

KIC 006209347

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})
006209347-01	OBS	6025.01	2.136584	133.023286	76286.4	2.474	2126.3	1472.5	0.91	5457	36.35	700.67
006209347-02	OBS	No	2.136579	131.958967	1951.5	1.466	48.0	55.7	0.91	5457	4.83	700.68
006209347-03	OBS	No	241.069485	224.093816	1719.9	3.864	10.9	5.4	0.91	5457	3.77	1.28
006209347-04	OBS	No	2.136120	133.160806	359.5	10.316	9.0	6.0	0.91	5457	1.91	700.88
006209347-05	OBS	No	0.534239	132.004678	169.0	1.615	10.8	5.9	0.91	5457	1.16	4447.97

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006209347-01	OBS	FP	0.03	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
006209347-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
006209347-03	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006209347-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—RESIDUAL_TCE—HALO_GHOST
006209347-05	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—HALO_GHOST

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

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

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

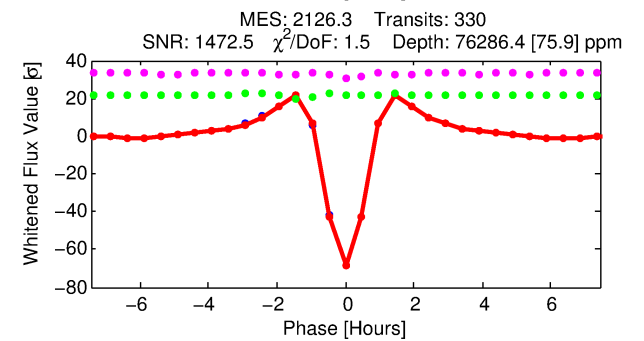
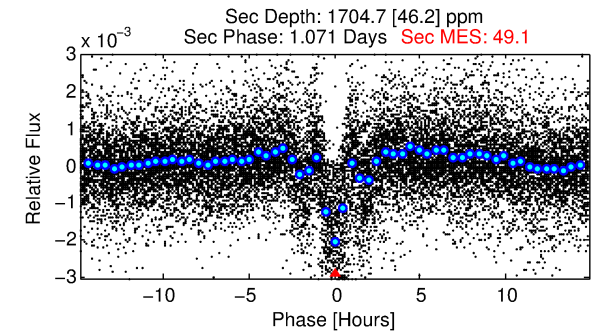
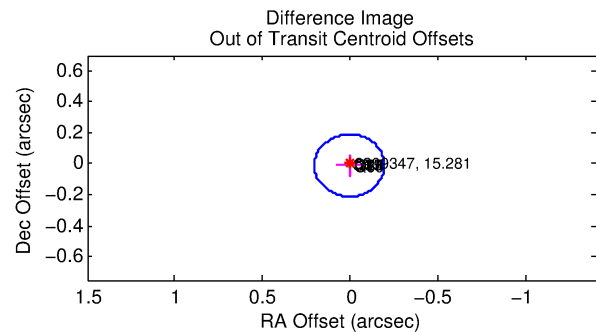
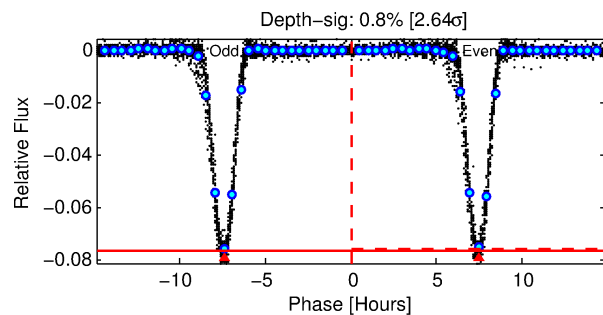
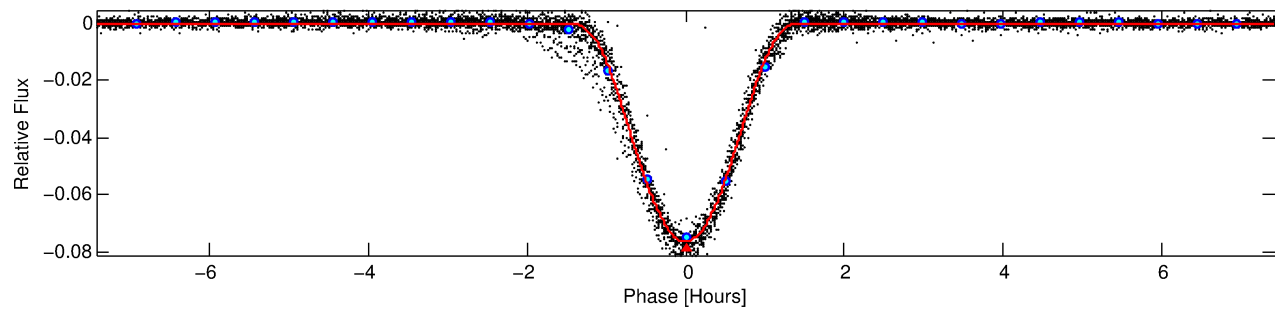
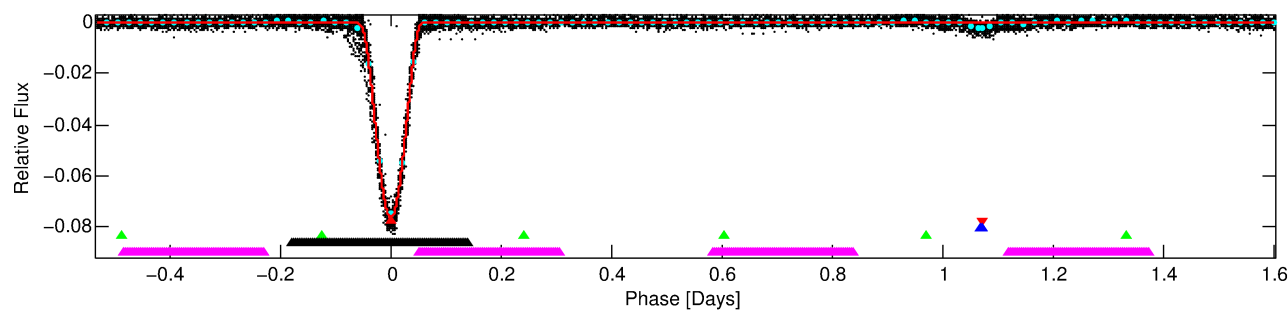
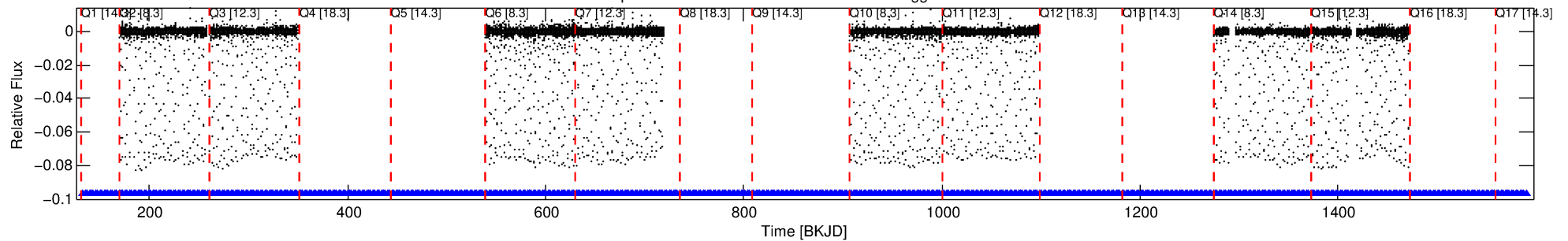
Ephemeris Match Information For 006209347-01

No Significant Match Found

DV One-Page Summary

KIC: 6209347 Candidate: 1 of 5 Period: 2.137 d
KOI: K06025.01 Corr: 0.983

Kp: 15.28 R*: 0.91 Rs Teff: 5457.0 K Logg: 4.44 Fe/H: -0.120



DV Fit Results:

Period = 2.13658 [0.00000] d
Epoch = 133.0233 [0.0000] BKJD
Rp/R* = 0.3680 [0.0170]
a/R* = 6.88 [0.01]
b = 0.90 [0.03]
Seff = 700.67 [224.50]
Teq = 1312 [105] K
Rp = 36.35 [8.21] Re
a = 0.0305 [0.0060] AU
Ag = 0.66 [0.21] [-1.65σ]
Teffp = 1828 [70] K [4.08σ]

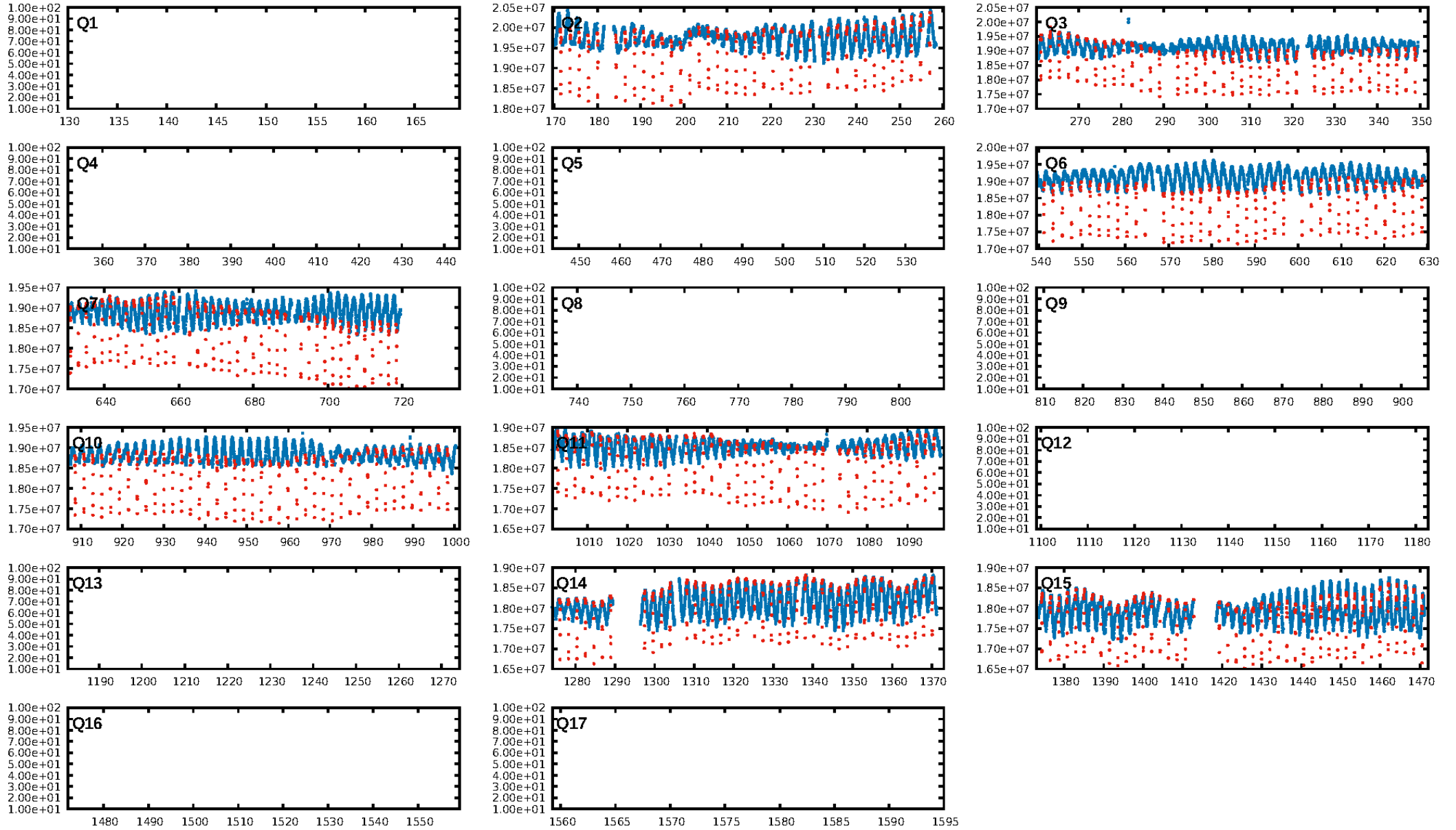
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 100.0% [1249.73σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [330/330]
GhostDiagnostic-chr: 1.728
Centroid-sig: 0.0%
Centroid-so: 0.092 arcsec [28.78σ]
OotOffset-rm: 0.014 arcsec [0.21σ]
OotOffset-st: 4/4/0/0 [8]
KicOffset-rm: 0.064 arcsec [0.90σ]
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DiffImageQuality-fgm: 1.00 [8/8]
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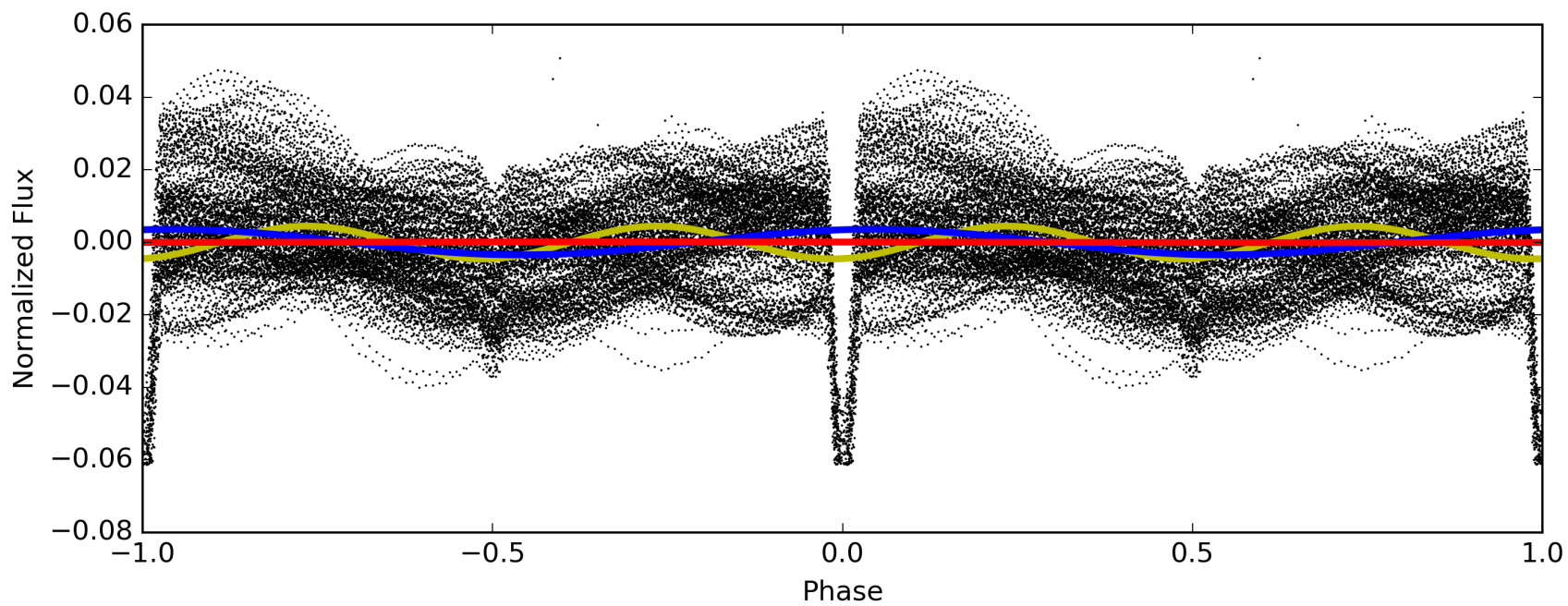
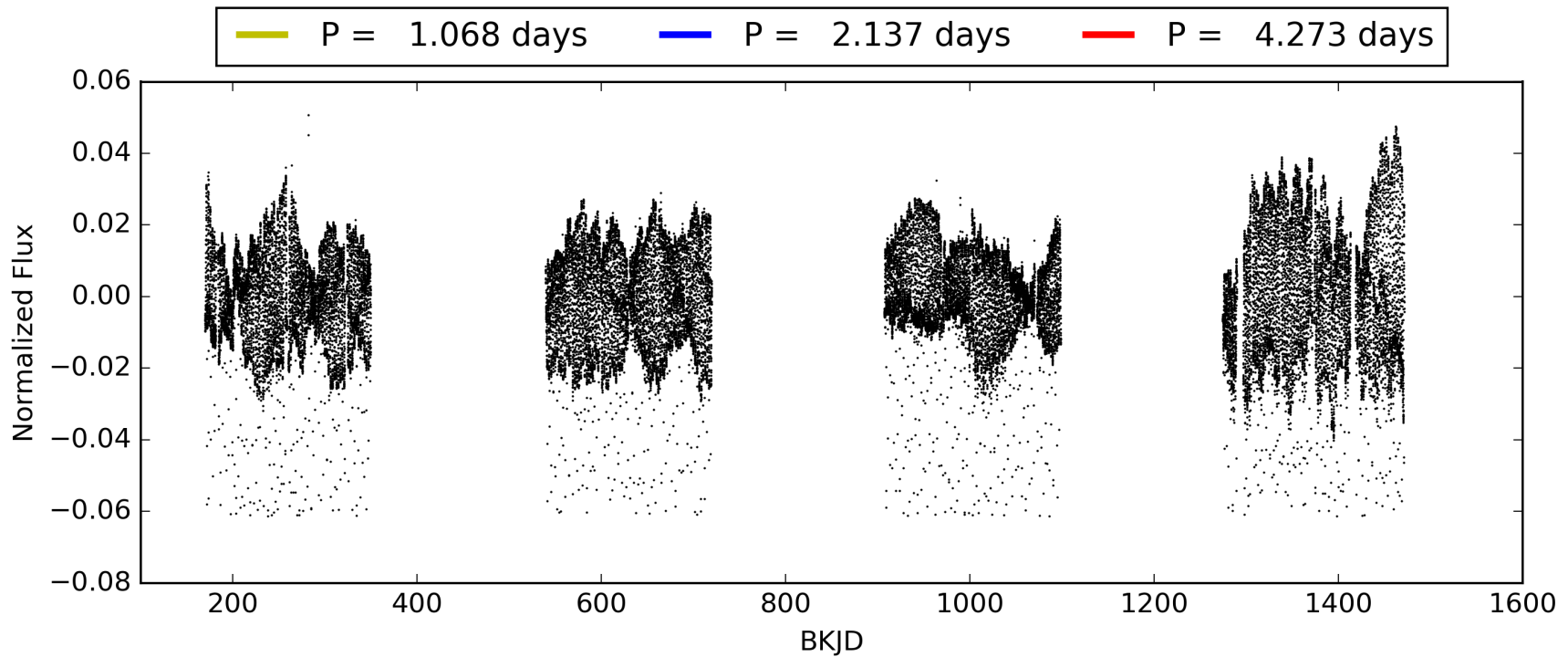
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 09:05:09 Z

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

TCE 006209347-01, PDC Light Curves

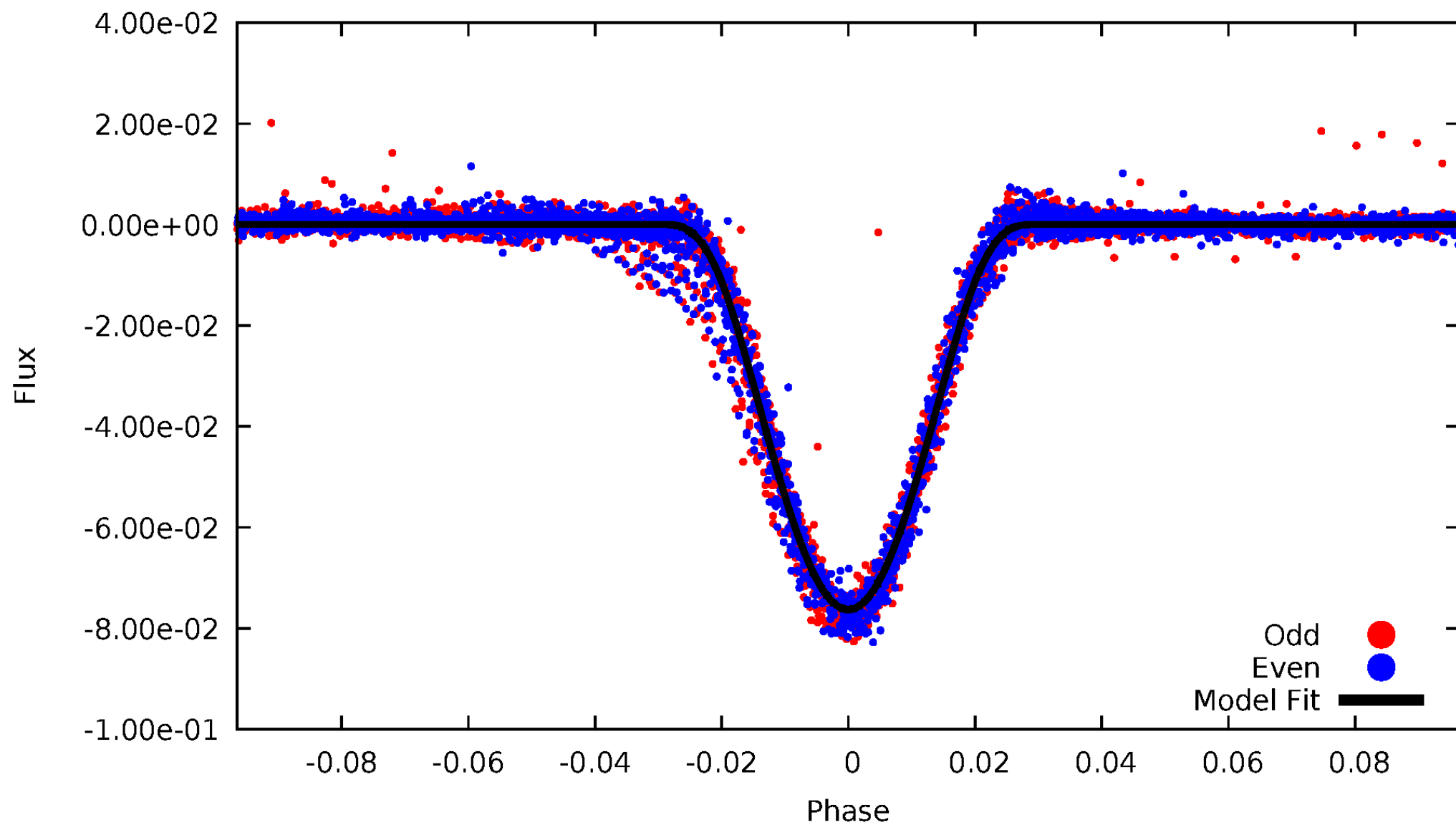


TCE 006209347-01



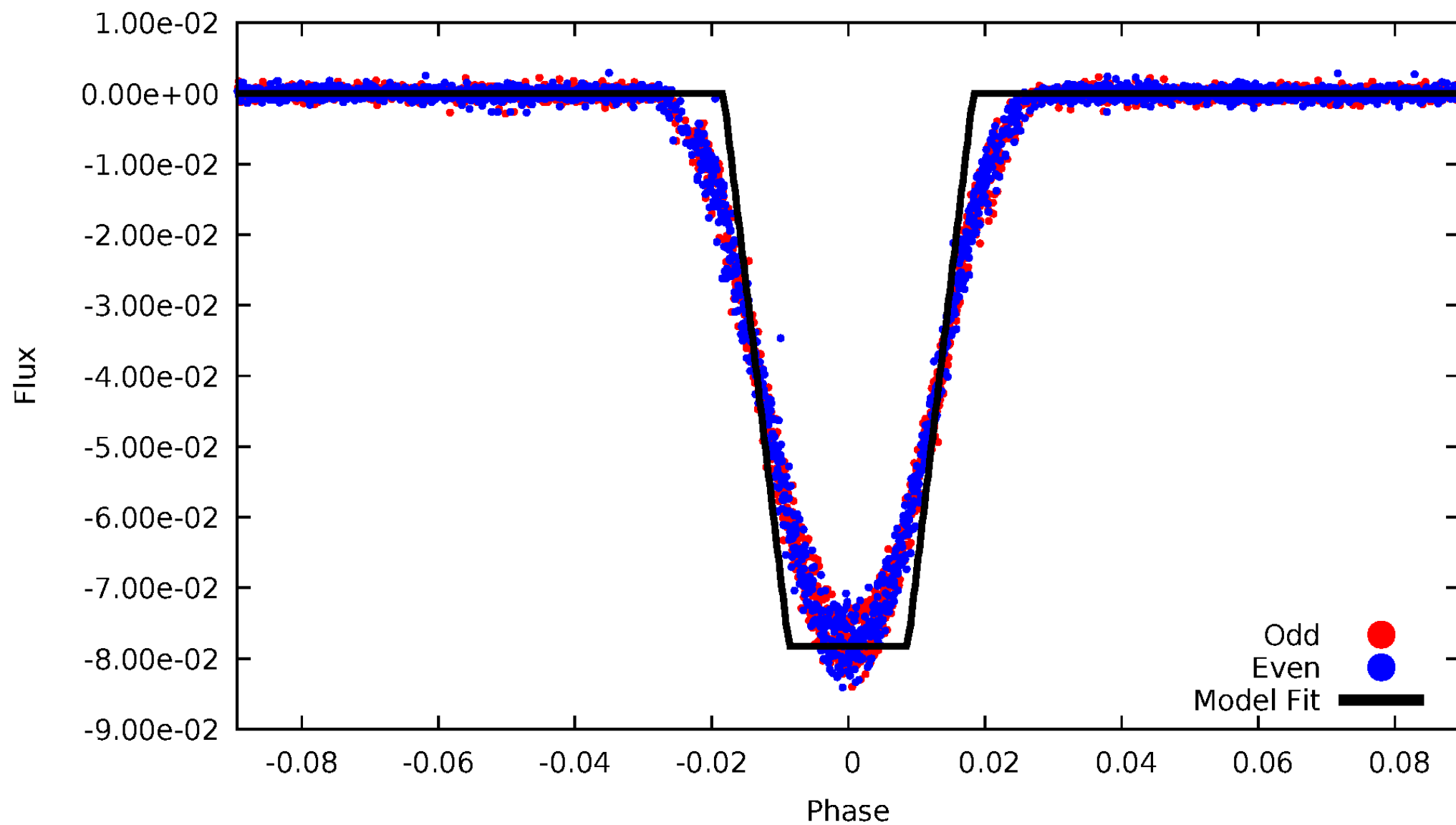
DV Odd/Even

TCE 006209347-01



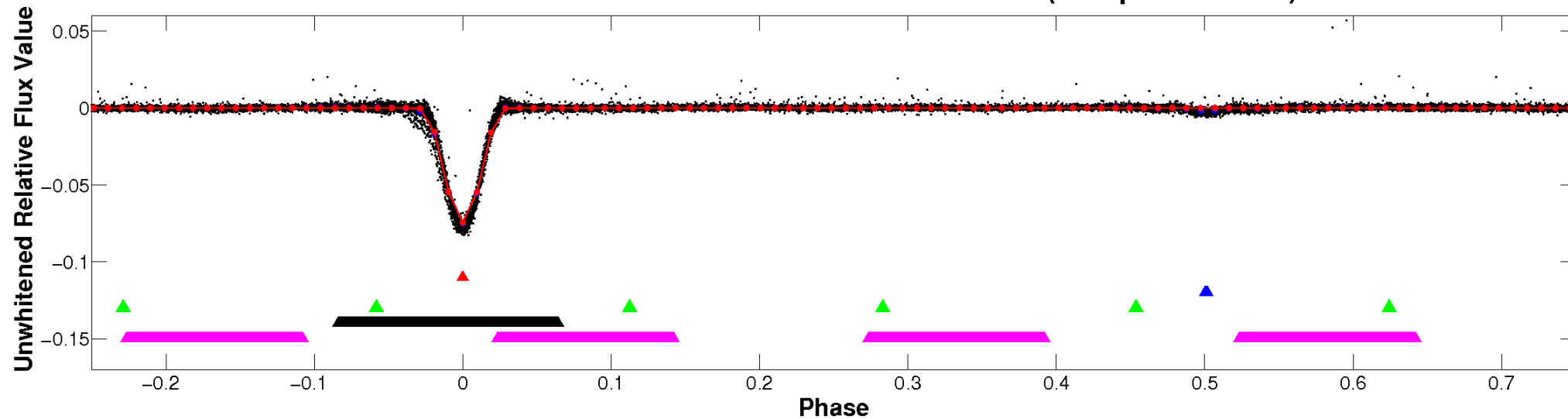
ALT Odd/Even

TCE 006209347-01

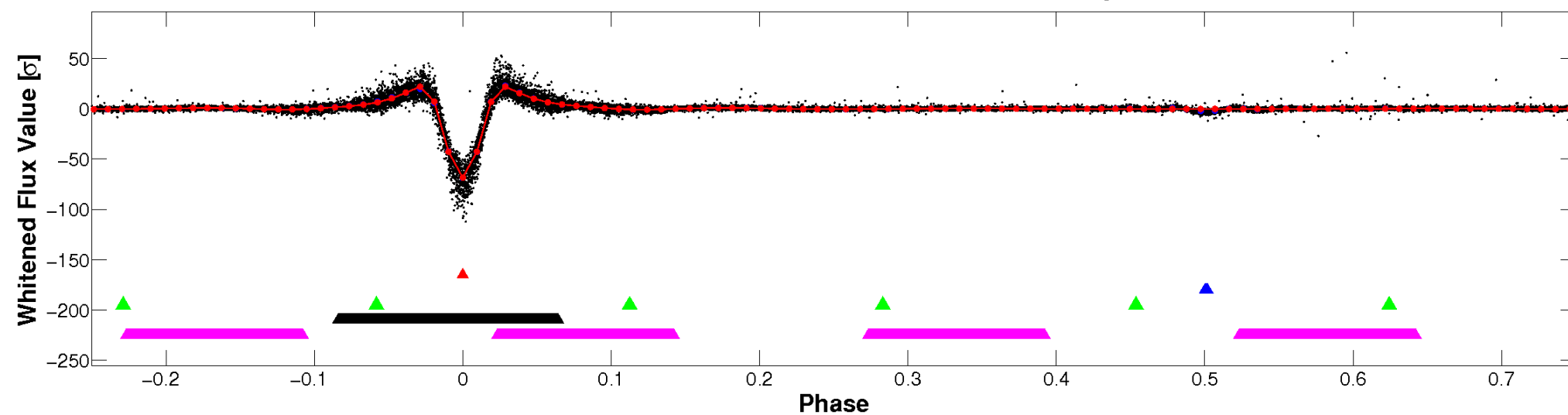


Non-Whitened Vs. Whitened Light Curve

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

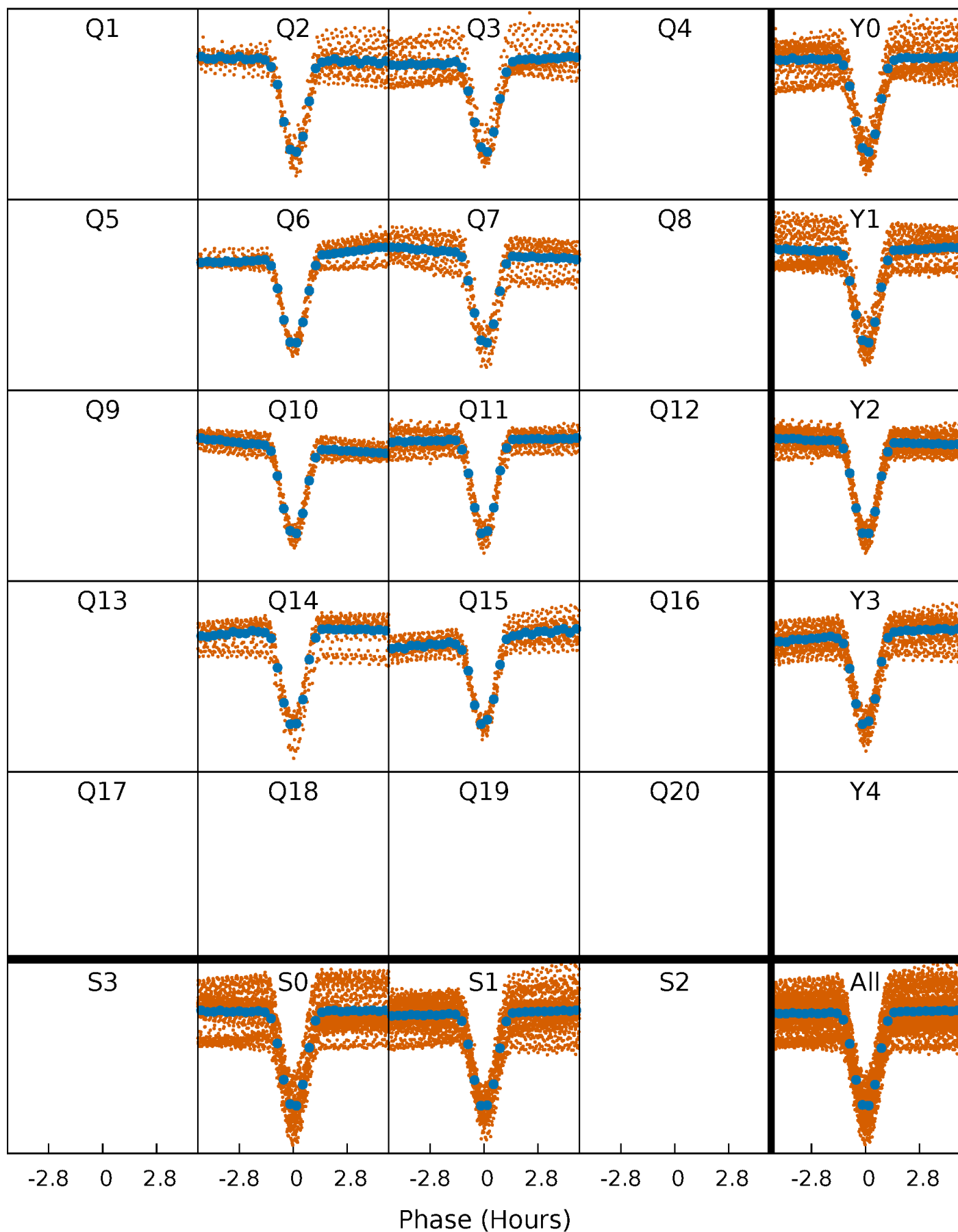


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



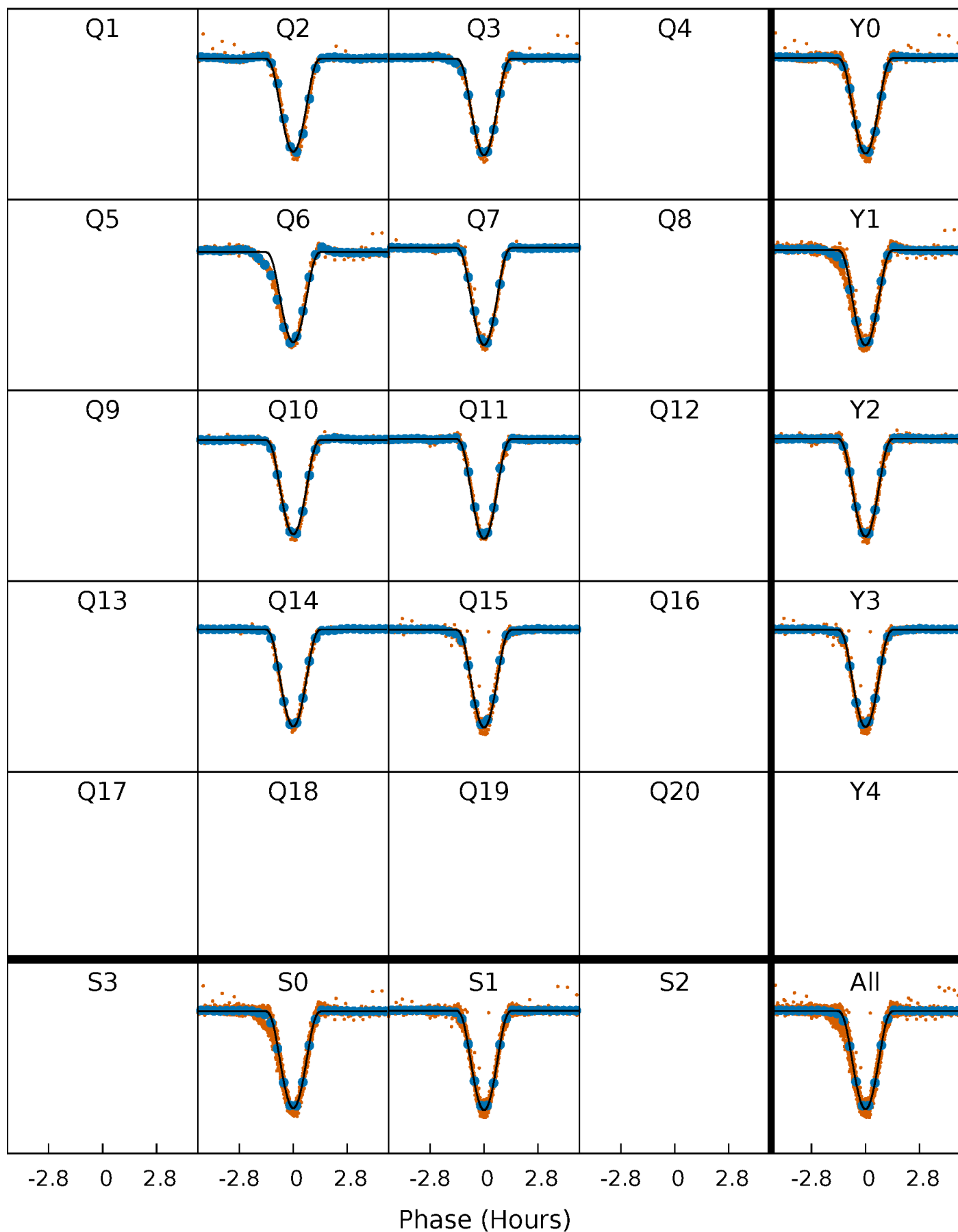
PDC Quarter-Phased Transit Curves

TCE 006209347-01 P= 2.136584 Days $T_0=133.023286$ (BKJD)



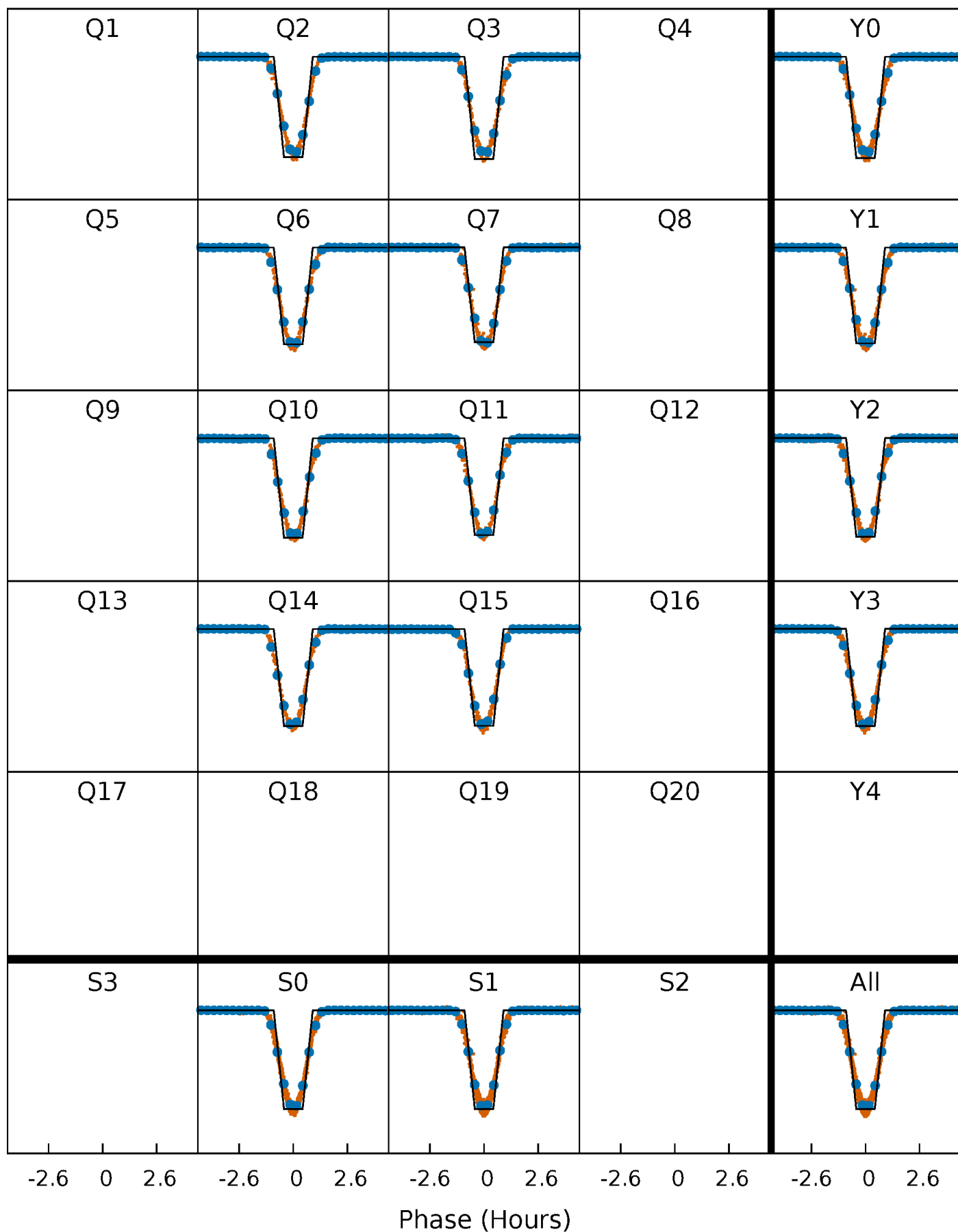
DV Quarter-Phased Transit Curves

TCE 006209347-01 P= 2.136584 Days $T_0=133.023286$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

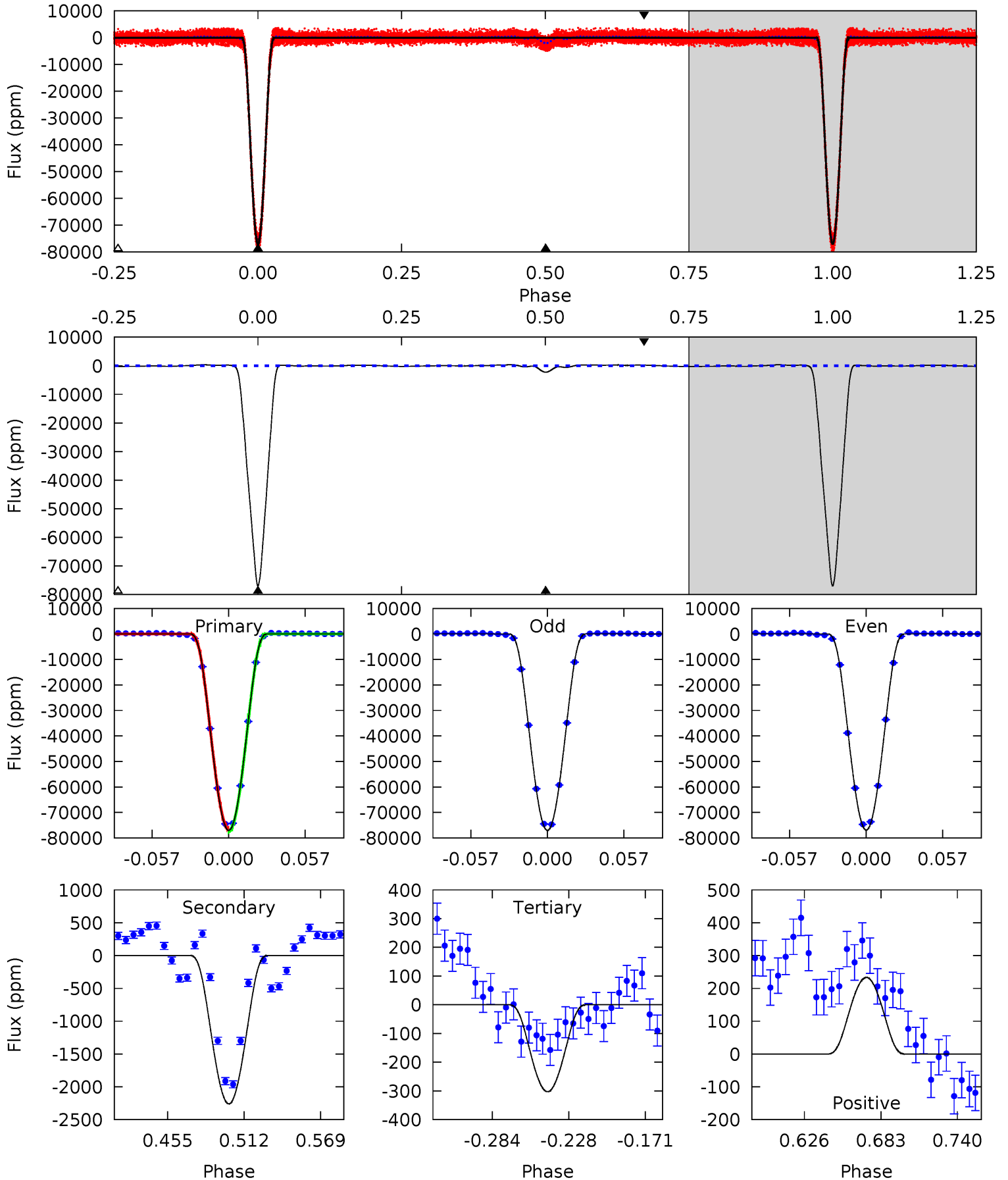
TCE 006209347-01 P= 2.136582 Days $T_0=133.024834$ (BKJD)



DV Model-Shift Uniqueness Test

006209347-01, P = 2.136584 Days, E = 133.023286 Days

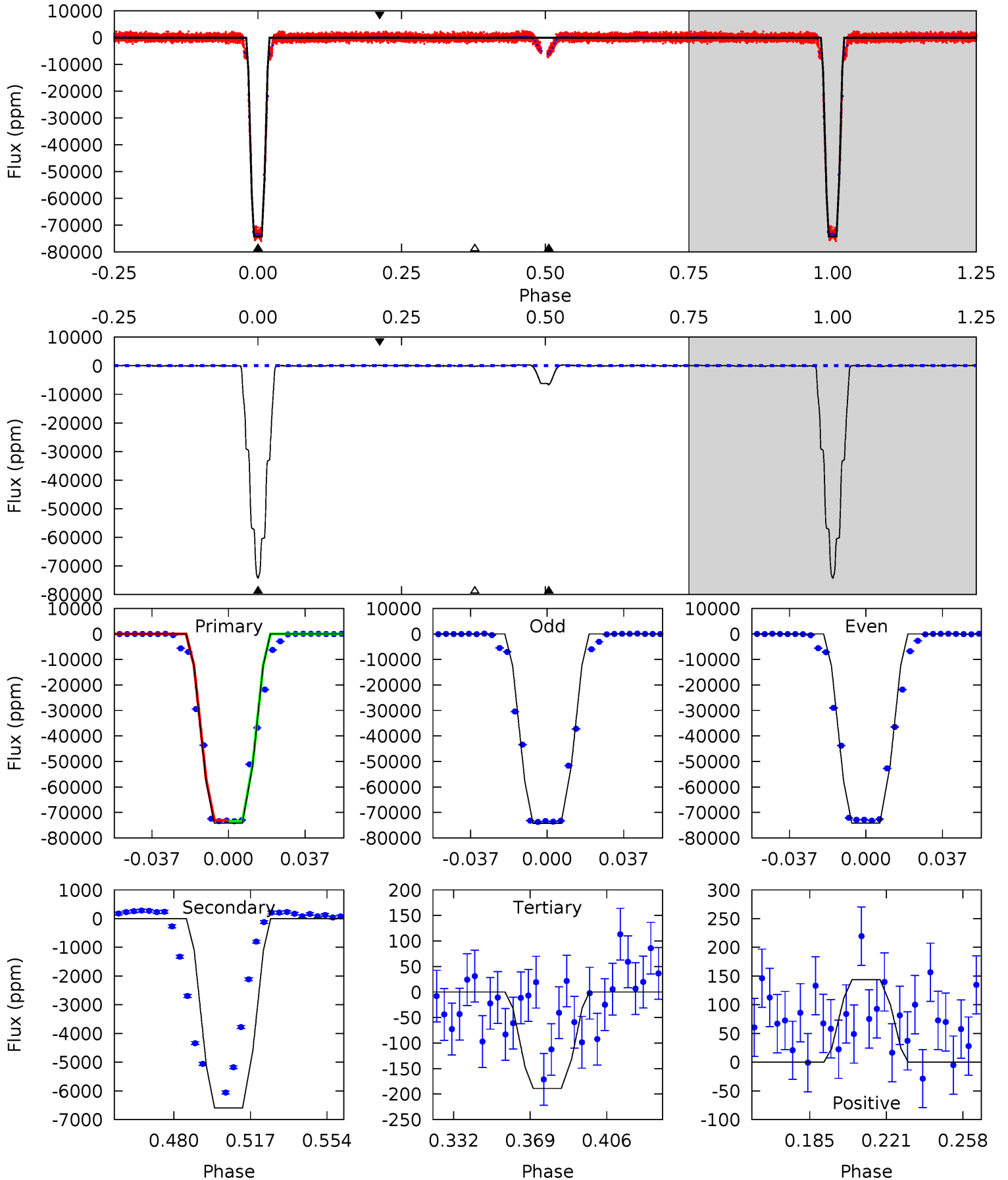
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3159	92.8	12.4	9.57	4.68	1.90	6.89	3147	3150	80.3	83.2	2.38	0.99	0.00	18.0



