

KIC 005080346

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})
005080346-01	OBS	6509.01	2.311939	132.275587	29.4	8.875	9.4	8.9	2.68	9451	1.63	24144.52
005080346-02	OBS	No	112.890906	168.600179	71.4	3.062	15.9	1.8	2.68	9451	2.48	135.28
005080346-03	OBS	No	155.206224	182.441750	306.2	17.451	12.3	8.4	2.68	9451	4.99	88.49
005080346-04	OBS	No	116.579548	212.669096	163.3	16.640	10.0	5.6	2.68	9451	3.70	129.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005080346-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_KIC_POS
005080346-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—TRANS_GAPPED—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—HALO_GHOST
005080346-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005080346-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

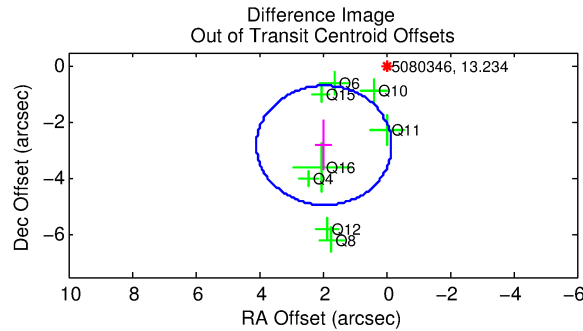
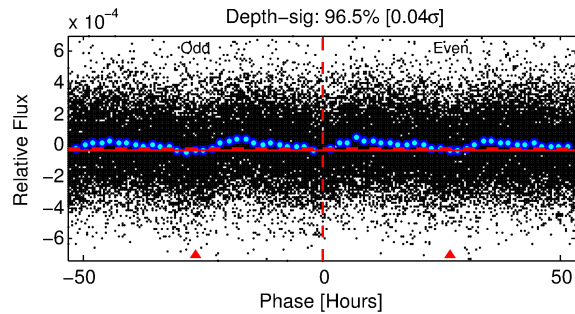
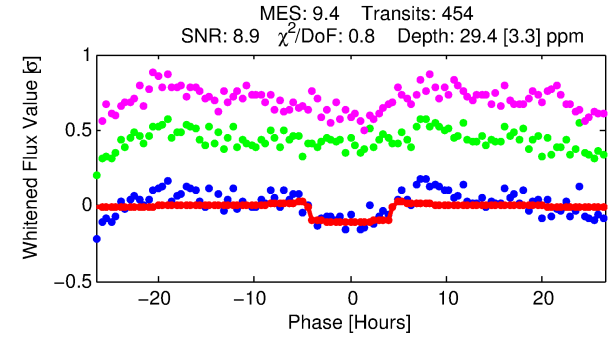
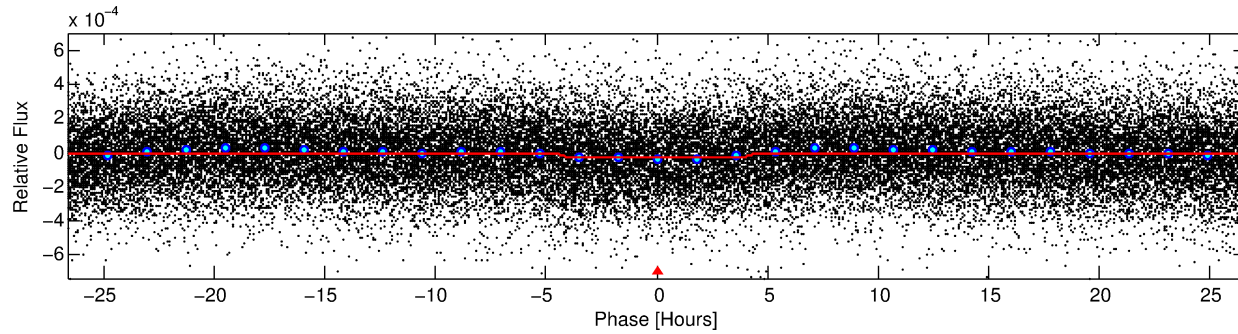
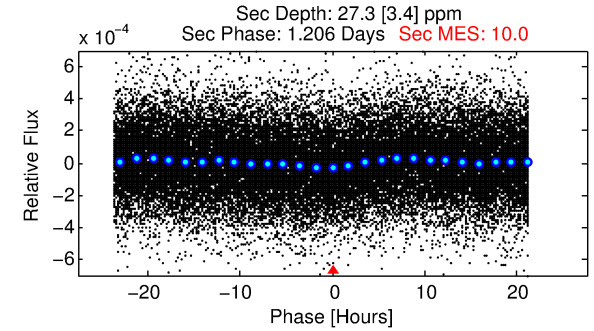
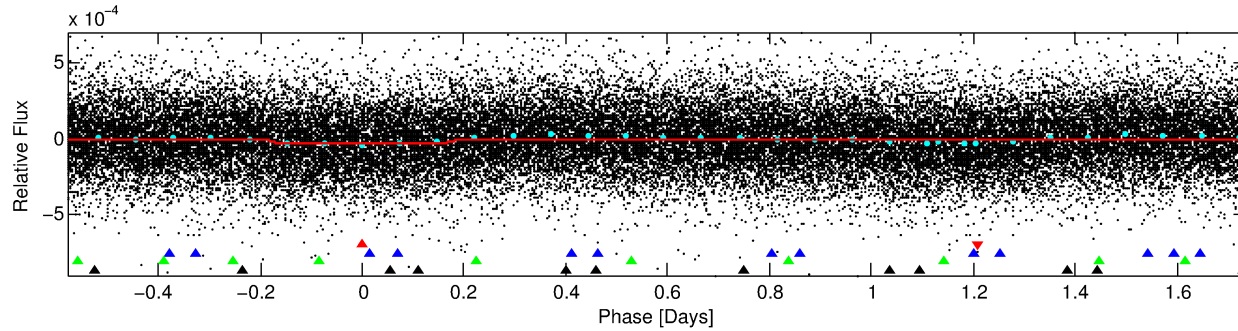
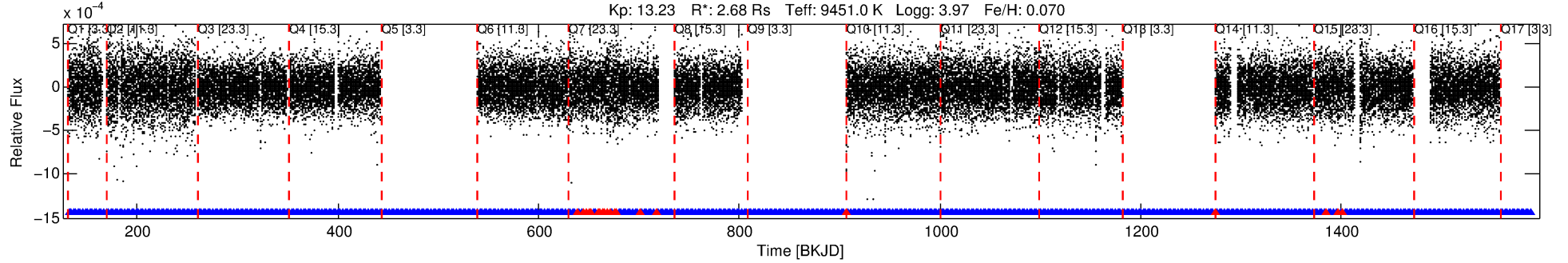
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005080346-01

No Significant Match Found

DV One-Page Summary

KIC: 5080346 Candidate: 1 of 4 Period: 2.312 d
KOI: K06509.01 Corr: 0.888



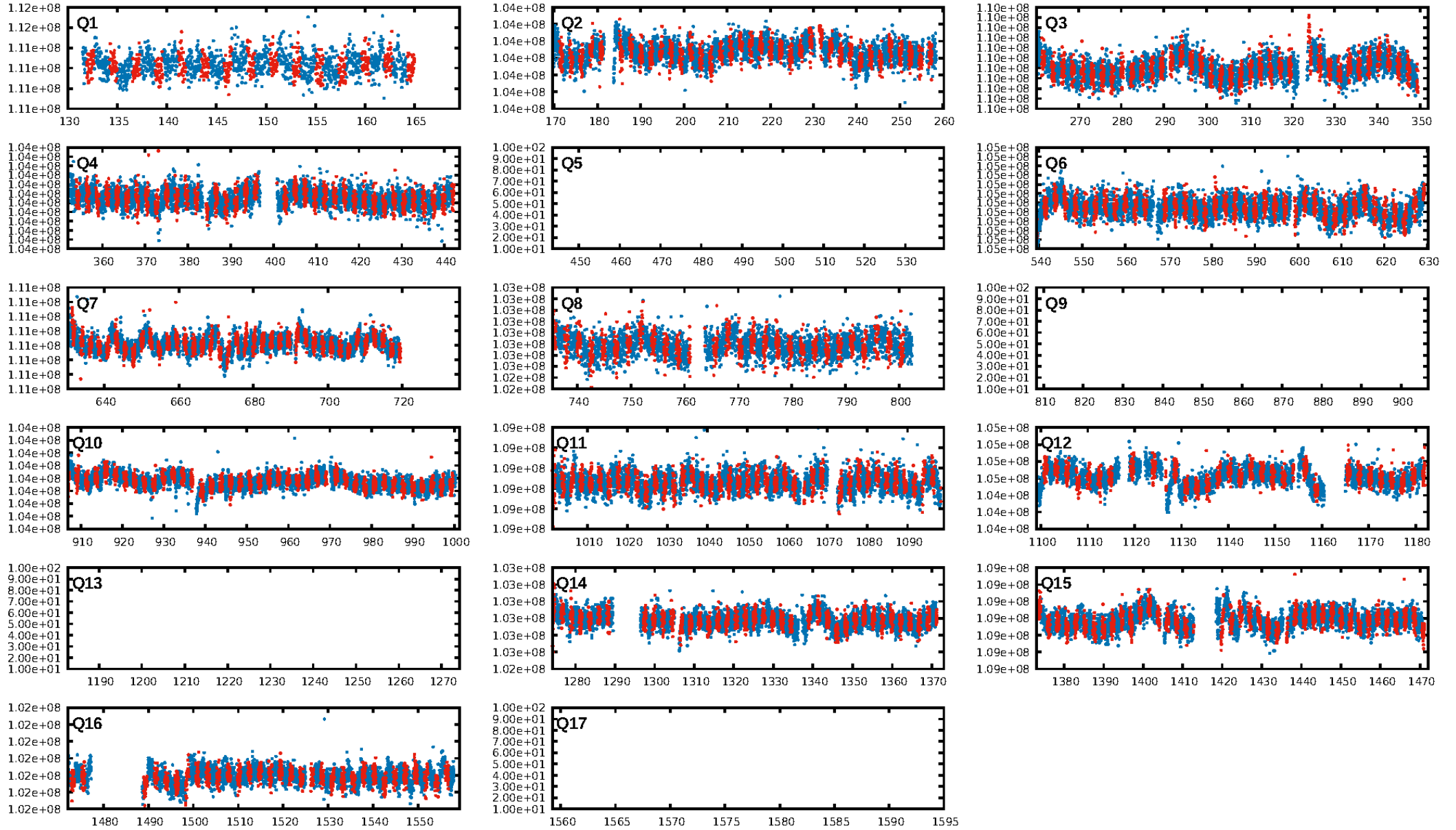
DV Fit Results:

Period = 2.31194 [0.00003] d
Epoch = 132.2756 [0.0067] BKJD
Rp/R* = 0.0056 [0.0012]
a/R* = 1.38 [1.07]
b = 0.86 [0.50]
Seff = 24144.52 [11639.61]
Teq = 3179 [383] K
Rp = 1.63 [0.72] Re
a = 0.0461 [0.0145] AU
Ag = 11.93 [7.76] [1.41σ]
Teffp = 9134 [1121] K [5.03σ]

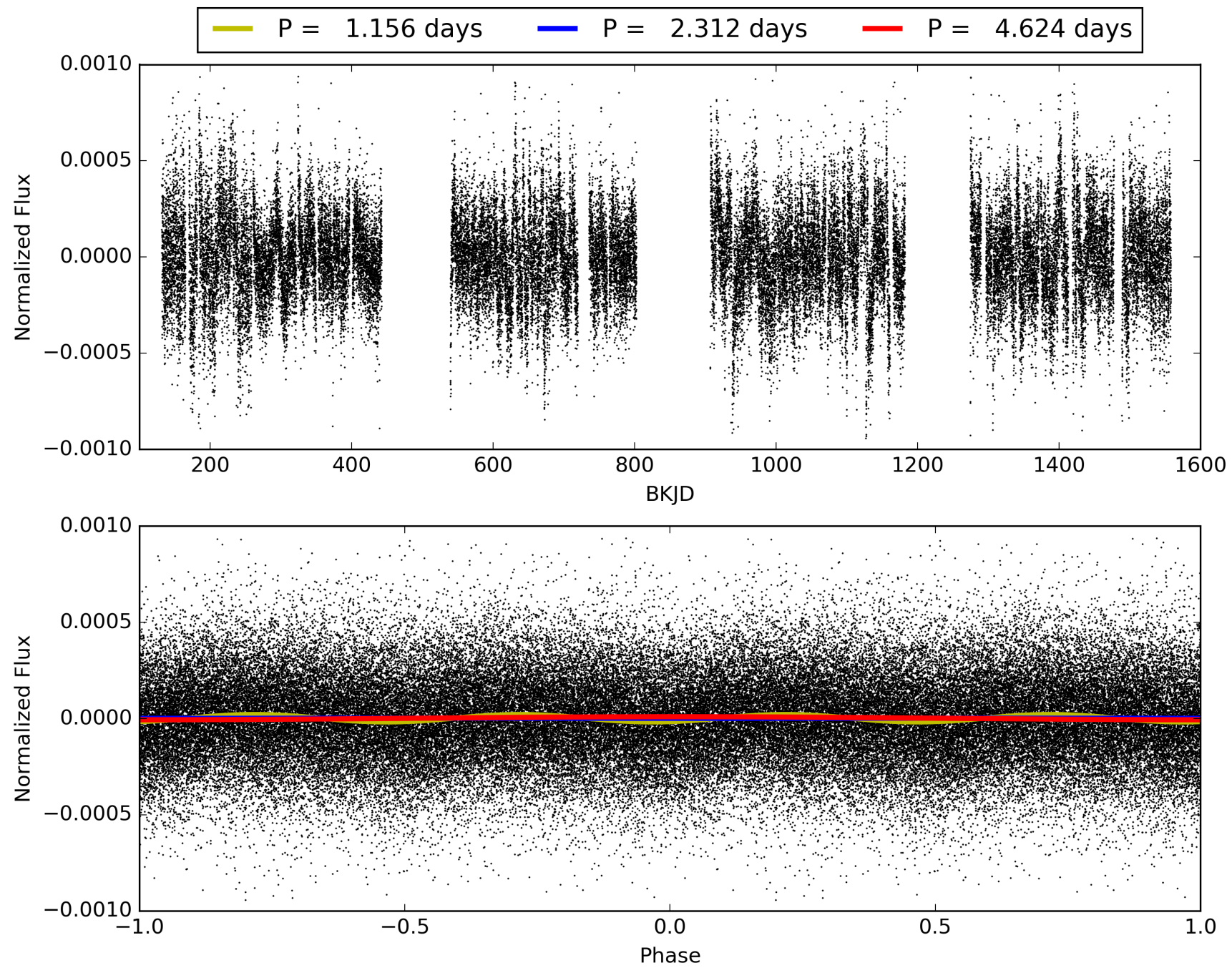
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [282.68σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.33e-14
RollingBand-fgt: 0.95 [419/439]
GhostDiagnostic-chr: -9.902
Centroid-sig: 0.0%
Centroid-so: 0.083 arcsec [0.12σ]
OotOffset-rm: 3.424 arcsec [4.83σ]
KicOffset-rm: 0.335 arcsec [1.08σ]
OotOffset-st: 2/2/4/0 [8]
KicOffset-st: 2/2/4/0 [8]
DiffImageQuality-fgm: 0.62 [5/8]
DiffImageOverlap-fno: 1.00 [13/13]

TCE 005080346-01, PDC Light Curves

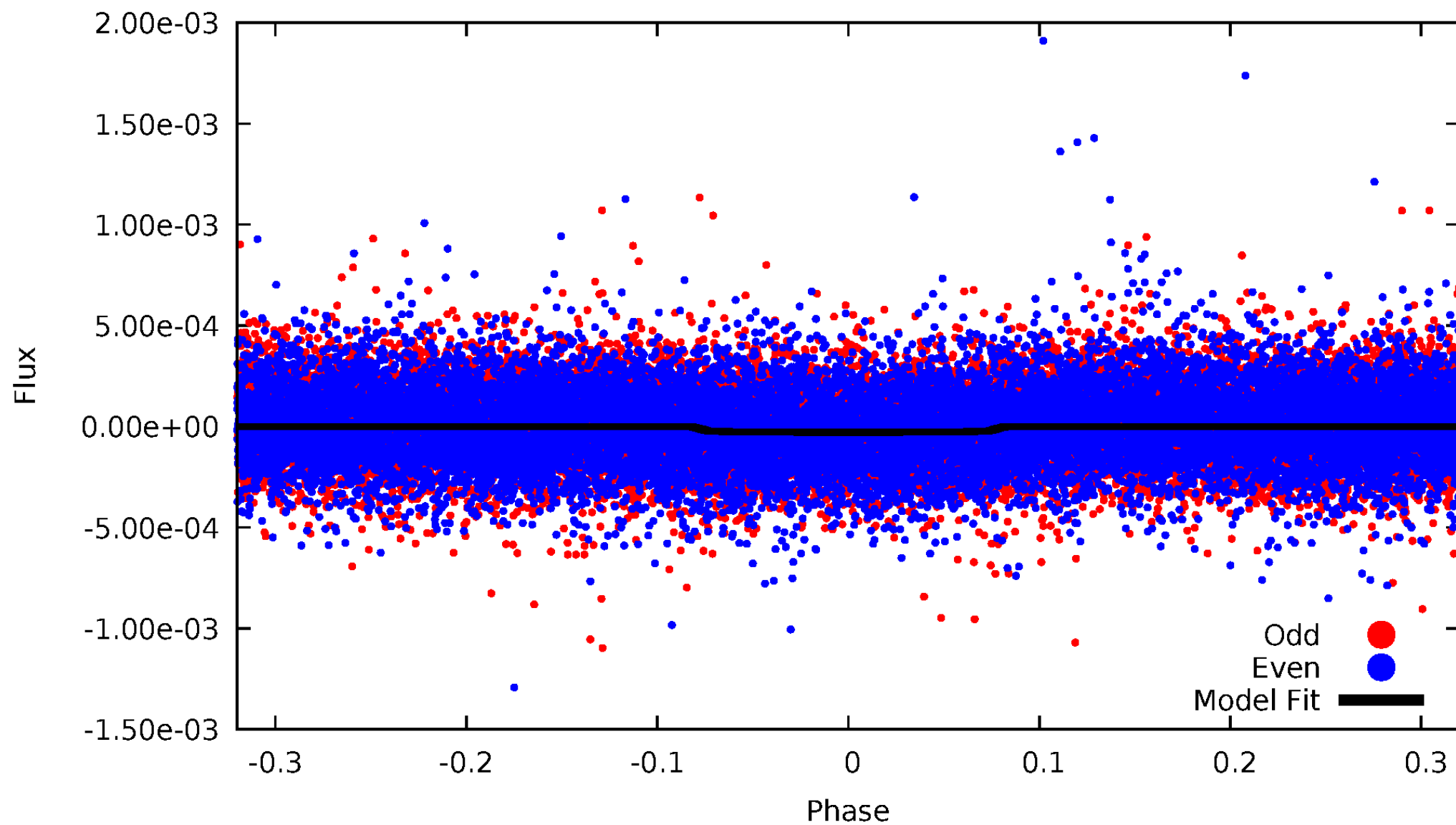


TCE 005080346-01



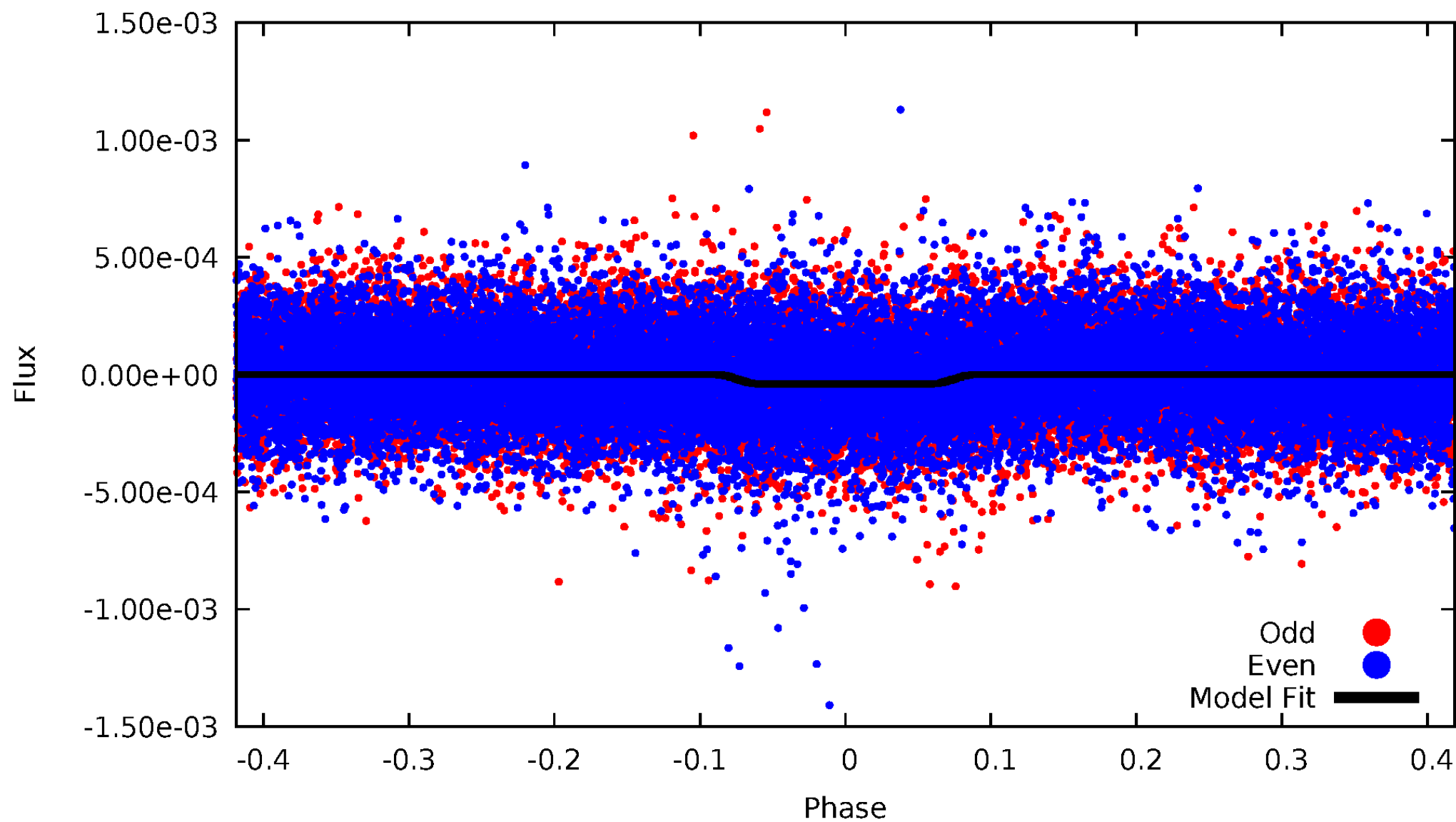
DV Odd/Even

TCE 005080346-01

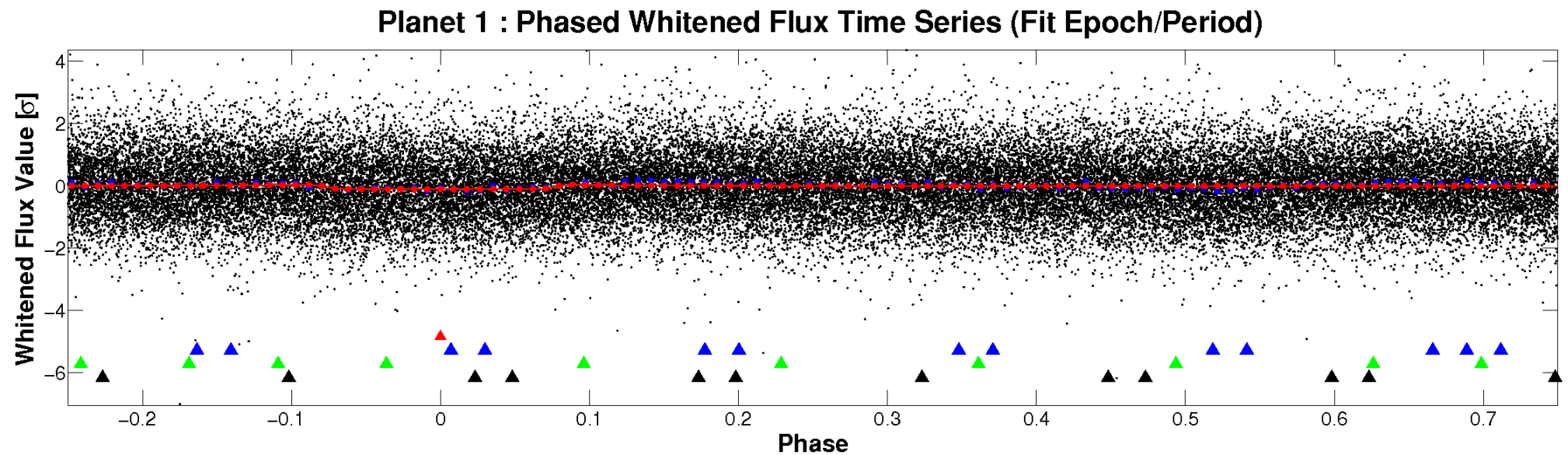
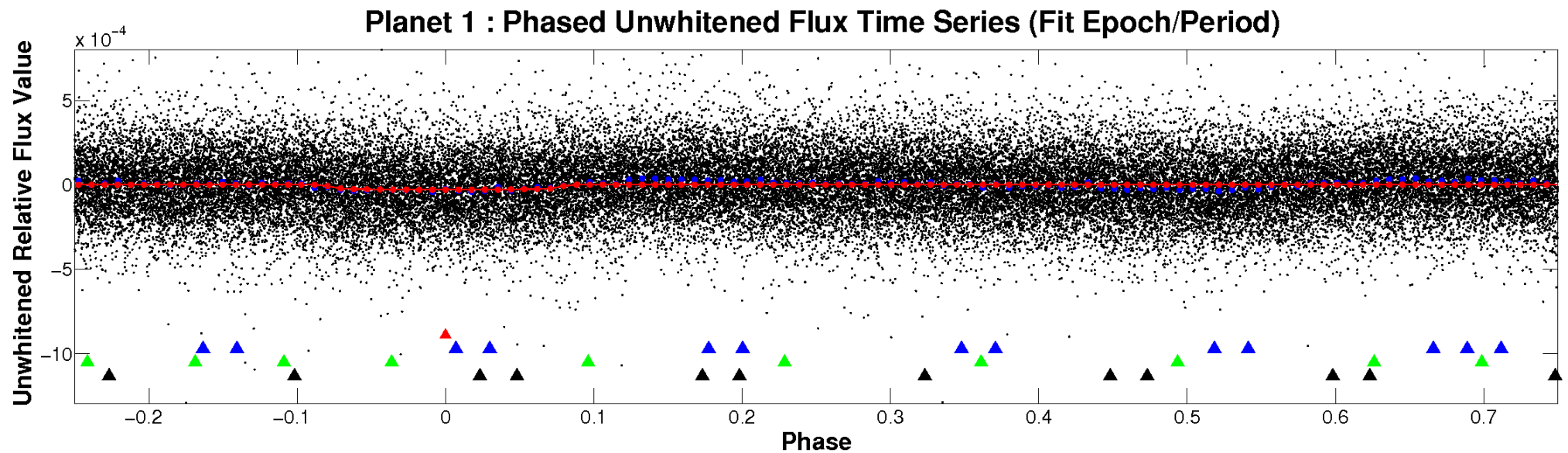


ALT Odd/Even

TCE 005080346-01

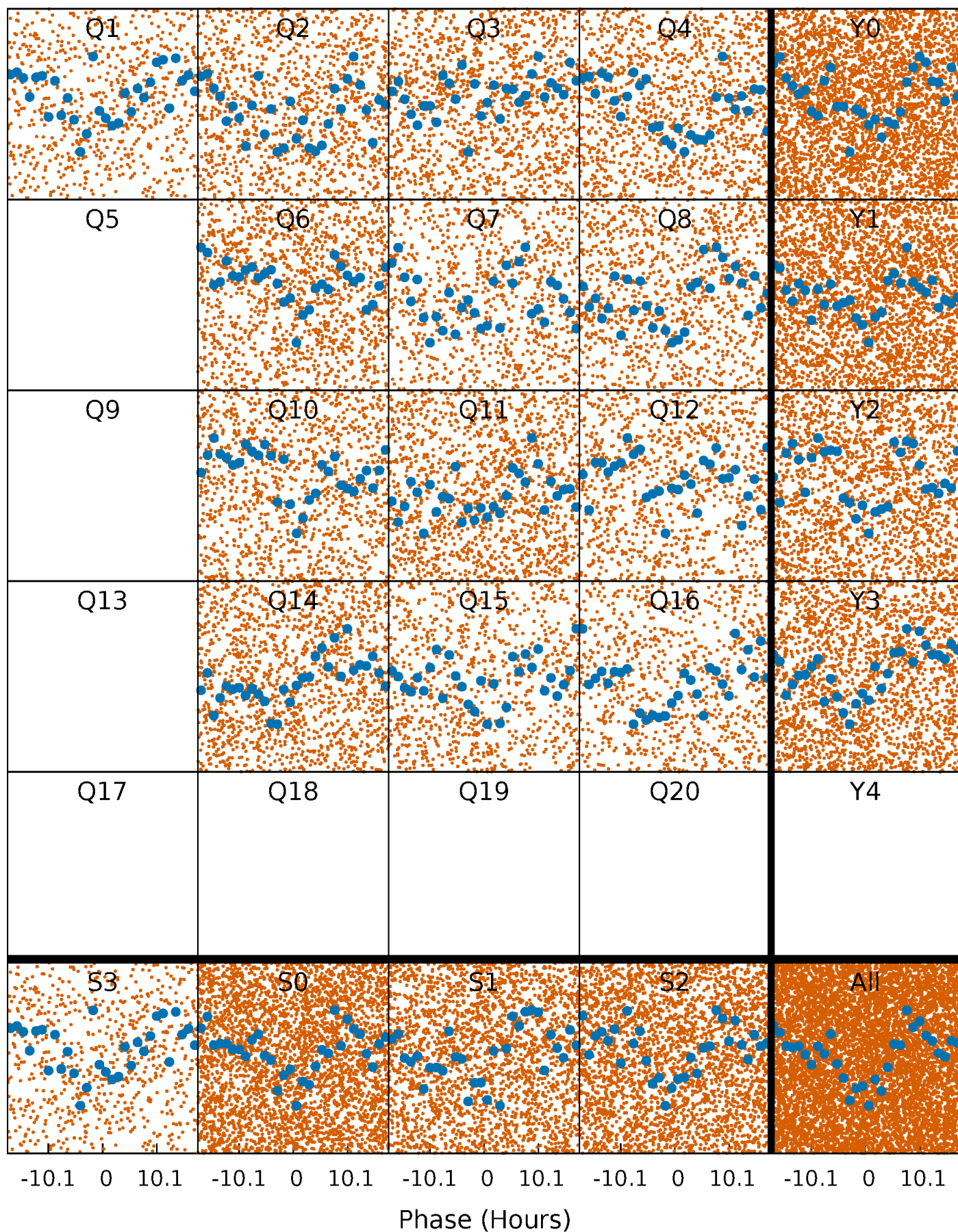


Non-Whitened Vs. Whitened Light Curve



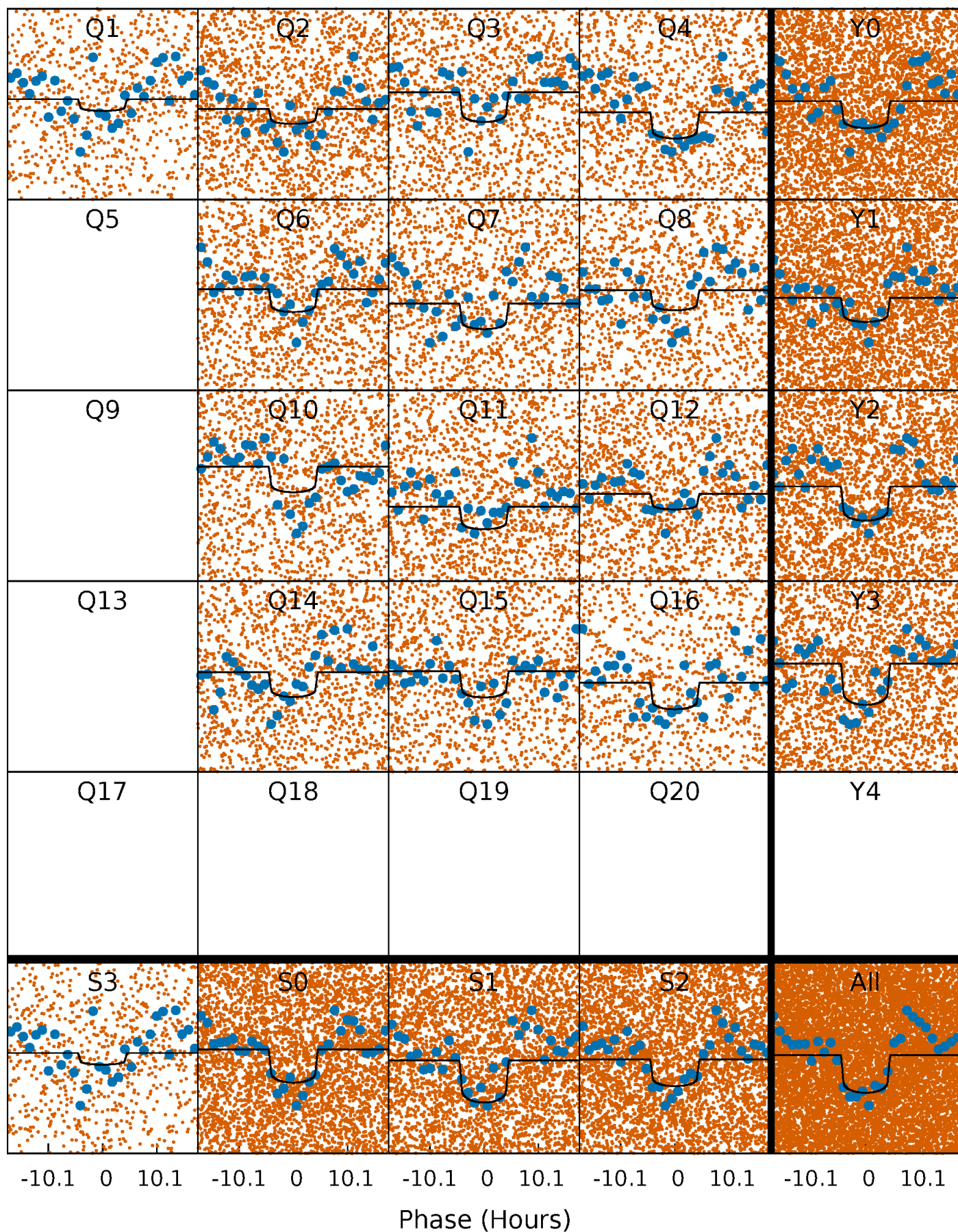
PDC Quarter-Phased Transit Curves

TCE 005080346-01 P= 2.311939 Days $T_0=132.275587$ (BKJD)



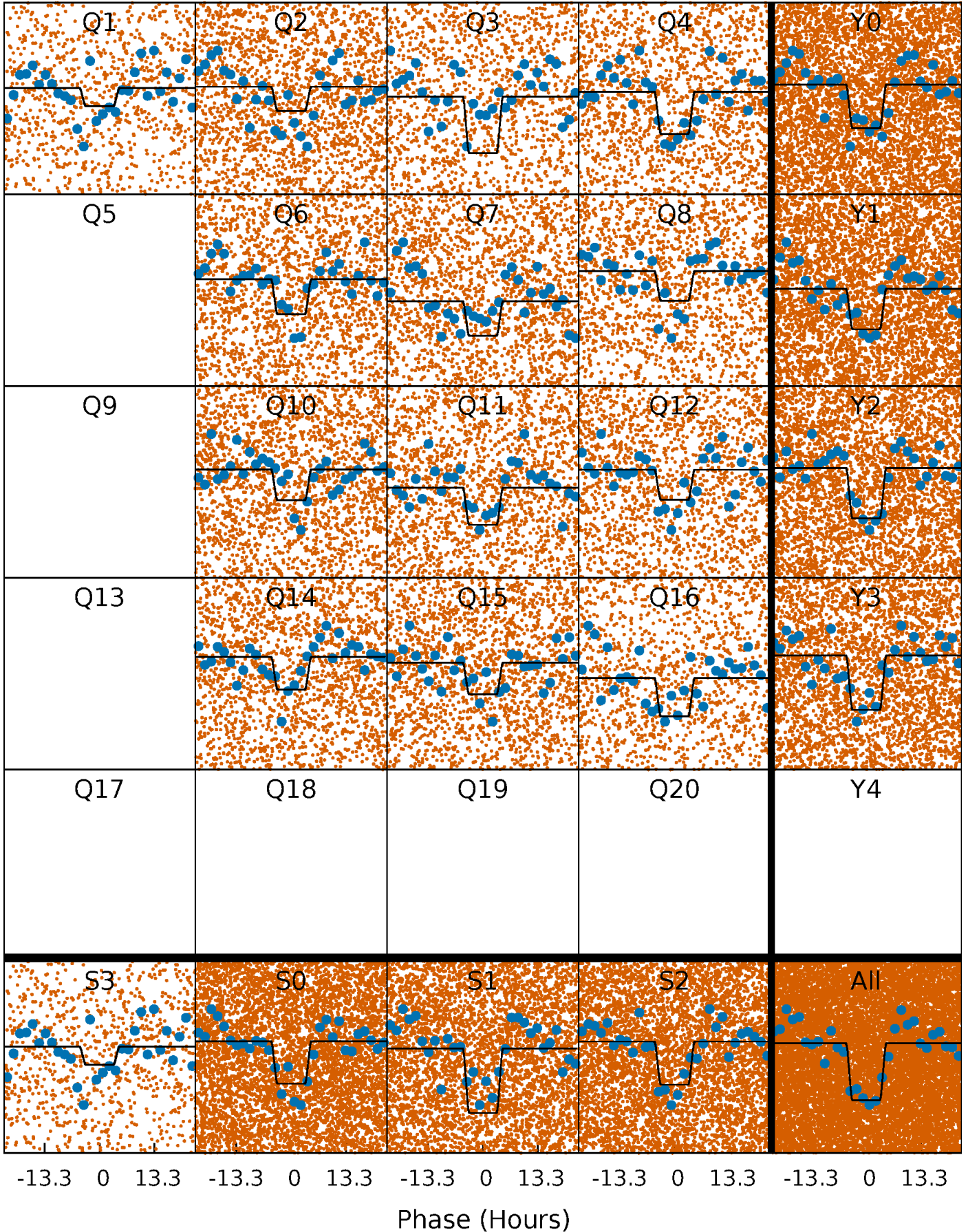
DV Quarter-Phased Transit Curves

TCE 005080346-01 P= 2.311939 Days $T_0=132.275587$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

