

KIC 012207117

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})
012207117-01	OBS	6249.01	1.603187	131.564285	1765.9	0.856	53.5	100.4	0.69	5430	3.52	680.27
012207117-02	OBS	No	0.801591	131.564945	629.0	0.600	17.8	33.4	0.69	5430	1.88	1714.18
012207117-03	OBS	No	257.660804	221.705809	2437.0	3.813	14.2	7.1	0.69	5430	3.62	0.78
012207117-04	OBS	No	392.969494	194.997702	2790.5	5.874	12.3	5.9	0.69	5430	3.62	0.44

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012207117-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL
012207117-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—SWEET_NTL—SAME_NTL_PERIOD
012207117-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS
012207117-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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 012207117-01

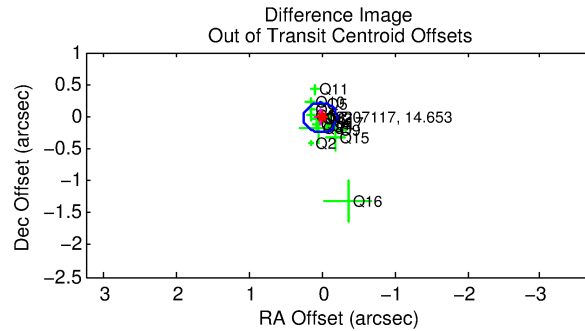
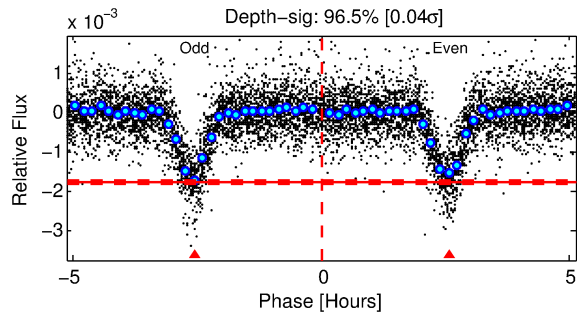
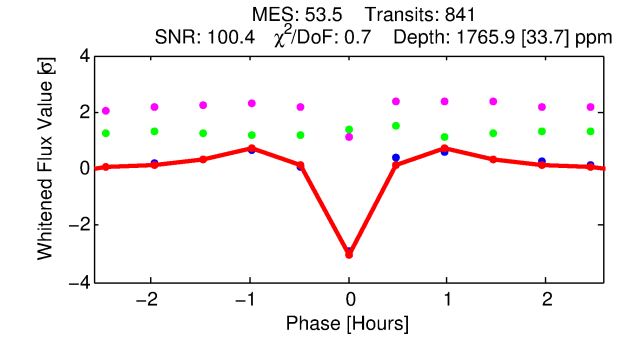
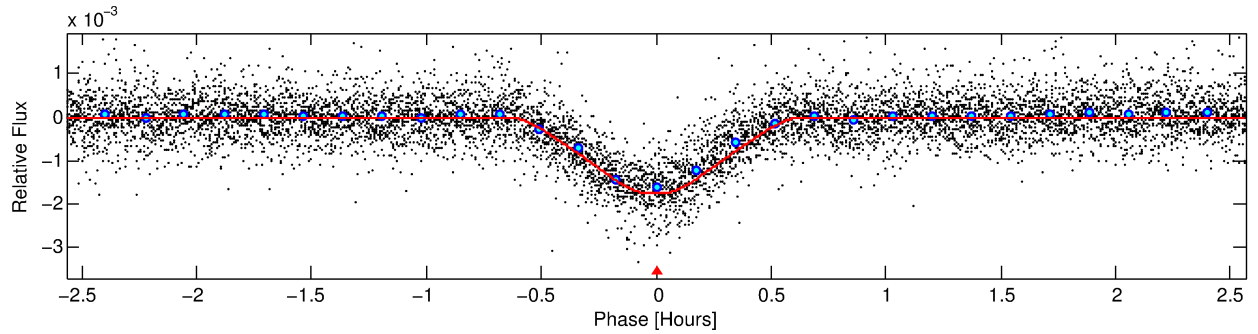
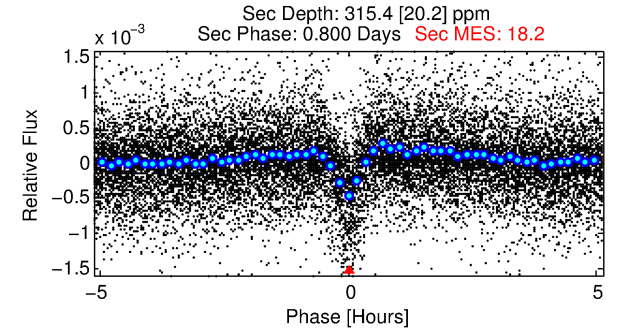
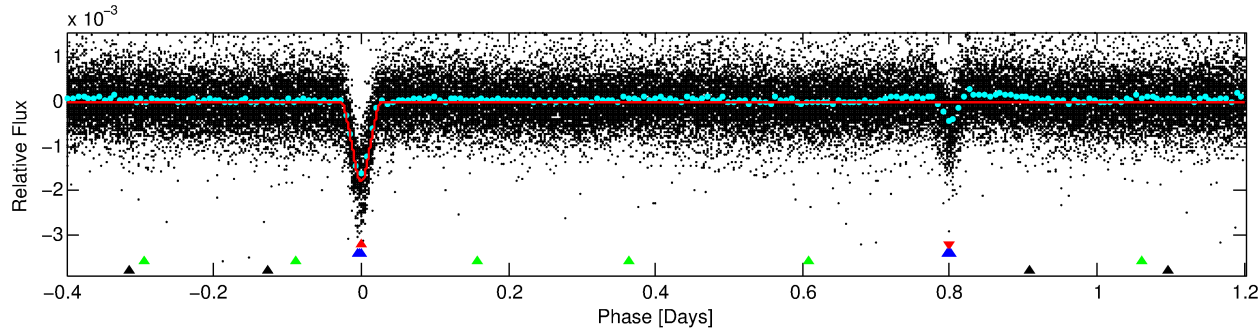
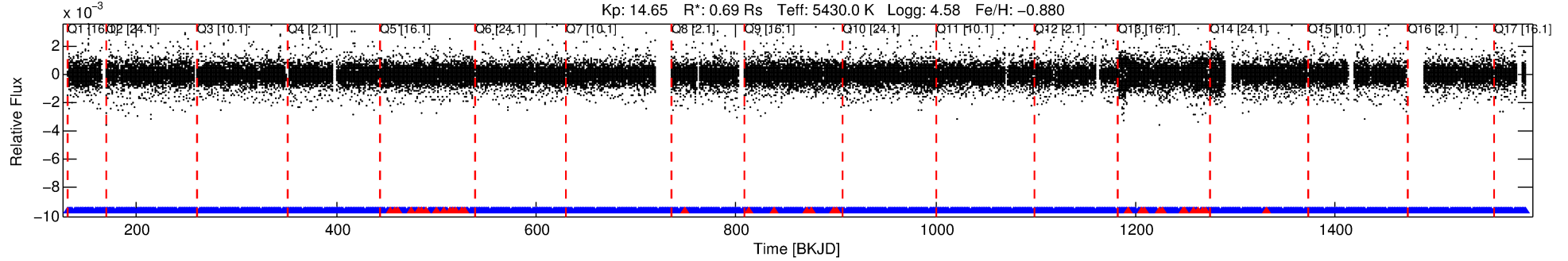
No Significant Match Found

DV One-Page Summary

KIC: 12207117 Candidate: 1 of 4 Period: 1.603 d

KOI: K06249 Corr: No Ephemeris Match

Kp: 14.65 R*: 0.69 Rs Teff: 5430.0 K Logg: 4.58 Fe/H: -0.880



DV Fit Results:

Period = 1.60319 [0.00000] d
Epoch = 131.5643 [0.0001] BKJD
Rp/R* = 0.0467 [0.0020]
a/R* = 7.66 [1.25]
b = 0.90 [0.04]
Seff = 680.27 [132.27]
Teq = 1302 [63] K
Rp = 3.51 [0.39] Re
a = 0.0233 [0.0022] AU
Ag = 7.66 [1.37] [4.86σ]
Teffp = 3349 [143] K [13.13σ]

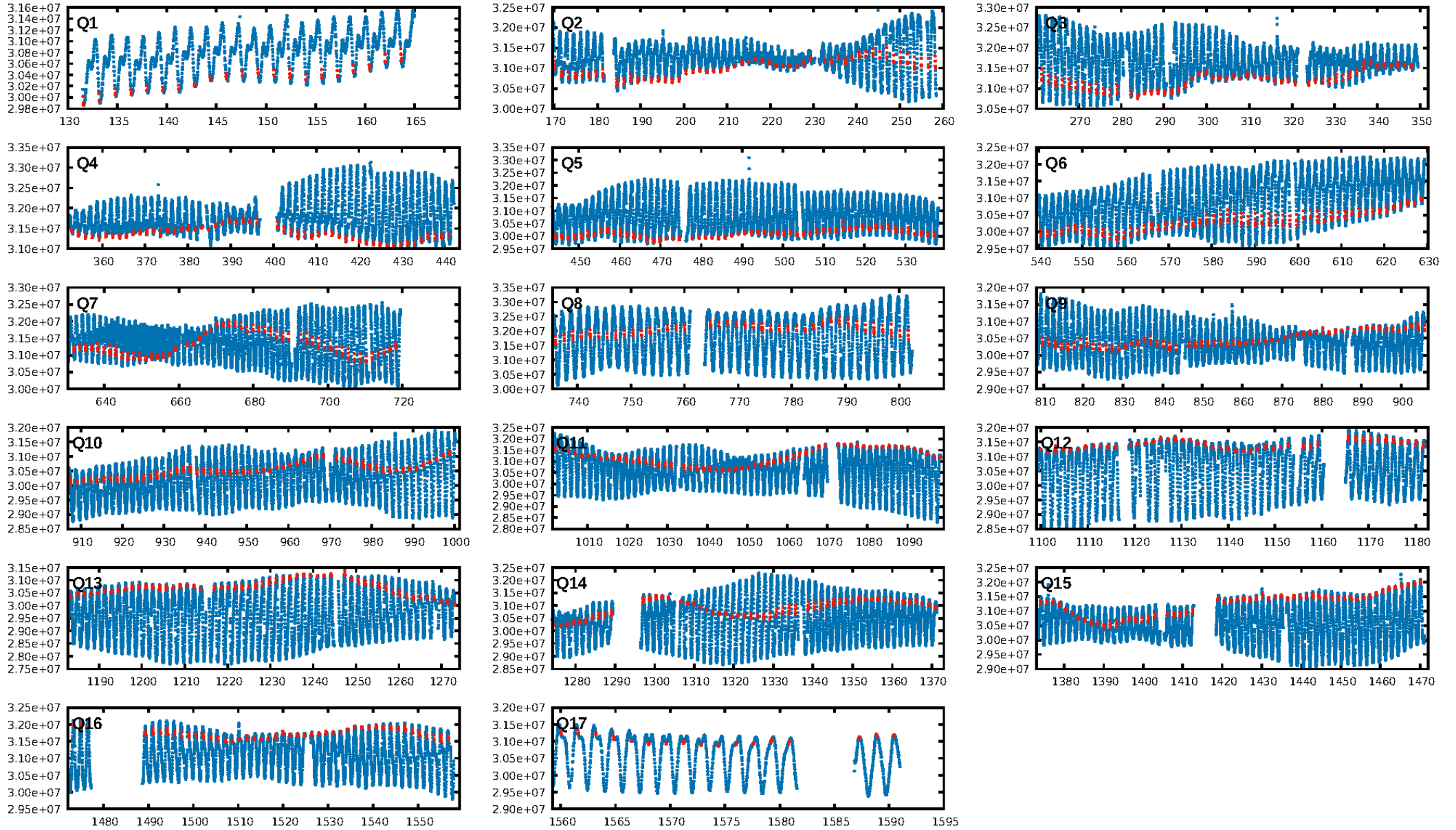
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [18.41σ]
LongPeriod-sig: 100.0% [1572.49σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fig: 0.96 [770/803]
GhostDiagnostic-chr: 1.288
Centroid-sig: 0.0%
Centroid-so: 0.460 arcsec [3.26σ]
OotOffset-rm: 0.032 arcsec [0.41σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-rm: 0.109 arcsec [1.41σ]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 0.75 [12/16]
DiffImageOverlap-fno: 0.00 [0/17]

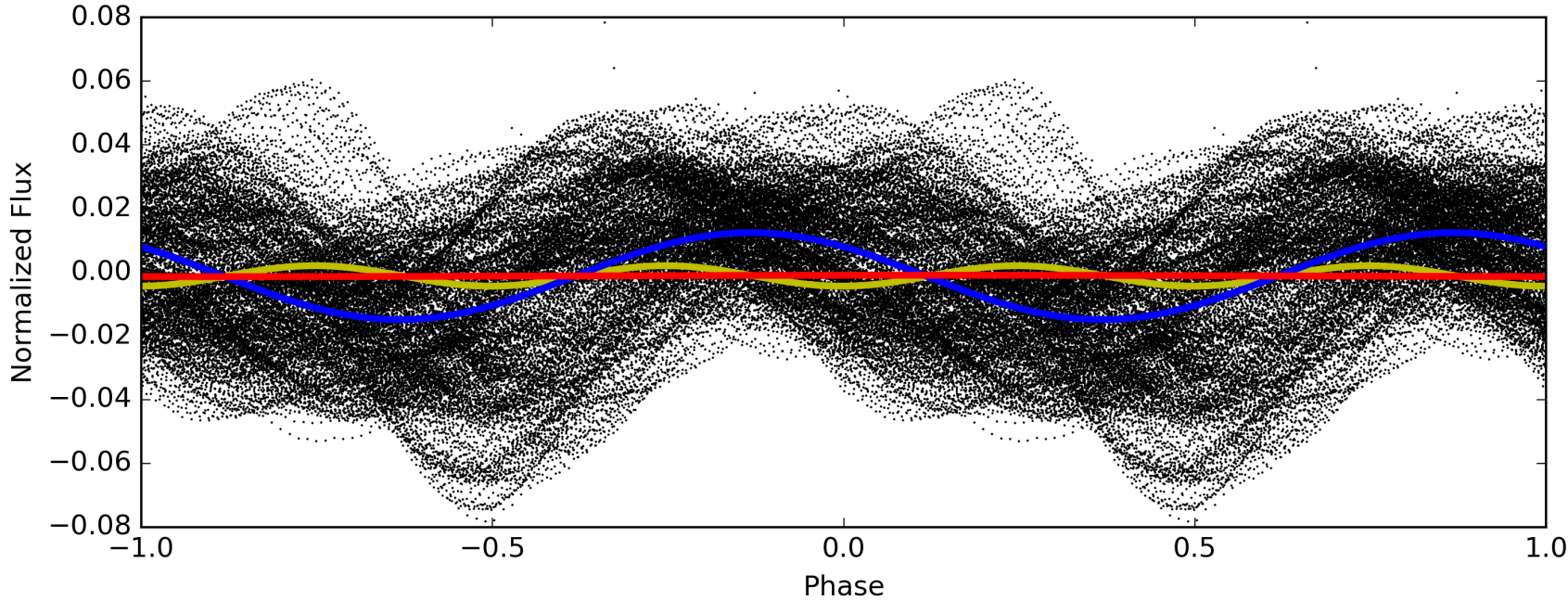
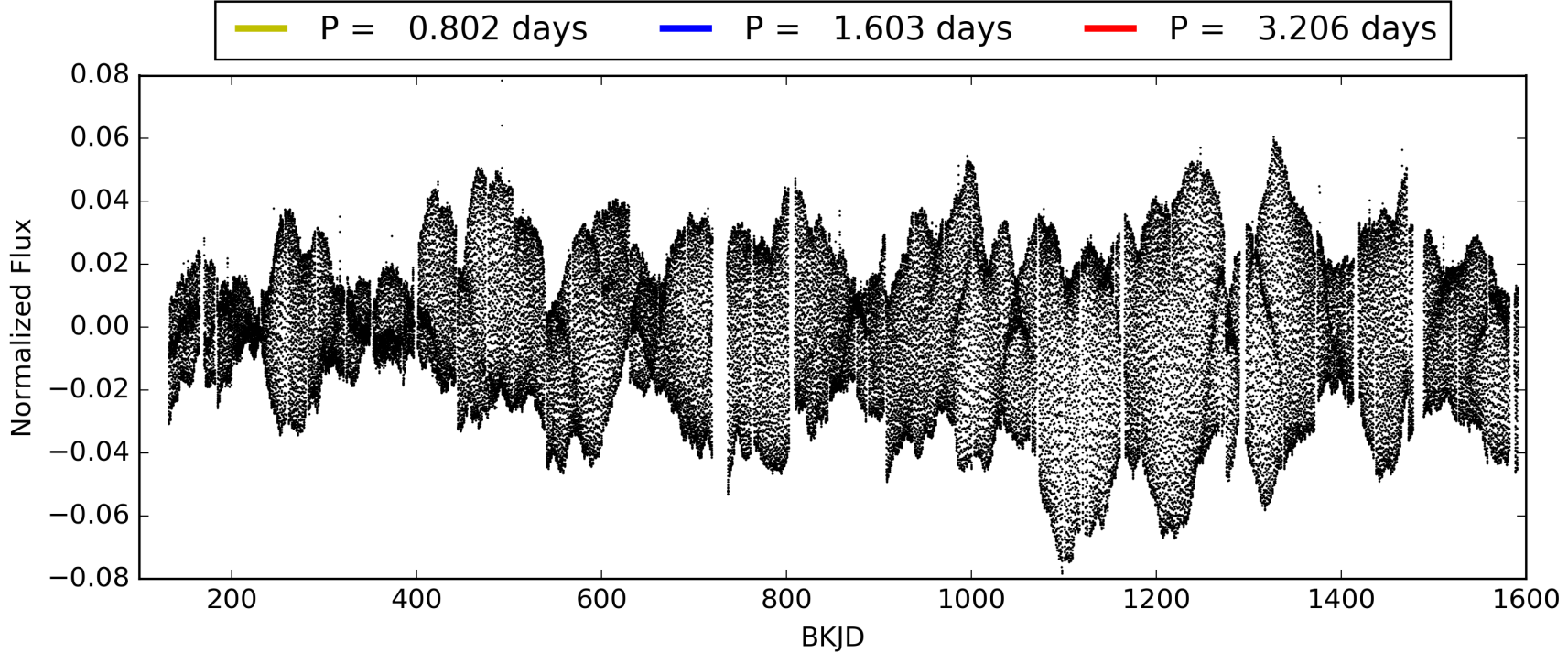
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:50:48 Z

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

TCE 012207117-01, PDC Light Curves

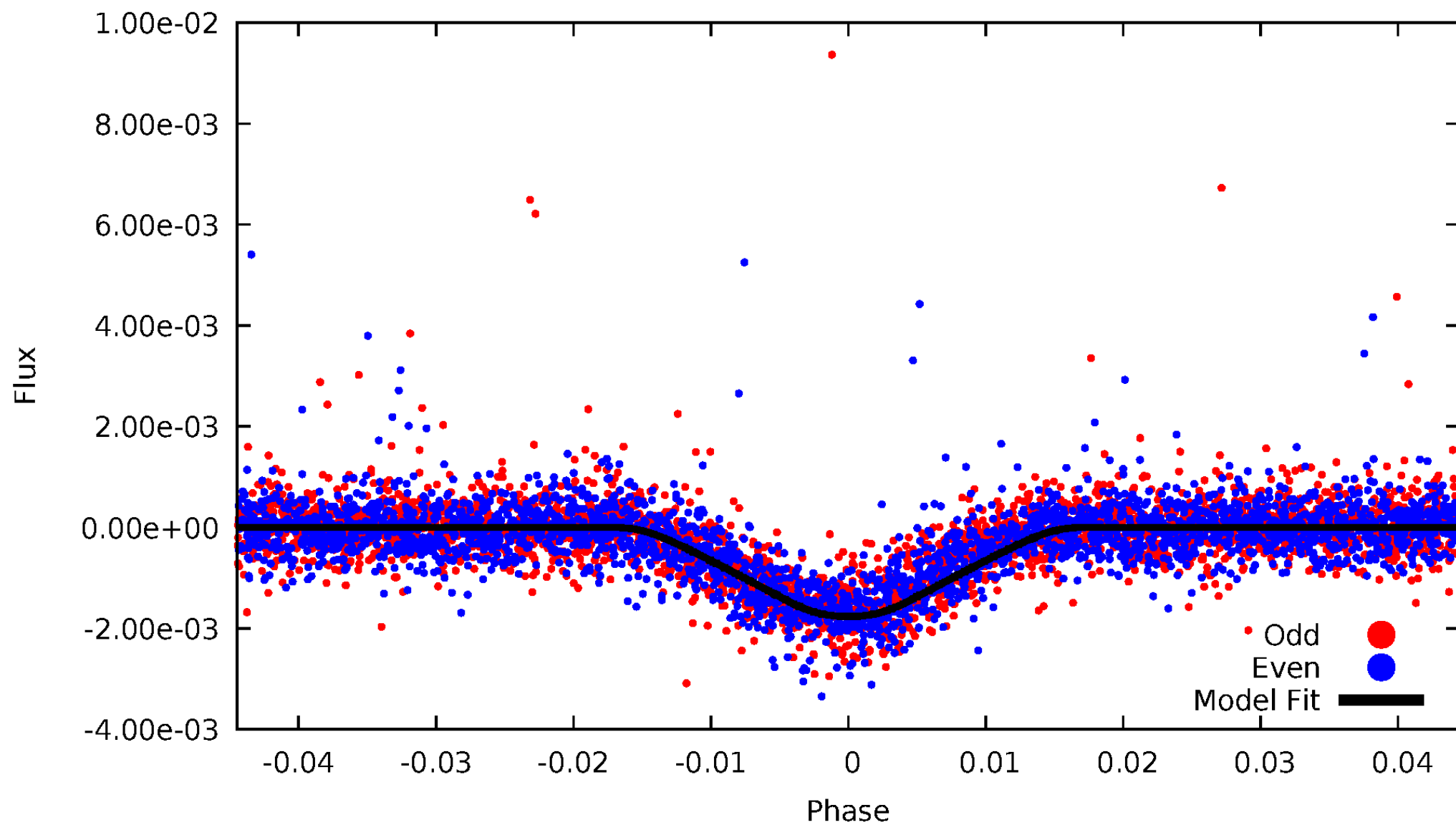


TCE 012207117-01



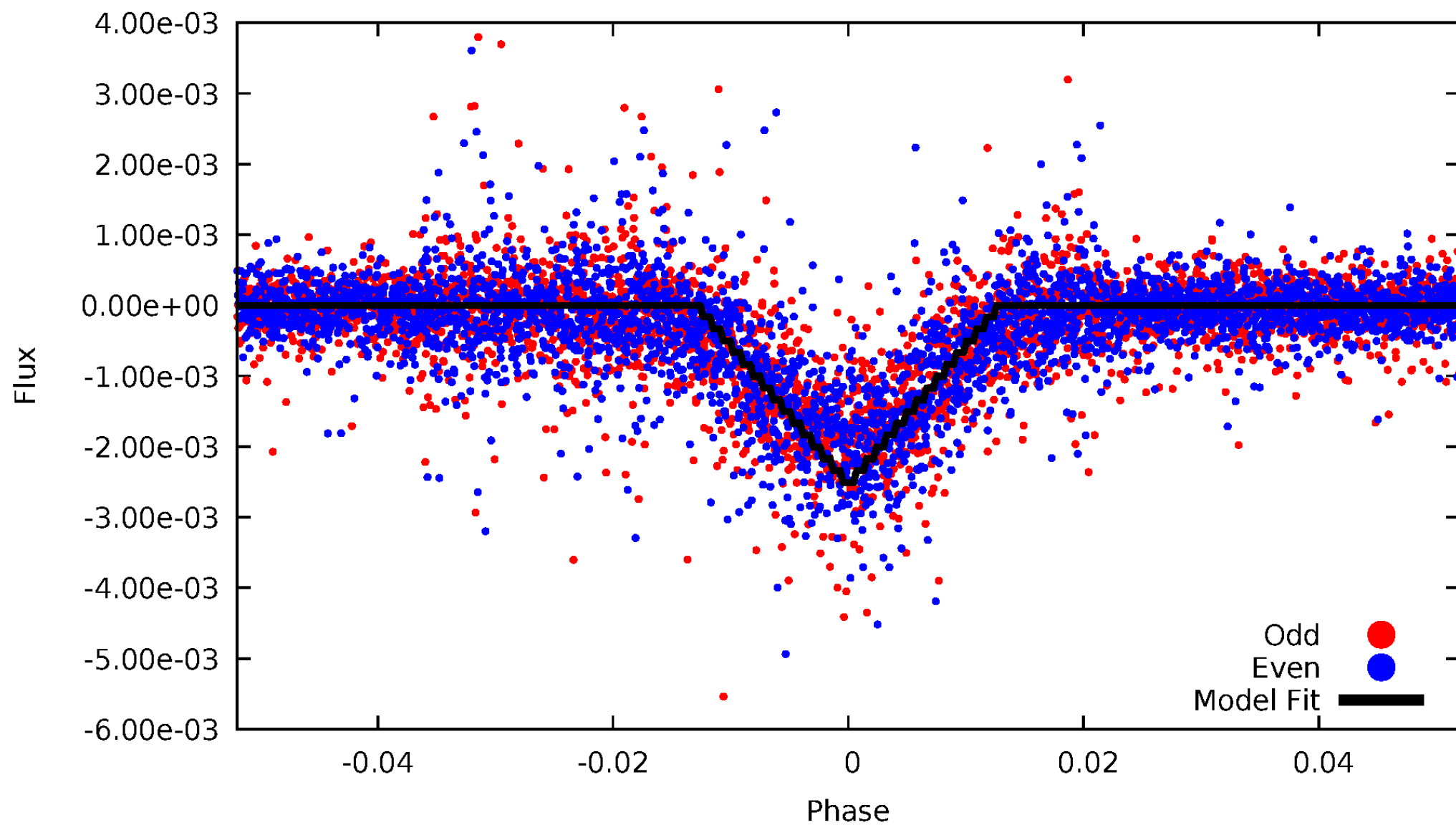
DV Odd/Even

TCE 012207117-01



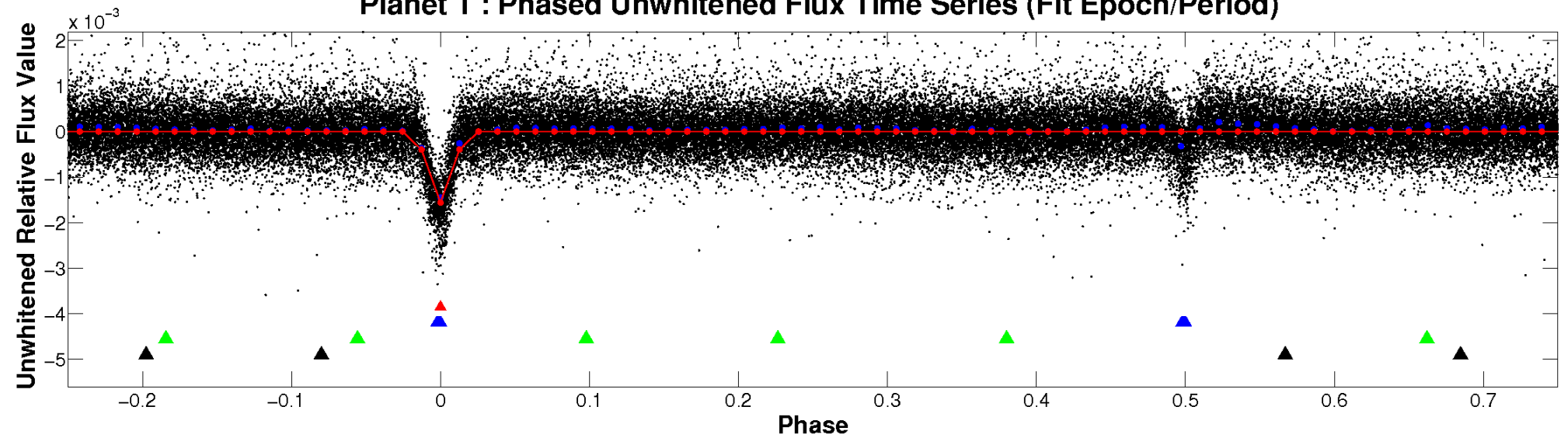
ALT Odd/Even

TCE 012207117-01

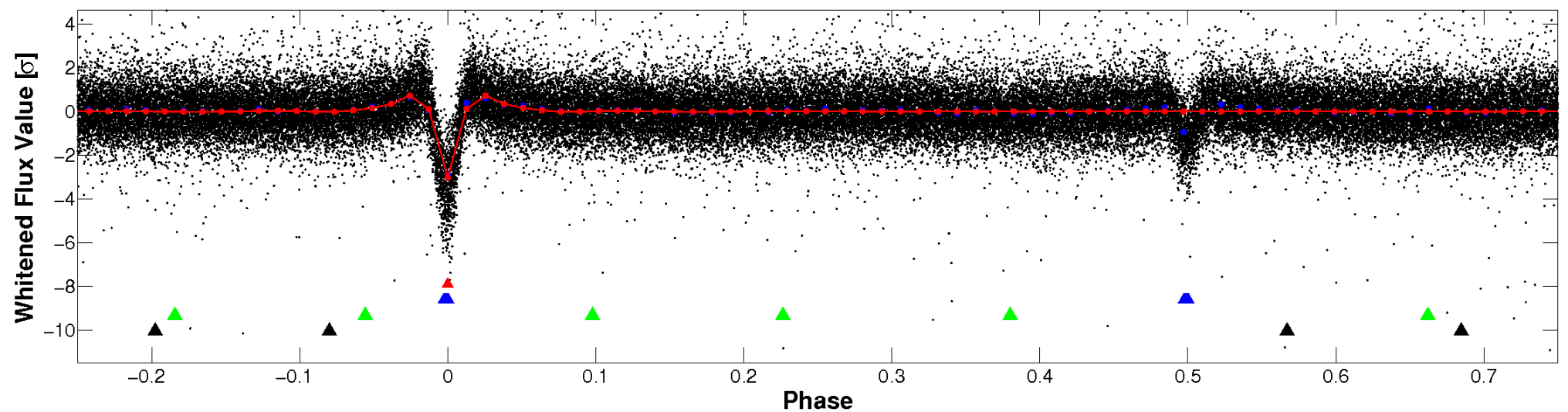


Non-Whitened Vs. Whitened Light Curve

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

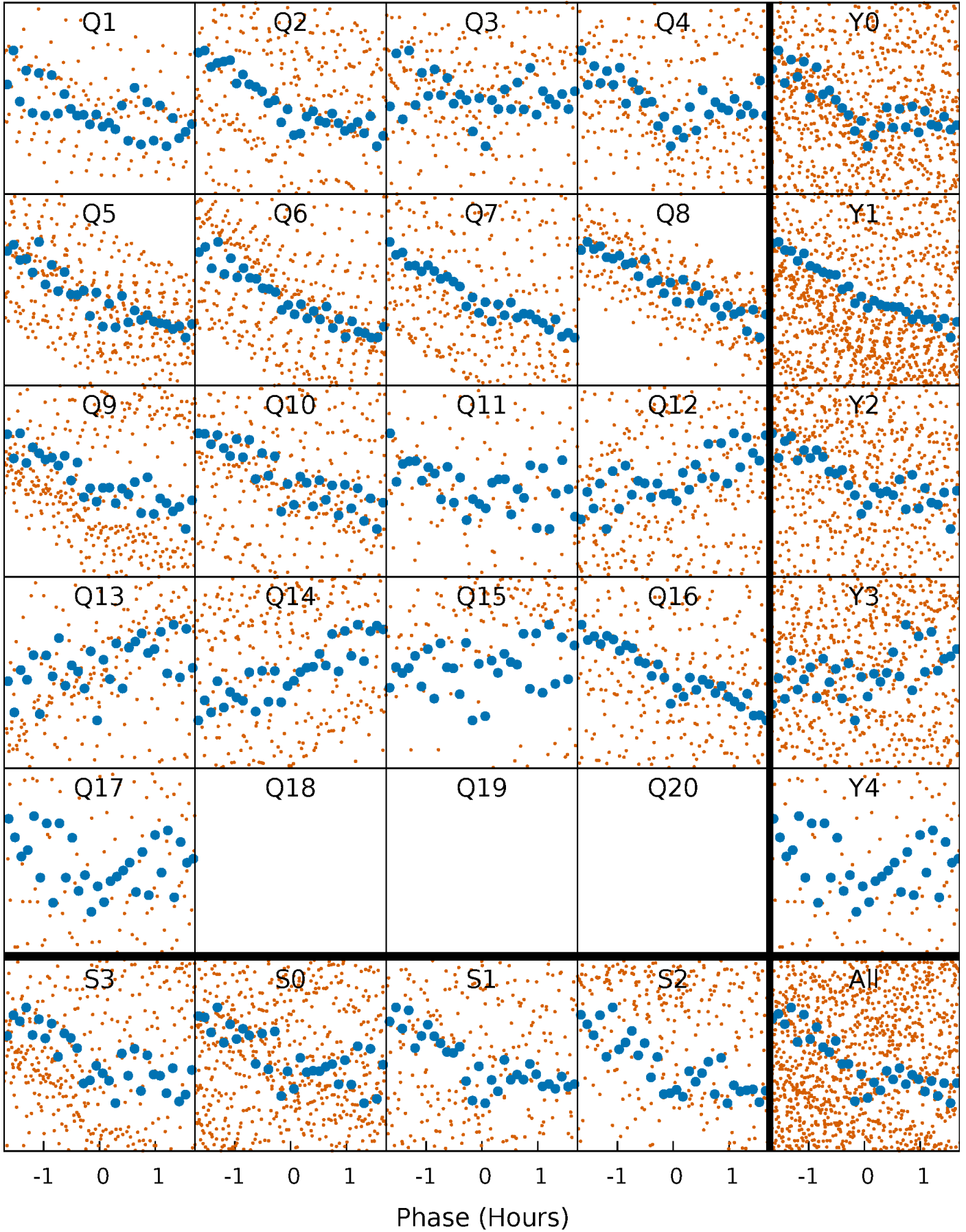


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



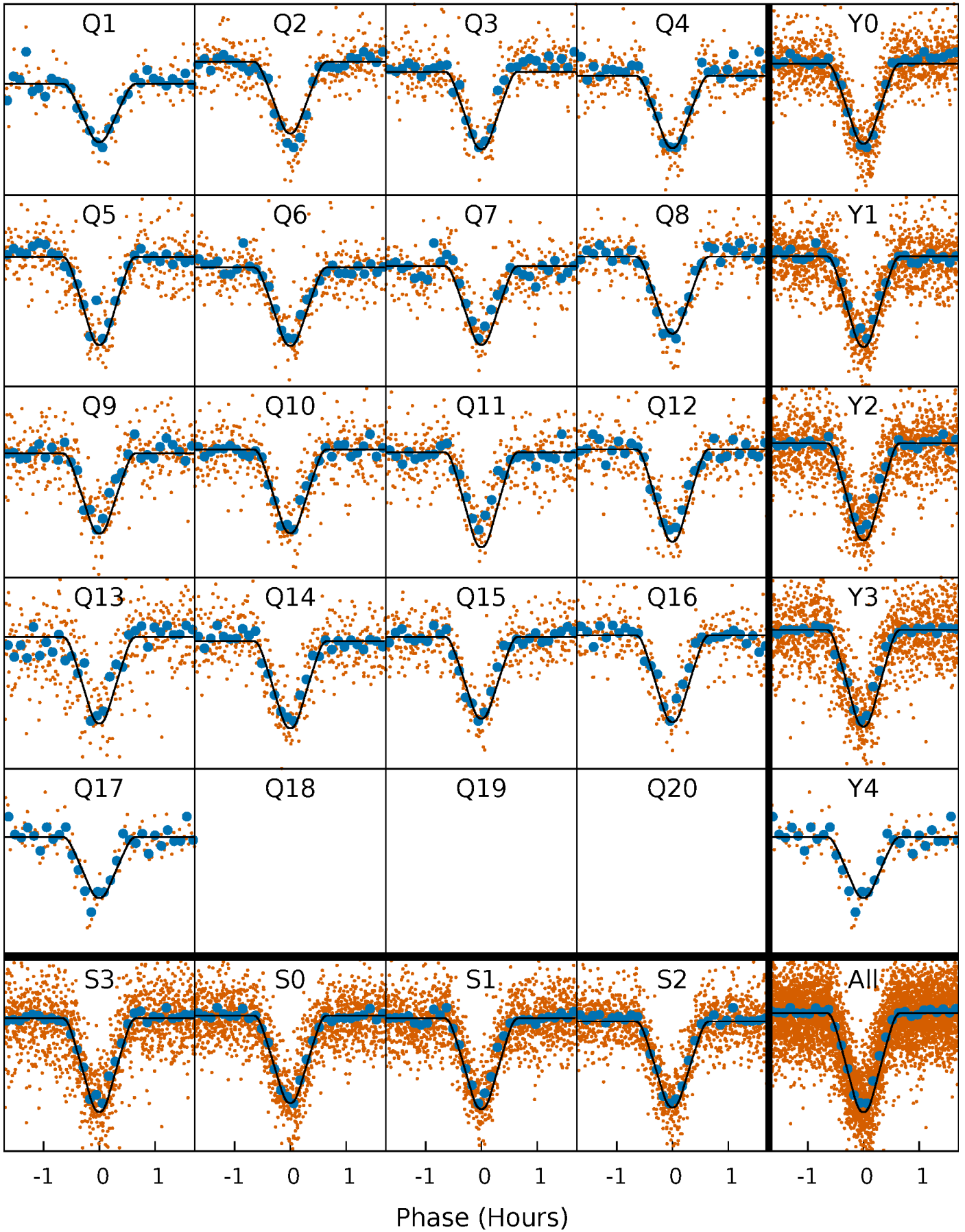
PDC Quarter-Phased Transit Curves

TCE 012207117-01 P= 1.603187 Days $T_0=131.564285$ (BKJD)



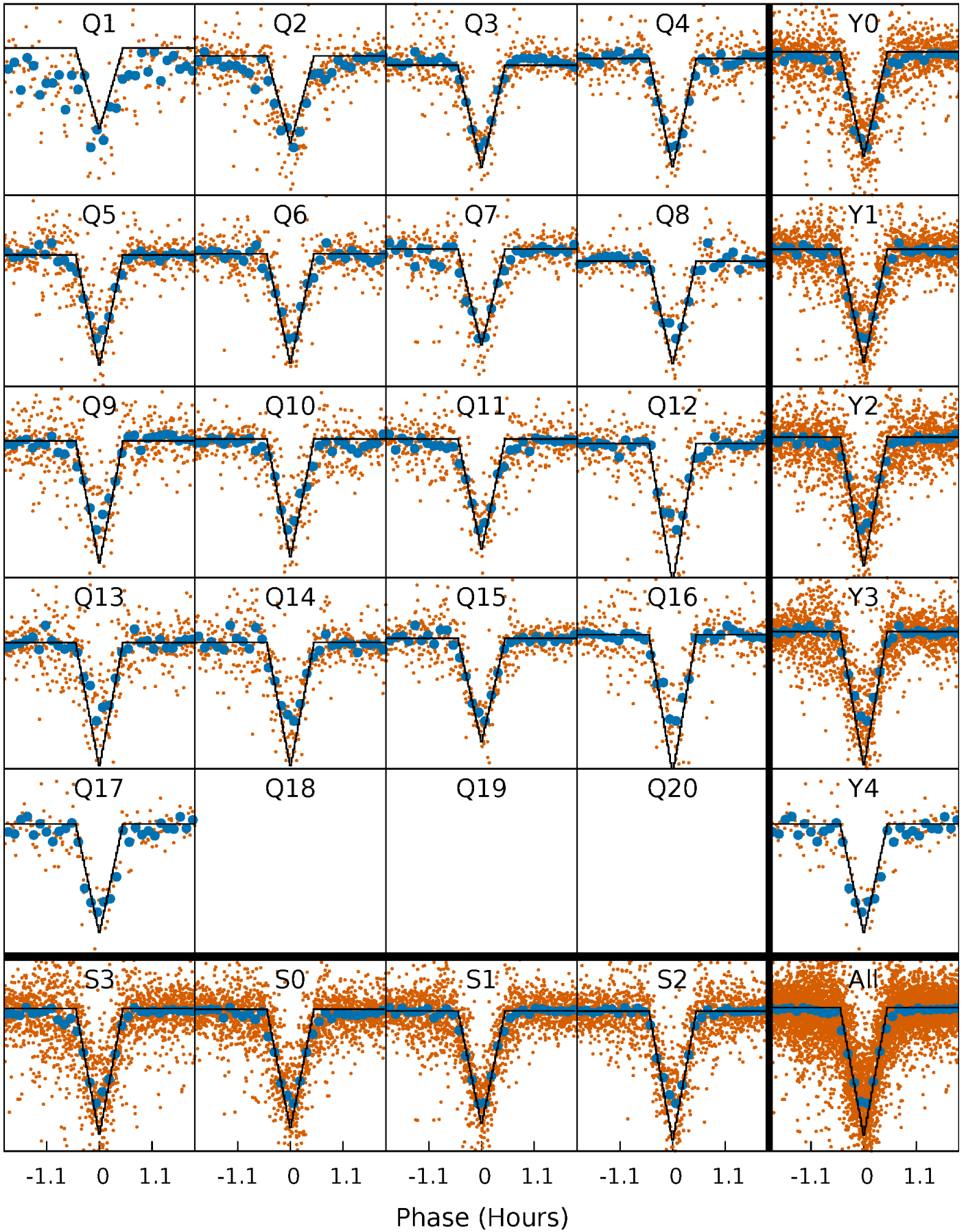
DV Quarter-Phased Transit Curves

TCE 012207117-01 P= 1.603187 Days $T_0=131.564285$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

