

KIC 006382217

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})
006382217-01	OBS	2036.01	8.411009	133.799840	723.8	2.377	23.2	25.7	0.54	3757	1.62	11.74
006382217-02	OBS	2036.02	5.795302	136.780740	336.6	2.284	12.5	13.6	0.54	3757	1.19	19.29

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006382217-01	OBS	PC	0.98	0	0	0	0	NO_COMMENT
006382217-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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.

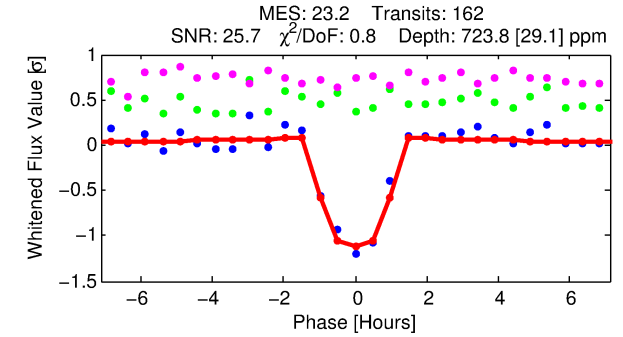
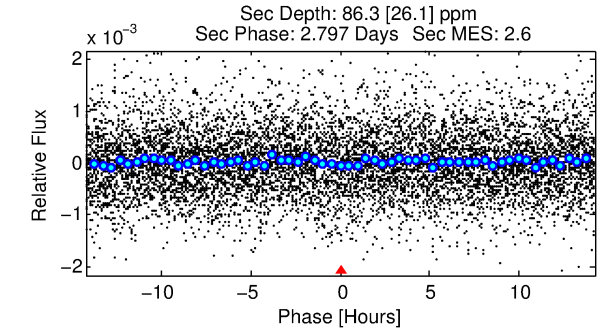
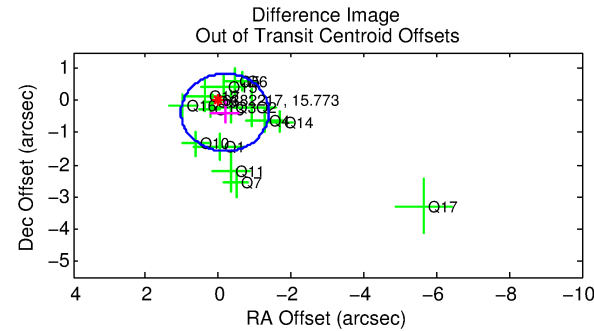
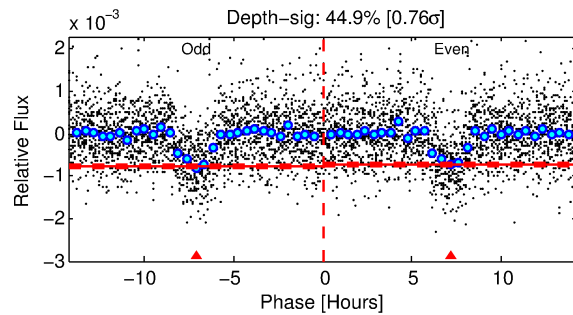
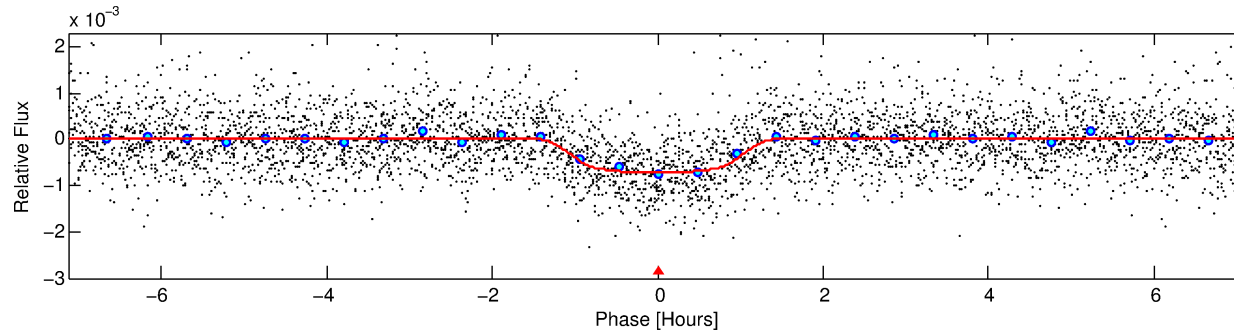
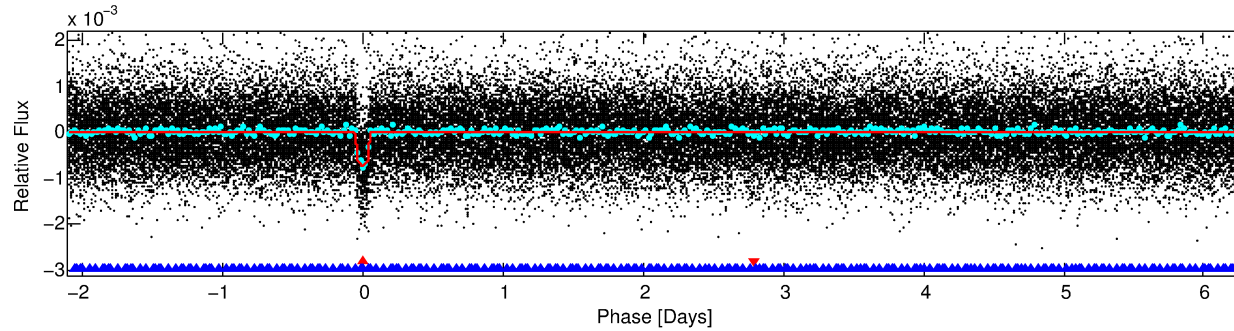
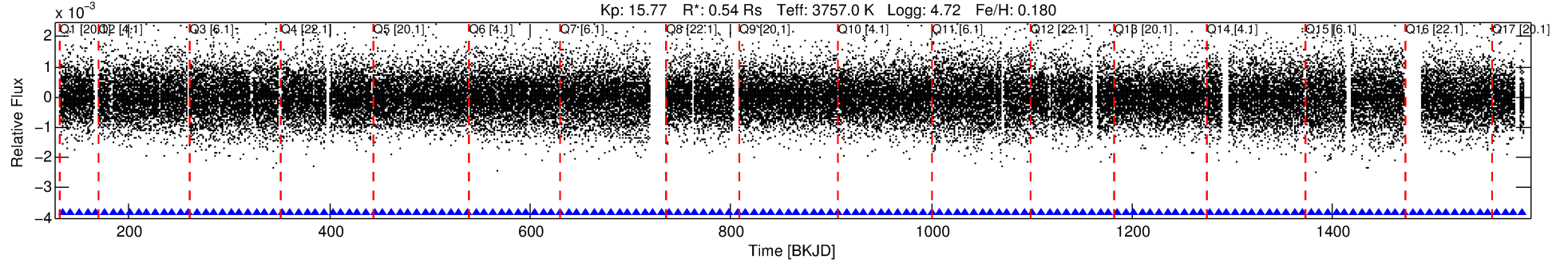
Ephemeris Match Information For 006382217-01

No Significant Match Found

DV One-Page Summary

KIC: 6382217 Candidate: 1 of 2 Period: 8.411 d
KOI: K02036.01 Name: Kepler-353c Corr: 0.991

Kp: 15.77 R*: 0.54 Rs Teff: 3757.0 K Logg: 4.72 Fe/H: 0.180



DV Fit Results:

Period = 8.41101 [0.00002] d
Epoch = 133.7998 [0.0019] BKJD
Rp/R* = 0.0276 [0.0107]
a/R* = 17.39 [26.24]
b = 0.80 [0.69]
Seff = 11.74 [1.37]
Teq = 472 [14] K
Rp = 1.62 [0.64] Re
a = 0.0665 [0.0037] AU
Ag = 79.87 [66.73] [1.18σ]
Teffp = 2181 [456] K [3.74σ]

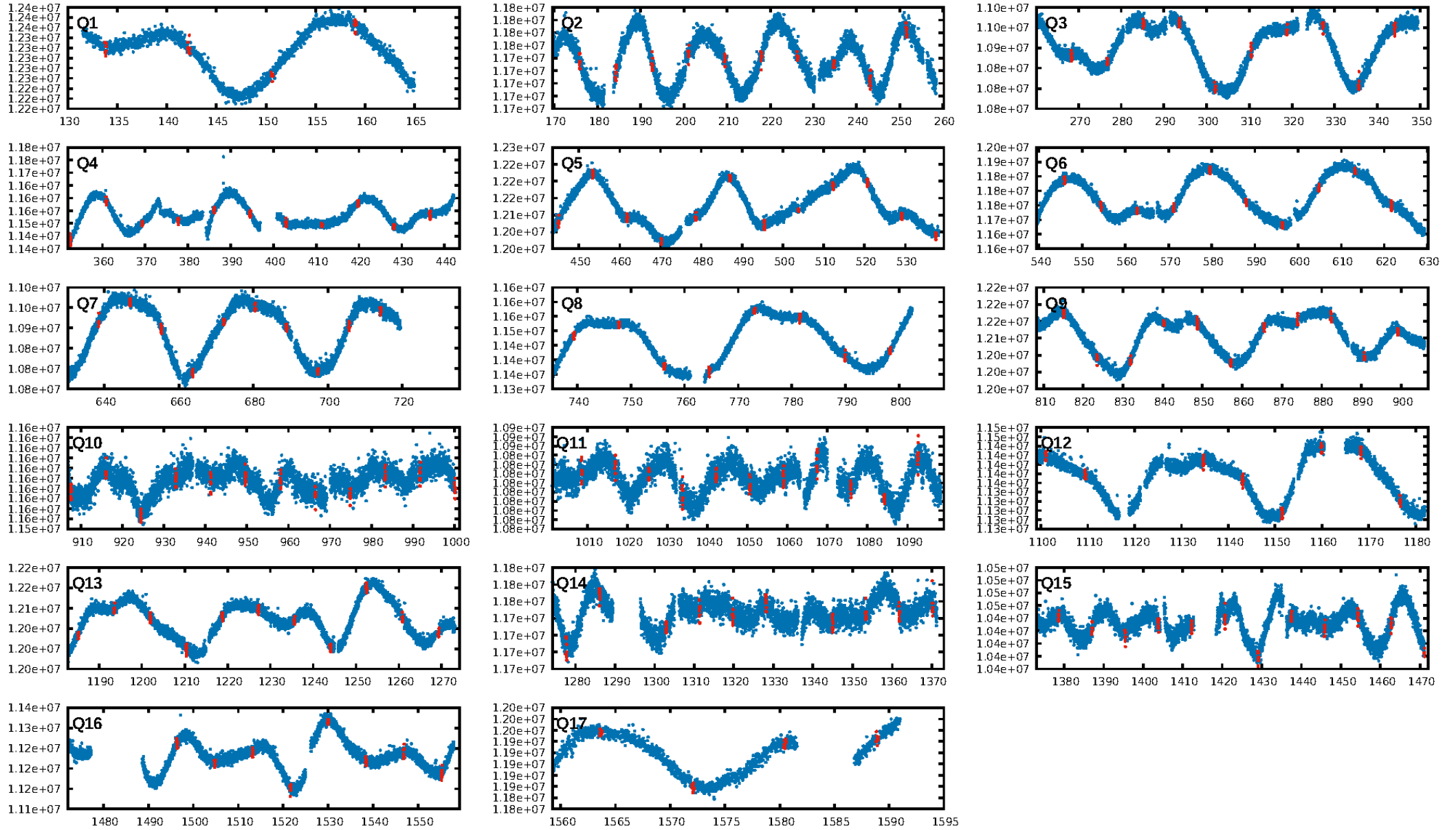
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [19.05σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.67e-119
RollingBand-fgt: 1.00 [154/154]
GhostDiagnostic-chr: 2.075
Centroid-sig: 0.6%
Centroid-so: 0.280 arcsec [0.59σ]
OotOffset-rm: 0.409 arcsec [1.02σ]
KicOffset-rm: 0.503 arcsec [1.27σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 0.88 [14/16]
DiffImageOverlap-fno: 1.00 [17/17]

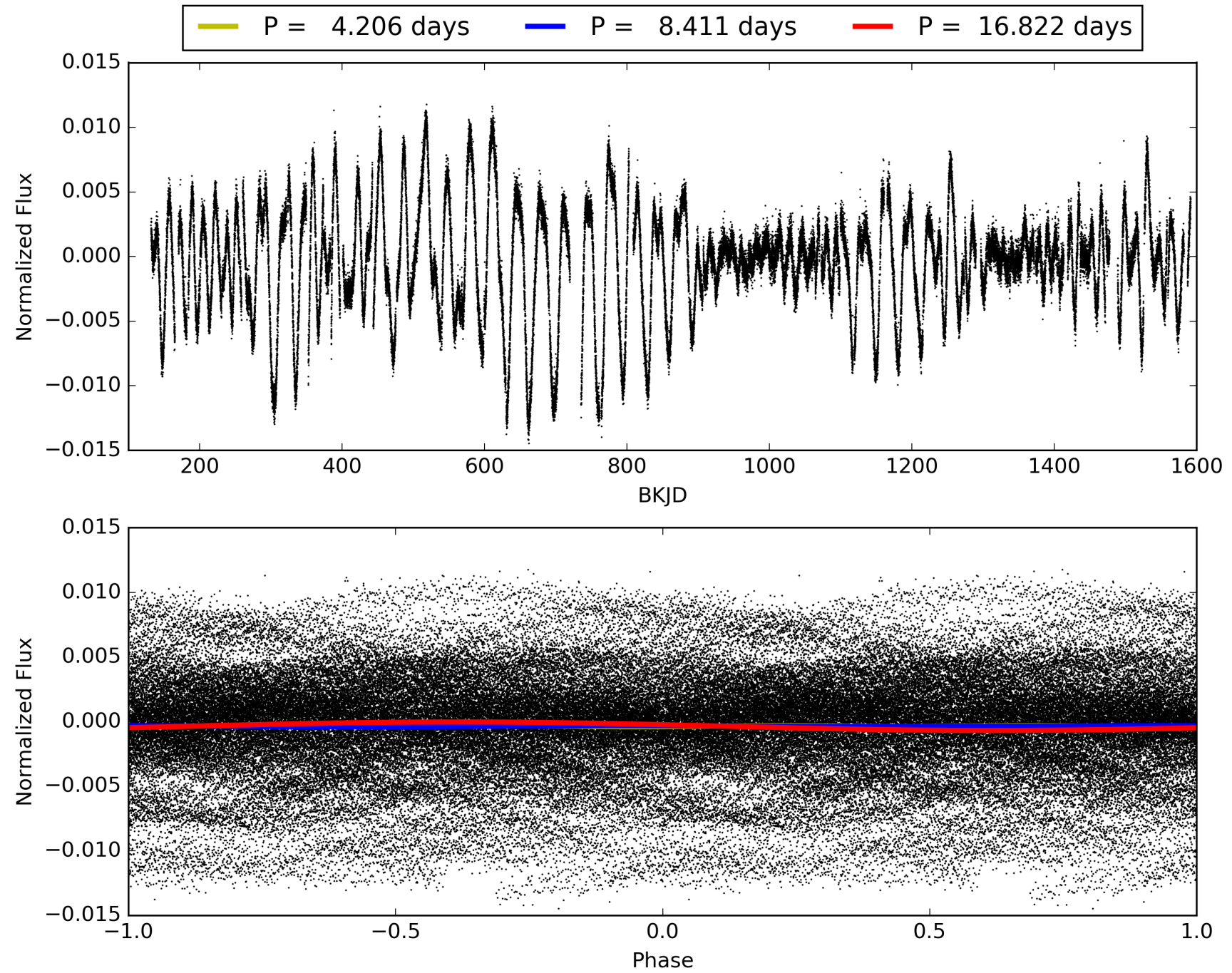
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:56:03 Z