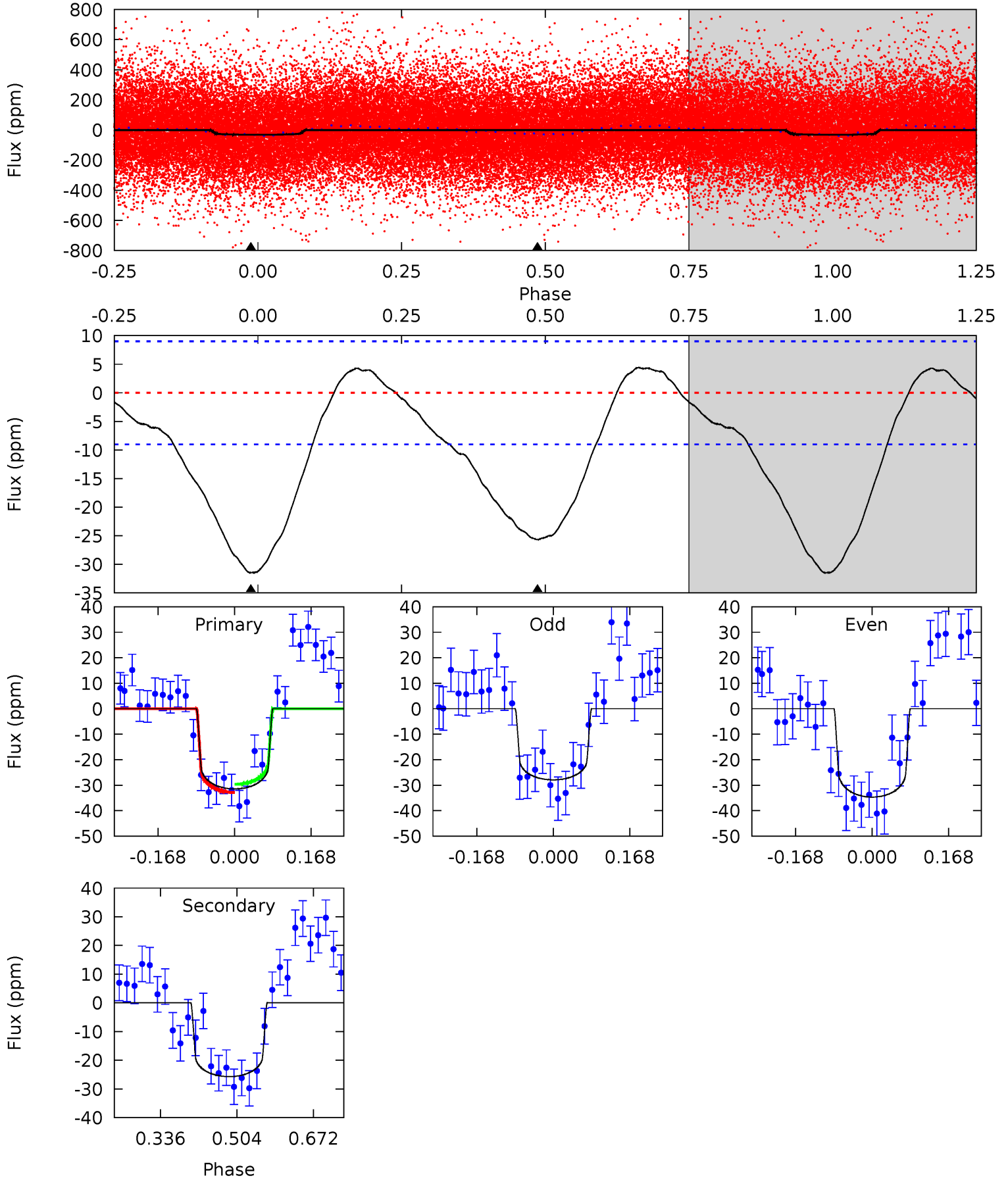
TCE 005080346-01 P= 2.311798 Days $T_0=132.300972$ (BKJD)



DV Model-Shift Uniqueness Test

005080346-01, P = 2.311939 Days, E = 129.963648 Days

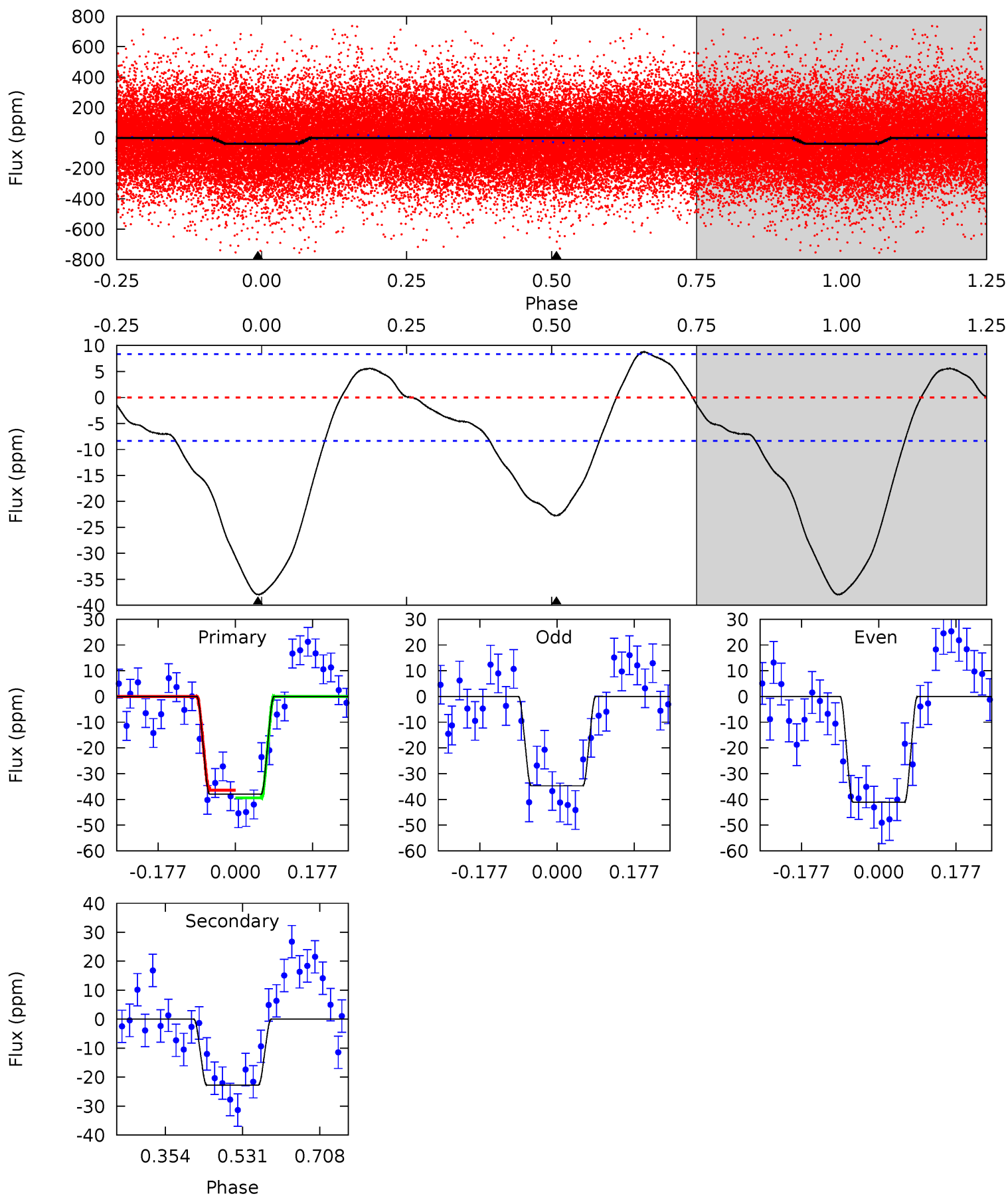
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.5	12.7	0	0	4.45	1.38	1.91	15.5	15.5	12.7	12.7	1.67	1.12	0.12	0.80



Alt Model-Shift Uniqueness Test

005080346-01, P = 2.311798 Days, E = 129.989174 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.2	12.1	0	0	4.44	1.35	2.24	20.2	20.2	12.1	12.1	1.68	1.17	0.19	0.79



Stellar Parameters For KIC 005080346

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	9451^{+302}_{-378}	$3.970^{+0.247}_{-0.180}$	$0.070^{+0.200}_{-0.750}$	$2.679^{+0.826}_{-1.009}$	$2.441^{+0.398}_{-0.738}$	$0.179^{+0.342}_{-0.092}$
	+3%/-4%	+6%/-5%	+286%/-1071%	+31%/-38%	+16%/-30%	+191%/-51%
Source	KIC0	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 005080346-01 / KOI 6509.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-26 ± 2	$1.62^{+0.49}_{-0.49}$	4402^{+396}_{-372}	8666^{+2070}_{-1185}	11^{+12}_{-5}
Alt.	-23 ± 2	$1.83^{+0.49}_{-0.48}$	4448^{+379}_{-400}	7730^{+1194}_{-783}	$7.820^{+5.519}_{-2.902}$

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 $A_{obs} \gg 1.0$

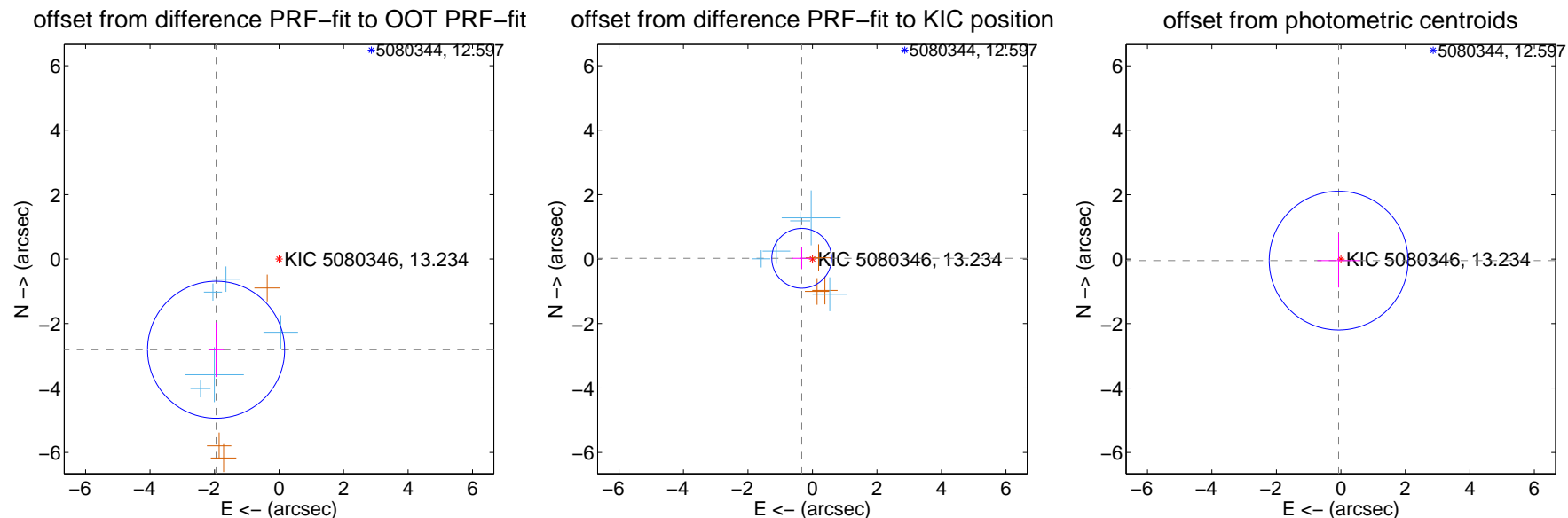
DV Centroid Data

Supplemental centroid analysis for 005080346-01. Kepler magnitude: 13.23. Transit SNR 8.91

There are 5 quarters with good PRF difference image offsets

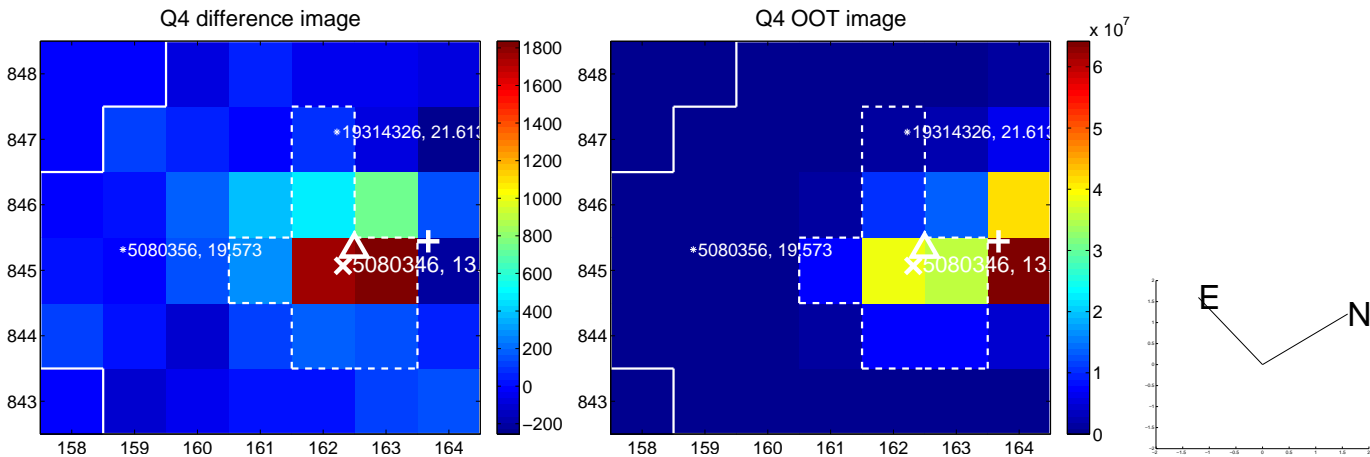
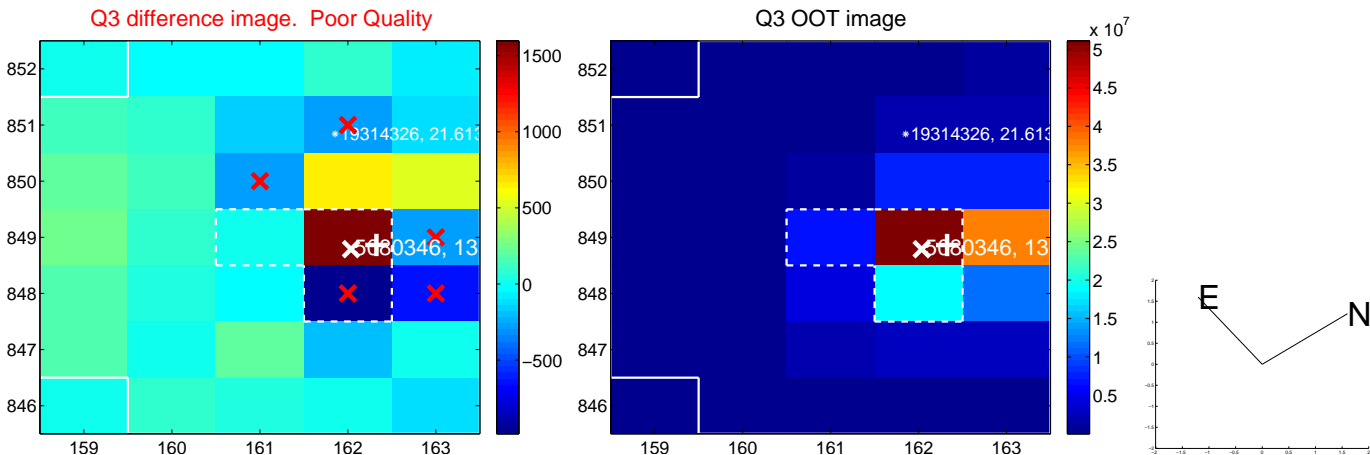
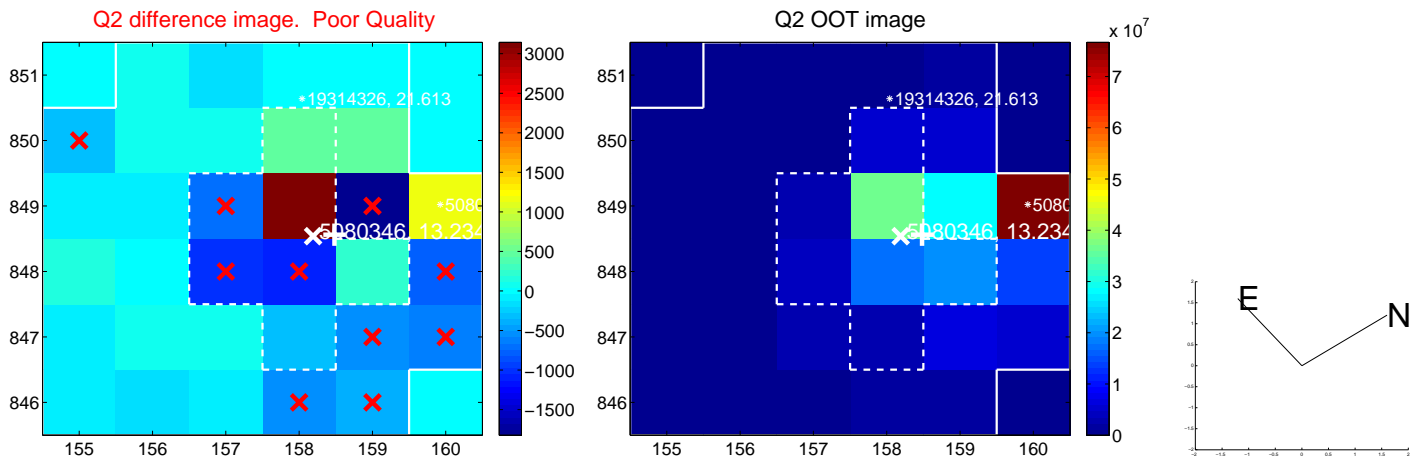
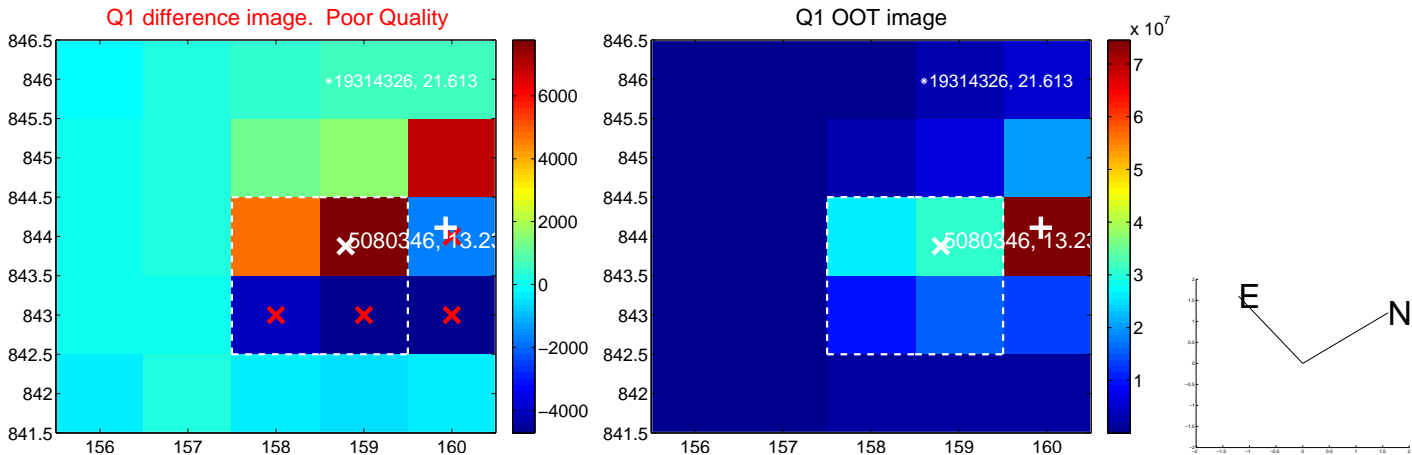
The OOT PRF centroid is offset from the target star catalog position by about 5.25 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.424 \pm 0.709	4.83	1.953 \pm 0.236	-2.812 \pm 0.847
PRF-fit source offset from KIC position	0.335 \pm 0.309	1.08	0.334 \pm 0.309	0.025 \pm 0.331
photometric centroid source offset	0.08 \pm 0.72	0.12	0.07 \pm 0.66	-0.04 \pm 0.84

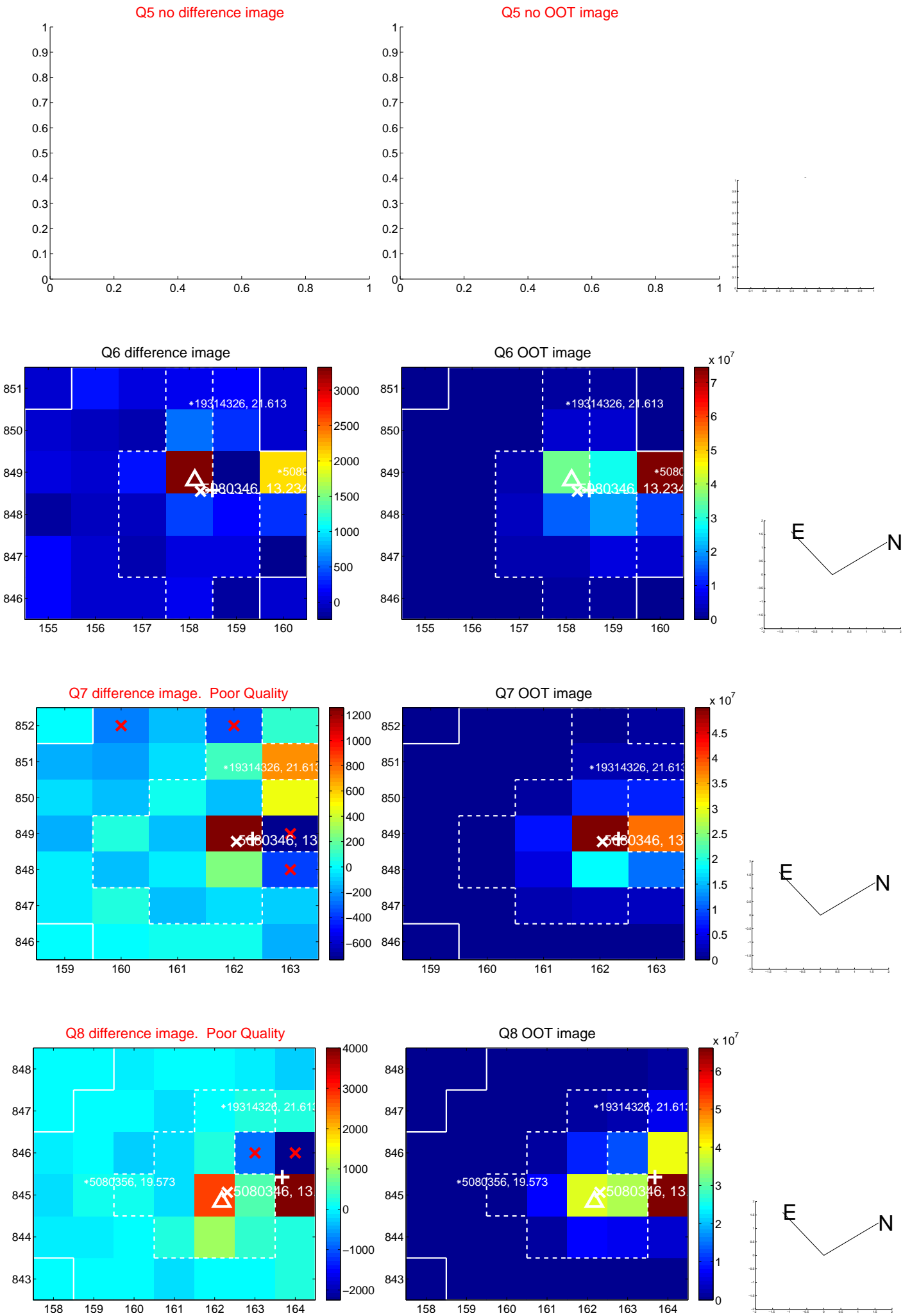


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

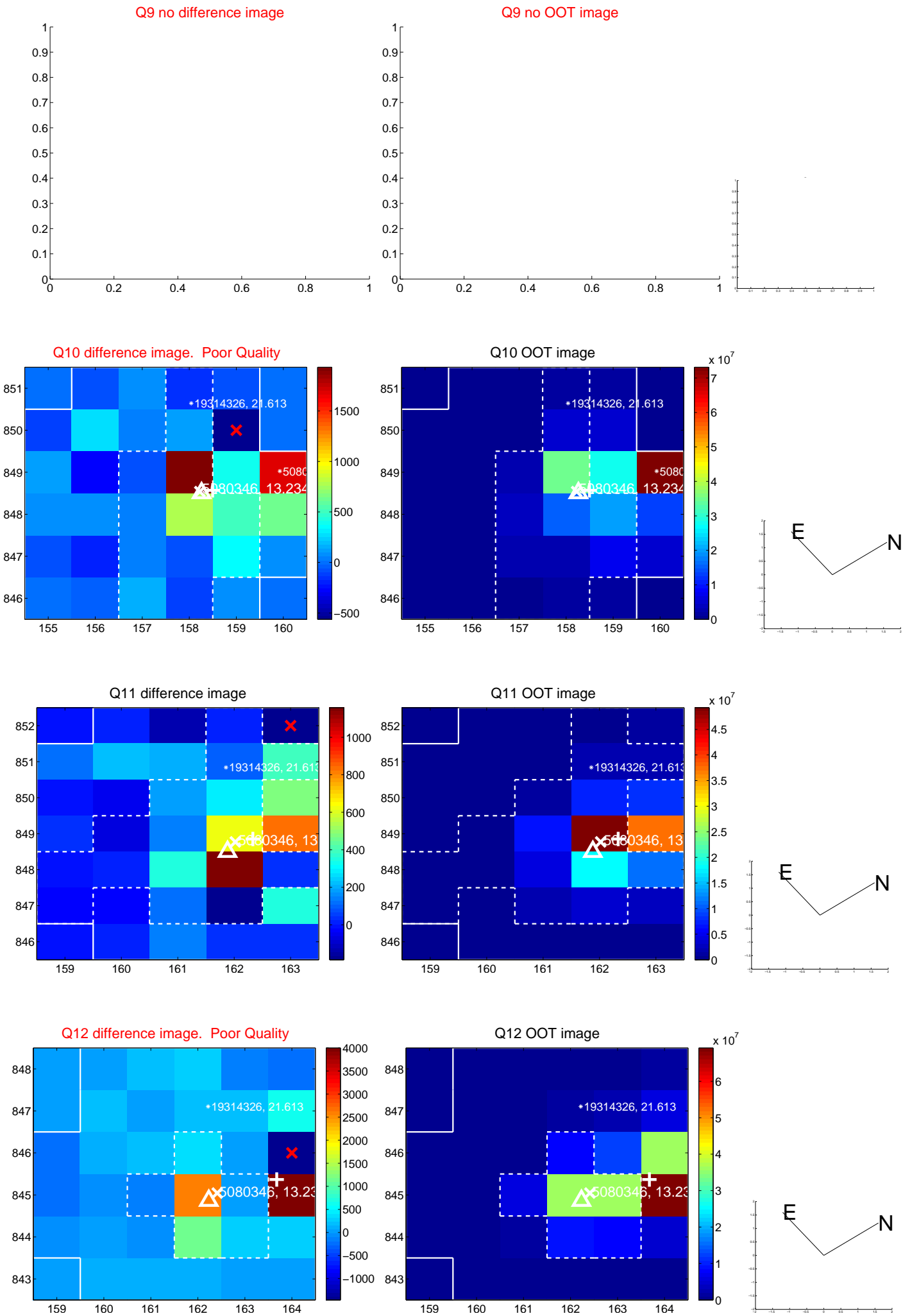
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



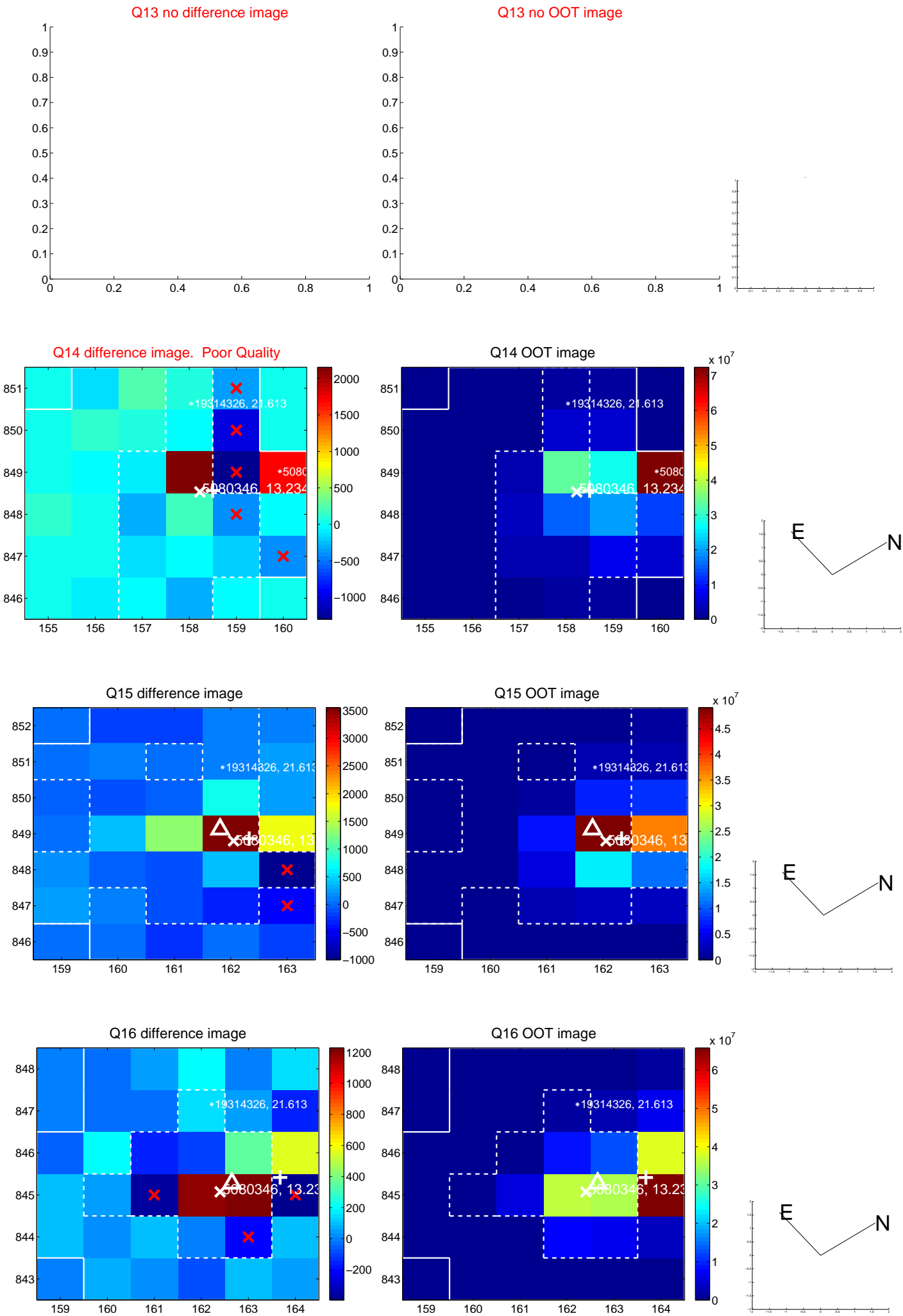
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



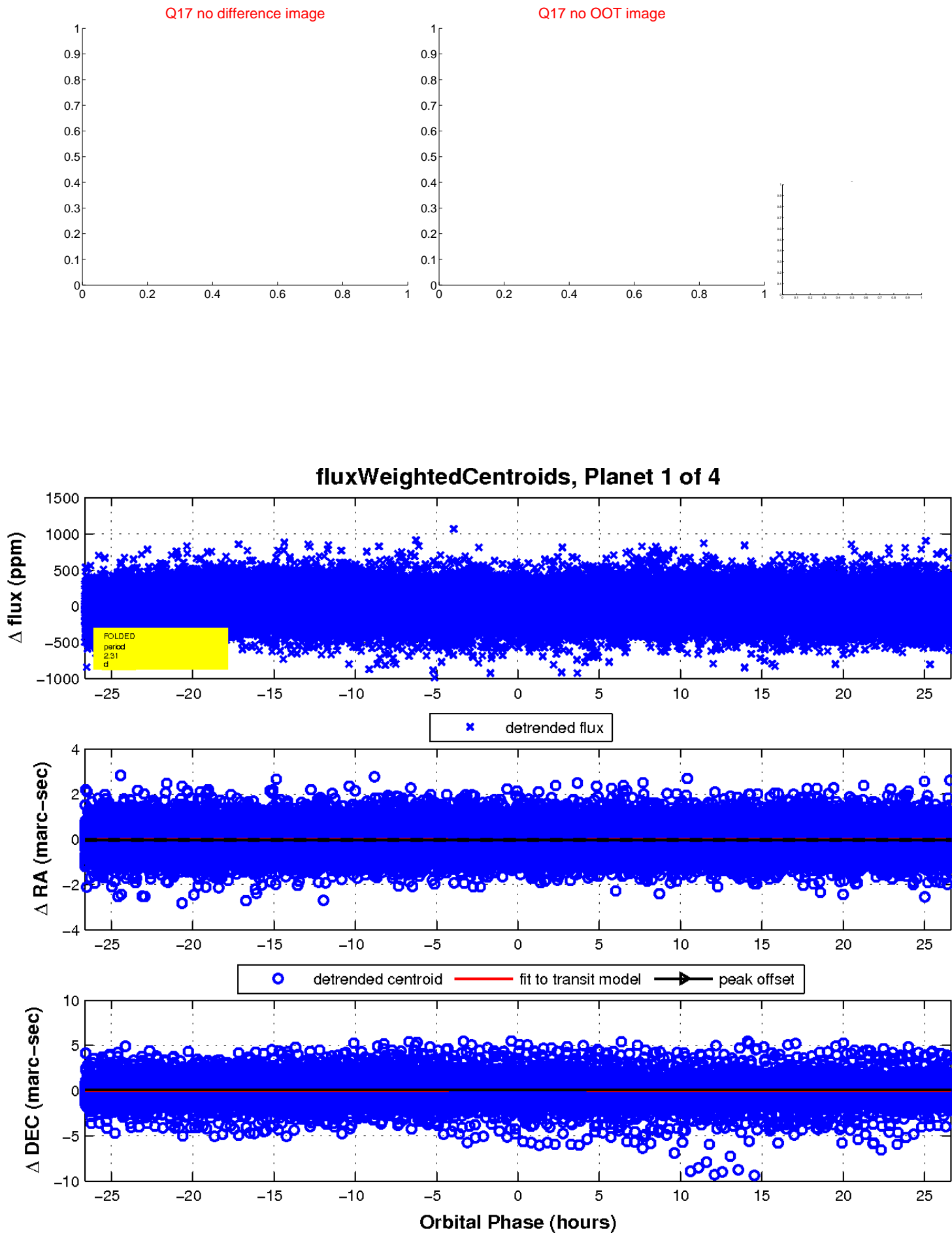
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

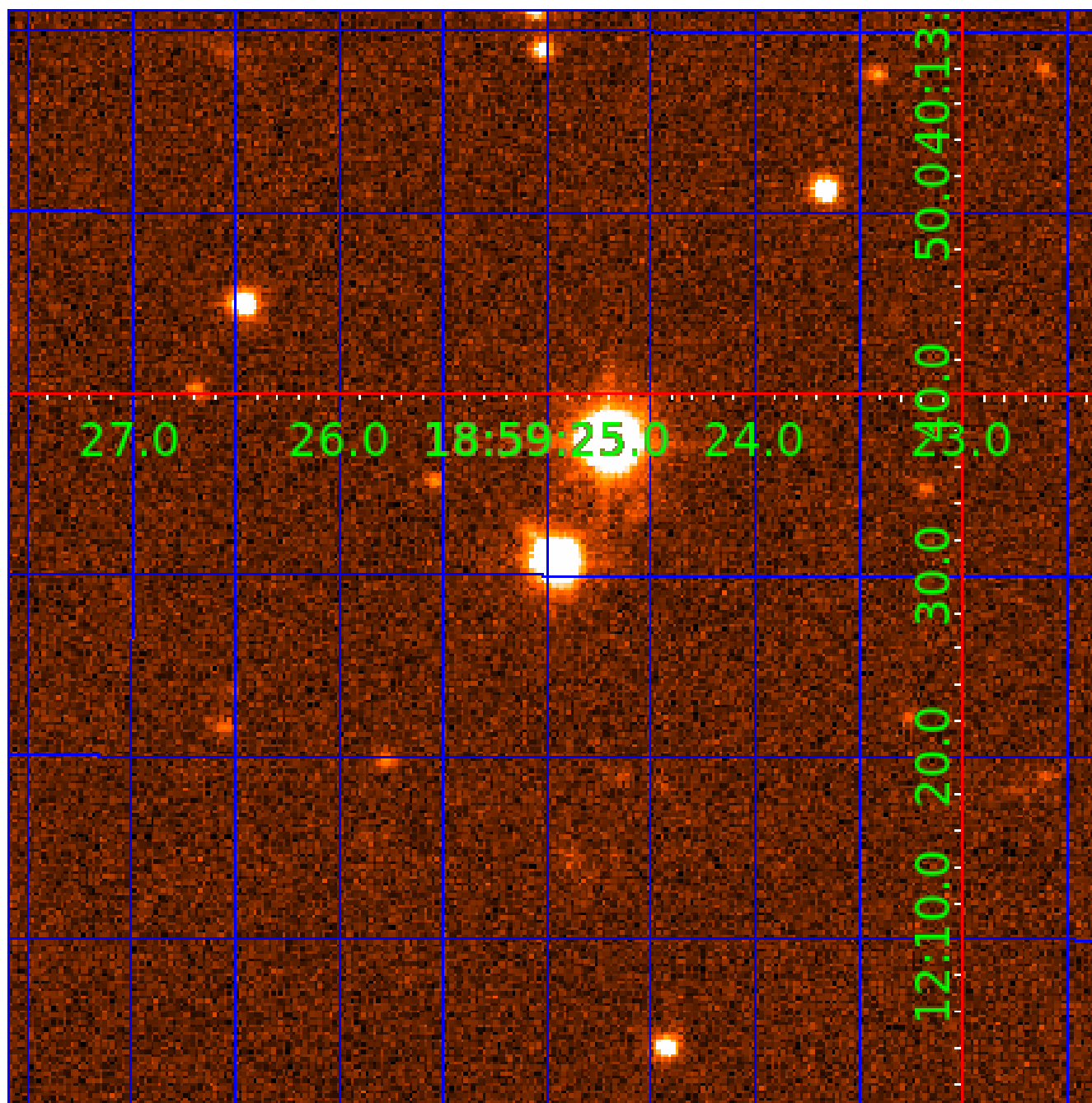


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005080346

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})
005080346-01	OBS	6509.01	2.311939	132.275587	29.4	8.875	9.4	8.9	2.68	9451	1.63	24144.52
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005080346-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_KIC_POS
005080346-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—TRANS_GAPPED—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—HALO_GHOST
005080346-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005080346-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

