

KIC 005474424

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})
005474424-01	OBS	No	0.617167	131.873914	86.0	1.687	9.8	11.0	2.27	7105	2.46	43115.28
005474424-02	OBS	No	0.617212	131.702935	177.1	4.913	11.1	15.9	2.27	7105	3.08	43111.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005474424-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005474424-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_FEW_MEAS

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

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

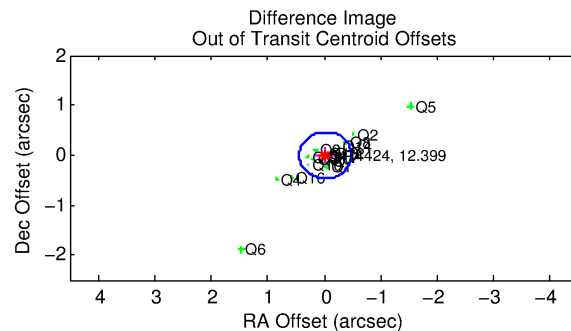
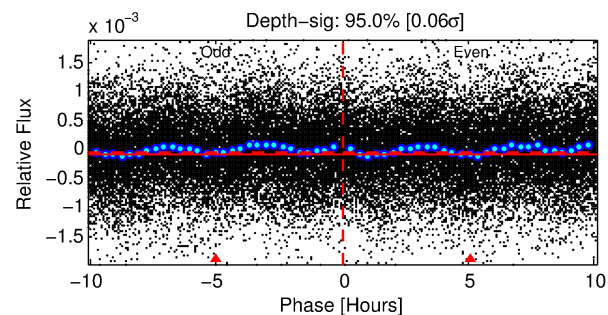
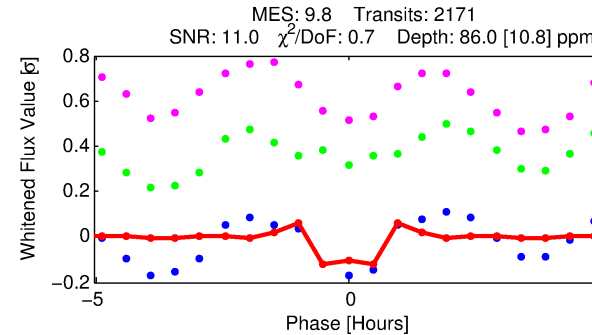
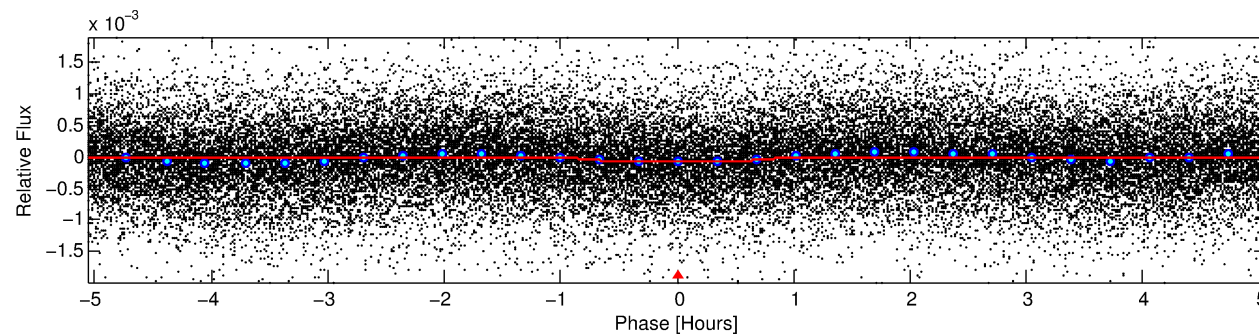
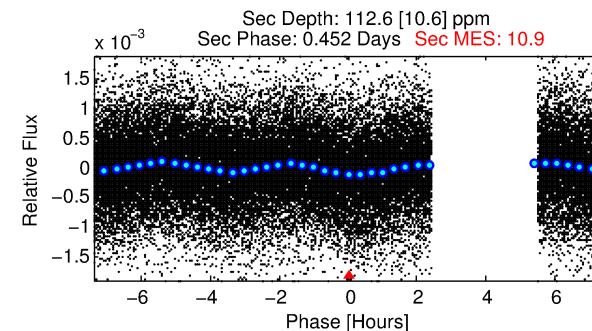
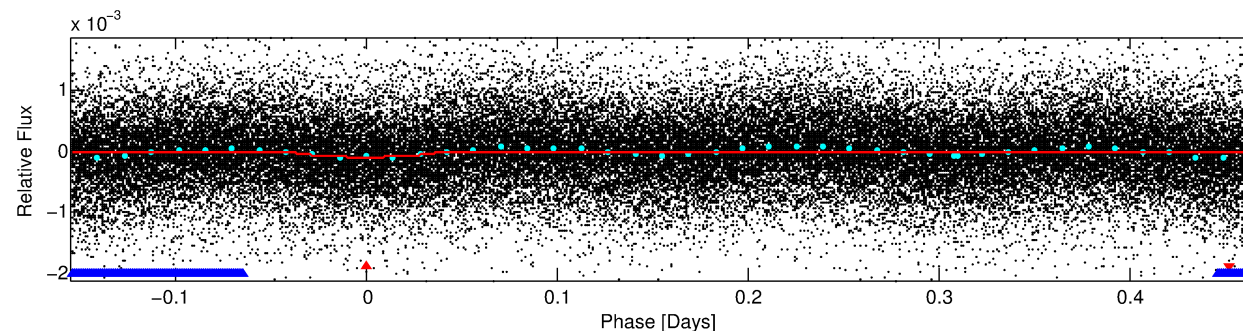
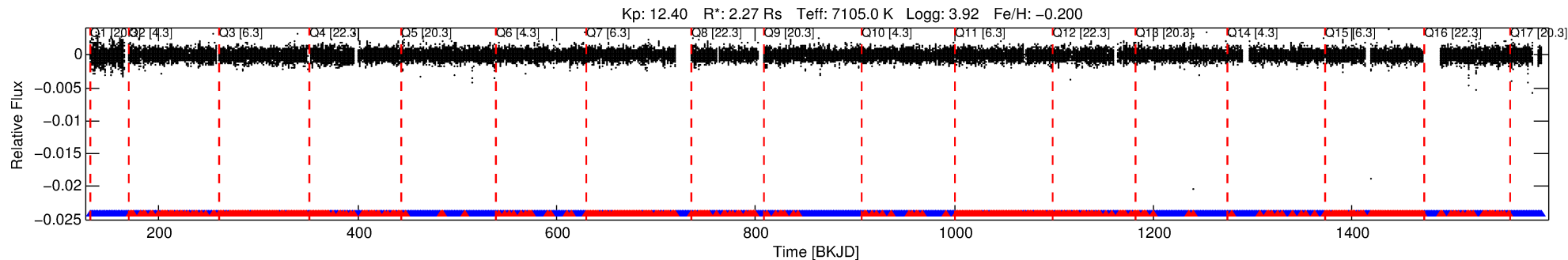
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005474424-01

No Significant Match Found

DV One-Page Summary

KIC: 5474424 Candidate: 1 of 2 Period: 0.617 d



DV Fit Results:

Period = 0.61717 [0.00001] d
Epoch = 131.8739 [0.0010] BKJD
Rp/R* = 0.0099 [0.0019]
a/R* = 1.59 [1.01]
b = 0.90 [0.23]
Seff = 43115.28 [23237.46]
Teq = 3674 [495] K
Rp = 2.46 [1.01] Re
a = 0.0165 [0.0055] AU
Ag = 2.80 [1.80] [1.00σ]
Teff = 7350 [774] K [4.00σ]

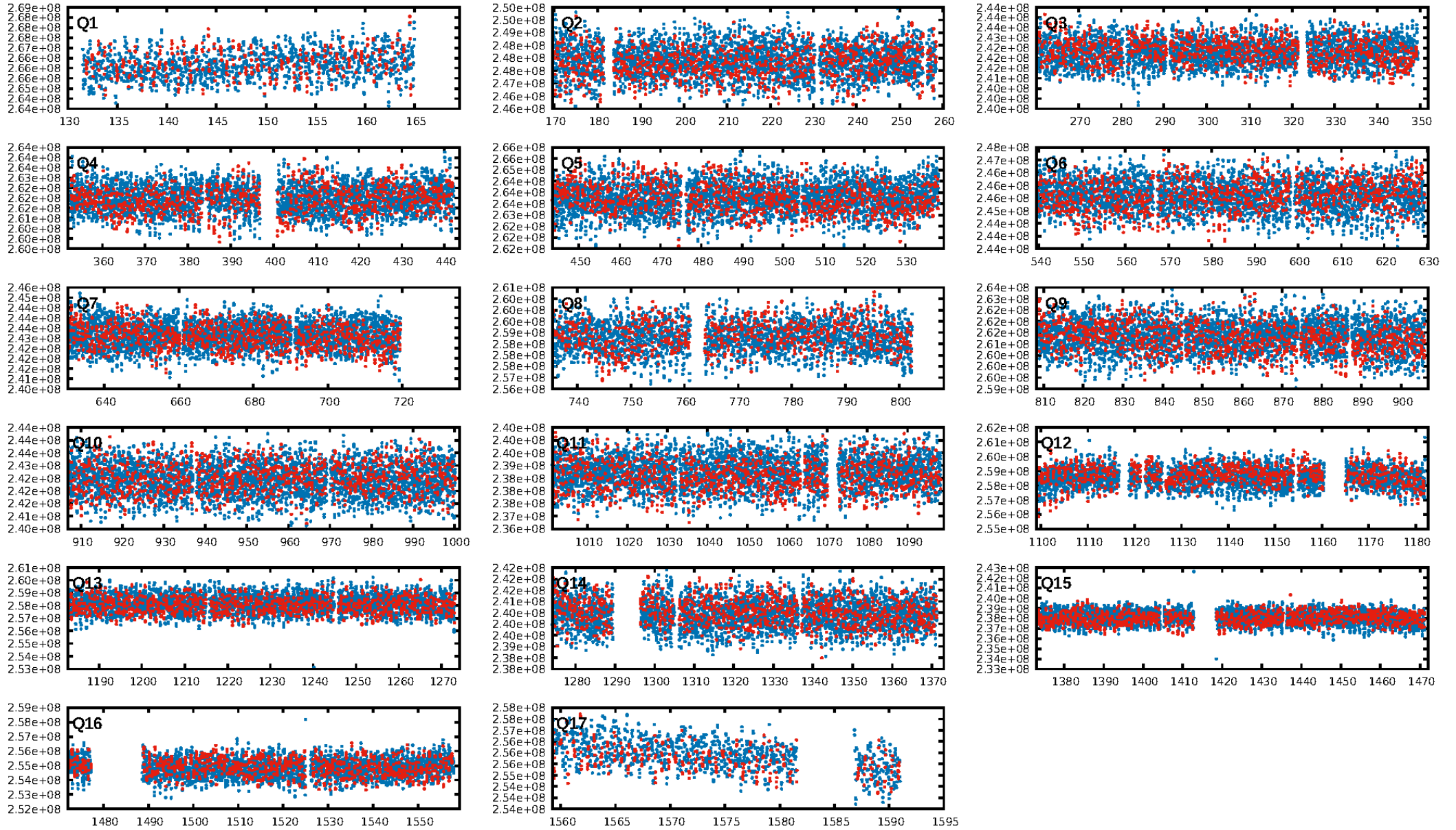
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.69 [1436/2073]
GhostDiagnostic-chr: 1.307
Centroid-sig: 0.0%
Centroid-so: 0.353 arcsec [1.31σ]
OotOffset-rm: 0.017 arcsec [0.11σ]
KicOffset-rm: 0.077 arcsec [0.38σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.47 [8/17]
DiffImageOverlap-fno: 0.00 [0/17]

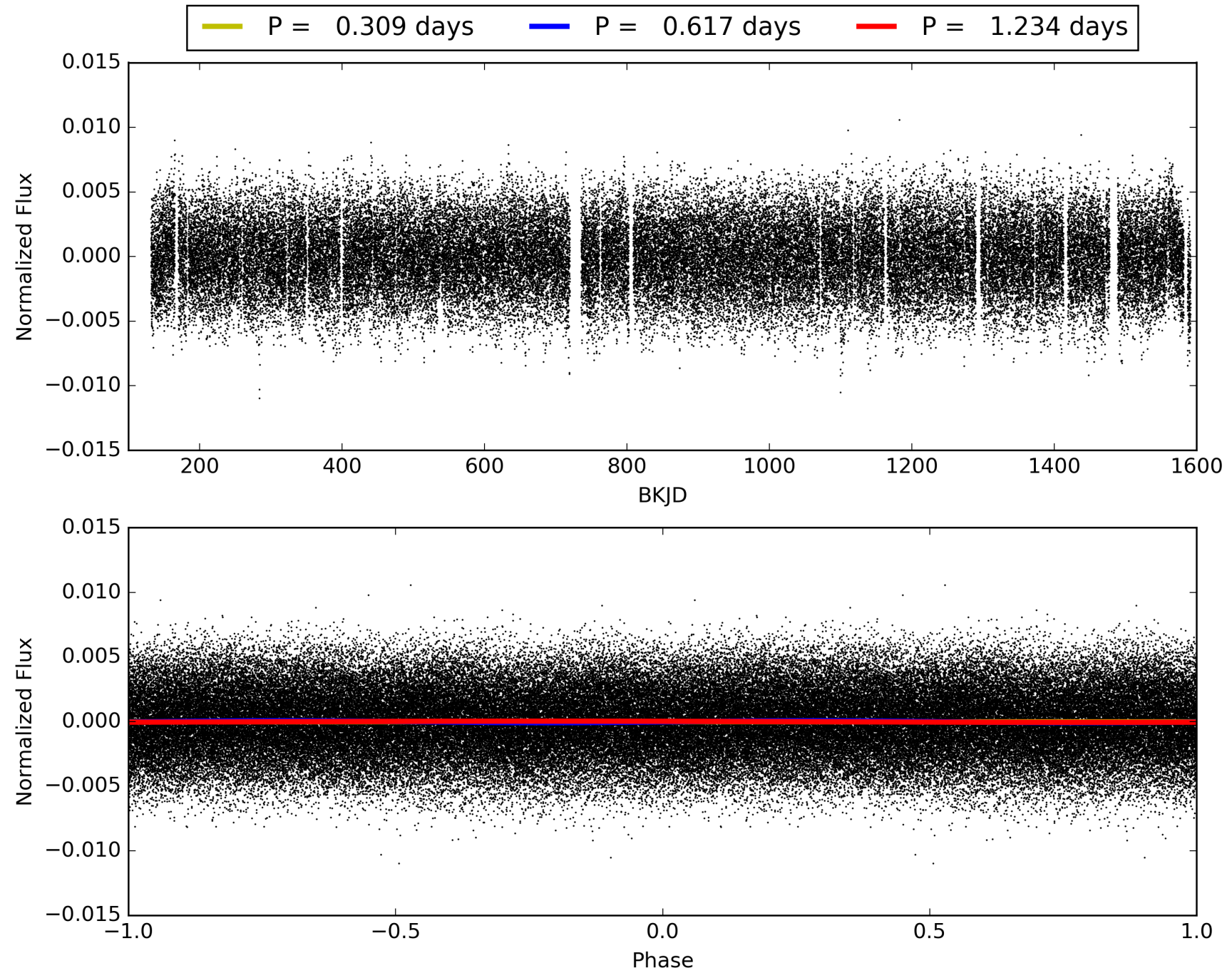
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 09:44:39 Z