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

TCE 006382217-01, PDC Light Curves

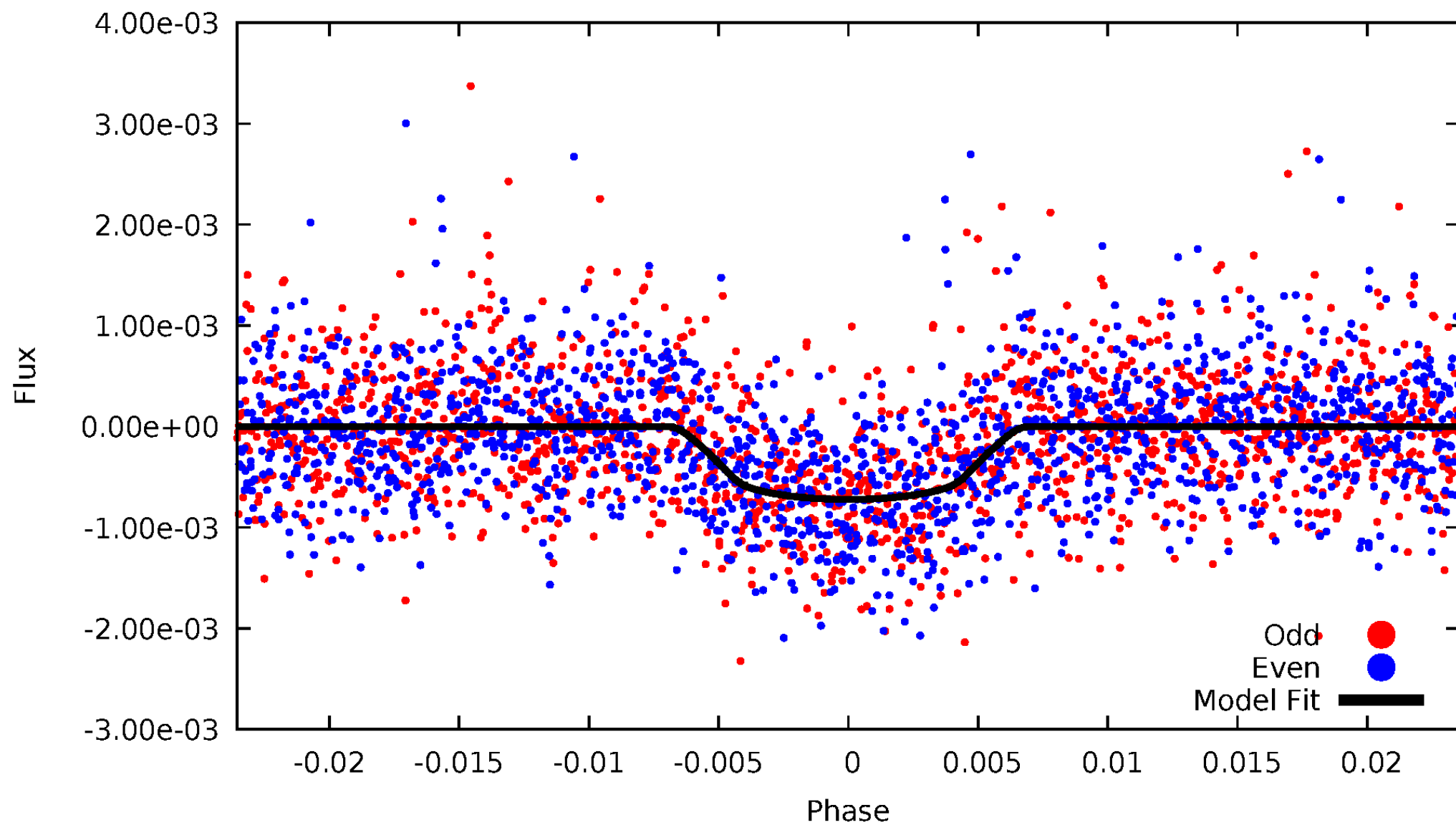


TCE 006382217-01



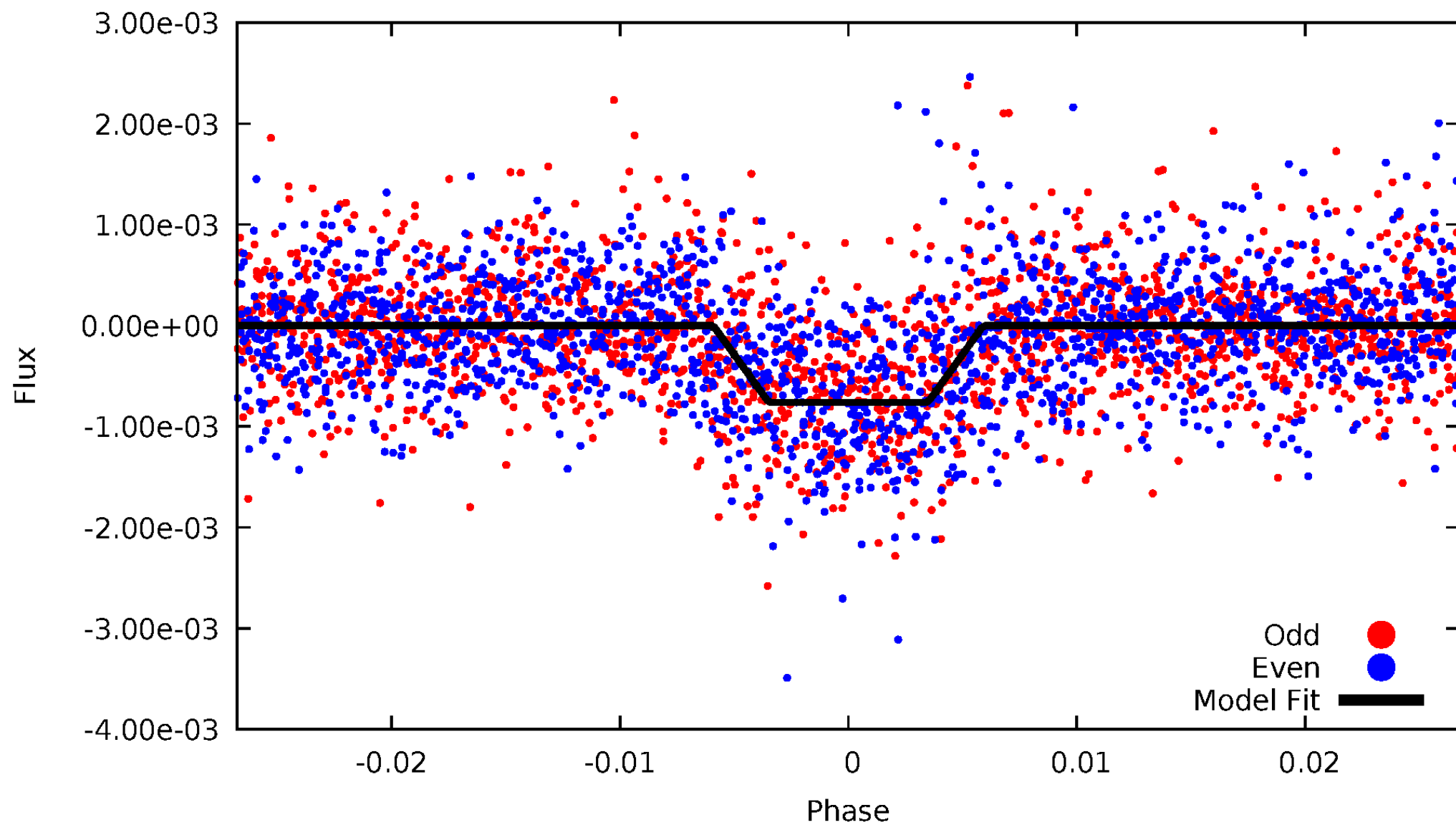
DV Odd/Even

TCE 006382217-01



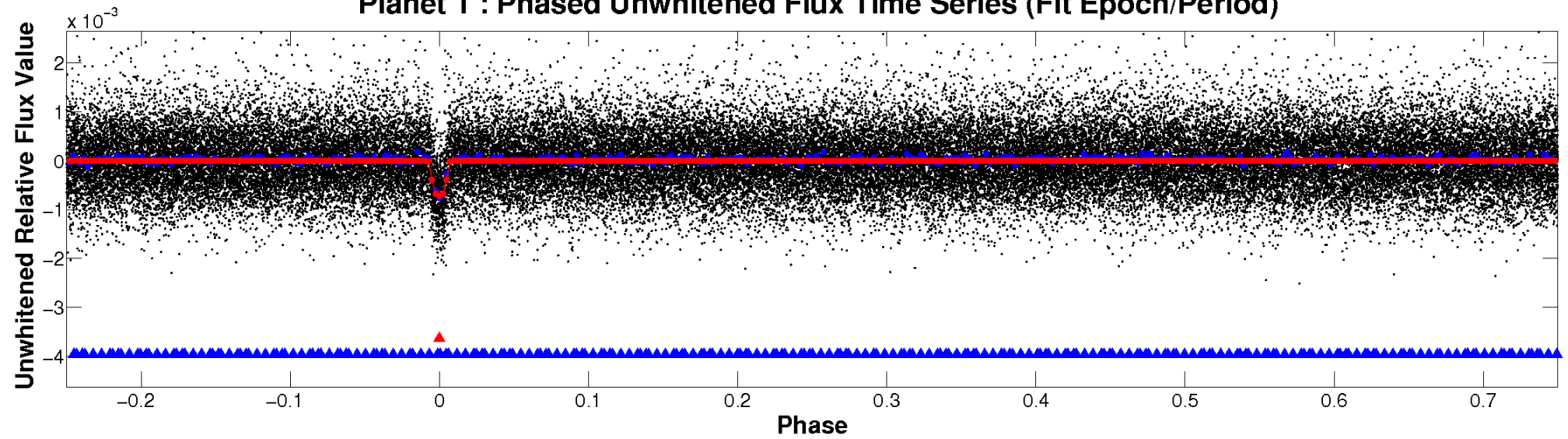
ALT Odd/Even

TCE 006382217-01

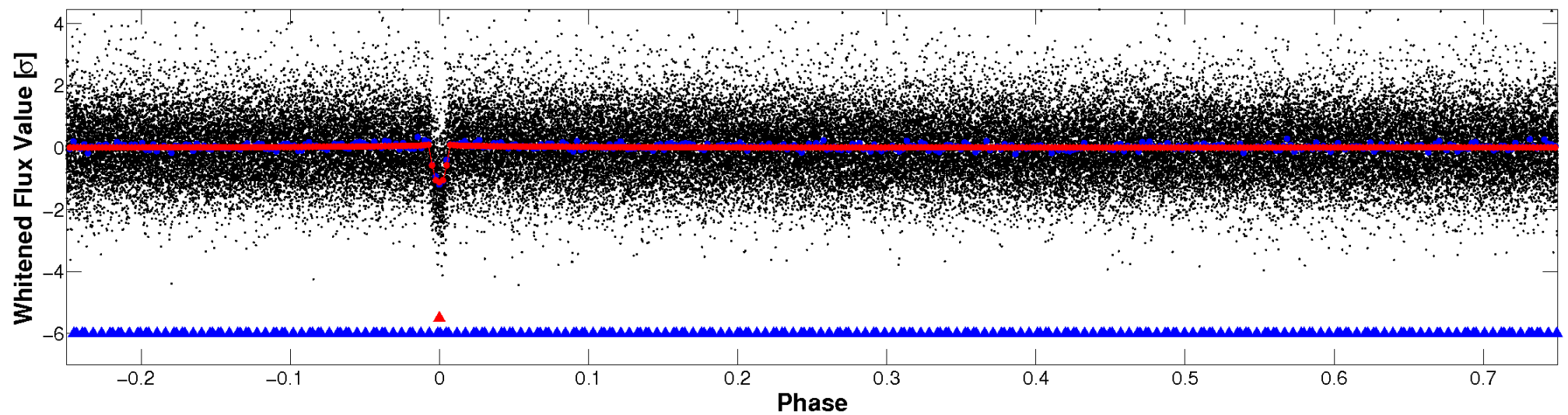


Non-Whitened Vs. Whitened Light Curve

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

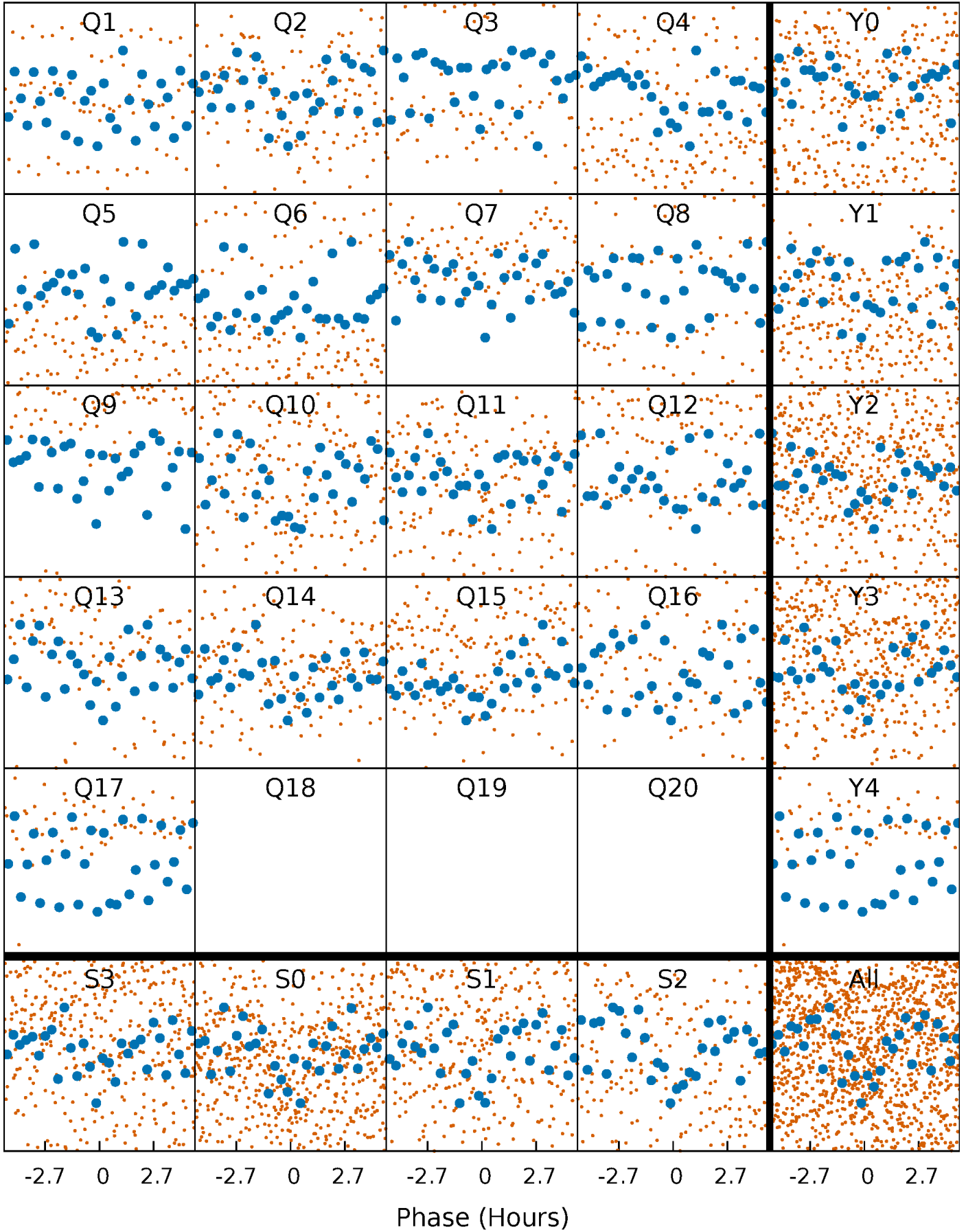


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



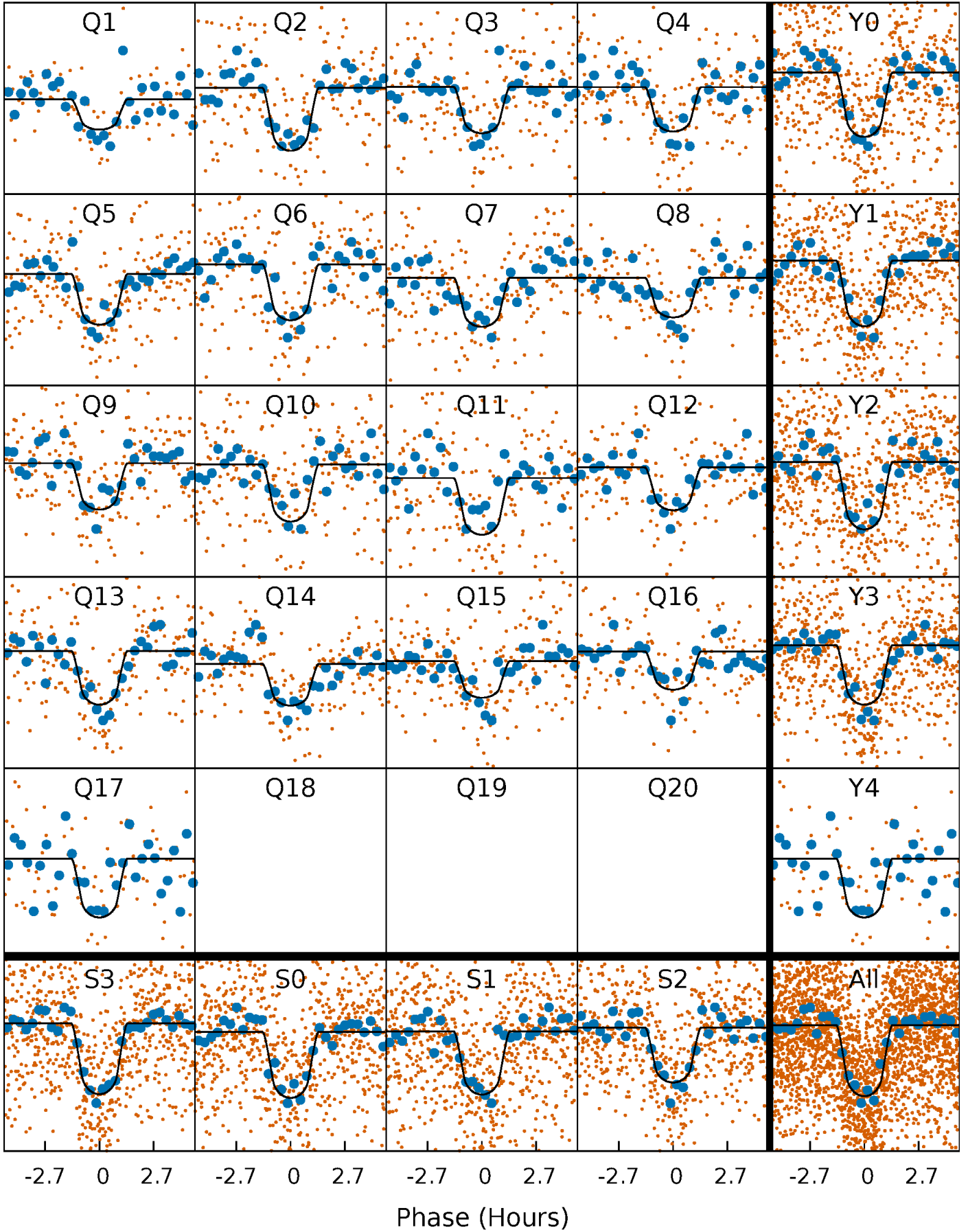
PDC Quarter-Phased Transit Curves

TCE 006382217-01 P= 8.411009 Days $T_0=133.799840$ (BKJD)



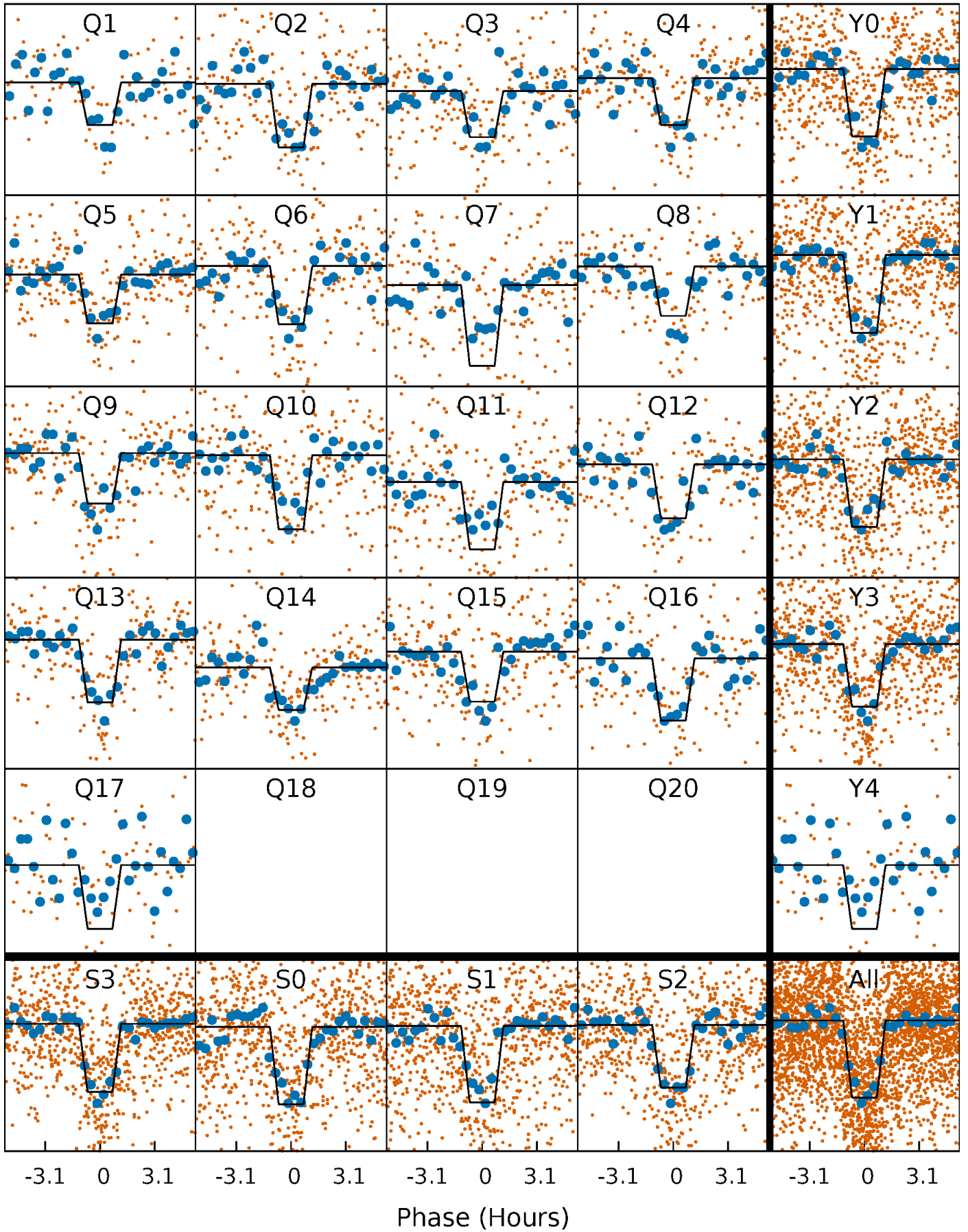
DV Quarter-Phased Transit Curves

TCE 006382217-01 P= 8.411009 Days $T_0=133.799840$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

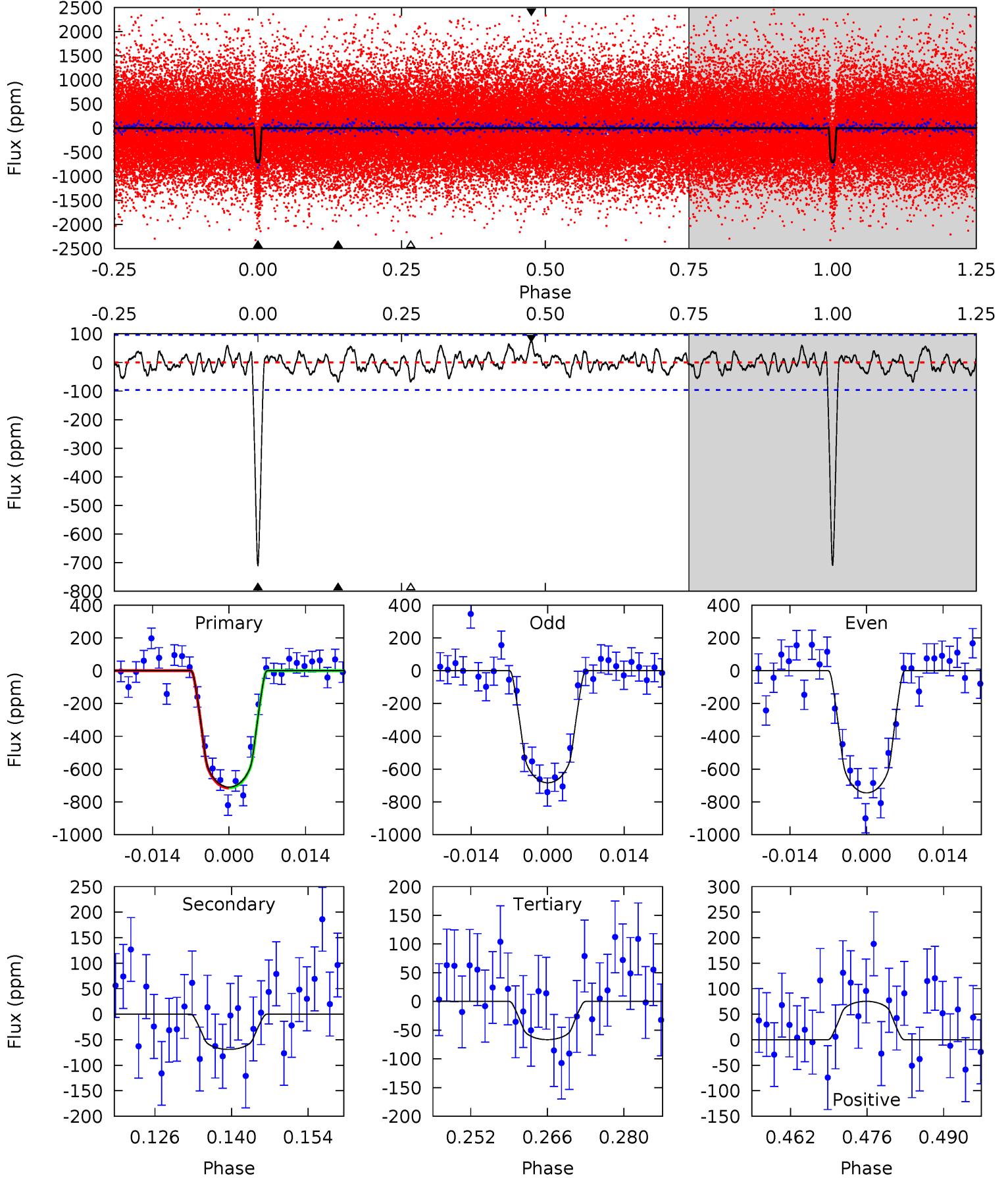
TCE 006382217-01 P= 8.411099 Days $T_0=133.792415$ (BKJD)



