

KIC 008176564

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})
008176564-01	OBS	2720.01	6.571523	132.751889	56.7	3.474	28.7	29.2	1.43	6042	1.28	508.97

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008176564-01	OBS	PC	1.00	0	0	0	0	CENT_SATURATED

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

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

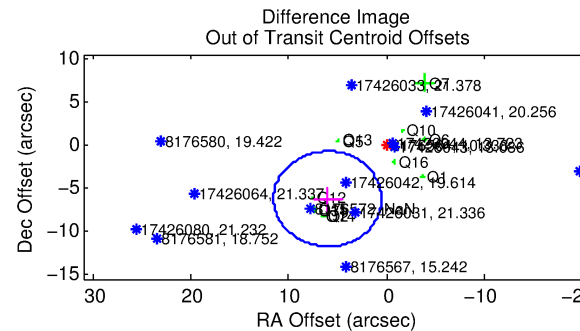
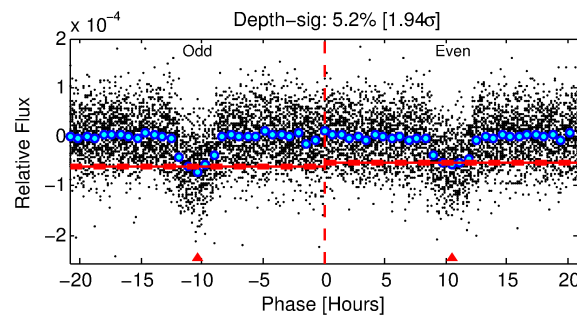
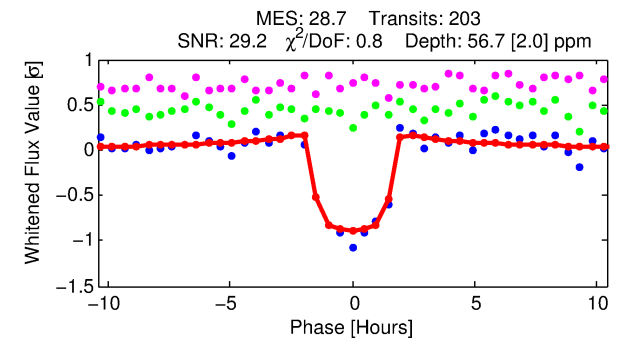
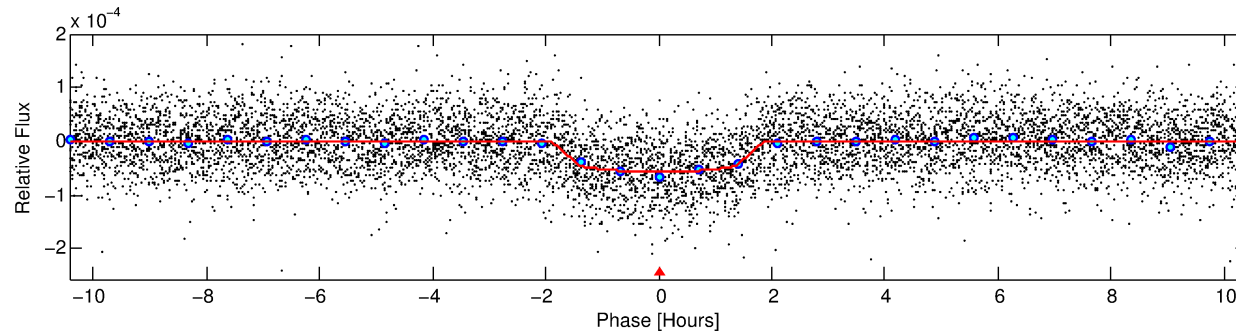
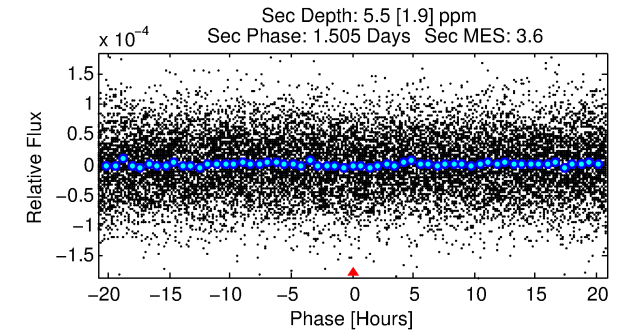
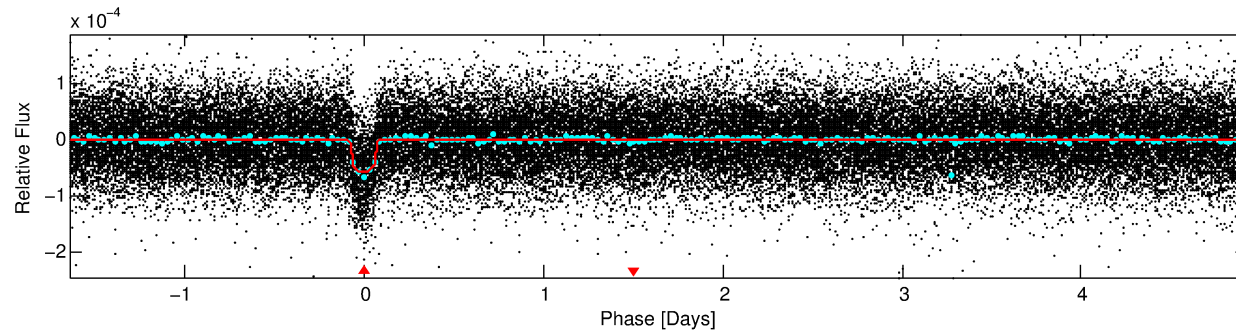
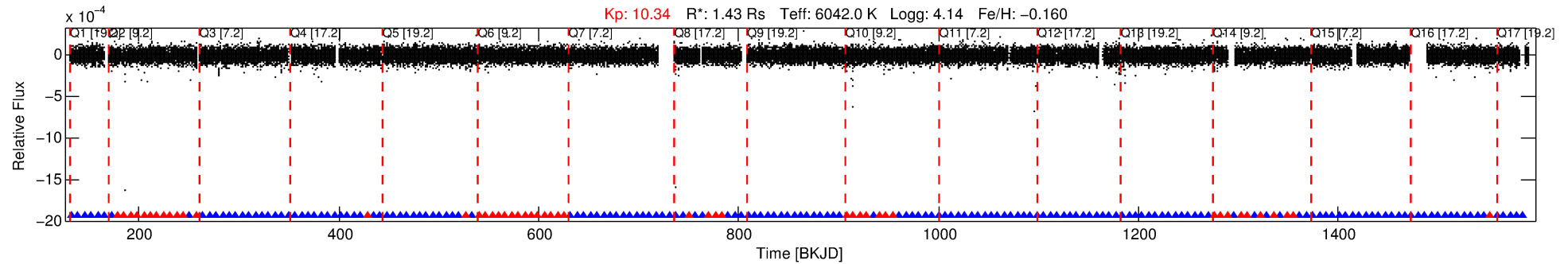
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008176564-01

No Significant Match Found

DV One-Page Summary

KIC: 8176564 Candidate: 1 of 1 Period: 6.572 d
KOI: K02720.01 Corr: 0.952



DV Fit Results:

Period = 6.57152 [0.00002] d
Epoch = 132.7519 [0.0018] BKJD
 $R_p/R^* = 0.0082$ [0.0012]
 $a/R^* = 6.30$ [4.66]
 $b = 0.91$ [0.14]
 $\text{Seff} = 508.97$ [32.83]
 $T_{\text{eq}} = 1211$ [20] K
 $R_p = 1.28$ [0.19] R_e
 $a = 0.0694$ [0.0022] AU
 $A_g = 8.82$ [3.97] [1.97σ]
 $T_{\text{eff}} = 3227$ [365] K [5.52σ]

