

KIC 006205384

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})
006205384-01	OBS	5250.01	3.722918	134.615892	34.3	9.220	11.6	11.9	0.82	5898	0.57	352.15
006205384-02	OBS	No	369.542487	158.713182	276.7	19.390	12.2	8.7	0.82	5898	1.56	0.77

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006205384-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_UNRESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
006205384-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

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

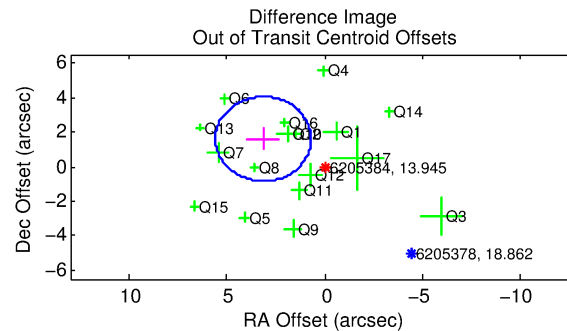
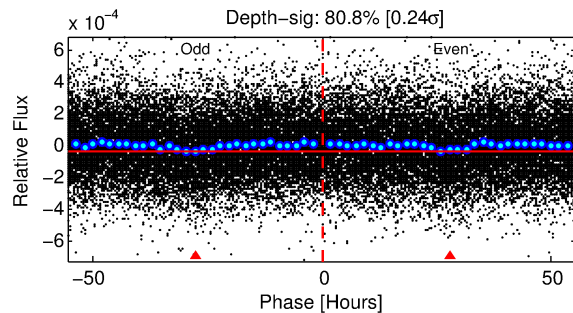
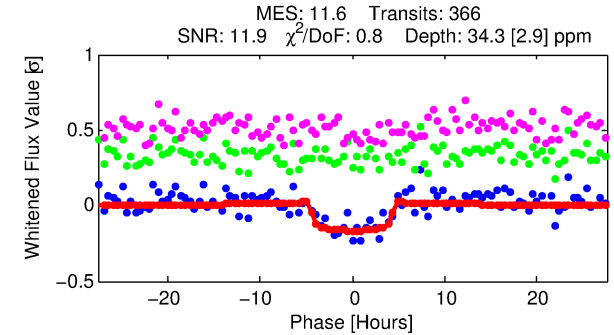
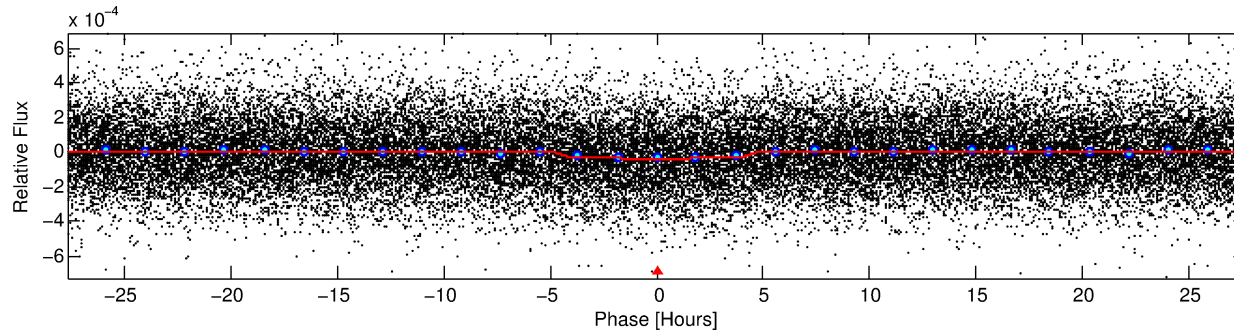
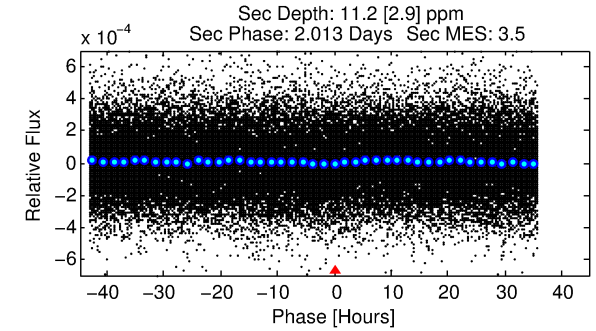
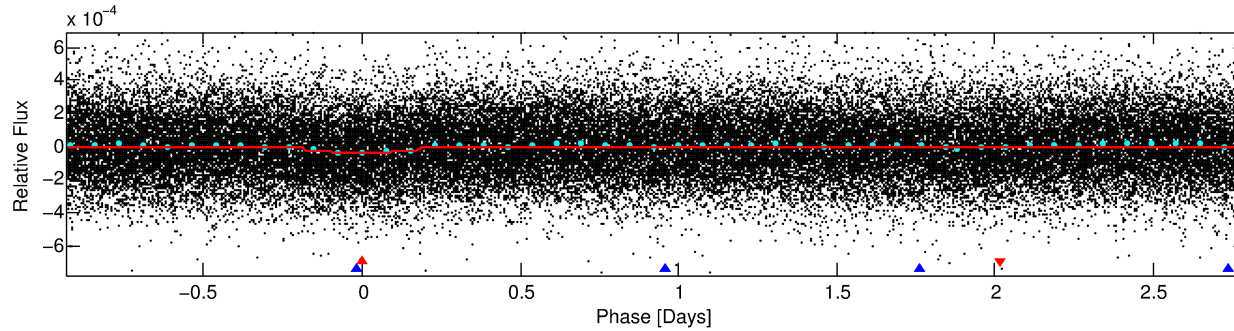
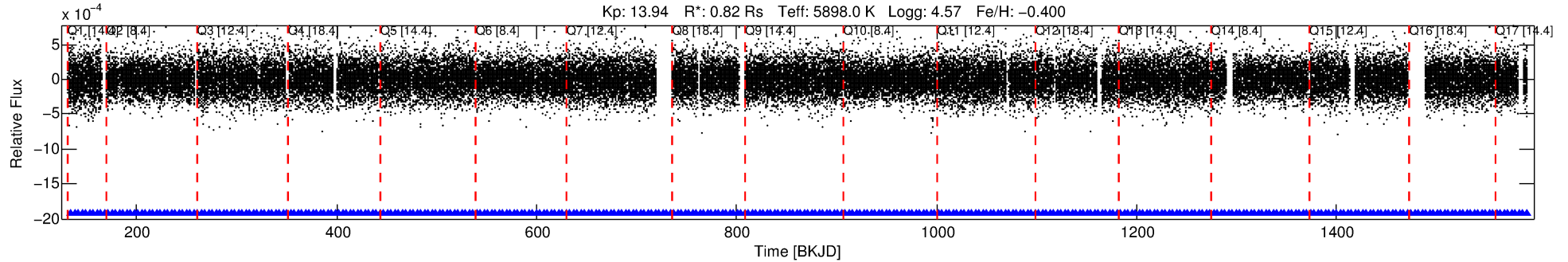
Ephemeris Match Information For 006205384-01

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
006205384-01	6205384	006205460-pri	6205460	1:1	87.6	22	-2	12.75	13.95	18318.00	Direct-PRF	0	1.29	0.35

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: 6205384 Candidate: 1 of 2 Period: 3.723 d
KOI: K05250.01 Corr: 0.960



DV Fit Results:

Period = 3.72292 [0.00005] d
Epoch = 134.6159 [0.0084] BKJD
Rp/R* = 0.0064 [0.0015]
a/R* = 1.64 [1.26]
b = 0.91 [0.24]
Seff = 352.15 [57.44]
Teq = 1105 [45] K
Rp = 0.57 [0.15] Re
a = 0.0454 [0.0046] AU
Ag = 39.33 [21.80] [1.76σ]
Teffp = 4277 [572] K [5.53σ]

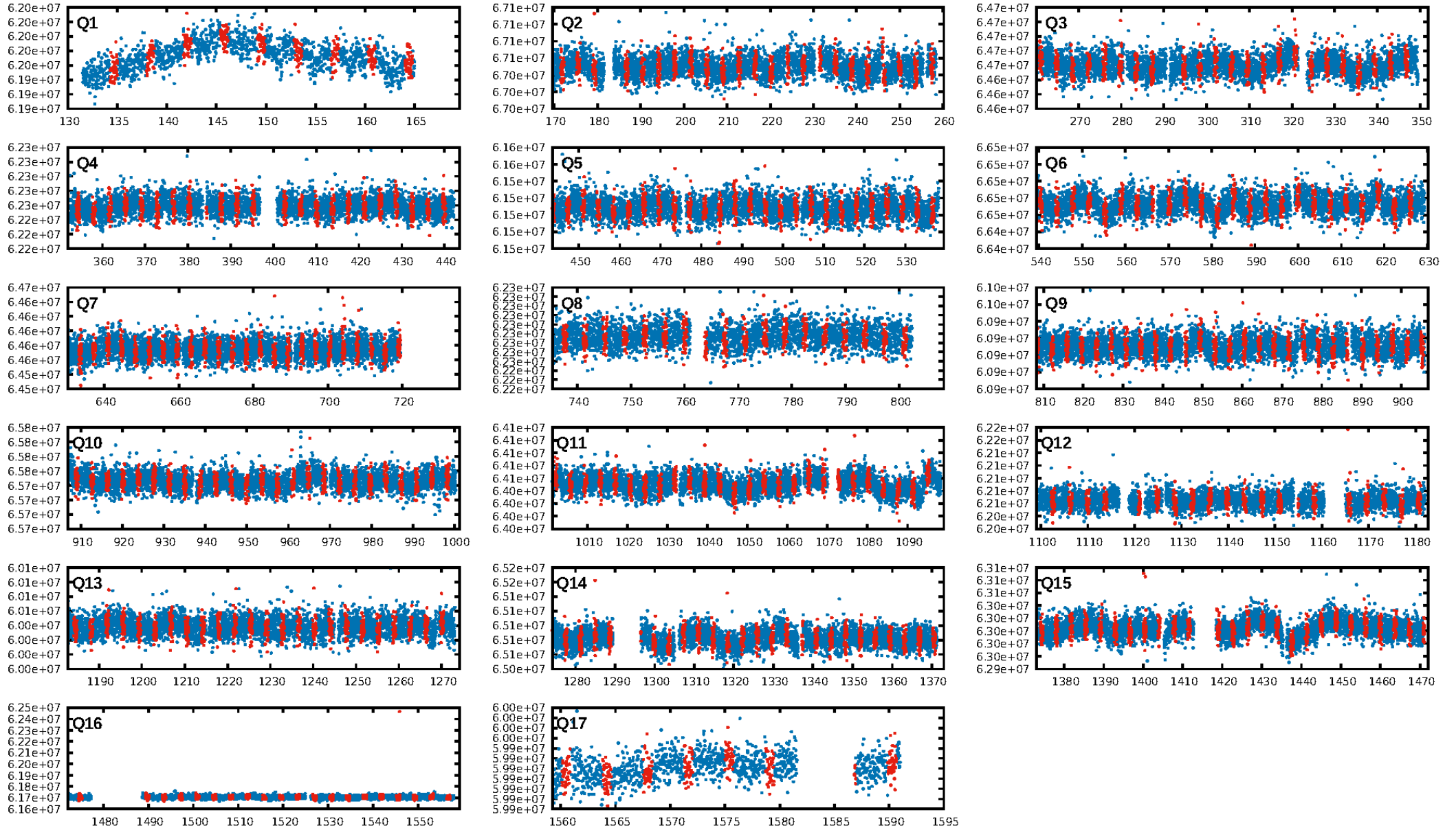
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [408.92σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.12e-29
RollingBand-fgt: 1.00 [350/350]
GhostDiagnostic-chr: -0.04908
Centroid-sig: 0.0%
Centroid-so: 4.766 arcsec [4.09σ]
OotOffset-rm: 3.528 arcsec [4.33σ]
KicOffset-rm: 3.633 arcsec [4.49σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.06 [1/17]
DiffImageOverlap-fno: 1.00 [17/17]

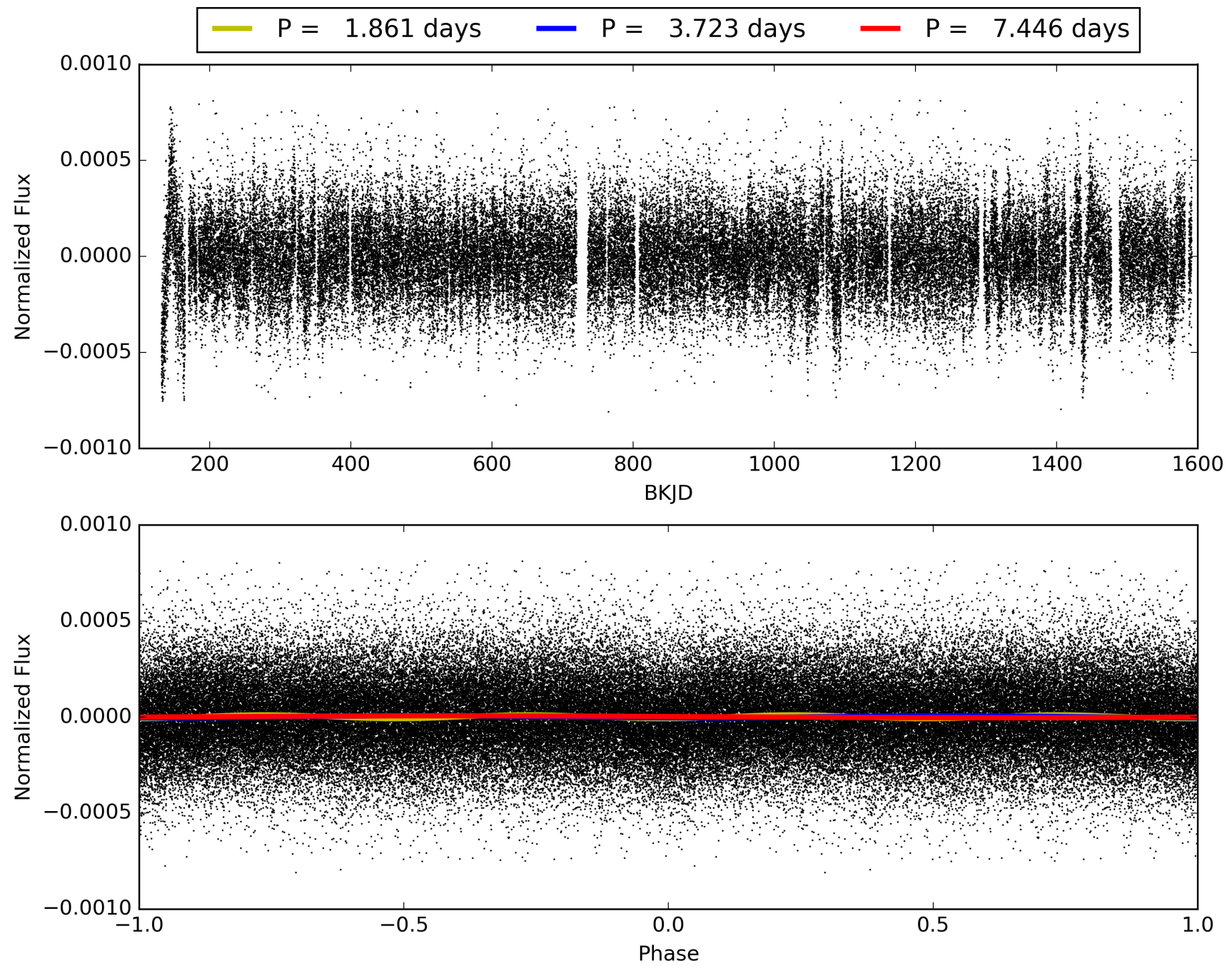
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:04:17 Z

