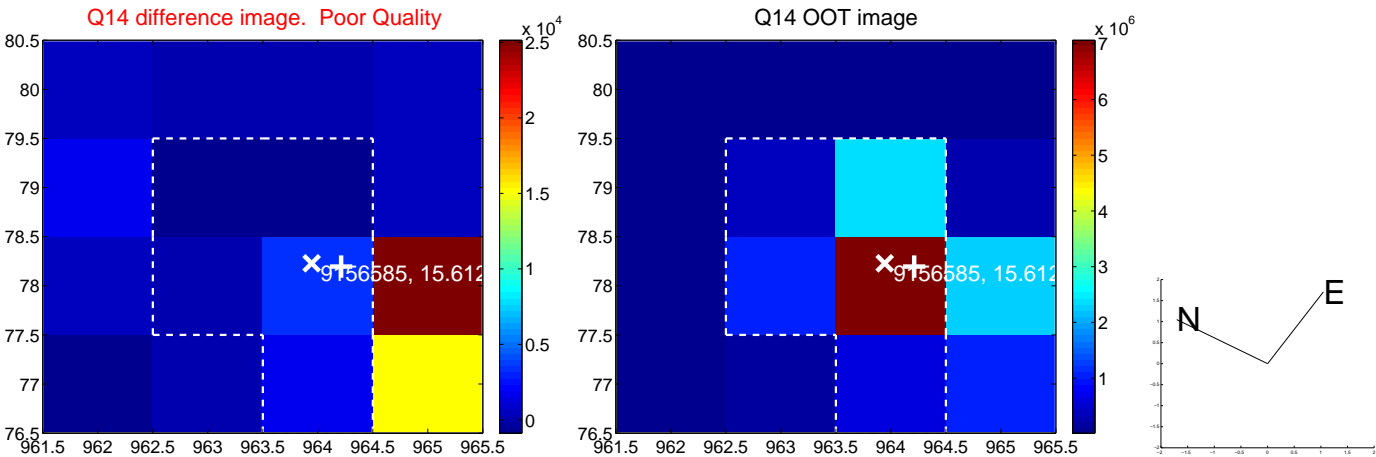
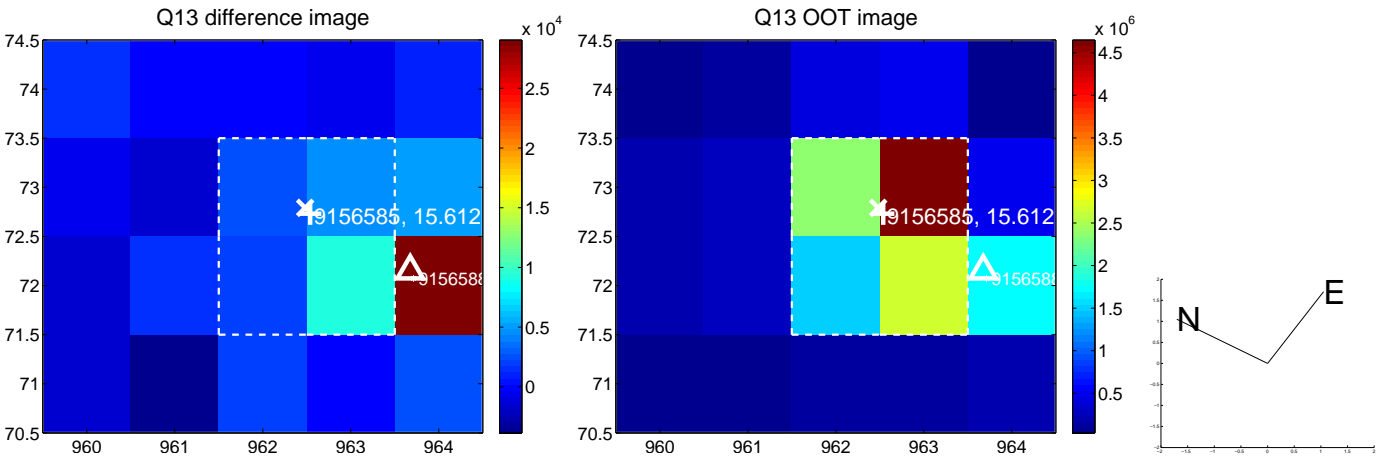
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



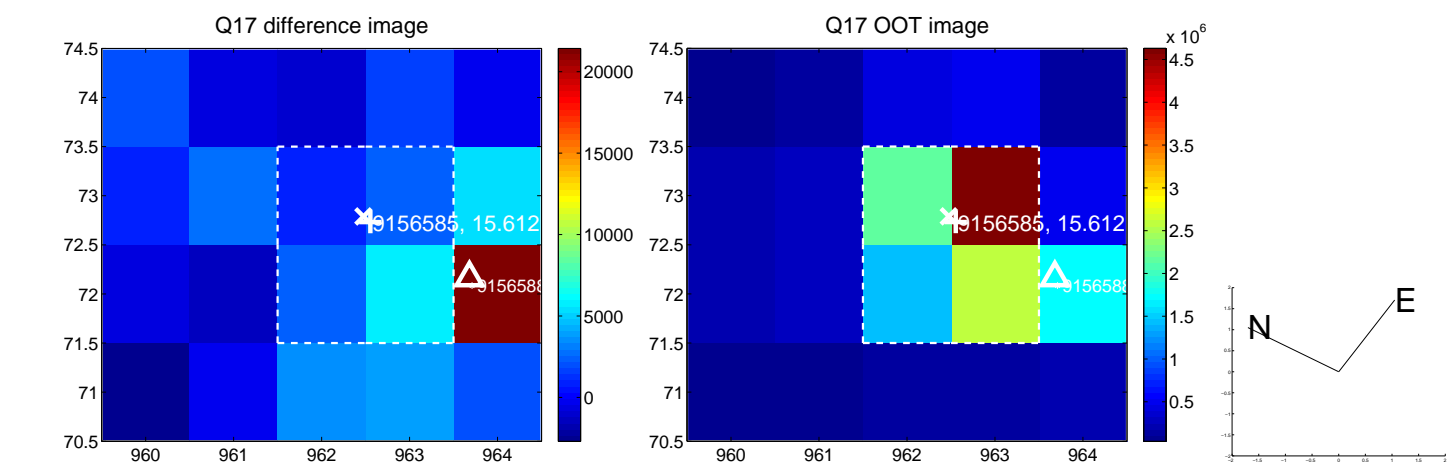
