

KIC 008423343

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})
008423343-01	OBS	No	428.550267	391.404560	25837.4	43.758	18.1	16.5	0.73	4555	11.98	0.21
008423343-02	OBS	No	505.981009	549.301851	7245.7	7.936	13.5	6.1	0.73	4555	7.38	0.17
008423343-03	OBS	No	1.720567	132.612715	383.4	10.803	12.1	6.0	0.73	4555	1.47	322.14
008423343-04	OBS	No	0.572178	131.567444	3258.5	2.000	14.6	-1.0	0.73	4555	3.98	1398.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008423343-01	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008423343-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008423343-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
008423343-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—CENT_NOFITS

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.

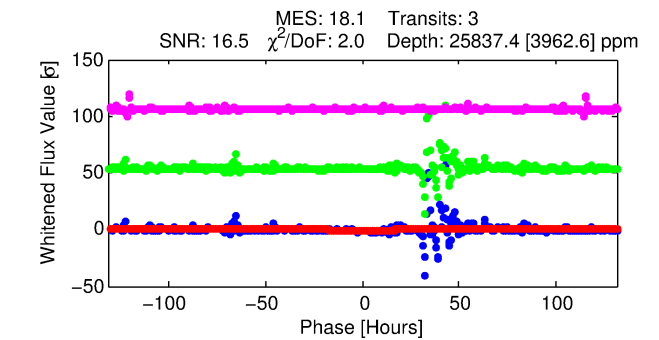
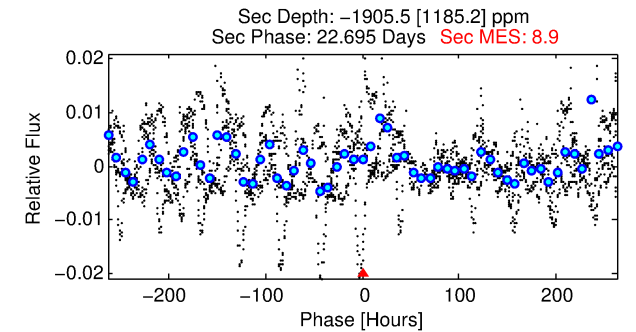
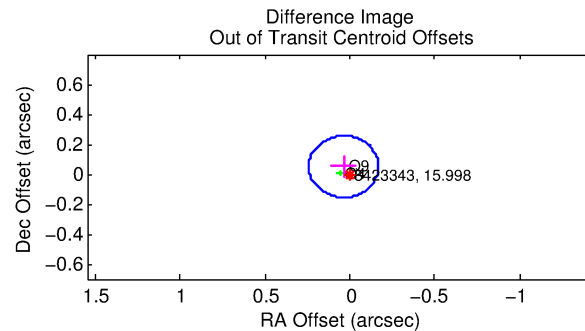
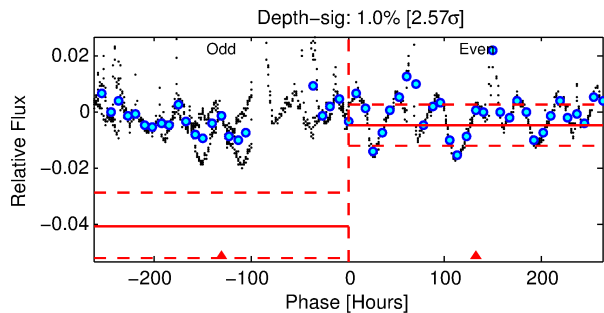
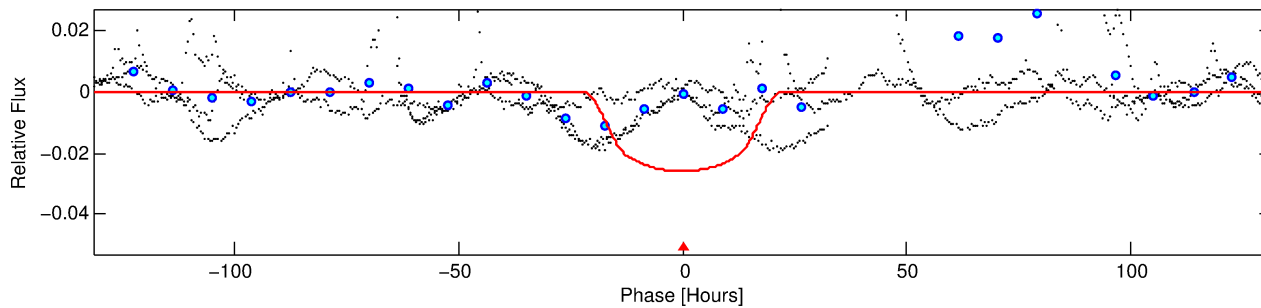
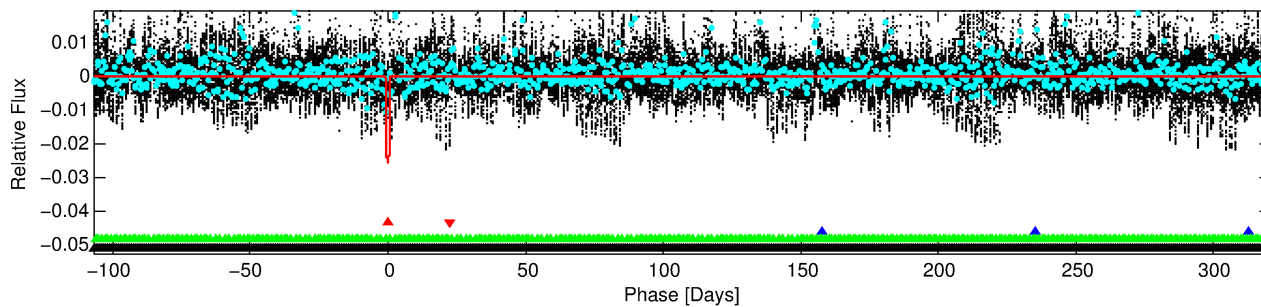
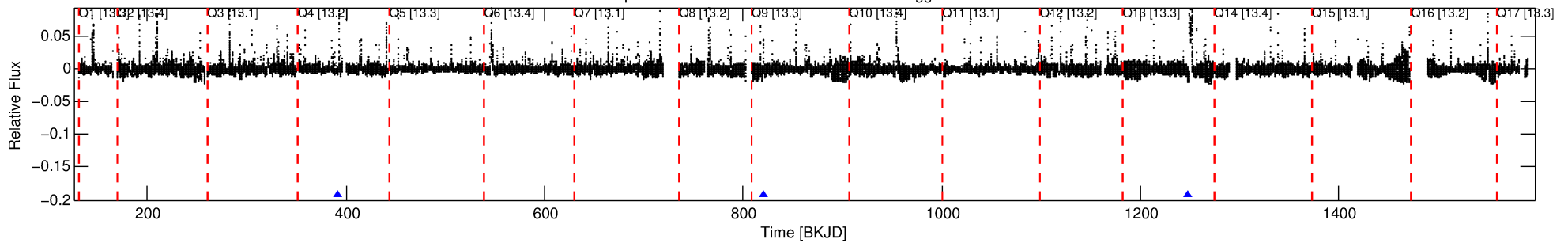
Ephemeris Match Information For 008423343-01

No Significant Match Found

DV One-Page Summary

KIC: 8423343 Candidate: 1 of 4 Period: 428.550 d

Kp: 16.00 R*: 0.73 Rs Teff: 4555.0 K Logg: 4.57 Fe/H: 0.160



DV Fit Results:

Period = 428.55027 [0.04727] d
Epoch = 391.4046 [0.0554] BKJD
Rp/R* = 0.1508 [0.0128]
a/R* = 74.55 [9.10]
b = 0.58 [0.14]
Seff = 0.21 [0.04]
Teq = 172 [8] K
Rp = 11.98 [1.50] Re
a = 0.9972 [0.0760] AU
Ag = N/A
Teffp = N/A

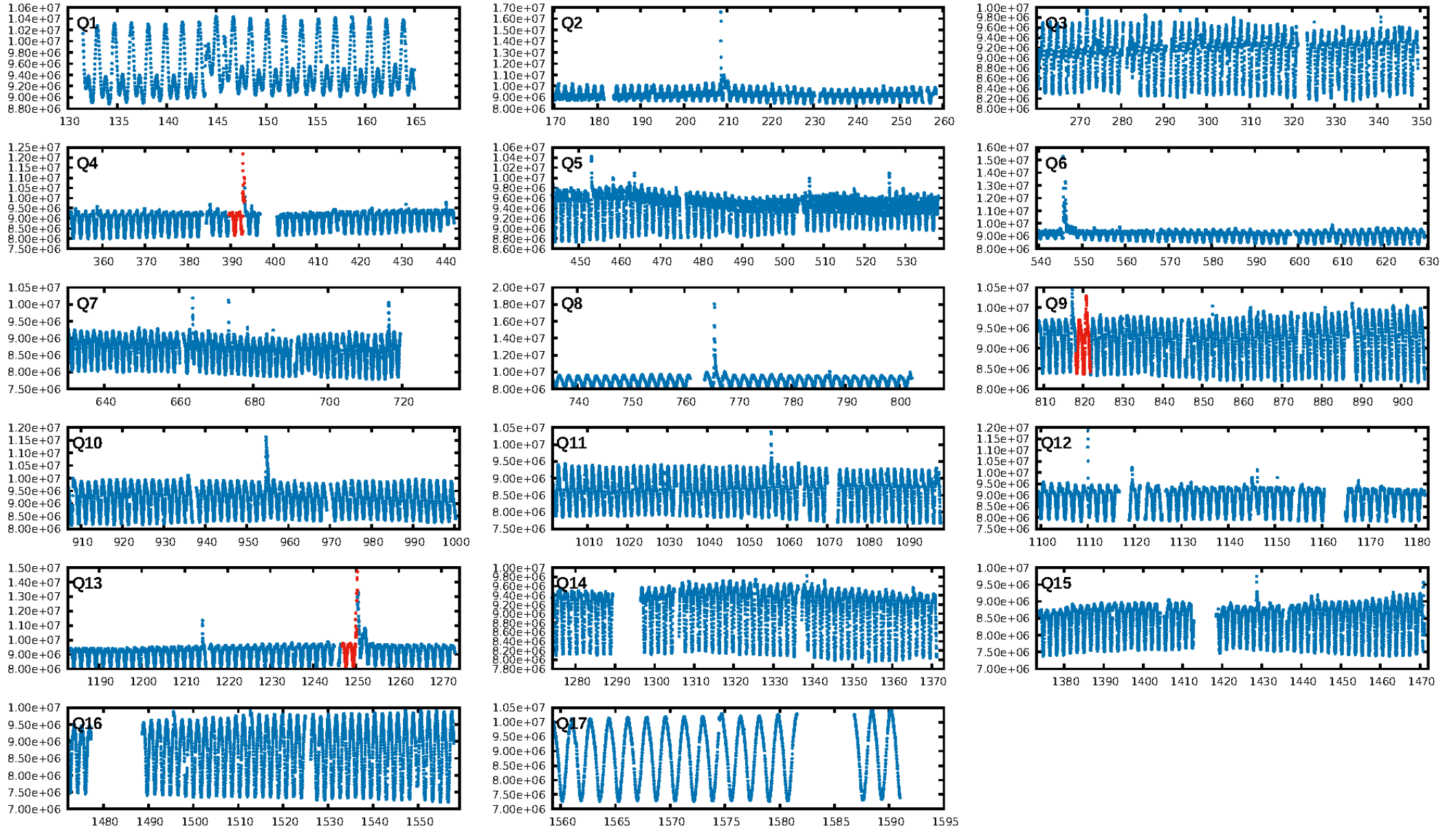
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [227.28σ]
LongPeriod-sig: 100.0% [41.79σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.3218
Centroid-sig: 50.3%
Centroid-so: 0.149 arcsec [4.05σ]
OotOffset-rm: 0.063 arcsec [0.92σ]
KicOffset-rm: 0.097 arcsec [1.37σ]
OotOffset-st: 0/0/1/1 [2]
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 0.00 [0/2]

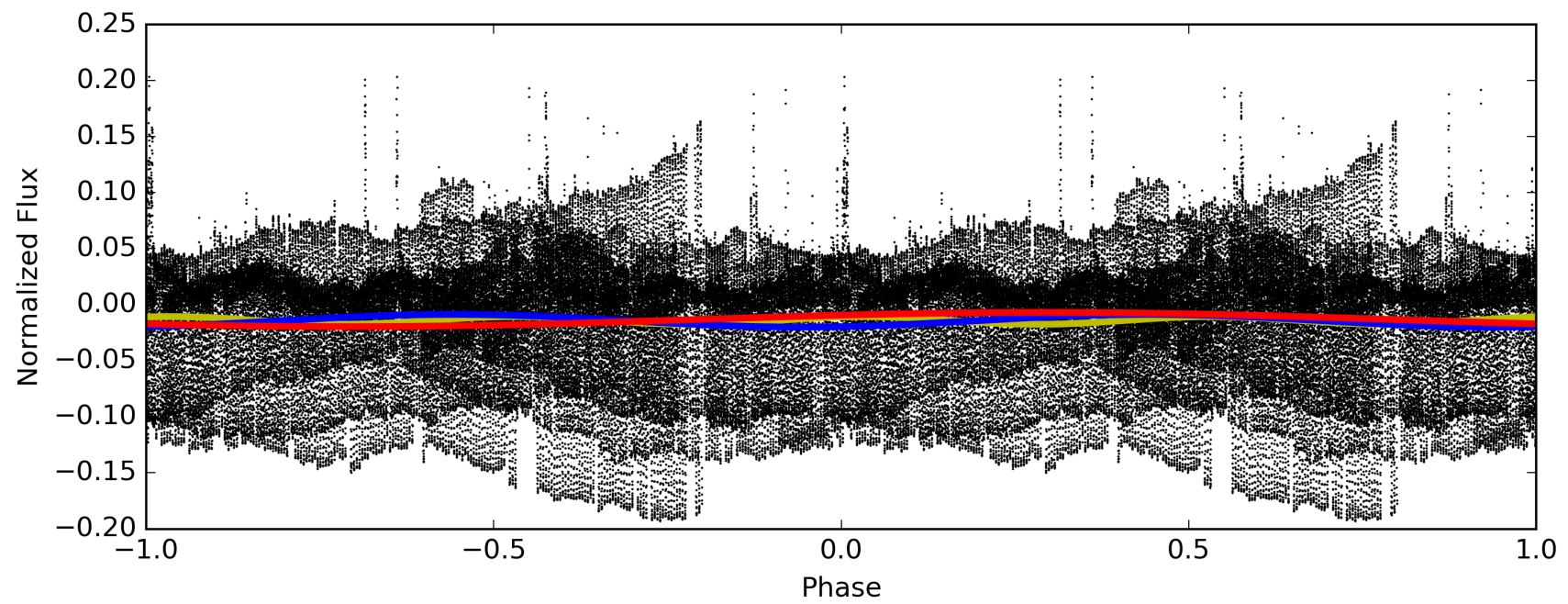
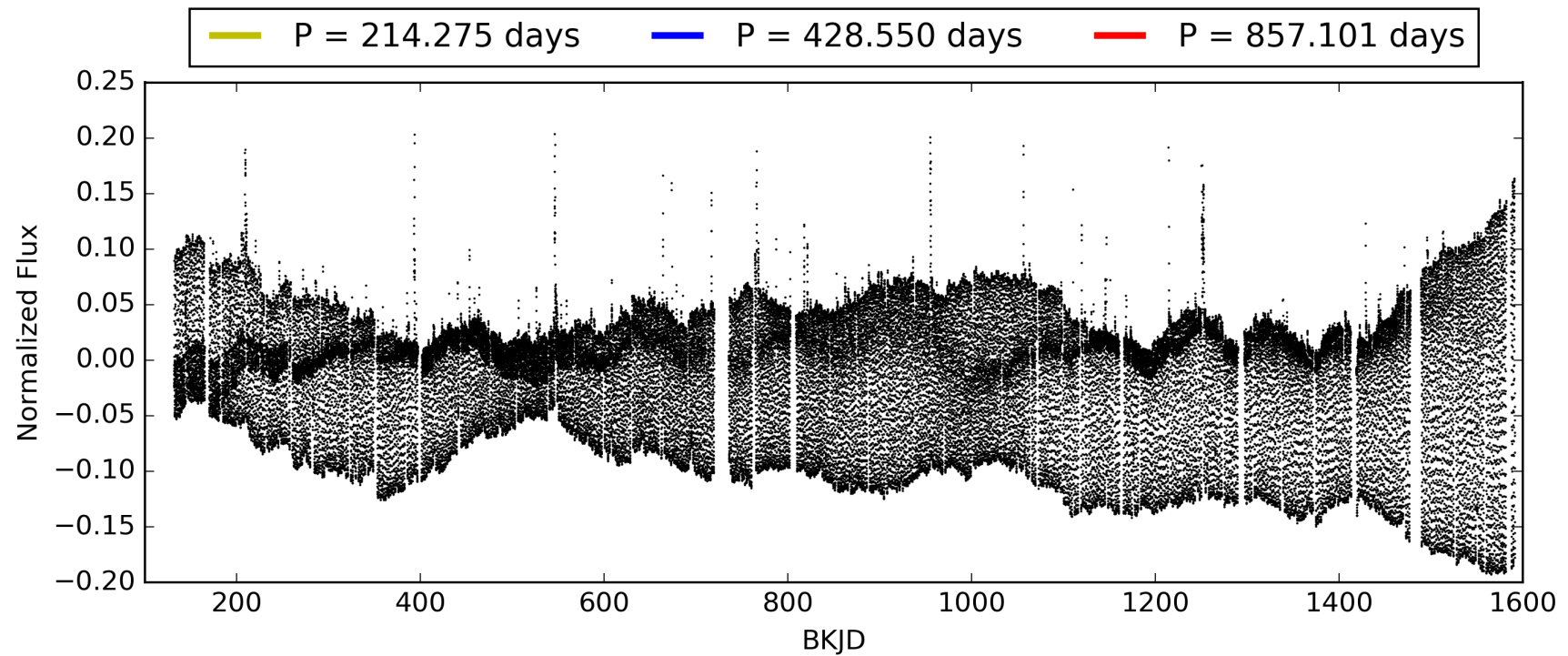
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 00:50:04 Z

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

TCE 008423343-01, PDC Light Curves

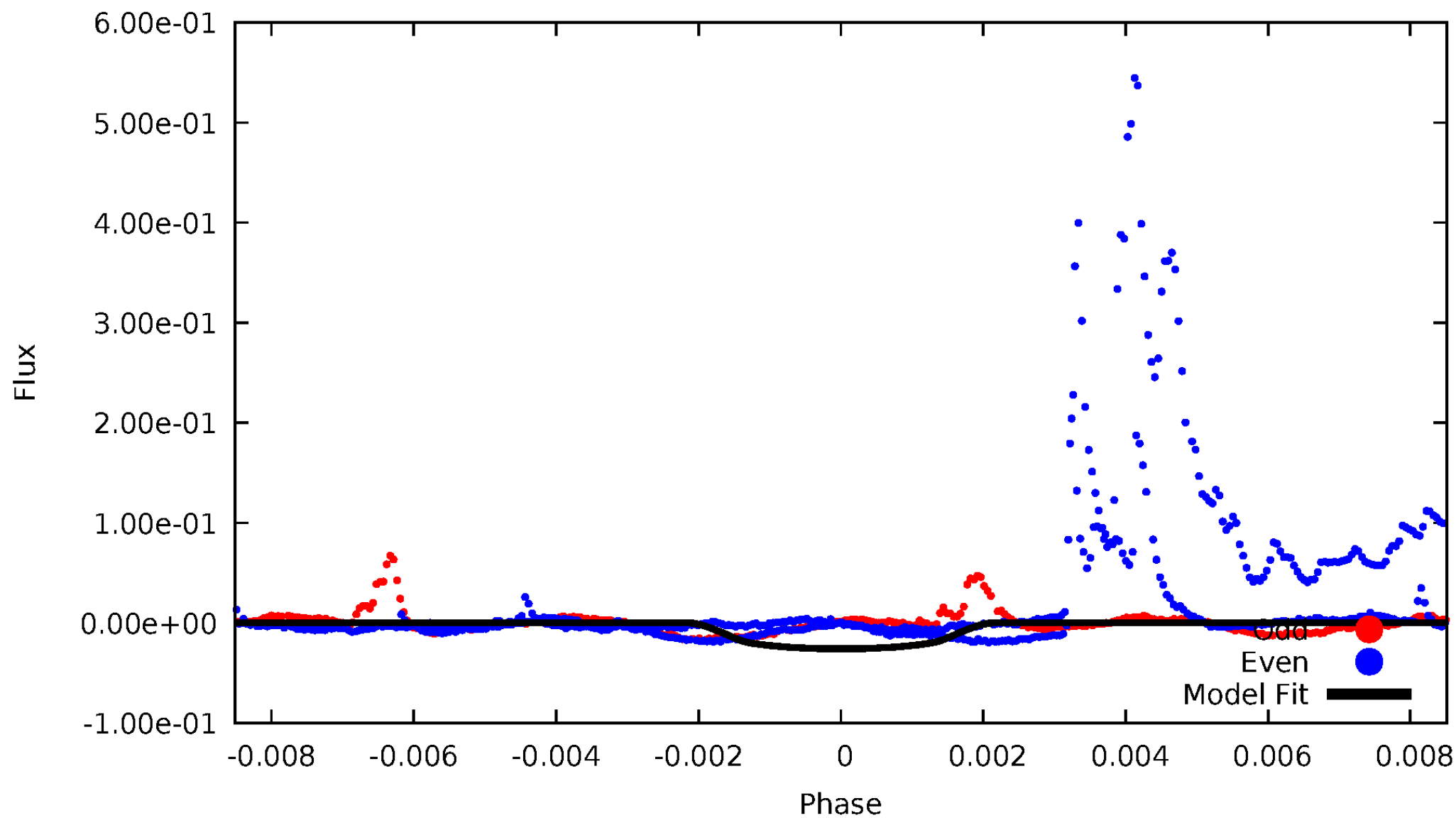


TCE 008423343-01



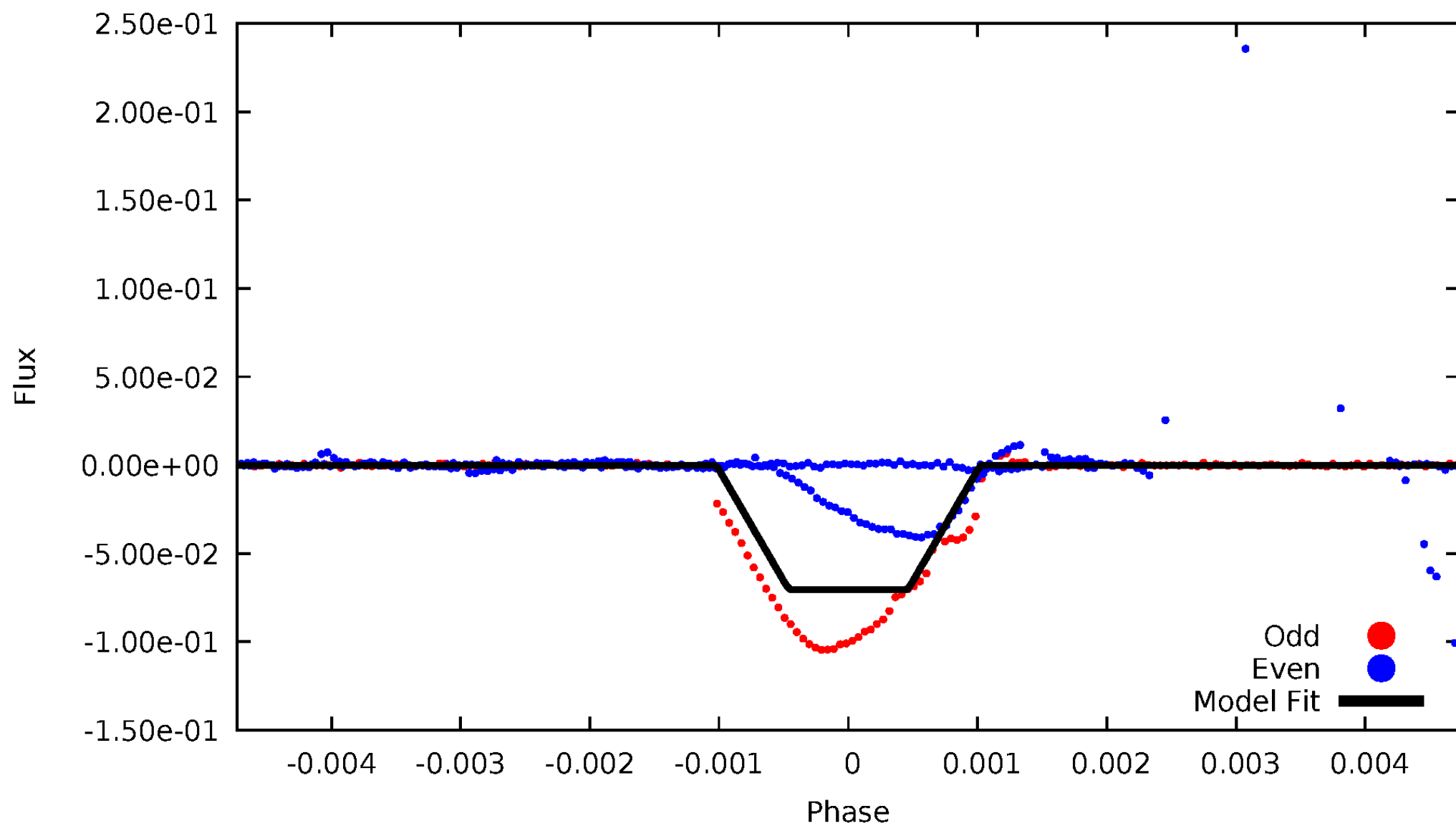
DV Odd/Even

TCE 008423343-01



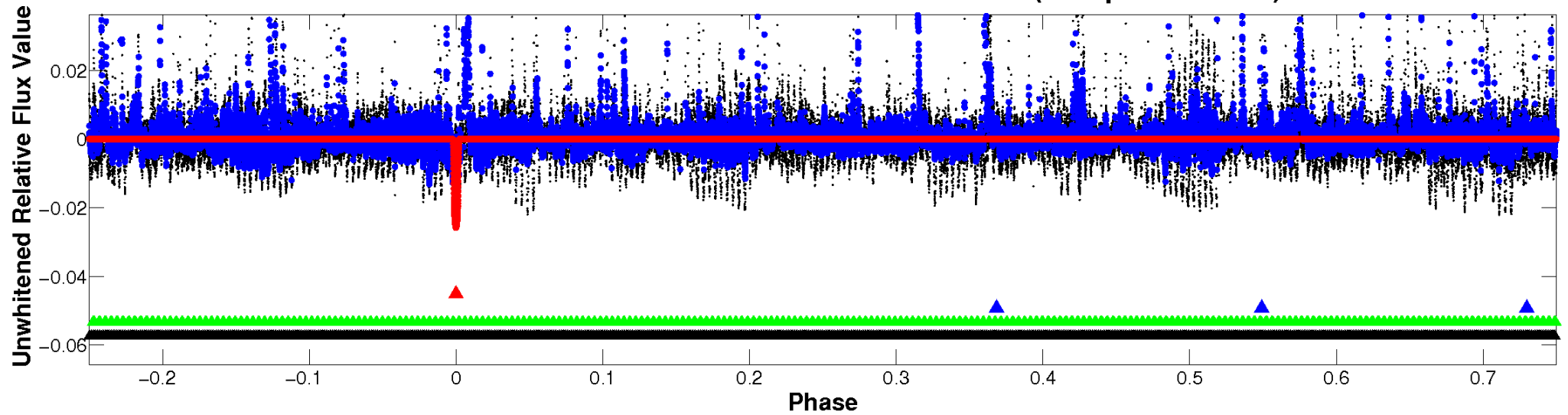
ALT Odd/Even

TCE 008423343-01

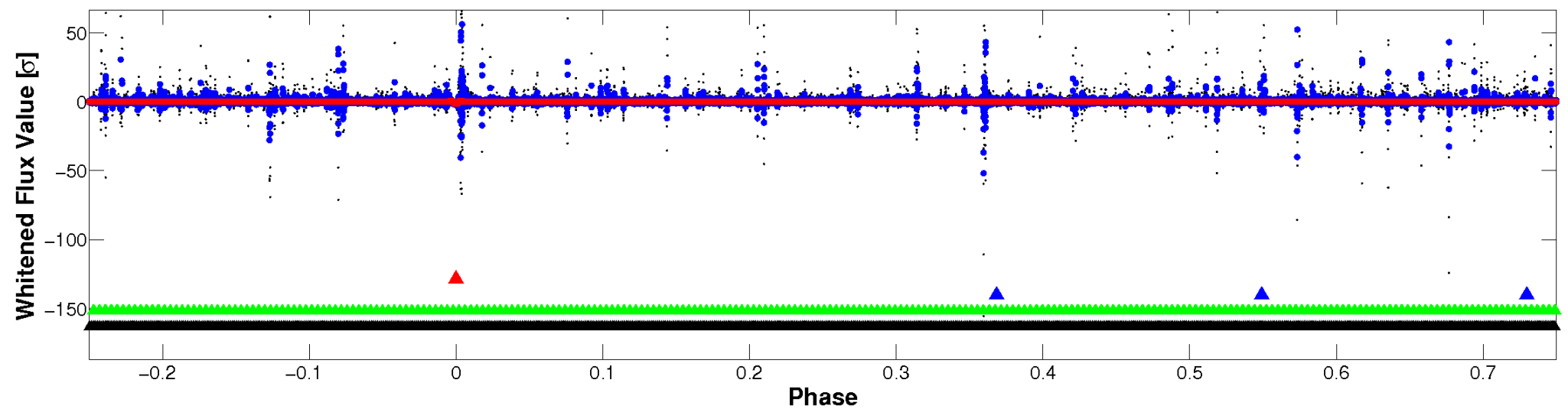


Non-Whitened Vs. Whitened Light Curve

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

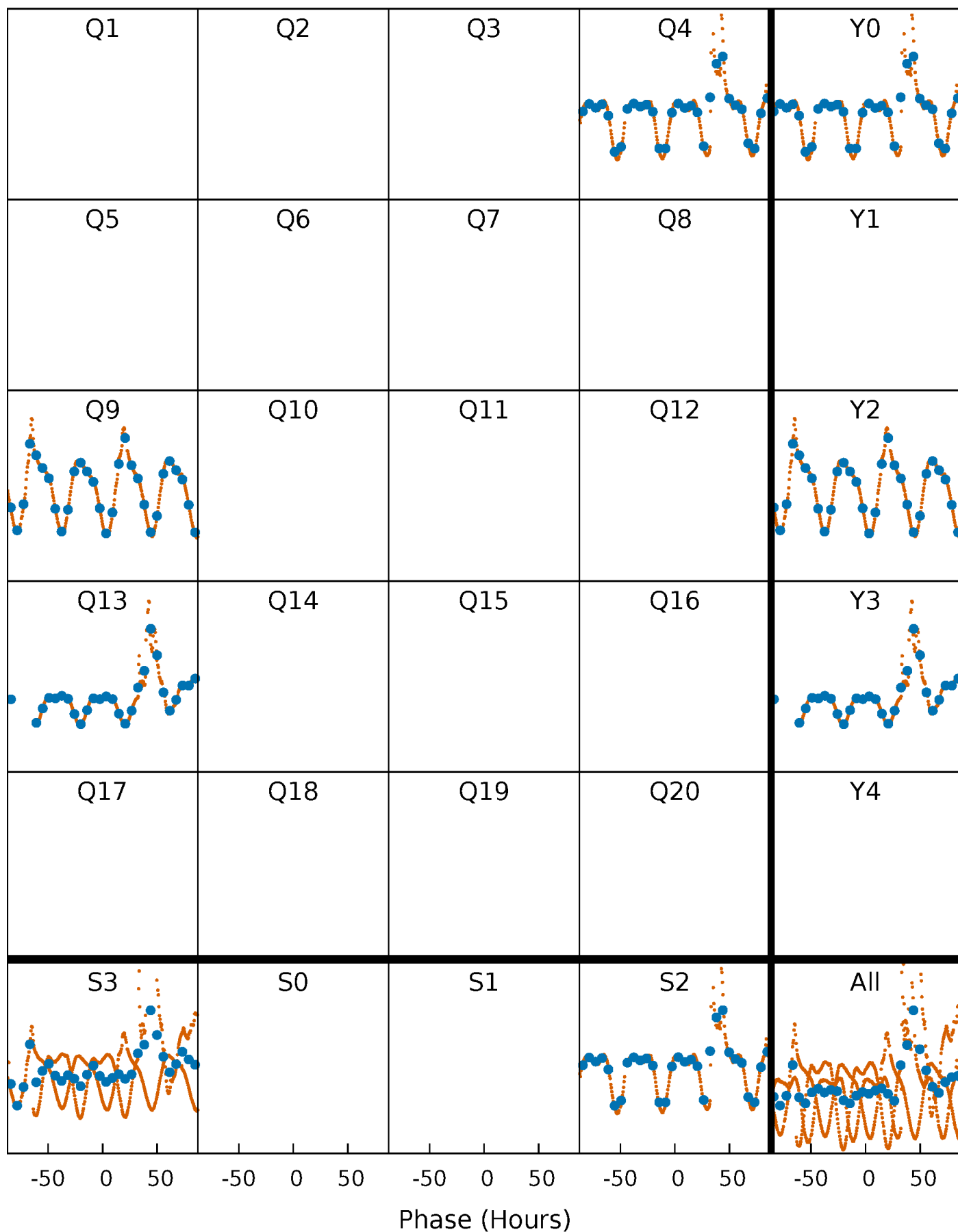


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



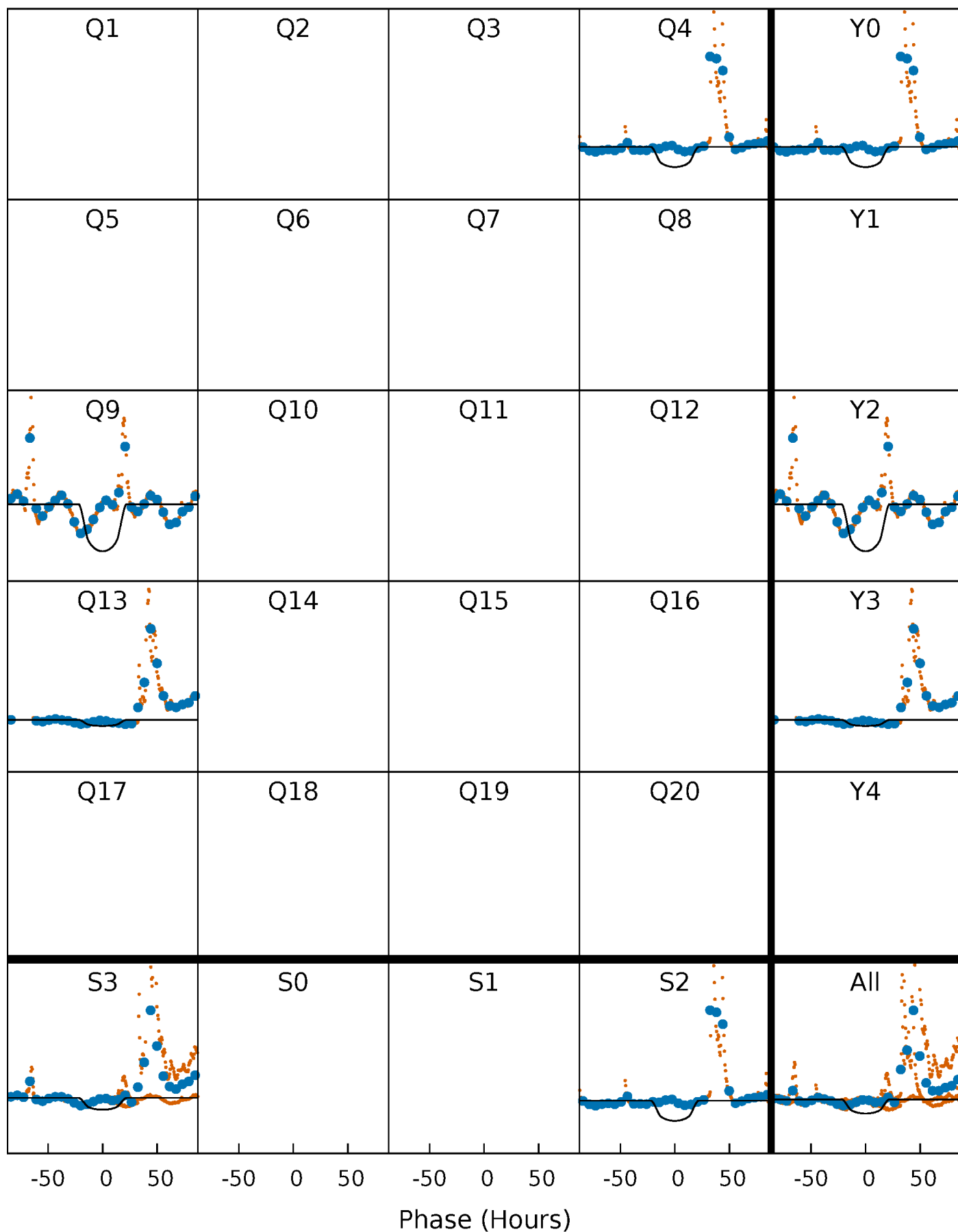
PDC Quarter-Phased Transit Curves

TCE 008423343-01 P=428.550267 Days $T_0=391.404560$ (BKJD)



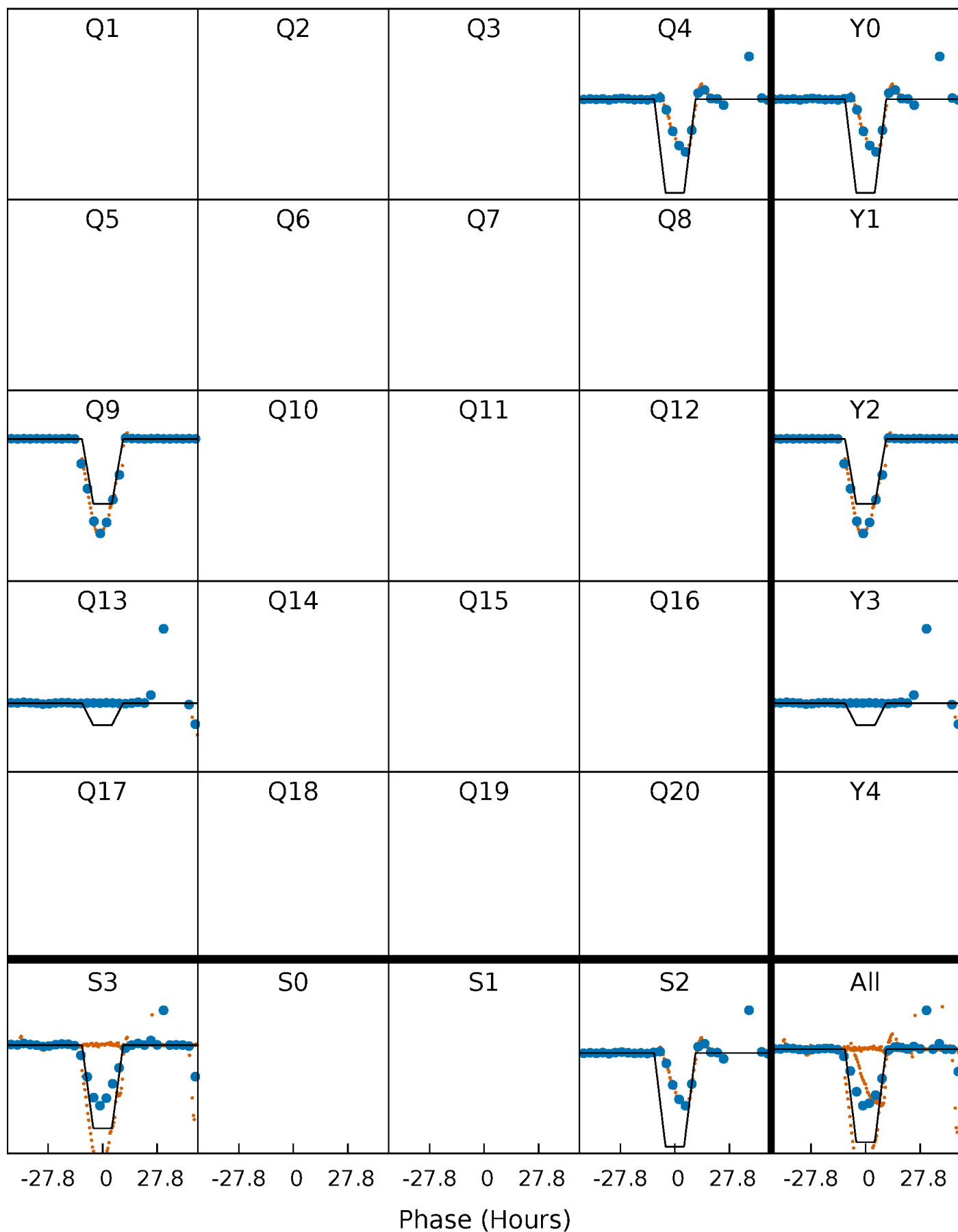
DV Quarter-Phased Transit Curves

TCE 008423343-01 P=428.550267 Days $T_0=391.404560$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

