

KIC 005544450

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})
005544450-01	OBS	3226.01	4.293958	133.498125	100.5	3.706	14.4	15.1	1.57	6615	1.84	1303.79
005544450-02	OBS	3226.02	6.936617	133.973186	86.9	3.662	8.6	9.6	1.57	6615	1.60	687.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005544450-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
005544450-02	OBS	PC	0.99	0	0	0	0	NO_COMMENT

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

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

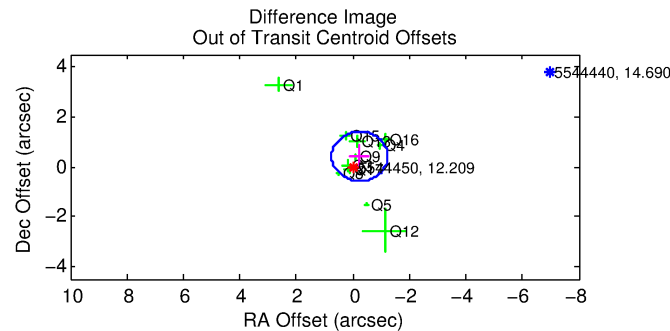
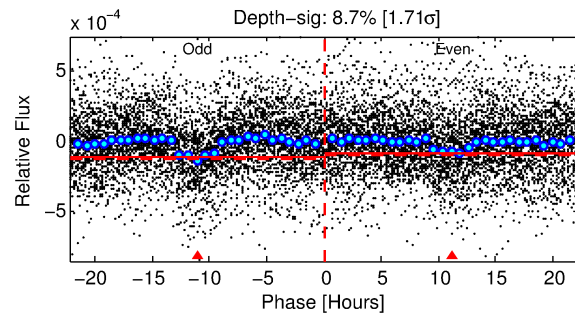
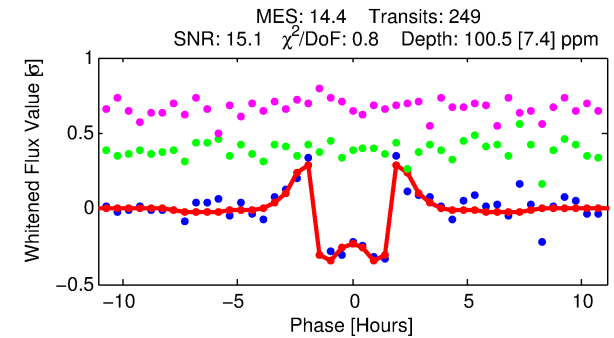
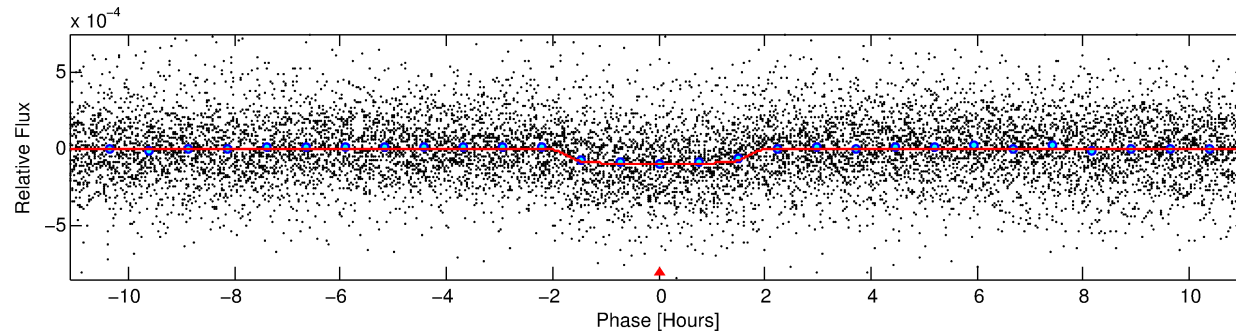
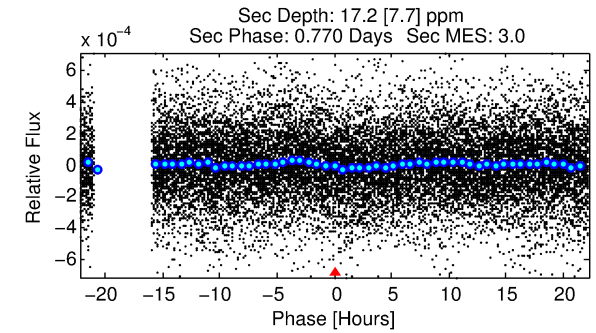
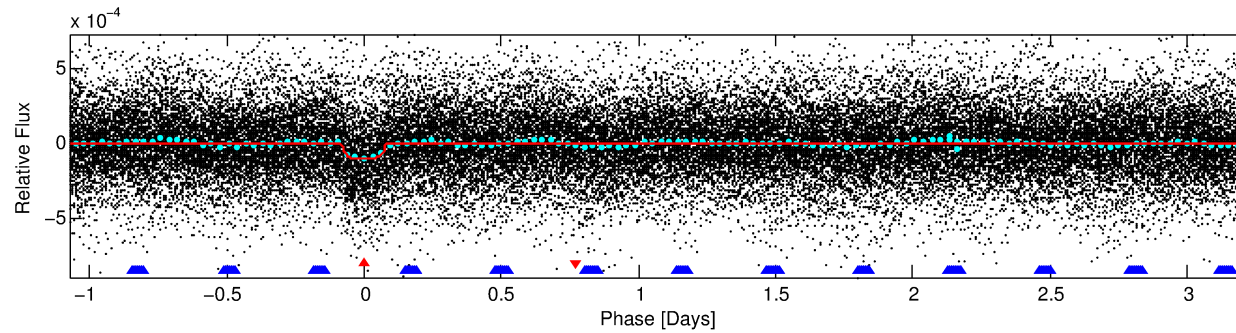
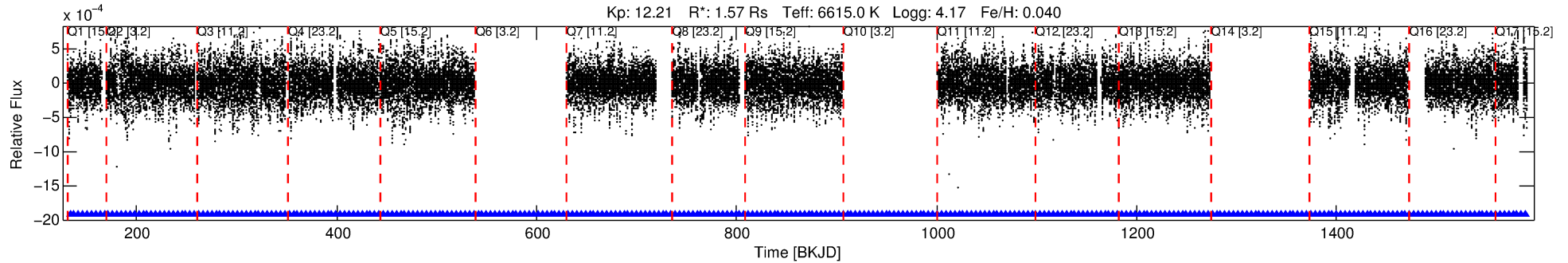
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005544450-01

No Significant Match Found

DV One-Page Summary

KIC: 5544450 Candidate: 1 of 2 Period: 4.294 d
KOI: K03226.01 Corr: 0.963



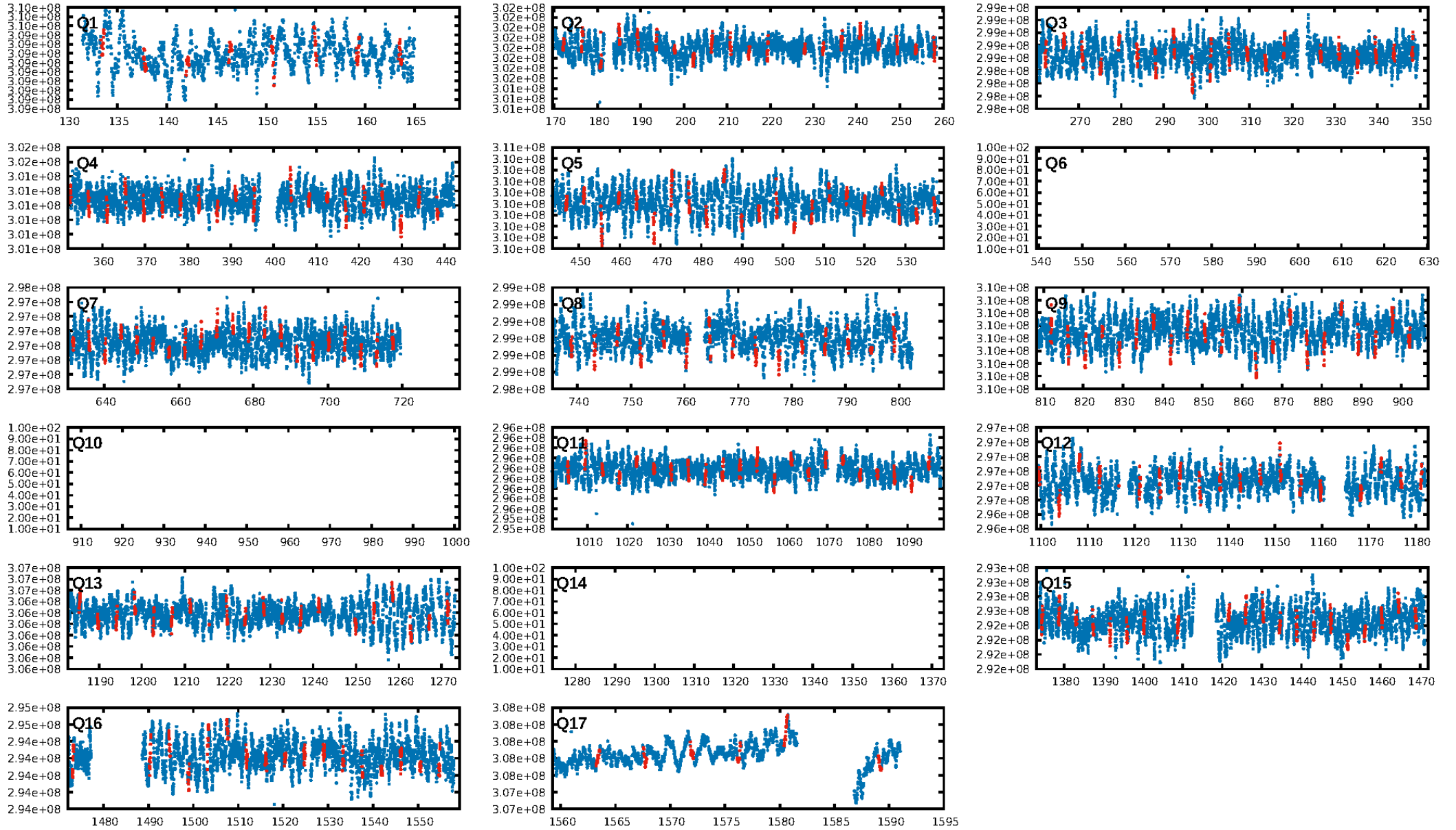
DV Fit Results:

Period = 4.29396 [0.00001] d
Epoch = 133.4981 [0.0014] BKJD
Rp/R* = 0.0107 [0.0013]
a/R* = 4.18 [2.62]
b = 0.90 [0.14]
Seff = 1303.79 [319.30]
Teq = 1532 [94] K
Rp = 1.84 [0.42] Re
a = 0.0571 [0.0092] AU
Ag = 9.08 [5.14] [1.57σ]
Teffp = 4112 [531] K [4.79σ]

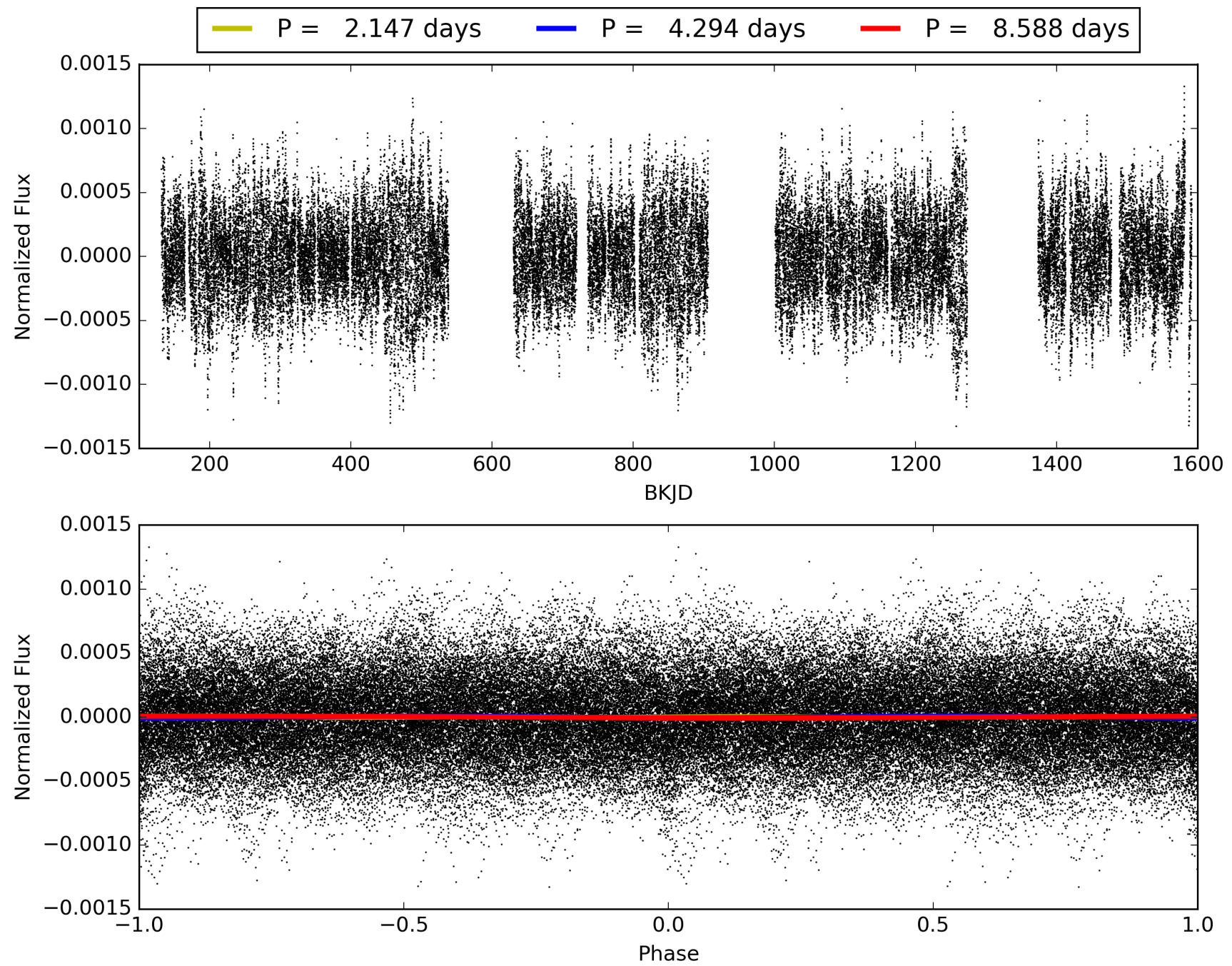
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [12.17σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 8.91e-43
RollingBand-fgt: 1.00 [235/235]
GhostDiagnostic-chr: 12.22
Centroid-sig: 0.0%
Centroid-so: 0.591 arcsec [2.08σ]
OotOffset-rm: 0.475 arcsec [1.44σ]
KicOffset-rm: 0.467 arcsec [1.34σ]
OotOffset-st: 0/2/4/5 [11]
KicOffset-st: 0/2/4/5 [11]
DiffImageQuality-fgm: 0.82 [9/11]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 005544450-01, PDC Light Curves

