

KIC 008746416

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})
008746416-02	OBS	No	372.216110	178.367823	700.7	28.074	12.0	9.9	1.05	6161	2.86	1.27

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008746416-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—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.

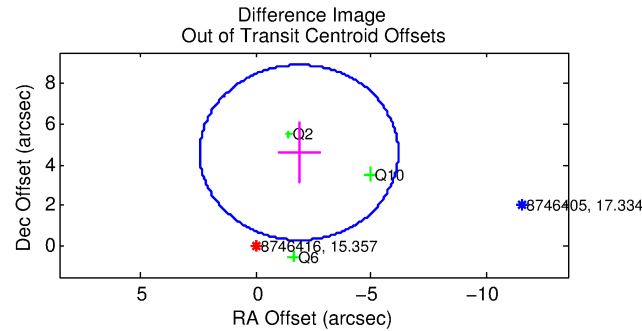
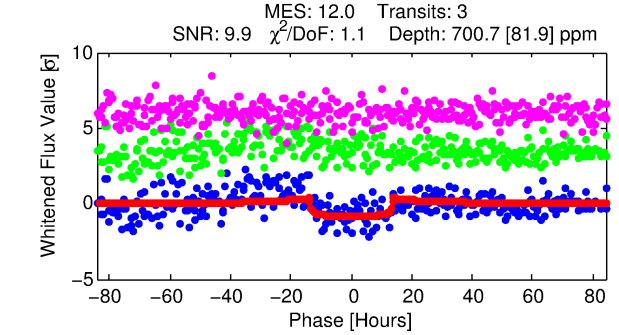
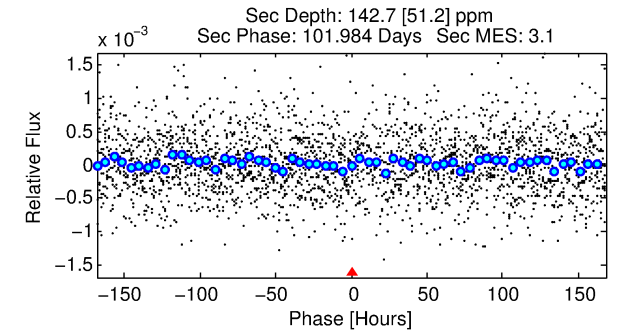
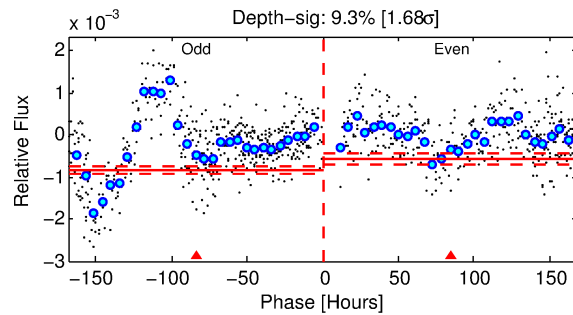
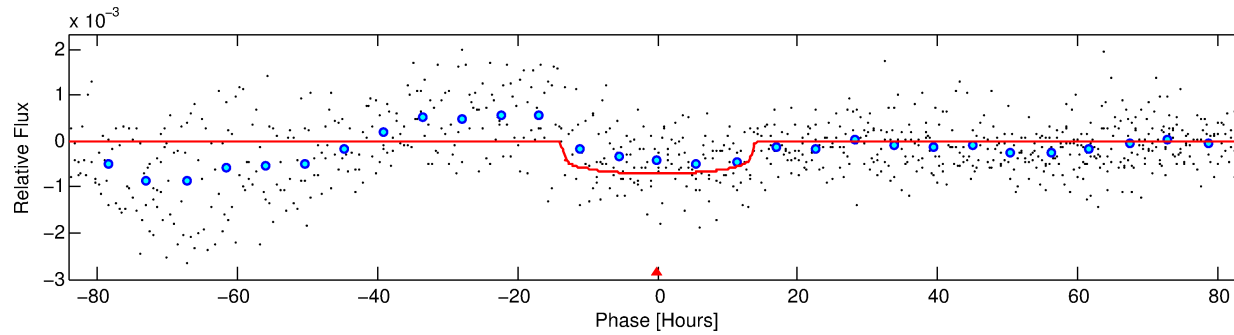
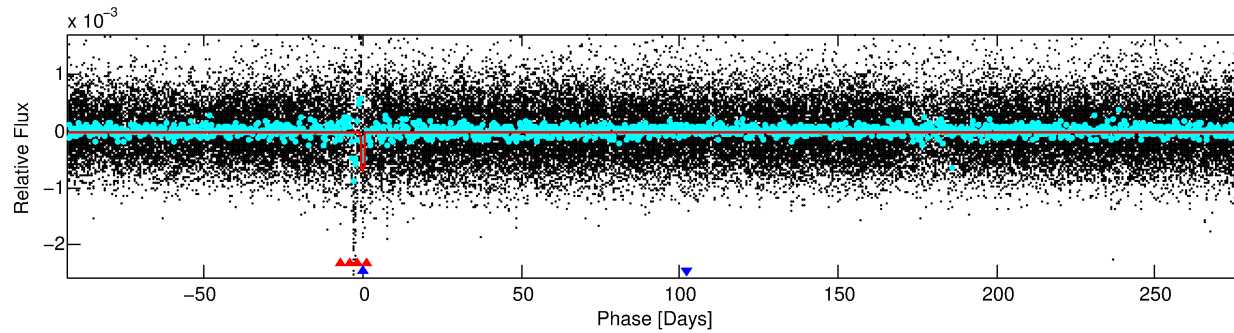
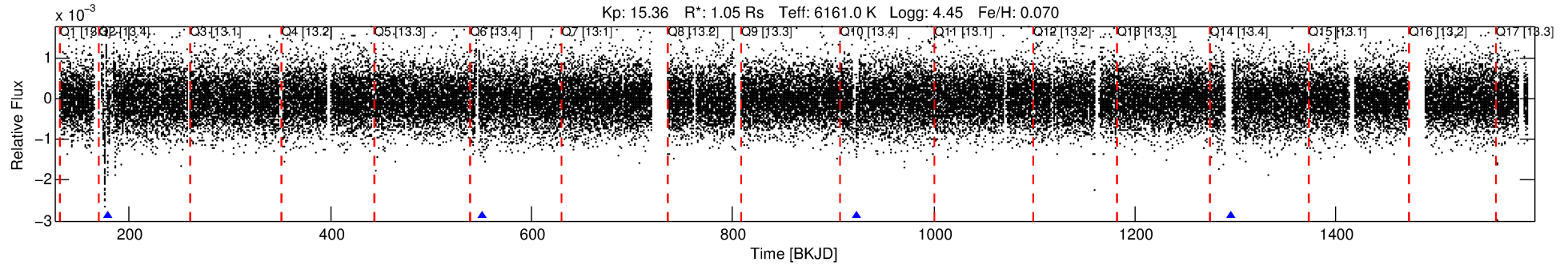
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008746416-02

No Significant Match Found

DV One-Page Summary

KIC: 8746416 Candidate: 2 of 2 Period: 372.216 d



DV Fit Results:

Period = 372.21611 [0.02477] d
Epoch = 178.3678 [0.0268] BKJD
Rp/R* = 0.0249 [0.0062]
a/R* = 91.16 [105.01]
b = 0.49 [1.80]
Seff = 1.27 [0.54]
Teq = 271 [29] K
Rp = 2.86 [1.16] Re
a = 1.0613 [0.2884] AU
Ag = 10820.88 [7887.72] [1.37σ]
Teffp = 4269 [674] K [5.93σ]