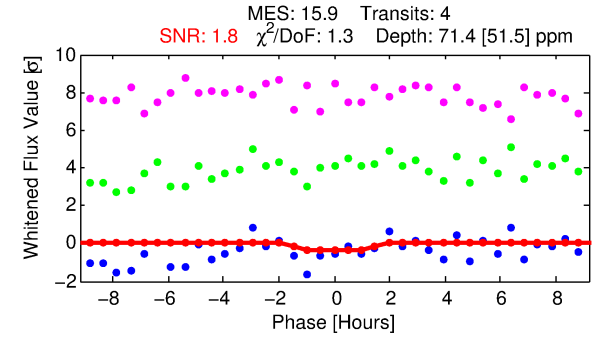
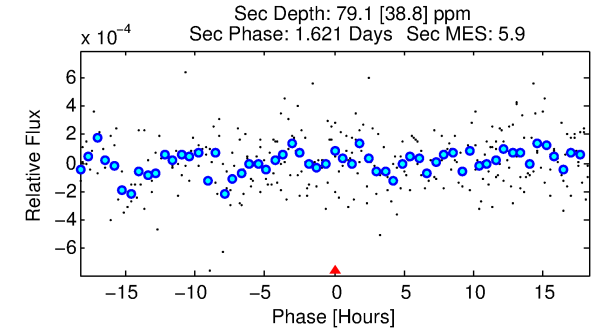
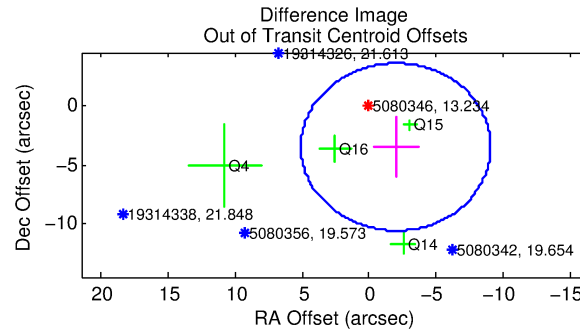
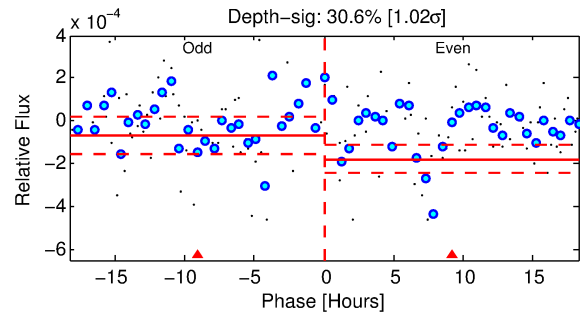
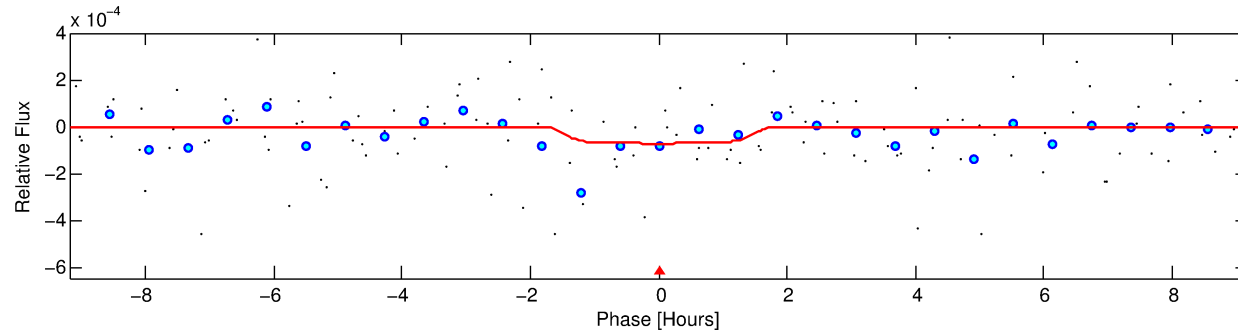
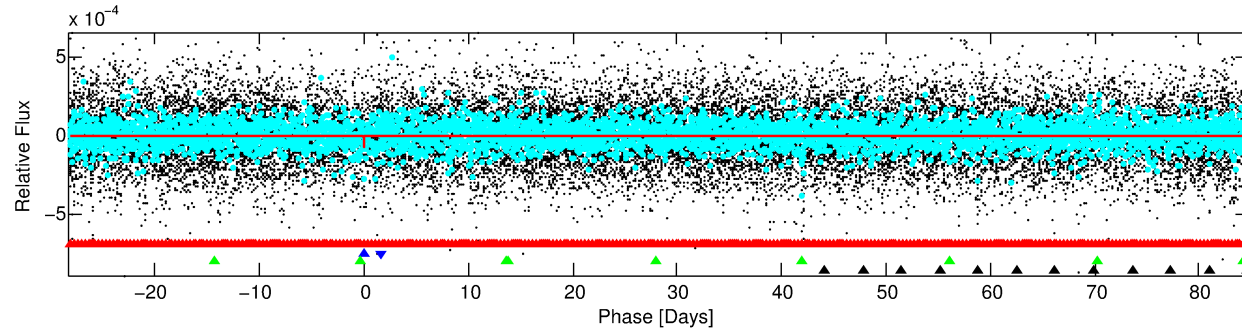
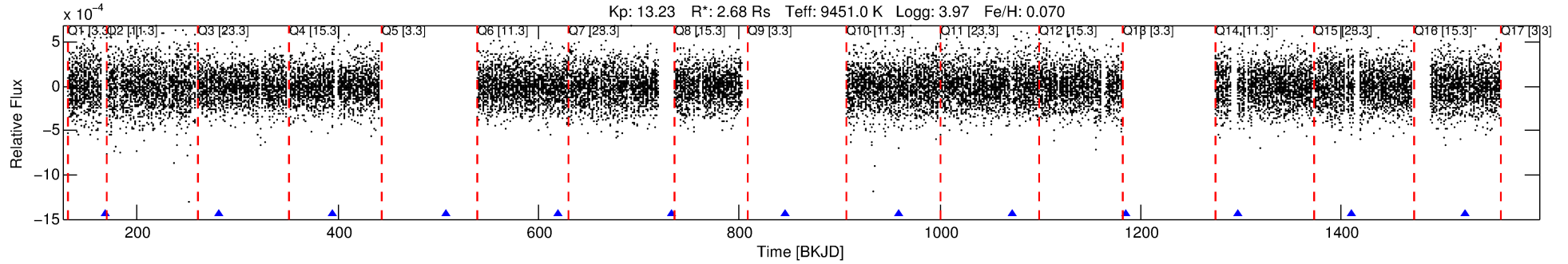
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005080346-02

No Significant Match Found

DV One-Page Summary

KIC: 5080346 Candidate: 2 of 4 Period: 112.891 d
KOI: K06509 Corr: No Ephemeris Match



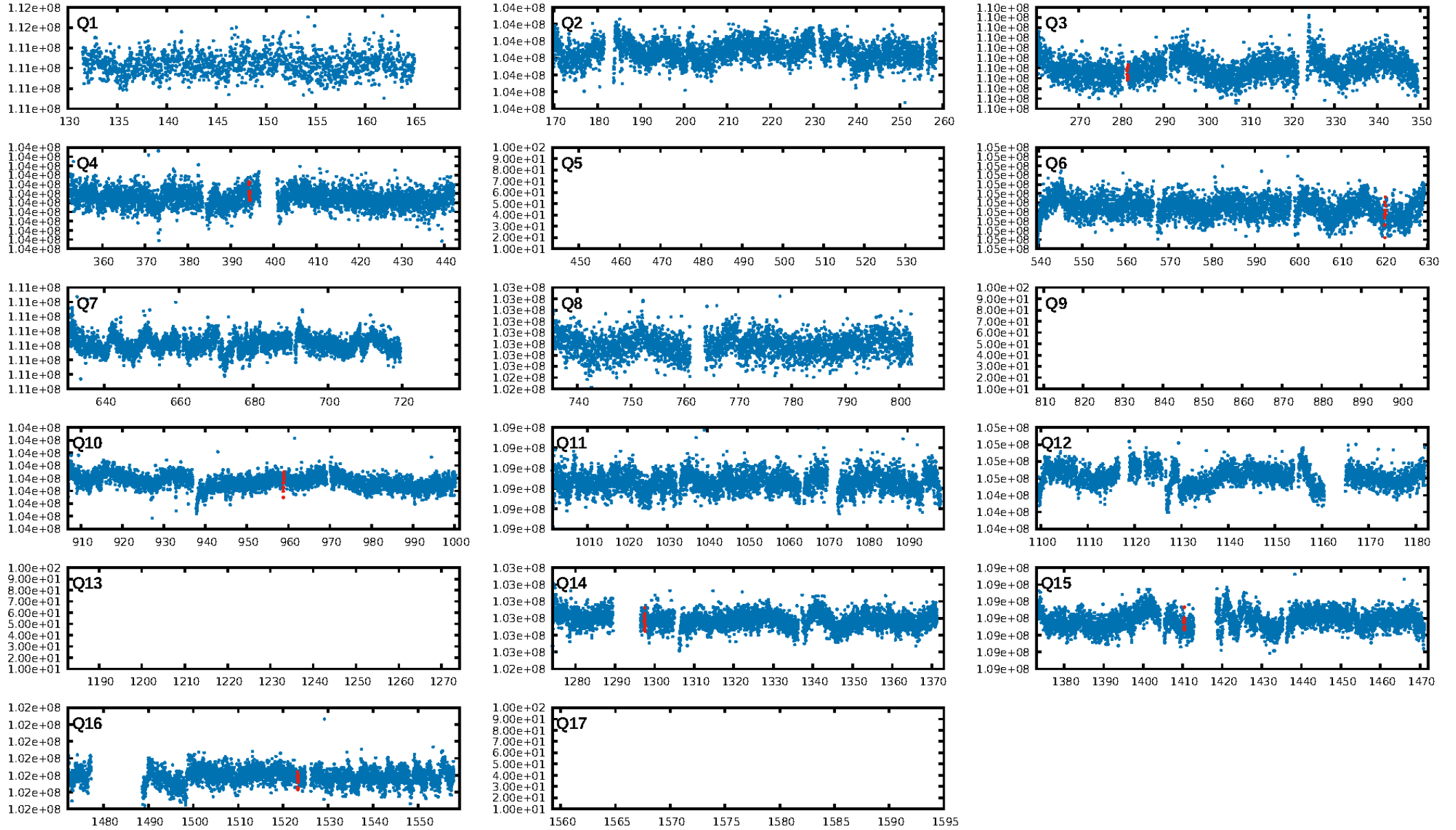
DV Fit Results:

Period = 112.89091 [0.00504] d
Epoch = 168.6002 [0.0322] BKJD
Rp/R* = 0.0085 [0.0292]
a/R* = 177.54 [4454.88]
b = 0.79 [12.12]
Seff = 135.28 [65.22]
Teq = 870 [105] K
Rp = 2.48 [8.58] Re
a = 0.6158 [0.1937] AU
Ag = 2676.14 [18473.08] [0.14 σ]
Teffp = 9671 [16657] K [0.53 σ]

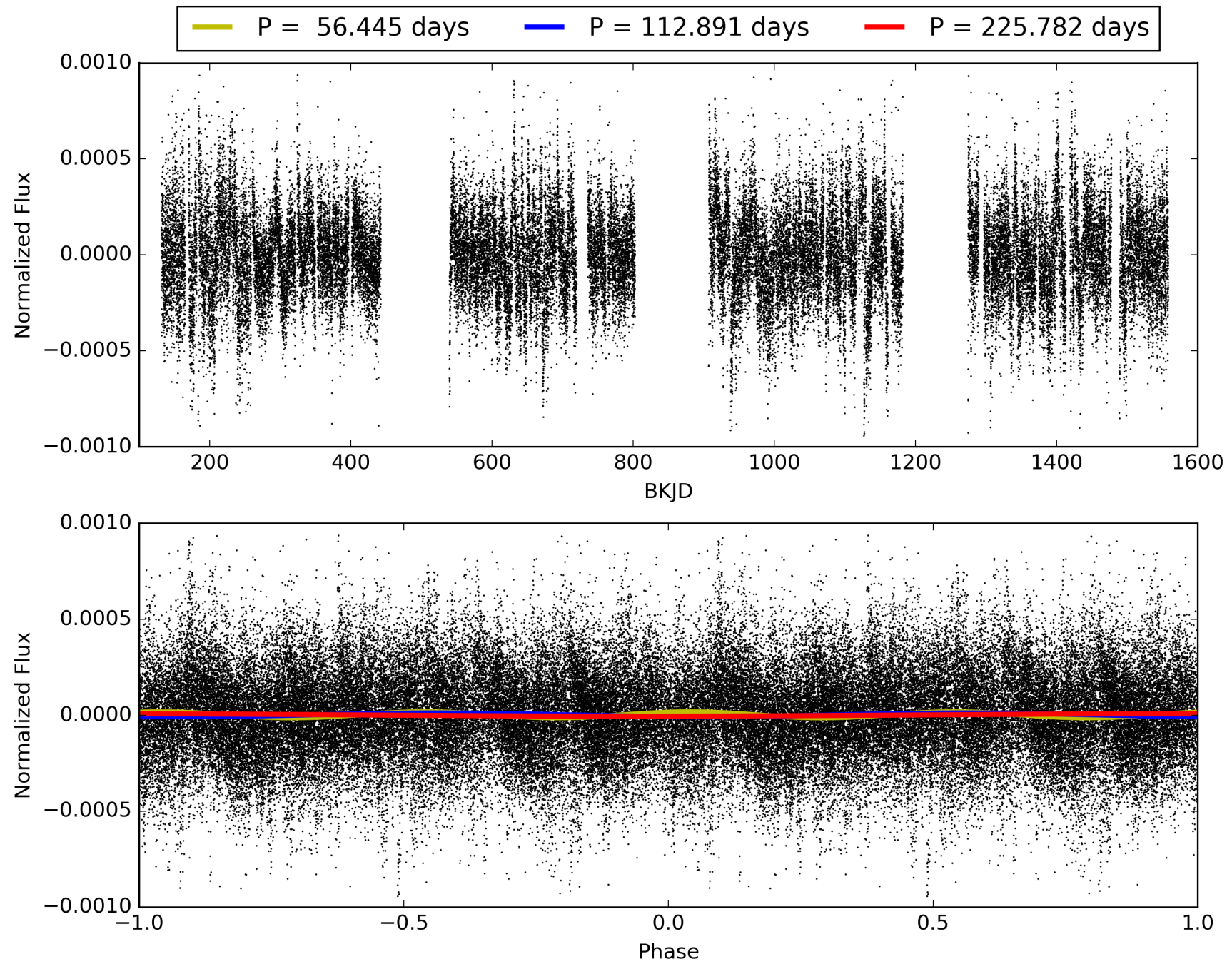
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [282.68 σ]
LongPeriod-sig: 100.0% [5.23 σ]
ModelChiSquare2-sig: 45.5%
ModelChiSquareGof-sig: 98.4%
Bootstrap-pfa: 1.87e-24
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.228
Centroid-sig: 6.8%
Centroid-so: 6.041 arcsec [1.60 σ]
OotOffset-rm: 4.031 arcsec [1.71 σ]
KicOffset-rm: 2.744 arcsec [0.93 σ]
OotOffset-st: 1/1/2/0 [4]
KicOffset-st: 1/1/2/0 [4]
DiffImageQuality-fgm: 0.25 [1/4]
DiffImageOverlap-fno: 0.33 [2/6]

TCE 005080346-02, PDC Light Curves

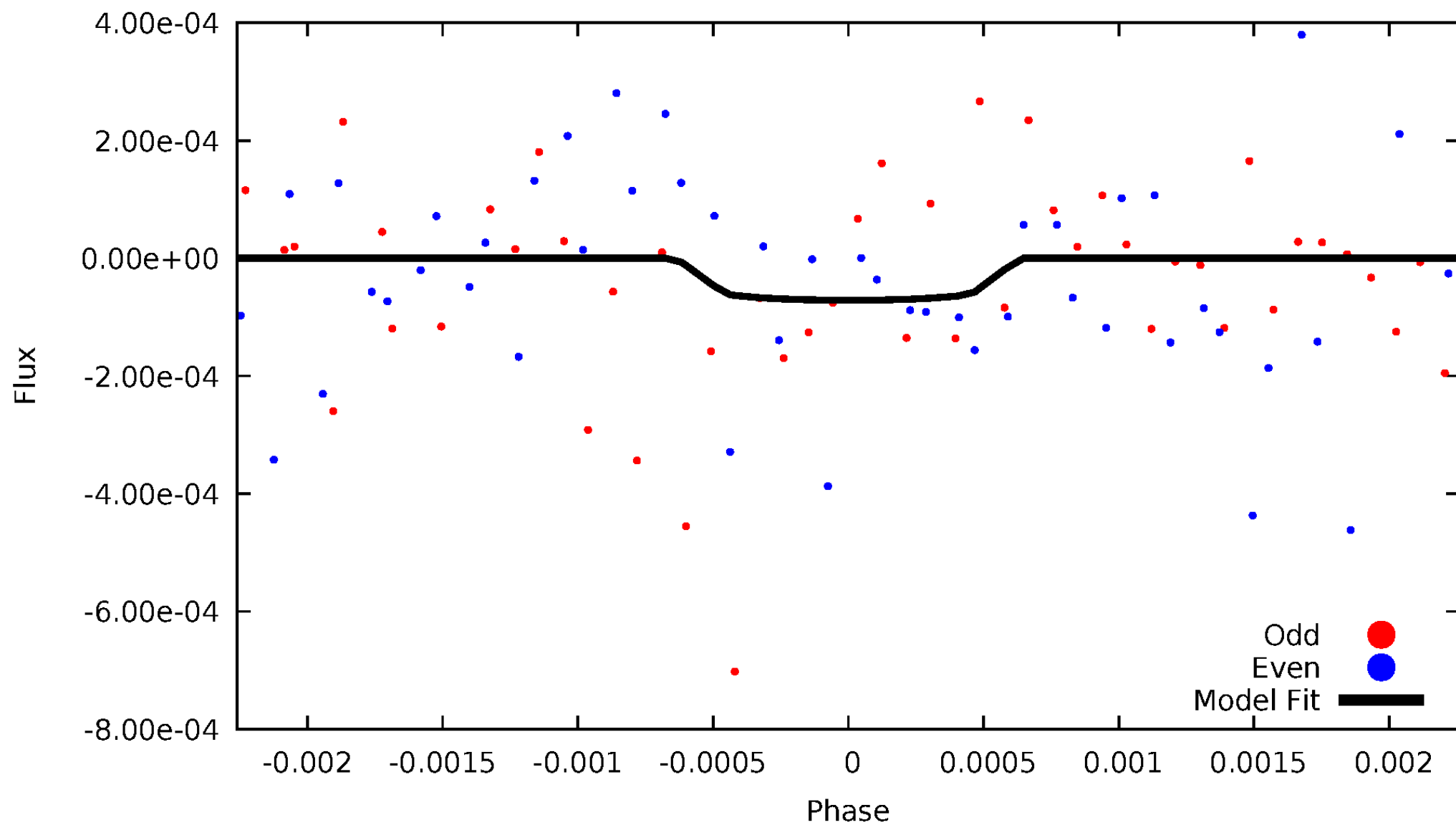


TCE 005080346-02



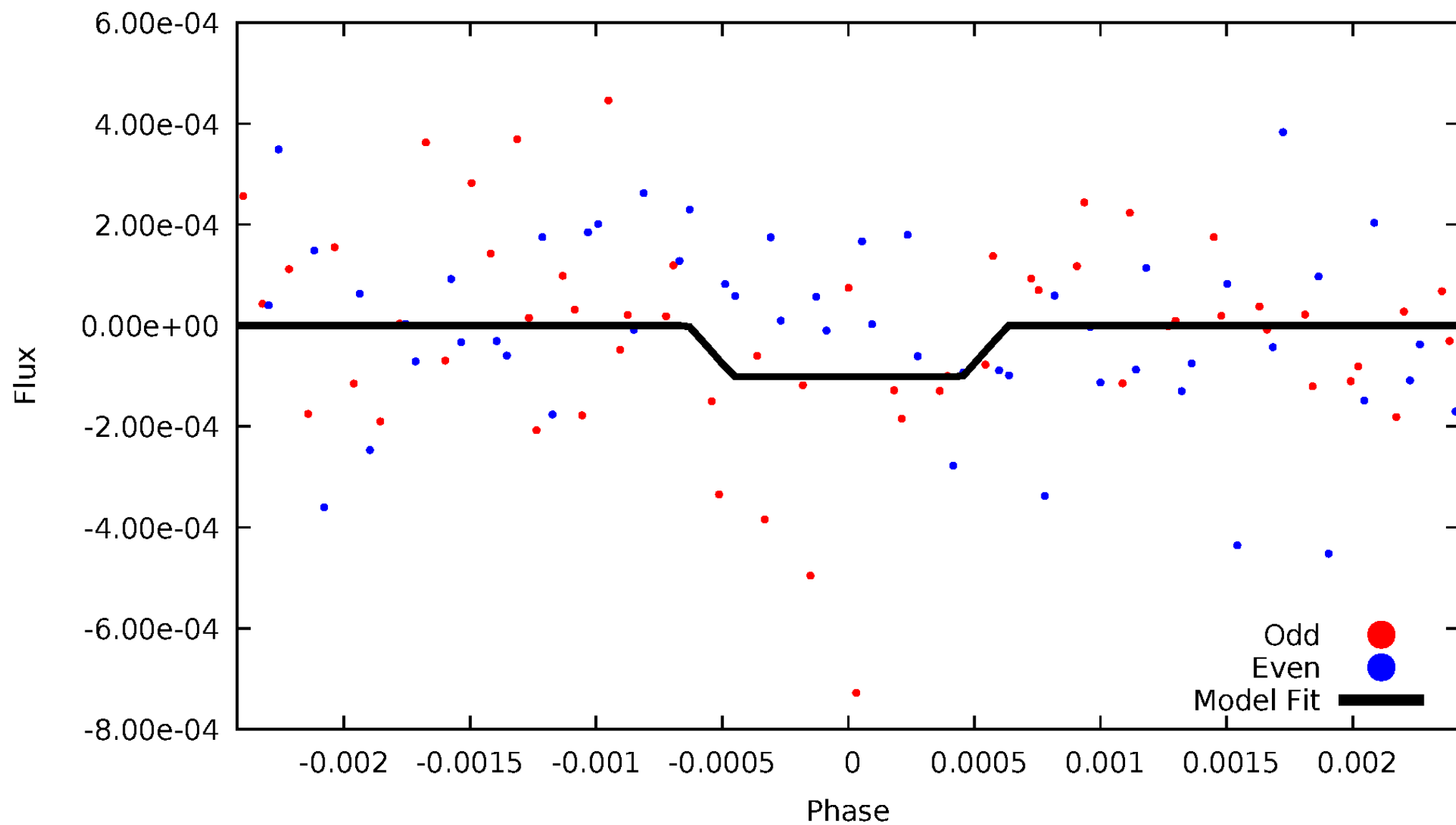
DV Odd/Even

TCE 005080346-02



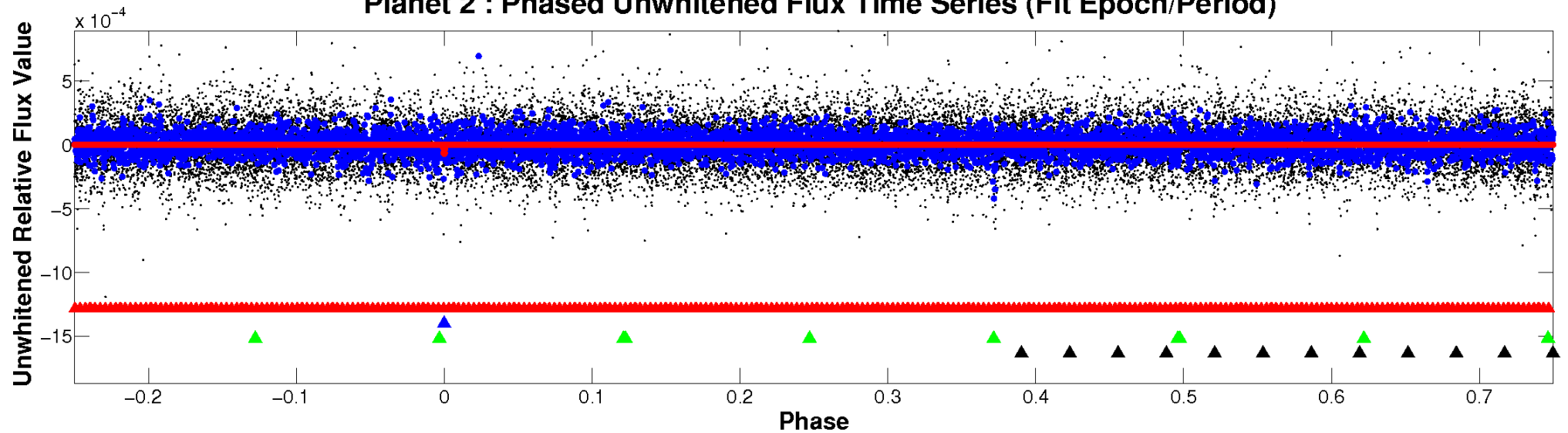
ALT Odd/Even

TCE 005080346-02

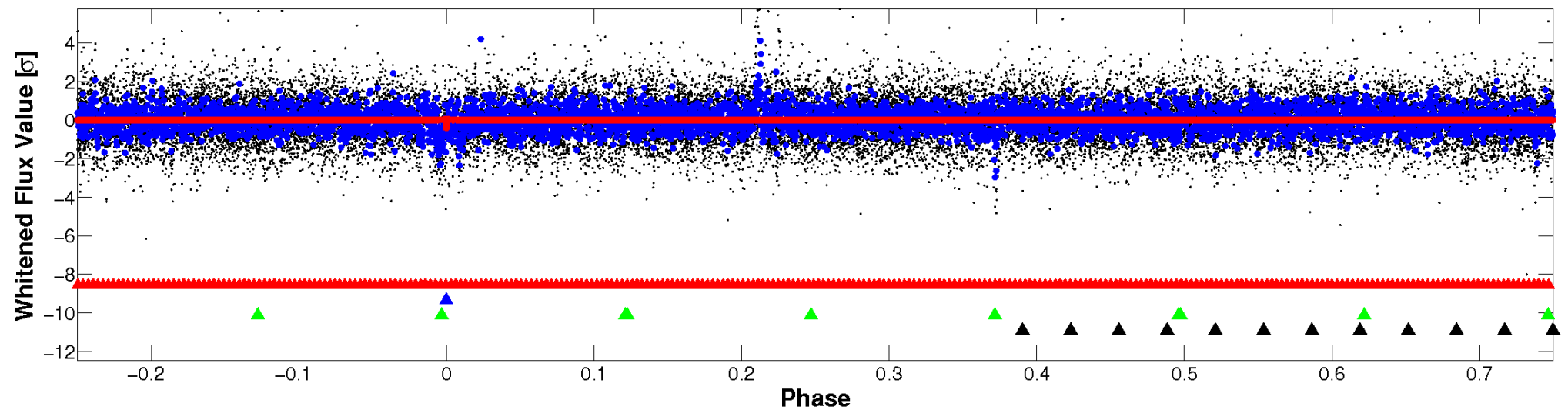


Non-Whitened Vs. Whitened Light Curve

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

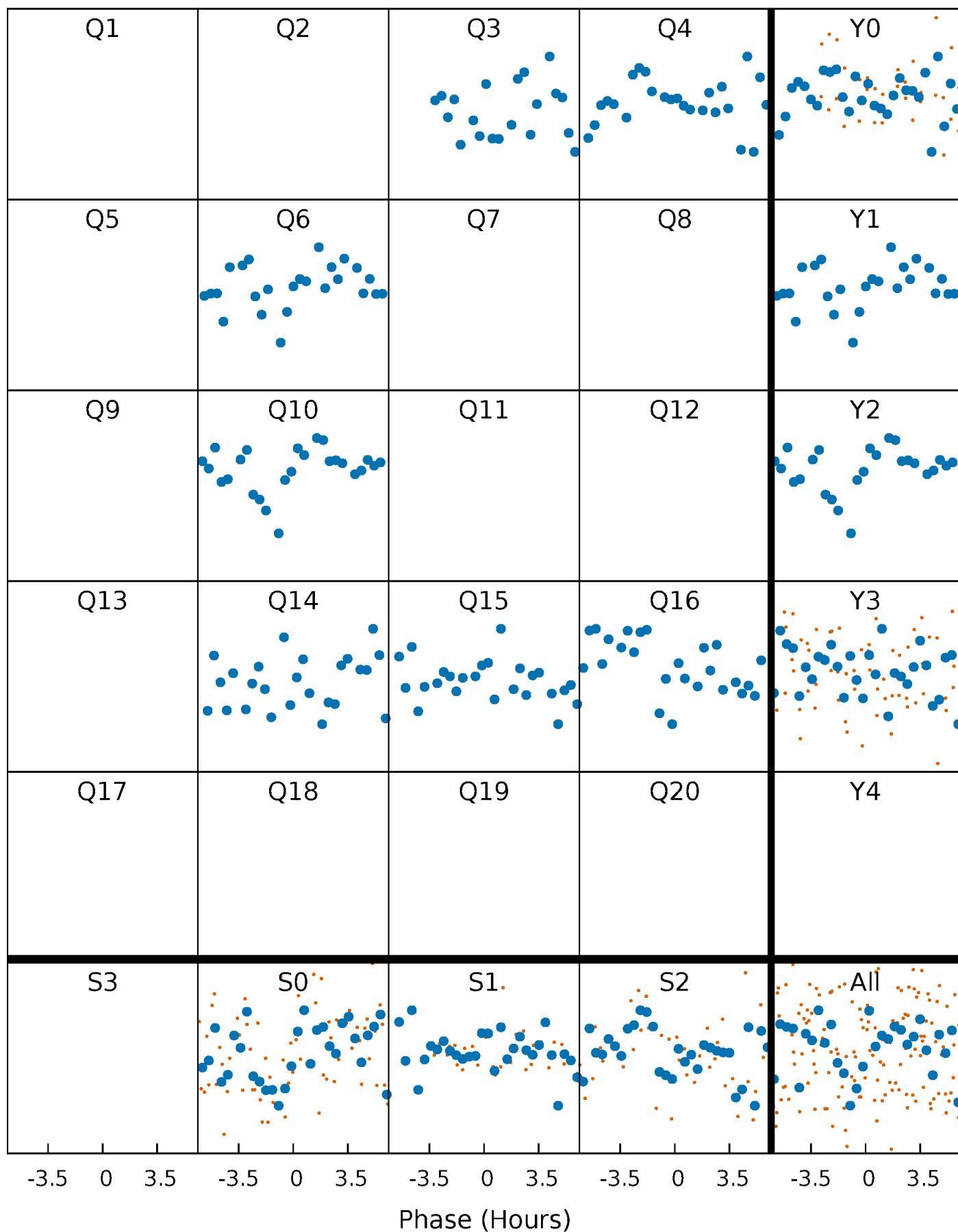


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



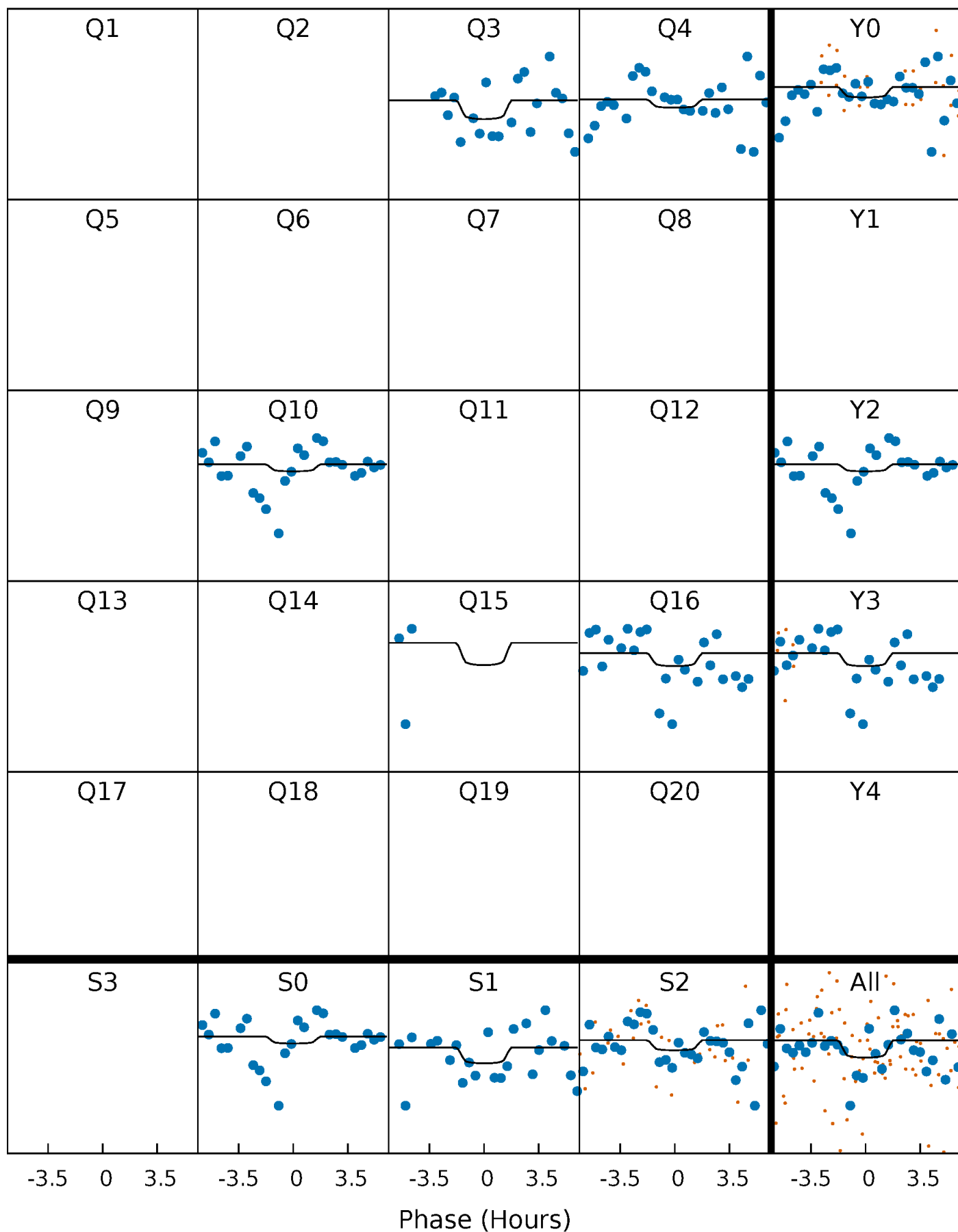
PDC Quarter-Phased Transit Curves

TCE 005080346-02 P=112.890906 Days $T_0=168.600179$ (BKJD)



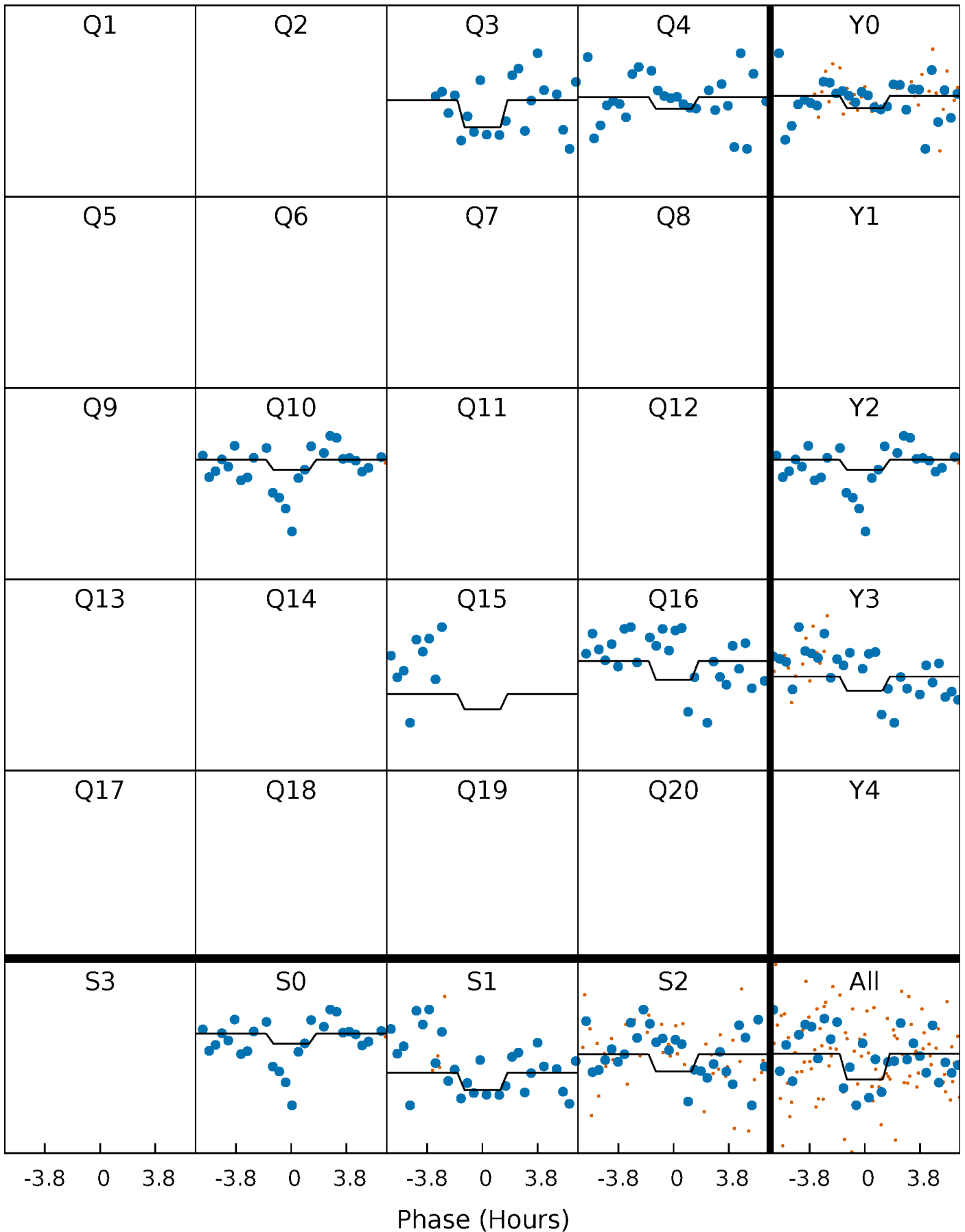
DV Quarter-Phased Transit Curves

TCE 005080346-02 P=112.890906 Days $T_0=168.600179$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

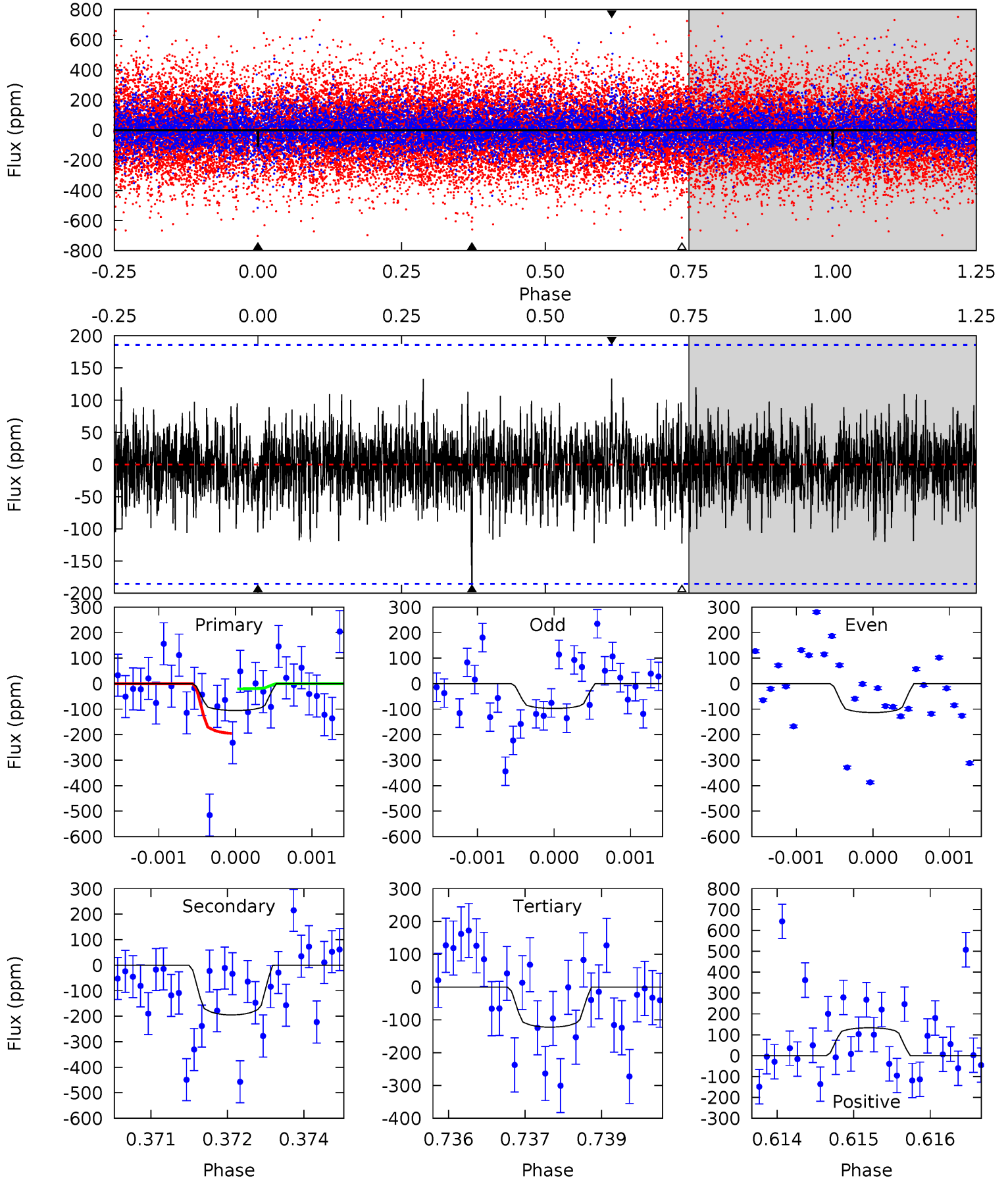
TCE 005080346-02 P=112.881797 Days $T_0=168.613117$ (BKJD)