DV Model-Shift Uniqueness Test

006382217-01, P = 8.411009 Days, E = 125.388831 Days

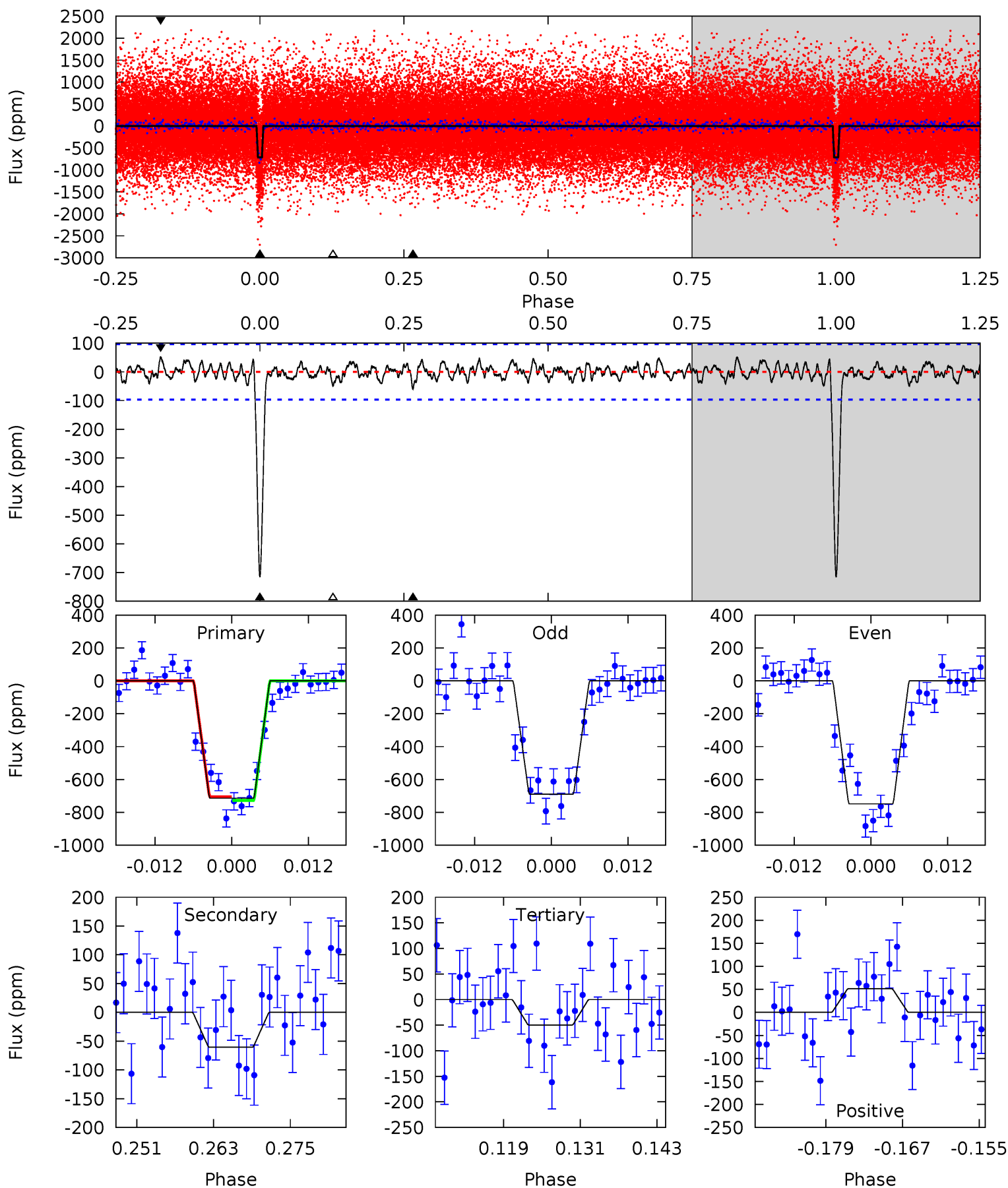
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.5	3.55	3.42	3.87	4.96	2.46	1.29	33.1	32.6	0.13	-0.33	1.58	1.02	0.10	0.02



Alt Model-Shift Uniqueness Test

006382217-01, P = 8.411099 Days, E = 125.381316 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.9	3.12	2.57	2.65	4.99	2.51	0.99	34.3	34.2	0.56	0.47	1.53	1.02	0.07	0.59



Stellar Parameters For KIC 006382217

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3757^{+75}_{-83}	$4.718^{+0.039}_{-0.024}$	$0.180^{+0.150}_{-0.150}$	$0.539^{+0.030}_{-0.038}$	$0.552^{+0.031}_{-0.038}$	$4.977^{+0.901}_{-0.523}$
	+2%/-2%	+1%/-1%	+83%/-83%	+6%/-7%	+6%/-7%	+18%/-11%
Source	SPE70	SPE60	SPE70	DSEP		

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

Secondary Eclipse Parameters for KIC 006382217-01 / KOI 2036.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-69 ± 19	$1.59^{+0.63}_{-0.60}$	657^{+17}_{-17}	2639^{+406}_{-212}	63^{+113}_{-31}
Alt.	-61 ± 19	$1.58^{+0.67}_{-0.62}$	657^{+17}_{-15}	2596^{+393}_{-249}	56^{+106}_{-31}

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 $A_{obs} \gg 1.0$

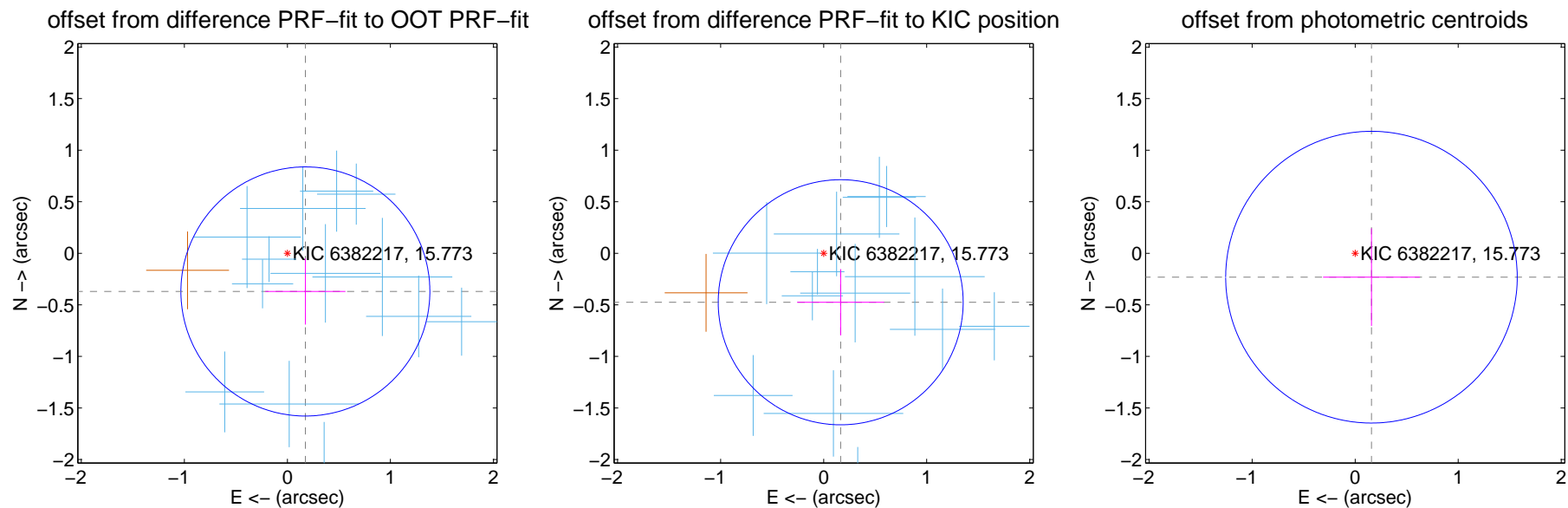
DV Centroid Data

Supplemental centroid analysis for 006382217-01. Kepler magnitude: 15.77. Transit SNR 25.65

There are 14 quarters with good PRF difference image offsets

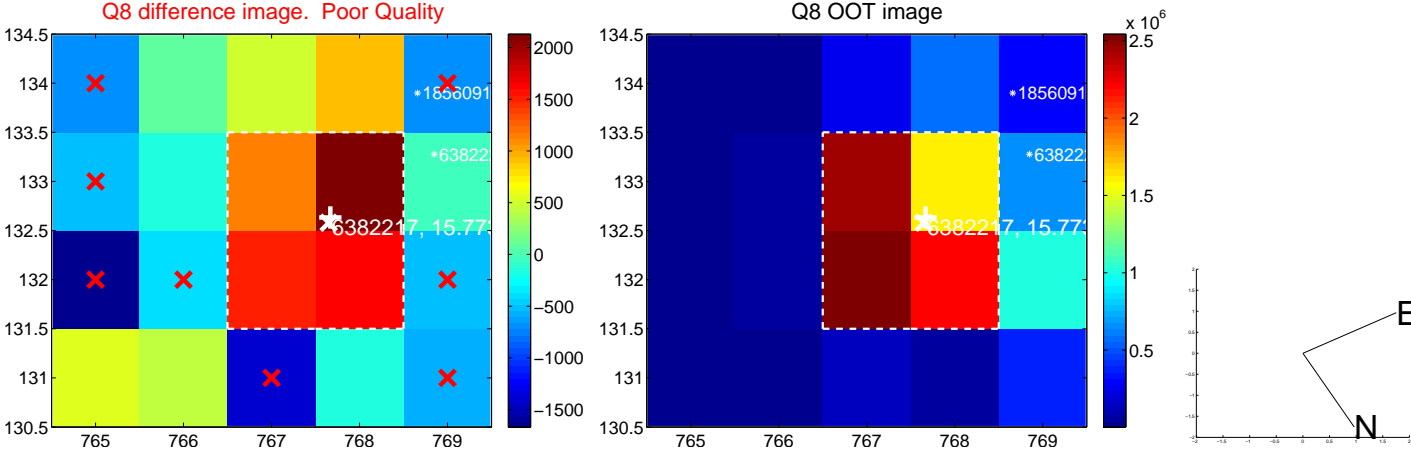
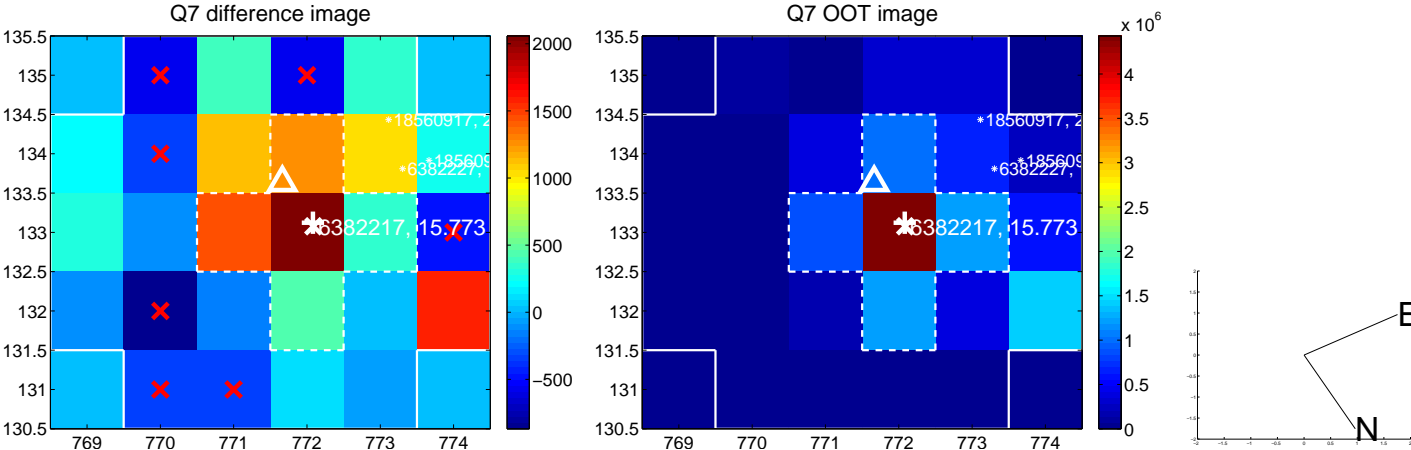
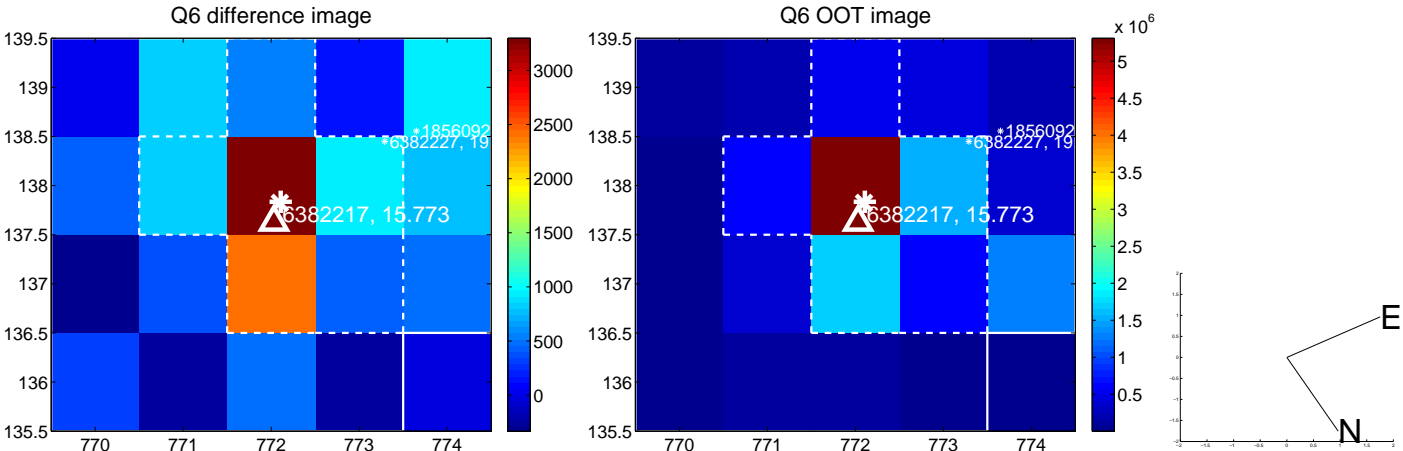
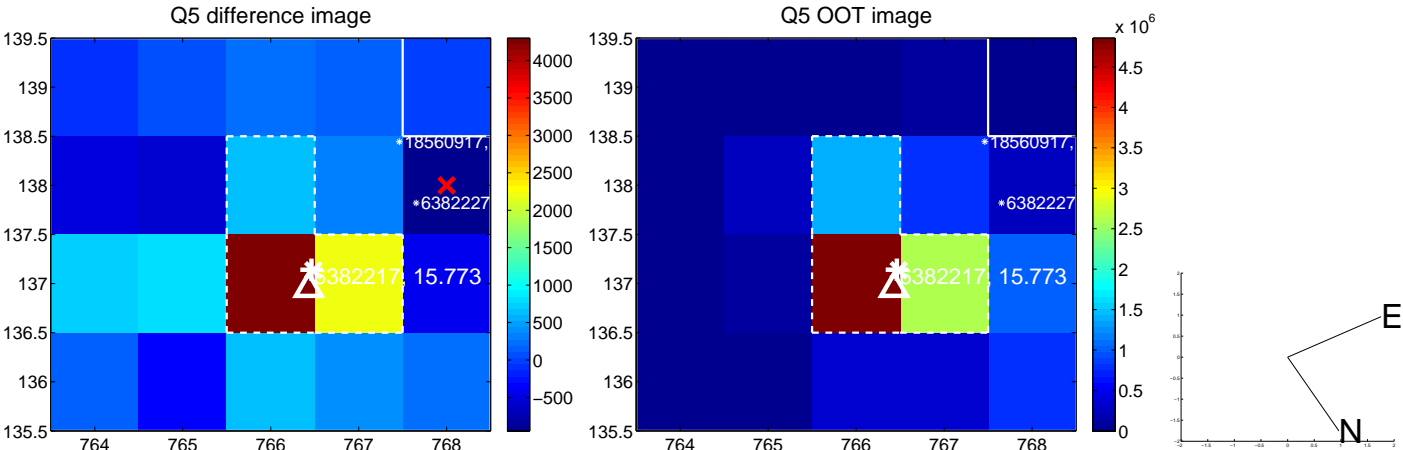
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.409 ± 0.403	1.02	-0.175 ± 0.389	-0.370 ± 0.321
PRF-fit source offset from KIC position	0.503 ± 0.396	1.27	-0.165 ± 0.422	-0.475 ± 0.321
photometric centroid source offset	0.28 ± 0.47	0.59	-0.16 ± 0.47	-0.23 ± 0.47

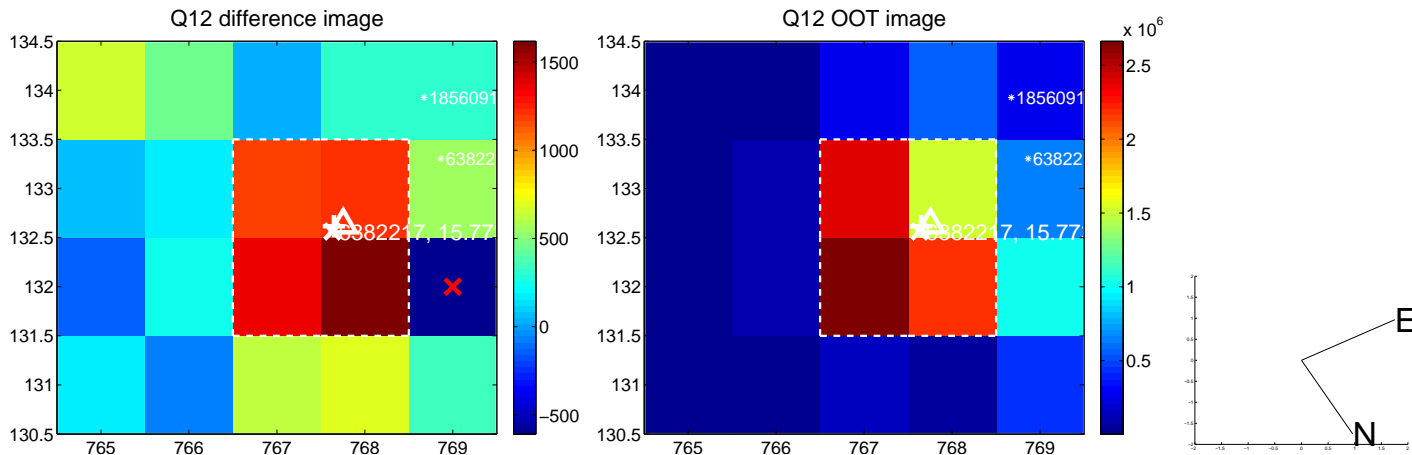
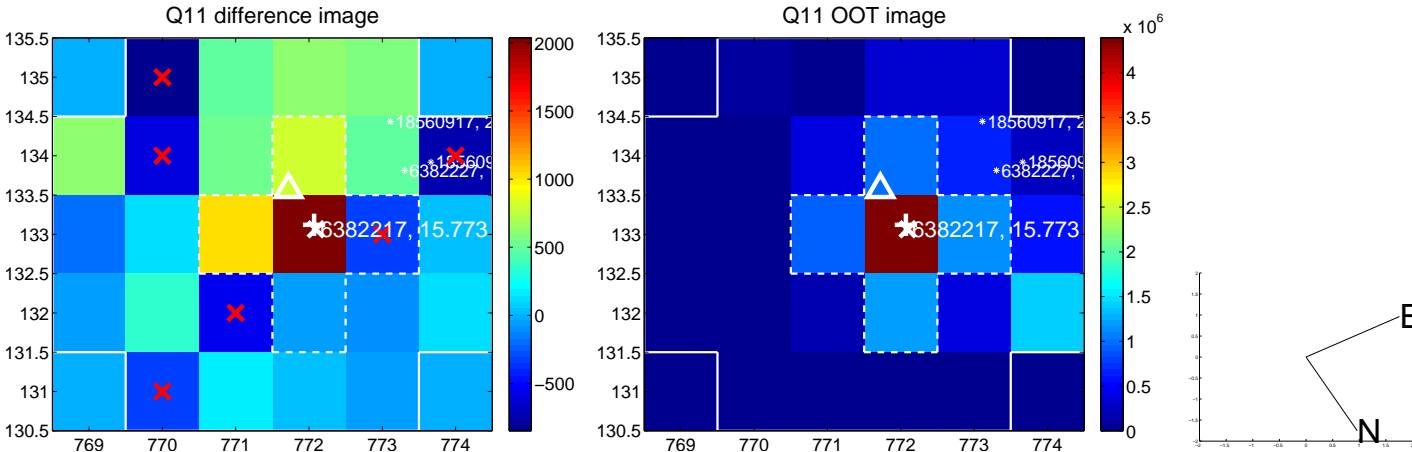
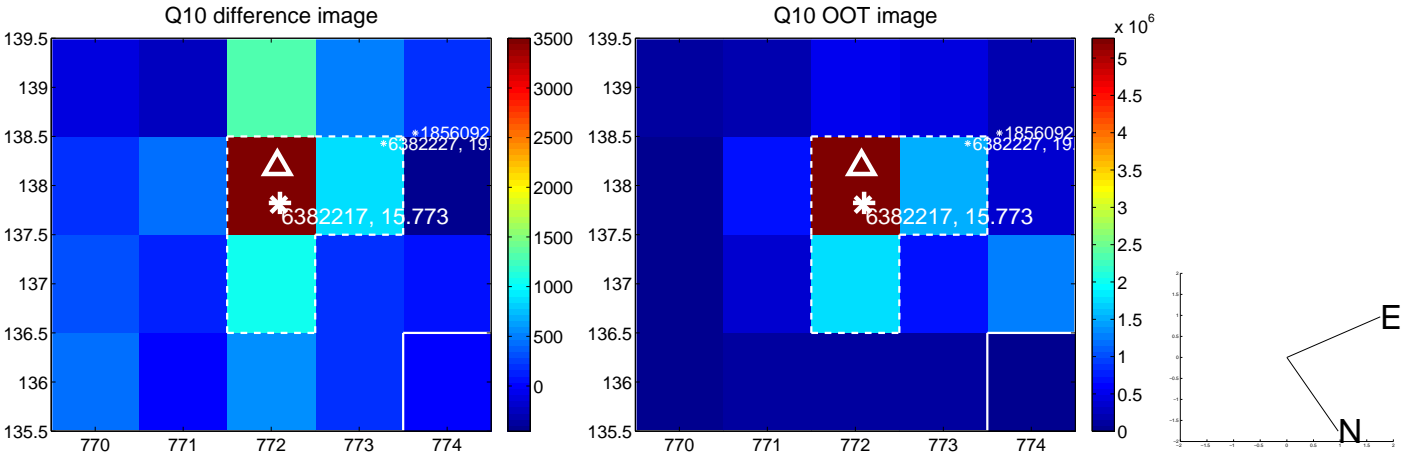
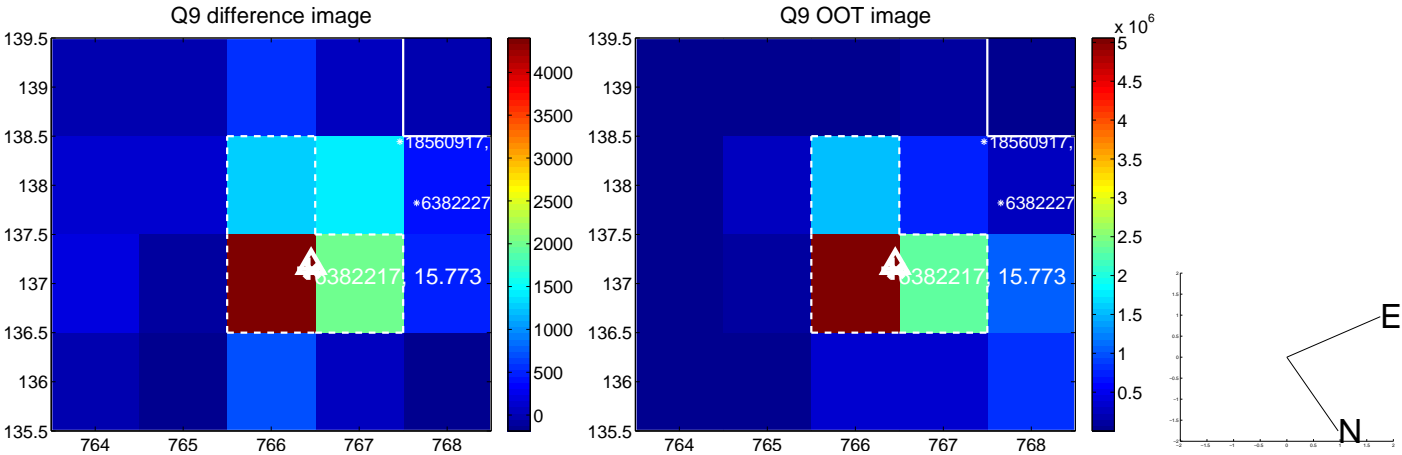