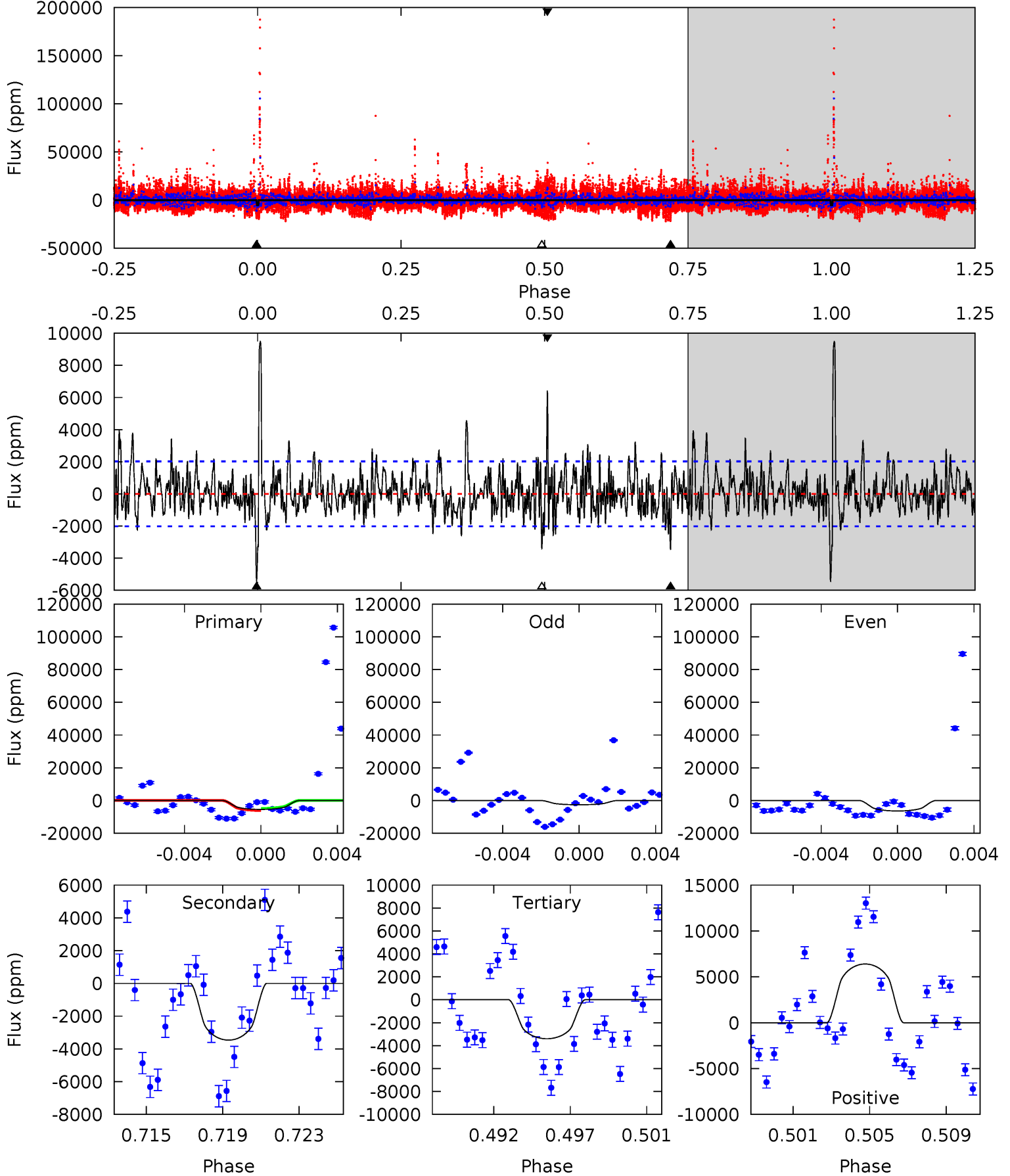
TCE 008423343-01 P=428.621166 Days $T_0=391.651636$ (BKJD)



DV Model-Shift Uniqueness Test

008423343-01, P = 428.550267 Days, E = 391.404560 Days

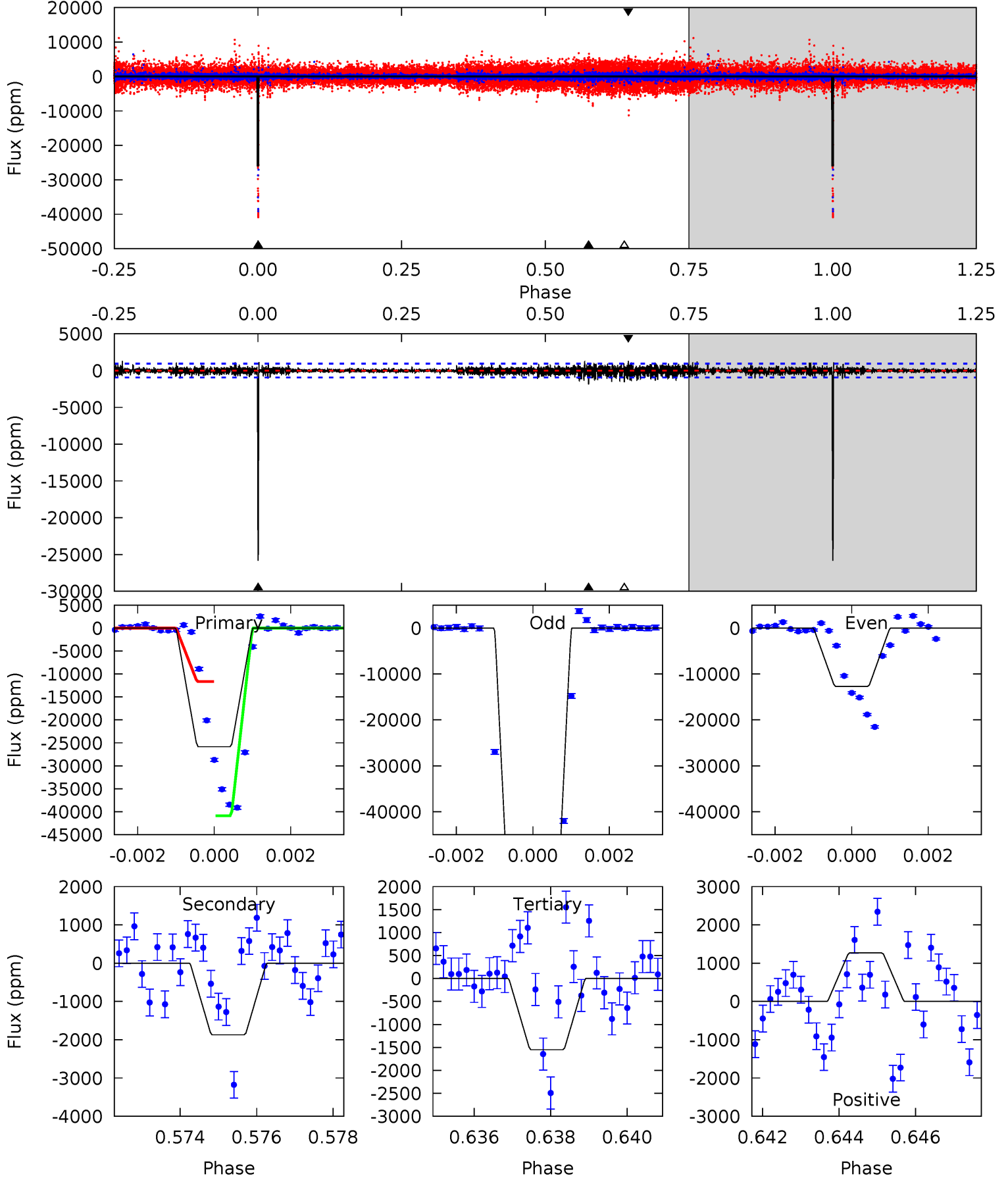
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.9	8.89	8.73	16.4	5.19	2.86	3.06	5.22	-2.48	0.16	-7.54	2.36	1.97	0.64	1.66



Alt Model-Shift Uniqueness Test

008423343-01, P = 428.621166 Days, E = 391.651636 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
146.7	10.6	8.80	7.20	5.32	3.08	1.85	137.9	139.5	1.83	3.43	237.5	1.48	0.05	83.2



Stellar Parameters For KIC 008423343

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4555^{+164}_{-164}	$4.571^{+0.059}_{-0.023}$	$0.160^{+0.200}_{-0.300}$	$0.728^{+0.036}_{-0.067}$	$0.721^{+0.056}_{-0.056}$	$2.628^{+0.669}_{-0.243}$
	+4%/-4%	+1%/-1%	+125%/-188%	+5%/-9%	+8%/-8%	+25%/-9%
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 008423343-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-3463 ± 389	$11.86^{+1.10}_{-1.16}$	238^{+9}_{-9}	3296^{+131}_{-137}	13649^{+3136}_{-2611}
Alt.	-1873 ± 176	$20.81^{+1.39}_{-1.41}$	238^{+9}_{-10}	2592^{+80}_{-72}	2386^{+436}_{-344}

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

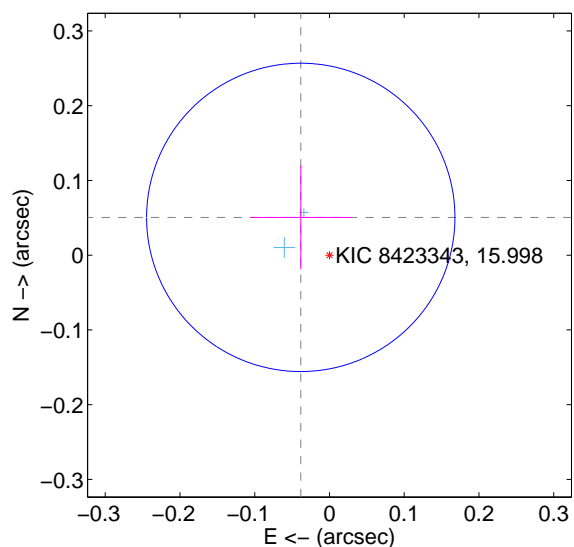
Supplemental centroid analysis for 008423343-01. Kepler magnitude: 16.00. Transit SNR 16.51

There are 2 quarters with good PRF difference image offsets

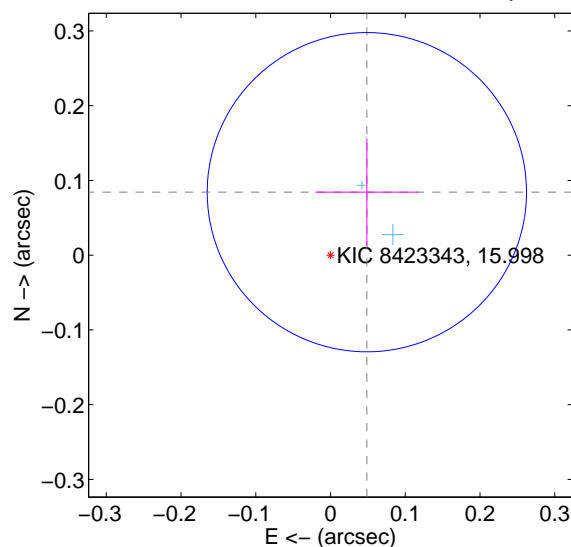
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.063 ± 0.069	0.92	0.038 ± 0.068	0.051 ± 0.069
PRF-fit source offset from KIC position	0.097 ± 0.071	1.37	-0.049 ± 0.069	0.084 ± 0.072
photometric centroid source offset	0.15 ± 0.04	4.05	-0.15 ± 0.04	0.03 ± 0.03

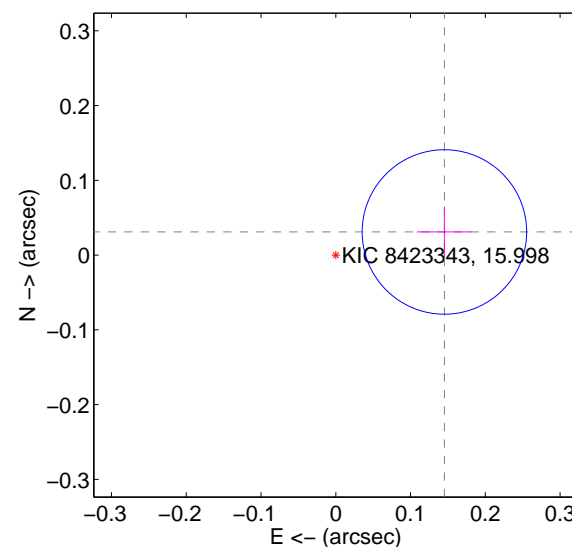
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

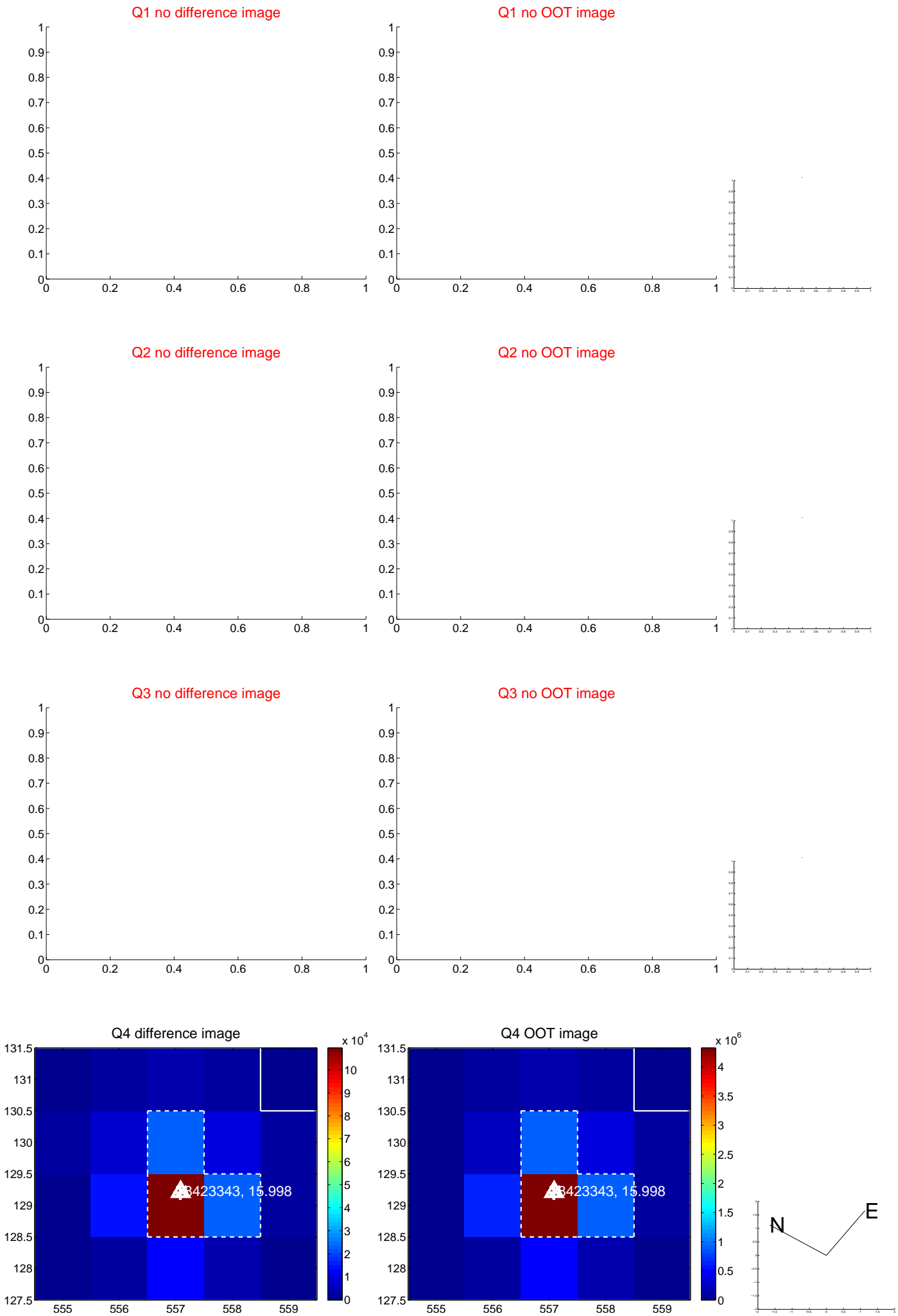


offset from photometric centroids



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.

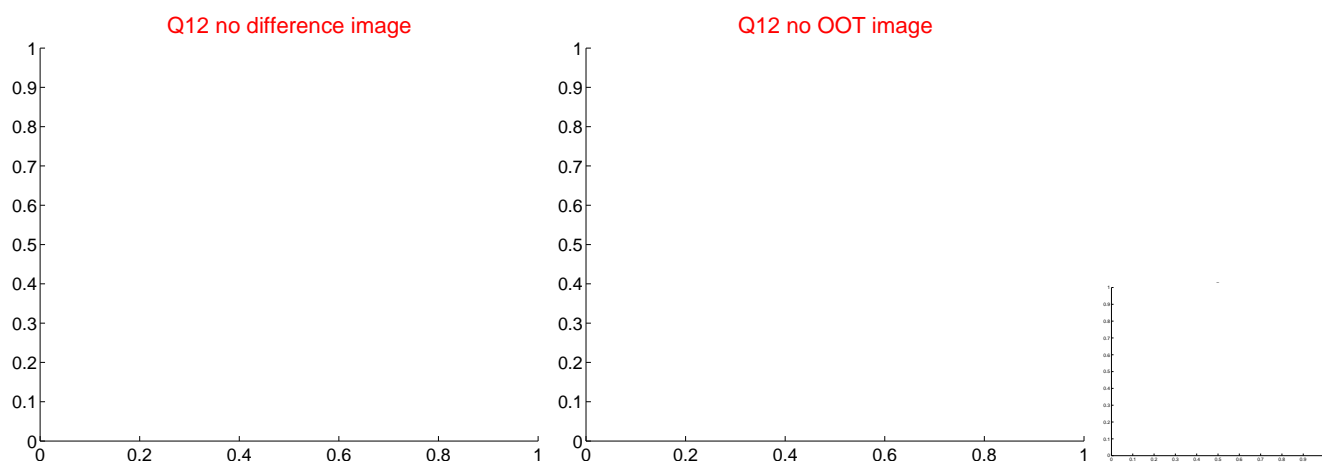
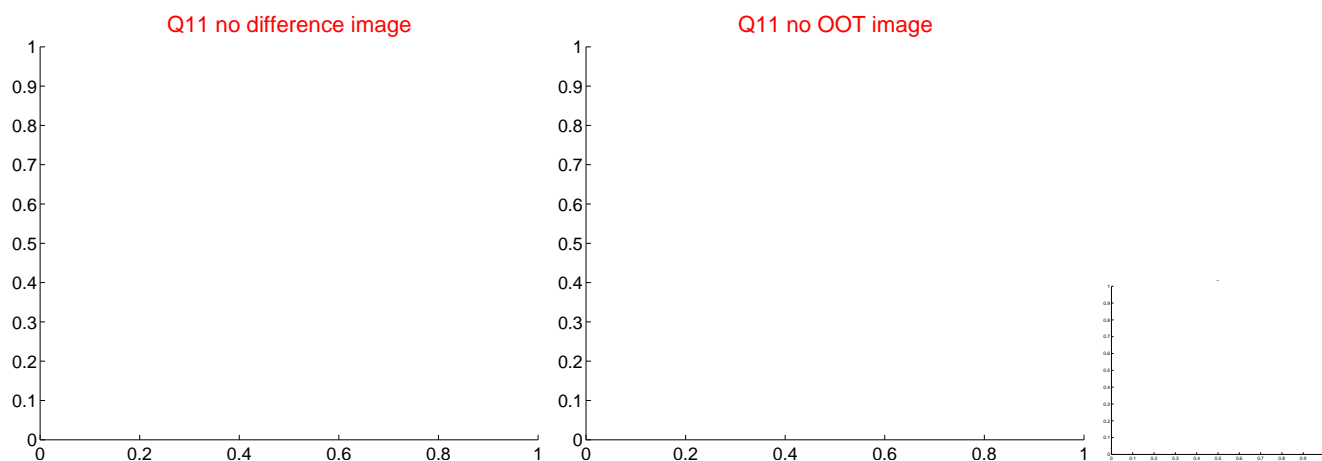
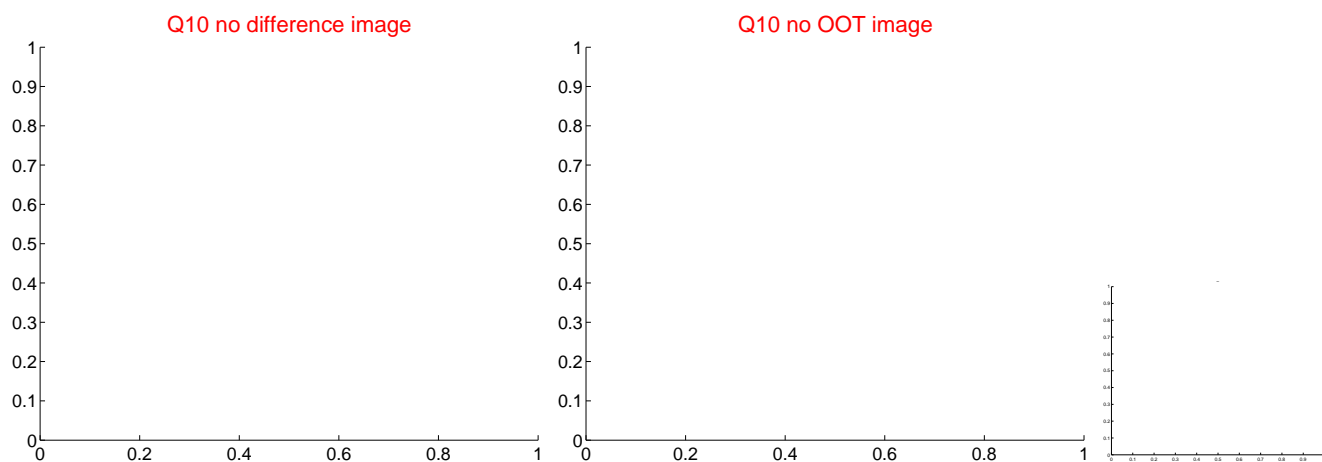
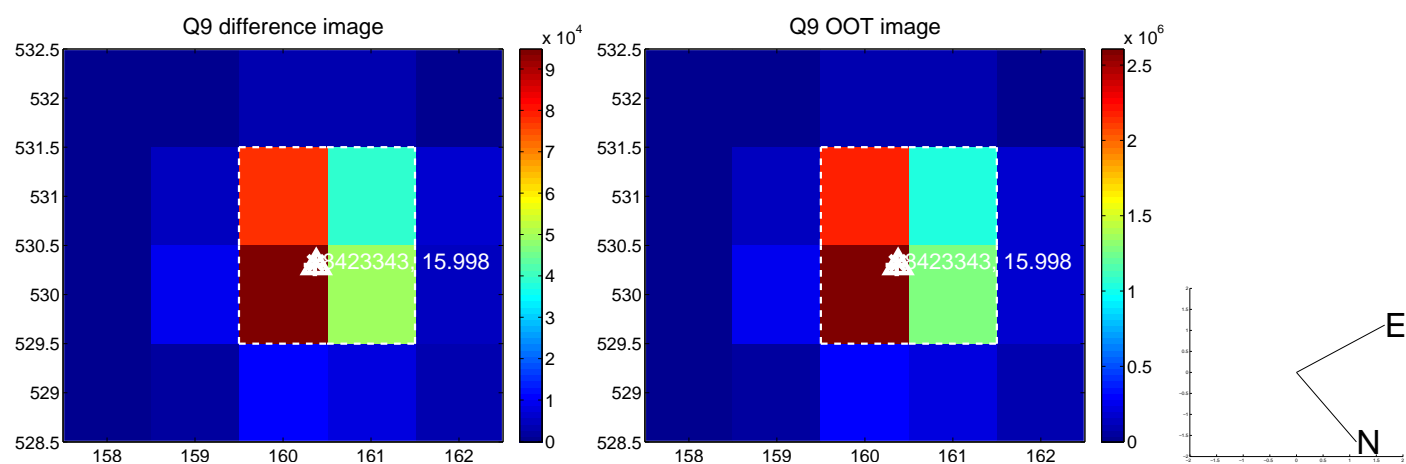
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



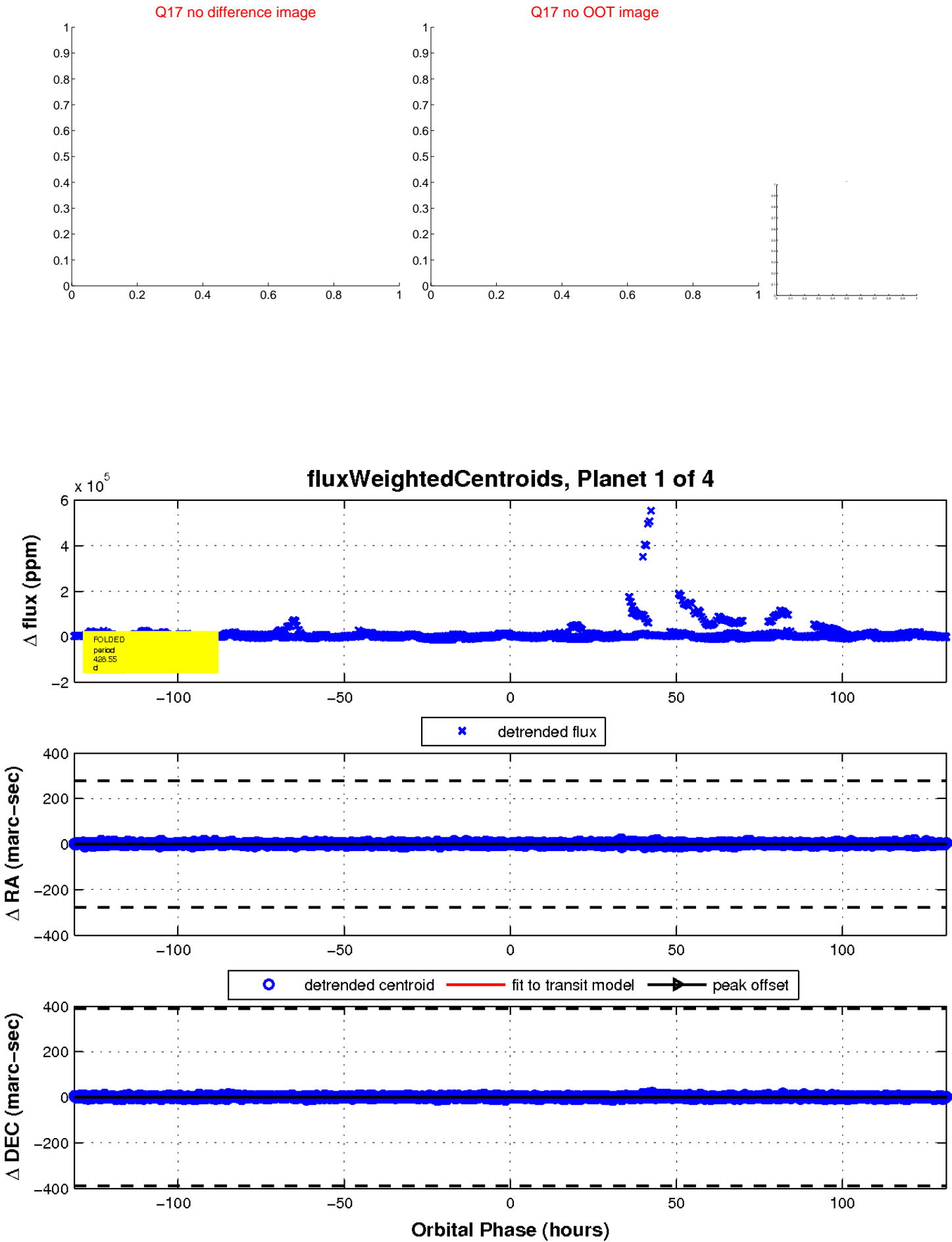
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

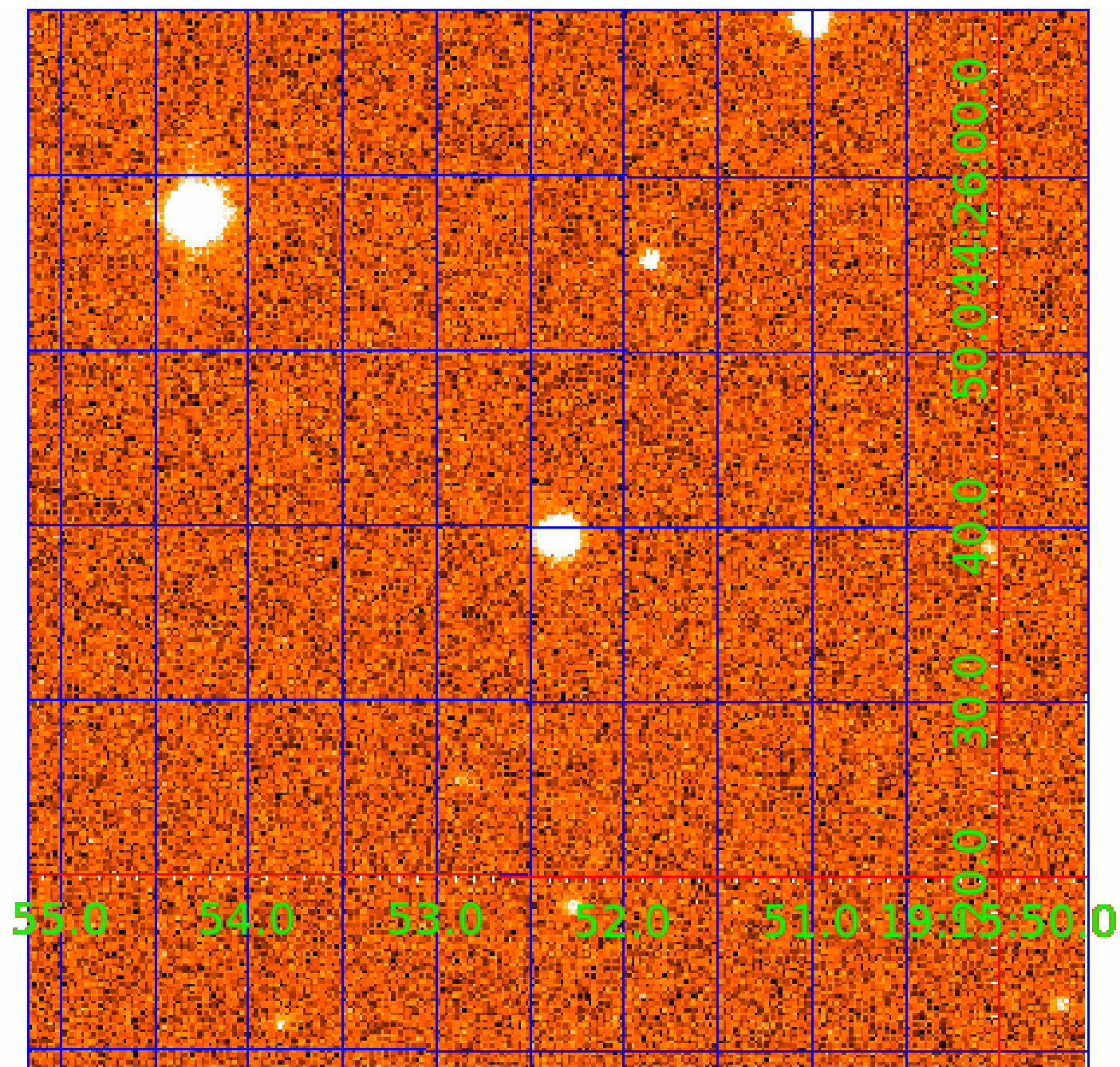


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008423343

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})
008423343-01	OBS	No	428.550267	391.404560	25837.4	43.758	18.1	16.5	0.73	4555	11.98	0.21
008423343-02	OBS	No	505.981009	549.301851	7245.7	7.936	13.5	6.1	0.73	4555	7.38	0.17
008423343-03	OBS	No	1.720567	132.612715	383.4	10.803	12.1	6.0	0.73	4555	1.47	322.14
008423343-04	OBS	No	0.572178	131.567444	3258.5	2.000	14.6	-1.0	0.73	4555	3.98	1398.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008423343-01	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008423343-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008423343-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
008423343-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—CENT_NOFITS

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

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

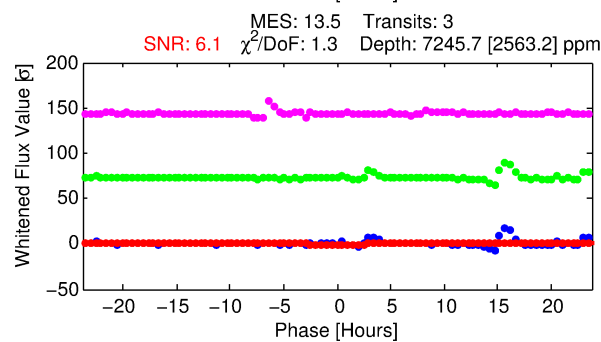
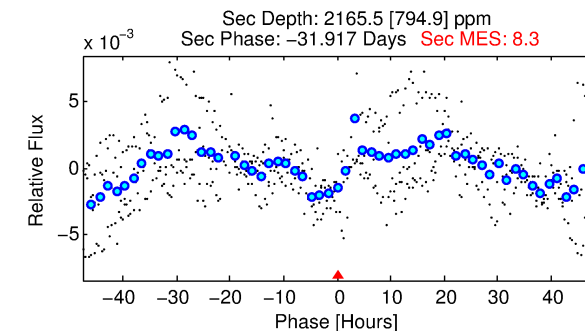
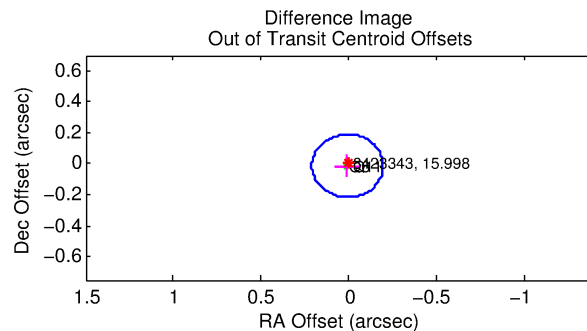
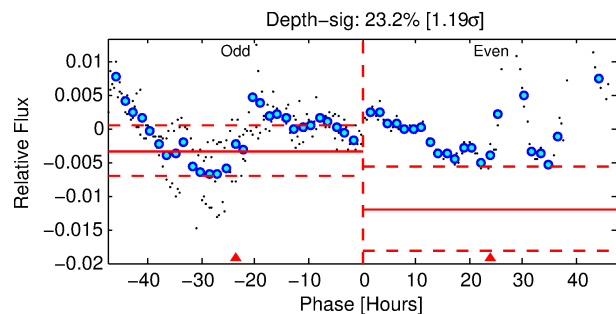
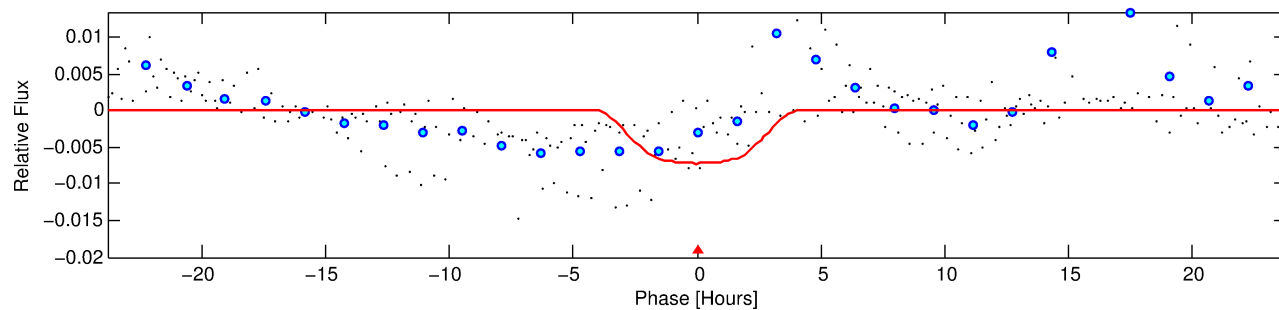
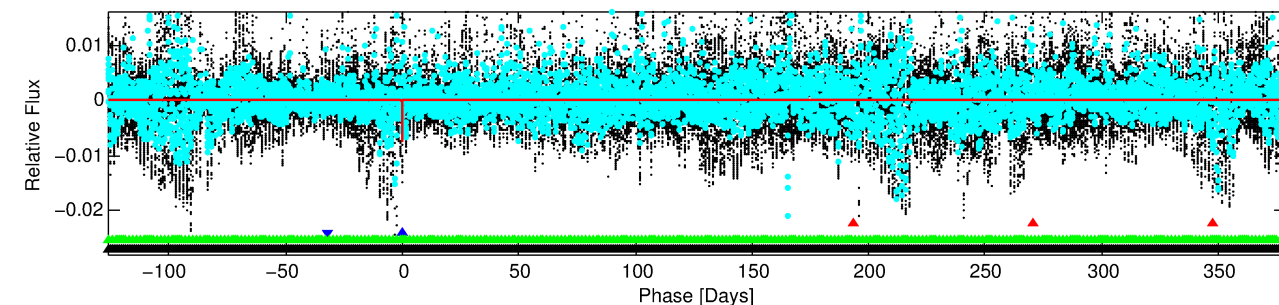
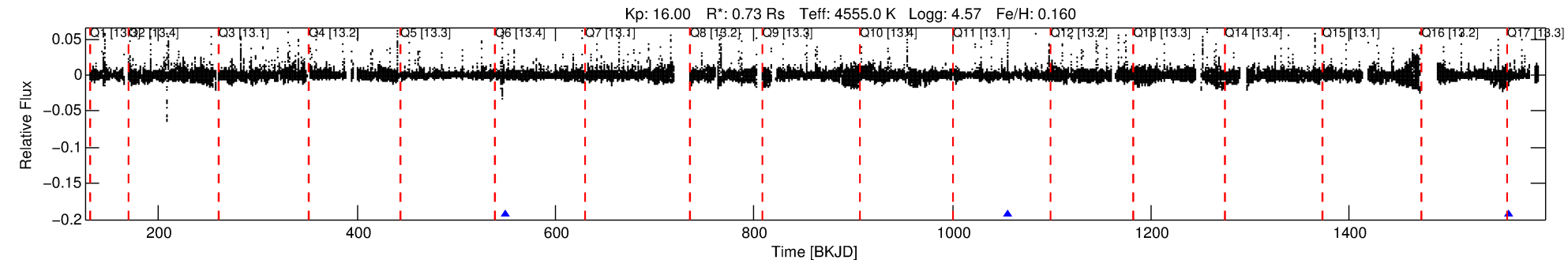
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008423343-02