DV Model-Shift Uniqueness Test

005080346-02, P = 112.890906 Days, E = 55.709273 Days

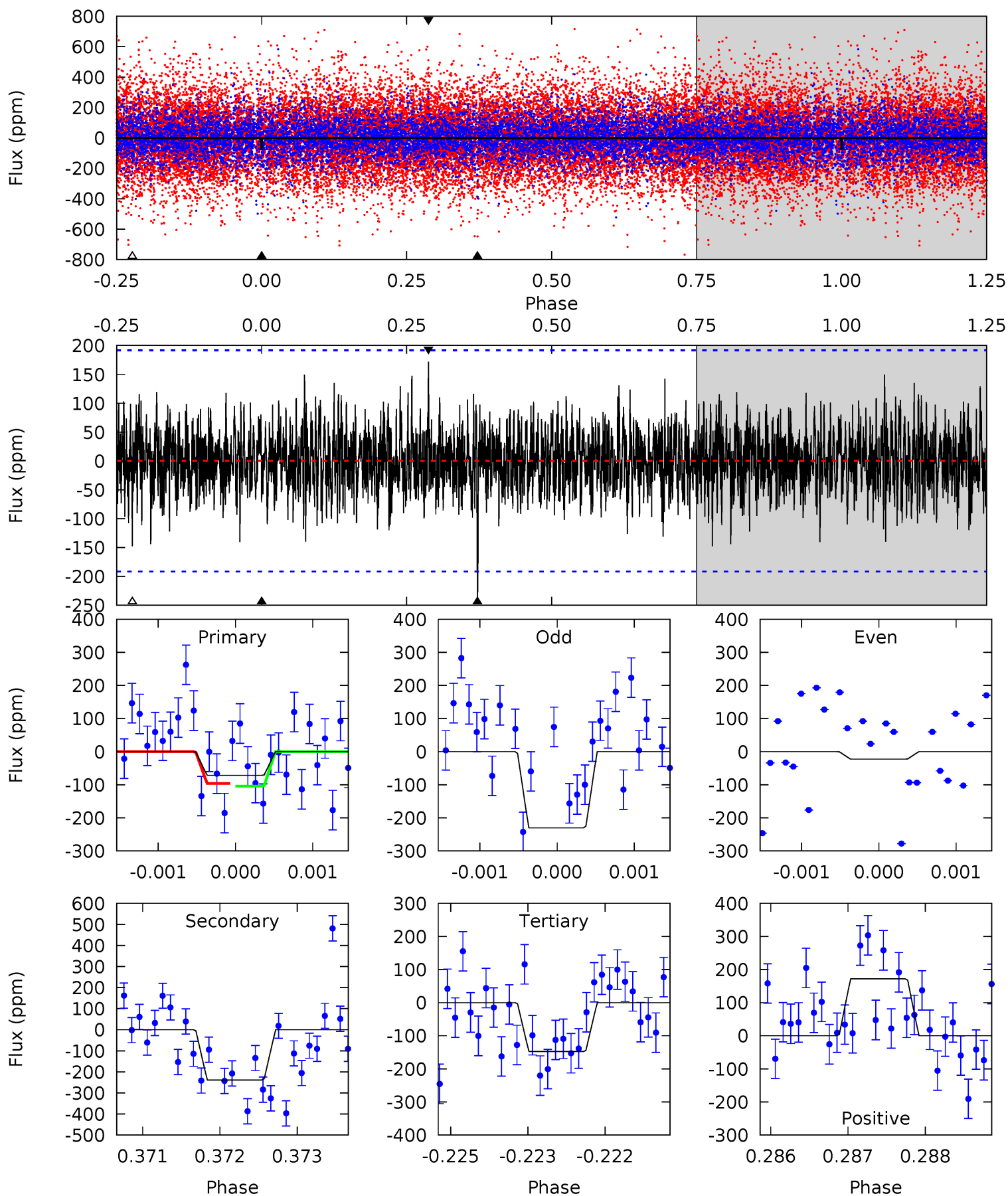
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.08	5.69	3.57	3.90	5.42	3.24	1.05	-0.49	-0.82	2.12	1.80	0.23	1.08	0.41	2.55



Alt Model-Shift Uniqueness Test

005080346-02, P = 112.881797 Days, E = 55.731320 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.03	6.73	4.17	4.86	5.41	3.23	1.22	-2.15	-2.83	2.56	1.87	2.99	2.04	0.42	0.11



Stellar Parameters For KIC 005080346

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot cm^{-3})$
	9451^{+302}_{-378}	$3.970^{+0.247}_{-0.180}$	$0.070^{+0.200}_{-0.750}$	$2.679^{+0.826}_{-1.009}$	$2.441^{+0.398}_{-0.738}$	$0.179^{+0.342}_{-0.092}$
	+3%/-4%	+6%/-5%	+286%/-1071%	+31%/-38%	+16%/-30%	+191%/-51%
Source	KIC0	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 005080346-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-195 ± 34	$6.44^{+6.79}_{-4.36}$	1206^{+107}_{-103}	6799^{+9592}_{-1820}	916^{+8150}_{-695}
Alt.	-238 ± 35	$6.75^{+7.12}_{-4.62}$	1209^{+97}_{-116}	7077^{+10514}_{-2073}	1040^{+9207}_{-806}

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 $A_{obs} \gg 1.0$

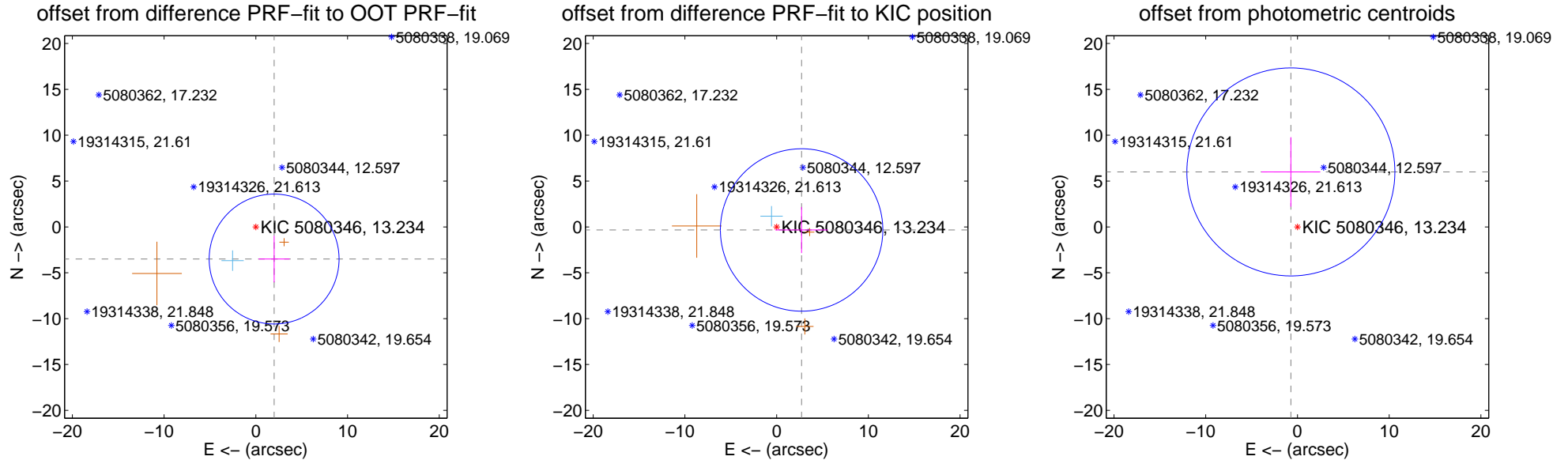
DV Centroid Data

Supplemental centroid analysis for 005080346-02. Kepler magnitude: 13.23. Transit SNR 1.84

There are 1 quarters with good PRF difference image offsets

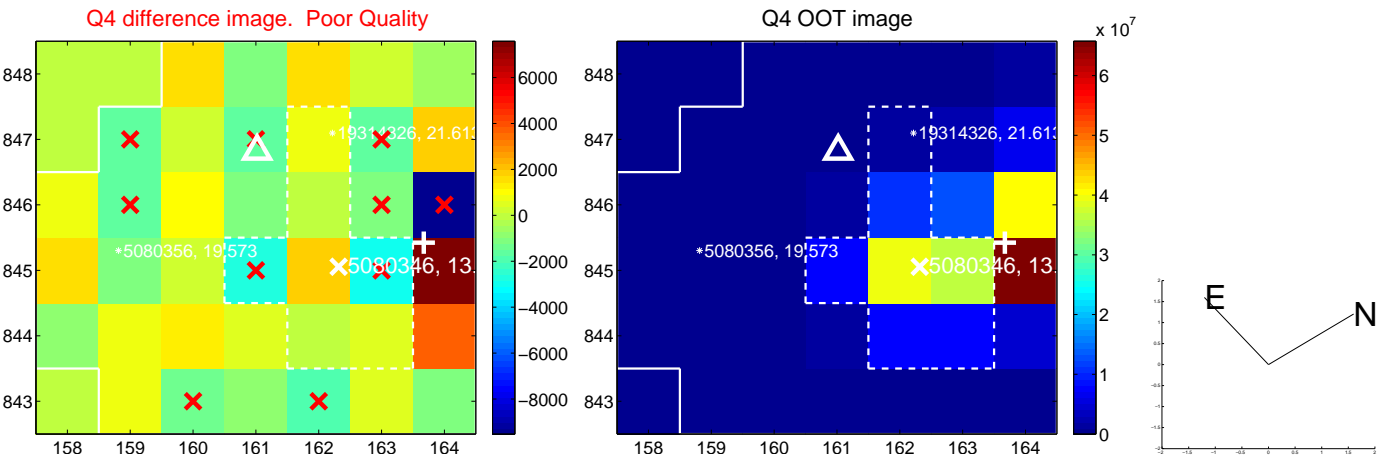
The OOT PRF centroid is offset from the target star catalog position by about 5.23 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.031 ± 2.361	1.71	-1.996 ± 1.696	-3.502 ± 2.539
PRF-fit source offset from KIC position	2.744 ± 2.952	0.93	-2.724 ± 2.865	-0.333 ± 2.513
photometric centroid source offset	6.04 ± 3.78	1.60	0.72 ± 3.21	6.00 ± 3.79

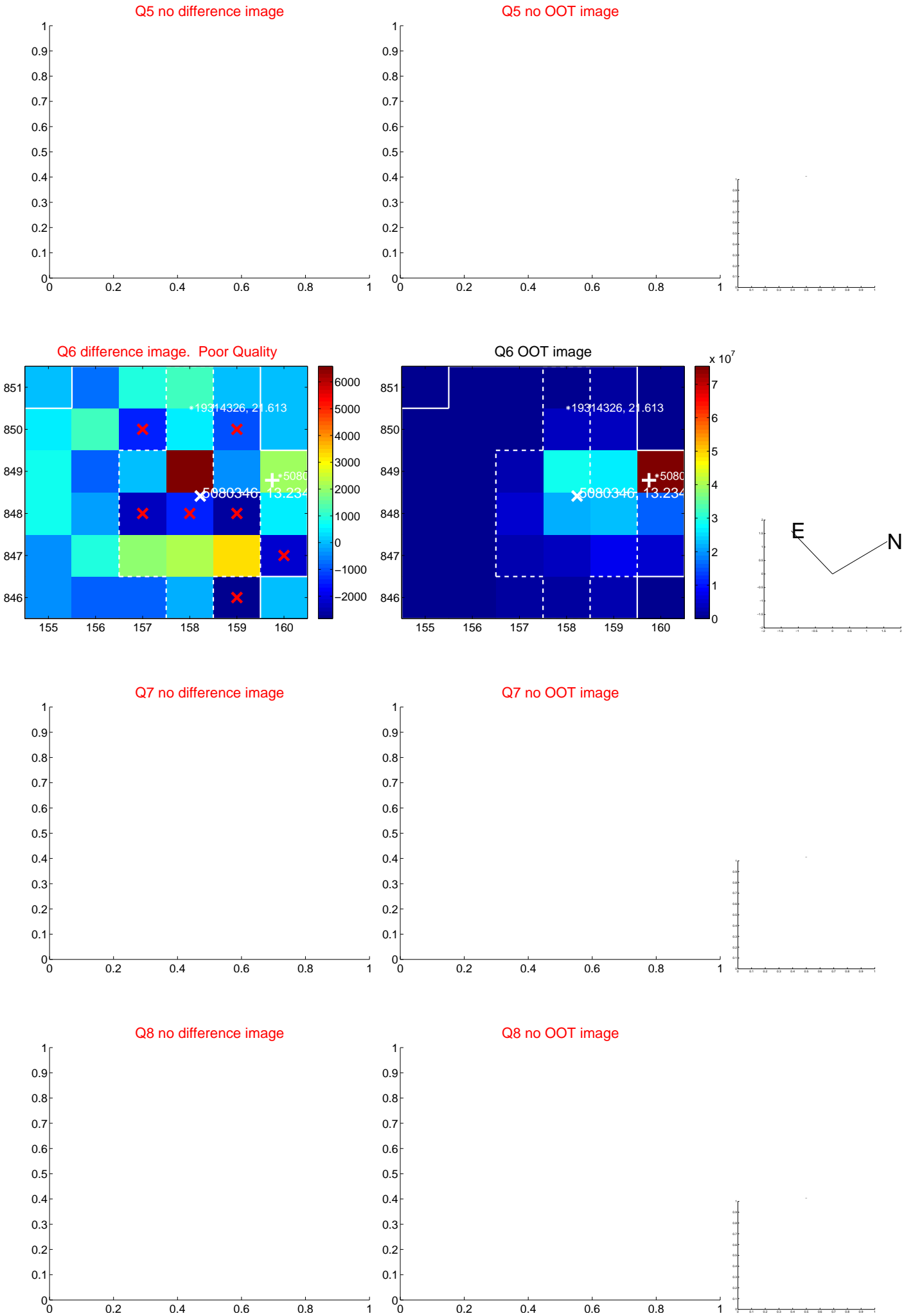


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

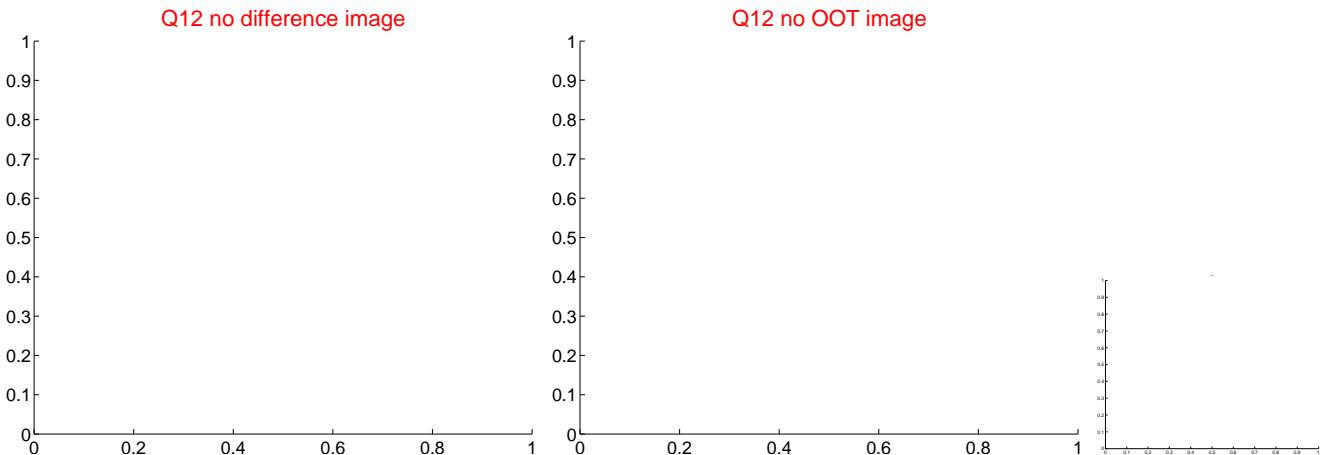
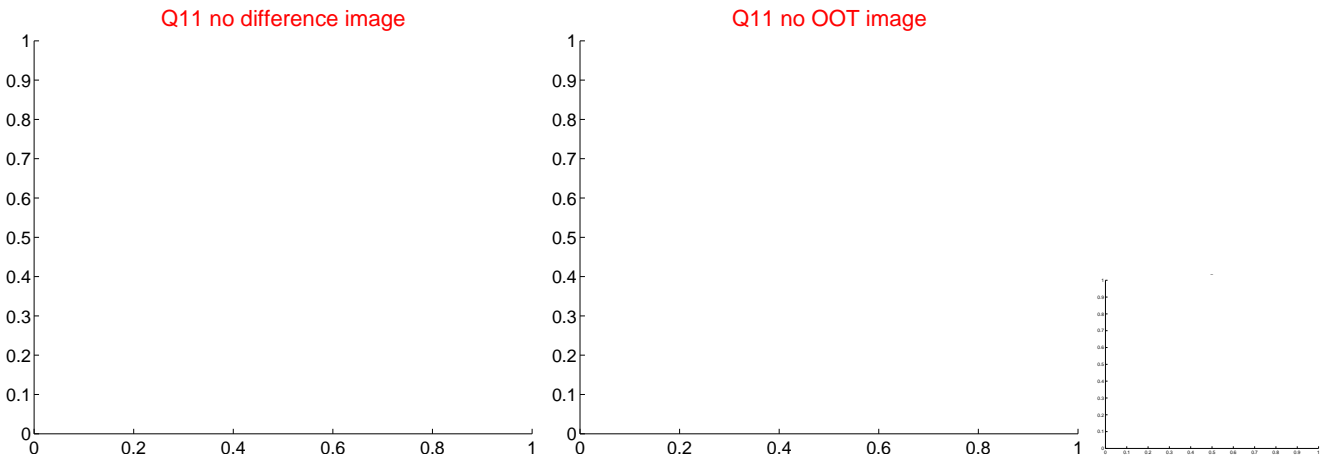
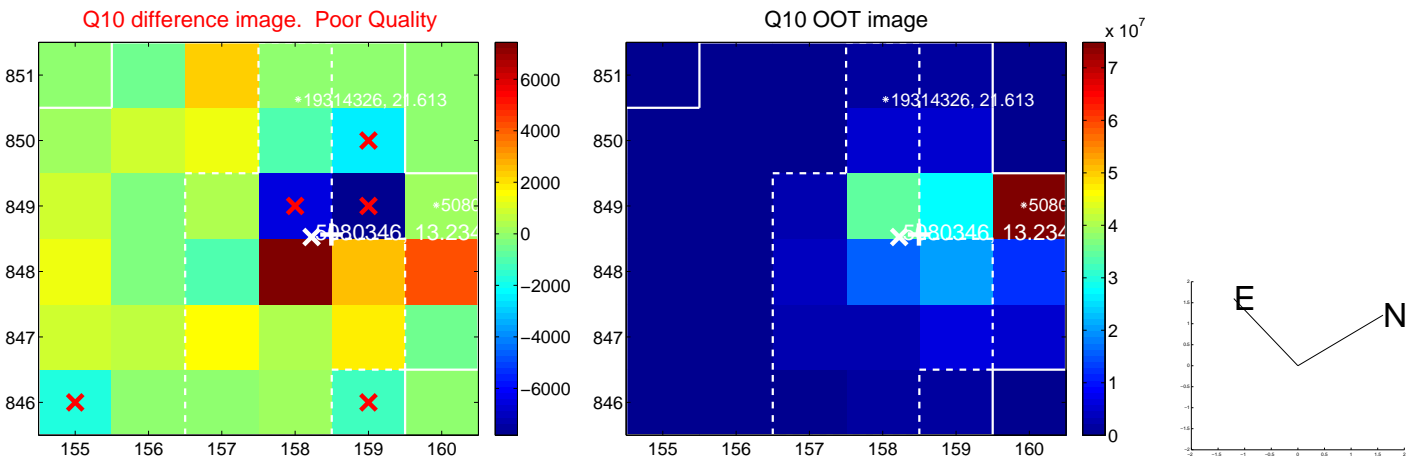
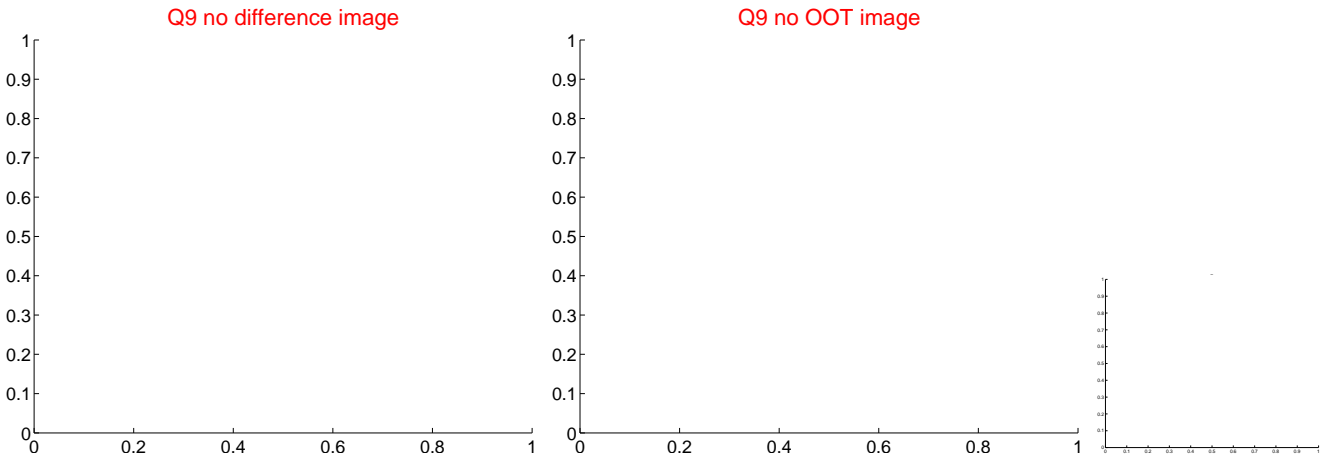
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



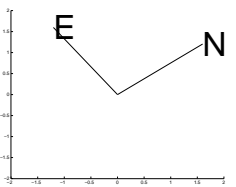
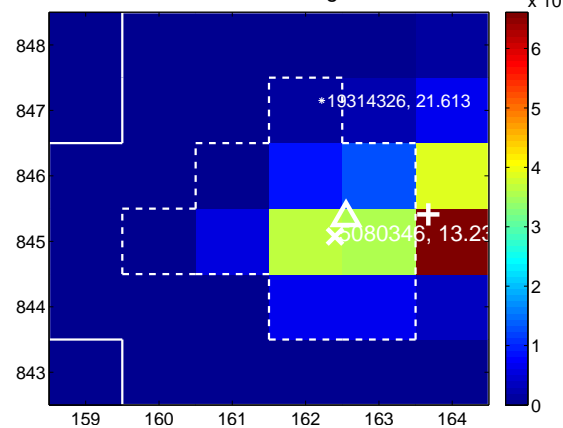
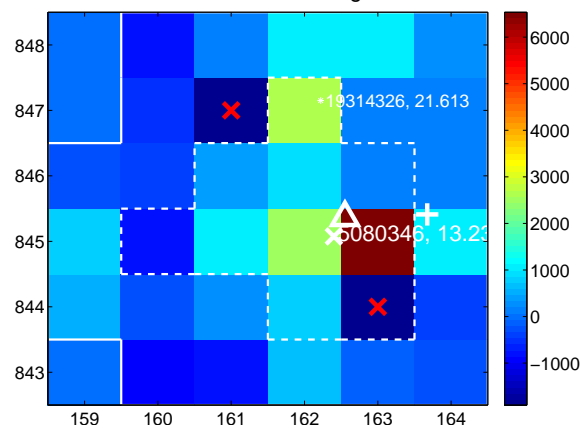
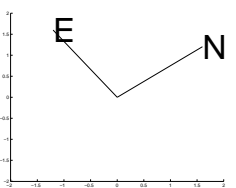
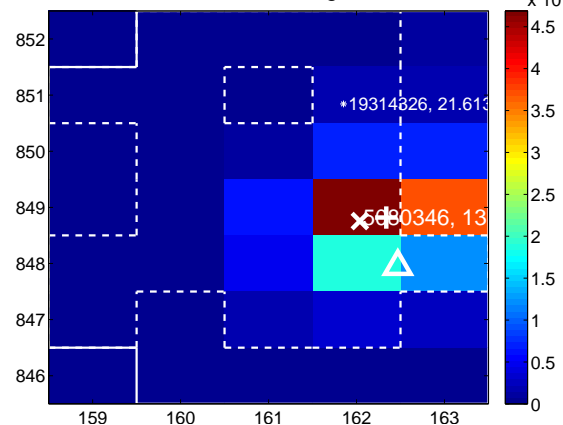
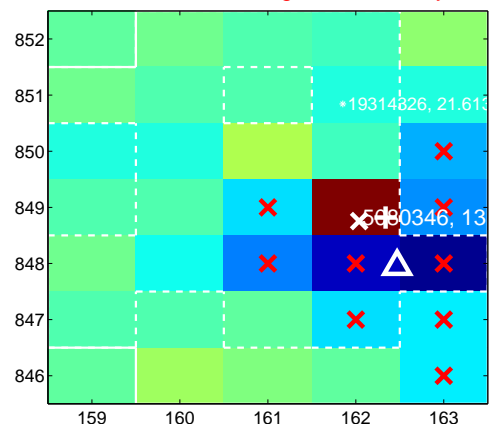
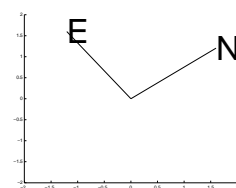
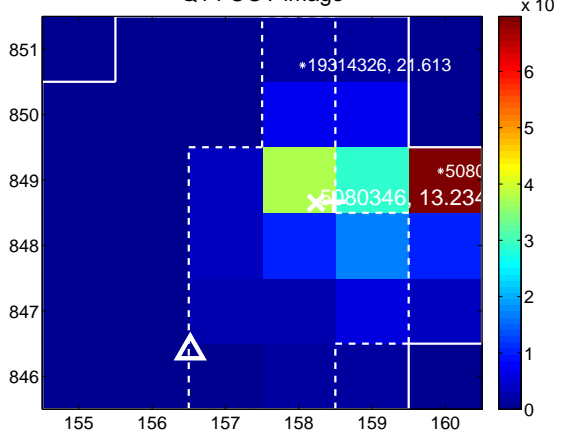
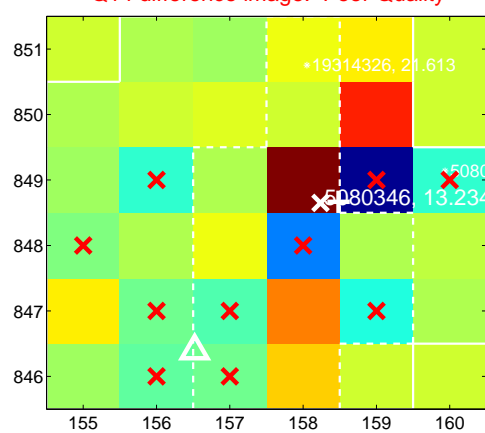
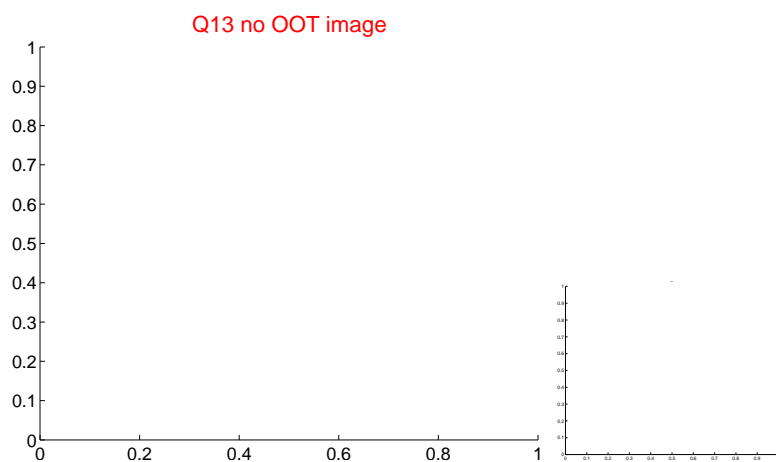
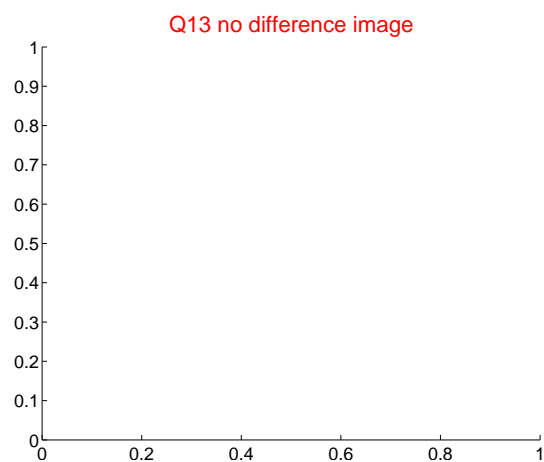
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



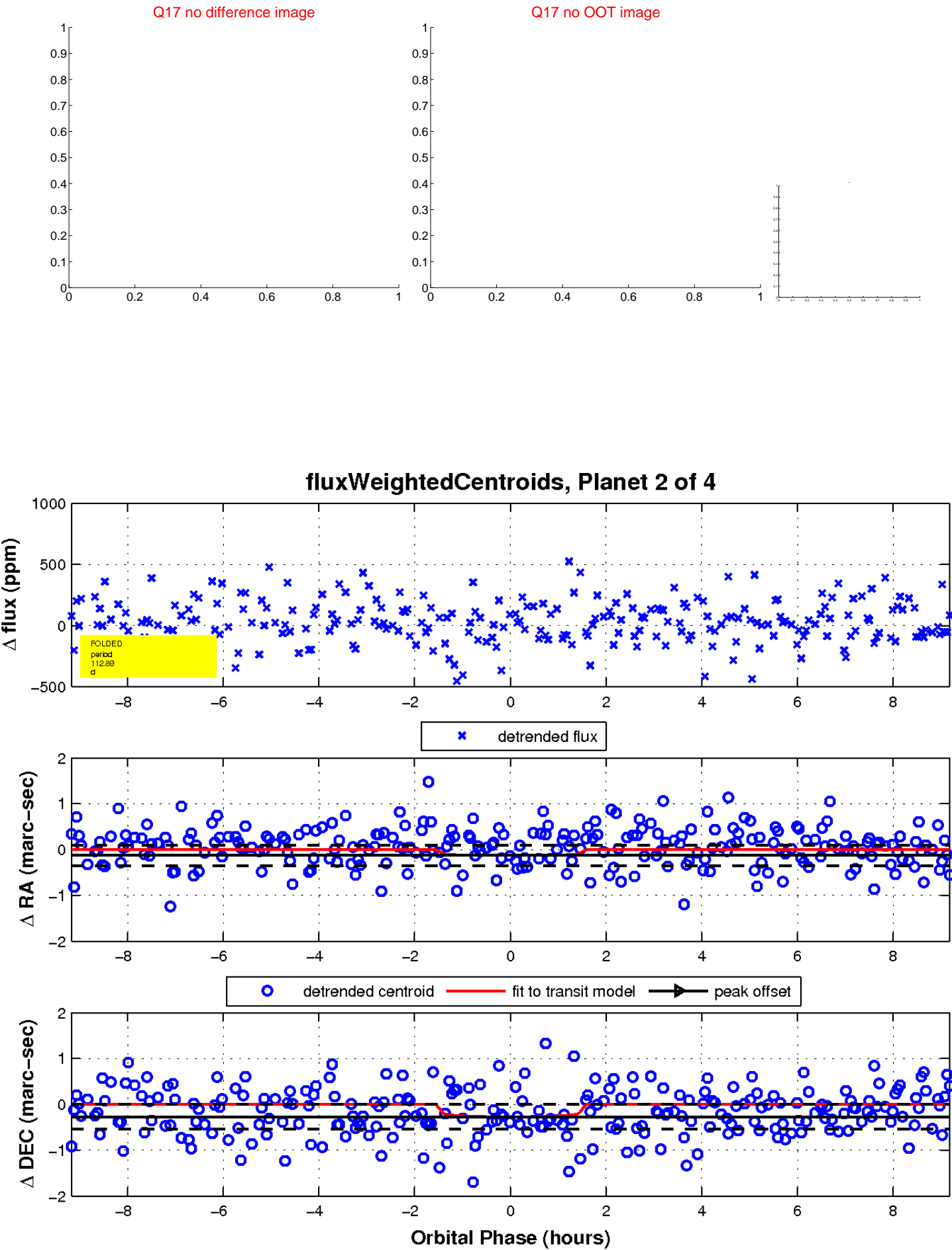
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

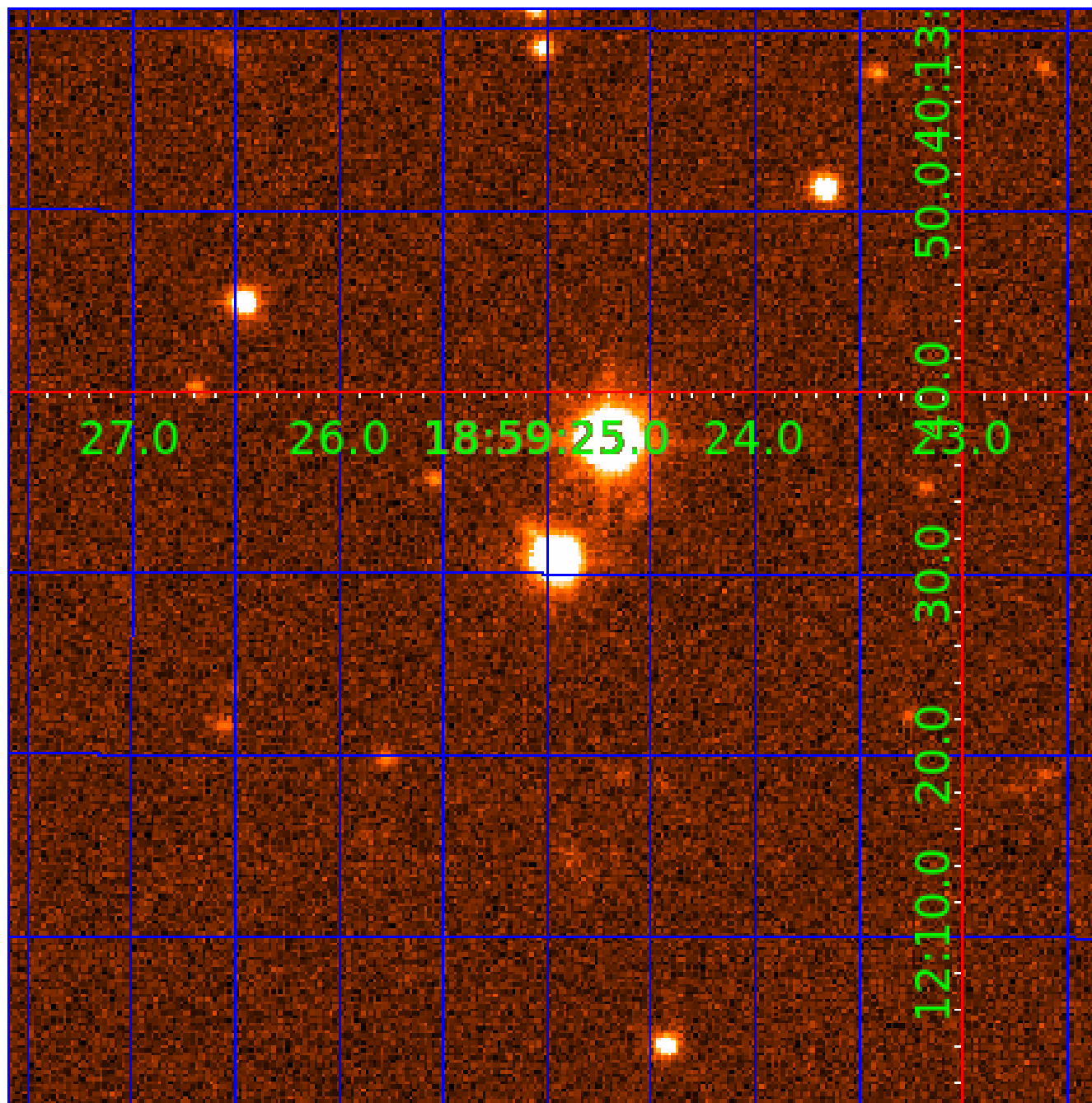


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005080346

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})
005080346-01	OBS	6509.01	2.311939	132.275587	29.4	8.875	9.4	8.9	2.68	9451	1.63	24144.52
005080346-02	OBS	No	112.890906	168.600179	71.4	3.062	15.9	1.8	2.68	9451	2.48	135.28
005080346-03	OBS	No	155.206224	182.441750	306.2	17.451	12.3	8.4	2.68	9451	4.99	88.49
005080346-04	OBS	No	116.579548	212.669096	163.3	16.640	10.0	5.6	2.68	9451	3.70	129.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005080346-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_KIC_POS
005080346-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—TRANS_GAPPED—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—HALO_GHOST
005080346-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005080346-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS— CENT_FEW_DIFFS—HALO_GHOST

