

KIC 009041558

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})
009041558-01	OBS	No	5.651970	133.658142	16.6	16.869	7.8	2.5	0.98	5885	0.40	287.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009041558-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

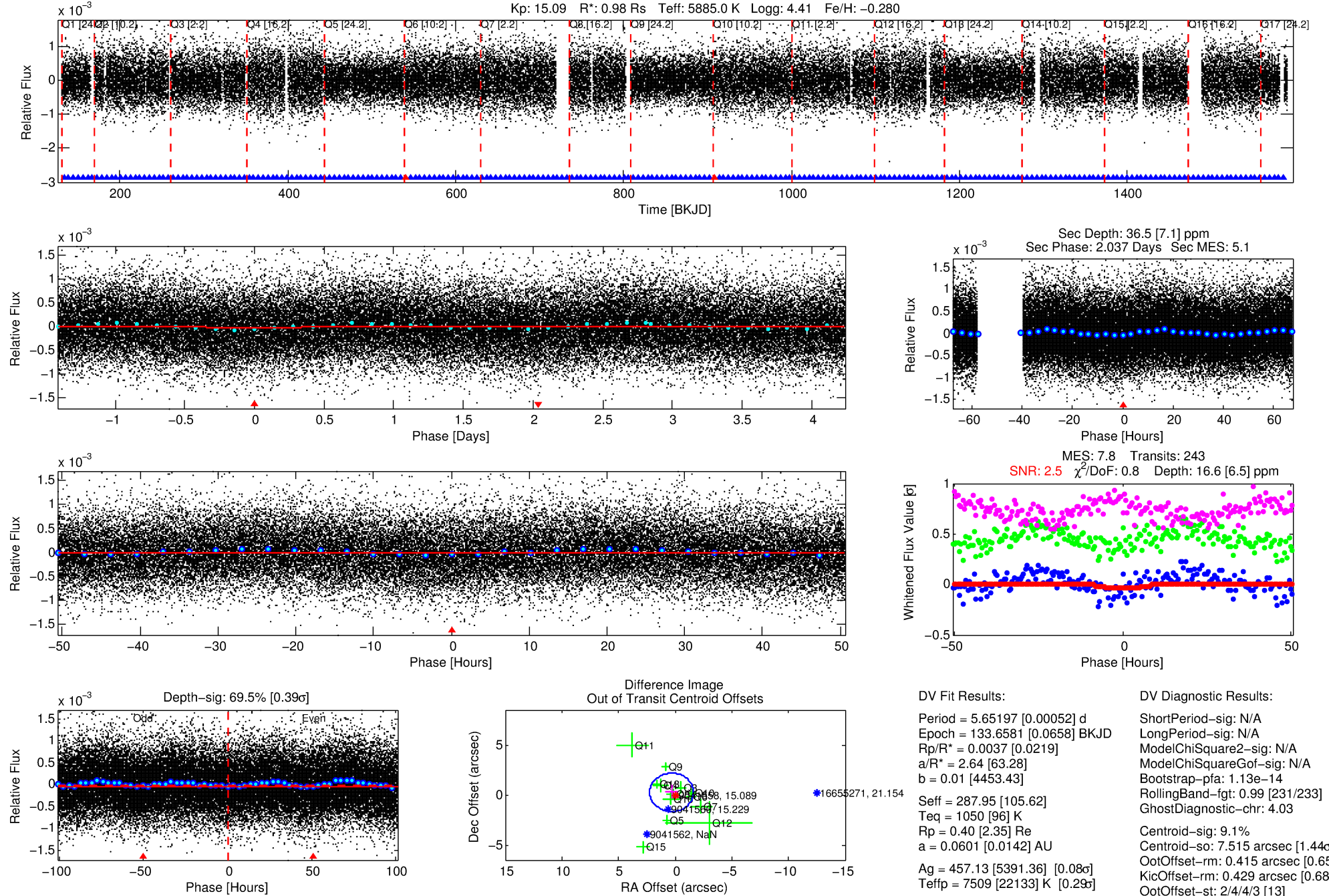
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009041558-01

No Significant Match Found

DV One-Page Summary

KIC: 9041558 Candidate: 1 of 1 Period: 5.652 d



DV Fit Results:

Period = 5.65197 [0.00052] d
Epoch = 133.6581 [0.0658] BKJD
Rp/R* = 0.0037 [0.0219]
a/R* = 2.64 [63.28]
b = 0.01 [4453.43]
Seff = 287.95 [105.62]
Teff = 1050 [96] K
Rp = 0.40 [2.35] Re
a = 0.0601 [0.0142] AU
Ag = 457.13 [5391.36] [0.08 σ]
Teffp = 7509 [22133] K [0.29 σ]

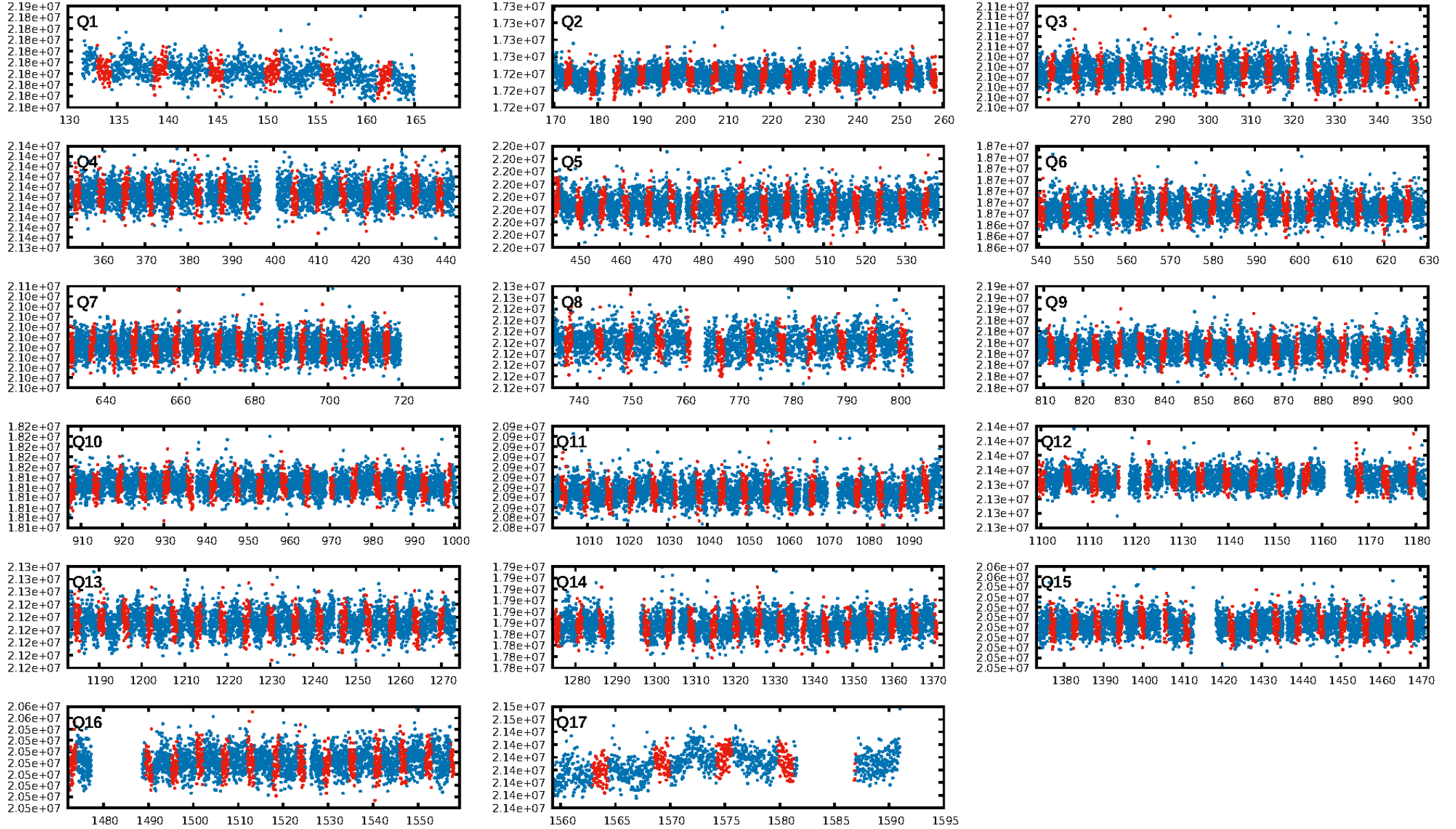
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.13e-14
RollingBand-fgt: 0.99 [231/233]
GhostDiagnostic-chr: 4.03
Centroid-sig: 9.1%
Centroid-so: 7.515 arcsec [1.44 σ]
OotOffset-rm: 0.415 arcsec [0.65 σ]
KicOffset-rm: 0.429 arcsec [0.68 σ]
OotOffset-st: 2/4/4/3 [13]
KicOffset-st: 2/4/4/3 [13]
DiffImageQuality-fgm: 0.62 [8/13]
DiffImageOverlap-fno: 1.00 [17/17]

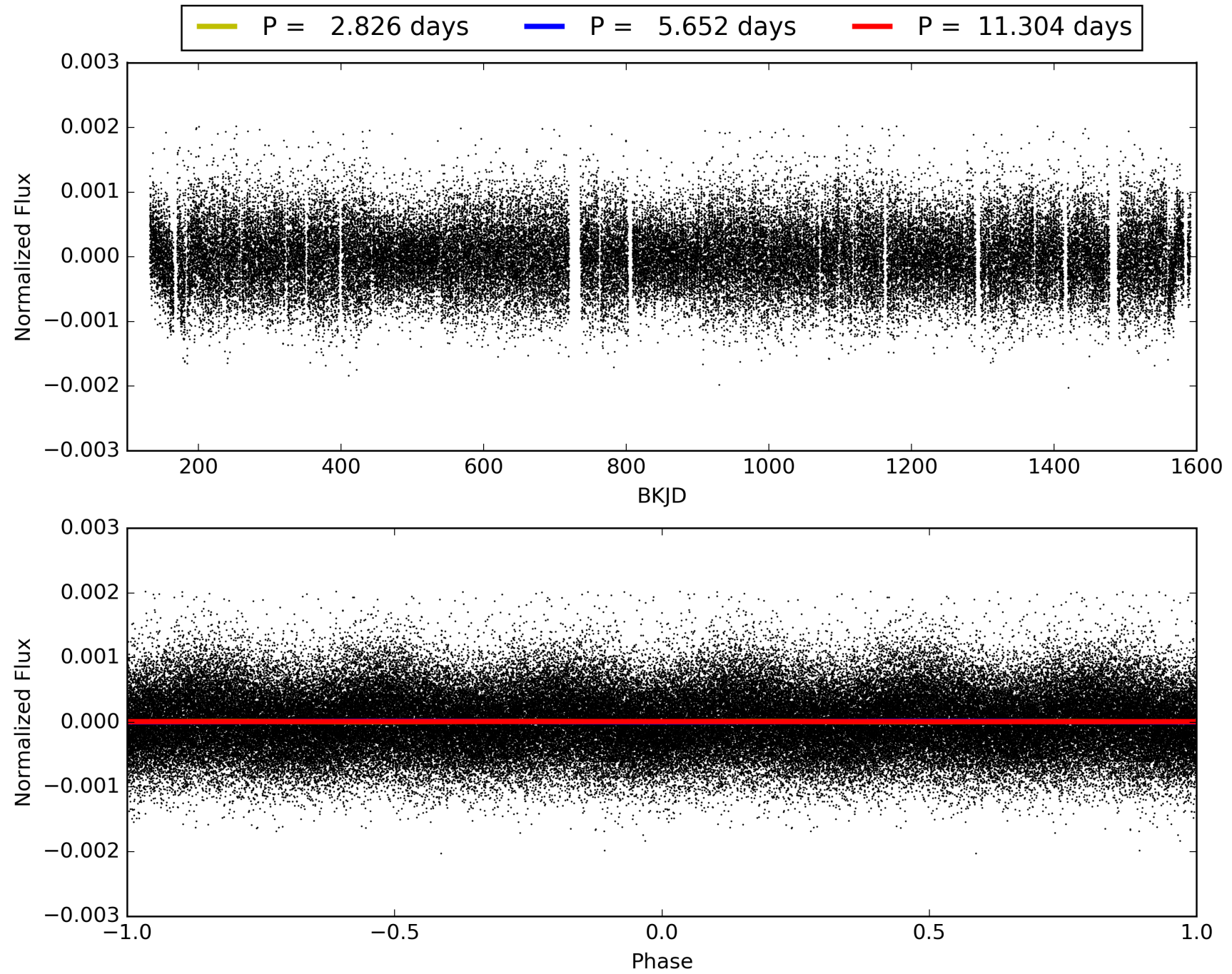
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:49:12 Z