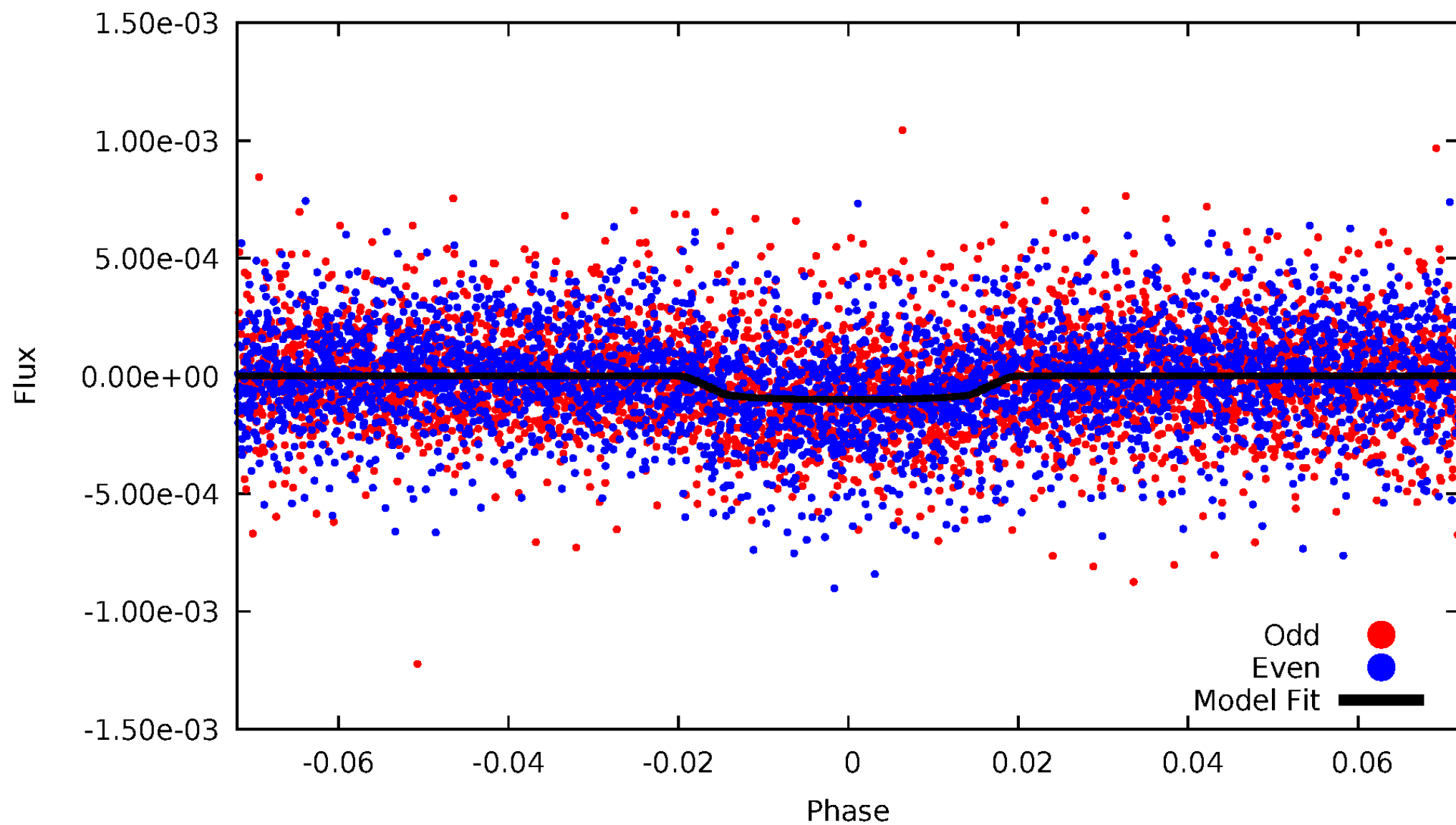


TCE 005544450-01



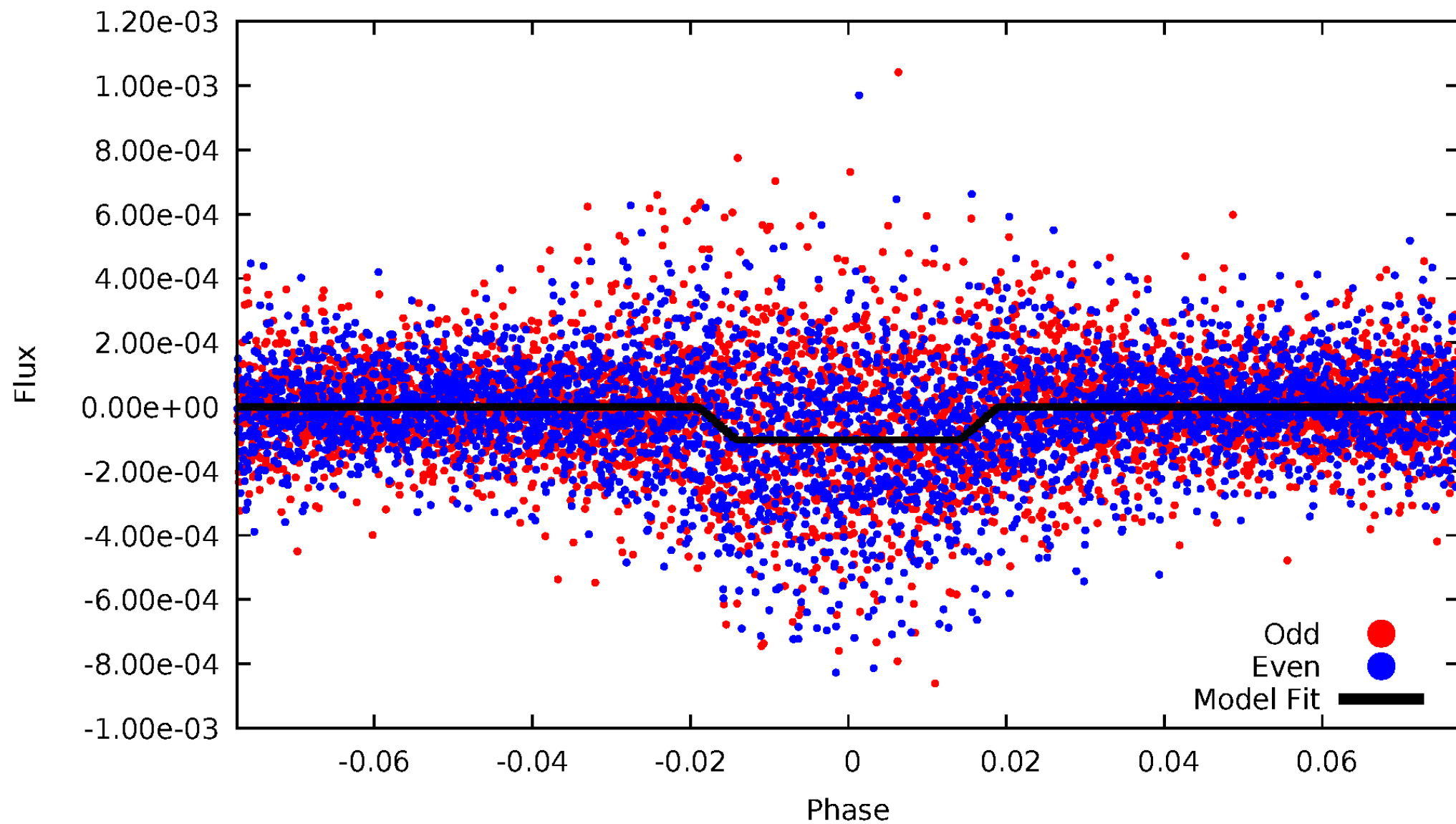
DV Odd/Even

TCE 005544450-01

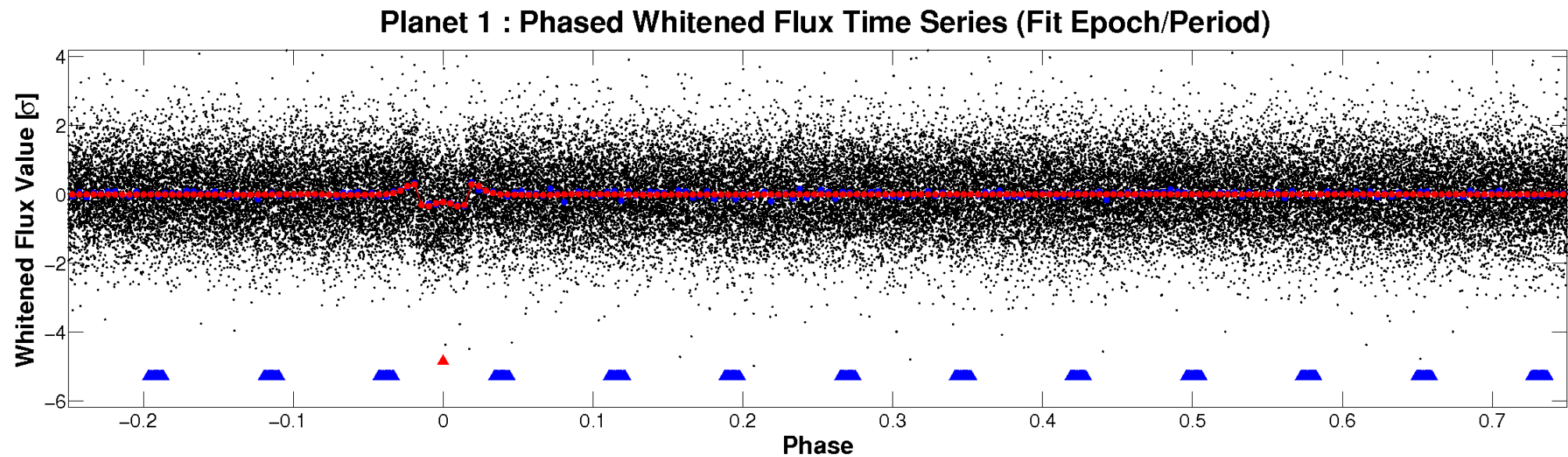
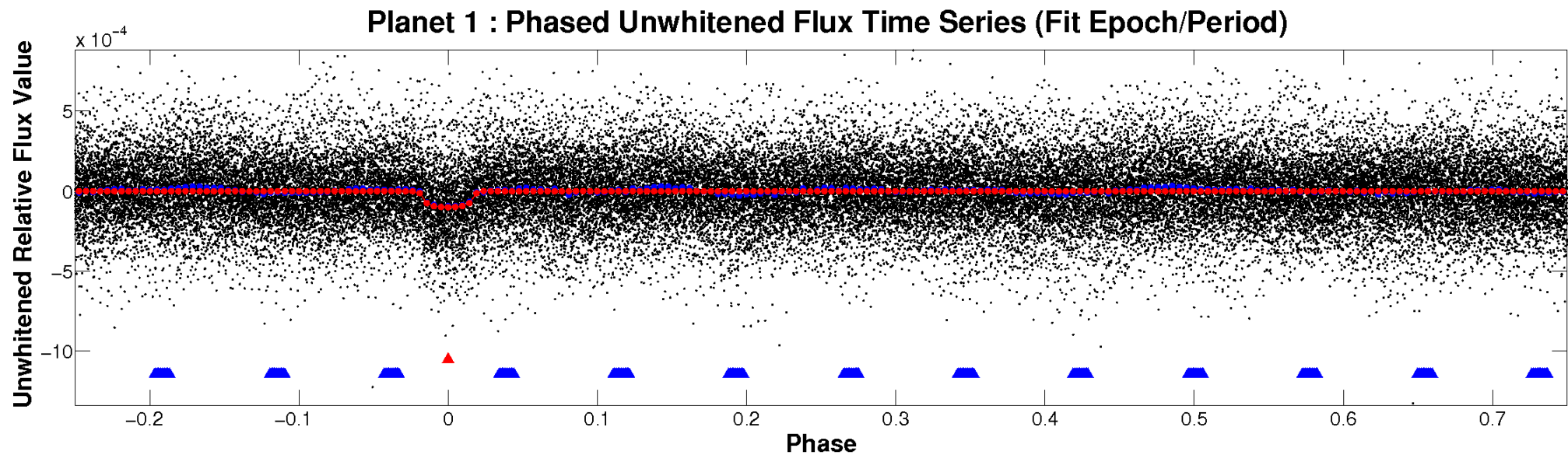


ALT Odd/Even

TCE 005544450-01

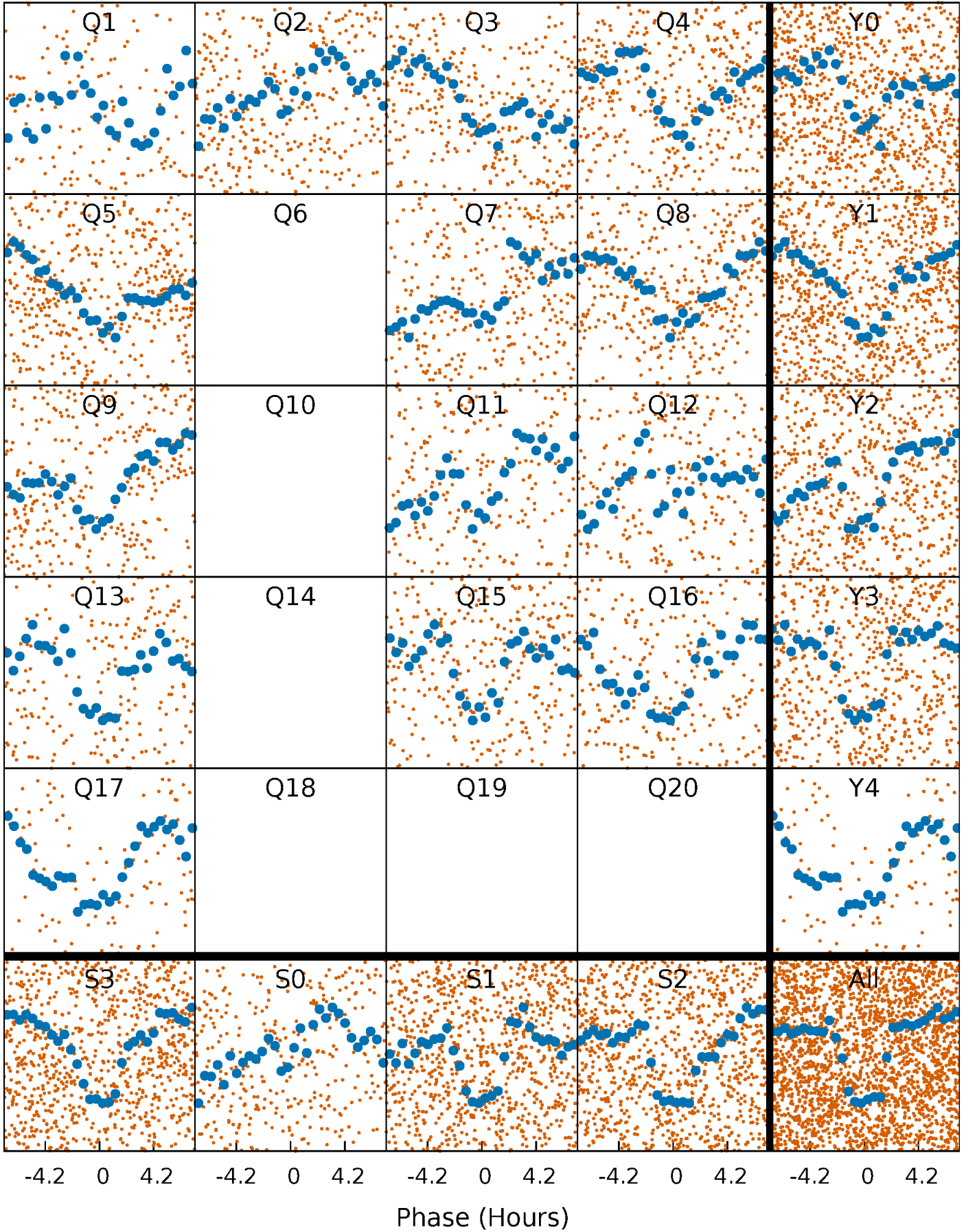


Non-Whitened Vs. Whitened Light Curve



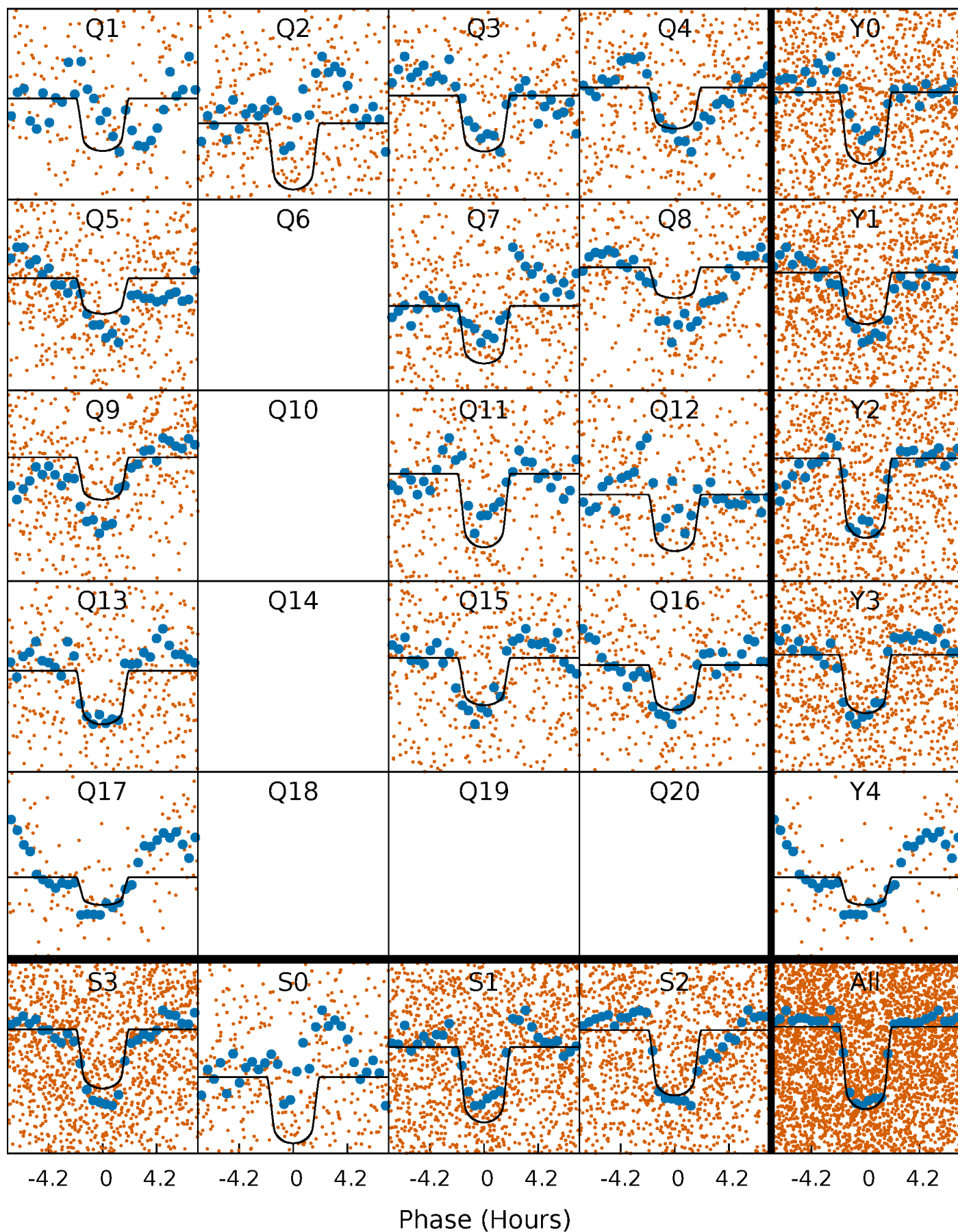
PDC Quarter-Phased Transit Curves

TCE 005544450-01 P= 4.293958 Days $T_0=133.498125$ (BKJD)



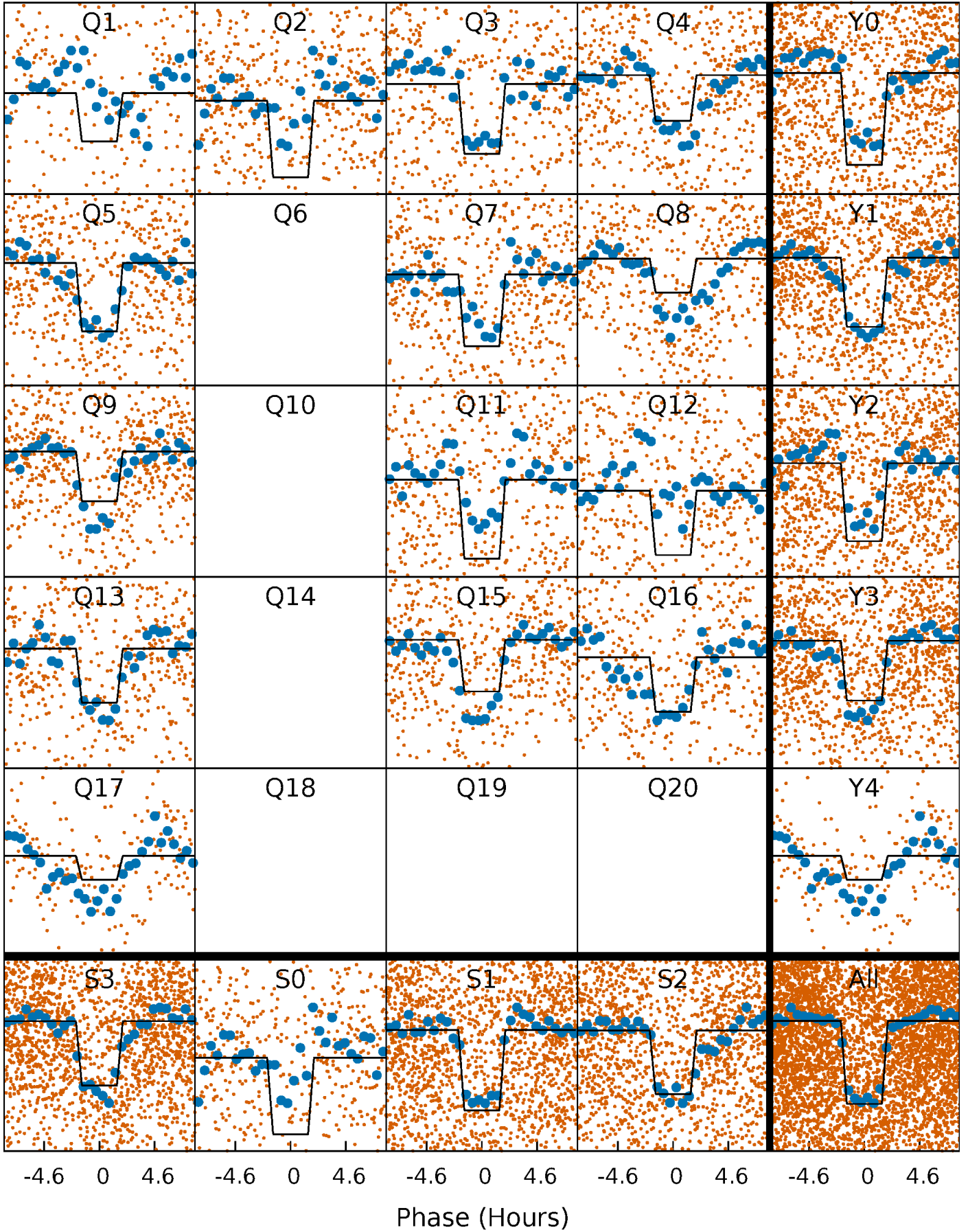
DV Quarter-Phased Transit Curves

TCE 005544450-01 P= 4.293958 Days $T_0=133.498125$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