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

TCE 005474424-01, PDC Light Curves

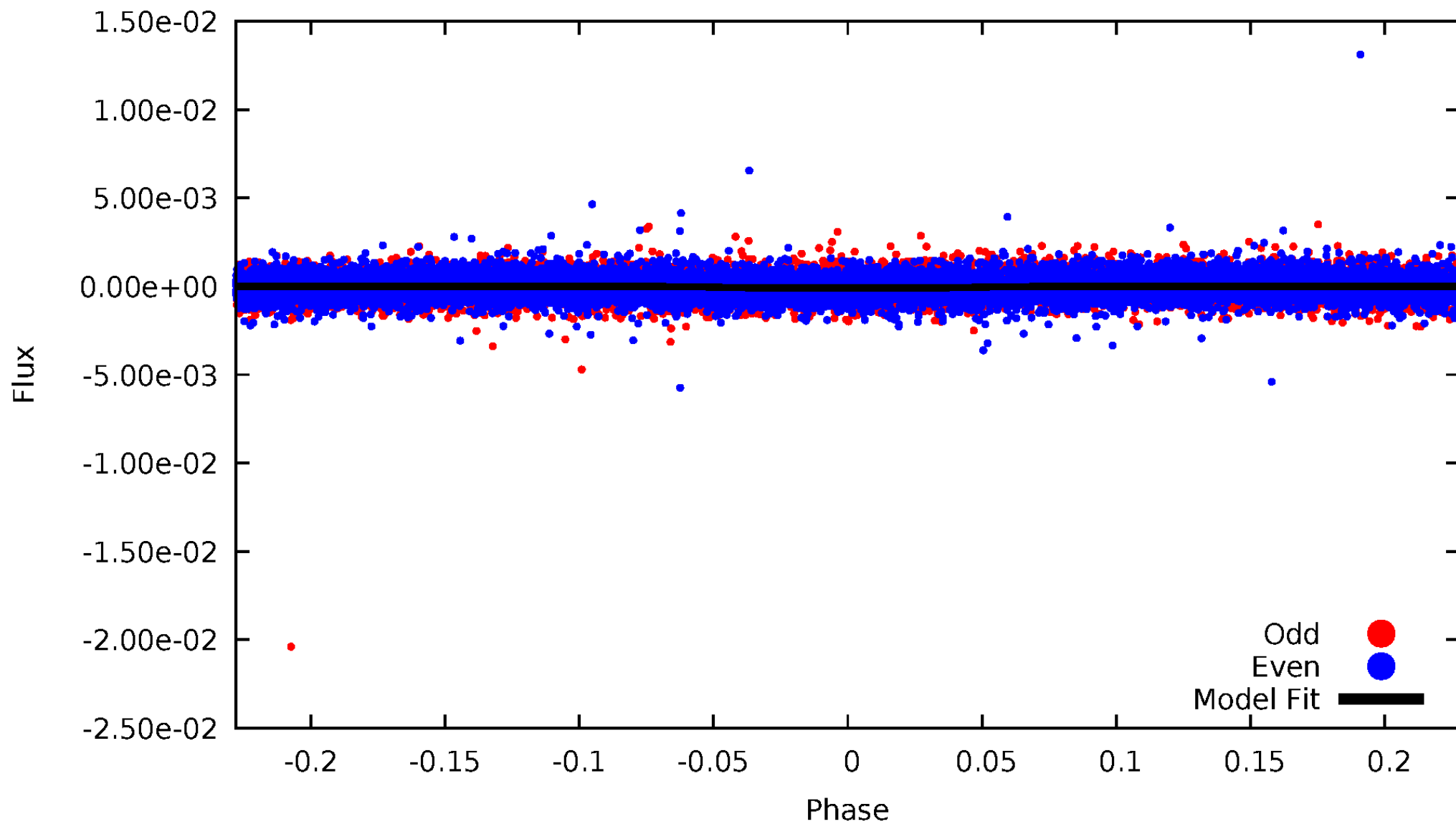


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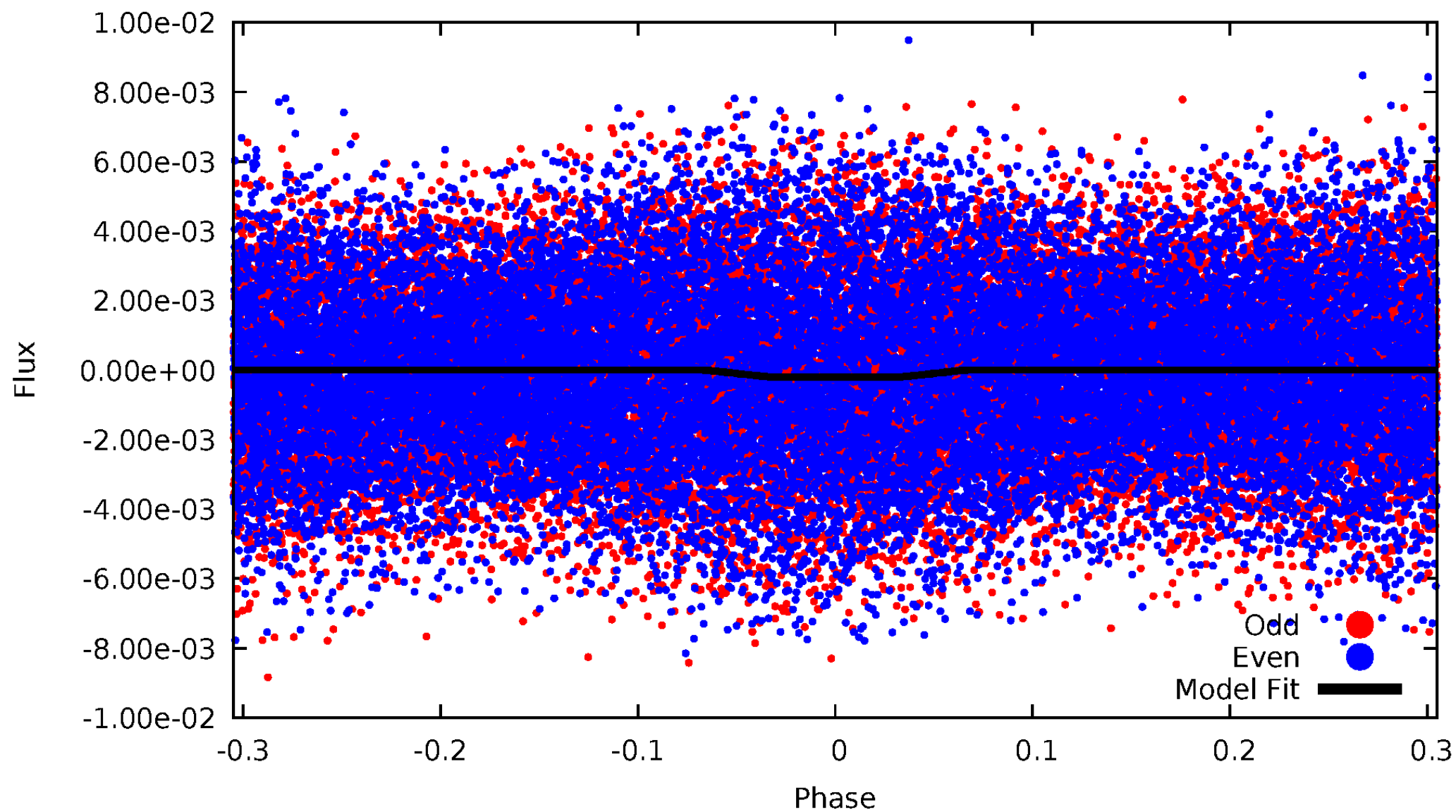
DV Odd/Even

TCE 005474424-01



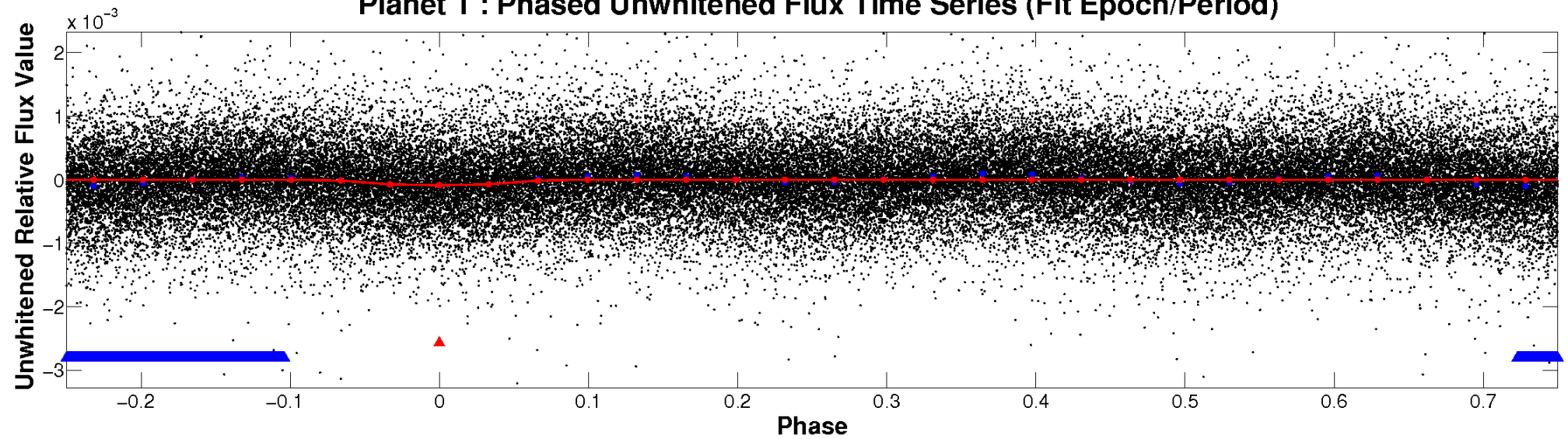
ALT Odd/Even

TCE 005474424-01

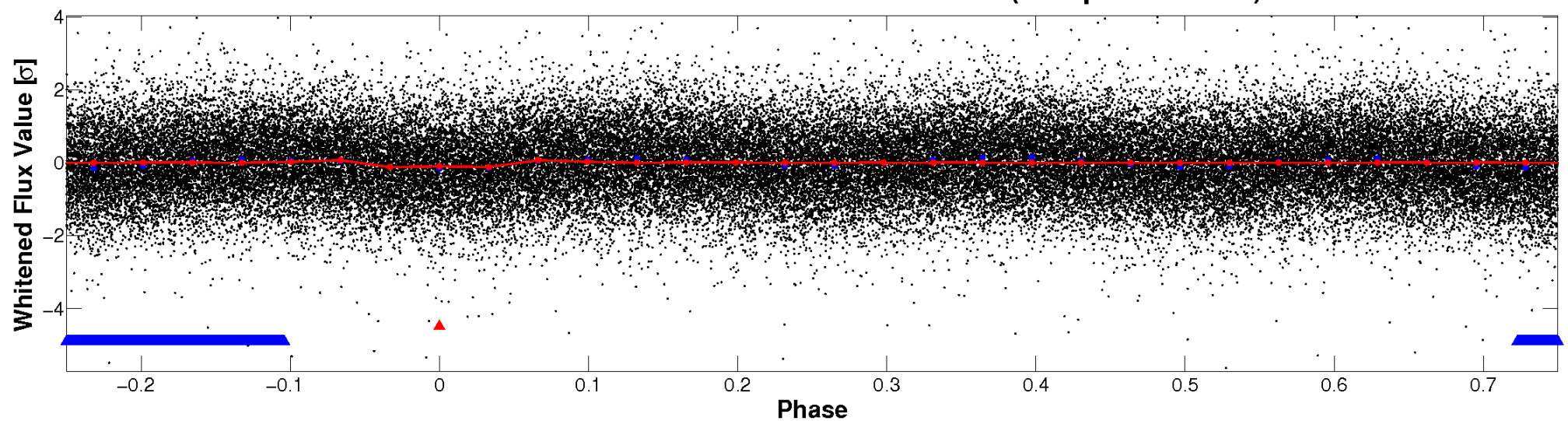


Non-Whitened Vs. Whitened Light Curve

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

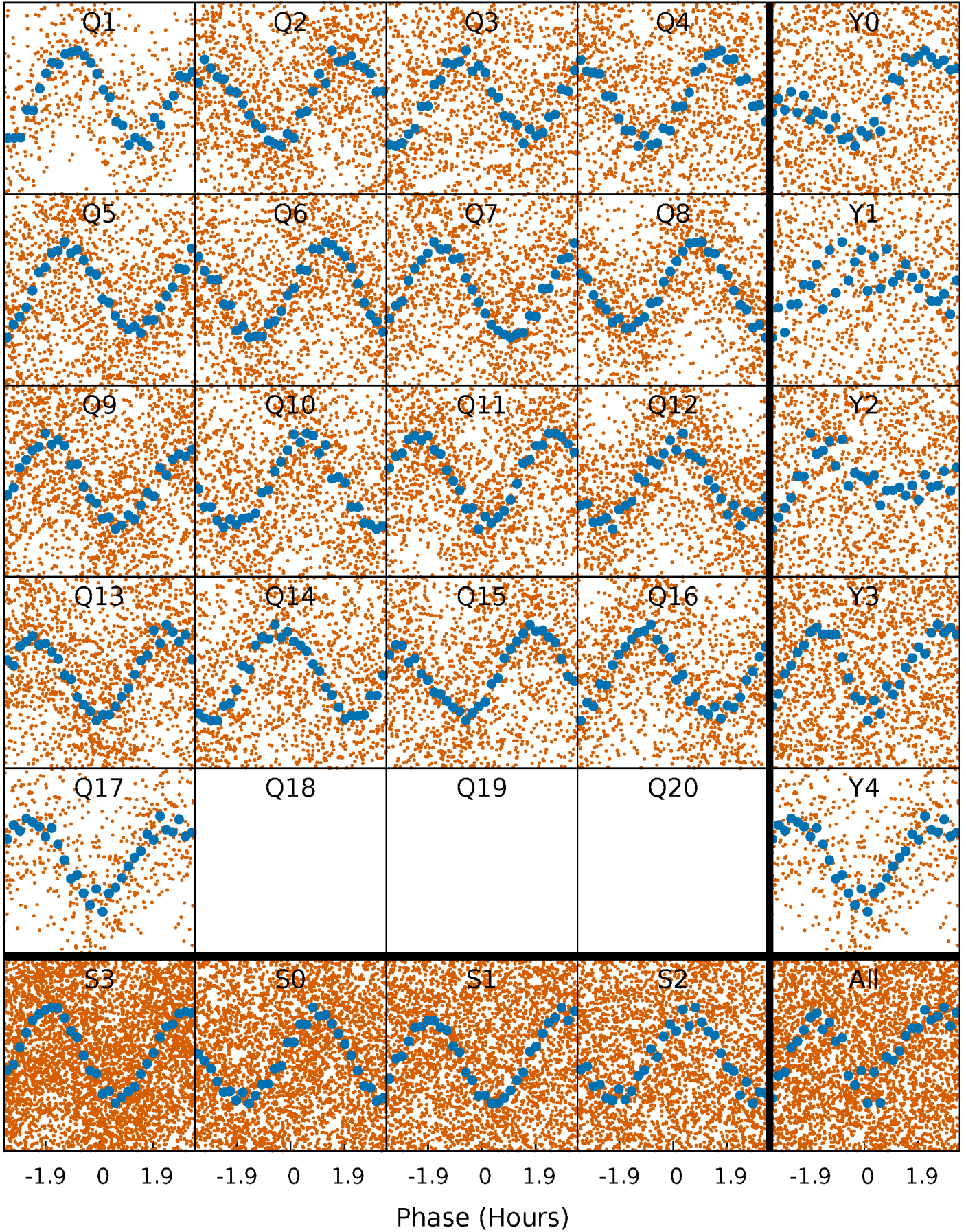


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



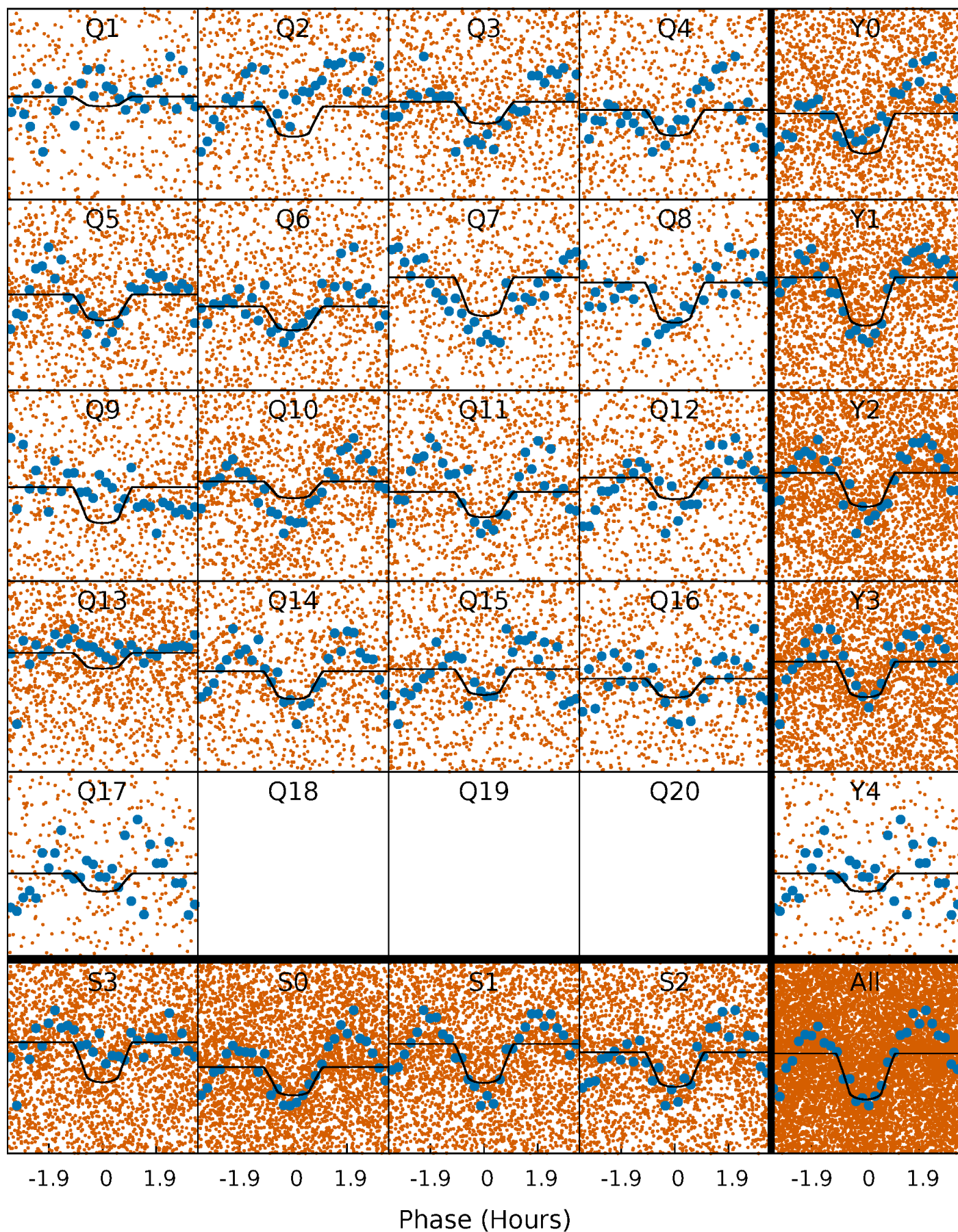
PDC Quarter-Phased Transit Curves

TCE 005474424-01 P= 0.617167 Days $T_0=131.873914$ (BKJD)



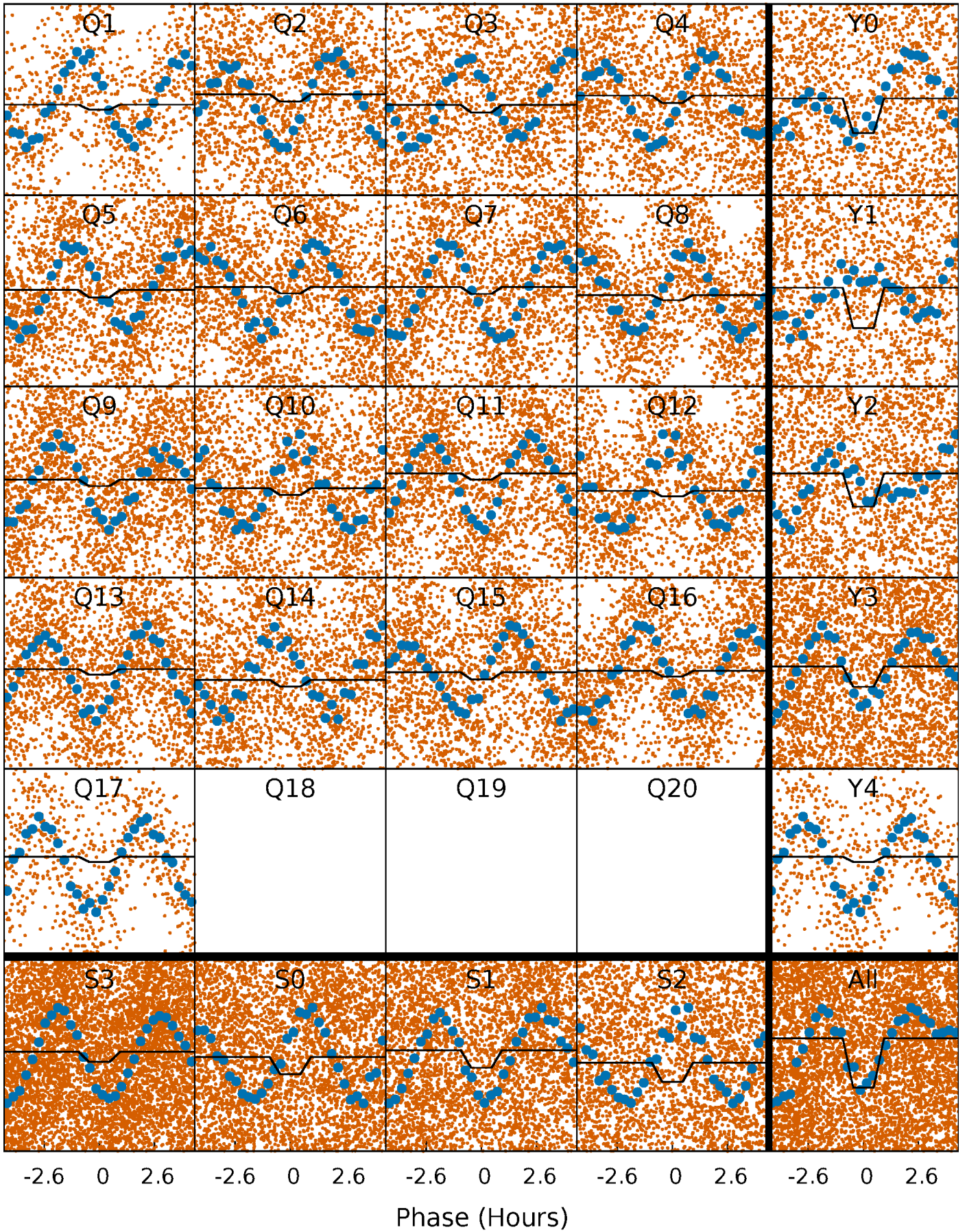
DV Quarter-Phased Transit Curves

TCE 005474424-01 P= 0.617167 Days $T_0=131.873914$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

