

KIC 008106610

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})
008106610-01	OBS	0570.01	12.398964	135.583288	699.9	4.289	44.1	46.9	1.11	6355	3.91	148.55
008106610-02	OBS	No	12.399210	142.122376	133.2	5.422	10.2	10.8	1.11	6355	1.71	148.54
008106610-03	OBS	No	298.252238	323.253679	615.9	23.701	14.7	11.6	1.11	6355	3.25	2.14
008106610-04	OBS	No	368.884947	233.321043	635.4	27.044	10.1	10.0	1.11	6355	5.37	1.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008106610-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST
008106610-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST
008106610-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008106610-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—CENT_FEW_DIFFS

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

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

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

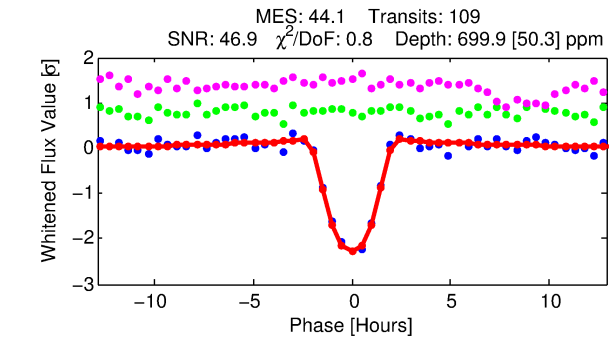
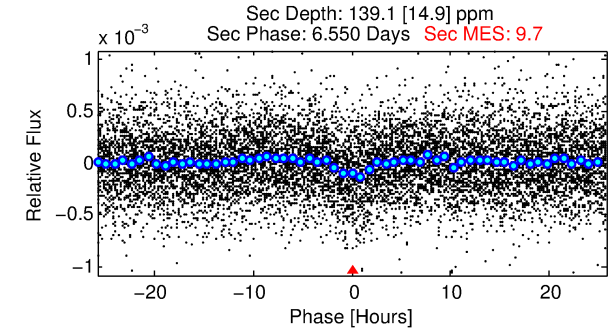
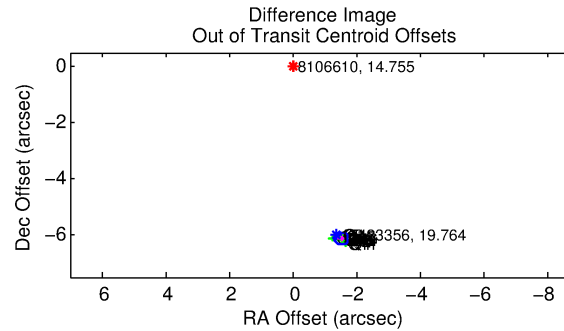
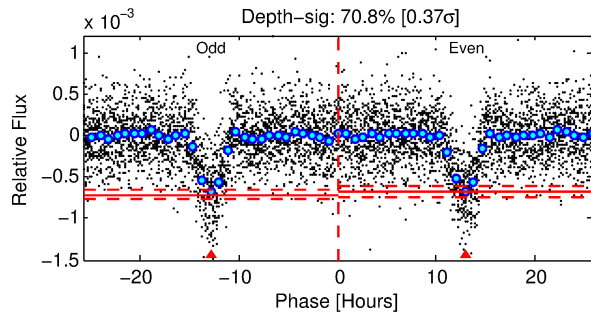
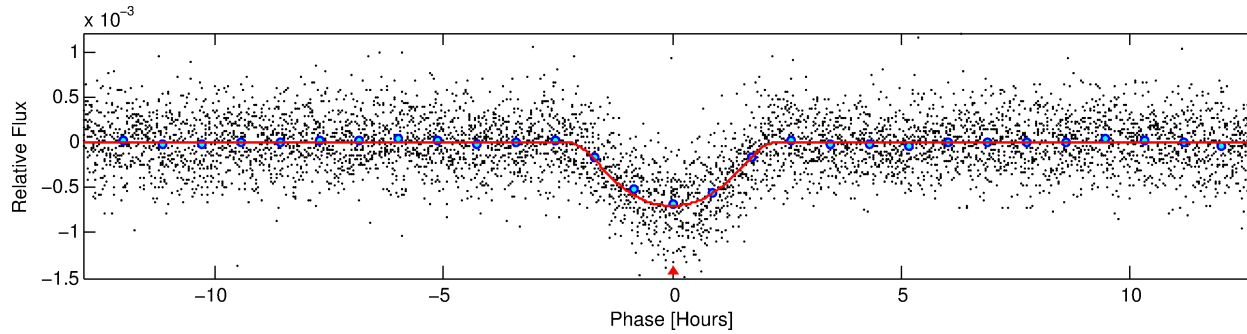
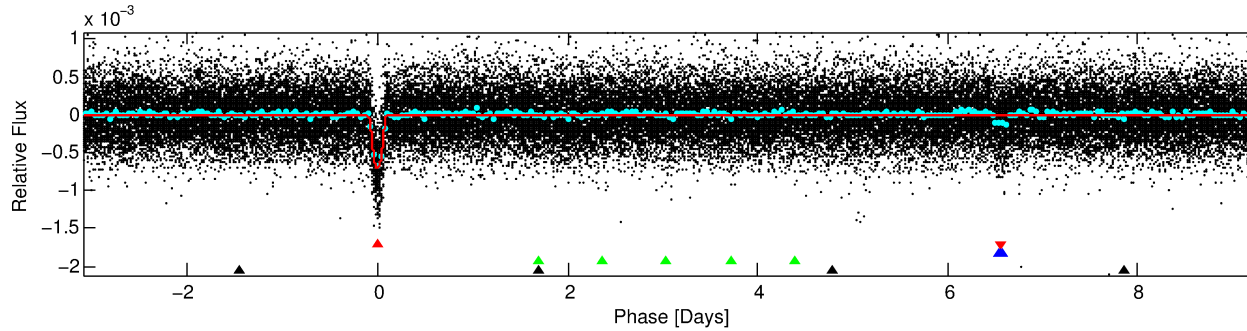
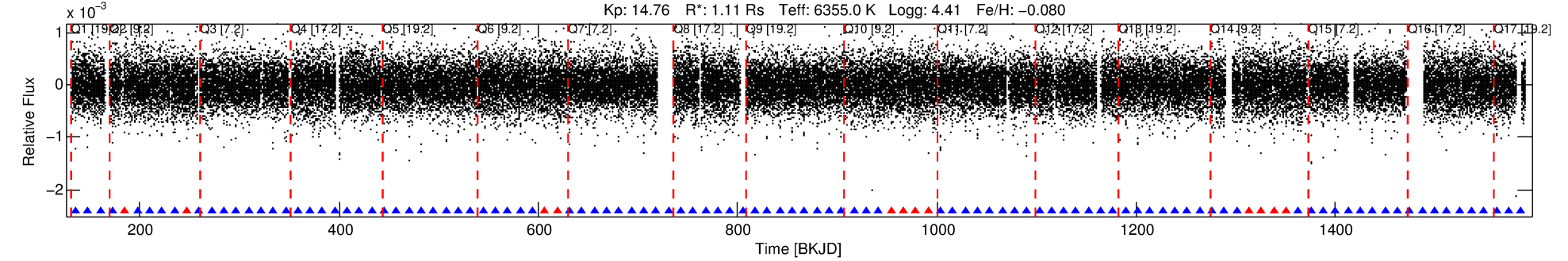
Ephemeris Match Information For 008106610-01

No Significant Match Found

DV One-Page Summary

KIC: 8106610 Candidate: 1 of 4 Period: 12.399 d
KOI: K00570.01 Corr: 0.992

Kp: 14.76 R*: 1.11 Rs Teff: 6355.0 K Logg: 4.41 Fe/H: -0.080



DV Fit Results:

Period = 12.39896 [0.00003] d
Epoch = 135.5833 [0.0021] BKJD
Rp/R* = 0.0323 [0.0027]
a/R* = 7.73 [0.53]
b = 0.97 [0.01]
Seff = 148.55 [62.77]
Teq = 890 [94] K
Rp = 3.91 [1.41] Re
a = 0.1099 [0.0312] AU
Ag = 60.43 [26.93] [2.21σ]
Teffp = 3838 [235] K [11.66σ]

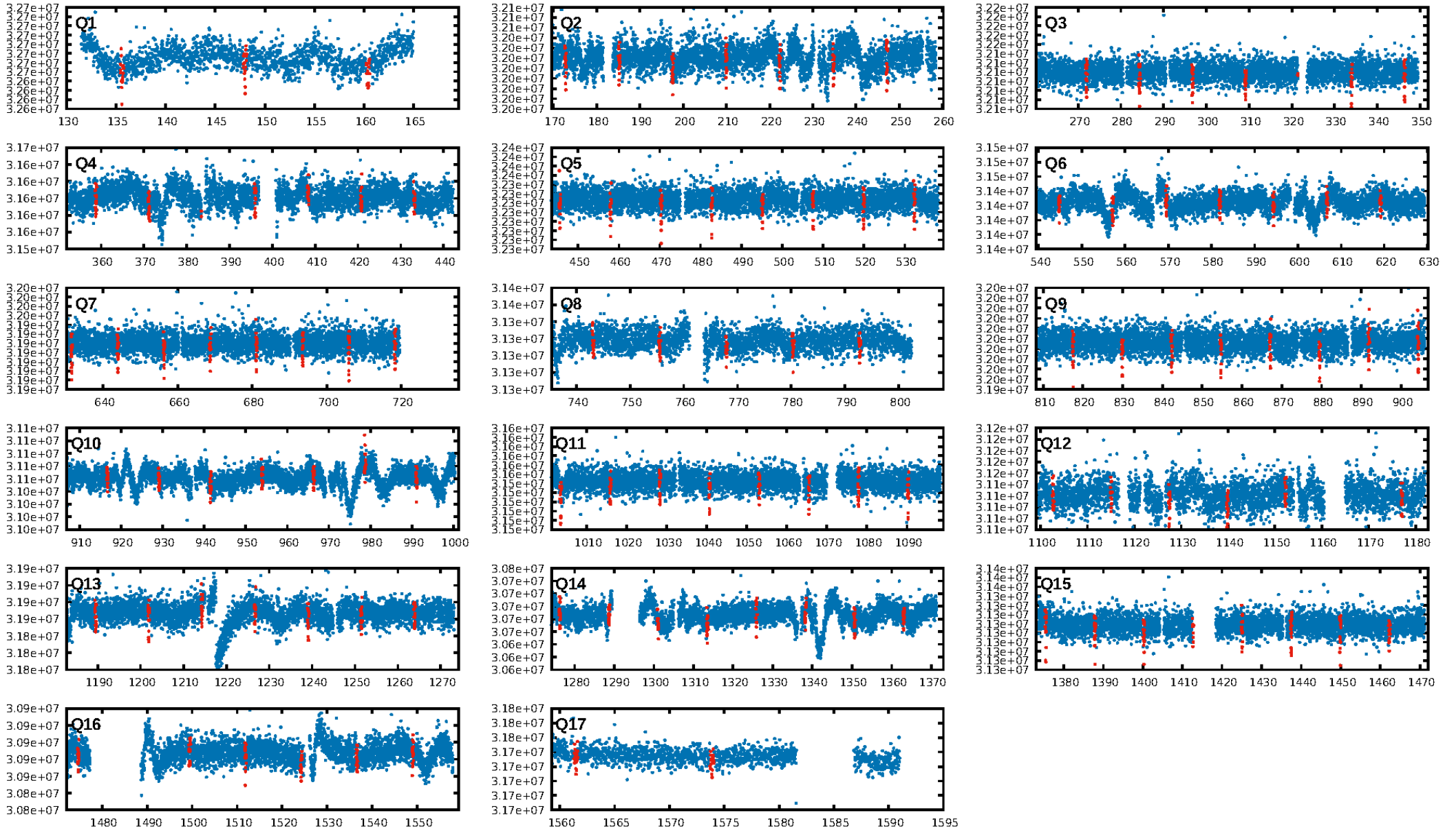
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: 8.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.88 [92/104]
GhostDiagnostic-chr: 0.04133
Centroid-sig: 0.0%
Centroid-so: 17.582 arcsec [55.70σ]
OotOffset-rm: 6.332 arcsec [90.77σ]
KicOffset-rm: 6.232 arcsec [87.89σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

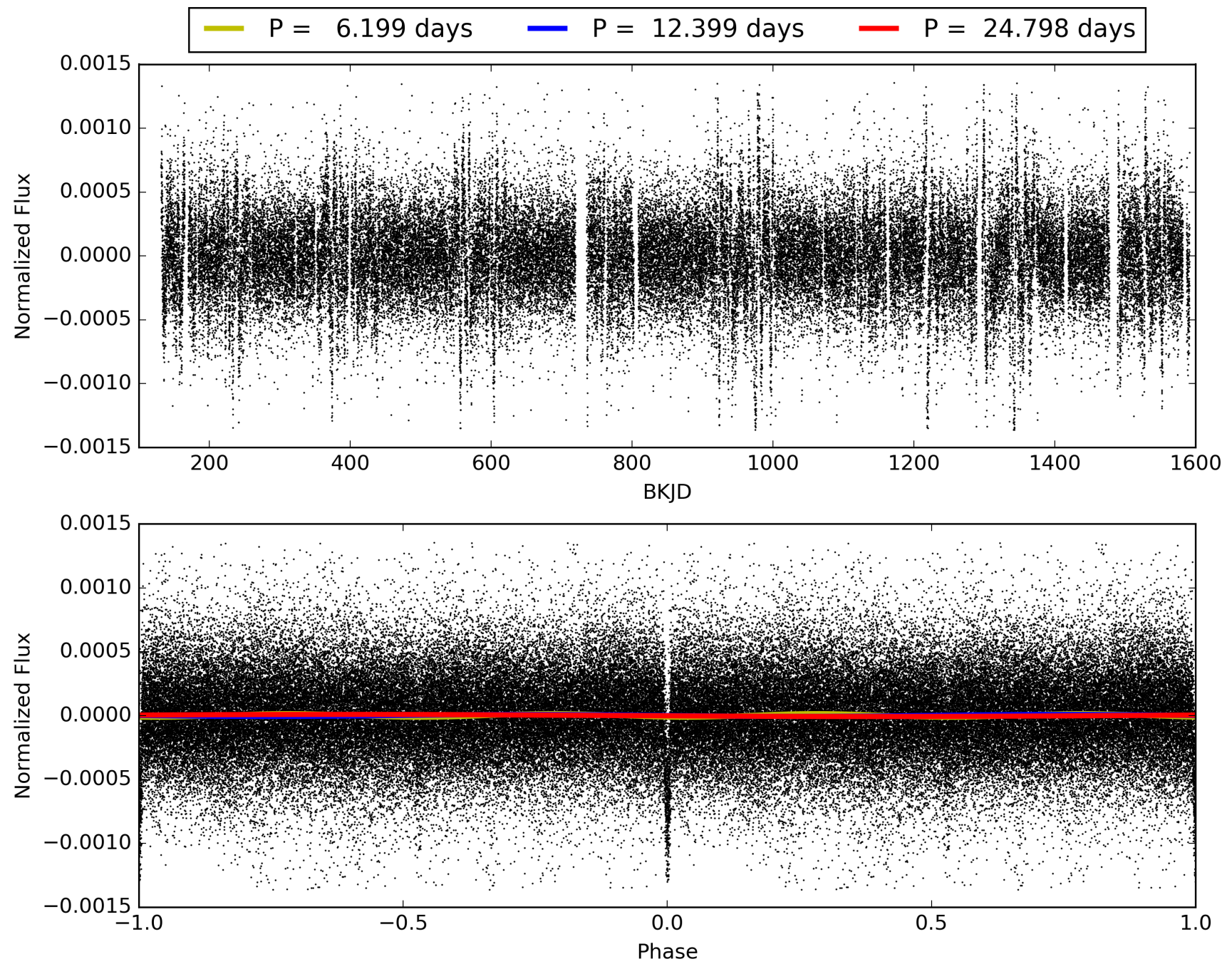
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 14:52:25 Z

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

TCE 008106610-01, PDC Light Curves

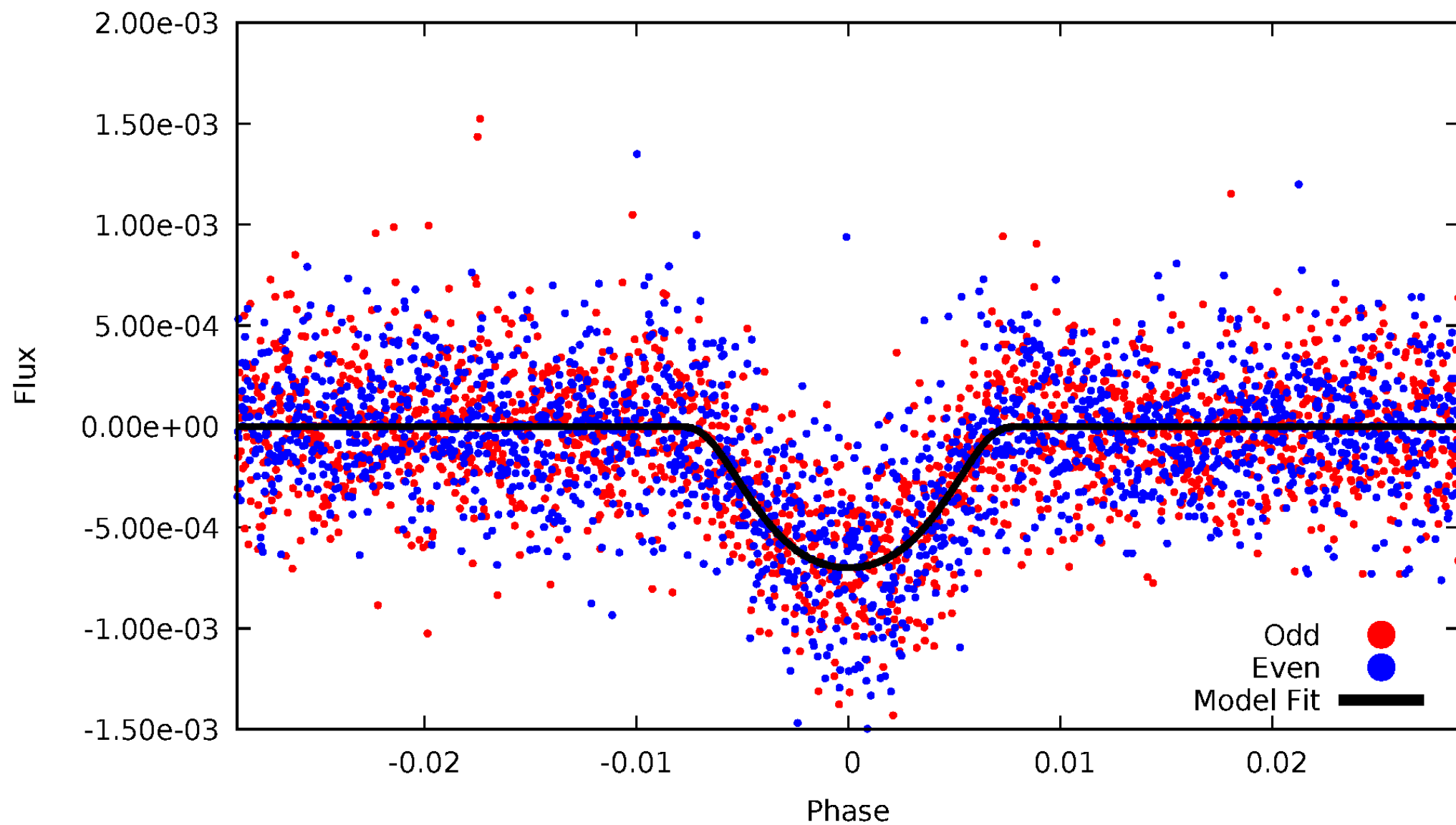


TCE 008106610-01



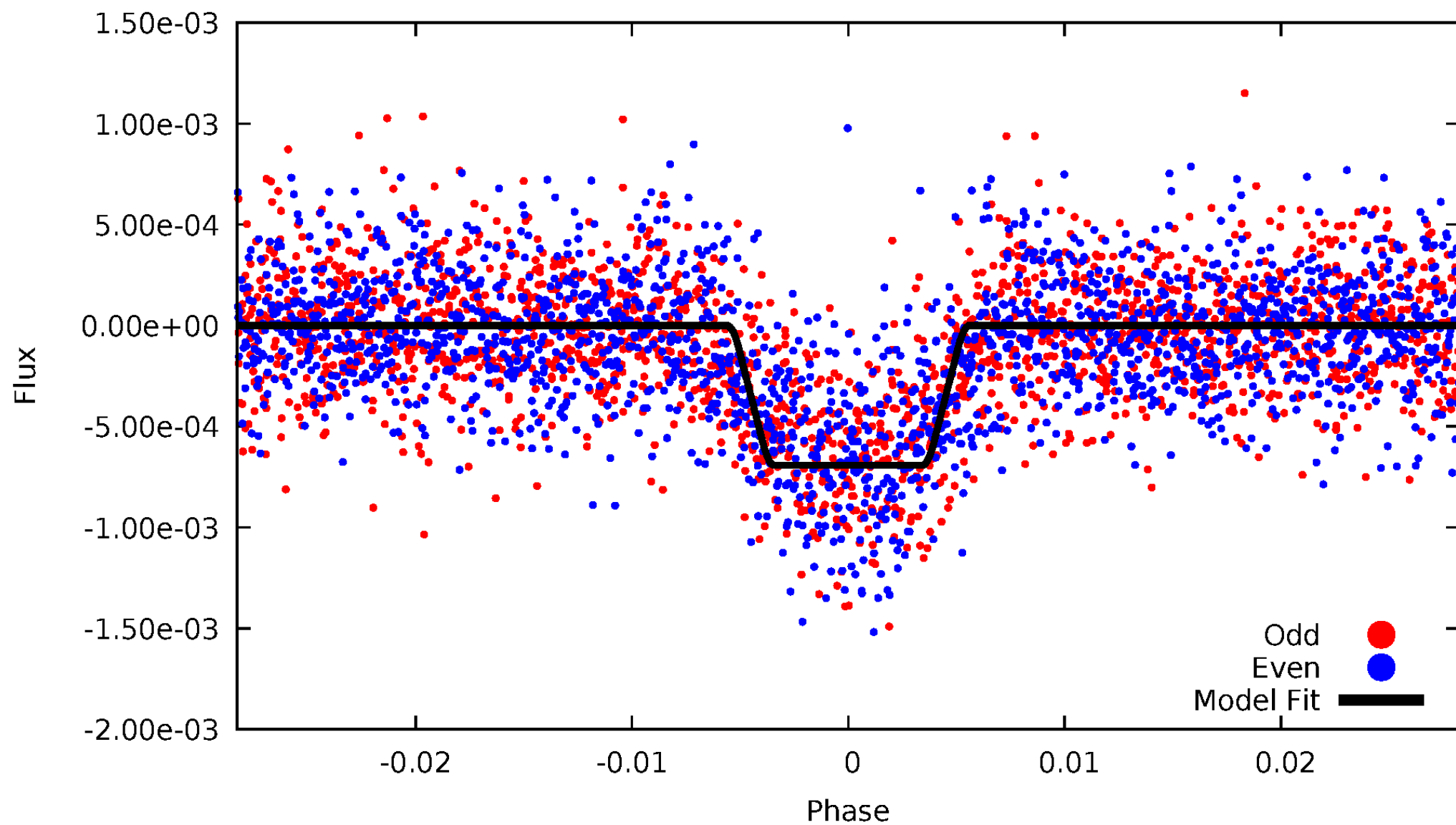
DV Odd/Even

TCE 008106610-01



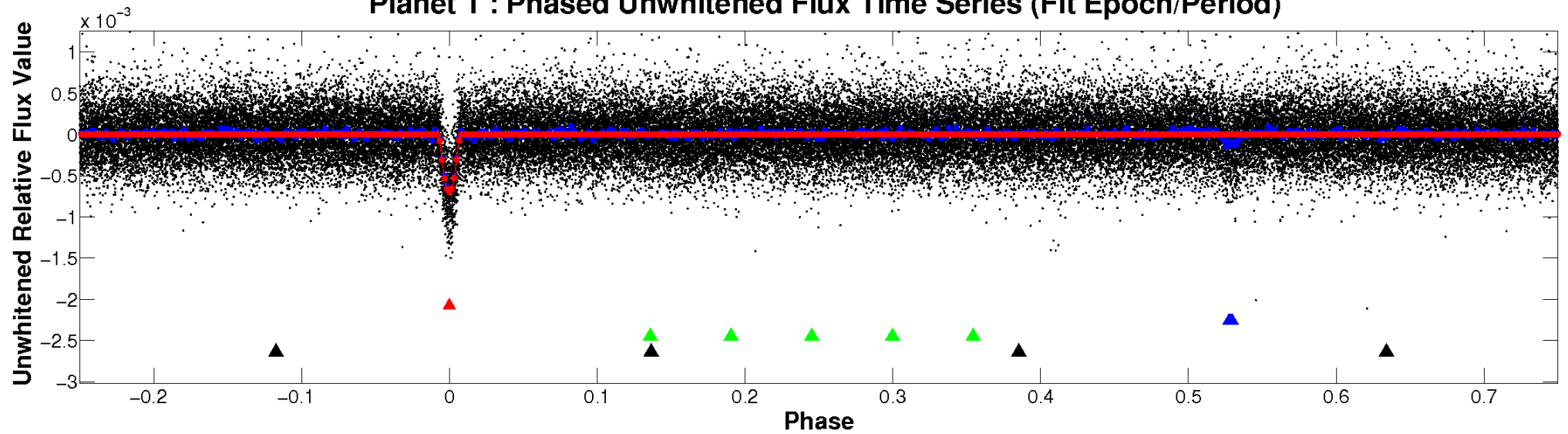
ALT Odd/Even

TCE 008106610-01

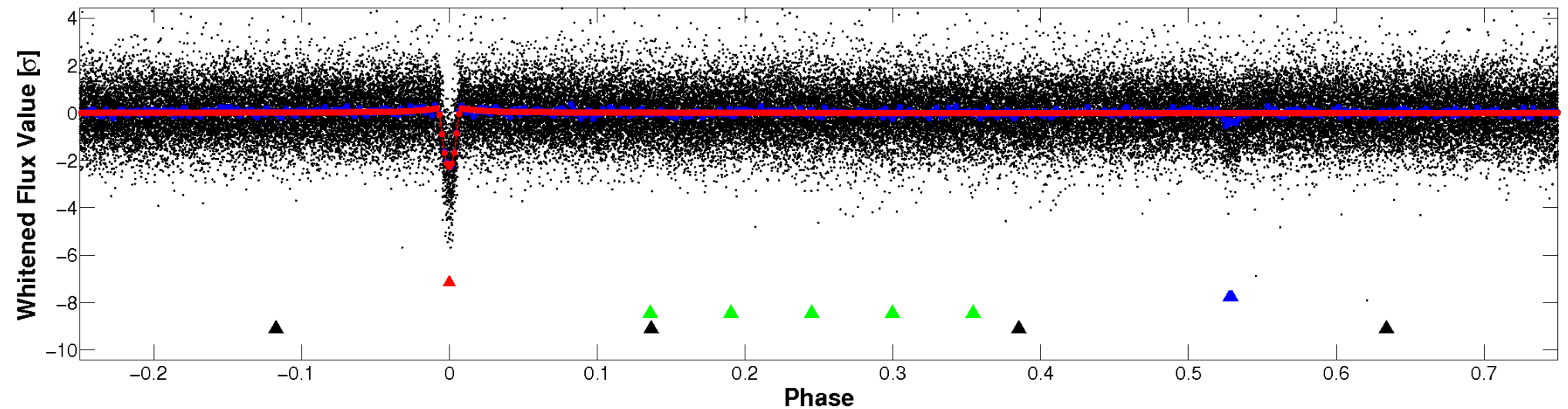


Non-Whitened Vs. Whitened Light Curve

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

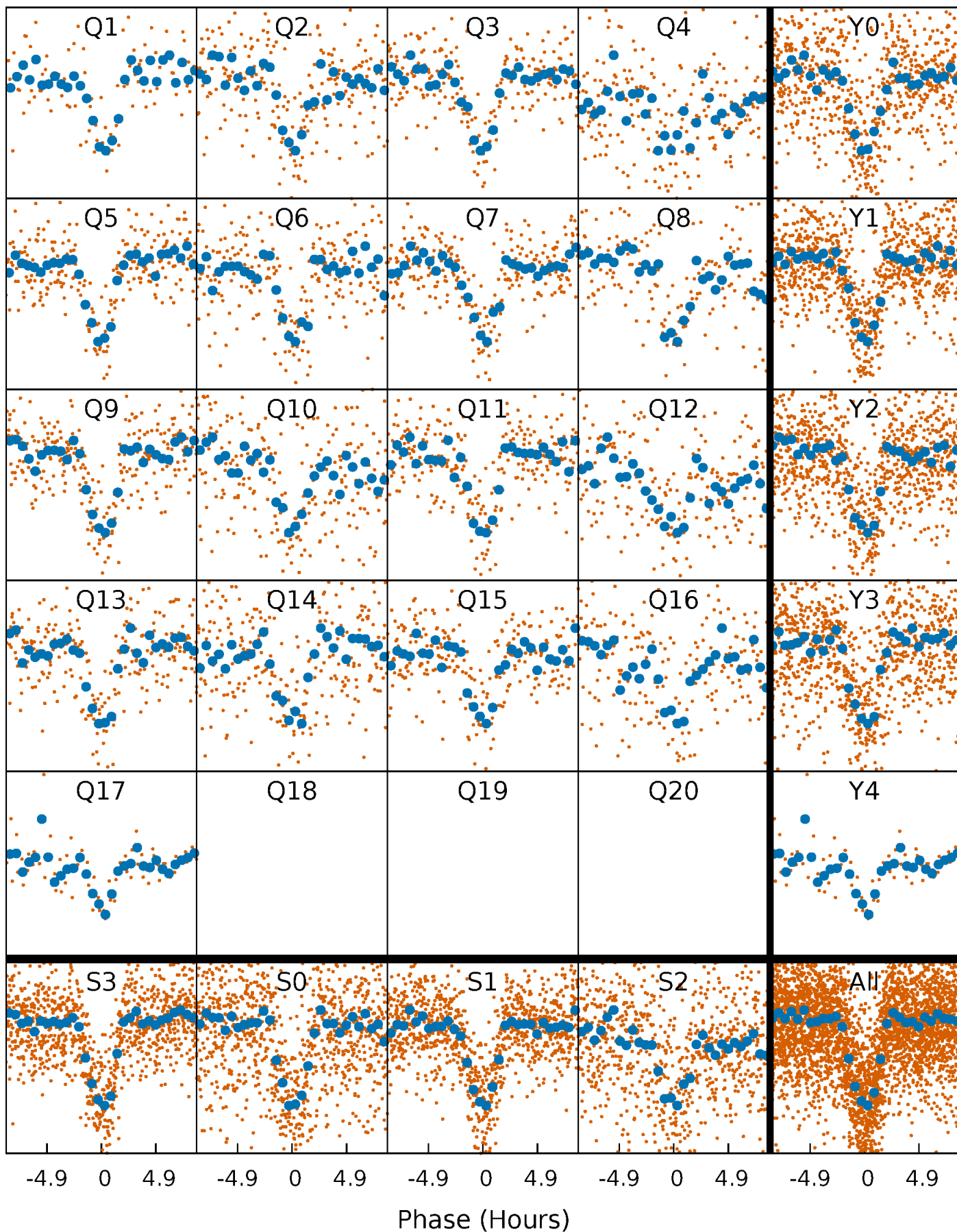


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



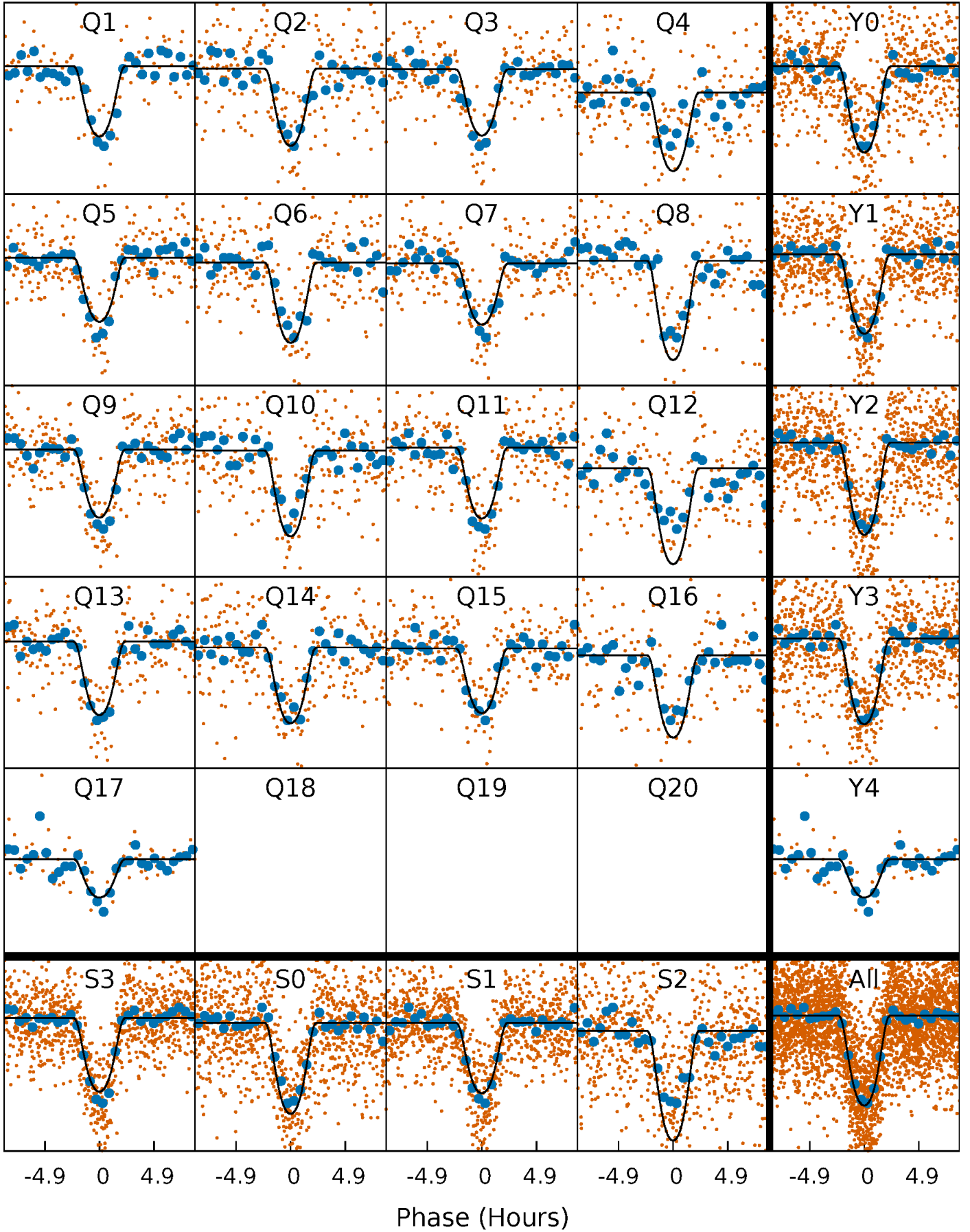
PDC Quarter-Phased Transit Curves

TCE 008106610-01 P= 12.398964 Days $T_0=135.583288$ (BKJD)



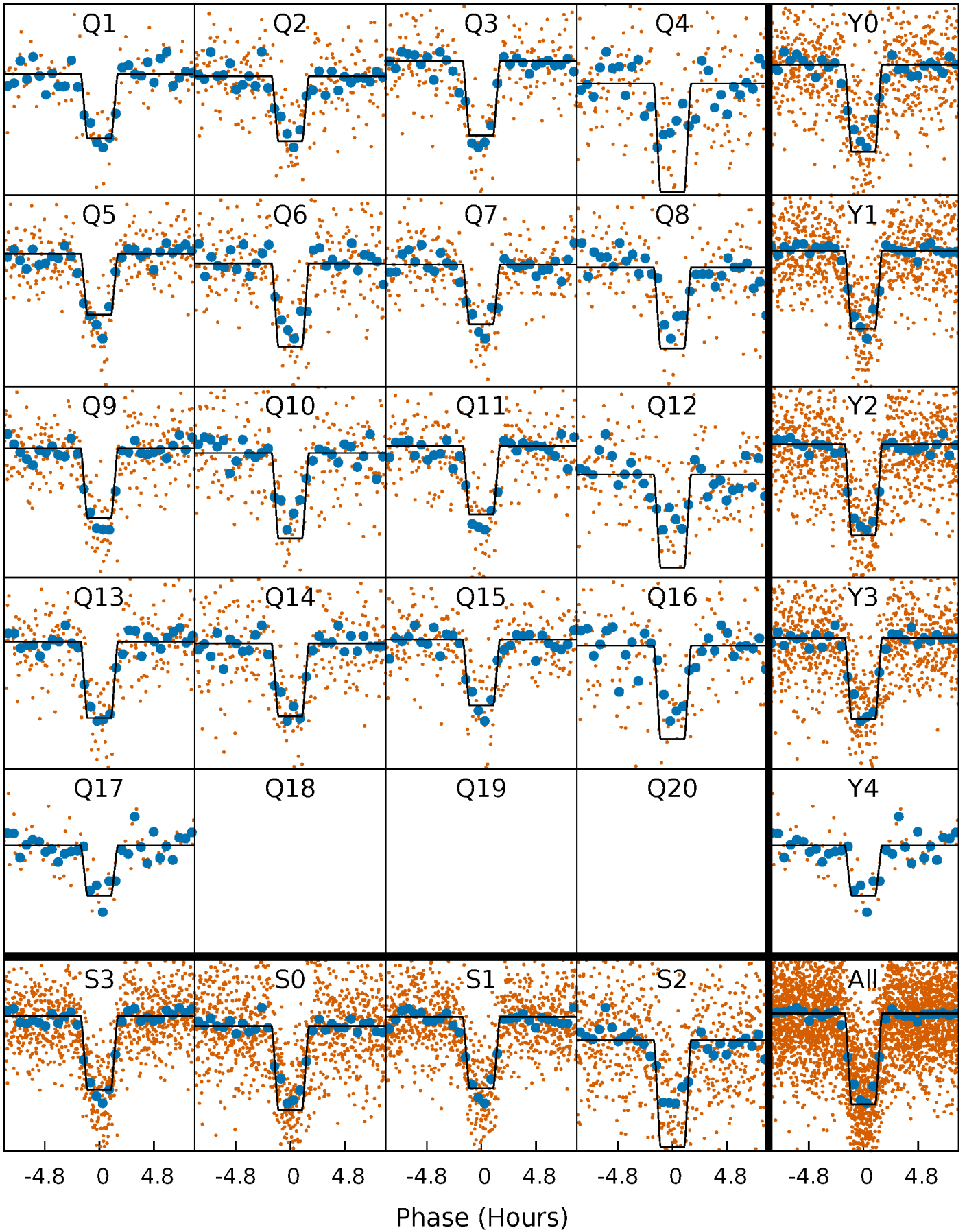
DV Quarter-Phased Transit Curves

TCE 008106610-01 P= 12.398964 Days $T_0=135.583288$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

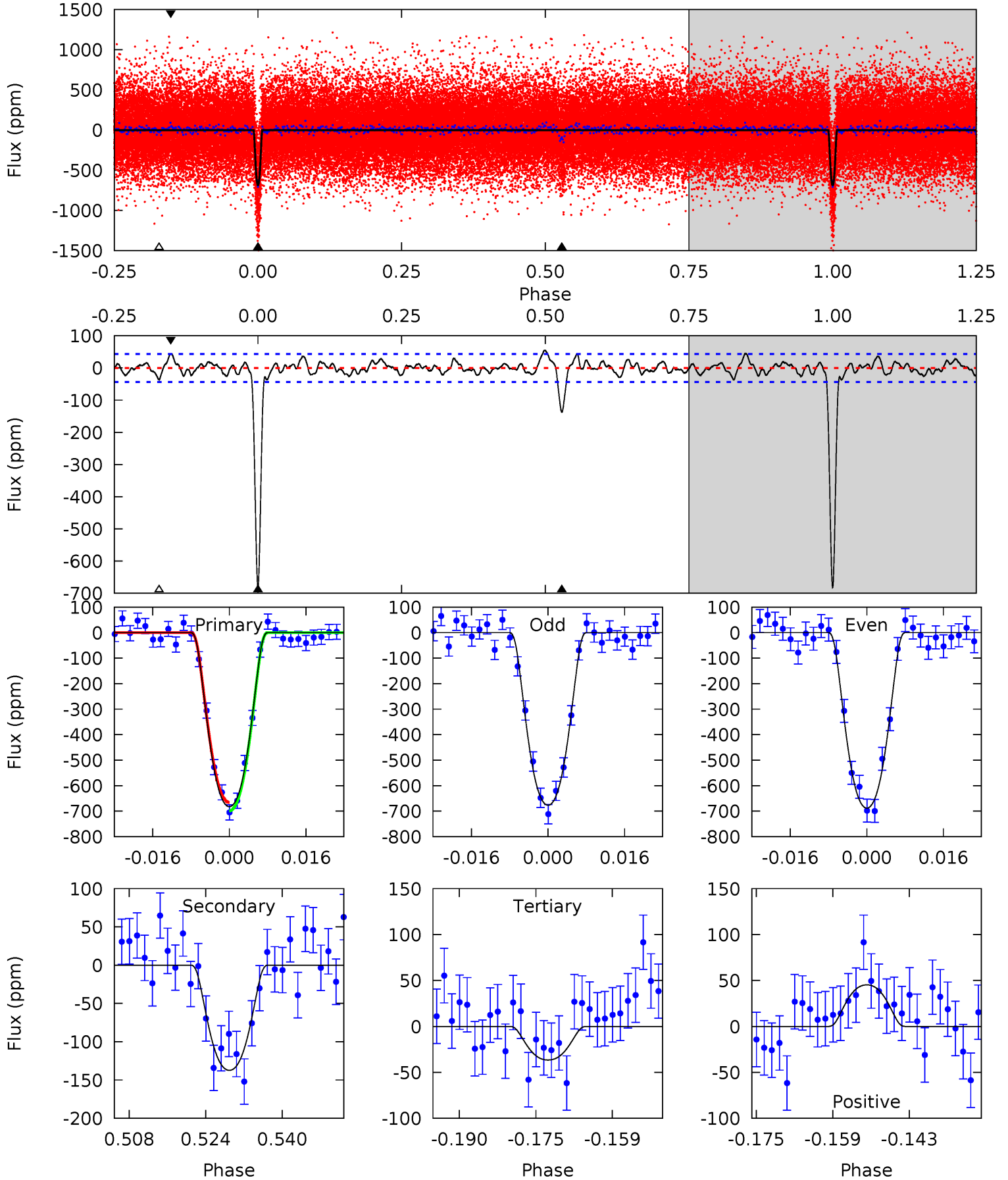
TCE 008106610-01 P= 12.398878 Days $T_0=135.588398$ (BKJD)