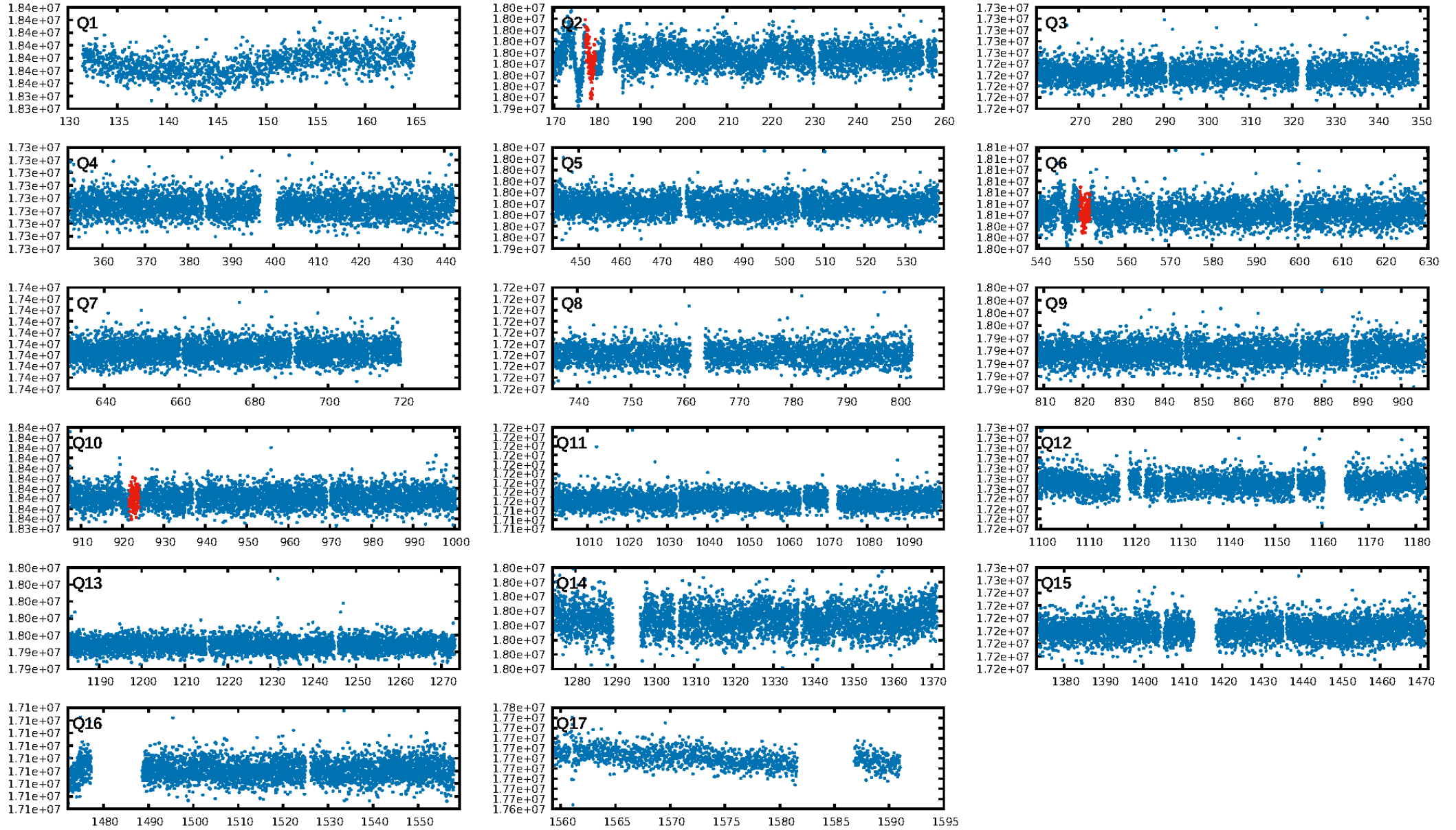
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 93.3% [1.83σ]
ModelChiSquare2-sig: 0.6%
ModelChiSquareGof-sig: 99.6%
Bootstrap-pfa: 5.72e-25
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.121
Centroid-sig: 4.5%
Centroid-so: 2.146 arcsec [1.48σ]
OotOffset-rm: 4.960 arcsec [3.47σ]
KicOffset-rm: 4.991 arcsec [3.54σ]
OotOffset-st: 3/0/0/0 [3]
KicOffset-st: 3/0/0/0 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 0.67 [2/3]

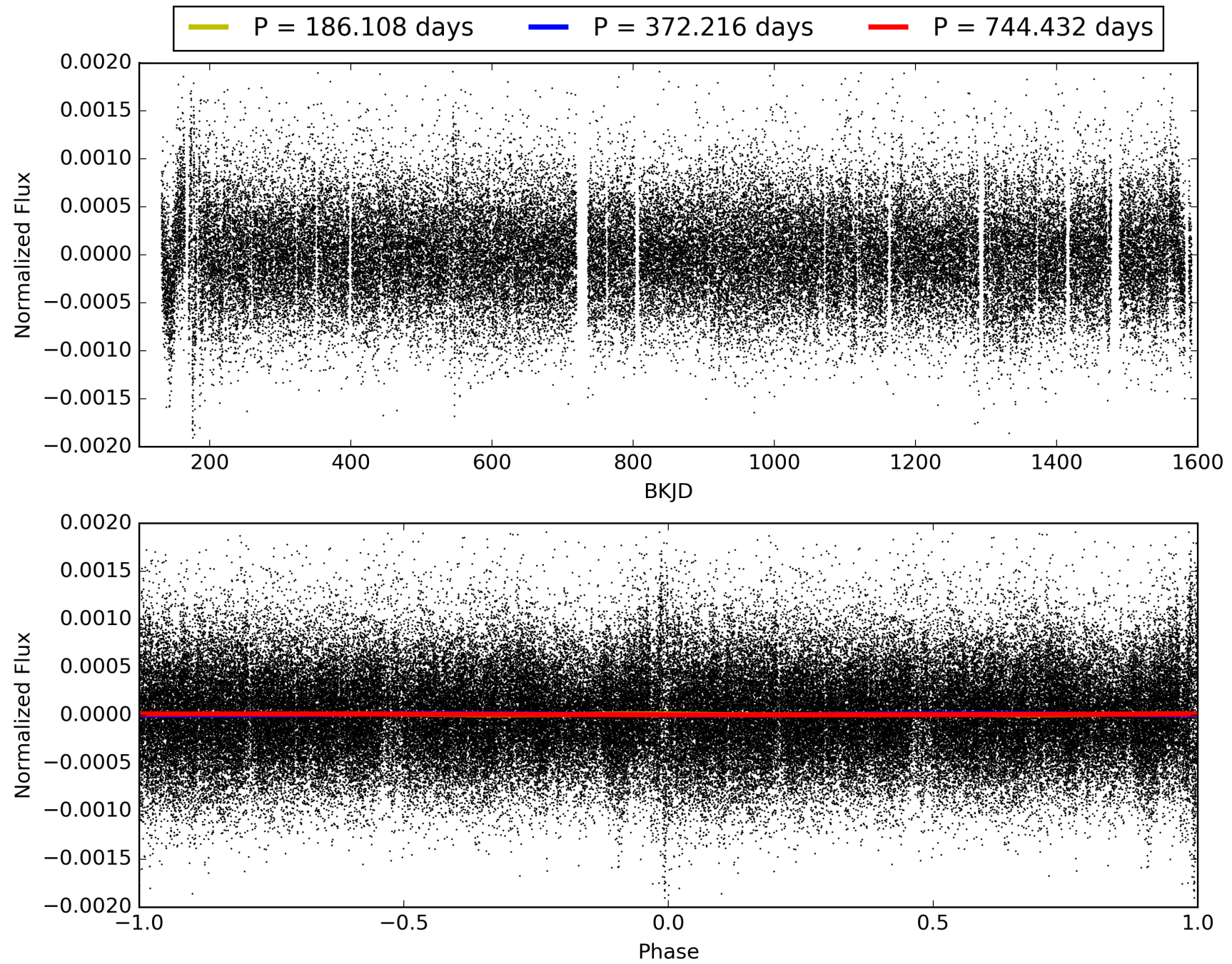
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:18:01 Z