No Significant Match Found

DV One-Page Summary

KIC: 8423343 Candidate: 2 of 4 Period: 505.981 d



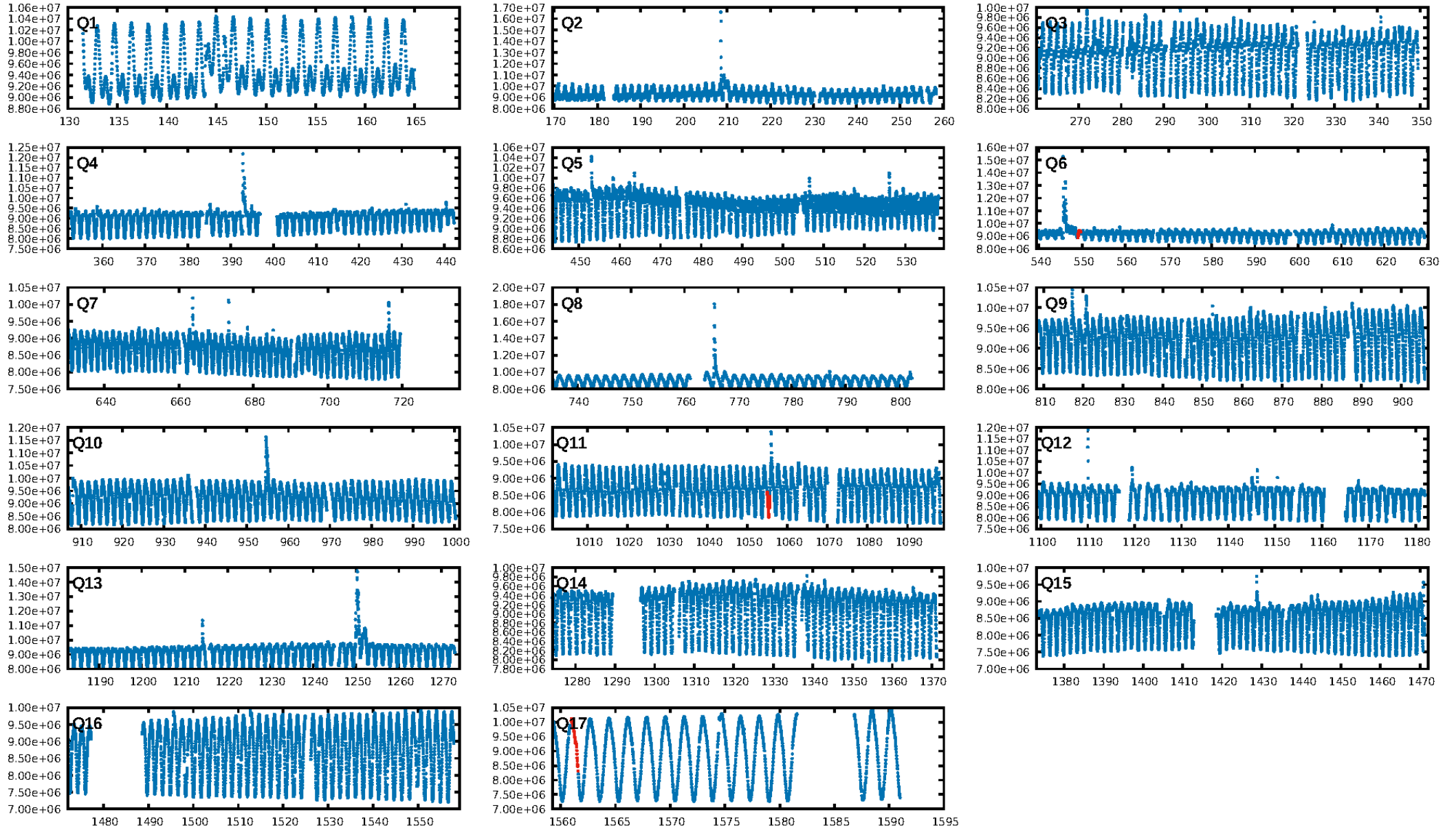
DV Fit Results:

Period = 505.98101 [0.01802] d
Epoch = 549.3019 [0.0243] BKJD
Rp/R* = 0.0929 [0.0191]
a/R* = 327.80 [73.78]
b = 0.86 [0.08]
Seff = 0.16 [0.03]
Teq = 162 [7] K
Rp = 7.38 [1.66] Re
a = 1.1140 [0.0849] AU
Ag = 27136.24 [15245.38] [1.78 σ]
Teffp = 3224 [459] K [6.67 σ]

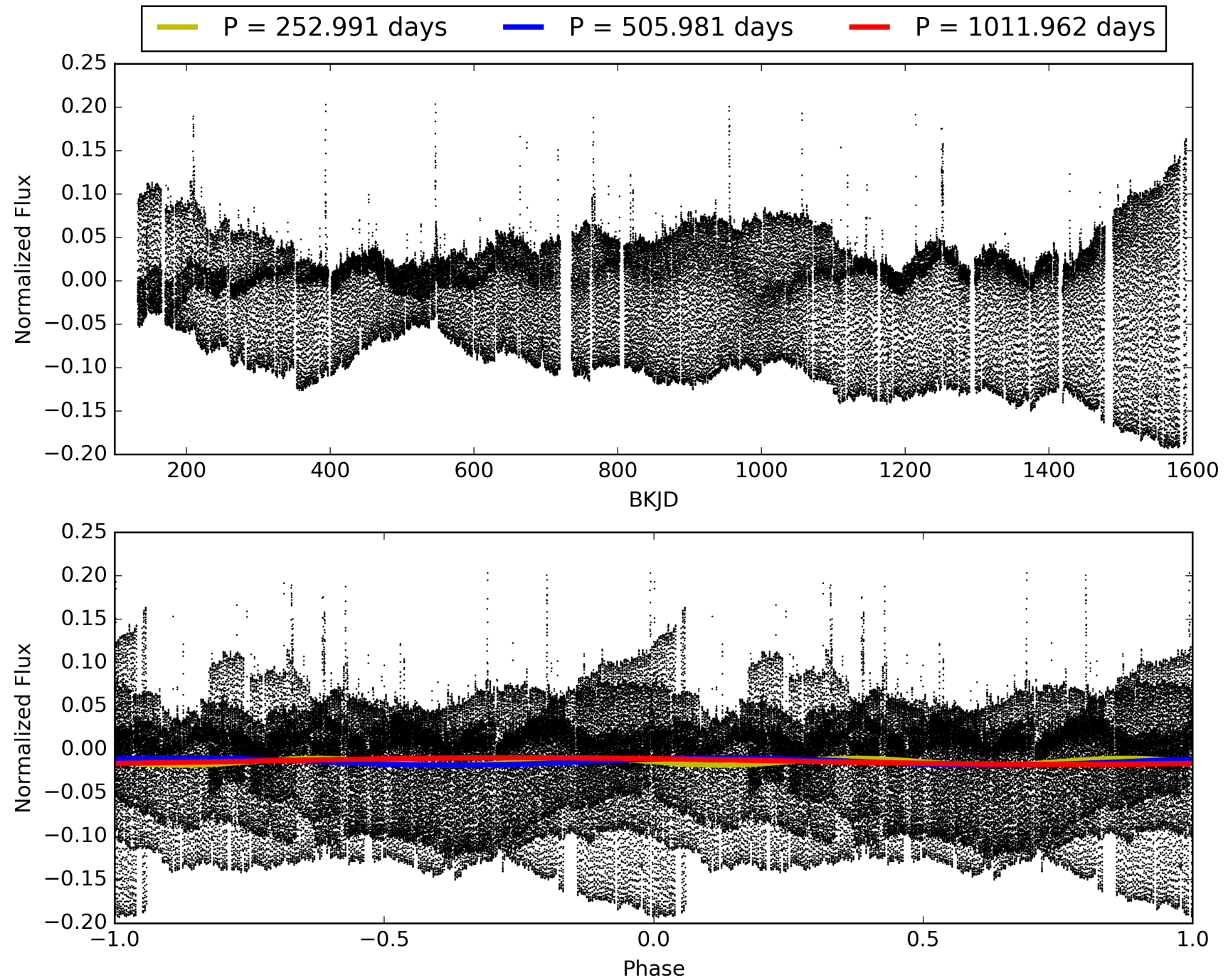
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [41.79 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 48.5%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 0.9586
Centroid-sig: 4.0%
Centroid-so: 0.814 arcsec [2.18 σ]
OotOffset-rm: 0.017 arcsec [0.25 σ]
KicOffset-rm: 0.147 arcsec [1.94 σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.00 [0/2]

TCE 008423343-02, PDC Light Curves

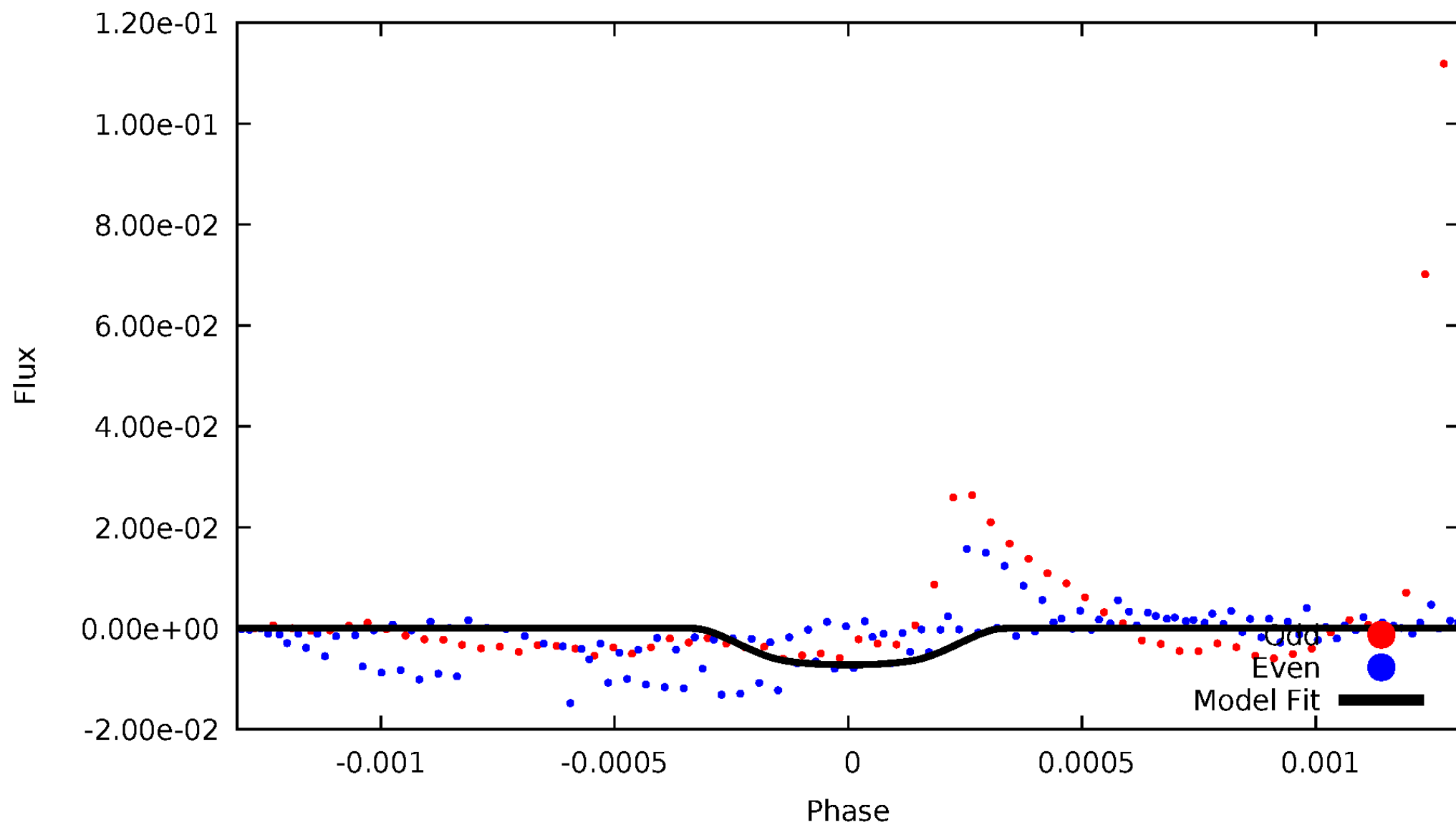


TCE 008423343-02



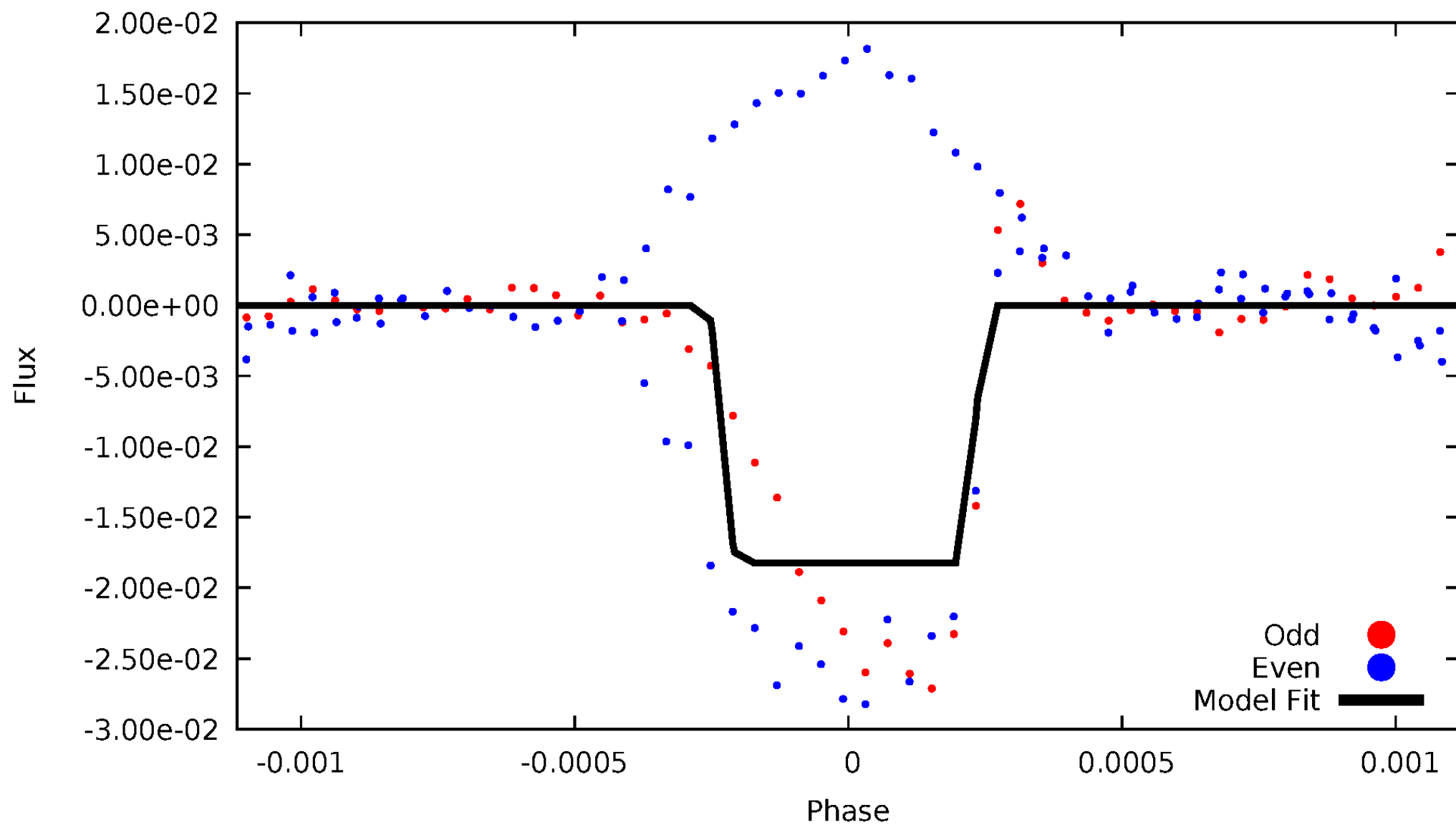
DV Odd/Even

TCE 008423343-02



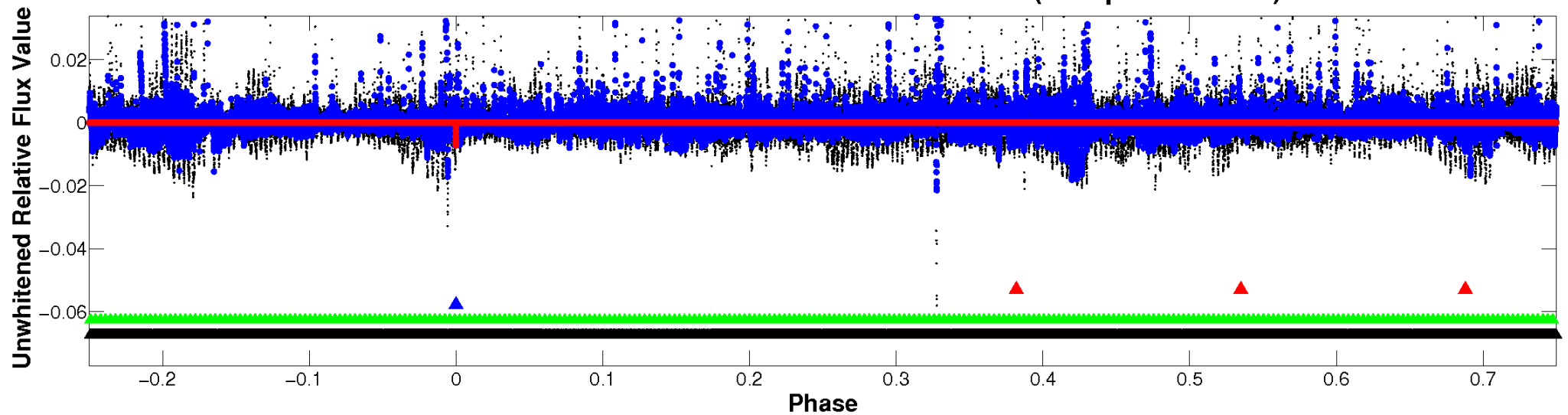
ALT Odd/Even

TCE 008423343-02

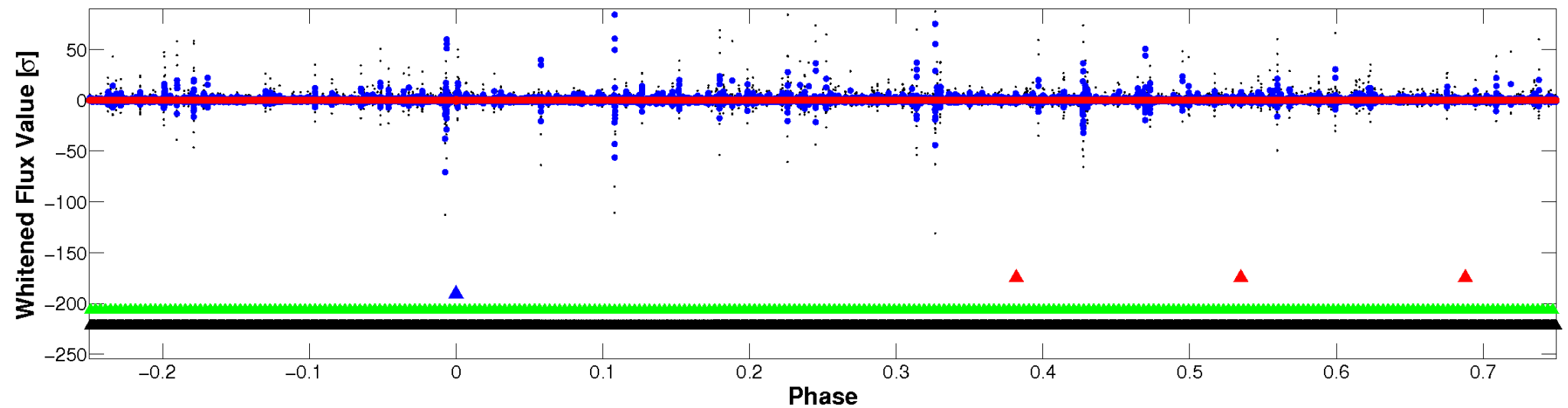


Non-Whitened Vs. Whitened Light Curve

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

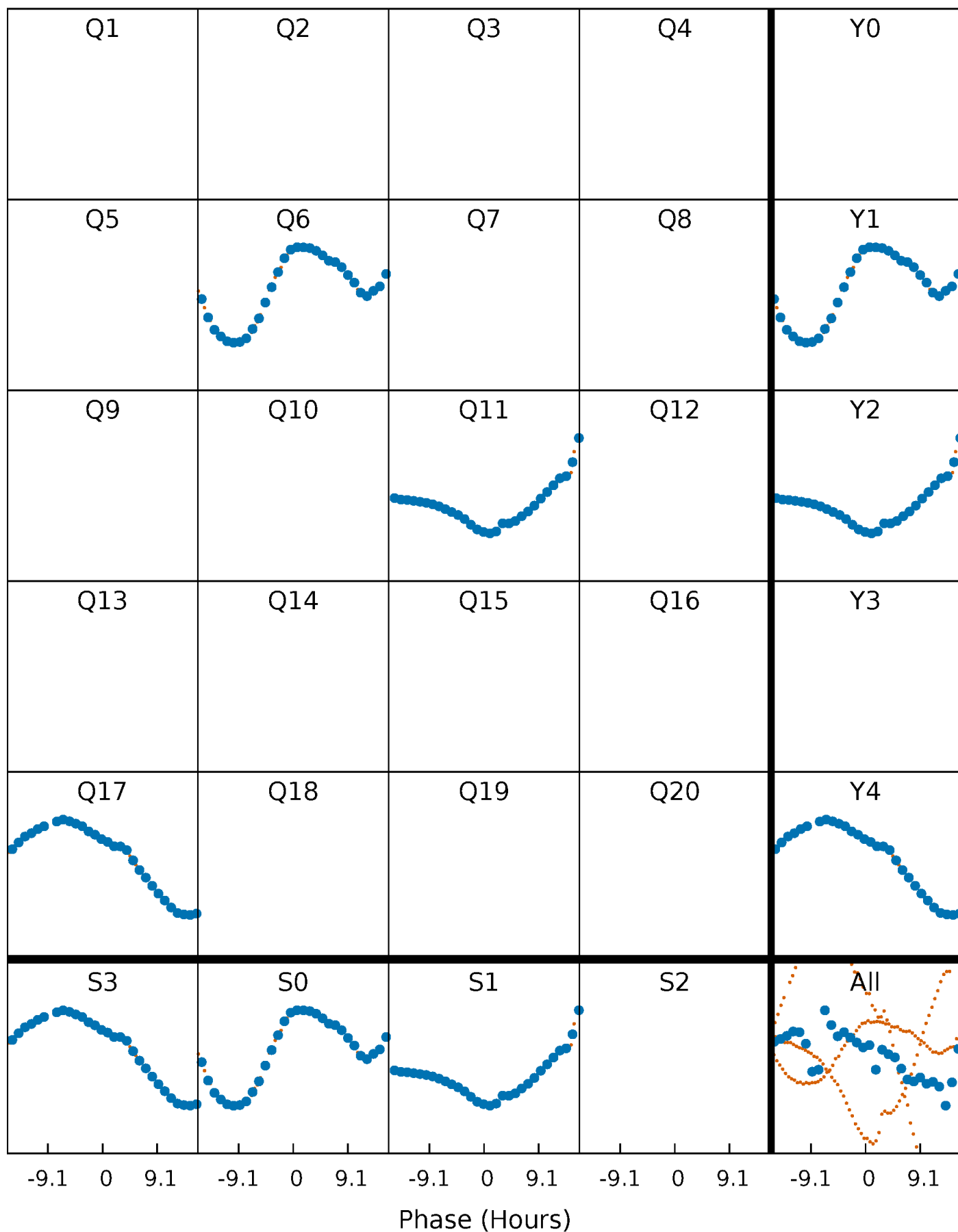


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



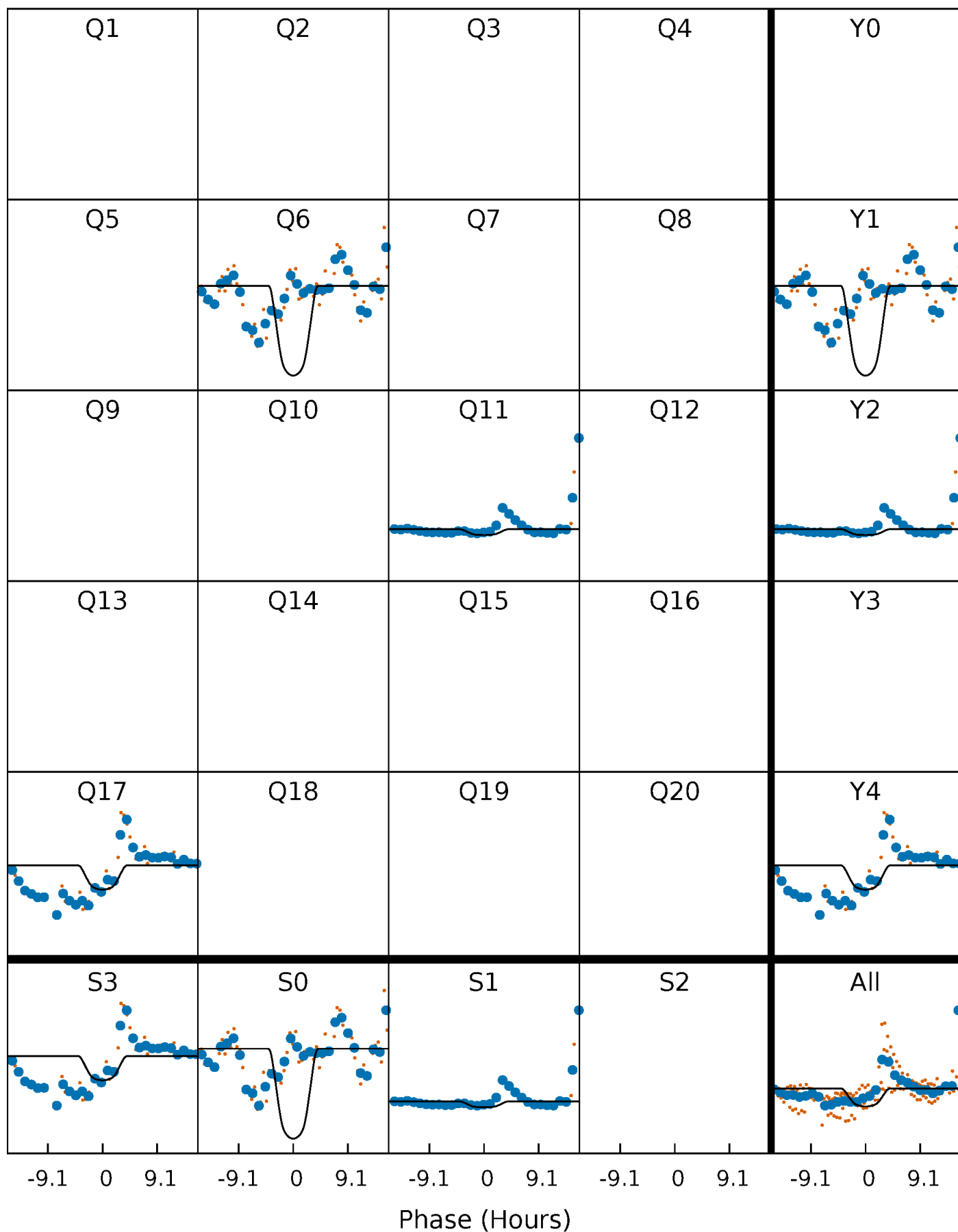
PDC Quarter-Phased Transit Curves

TCE 008423343-02 P=505.981009 Days $T_0=549.301851$ (BKJD)



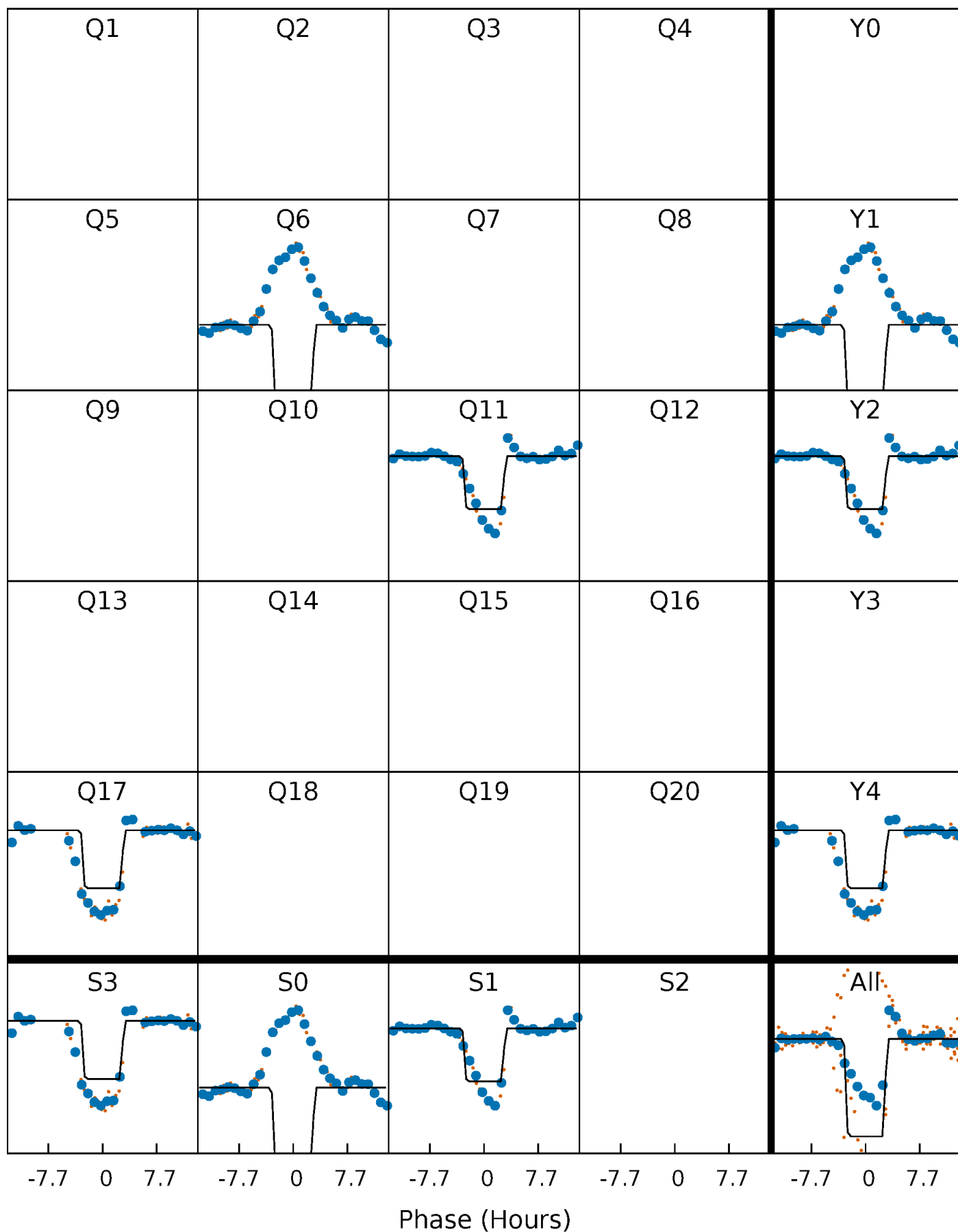
DV Quarter-Phased Transit Curves

TCE 008423343-02 P=505.981009 Days $T_0=549.301851$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

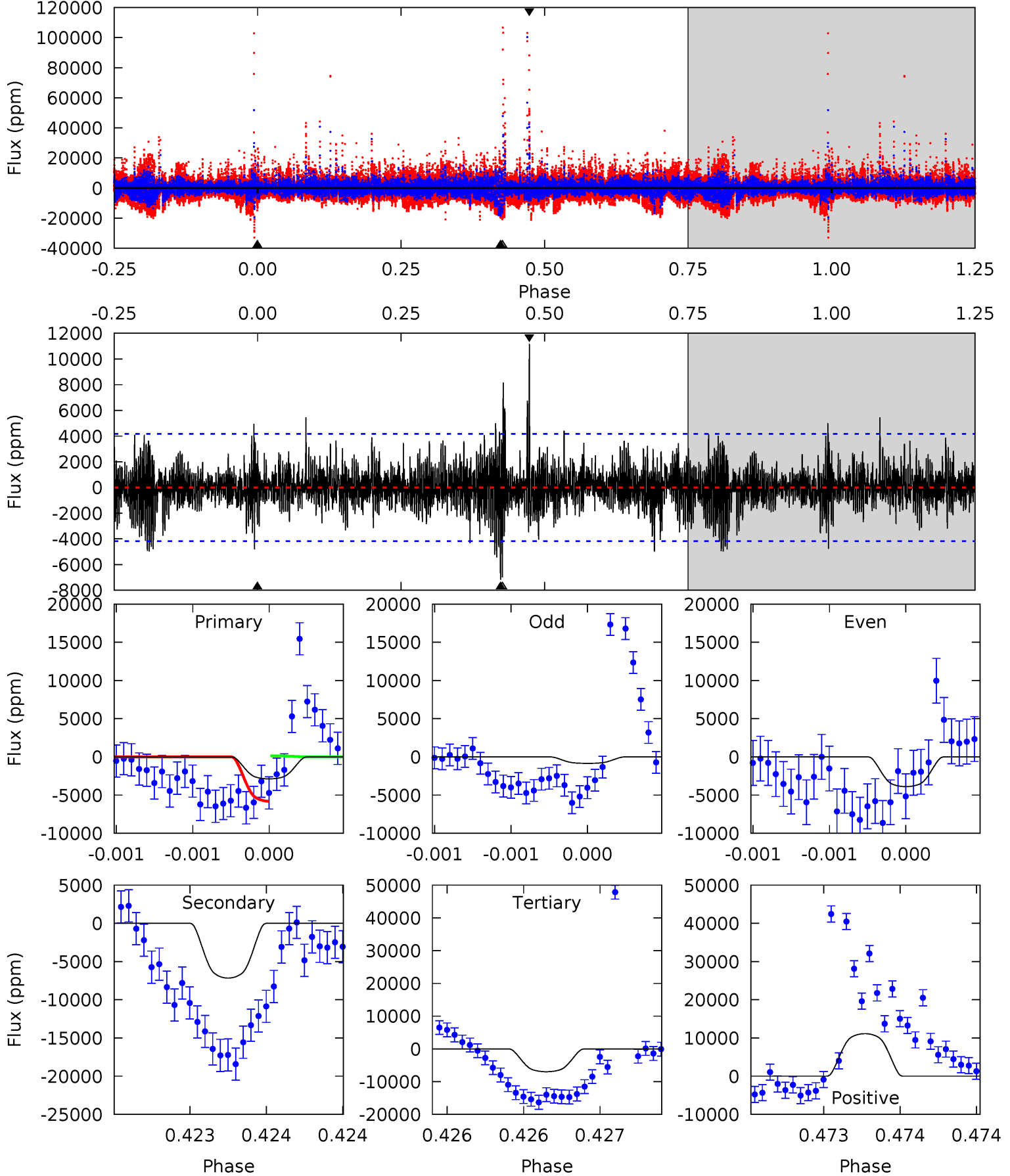
TCE 008423343-02 P=505.996246 Days $T_0=549.261432$ (BKJD)



DV Model-Shift Uniqueness Test

008423343-02, P = 505.981009 Days, E = 43.320842 Days

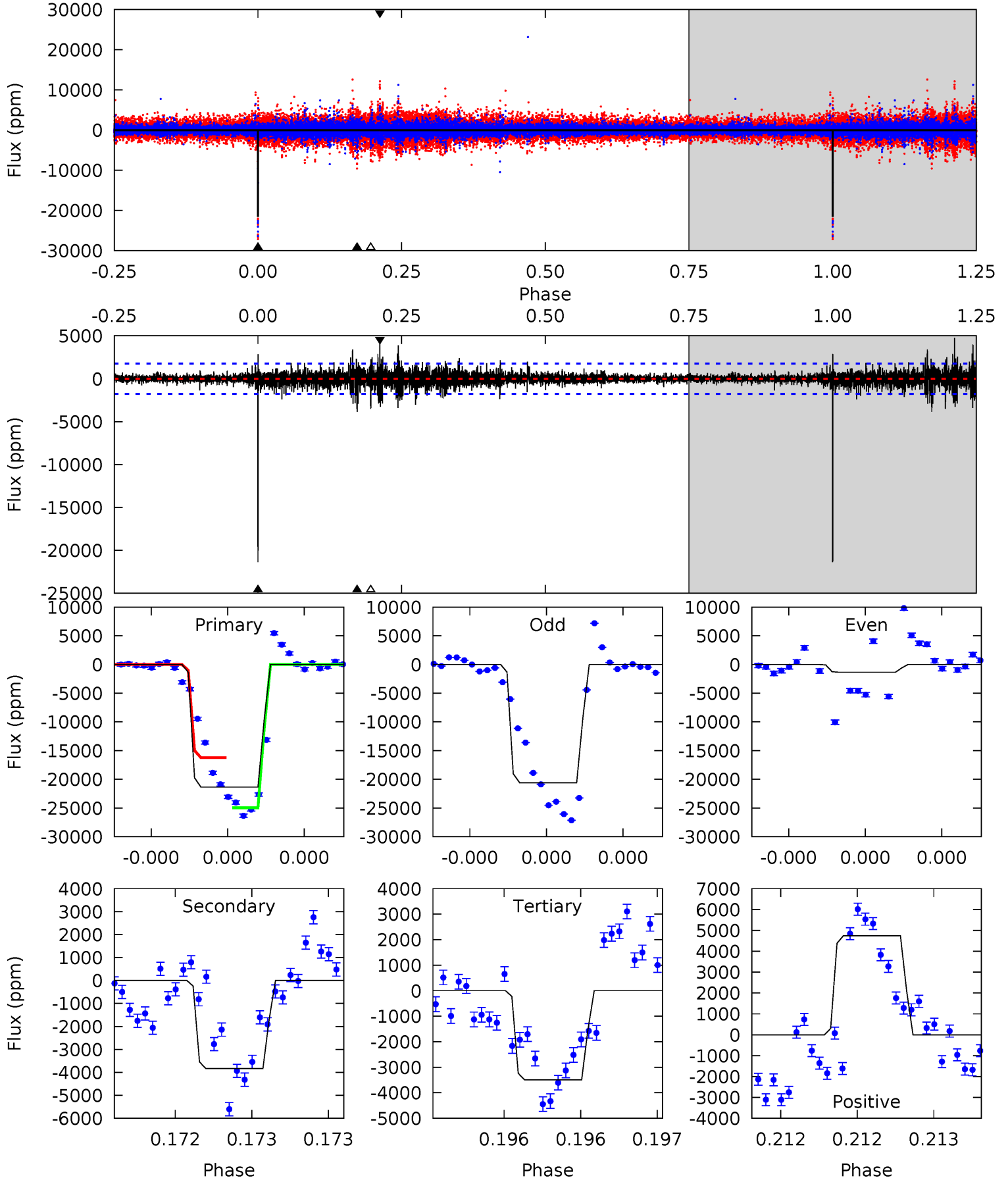
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.81	9.48	9.22	14.7	5.52	3.39	1.86	-5.41	-10.9	0.26	-5.23	1.04	3.38	0.61	3.83



Alt Model-Shift Uniqueness Test

008423343-02, P = 505.996246 Days, E = 43.265186 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
67.5	12.1	11.1	15.0	5.58	3.49	1.53	56.4	52.5	1.07	-2.86	33.2	0.49	0.18	0



Stellar Parameters For KIC 008423343

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4555^{+164}_{-164}	$4.571^{+0.059}_{-0.023}$	$0.160^{+0.200}_{-0.300}$	$0.728^{+0.036}_{-0.067}$	$0.721^{+0.056}_{-0.056}$	$2.628^{+0.669}_{-0.243}$
	+4%/-4%	+1%/-1%	+125%/-188%	+5%/-9%	+8%/-8%	+25%/-9%
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 008423343-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-7165 ± 756	$7.33^{+1.52}_{-1.57}$	226^{+9}_{-9}	4392^{+474}_{-310}	92760^{+54898}_{-29314}
Alt.	-3837 ± 317	$10.61^{+1.66}_{-1.62}$	226^{+9}_{-10}	3476^{+215}_{-186}	23583^{+9433}_{-5857}

