

KIC 011612241

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})
011612241-02	OBS	No	574.328324	276.628483	1861.0	3.748	12.5	11.8	0.99	5953	5.65	0.62
011612241-03	OBS	8059.01	4.564640	133.086420	100.1	14.481	9.7	11.6	0.99	5953	1.35	388.20

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011612241-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011612241-03	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_RESOLVED_OFFSET—EPHEM_MATCH

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

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

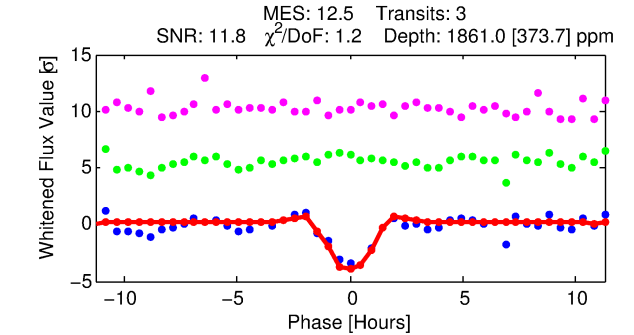
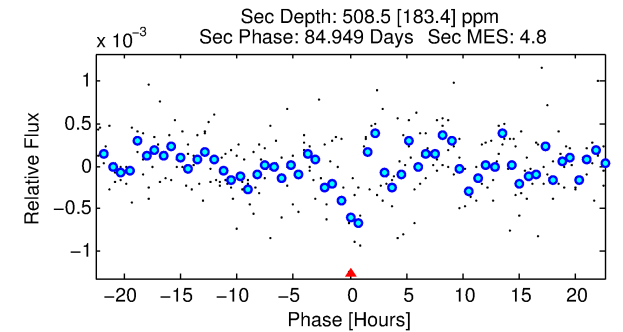
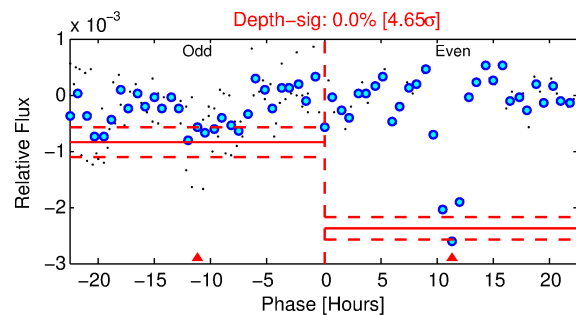
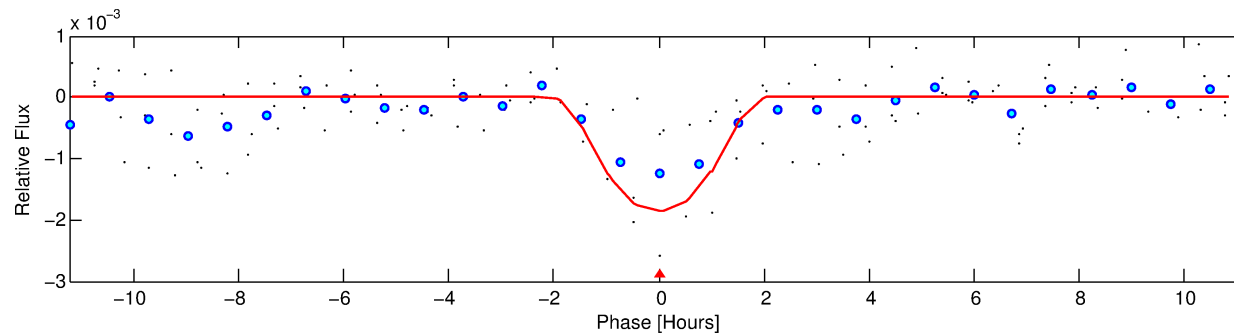
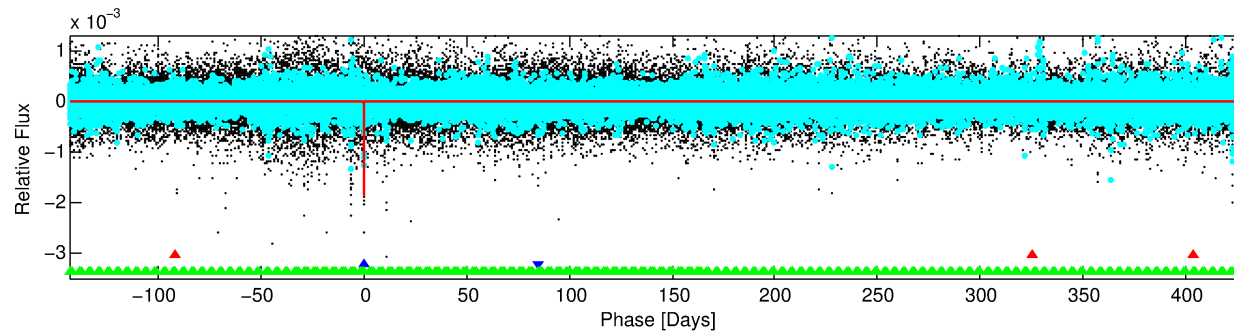
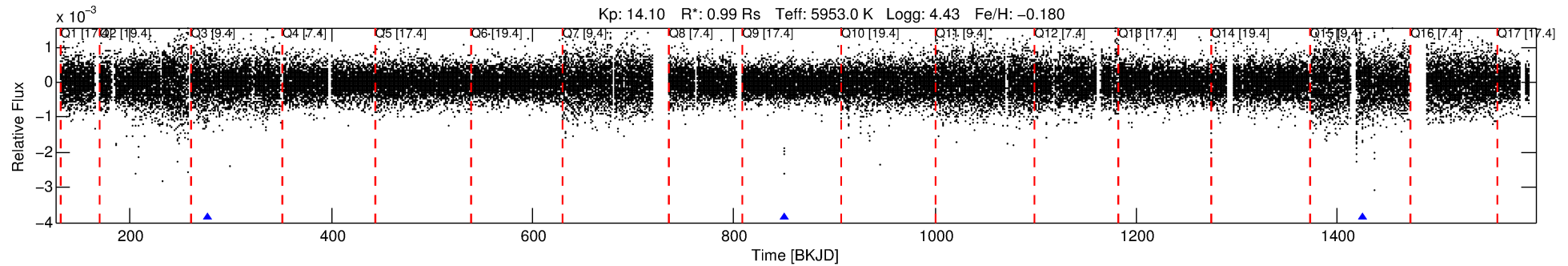
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011612241-02

No Significant Match Found

DV One-Page Summary

KIC: 11612241 Candidate: 2 of 3 Period: 574.328 d



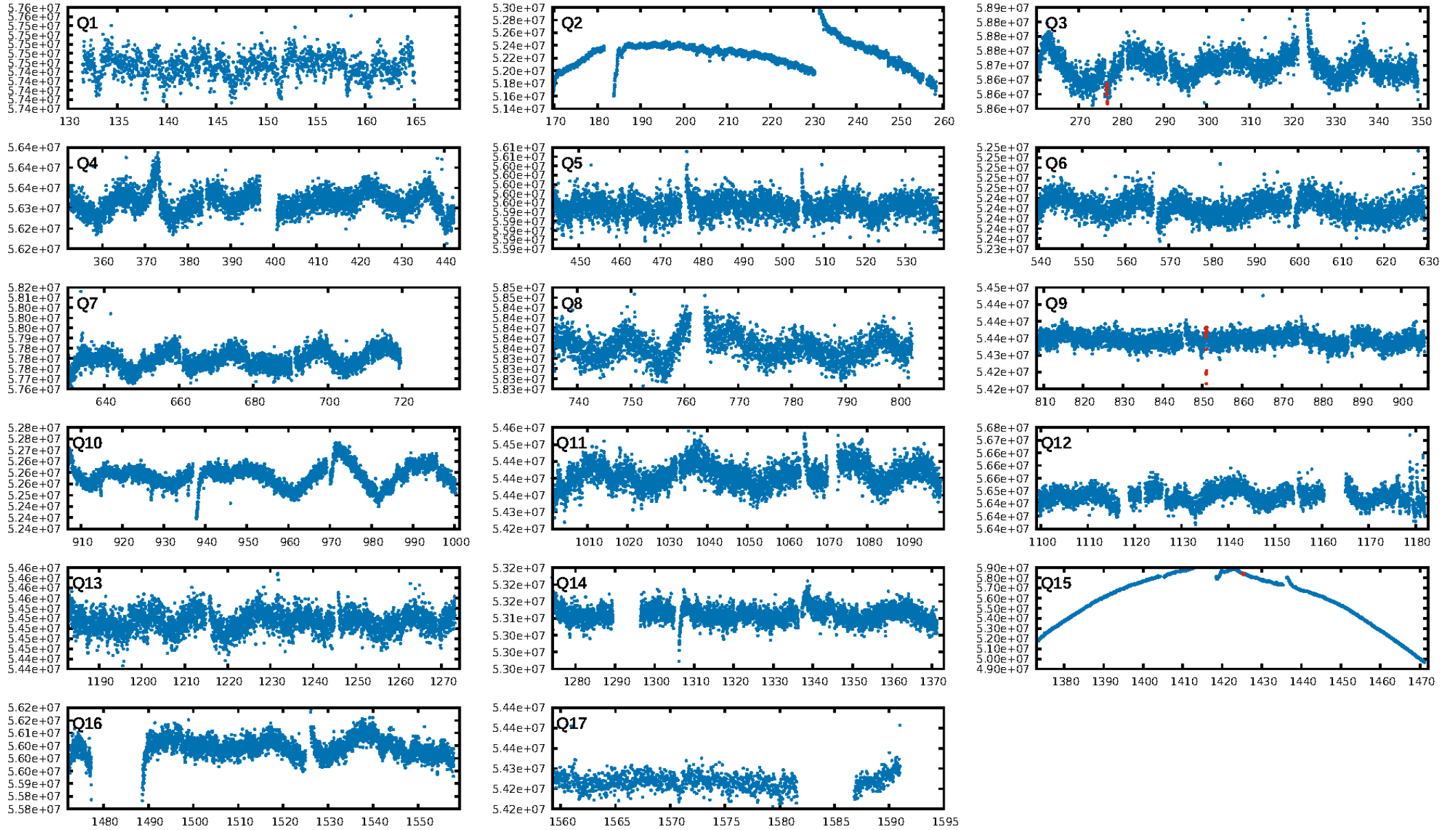
DV Fit Results:

Period = 574.32832 [0.00580] d
Epoch = 276.6285 [0.0068] BKJD
Rp/R* = 0.0523 [0.0245]
a/R* = 509.78 [163.92]
b = 0.96 [0.07]
Seff = 0.62 [0.24]
Teq = 226 [22] K
Rp = 5.65 [3.15] Re
a = 1.3383 [0.3414] AU
Ag = 15682.46 [16774.35] [0.93 σ]
Teffp = 3908 [987] K [3.73 σ]

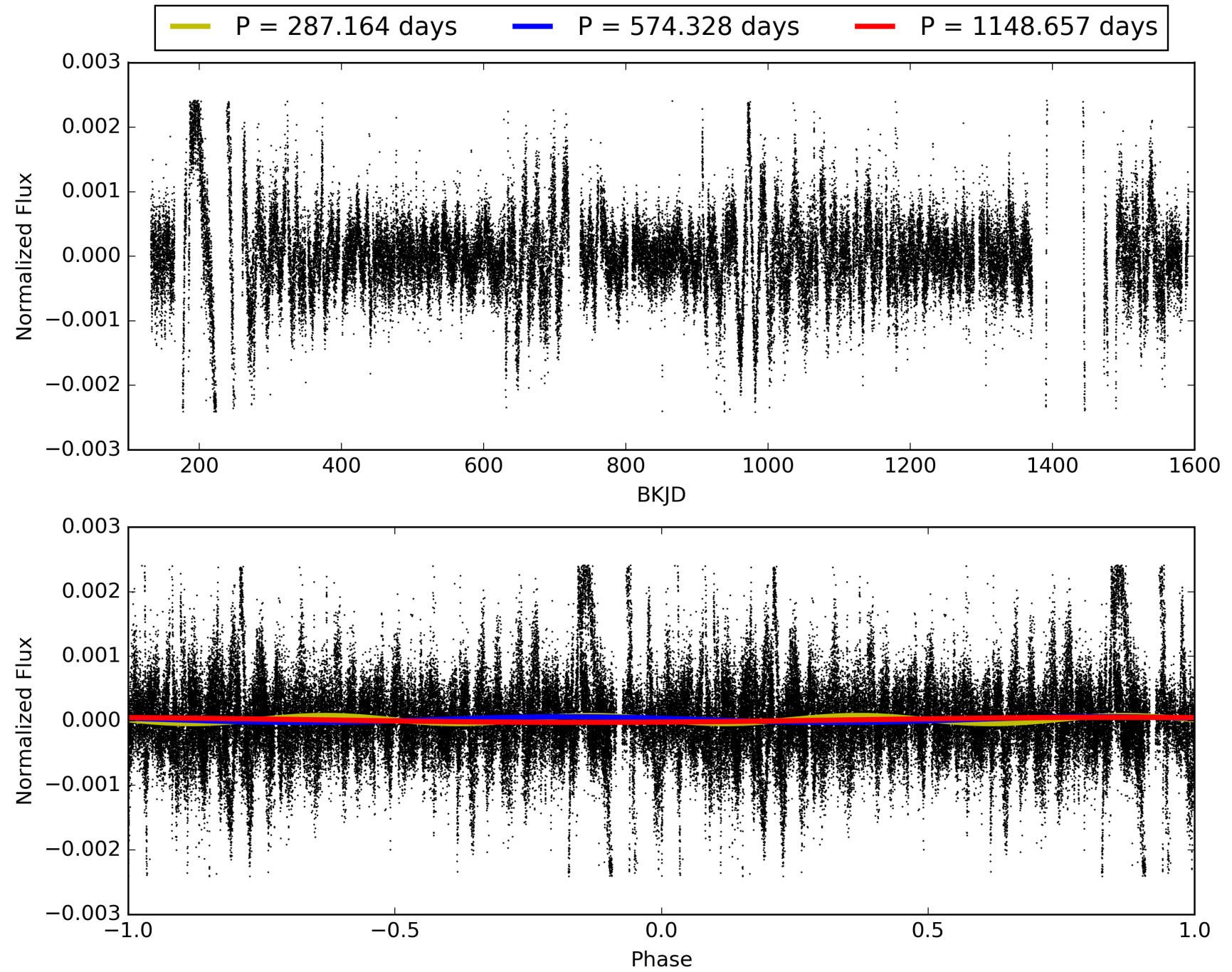
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [143.57 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 53.6%
Bootstrap-pfa: 3.25e-16
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.287
Centroid-sig: N/A
Centroid-so: 1.578 arcsec [8.16 σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 0.67 [2/3]