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



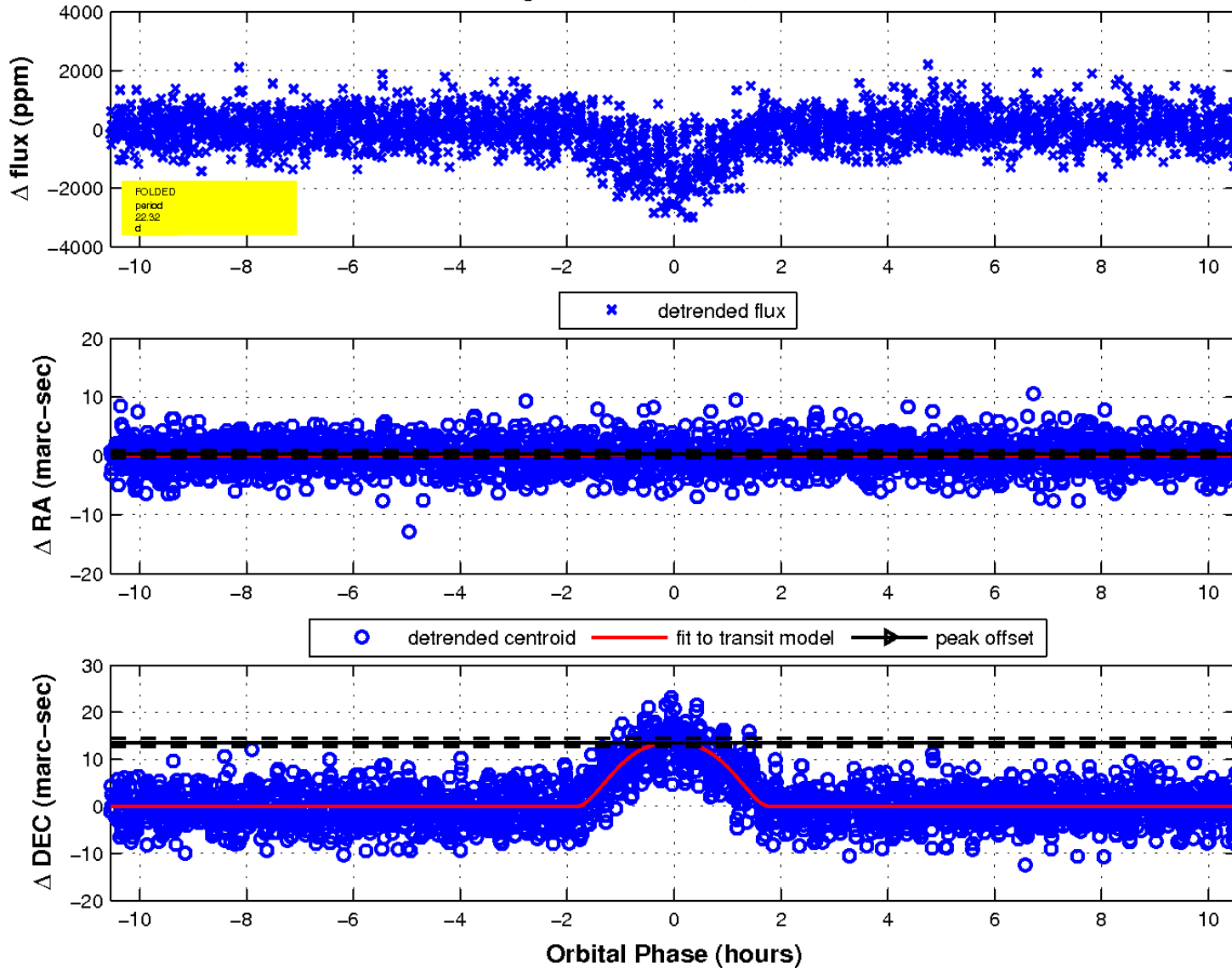
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