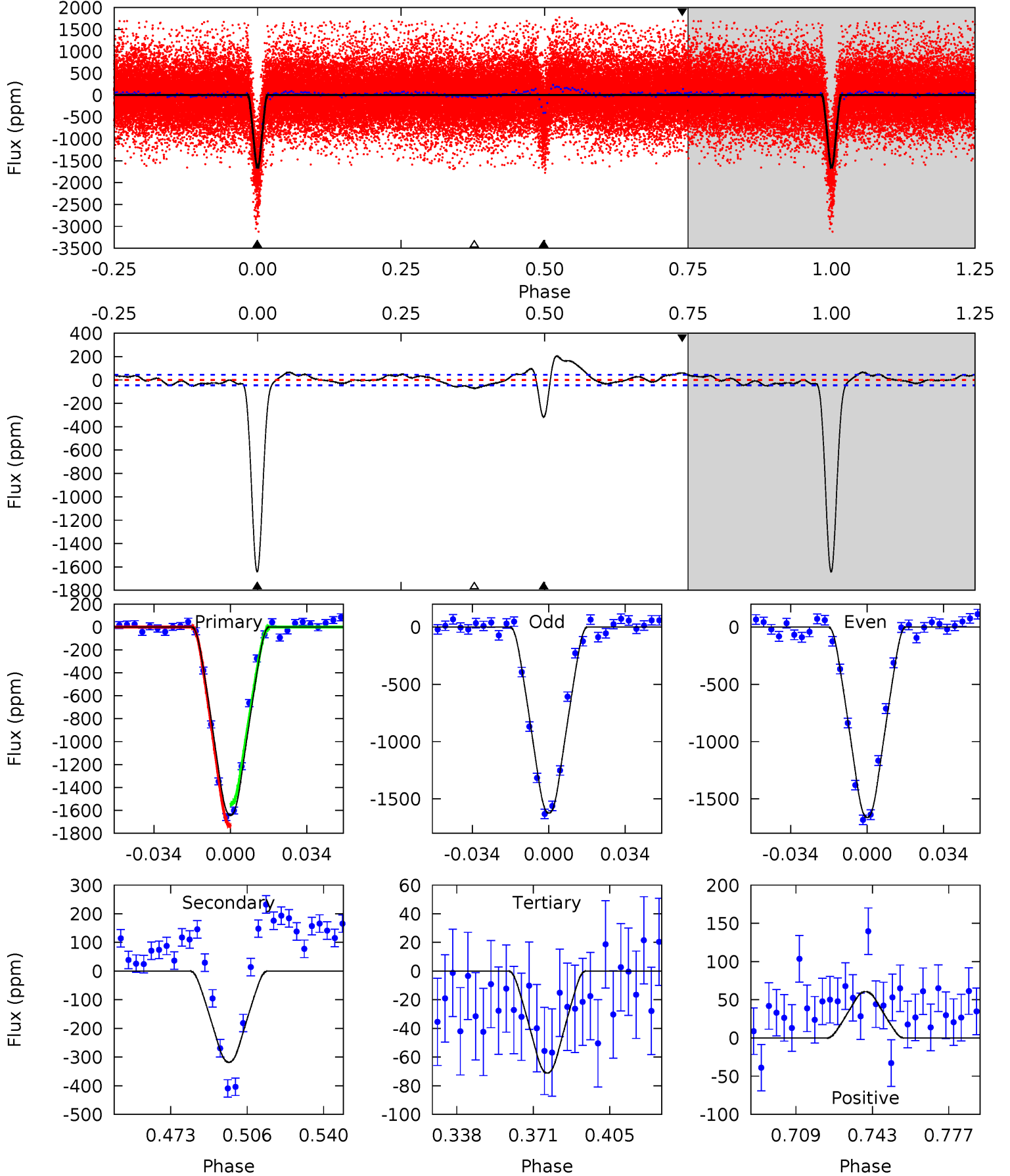
TCE 012207117-01 P= 1.603184 Days $T_0=131.564307$ (BKJD)



DV Model-Shift Uniqueness Test

012207117-01, P = 1.603187 Days, E = 129.961098 Days

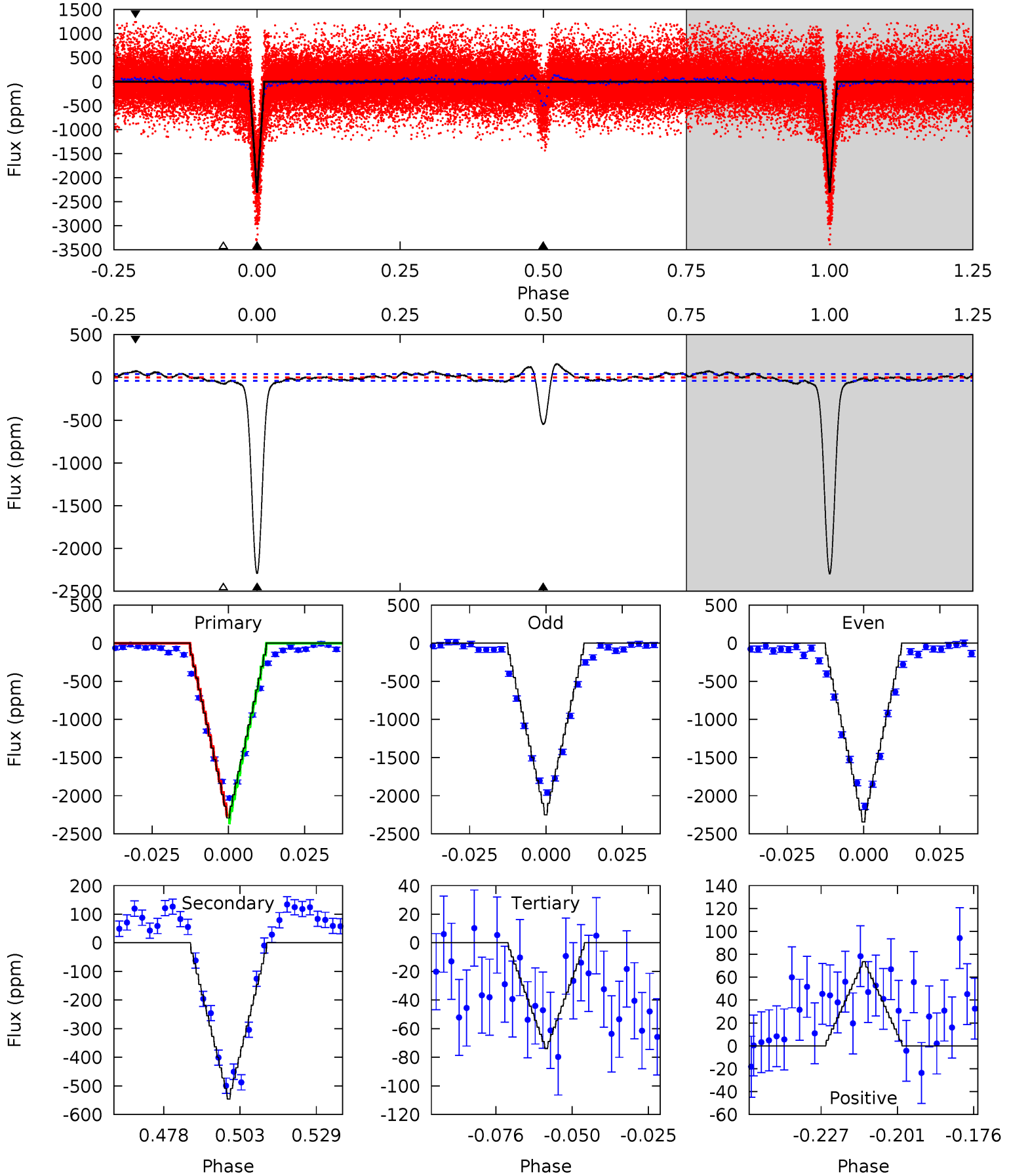
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
172.6	33.4	7.47	6.36	4.79	2.12	4.47	165.1	166.2	25.9	27.0	2.02	0.99	0.11	10.1



Alt Model-Shift Uniqueness Test

012207117-01, P = 1.603184 Days, E = 129.961123 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
280.0	66.6	9.02	8.99	4.85	2.24	4.74	271.0	271.0	57.6	57.6	5.88	1.03	0.06	0



Stellar Parameters For KIC 012207117

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5430^{+179}_{-163}	$4.580^{+0.082}_{-0.060}$	$-0.880^{+0.350}_{-0.300}$	$0.690^{+0.070}_{-0.070}$	$0.661^{+0.071}_{-0.028}$	$2.828^{+0.967}_{-0.607}$
	+3%/-3%	+2%/-1%	+40%/-34%	+10%/-10%	+11%/-4%	+34%/-21%
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 012207117-01 / KOI 6249.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-318 ± 10	$3.51^{+0.29}_{-0.26}$	1810^{+77}_{-71}	3711^{+107}_{-98}	$7.756^{+1.283}_{-0.998}$
Alt.	-546 ± 8	$3.78^{+0.28}_{-0.26}$	1815^{+75}_{-75}	3987^{+114}_{-109}	12^{+2}_{-1}

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

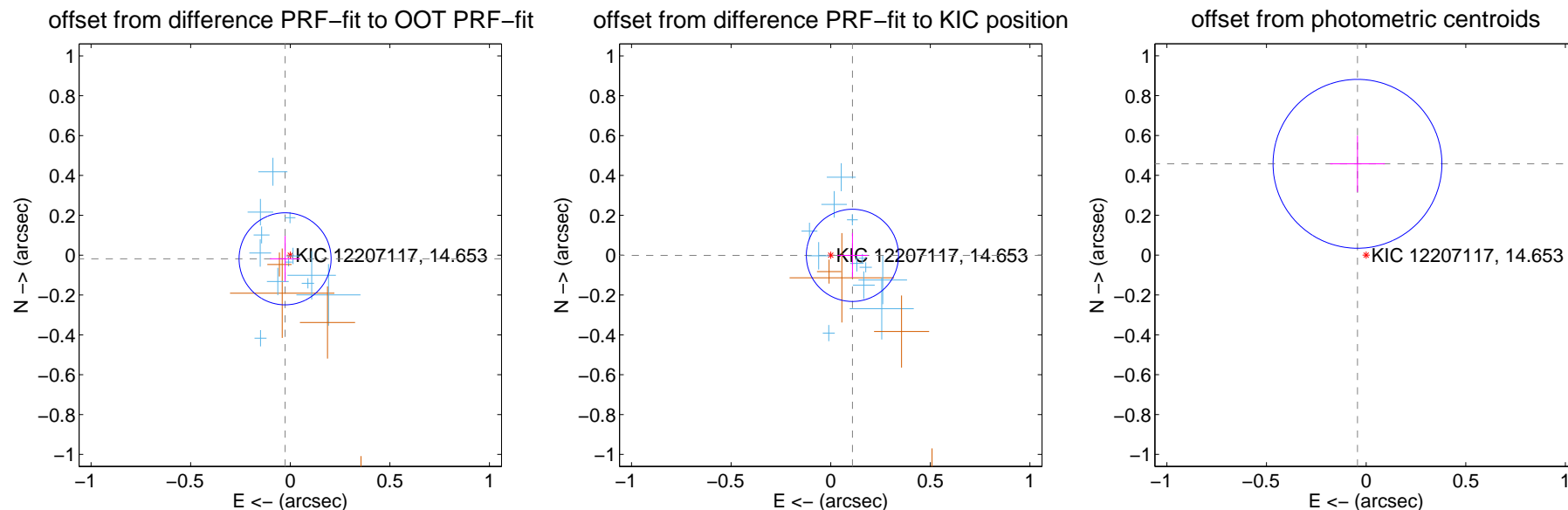
DV Centroid Data

Supplemental centroid analysis for 012207117-01. Kepler magnitude: 14.65. Transit SNR 100.38

There are 12 quarters with good PRF difference image offsets

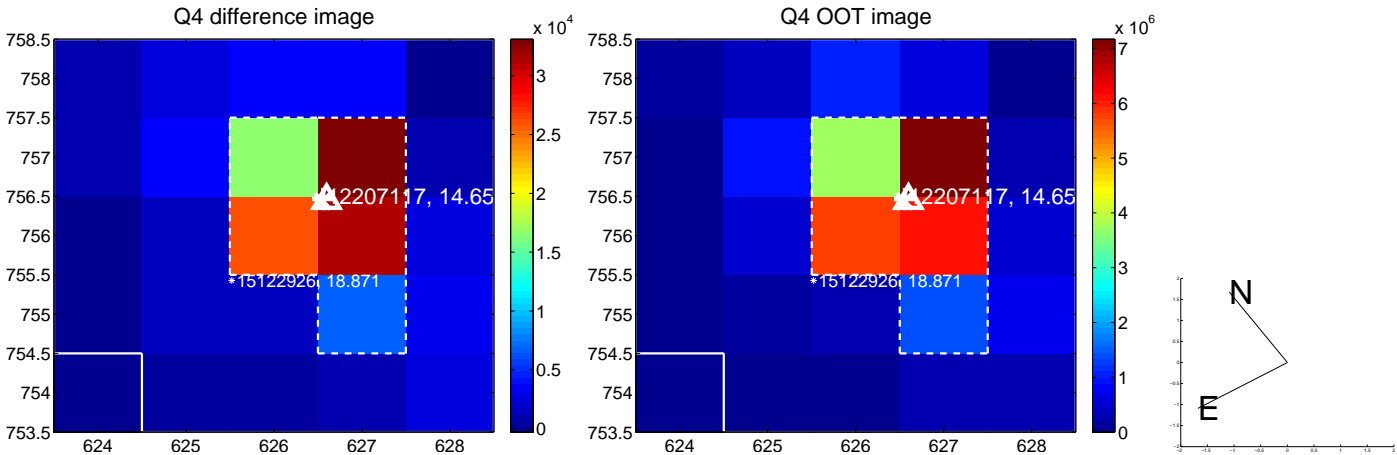
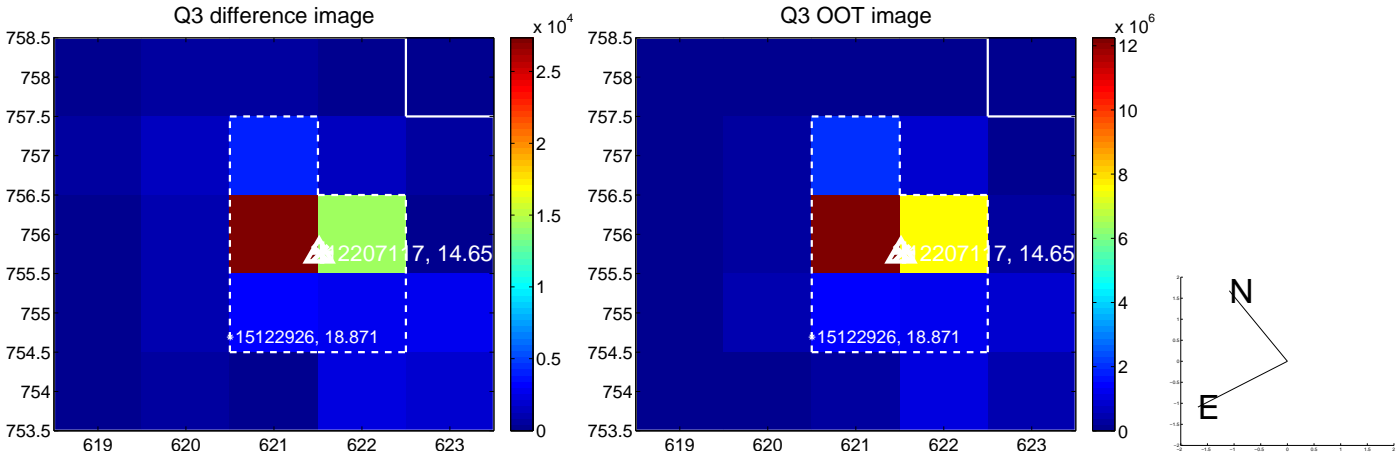
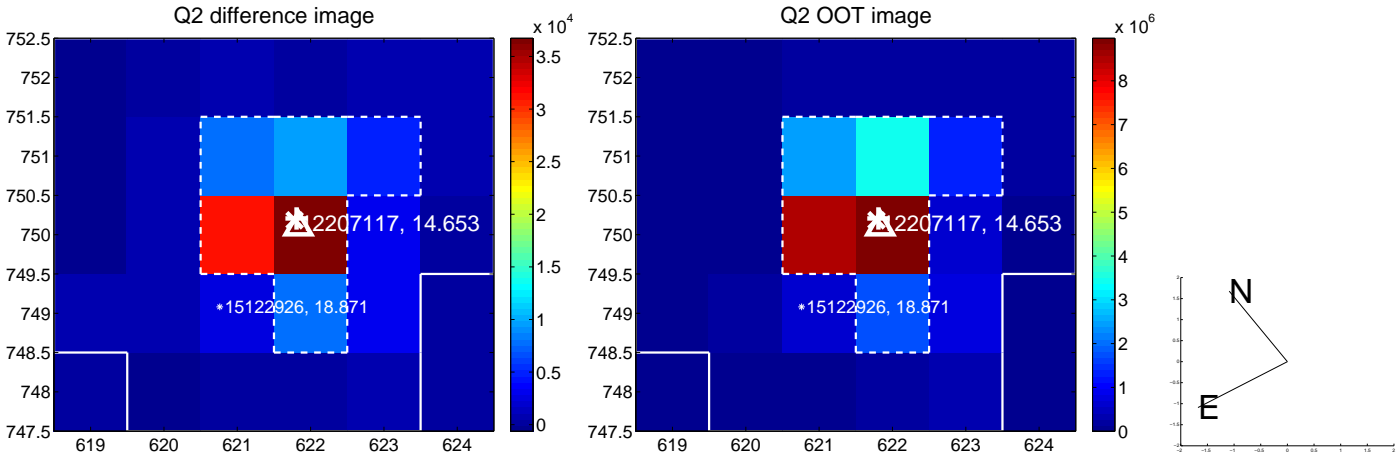
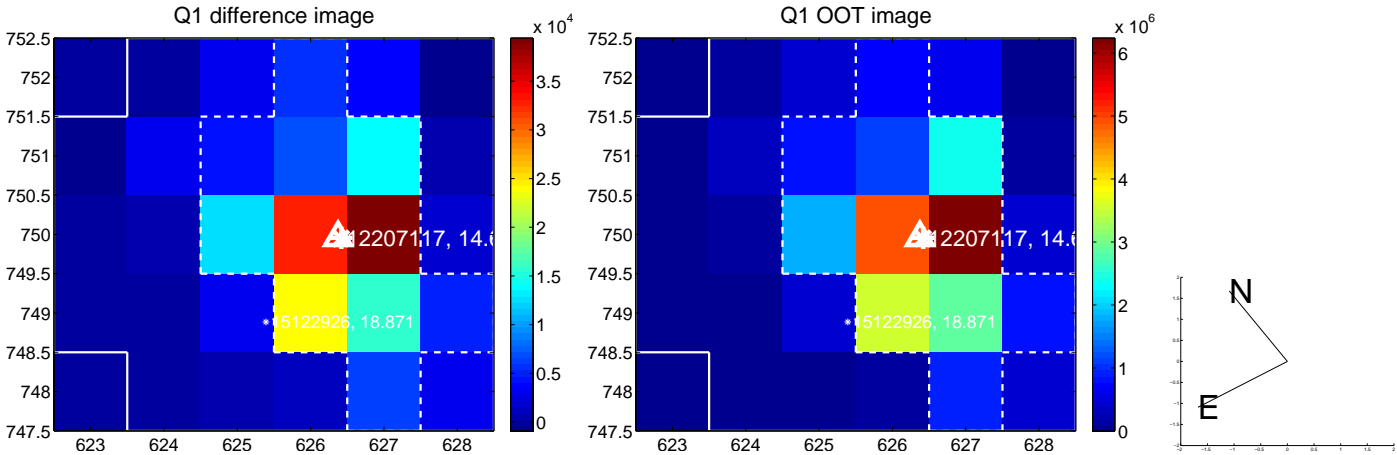
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.032 ± 0.077	0.41	0.026 ± 0.076	-0.018 ± 0.115
PRF-fit source offset from KIC position	0.109 ± 0.077	1.41	-0.109 ± 0.077	-0.001 ± 0.112
photometric centroid source offset	0.46 ± 0.14	3.26	0.04 ± 0.14	0.46 ± 0.14

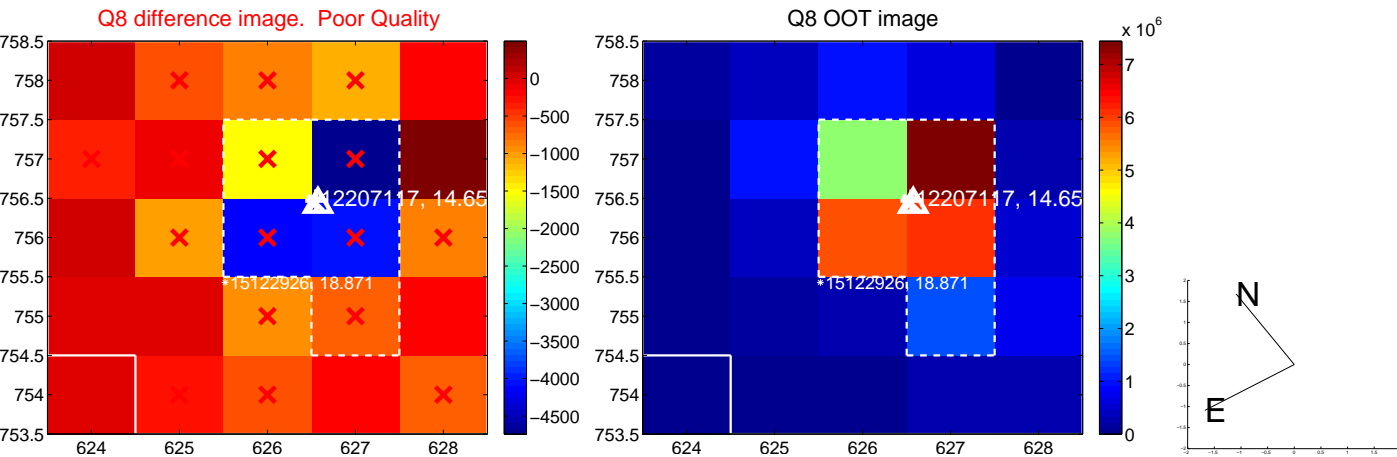
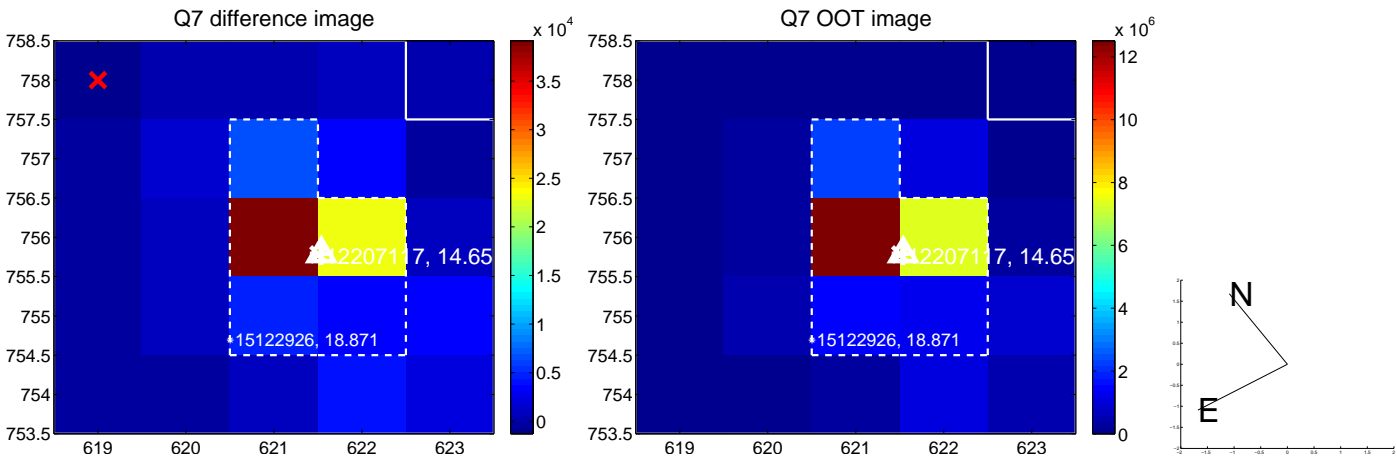
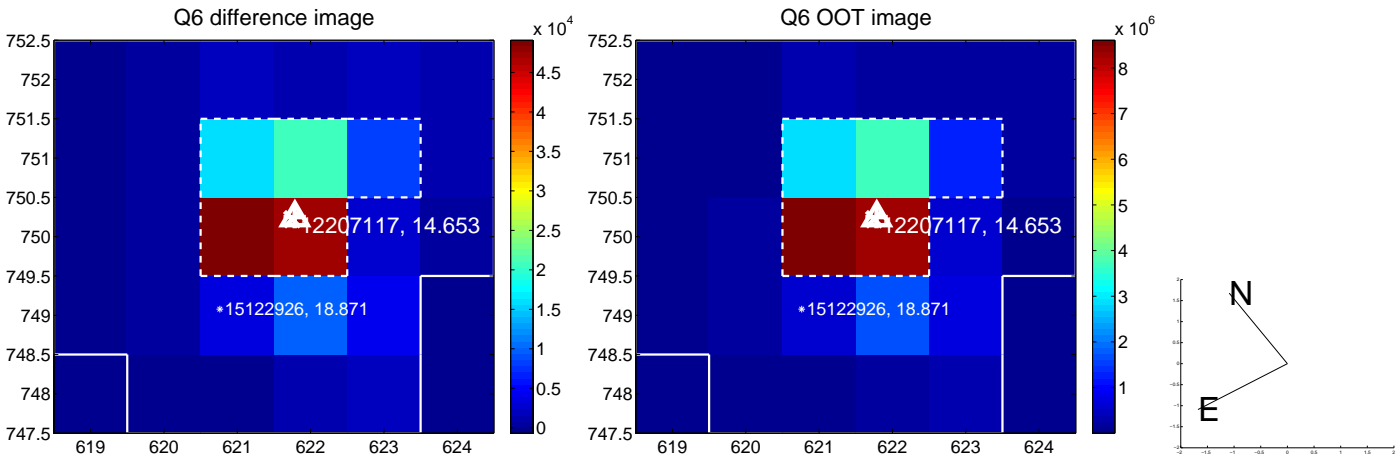
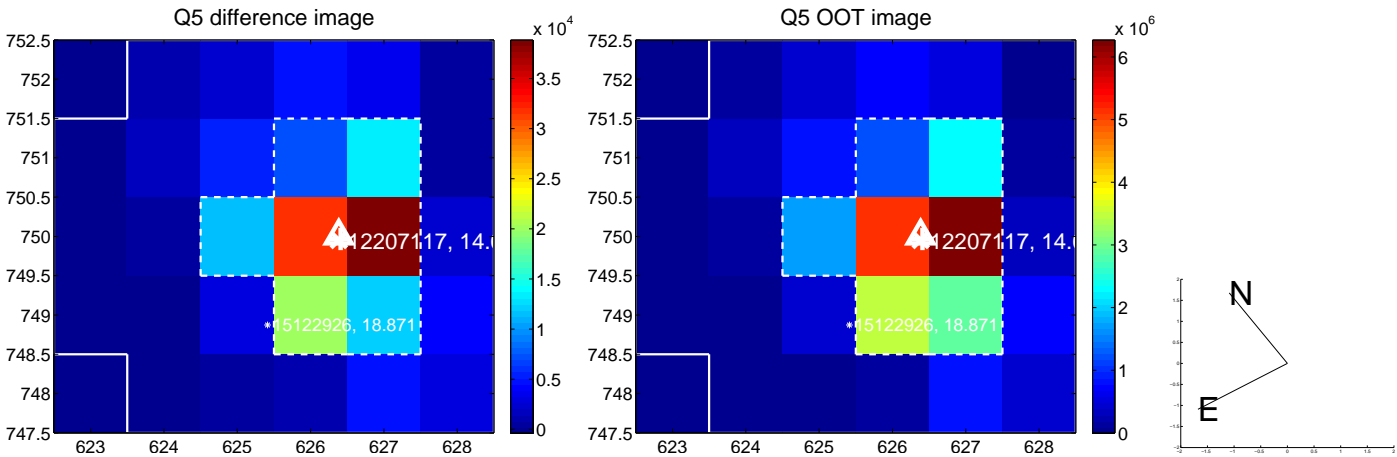


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

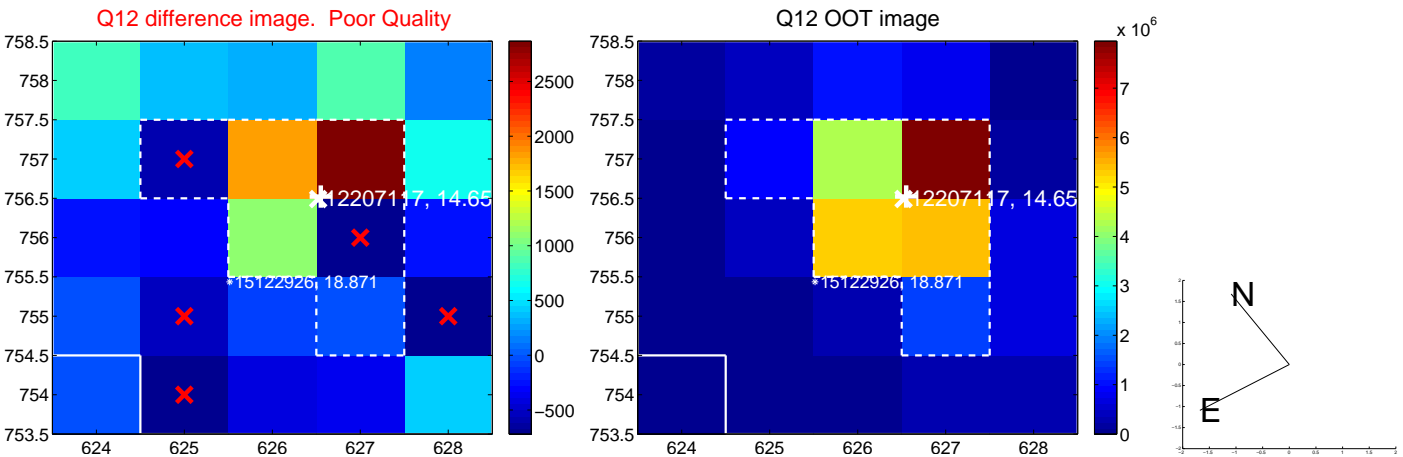
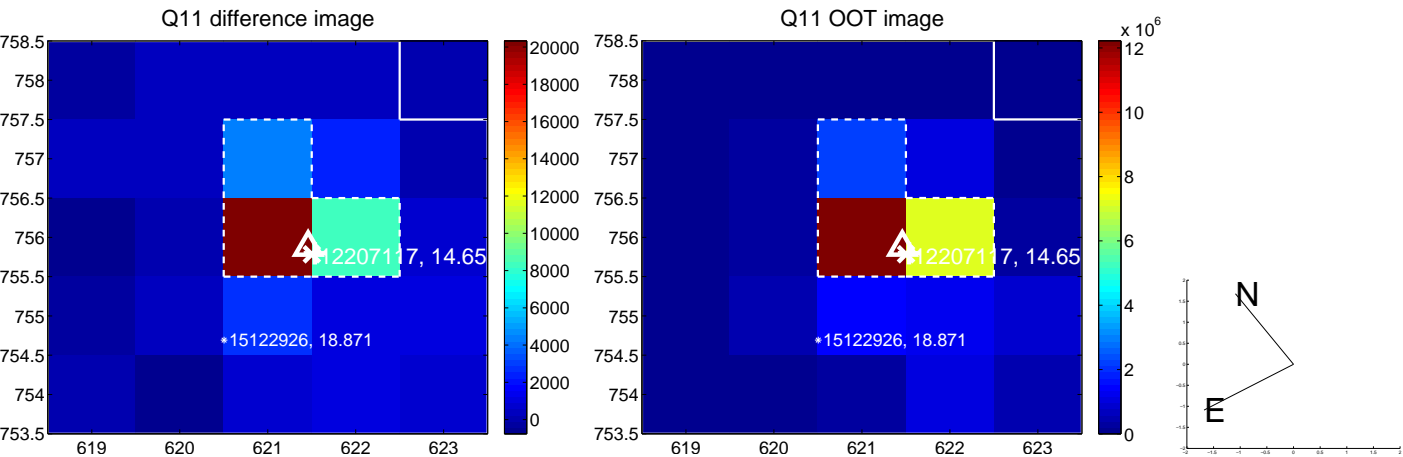
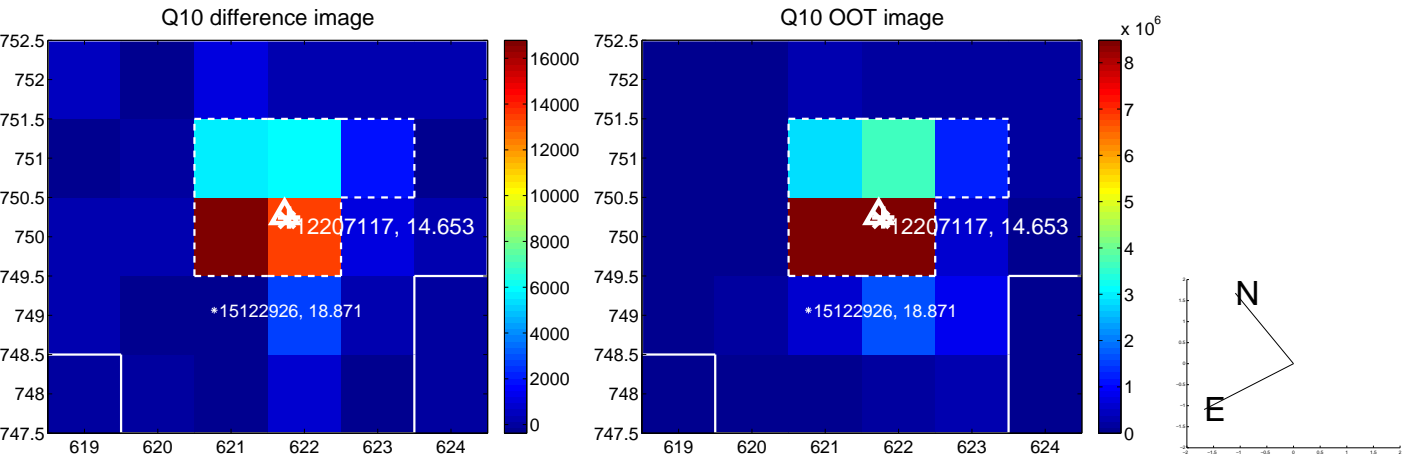
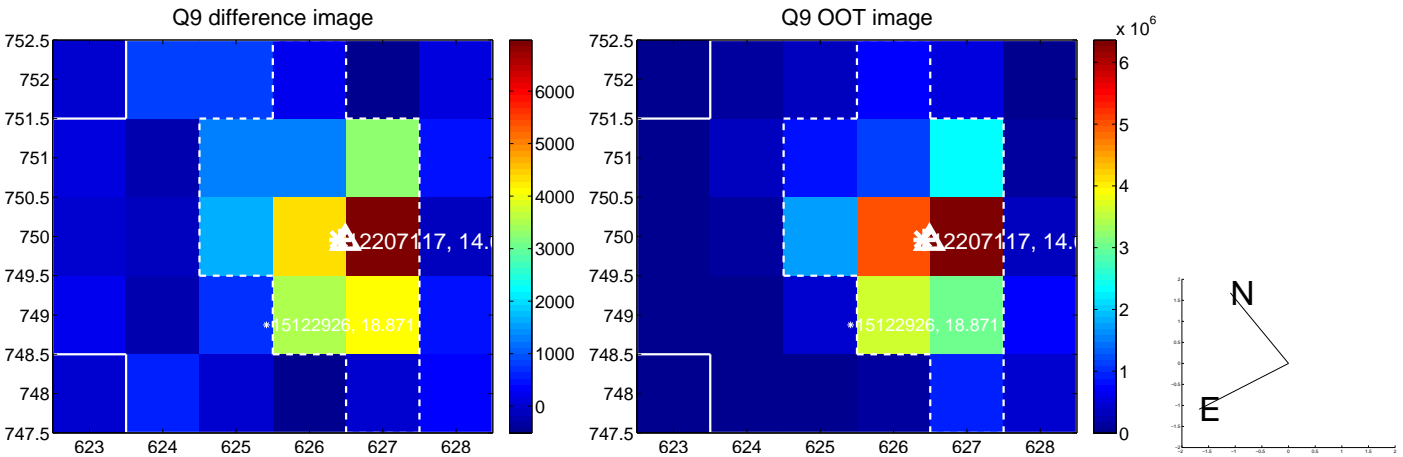
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



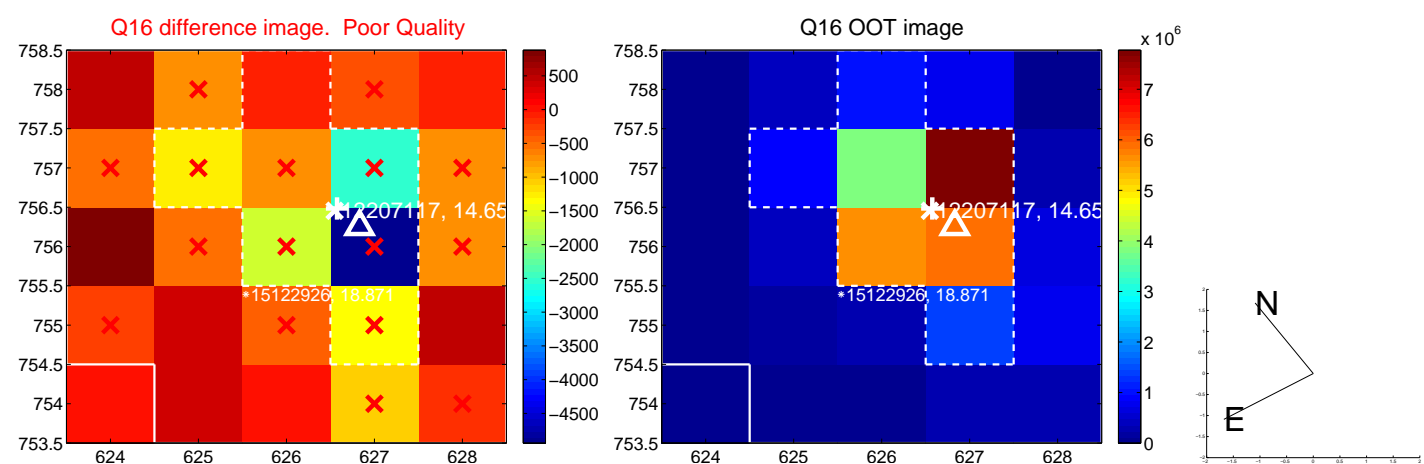
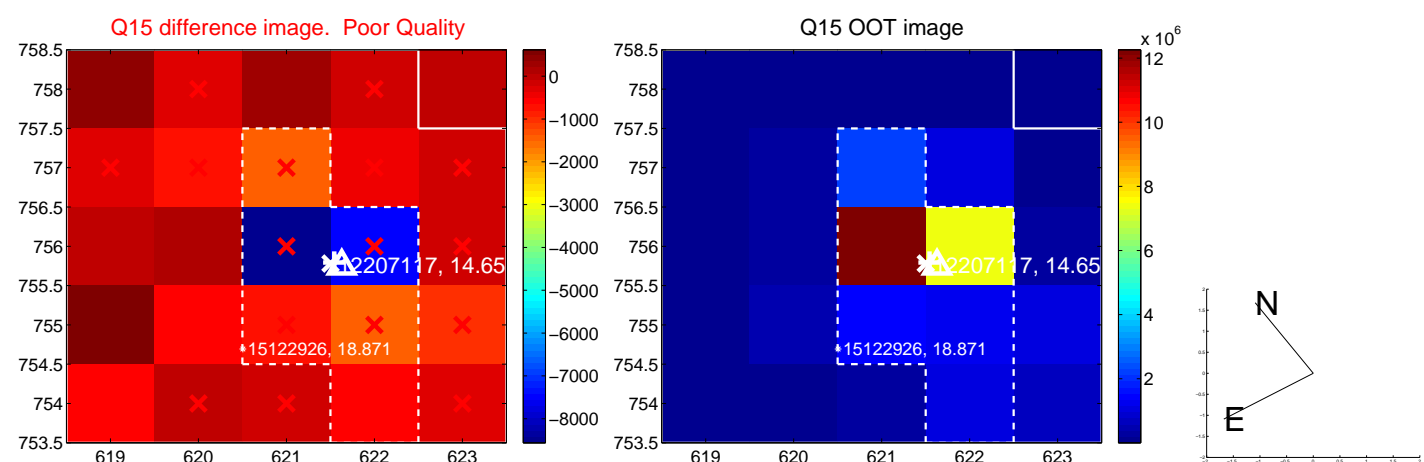
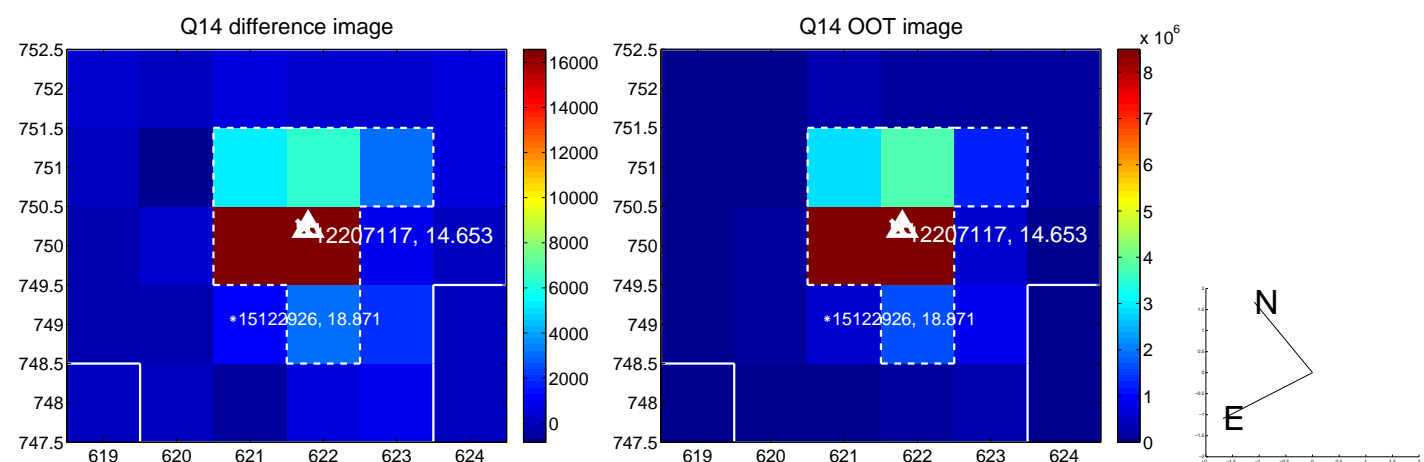
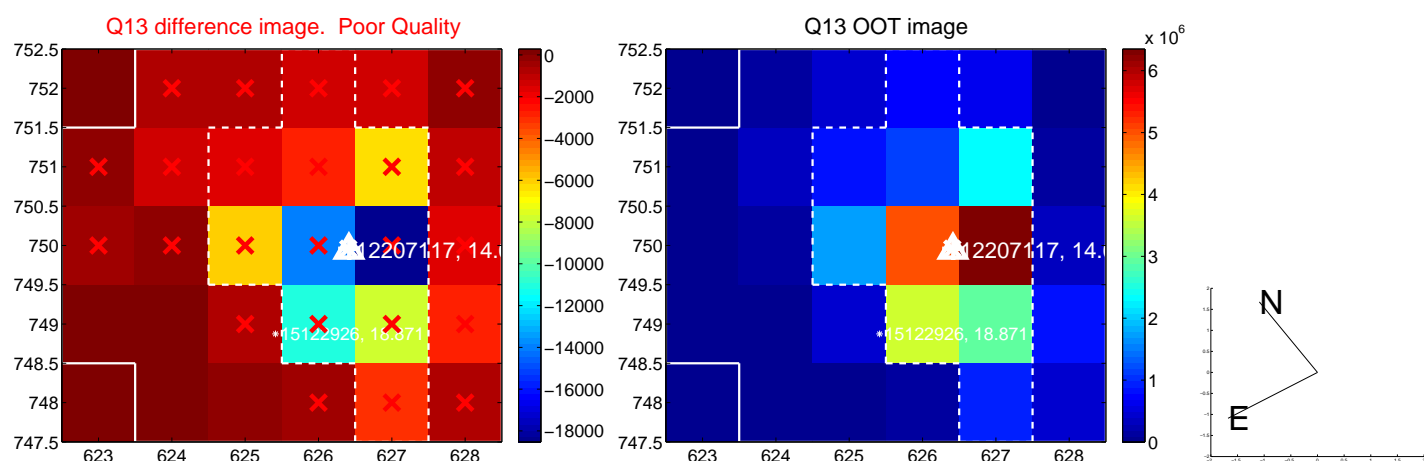
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