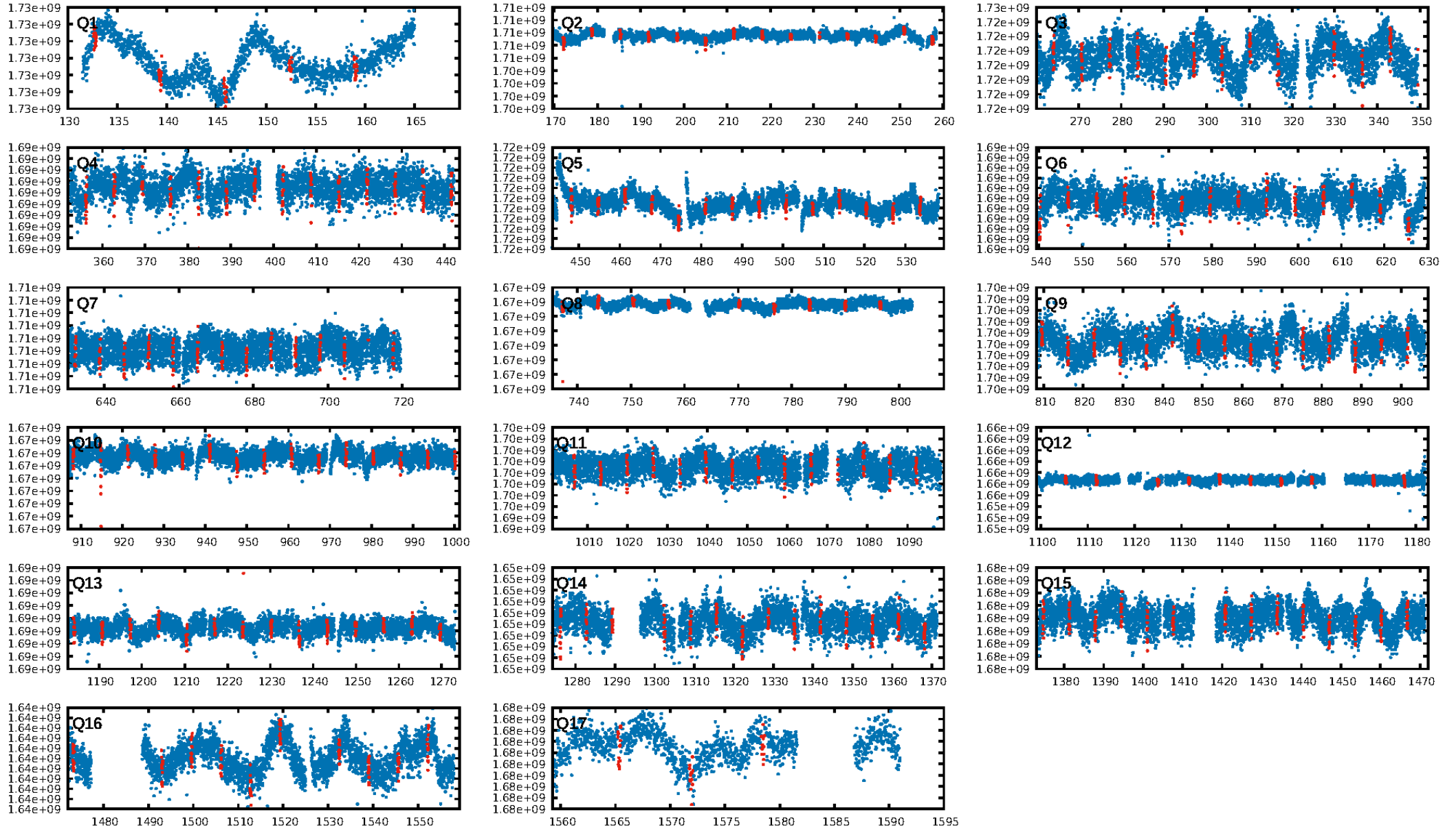
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.68e-163
RollingBand-fgt: 0.75 [146/195]
GhostDiagnostic-chr: 8.145
Centroid-sig: 0.0%
Centroid-so: 1.733 arcsec [3.59σ]
OotOffset-rm: 8.674 arcsec [4.72σ]
KicOffset-rm: 9.276 arcsec [5.07σ]
OotOffset-st: 4/4/2/3 [13]
KicOffset-st: 4/4/2/3 [13]
DiffImageQuality-fgm: 0.23 [3/13]
DiffImageOverlap-fno: 1.00 [17/17]

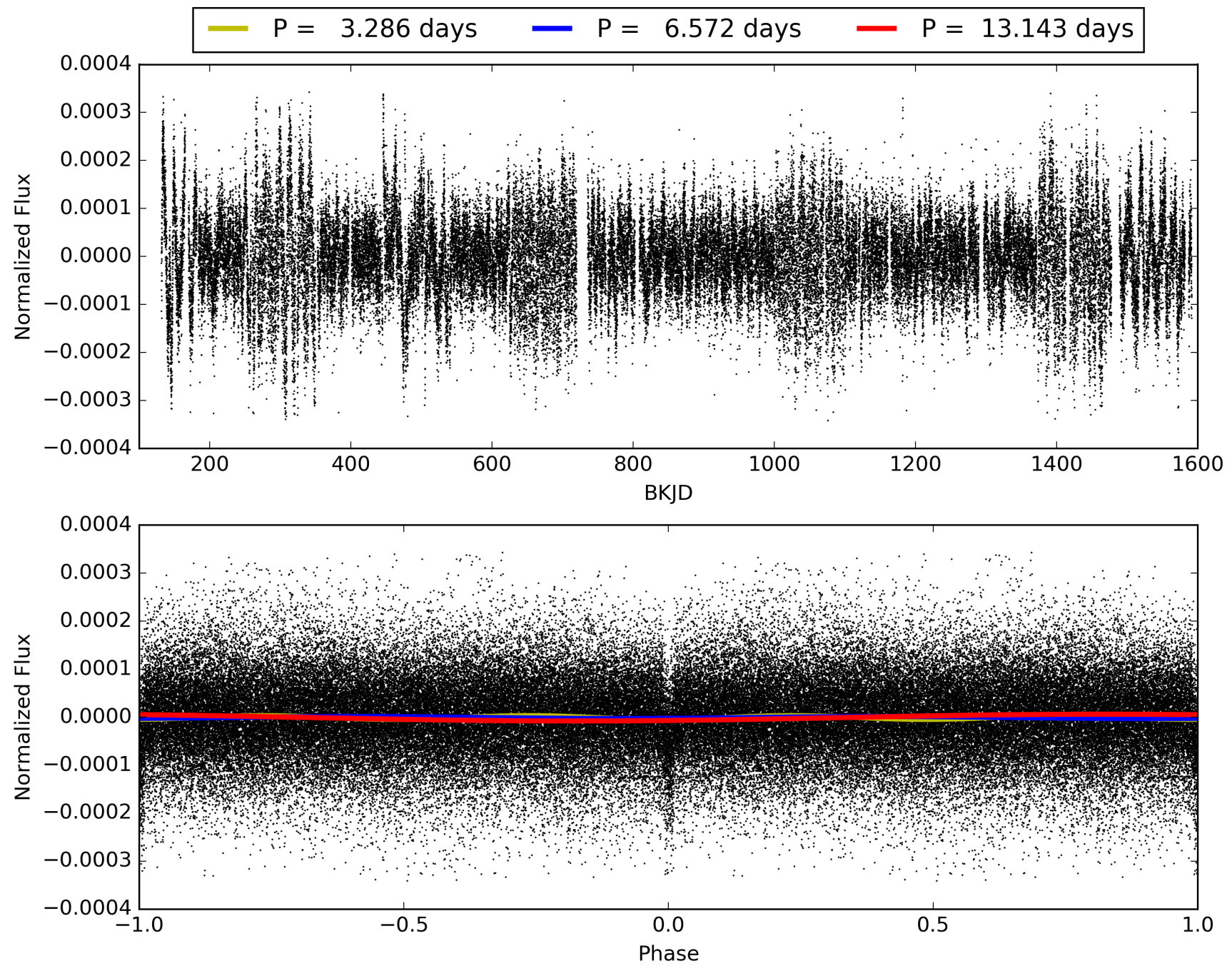
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 06:36:56 Z