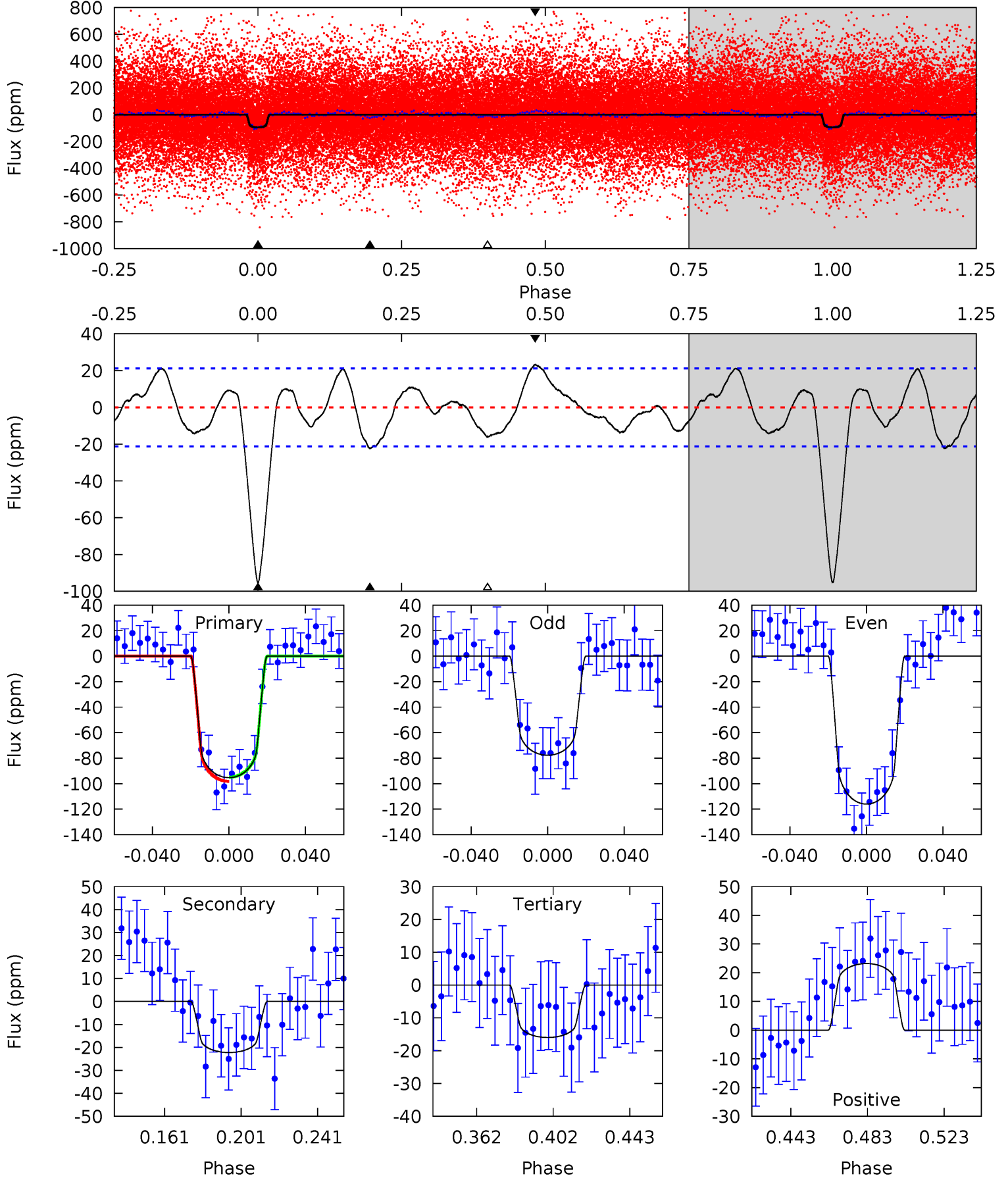
TCE 005544450-01 P= 4.293951 Days $T_0=133.498429$ (BKJD)



DV Model-Shift Uniqueness Test

005544450-01, P = 4.293958 Days, E = 129.204167 Days

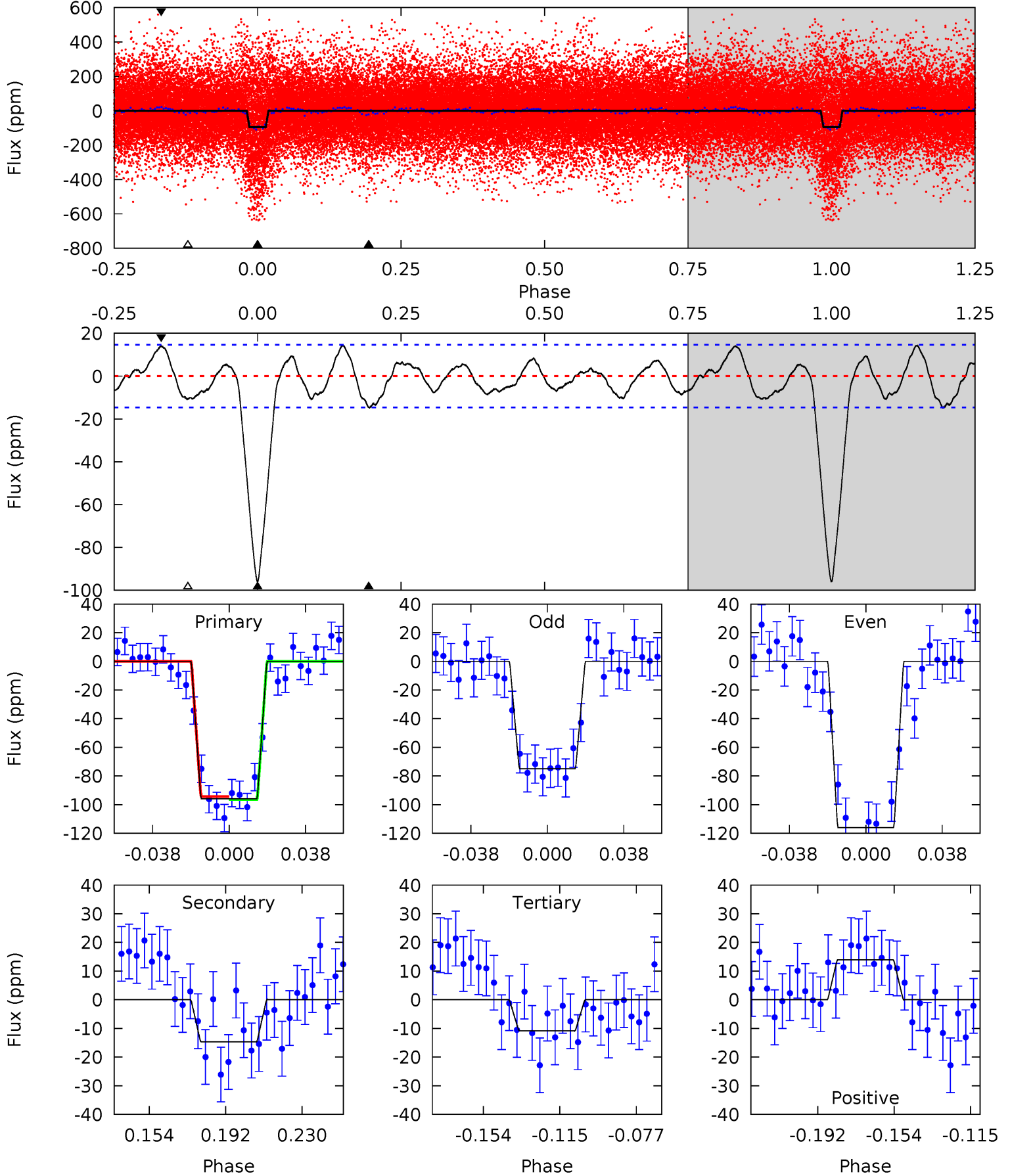
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.4	4.98	3.58	5.20	4.75	2.05	2.22	17.8	16.2	1.40	-0.21	4.31	0.99	0.20	0.36



Alt Model-Shift Uniqueness Test

005544450-01, P = 4.293951 Days, E = 129.204478 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.2	4.76	3.52	4.54	4.76	2.07	1.95	27.6	26.6	1.24	0.22	6.67	0.99	0.13	0.34



Stellar Parameters For KIC 005544450

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6615^{+65}_{-92}	$4.173^{+0.108}_{-0.132}$	$0.040^{+0.150}_{-0.200}$	$1.574^{+0.297}_{-0.216}$	$1.343^{+0.111}_{-0.100}$	$0.486^{+0.226}_{-0.181}$
	+1%/-1%	+3%/-3%	+375%/-500%	+19%/-14%	+8%/-7%	+47%/-37%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 005544450-01 / KOI 3226.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-22 ± 4	$1.85^{+0.32}_{-0.27}$	2138^{+115}_{-78}	4519^{+297}_{-288}	12^{+5}_{-4}
Alt.	-15 ± 3	$1.76^{+0.30}_{-0.30}$	2146^{+101}_{-90}	4255^{+334}_{-263}	$8.320^{+4.421}_{-2.548}$

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 $A_{obs} \gg 1.0$

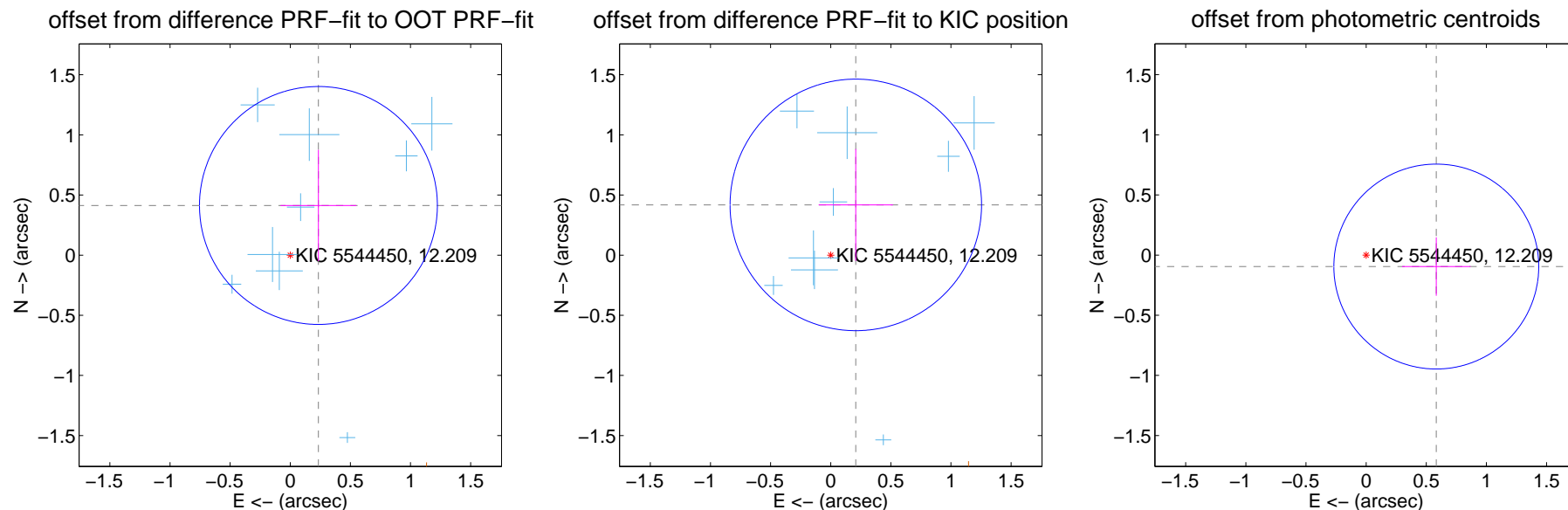
DV Centroid Data

Supplemental centroid analysis for 005544450-01. Kepler magnitude: 12.21. Transit SNR 15.10

There are 9 quarters with good PRF difference image offsets

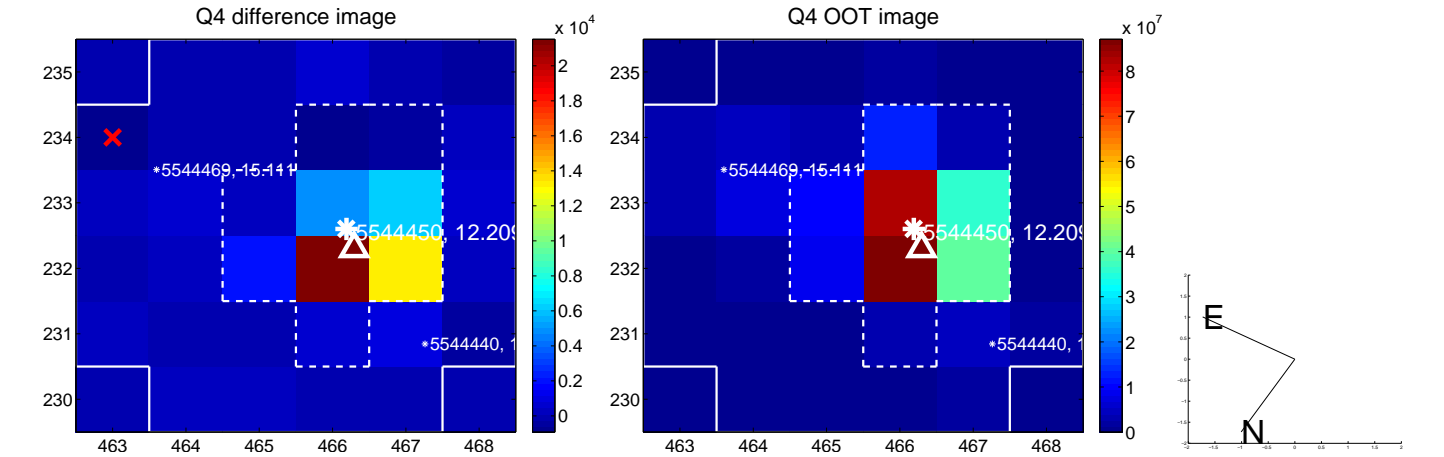
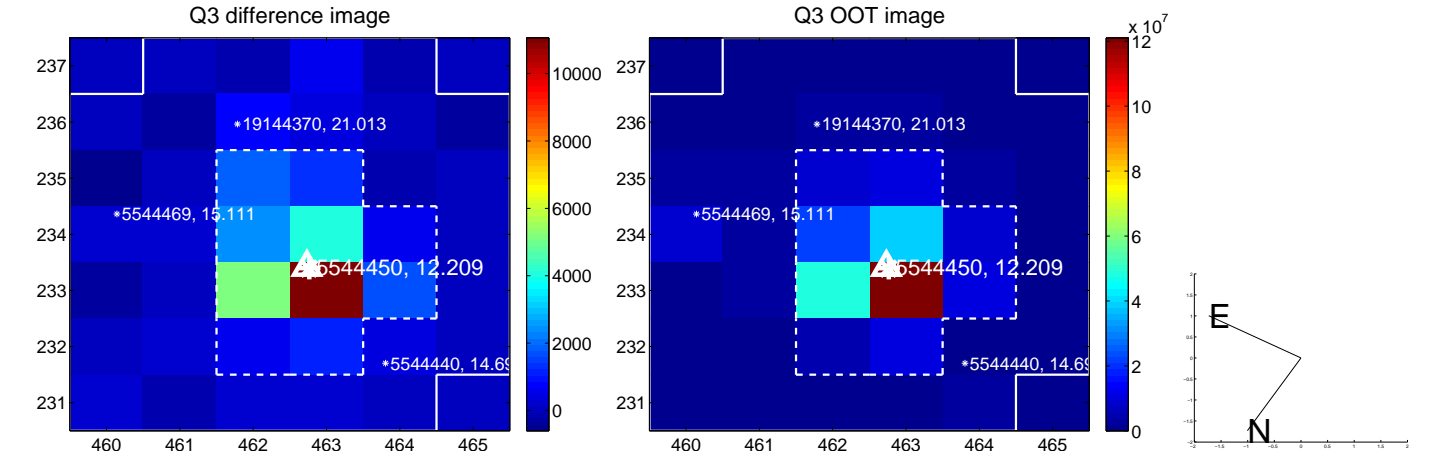
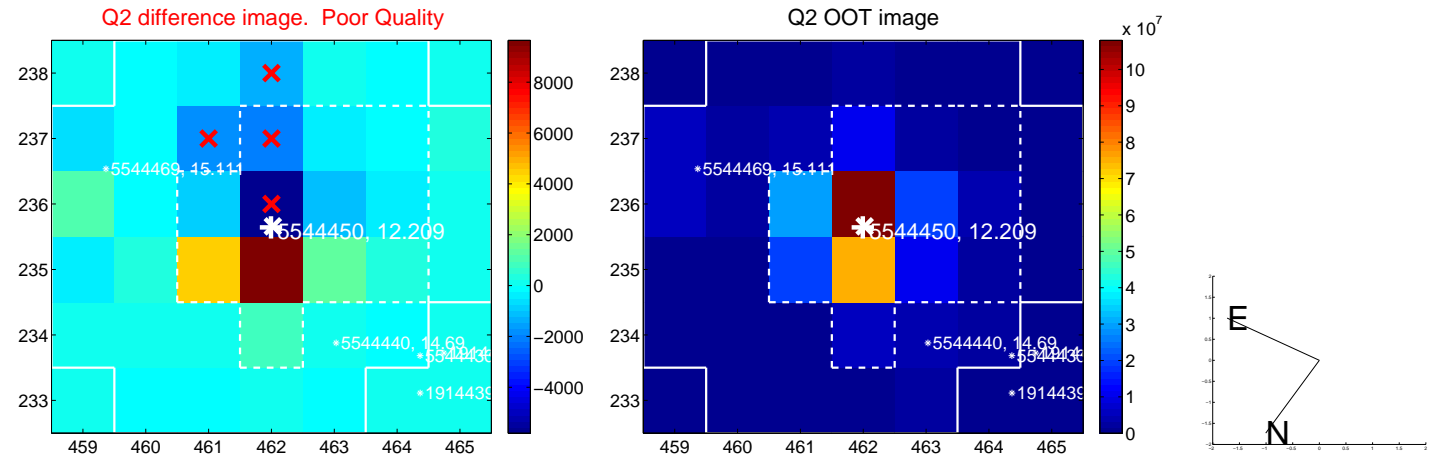
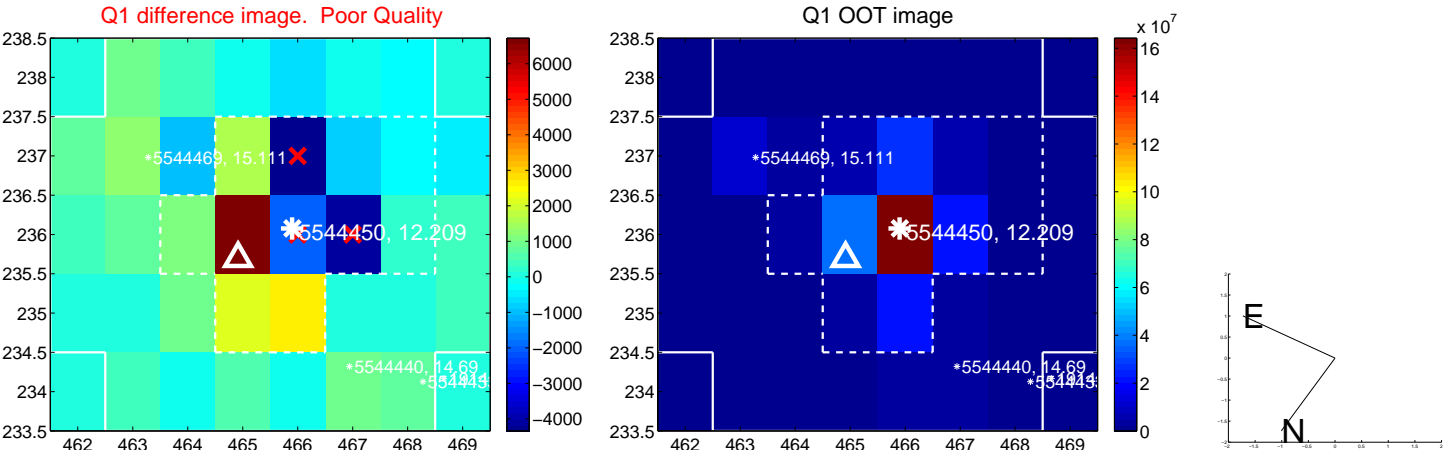
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.475 ± 0.330	1.44	-0.234 ± 0.315	0.413 ± 0.463
PRF-fit source offset from KIC position	0.467 ± 0.349	1.34	-0.209 ± 0.309	0.418 ± 0.464
photometric centroid source offset	0.59 ± 0.28	2.08	-0.58 ± 0.28	-0.10 ± 0.24

