

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})
005114623-01	OBS	No	363.329250	284.636050	5278.6	13.048	54.2	60.4	1.00	6029	13.23	1.17
005114623-02	OBS	No	363.326947	310.595787	5246.9	12.643	56.5	56.8	1.00	6029	13.19	1.17
005114623-03	OBS	No	363.327653	336.550228	5137.8	13.809	48.3	48.8	1.00	6029	13.06	1.17
005114623-04	OBS	No	389.280763	278.687192	3576.5	19.563	45.6	47.1	1.00	6029	10.99	1.06
005114623-05	OBS	No	389.272274	304.639583	3718.4	20.450	44.9	46.4	1.00	6029	11.03	1.06
005114623-06	OBS	No	363.314235	362.530688	5113.3	12.701	37.9	40.6	1.00	6029	13.03	1.17
005114623-07	OBS	No	389.281035	252.729537	2866.9	17.496	30.8	34.5	1.00	6029	8.98	1.06
005114623-08	OBS	No	364.132836	330.599616	2367.5	22.467	29.3	24.9	1.00	6029	9.08	1.16
005114623-09	OBS	No	389.246077	226.865752	3358.8	16.550	22.5	28.7	1.00	6029	10.70	1.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005114623-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—PERIOD_ALIAS_DV—PERIOD_ALIAS_ALT—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
005114623-02	OBS	FP	0.00	1	1	1	1	IS_SEC_TCE—CENT_RESOLVED_OFFSET—EPHEM_MATCH
005114623-03	OBS	FP	0.00	1	0	0	1	SAME_NTL_PERIOD—CENT_FEW_DIFFS—EPHEM_MATCH
005114623-04	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_MARSHALL—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
005114623-05	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_MARSHALL—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
005114623-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS
005114623-07	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
005114623-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005114623-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_ZUMA—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST

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 005114623-01

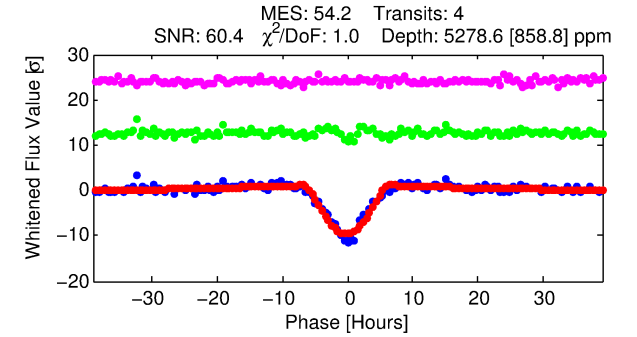
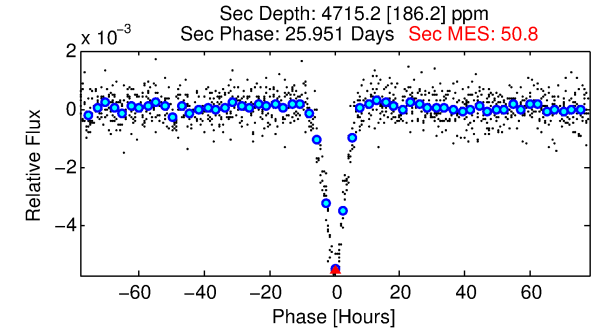
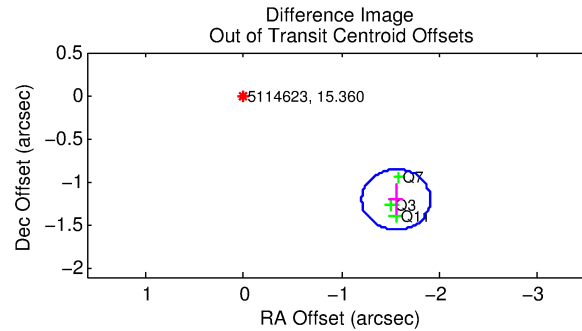
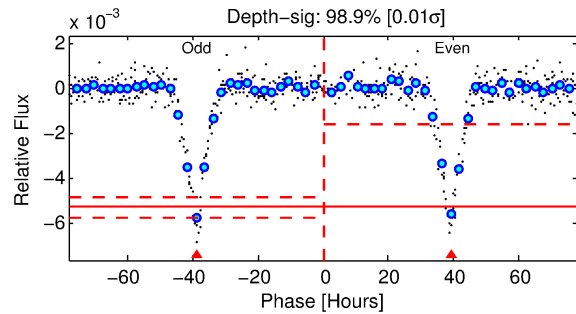
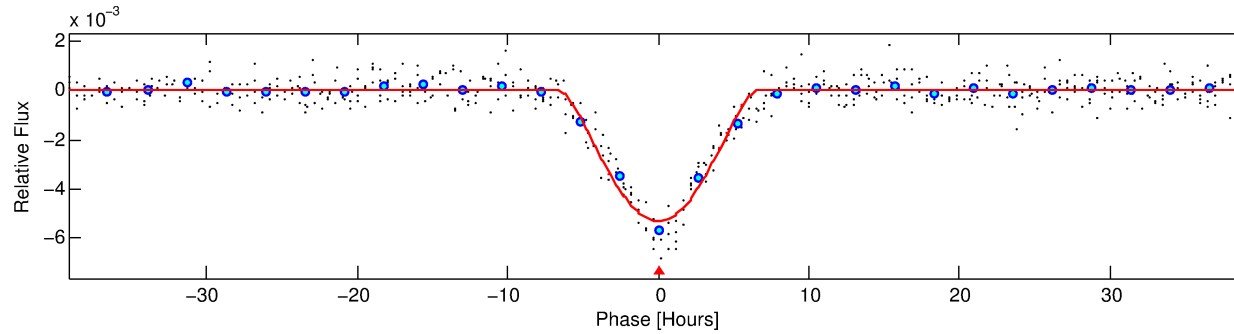
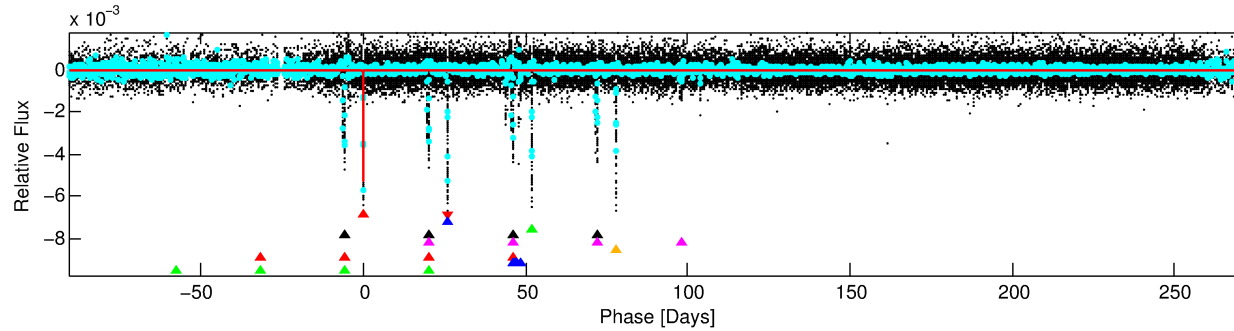
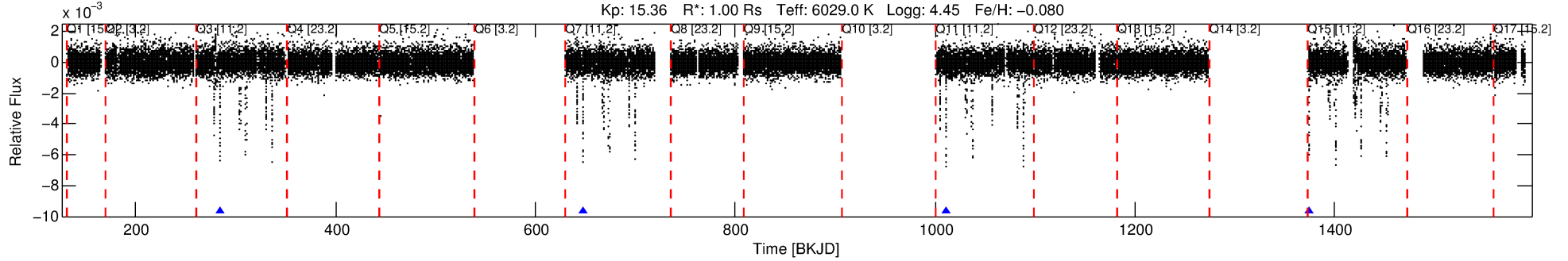
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
005114623-01	5114623	6371.01	3858884	14:1	7285.7	9	0	9.28	15.36	75.48	Cross-Talk	0	2.27	0.11

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: 5114623 Candidate: 1 of 9 Period: 363.329 d
KOI: K03827 Corr: No Ephemeris Match

Kp: 15.36 R*: 1.00 Rs Teff: 6029.0 K Logg: 4.45 Fe/H: -0.080



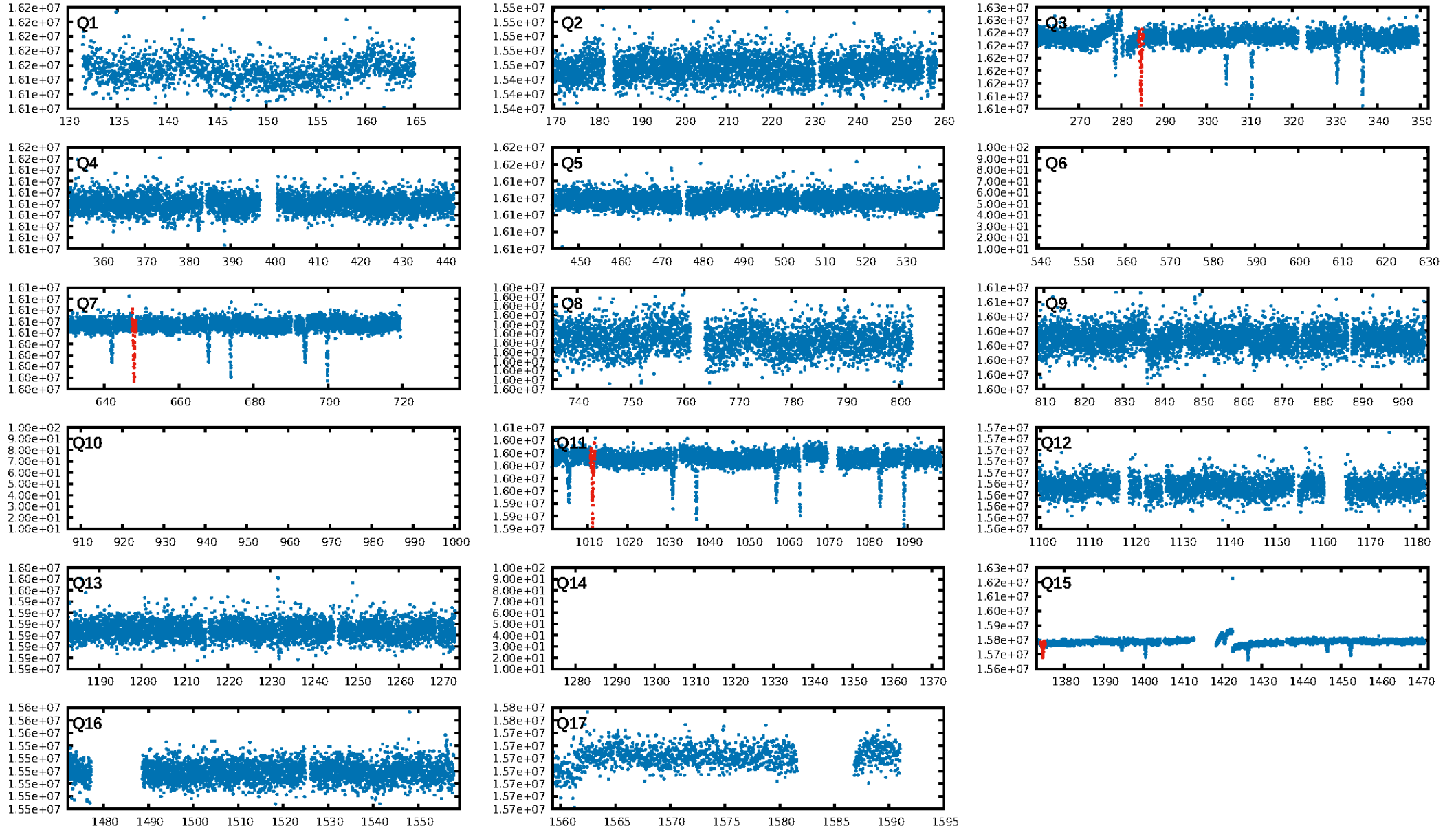
DV Fit Results:

Period = 363.32925 [0.00252] d
Epoch = 284.6360 [0.0044] BKJD
Rp/R* = 0.1215 [0.0917]
a/R* = 108.00 [14.75]
b = 1.00 [0.12]
Seff = 1.16 [0.48]
Teq = 265 [27] K
Rp = 13.23 [10.90] Re
a = 1.0061 [0.2748] AU
Ag = 15004.24 [23410.57] [0.64σ]
Teffp = 4533 [1719] K [2.48σ]

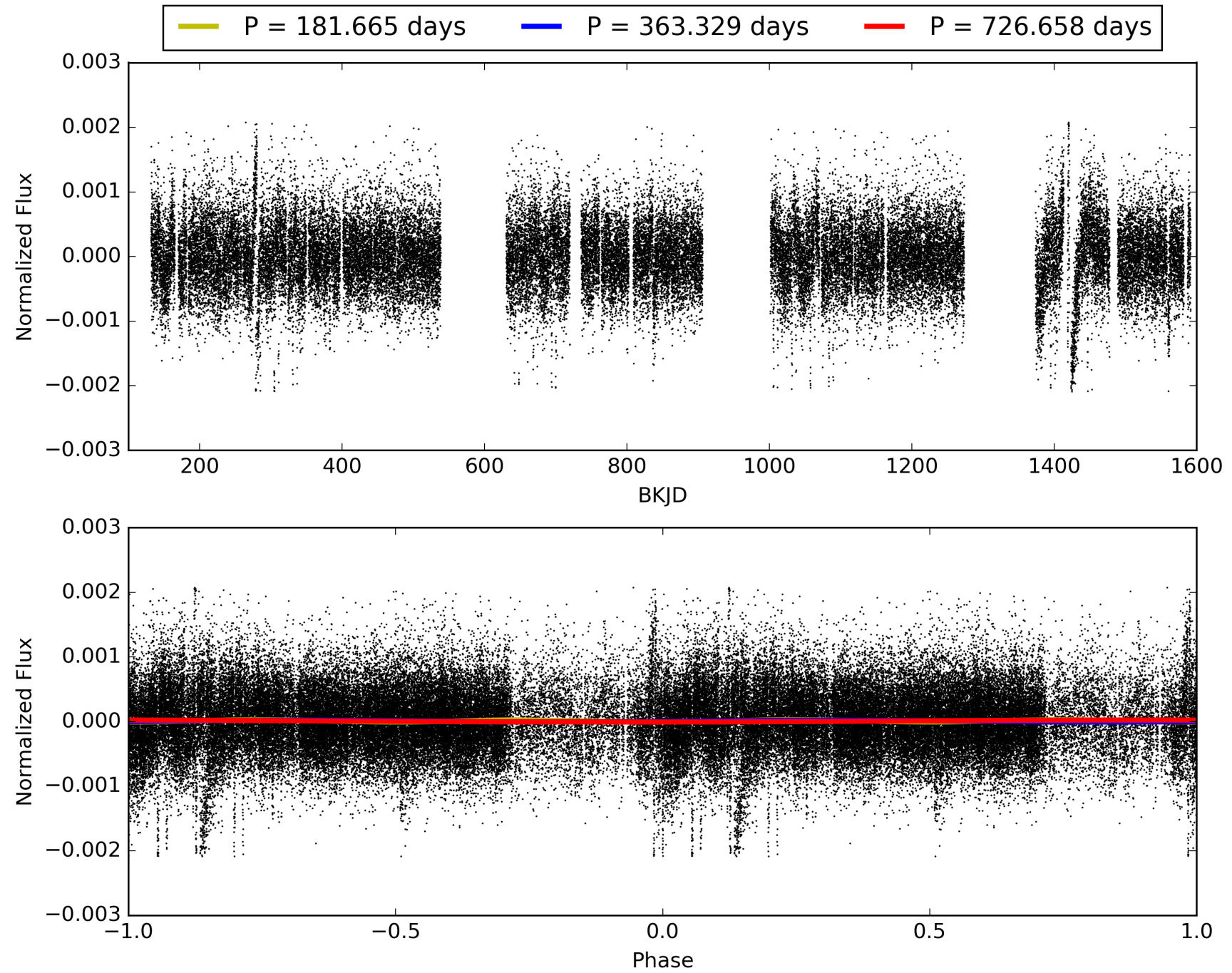
DV Diagnostic Results:

ShortPeriod-sig: 0.2% [0.00σ]
LongPeriod-sig: 54.2% [0.74σ]
ModelChiSquare2-sig: 89.1%
ModelChiSquareGof-sig: 79.4%
Bootstrap-pfa: 1.22e-189
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.1366
Centroid-sig: 0.0%
Centroid-so: 5.061 arcsec [20.71σ]
OotOffset-rm: 1.969 arcsec [16.86σ]
KicOffset-rm: 1.868 arcsec [17.25σ]
OotOffset-st: 0/3/0/0 [3]
KicOffset-st: 0/3/0/0 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 005114623-01, PDC Light Curves

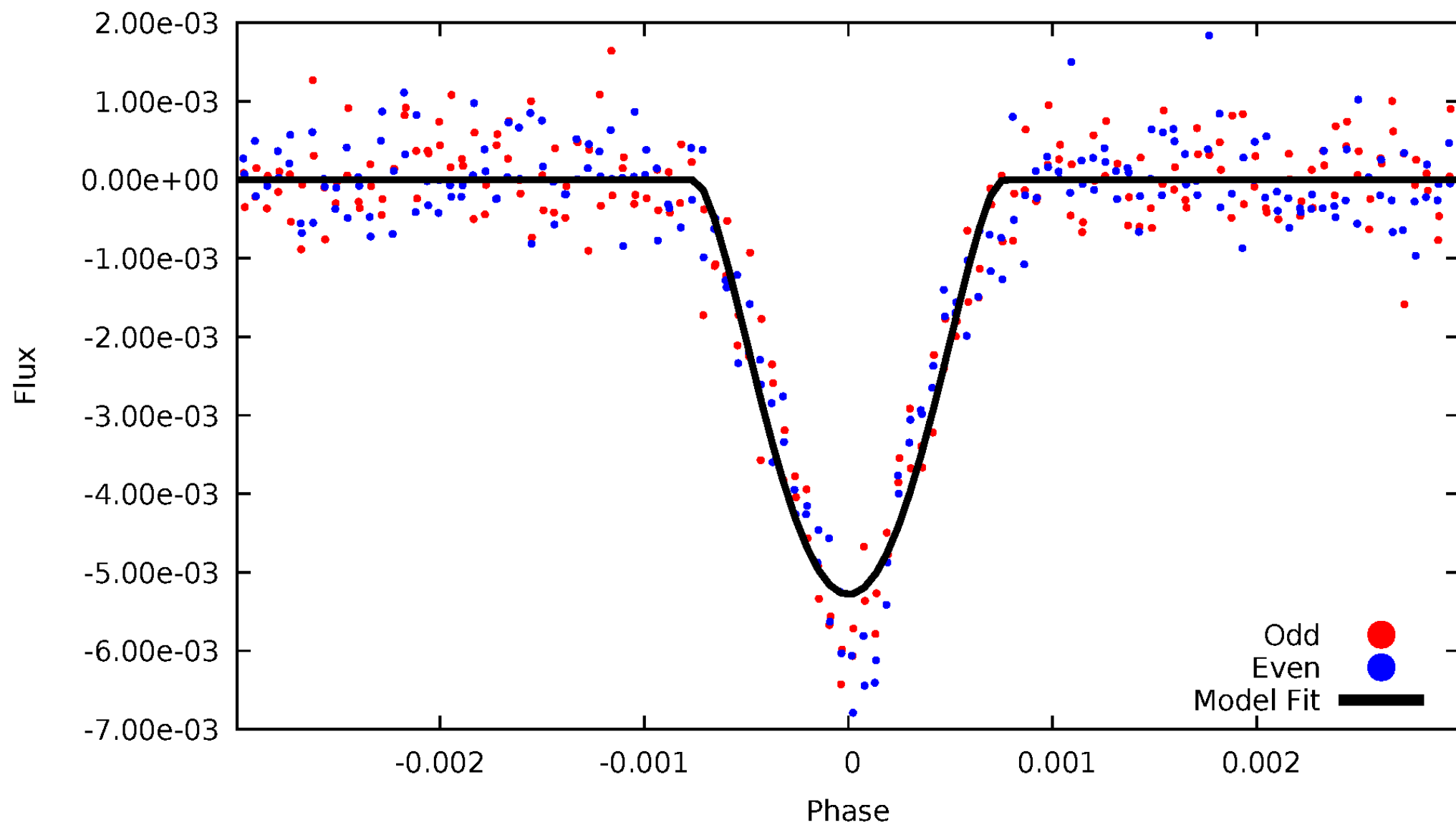


TCE 005114623-01



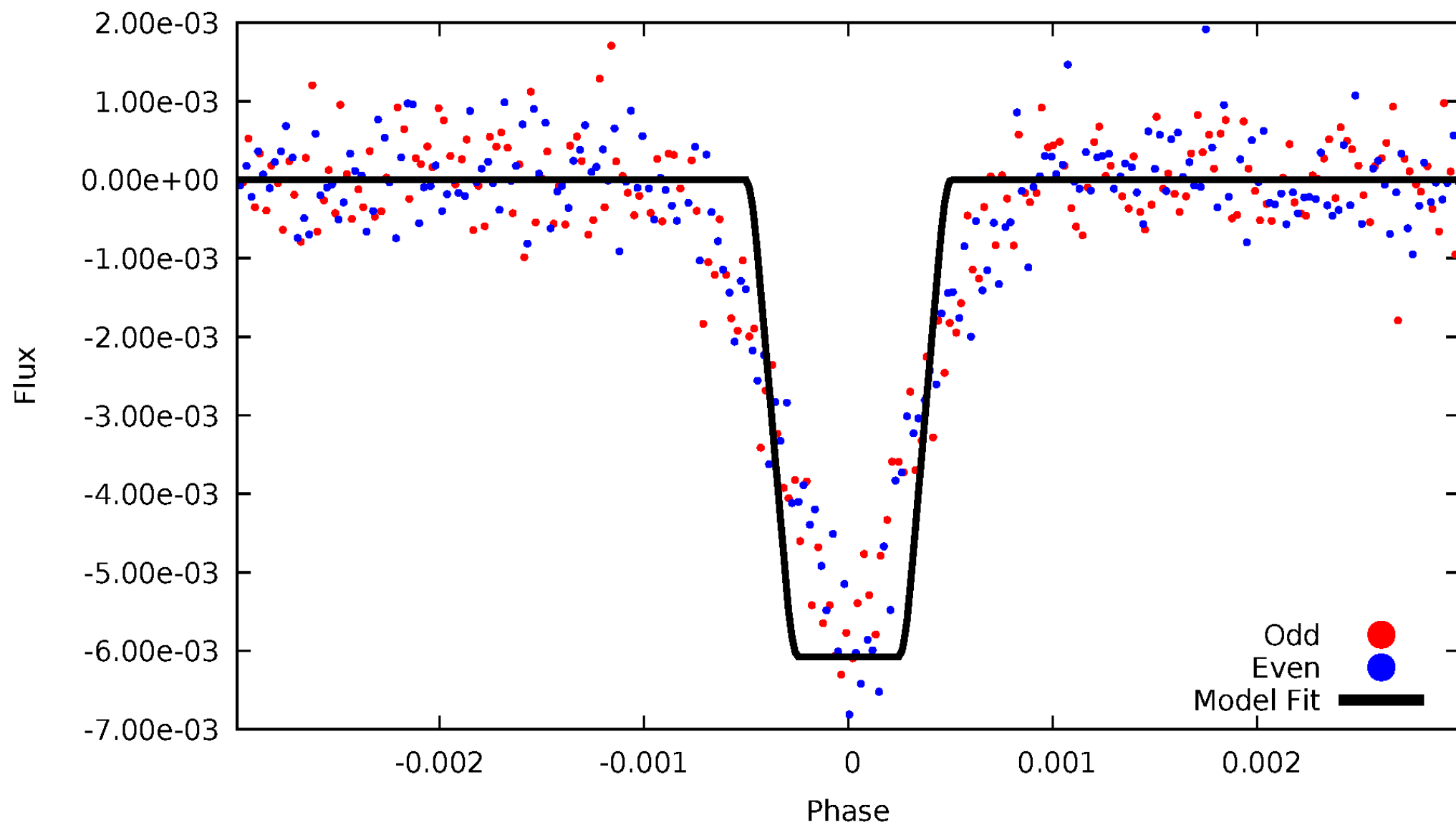
DV Odd/Even

TCE 005114623-01

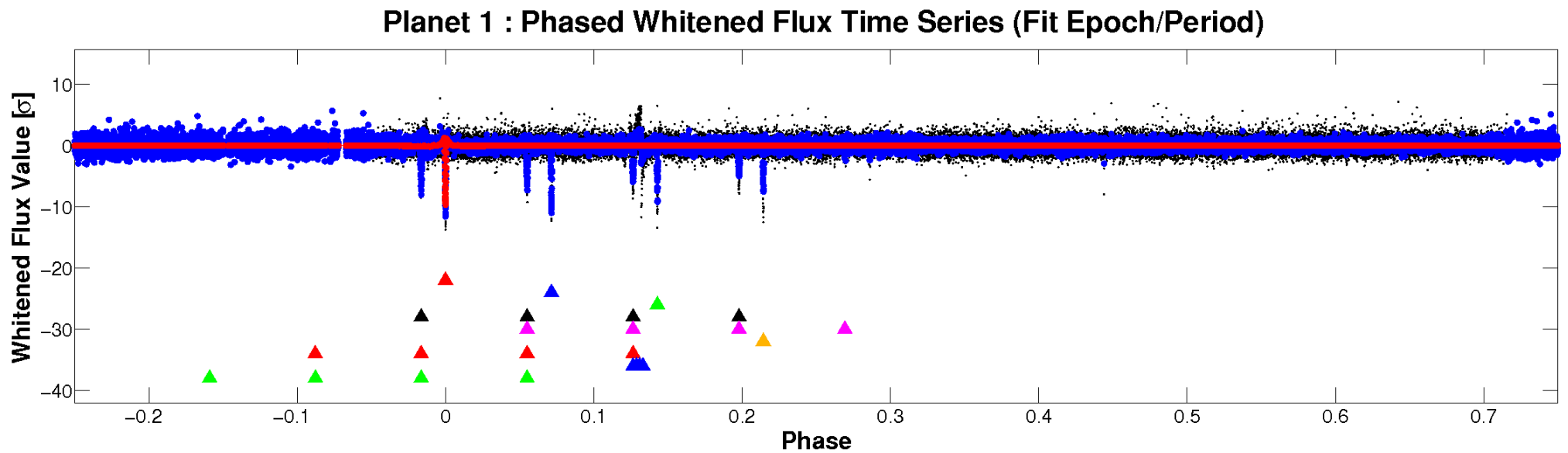
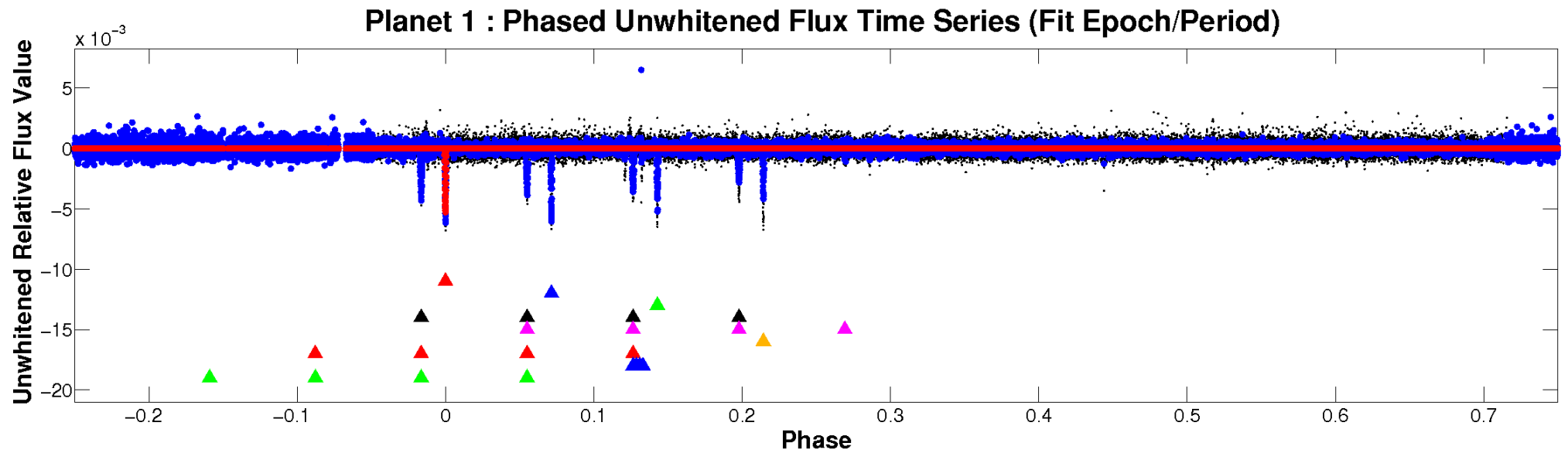


ALT Odd/Even

TCE 005114623-01

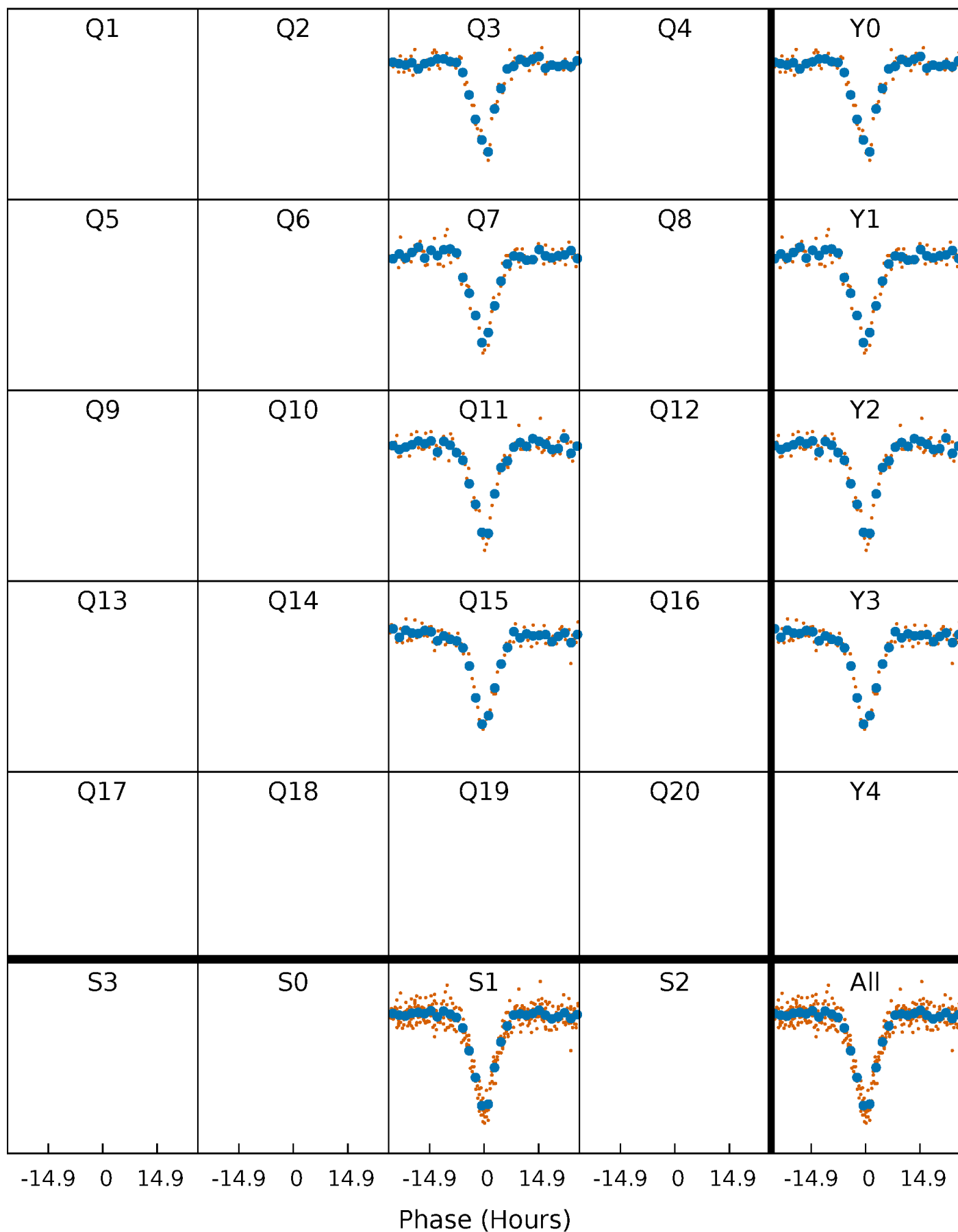


Non-Whitened Vs. Whitened Light Curve



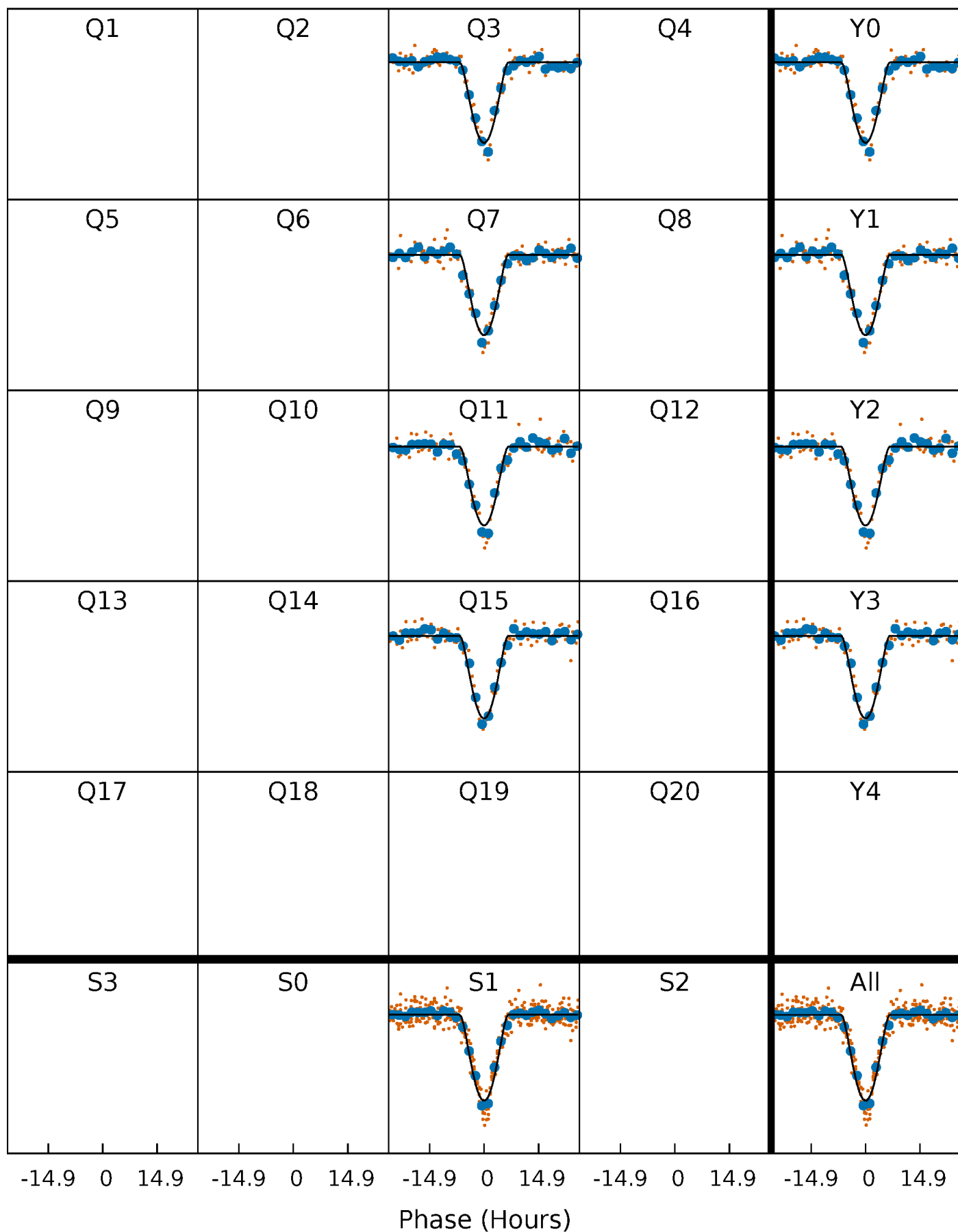
PDC Quarter-Phased Transit Curves

TCE 005114623-01 P=363.329250 Days $T_0=284.636050$ (BKJD)



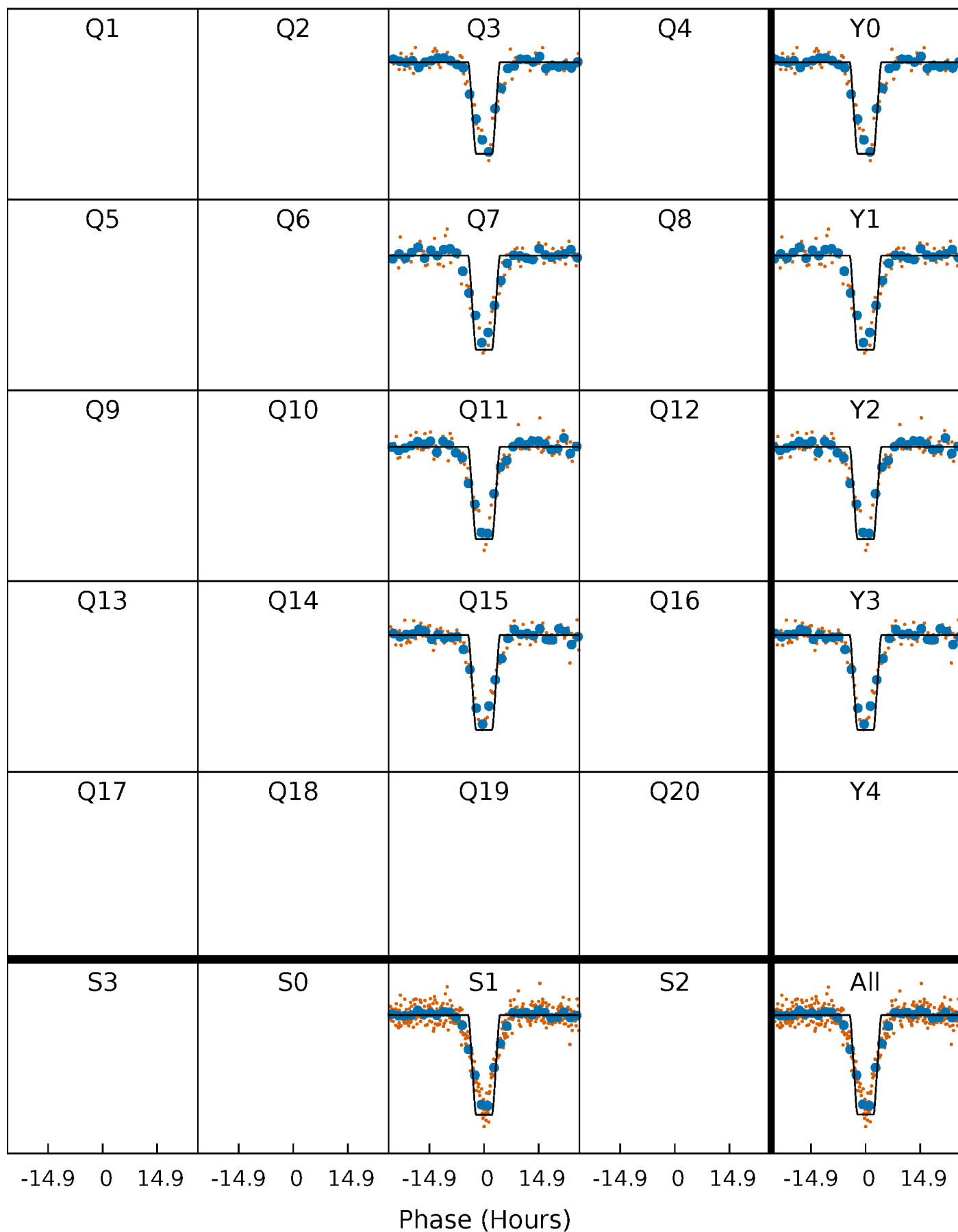
DV Quarter-Phased Transit Curves

TCE 005114623-01 P=363.329250 Days $T_0=284.636050$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

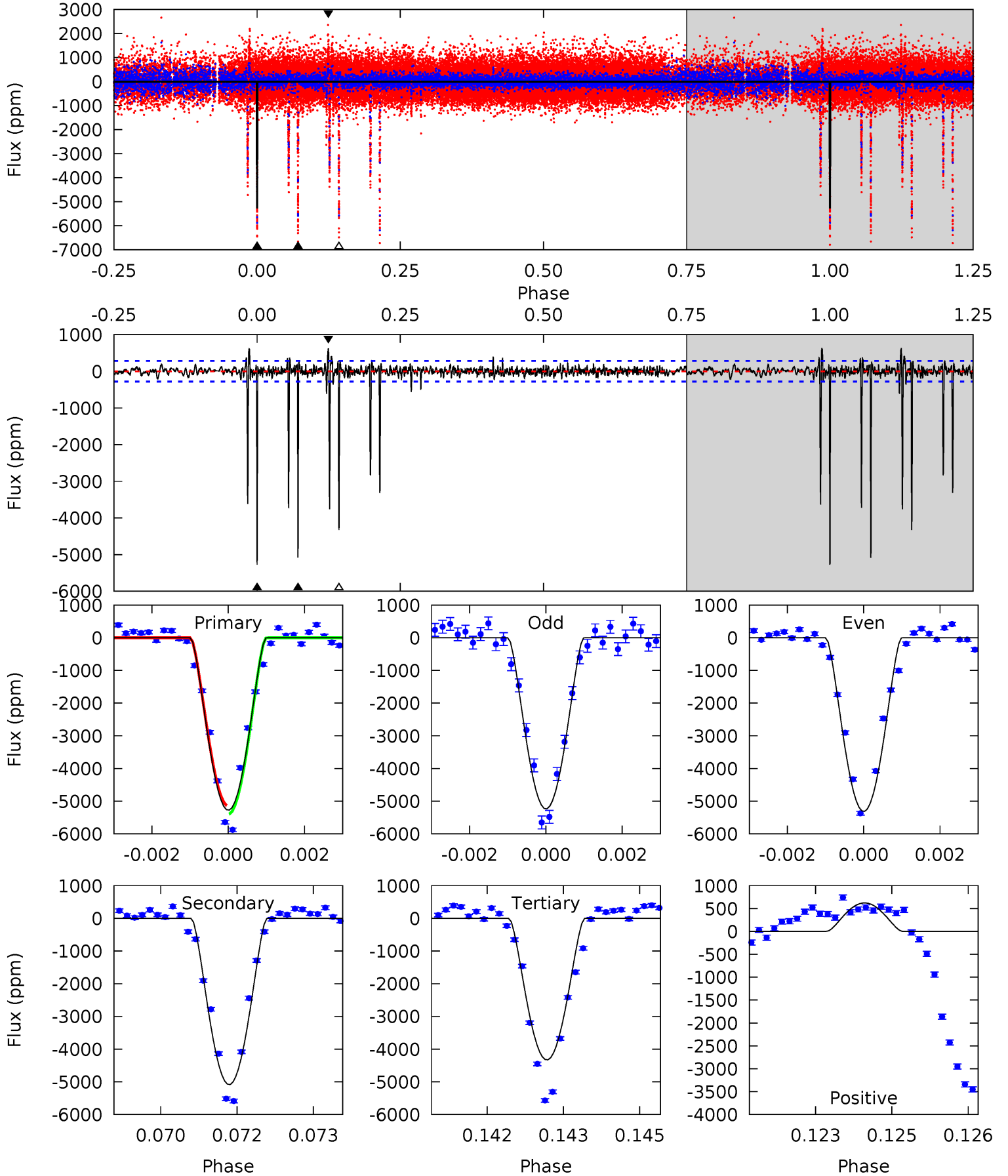
TCE 005114623-01 P=363.335941 Days $T_0=284.628939$ (BKJD)



DV Model-Shift Uniqueness Test

005114623-01, P = 363.329250 Days, E = 284.636050 Days

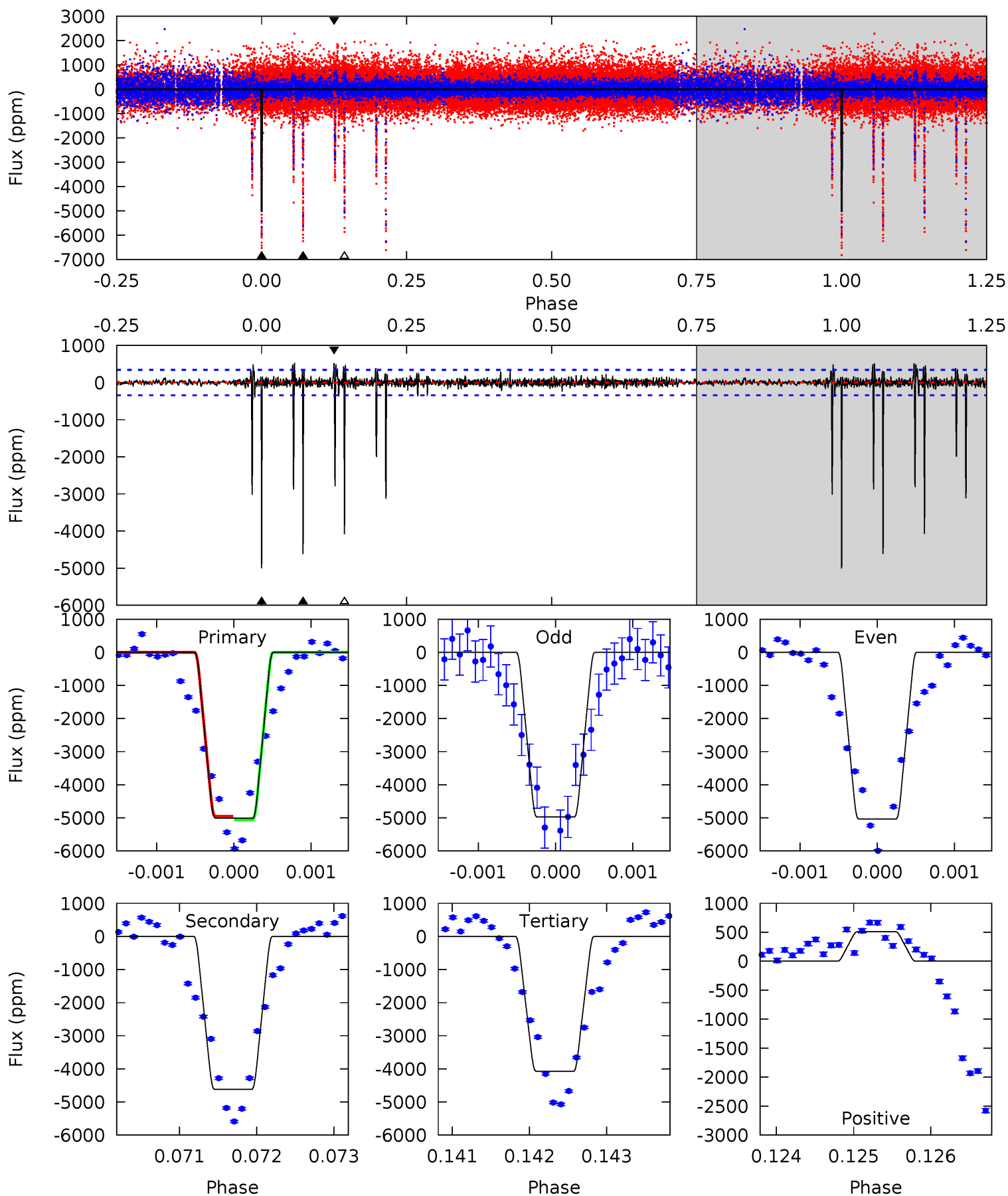
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
100.5	96.9	82.5	11.8	5.38	3.17	6.01	18.0	88.7	14.4	85.0	0.73	1.01	0.11	2.55



Alt Model-Shift Uniqueness Test

005114623-01, P = 363.335941 Days, E = 284.628939 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
80.0	73.7	65.1	8.16	5.45	3.29	3.93	14.9	71.8	8.61	65.6	0.46	1.00	0.09	0.83



Stellar Parameters For KIC 005114623

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6029^{+210}_{-210}	$4.452^{+0.070}_{-0.210}$	$-0.080^{+0.250}_{-0.300}$	$0.998^{+0.330}_{-0.132}$	$1.025^{+0.153}_{-0.126}$	$1.451^{+0.427}_{-0.780}$
	+3%/-3%	+2%/-5%	+312%/-375%	+33%/-13%	+15%/-12%	+29%/-54%
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 005114623-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-5082 ± 52	$14.95^{+10.53}_{-8.39}$	377^{+34}_{-20}	4618^{+1997}_{-818}	12496^{+48117}_{-8075}
Alt.	-4615 ± 63	$11.08^{+10.04}_{-6.97}$	380^{+27}_{-22}	5114^{+3369}_{-1116}	$20937^{+129650}_{-15343}$

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 $A_{obs} \gg 1.0$

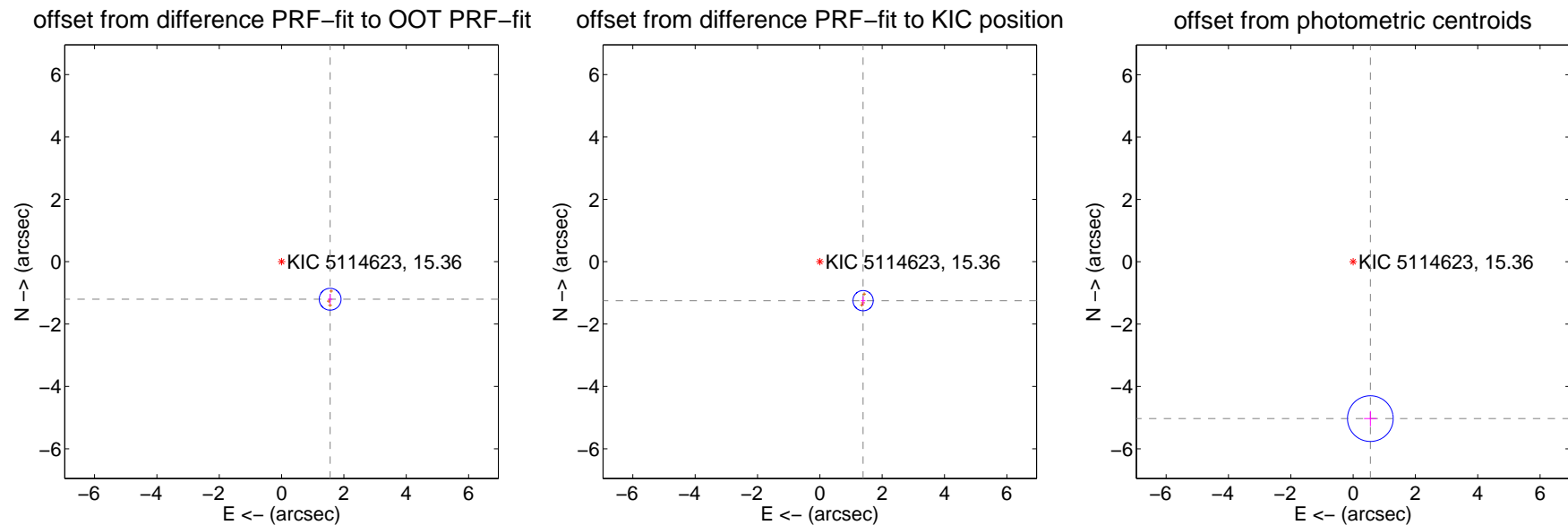
DV Centroid Data

Supplemental centroid analysis for 005114623-01. Kepler magnitude: 15.36. Transit SNR 60.39

There are 0 quarters with good PRF difference image offsets

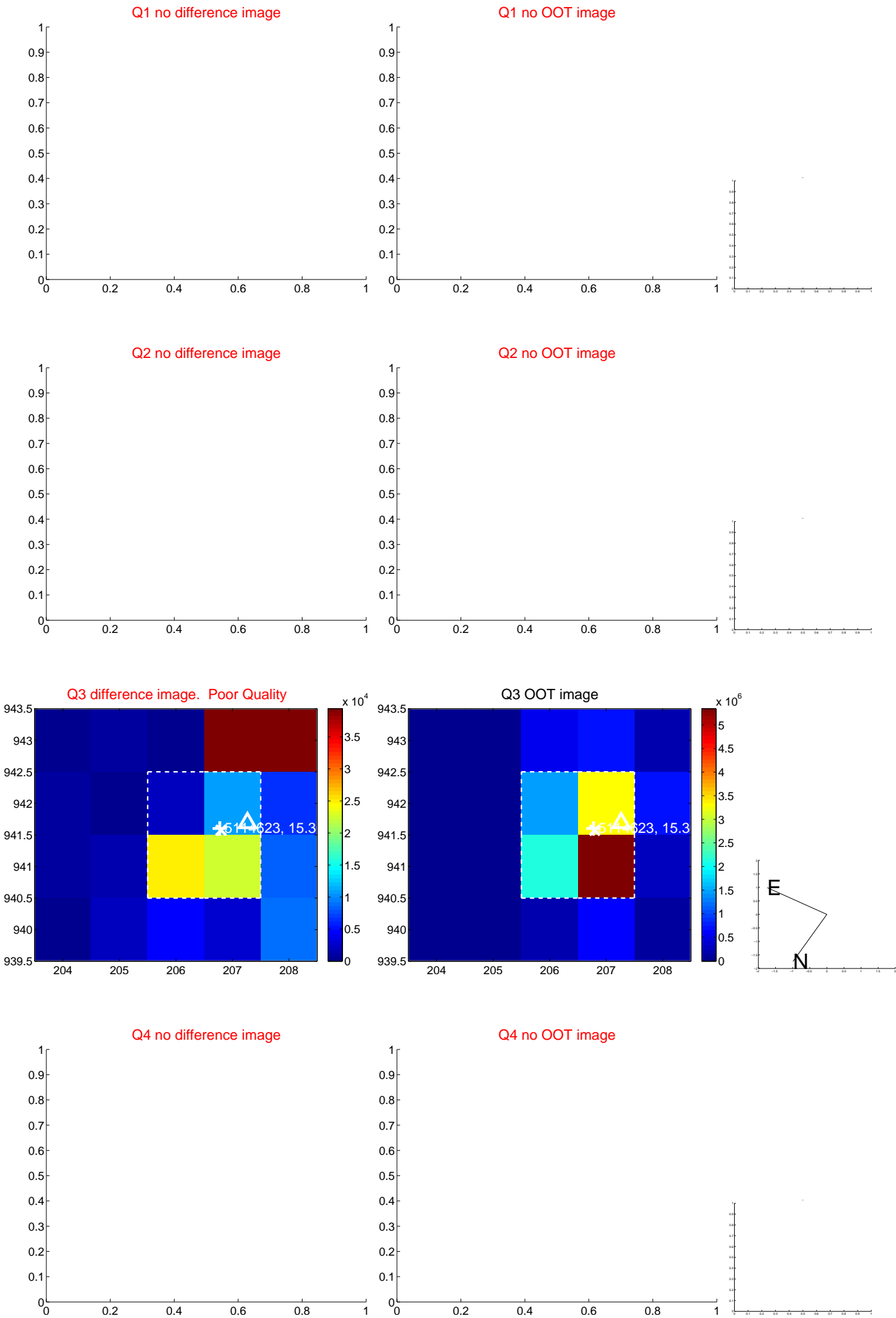
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.969 ± 0.117	16.86	-1.558 ± 0.071	-1.204 ± 0.168
PRF-fit source offset from KIC position	1.868 ± 0.108	17.25	-1.388 ± 0.071	-1.250 ± 0.141
photometric centroid source offset	5.06 ± 0.24	20.71	-0.55 ± 0.20	-5.03 ± 0.24

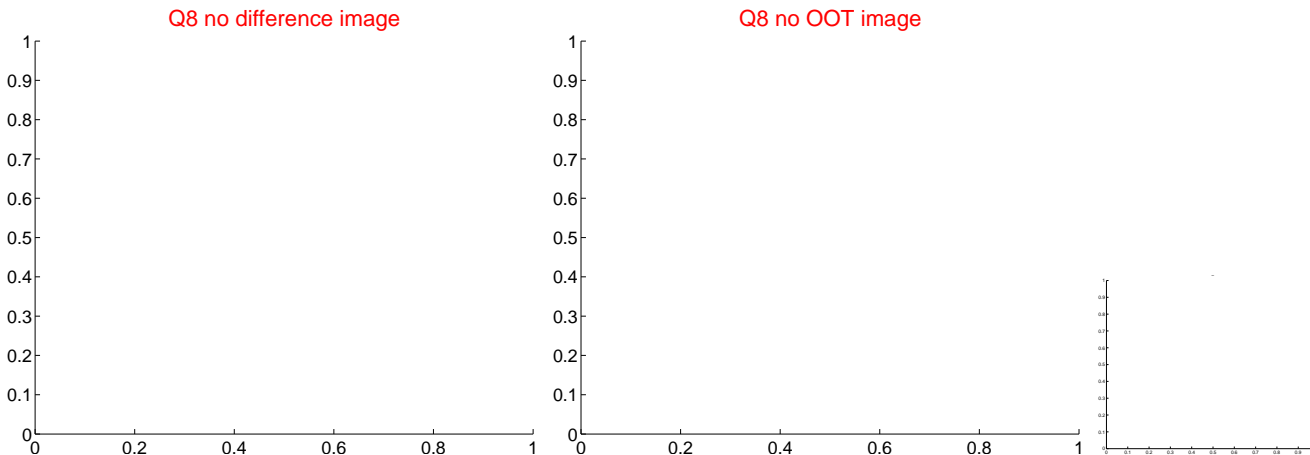
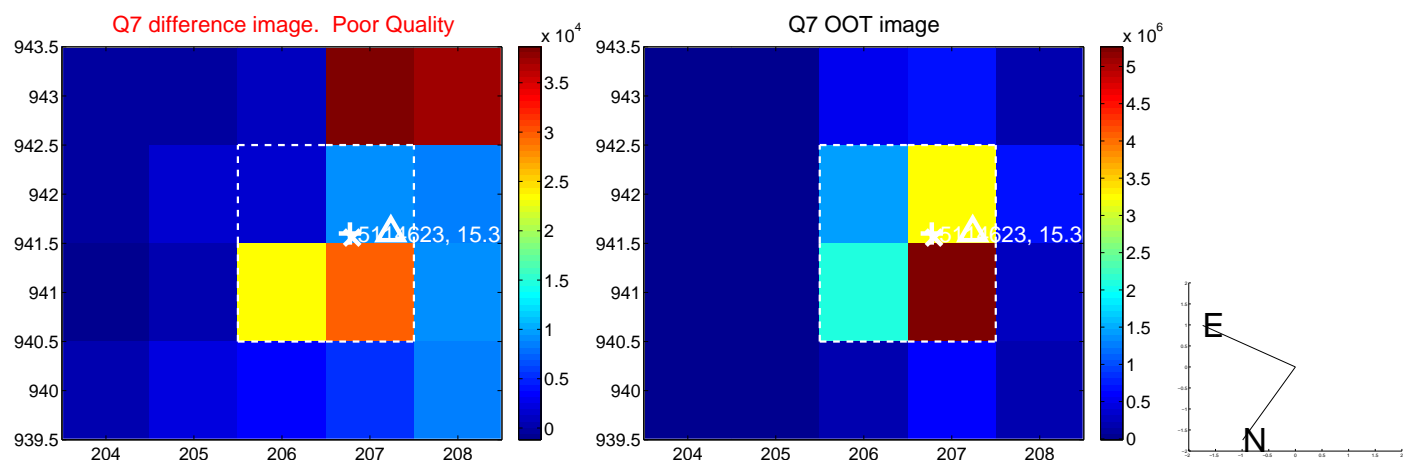
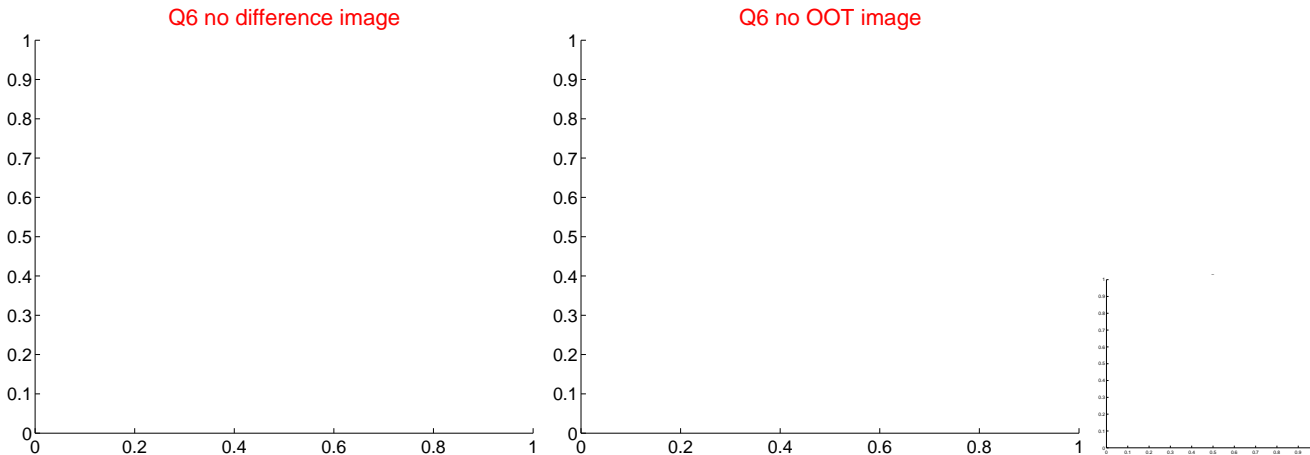
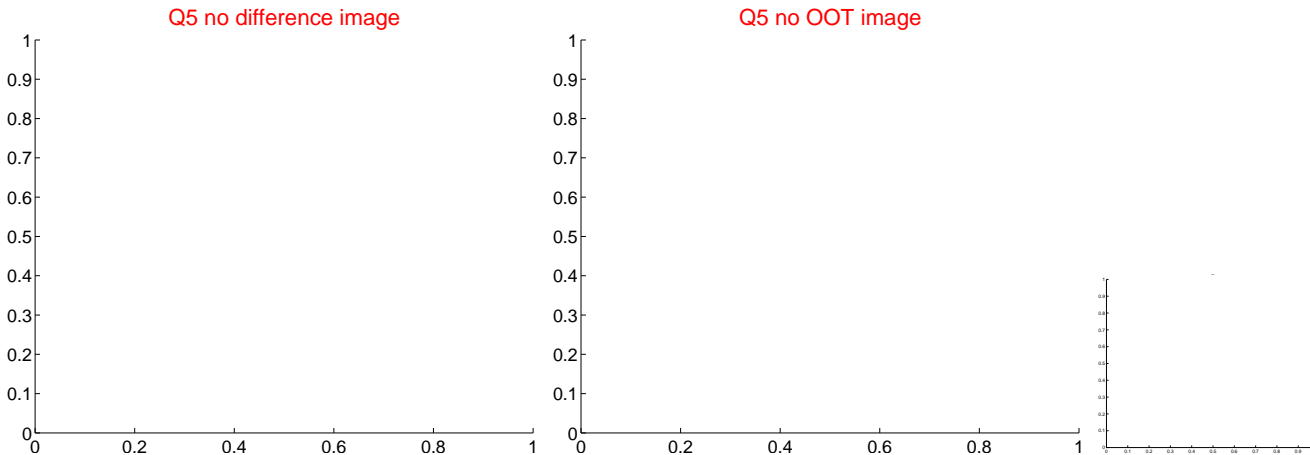


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

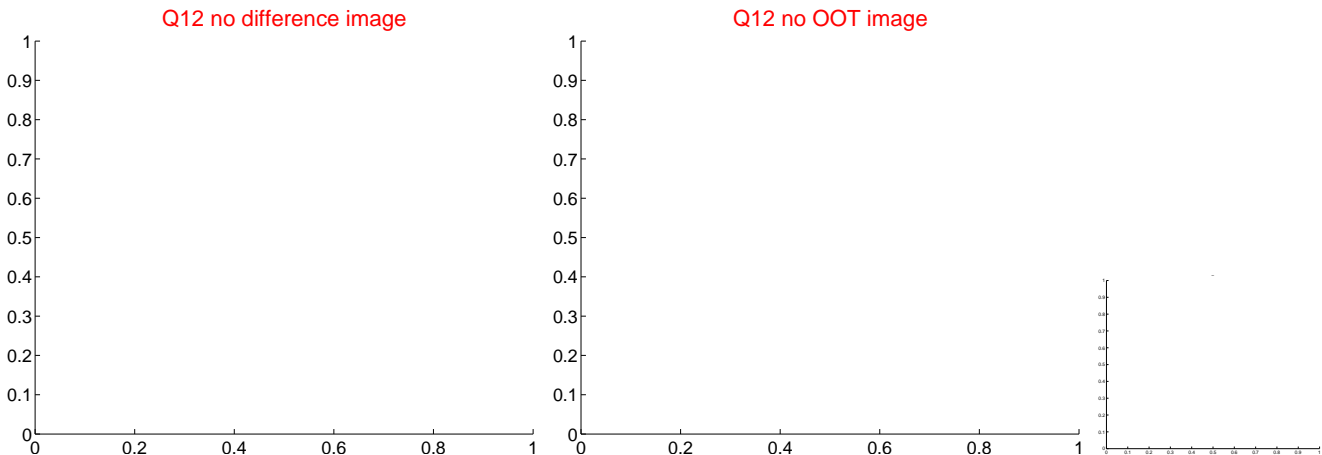
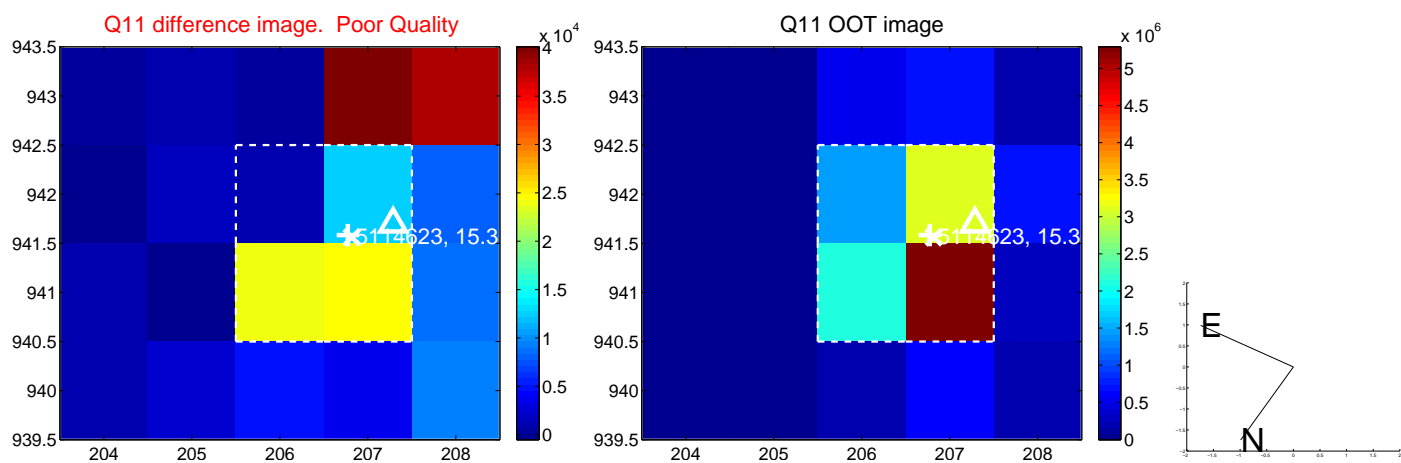
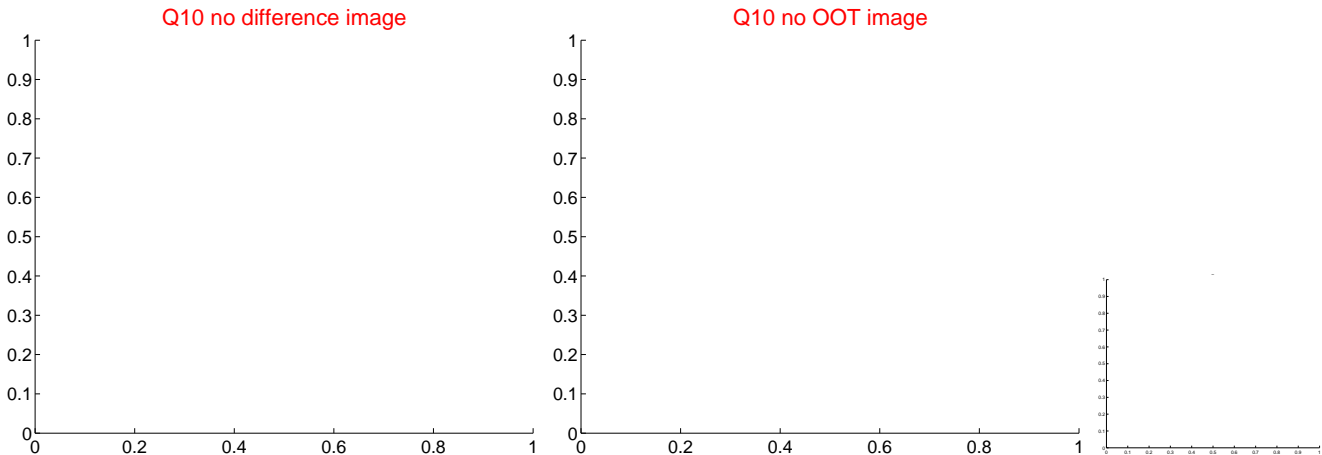
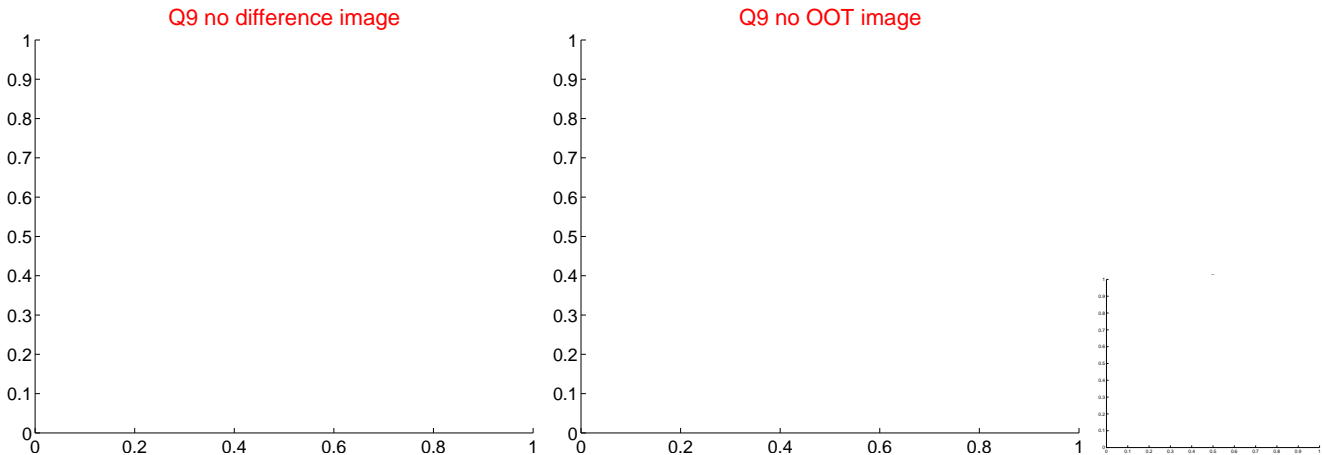
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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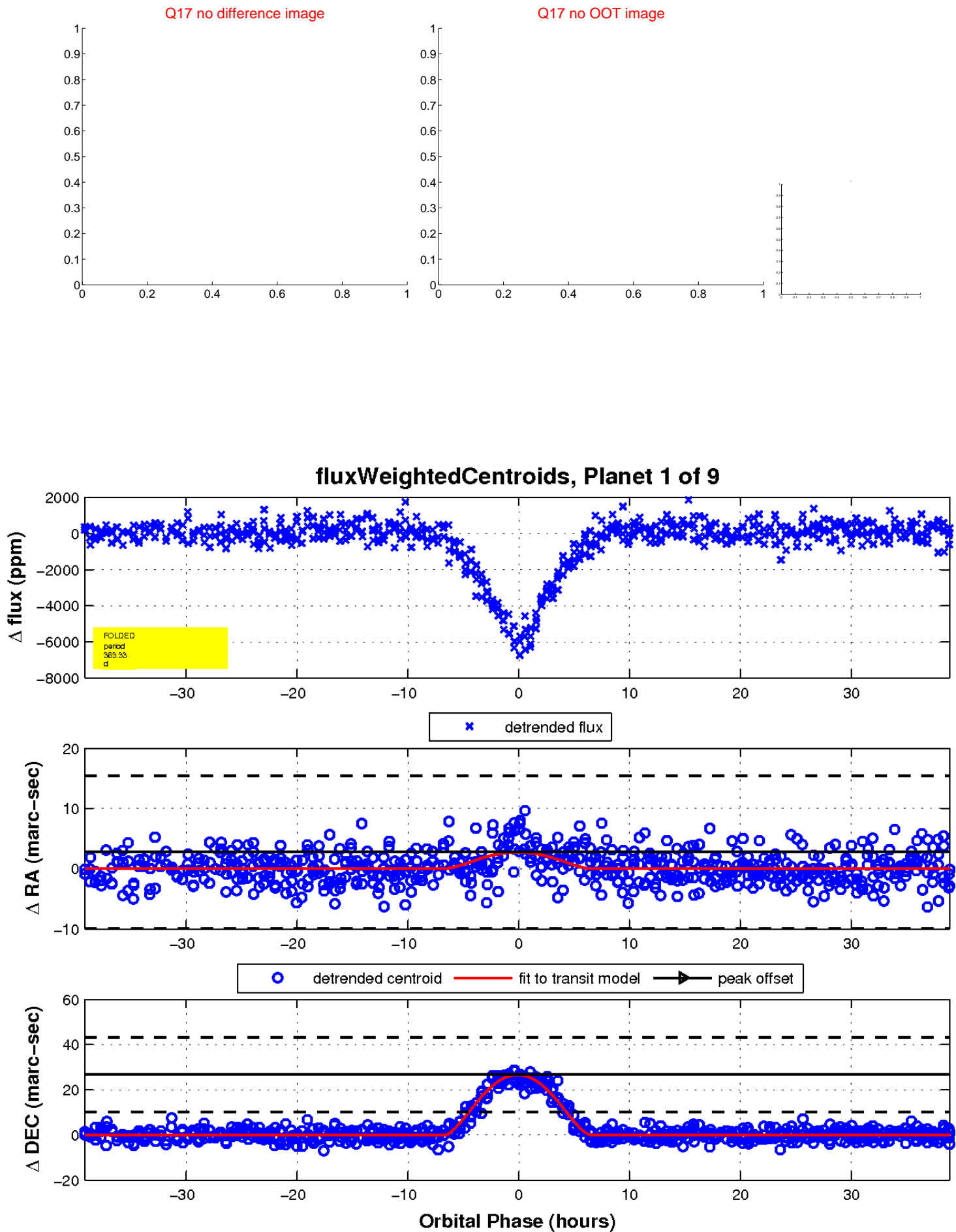
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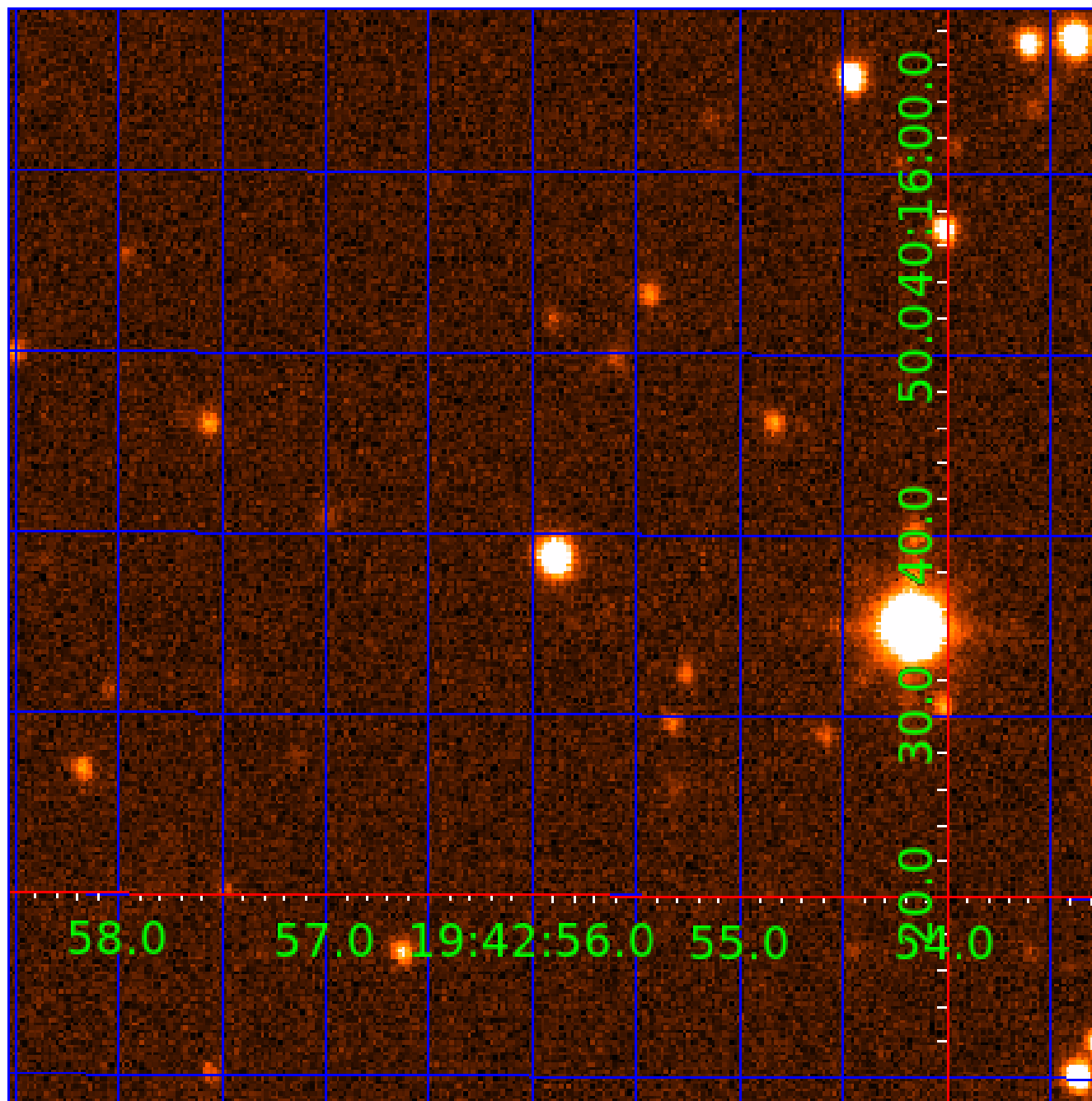


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UKIRT Image

Declination



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005114623-02	OBS	FP	0.00	1	1	1	1	IS_SEC_TCE—CENT_RESOLVED_OFFSET—EPHEM_MATCH
005114623-03	OBS	FP	0.00	1	0	0	1	SAME_NTL_PERIOD—CENT_FEW_DIFFS—EPHEM_MATCH
005114623-04	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_MARSHALL—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
005114623-05	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_MARSHALL—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
005114623-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS
005114623-07	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
005114623-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005114623-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_ZUMA—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST

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 005114623-02

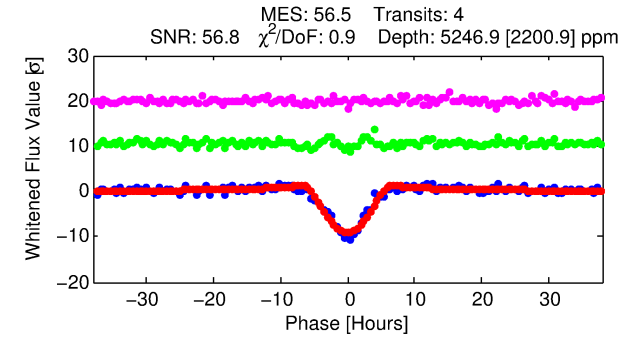
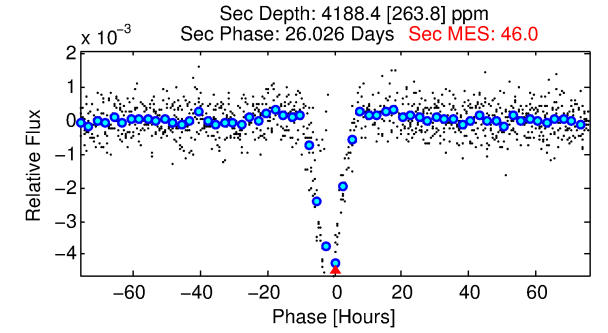
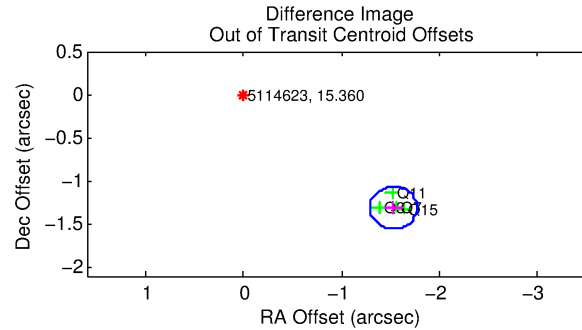
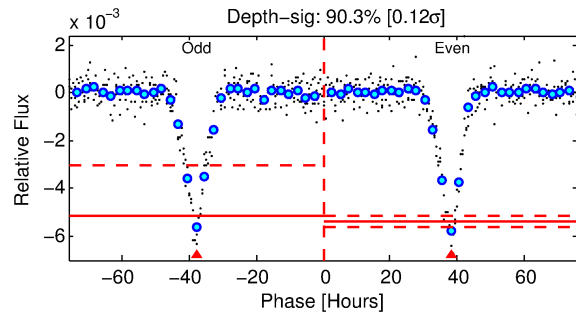
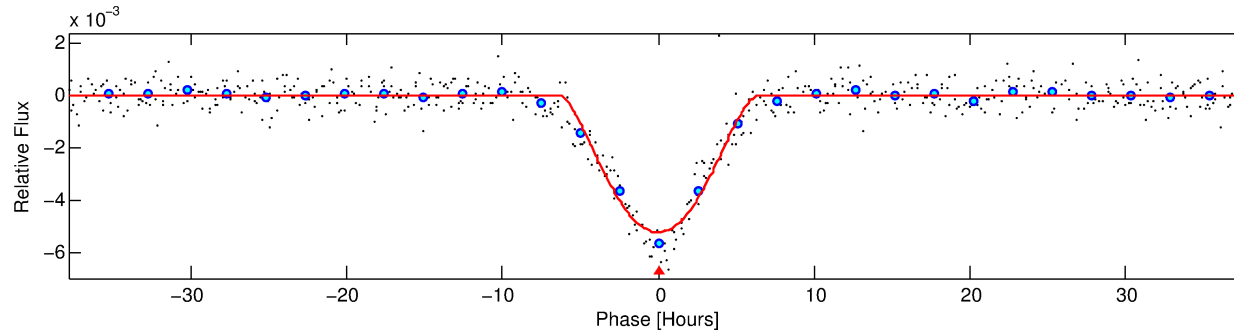
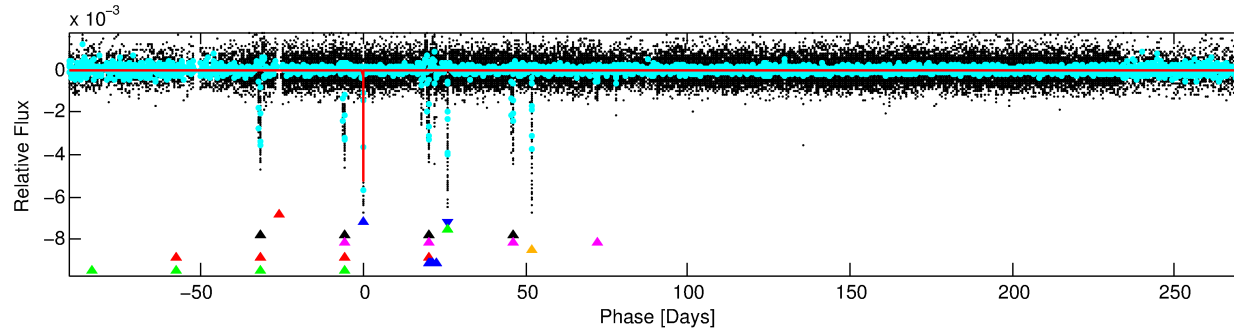
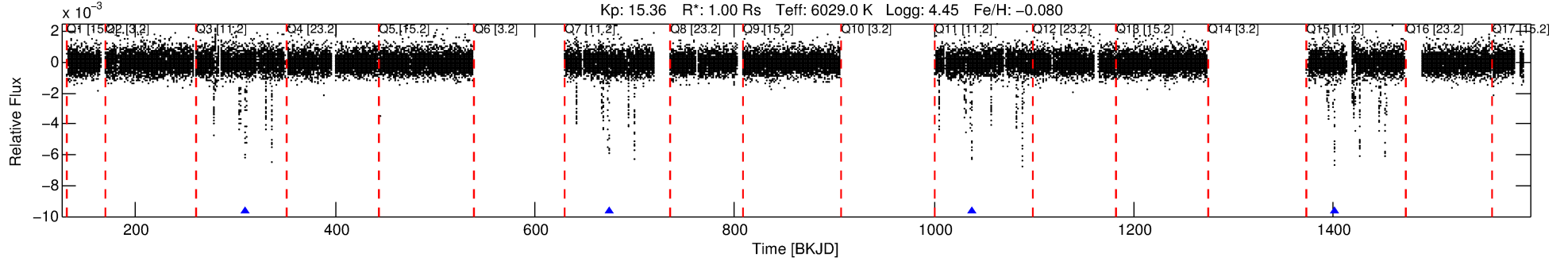
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
005114623-02	5114623	003858884-01	3858884	14:1	7285.7	9	0	9.28	15.36	75.96	Cross-Talk	0	4.88	0.09

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: 5114623 Candidate: 2 of 9 Period: 363.327 d
KOI: K03827 Corr: No Ephemeris Match

Kp: 15.36 R*: 1.00 Rs Teff: 6029.0 K Logg: 4.45 Fe/H: -0.080



DV Fit Results:

Period = 363.32695 [0.00233] d
Epoch = 310.5958 [0.0040] BKJD
Rp/R* = 0.1211 [0.0933]
a/R* = 111.27 [15.54]
b = 1.00 [0.10]
Seff = 1.16 [0.48]
Teq = 265 [27] K
Rp = 13.19 [11.06] Re
a = 1.0061 [0.2748] AU
Ag = 13410.53 [21342.23] [0.63σ]
Teffp = 4407 [1707] K [2.43σ]

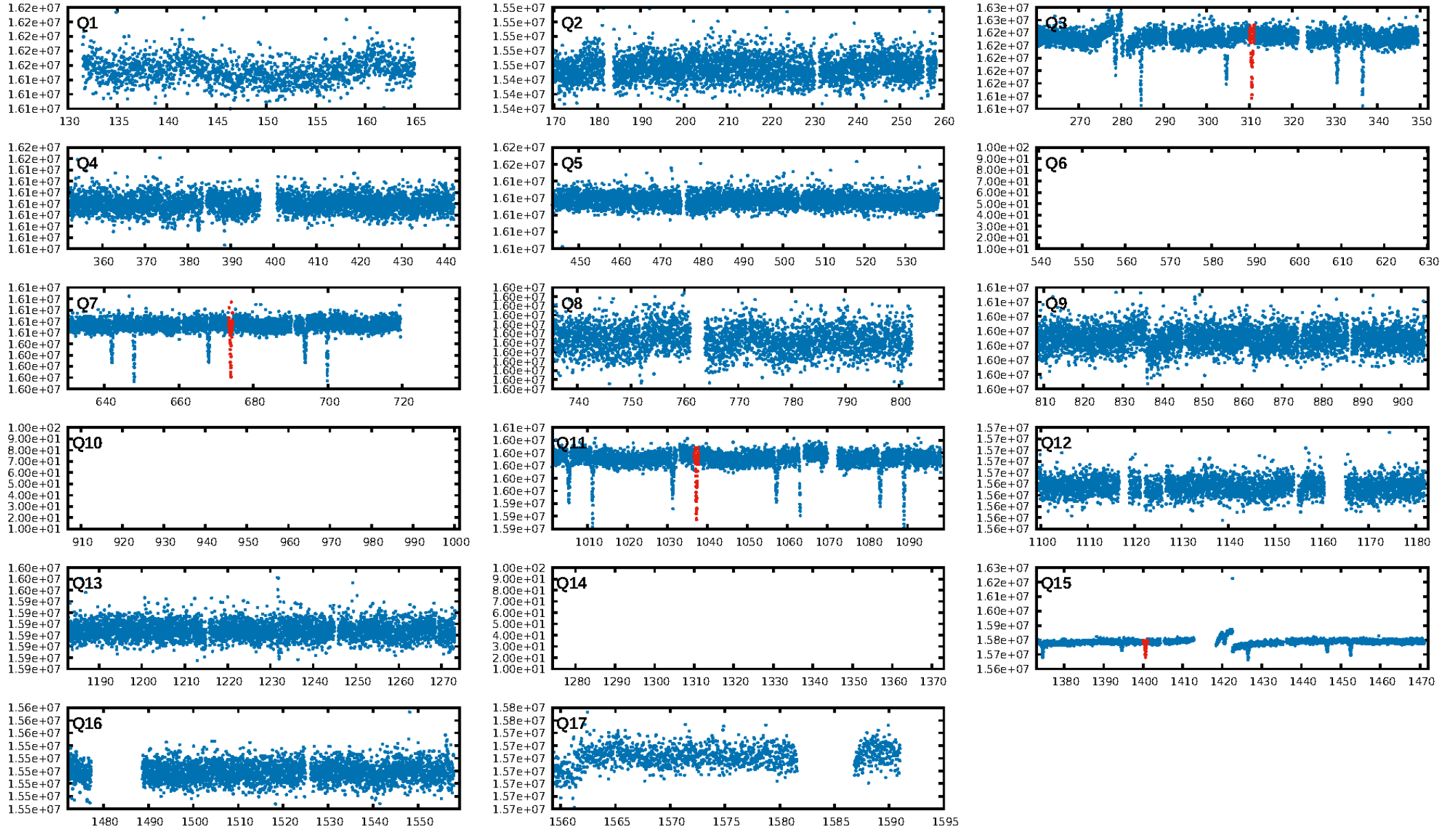
DV Diagnostic Results:

ShortPeriod-sig: 1.4% [0.02σ]
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: 39.7%
ModelChiSquareGof-sig: 89.4%
Bootstrap-pfa: 2.87e-196
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.2886
Centroid-sig: 0.0%
Centroid-so: 4.807 arcsec [19.40σ]
OotOffset-rm: 2.016 arcsec [24.85σ]
KicOffset-rm: 1.974 arcsec [20.11σ]
OotOffset-st: 0/4/0/0 [4]
KicOffset-st: 0/4/0/0 [4]
DiffImageQuality-fgm: 0.00 [0/4]
DiffImageOverlap-fno: 1.00 [4/4]

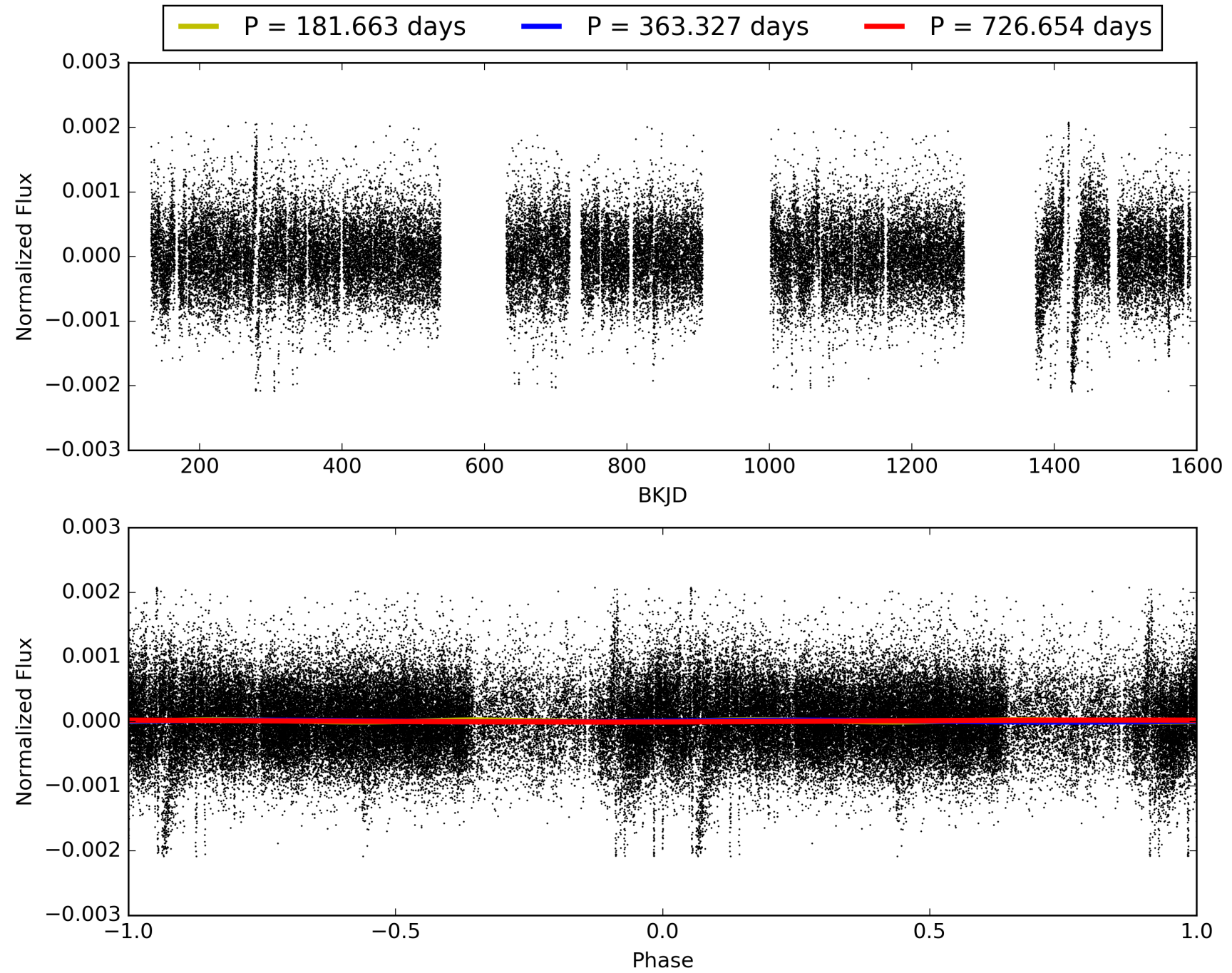
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:08:29 Z

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

TCE 005114623-02, PDC Light Curves

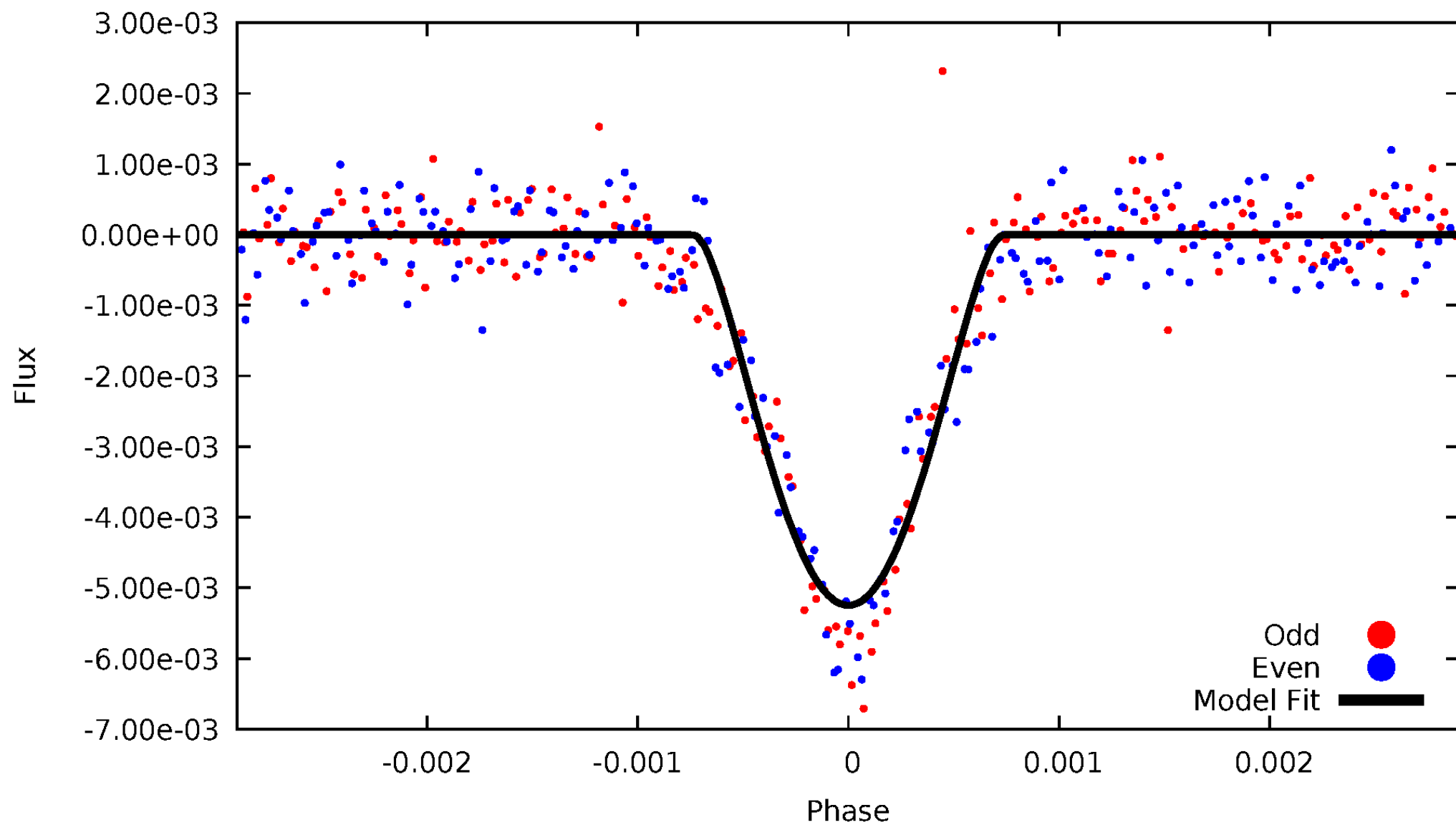


TCE 005114623-02



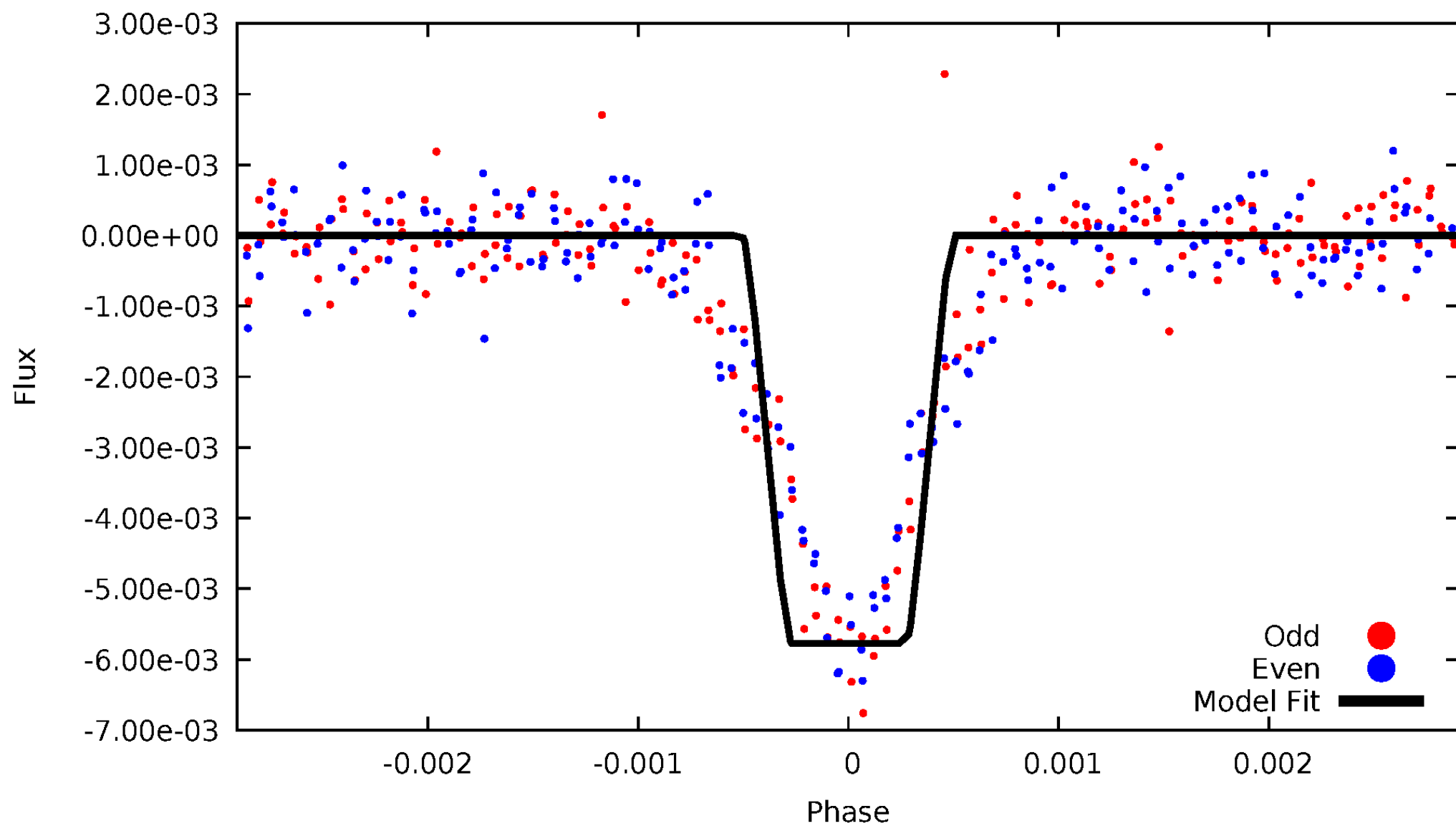
DV Odd/Even

TCE 005114623-02



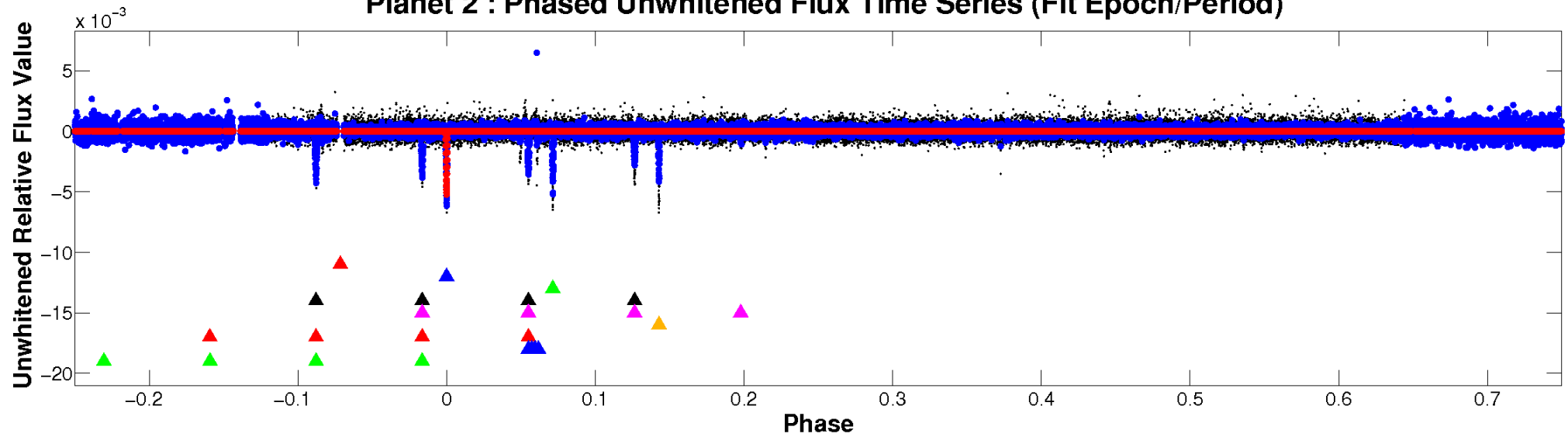
ALT Odd/Even

TCE 005114623-02

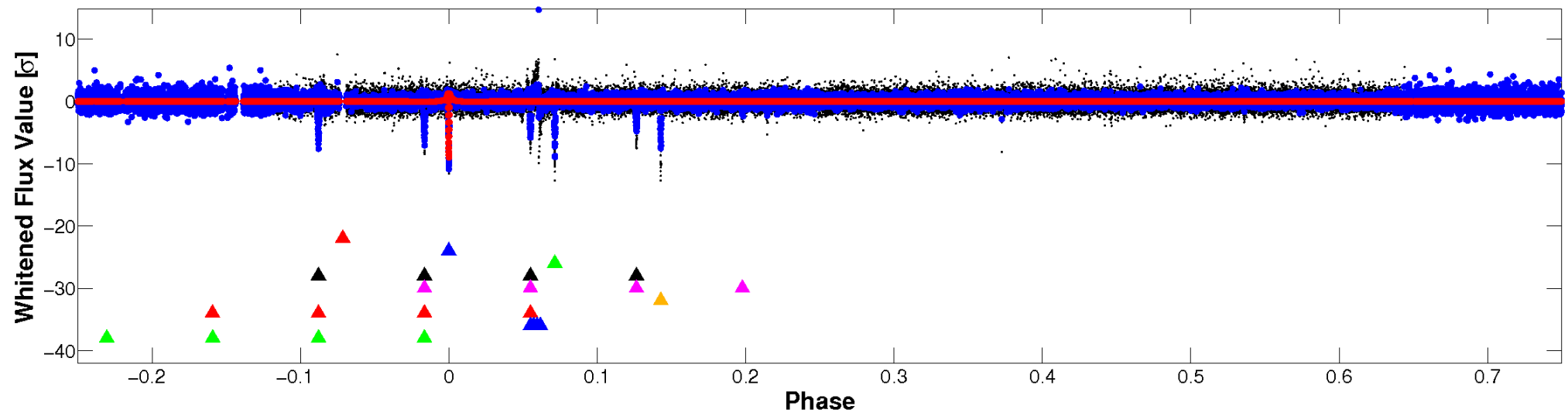


Non-Whitened Vs. Whitened Light Curve

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

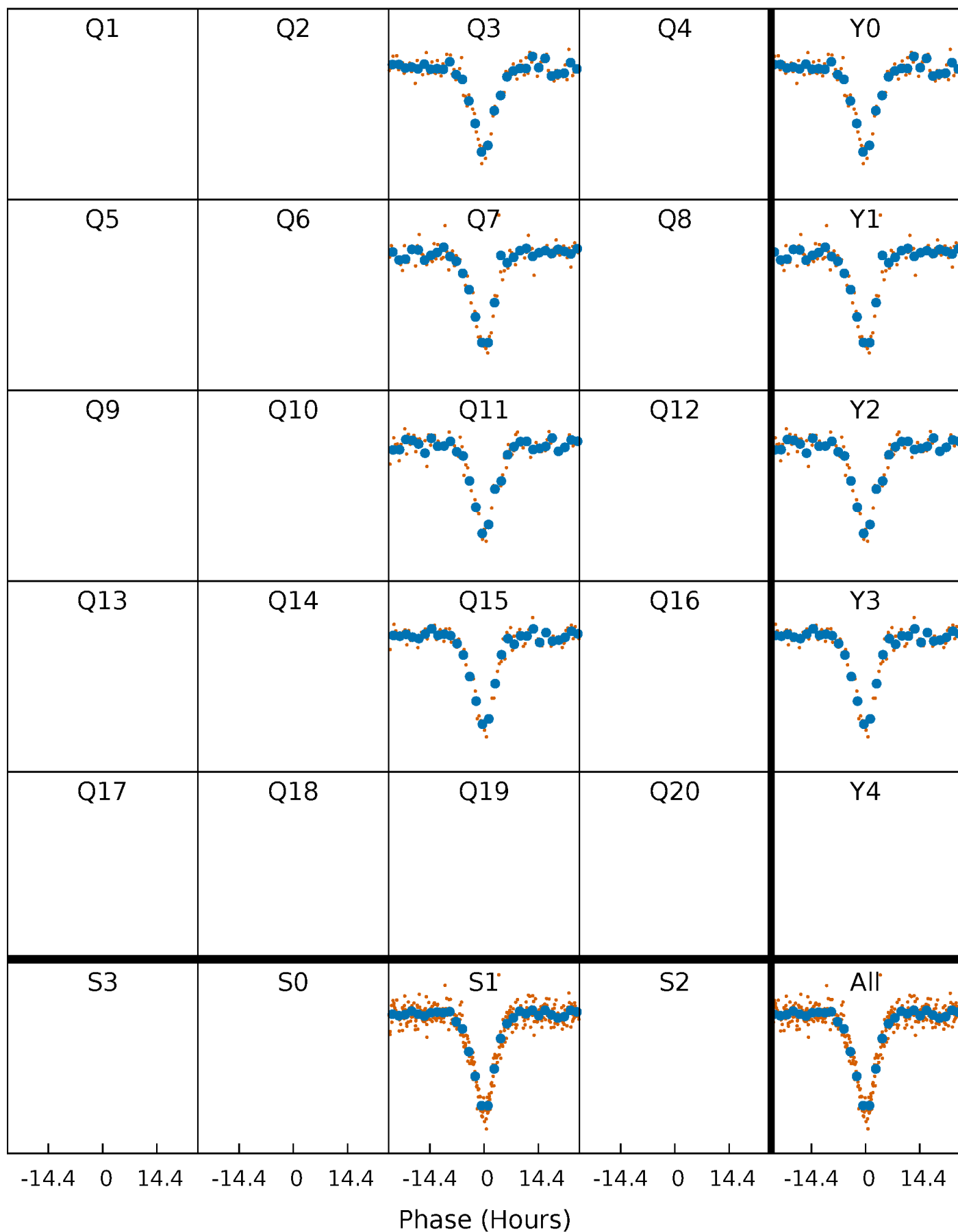


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



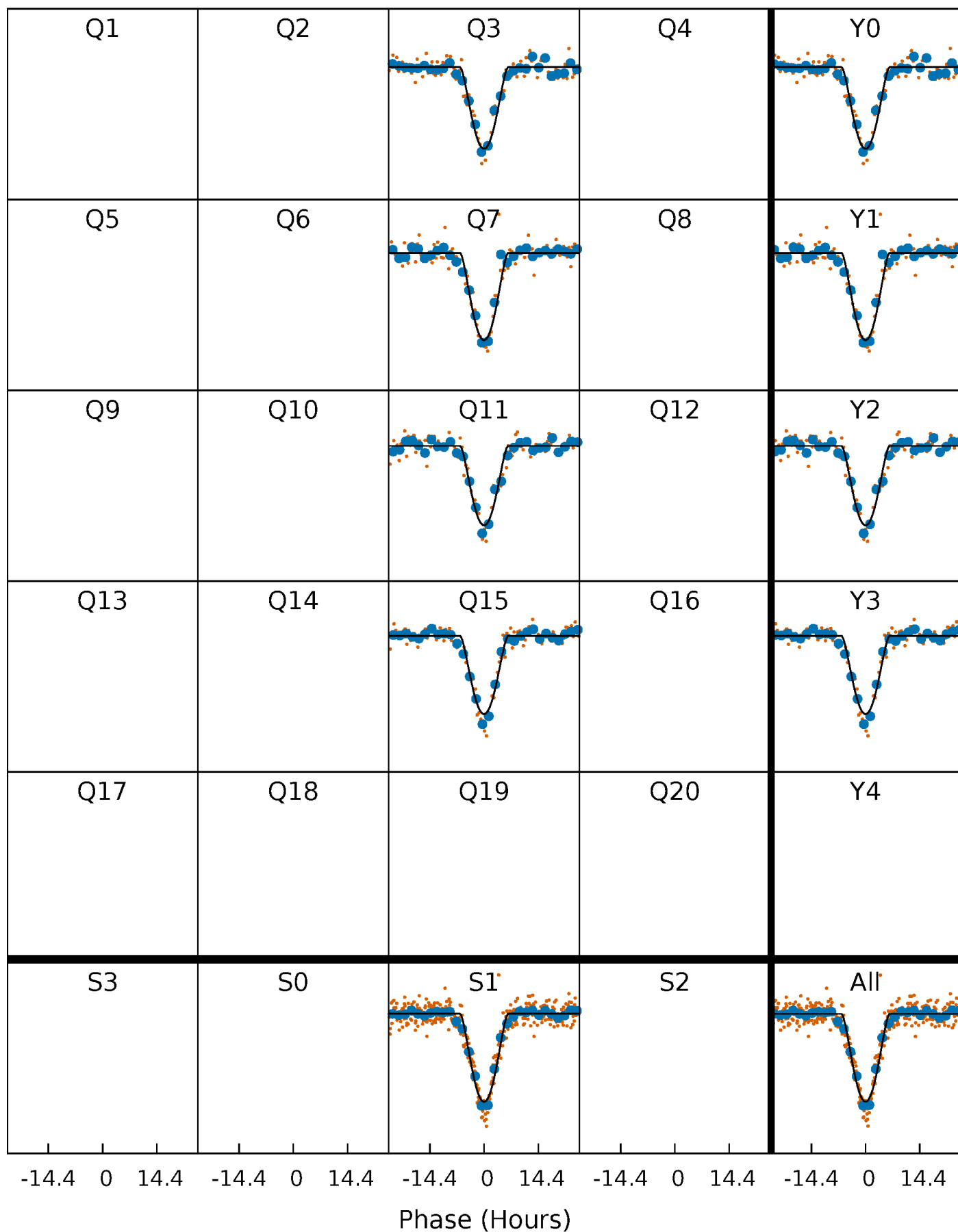
PDC Quarter-Phased Transit Curves

TCE 005114623-02 P=363.326947 Days $T_0=310.595787$ (BKJD)



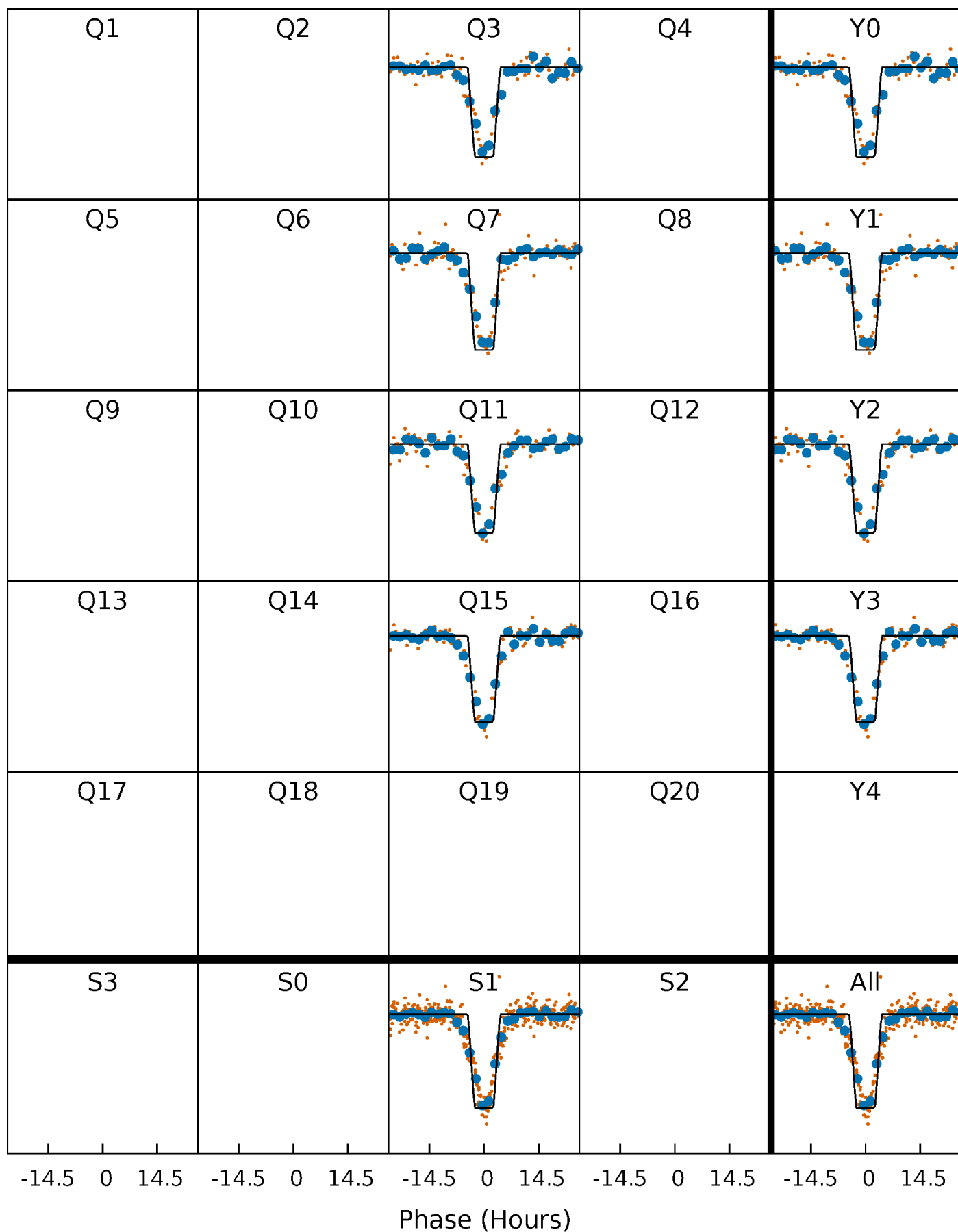
DV Quarter-Phased Transit Curves

TCE 005114623-02 P=363.326947 Days $T_0=310.595787$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

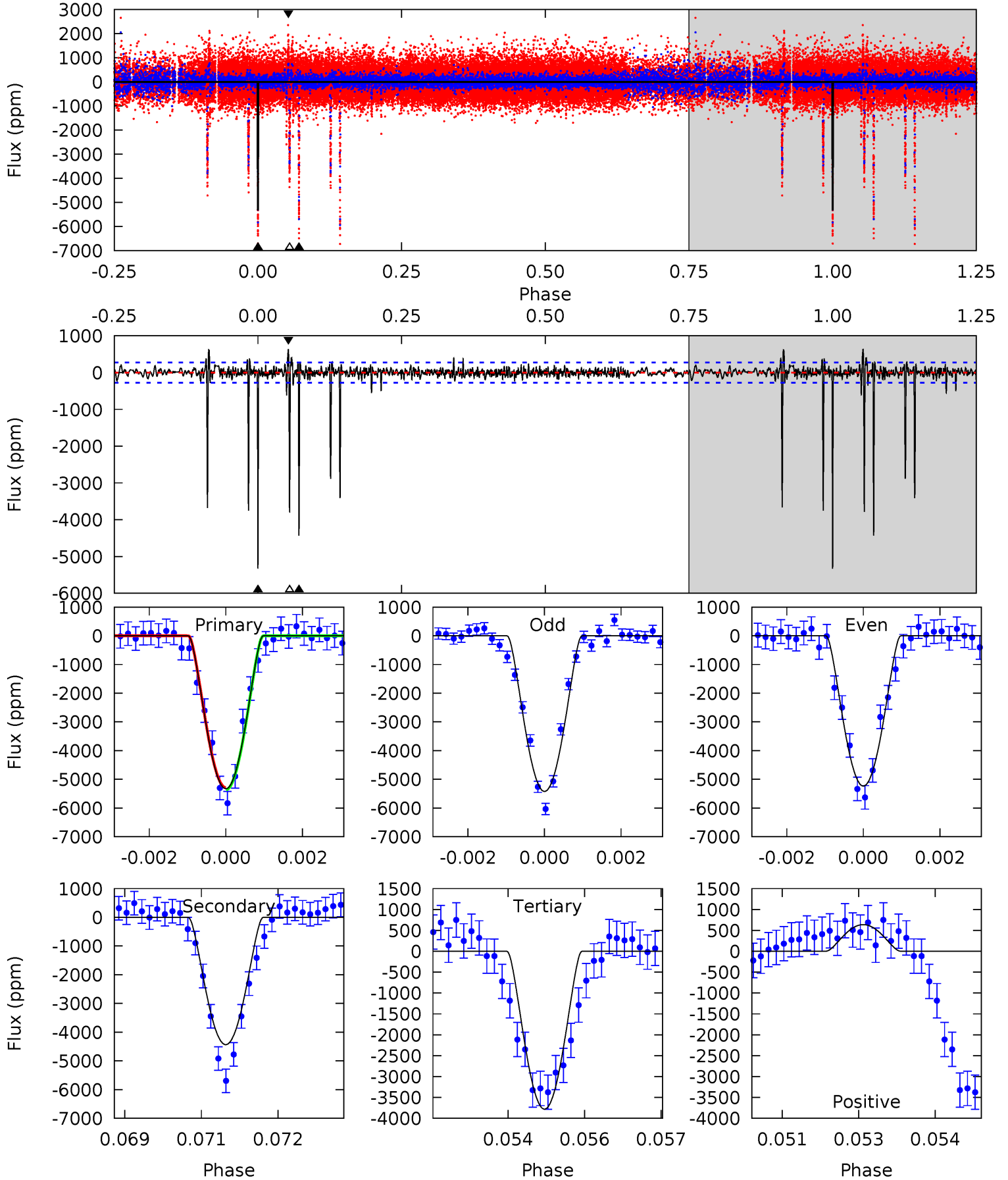
TCE 005114623-02 $P=363.329130$ Days $T_0=310.589815$ (BKJD)



DV Model-Shift Uniqueness Test

005114623-02, P = 363.326947 Days, E = 310.595787 Days

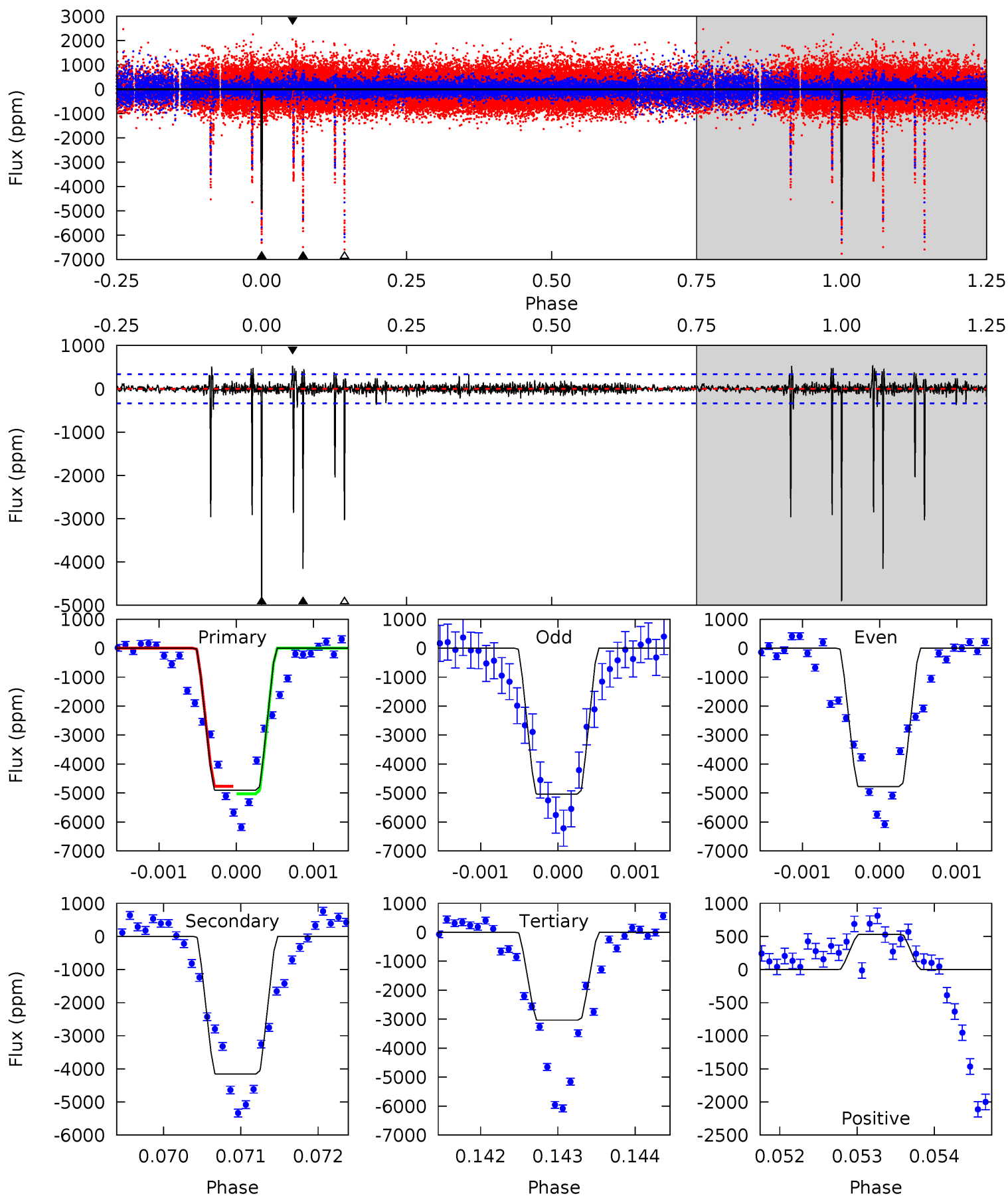
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
103.6	86.2	73.5	12.4	5.38	3.17	5.56	30.1	91.2	12.7	73.8	1.82	1.01	0.11	0.69



Alt Model-Shift Uniqueness Test

005114623-02, P = 363.329130 Days, E = 310.589815 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
80.0	67.8	49.5	8.67	5.46	3.30	3.52	30.6	71.4	18.3	59.1	2.09	1.01	0.10	2.11



Stellar Parameters For KIC 005114623

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6029^{+210}_{-210}	$4.452^{+0.070}_{-0.210}$	$-0.080^{+0.250}_{-0.300}$	$0.998^{+0.330}_{-0.132}$	$1.025^{+0.153}_{-0.126}$	$1.451^{+0.427}_{-0.780}$
	+3%/-3%	+2%/-5%	+312%/-375%	+33%/-13%	+15%/-12%	+29%/-54%
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 005114623-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-4434 ± 51	$15.27^{+10.32}_{-8.46}$	377^{+30}_{-20}	4454^{+1932}_{-739}	10662^{+43725}_{-6828}
Alt.	-4156 ± 61	$11.63^{+9.99}_{-7.59}$	377^{+31}_{-20}	4918^{+3383}_{-1020}	$16837^{+123213}_{-11873}$

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

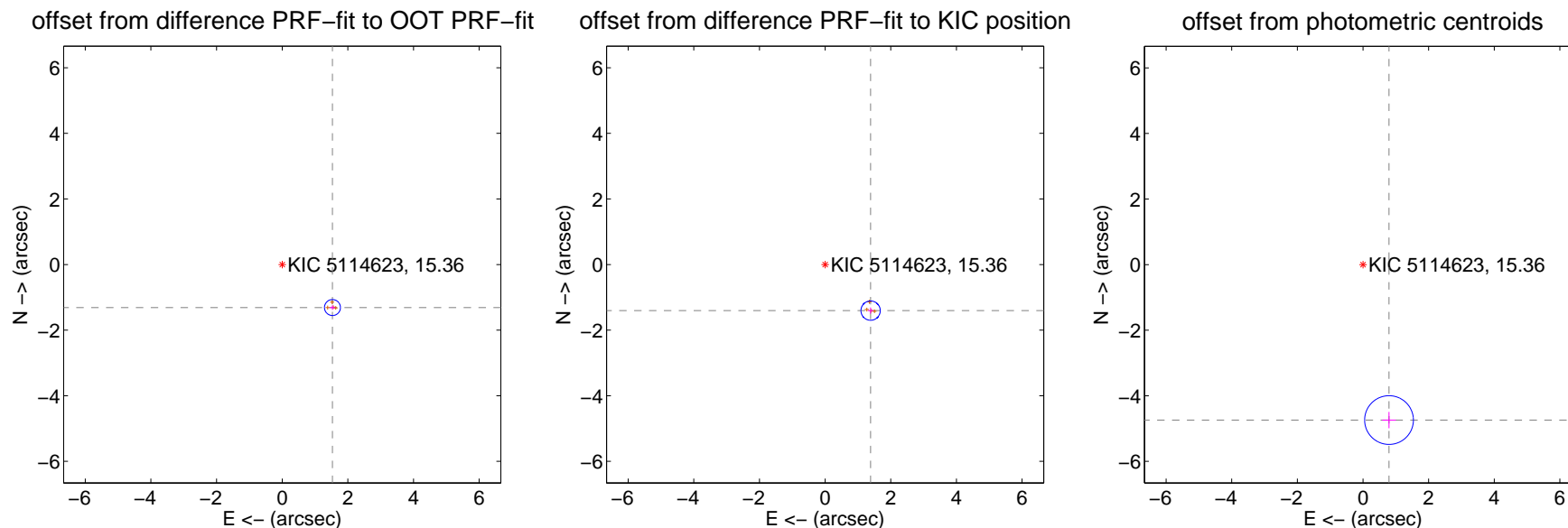
DV Centroid Data

Supplemental centroid analysis for 005114623-02. Kepler magnitude: 15.36. Transit SNR 56.77

There are 0 quarters with good PRF difference image offsets

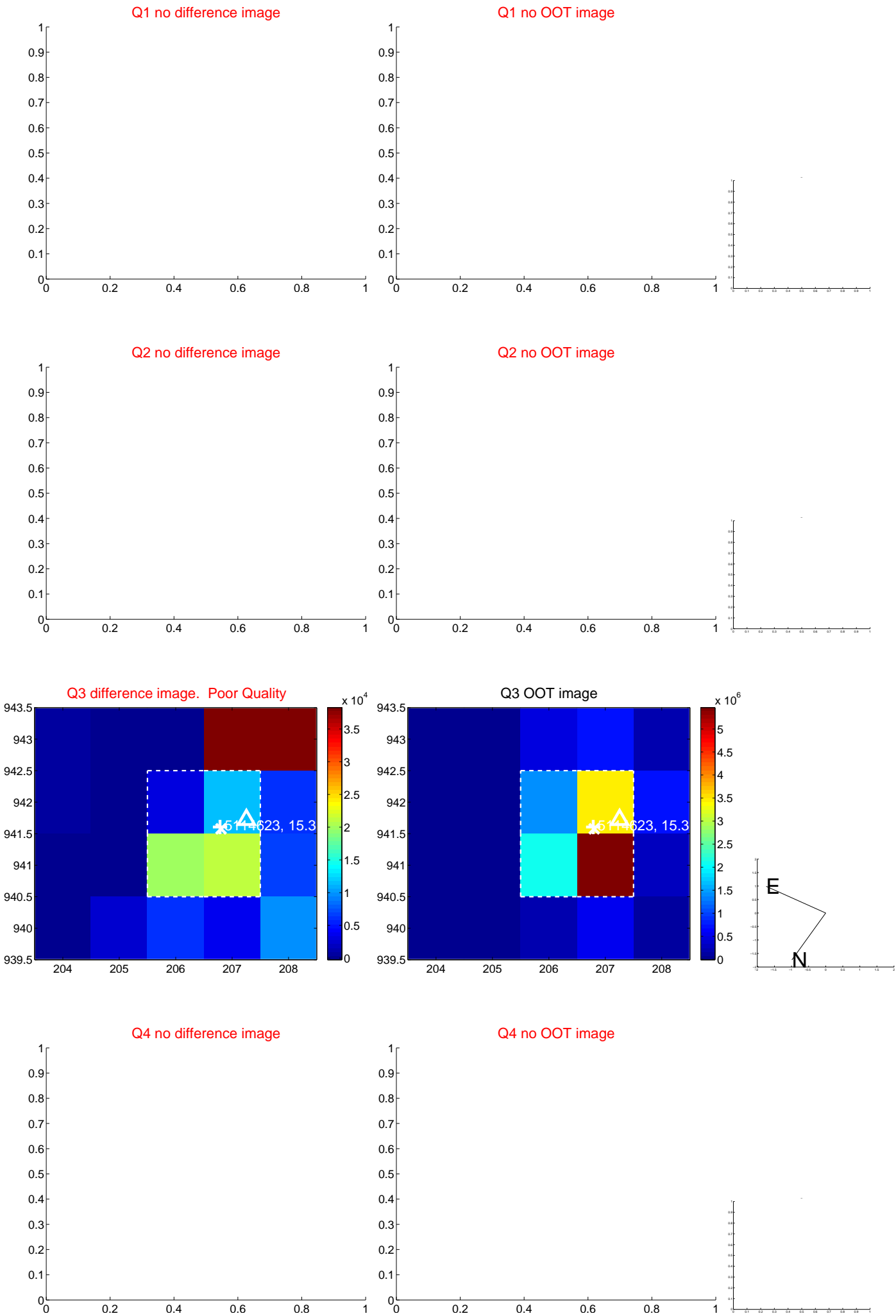
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.016 ± 0.081	24.85	-1.531 ± 0.089	-1.311 ± 0.069
PRF-fit source offset from KIC position	1.974 ± 0.098	20.11	-1.386 ± 0.082	-1.405 ± 0.095
photometric centroid source offset	4.81 ± 0.25	19.40	-0.79 ± 0.21	-4.74 ± 0.25

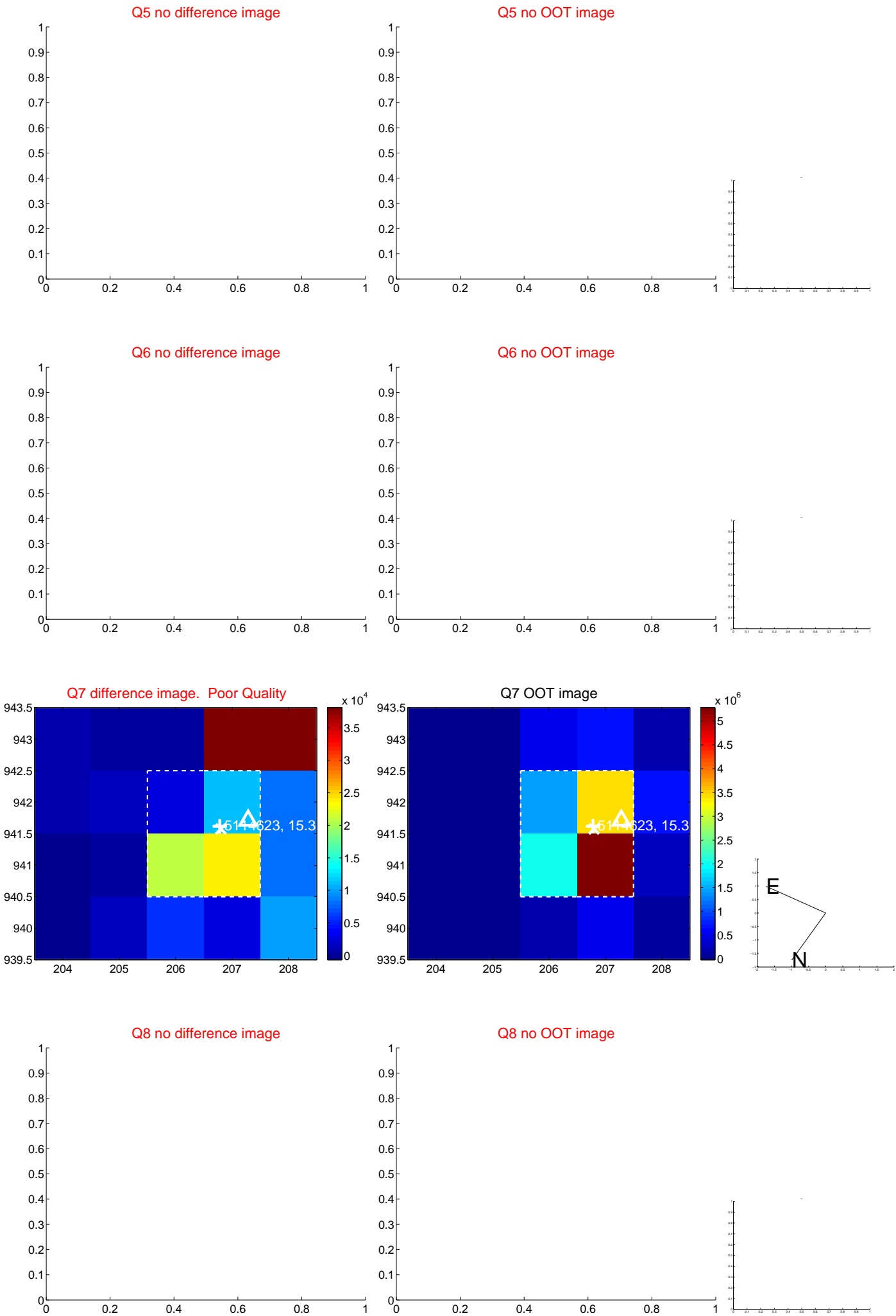


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

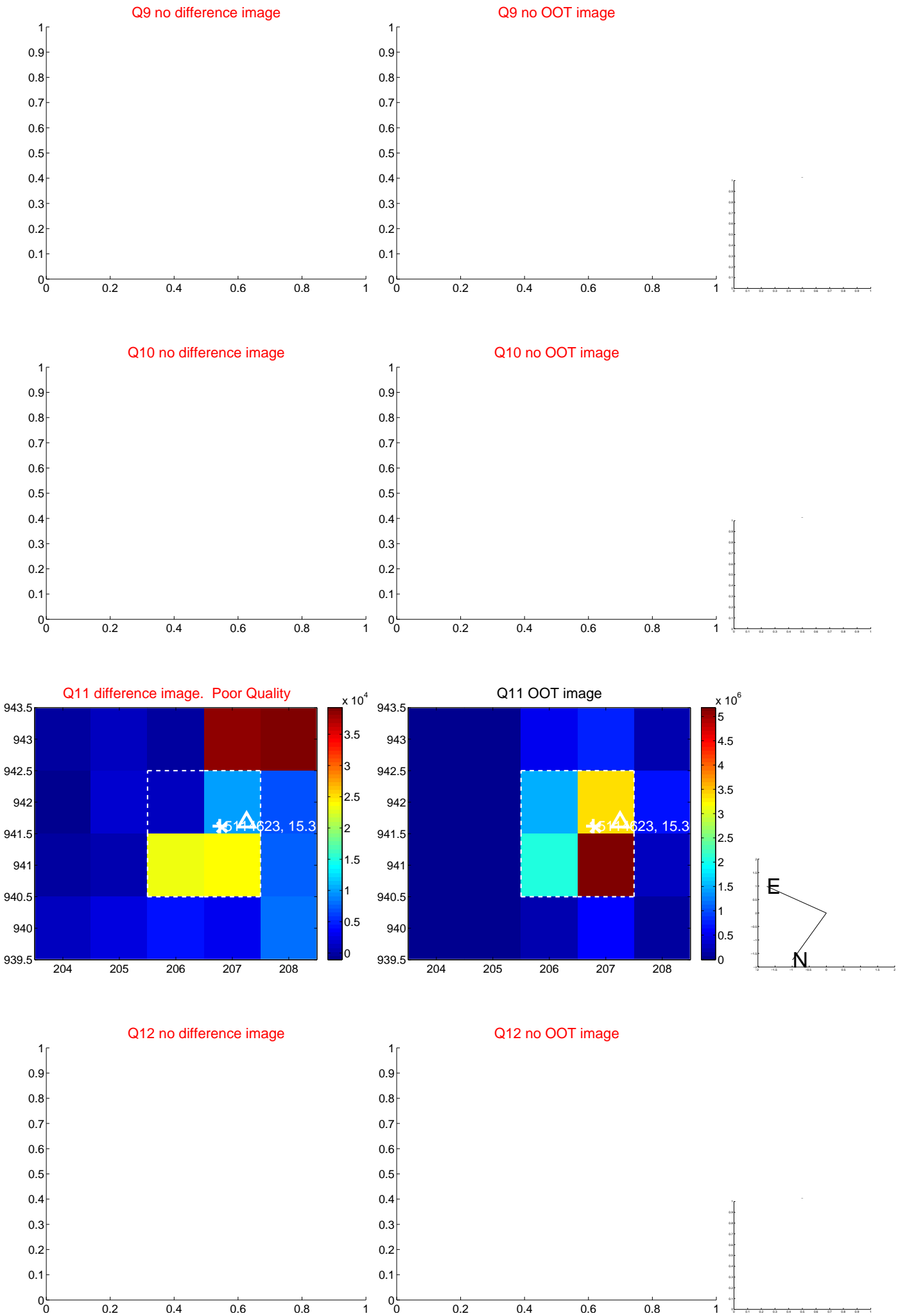
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



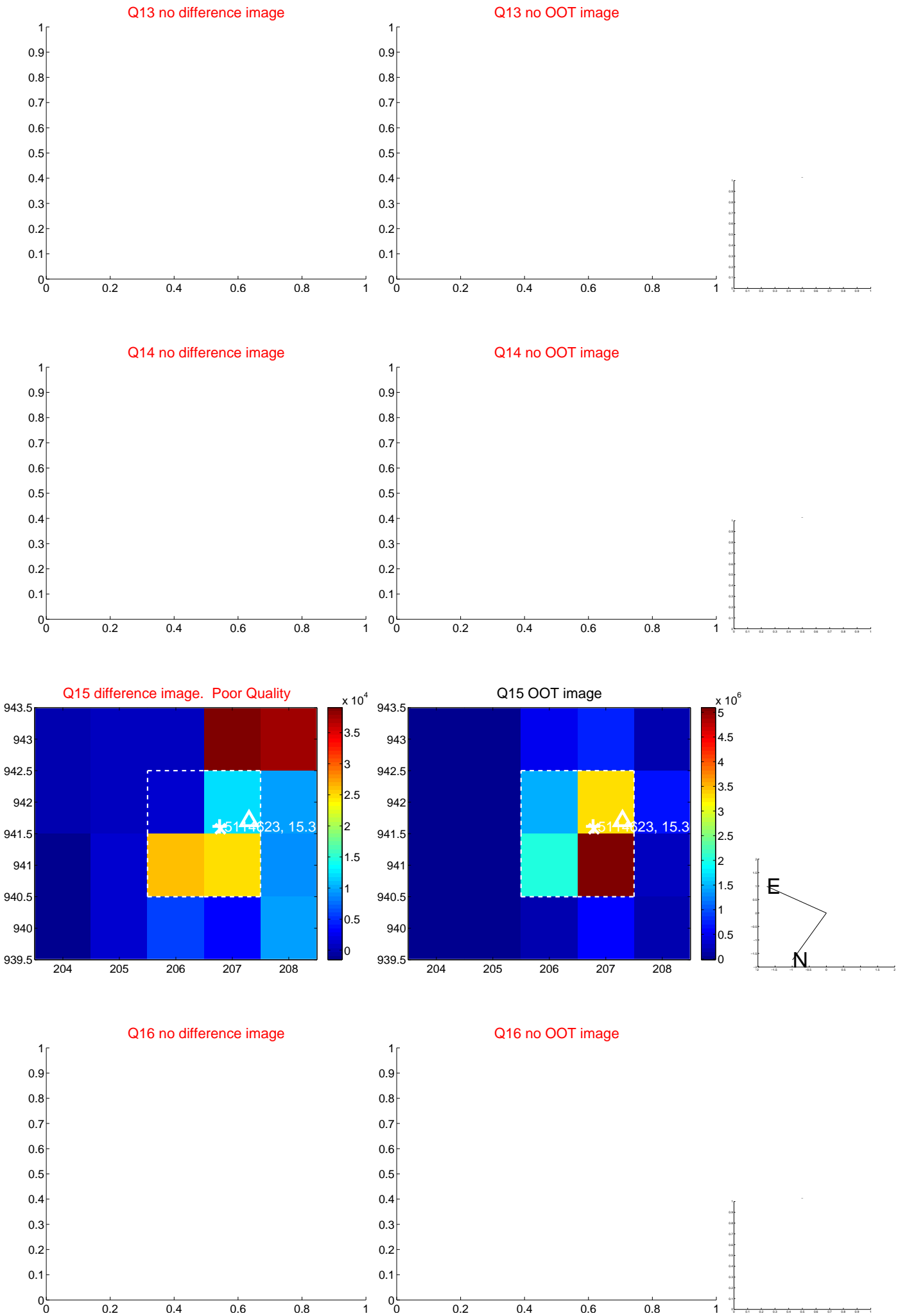
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

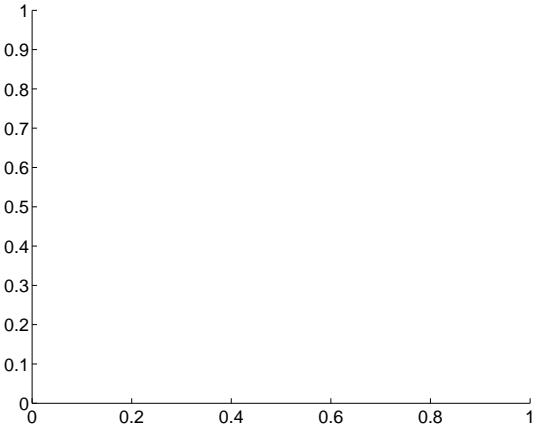


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

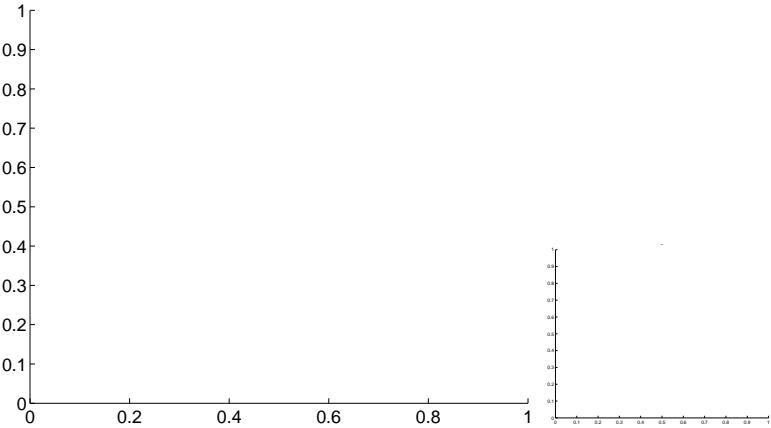


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

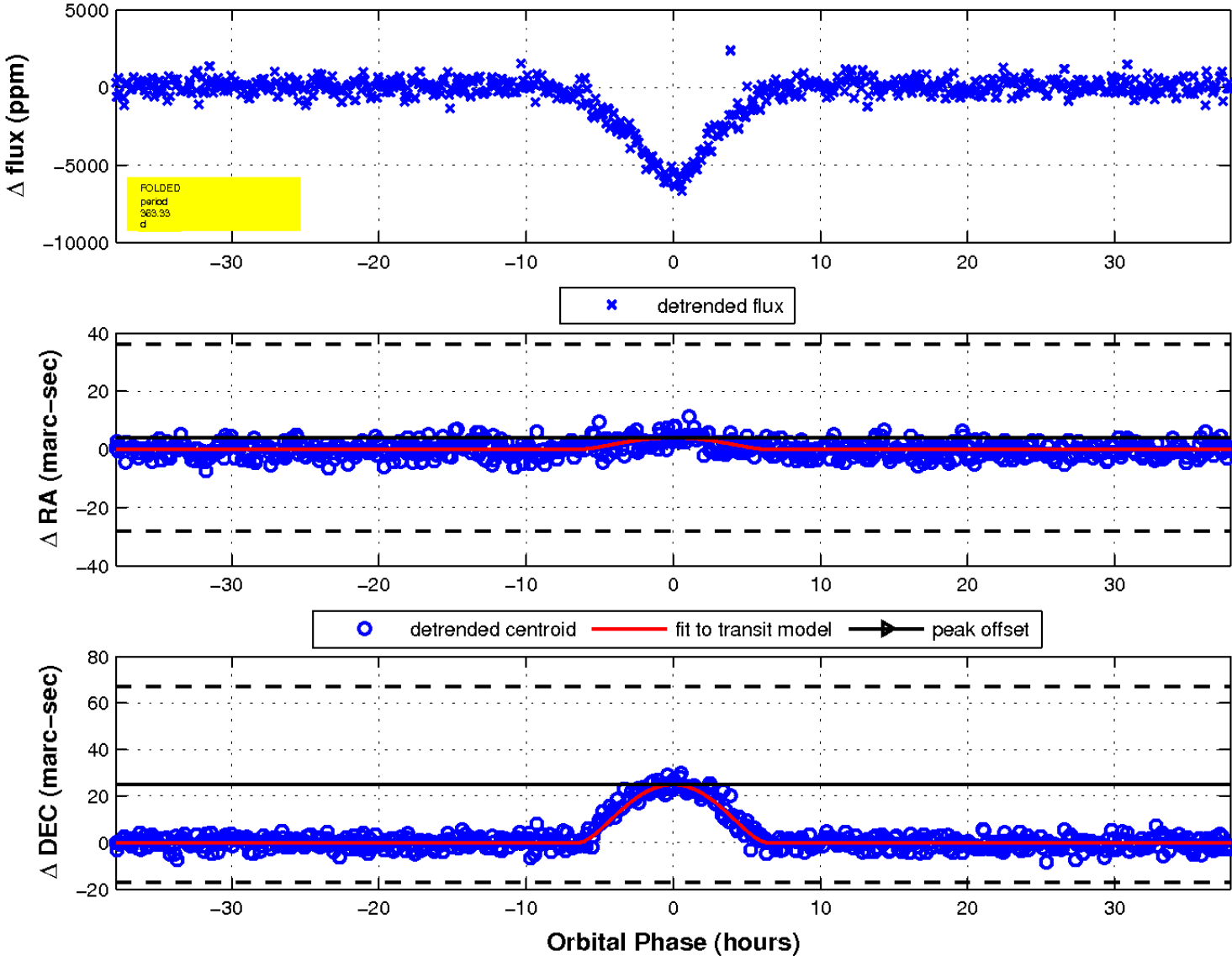
Q17 no difference image



Q17 no OOT image

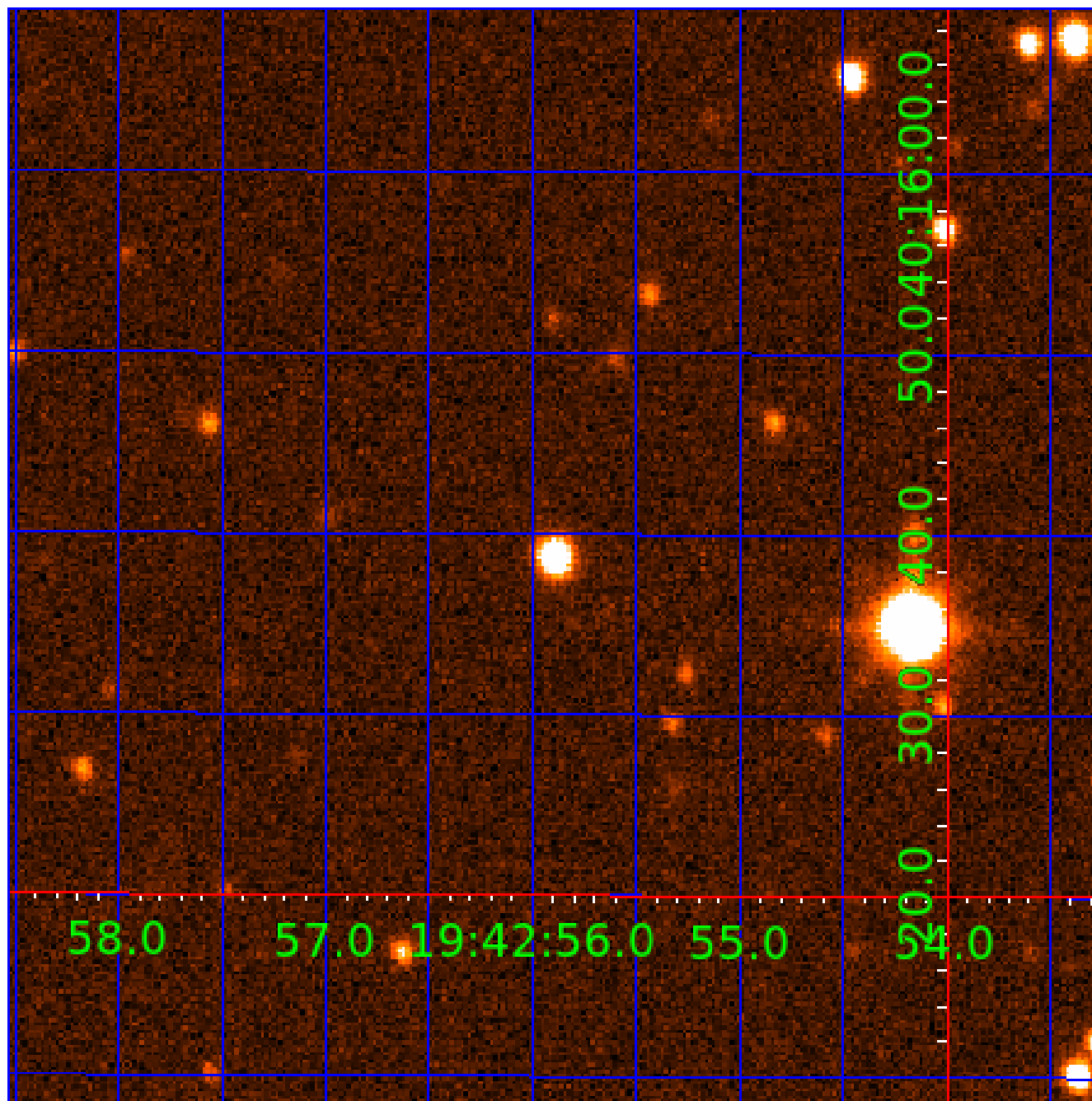


fluxWeightedCentroids, Planet 2 of 9



UKIRT Image

Declination



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})
005114623-01	OBS	No	363.329250	284.636050	5278.6	13.048	54.2	60.4	1.00	6029	13.23	1.17
005114623-02	OBS	No	363.326947	310.595787	5246.9	12.643	56.5	56.8	1.00	6029	13.19	1.17
005114623-03	OBS	No	363.327653	336.550228	5137.8	13.809	48.3	48.8	1.00	6029	13.06	1.17
005114623-04	OBS	No	389.280763	278.687192	3576.5	19.563	45.6	47.1	1.00	6029	10.99	1.06
005114623-05	OBS	No	389.272274	304.639583	3718.4	20.450	44.9	46.4	1.00	6029	11.03	1.06
005114623-06	OBS	No	363.314235	362.530688	5113.3	12.701	37.9	40.6	1.00	6029	13.03	1.17
005114623-07	OBS	No	389.281035	252.729537	2866.9	17.496	30.8	34.5	1.00	6029	8.98	1.06
005114623-08	OBS	No	364.132836	330.599616	2367.5	22.467	29.3	24.9	1.00	6029	9.08	1.16
005114623-09	OBS	No	389.246077	226.865752	3358.8	16.550	22.5	28.7	1.00	6029	10.70	1.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005114623-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—PERIOD_ALIAS_DV—PERIOD_ALIAS_ALT—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
005114623-02	OBS	FP	0.00	1	1	1	1	IS_SEC_TCE—CENT_RESOLVED_OFFSET—EPHEM_MATCH
005114623-03	OBS	FP	0.00	1	0	0	1	SAME_NTL_PERIOD—CENT_FEW_DIFFS—EPHEM_MATCH
005114623-04	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_MARSHALL—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
005114623-05	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_MARSHALL—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
005114623-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS
005114623-07	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
005114623-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005114623-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_ZUMA—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST

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 005114623-03

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
005114623-03	5114623	6371.01	3858884	14:1	7285.7	9	0	9.28	15.36	77.56	Cross-Talk	0	0.61	0.12

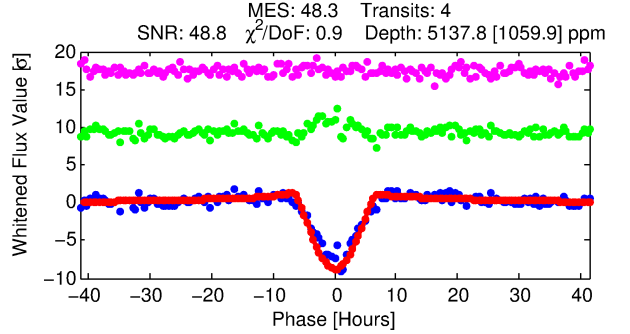
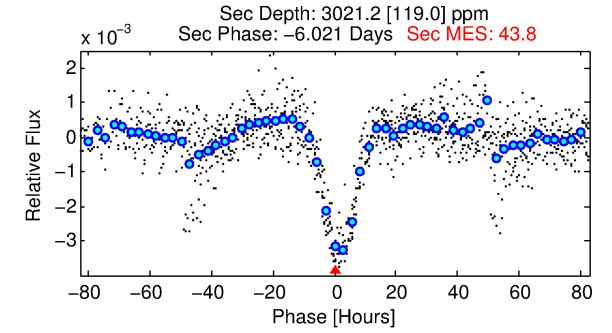
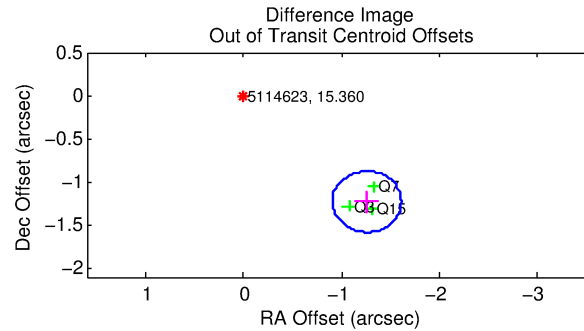
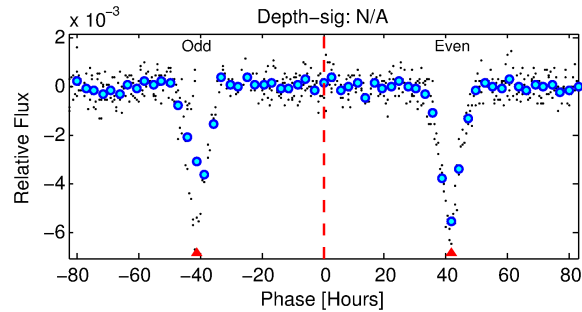
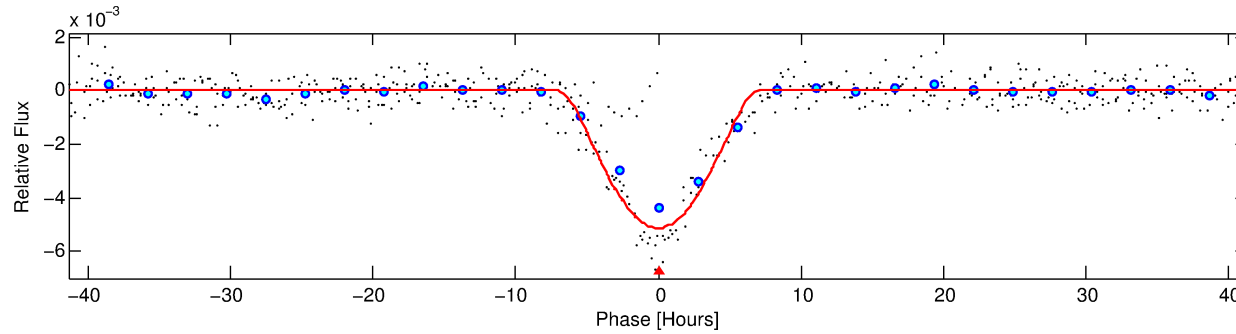
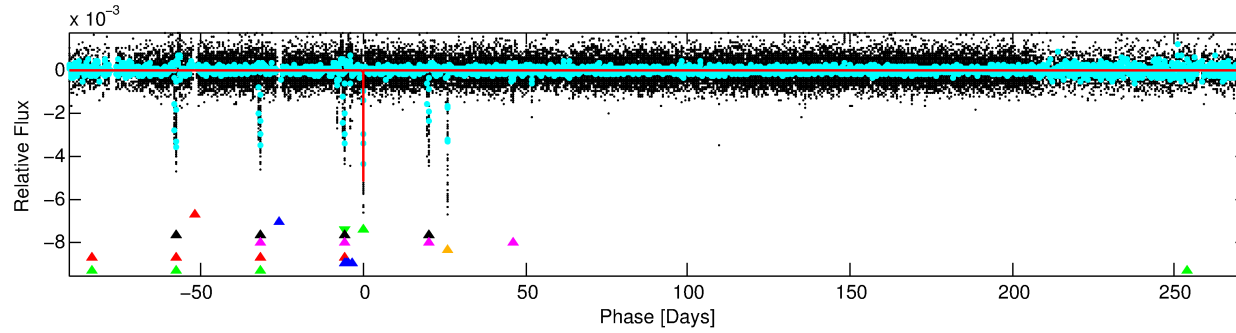
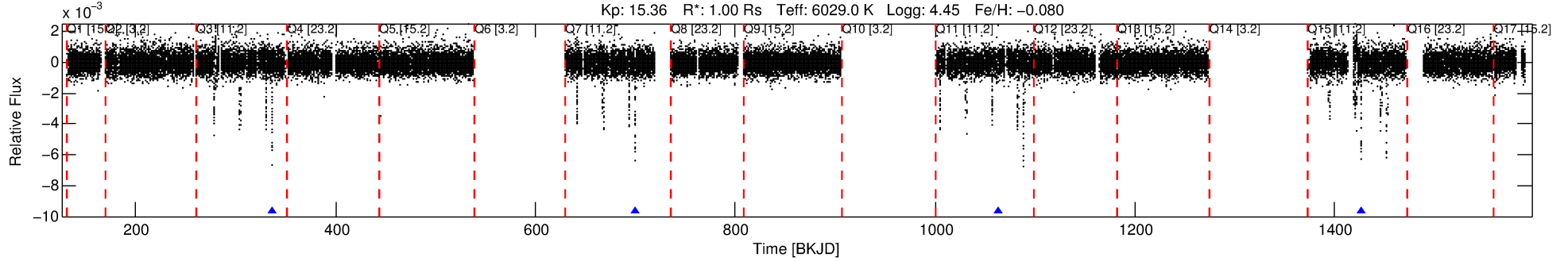
Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match 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: 5114623 Candidate: 3 of 9 Period: 363.328 d

KOI: K03827 Corr: No Ephemeris Match

Kp: 15.36 R*: 1.00 Rs Teff: 6029.0 K Logg: 4.45 Fe/H: -0.080



DV Fit Results:

Period = 363.32765 [0.00267] d
Epoch = 336.5502 [0.0045] BKJD
Rp/R* = 0.1199 [0.0975]
a/R* = 101.35 [15.04]
b = 1.00 [0.15]
Seff = 1.16 [0.48]
Teq = 265 [27] K
Rp = 13.06 [11.46] Re
a = 1.0061 [0.2748] AU
Ag = 9869.93 [16515.77] [0.60σ]
Teffp = 4082 [1667] K [2.29σ]

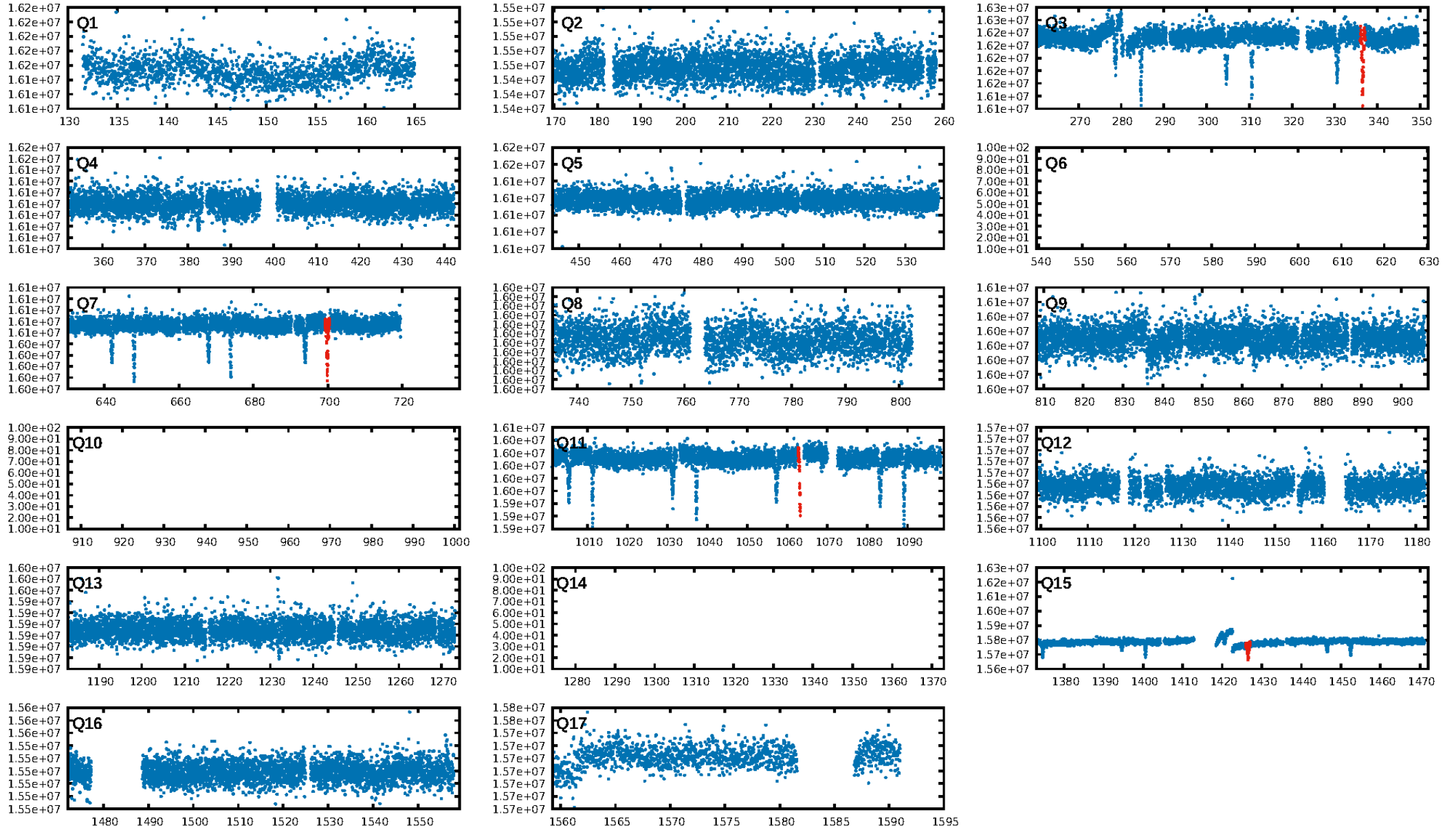
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: 0.2% [0.00σ]
ModelChiSquare2-sig: 14.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.49e-157
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.4788
Centroid-sig: 0.0%
Centroid-so: 4.149 arcsec [16.16σ]
OotOffset-rm: 1.760 arcsec [14.96σ]
KicOffset-rm: 1.756 arcsec [14.61σ]
OotOffset-st: 0/3/0/0 [3]
KicOffset-st: 0/3/0/0 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 1.00 [3/3]