Alt Model-Shift Uniqueness Test

006209347-01, P = 2.136582 Days, E = 133.024834 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2210	196.3	5.63	4.28	4.77	2.09	2.29	2205	2206	190.7	192.1	2.32	1.00	0.00	0



Stellar Parameters For KIC 006209347

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5457^{+164}_{-164}	$4.442^{+0.126}_{-0.168}$	$-0.120^{+0.300}_{-0.300}$	$0.905^{+0.200}_{-0.133}$	$0.827^{+0.119}_{-0.064}$	$1.574^{+0.867}_{-0.692}$
	+3%/-3%	+3%/-4%	+250%/-250%	+22%/-15%	+14%/-8%	+55%/-44%
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 006209347-01 / KOI 6025.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2260 ± 24	$36.95^{+4.84}_{-4.17}$	1843^{+113}_{-100}	2578^{+74}_{-74}	$0.865^{+0.206}_{-0.180}$
Alt.	-6591 ± 34	$28.04^{+4.03}_{-3.31}$	1846^{+112}_{-110}	3399^{+102}_{-95}	$4.361^{+1.098}_{-1.003}$

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 $A_{obs} \gg 1.0$

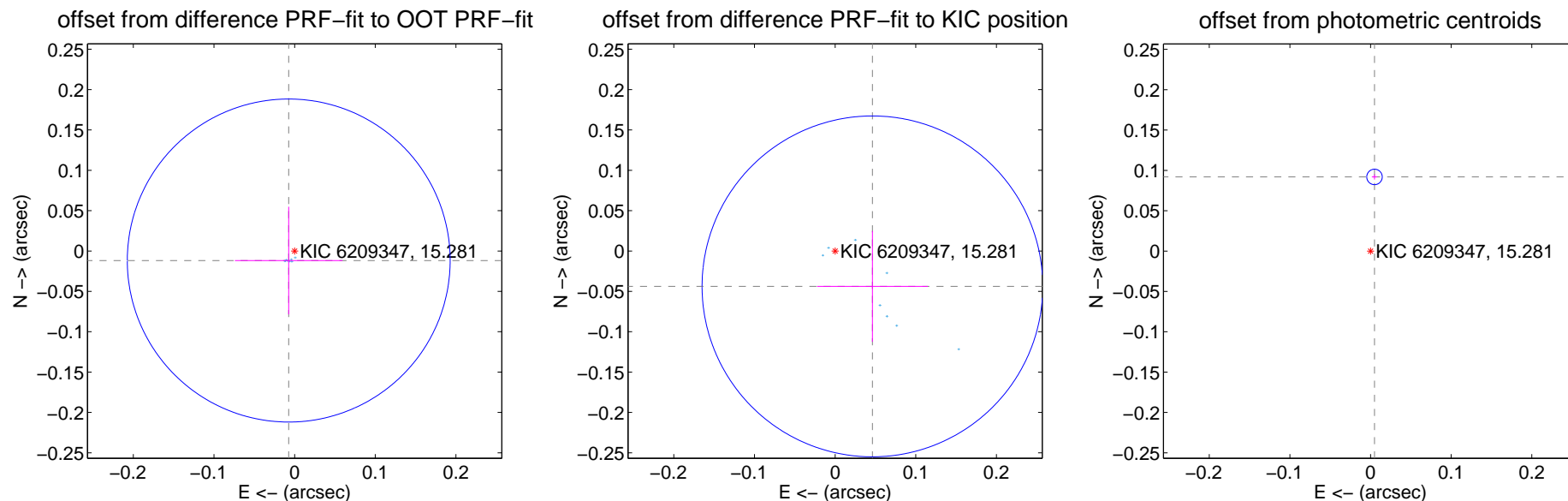
DV Centroid Data

Supplemental centroid analysis for 006209347-01. Kepler magnitude: 15.28. Transit SNR 1472.50

There are 8 quarters with good PRF difference image offsets

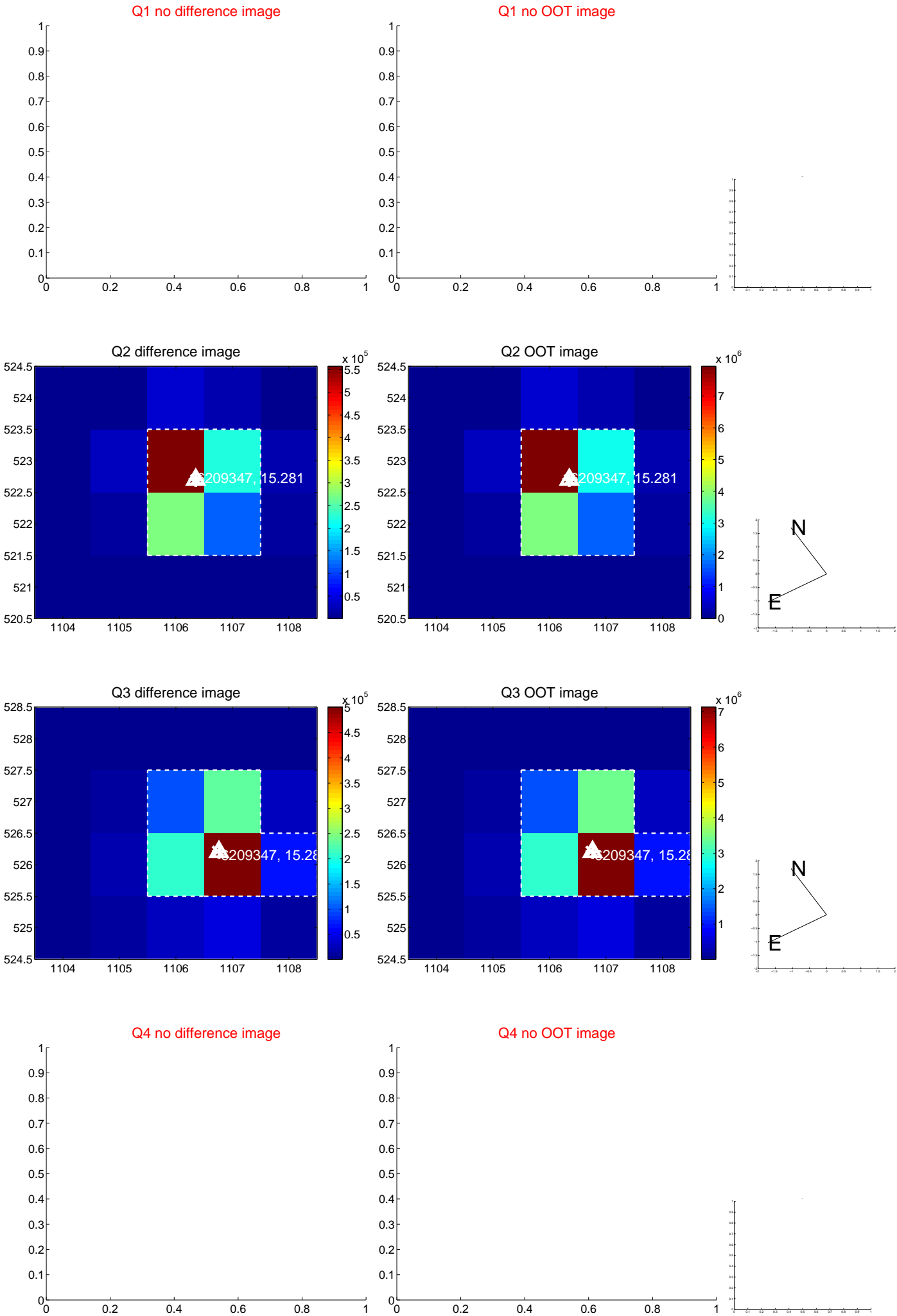
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.014 ± 0.067	0.21	0.007 ± 0.067	-0.012 ± 0.067
PRF-fit source offset from KIC position	0.064 ± 0.070	0.90	-0.046 ± 0.069	-0.044 ± 0.069
photometric centroid source offset	0.09 ± 0.00	28.78	-0.00 ± 0.00	0.09 ± 0.00



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.

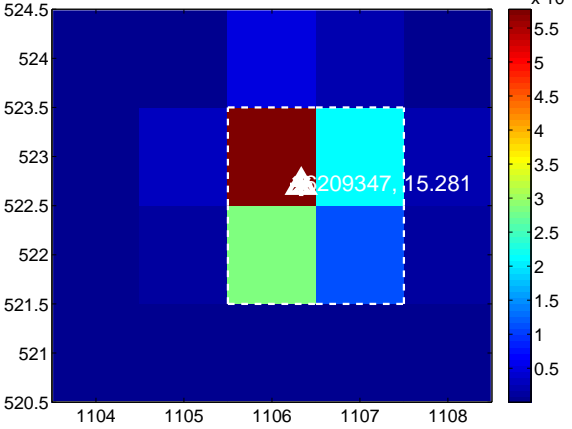
Q5 no difference image



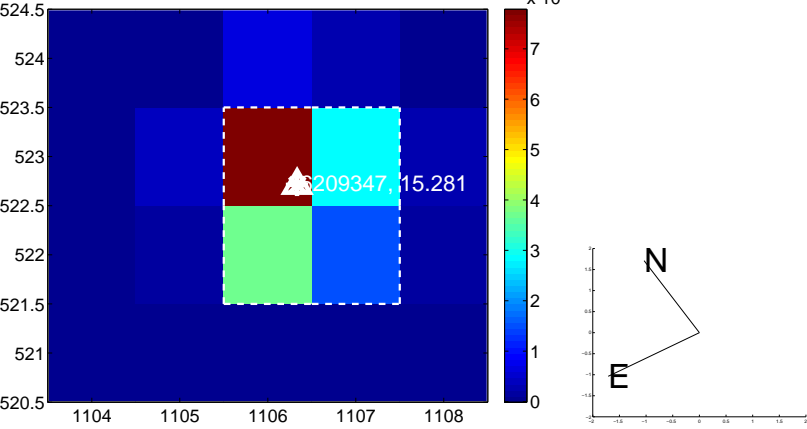
Q5 no OOT image



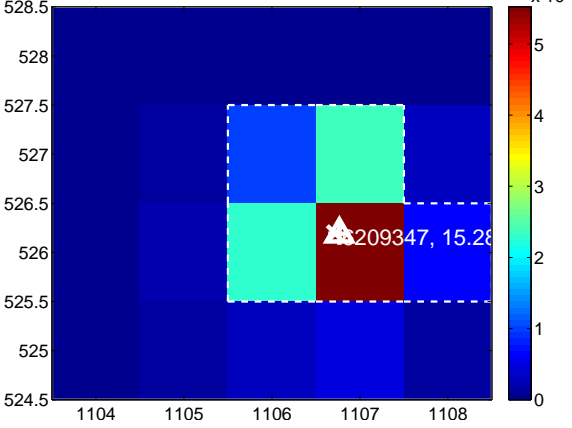
Q6 difference image



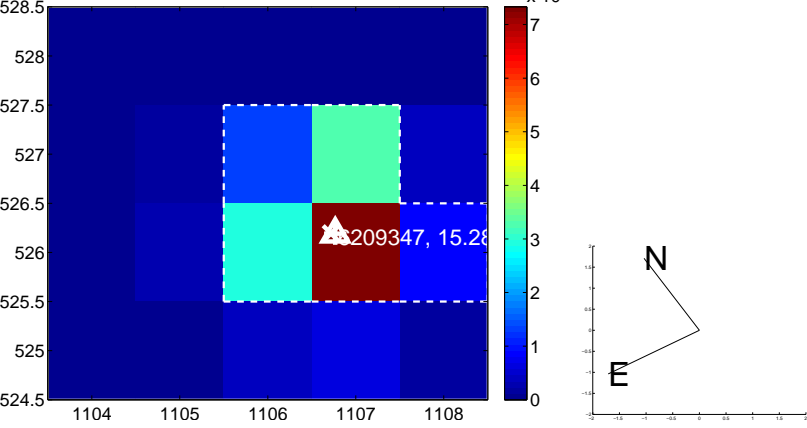
Q6 OOT image



Q7 difference image



Q7 OOT image



Q8 no difference image



Q8 no OOT image



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

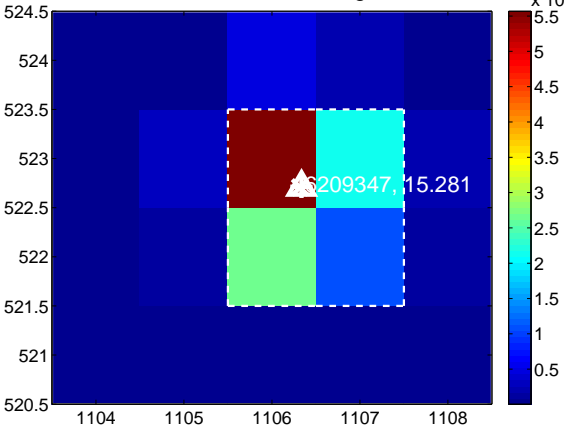
Q9 no difference image



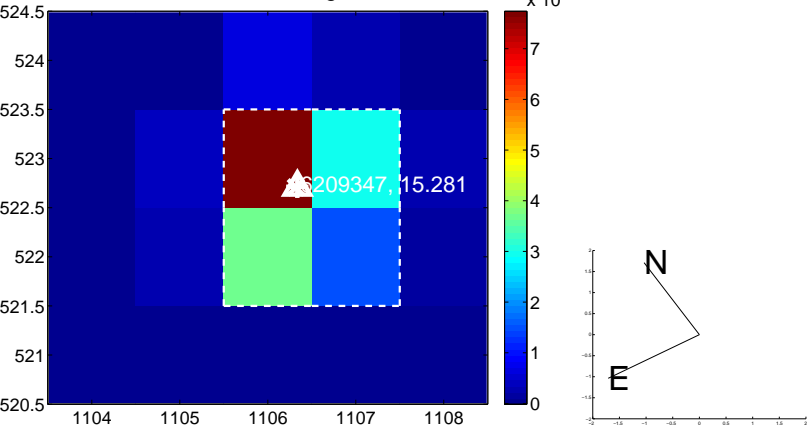
Q9 no OOT image



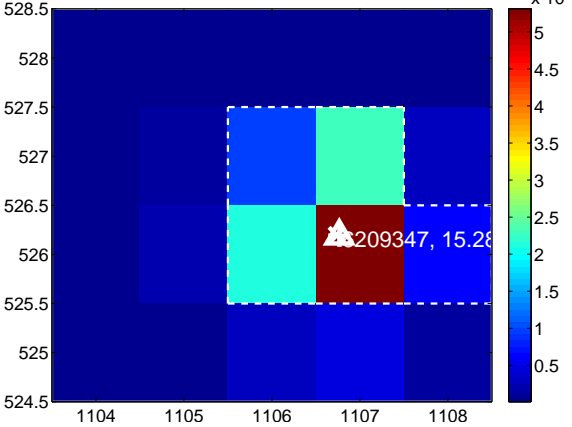
Q10 difference image



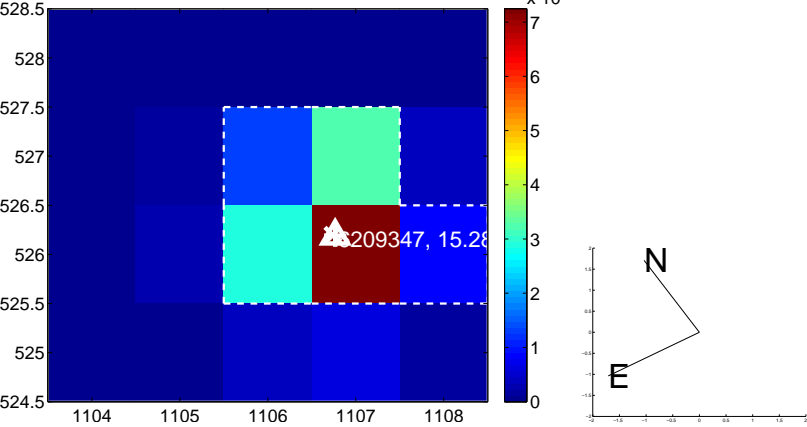
Q10 OOT image



Q11 difference image



Q11 OOT image



Q12 no difference image



Q12 no OOT image



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

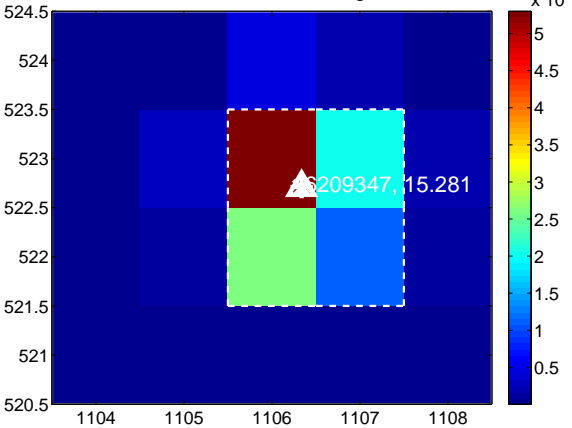
Q13 no difference image



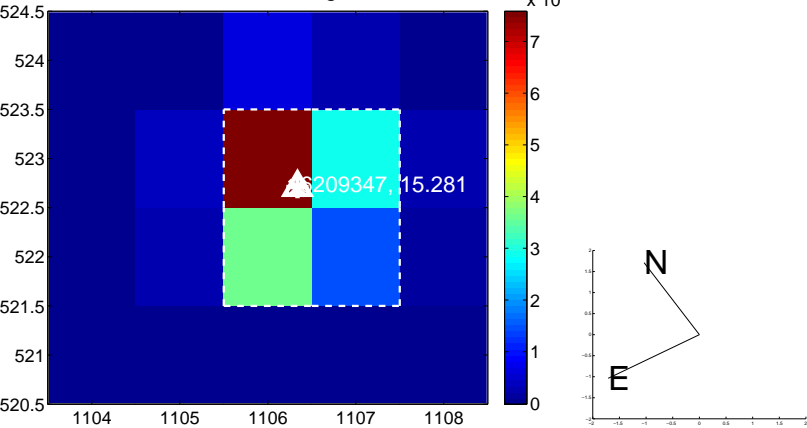
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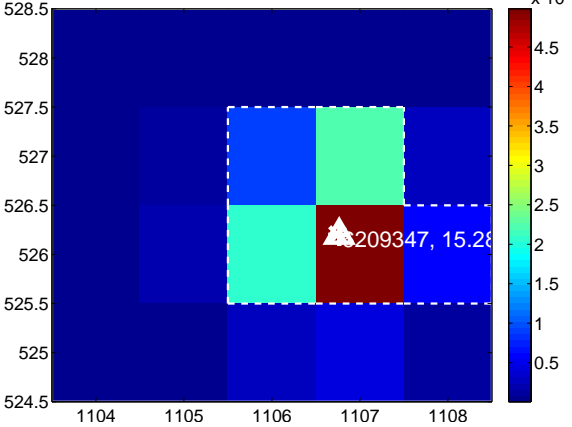
Q14 difference image



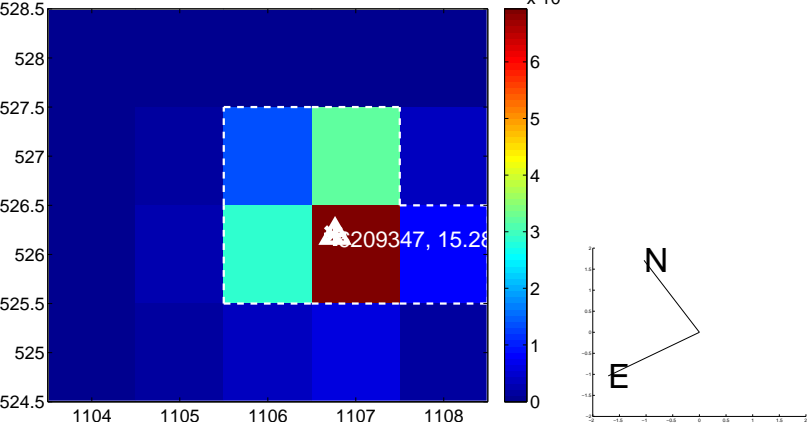
Q14 OOT image



Q15 difference image



Q15 OOT image



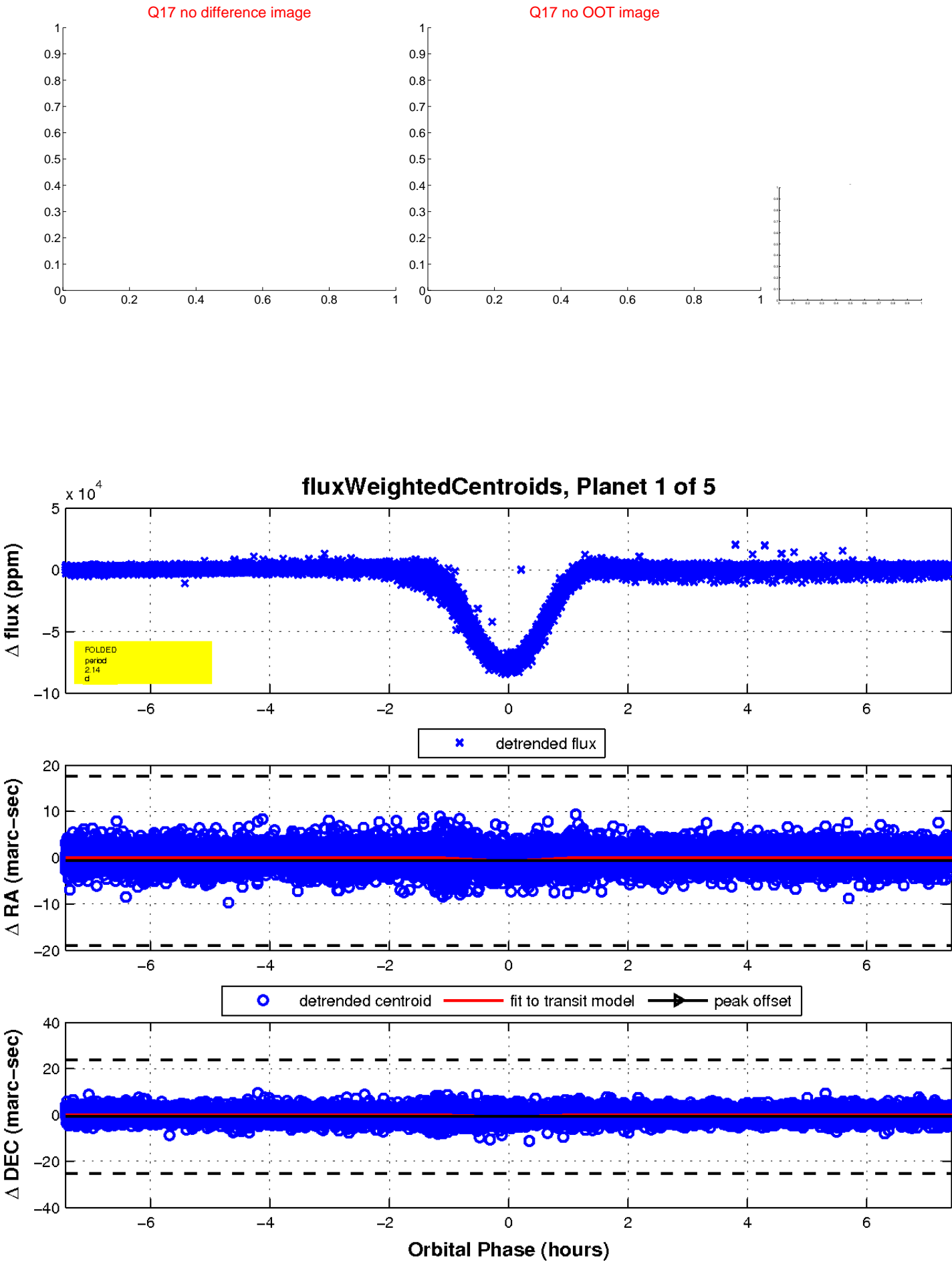
Q16 no difference image



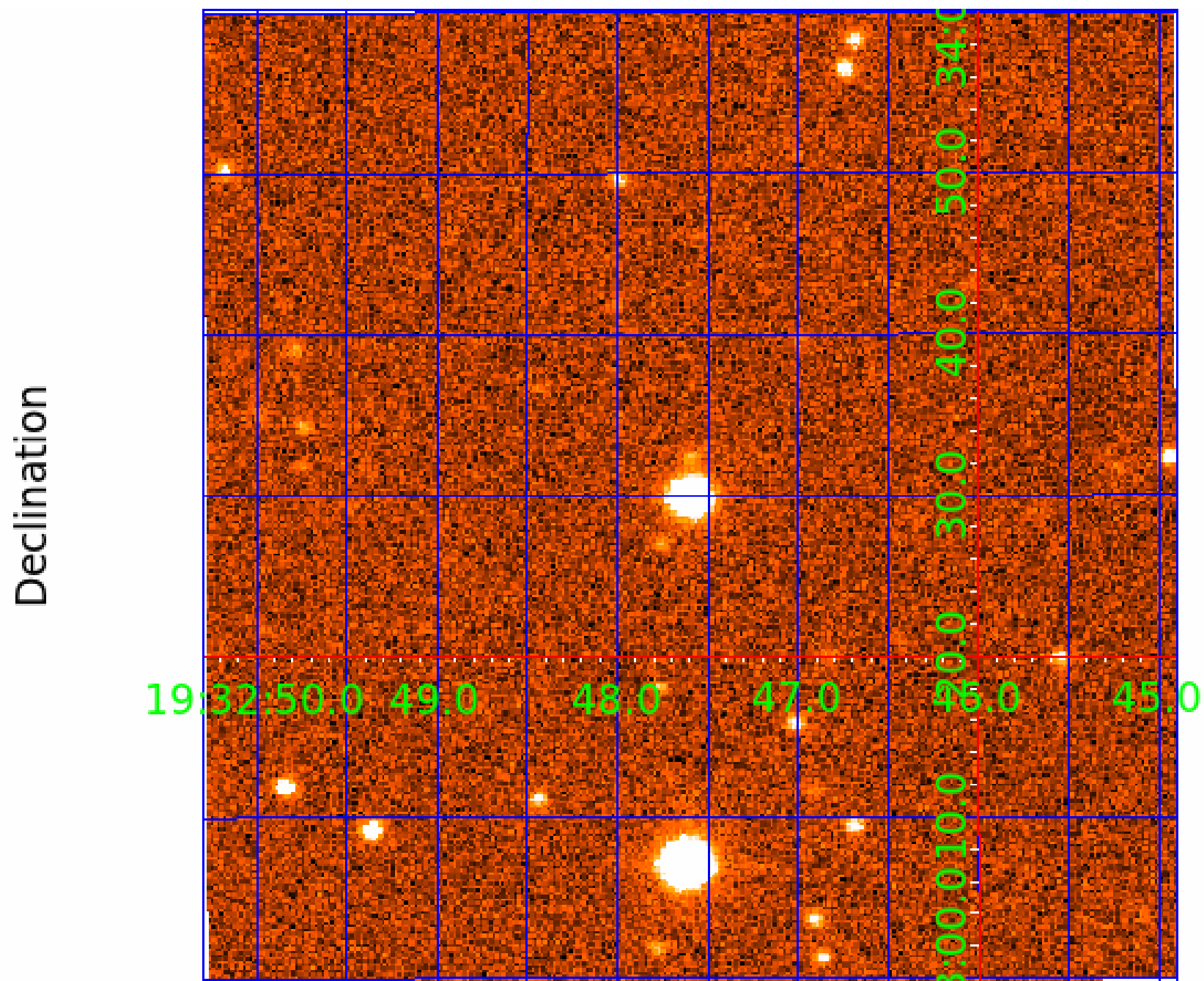
Q16 no OOT image



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



UKIRT Image



KIC 006209347

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})
006209347-01	OBS	6025.01	2.136584	133.023286	76286.4	2.474	2126.3	1472.5	0.91	5457	36.35	700.67
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006209347-04	OBS	No	2.136120	133.160806	359.5	10.316	9.0	6.0	0.91	5457	1.91	700.88
006209347-05	OBS	No	0.534239	132.004678	169.0	1.615	10.8	5.9	0.91	5457	1.16	4447.97

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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006209347-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
006209347-03	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006209347-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—RESIDUAL_TCE—HALO_GHOST
006209347-05	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—HALO_GHOST

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

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

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

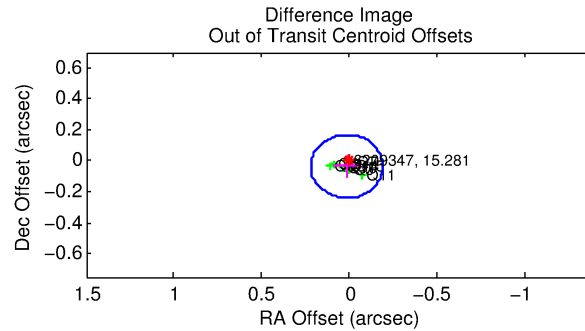
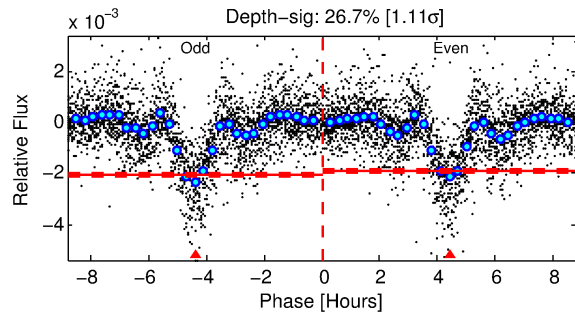
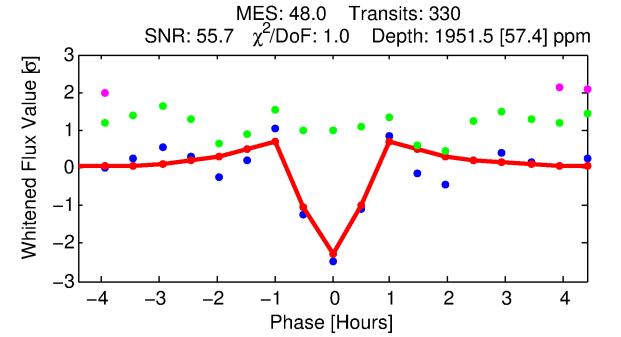
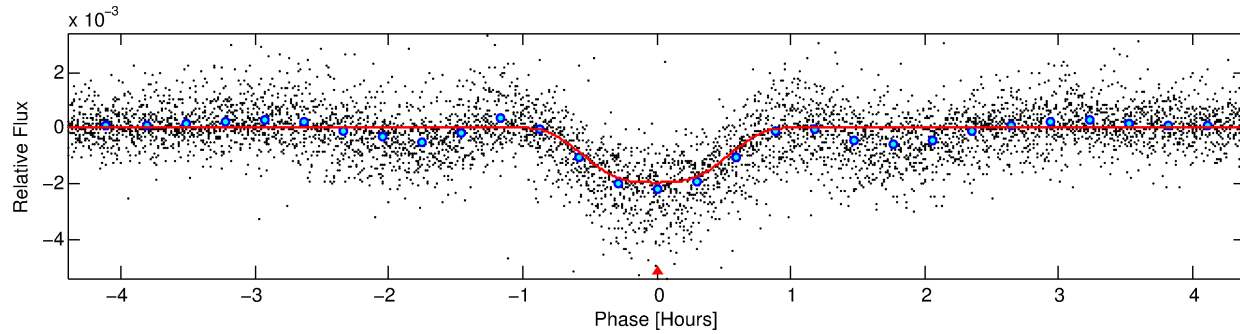
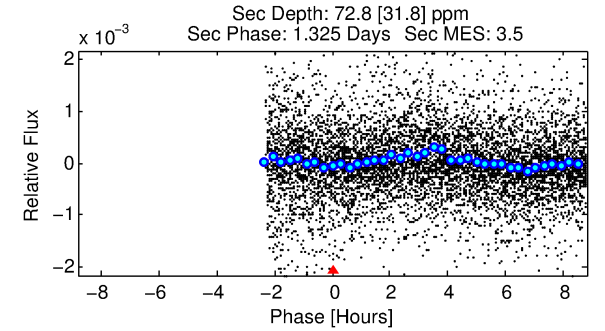
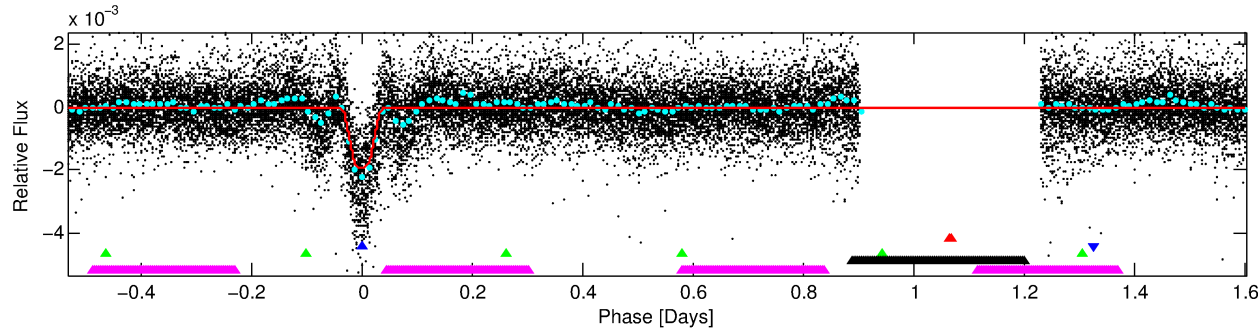
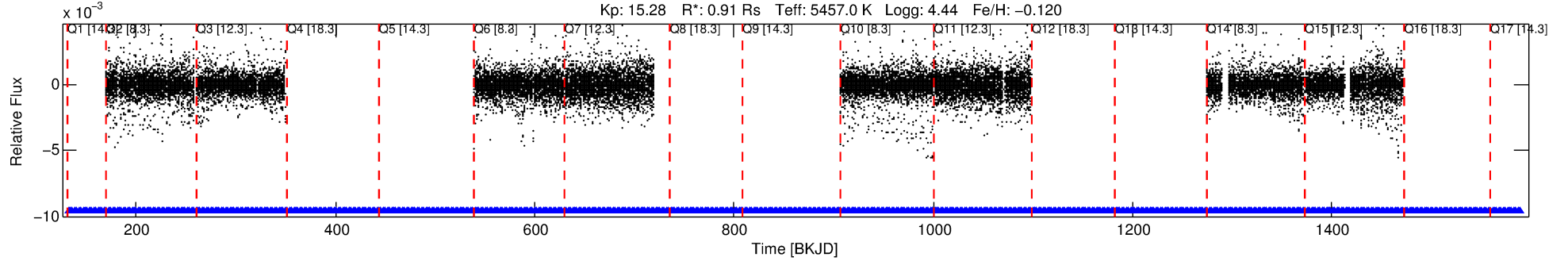
Ephemeris Match Information For 006209347-02

No Significant Match Found

DV One-Page Summary

KIC: 6209347 Candidate: 2 of 5 Period: 2.137 d
KOI: K06025 Corr: No Ephemeris Match

Kp: 15.28 R*: 0.91 Rs Teff: 5457.0 K Logg: 4.44 Fe/H: -0.120



DV Fit Results:

Period = 2.13658 [0.00000] d
Epoch = 131.9590 [0.0003] BKJD
Rp/R* = 0.0490 [0.0023]
a/R* = 6.06 [1.00]
b = 0.90 [0.04]
Seff = 700.68 [224.51]
Teff = 1312 [105] K
Rp = 4.84 [1.09] Re
a = 0.0305 [0.0060] AU
Ag = 1.59 [0.85] [0.69σ]
Teffp = 2278 [264] K [3.40σ]

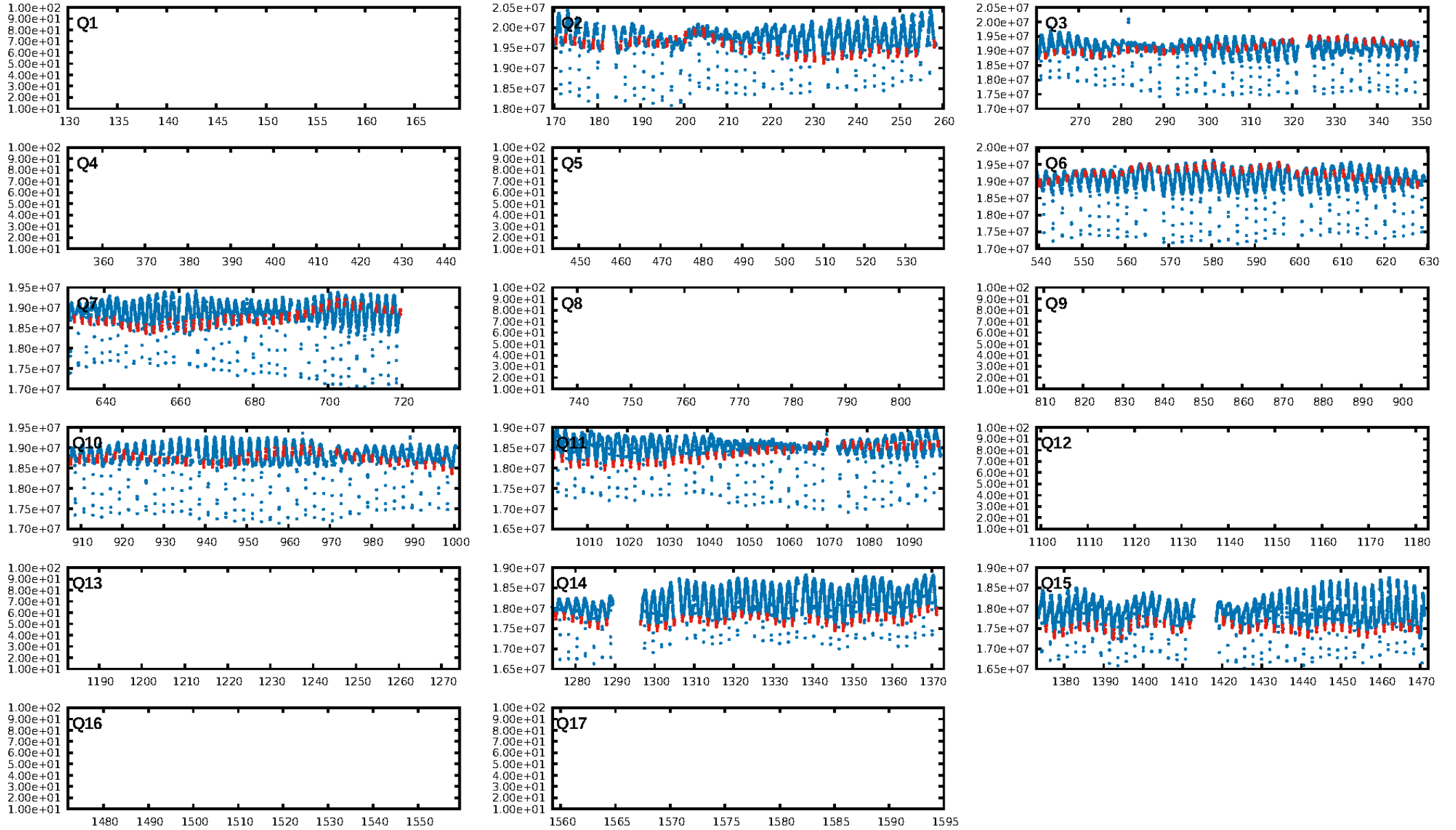
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [330/330]
GhostDiagnostic-chr: 0.6656
Centroid-sig: 1.1%
Centroid-so: 0.282 arcsec [2.29σ]
OotOffset-rm: 0.040 arcsec [0.58σ]
KicOffset-rm: 0.098 arcsec [1.31σ]
OotOffset-st: 4/4/0/0 [8]
KicOffset-st: 4/4/0/0 [8]
DiffImageQuality-fgm: 1.00 [8/8]
DiffImageOverlap-fno: 0.25 [2/8]

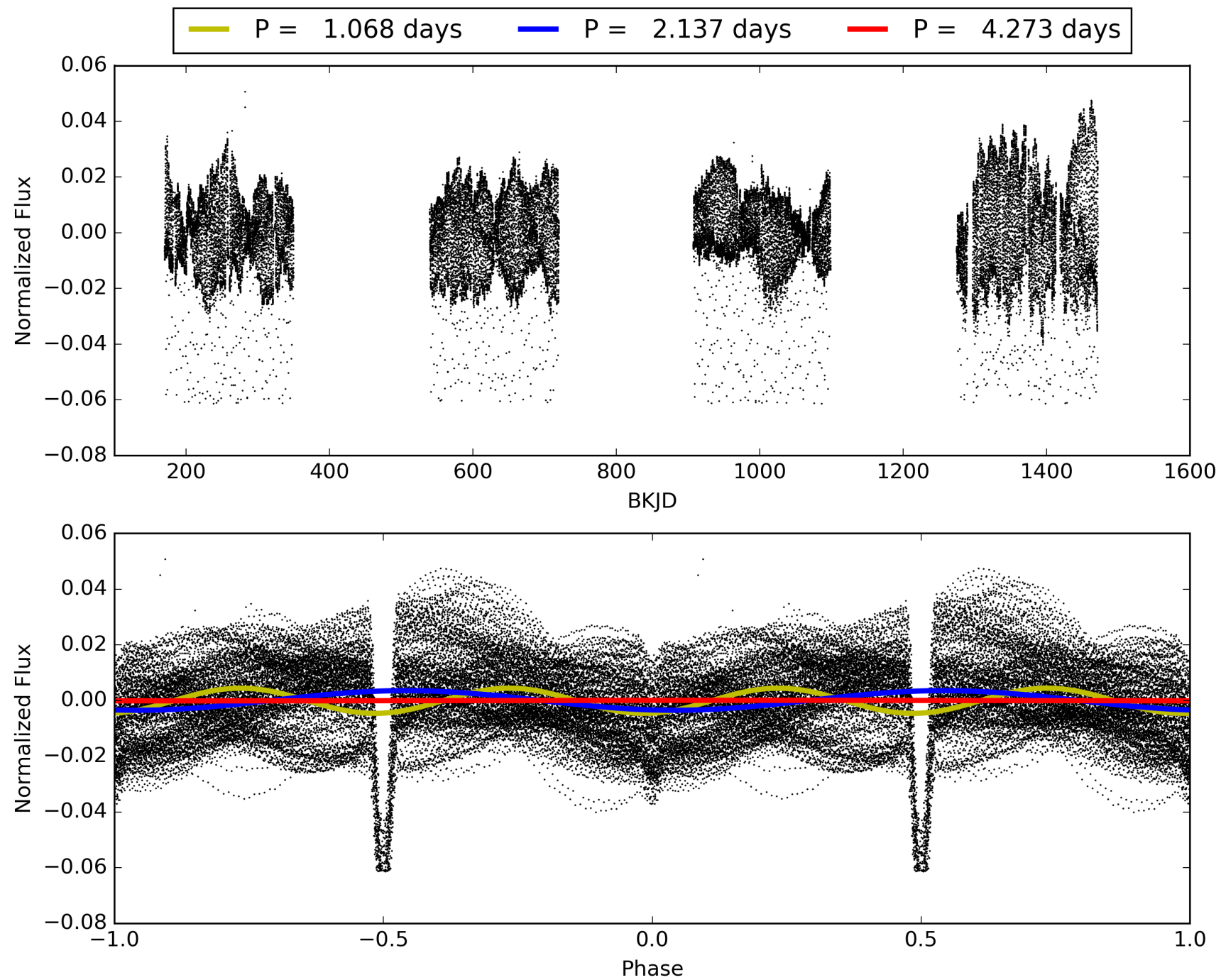
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 09:05:15 Z