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

TCE 008176564-01, PDC Light Curves

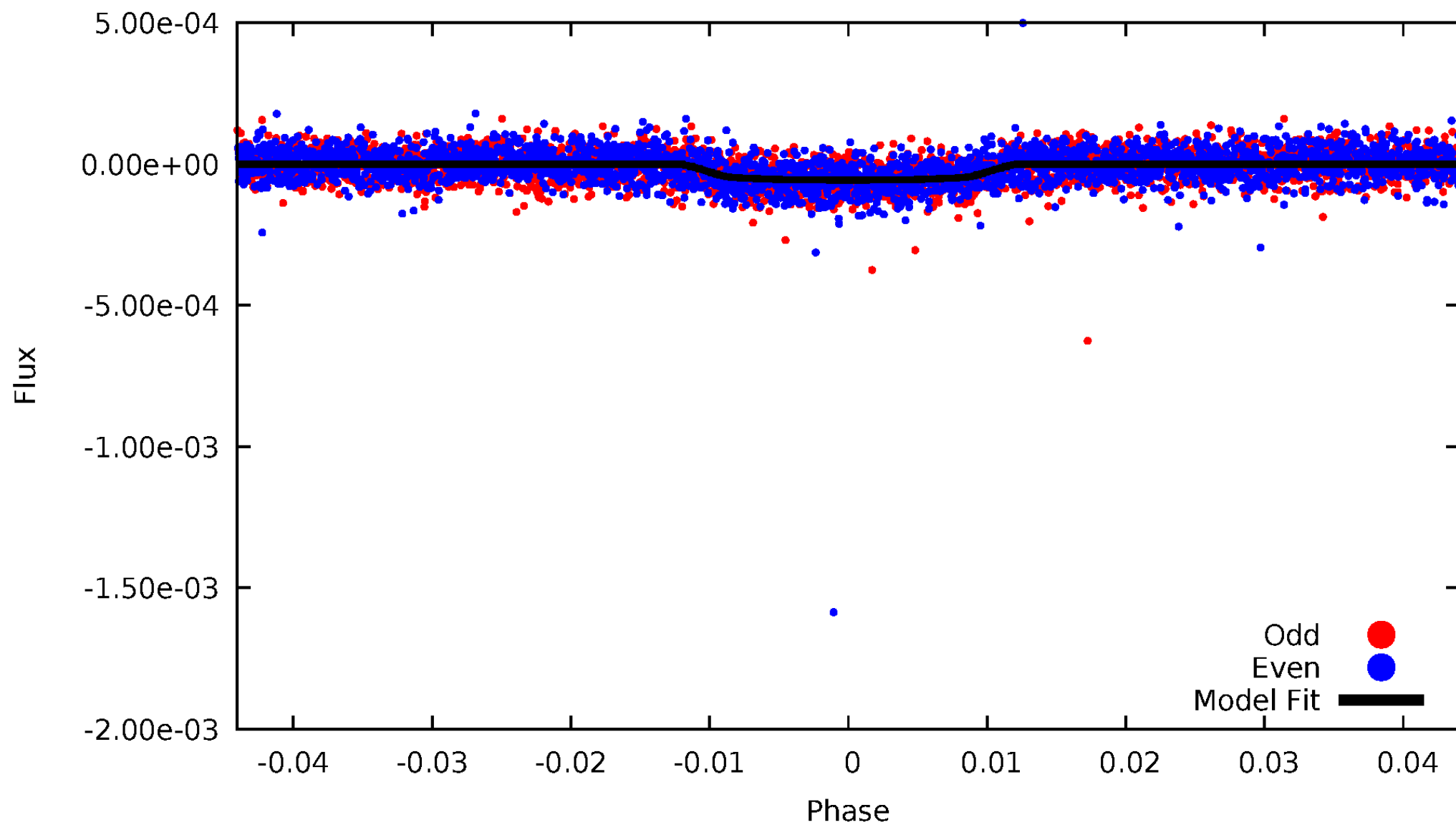


TCE 008176564-01



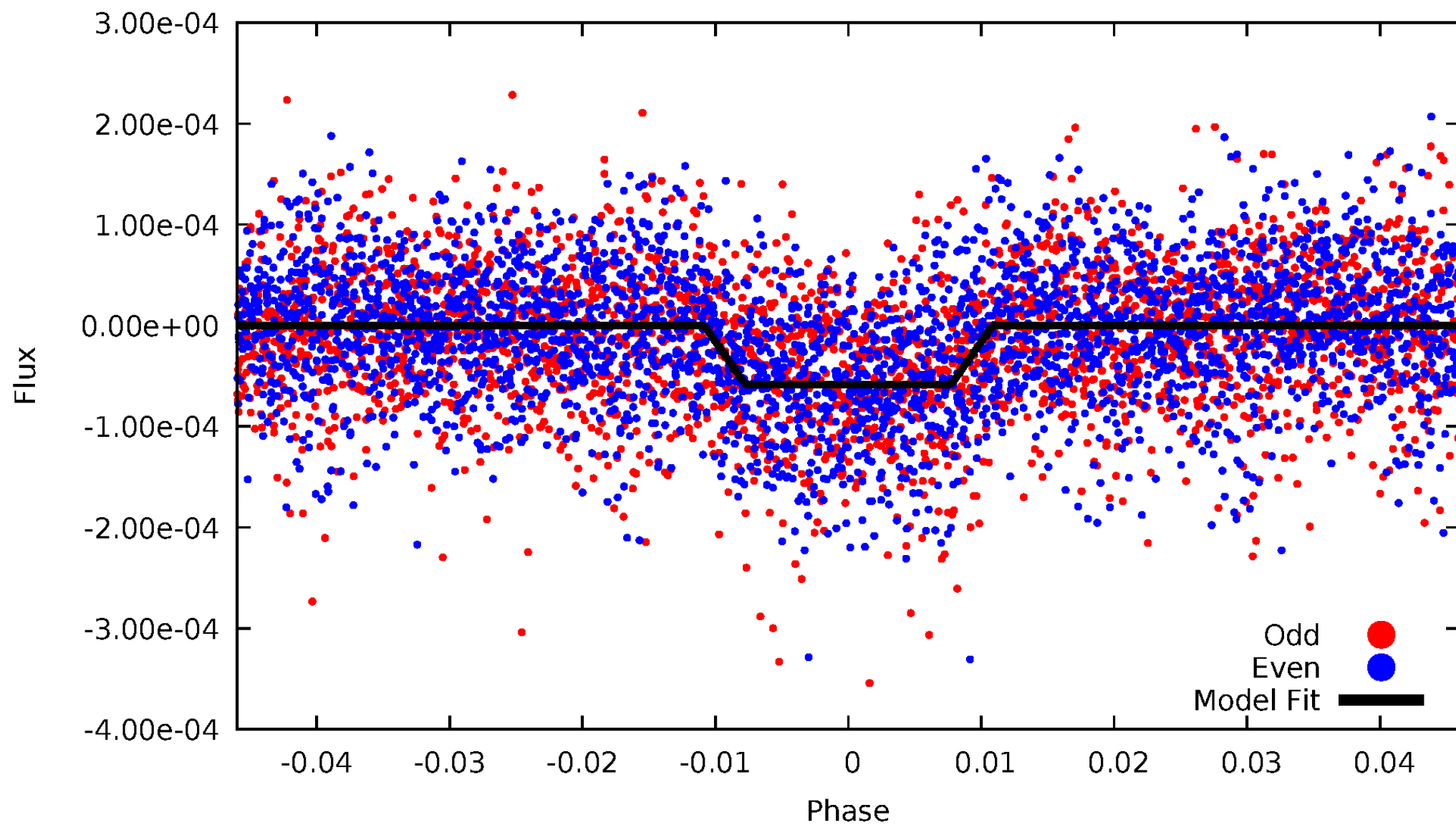
DV Odd/Even

TCE 008176564-01



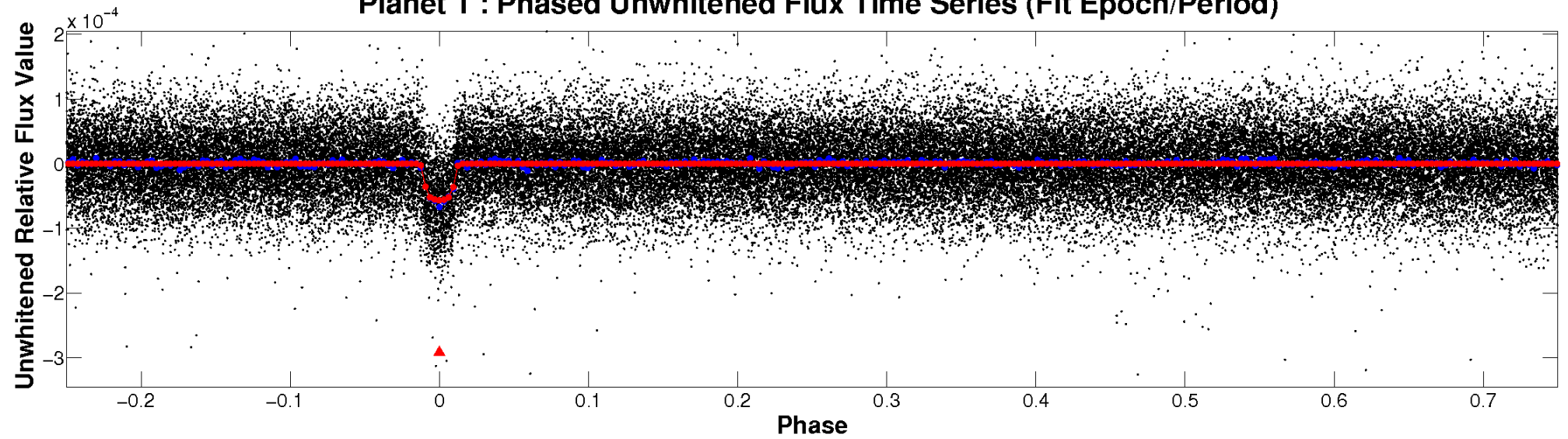
ALT Odd/Even

TCE 008176564-01

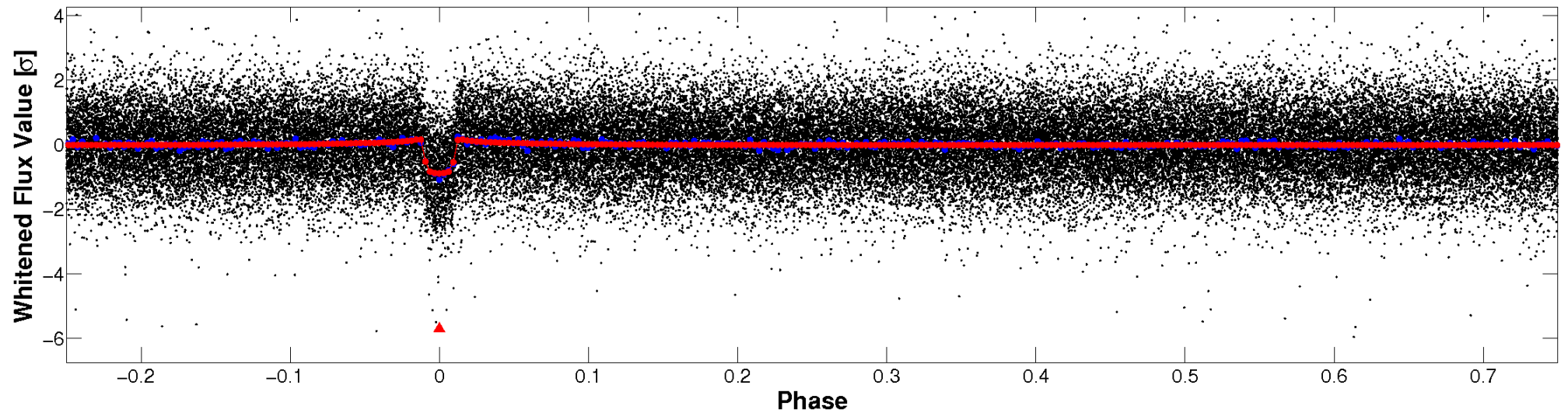