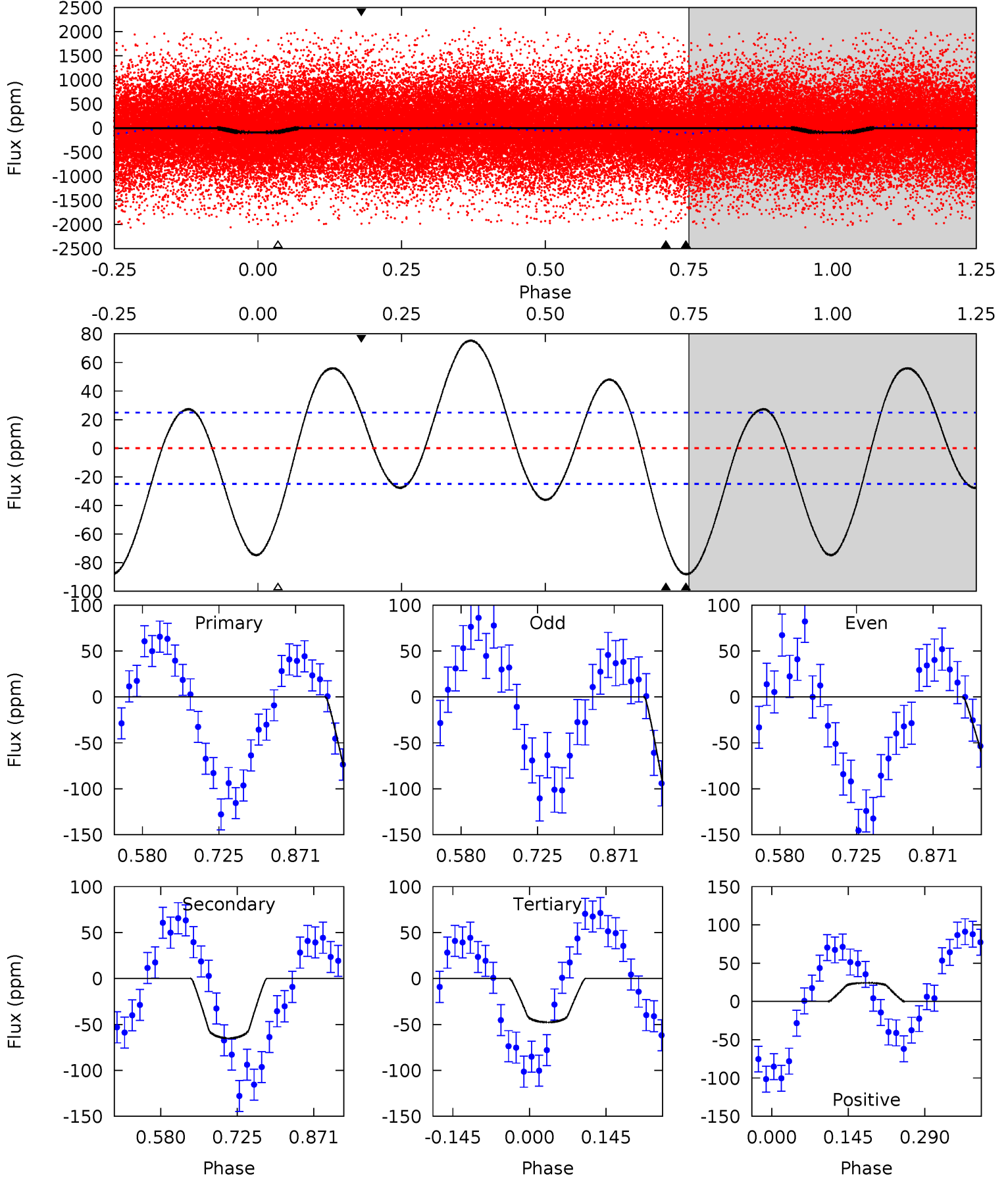
TCE 005474424-01 P= 0.617175 Days $T_0=131.871340$ (BKJD)



DV Model-Shift Uniqueness Test

005474424-01, P = 0.617167 Days, E = 131.256747 Days

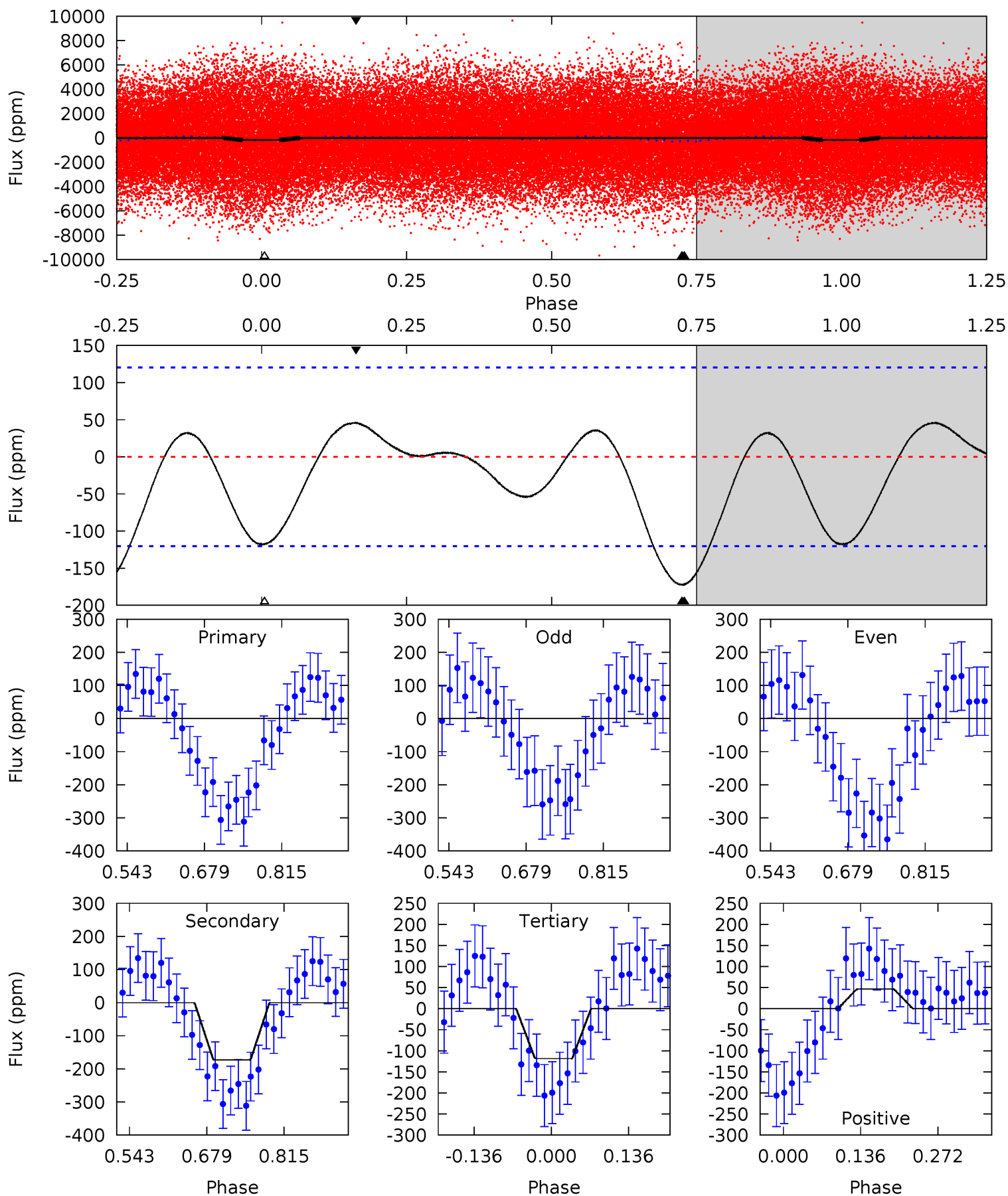
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.8	11.7	8.57	4.37	4.49	1.46	7.38	7.27	11.5	3.13	7.33	3.35	1.09	0.46	0.51



Alt Model-Shift Uniqueness Test

005474424-01, P = 0.617175 Days, E = 131.254165 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.45	6.47	4.43	1.73	4.50	1.49	1.68	2.02	4.72	2.04	4.74	0.20	0.83	0.21	0.04



Stellar Parameters For KIC 005474424

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7105^{+199}_{-299}	$3.924^{+0.293}_{-0.135}$	$-0.200^{+0.250}_{-0.350}$	$2.270^{+0.555}_{-0.833}$	$1.573^{+0.217}_{-0.325}$	$0.190^{+0.425}_{-0.074}$
	+3%/-4%	+7%/-3%	+125%/-175%	+24%/-37%	+14%/-21%	+224%/-39%
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 005474424-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-65 ± 6	$2.31^{+0.61}_{-0.55}$	5004^{+411}_{-470}	6055^{+853}_{-687}	$1.834^{+1.187}_{-0.691}$
Alt.	-173 ± 27	$3.37^{+0.81}_{-0.72}$	5051^{+368}_{-446}	6536^{+771}_{-651}	$2.231^{+1.369}_{-0.750}$

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 $A_{obs} \gg 1.0$

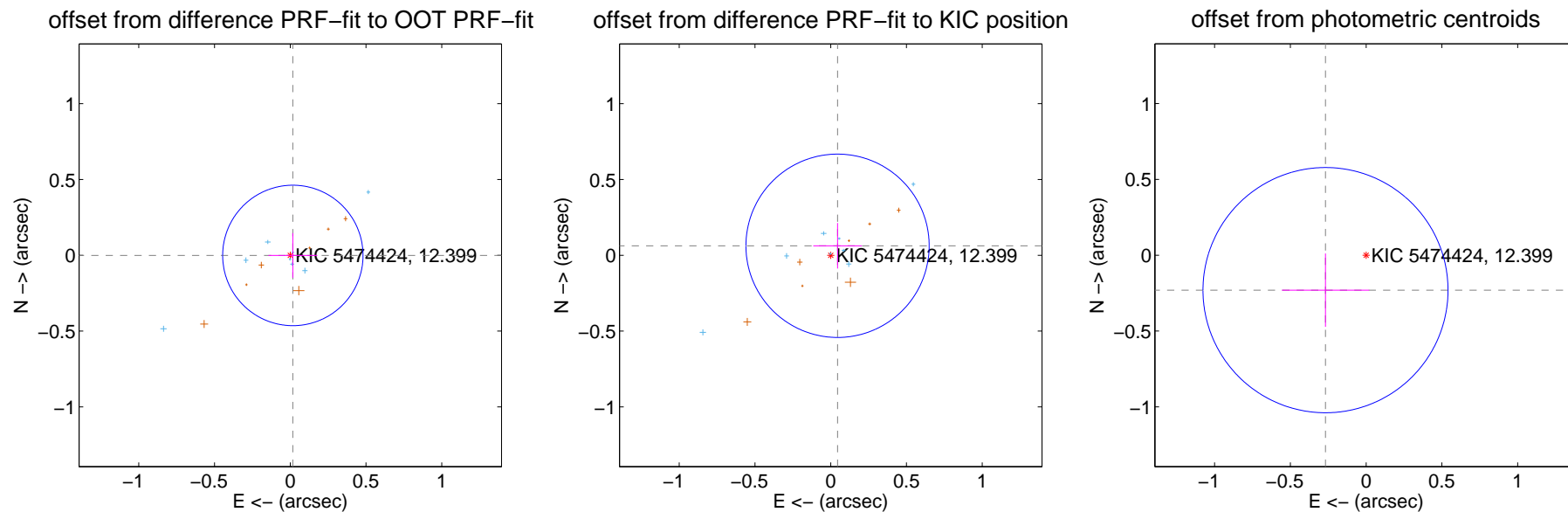
DV Centroid Data

Supplemental centroid analysis for 005474424-01. Kepler magnitude: 12.40. Transit SNR 11.04

There are 8 quarters with good PRF difference image offsets

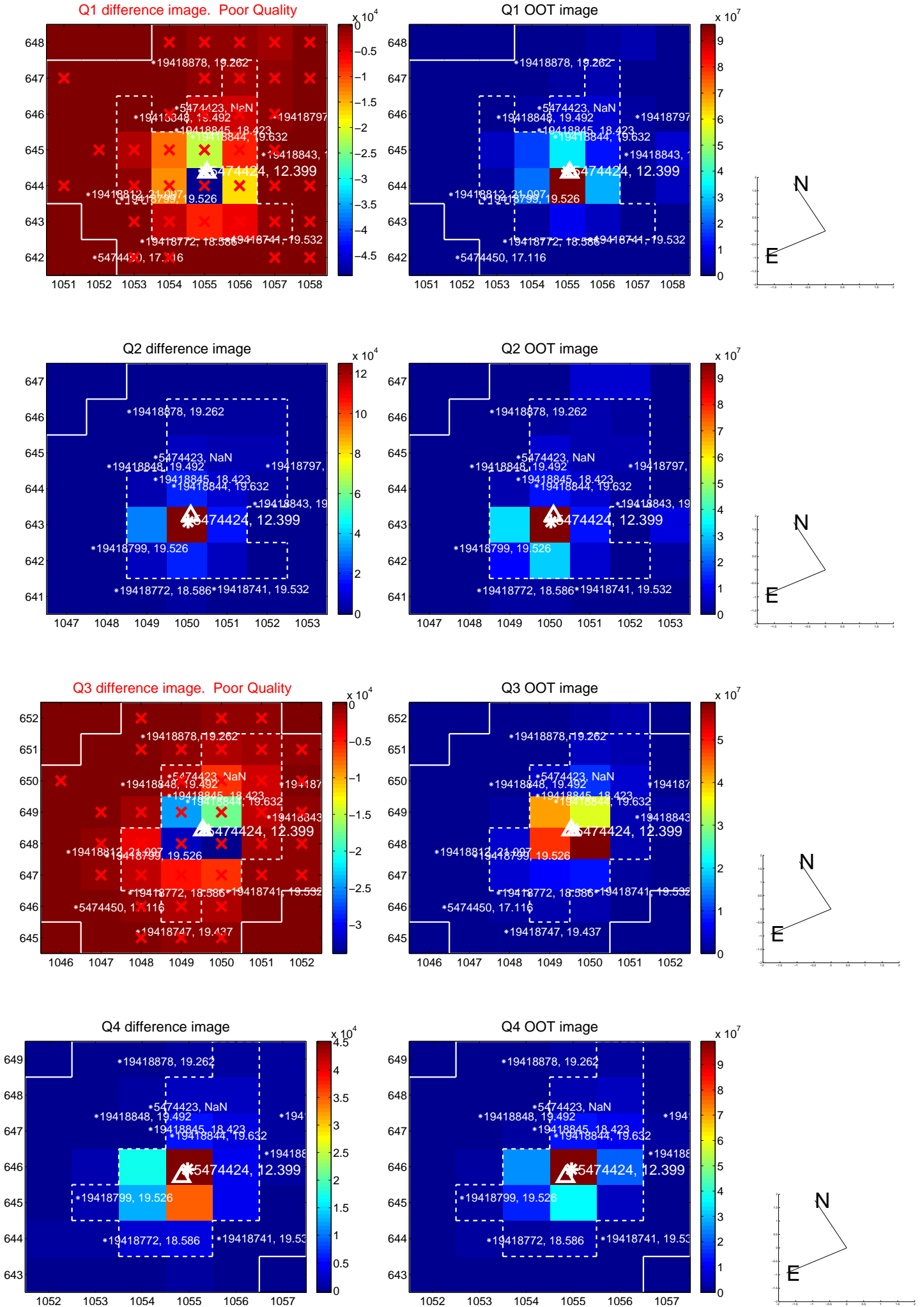
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.017 ± 0.154	0.11	-0.017 ± 0.162	-0.001 ± 0.147
PRF-fit source offset from KIC position	0.077 ± 0.202	0.38	-0.045 ± 0.160	0.063 ± 0.150
photometric centroid source offset	0.35 ± 0.27	1.31	0.27 ± 0.29	-0.23 ± 0.24