DV Model-Shift Uniqueness Test

008106610-01, P = 12.398964 Days, E = 123.184324 Days

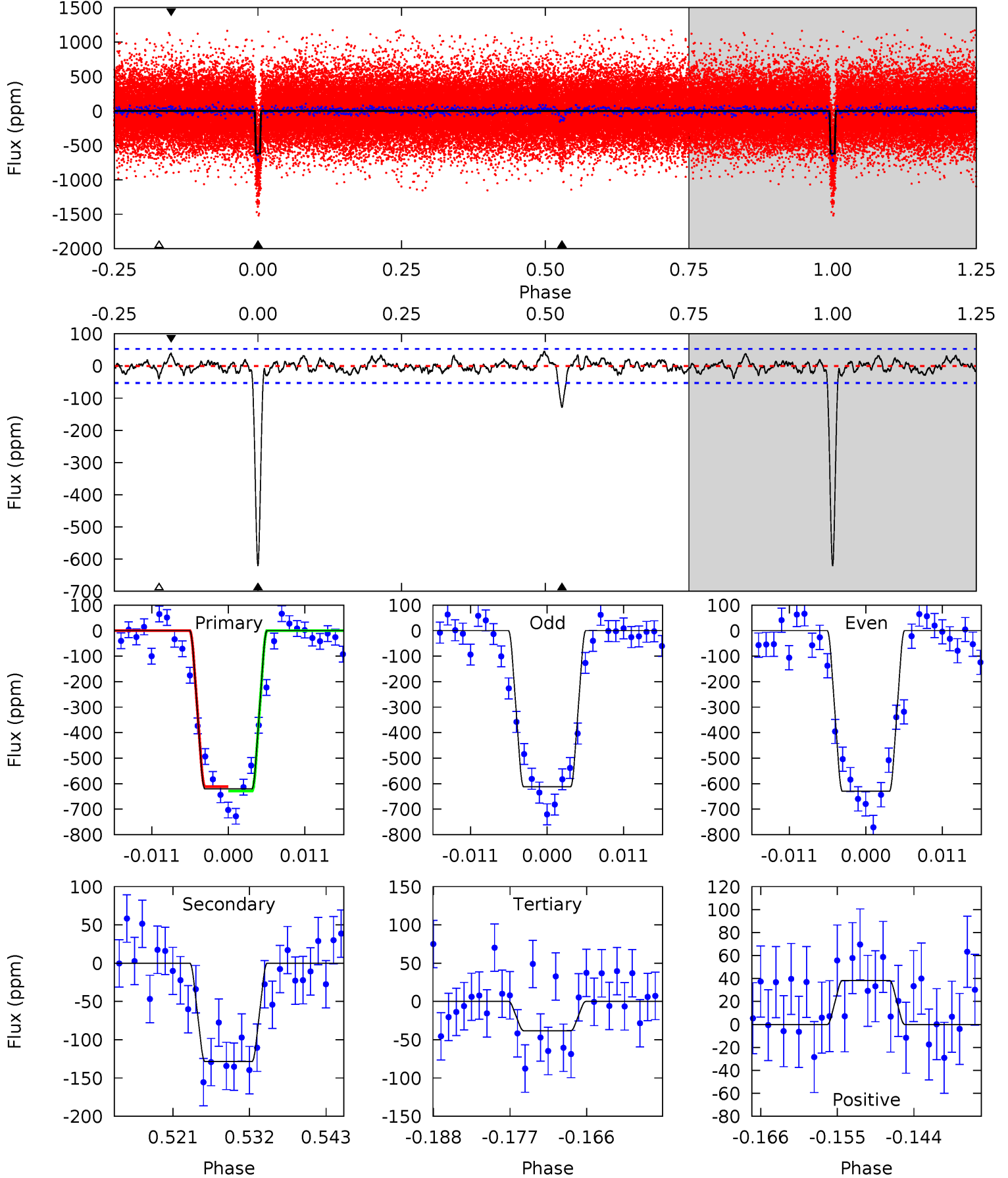
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
77.5	15.6	4.16	5.14	4.94	2.41	1.73	73.3	72.3	11.4	10.5	0.64	0.98	0.08	1.87



Alt Model-Shift Uniqueness Test

008106610-01, P = 12.398878 Days, E = 123.189520 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
58.7	12.1	3.61	3.62	5.01	2.54	1.29	55.1	55.1	8.53	8.52	0.85	0.97	0.07	0.83



Stellar Parameters For KIC 008106610

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6355^{+179}_{-224}	$4.410^{+0.070}_{-0.210}$	$-0.080^{+0.250}_{-0.300}$	$1.108^{+0.389}_{-0.130}$	$1.151^{+0.172}_{-0.157}$	$1.191^{+0.346}_{-0.632}$
	+3%/-4%	+2%/-5%	+312%/-375%	+35%/-12%	+15%/-14%	+29%/-53%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008106610-01 / KOI 0570.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-137 ± 9	$4.06^{+0.68}_{-0.52}$	1267^{+90}_{-67}	4100^{+181}_{-156}	55^{+17}_{-15}
Alt.	-128 ± 11	$3.28^{+0.71}_{-0.50}$	1261^{+97}_{-67}	4365^{+227}_{-205}	77^{+27}_{-23}

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

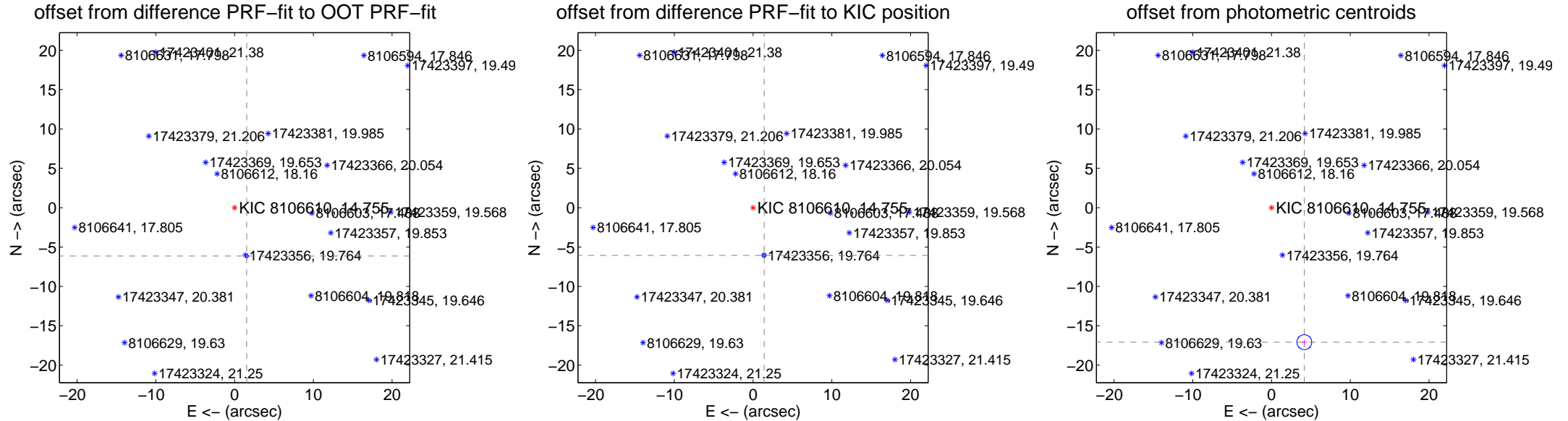
DV Centroid Data

Supplemental centroid analysis for 008106610-01. Kepler magnitude: 14.76. Transit SNR 46.87

There are 17 quarters with good PRF difference image offsets

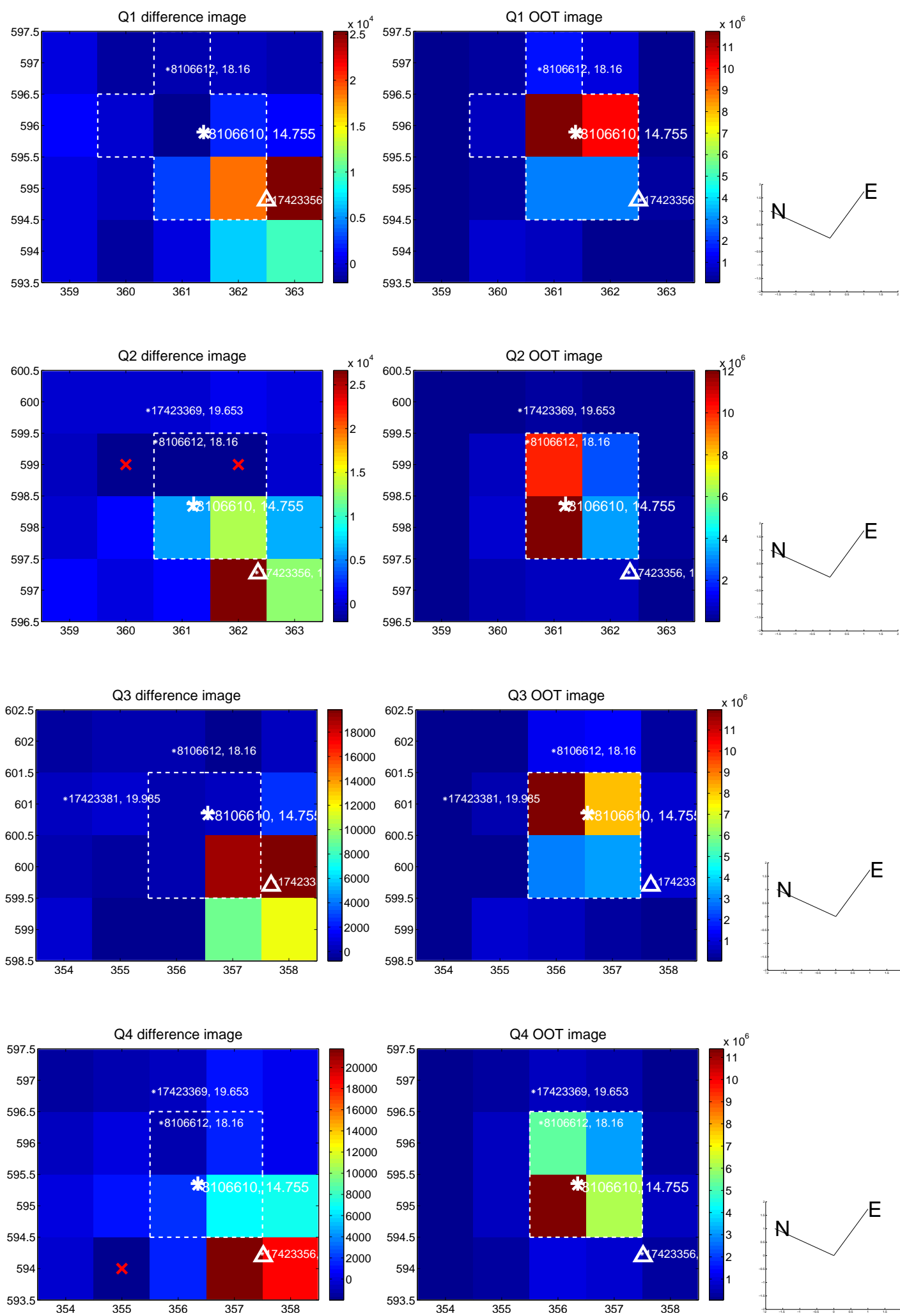
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.332 ± 0.070	90.77	-1.542 ± 0.072	-6.142 ± 0.069
PRF-fit source offset from KIC position	6.232 ± 0.071	87.89	-1.411 ± 0.072	-6.070 ± 0.070
photometric centroid source offset	17.58 ± 0.32	55.70	-4.16 ± 0.30	-17.08 ± 0.32

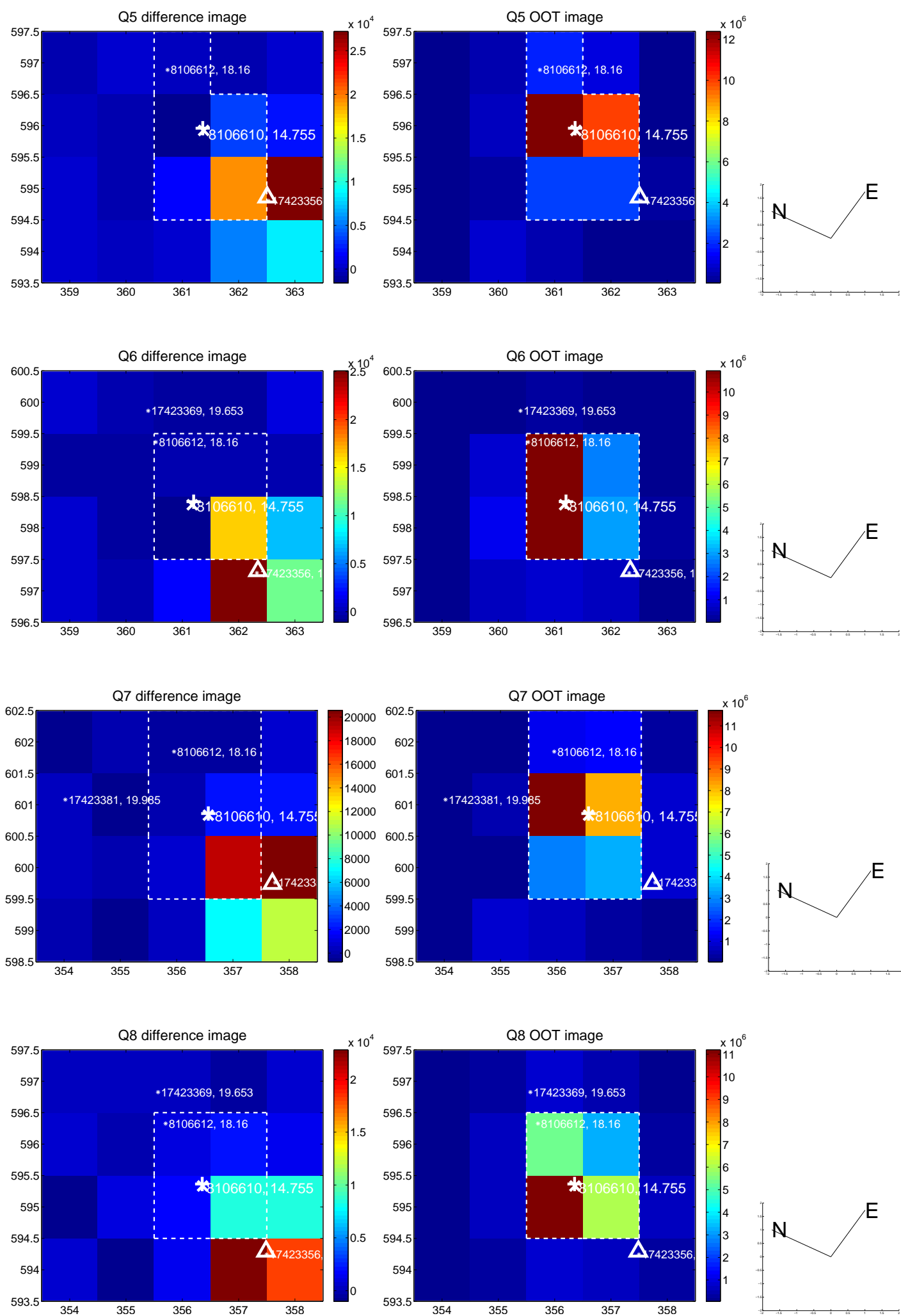


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

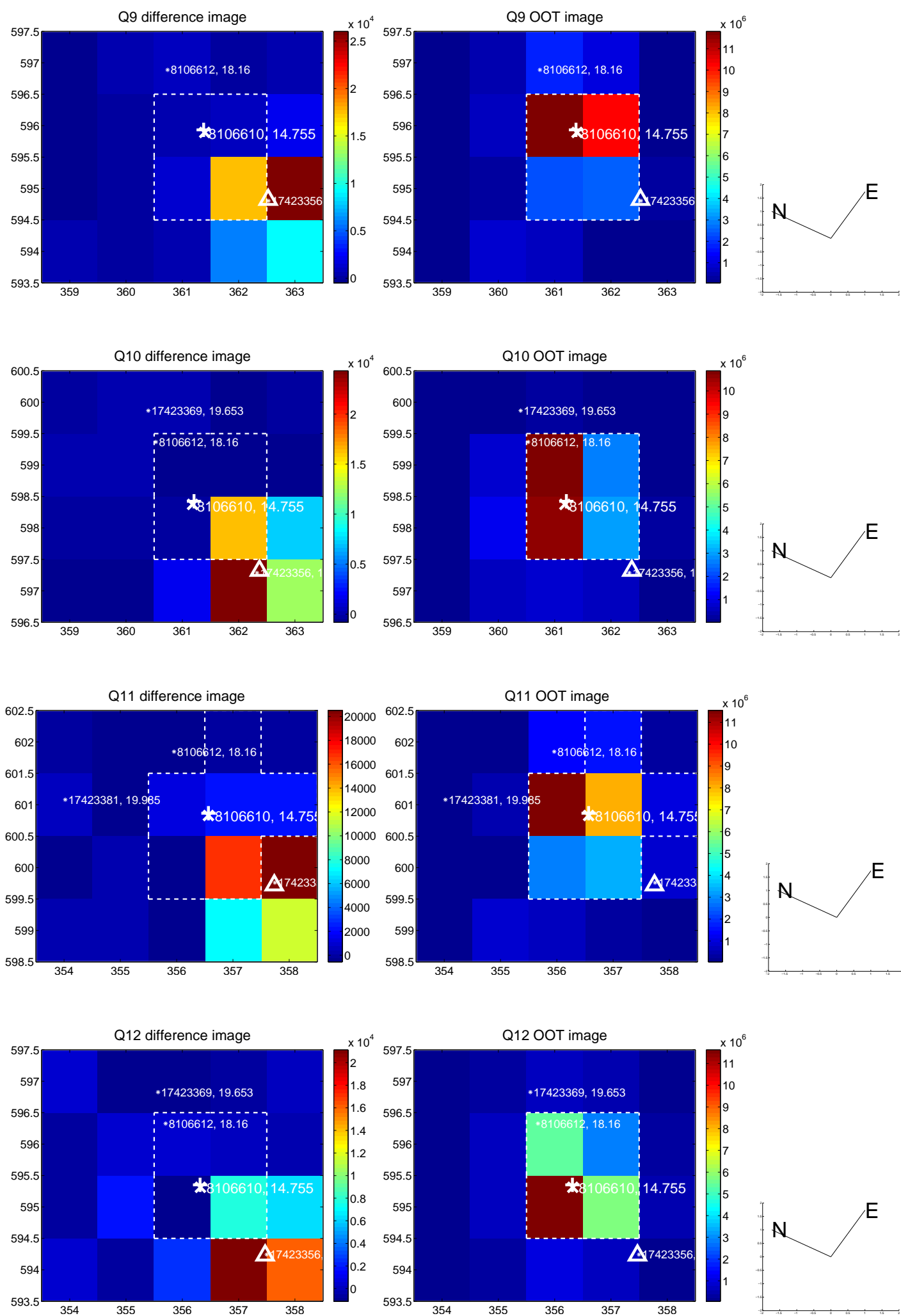
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



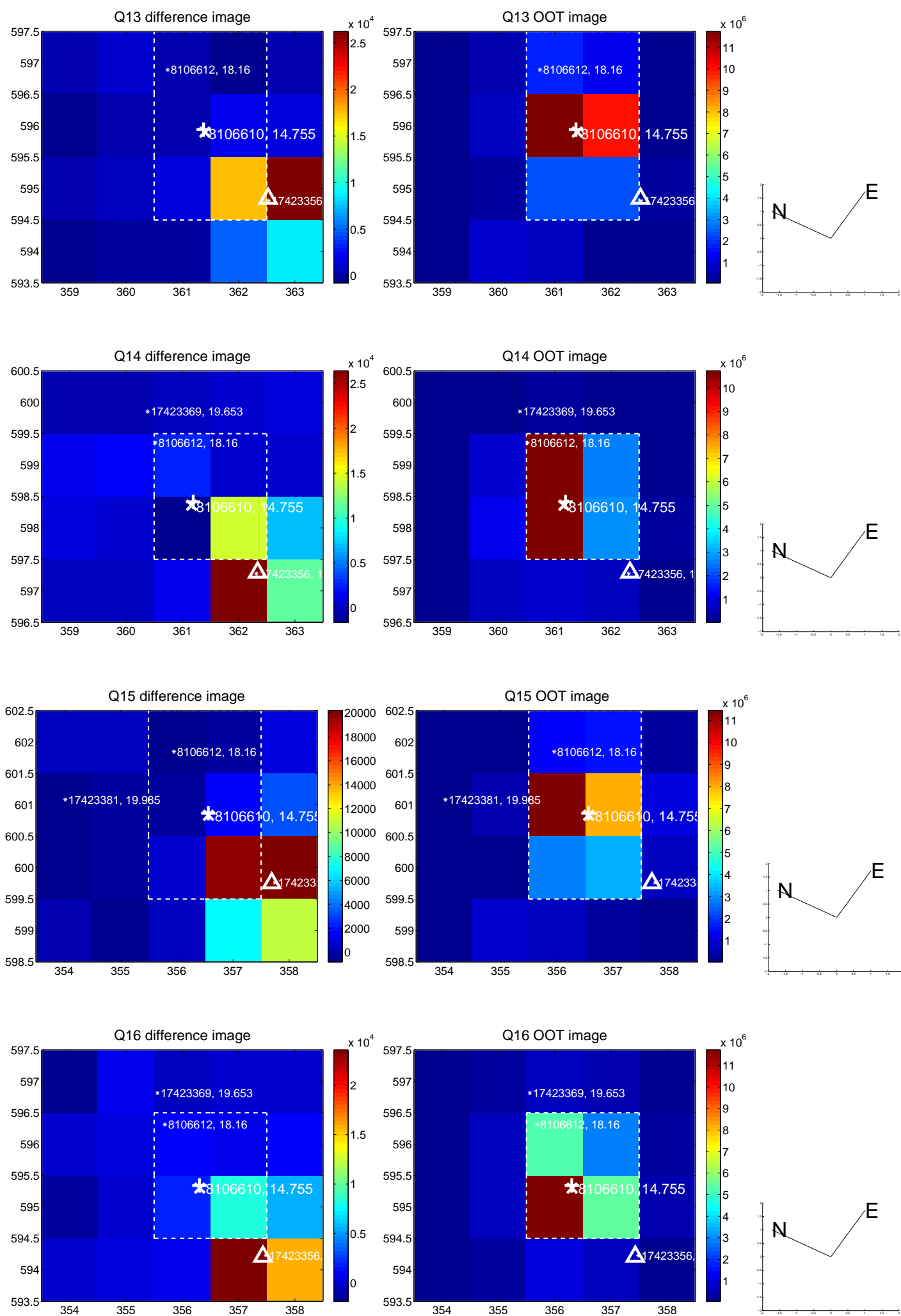
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



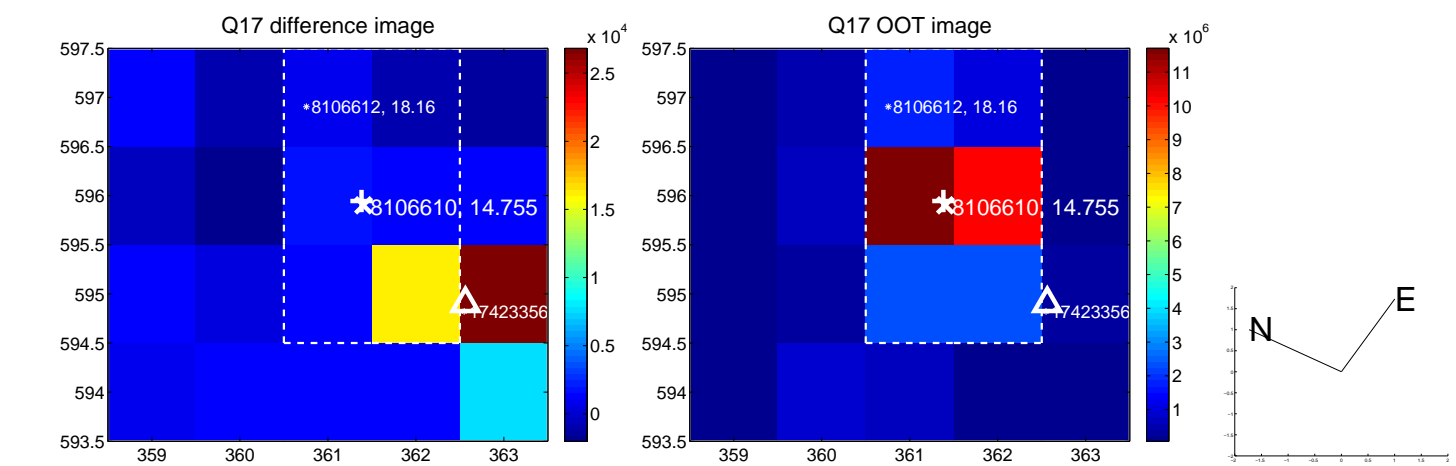
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



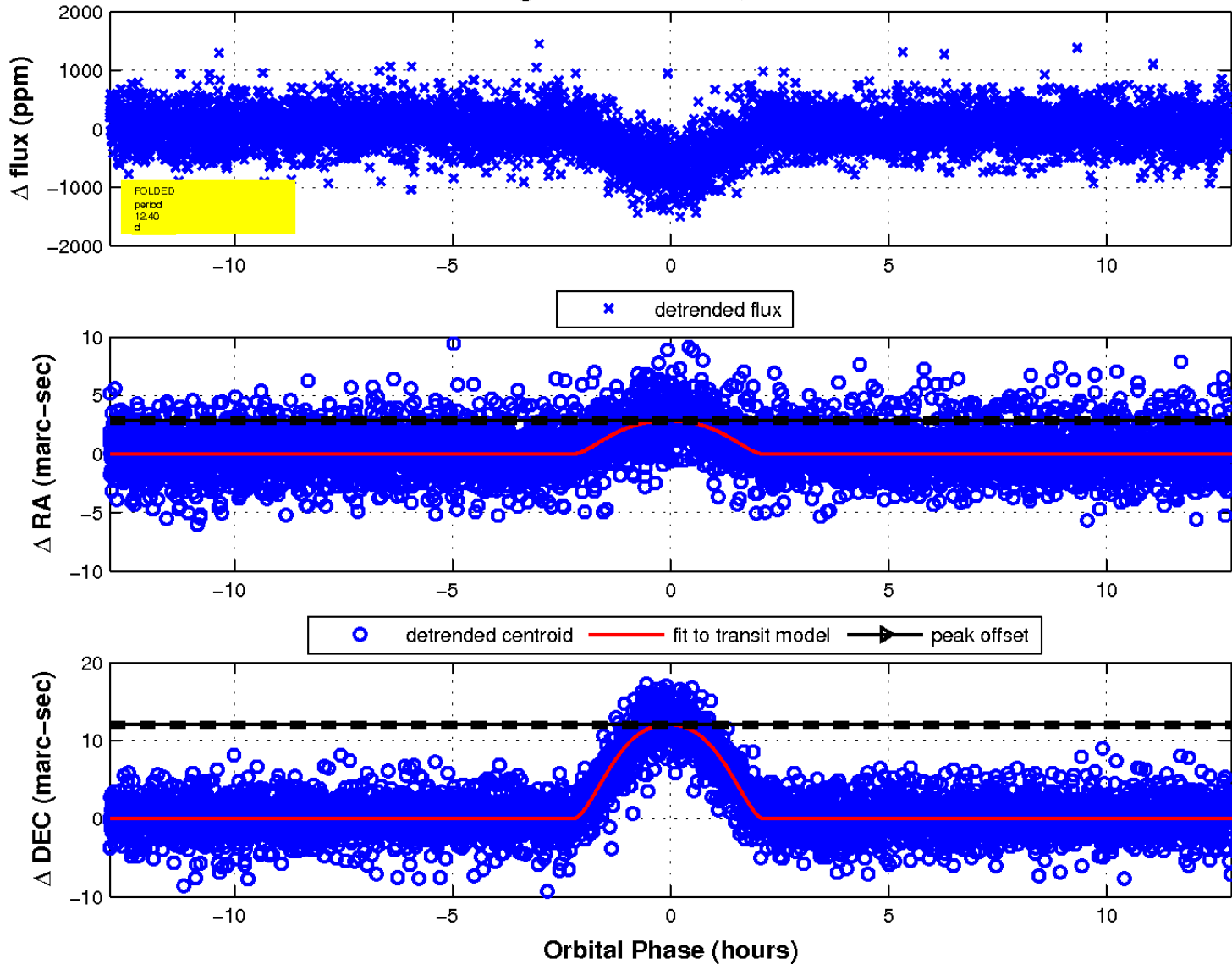
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

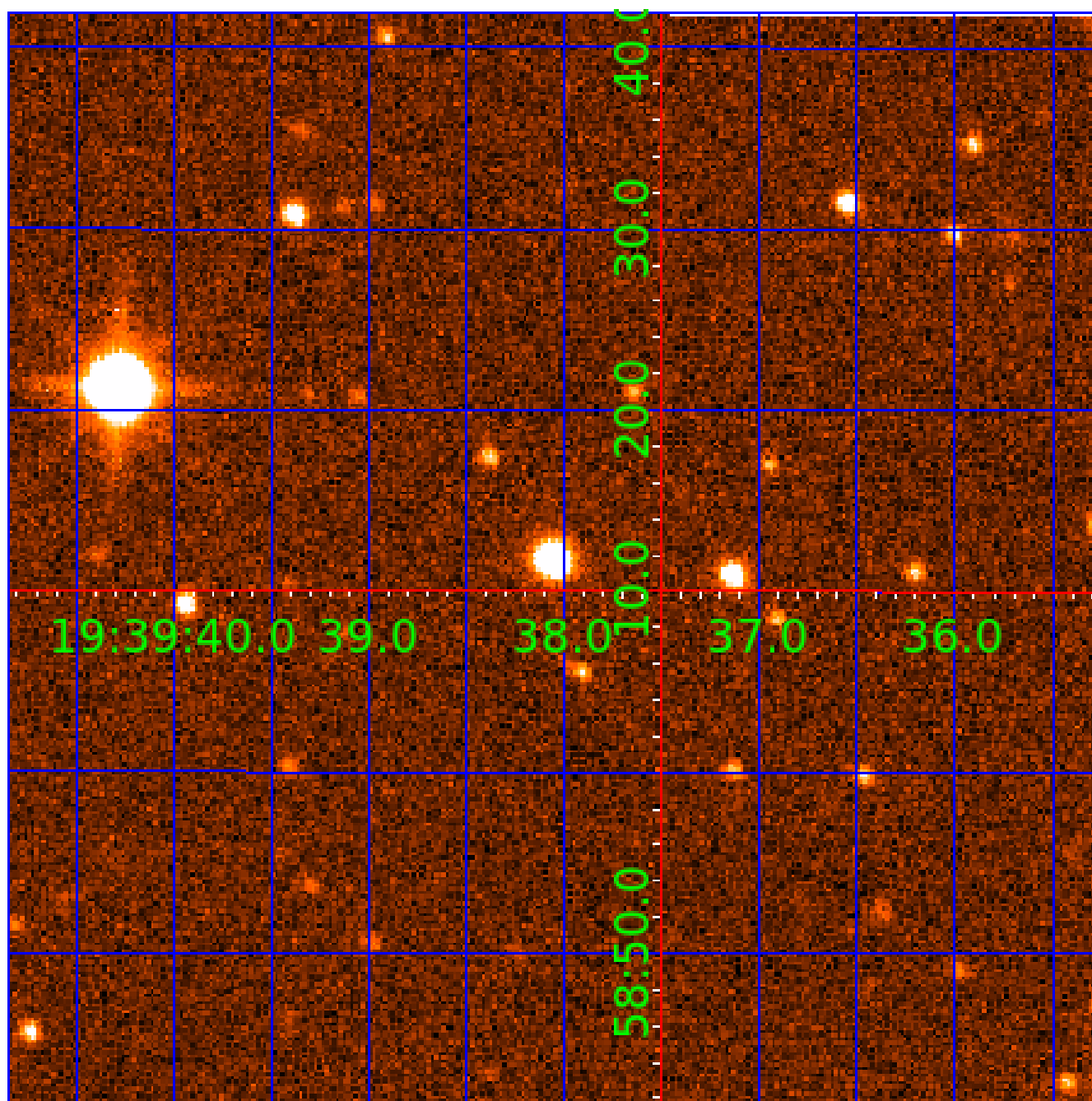


fluxWeightedCentroids, Planet 1 of 4



UKIRT Image

Declination



KIC 008106610

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})
008106610-01	OBS	0570.01	12.398964	135.583288	699.9	4.289	44.1	46.9	1.11	6355	3.91	148.55
008106610-02	OBS	No	12.399210	142.122376	133.2	5.422	10.2	10.8	1.11	6355	1.71	148.54
008106610-03	OBS	No	298.252238	323.253679	615.9	23.701	14.7	11.6	1.11	6355	3.25	2.14
008106610-04	OBS	No	368.884947	233.321043	635.4	27.044	10.1	10.0	1.11	6355	5.37	1.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008106610-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST
008106610-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST
008106610-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008106610-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—CENT_FEW_DIFFS

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

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

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

Ephemeris Match Information For 008106610-02

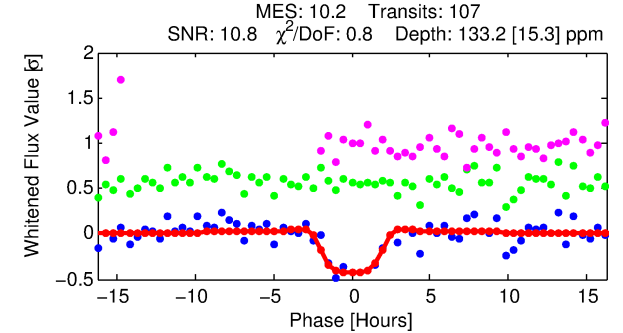
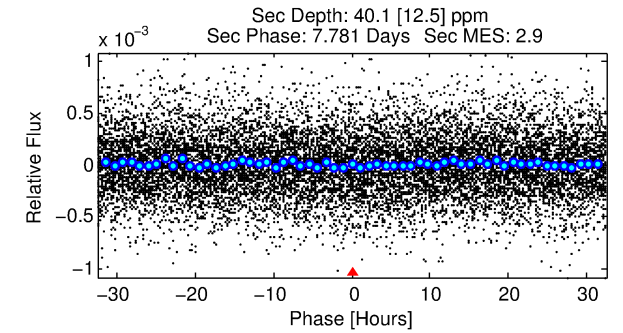
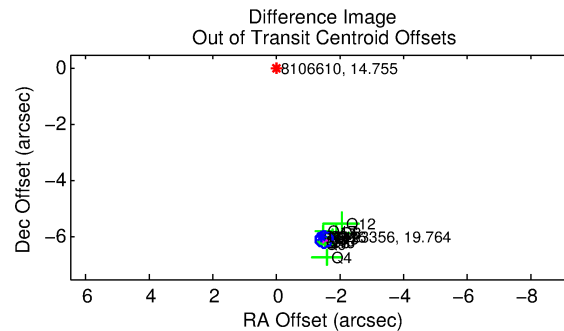
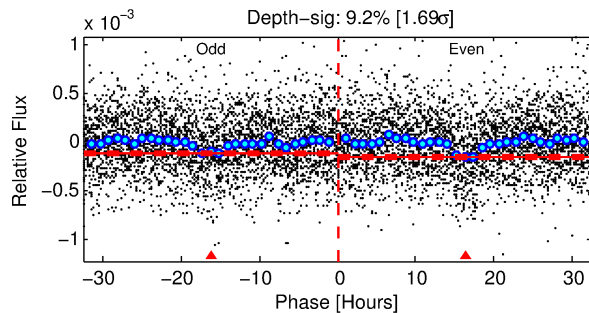
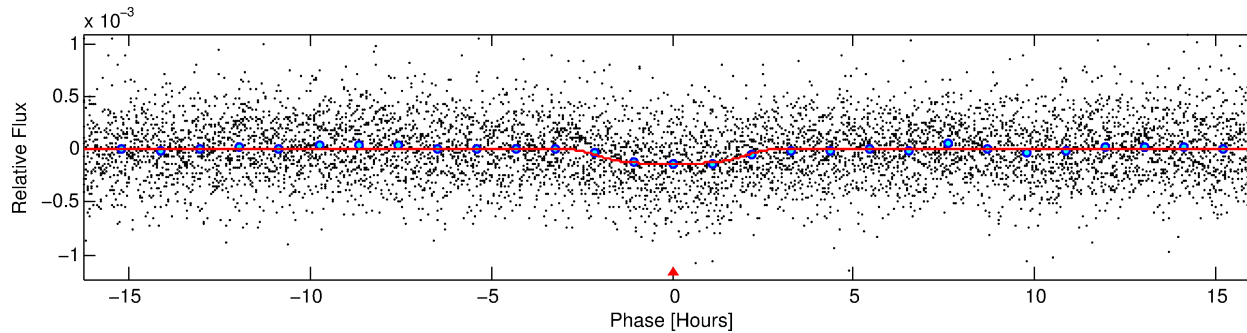
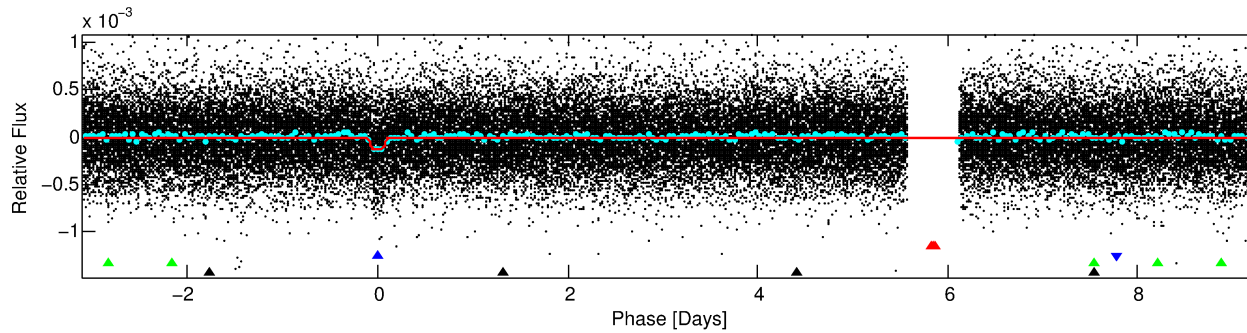
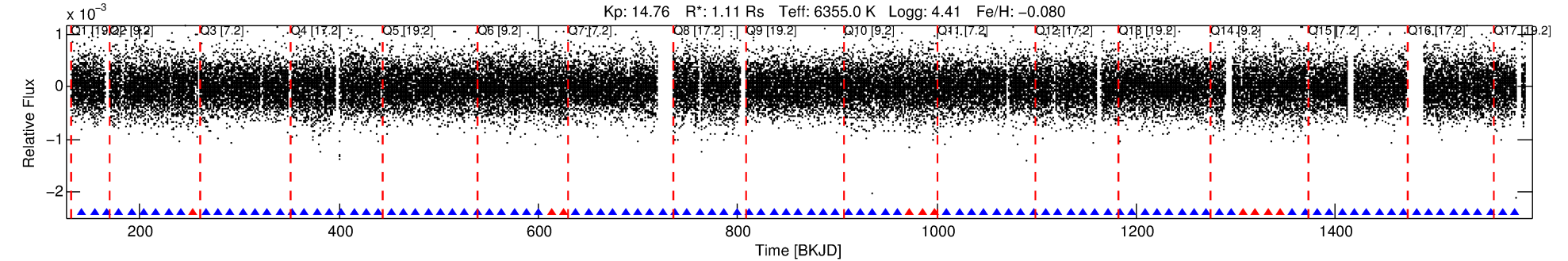
No Significant Match Found

DV One-Page Summary

KIC: 8106610 Candidate: 2 of 4 Period: 12.399 d

KOI: K00570 Corr: No Ephemeris Match

Kp: 14.76 R*: 1.11 Rs Teff: 6355.0 K Logg: 4.41 Fe/H: -0.080



DV Fit Results:

Period = 12.39921 [0.00017] d
Epoch = 142.1224 [0.0112] BKJD
Rp/R* = 0.0141 [0.0011]
a/R* = 4.64 [1.03]
b = 0.98 [0.01]
Seff = 148.54 [62.77]
Teq = 890 [94] K
Rp = 1.71 [0.62] Re
a = 0.1099 [0.0312] AU
Ag = 91.19 [48.49] [1.86σ]
Teffp = 4253 [403] K [8.12σ]