Non-Whitened Vs. Whitened Light Curve

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

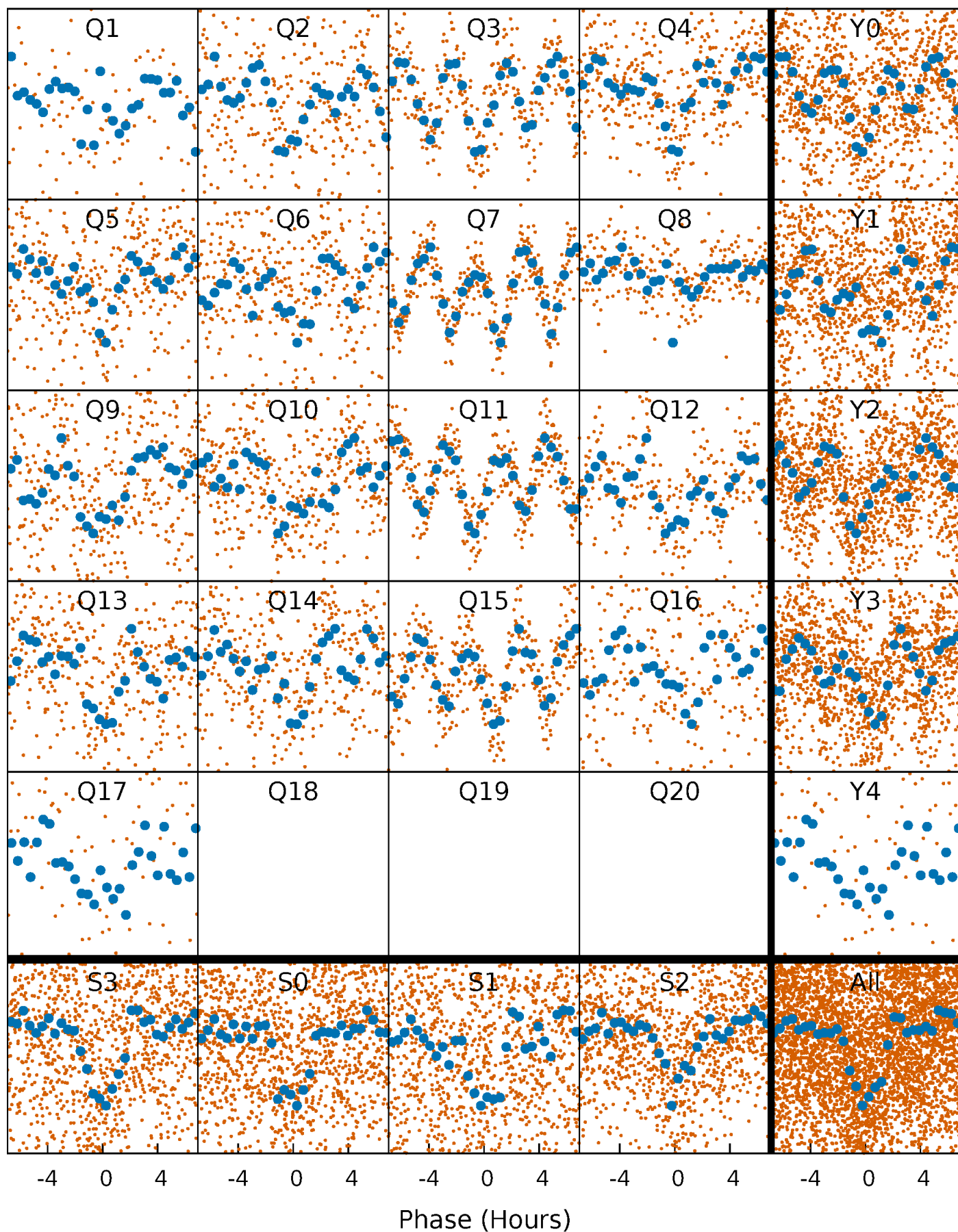


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



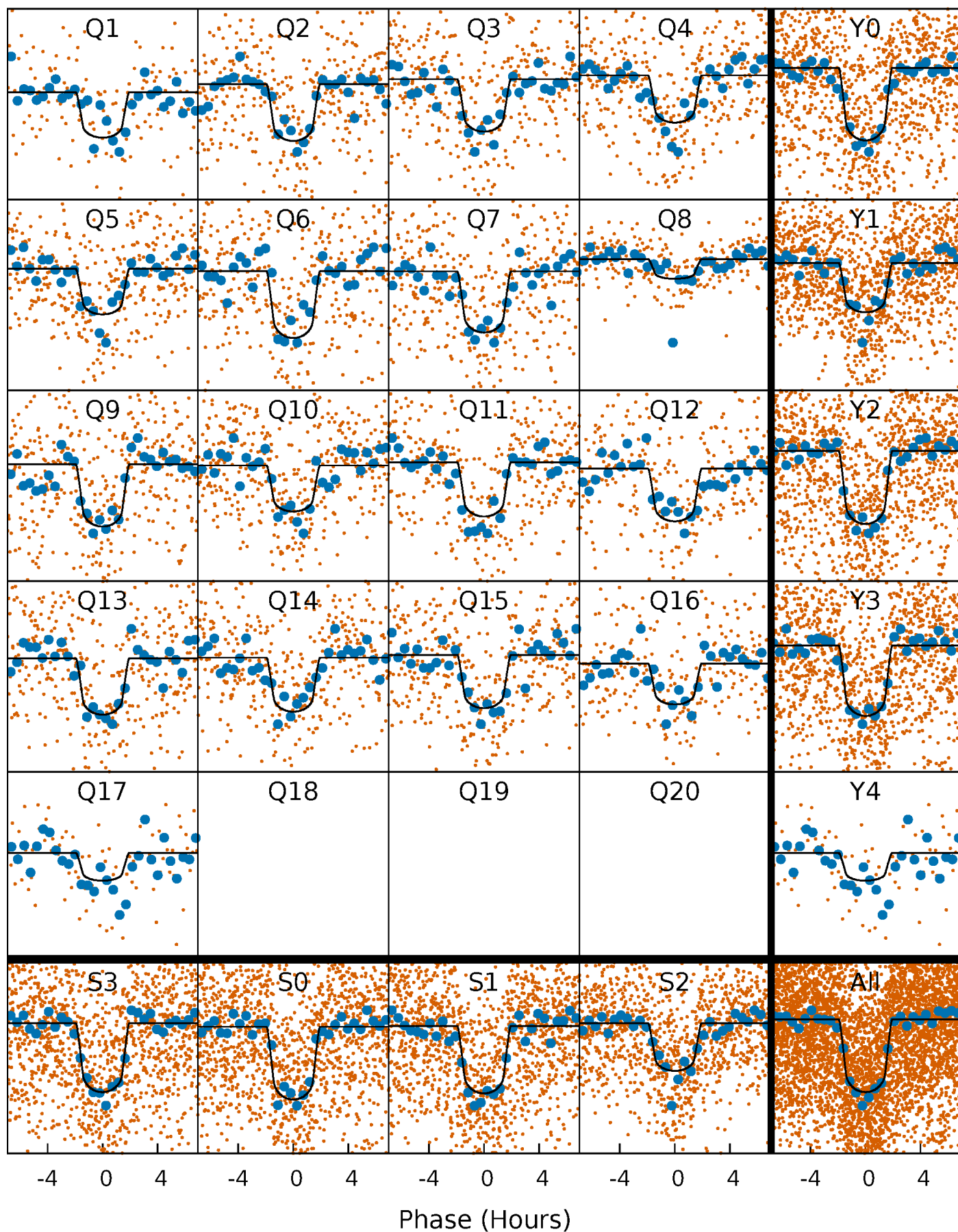
PDC Quarter-Phased Transit Curves

TCE 008176564-01 P= 6.571523 Days $T_0=132.751889$ (BKJD)