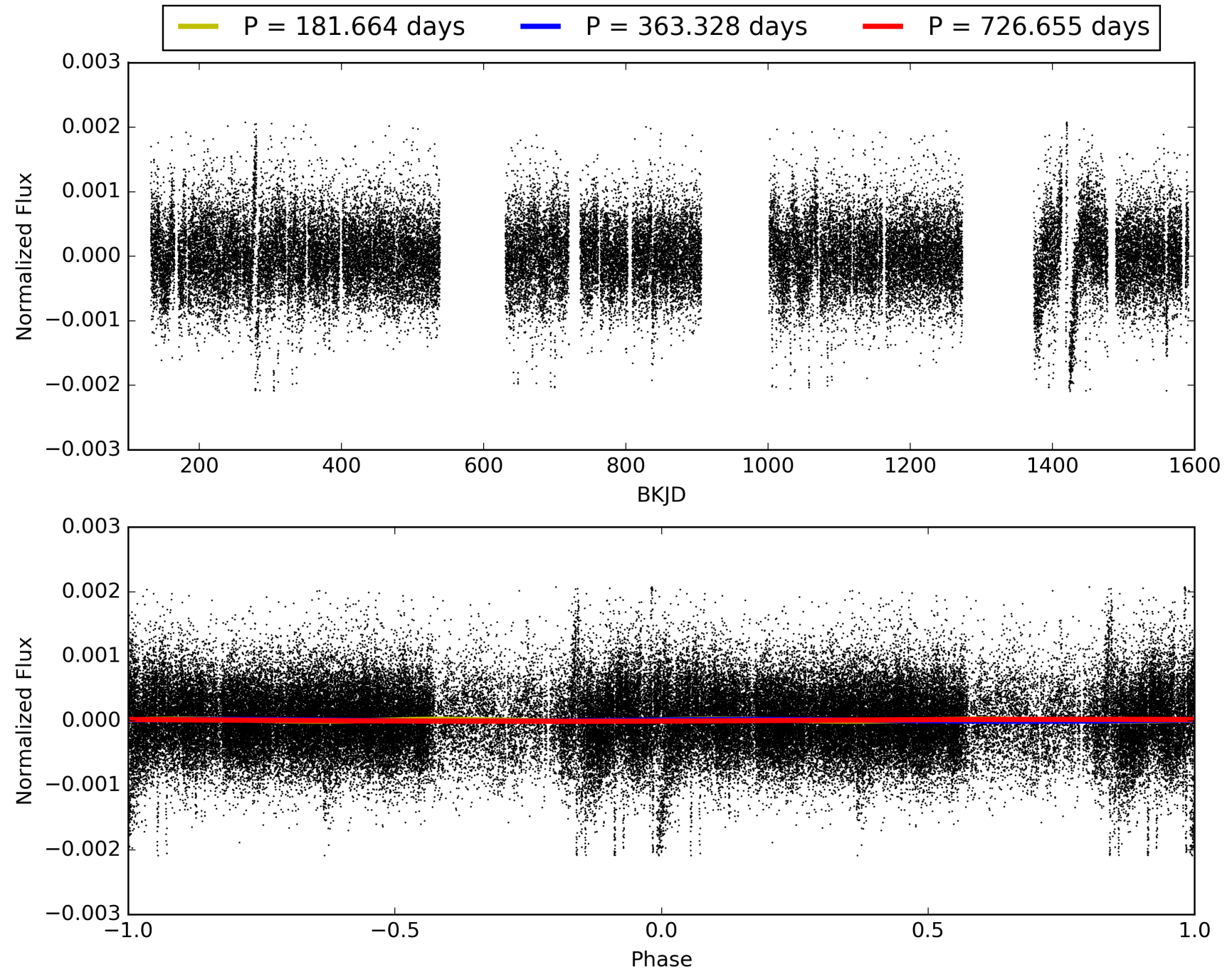
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:08:37 Z

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

TCE 005114623-03, PDC Light Curves

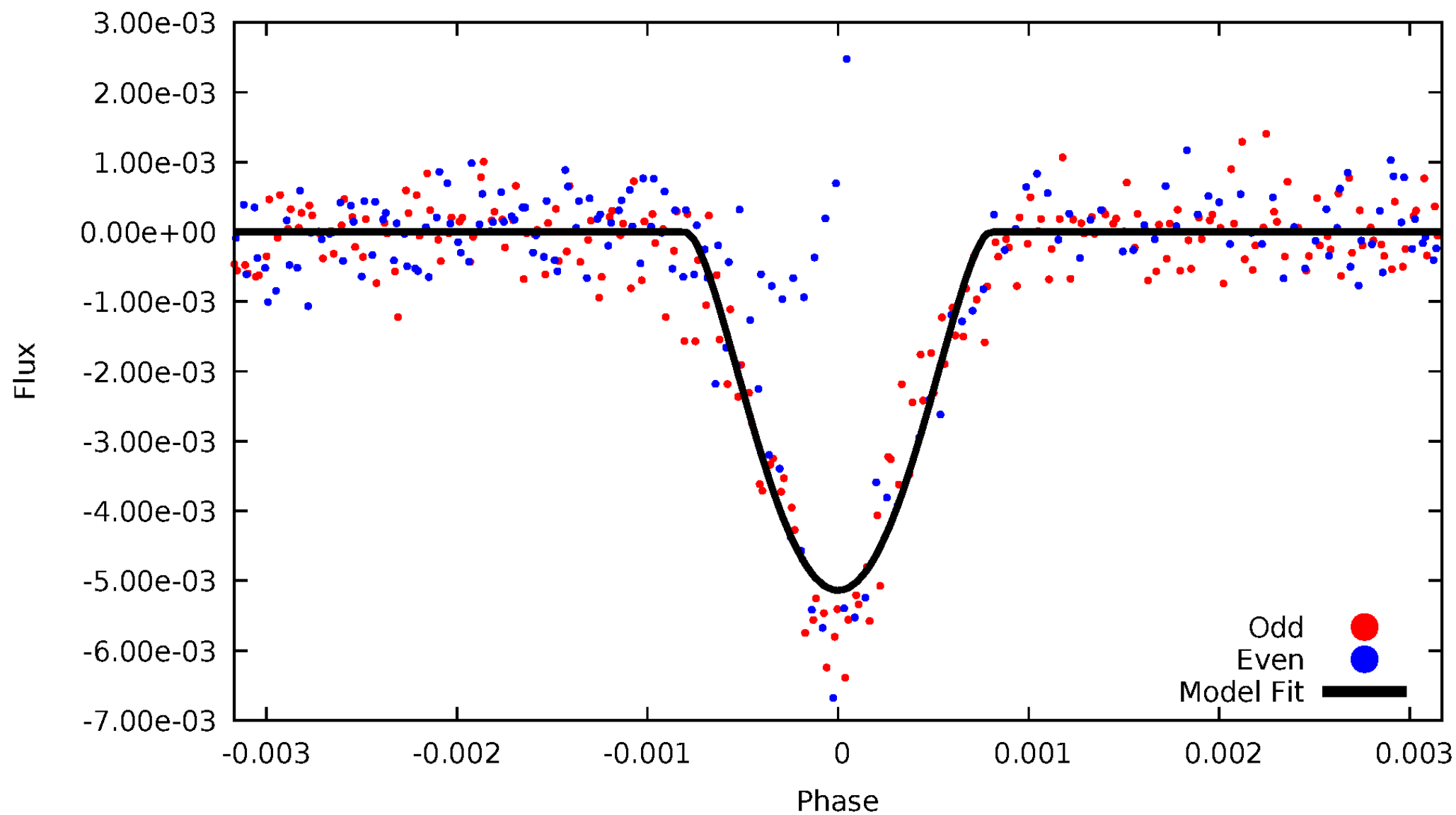


TCE 005114623-03



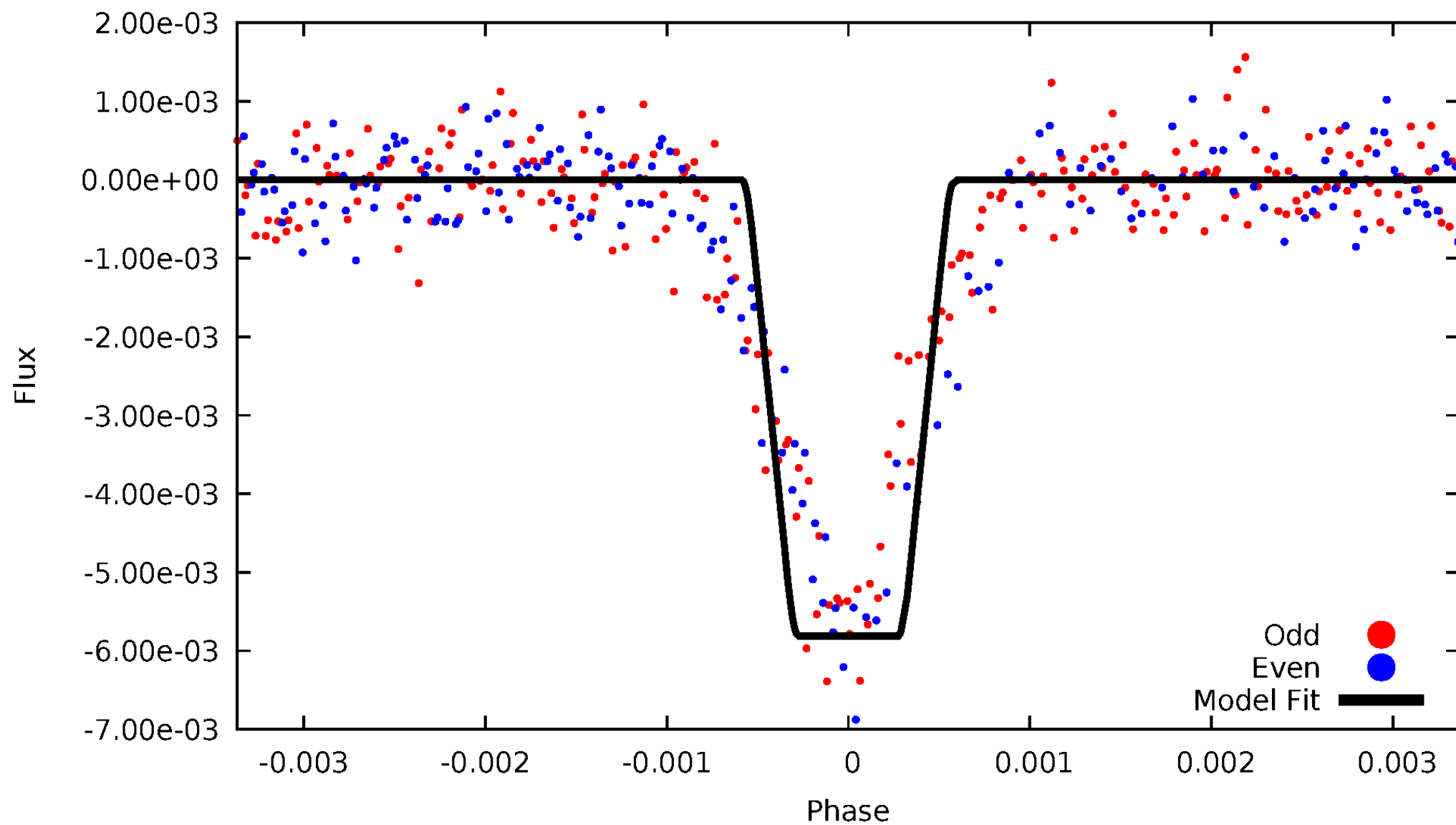
DV Odd/Even

TCE 005114623-03

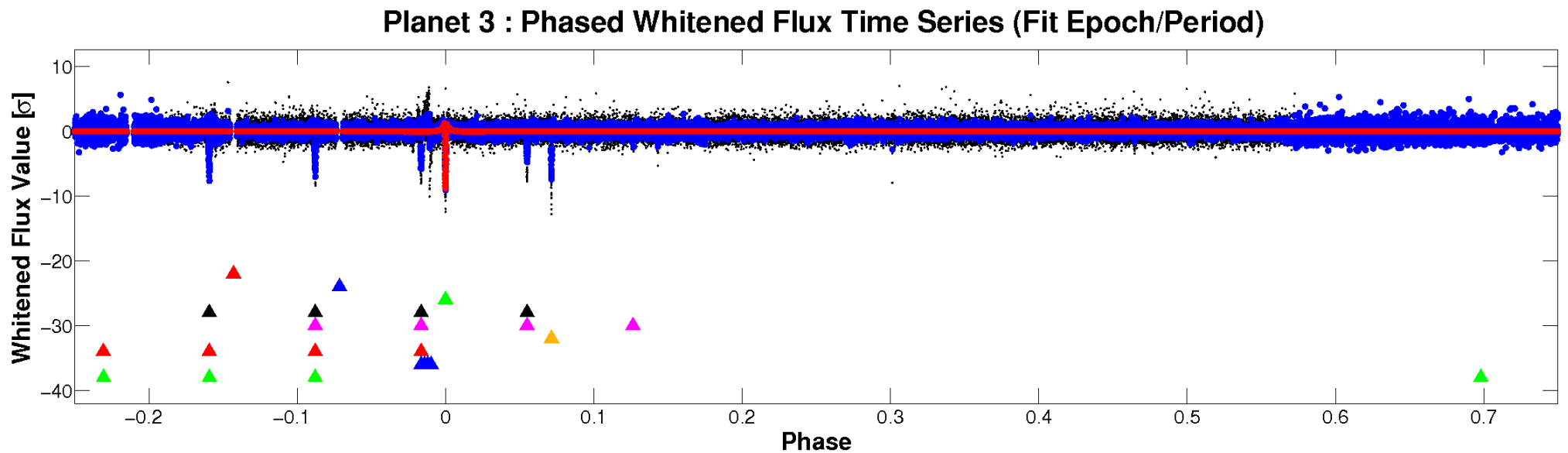
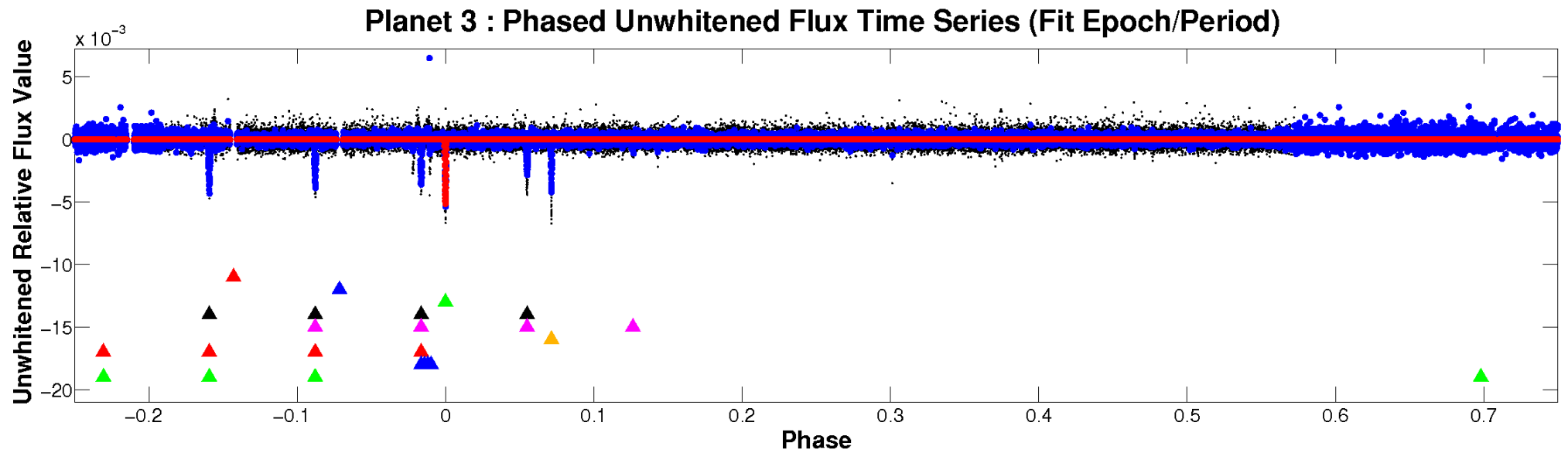


ALT Odd/Even

TCE 005114623-03

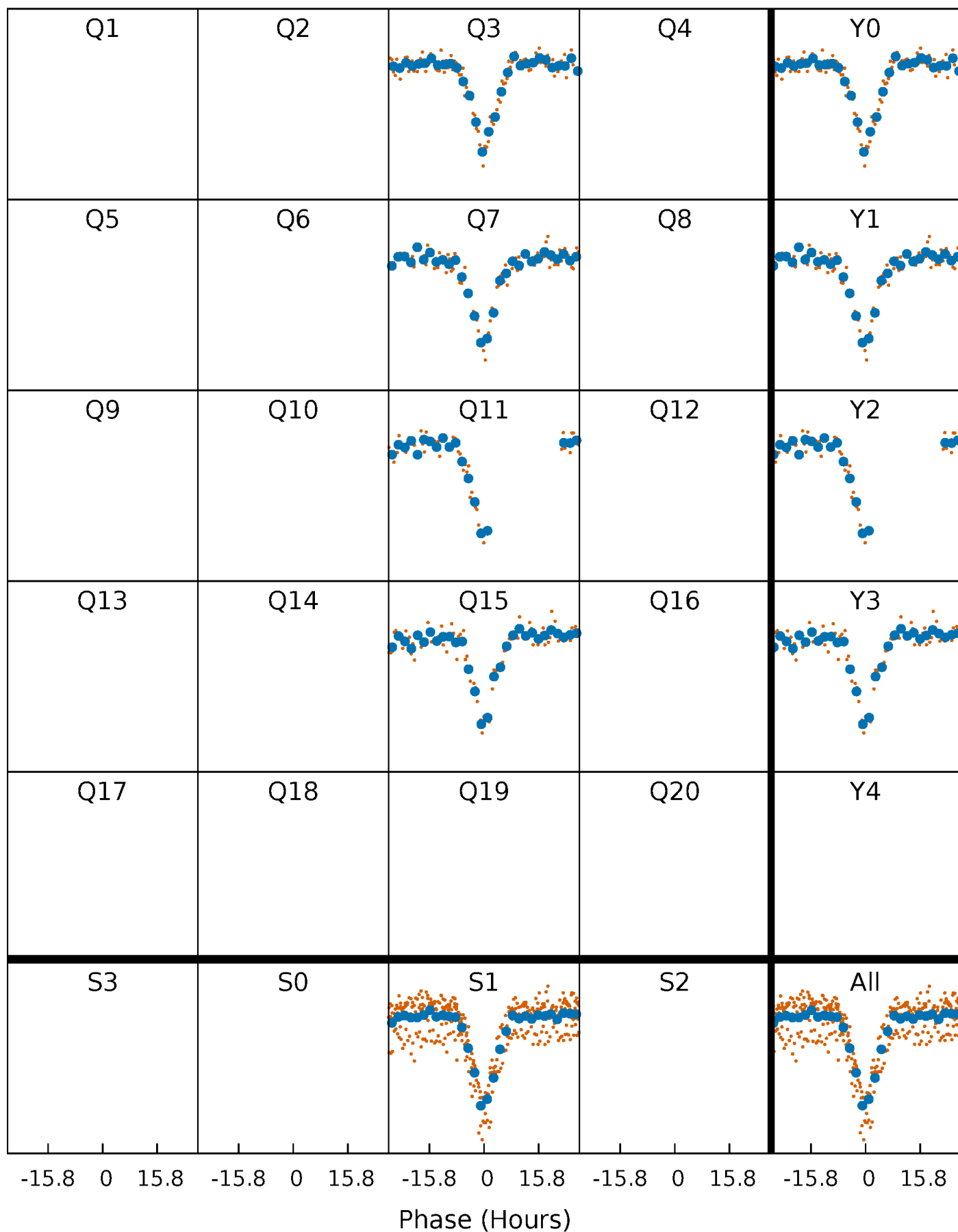


Non-Whitened Vs. Whitened Light Curve



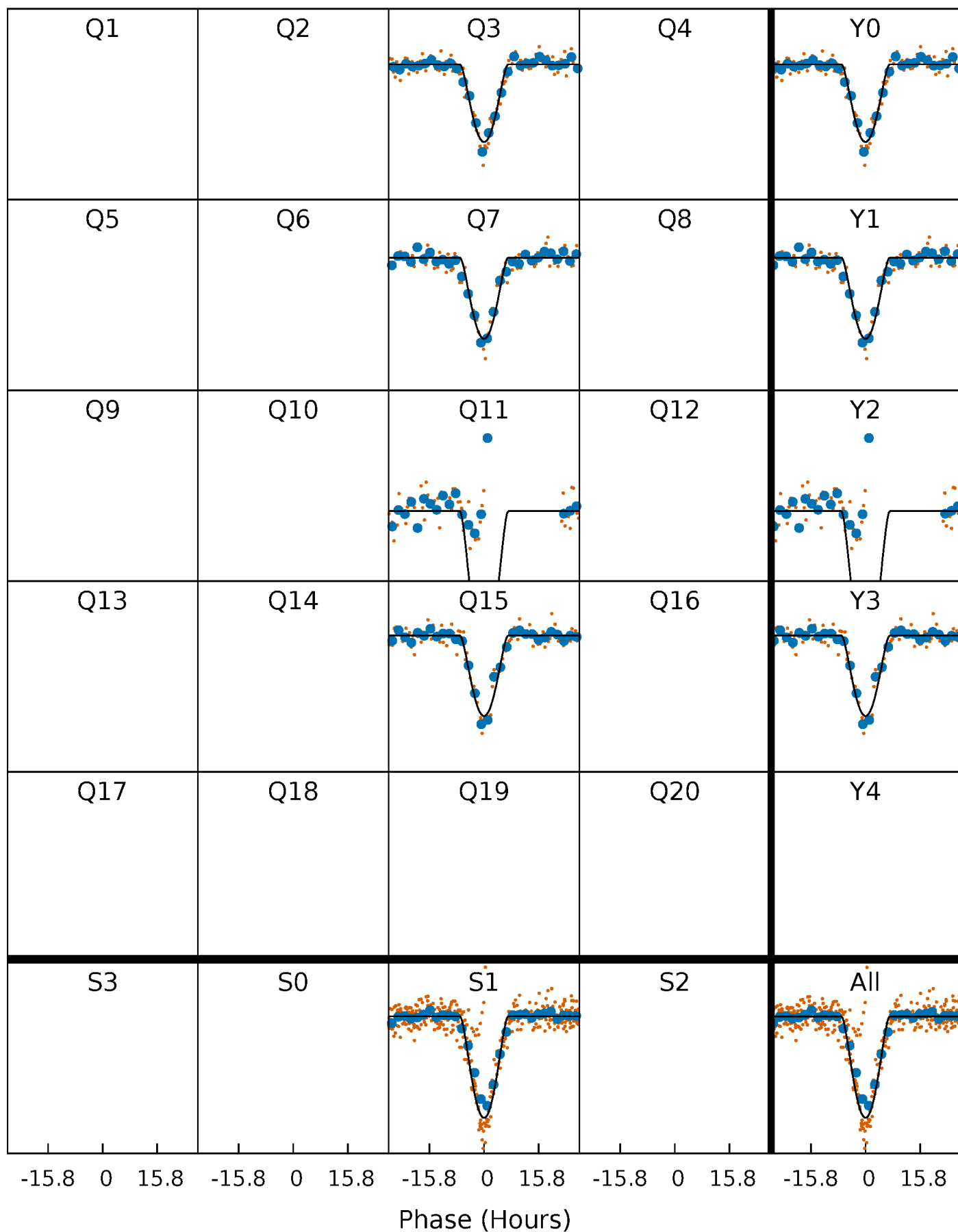
PDC Quarter-Phased Transit Curves

TCE 005114623-03 $P=363.327653$ Days $T_0=336.550228$ (BKJD)



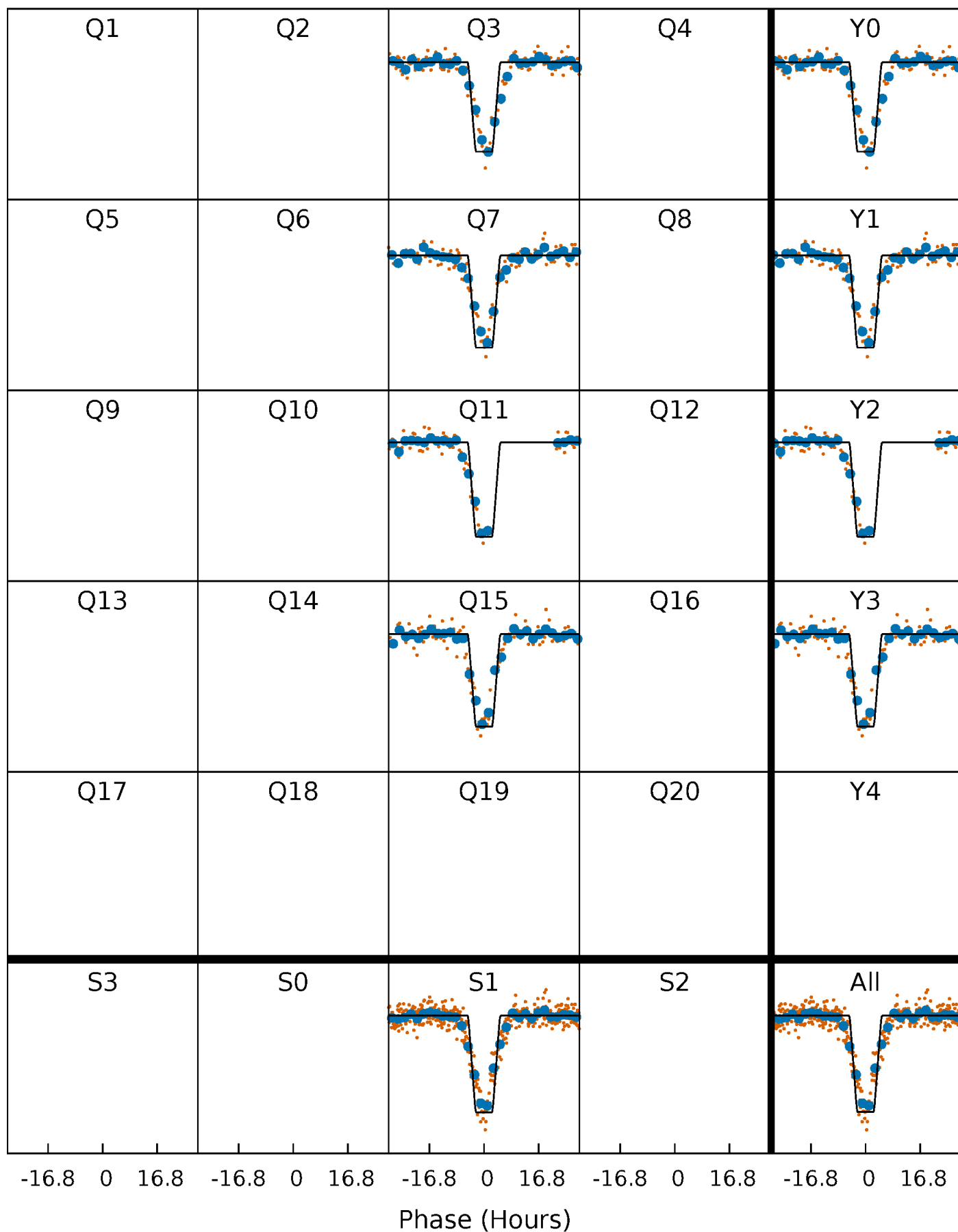
DV Quarter-Phased Transit Curves

TCE 005114623-03 P=363.327653 Days $T_0=336.550228$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

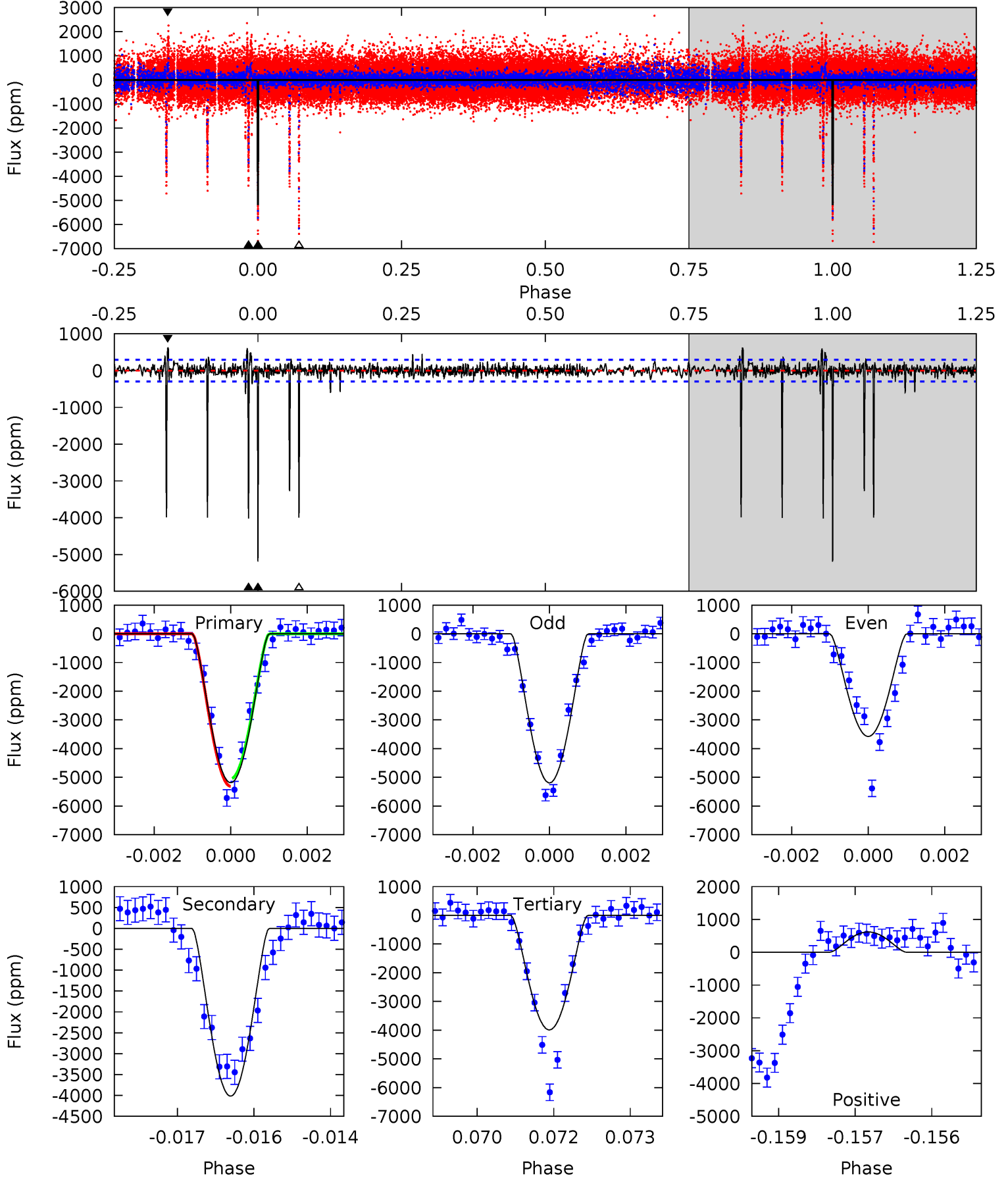
TCE 005114623-03 $P=363.342753$ Days $T_0=336.525999$ (BKJD)



DV Model-Shift Uniqueness Test

005114623-03, P = 363.327653 Days, E = 336.550228 Days

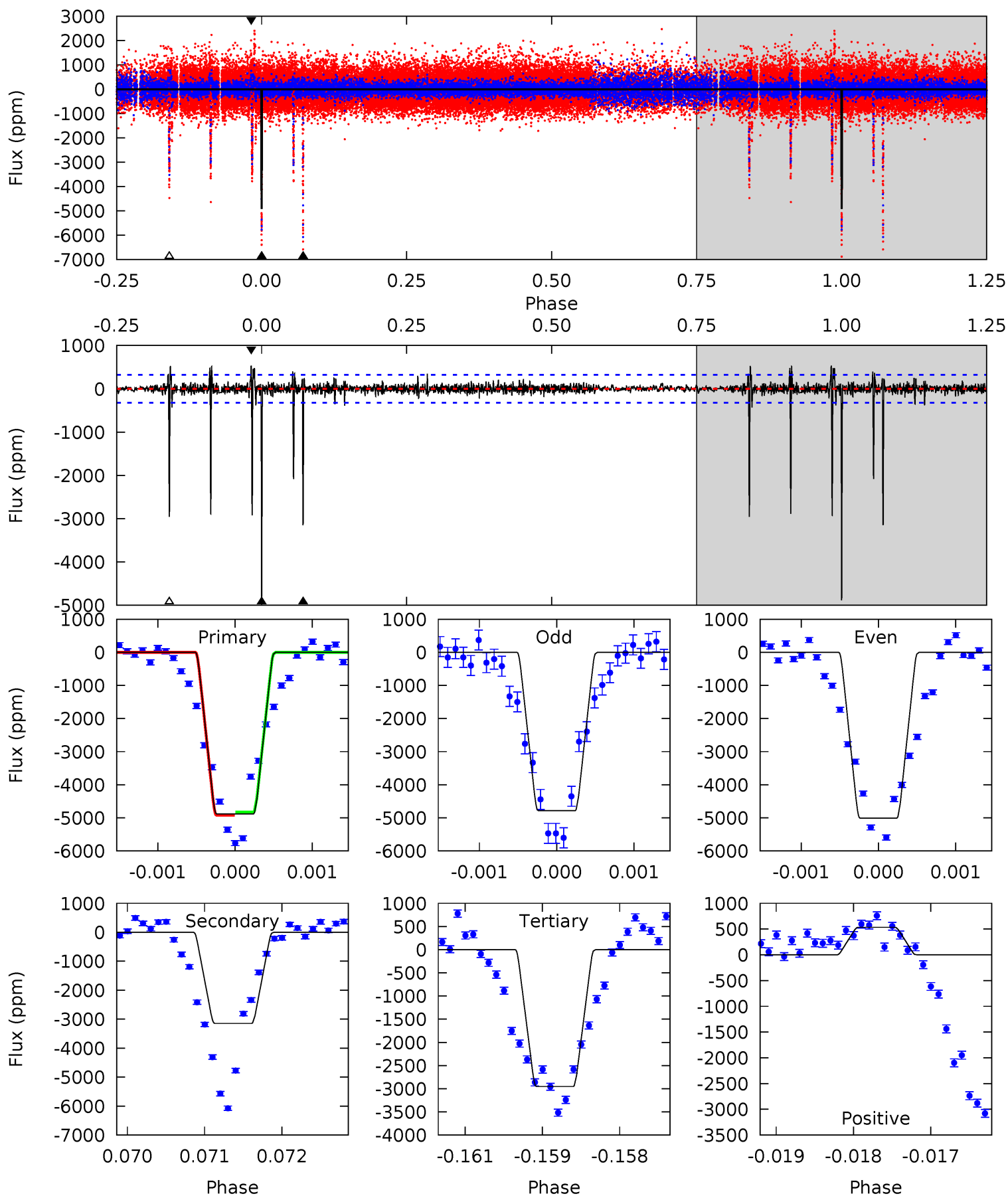
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
94.5	73.2	72.7	11.3	5.37	3.16	4.88	21.8	83.3	0.47	61.9	15.3	0.76	0.11	2.47



Alt Model-Shift Uniqueness Test

005114623-03, P = 363.342753 Days, E = 336.525999 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
82.2	53.0	49.7	8.98	5.43	3.25	3.34	32.5	73.3	3.27	44.0	1.84	1.01	0.10	0.80



Stellar Parameters For KIC 005114623

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6029^{+210}_{-210}	$4.452^{+0.070}_{-0.210}$	$-0.080^{+0.250}_{-0.300}$	$0.998^{+0.330}_{-0.132}$	$1.025^{+0.153}_{-0.126}$	$1.451^{+0.427}_{-0.780}$
	+3%/-3%	+2%/-5%	+312%/-375%	+33%/-13%	+15%/-12%	+29%/-54%
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 005114623-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-4017 ± 55	$15.61^{+11.14}_{-9.83}$	380^{+32}_{-22}	4349^{+2333}_{-742}	9035^{+54744}_{-5985}
Alt.	-3147 ± 59	$11.86^{+9.91}_{-7.76}$	378^{+29}_{-23}	4595^{+2993}_{-913}	12412^{+91259}_{-8637}

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

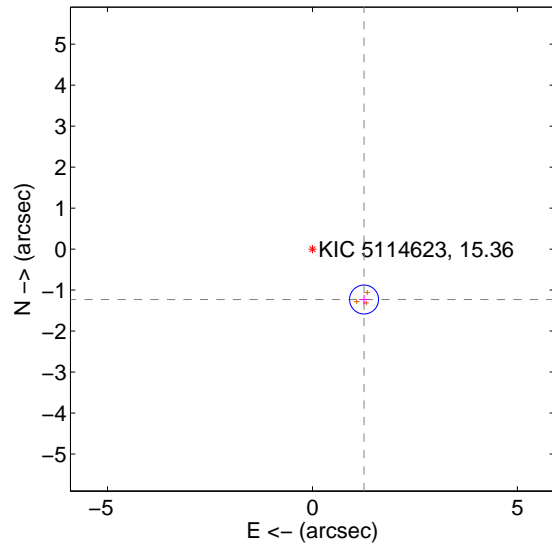
Supplemental centroid analysis for 005114623-03. Kepler magnitude: 15.36. Transit SNR 48.80

There are 0 quarters with good PRF difference image offsets

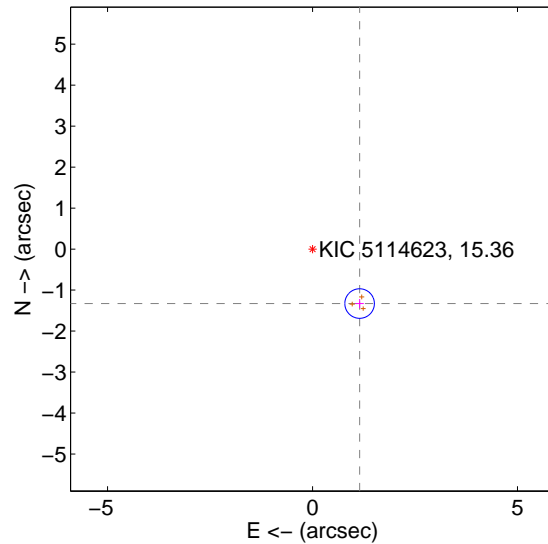
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.760 ± 0.118	14.96	-1.259 ± 0.120	-1.229 ± 0.115
PRF-fit source offset from KIC position	1.756 ± 0.120	14.61	-1.148 ± 0.102	-1.328 ± 0.113
photometric centroid source offset	4.15 ± 0.26	16.16	-0.62 ± 0.22	-4.10 ± 0.26

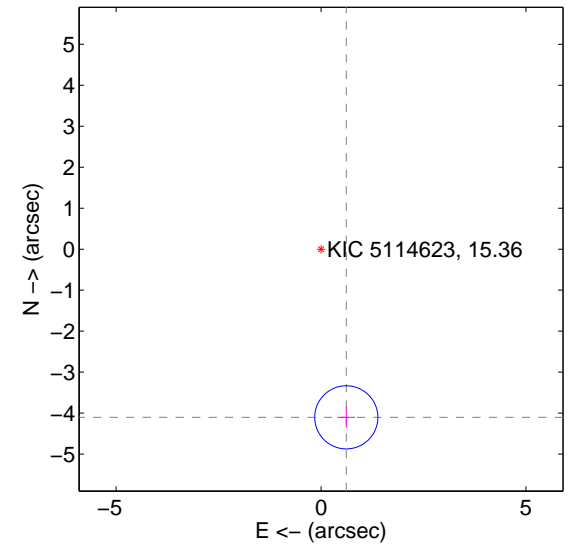
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

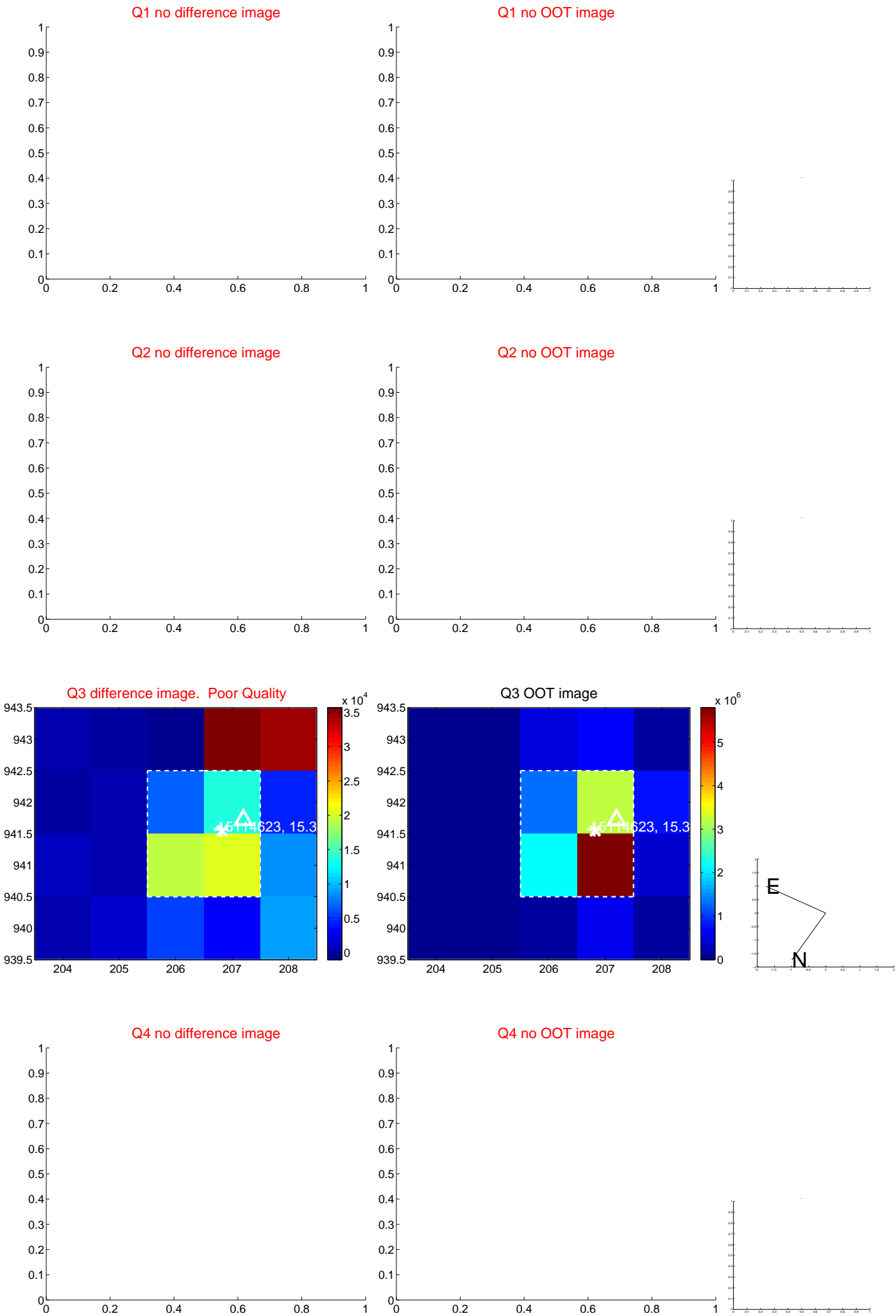


offset from photometric centroids

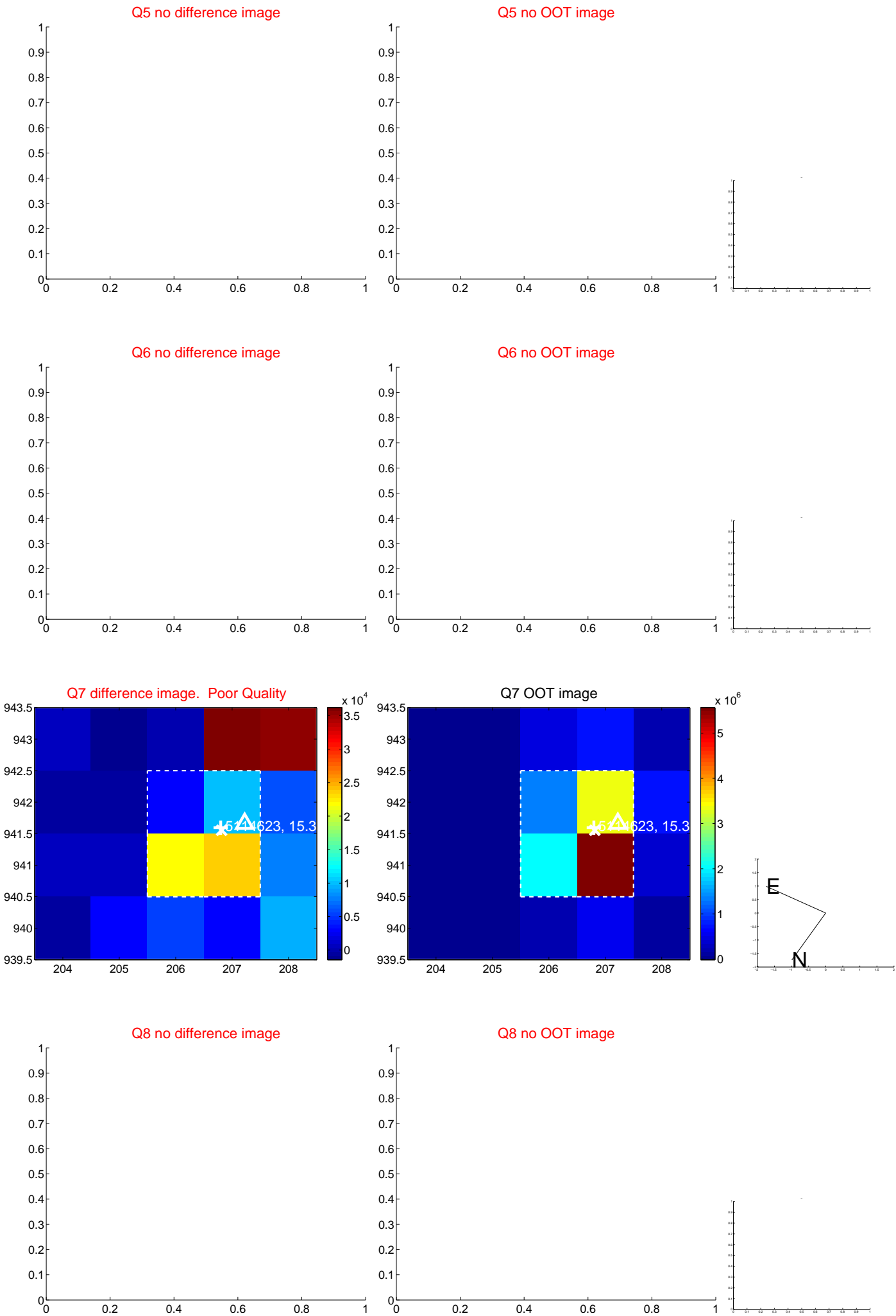


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



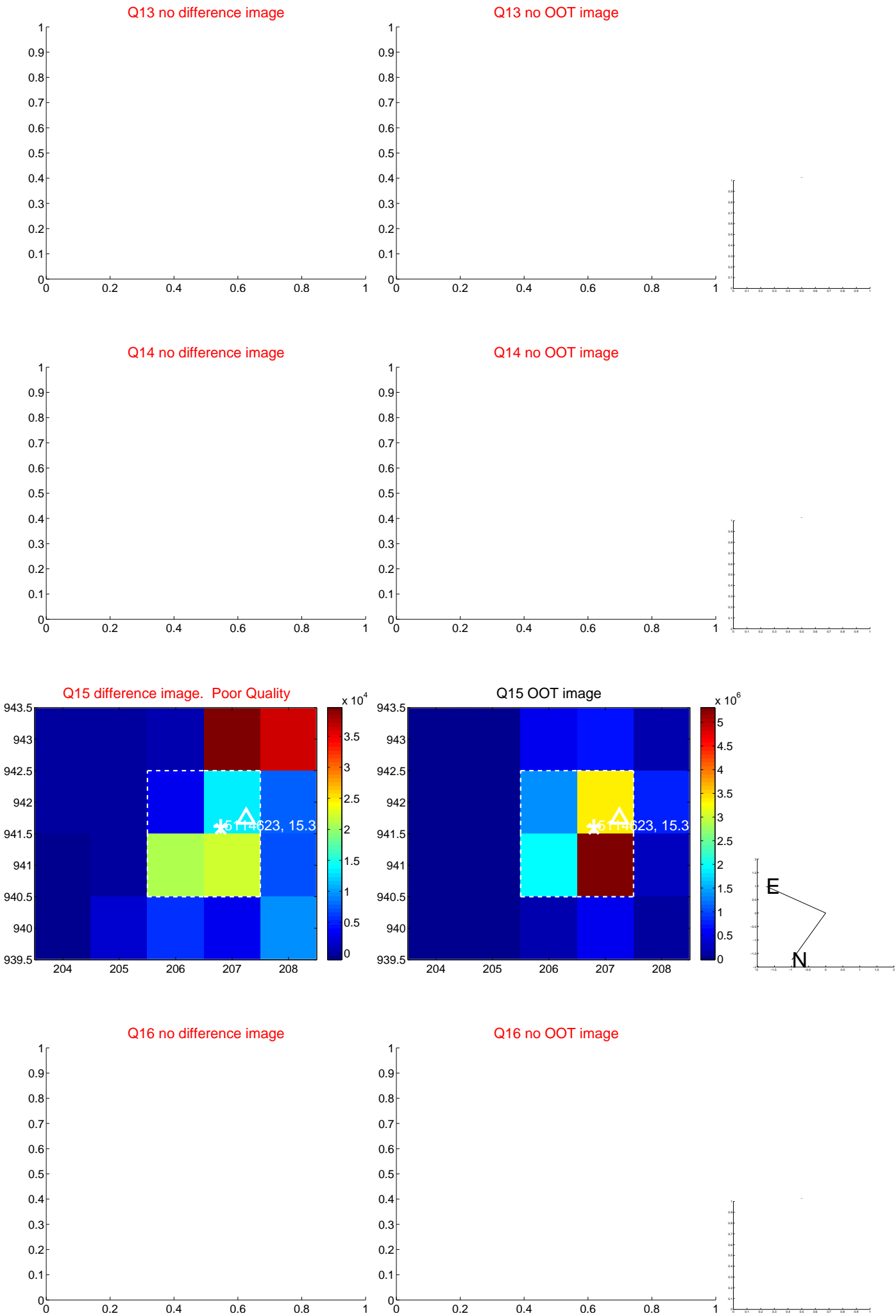
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



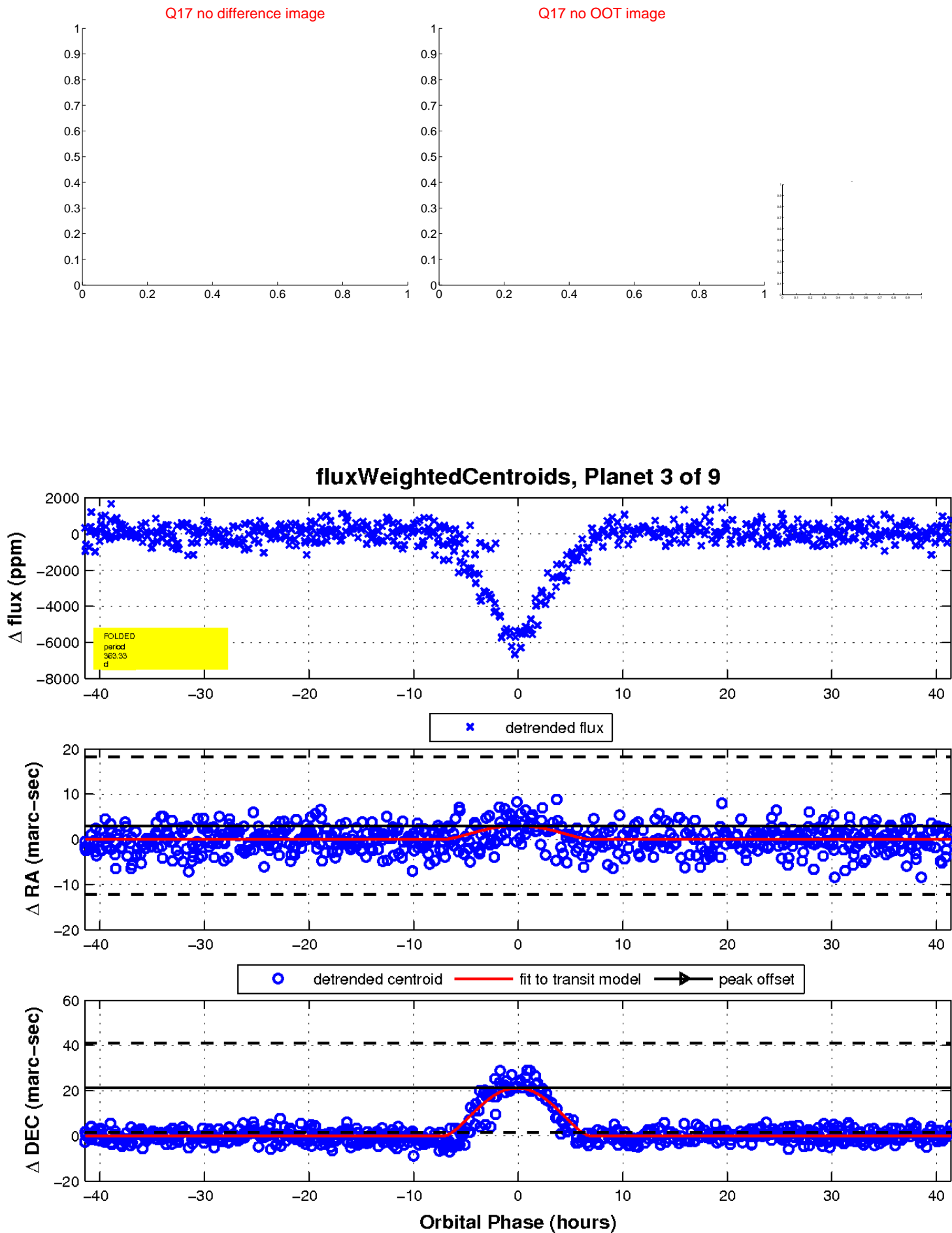
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

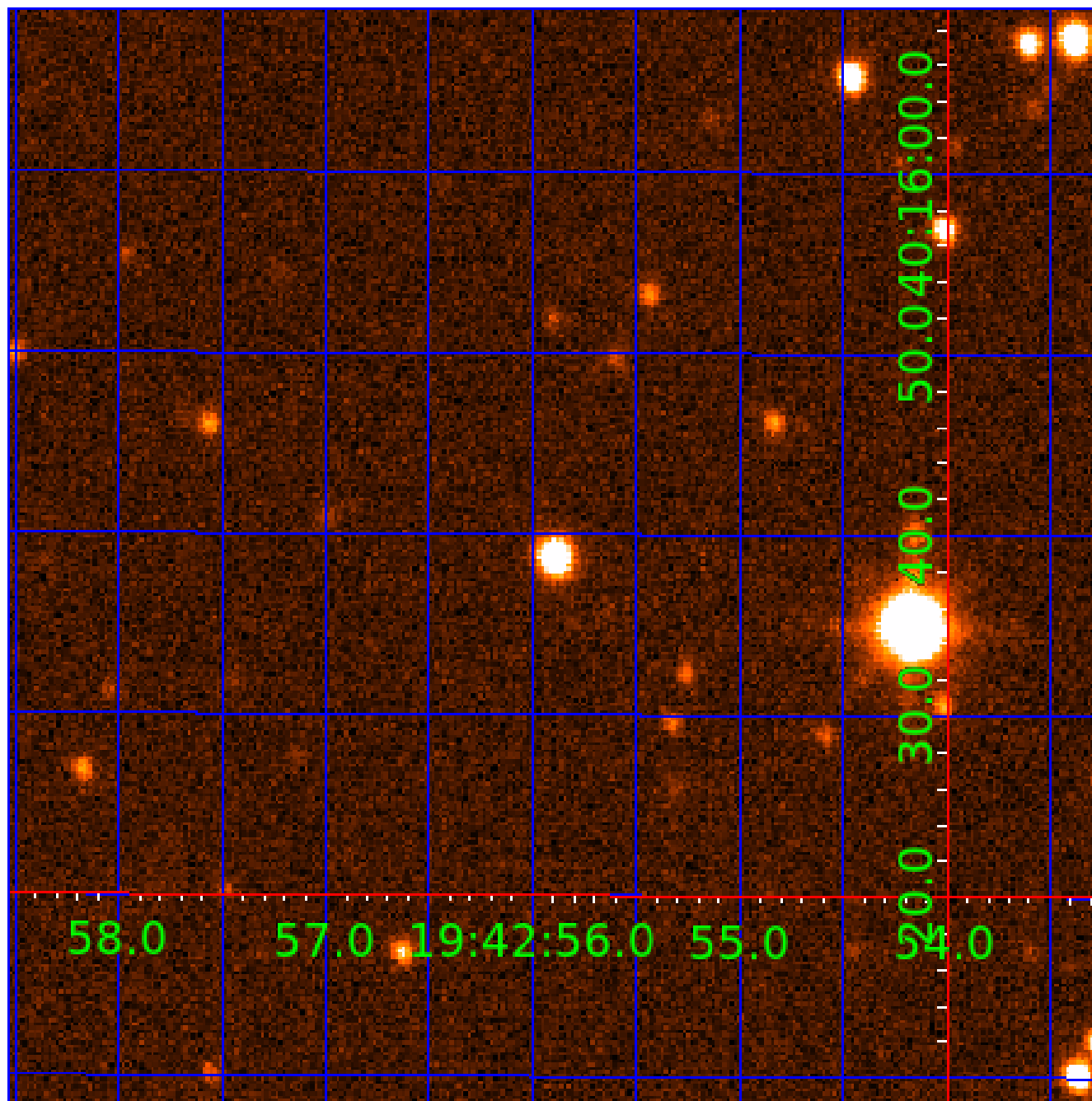


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
005114623-01	OBS	No	363.329250	284.636050	5278.6	13.048	54.2	60.4	1.00	6029	13.23	1.17
005114623-02	OBS	No	363.326947	310.595787	5246.9	12.643	56.5	56.8	1.00	6029	13.19	1.17
005114623-03	OBS	No	363.327653	336.550228	5137.8	13.809	48.3	48.8	1.00	6029	13.06	1.17
005114623-04	OBS	No	389.280763	278.687192	3576.5	19.563	45.6	47.1	1.00	6029	10.99	1.06
005114623-05	OBS	No	389.272274	304.639583	3718.4	20.450	44.9	46.4	1.00	6029	11.03	1.06
005114623-06	OBS	No	363.314235	362.530688	5113.3	12.701	37.9	40.6	1.00	6029	13.03	1.17
005114623-07	OBS	No	389.281035	252.729537	2866.9	17.496	30.8	34.5	1.00	6029	8.98	1.06
005114623-08	OBS	No	364.132836	330.599616	2367.5	22.467	29.3	24.9	1.00	6029	9.08	1.16
005114623-09	OBS	No	389.246077	226.865752	3358.8	16.550	22.5	28.7	1.00	6029	10.70	1.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005114623-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—PERIOD_ALIAS_DV—PERIOD_ALIAS_ALT—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
005114623-02	OBS	FP	0.00	1	1	1	1	IS_SEC_TCE—CENT_RESOLVED_OFFSET—EPHEM_MATCH
005114623-03	OBS	FP	0.00	1	0	0	1	SAME_NTL_PERIOD—CENT_FEW_DIFFS—EPHEM_MATCH
005114623-04	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_MARSHALL—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
005114623-05	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_MARSHALL—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
005114623-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS
005114623-07	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
005114623-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005114623-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_ZUMA—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST

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 005114623-04

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
005114623-04	5114623	003858884-sec	3858884	15:1	7285.7	9	0	9.28	15.36	84.59	Cross-Talk	0	1.87	0.06

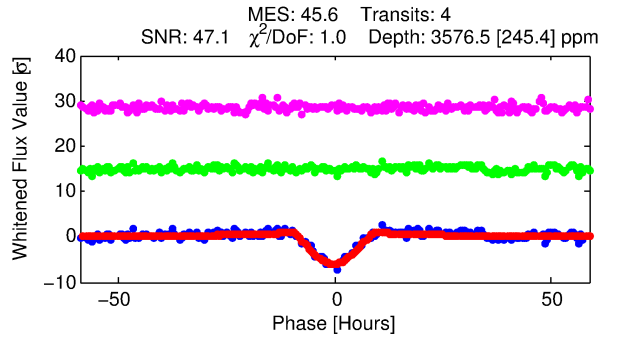
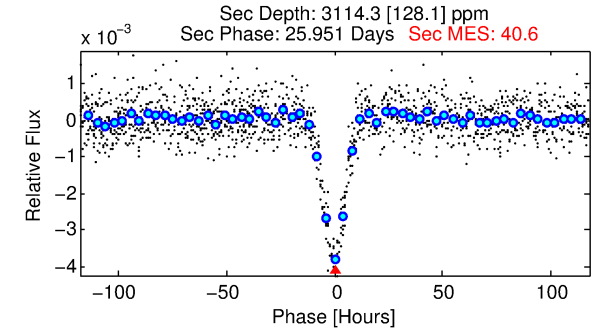
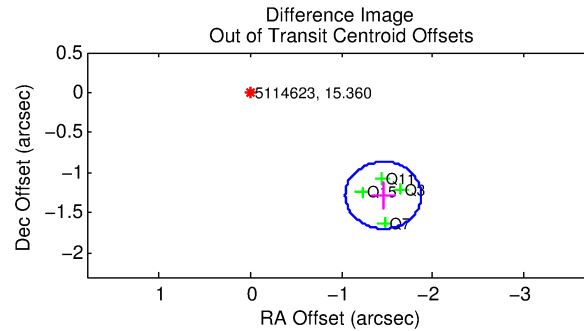
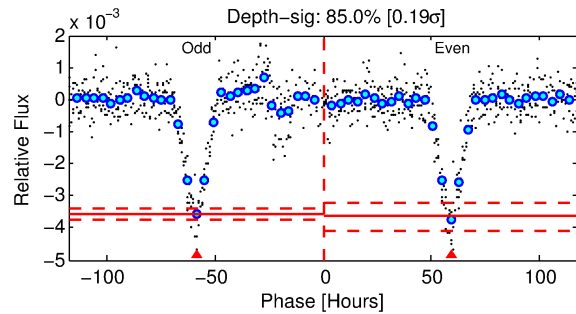
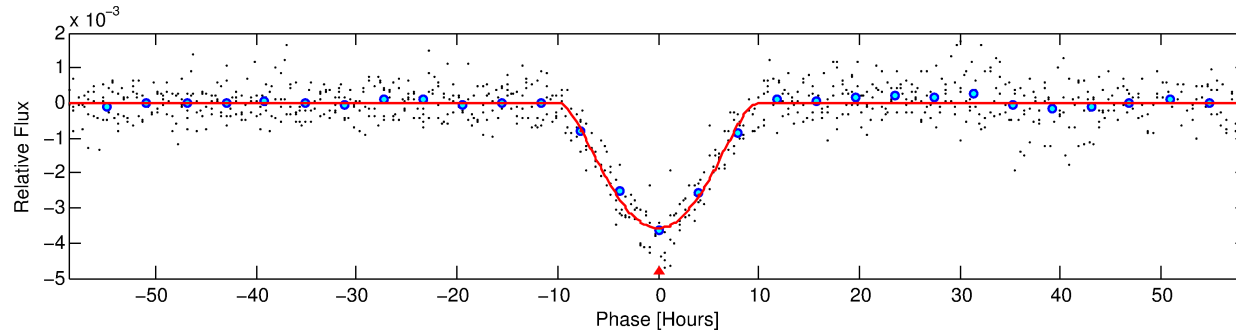
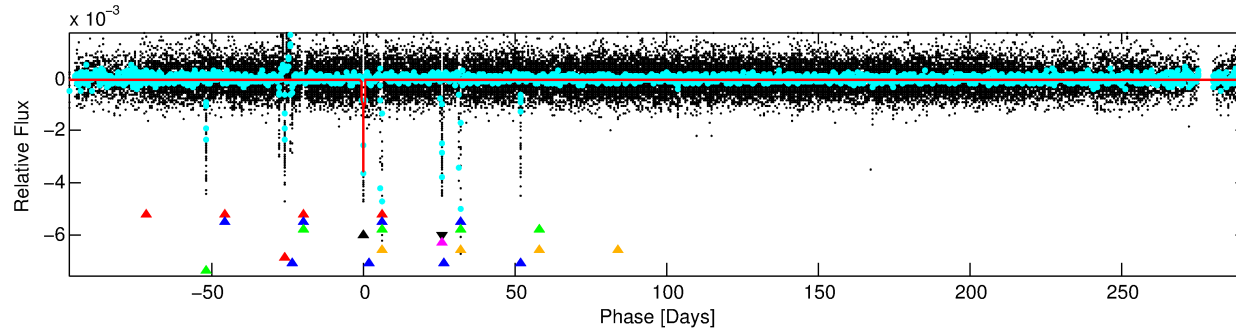
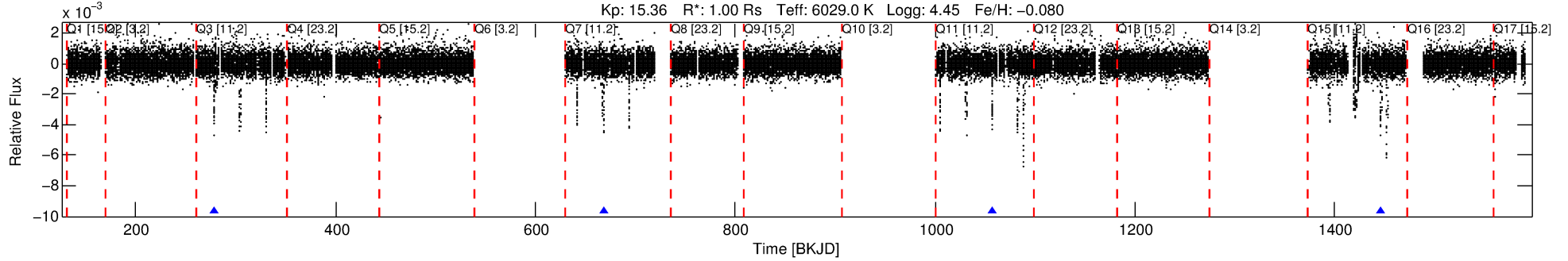
Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match 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: 5114623 Candidate: 4 of 9 Period: 389.281 d

KOI: K03827 Corr: No Ephemeris Match

Kp: 15.36 R*: 1.00 Rs Teff: 6029.0 K Logg: 4.45 Fe/H: -0.080



DV Fit Results:

Period = 389.28076 [0.00435] d
Epoch = 278.6872 [0.0075] BKJD
Rp/R* = 0.1009 [0.0810]
a/R* = 70.14 [11.16]
b = 1.00 [0.12]
Seff = 1.06 [0.44]
Teq = 259 [27] K
Rp = 10.99 [9.54] Re
a = 1.0535 [0.2877] AU
Ag = 15736.28 [25988.38] [0.61σ]
Teffp = 4483 [1805] K [2.34σ]

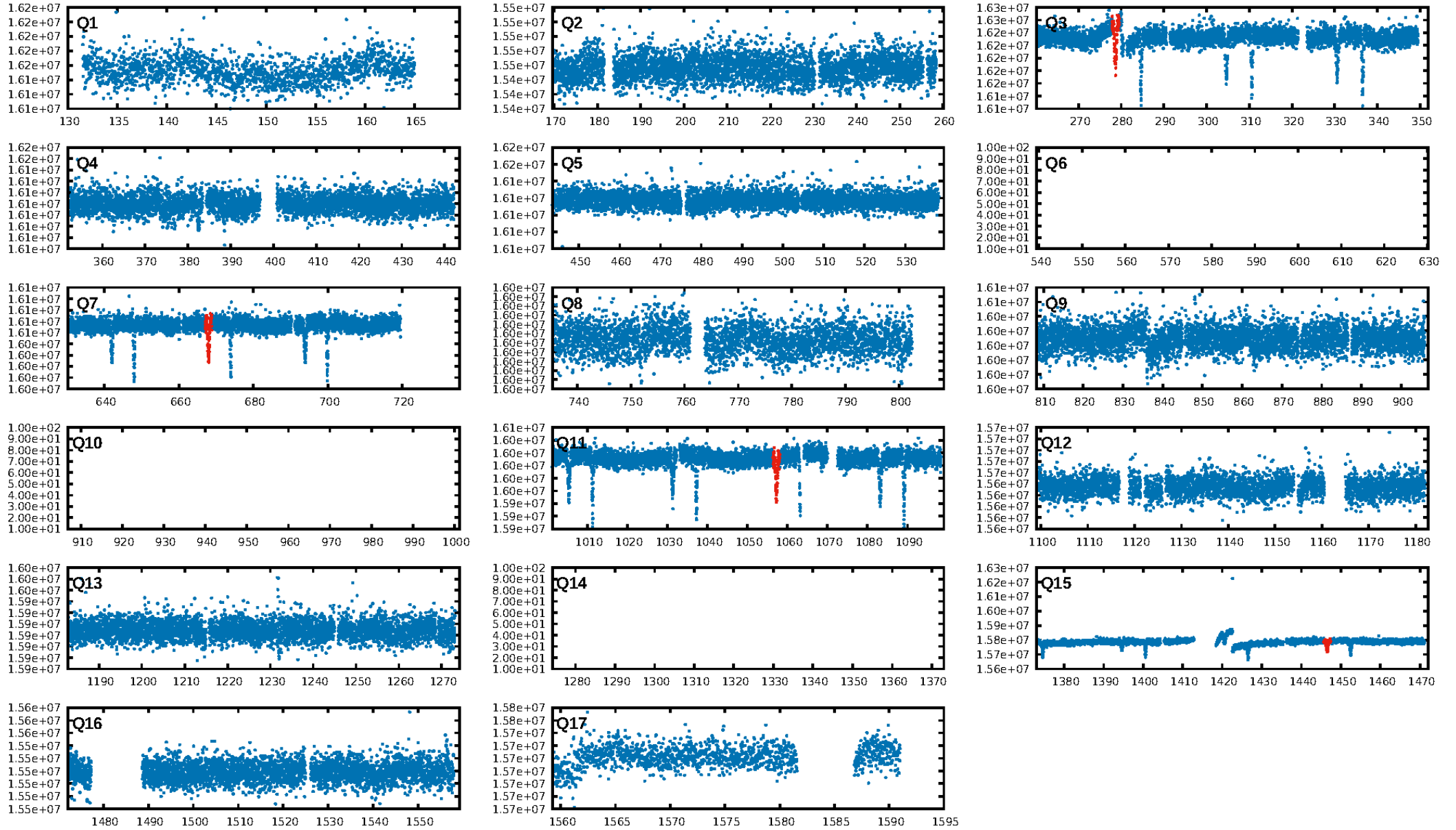
DV Diagnostic Results:

ShortPeriod-sig: 0.6% [0.01σ]
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 33.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 8.21e-150
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.09376
Centroid-sig: 0.0%
Centroid-so: 5.659 arcsec [17.82σ]
OotOffset-rm: 1.942 arcsec [13.93σ]
KicOffset-rm: 1.903 arcsec [12.76σ]
OotOffset-st: 0/4/0/0 [4]
KicOffset-st: 0/4/0/0 [4]
DiffImageQuality-fgm: 0.00 [0/4]
DiffImageOverlap-fno: 0.75 [3/4]

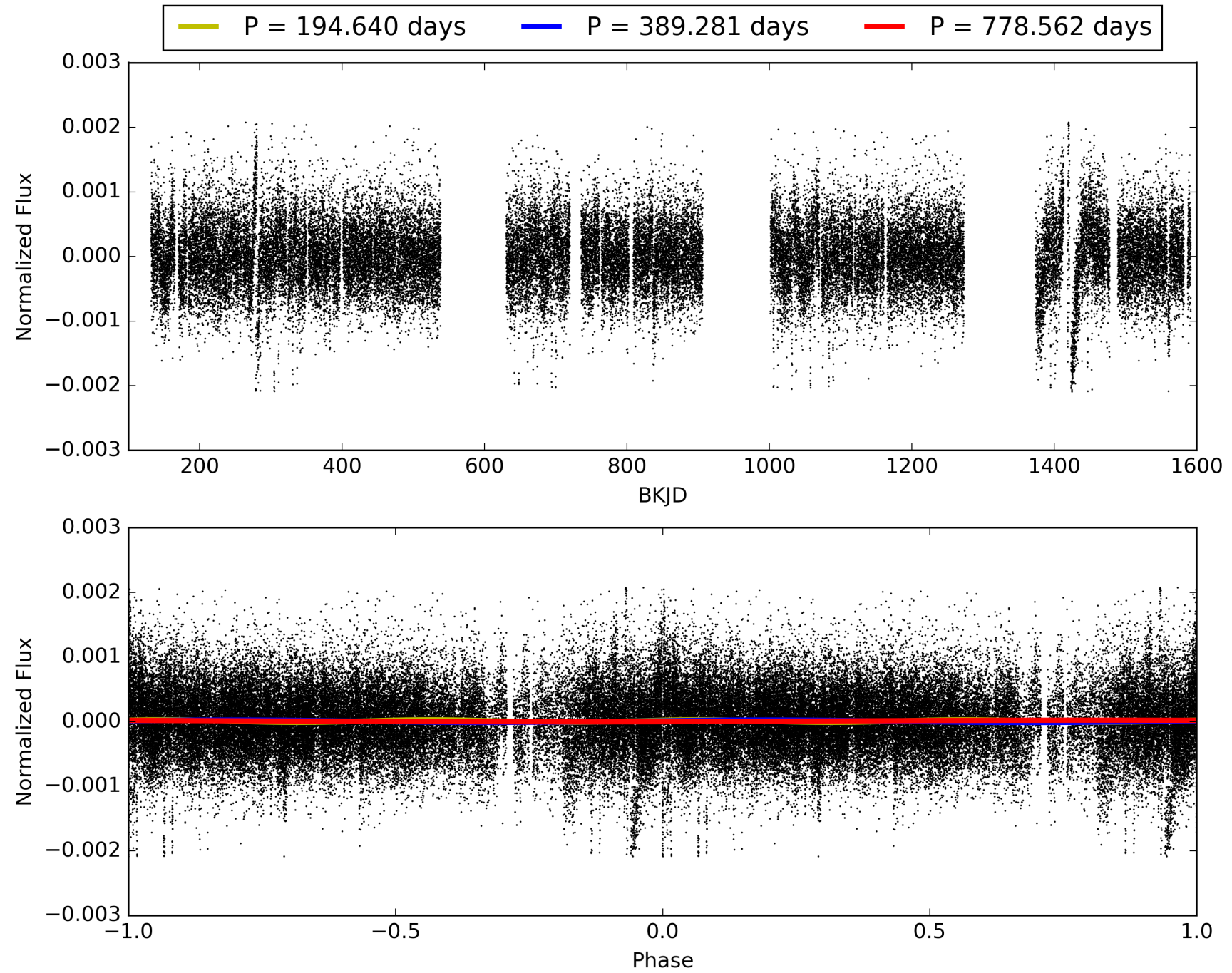
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:08:44 Z