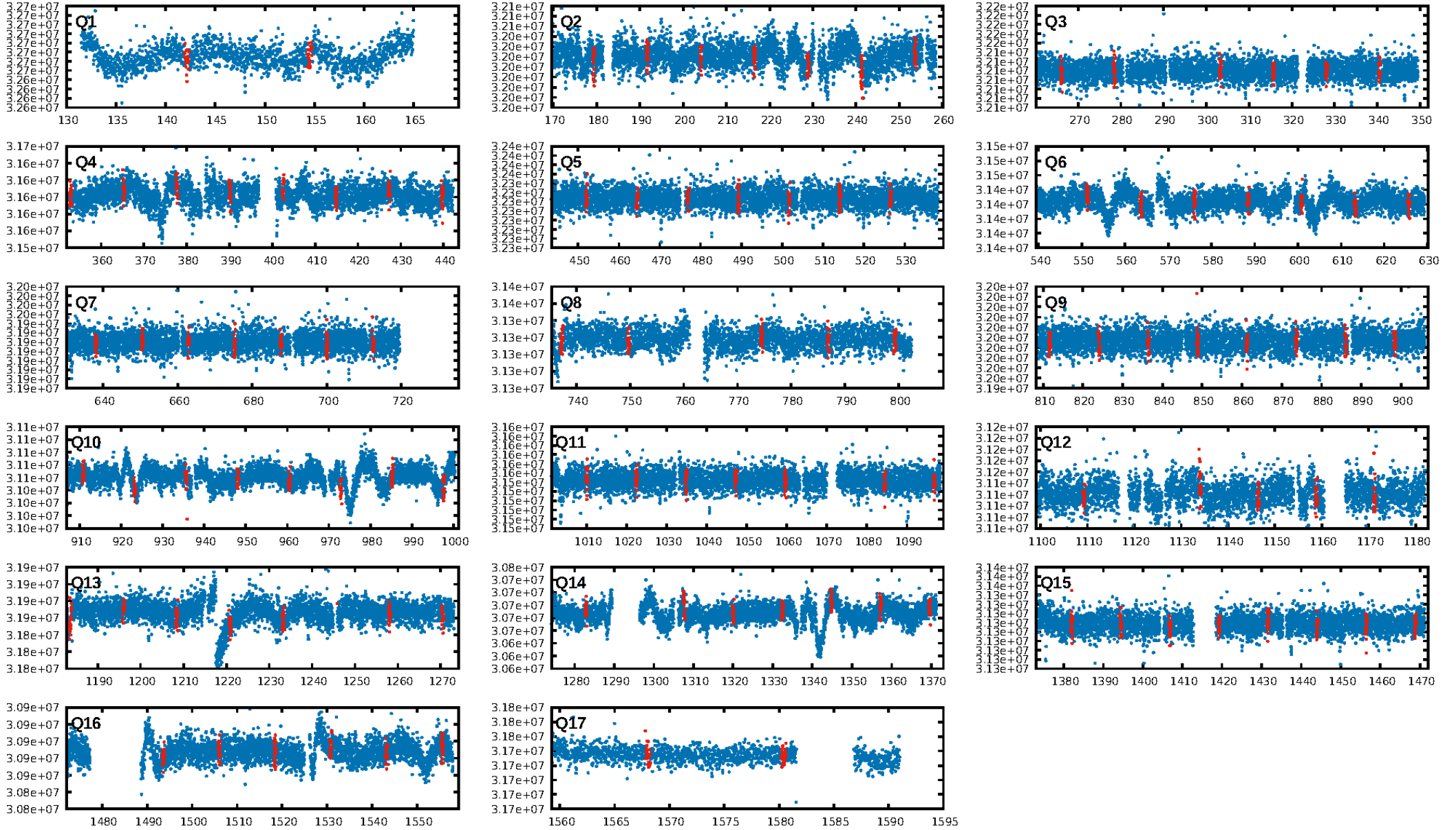
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: 100.0% [282.17σ]
ModelChiSquare2-sig: 52.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.37e-23
RollingBand-fgt: 0.90 [93/103]
GhostDiagnostic-chr: -0.2053
Centroid-sig: 0.0%
Centroid-so: 18.127 arcsec [12.86σ]
OotOffset-rm: 6.278 arcsec [69.52σ]
KicOffset-rm: 6.177 arcsec [59.41σ]
OotOffset-st: 2/4/4/3 [13]
KicOffset-st: 2/4/4/3 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 1.00 [17/17]

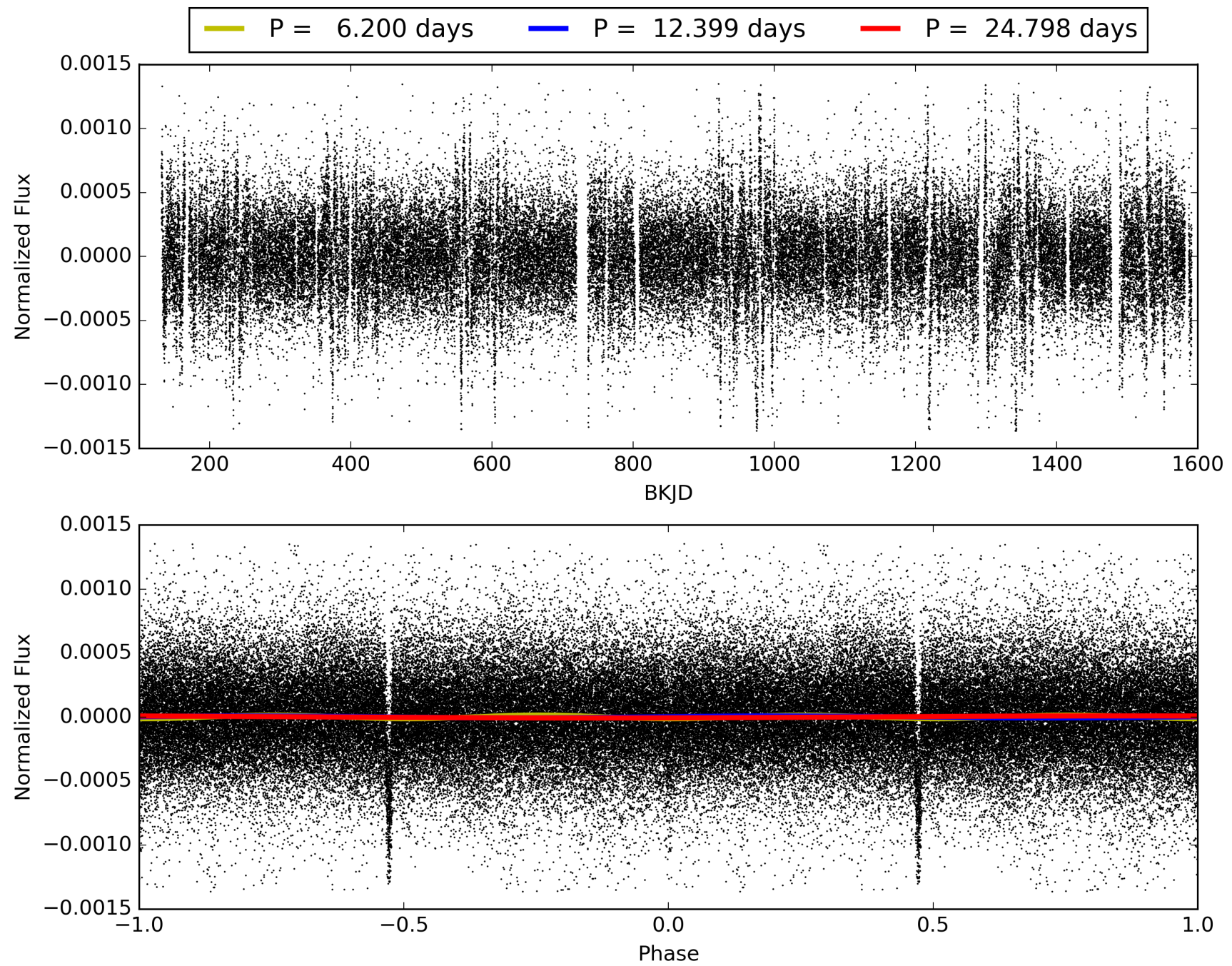
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 14:52:32 Z

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

TCE 008106610-02, PDC Light Curves

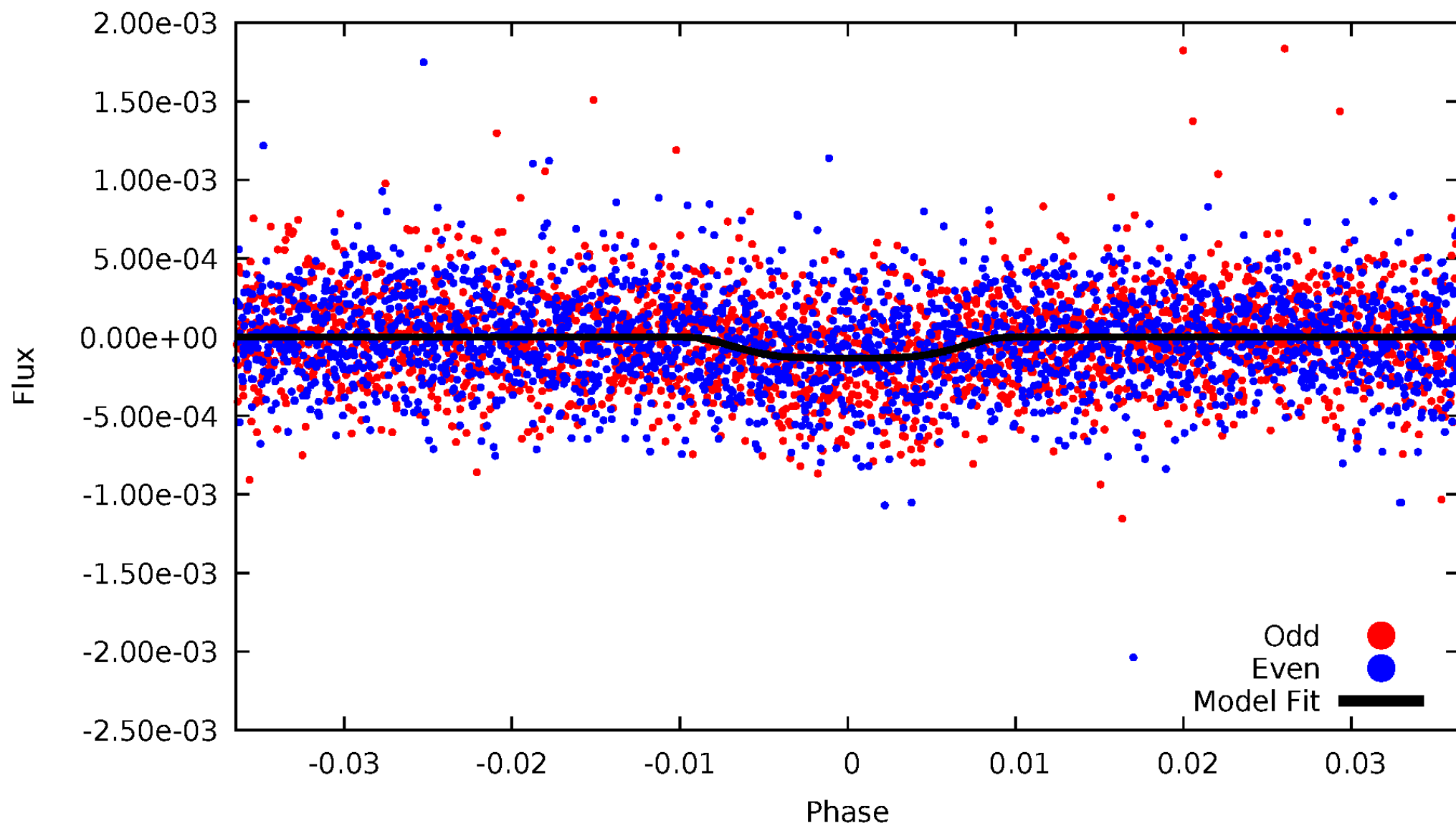


TCE 008106610-02



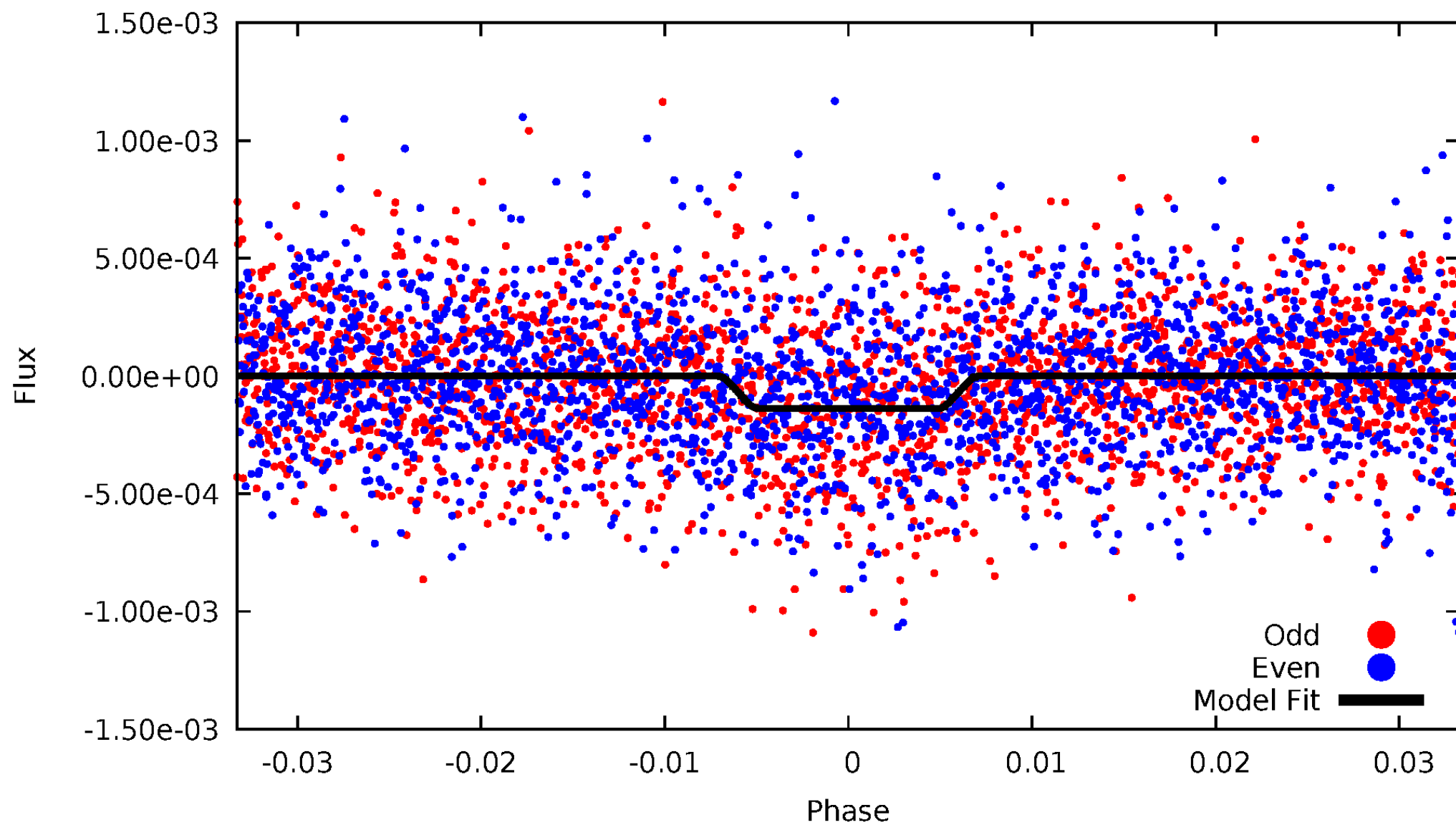
DV Odd/Even

TCE 008106610-02



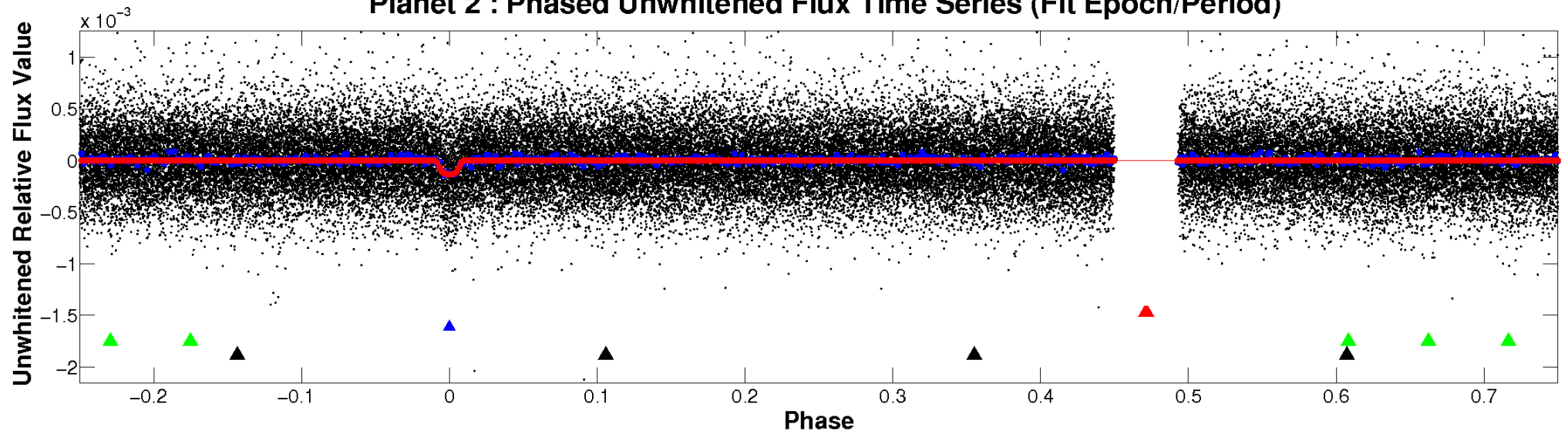
ALT Odd/Even

TCE 008106610-02

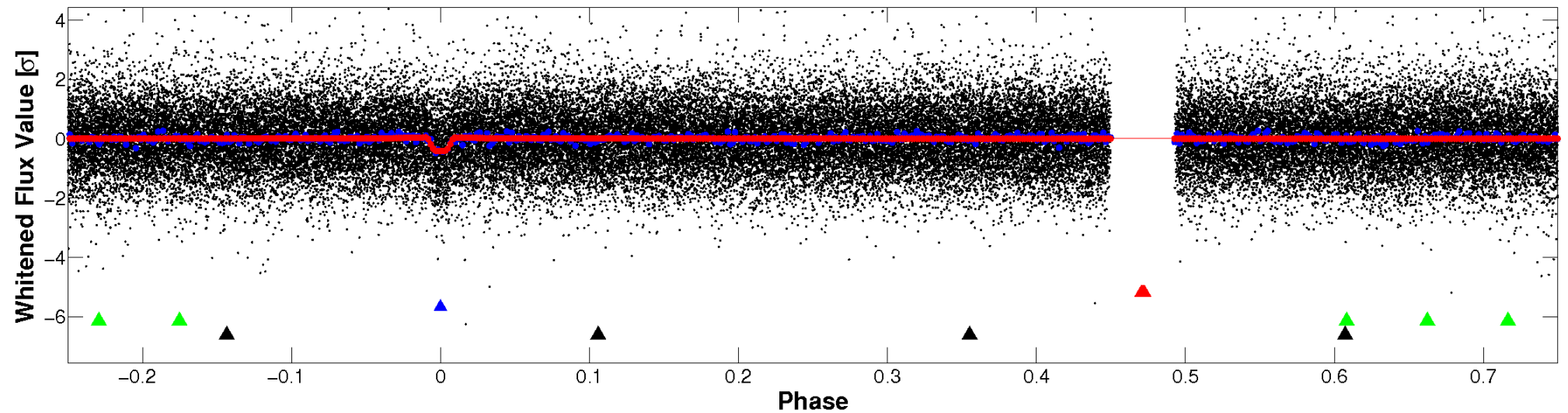


Non-Whitened Vs. Whitened Light Curve

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

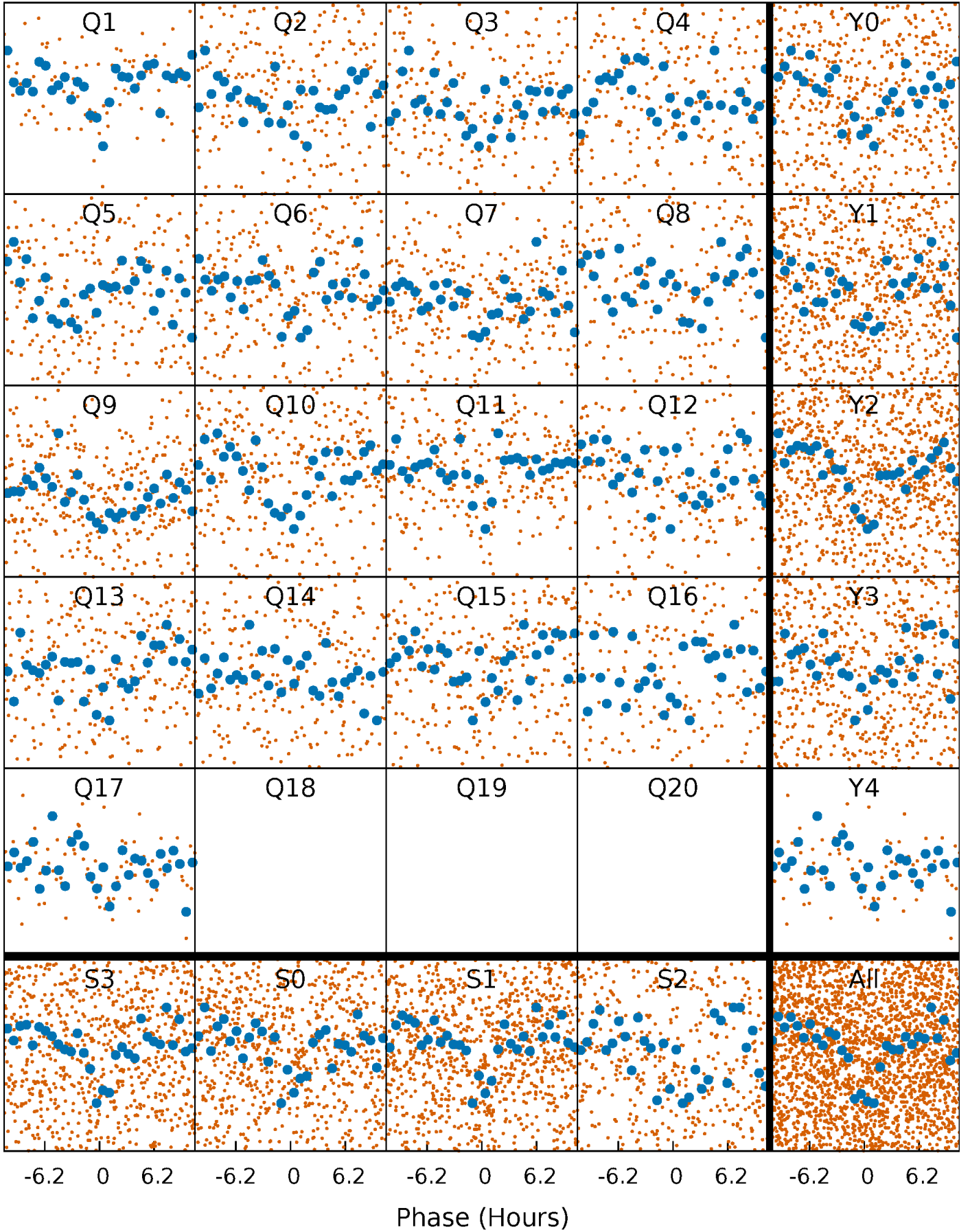


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



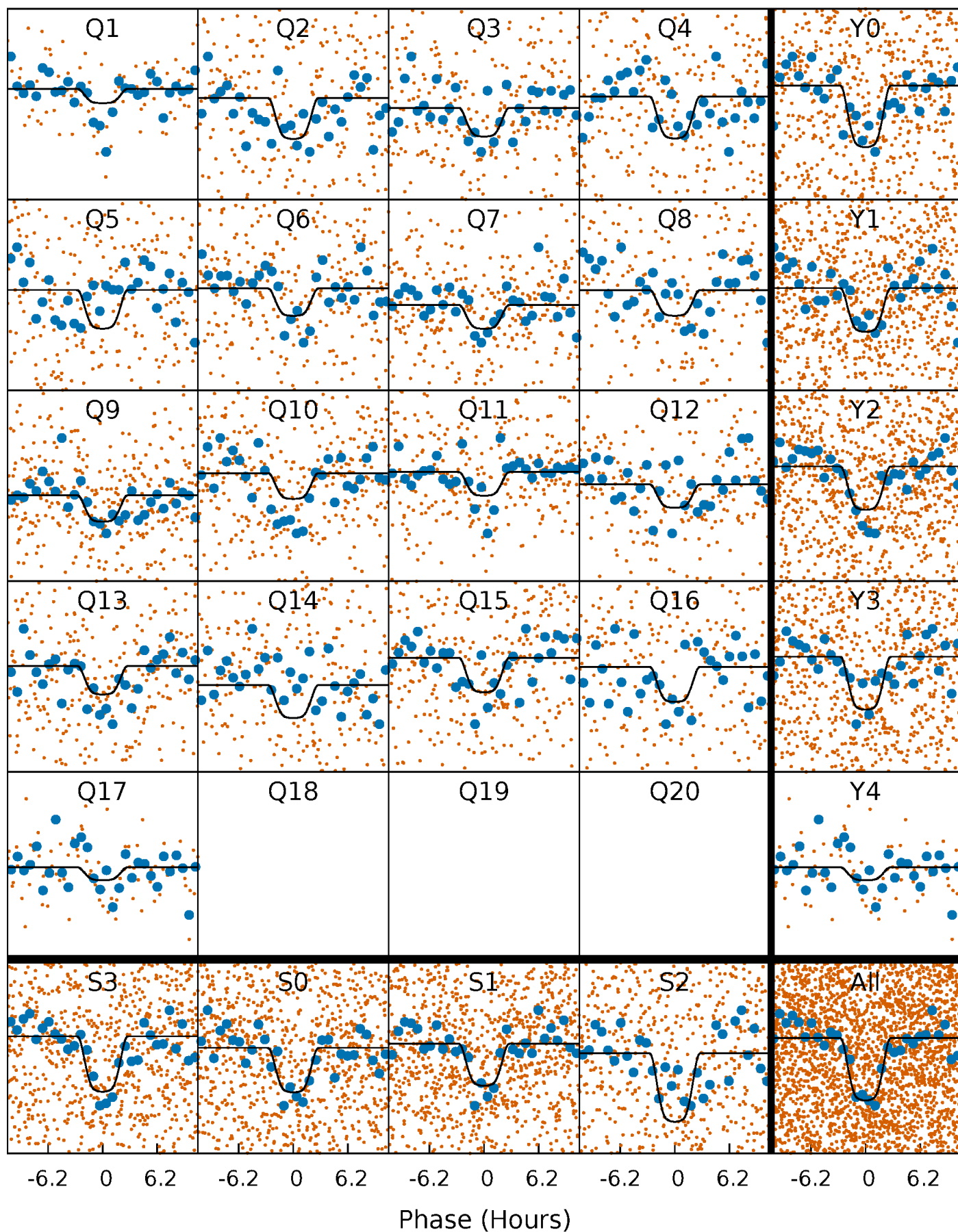
PDC Quarter-Phased Transit Curves

TCE 008106610-02 P= 12.399210 Days $T_0=142.122376$ (BKJD)



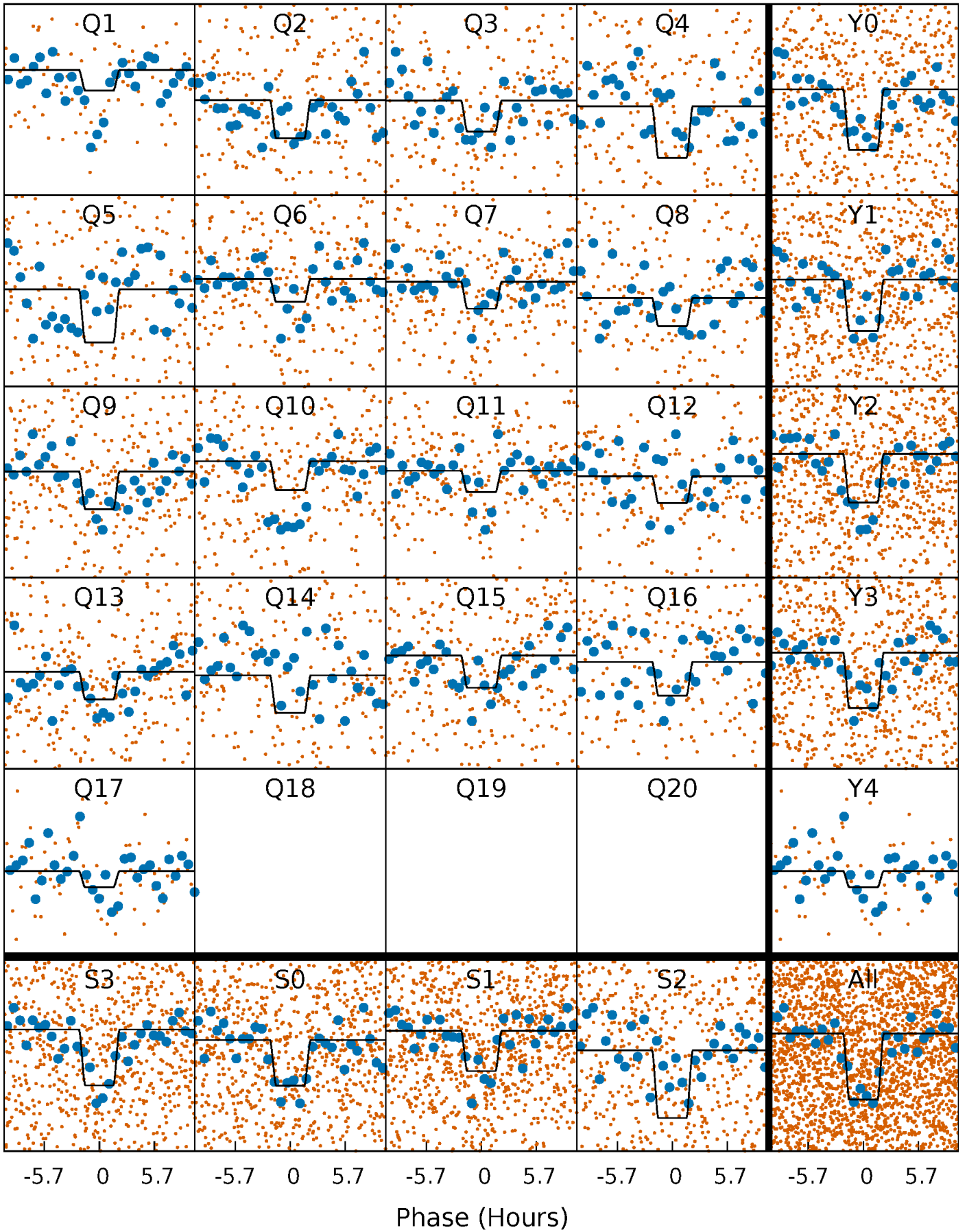
DV Quarter-Phased Transit Curves

TCE 008106610-02 P= 12.399210 Days $T_0=142.122376$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

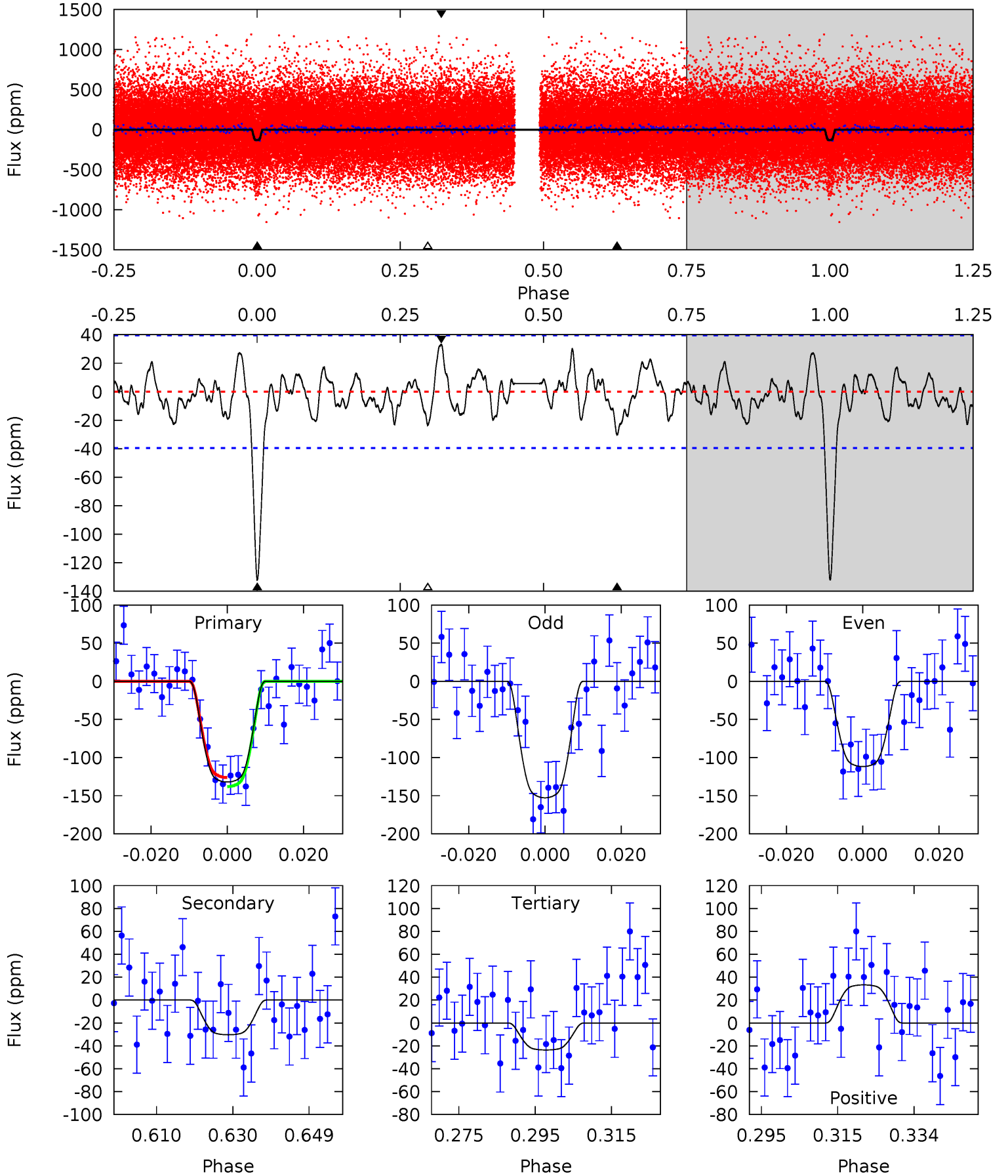
TCE 008106610-02 P= 12.399013 Days $T_0=142.137247$ (BKJD)



DV Model-Shift Uniqueness Test

008106610-02, $P = 12.399210$ Days, $E = 129.723166$ Days

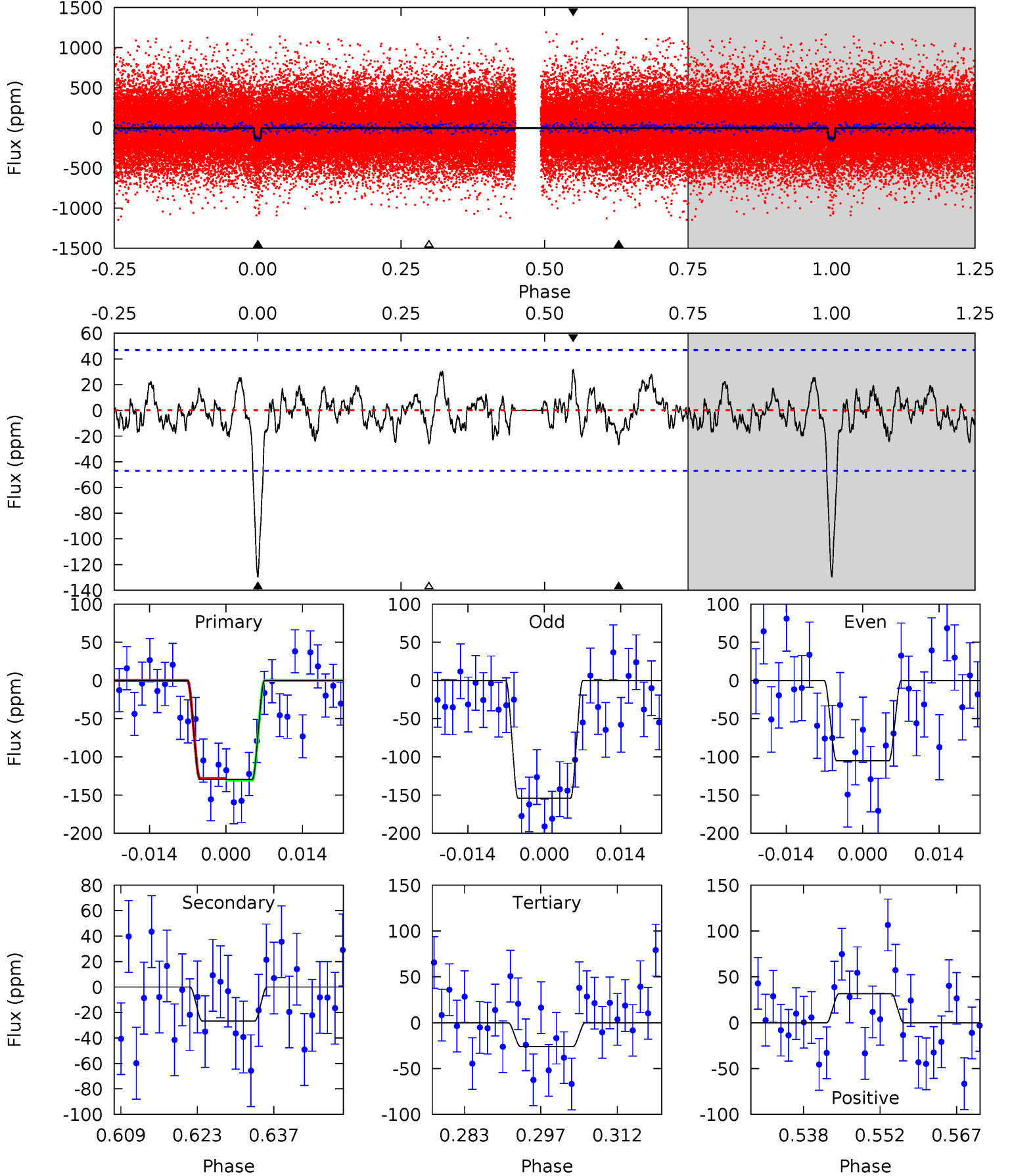
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.4	3.76	2.93	4.12	4.89	2.33	1.38	13.4	12.3	0.83	-0.36	2.54	1.00	0.20	0.73



Alt Model-Shift Uniqueness Test

008106610-02, P = 12.399013 Days, E = 129.738234 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.7	2.82	2.75	3.33	4.96	2.45	1.14	10.9	10.3	0.07	-0.51	2.59	0.94	0.20	0.14



Stellar Parameters For KIC 008106610

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6355^{+179}_{-224}	$4.410^{+0.070}_{-0.210}$	$-0.080^{+0.250}_{-0.300}$	$1.108^{+0.389}_{-0.130}$	$1.151^{+0.172}_{-0.157}$	$1.191^{+0.346}_{-0.632}$
	+3%/-4%	+2%/-5%	+312%/-375%	+35%/-12%	+15%/-14%	+29%/-53%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008106610-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-30 ± 8	$1.76^{+0.32}_{-0.21}$	1266^{+96}_{-64}	4208^{+264}_{-273}	62^{+25}_{-21}
Alt.	-27 ± 9	$1.48^{+0.28}_{-0.20}$	1263^{+106}_{-68}	4396^{+372}_{-371}	78^{+43}_{-33}

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 $A_{obs} \gg 1.0$

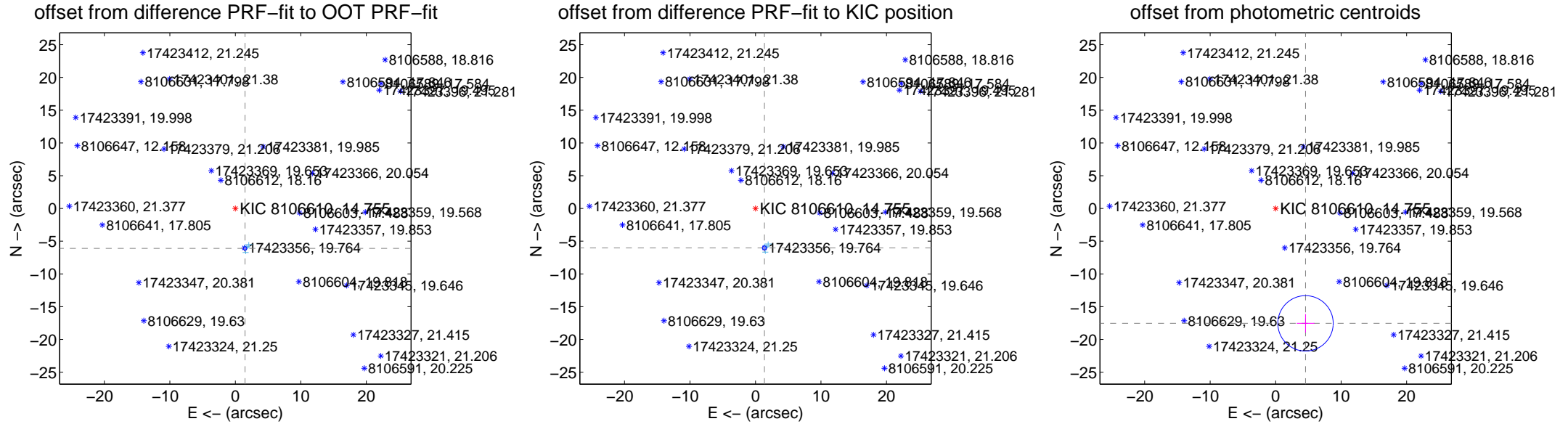
DV Centroid Data

Supplemental centroid analysis for 008106610-02. Kepler magnitude: 14.76. Transit SNR 10.81