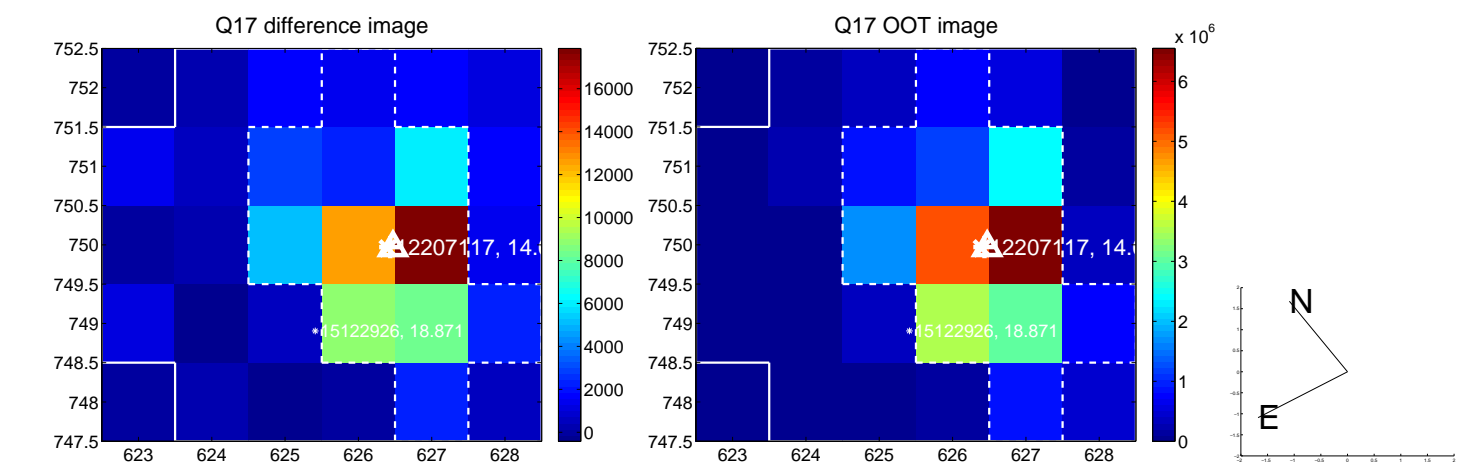
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



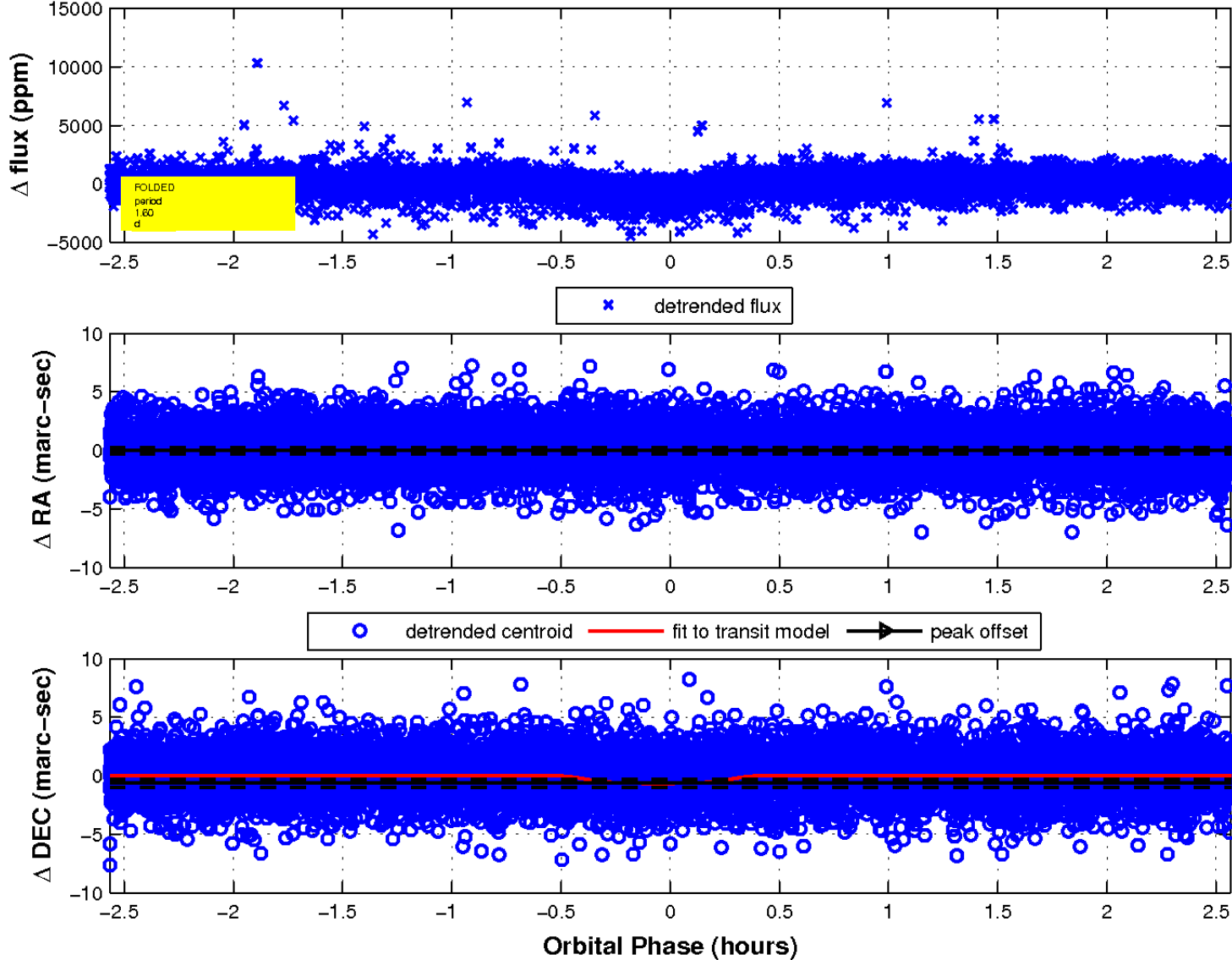
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



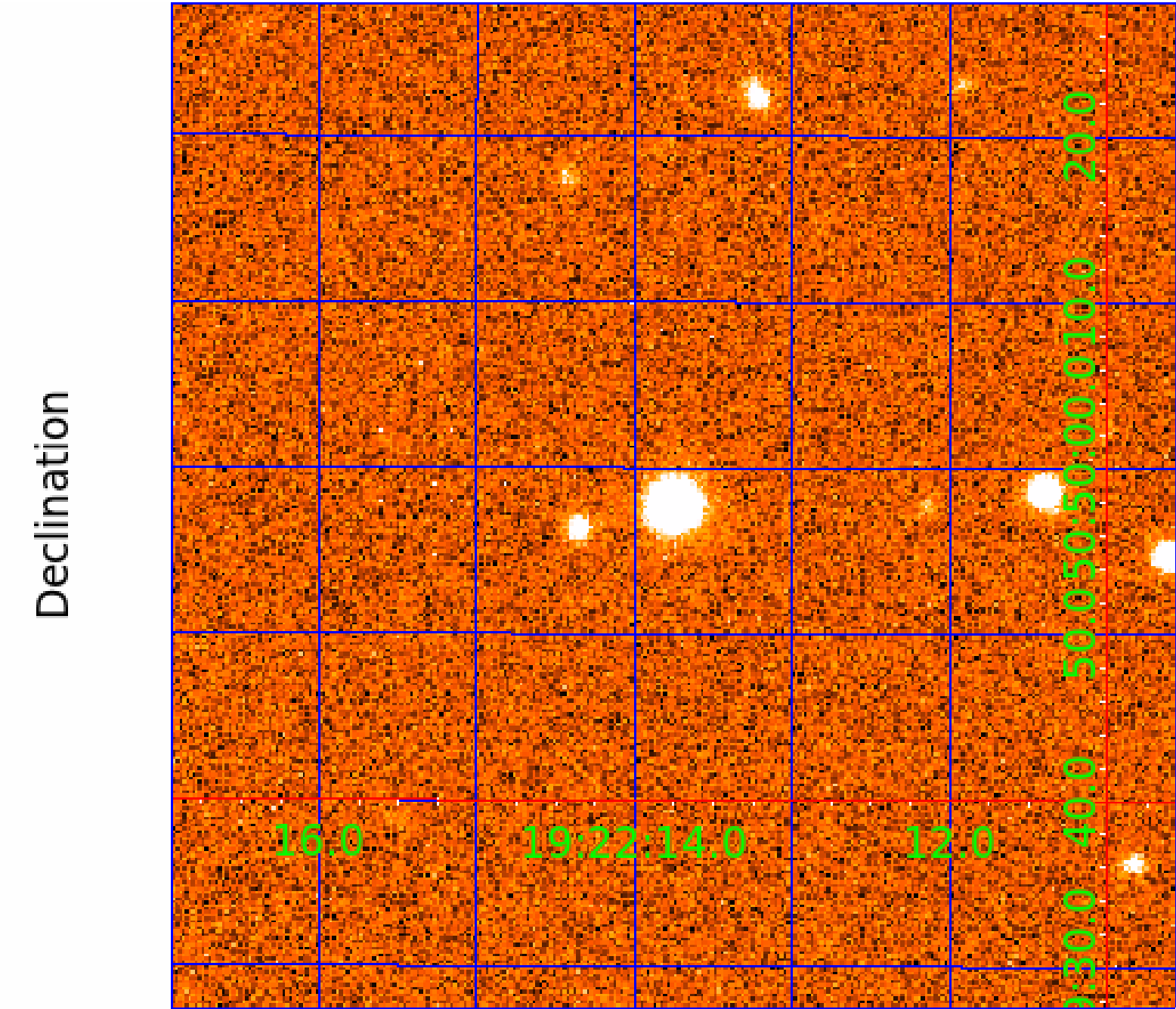
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 4



UKIRT Image



KIC 012207117

Q1-17 DR25 TCE Parameters

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012207117-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS
012207117-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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 012207117-02

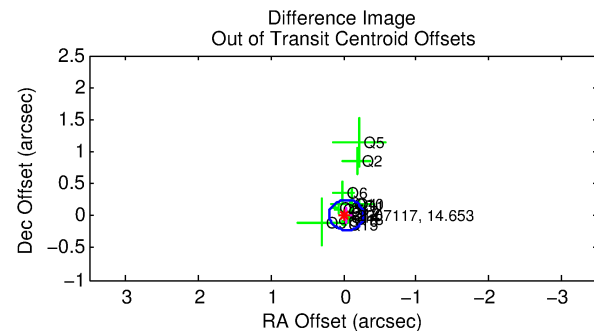
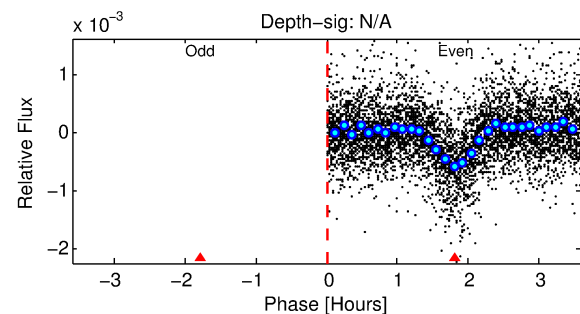
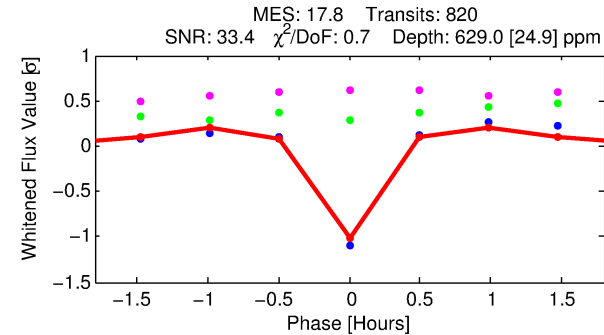
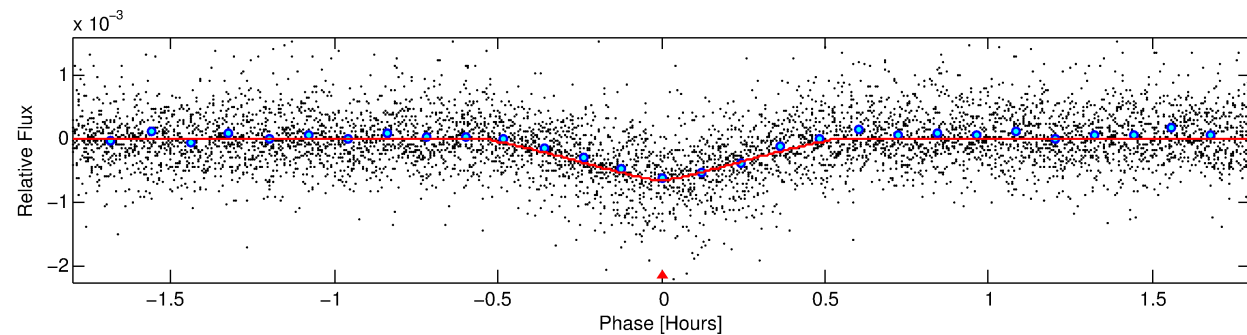
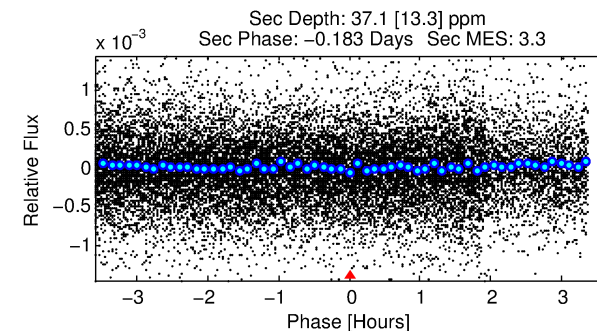
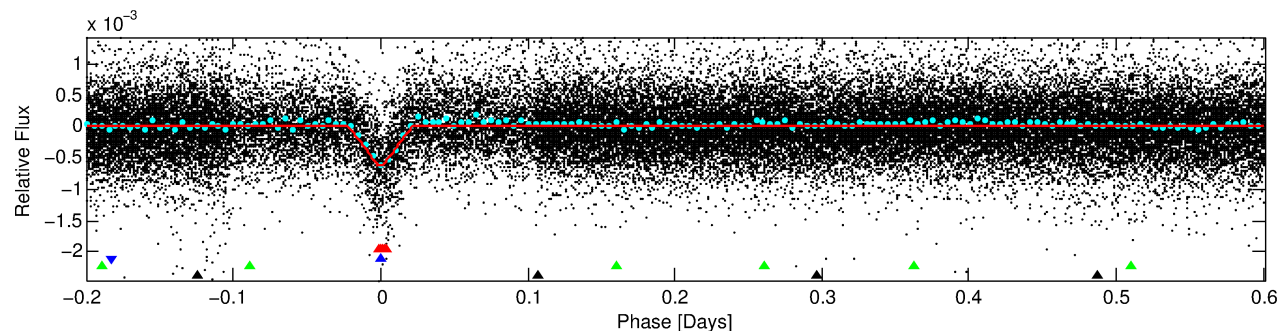
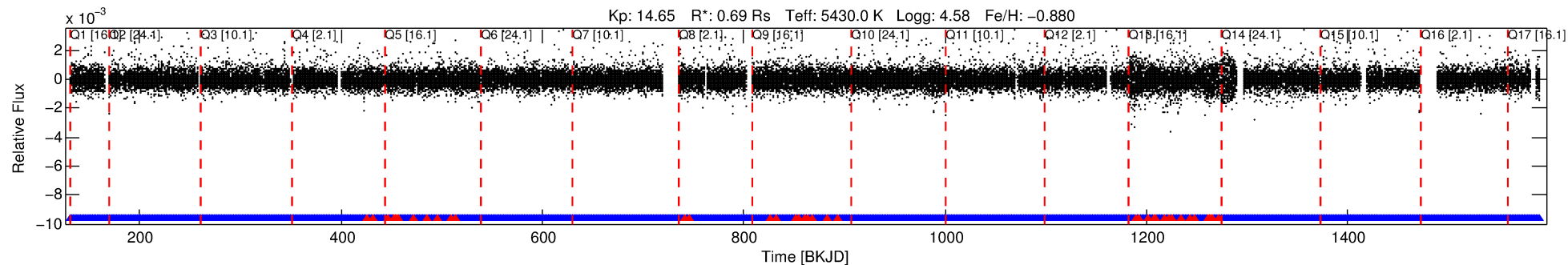
No Significant Match Found

DV One-Page Summary

KIC: 12207117 Candidate: 2 of 4 Period: 0.802 d

KOI: K06249 Corr: No Ephemeris Match

Kp: 14.65 R*: 0.69 Rs Teff: 5430.0 K Logg: 4.58 Fe/H: -0.880



DV Fit Results:

Period = 0.80159 [0.00000] d
Epoch = 131.5649 [0.0003] BKJD
Rp/R* = 0.0250 [0.0036]
a/R* = 8.12 [5.39]
b = 0.65 [0.60]
Seff = 1714.18 [333.30]
Teq = 1641 [80] K
Rp = 1.88 [0.33] Re
a = 0.0147 [0.0014] AU
Ag = 1.24 [0.60] [0.41σ]
Teffp = 2679 [319] K [3.15σ]

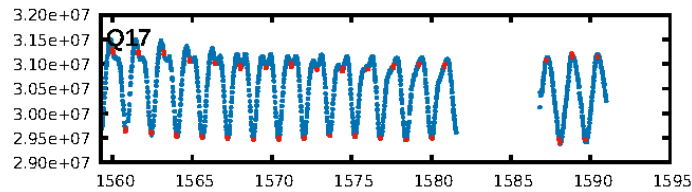
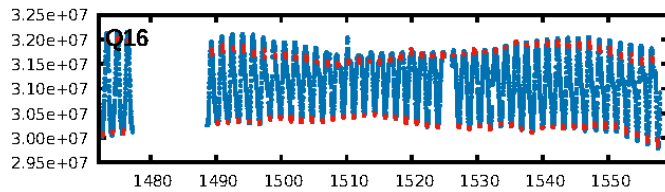
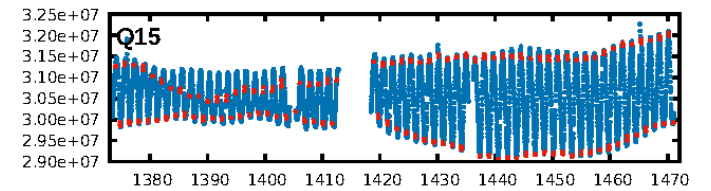
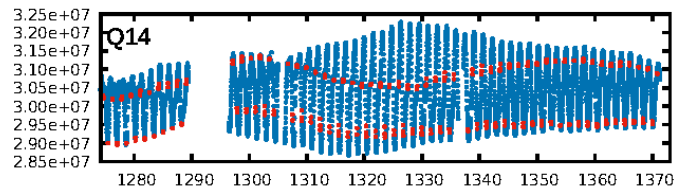
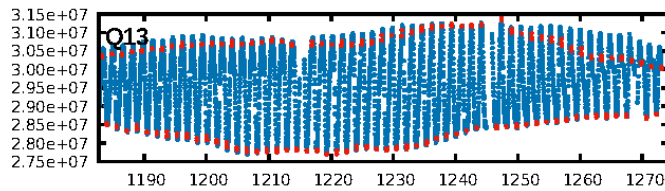
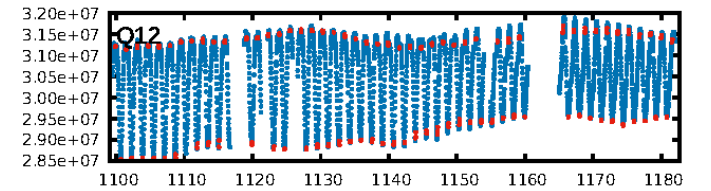
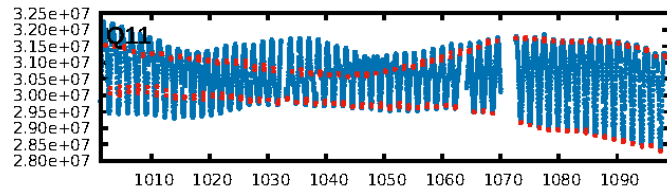
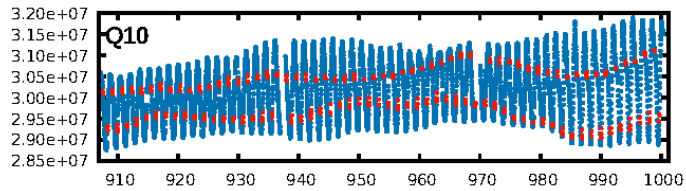
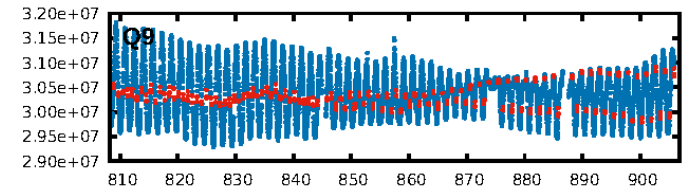
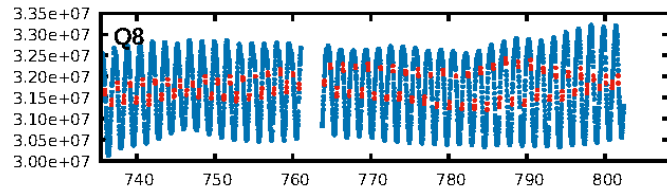
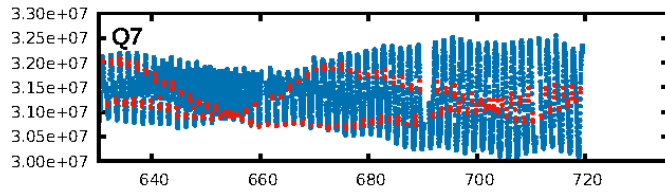
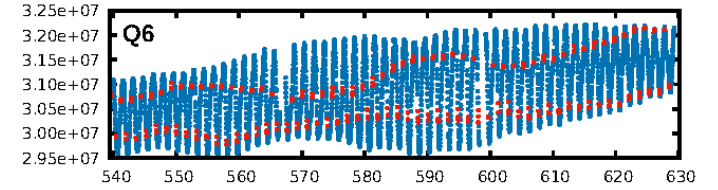
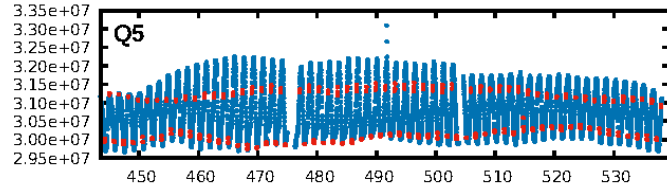
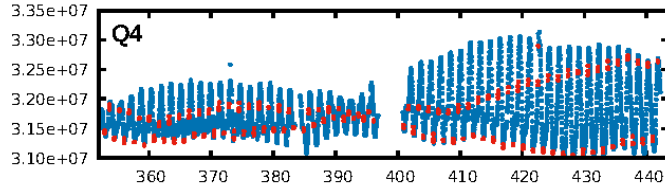
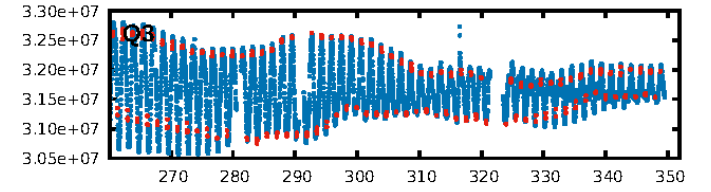
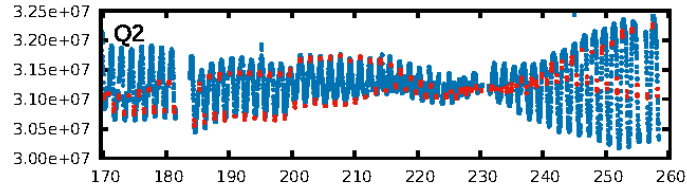
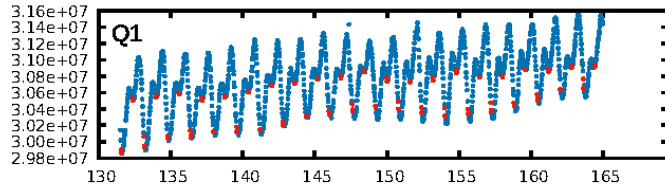
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [18.41σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.35e-68
RollingBand-fgt: 0.95 [745/784]
GhostDiagnostic-chr: 1.277
Centroid-sig: 0.0%
Centroid-so: 0.499 arcsec [1.63σ]
OotOffset-rm: 0.042 arcsec [0.53σ]
KicOffset-rm: 0.185 arcsec [2.38σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 0.81 [13/16]
DiffImageOverlap-fno: 1.00 [17/17]

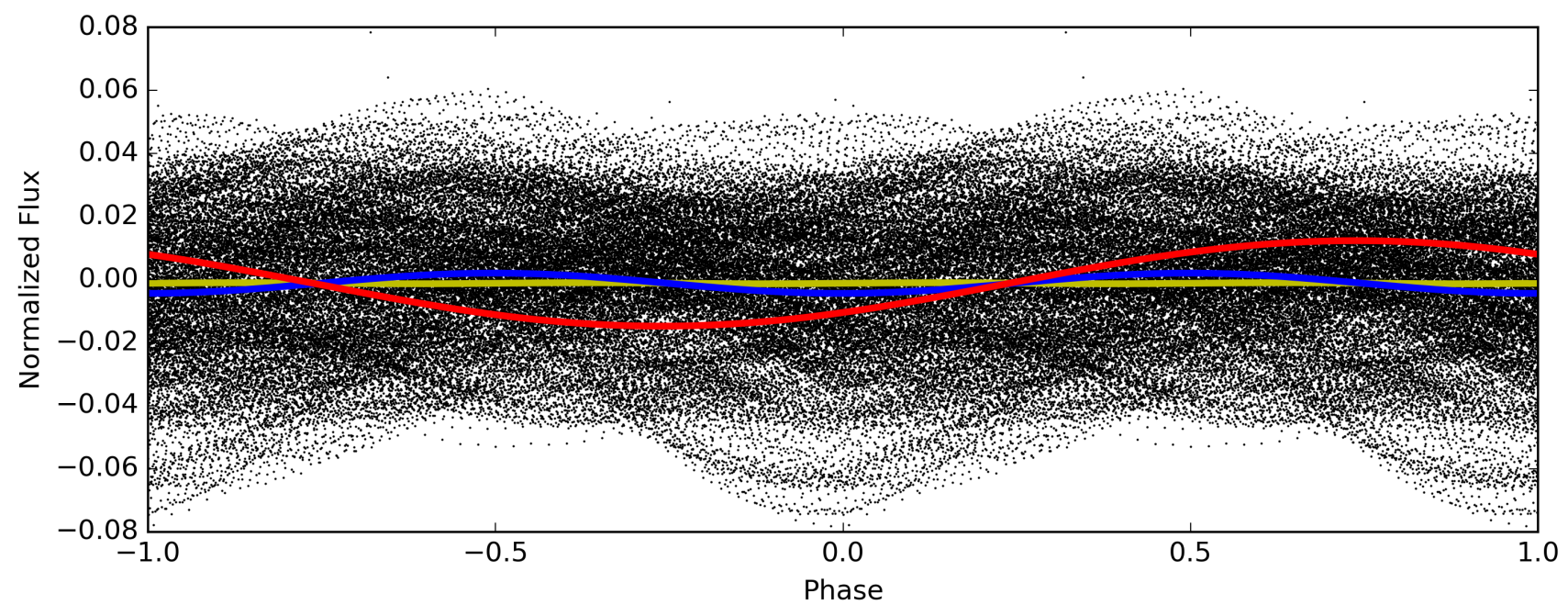
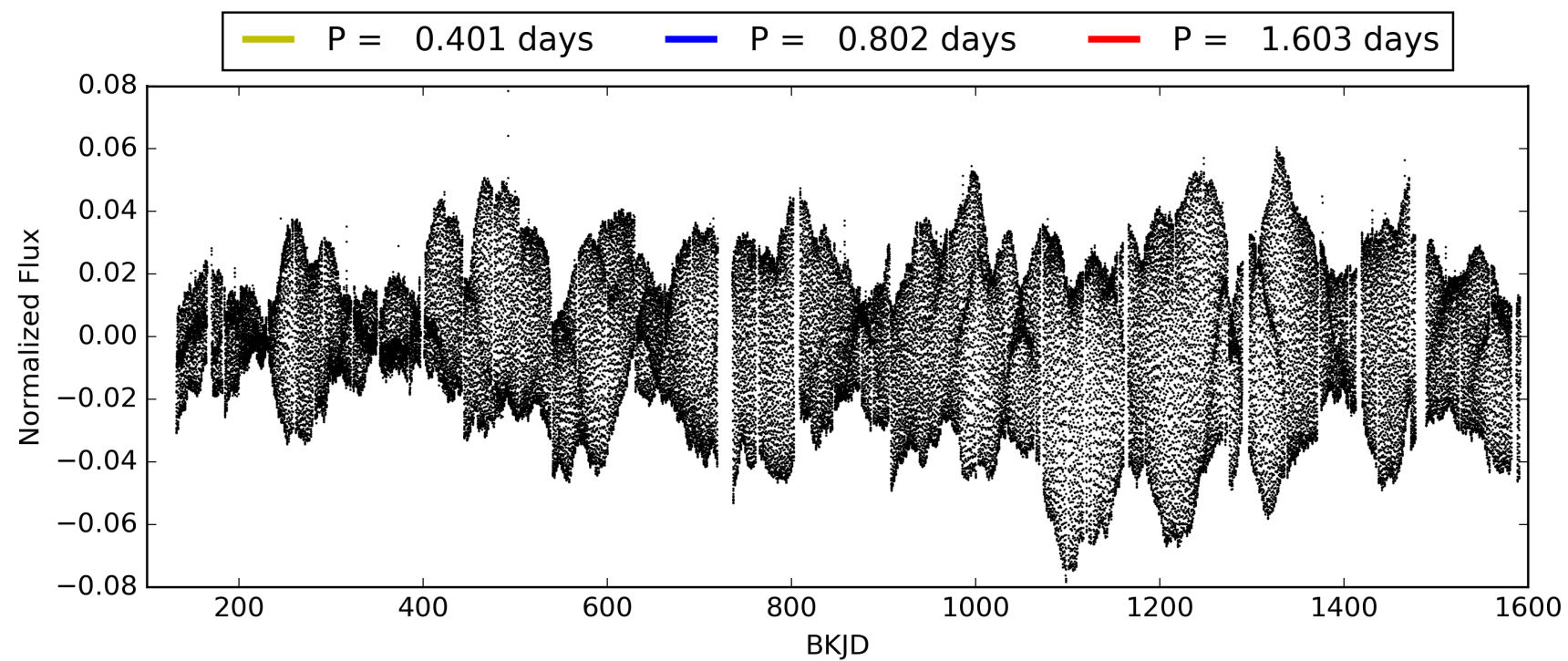
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:50:55 Z