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

TCE 005114623-04, PDC Light Curves

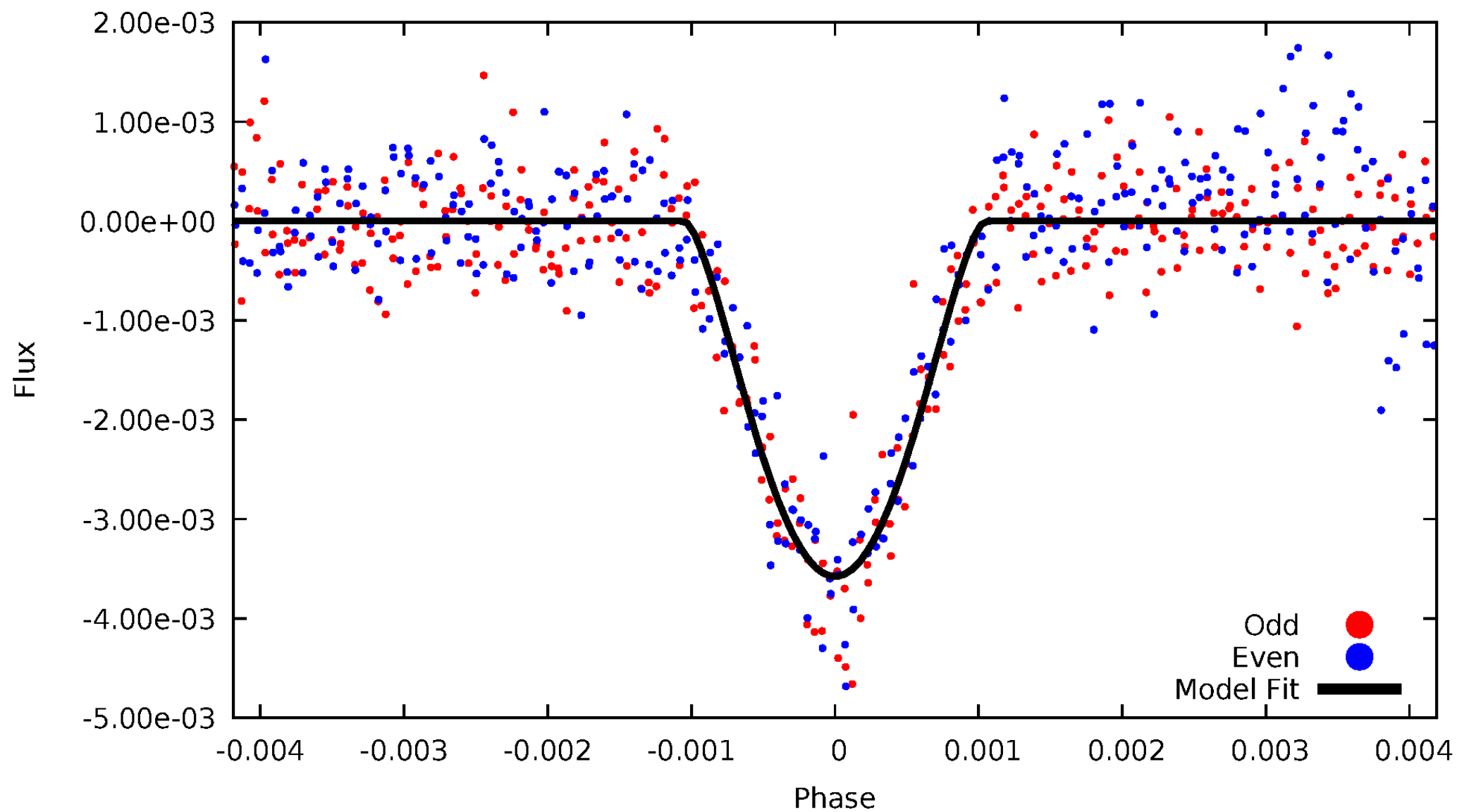


TCE 005114623-04



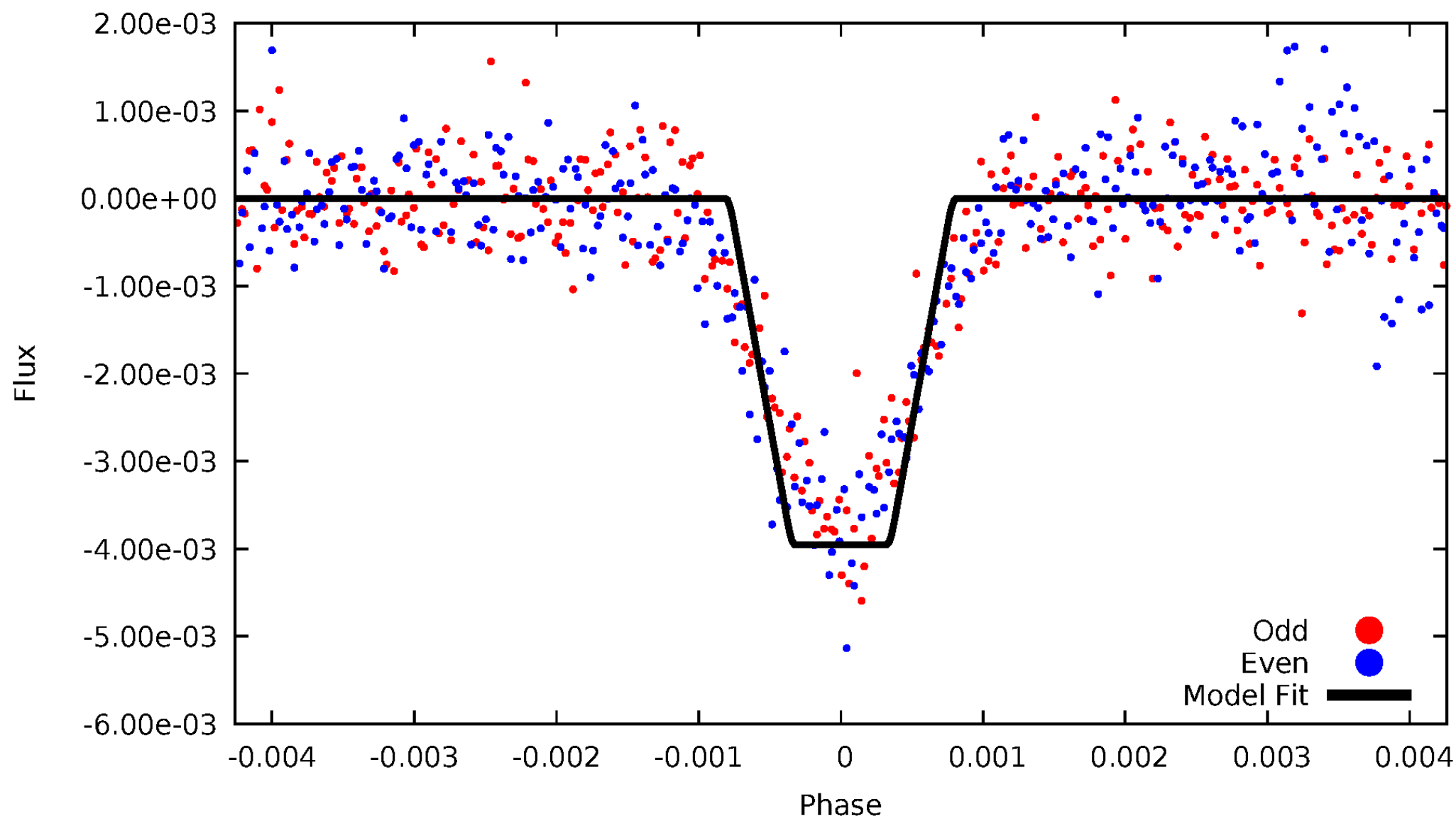
DV Odd/Even

TCE 005114623-04



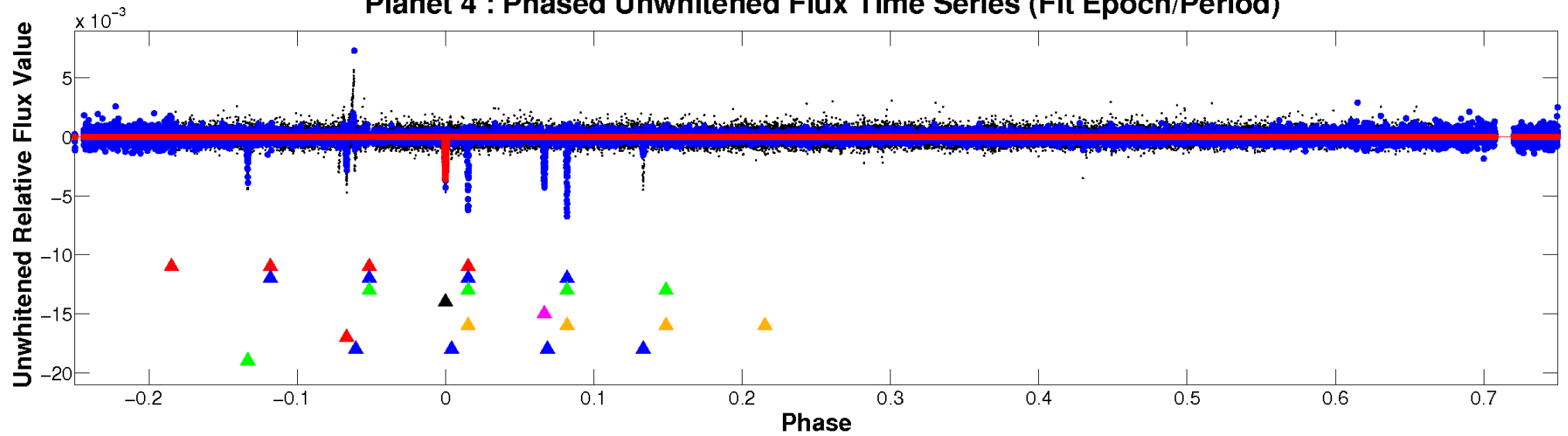
ALT Odd/Even

TCE 005114623-04

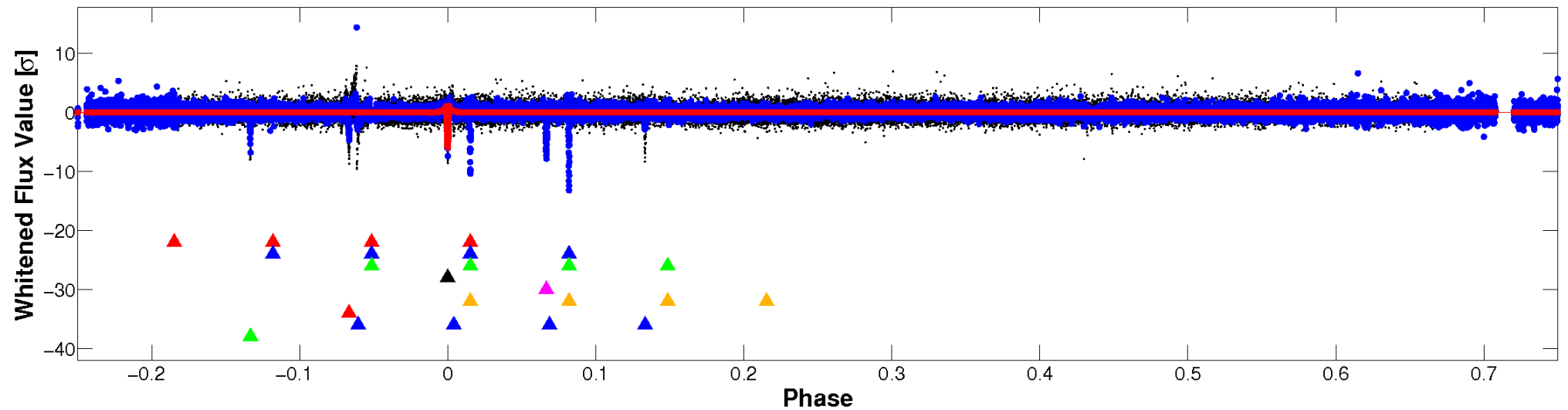


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

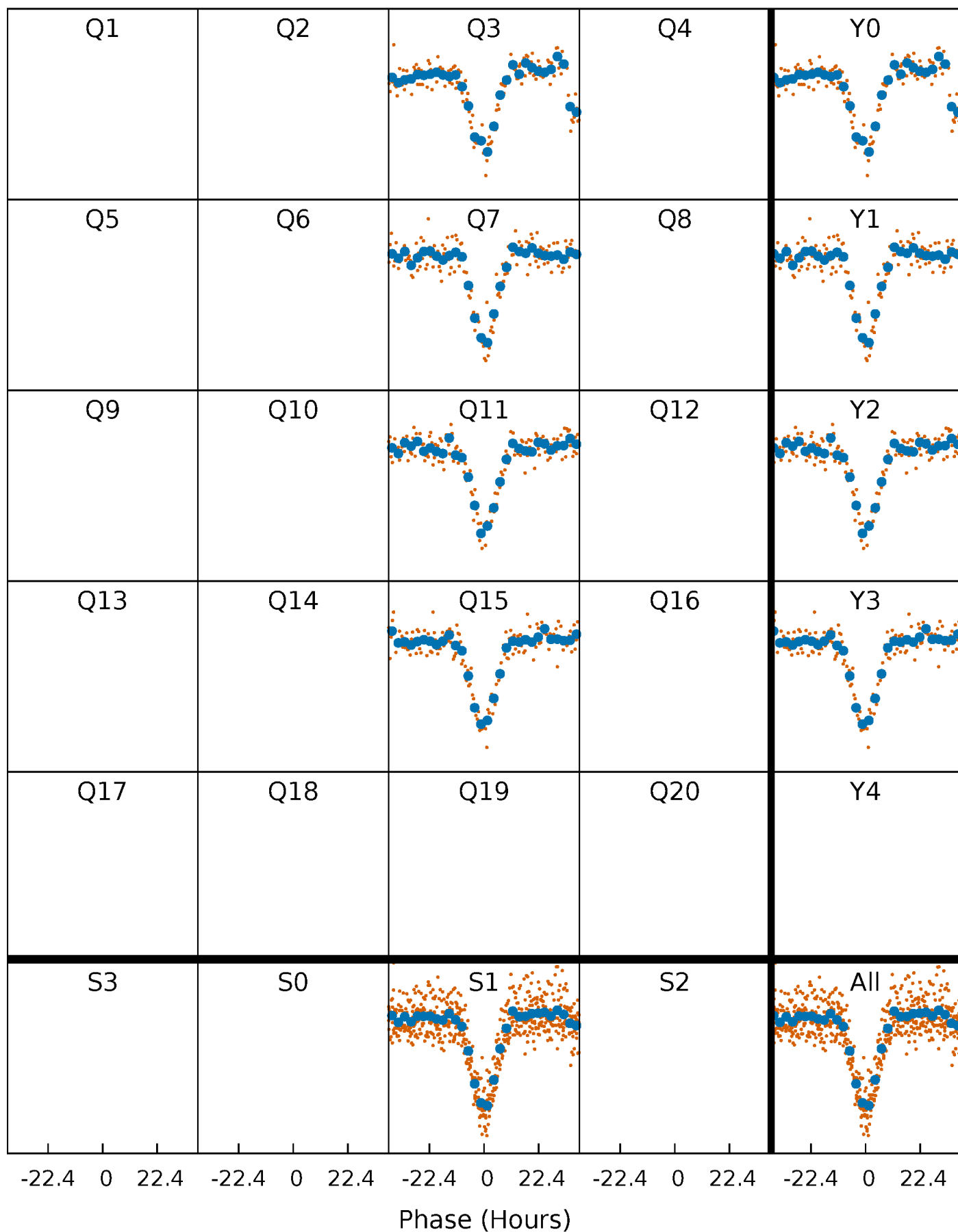


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



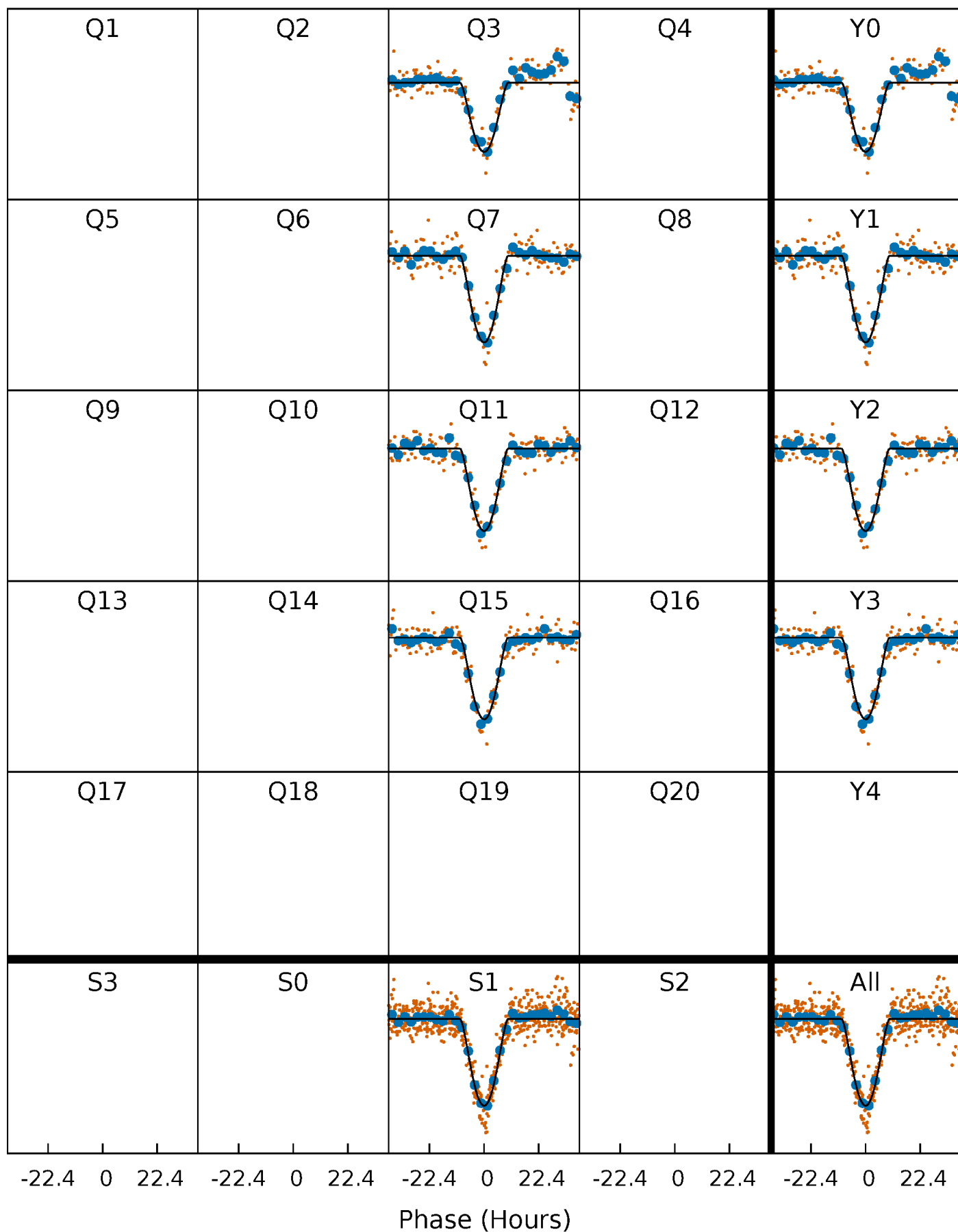
PDC Quarter-Phased Transit Curves

TCE 005114623-04 $P=389.280763$ Days $T_0=278.687192$ (BKJD)



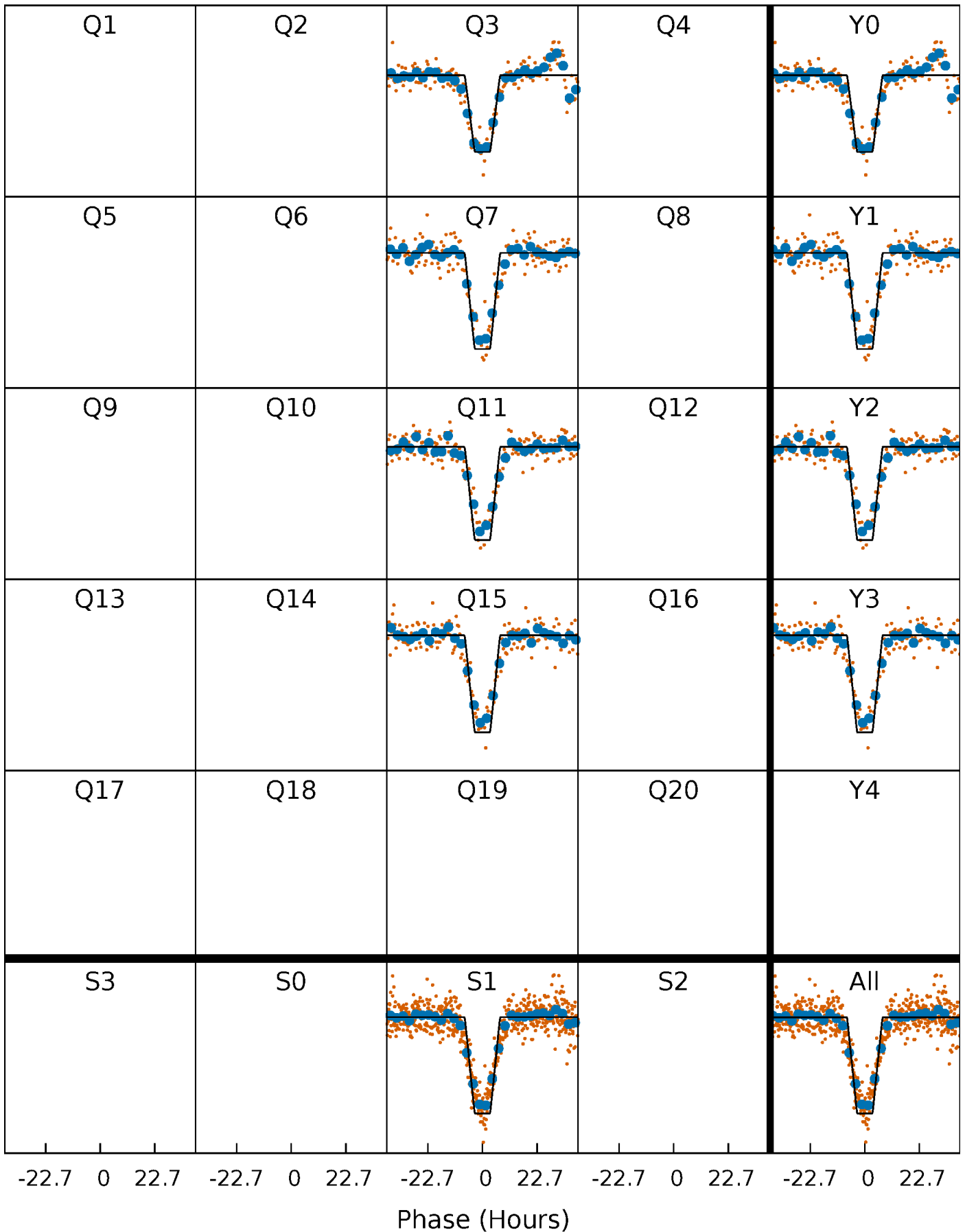
DV Quarter-Phased Transit Curves

TCE 005114623-04 P=389.280763 Days $T_0=278.687192$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

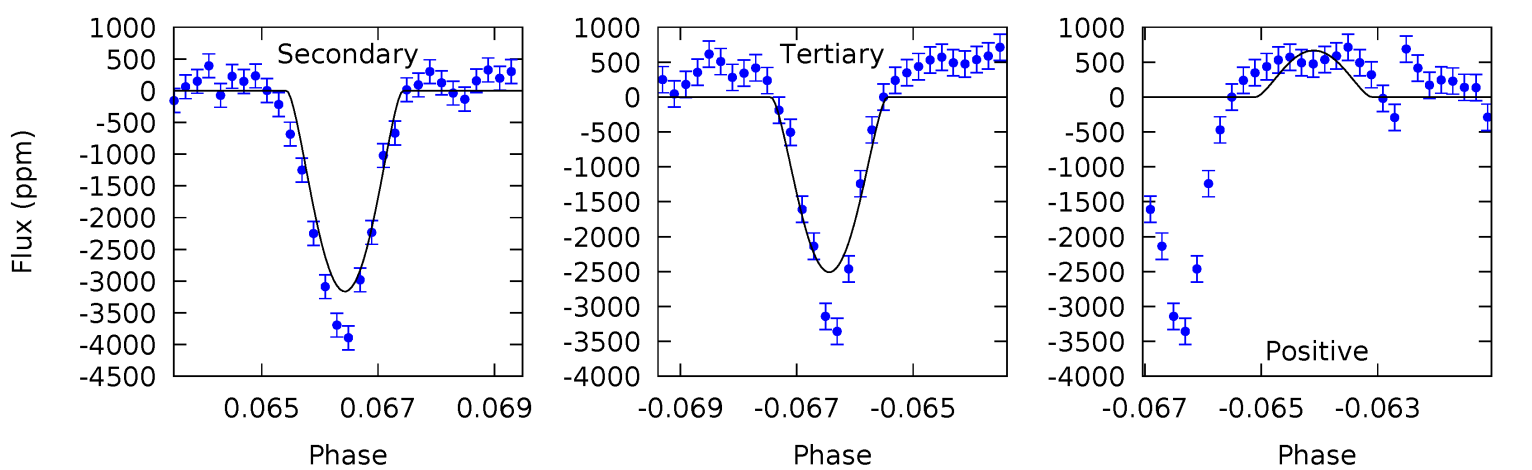
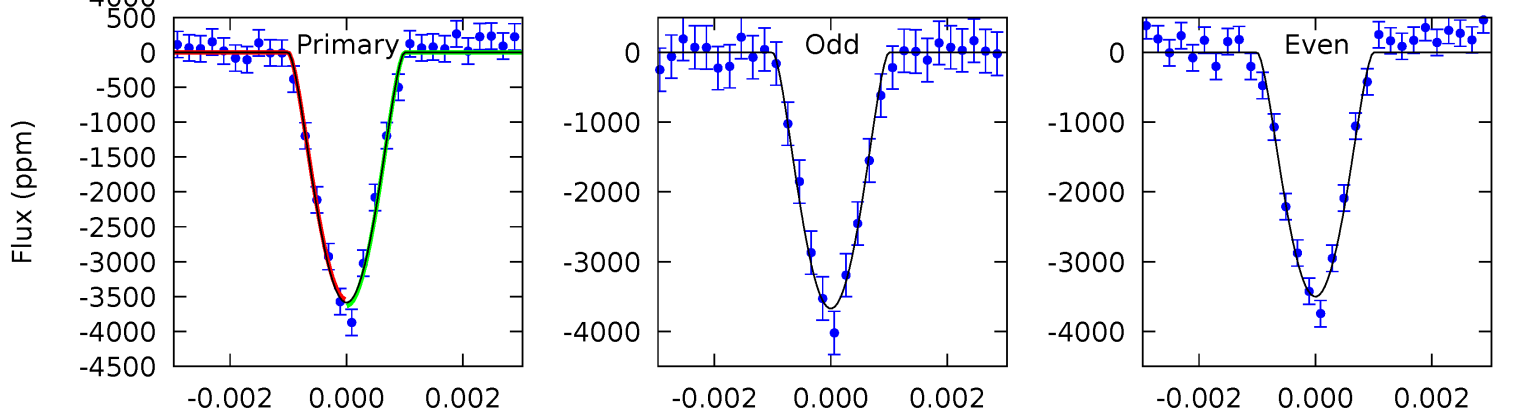
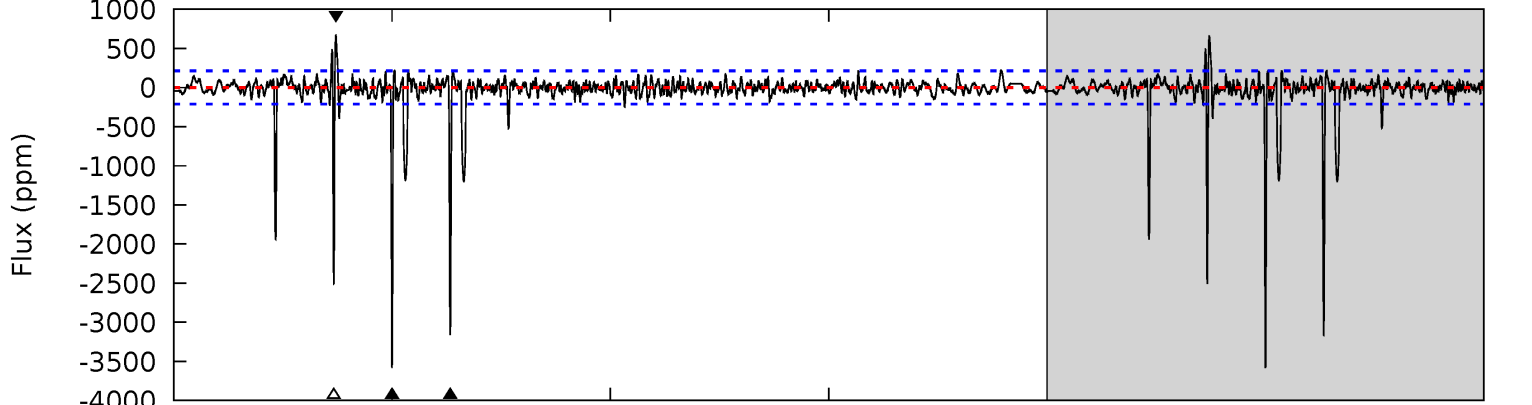
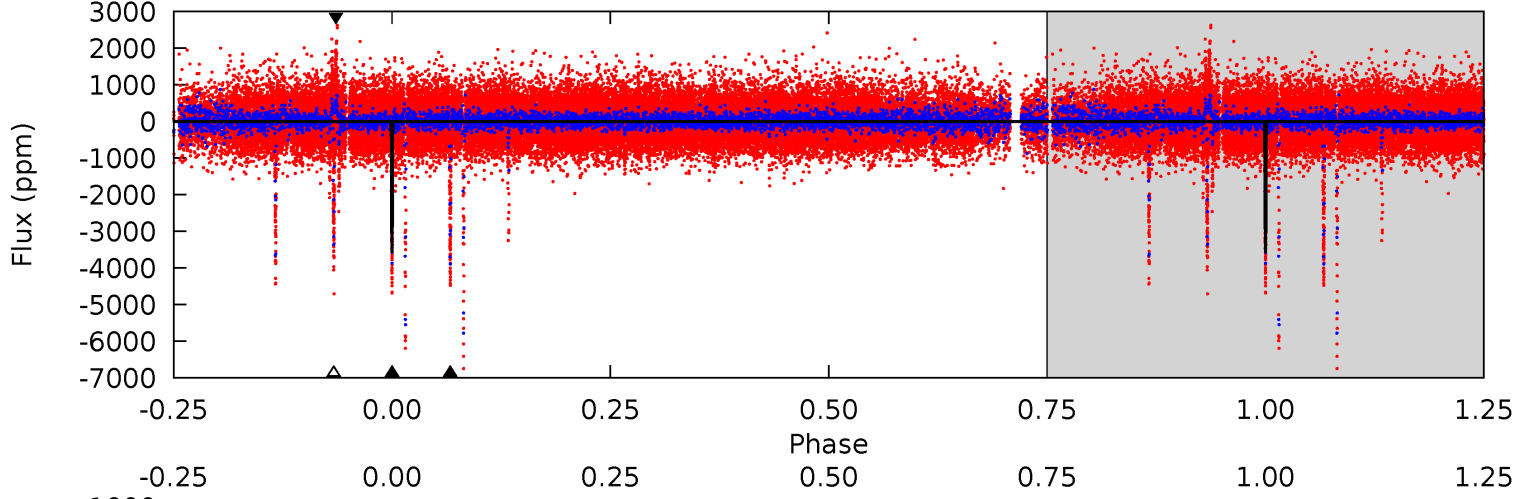
TCE 005114623-04 $P=389.272940$ Days $T_0=278.700773$ (BKJD)



DV Model-Shift Uniqueness Test

005114623-04, P = 389.280763 Days, E = 278.687192 Days

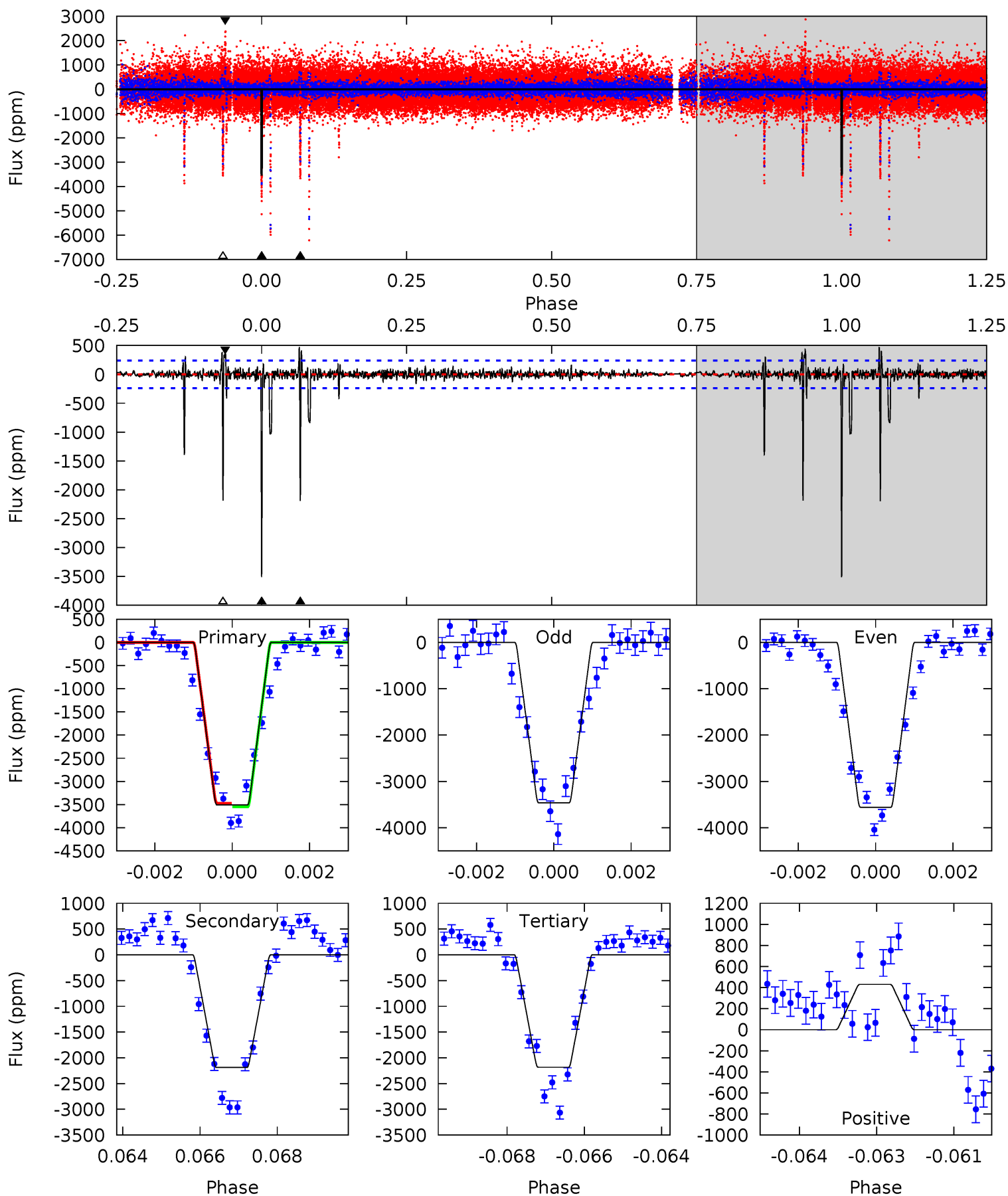
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
89.8	79.2	62.8	16.7	5.32	3.08	3.94	27.0	73.1	16.4	62.5	2.09	1.01	0.16	1.18



Alt Model-Shift Uniqueness Test

005114623-04, P = 389.272940 Days, E = 278.700773 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
78.8	49.1	49.0	9.67	5.37	3.15	2.68	29.8	69.1	0.12	39.5	1.08	1.02	0.12	0.87



Stellar Parameters For KIC 005114623

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6029^{+210}_{-210}	$4.452^{+0.070}_{-0.210}$	$-0.080^{+0.250}_{-0.300}$	$0.998^{+0.330}_{-0.132}$	$1.025^{+0.153}_{-0.126}$	$1.451^{+0.427}_{-0.780}$
	+3%/-3%	+2%/-5%	+312%/-375%	+33%/-13%	+15%/-12%	+29%/-54%
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 005114623-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-3164 ± 40	$12.78^{+8.99}_{-7.30}$	369^{+29}_{-20}	4475^{+2104}_{-767}	11919^{+52074}_{-7781}
Alt.	-2188 ± 45	$9.70^{+8.23}_{-6.41}$	369^{+30}_{-20}	4609^{+3488}_{-921}	$13939^{+111239}_{-9977}$

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

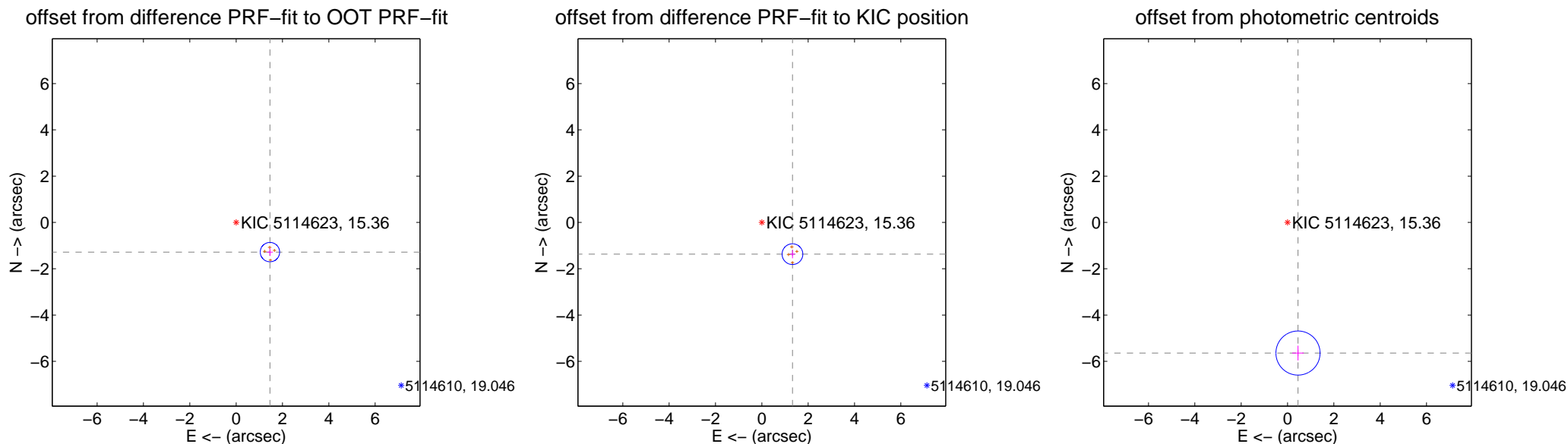
DV Centroid Data

Supplemental centroid analysis for 005114623-04. Kepler magnitude: 15.36. Transit SNR 47.10

There are 0 quarters with good PRF difference image offsets

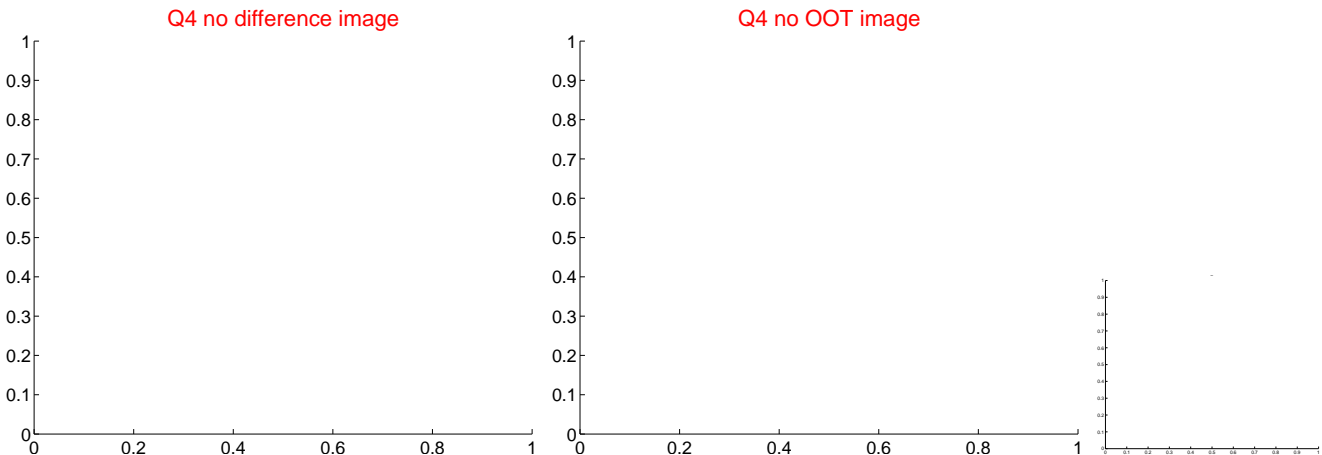
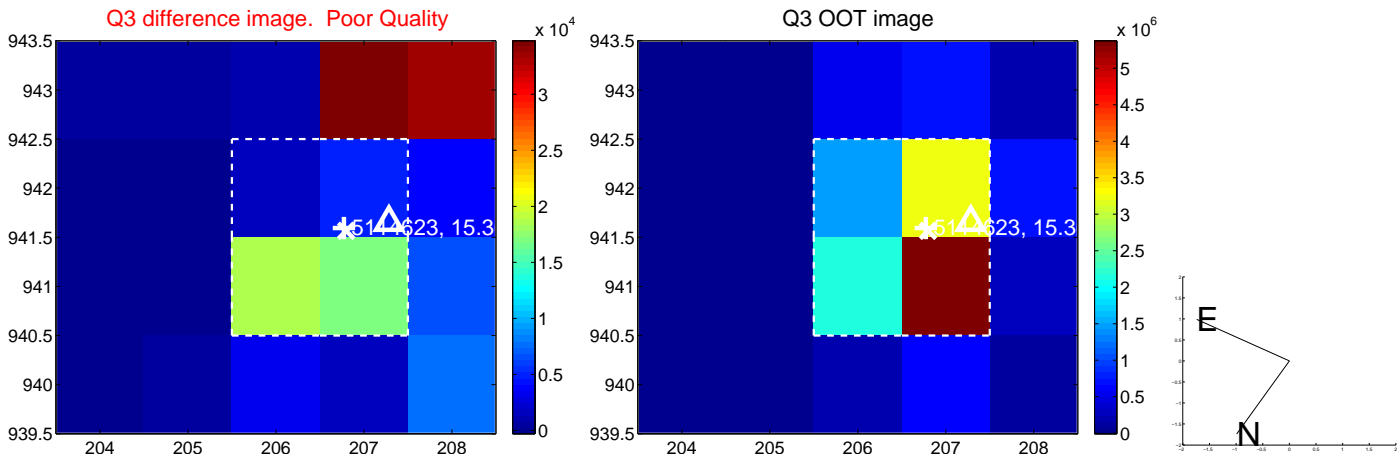
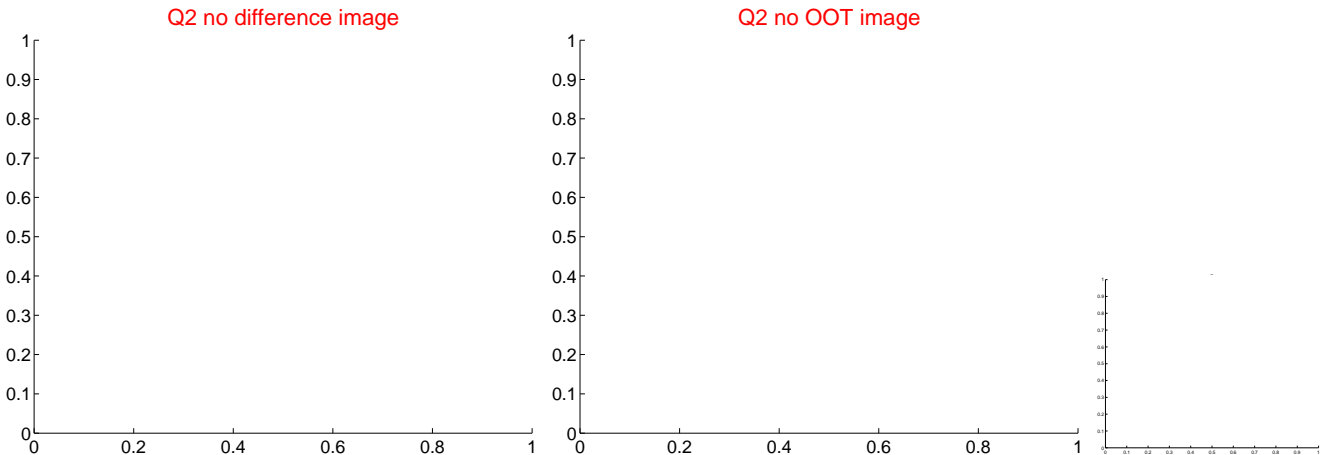
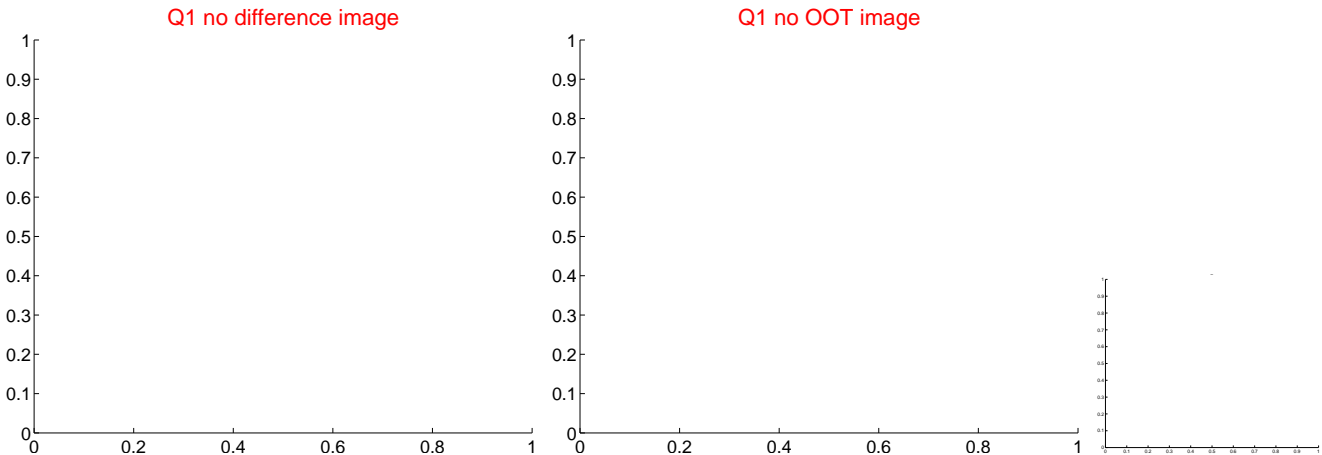
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.942 ± 0.139	13.93	-1.459 ± 0.122	-1.281 ± 0.159
PRF-fit source offset from KIC position	1.903 ± 0.149	12.76	-1.322 ± 0.110	-1.370 ± 0.178
photometric centroid source offset	5.66 ± 0.32	17.82	-0.45 ± 0.25	-5.64 ± 0.32

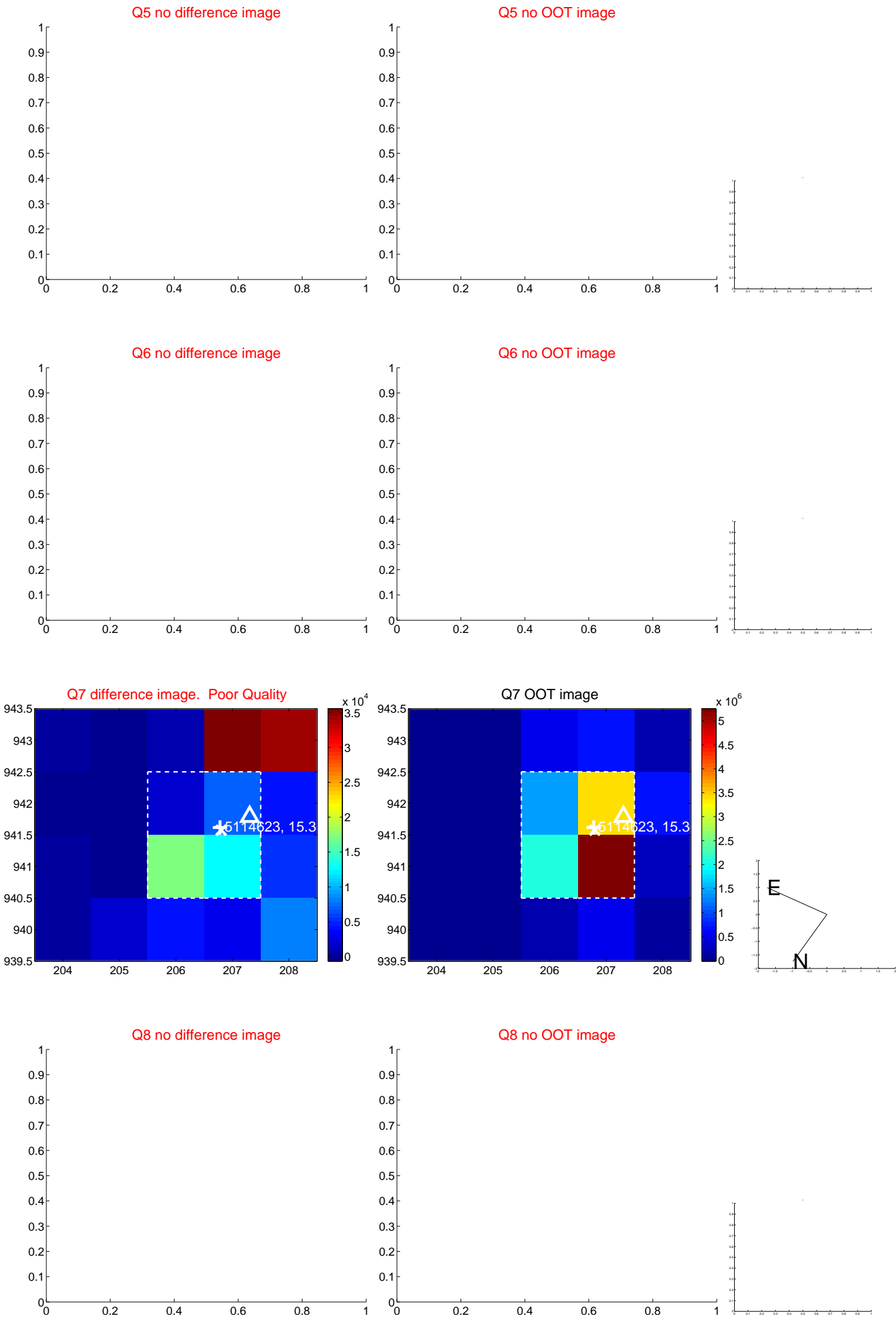


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

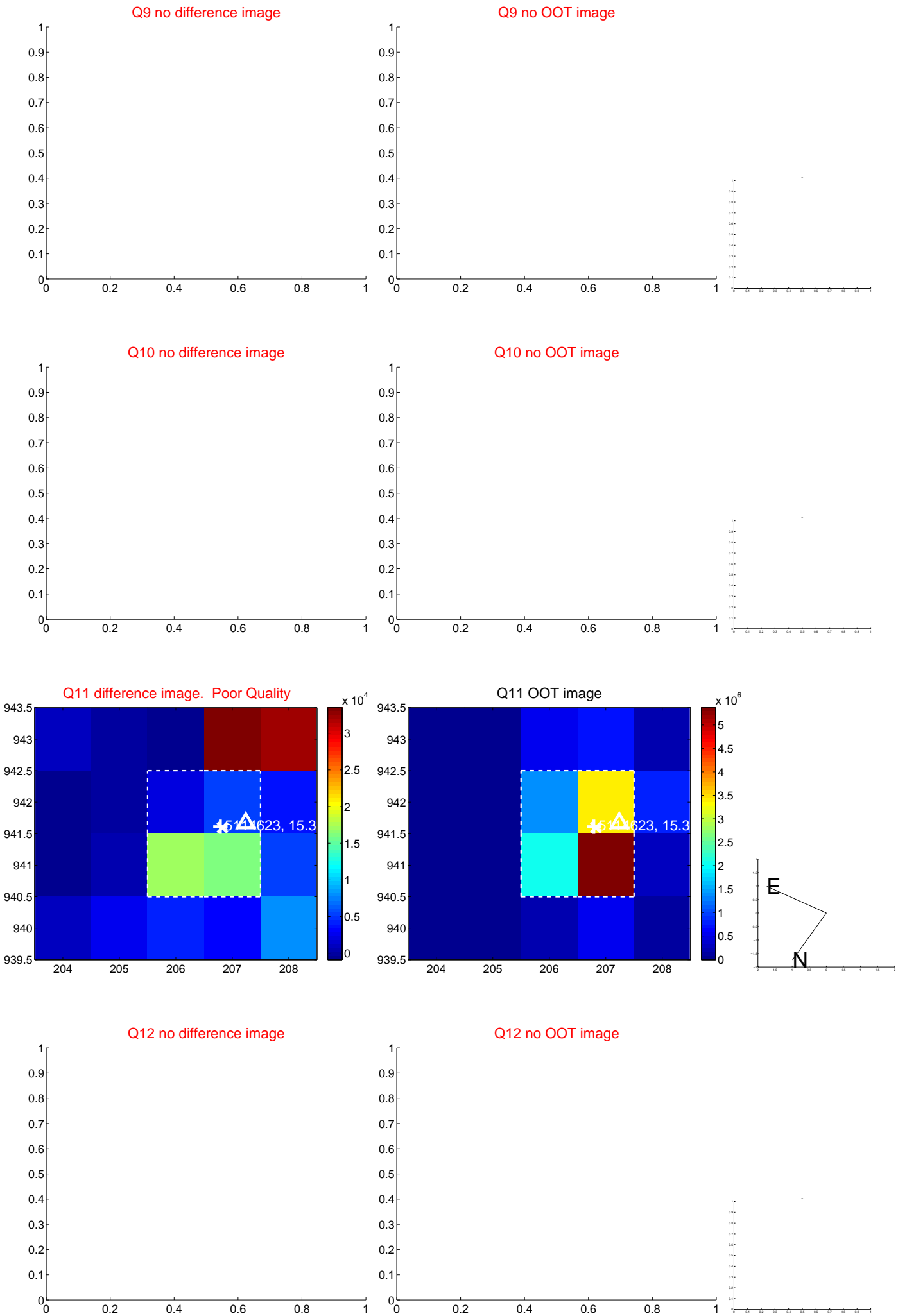
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



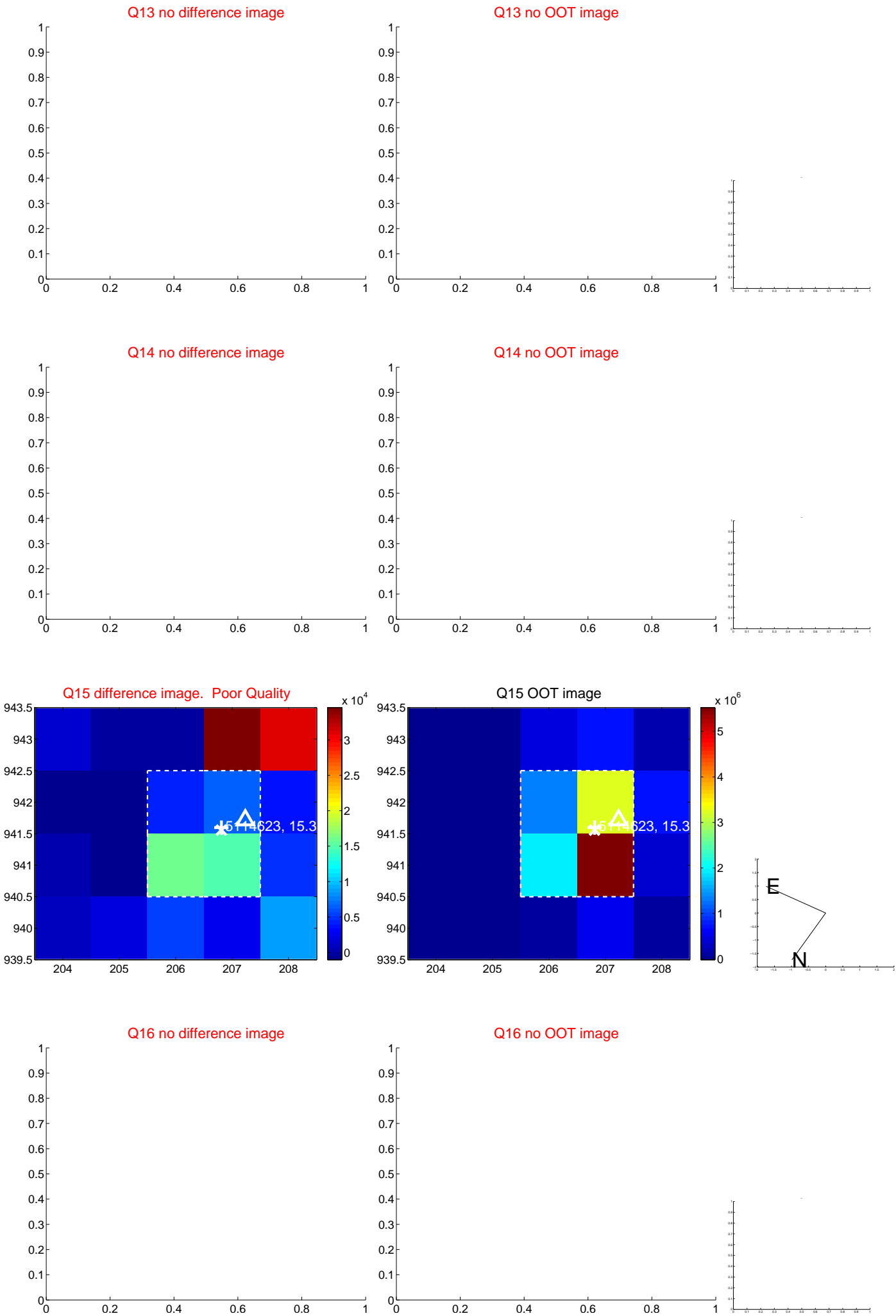
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



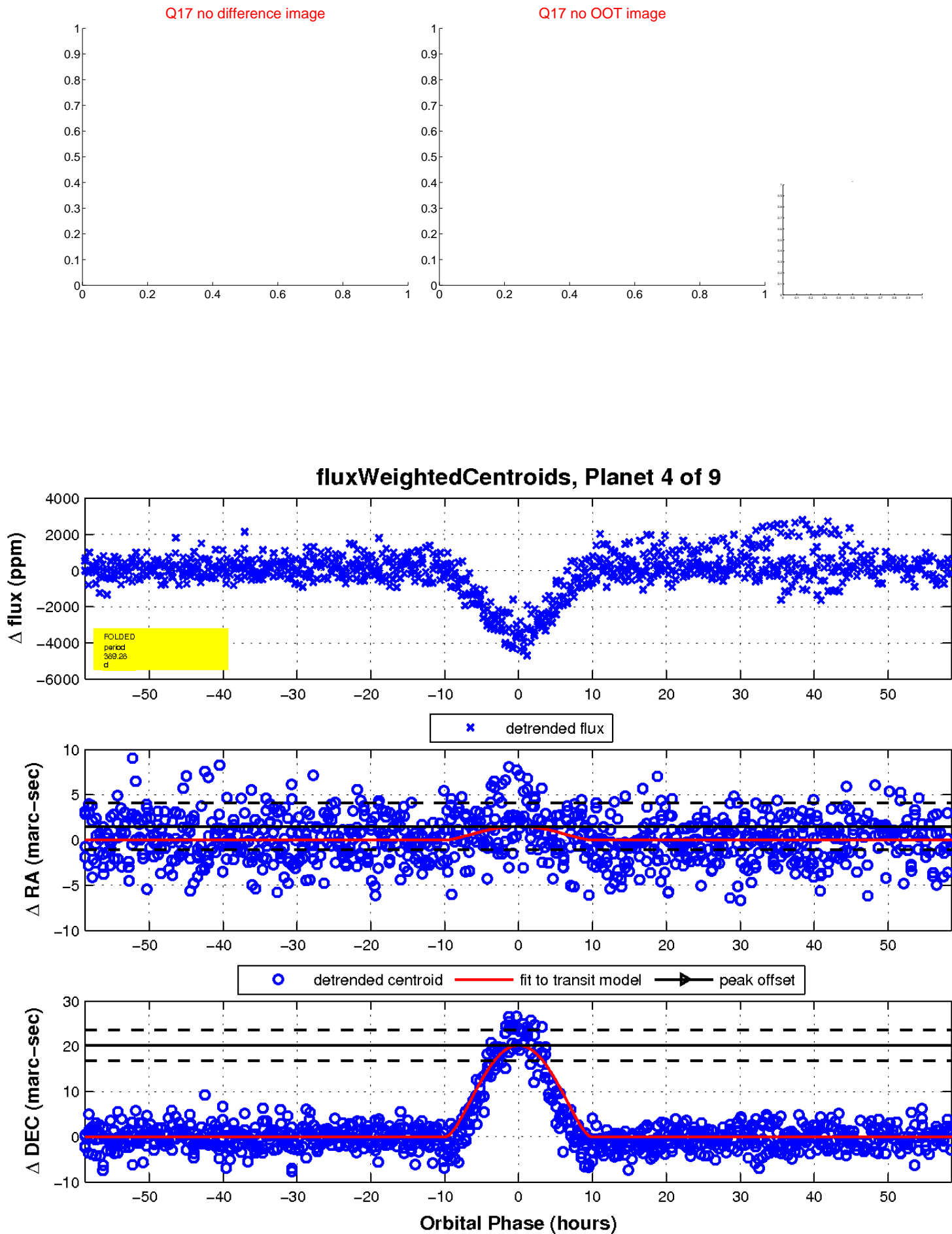
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

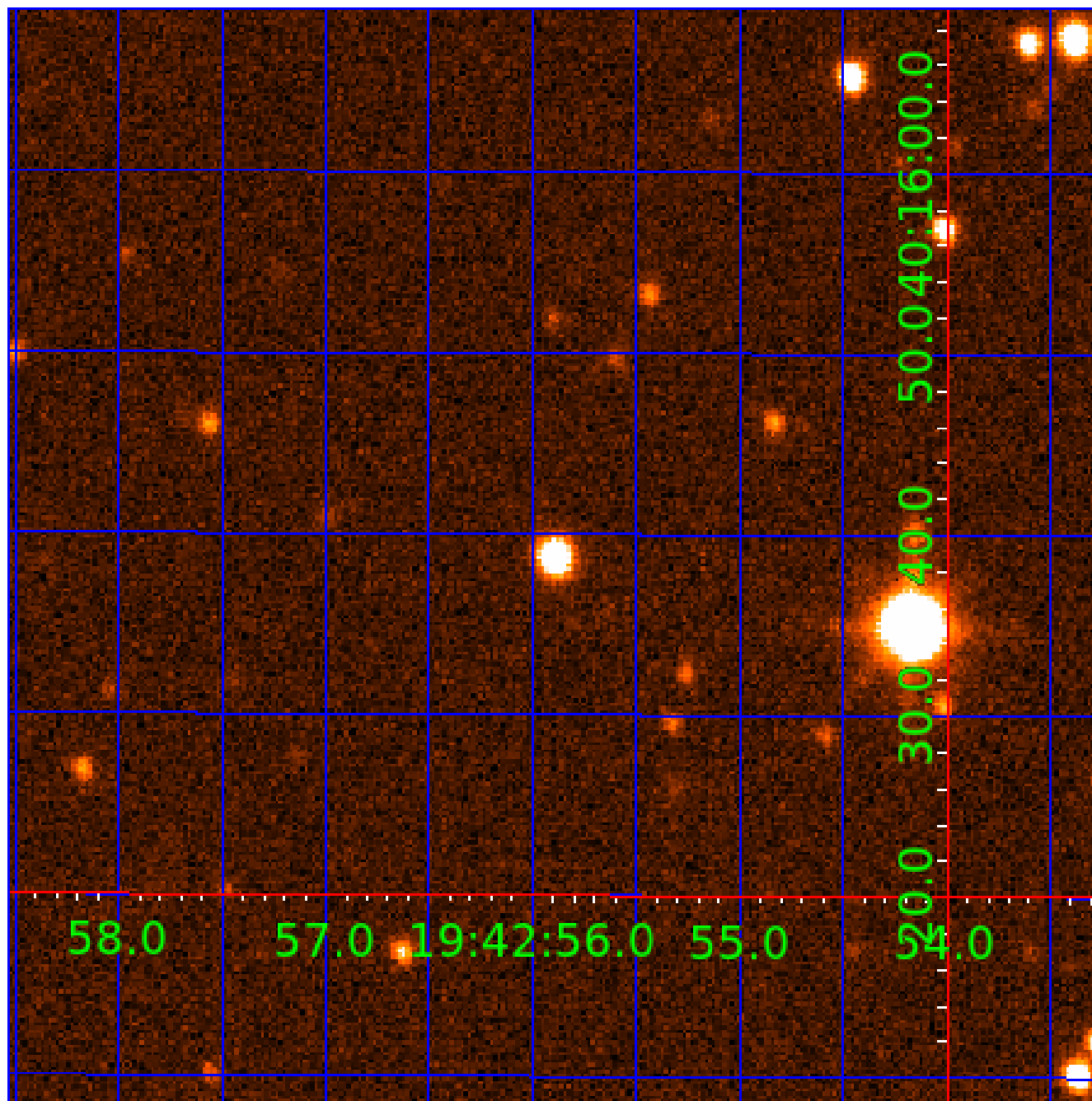


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
005114623-01	OBS	No	363.329250	284.636050	5278.6	13.048	54.2	60.4	1.00	6029	13.23	1.17
005114623-02	OBS	No	363.326947	310.595787	5246.9	12.643	56.5	56.8	1.00	6029	13.19	1.17
005114623-03	OBS	No	363.327653	336.550228	5137.8	13.809	48.3	48.8	1.00	6029	13.06	1.17
005114623-04	OBS	No	389.280763	278.687192	3576.5	19.563	45.6	47.1	1.00	6029	10.99	1.06
005114623-05	OBS	No	389.272274	304.639583	3718.4	20.450	44.9	46.4	1.00	6029	11.03	1.06
005114623-06	OBS	No	363.314235	362.530688	5113.3	12.701	37.9	40.6	1.00	6029	13.03	1.17
005114623-07	OBS	No	389.281035	252.729537	2866.9	17.496	30.8	34.5	1.00	6029	8.98	1.06
005114623-08	OBS	No	364.132836	330.599616	2367.5	22.467	29.3	24.9	1.00	6029	9.08	1.16
005114623-09	OBS	No	389.246077	226.865752	3358.8	16.550	22.5	28.7	1.00	6029	10.70	1.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005114623-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—PERIOD_ALIAS_DV—PERIOD_ALIAS_ALT—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
005114623-02	OBS	FP	0.00	1	1	1	1	IS_SEC_TCE—CENT_RESOLVED_OFFSET—EPHEM_MATCH
005114623-03	OBS	FP	0.00	1	0	0	1	SAME_NTL_PERIOD—CENT_FEW_DIFFS—EPHEM_MATCH
005114623-04	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_MARSHALL—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
005114623-05	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_MARSHALL—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
005114623-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS
005114623-07	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
005114623-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005114623-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_ZUMA—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST

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 005114623-05

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
005114623-05	5114623	003858884-02	3858884	15:1	7285.7	9	0	9.28	15.36	90.67	Cross-Talk	0	2.73	0.02

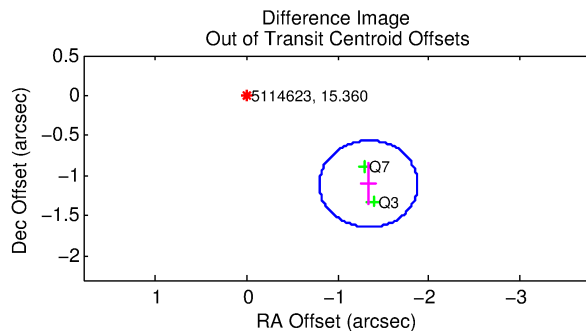
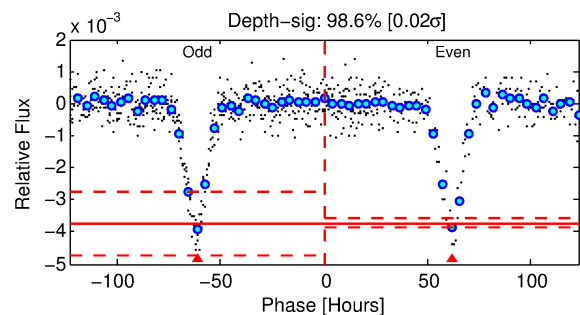
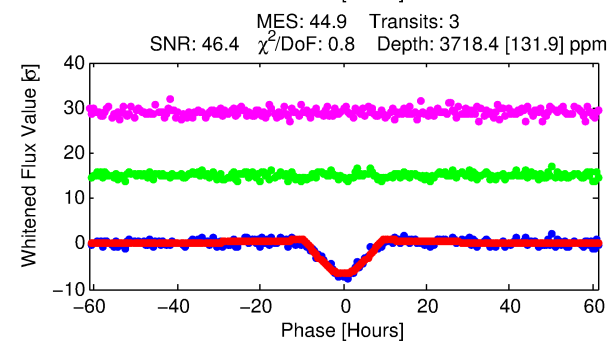
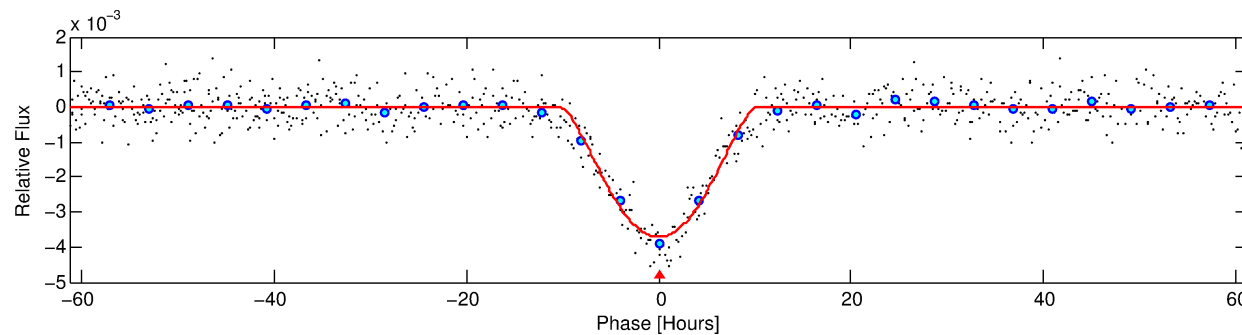
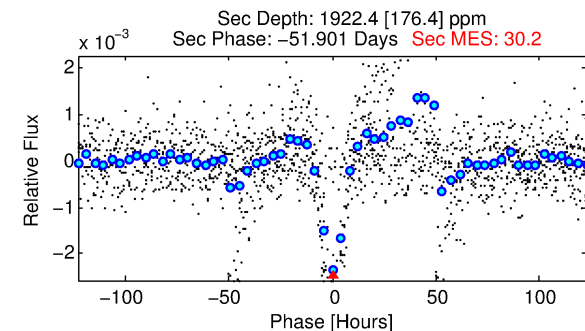
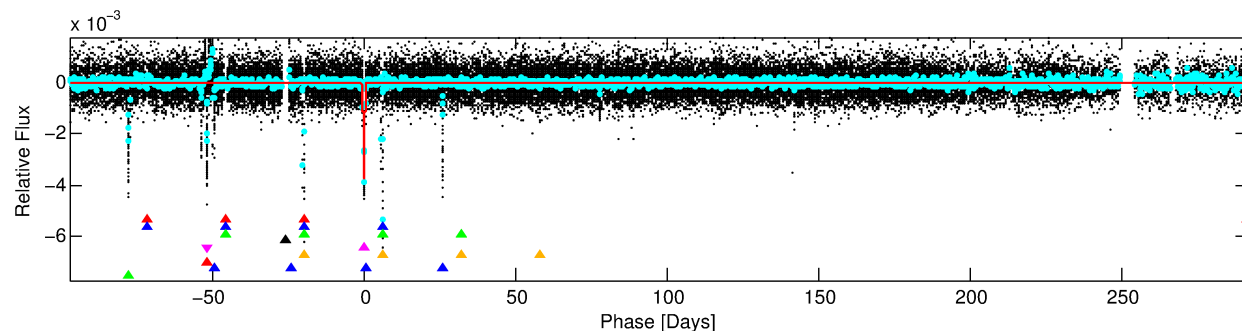
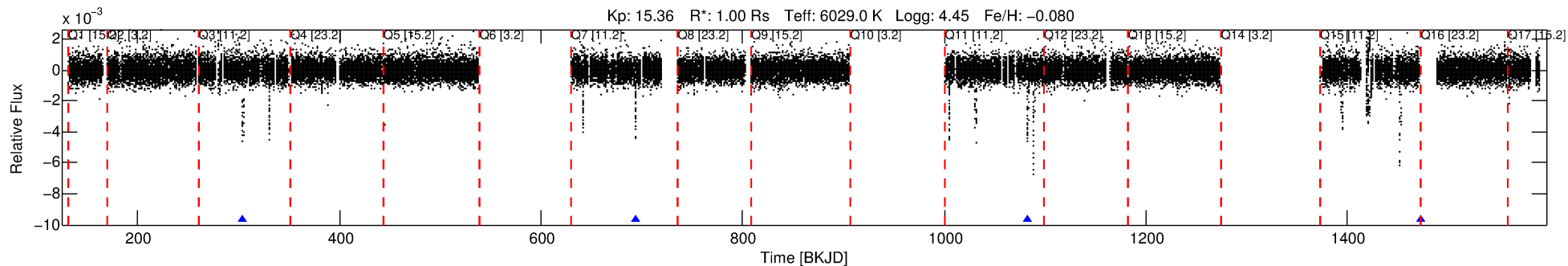
Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match 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: 5114623 Candidate: 5 of 9 Period: 389.272 d

KOI: K03827 Corr: No Ephemeris Match

Kp: 15.36 R*: 1.00 Rs Teff: 6029.0 K Logg: 4.45 Fe/H: -0.080



DV Fit Results:

Period = 389.27227 [0.00581] d
Epoch = 304.6396 [0.0075] BKJD
Rp/R* = 0.1013 [0.0733]
a/R* = 67.90 [9.91]
b = 1.00 [0.11]
Seff = 1.06 [0.44]
Teq = 259 [27] K
Rp = 11.03 [8.78] Re
a = 1.0535 [0.2877] AU
Ag = 9646.34 [14486.36] [0.67σ]
Teffp = 3967 [1445] K [2.57σ]

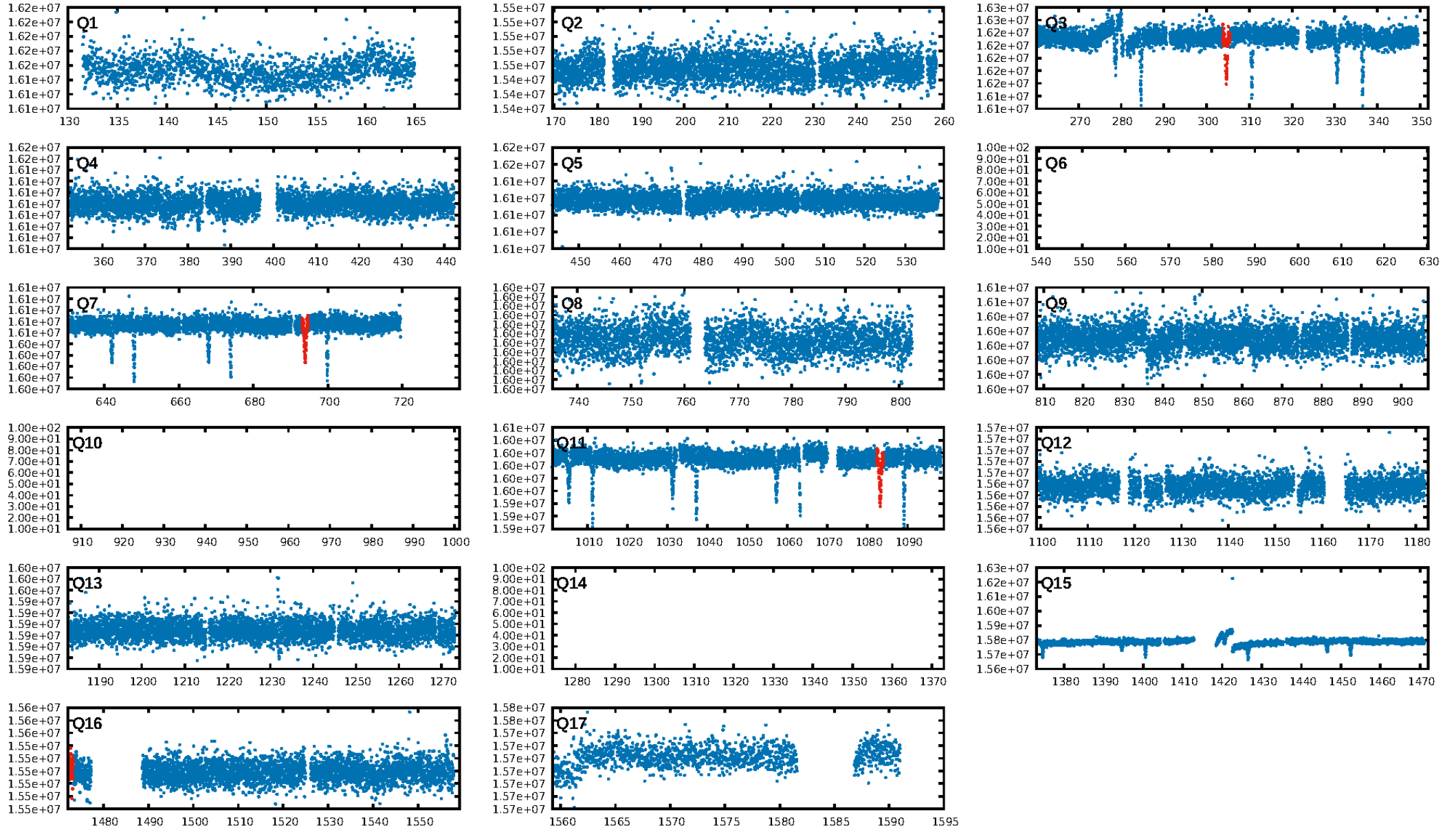
DV Diagnostic Results:

ShortPeriod-sig: 1.9% [0.02σ]
LongPeriod-sig: 0.6% [0.01σ]
ModelChiSquare2-sig: 89.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.20e-137
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.2188
Centroid-sig: 0.0%
Centroid-so: 5.992 arcsec [18.25σ]
OotOffset-rm: 1.735 arcsec [9.62σ]
KicOffset-rm: 1.695 arcsec [9.47σ]
OotOffset-st: 0/2/0/0 [2]
KicOffset-st: 0/2/0/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 0.50 [1/2]

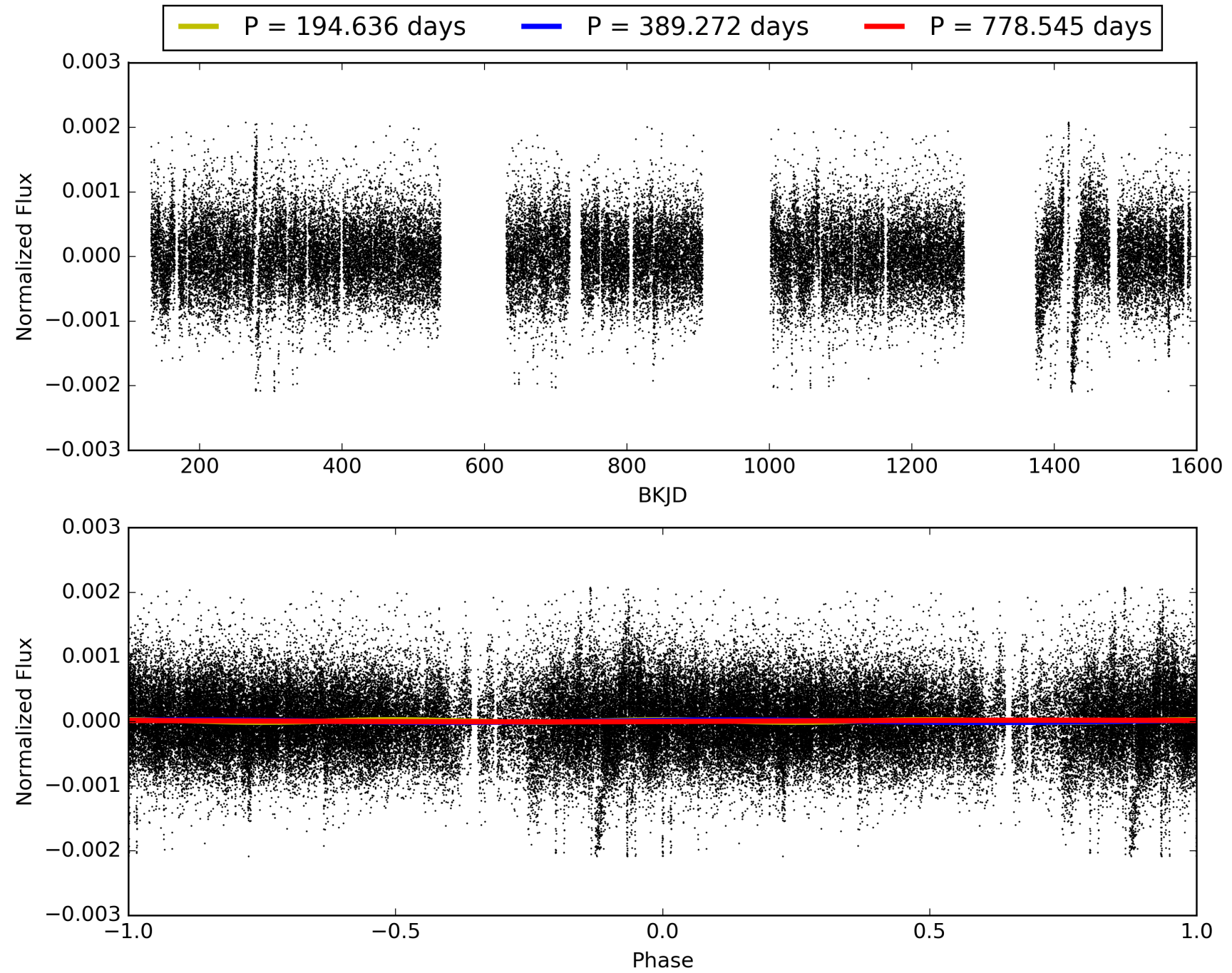
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:08:51 Z