There are 13 quarters with good PRF difference image offsets

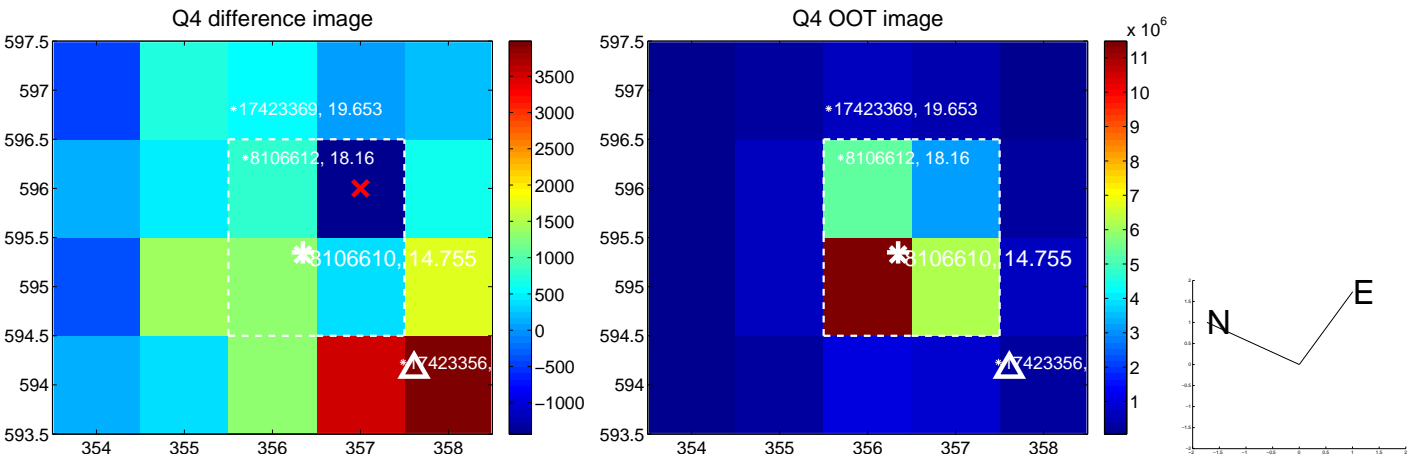
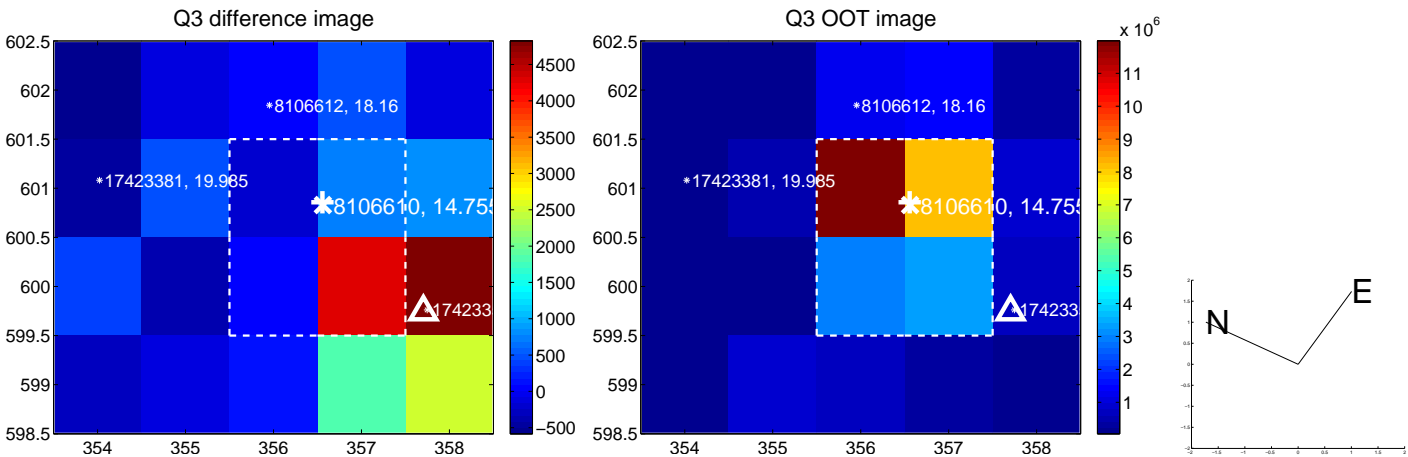
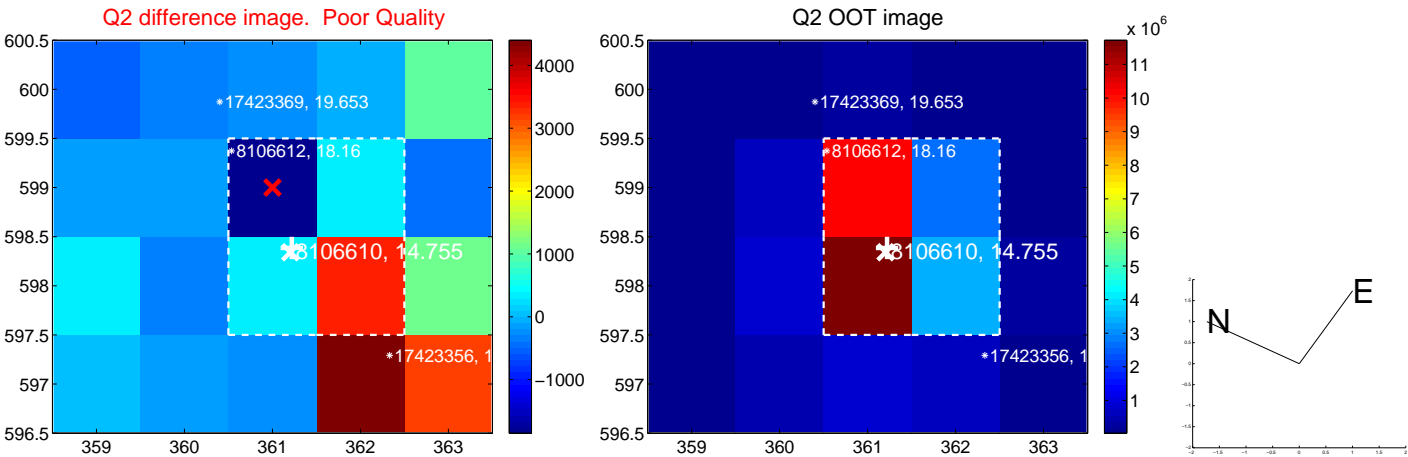
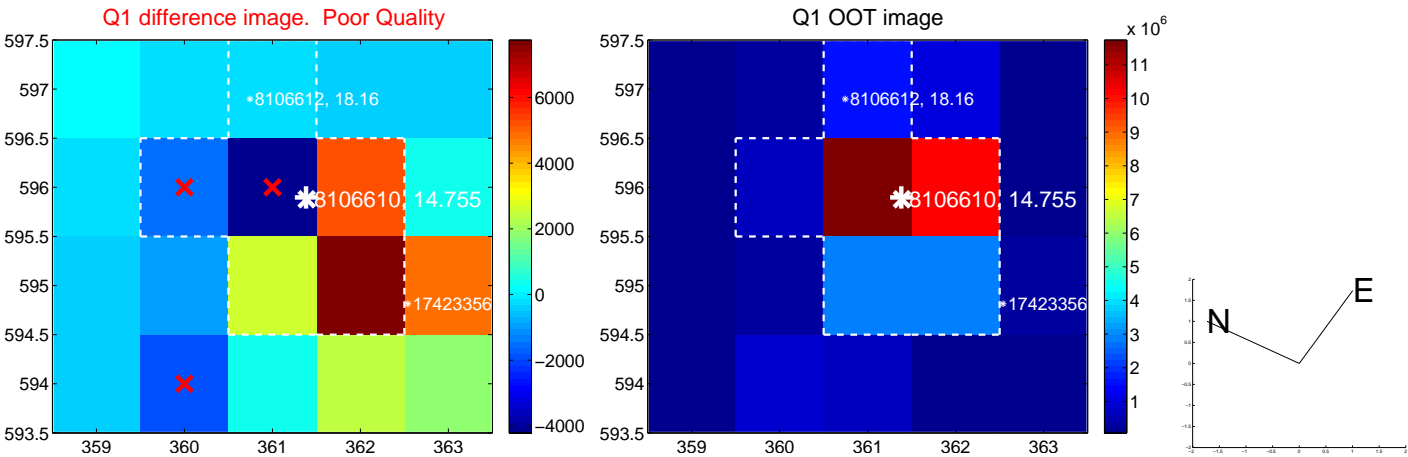
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.278 ± 0.090	69.52	-1.479 ± 0.090	-6.101 ± 0.096
PRF-fit source offset from KIC position	6.177 ± 0.104	59.41	-1.358 ± 0.089	-6.026 ± 0.110
photometric centroid source offset	18.13 ± 1.41	12.86	-4.56 ± 1.34	-17.54 ± 1.41

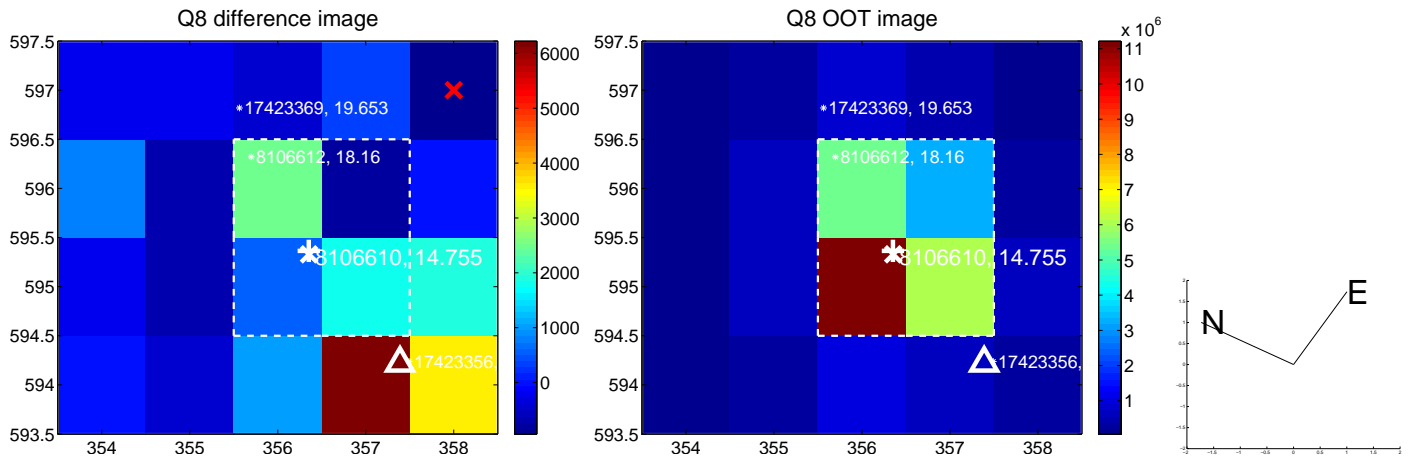
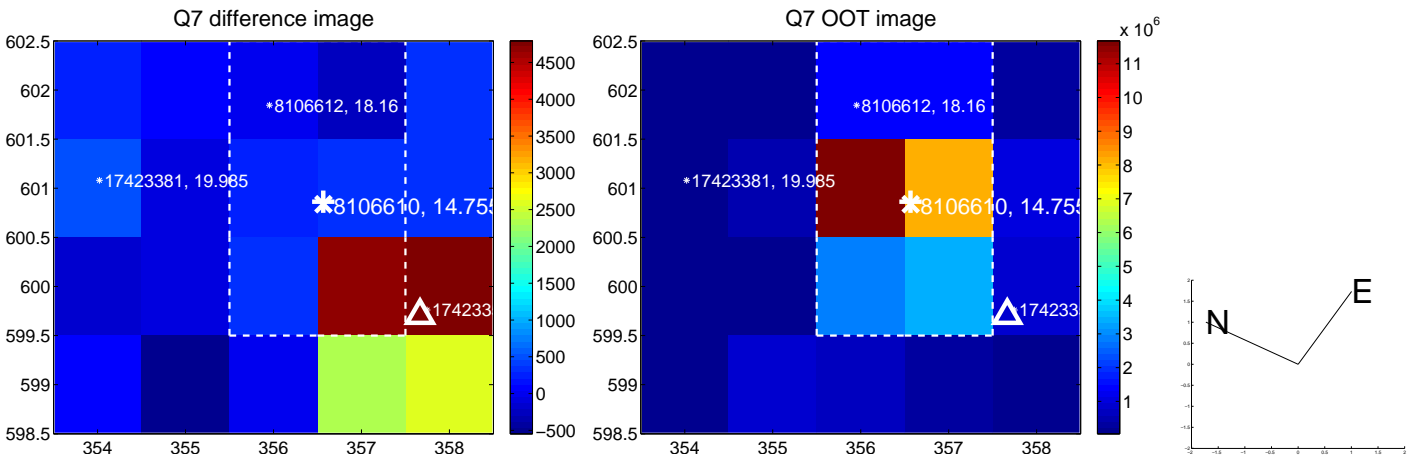
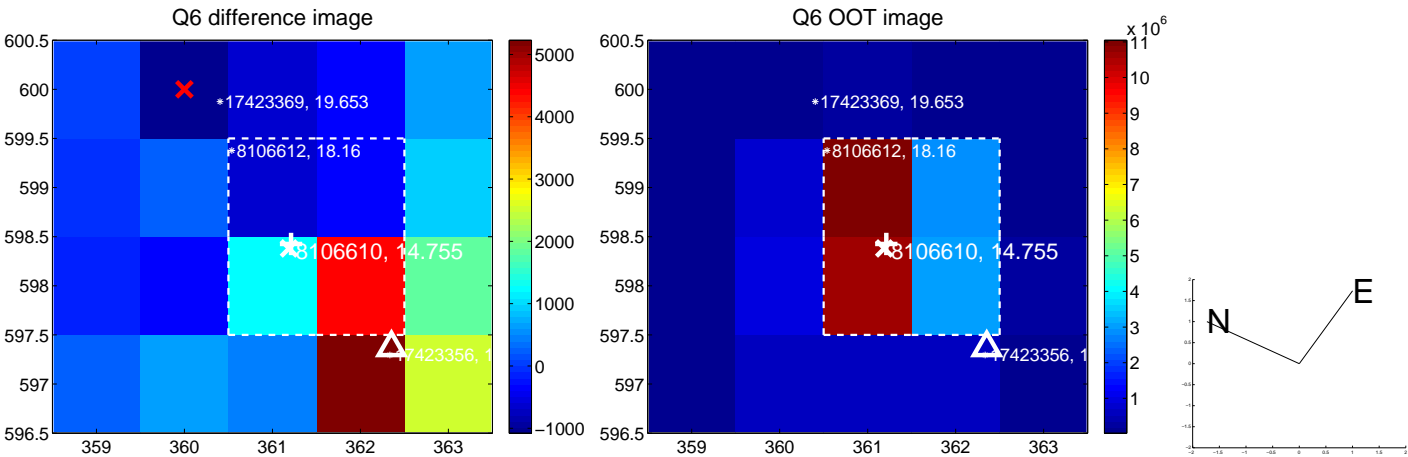
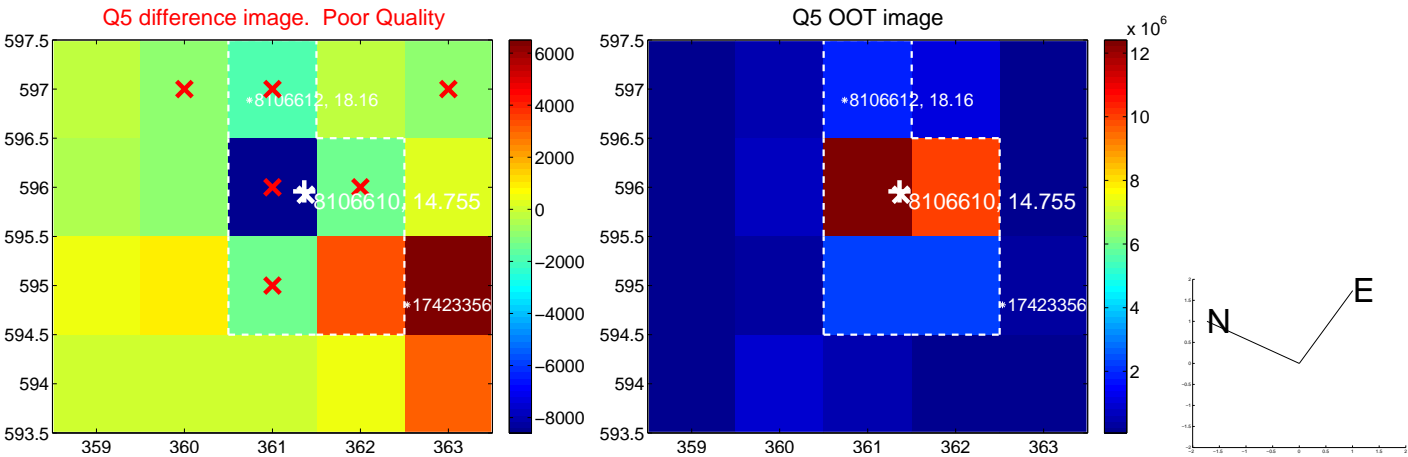


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

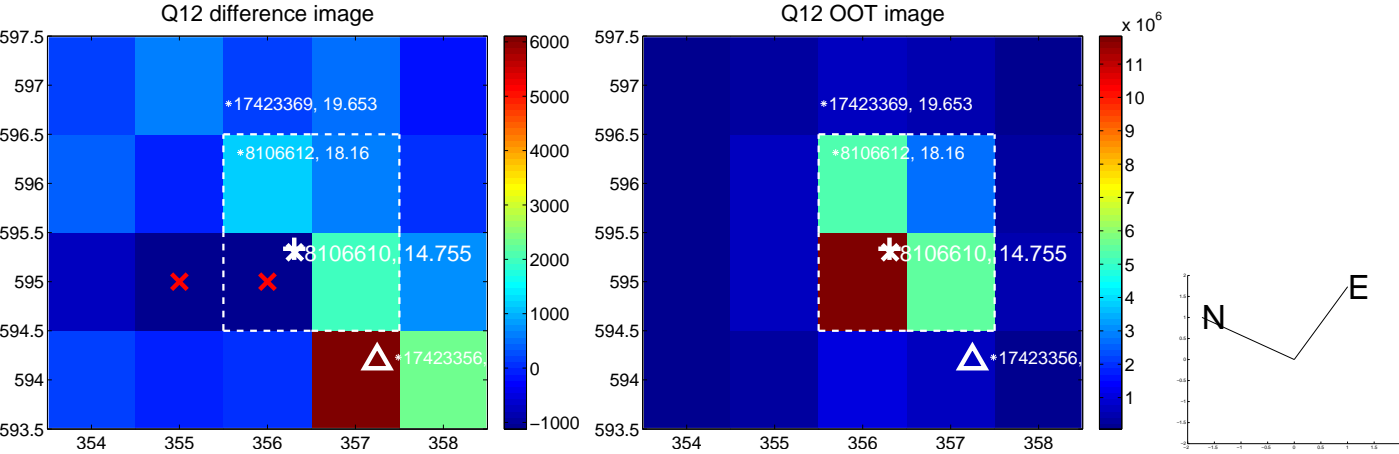
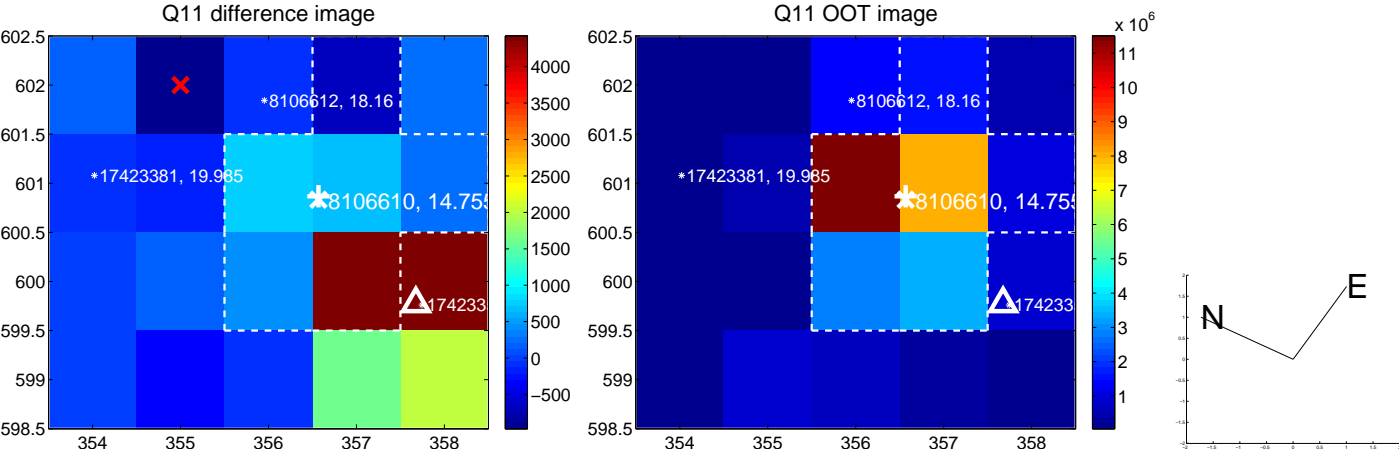
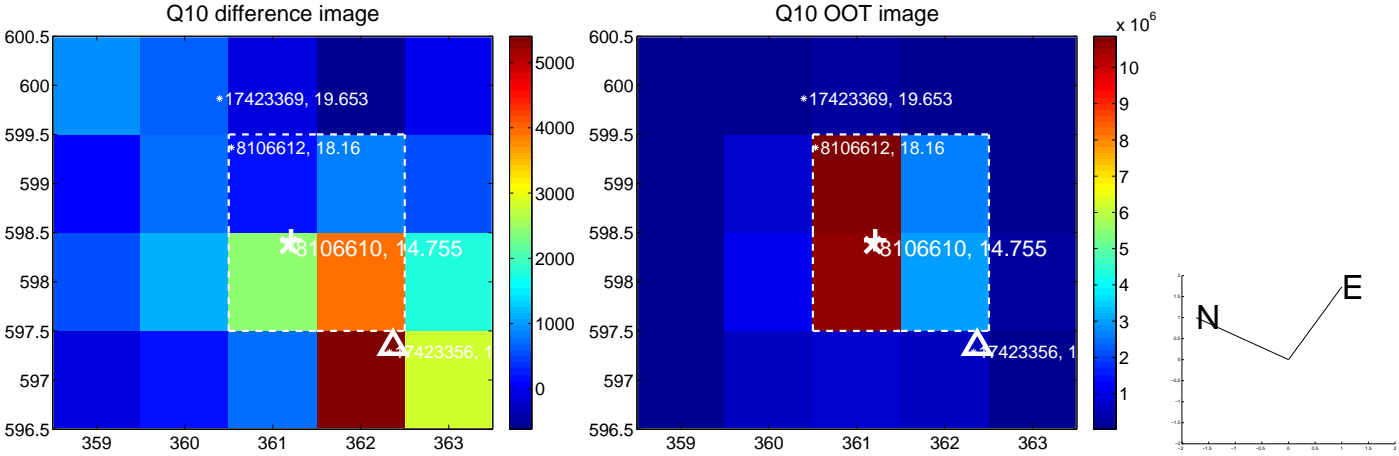
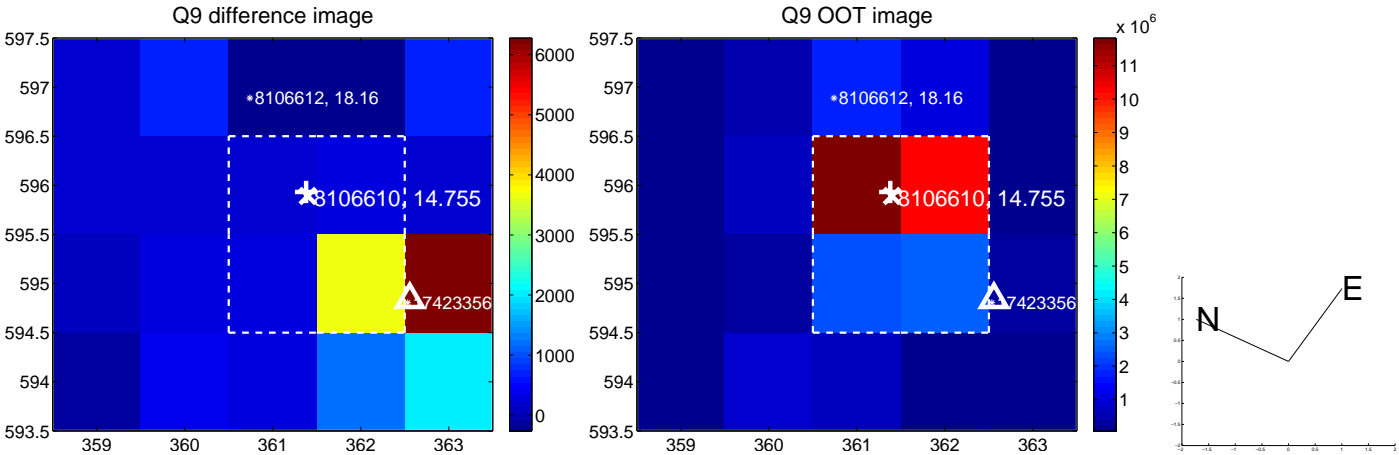
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



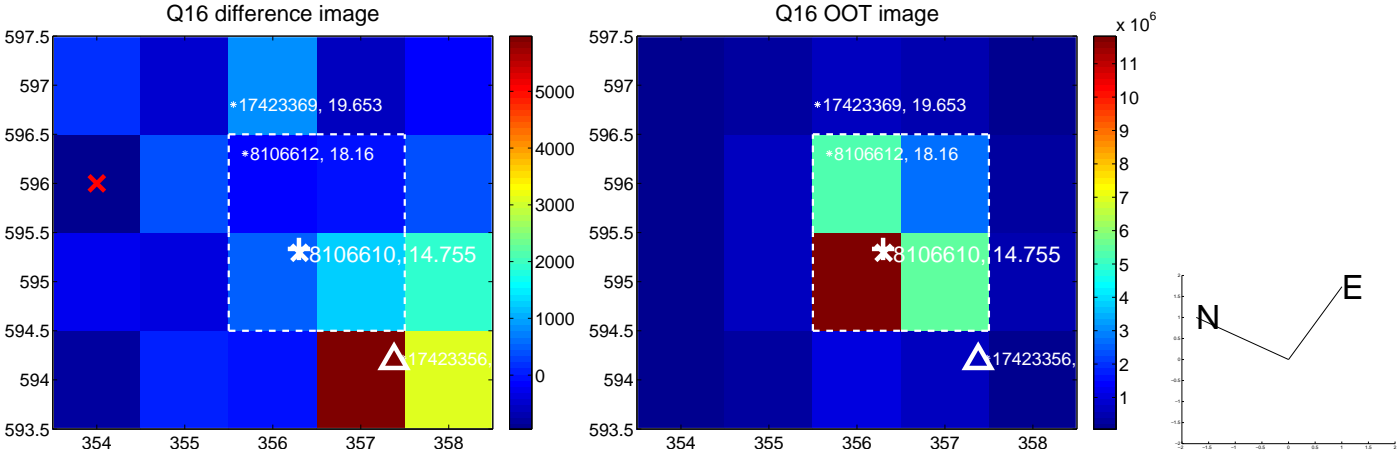
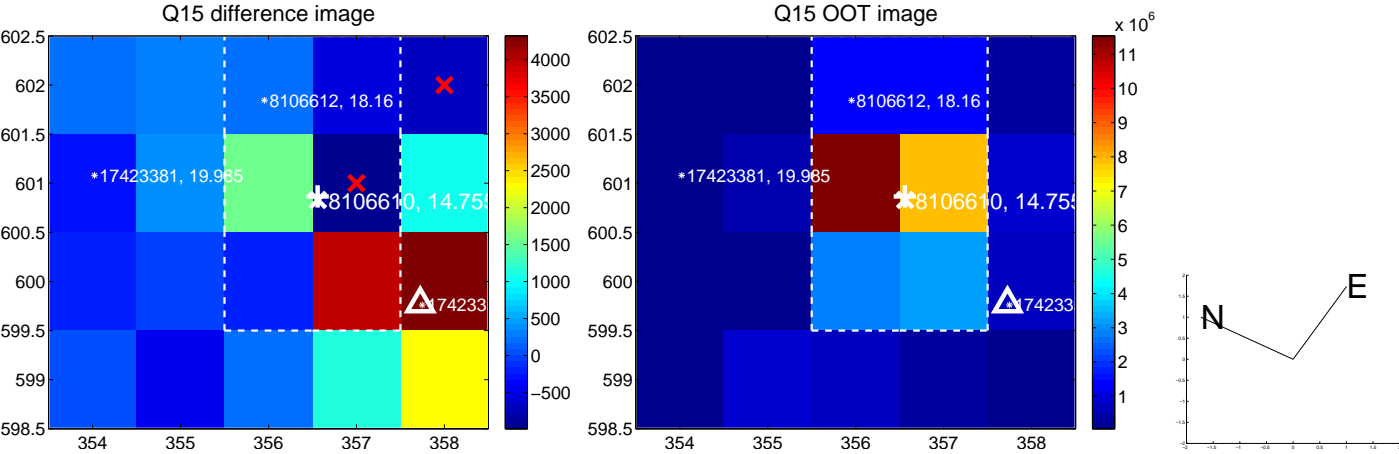
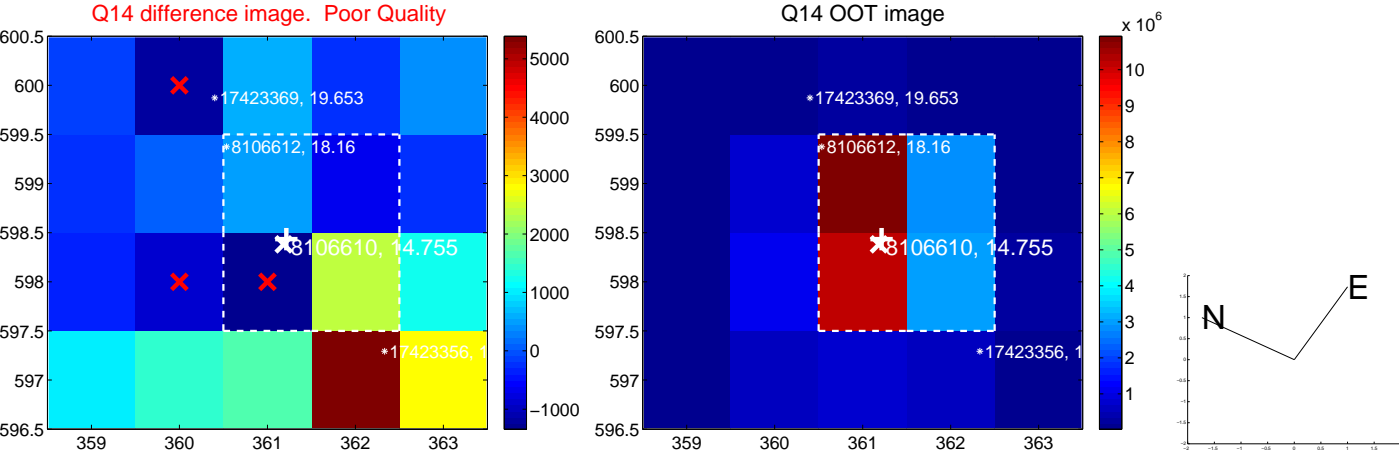
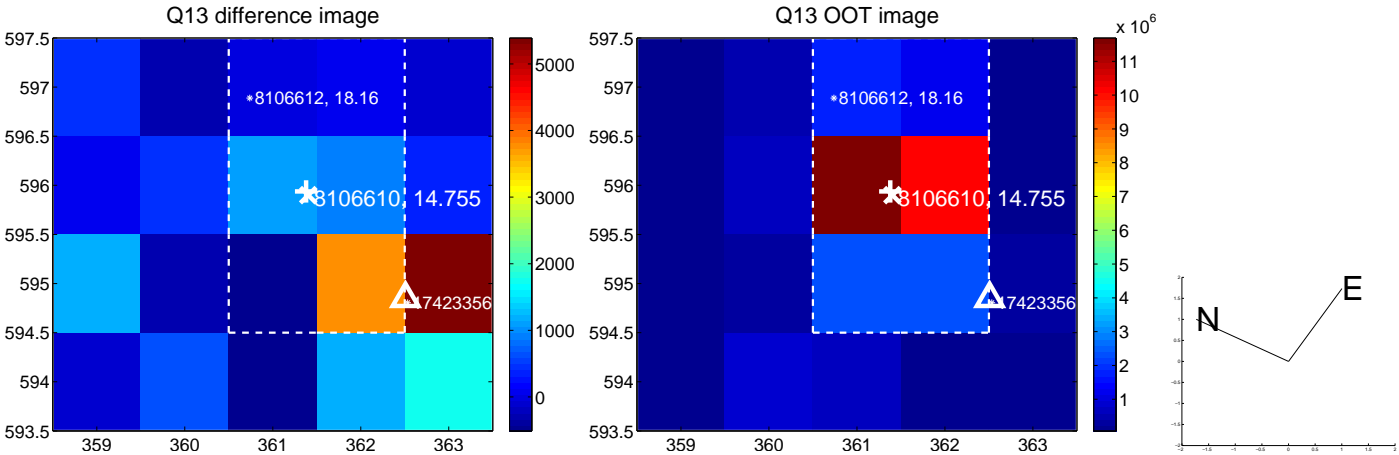
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



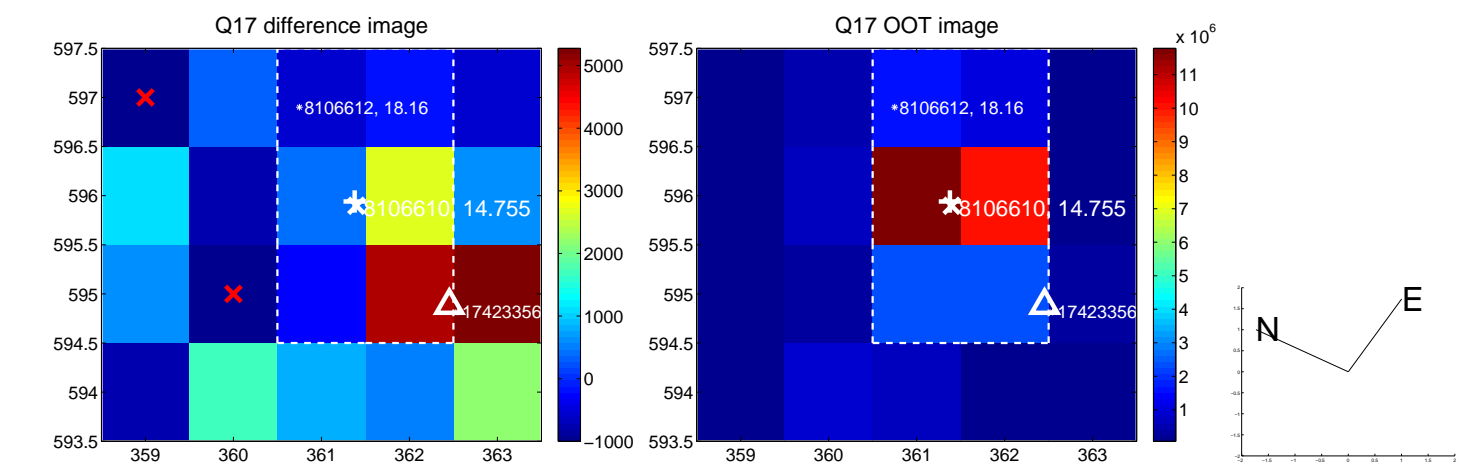
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



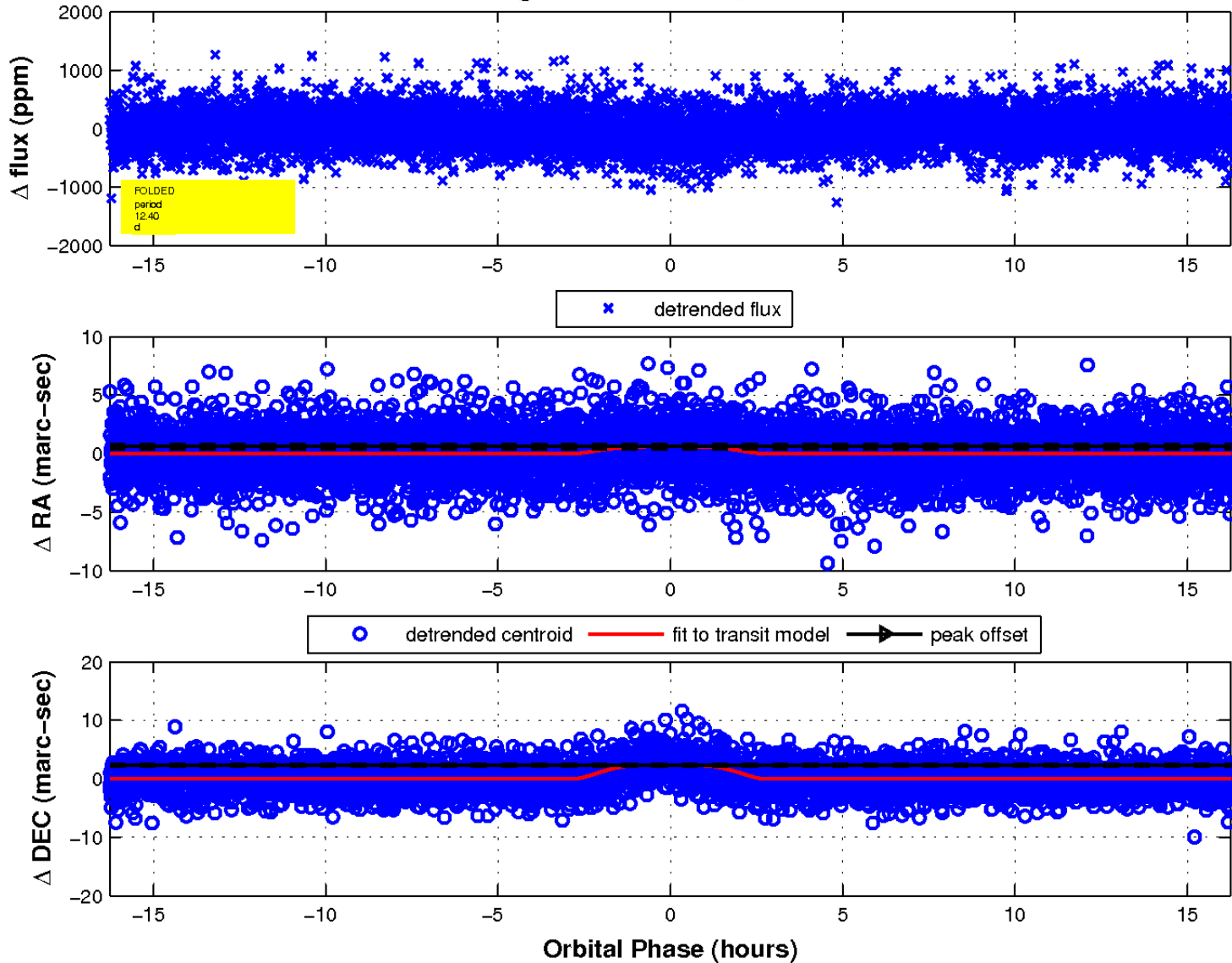
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

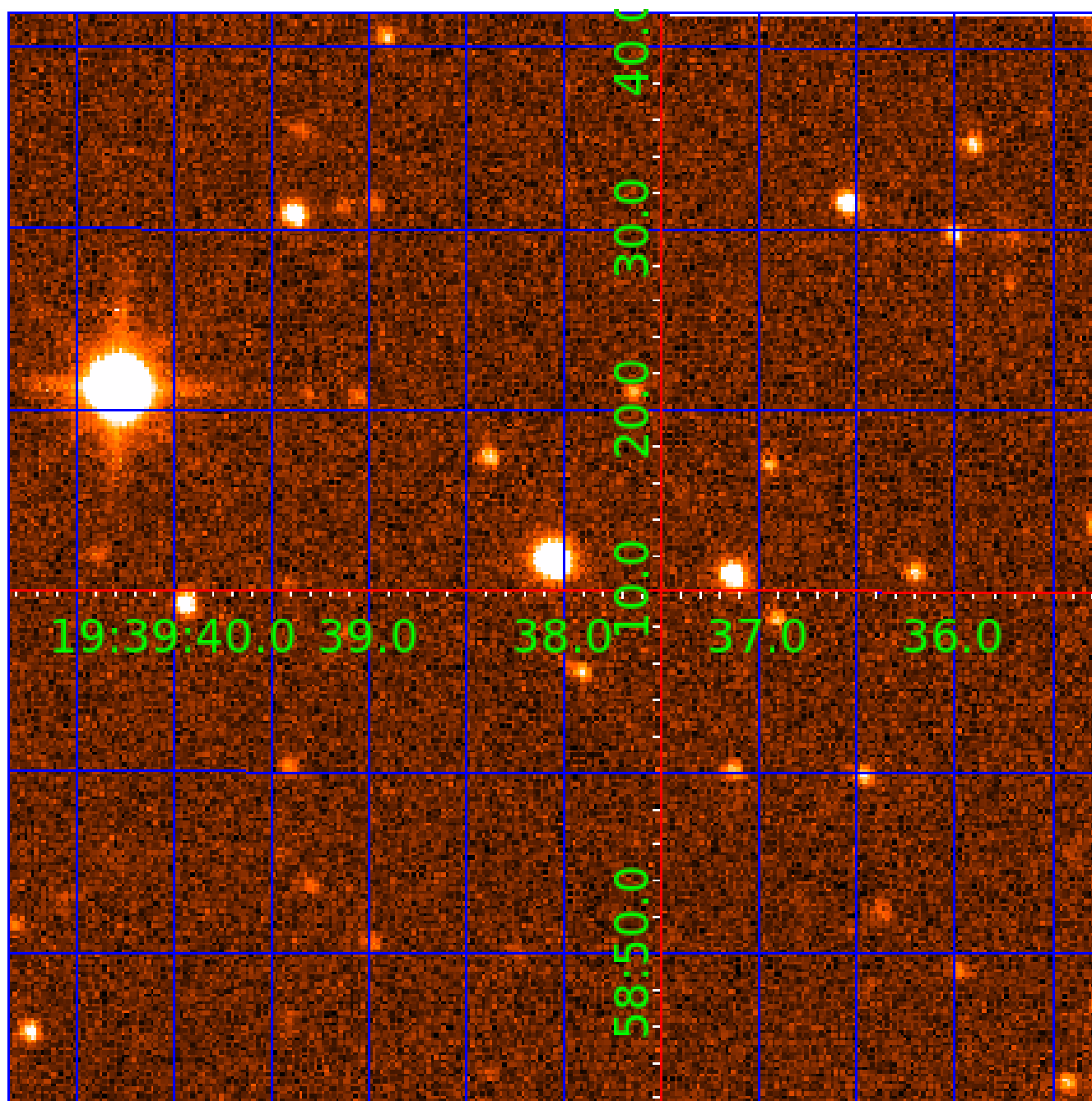


fluxWeightedCentroids, Planet 2 of 4



UKIRT Image

Declination



KIC 008106610

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})
008106610-01	OBS	0570.01	12.398964	135.583288	699.9	4.289	44.1	46.9	1.11	6355	3.91	148.55
008106610-02	OBS	No	12.399210	142.122376	133.2	5.422	10.2	10.8	1.11	6355	1.71	148.54
008106610-03	OBS	No	298.252238	323.253679	615.9	23.701	14.7	11.6	1.11	6355	3.25	2.14
008106610-04	OBS	No	368.884947	233.321043	635.4	27.044	10.1	10.0	1.11	6355	5.37	1.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008106610-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST
008106610-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST
008106610-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008106610-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—CENT_FEW_DIFFS