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

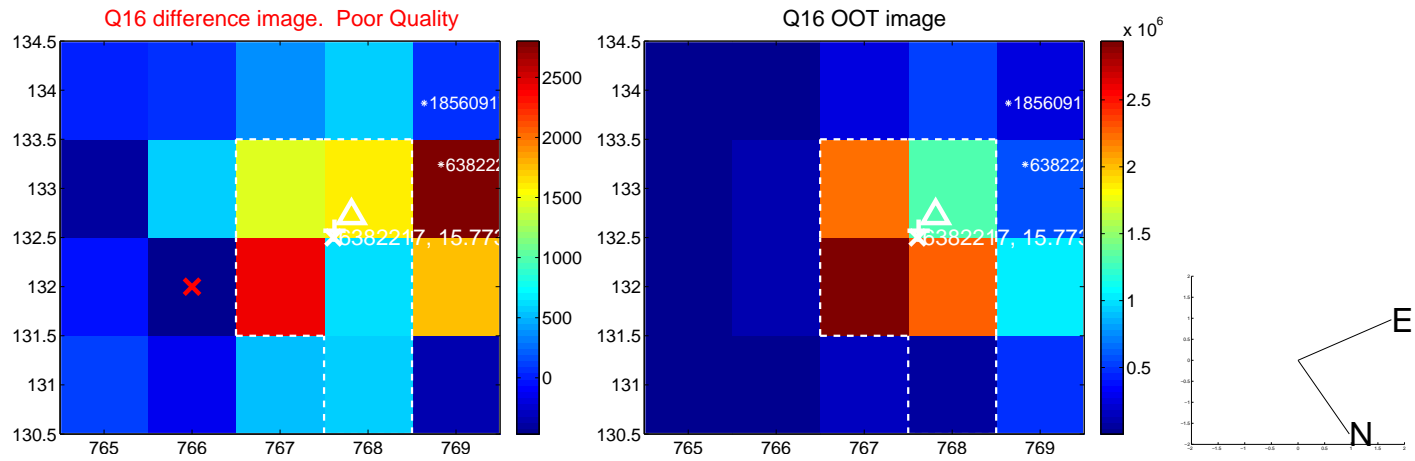
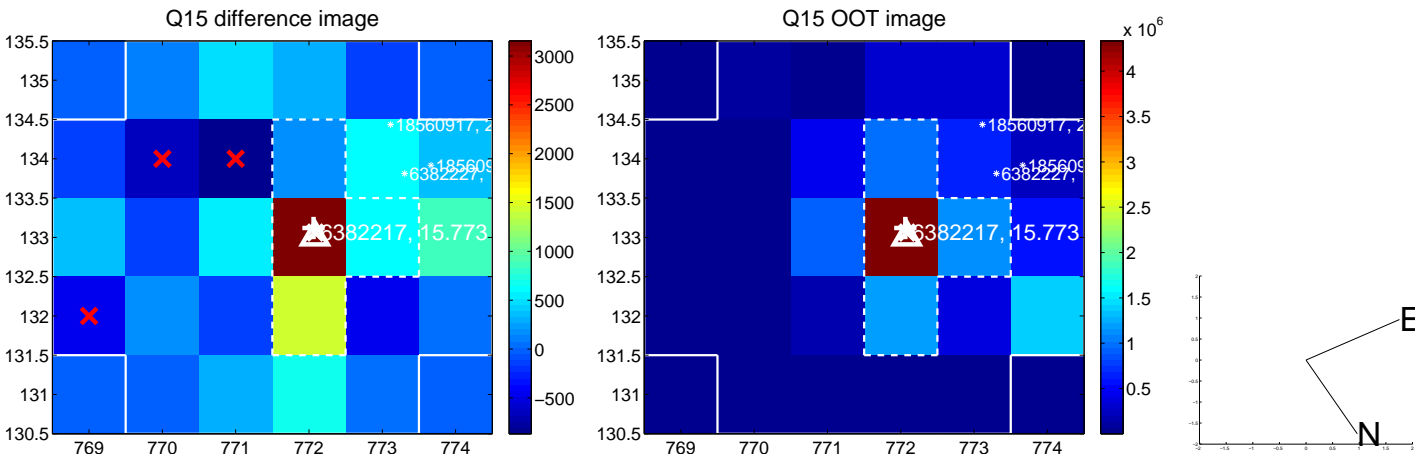
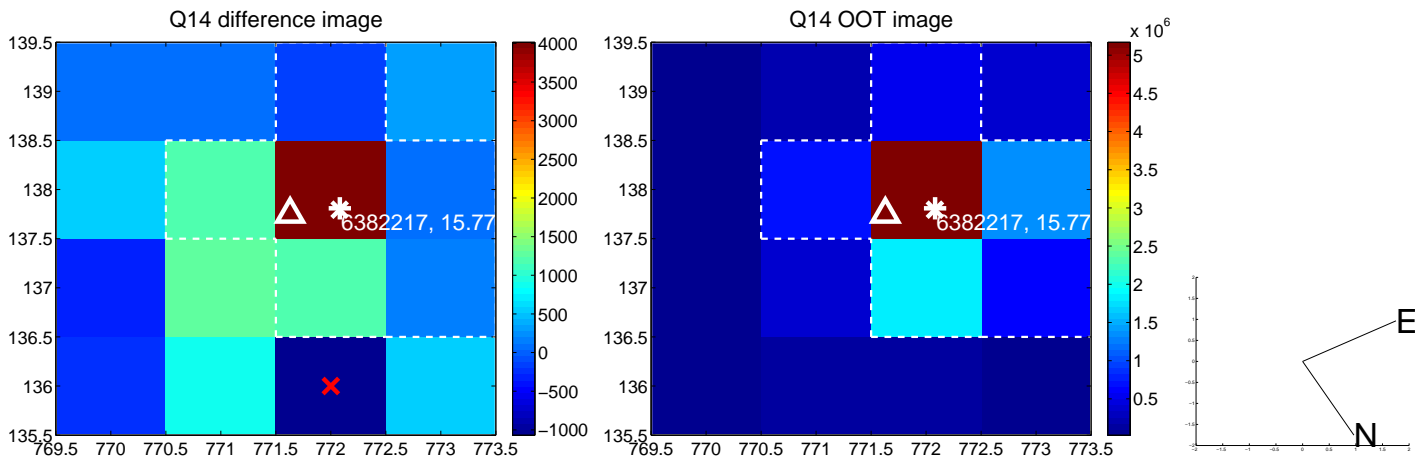
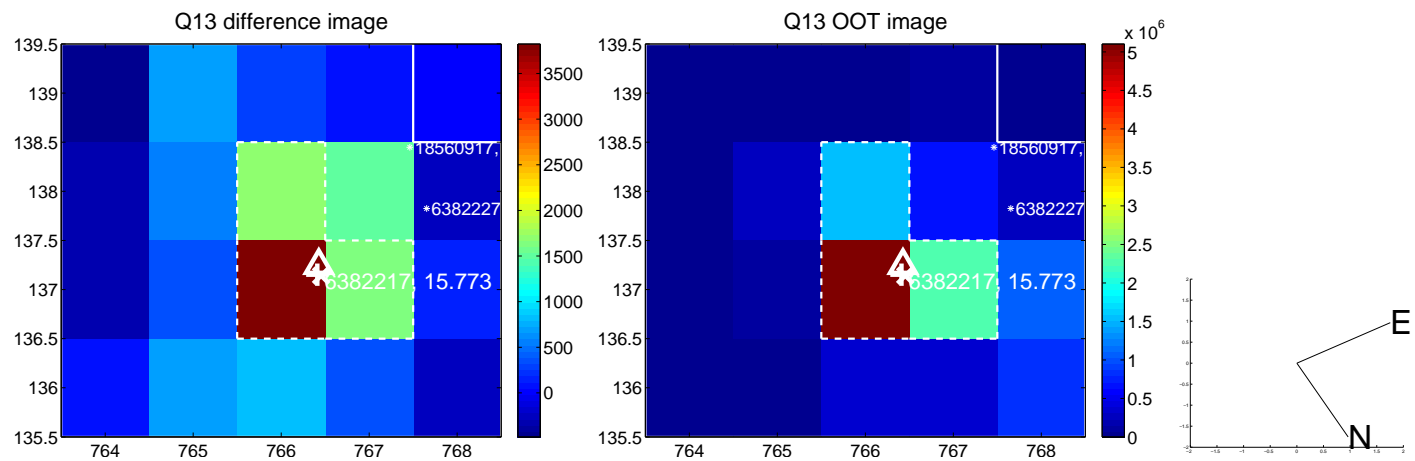
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



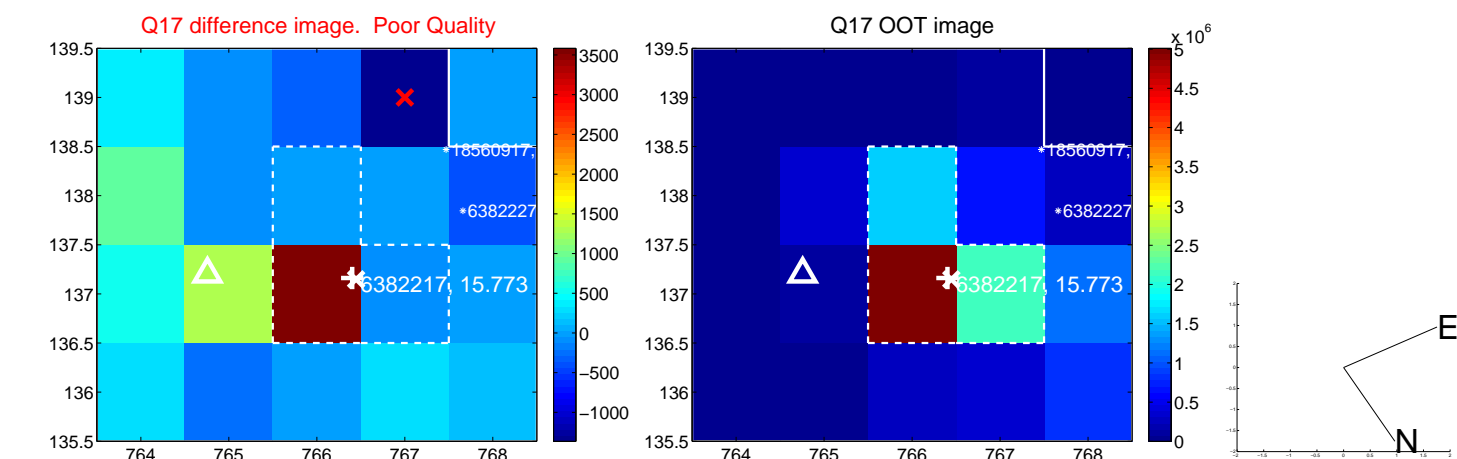
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



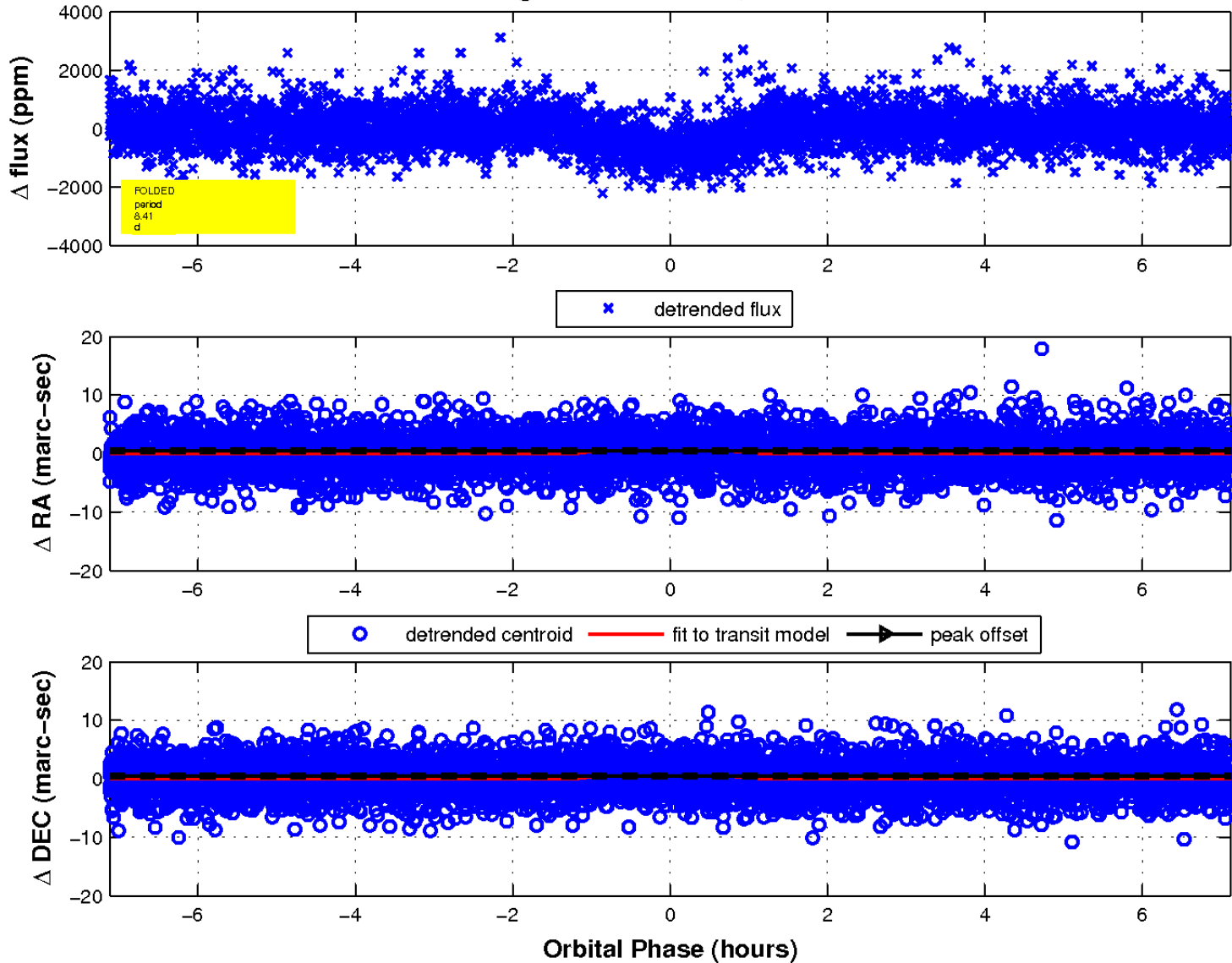
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

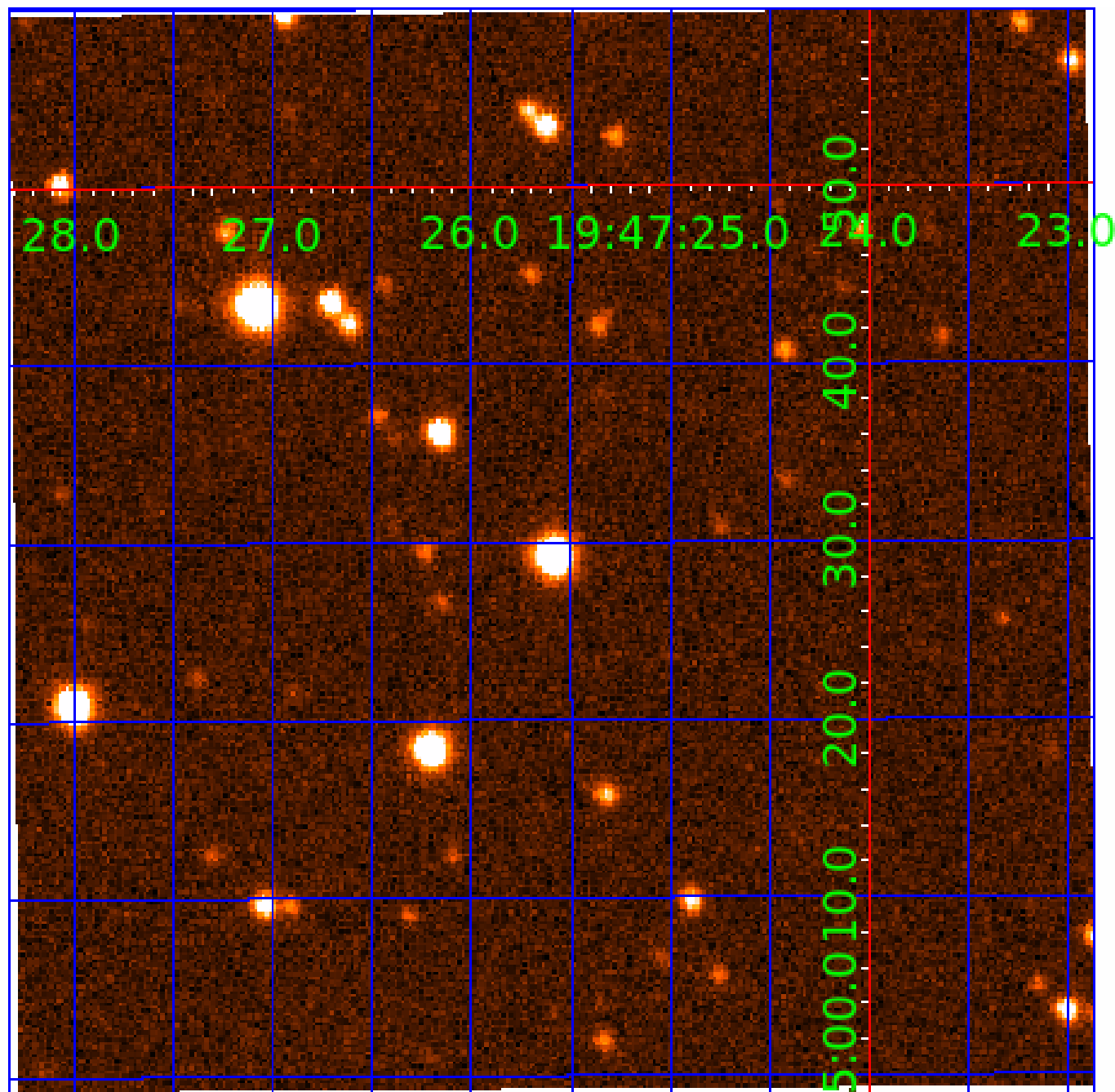


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 006382217

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})
006382217-01	OBS	2036.01	8.411009	133.799840	723.8	2.377	23.2	25.7	0.54	3757	1.62	11.74
006382217-02	OBS	2036.02	5.795302	136.780740	336.6	2.284	12.5	13.6	0.54	3757	1.19	19.29

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006382217-01	OBS	PC	0.98	0	0	0	0	NO_COMMENT
006382217-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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.