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

TCE 005114623-05, PDC Light Curves

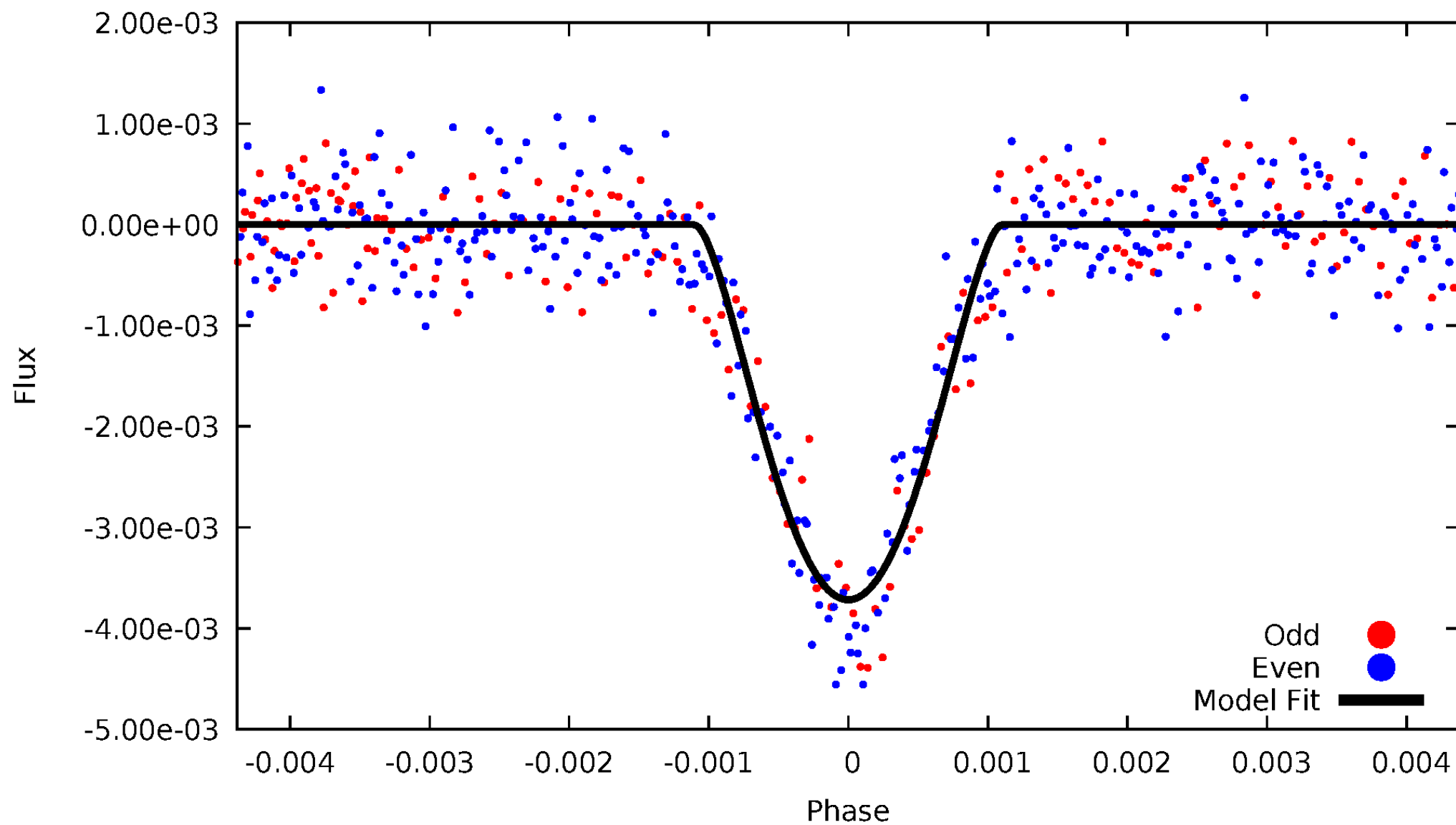


TCE 005114623-05



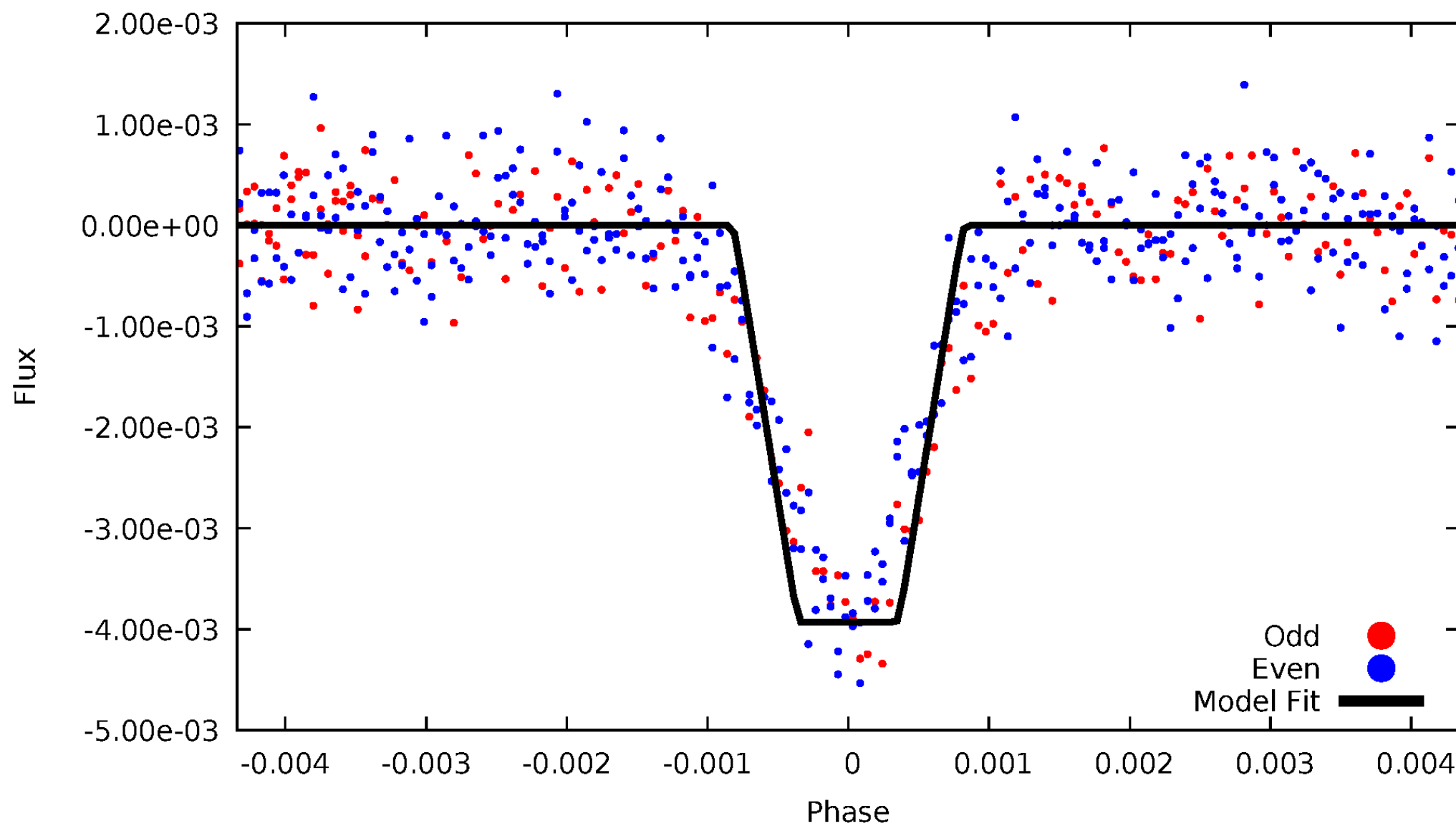
DV Odd/Even

TCE 005114623-05

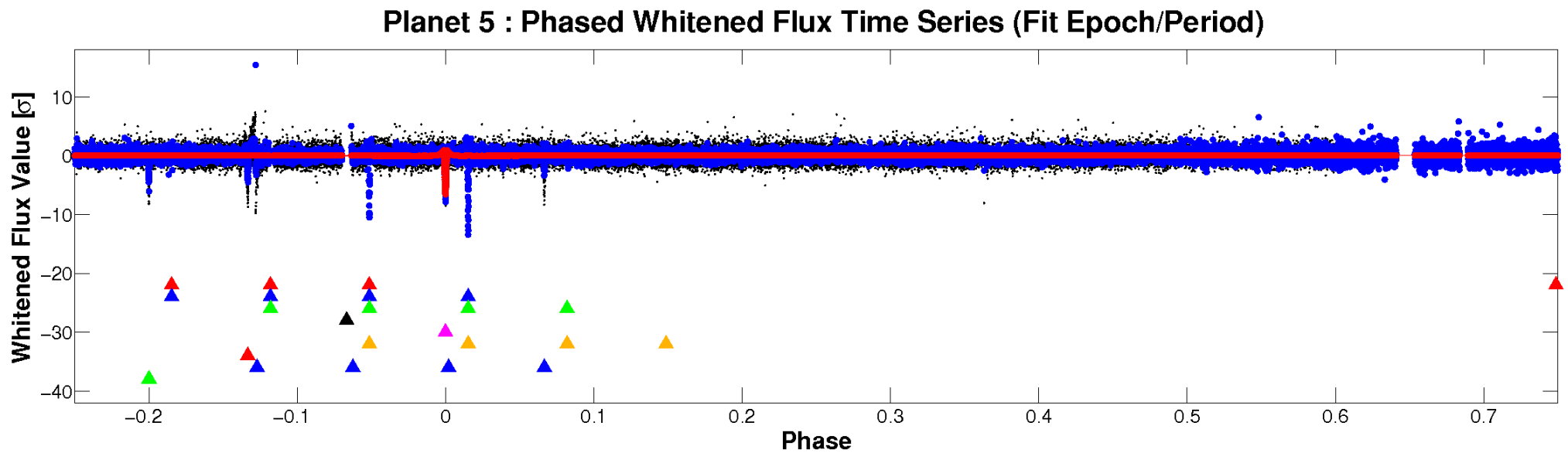
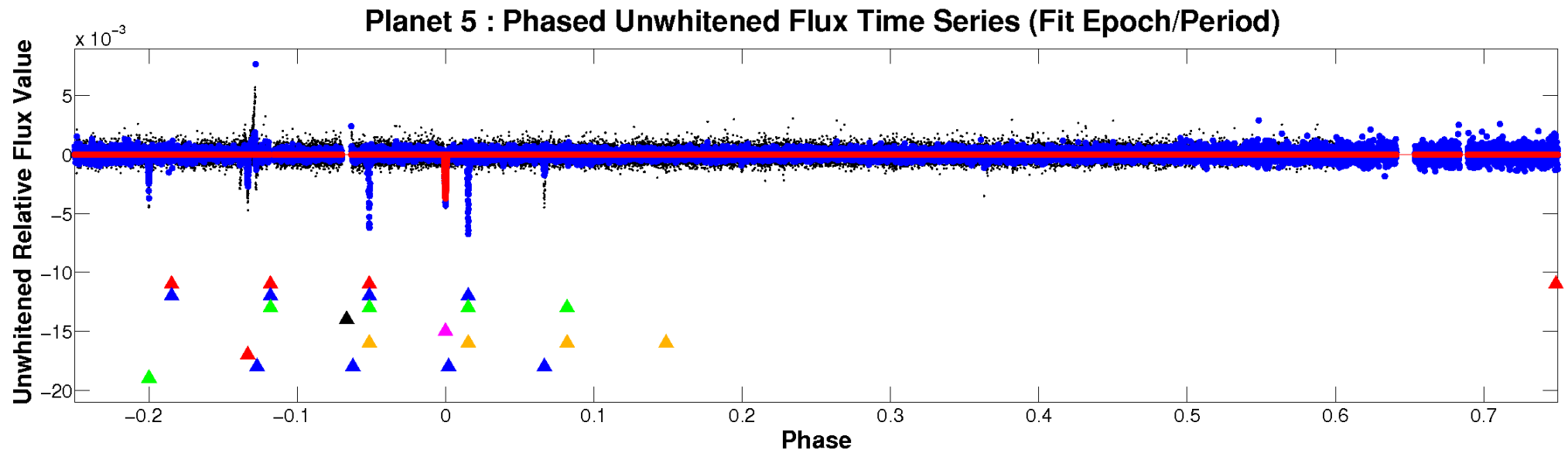


ALT Odd/Even

TCE 005114623-05

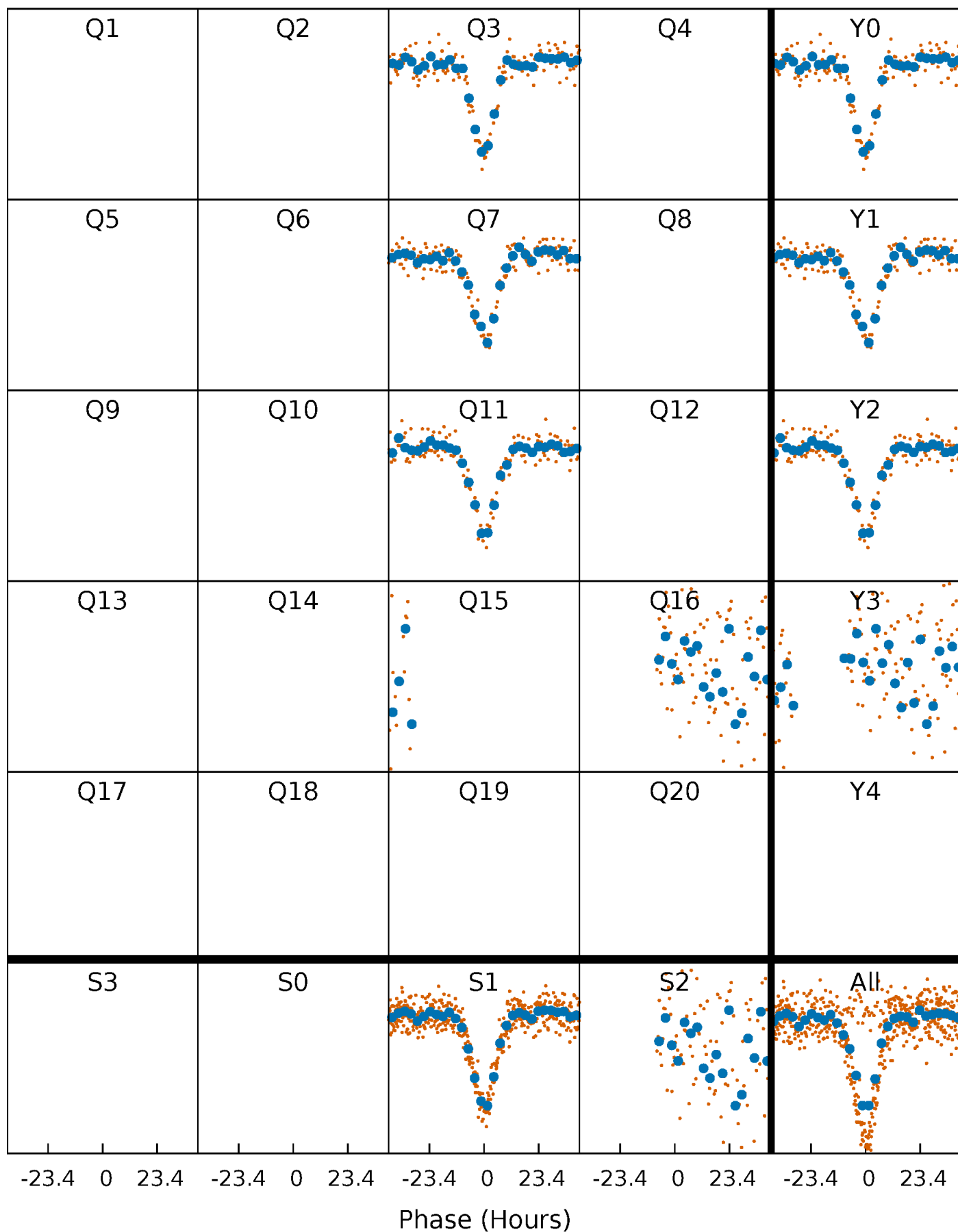


Non-Whitened Vs. Whitened Light Curve



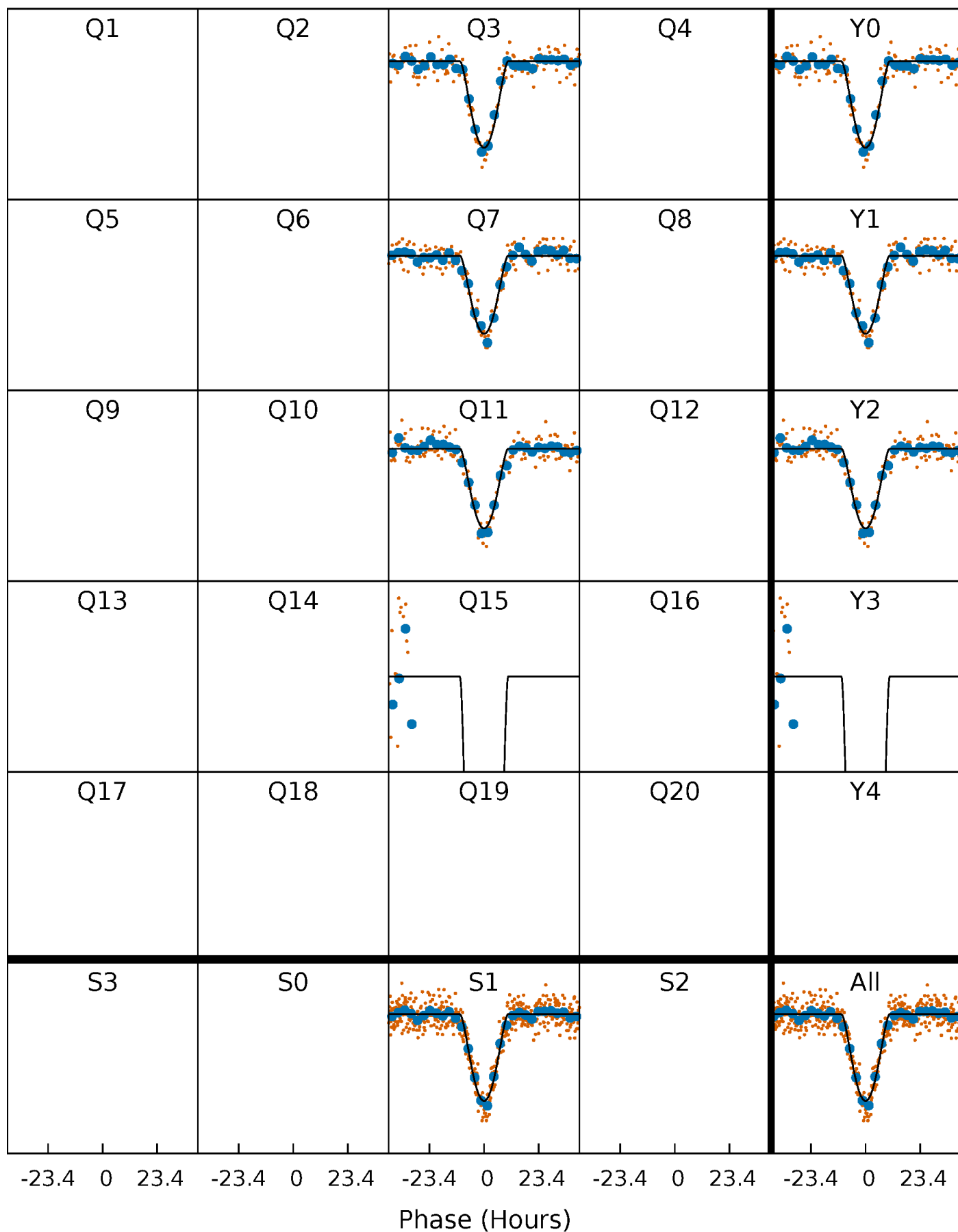
PDC Quarter-Phased Transit Curves

TCE 005114623-05 $P=389.272274$ Days $T_0=304.639583$ (BKJD)



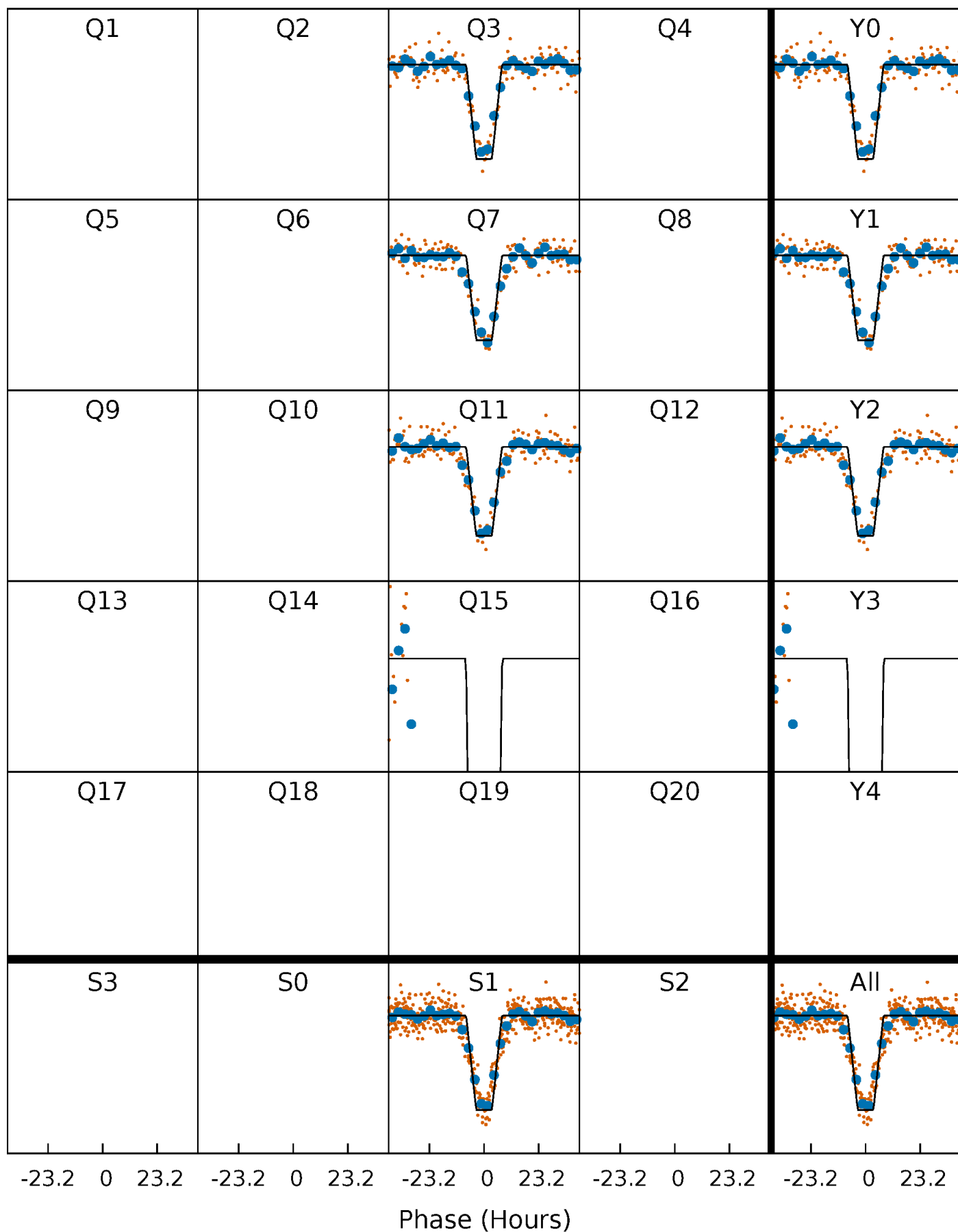
DV Quarter-Phased Transit Curves

TCE 005114623-05 $P=389.272274$ Days $T_0=304.639583$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

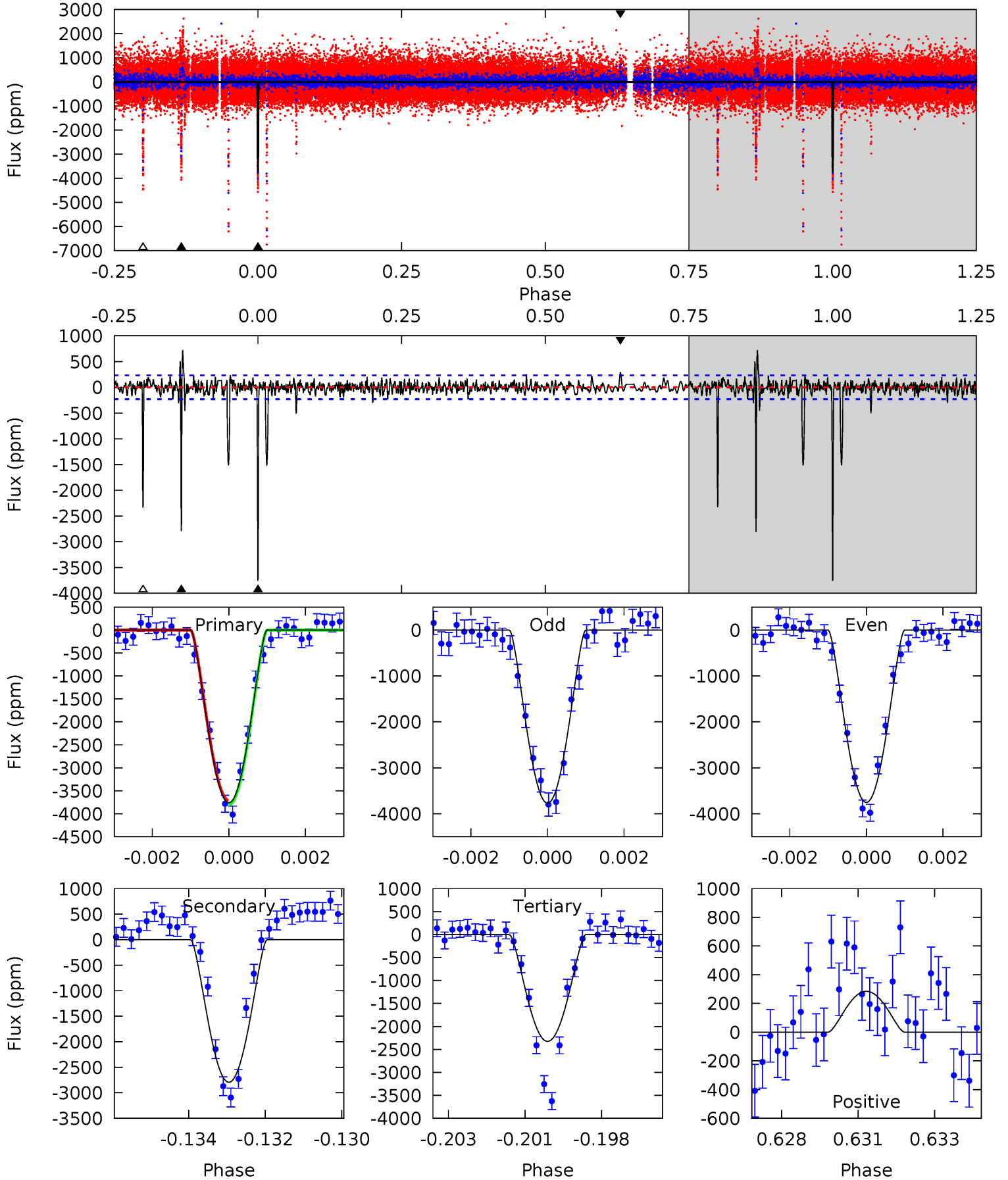
TCE 005114623-05 $P=389.279751$ Days $T_0=304.633501$ (BKJD)



DV Model-Shift Uniqueness Test

005114623-05, P = 389.272274 Days, E = 304.639583 Days

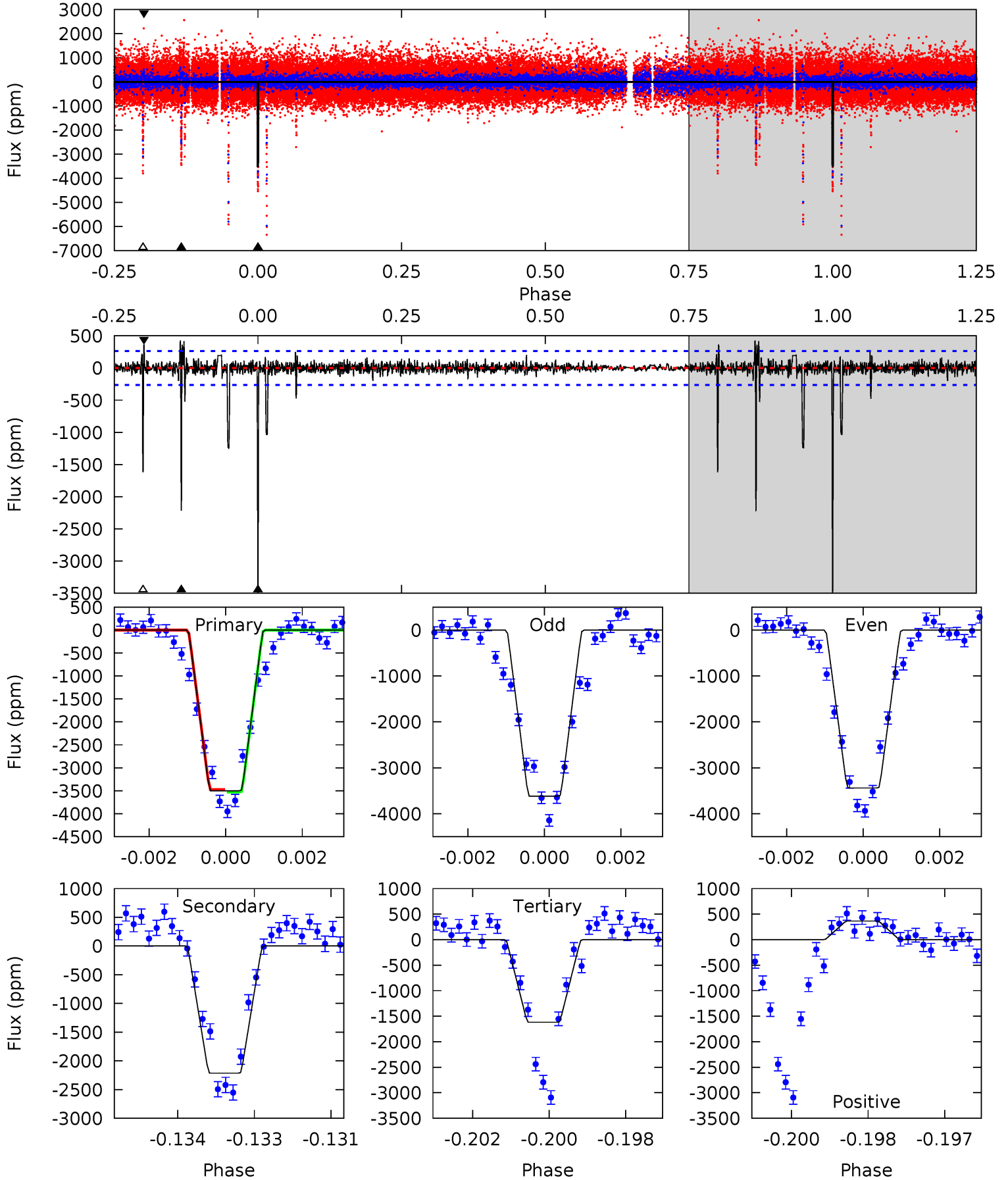
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
85.6	63.7	53.0	6.48	5.31	3.06	3.08	32.7	79.1	10.7	57.2	0.17	1.00	0.16	1.06



Alt Model-Shift Uniqueness Test

005114623-05, P = 389.279751 Days, E = 304.633501 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
71.2	45.0	32.9	7.43	5.36	3.14	1.93	38.3	63.7	12.1	37.6	1.71	0.99	0.11	0.58



Stellar Parameters For KIC 005114623

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6029^{+210}_{-210}	$4.452^{+0.070}_{-0.210}$	$-0.080^{+0.250}_{-0.300}$	$0.998^{+0.330}_{-0.132}$	$1.025^{+0.153}_{-0.126}$	$1.451^{+0.427}_{-0.780}$
	+3%/-3%	+2%/-5%	+312%/-375%	+33%/-13%	+15%/-12%	+29%/-54%
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 005114623-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2795 ± 44	$12.70^{+8.29}_{-7.07}$	369^{+28}_{-21}	4367^{+1935}_{-691}	10483^{+40971}_{-6654}
Alt.	-2213 ± 49	$9.33^{+8.12}_{-6.32}$	367^{+28}_{-20}	4706^{+3580}_{-966}	$15416^{+128295}_{-10909}$

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

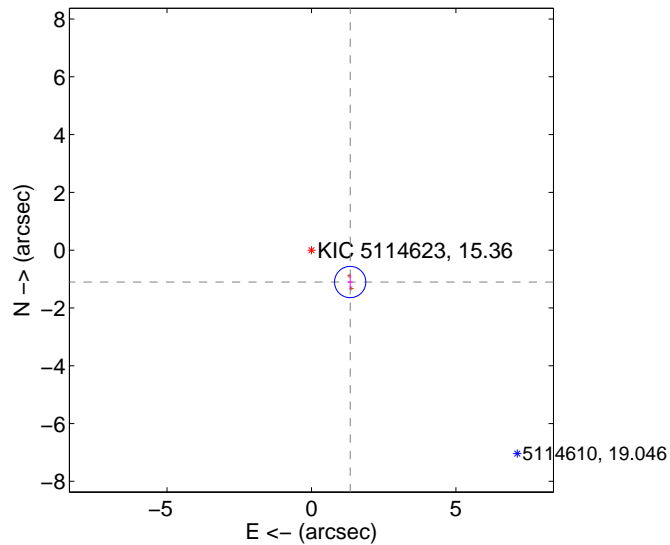
Supplemental centroid analysis for 005114623-05. Kepler magnitude: 15.36. Transit SNR 46.43

There are 0 quarters with good PRF difference image offsets

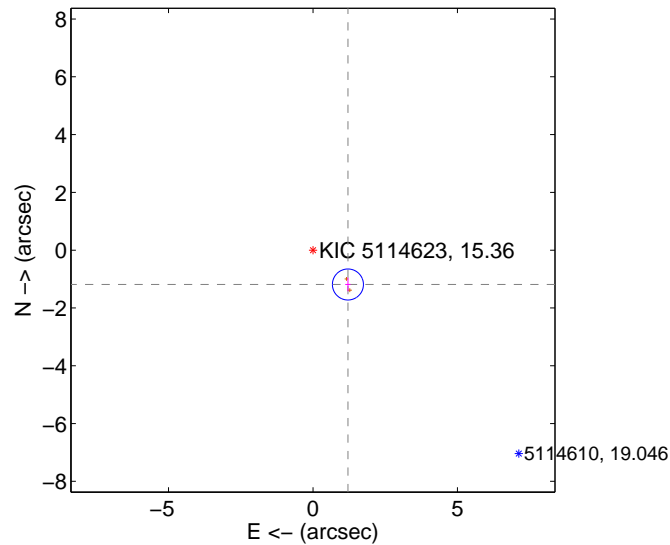
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.735 ± 0.180	9.62	-1.340 ± 0.086	-1.103 ± 0.264
PRF-fit source offset from KIC position	1.695 ± 0.179	9.47	-1.209 ± 0.094	-1.188 ± 0.237
photometric centroid source offset	5.99 ± 0.33	18.25	-0.28 ± 0.26	-5.99 ± 0.33

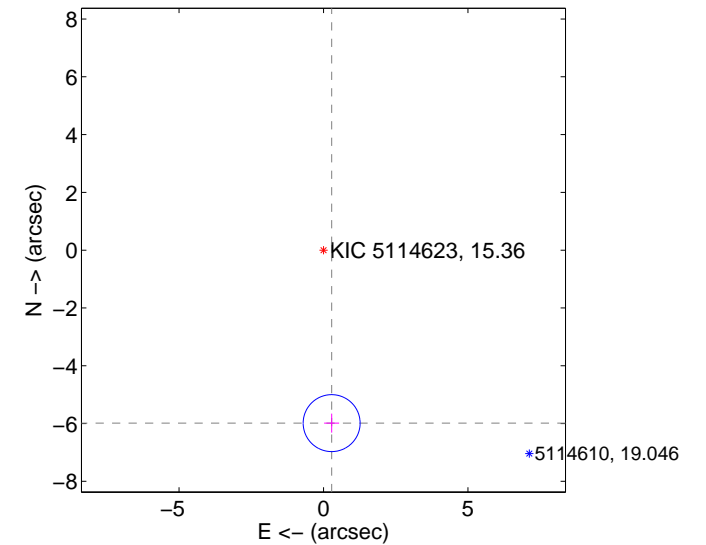
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

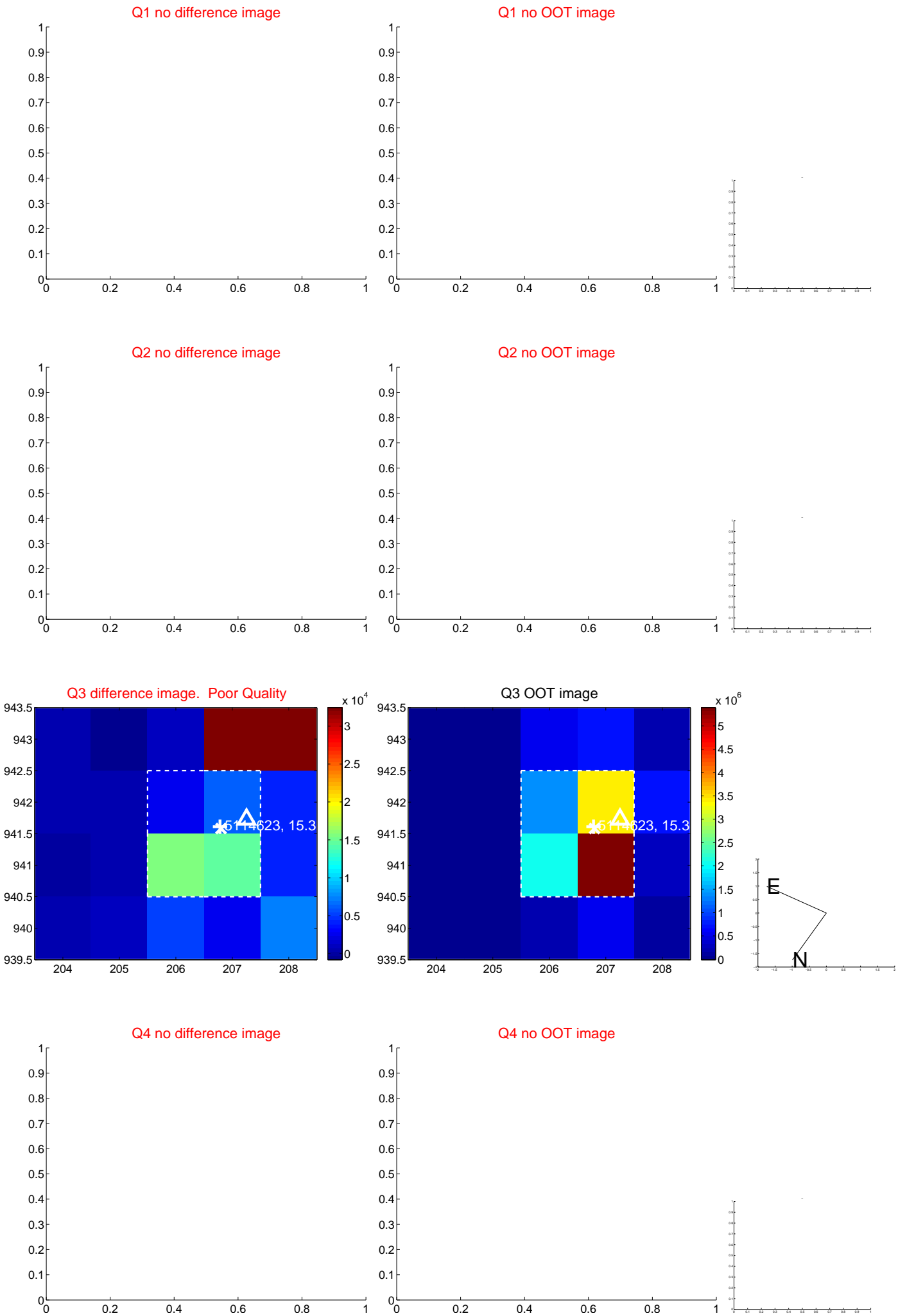


offset from photometric centroids

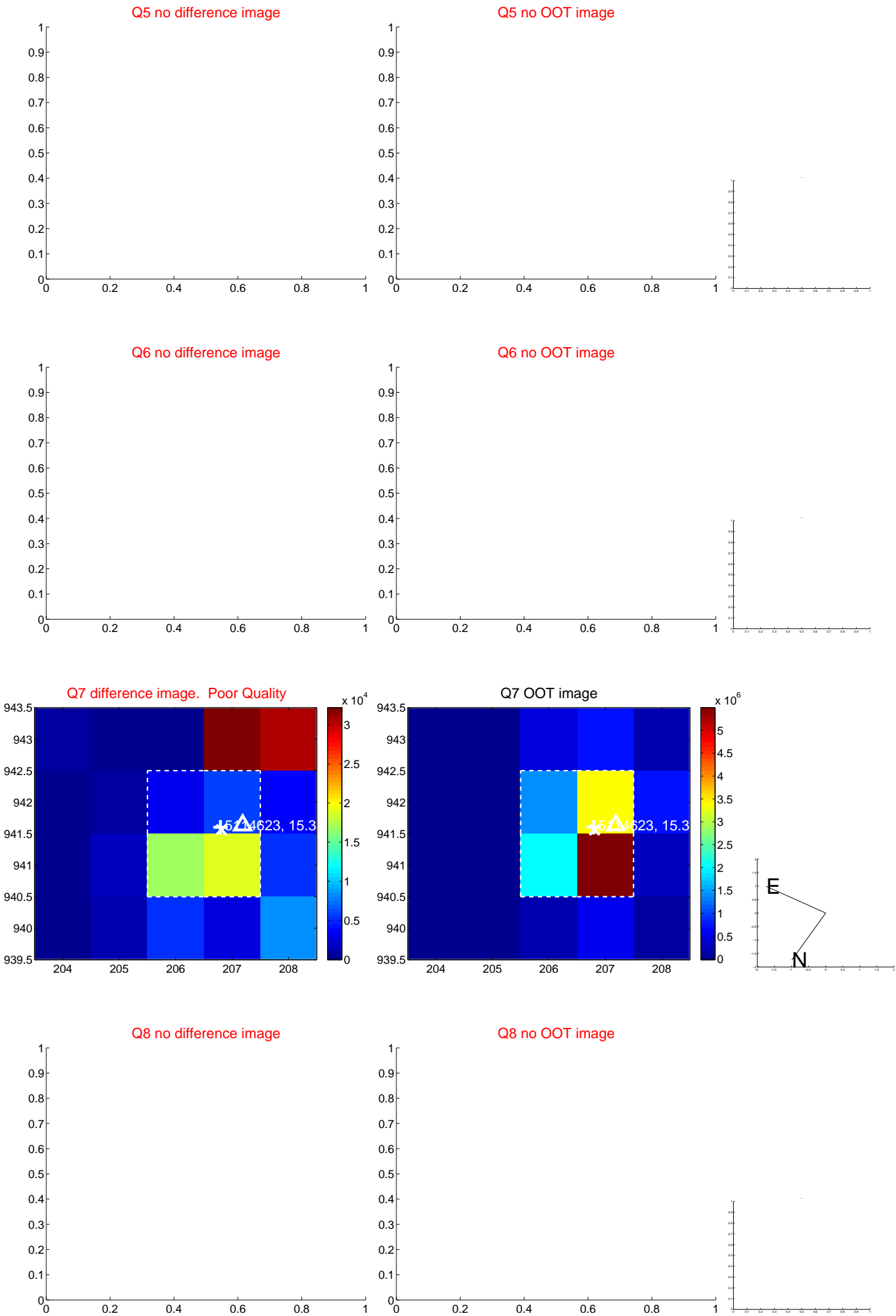


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



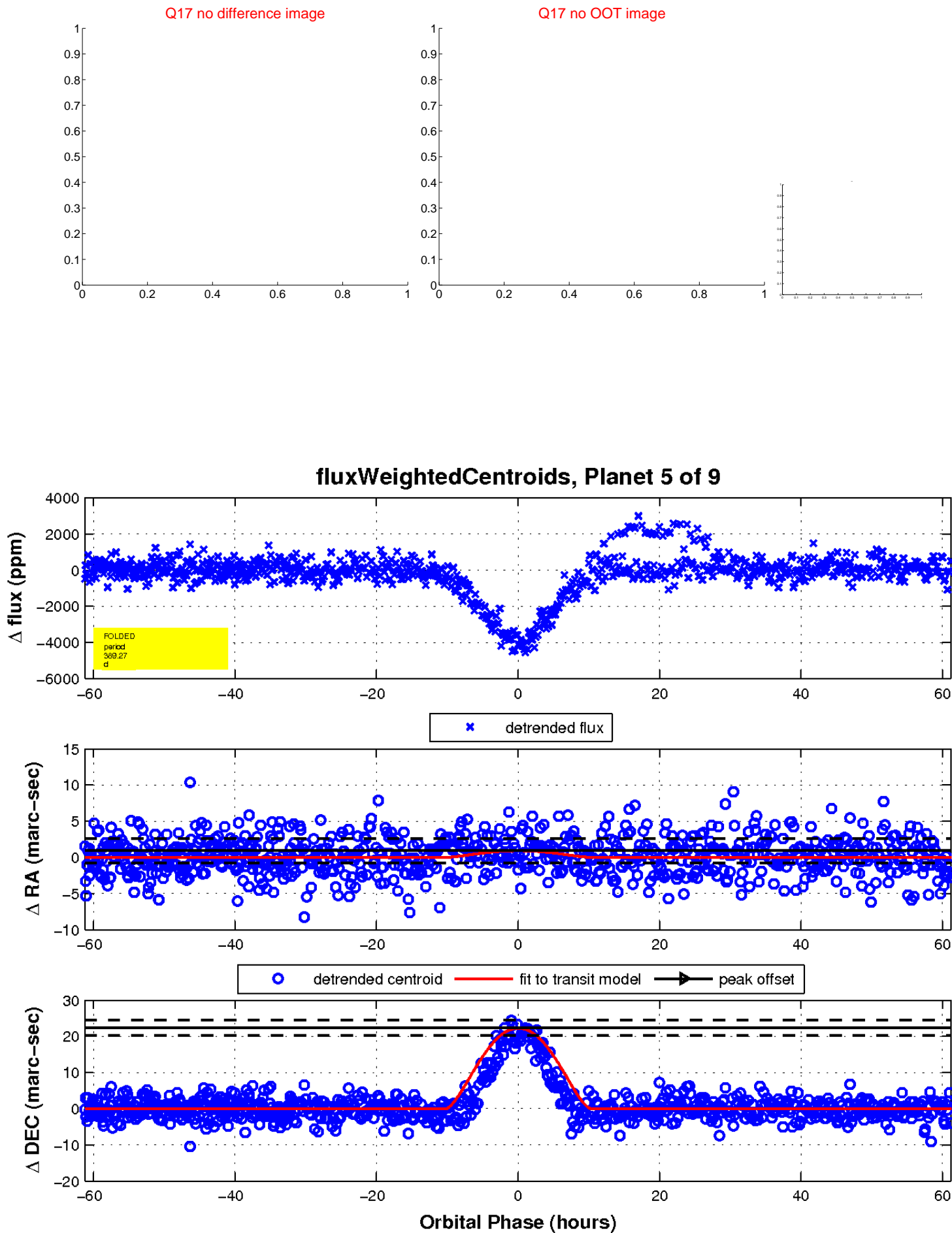
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

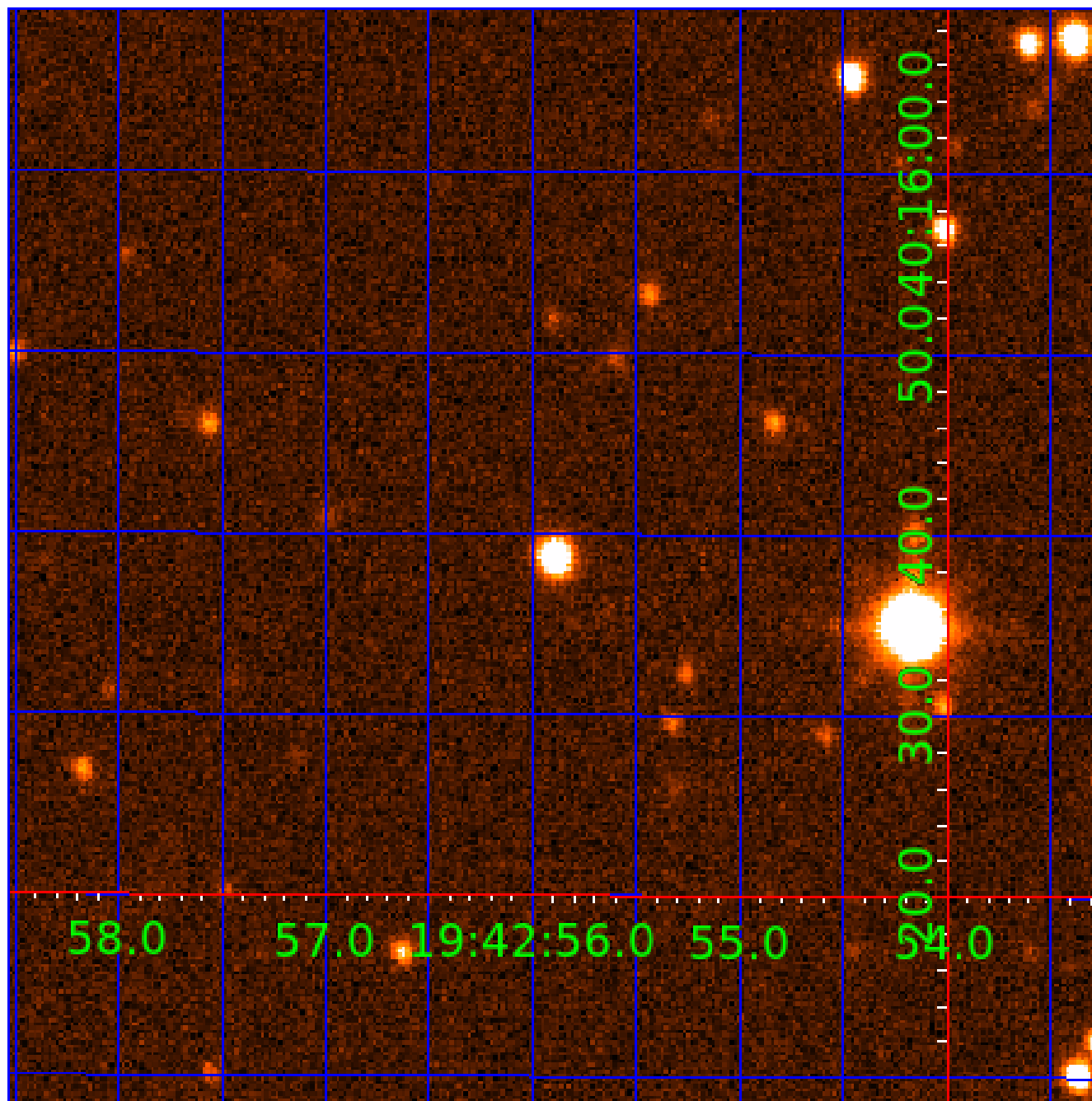


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005114623

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})
005114623-01	OBS	No	363.329250	284.636050	5278.6	13.048	54.2	60.4	1.00	6029	13.23	1.17
005114623-02	OBS	No	363.326947	310.595787	5246.9	12.643	56.5	56.8	1.00	6029	13.19	1.17
005114623-03	OBS	No	363.327653	336.550228	5137.8	13.809	48.3	48.8	1.00	6029	13.06	1.17
005114623-04	OBS	No	389.280763	278.687192	3576.5	19.563	45.6	47.1	1.00	6029	10.99	1.06
005114623-05	OBS	No	389.272274	304.639583	3718.4	20.450	44.9	46.4	1.00	6029	11.03	1.06
005114623-06	OBS	No	363.314235	362.530688	5113.3	12.701	37.9	40.6	1.00	6029	13.03	1.17
005114623-07	OBS	No	389.281035	252.729537	2866.9	17.496	30.8	34.5	1.00	6029	8.98	1.06
005114623-08	OBS	No	364.132836	330.599616	2367.5	22.467	29.3	24.9	1.00	6029	9.08	1.16
005114623-09	OBS	No	389.246077	226.865752	3358.8	16.550	22.5	28.7	1.00	6029	10.70	1.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005114623-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—PERIOD_ALIAS_DV—PERIOD_ALIAS_ALT—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
005114623-02	OBS	FP	0.00	1	1	1	1	IS_SEC_TCE—CENT_RESOLVED_OFFSET—EPHEM_MATCH
005114623-03	OBS	FP	0.00	1	0	0	1	SAME_NTL_PERIOD—CENT_FEW_DIFFS—EPHEM_MATCH
005114623-04	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_MARSHALL—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
005114623-05	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_MARSHALL—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
005114623-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS
005114623-07	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
005114623-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005114623-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_ZUMA—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST

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.

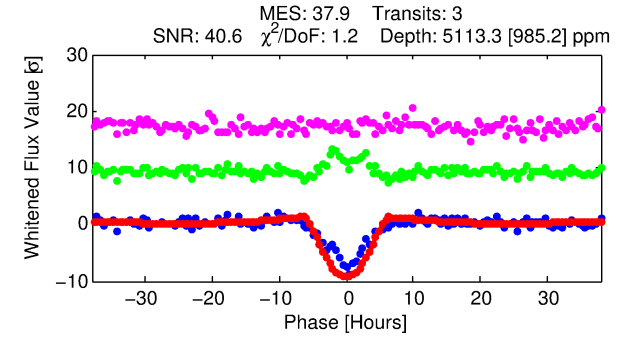
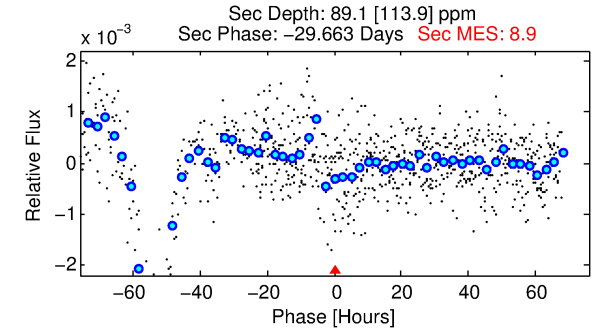
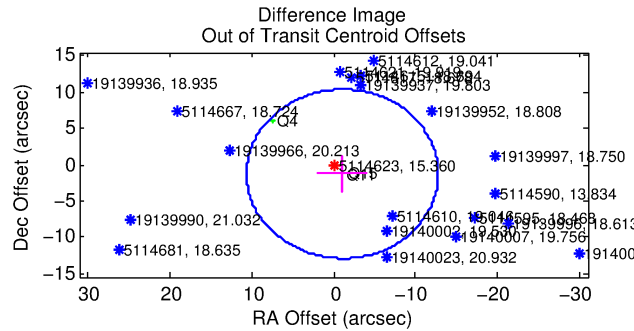
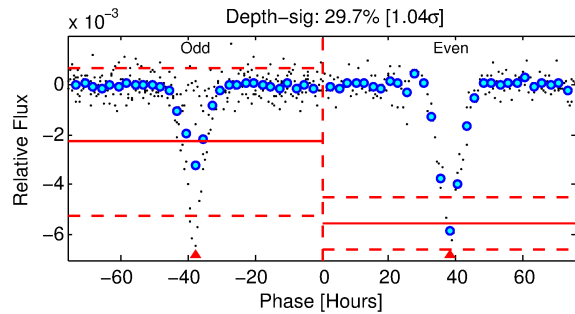
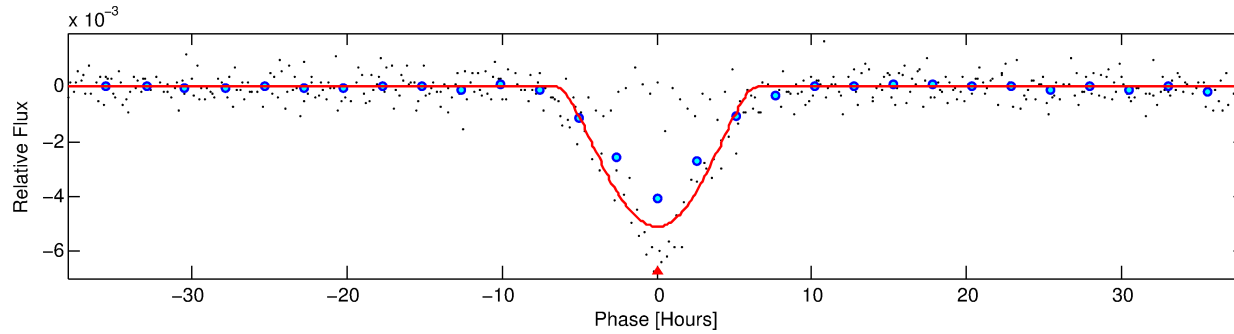
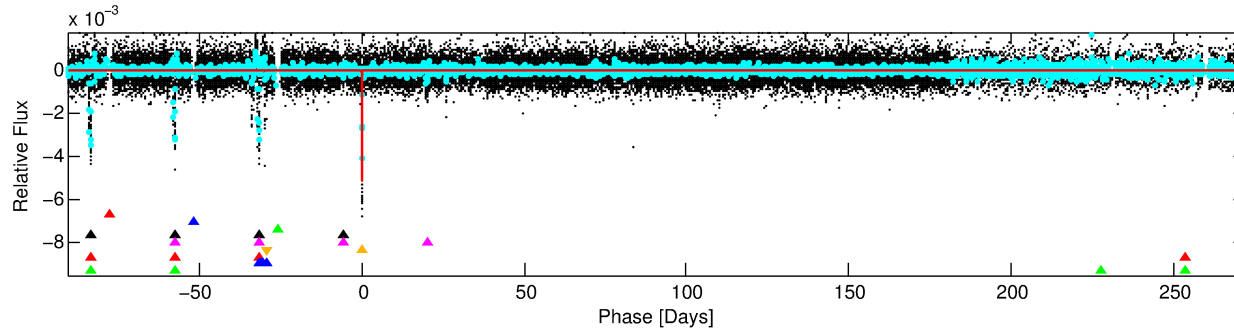
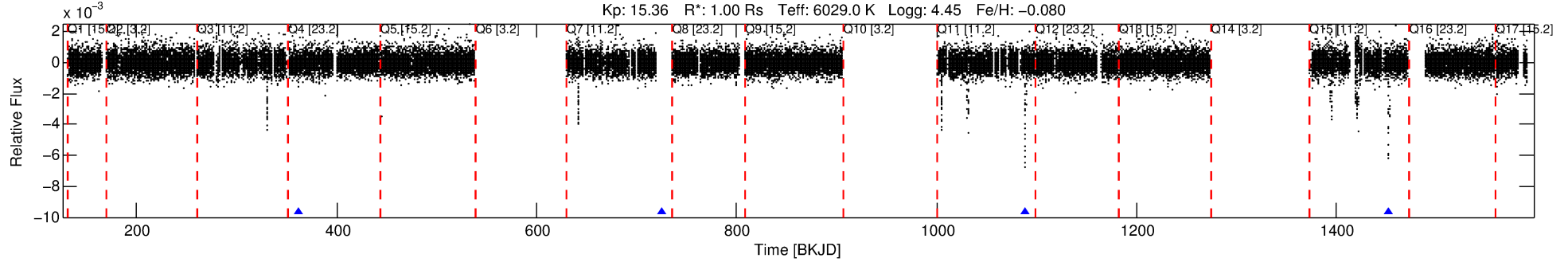
Ephemeris Match Information For 005114623-06

No Significant Match Found

DV One-Page Summary

KIC: 5114623 Candidate: 6 of 9 Period: 363.314 d
KOI: K03827 Corr: No Ephemeris Match

Kp: 15.36 R*: 1.00 Rs Teff: 6029.0 K Logg: 4.45 Fe/H: -0.080



DV Fit Results:

Period = 363.31423 [0.00275] d
Epoch = 362.5307 [0.0055] BKJD
Rp/R* = 0.1196 [0.1197]
a/R* = 110.06 [20.08]
b = 1.00 [0.18]
Seff = 1.16 [0.48]
Teq = 265 [27] K
Rp = 13.03 [13.73] Re
a = 1.0061 [0.2747] AU
Ag = 292.58 [703.99] [0.41σ]
Teffp = 1694 [1007] K [1.42σ]

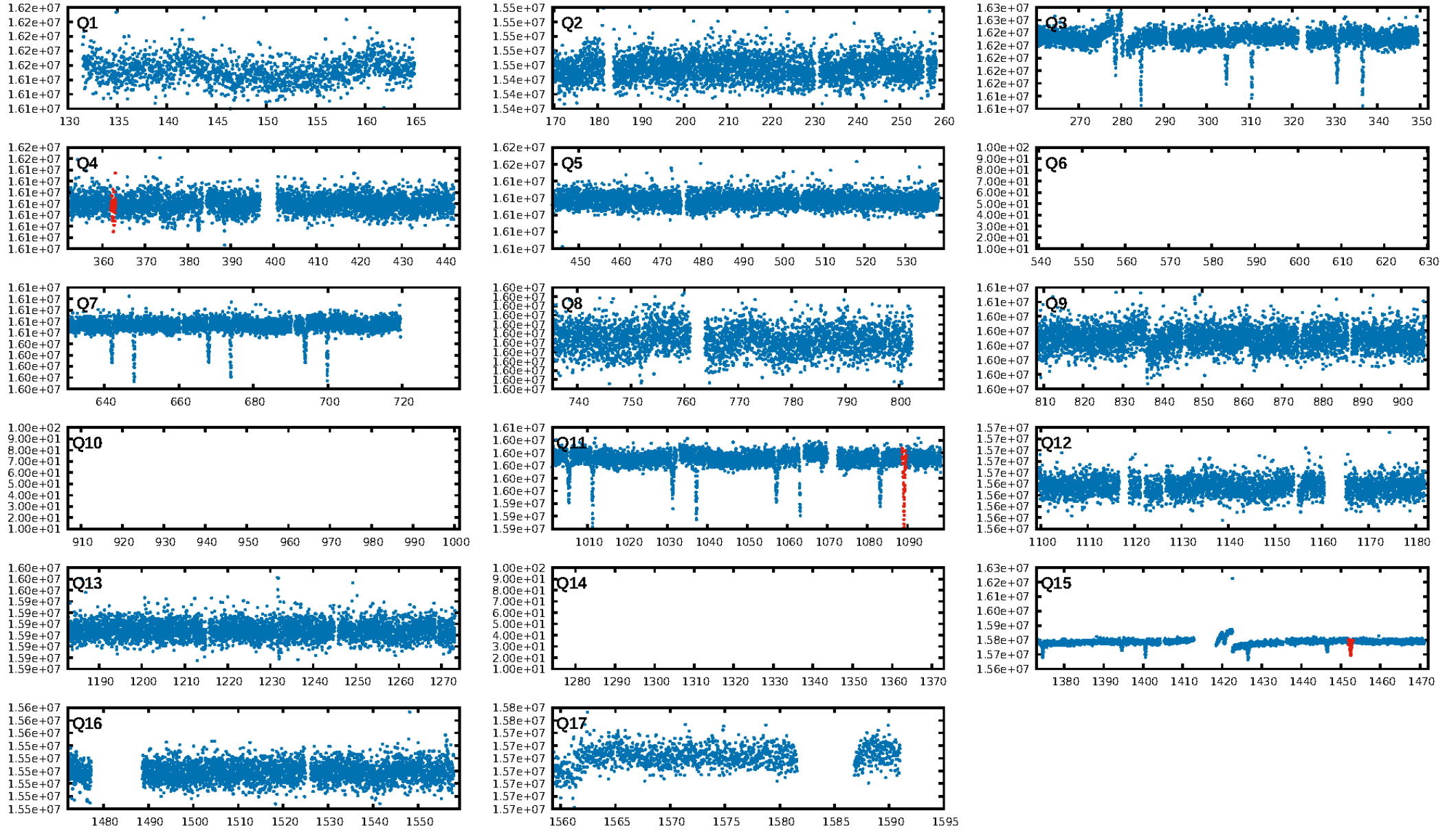
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 1.4% [0.02σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 44.2%
Bootstrap-pfa: 8.86e-94
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.769
Centroid-sig: 0.0%
Centroid-so: 4.171 arcsec [14.43σ]
OotOffset-rm: 1.675 arcsec [0.43σ]
KicOffset-rm: 1.650 arcsec [0.58σ]
OotOffset-st: 0/2/1/0 [3]
KicOffset-st: 0/2/1/0 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 1.00 [3/3]

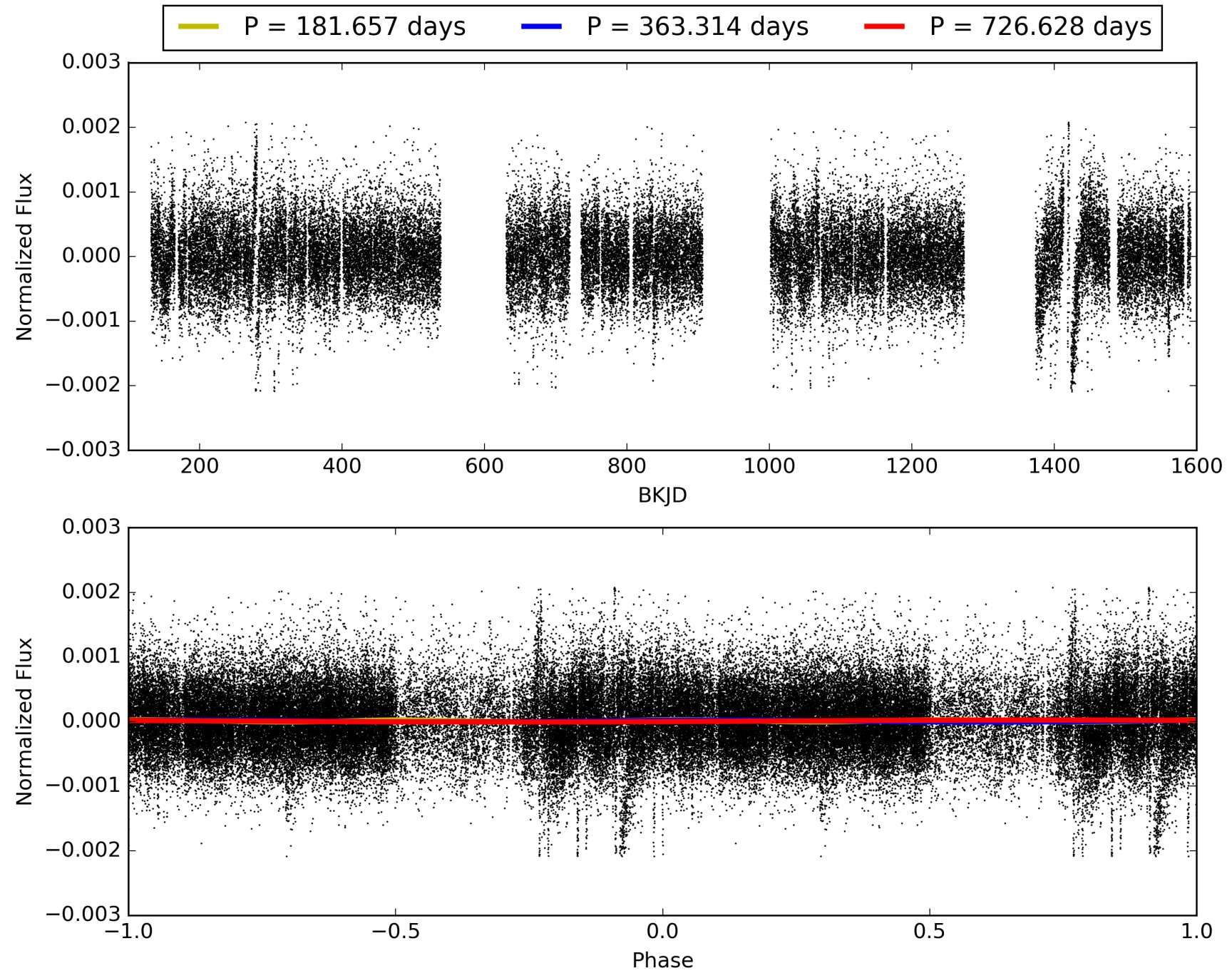
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:08:59 Z

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

TCE 005114623-06, PDC Light Curves

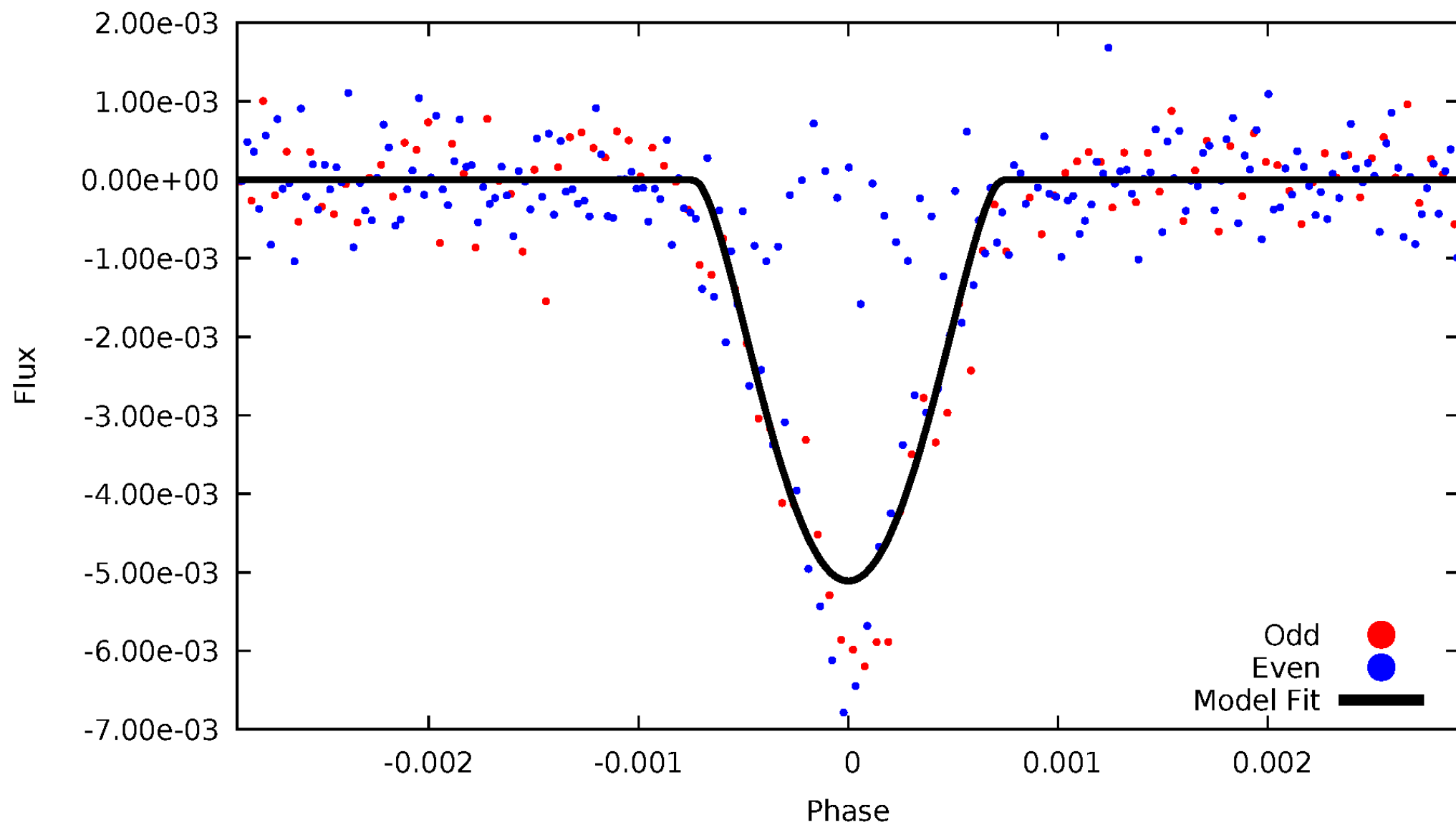


TCE 005114623-06



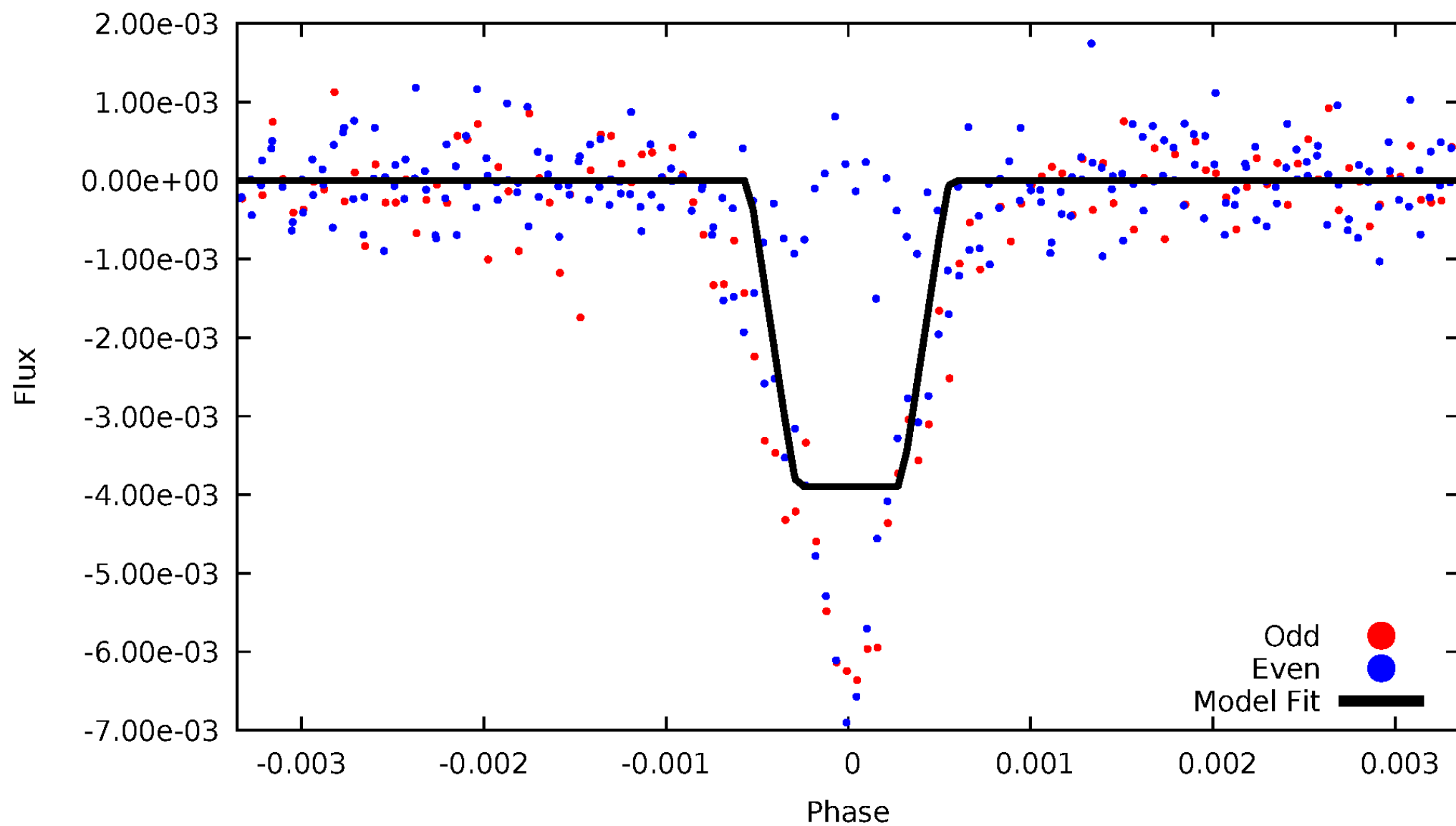
DV Odd/Even

TCE 005114623-06



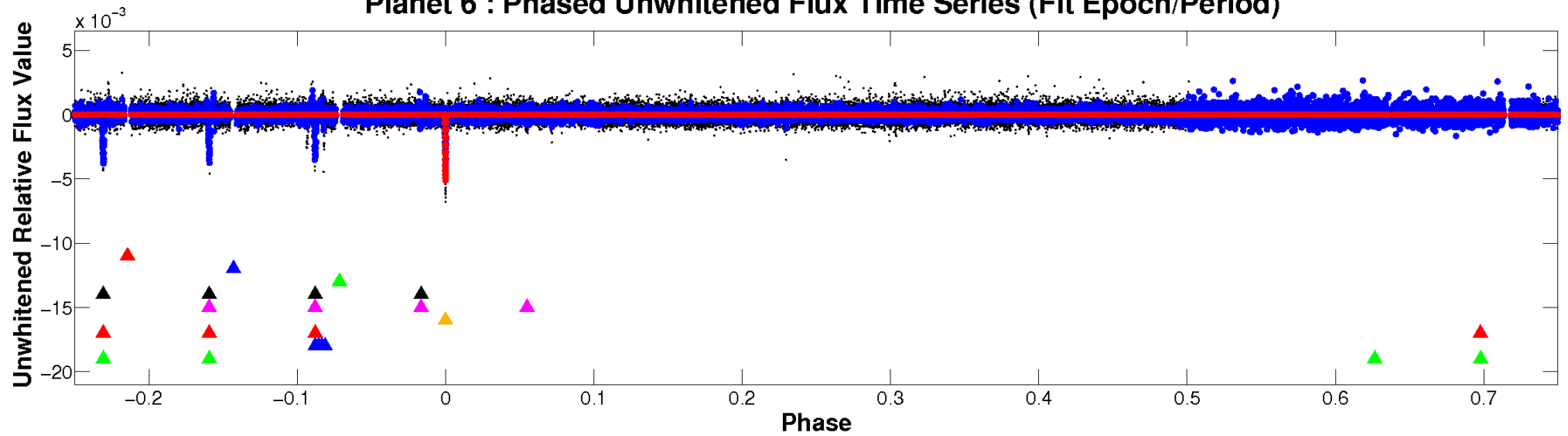
ALT Odd/Even

TCE 005114623-06

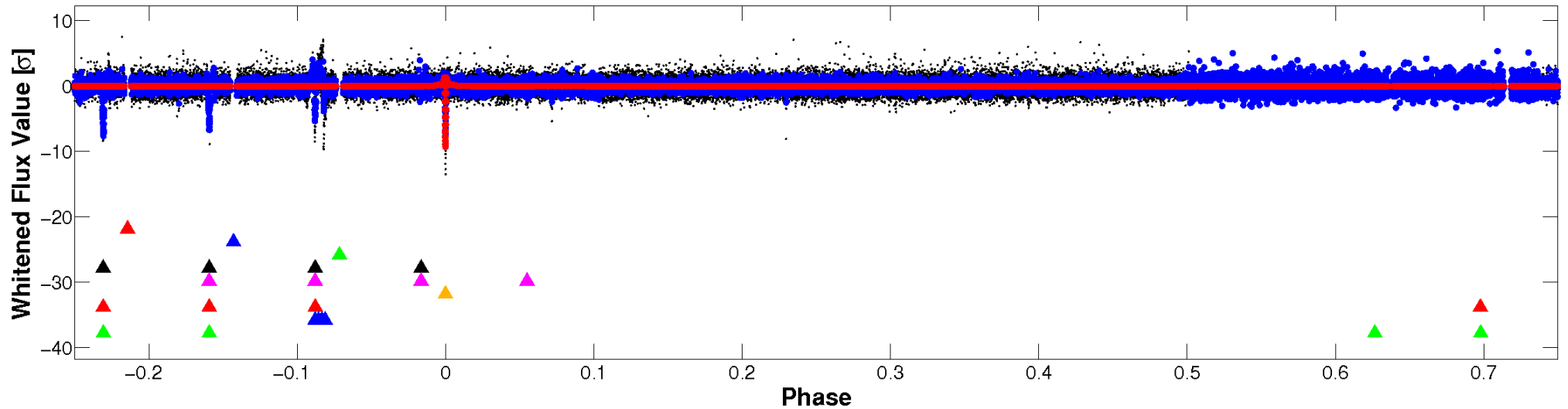


Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

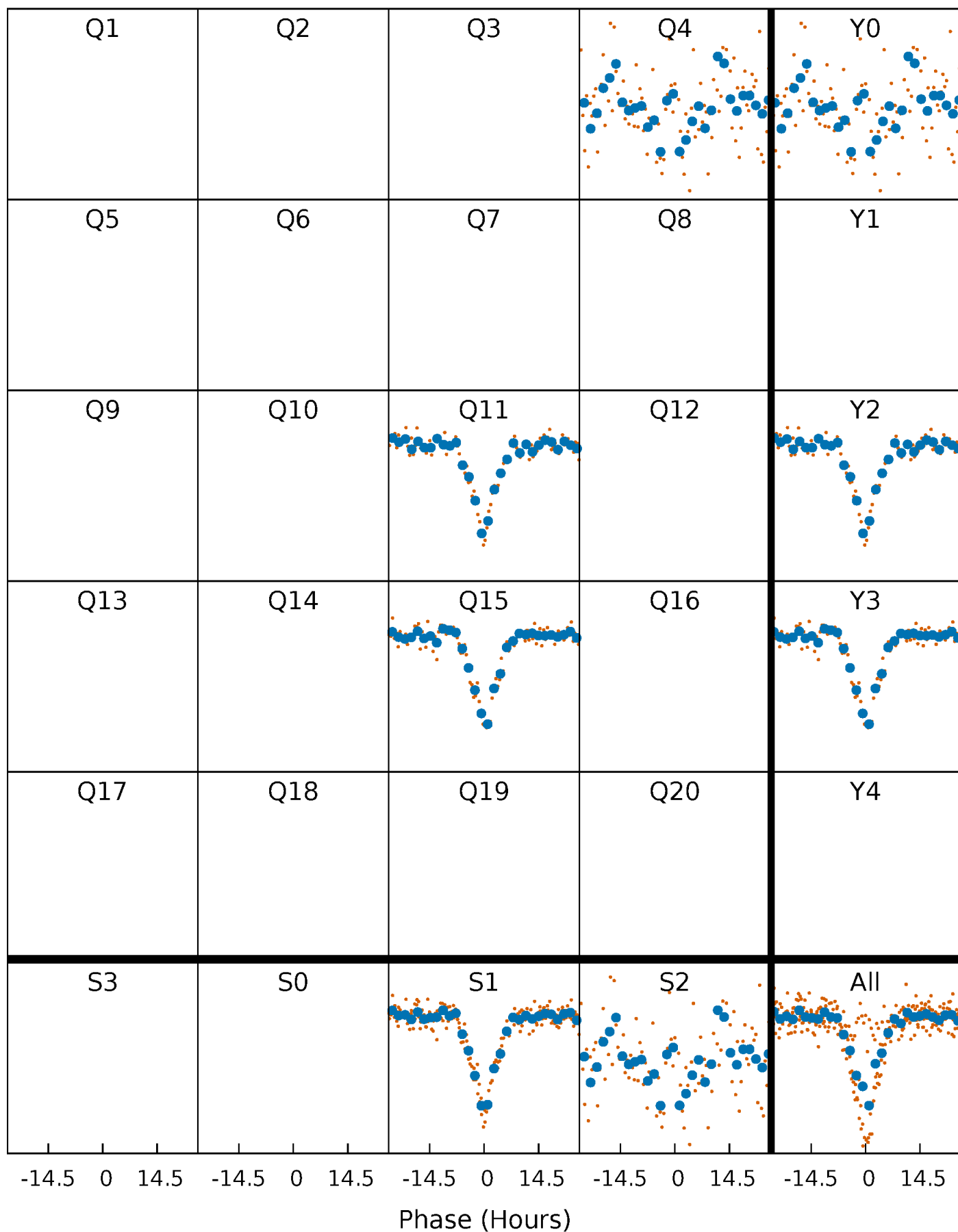


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



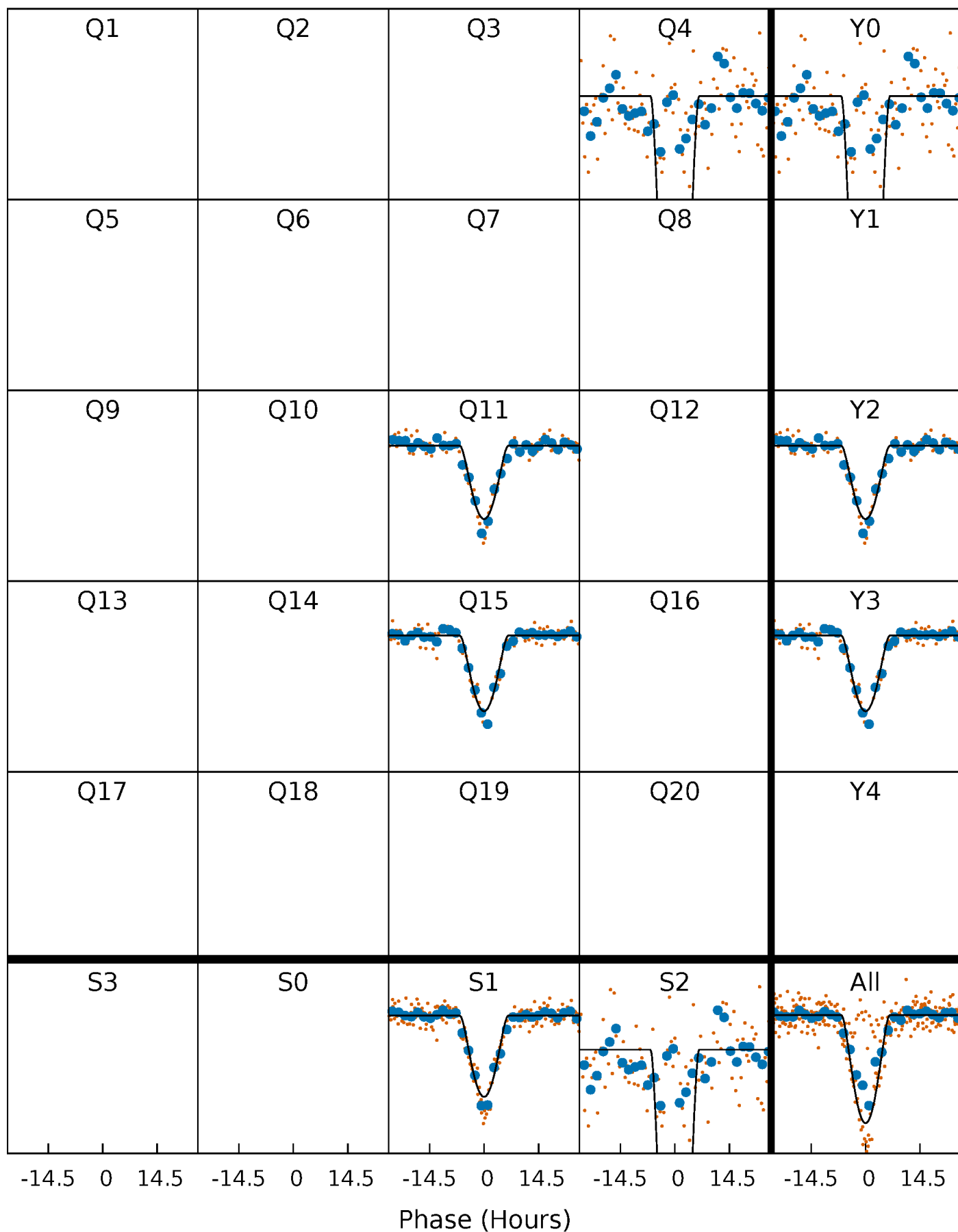
PDC Quarter-Phased Transit Curves

TCE 005114623-06 P=363.314235 Days $T_0=362.530688$ (BKJD)