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

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

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

Ephemeris Match Information For 008106610-03

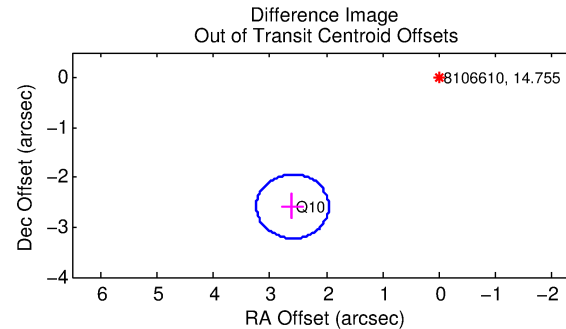
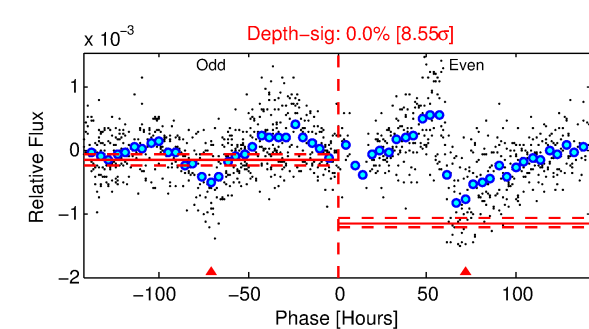
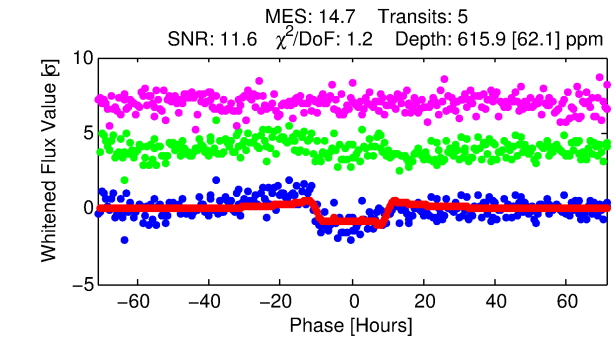
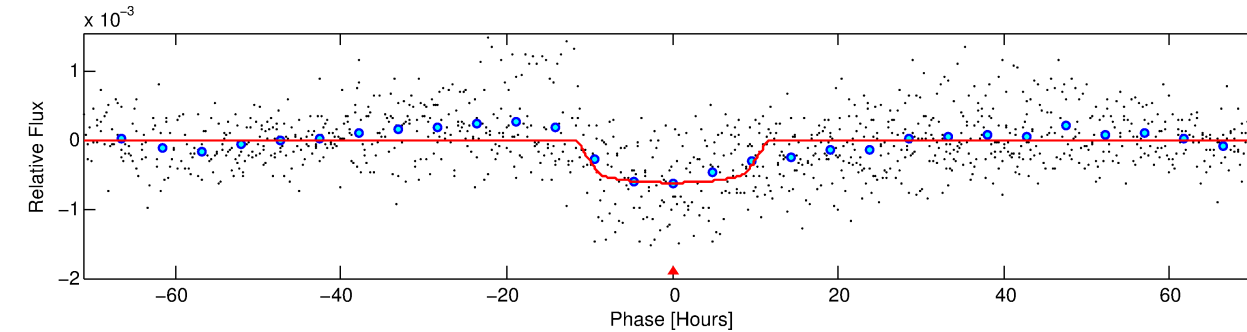
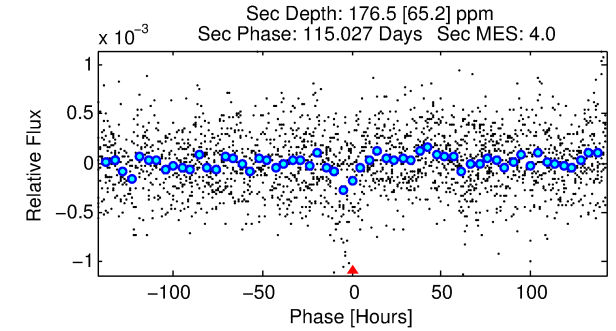
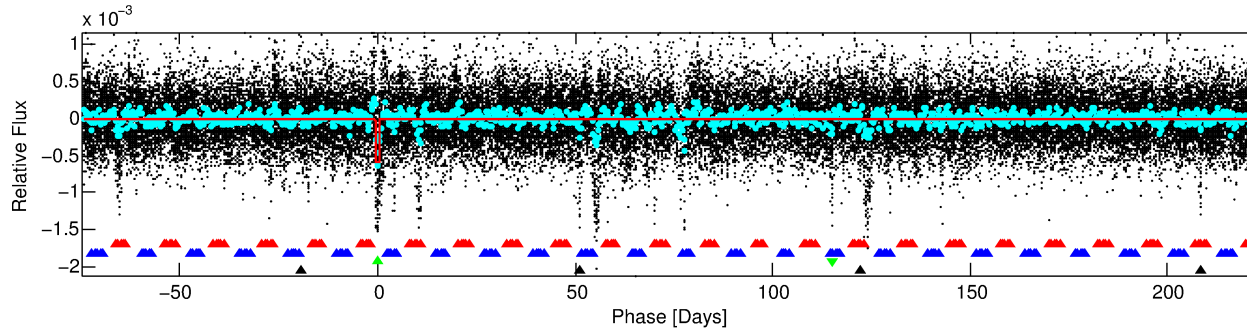
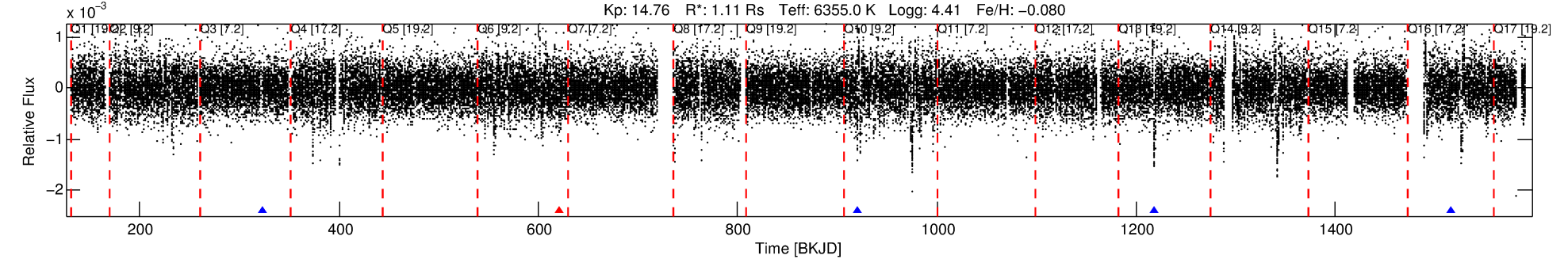
No Significant Match Found

DV One-Page Summary

KIC: 8106610 Candidate: 3 of 4 Period: 298.252 d

KOI: K00570 Corr: No Ephemeris Match

Kp: 14.76 R*: 1.11 Rs Teff: 6355.0 K Logg: 4.41 Fe/H: -0.080



DV Fit Results:

Period = 298.25224 [0.01056] d
Epoch = 323.2537 [0.0269] BKJD
Rp/R* = 0.0268 [0.0019]
a/R* = 46.12 [10.27]
b = 0.91 [0.04]
Seff = 2.14 [0.90]
Teq = 308 [33] K
Rp = 3.25 [1.16] Re
a = 0.9158 [0.2602] AU
Ag = 7732.46 [4335.56] [1.78σ]
Teffp = 4471 [468] K [8.87σ]

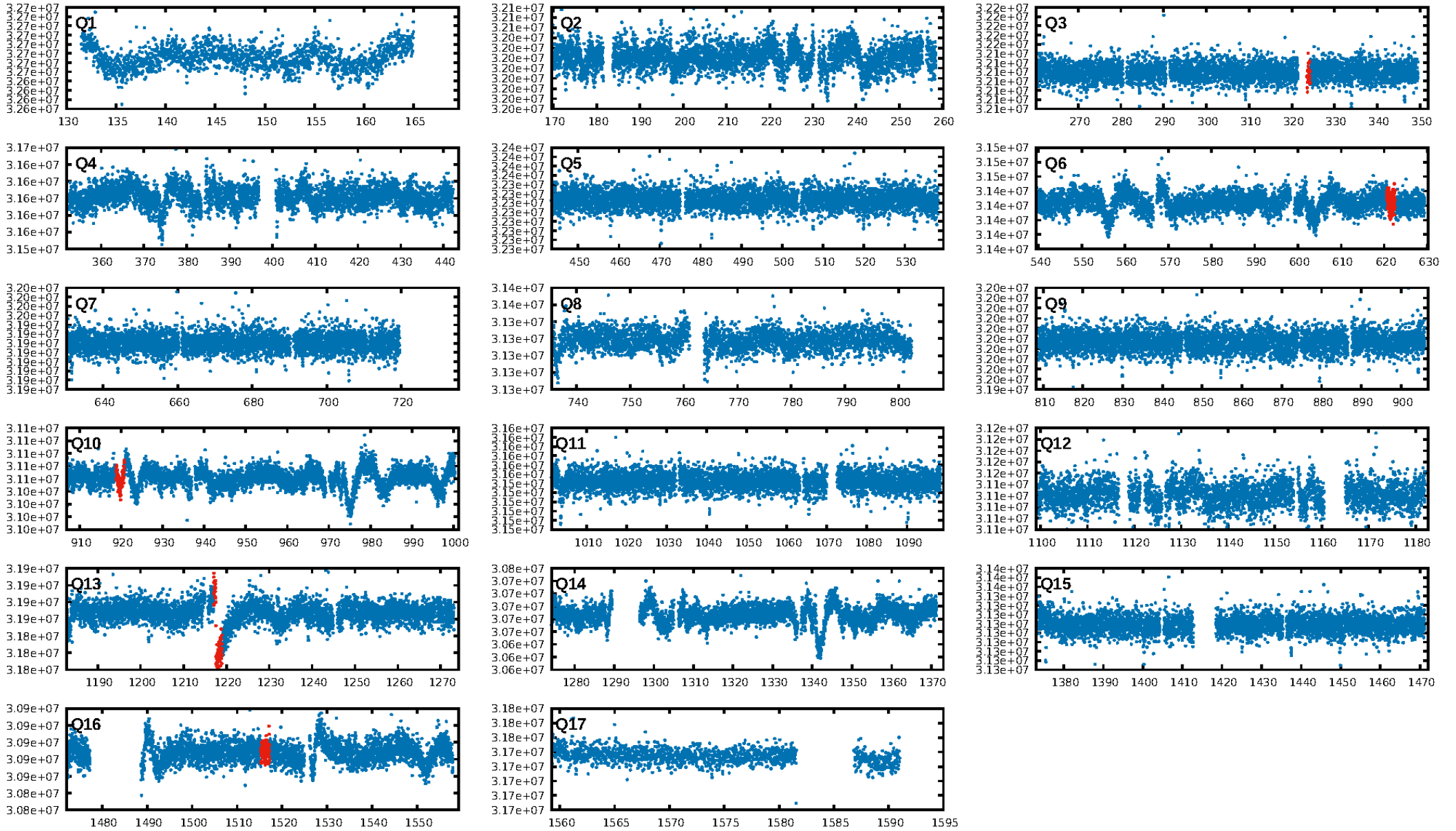
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [282.17σ]
LongPeriod-sig: 100.0% [47.14σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 4.62e-19
RollingBand-fgt: 0.80 [4/5]
GhostDiagnostic-chr: 0.0899
Centroid-sig: 7.5%
Centroid-so: 1.664 arcsec [1.56σ]
OotOffset-rm: 3.665 arcsec [17.15σ]
KicOffset-rm: 3.760 arcsec [17.89σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [2/2]

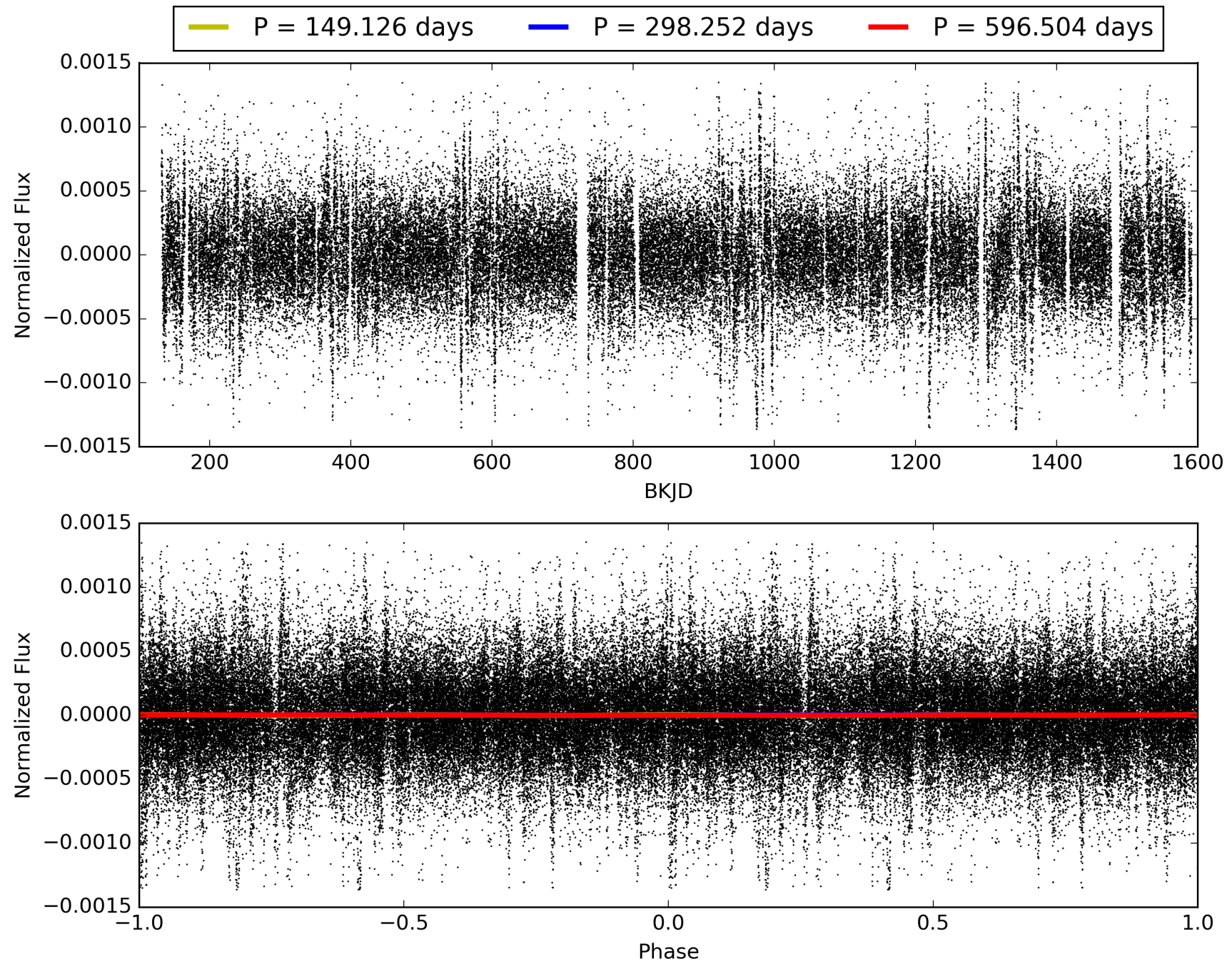
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 14:52:40 Z

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

TCE 008106610-03, PDC Light Curves

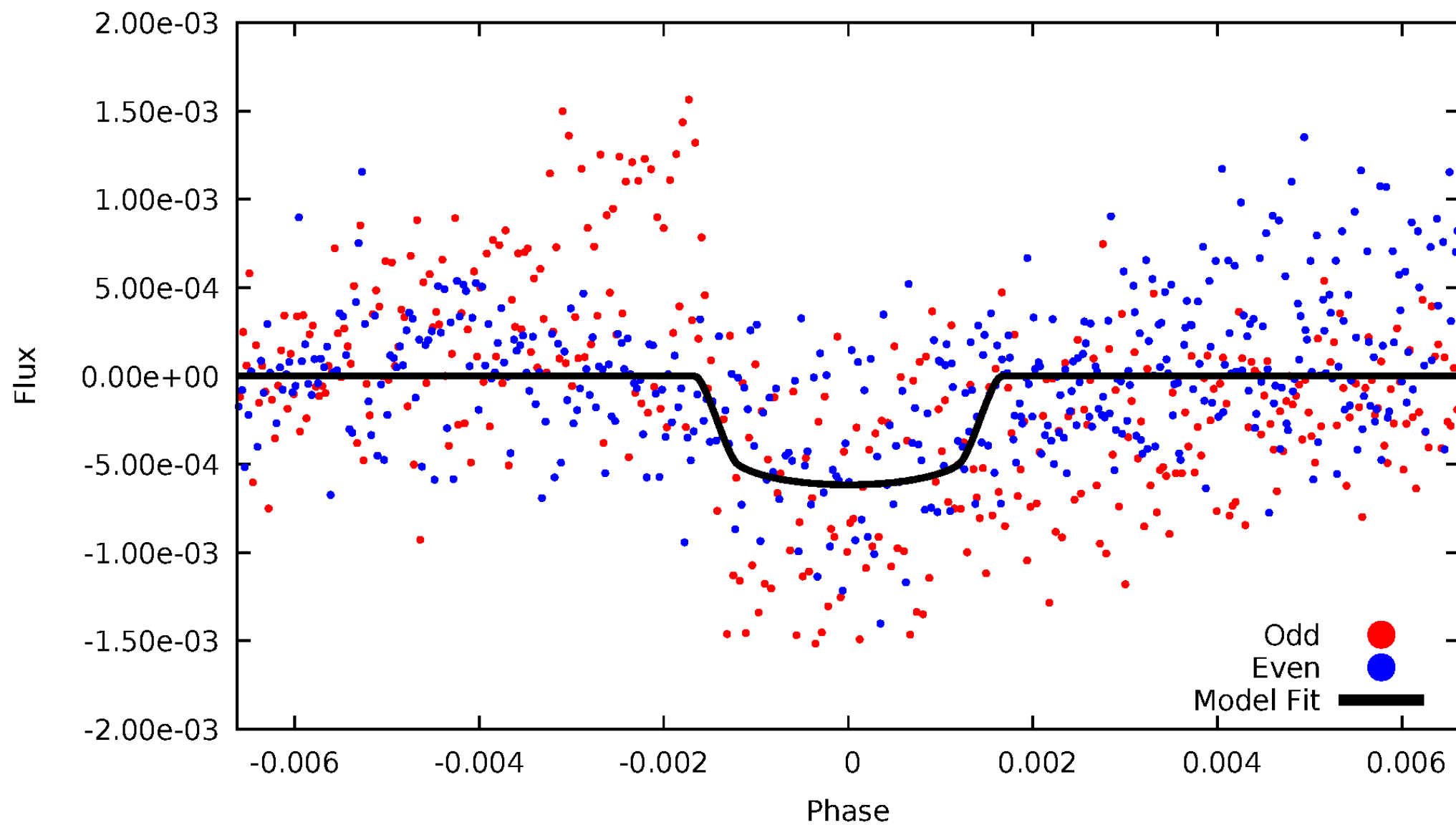


TCE 008106610-03



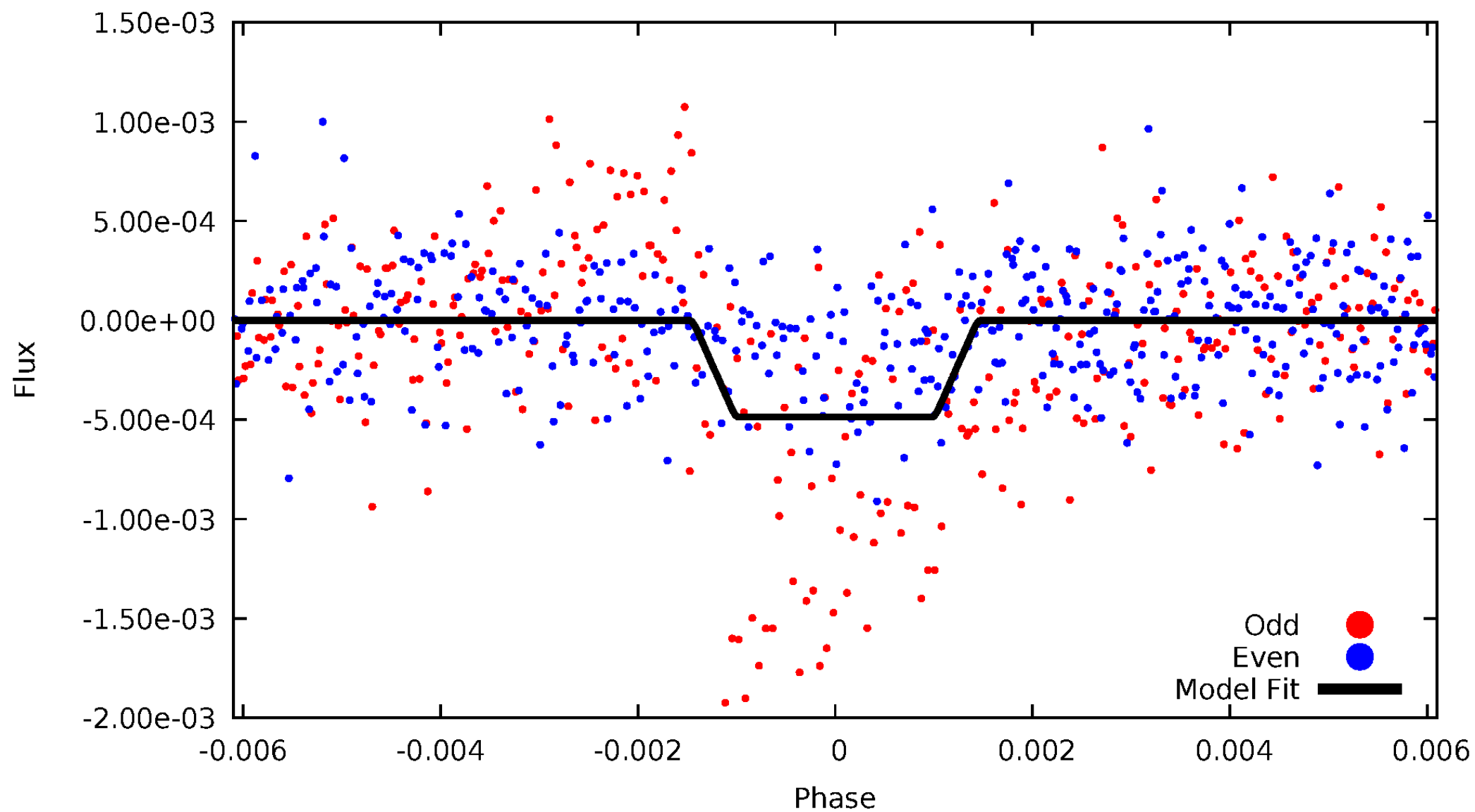
DV Odd/Even

TCE 008106610-03



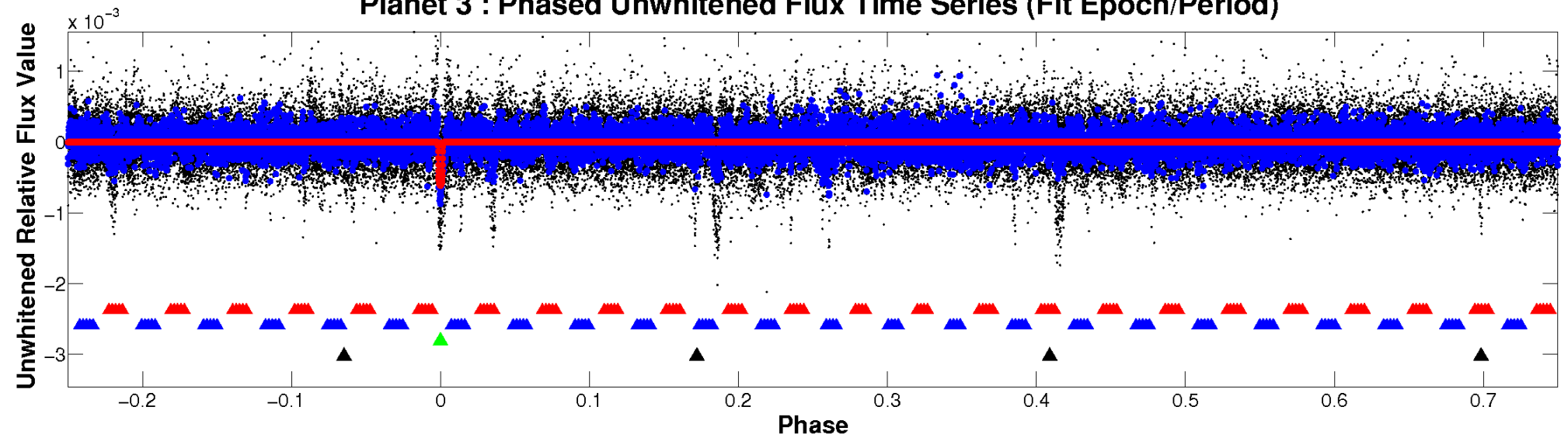
ALT Odd/Even

TCE 008106610-03

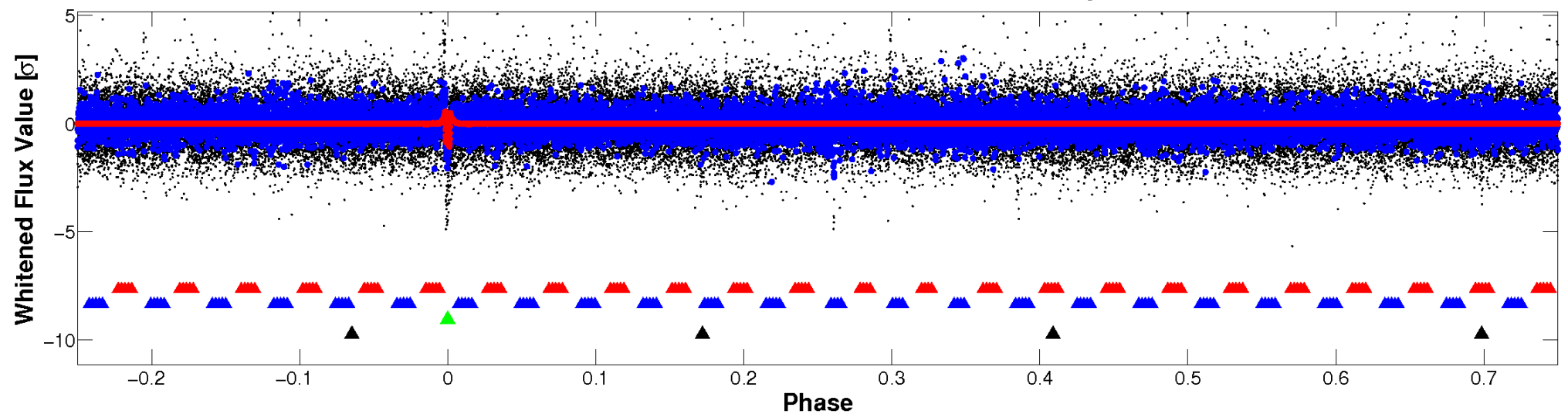


Non-Whitened Vs. Whitened Light Curve

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

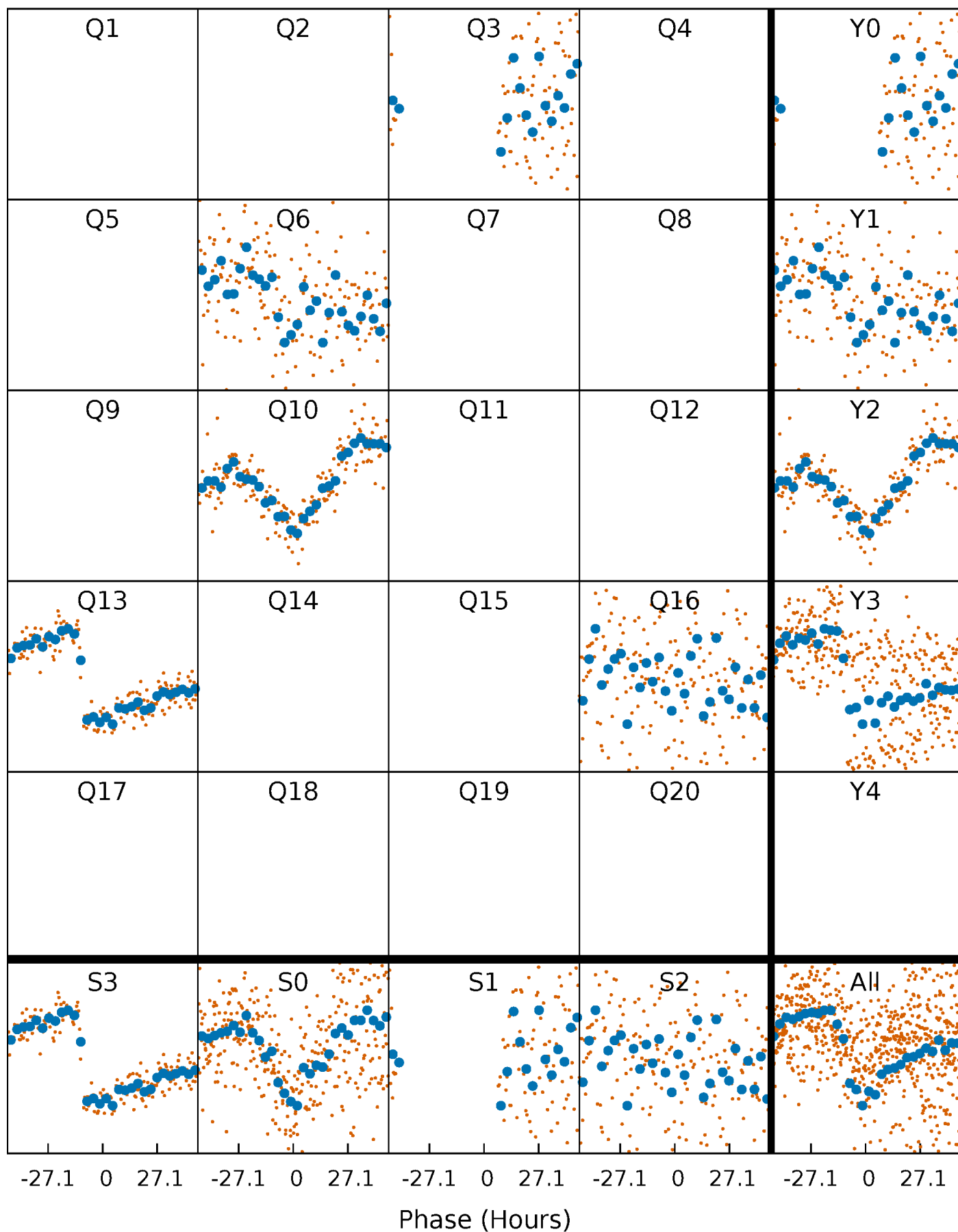


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



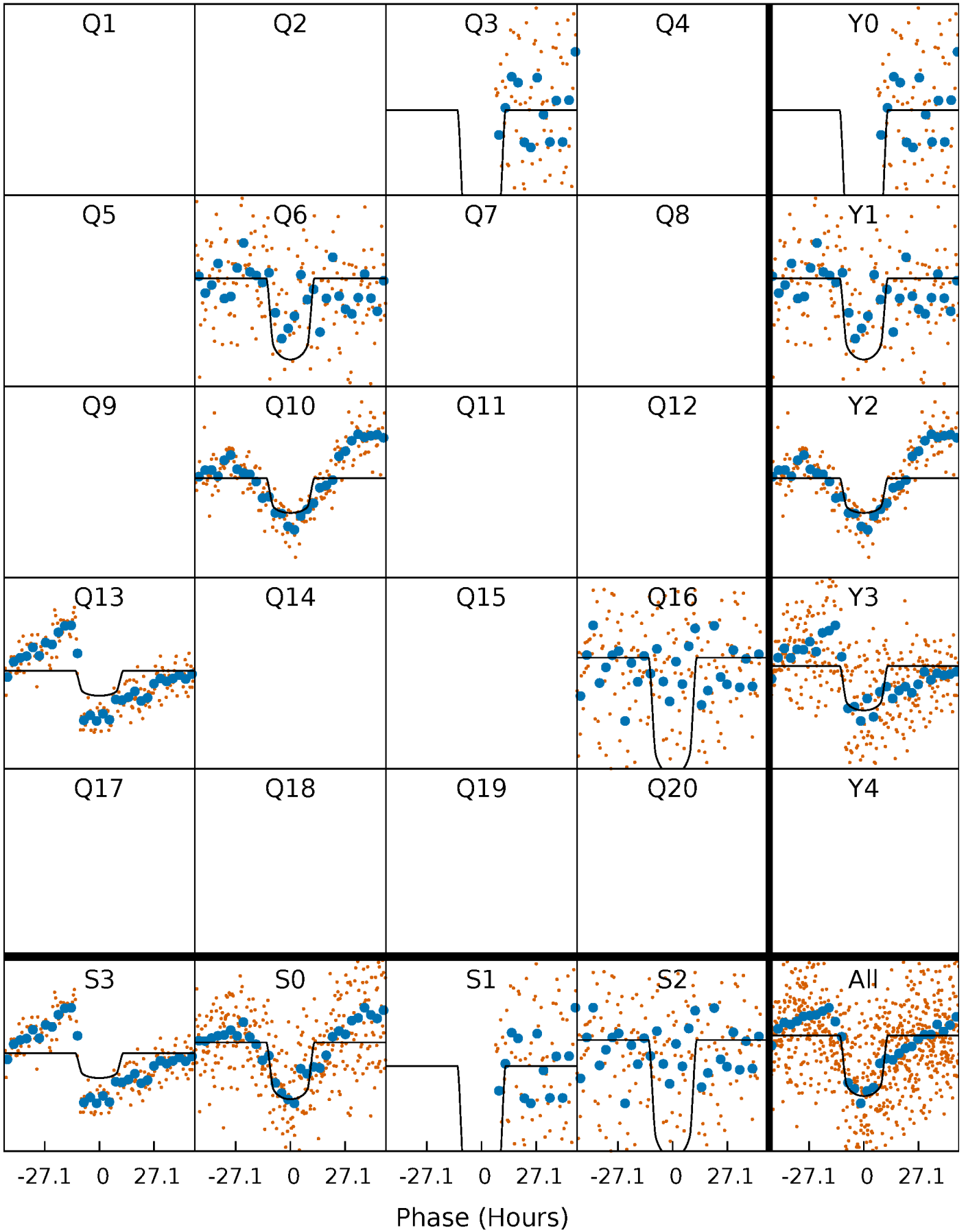
PDC Quarter-Phased Transit Curves

TCE 008106610-03 P=298.252238 Days $T_0=323.253679$ (BKJD)



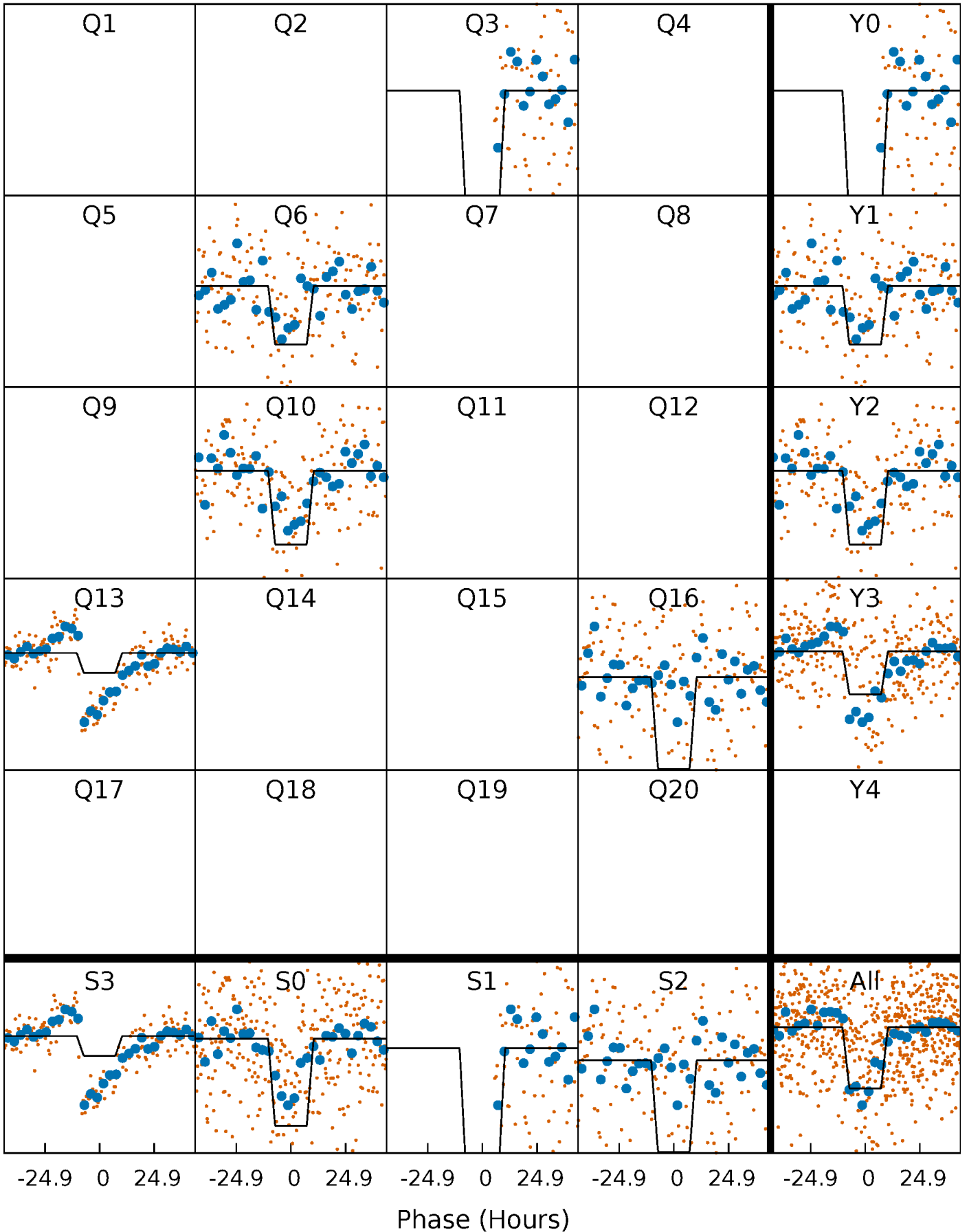
DV Quarter-Phased Transit Curves

TCE 008106610-03 $P=298.252238$ Days $T_0=323.253679$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

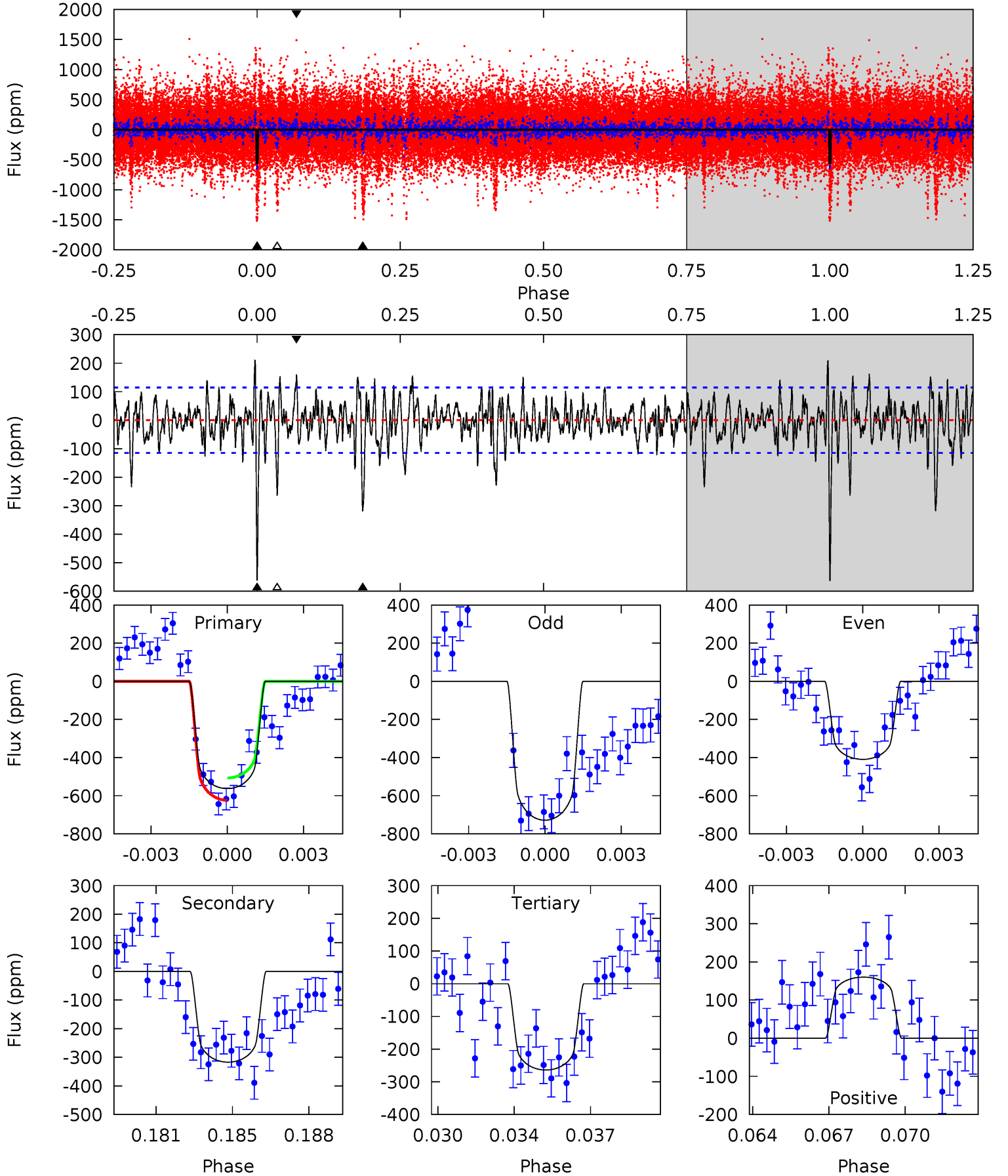
TCE 008106610-03 P=298.214186 Days $T_0=323.307612$ (BKJD)