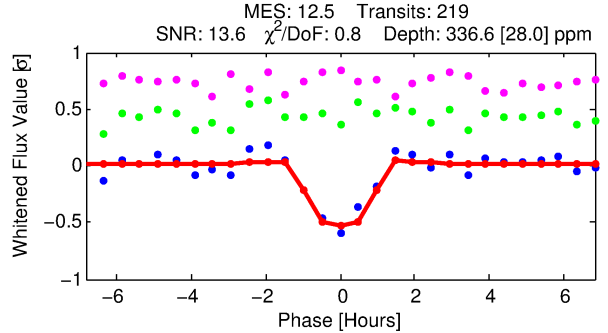
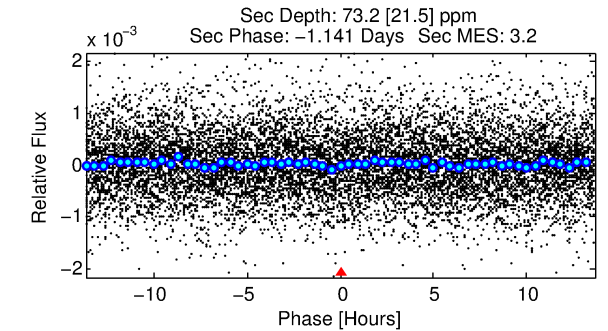
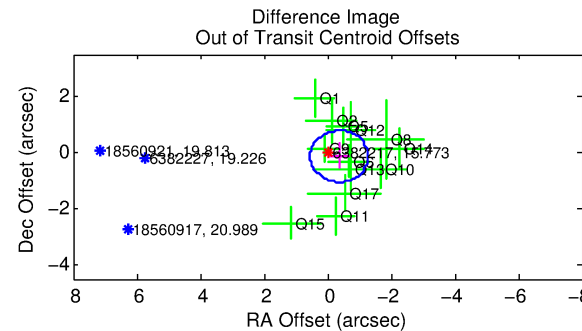
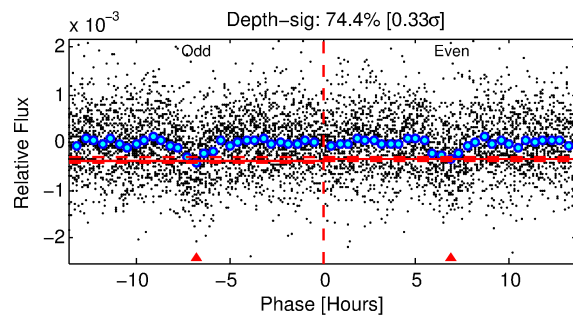
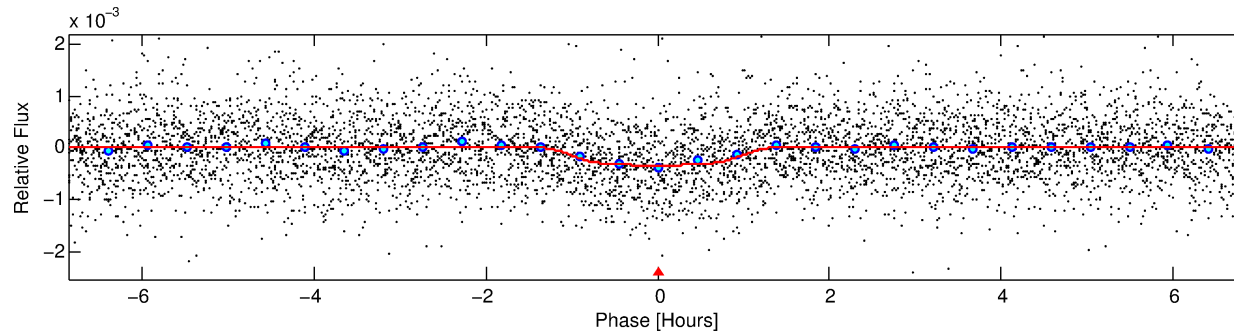
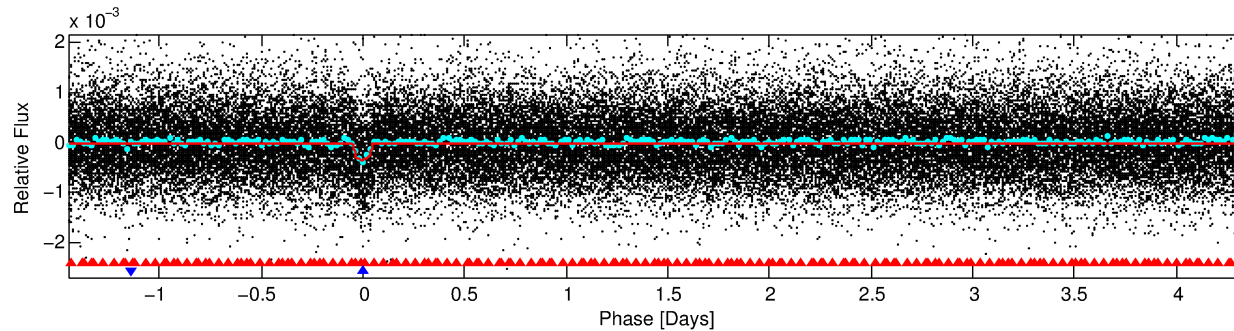
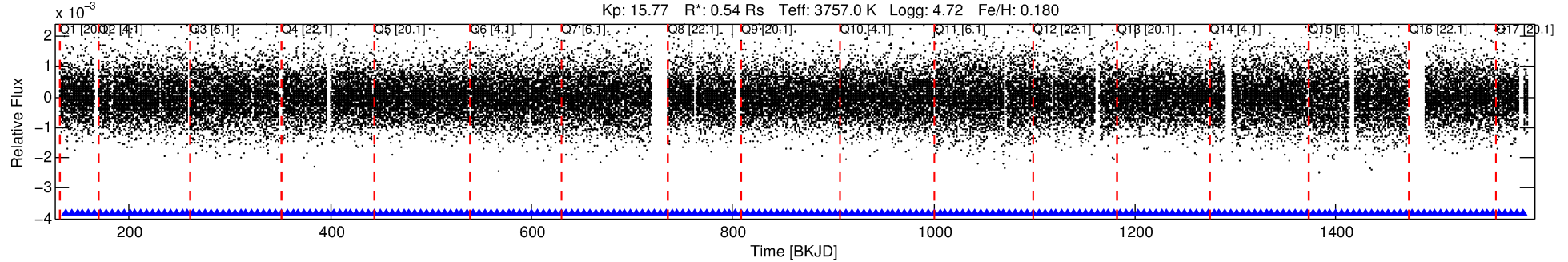
Ephemeris Match Information For 006382217-02

No Significant Match Found

DV One-Page Summary

KIC: 6382217 Candidate: 2 of 2 Period: 5.795 d
KOI: K02036.02 Name: Kepler-353b Corr: 0.979

Kp: 15.77 R*: 0.54 Rs Teff: 3757.0 K Logg: 4.72 Fe/H: 0.180



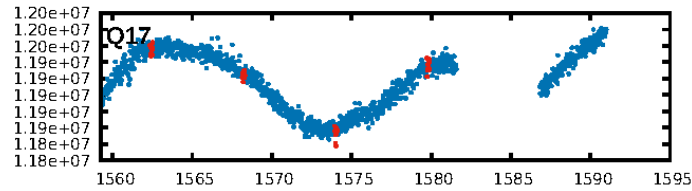
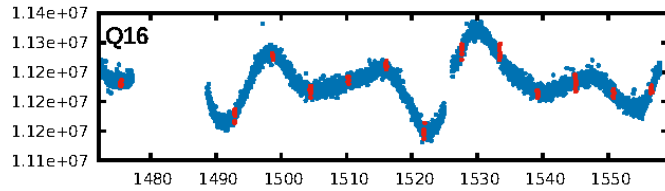
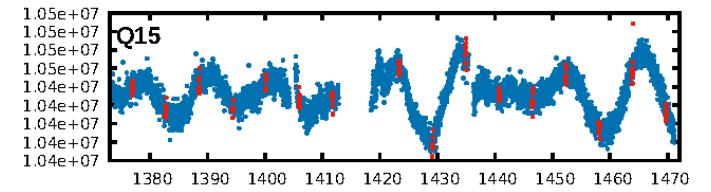
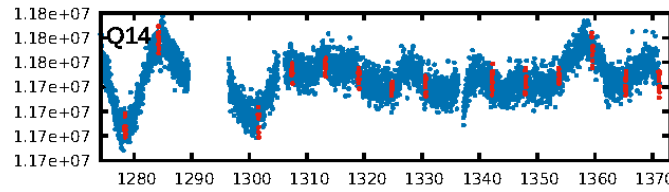
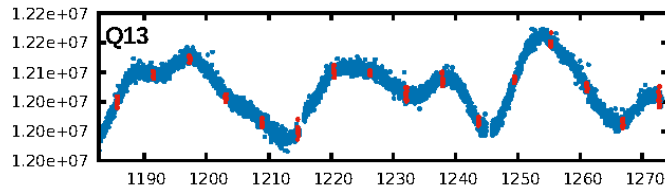
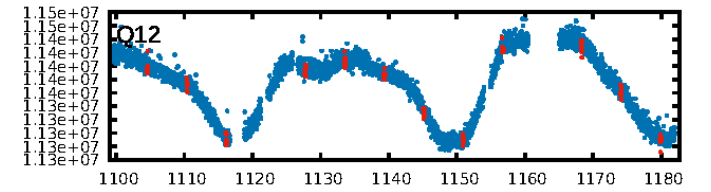
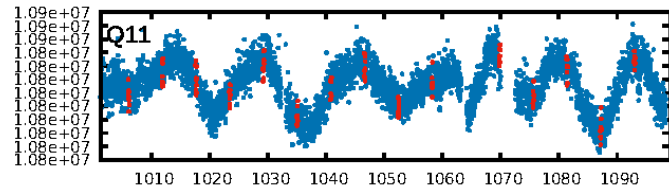
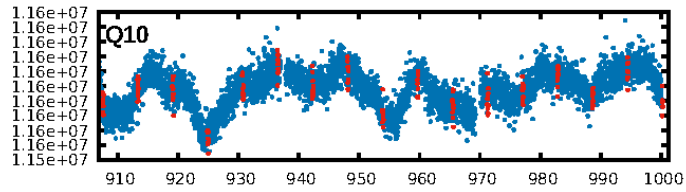
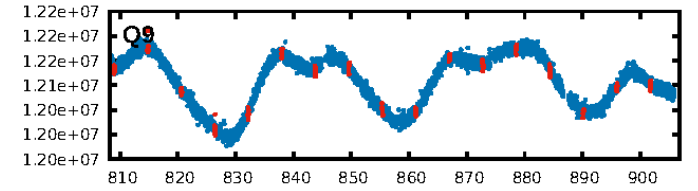
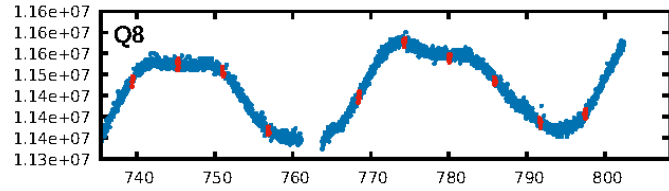
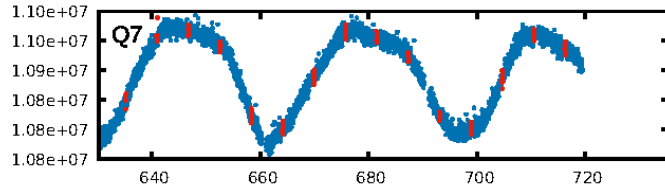
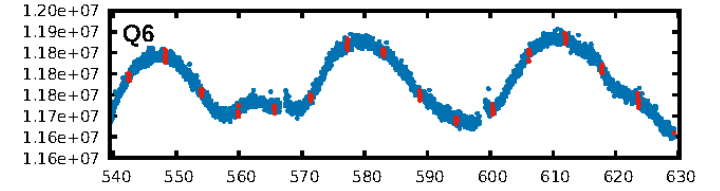
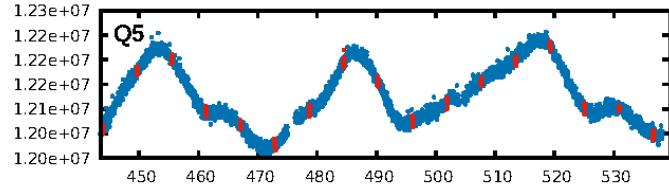
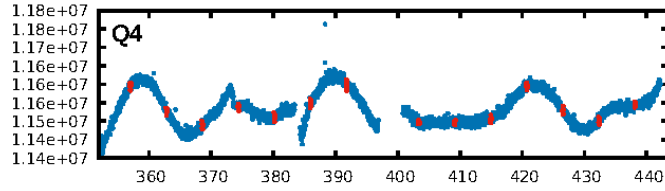
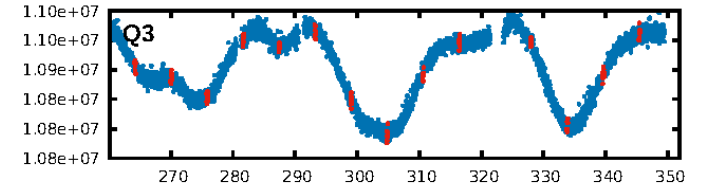
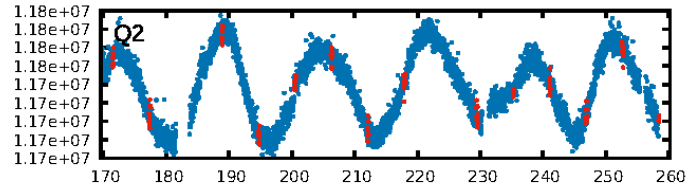
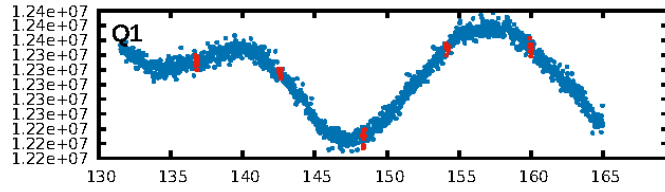
DV Fit Results:

Period = 5.79530 [0.00003] d
Epoch = 136.7807 [0.0033] BKJD
Rp/R* = 0.0203 [0.0091]
a/R* = 9.39 [17.05]
b = 0.90 [0.40]
Seff = 19.28 [2.25]
Teq = 534 [16] K
Rp = 1.19 [0.54] Re
a = 0.0519 [0.0029] AU
Ag = 76.11 [72.08] [1.04σ]
Teffp = 2440 [578] K [3.29σ]

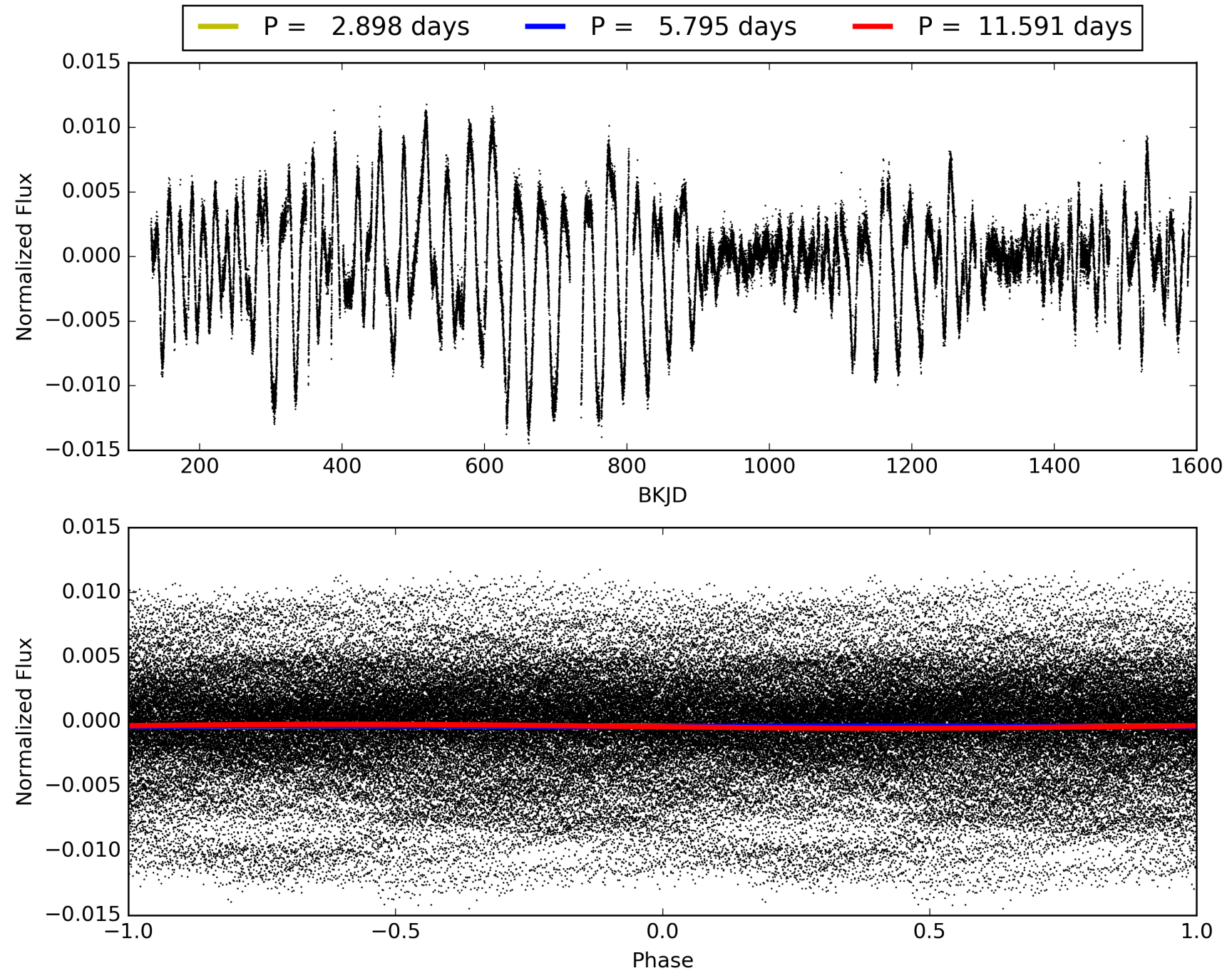
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [19.05σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.01e-36
RollingBand-fgt: 1.00 [210/210]
GhostDiagnostic-chr: 1.116
Centroid-sig: 7.2%
Centroid-so: 0.693 arcsec [0.79σ]
OotOffset-rm: 0.384 arcsec [1.26σ]
KicOffset-rm: 0.367 arcsec [1.30σ]
OotOffset-st: 4/2/2/5 [13]
KicOffset-st: 4/2/2/5 [13]
DiffImageQuality-fgm: 0.69 [9/13]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 006382217-02, PDC Light Curves