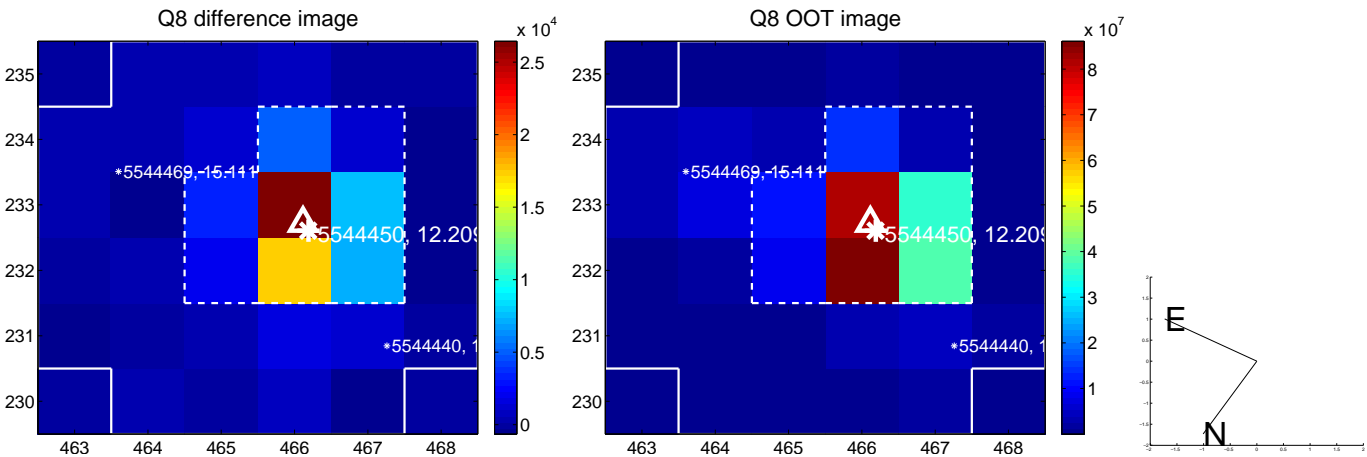
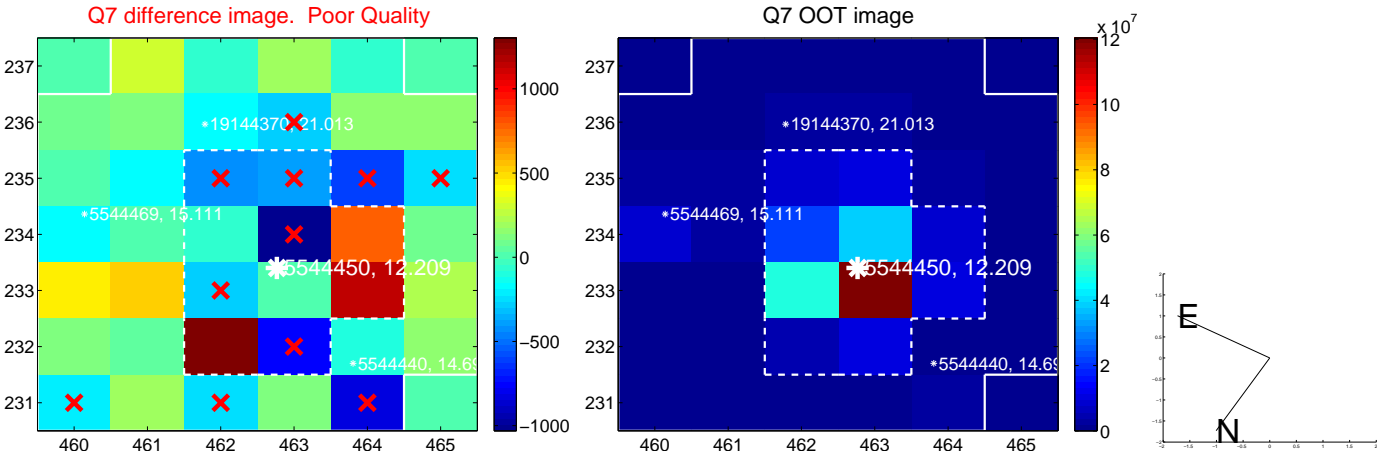
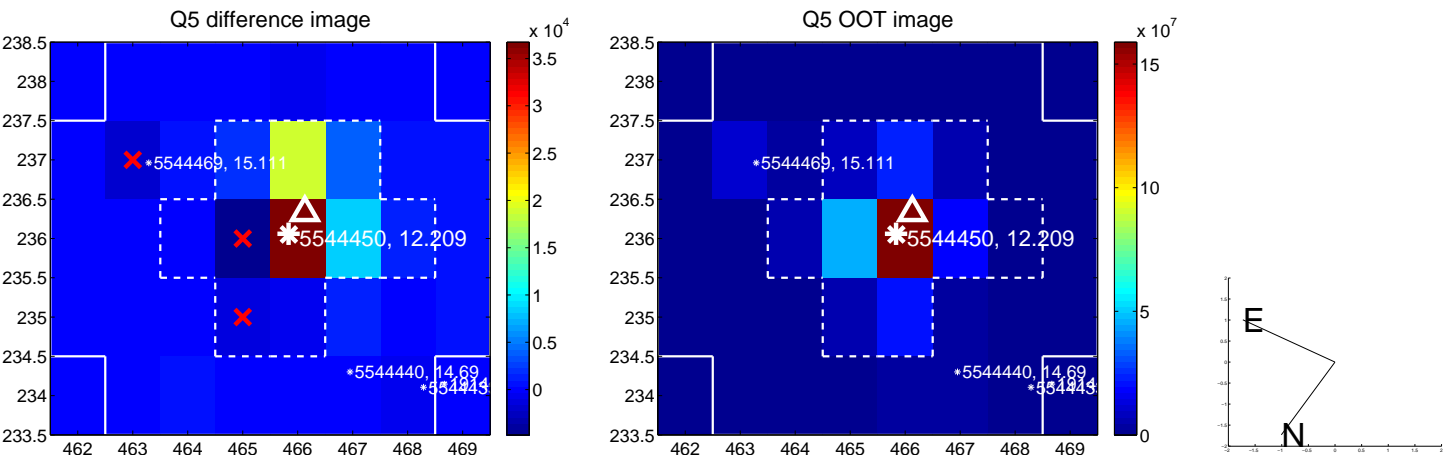


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

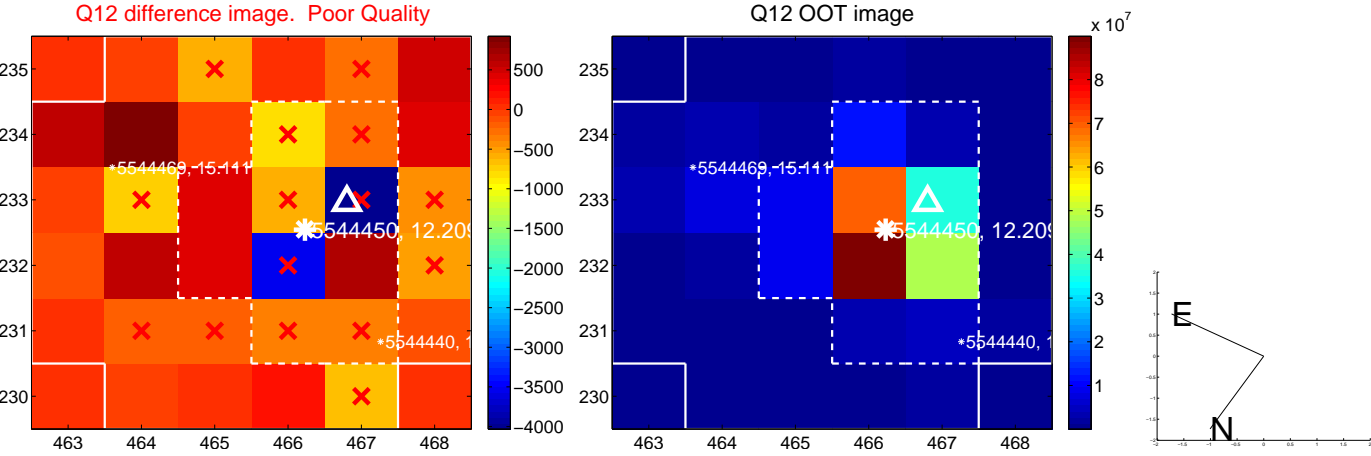
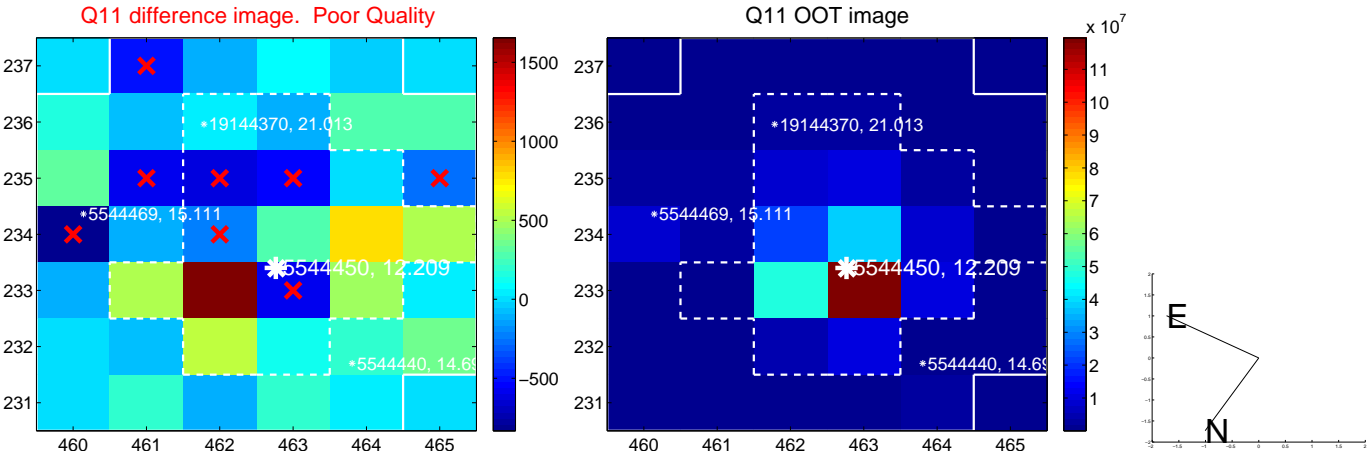
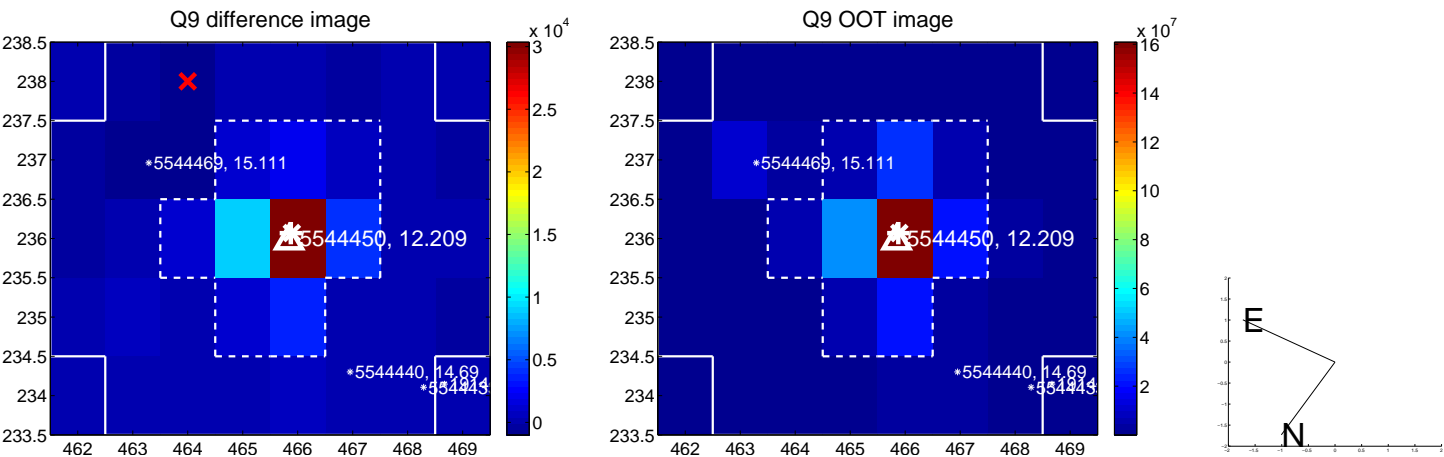
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



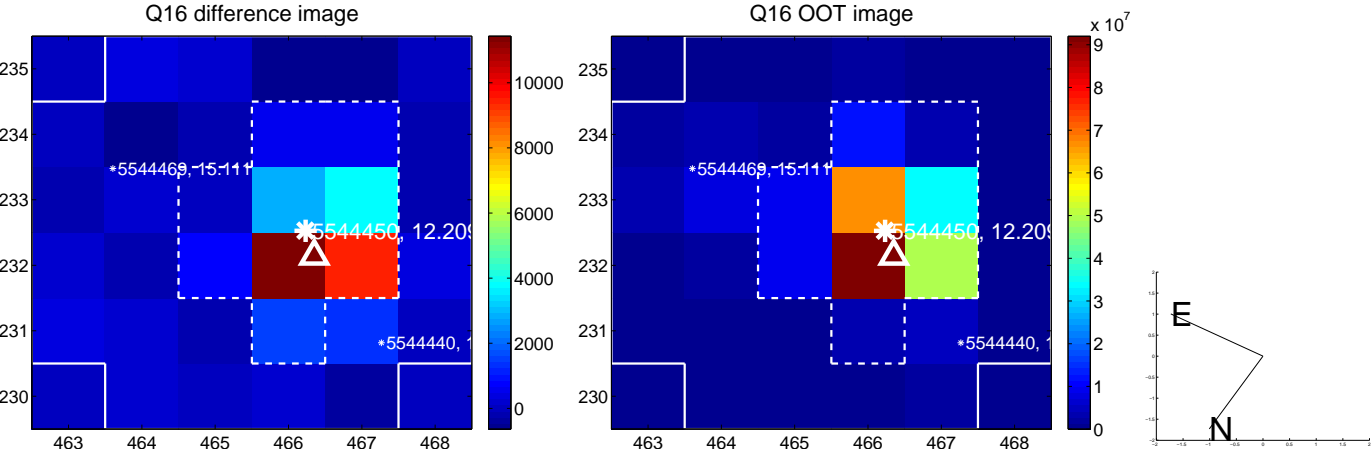
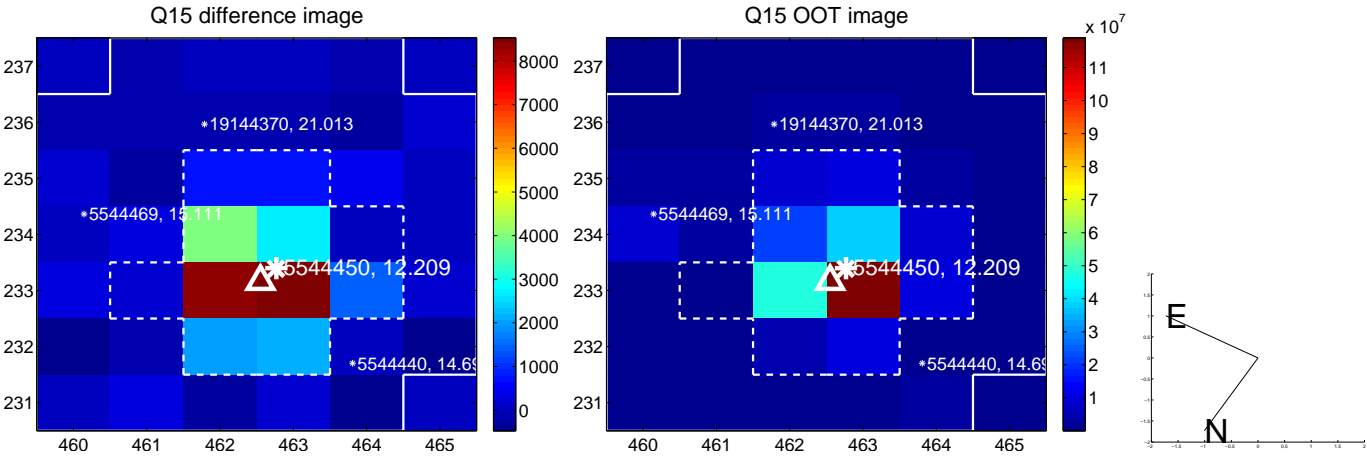
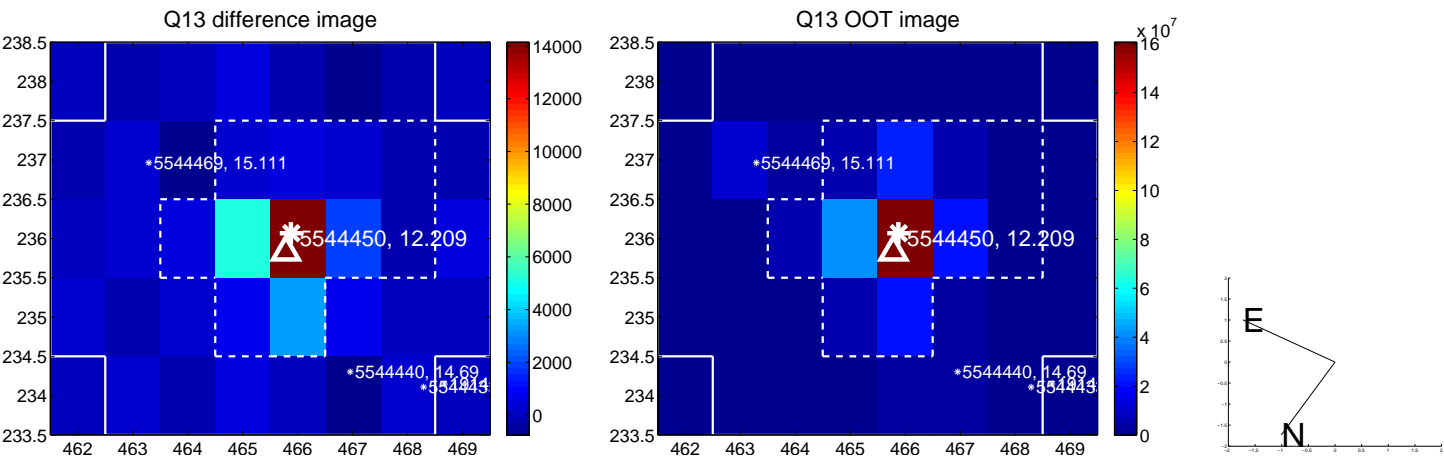
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



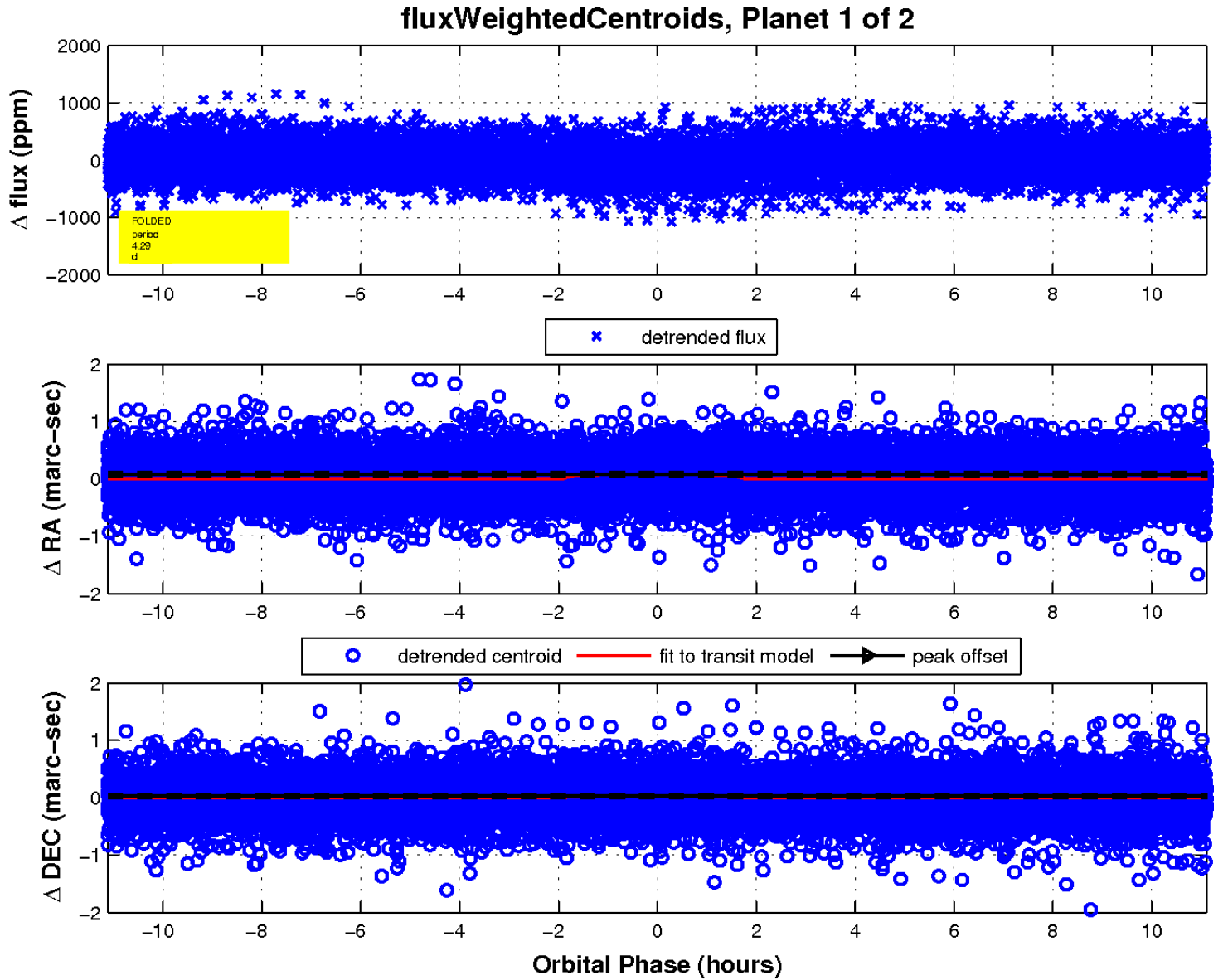
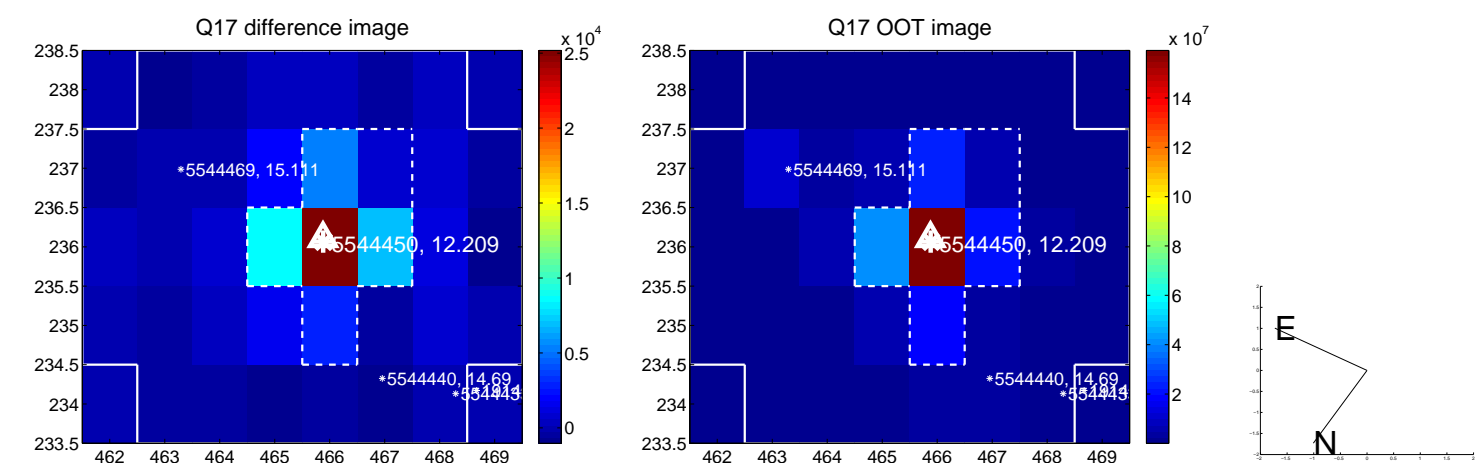
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