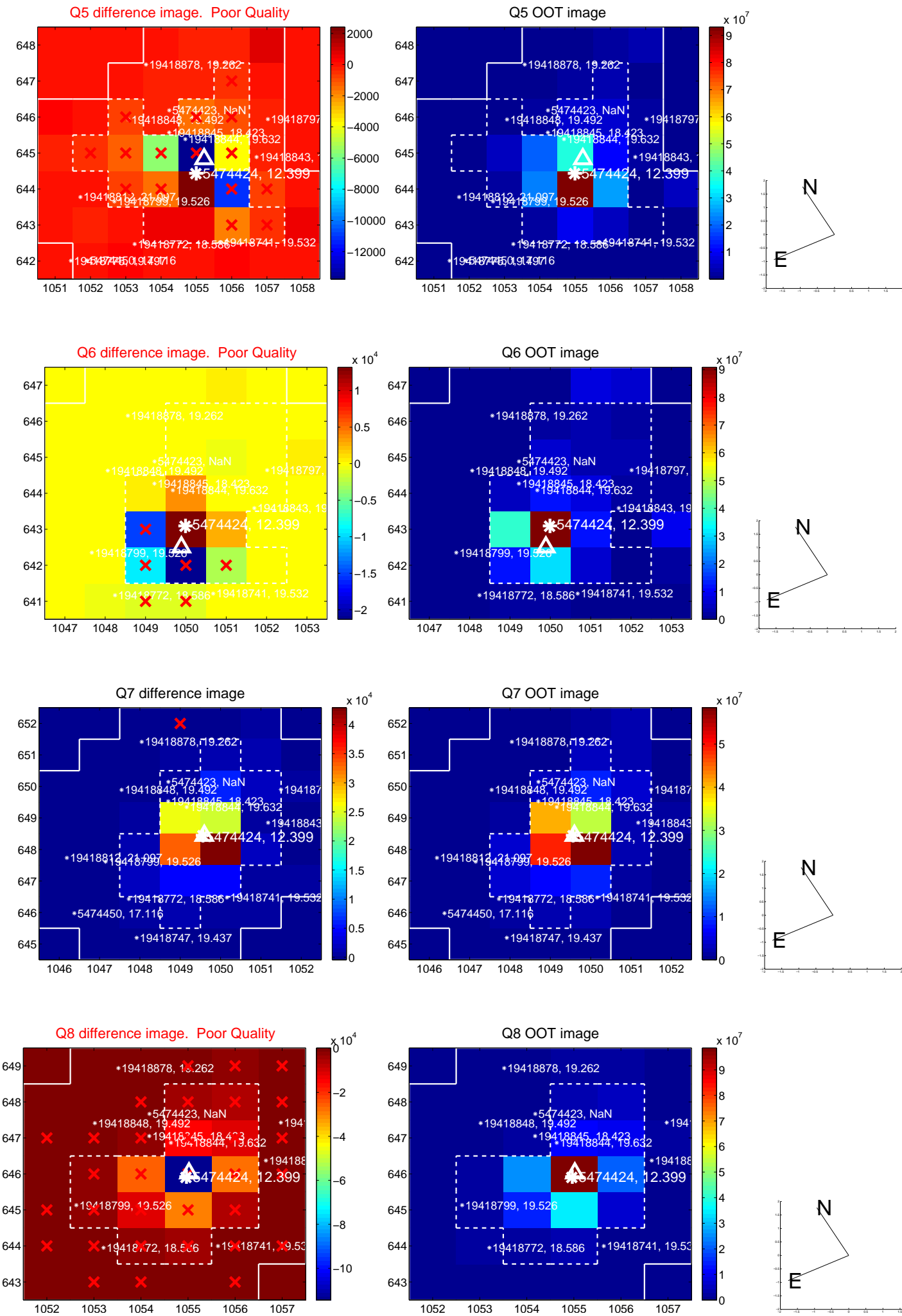


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

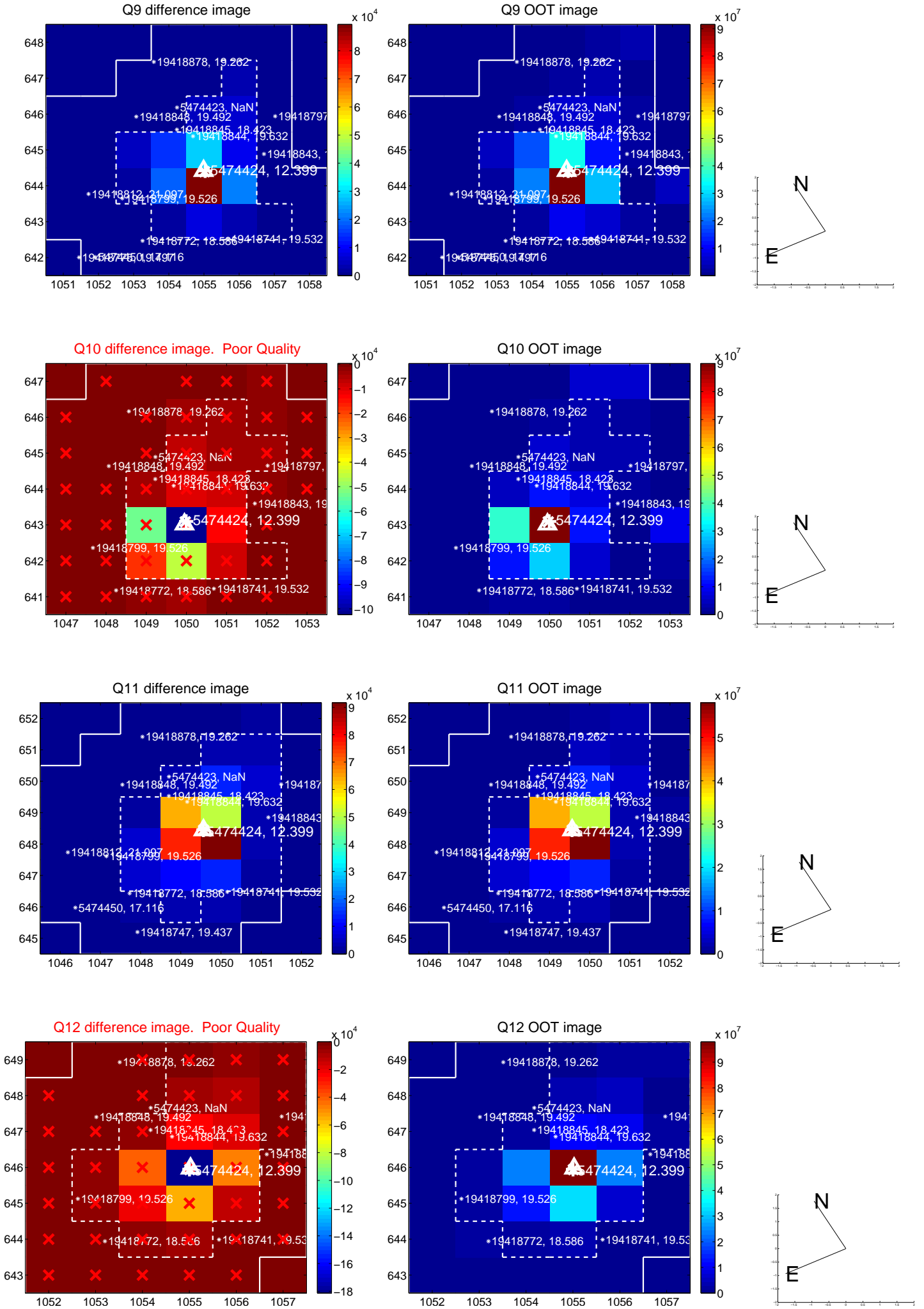
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



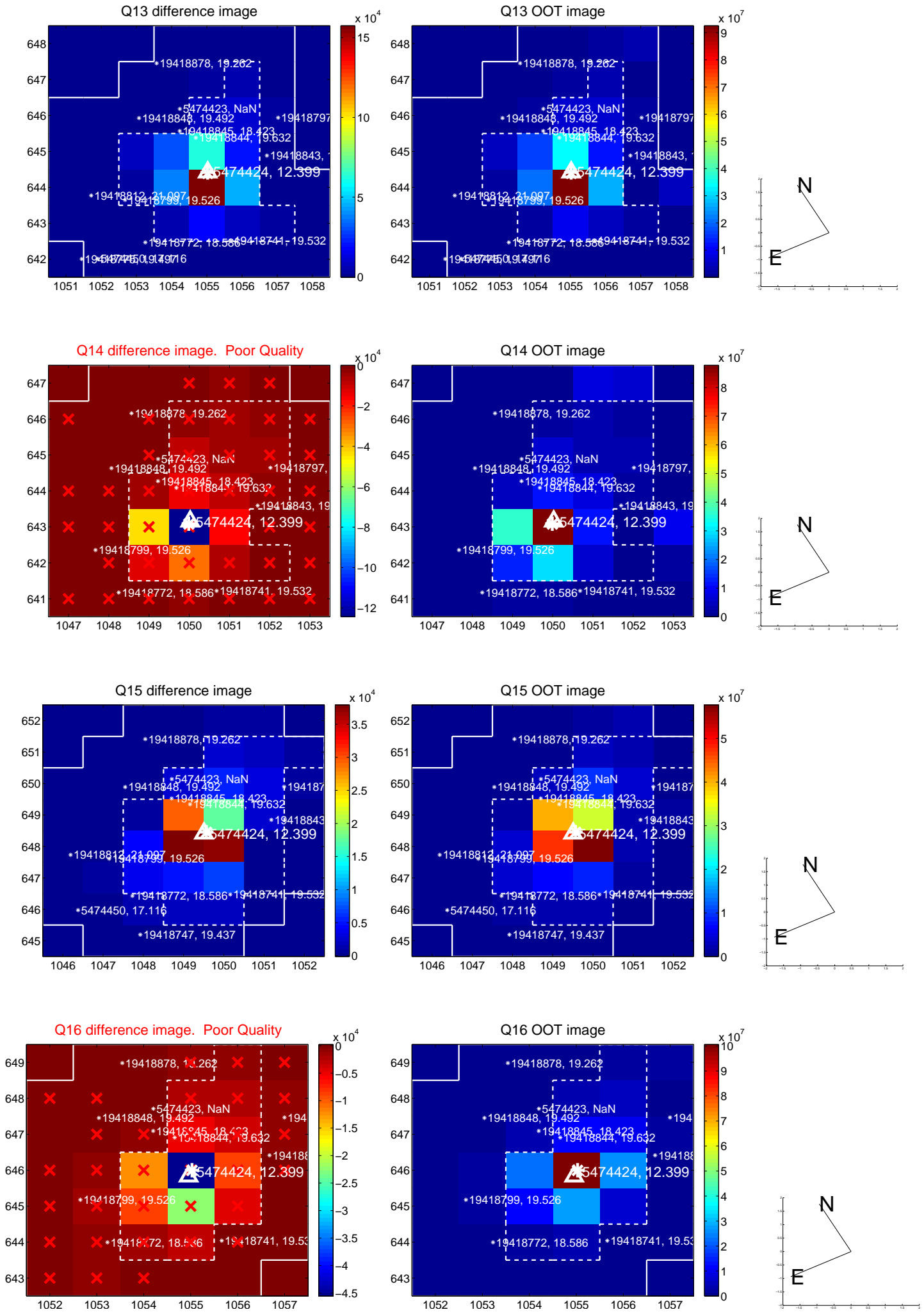
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



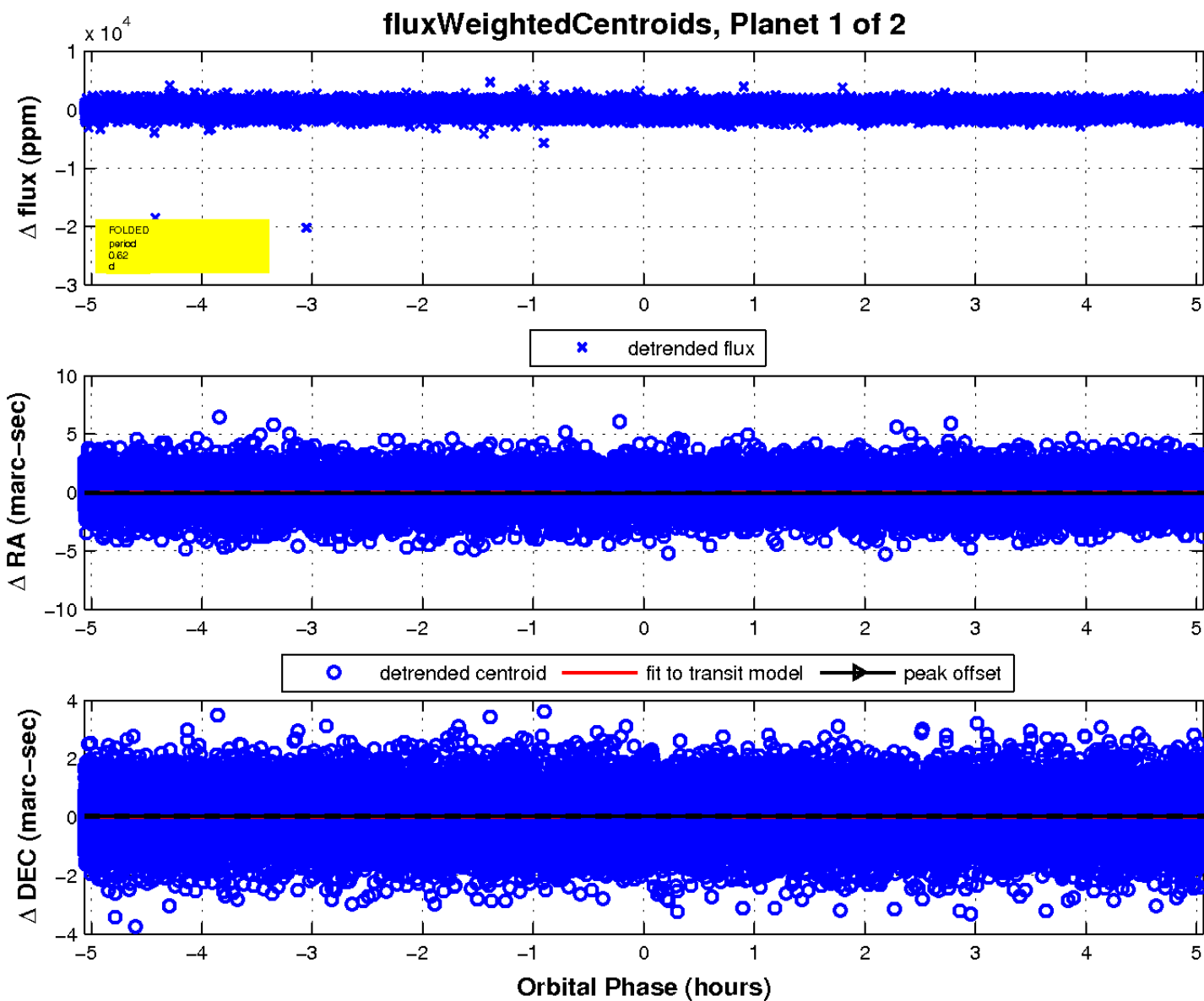
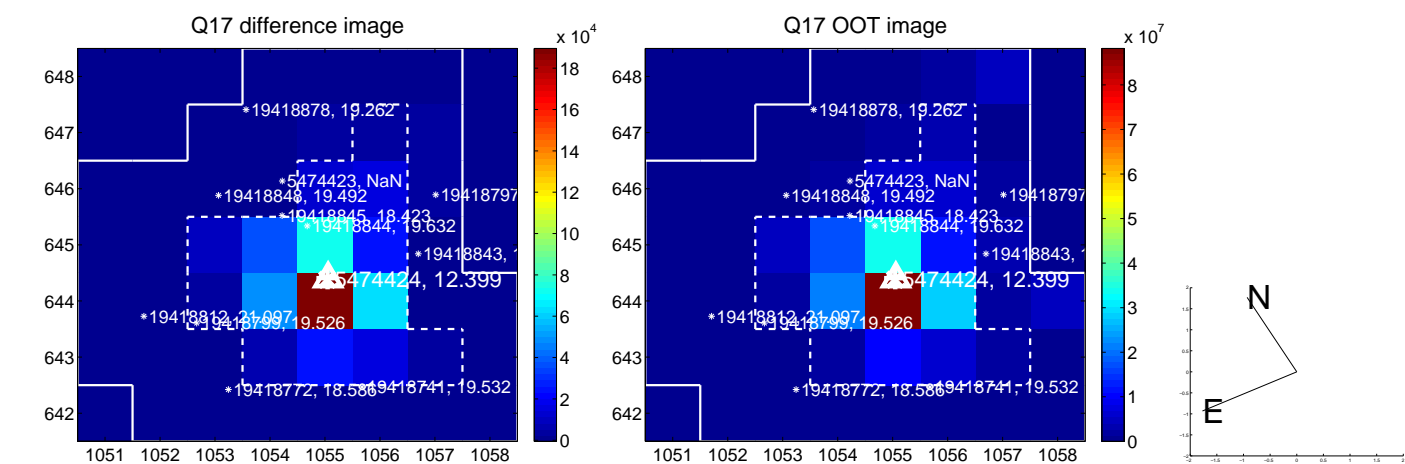
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

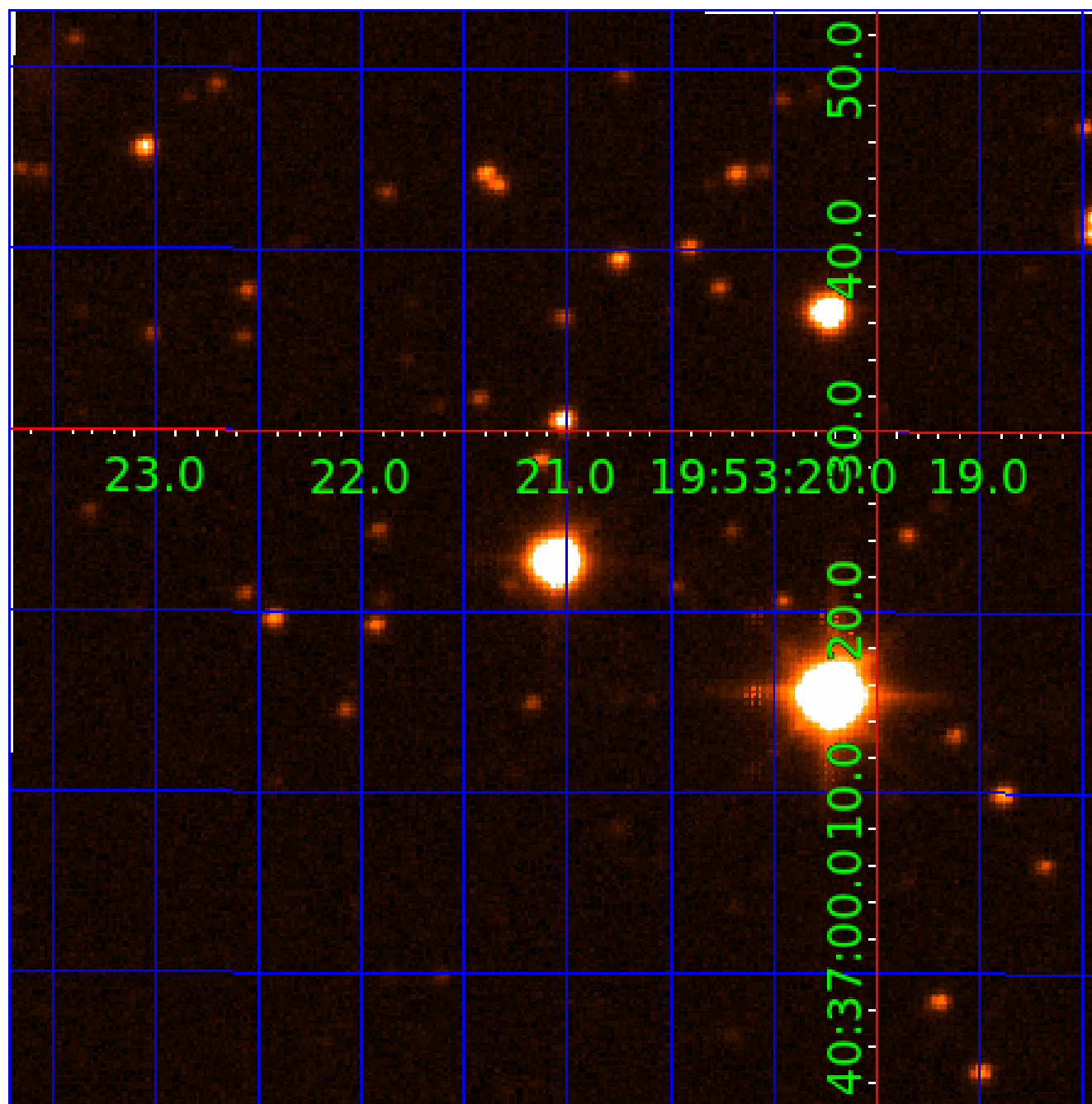


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005474424

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})
005474424-01	OBS	No	0.617167	131.873914	86.0	1.687	9.8	11.0	2.27	7105	2.46	43115.28
005474424-02	OBS	No	0.617212	131.702935	177.1	4.913	11.1	15.9	2.27	7105	3.08	43111.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005474424-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005474424-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_FEW_MEAS