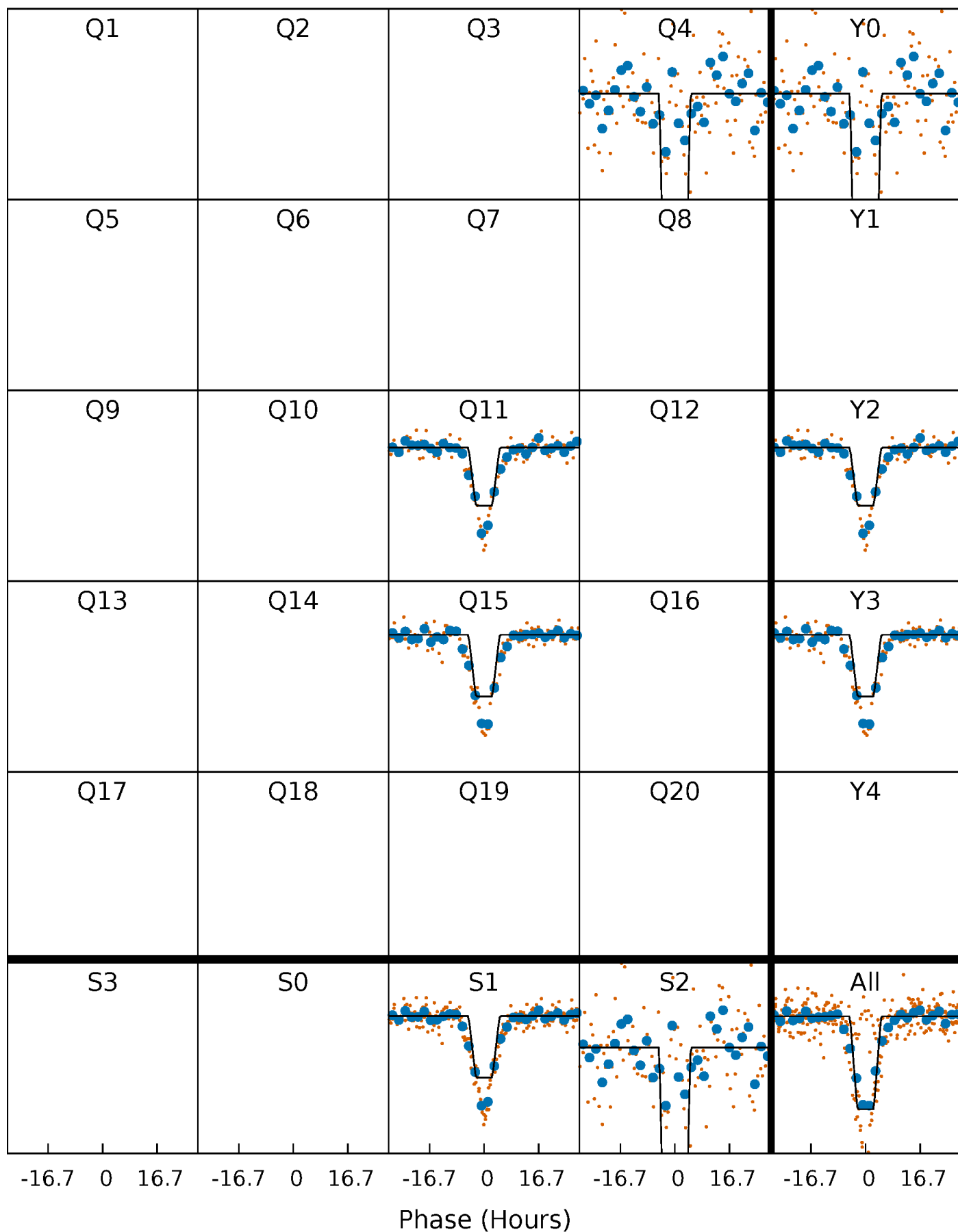
DV Quarter-Phased Transit Curves

TCE 005114623-06 P=363.314235 Days $T_0=362.530688$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

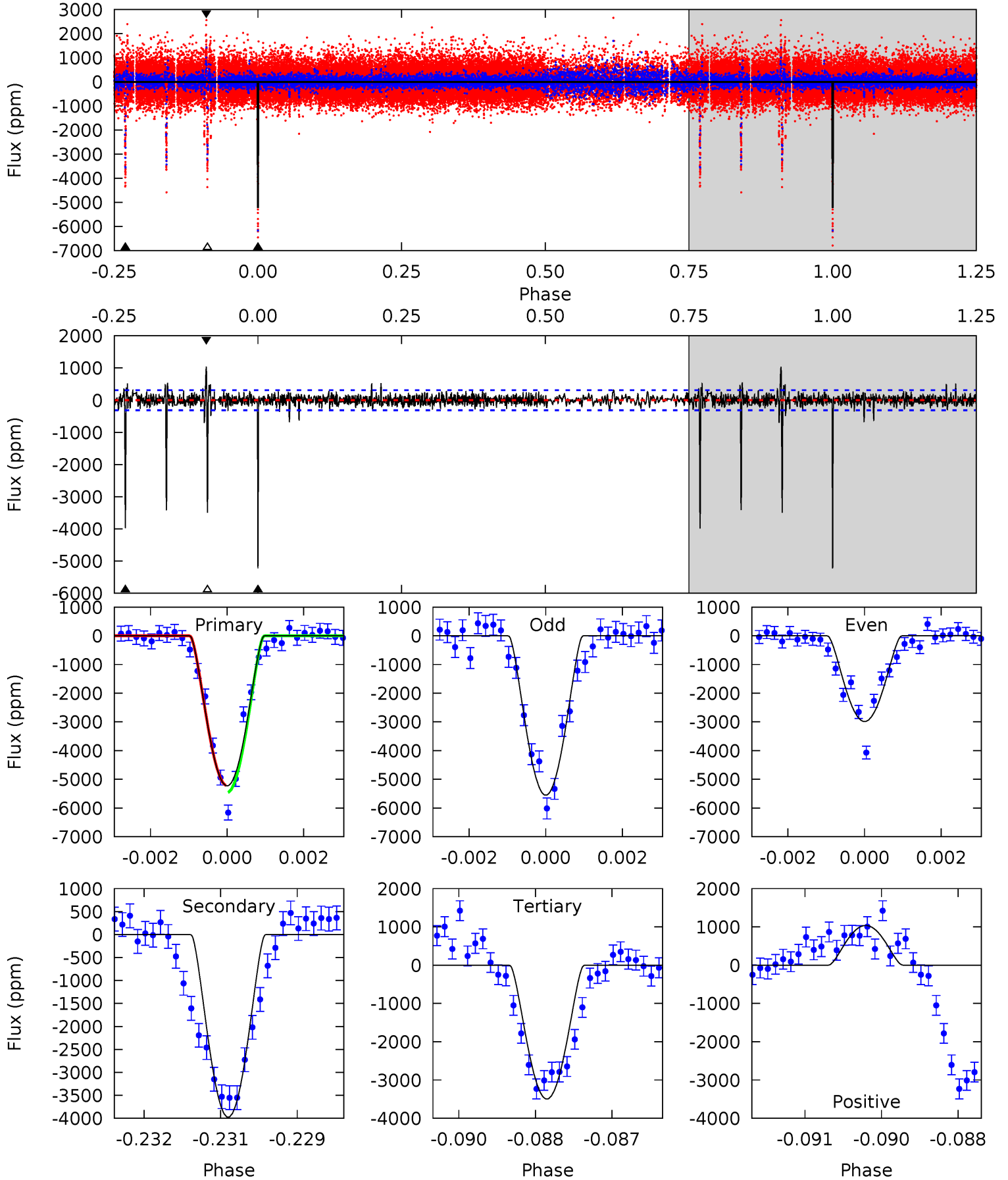
TCE 005114623-06 P=363.329130 Days $T_0=362.496830$ (BKJD)



DV Model-Shift Uniqueness Test

005114623-06, P = 363.314235 Days, E = 362.530688 Days

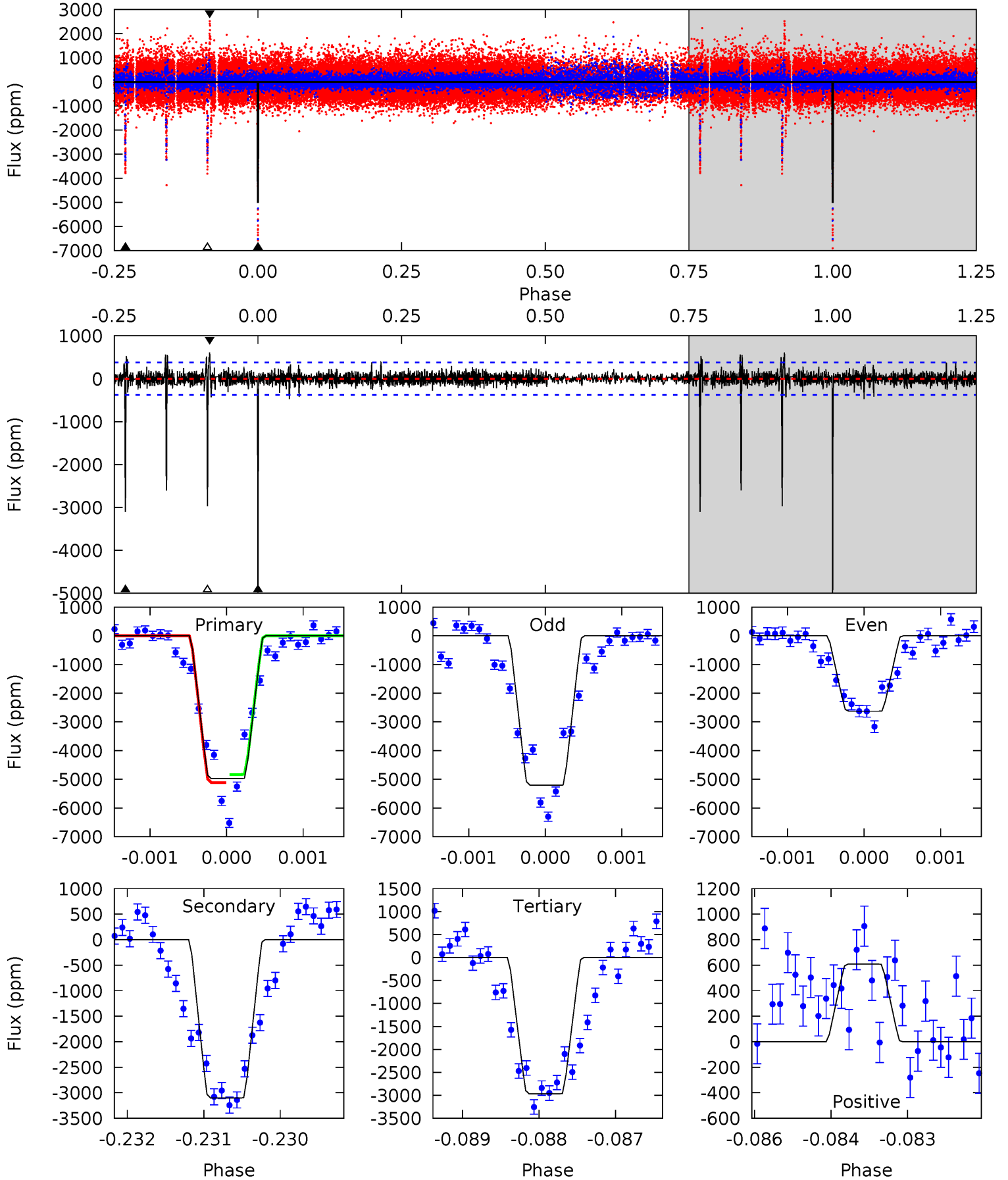
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
89.6	68.1	59.9	17.8	5.38	3.17	2.99	29.7	71.8	8.20	50.4	22.7	0.70	0.17	2.01



Alt Model-Shift Uniqueness Test

005114623-06, P = 363.329130 Days, E = 362.496830 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
71.1	44.3	42.4	8.69	5.42	3.25	1.95	28.7	62.4	1.93	35.6	19.8	0.71	0.11	1.92



Stellar Parameters For KIC 005114623

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6029^{+210}_{-210}	$4.452^{+0.070}_{-0.210}$	$-0.080^{+0.250}_{-0.300}$	$0.998^{+0.330}_{-0.132}$	$1.025^{+0.153}_{-0.126}$	$1.451^{+0.427}_{-0.780}$
	+3%/-3%	+2%/-5%	+312%/-375%	+33%/-13%	+15%/-12%	+29%/-54%
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 005114623-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-3971 ± 58	$16.66^{+11.88}_{-9.99}$	378^{+29}_{-22}	4242^{+1913}_{-734}	7945^{+40882}_{-5260}
Alt.	-3103 ± 70	$12.63^{+11.02}_{-8.99}$	377^{+29}_{-20}	4461^{+3554}_{-865}	$11221^{+110612}_{-8160}$

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

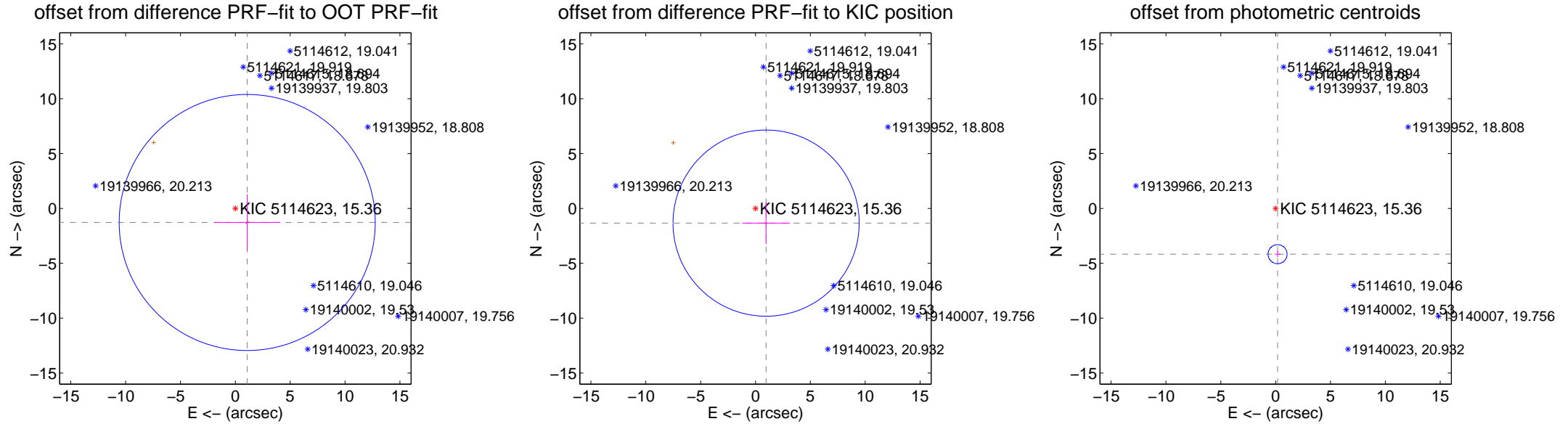
DV Centroid Data

Supplemental centroid analysis for 005114623-06. Kepler magnitude: 15.36. Transit SNR 40.58

There are 0 quarters with good PRF difference image offsets

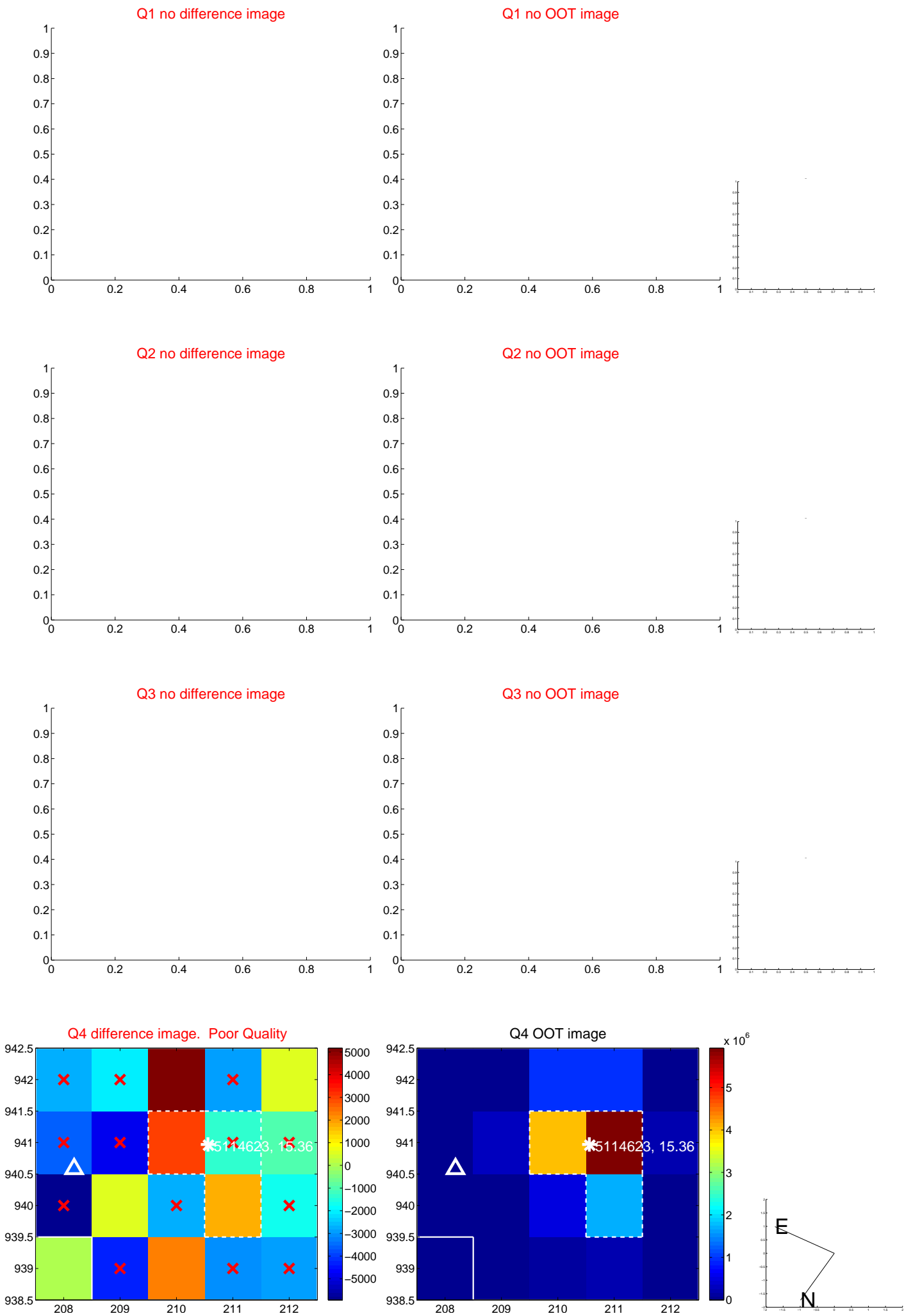
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.675 ± 3.888	0.43	-1.082 ± 3.003	-1.279 ± 2.555
PRF-fit source offset from KIC position	1.650 ± 2.827	0.58	-0.967 ± 2.190	-1.337 ± 1.907
photometric centroid source offset	4.17 ± 0.29	14.43	-0.18 ± 0.26	-4.17 ± 0.29



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.

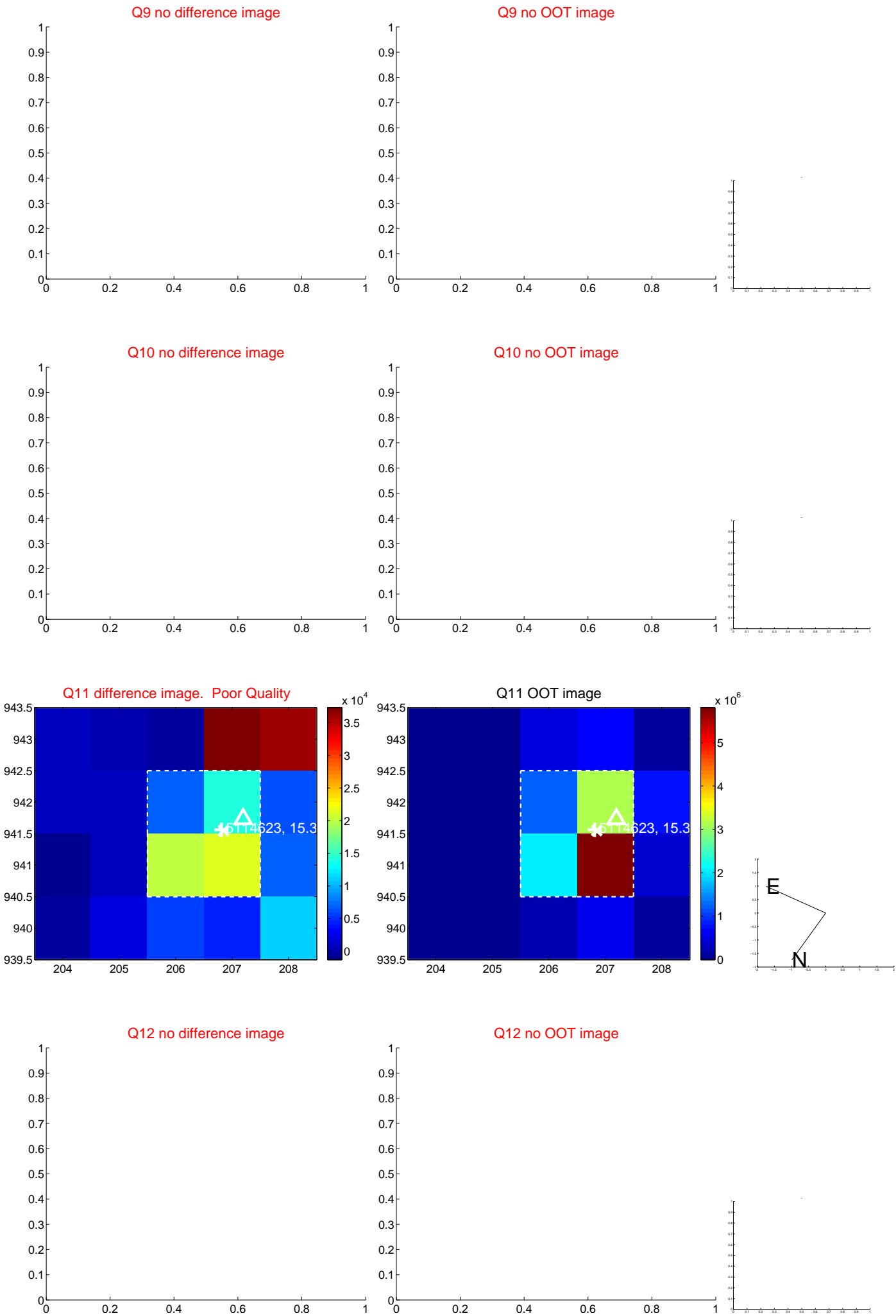
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



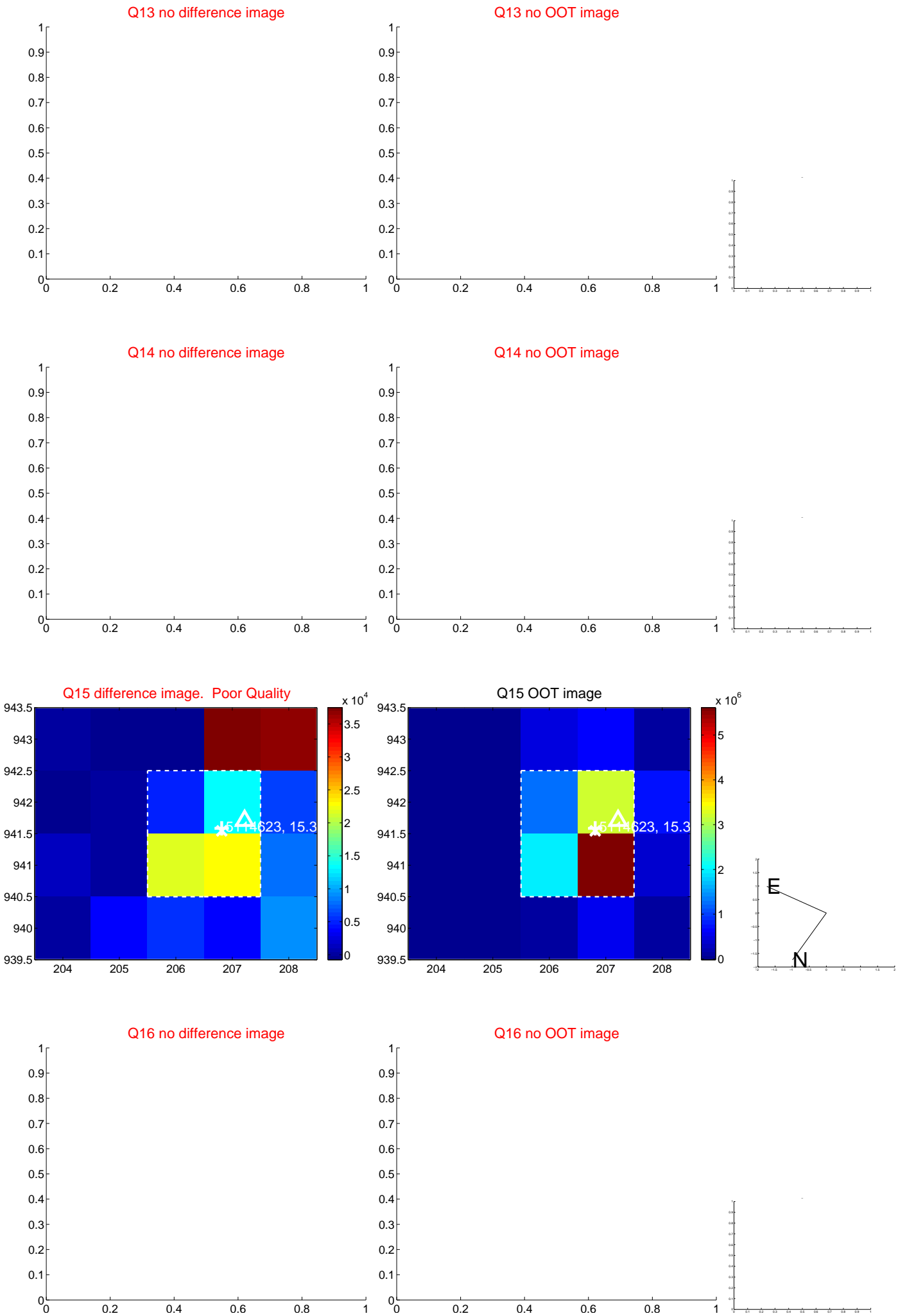
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



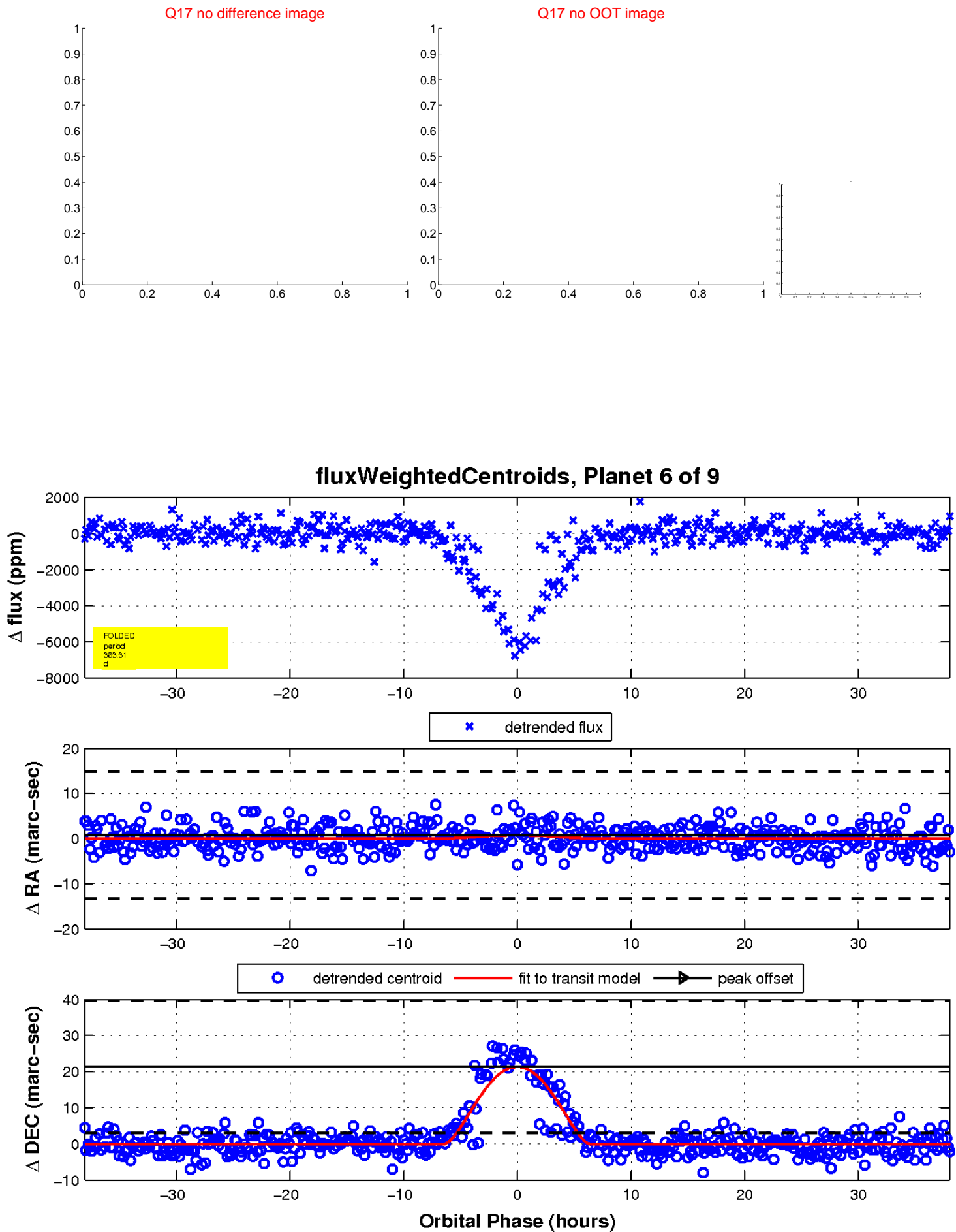
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

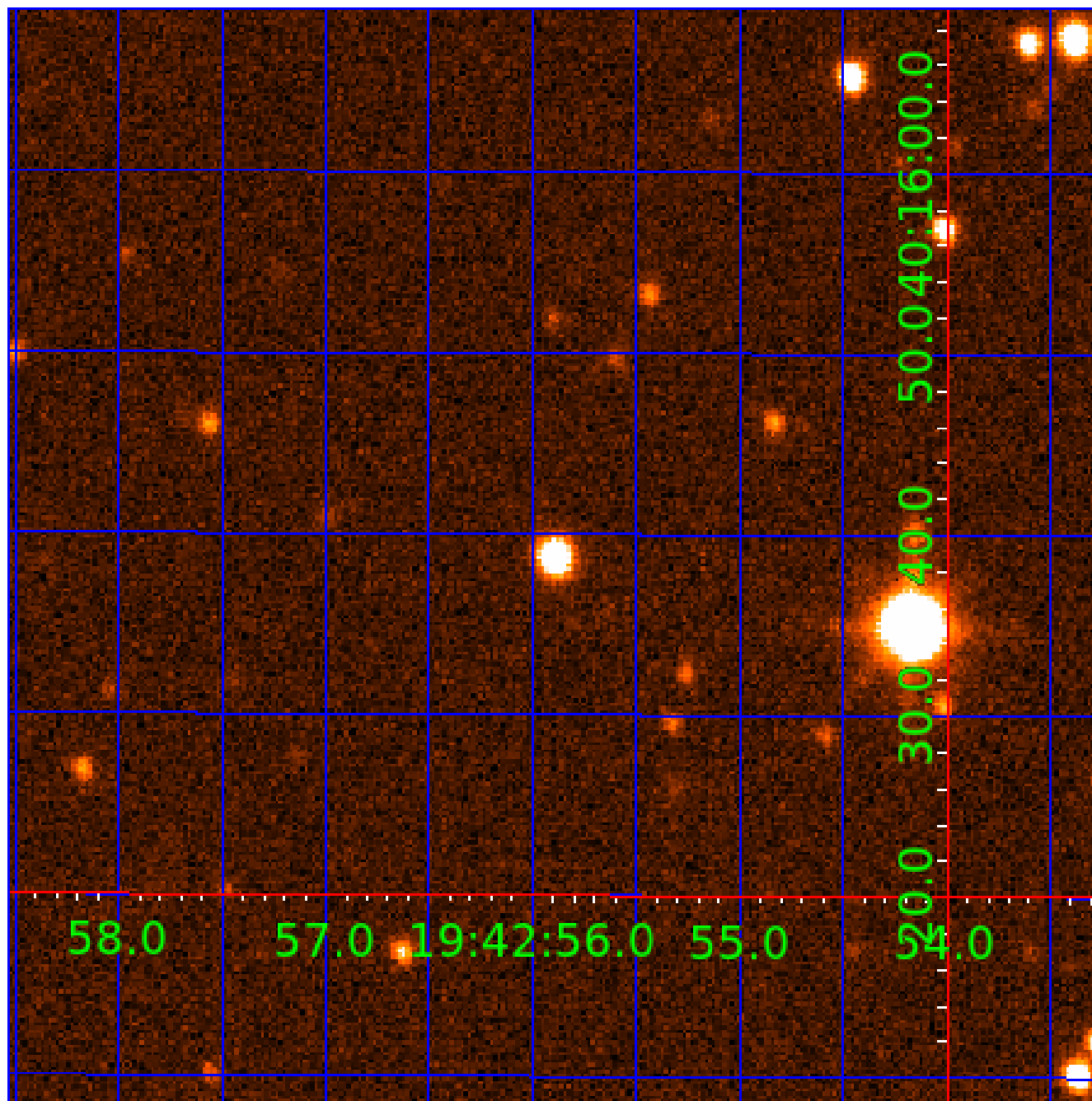


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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})
005114623-01	OBS	No	363.329250	284.636050	5278.6	13.048	54.2	60.4	1.00	6029	13.23	1.17
005114623-02	OBS	No	363.326947	310.595787	5246.9	12.643	56.5	56.8	1.00	6029	13.19	1.17
005114623-03	OBS	No	363.327653	336.550228	5137.8	13.809	48.3	48.8	1.00	6029	13.06	1.17
005114623-04	OBS	No	389.280763	278.687192	3576.5	19.563	45.6	47.1	1.00	6029	10.99	1.06
005114623-05	OBS	No	389.272274	304.639583	3718.4	20.450	44.9	46.4	1.00	6029	11.03	1.06
005114623-06	OBS	No	363.314235	362.530688	5113.3	12.701	37.9	40.6	1.00	6029	13.03	1.17
005114623-07	OBS	No	389.281035	252.729537	2866.9	17.496	30.8	34.5	1.00	6029	8.98	1.06
005114623-08	OBS	No	364.132836	330.599616	2367.5	22.467	29.3	24.9	1.00	6029	9.08	1.16
005114623-09	OBS	No	389.246077	226.865752	3358.8	16.550	22.5	28.7	1.00	6029	10.70	1.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005114623-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—PERIOD_ALIAS_DV—PERIOD_ALIAS_ALT—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
005114623-02	OBS	FP	0.00	1	1	1	1	IS_SEC_TCE—CENT_RESOLVED_OFFSET—EPHEM_MATCH
005114623-03	OBS	FP	0.00	1	0	0	1	SAME_NTL_PERIOD—CENT_FEW_DIFFS—EPHEM_MATCH
005114623-04	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_MARSHALL—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
005114623-05	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_MARSHALL—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
005114623-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS
005114623-07	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
005114623-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005114623-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_ZUMA—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST

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 005114623-07

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
005114623-07	5114623	003858884-sec	3858884	15:1	7285.7	9	0	9.28	15.36	105.51	Cross-Talk	0	2.15	0.06

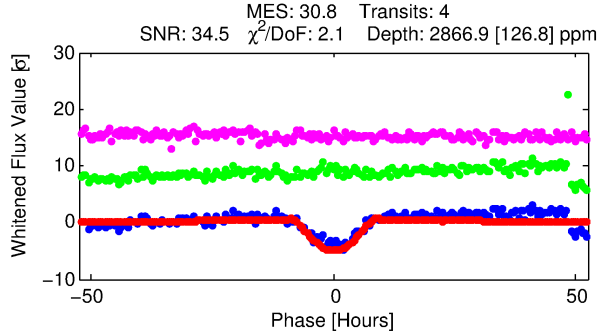
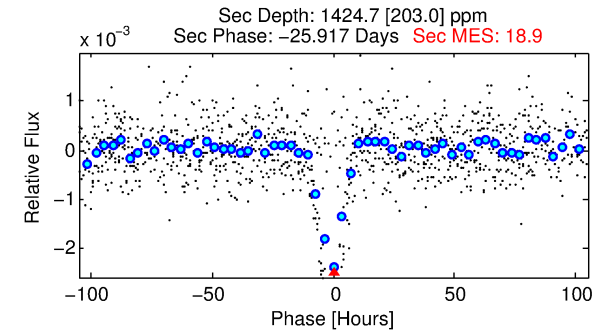
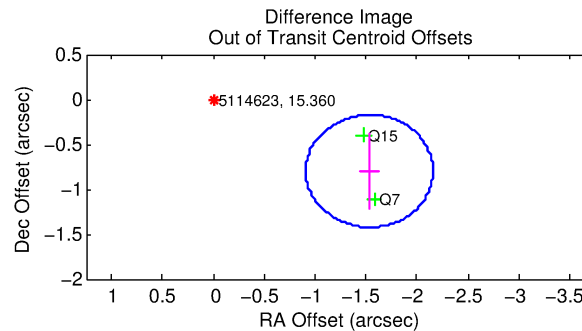
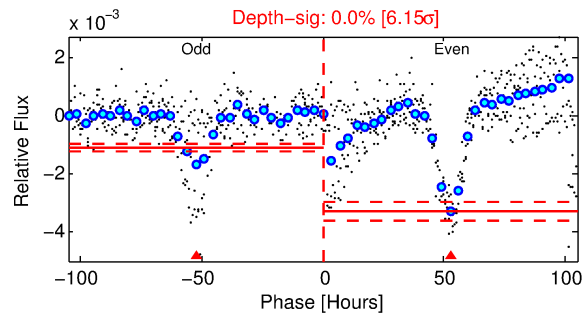
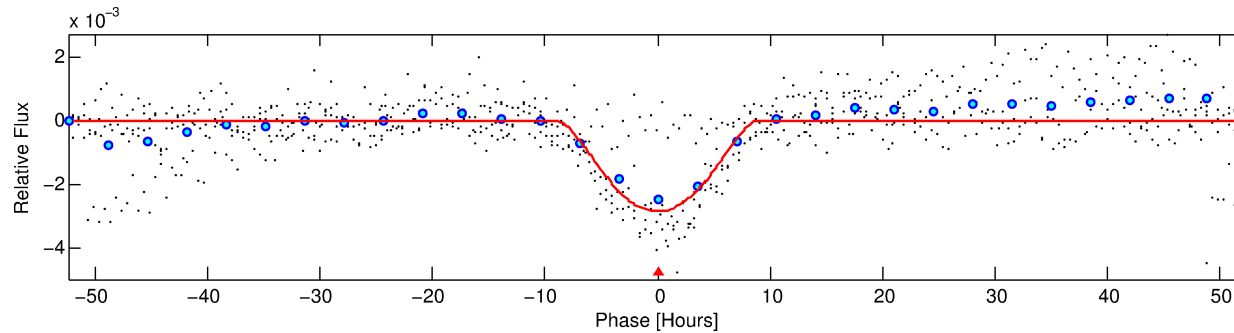
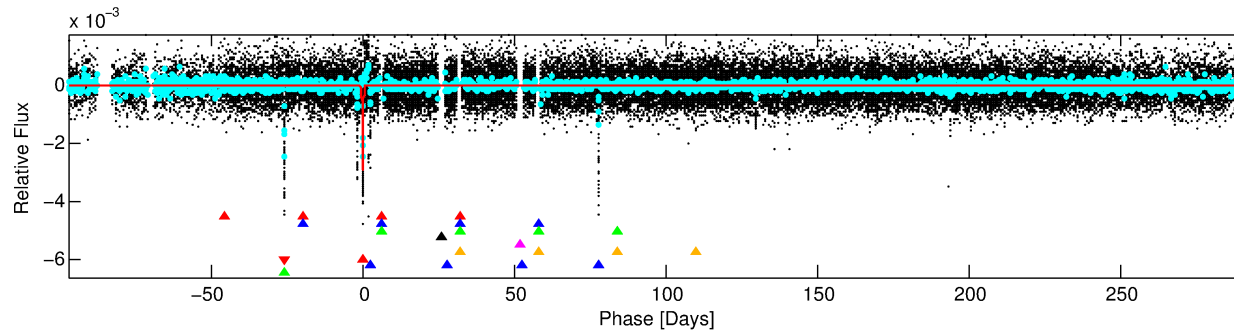
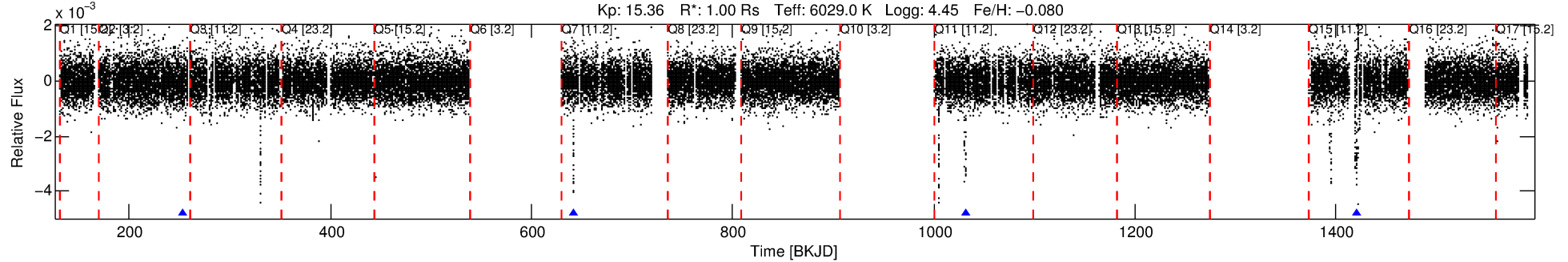
Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match 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: 5114623 Candidate: 7 of 9 Period: 389.281 d

KOI: K03827 Corr: No Ephemeris Match

Kp: 15.36 R*: 1.00 Rs Teff: 6029.0 K Logg: 4.45 Fe/H: -0.080



DV Fit Results:

Period = 389.28104 [0.00778] d
Epoch = 252.7295 [0.0136] BKJD
Rp/R* = 0.0825 [0.0863]
a/R* = 75.68 [19.64]
b = 0.99 [0.14]
Seff = 1.06 [0.44]
Teq = 259 [27] K
Rp = 8.98 [9.85] Re
a = 1.0535 [0.2877] AU
Ag = 10775.76 [22978.11] [0.47σ]
Teffp = 4078 [2142] K [1.78σ]

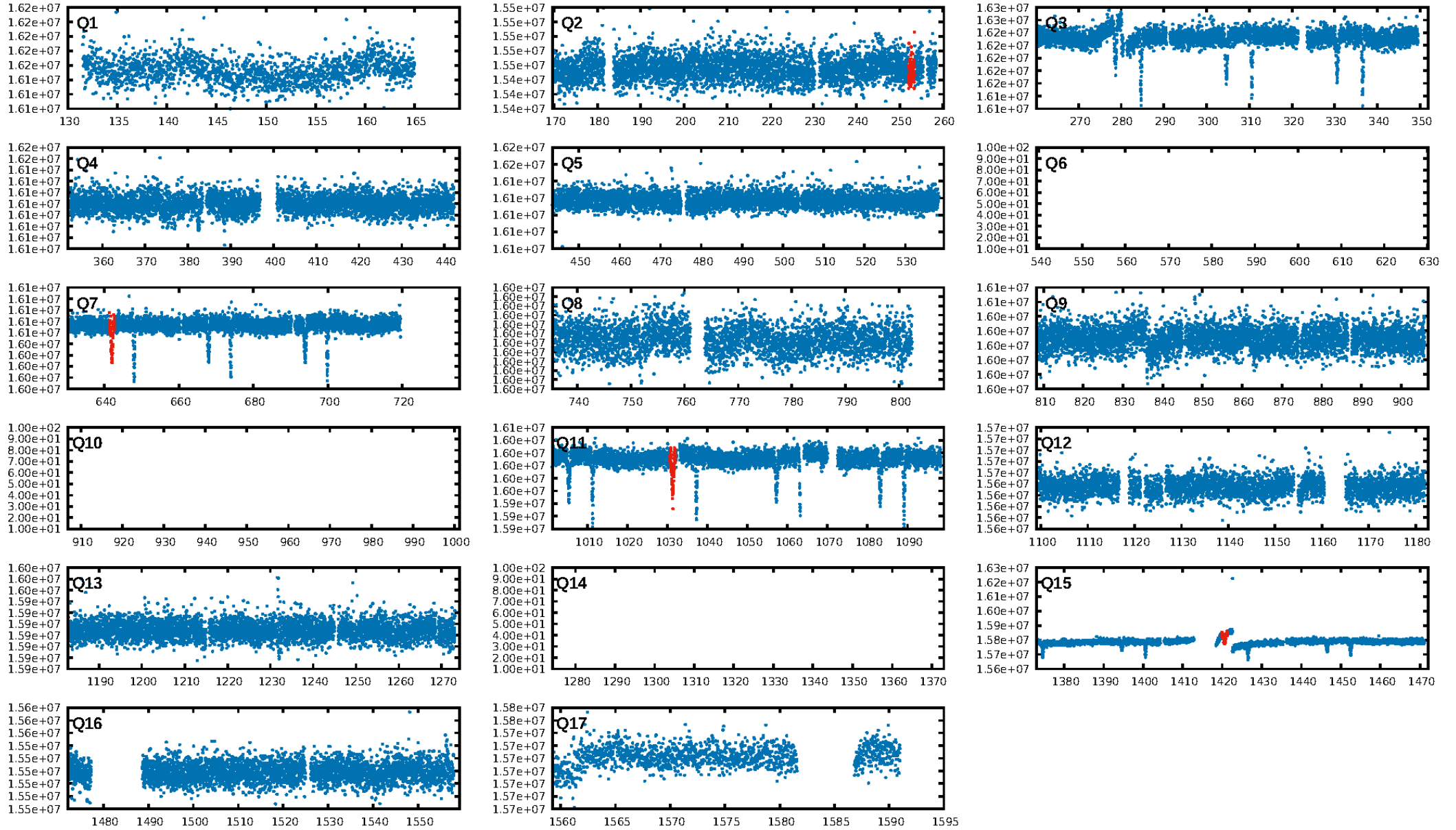
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 2.69e-73
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.09448
Centroid-sig: 0.0%
Centroid-so: 8.357 arcsec [20.25σ]
OotOffset-rm: 1.730 arcsec [8.30σ]
KicOffset-rm: 1.661 arcsec [7.29σ]
OotOffset-st: 0/2/0/0 [2]
KicOffset-st: 0/2/0/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [3/3]

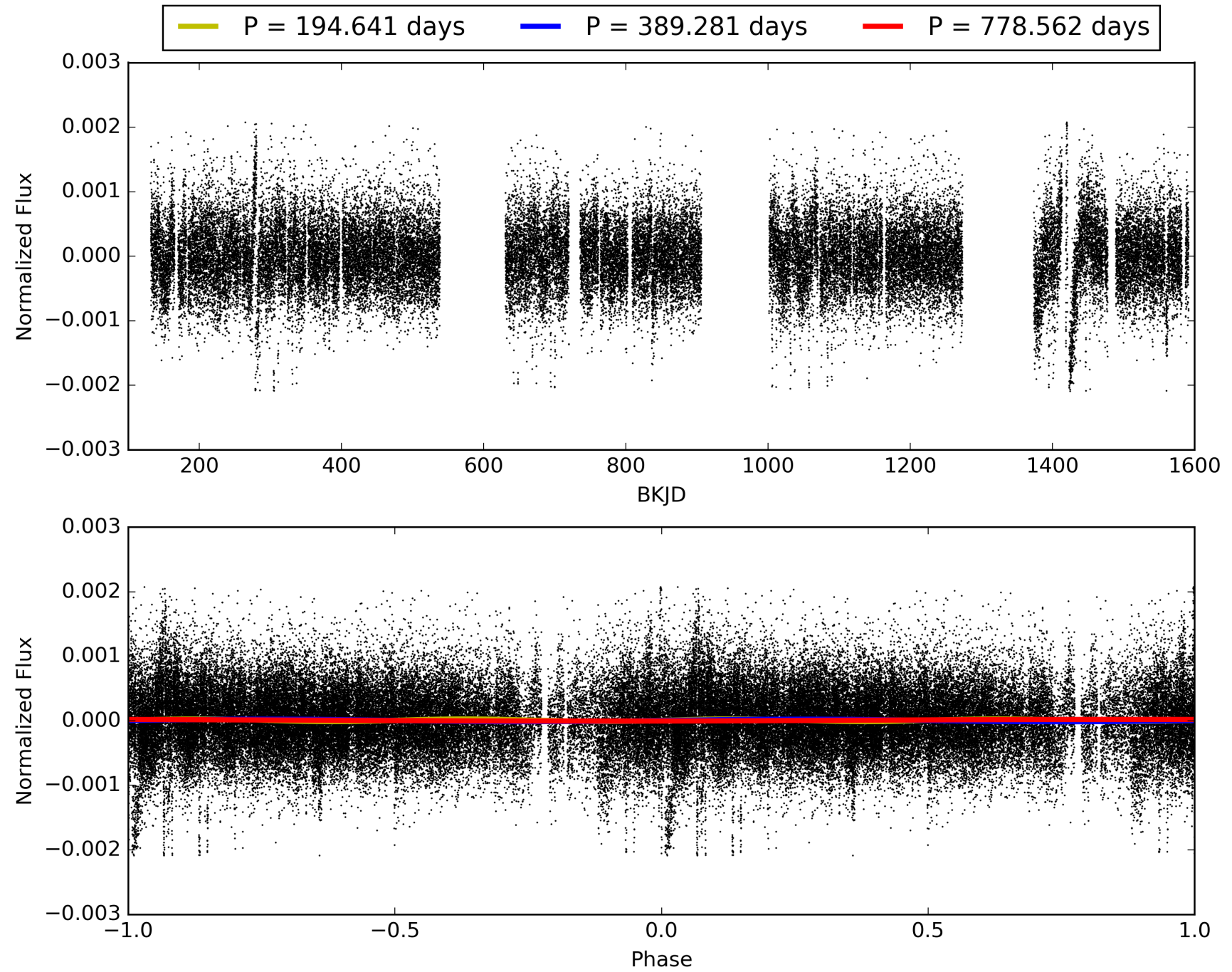
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:09:06 Z

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

TCE 005114623-07, PDC Light Curves

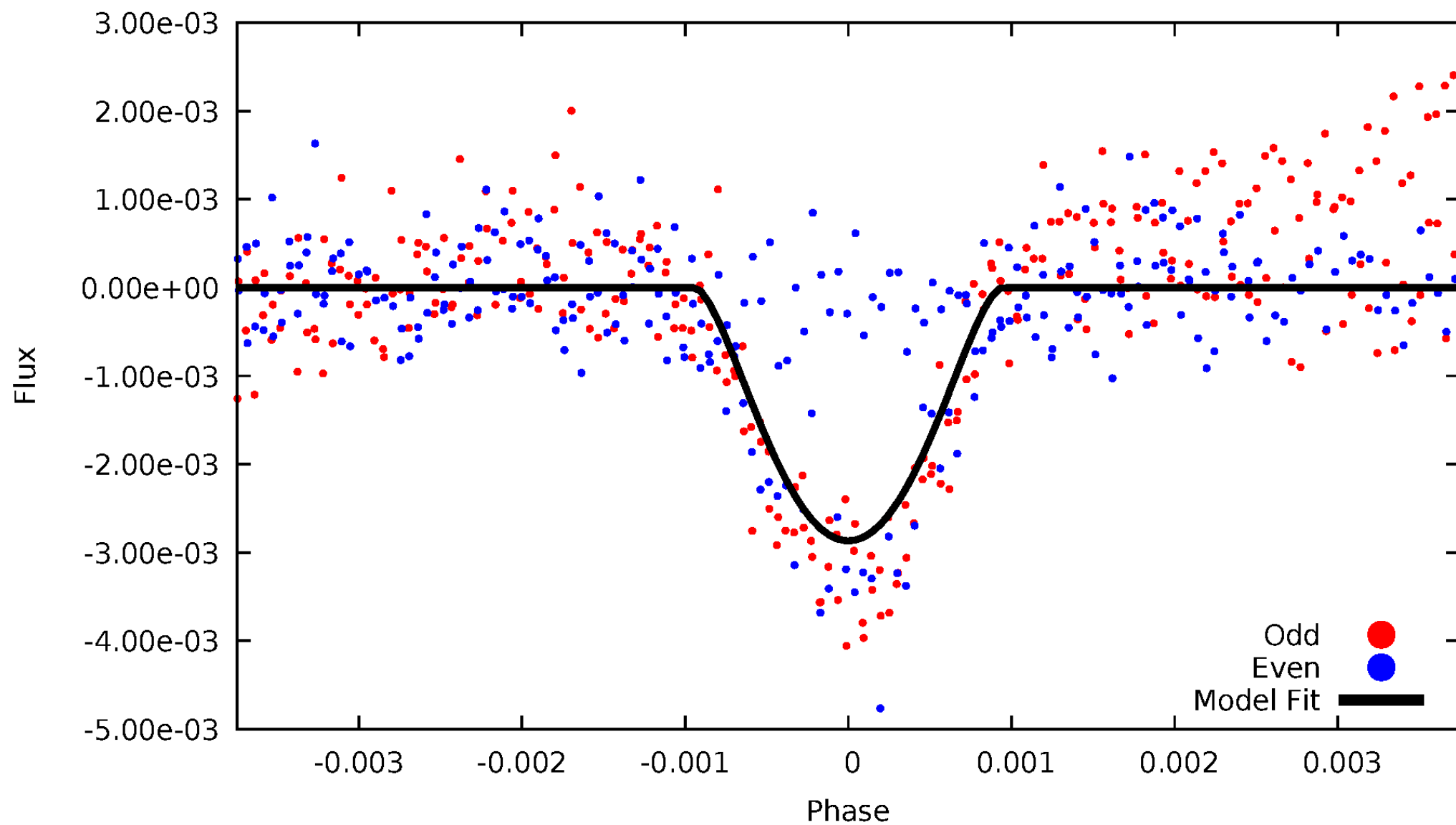


TCE 005114623-07



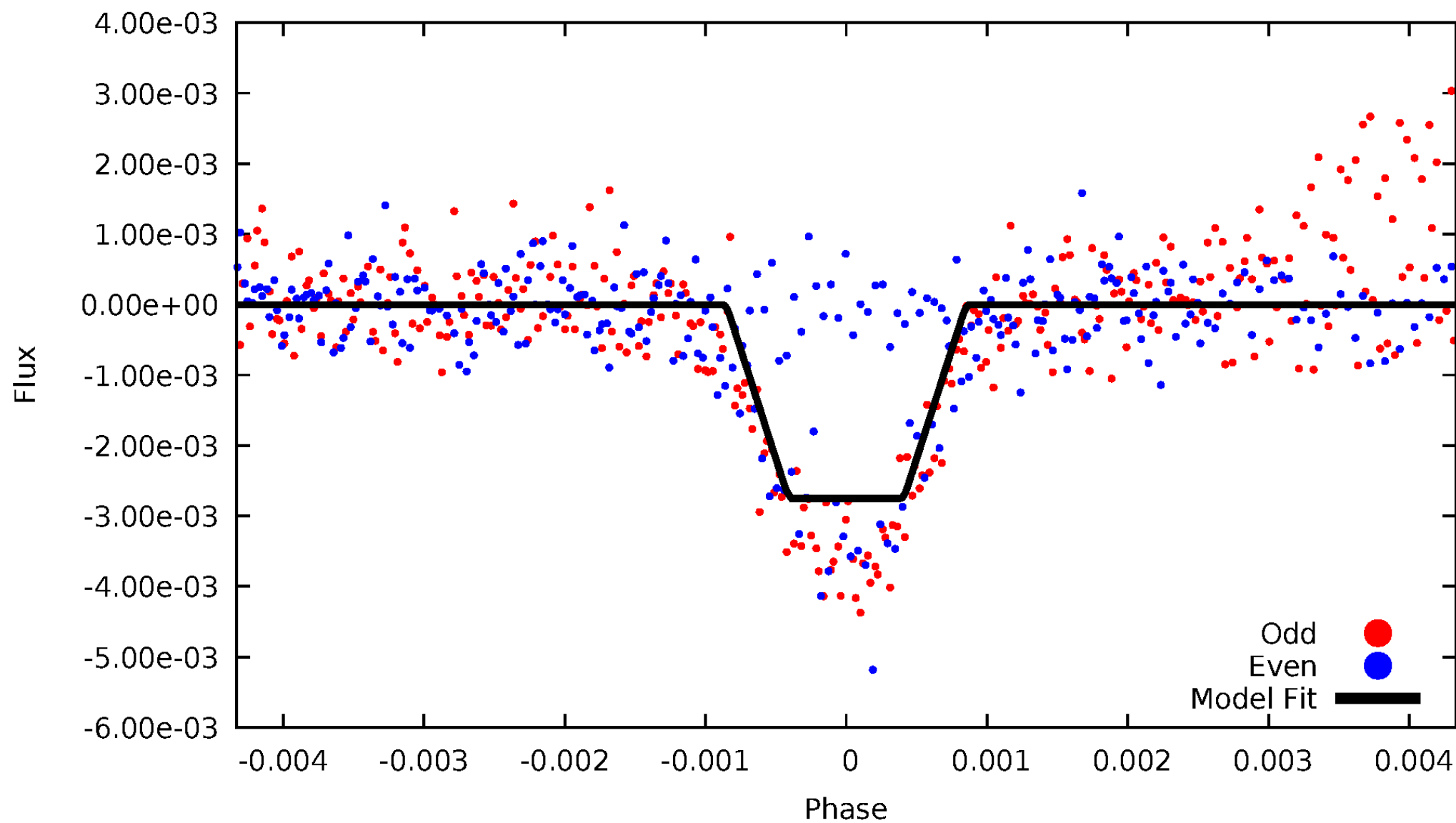
DV Odd/Even

TCE 005114623-07



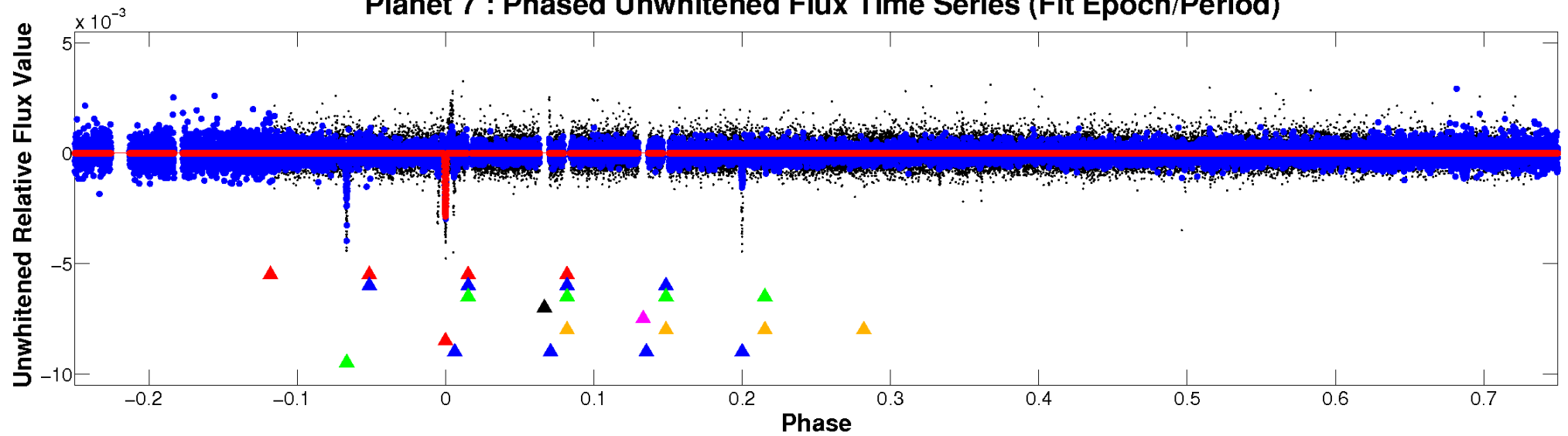
ALT Odd/Even

TCE 005114623-07

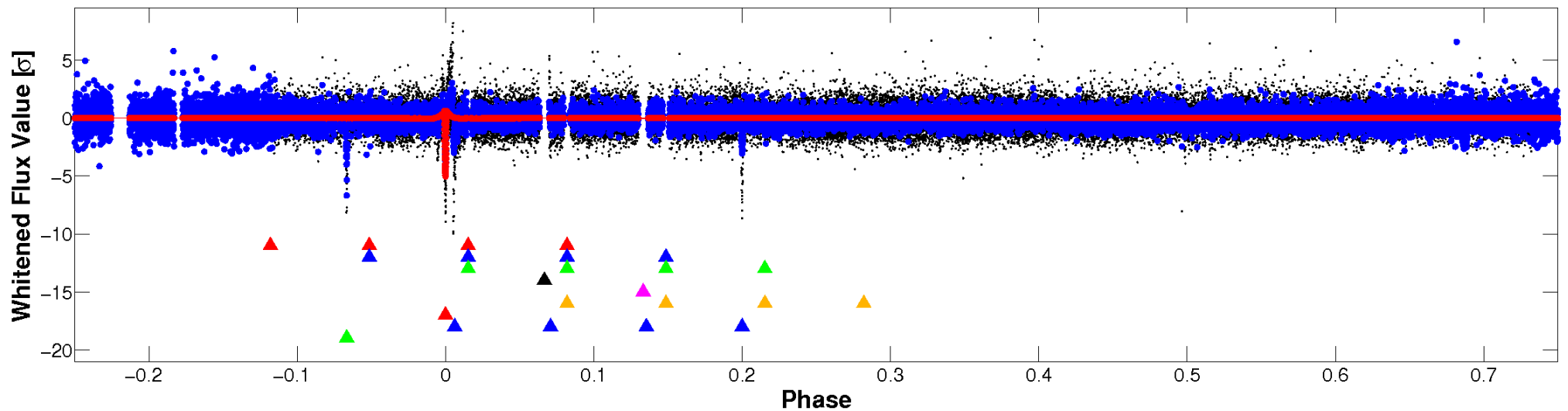


Non-Whitened Vs. Whitened Light Curve

Planet 7 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

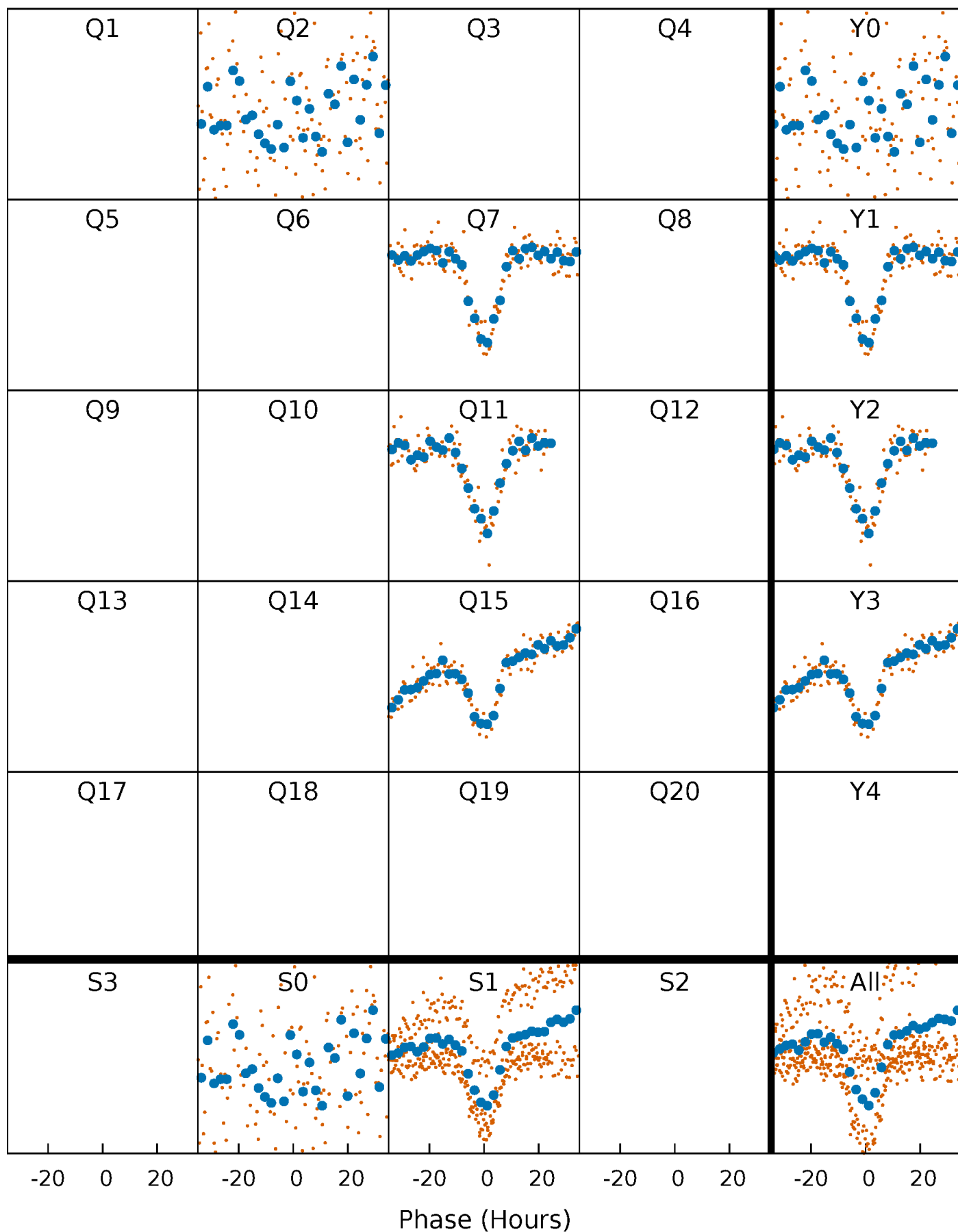


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



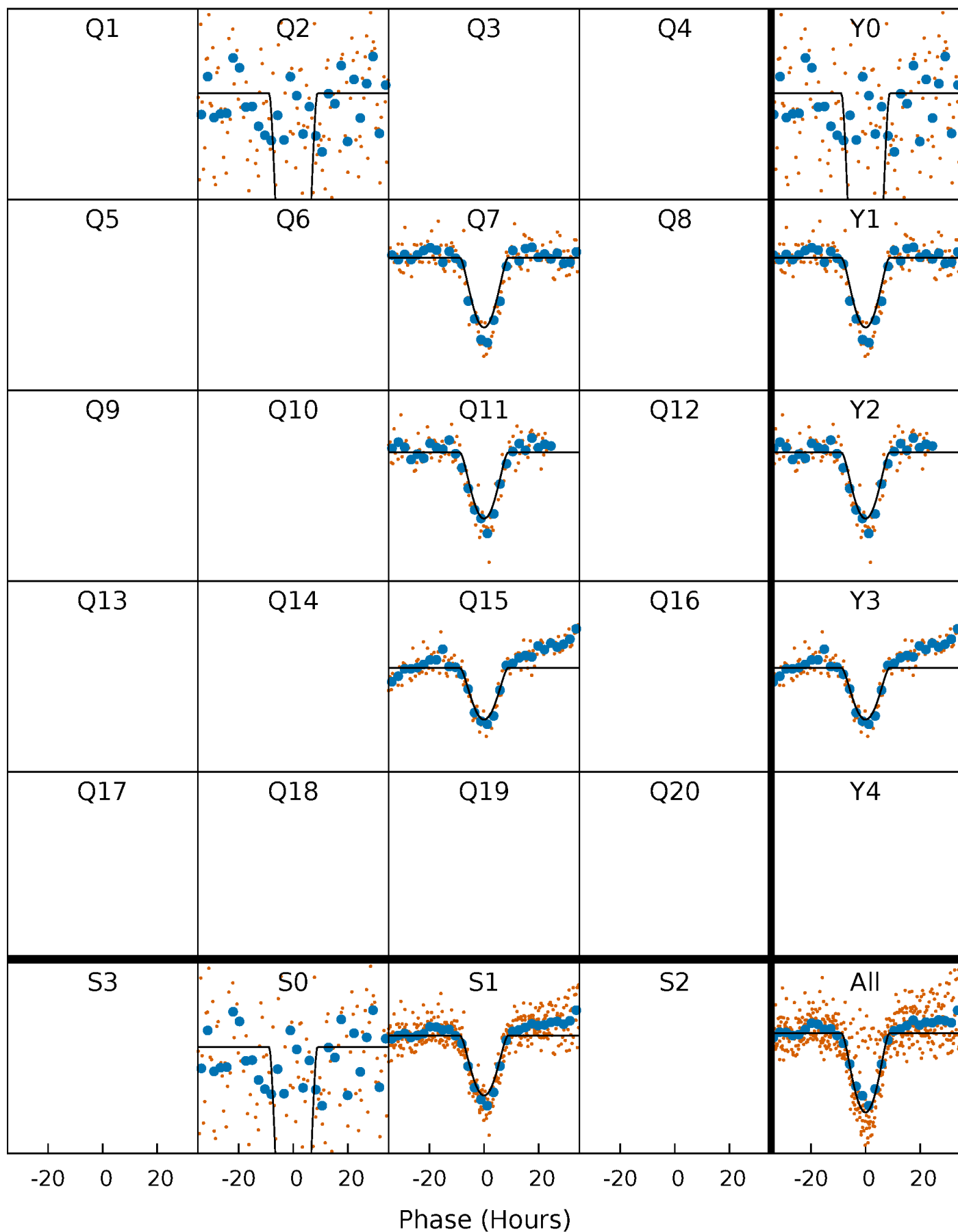
PDC Quarter-Phased Transit Curves

TCE 005114623-07 $P=389.281035$ Days $T_0=252.729537$ (BKJD)



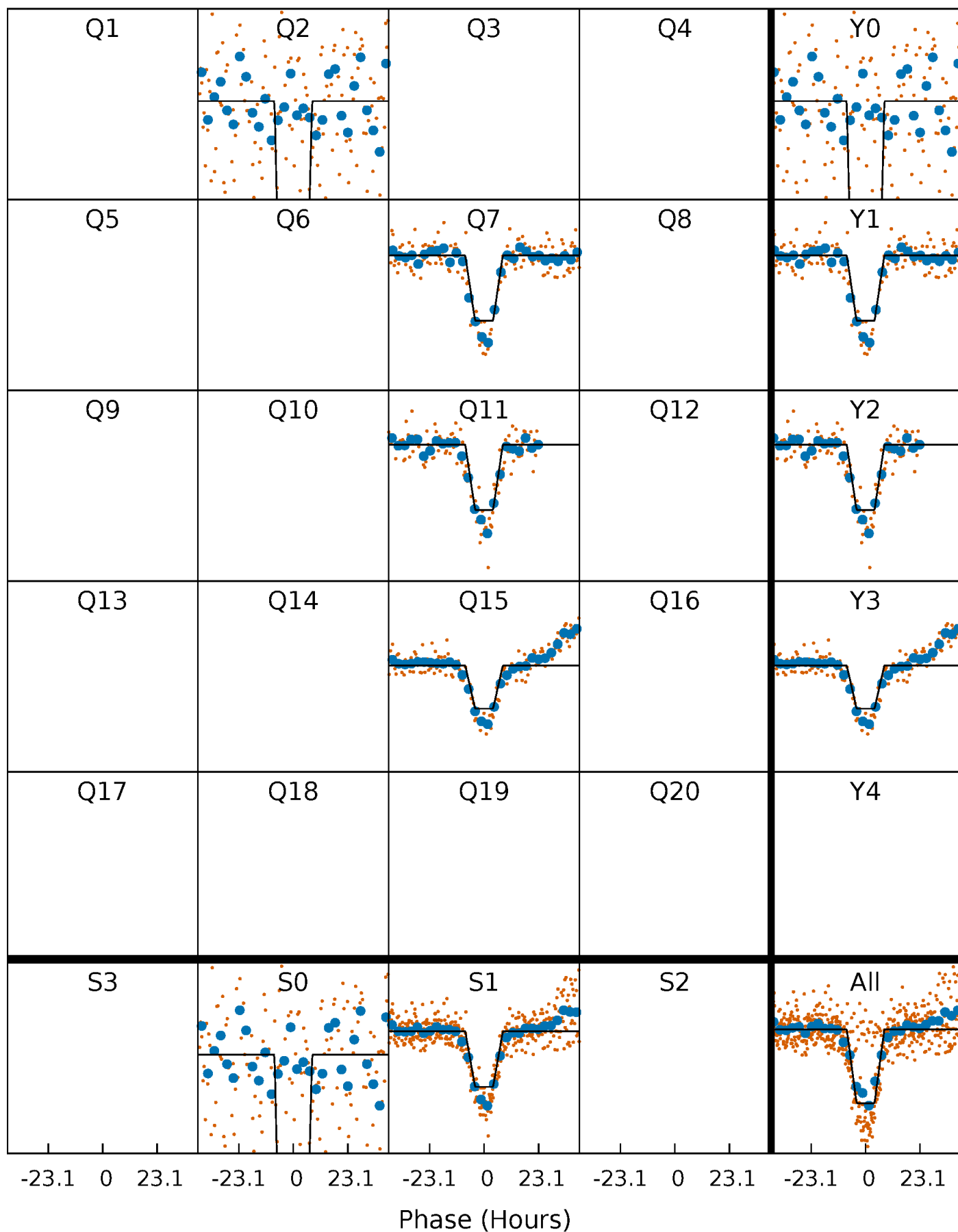
DV Quarter-Phased Transit Curves

TCE 005114623-07 P=389.281035 Days $T_0=252.729537$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

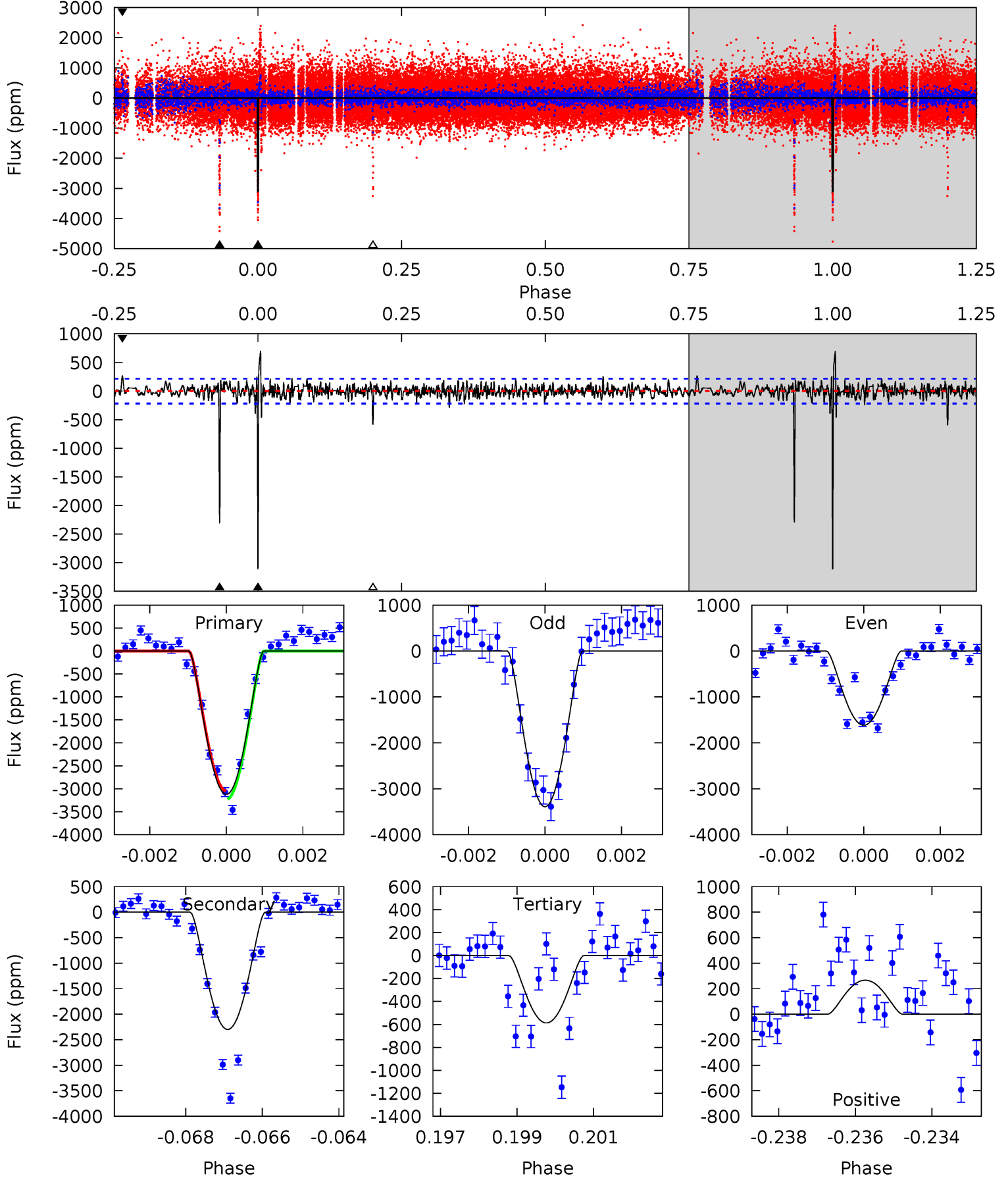
TCE 005114623-07 P=389.272940 Days $T_0=252.748258$ (BKJD)



DV Model-Shift Uniqueness Test

005114623-07, P = 389.281035 Days, E = 252.729537 Days

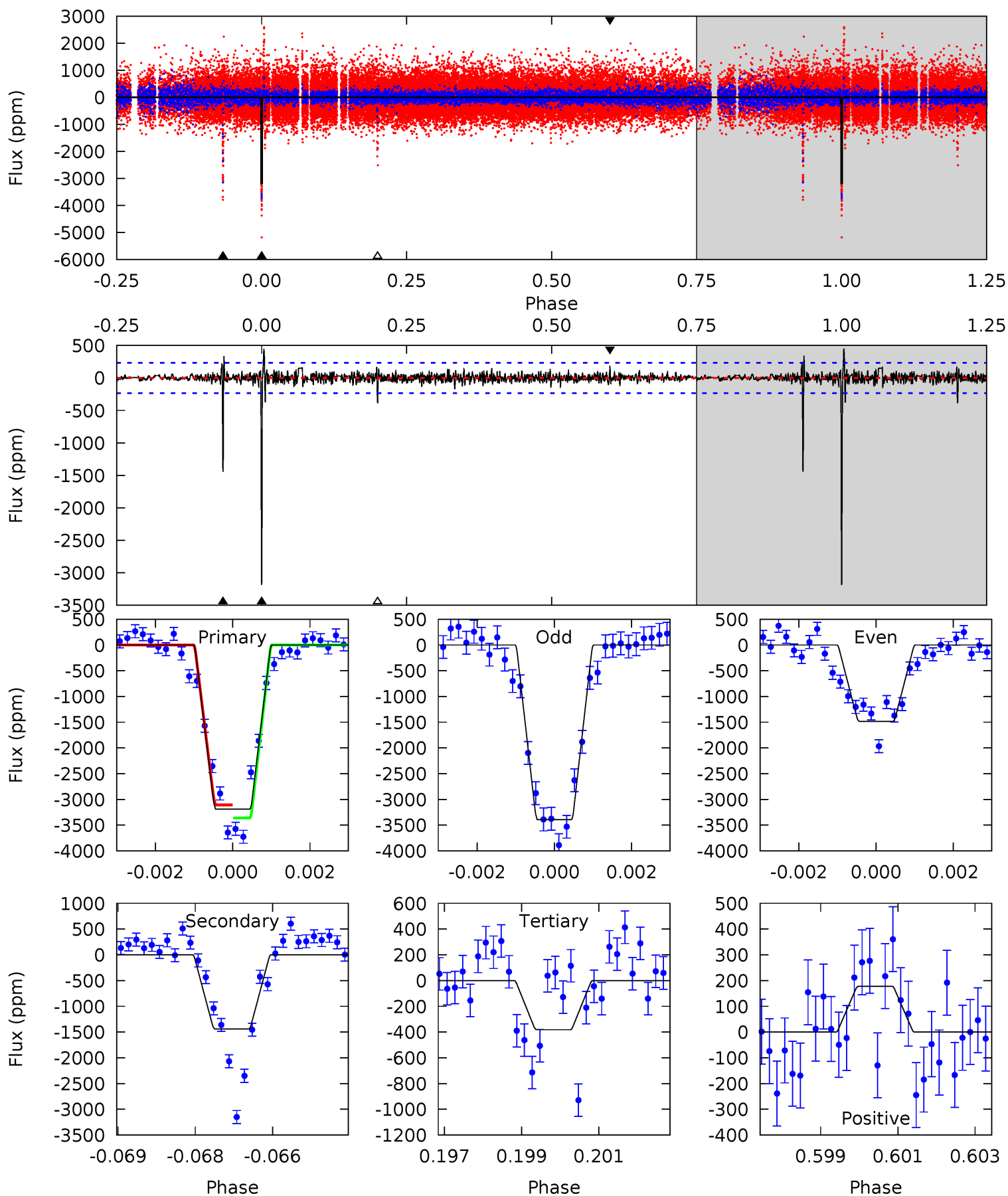
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
76.5	56.4	14.4	6.54	5.33	3.10	2.12	62.1	70.0	42.0	49.8	22.4	0.78	0.18	0



Alt Model-Shift Uniqueness Test

005114623-07, P = 389.272940 Days, E = 252.748258 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
73.0	33.0	8.74	4.06	5.35	3.13	1.17	64.3	68.9	24.3	28.9	23.1	0.77	0.12	2.85



Stellar Parameters For KIC 005114623

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6029^{+210}_{-210}	$4.452^{+0.070}_{-0.210}$	$-0.080^{+0.250}_{-0.300}$	$0.998^{+0.330}_{-0.132}$	$1.025^{+0.153}_{-0.126}$	$1.451^{+0.427}_{-0.780}$
	+3%/-3%	+2%/-5%	+312%/-375%	+33%/-13%	+15%/-12%	+29%/-54%
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 005114623-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2295 ± 41	$11.74^{+9.28}_{-7.93}$	370^{+27}_{-21}	4360^{+2910}_{-801}	10410^{+79473}_{-7227}
Alt.	-1441 ± 44	$9.32^{+9.14}_{-6.27}$	370^{+30}_{-20}	4338^{+2815}_{-869}	10069^{+83296}_{-7494}

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 $A_{obs} \gg 1.0$

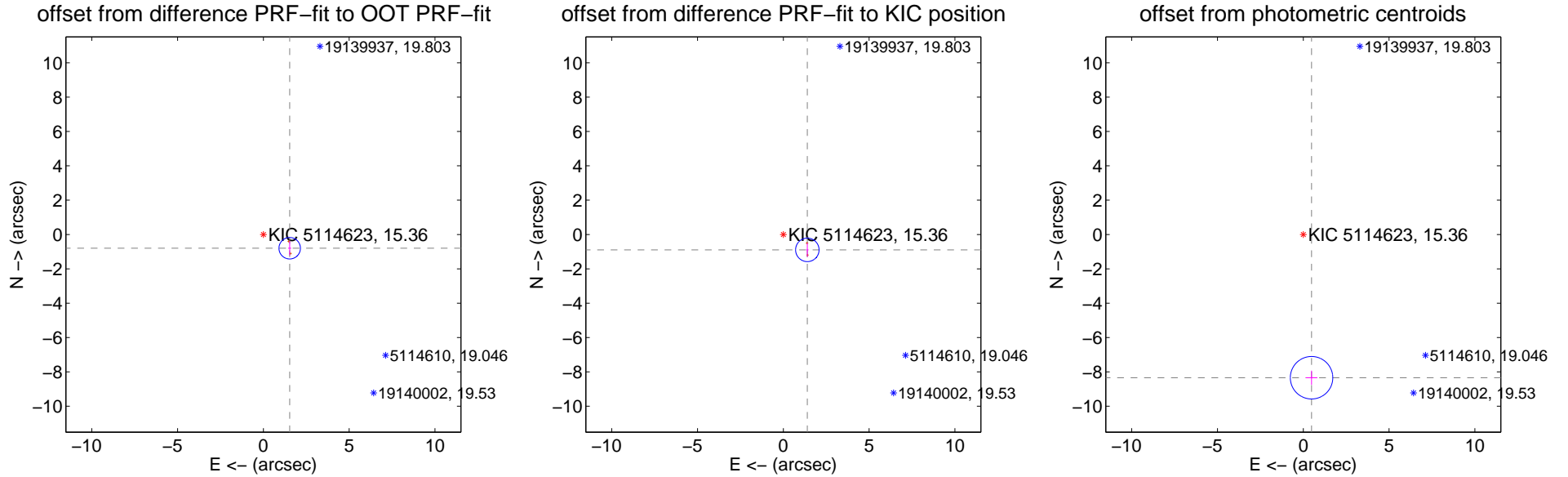
DV Centroid Data

Supplemental centroid analysis for 005114623-07. Kepler magnitude: 15.36. Transit SNR 34.49