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

TCE 006209347-02, PDC Light Curves

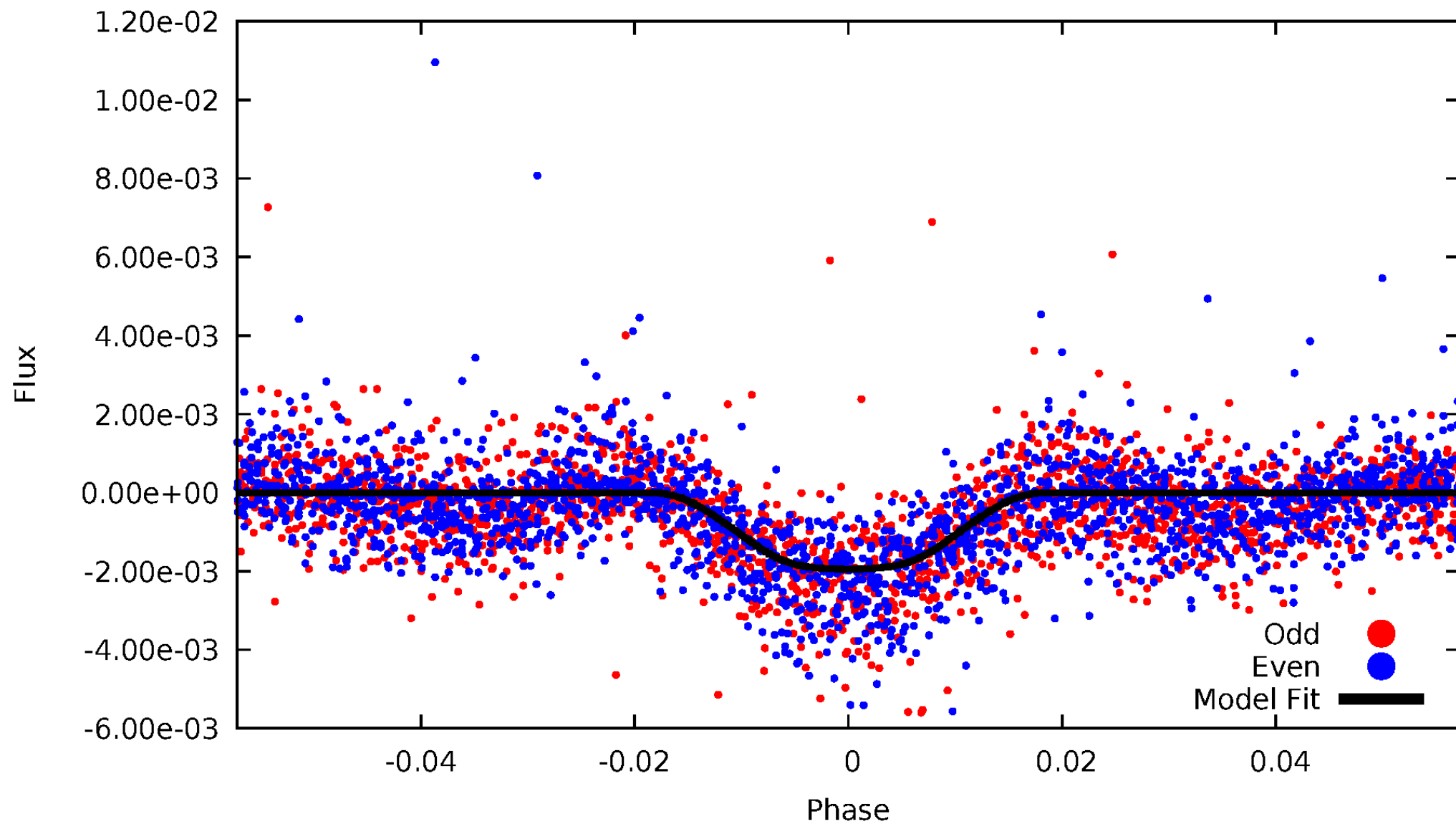


TCE 006209347-02



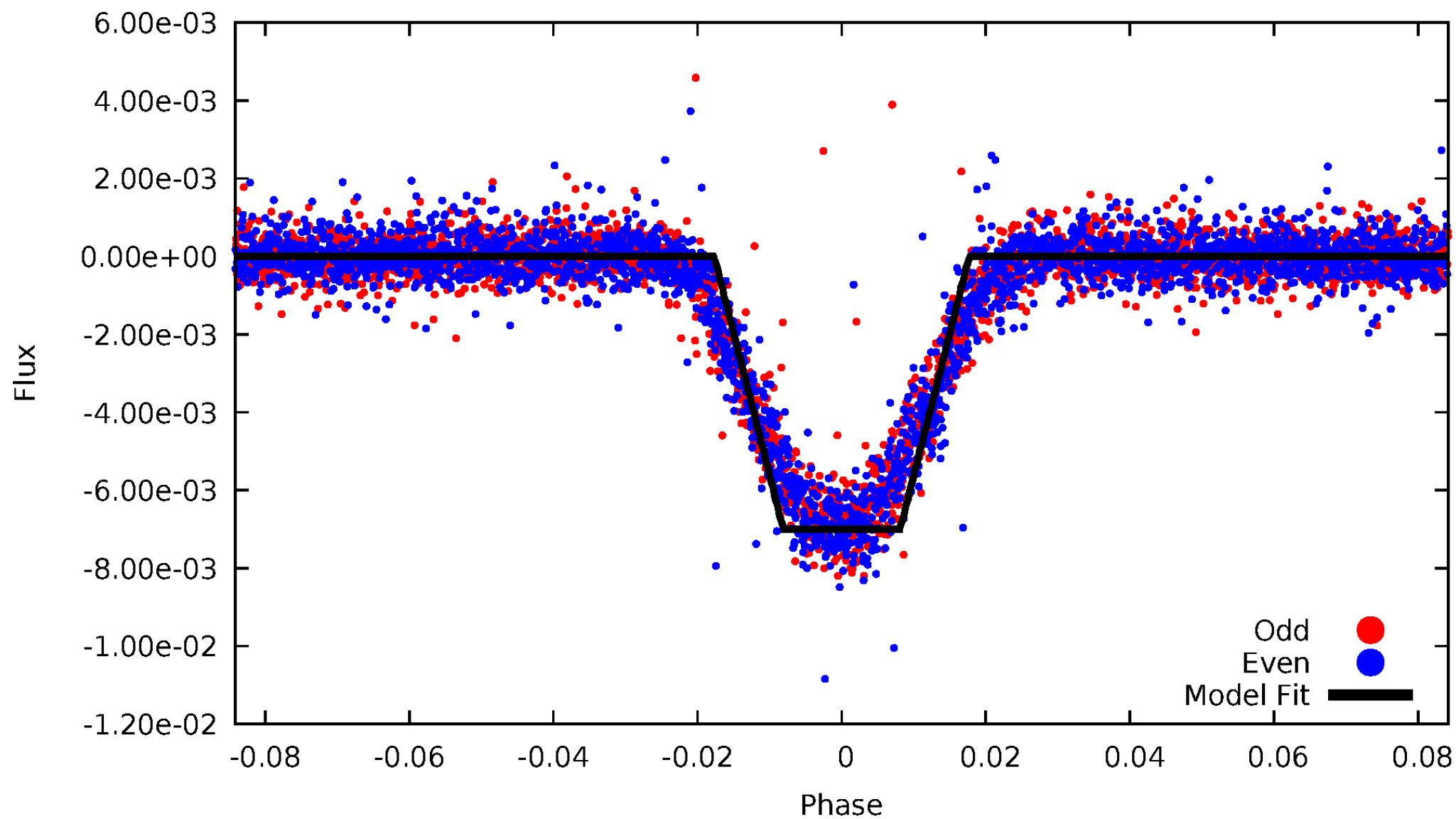
DV Odd/Even

TCE 006209347-02



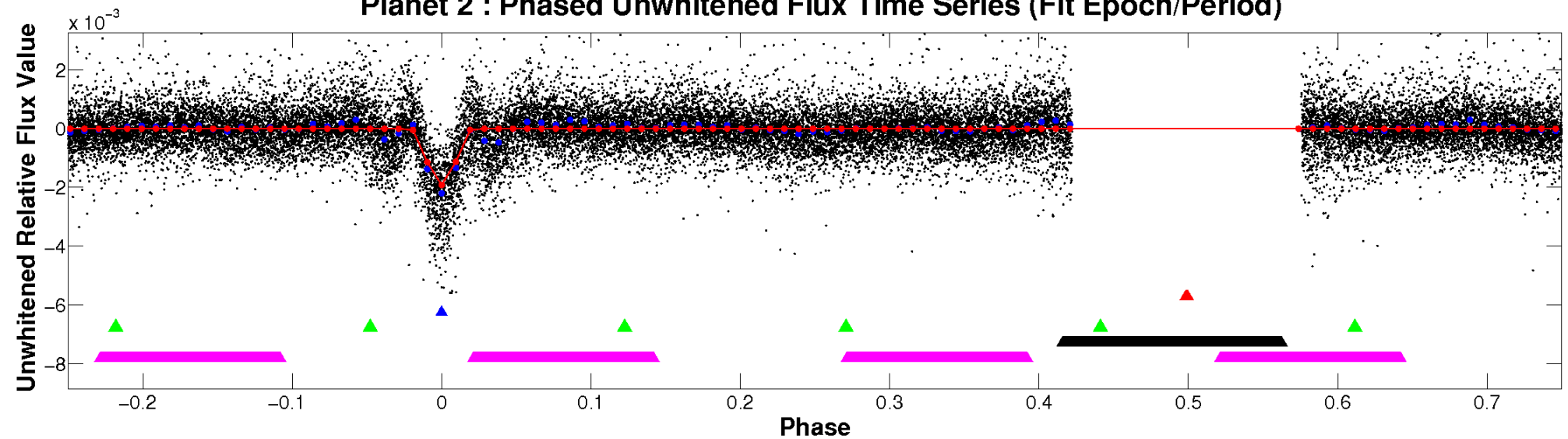
ALT Odd/Even

TCE 006209347-02

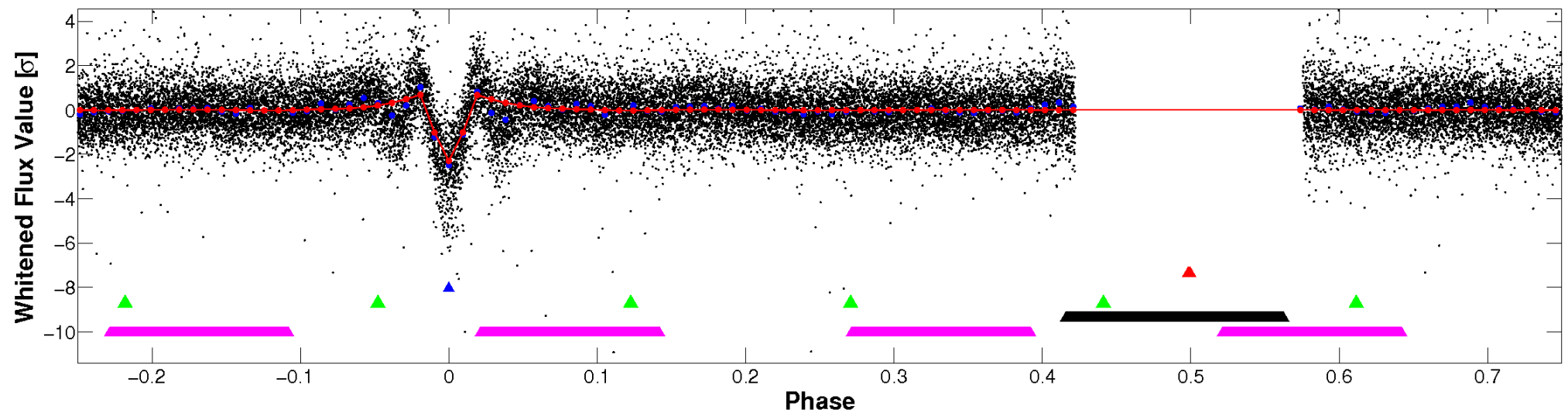


Non-Whitened Vs. Whitened Light Curve

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

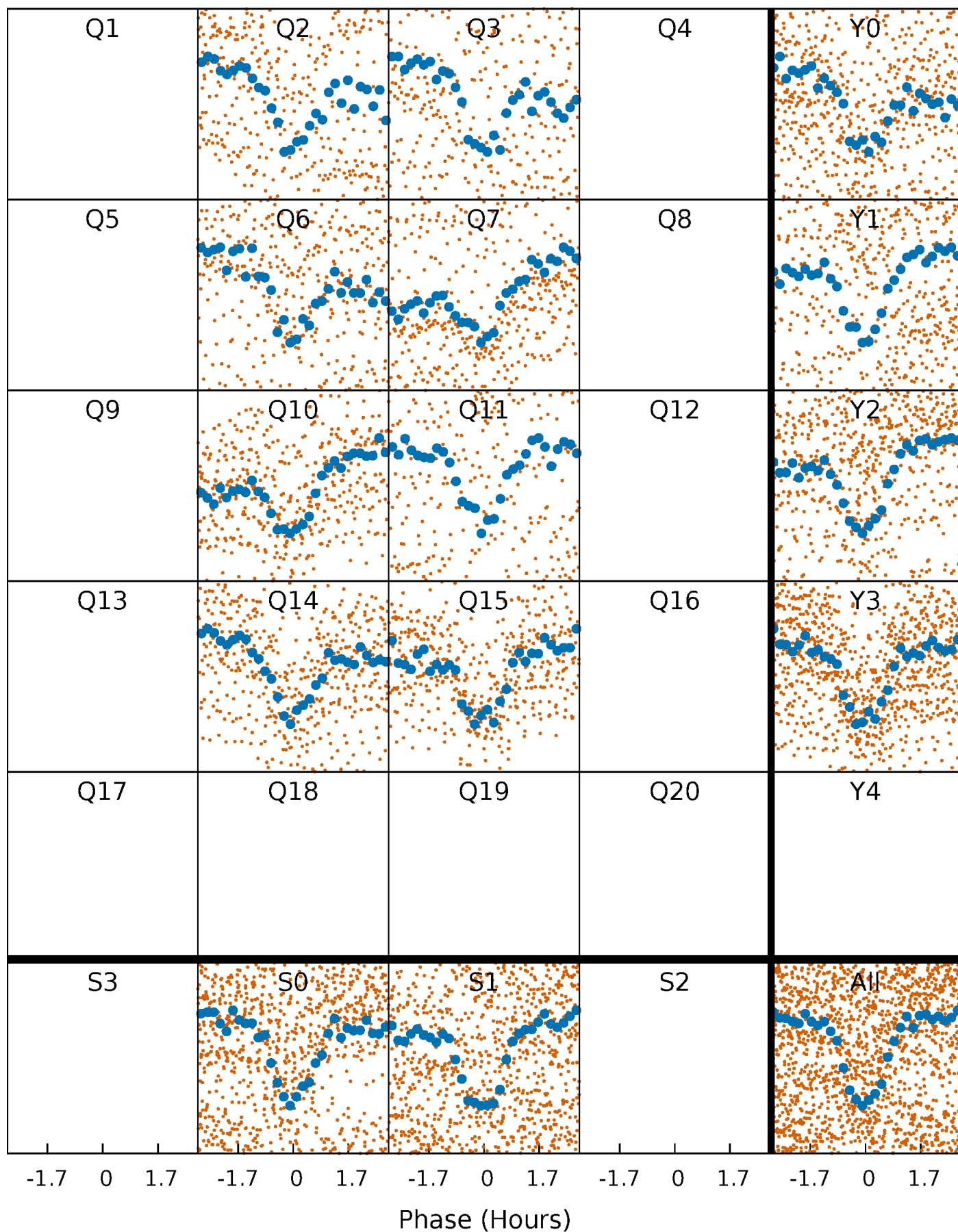


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



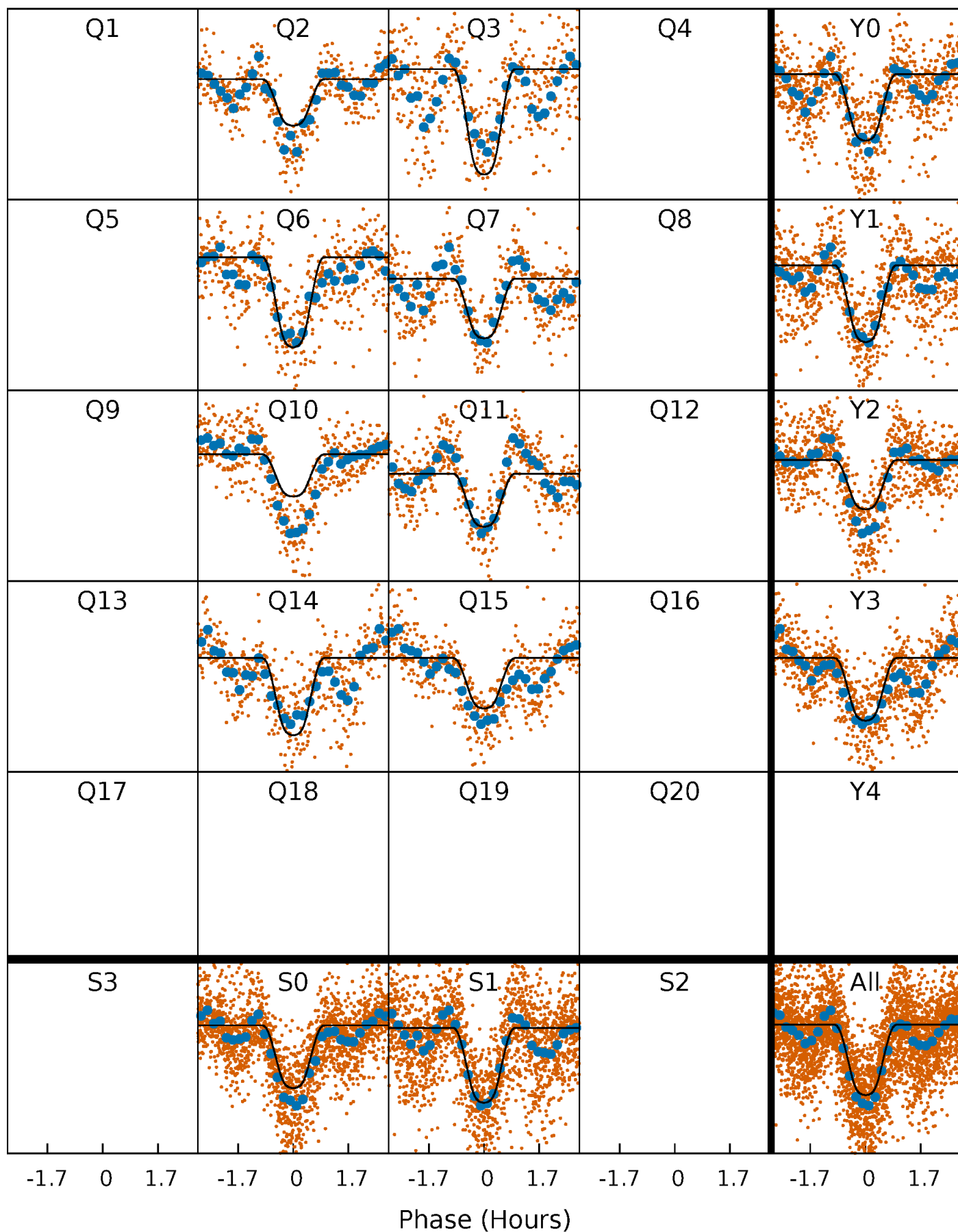
PDC Quarter-Phased Transit Curves

TCE 006209347-02 $P = 2.136579$ Days $T_0 = 131.958967$ (BKJD)



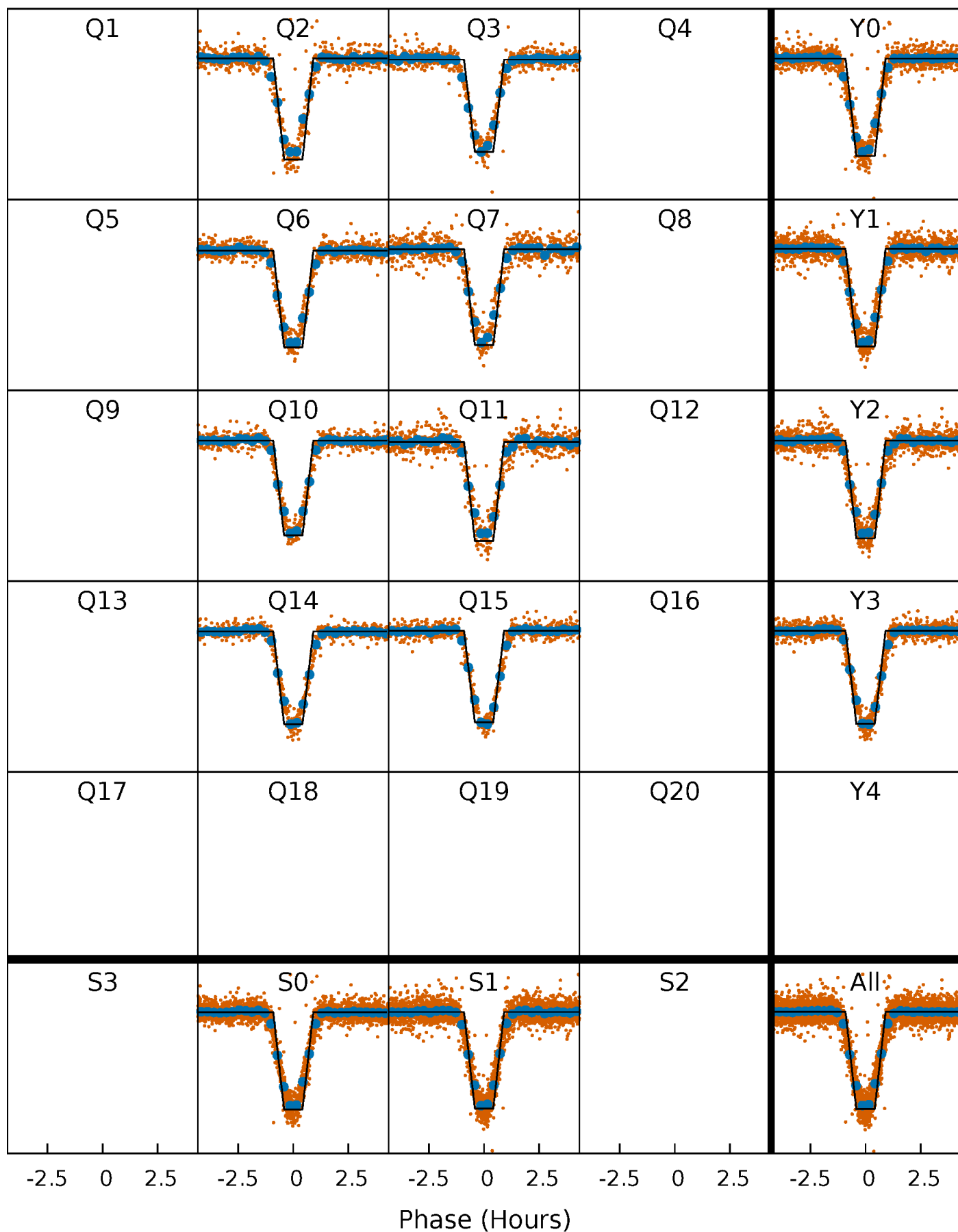
DV Quarter-Phased Transit Curves

TCE 006209347-02 P= 2.136579 Days $T_0=131.958967$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

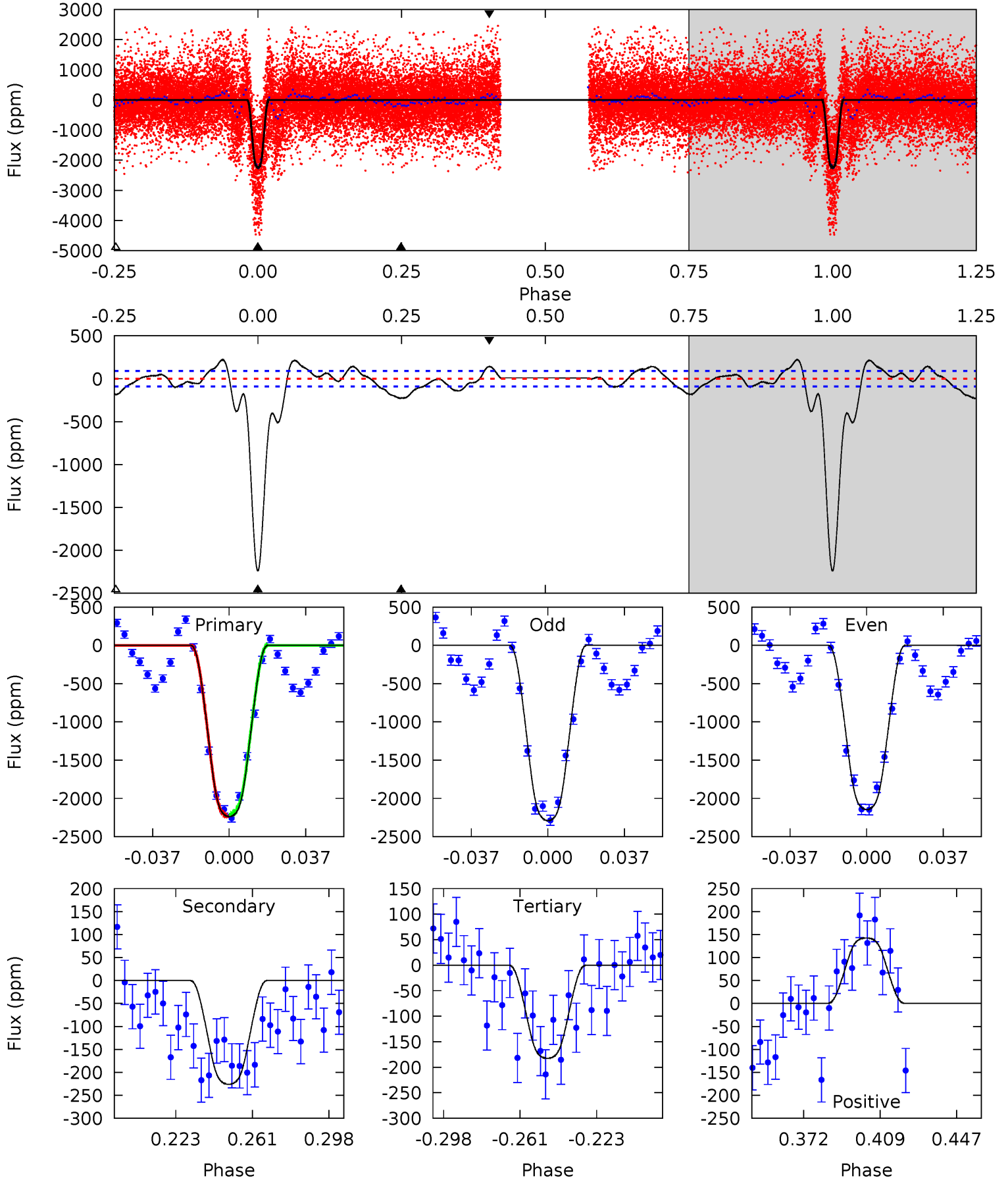
TCE 006209347-02 P= 2.136571 Days $T_0=131.961012$ (BKJD)



DV Model-Shift Uniqueness Test

006209347-02, P = 2.136579 Days, E = 131.958967 Days

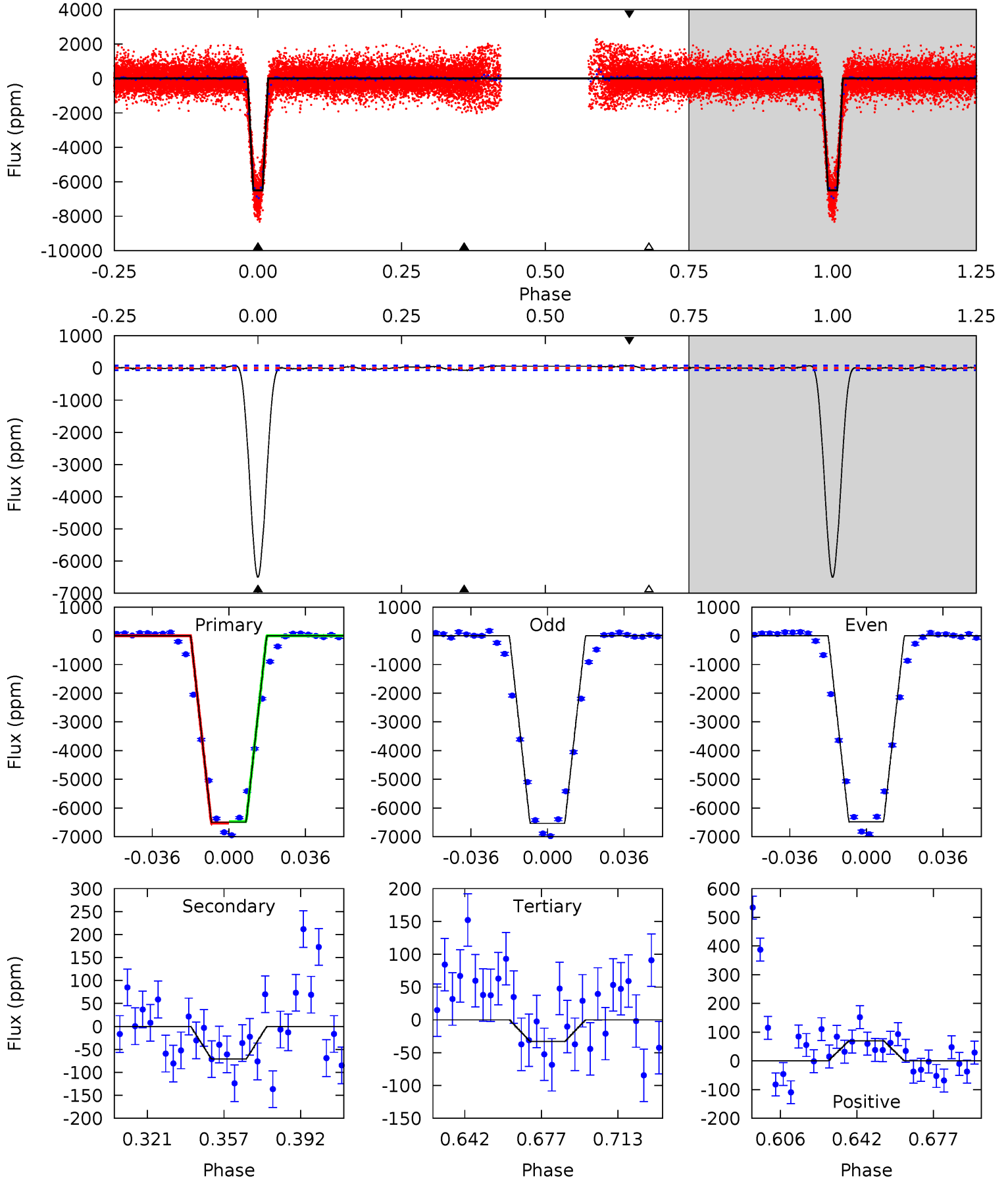
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
119.7	12.1	9.77	7.63	4.77	2.08	5.60	110.0	112.1	2.33	4.47	3.91	1.08	0.09	0.77



Alt Model-Shift Uniqueness Test

006209347-02, P = 2.136571 Days, E = 131.961012 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
428.0	4.69	2.17	4.61	4.78	2.10	1.69	425.9	423.4	2.52	0.08	1.69	0.99	0.01	1.58



Stellar Parameters For KIC 006209347

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5457^{+164}_{-164}	$4.442^{+0.126}_{-0.168}$	$-0.120^{+0.300}_{-0.300}$	$0.905^{+0.200}_{-0.133}$	$0.827^{+0.119}_{-0.064}$	$1.574^{+0.867}_{-0.692}$
	+3%/-3%	+3%/-4%	+250%/-250%	+22%/-15%	+14%/-8%	+55%/-44%
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 006209347-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-226 ± 19	$4.89^{+0.66}_{-0.49}$	1842^{+120}_{-104}	3461^{+97}_{-107}	$4.871^{+1.213}_{-1.143}$
Alt.	-71 ± 15	$8.38^{+1.09}_{-0.83}$	1847^{+118}_{-103}	2308^{+127}_{-245}	$0.517^{+0.177}_{-0.153}$

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 $A_{obs} \gg 1.0$

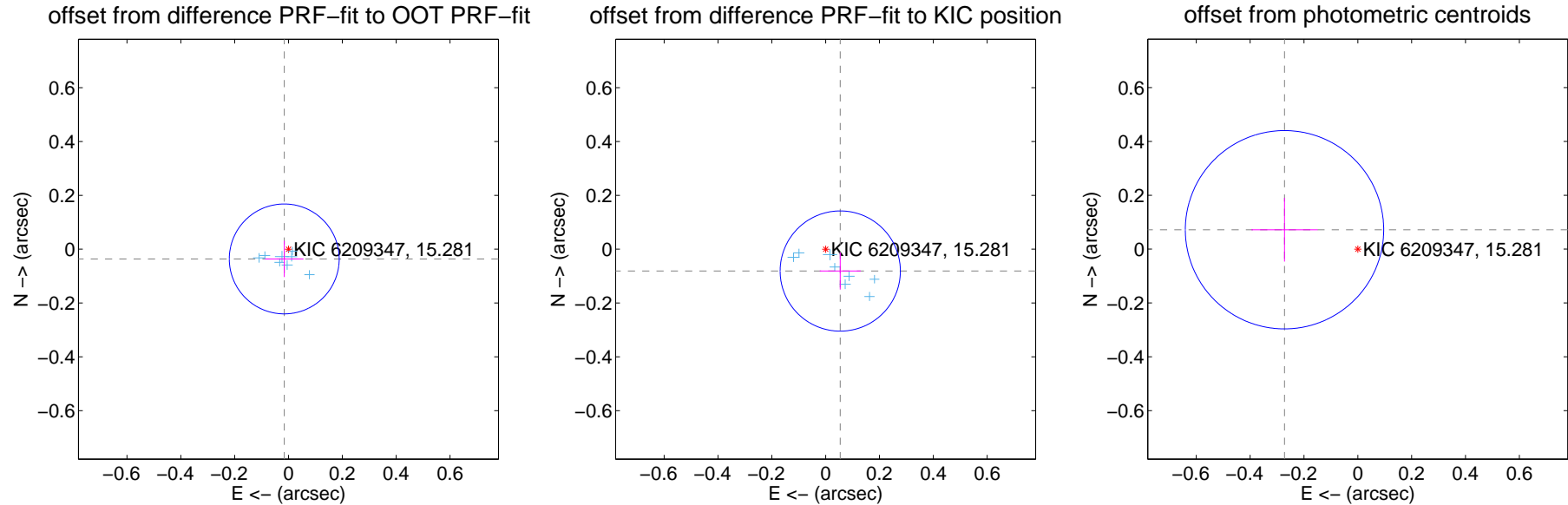
DV Centroid Data

Supplemental centroid analysis for 006209347-02. Kepler magnitude: 15.28. Transit SNR 55.70

There are 8 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	0.040 ± 0.068	0.58	0.016 ± 0.071	-0.036 ± 0.067
PRF-fit source offset from KIC position	0.098 ± 0.074	1.31	-0.054 ± 0.076	-0.081 ± 0.069
photometric centroid source offset	0.28 ± 0.12	2.29	0.27 ± 0.12	0.07 ± 0.12



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.