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

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

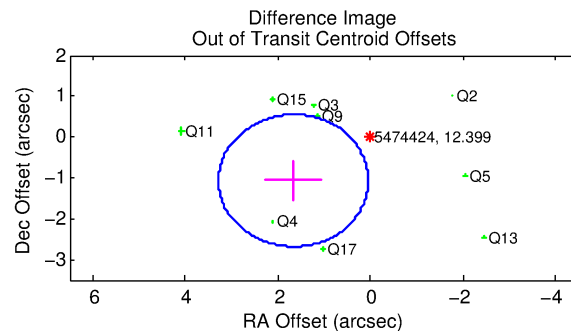
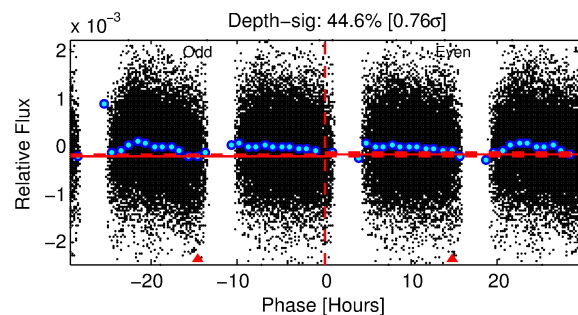
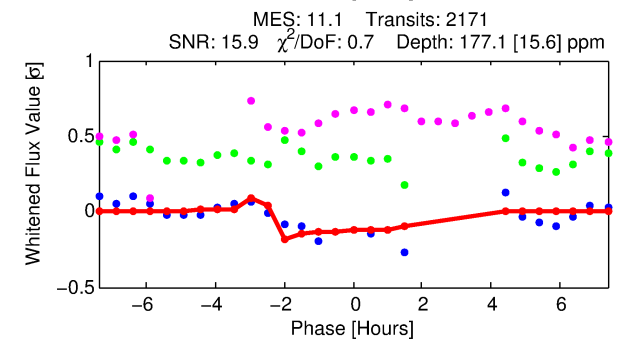
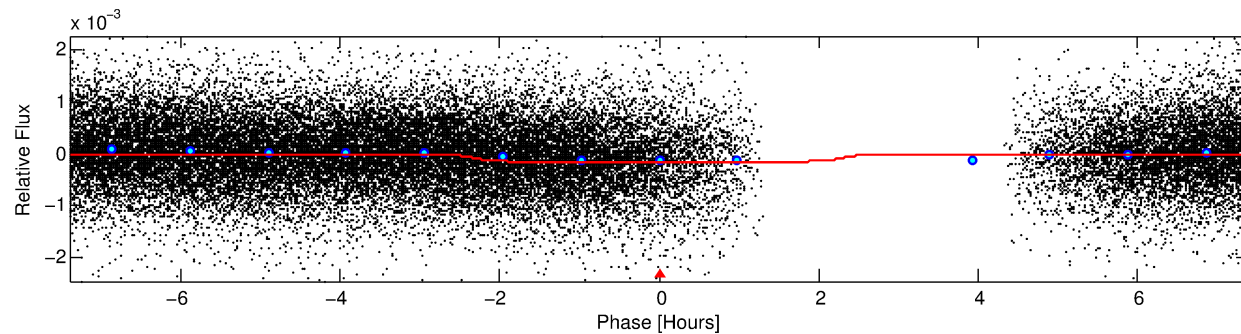
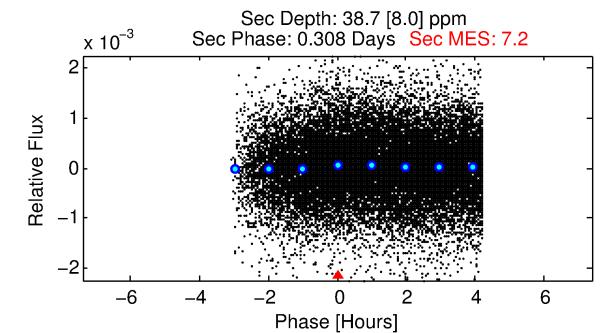
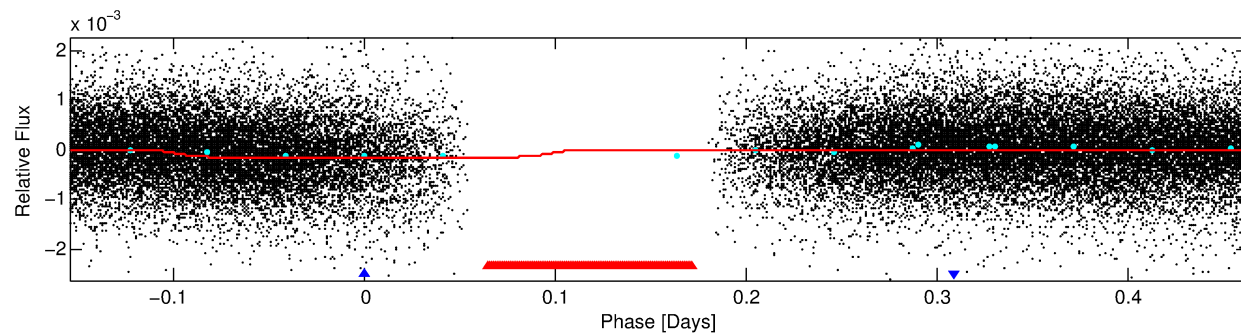
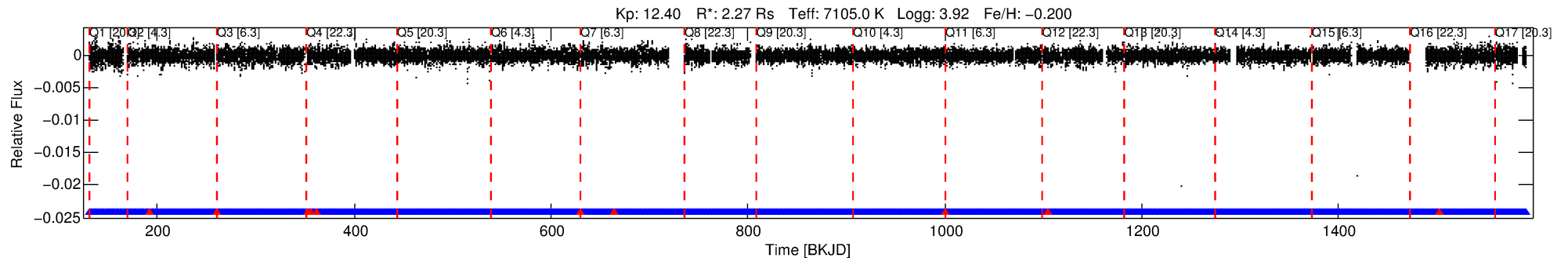
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005474424-02

No Significant Match Found

DV One-Page Summary

KIC: 5474424 Candidate: 2 of 2 Period: 0.617 d



DV Fit Results:

Period = 0.61721 [0.00001] d
Epoch = 131.7029 [0.0034] BKJD
Rp/R* = 0.0124 [0.0037]
a/R* = 1.16 [0.49]
b = 0.30 [5.08]
Seff = 43111.07 [23235.19]
Teq = 3674 [495] K
Rp = 3.08 [1.45] Re
a = 0.0165 [0.0055] AU
Ag = 0.61 [0.50] [-0.77σ]
Teff = 5030 [817] K [1.42σ]

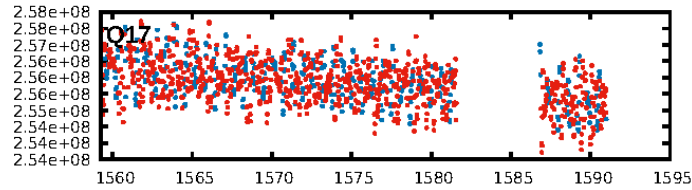
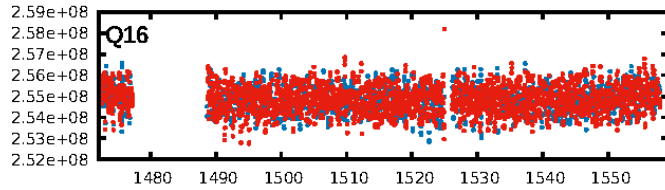
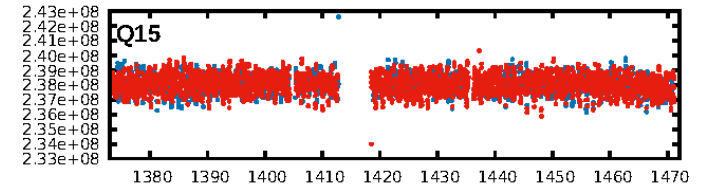
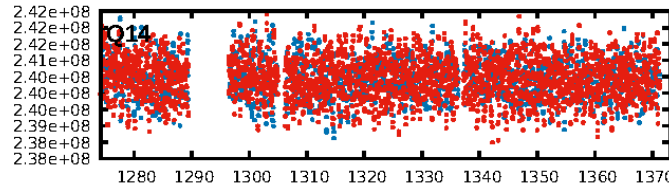
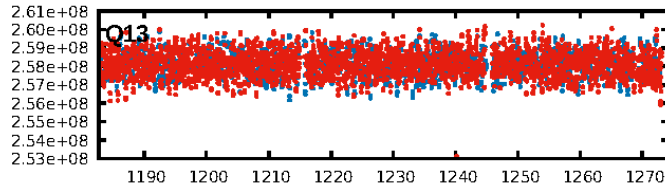
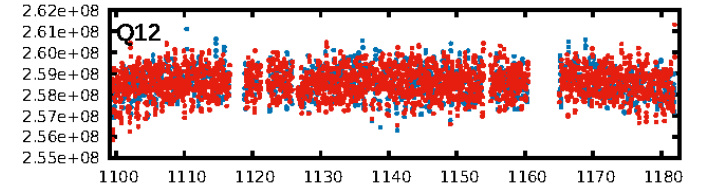
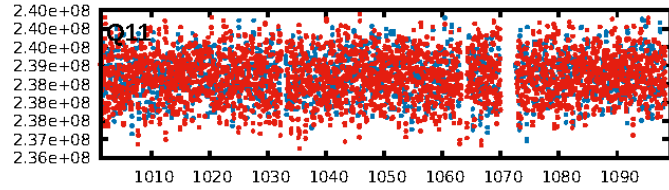
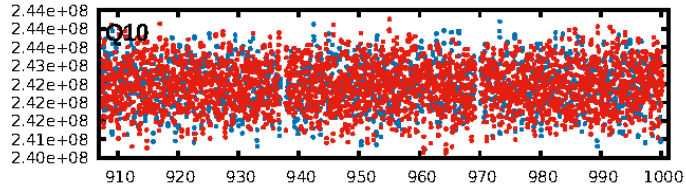
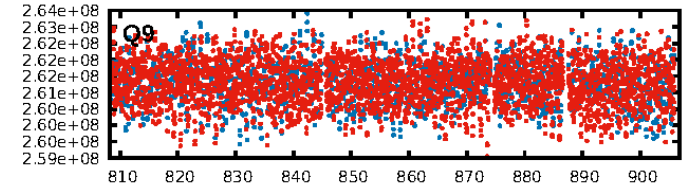
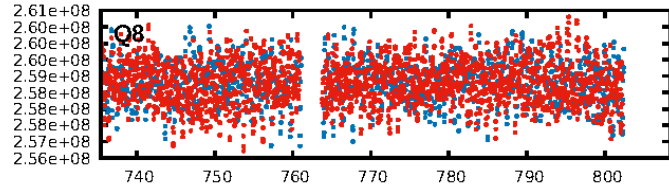
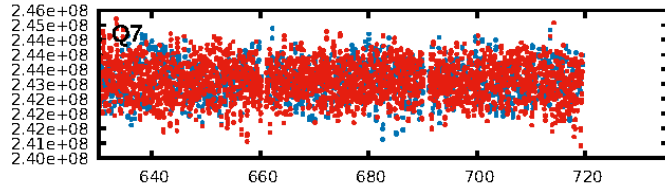
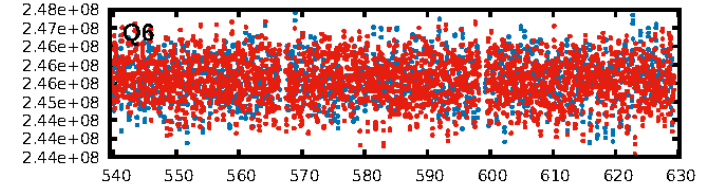
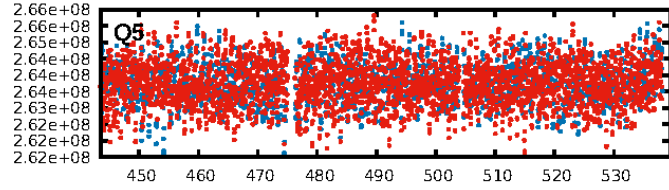
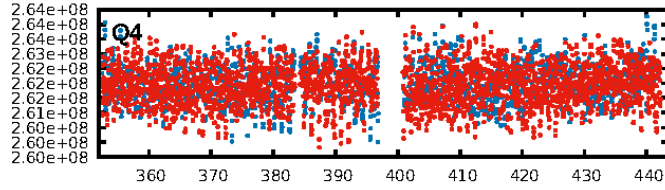
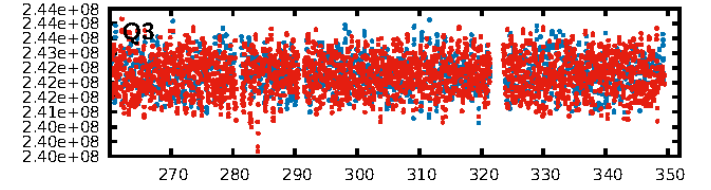
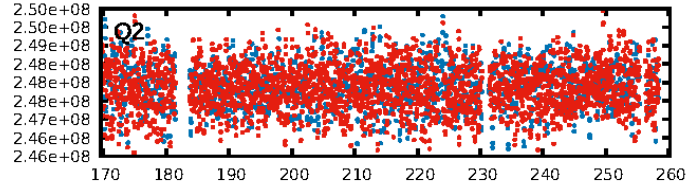
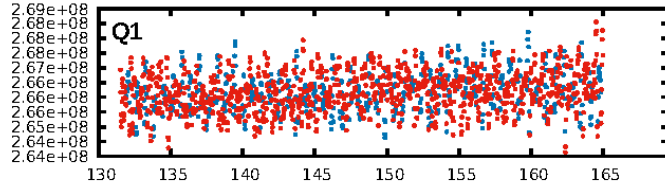
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2062/2072]
GhostDiagnostic-chr: 4.253
Centroid-sig: 2.9%
Centroid-so: 0.311 arcsec [3.40σ]
OotOffset-rm: 1.975 arcsec [3.66σ]
KicOffset-rm: 1.959 arcsec [3.35σ]
OotOffset-st: 1/3/1/4 [9]
KicOffset-st: 1/3/1/4 [9]
DiffImageQuality-fgm: 0.44 [4/9]
DiffImageOverlap-fno: 0.00 [0/17]

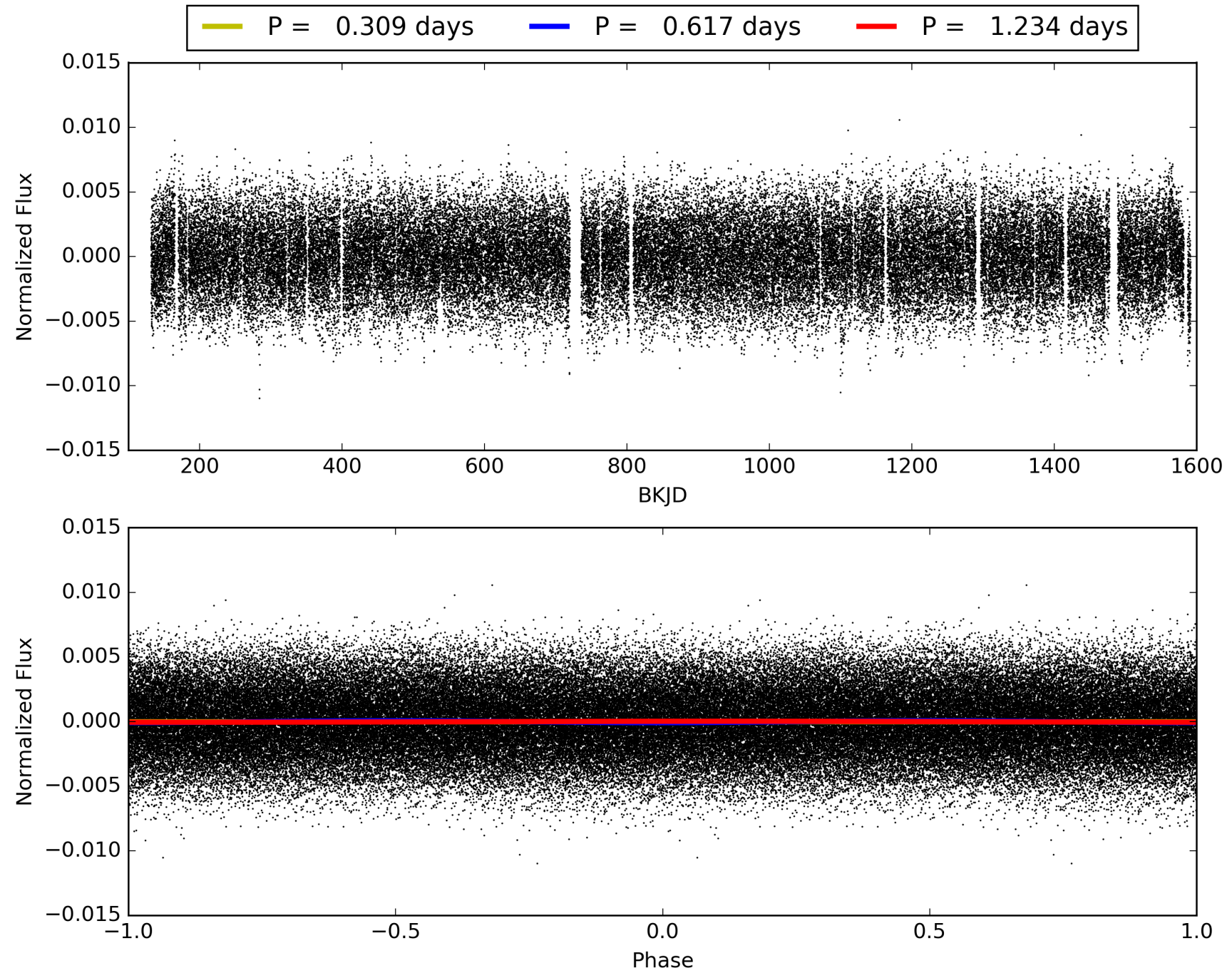
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 09:44:53 Z