There are 0 quarters with good PRF difference image offsets

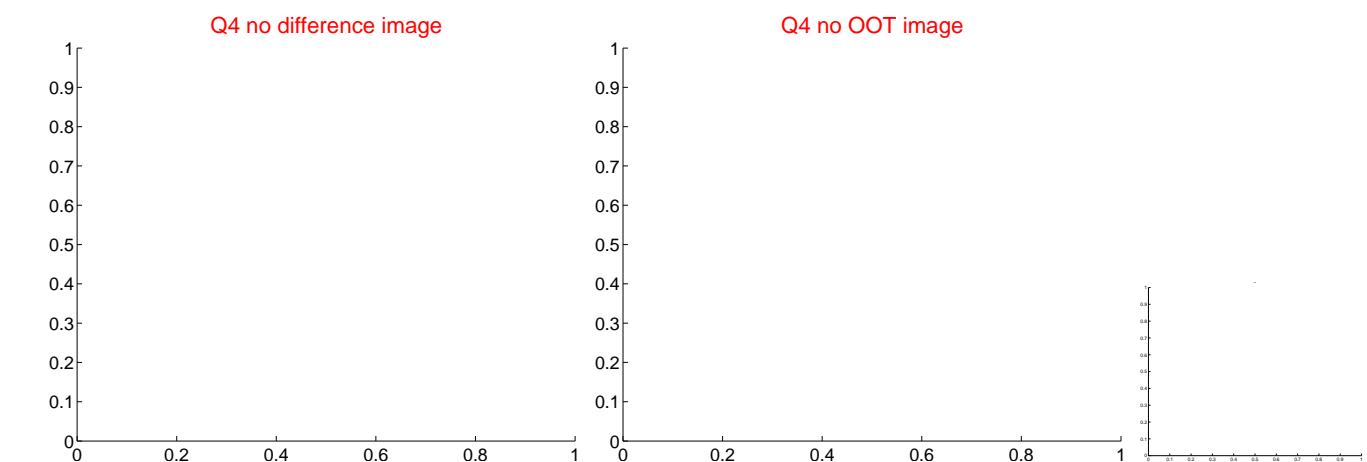
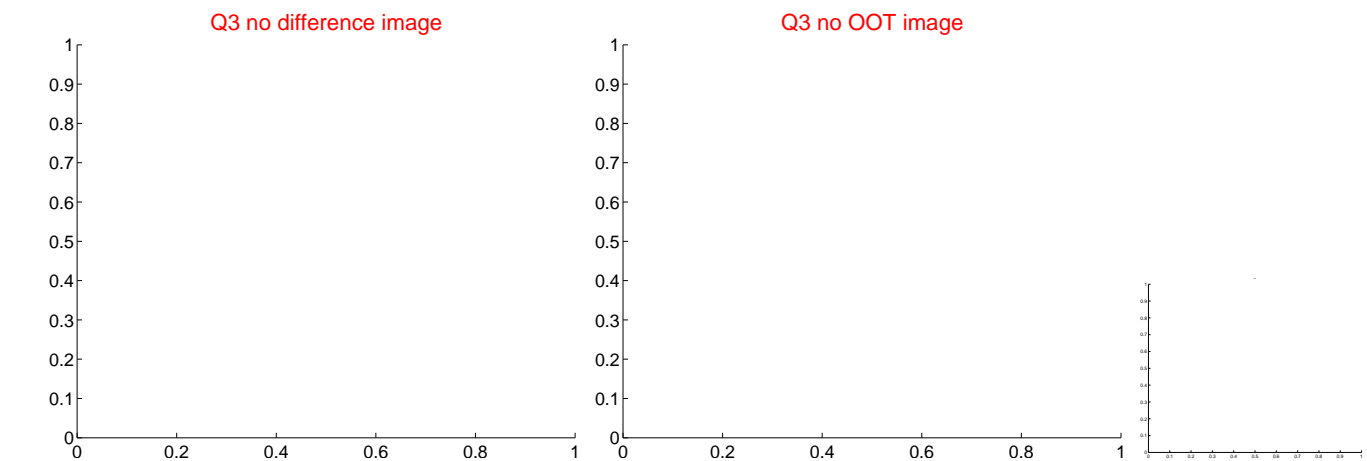
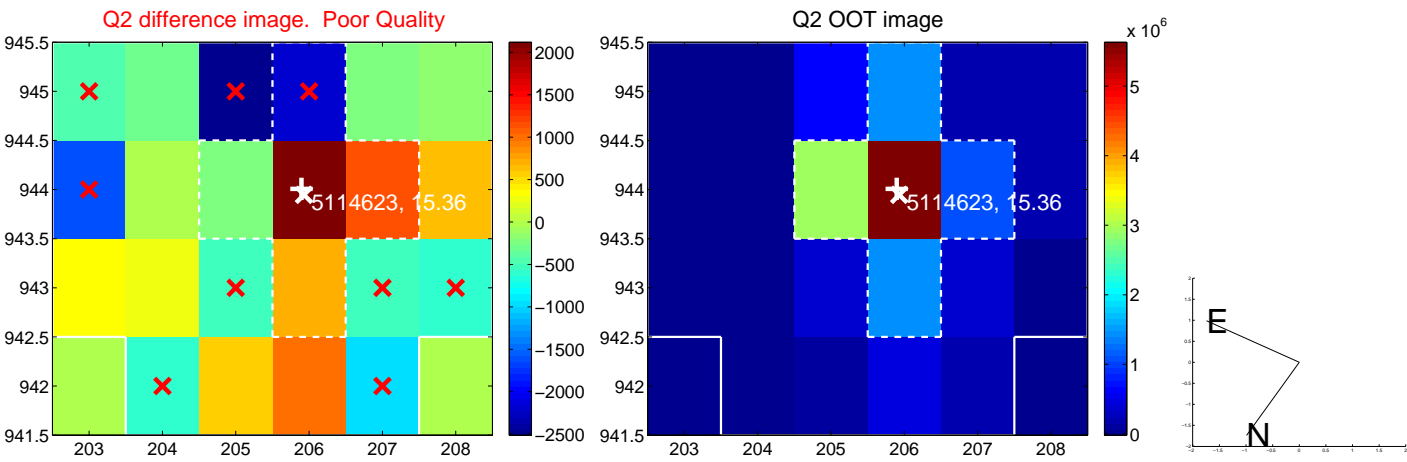
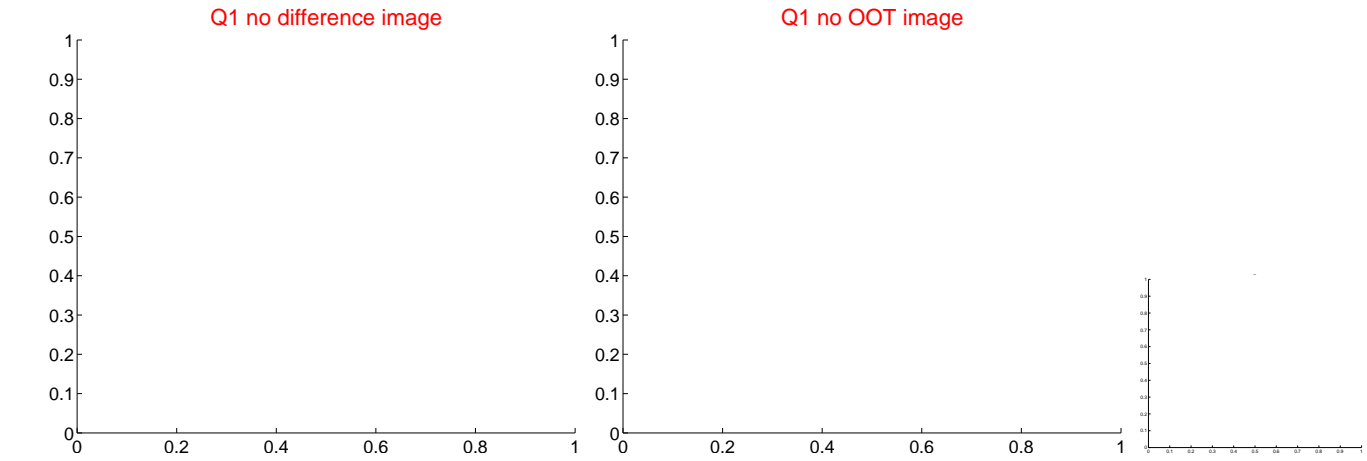
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.730 ± 0.208	8.30	-1.533 ± 0.090	-0.800 ± 0.416
PRF-fit source offset from KIC position	1.661 ± 0.228	7.29	-1.399 ± 0.069	-0.896 ± 0.409
photometric centroid source offset	8.36 ± 0.41	20.25	-0.48 ± 0.34	-8.34 ± 0.41

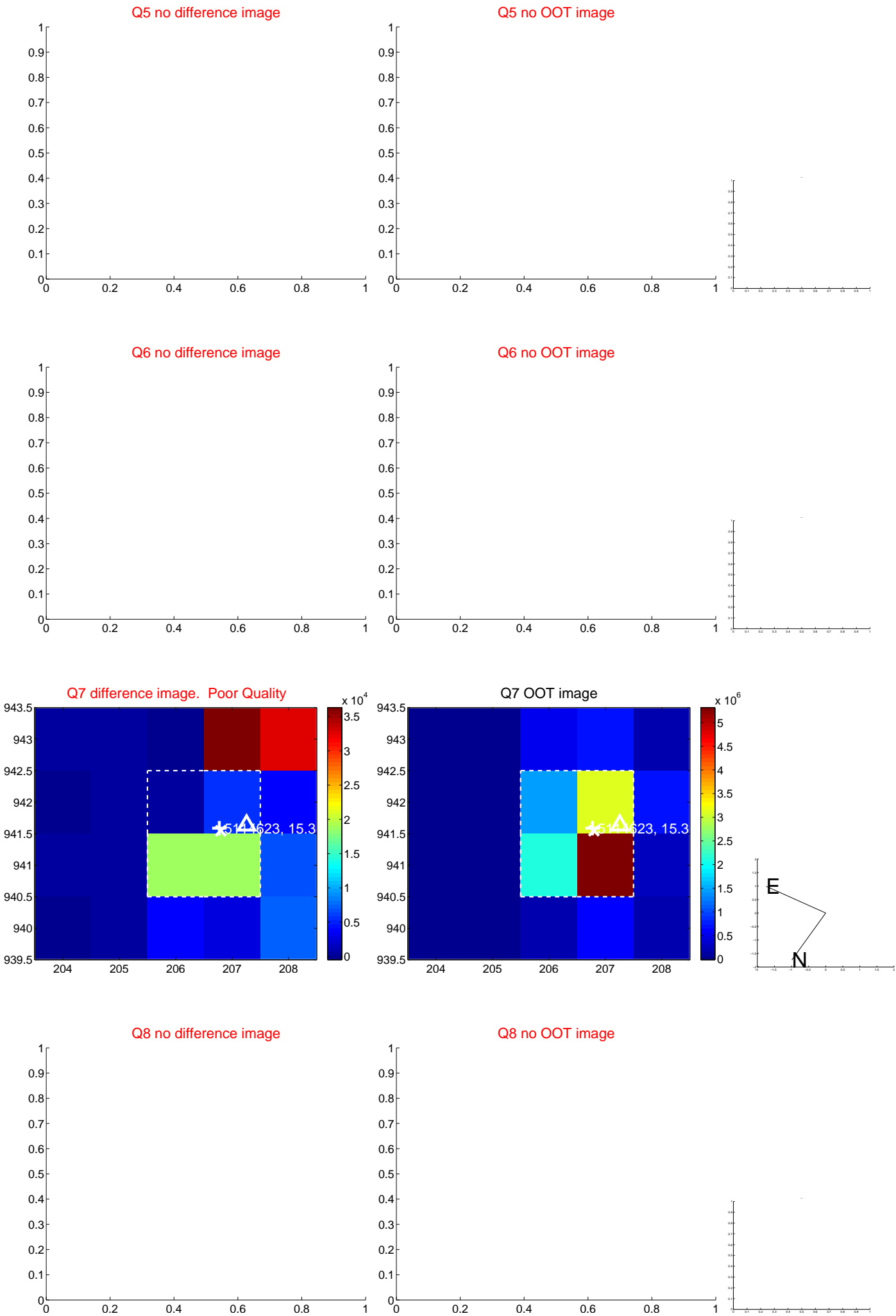


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



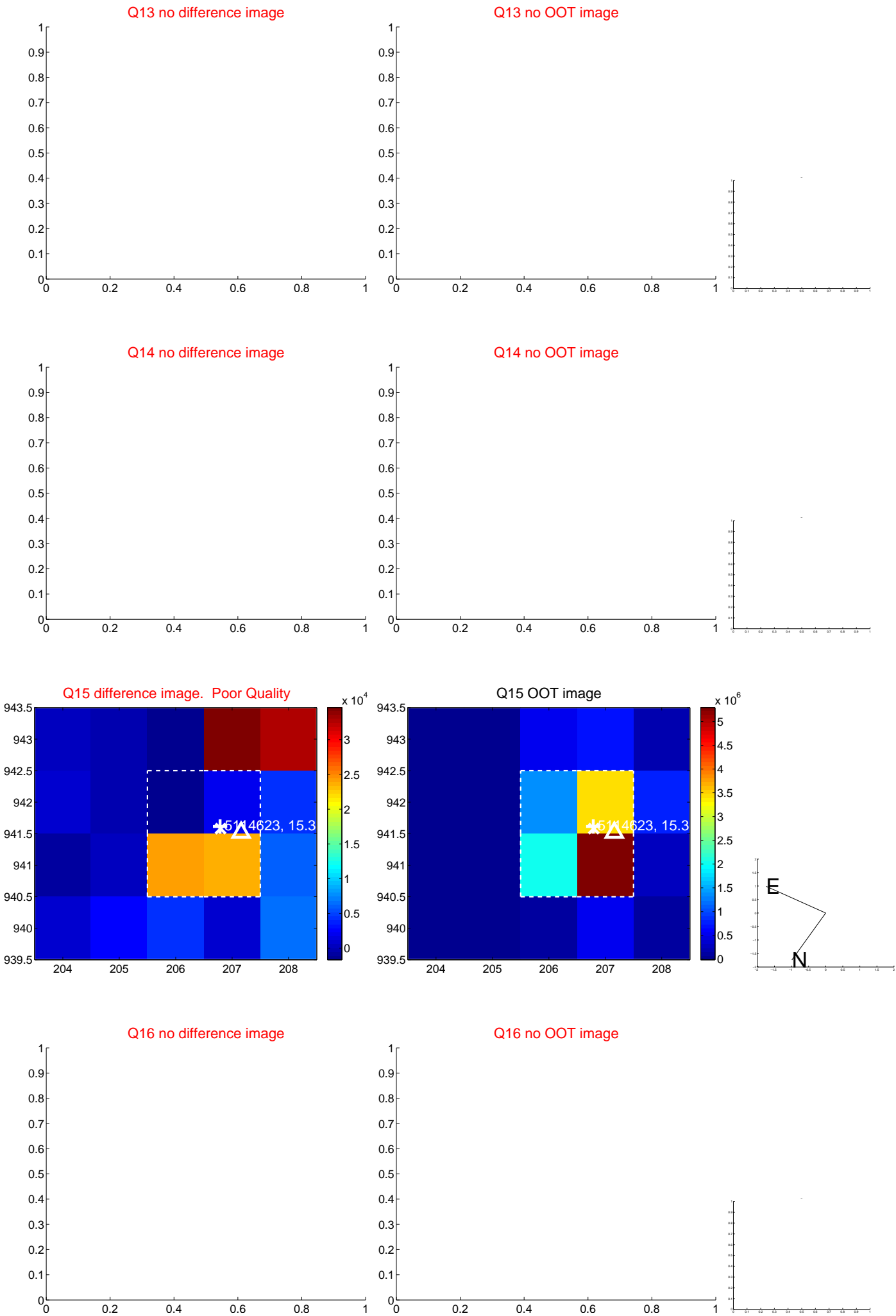
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



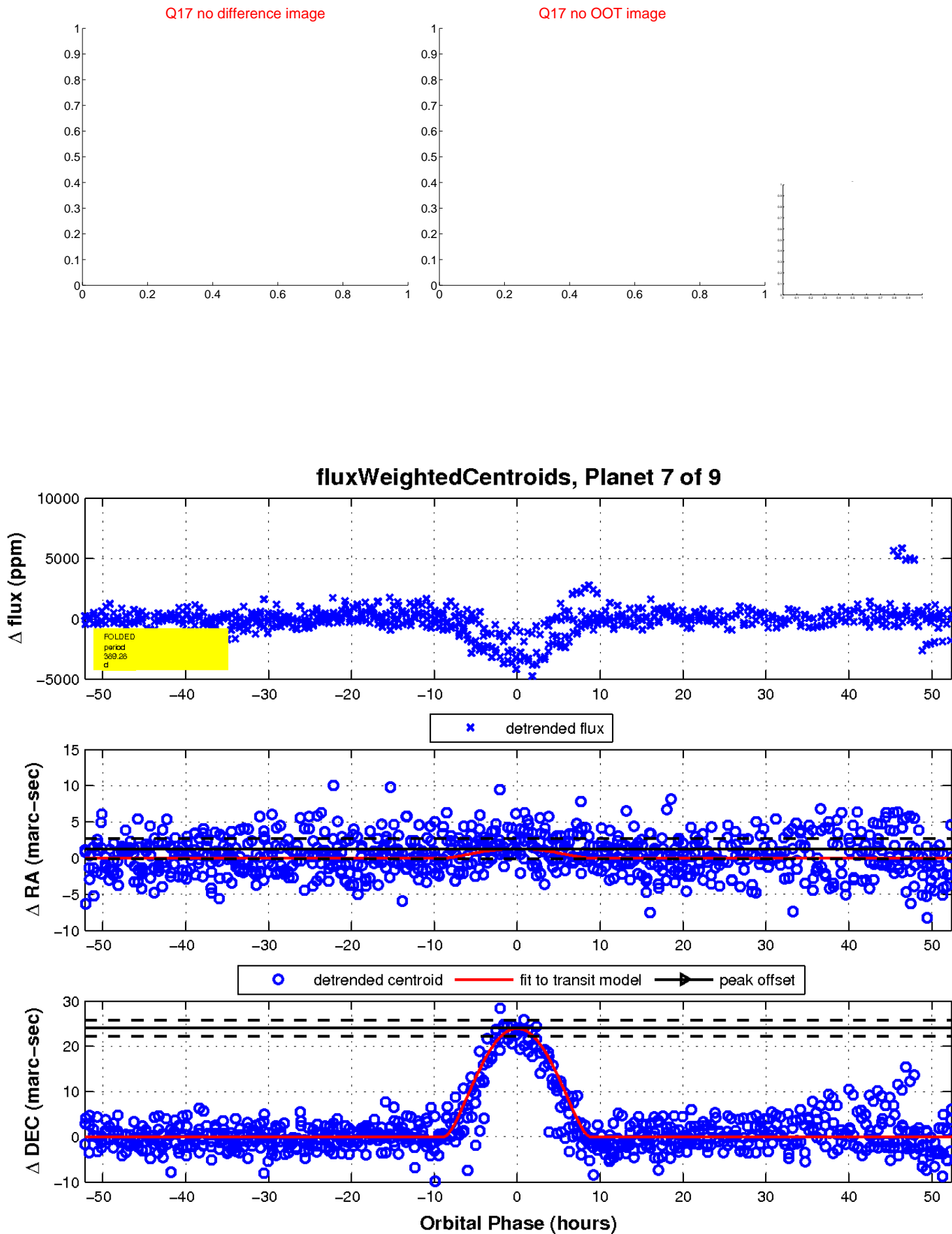
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

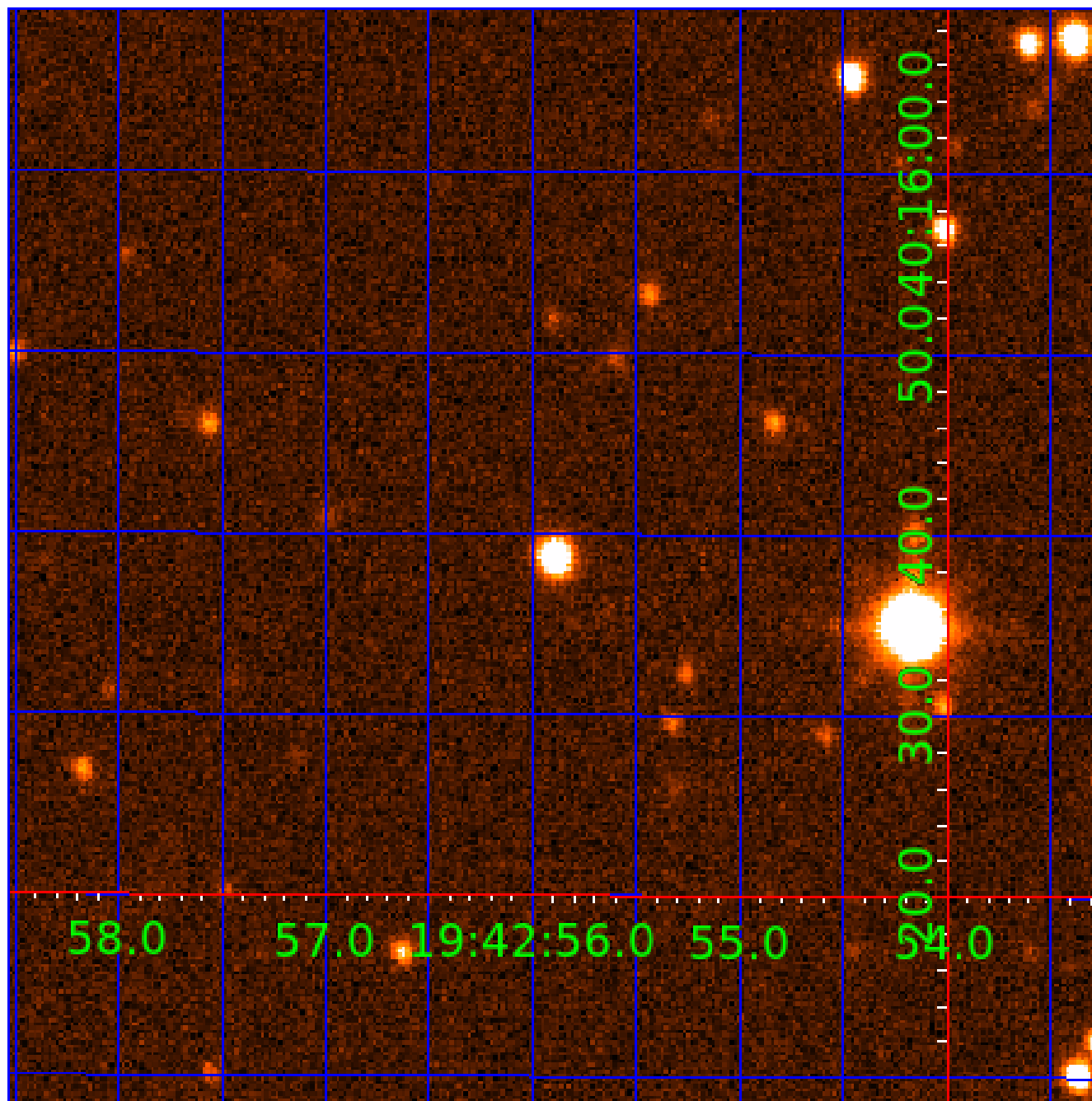


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005114623

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})
005114623-01	OBS	No	363.329250	284.636050	5278.6	13.048	54.2	60.4	1.00	6029	13.23	1.17
005114623-02	OBS	No	363.326947	310.595787	5246.9	12.643	56.5	56.8	1.00	6029	13.19	1.17
005114623-03	OBS	No	363.327653	336.550228	5137.8	13.809	48.3	48.8	1.00	6029	13.06	1.17
005114623-04	OBS	No	389.280763	278.687192	3576.5	19.563	45.6	47.1	1.00	6029	10.99	1.06
005114623-05	OBS	No	389.272274	304.639583	3718.4	20.450	44.9	46.4	1.00	6029	11.03	1.06
005114623-06	OBS	No	363.314235	362.530688	5113.3	12.701	37.9	40.6	1.00	6029	13.03	1.17
005114623-07	OBS	No	389.281035	252.729537	2866.9	17.496	30.8	34.5	1.00	6029	8.98	1.06
005114623-08	OBS	No	364.132836	330.599616	2367.5	22.467	29.3	24.9	1.00	6029	9.08	1.16
005114623-09	OBS	No	389.246077	226.865752	3358.8	16.550	22.5	28.7	1.00	6029	10.70	1.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005114623-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—PERIOD_ALIAS_DV—PERIOD_ALIAS_ALT—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
005114623-02	OBS	FP	0.00	1	1	1	1	IS_SEC_TCE—CENT_RESOLVED_OFFSET—EPHEM_MATCH
005114623-03	OBS	FP	0.00	1	0	0	1	SAME_NTL_PERIOD—CENT_FEW_DIFFS—EPHEM_MATCH
005114623-04	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_MARSHALL—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
005114623-05	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_MARSHALL—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
005114623-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS
005114623-07	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
005114623-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005114623-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_ZUMA—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST

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.

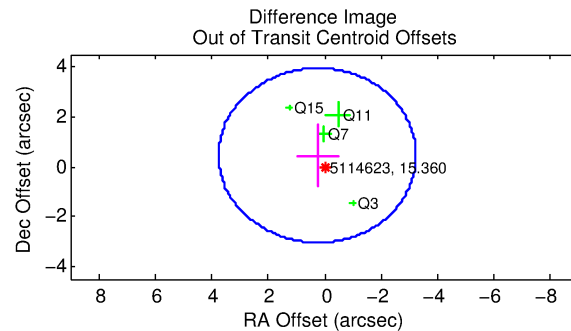
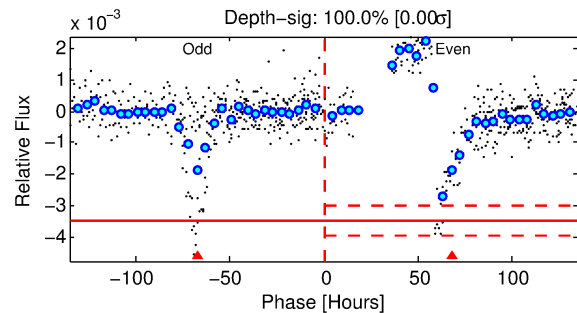
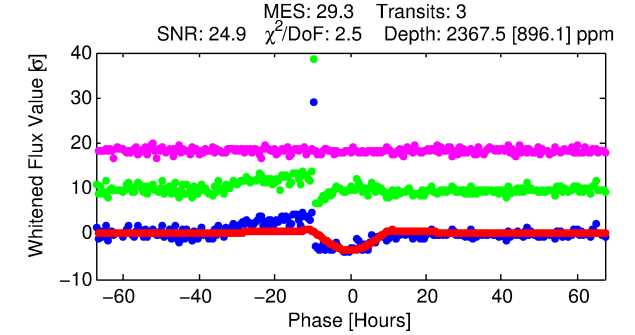
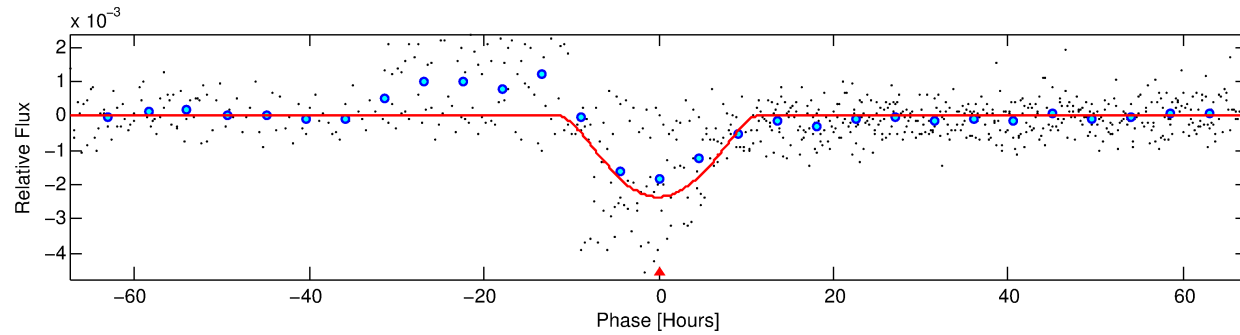
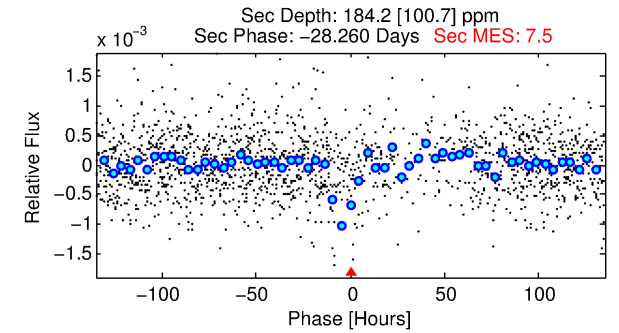
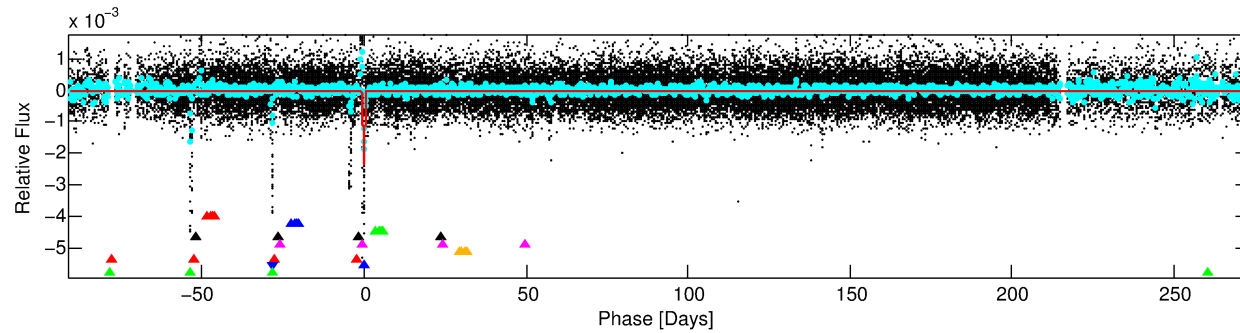
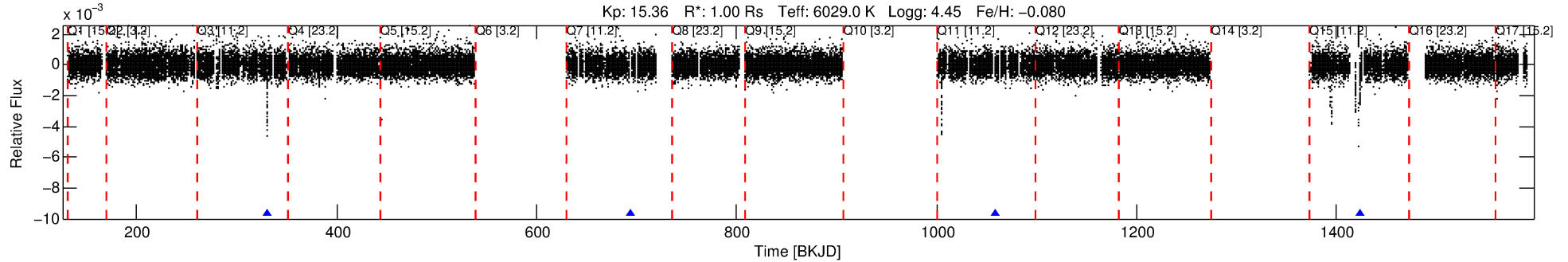
Ephemeris Match Information For 005114623-08

No Significant Match Found

DV One-Page Summary

KIC: 5114623 Candidate: 8 of 9 Period: 364.133 d
KOI: K03827 Corr: No Ephemeris Match

Kp: 15.36 R*: 1.00 Rs Teff: 6029.0 K Logg: 4.45 Fe/H: -0.080



DV Fit Results:

Period = 364.13284 [0.01284] d
Epoch = 330.5996 [0.0246] BKJD
Rp/R* = 0.0834 [0.1938]
a/R* = 51.63 [25.72]
b = 1.00 [0.26]
Seff = 1.16 [0.48]
Teq = 265 [27] K
Rp = 9.08 [21.32] Re
a = 1.0076 [0.2752] AU
Ag = 1246.75 [5853.66] [0.21σ]
Teffp = 2432 [2846] K [0.76σ]

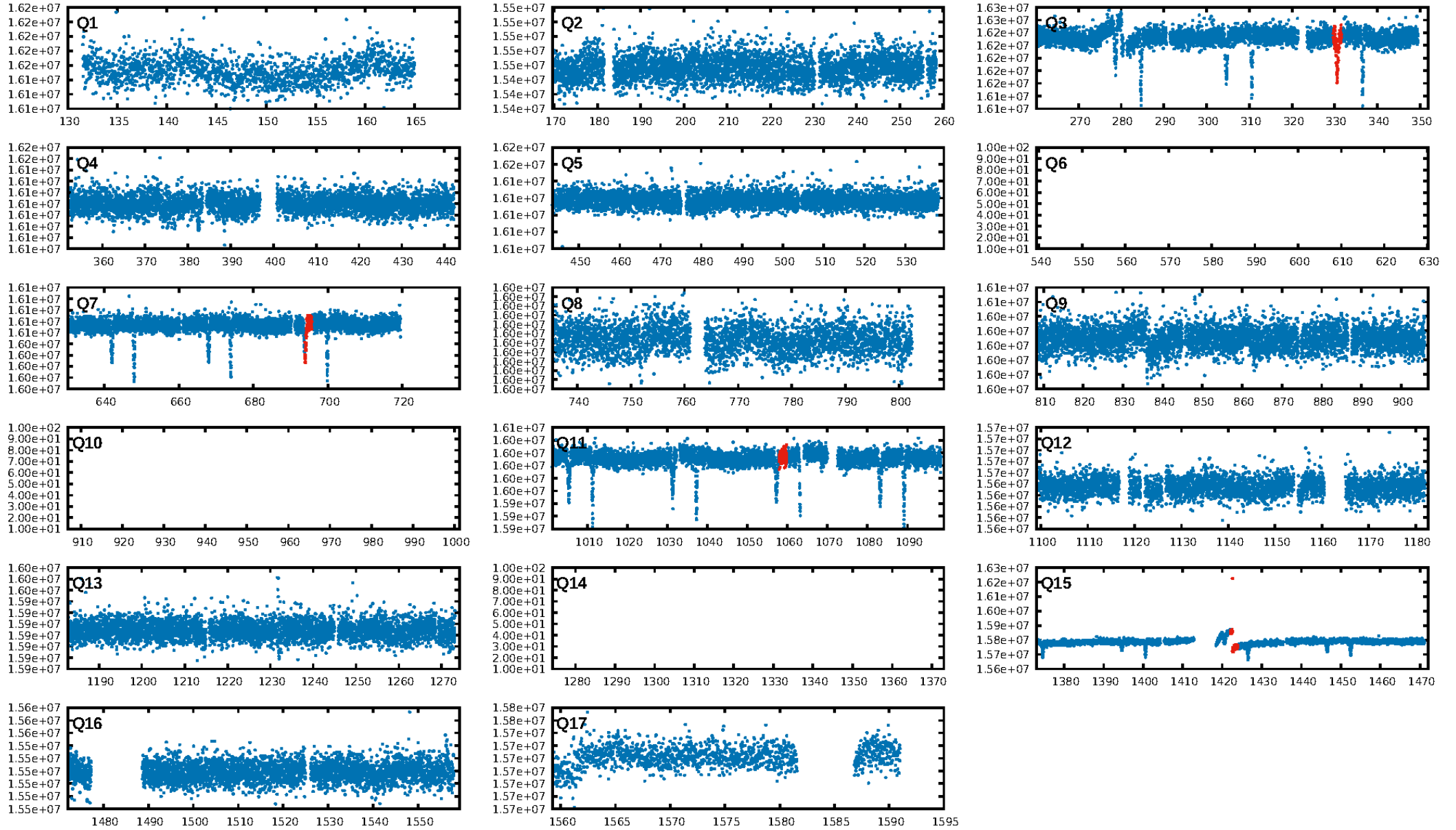
DV Diagnostic Results:

ShortPeriod-sig: 54.2% [0.74σ]
LongPeriod-sig: 100.0% [21.60σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 2.16e-67
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.373
Centroid-sig: 0.1%
Centroid-so: 1.129 arcsec [2.45σ]
OotOffset-rm: 0.518 arcsec [0.44σ]
KicOffset-rm: 0.507 arcsec [0.49σ]
OotOffset-st: 0/4/0/0 [4]
KicOffset-st: 0/4/0/0 [4]
DiffImageQuality-fgm: 0.25 [1/4]
DiffImageOverlap-fno: 0.50 [2/4]

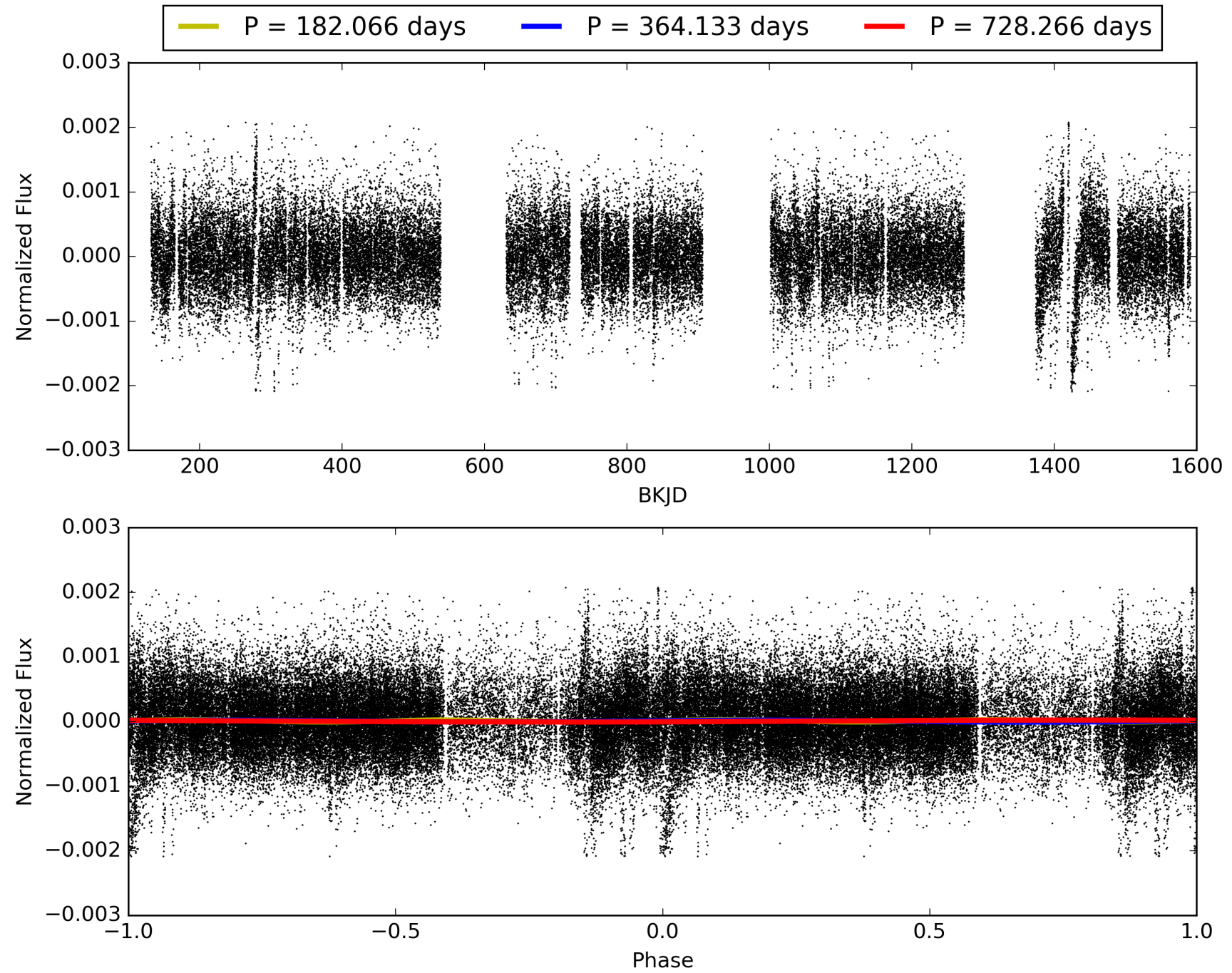
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:09:13 Z

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

TCE 005114623-08, PDC Light Curves

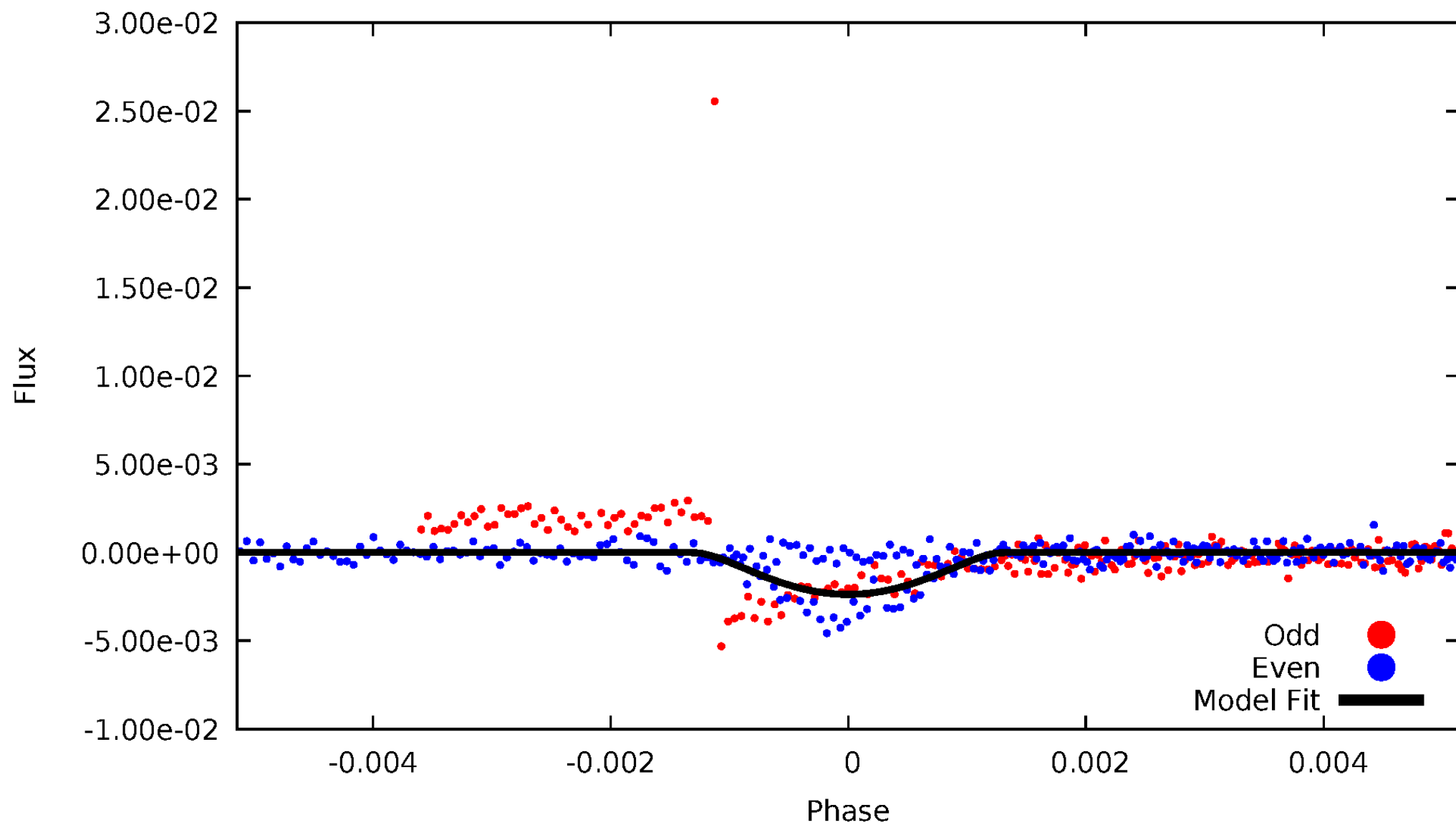


TCE 005114623-08



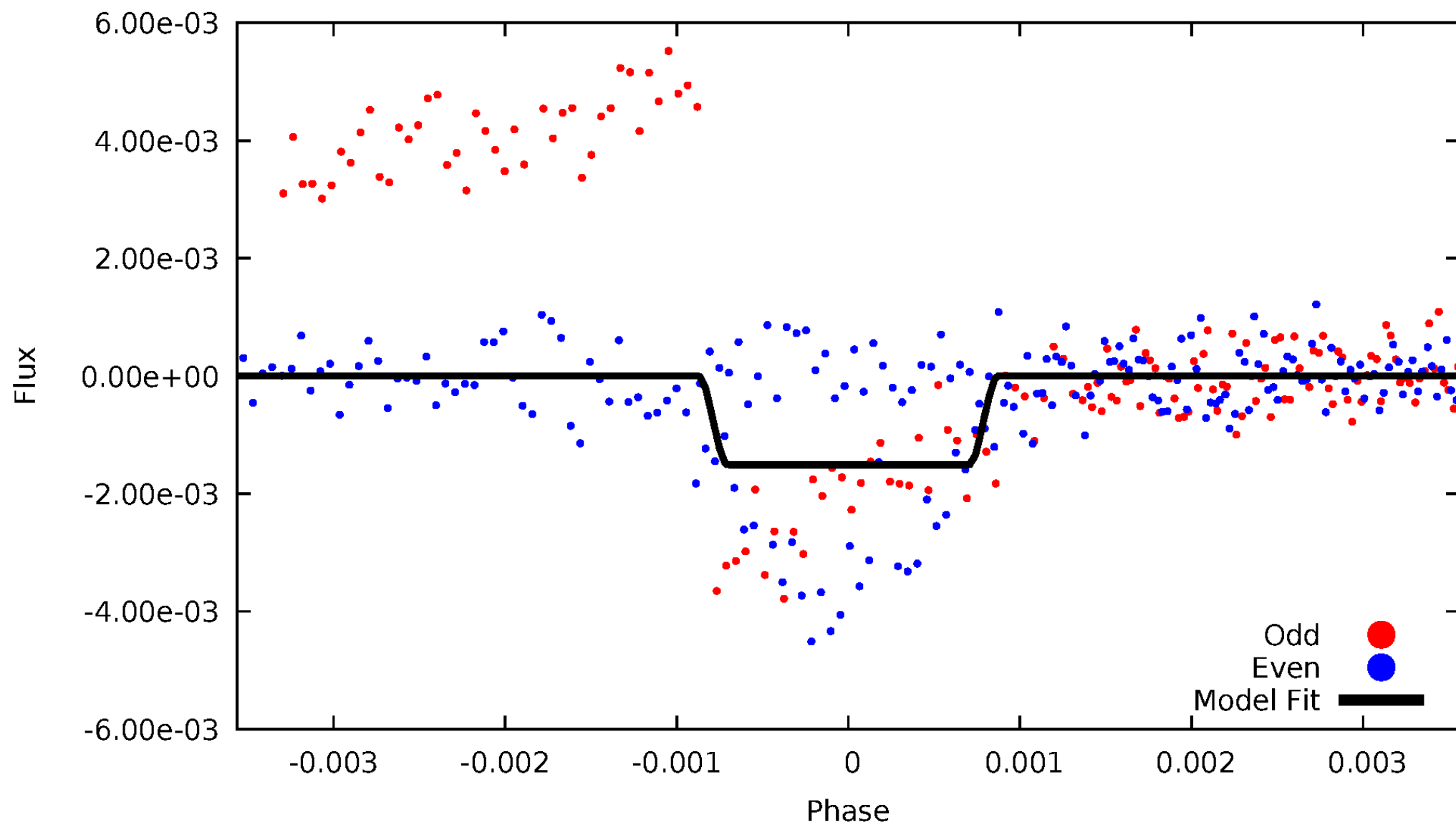
DV Odd/Even

TCE 005114623-08



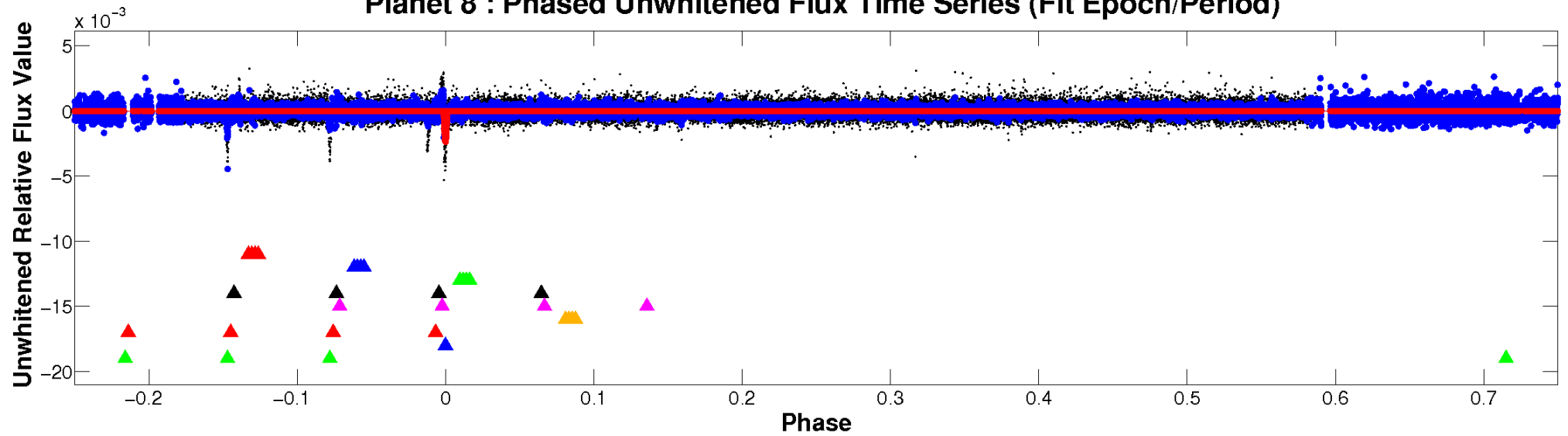
ALT Odd/Even

TCE 005114623-08

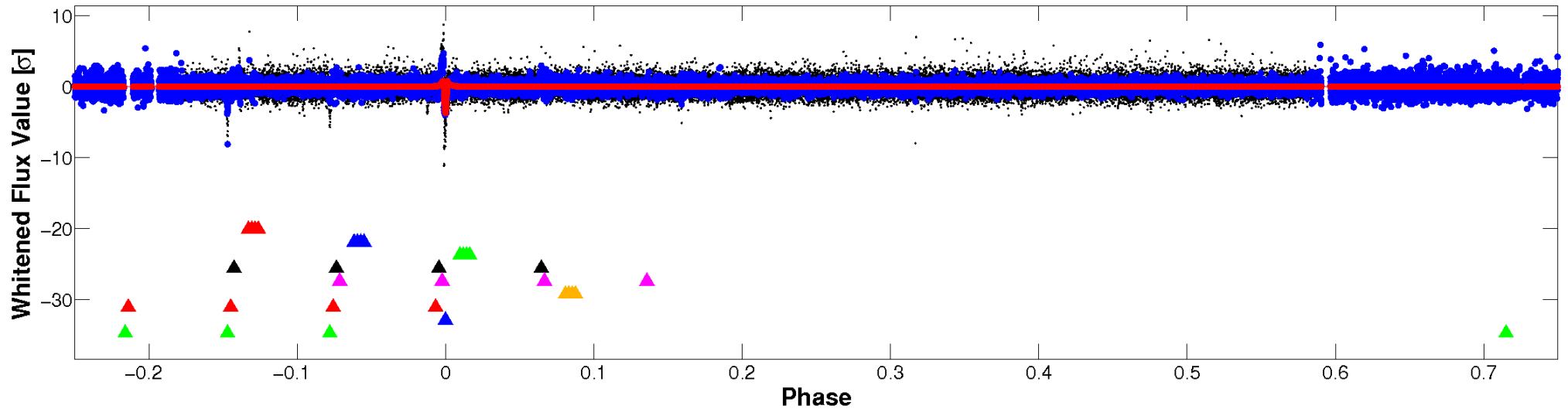


Non-Whitened Vs. Whitened Light Curve

Planet 8 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

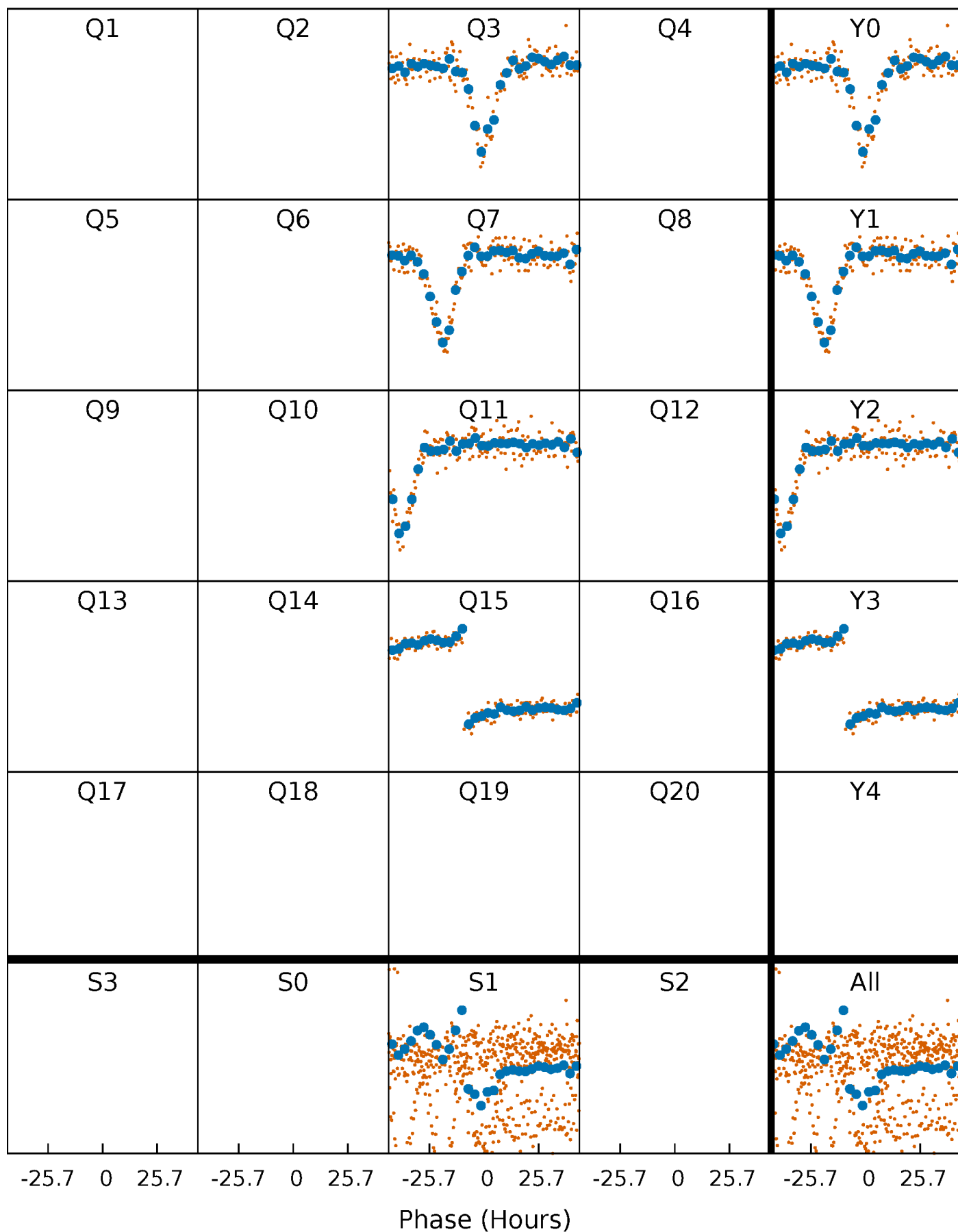


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



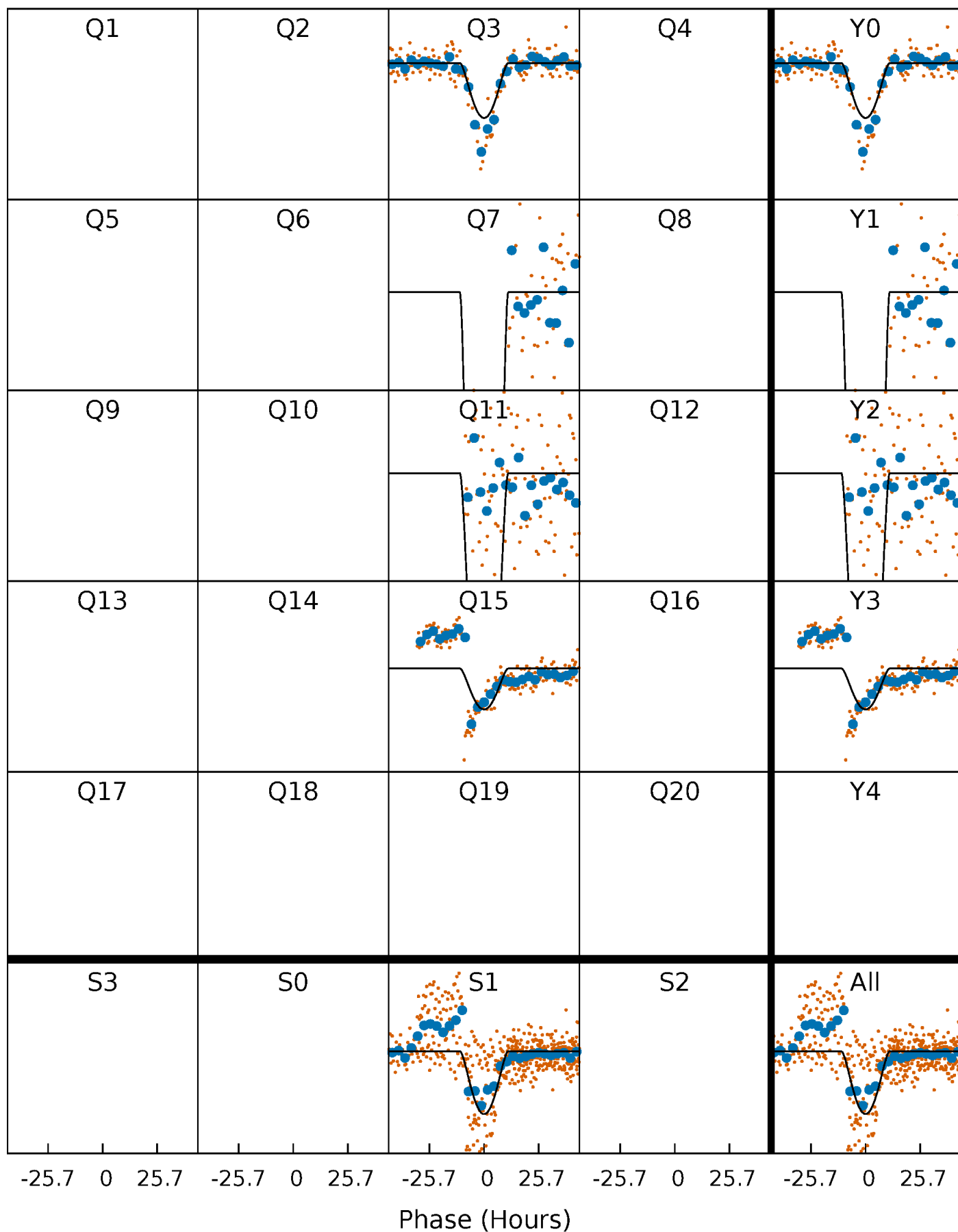
PDC Quarter-Phased Transit Curves

TCE 005114623-08 $P=364.132836$ Days $T_0=330.599616$ (BKJD)



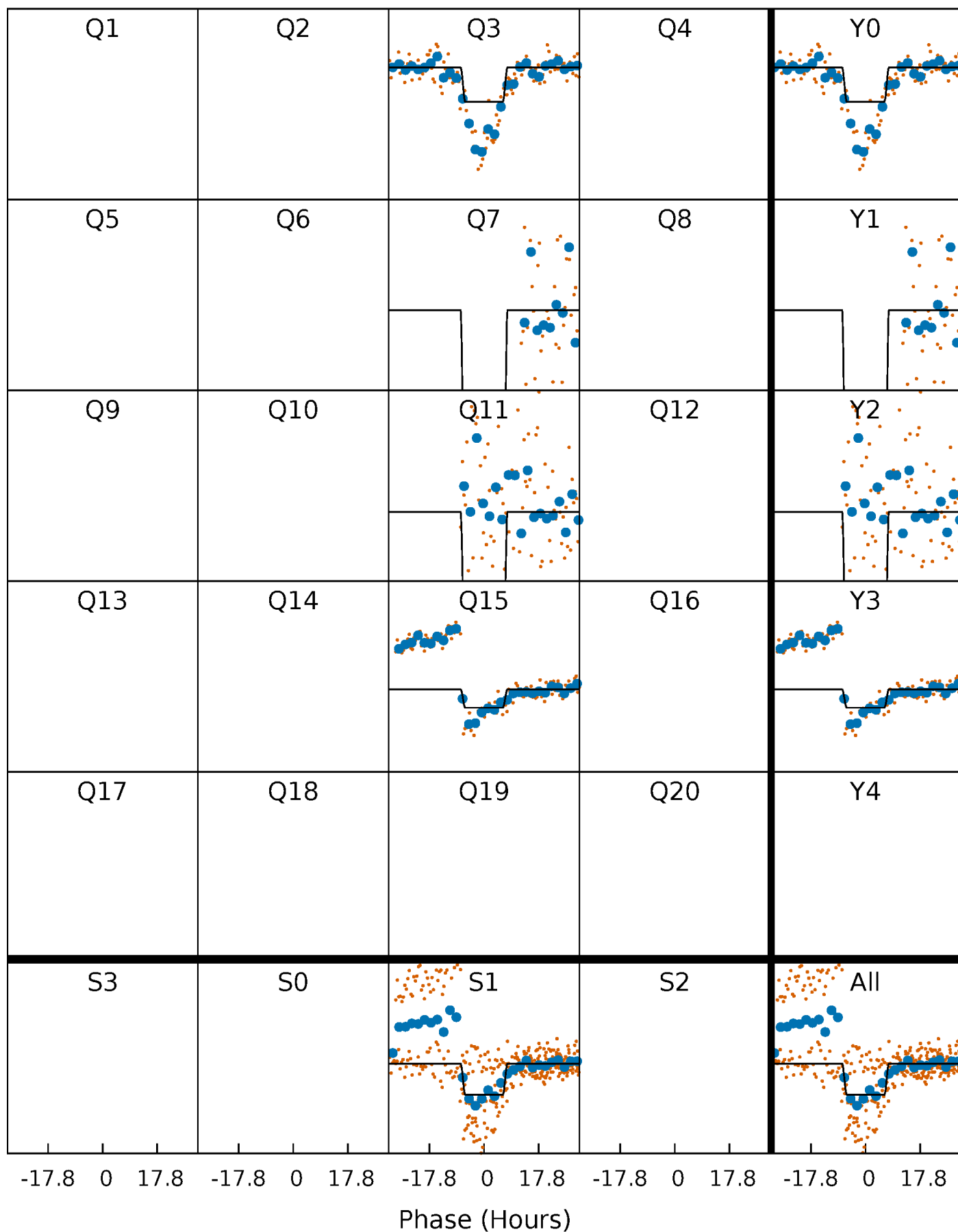
DV Quarter-Phased Transit Curves

TCE 005114623-08 $P=364.132836$ Days $T_0=330.599616$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

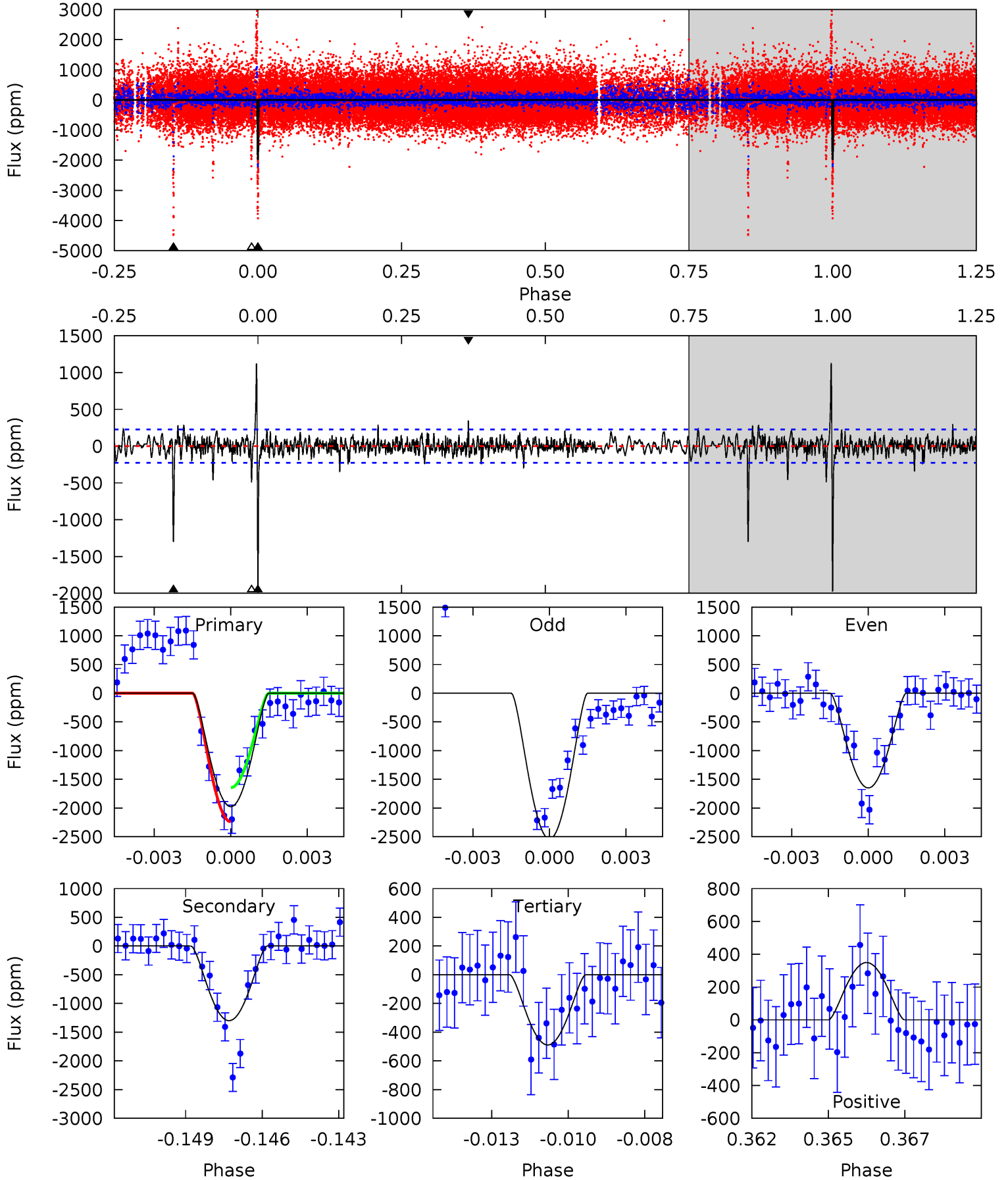
TCE 005114623-08 P=364.091983 Days $T_0=330.612467$ (BKJD)



DV Model-Shift Uniqueness Test

005114623-08, P = 364.132836 Days, E = 330.599616 Days

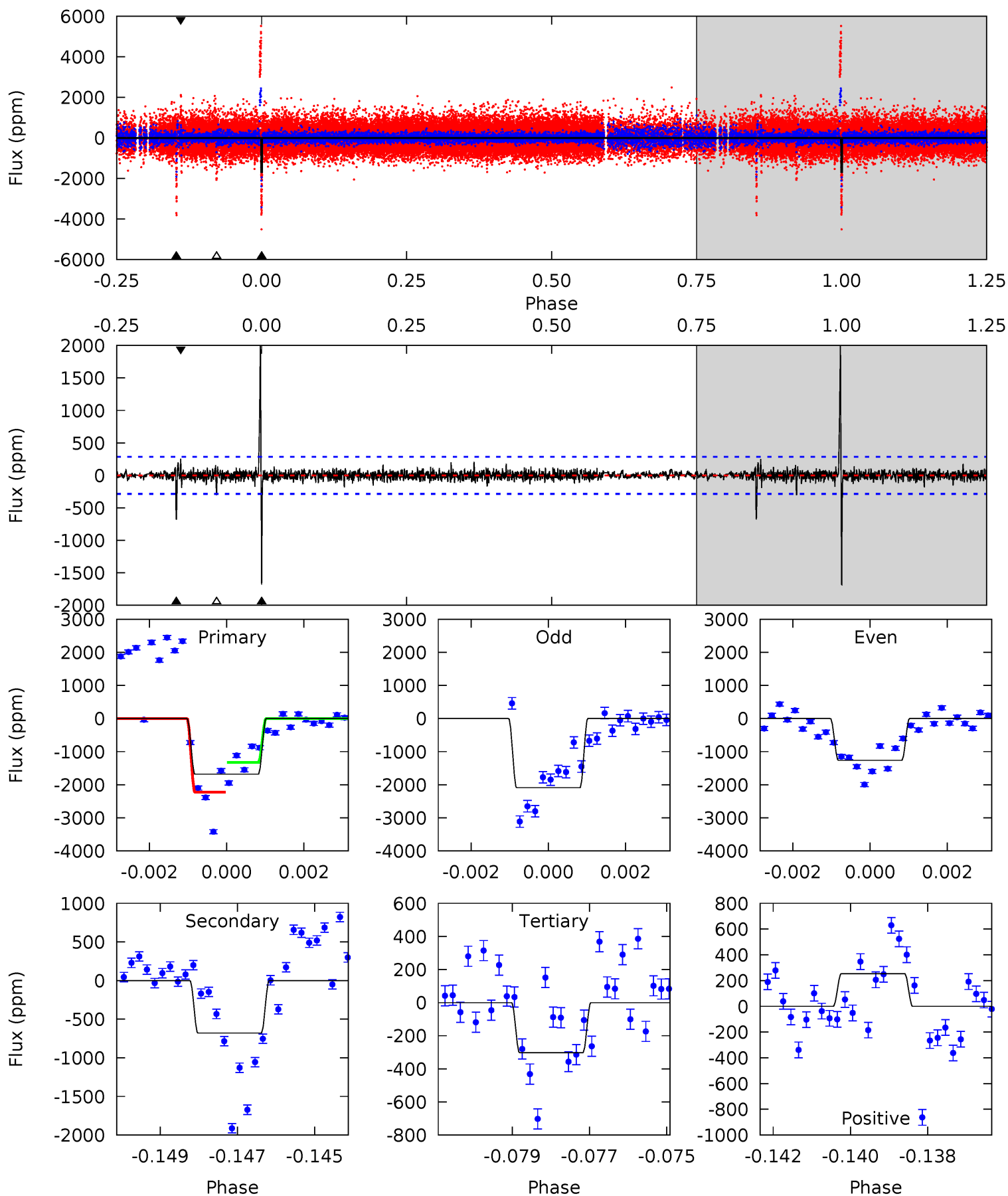
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
46.2	30.4	11.4	8.16	5.28	3.01	1.93	34.7	38.0	18.9	22.2	10.4	0.80	0.36	6.74



Alt Model-Shift Uniqueness Test

005114623-08, P = 364.091983 Days, E = 330.612467 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.6	12.8	5.69	4.76	5.36	3.14	1.41	25.9	26.9	7.09	8.01	7.84	0.75	0.54	8.07



Stellar Parameters For KIC 005114623

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6029^{+210}_{-210}	$4.452^{+0.070}_{-0.210}$	$-0.080^{+0.250}_{-0.300}$	$0.998^{+0.330}_{-0.132}$	$1.025^{+0.153}_{-0.126}$	$1.451^{+0.427}_{-0.780}$
	+3%/-3%	+2%/-5%	+312%/-375%	+33%/-13%	+15%/-12%	+29%/-54%
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 005114623-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1300 ± 43	$19.09^{+19.26}_{-12.64}$	379^{+28}_{-21}	3380^{+1569}_{-631}	1944^{+15465}_{-1457}
Alt.	-679 ± 53	$15.78^{+17.78}_{-10.62}$	377^{+29}_{-21}	3208^{+1455}_{-600}	1516^{+12102}_{-1179}

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

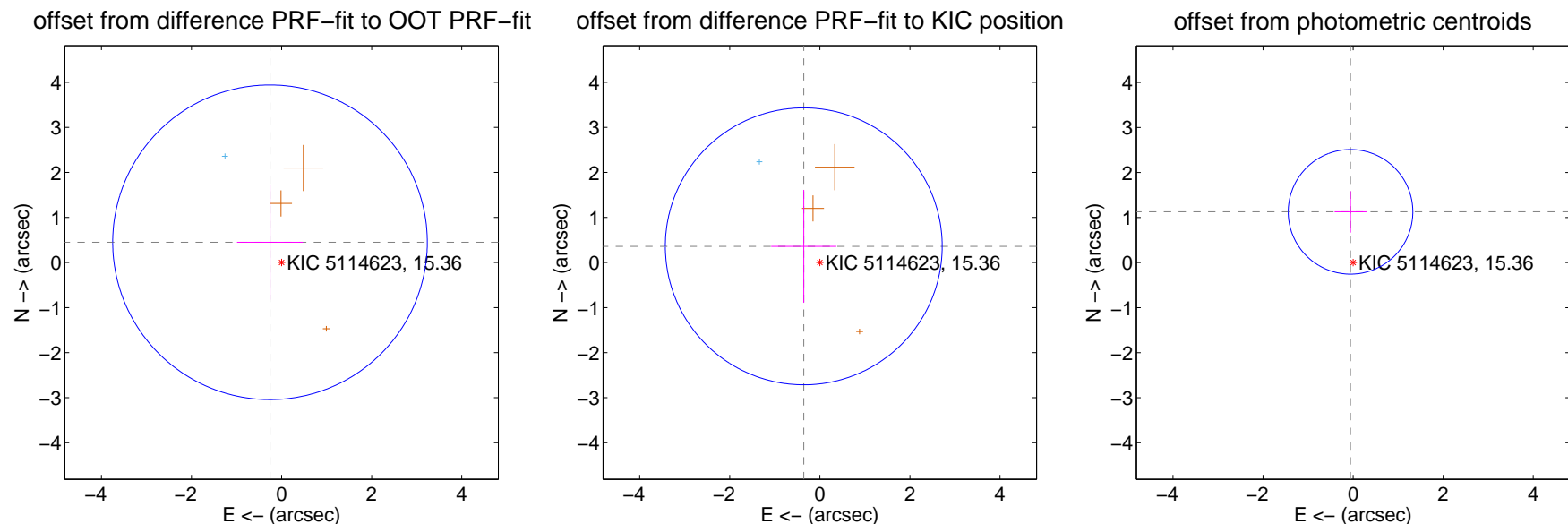
DV Centroid Data

Supplemental centroid analysis for 005114623-08. Kepler magnitude: 15.36. Transit SNR 24.88

There are 1 quarters with good PRF difference image offsets

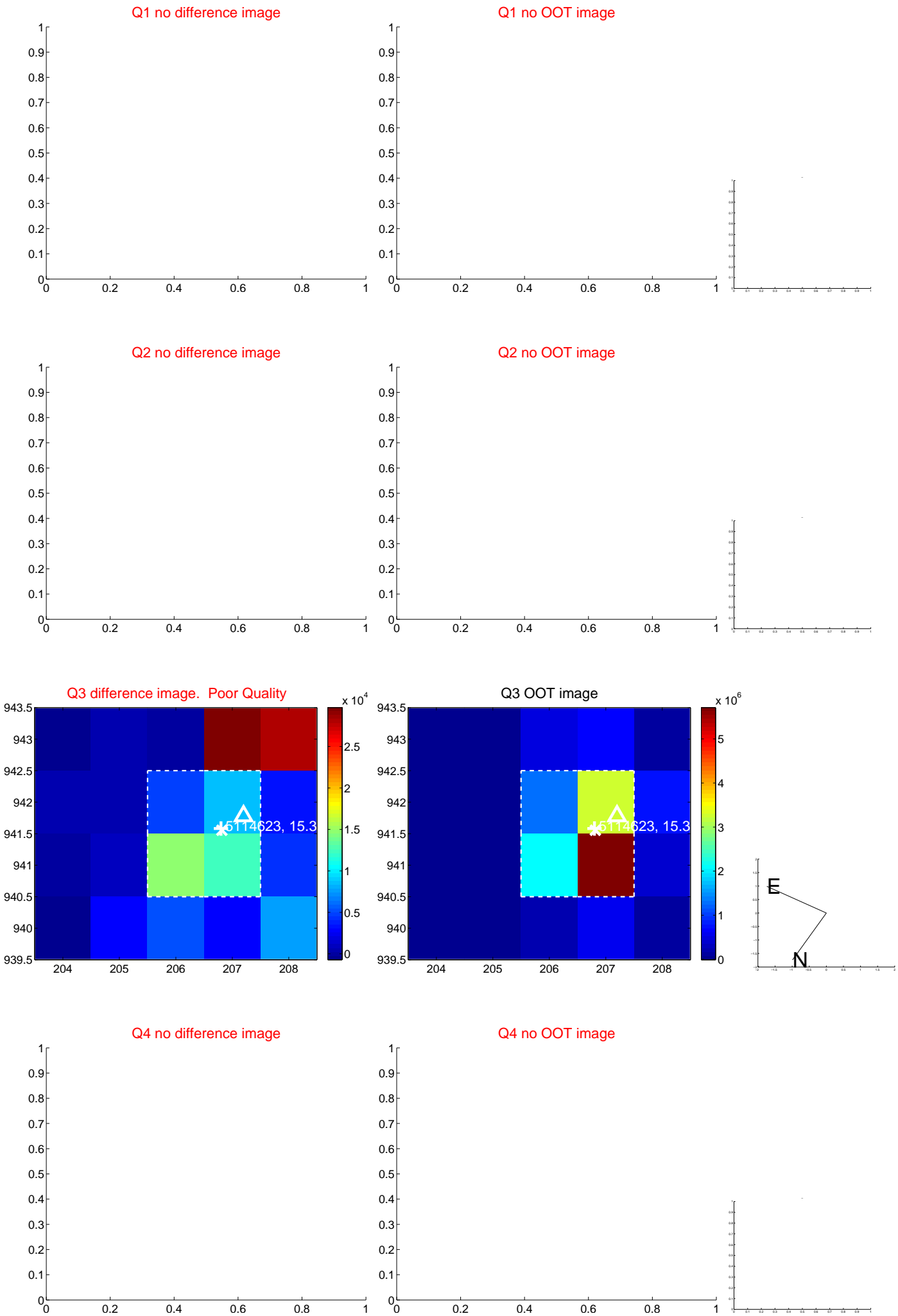
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.518 ± 1.164	0.44	0.257 ± 0.732	0.449 ± 1.274
PRF-fit source offset from KIC position	0.507 ± 1.025	0.49	0.357 ± 0.724	0.359 ± 1.253
photometric centroid source offset	1.13 ± 0.46	2.45	0.06 ± 0.35	1.13 ± 0.46