DV Model-Shift Uniqueness Test

008106610-03, $P = 298.252238$ Days, $E = 25.001441$ Days

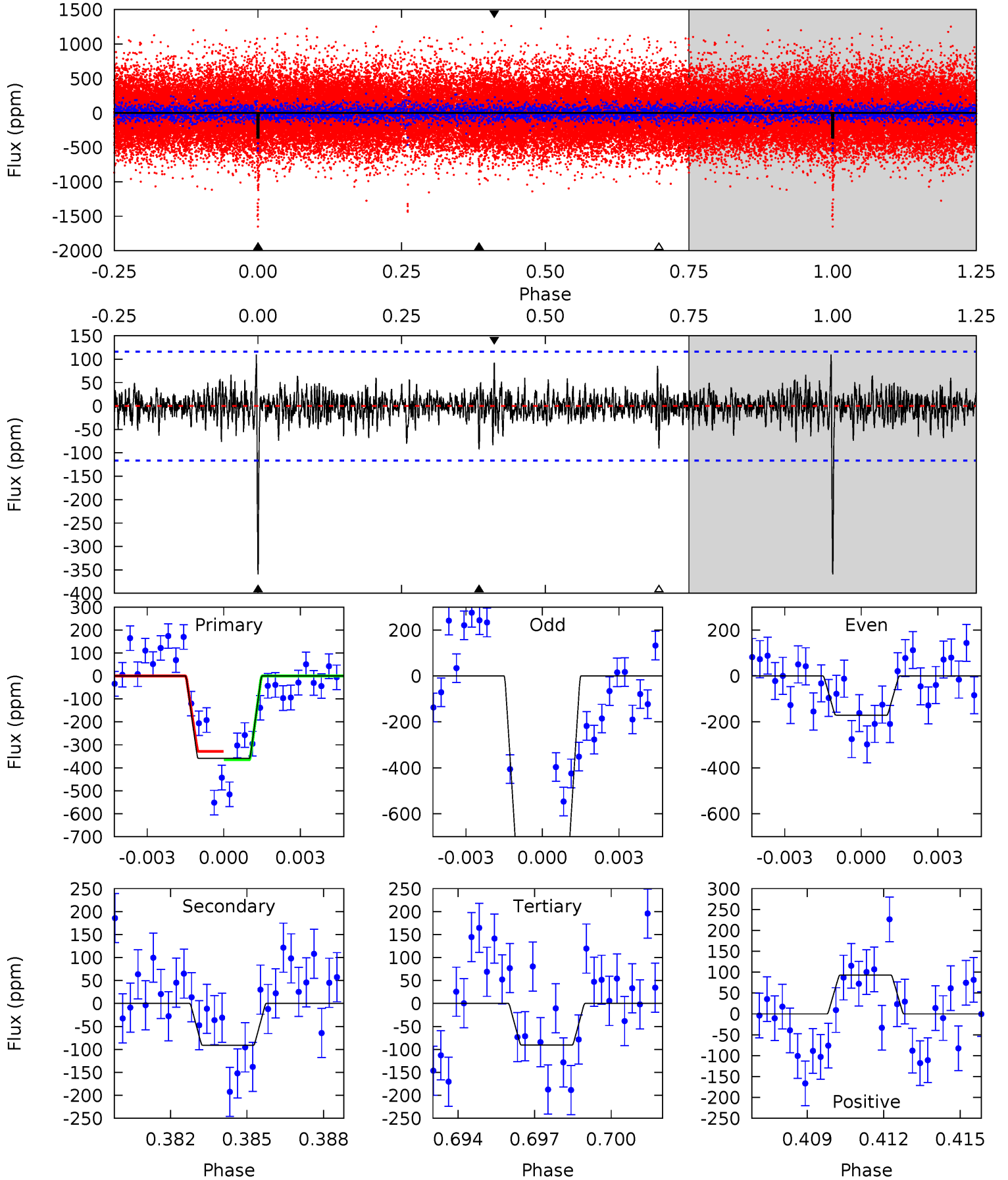
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.7	14.5	12.0	7.30	5.23	2.93	2.62	13.6	18.4	2.43	7.16	7.25	1.70	0.27	2.66



Alt Model-Shift Uniqueness Test

008106610-03, $P = 298.214186$ Days, $E = 25.093426$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.2	4.12	4.09	4.20	5.26	2.97	0.97	12.1	12.0	0.03	-0.08	14.0	1.80	0.23	0.80



Stellar Parameters For KIC 008106610

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6355^{+179}_{-224}	$4.410^{+0.070}_{-0.210}$	$-0.080^{+0.250}_{-0.300}$	$1.108^{+0.389}_{-0.130}$	$1.151^{+0.172}_{-0.157}$	$1.191^{+0.346}_{-0.632}$
	+3%/-4%	+2%/-5%	+312%/-375%	+35%/-12%	+15%/-14%	+29%/-53%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008106610-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-317 ± 22	$3.34^{+0.56}_{-0.38}$	437^{+33}_{-22}	5217^{+244}_{-217}	12861^{+3382}_{-3278}
Alt.	-91 ± 22	$2.76^{+0.47}_{-0.38}$	437^{+33}_{-21}	4370^{+289}_{-281}	5355^{+2173}_{-1815}

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

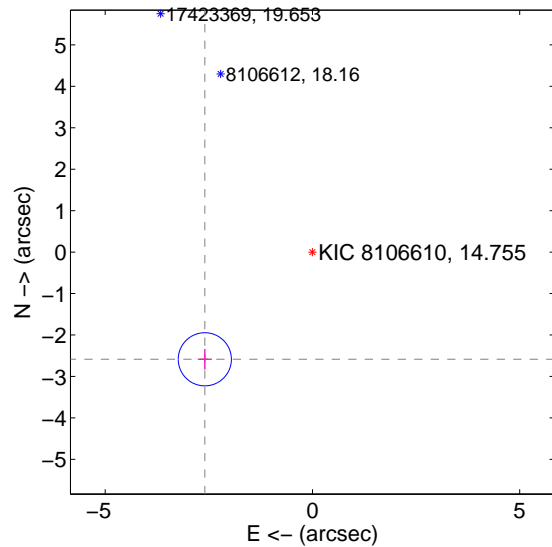
Supplemental centroid analysis for 008106610-03. Kepler magnitude: 14.76. Transit SNR 11.63

There are 0 quarters with good PRF difference image offsets

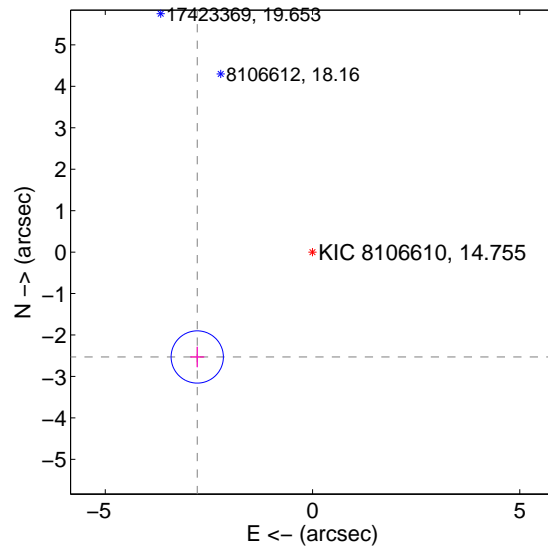
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.665 ± 0.214	17.15	2.597 ± 0.171	-2.586 ± 0.250
PRF-fit source offset from KIC position	3.760 ± 0.210	17.89	2.781 ± 0.171	-2.530 ± 0.250
photometric centroid source offset	1.66 ± 1.07	1.56	1.66 ± 1.07	0.05 ± 1.33

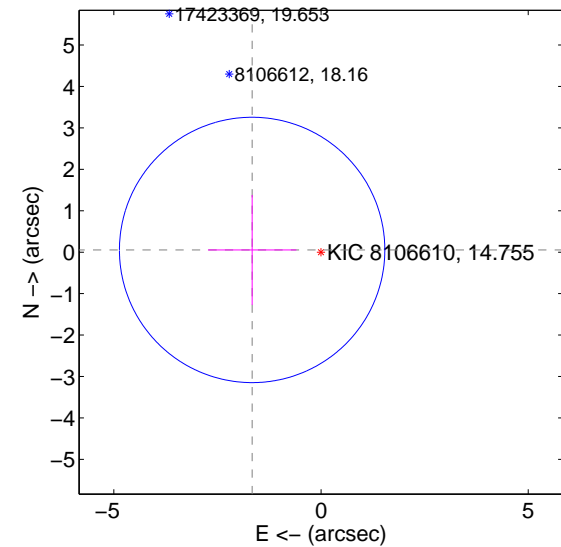
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

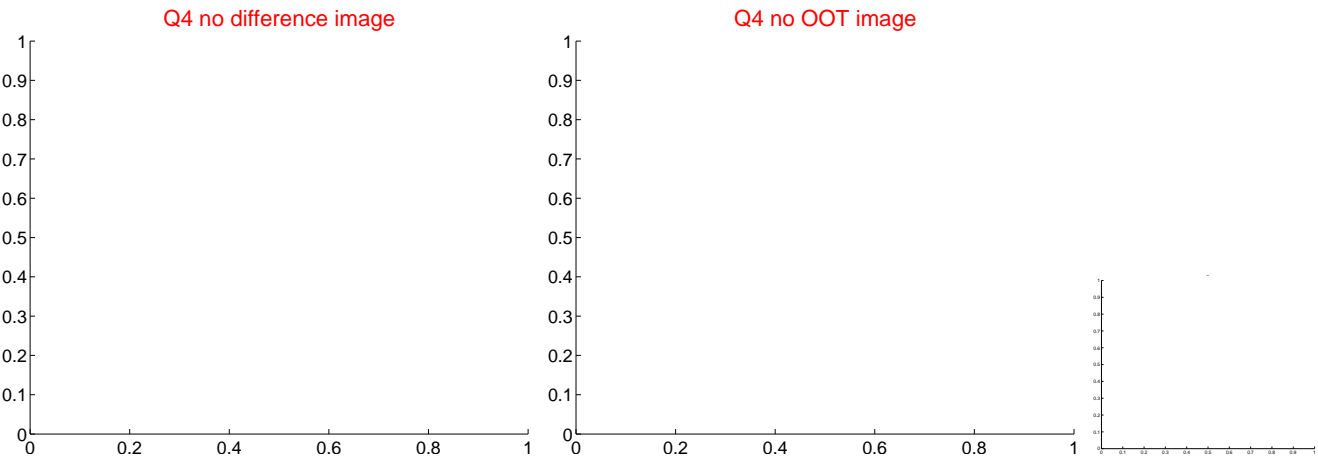
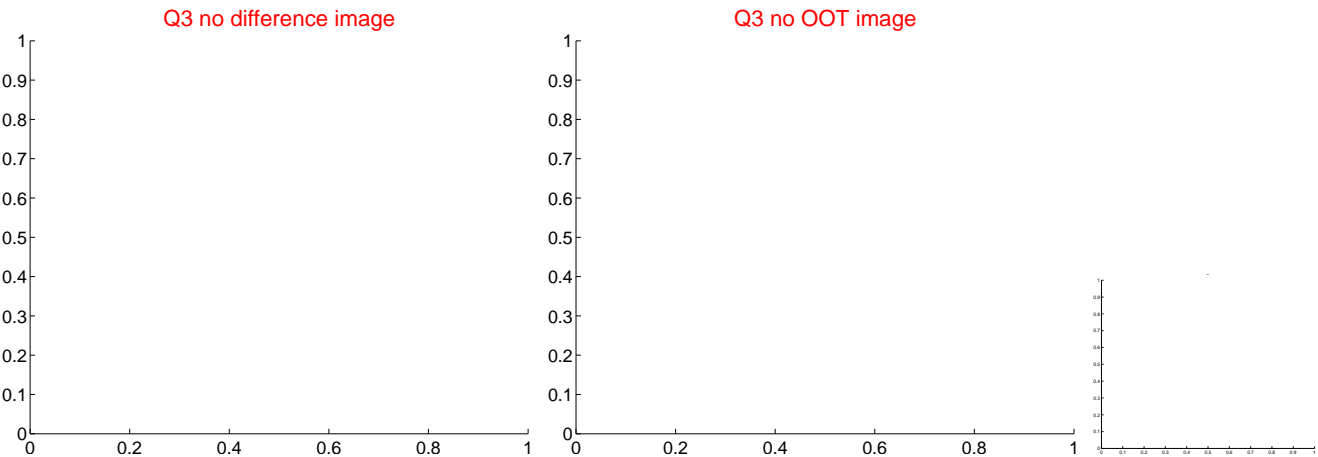
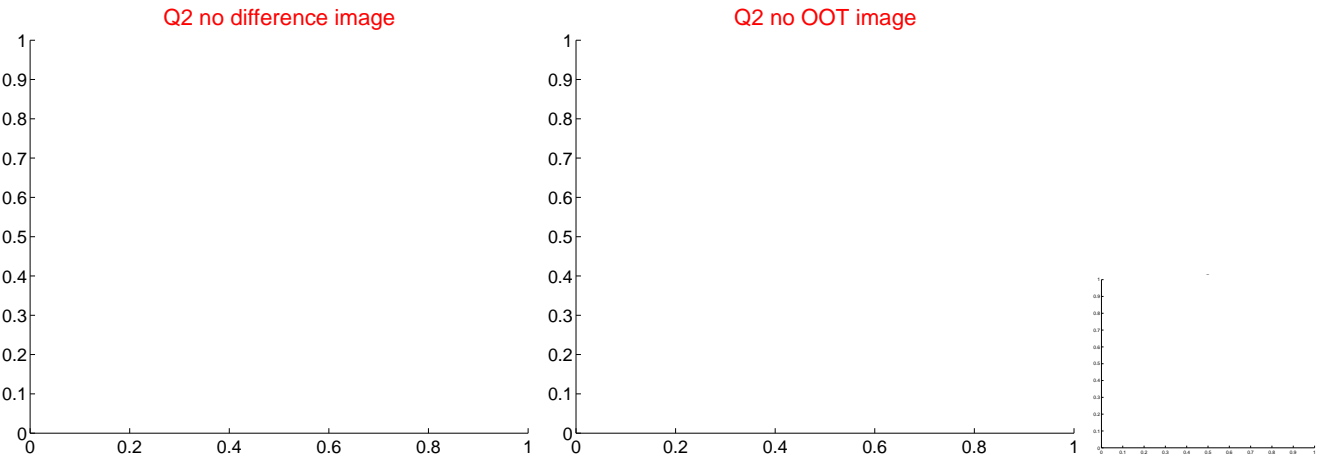
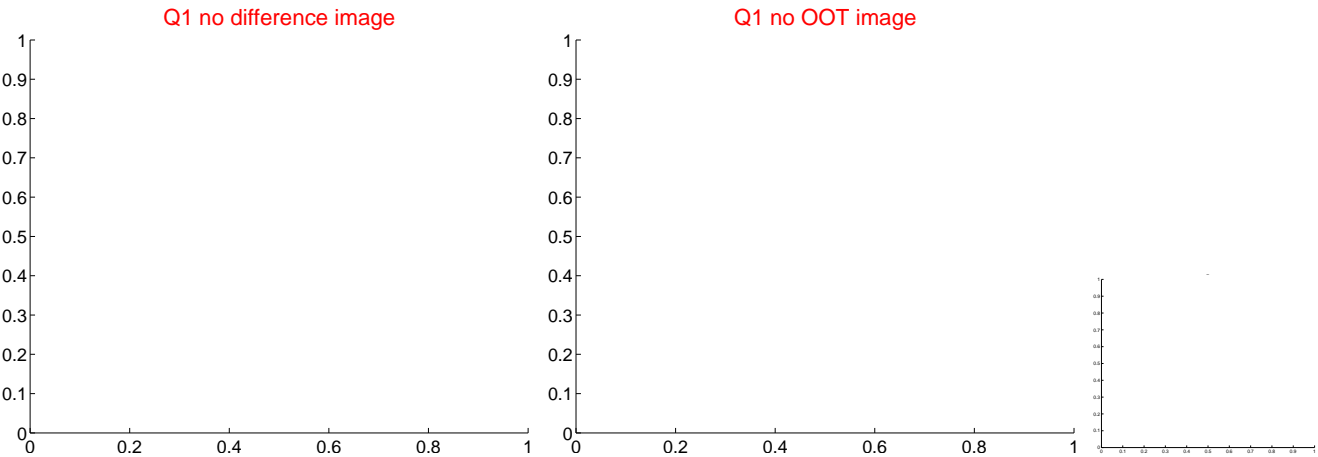


offset from photometric centroids

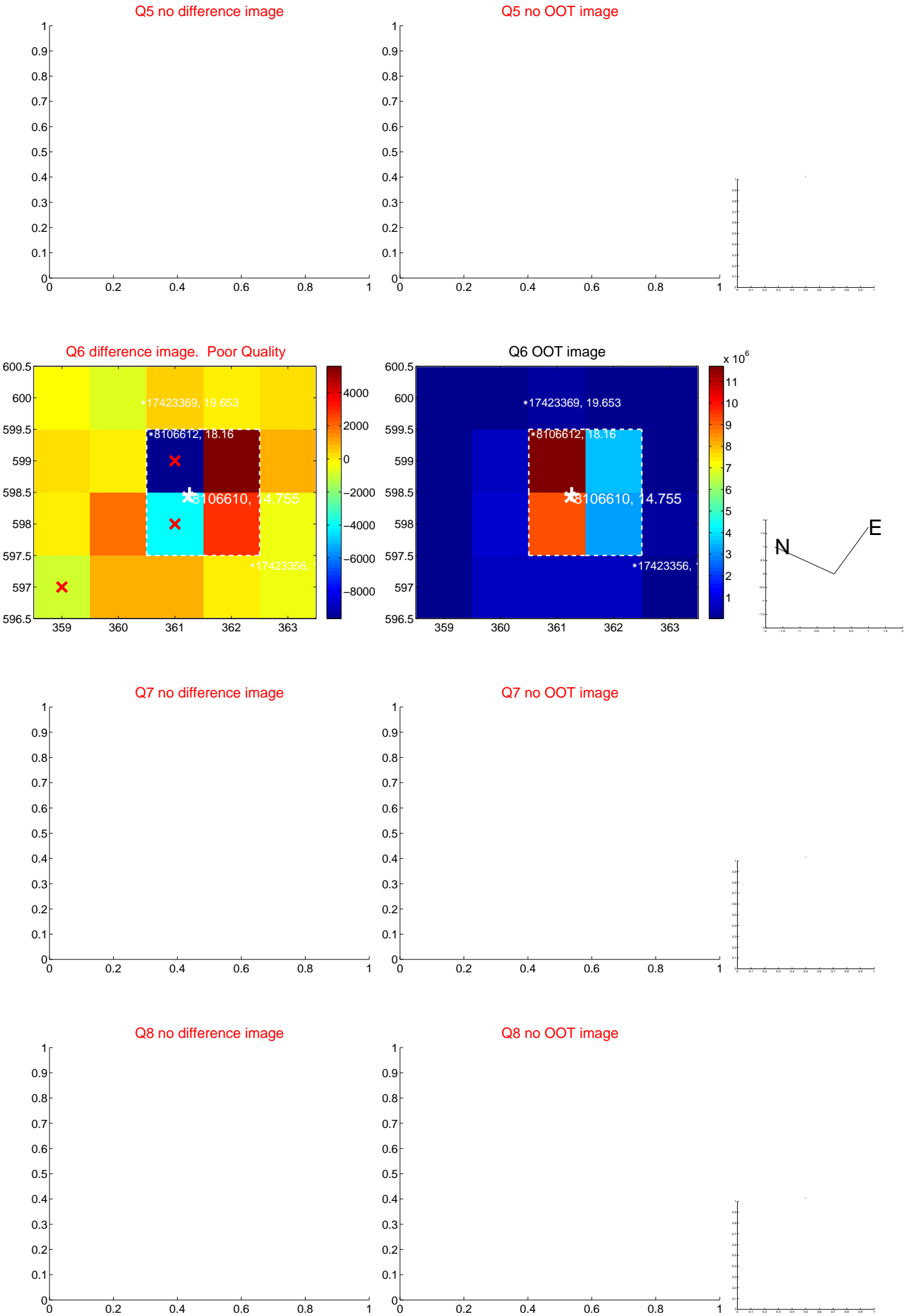


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

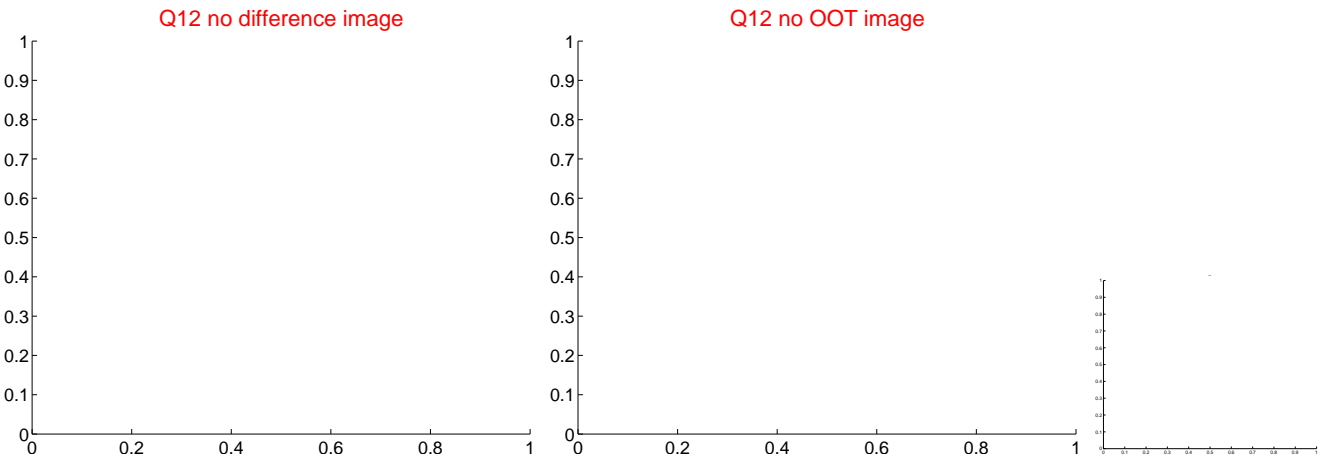
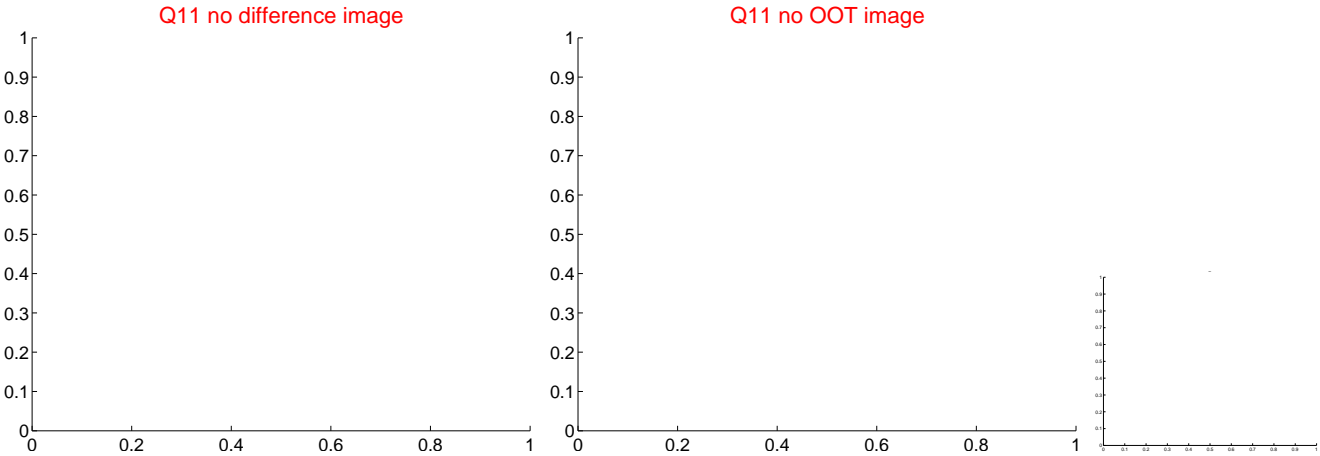
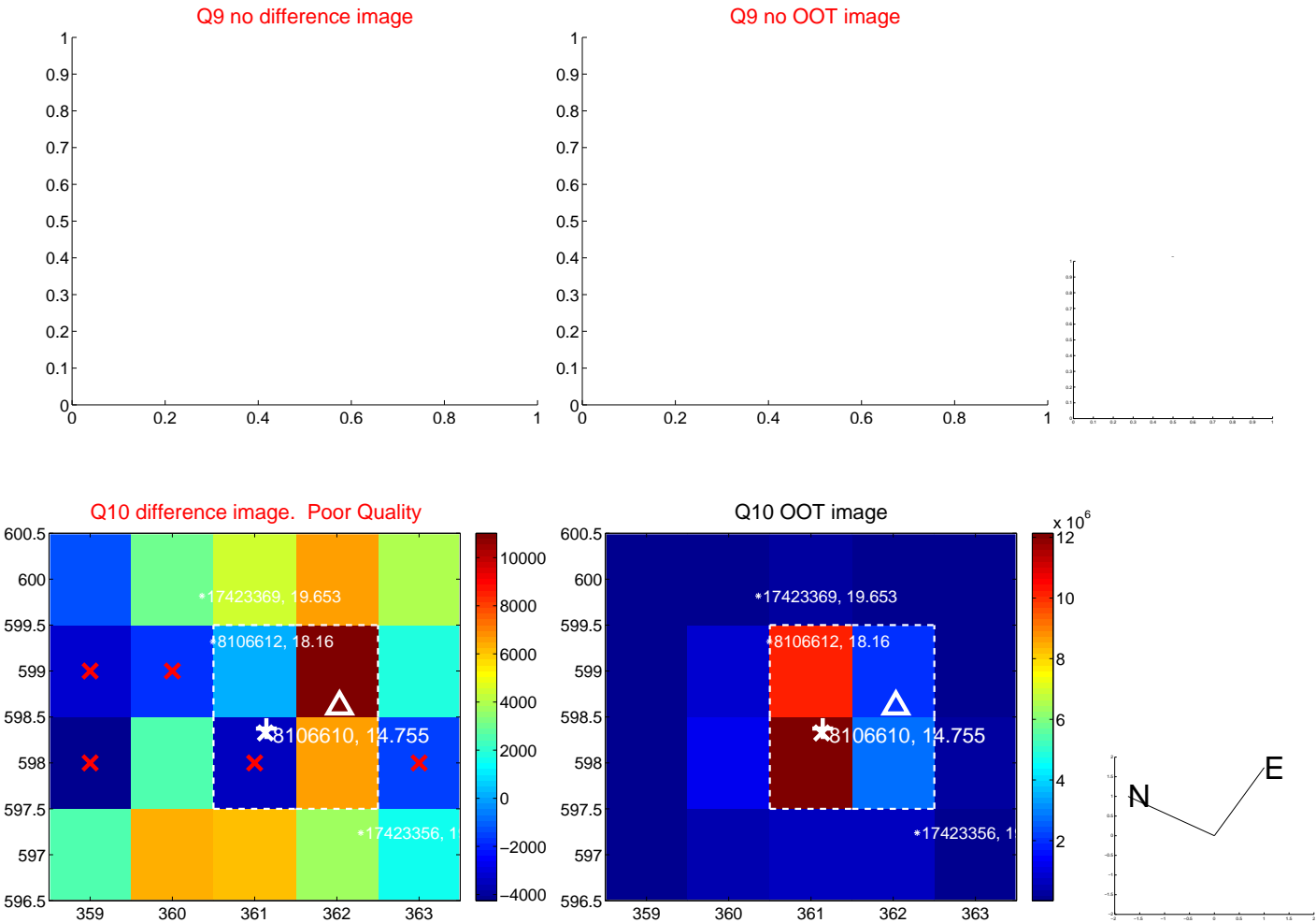
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



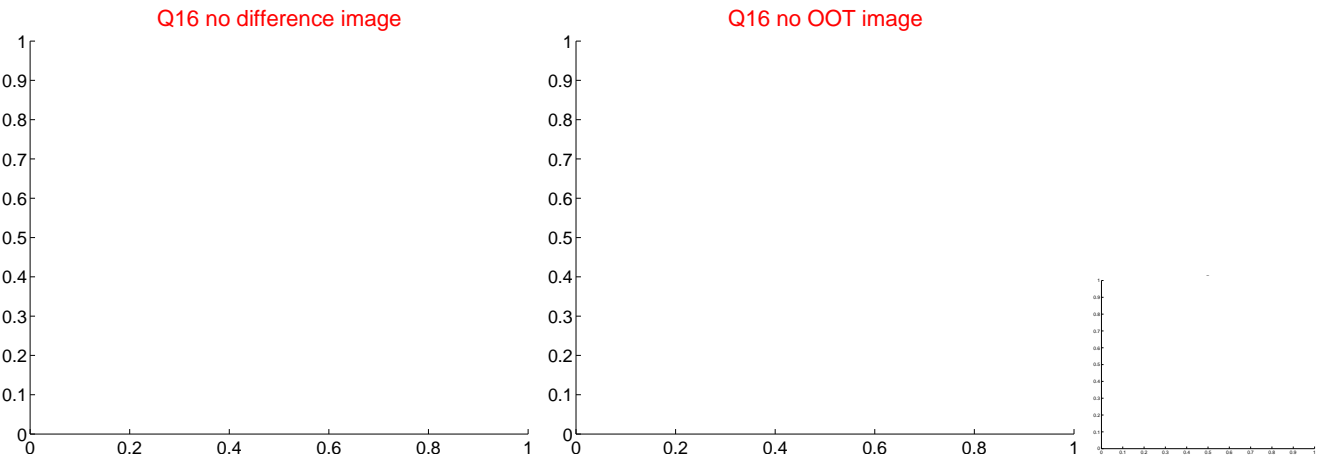
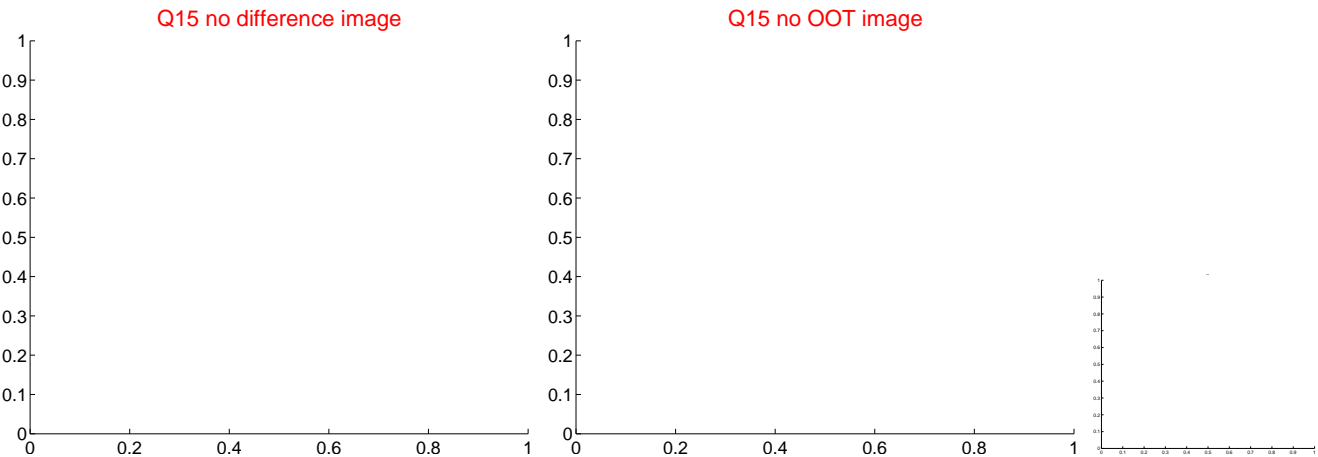
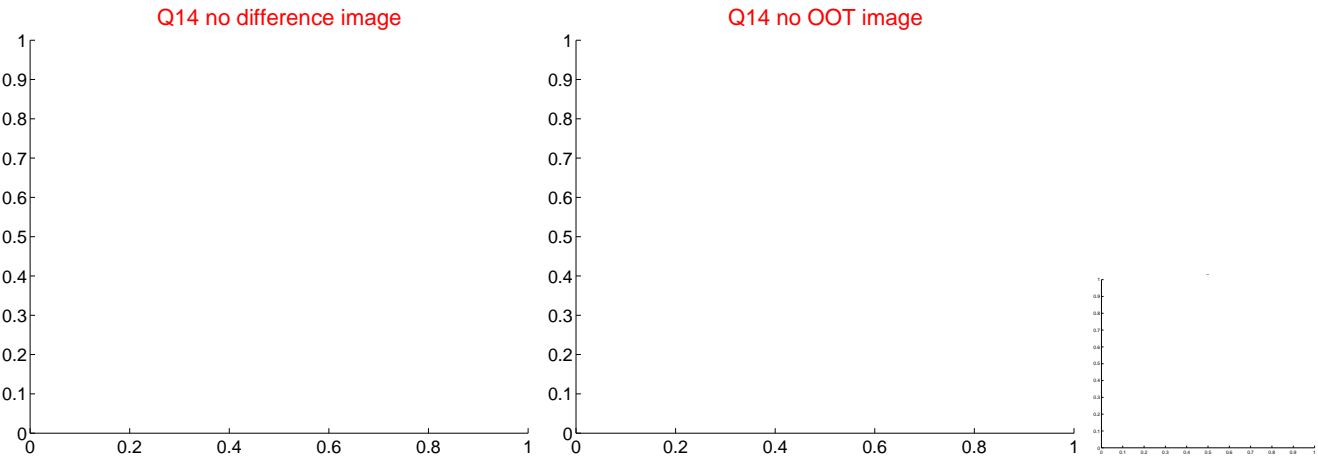
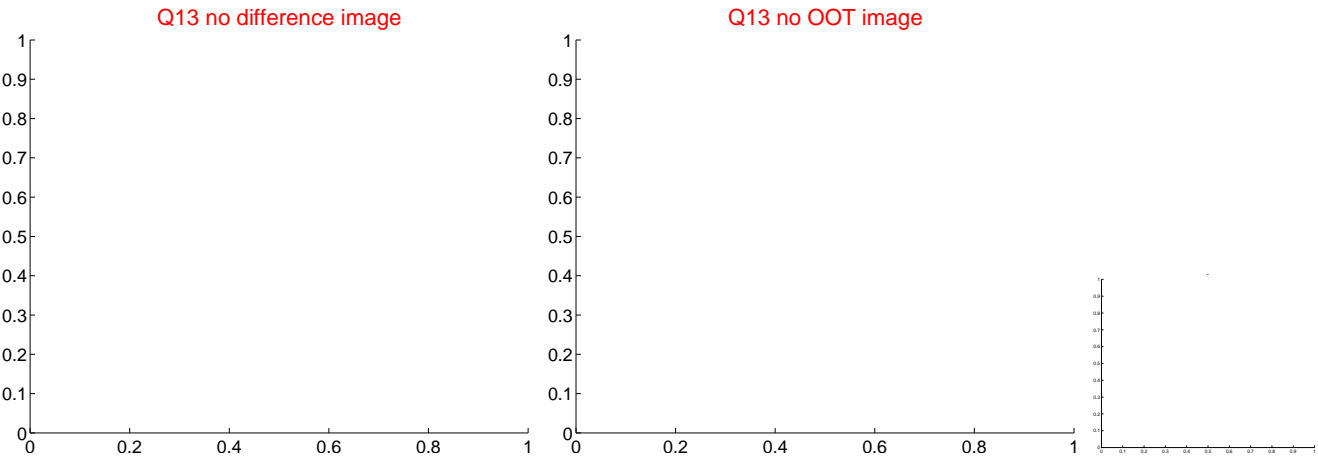
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



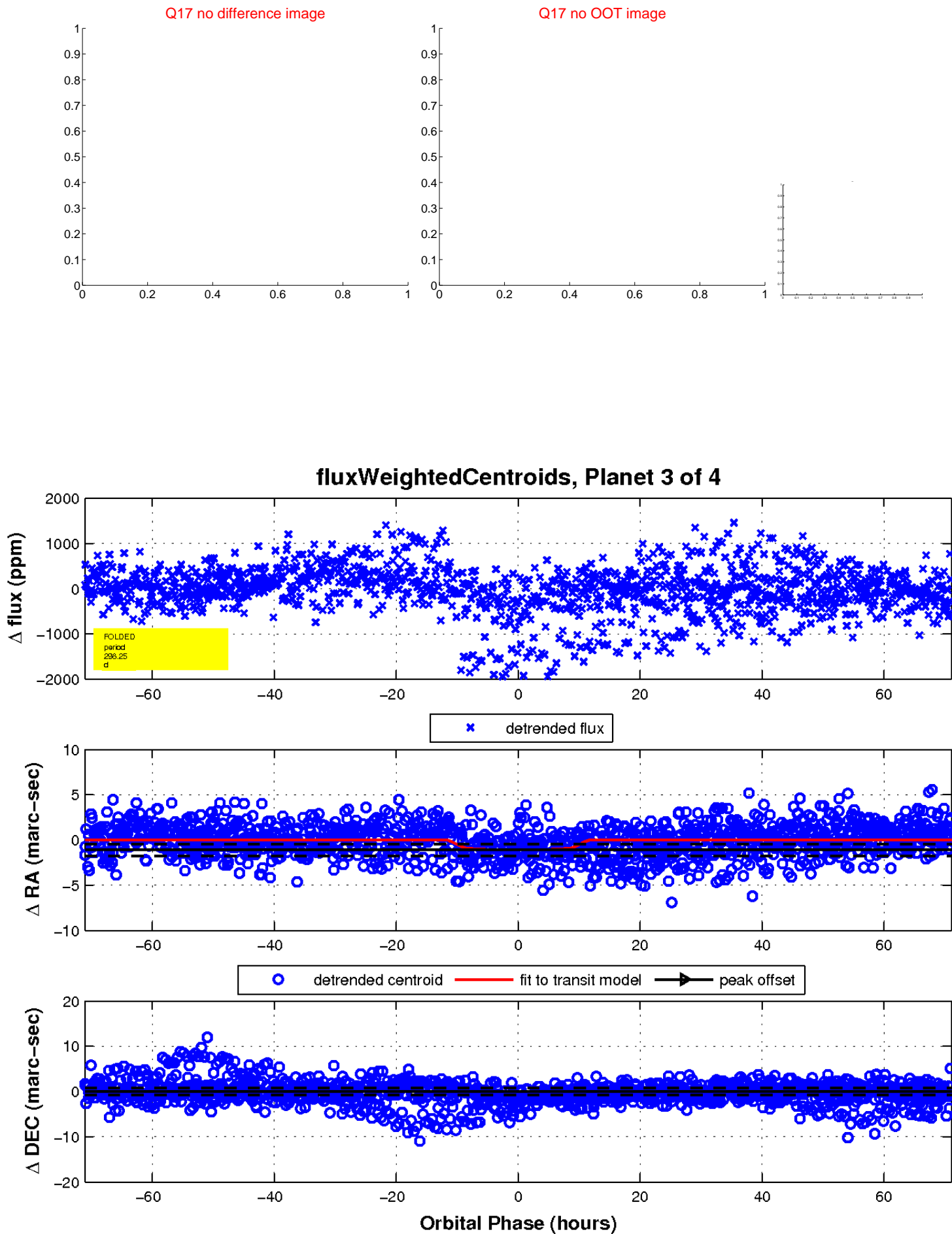
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

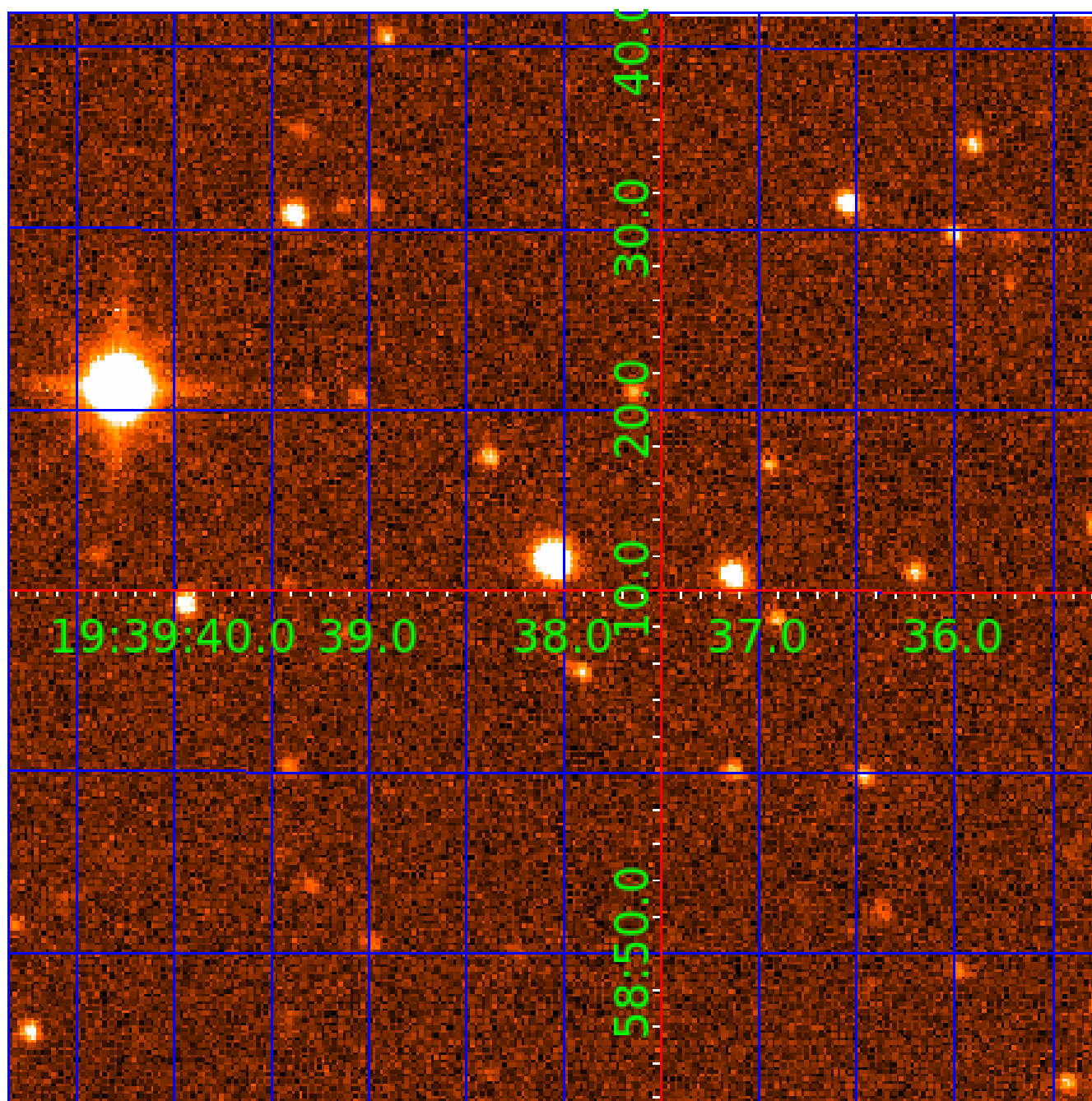


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008106610

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})
008106610-01	OBS	0570.01	12.398964	135.583288	699.9	4.289	44.1	46.9	1.11	6355	3.91	148.55
008106610-02	OBS	No	12.399210	142.122376	133.2	5.422	10.2	10.8	1.11	6355	1.71	148.54
008106610-03	OBS	No	298.252238	323.253679	615.9	23.701	14.7	11.6	1.11	6355	3.25	2.14
008106610-04	OBS	No	368.884947	233.321043	635.4	27.044	10.1	10.0	1.11	6355	5.37	1.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008106610-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST
008106610-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST
008106610-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008106610-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—CENT_FEW_DIFFS