TCE 011612241-02, PDC Light Curves

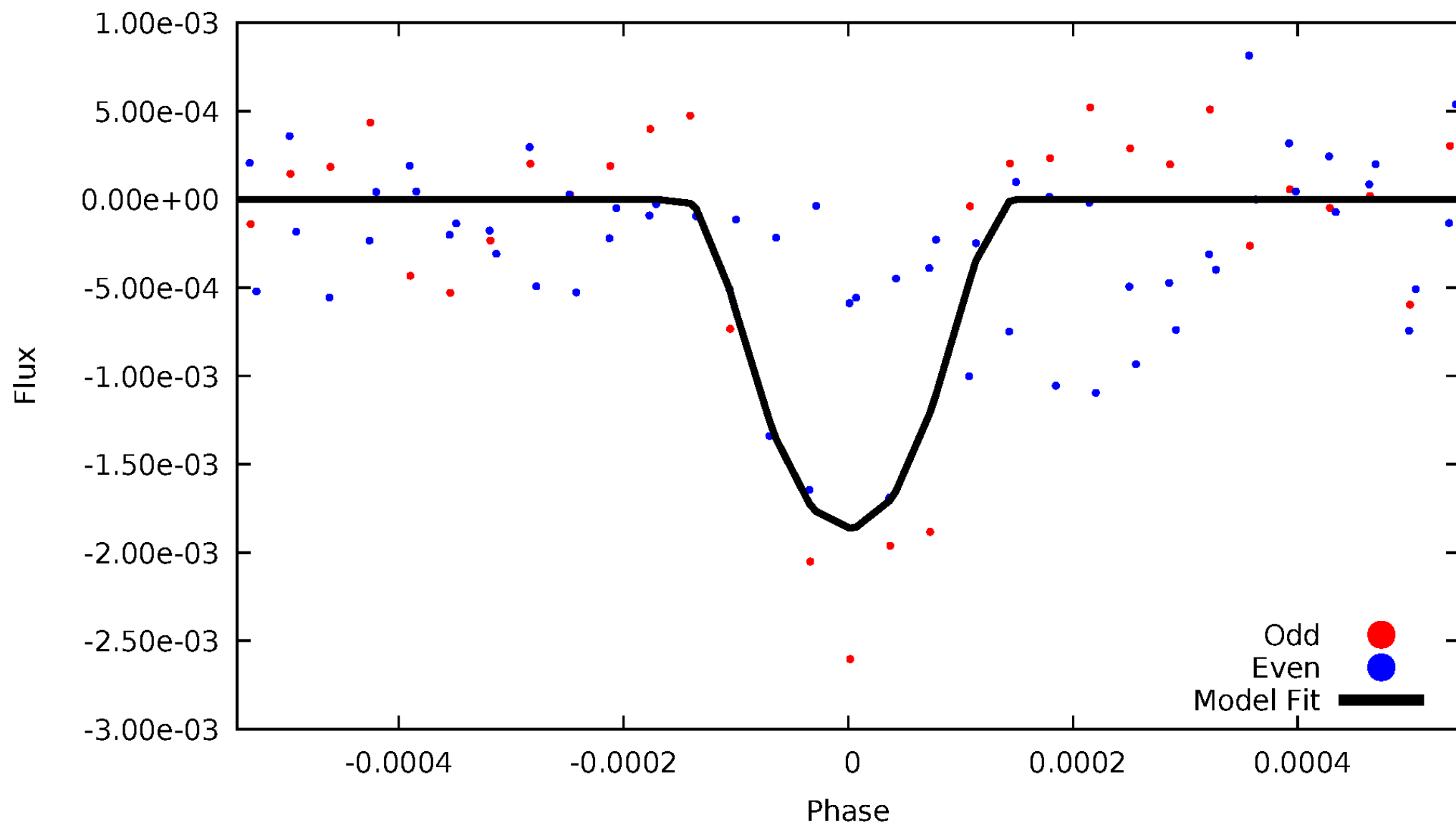


TCE 011612241-02



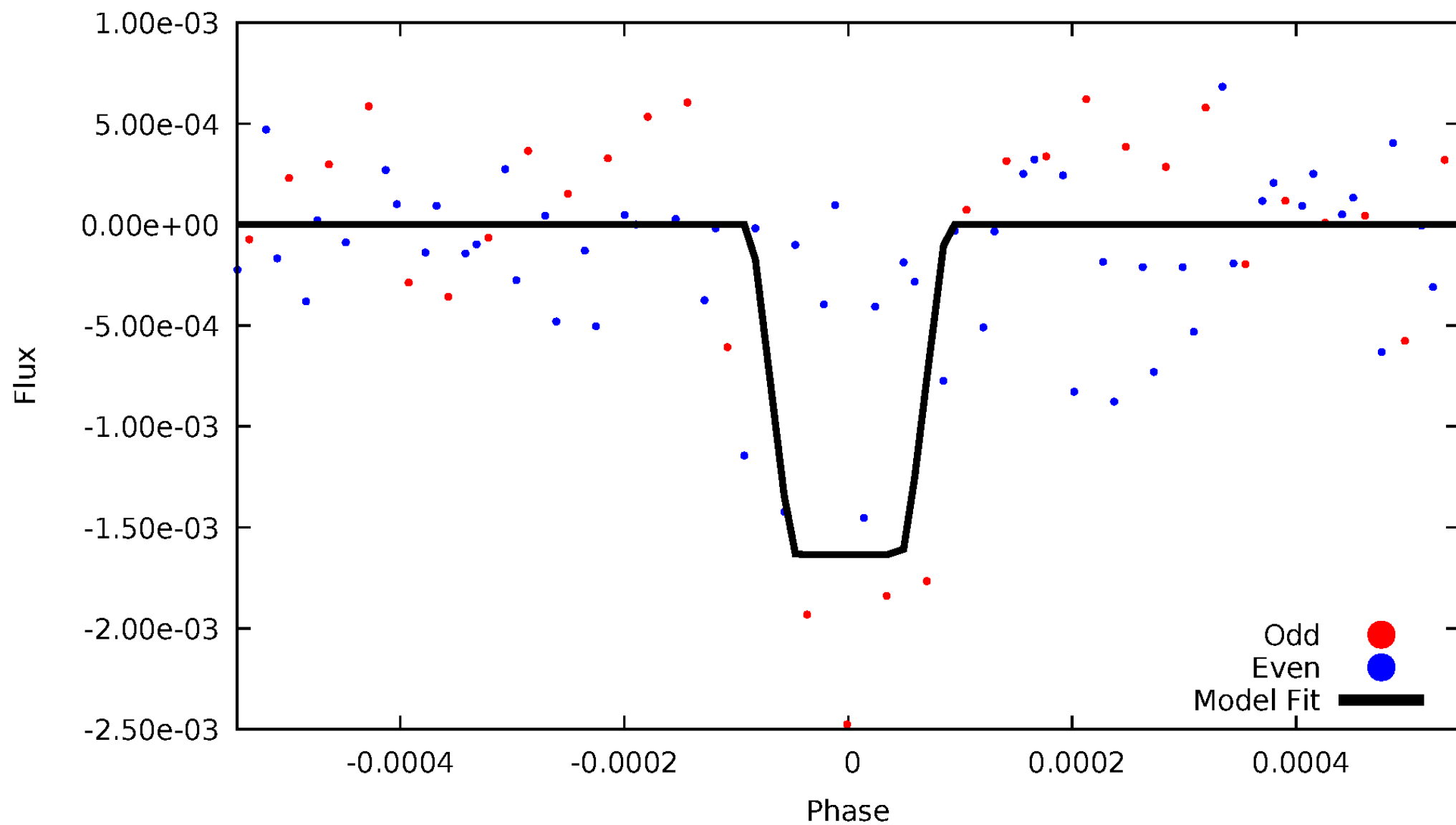
DV Odd/Even

TCE 011612241-02



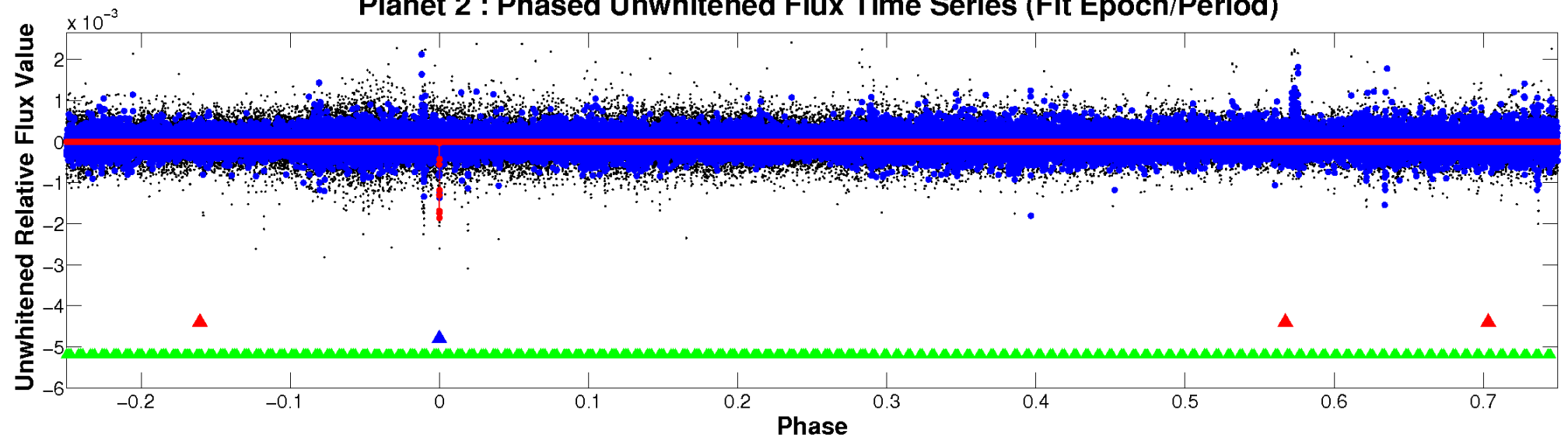
ALT Odd/Even

TCE 011612241-02

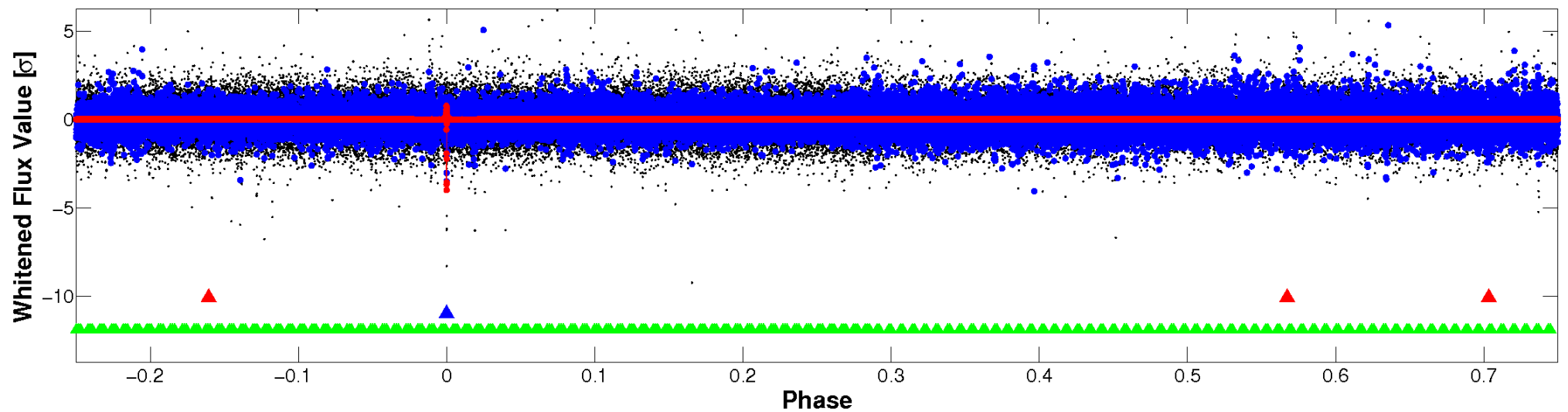


Non-Whitened Vs. Whitened Light Curve

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



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



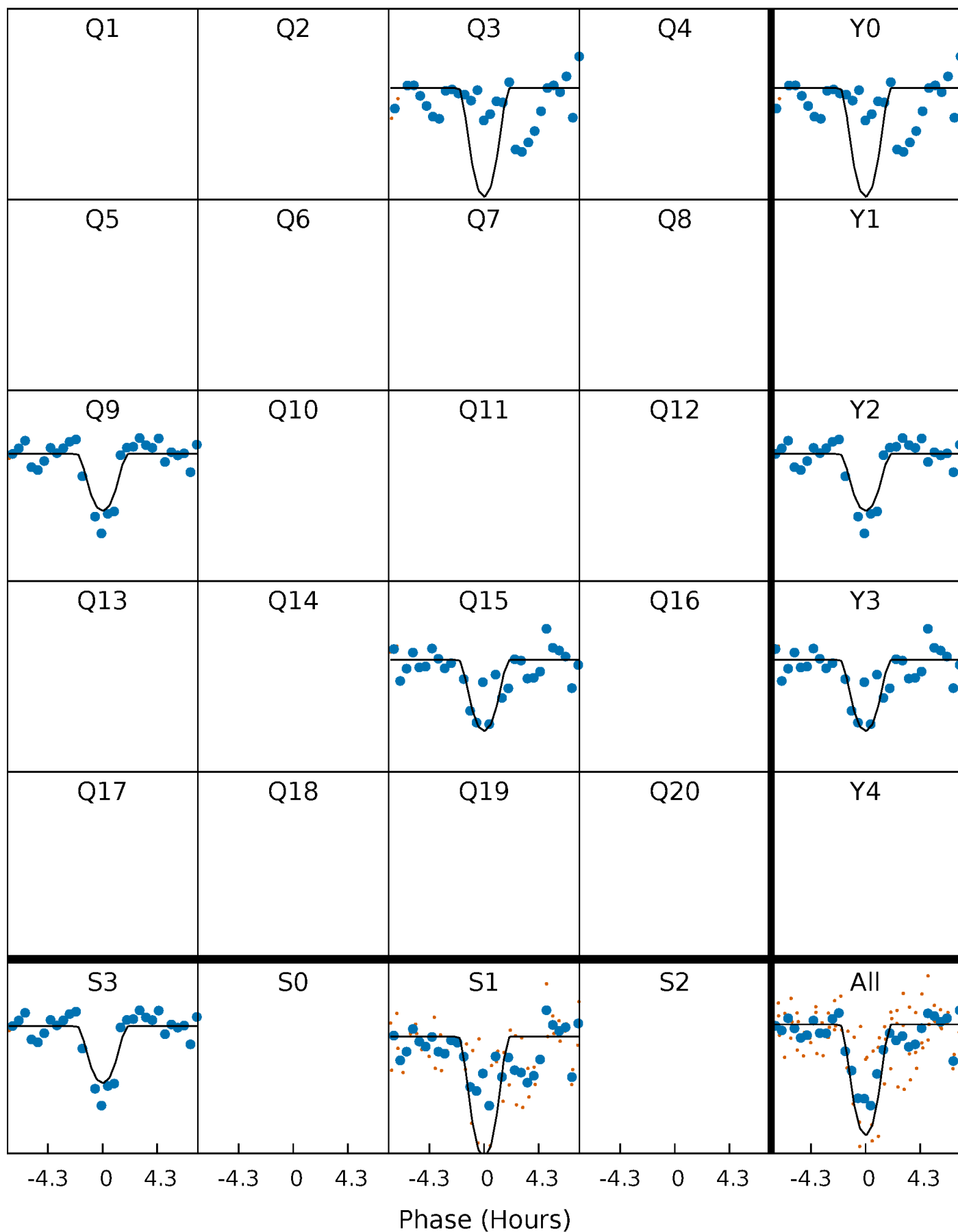
PDC Quarter-Phased Transit Curves

TCE 011612241-02 $P=574.328324$ Days $T_0=276.628483$ (BKJD)



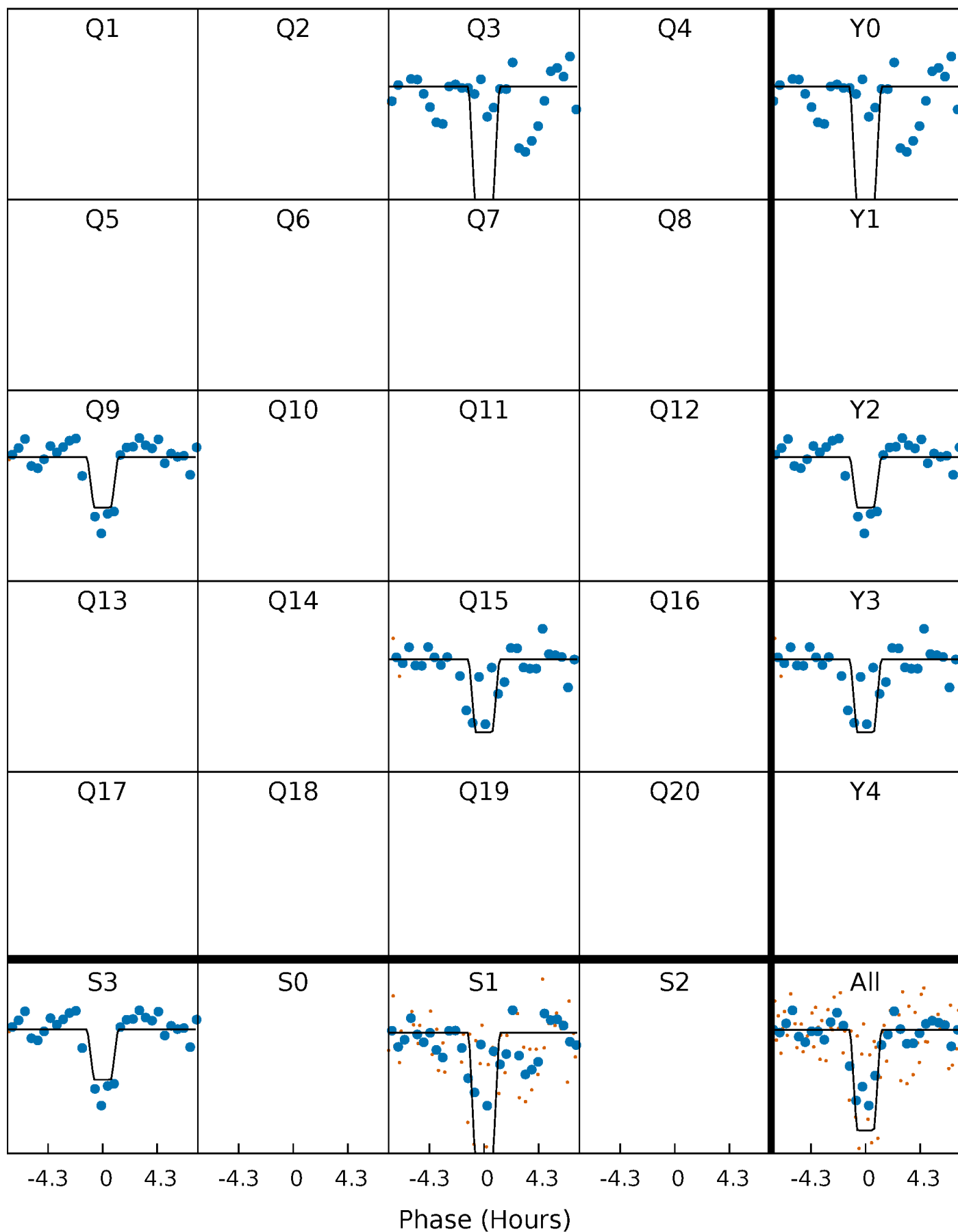
DV Quarter-Phased Transit Curves

TCE 011612241-02 $P=574.328324$ Days $T_0=276.628483$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

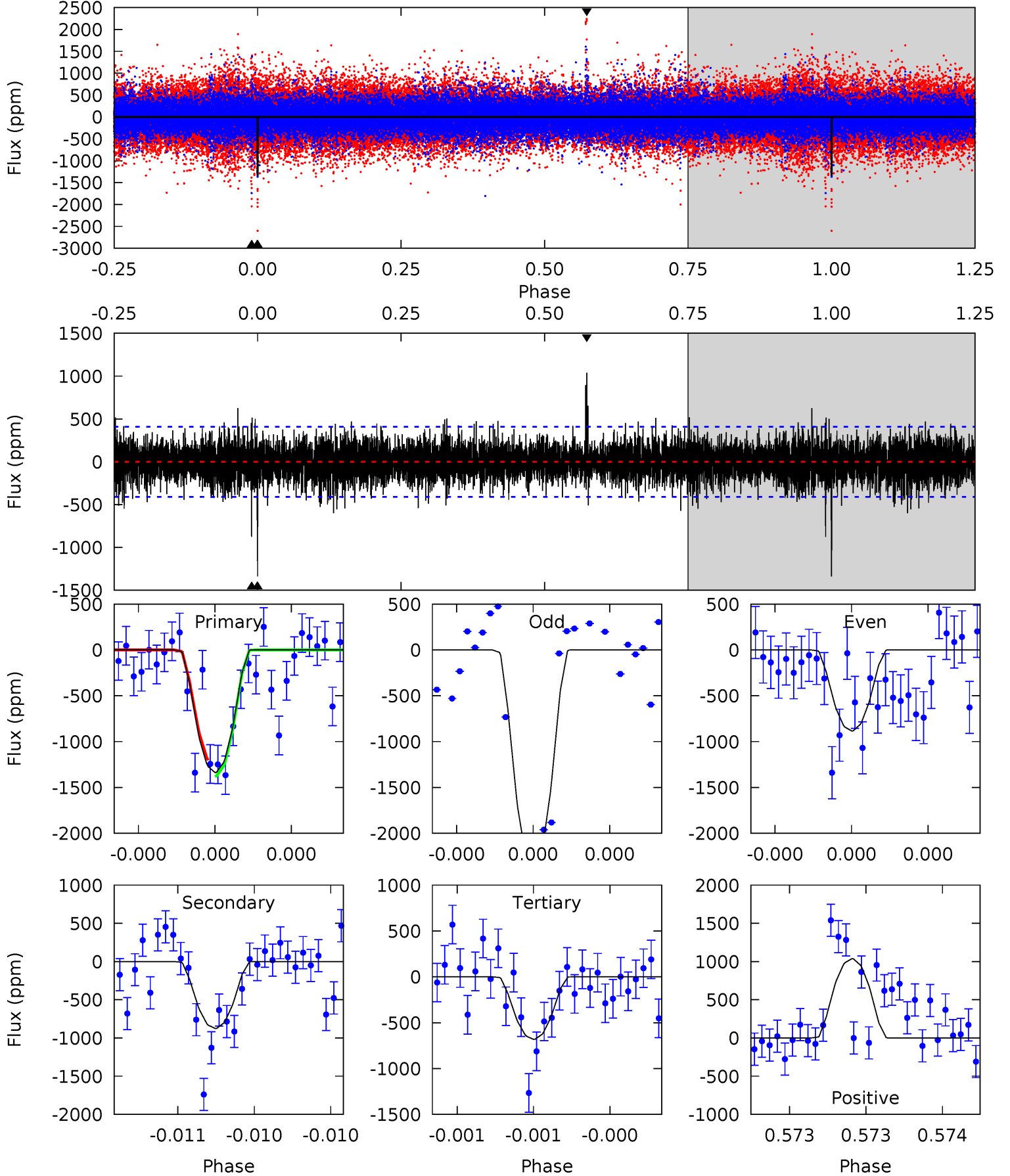
TCE 011612241-02 P=574.339693 Days $T_0=276.618755$ (BKJD)