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

TCE 009041558-01, PDC Light Curves

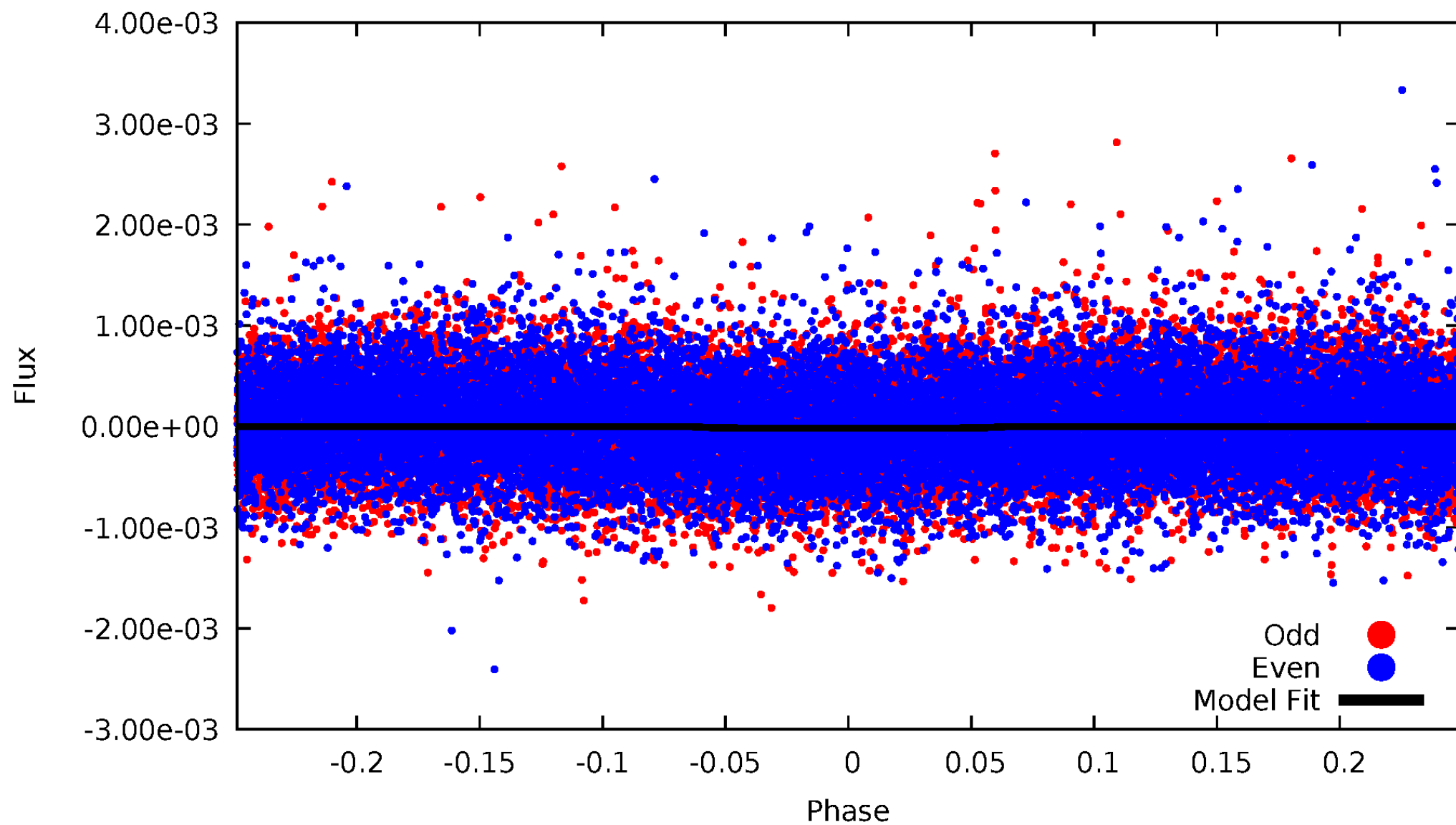


TCE 009041558-01



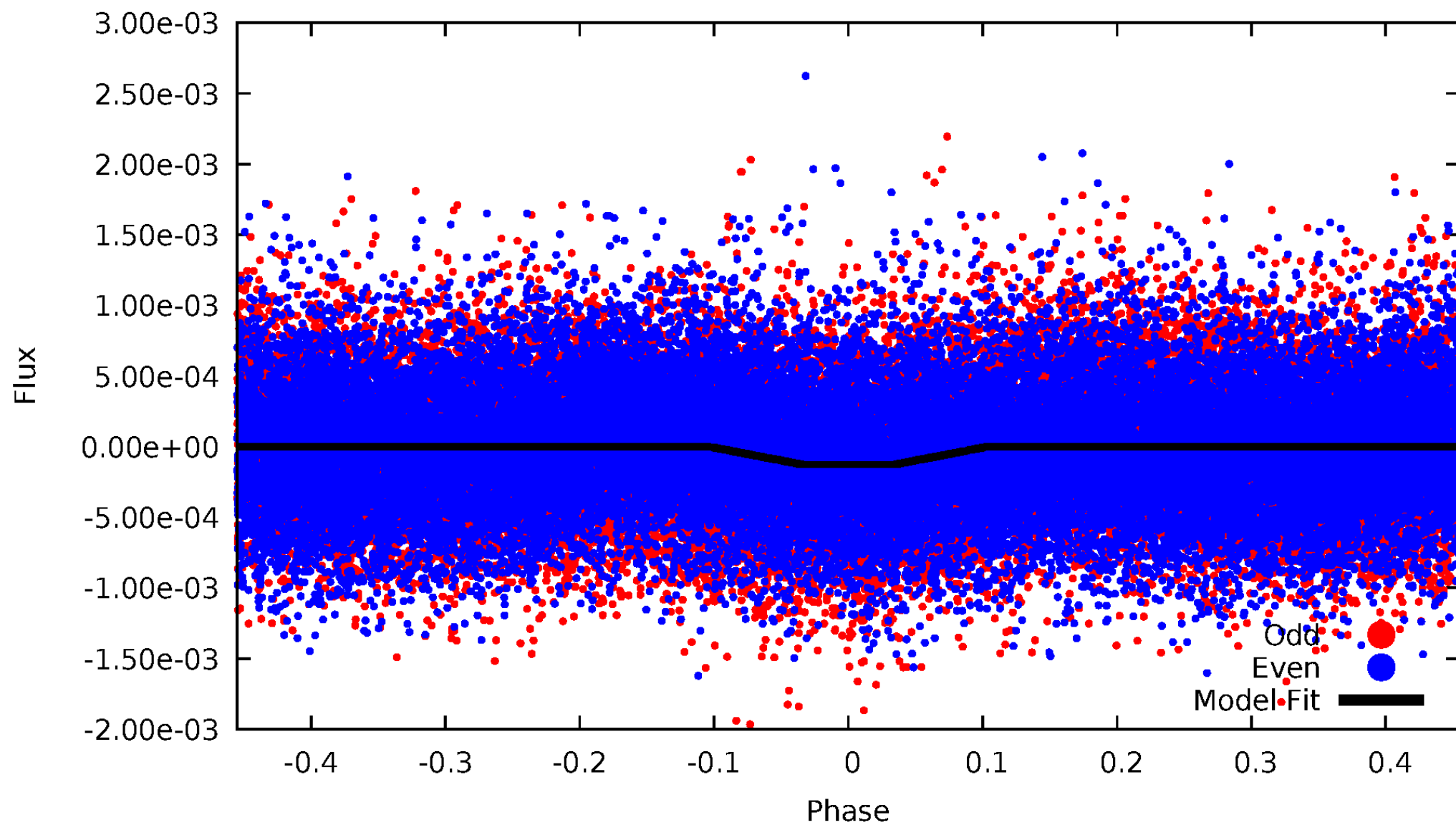
DV Odd/Even

TCE 009041558-01



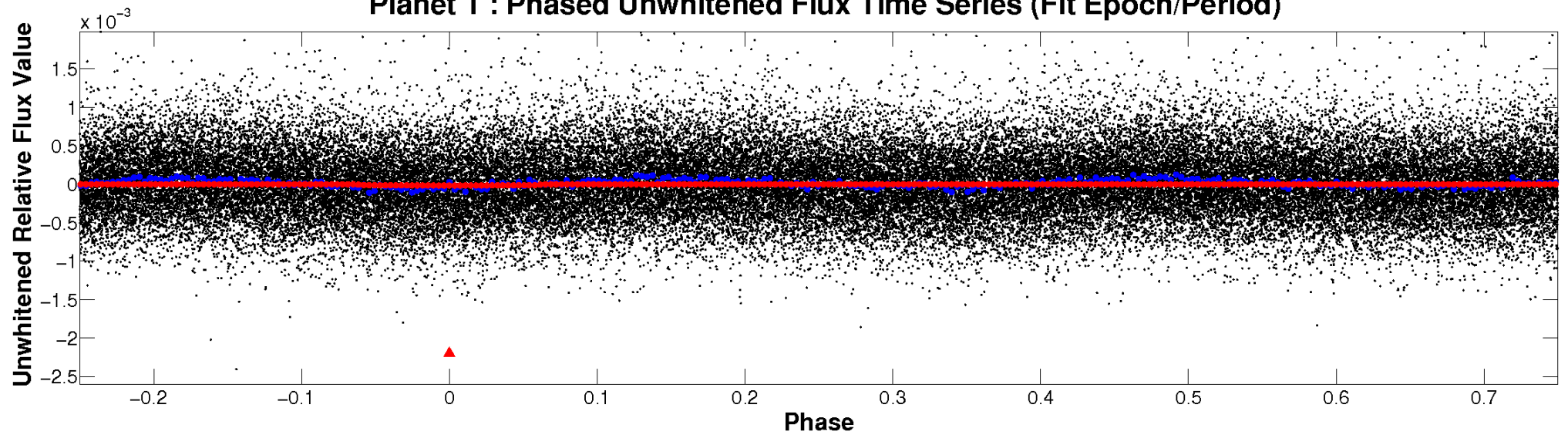
ALT Odd/Even

TCE 009041558-01

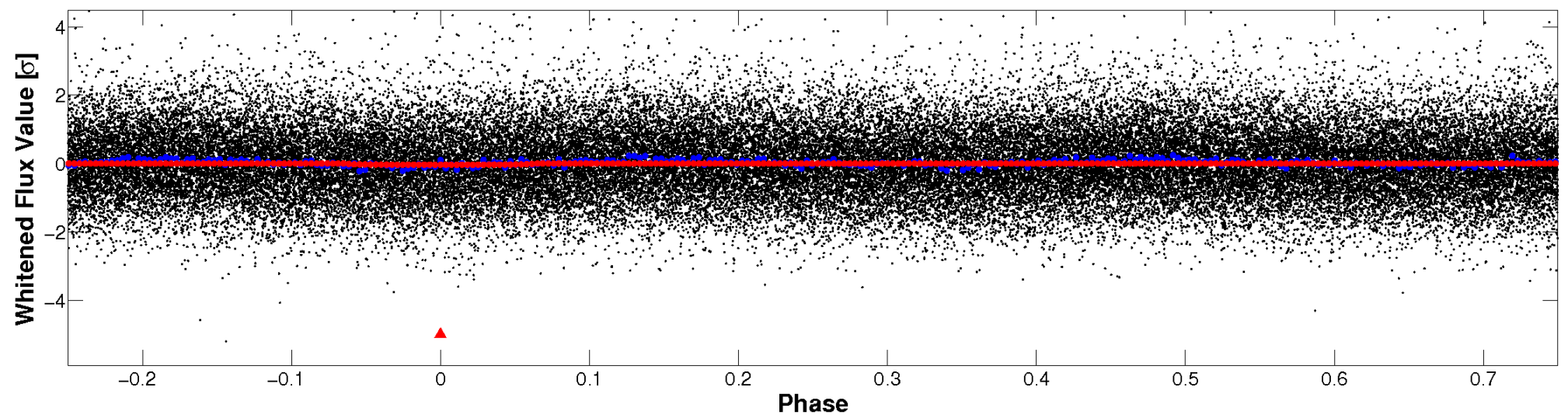