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

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

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

Ephemeris Match Information For 008106610-04

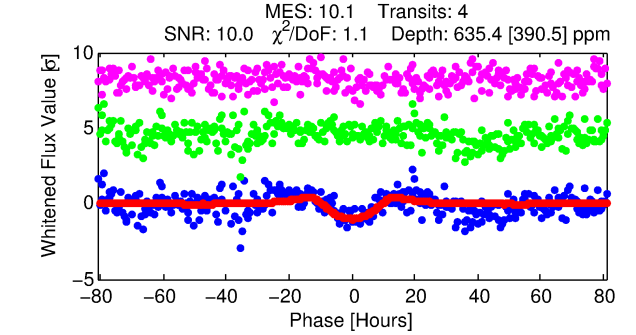
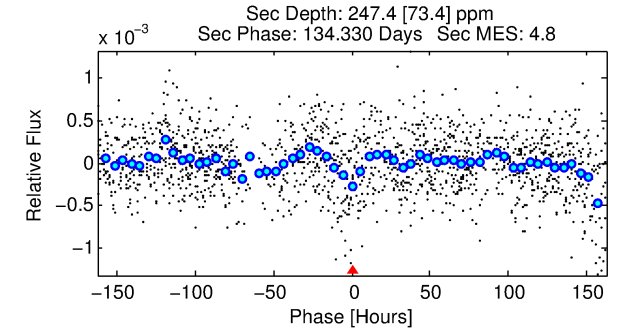
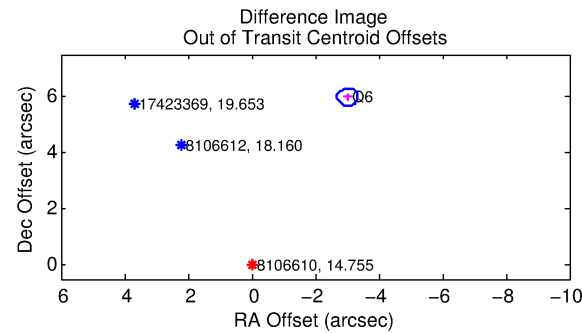
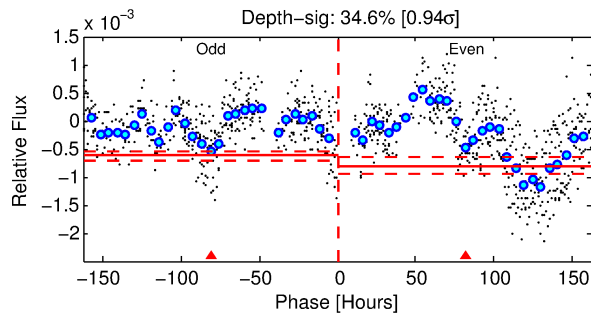
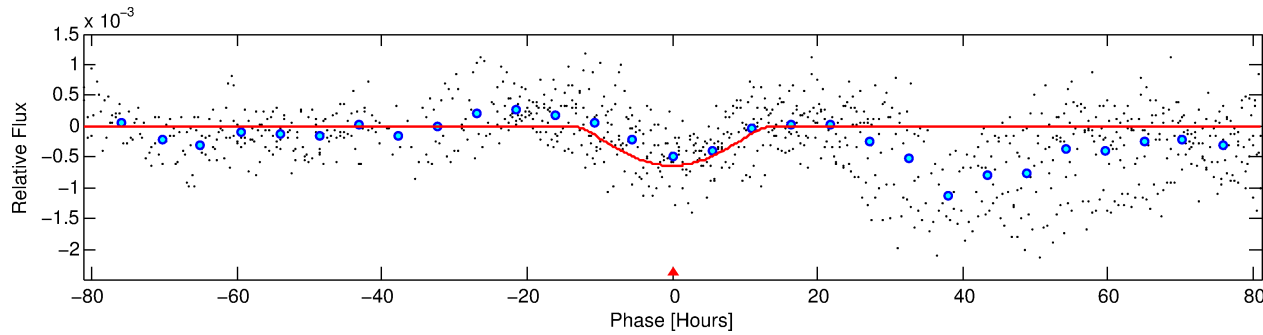
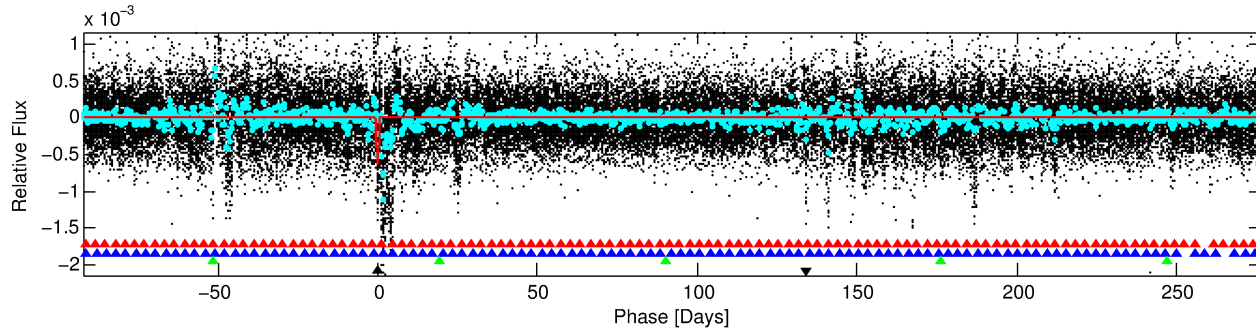
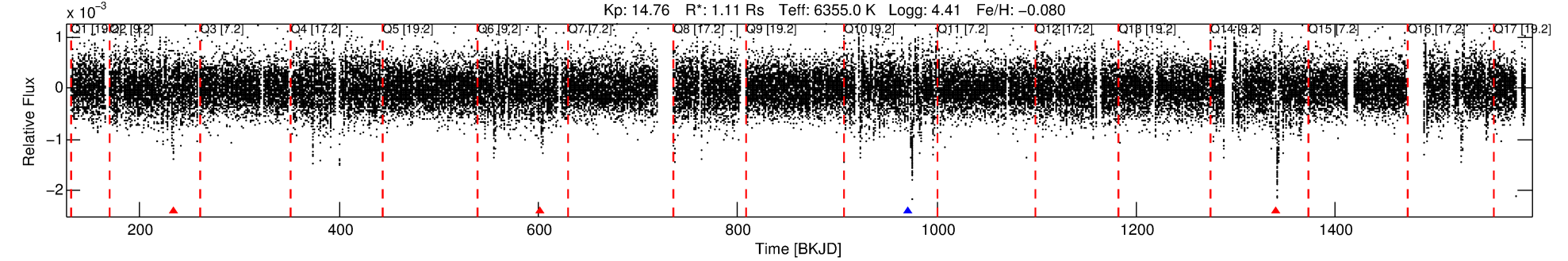
No Significant Match Found

DV One-Page Summary

KIC: 8106610 Candidate: 4 of 4 Period: 368.885 d

KOI: K00570 Corr: No Ephemeris Match

Kp: 14.76 R*: 1.11 Rs Teff: 6355.0 K Logg: 4.41 Fe/H: -0.080



DV Fit Results:

Period = 368.88495 [0.02344] d
Epoch = 233.3210 [0.0397] BKJD
Rp/R* = 0.0444 [0.1121]
a/R* = 31.43 [19.79]
b = 1.00 [0.18]
Seff = 1.61 [0.68]
Teq = 287 [30] K
Rp = 5.37 [13.68] Re
a = 1.0552 [0.2999] AU
Ag = 5253.92 [26649.60] [0.20σ]
Teffp = 3782 [4783] K [0.73σ]

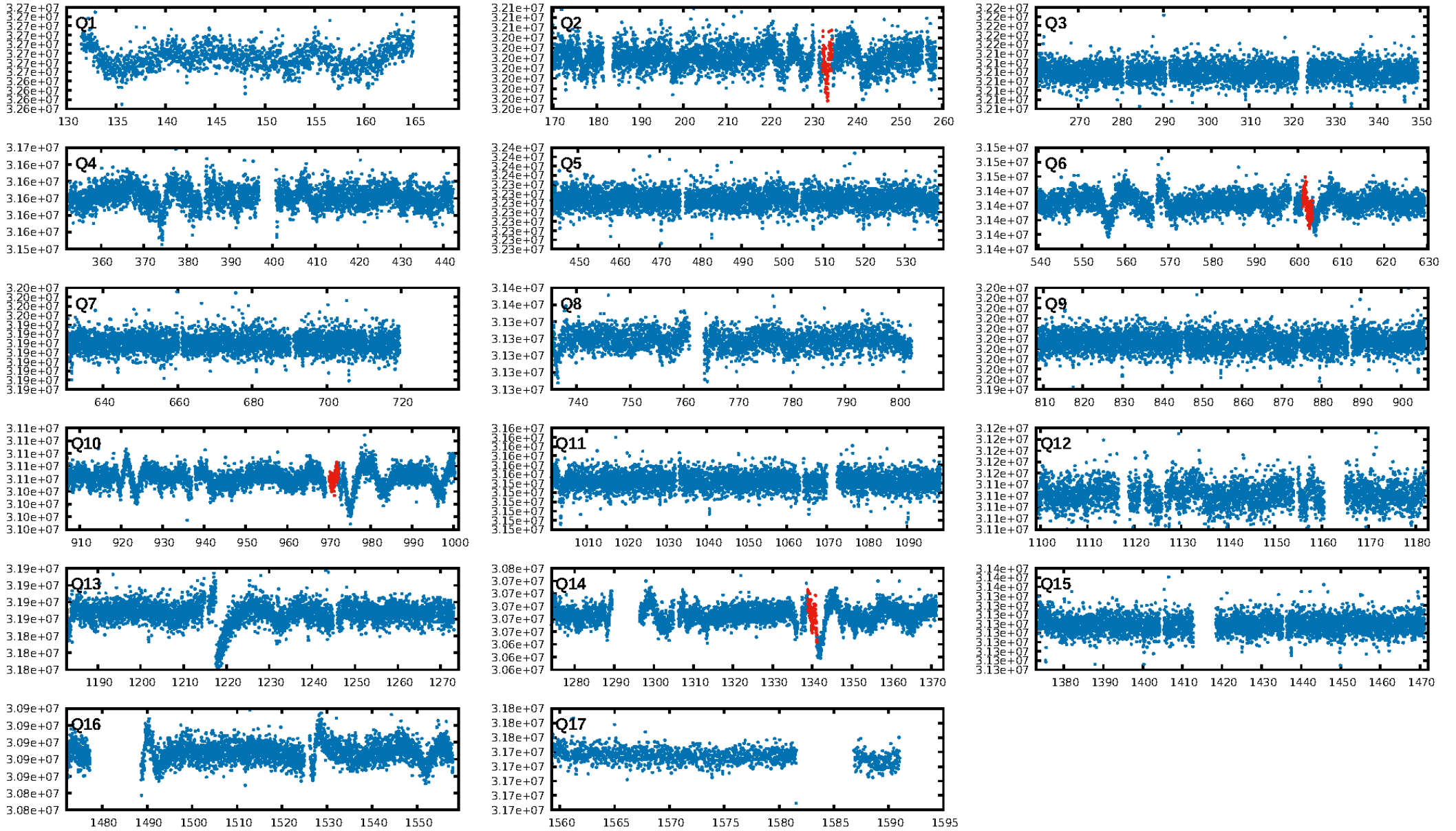
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [47.14σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 1.5%
ModelChiSquareGof-sig: 98.0%
Bootstrap-pfa: 8.29e-11
RollingBand-fgt: 0.25 [1/4]
GhostDiagnostic-chr: 0.3757
Centroid-sig: 4.4%
Centroid-so: 3.926 arcsec [1.53σ]
OotOffset-rm: 6.688 arcsec [63.88σ]
KicOffset-rm: 6.615 arcsec [63.42σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 0.00 [0/2]

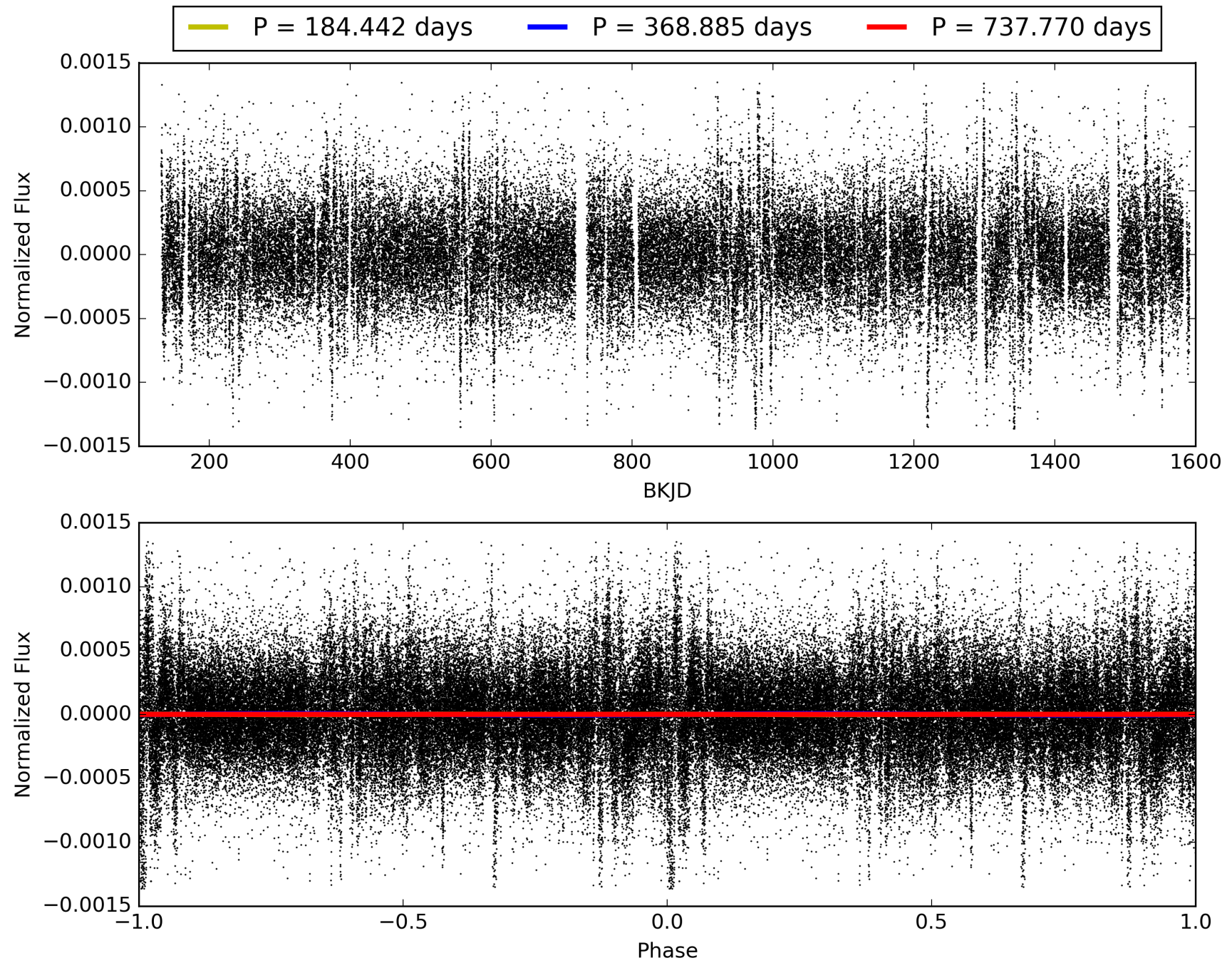
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 14:52:48 Z

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

TCE 008106610-04, PDC Light Curves

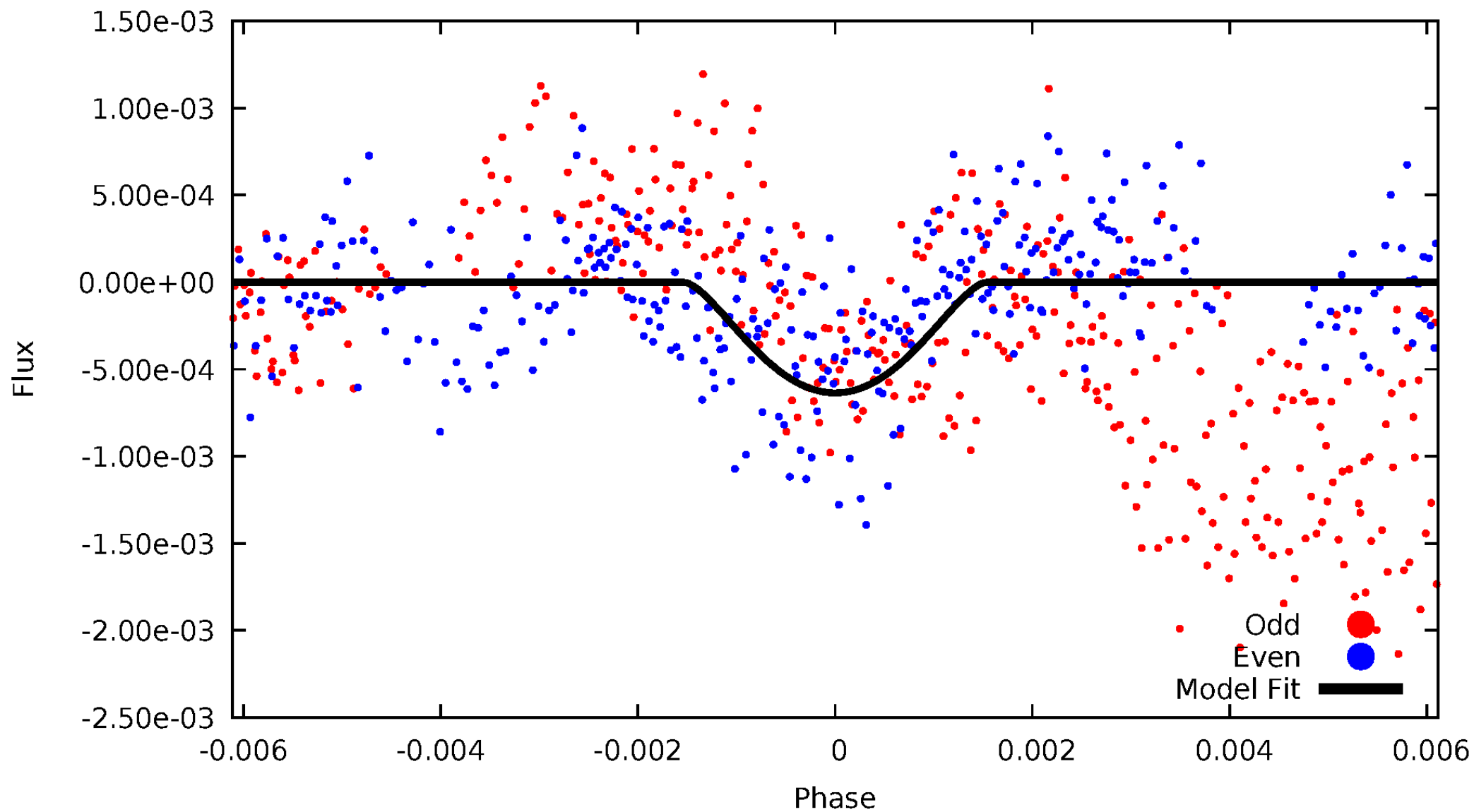


TCE 008106610-04



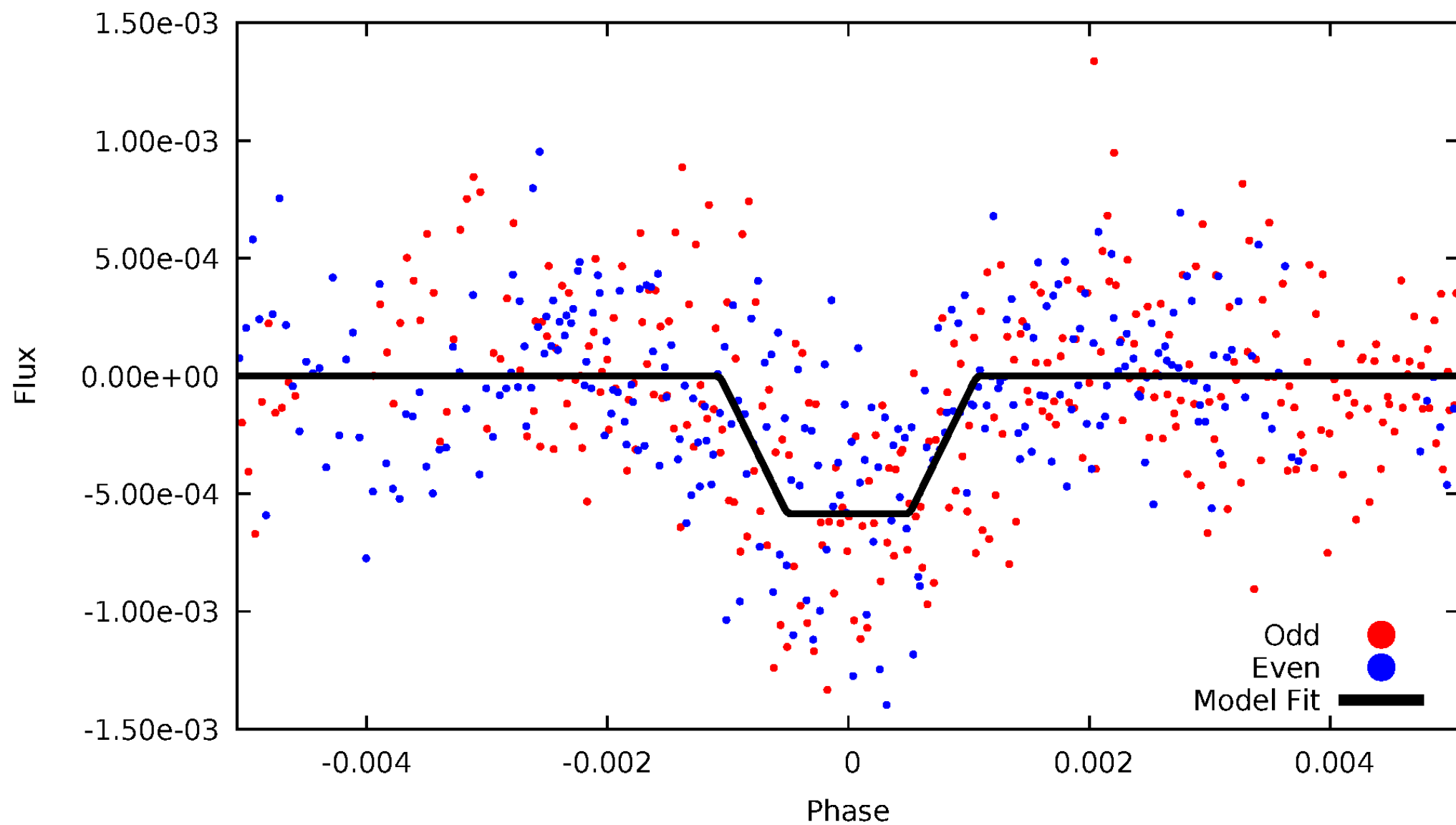
DV Odd/Even

TCE 008106610-04



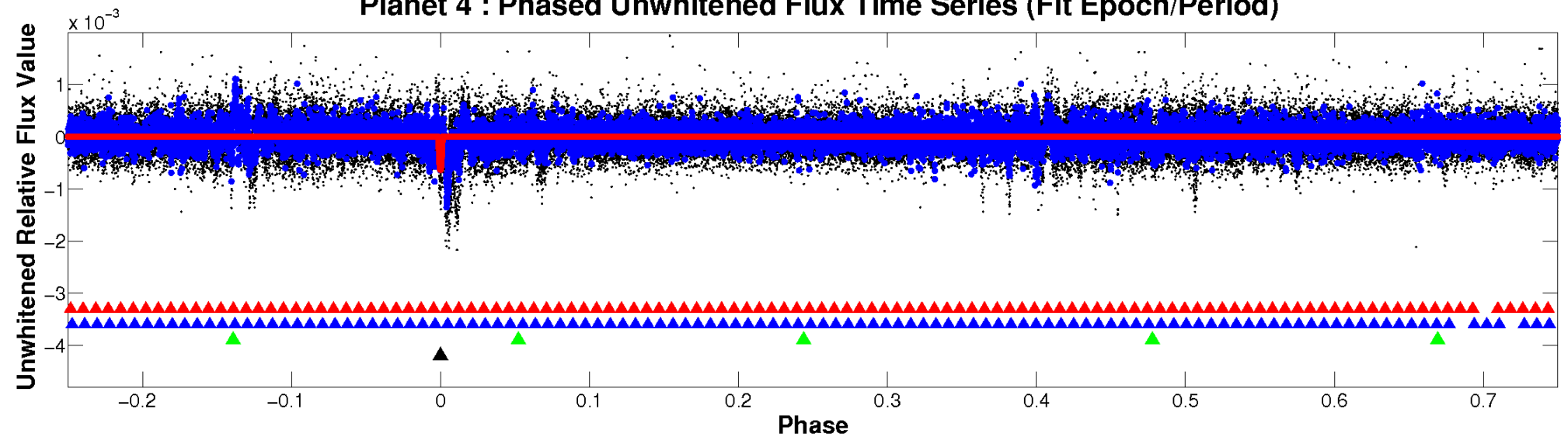
ALT Odd/Even

TCE 008106610-04

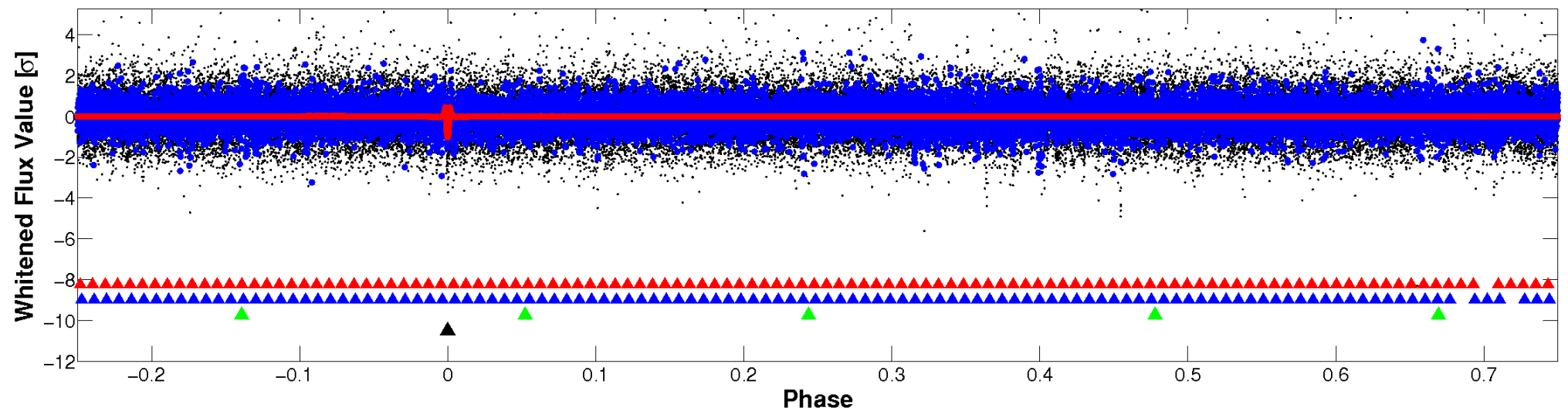


Non-Whitened Vs. Whitened Light Curve

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

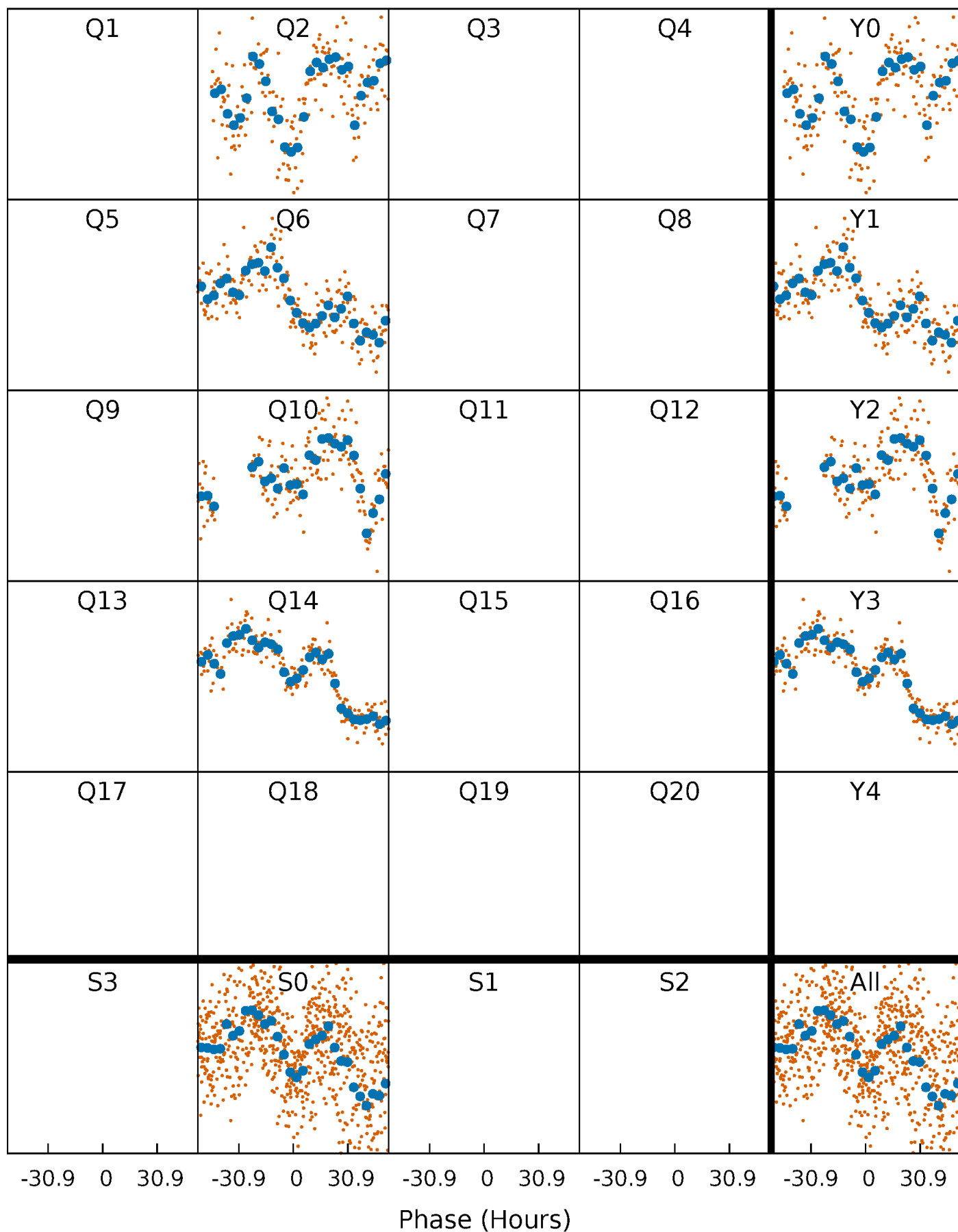


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



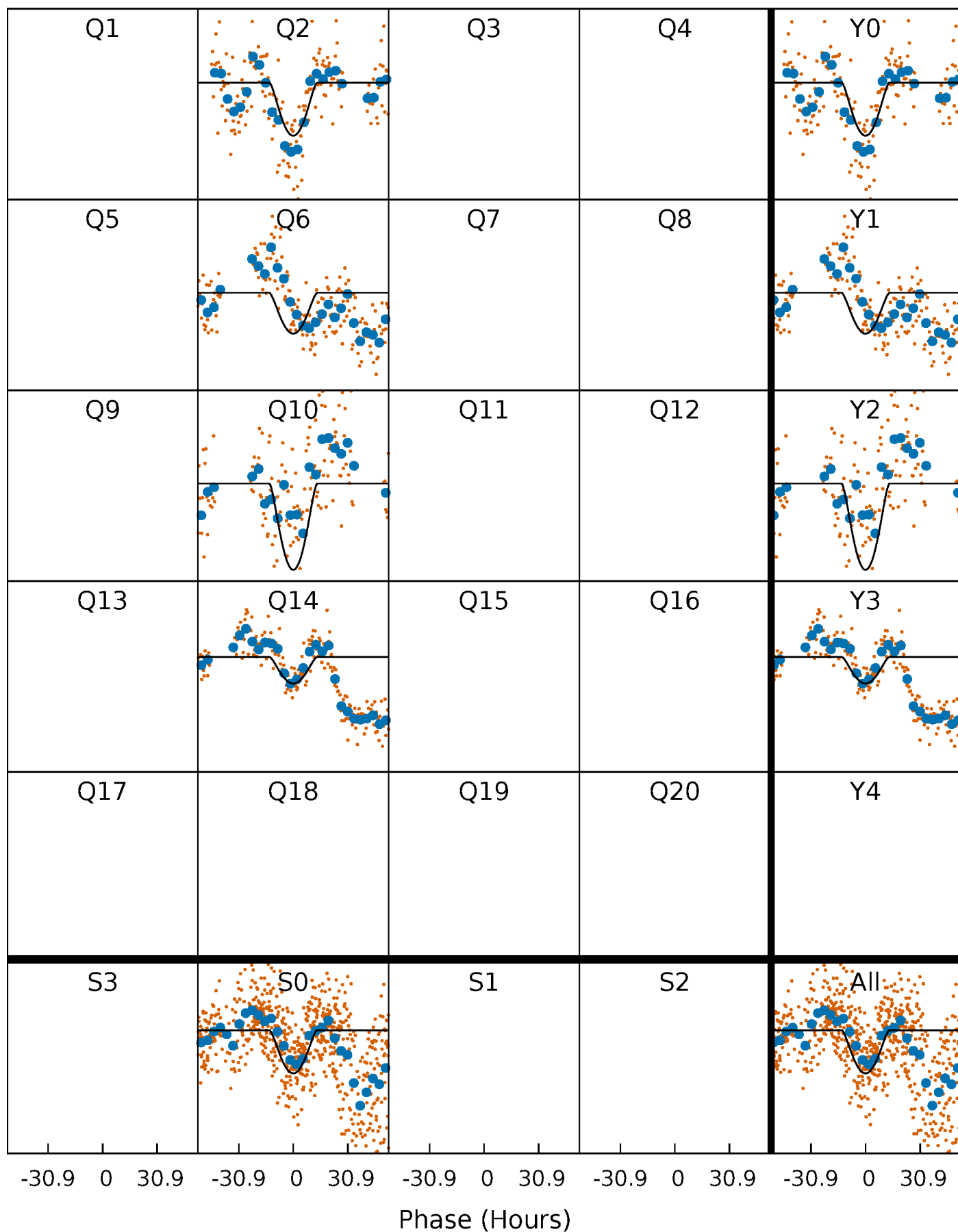
PDC Quarter-Phased Transit Curves

TCE 008106610-04 P=368.884947 Days $T_0=233.321043$ (BKJD)



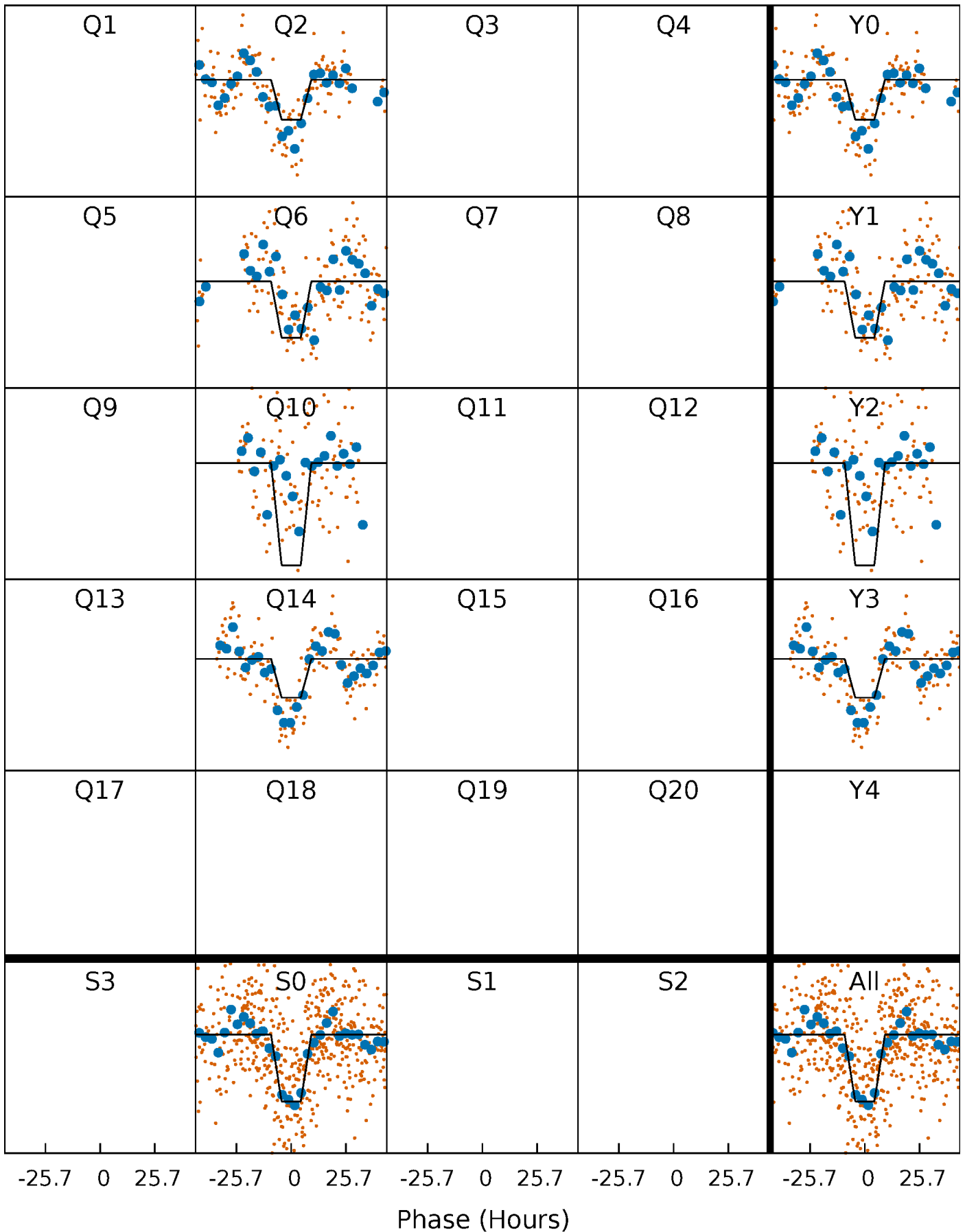
DV Quarter-Phased Transit Curves

TCE 008106610-04 P=368.884947 Days $T_0=233.321043$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

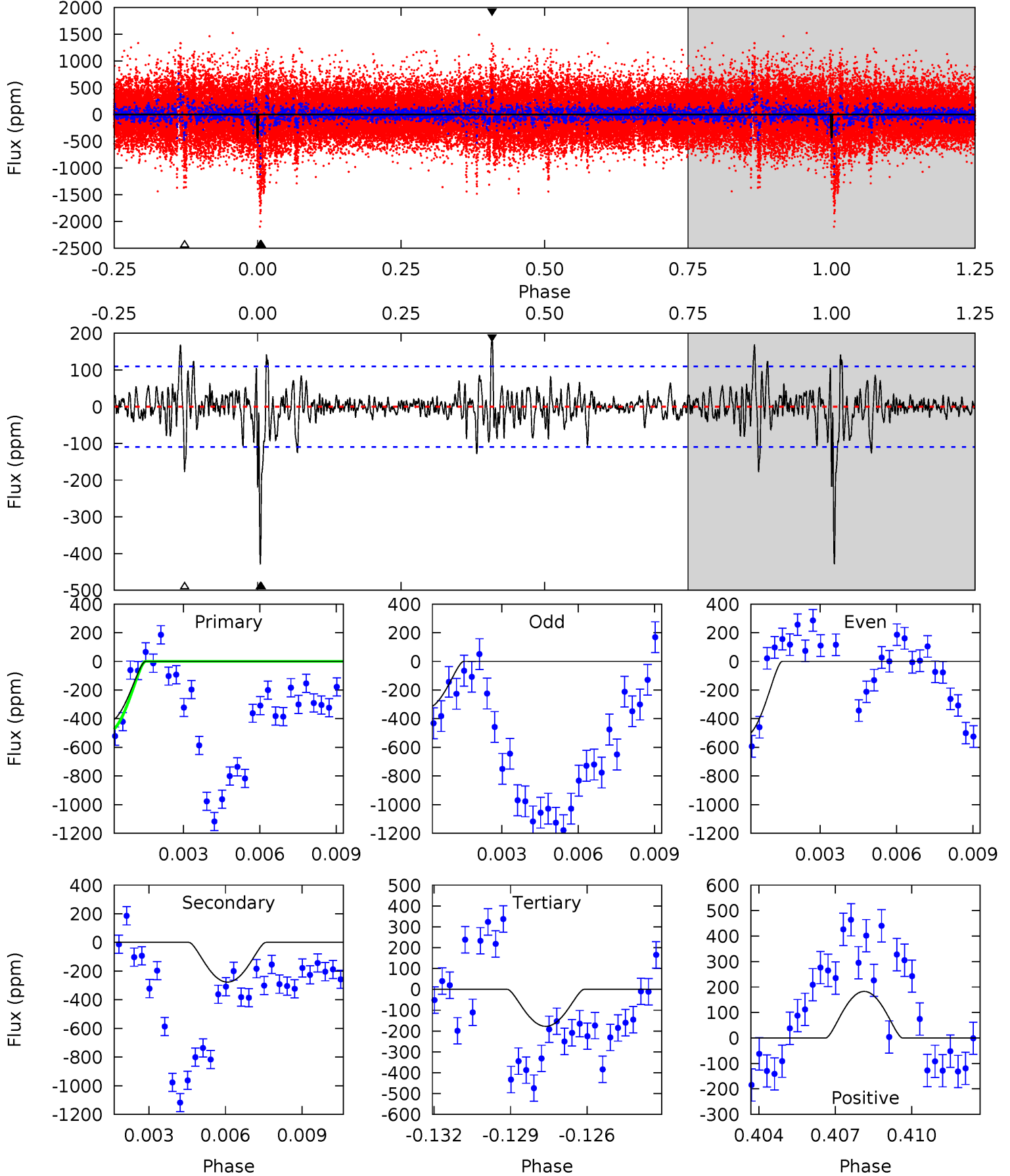
TCE 008106610-04 P=368.900681 Days $T_0=233.319914$ (BKJD)