DV Model-Shift Uniqueness Test

011612241-02, P = 574.328324 Days, E = 276.628483 Days

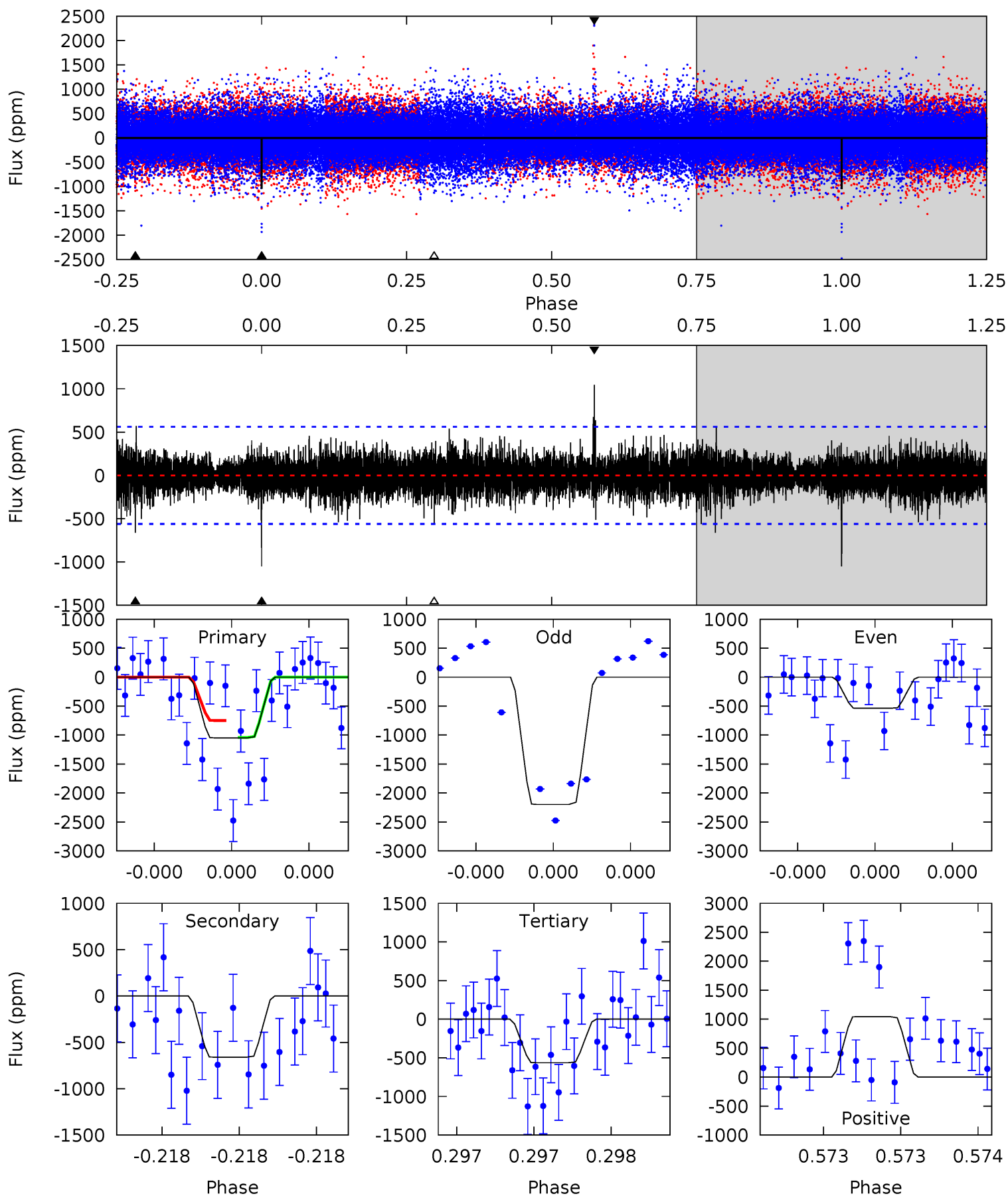
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.5	12.1	9.41	14.3	5.65	3.60	1.96	9.05	4.15	2.67	-2.22	9.41	0.99	0.44	1.19



Alt Model-Shift Uniqueness Test

011612241-02, P = 574.339693 Days, E = 276.618755 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.8	6.77	5.79	10.7	5.76	3.76	1.30	4.97	0.05	0.99	-3.93	8.20	1.22	0.50	0



Stellar Parameters For KIC 011612241

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5953^{+161}_{-179}	$4.433^{+0.087}_{-0.203}$	$-0.180^{+0.300}_{-0.300}$	$0.990^{+0.300}_{-0.129}$	$0.968^{+0.132}_{-0.119}$	$1.407^{+0.523}_{-0.695}$
	+3%/-3%	+2%/-5%	+167%/-167%	+30%/-13%	+14%/-12%	+37%/-49%
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 011612241-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-876 ± 73	$5.83^{+3.06}_{-2.59}$	321^{+24}_{-17}	4665^{+1398}_{-656}	26187^{+59466}_{-15028}
Alt.	-660 ± 97	$4.65^{+3.01}_{-2.59}$	319^{+24}_{-17}	4800^{+2286}_{-791}	$30094^{+119279}_{-19204}$

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 $A_{obs} \gg 1.0$

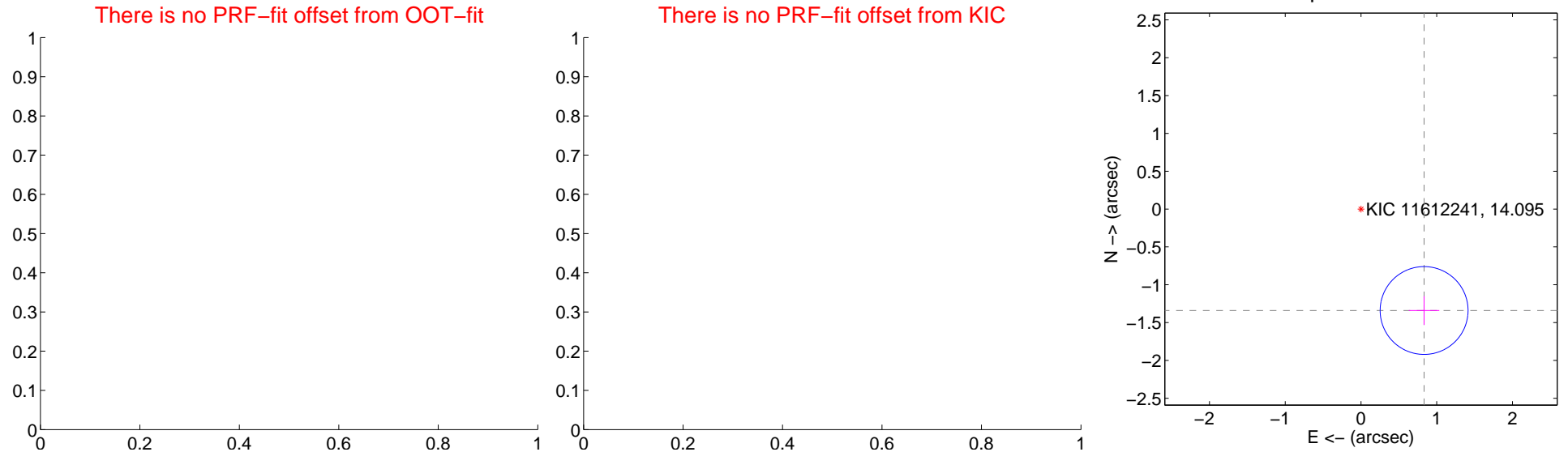
DV Centroid Data

Supplemental centroid analysis for 011612241-02. Kepler magnitude: 14.10. Transit SNR 11.81

There are 0 quarters with good PRF difference image offsets

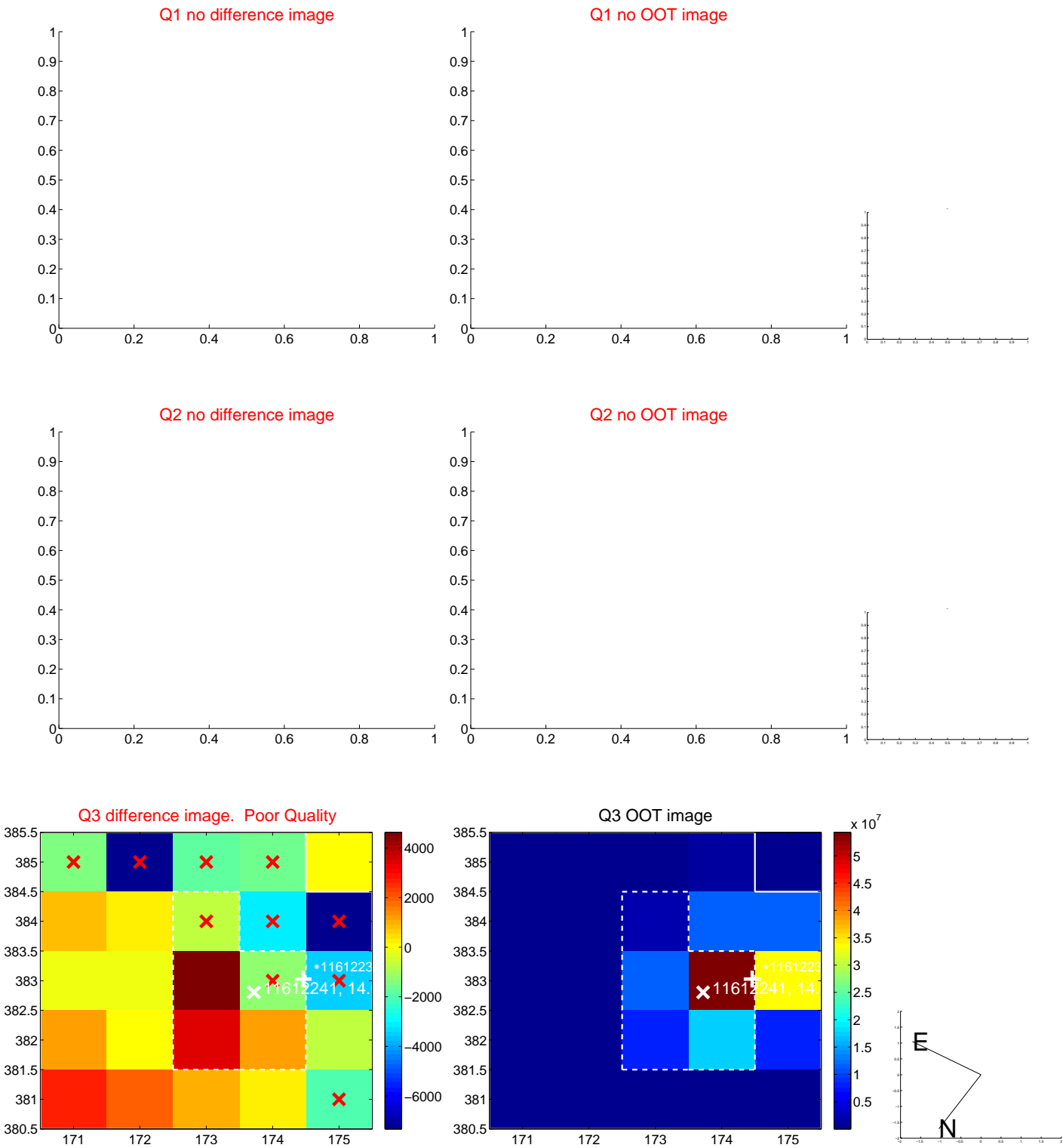
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	1.58 ± 0.19	8.16	-0.83 ± 0.20	-1.34 ± 0.19



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.

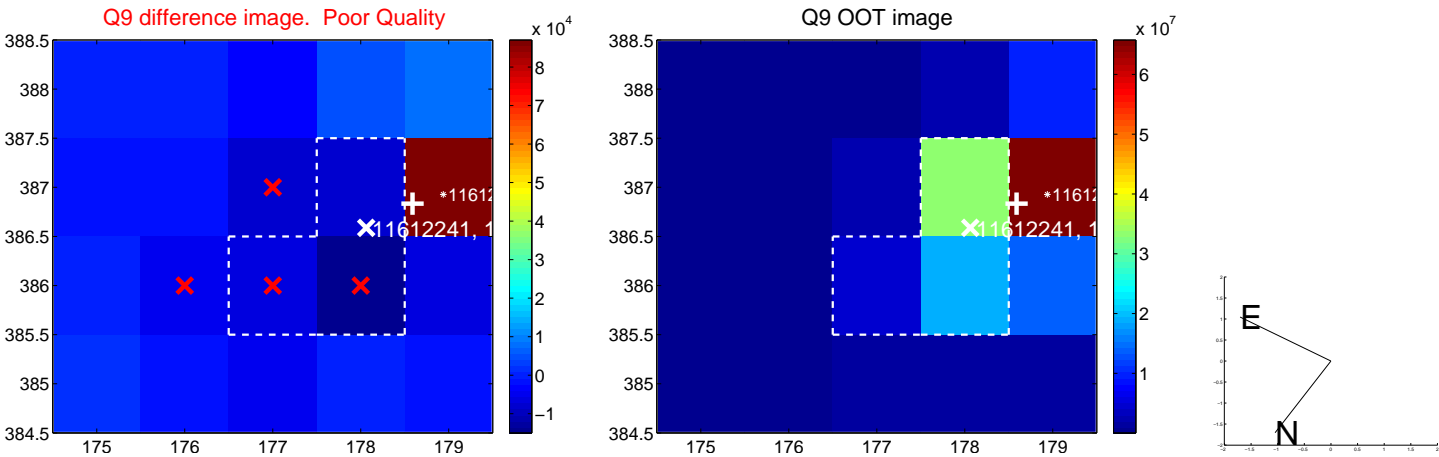
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



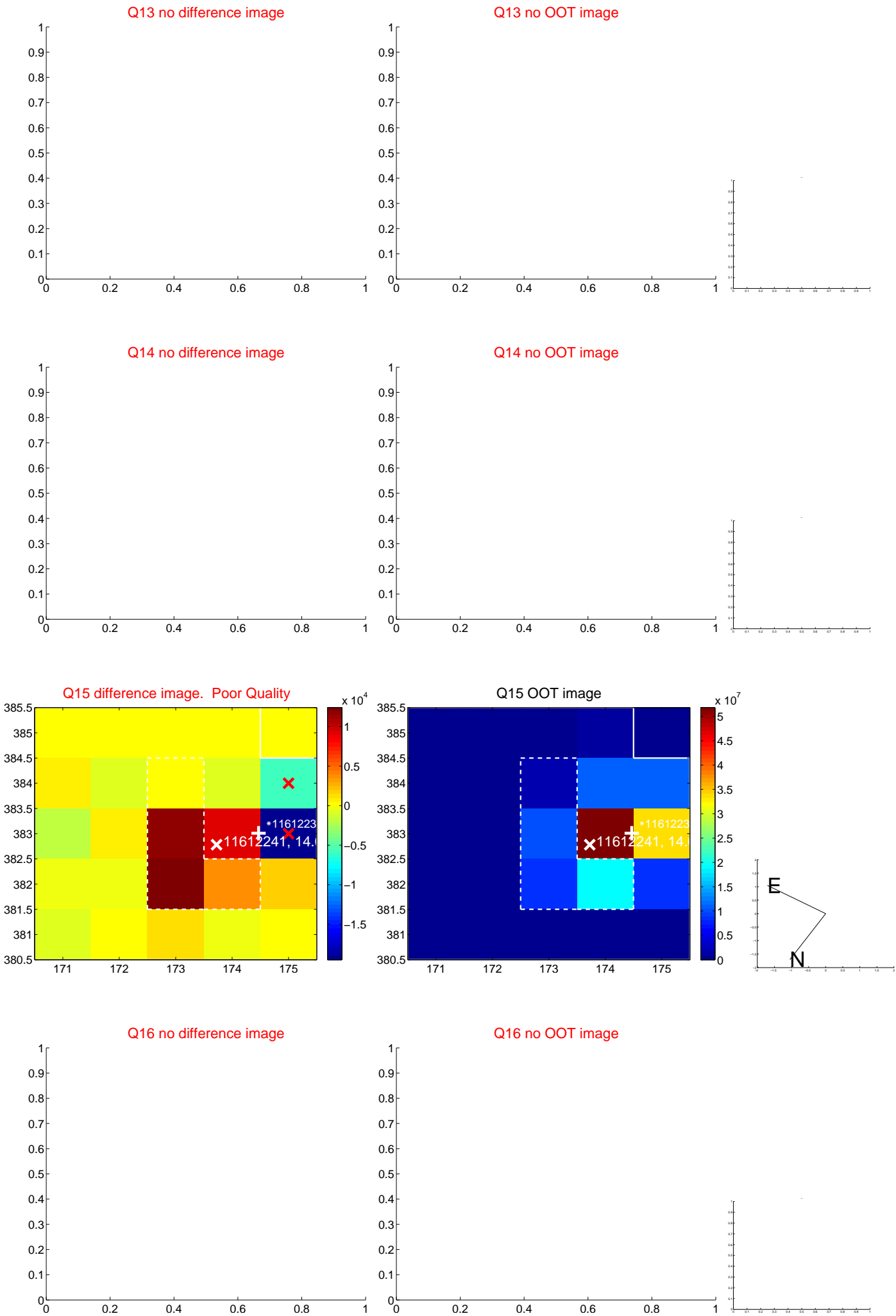
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