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

TCE 008746416-02, PDC Light Curves

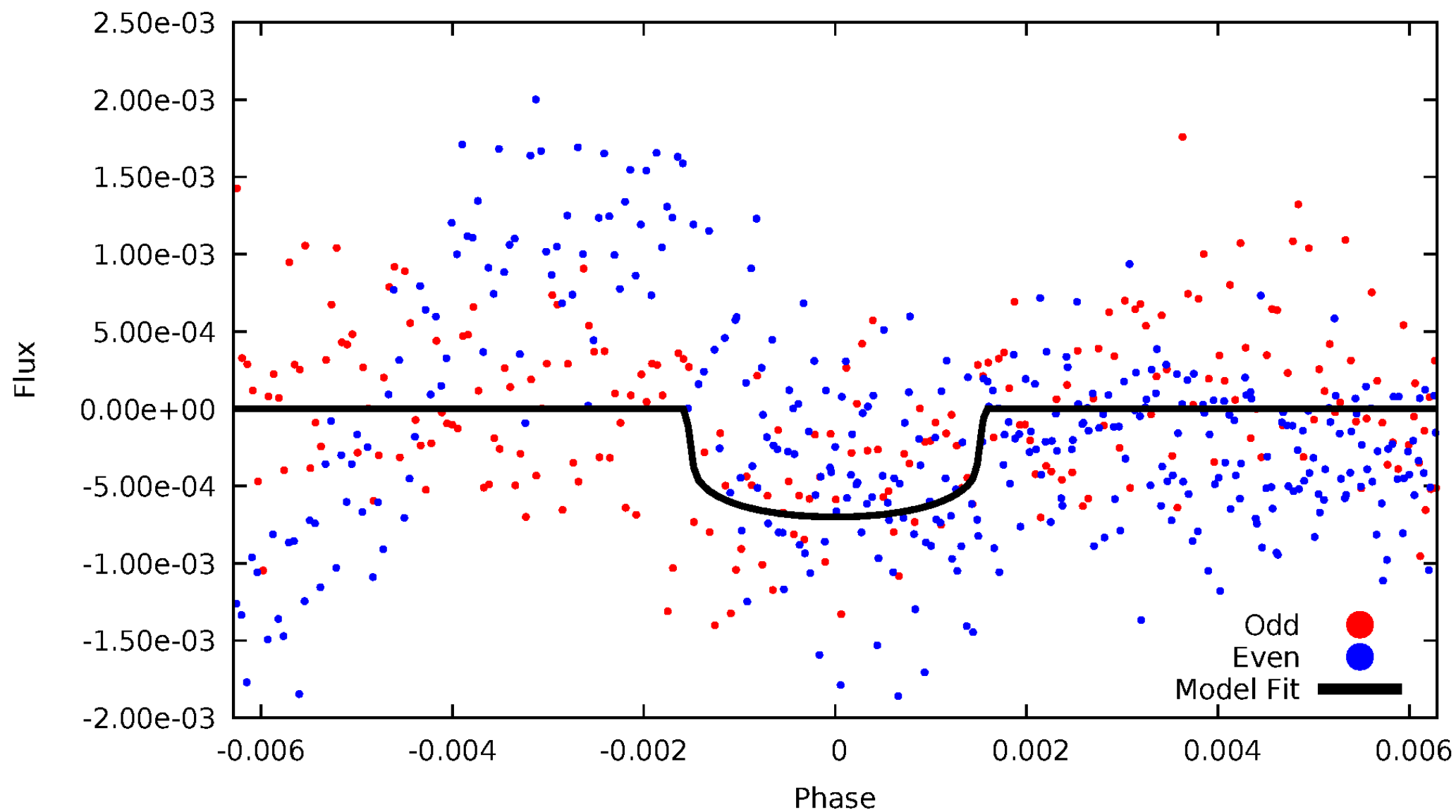


TCE 008746416-02



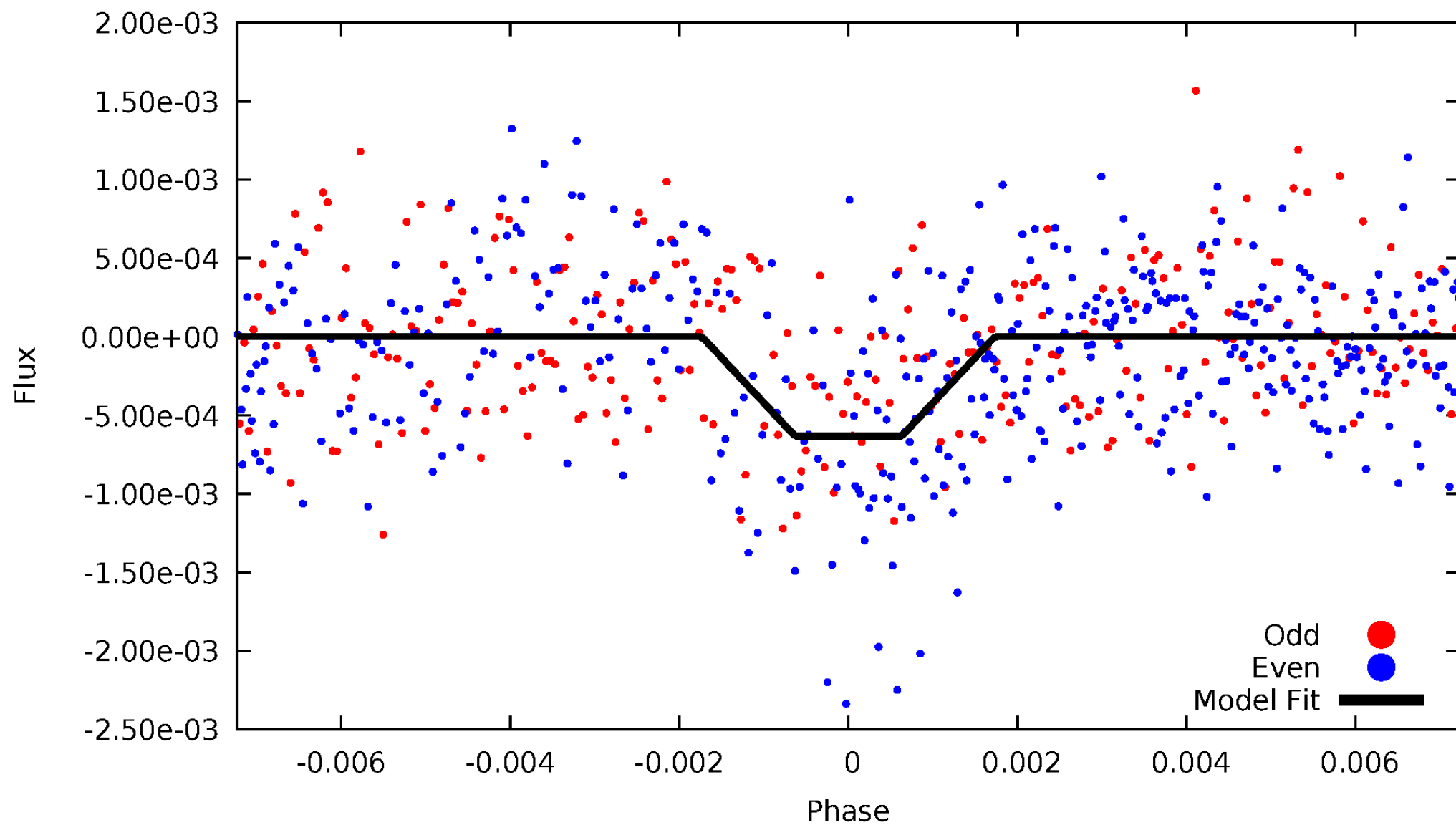
DV Odd/Even

TCE 008746416-02



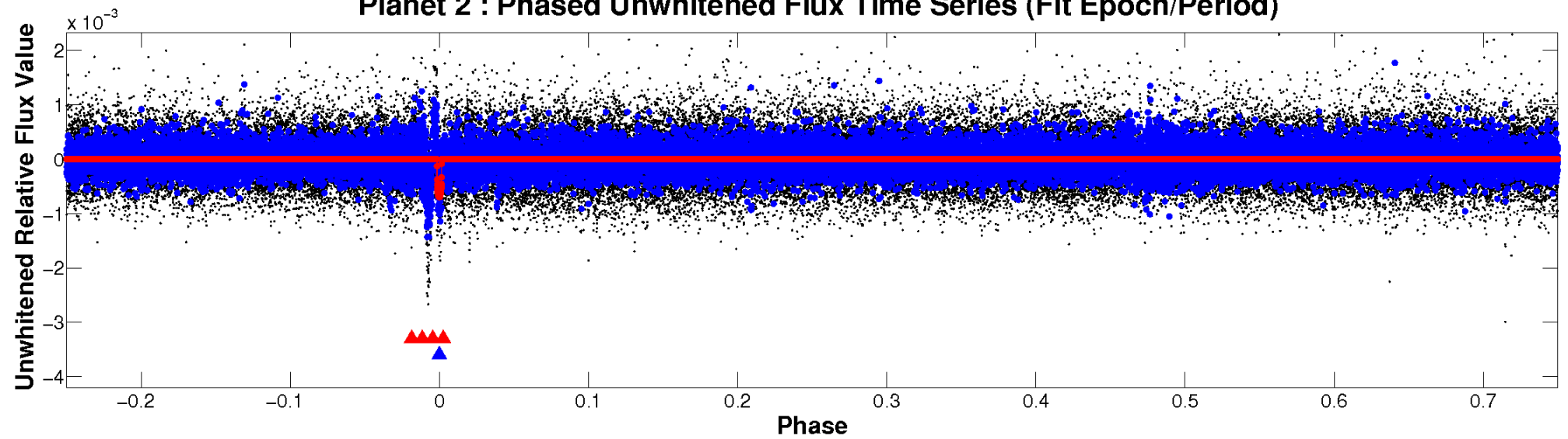
ALT Odd/Even

TCE 008746416-02