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

TCE 006205384-01, PDC Light Curves

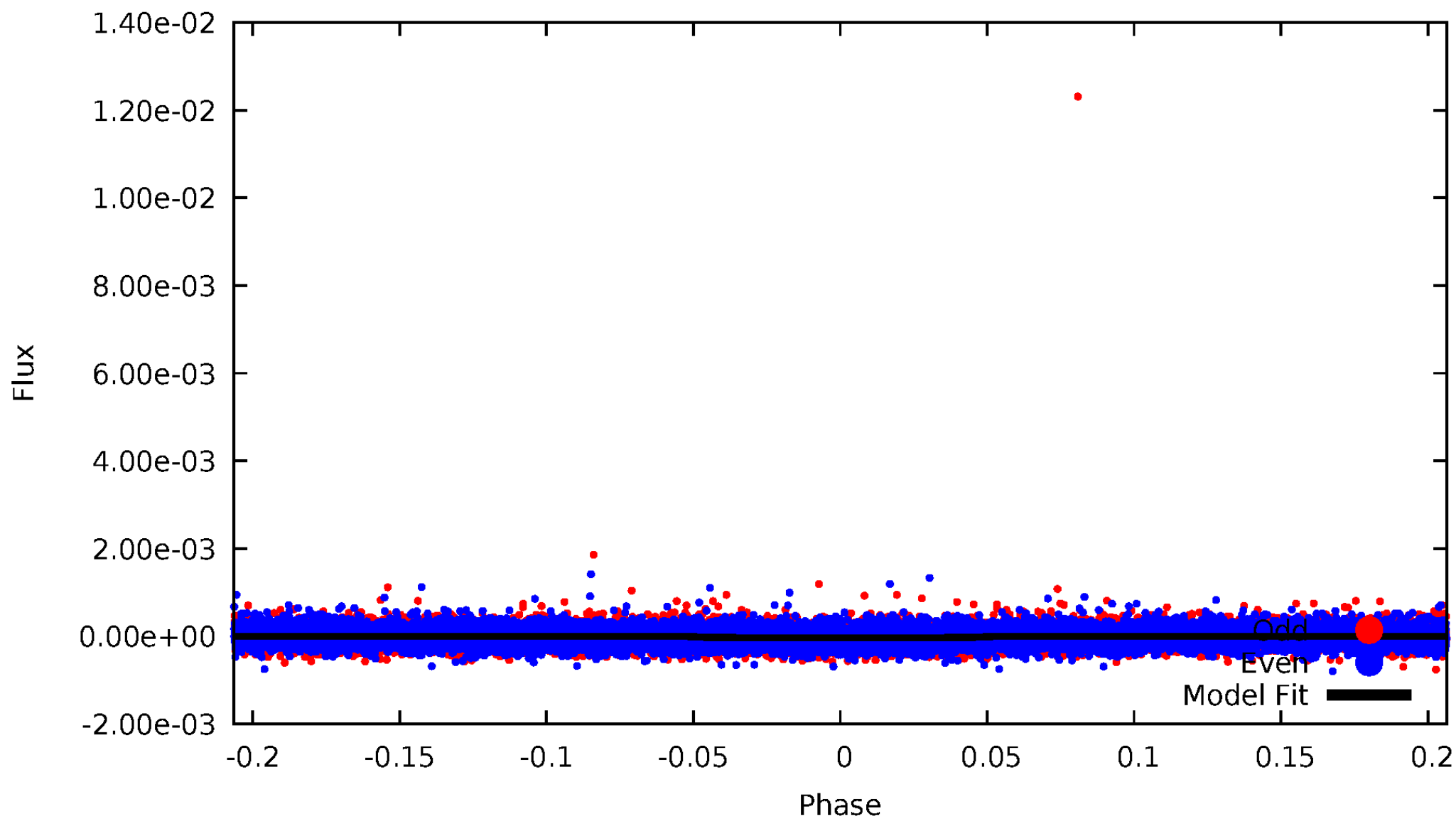


TCE 006205384-01



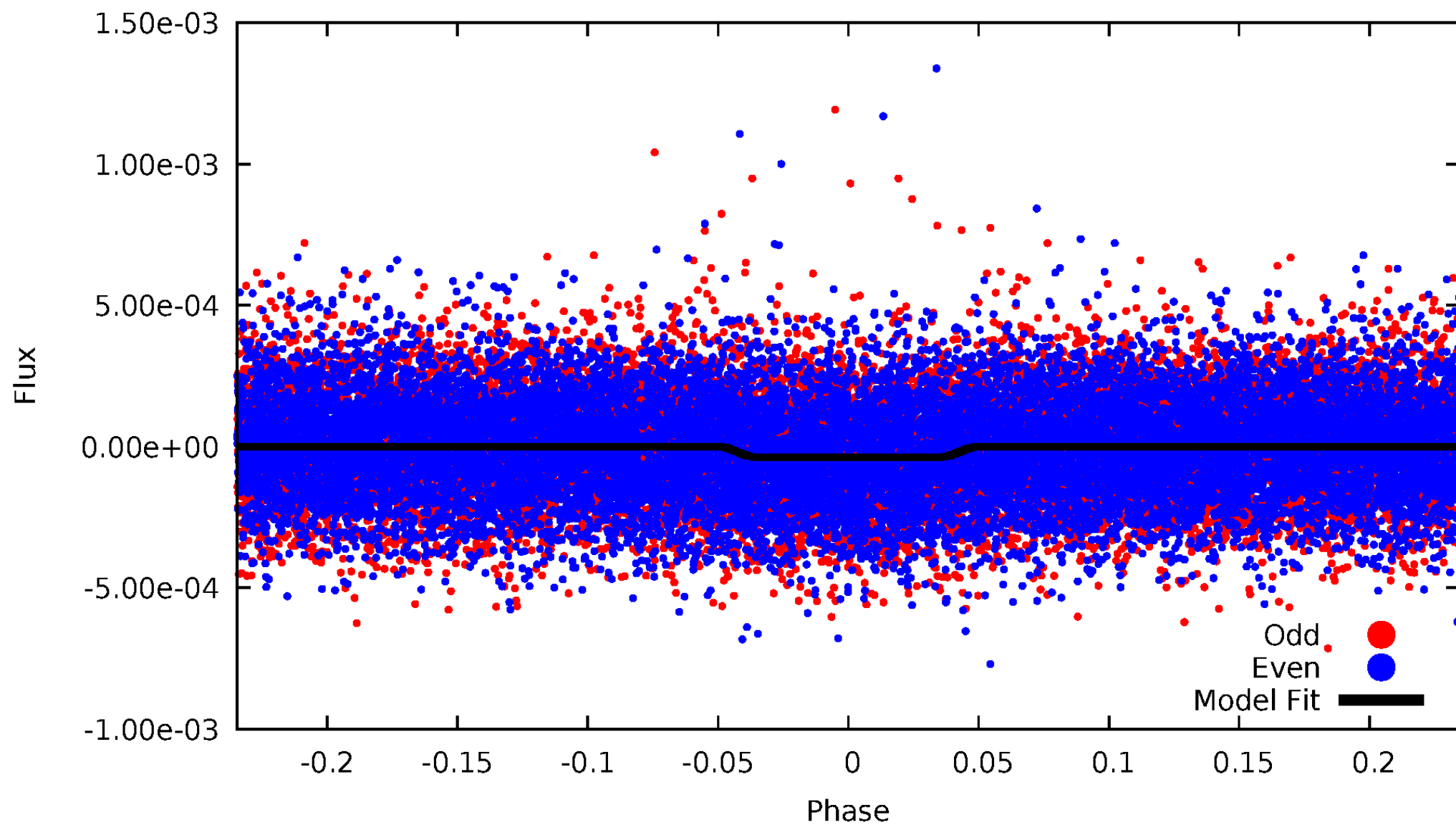
DV Odd/Even

TCE 006205384-01



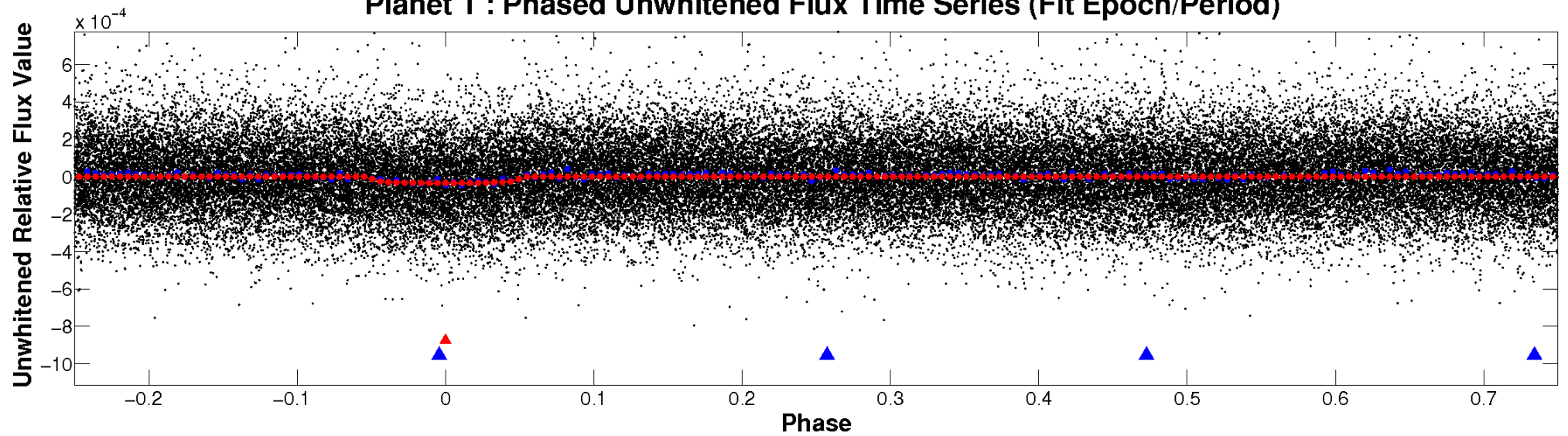
ALT Odd/Even

TCE 006205384-01

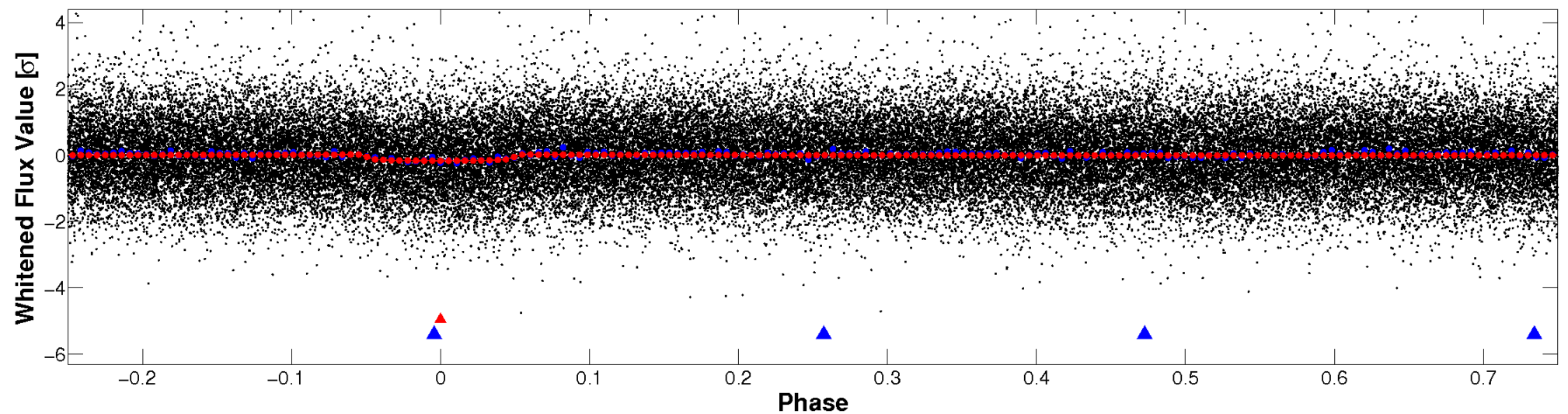


Non-Whitened Vs. Whitened Light Curve

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

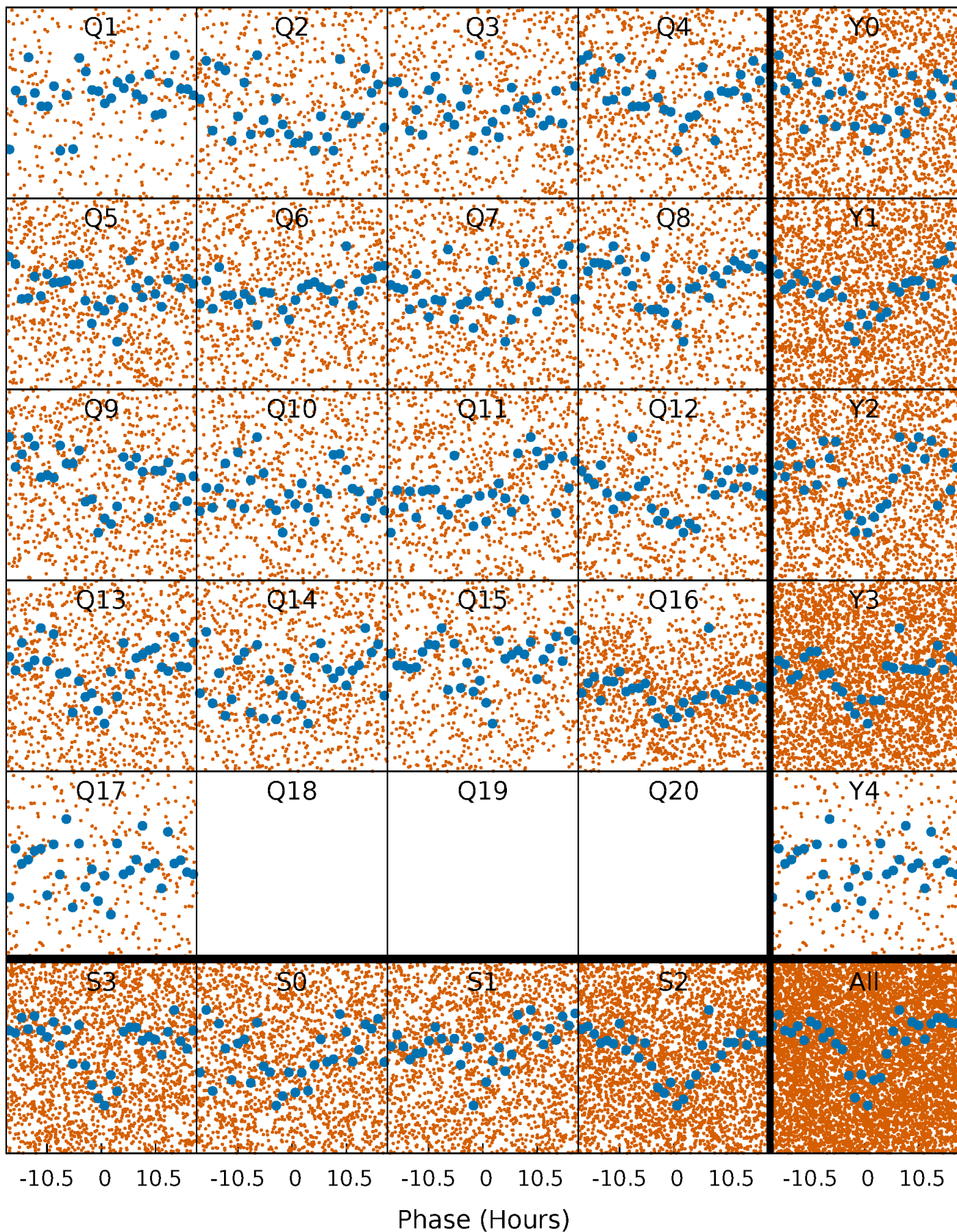


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



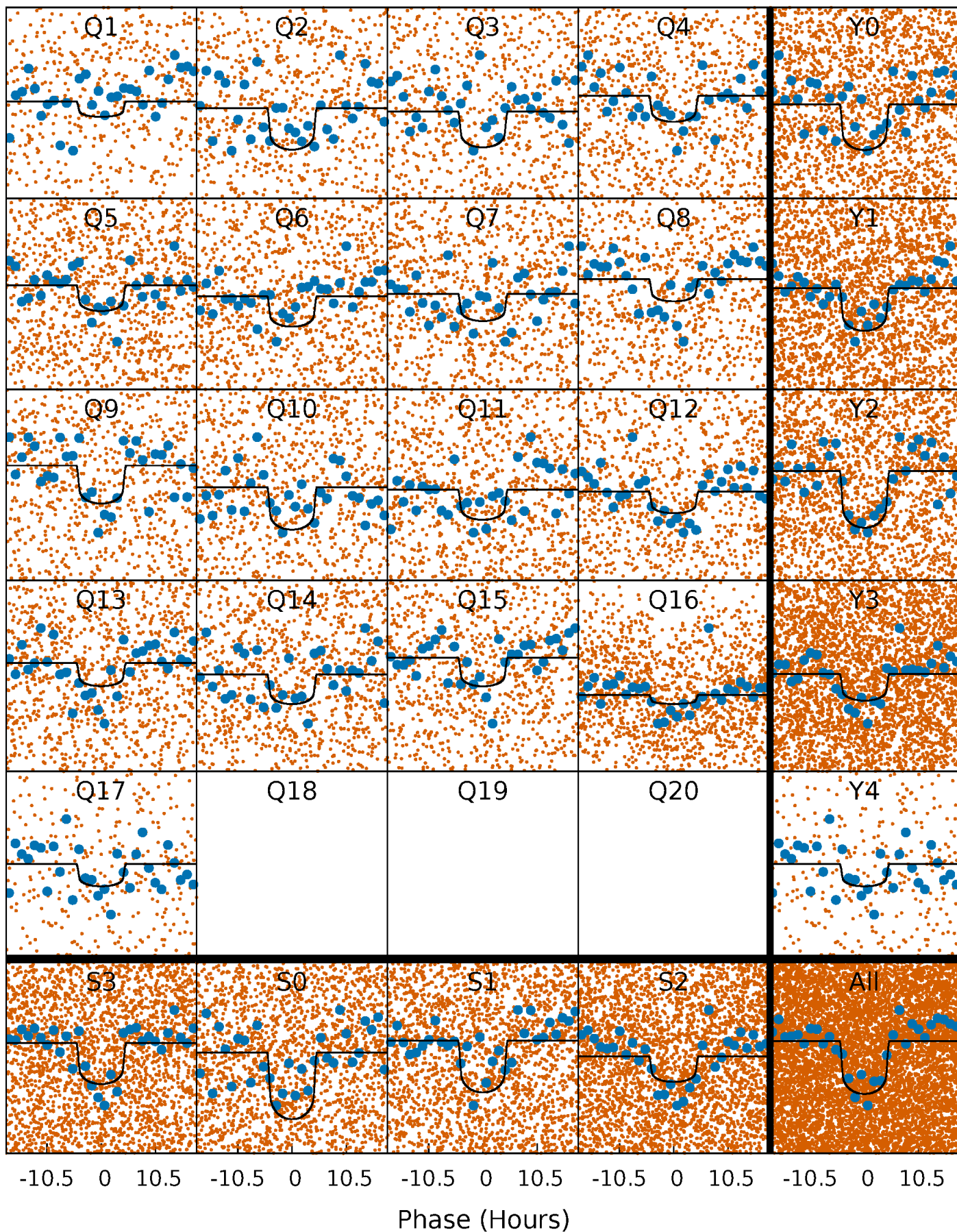
PDC Quarter-Phased Transit Curves

TCE 006205384-01 P= 3.722918 Days $T_0=134.615892$ (BKJD)



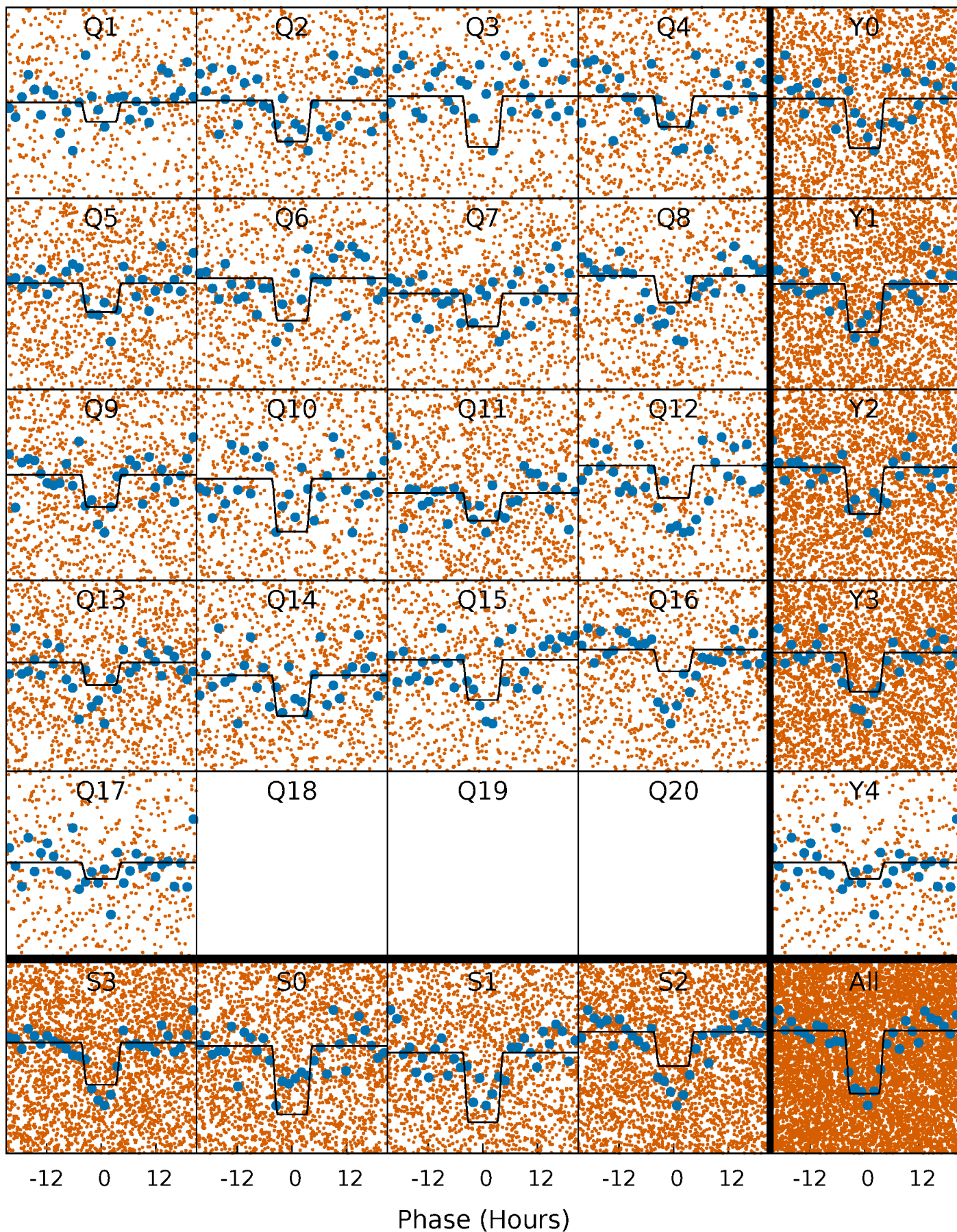
DV Quarter-Phased Transit Curves

TCE 006205384-01 P= 3.722918 Days $T_0=134.615892$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

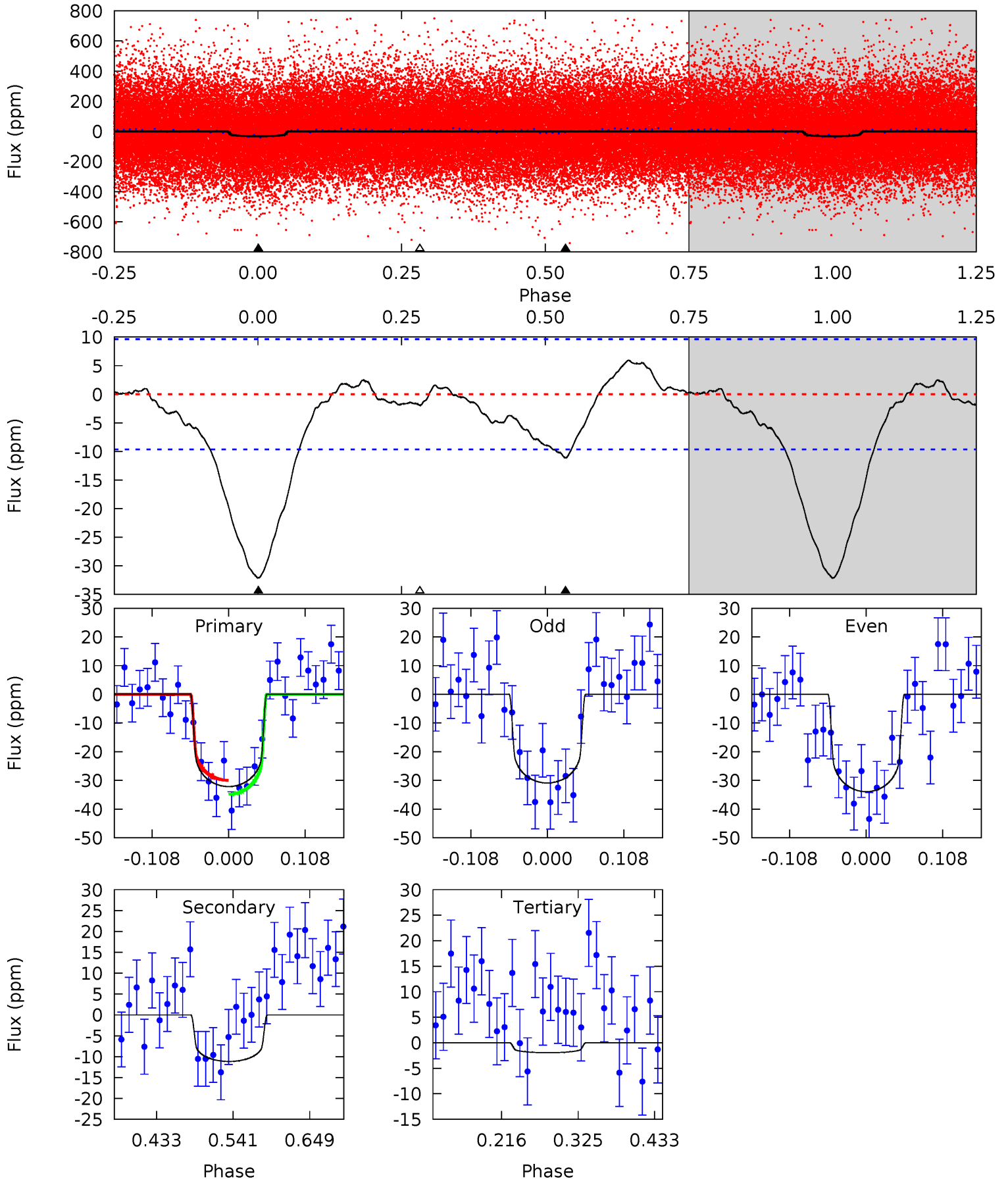
TCE 006205384-01 P= 3.722783 Days $T_0=134.648879$ (BKJD)