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

TCE 012207117-02, PDC Light Curves

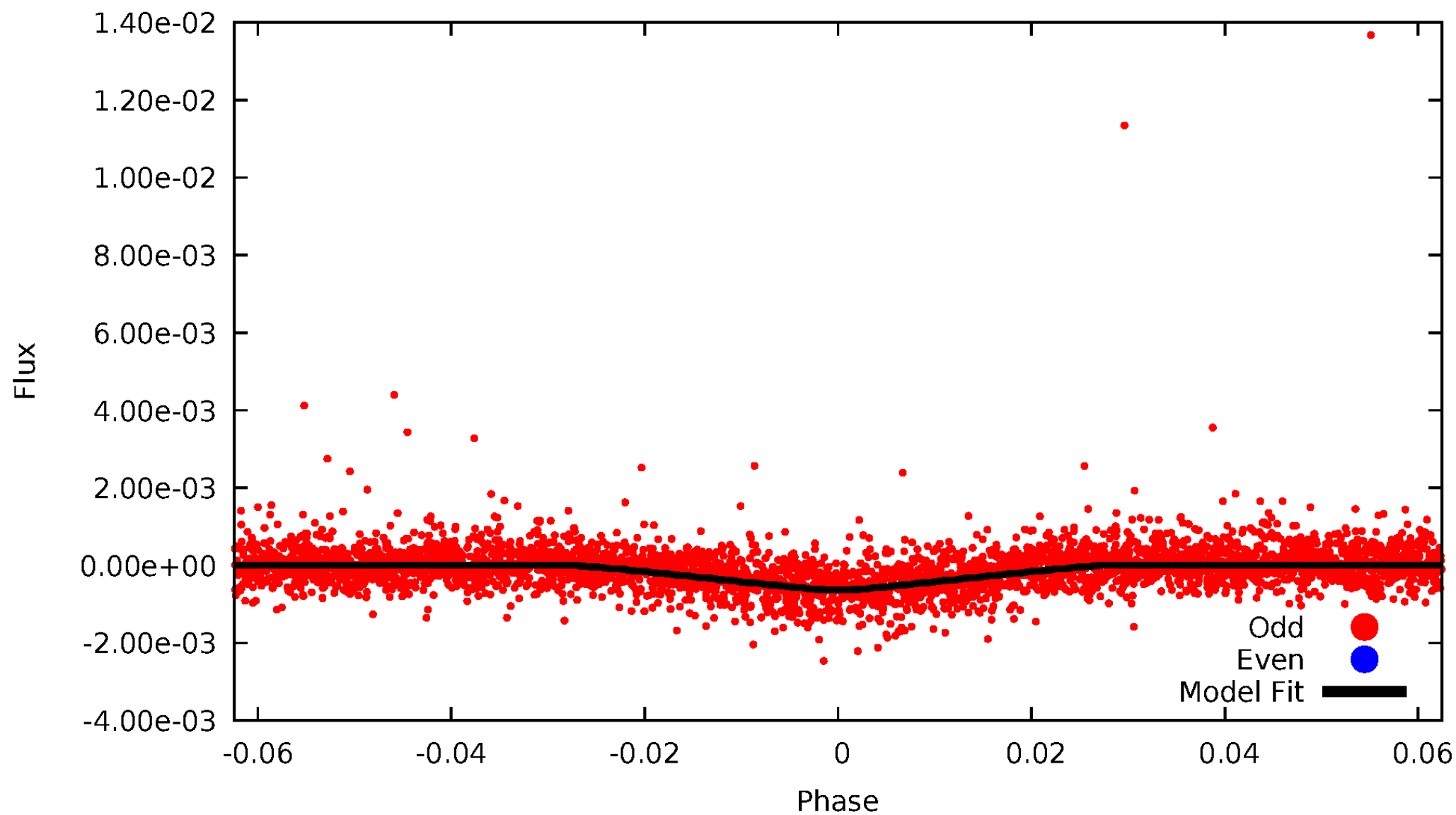


TCE 012207117-02



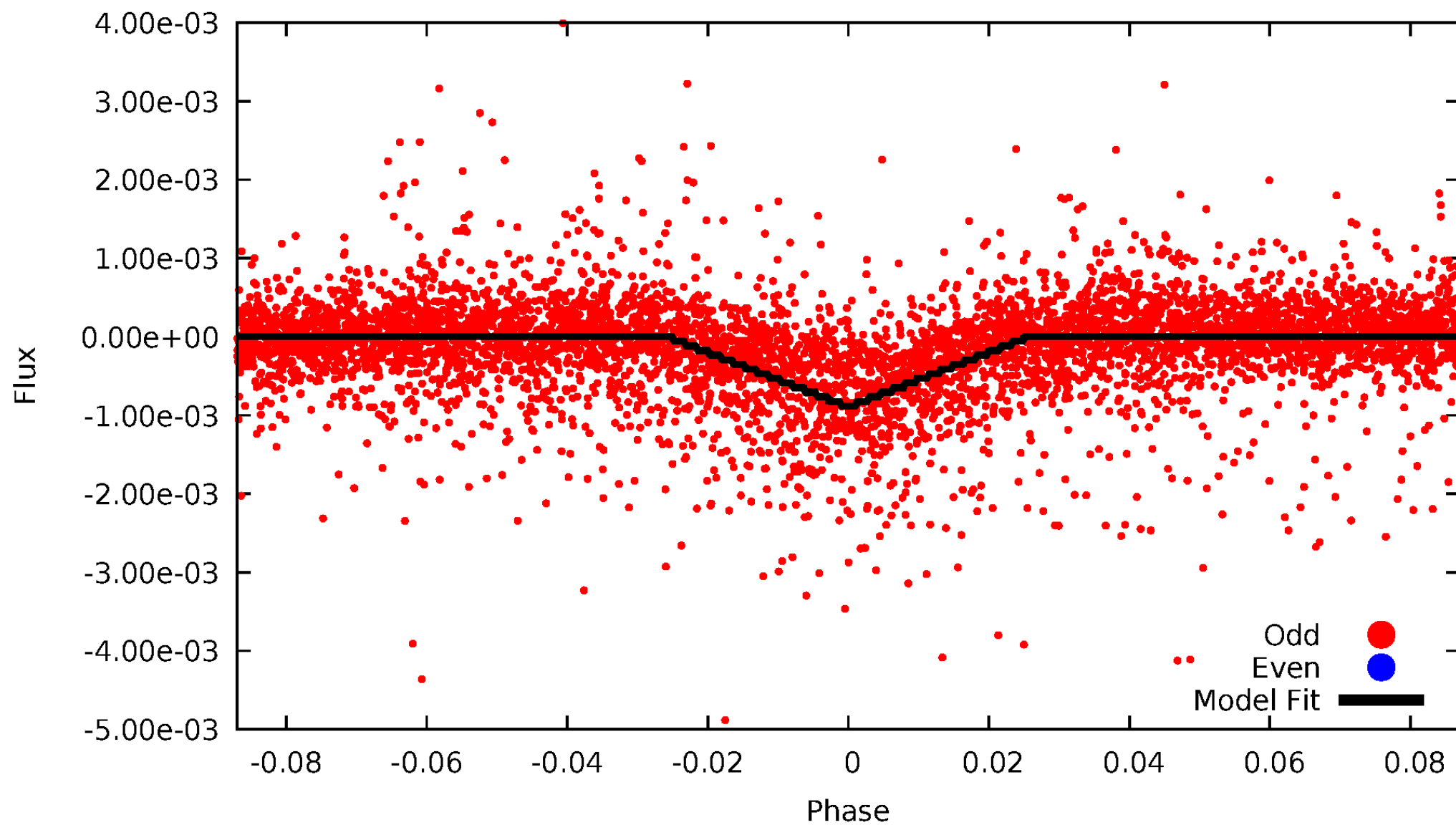
DV Odd/Even

TCE 012207117-02



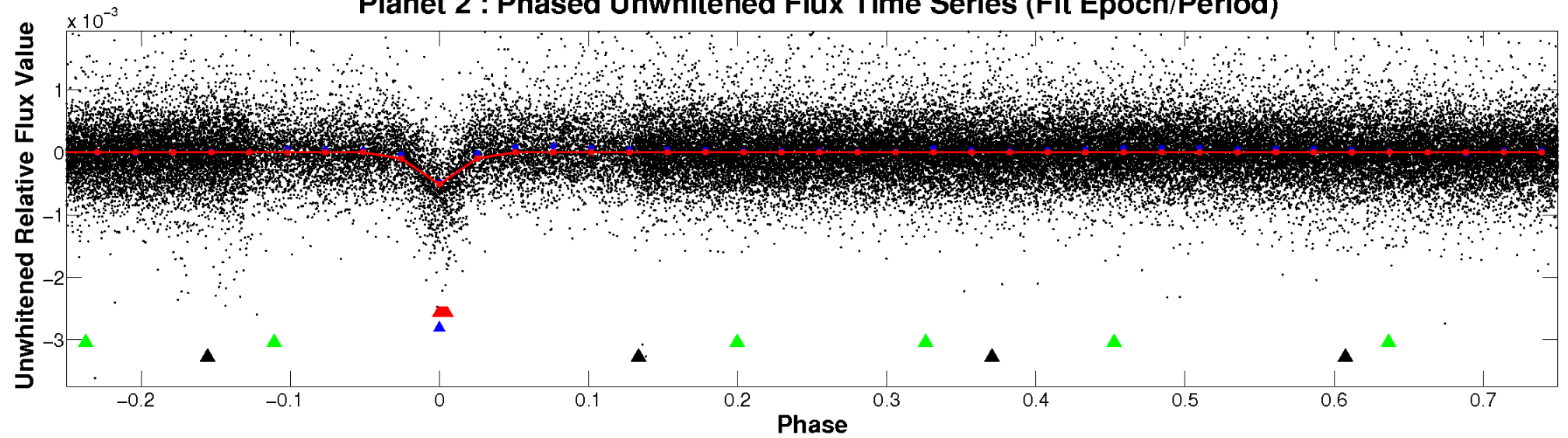
ALT Odd/Even

TCE 012207117-02

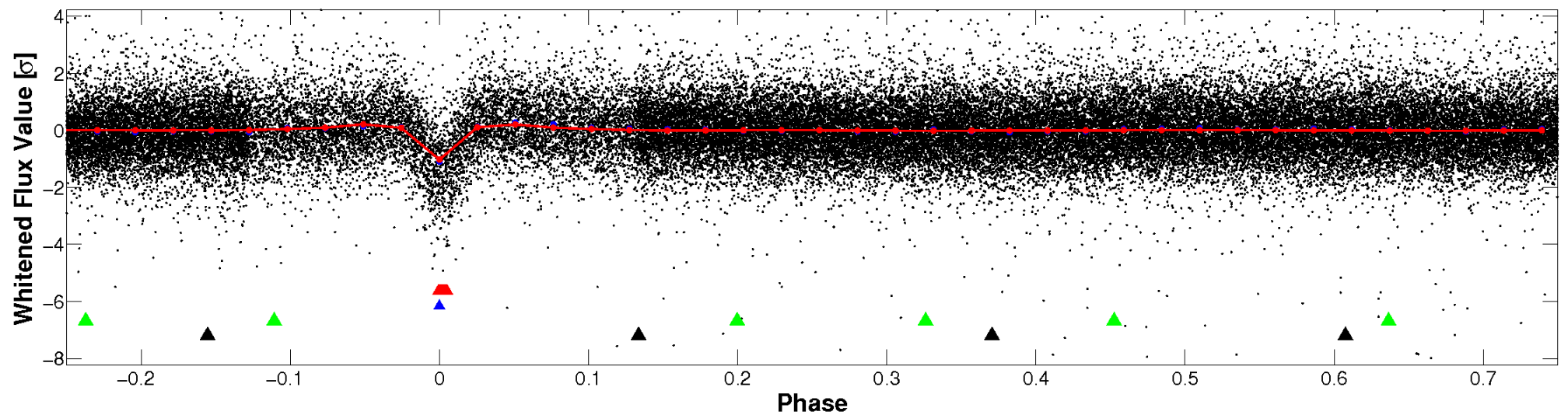


Non-Whitened Vs. Whitened Light Curve

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

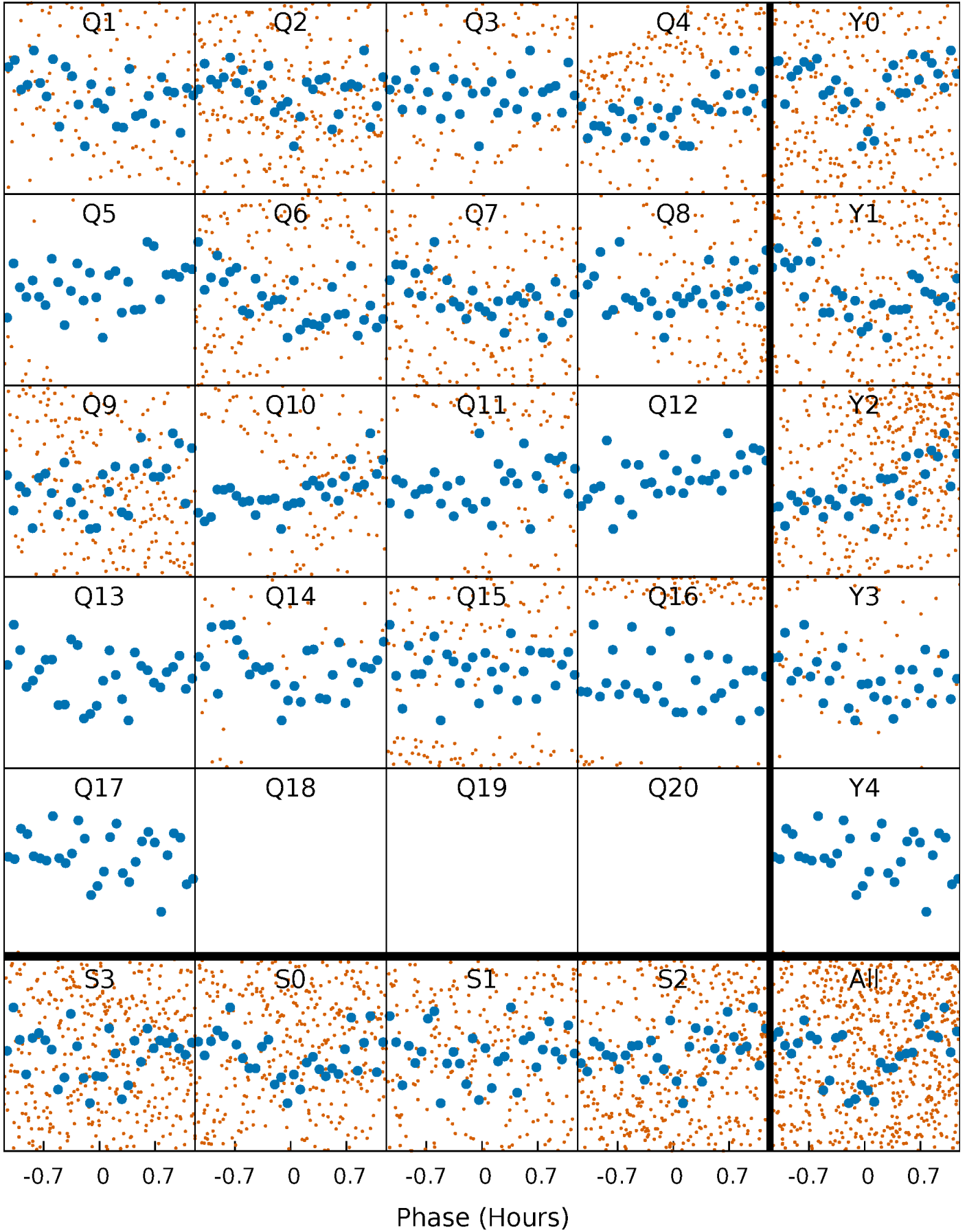


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



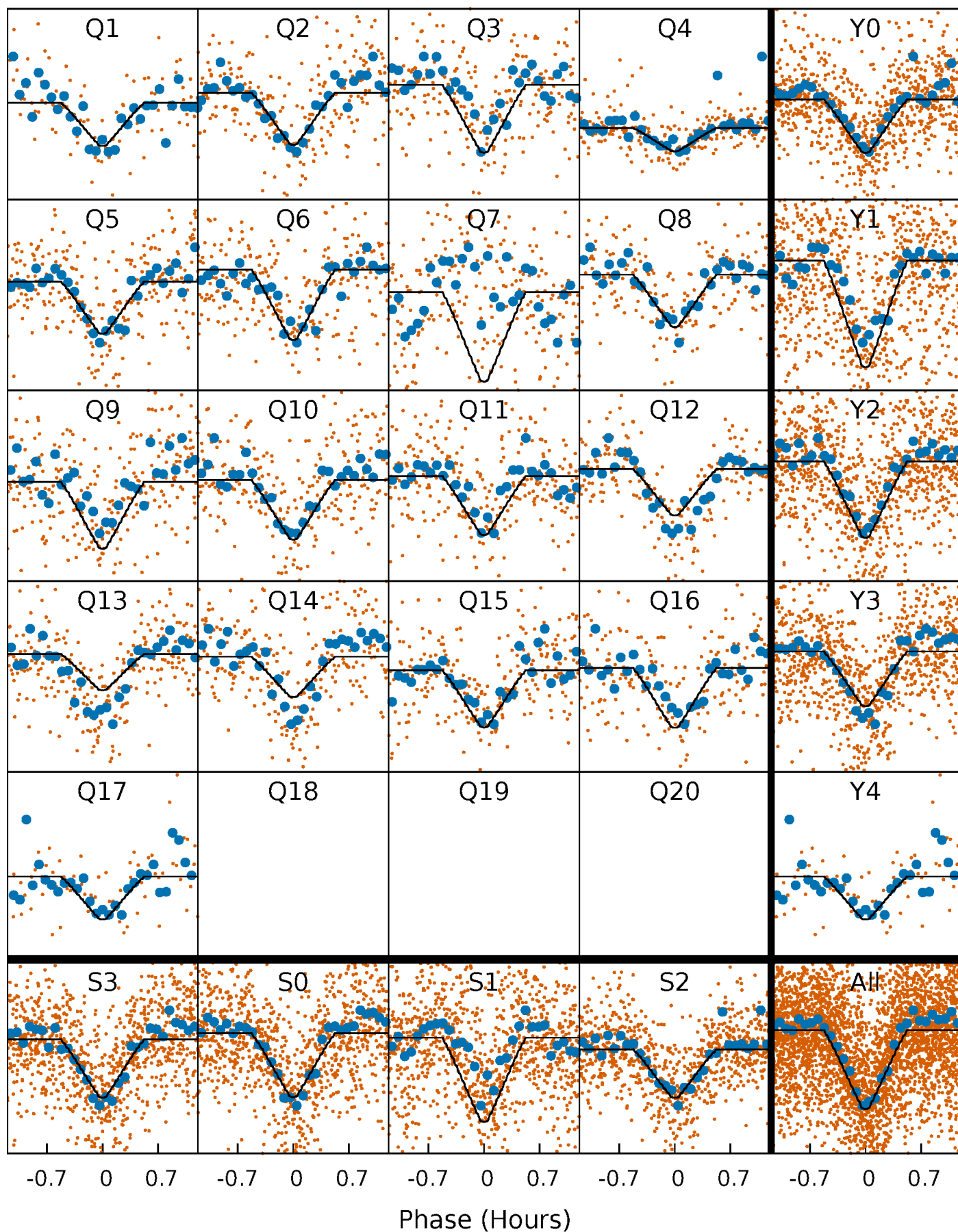
PDC Quarter-Phased Transit Curves

TCE 012207117-02 P= 0.801591 Days $T_0=131.564945$ (BKJD)



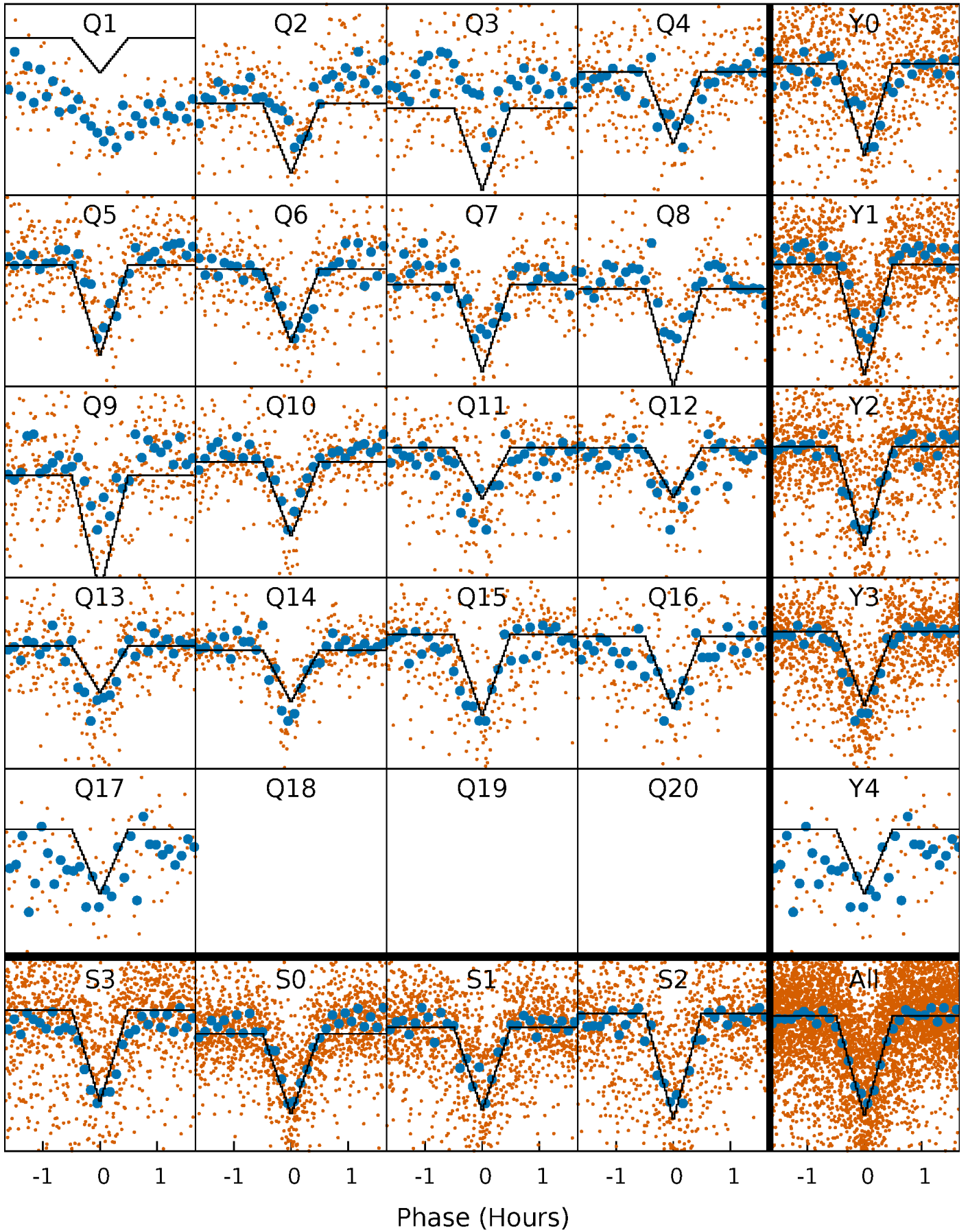
DV Quarter-Phased Transit Curves

TCE 012207117-02 $P = 0.801591$ Days $T_0 = 131.564945$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

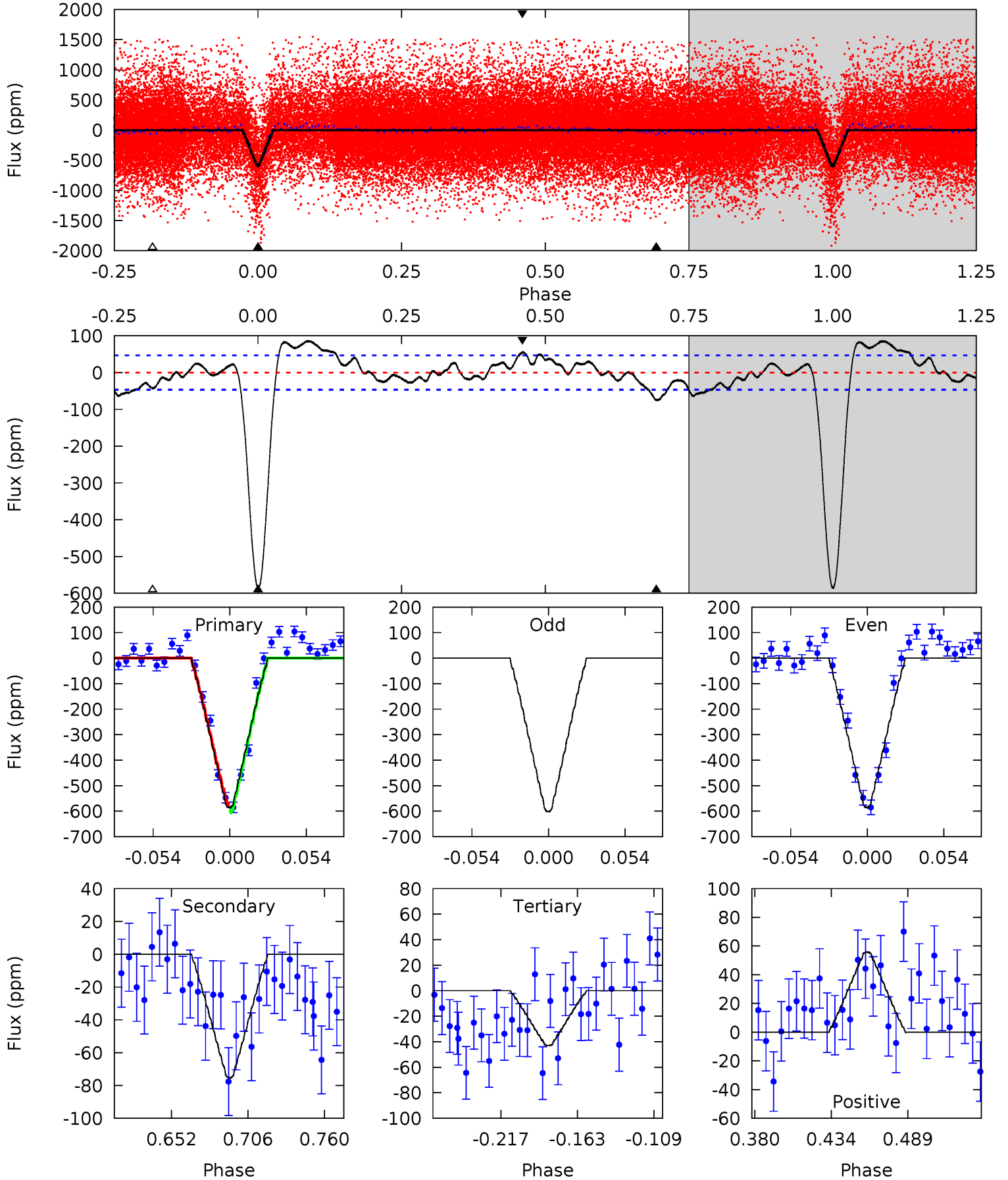
TCE 012207117-02 P= 0.801597 Days $T_0=131.559321$ (BKJD)



DV Model-Shift Uniqueness Test

012207117-02, P = 0.801591 Days, E = 131.564945 Days

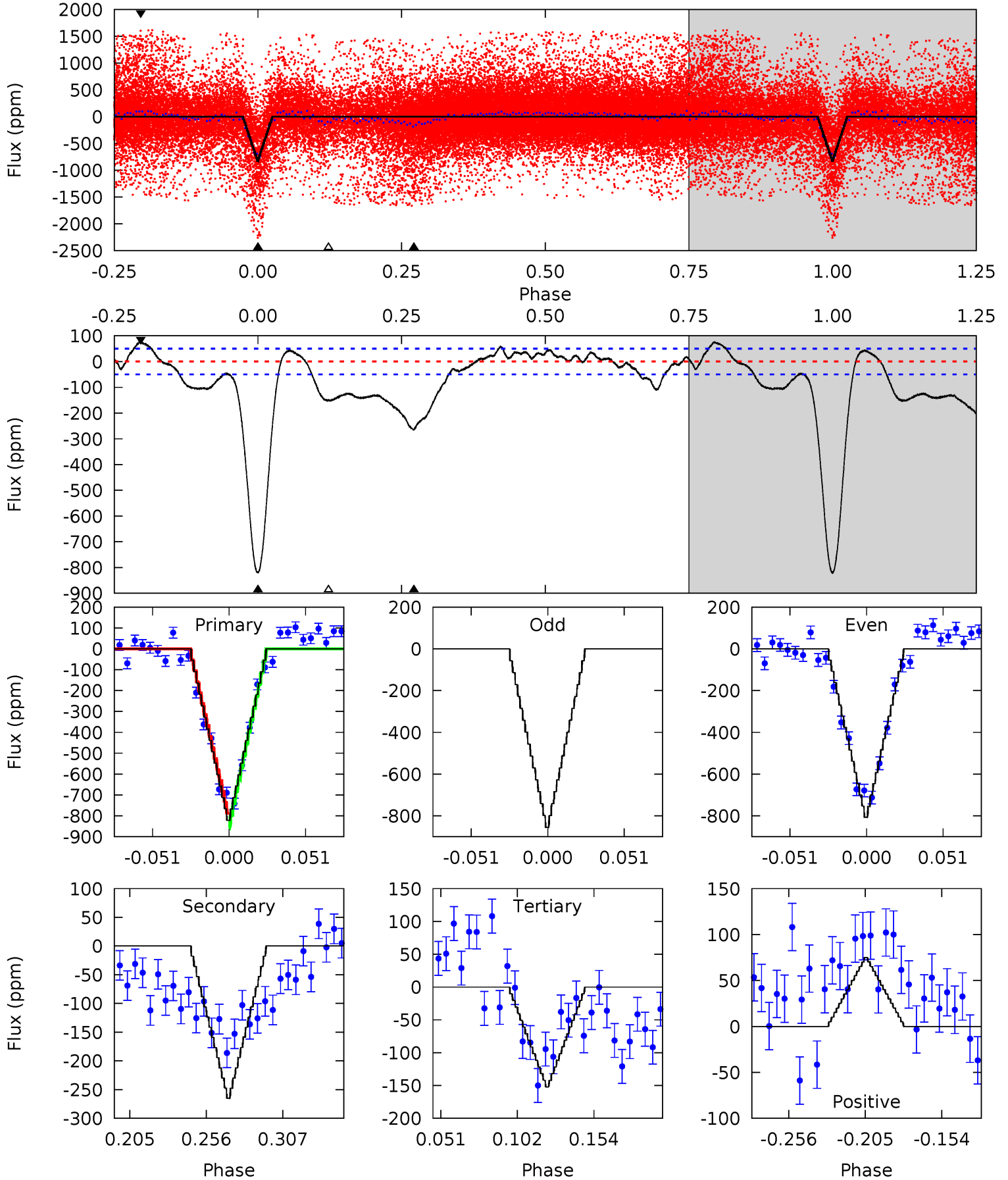
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
58.9	7.58	4.33	5.62	4.69	1.92	3.04	54.6	53.3	3.25	1.97	0.92	0.98	0.13	1.53



Alt Model-Shift Uniqueness Test

012207117-02, P = 0.801597 Days, E = 131.559321 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
77.7	25.1	14.4	7.10	4.70	1.95	5.02	63.3	70.6	10.7	17.9	2.67	1.18	0.08	3.14



Stellar Parameters For KIC 012207117

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5430^{+179}_{-163}	$4.580^{+0.082}_{-0.060}$	$-0.880^{+0.350}_{-0.300}$	$0.690^{+0.070}_{-0.070}$	$0.661^{+0.071}_{-0.028}$	$2.828^{+0.967}_{-0.607}$
	+3%/-3%	+2%/-1%	+40%/-34%	+10%/-10%	+11%/-4%	+34%/-21%
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 012207117-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-75 ± 10	$1.89^{+0.29}_{-0.30}$	2291^{+93}_{-101}	3551^{+255}_{-200}	$2.547^{+1.156}_{-0.695}$
Alt.	-265 ± 11	$2.24^{+0.29}_{-0.30}$	2287^{+92}_{-90}	4228^{+250}_{-218}	$6.467^{+2.082}_{-1.408}$

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

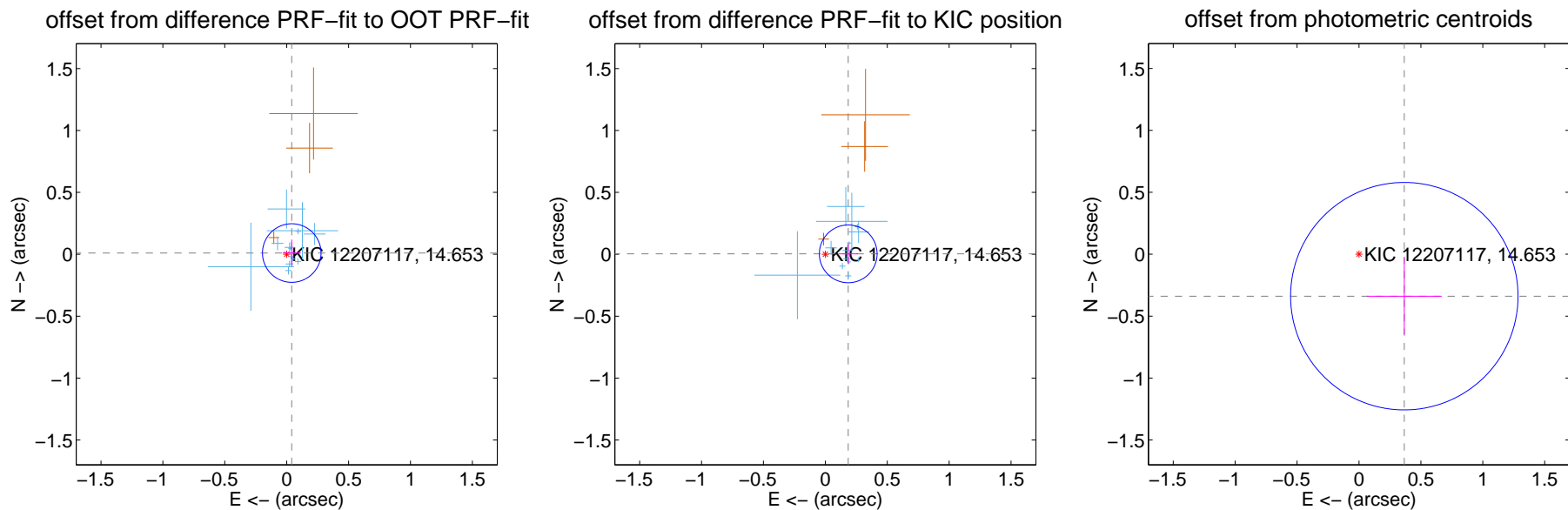
DV Centroid Data

Supplemental centroid analysis for 012207117-02. Kepler magnitude: 14.65. Transit SNR 33.41

There are 13 quarters with good PRF difference image offsets

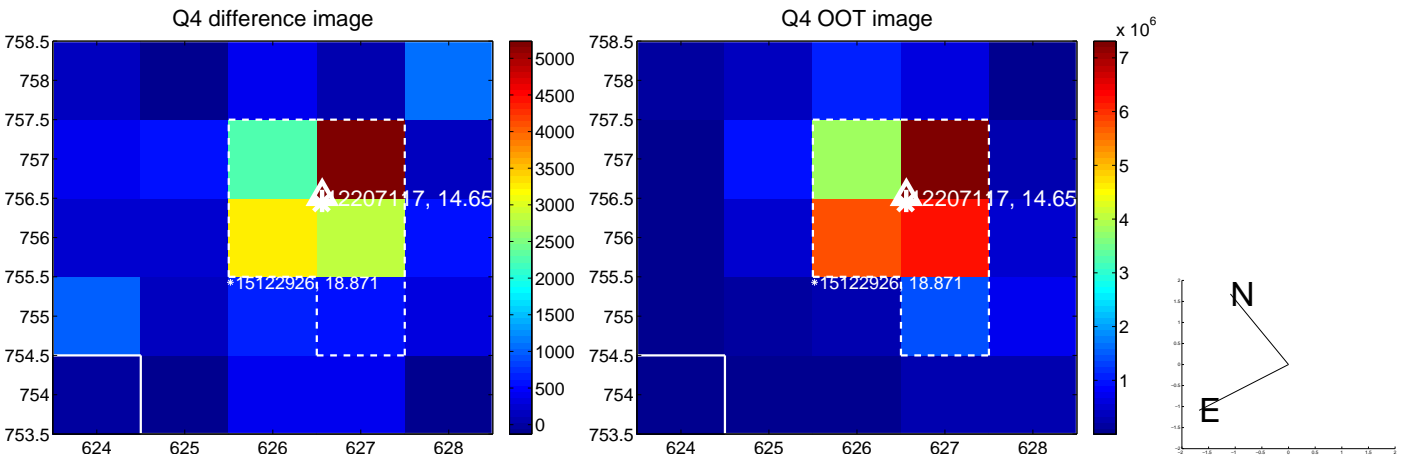
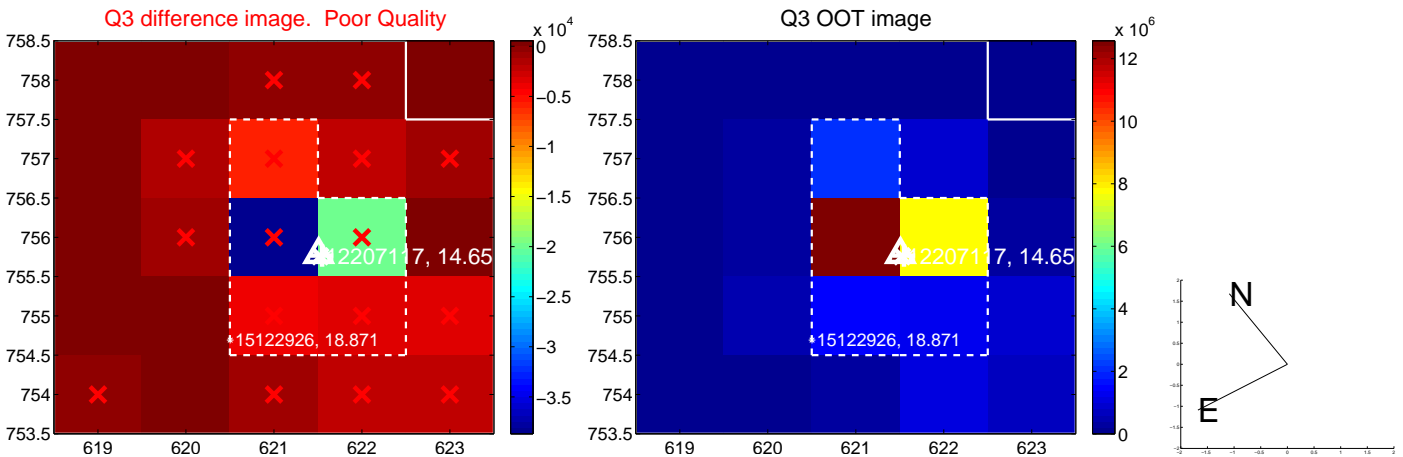
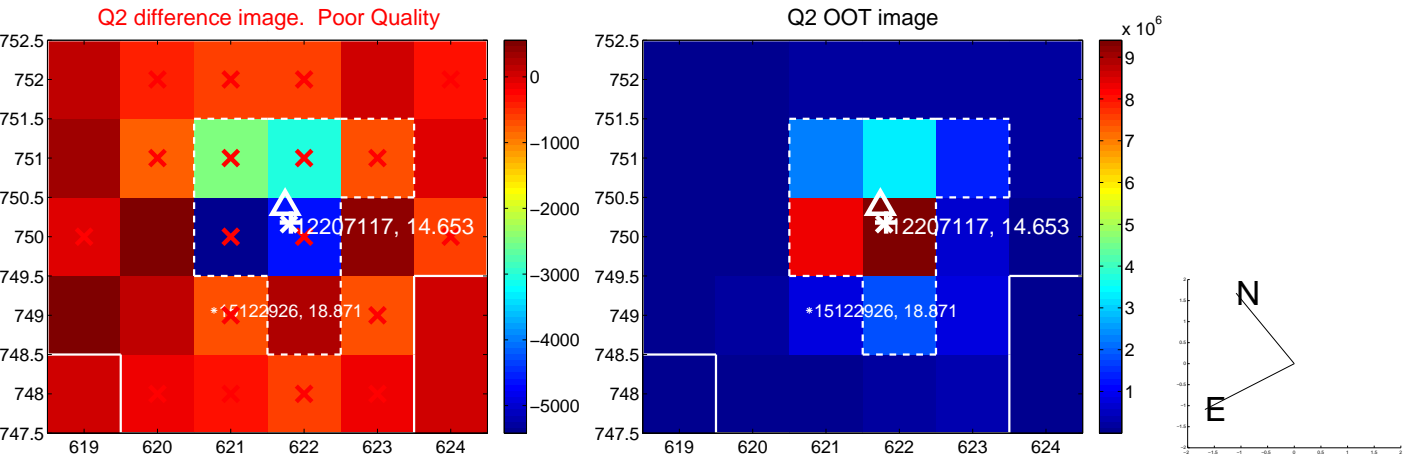
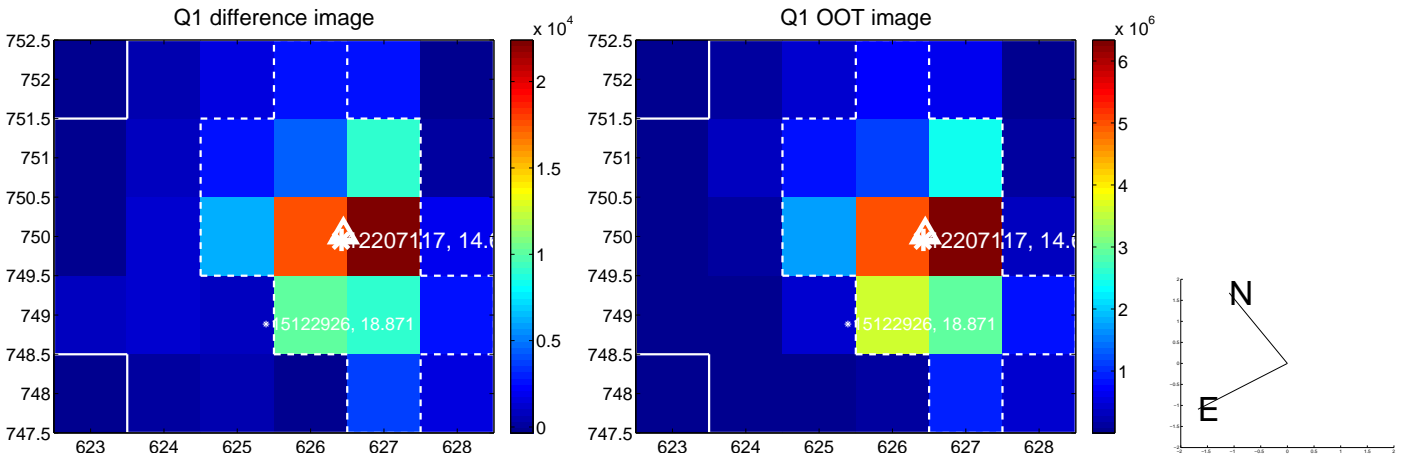
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.042 ± 0.079	0.53	-0.041 ± 0.073	0.010 ± 0.109
PRF-fit source offset from KIC position	0.185 ± 0.078	2.38	-0.185 ± 0.078	0.004 ± 0.078
photometric centroid source offset	0.50 ± 0.31	1.63	-0.37 ± 0.30	-0.34 ± 0.31

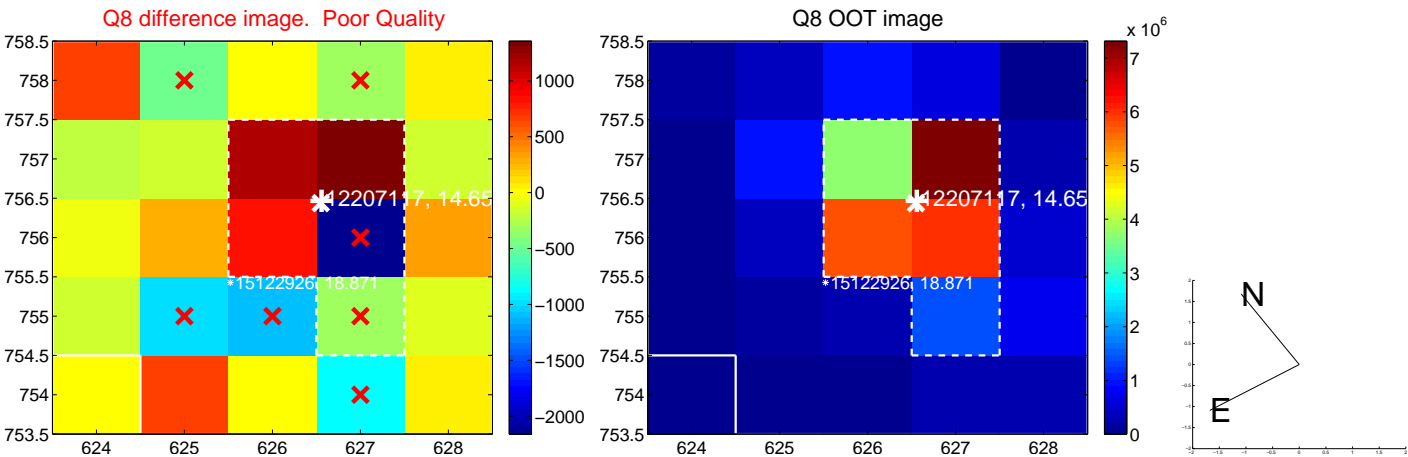
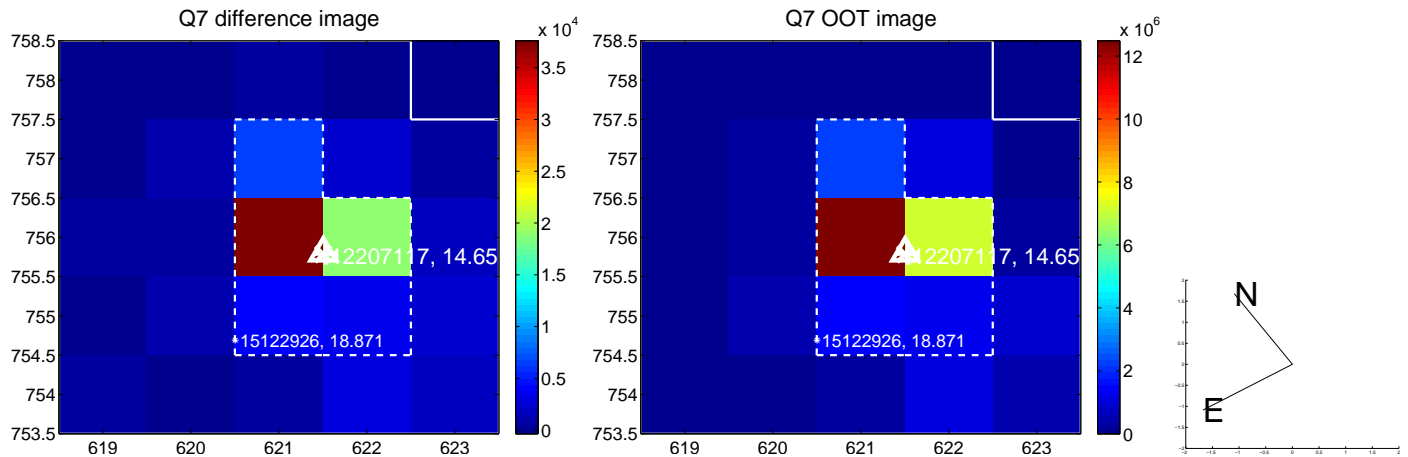
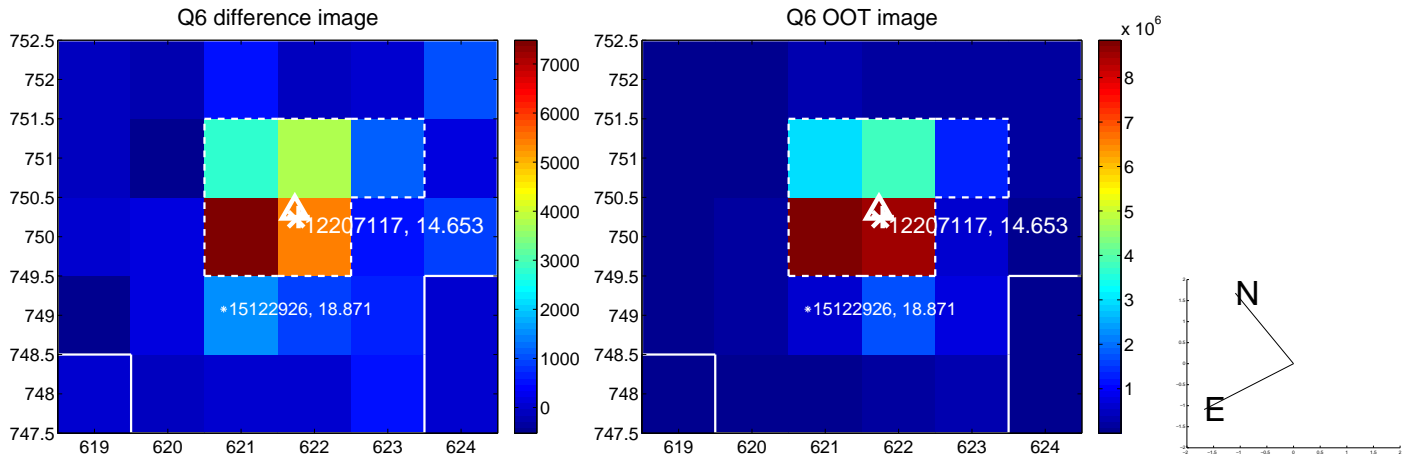
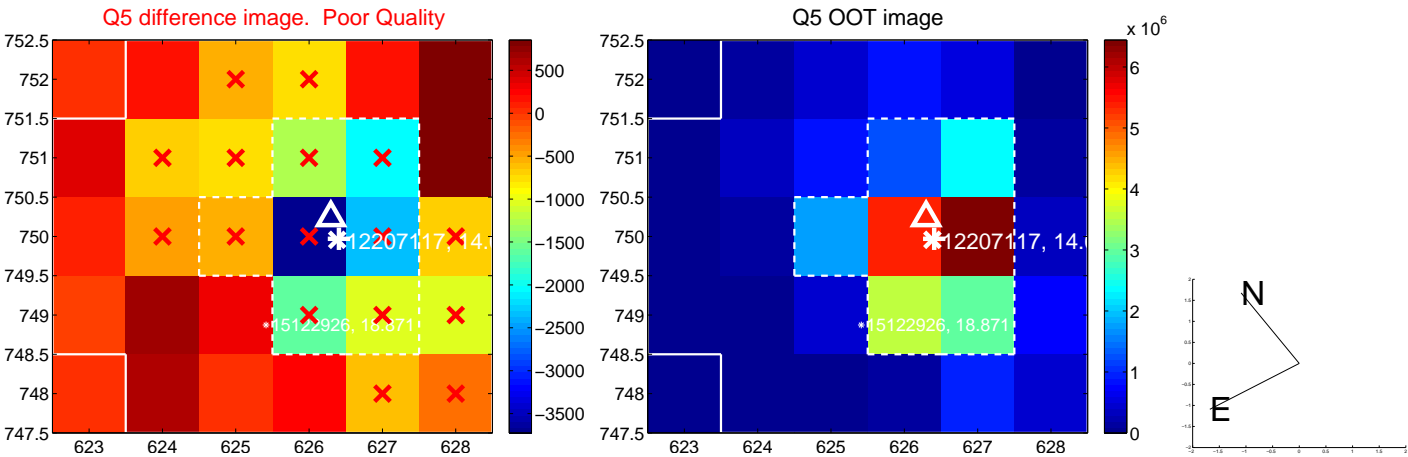