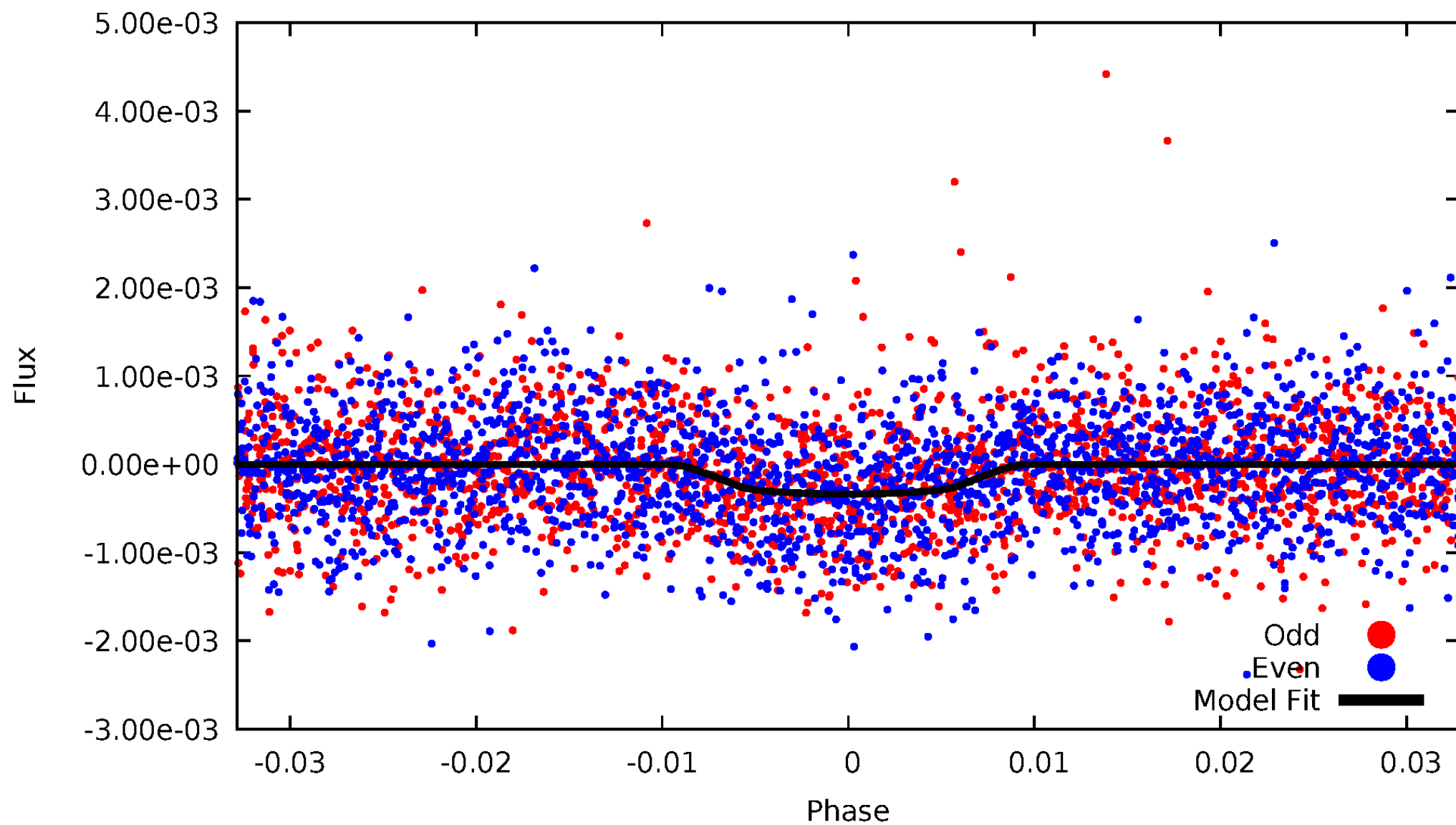


TCE 006382217-02



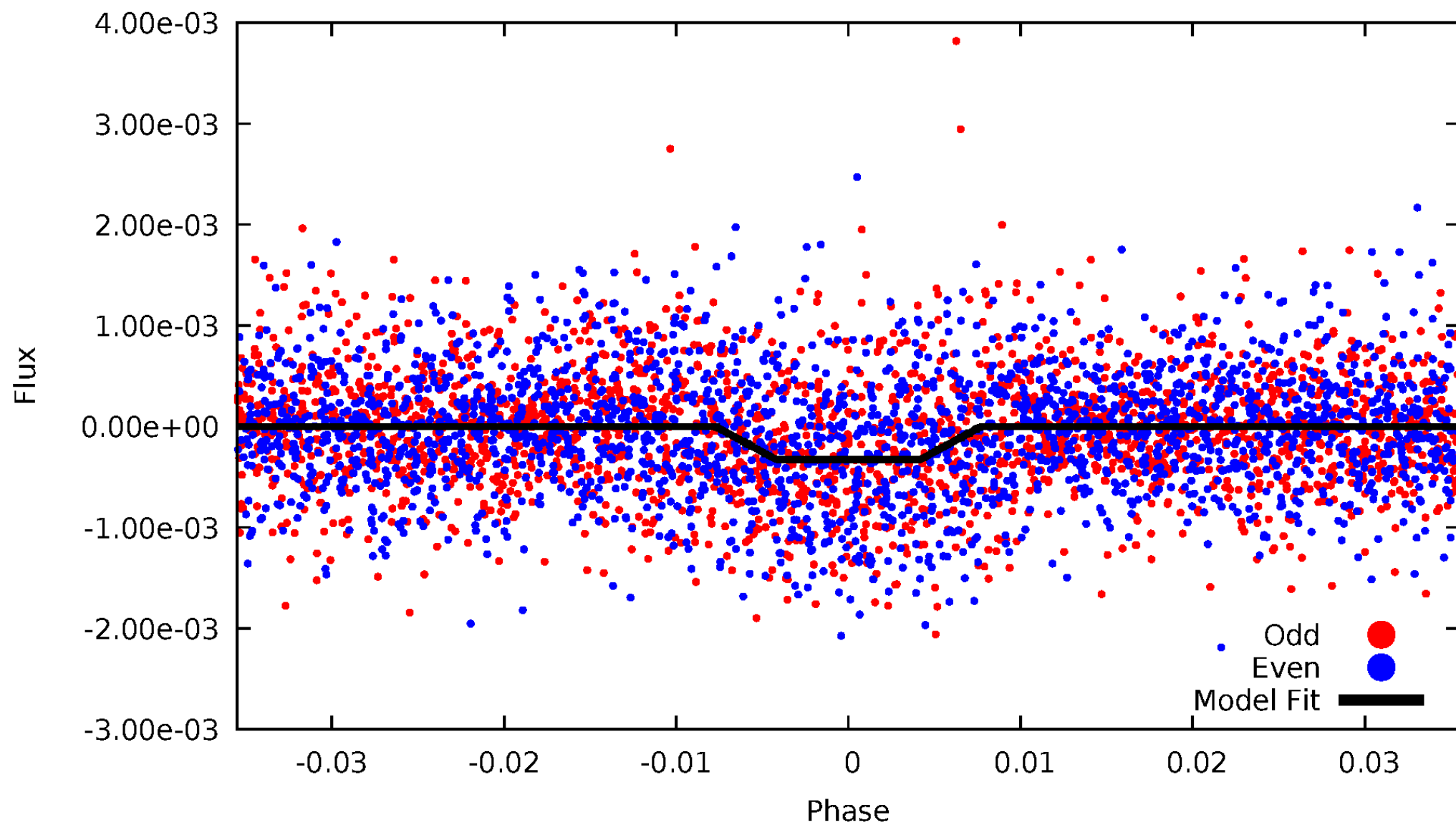
DV Odd/Even

TCE 006382217-02



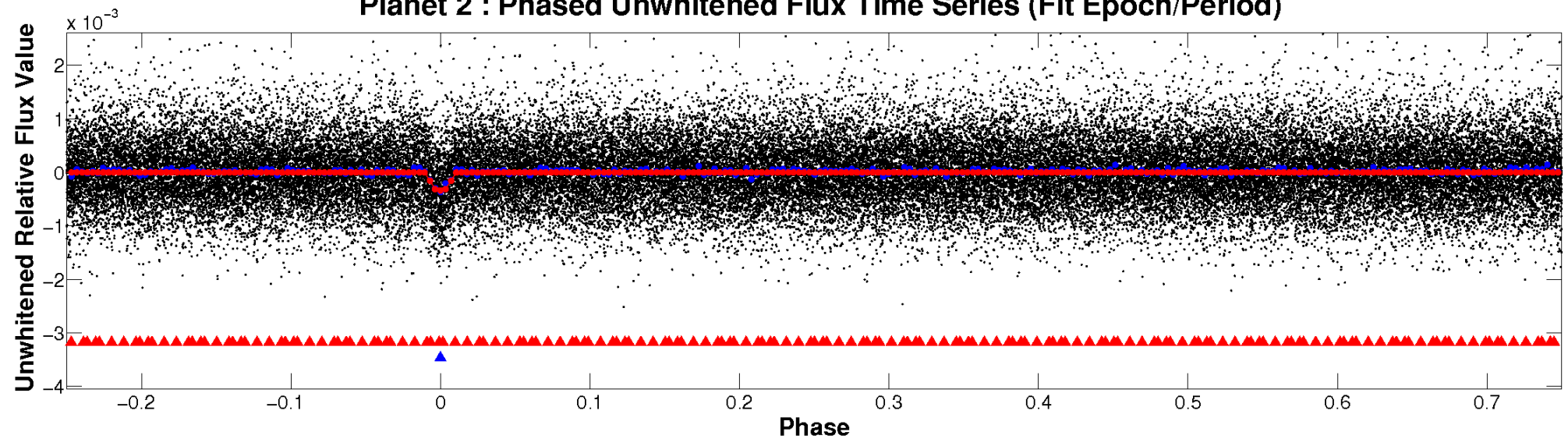
ALT Odd/Even

TCE 006382217-02

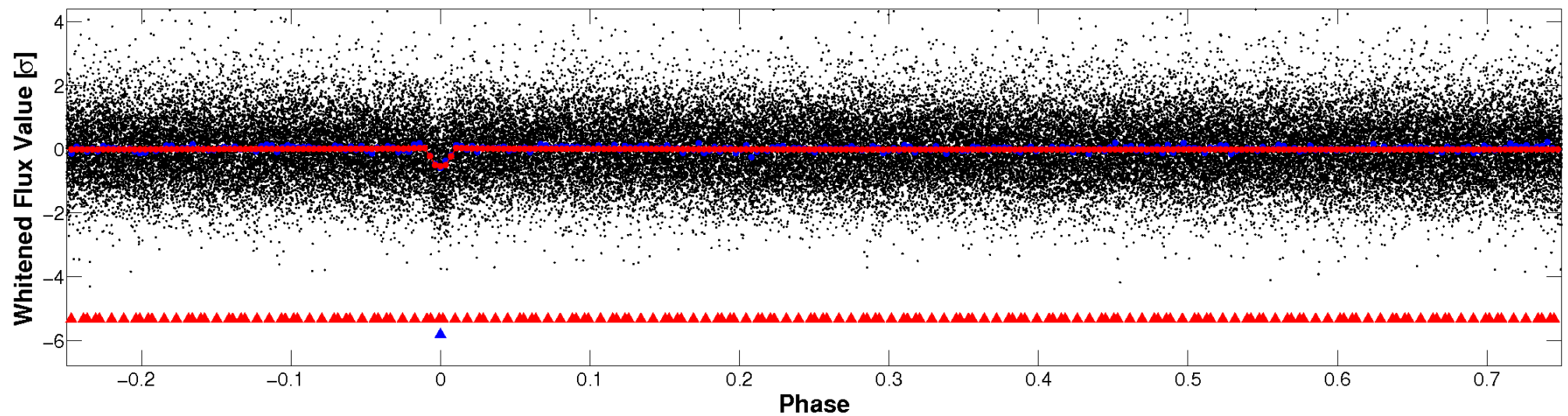


Non-Whitened Vs. Whitened Light Curve

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

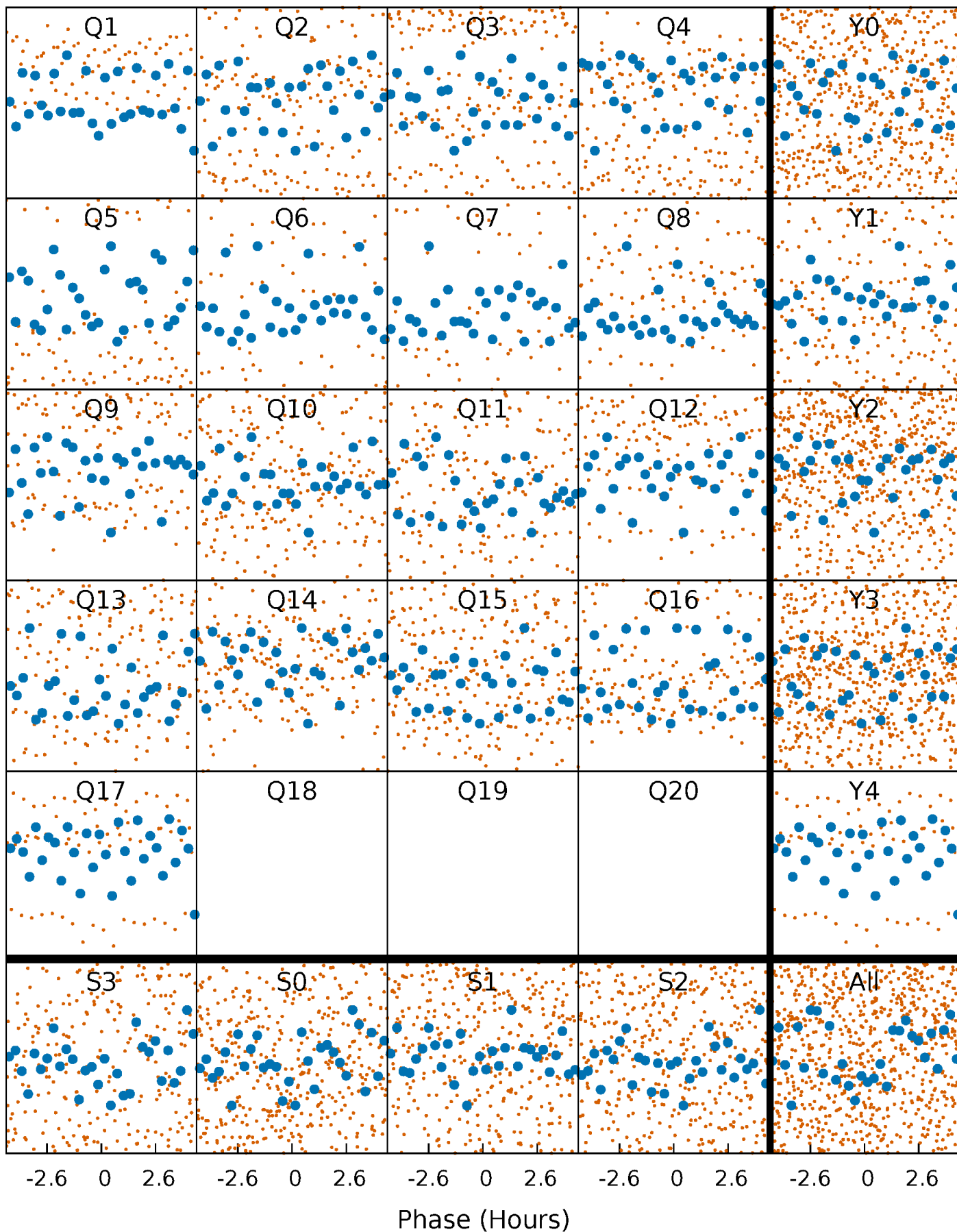


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



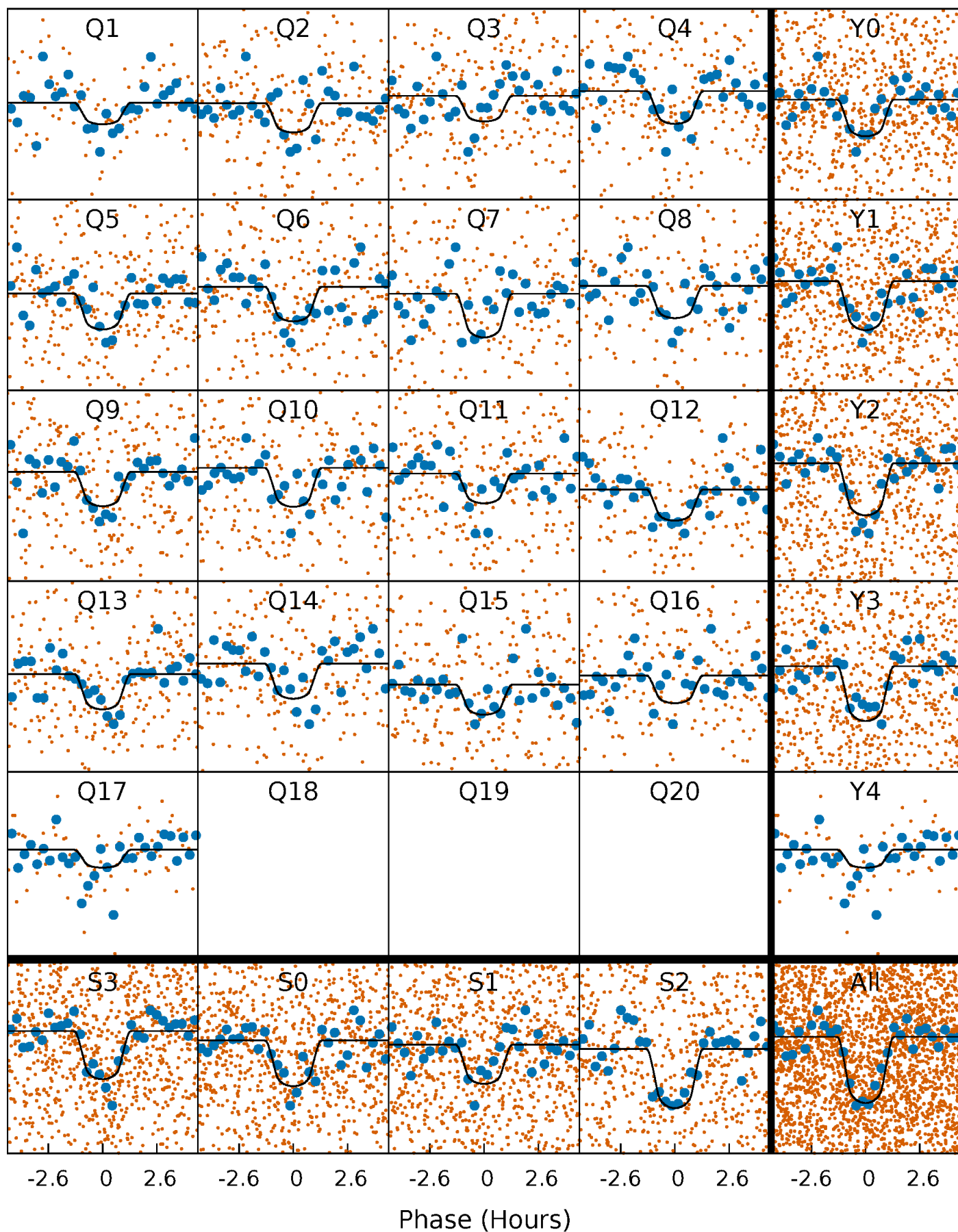
PDC Quarter-Phased Transit Curves

TCE 006382217-02 P= 5.795302 Days $T_0=136.780740$ (BKJD)



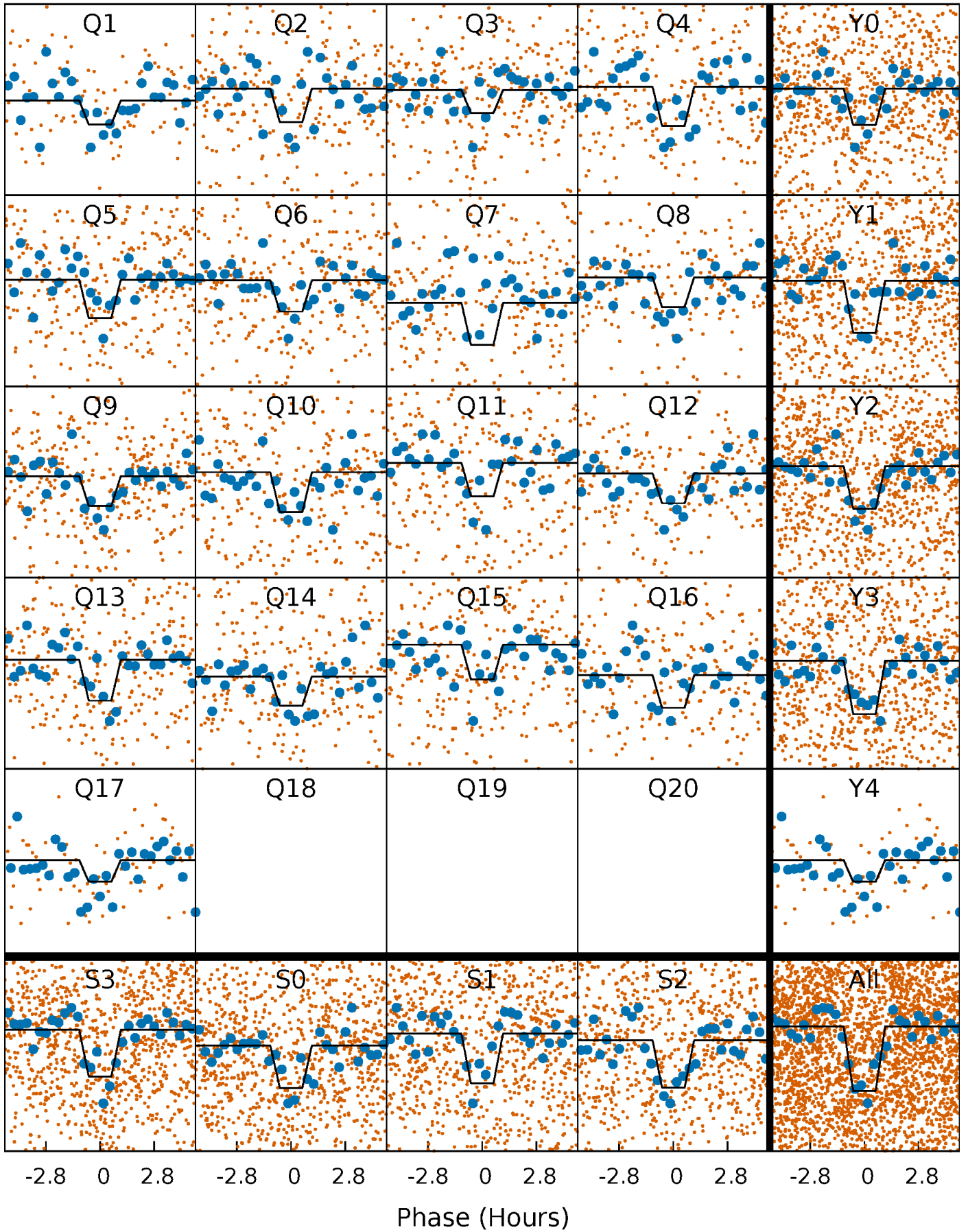
DV Quarter-Phased Transit Curves

TCE 006382217-02 P= 5.795302 Days $T_0=136.780740$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