Non-Whitened Vs. Whitened Light Curve

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

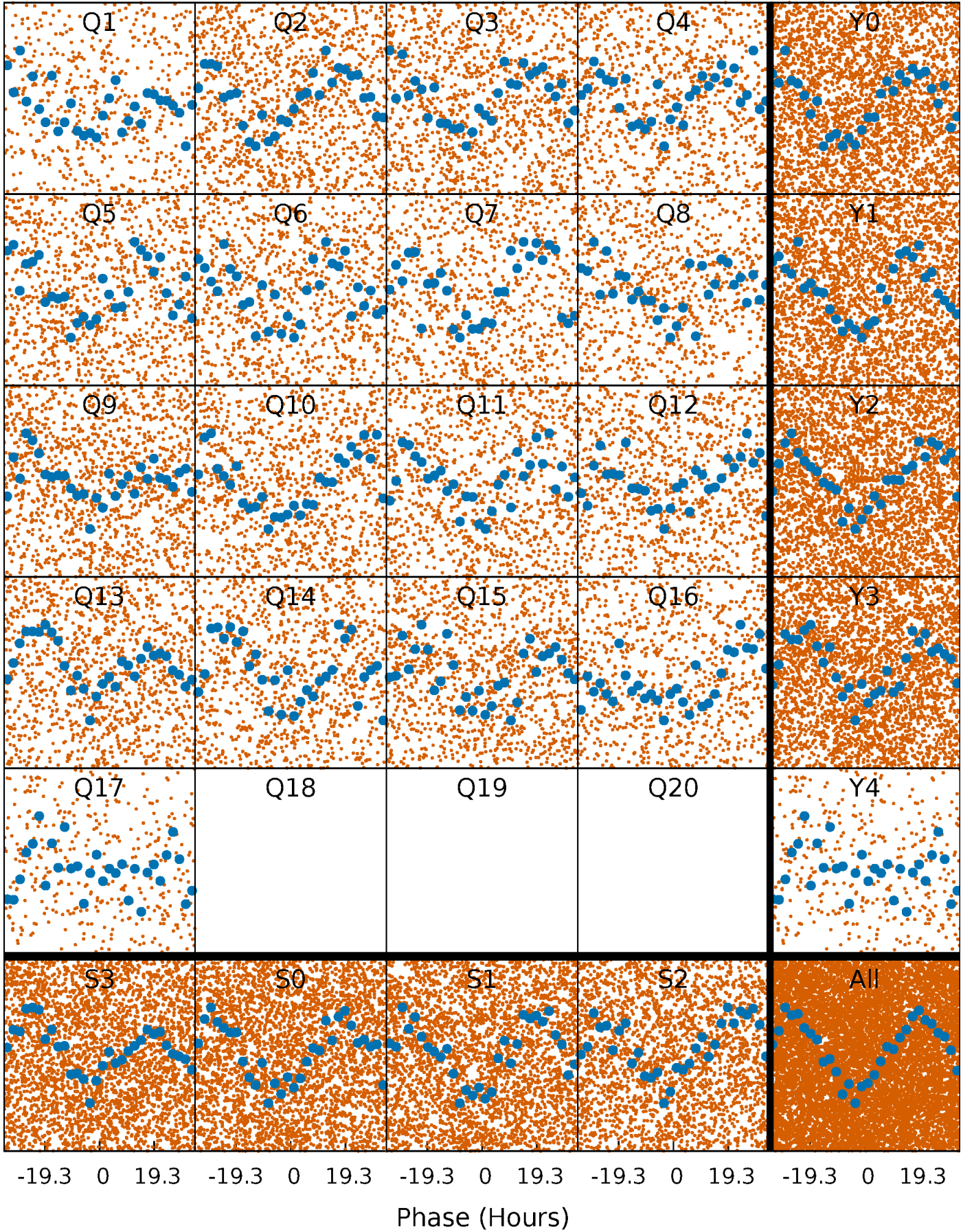


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



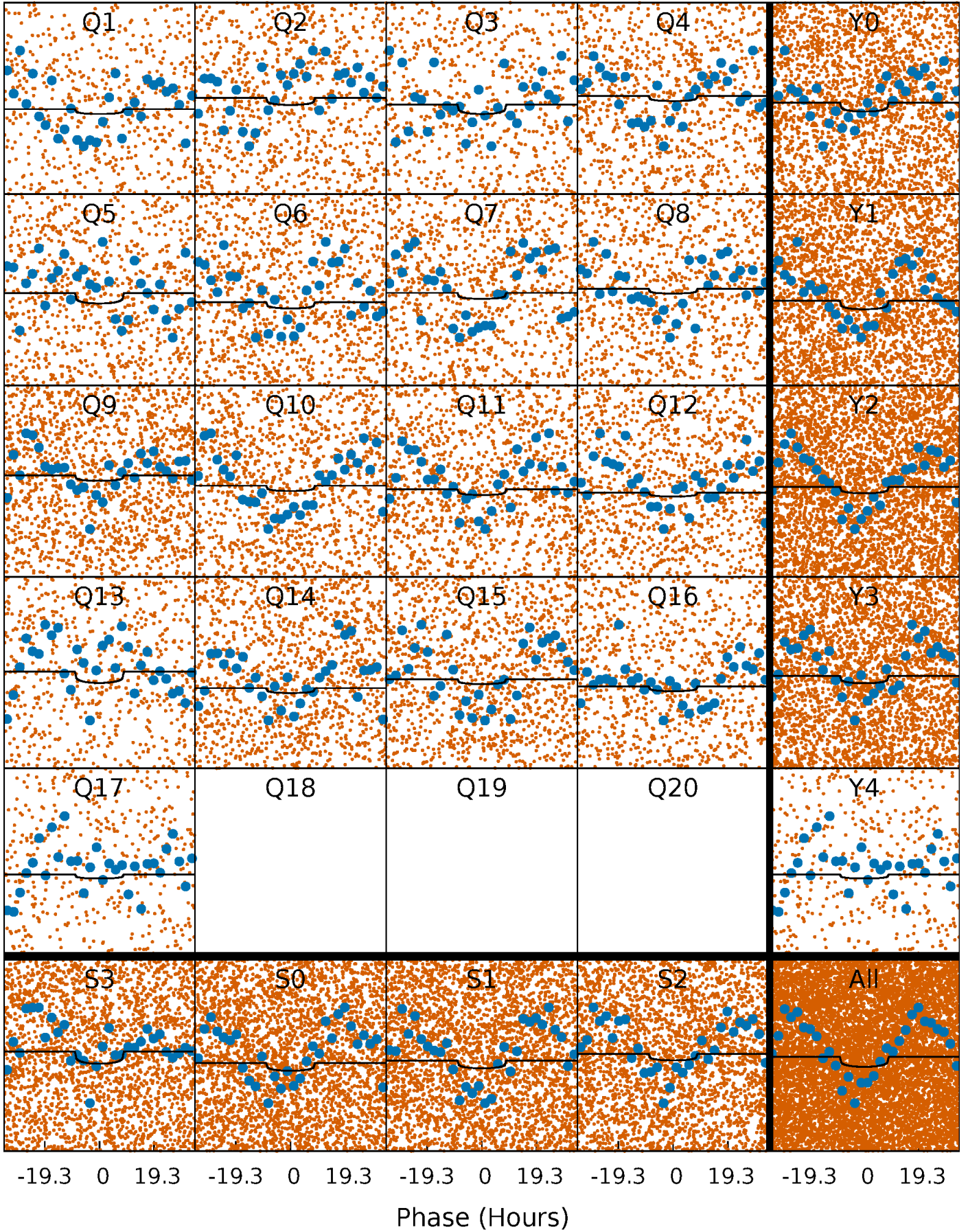
PDC Quarter-Phased Transit Curves

TCE 009041558-01 P= 5.651970 Days $T_0=133.658142$ (BKJD)