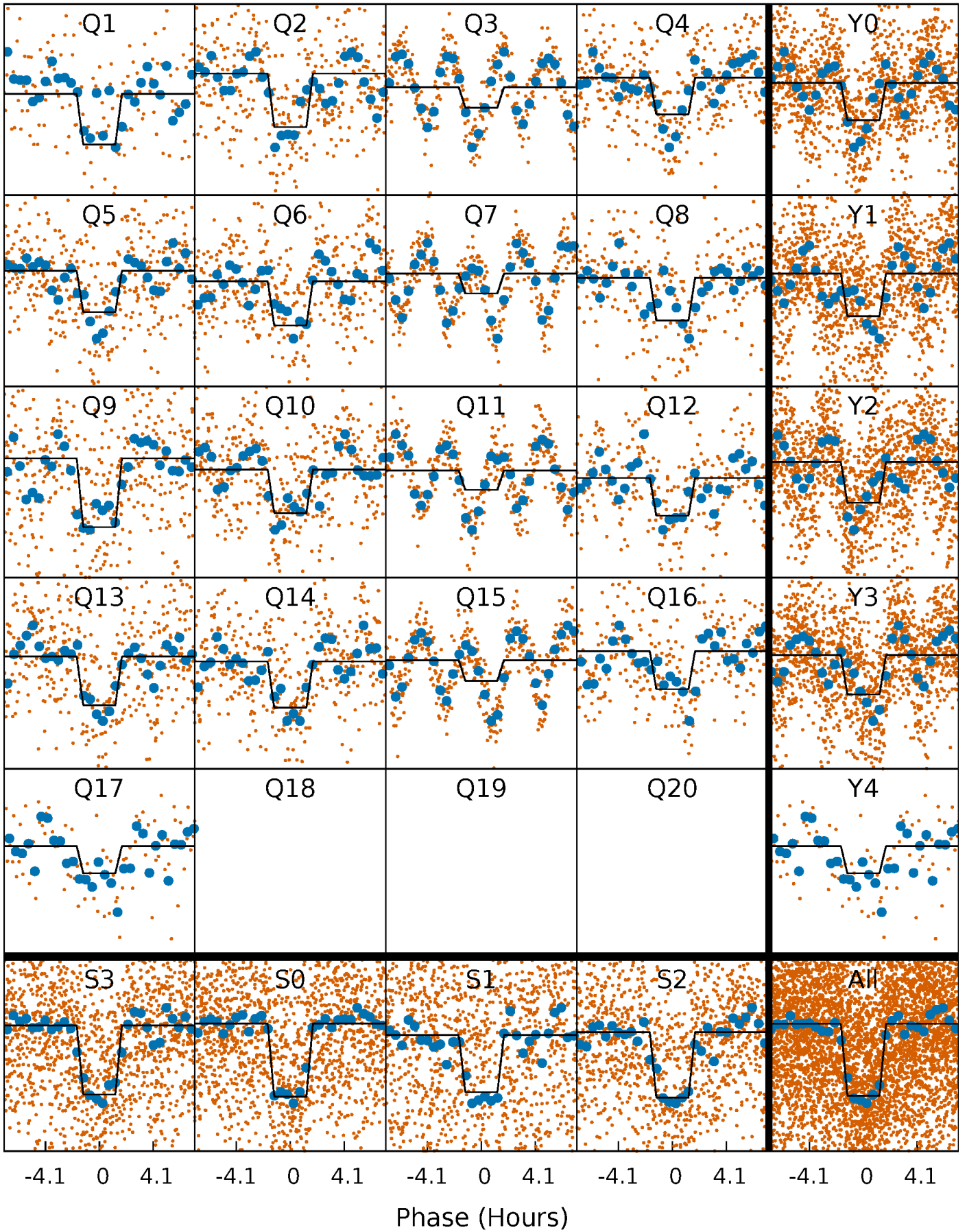
DV Quarter-Phased Transit Curves

TCE 008176564-01 P= 6.571523 Days $T_0=132.751889$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

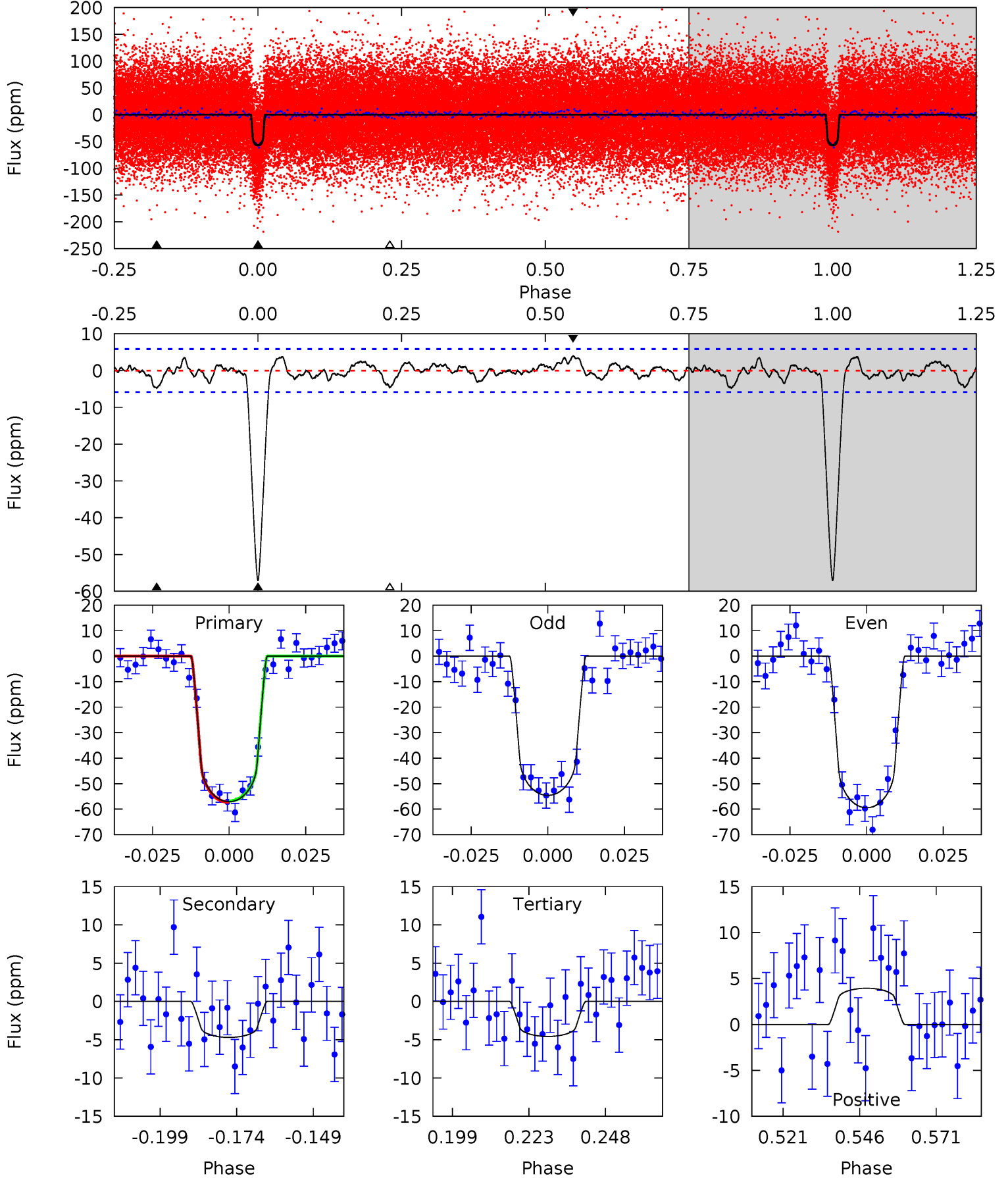
TCE 008176564-01 P= 6.571480 Days $T_0=132.757667$ (BKJD)