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

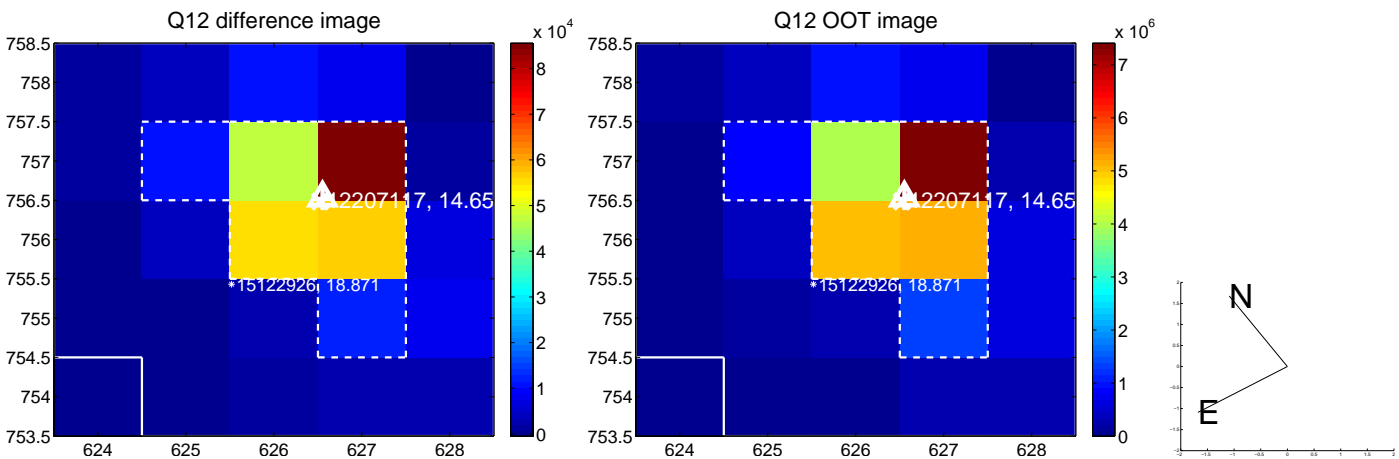
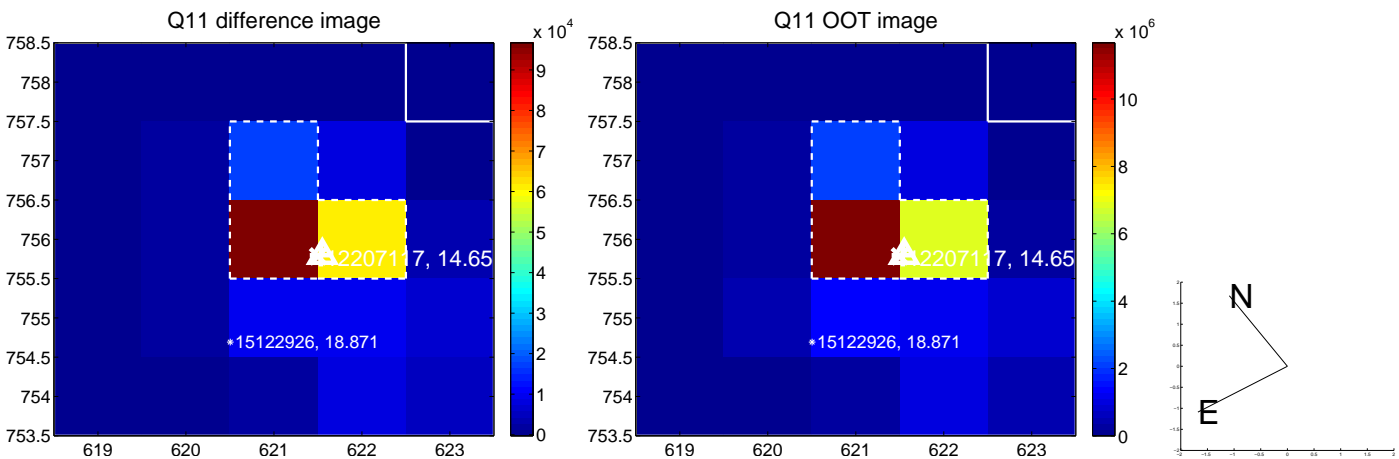
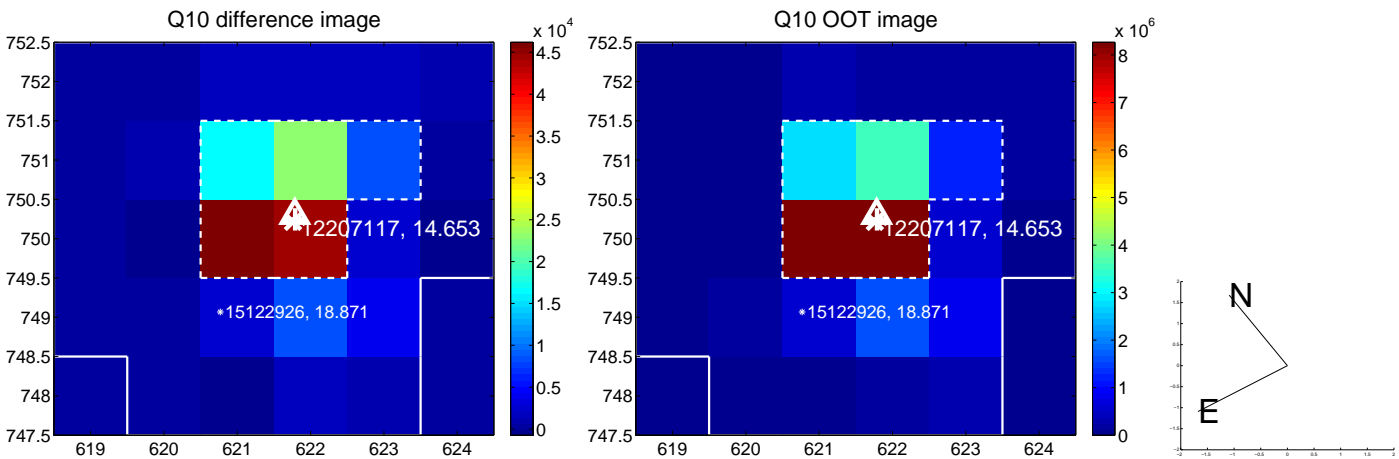
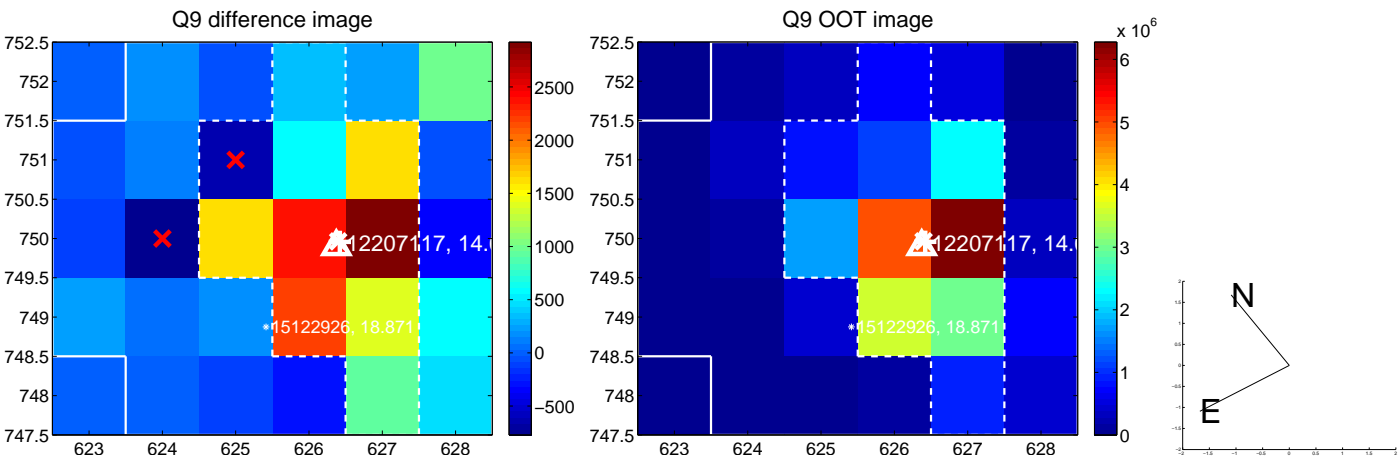
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



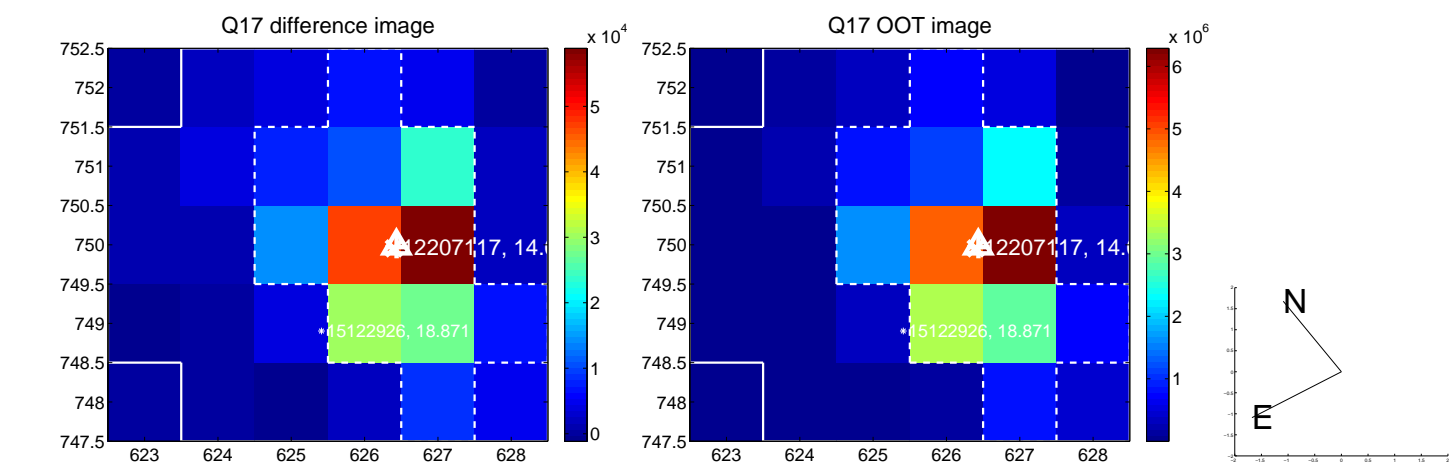
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



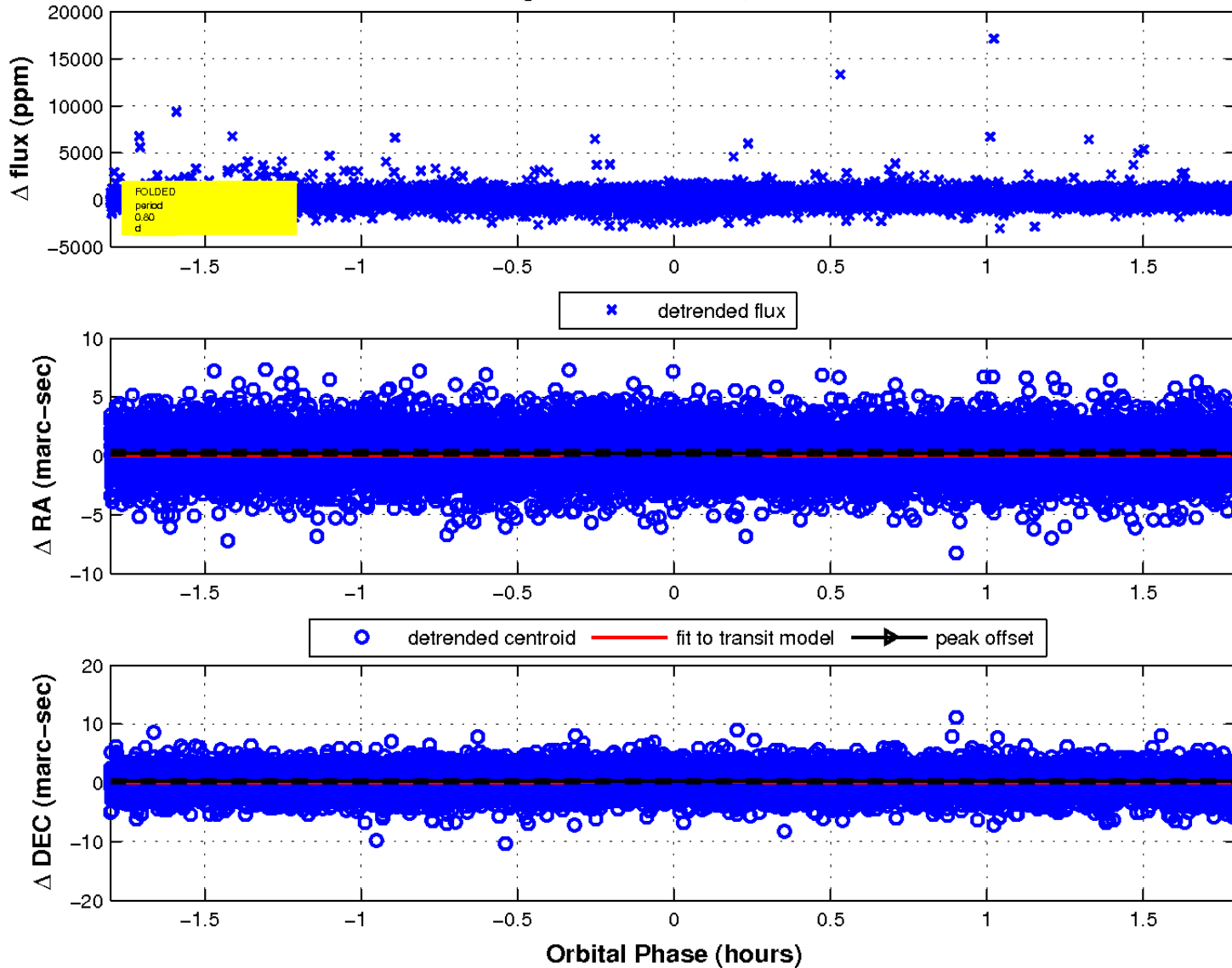
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



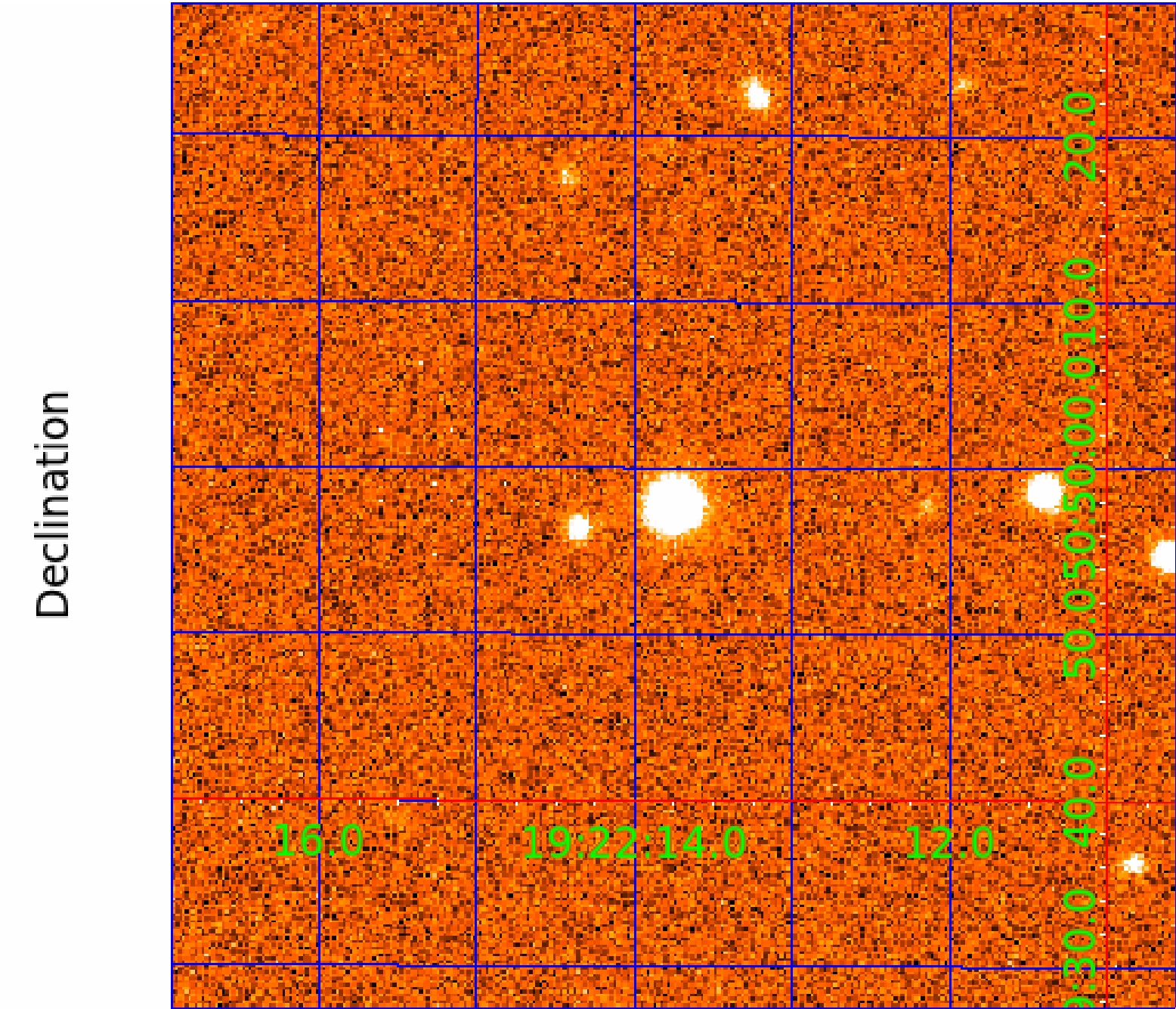
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 2 of 4



UKIRT Image



KIC 012207117

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})
012207117-01	OBS	6249.01	1.603187	131.564285	1765.9	0.856	53.5	100.4	0.69	5430	3.52	680.27
012207117-02	OBS	No	0.801591	131.564945	629.0	0.600	17.8	33.4	0.69	5430	1.88	1714.18
012207117-03	OBS	No	257.660804	221.705809	2437.0	3.813	14.2	7.1	0.69	5430	3.62	0.78
012207117-04	OBS	No	392.969494	194.997702	2790.5	5.874	12.3	5.9	0.69	5430	3.62	0.44

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012207117-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL
012207117-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—SWEET_NTL—SAME_NTL_PERIOD
012207117-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS
012207117-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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 012207117-03

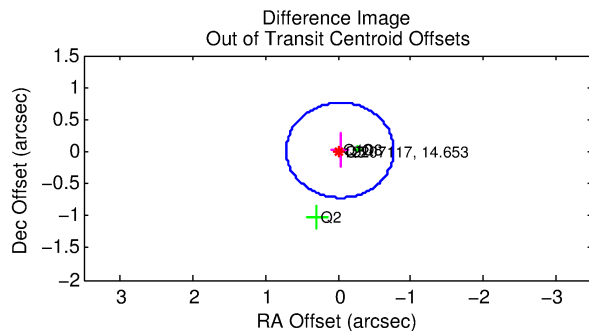
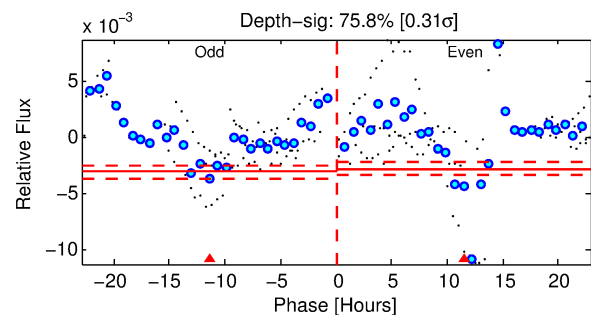
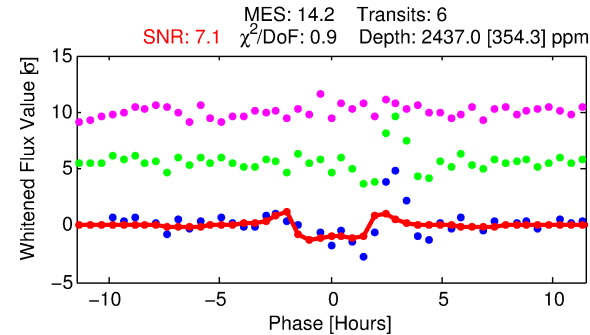
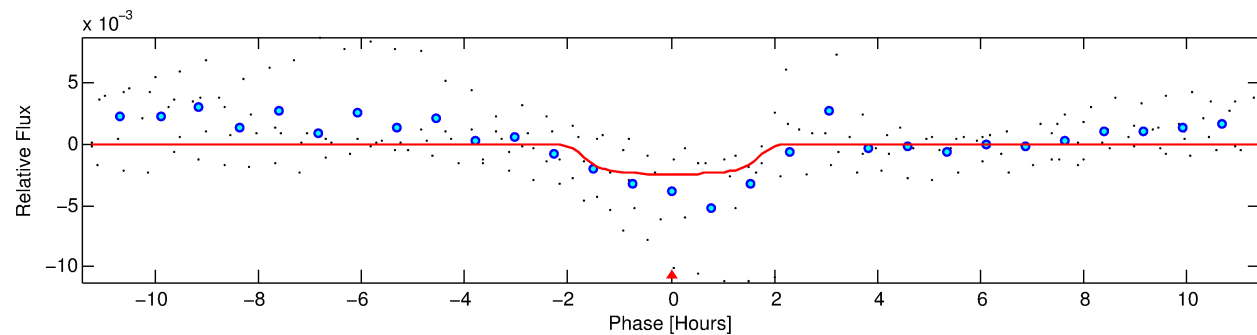
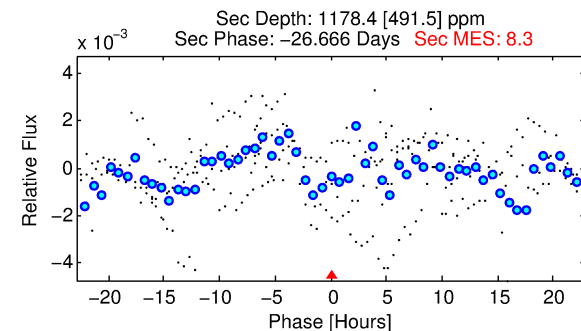
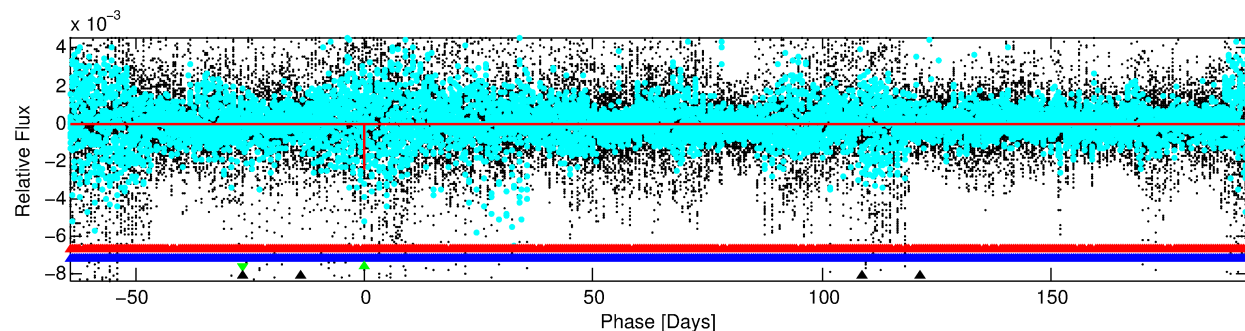
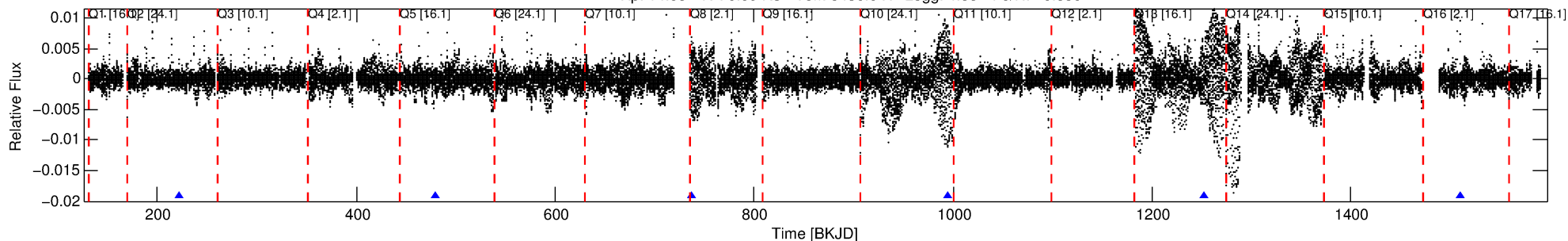
No Significant Match Found

DV One-Page Summary

KIC: 12207117 Candidate: 3 of 4 Period: 257.661 d

KOI: K06249 Corr: No Ephemeris Match

Kp: 14.65 R*: 0.69 Rs Teff: 5430.0 K Logg: 4.58 Fe/H: -0.880



DV Fit Results:

Period = 257.66080 [0.00143] d
Epoch = 221.7058 [0.0052] BKJD
Rp/R* = 0.0481 [0.0167]
a/R* = 409.48 [601.69]
b = 0.69 [1.16]
Seff = 0.78 [0.15]
Teff = 240 [12] K
Rp = 3.62 [1.31] Re
a = 0.6902 [0.0638] AU
Ag = 23511.83 [19365.48] [1.21σ]
Teffp = 4586 [942] K [4.61σ]

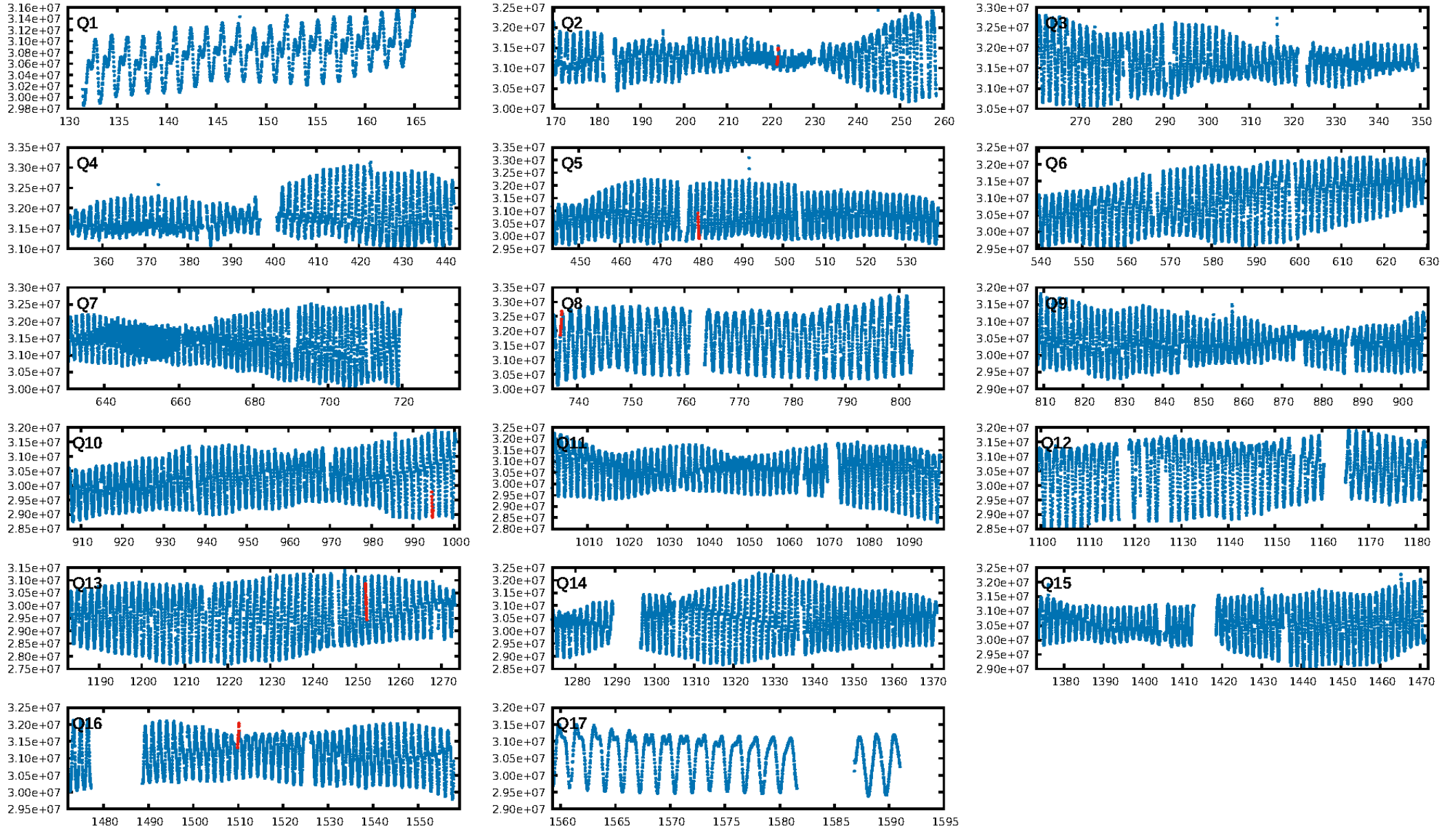
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1572.49σ]
LongPeriod-sig: 100.0% [463.68σ]
ModelChiSquare2-sig: 13.1%
ModelChiSquareGof-sig: 99.6%
Bootstrap-pfa: 3.79e-16
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 1.264
Centroid-sig: 5.6%
Centroid-so: 0.610 arcsec [1.45σ]
OotOffset-rm: 0.033 arcsec [0.14σ]
KicOffset-rm: 0.173 arcsec [1.04σ]
OotOffset-st: 2/0/1/1 [4]
KicOffset-st: 2/0/1/1 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 0.00 [0/5]

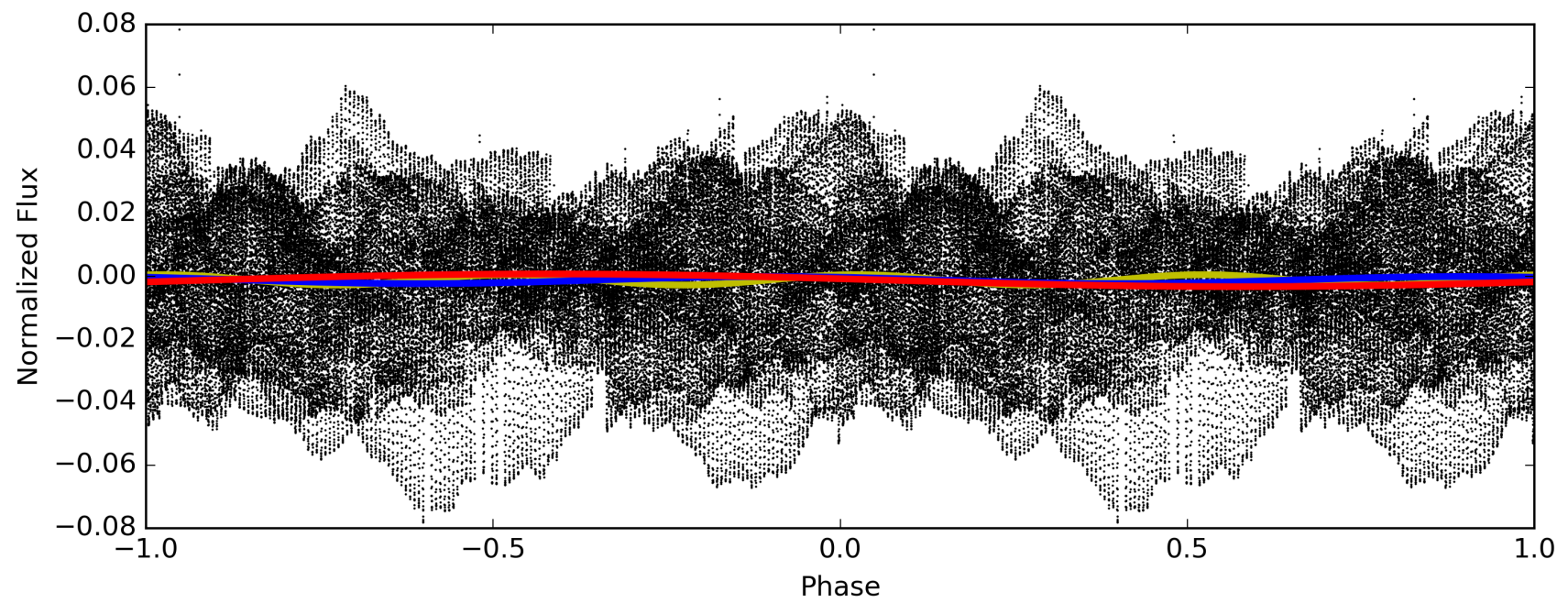
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:51:06 Z