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

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

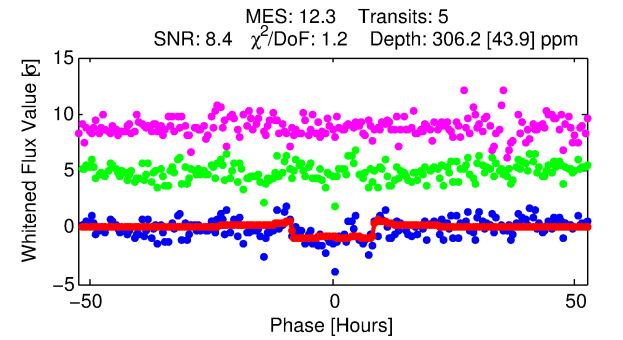
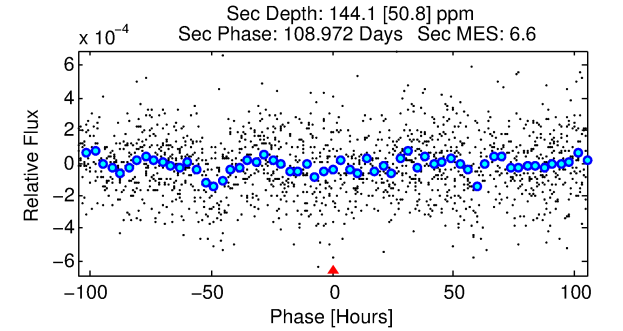
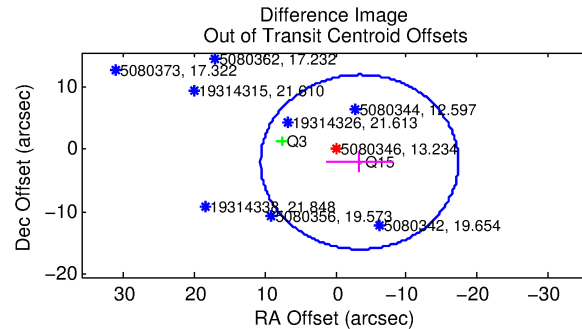
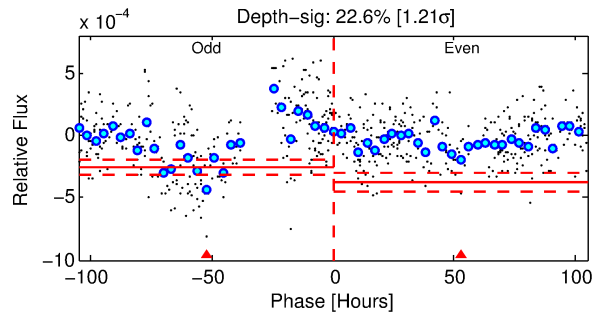
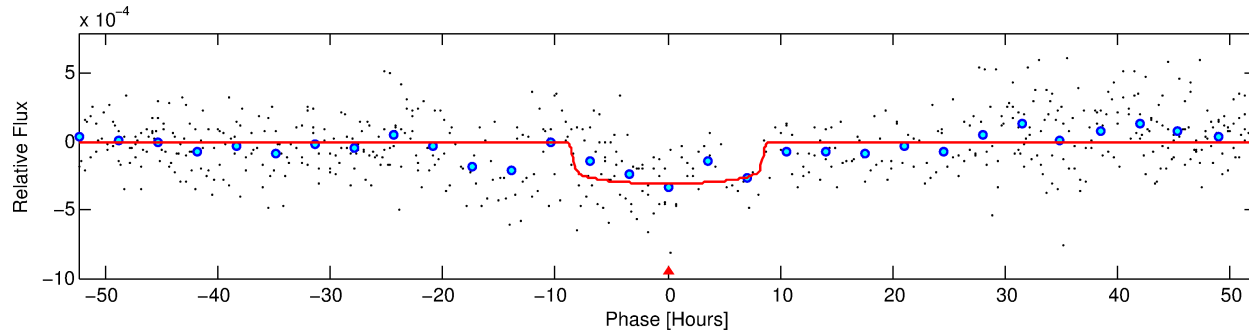
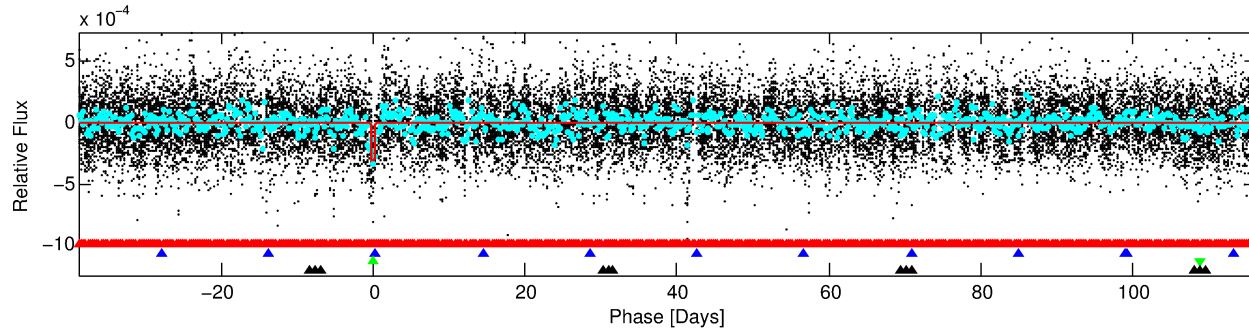
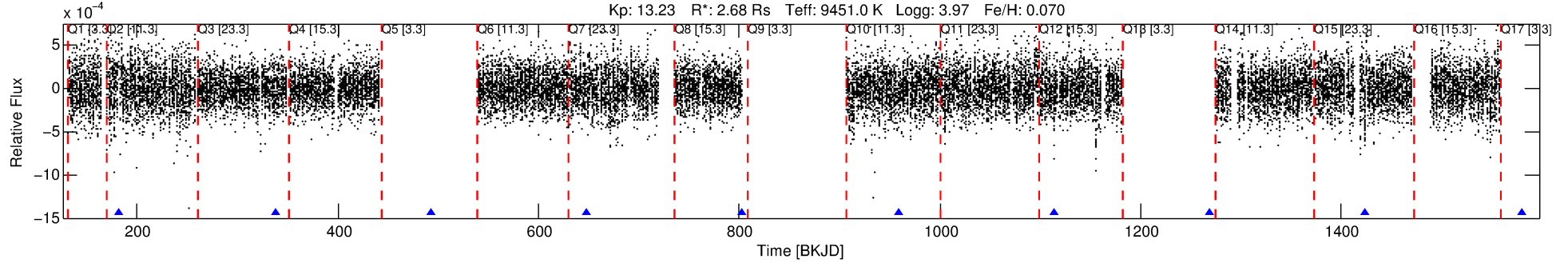
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005080346-03

No Significant Match Found

DV One-Page Summary

KIC: 5080346 Candidate: 3 of 4 Period: 155.206 d
KOI: K06509 Corr: No Ephemeris Match



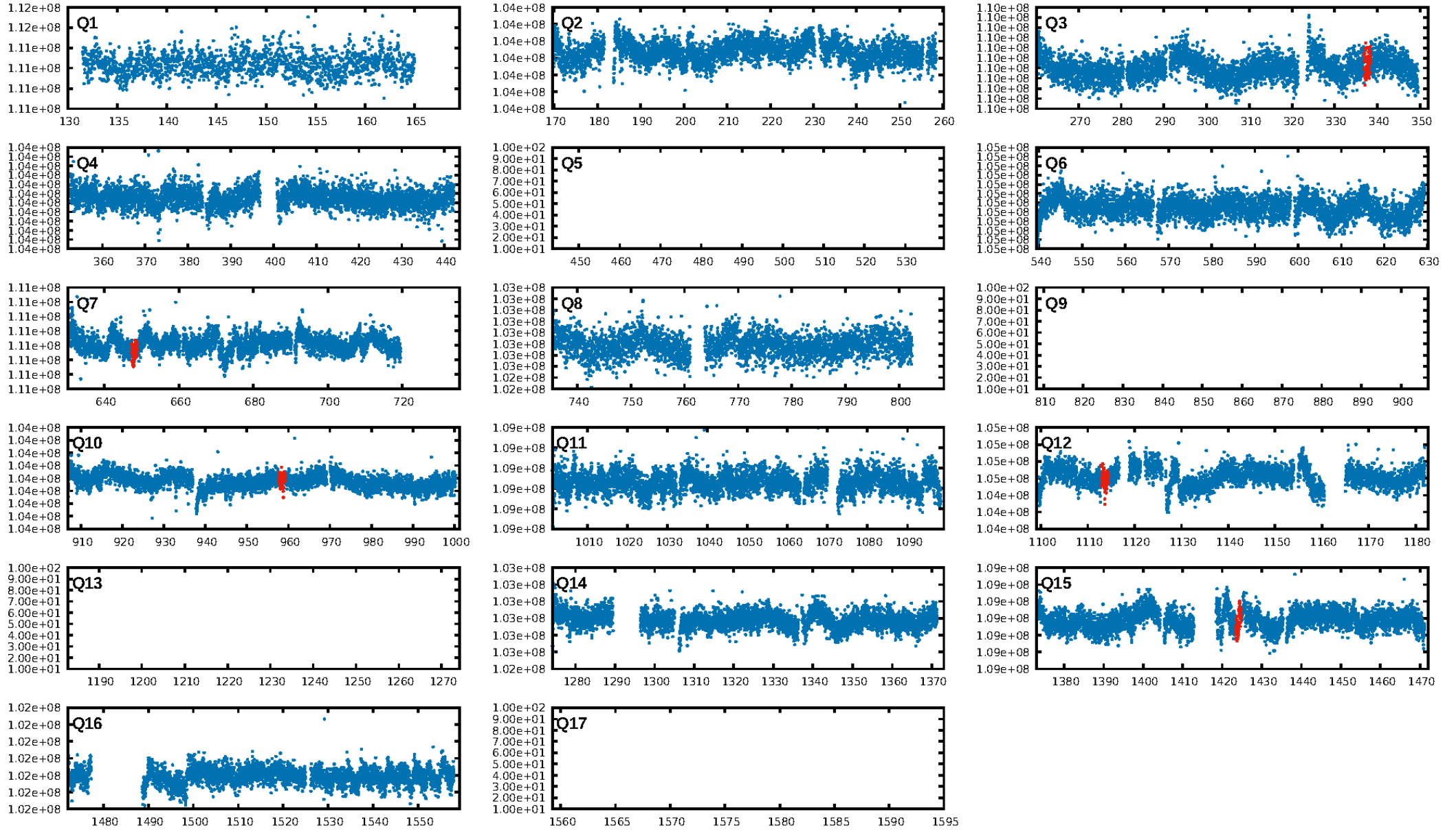
DV Fit Results:

Period = 155.20622 [0.00414] d
Epoch = 182.4418 [0.0231] BKJD
Rp/R* = 0.0171 [0.0044]
a/R* = 53.16 [89.07]
b = 0.65 [1.51]
Seff = 88.49 [42.66]
Teq = 782 [94] K
Rp = 4.99 [2.28] Re
a = 0.7614 [0.2396] AU
Ag = 1845.76 [1424.38] [1.30 σ]
Teffp = 7926 [1275] K [5.59 σ]

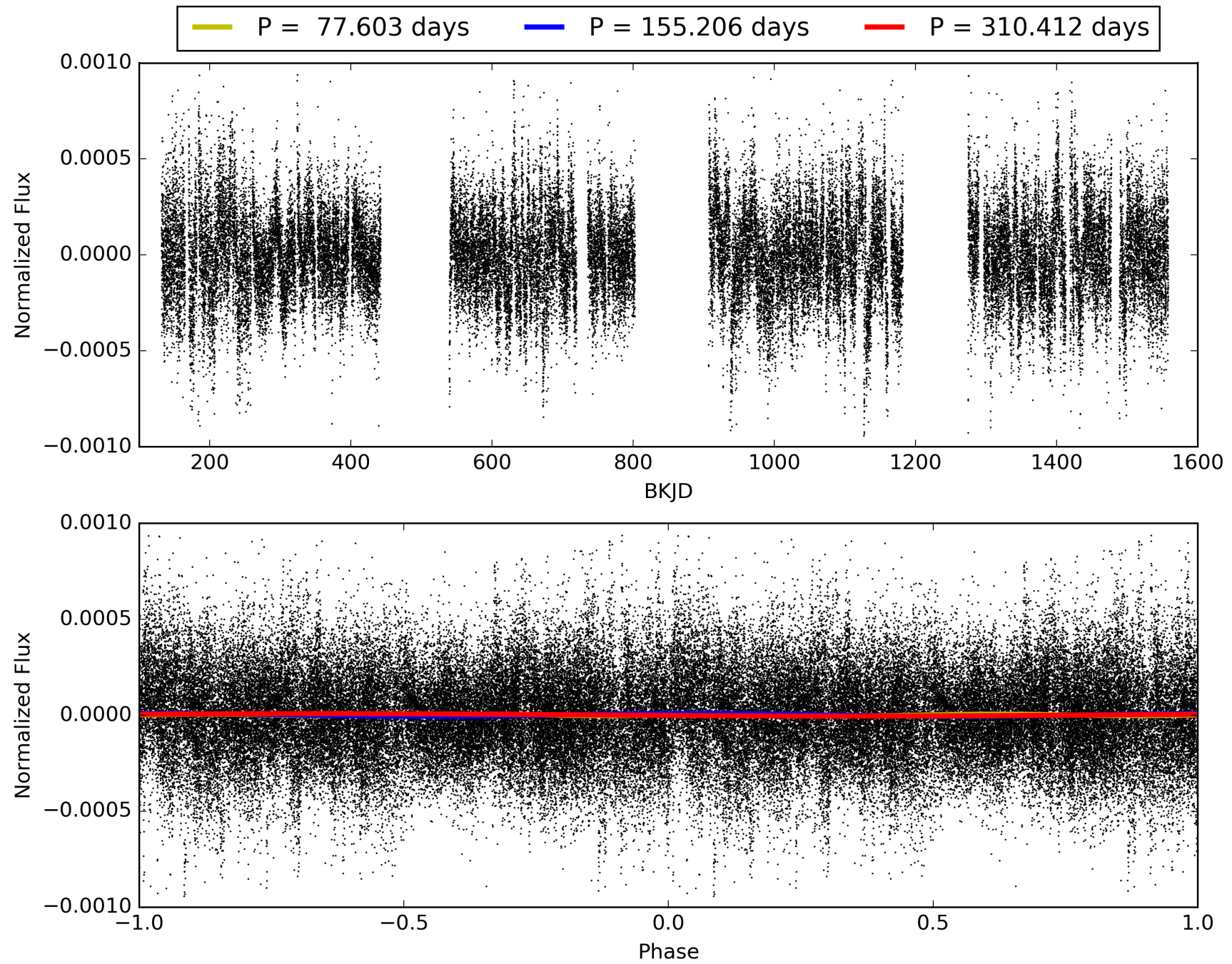
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [38.45 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.60e-17
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -1.679
Centroid-sig: 27.7%
Centroid-so: 2.985 arcsec [4.12 σ]
OotOffset-rm: 3.977 arcsec [0.85 σ]
KicOffset-rm: 3.989 arcsec [0.82 σ]
OotOffset-st: 0/2/0/0 [2]
KicOffset-st: 0/2/0/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 0.00 [0/4]

TCE 005080346-03, PDC Light Curves

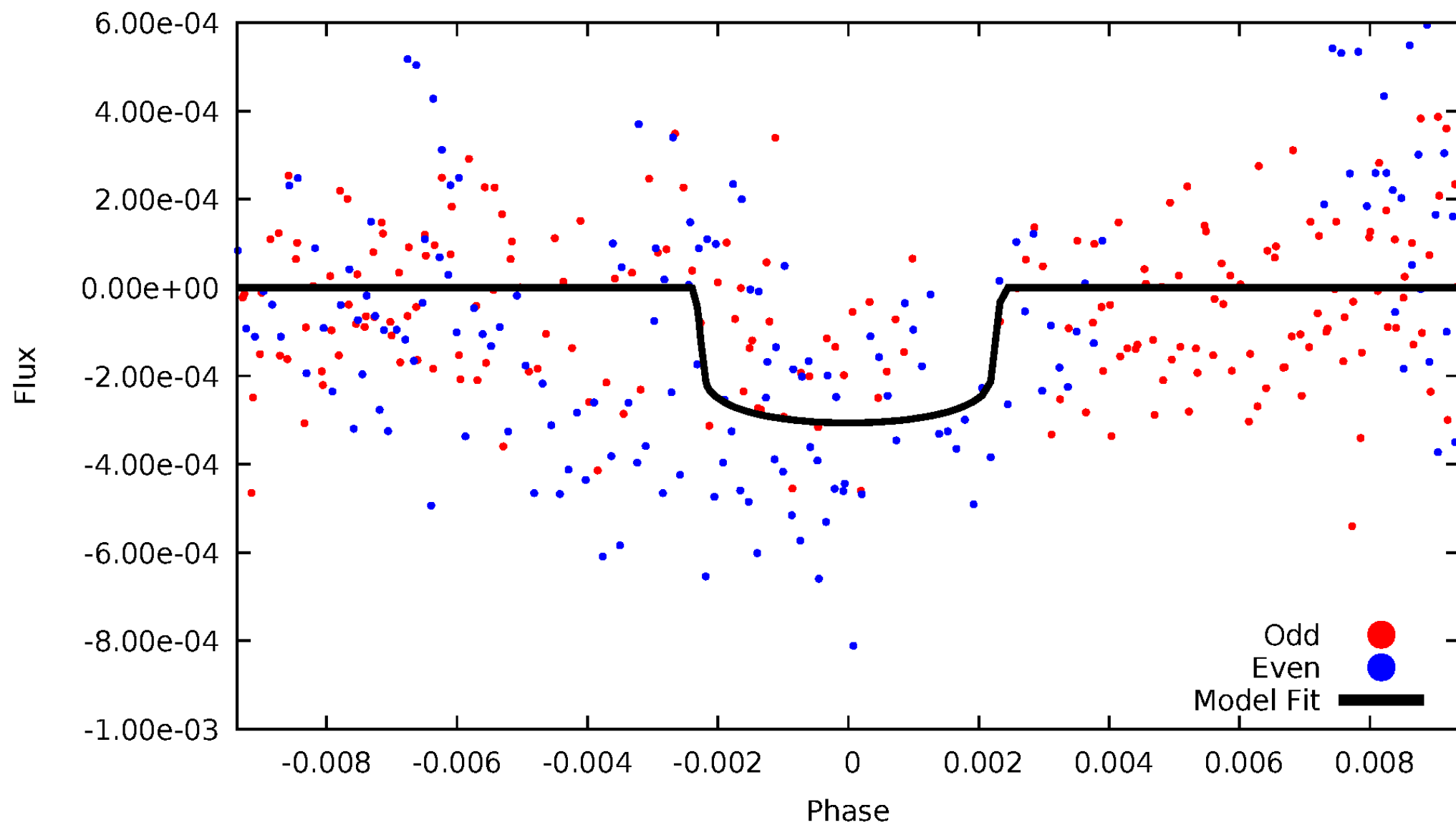


TCE 005080346-03



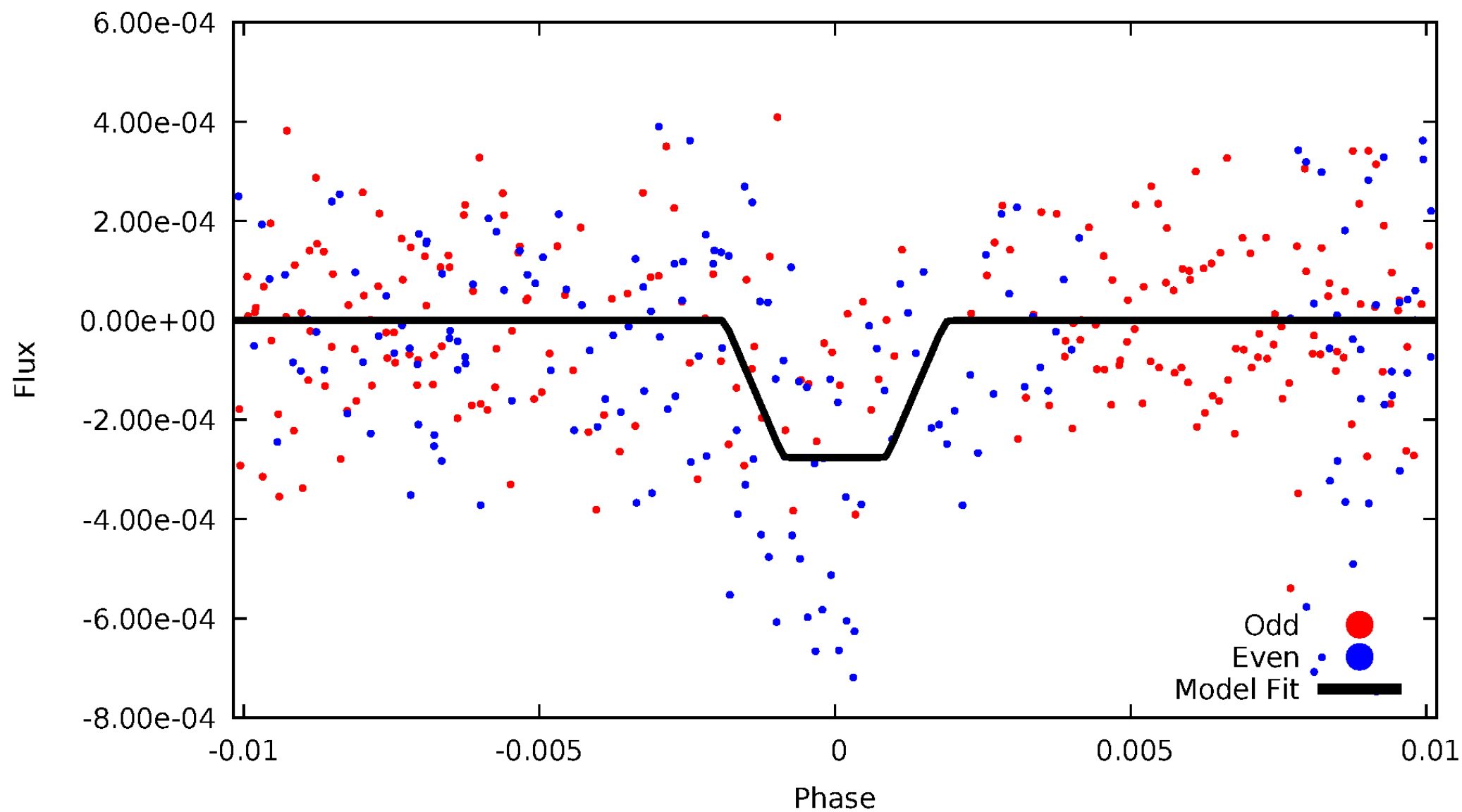
DV Odd/Even

TCE 005080346-03



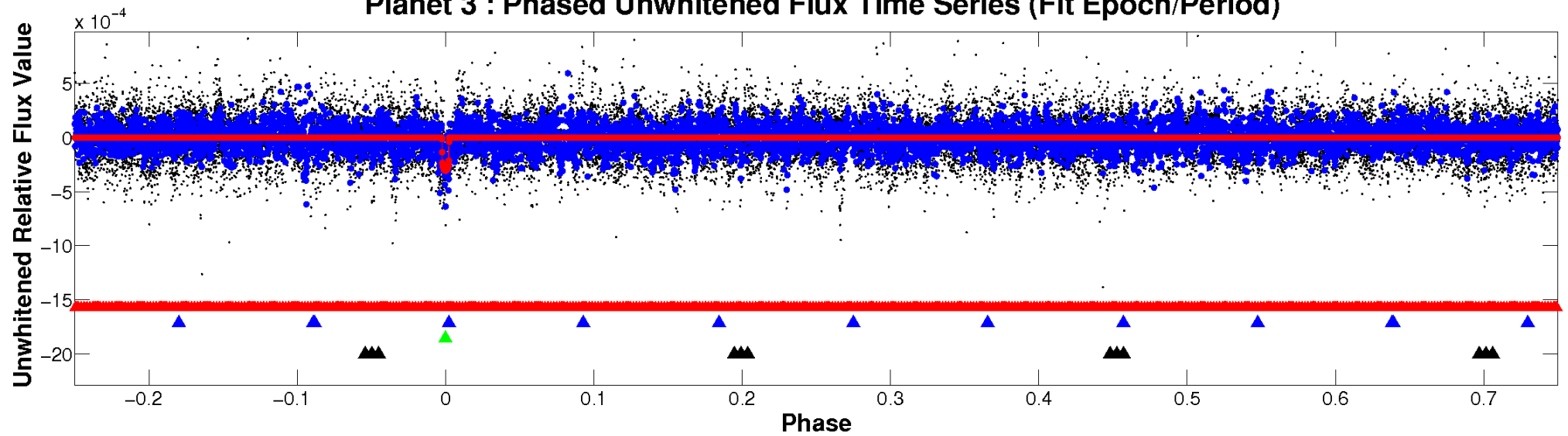
ALT Odd/Even

TCE 005080346-03

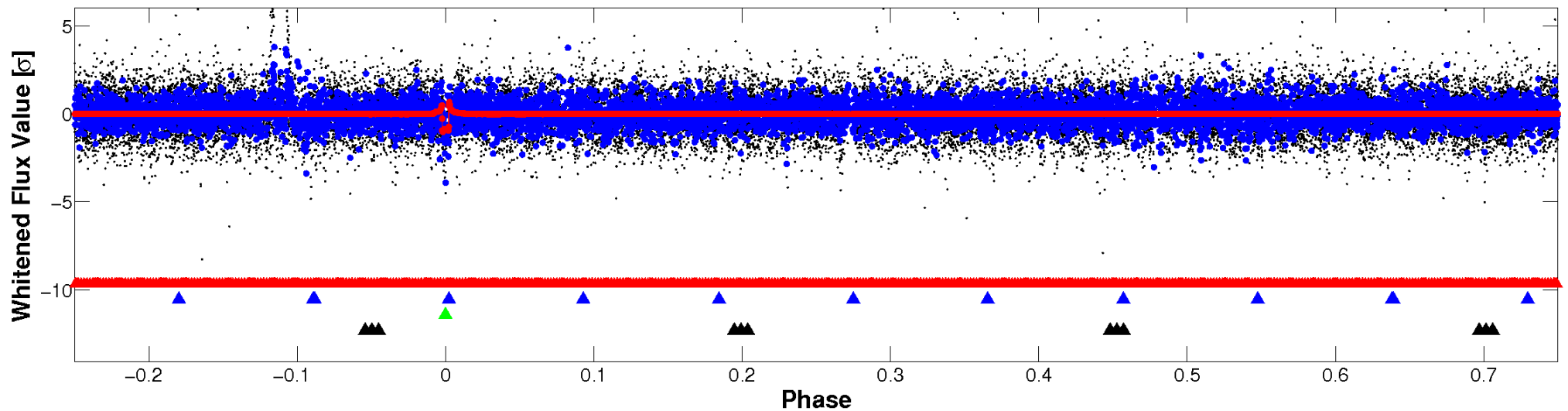


Non-Whitened Vs. Whitened Light Curve

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

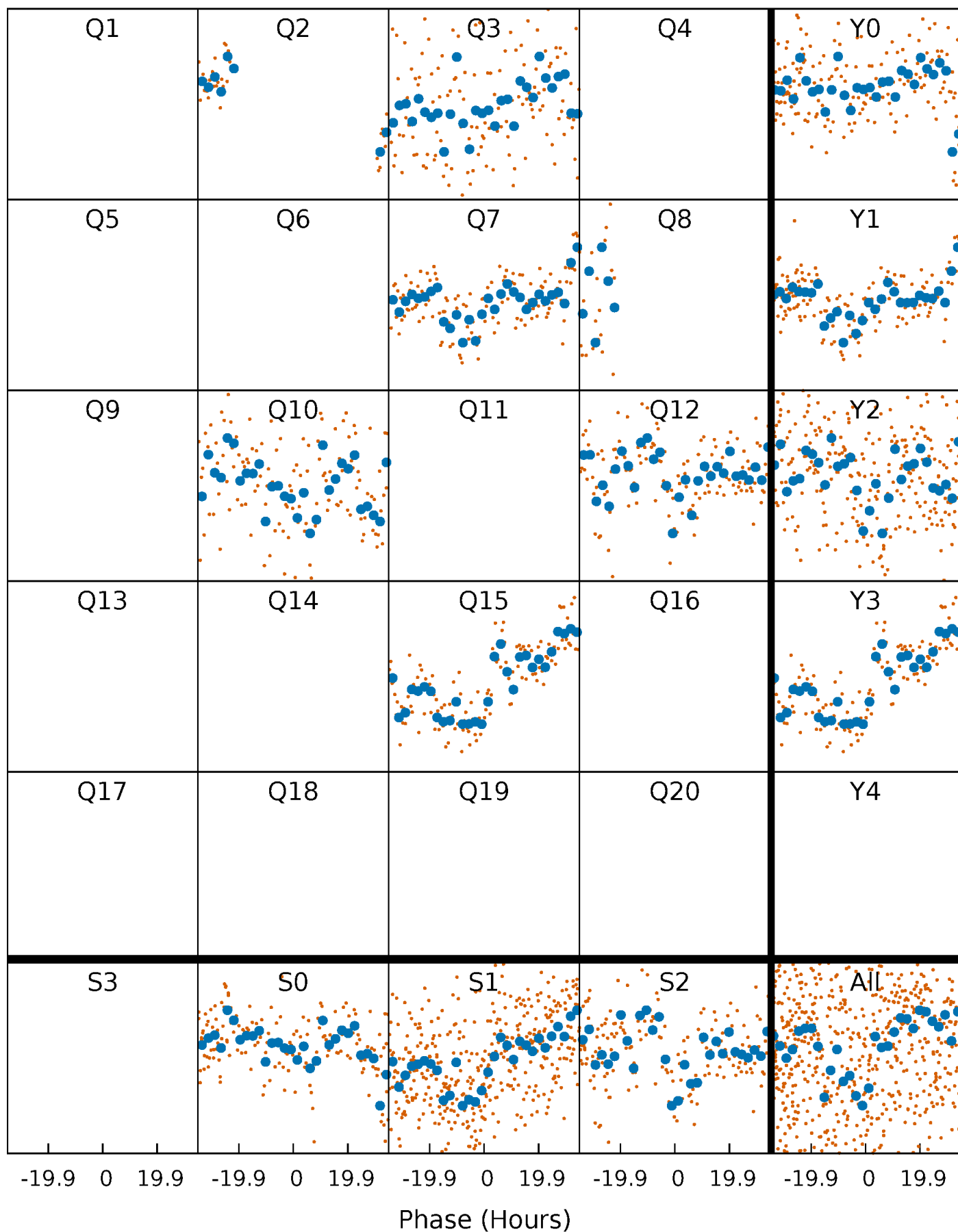


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



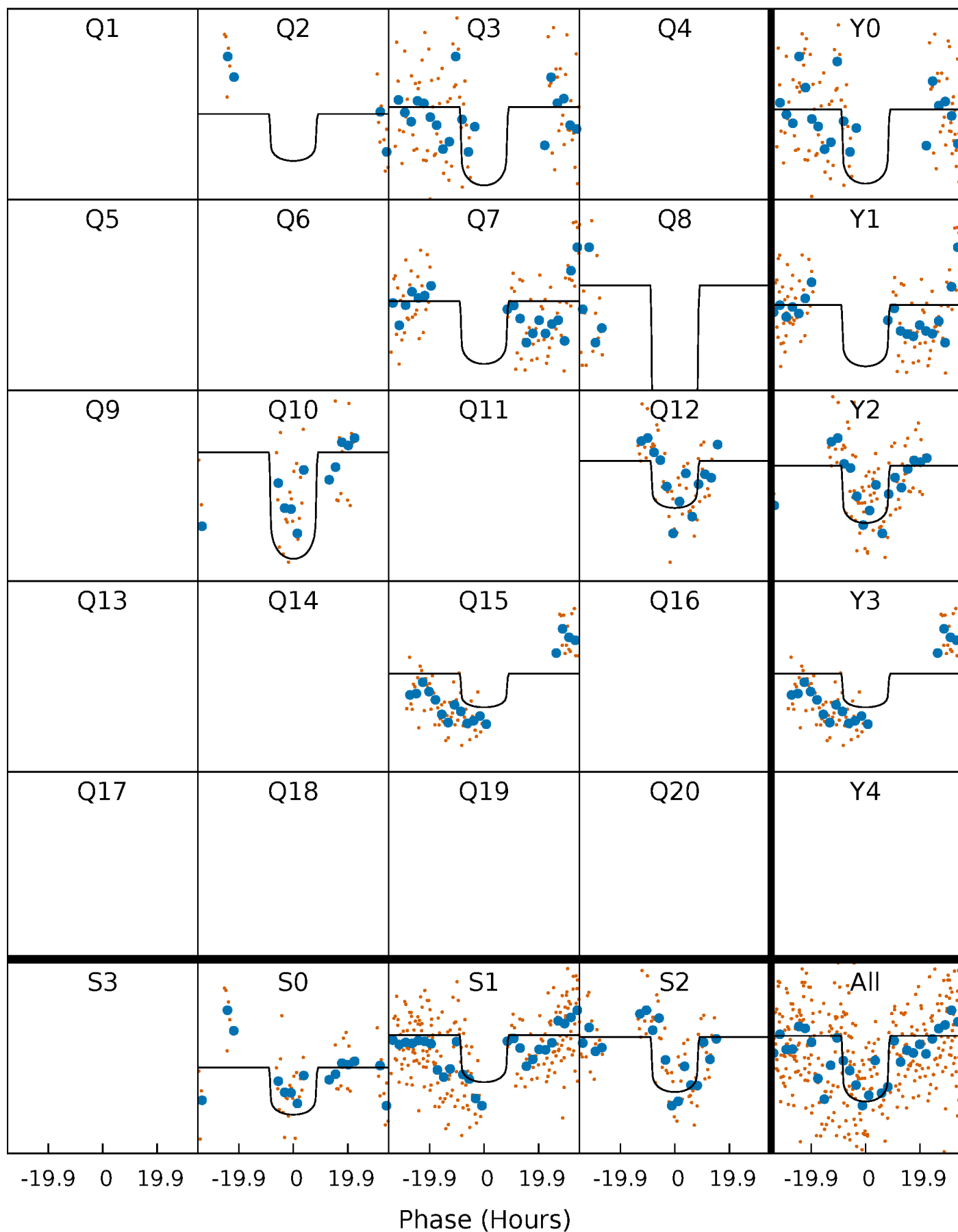
PDC Quarter-Phased Transit Curves

TCE 005080346-03 $P=155.206224$ Days $T_0=182.441750$ (BKJD)



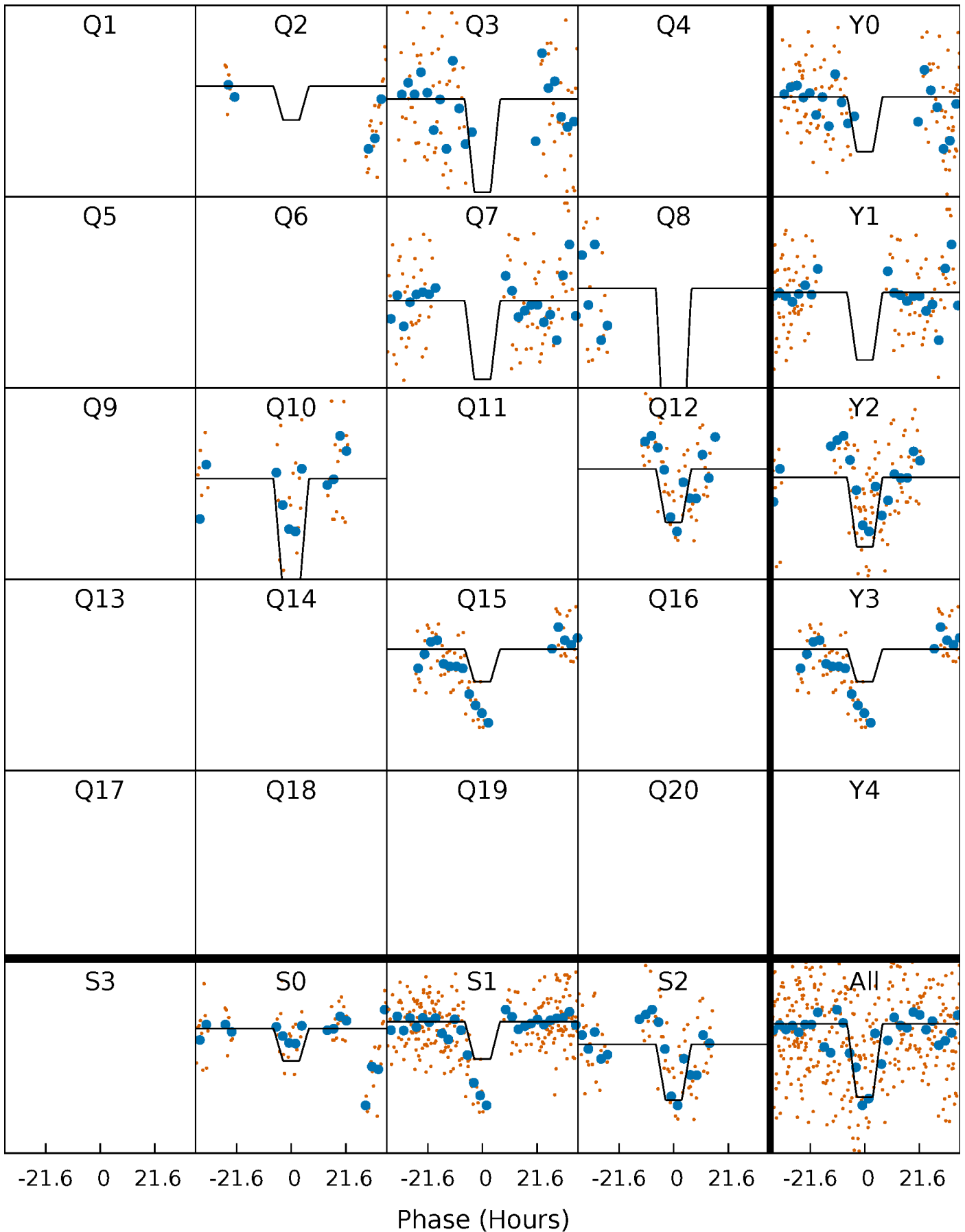
DV Quarter-Phased Transit Curves

TCE 005080346-03 P=155.206224 Days $T_0=182.441750$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

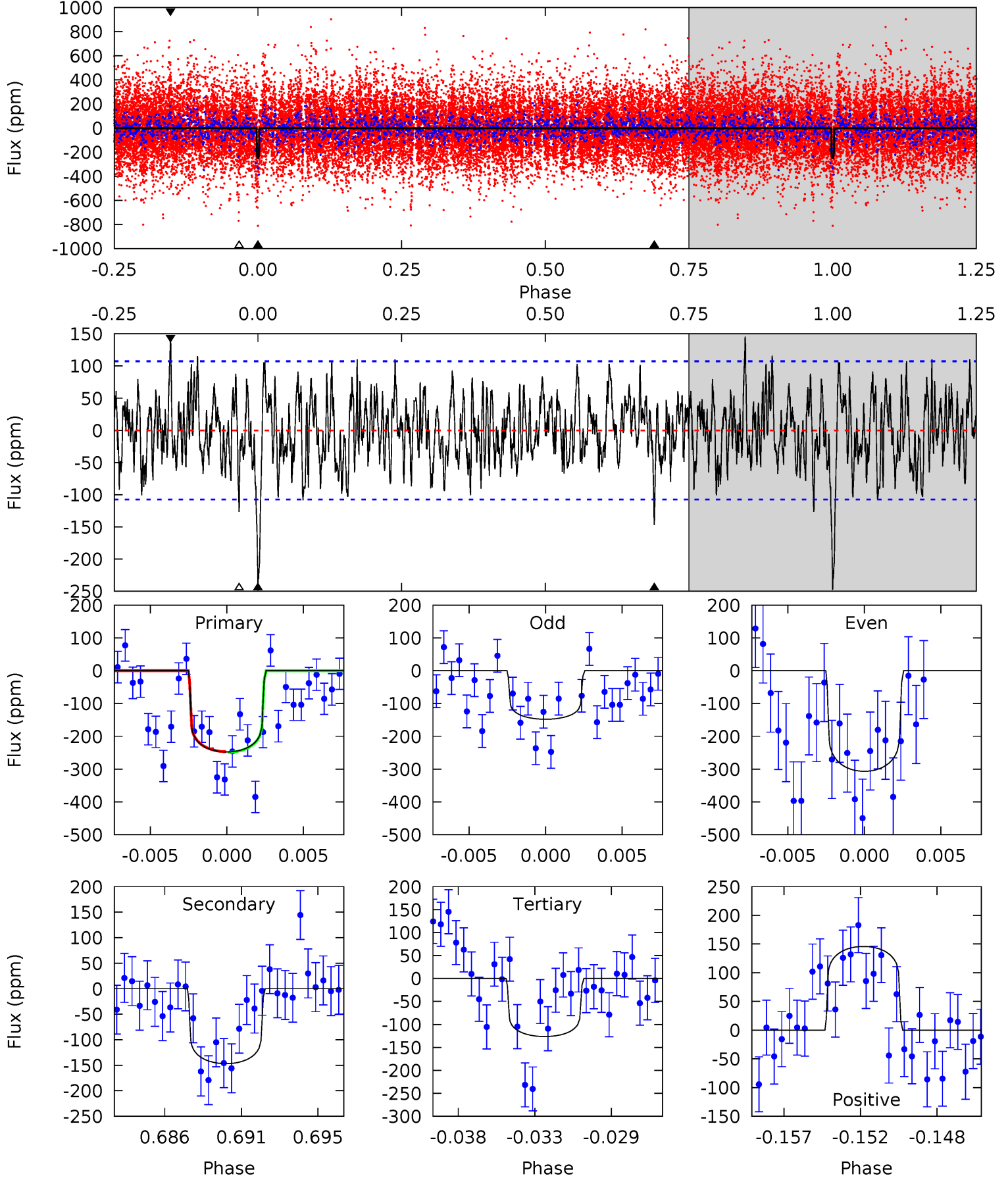
TCE 005080346-03 P=155.192888 Days $T_0=182.485082$ (BKJD)