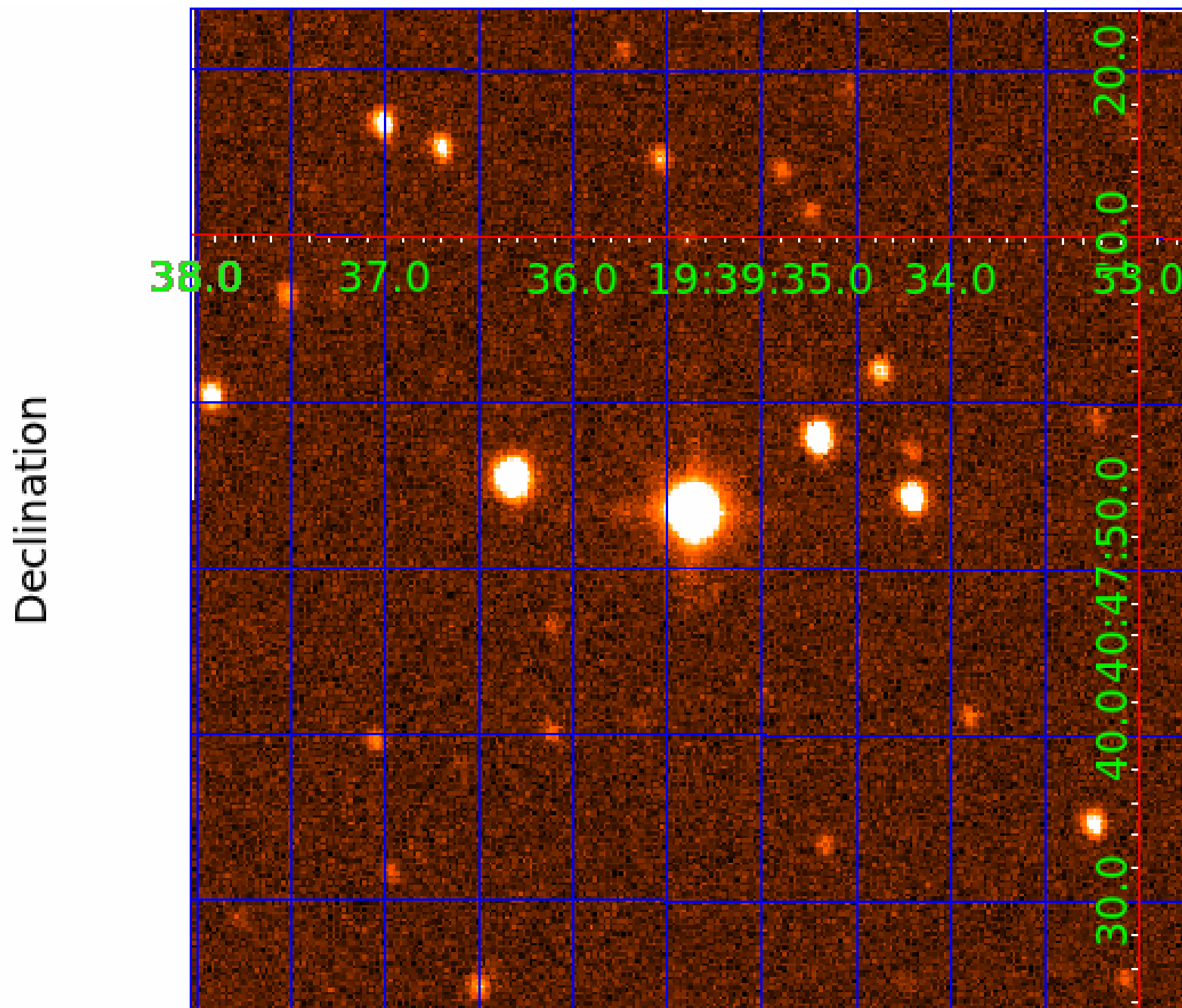
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 005544450

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})
005544450-01	OBS	3226.01	4.293958	133.498125	100.5	3.706	14.4	15.1	1.57	6615	1.84	1303.79
005544450-02	OBS	3226.02	6.936617	133.973186	86.9	3.662	8.6	9.6	1.57	6615	1.60	687.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005544450-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
005544450-02	OBS	PC	0.99	0	0	0	0	NO_COMMENT

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

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

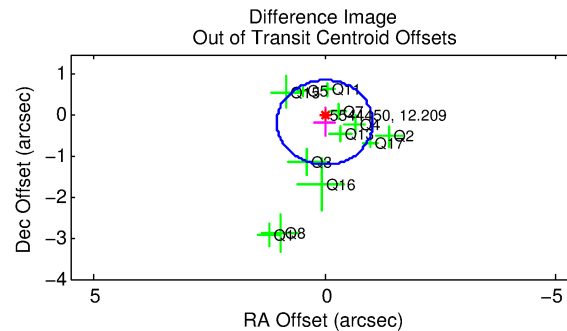
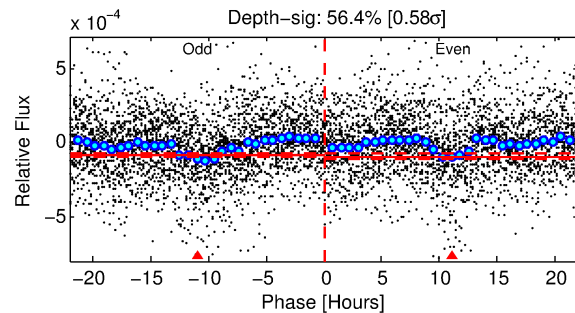
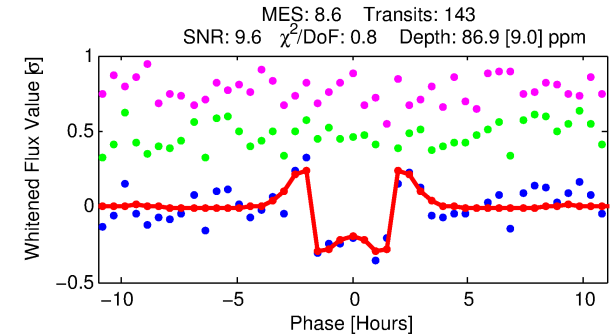
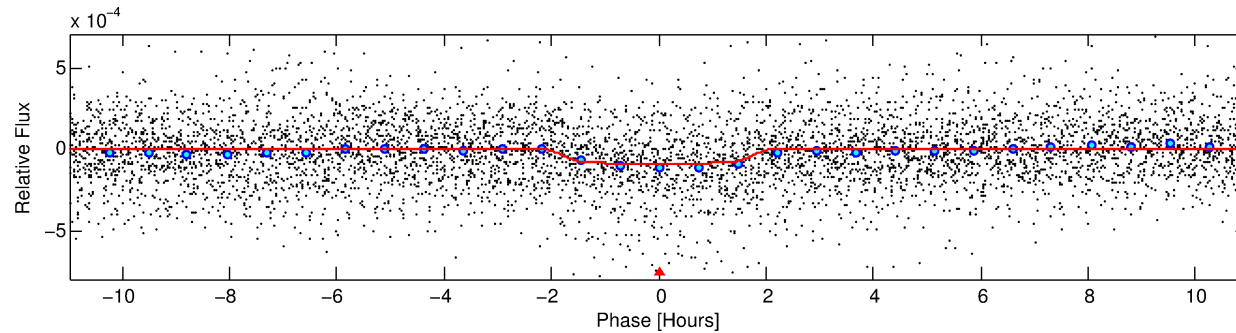
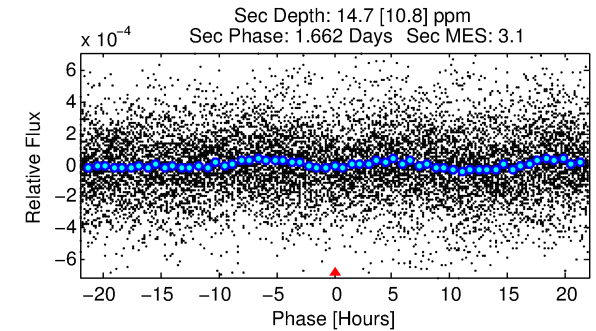
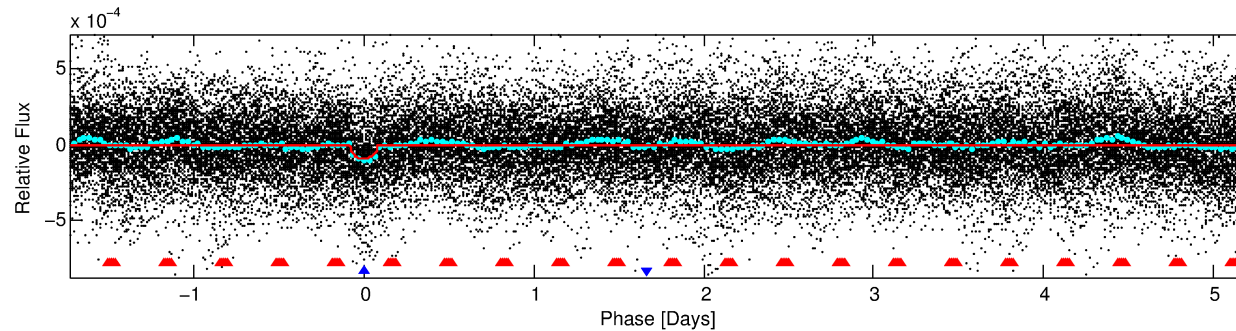
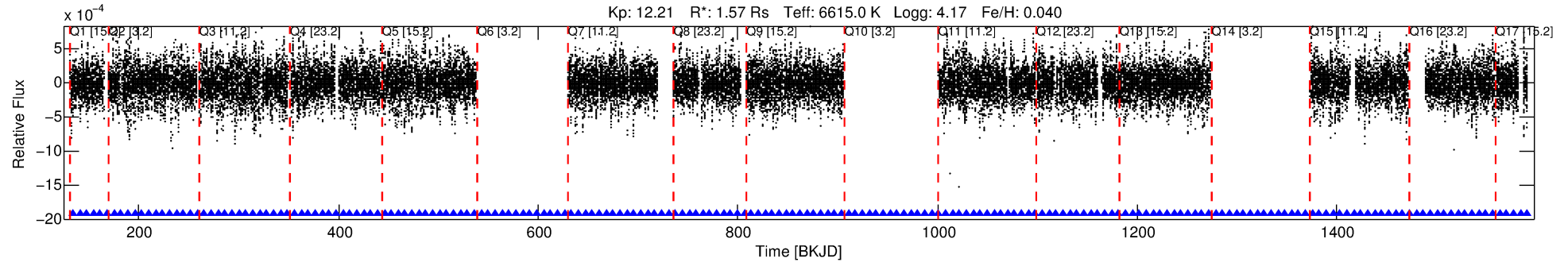
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005544450-02

No Significant Match Found

DV One-Page Summary

KIC: 5544450 Candidate: 2 of 2 Period: 6.937 d
KOI: K03226 Corr: No Ephemeris Match



DV Fit Results:

Period = 6.93662 [0.00002] d
Epoch = 133.9732 [0.0025] BKJD
Rp/R* = 0.0093 [0.0016]
a/R* = 9.54 [8.31]
b = 0.77 [0.48]
Seff = 687.84 [168.45]
Teff = 1306 [80] K
Rp = 1.60 [0.40] Re
a = 0.0786 [0.0127] AU
Ag = 19.45 [16.37] [1.13σ]
Teffp = 4240 [858] K [3.41σ]

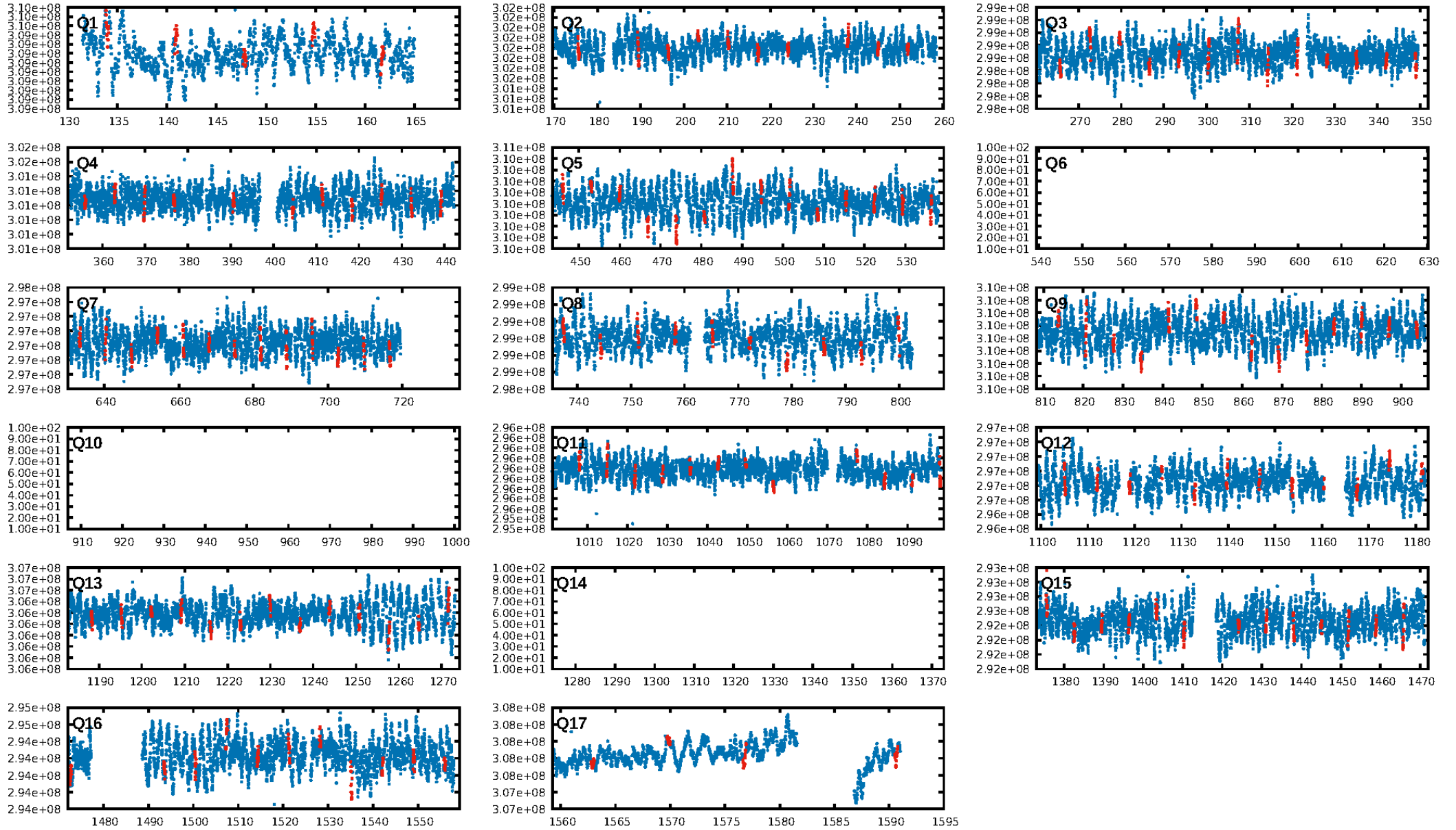
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [12.17σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 93.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.61e-16
RollingBand-fgt: 1.00 [134/134]
GhostDiagnostic-chr: 7.802
Centroid-sig: 0.2%
Centroid-so: 0.499 arcsec [1.36σ]
OotOffset-rm: 0.168 arcsec [0.49σ]
KicOffset-rm: 0.154 arcsec [0.43σ]
OotOffset-st: 1/4/3/4 [12]
KicOffset-st: 1/4/3/4 [12]
DiffImageQuality-fgm: 0.83 [10/12]
DiffImageOverlap-fno: 1.00 [14/14]

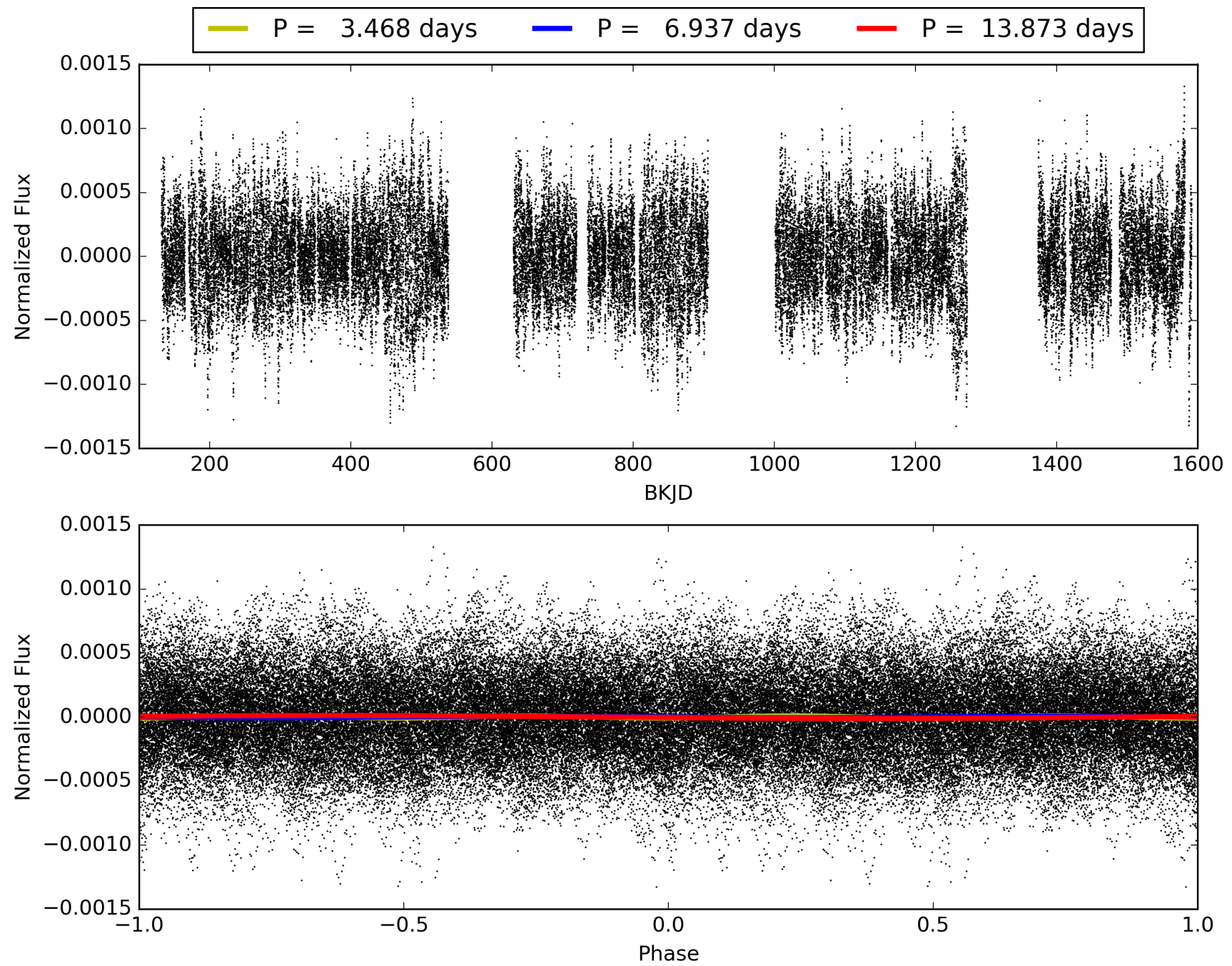
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 00:37:35 Z