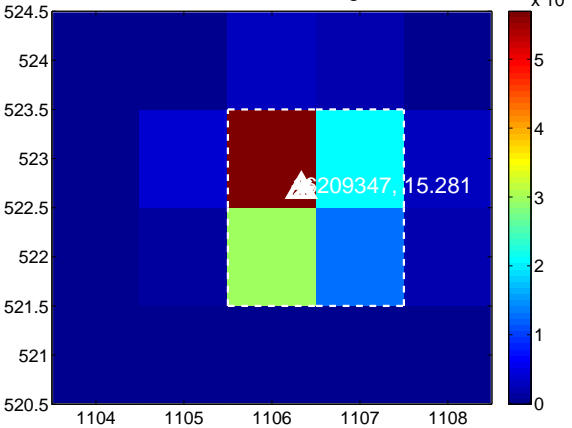
Q1 no difference image



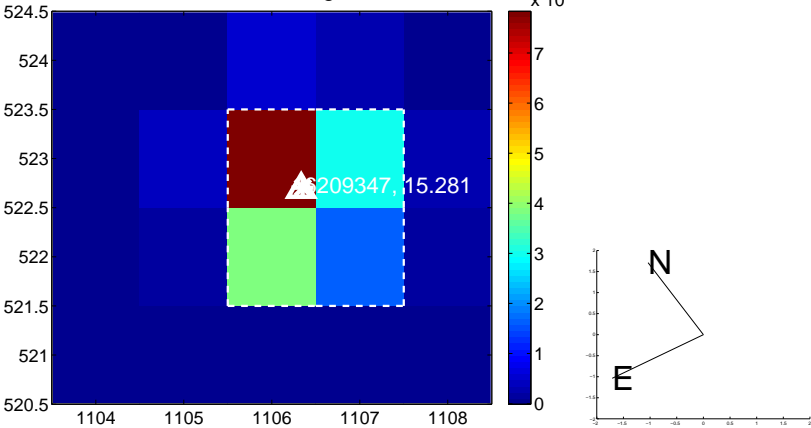
Q1 no OOT image



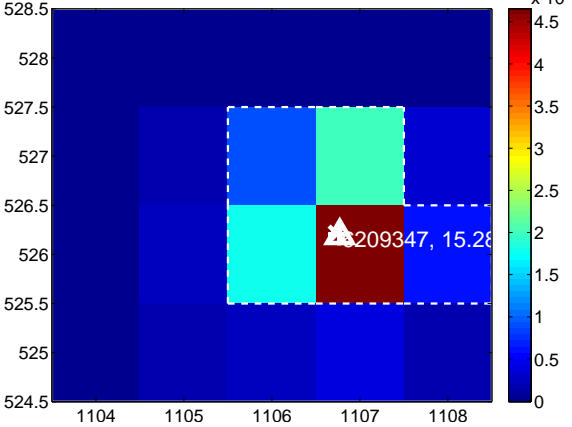
Q2 difference image



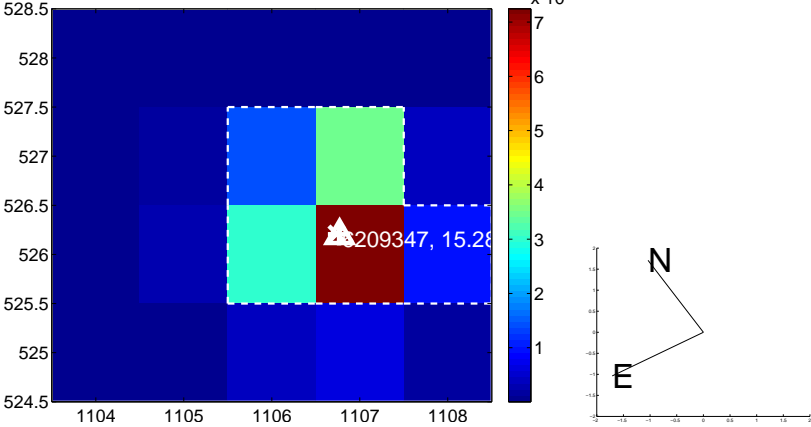
Q2 OOT image



Q3 difference image



Q3 OOT image



Q4 no difference image



Q4 no OOT image



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

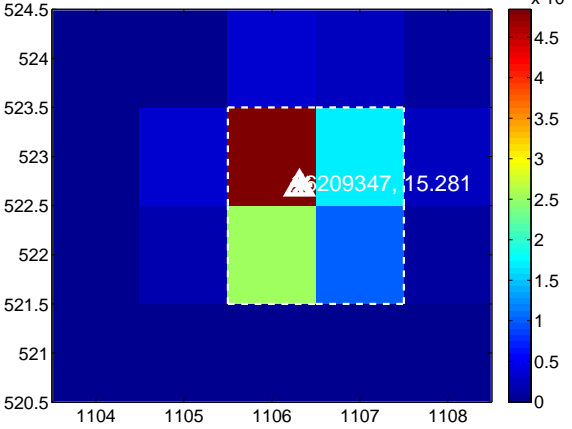
Q5 no difference image



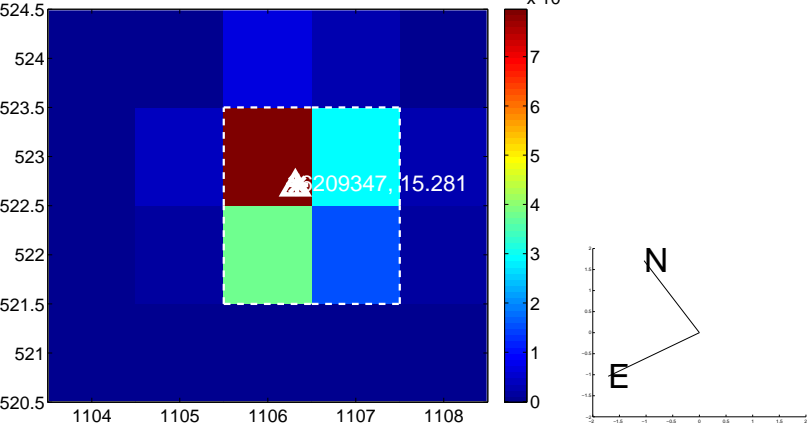
Q5 no OOT image



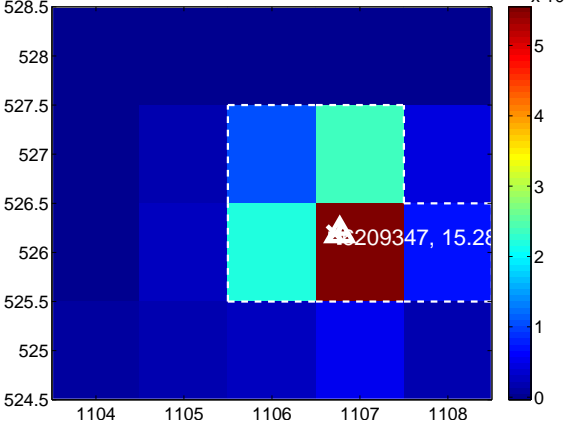
Q6 difference image



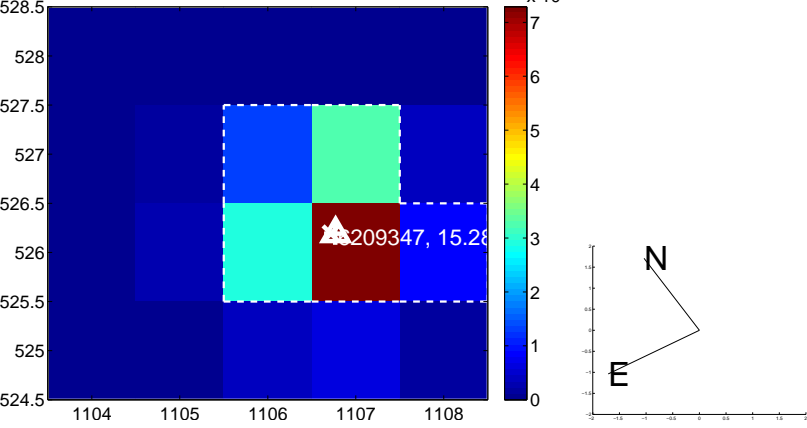
Q6 OOT image



Q7 difference image



Q7 OOT image



Q8 no difference image



Q8 no OOT image



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

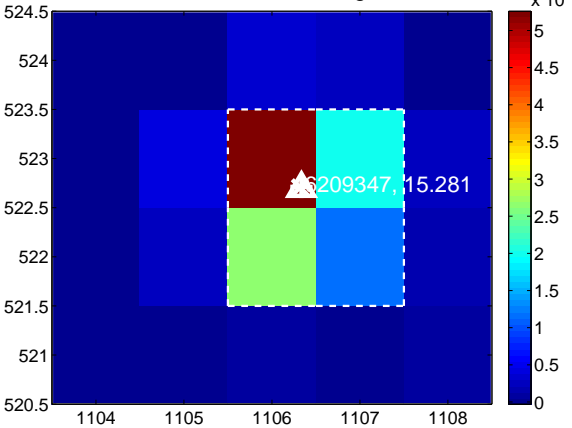
Q9 no difference image



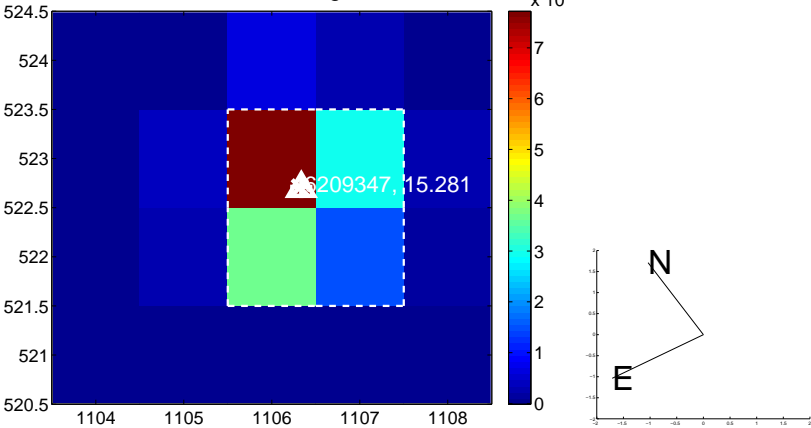
Q9 no OOT image



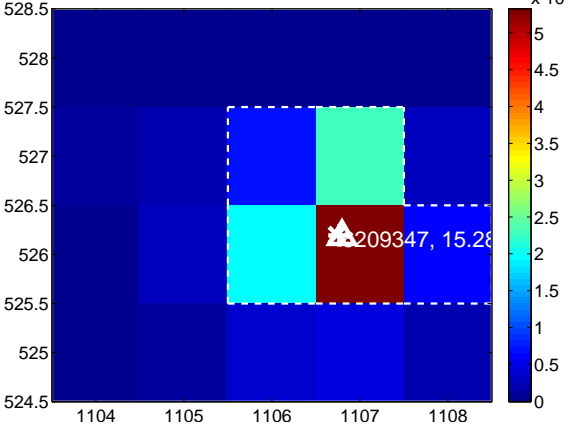
Q10 difference image



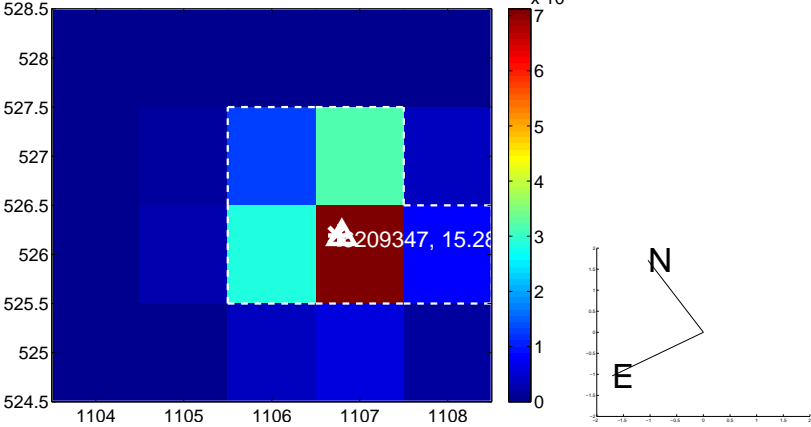
Q10 OOT image



Q11 difference image



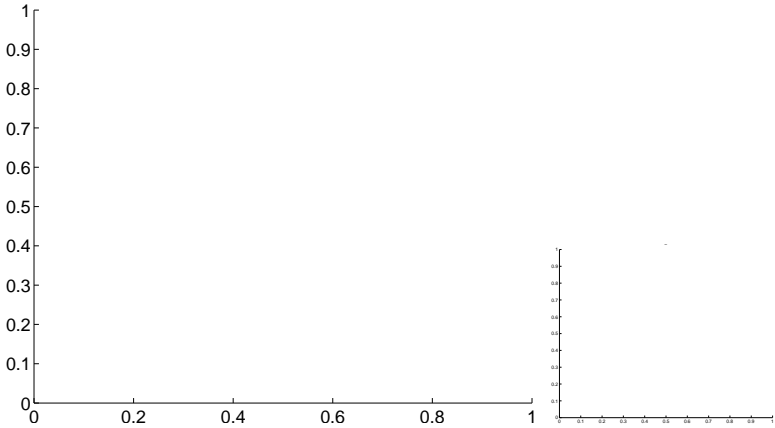
Q11 OOT image



Q12 no difference image



Q12 no OOT image



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

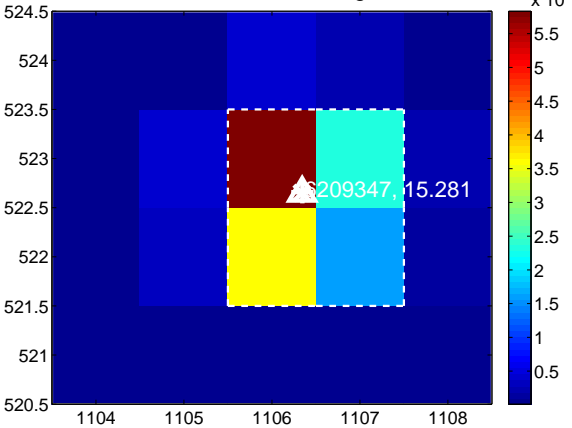
Q13 no difference image



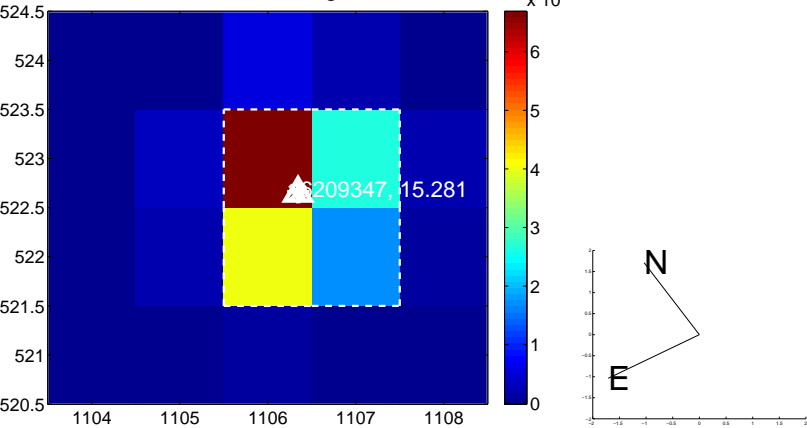
Q13 no OOT image



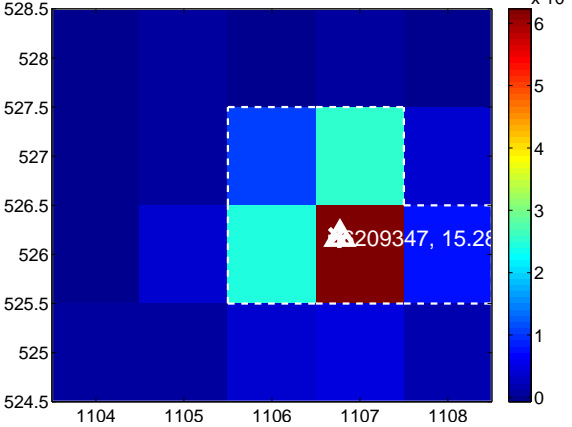
Q14 difference image



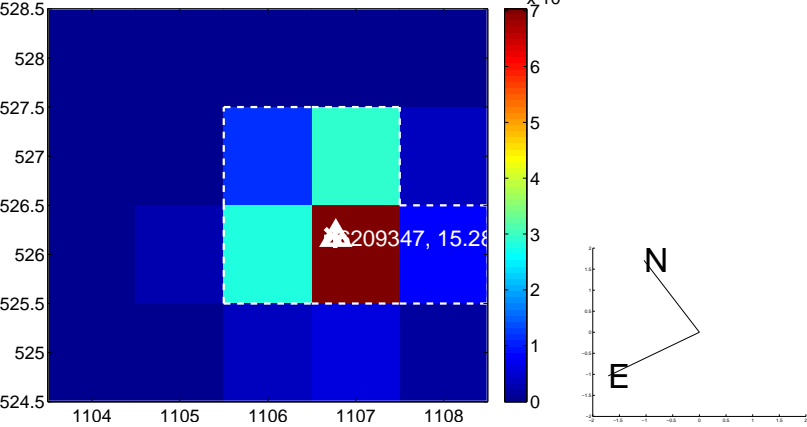
Q14 OOT image



Q15 difference image



Q15 OOT image



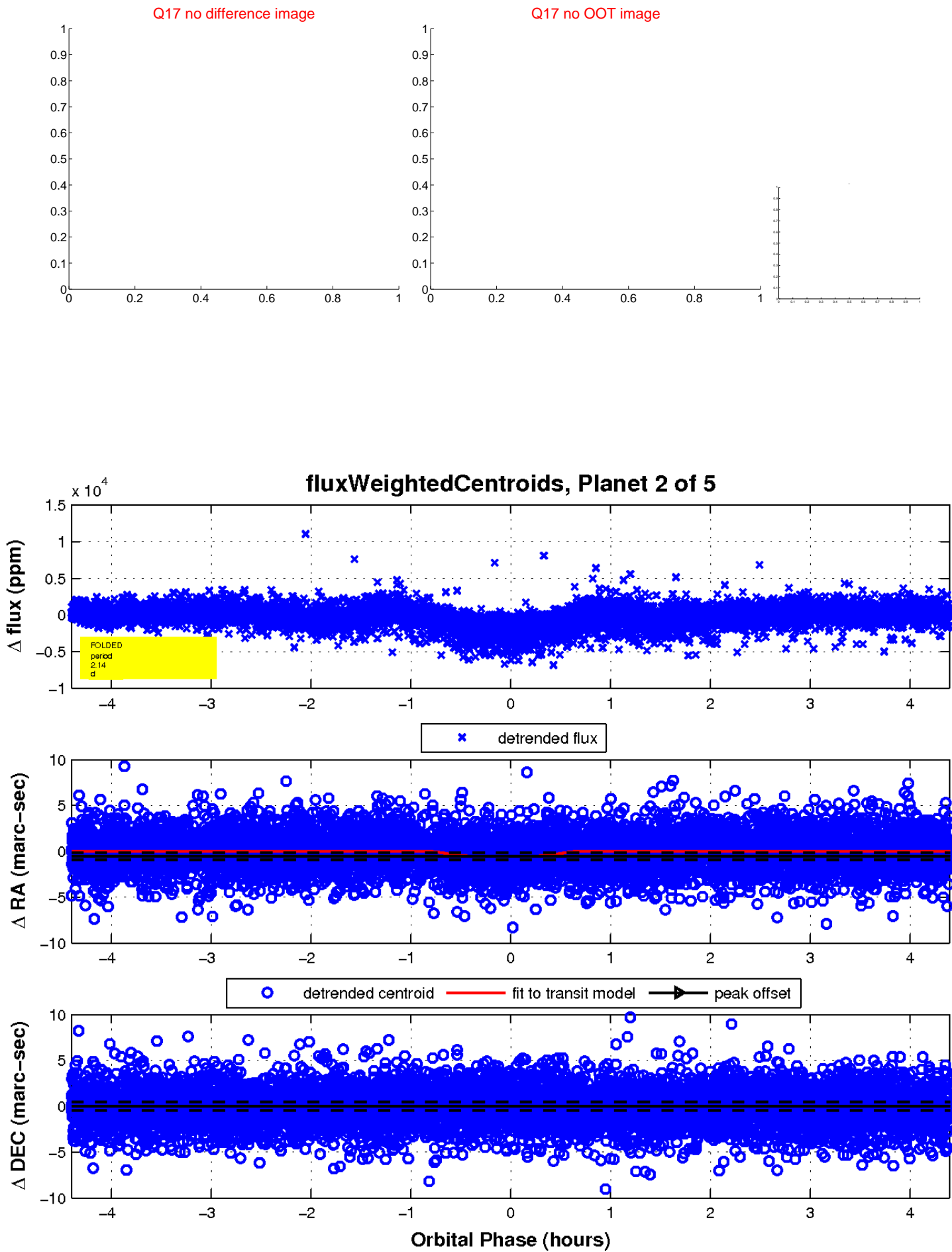
Q16 no difference image



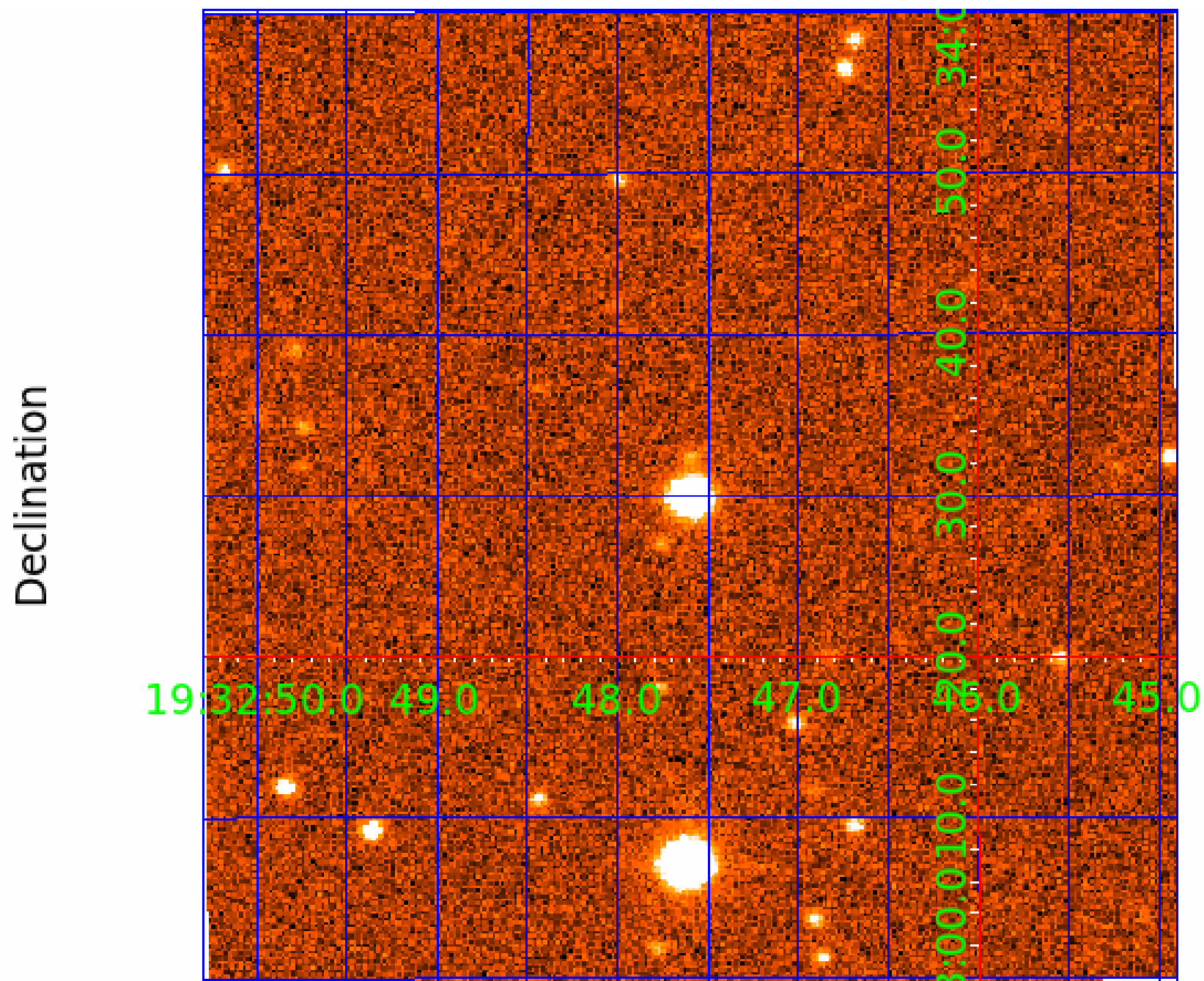
Q16 no OOT image



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



UKIRT Image



KIC 006209347

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})
006209347-01	OBS	6025.01	2.136584	133.023286	76286.4	2.474	2126.3	1472.5	0.91	5457	36.35	700.67
006209347-02	OBS	No	2.136579	131.958967	1951.5	1.466	48.0	55.7	0.91	5457	4.83	700.68
006209347-03	OBS	No	241.069485	224.093816	1719.9	3.864	10.9	5.4	0.91	5457	3.77	1.28
006209347-04	OBS	No	2.136120	133.160806	359.5	10.316	9.0	6.0	0.91	5457	1.91	700.88
006209347-05	OBS	No	0.534239	132.004678	169.0	1.615	10.8	5.9	0.91	5457	1.16	4447.97

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006209347-01	OBS	FP	0.03	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
006209347-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
006209347-03	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006209347-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—RESIDUAL_TCE—HALO_GHOST
006209347-05	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—HALO_GHOST

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

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

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

Ephemeris Match Information For 006209347-03

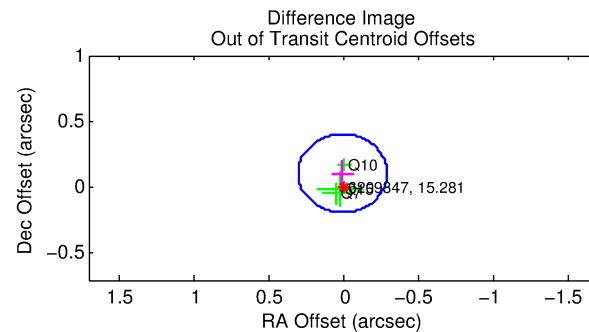
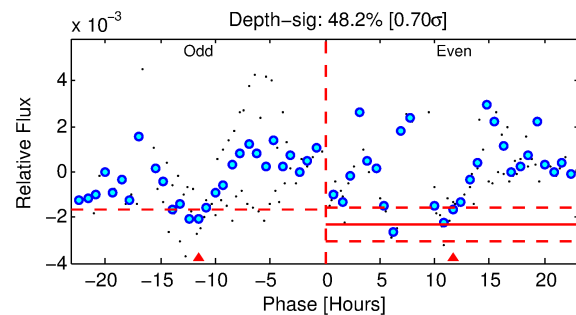
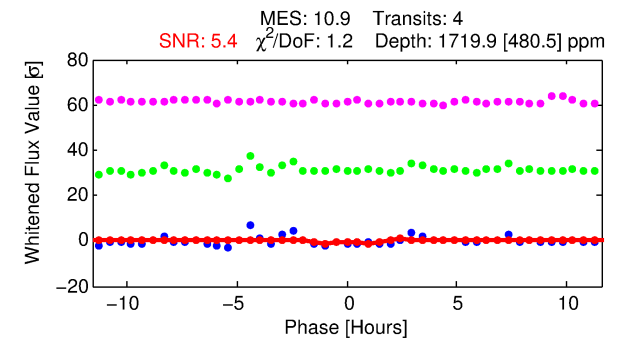
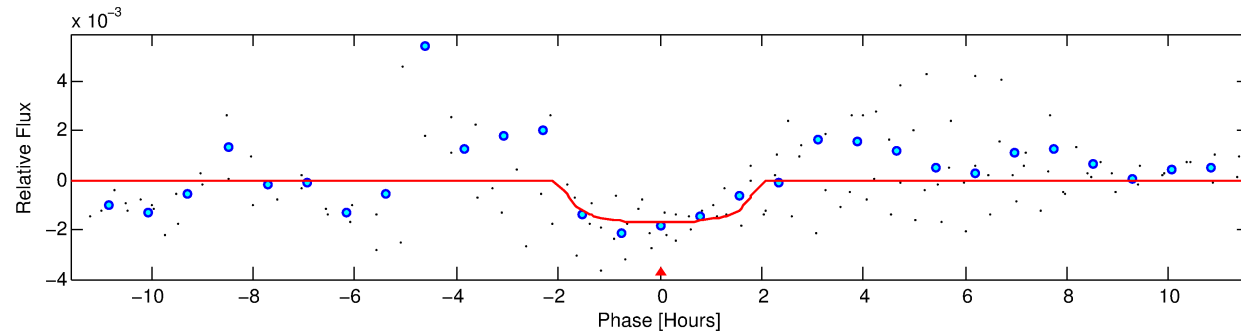
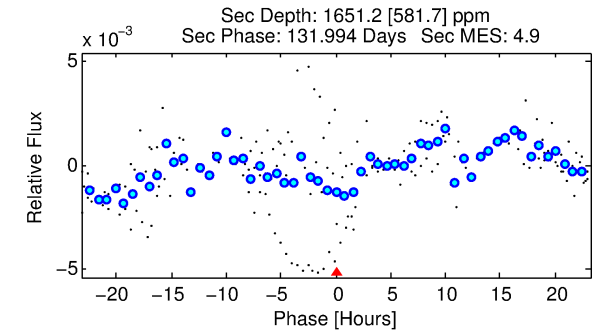
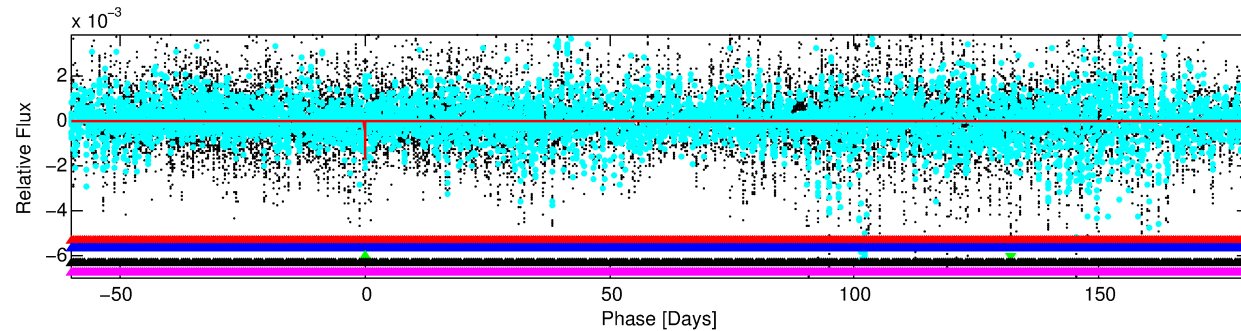
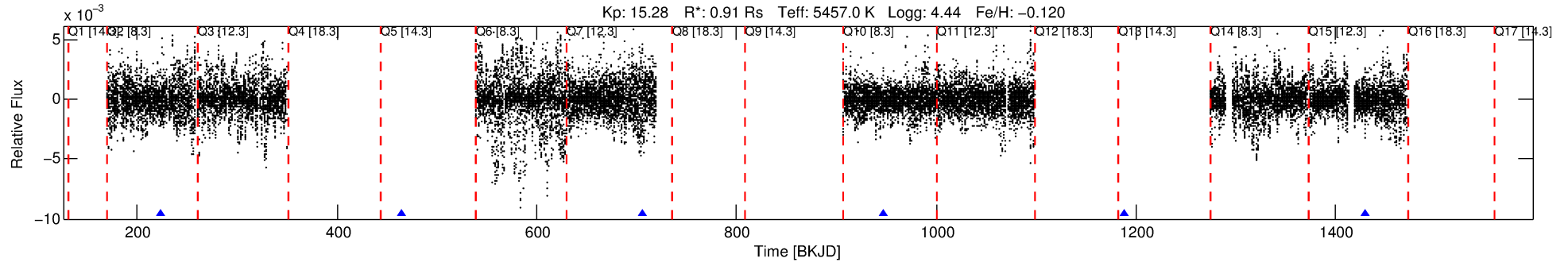
No Significant Match Found

DV One-Page Summary

KIC: 6209347 Candidate: 3 of 5 Period: 241.069 d

KOI: K06025 Corr: No Ephemeris Match

Kp: 15.28 R*: 0.91 Rs Teff: 5457.0 K Logg: 4.44 Fe/H: -0.120



DV Fit Results:

Period = 241.06949 [0.00385] d
Epoch = 224.0938 [0.0131] BKJD
Rp/R* = 0.0382 [0.0855]
a/R* = 455.32 [4001.55]
b = 0.41 [18.26]
Seff = 1.29 [0.41]
Teq = 271 [22] K
Rp = 3.77 [8.49] Re
a = 0.7116 [0.1393] AU
Ag = 32342.44 [145637.82] [0.22σ]
Teffp = 5629 [6326] K [0.85σ]

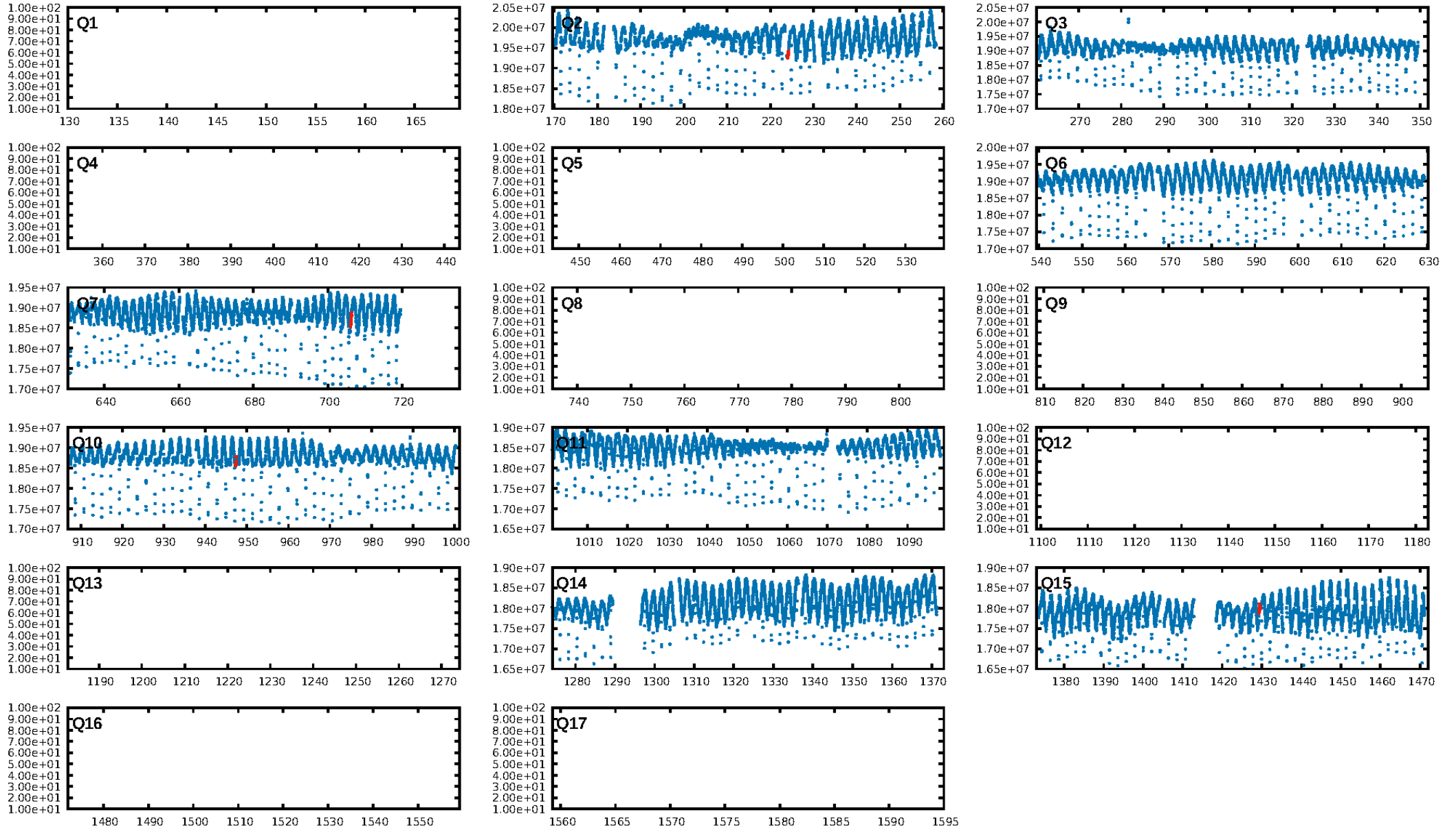
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1249.73σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 43.1%
ModelChiSquareGof-sig: 99.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.8685
Centroid-sig: 82.8%
Centroid-so: 0.208 arcsec [0.30σ]
OotOffset-rm: 0.107 arcsec [1.08σ]
OotOffset-st: 1/2/0/0 [3]
KicOffset-rm: 0.123 arcsec [1.30σ]
KicOffset-st: 1/2/0/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 0.00 [0/3]

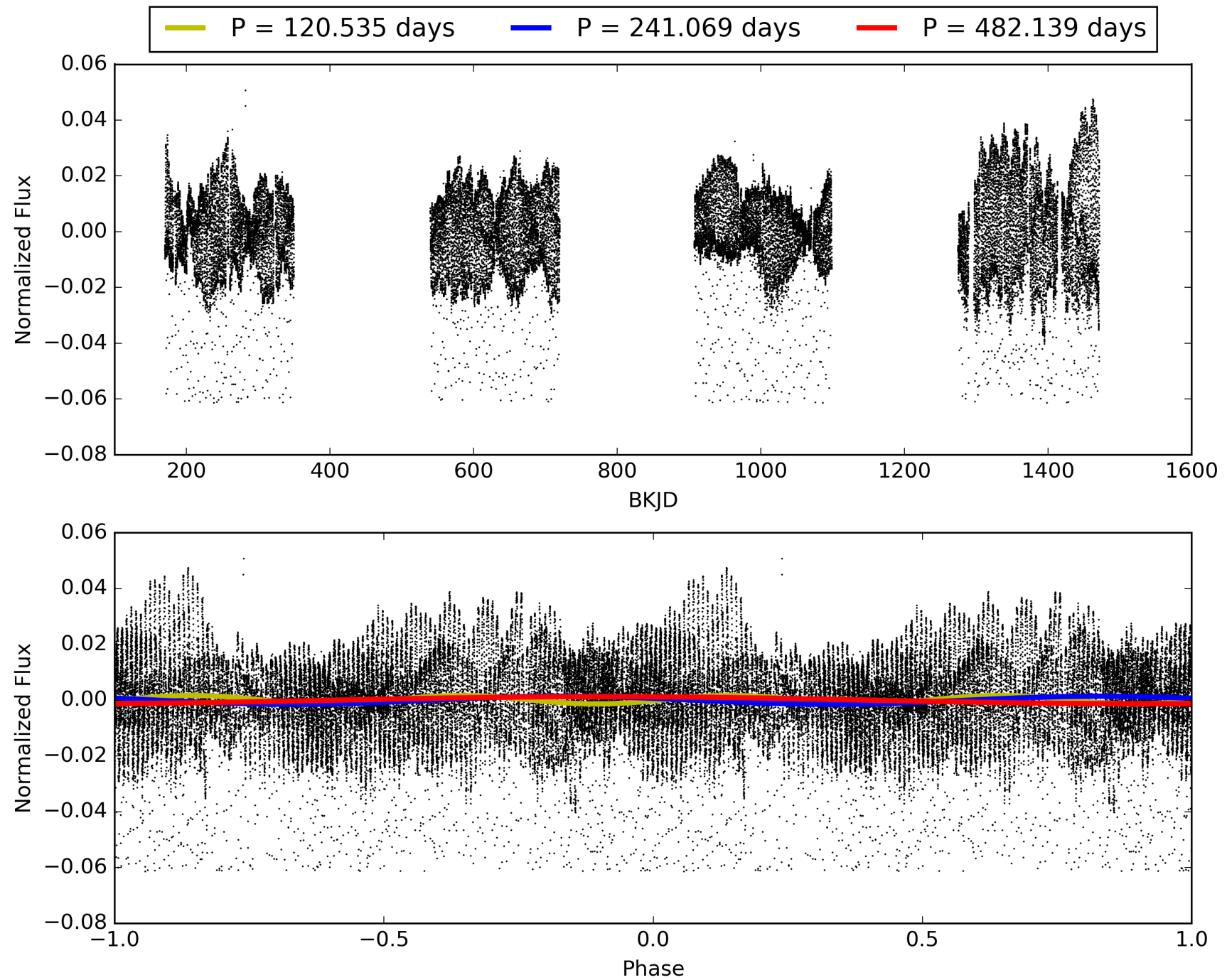
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 09:05:22 Z

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

TCE 006209347-03, PDC Light Curves

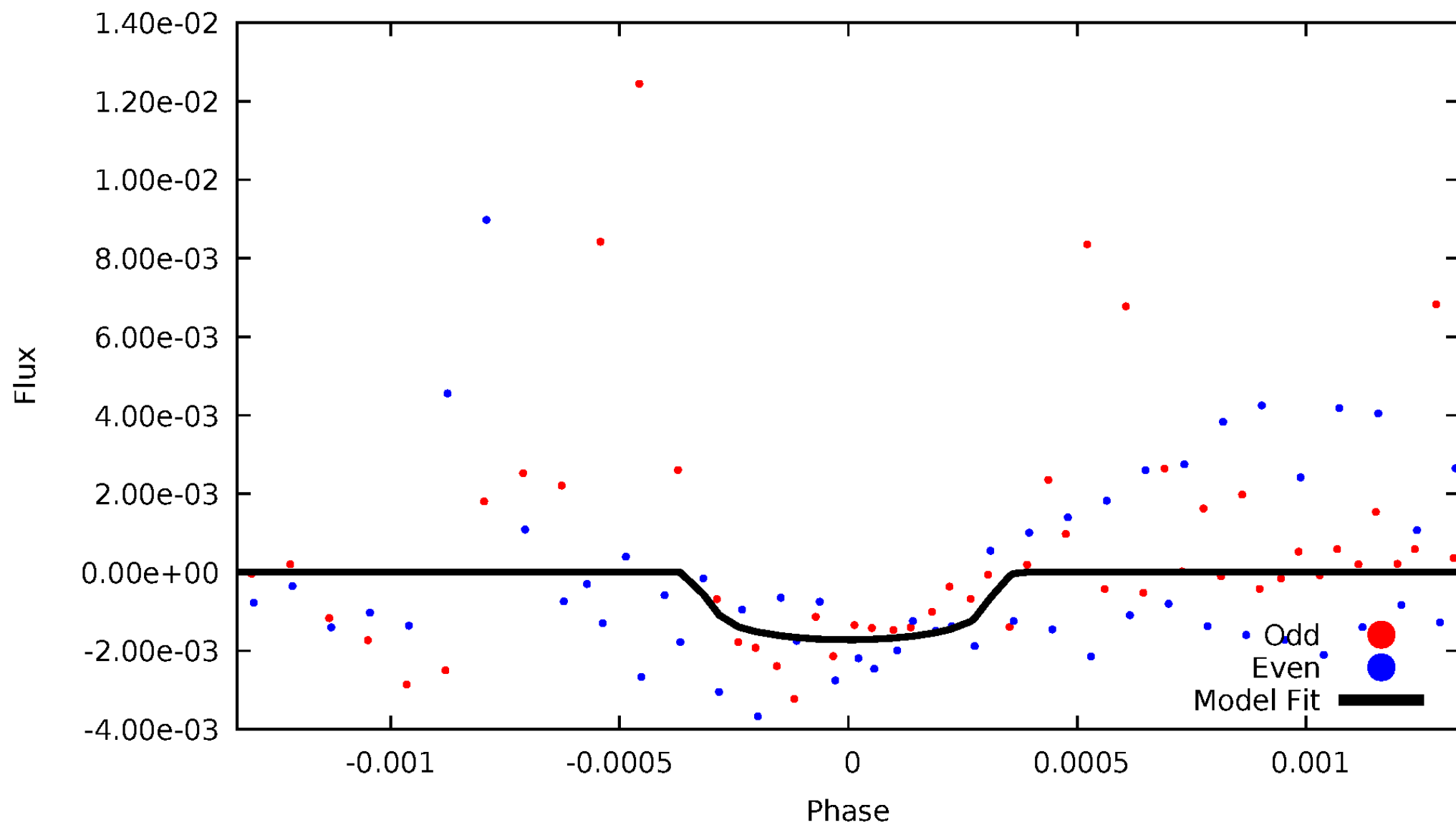


TCE 006209347-03



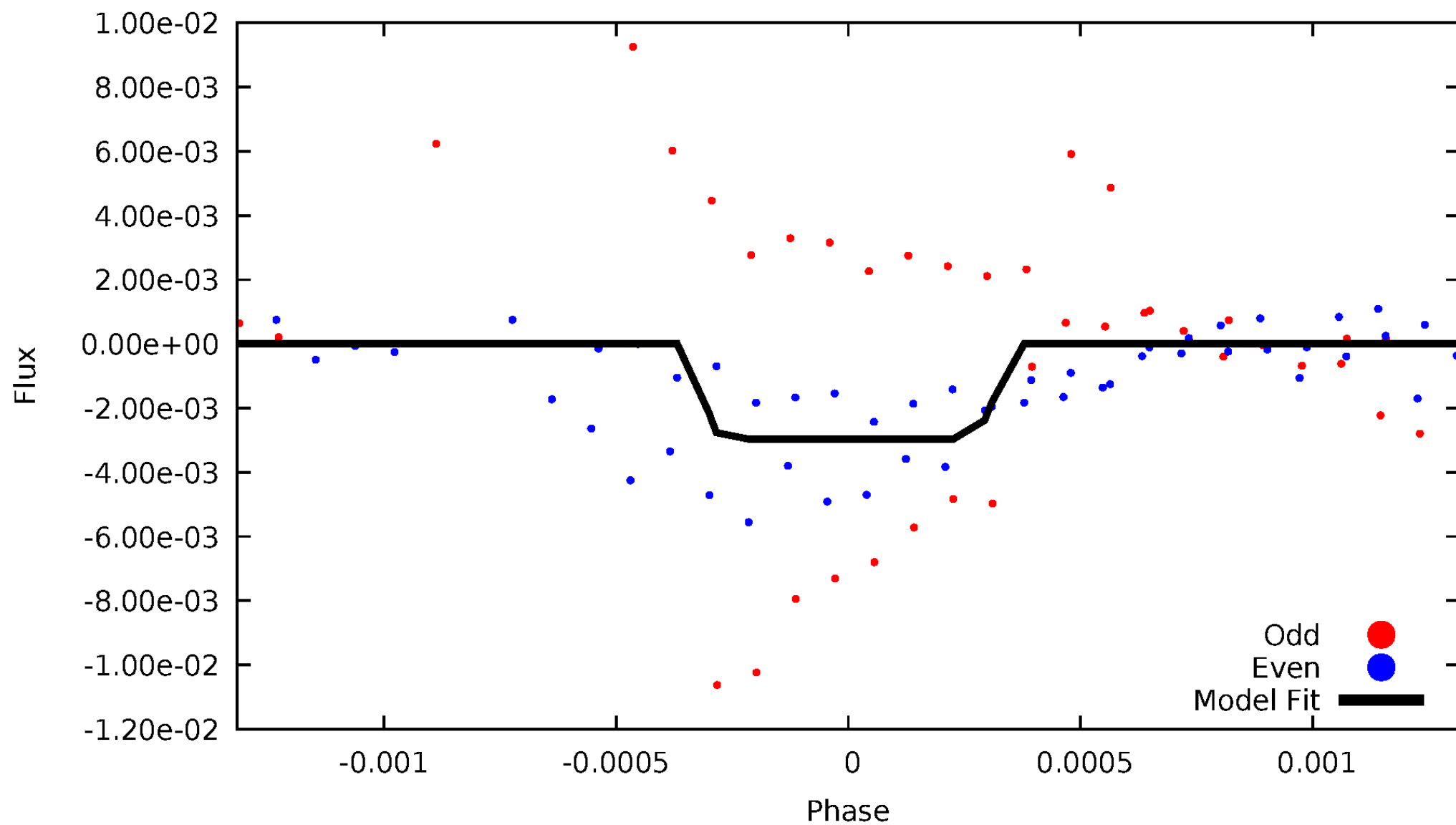
DV Odd/Even

TCE 006209347-03



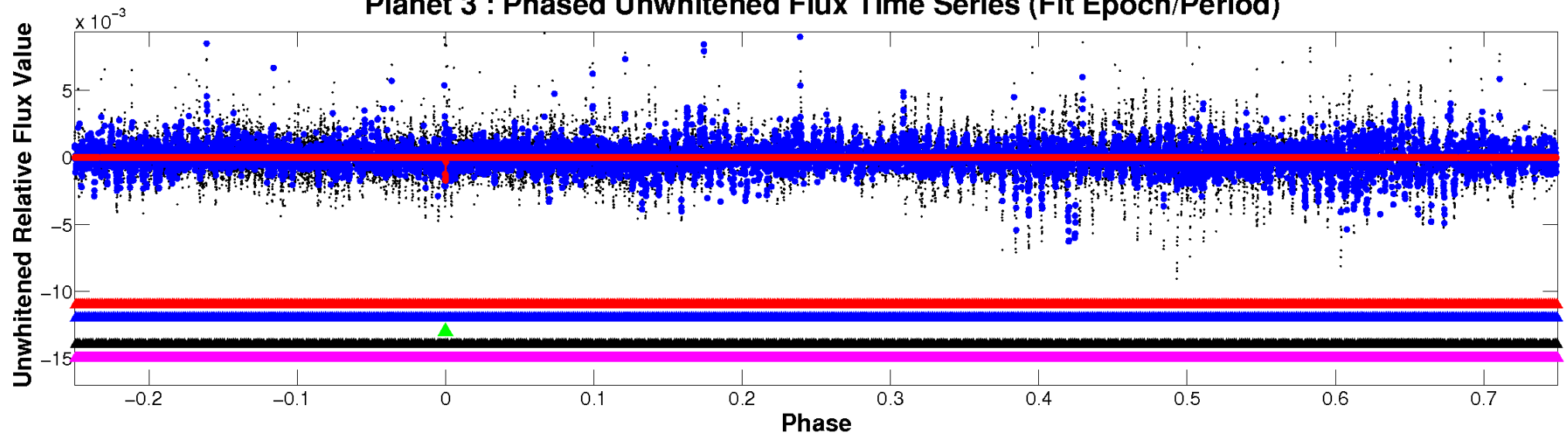
ALT Odd/Even

TCE 006209347-03

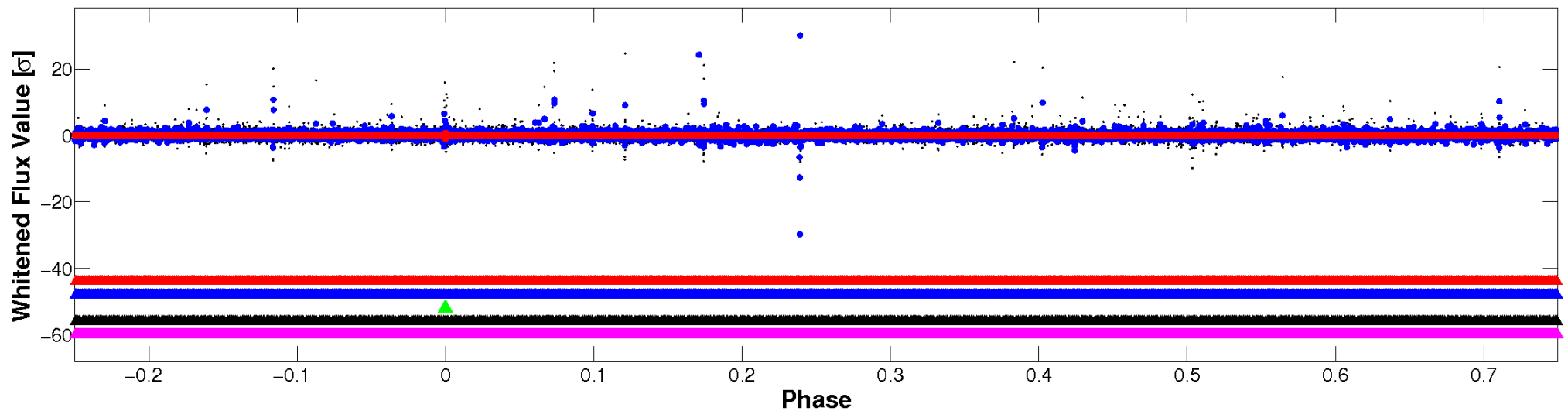


Non-Whitened Vs. Whitened Light Curve

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

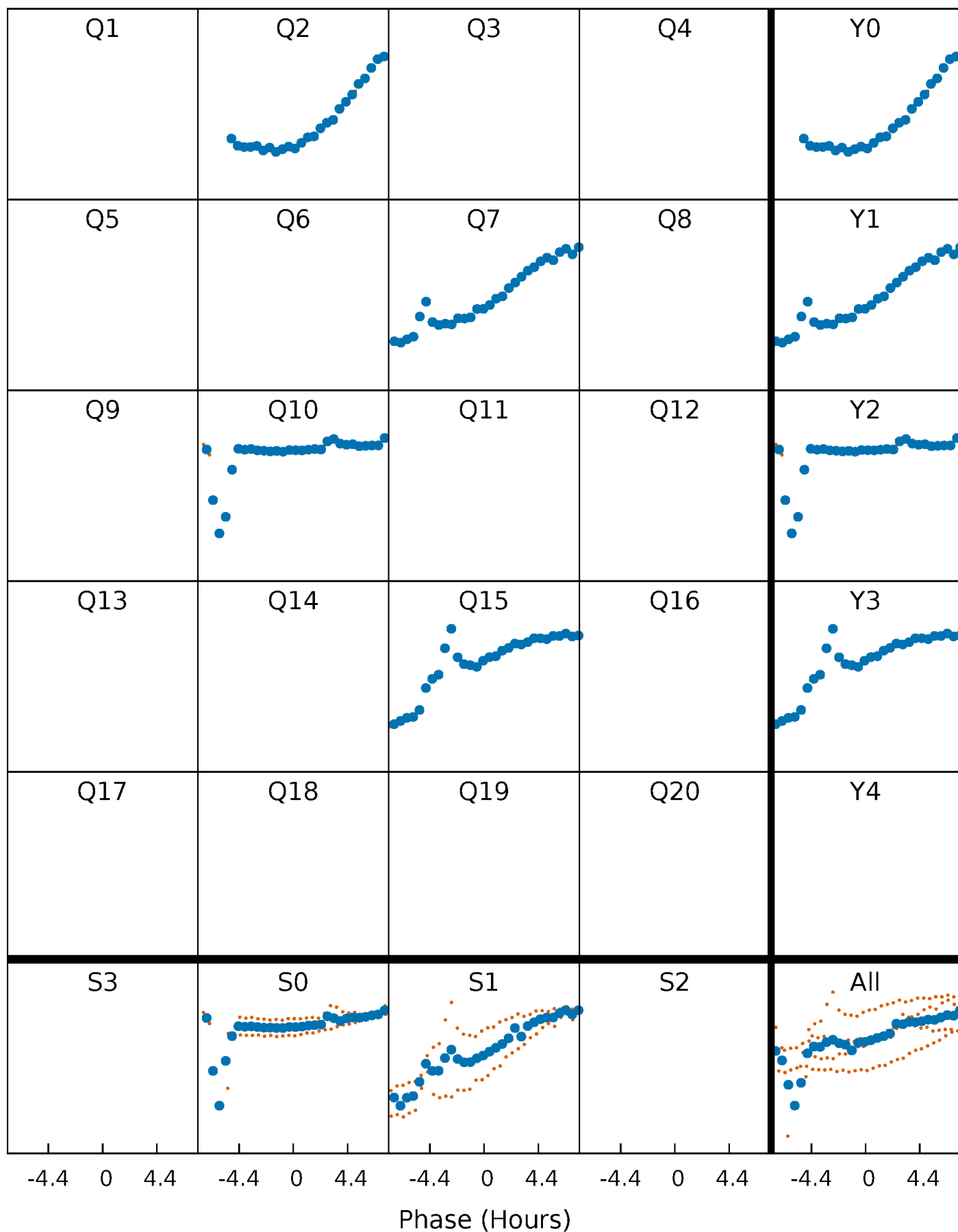


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



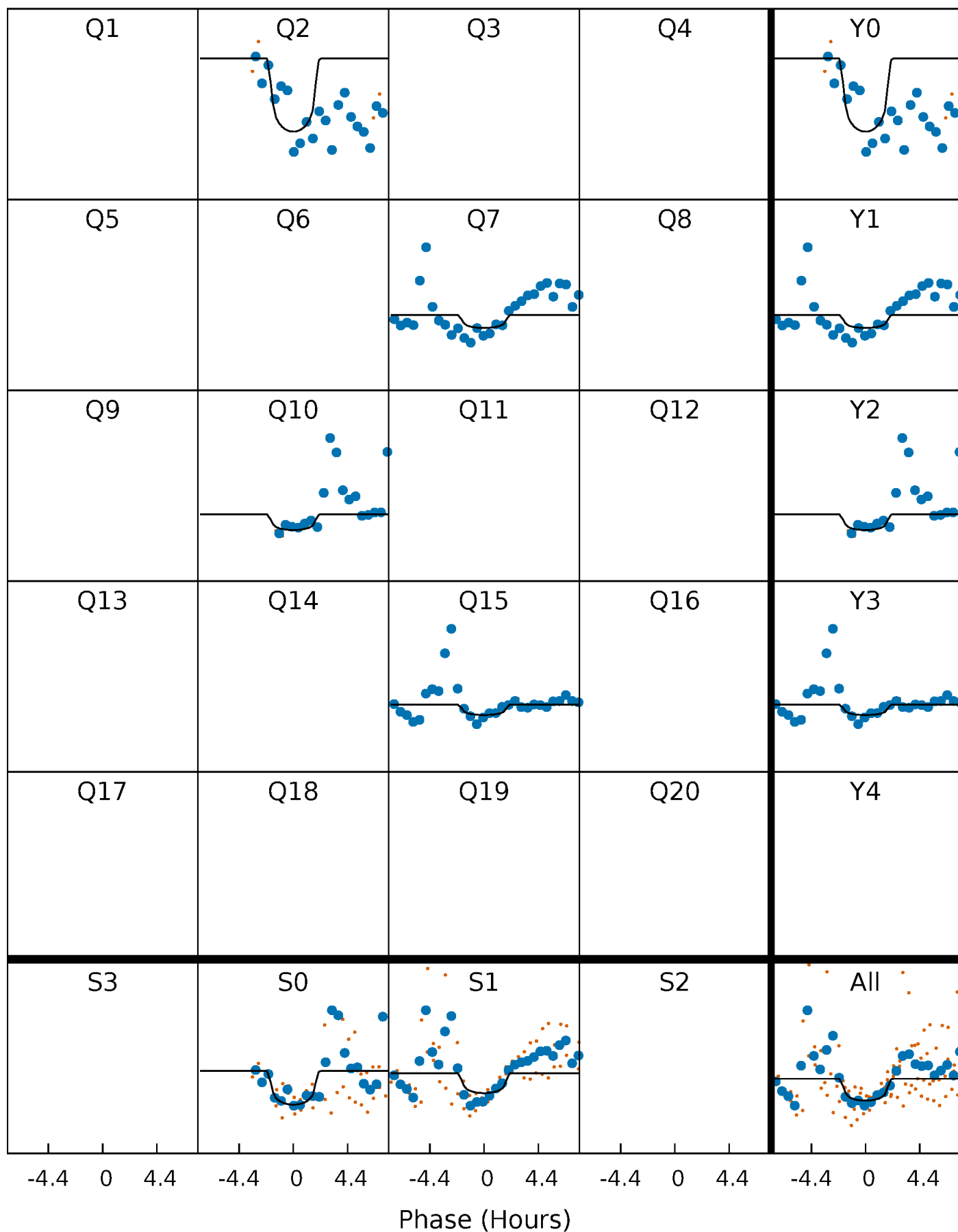
PDC Quarter-Phased Transit Curves

TCE 006209347-03 P=241.069486 Days $T_0=224.093816$ (BKJD)



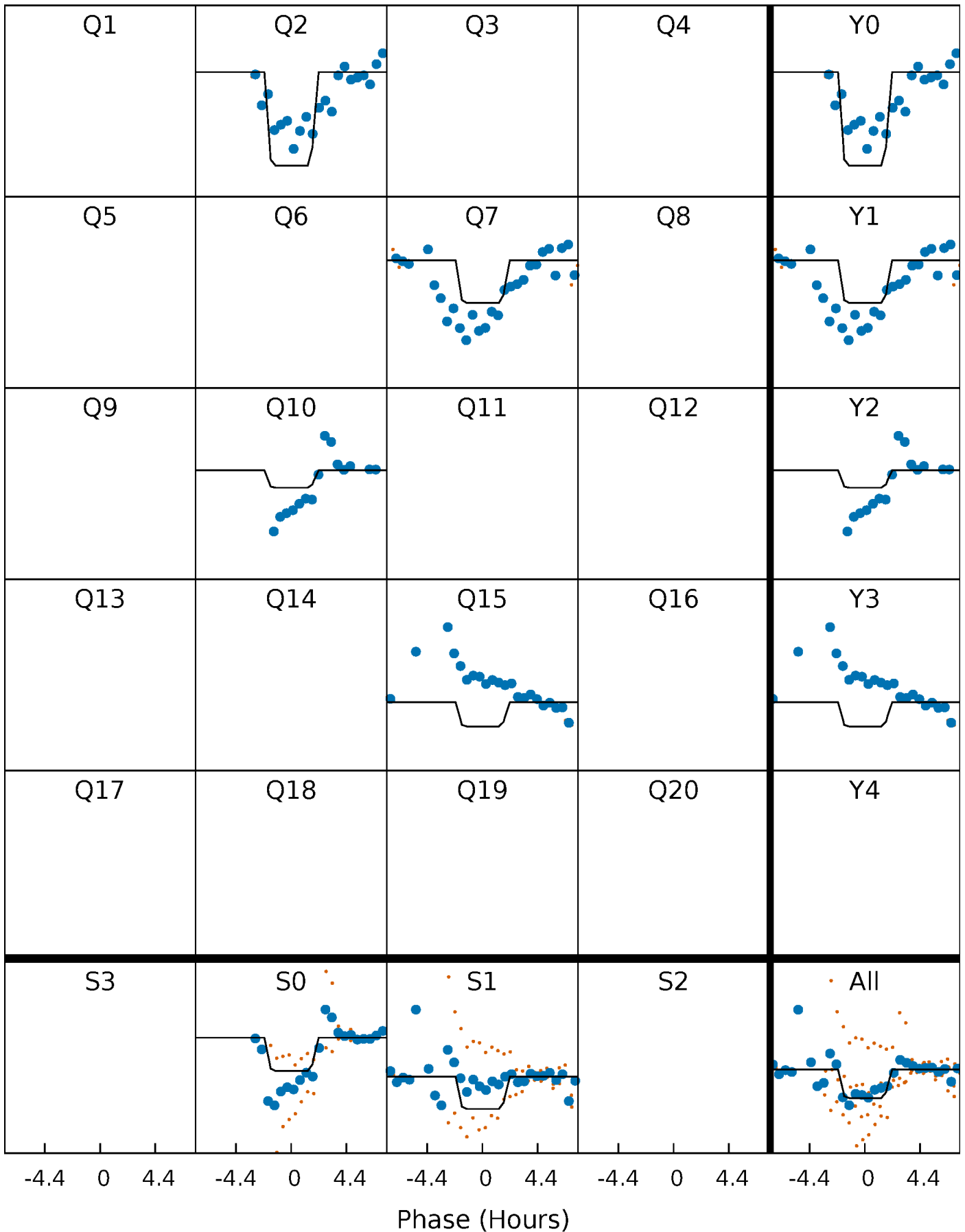
DV Quarter-Phased Transit Curves

TCE 006209347-03 $P=241.069486$ Days $T_0=224.093816$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