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

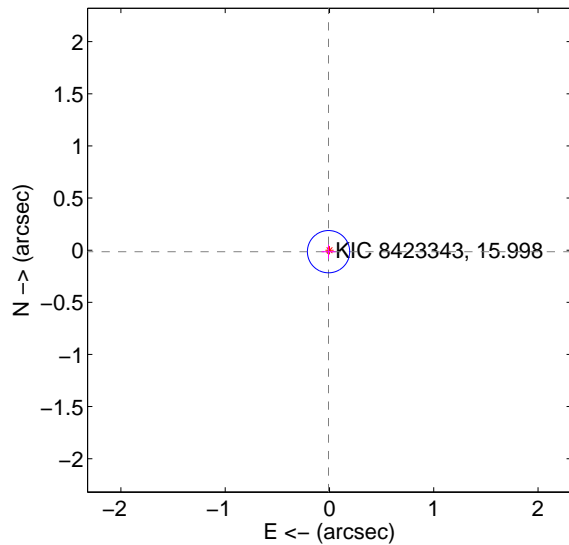
Supplemental centroid analysis for 008423343-02. Kepler magnitude: 16.00. Transit SNR 6.06

There are 1 quarters with good PRF difference image offsets

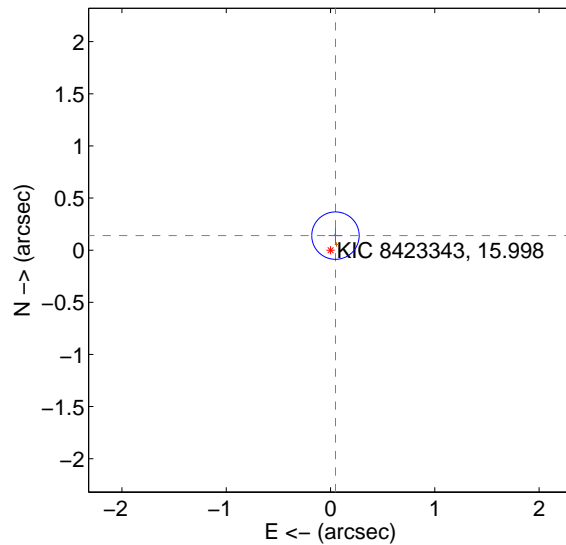
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.017 ± 0.068	0.25	0.009 ± 0.067	-0.014 ± 0.068
PRF-fit source offset from KIC position	0.147 ± 0.076	1.94	-0.047 ± 0.067	0.140 ± 0.078
photometric centroid source offset	0.81 ± 0.37	2.18	0.80 ± 0.37	-0.13 ± 0.37

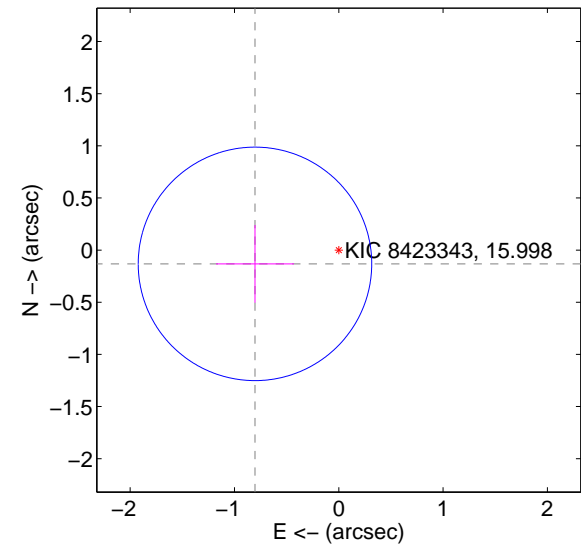
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

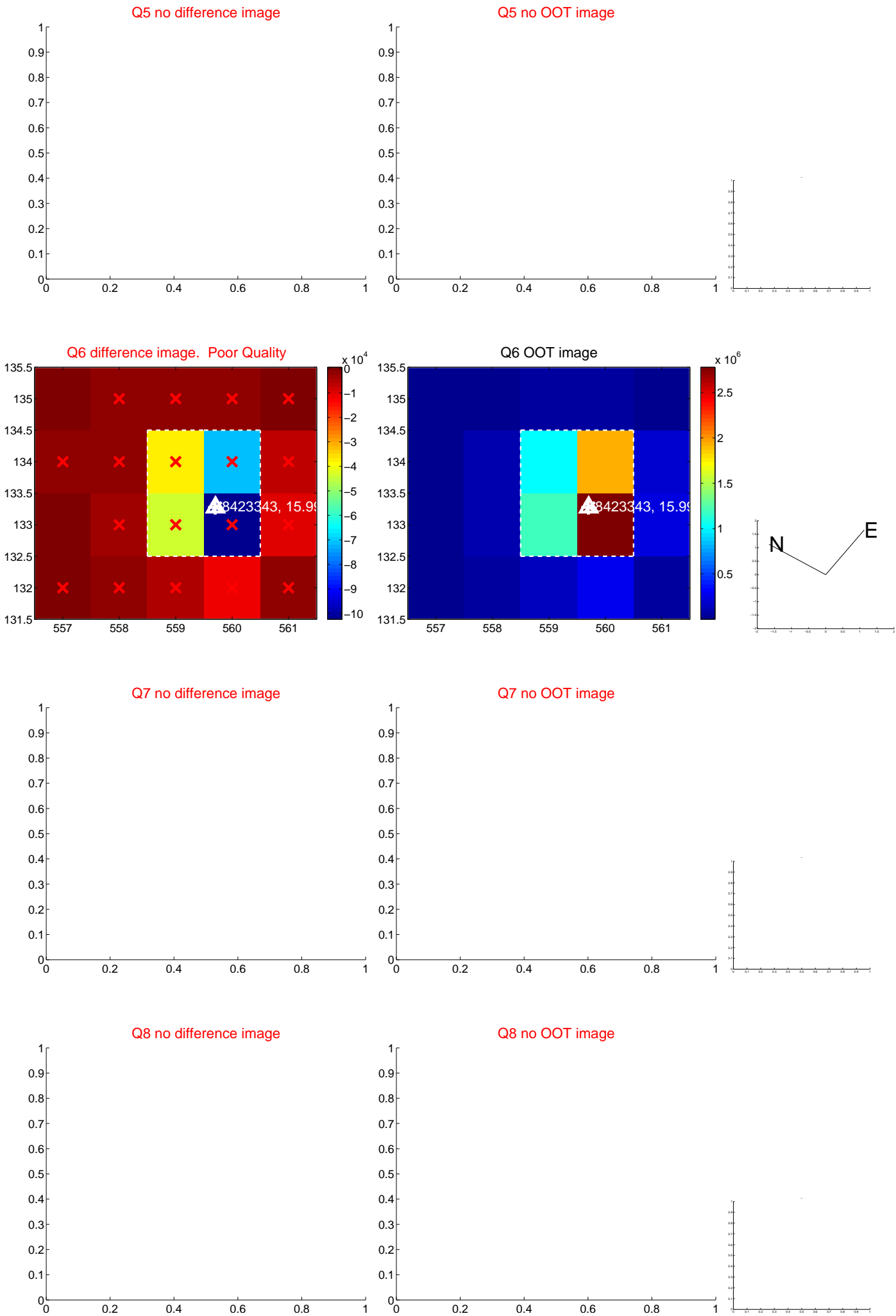


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

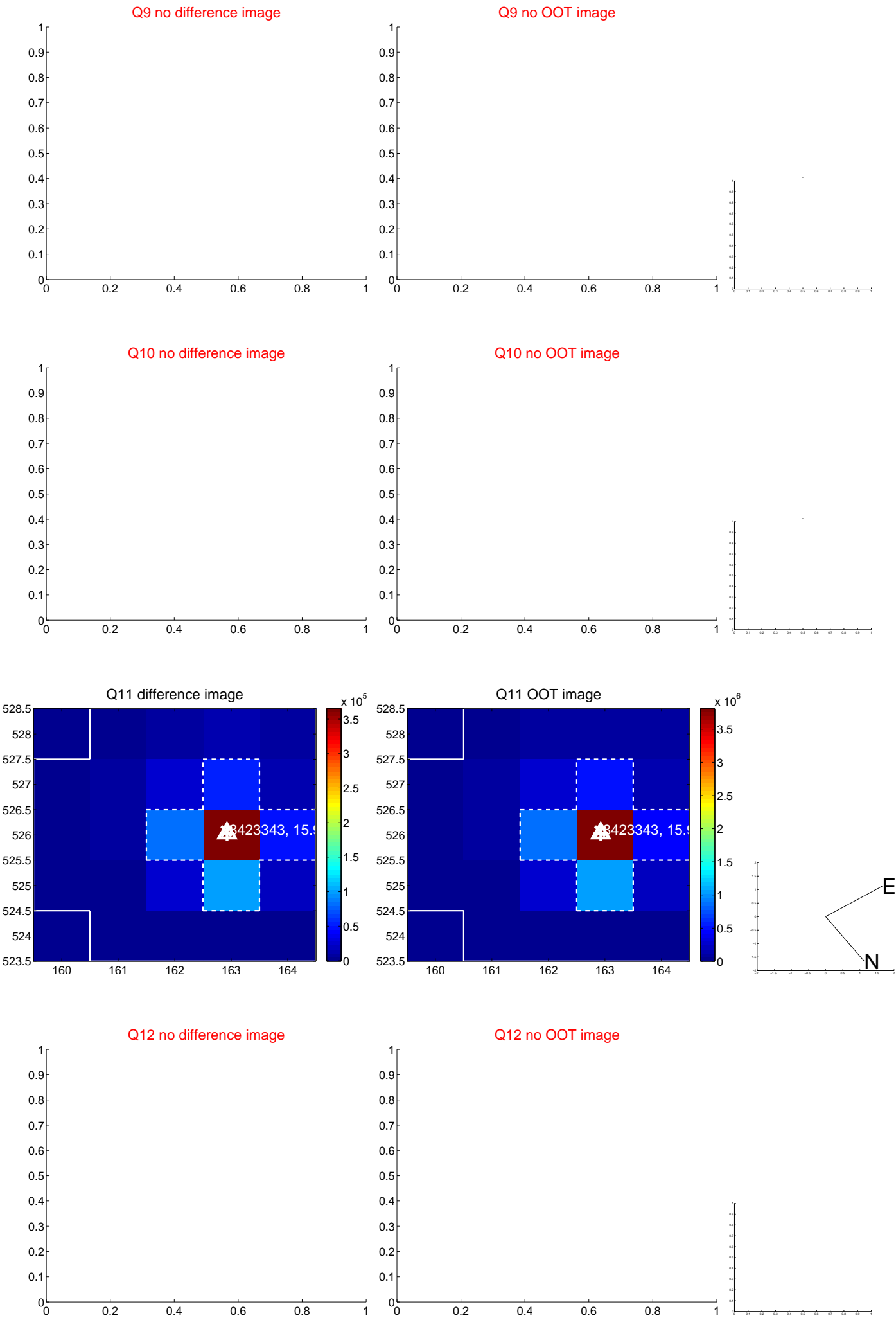
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



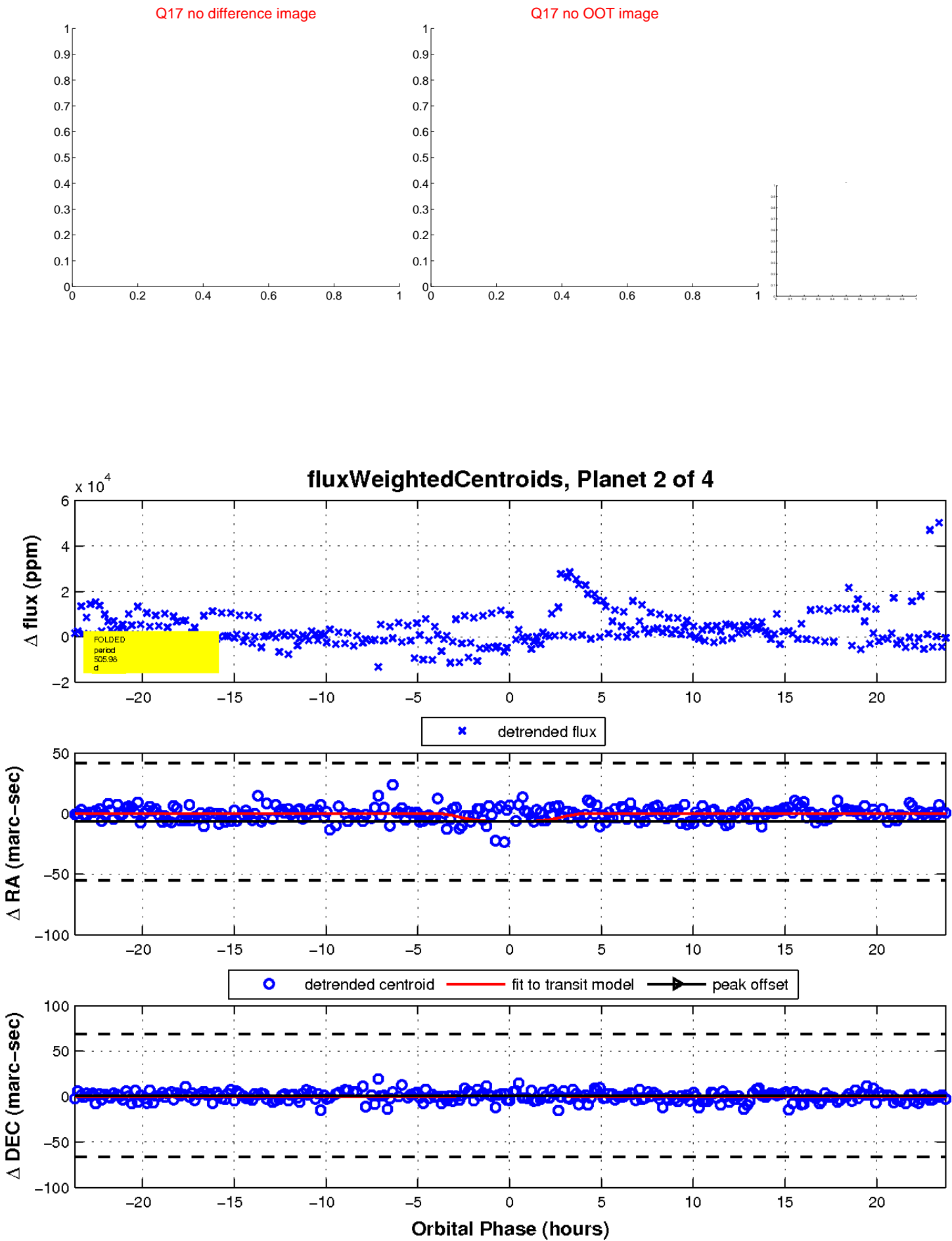
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

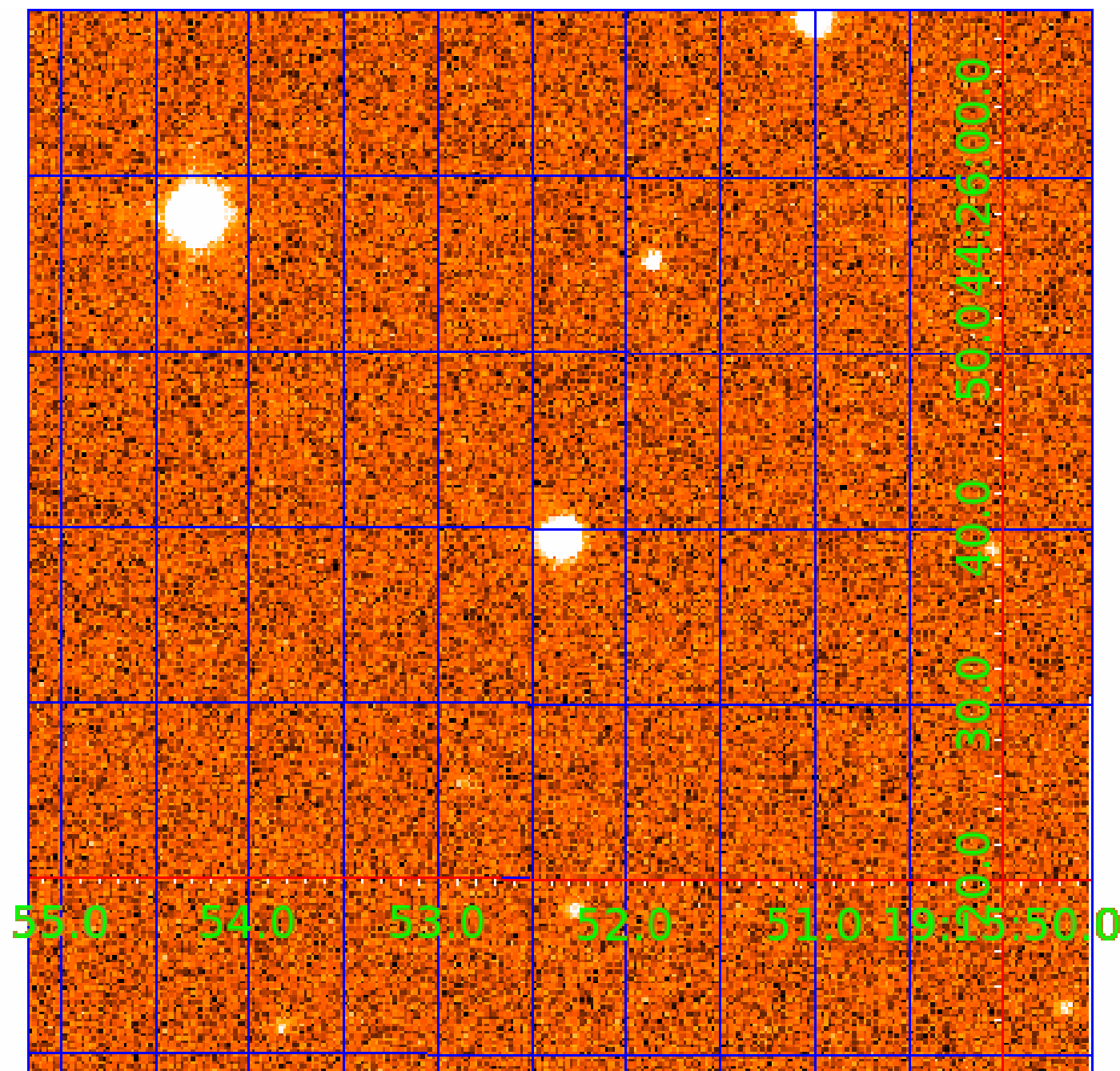


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008423343

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})
008423343-01	OBS	No	428.550267	391.404560	25837.4	43.758	18.1	16.5	0.73	4555	11.98	0.21
008423343-02	OBS	No	505.981009	549.301851	7245.7	7.936	13.5	6.1	0.73	4555	7.38	0.17
008423343-03	OBS	No	1.720567	132.612715	383.4	10.803	12.1	6.0	0.73	4555	1.47	322.14
008423343-04	OBS	No	0.572178	131.567444	3258.5	2.000	14.6	-1.0	0.73	4555	3.98	1398.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008423343-01	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008423343-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008423343-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
008423343-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—CENT_NOFITS

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.

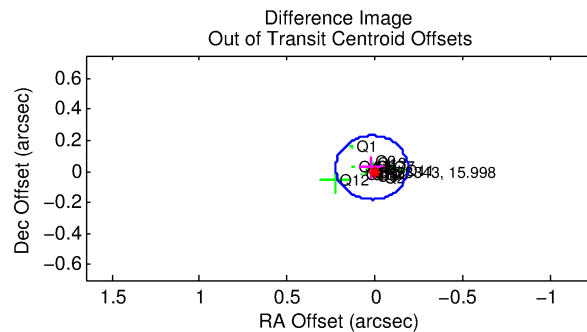
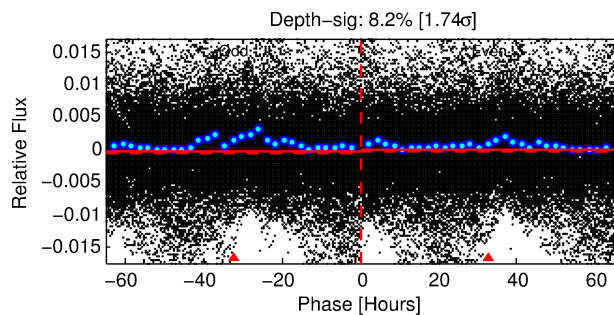
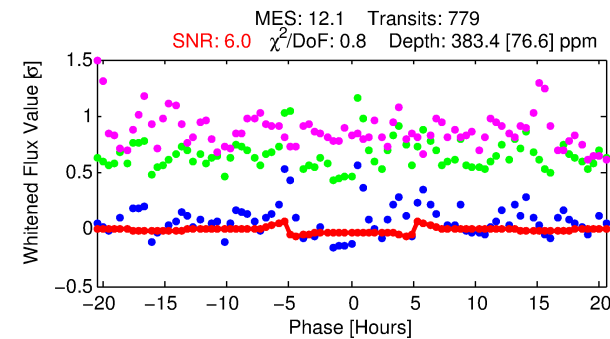
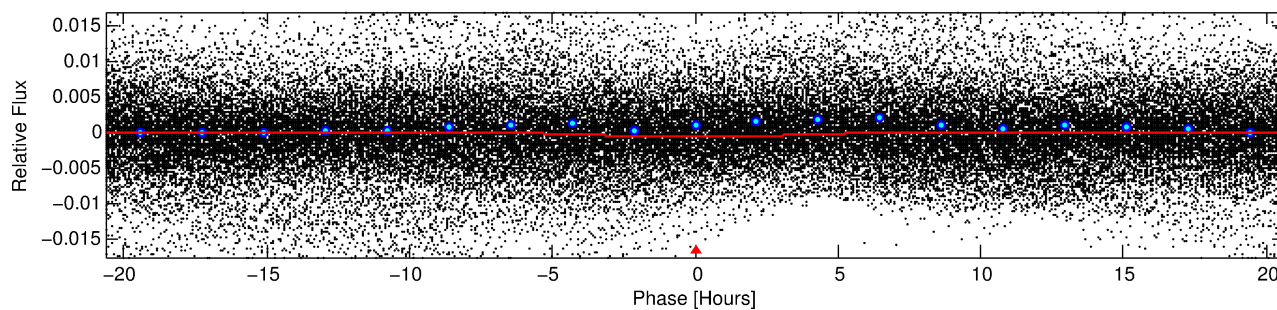
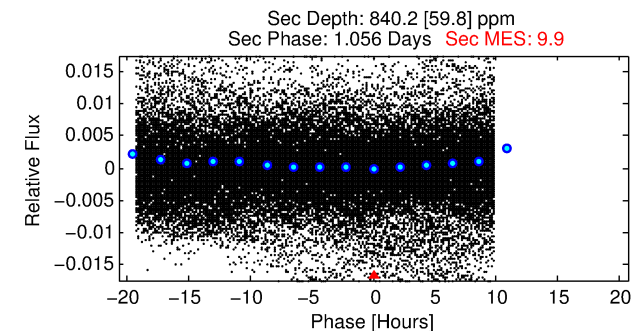
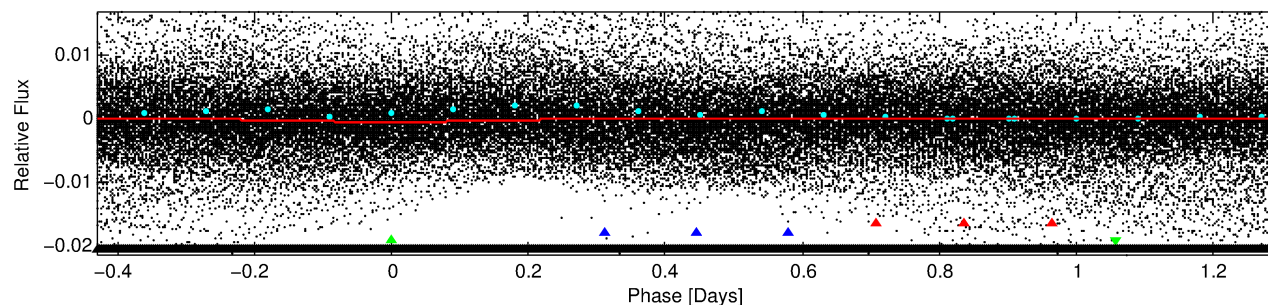
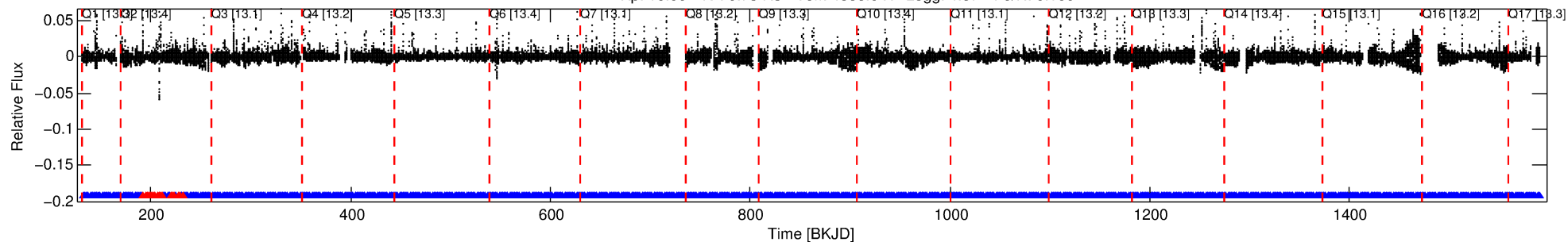
Ephemeris Match Information For 008423343-03

No Significant Match Found

DV One-Page Summary

KIC: 8423343 Candidate: 3 of 4 Period: 1.721 d

Kp: 16.00 R*: 0.73 Rs Teff: 4555.0 K Logg: 4.57 Fe/H: 0.160



DV Fit Results:

Period = 1.72057 [0.00002] d
Epoch = 132.6127 [0.0038] BKJD
Rp/R* = 0.0186 [0.0052]
a/R* = 1.27 [0.40]
b = 0.62 [0.85]
Seff = 322.14 [58.26]
Teff = 1080 [49] K
Rp = 1.47 [0.44] Re
a = 0.0252 [0.0019] AU
Ag = 134.93 [78.22] [1.71σ]
Teffp = 5693 [836] K [5.51σ]

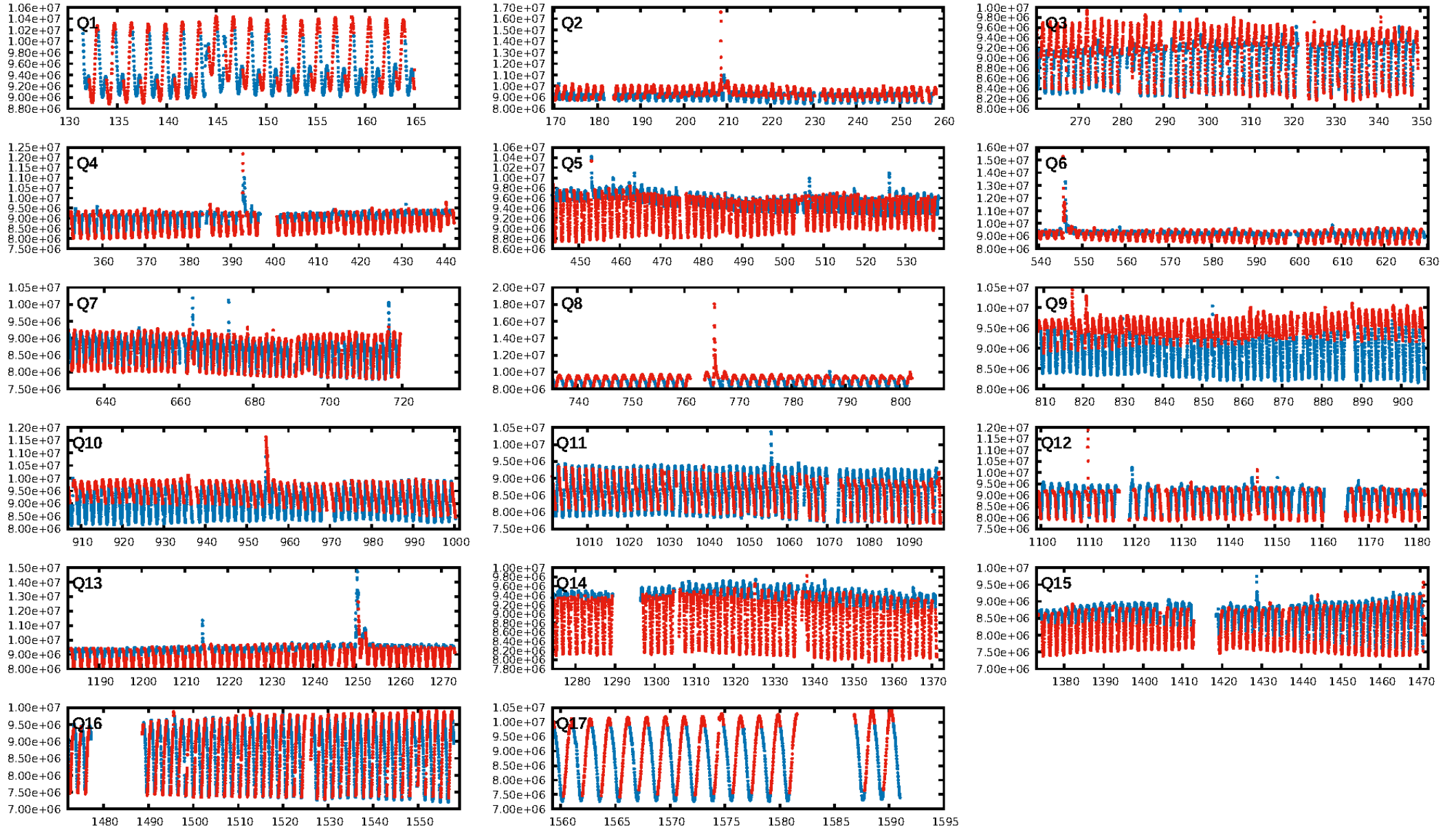
DV Diagnostic Results:

ShortPeriod-sig: 98.8% [2.51σ]
LongPeriod-sig: 100.0% [227.28σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.98 [727/745]
GhostDiagnostic-chr: -0.7282
Centroid-sig: 0.1%
Centroid-so: 0.633 arcsec [2.08σ]
OotOffset-rm: 0.033 arcsec [0.48σ]
KicOffset-rm: 0.102 arcsec [1.47σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.47 [8/17]
DiffImageOverlap-fno: 0.00 [0/17]

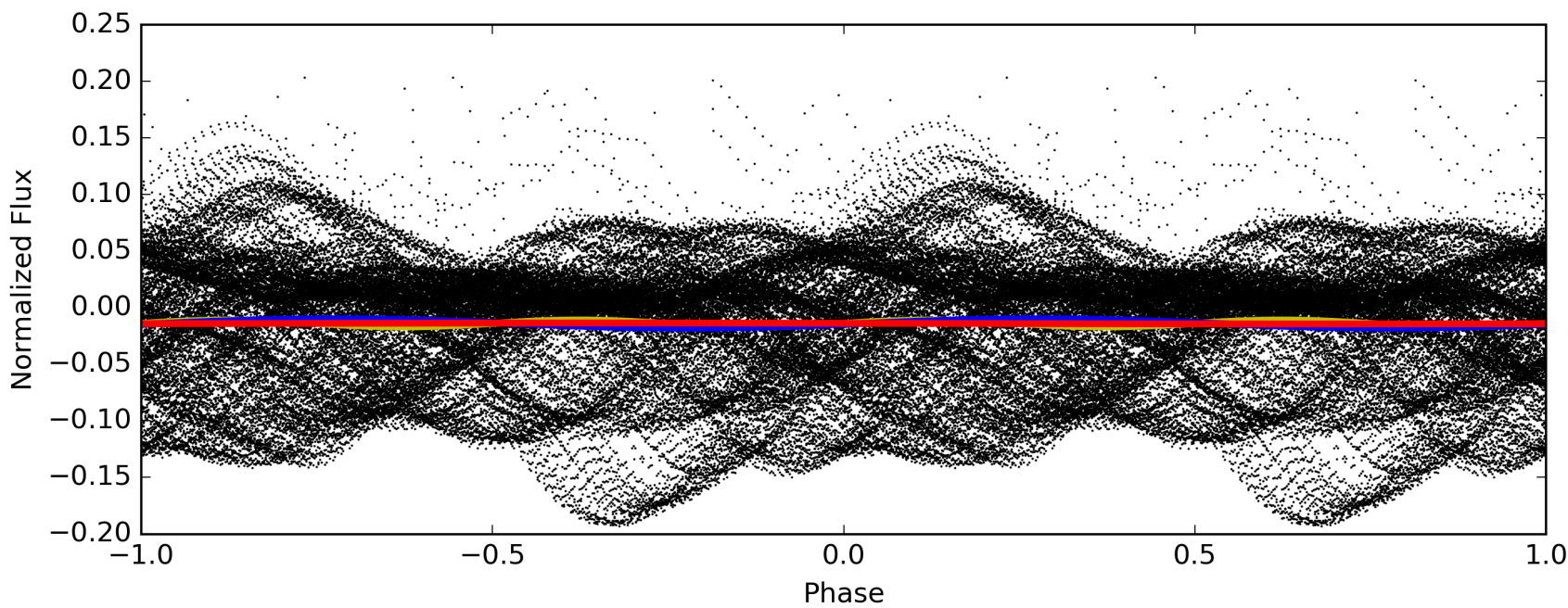
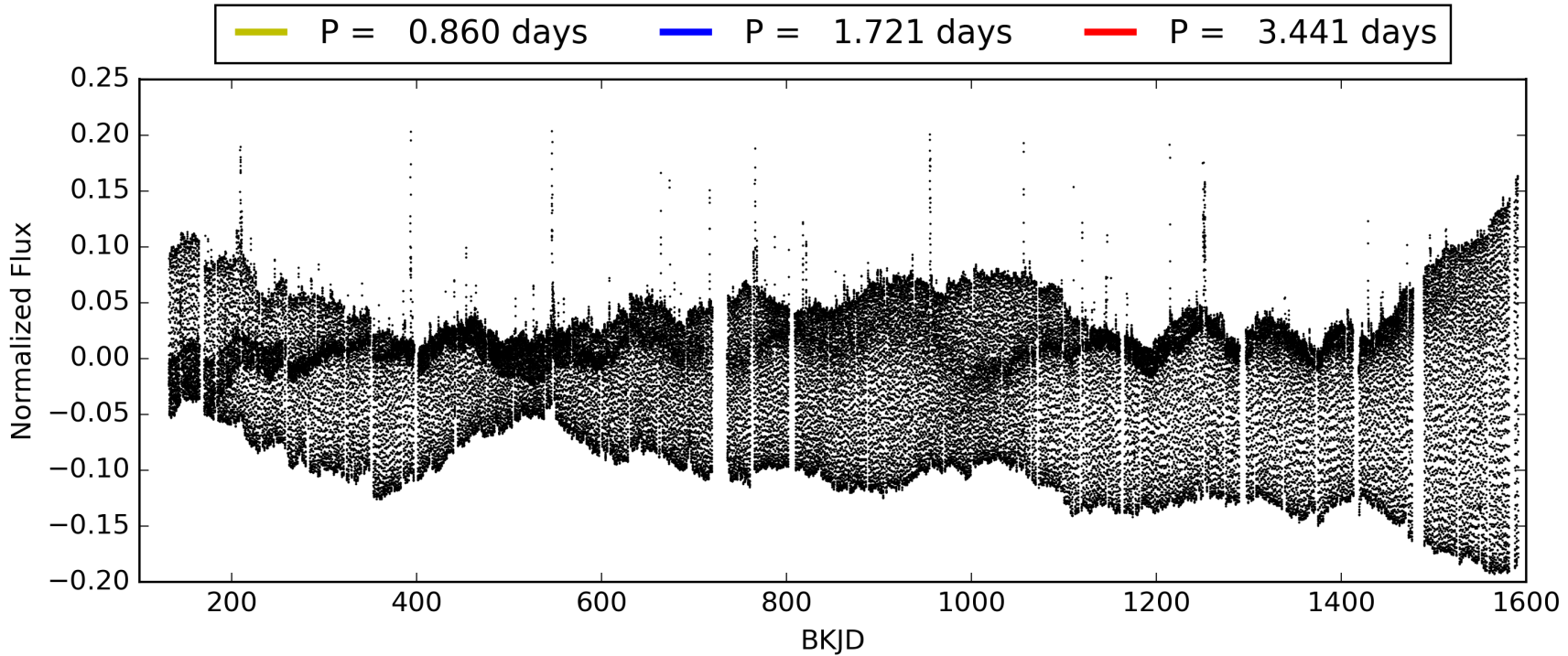
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 00:50:24 Z