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

TCE 005474424-02, PDC Light Curves

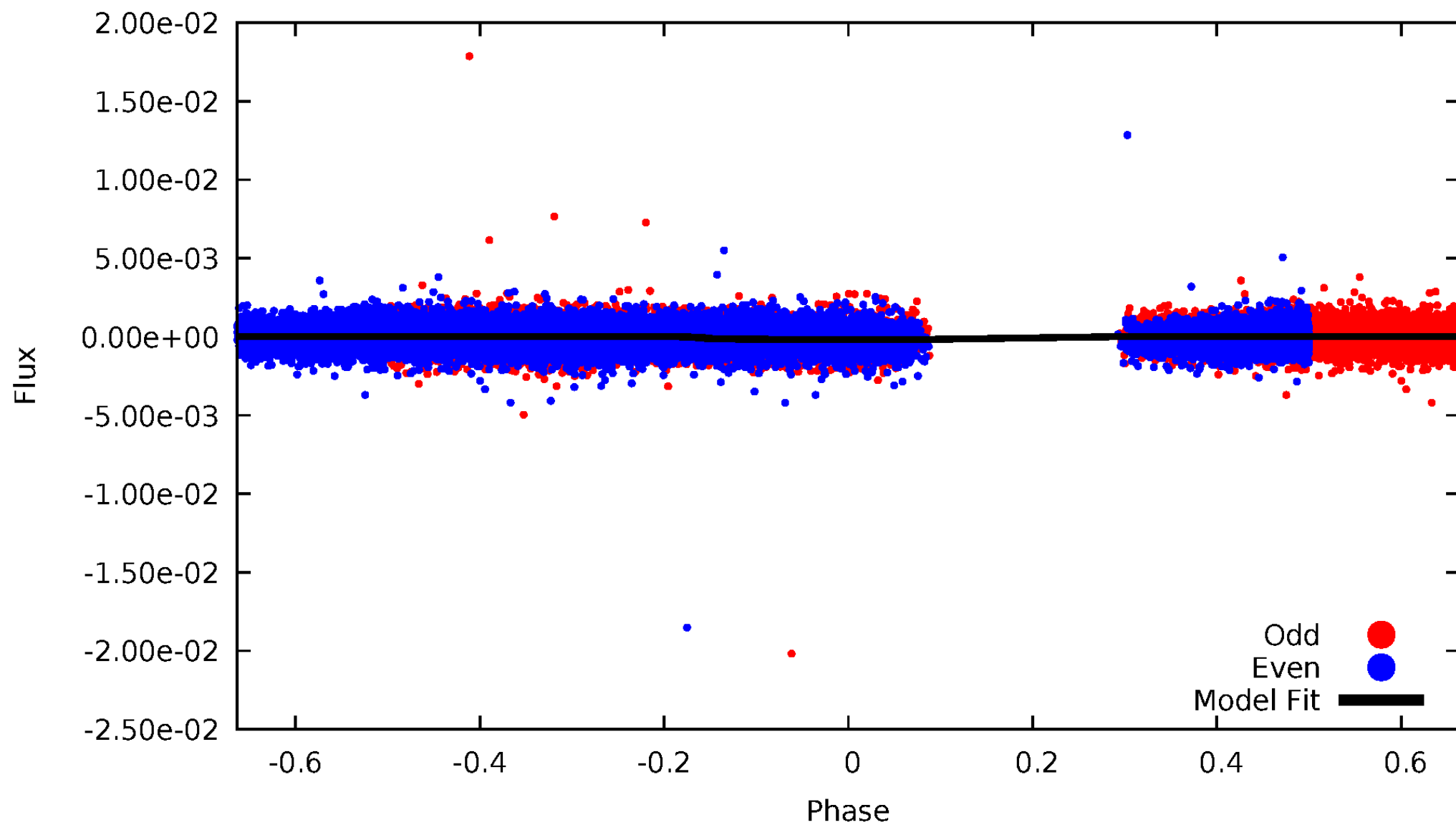


TCE 005474424-02



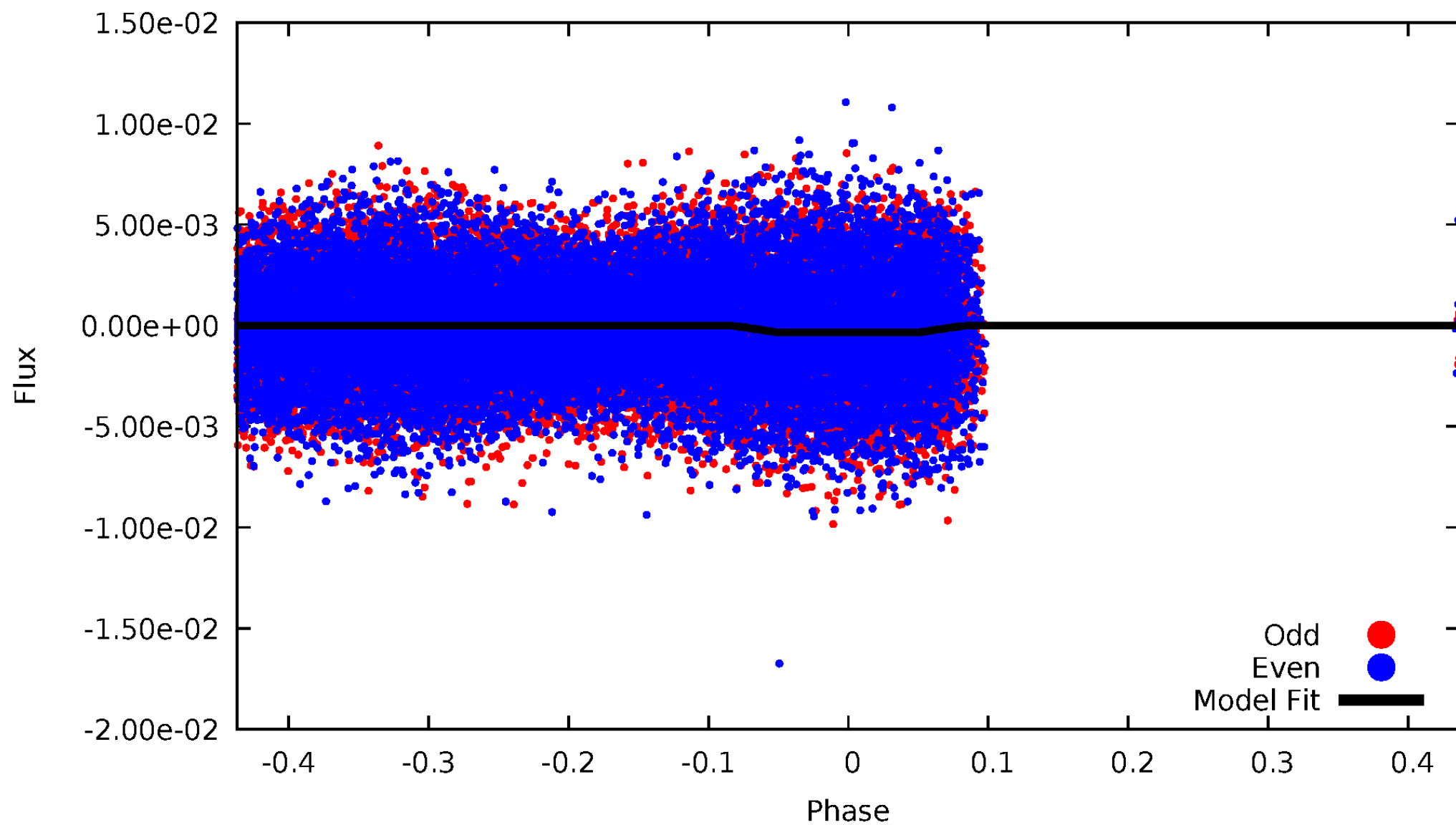
DV Odd/Even

TCE 005474424-02



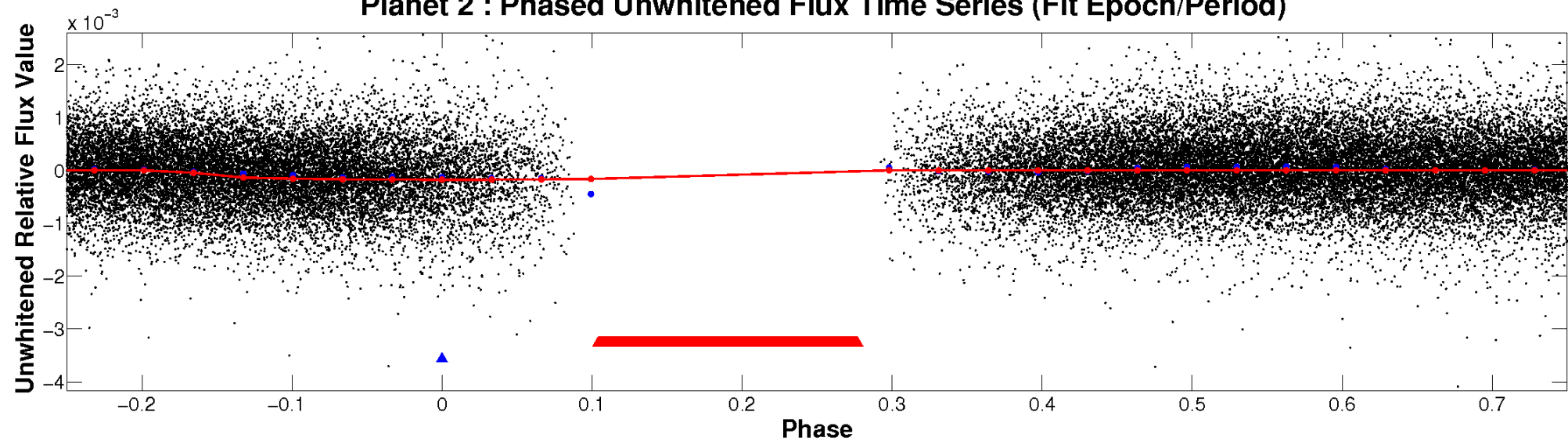
ALT Odd/Even

TCE 005474424-02

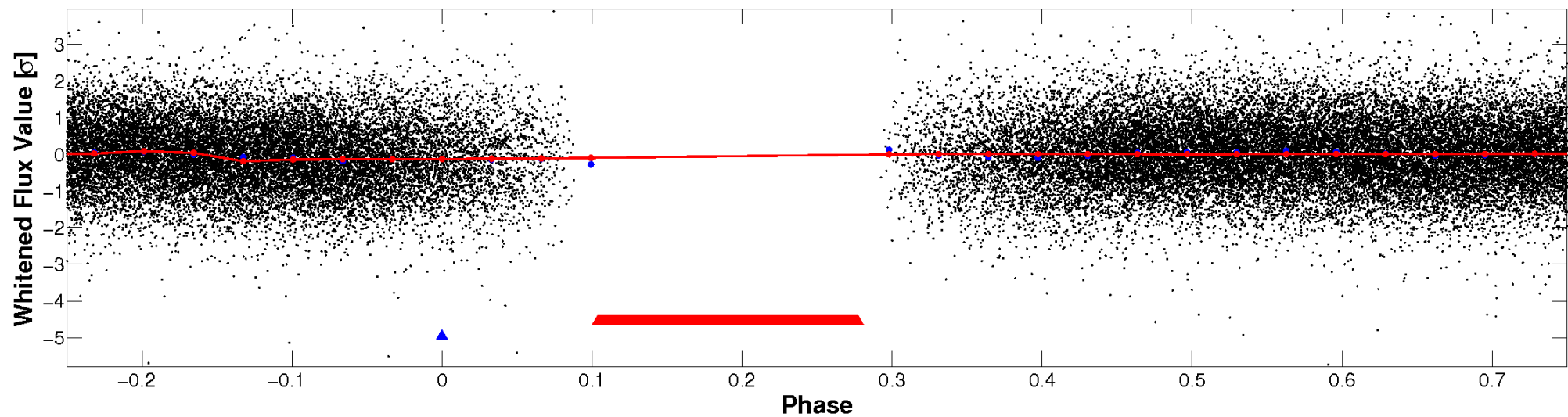


Non-Whitened Vs. Whitened Light Curve

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

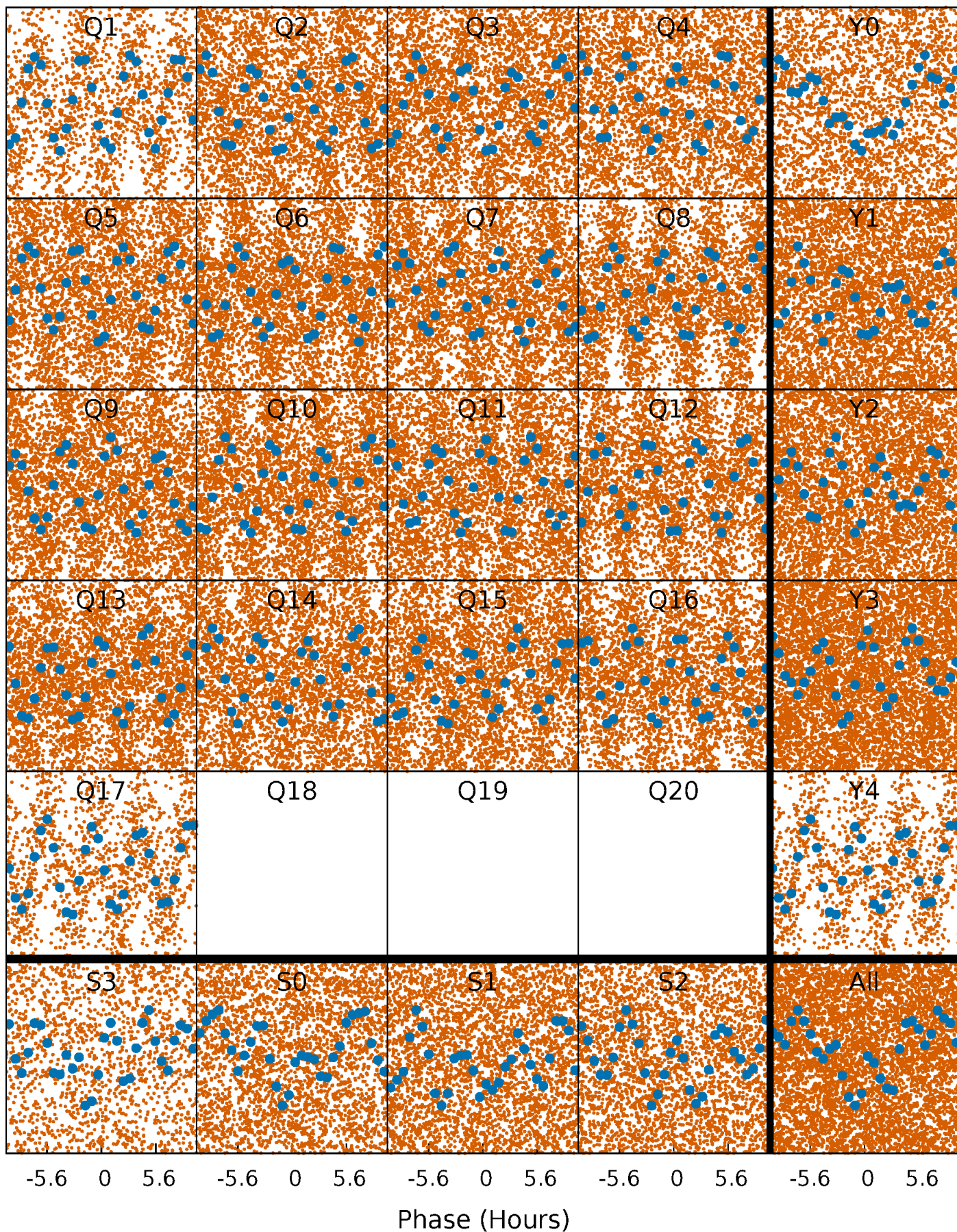


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



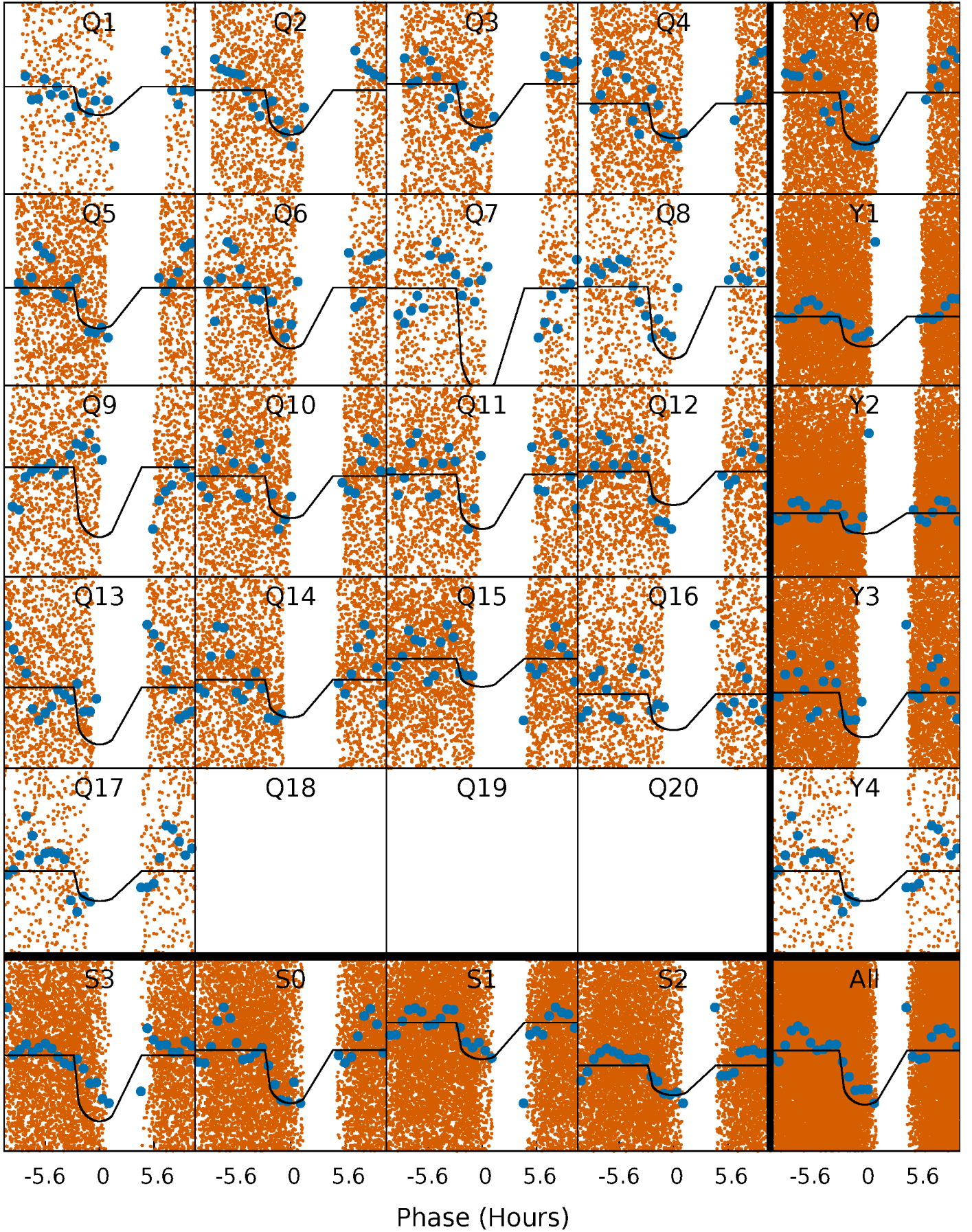
PDC Quarter-Phased Transit Curves

TCE 005474424-02 P= 0.617212 Days $T_0=131.702935$ (BKJD)