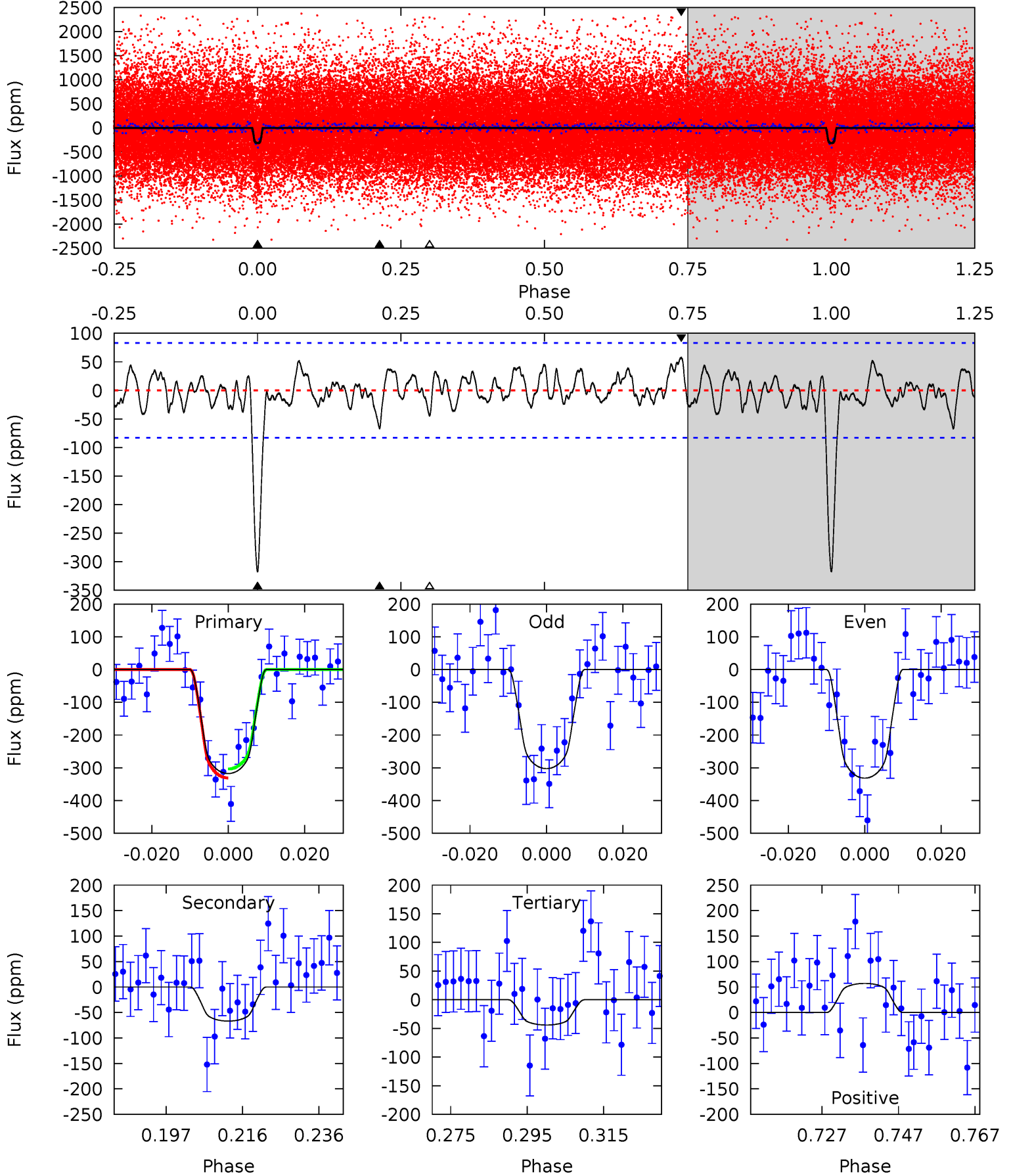
TCE 006382217-02 P= 5.795315 Days $T_0=136.776326$ (BKJD)



DV Model-Shift Uniqueness Test

006382217-02, P = 5.795302 Days, E = 130.985438 Days

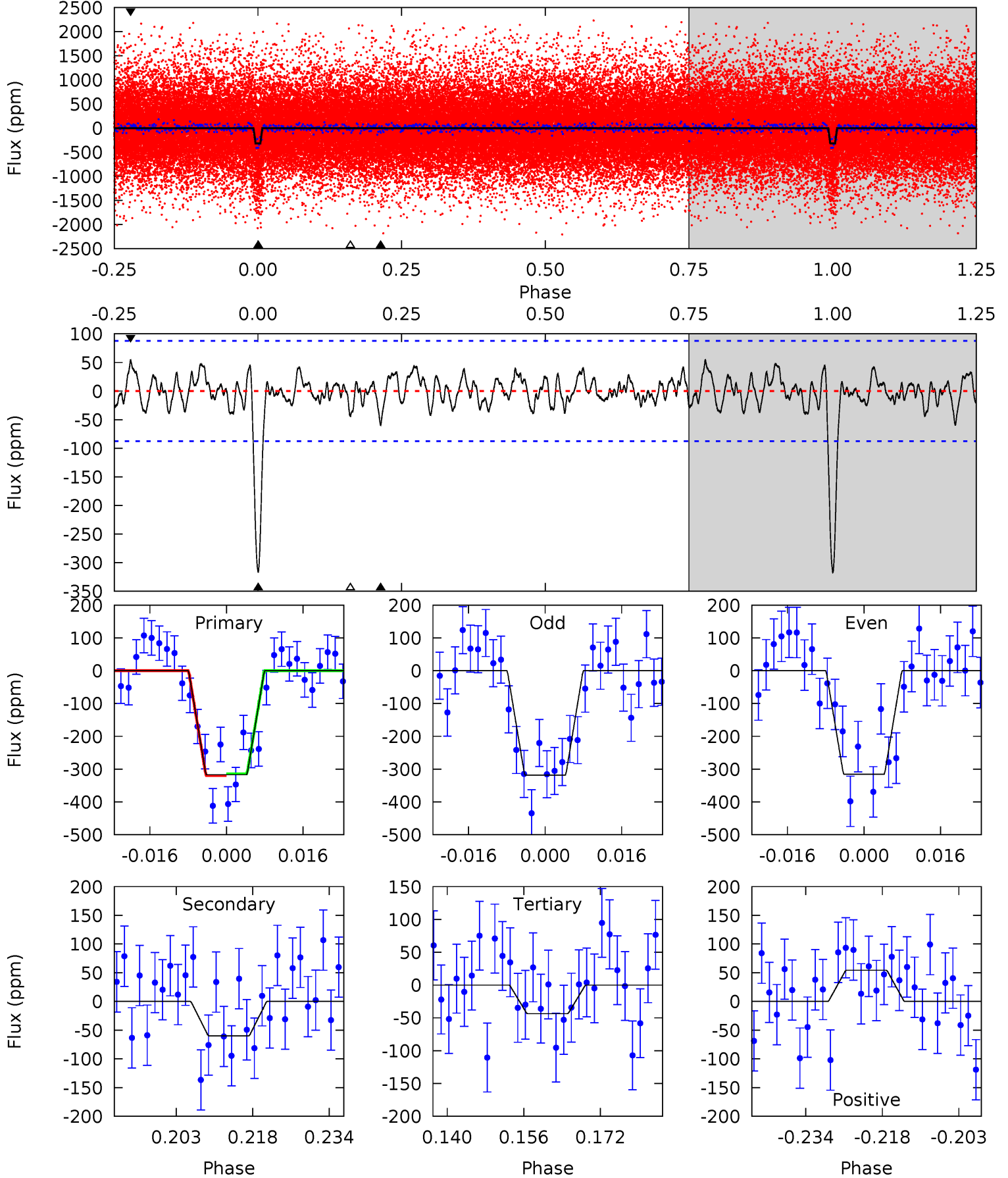
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.8	3.95	2.60	3.37	4.90	2.33	1.25	16.2	15.4	1.35	0.58	0.86	0.92	0.15	0.81



Alt Model-Shift Uniqueness Test

006382217-02, P = 5.795315 Days, E = 130.981011 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.9	3.37	2.46	3.07	4.94	2.42	1.12	15.4	14.8	0.91	0.30	0.07	0.87	0.15	0.15



Stellar Parameters For KIC 006382217

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3757^{+75}_{-83}	$4.718^{+0.039}_{-0.024}$	$0.180^{+0.150}_{-0.150}$	$0.539^{+0.030}_{-0.038}$	$0.552^{+0.031}_{-0.038}$	$4.977^{+0.901}_{-0.523}$
	+2%/-2%	+1%/-1%	+83%/-83%	+6%/-7%	+6%/-7%	+18%/-11%
Source	SPE70	SPE60	SPE70	DSEP		

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

Secondary Eclipse Parameters for KIC 006382217-02 / KOI 2036.02

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-67 ± 17	$1.22^{+0.52}_{-0.53}$	743^{+17}_{-18}	2829^{+491}_{-277}	67^{+135}_{-37}
Alt.	-60 ± 18	$1.07^{+0.53}_{-0.54}$	743^{+18}_{-18}	2882^{+674}_{-300}	76^{+220}_{-43}

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

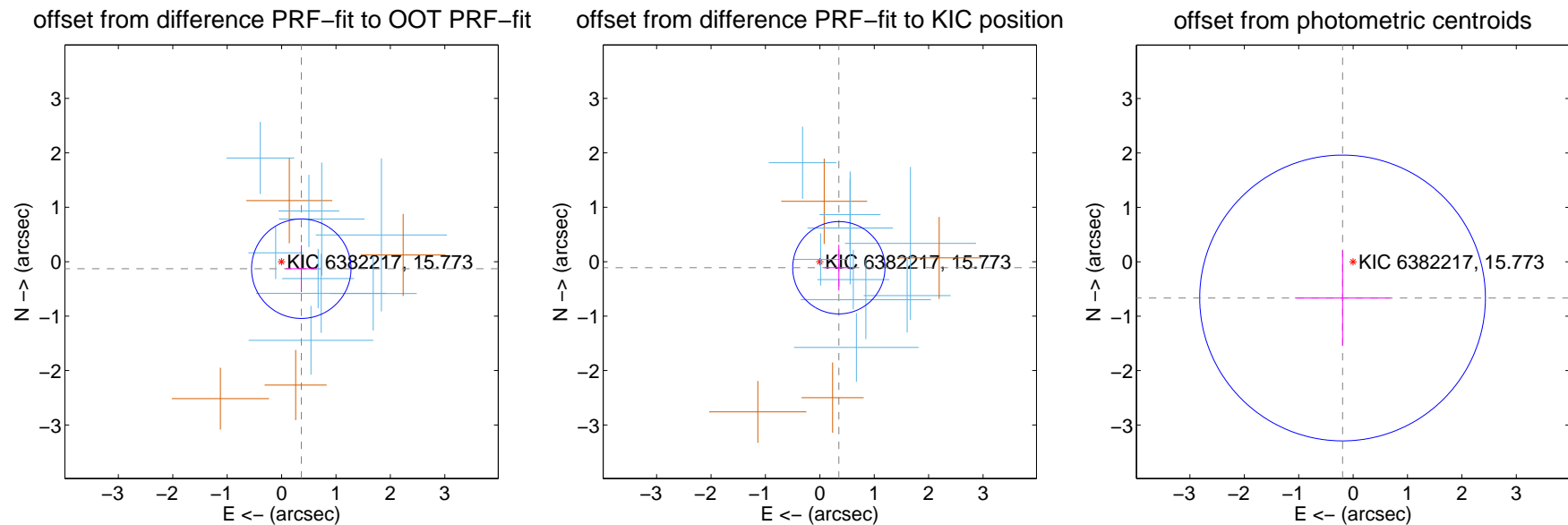
DV Centroid Data

Supplemental centroid analysis for 006382217-02. Kepler magnitude: 15.77. Transit SNR 13.64

There are 9 quarters with good PRF difference image offsets

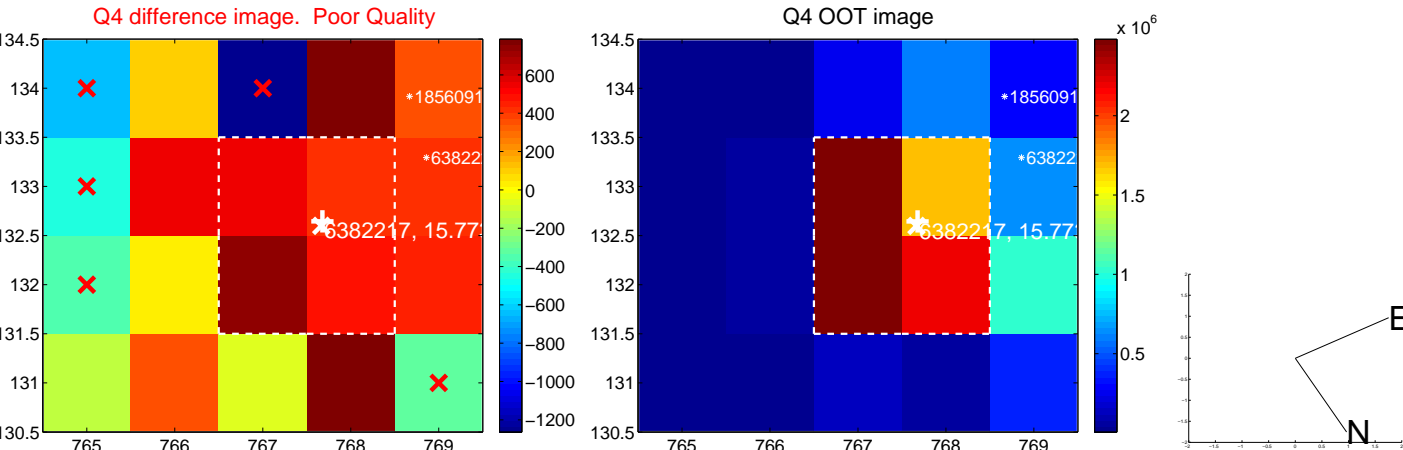
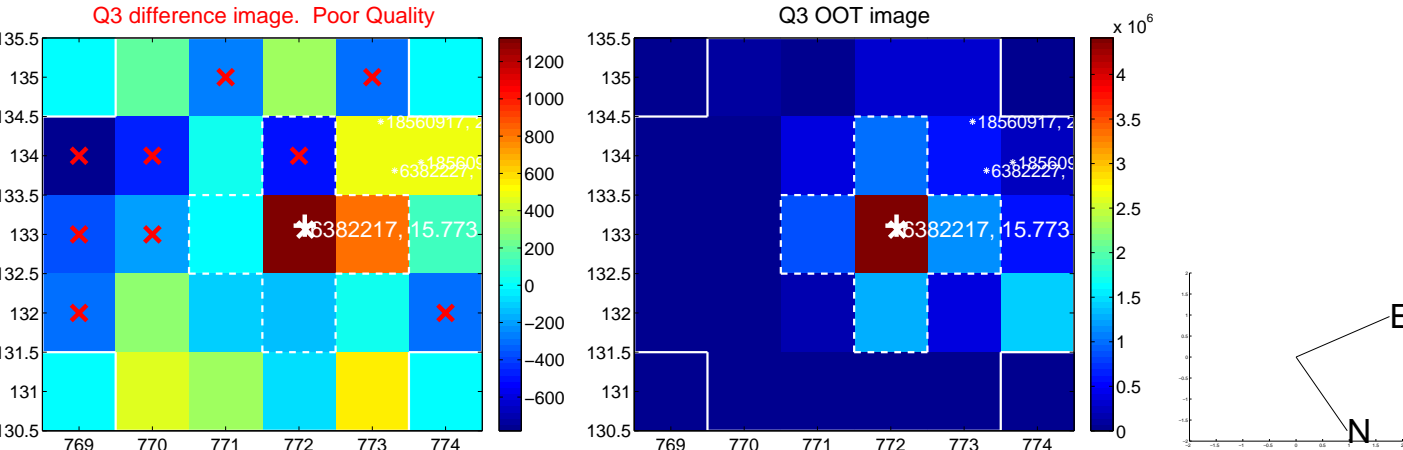
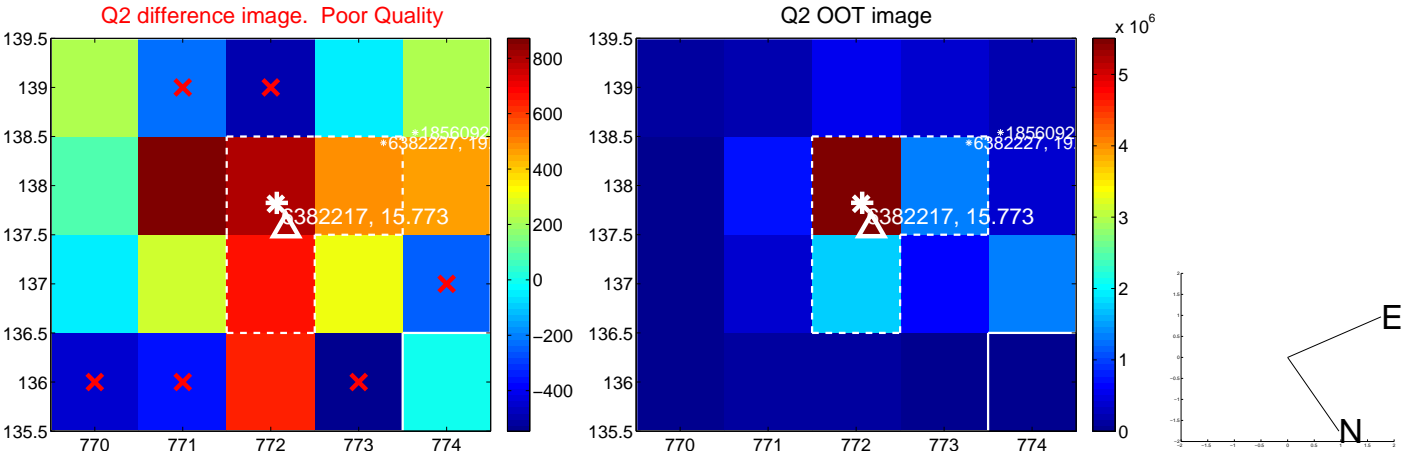
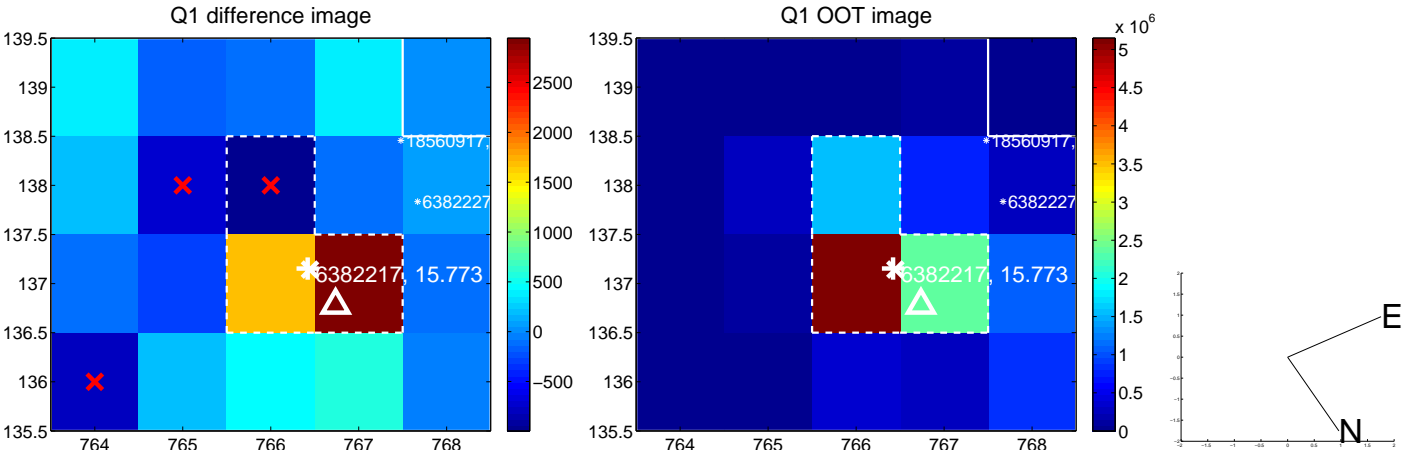
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.384 ± 0.305	1.26	-0.362 ± 0.285	-0.129 ± 0.430
PRF-fit source offset from KIC position	0.367 ± 0.283	1.30	-0.349 ± 0.265	-0.111 ± 0.420
photometric centroid source offset	0.69 ± 0.88	0.79	0.19 ± 0.88	-0.67 ± 0.88