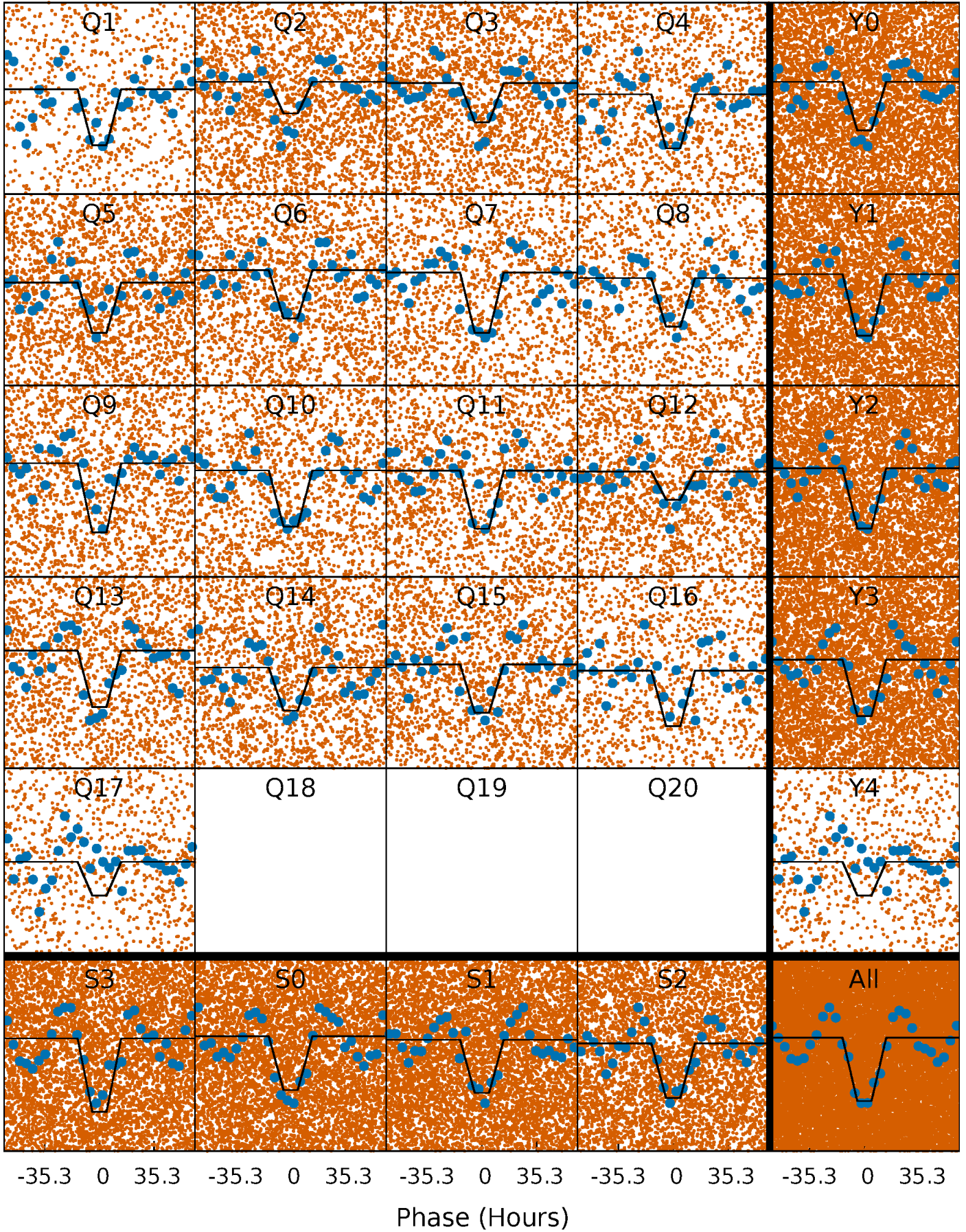
DV Quarter-Phased Transit Curves

TCE 009041558-01 P= 5.651970 Days $T_0=133.658142$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

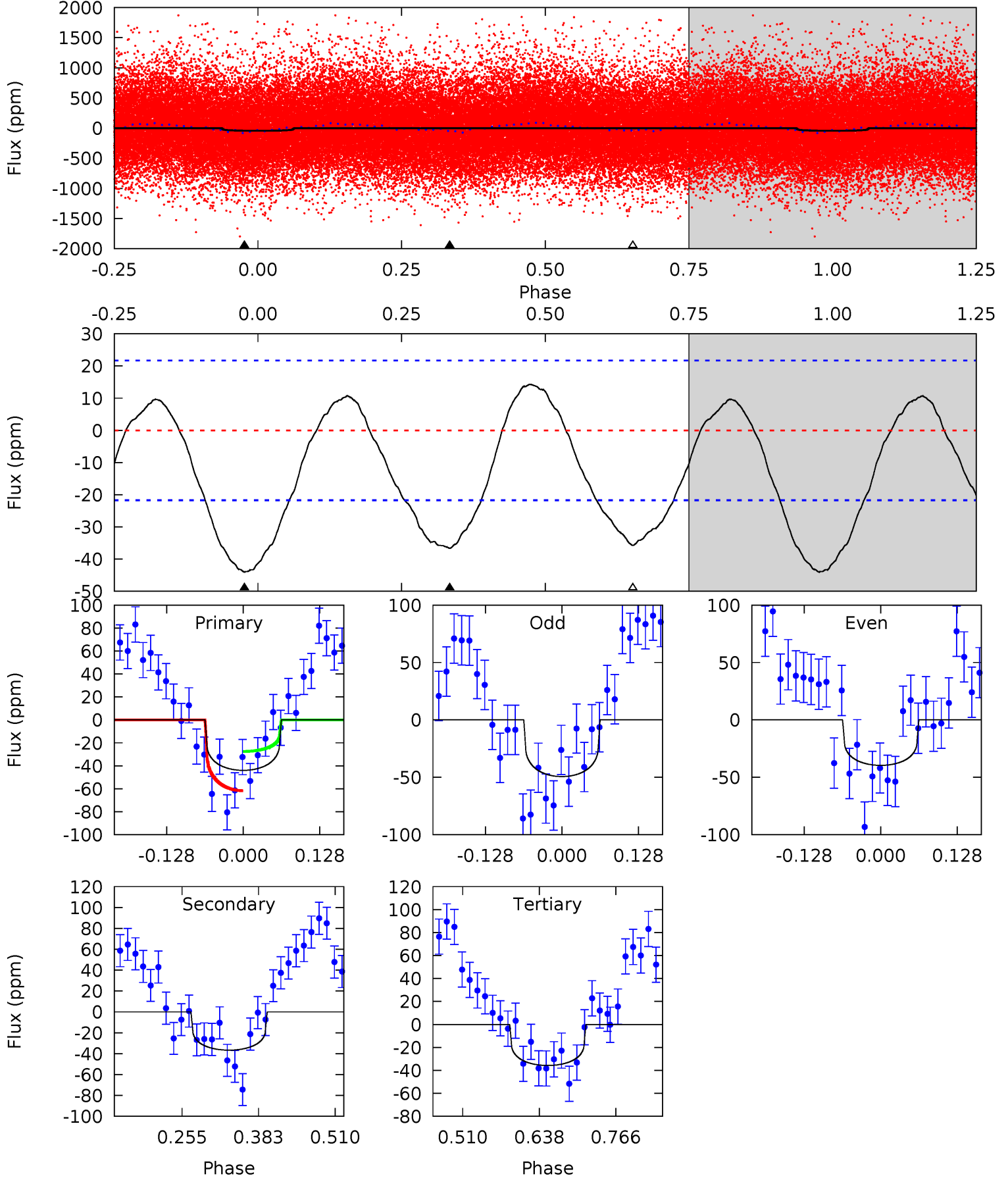
TCE 009041558-01 P= 5.653121 Days $T_0=133.359041$ (BKJD)



DV Model-Shift Uniqueness Test

009041558-01, P = 5.651970 Days, E = 128.006172 Days

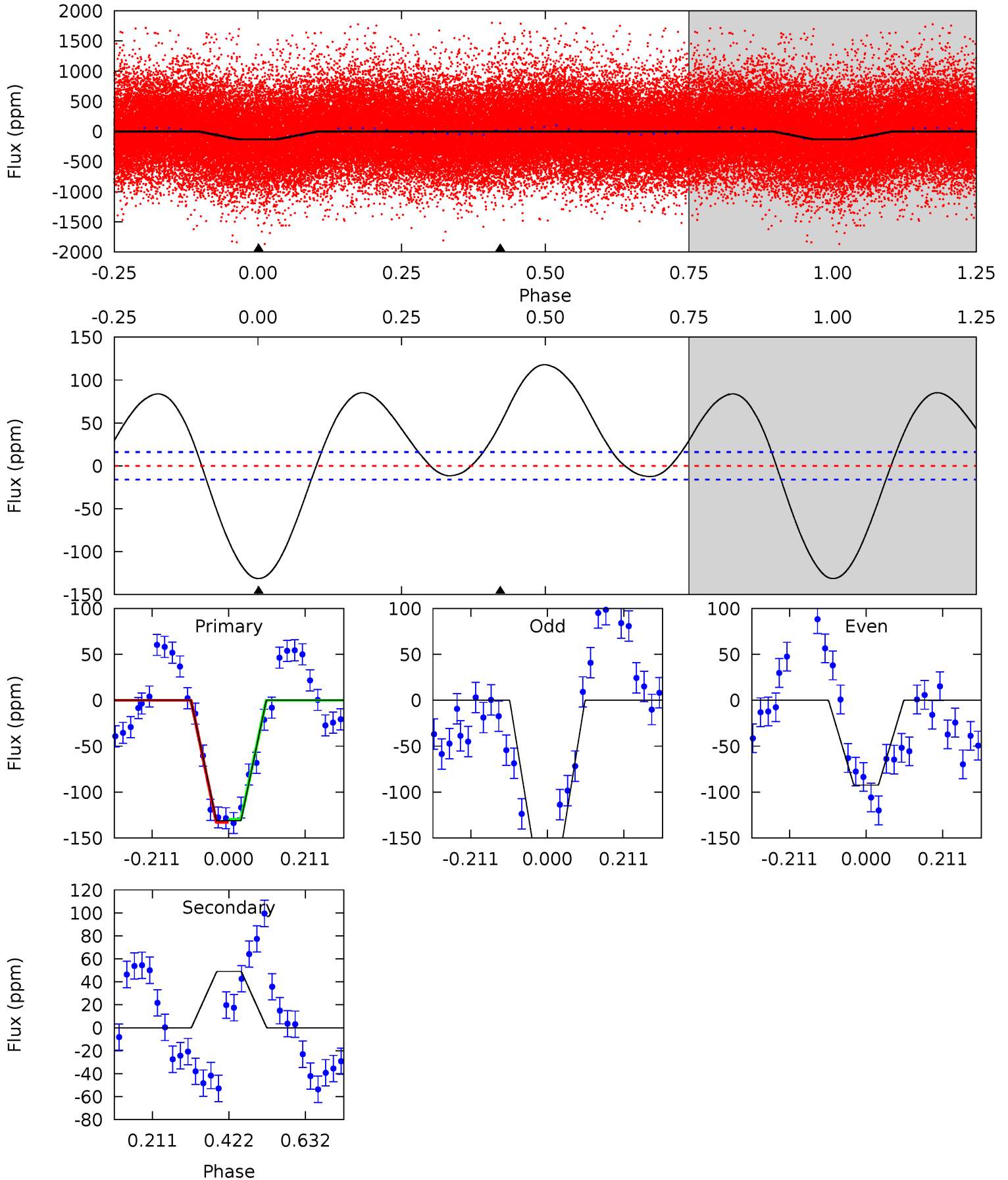
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.13	7.61	7.43	0	4.51	1.52	3.44	1.70	9.13	0.18	7.61	1.01	1.04	0.25	3.55