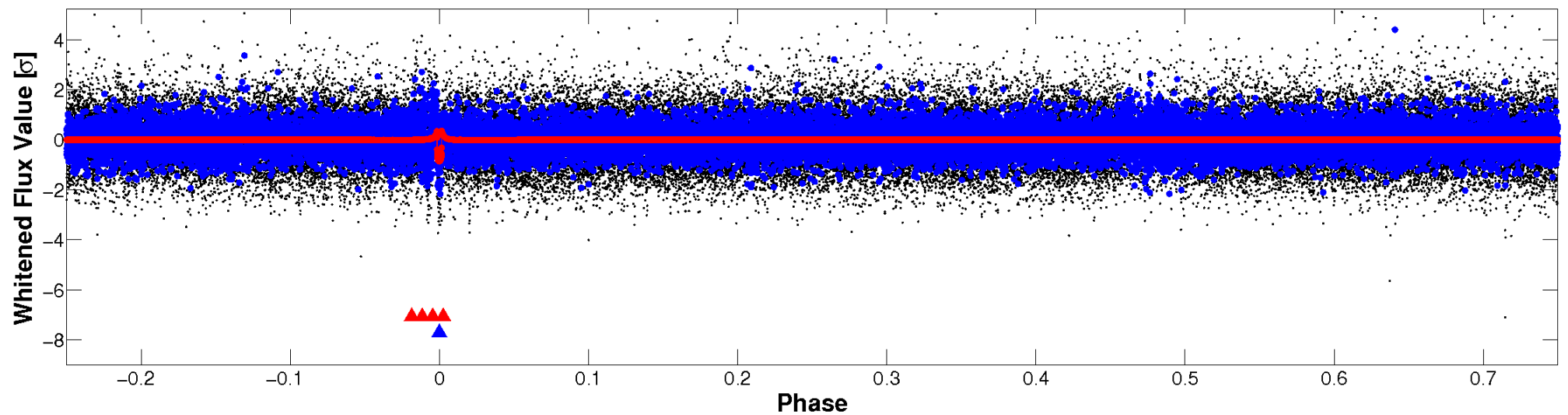


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

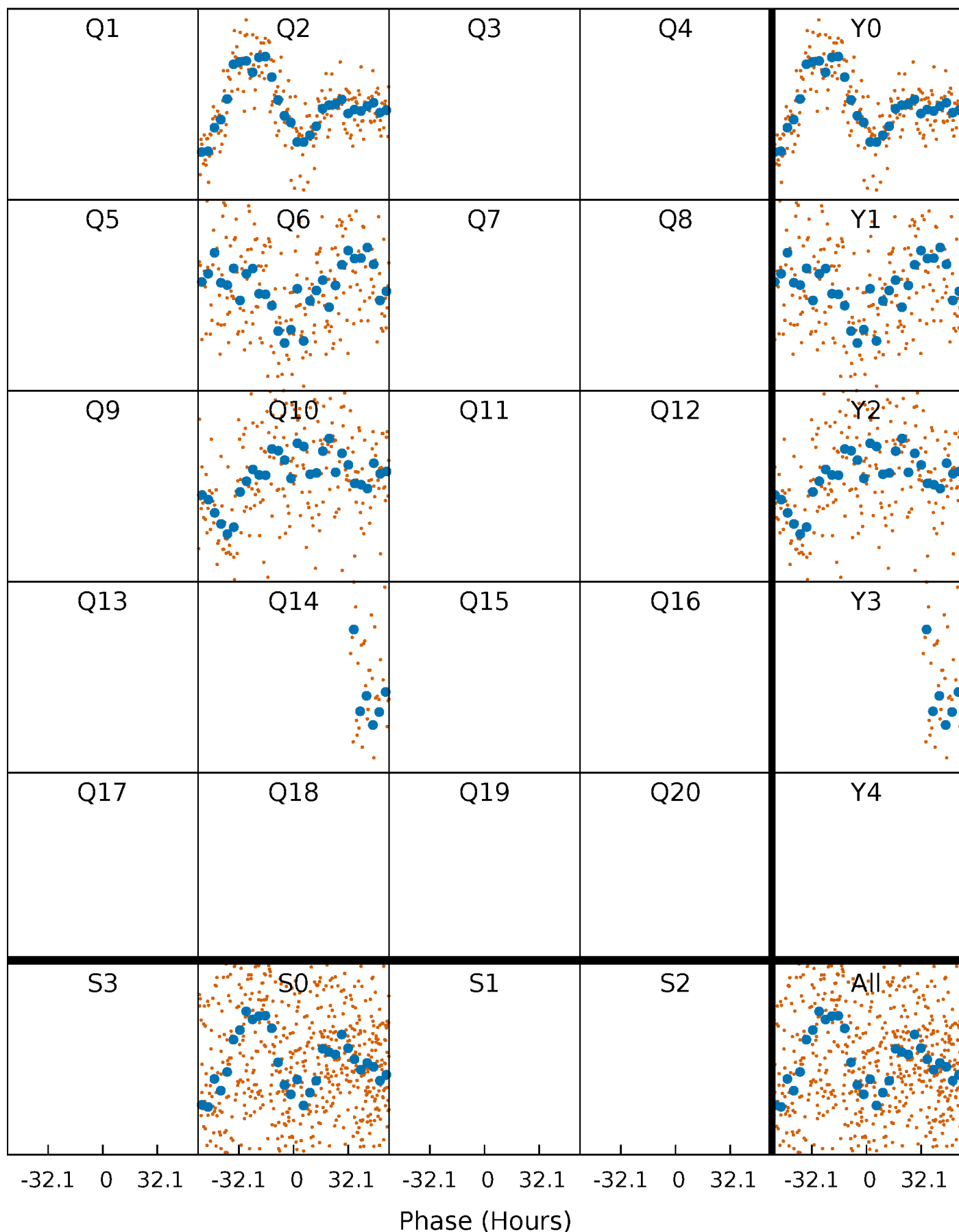


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



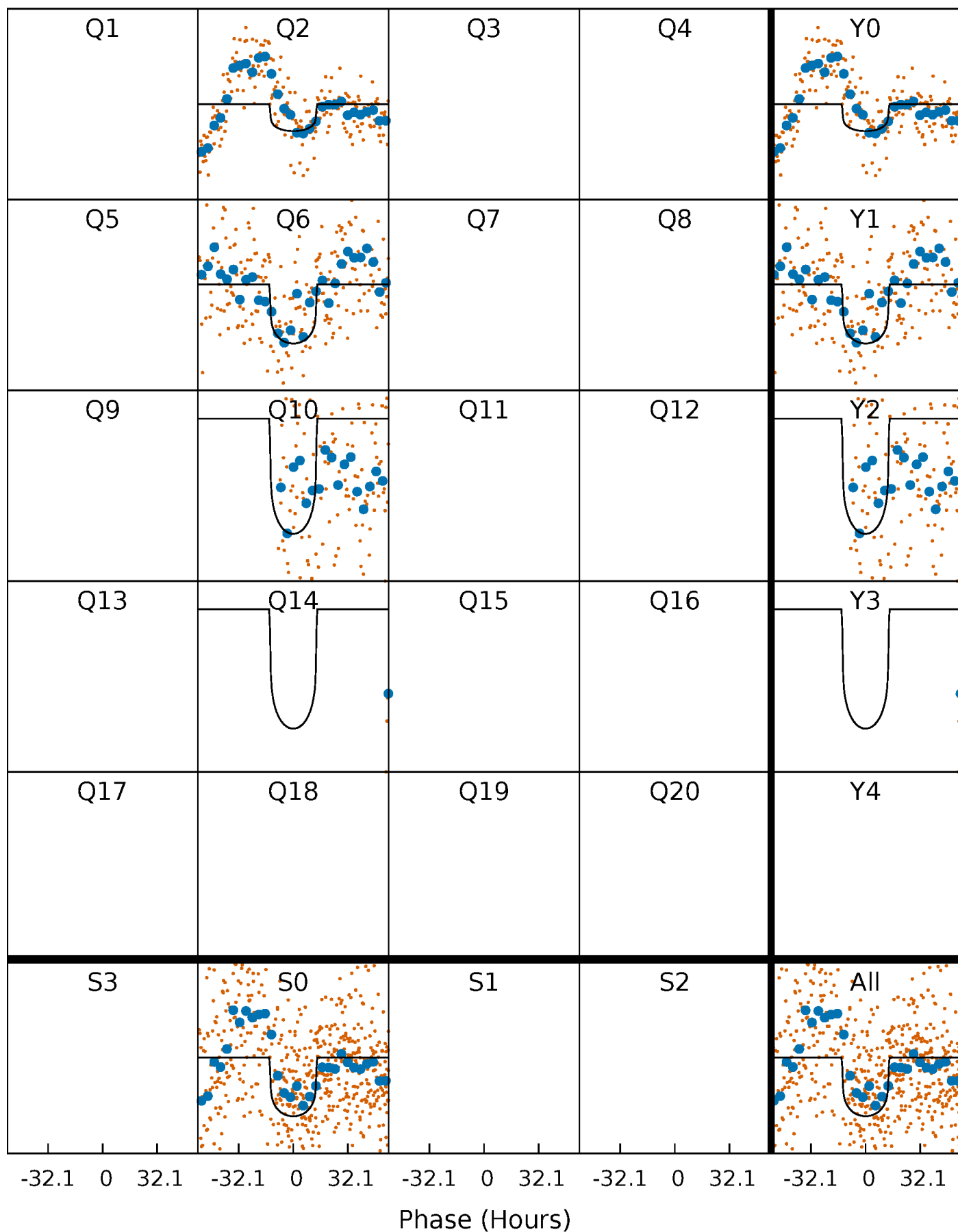
PDC Quarter-Phased Transit Curves

TCE 008746416-02 P=372.216111 Days $T_0=178.367823$ (BKJD)