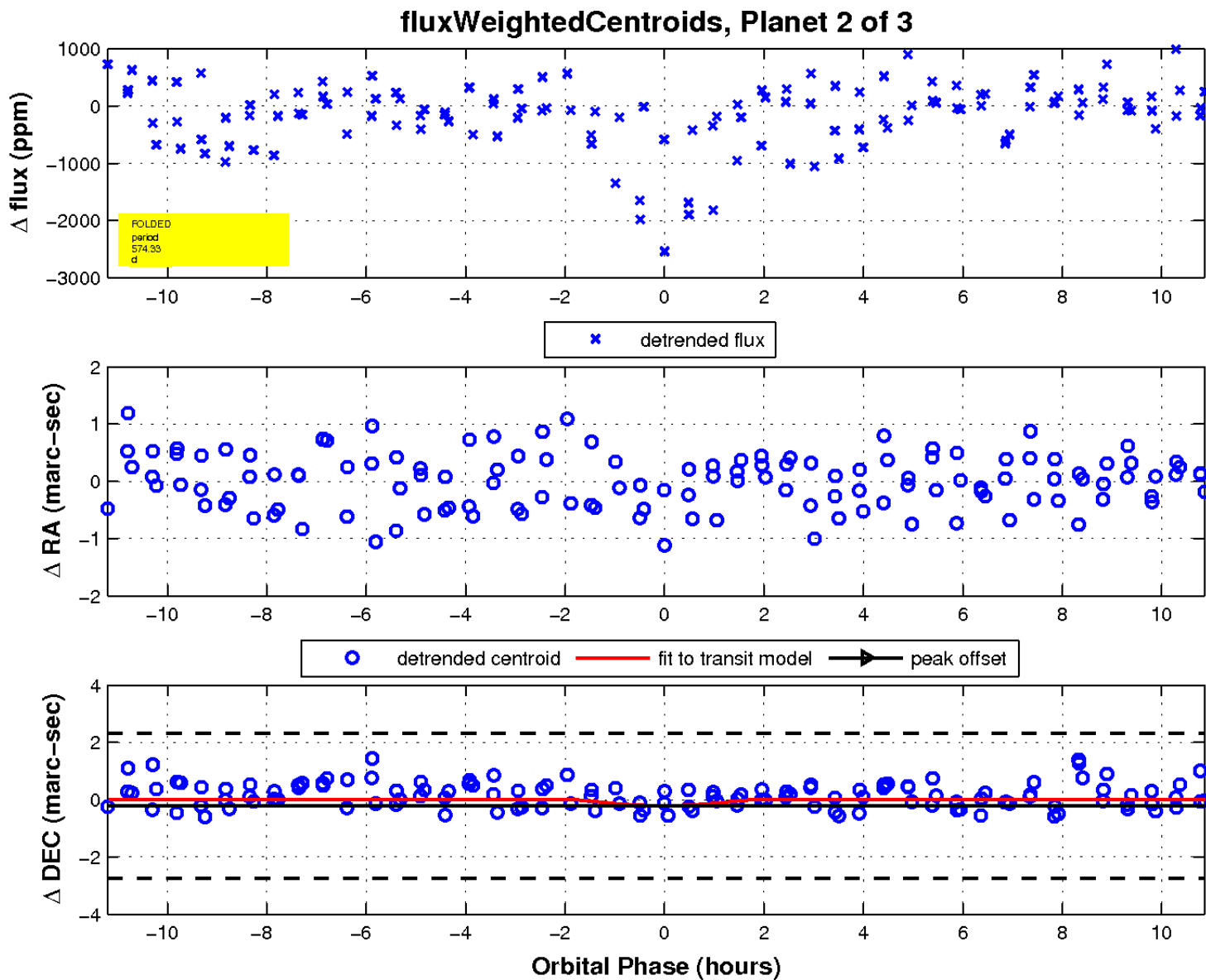
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

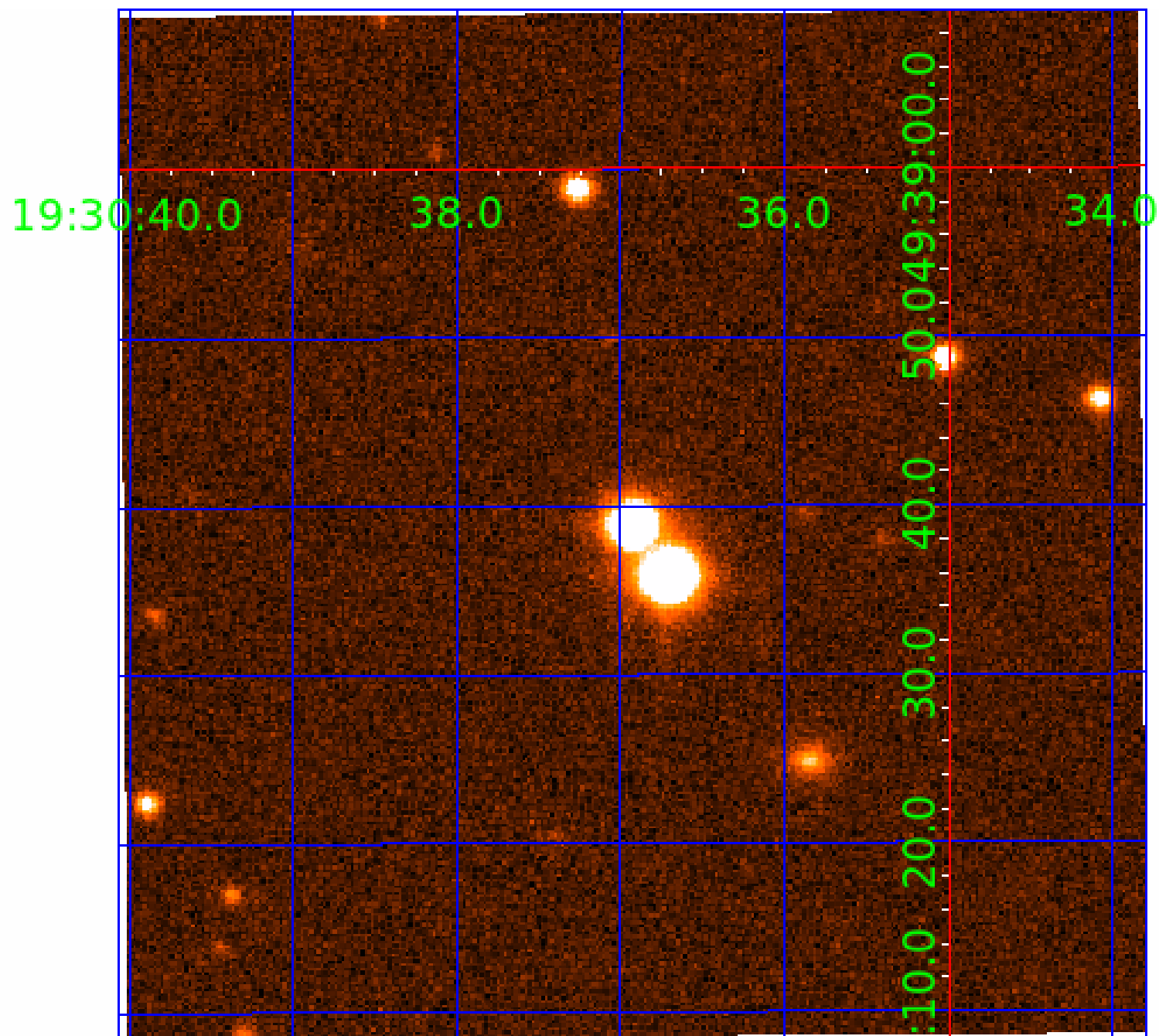


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011612241

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})
011612241-02	OBS	No	574.328324	276.628483	1861.0	3.748	12.5	11.8	0.99	5953	5.65	0.62
011612241-03	OBS	8059.01	4.564640	133.086420	100.1	14.481	9.7	11.6	0.99	5953	1.35	388.20

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011612241-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011612241-03	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_RESOLVED_OFFSET—EPHEM_MATCH

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.

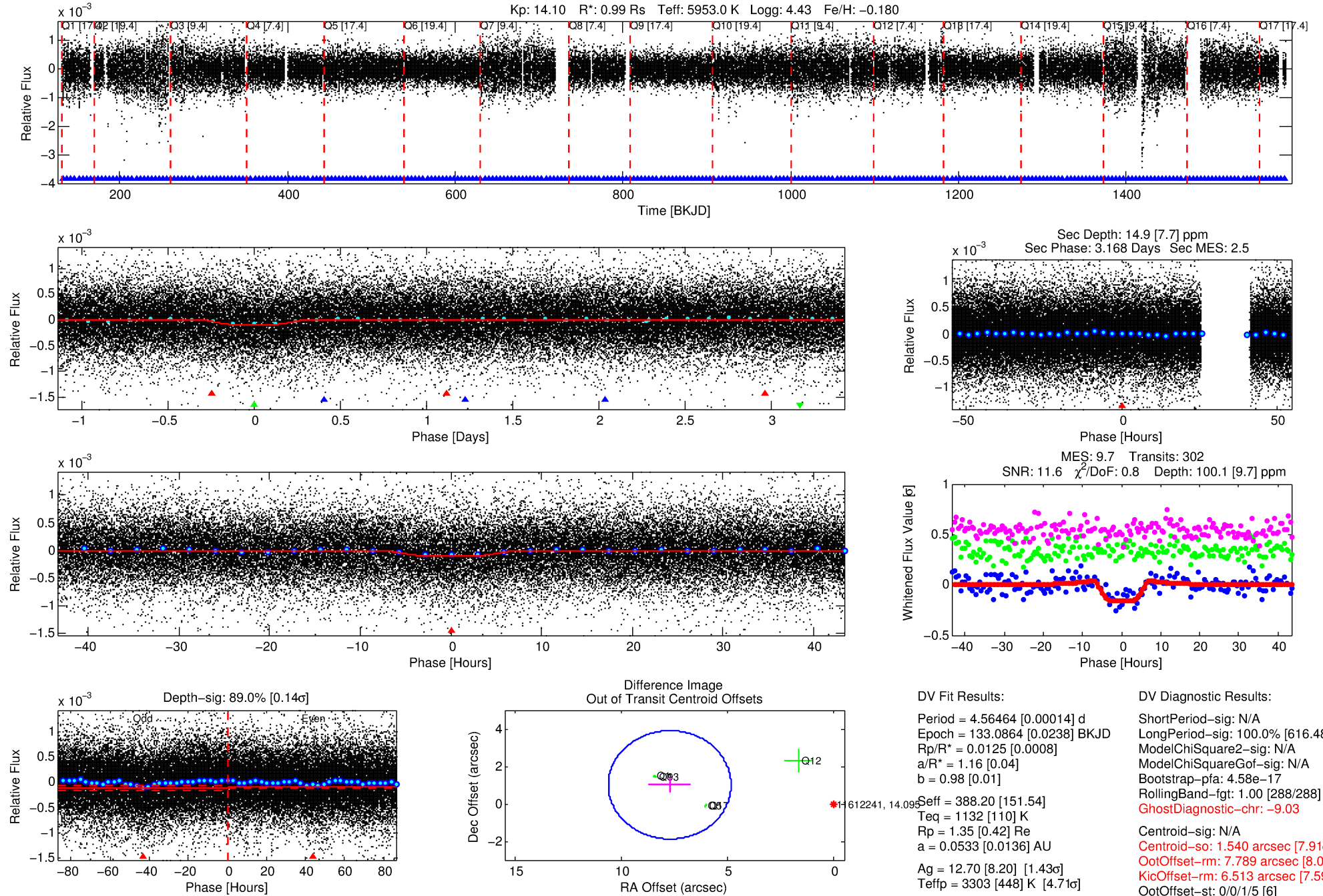
Ephemeris Match Information For 011612241-03

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
011612241-03	11612241	V850-Cyg-pri	10206340	1:1	9254.2	-1	-7	11.20	14.09	6018.90	Cross-Talk	0	2.88	0.40

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 11612241 Candidate: 3 of 3 Period: 4.565 d



DV Fit Results:

Period = 4.56464 [0.00014] d
Epoch = 133.0864 [0.0238] BKJD
Rp/R* = 0.0125 [0.0008]
a/R* = 1.16 [0.04]
b = 0.98 [0.01]
Teff = 388.20 [151.54]
Teff = 1132 [110] K
Rp = 1.35 [0.42] Re
a = 0.0533 [0.0136] AU
Ag = 12.70 [8.20] [1.43 σ]
Teffp = 3303 [448] K [4.71 σ]

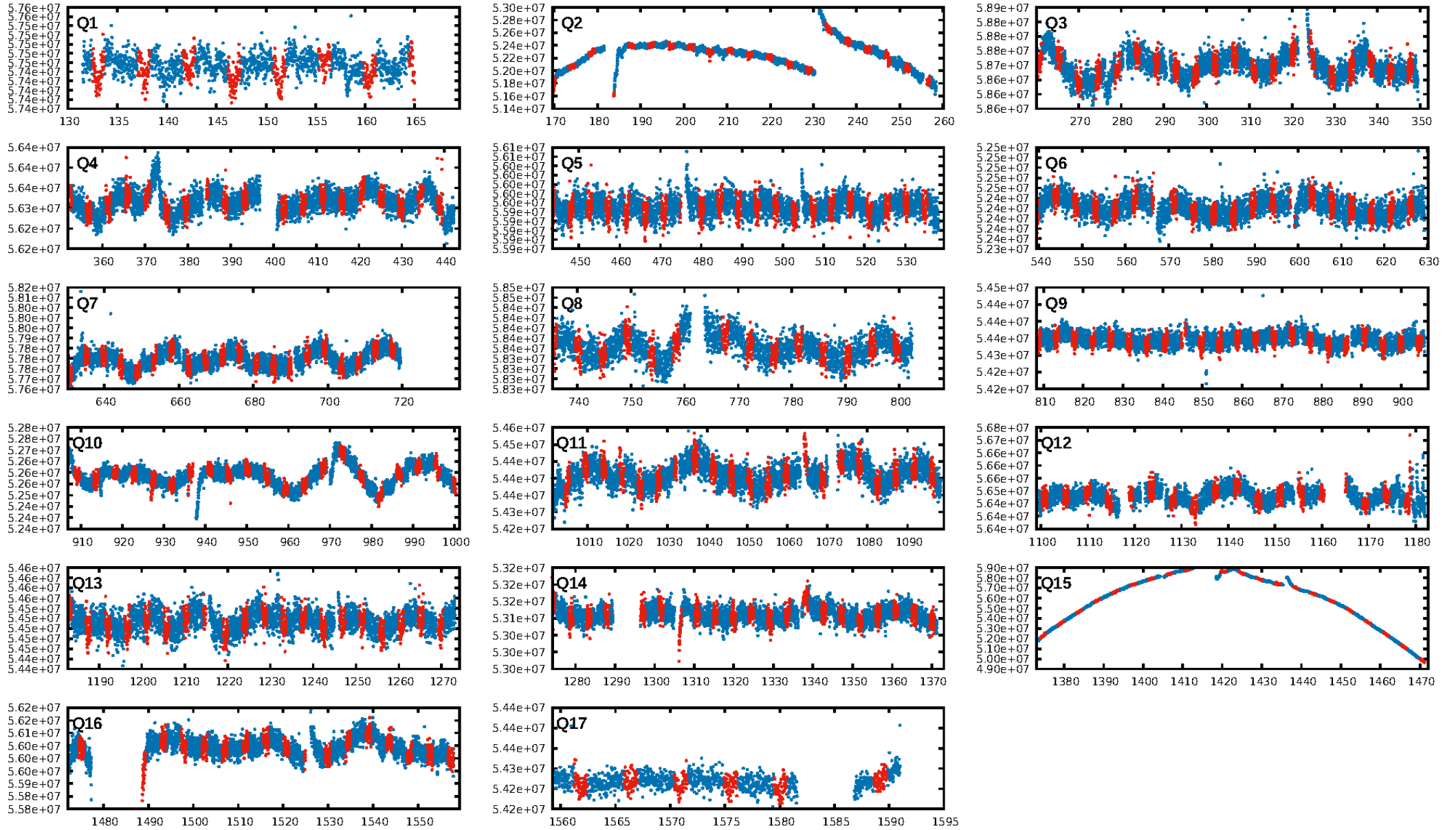
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [616.48 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.58e-17
RollingBand-fgt: 1.00 [288/288]
GhostDiagnostic-chr: -9.03
Centroid-sig: N/A
Centroid-so: 1.540 arcsec [7.91 σ]
OotOffset-rm: 7.789 arcsec [8.08 σ]
KicOffset-rm: 6.513 arcsec [7.59 σ]
OotOffset-st: 0/0/1/5 [6]
KicOffset-st: 0/0/1/5 [6]
DiffImageQuality-fgm: 0.83 [5/6]
DiffImageOverlap-fno: 1.00 [17/17]

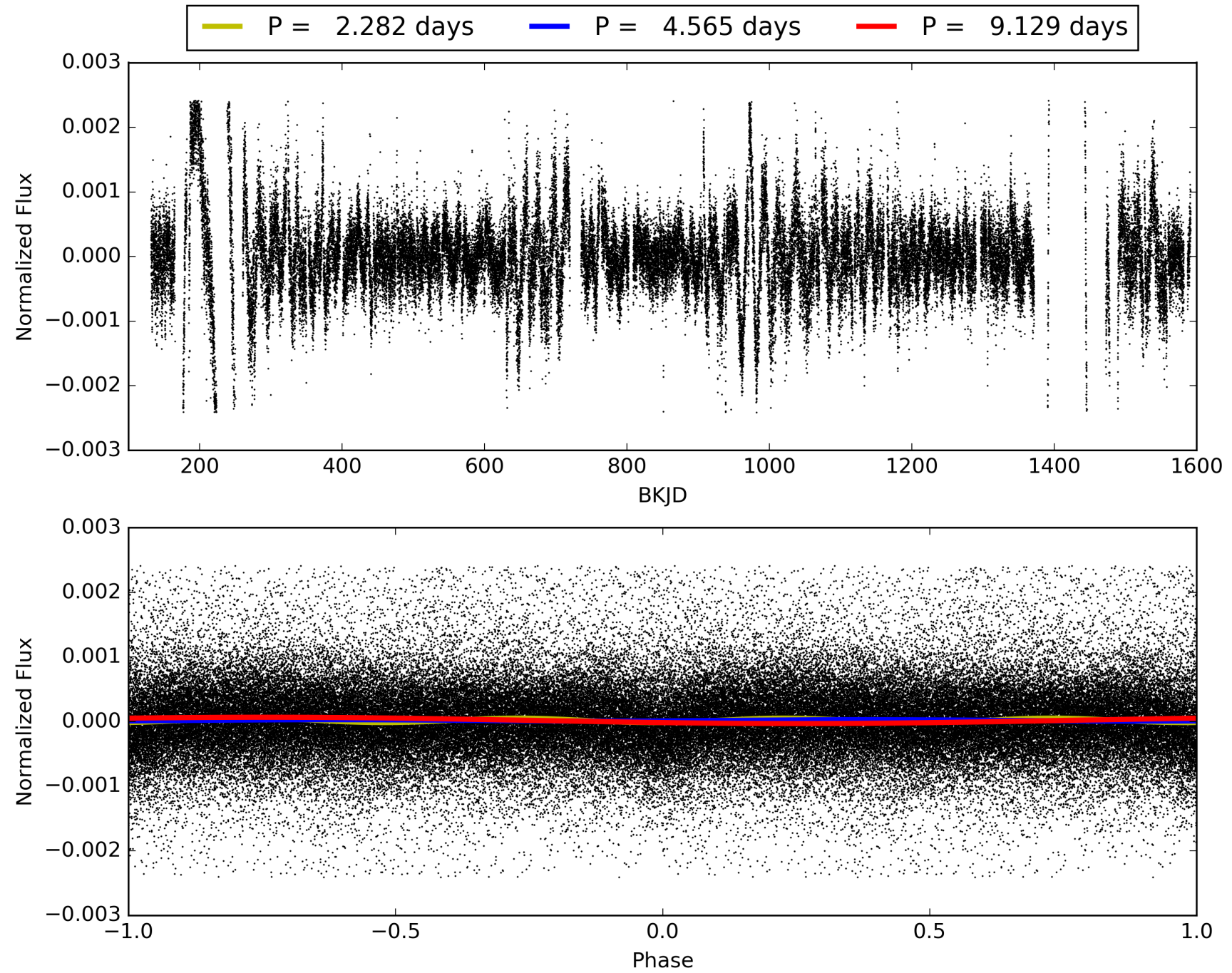
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 14:07:01 Z