Alt Model-Shift Uniqueness Test

009041558-01, P = 5.653121 Days, E = 127.705920 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.0	-13.4	0	0	4.41	1.25	7.07	36.0	36.0	-13.4	-13.4	10.5	1.04	0.47	0.43



Stellar Parameters For KIC 009041558

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5885^{+158}_{-193}	$4.409^{+0.124}_{-0.186}$	$-0.280^{+0.300}_{-0.300}$	$0.983^{+0.279}_{-0.150}$	$0.904^{+0.119}_{-0.086}$	$1.340^{+0.737}_{-0.642}$
	+3%/-3%	+3%/-4%	+107%/-107%	+28%/-15%	+13%/-10%	+55%/-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 009041558-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-37 ± 5	$1.81^{+1.88}_{-1.20}$	1471^{+111}_{-87}	3884^{+2162}_{-794}	22^{+179}_{-17}
Alt.	49 ± 4	$2.32^{+1.92}_{-1.54}$	1473^{+111}_{-88}	-3764^{+619}_{-2134}	$-17.752^{+12.520}_{-144.962}$

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

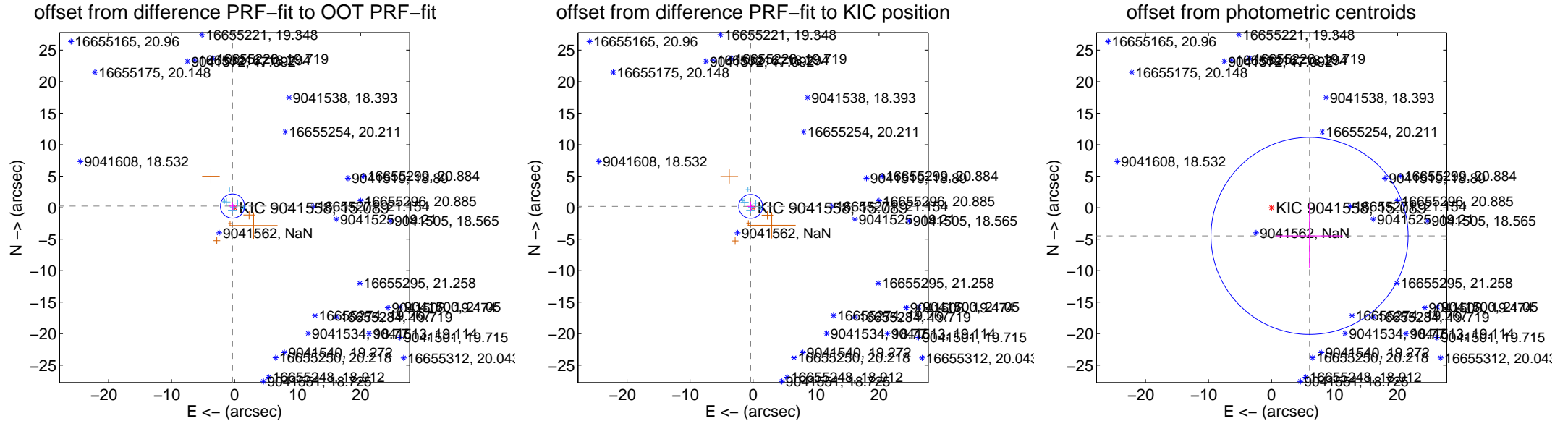
DV Centroid Data

Supplemental centroid analysis for 009041558-01. Kepler magnitude: 15.09. Transit SNR 2.54

There are 8 quarters with good PRF difference image offsets

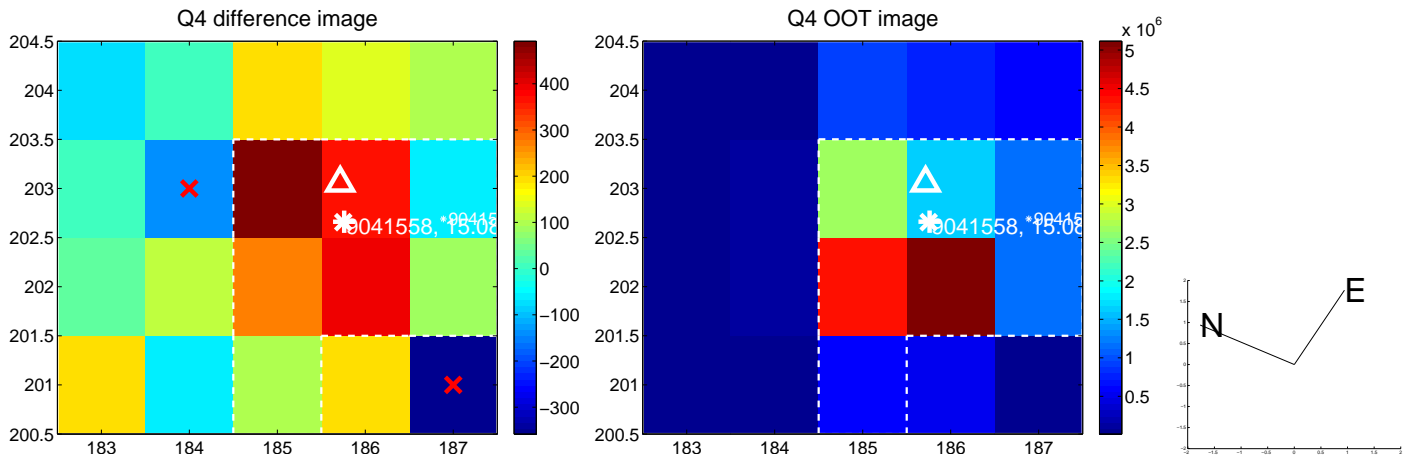
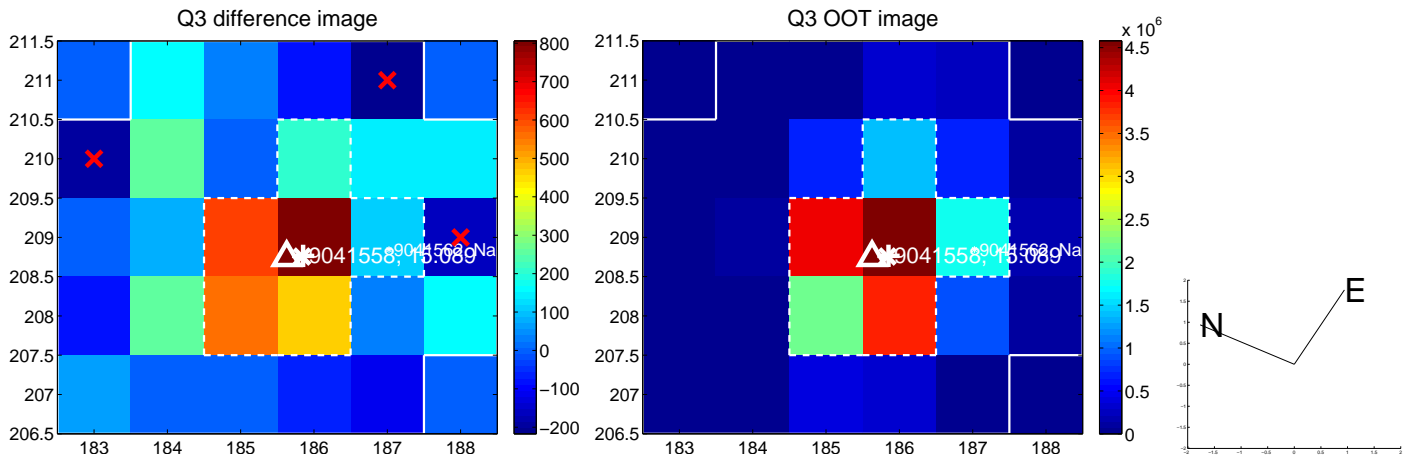
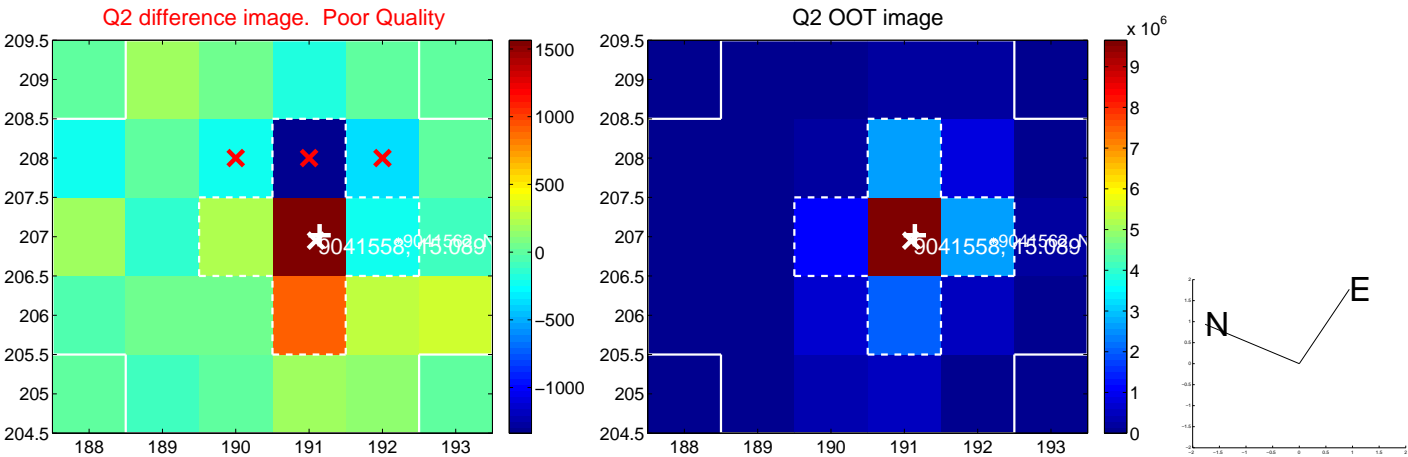
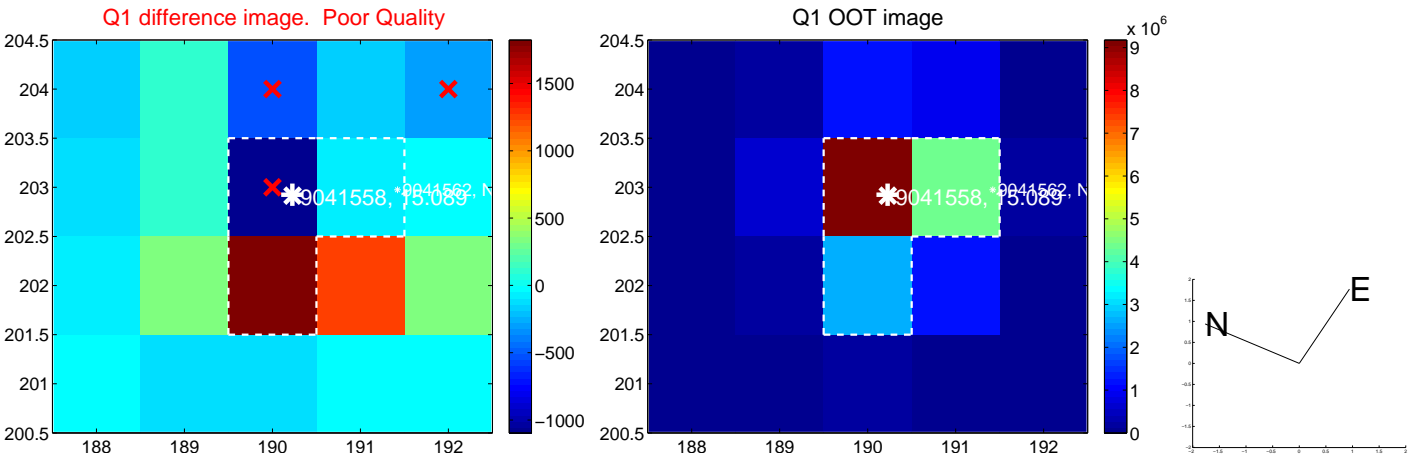
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.415 ± 0.639	0.65	0.329 ± 0.515	0.253 ± 0.627
PRF-fit source offset from KIC position	0.429 ± 0.631	0.68	0.378 ± 0.506	0.202 ± 0.745
photometric centroid source offset	7.52 ± 5.21	1.44	-6.03 ± 5.28	-4.48 ± 5.10