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

TCE 012207117-03, PDC Light Curves

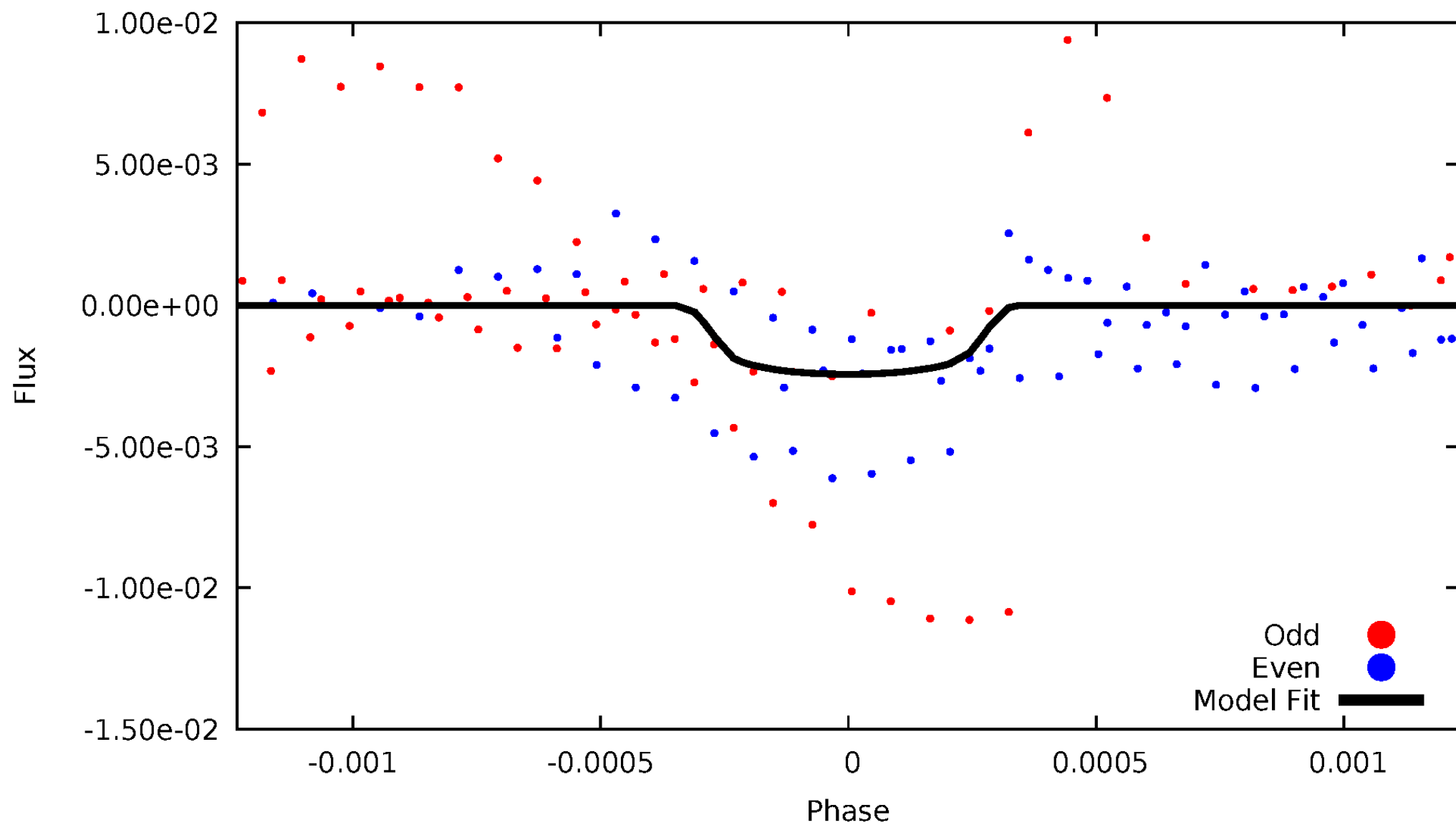


— P = 128.830 days — P = 257.661 days — P = 515.322 days



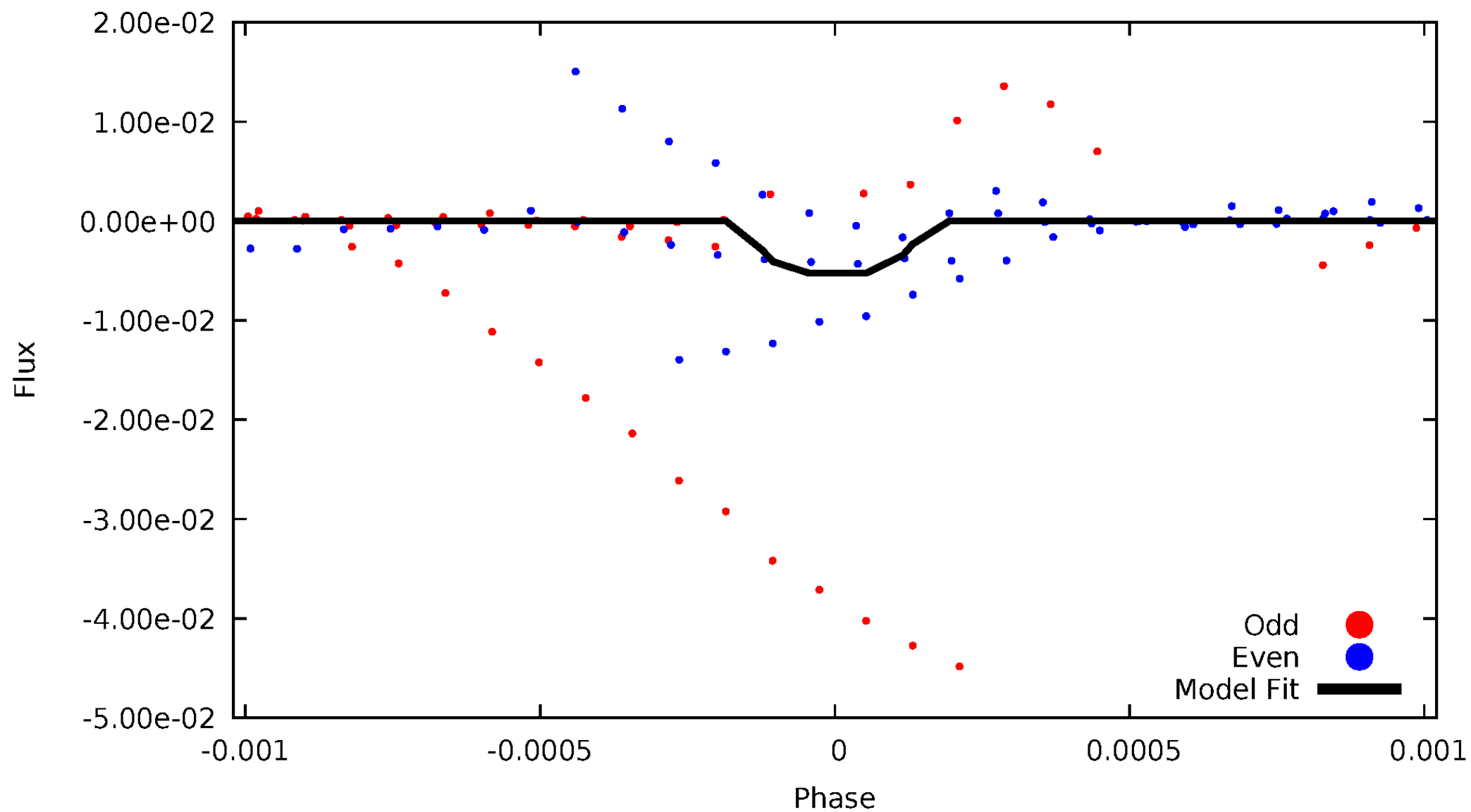
DV Odd/Even

TCE 012207117-03



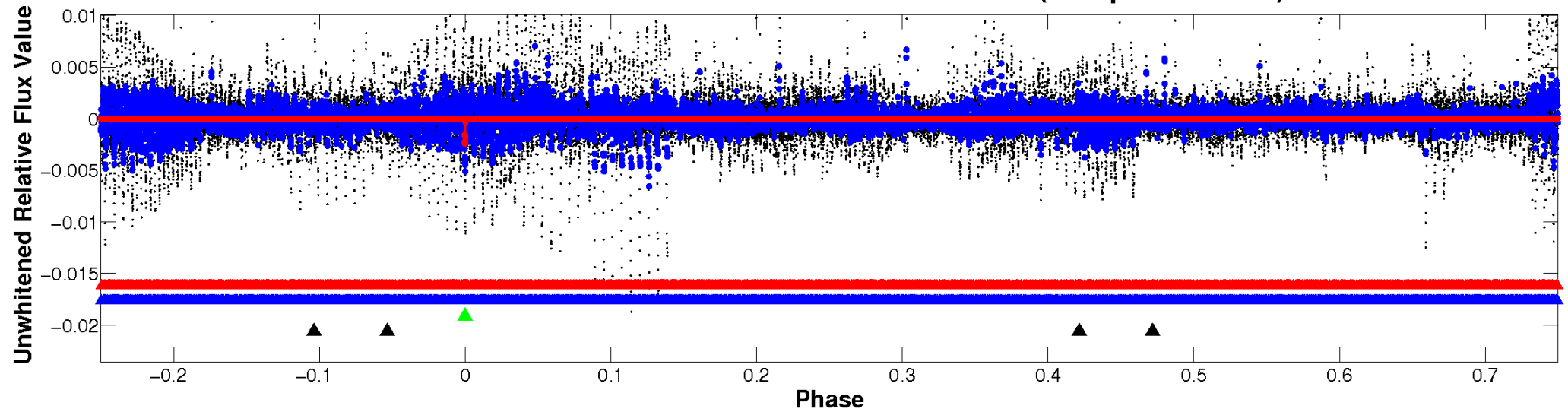
ALT Odd/Even

TCE 012207117-03

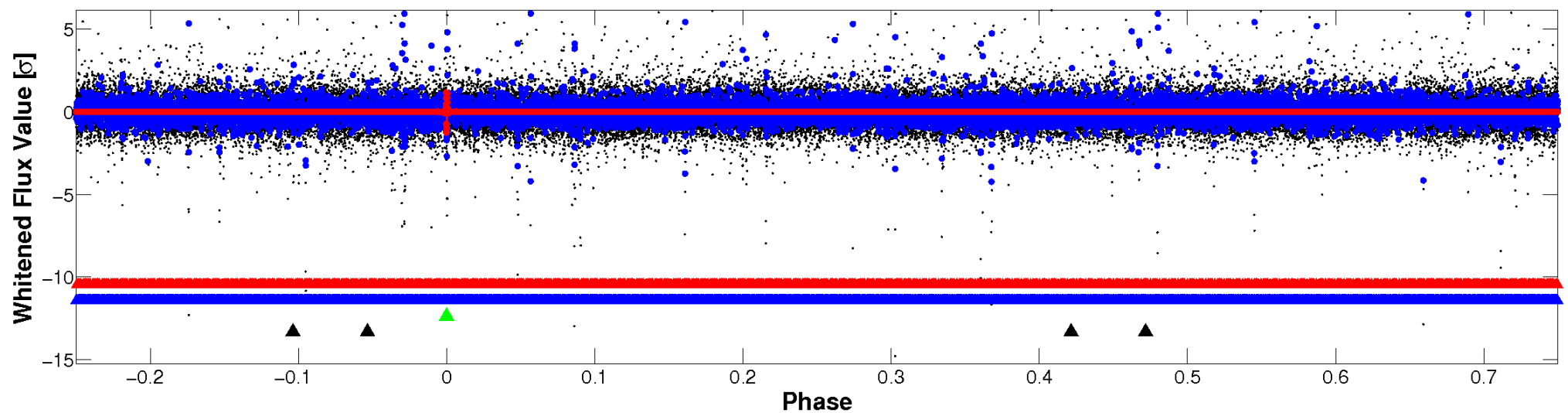


Non-Whitened Vs. Whitened Light Curve

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

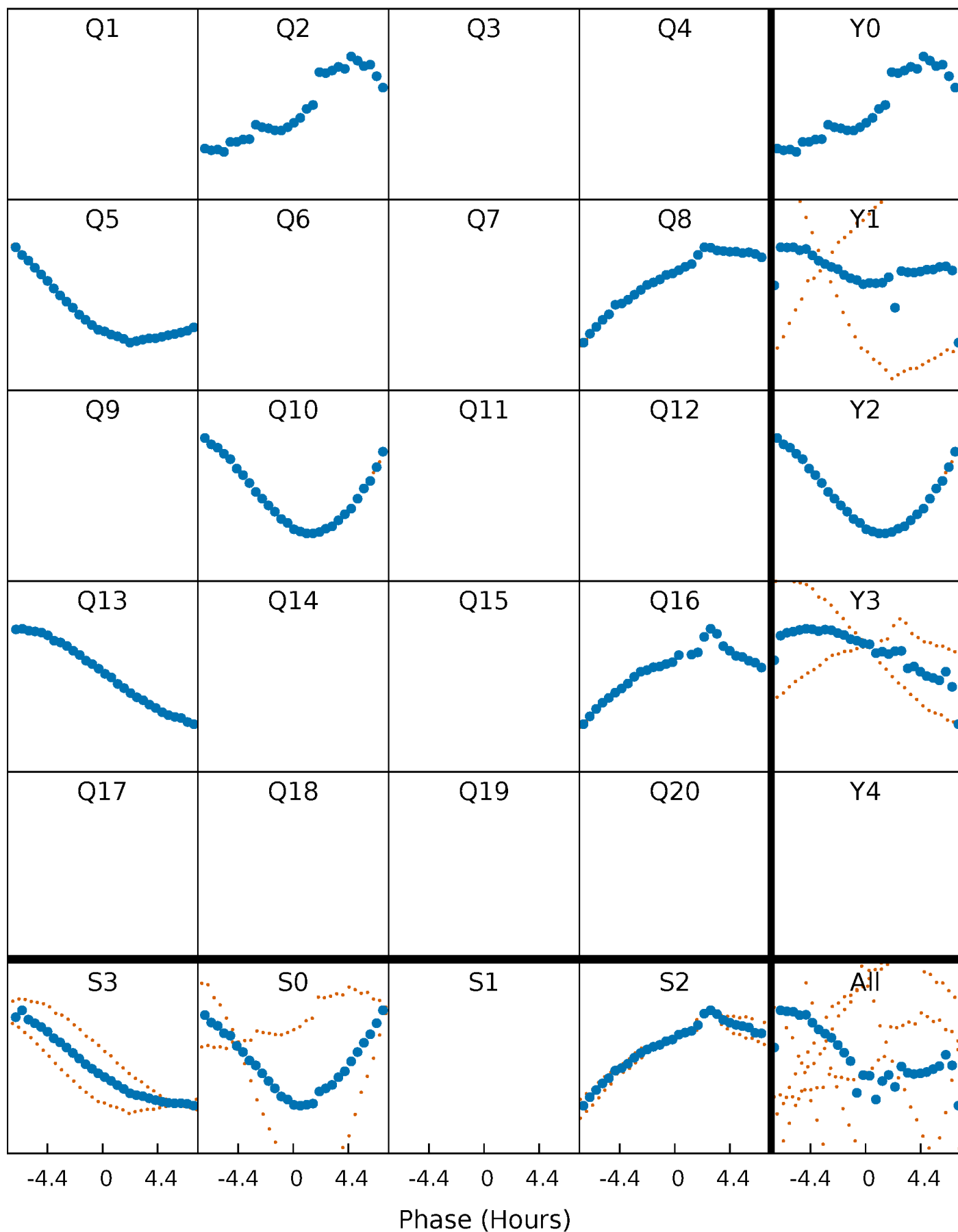


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



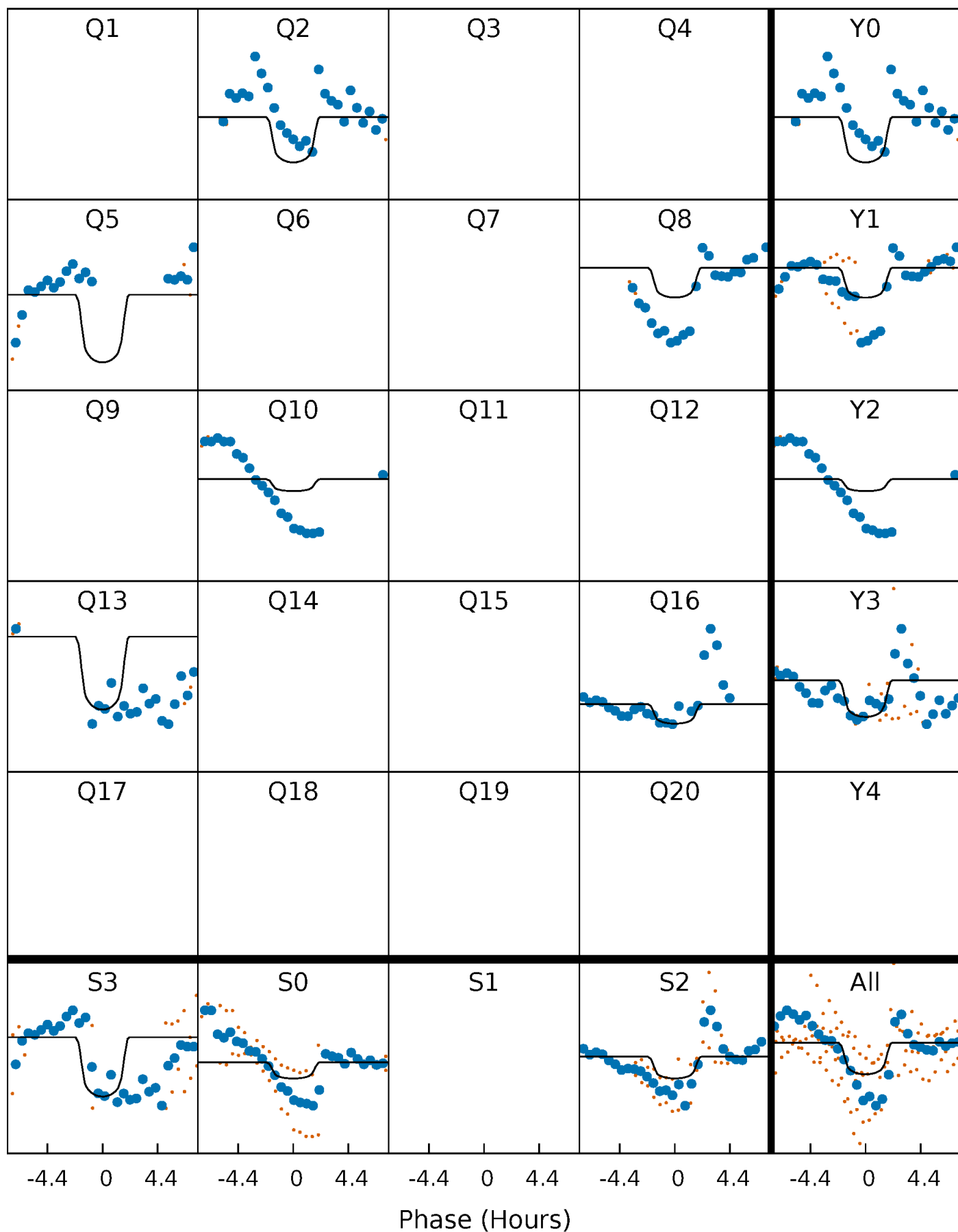
PDC Quarter-Phased Transit Curves

TCE 012207117-03 P=257.660804 Days $T_0=221.705809$ (BKJD)



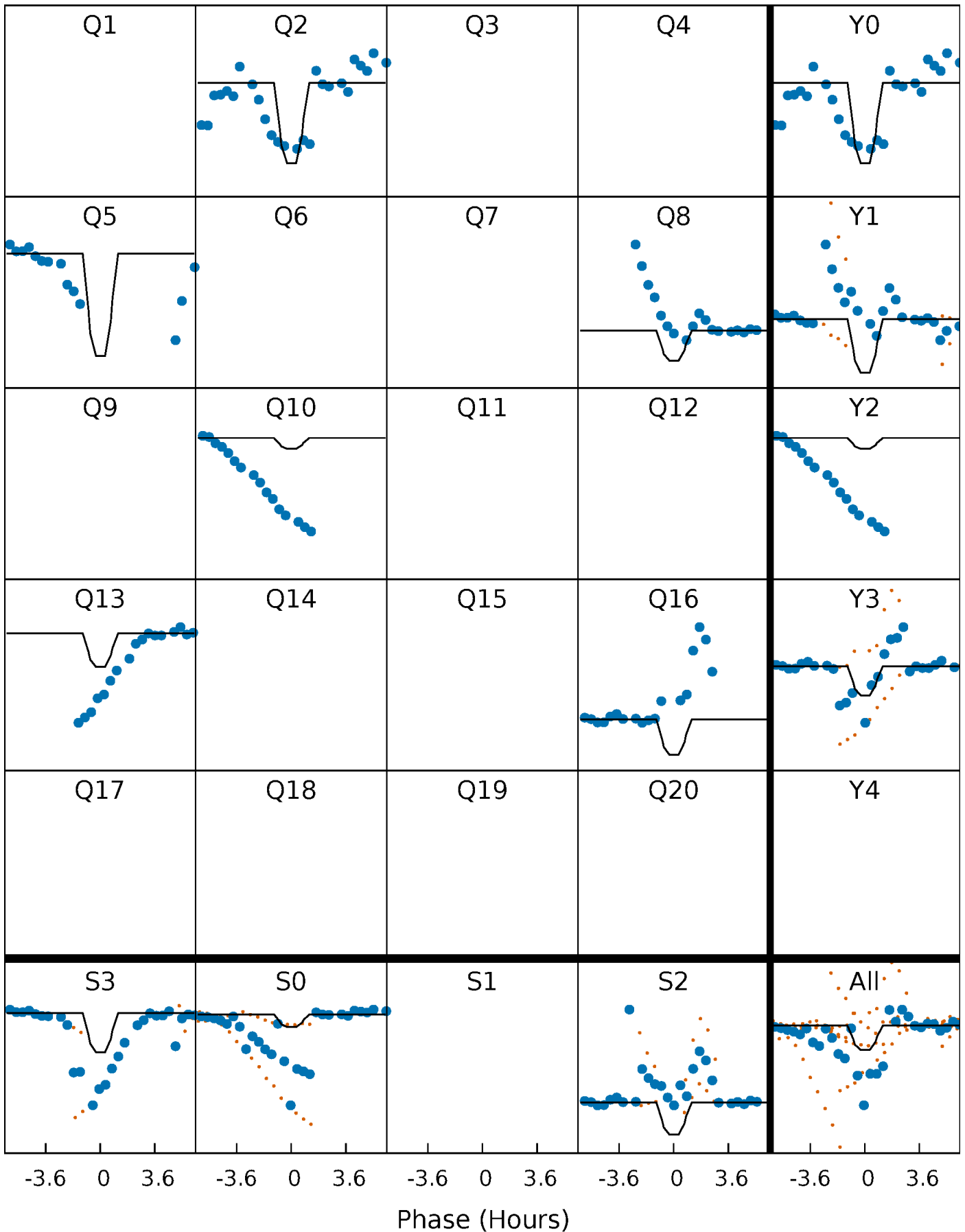
DV Quarter-Phased Transit Curves

TCE 012207117-03 P=257.660804 Days $T_0=221.705809$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

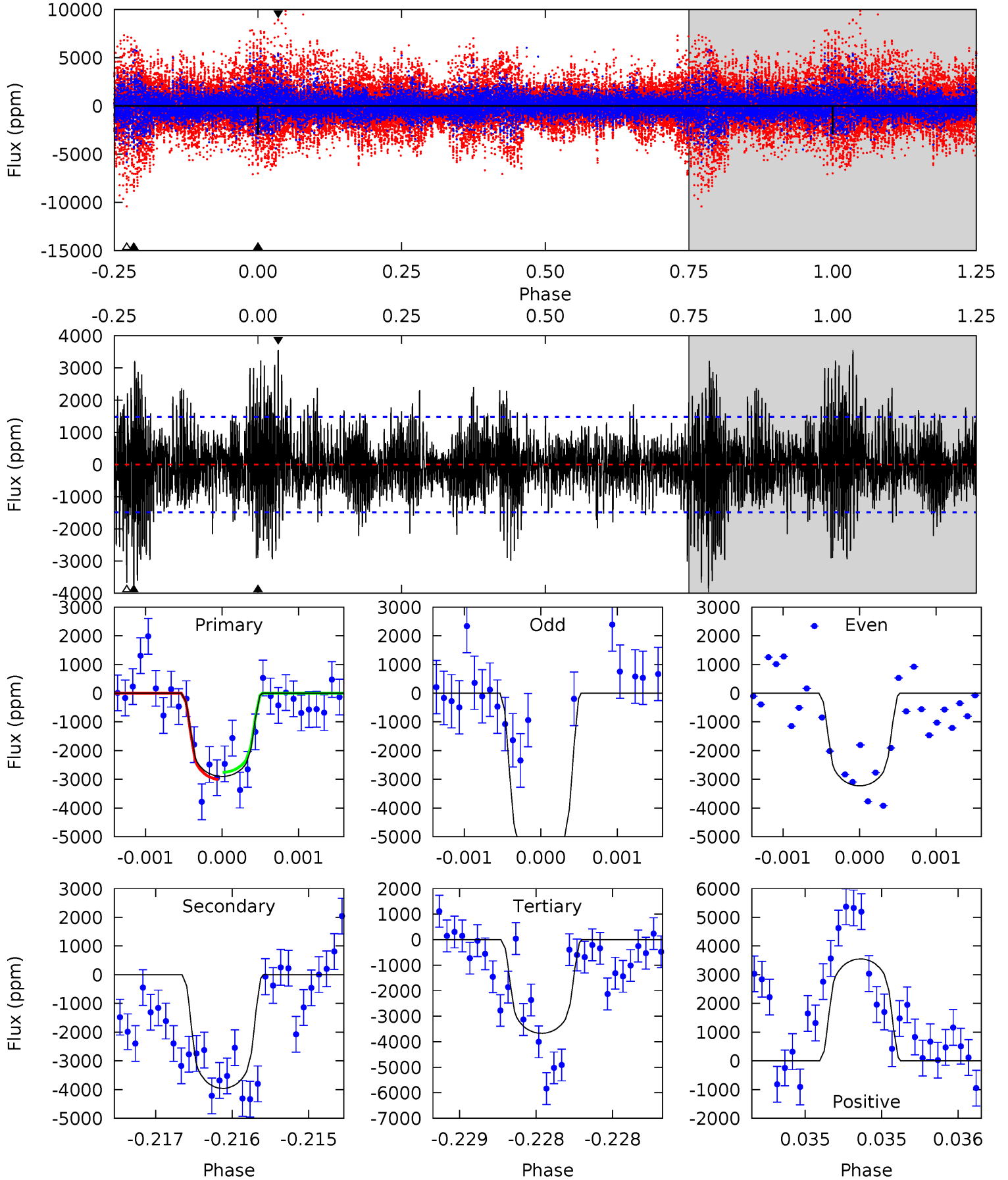
TCE 012207117-03 P=257.666416 Days $T_0=221.717920$ (BKJD)



DV Model-Shift Uniqueness Test

012207117-03, P = 257.660804 Days, E = 221.705809 Days

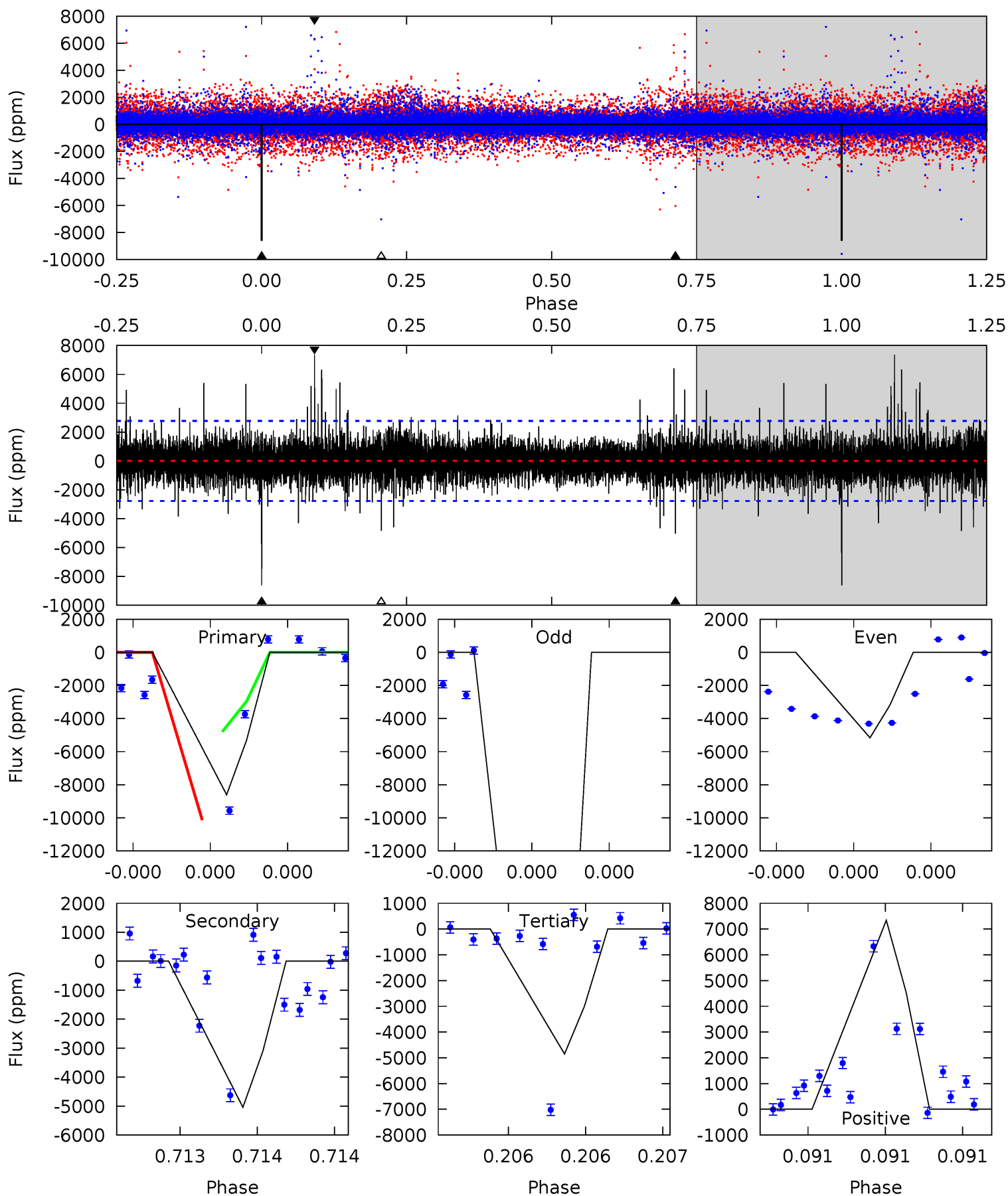
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.8	14.7	13.7	13.2	5.53	3.41	3.09	-2.86	-2.41	1.08	1.53	4.64	1.56	0.47	0.48



Alt Model-Shift Uniqueness Test

012207117-03, P = 257.666416 Days, E = 221.717920 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.7	10.3	9.96	15.1	5.69	3.66	1.22	7.71	2.60	0.39	-4.73	29.0	2.36	0.46	6.54



Stellar Parameters For KIC 012207117

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5430^{+179}_{-163}	$4.580^{+0.082}_{-0.060}$	$-0.880^{+0.350}_{-0.300}$	$0.690^{+0.070}_{-0.070}$	$0.661^{+0.071}_{-0.028}$	$2.828^{+0.967}_{-0.607}$
	+3%/-3%	+2%/-1%	+40%/-34%	+10%/-10%	+11%/-4%	+34%/-21%
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 012207117-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-3961 ± 269	$3.68^{+1.33}_{-1.47}$	334^{+15}_{-13}	6162^{+1960}_{-835}	$78793^{+135708}_{-35977}$
Alt.	-5040 ± 487	$5.37^{+1.41}_{-1.24}$	334^{+14}_{-14}	5417^{+748}_{-535}	46026^{+32659}_{-17069}

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 $A_{obs} \gg 1.0$

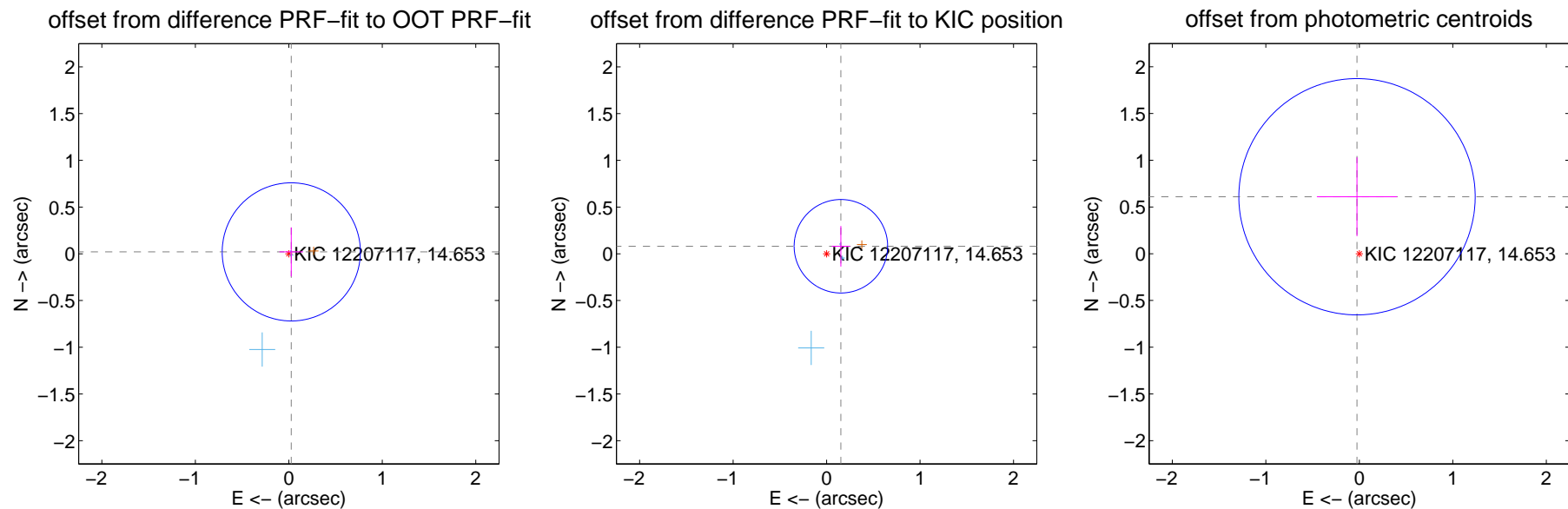
DV Centroid Data

Supplemental centroid analysis for 012207117-03. Kepler magnitude: 14.65. Transit SNR 7.06

There are 3 quarters with good PRF difference image offsets

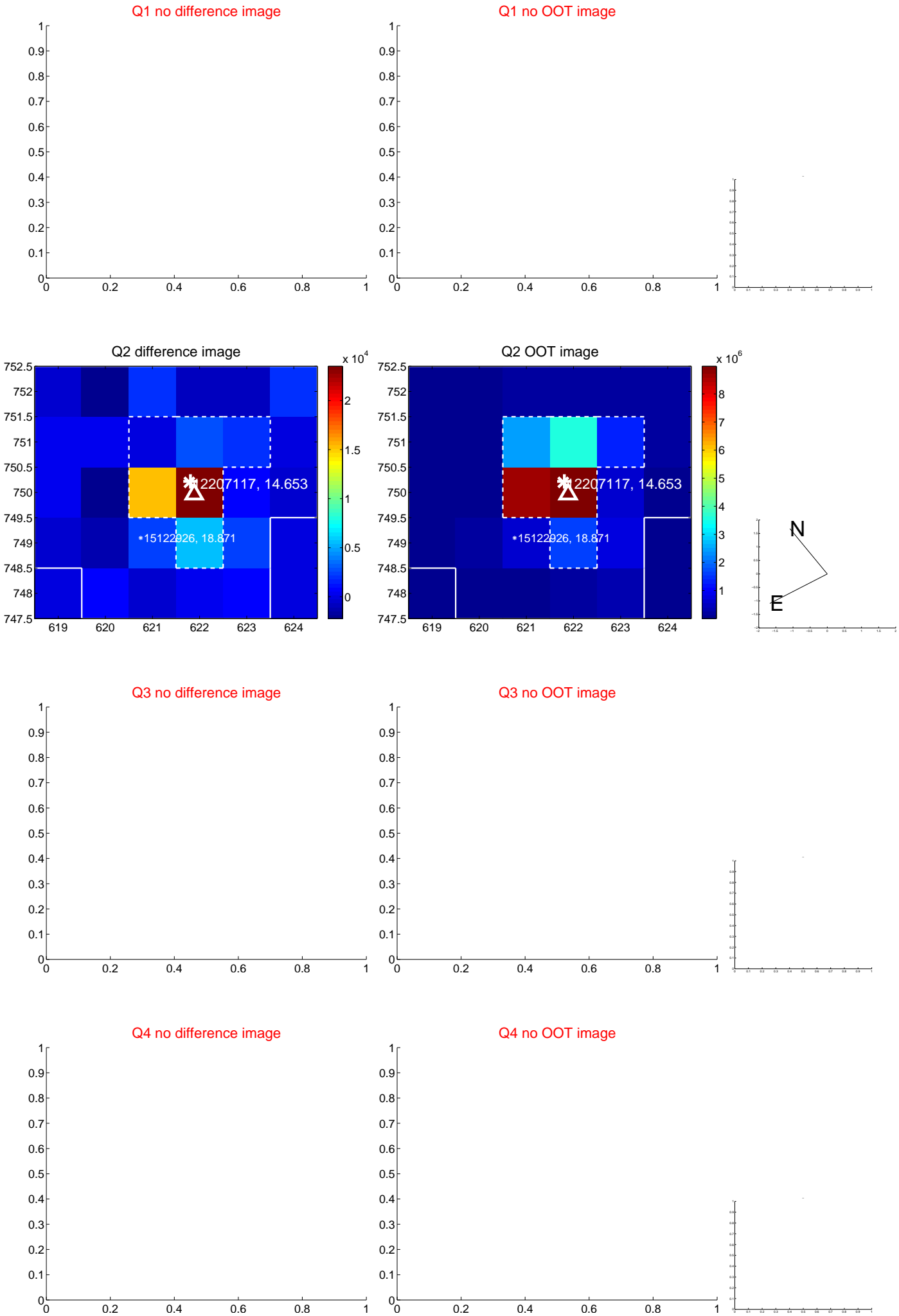
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.033 ± 0.246	0.14	-0.026 ± 0.127	0.020 ± 0.262
PRF-fit source offset from KIC position	0.173 ± 0.167	1.04	-0.153 ± 0.098	0.081 ± 0.217
photometric centroid source offset	0.61 ± 0.42	1.45	0.02 ± 0.43	0.61 ± 0.42

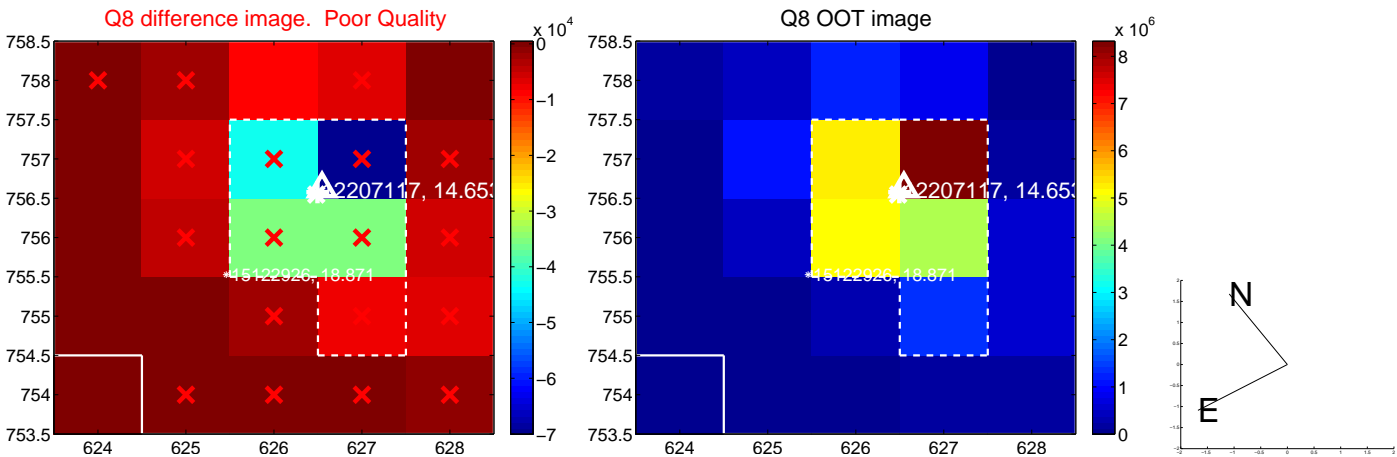
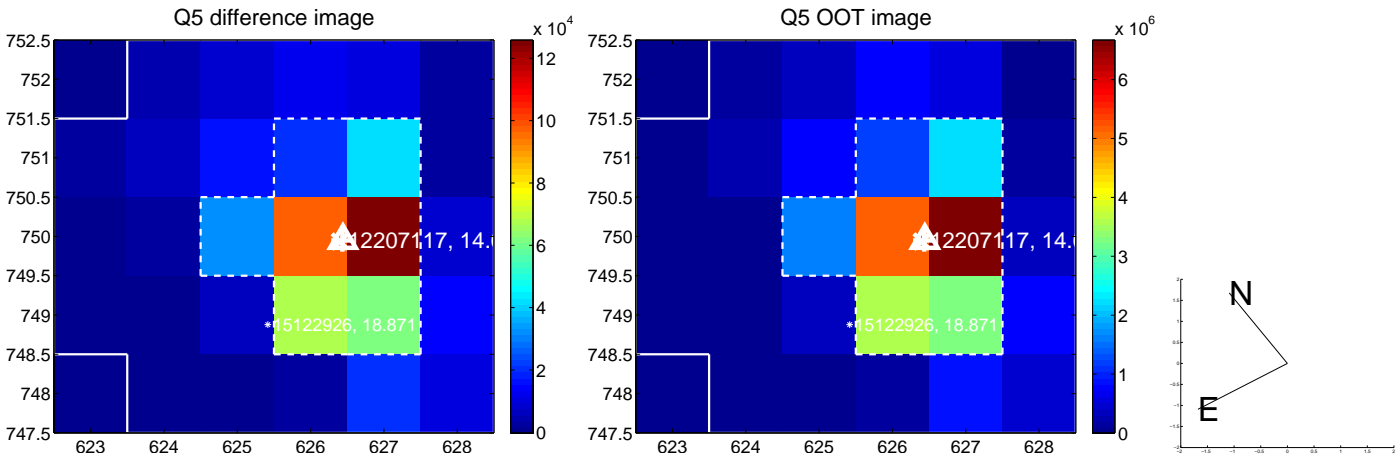