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

TCE 008423343-03, PDC Light Curves

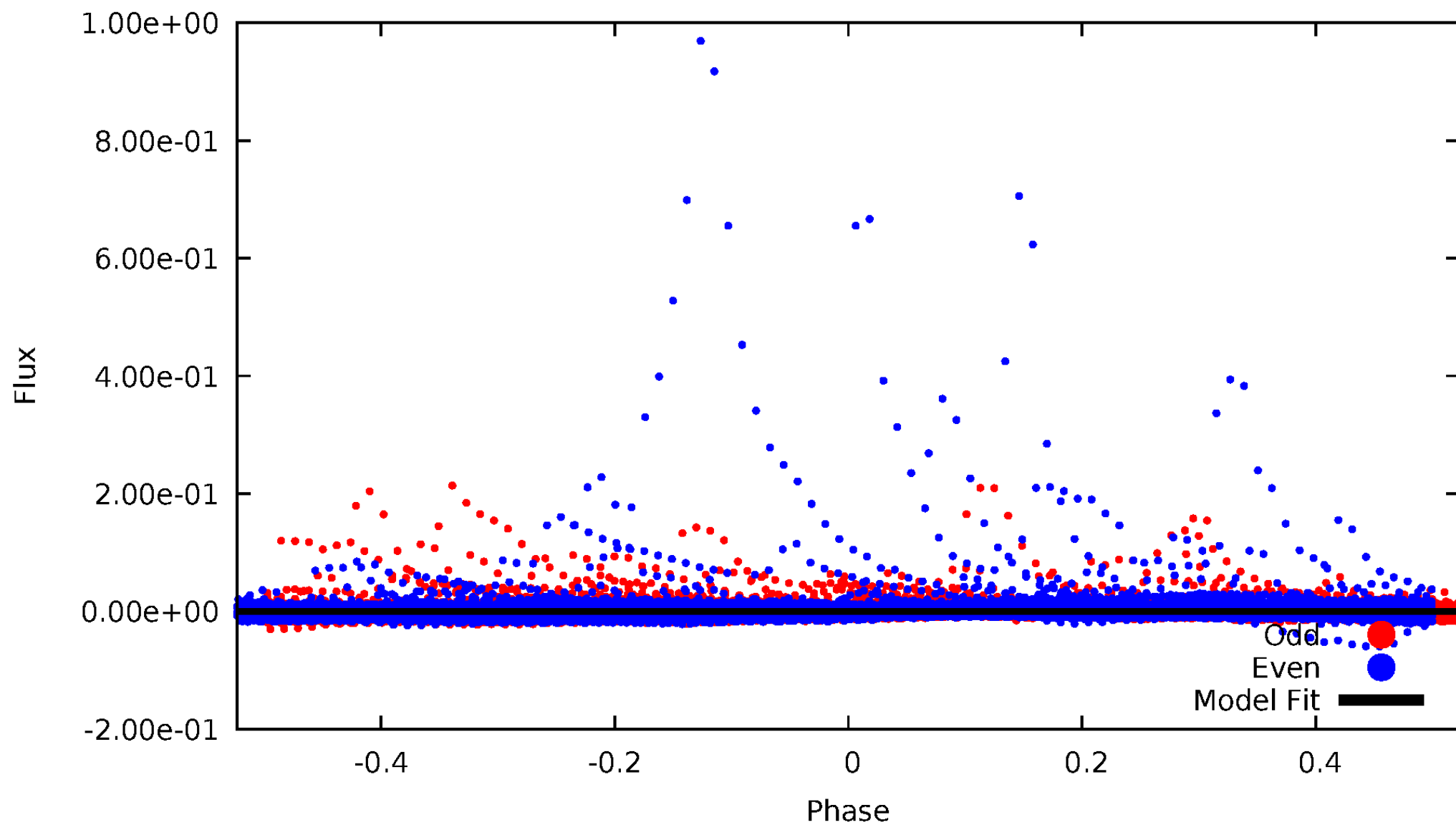


TCE 008423343-03



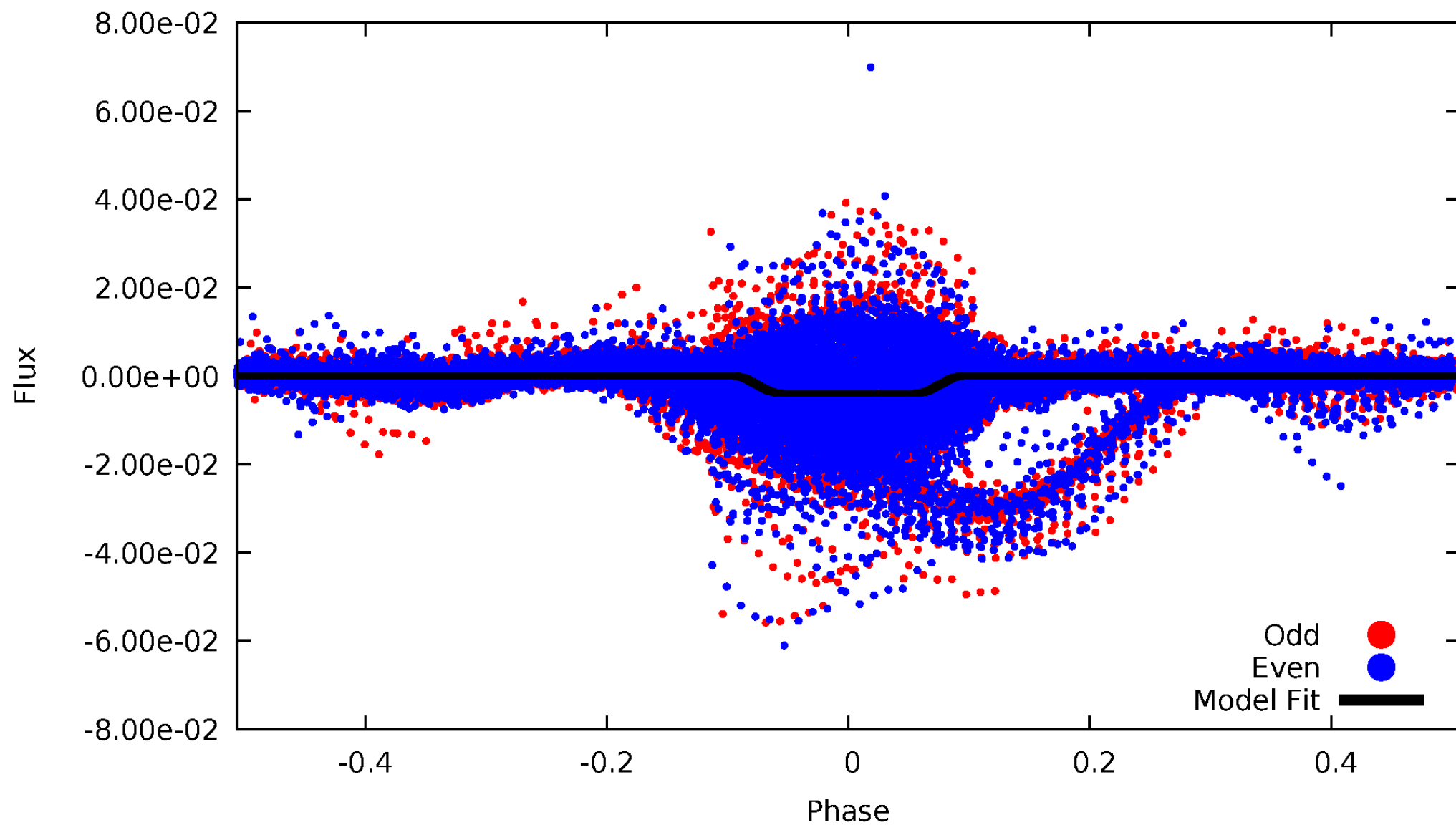
DV Odd/Even

TCE 008423343-03



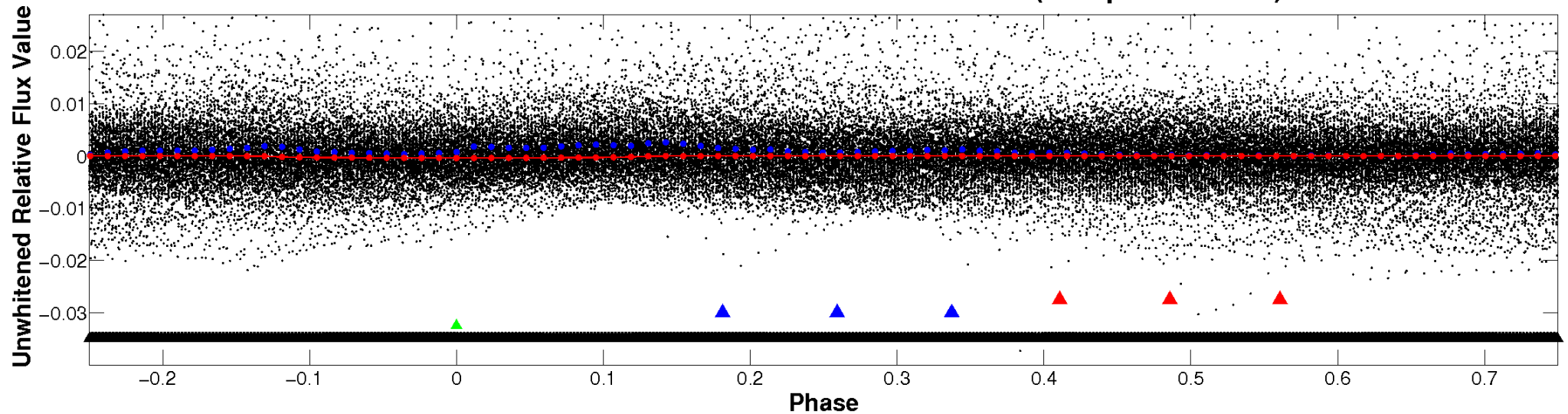
ALT Odd/Even

TCE 008423343-03

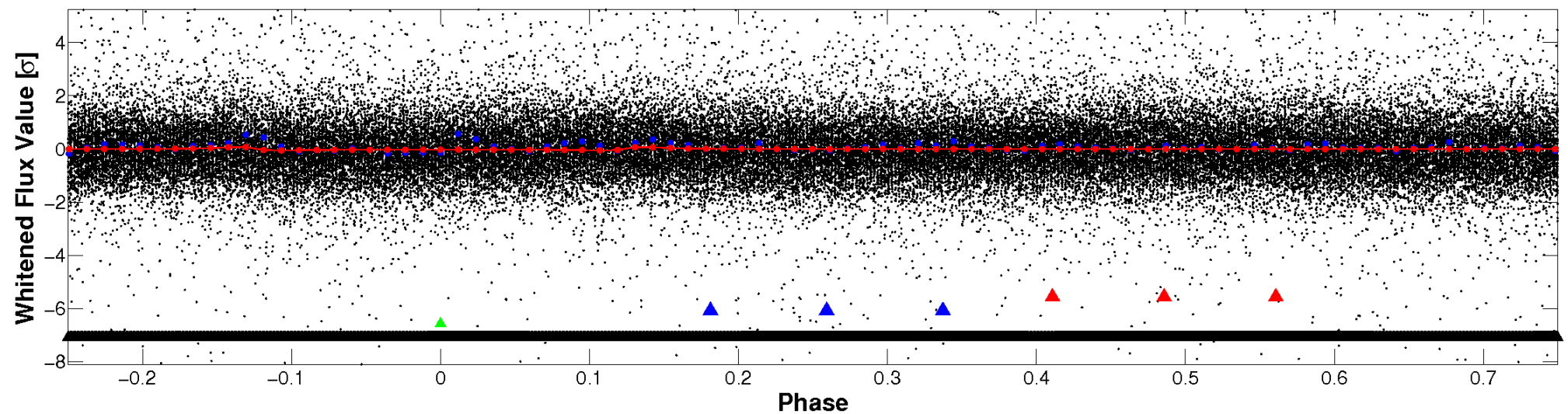


Non-Whitened Vs. Whitened Light Curve

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

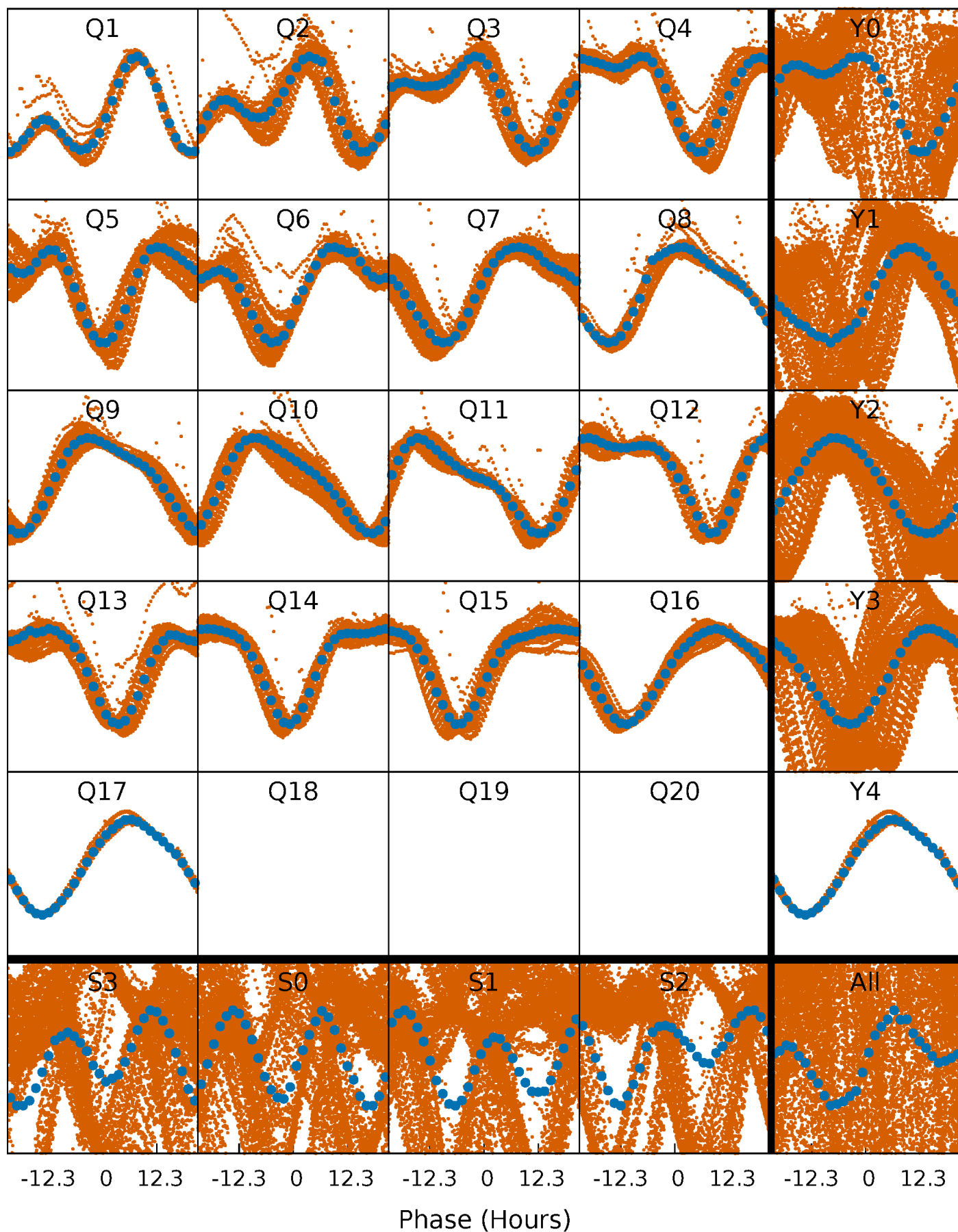


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



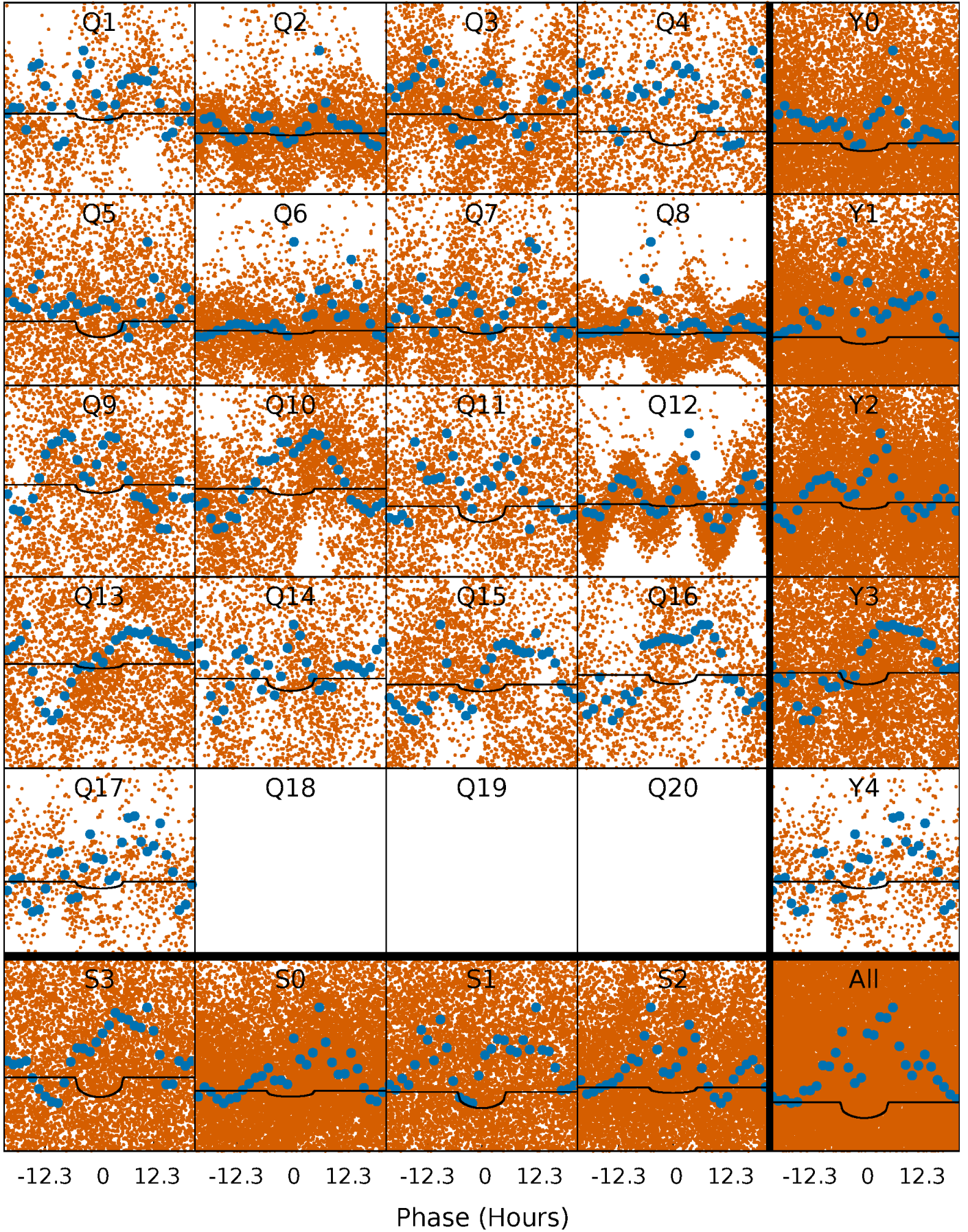
PDC Quarter-Phased Transit Curves

TCE 008423343-03 P= 1.720567 Days $T_0=132.612715$ (BKJD)



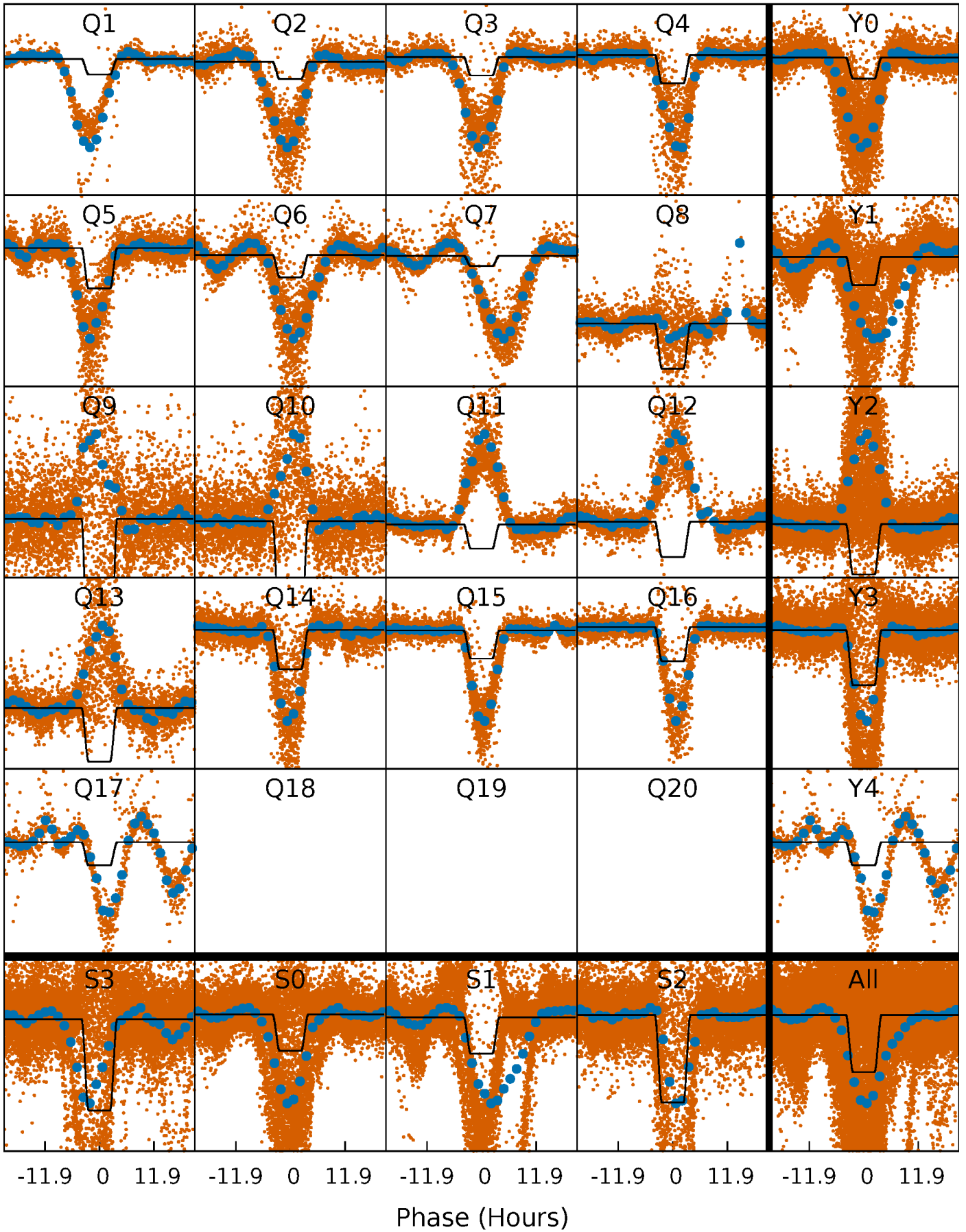
DV Quarter-Phased Transit Curves

TCE 008423343-03 P= 1.720567 Days $T_0=132.612715$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

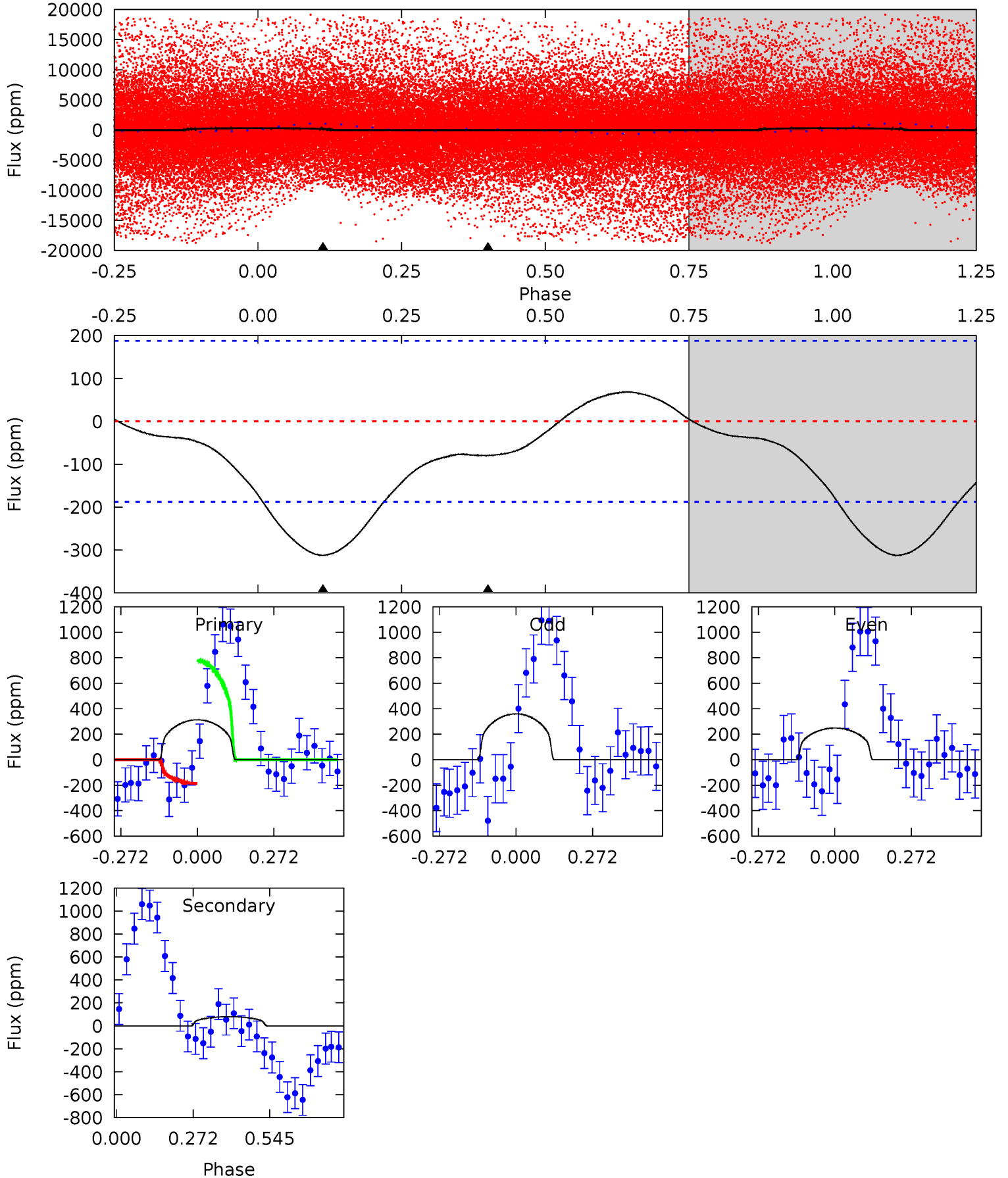
TCE 008423343-03 P= 1.715826 Days $T_0=131.848950$ (BKJD)



DV Model-Shift Uniqueness Test

008423343-03, P = 1.720567 Days, E = 130.892148 Days

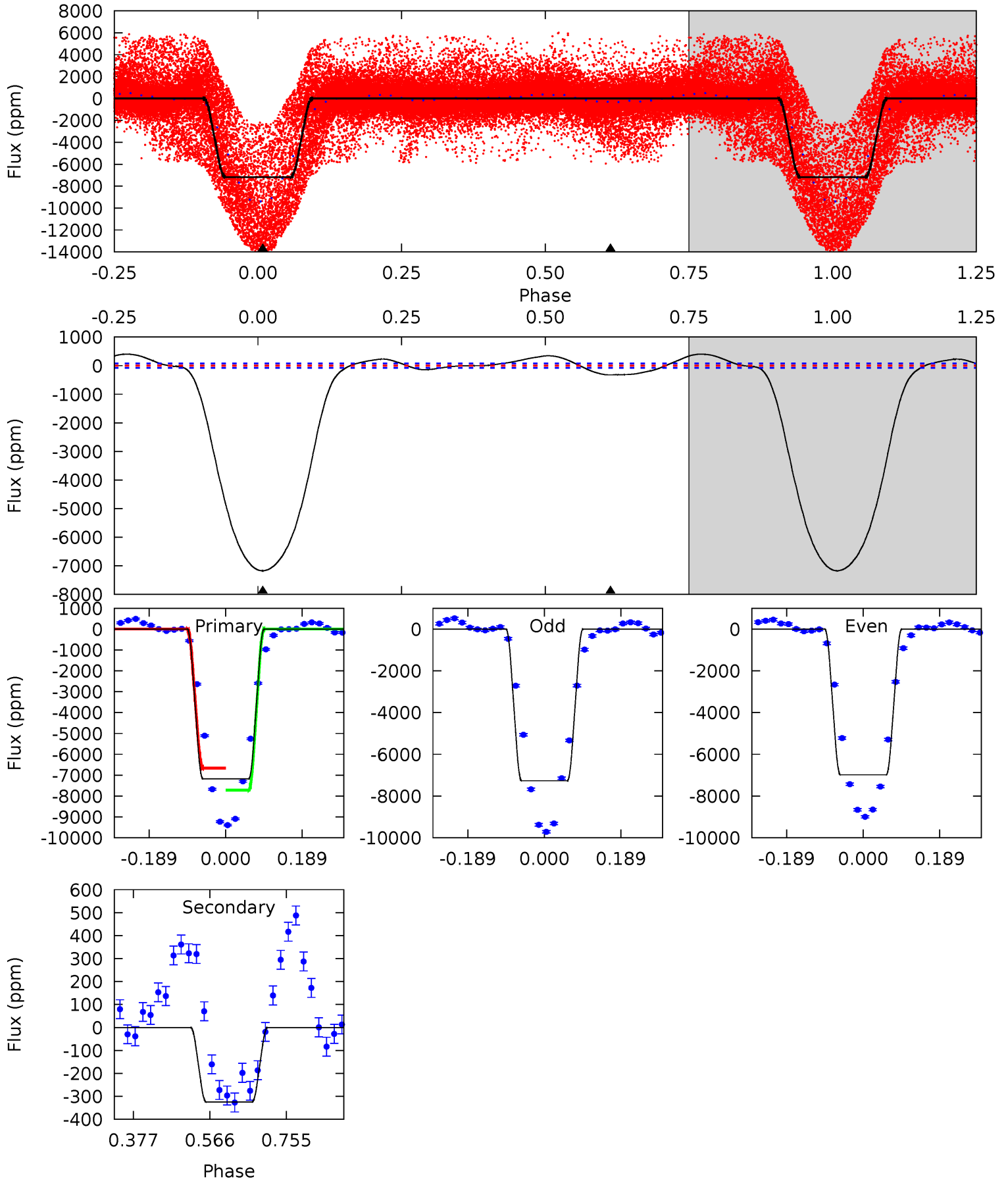
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.24	1.85	0	0	4.35	1.10	0.76	7.24	7.24	1.85	1.85	1.30	4.77	0.18	7.92



Alt Model-Shift Uniqueness Test

008423343-03, P = 1.715826 Days, E = 130.133124 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
402.1	18.2	0	0	4.43	1.31	6.64	402.1	402.1	18.2	18.2	7.89	0.77	0.05	0



Stellar Parameters For KIC 008423343

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4555^{+164}_{-164}	$4.571^{+0.059}_{-0.023}$	$0.160^{+0.200}_{-0.300}$	$0.728^{+0.036}_{-0.067}$	$0.721^{+0.056}_{-0.056}$	$2.628^{+0.669}_{-0.243}$
	+4%/-4%	+1%/-1%	+125%/-188%	+5%/-9%	+8%/-8%	+25%/-9%
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 008423343-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-80 ± 43	$1.45^{+0.41}_{-0.38}$	1500^{+62}_{-63}	3521^{+532}_{-489}	13^{+16}_{-8}
Alt.	-325 ± 18	$4.92^{+0.46}_{-0.47}$	1501^{+55}_{-59}	2993^{+111}_{-108}	$4.690^{+1.098}_{-0.752}$

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

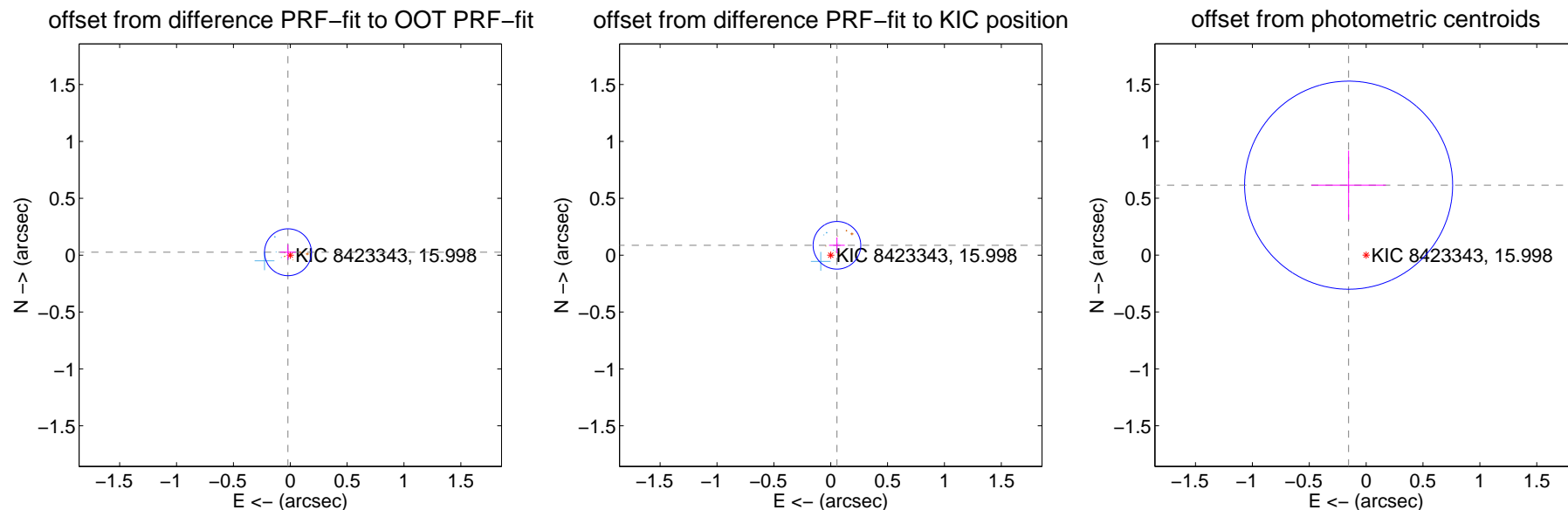
DV Centroid Data

Supplemental centroid analysis for 008423343-03. Kepler magnitude: 16.00. Transit SNR 5.96

There are 8 quarters with good PRF difference image offsets

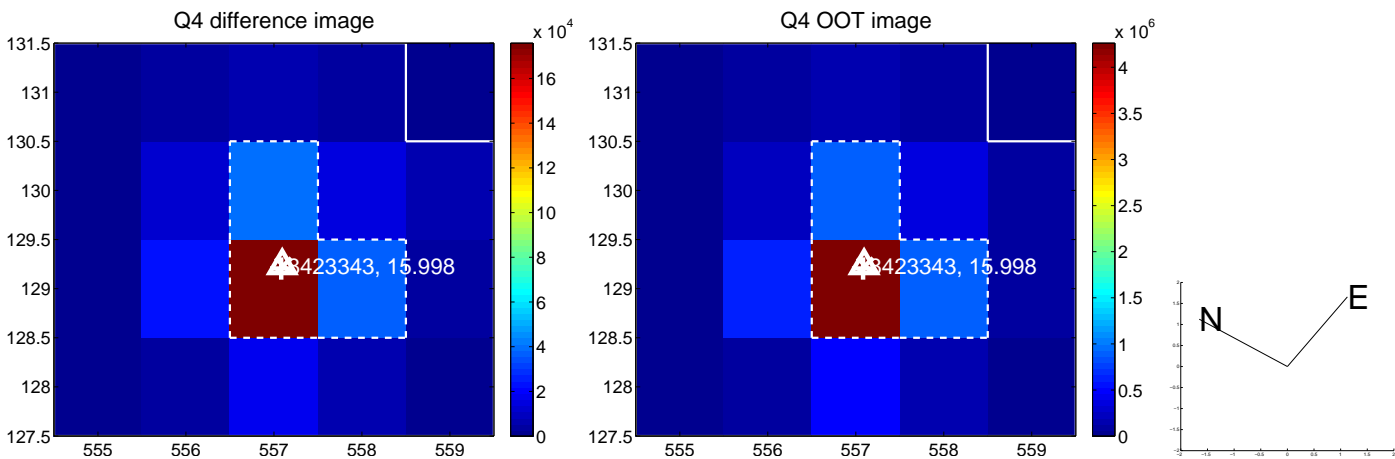
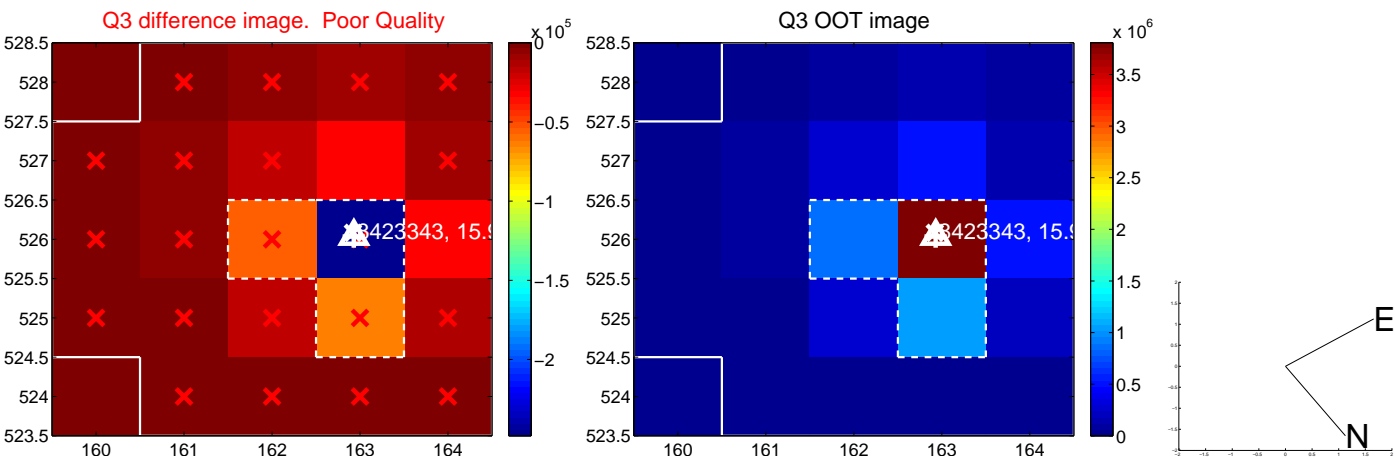
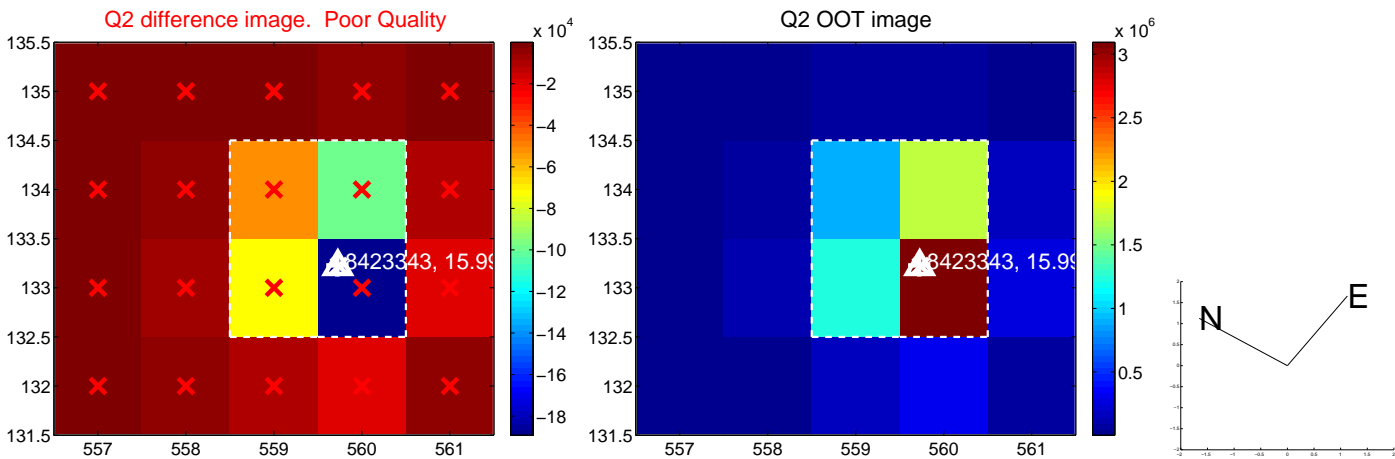
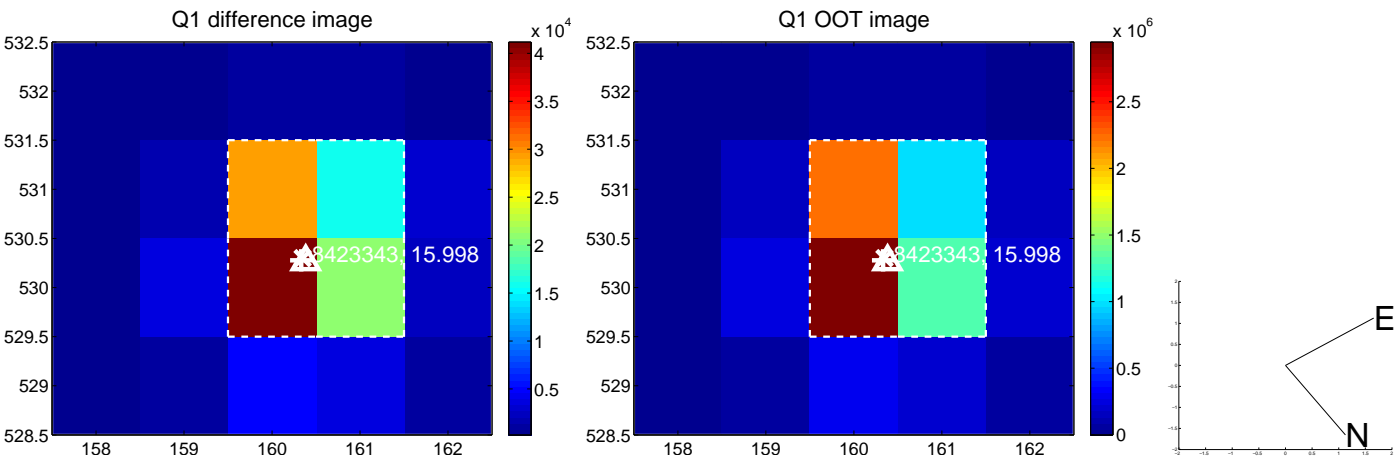
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.033 ± 0.069	0.48	0.020 ± 0.070	0.026 ± 0.068
PRF-fit source offset from KIC position	0.102 ± 0.070	1.47	-0.055 ± 0.069	0.087 ± 0.069
photometric centroid source offset	0.63 ± 0.30	2.08	0.15 ± 0.33	0.61 ± 0.30