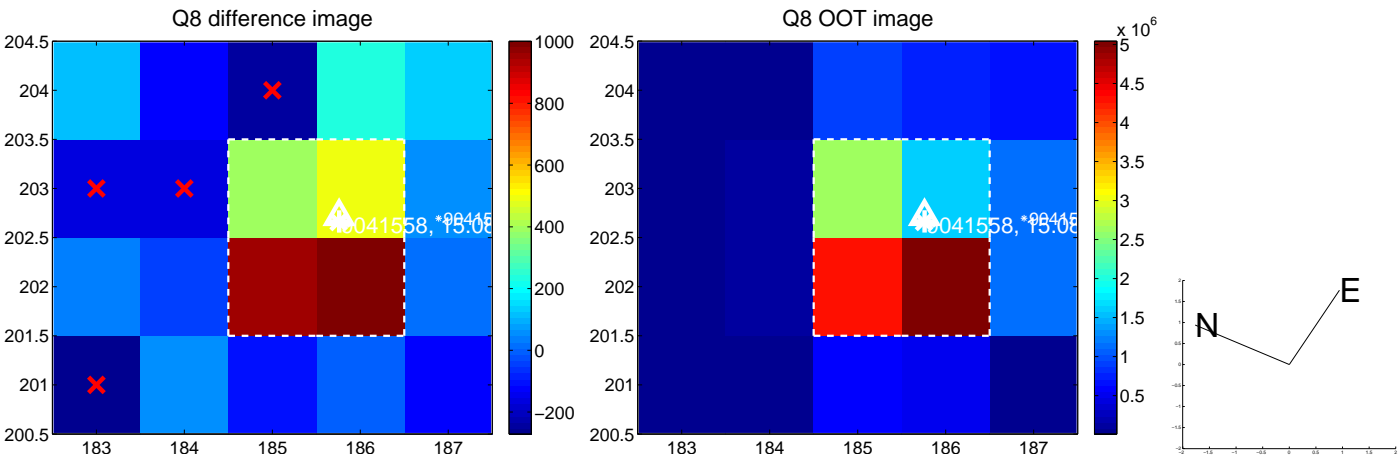
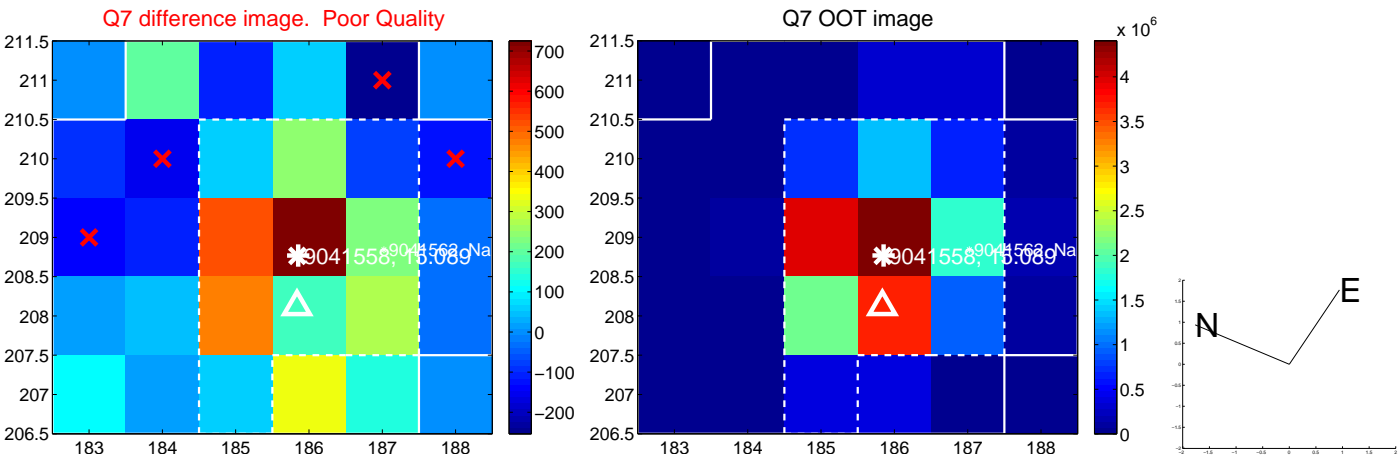
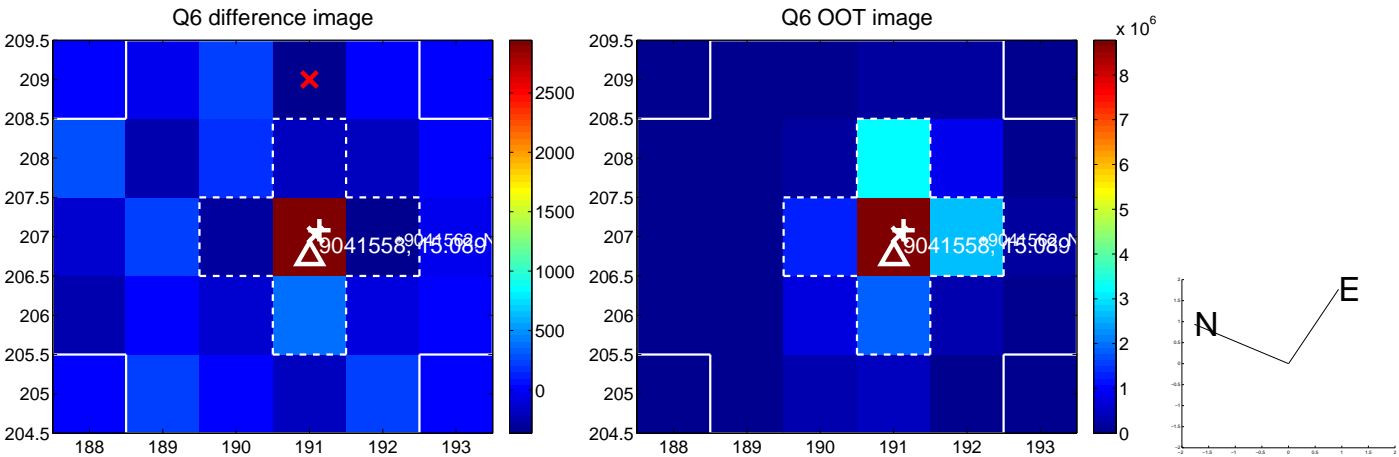
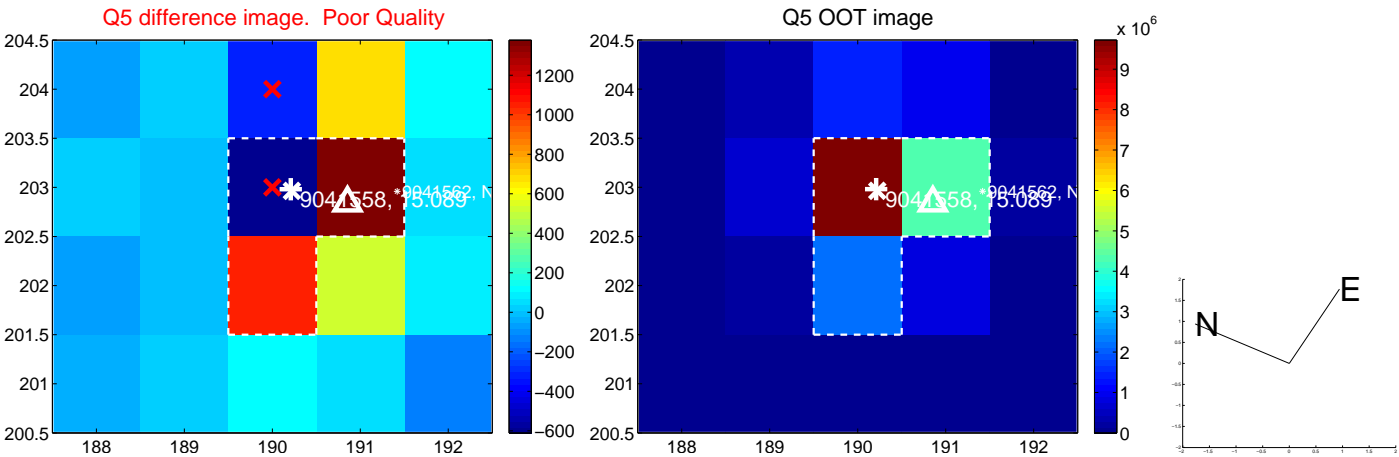