DV Model-Shift Uniqueness Test

006205384-01, P = 3.722918 Days, E = 130.892974 Days

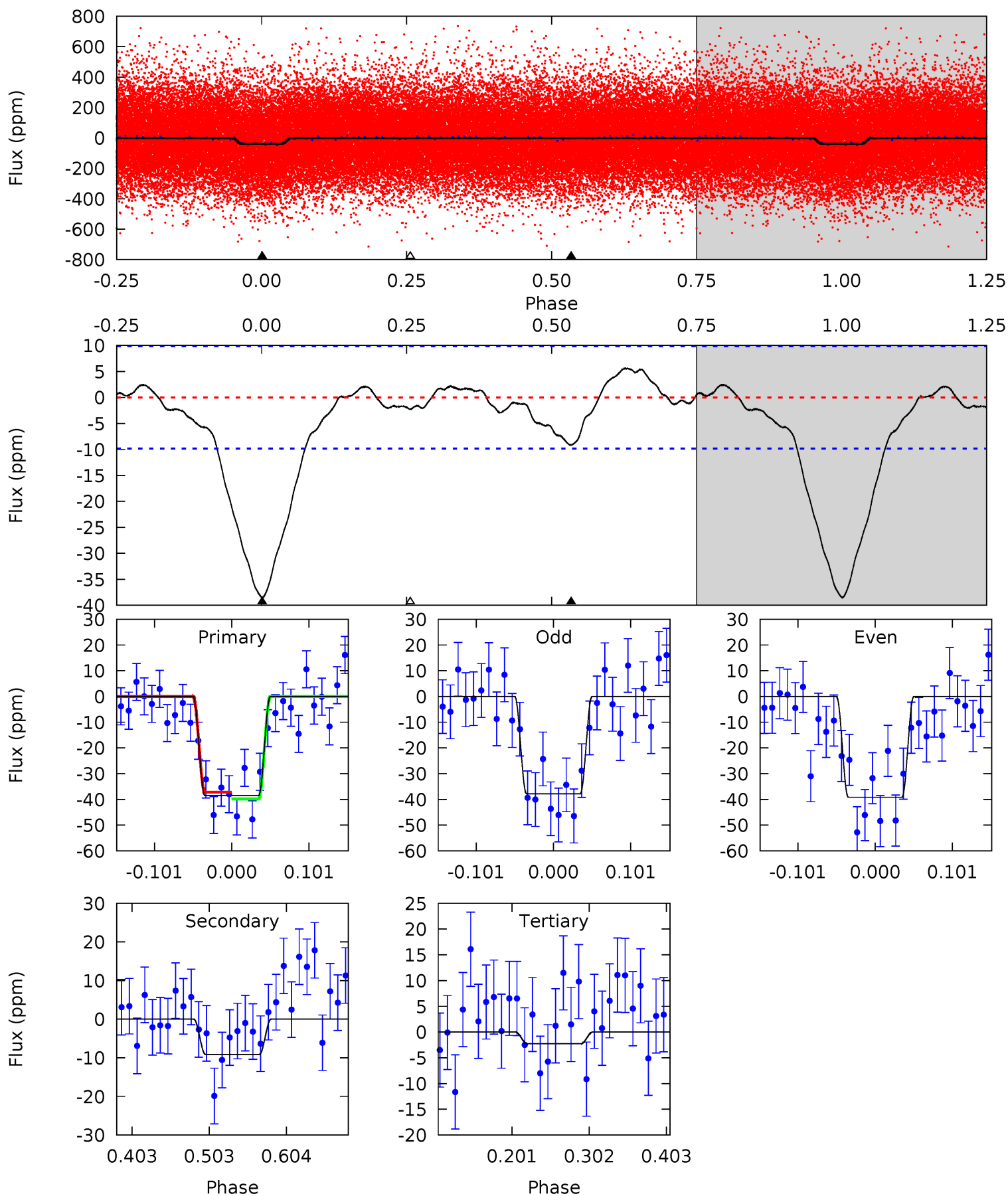
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.2	5.25	0.92	0	4.55	1.61	1.20	14.2	15.2	4.34	5.25	0.71	1.09	0.16	1.14



Alt Model-Shift Uniqueness Test

006205384-01, P = 3.722783 Days, E = 130.926096 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.8	4.24	1.05	0	4.56	1.64	1.06	16.8	17.8	3.19	4.24	0.32	0.94	0.13	0.61



Stellar Parameters For KIC 006205384

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5898^{+79}_{-79}	$4.567^{+0.022}_{-0.088}$	$-0.400^{+0.150}_{-0.150}$	$0.819^{+0.091}_{-0.039}$	$0.904^{+0.043}_{-0.064}$	$2.315^{+0.201}_{-0.621}$
	+1%/-1%	+0%/-2%	+37%/-37%	+11%/-5%	+5%/-7%	+9%/-27%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 006205384-01 / KOI 5250.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-11±2	$0.58^{+0.12}_{-0.14}$	1559^{+43}_{-33}	4460^{+589}_{-361}	38^{+29}_{-14}
Alt.	-9±2	$0.56^{+0.14}_{-0.13}$	1559^{+51}_{-31}	4348^{+557}_{-380}	33^{+27}_{-13}

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

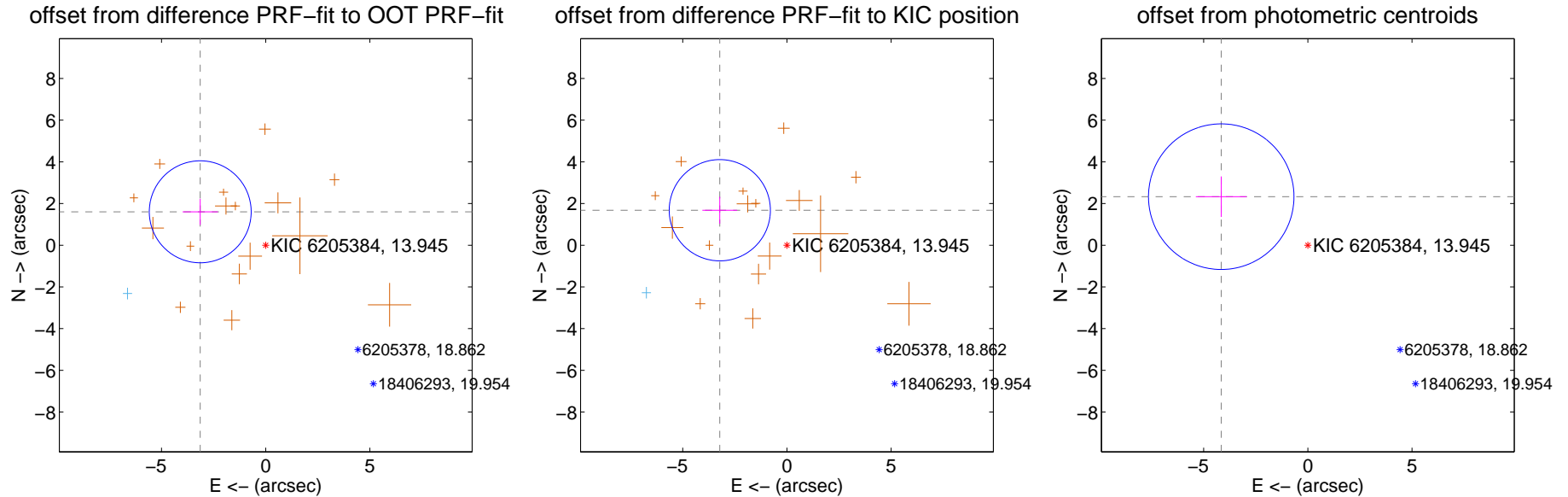
DV Centroid Data

Supplemental centroid analysis for 006205384-01. Kepler magnitude: 13.95. Transit SNR 11.86

There are 1 quarters with good PRF difference image offsets

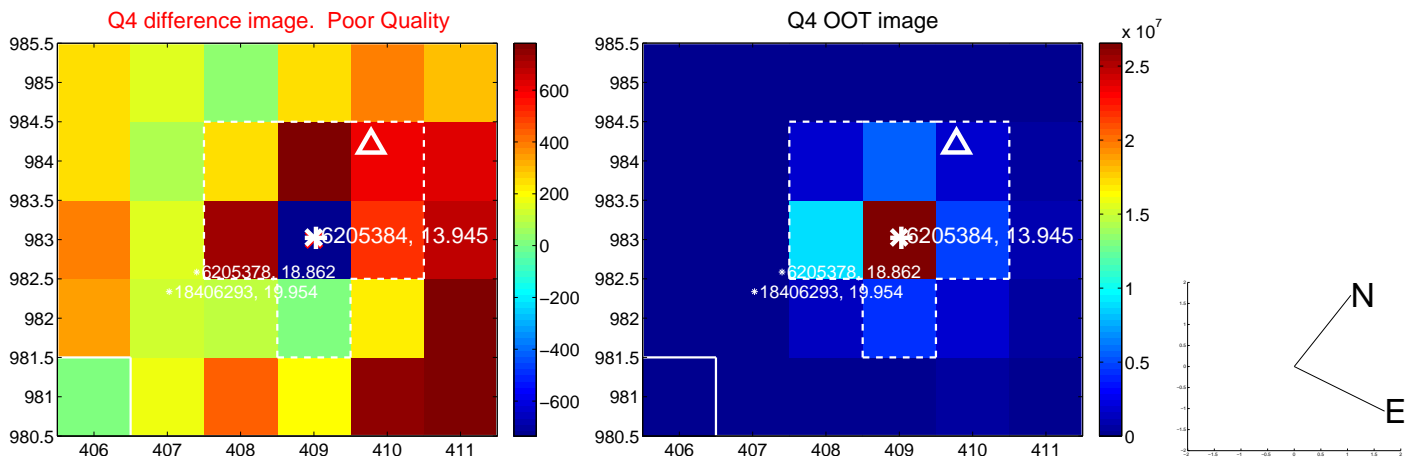
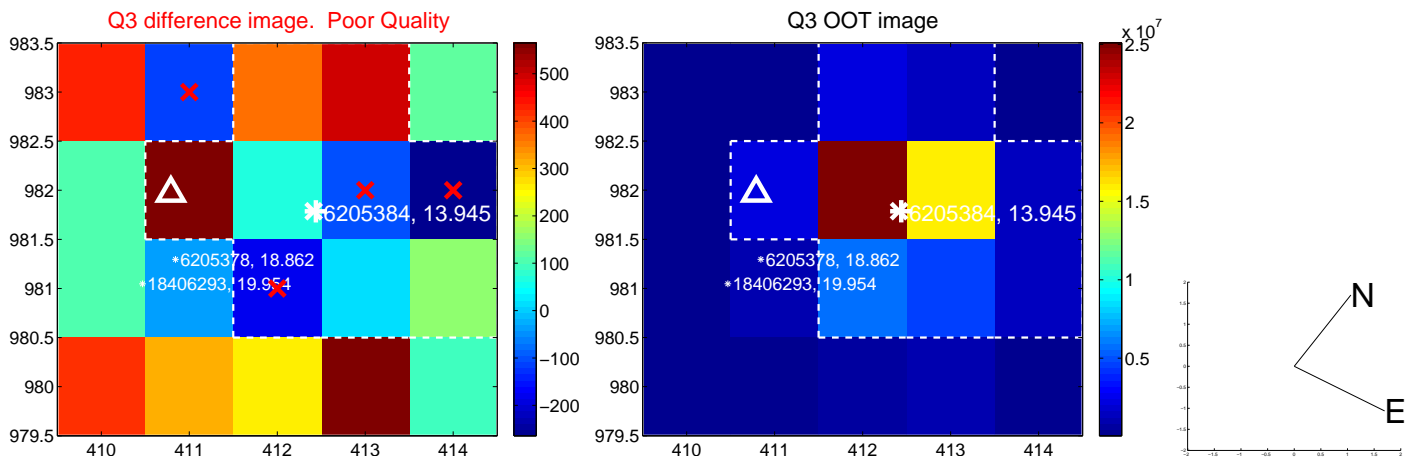
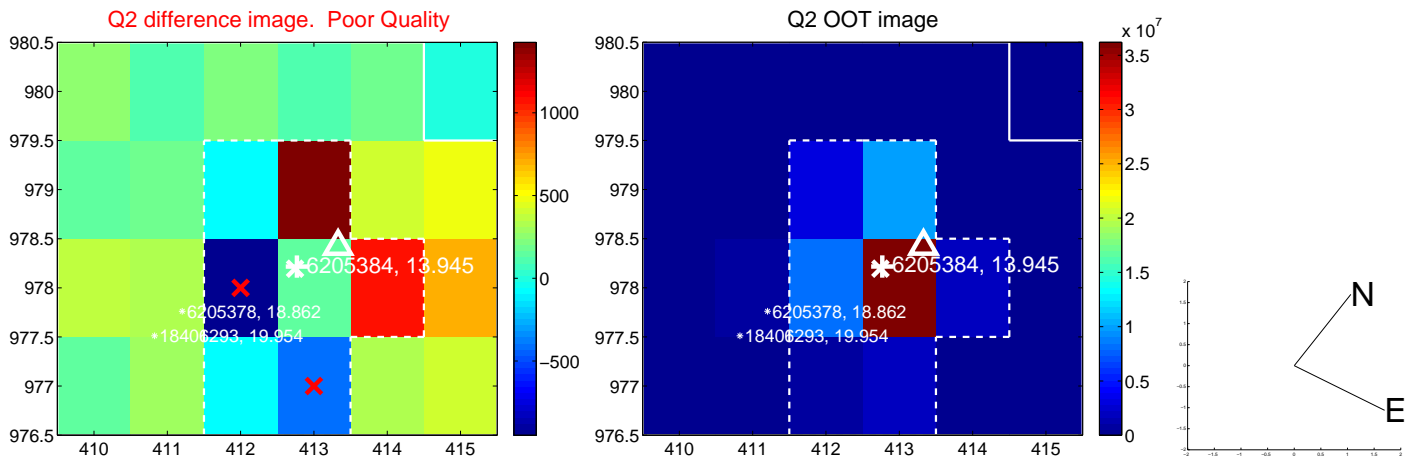
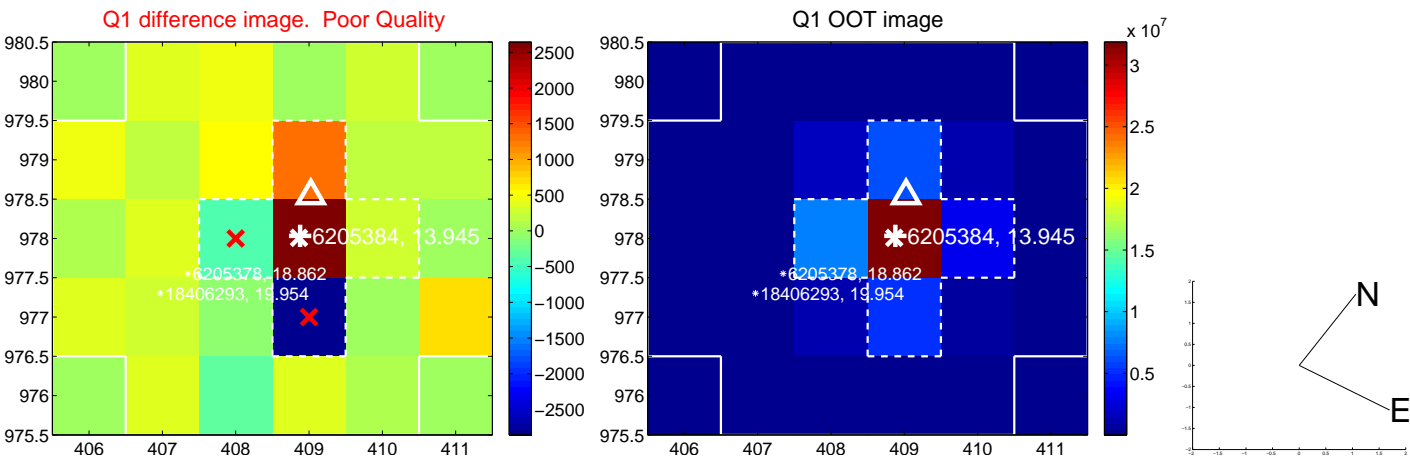
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.528 ± 0.815	4.33	3.143 ± 0.848	1.604 ± 0.625
PRF-fit source offset from KIC position	3.633 ± 0.810	4.49	3.222 ± 0.835	1.678 ± 0.647
photometric centroid source offset	4.77 ± 1.16	4.09	4.16 ± 1.22	2.33 ± 0.97

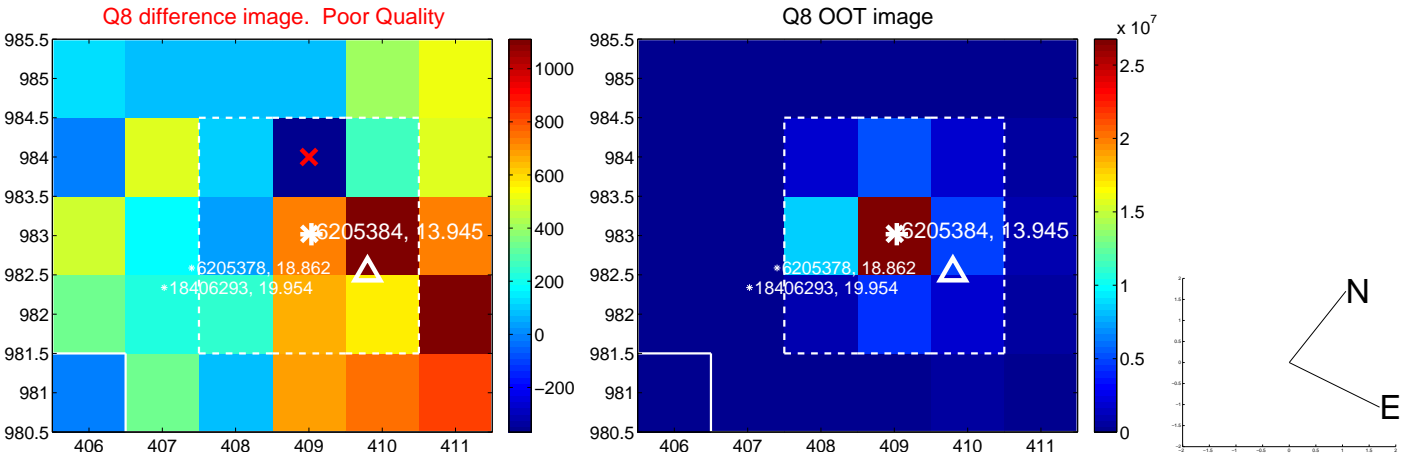
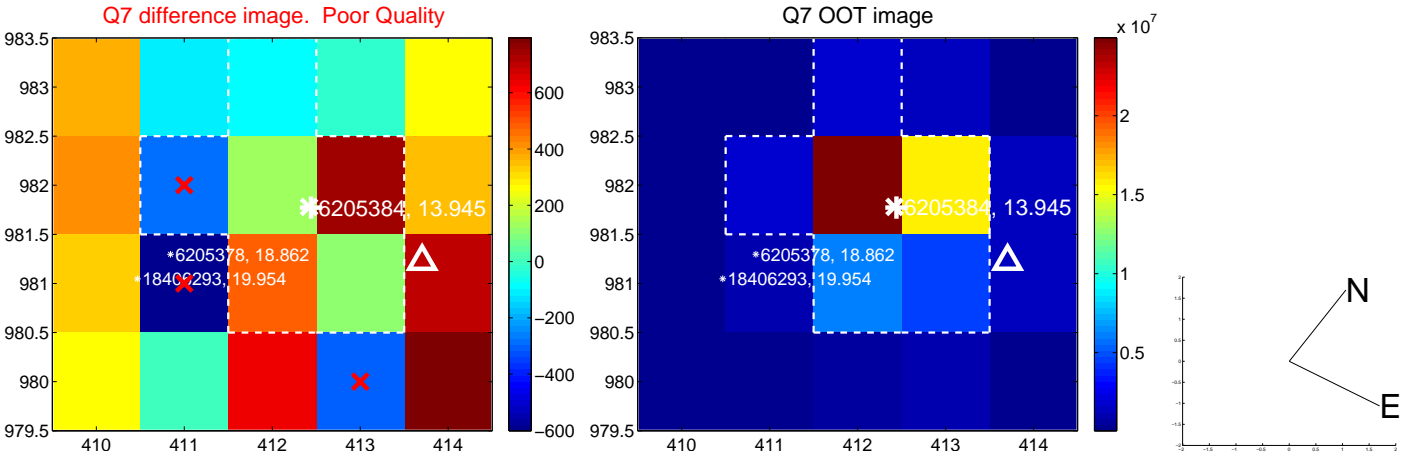
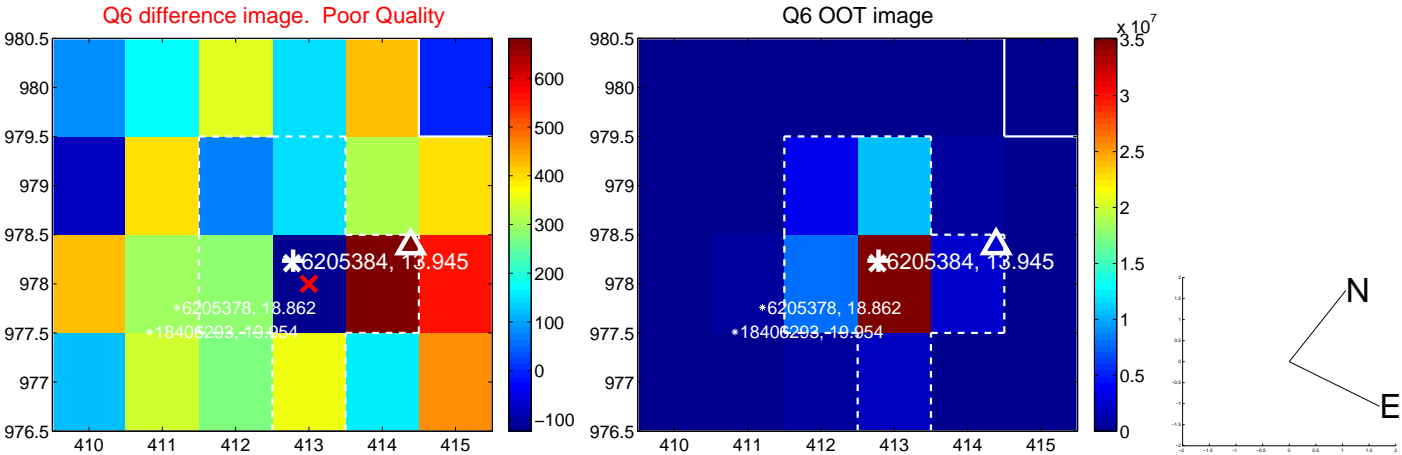
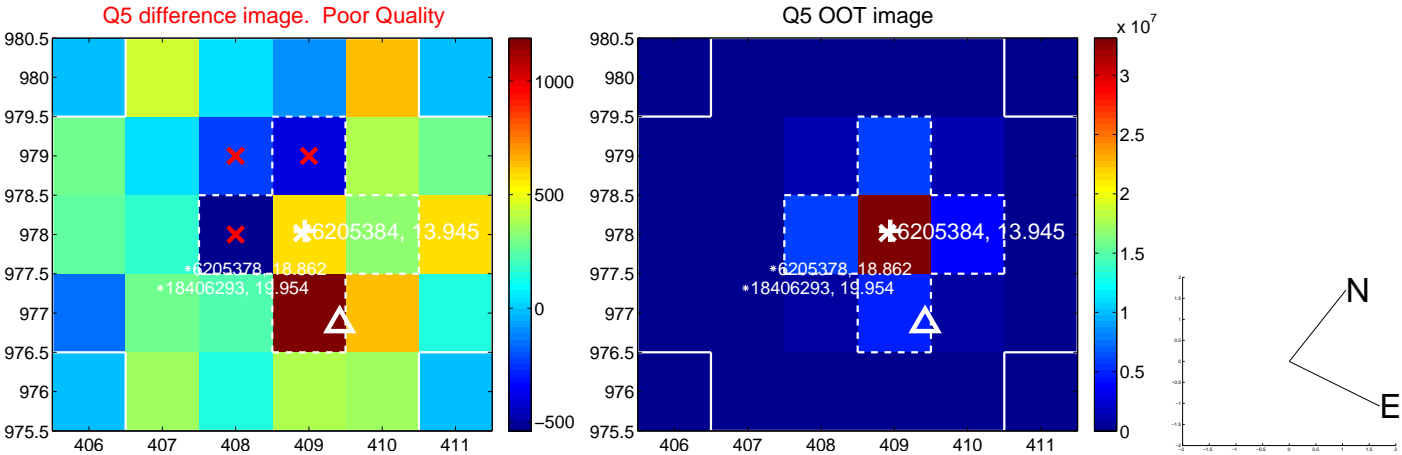