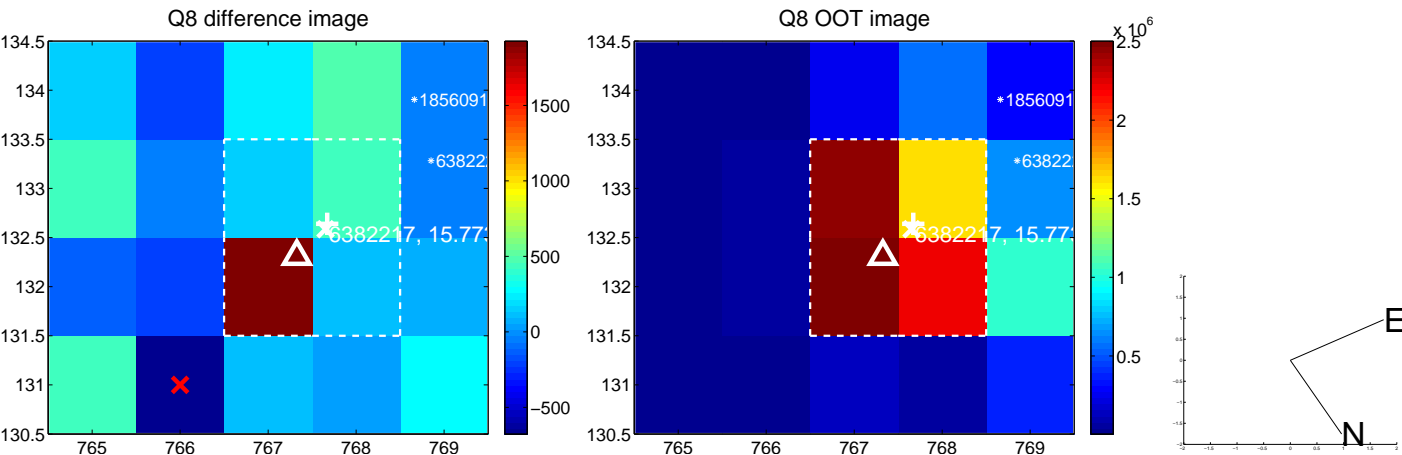
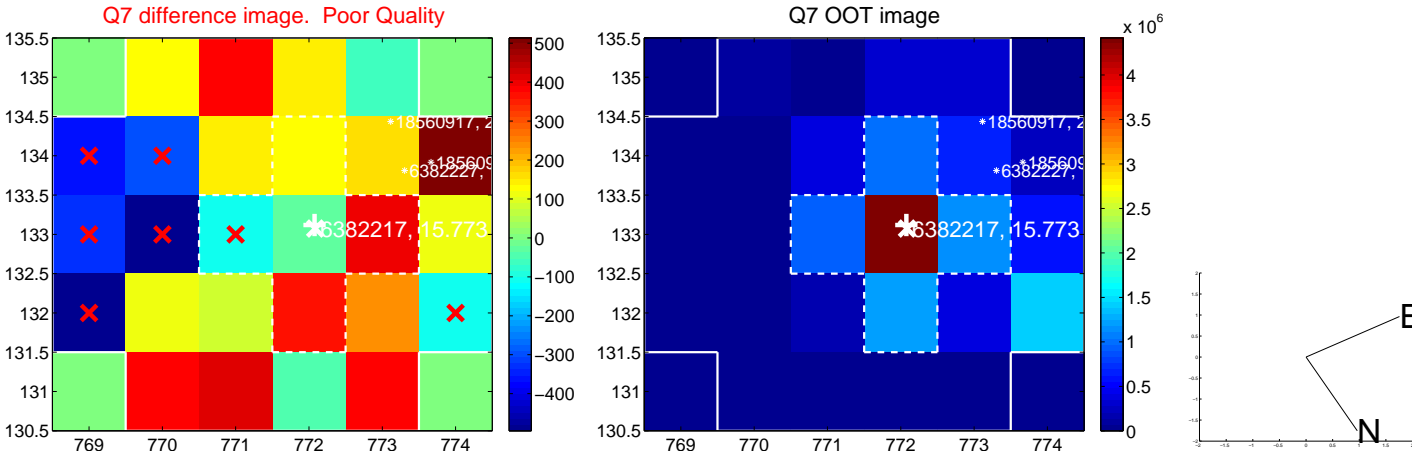
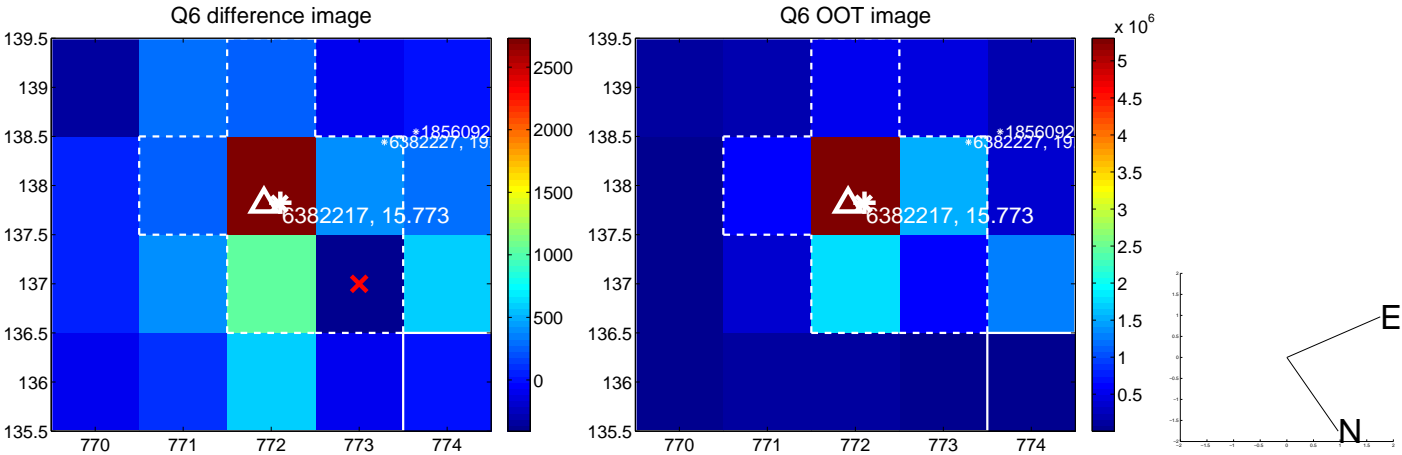
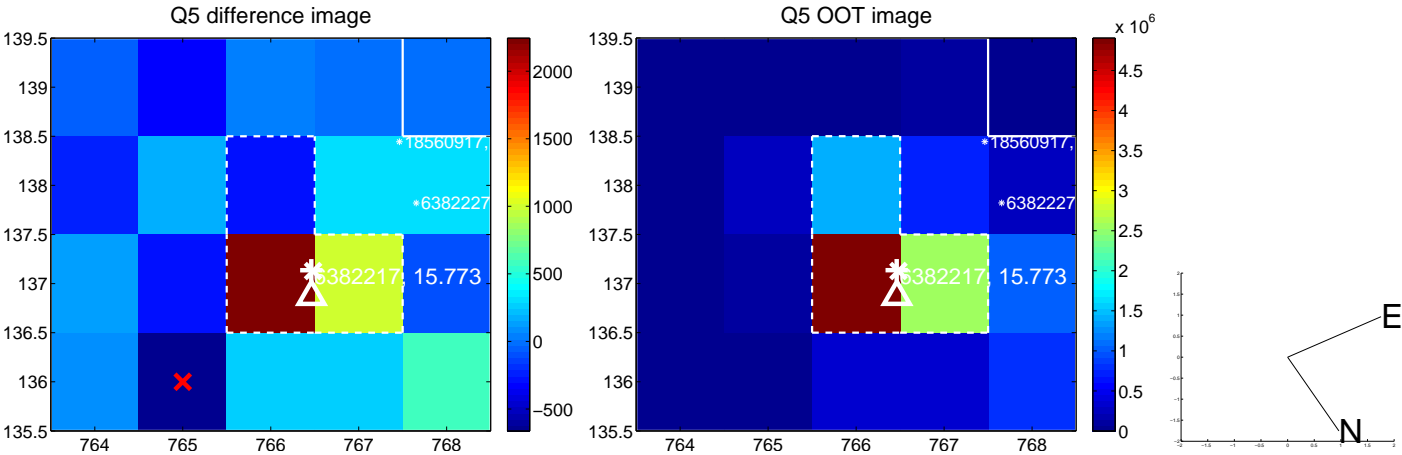


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

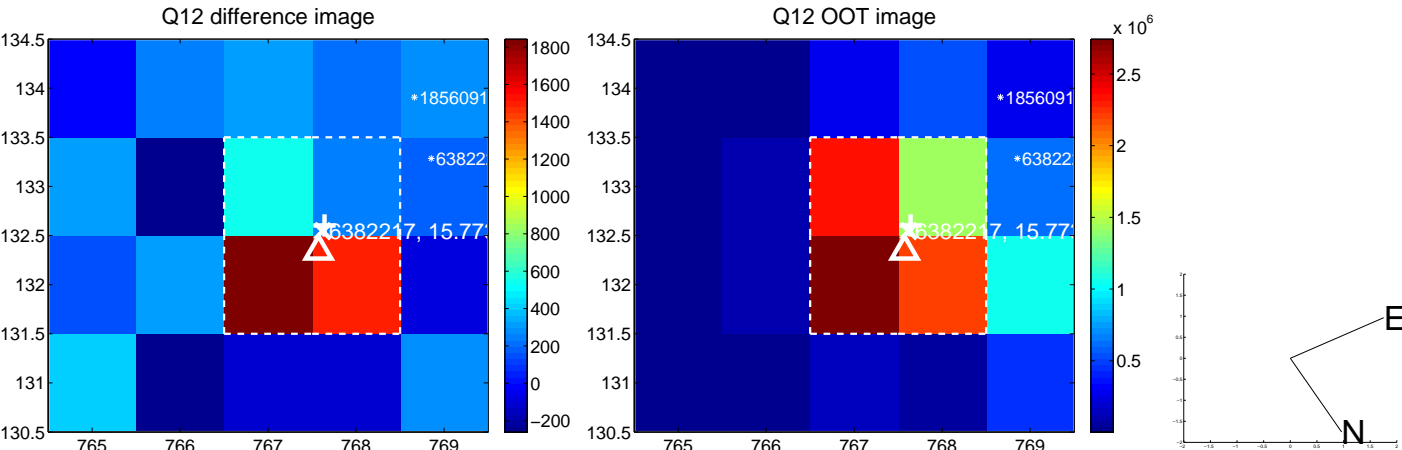
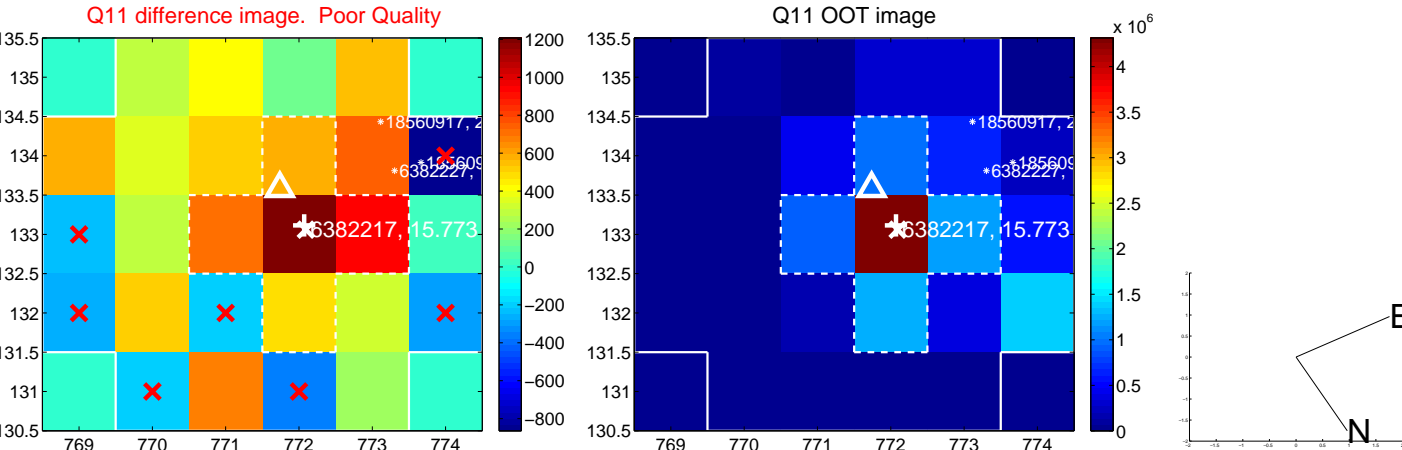
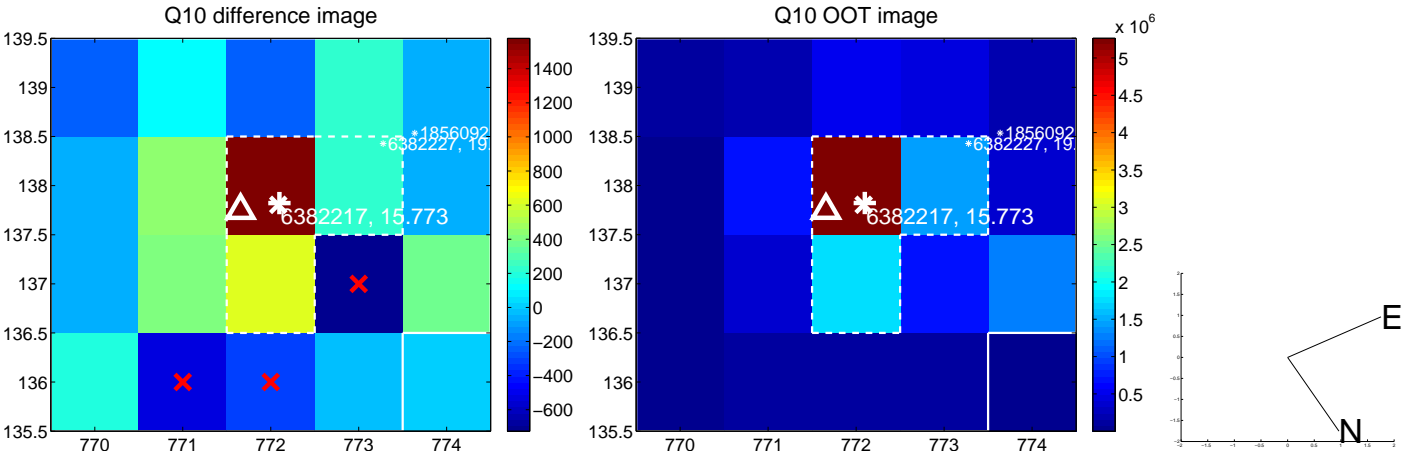
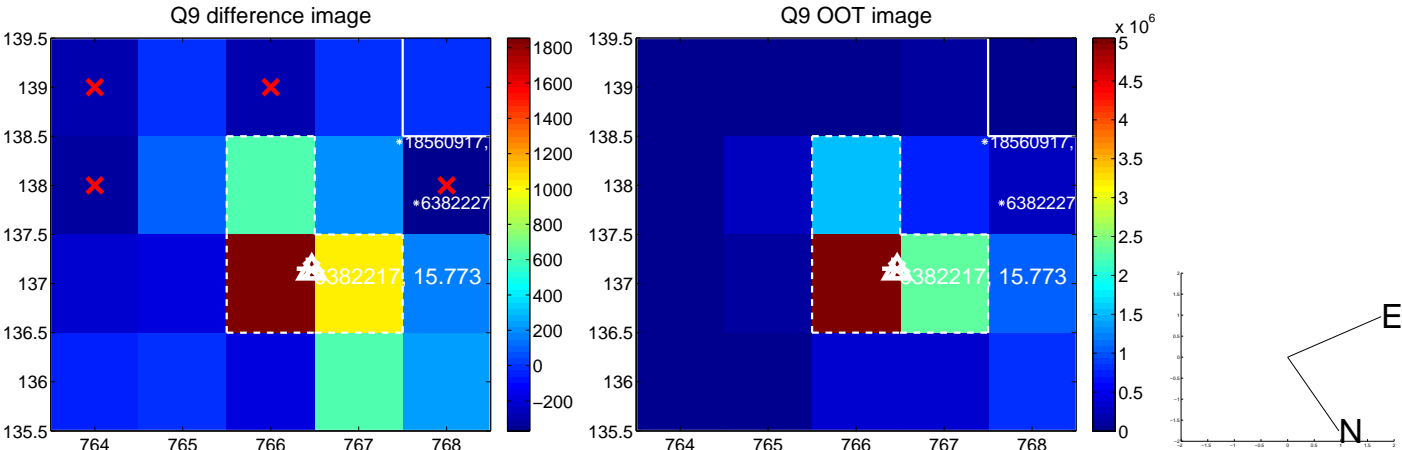
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



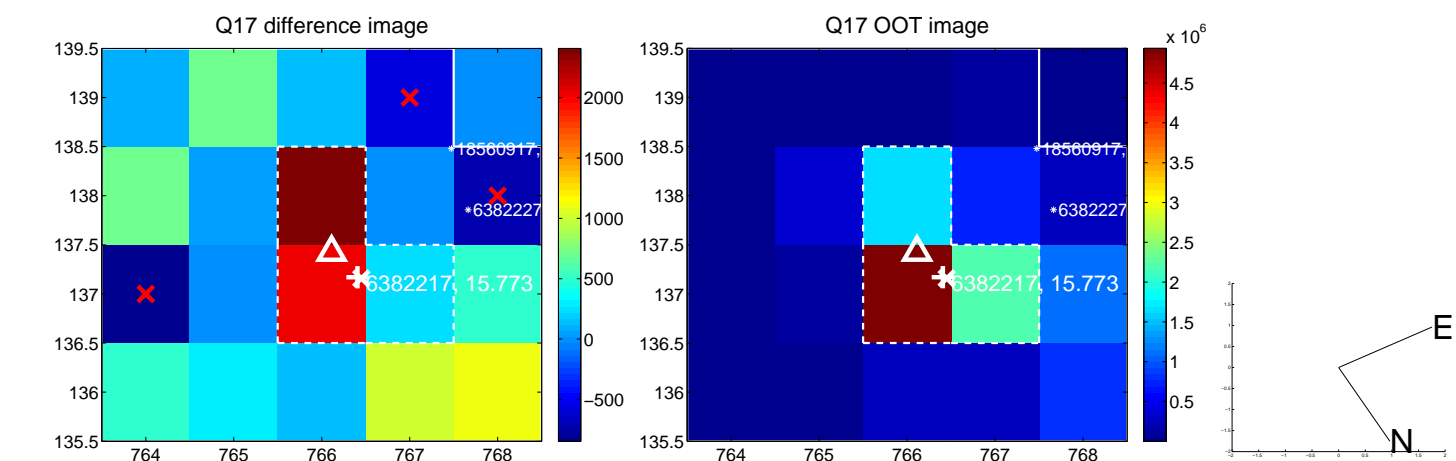
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



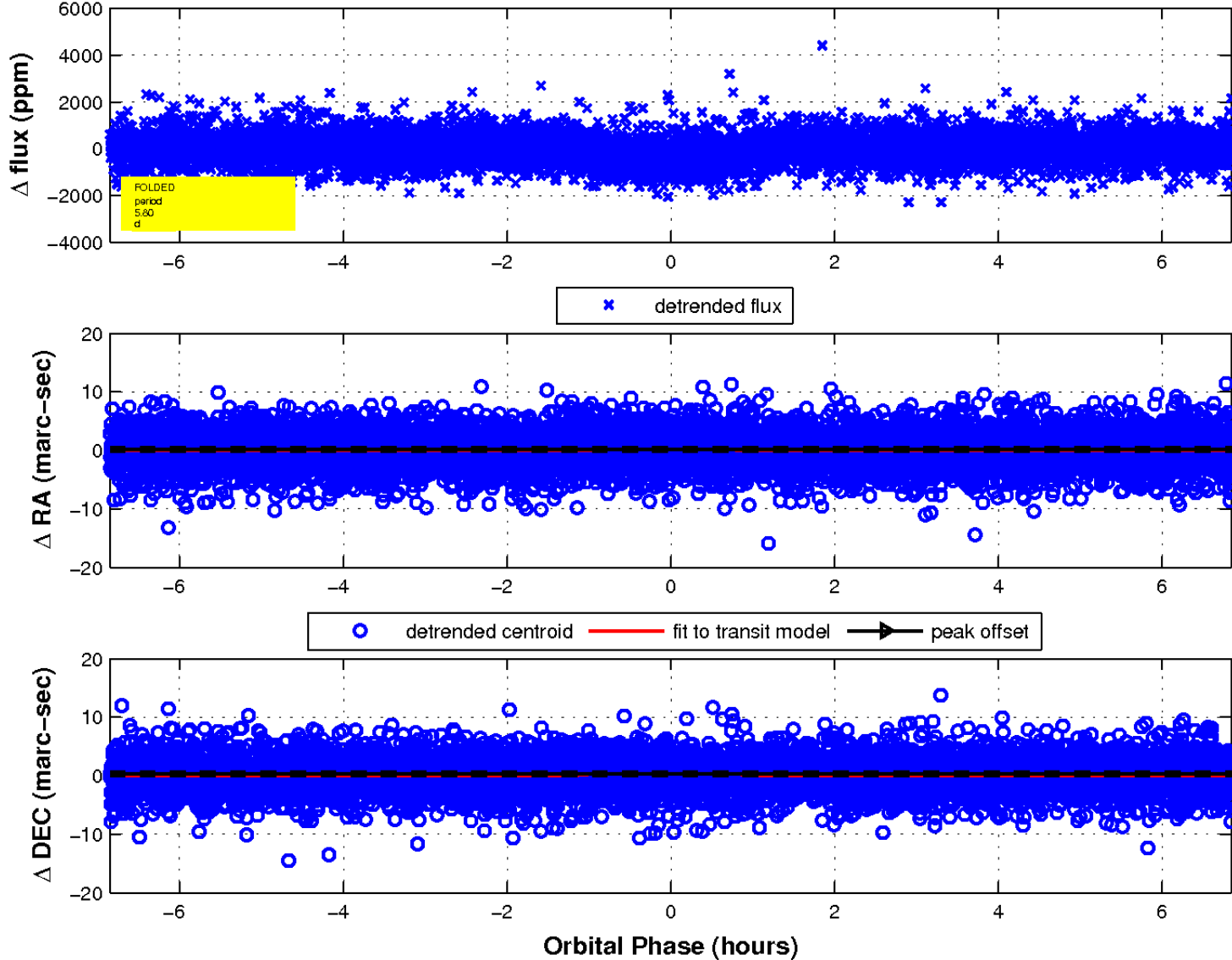
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