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

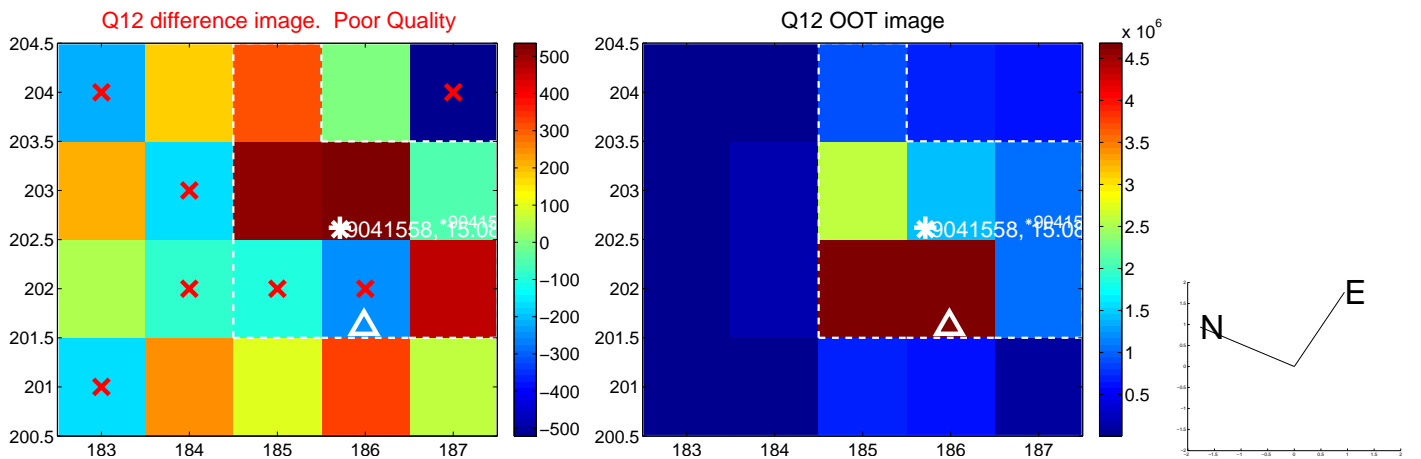
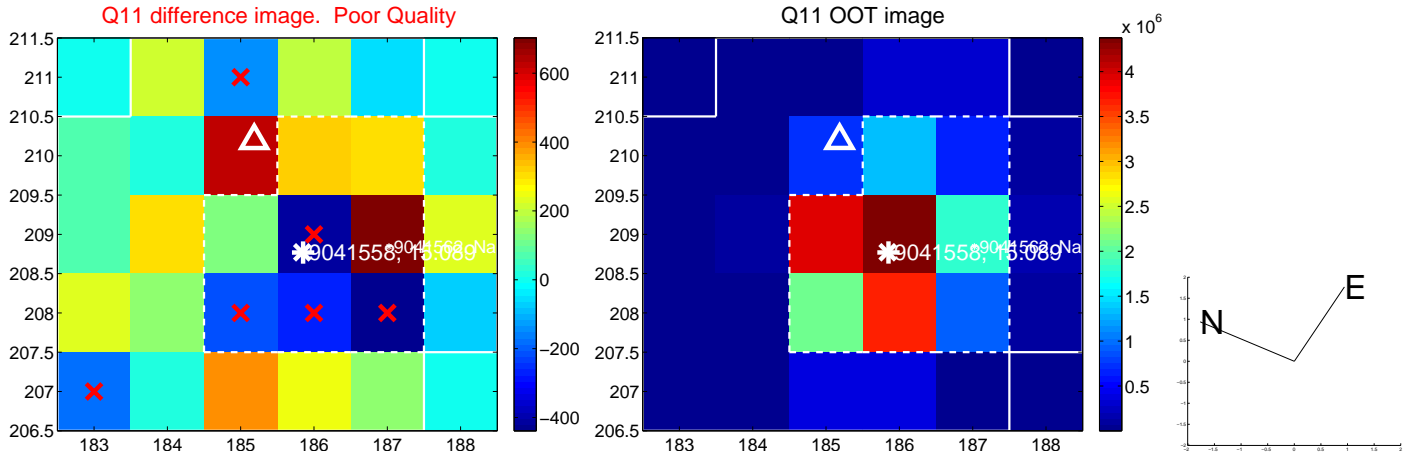
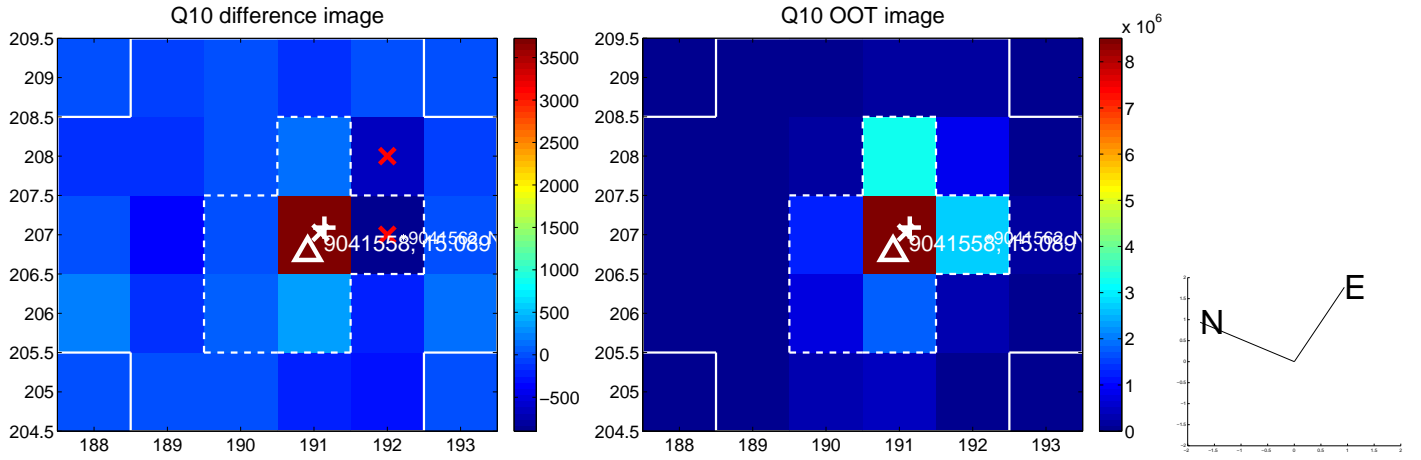
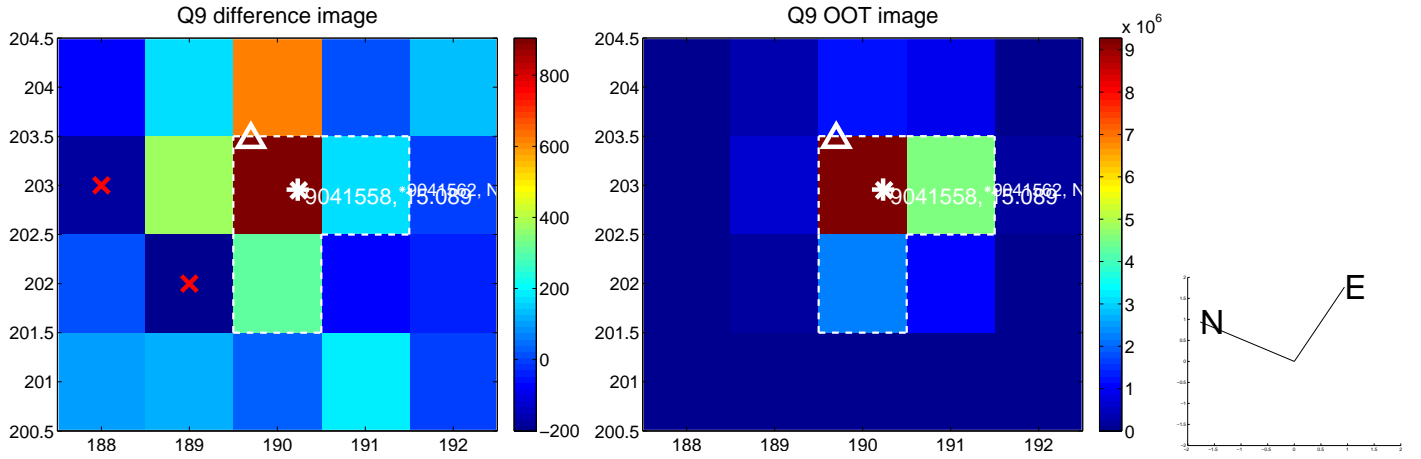
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