DV Model-Shift Uniqueness Test

008106610-04, P = 368.884947 Days, E = 233.321043 Days

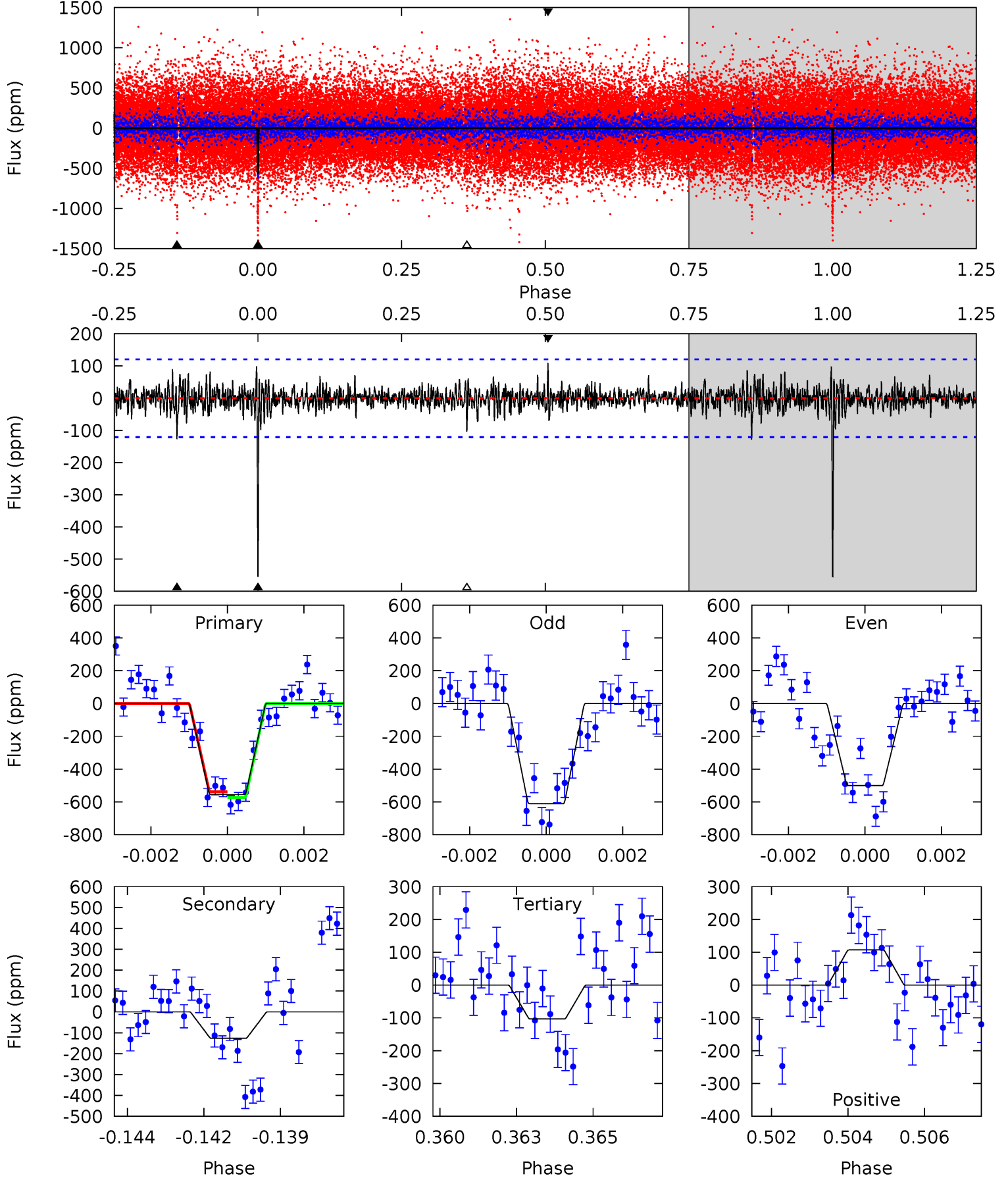
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.5	13.3	8.51	8.75	5.25	2.96	1.80	12.0	11.8	4.75	4.51	4.74	1.28	0.30	2.91



Alt Model-Shift Uniqueness Test

008106610-04, P = 368.900681 Days, E = 233.319914 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.4	5.57	4.55	4.70	5.31	3.07	1.04	19.9	19.7	1.02	0.87	2.42	0.95	0.16	0.76



Stellar Parameters For KIC 008106610

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6355^{+179}_{-224}	$4.410^{+0.070}_{-0.210}$	$-0.080^{+0.250}_{-0.300}$	$1.108^{+0.389}_{-0.130}$	$1.151^{+0.172}_{-0.157}$	$1.191^{+0.346}_{-0.632}$
	+3%/-4%	+2%/-5%	+312%/-375%	+35%/-12%	+15%/-14%	+29%/-53%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008106610-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-277 ± 21	$11.12^{+11.92}_{-7.12}$	408^{+27}_{-20}	3341^{+1444}_{-641}	1388^{+8900}_{-1079}
Alt.	-127 ± 23	$10.93^{+11.80}_{-7.79}$	408^{+30}_{-22}	2963^{+1447}_{-523}	628^{+6852}_{-483}

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 $A_{obs} \gg 1.0$

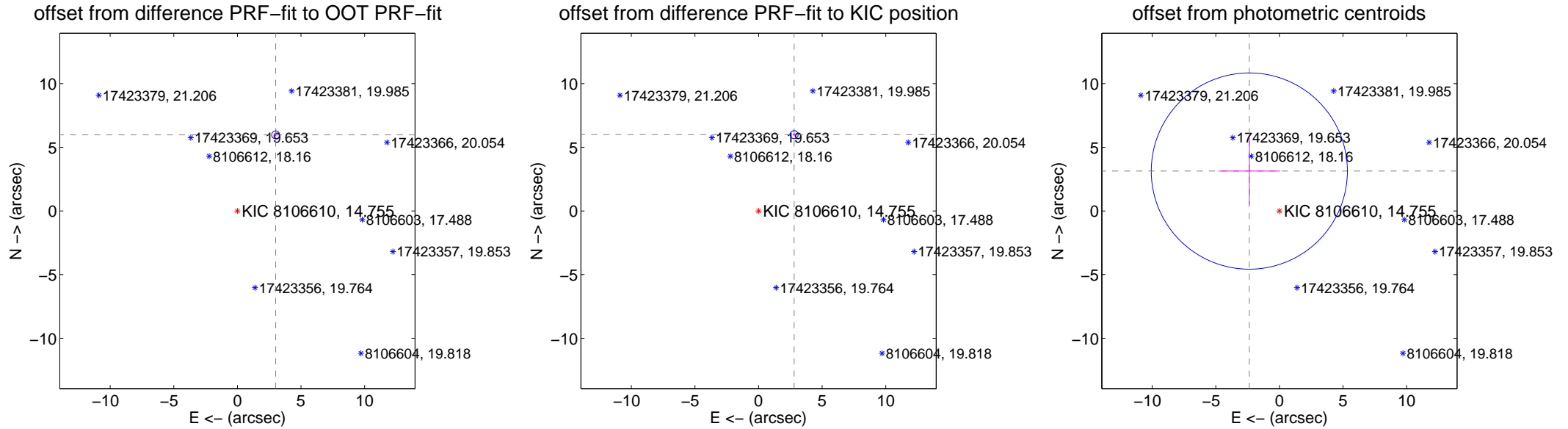
DV Centroid Data

Supplemental centroid analysis for 008106610-04. Kepler magnitude: 14.76. Transit SNR 9.99

There are 0 quarters with good PRF difference image offsets

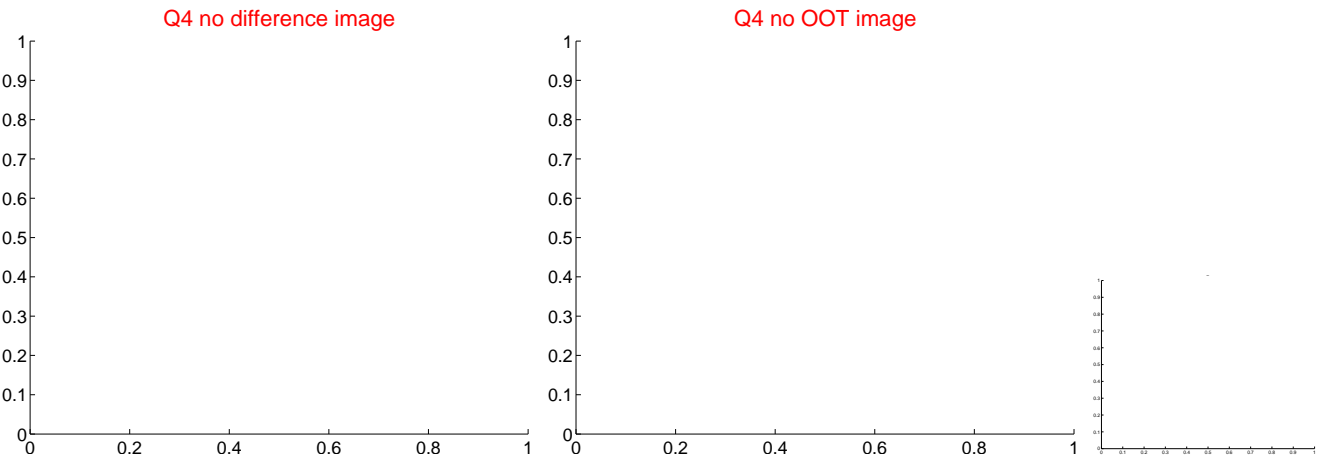
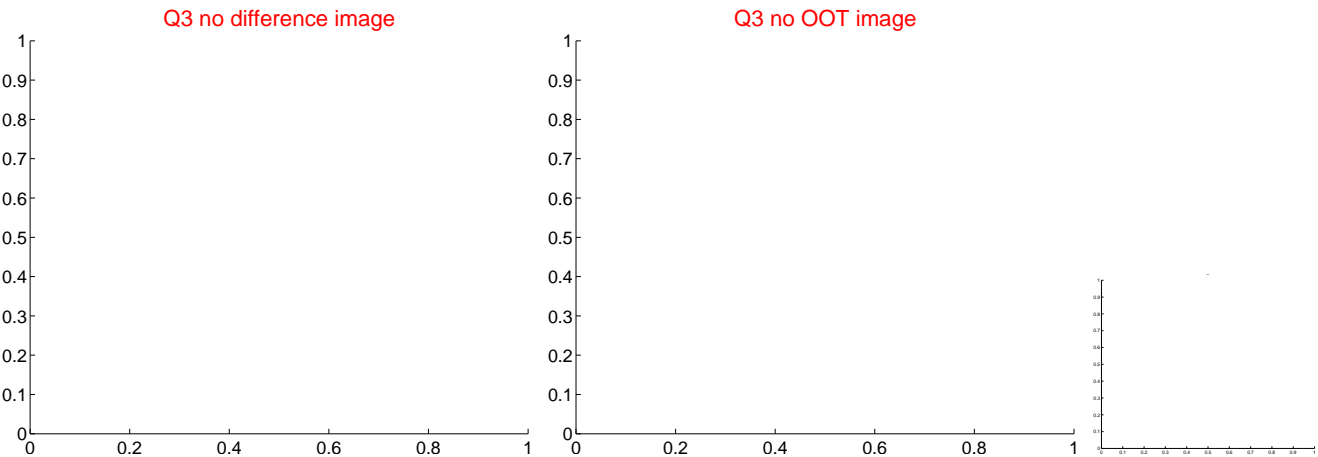
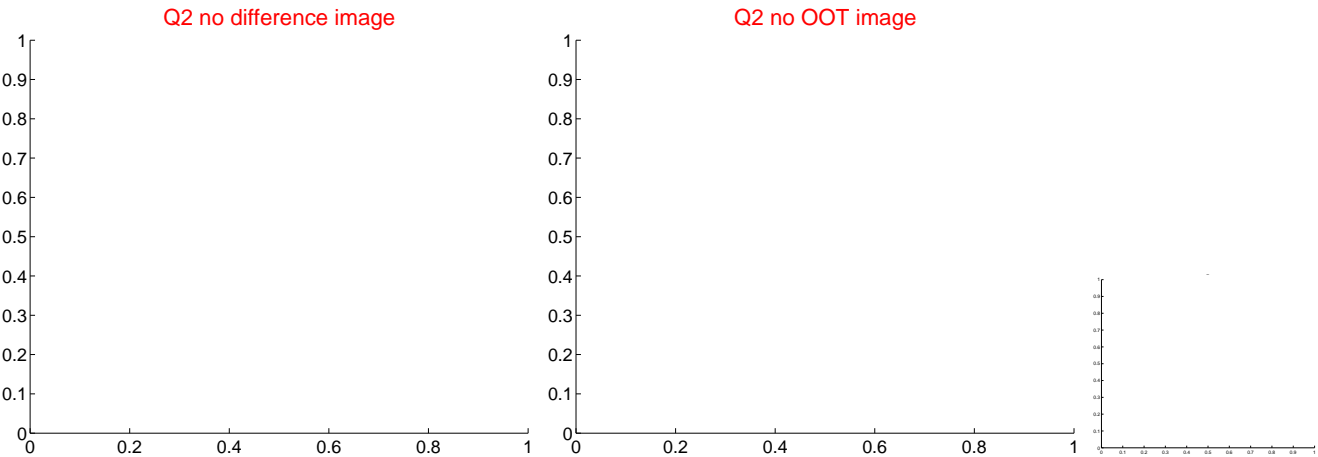
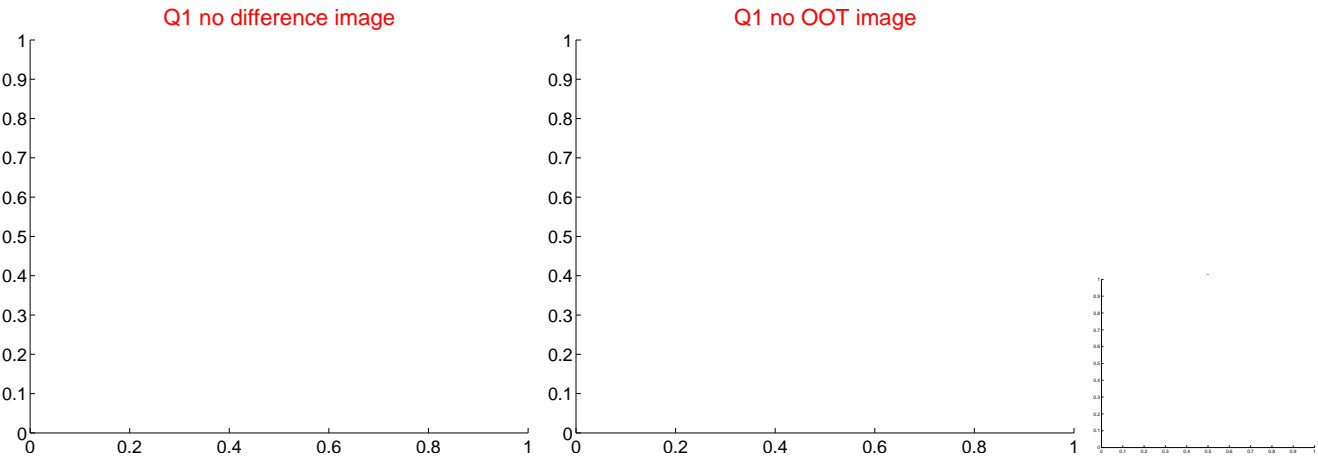
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.688 ± 0.105	63.88	-3.008 ± 0.118	5.973 ± 0.101
PRF-fit source offset from KIC position	6.615 ± 0.104	63.42	-2.799 ± 0.118	5.993 ± 0.101
photometric centroid source offset	3.93 ± 2.57	1.53	2.37 ± 2.41	3.13 ± 2.65

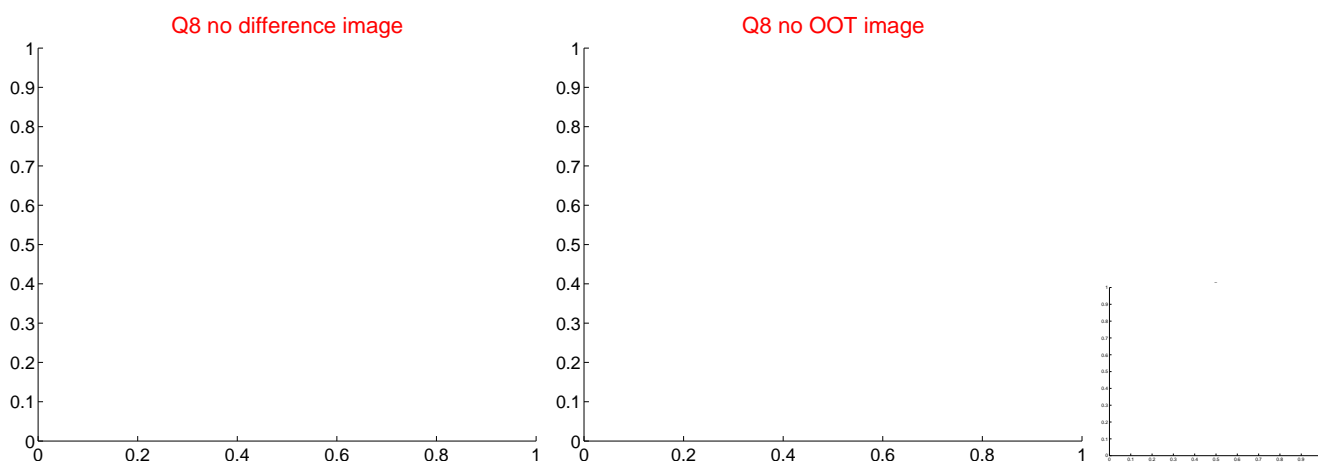
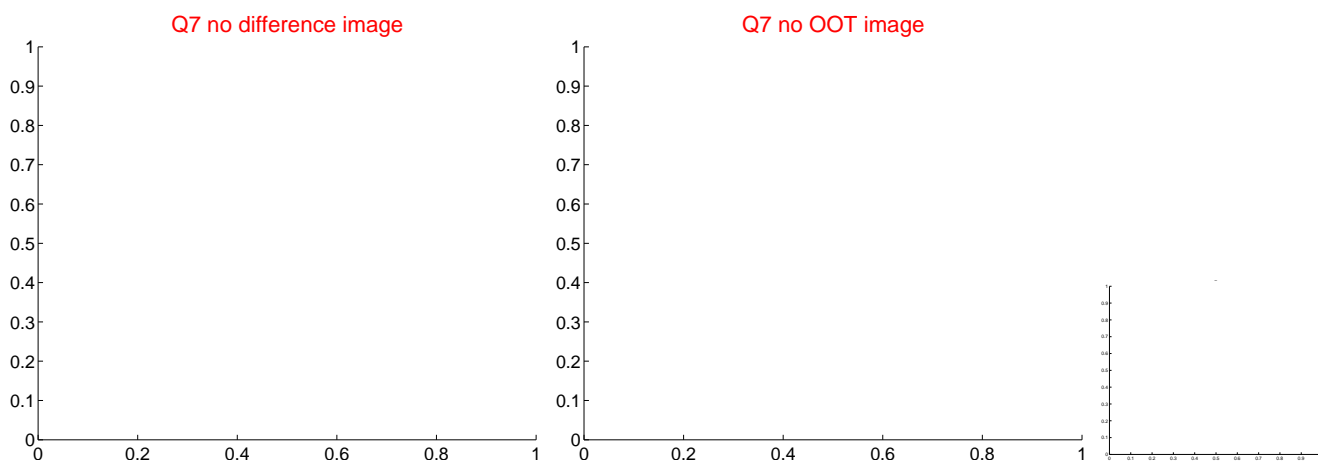
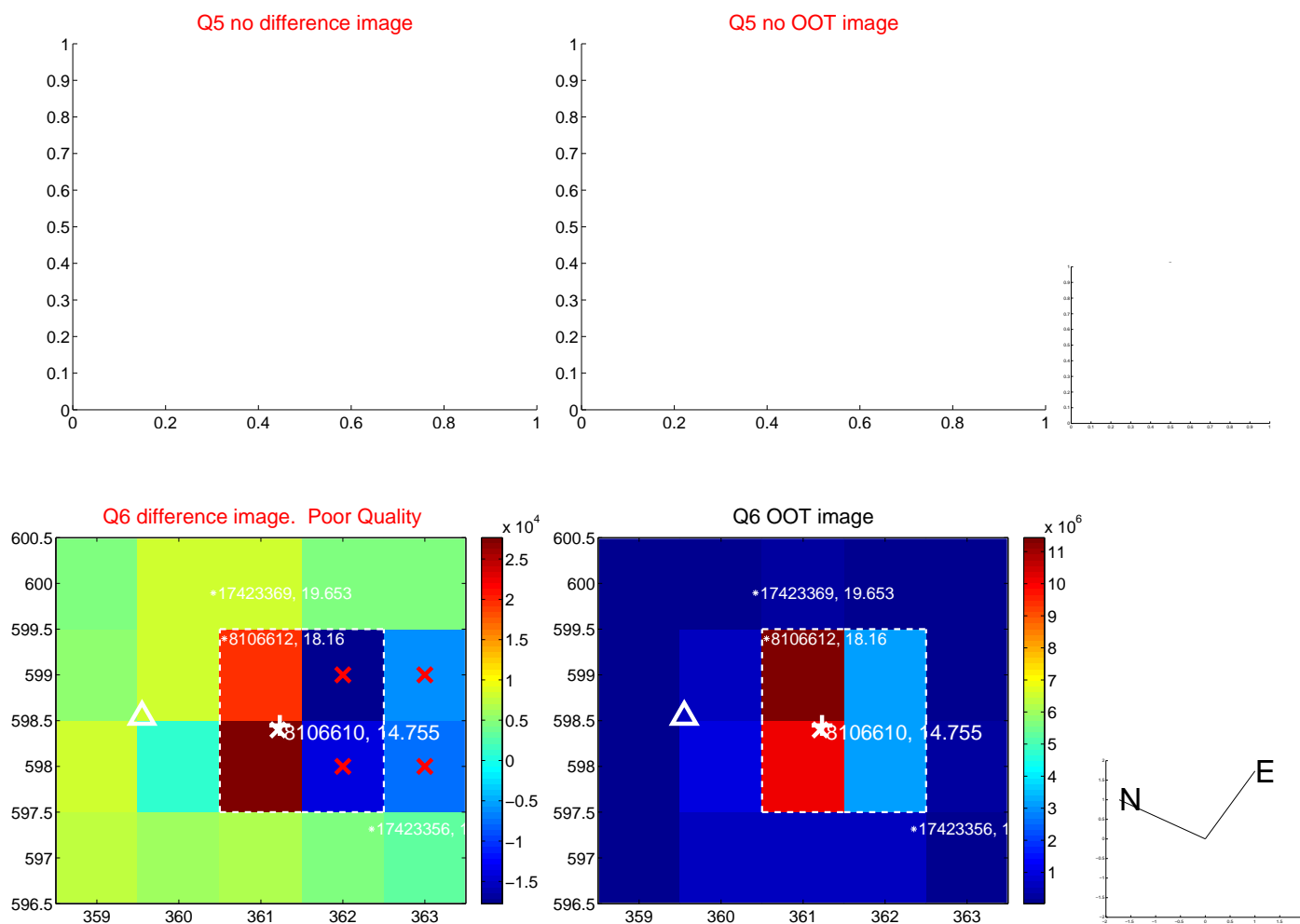


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

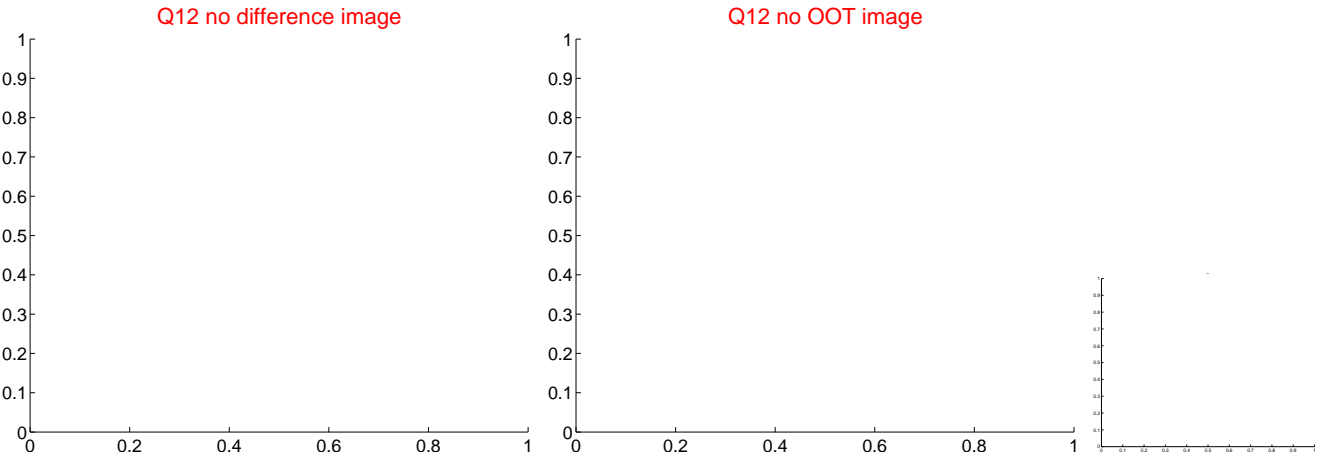
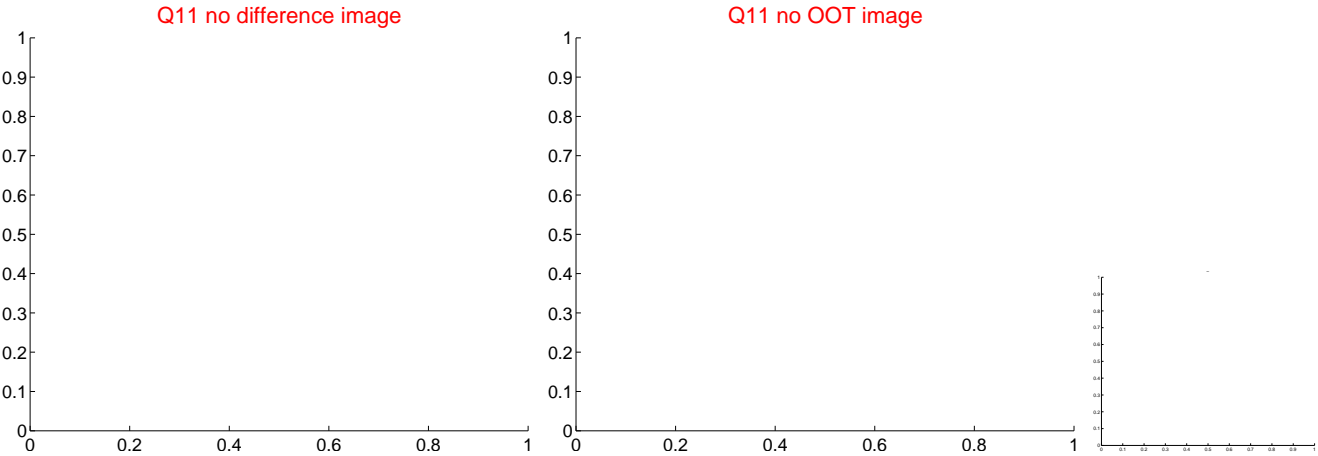
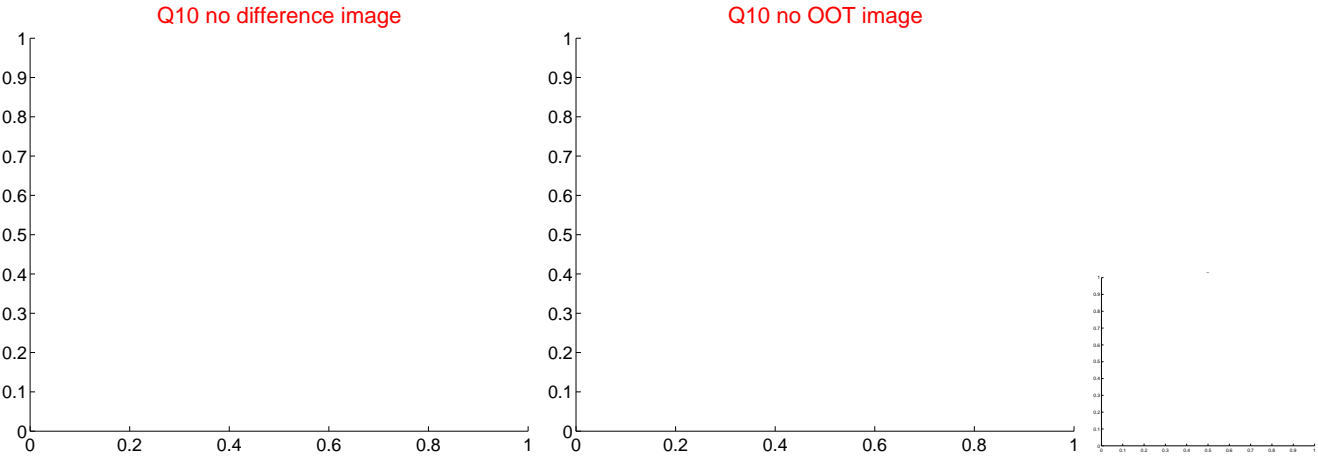
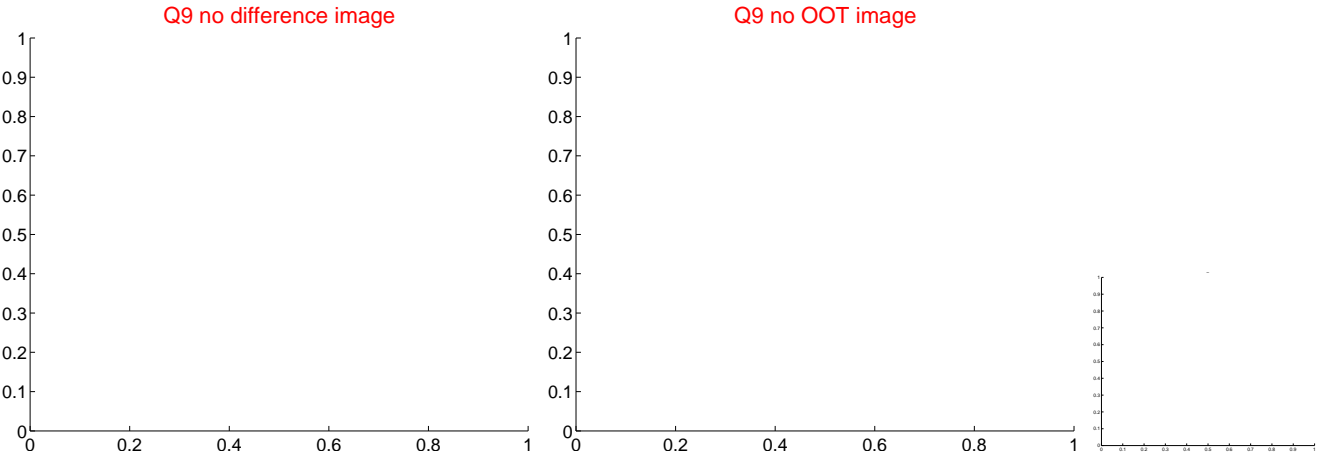
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



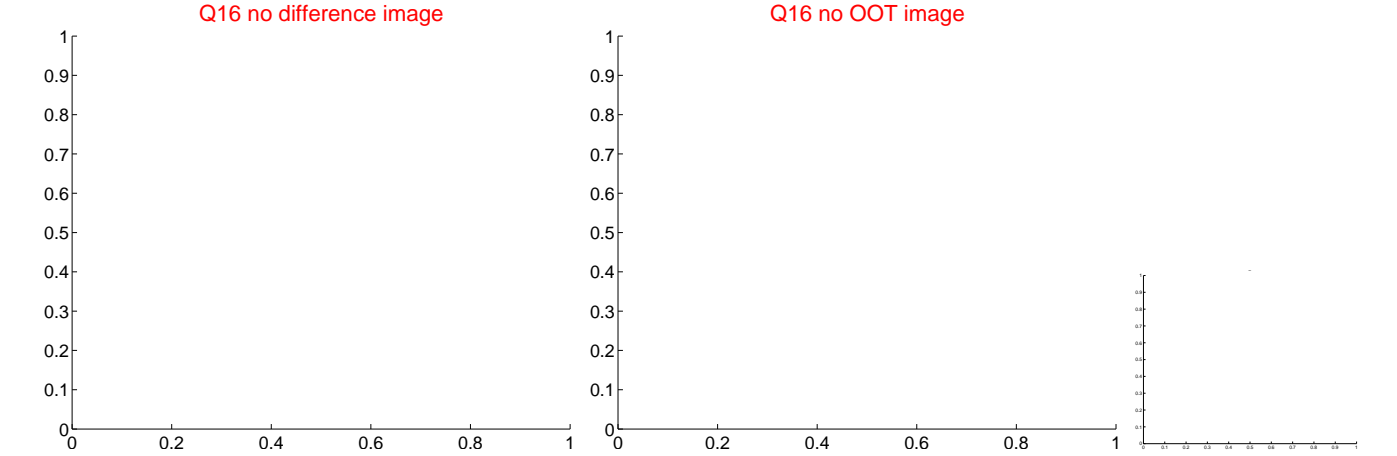
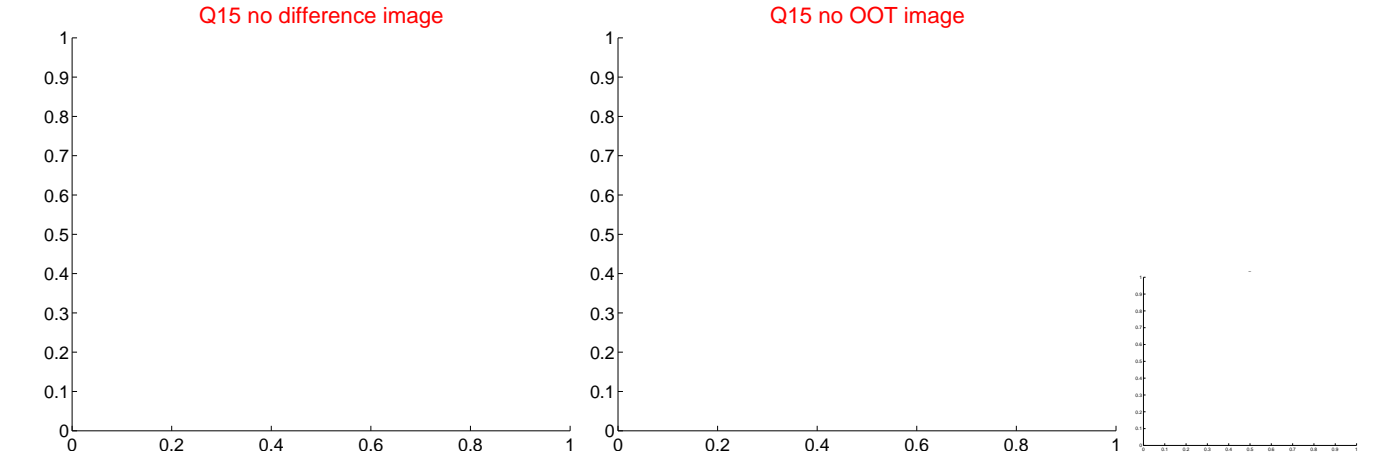
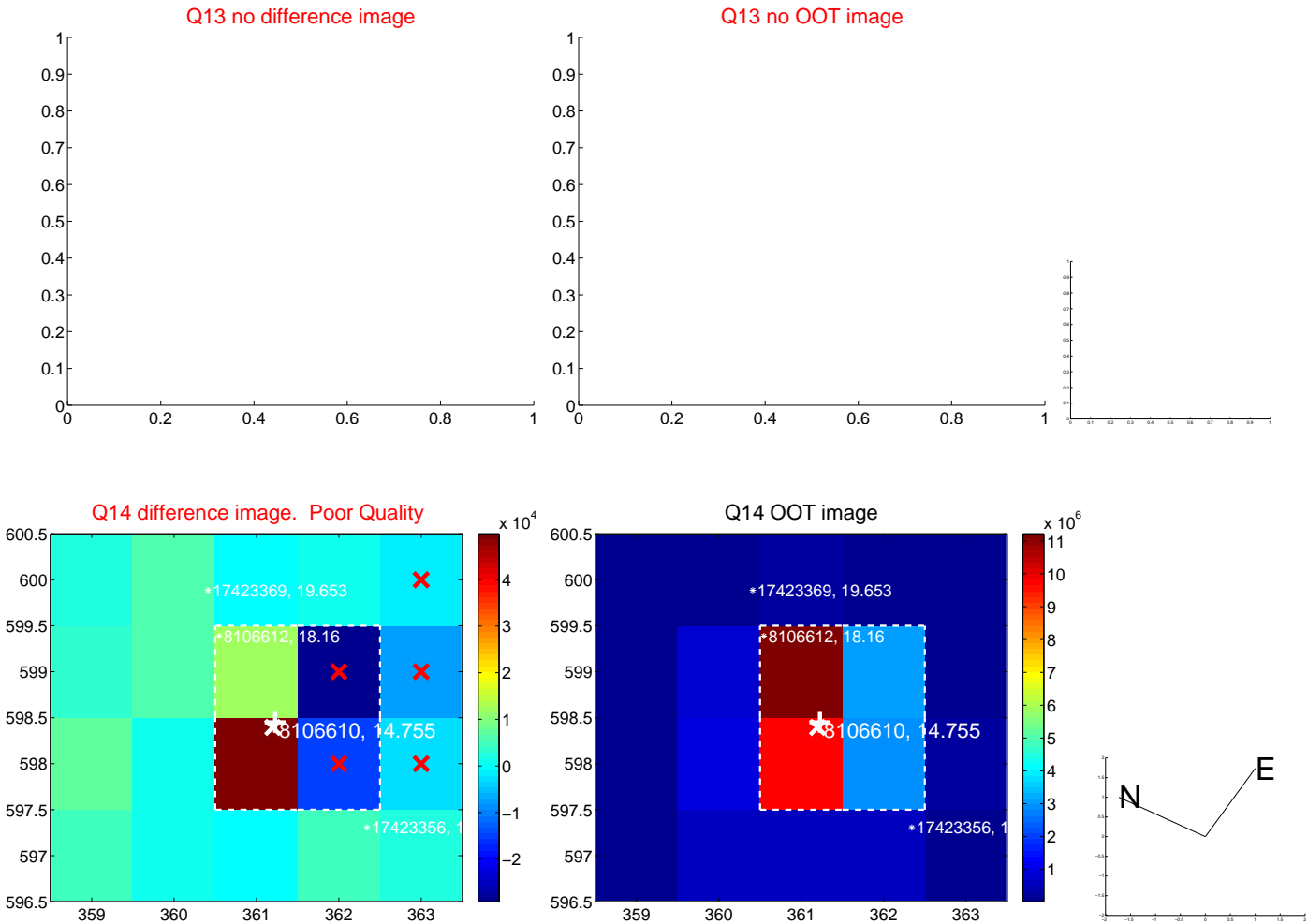
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



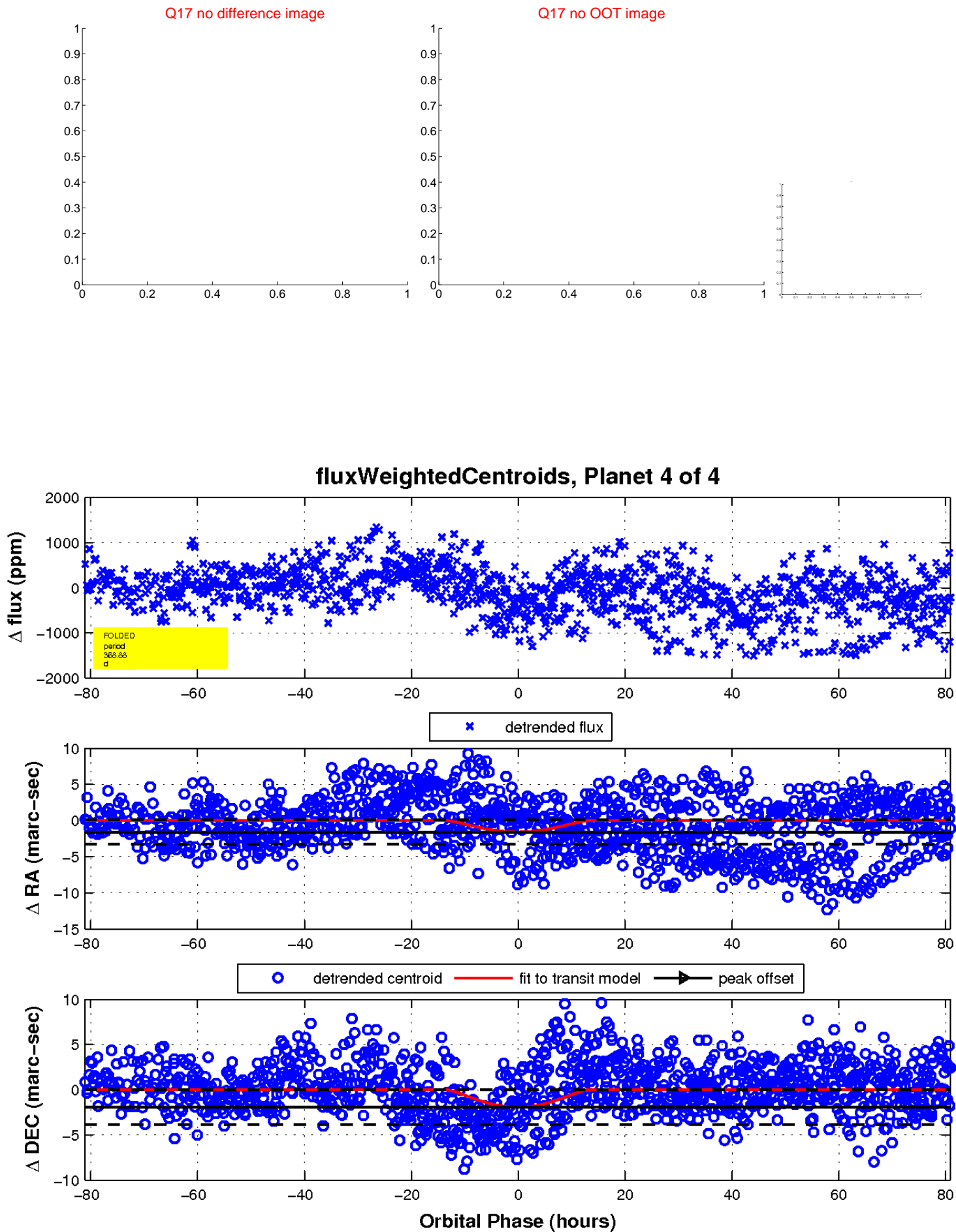
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