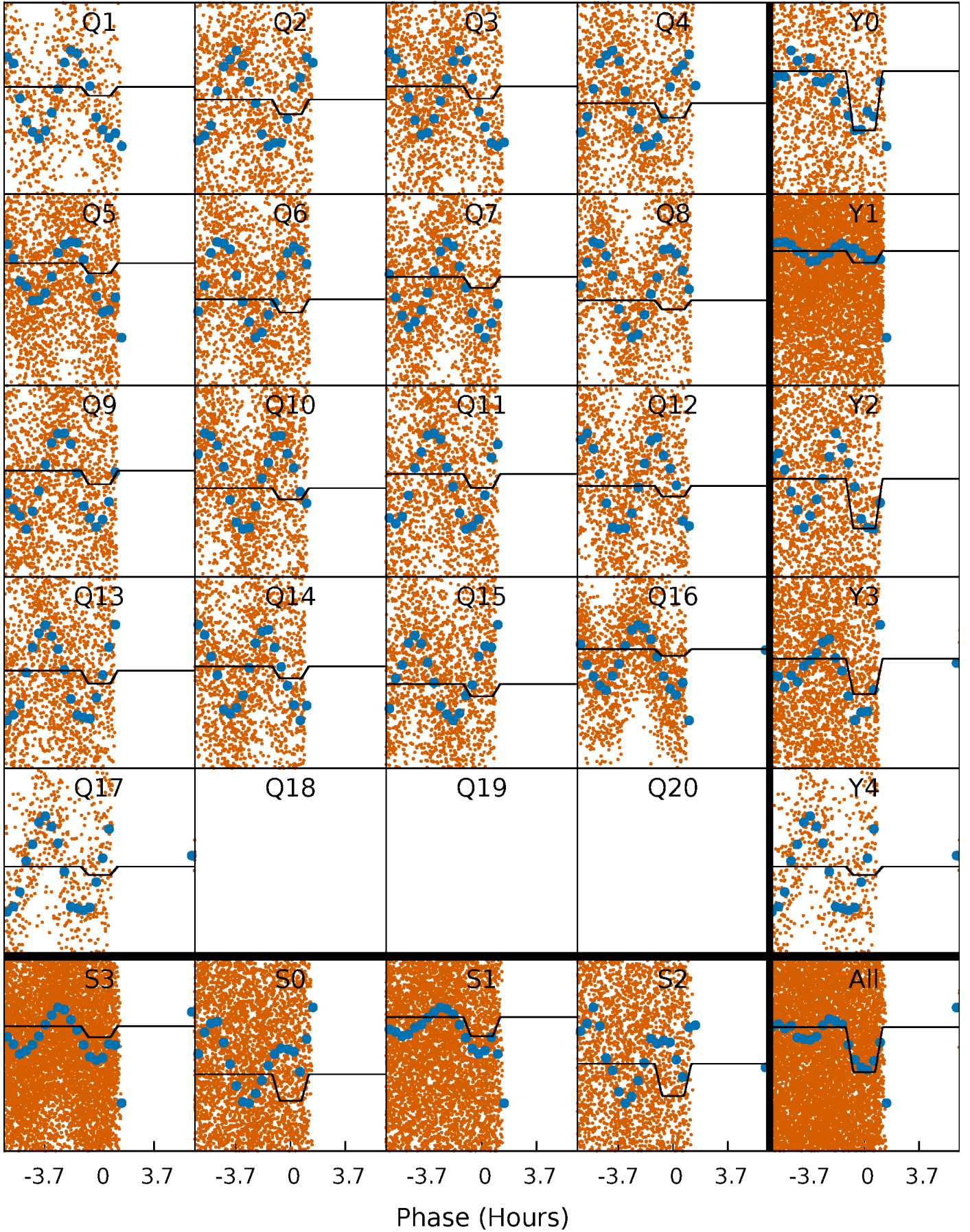
DV Quarter-Phased Transit Curves

TCE 005474424-02 P= 0.617212 Days $T_0=131.702935$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

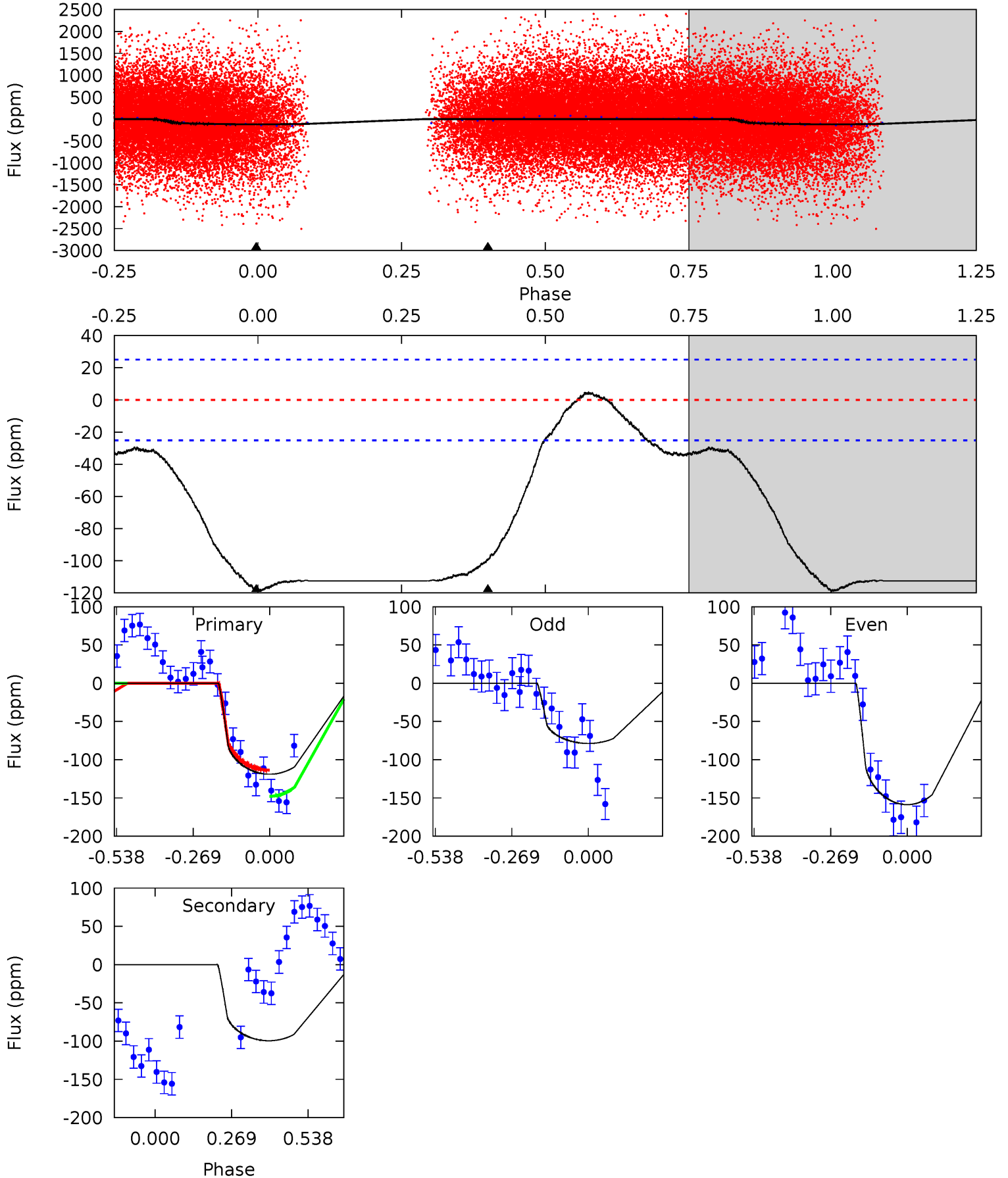
TCE 005474424-02 P= 0.617177 Days $T_0=131.697088$ (BKJD)



DV Model-Shift Uniqueness Test

005474424-02, $P = 0.617212$ Days, $E = 131.085723$ Days

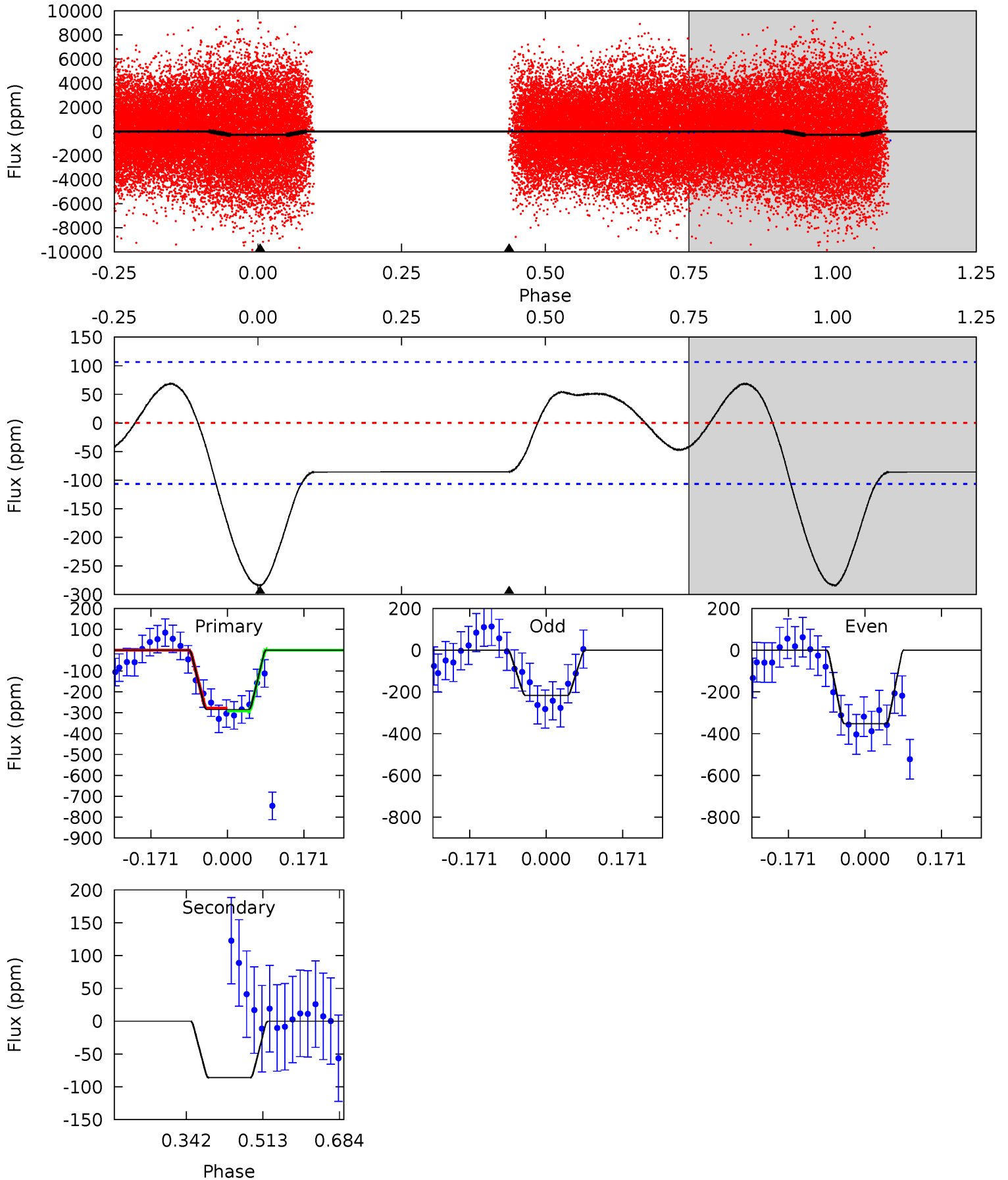
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.6	17.3	0	0	4.35	1.11	0.82	20.6	20.6	17.3	17.3	7.00	1.06	0.04	1.99



Alt Model-Shift Uniqueness Test

005474424-02, P = 0.617177 Days, E = 131.079911 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	3.60	0	0	4.45	1.37	1.42	11.9	11.9	3.60	3.60	2.82	0.97	0.20	0.25



Stellar Parameters For KIC 005474424

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7105^{+199}_{-299}	$3.924^{+0.293}_{-0.135}$	$-0.200^{+0.250}_{-0.350}$	$2.270^{+0.555}_{-0.833}$	$1.573^{+0.217}_{-0.325}$	$0.190^{+0.425}_{-0.074}$
	+3%/-4%	+7%/-3%	+125%/-175%	+24%/-37%	+14%/-21%	+224%/-39%
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 005474424-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-100 ± 6	$2.85^{+1.16}_{-0.91}$	5027^{+394}_{-473}	5963^{+1432}_{-873}	$1.774^{+2.107}_{-0.833}$
Alt.	-86 ± 24	$4.36^{+1.24}_{-1.14}$	5024^{+375}_{-493}	4411^{+830}_{-1026}	$0.639^{+0.584}_{-0.265}$

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

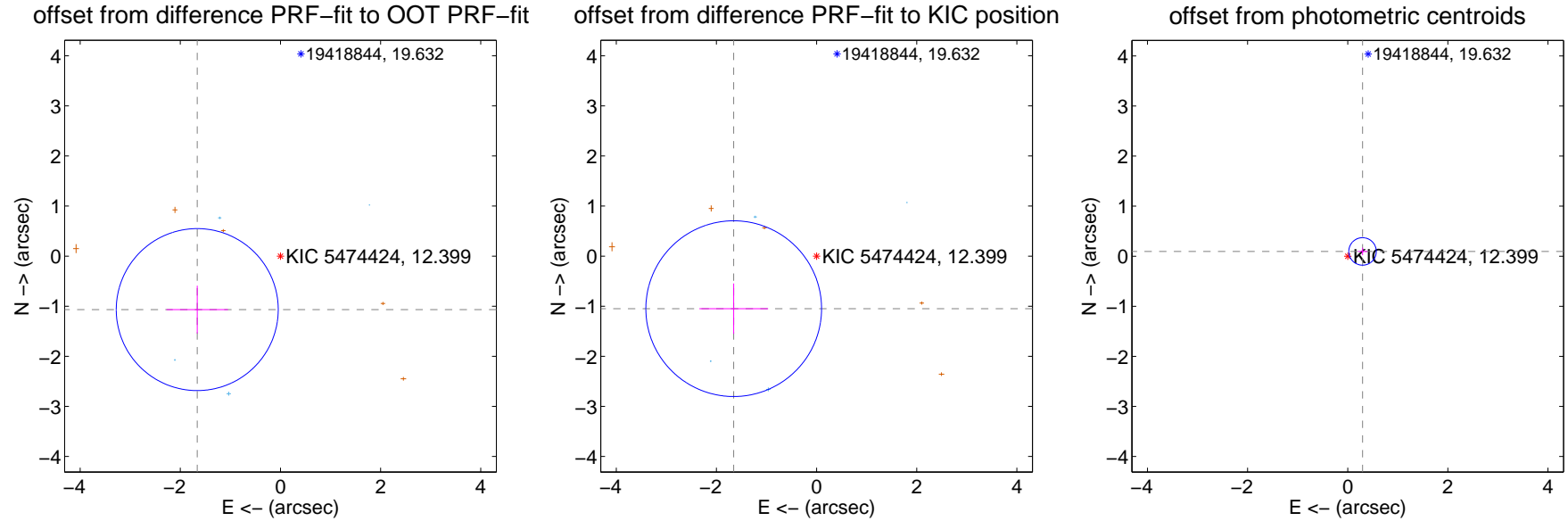
DV Centroid Data

Supplemental centroid analysis for 005474424-02. Kepler magnitude: 12.40. Transit SNR 15.86

There are 4 quarters with good PRF difference image offsets

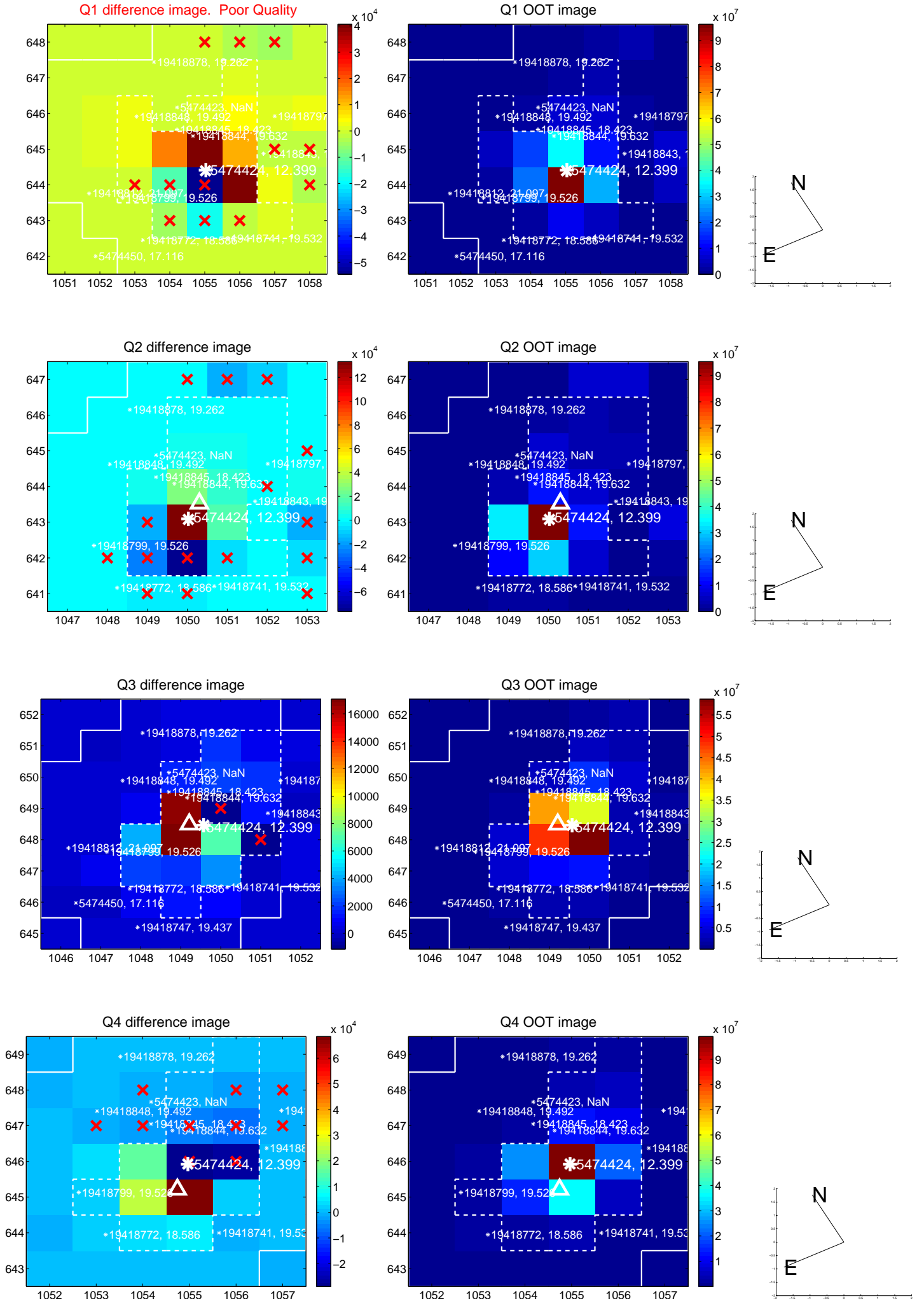
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.975 ± 0.539	3.66	1.662 ± 0.614	-1.068 ± 0.476
PRF-fit source offset from KIC position	1.959 ± 0.585	3.35	1.655 ± 0.687	-1.049 ± 0.504
photometric centroid source offset	0.31 ± 0.09	3.40	-0.30 ± 0.09	0.10 ± 0.07