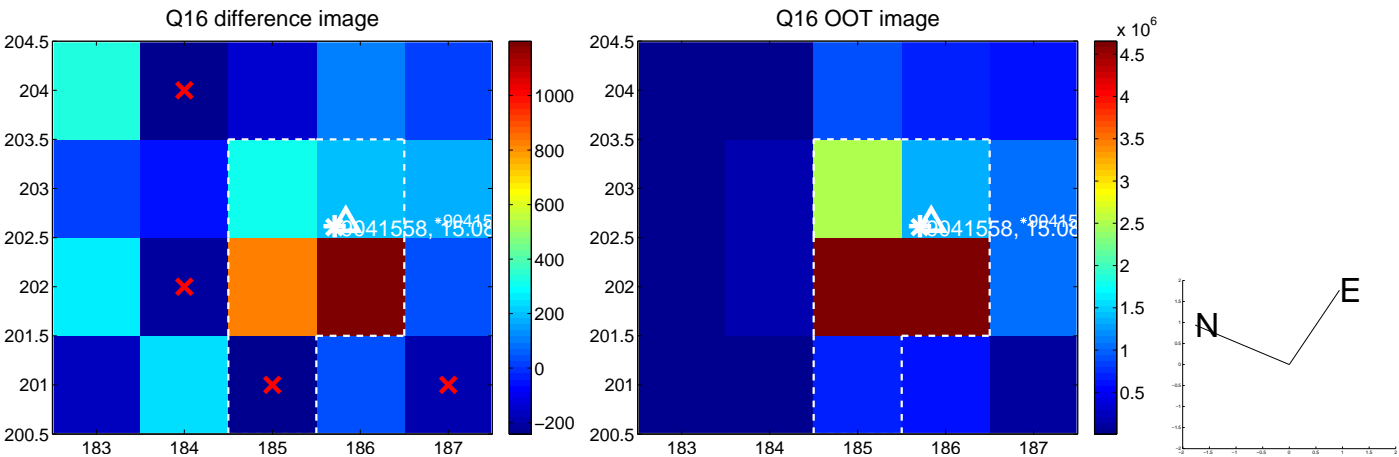
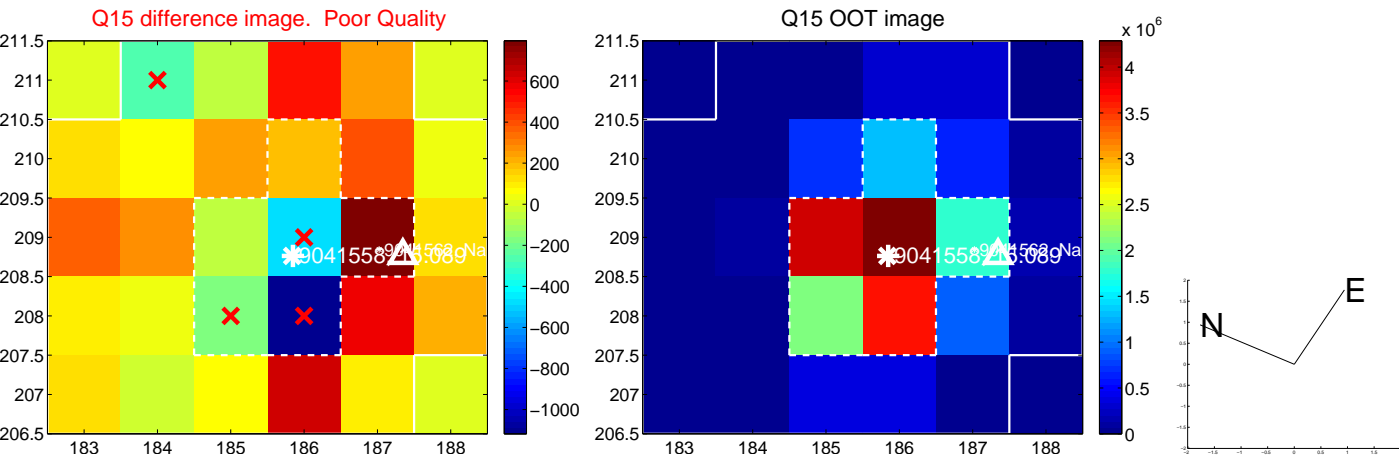
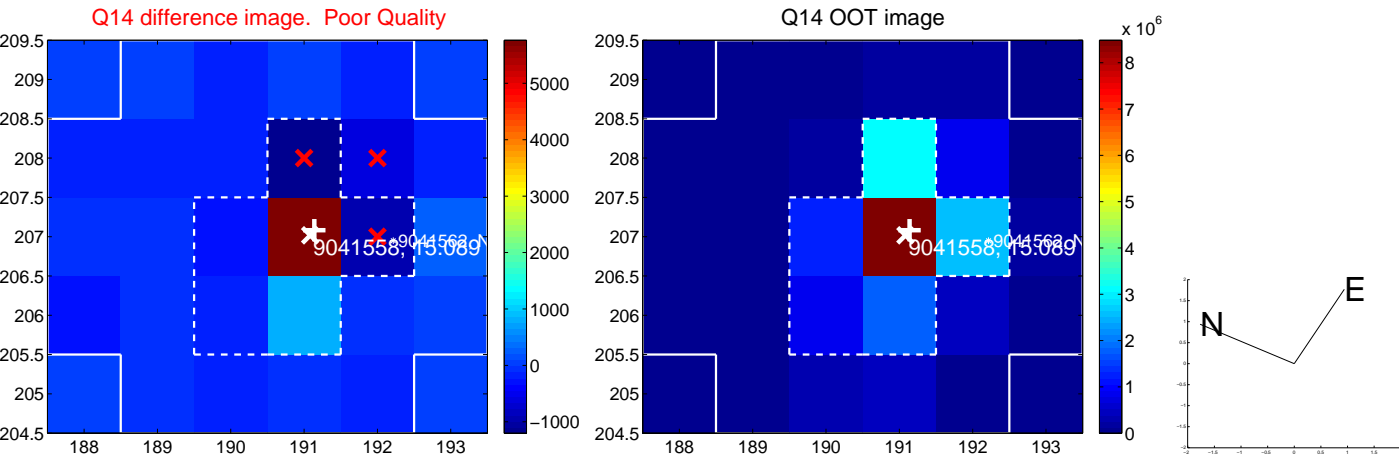
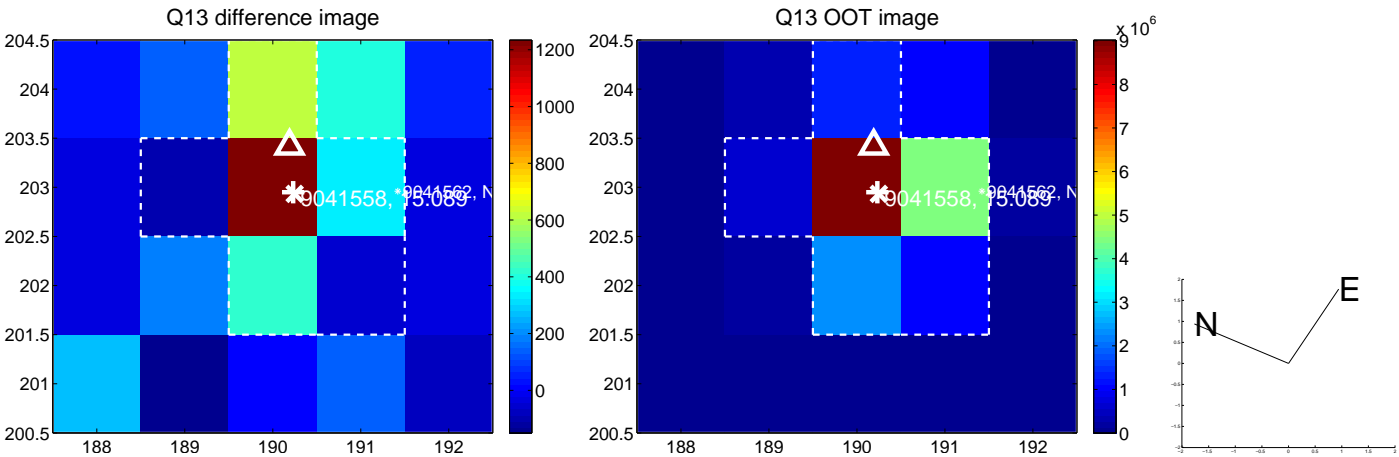
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



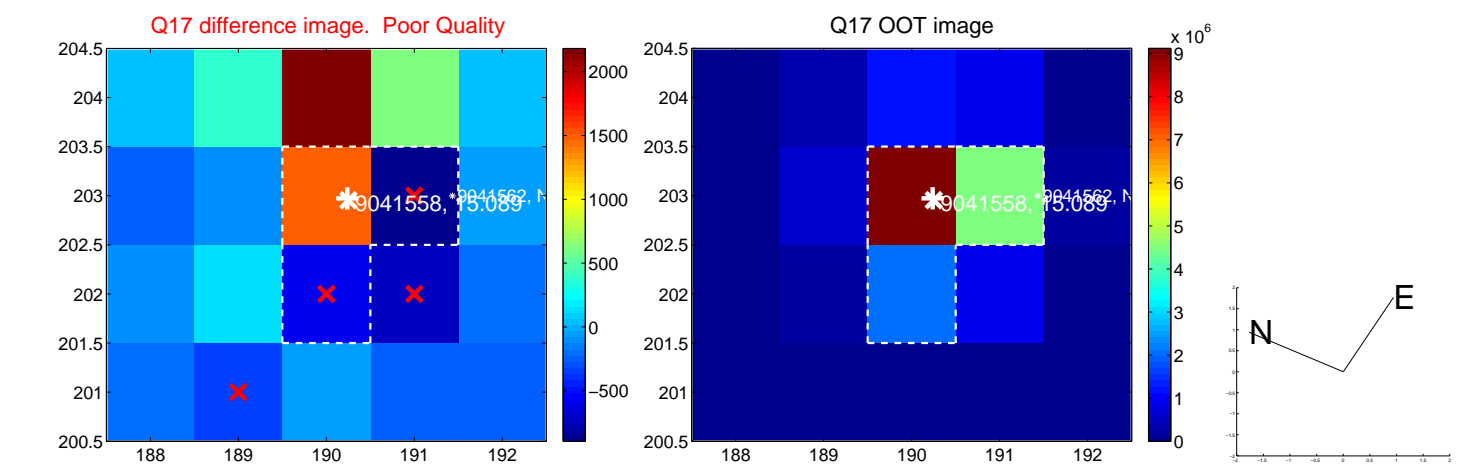
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



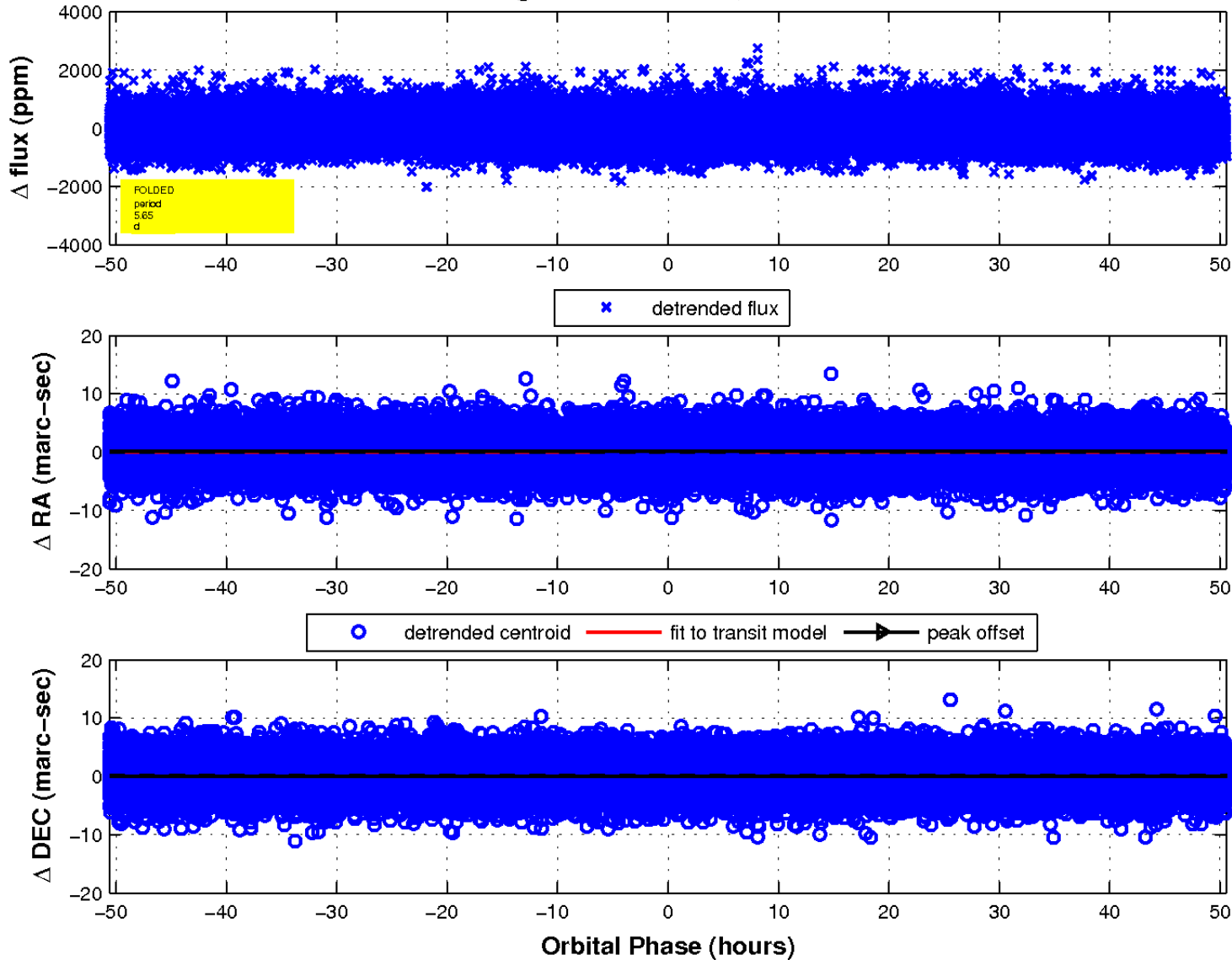
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