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

TCE 005544450-02, PDC Light Curves

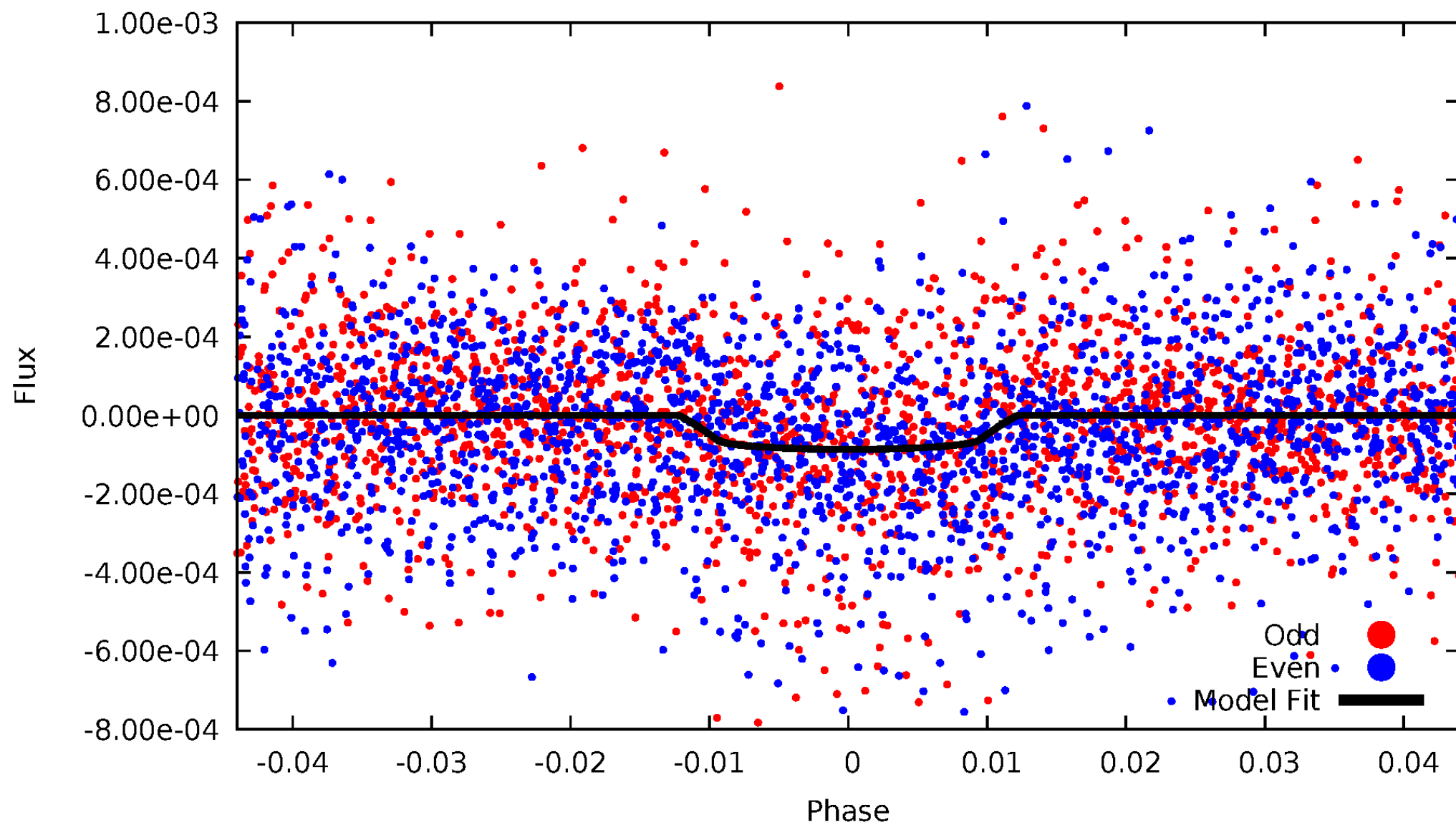


TCE 005544450-02



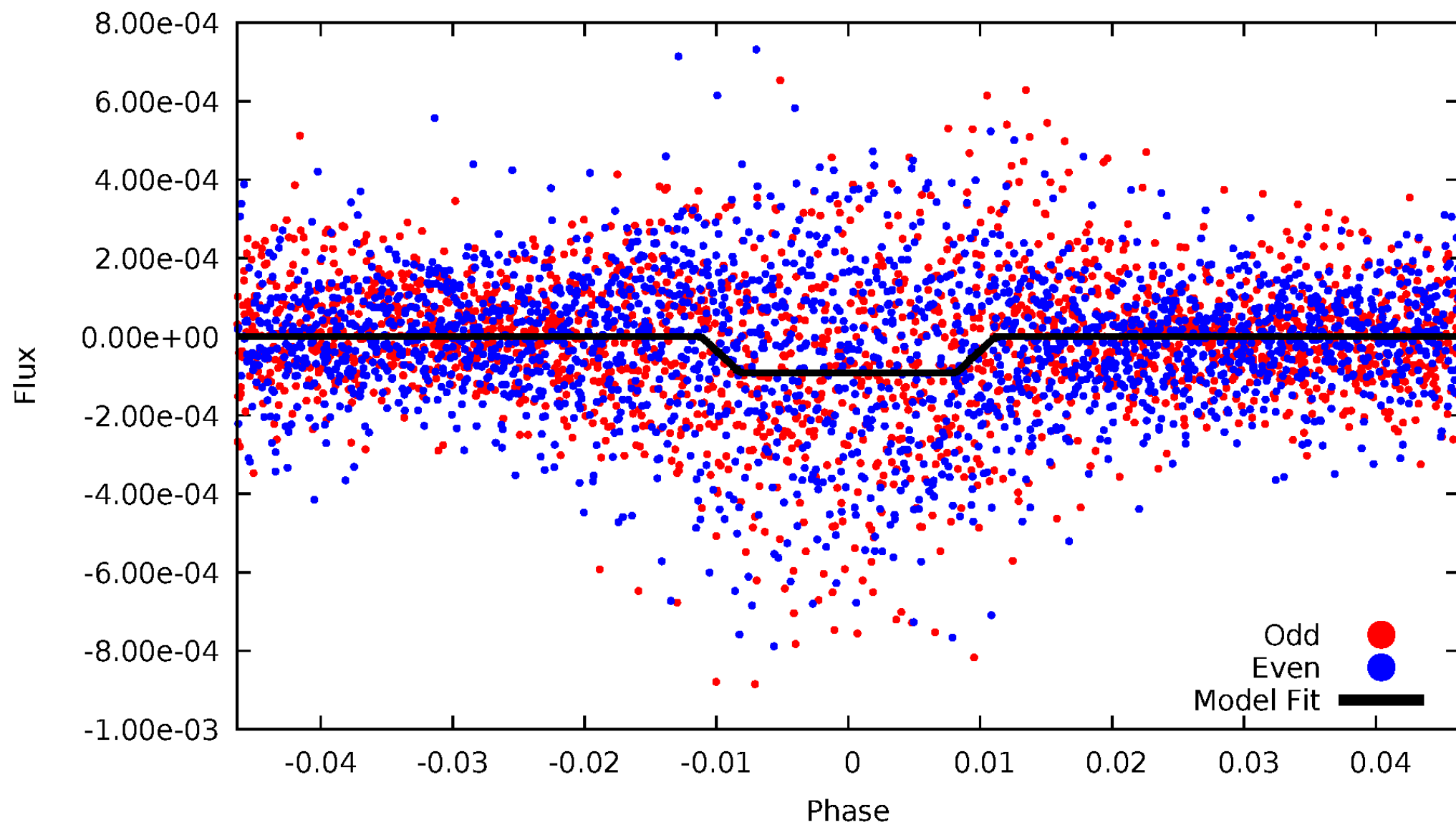
DV Odd/Even

TCE 005544450-02



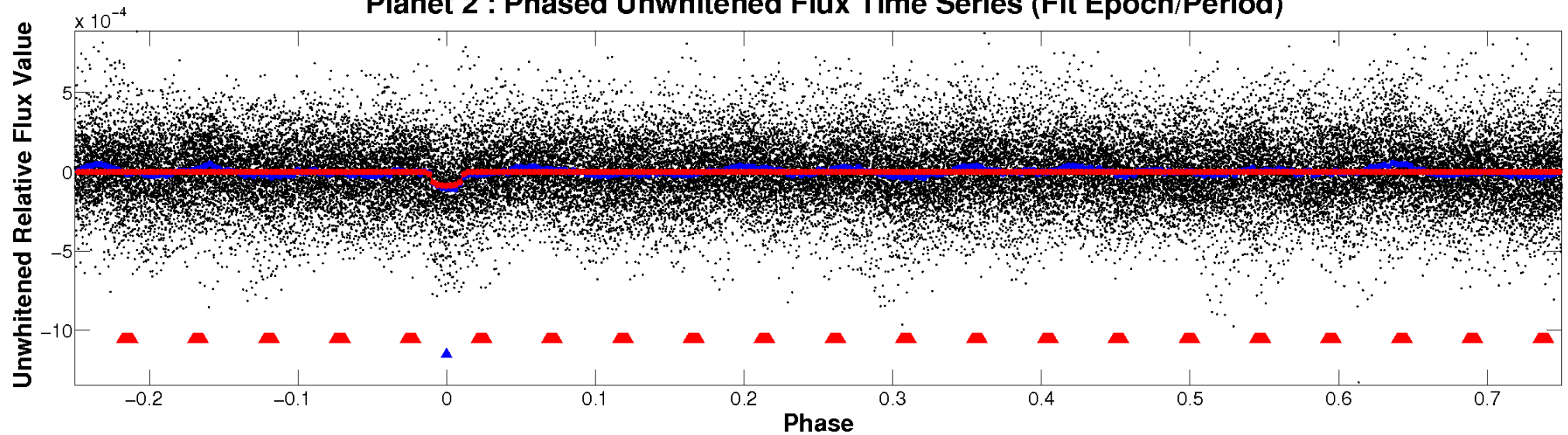
ALT Odd/Even

TCE 005544450-02

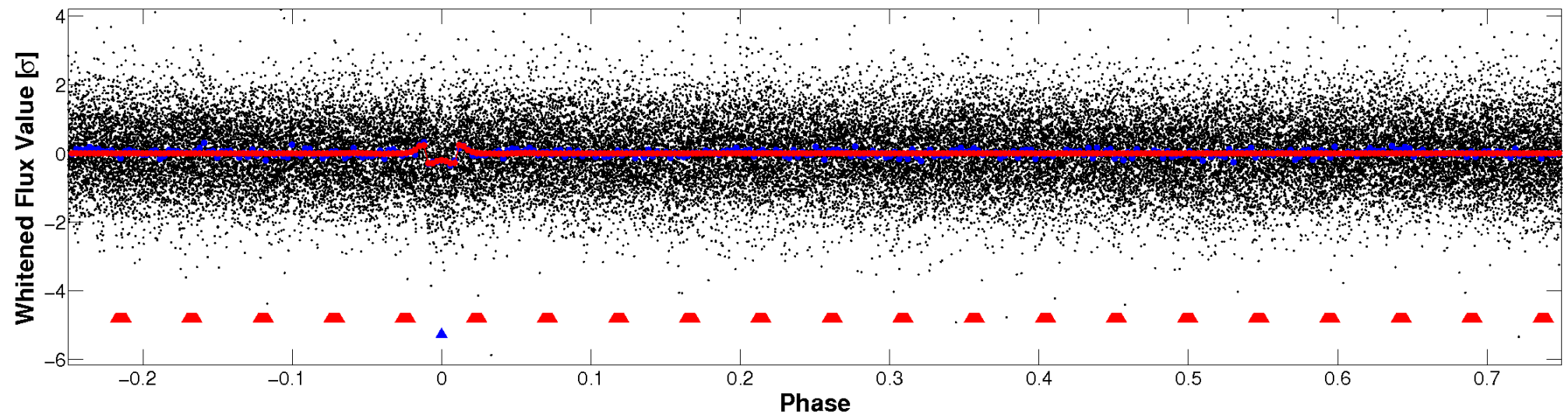


Non-Whitened Vs. Whitened Light Curve

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

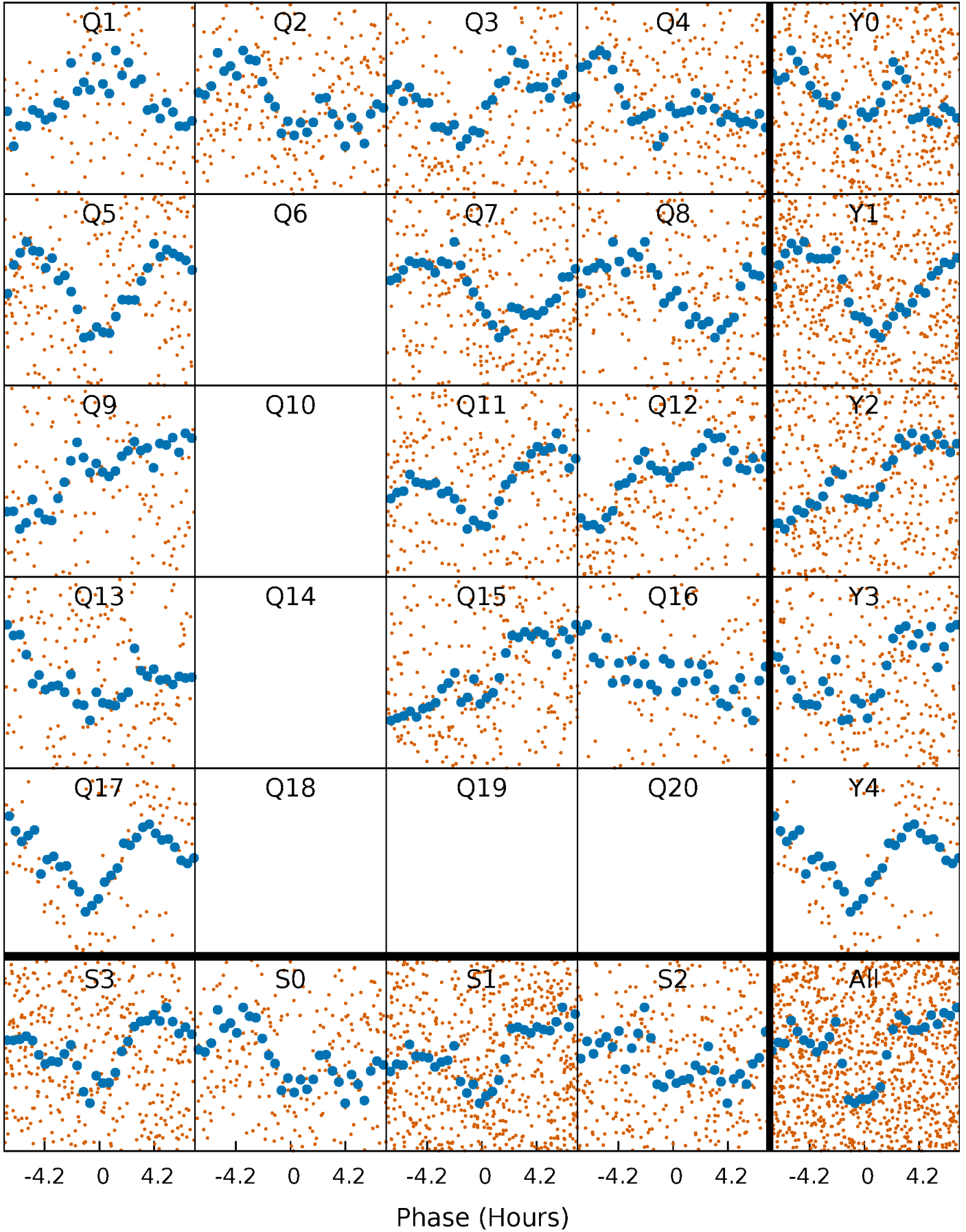


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



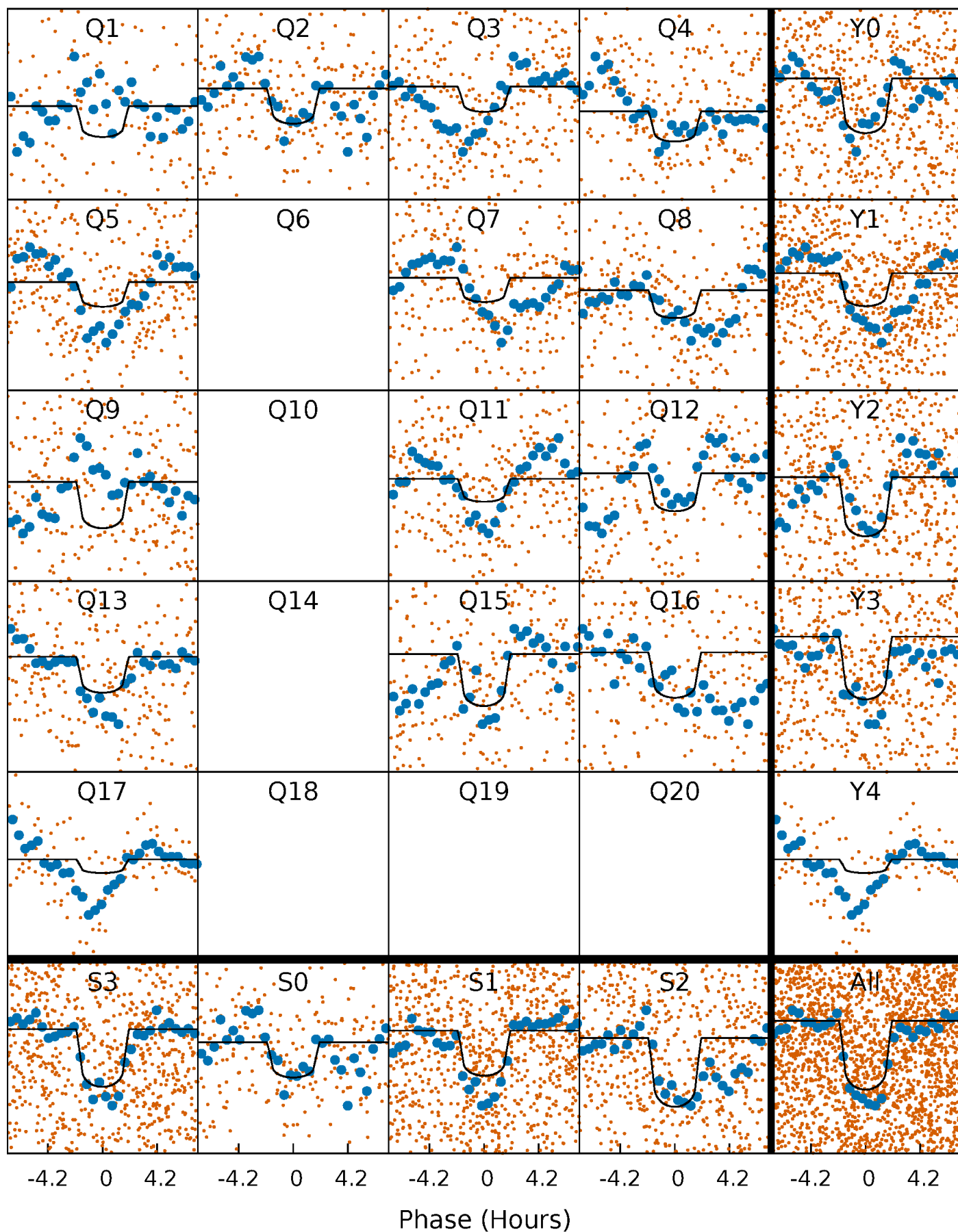
PDC Quarter-Phased Transit Curves

TCE 005544450-02 P= 6.936617 Days $T_0=133.973186$ (BKJD)