DV Model-Shift Uniqueness Test

005080346-03, P = 155.206224 Days, E = 27.235526 Days

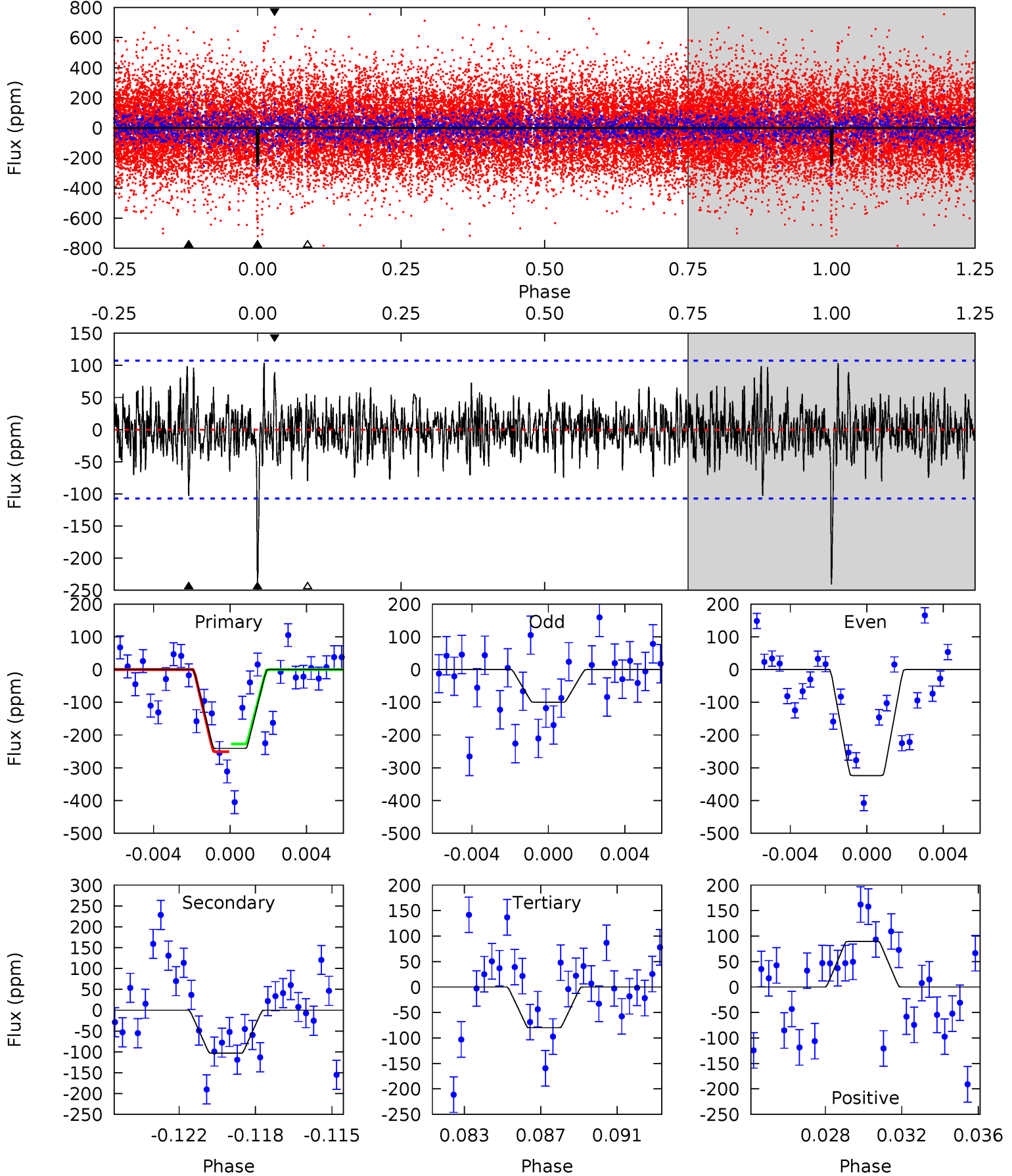
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	7.06	6.08	7.01	5.17	2.82	2.01	5.83	4.90	0.98	0.05	3.73	1.31	0.37	0.05



Alt Model-Shift Uniqueness Test

005080346-03, P = 155.192888 Days, E = 27.292194 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.7	4.99	3.88	4.33	5.20	2.88	1.25	7.79	7.34	1.12	0.66	5.25	0.98	0.30	0.55



Stellar Parameters For KIC 005080346

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	9451^{+302}_{-378}	$3.970^{+0.247}_{-0.180}$	$0.070^{+0.200}_{-0.750}$	$2.679^{+0.826}_{-1.009}$	$2.441^{+0.398}_{-0.738}$	$0.179^{+0.342}_{-0.092}$
	+3%/-4%	+6%/-5%	+286%/-1071%	+31%/-38%	+16%/-30%	+191%/-51%
Source	KIC0	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 005080346-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-147 ± 21	$4.90^{+1.58}_{-1.45}$	1090^{+89}_{-99}	7505^{+1545}_{-947}	1900^{+1972}_{-811}
Alt.	-103 ± 21	$4.75^{+1.71}_{-1.44}$	1086^{+99}_{-94}	6874^{+1350}_{-910}	1391^{+1470}_{-667}

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

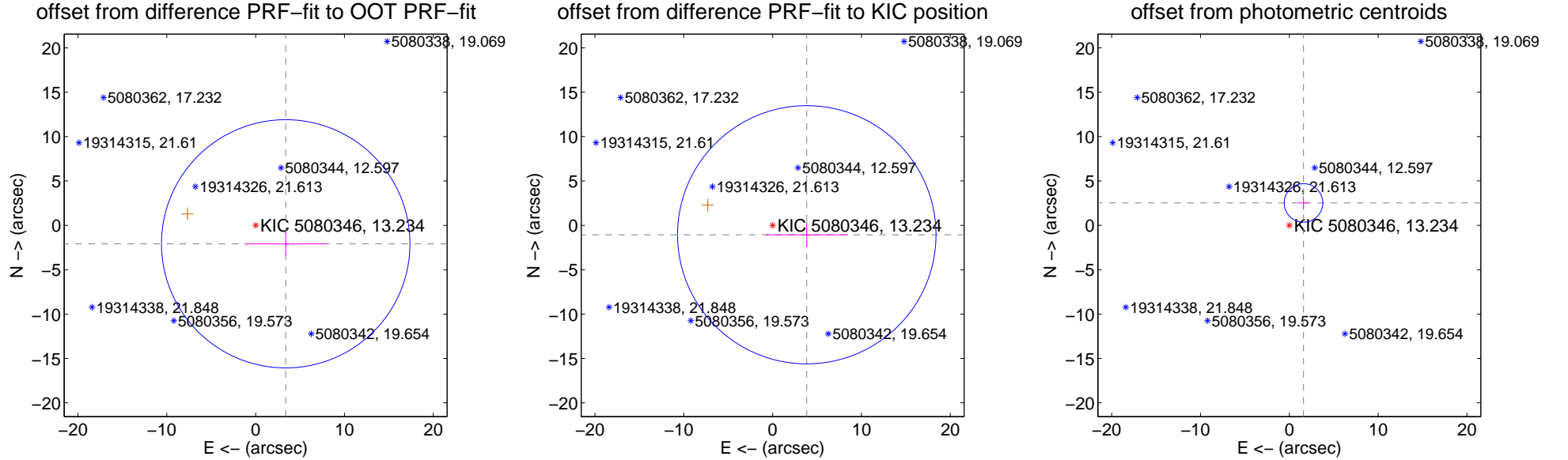
DV Centroid Data

Supplemental centroid analysis for 005080346-03. Kepler magnitude: 13.23. Transit SNR 8.39

There are 0 quarters with good PRF difference image offsets

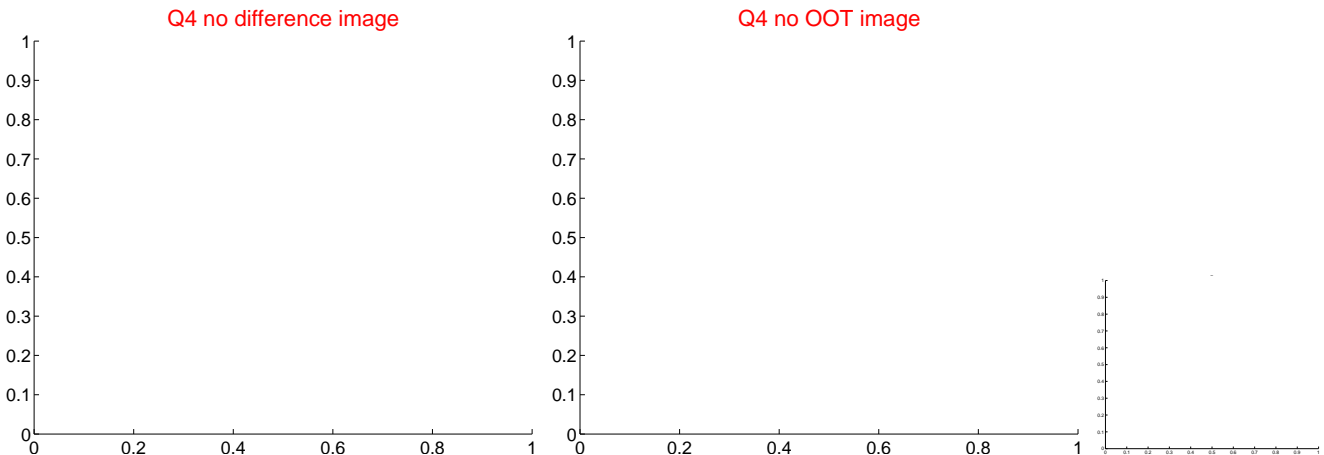
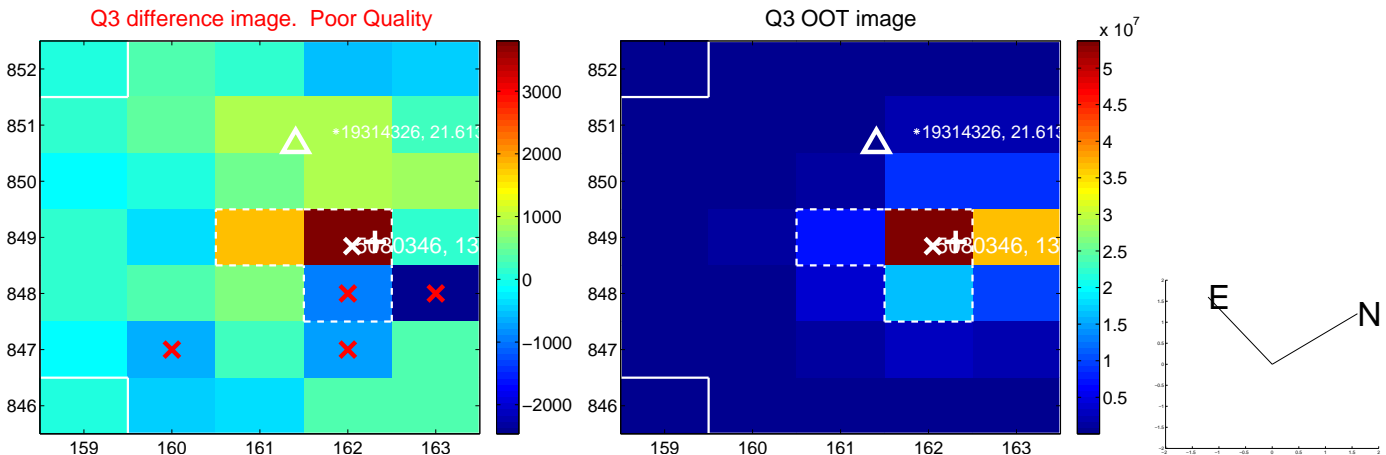
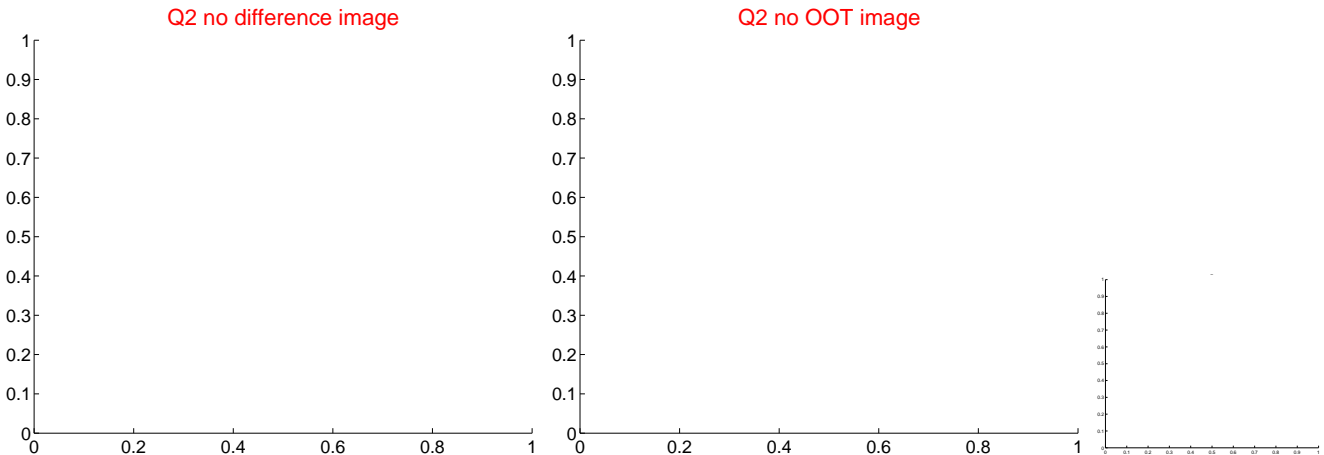
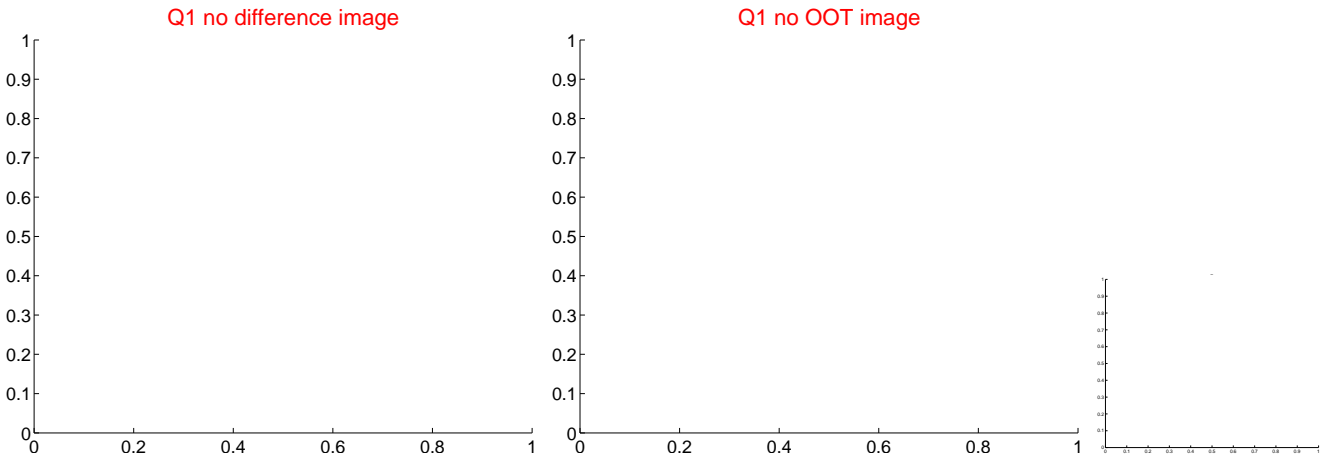
The direct PRF centroid is offset from the target star catalog position by about 1.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.977 ± 4.662	0.85	-3.388 ± 4.611	-2.083 ± 1.402
PRF-fit source offset from KIC position	3.989 ± 4.849	0.82	-3.845 ± 4.646	-1.062 ± 1.395
photometric centroid source offset	2.98 ± 0.72	4.12	-1.59 ± 0.62	2.52 ± 0.76

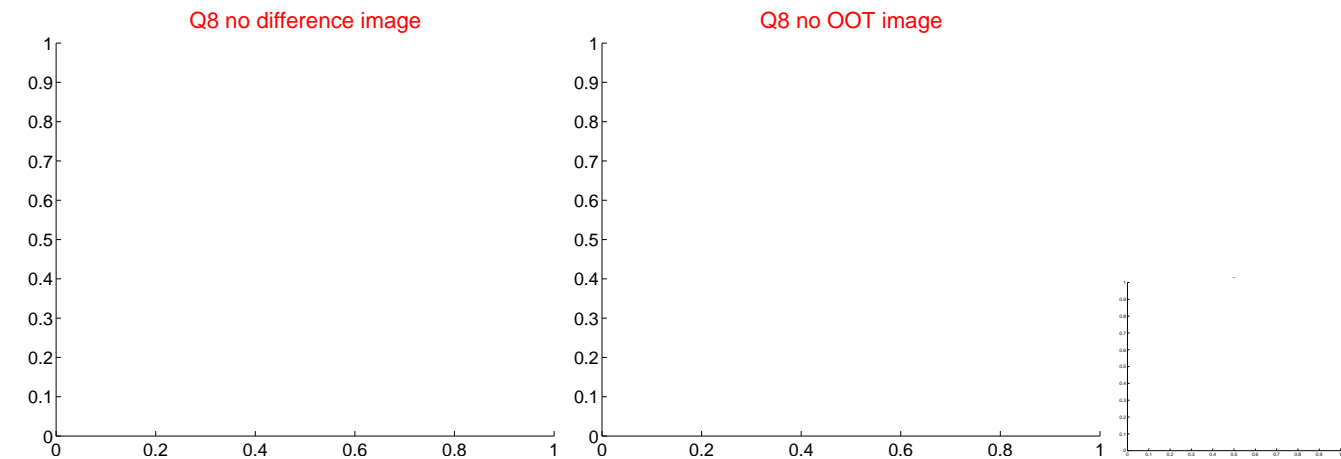
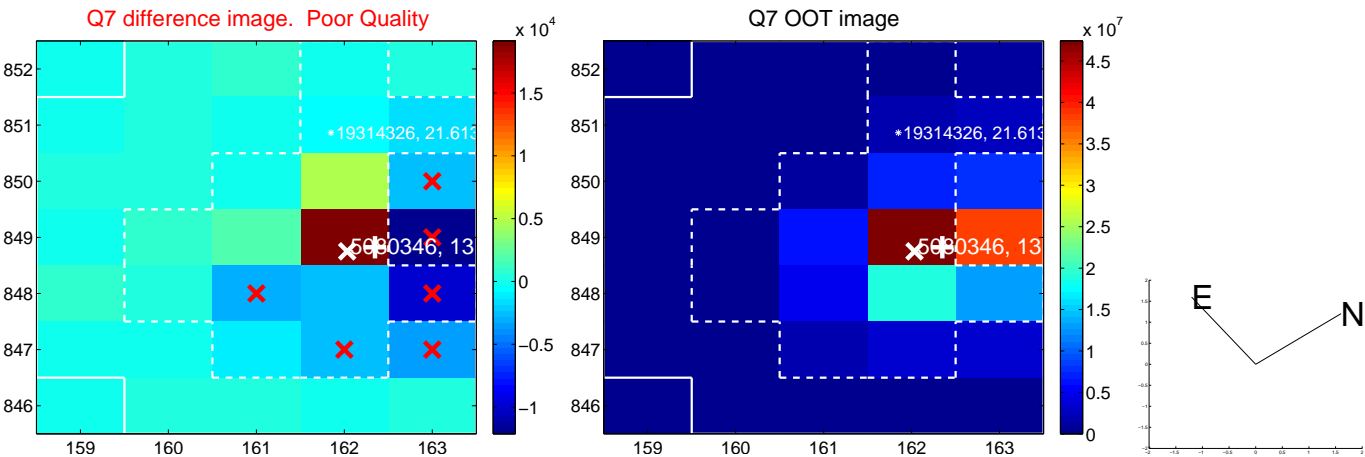
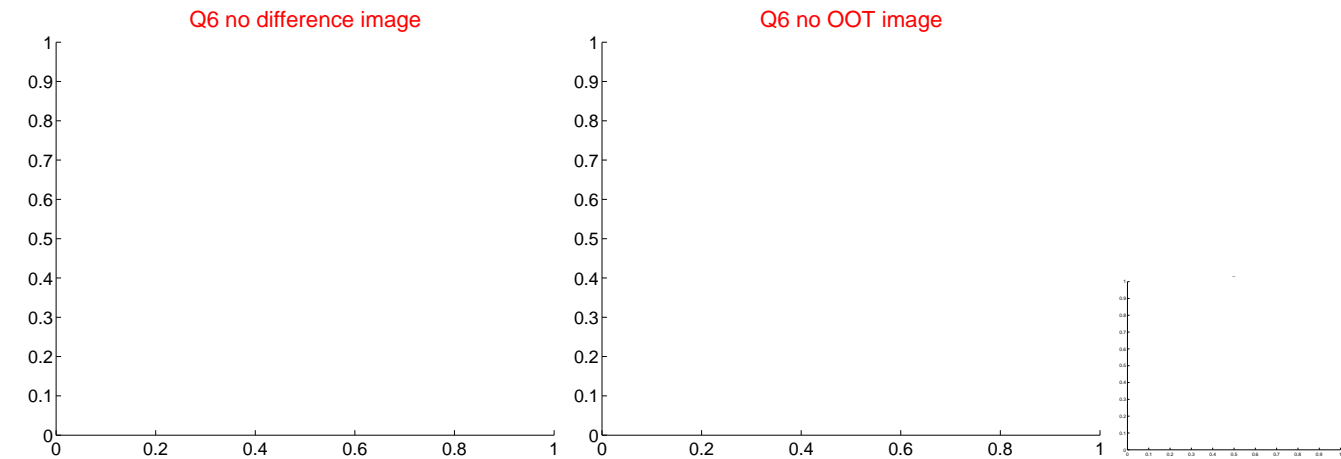


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

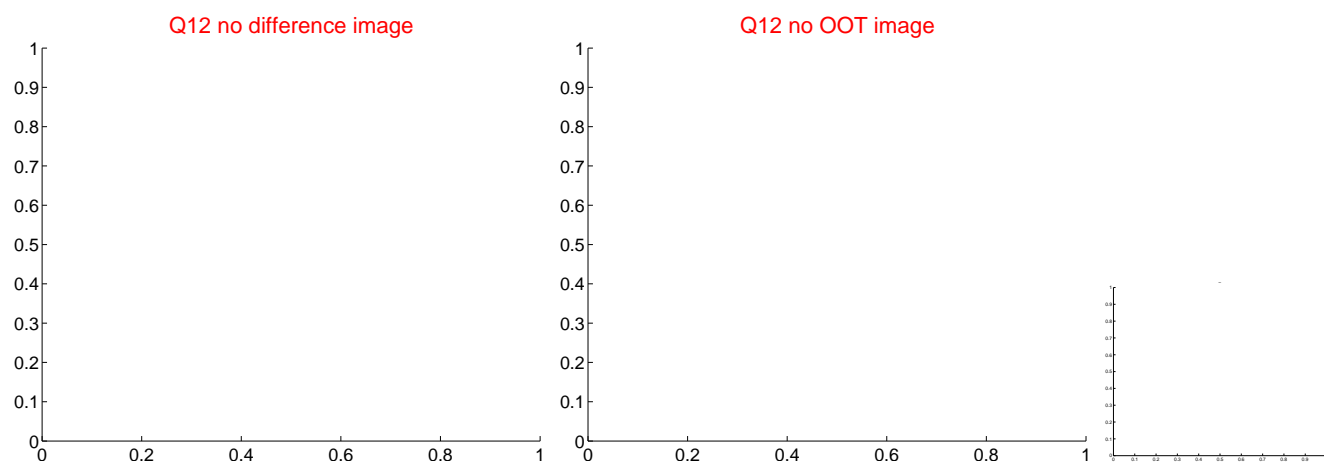
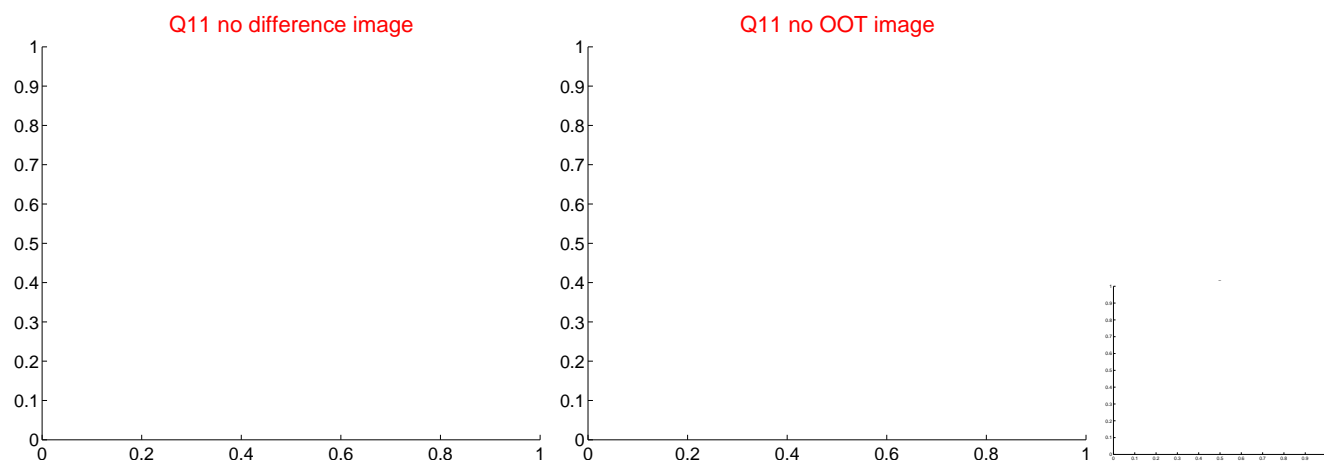
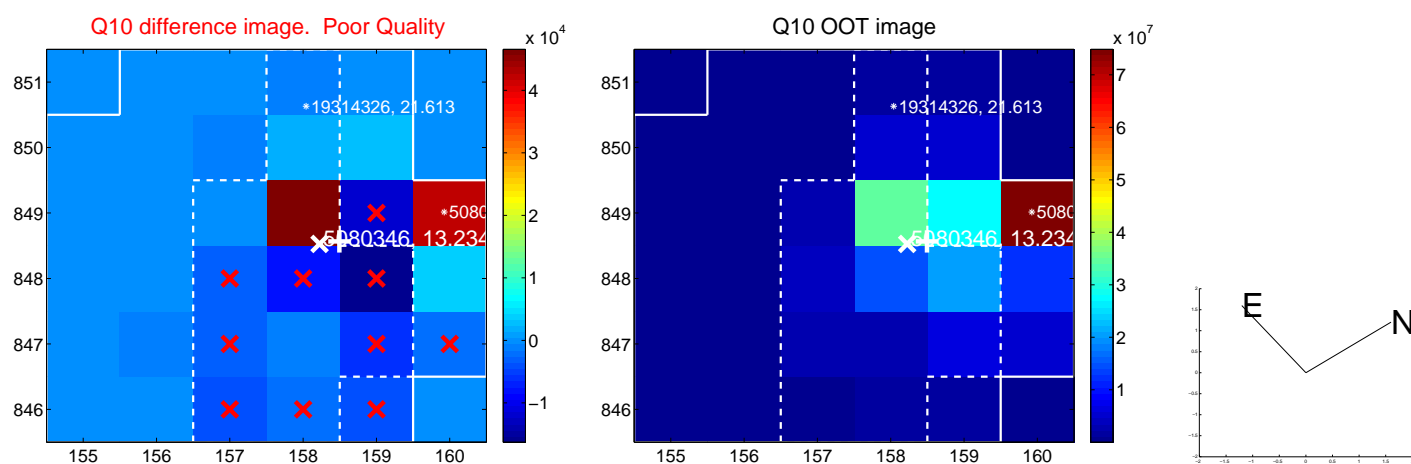
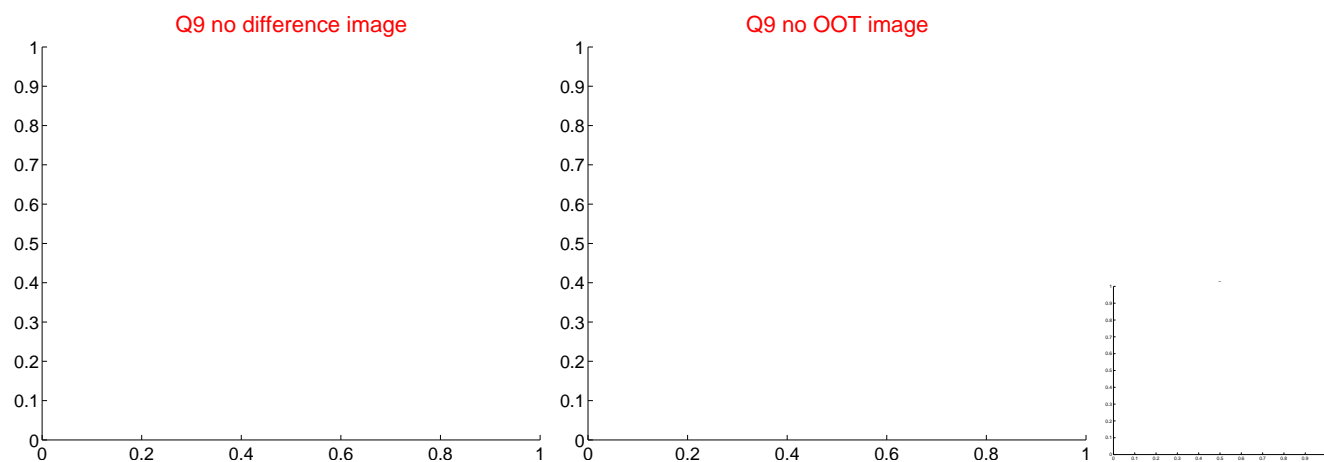
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



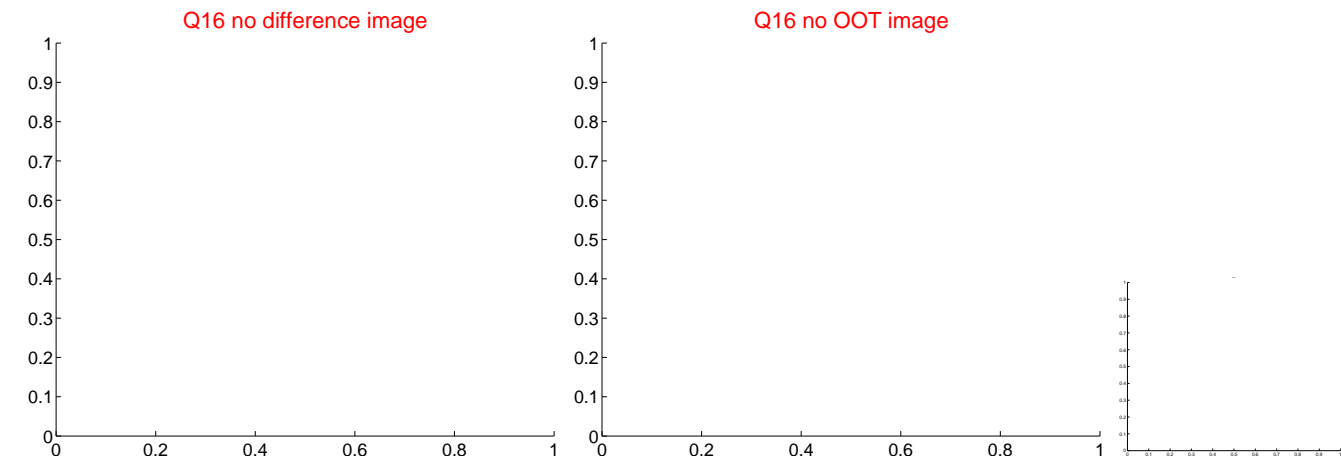
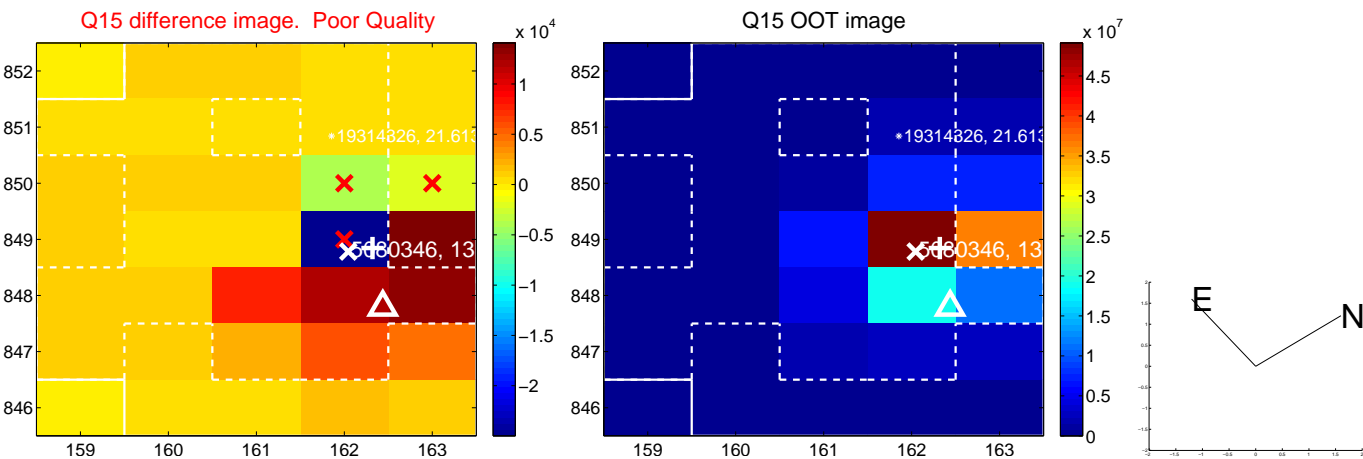
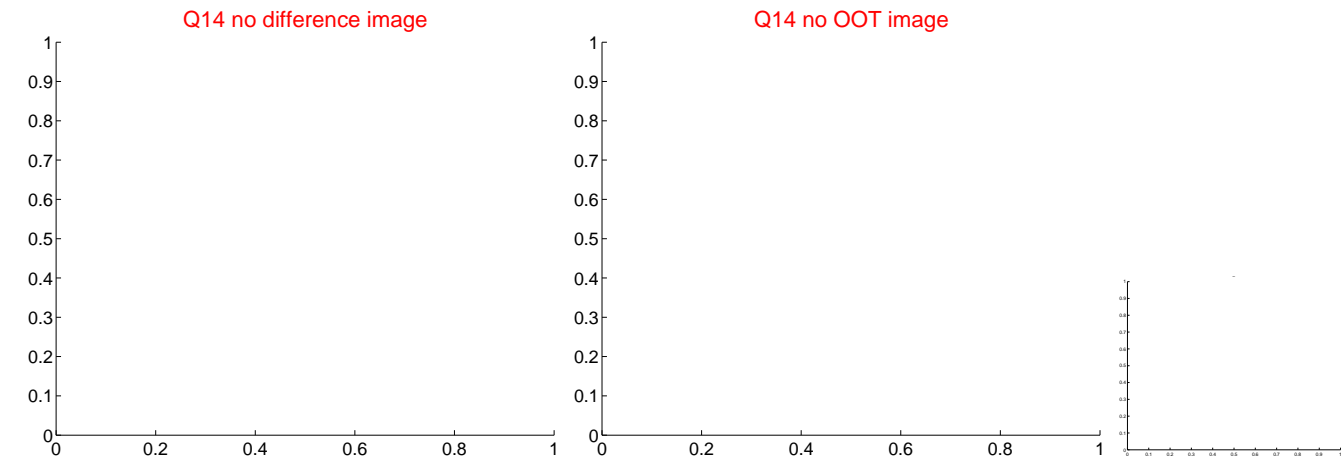
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



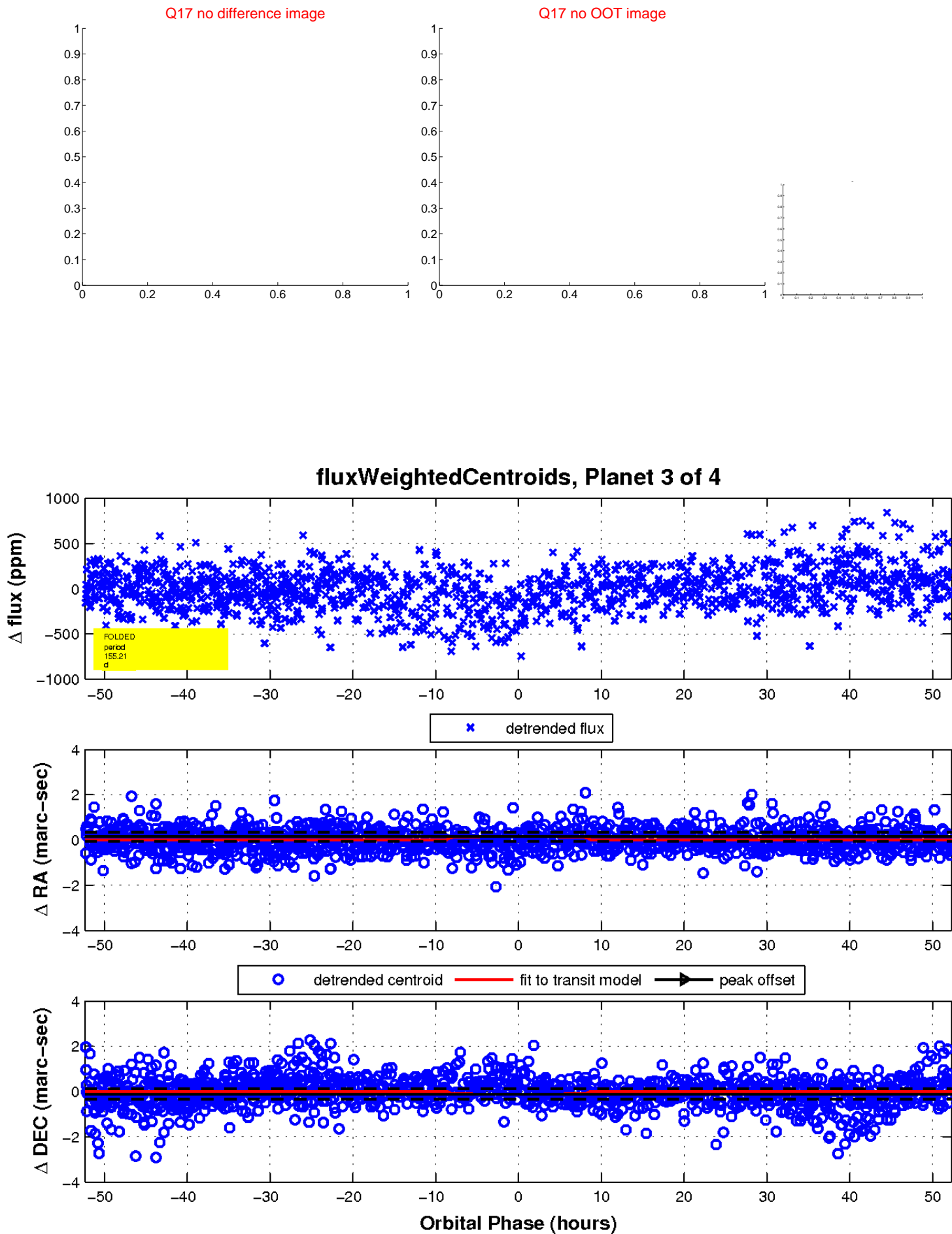
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