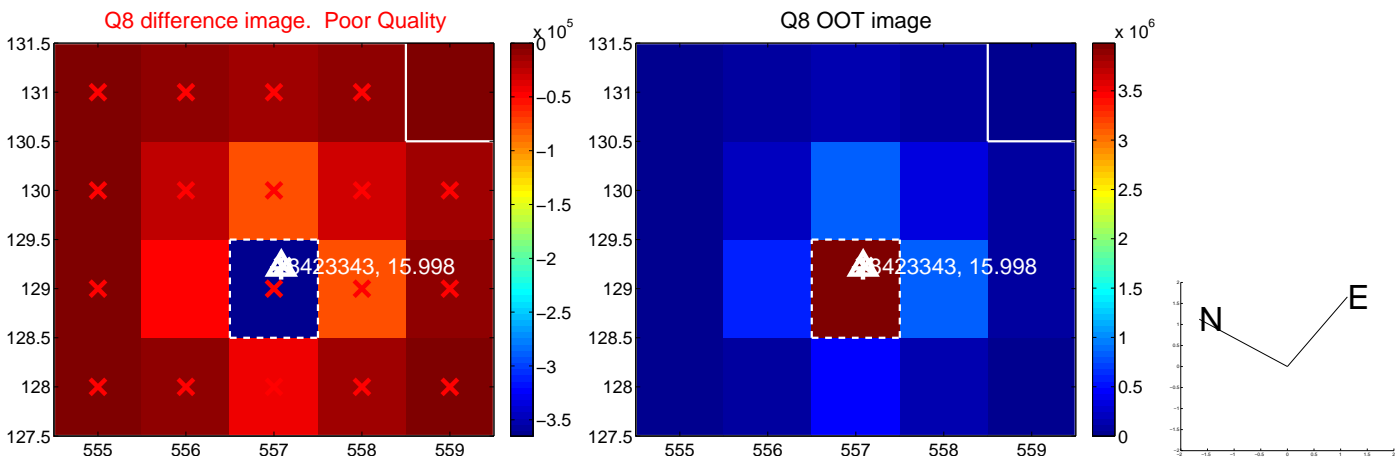
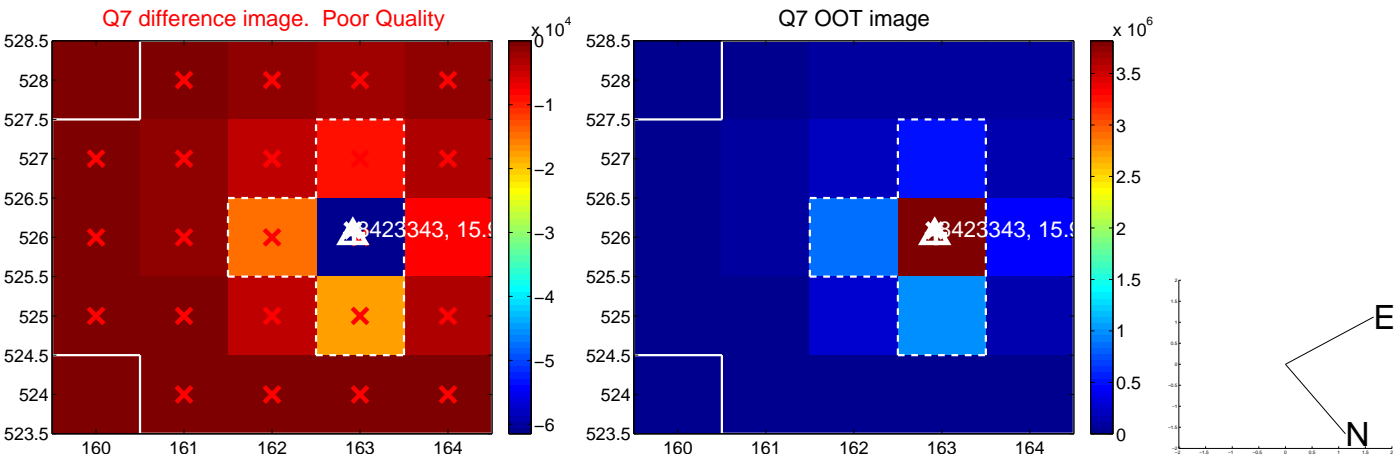
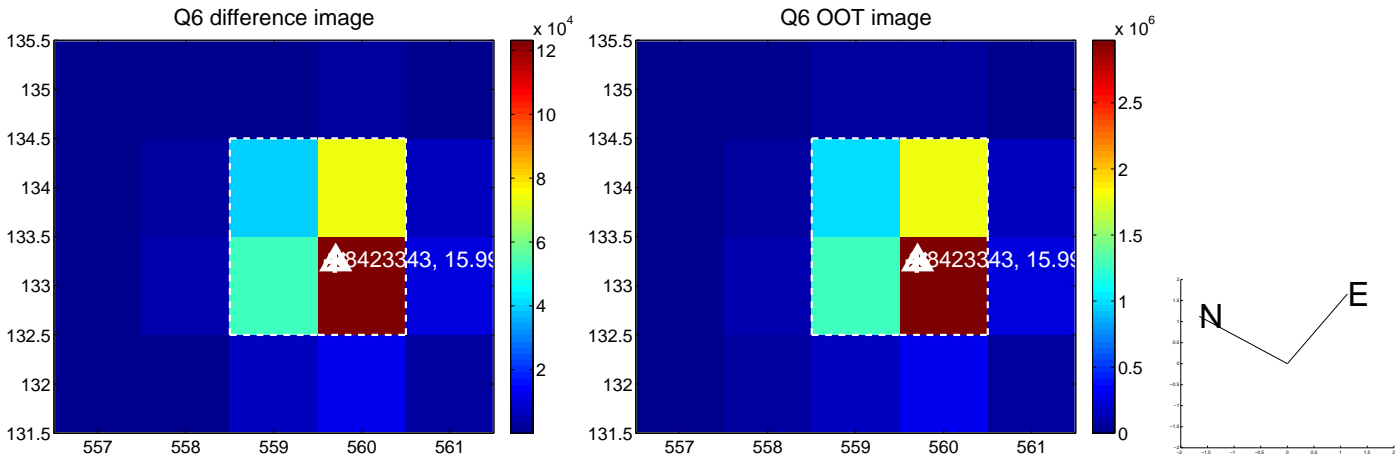
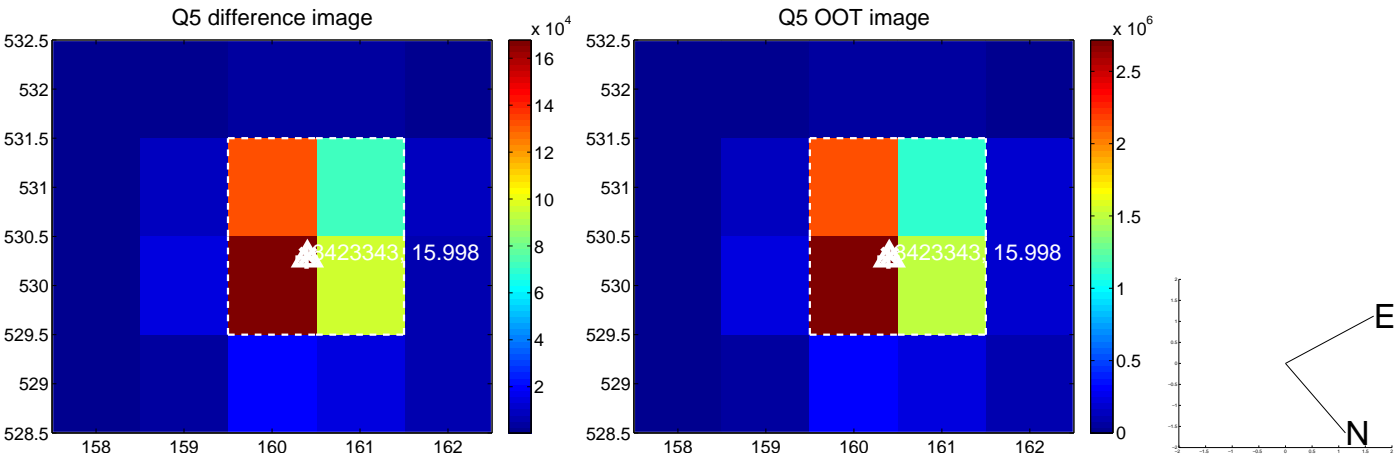


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

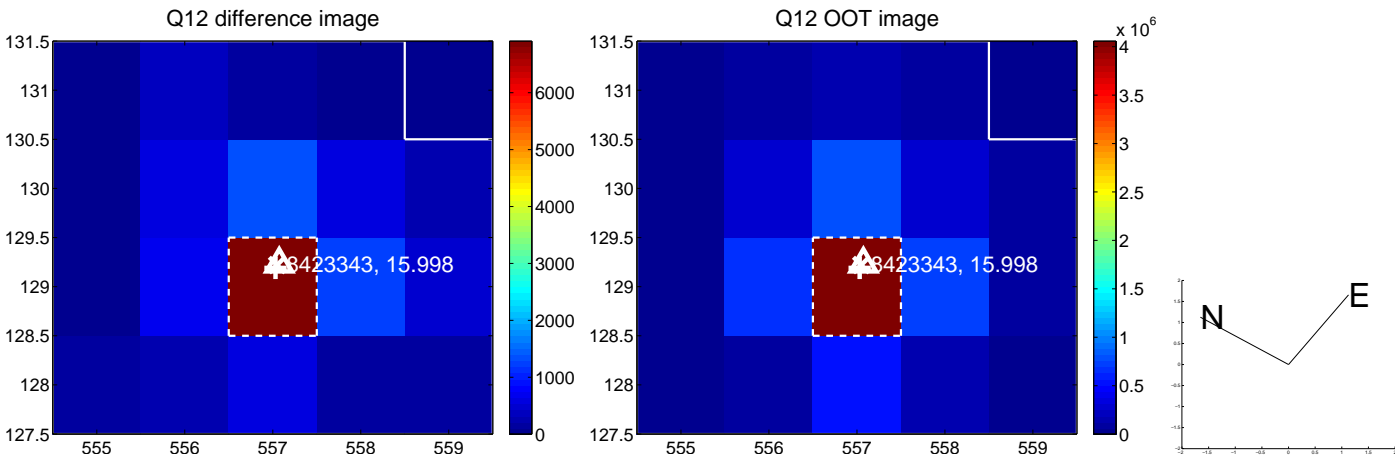
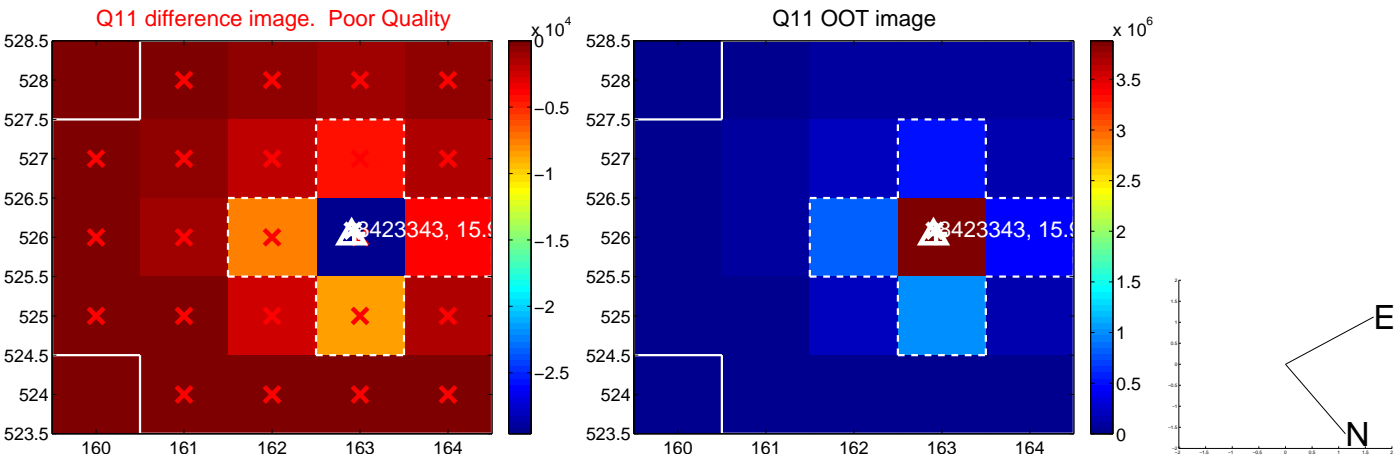
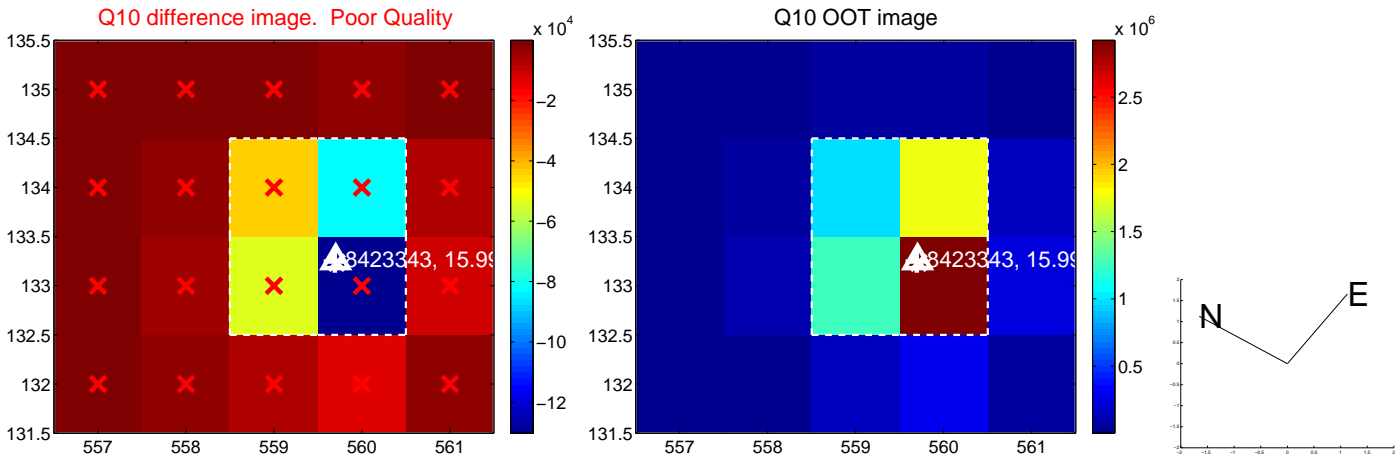
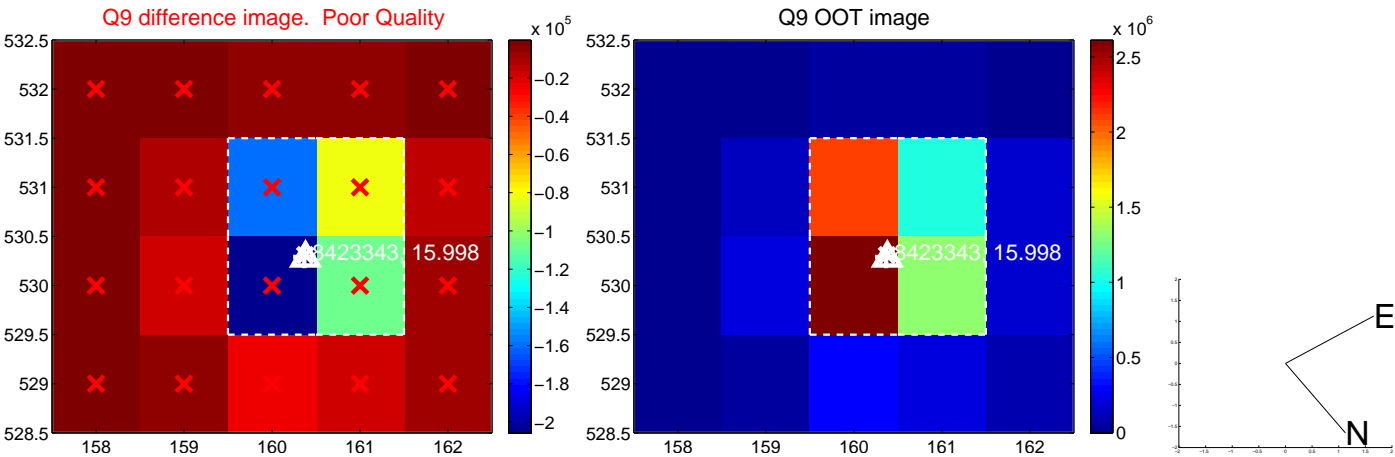
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



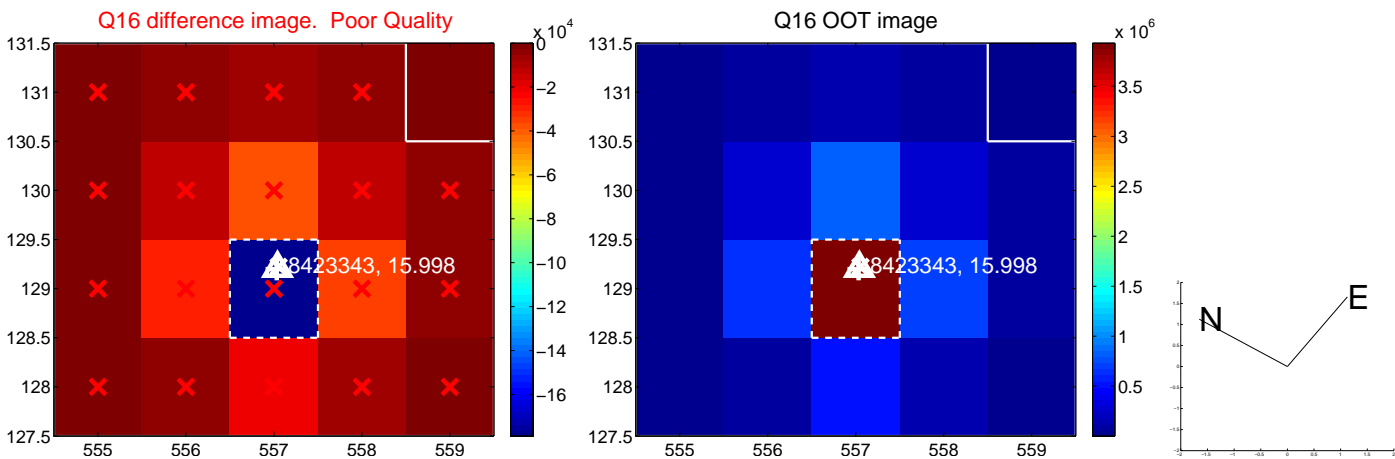
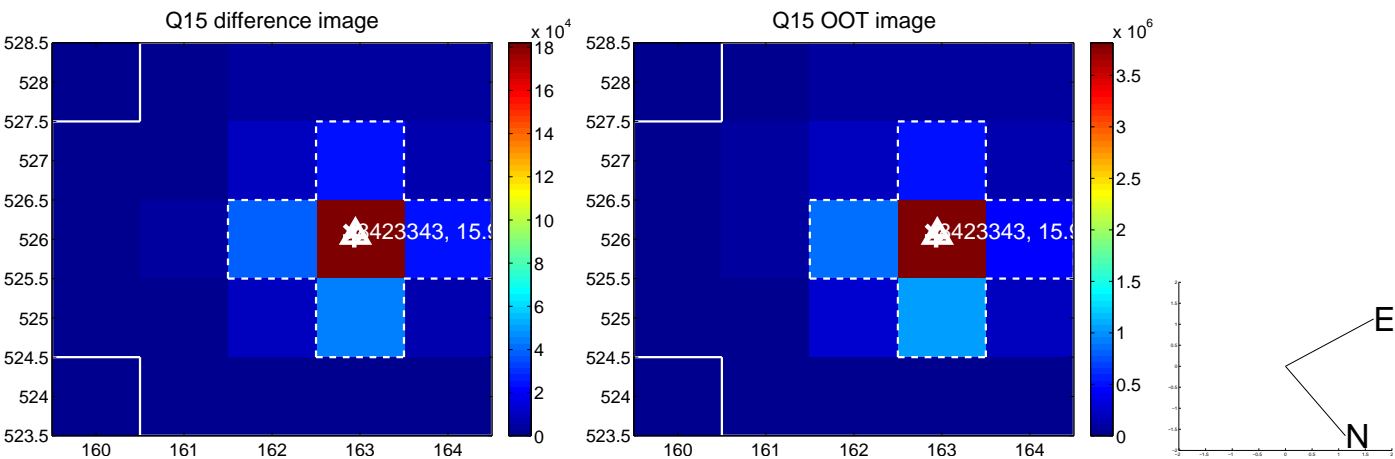
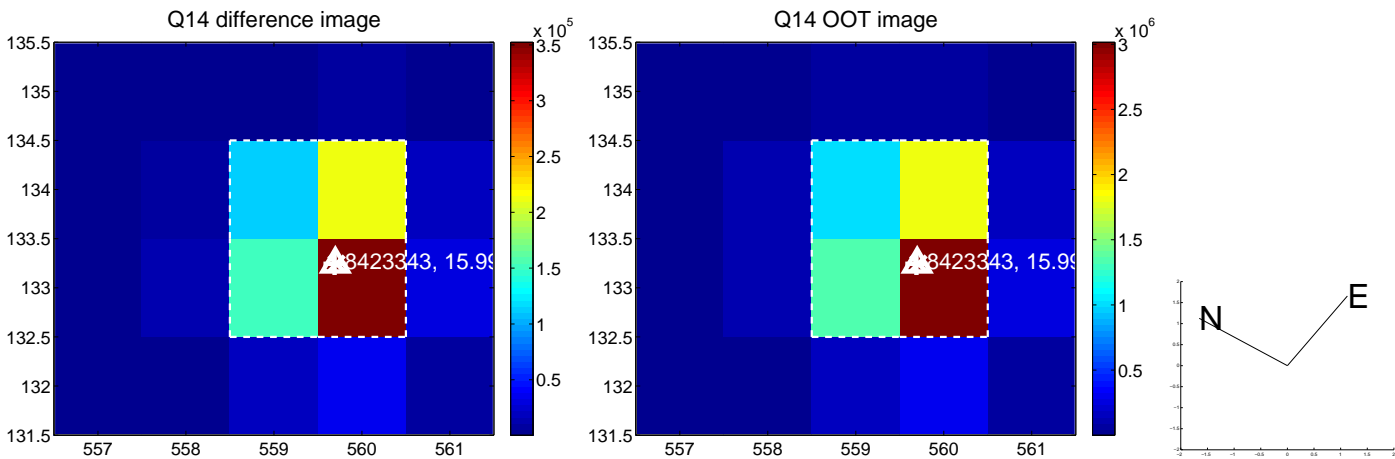
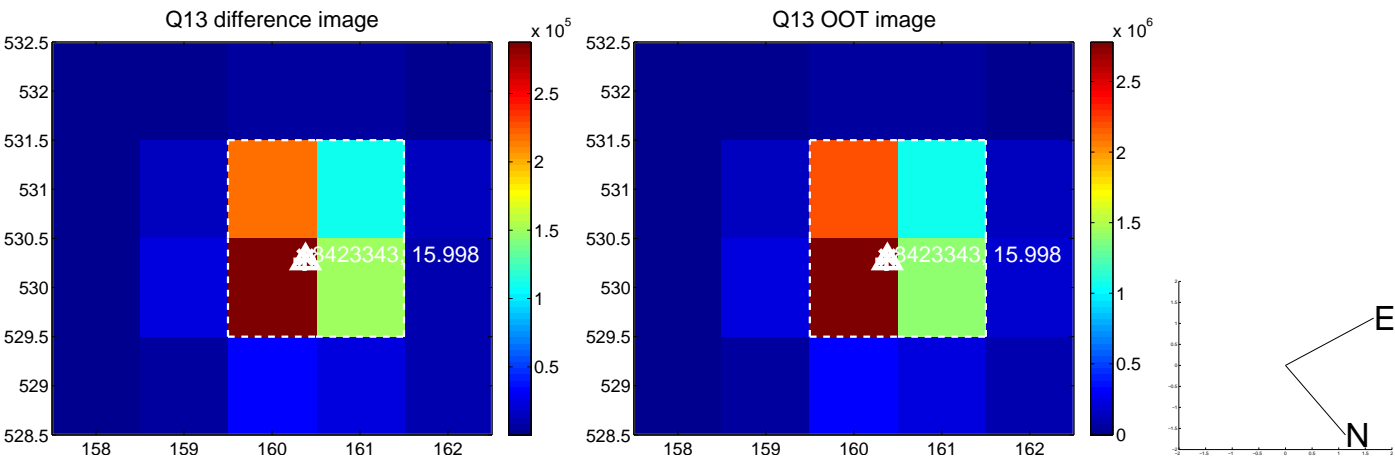
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



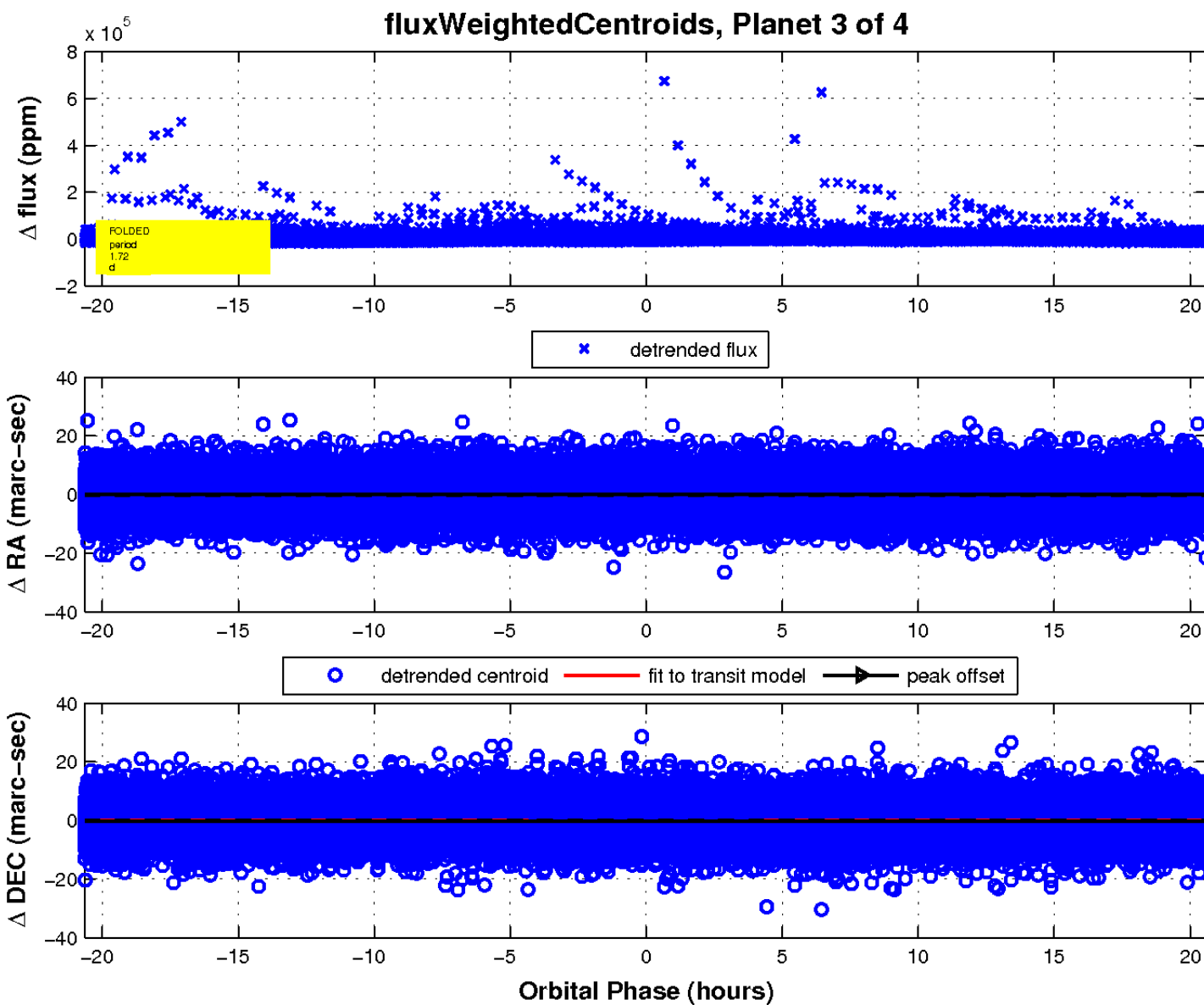
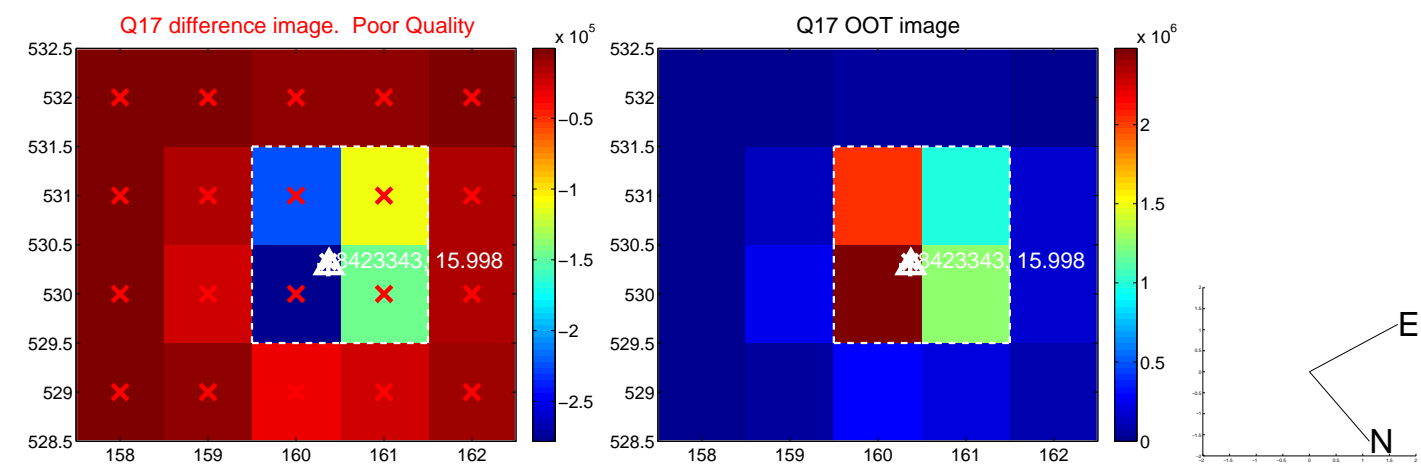
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

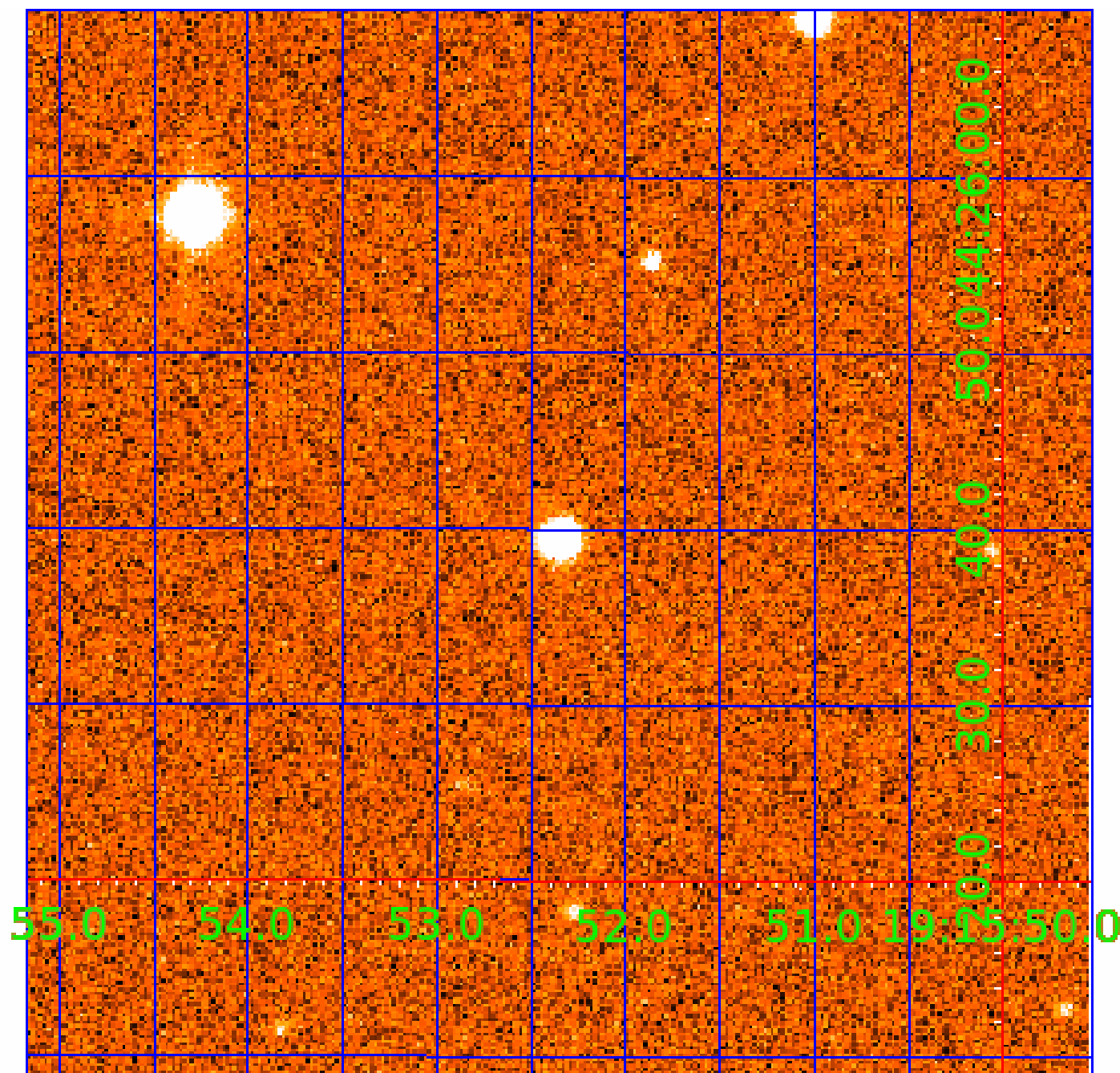


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008423343

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})
008423343-01	OBS	No	428.550267	391.404560	25837.4	43.758	18.1	16.5	0.73	4555	11.98	0.21
008423343-02	OBS	No	505.981009	549.301851	7245.7	7.936	13.5	6.1	0.73	4555	7.38	0.17
008423343-03	OBS	No	1.720567	132.612715	383.4	10.803	12.1	6.0	0.73	4555	1.47	322.14
008423343-04	OBS	No	0.572178	131.567444	3258.5	2.000	14.6	-1.0	0.73	4555	3.98	1398.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008423343-01	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008423343-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008423343-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
008423343-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—CENT_NOFITS

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

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

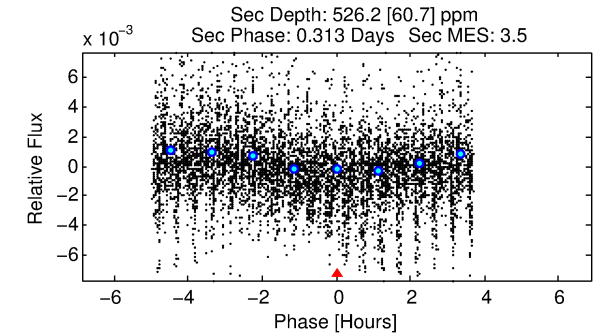
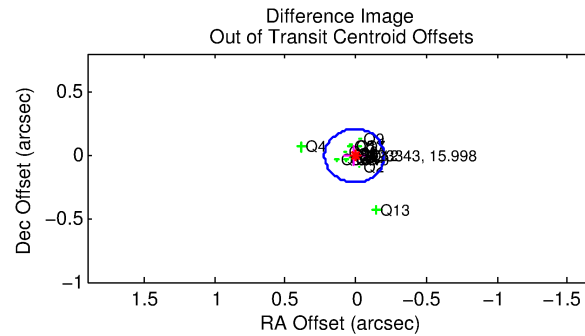
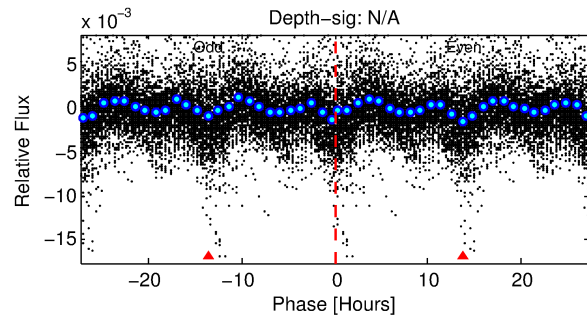
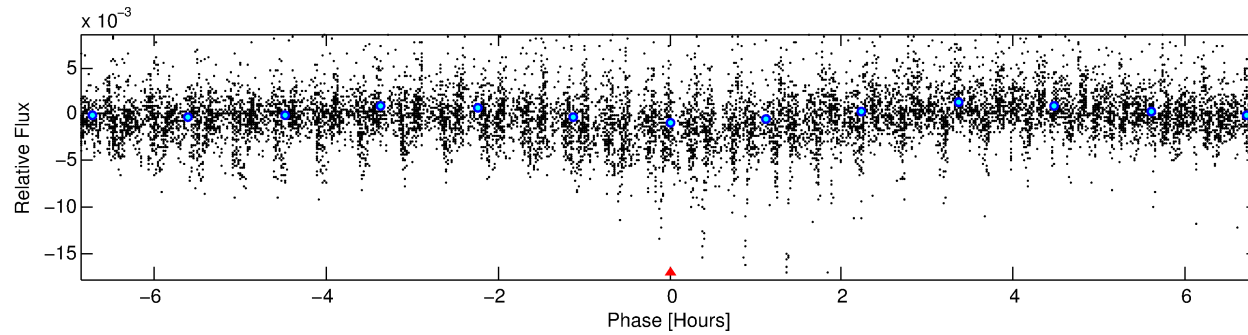
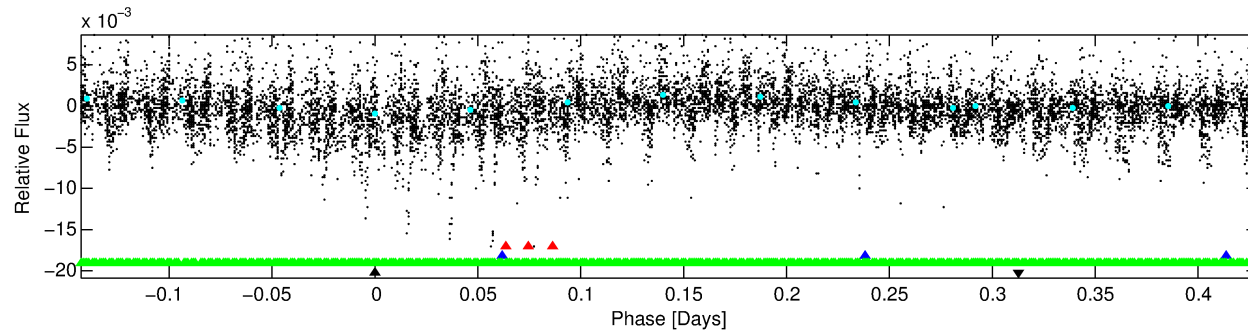
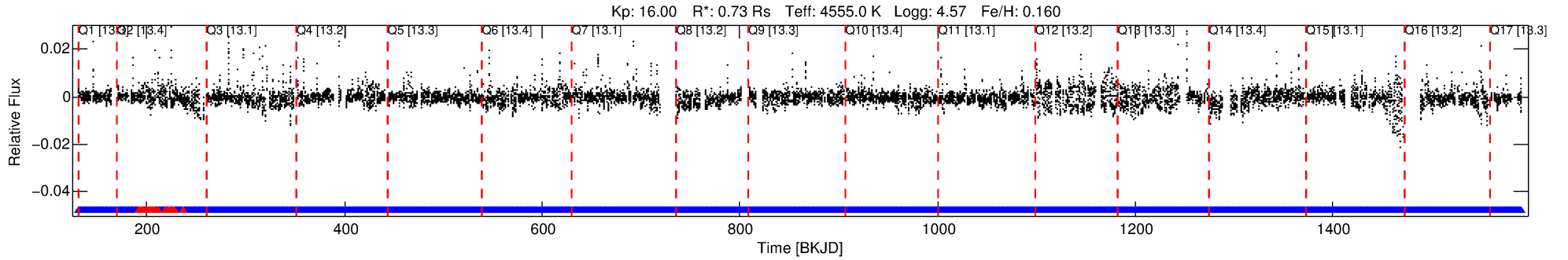
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008423343-04

No Significant Match Found

DV One-Page Summary

KIC: 8423343 Candidate: 4 of 4 Period: 0.572 d



TPS TCE Results:

Period = 0.57218 d
Epoch = 131.5674 BKJD

DV fit results are unavailable

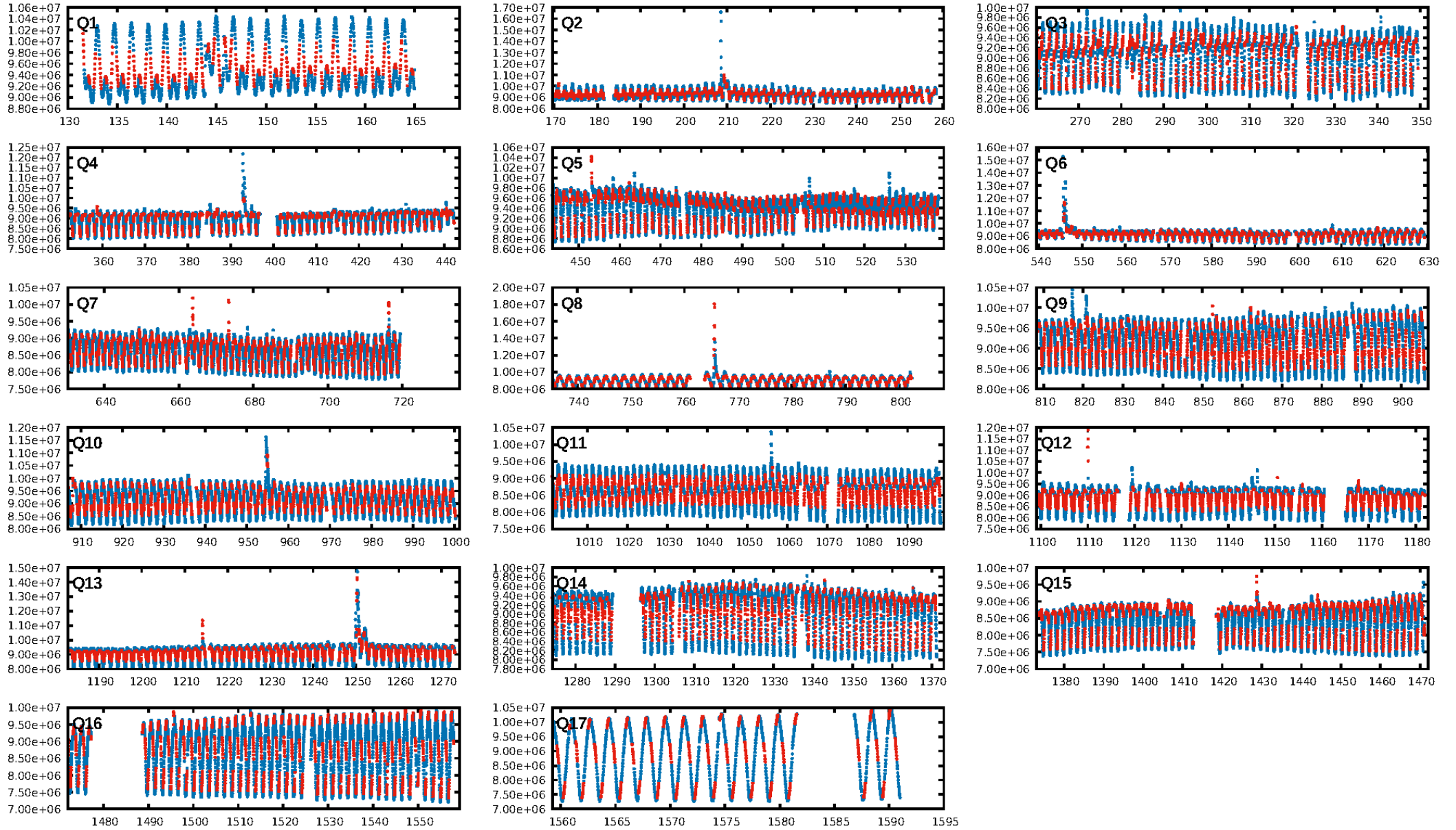
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 98.8% [2.51 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.98 [730/748]
GhostDiagnostic-chr: -8.463
Centroid-sig: 16.6%
Centroid-so: 0.131 arcsec [11.66 σ]
OotOffset-rm: 0.011 arcsec [0.16 σ]
KicOffset-rm: 0.110 arcsec [1.54 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.65 [11/17]
DiffImageOverlap-fno: 1.00 [17/17]

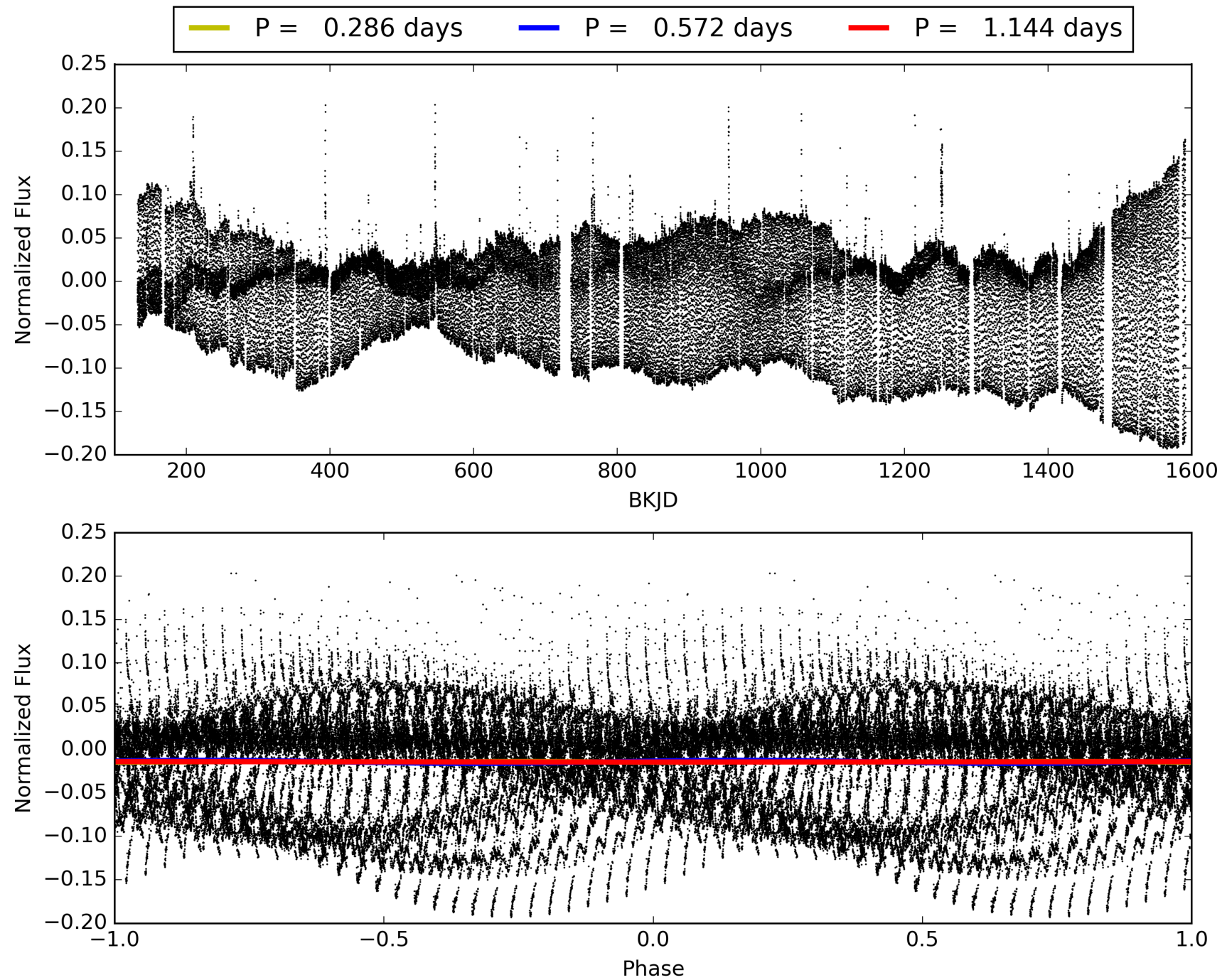
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 00:50:37 Z

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

TCE 008423343-04, PDC Light Curves

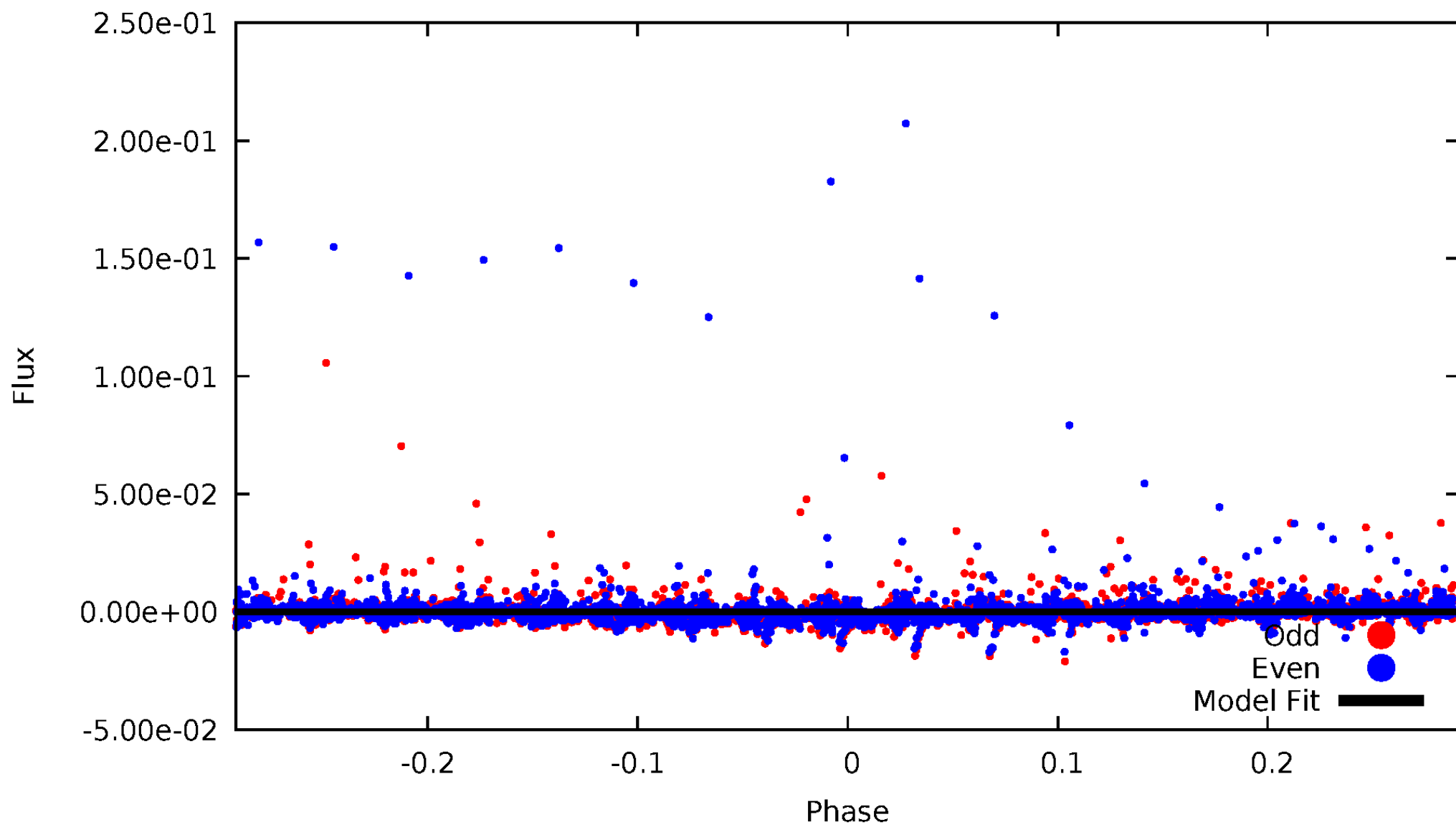


TCE 008423343-04



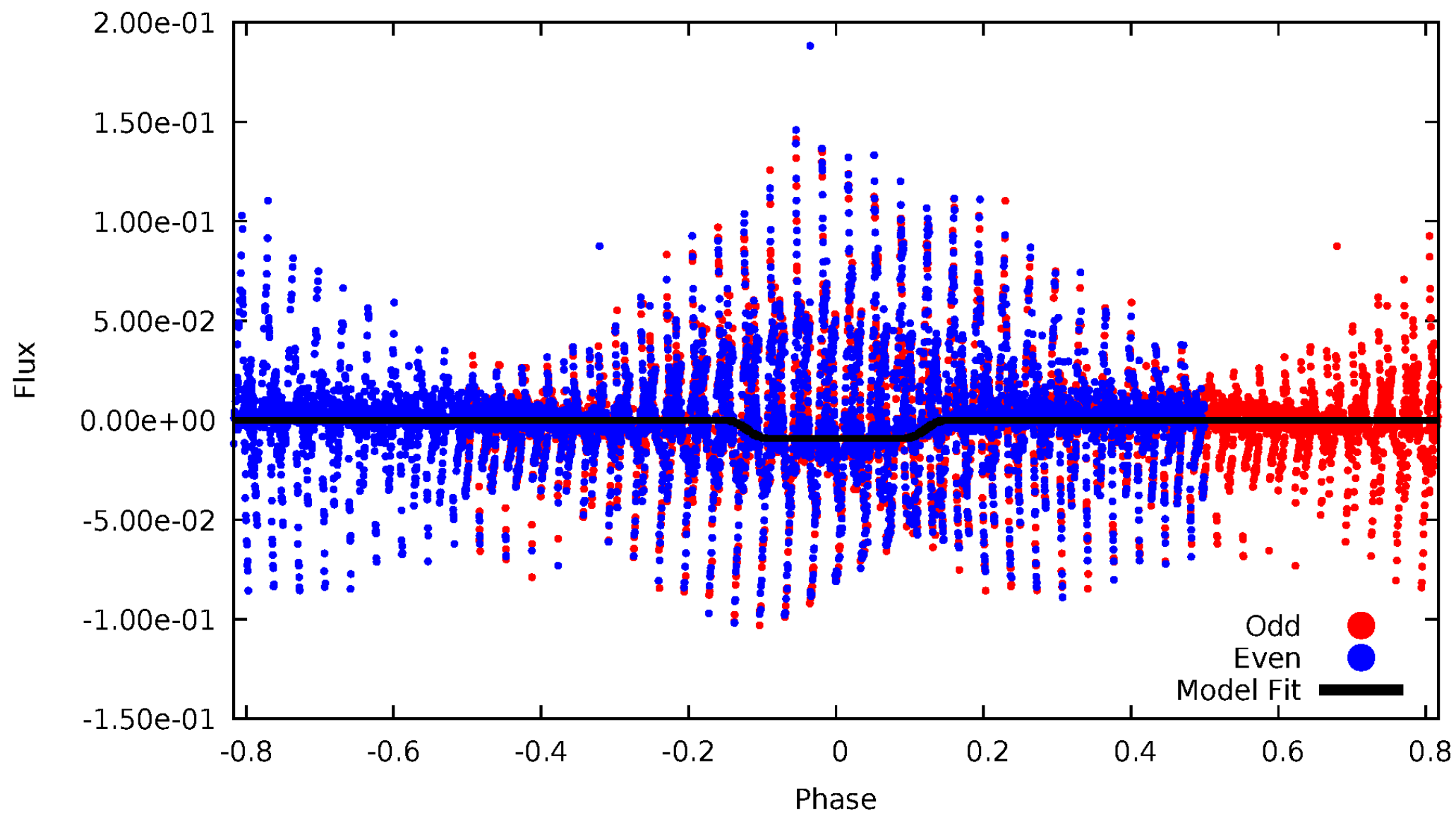
DV Odd/Even

TCE 008423343-04



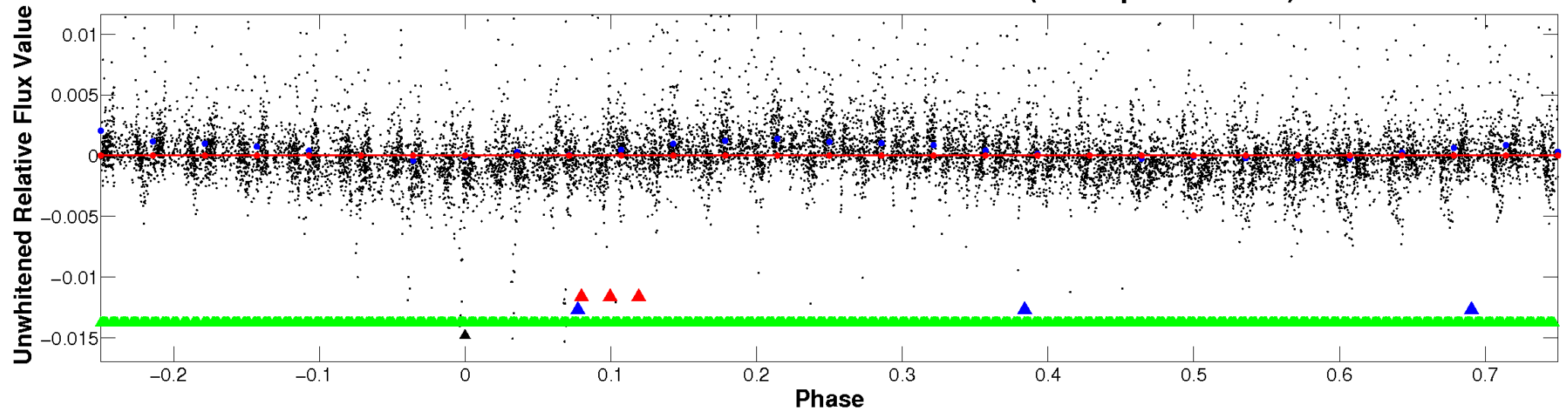
ALT Odd/Even

TCE 008423343-04

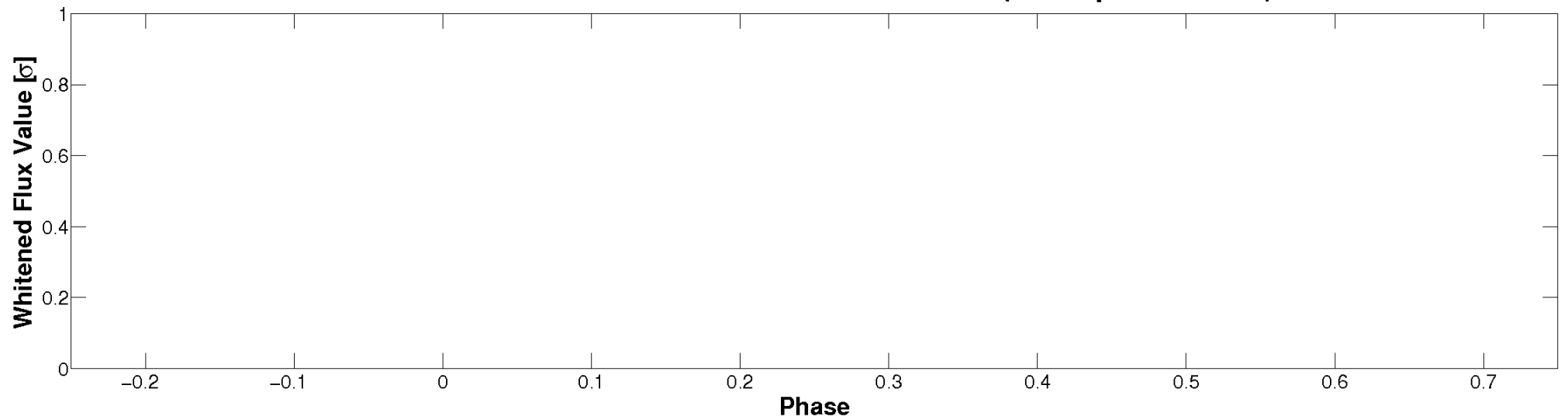


Non-Whitened Vs. Whitened Light Curve

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

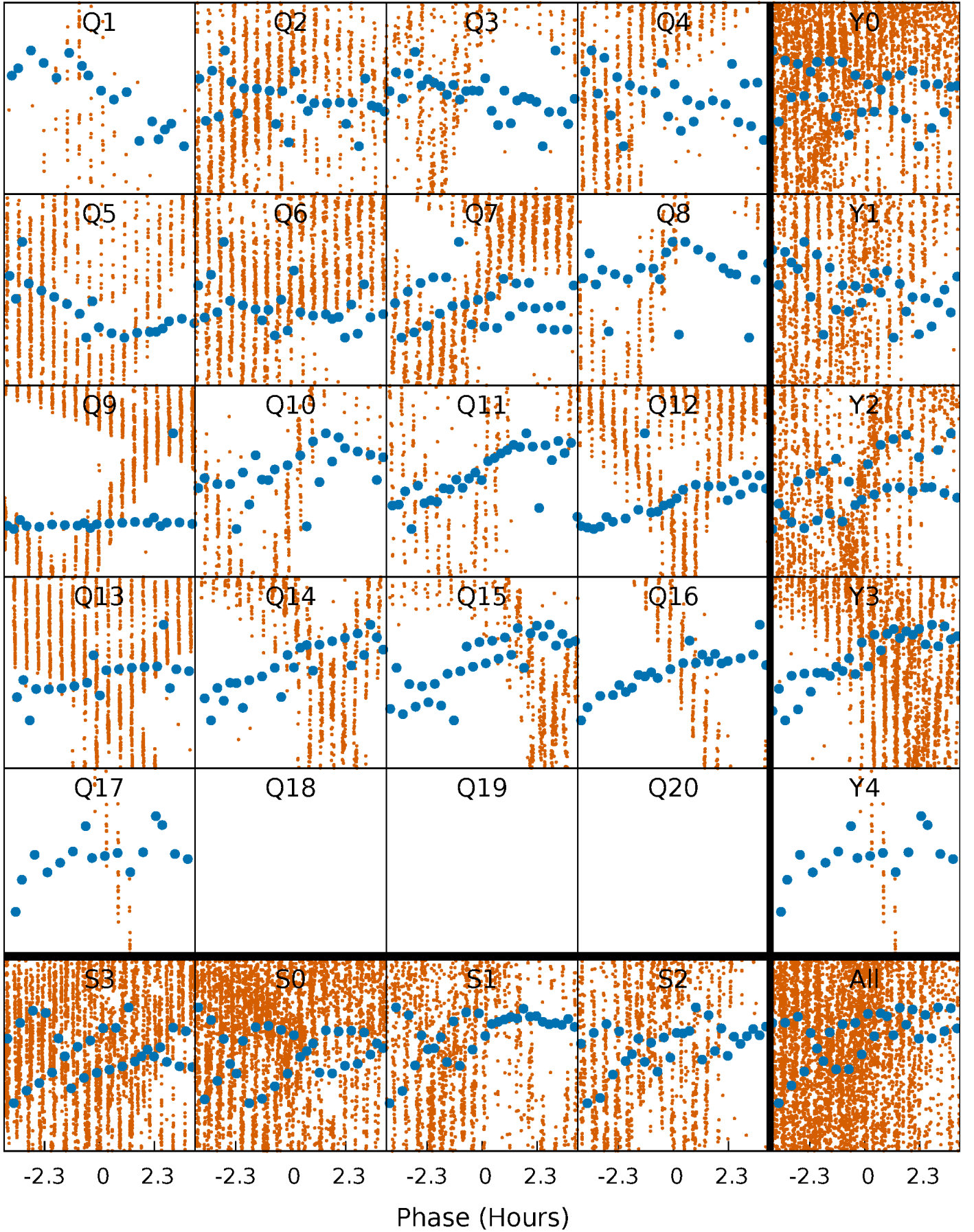


Planet 4 : Phased Whitened Flux Time Series (TPS Epoch/Period)



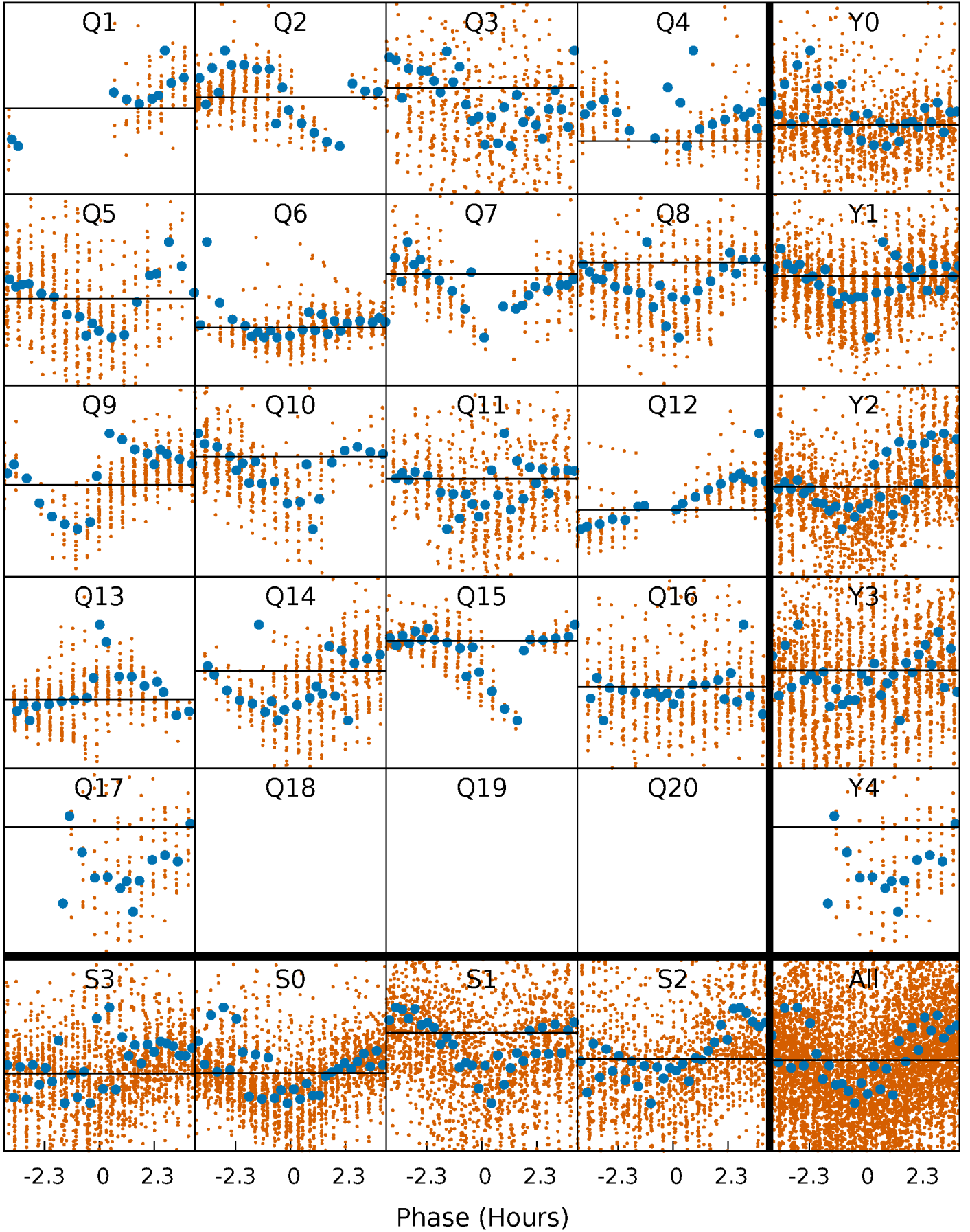
PDC Quarter-Phased Transit Curves

TCE 008423343-04 P= 0.572178 Days $T_0=131.567444$ (BKJD)



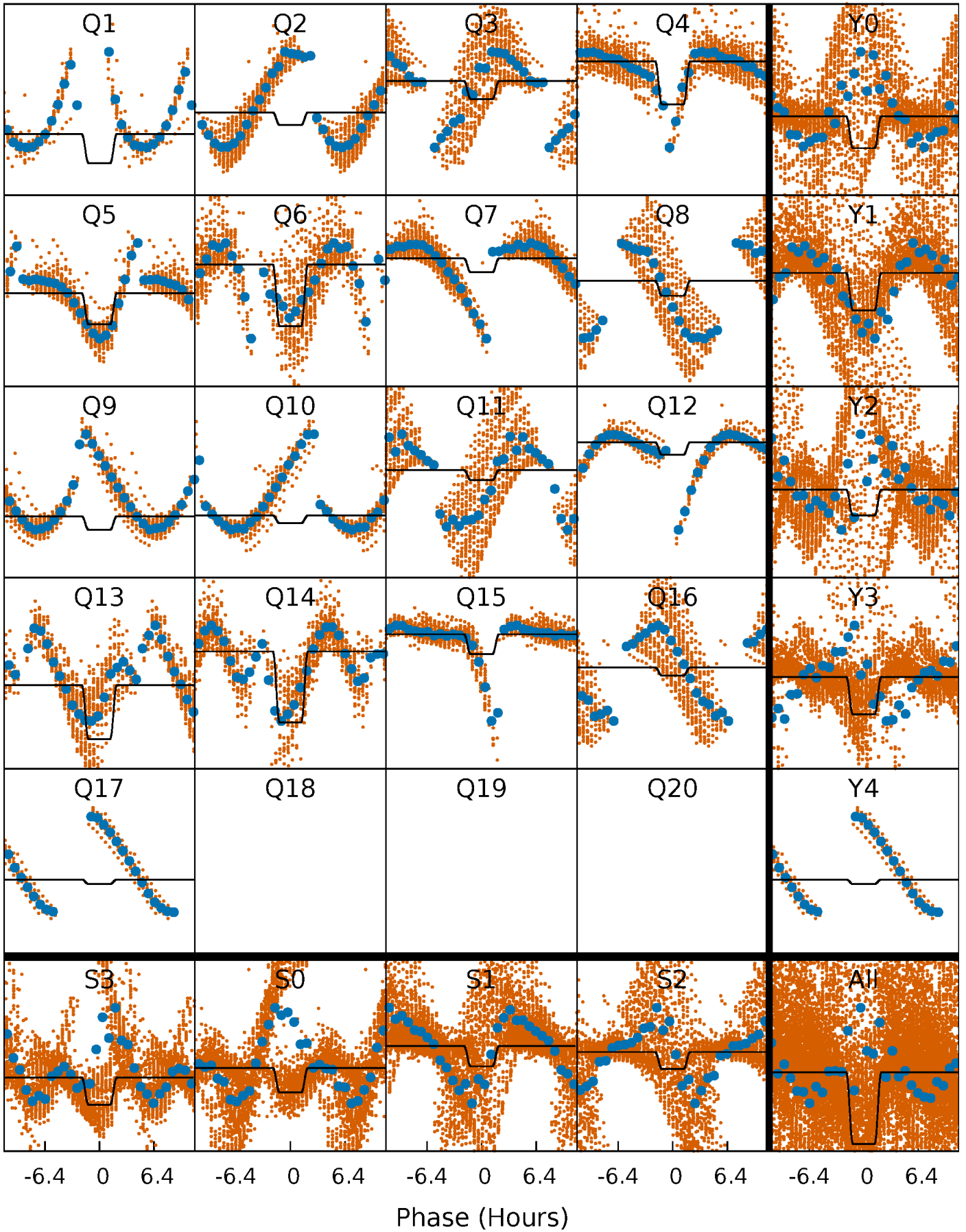
DV Quarter-Phased Transit Curves

TCE 008423343-04 $P = 0.572178$ Days $T_0 = 131.567444$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

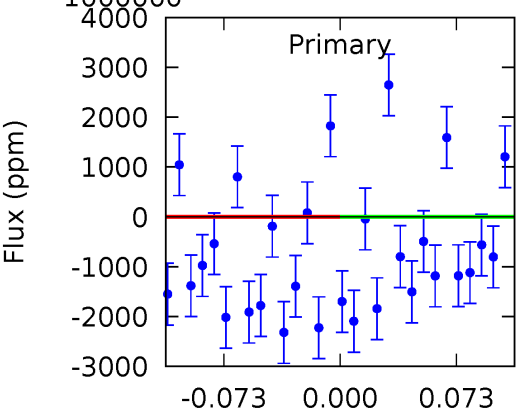
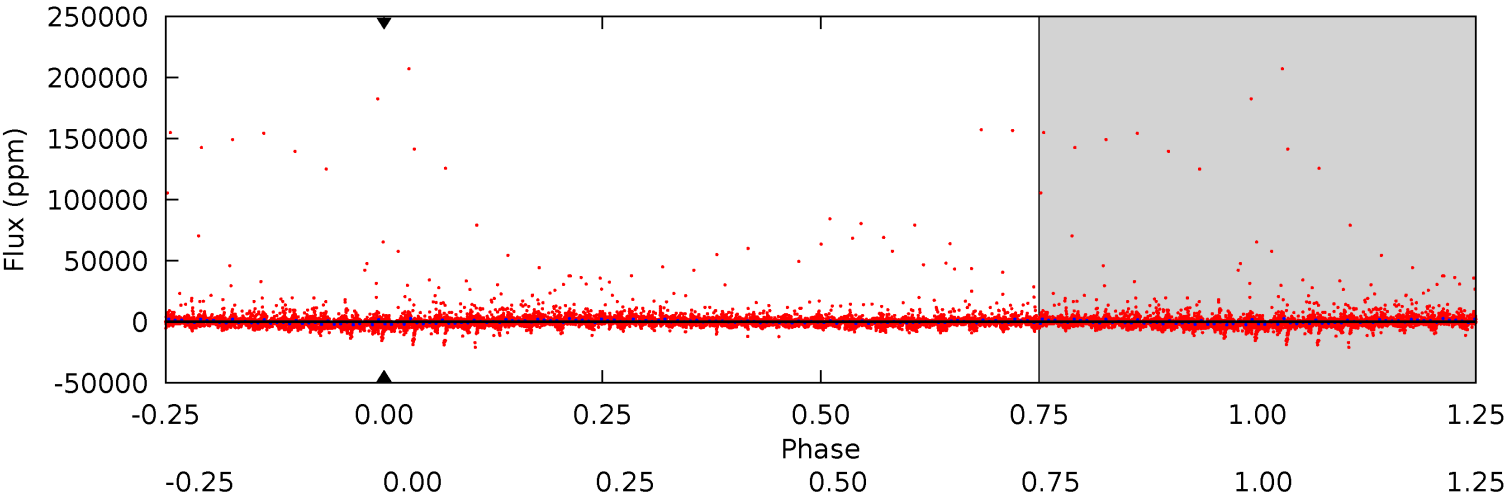
TCE 008423343-04 P= 0.572178 Days $T_0=131.549619$ (BKJD)



DV Model-Shift Uniqueness Test

008423343-04, P = 0.572178 Days, E = 131.567444 Days

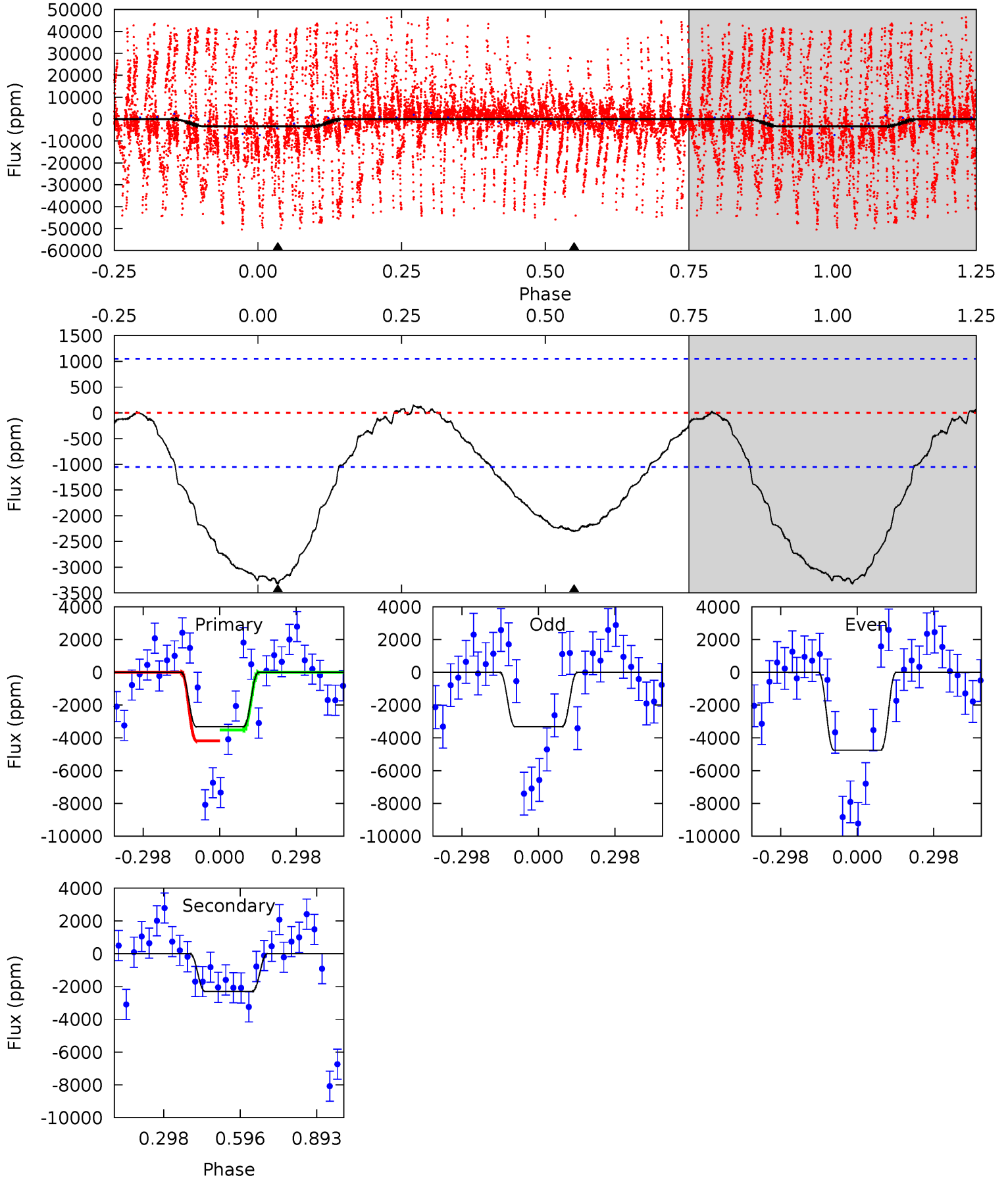
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

008423343-04, P = 0.572178 Days, E = 131.549619 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.7	9.46	0	0	4.33	1.04	0.32	13.7	13.7	9.46	9.46	3.11	-0.95	0.04	0.98



Stellar Parameters For KIC 008423343

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4555^{+164}_{-164}	$4.571^{+0.059}_{-0.023}$	$0.160^{+0.200}_{-0.300}$	$0.728^{+0.036}_{-0.067}$	$0.721^{+0.056}_{-0.056}$	$2.628^{+0.669}_{-0.243}$
	+4%/-4%	+1%/-1%	+125%/-188%	+5%/-9%	+8%/-8%	+25%/-9%
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 008423343-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$6.66^{+6.63}_{-4.46}$	2163^{+80}_{-82}	-3752^{+14875}_{-7094}	$-3.927^{+357.259}_{-341.886}$
Alt.	-2299 ± 243	$8.95^{+7.31}_{-5.73}$	2166^{+82}_{-84}	3301^{+1504}_{-673}	$2.281^{+15.654}_{-1.579}$

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 $A_{obs} \gg 1.0$

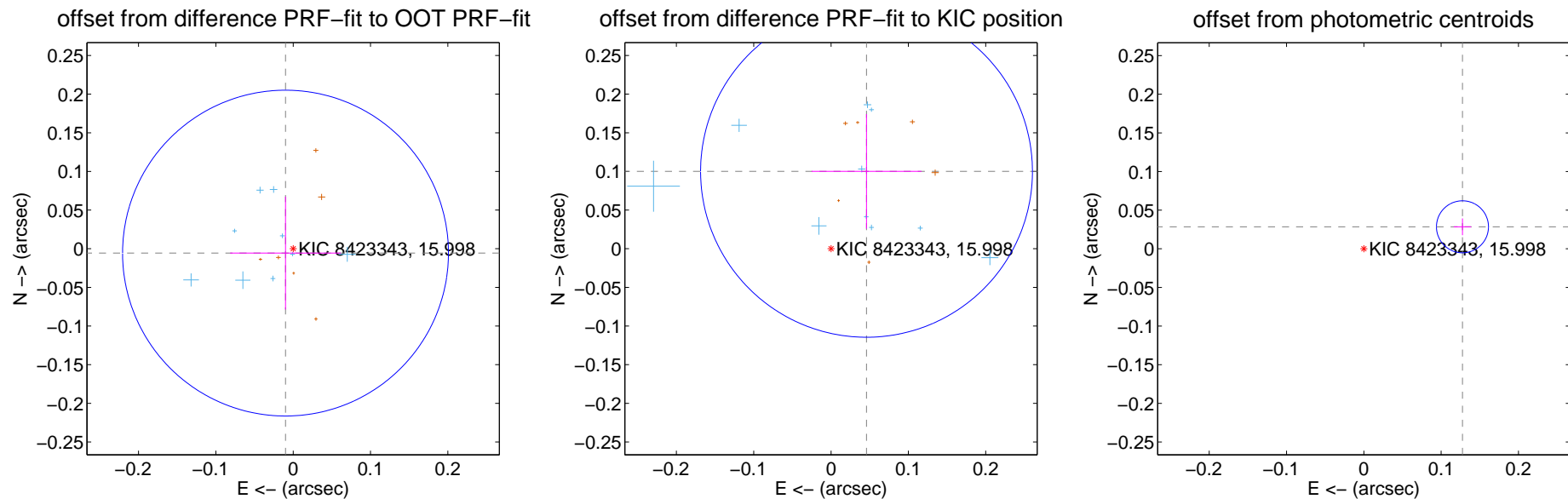
DV Centroid Data

Supplemental centroid analysis for 008423343-04. Kepler magnitude: 16.00. Transit SNR -1.00