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

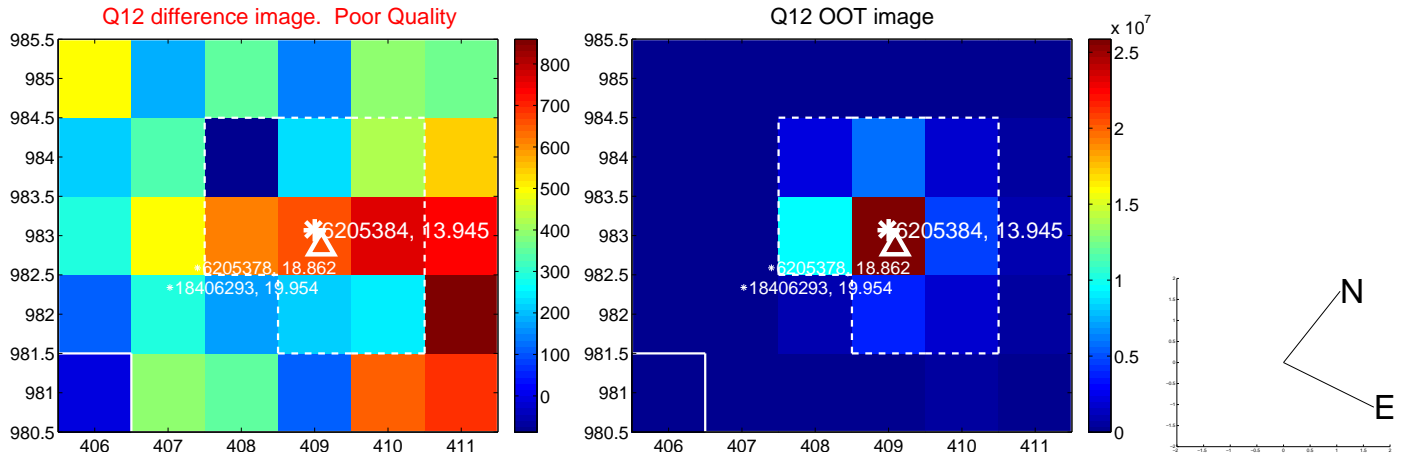
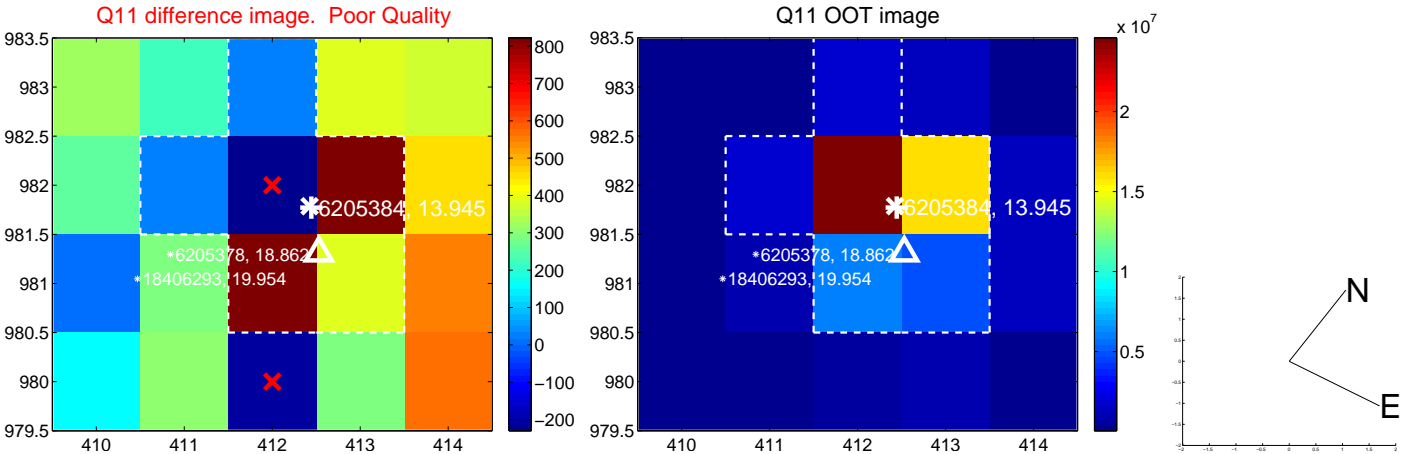
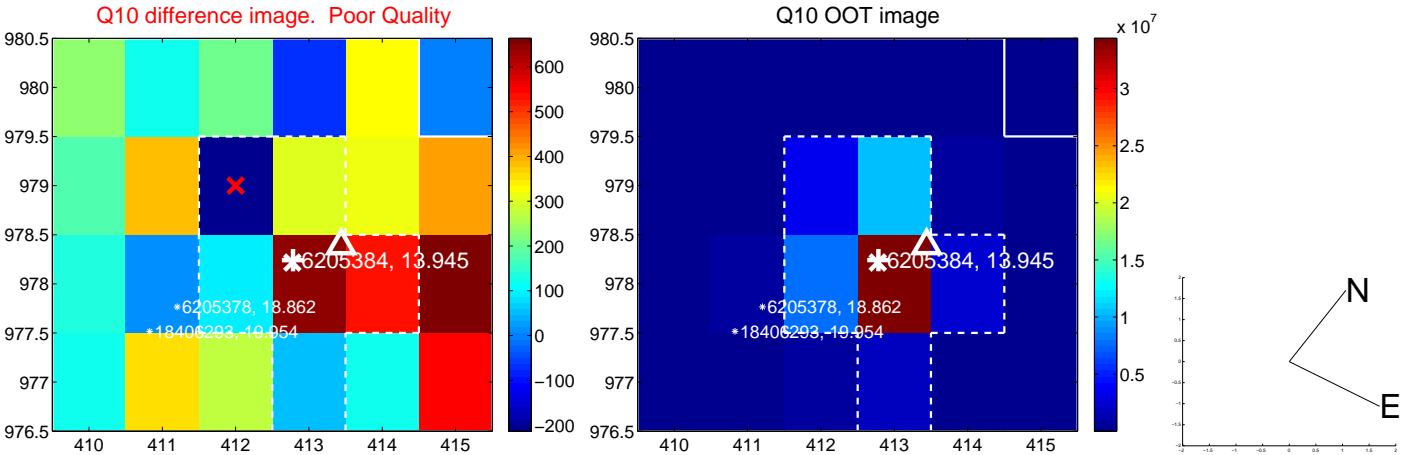
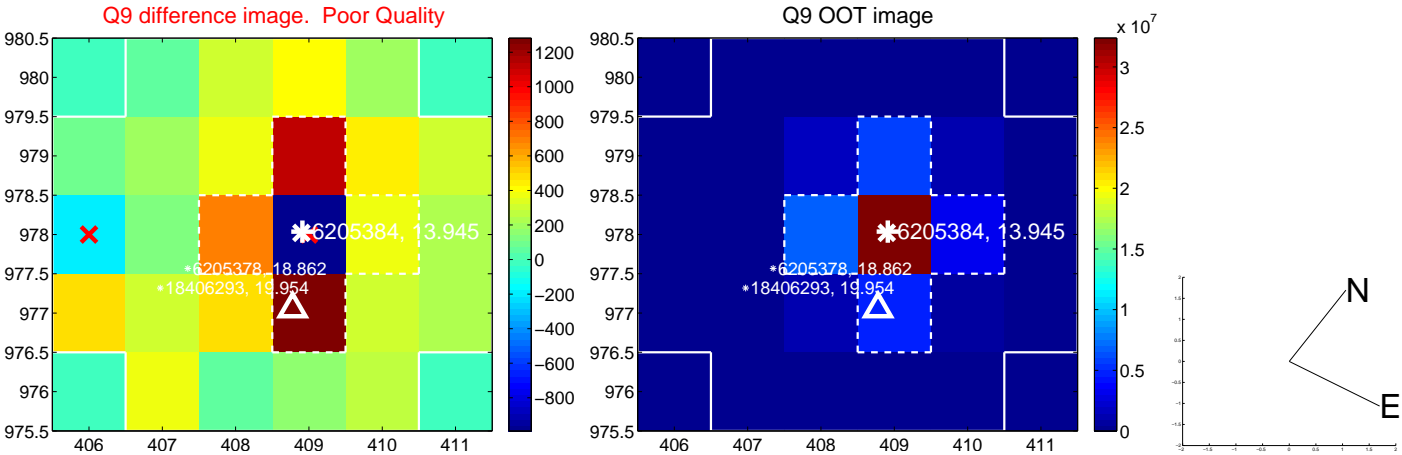
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



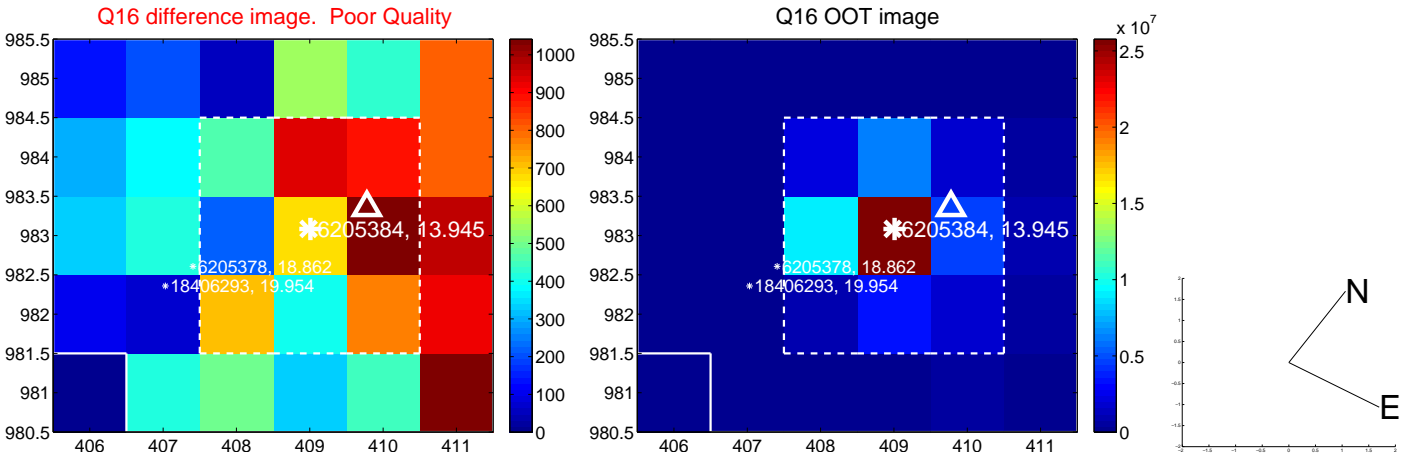
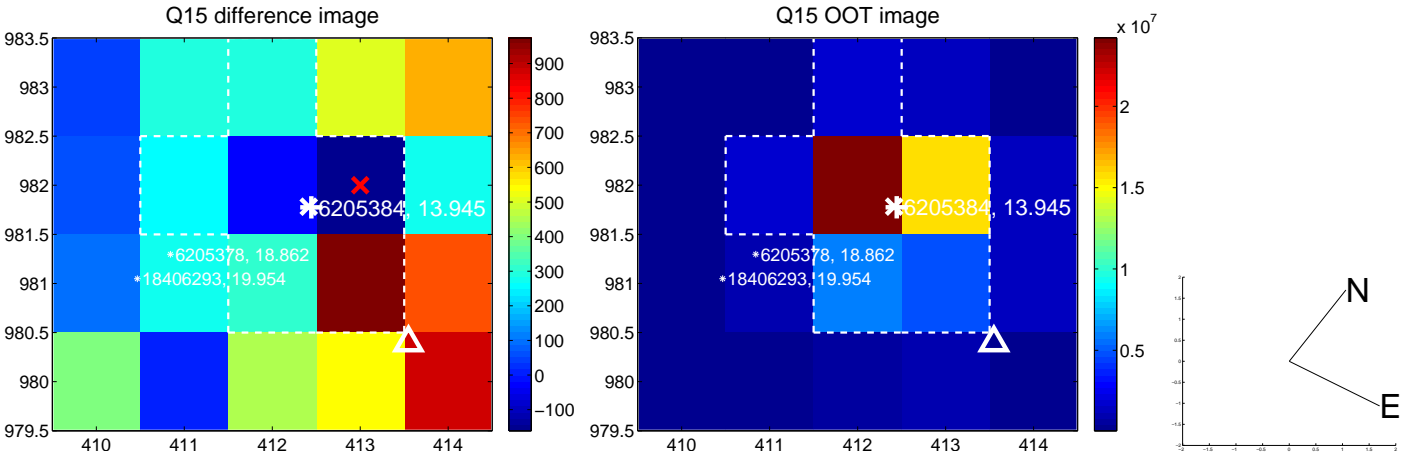
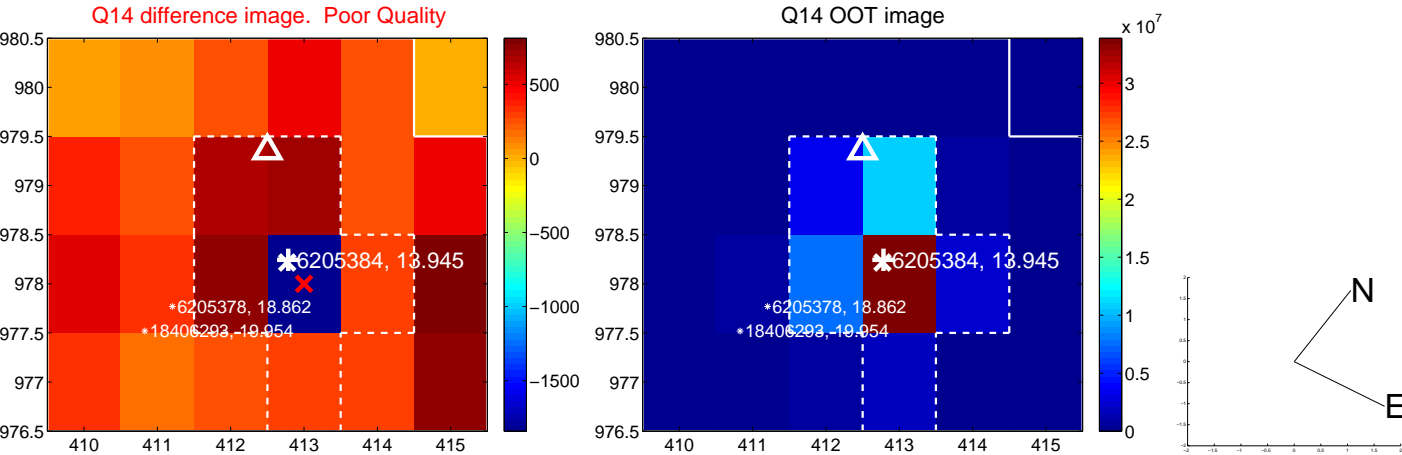
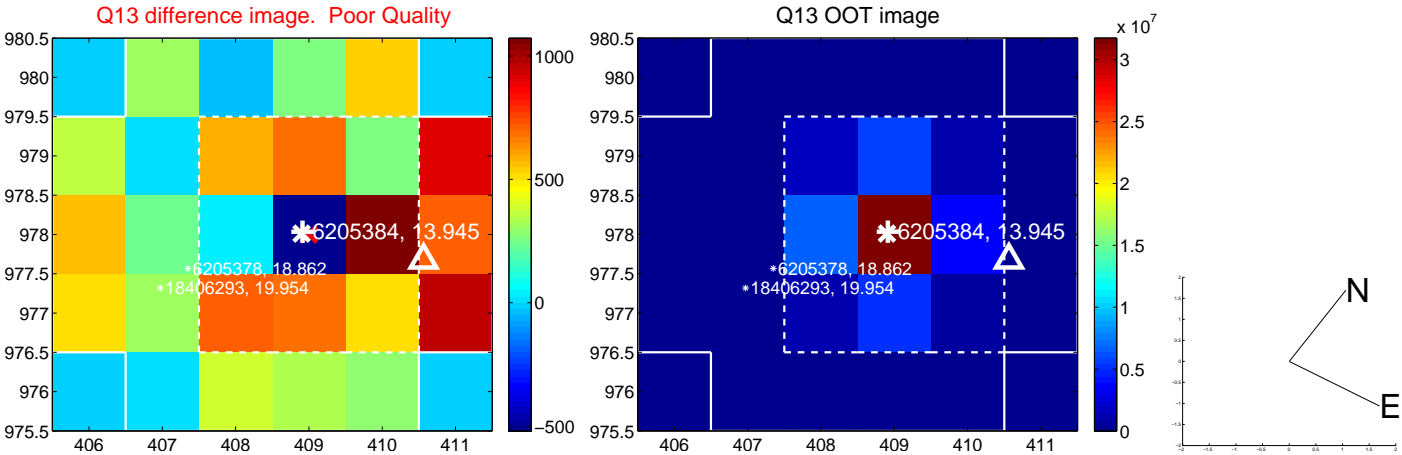
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