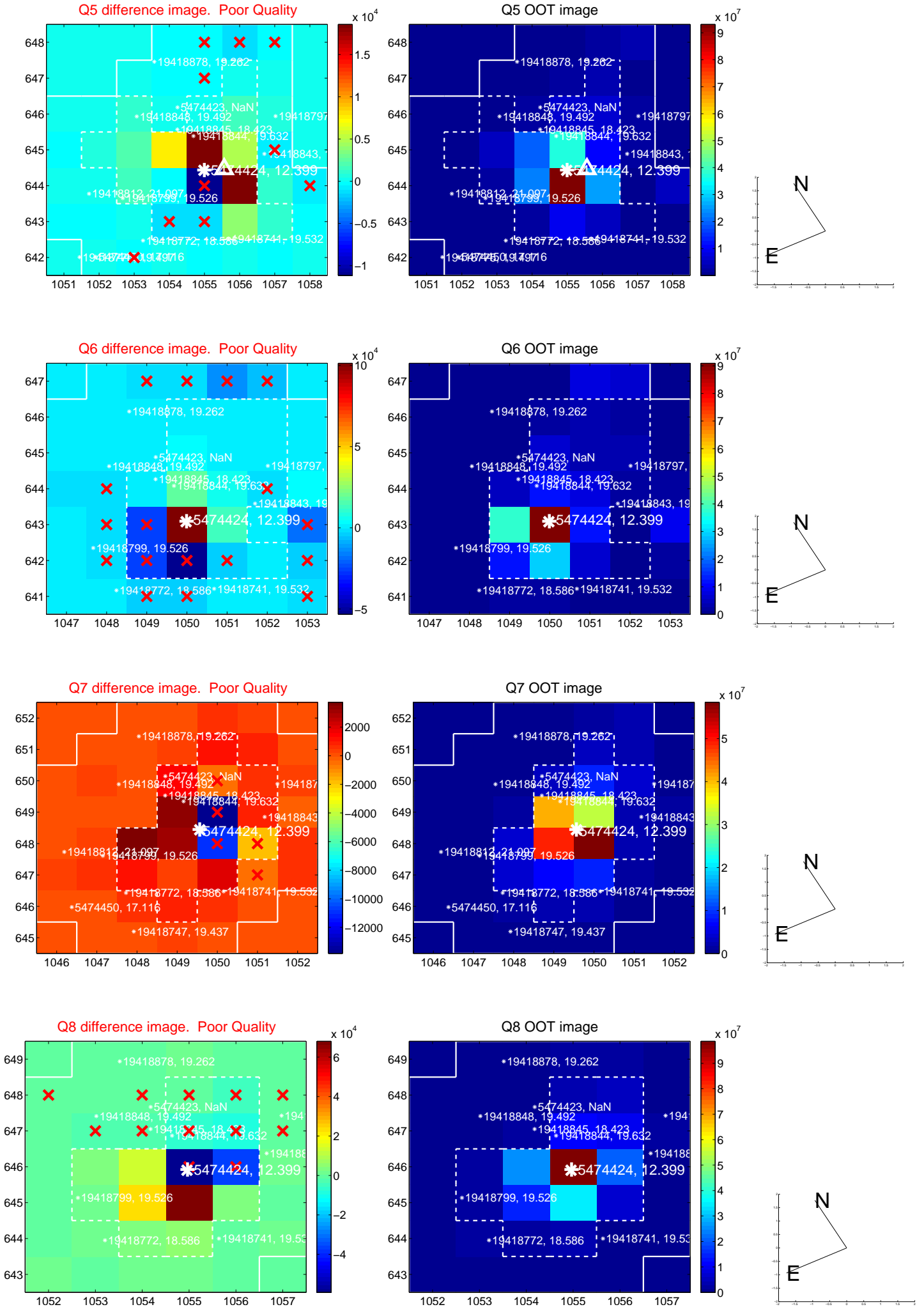


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

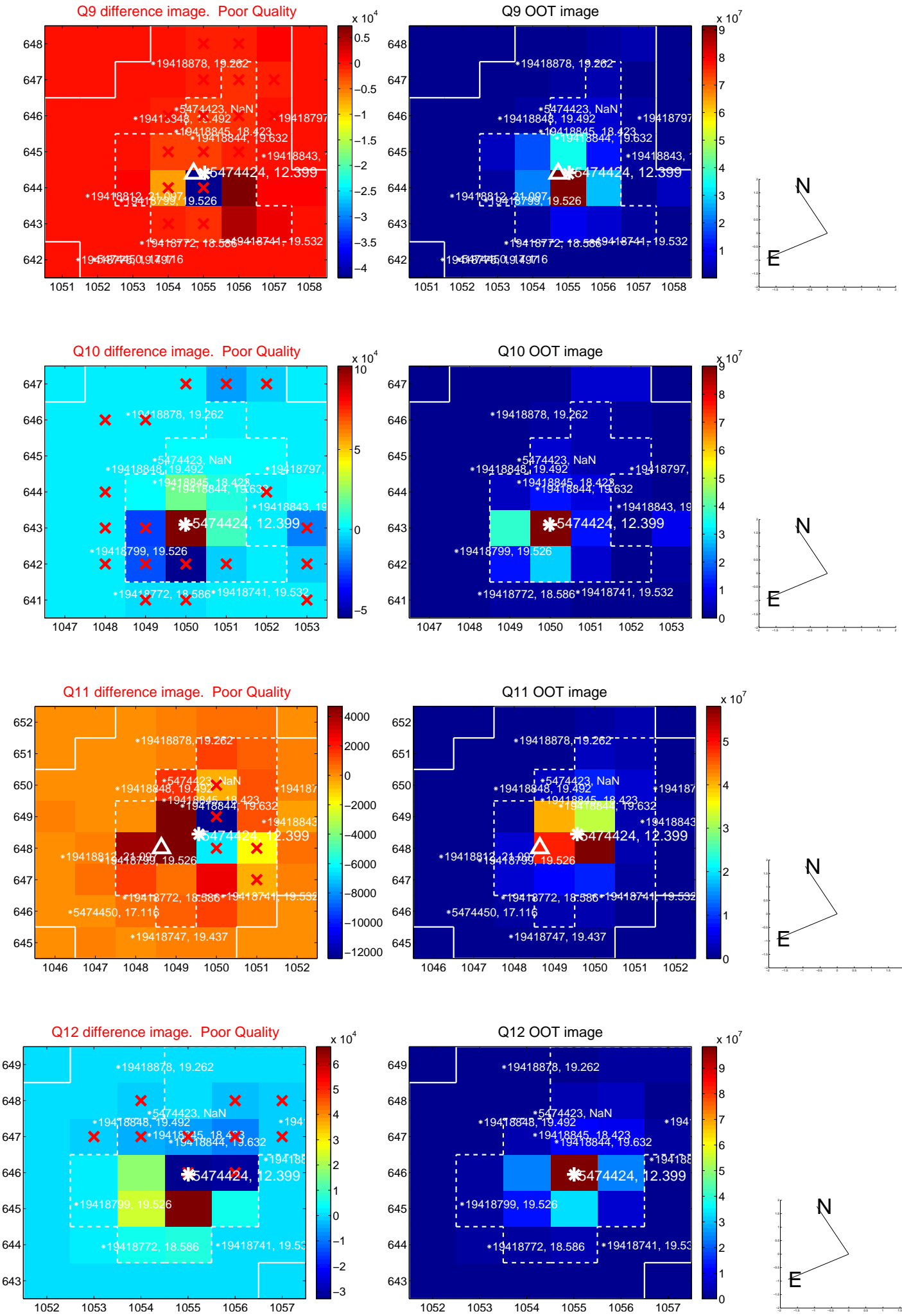
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



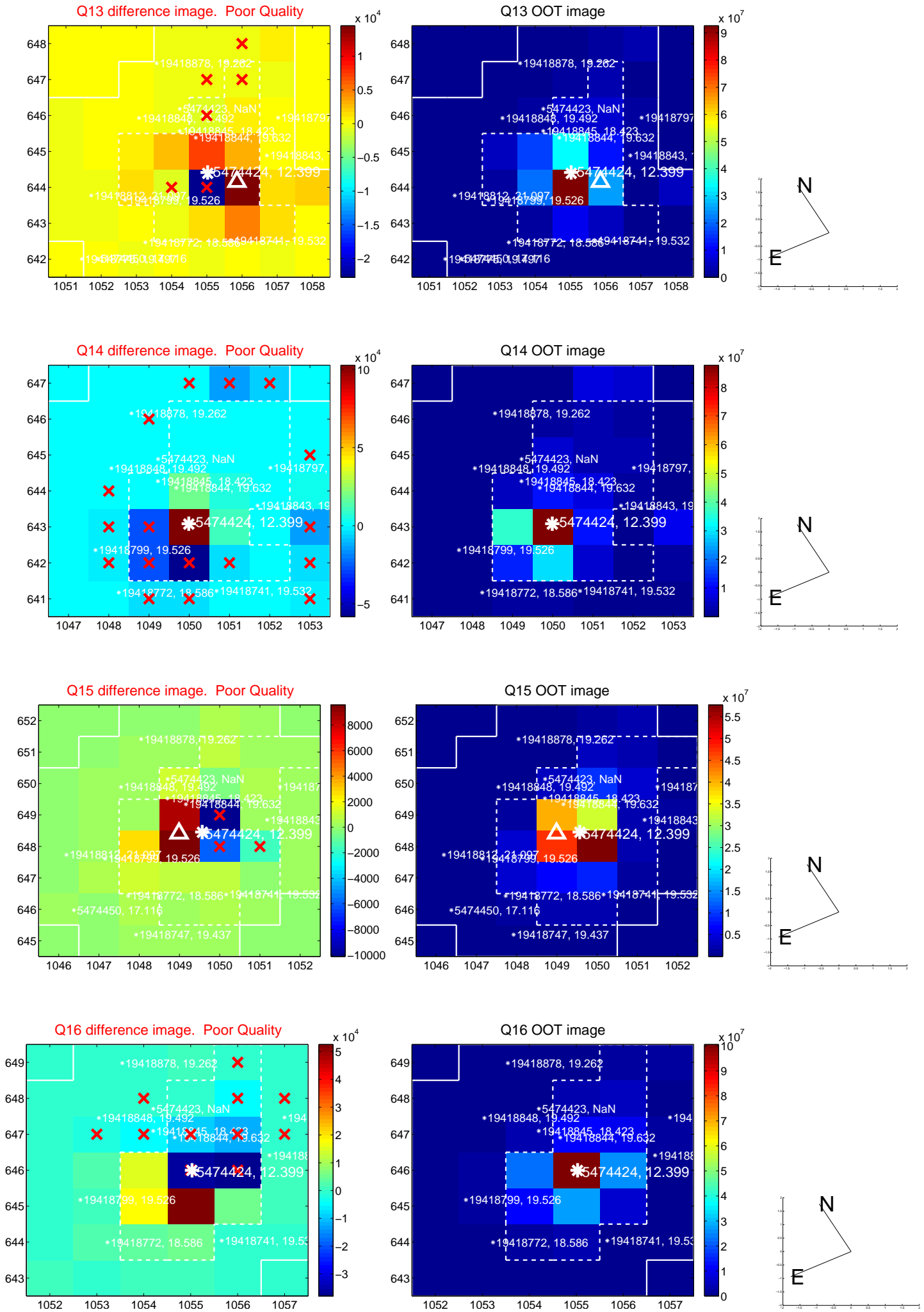
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



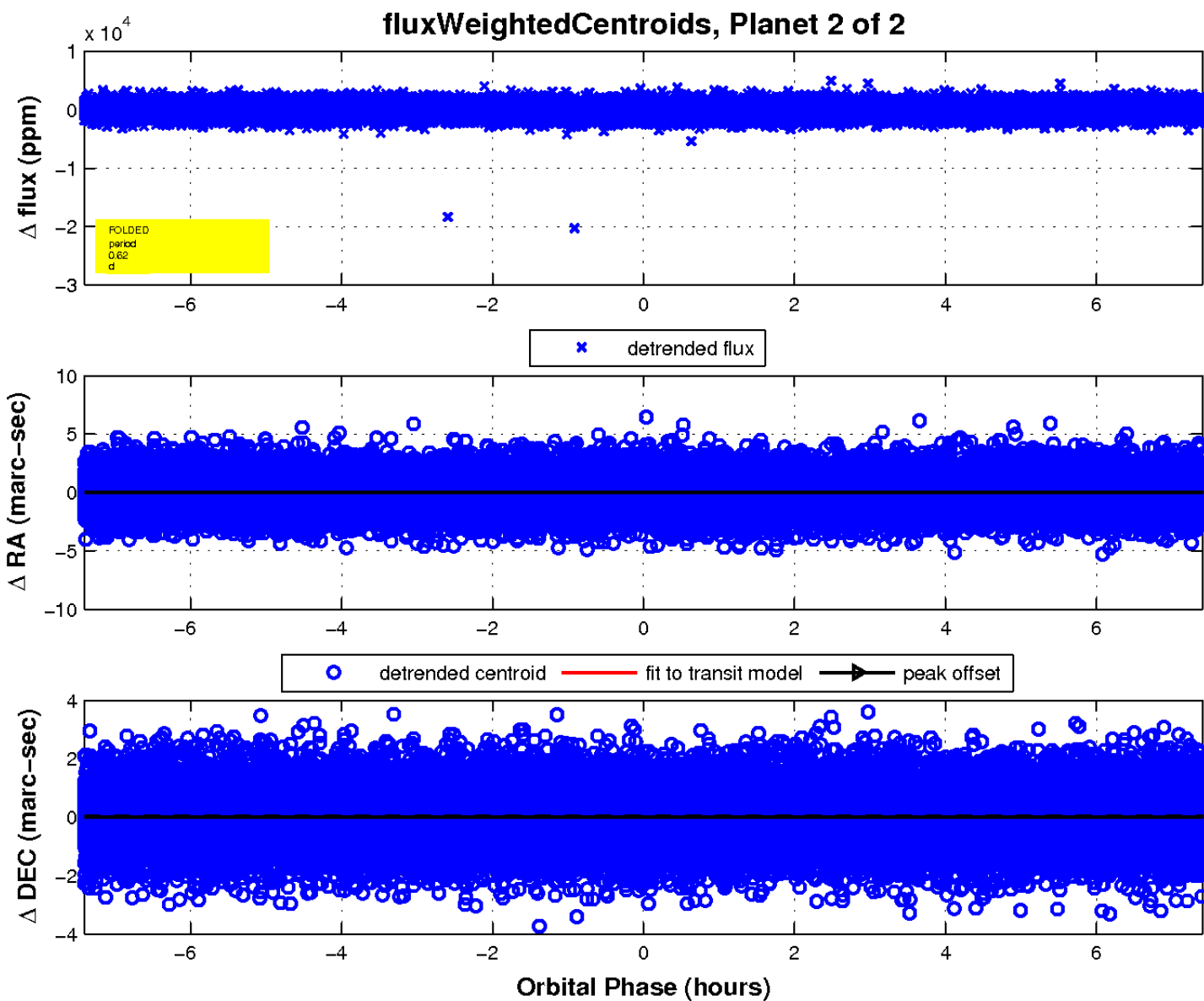
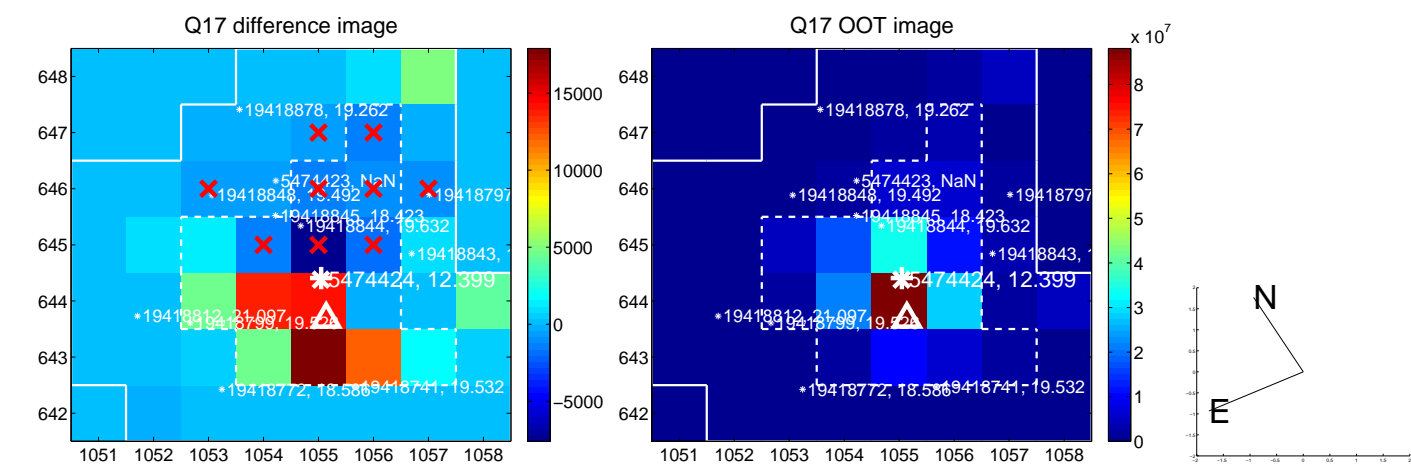
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