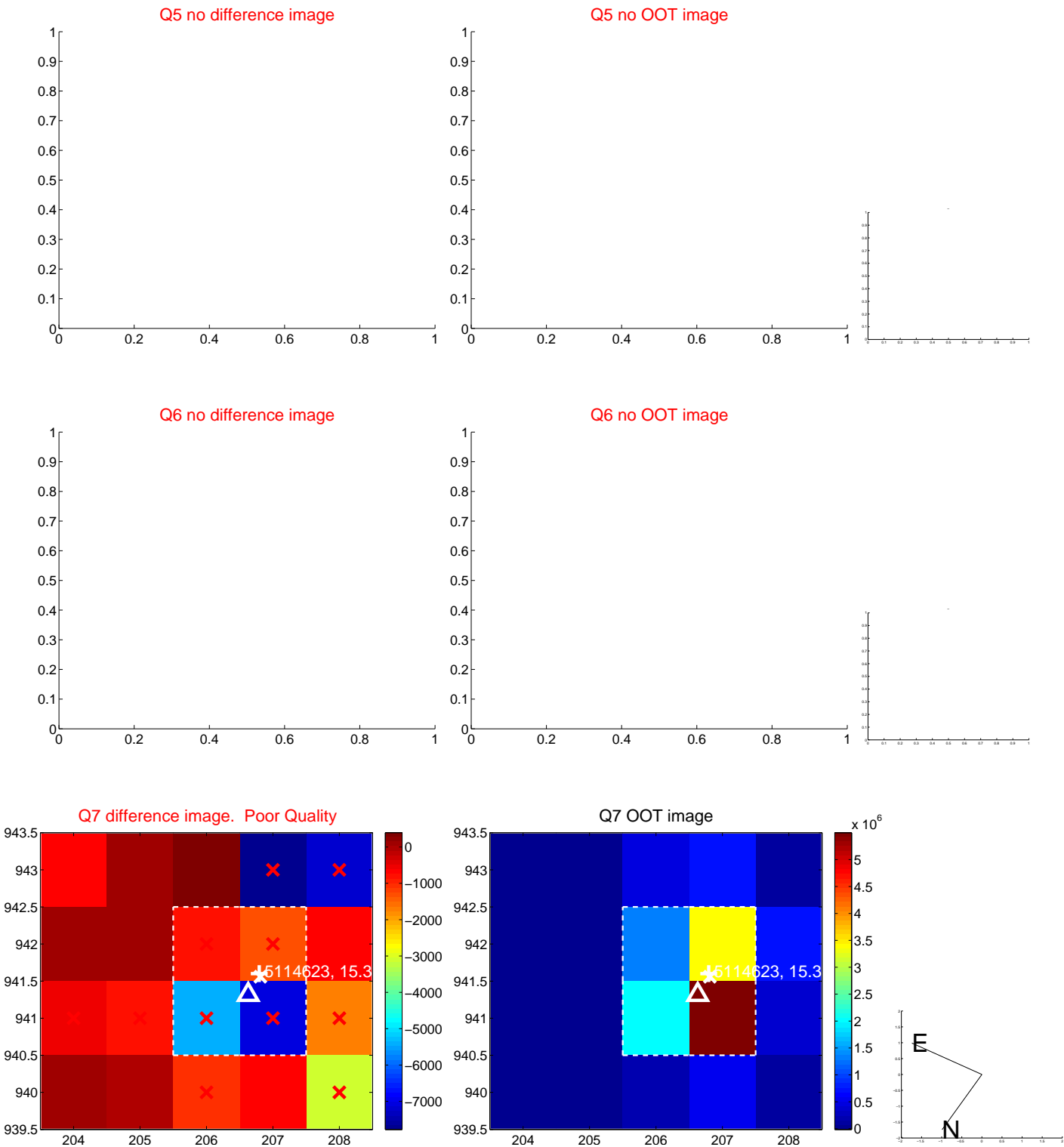


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

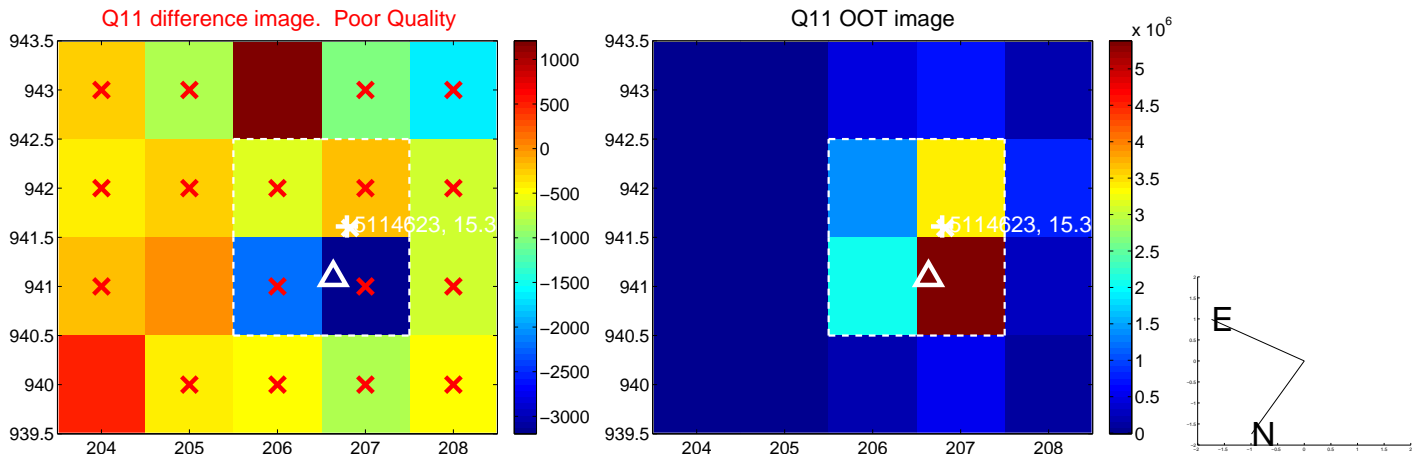
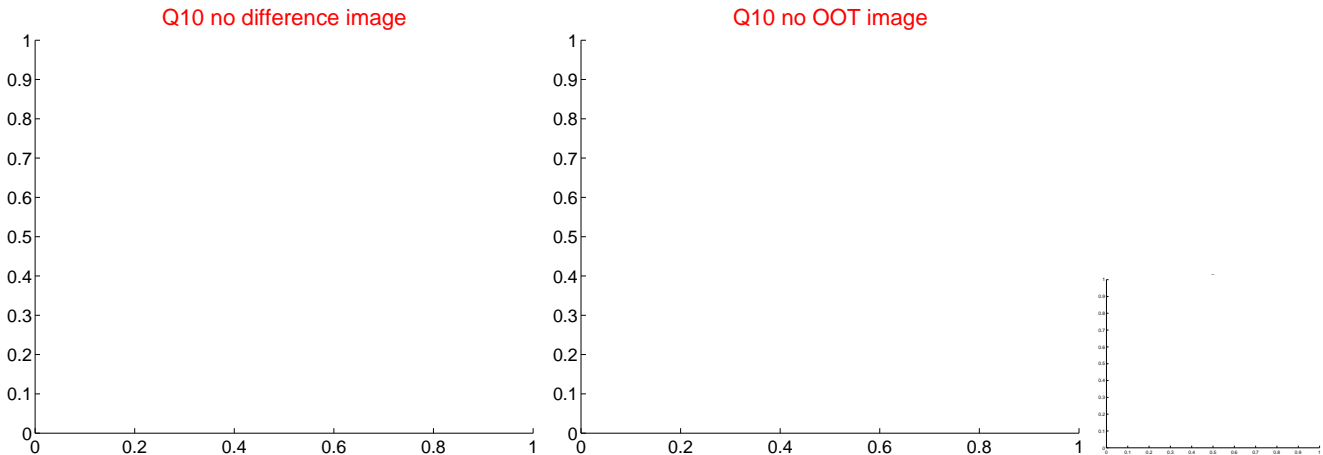
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



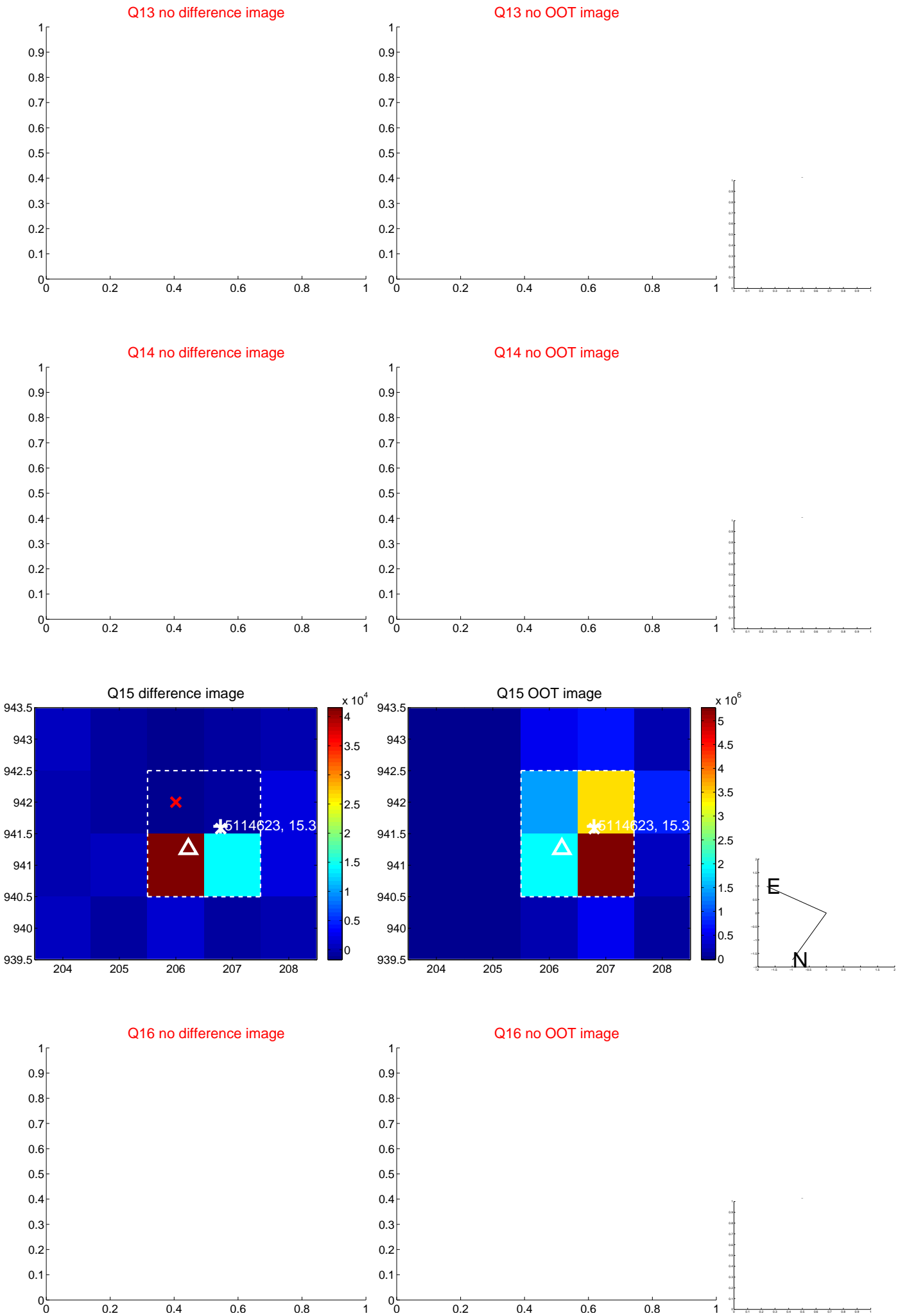
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



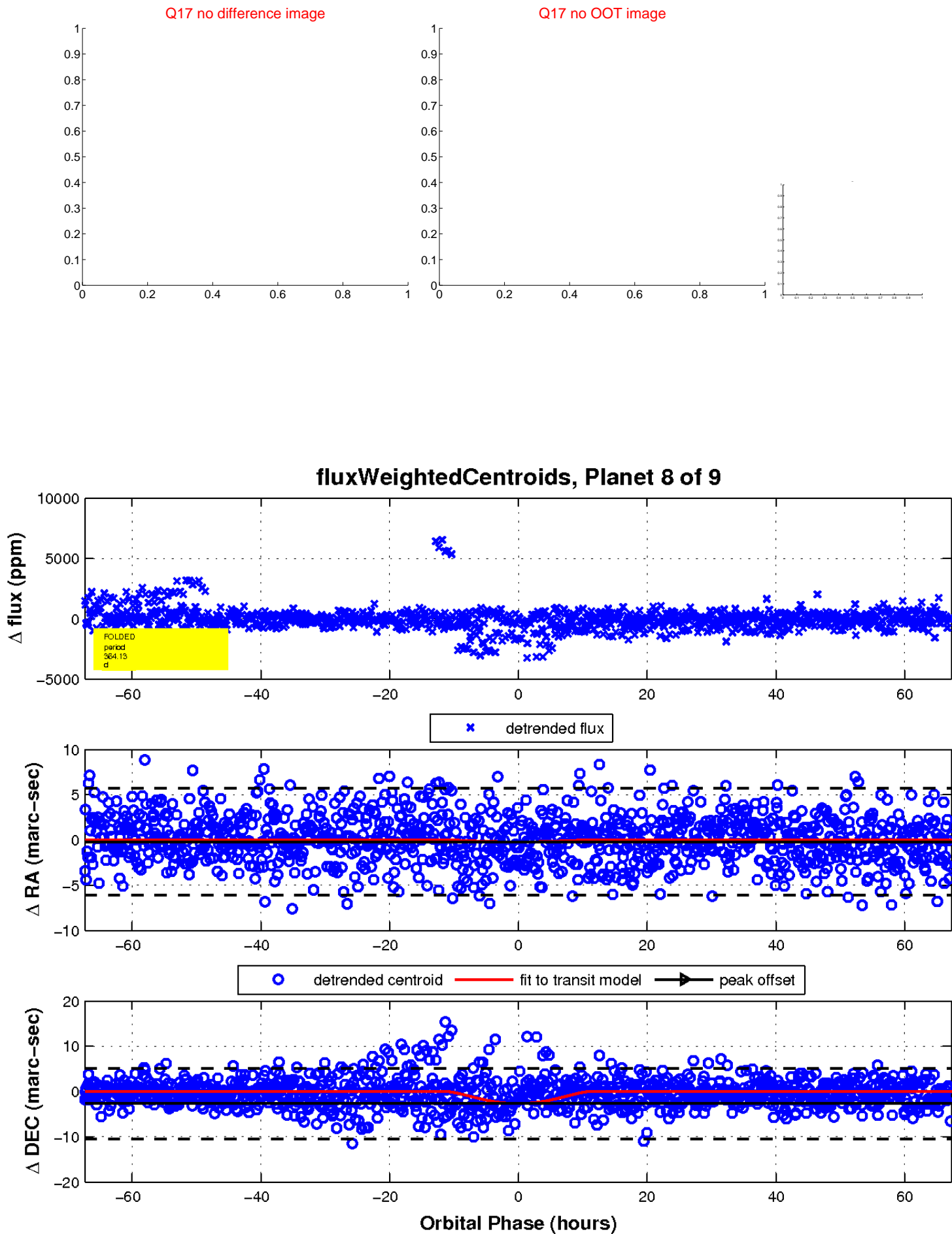
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

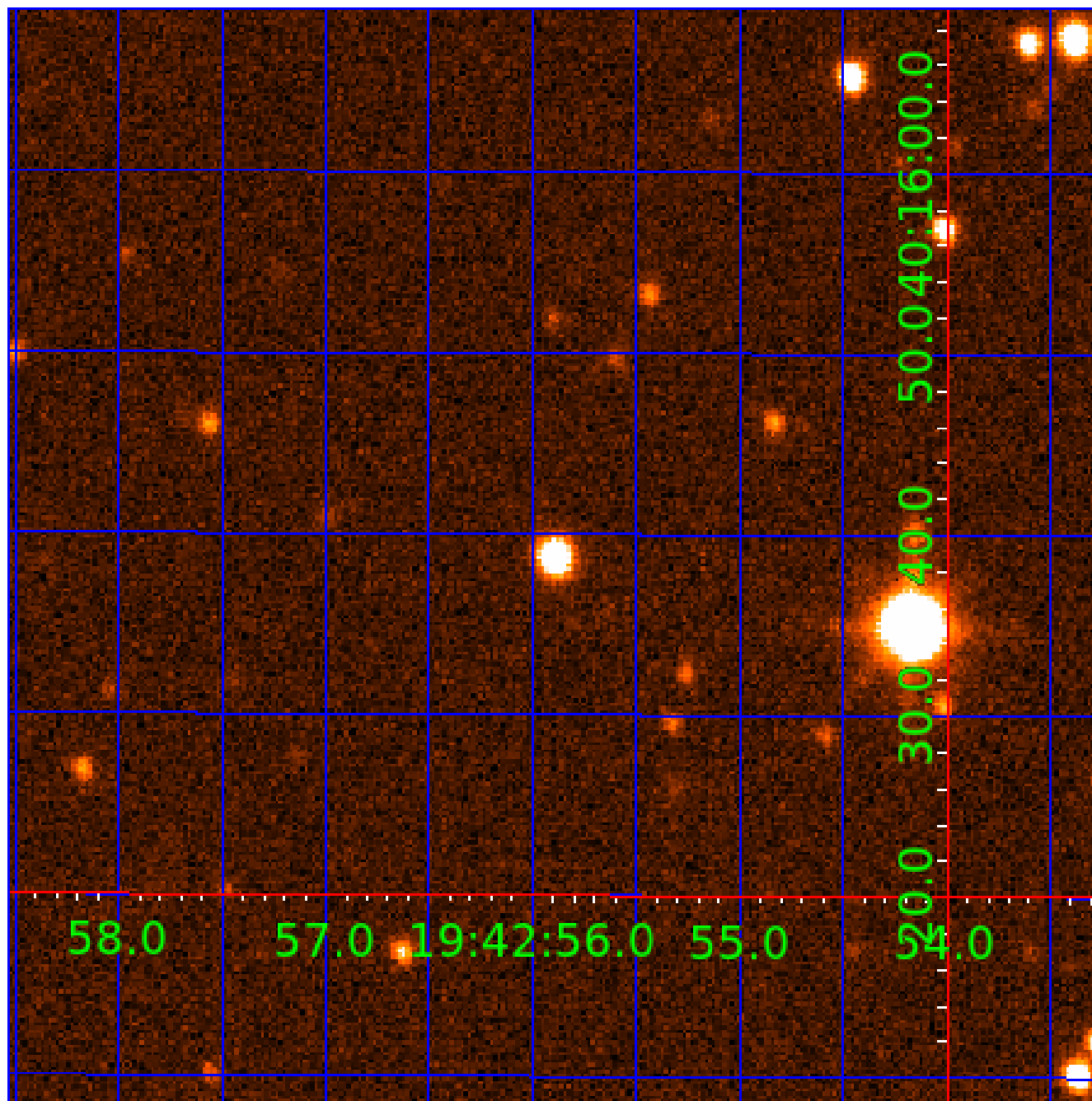


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005114623

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})
005114623-01	OBS	No	363.329250	284.636050	5278.6	13.048	54.2	60.4	1.00	6029	13.23	1.17
005114623-02	OBS	No	363.326947	310.595787	5246.9	12.643	56.5	56.8	1.00	6029	13.19	1.17
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005114623-05	OBS	No	389.272274	304.639583	3718.4	20.450	44.9	46.4	1.00	6029	11.03	1.06
005114623-06	OBS	No	363.314235	362.530688	5113.3	12.701	37.9	40.6	1.00	6029	13.03	1.17
005114623-07	OBS	No	389.281035	252.729537	2866.9	17.496	30.8	34.5	1.00	6029	8.98	1.06
005114623-08	OBS	No	364.132836	330.599616	2367.5	22.467	29.3	24.9	1.00	6029	9.08	1.16
005114623-09	OBS	No	389.246077	226.865752	3358.8	16.550	22.5	28.7	1.00	6029	10.70	1.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005114623-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—PERIOD_ALIAS_DV—PERIOD_ALIAS_ALT—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
005114623-02	OBS	FP	0.00	1	1	1	1	IS_SEC_TCE—CENT_RESOLVED_OFFSET—EPHEM_MATCH
005114623-03	OBS	FP	0.00	1	0	0	1	SAME_NTL_PERIOD—CENT_FEW_DIFFS—EPHEM_MATCH
005114623-04	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_MARSHALL—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
005114623-05	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_MARSHALL—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
005114623-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS
005114623-07	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
005114623-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—LPP_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005114623-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_ZUMA—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST

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

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

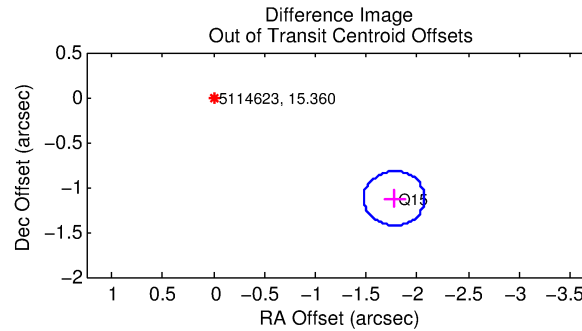
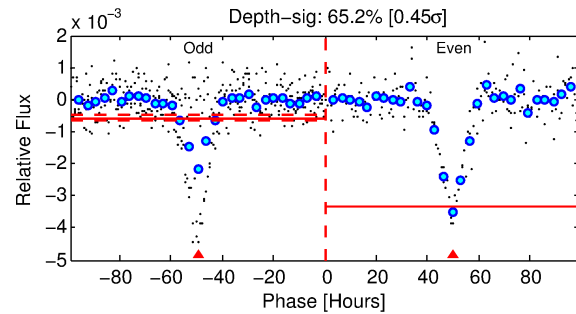
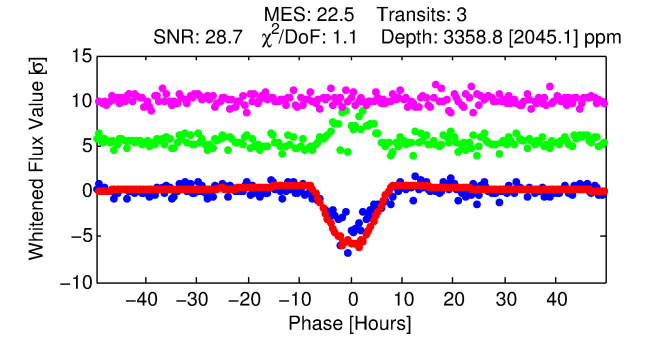
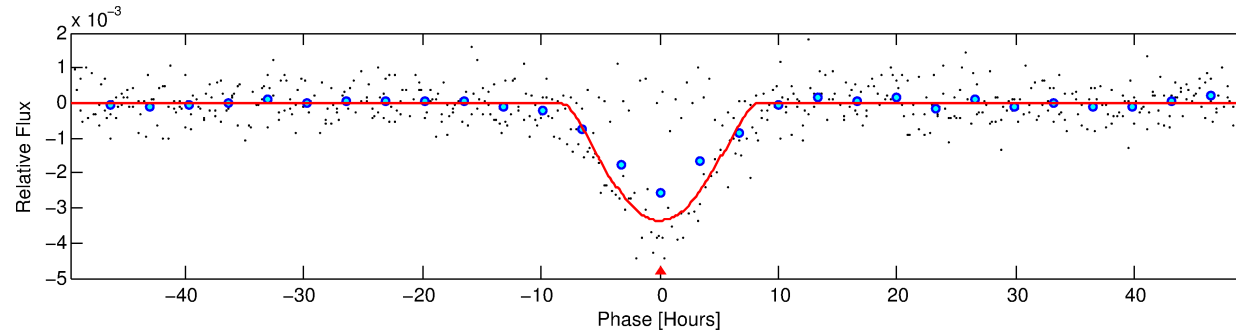
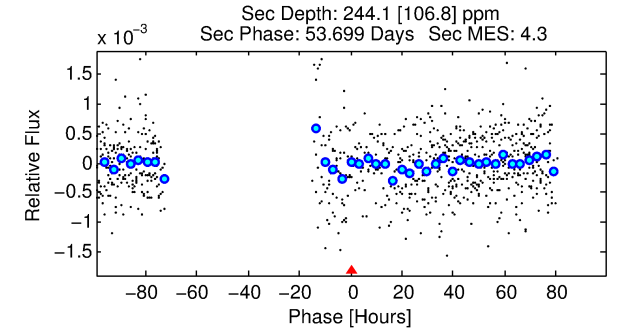
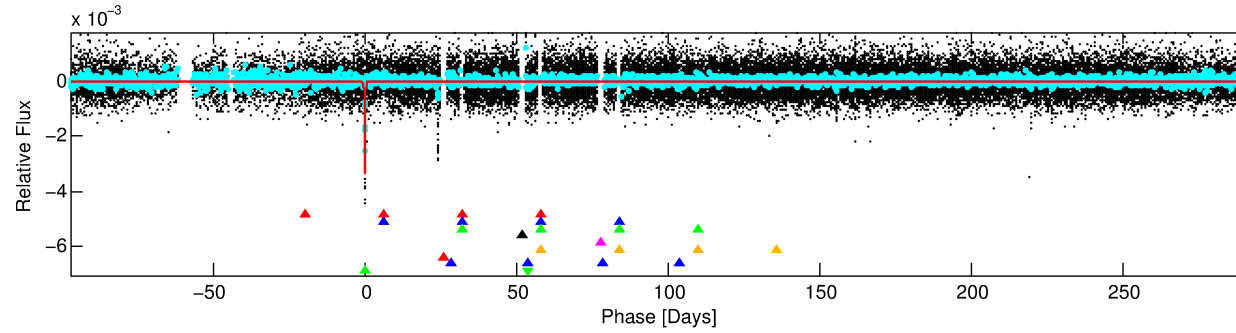
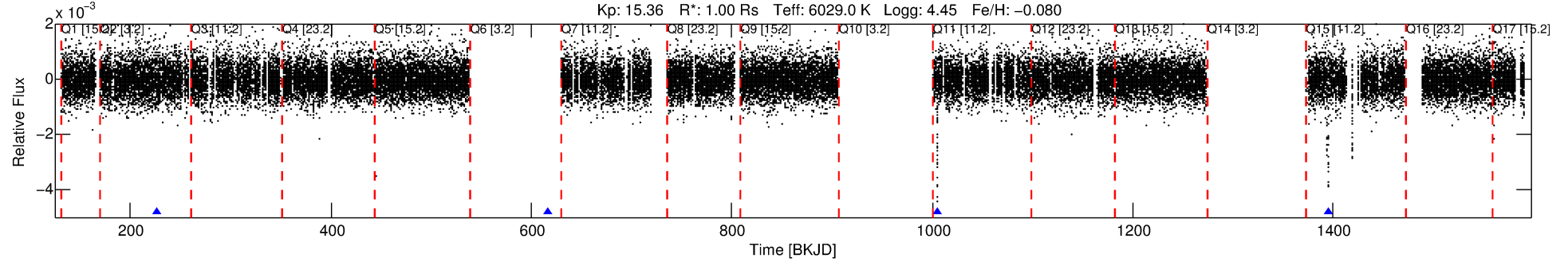
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005114623-09

No Significant Match Found

DV One-Page Summary

KIC: 5114623 Candidate: 9 of 9 Period: 389.246 d
KOI: K03827 Corr: No Ephemeris Match



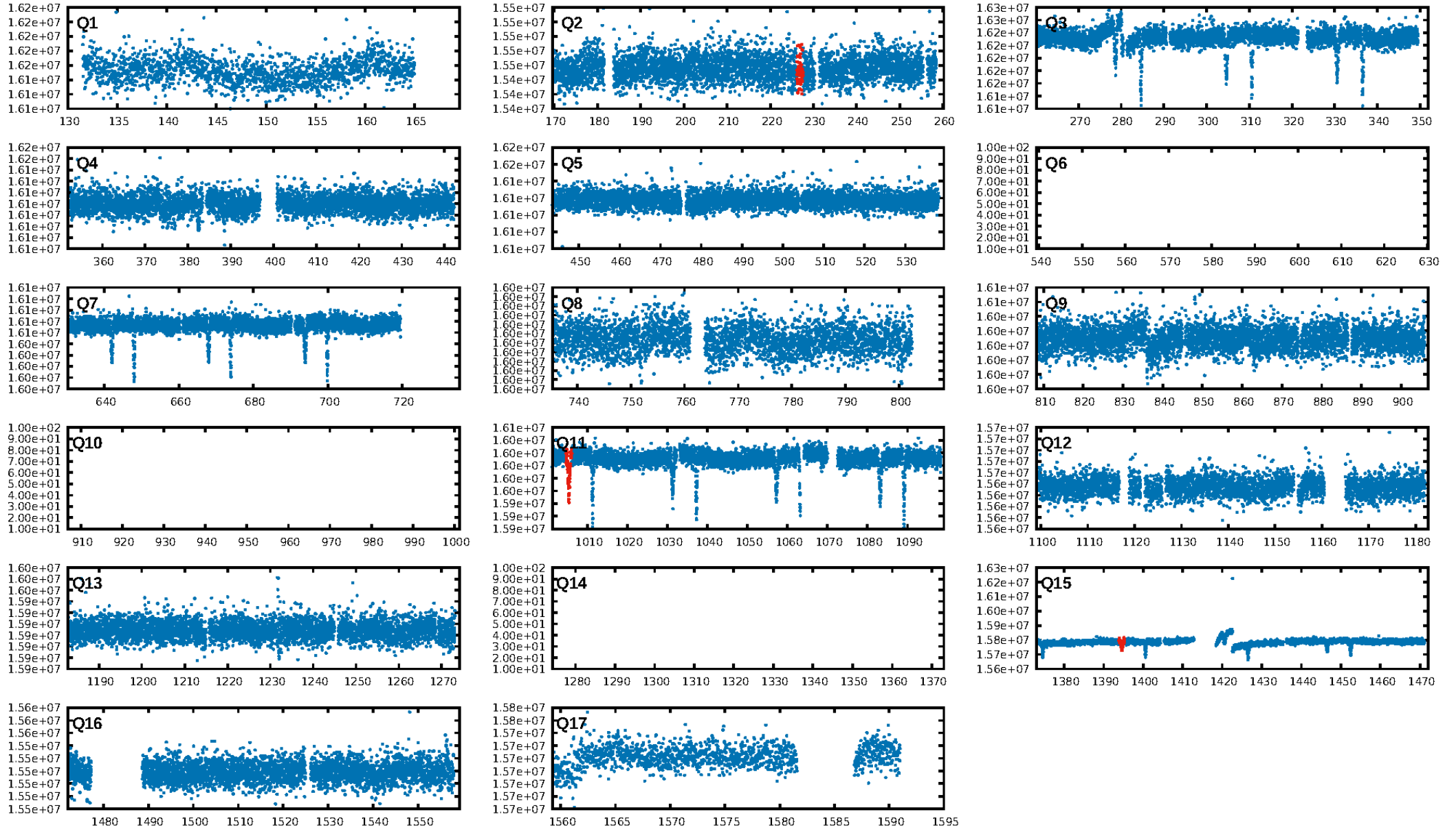
DV Fit Results:

Period = 389.24608 [0.00485] d
Epoch = 226.8658 [0.0094] BKJD
Rp/R* = 0.0983 [0.1289]
a/R* = 81.59 [21.27]
b = 1.00 [0.14]
Seff = 1.06 [0.44]
Teq = 259 [27] K
Rp = 10.70 [14.48] Re
a = 1.0534 [0.2877] AU
Ag = 1301.35 [3499.28] [0.37σ]
Teff = 2404 [1601] K [1.34σ]

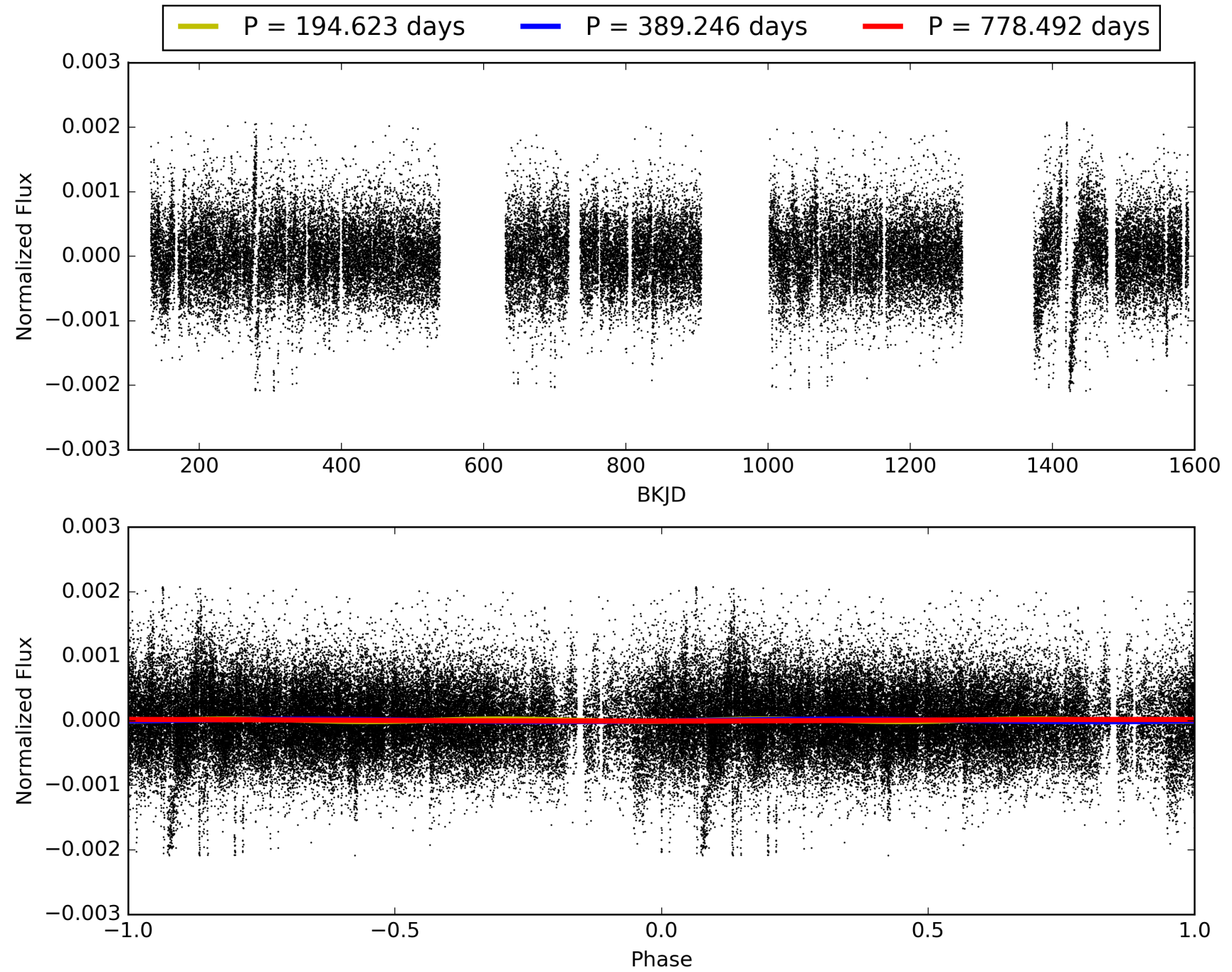
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [21.60σ]
LongPeriod-sig: 1.9% [0.02σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGoF-sig: 99.7%
Bootstrap-pfa: 1.16e-40
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.2312
Centroid-sig: 0.0%
Centroid-so: 7.024 arcsec [15.75σ]
OotOffset-rm: 2.103 arcsec [20.97σ]
KicOffset-rm: 2.050 arcsec [20.49σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [2/2]

TCE 005114623-09, PDC Light Curves

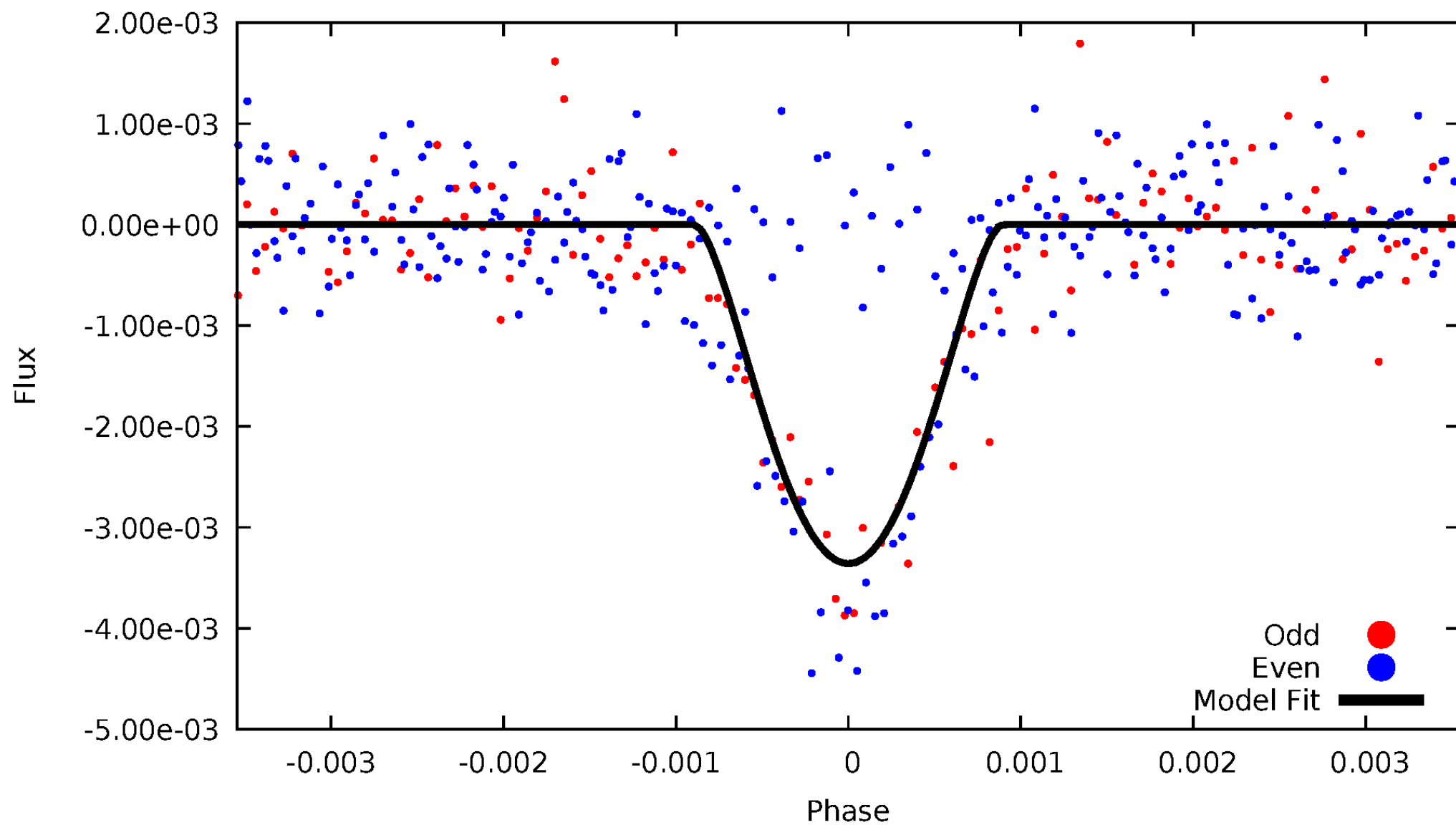


TCE 005114623-09



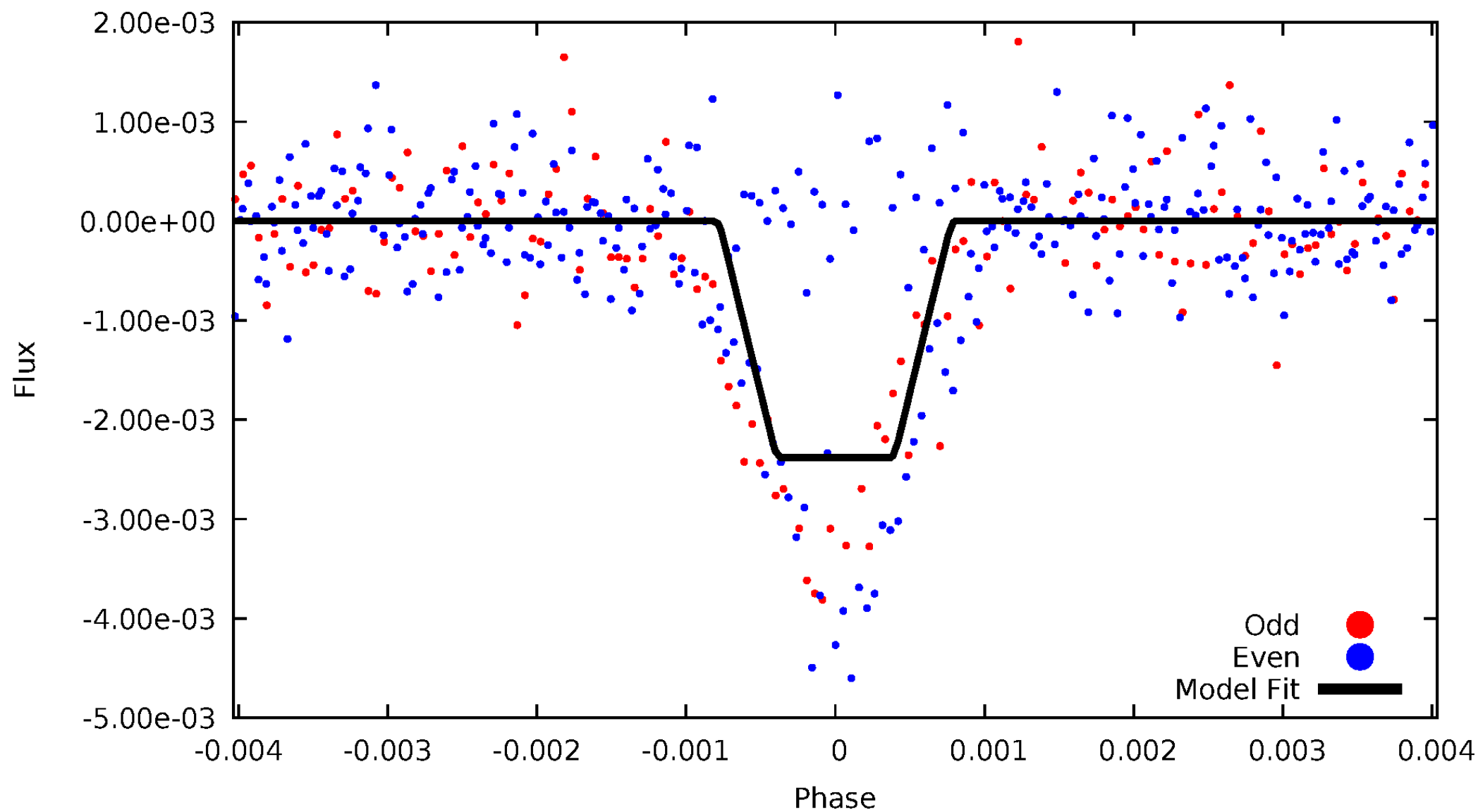
DV Odd/Even

TCE 005114623-09

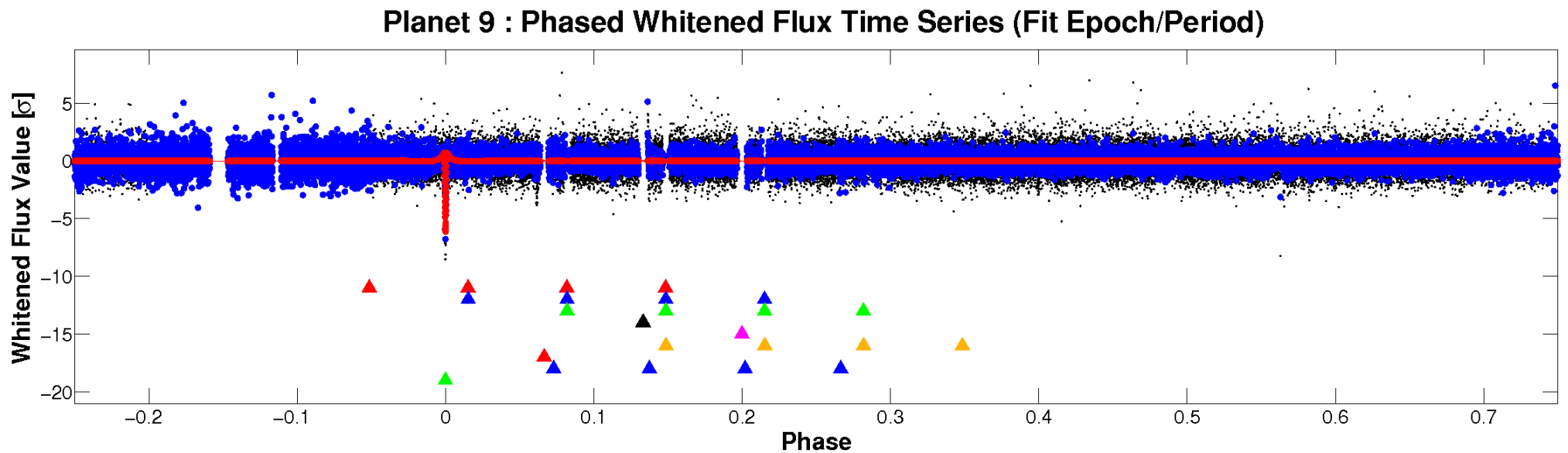
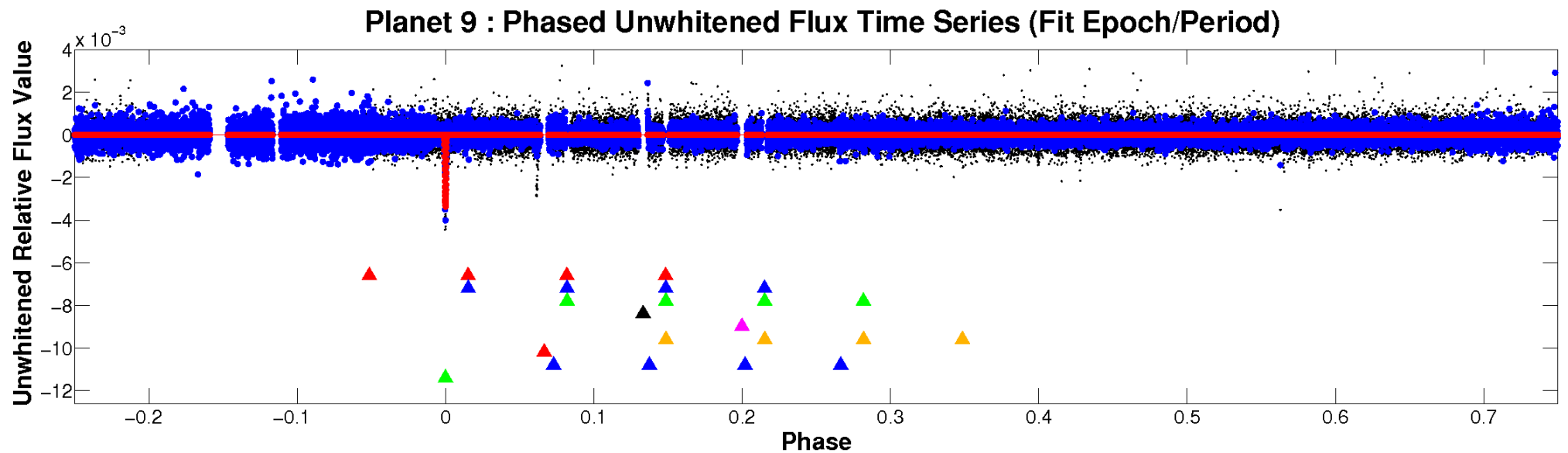


ALT Odd/Even

TCE 005114623-09

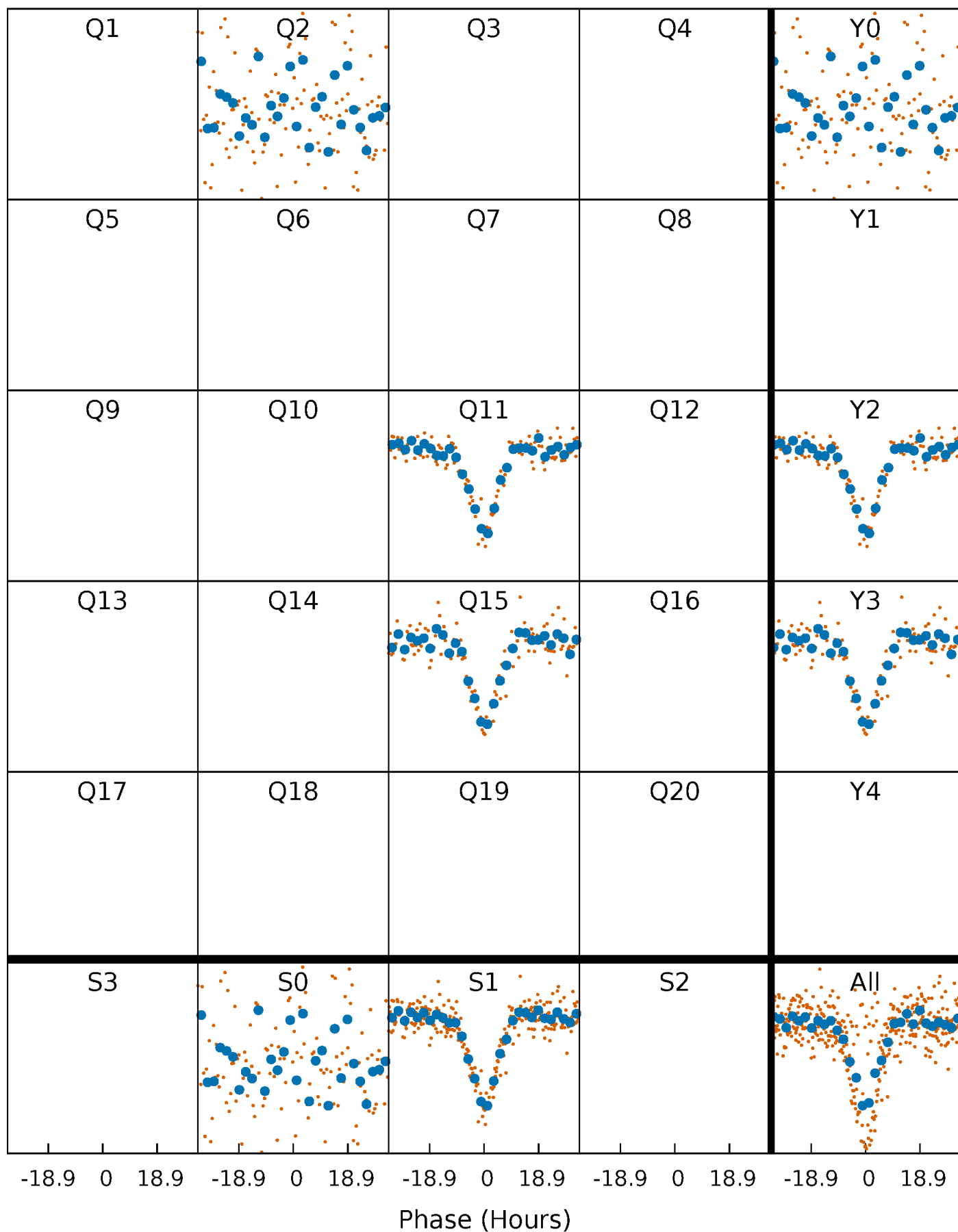


Non-Whitened Vs. Whitened Light Curve



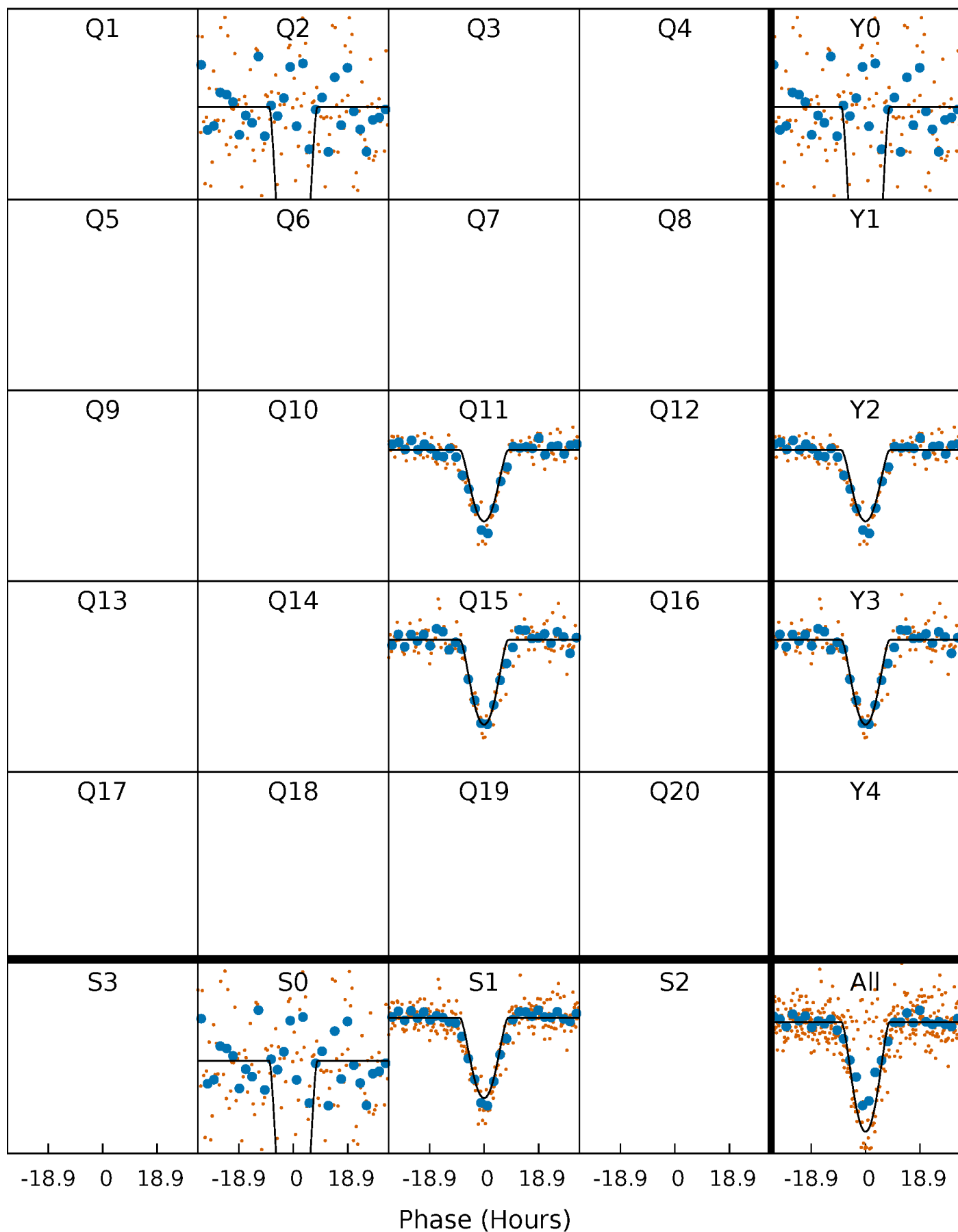
PDC Quarter-Phased Transit Curves

TCE 005114623-09 $P=389.246077$ Days $T_0=226.865752$ (BKJD)



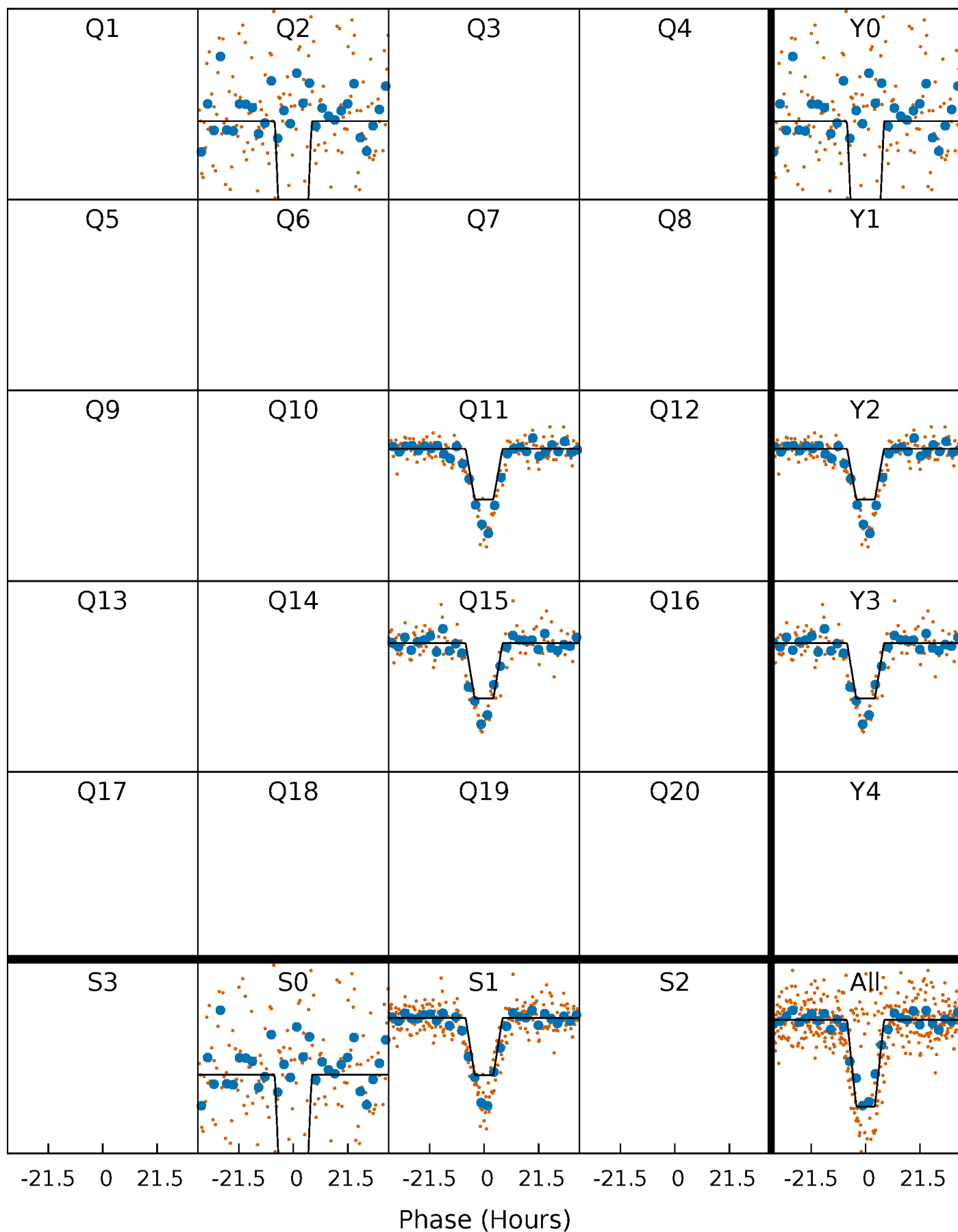
DV Quarter-Phased Transit Curves

TCE 005114623-09 P=389.246077 Days $T_0=226.865752$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

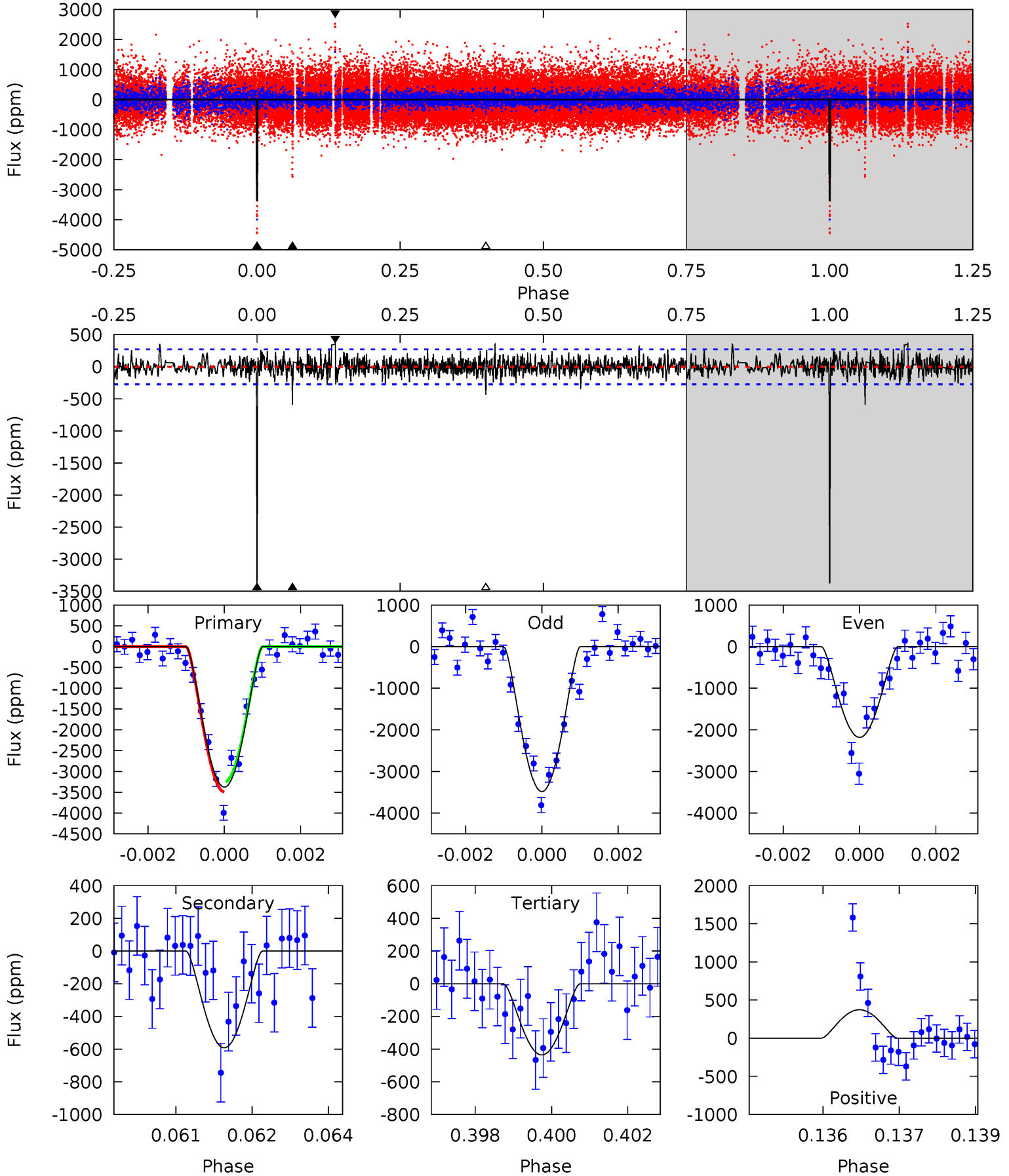
TCE 005114623-09 $P=389.313807$ Days $T_0=226.708080$ (BKJD)



DV Model-Shift Uniqueness Test

005114623-09, P = 389.246077 Days, E = 226.865752 Days

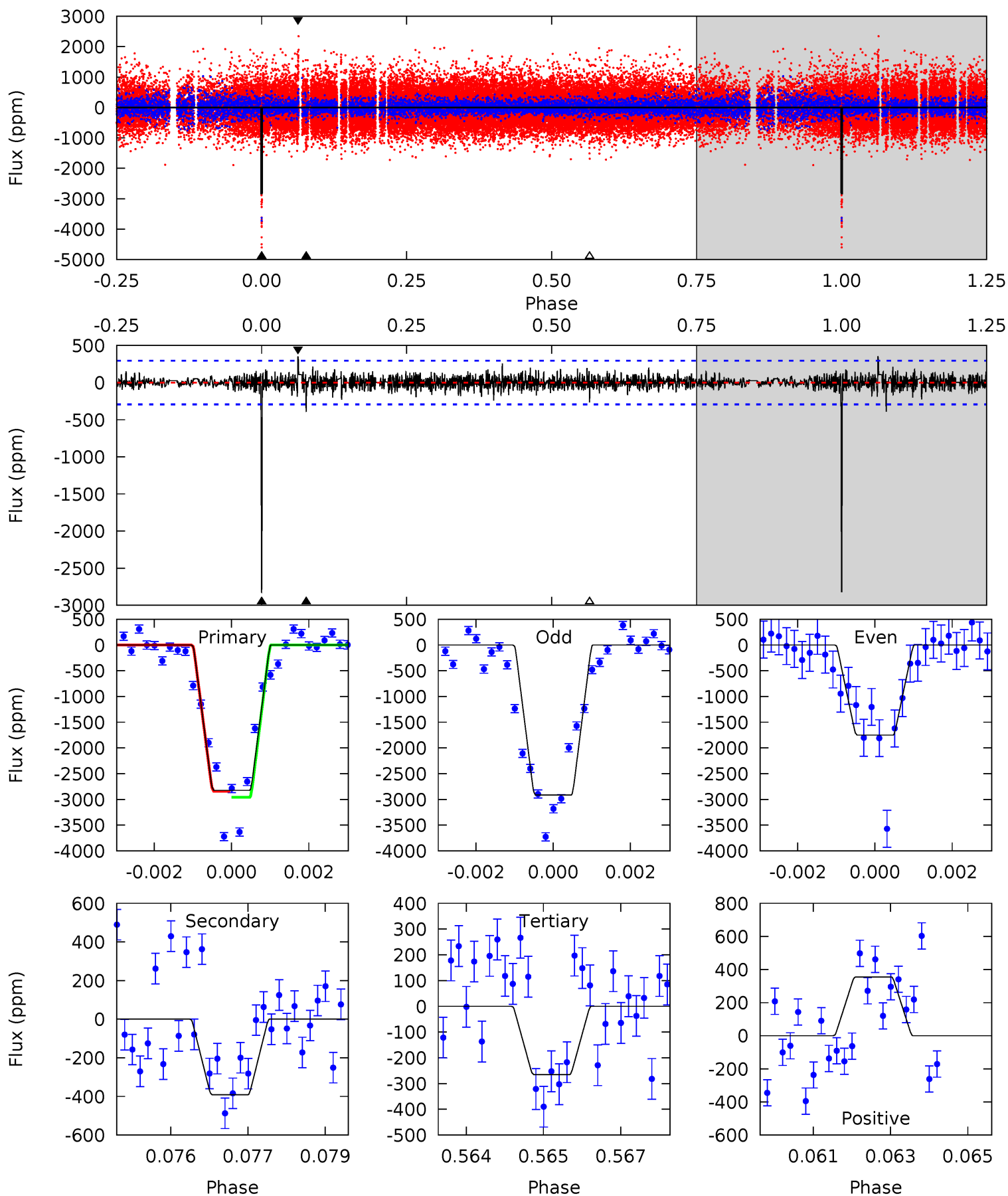
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
66.4	11.6	8.57	7.34	5.35	3.12	1.81	57.9	59.1	3.08	4.31	12.8	0.69	0.10	2.33



Alt Model-Shift Uniqueness Test

005114623-09, P = 389.313807 Days, E = 226.708080 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
51.4	7.13	4.83	6.47	5.37	3.16	1.12	46.6	45.0	2.30	0.66	10.8	0.70	0.11	1.09



Stellar Parameters For KIC 005114623

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6029^{+210}_{-210}	$4.452^{+0.070}_{-0.210}$	$-0.080^{+0.250}_{-0.300}$	$0.998^{+0.330}_{-0.132}$	$1.025^{+0.153}_{-0.126}$	$1.451^{+0.427}_{-0.780}$
	+3%/-3%	+2%/-5%	+312%/-375%	+33%/-13%	+15%/-12%	+29%/-54%
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 005114623-09 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-592 ± 51	$15.12^{+14.51}_{-9.96}$	369^{+30}_{-21}	3189^{+1399}_{-497}	1593^{+12110}_{-1156}
Alt.	-391 ± 55	$12.35^{+12.03}_{-8.53}$	368^{+26}_{-21}	3211^{+1532}_{-568}	1569^{+15272}_{-1171}

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 $A_{obs} \gg 1.0$

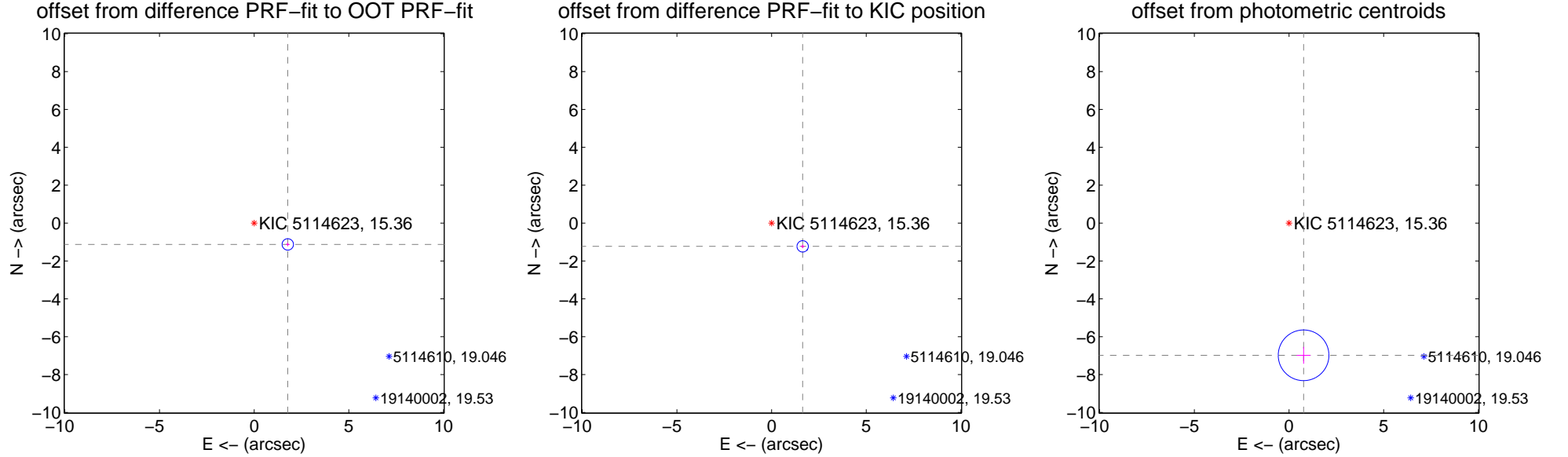
DV Centroid Data

Supplemental centroid analysis for 005114623-09. Kepler magnitude: 15.36. Transit SNR 28.75

There are 0 quarters with good PRF difference image offsets

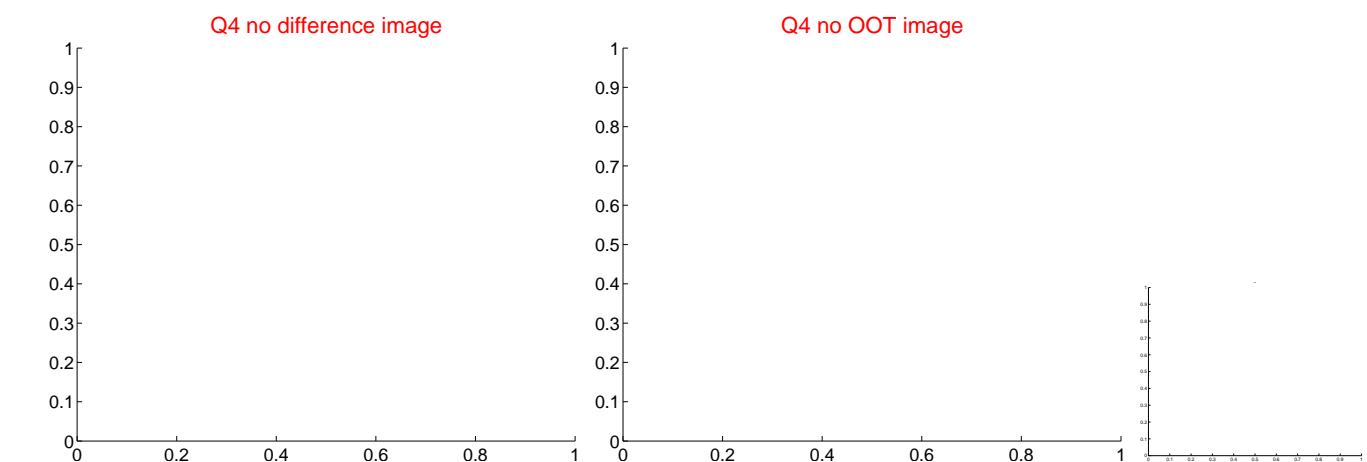
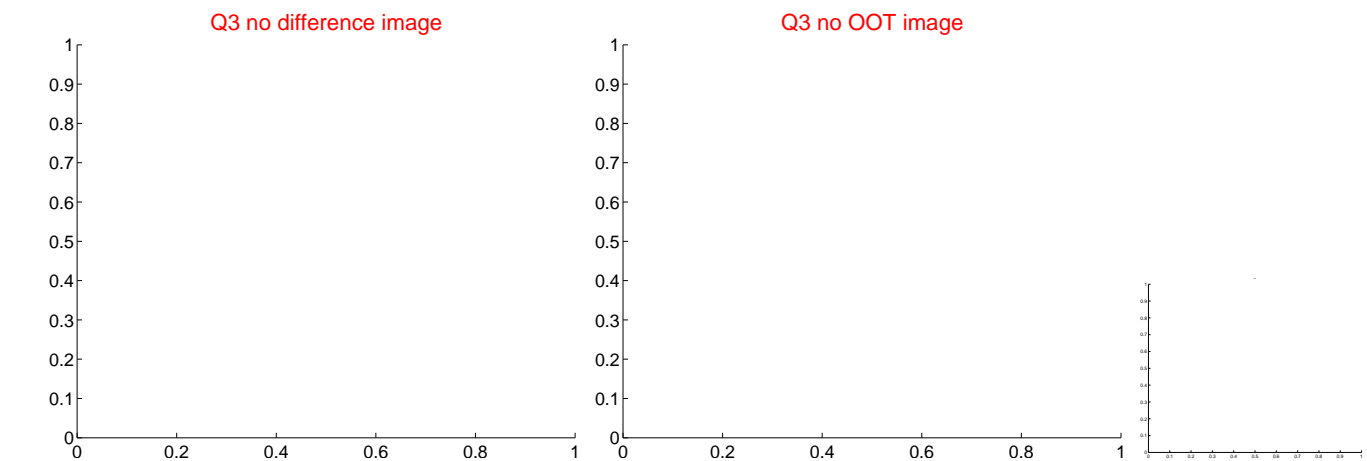
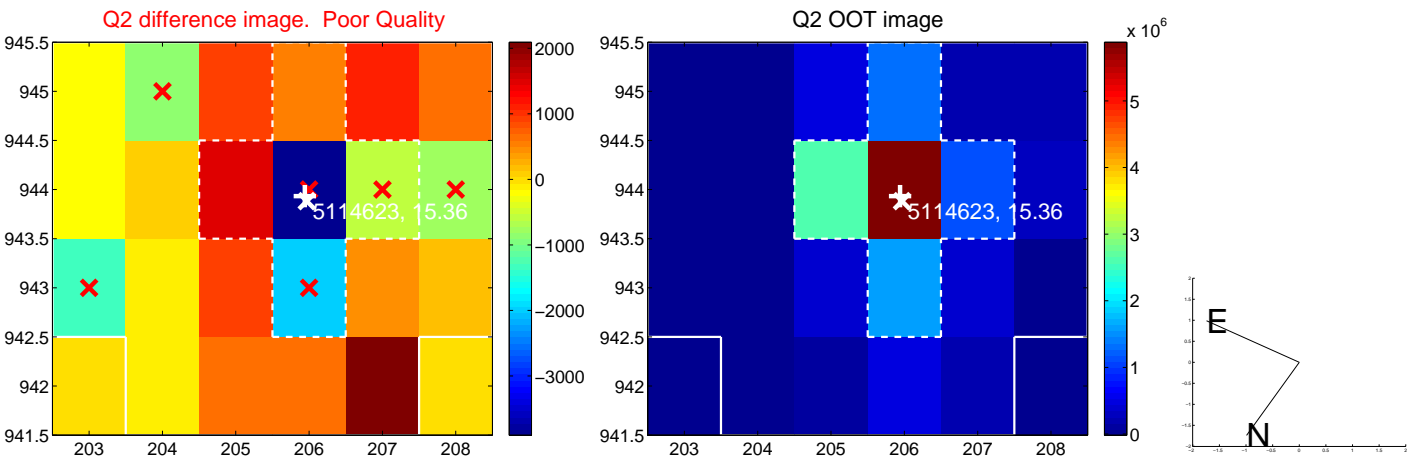
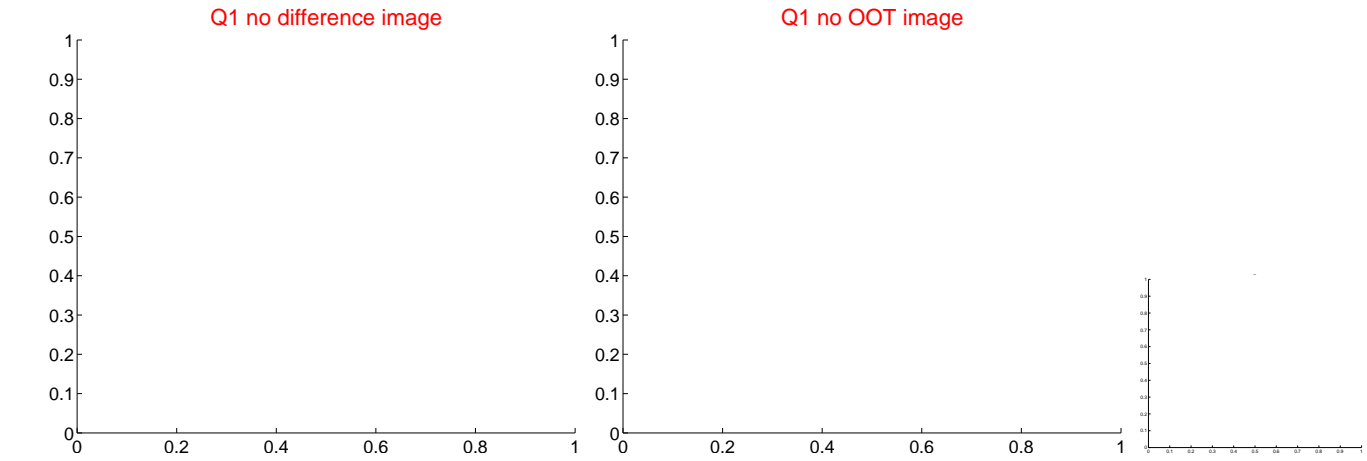
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.103 ± 0.100	20.97	-1.776 ± 0.101	-1.126 ± 0.098
PRF-fit source offset from KIC position	2.050 ± 0.100	20.49	-1.641 ± 0.101	-1.229 ± 0.098
photometric centroid source offset	7.02 ± 0.45	15.75	-0.77 ± 0.37	-6.98 ± 0.45



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.



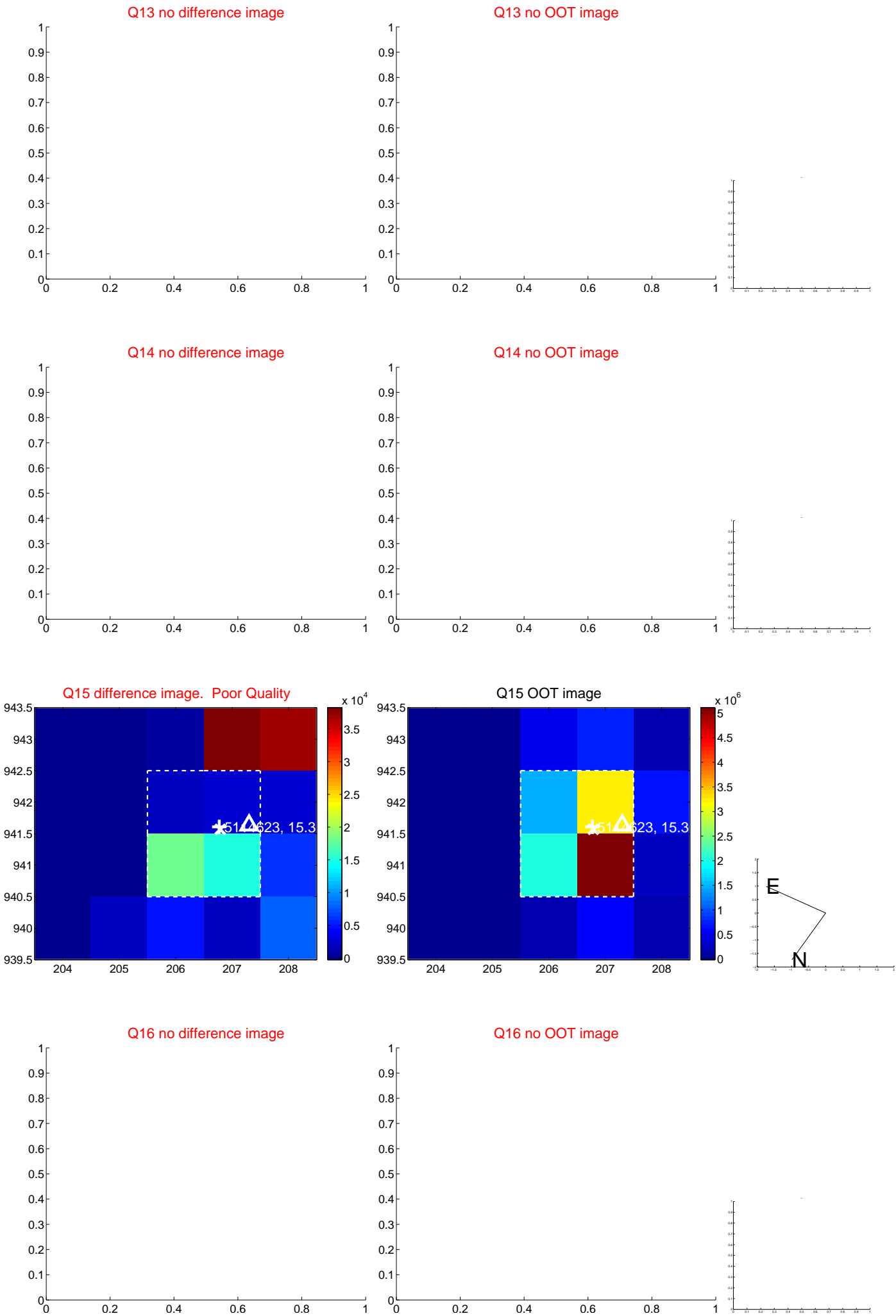
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



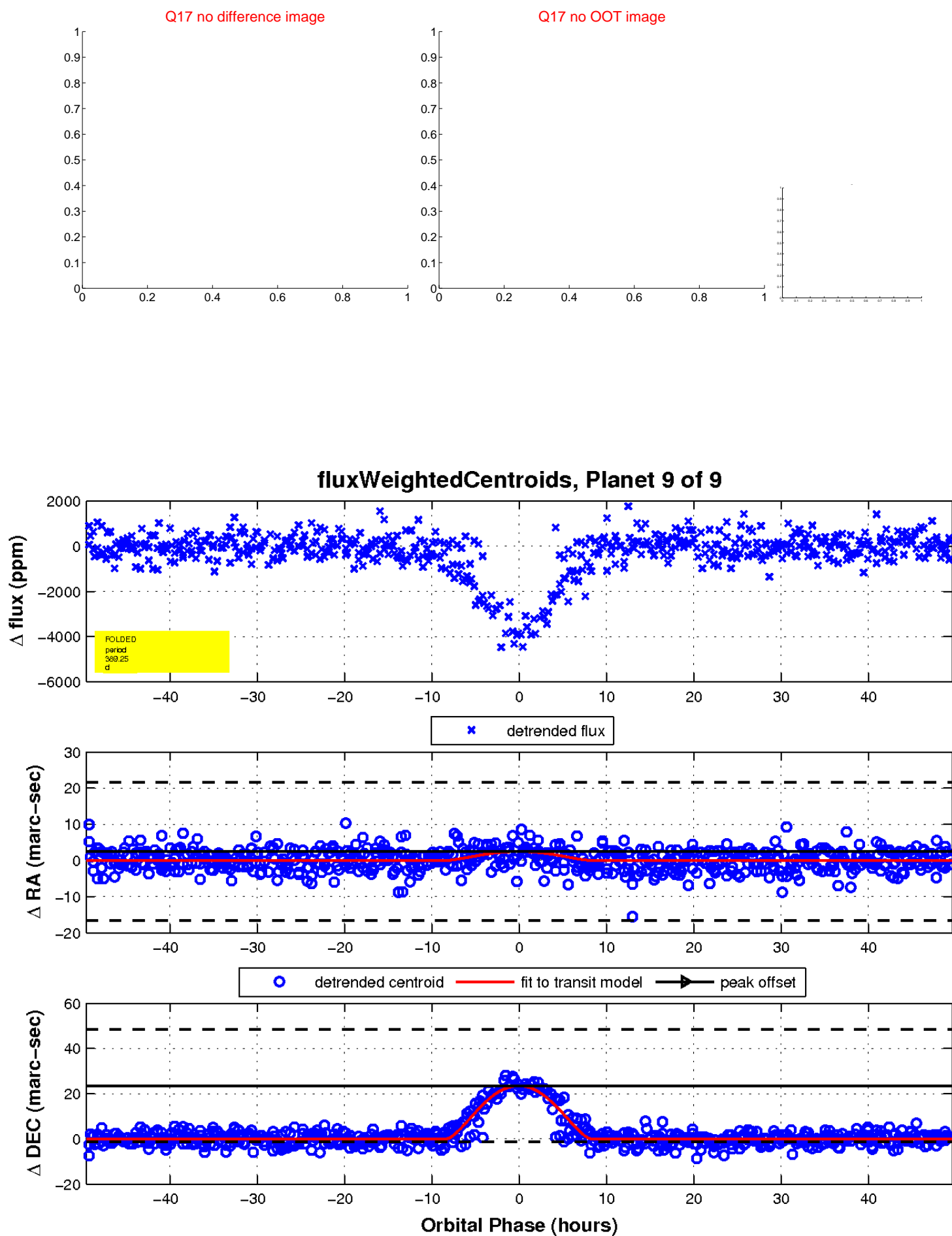
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