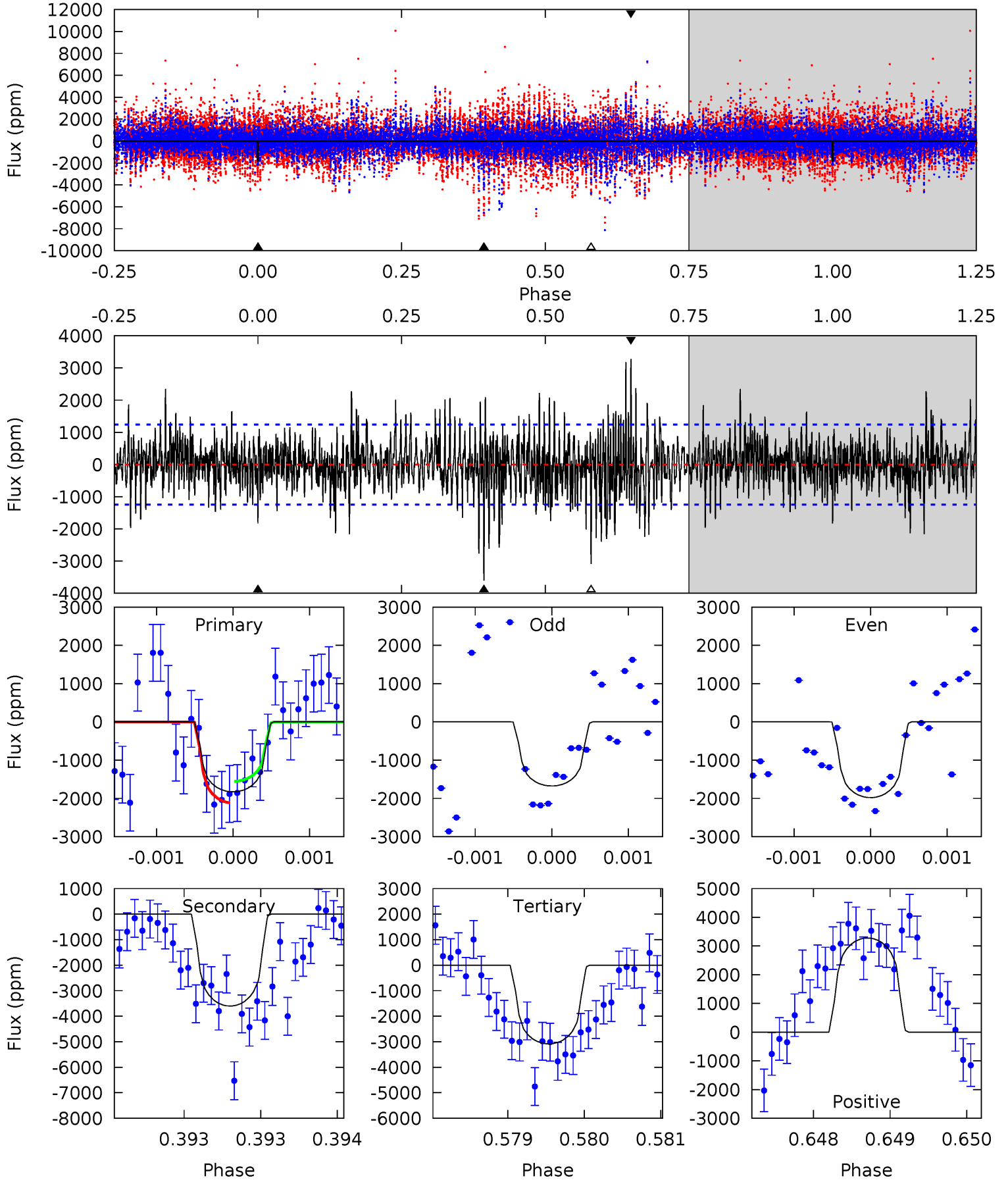
TCE 006209347-03 P=241.075508 Days $T_0=224.085829$ (BKJD)



DV Model-Shift Uniqueness Test

006209347-03, P = 241.069486 Days, E = 224.093816 Days

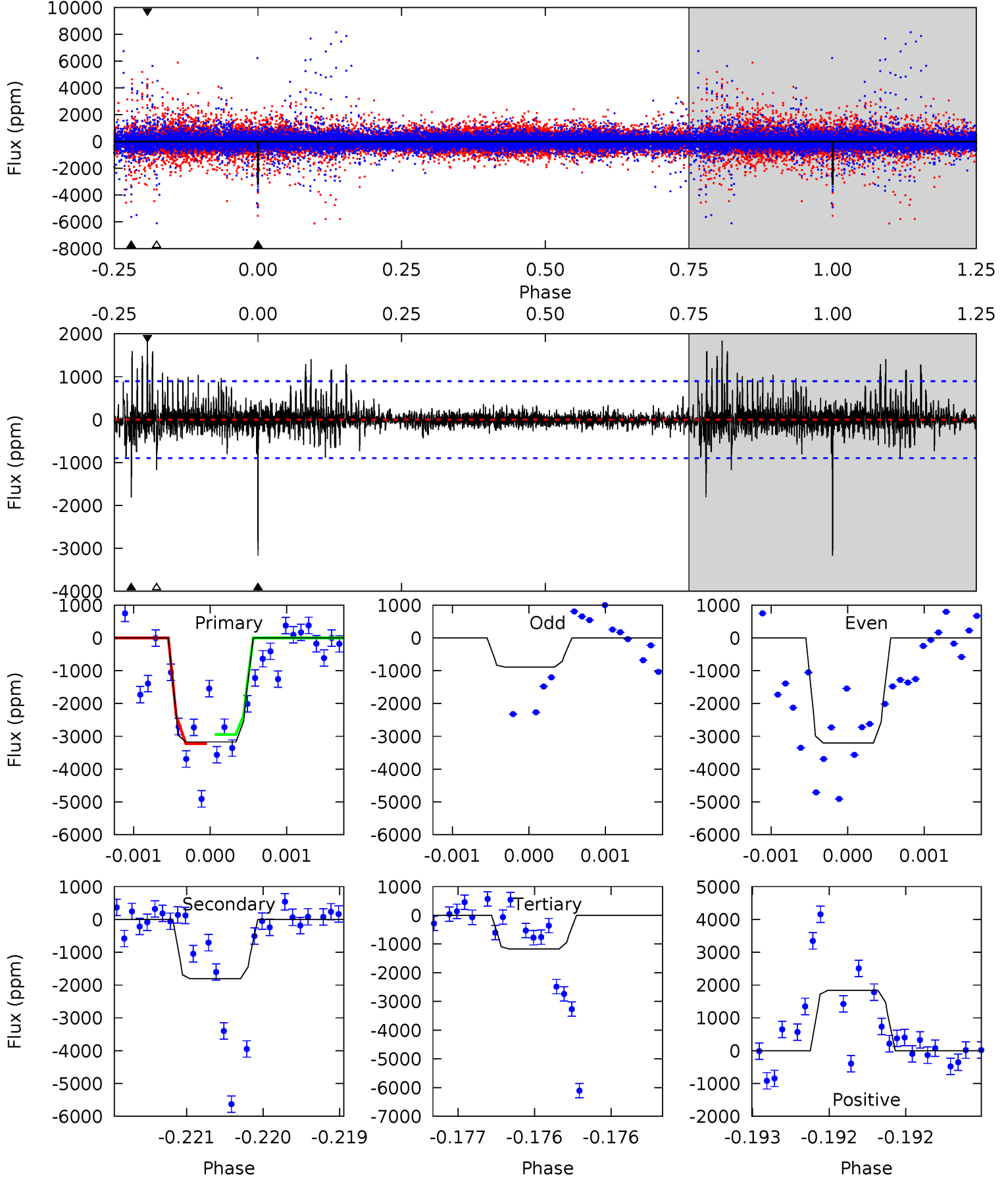
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.09	15.9	13.6	14.5	5.51	3.38	3.02	-5.55	-6.43	2.30	1.42	0.61	1.09	0.48	1.25



Alt Model-Shift Uniqueness Test

006209347-03, P = 241.075508 Days, E = 224.085829 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.5	11.1	7.21	11.3	5.52	3.40	1.16	12.3	8.19	3.93	-0.20	7.89	0.88	0.37	0



Stellar Parameters For KIC 006209347

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5457^{+164}_{-164}	$4.442^{+0.126}_{-0.168}$	$-0.120^{+0.300}_{-0.300}$	$0.905^{+0.200}_{-0.133}$	$0.827^{+0.119}_{-0.064}$	$1.574^{+0.867}_{-0.692}$
	+3%/-3%	+3%/-4%	+250%/-250%	+22%/-15%	+14%/-8%	+55%/-44%
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 006209347-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-3601 ± 226	$7.26^{+7.30}_{-4.84}$	381^{+24}_{-23}	4946^{+4406}_{-1090}	$19294^{+153040}_{-14400}$
Alt.	-1809 ± 162	$8.09^{+8.61}_{-5.25}$	380^{+27}_{-22}	4158^{+2485}_{-853}	7600^{+56695}_{-5797}

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 $A_{obs} \gg 1.0$

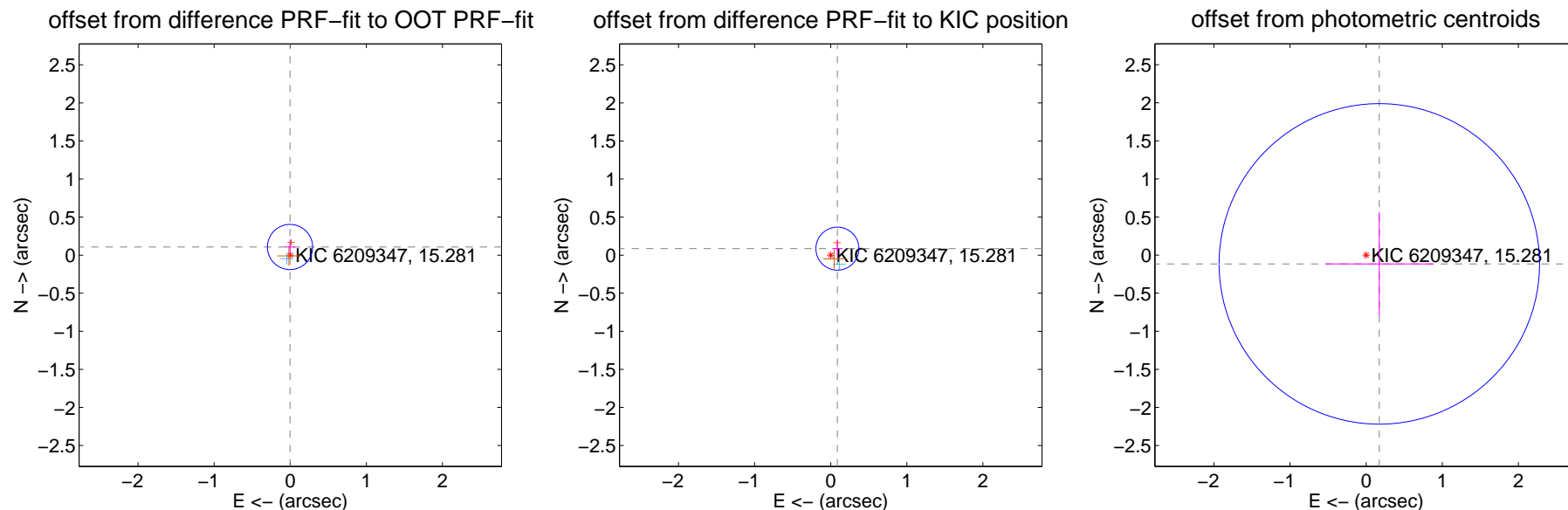
DV Centroid Data

Supplemental centroid analysis for 006209347-03. Kepler magnitude: 15.28. Transit SNR 5.45

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.107 ± 0.099	1.08	0.003 ± 0.069	0.107 ± 0.099
PRF-fit source offset from KIC position	0.123 ± 0.094	1.30	-0.088 ± 0.068	0.086 ± 0.115
photometric centroid source offset	0.21 ± 0.70	0.30	-0.17 ± 0.71	-0.12 ± 0.68

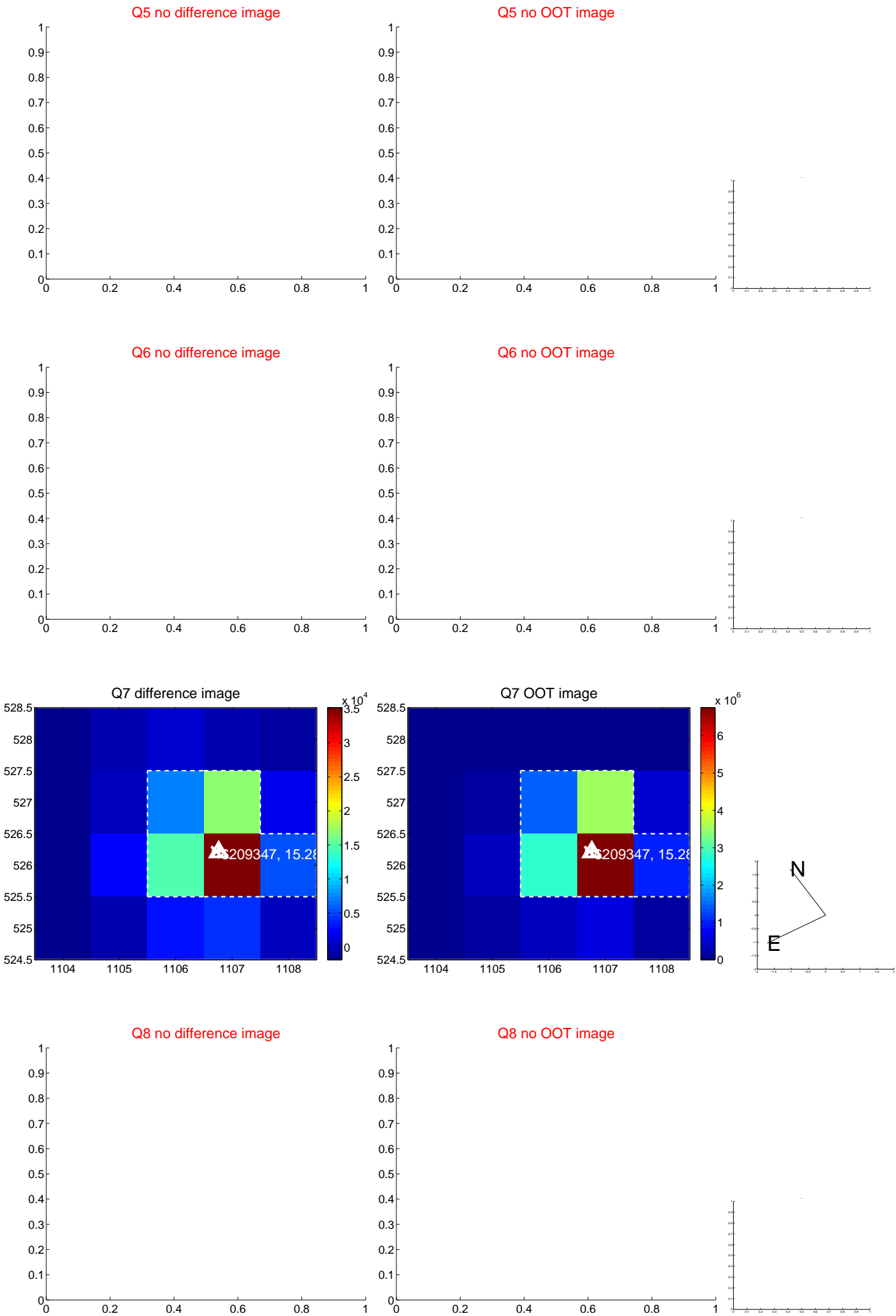


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

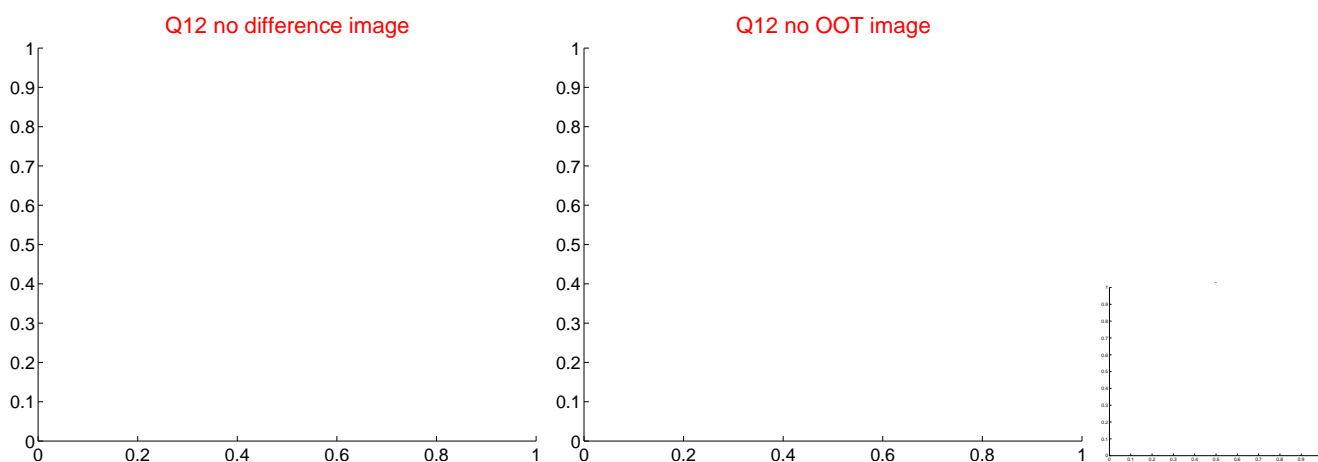
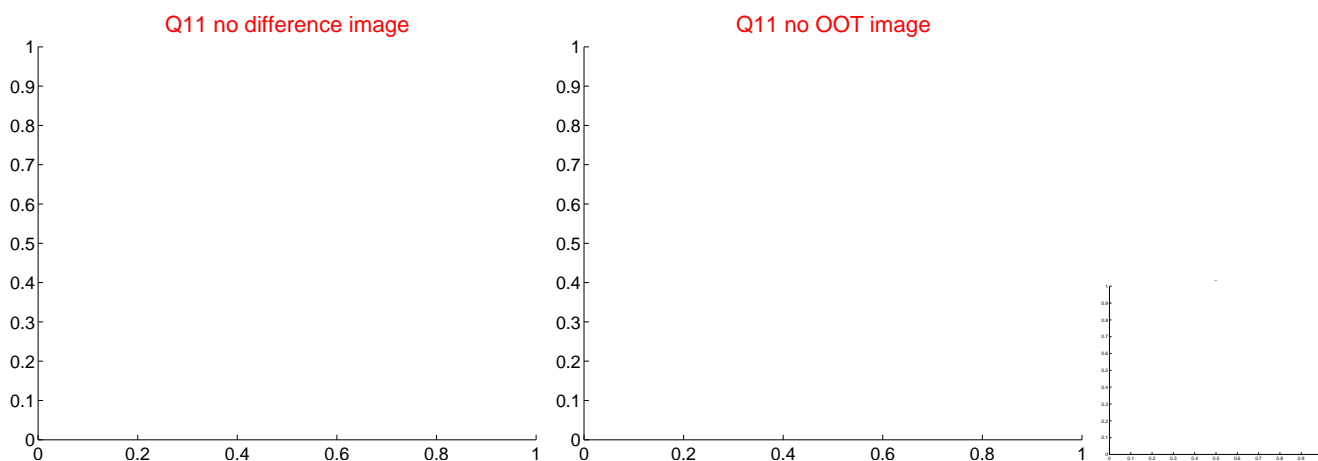
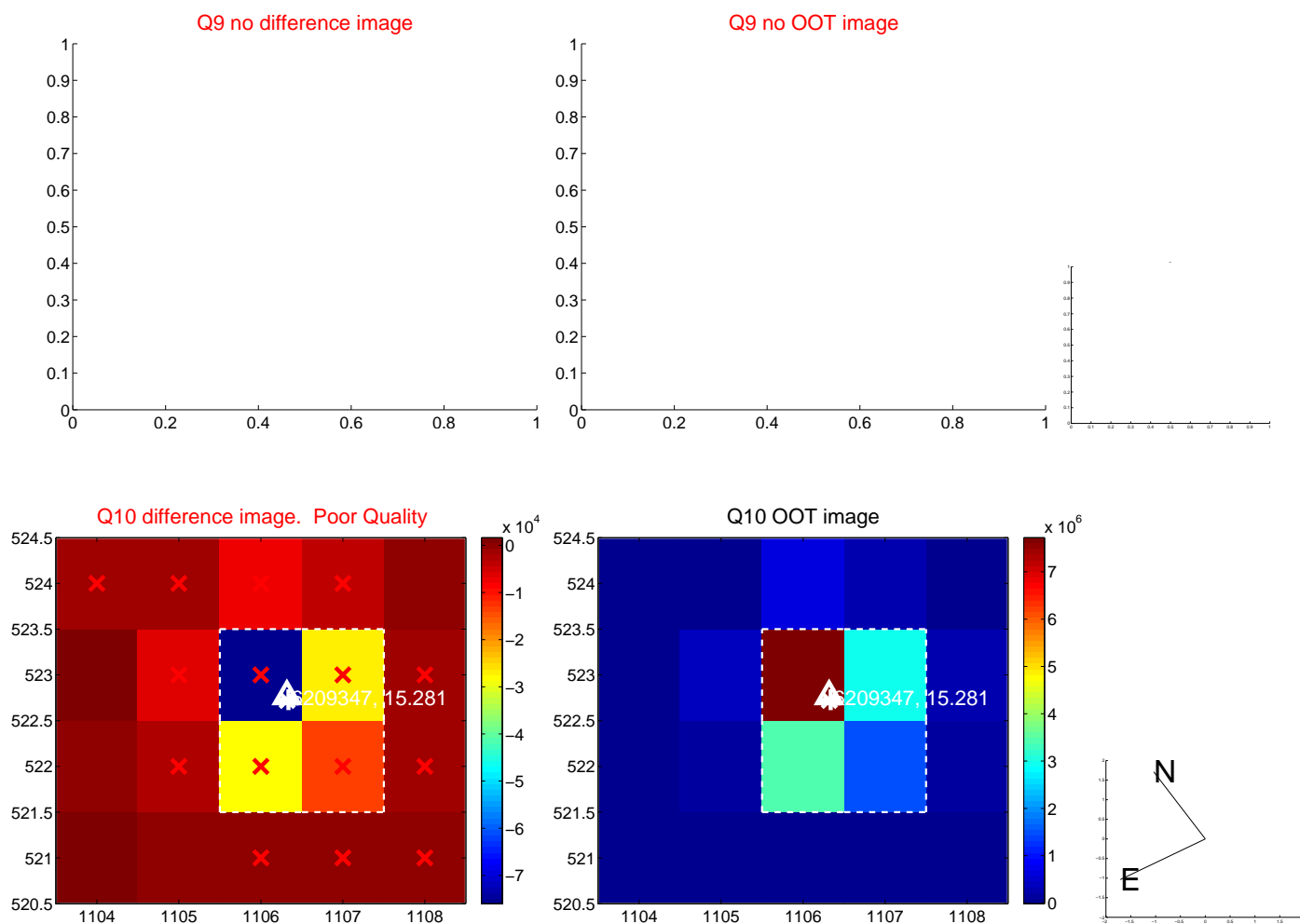
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



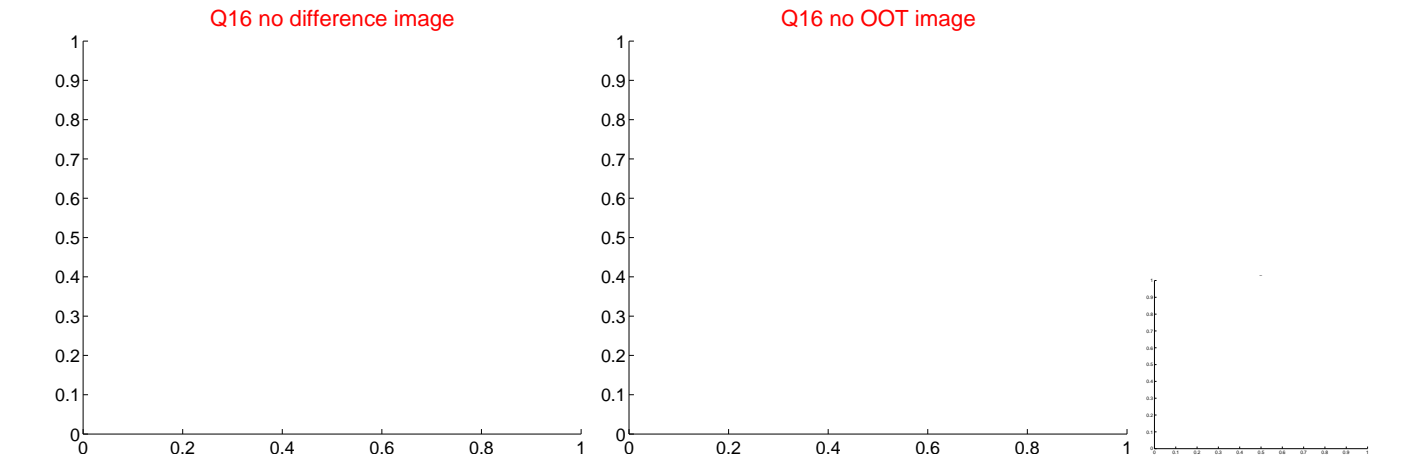
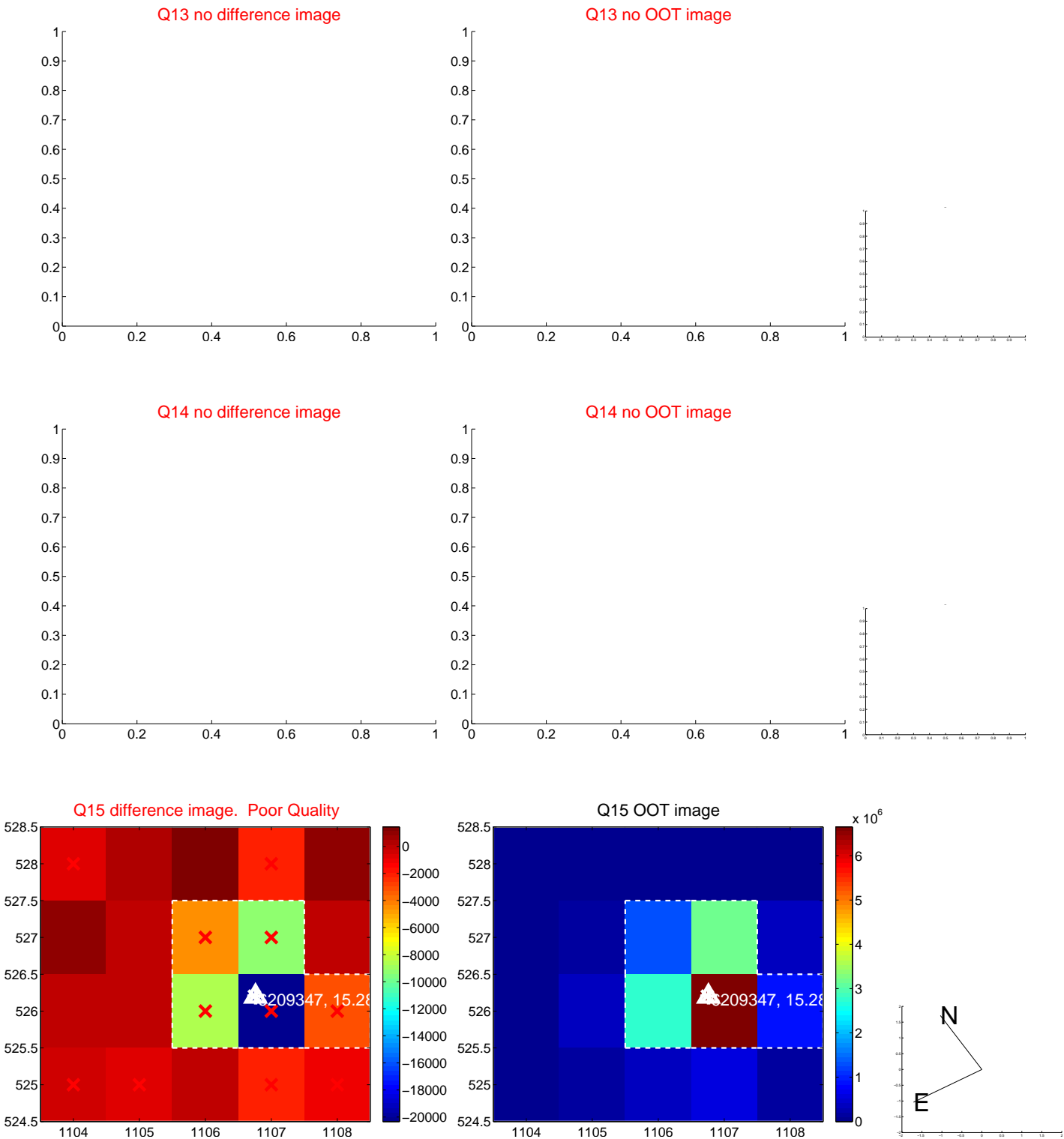
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



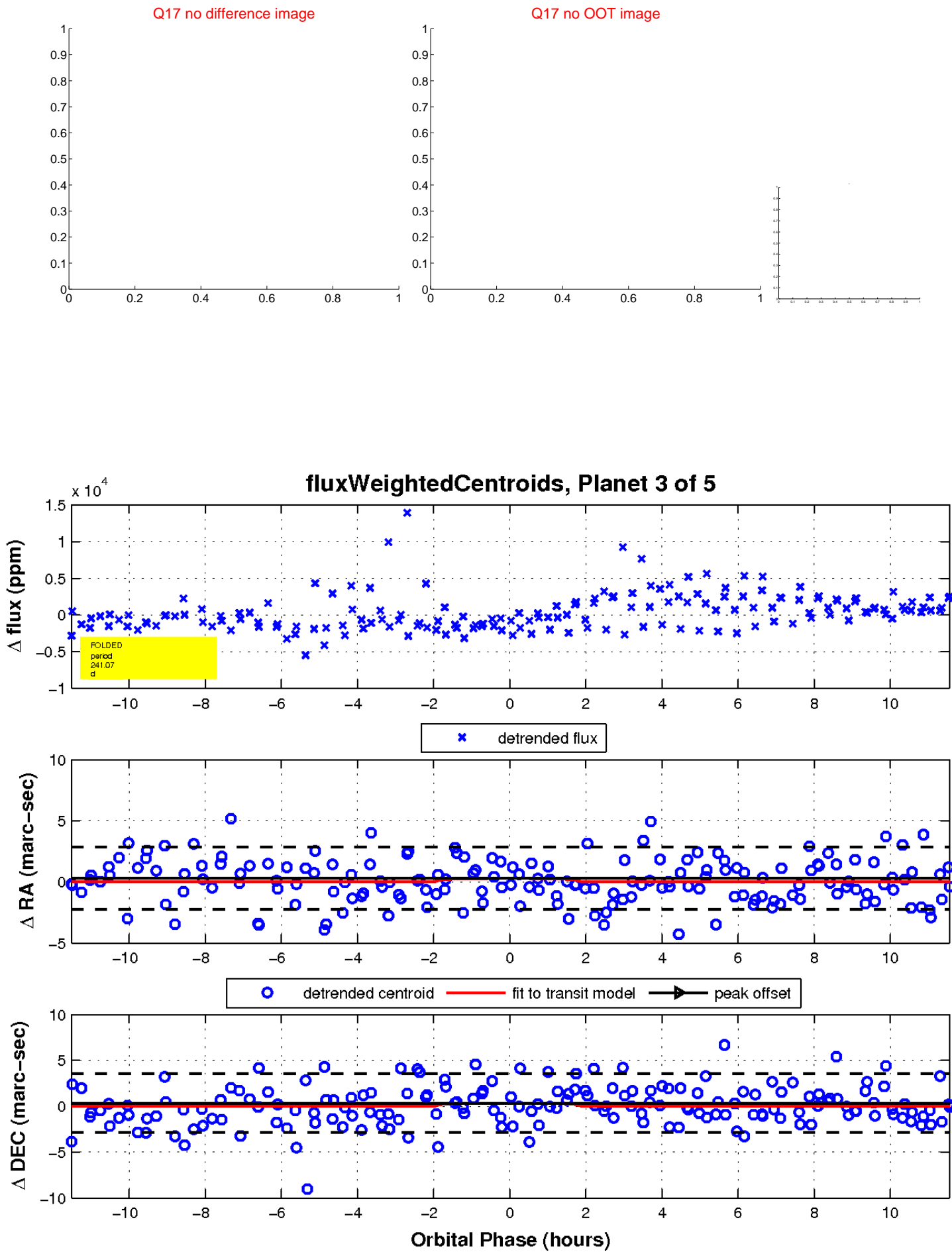
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



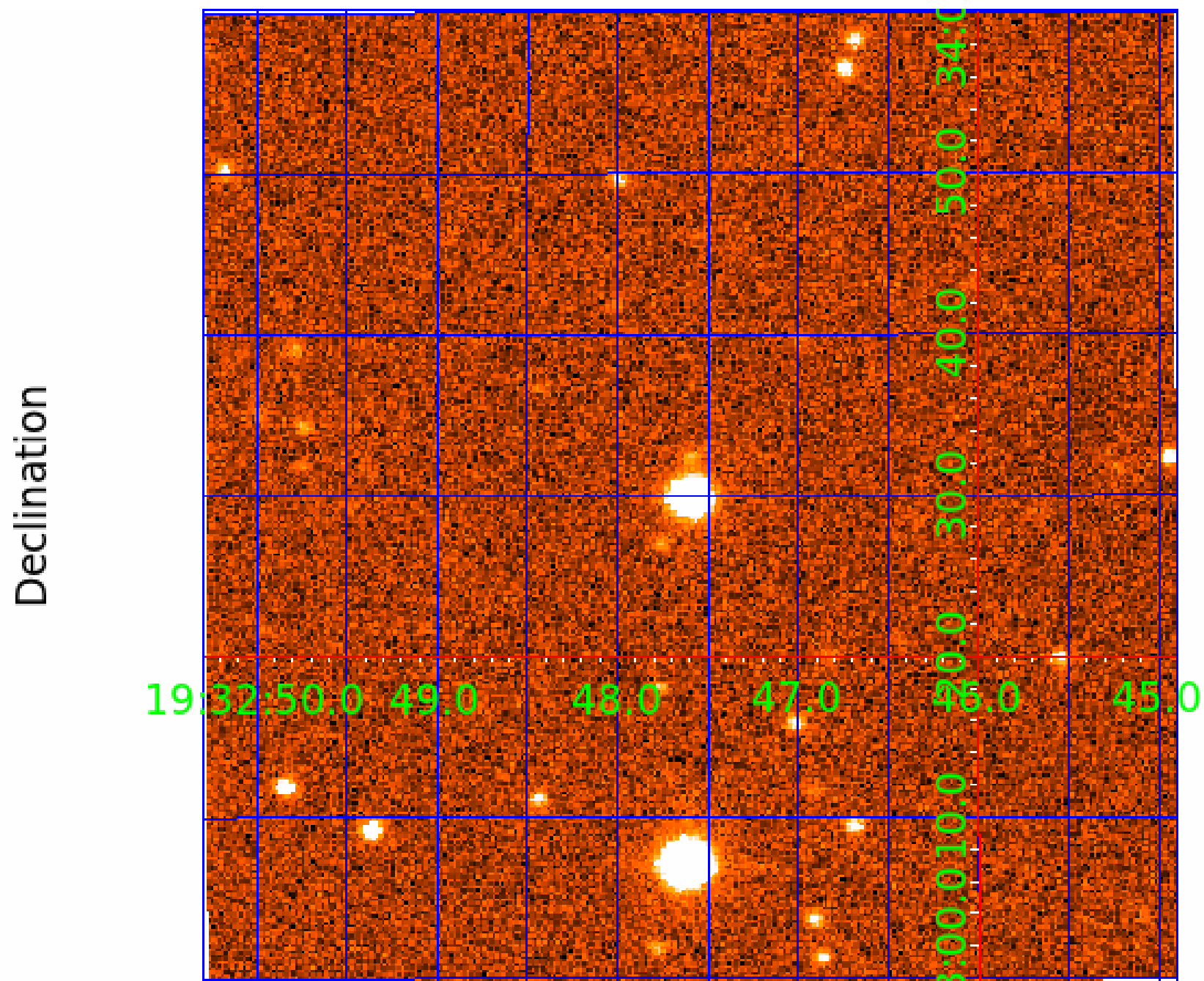
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 006209347

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})
006209347-01	OBS	6025.01	2.136584	133.023286	76286.4	2.474	2126.3	1472.5	0.91	5457	36.35	700.67
006209347-02	OBS	No	2.136579	131.958967	1951.5	1.466	48.0	55.7	0.91	5457	4.83	700.68
006209347-03	OBS	No	241.069485	224.093816	1719.9	3.864	10.9	5.4	0.91	5457	3.77	1.28
006209347-04	OBS	No	2.136120	133.160806	359.5	10.316	9.0	6.0	0.91	5457	1.91	700.88
006209347-05	OBS	No	0.534239	132.004678	169.0	1.615	10.8	5.9	0.91	5457	1.16	4447.97

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006209347-01	OBS	FP	0.03	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
006209347-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
006209347-03	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006209347-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—RESIDUAL_TCE—HALO_GHOST
006209347-05	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—HALO_GHOST

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

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

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

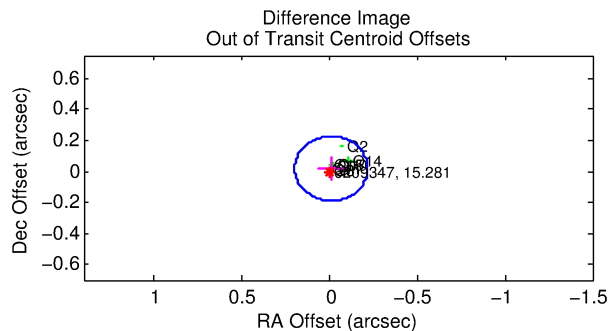
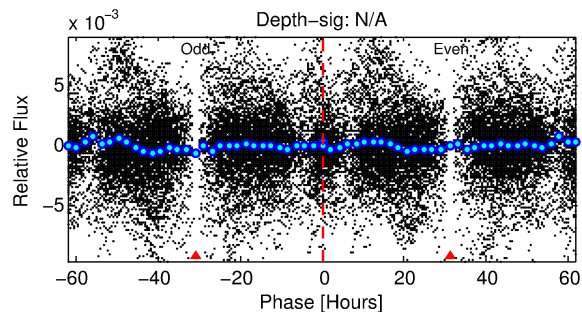
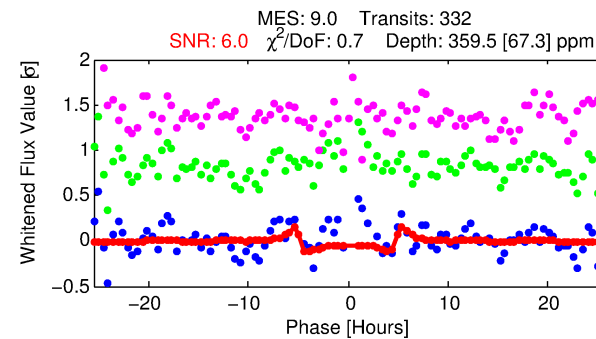
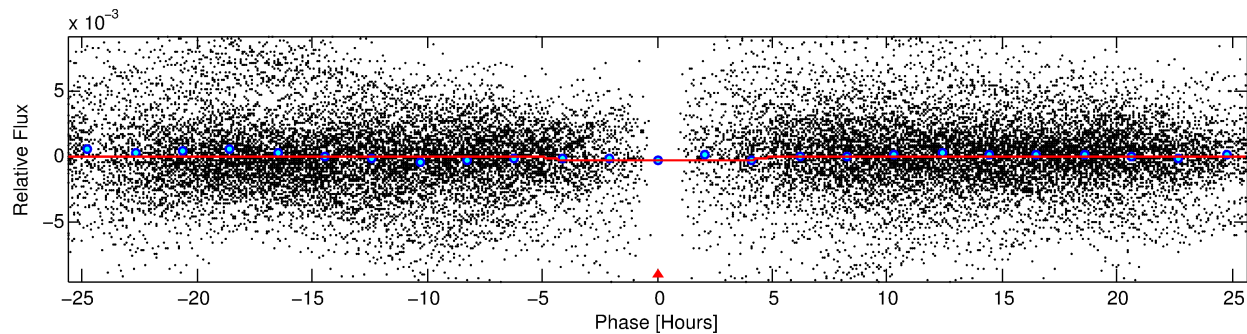
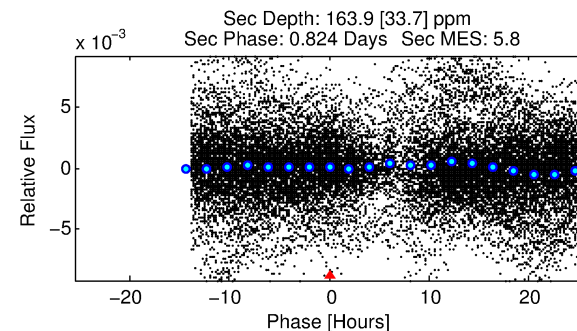
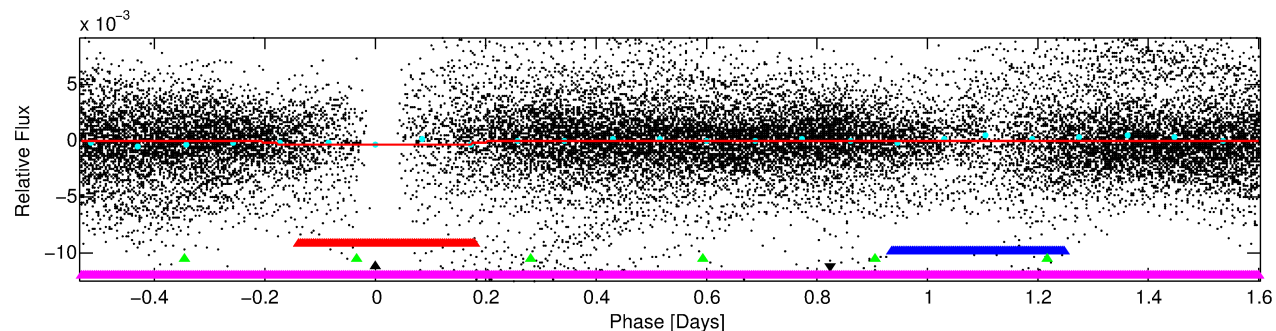
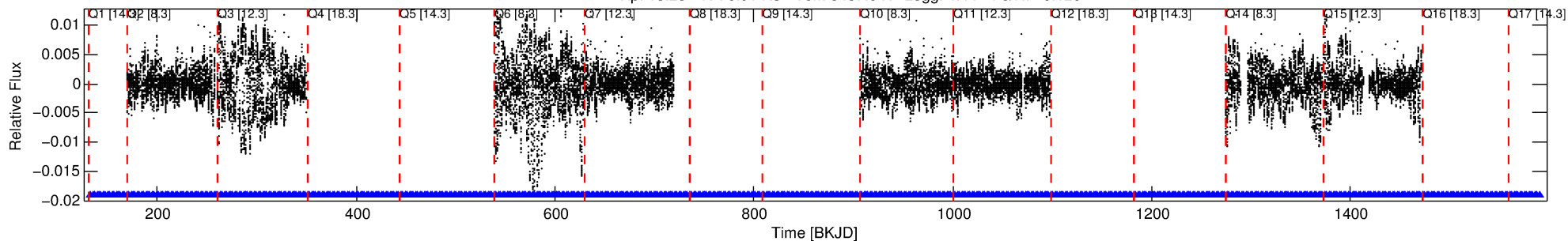
Ephemeris Match Information For 006209347-04

No Significant Match Found

DV One-Page Summary

KIC: 6209347 Candidate: 4 of 5 Period: 2.136 d
KOI: K06025 Corr: No Ephemeris Match

Kp: 15.28 R*: 0.91 Rs Teff: 5457.0 K Logg: 4.44 Fe/H: -0.120



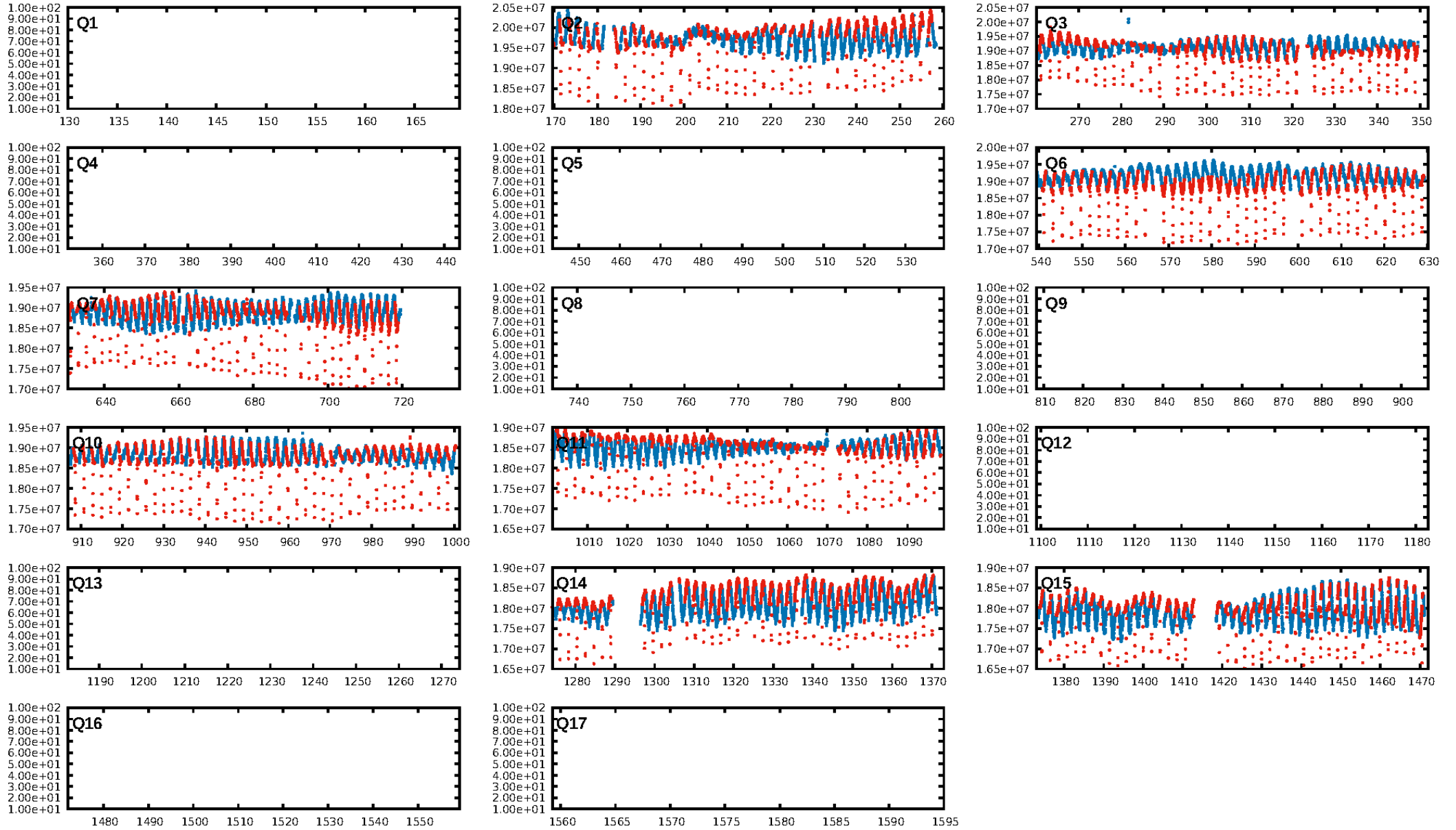
DV Fit Results:

Period = 2.13612 [0.00002] d
Epoch = 133.1608 [0.0044] BKJD
Rp/R* = 0.0194 [0.0031]
a/R* = 1.33 [0.28]
b = 0.80 [0.22]
Seff = 700.88 [224.57]
Teq = 1312 [105] K
Rp = 1.91 [0.52] Re
a = 0.0305 [0.0060] AU
Ag = 22.92 [11.00] [1.99σ]
Teffp = 4438 [439] K [6.92σ]

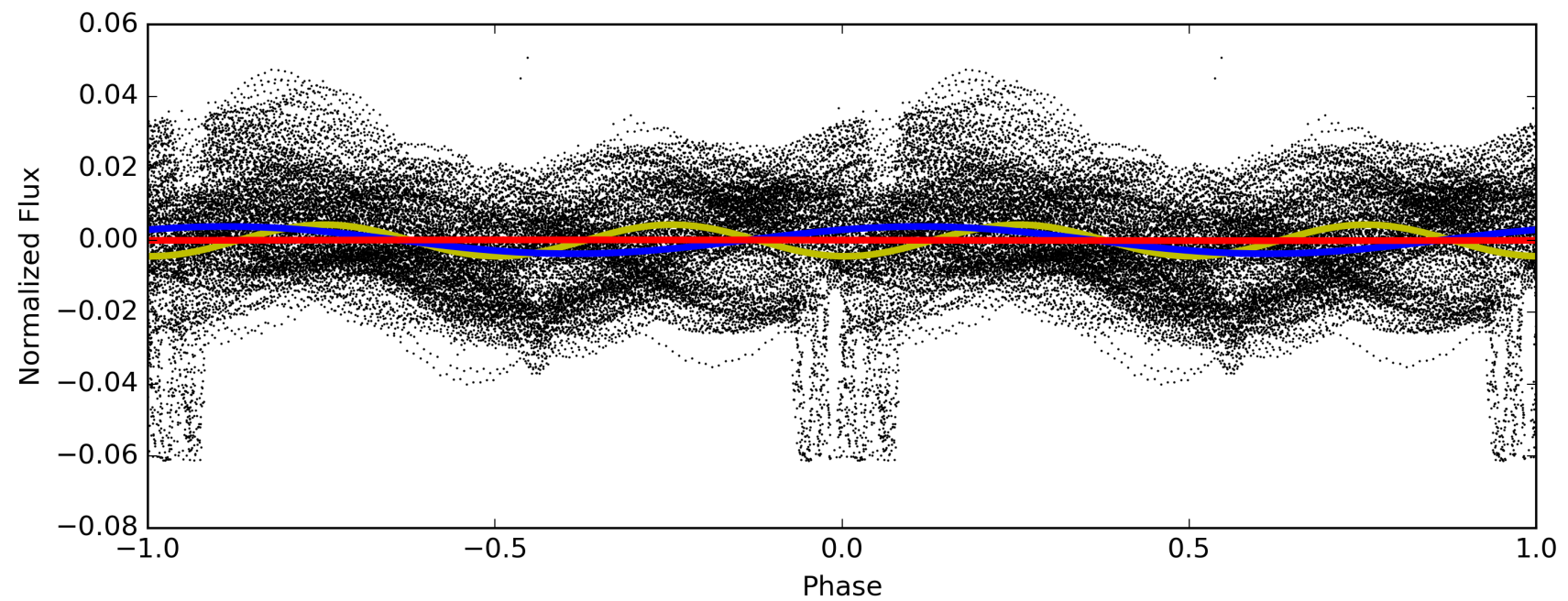
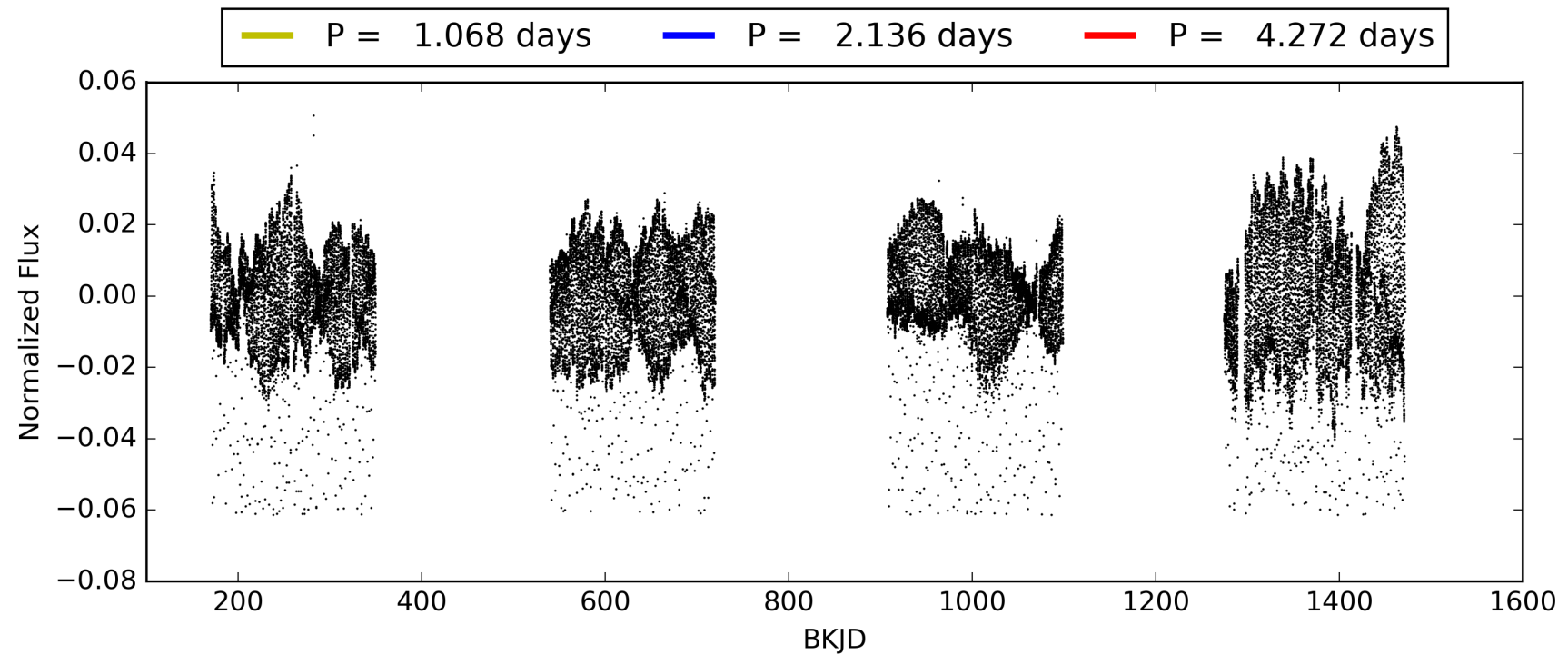
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [3.68σ]
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [332/332]
GhostDiagnostic-chr: -0.1844
Centroid-sig: 0.4%
Centroid-so: 0.476 arcsec [1.79σ]
OotOffset-rm: 0.021 arcsec [0.31σ]
KicOffset-rm: 0.078 arcsec [1.13σ]
OotOffset-st: 4/4/0/0 [8]
KicOffset-st: 4/4/0/0 [8]
DiffImageQuality-fgm: 0.88 [7/8]
DiffImageOverlap-fno: 0.00 [0/8]

TCE 006209347-04, PDC Light Curves

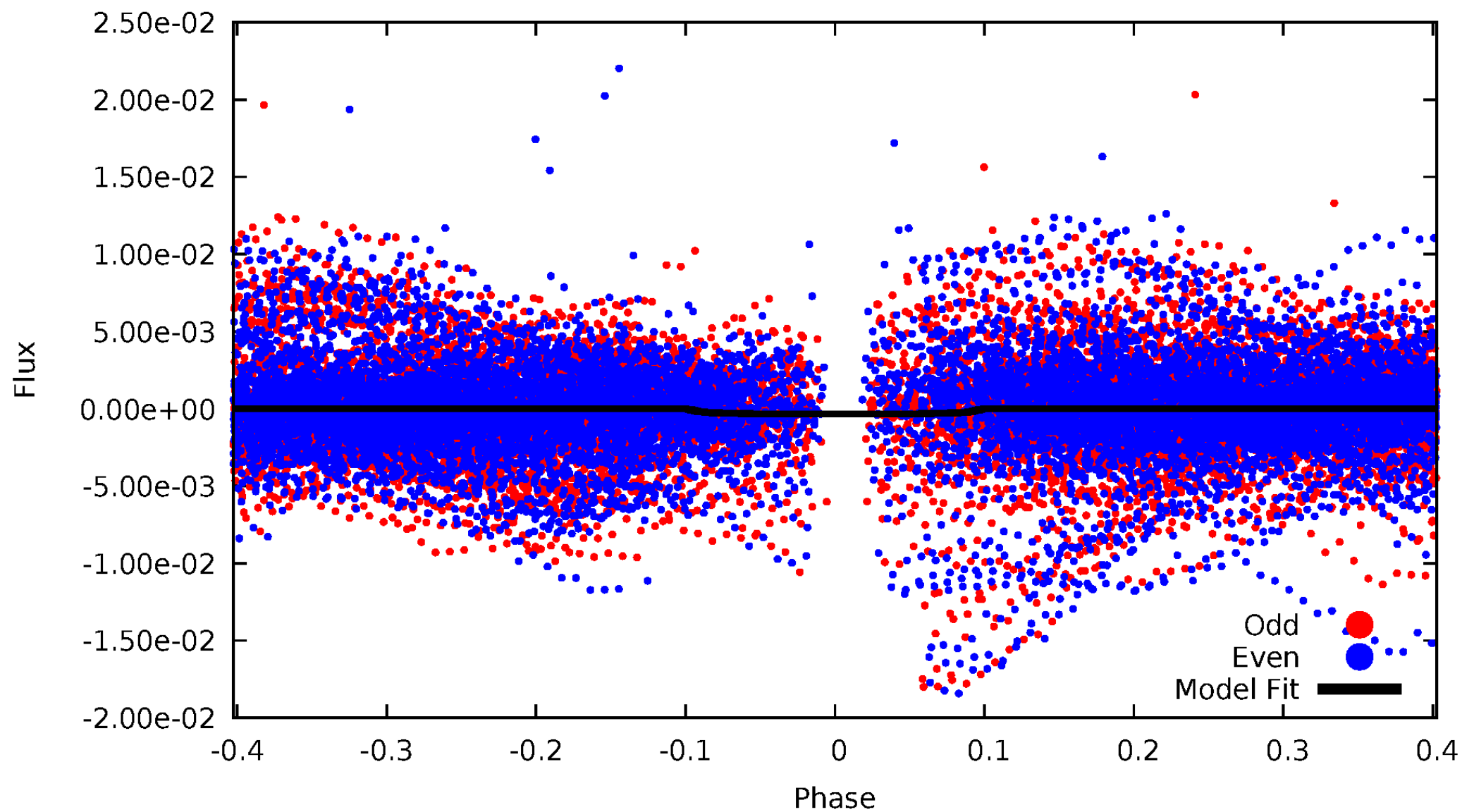


TCE 006209347-04



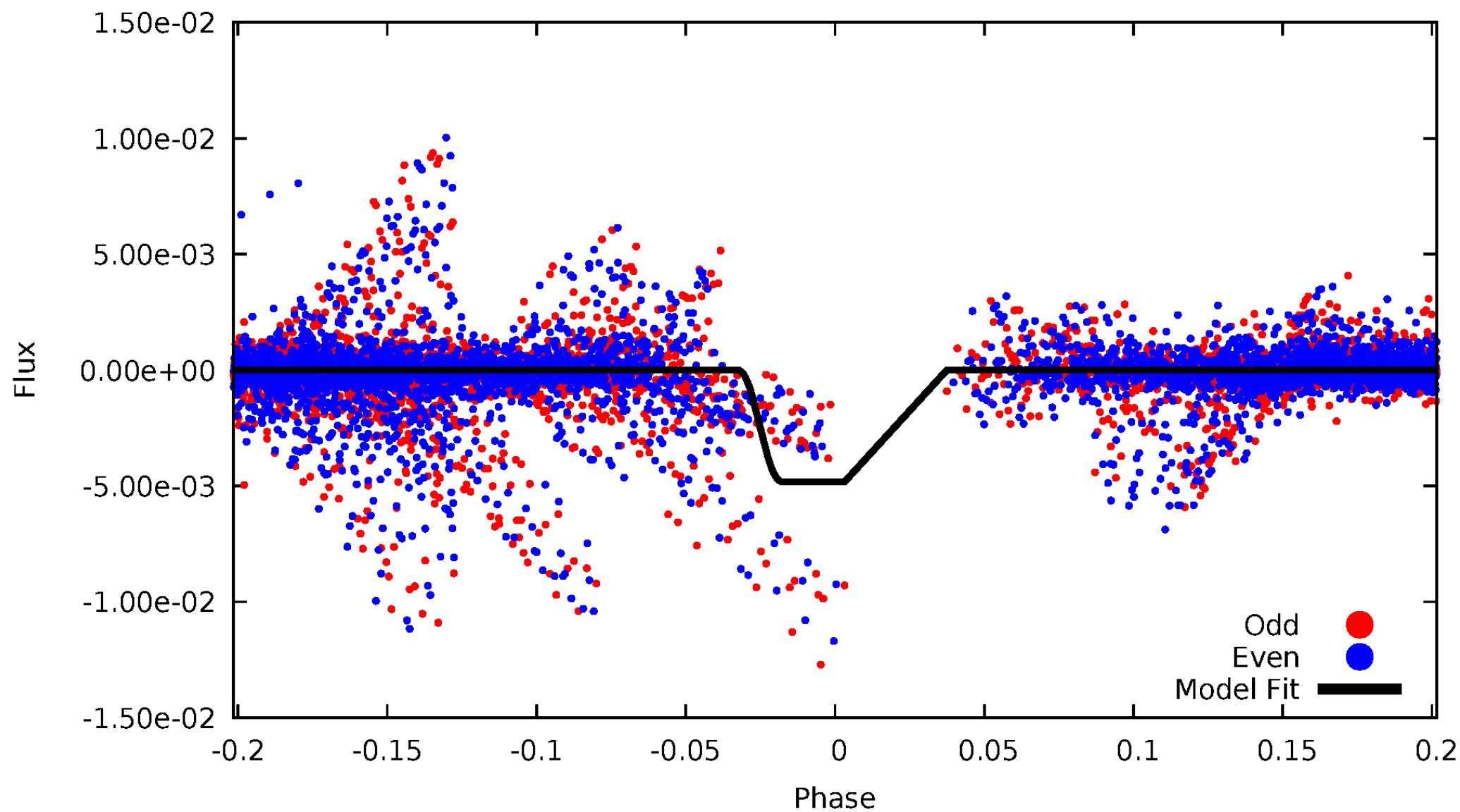
DV Odd/Even

TCE 006209347-04



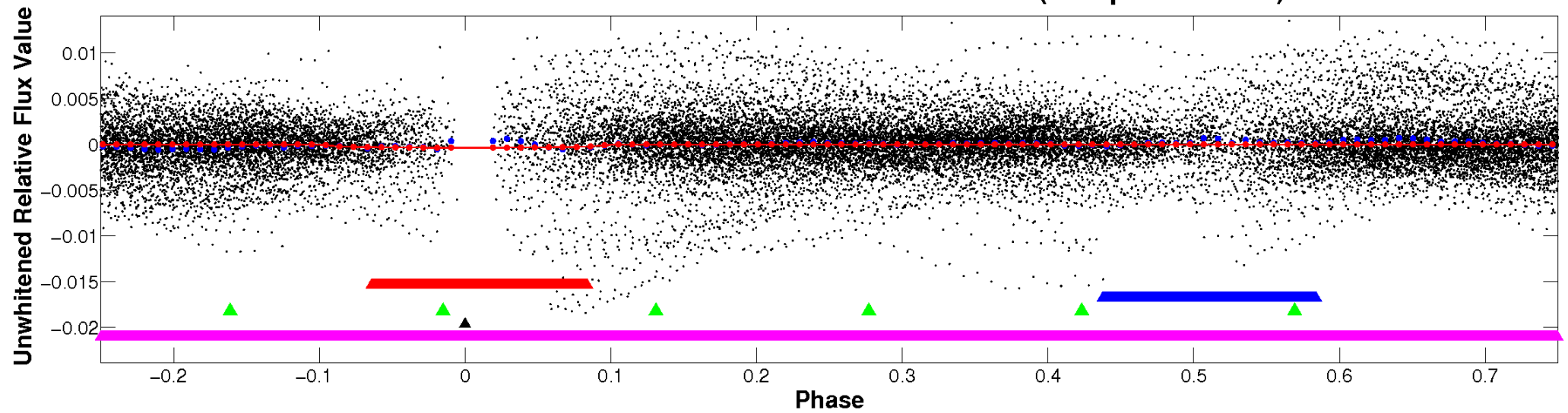
ALT Odd/Even

TCE 006209347-04

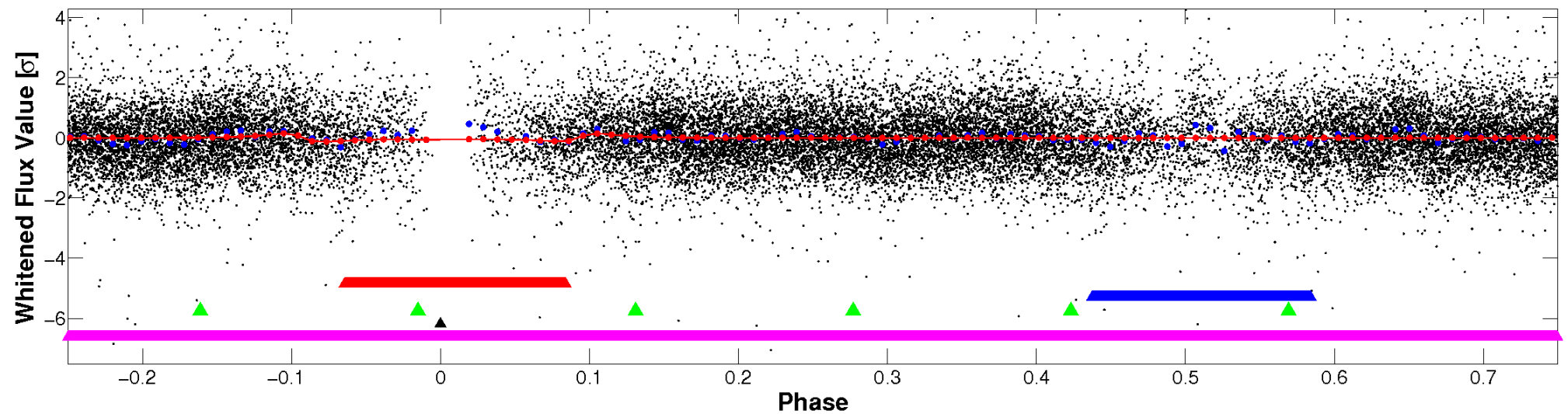


Non-Whitened Vs. Whitened Light Curve

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

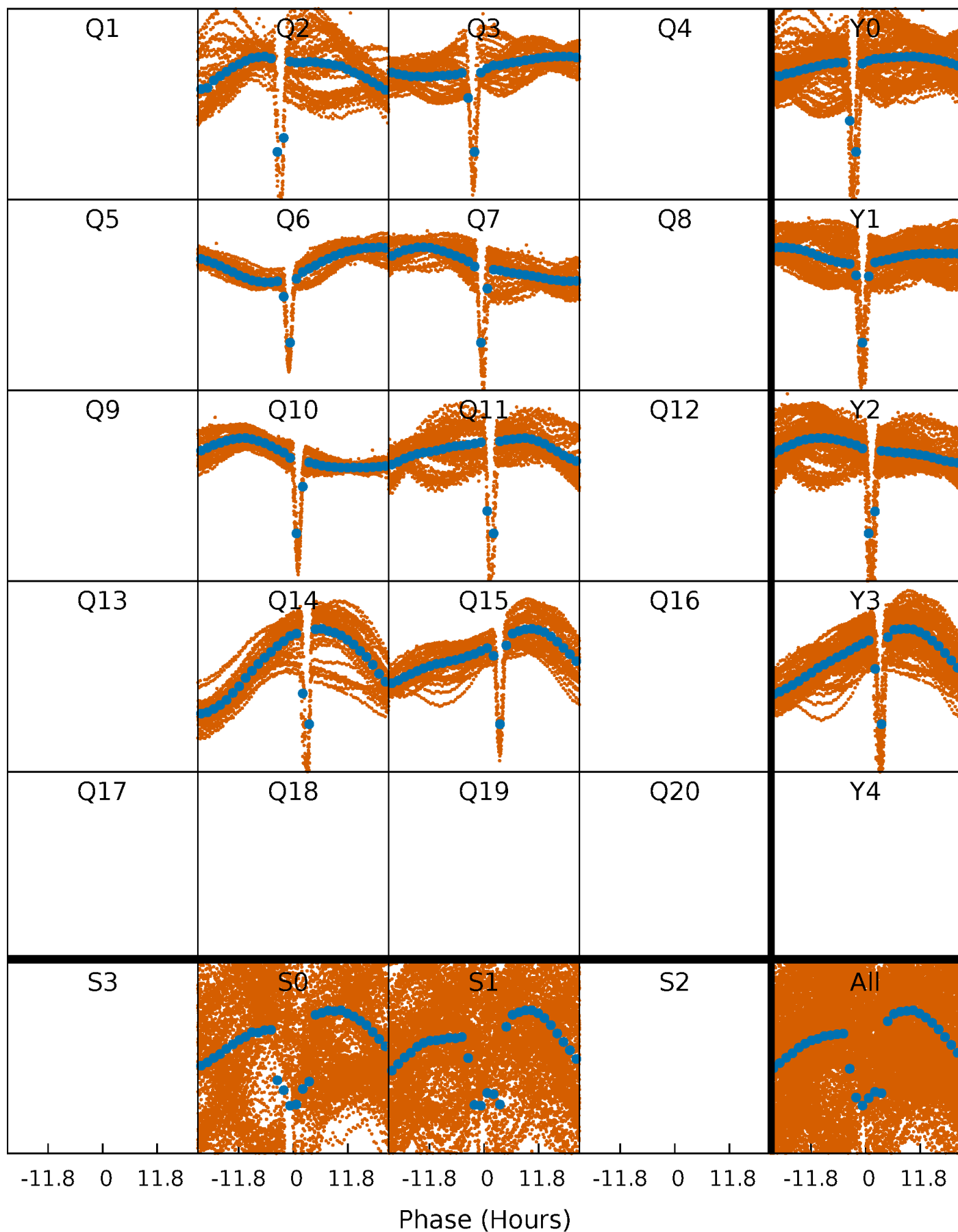


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



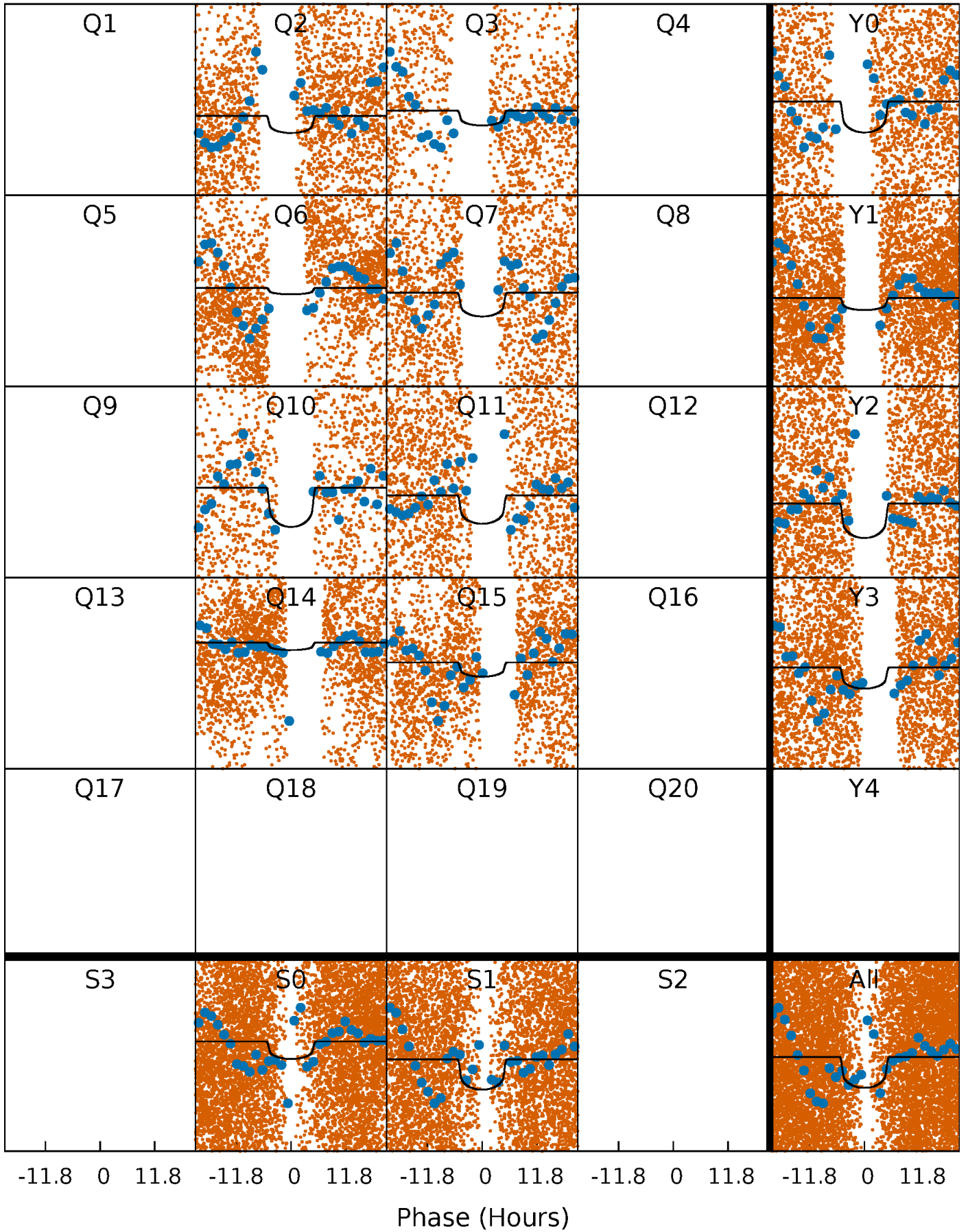
PDC Quarter-Phased Transit Curves

TCE 006209347-04 P= 2.136120 Days $T_0=133.160806$ (BKJD)



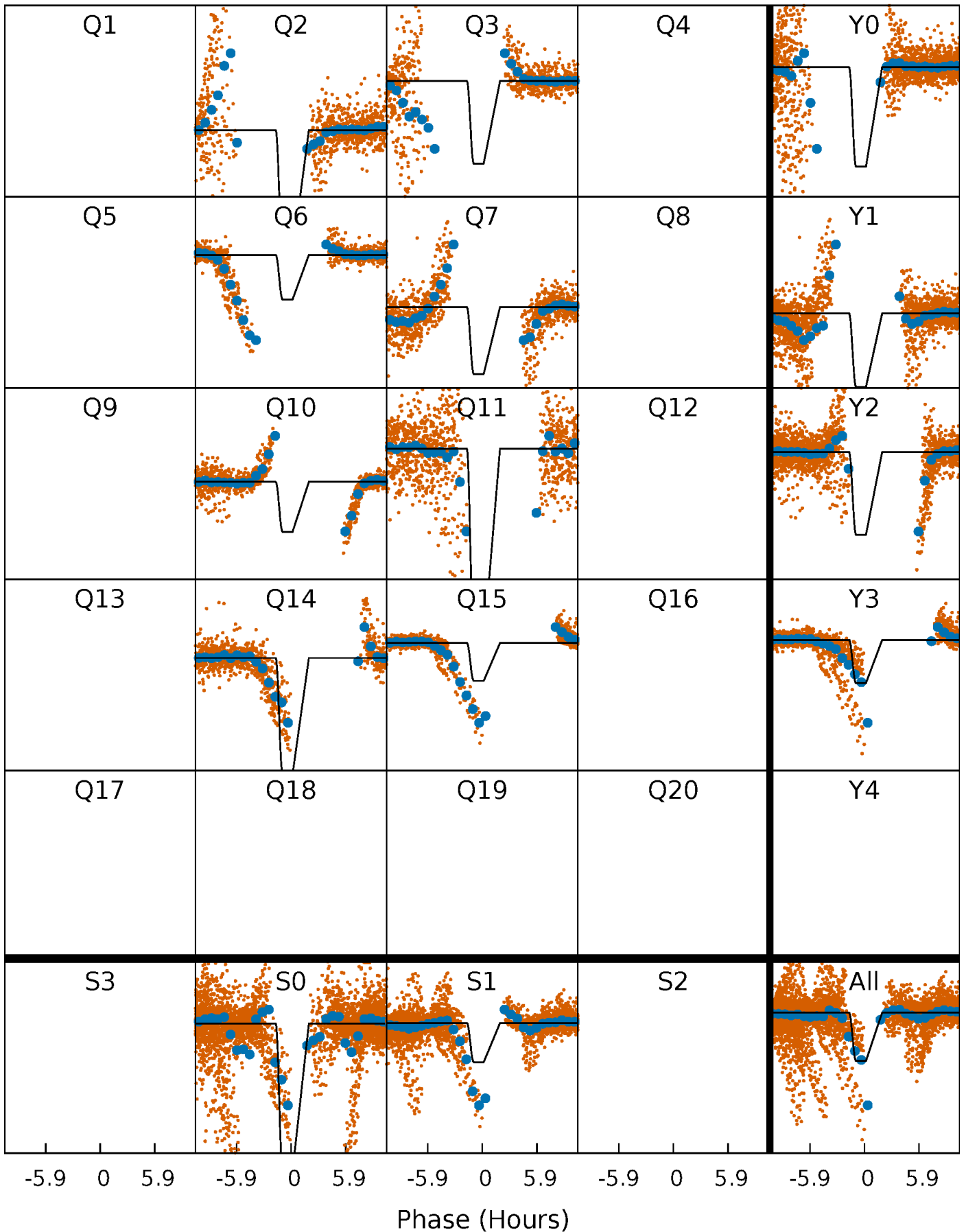
DV Quarter-Phased Transit Curves

TCE 006209347-04 P= 2.136120 Days $T_0=133.160806$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

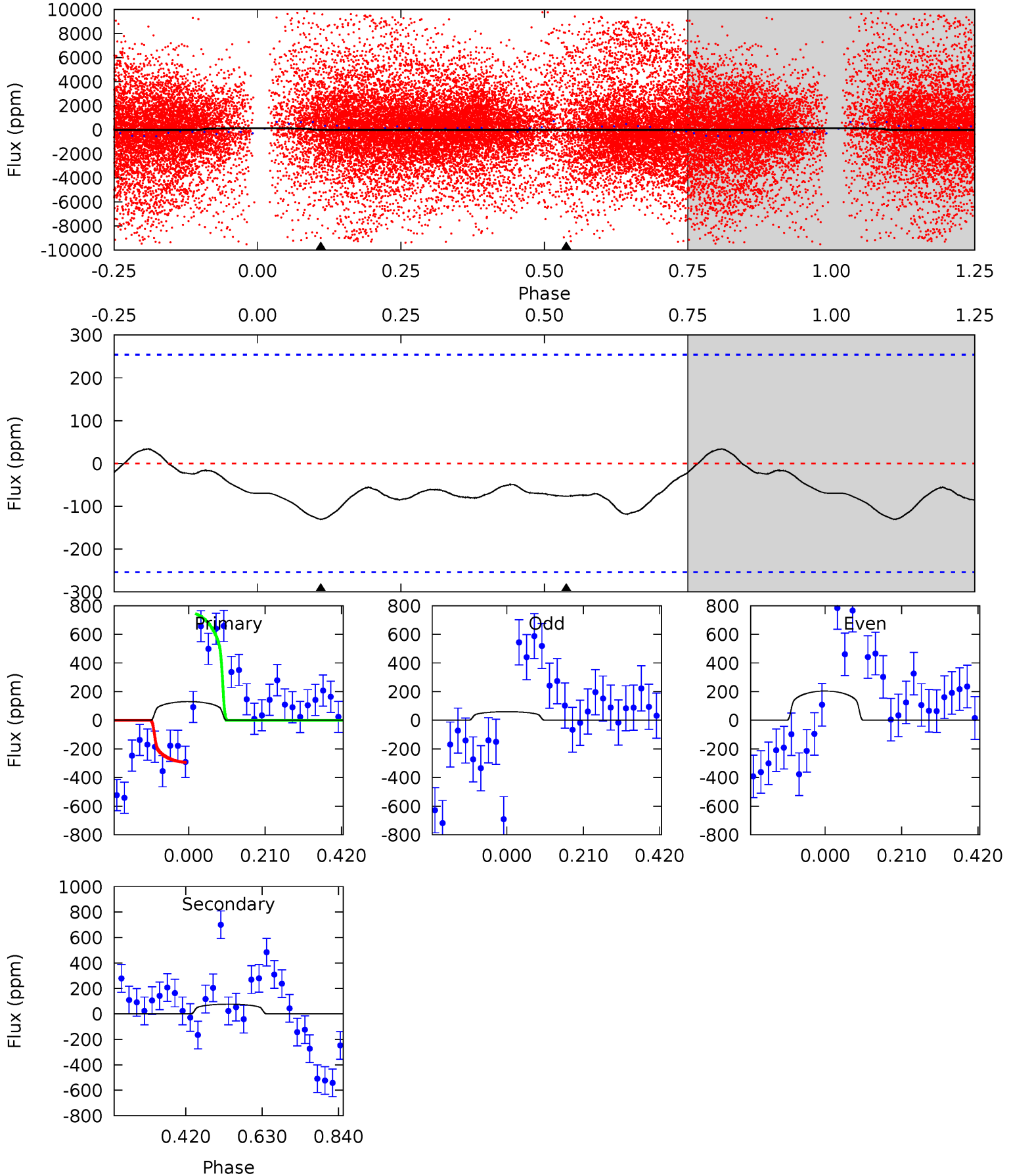
TCE 006209347-04 P= 2.136131 Days $T_0=133.119937$ (BKJD)



DV Model-Shift Uniqueness Test

006209347-04, P = 2.136120 Days, E = 133.160806 Days

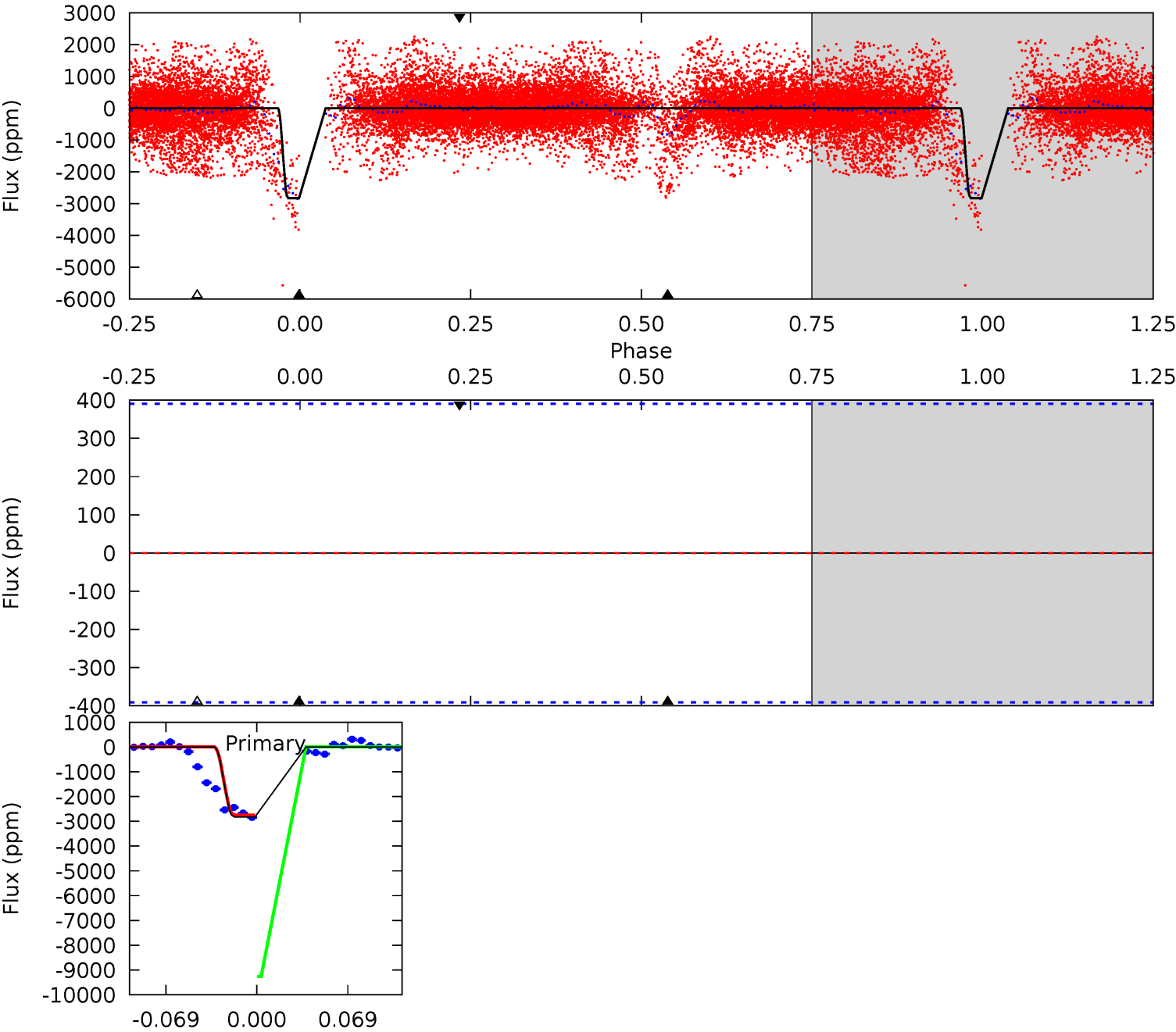
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.26	1.33	0	0	4.41	1.25	0.43	2.26	2.26	1.33	1.33	1.26	-2.88	0.21	3.82



Alt Model-Shift Uniqueness Test

006209347-04, P = 2.136131 Days, E = 133.119937 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	4.64	1.82	0	0	0	0	0	0	1.37	0	0



Stellar Parameters For KIC 006209347

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	5457^{+164}_{-164}	$4.442^{+0.126}_{-0.168}$	$-0.120^{+0.300}_{-0.300}$	$0.905^{+0.200}_{-0.133}$	$0.827^{+0.119}_{-0.064}$	$1.574^{+0.867}_{-0.692}$
	+3%/-3%	+3%/-4%	+250%/-250%	+22%/-15%	+14%/-8%	+55%/-44%
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 006209347-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-76 ± 58	$1.94^{+0.40}_{-0.34}$	1837^{+135}_{-104}	3950^{+524}_{-810}	10^{+11}_{-7}
Alt.	-0 ± 84	$6.92^{+1.08}_{-0.72}$	1839^{+126}_{-103}	-2408^{+5029}_{-447}	$0.010^{+0.929}_{-0.949}$

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 $A_{obs} \gg 1.0$

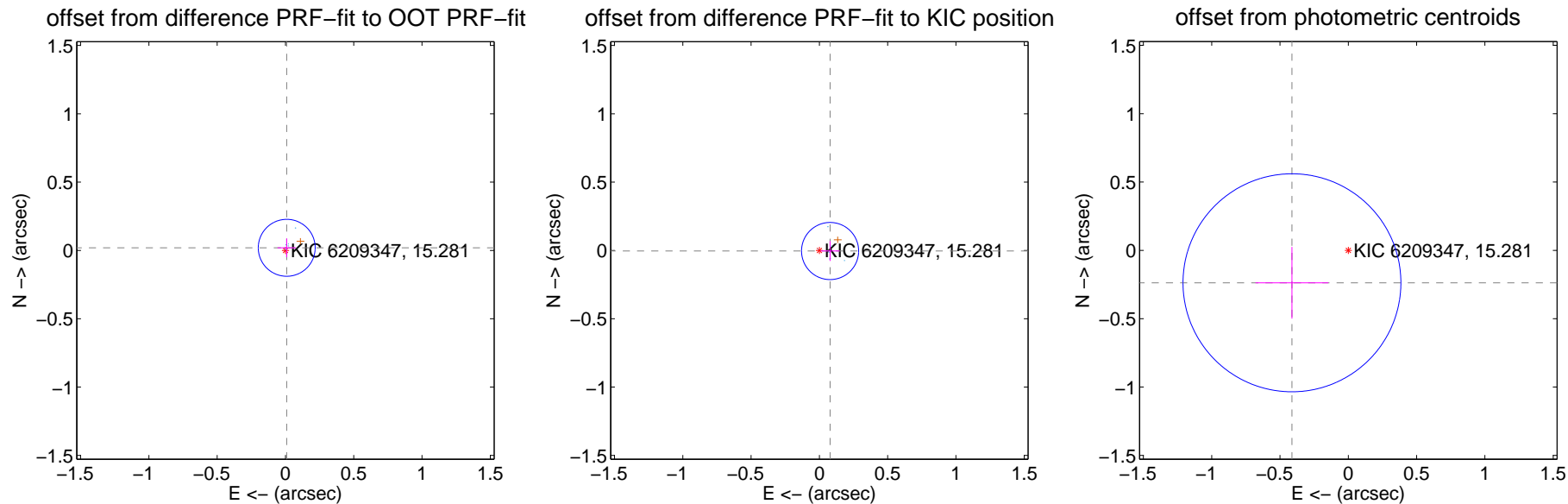
DV Centroid Data

Supplemental centroid analysis for 006209347-04. Kepler magnitude: 15.28. Transit SNR 6.03

There are 7 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	0.021 ± 0.069	0.31	-0.009 ± 0.068	0.019 ± 0.069
PRF-fit source offset from KIC position	0.078 ± 0.070	1.13	-0.078 ± 0.070	-0.004 ± 0.072
photometric centroid source offset	0.48 ± 0.27	1.79	0.41 ± 0.27	-0.24 ± 0.26



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.