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

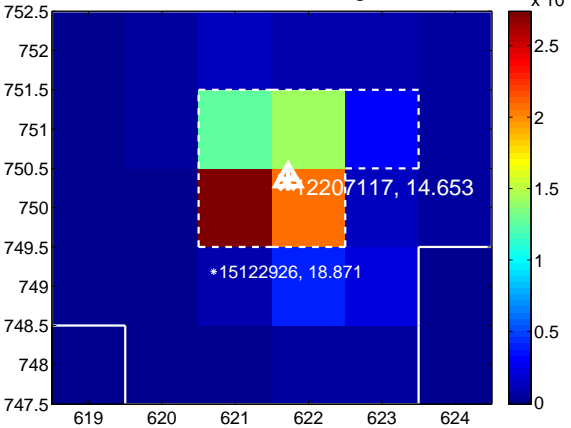
Q9 no difference image



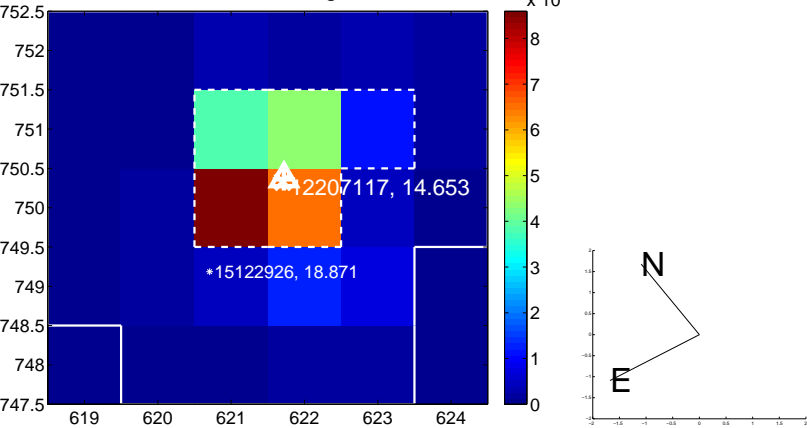
Q9 no OOT image



Q10 difference image



Q10 OOT image



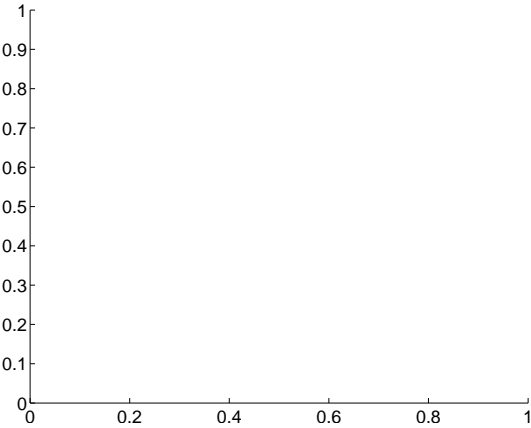
Q11 no difference image



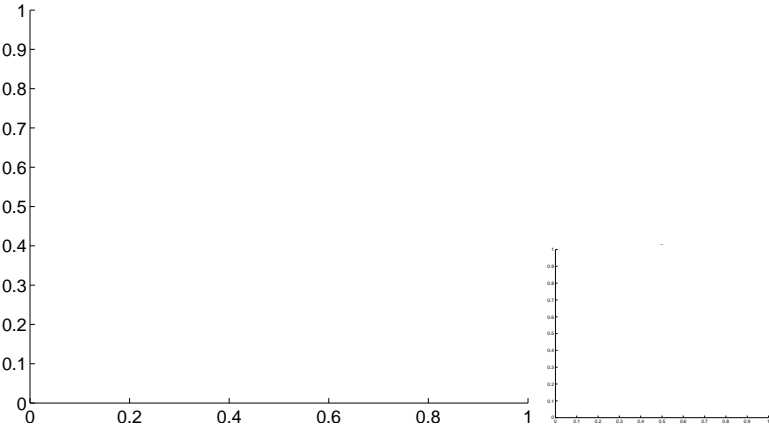
Q11 no OOT image



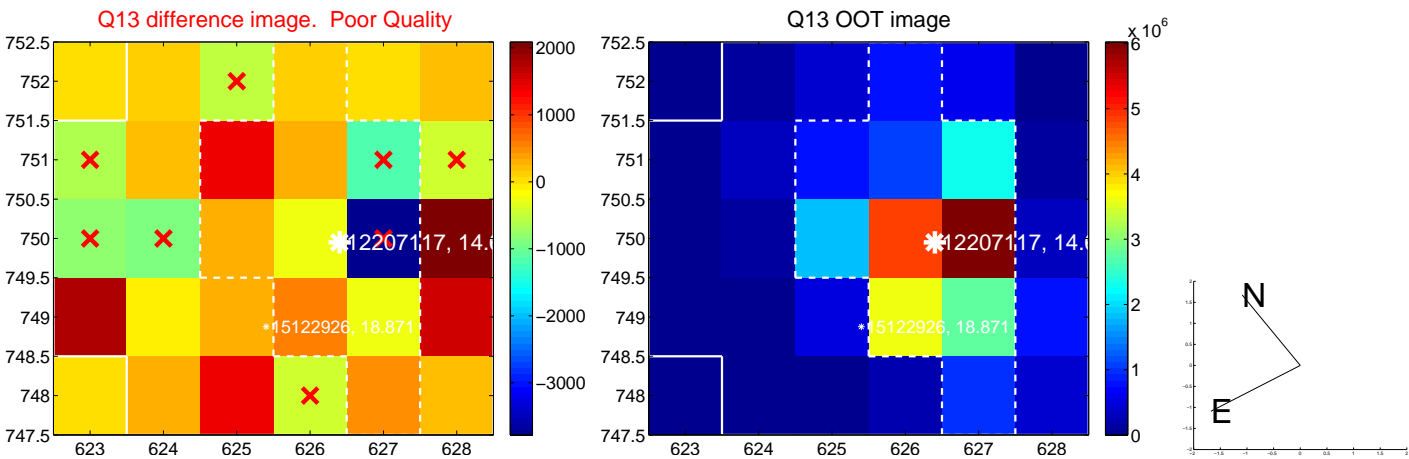
Q12 no difference image



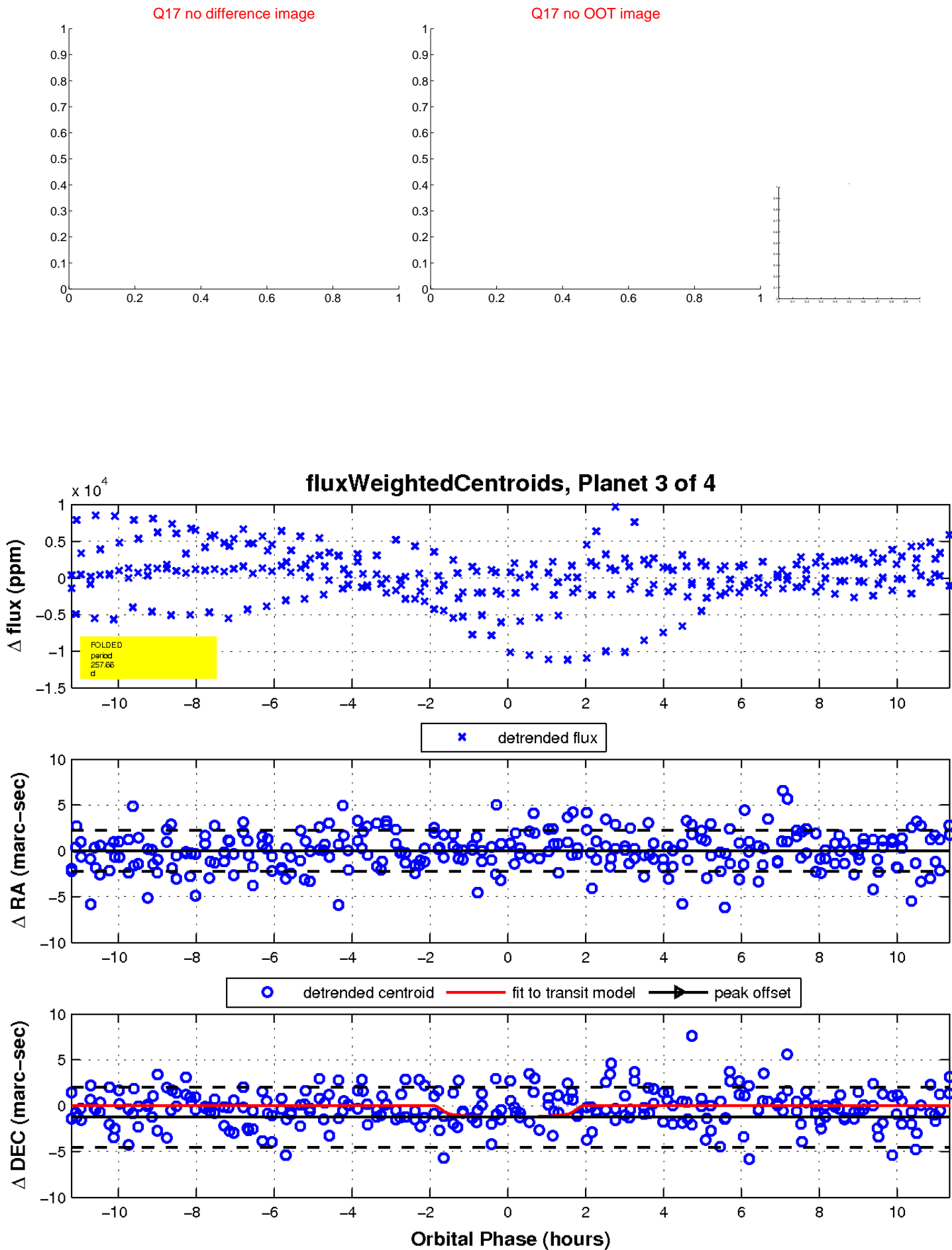
Q12 no OOT image



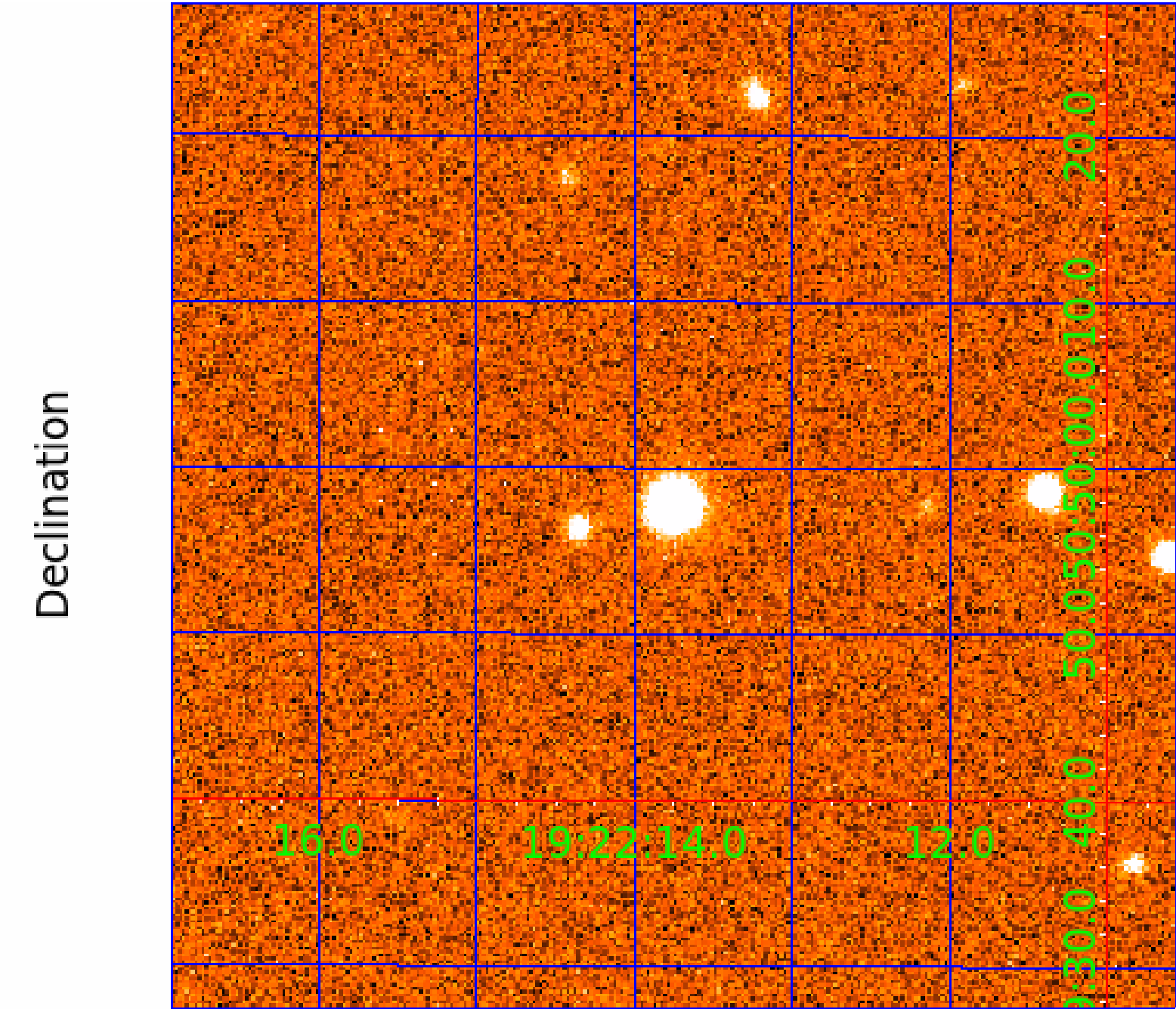
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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



UKIRT Image



KIC 012207117

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})
012207117-01	OBS	6249.01	1.603187	131.564285	1765.9	0.856	53.5	100.4	0.69	5430	3.52	680.27
012207117-02	OBS	No	0.801591	131.564945	629.0	0.600	17.8	33.4	0.69	5430	1.88	1714.18
012207117-03	OBS	No	257.660804	221.705809	2437.0	3.813	14.2	7.1	0.69	5430	3.62	0.78
012207117-04	OBS	No	392.969494	194.997702	2790.5	5.874	12.3	5.9	0.69	5430	3.62	0.44

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012207117-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL
012207117-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—SWEET_NTL—SAME_NTL_PERIOD
012207117-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS
012207117-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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.

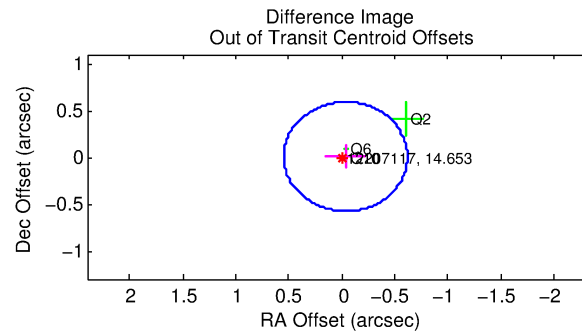
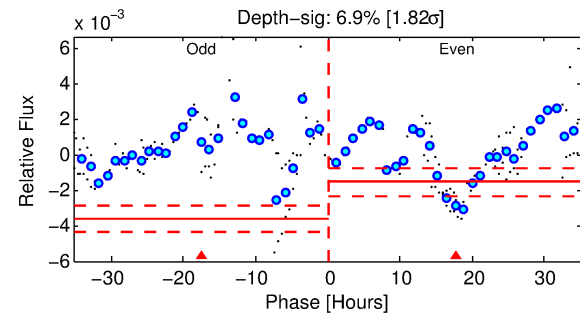
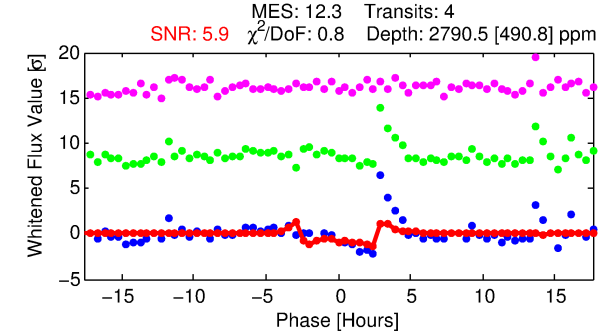
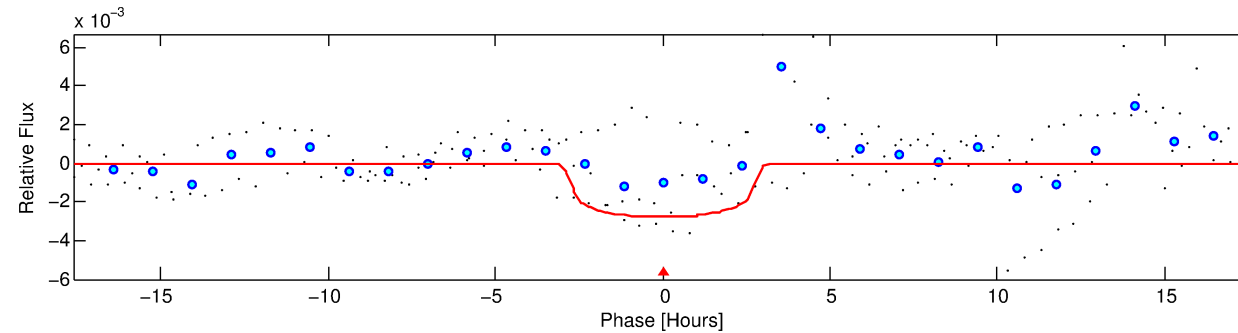
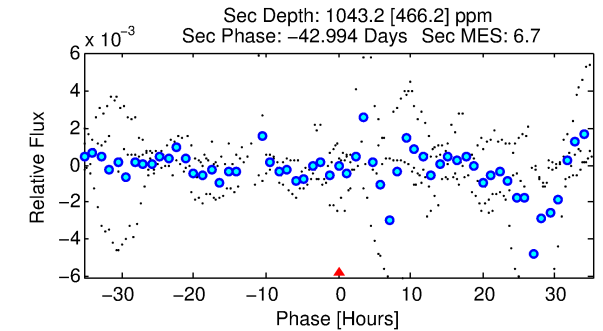
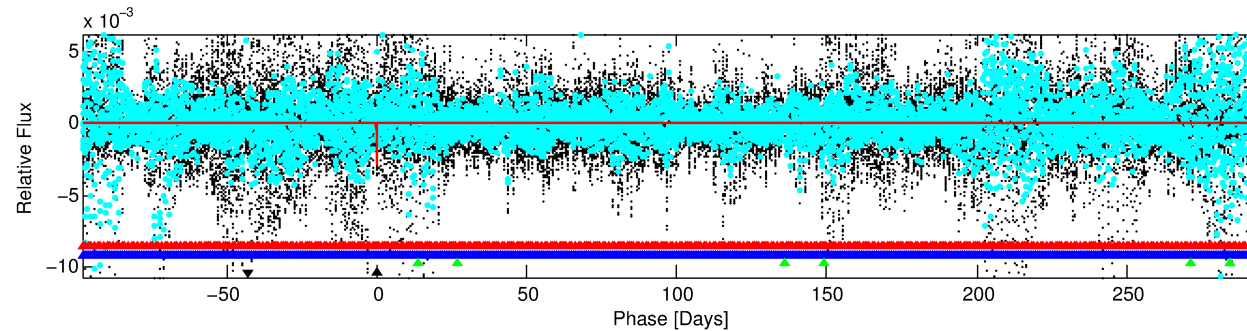
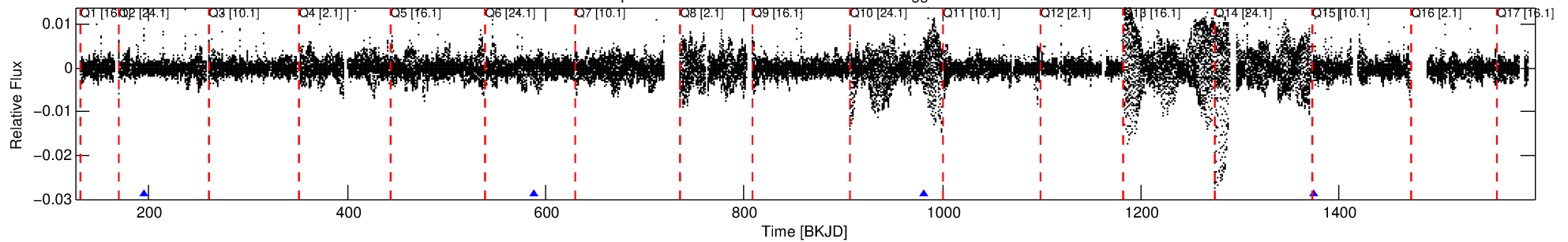
Ephemeris Match Information For 012207117-04

No Significant Match Found

DV One-Page Summary

KIC: 12207117 Candidate: 4 of 4 Period: 392.969 d
KOI: K06249 Corr: No Ephemeris Match

Kp: 14.65 R*: 0.69 Rs Teff: 5430.0 K Logg: 4.58 Fe/H: -0.880



DV Fit Results:

Period = 392.96949 [0.00408] d
Epoch = 194.9977 [0.0074] BKJD
Rp/R* = 0.0481 [0.0215]
a/R* = 534.48 [1007.12]
b = 0.07 [27.32]
Seff = 0.44 [0.09]
Teq = 208 [10] K
Rp = 3.62 [1.66] Re
a = 0.9145 [0.0845] AU
Ag = 36582.89 [36905.71] [0.99σ]
Teffp = 4449 [1120] K [3.79σ]

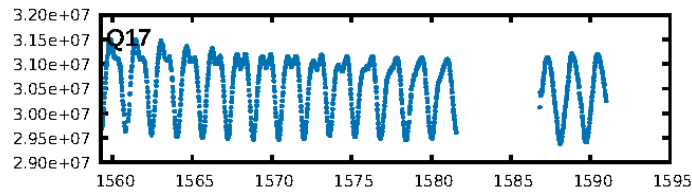
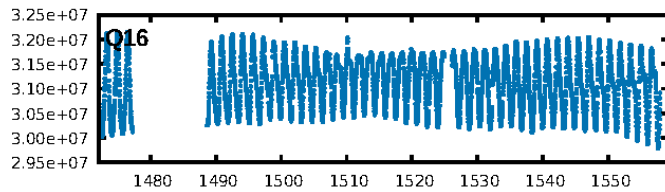
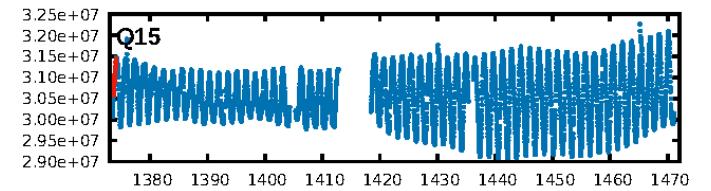
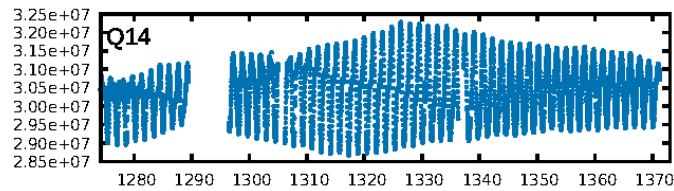
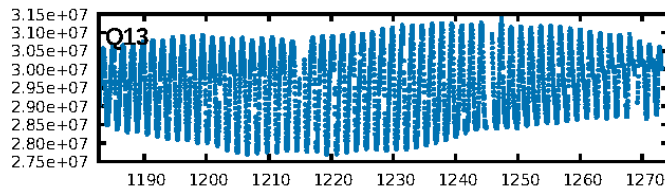
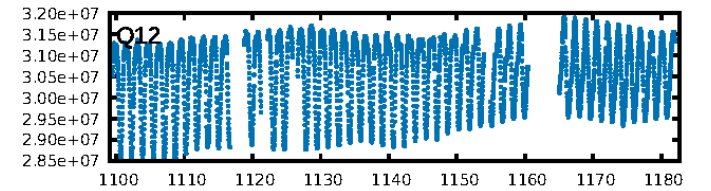
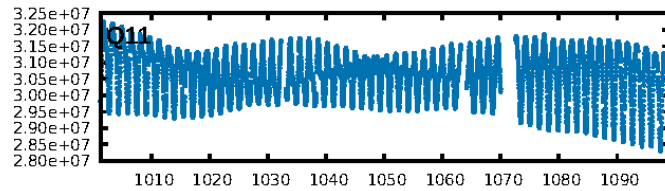
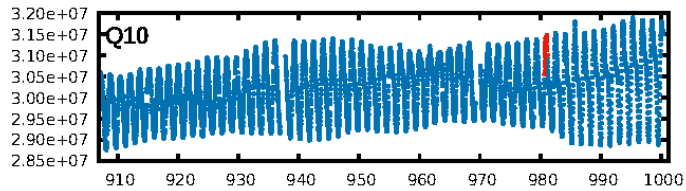
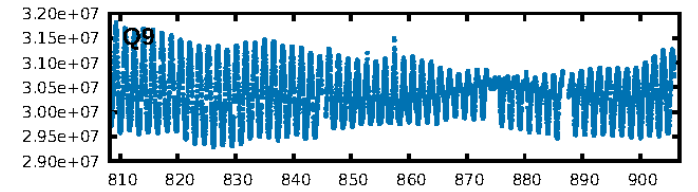
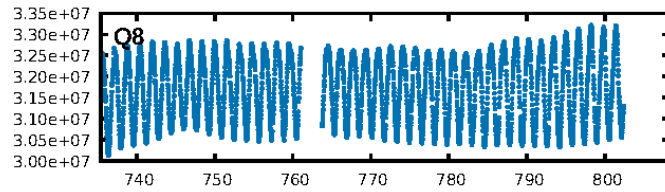
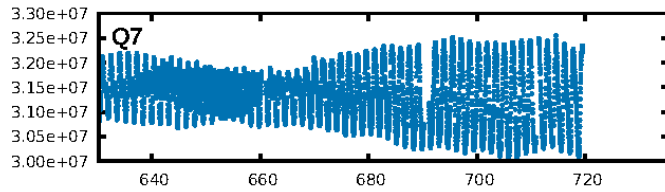
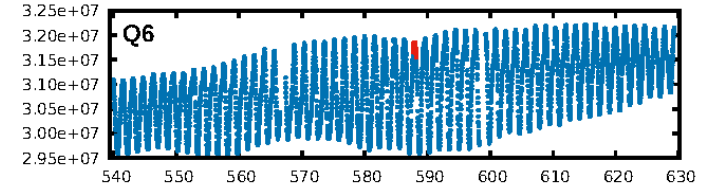
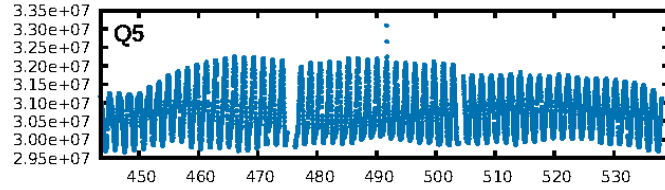
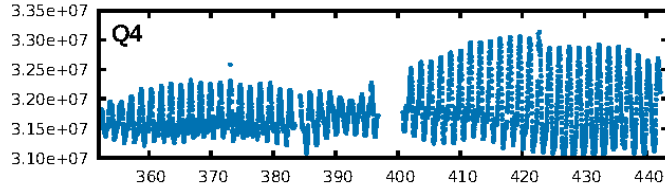
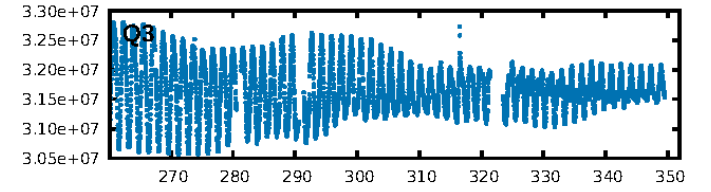
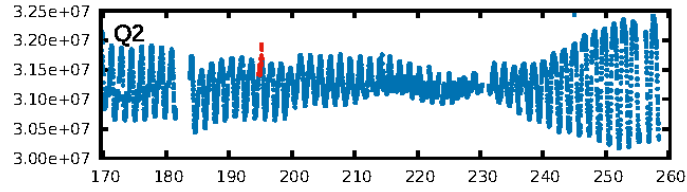
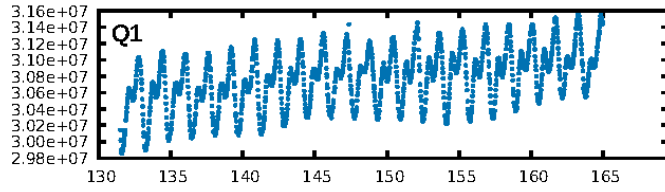
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [463.68σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 14.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.83e-12
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.5853
Centroid-sig: 40.7%
Centroid-so: 0.362 arcsec [1.07σ]
OotOffset-rm: 0.038 arcsec [0.19σ]
OotOffset-st: 3/0/0/0 [3]
KicOffset-rm: 0.182 arcsec [0.91σ]
KicOffset-st: 3/0/0/0 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 0.00 [0/3]

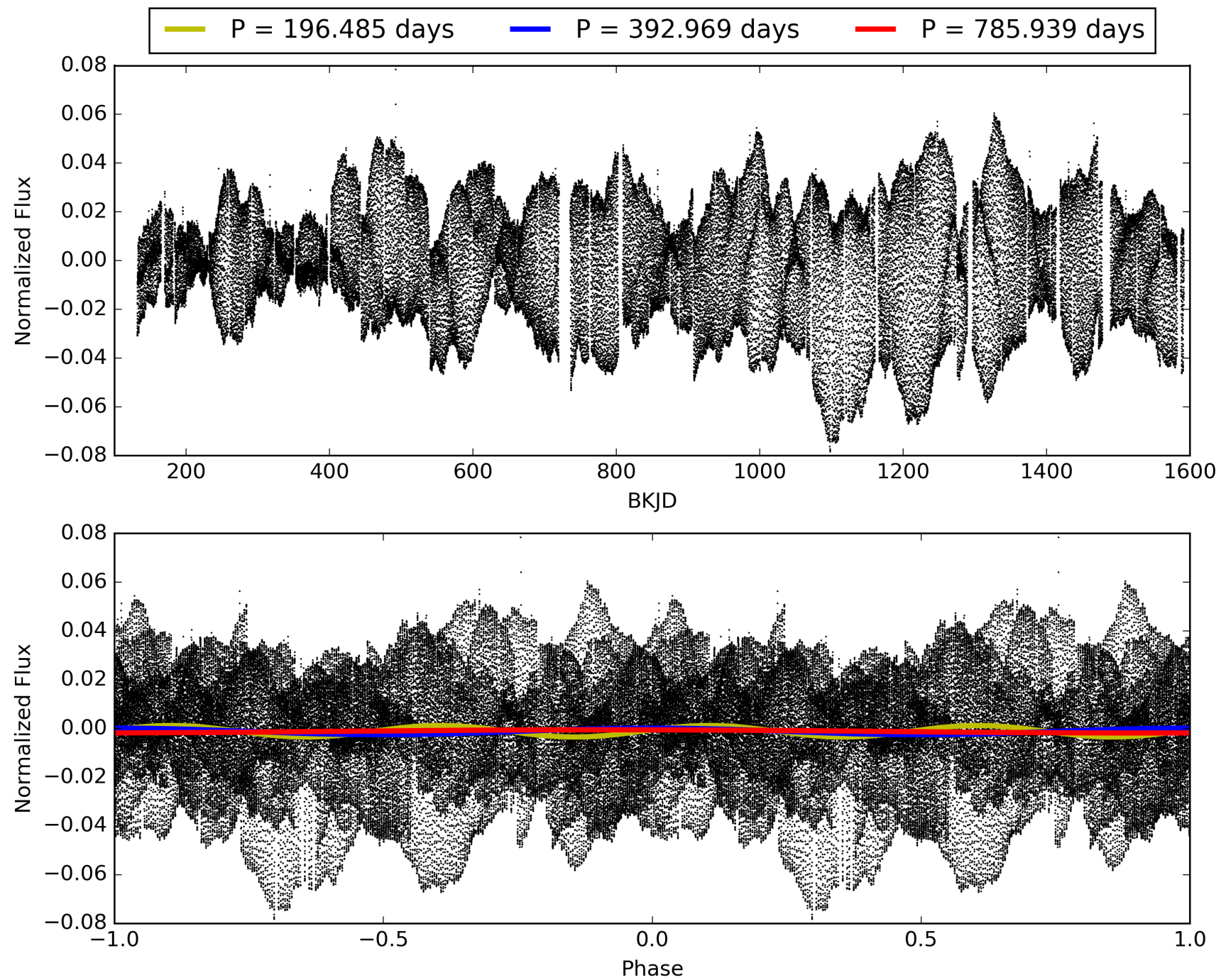
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:51:17 Z