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

TCE 011612241-03, PDC Light Curves

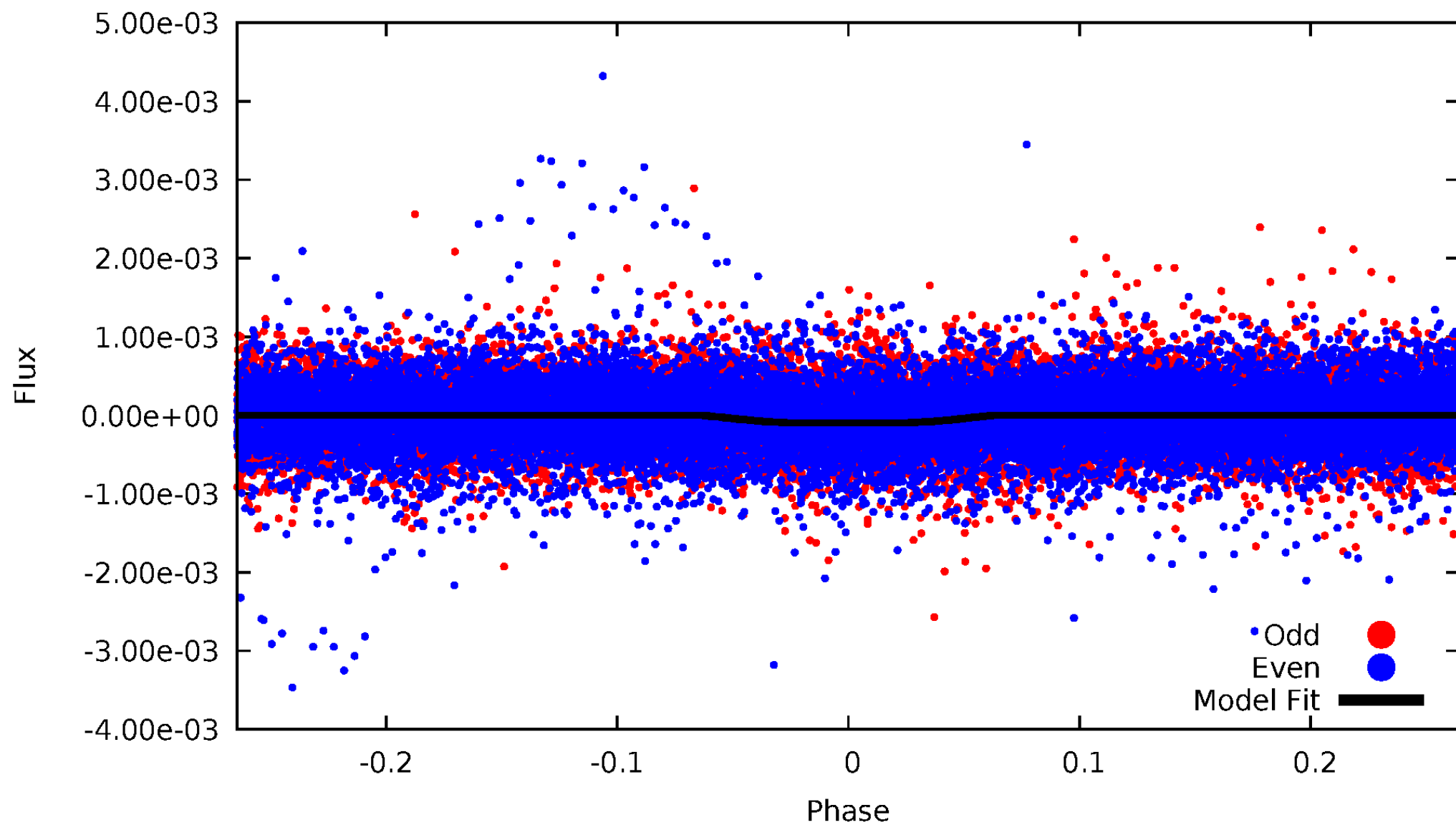


TCE 011612241-03



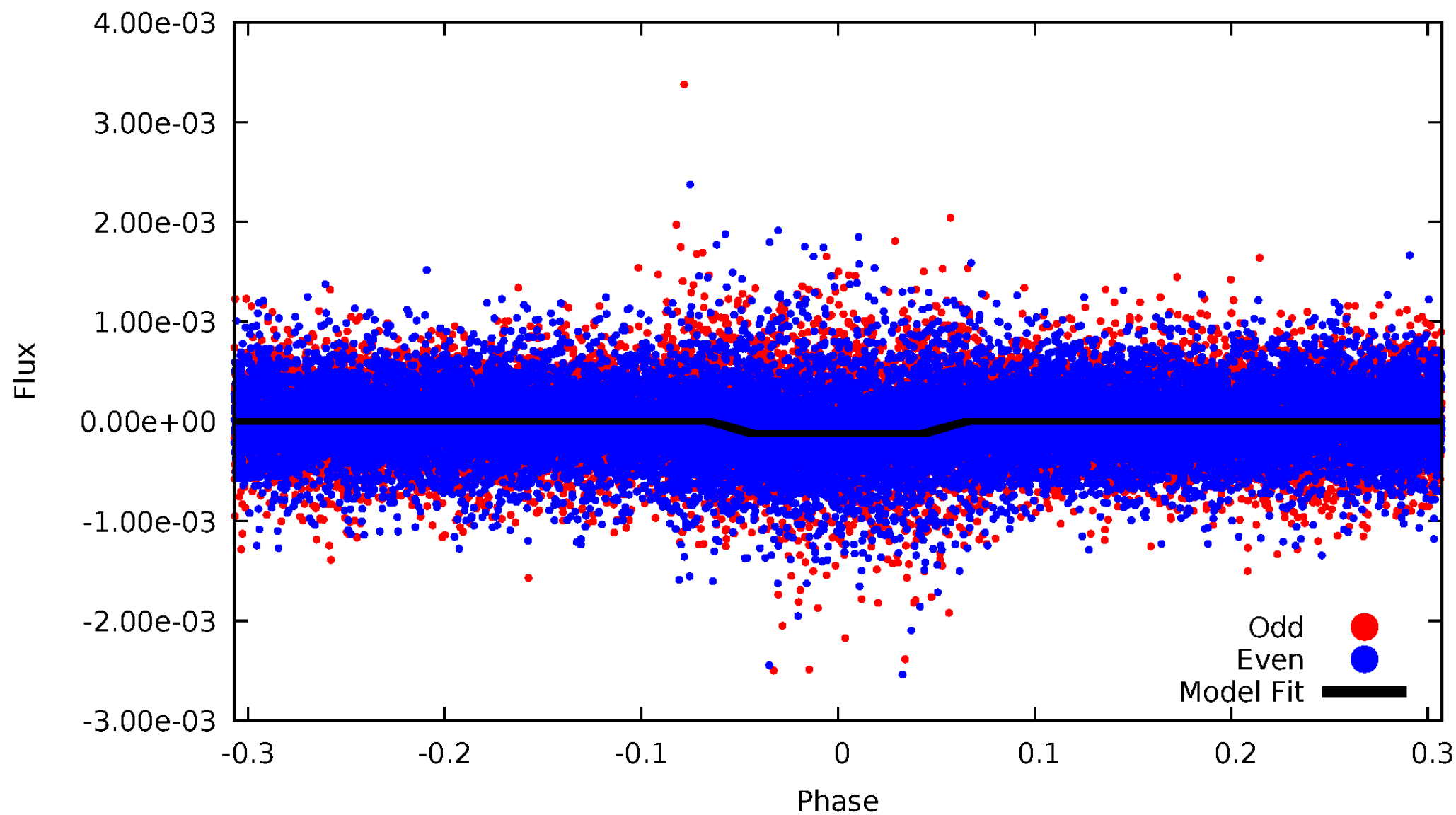
DV Odd/Even

TCE 011612241-03



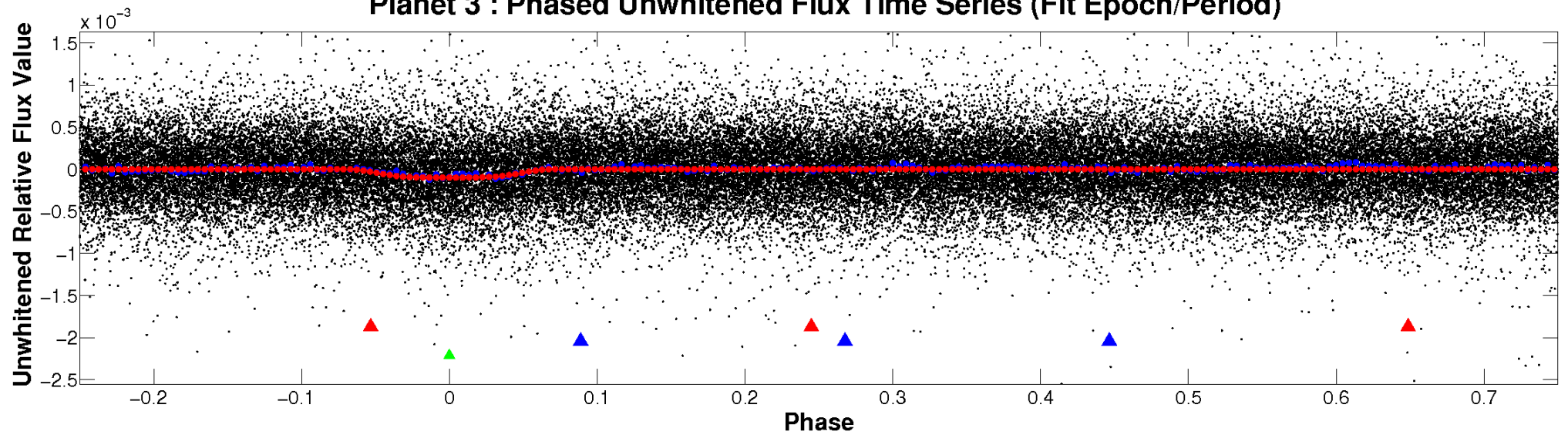
ALT Odd/Even

TCE 011612241-03

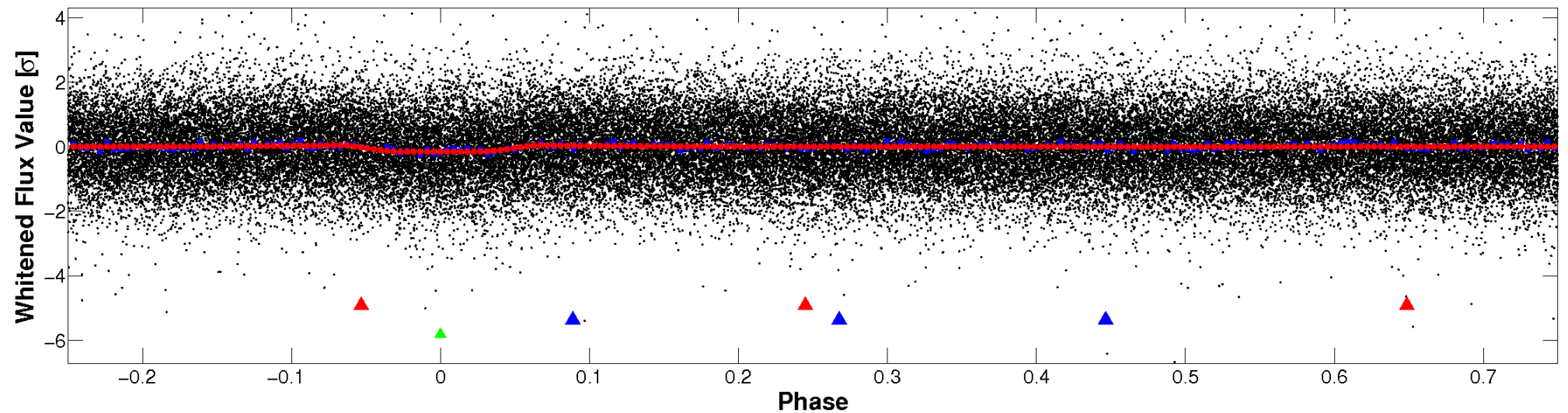


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

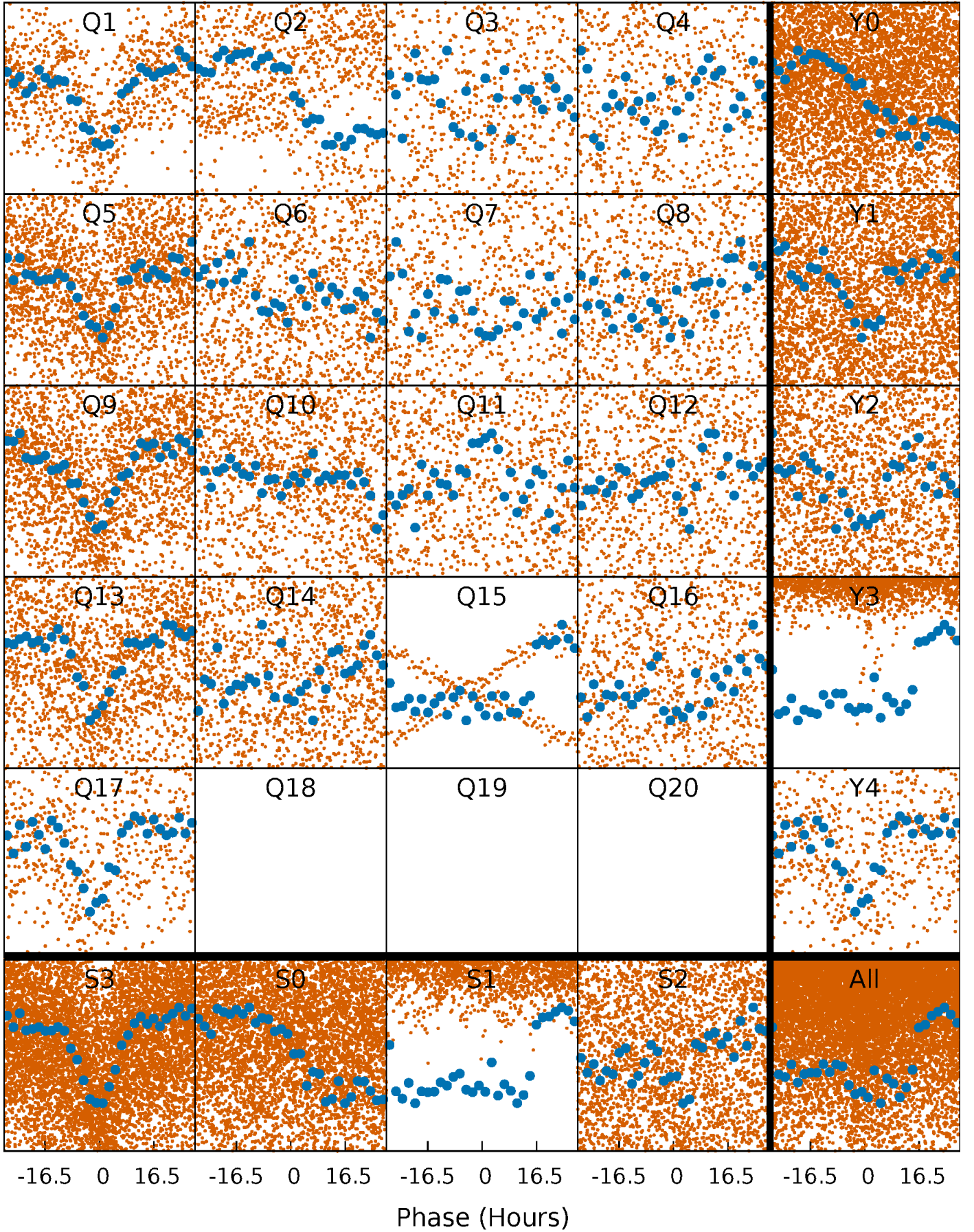


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



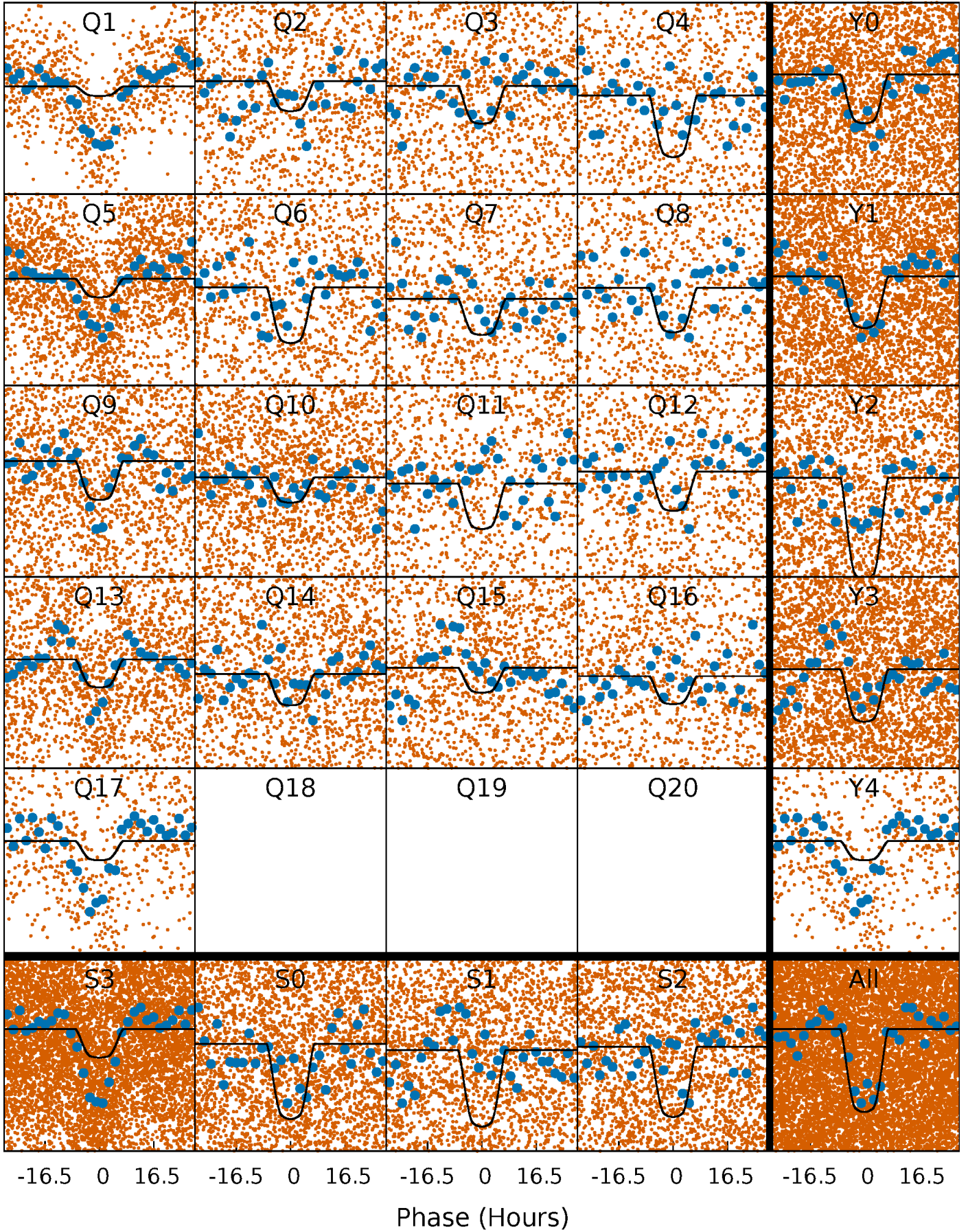
PDC Quarter-Phased Transit Curves

TCE 011612241-03 P= 4.564640 Days $T_0=133.086420$ (BKJD)