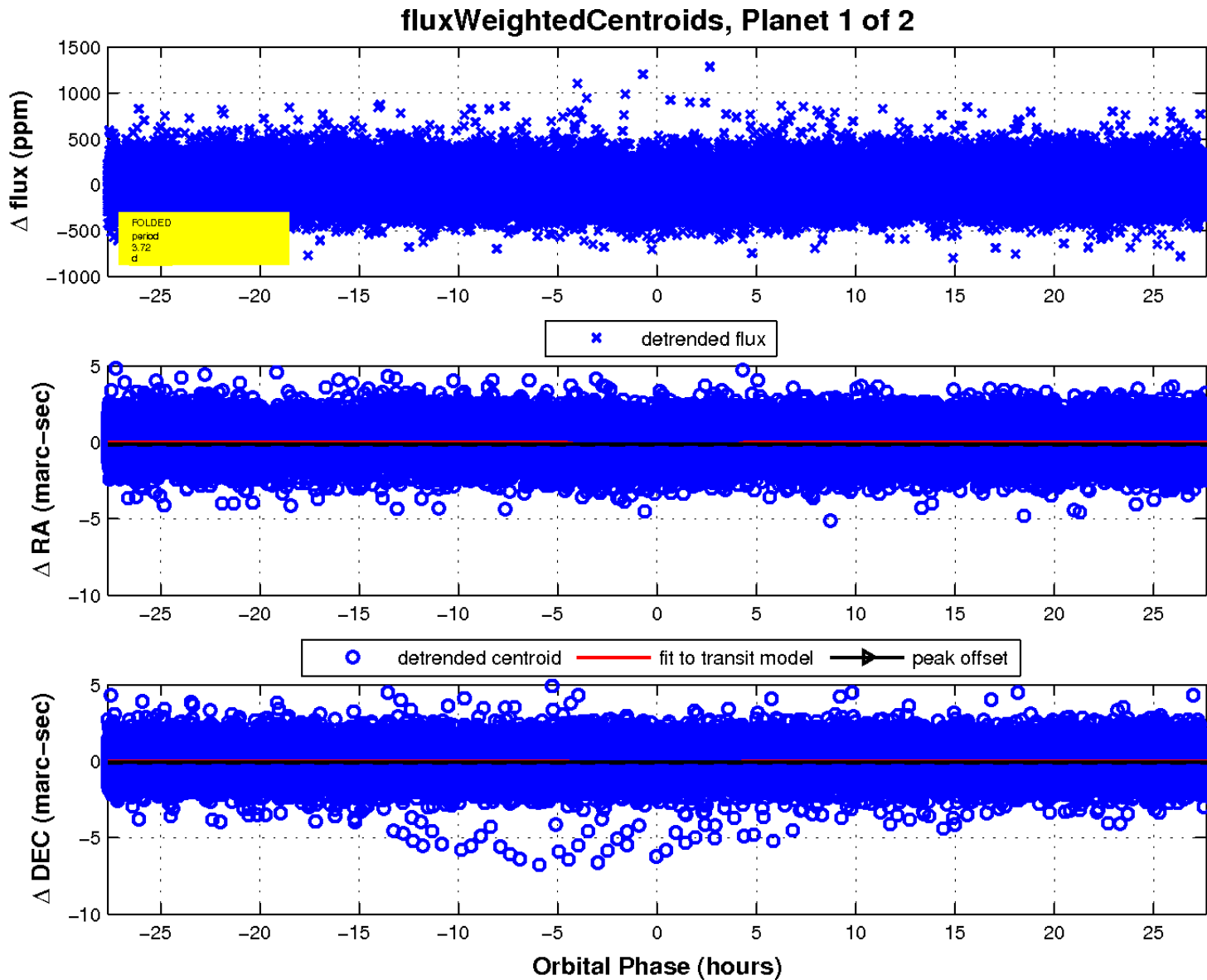
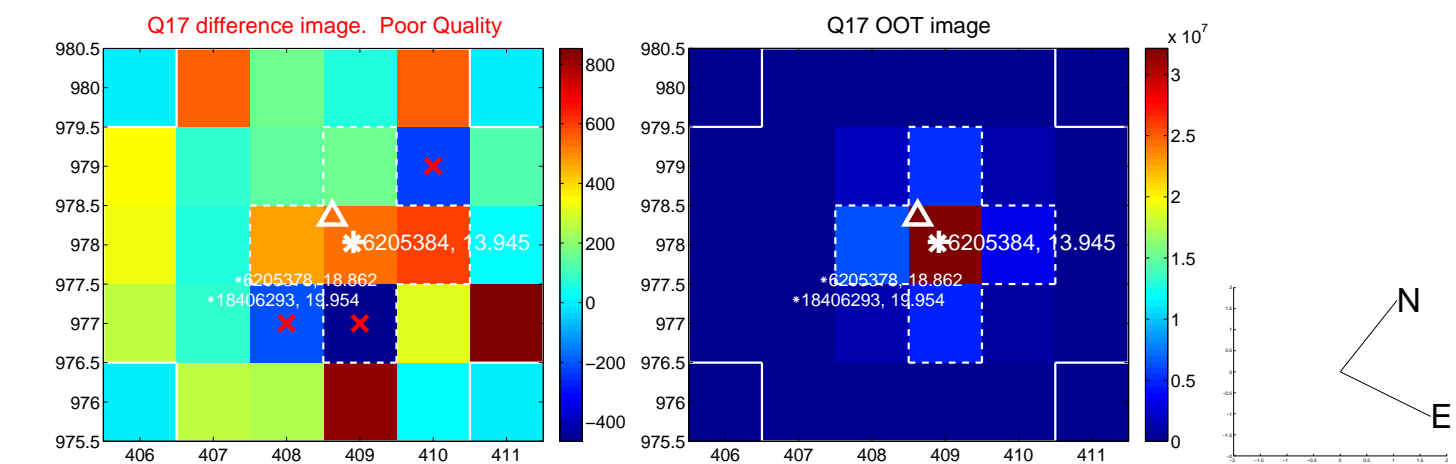
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

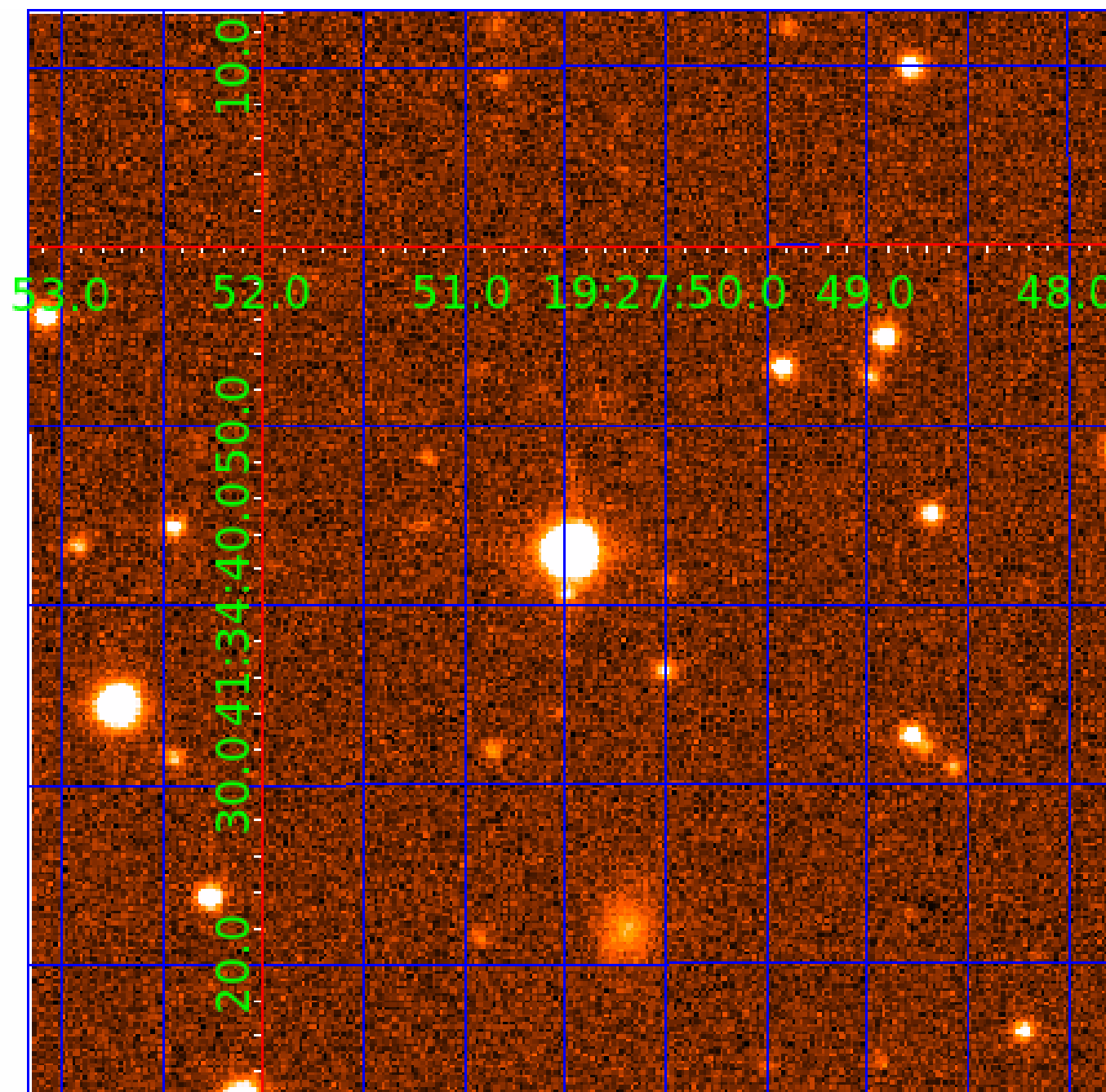


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006205384

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})
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006205384-02	OBS	No	369.542487	158.713182	276.7	19.390	12.2	8.7	0.82	5898	1.56	0.77

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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006205384-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

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

Ephemeris Match Information For 006205384-02

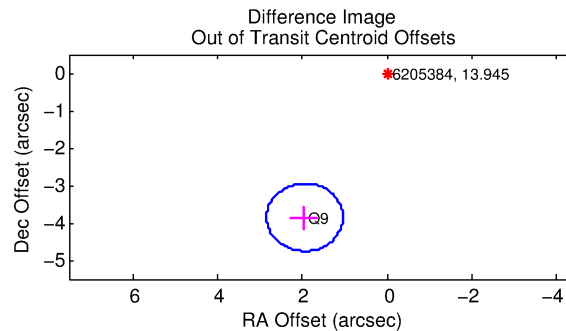
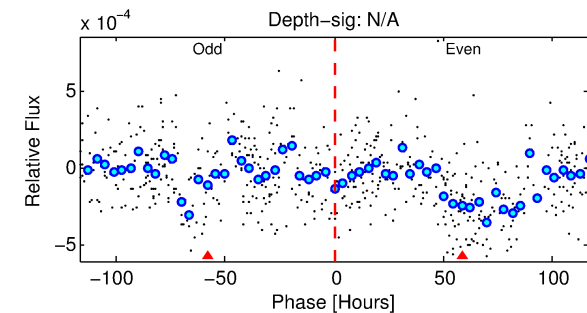
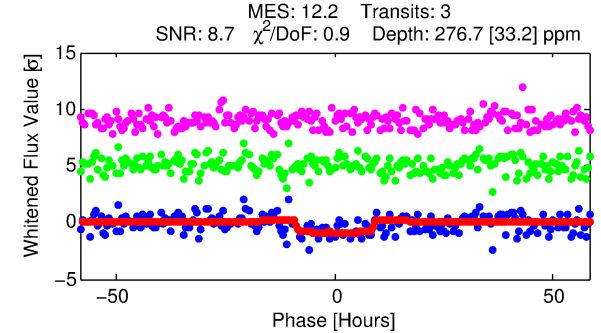
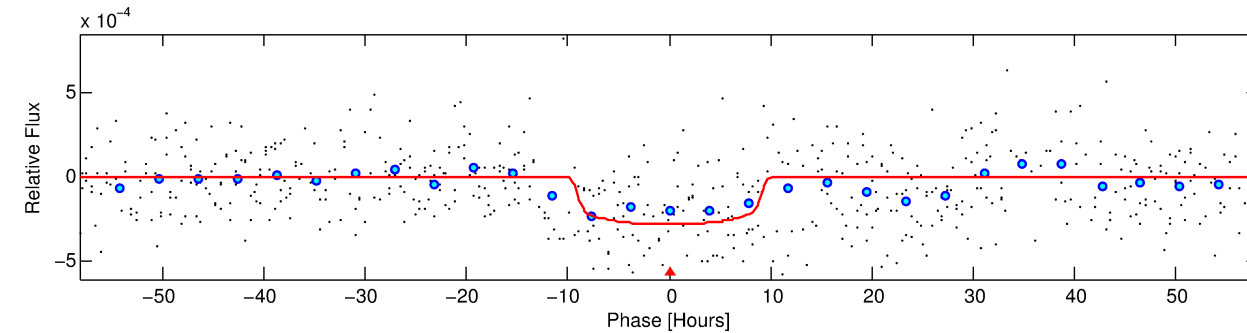
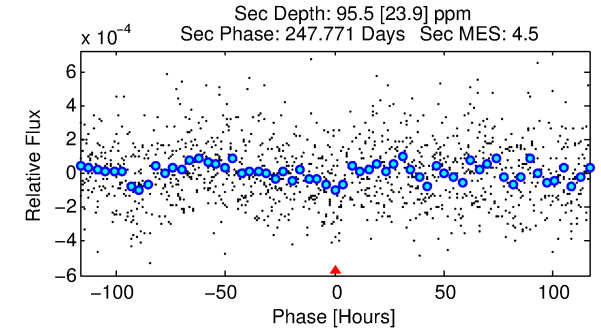
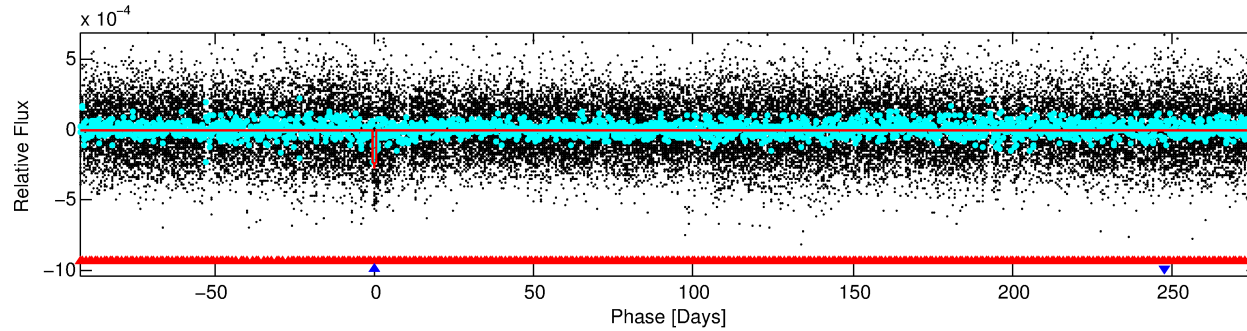
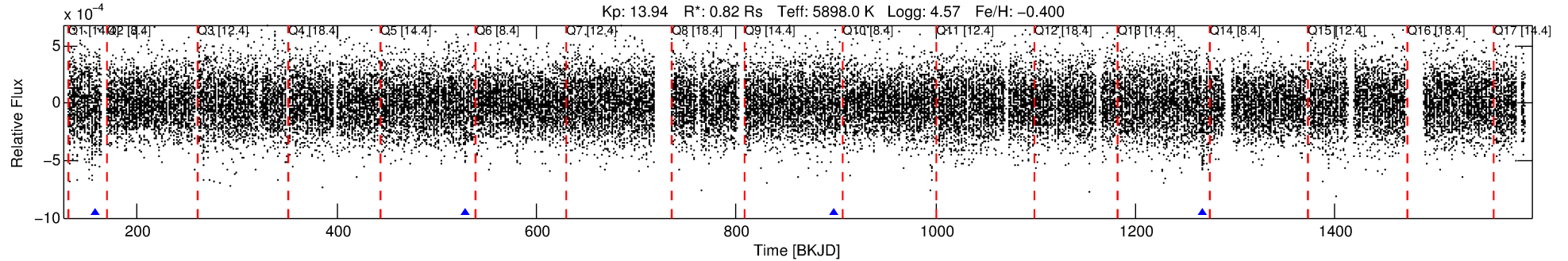
No Significant Match Found

DV One-Page Summary

KIC: 6205384 Candidate: 2 of 2 Period: 369.542 d

KOI: K05250 Corr: No Ephemeris Match

Kp: 13.94 R*: 0.82 Rs Teff: 5898.0 K Logg: 4.57 Fe/H: -0.400



DV Fit Results:

Period = 369.54249 [0.01490] d
Epoch = 158.7132 [0.0233] BKJD
Rp/R* = 0.0174 [0.0026]
a/R* = 78.73 [53.25]
b = 0.86 [0.20]
Seff = 0.77 [0.12]
Teq = 239 [10] K
Rp = 1.56 [0.29] Re
a = 0.9742 [0.0977] AU
Ag = 20515.84 [8573.12] [2.39σ]
Teffp = 4414 [433] K [9.65σ]

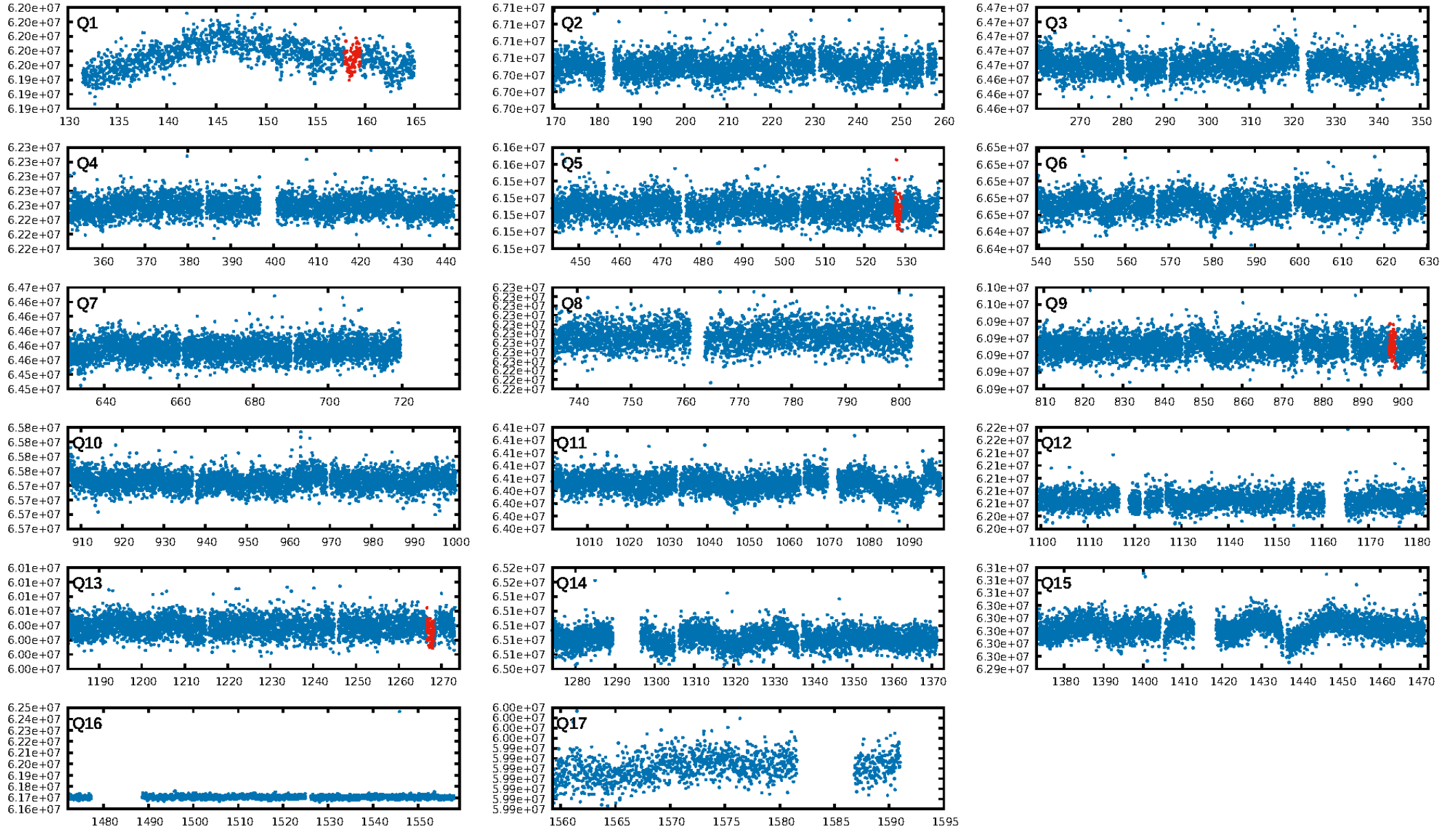
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [408.92σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 9.61e-44
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 0.5344
Centroid-sig: 2.0%
Centroid-so: 2.488 arcsec [1.97σ]
OotOffset-rm: 4.316 arcsec [14.37σ]
KicOffset-rm: 4.240 arcsec [14.11σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 0.33 [1/3]

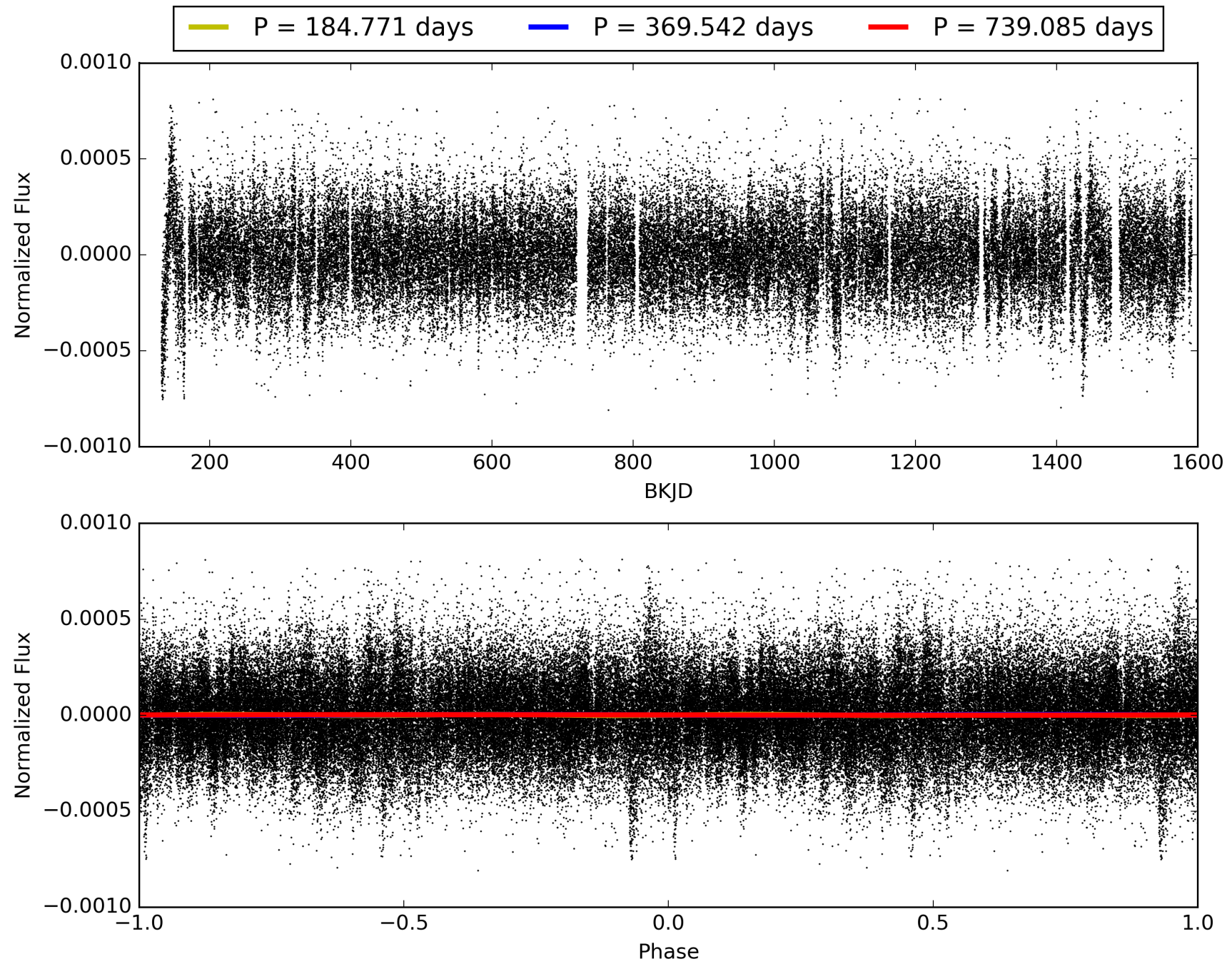
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:04:27 Z