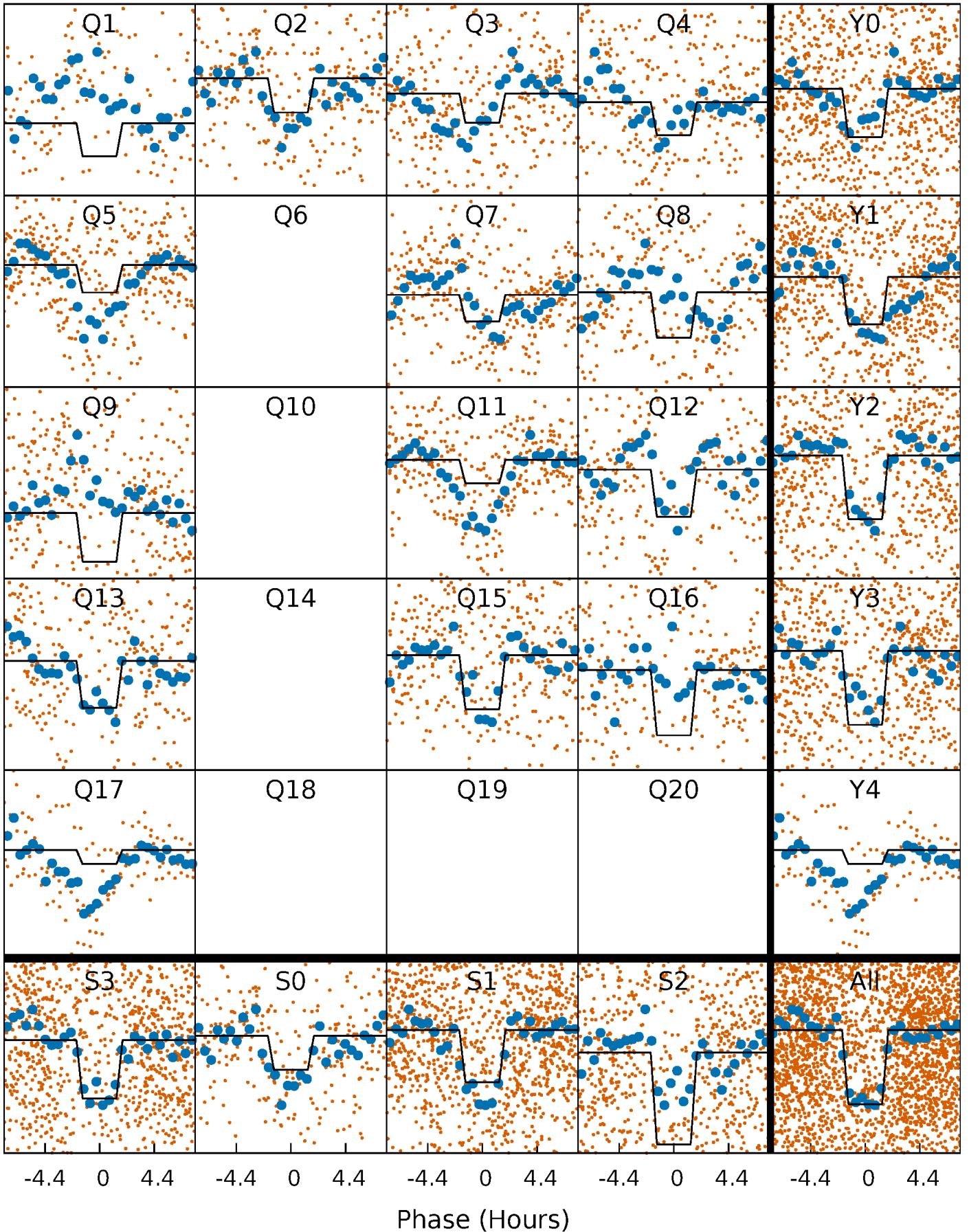
DV Quarter-Phased Transit Curves

TCE 005544450-02 P= 6.936617 Days $T_0=133.973186$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

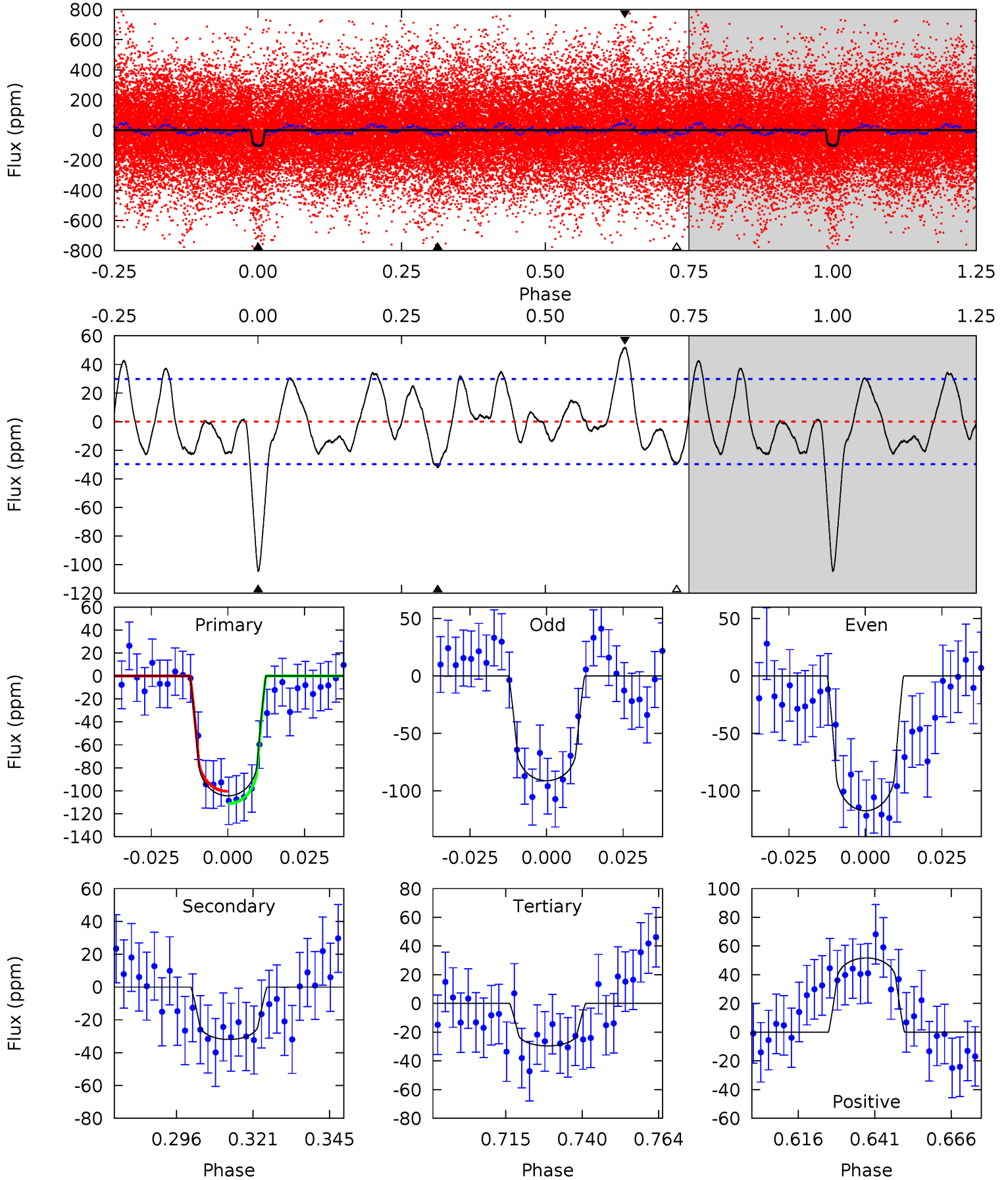
TCE 005544450-02 P= 6.936599 Days $T_0=133.977693$ (BKJD)



DV Model-Shift Uniqueness Test

005544450-02, P = 6.936617 Days, E = 127.036569 Days

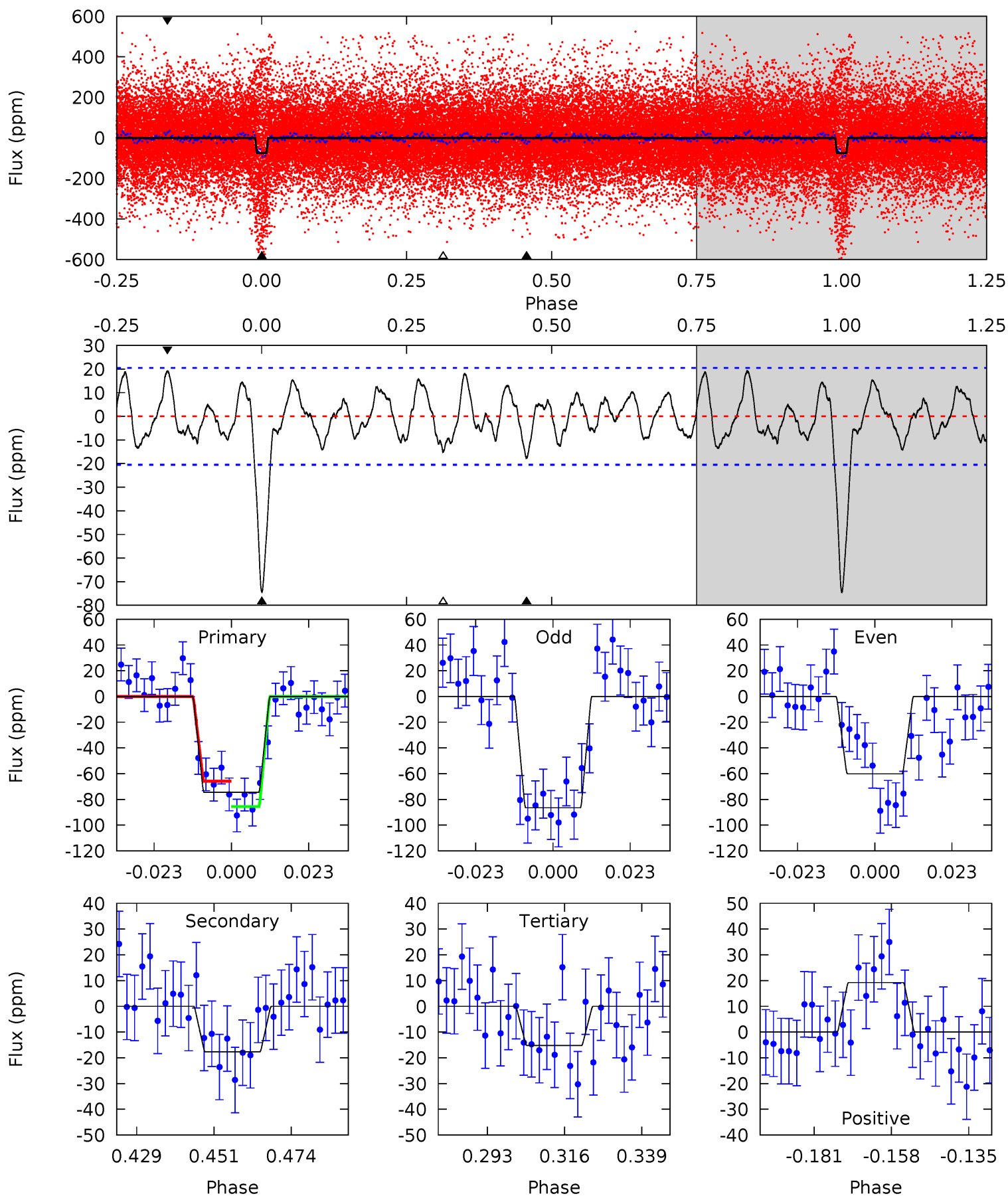
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.0	5.21	4.82	8.43	4.85	2.25	2.95	12.2	8.59	0.39	-3.22	2.13	1.07	0.33	0.88



Alt Model-Shift Uniqueness Test

005544450-02, P = 6.936599 Days, E = 127.041094 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.7	4.20	3.61	4.57	4.87	2.28	1.88	14.1	13.1	0.58	-0.38	3.14	1.25	0.21	2.35



Stellar Parameters For KIC 005544450

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6615^{+65}_{-92}	$4.173^{+0.108}_{-0.132}$	$0.040^{+0.150}_{-0.200}$	$1.574^{+0.297}_{-0.216}$	$1.343^{+0.111}_{-0.100}$	$0.486^{+0.226}_{-0.181}$
	+1%/-1%	+3%/-3%	+375%/-500%	+19%/-14%	+8%/-7%	+47%/-37%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 005544450-02 / KOI 3226.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-32 ± 6	$1.62^{+0.30}_{-0.30}$	1819^{+91}_{-72}	5165^{+534}_{-405}	40^{+25}_{-13}
Alt.	-18 ± 4	$1.66^{+0.32}_{-0.29}$	1822^{+94}_{-70}	4530^{+389}_{-351}	22^{+11}_{-8}

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 $A_{obs} \gg 1.0$

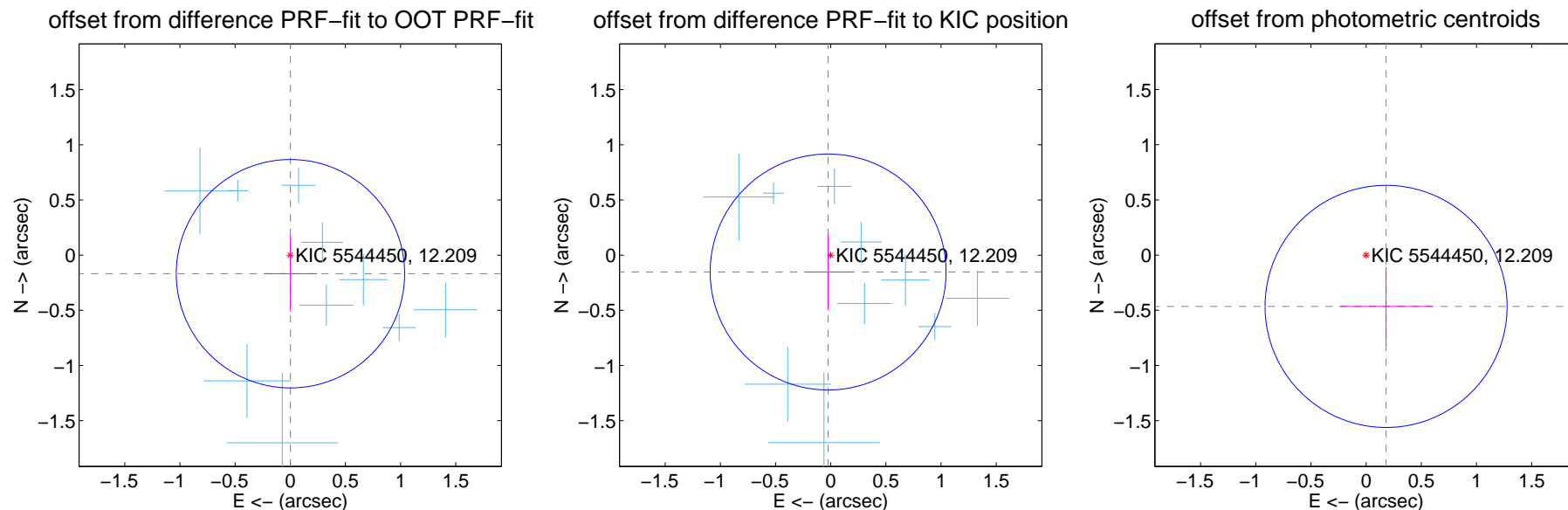
DV Centroid Data

Supplemental centroid analysis for 005544450-02. Kepler magnitude: 12.21. Transit SNR 9.58

There are 10 quarters with good PRF difference image offsets

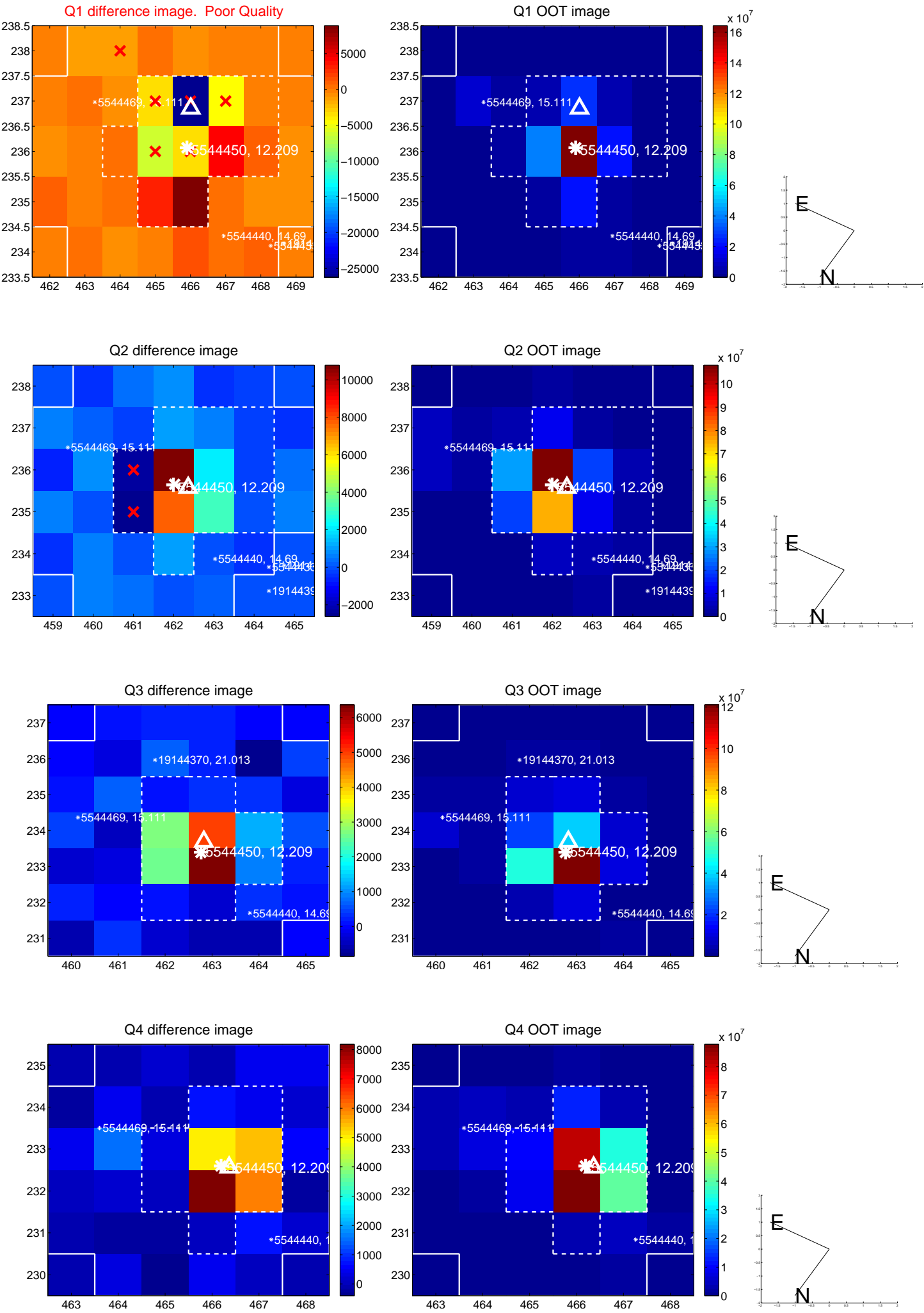
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.168 ± 0.345	0.49	-0.002 ± 0.241	-0.168 ± 0.346
PRF-fit source offset from KIC position	0.154 ± 0.356	0.43	0.024 ± 0.215	-0.153 ± 0.345
photometric centroid source offset	0.50 ± 0.37	1.36	-0.18 ± 0.42	-0.46 ± 0.36