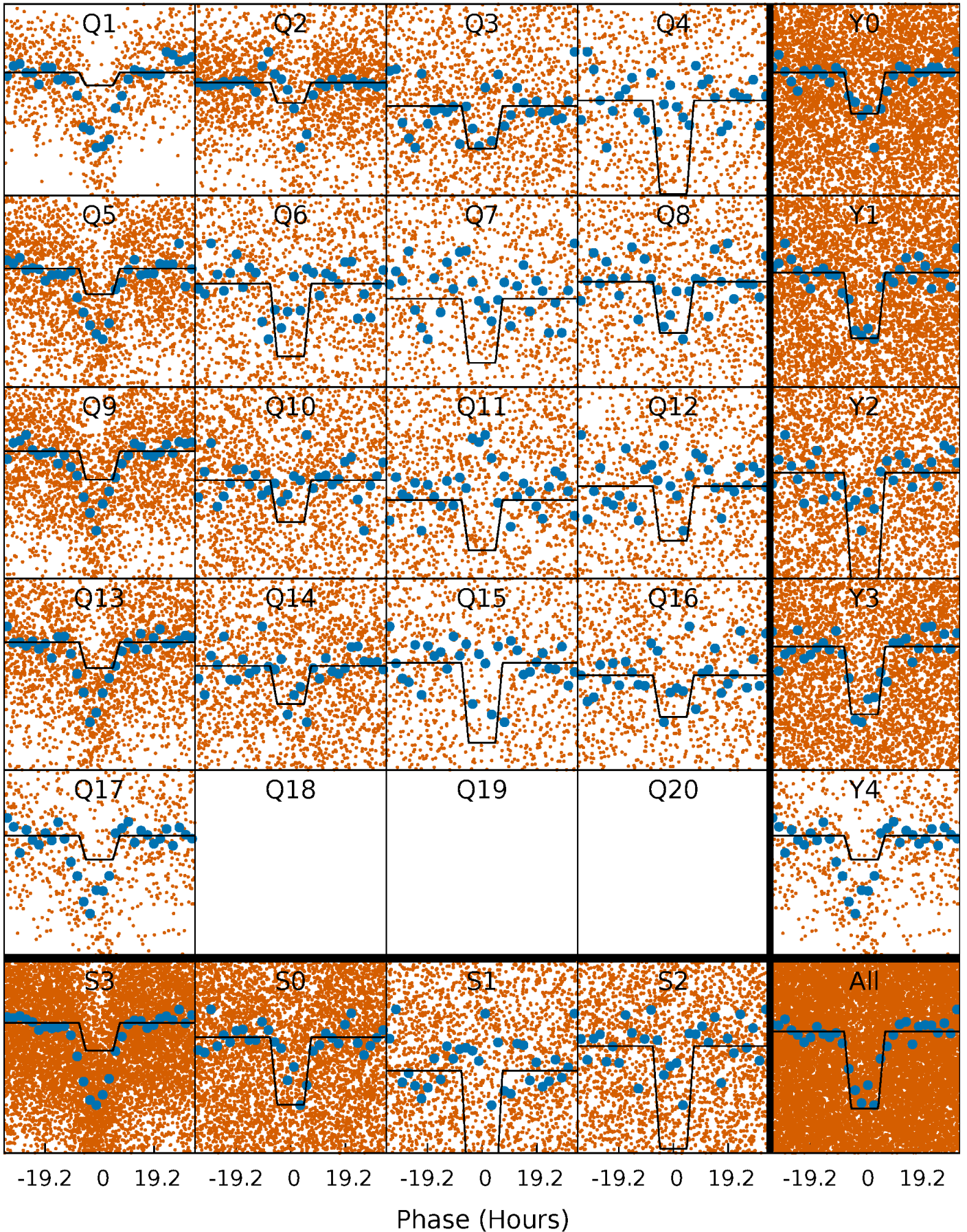
DV Quarter-Phased Transit Curves

TCE 011612241-03 P= 4.564640 Days $T_0=133.086420$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

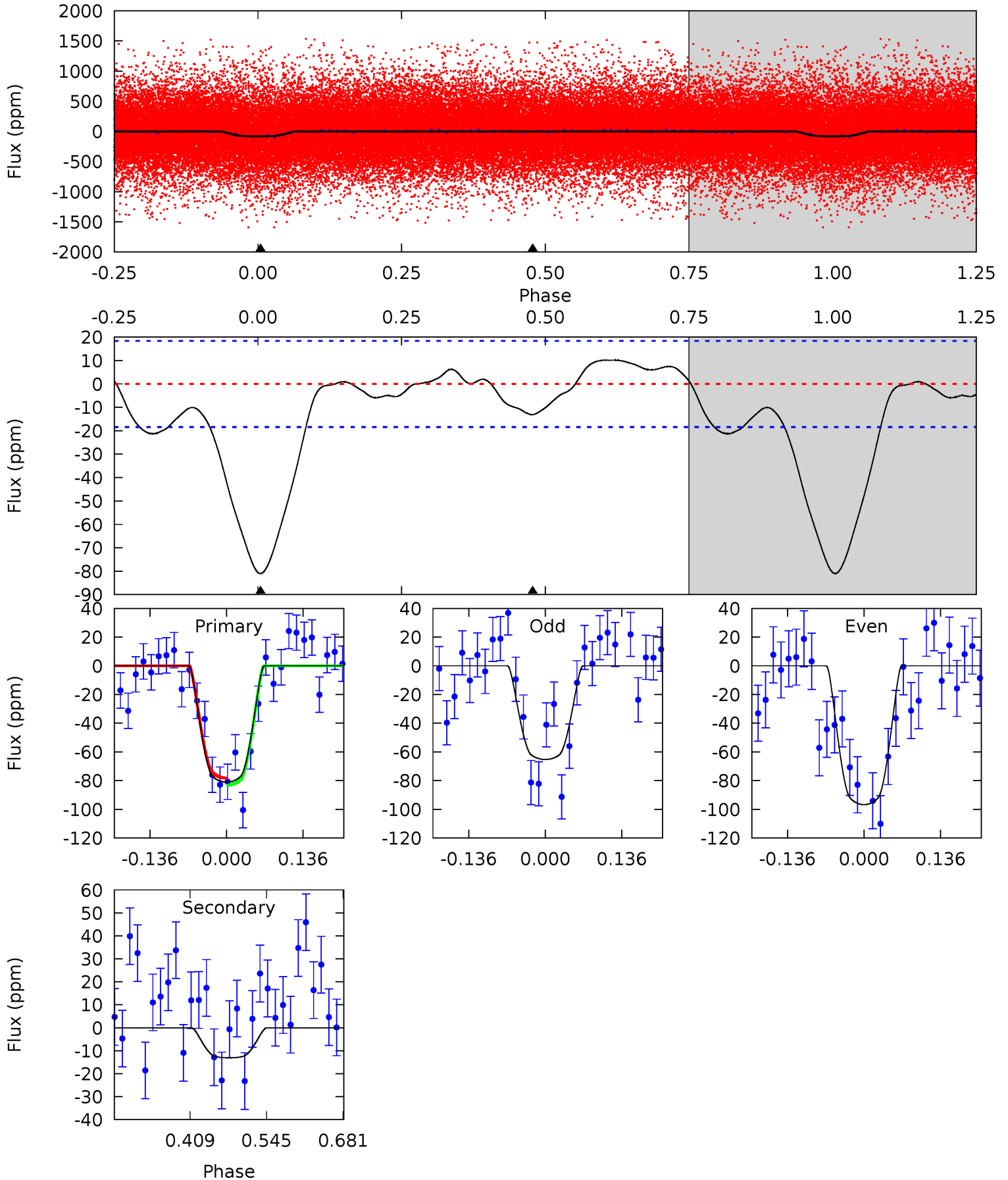
TCE 011612241-03 P= 4.564786 Days $T_0=133.096968$ (BKJD)



DV Model-Shift Uniqueness Test

011612241-03, P = 4.564640 Days, E = 128.521780 Days

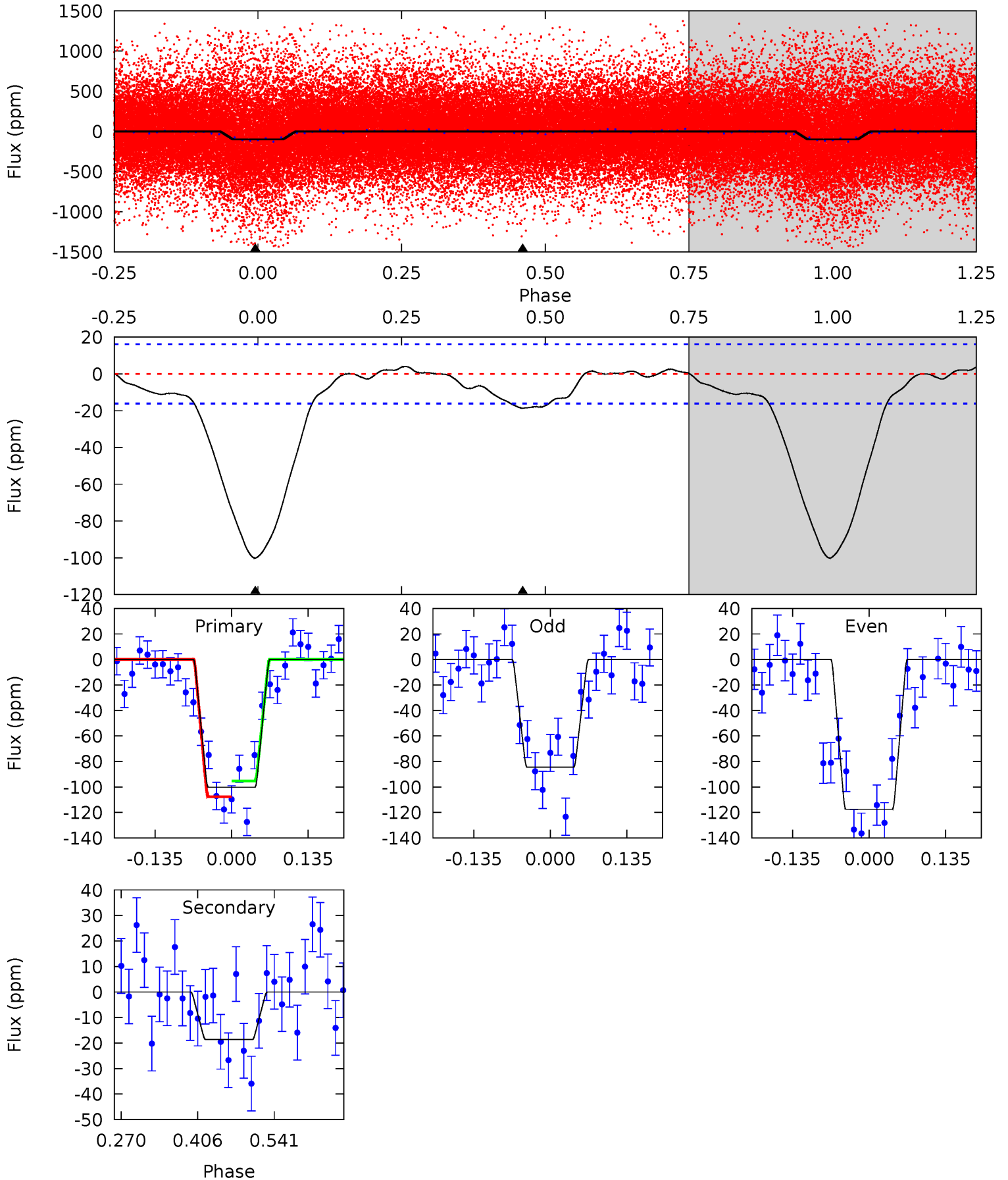
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.8	3.21	0	0	4.50	1.49	2.27	19.8	19.8	3.21	3.21	3.87	1.11	0.11	0.61



Alt Model-Shift Uniqueness Test

011612241-03, P = 4.564786 Days, E = 128.532182 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.9	5.19	0	0	4.50	1.49	1.14	27.9	27.9	5.19	5.19	4.61	0.94	0.04	1.70



Stellar Parameters For KIC 011612241

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5953^{+161}_{-179}	$4.433^{+0.087}_{-0.203}$	$-0.180^{+0.300}_{-0.300}$	$0.990^{+0.300}_{-0.129}$	$0.968^{+0.132}_{-0.119}$	$1.407^{+0.523}_{-0.695}$
	+3%/-3%	+2%/-5%	+167%/-167%	+30%/-13%	+14%/-12%	+37%/-49%
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 011612241-03 / KOI 8059.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-13 ± 4	$1.39^{+0.24}_{-0.17}$	1598^{+124}_{-84}	3597^{+232}_{-240}	10^{+5}_{-4}
Alt.	-19 ± 4	$1.22^{+0.20}_{-0.12}$	1599^{+116}_{-83}	4002^{+183}_{-178}	19^{+6}_{-6}

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

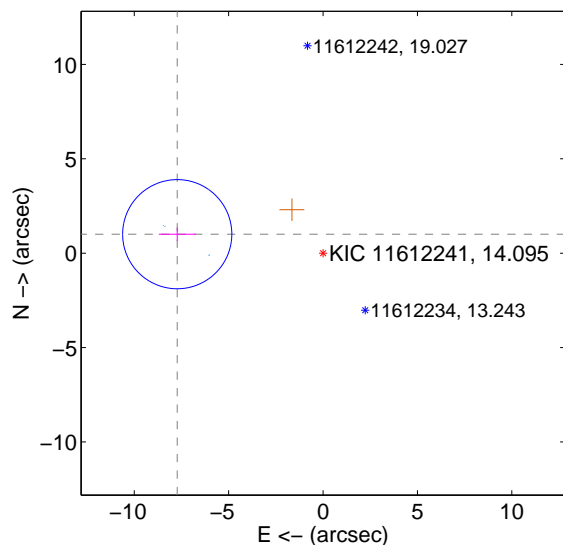
Supplemental centroid analysis for 011612241-03. Kepler magnitude: 14.10. Transit SNR 11.60

There are 5 quarters with good PRF difference image offsets

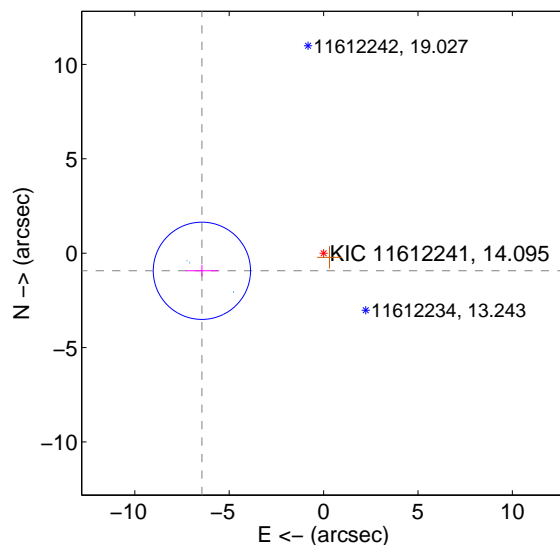
The OOT PRF centroid is offset from the target star catalog position by about 2.31 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.789 ± 0.964	8.08	7.724 ± 0.980	1.006 ± 0.353
PRF-fit source offset from KIC position	6.513 ± 0.858	7.59	6.446 ± 0.861	-0.933 ± 0.300
photometric centroid source offset	1.54 ± 0.19	7.91	-0.28 ± 0.18	-1.51 ± 0.19

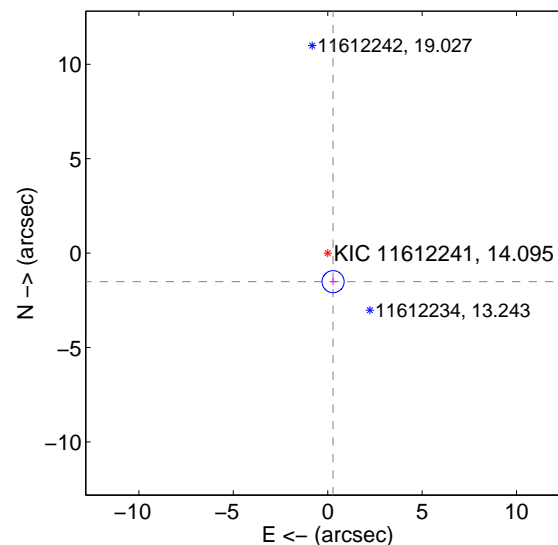
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