DV Model-Shift Uniqueness Test

008176564-01, P = 6.571523 Days, E = 126.180366 Days

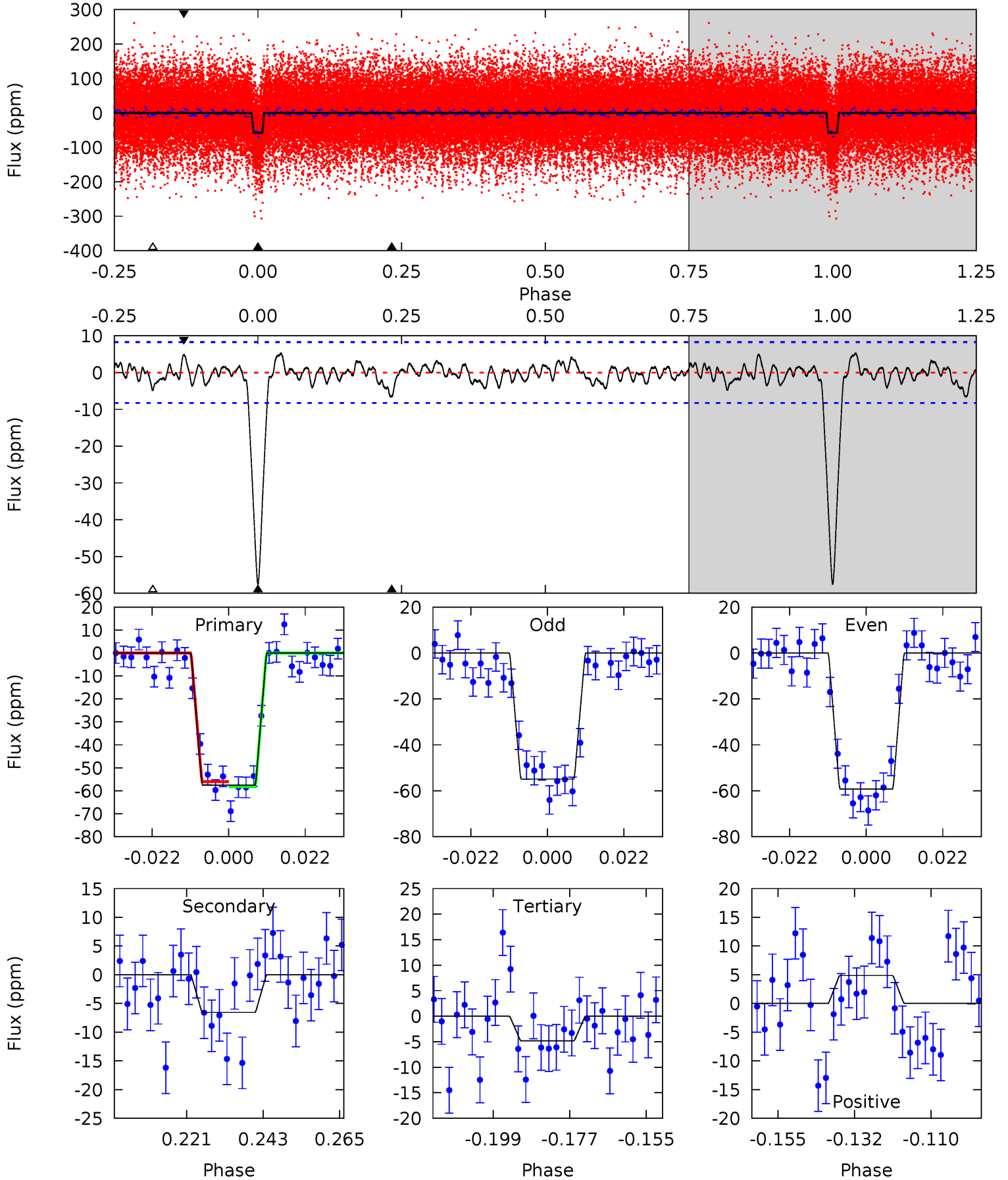
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
47.5	3.90	3.80	3.27	4.85	2.24	1.28	43.7	44.2	0.10	0.63	2.02	1.07	0.06	0.20



Alt Model-Shift Uniqueness Test

008176564-01, P = 6.571480 Days, E = 126.186187 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.9	3.85	2.84	2.86	4.87	2.29	1.08	31.0	31.0	1.01	0.99	1.27	1.03	0.08	0.64



Stellar Parameters For KIC 008176564

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6042^{+81}_{-81}	$4.139^{+0.012}_{-0.013}$	$-0.160^{+0.200}_{-0.150}$	$1.432^{+0.064}_{-0.052}$	$1.029^{+0.088}_{-0.066}$	$0.494^{+0.026}_{-0.033}$
	+1%/-1%	+0%/-0%	+125%/-94%	+4%/-4%	+9%/-6%	+5%/-7%
Source	SPE72	AST10	SPE72	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 008176564-01 / KOI 2720.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-5 ± 1	$1.29^{+0.17}_{-0.18}$	1692^{+25}_{-26}	3531^{+226}_{-208}	$7.410^{+3.109}_{-2.336}$
Alt.	-7 ± 2	$1.21^{+0.18}_{-0.19}$	1693^{+25}_{-26}	3839^{+279}_{-272}	12^{+6}_{-4}

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

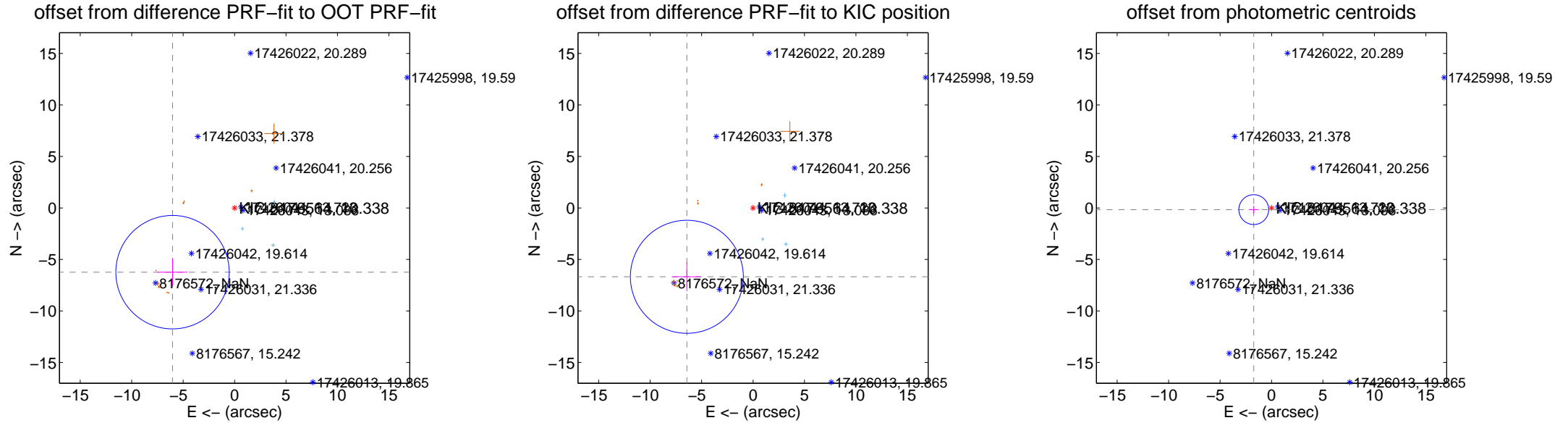
DV Centroid Data

Supplemental centroid analysis for 008176564-01. **Kepler magnitude: 10.34.** Transit SNR 29.16