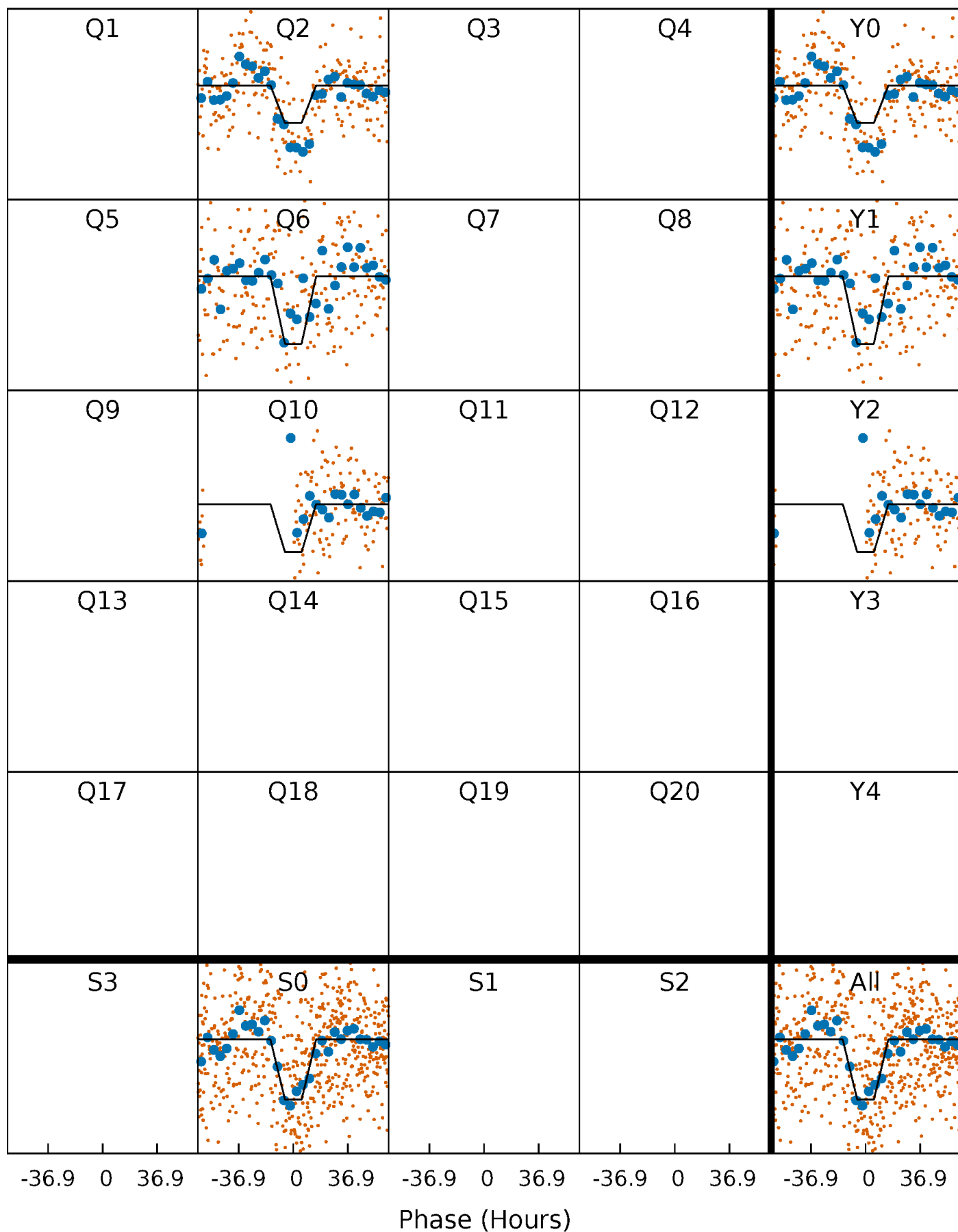
DV Quarter-Phased Transit Curves

TCE 008746416-02 P=372.216111 Days $T_0=178.367823$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

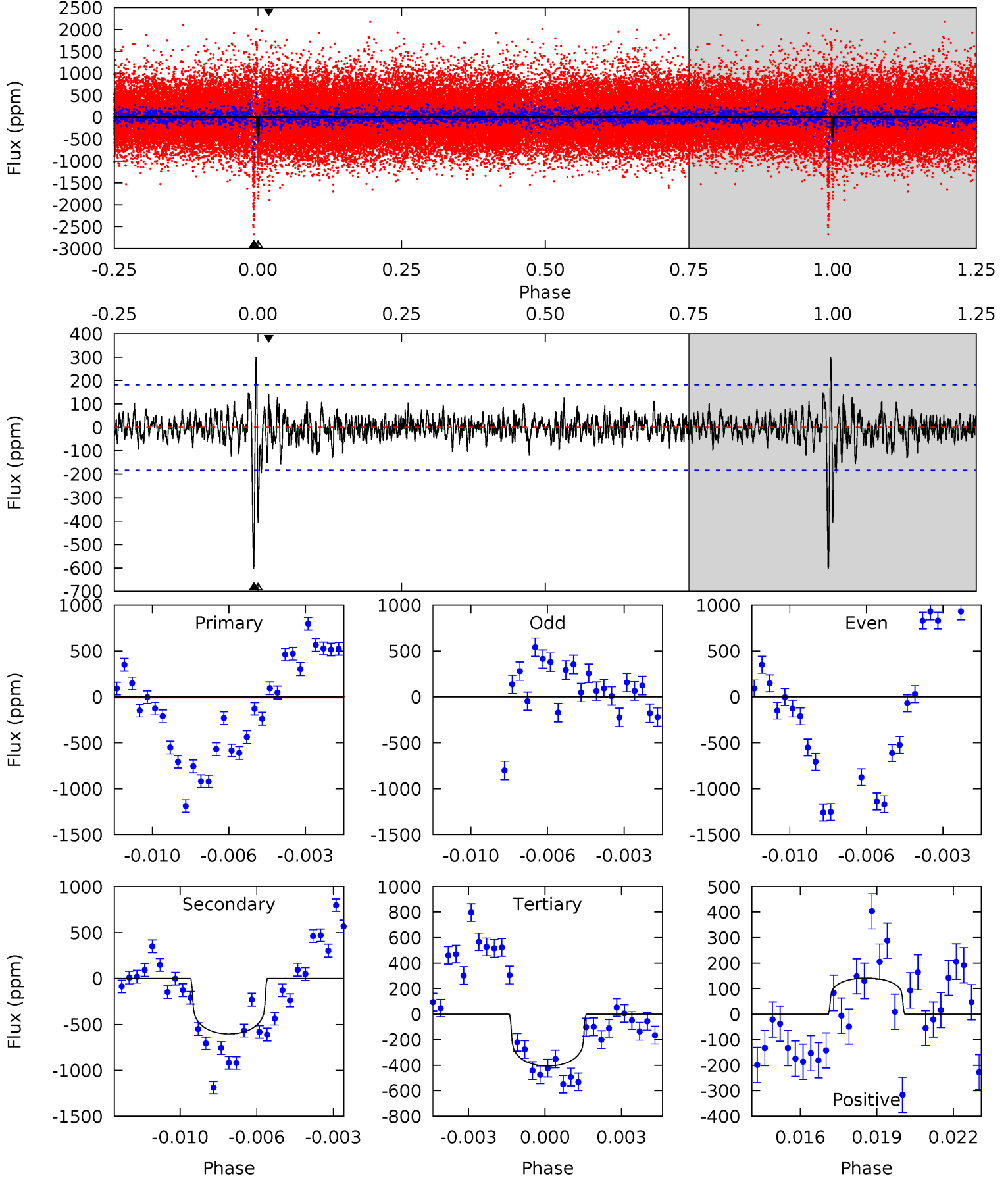
TCE 008746416-02 P=372.006582 Days $T_0=178.398741$ (BKJD)