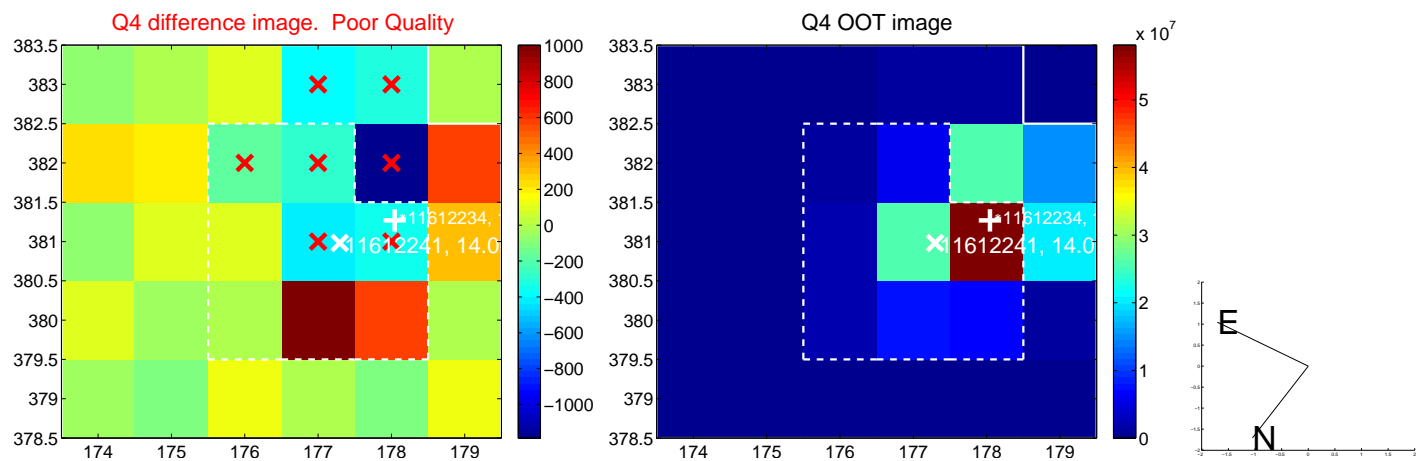
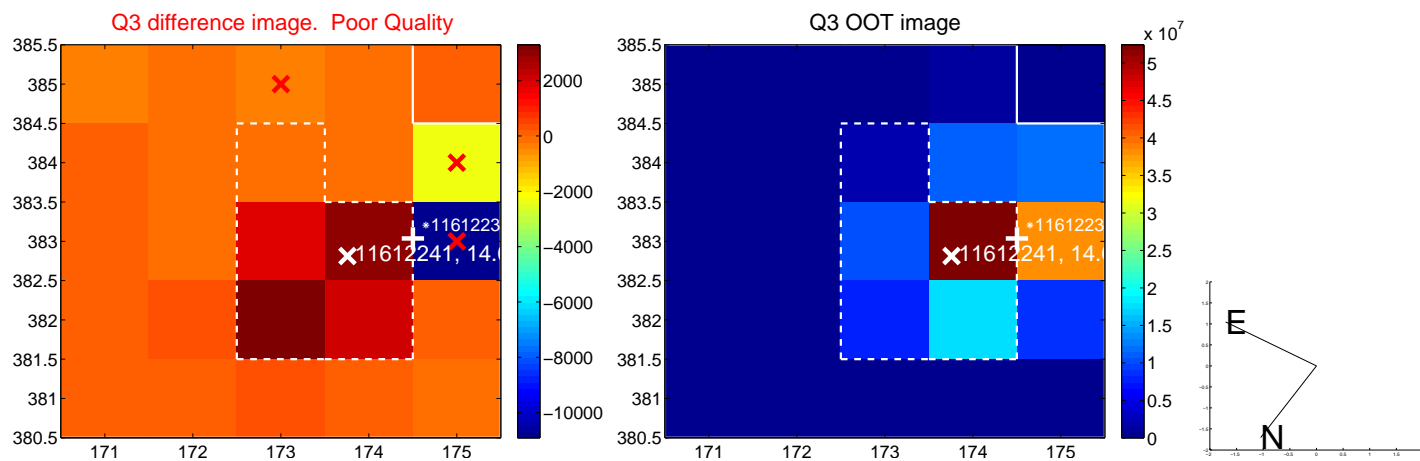
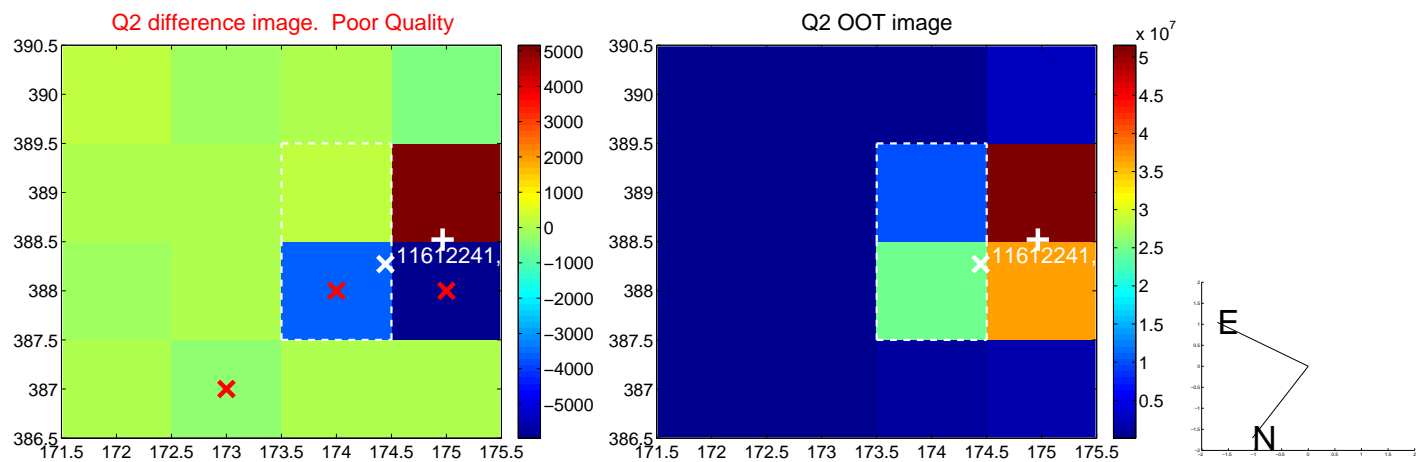
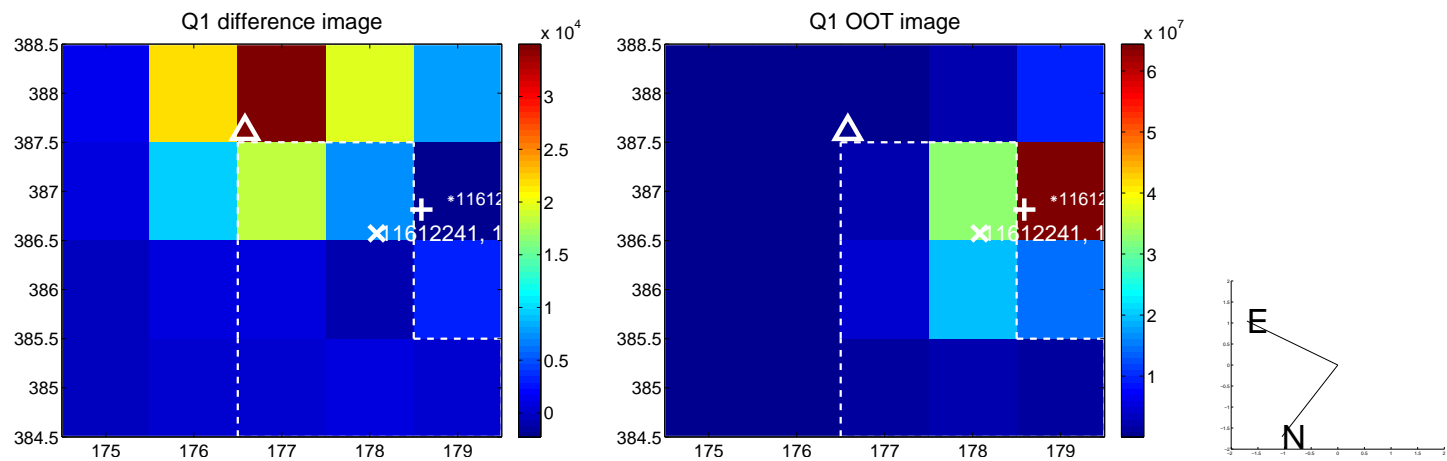


offset from photometric centroids

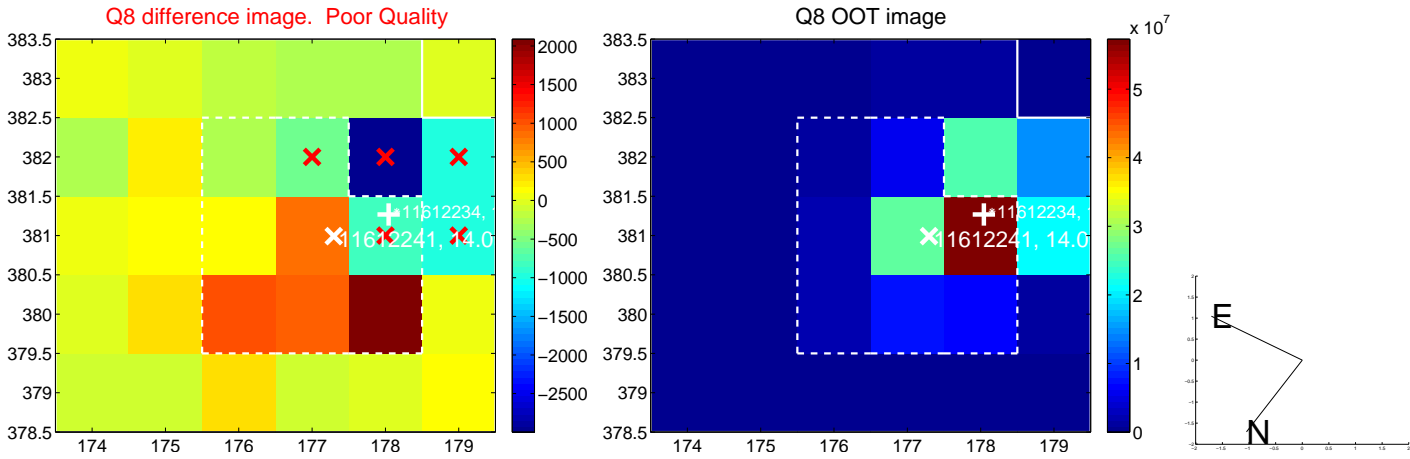
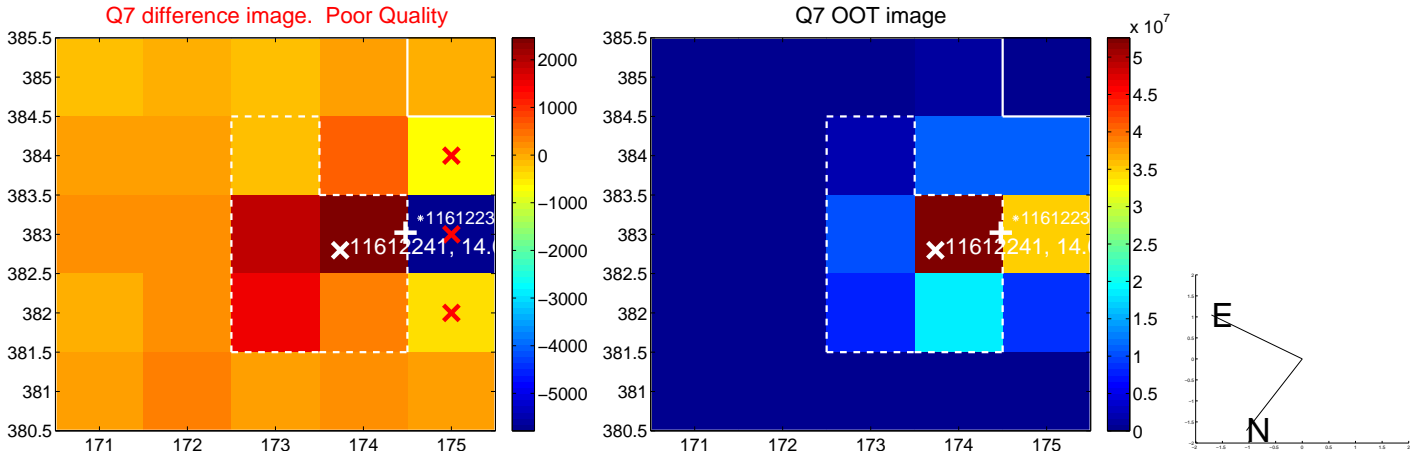
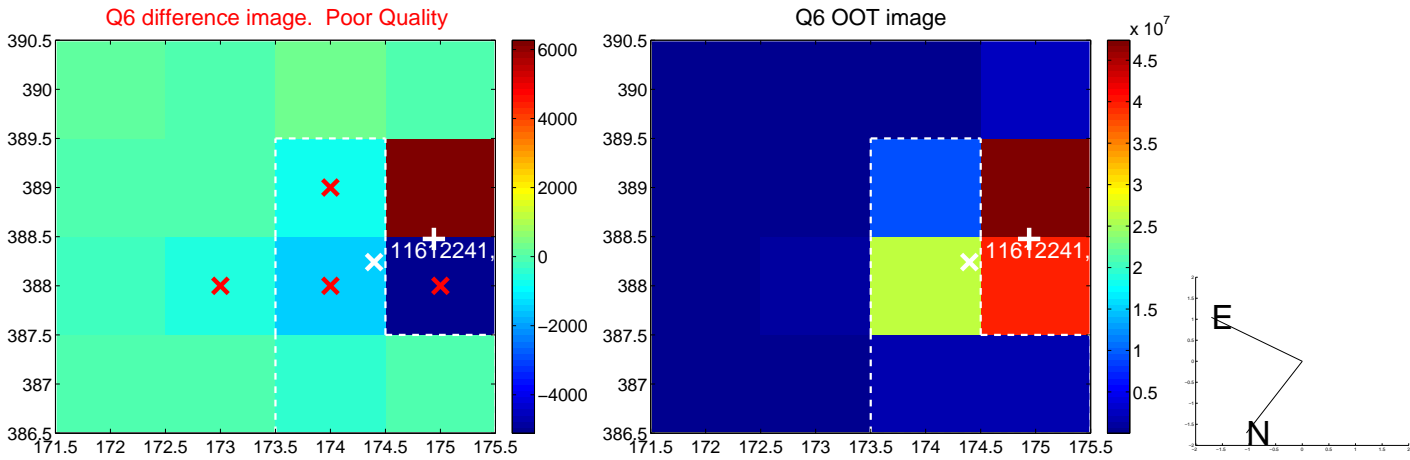
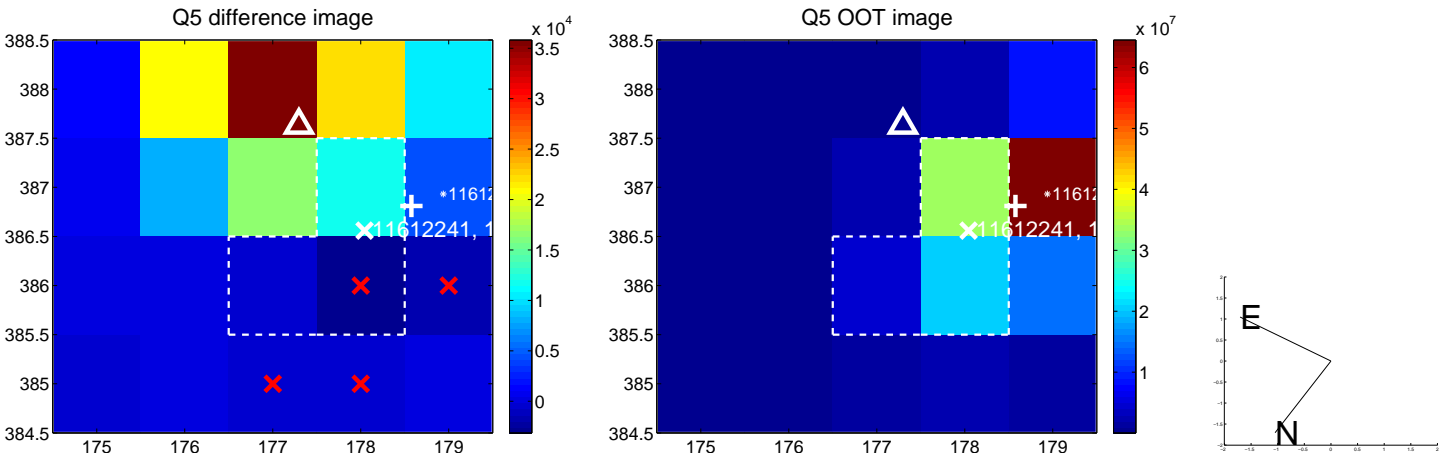