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

TCE 012207117-04, PDC Light Curves

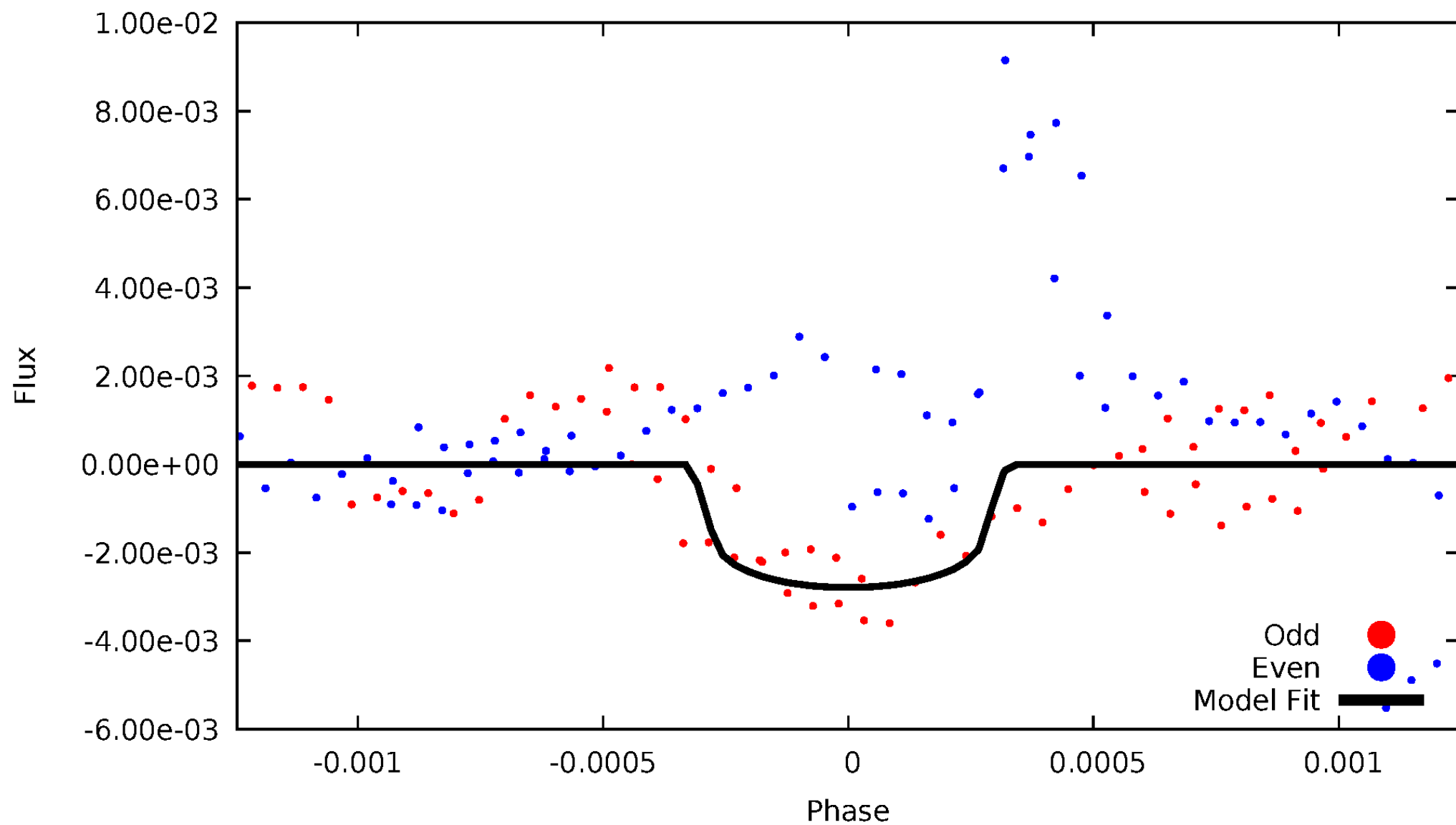


TCE 012207117-04



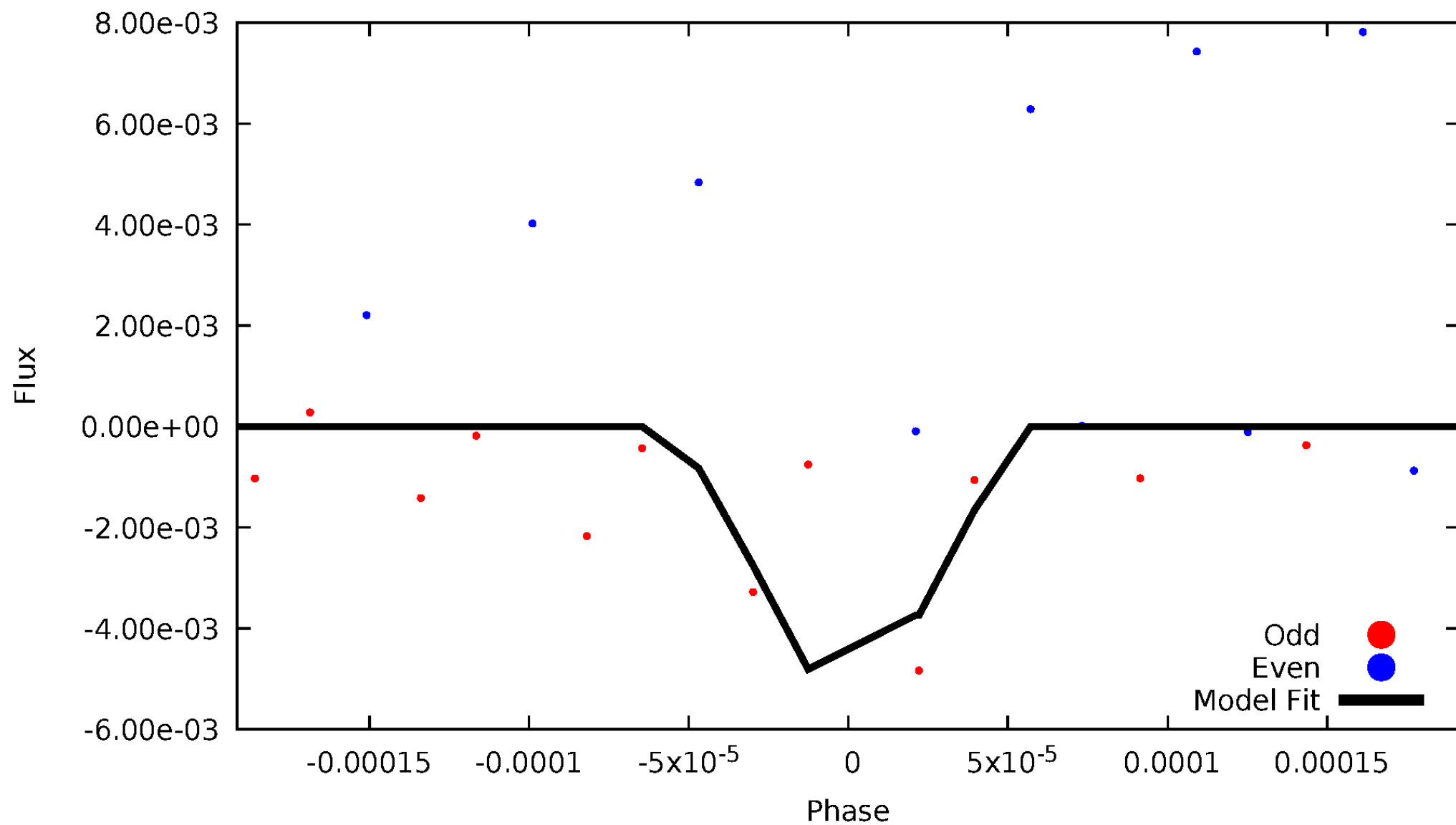
DV Odd/Even

TCE 012207117-04



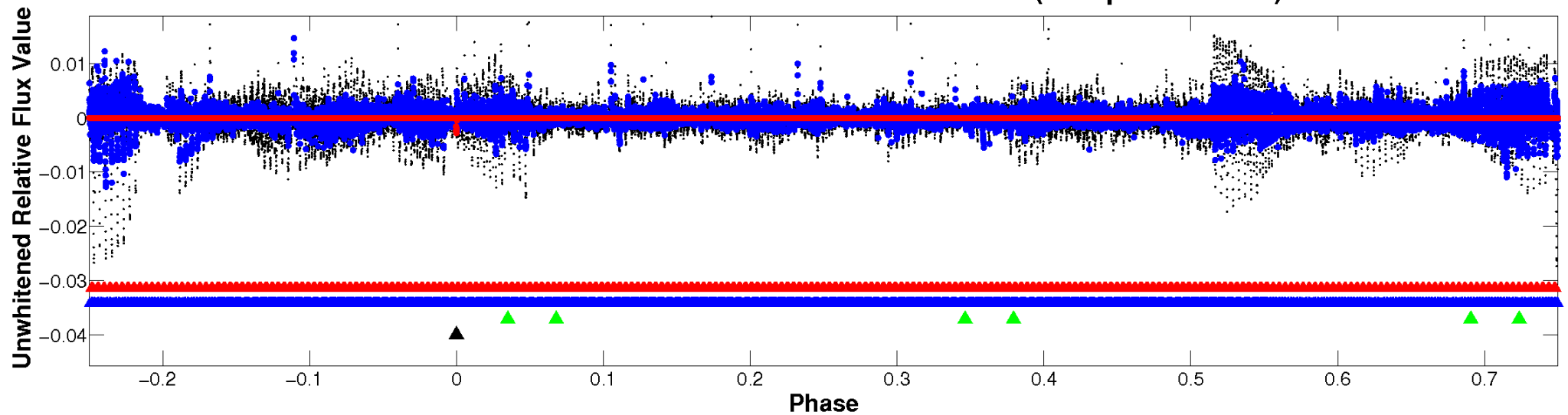
ALT Odd/Even

TCE 012207117-04

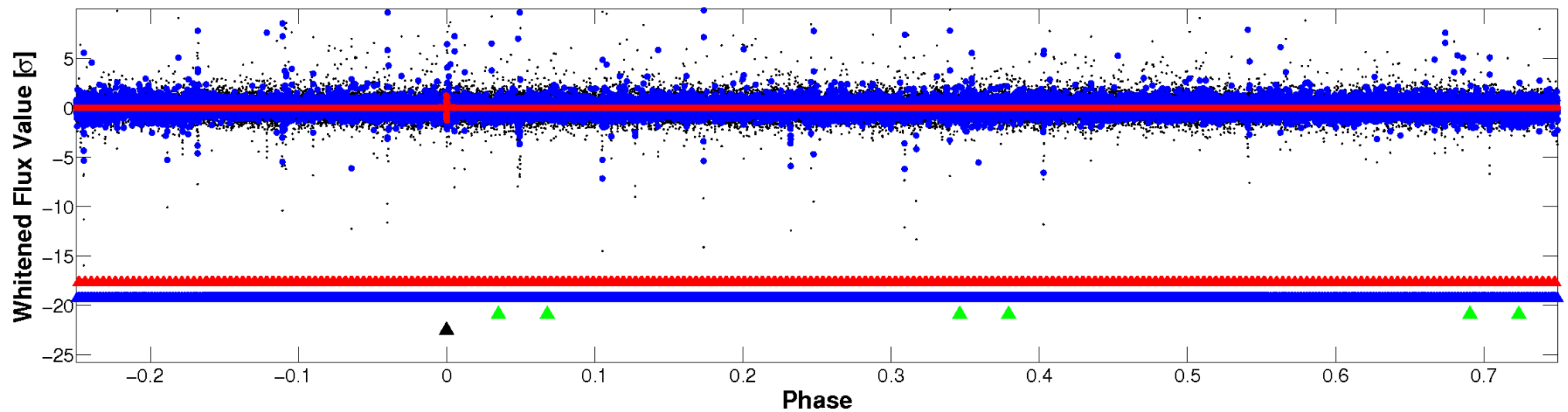


Non-Whitened Vs. Whitened Light Curve

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

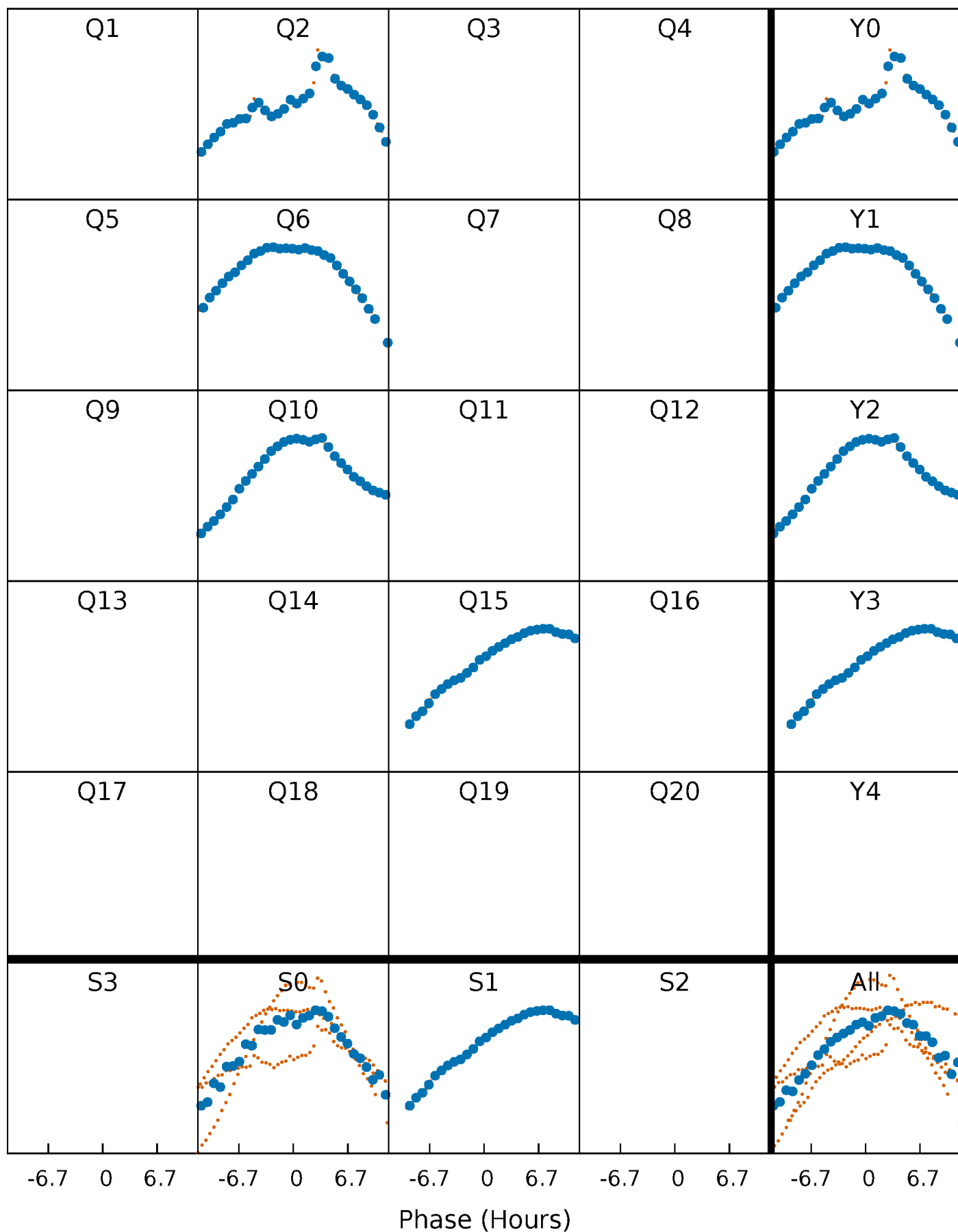


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



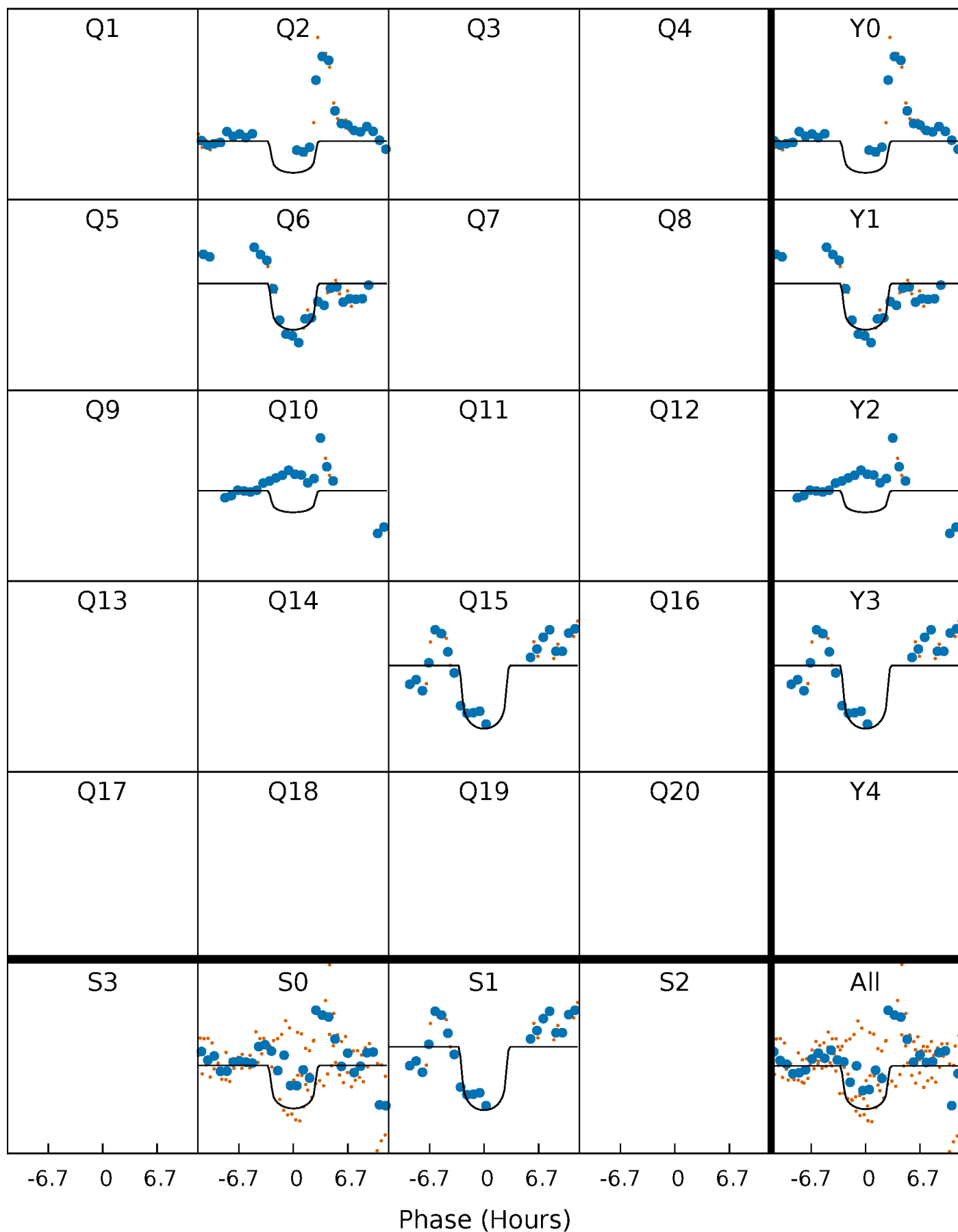
PDC Quarter-Phased Transit Curves

TCE 012207117-04 P=392.969494 Days $T_0=194.997702$ (BKJD)



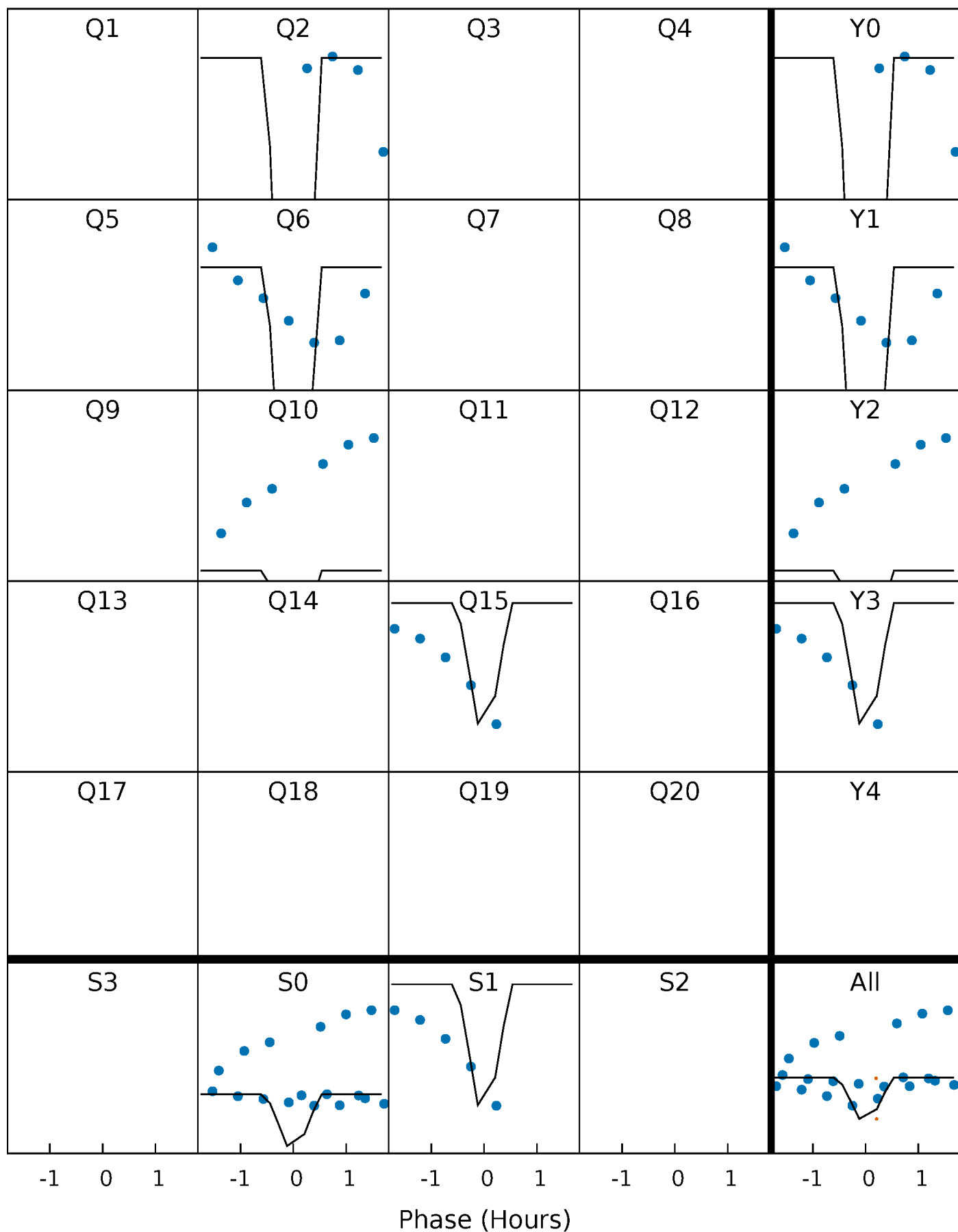
DV Quarter-Phased Transit Curves

TCE 012207117-04 P=392.969494 Days $T_0=194.997702$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

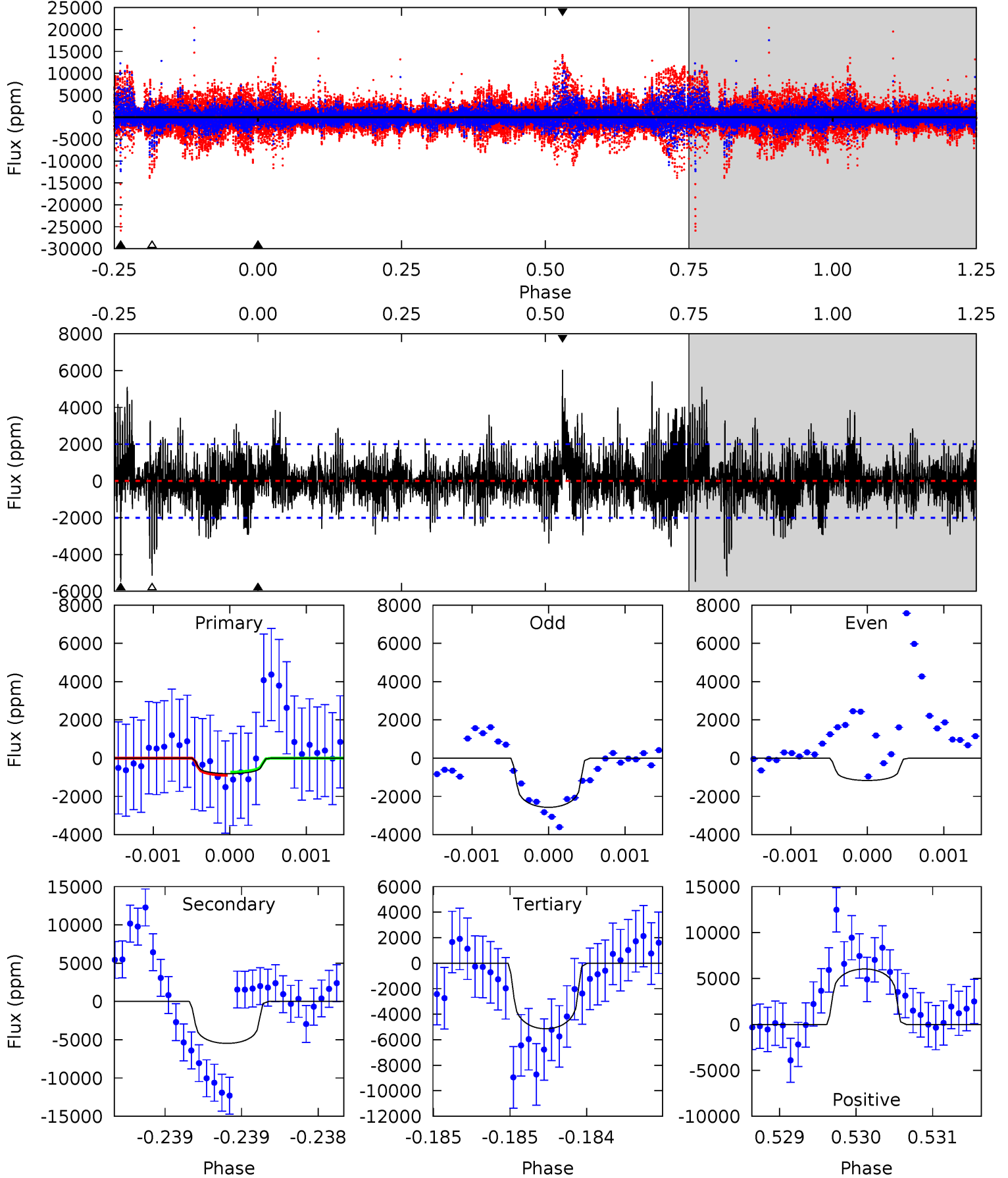
TCE 012207117-04 P=392.971944 Days $T_0=194.992383$ (BKJD)



DV Model-Shift Uniqueness Test

012207117-04, P = 392.969494 Days, E = 194.997702 Days

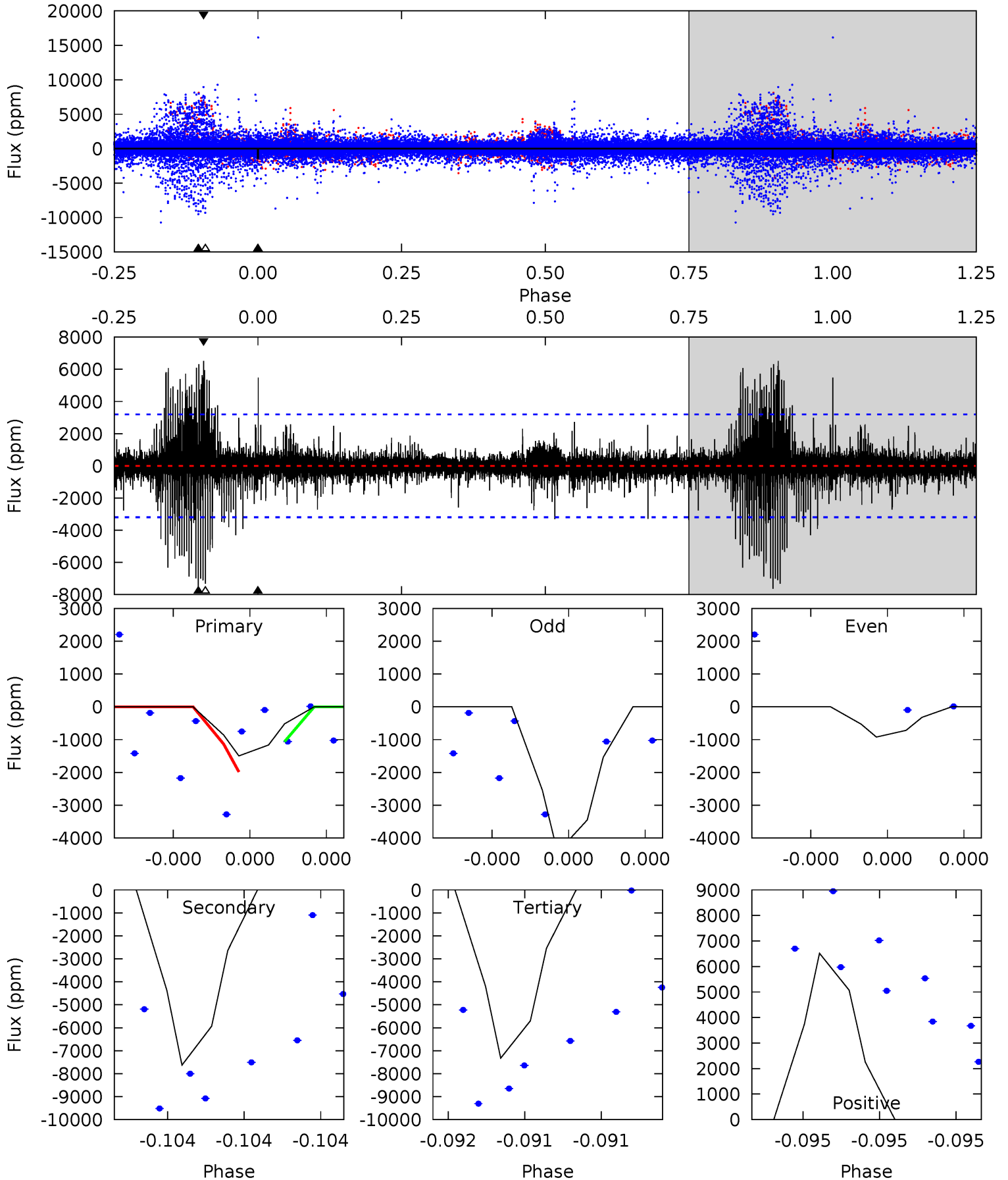
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.23	15.1	14.2	16.6	5.52	3.40	2.95	-11.9	-14.4	0.93	-1.55	1.75	0.60	0.52	0.23



Alt Model-Shift Uniqueness Test

012207117-04, P = 392.971944 Days, E = 194.992383 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.75	14.0	13.5	12.0	5.87	3.92	1.12	-10.7	-9.22	0.55	2.04	1.94	1.00	0.46	0.66



Stellar Parameters For KIC 012207117

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5430^{+179}_{-163}	$4.580^{+0.082}_{-0.060}$	$-0.880^{+0.350}_{-0.300}$	$0.690^{+0.070}_{-0.070}$	$0.661^{+0.071}_{-0.028}$	$2.828^{+0.967}_{-0.607}$
	+3%/-3%	+2%/-1%	+40%/-34%	+10%/-10%	+11%/-4%	+34%/-21%
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 012207117-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-5477 ± 363	$3.60^{+1.58}_{-1.51}$	290^{+13}_{-12}	6790^{+2535}_{-1163}	$199155^{+385159}_{-104836}$
Alt.	-7626 ± 544	$5.92^{+1.68}_{-1.61}$	290^{+13}_{-12}	5721^{+950}_{-600}	102319^{+92533}_{-40802}

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

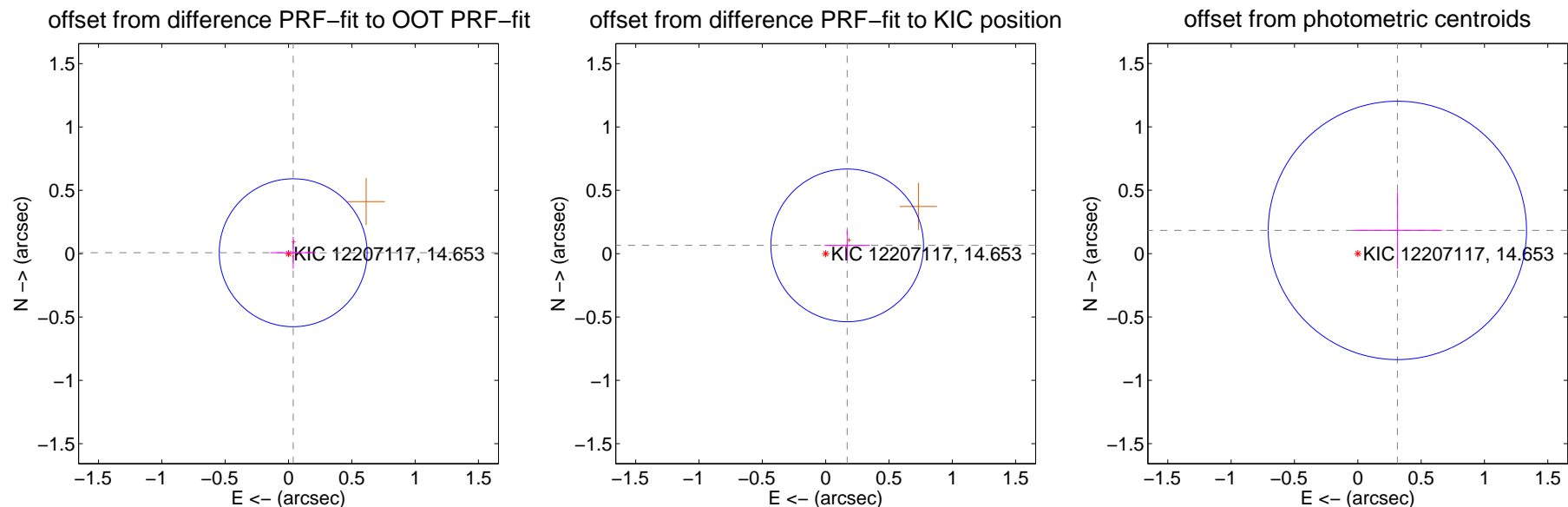
DV Centroid Data

Supplemental centroid analysis for 012207117-04. Kepler magnitude: 14.65. Transit SNR 5.91

There are 0 quarters with good PRF difference image offsets

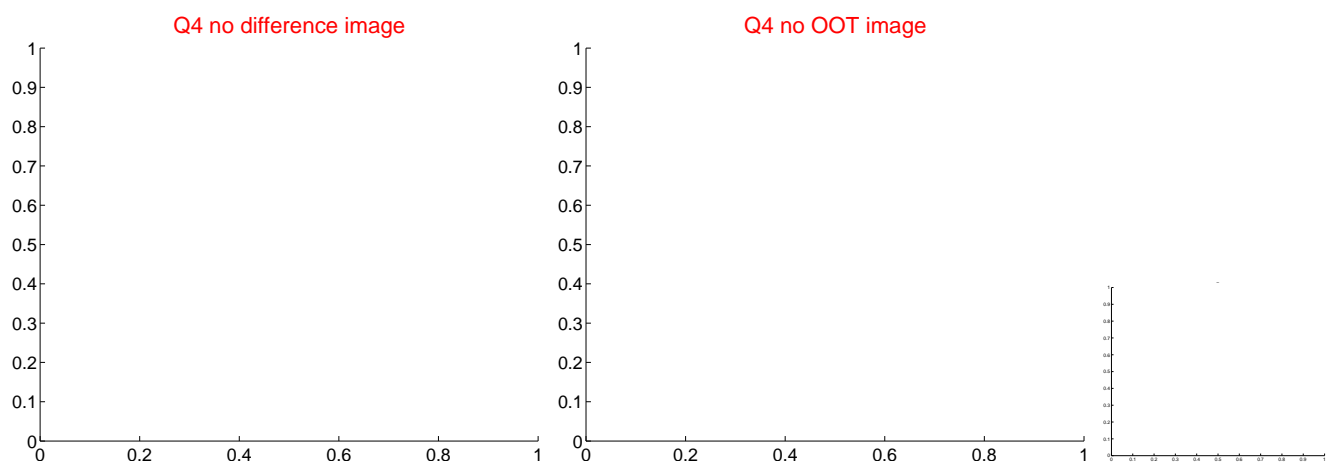
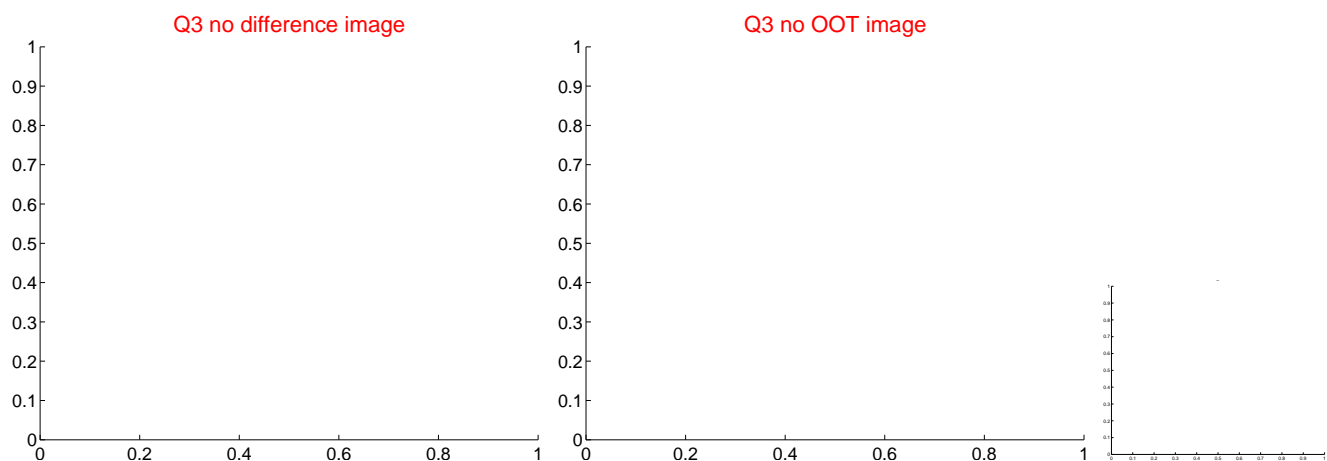
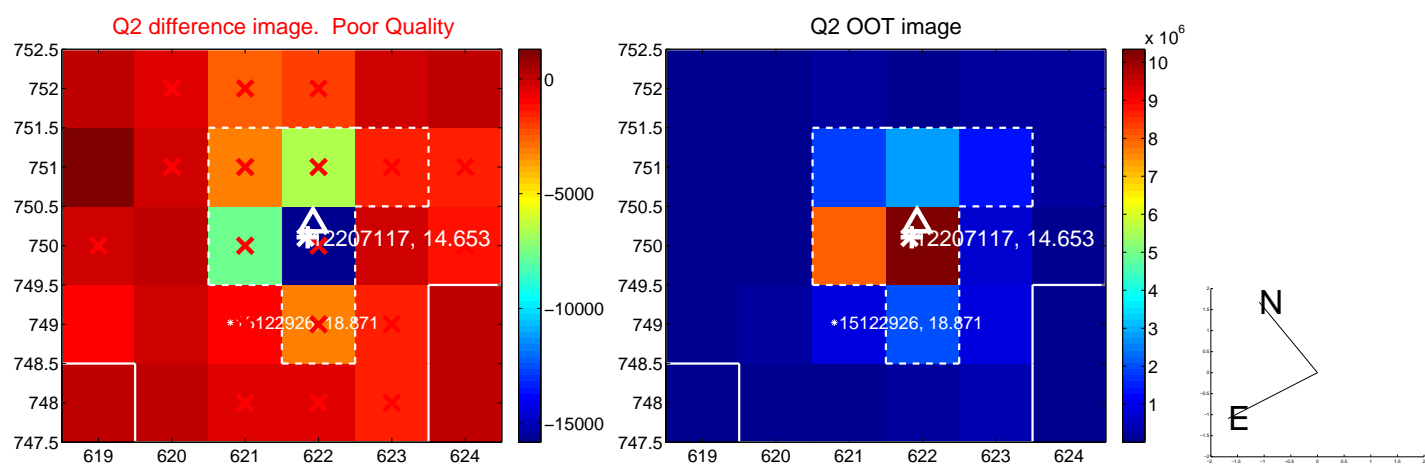
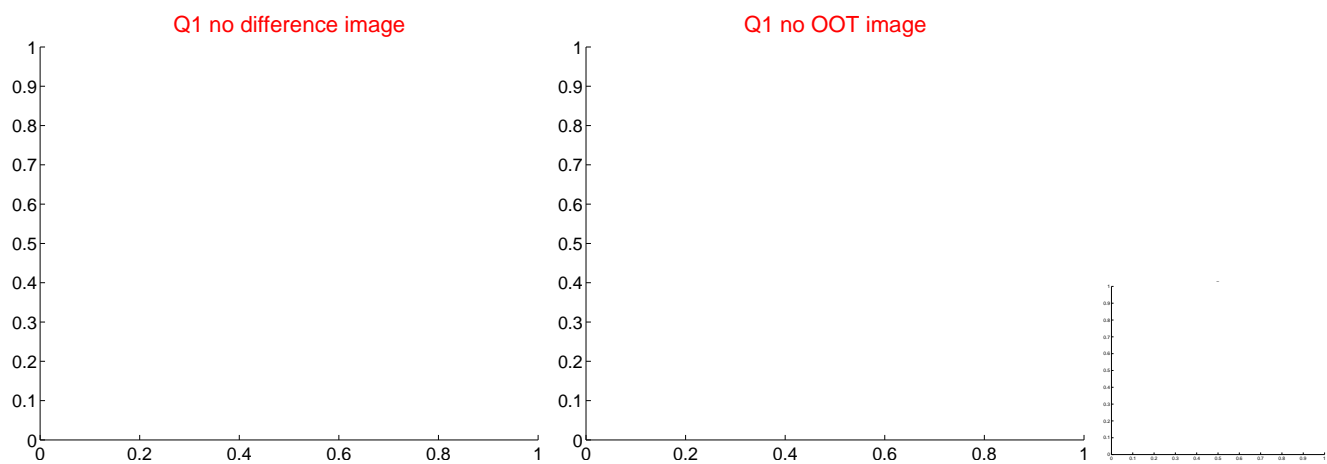
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.038 ± 0.195	0.19	-0.037 ± 0.179	0.007 ± 0.126
PRF-fit source offset from KIC position	0.182 ± 0.201	0.91	-0.170 ± 0.179	0.065 ± 0.118
photometric centroid source offset	0.36 ± 0.34	1.07	-0.31 ± 0.35	0.18 ± 0.30

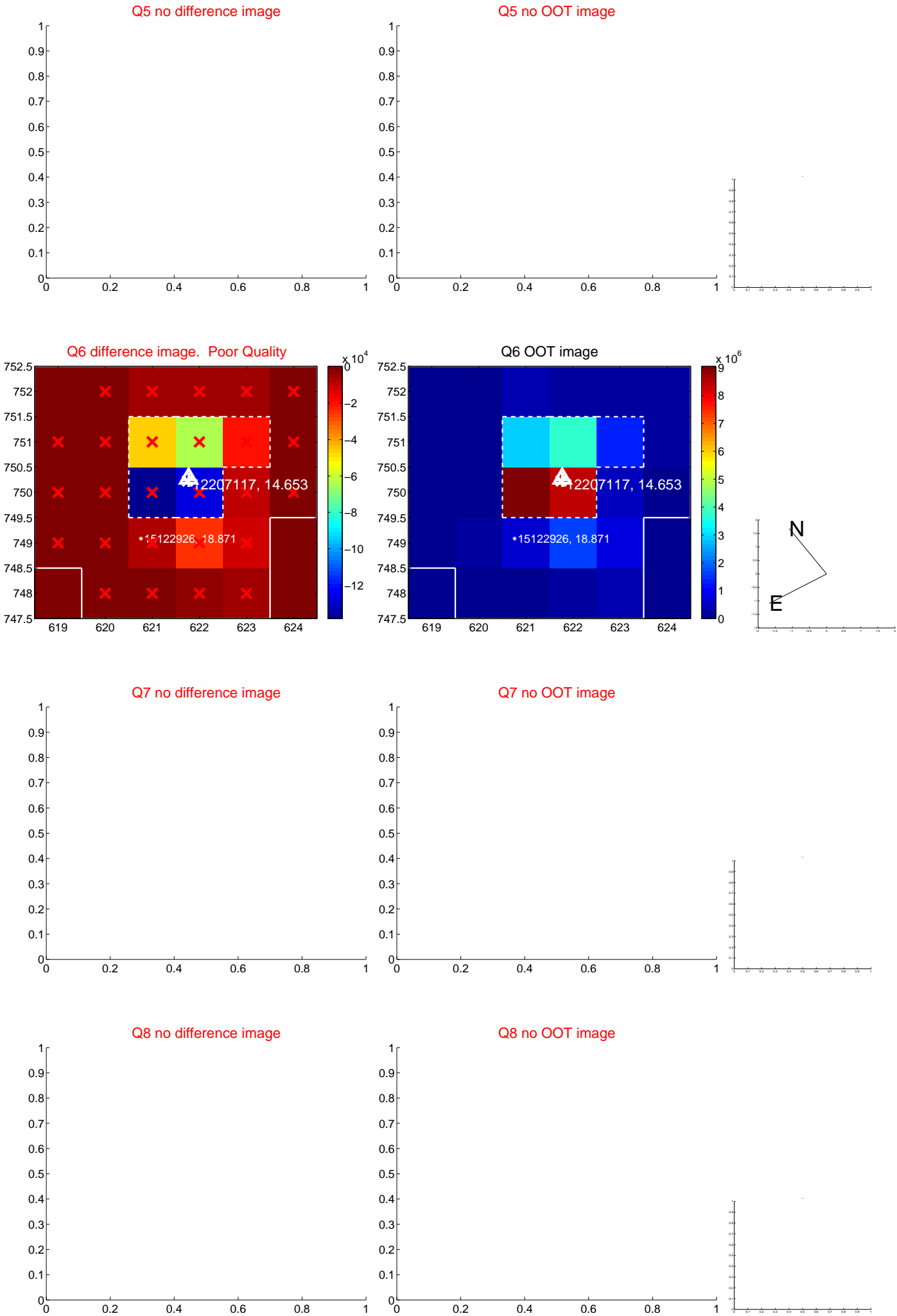


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

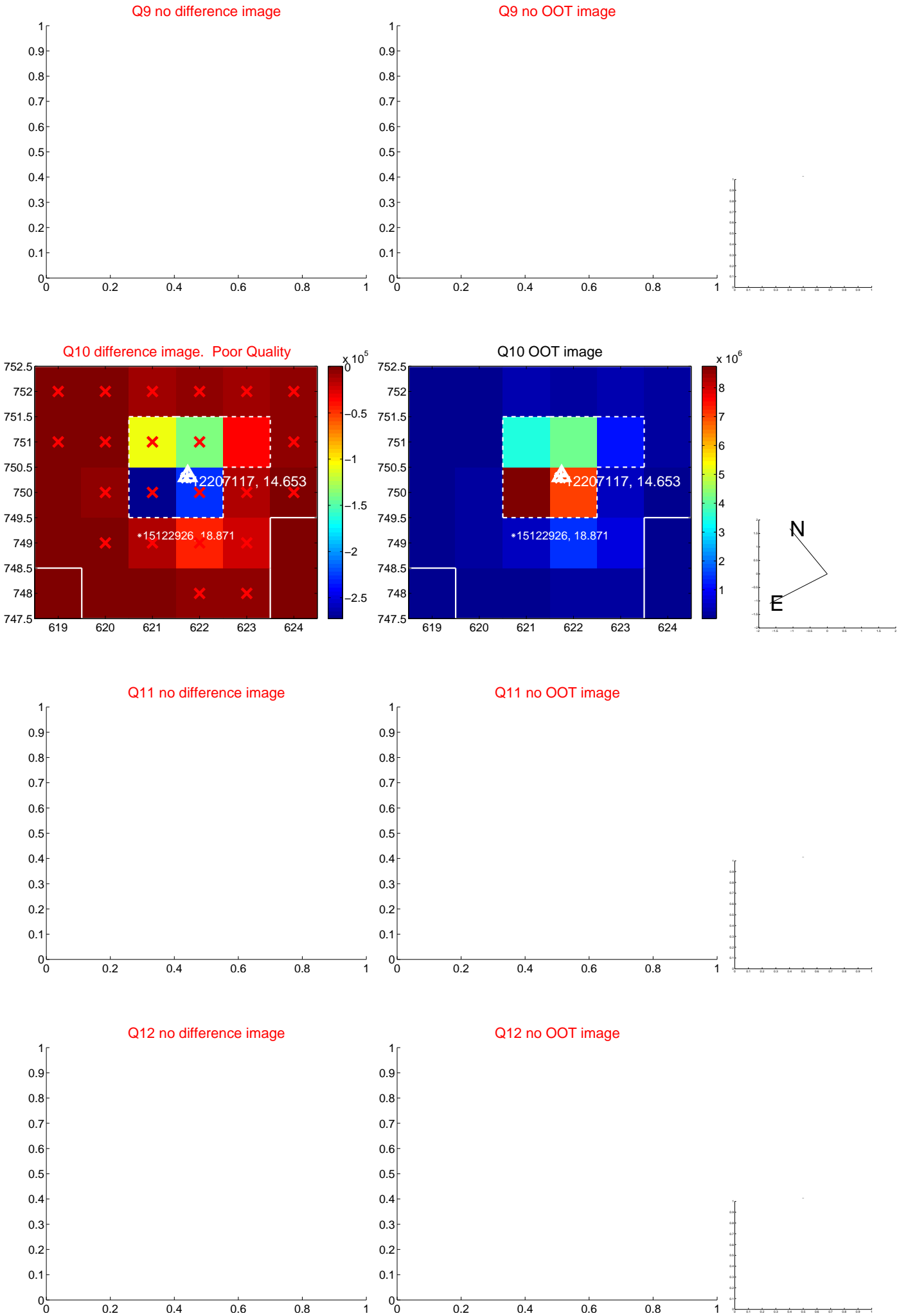
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



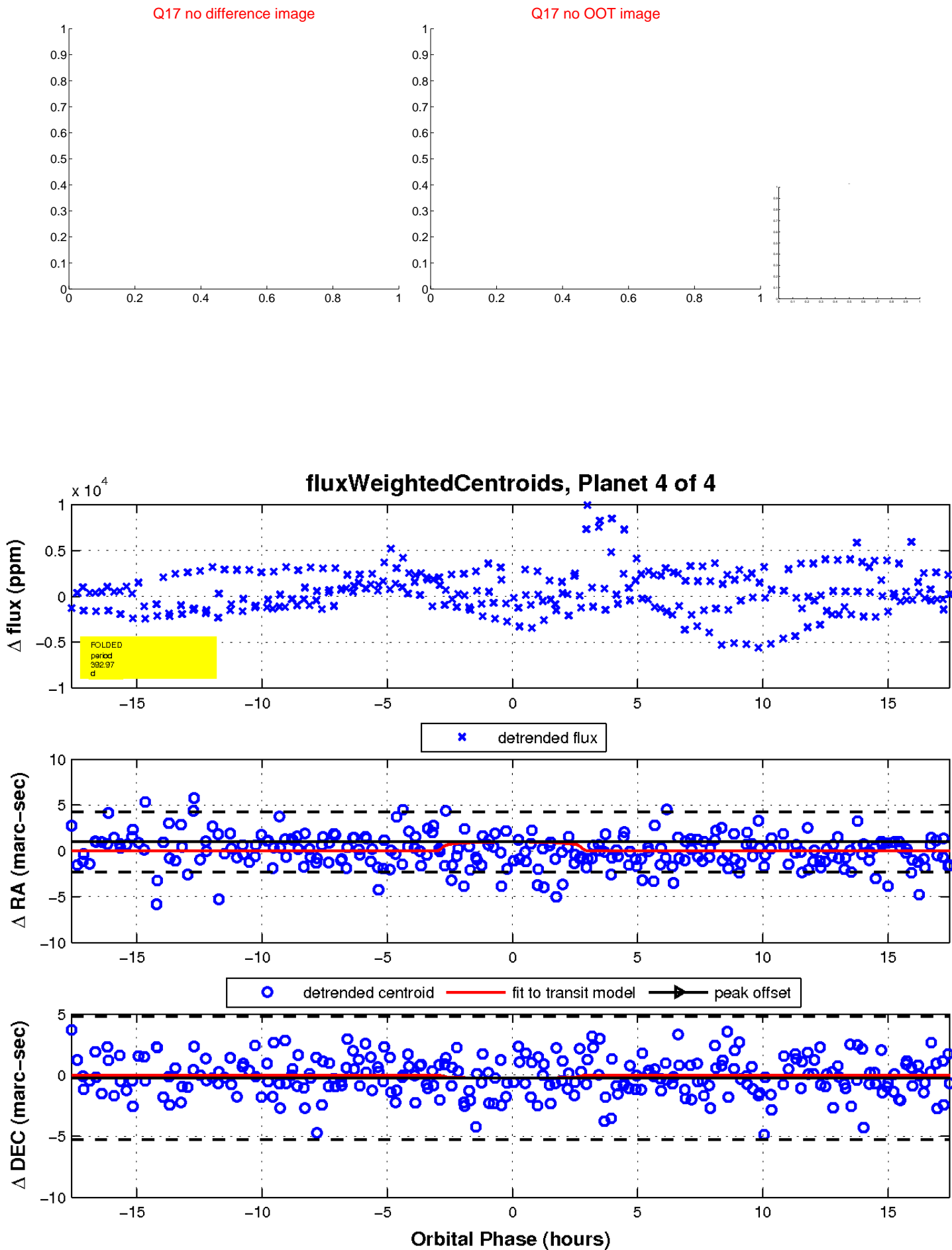
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