DV Model-Shift Uniqueness Test

008746416-02, P = 372.216111 Days, E = 178.367823 Days

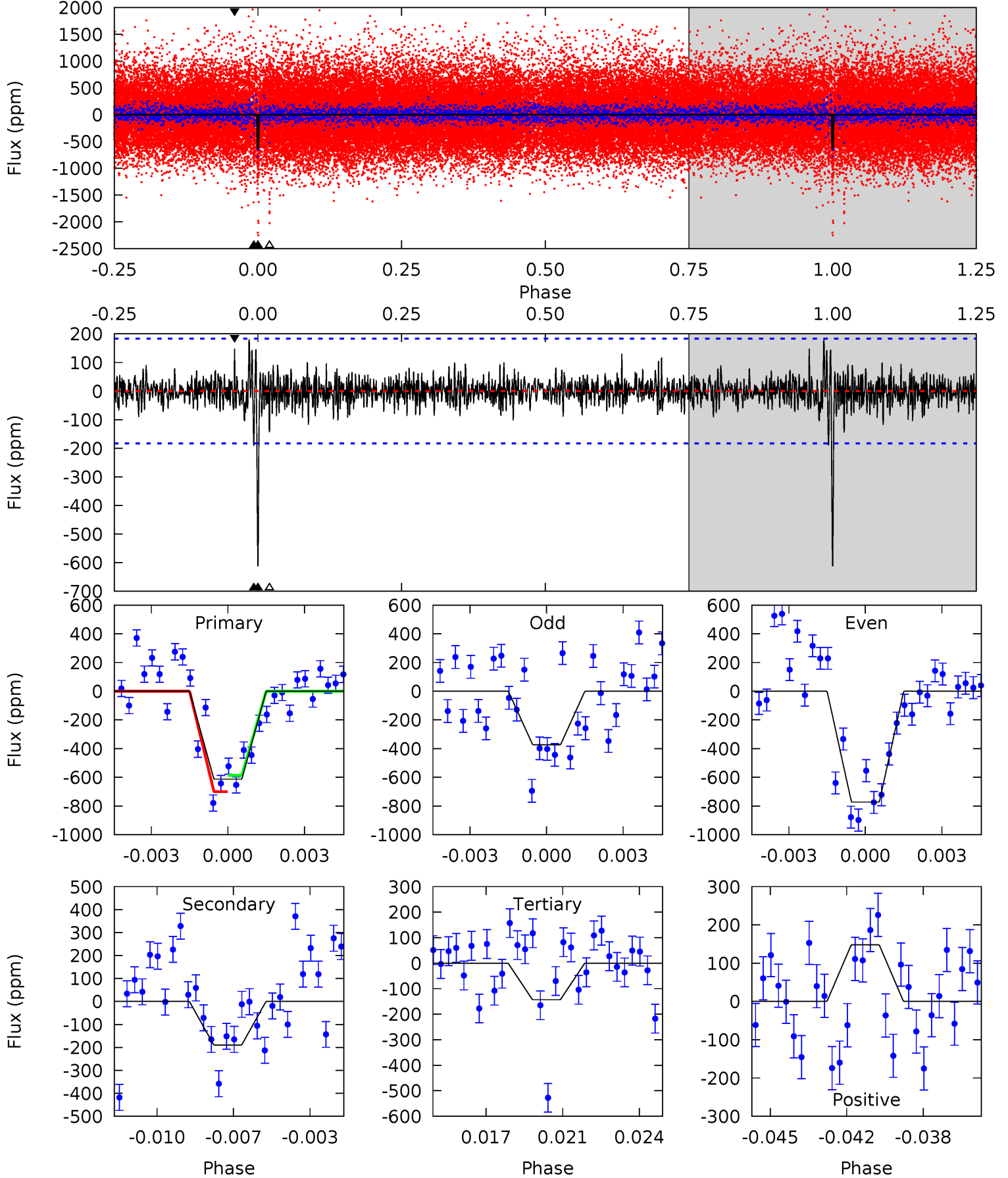
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.9	17.3	11.6	4.06	5.24	2.95	1.27	1.27	8.81	5.66	13.2	1.24	0.96	0.33	2.12



Alt Model-Shift Uniqueness Test

008746416-02, P = 372.006582 Days, E = 178.398741 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.5	5.42	4.09	4.23	5.23	2.92	0.97	13.4	13.3	1.33	1.19	5.58	1.51	0.23	1.59



Stellar Parameters For KIC 008746416

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6161^{+193}_{-236}	$4.454^{+0.054}_{-0.216}$	$0.070^{+0.250}_{-0.350}$	$1.053^{+0.340}_{-0.113}$	$1.150^{+0.138}_{-0.169}$	$1.388^{+0.395}_{-0.729}$
	+3%/-4%	+1%/-5%	+357%/-500%	+32%/-11%	+12%/-15%	+28%/-53%
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 008746416-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-603 ± 35	$2.97^{+0.91}_{-0.74}$	385^{+29}_{-21}	6103^{+941}_{-626}	41049^{+31437}_{-16557}
Alt.	-190 ± 35	$3.00^{+0.80}_{-0.76}$	388^{+27}_{-22}	4714^{+639}_{-442}	12649^{+9548}_{-5191}

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

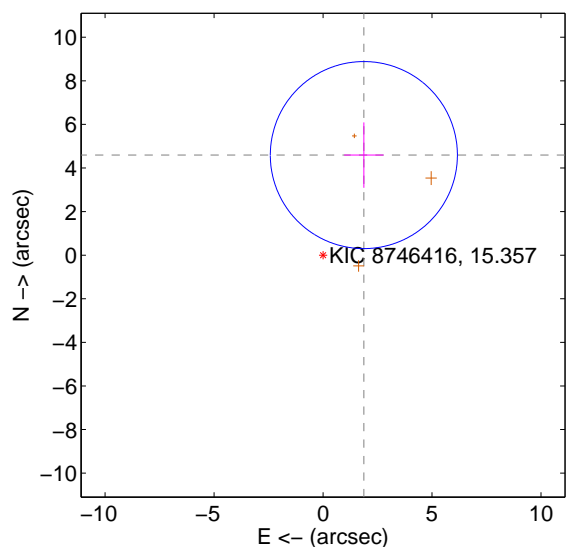
Supplemental centroid analysis for 008746416-02. Kepler magnitude: 15.36. Transit SNR 9.85

There are 0 quarters with good PRF difference image offsets

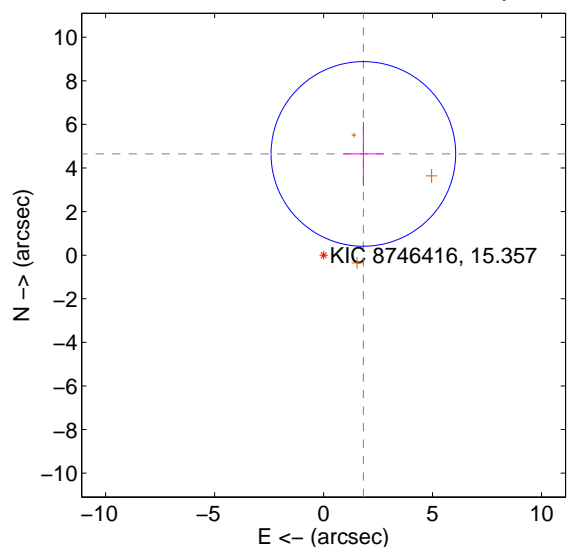
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.960 ± 1.430	3.47	-1.873 ± 0.905	4.593 ± 1.500
PRF-fit source offset from KIC position	4.991 ± 1.412	3.54	-1.825 ± 0.919	4.646 ± 1.473
photometric centroid source offset	2.15 ± 1.45	1.48	-0.54 ± 1.31	2.08 ± 1.46