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

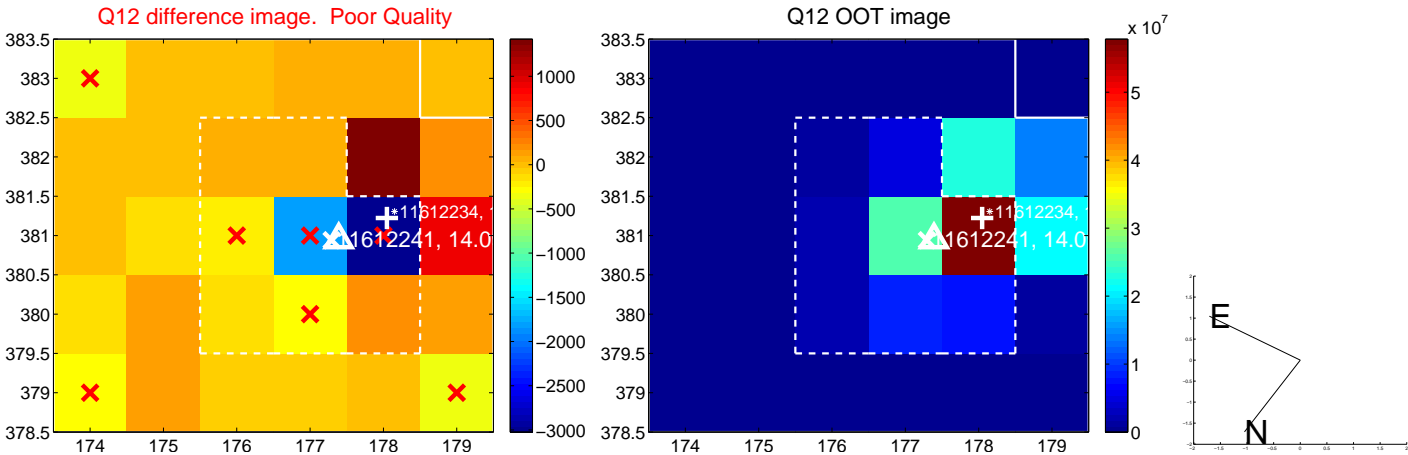
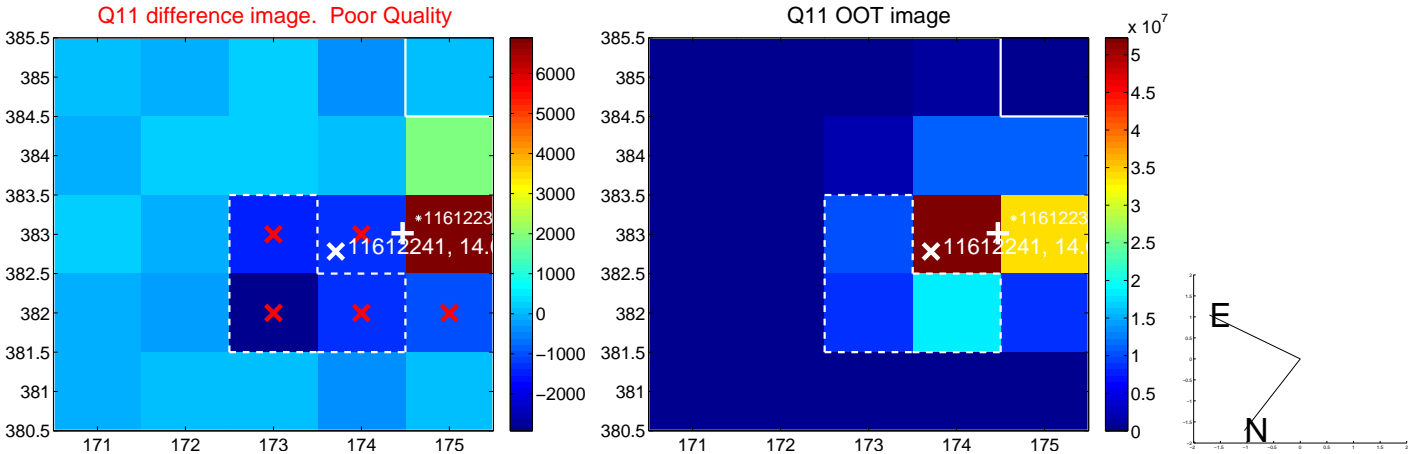
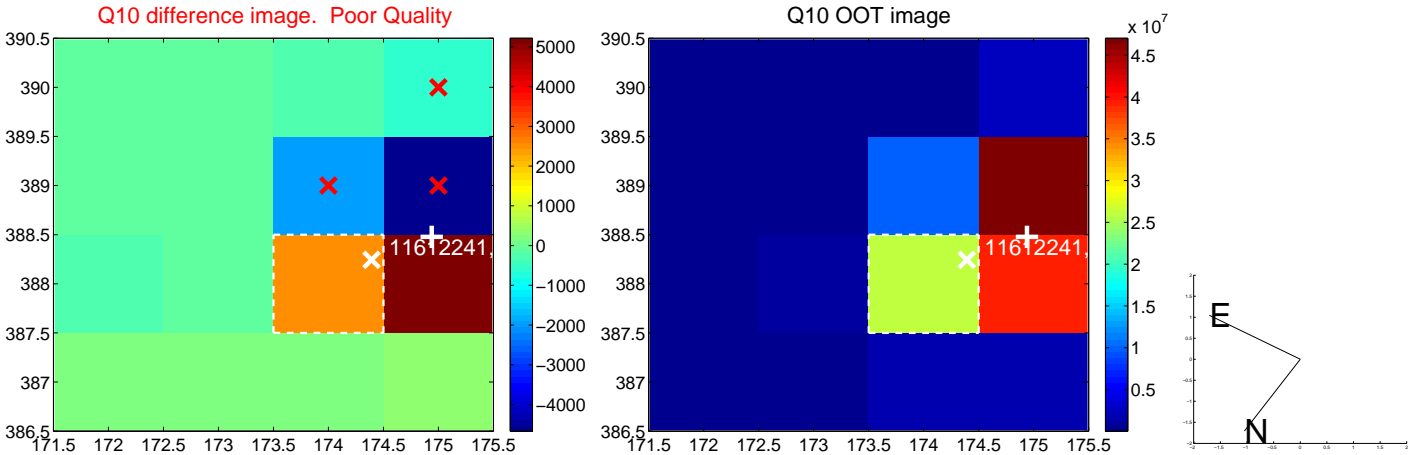
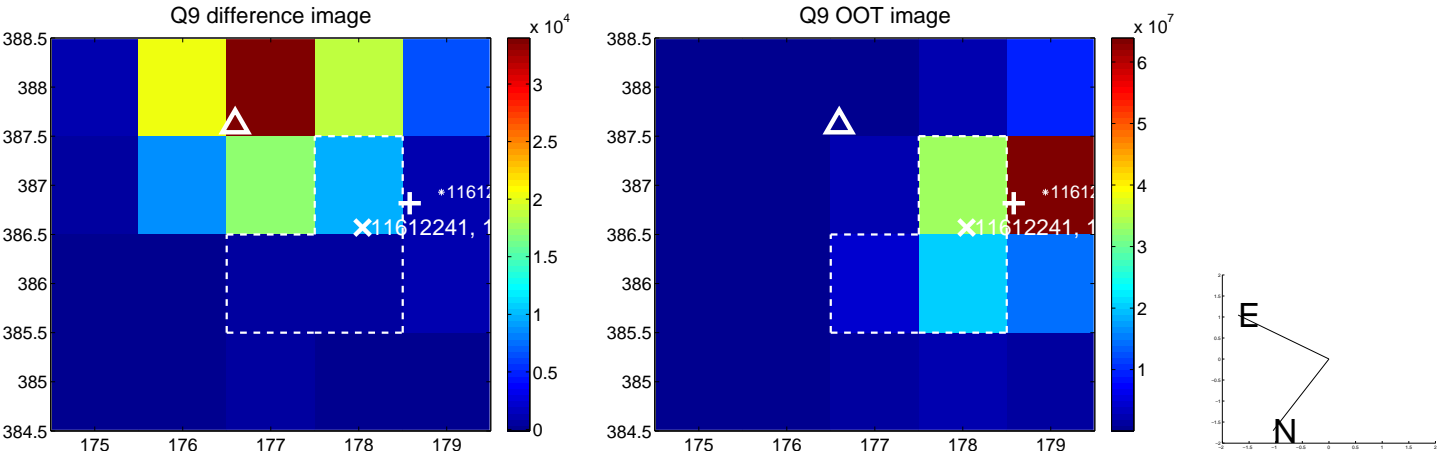
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



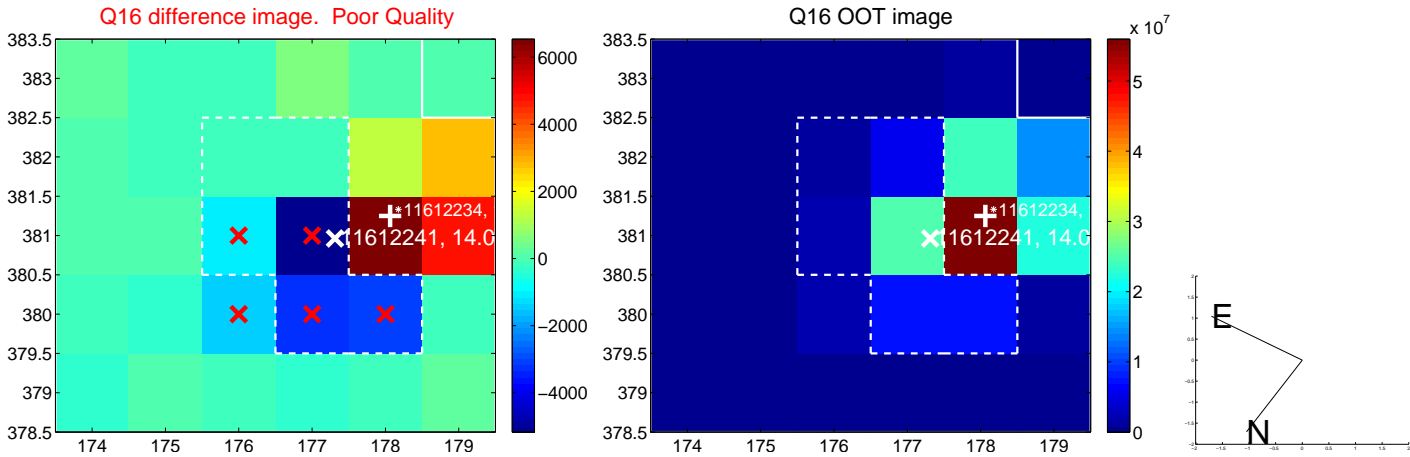
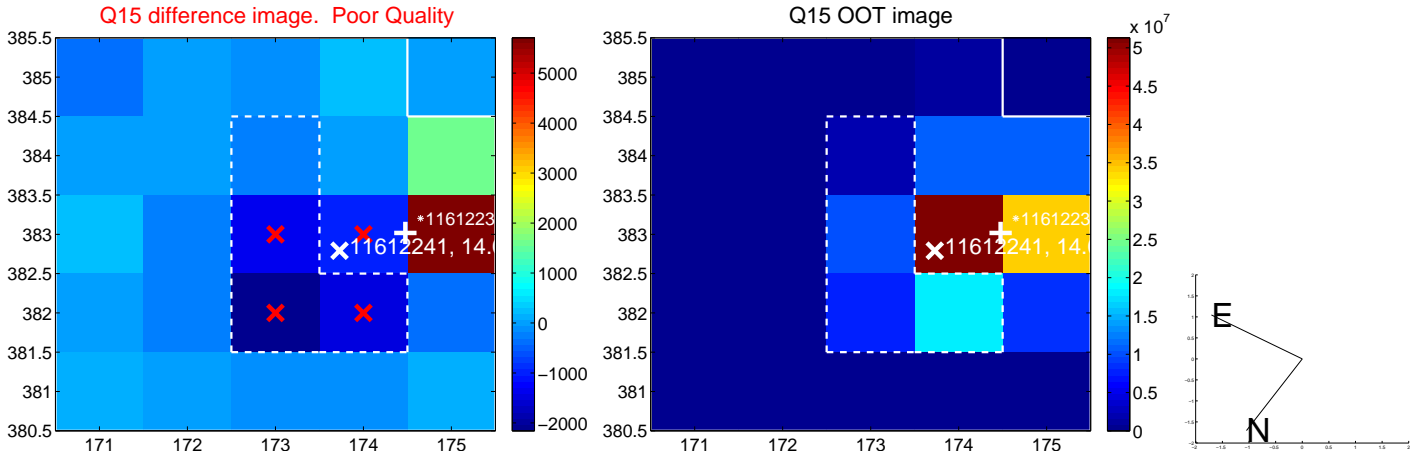
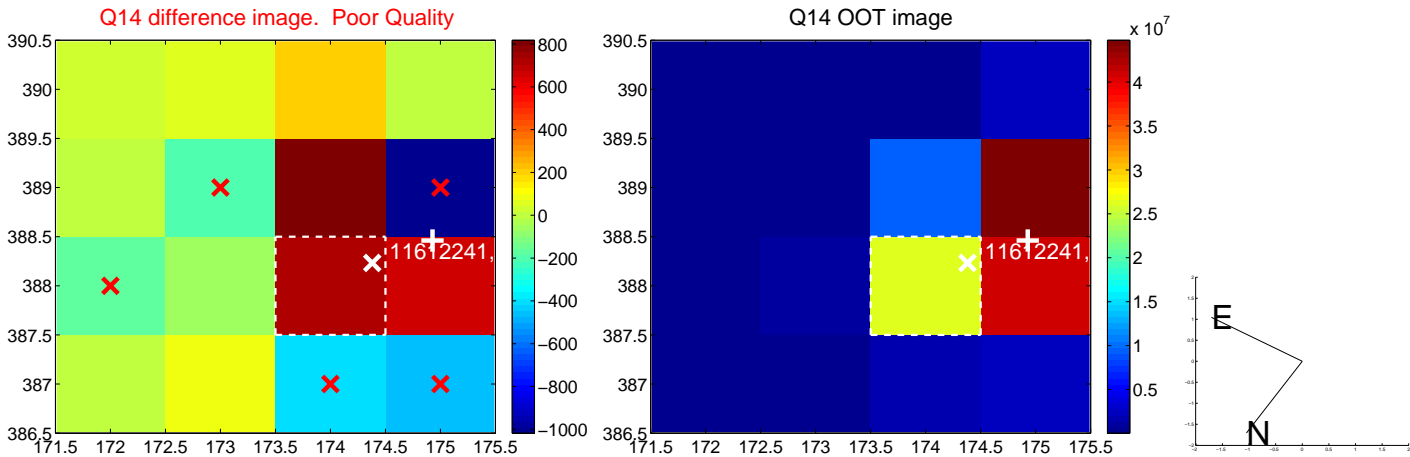
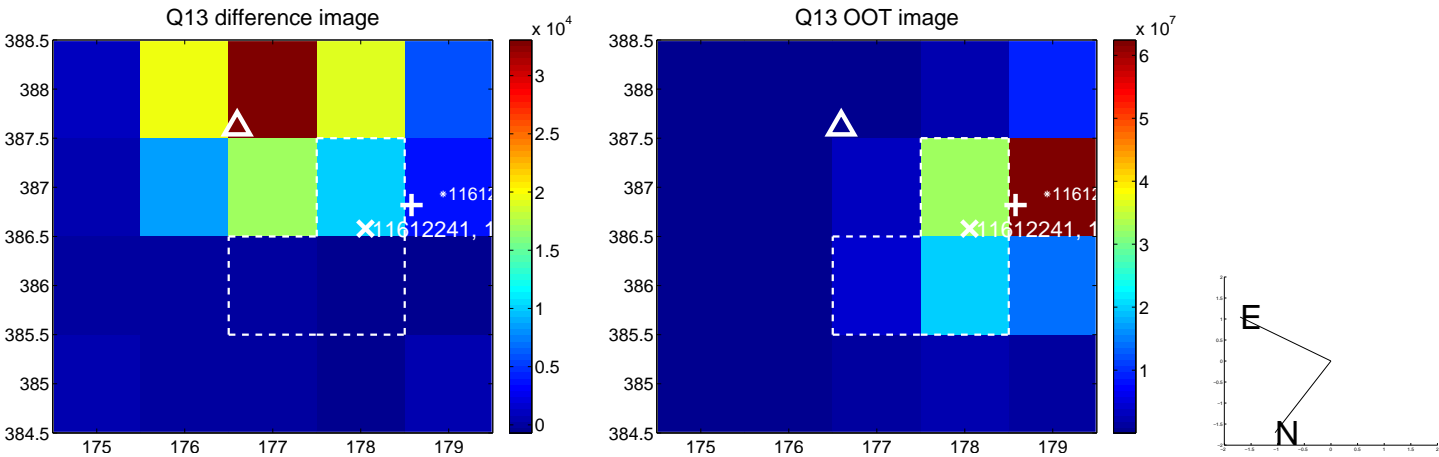
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



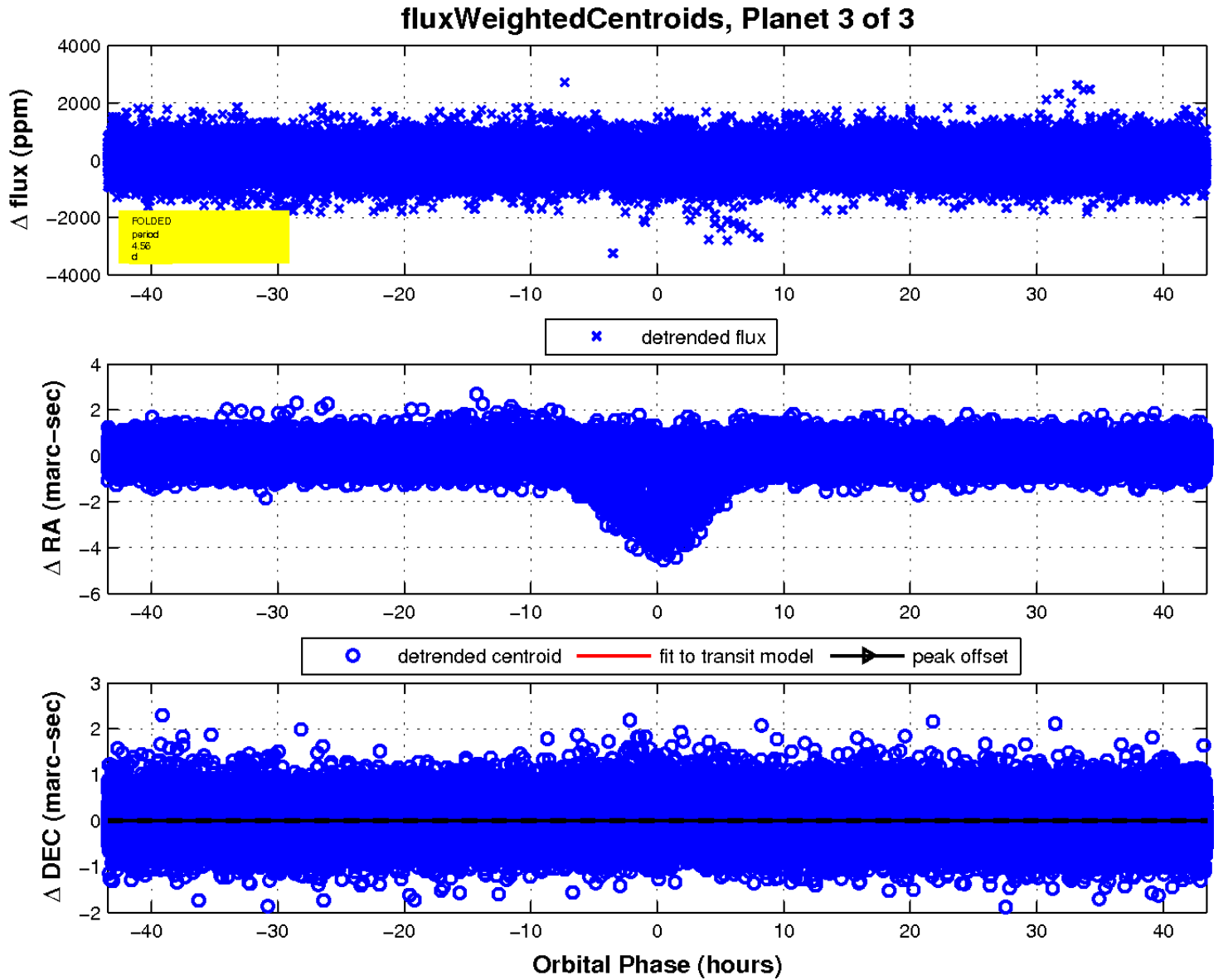
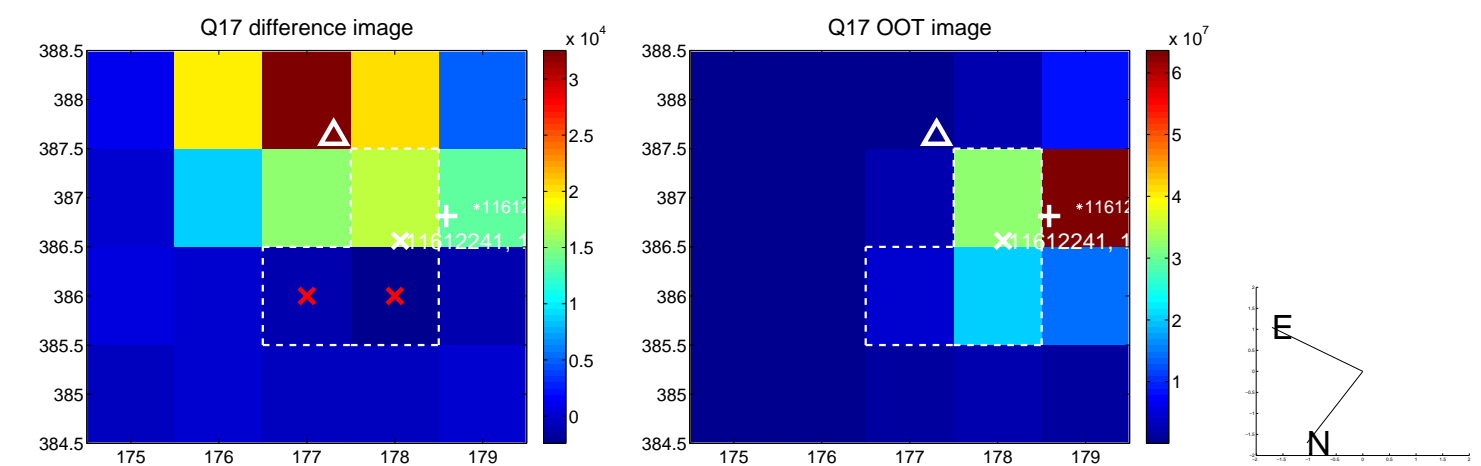
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