There are 3 quarters with good PRF difference image offsets

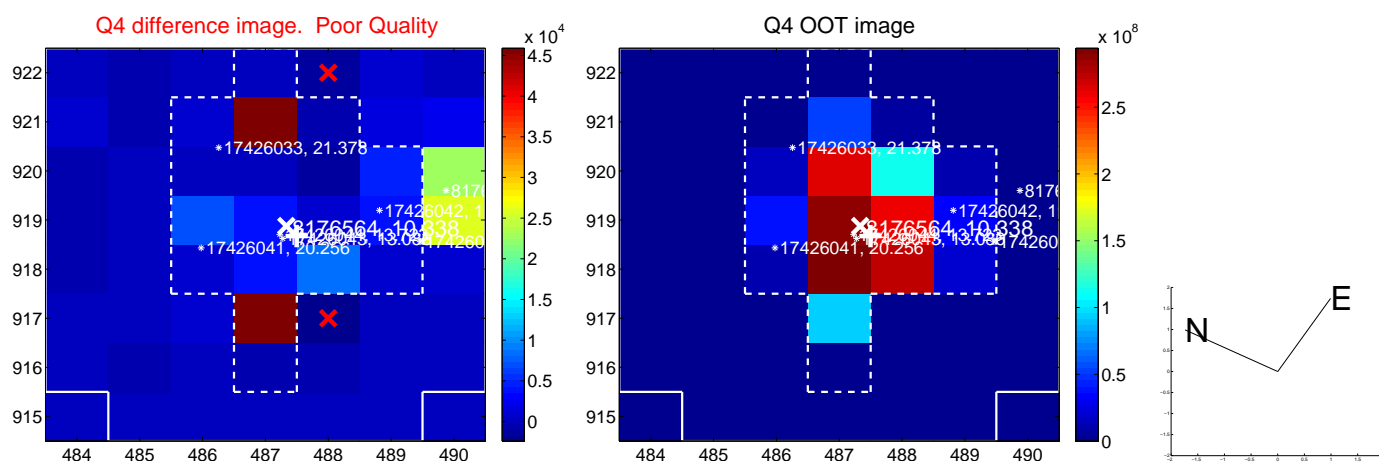
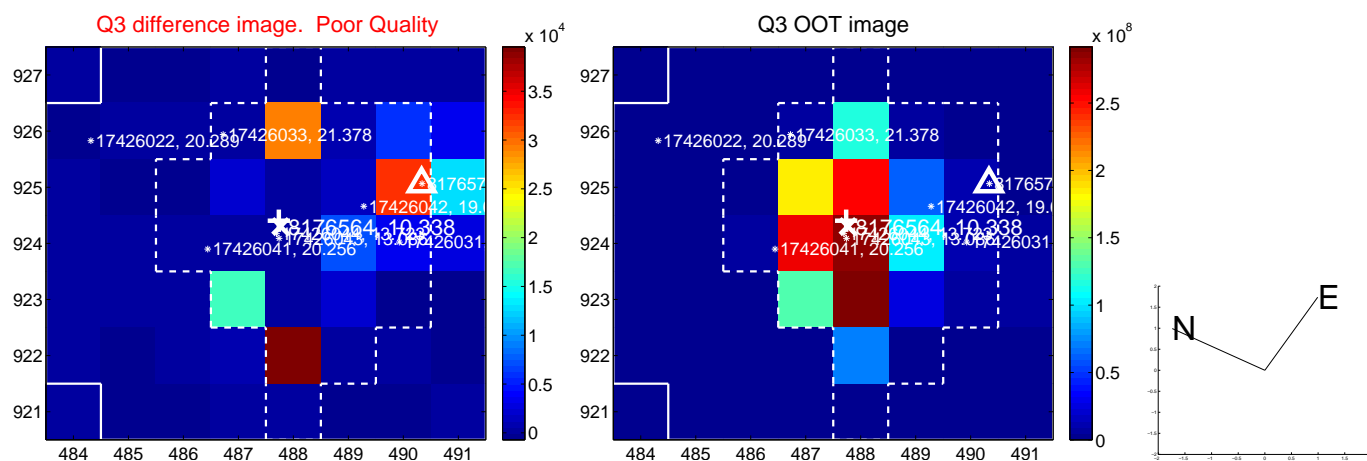
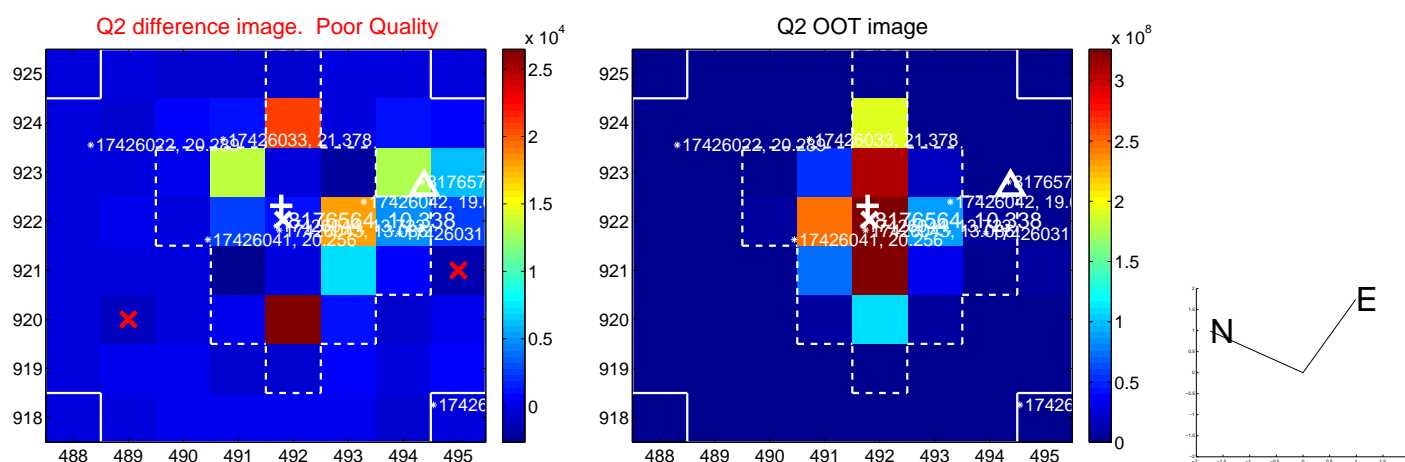
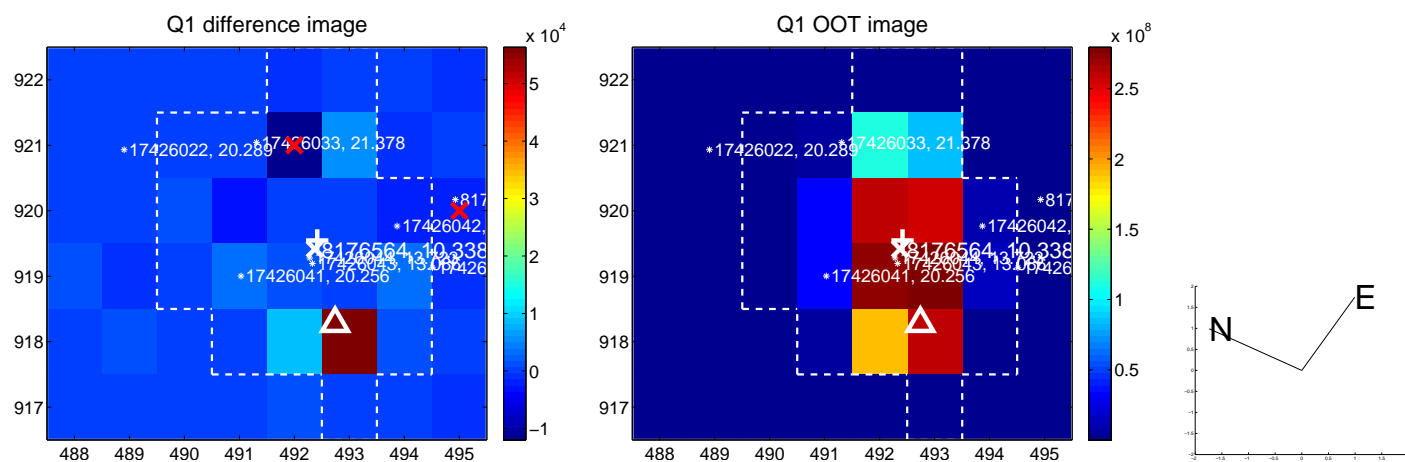
The direct PRF centroid is offset from the target star catalog position by about 1.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	8.674 ± 1.836	4.72	6.031 ± 1.447	-6.235 ± 1.324
PRF-fit source offset from KIC position	9.276 ± 1.829	5.07	6.433 ± 1.354	-6.684 ± 1.402
photometric centroid source offset	1.73 ± 0.48	3.59	1.73 ± 0.48	-0.16 ± 0.36