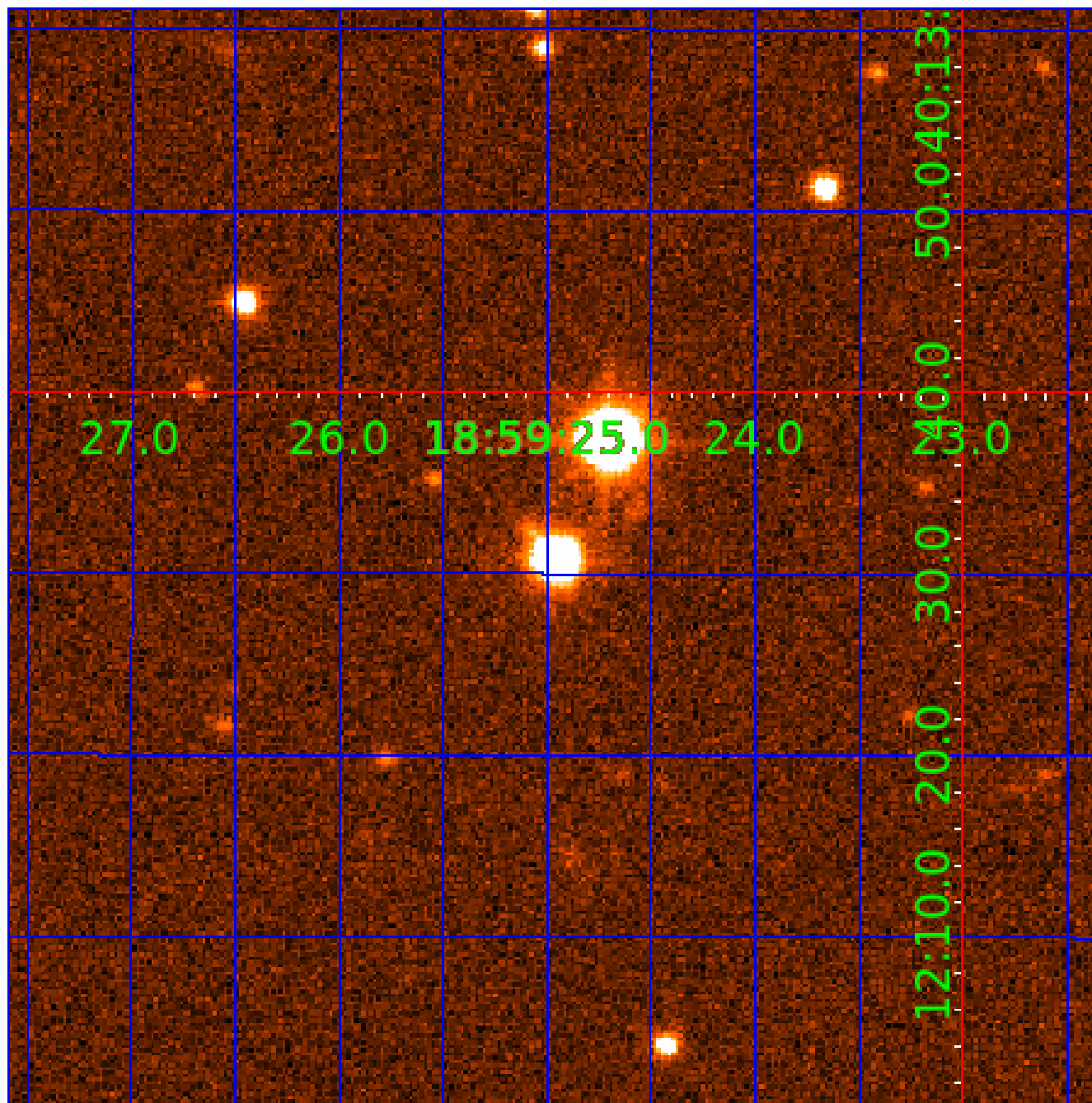


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005080346

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})
005080346-01	OBS	6509.01	2.311939	132.275587	29.4	8.875	9.4	8.9	2.68	9451	1.63	24144.52
005080346-02	OBS	No	112.890906	168.600179	71.4	3.062	15.9	1.8	2.68	9451	2.48	135.28
005080346-03	OBS	No	155.206224	182.441750	306.2	17.451	12.3	8.4	2.68	9451	4.99	88.49
005080346-04	OBS	No	116.579548	212.669096	163.3	16.640	10.0	5.6	2.68	9451	3.70	129.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005080346-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_KIC_POS
005080346-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—TRANS_GAPPED—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—HALO_GHOST
005080346-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005080346-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS— CENT_FEW_DIFFS—HALO_GHOST

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

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

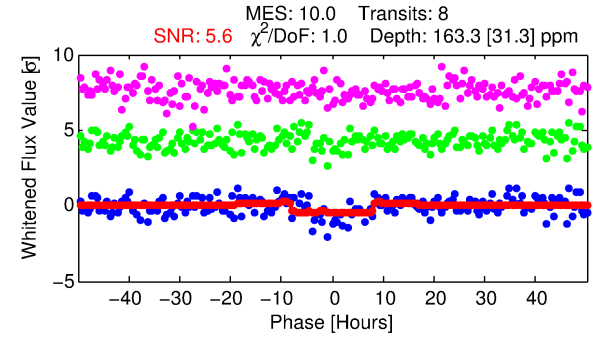
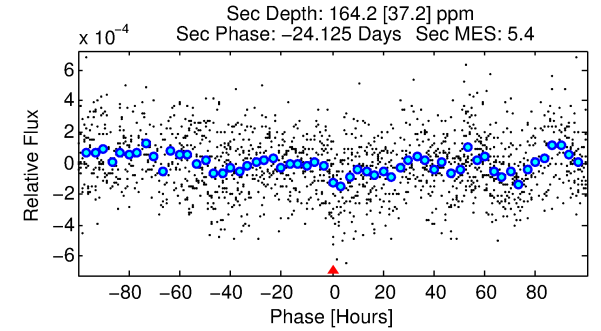
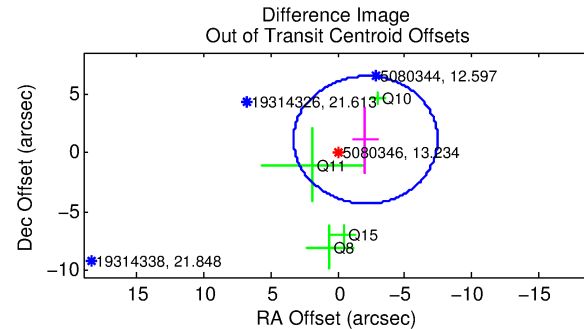
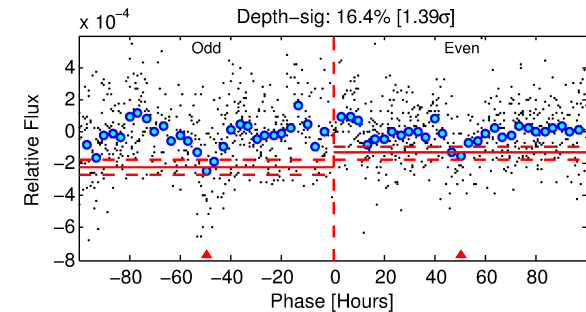
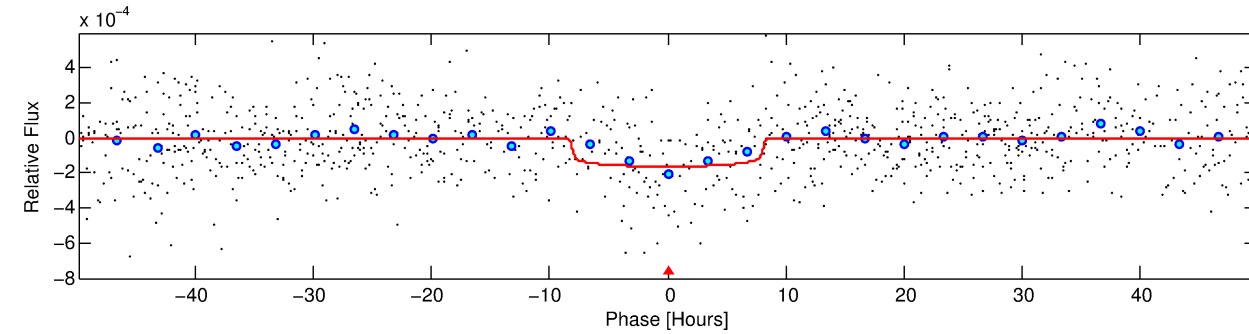
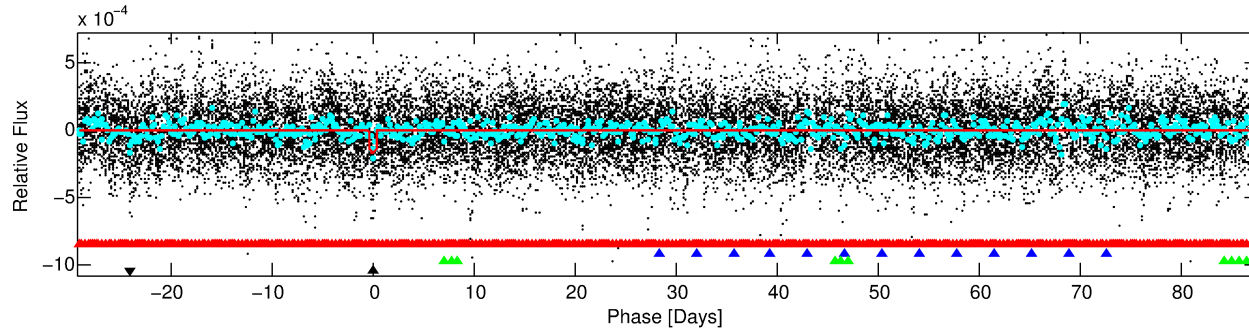
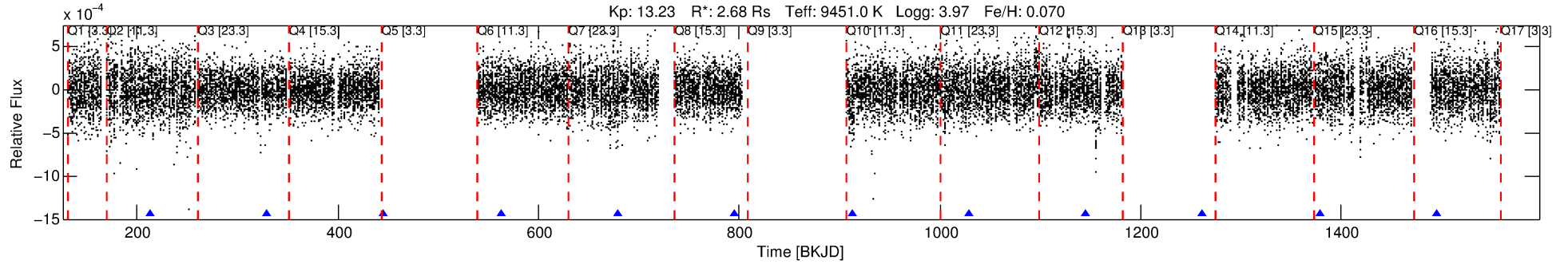
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005080346-04

No Significant Match Found

DV One-Page Summary

KIC: 5080346 Candidate: 4 of 4 Period: 116.580 d
KOI: K06509 Corr: No Ephemeris Match



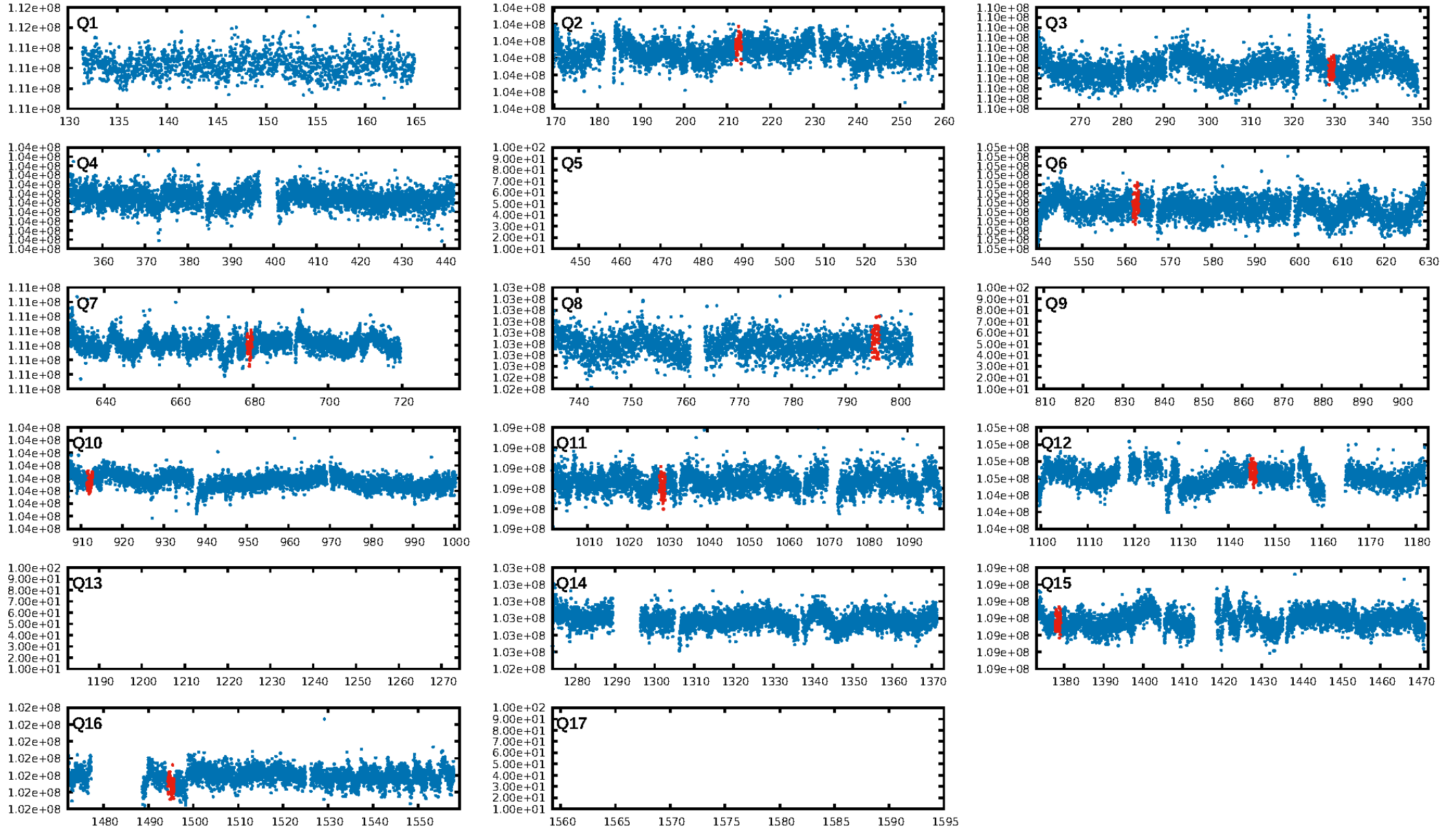
DV Fit Results:

Period = 116.57955 [0.00381] d
Epoch = 212.6691 [0.0238] BKJD
Rp/R* = 0.0126 [0.0029]
a/R* = 37.81 [52.42]
b = 0.73 [0.91]
Seff = 129.61 [62.48]
Teq = 860 [104] K
Rp = 3.70 [1.63] Re
a = 0.6292 [0.1979] AU
Ag = 2618.03 [1792.75] [1.46 σ]
Teffp = 9515 [1276] K [6.76 σ]

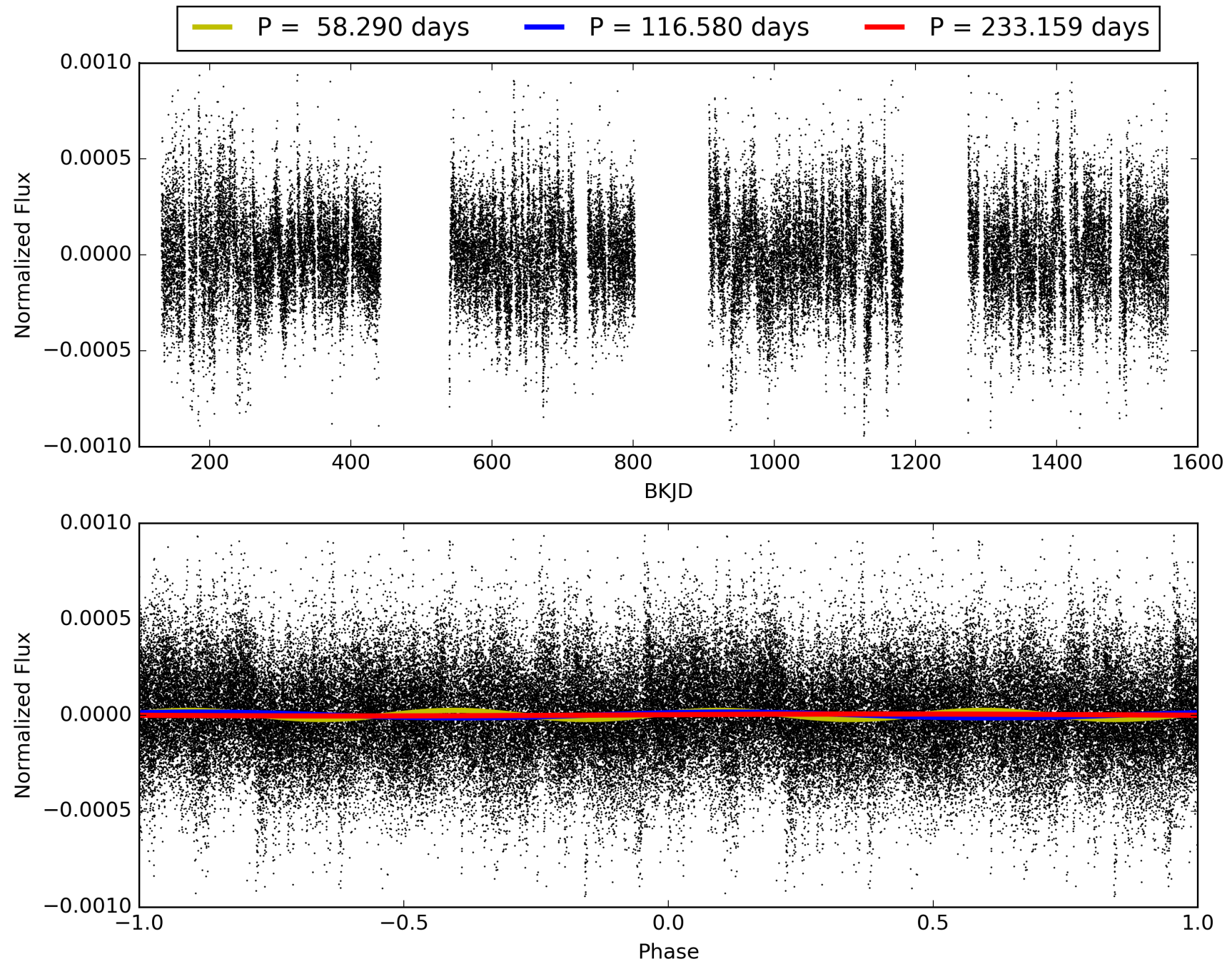
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [5.23 σ]
LongPeriod-sig: 100.0% [38.45 σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.07e-12
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: -0.1209
Centroid-sig: 5.3%
Centroid-so: 2.884 arcsec [2.77 σ]
OotOffset-rm: 2.356 arcsec [1.31 σ]
KicOffset-rm: 3.482 arcsec [1.70 σ]
OotOffset-st: 1/2/1/0 [4]
KicOffset-st: 1/2/1/0 [4]
DiffImageQuality-fgm: 0.25 [1/4]
DiffImageOverlap-fno: 0.00 [0/10]

TCE 005080346-04, PDC Light Curves

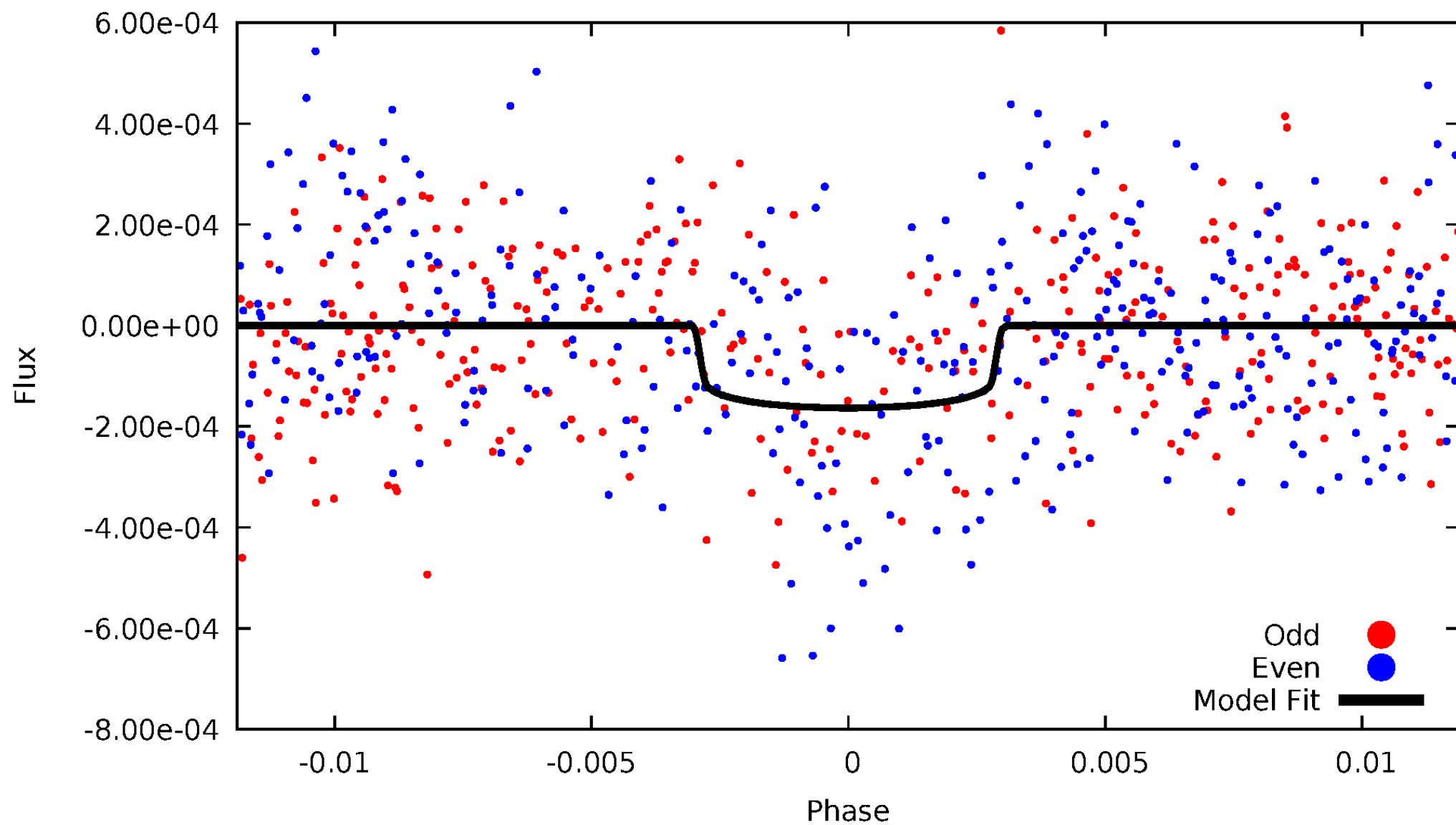


TCE 005080346-04



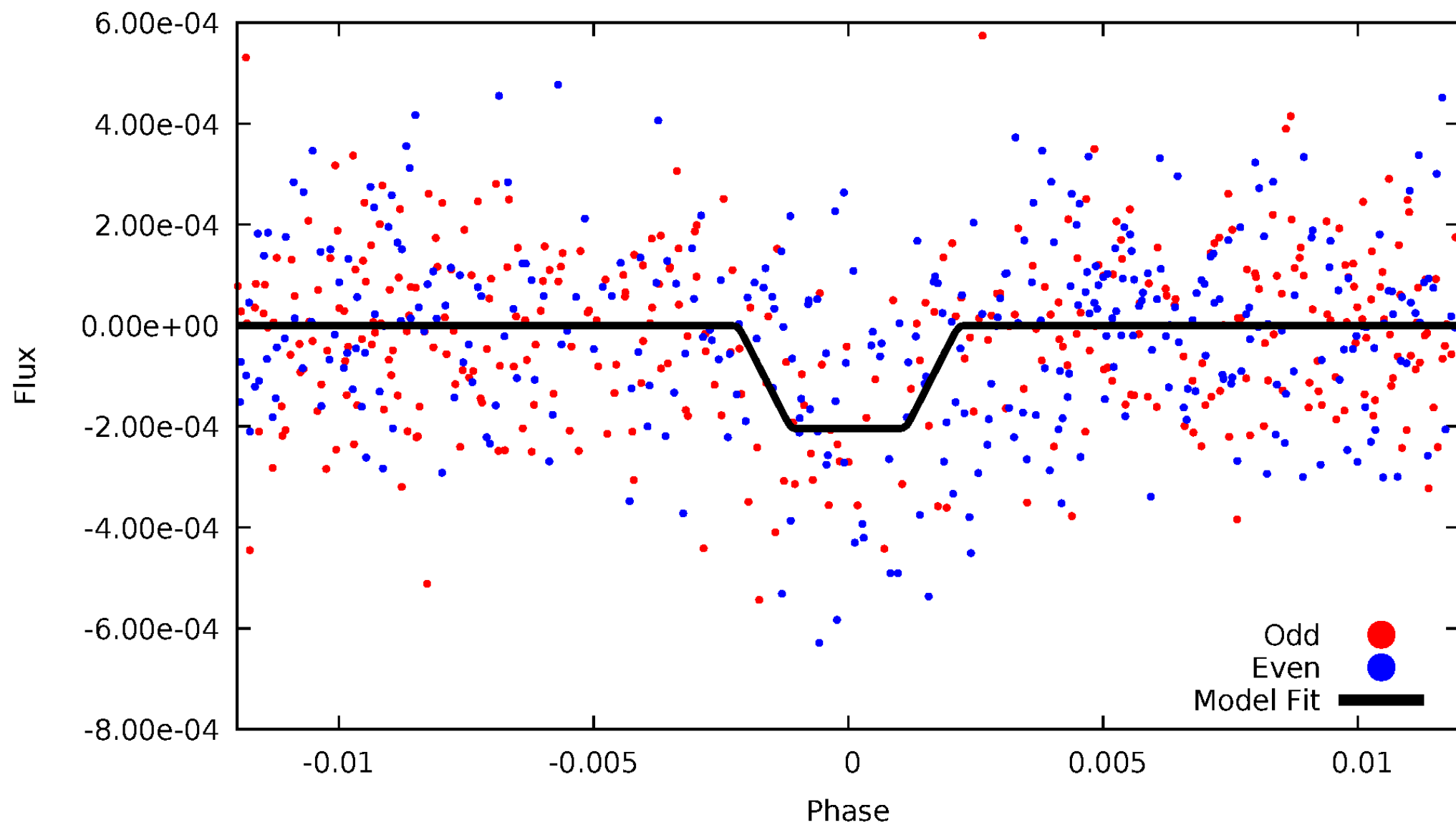
DV Odd/Even

TCE 005080346-04



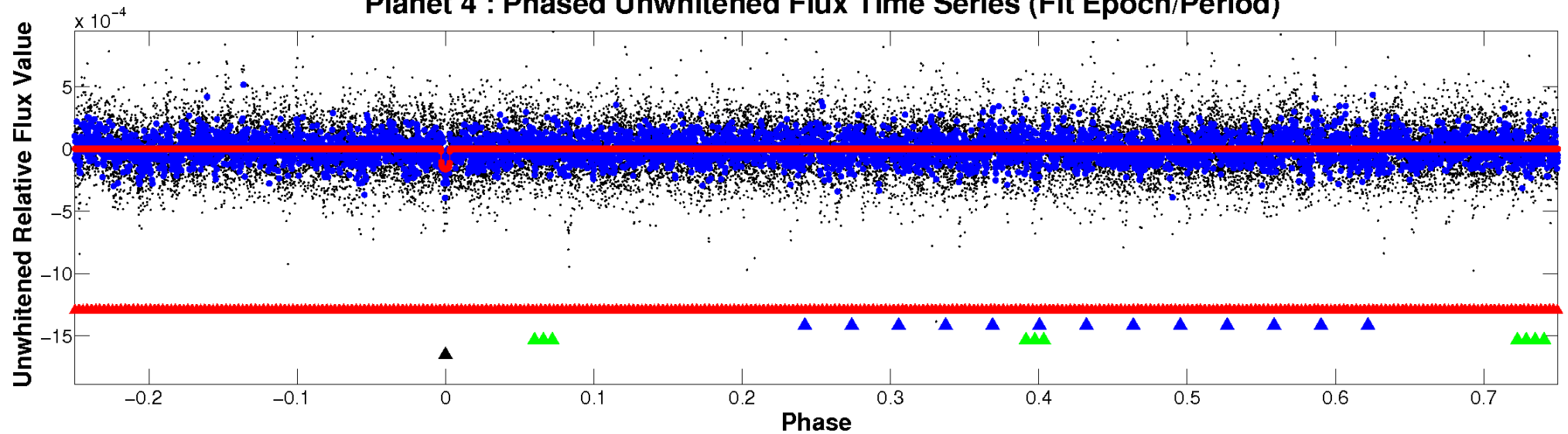
ALT Odd/Even

TCE 005080346-04

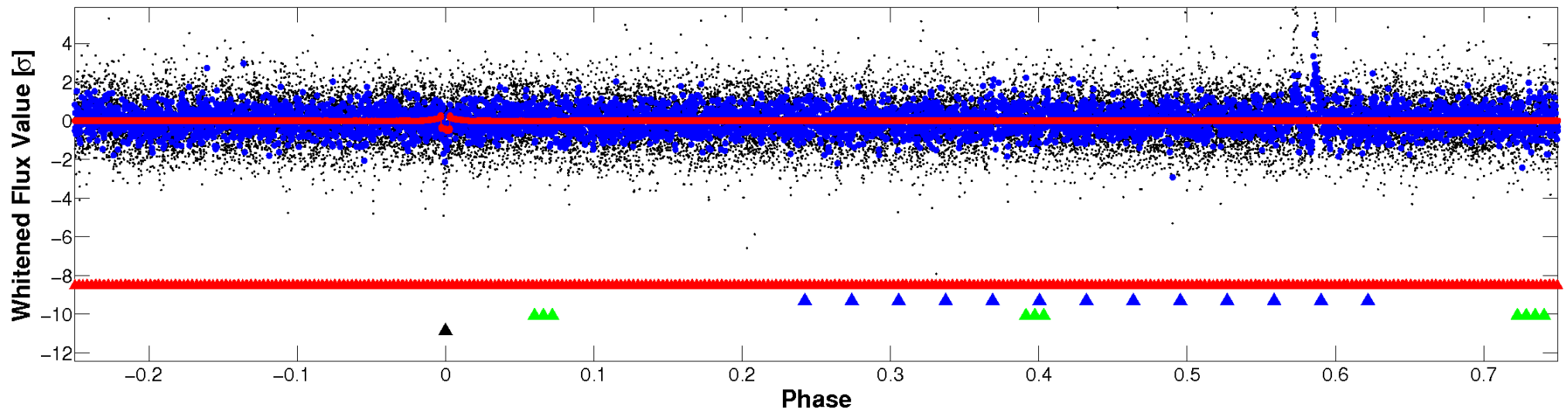


Non-Whitened Vs. Whitened Light Curve

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

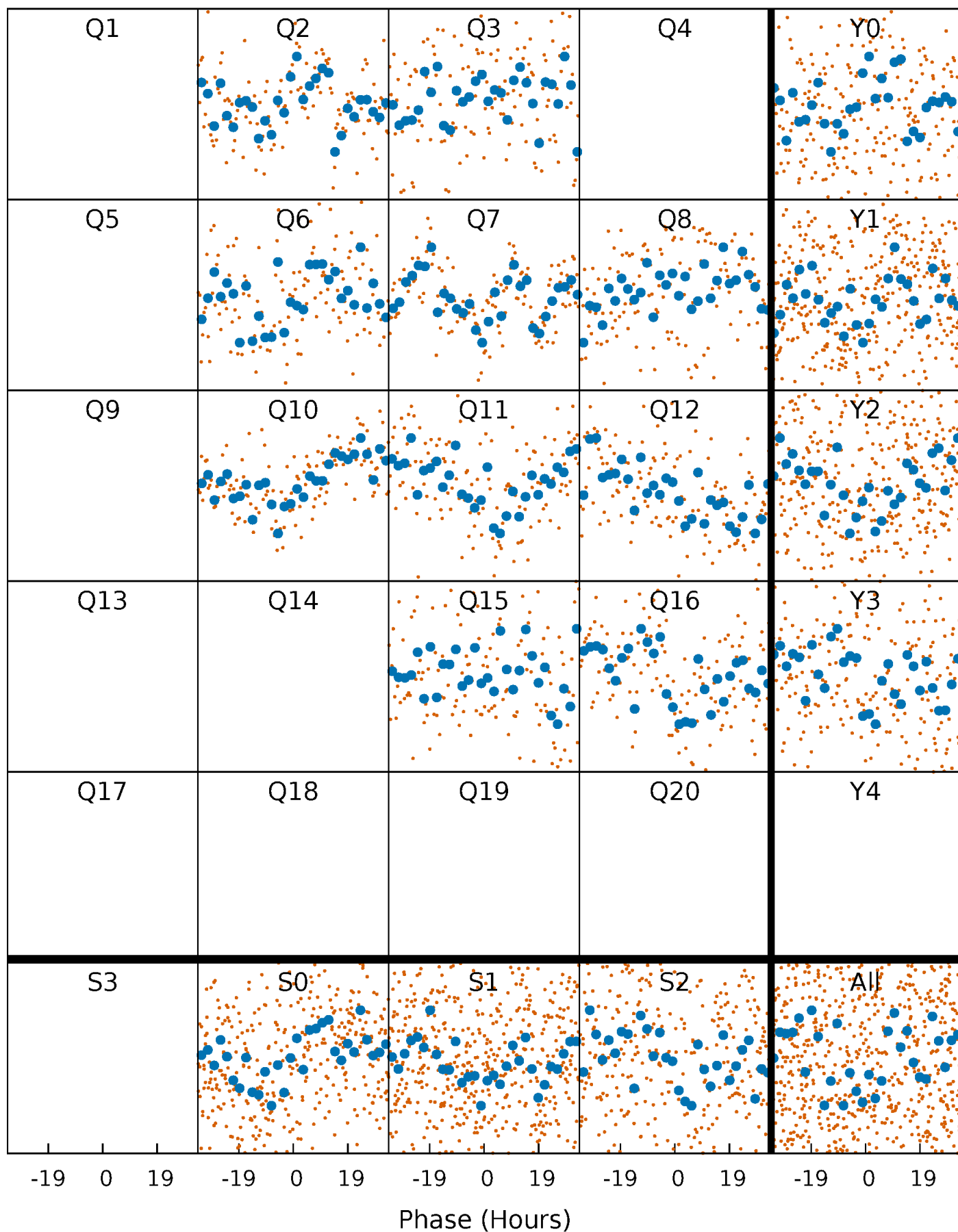


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



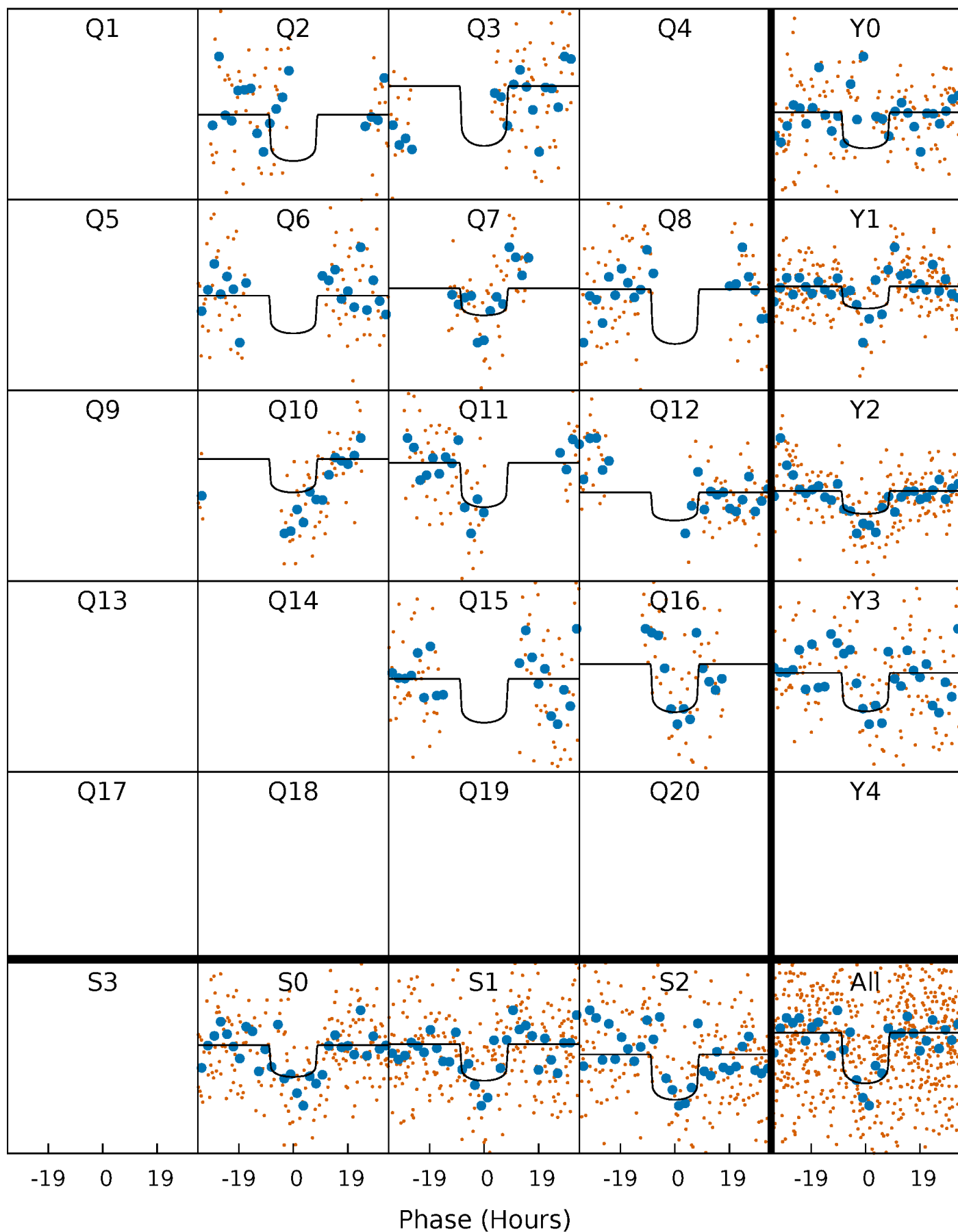
PDC Quarter-Phased Transit Curves

TCE 005080346-04 P=116.579548 Days $T_0=212.669095$ (BKJD)