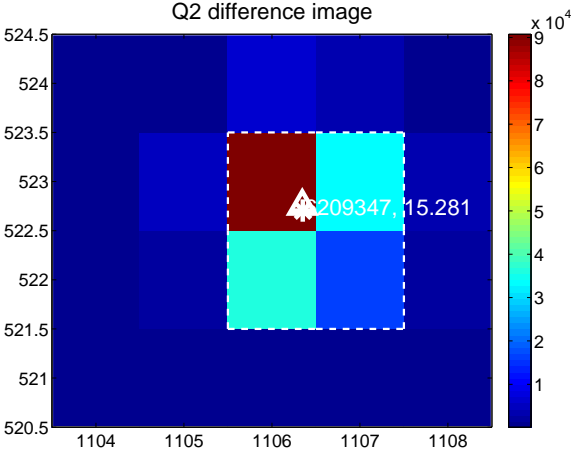
Q1 no difference image



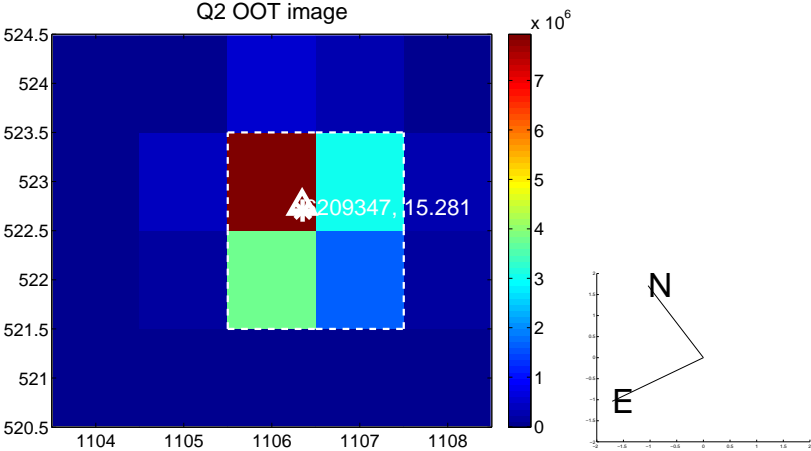
Q1 no OOT image



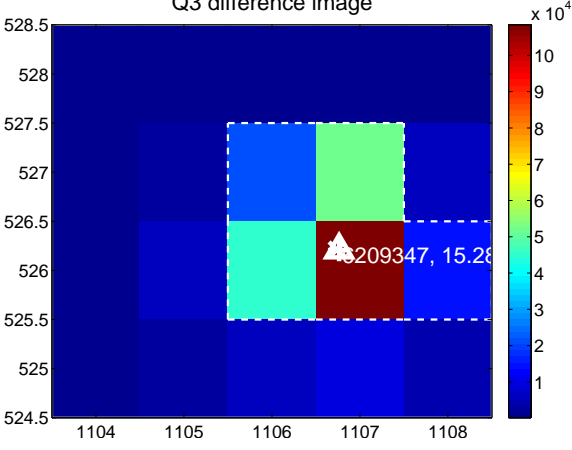
Q2 difference image



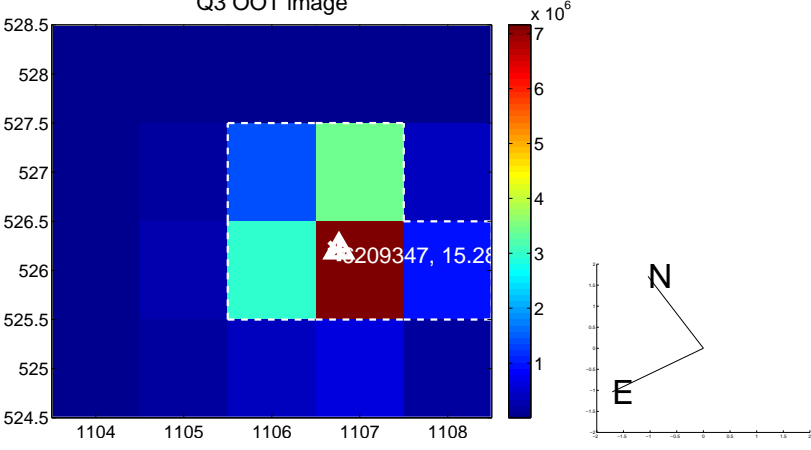
Q2 OOT image



Q3 difference image



Q3 OOT image



Q4 no difference image



Q4 no OOT image

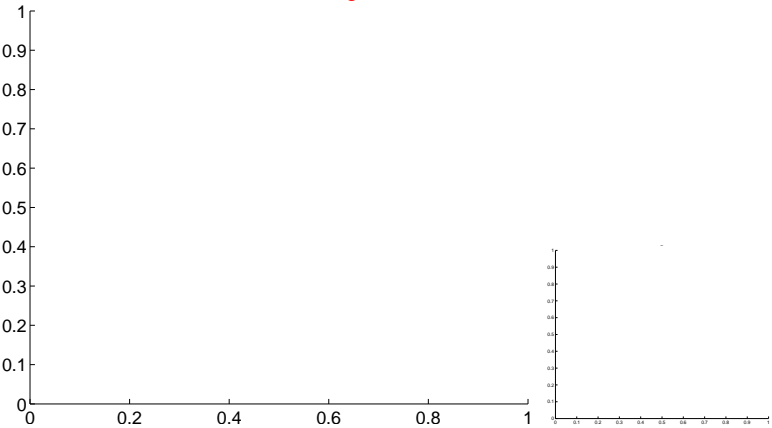


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

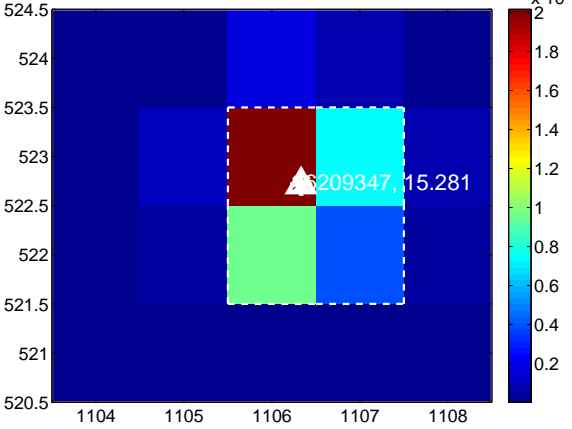
Q5 no difference image



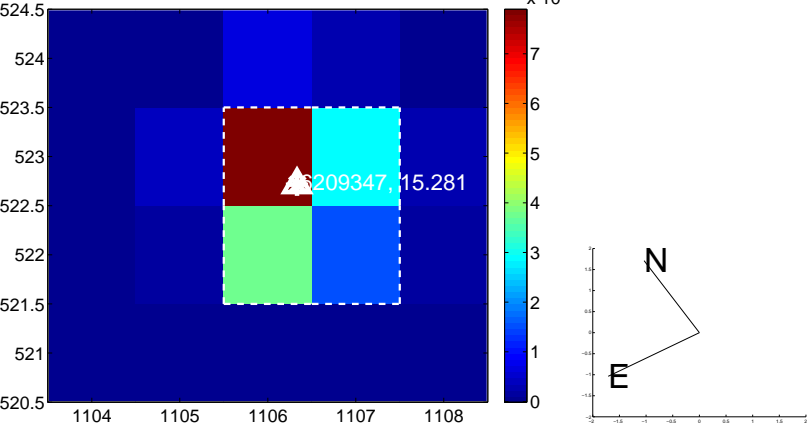
Q5 no OOT image



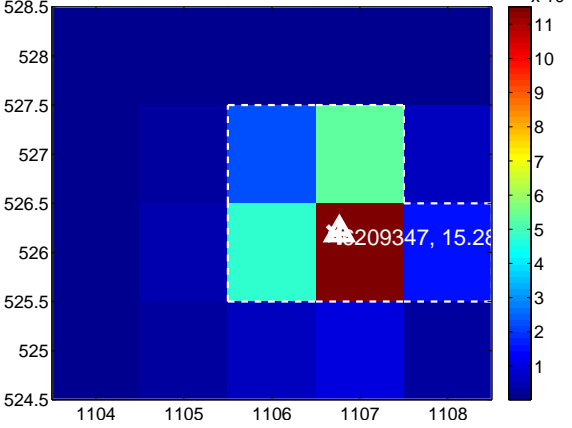
Q6 difference image



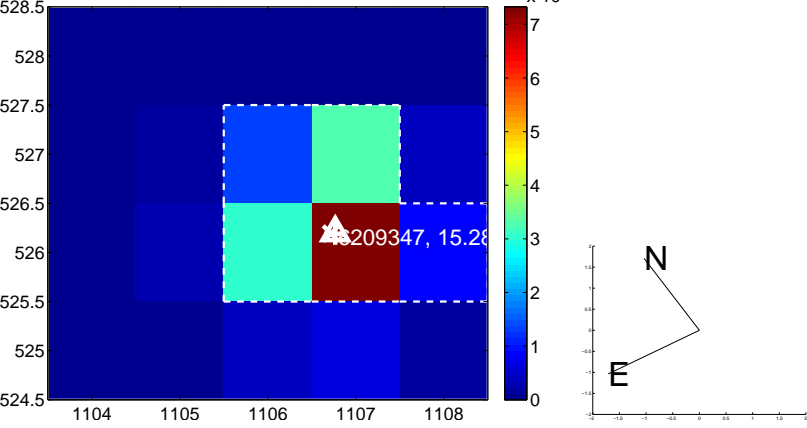
Q6 OOT image



Q7 difference image



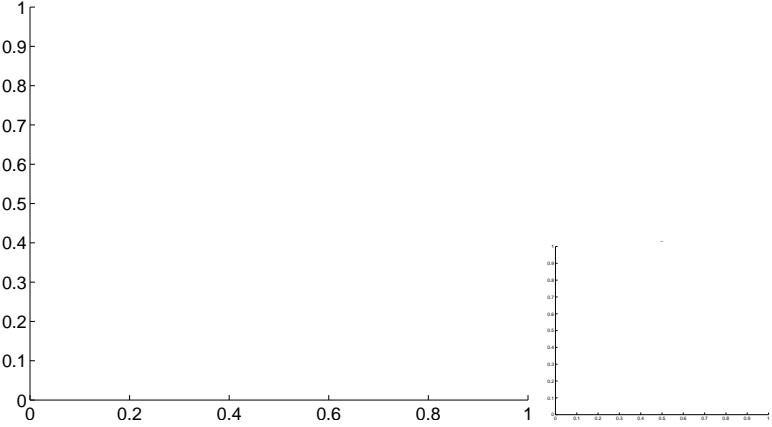
Q7 OOT image



Q8 no difference image



Q8 no OOT image



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

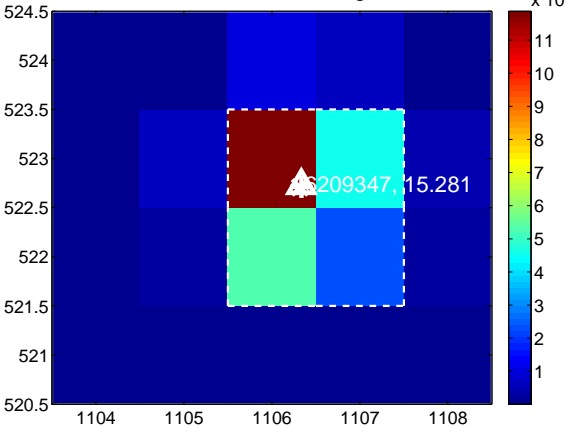
Q9 no difference image



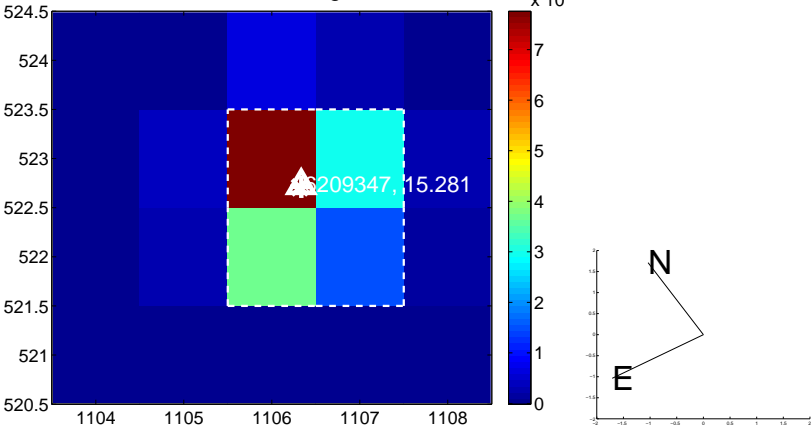
Q9 no OOT image



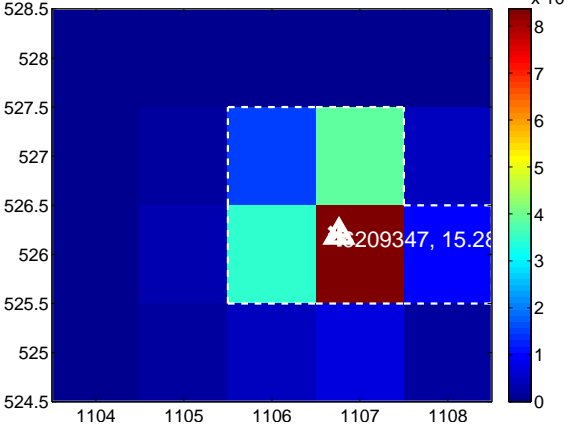
Q10 difference image



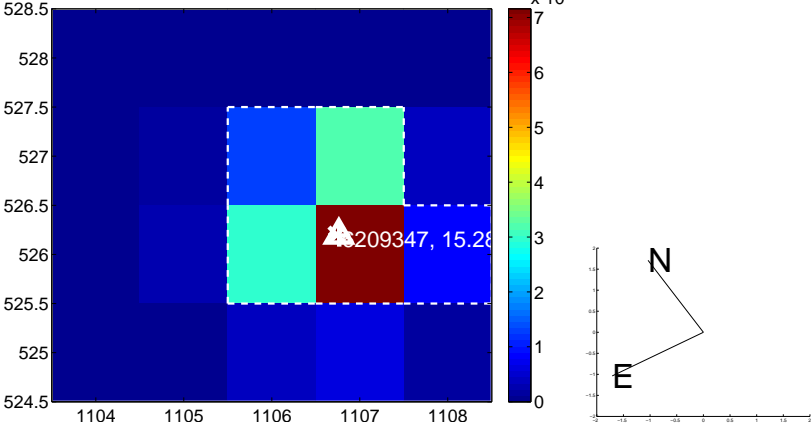
Q10 OOT image



Q11 difference image



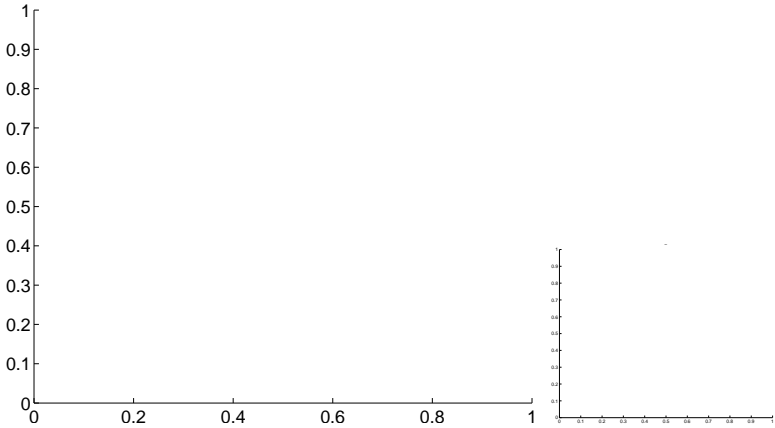
Q11 OOT image



Q12 no difference image



Q12 no OOT image



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

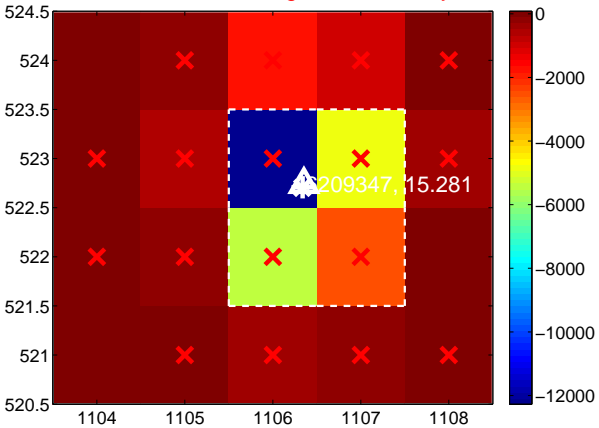
Q13 no difference image



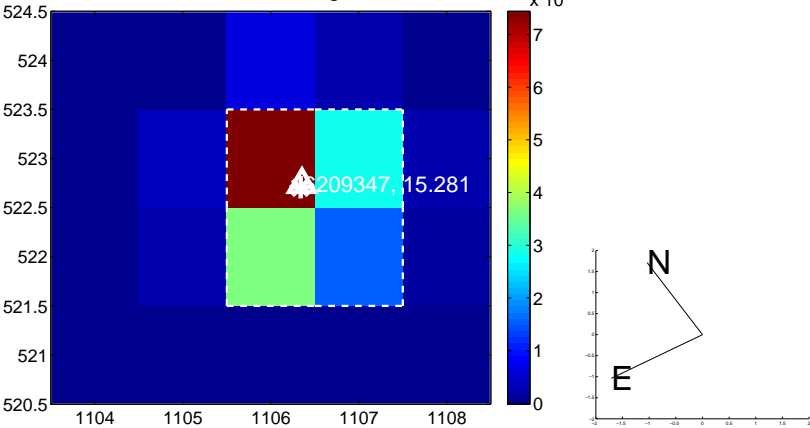
Q13 no OOT image



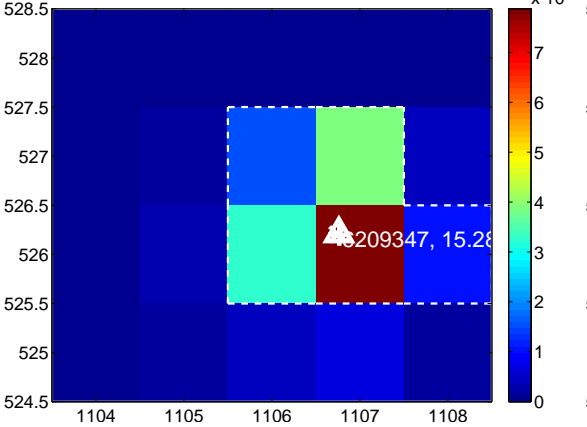
Q14 difference image. Poor Quality



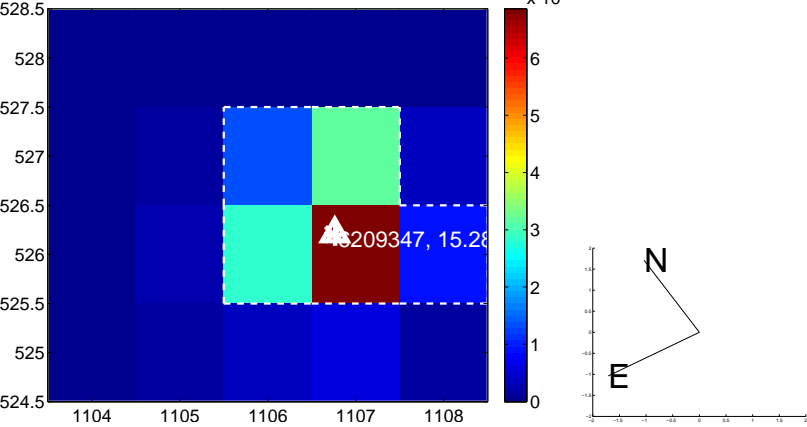
Q14 OOT image



Q15 difference image



Q15 OOT image



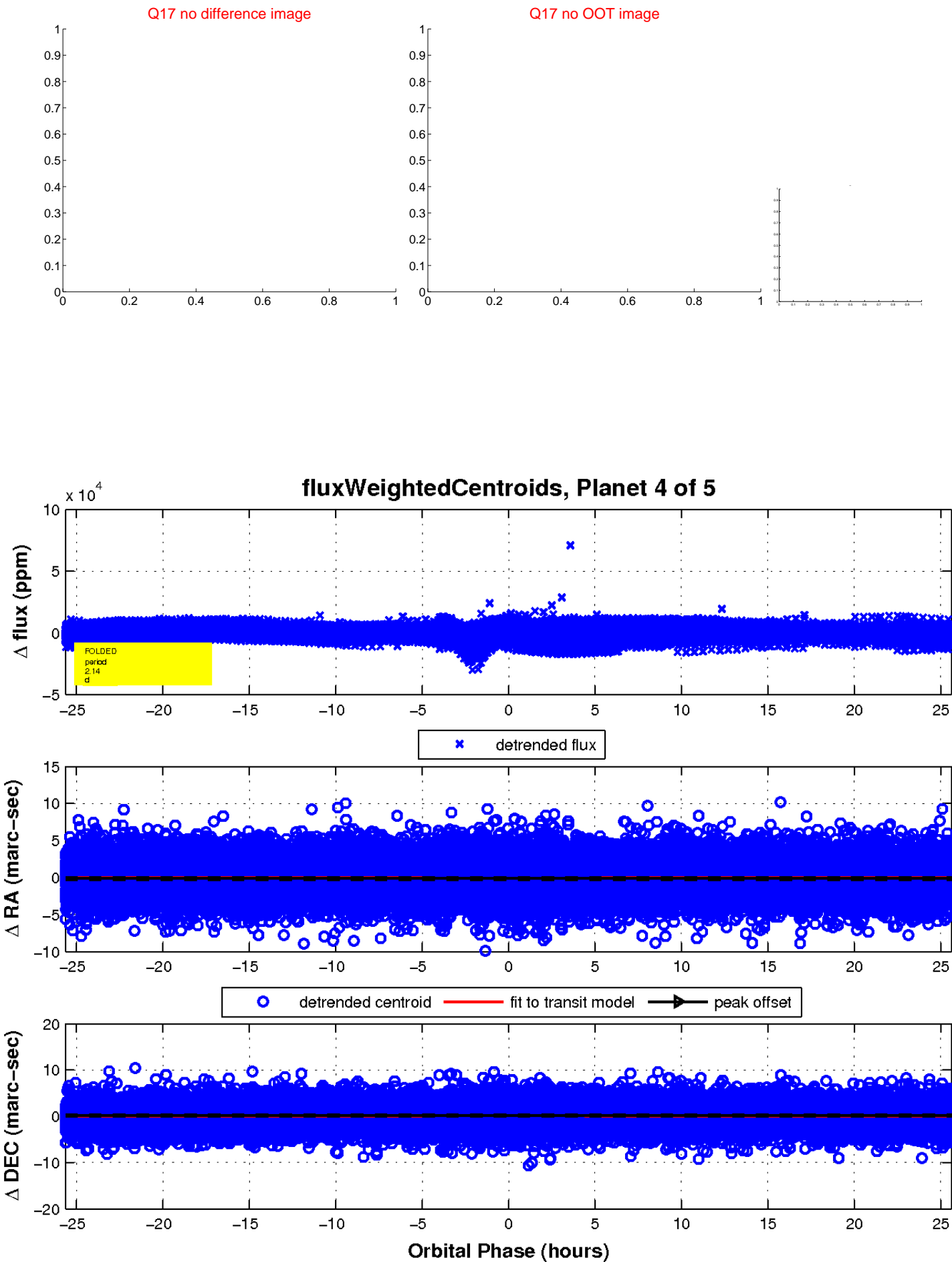
Q16 no difference image



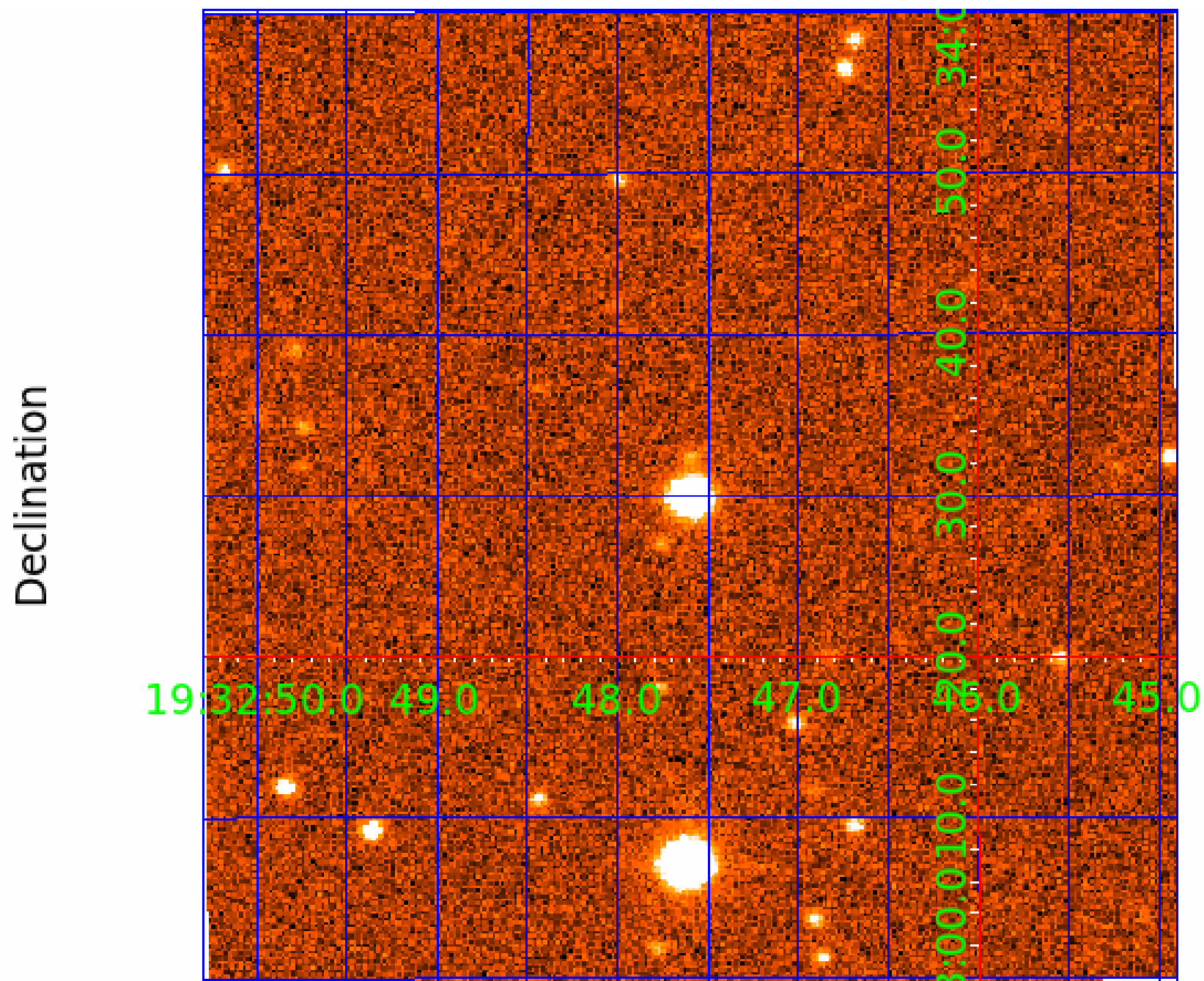
Q16 no OOT image



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



UKIRT Image



KIC 006209347

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})
006209347-01	OBS	6025.01	2.136584	133.023286	76286.4	2.474	2126.3	1472.5	0.91	5457	36.35	700.67
006209347-02	OBS	No	2.136579	131.958967	1951.5	1.466	48.0	55.7	0.91	5457	4.83	700.68
006209347-03	OBS	No	241.069485	224.093816	1719.9	3.864	10.9	5.4	0.91	5457	3.77	1.28
006209347-04	OBS	No	2.136120	133.160806	359.5	10.316	9.0	6.0	0.91	5457	1.91	700.88
006209347-05	OBS	No	0.534239	132.004678	169.0	1.615	10.8	5.9	0.91	5457	1.16	4447.97

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006209347-01	OBS	FP	0.03	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
006209347-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
006209347-03	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006209347-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—RESIDUAL_TCE—HALO_GHOST
006209347-05	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—HALO_GHOST

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

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

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

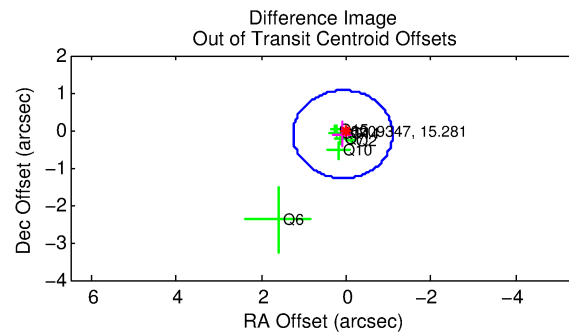
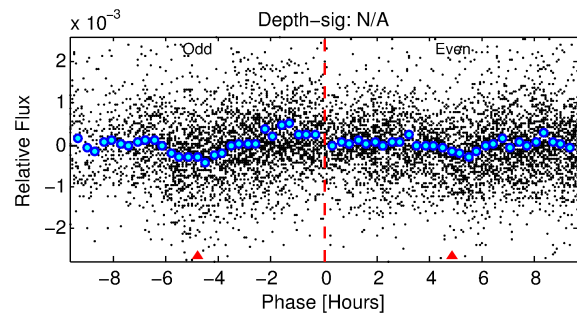
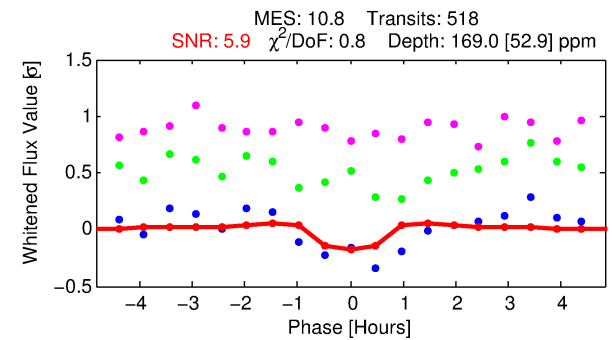
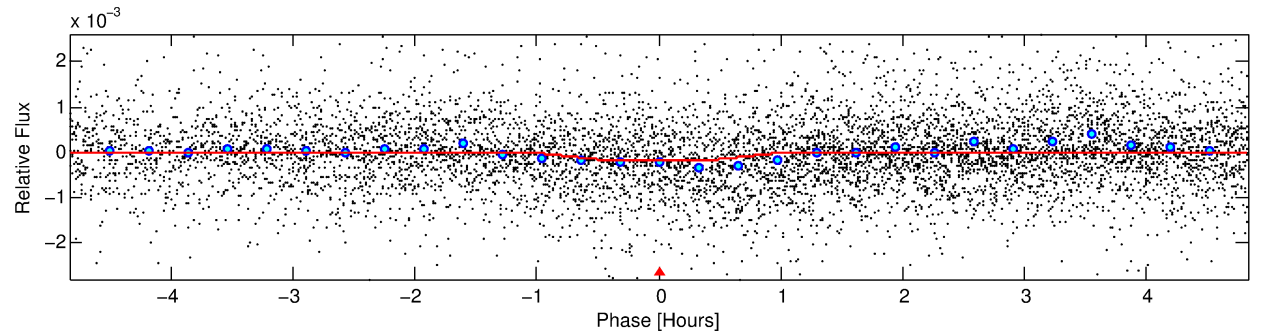
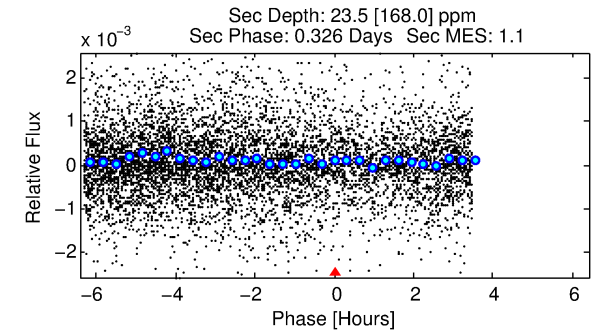
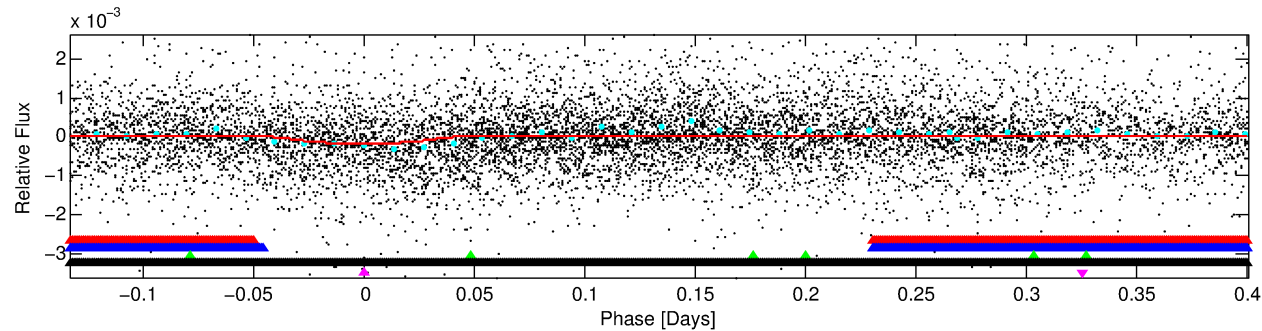
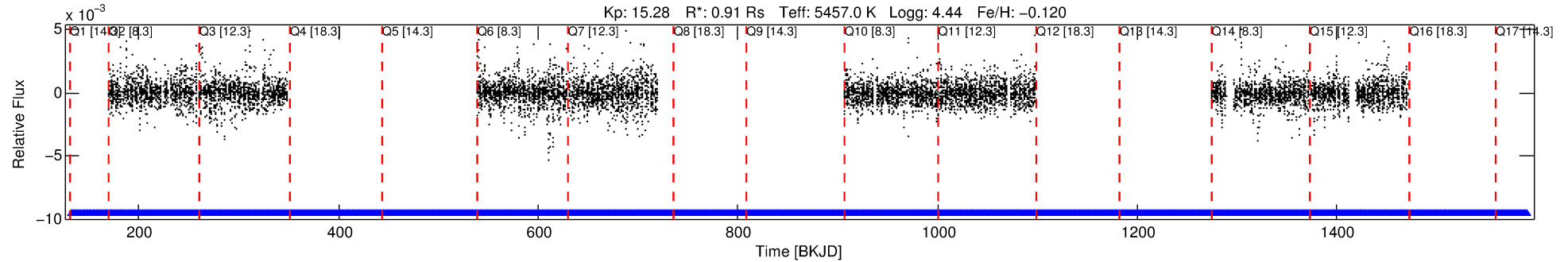
Ephemeris Match Information For 006209347-05

No Significant Match Found

DV One-Page Summary

KIC: 6209347 Candidate: 5 of 5 Period: 0.534 d
KOI: K06025 Corr: No Ephemeris Match

Kp: 15.28 R*: 0.91 Rs Teff: 5457.0 K Logg: 4.44 Fe/H: -0.120



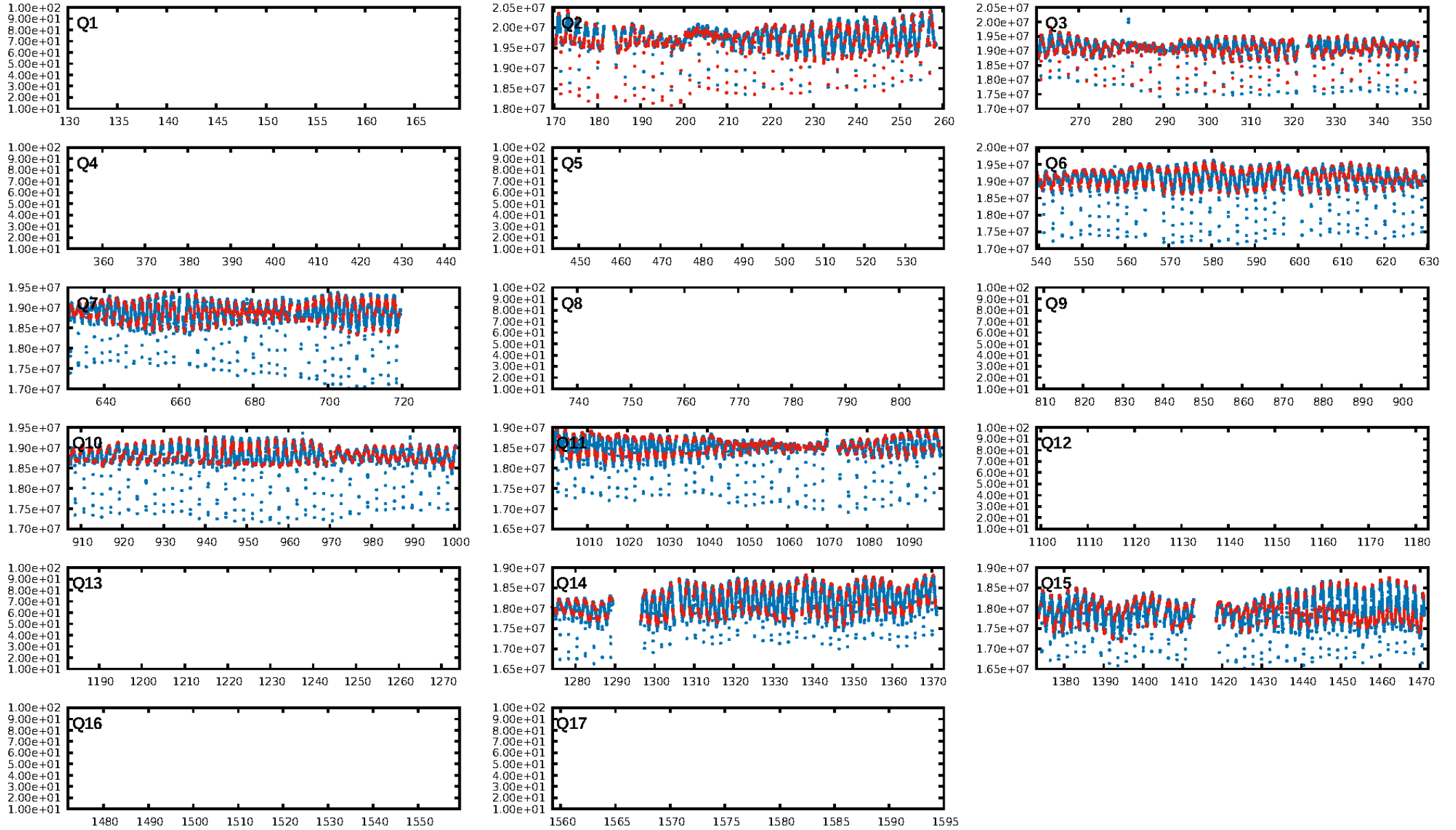
DV Fit Results:

Period = 0.53424 [0.00002] d
Epoch = 132.0047 [0.0033] BKJD
Rp/R* = 0.0118 [0.0300]
a/R* = 2.62 [23.08]
b = 0.07 [139.32]
Seff = 4447.97 [1425.18]
Teff = 2082 [167] K
Rp = 1.16 [2.97] Re
a = 0.0121 [0.0024] AU
Ag = 1.41 [12.34] [0.03σ]
Teffp = 3506 [7690] K [0.19σ]

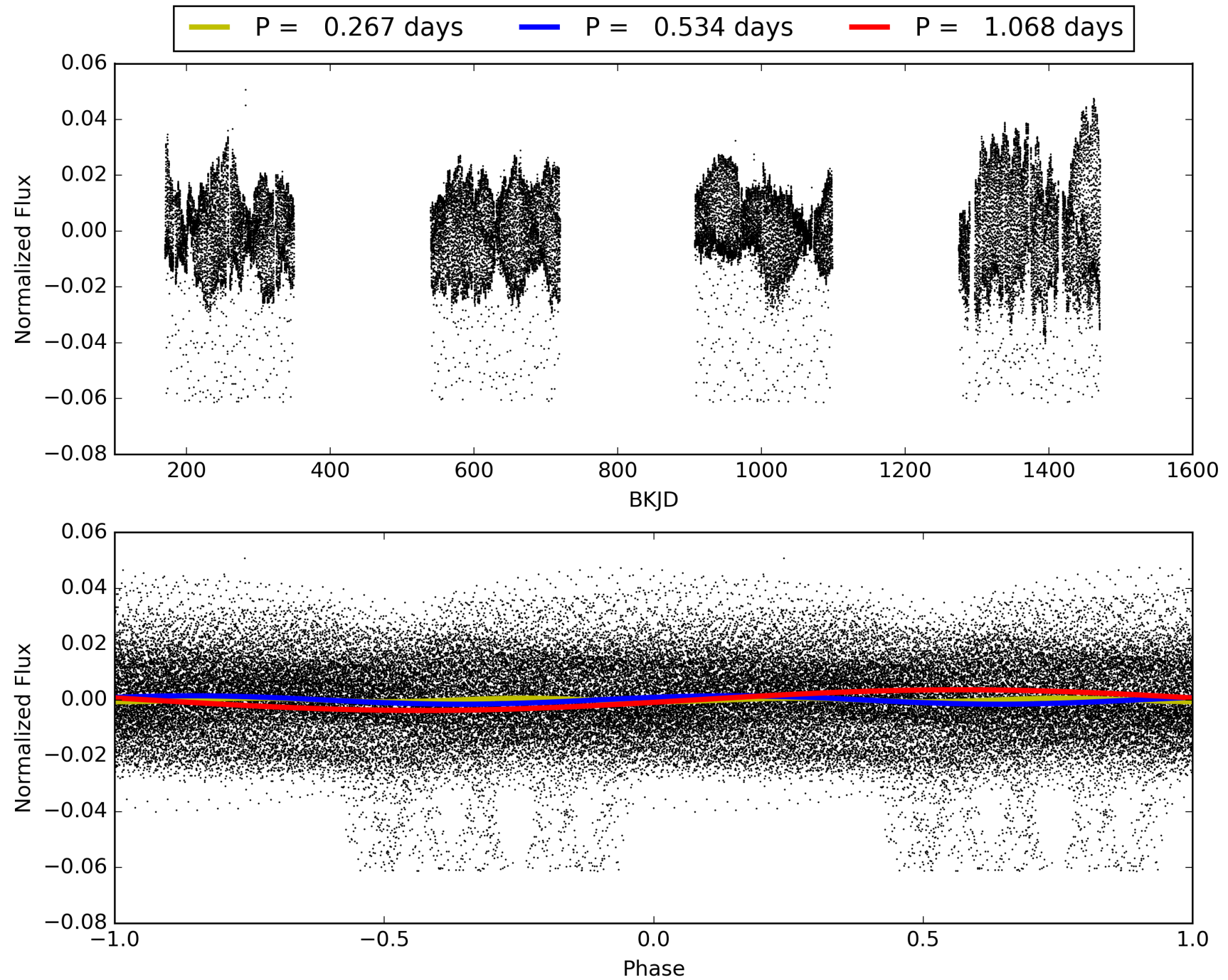
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [3.68σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [518/518]
GhostDiagnostic-chr: -0.06396
Centroid-sig: 11.2%
Centroid-so: 0.715 arcsec [1.19σ]
OotOffset-rm: 0.130 arcsec [0.33σ]
KicOffset-rm: 0.128 arcsec [0.41σ]
OotOffset-st: 4/3/0/0 [7]
KicOffset-st: 4/3/0/0 [7]
DiffImageQuality-fgm: 0.71 [5/7]
DiffImageOverlap-fno: 1.00 [8/8]