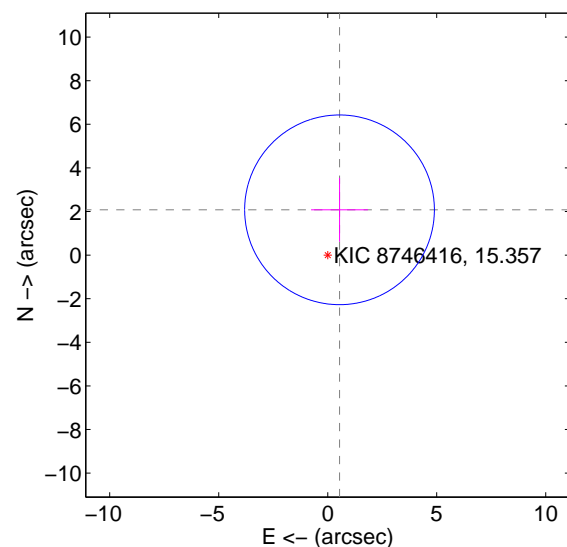
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

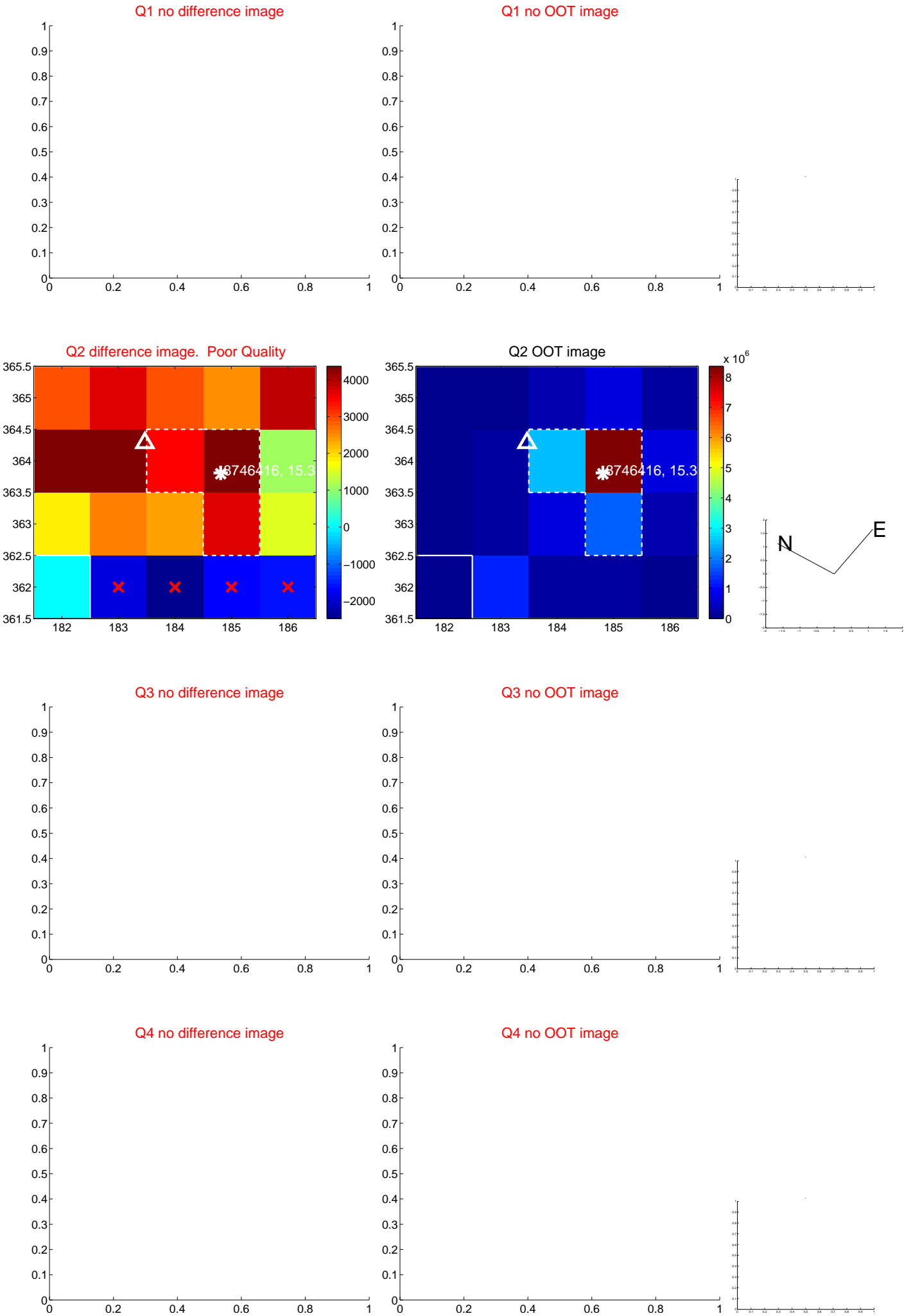


offset from photometric centroids

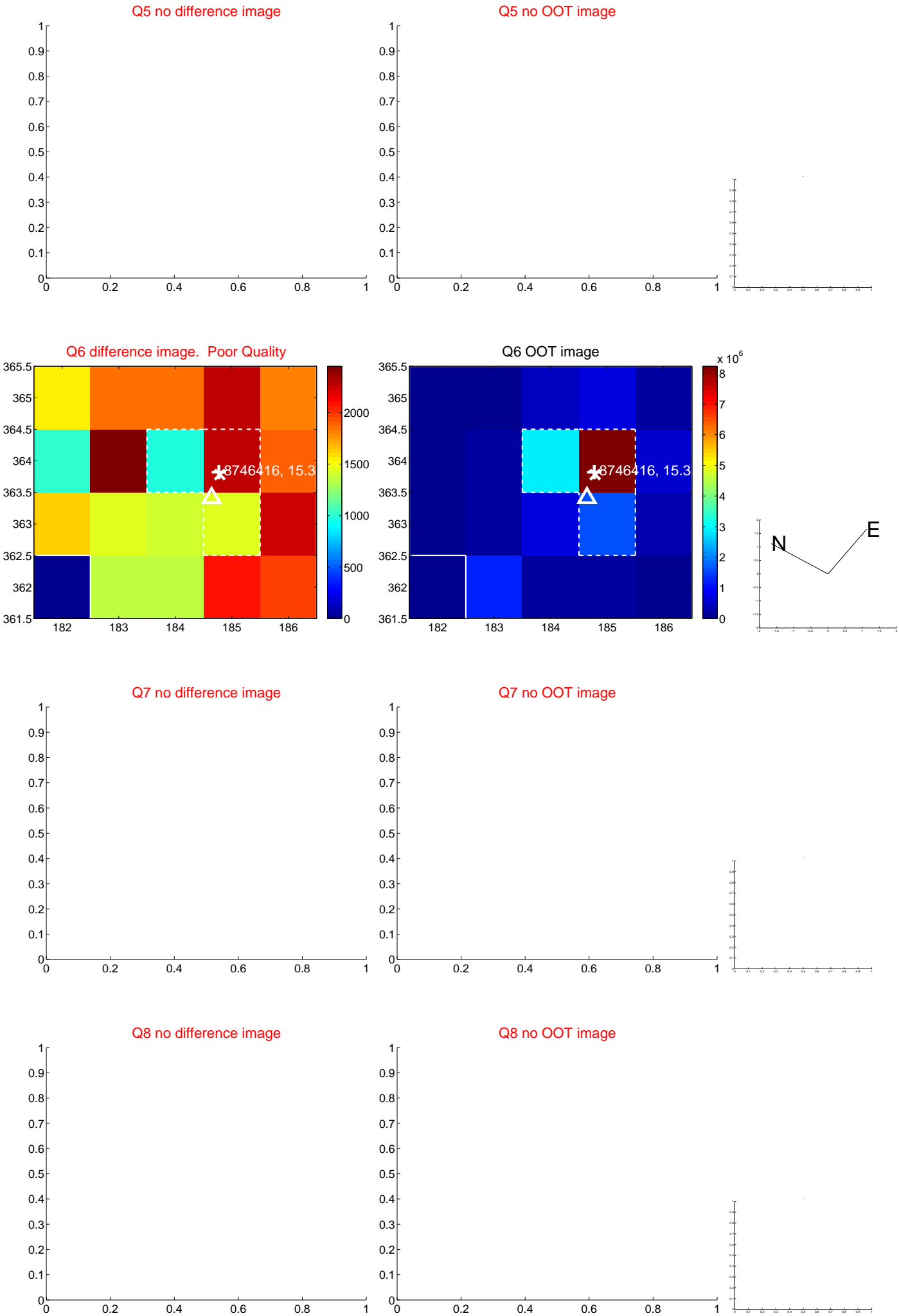