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

TCE 006205384-02, PDC Light Curves

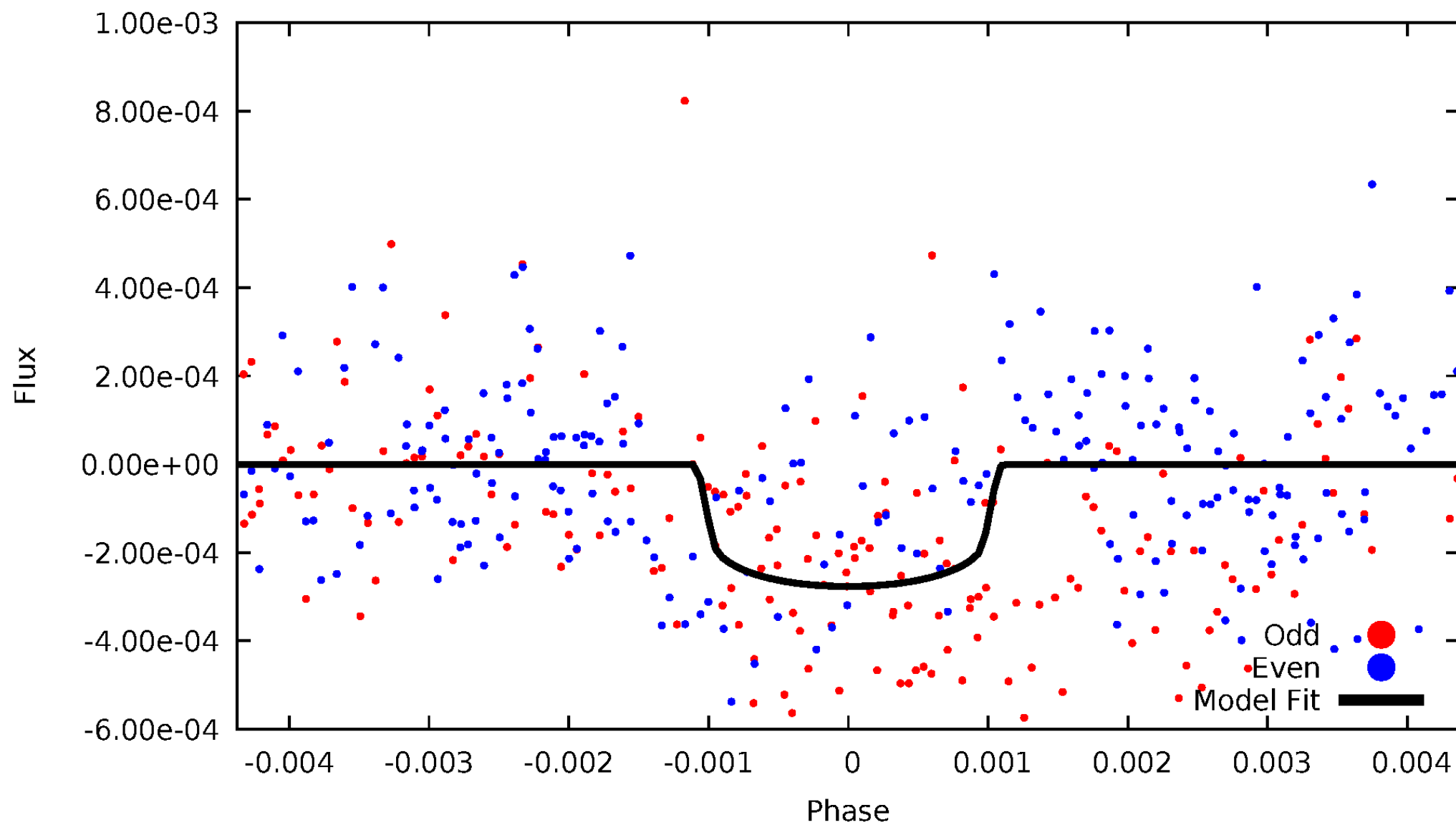


TCE 006205384-02



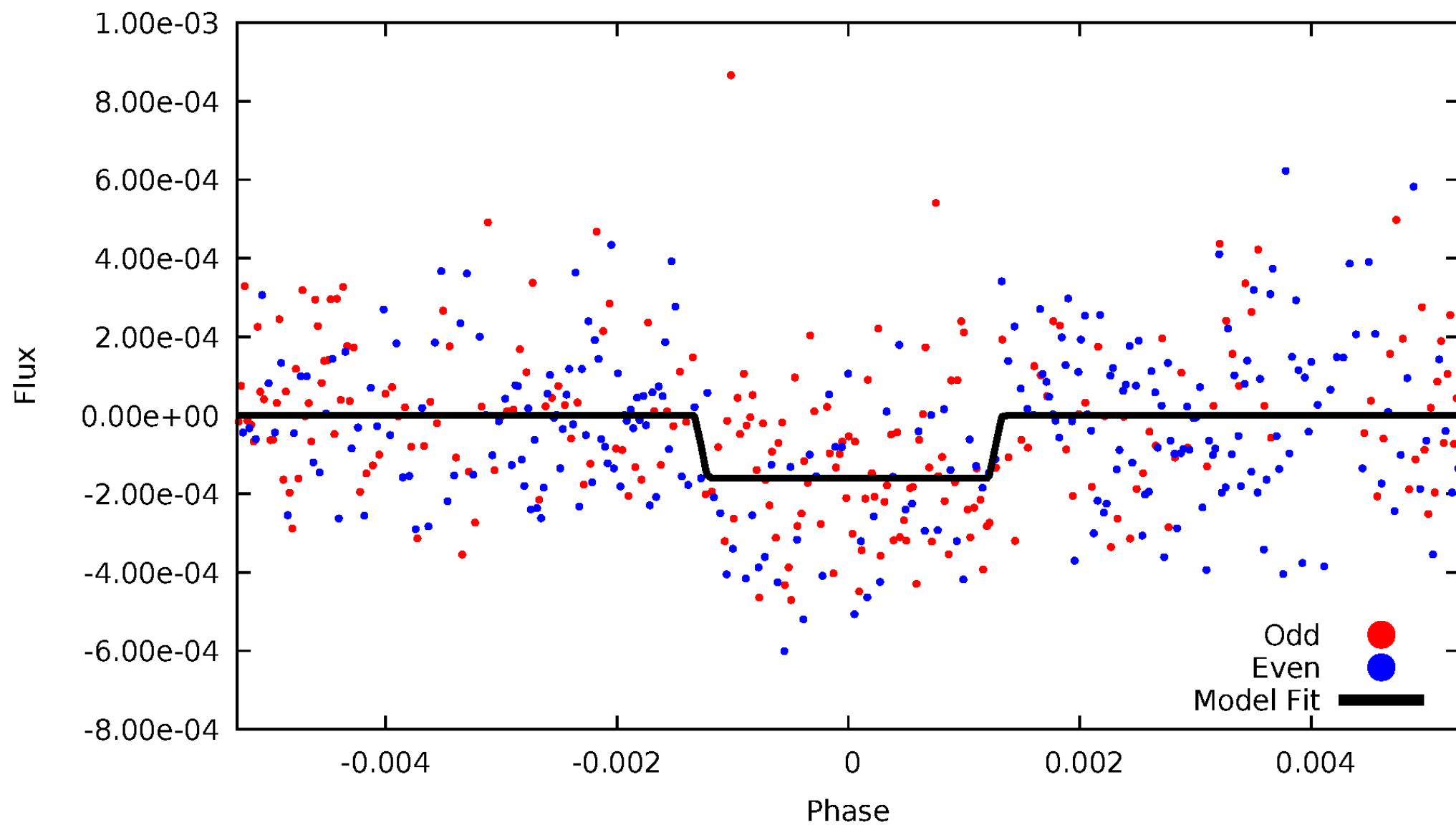
DV Odd/Even

TCE 006205384-02



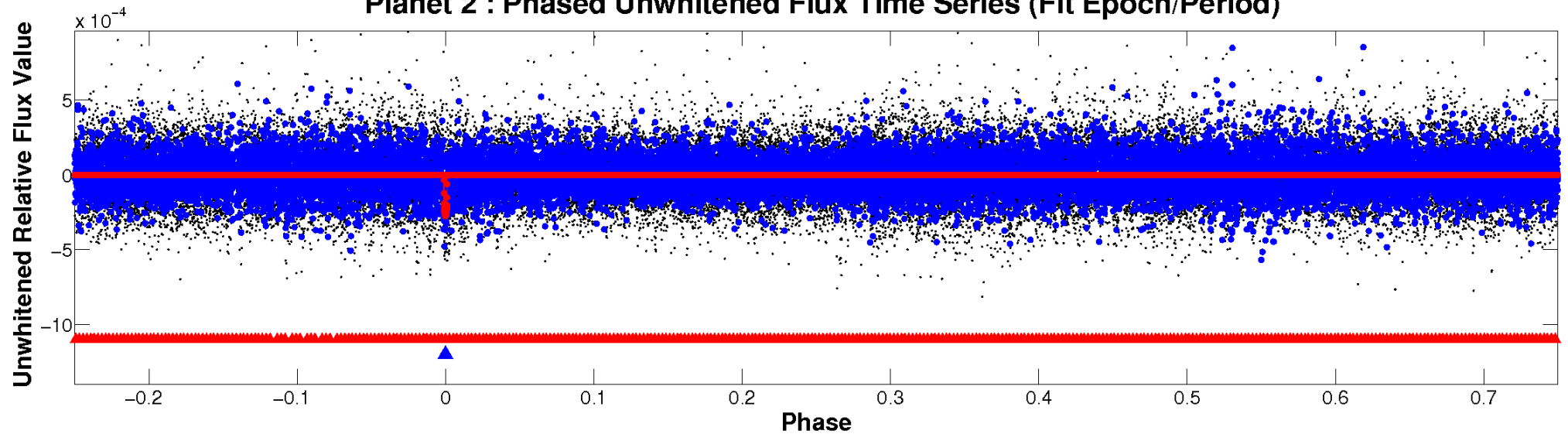
ALT Odd/Even

TCE 006205384-02

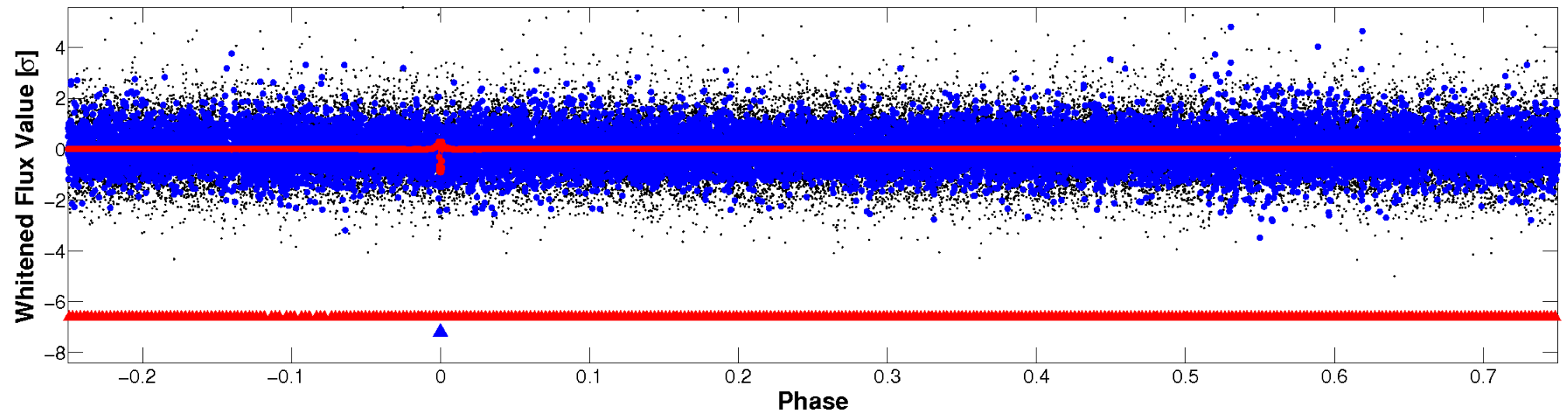


Non-Whitened Vs. Whitened Light Curve

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

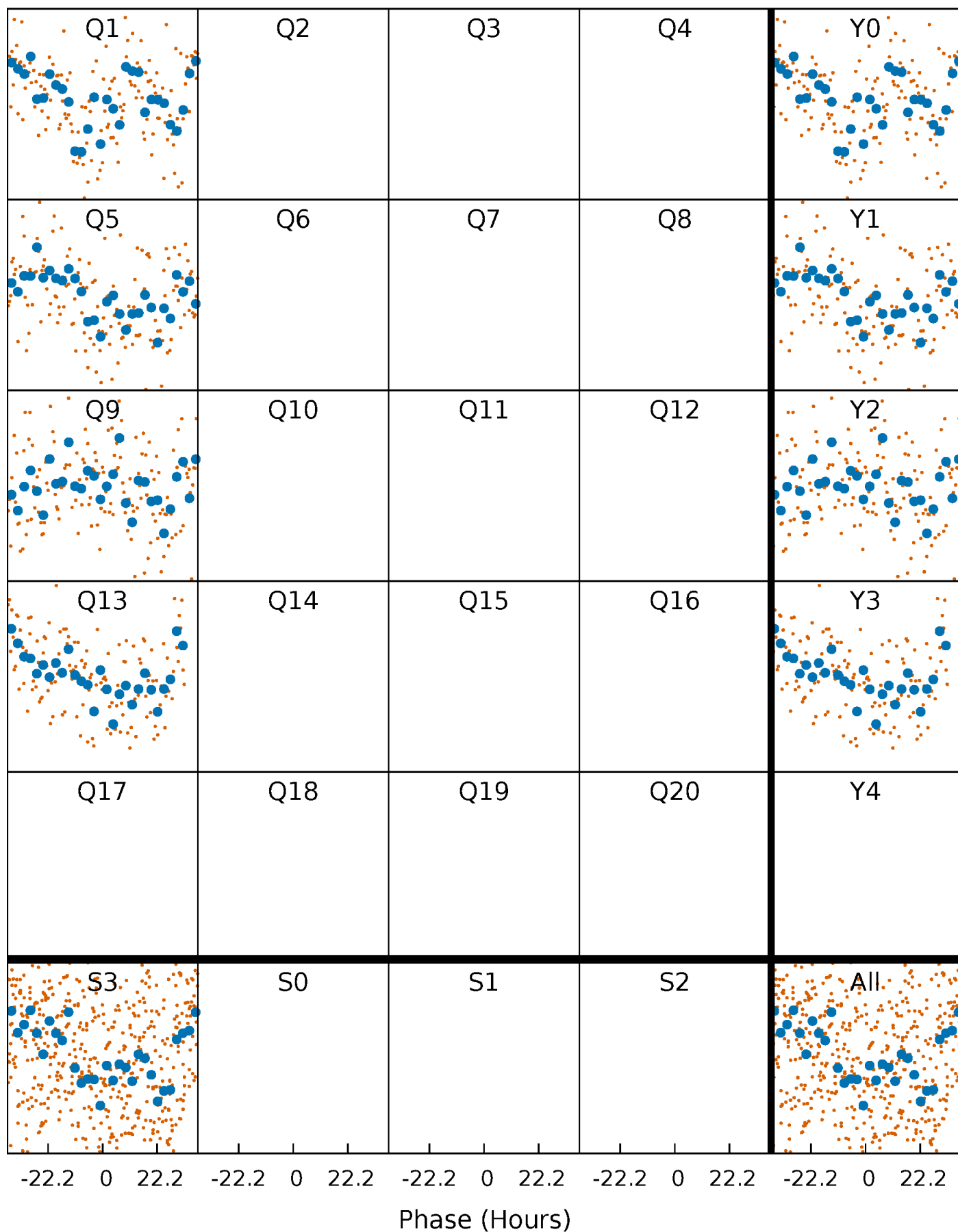


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



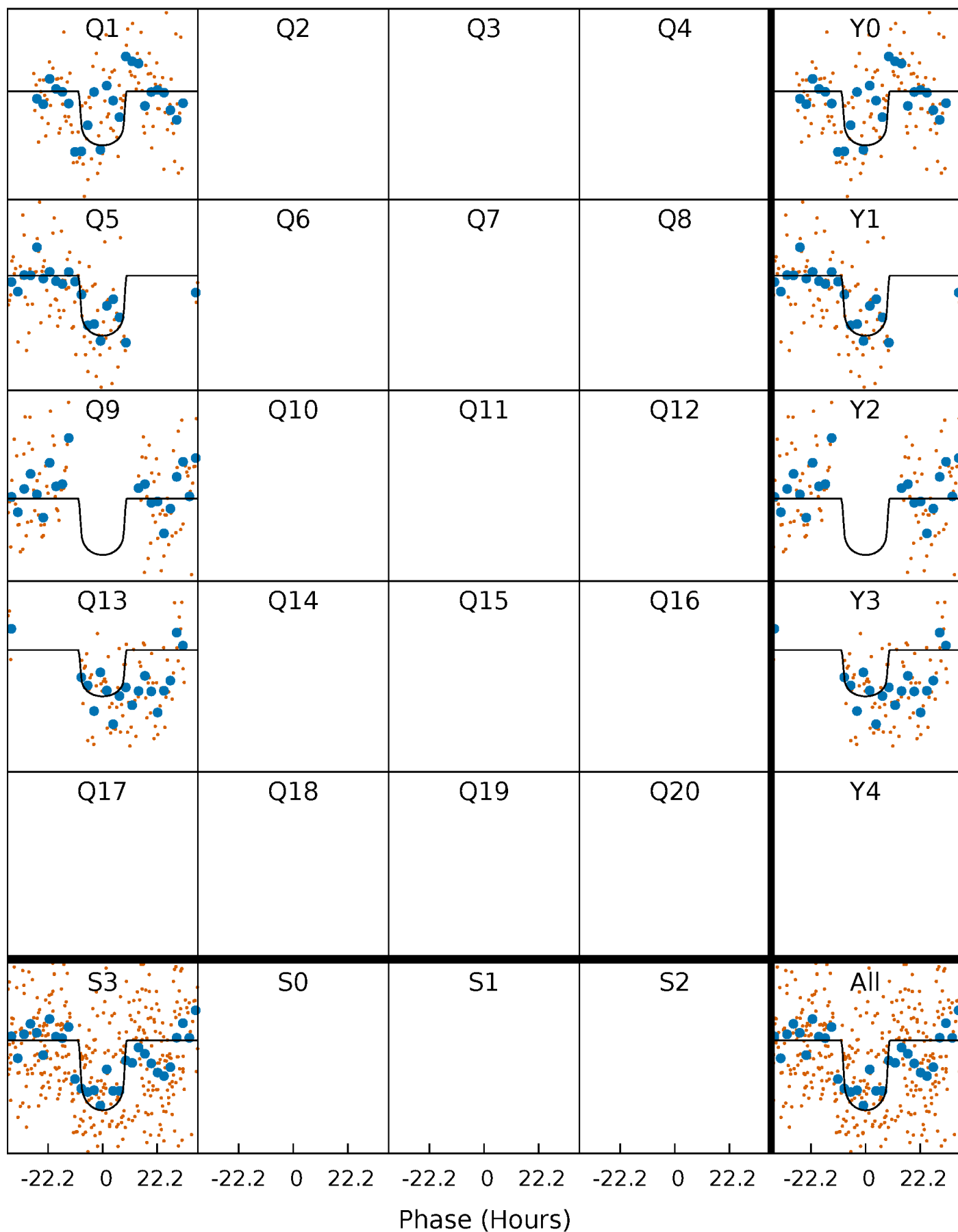
PDC Quarter-Phased Transit Curves

TCE 006205384-02 $P=369.542487$ Days $T_0=158.713182$ (BKJD)