TCE 006209347-05, PDC Light Curves

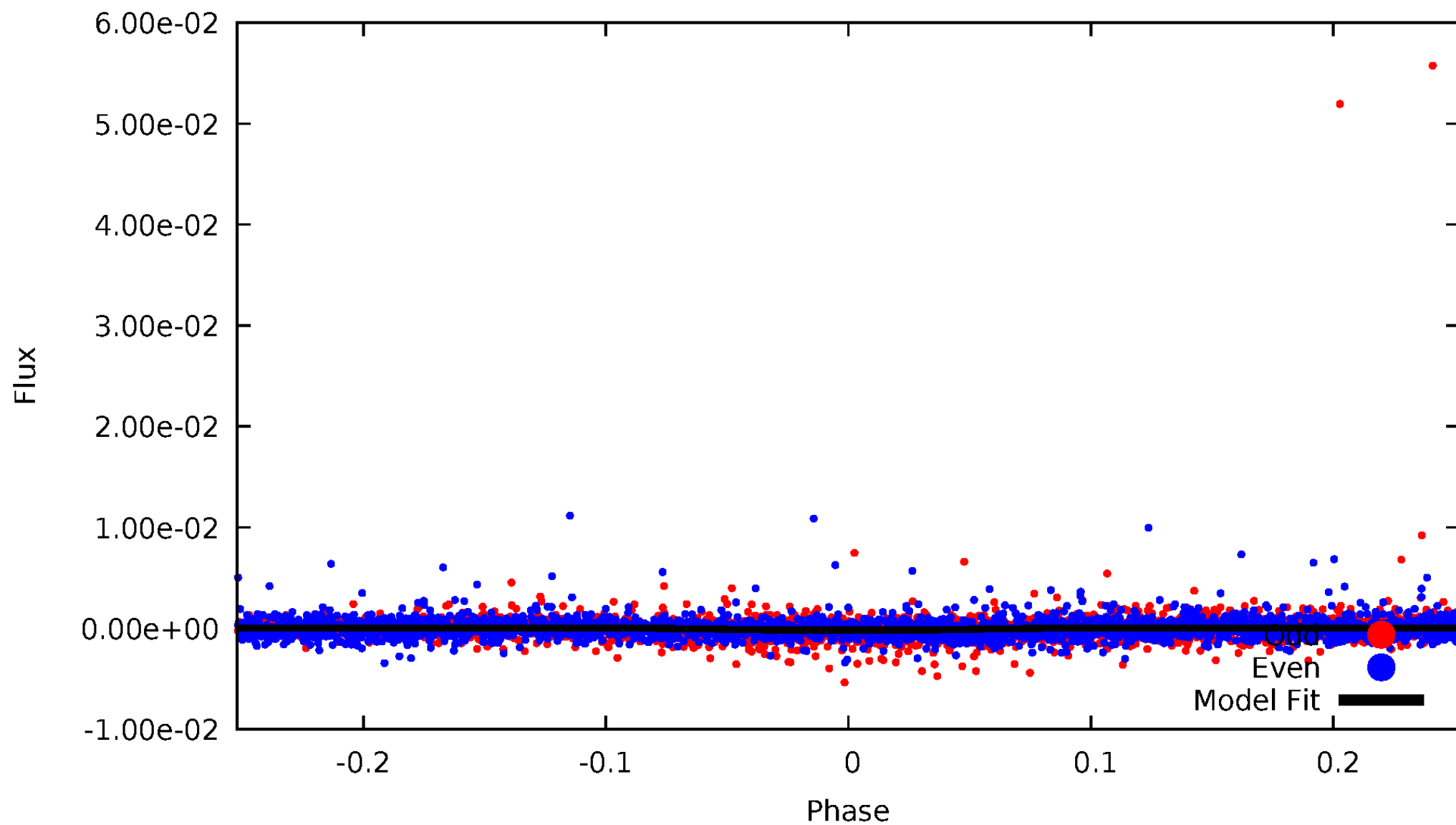


TCE 006209347-05



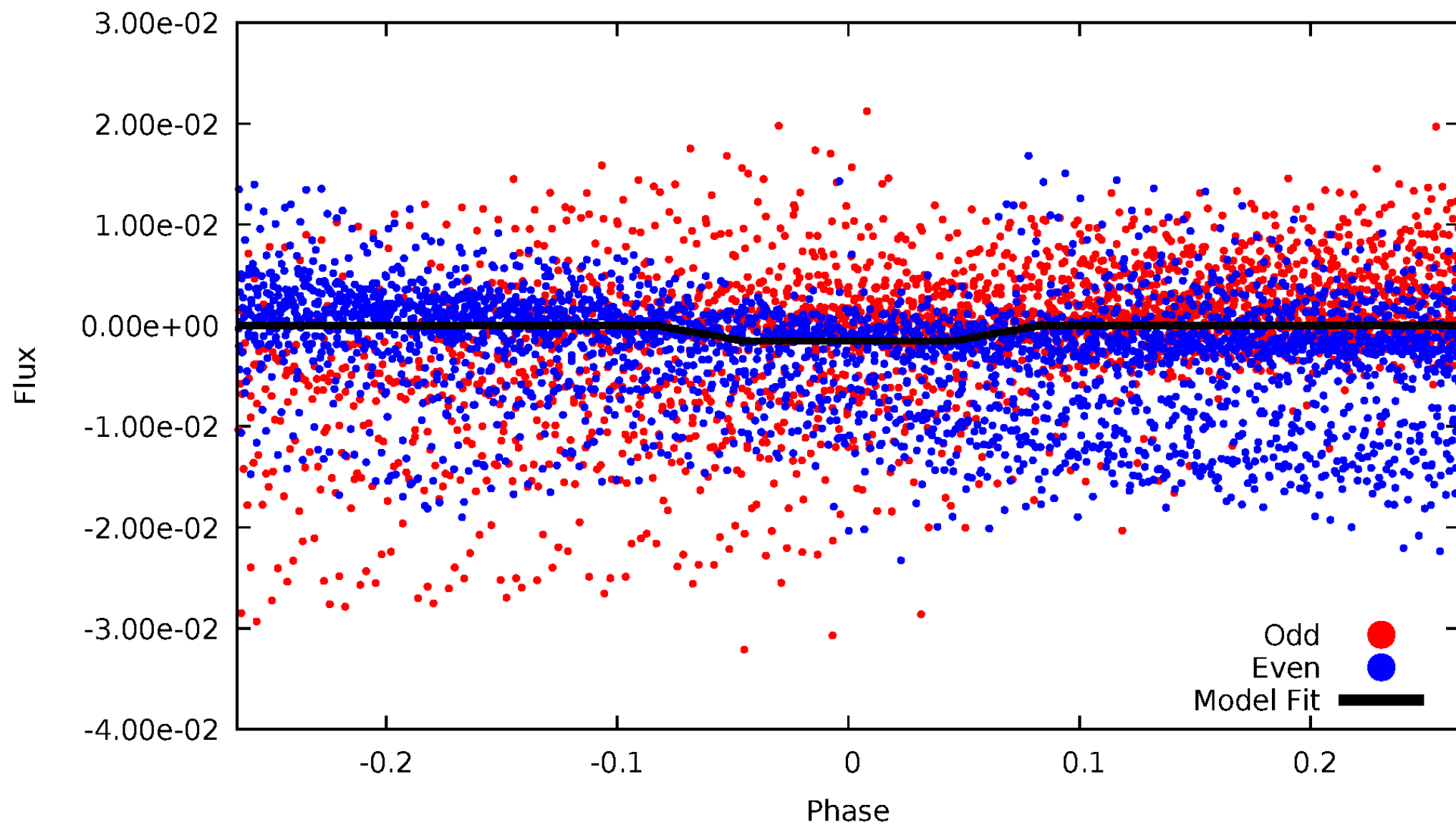
DV Odd/Even

TCE 006209347-05



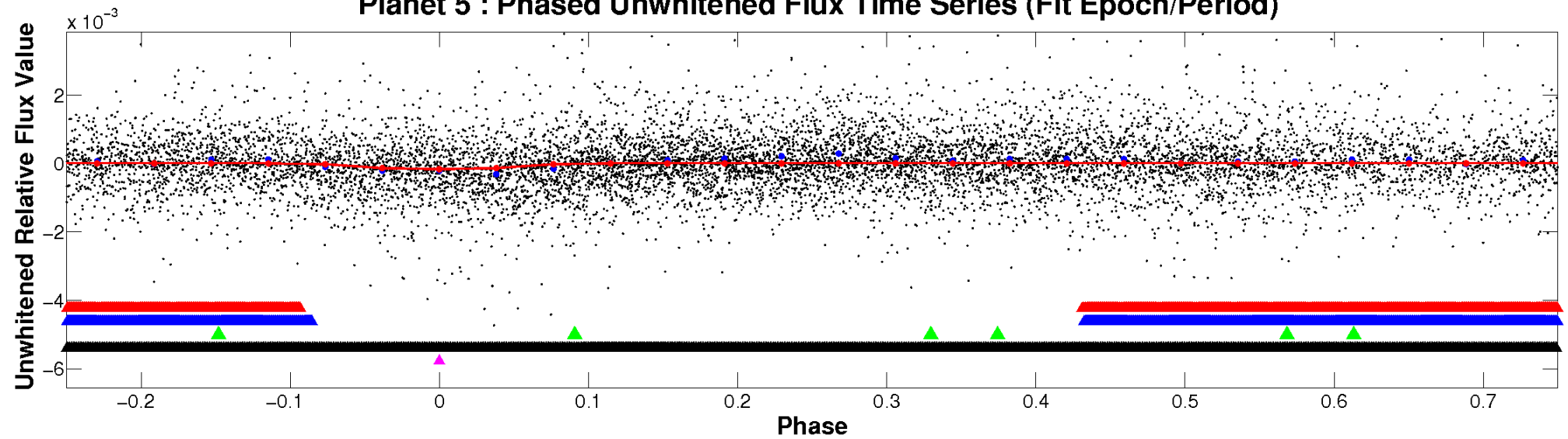
ALT Odd/Even

TCE 006209347-05

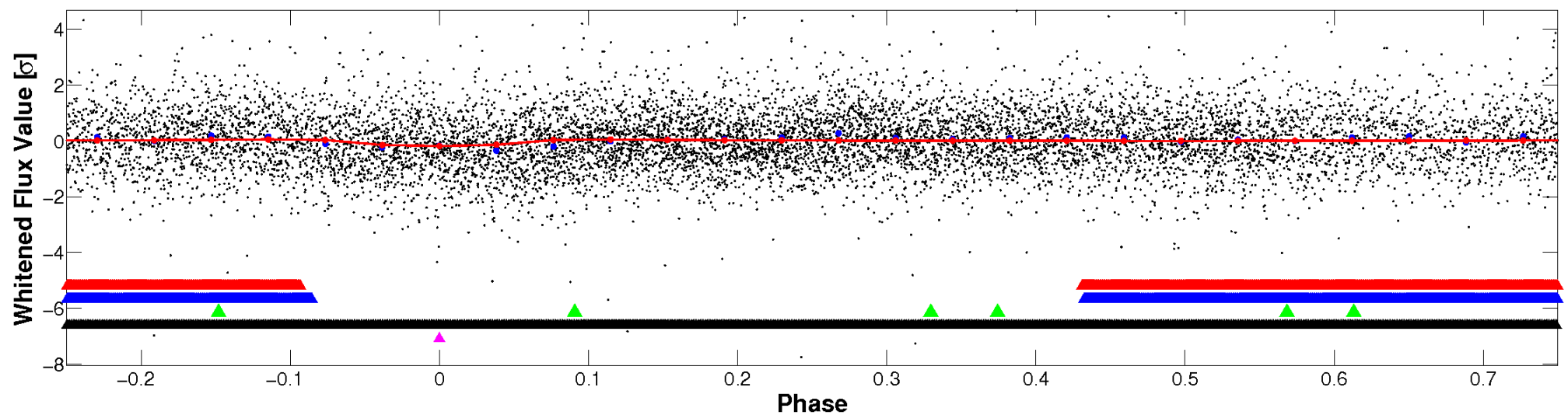


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

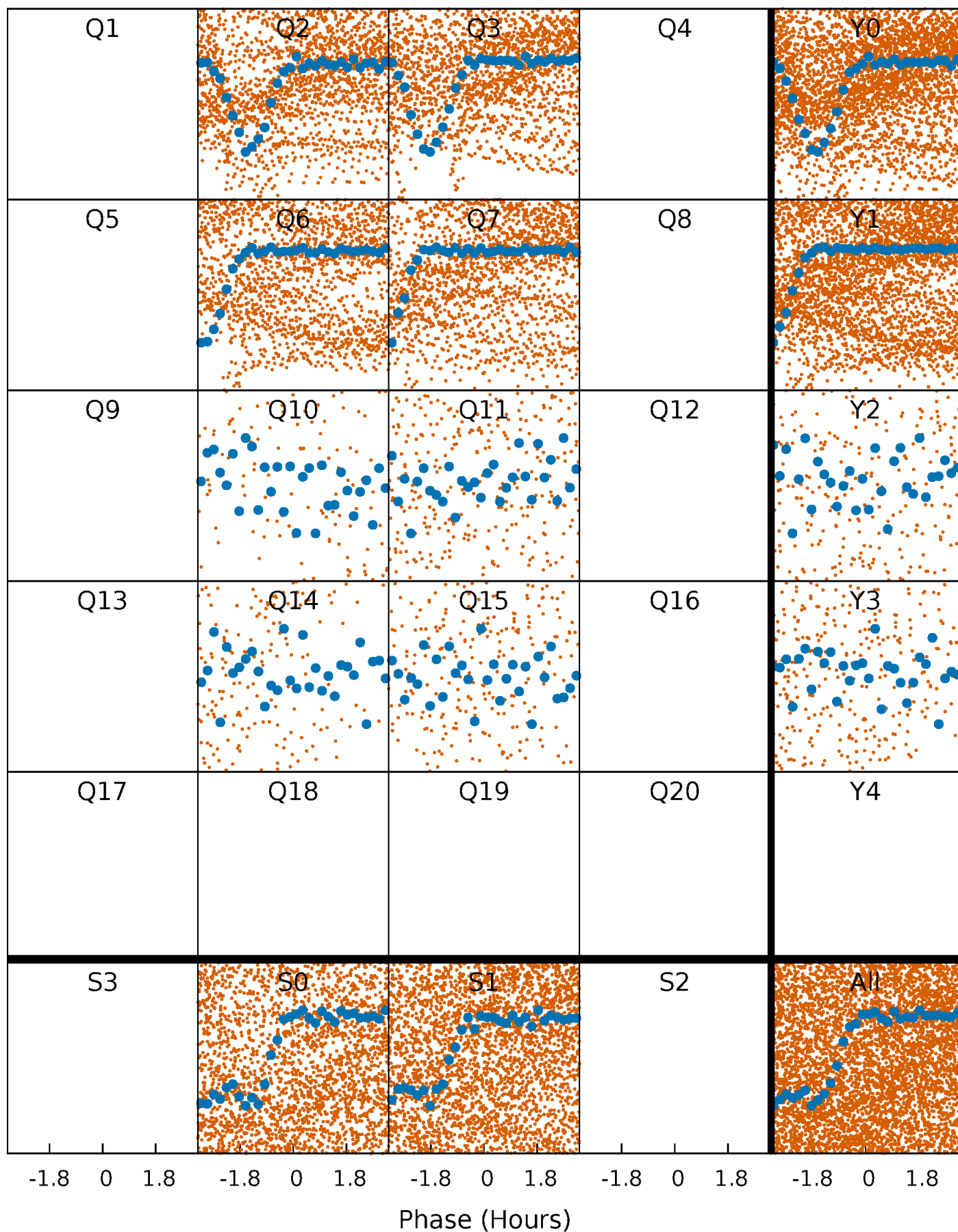


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



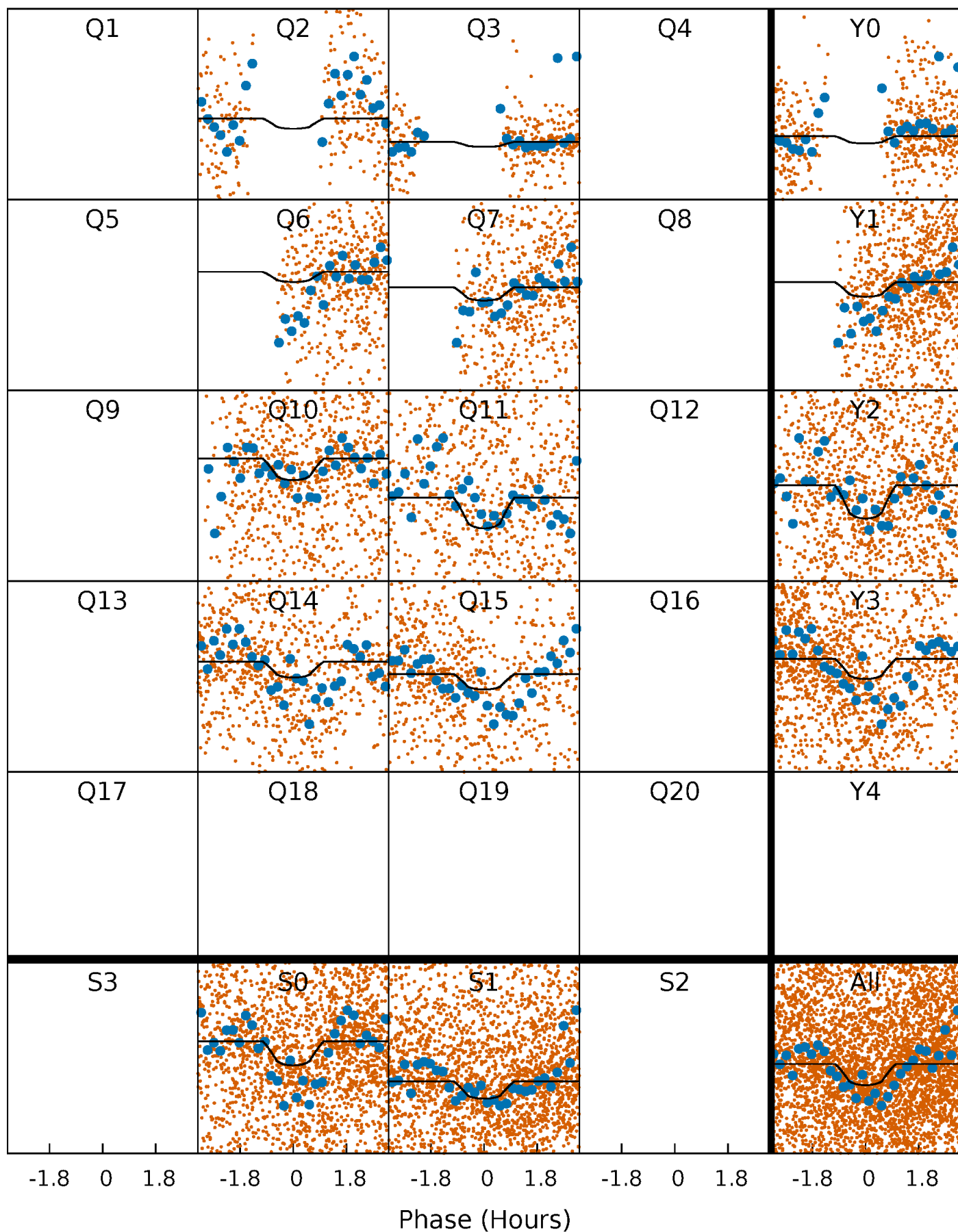
PDC Quarter-Phased Transit Curves

TCE 006209347-05 $P = 0.534239$ Days $T_0 = 132.004678$ (BKJD)



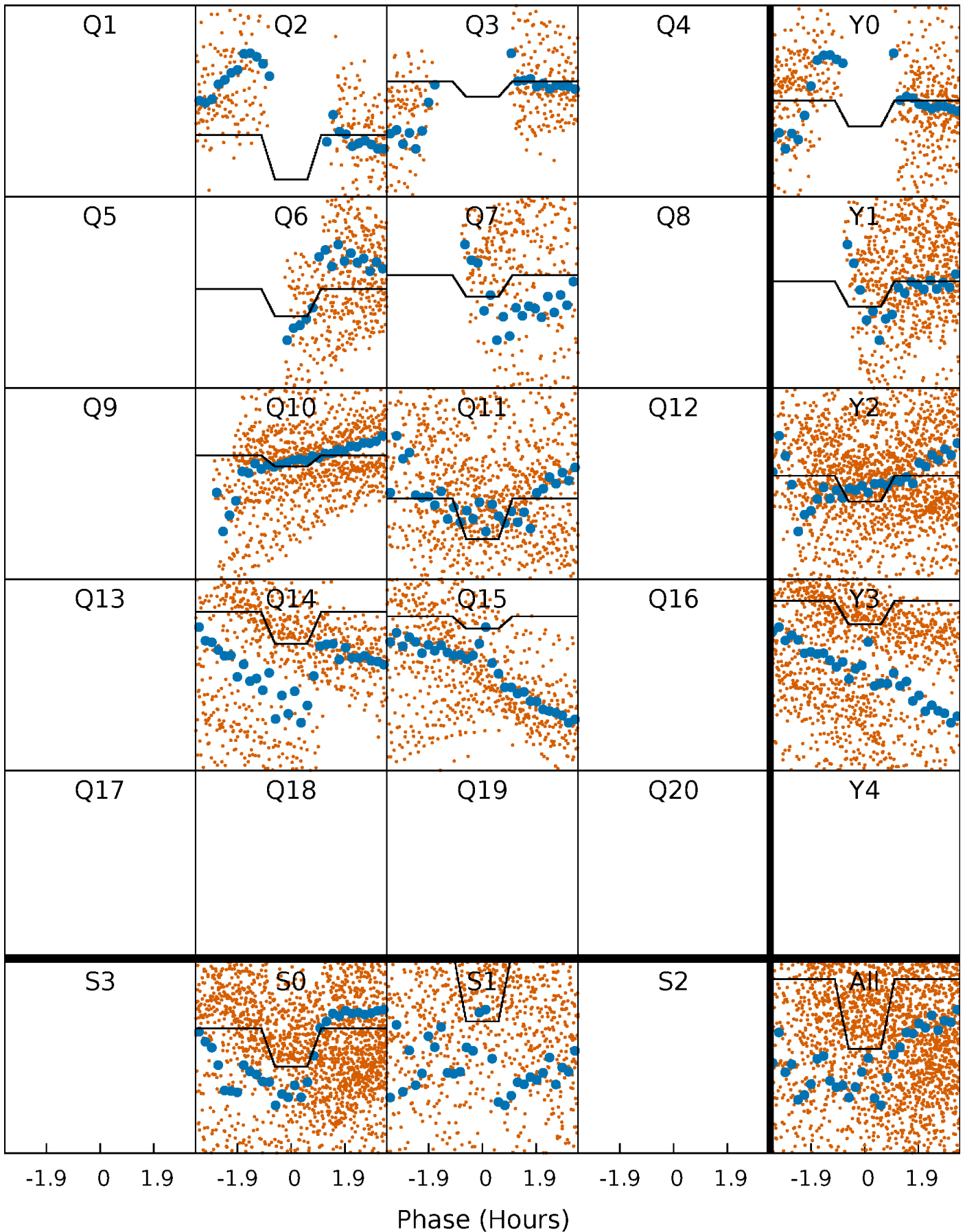
DV Quarter-Phased Transit Curves

TCE 006209347-05 $P = 0.534239$ Days $T_0 = 132.004678$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

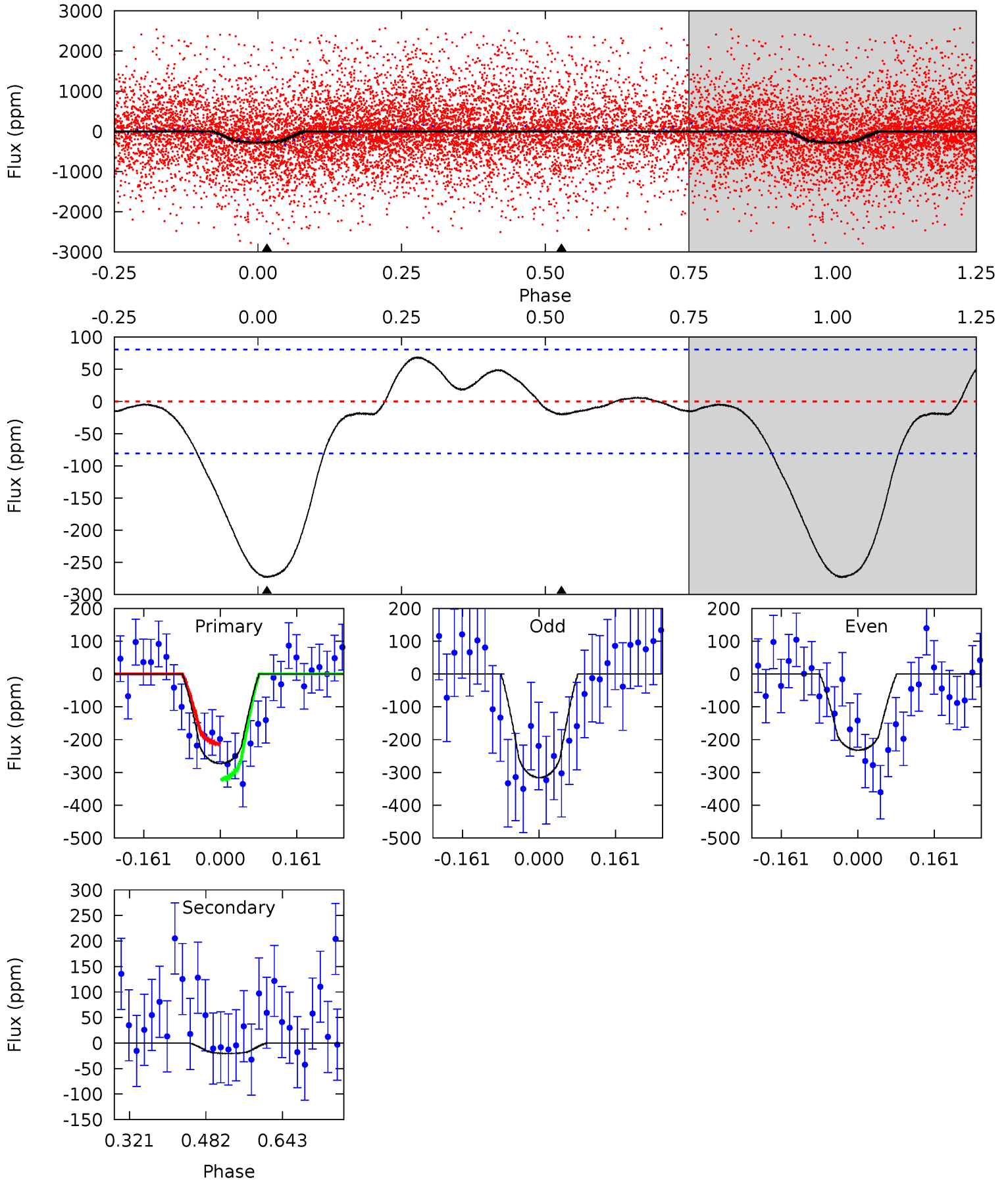
TCE 006209347-05 P= 0.534246 Days $T_0=131.984646$ (BKJD)



DV Model-Shift Uniqueness Test

006209347-05, P = 0.534239 Days, E = 132.004678 Days

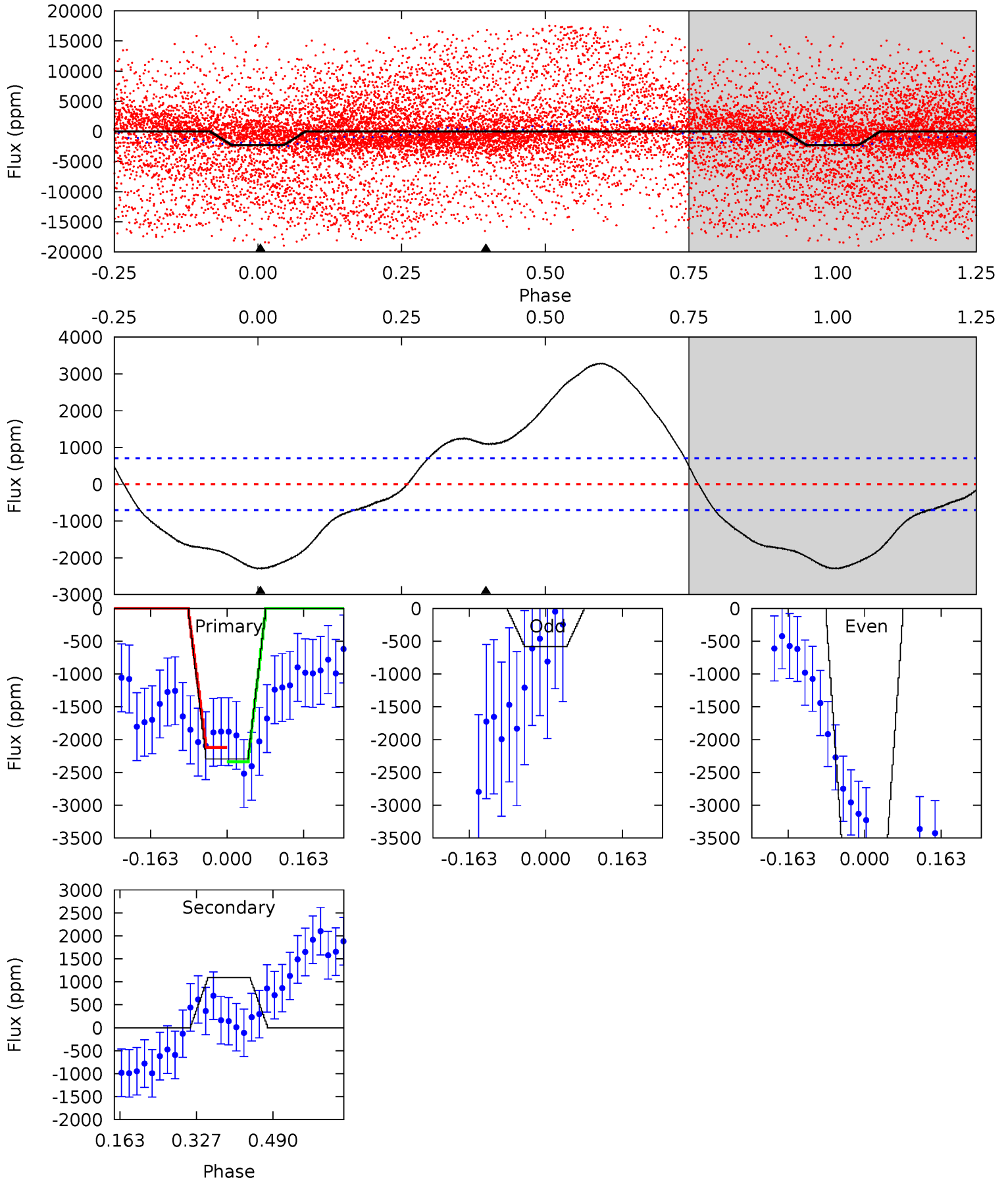
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.1	1.13	0	0	4.46	1.40	1.71	15.1	15.1	1.13	1.13	2.36	1.04	0.20	3.07



Alt Model-Shift Uniqueness Test

006209347-05, P = 0.534246 Days, E = 131.984646 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.5	-6.90	0	0	4.46	1.39	10.4	14.5	14.5	-6.90	-6.90	11.5	2.44	0.59	0.72



Stellar Parameters For KIC 006209347

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5457^{+164}_{-164}	$4.442^{+0.126}_{-0.168}$	$-0.120^{+0.300}_{-0.300}$	$0.905^{+0.200}_{-0.133}$	$0.827^{+0.119}_{-0.064}$	$1.574^{+0.867}_{-0.692}$
	+3%/-3%	+3%/-4%	+250%/-250%	+22%/-15%	+14%/-8%	+55%/-44%
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 006209347-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-20±18	$2.43^{+2.70}_{-1.63}$	2912^{+198}_{-155}	-2666^{+6759}_{-418}	$0.176^{+2.019}_{-0.168}$
Alt.	1090±158	$4.30^{+2.91}_{-2.49}$	2935^{+175}_{-178}	-4934^{+838}_{-2608}	$-4.861^{+3.203}_{-23.552}$

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 $A_{obs} \gg 1.0$

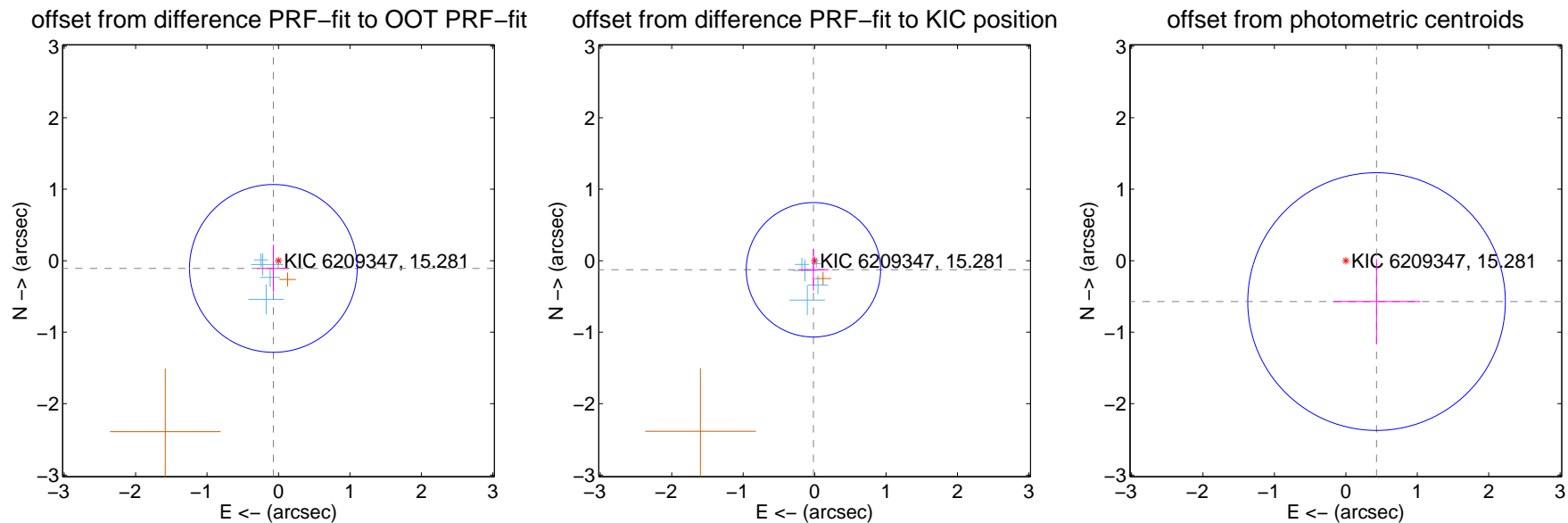
DV Centroid Data

Supplemental centroid analysis for 006209347-05. Kepler magnitude: 15.28. Transit SNR 5.94

There are 5 quarters with good PRF difference image offsets

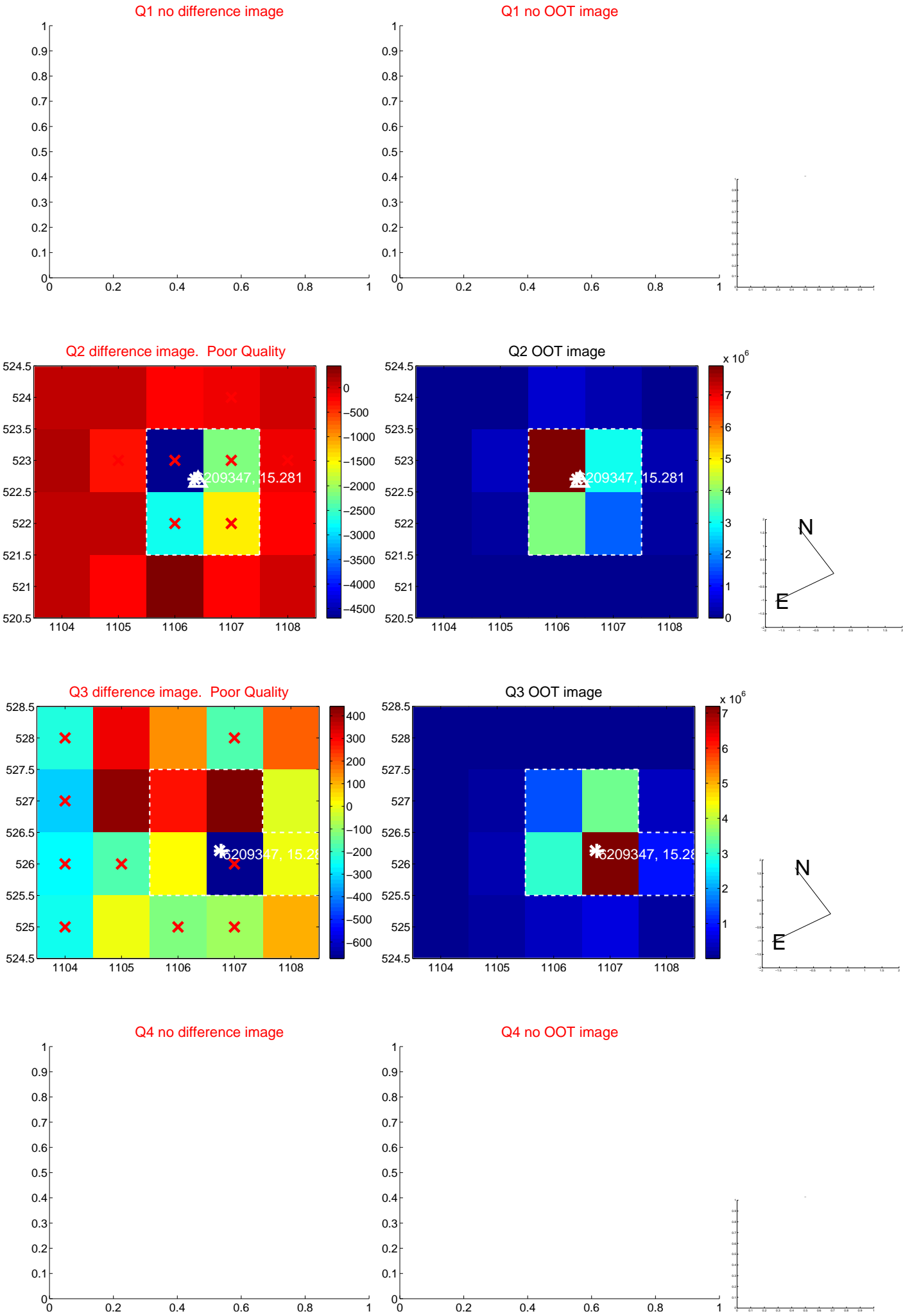
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.130 ± 0.391	0.33	0.072 ± 0.226	-0.108 ± 0.331
PRF-fit source offset from KIC position	0.128 ± 0.313	0.41	0.017 ± 0.214	-0.127 ± 0.291
photometric centroid source offset	0.72 ± 0.60	1.19	-0.43 ± 0.61	-0.57 ± 0.59

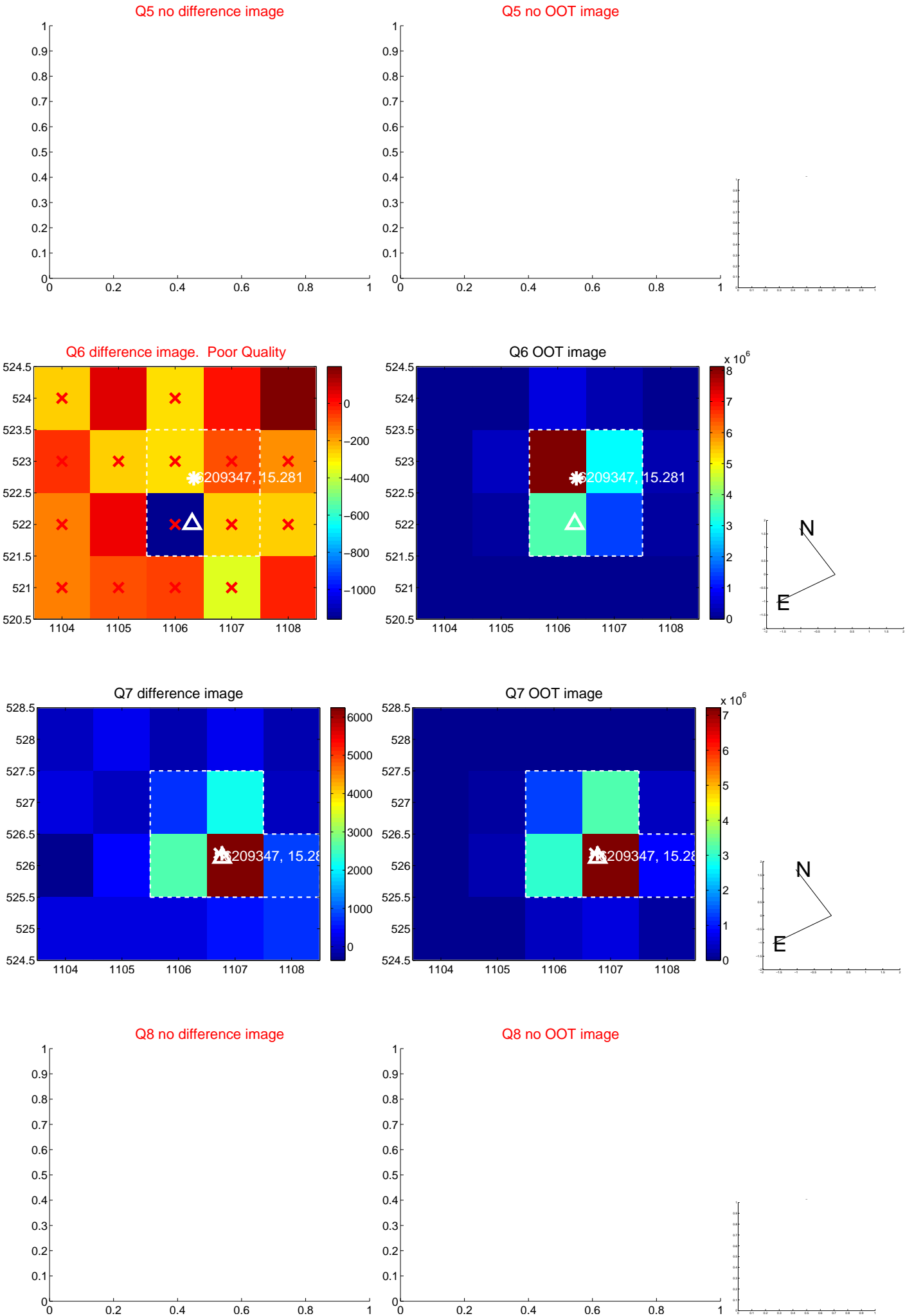


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

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



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

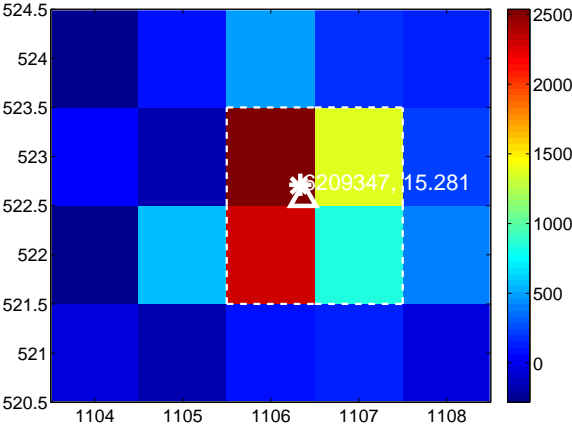
Q9 no difference image



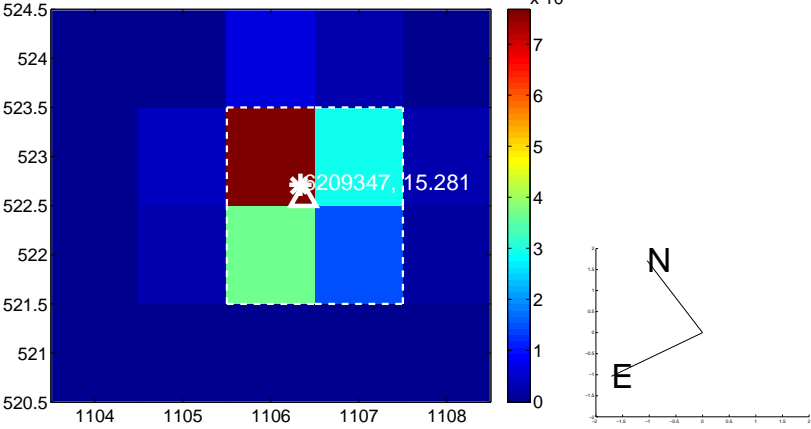
Q9 no OOT image



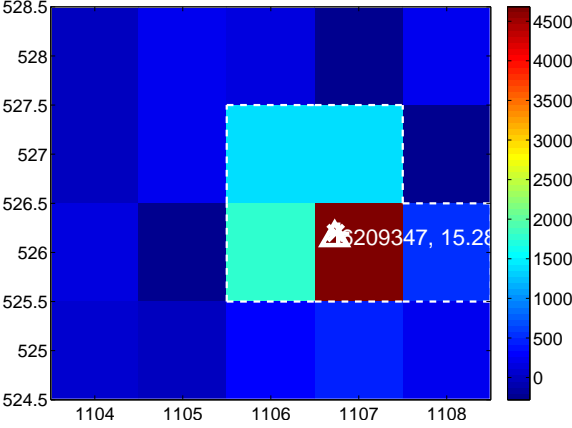
Q10 difference image



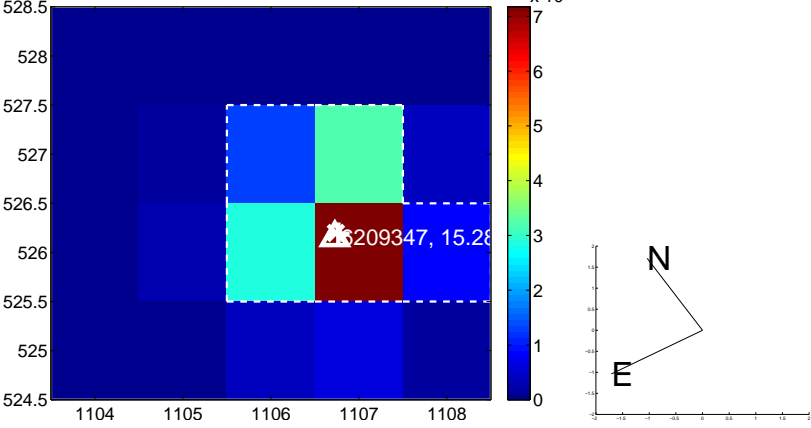
Q10 OOT image



Q11 difference image



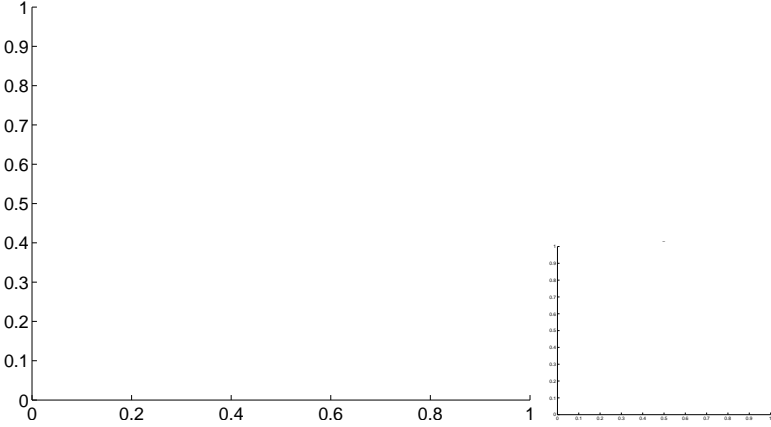
Q11 OOT image



Q12 no difference image



Q12 no OOT image



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

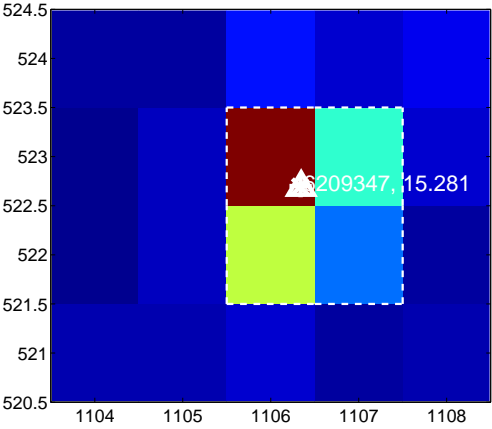
Q13 no difference image



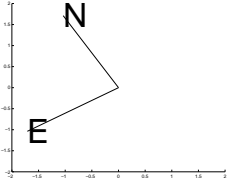
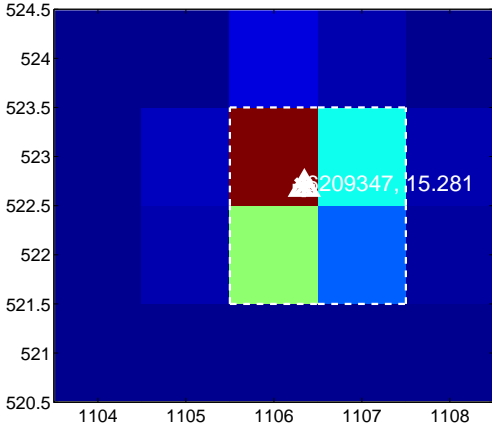
Q13 no OOT image



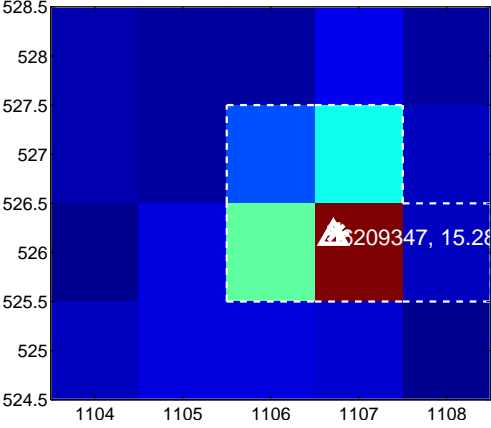
Q14 difference image



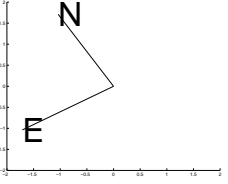
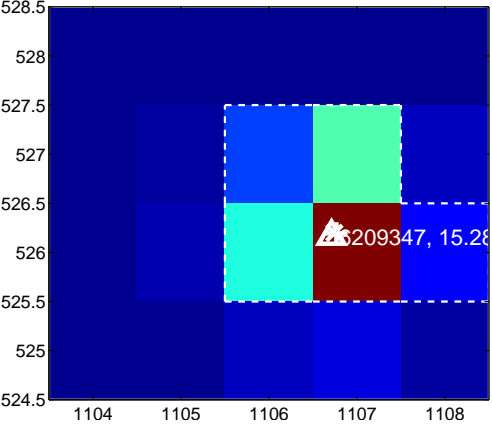
Q14 OOT image



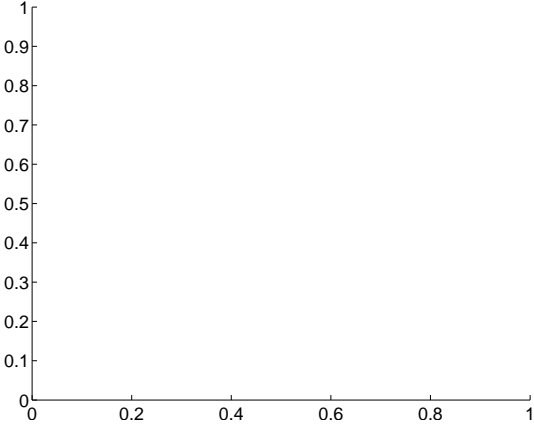
Q15 difference image



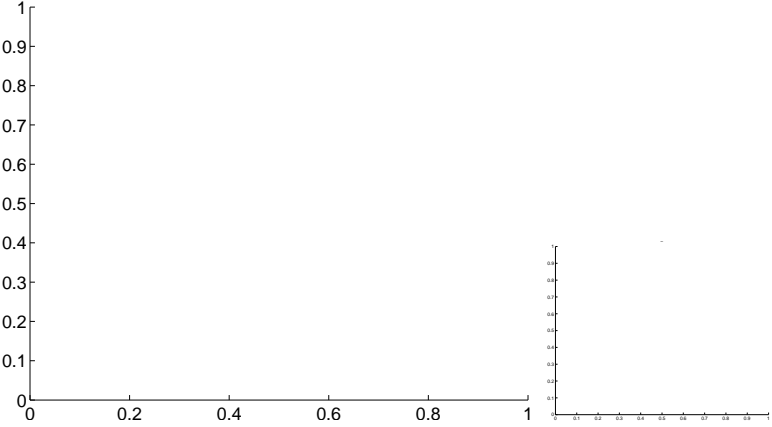
Q15 OOT image



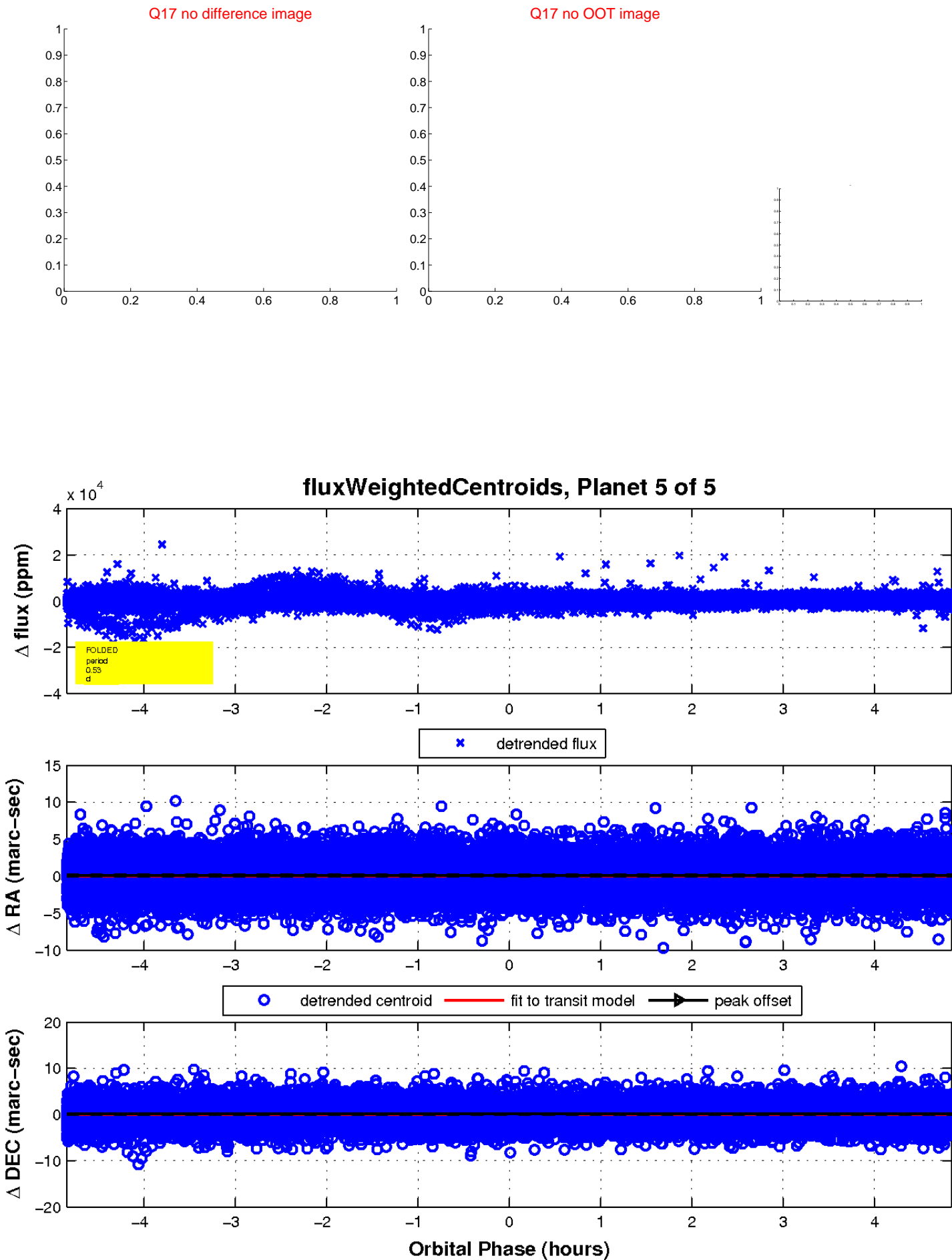
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