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

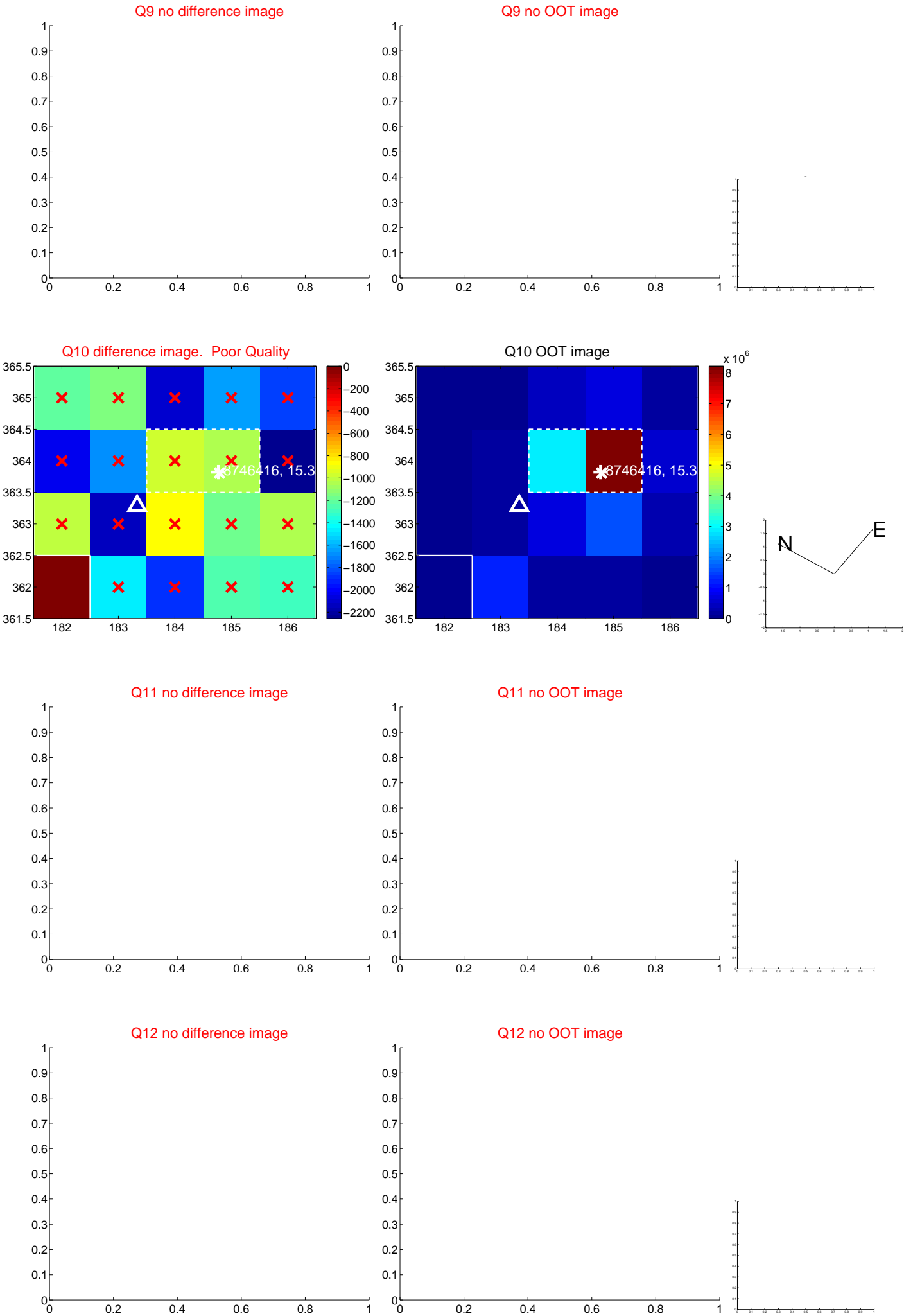
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



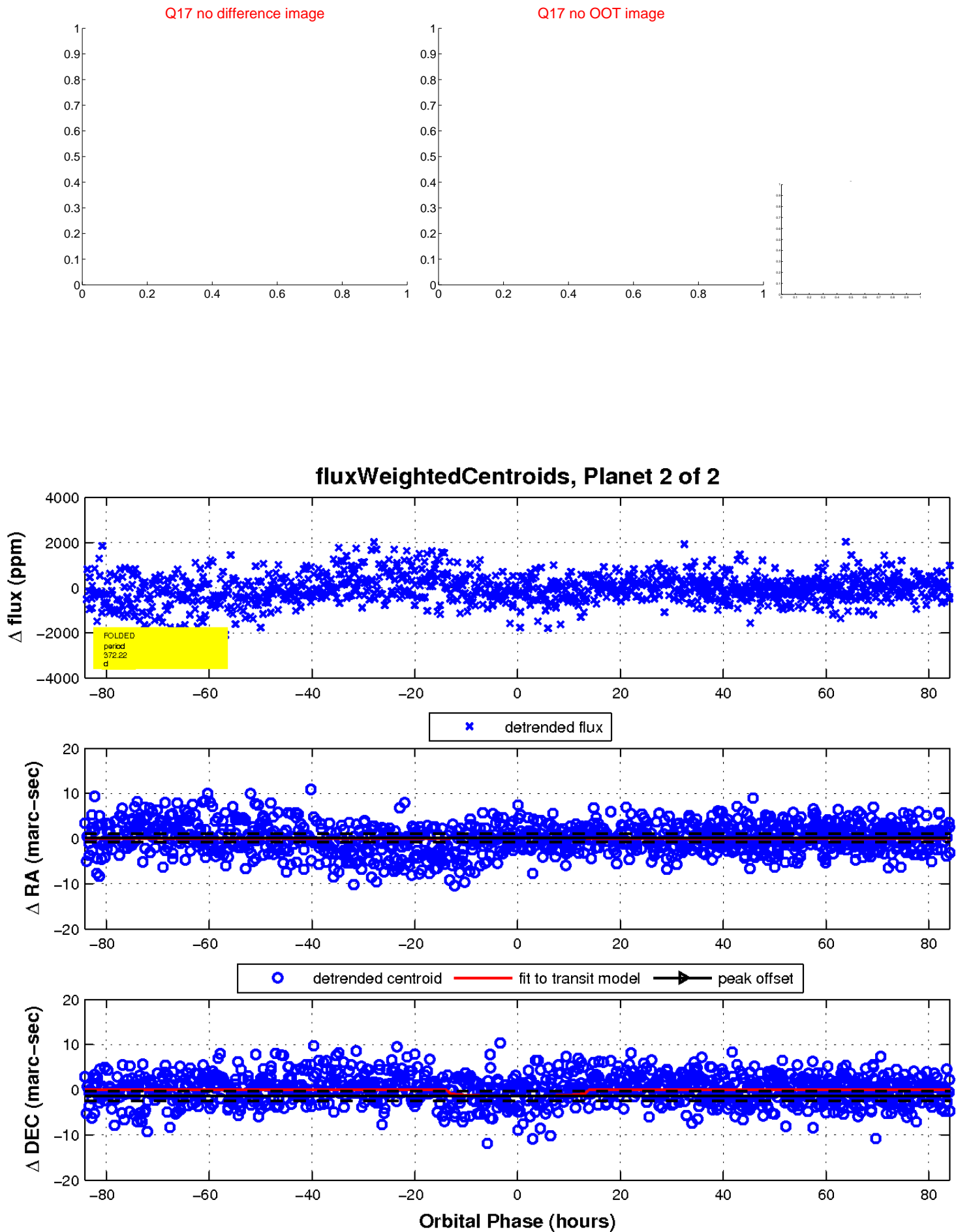
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