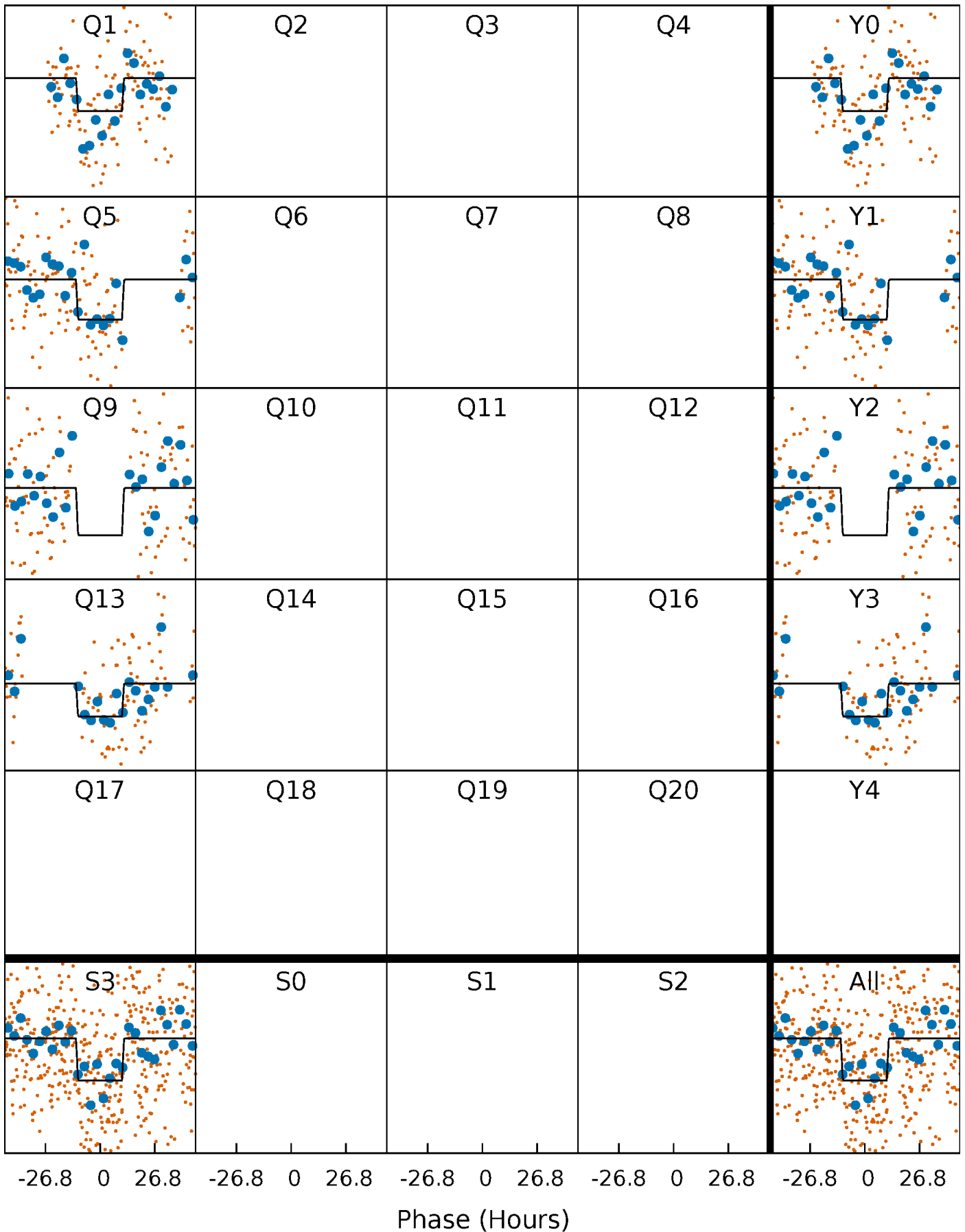
DV Quarter-Phased Transit Curves

TCE 006205384-02 $P=369.542487$ Days $T_0=158.713182$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

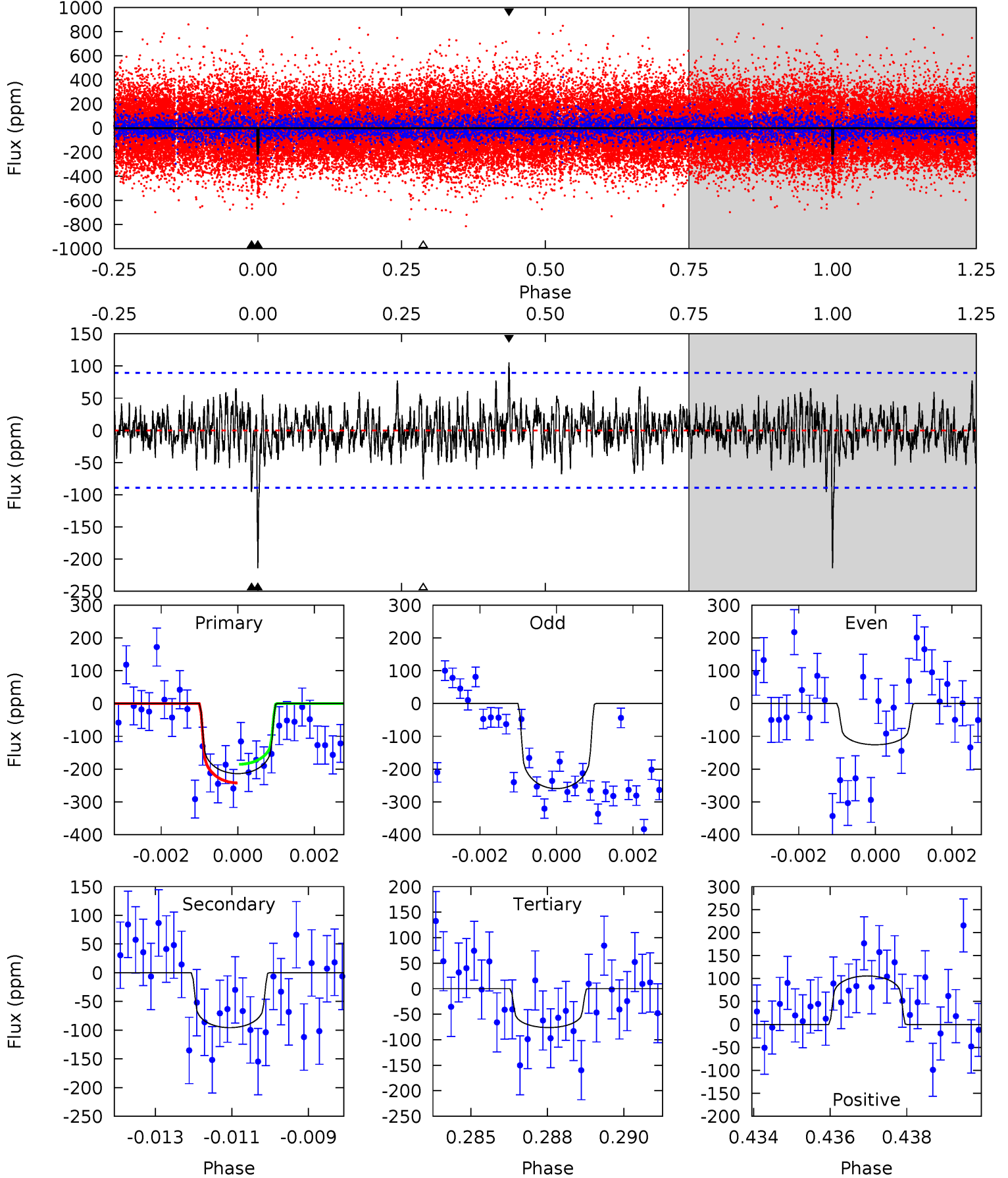
TCE 006205384-02 P=369.588611 Days $T_0=158.609150$ (BKJD)



DV Model-Shift Uniqueness Test

006205384-02, P = 369.542487 Days, E = 158.713182 Days

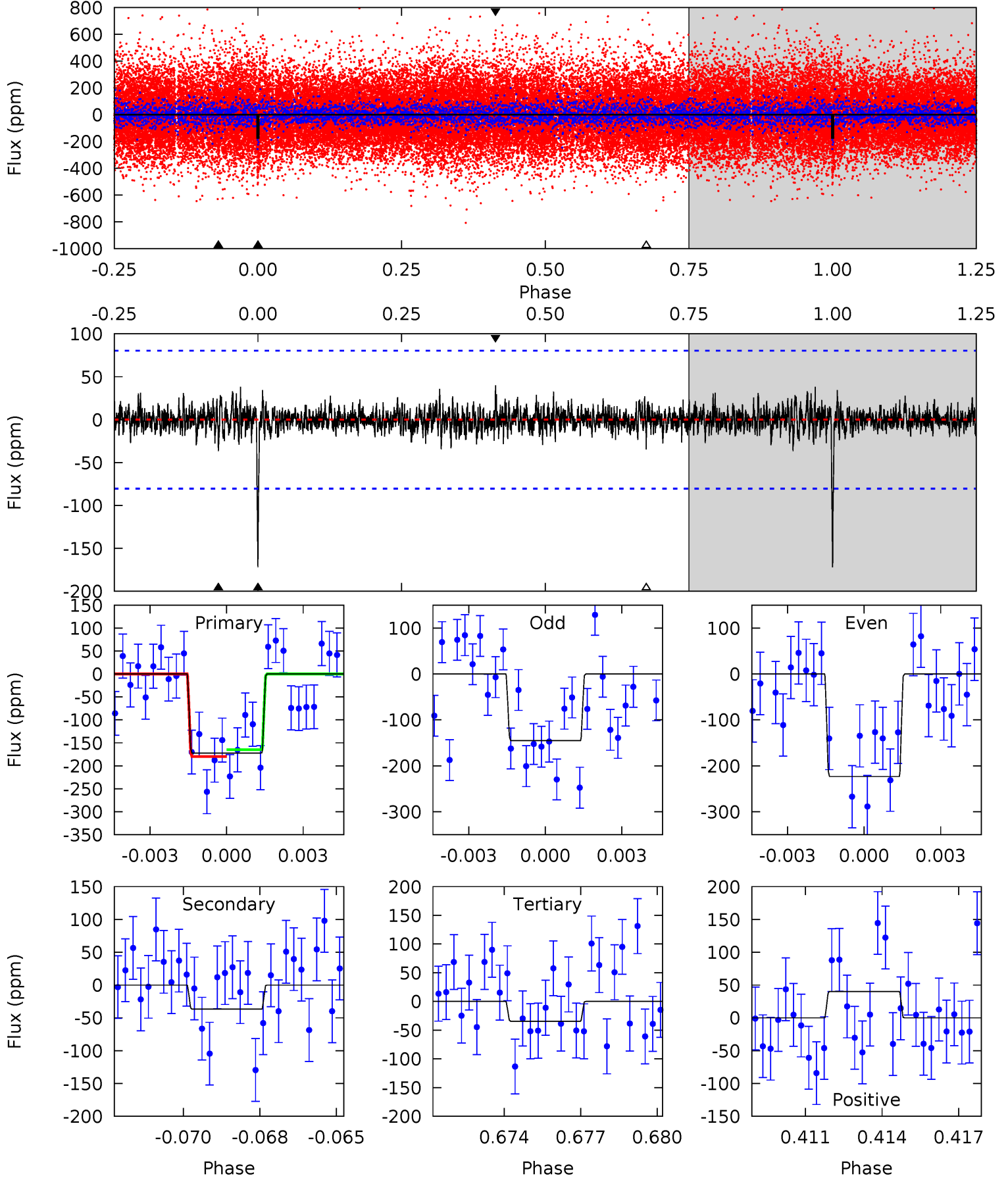
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.7	5.69	4.53	6.28	5.31	3.06	1.39	8.19	6.44	1.16	-0.59	3.80	0.97	0.33	1.68



Alt Model-Shift Uniqueness Test

006205384-02, $P = 369.588611$ Days, $E = 158.609150$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.3	2.41	2.26	2.63	5.28	3.01	0.61	9.04	8.67	0.15	-0.22	2.46	1.08	0.19	0.48



Stellar Parameters For KIC 006205384

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5898^{+79}_{-79}	$4.567^{+0.022}_{-0.088}$	$-0.400^{+0.150}_{-0.150}$	$0.819^{+0.091}_{-0.039}$	$0.904^{+0.043}_{-0.064}$	$2.315^{+0.201}_{-0.621}$
	+1%/-1%	+0%/-2%	+37%/-37%	+11%/-5%	+5%/-7%	+9%/-27%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 006205384-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-96 ± 17	$1.59^{+0.27}_{-0.24}$	337^{+9}_{-7}	4565^{+331}_{-297}	19045^{+8022}_{-5629}
Alt.	-37 ± 15	$1.16^{+0.26}_{-0.25}$	337^{+10}_{-8}	4282^{+535}_{-466}	13789^{+11332}_{-6700}

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 $A_{obs} \gg 1.0$

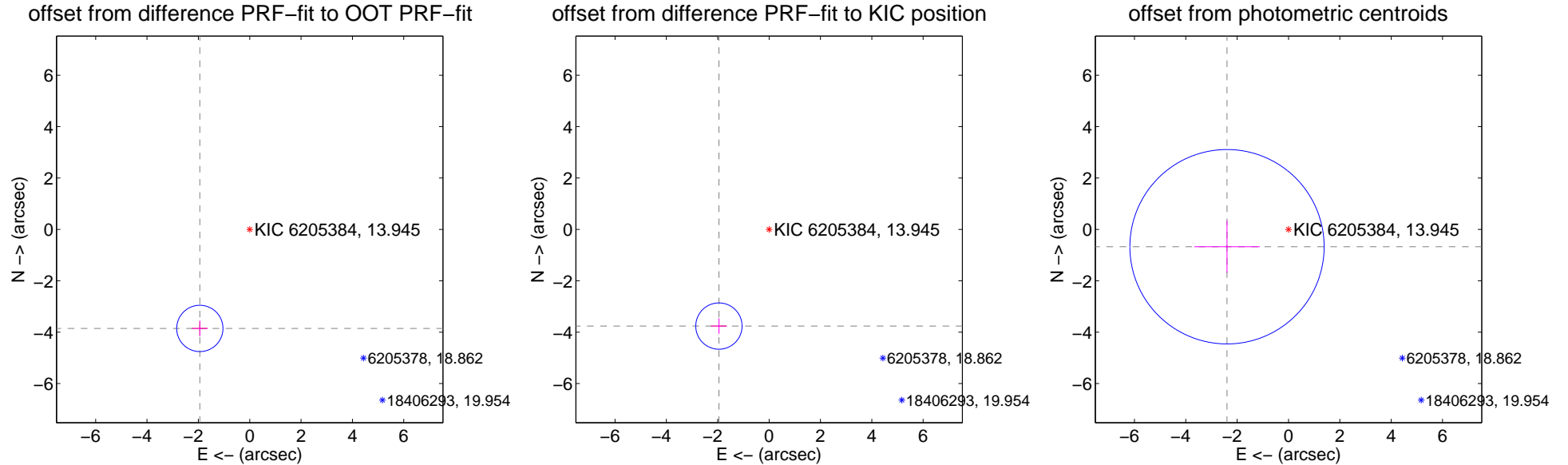
DV Centroid Data

Supplemental centroid analysis for 006205384-02. Kepler magnitude: 13.95. Transit SNR 8.70

There are 0 quarters with good PRF difference image offsets

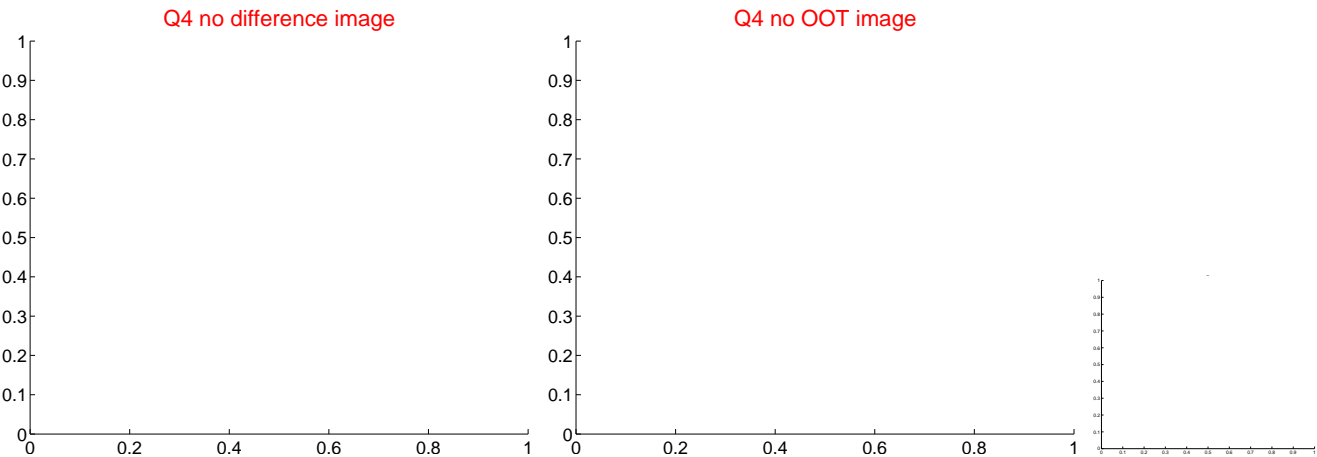
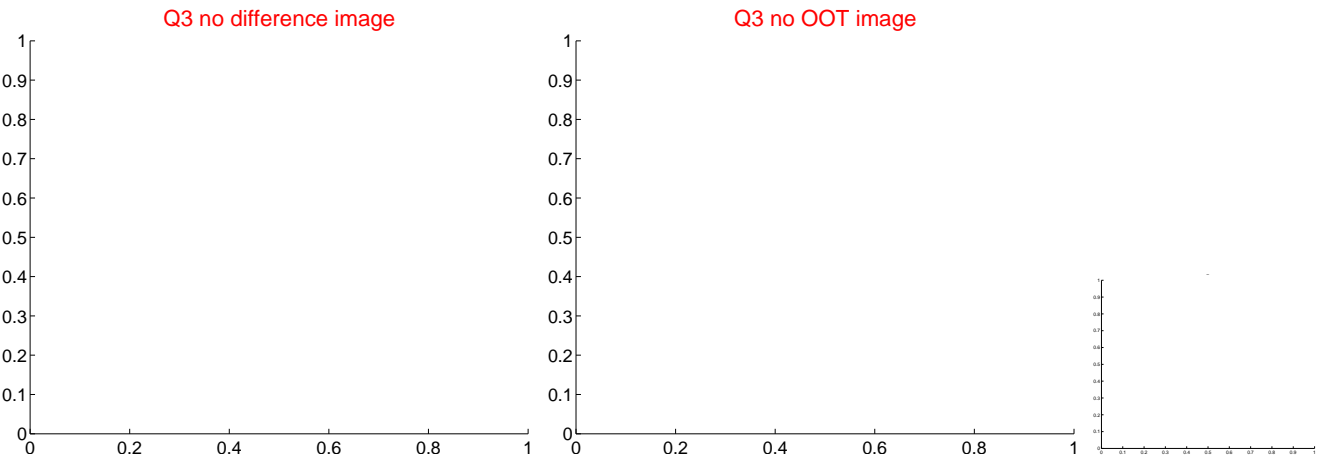
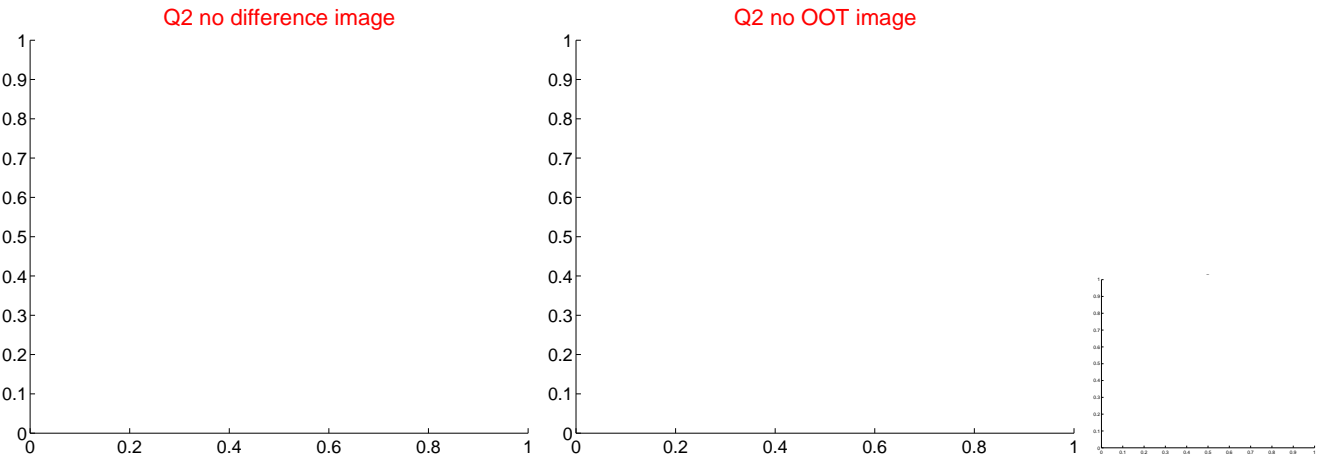
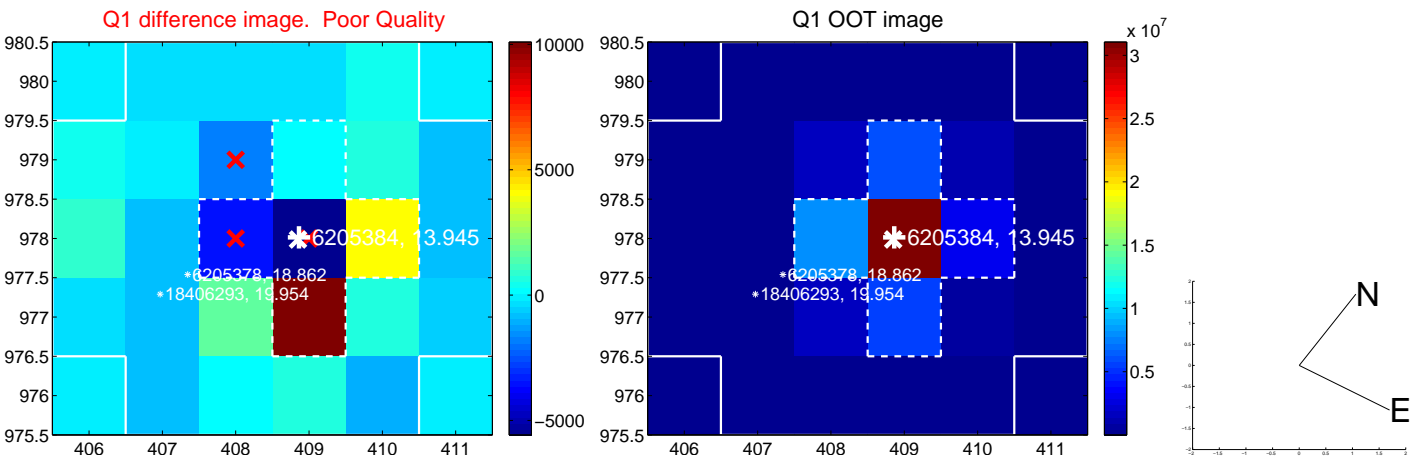
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.316 \pm 0.300	14.37	1.942 \pm 0.310	-3.855 \pm 0.298
PRF-fit source offset from KIC position	4.240 \pm 0.300	14.11	1.954 \pm 0.310	-3.763 \pm 0.298
photometric centroid source offset	2.49 \pm 1.26	1.97	2.39 \pm 1.28	-0.68 \pm 1.01