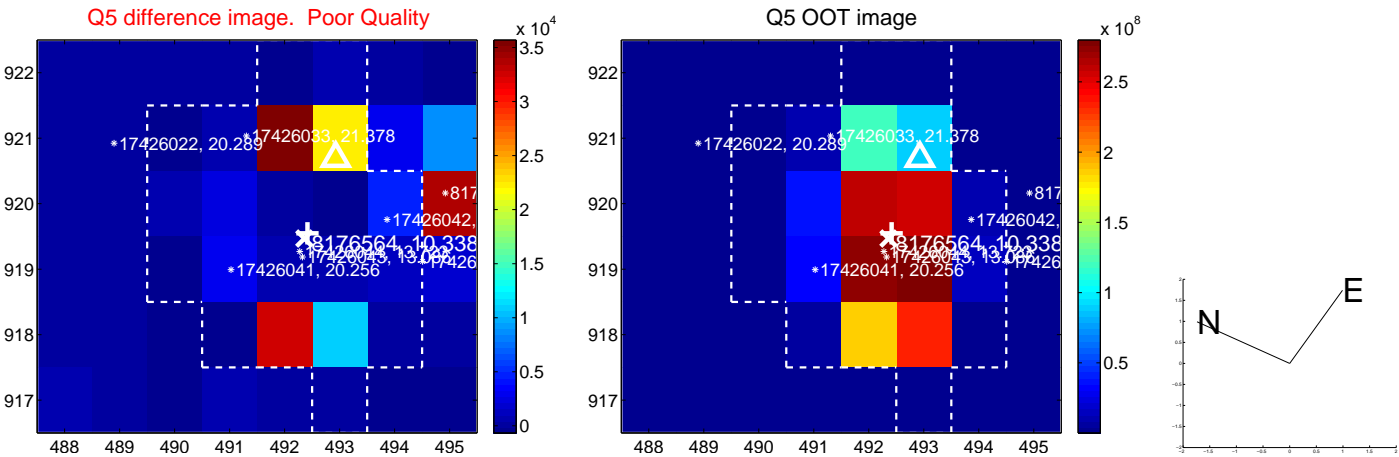


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

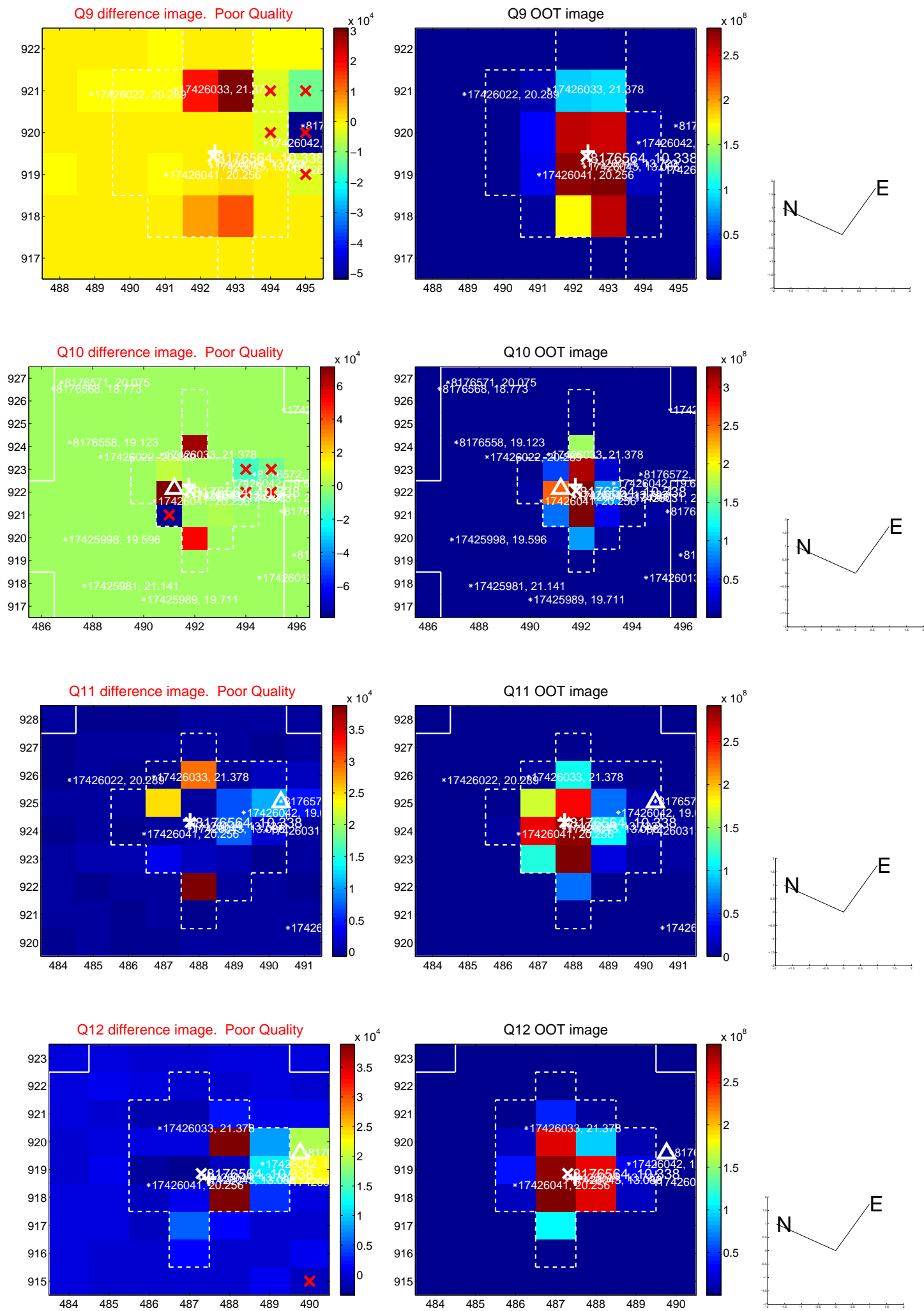
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



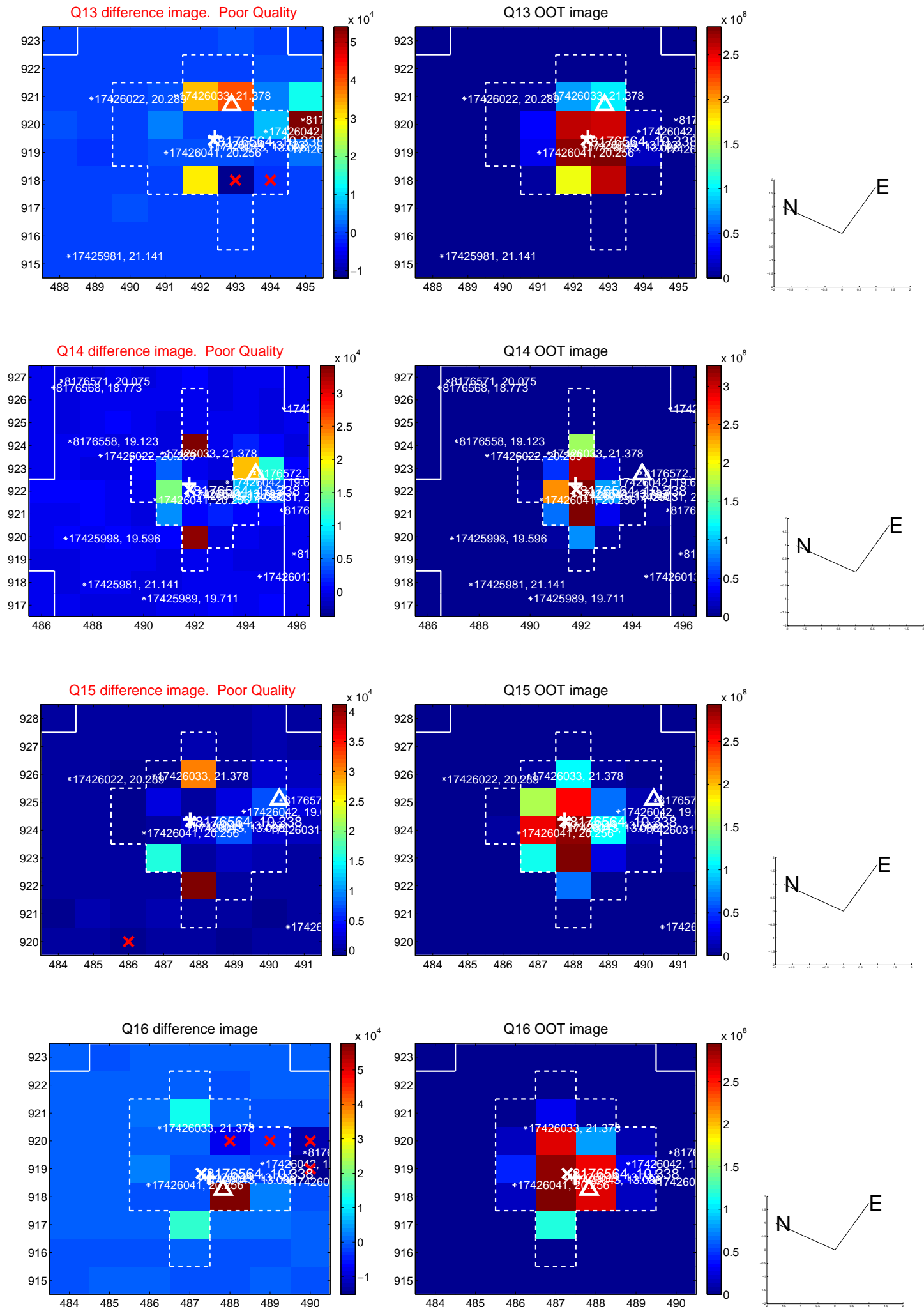
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