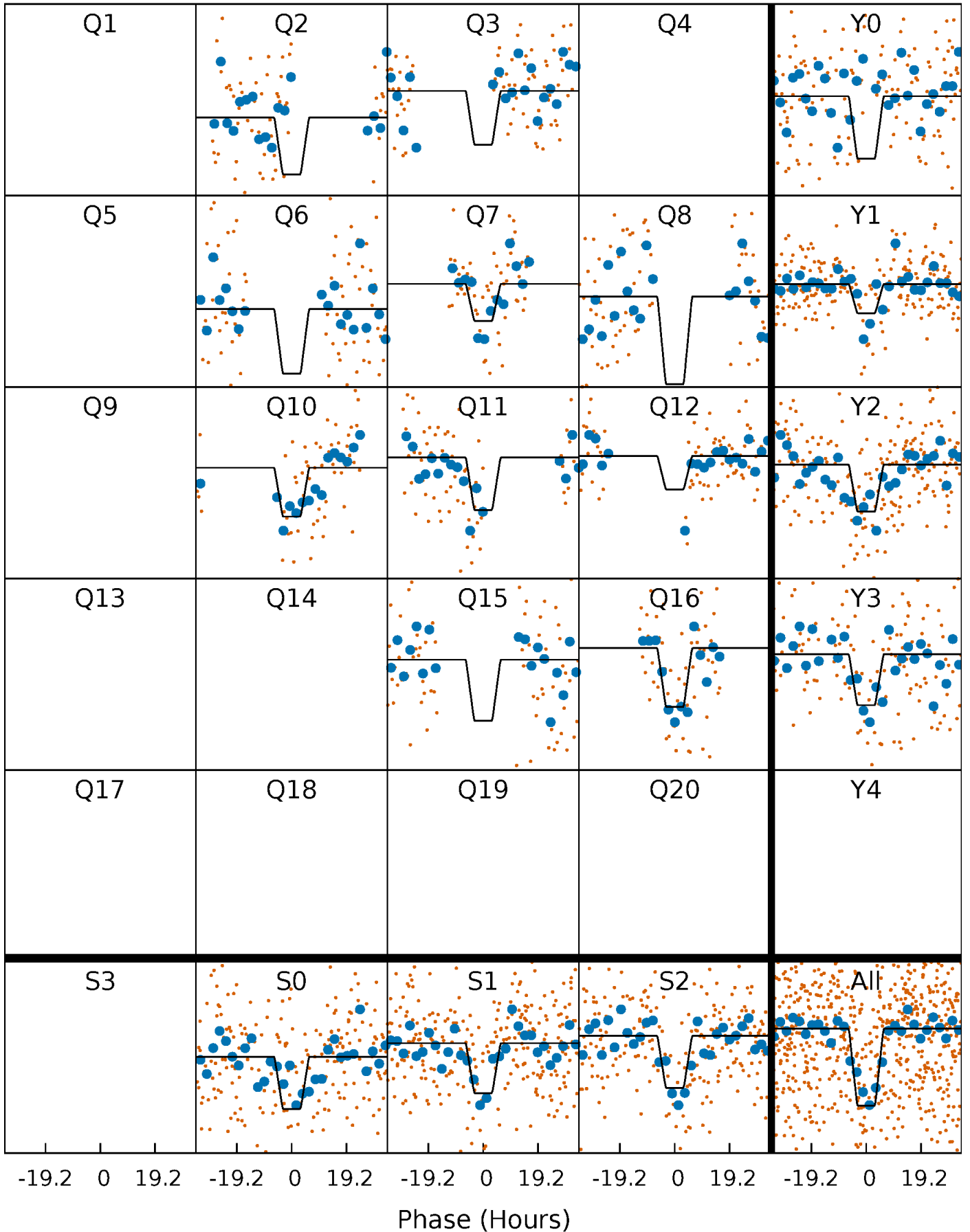
DV Quarter-Phased Transit Curves

TCE 005080346-04 P=116.579548 Days $T_0=212.669095$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

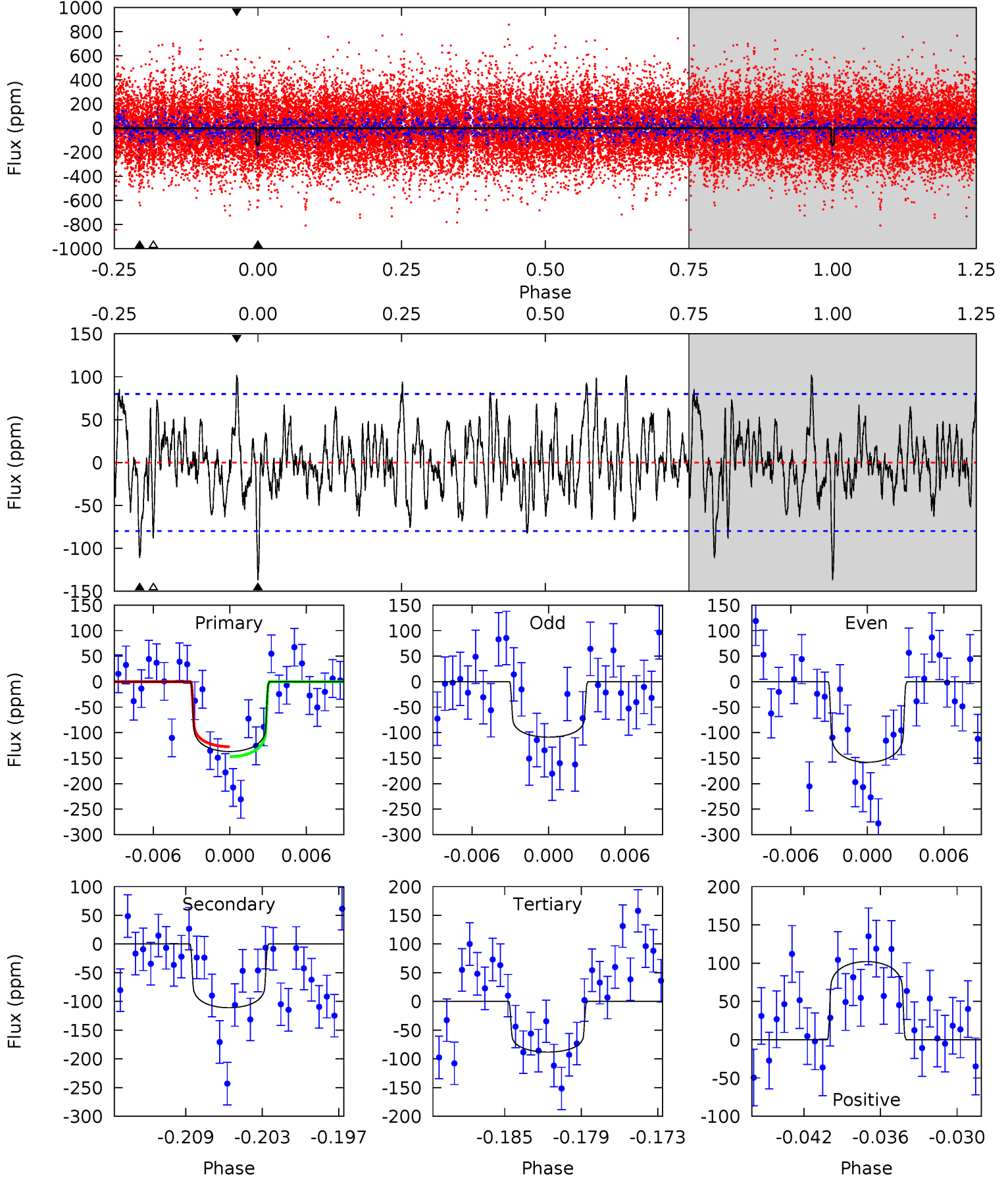
TCE 005080346-04 P=116.587082 Days $T_0=212.625526$ (BKJD)



DV Model-Shift Uniqueness Test

005080346-04, P = 116.579548 Days, E = 96.089547 Days

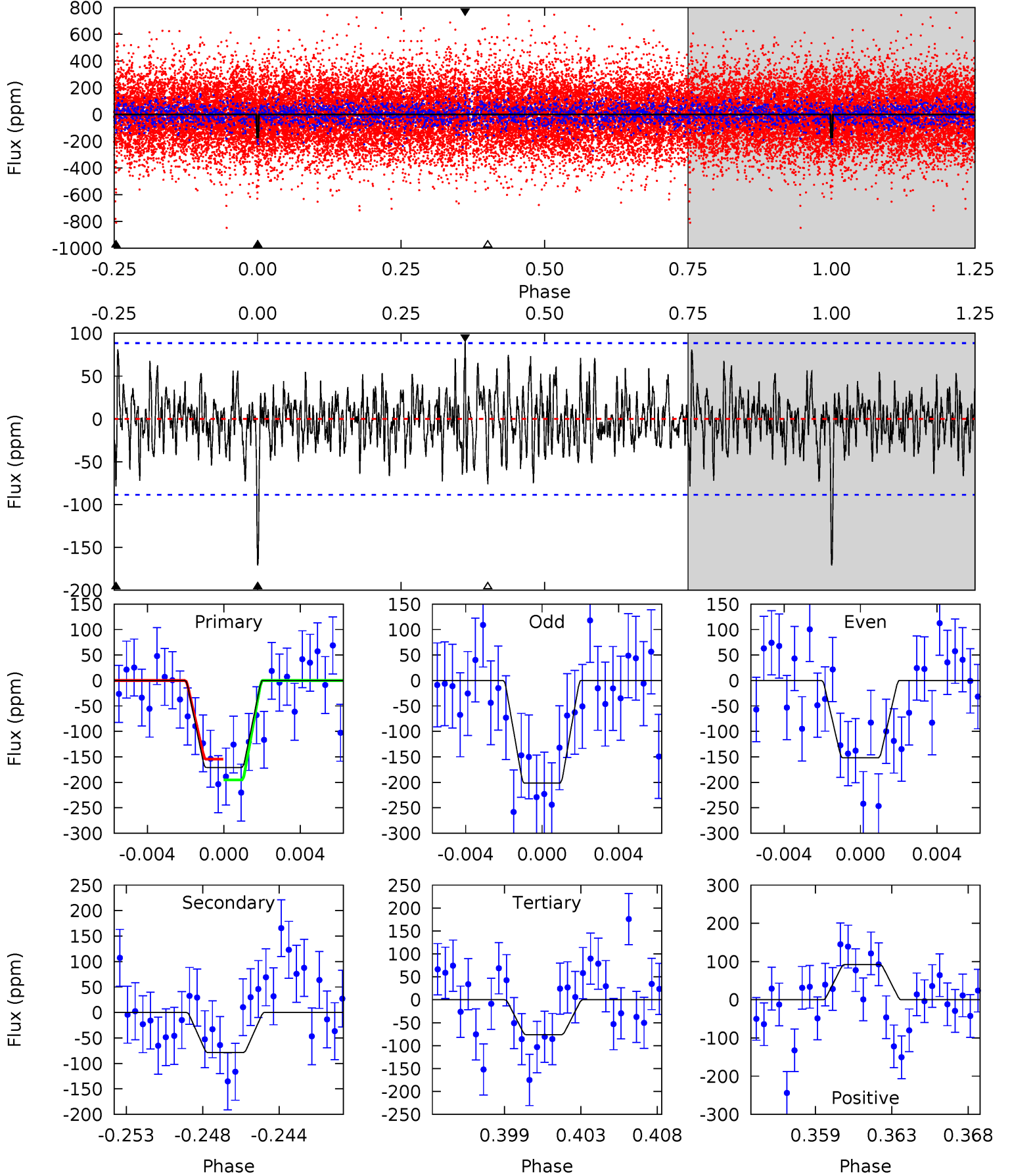
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.79	7.11	5.65	6.54	5.12	2.75	2.10	3.13	2.24	1.46	0.57	1.57	1.44	0.43	0.63



Alt Model-Shift Uniqueness Test

005080346-04, P = 116.587082 Days, E = 96.038444 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.00	4.60	4.45	5.38	5.18	2.85	1.50	5.55	4.62	0.15	-0.78	1.43	0.87	0.35	1.19



Stellar Parameters For KIC 005080346

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	9451^{+302}_{-378}	$3.970^{+0.247}_{-0.180}$	$0.070^{+0.200}_{-0.750}$	$2.679^{+0.826}_{-1.009}$	$2.441^{+0.398}_{-0.738}$	$0.179^{+0.342}_{-0.092}$
	+3%/-4%	+6%/-5%	+286%/-1071%	+31%/-38%	+16%/-30%	+191%/-51%
Source	KIC0	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 005080346-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-111 ± 16	$3.63^{+1.14}_{-1.05}$	1201^{+97}_{-108}	8327^{+1681}_{-1052}	1820^{+1666}_{-762}
Alt.	-79 ± 17	$4.07^{+1.15}_{-1.07}$	1190^{+98}_{-106}	7008^{+1087}_{-839}	1028^{+922}_{-443}

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

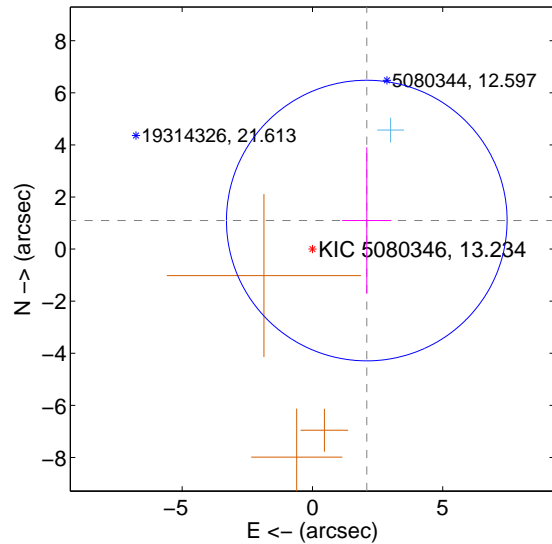
Supplemental centroid analysis for 005080346-04. Kepler magnitude: 13.23. Transit SNR 5.61

There are 1 quarters with good PRF difference image offsets

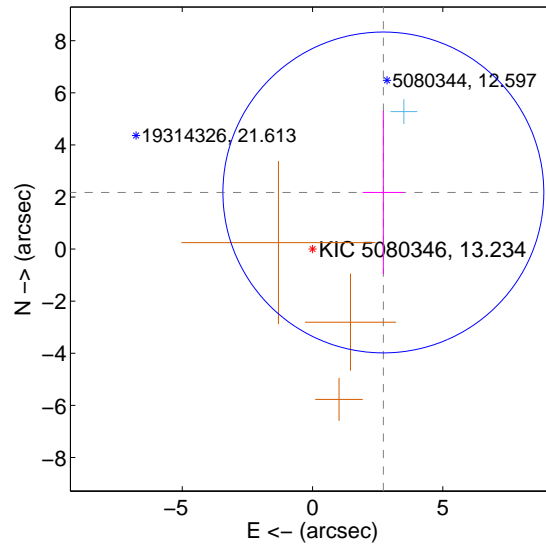
The direct PRF centroid is offset from the target star catalog position by about 1.31 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.356 ± 1.795	1.31	-2.086 ± 0.945	1.096 ± 2.809
PRF-fit source offset from KIC position	3.482 ± 2.053	1.70	-2.719 ± 0.796	2.174 ± 3.133
photometric centroid source offset	2.88 ± 1.04	2.77	-0.10 ± 0.78	2.88 ± 1.04

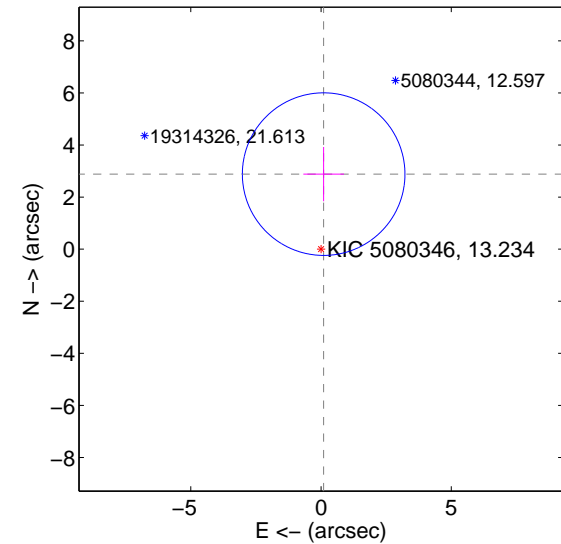
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

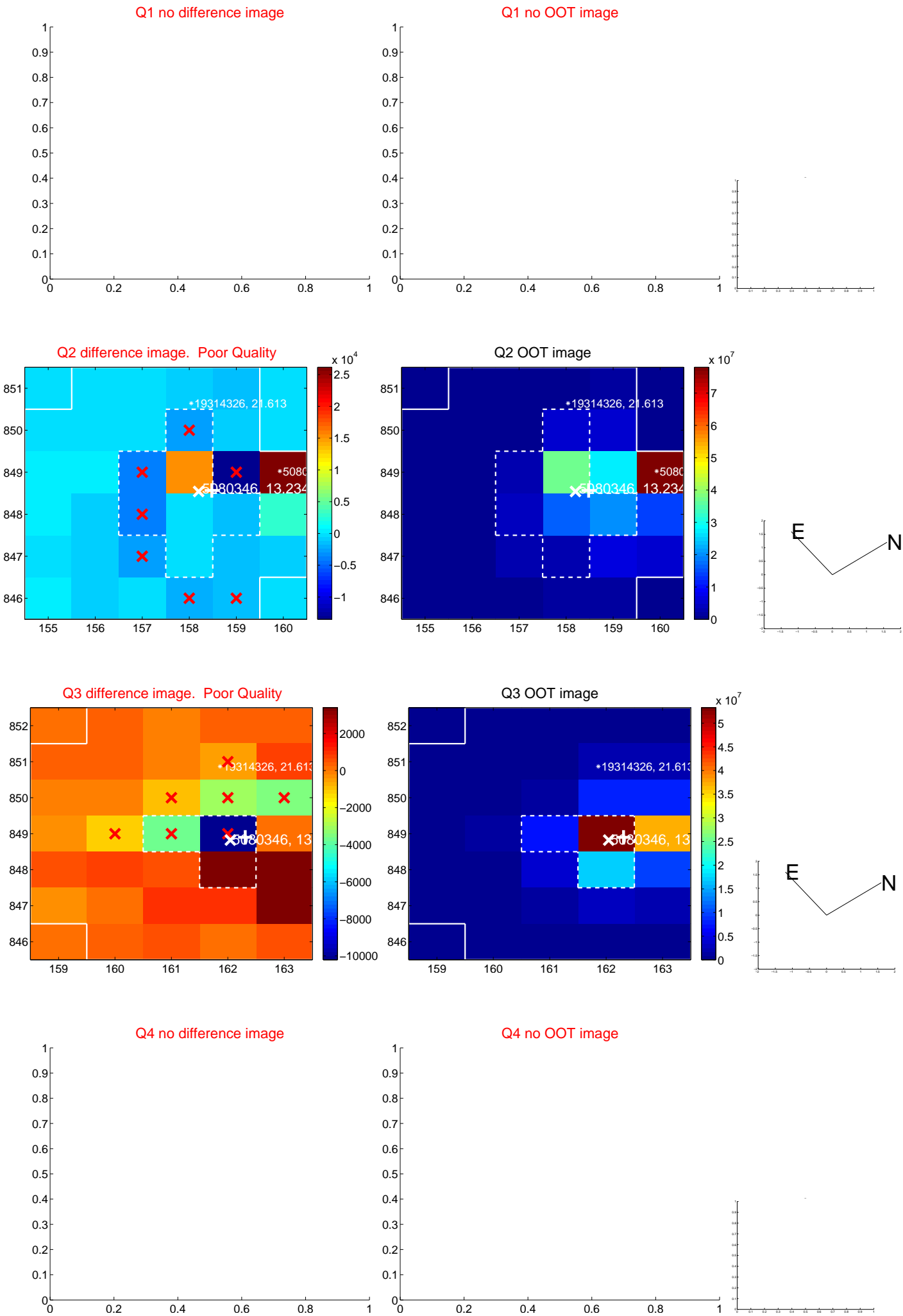


offset from photometric centroids

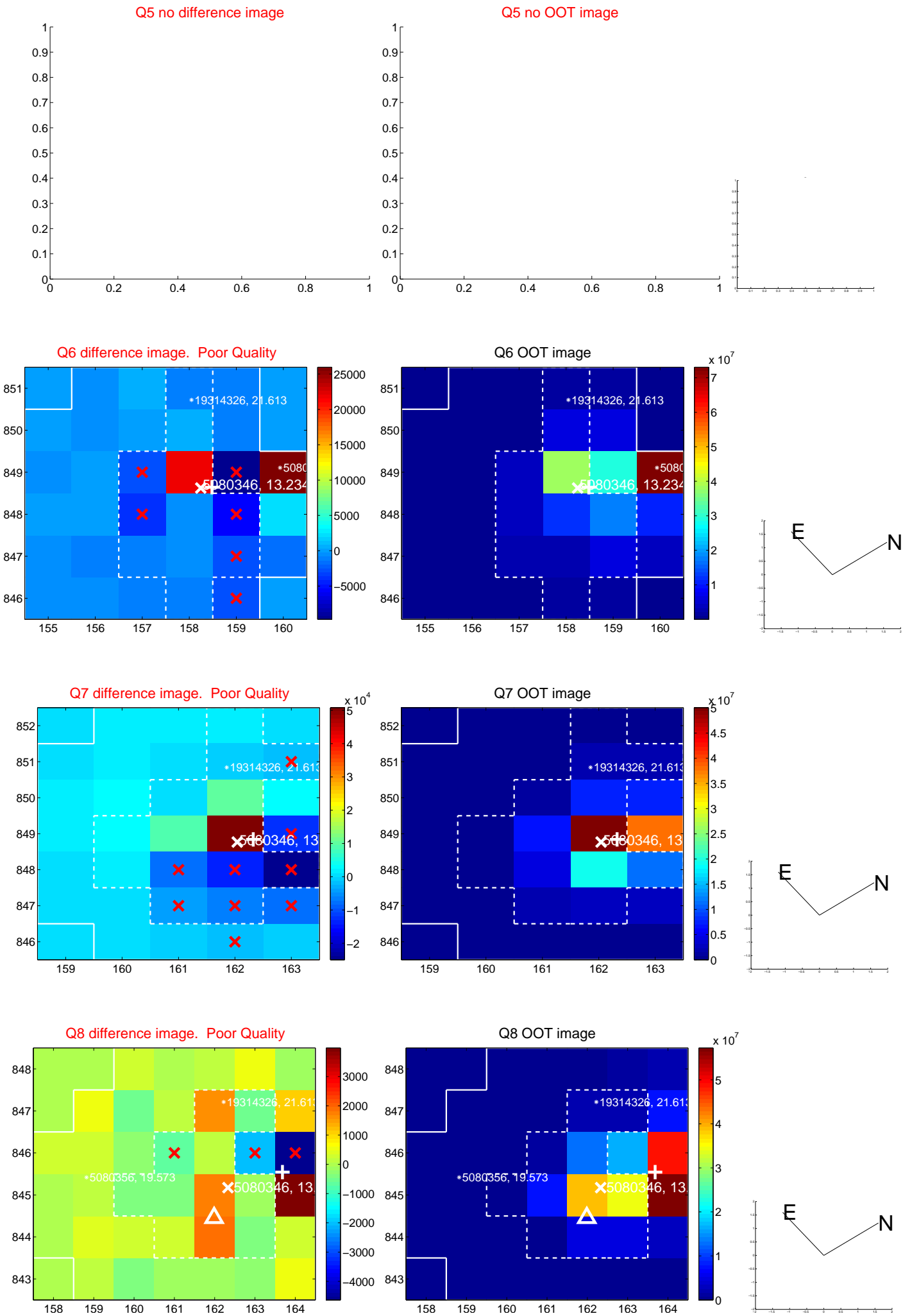


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

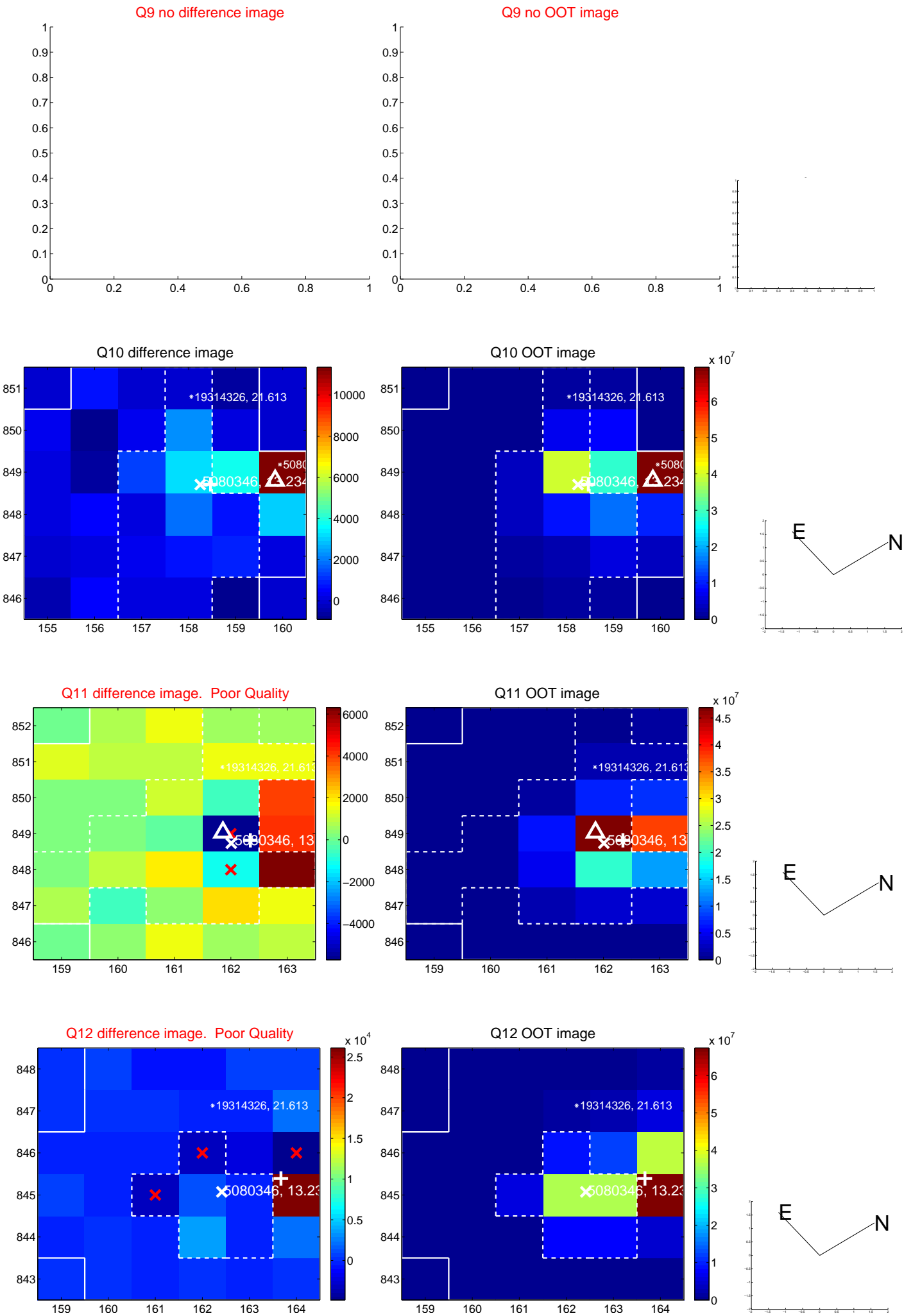
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



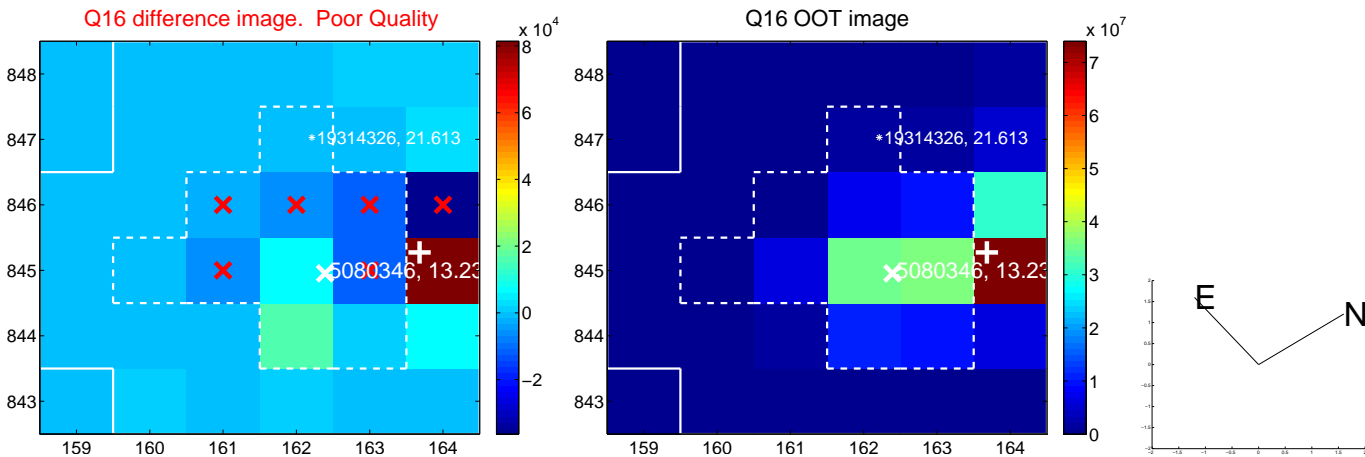
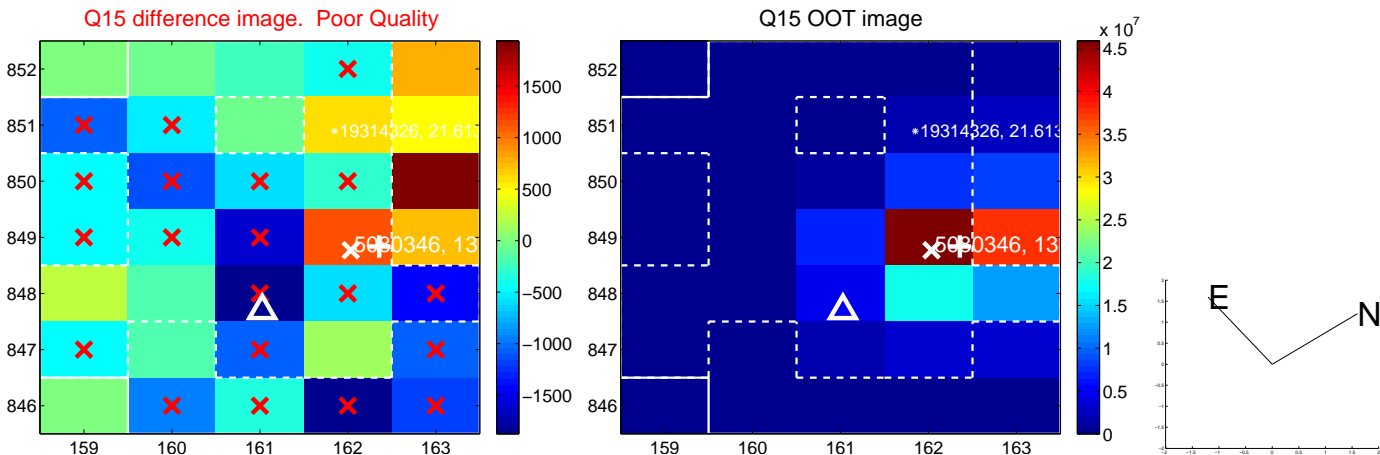
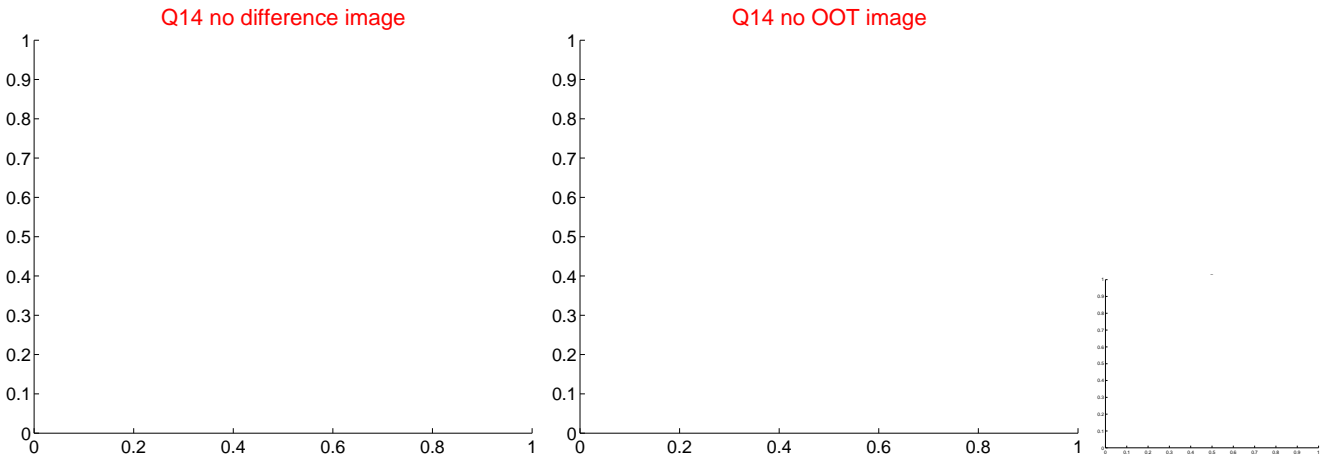
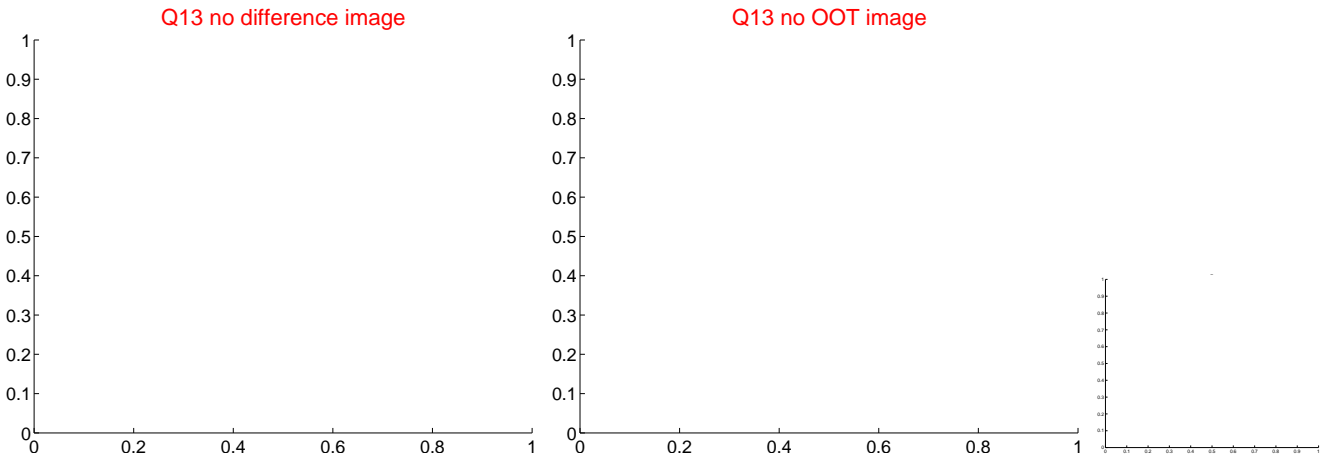
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



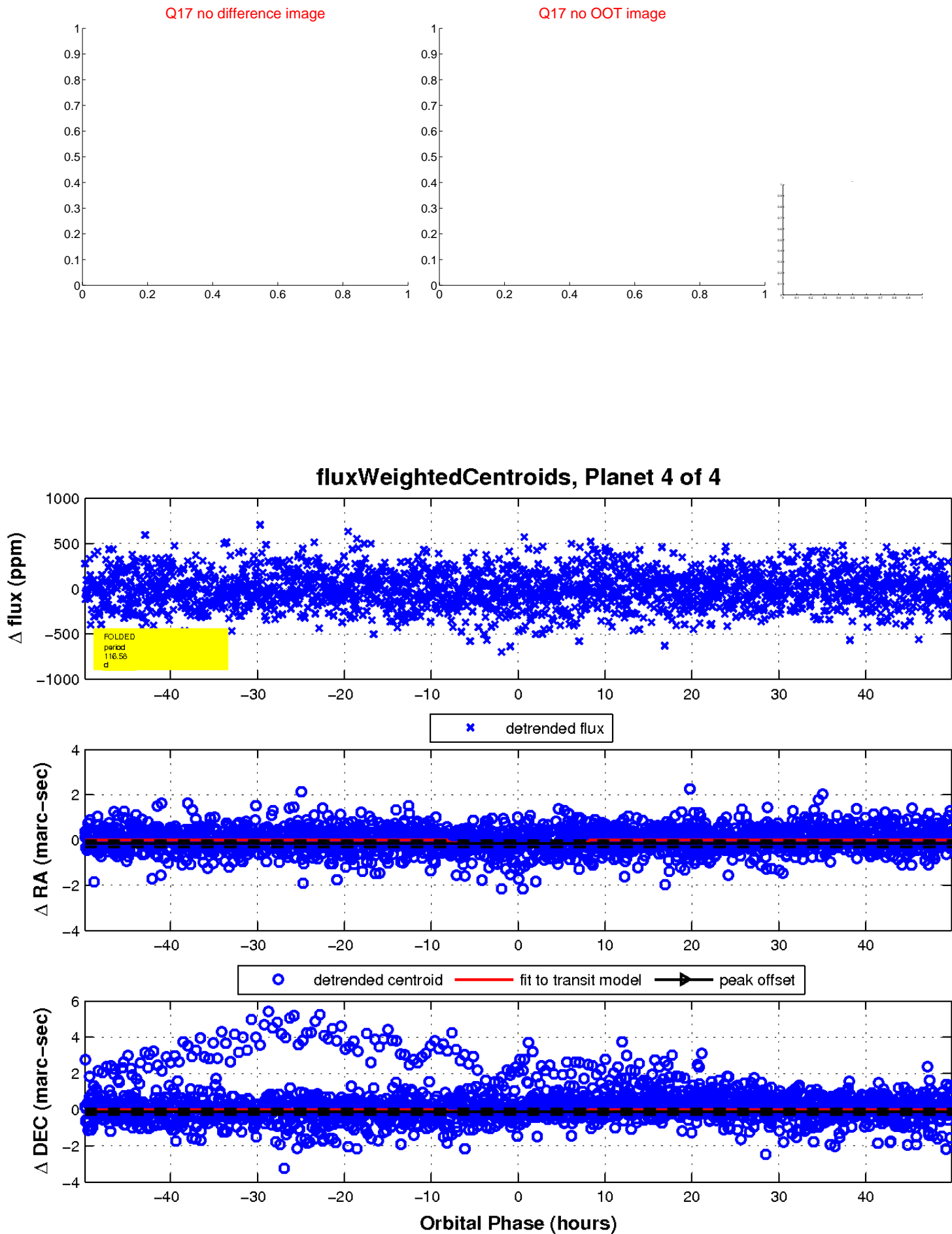
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