There are 11 quarters with good PRF difference image offsets

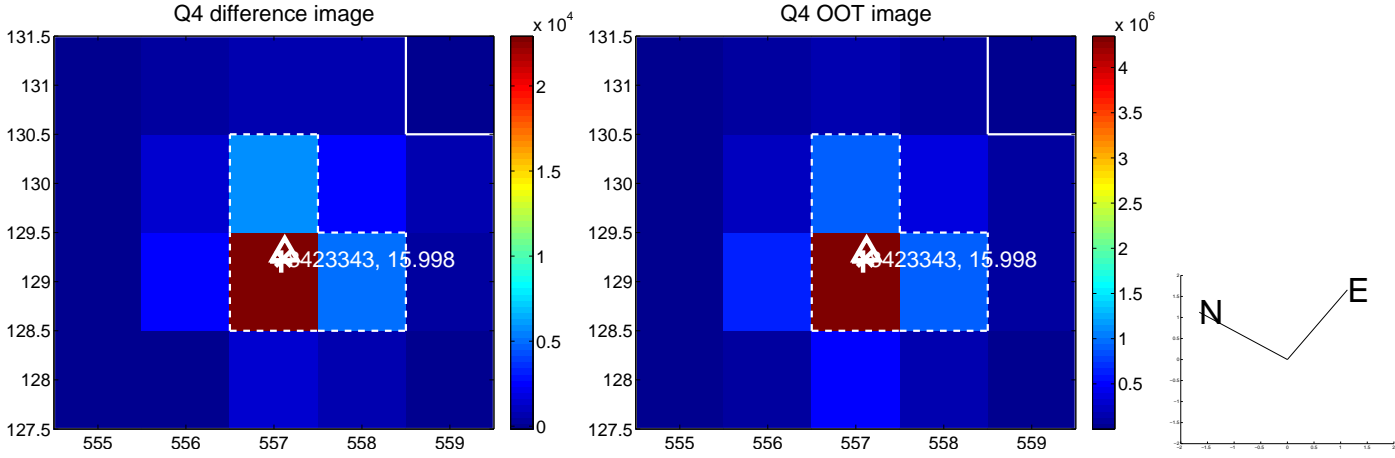
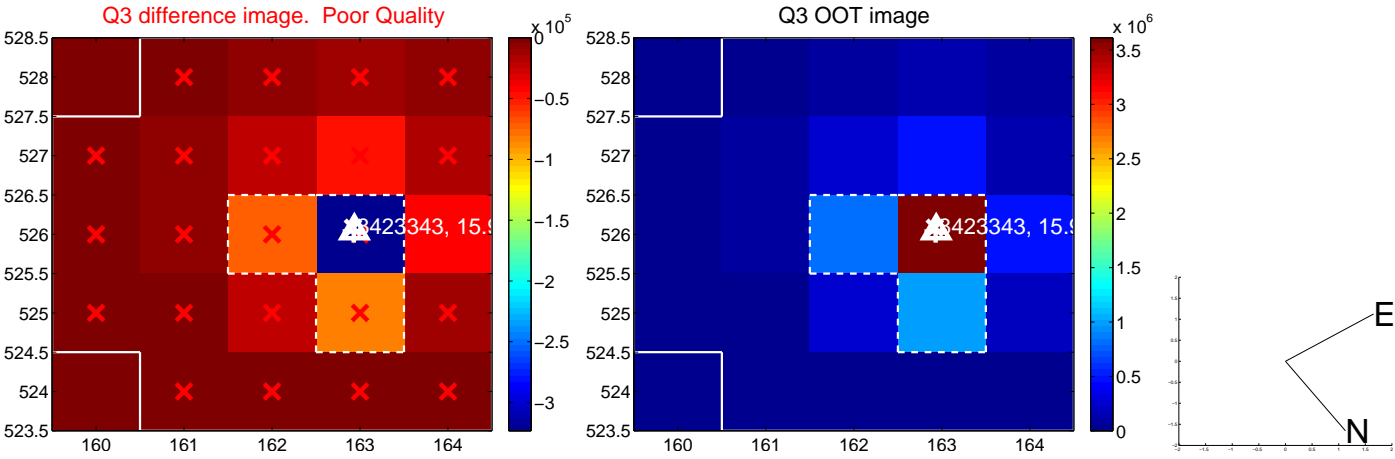
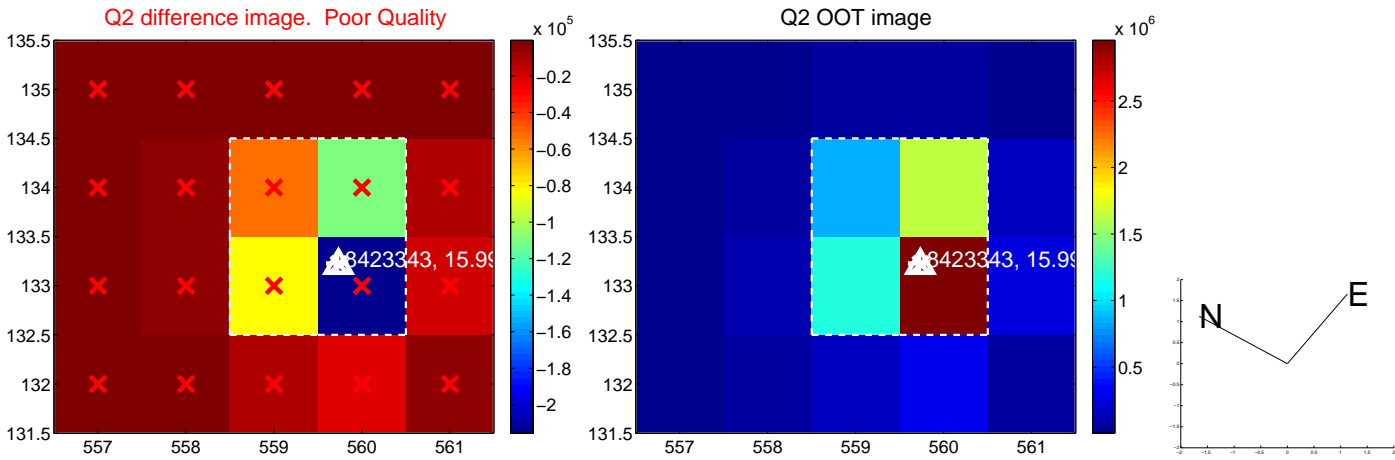
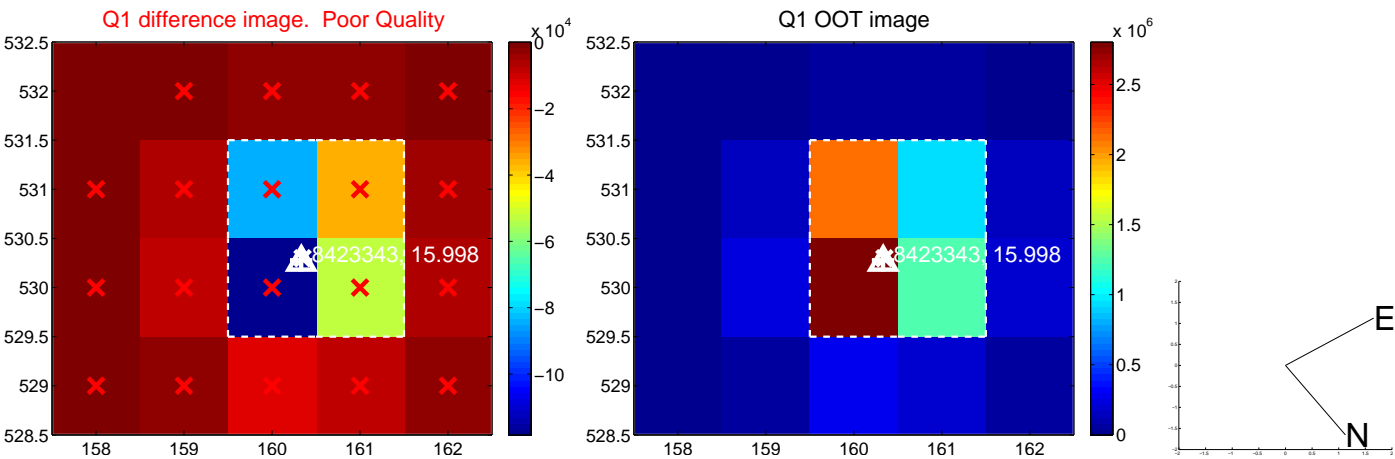
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.011 ± 0.070	0.16	0.010 ± 0.072	-0.006 ± 0.073
PRF-fit source offset from KIC position	0.110 ± 0.072	1.54	-0.046 ± 0.071	0.100 ± 0.074
photometric centroid source offset	0.13 ± 0.01	11.66	-0.13 ± 0.01	0.03 ± 0.01

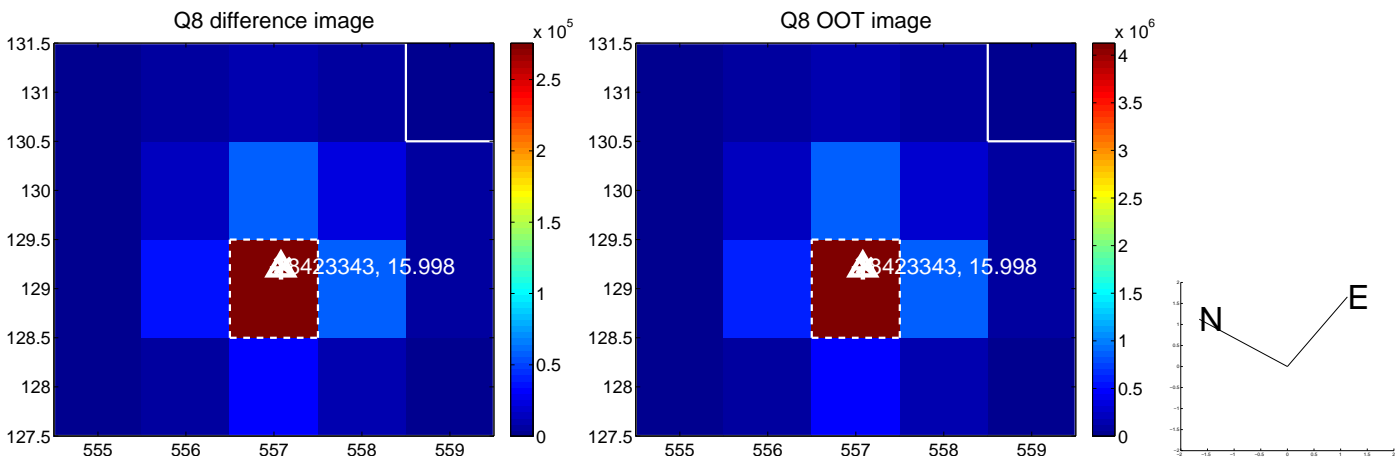
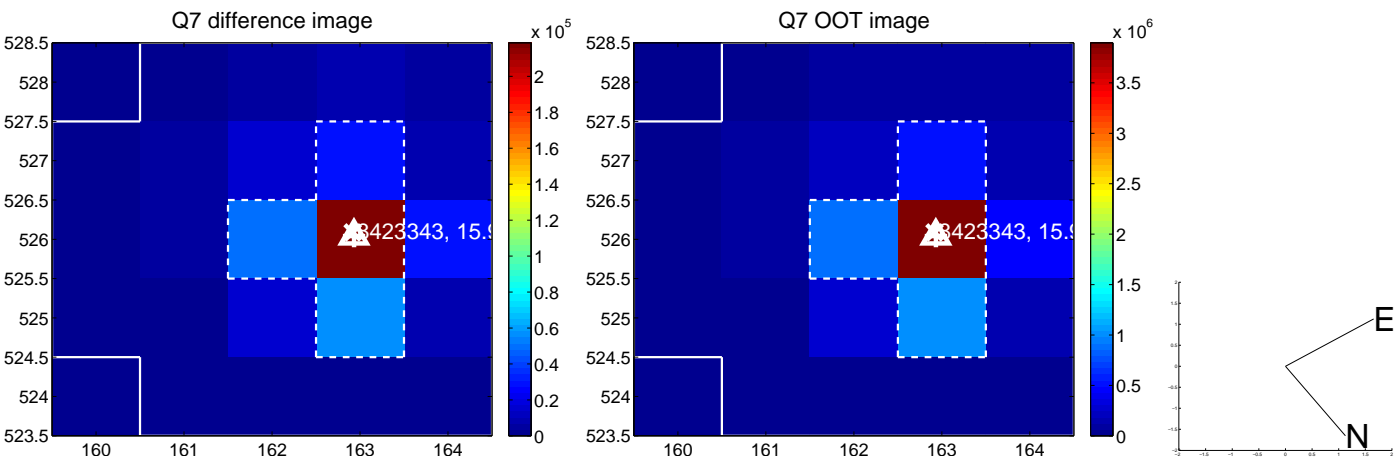
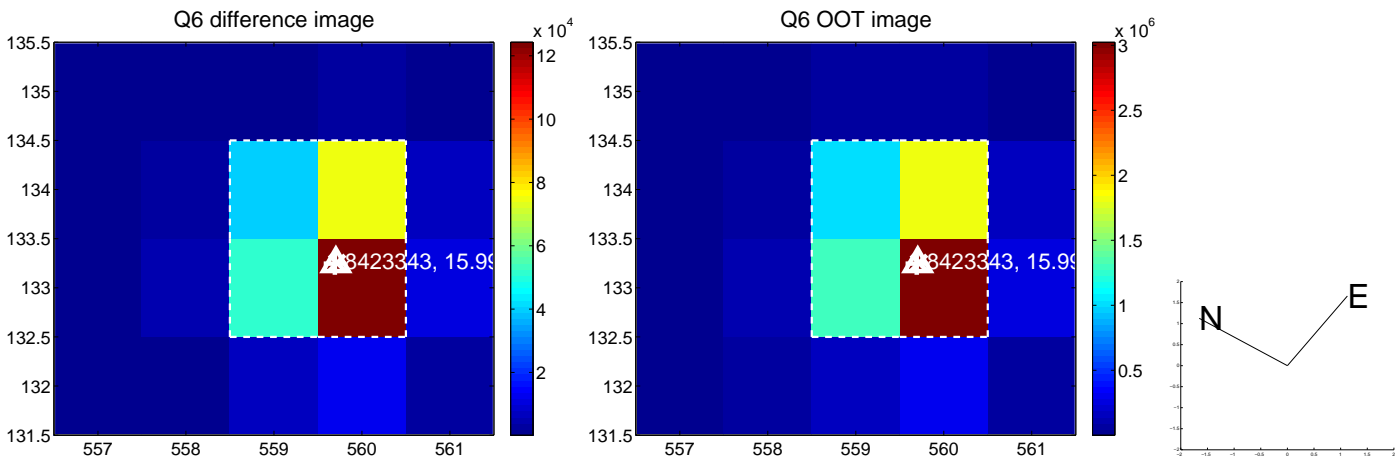
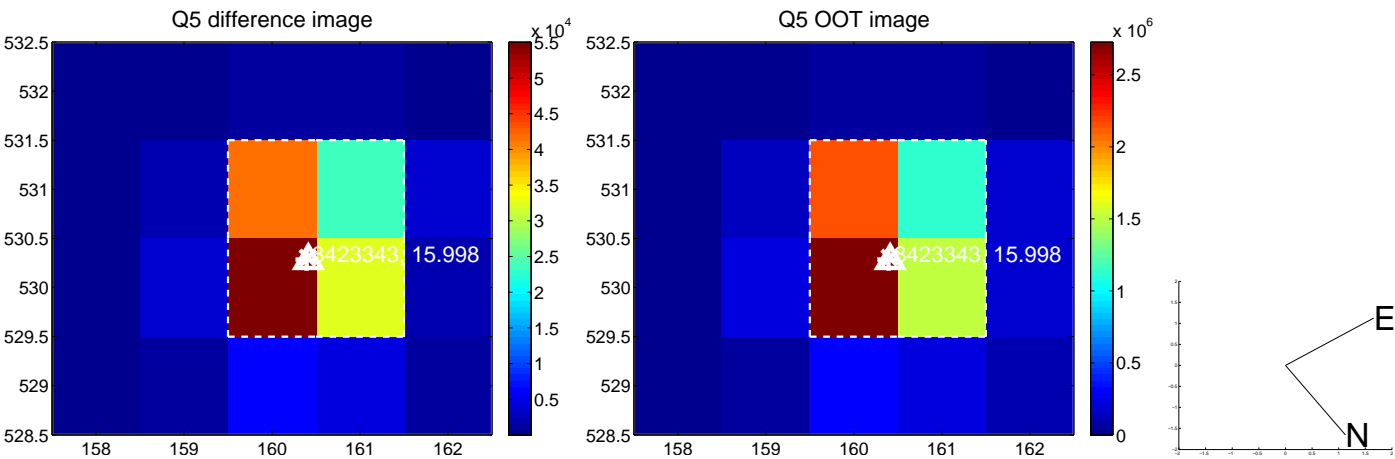


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

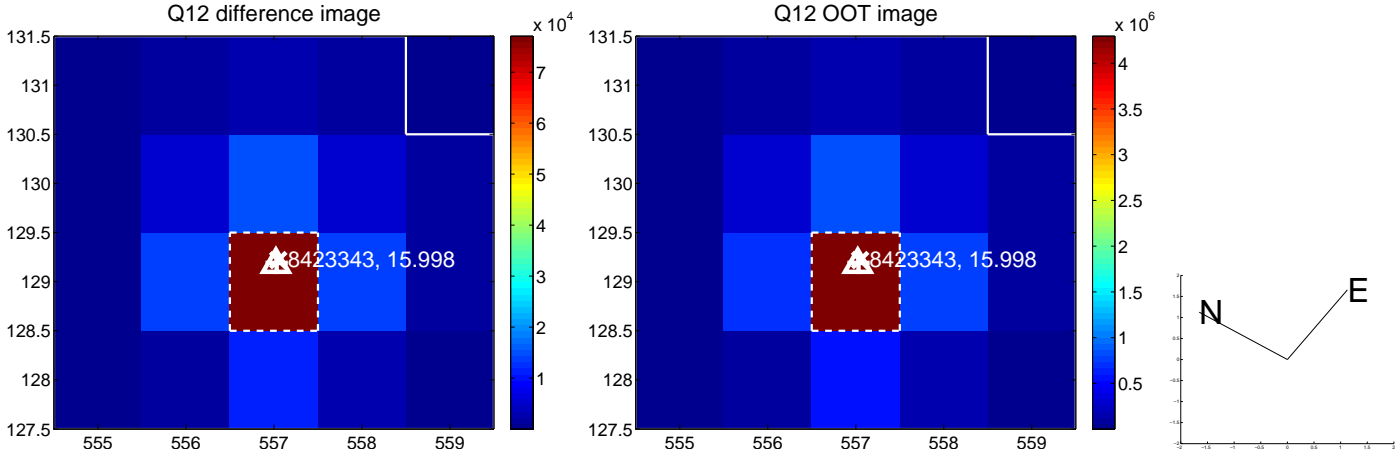
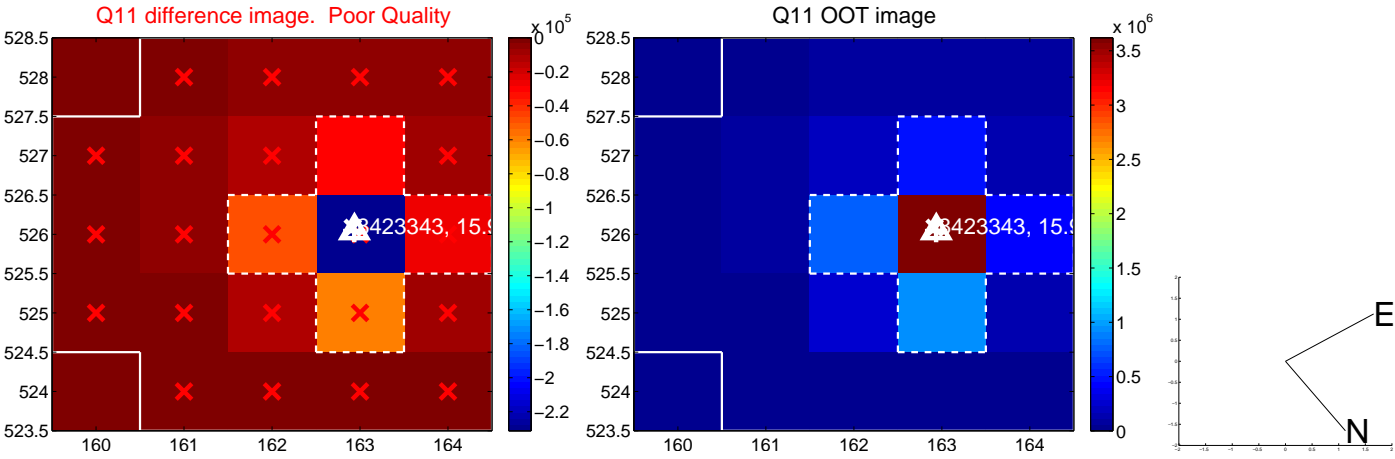
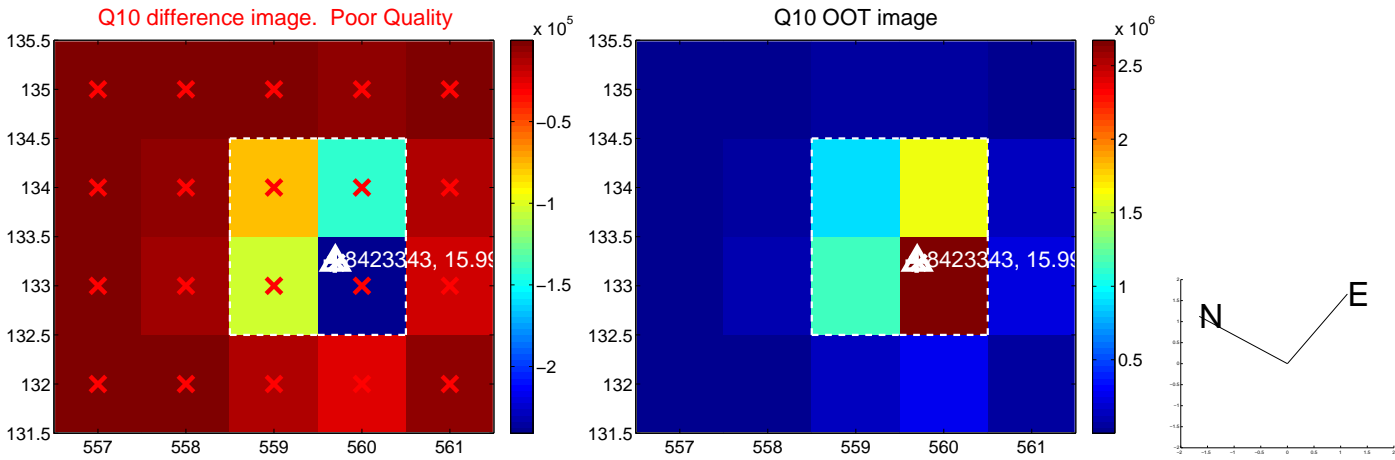
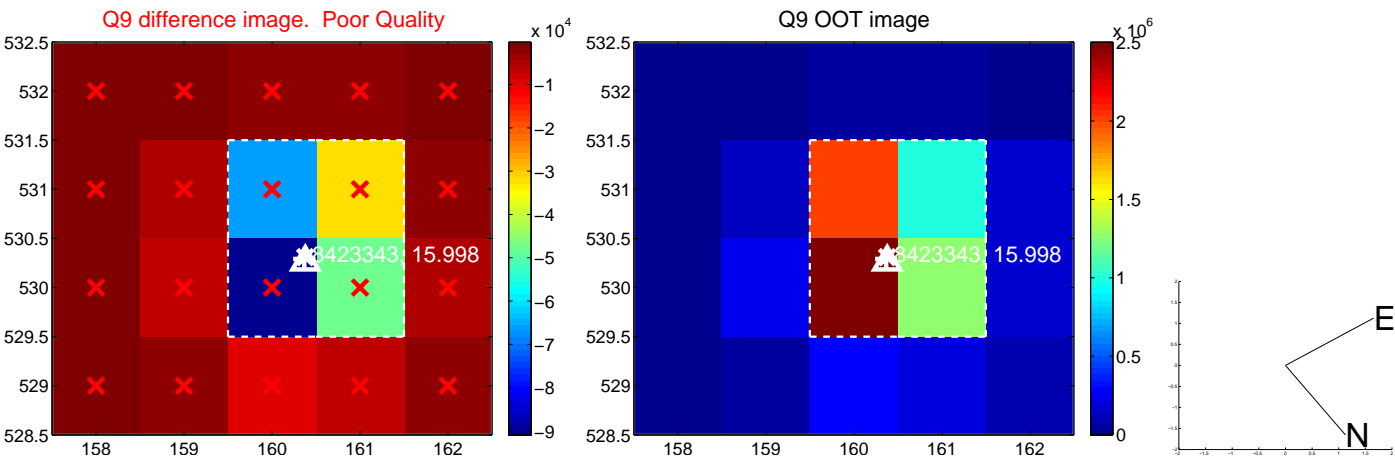
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



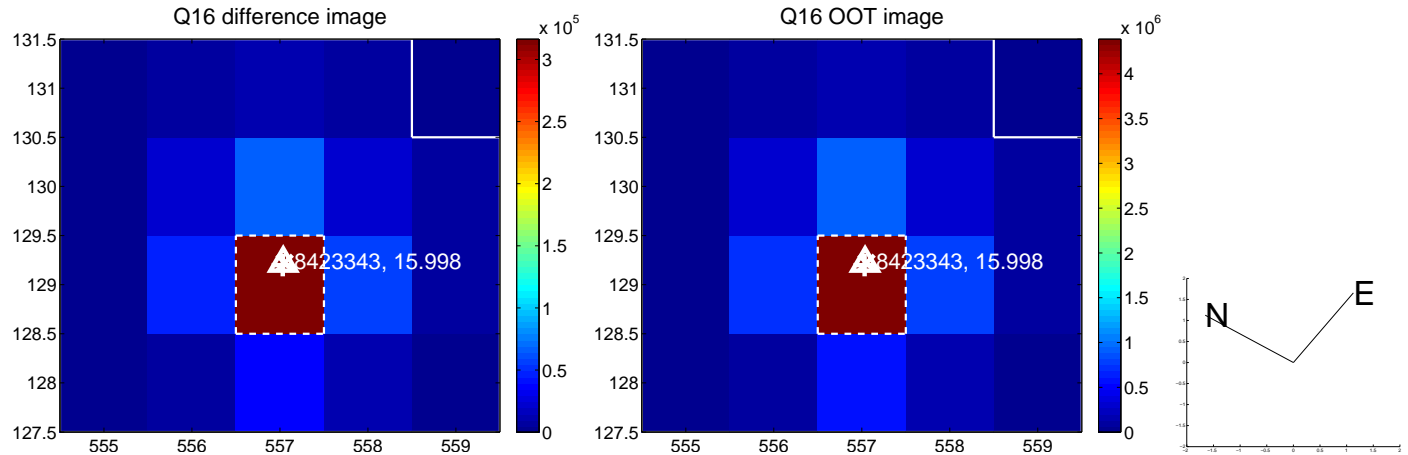
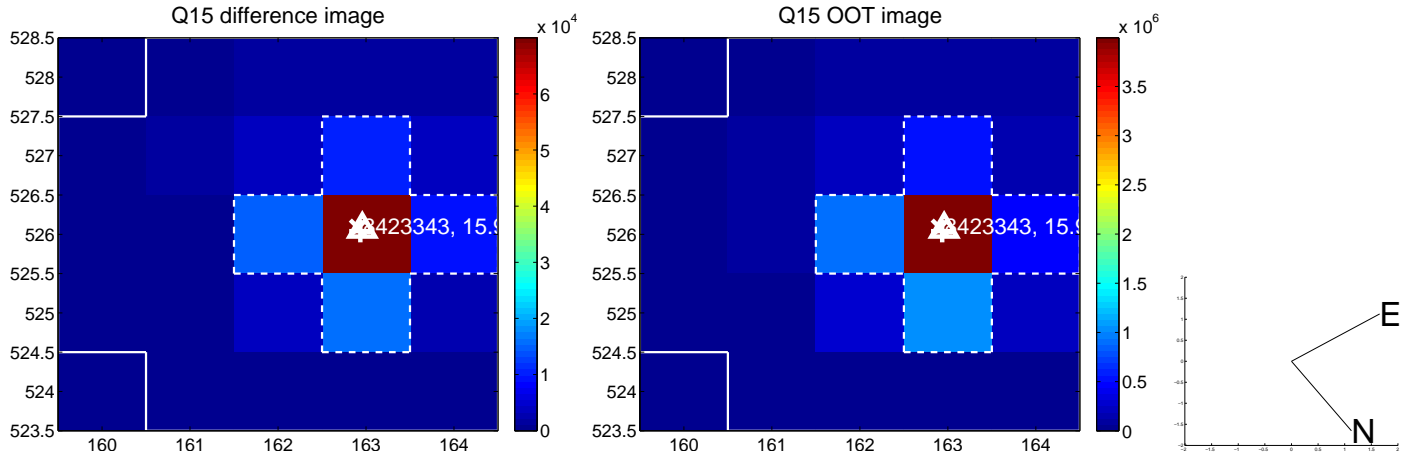
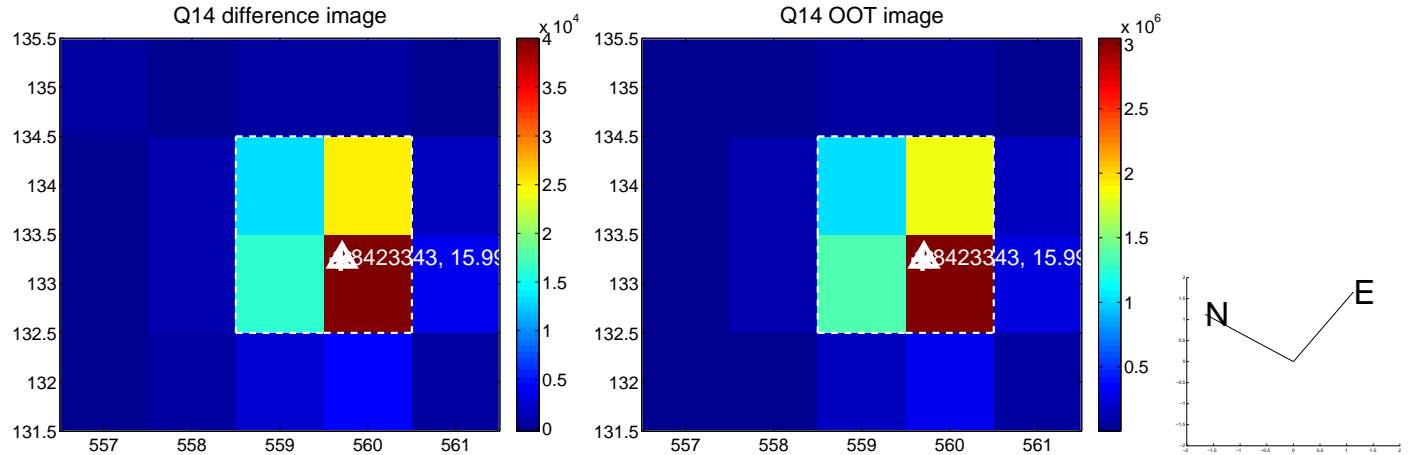
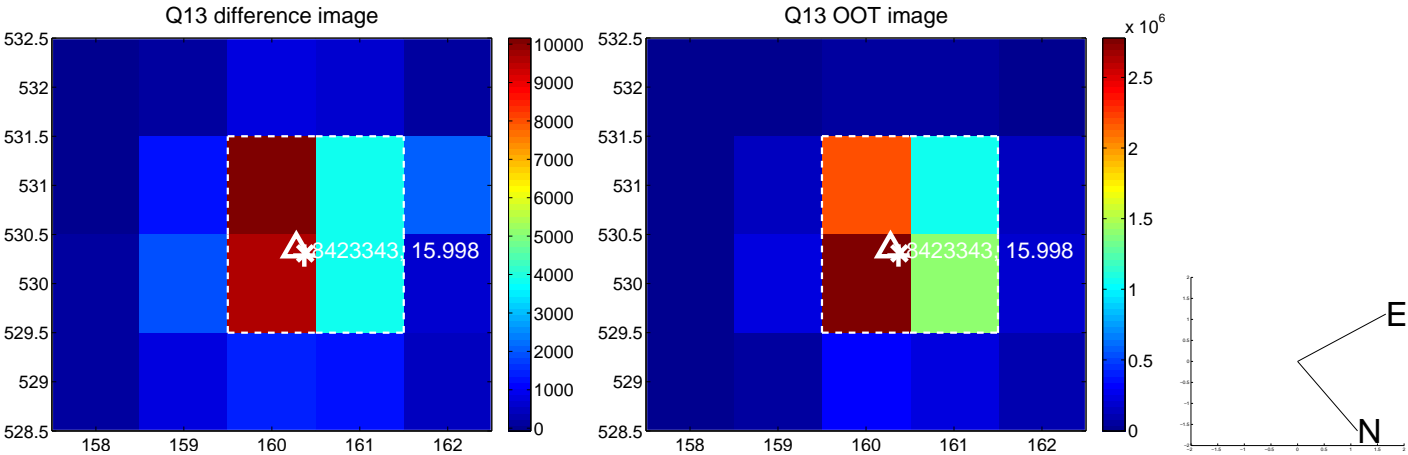
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



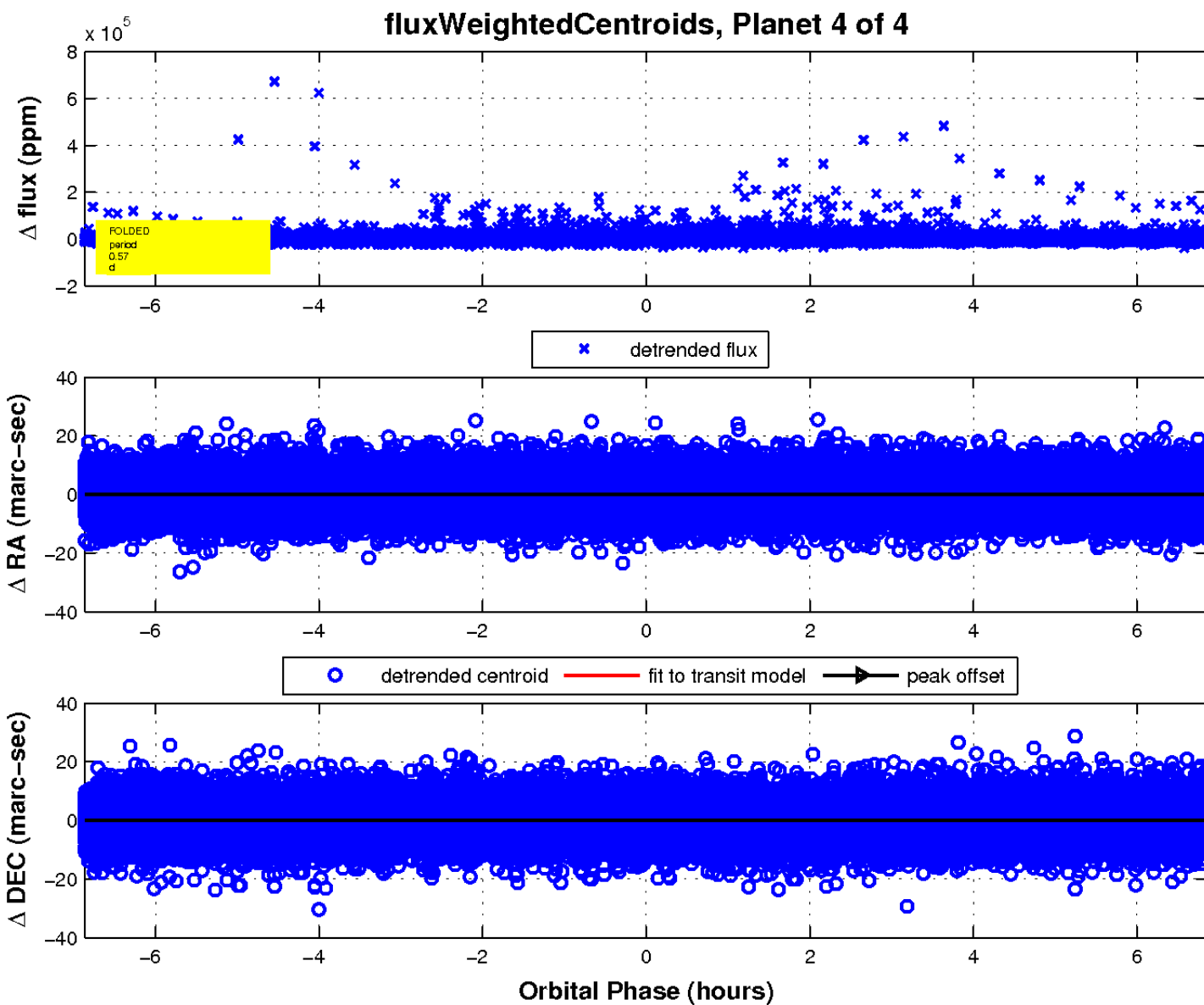
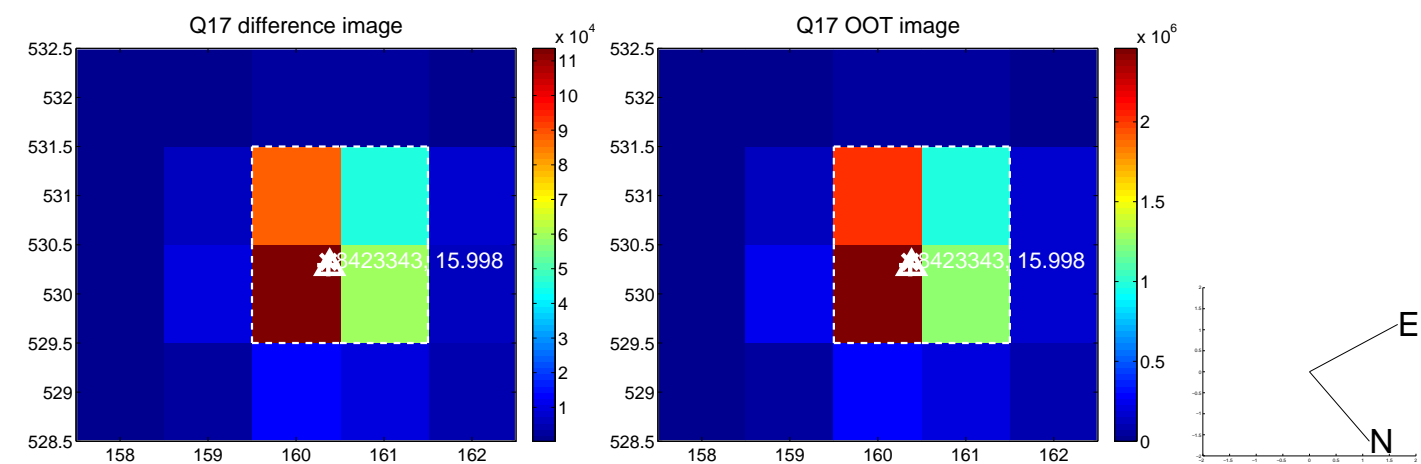
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