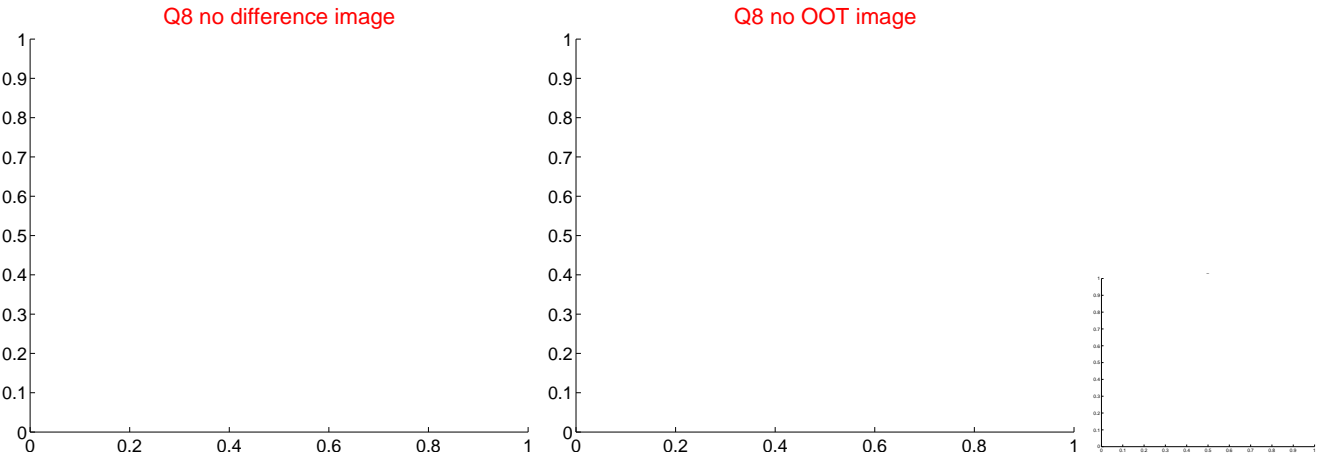
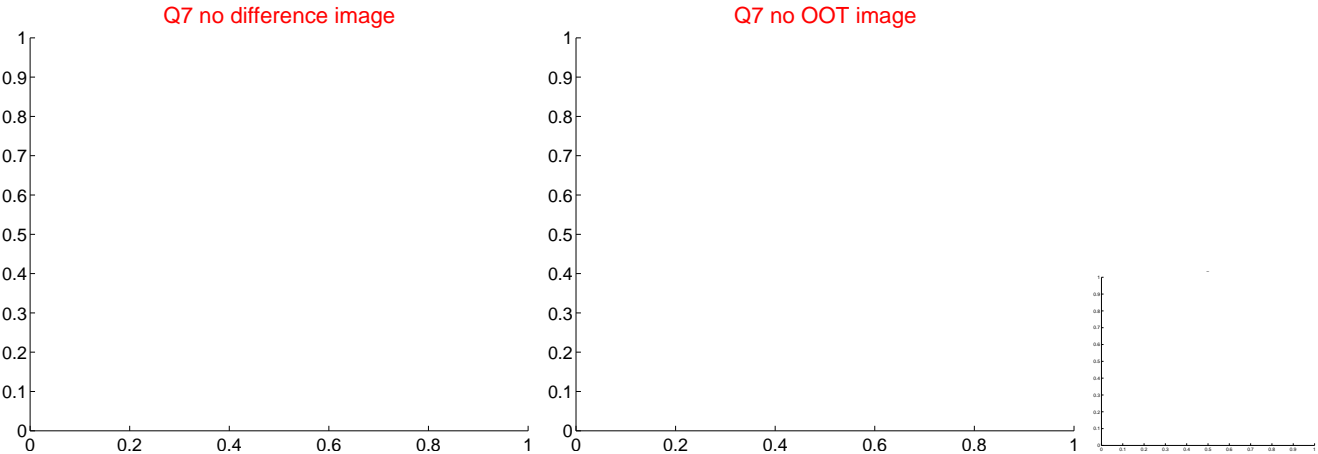
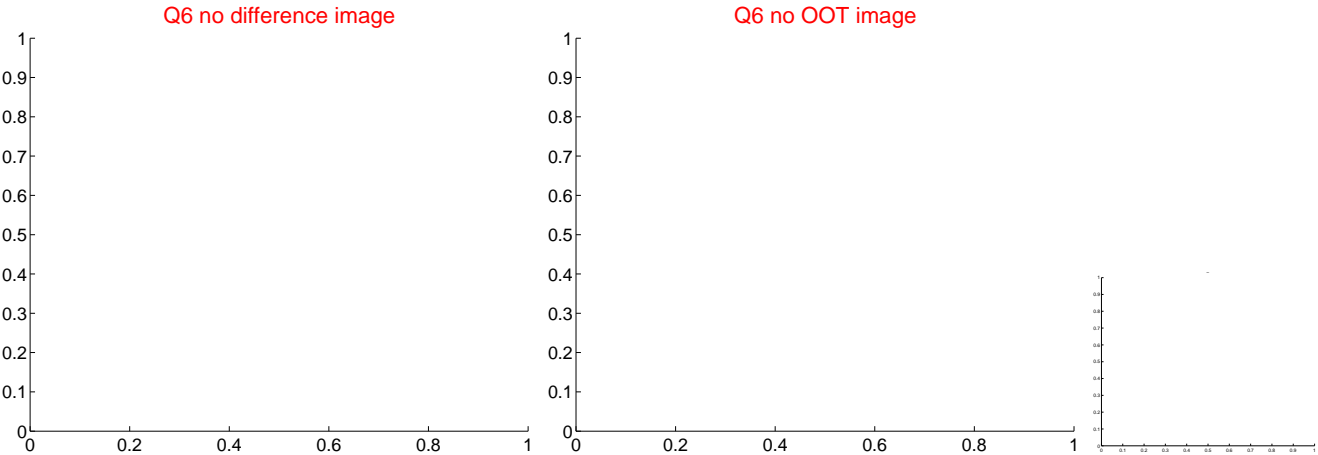
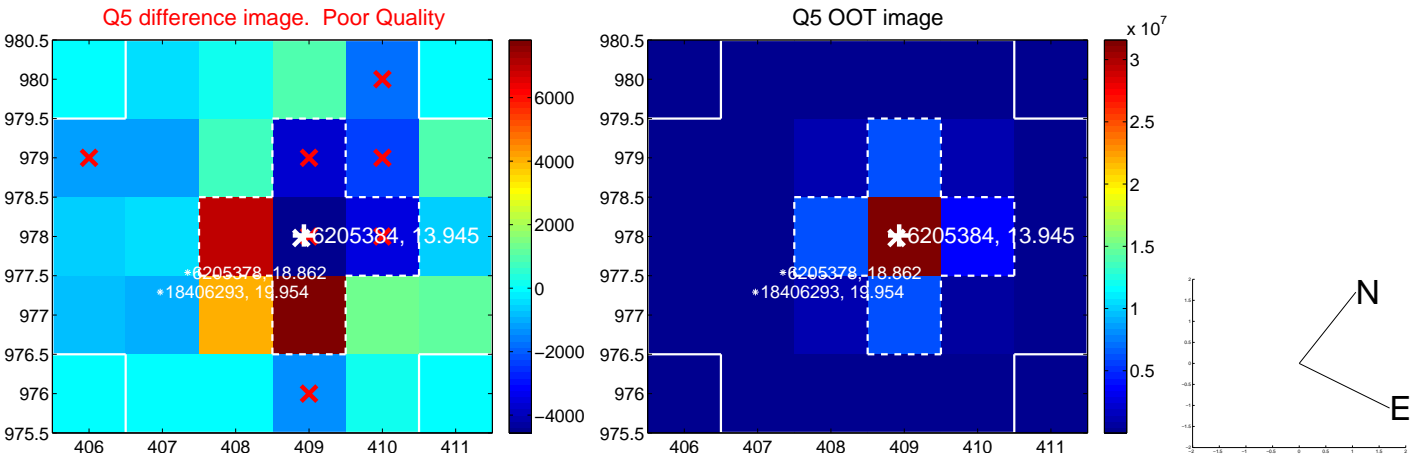


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

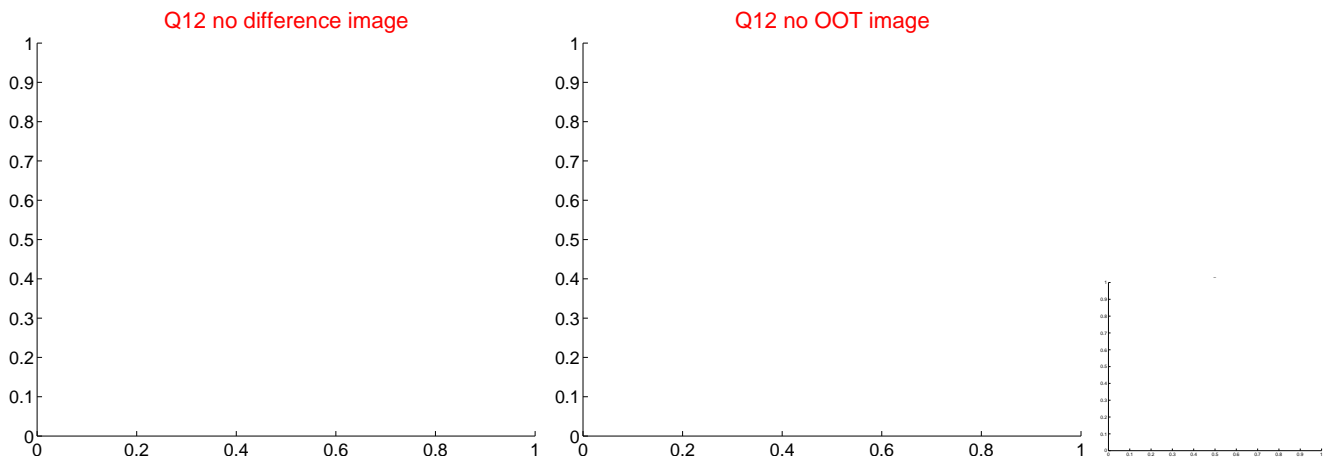
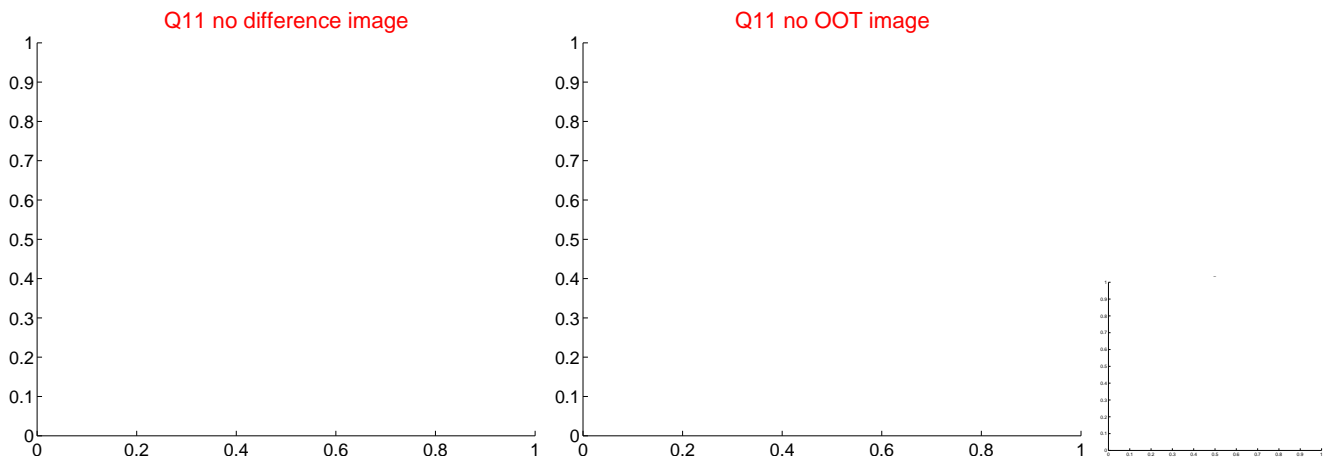
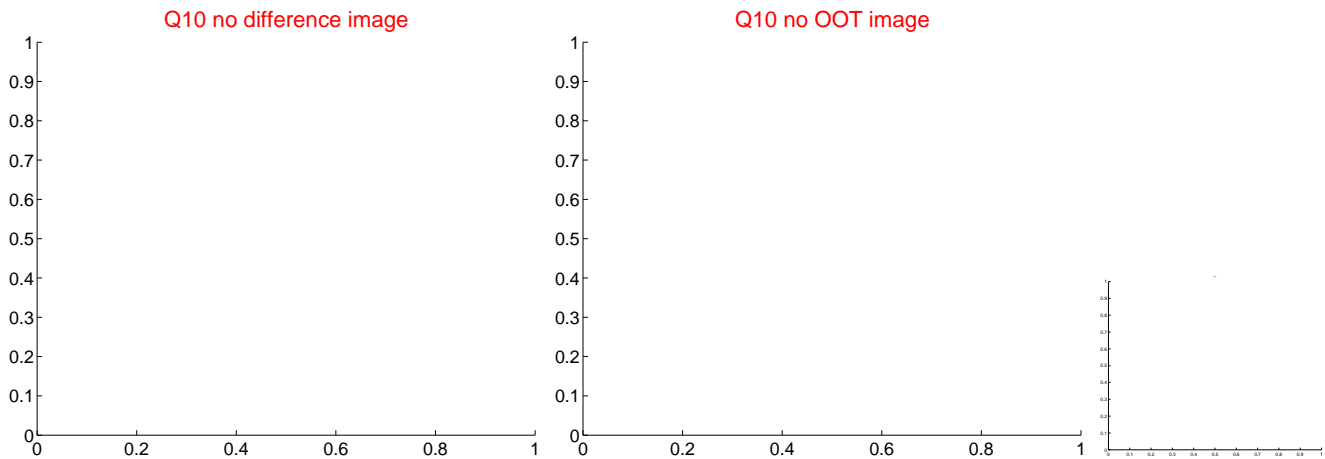
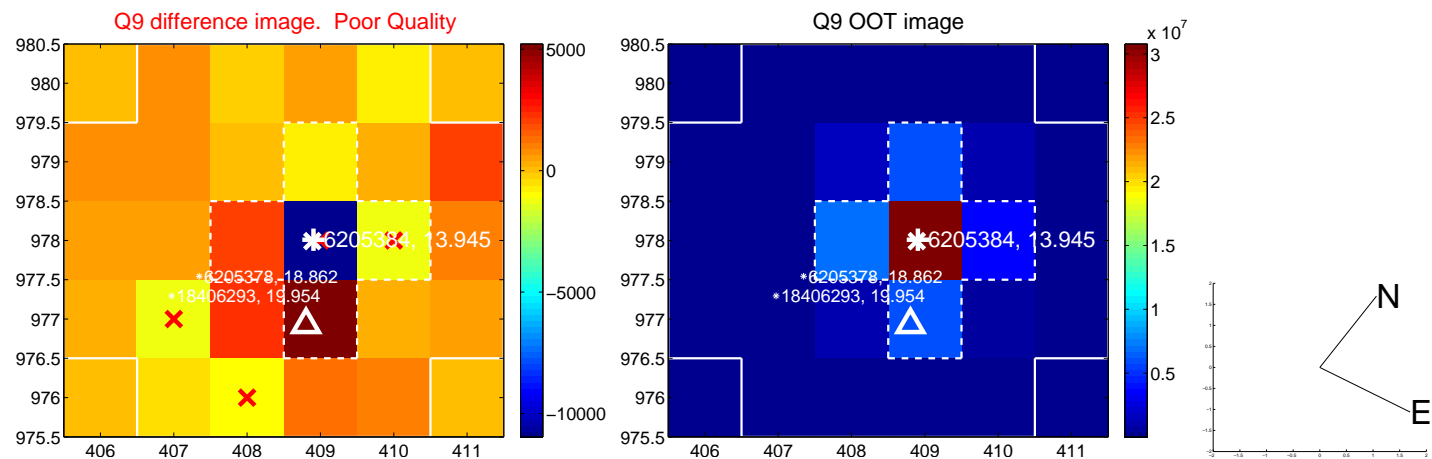
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



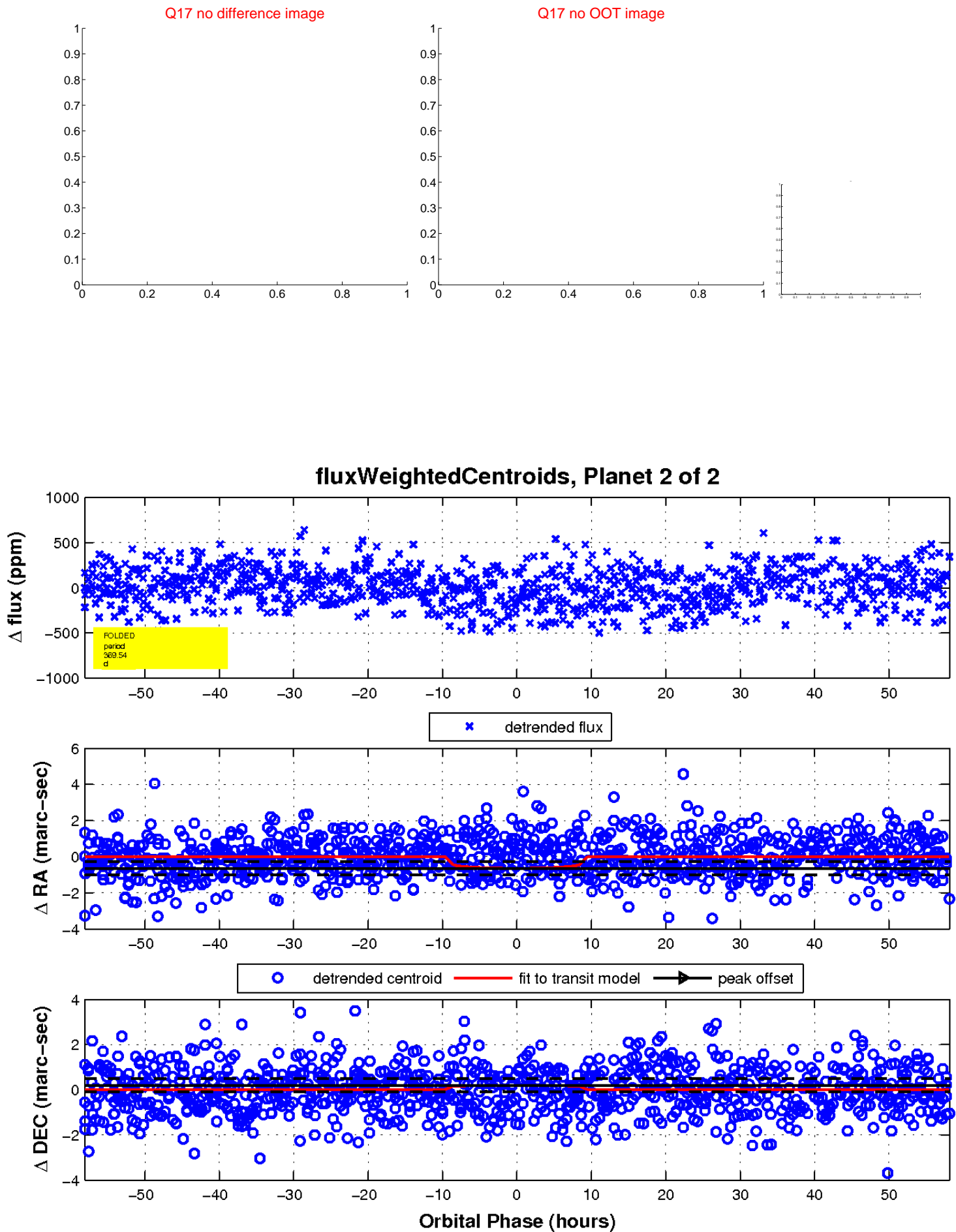
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



white \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