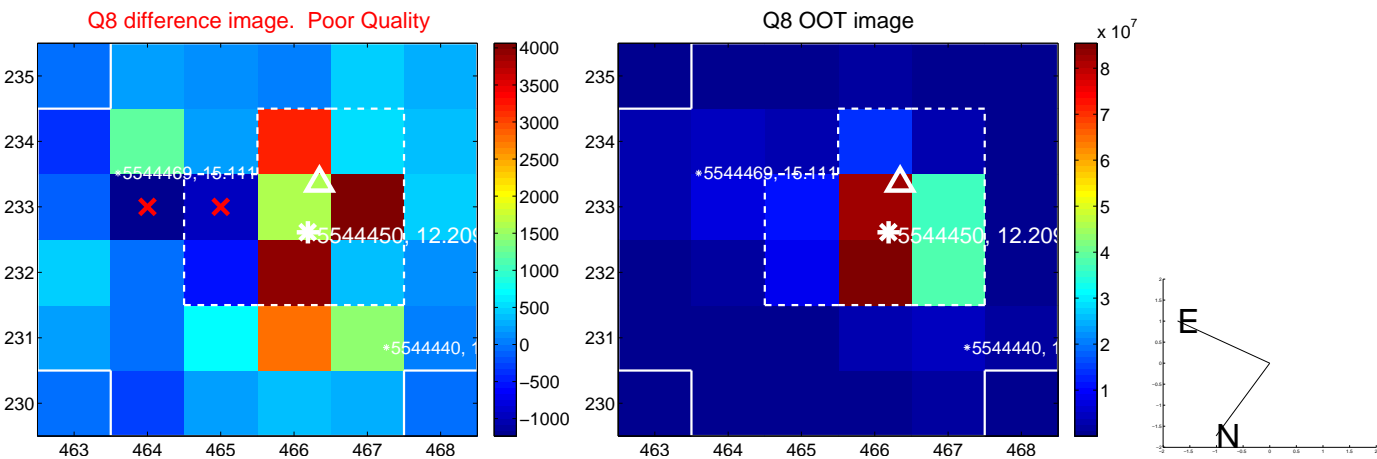
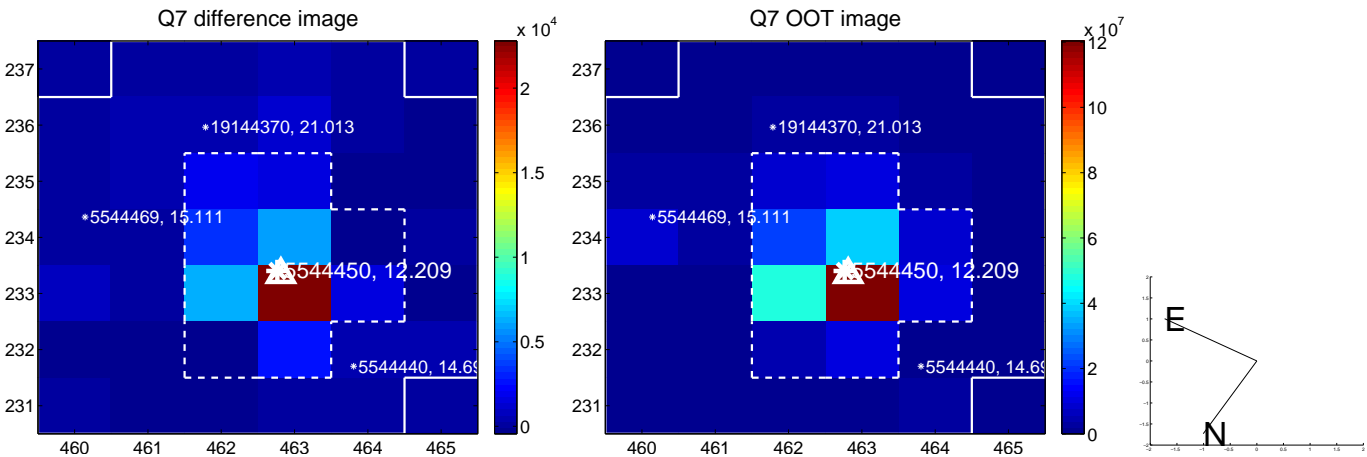
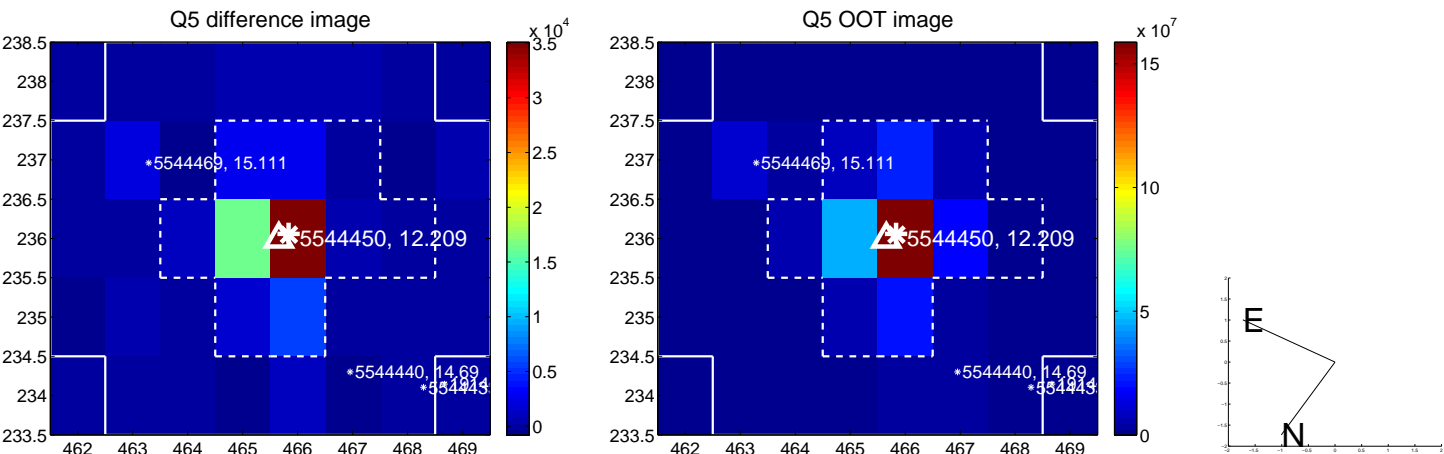


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

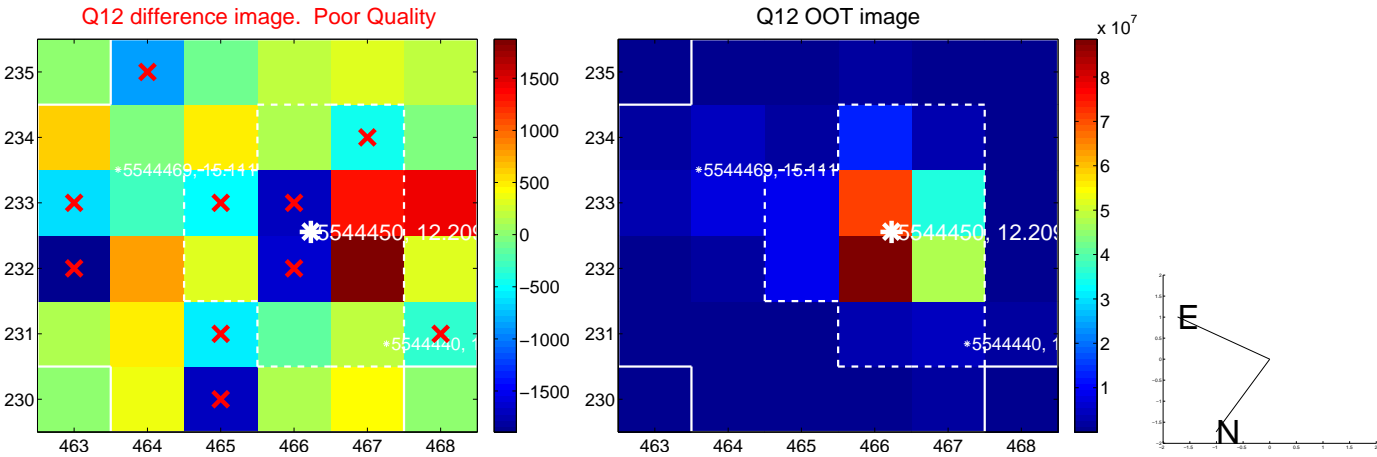
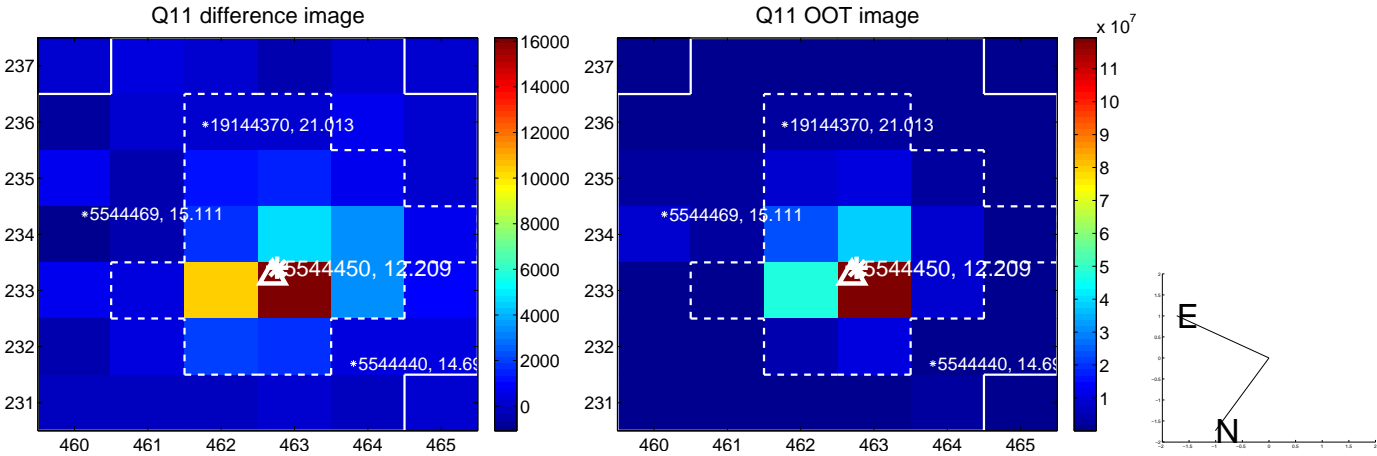
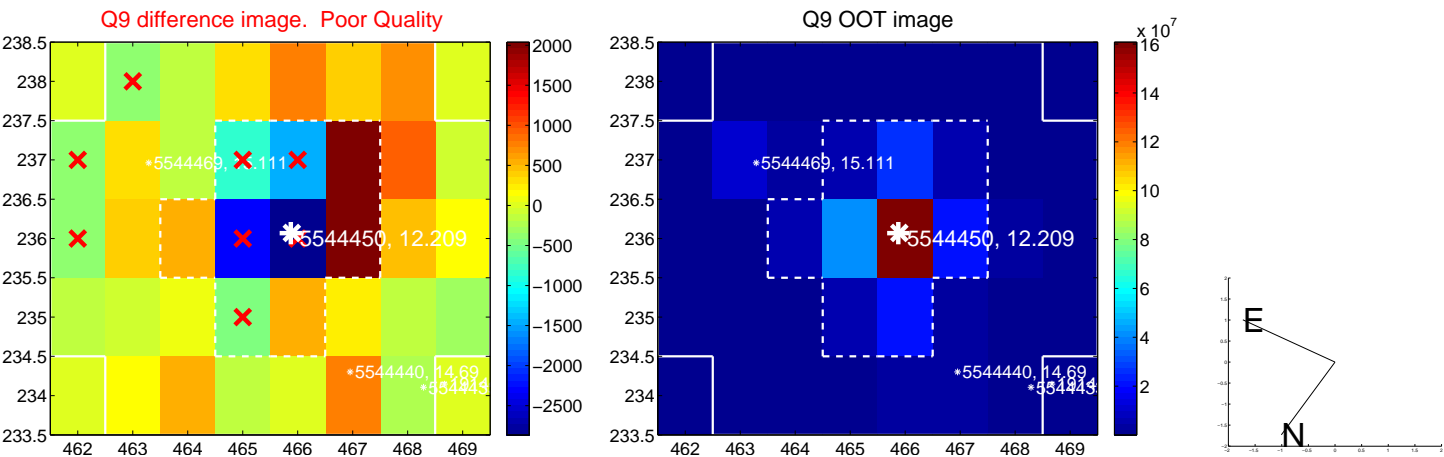
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



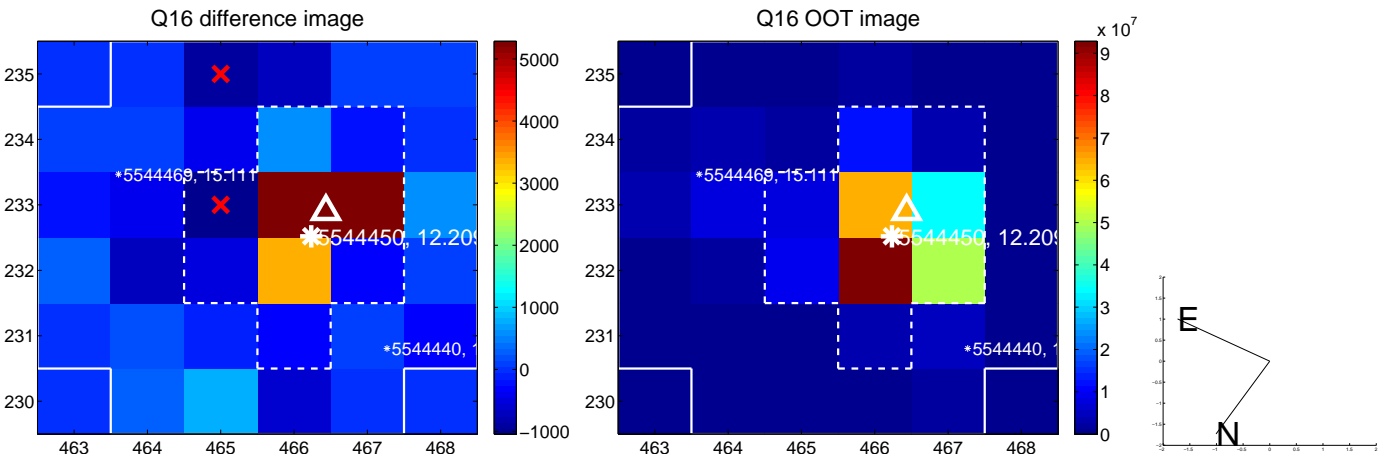
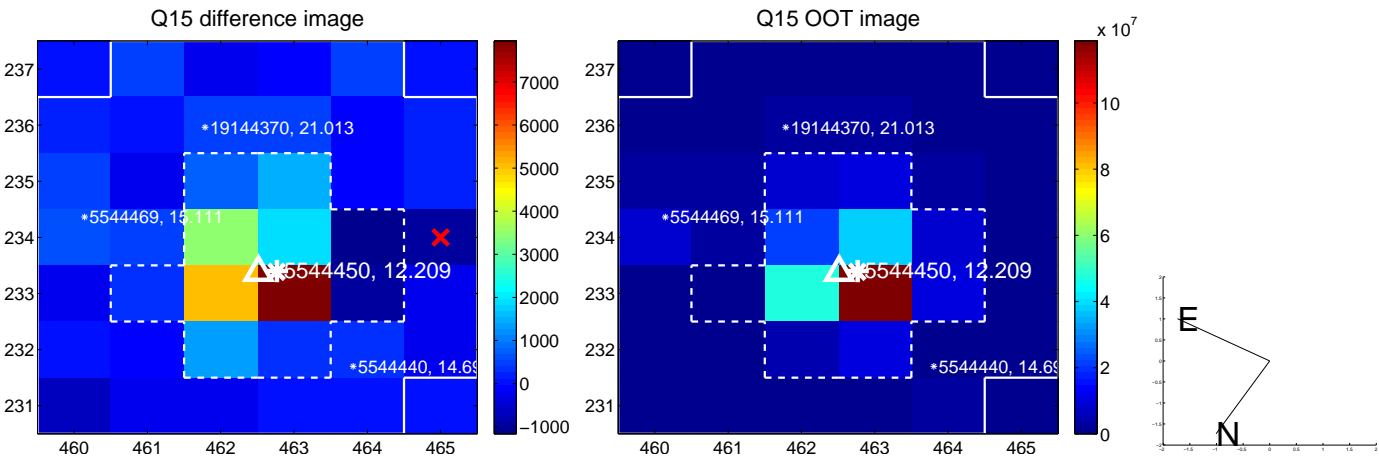
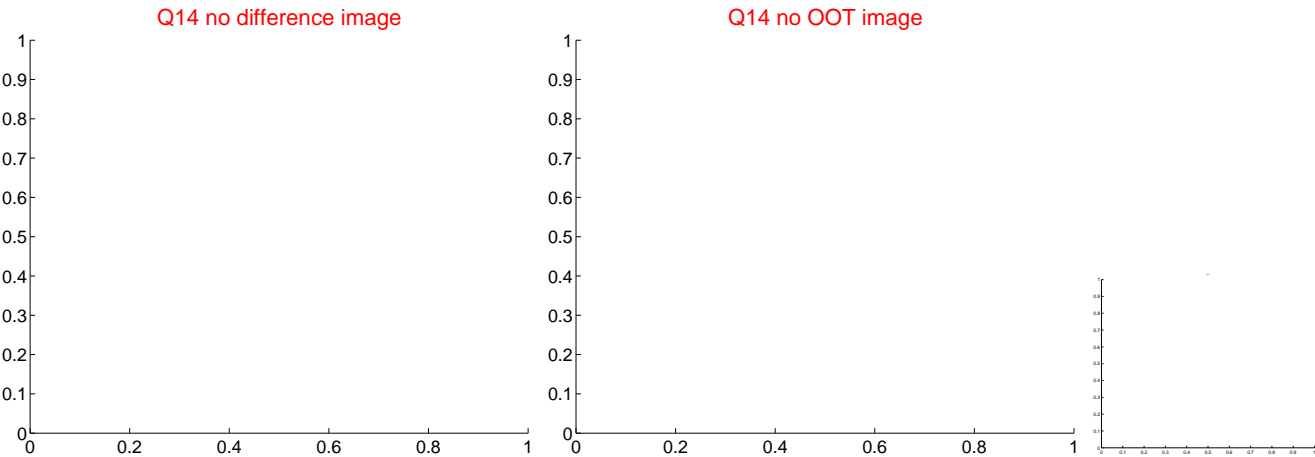
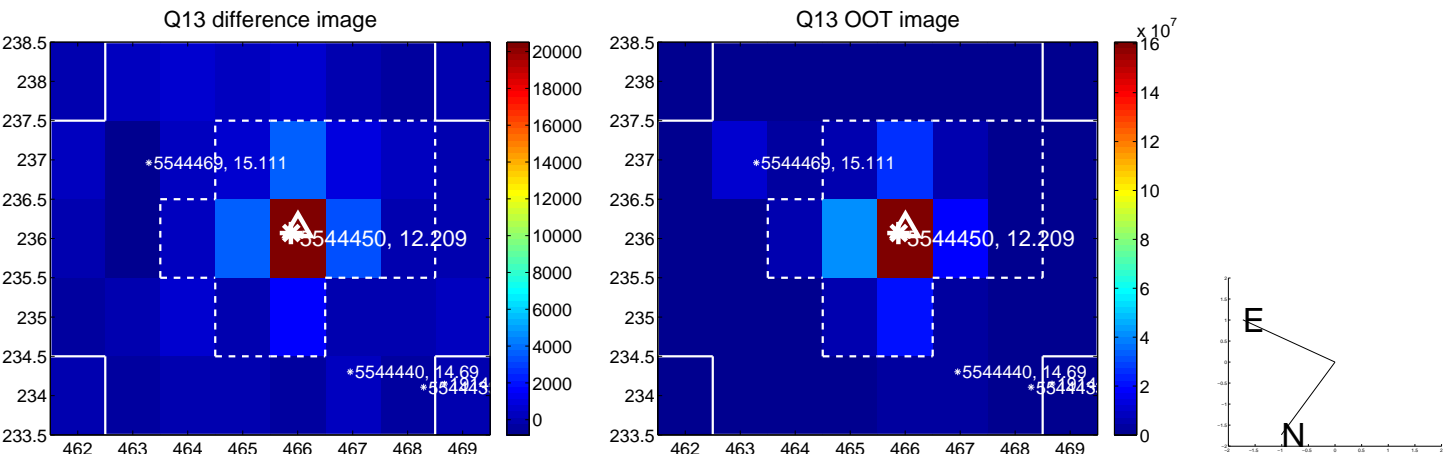
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



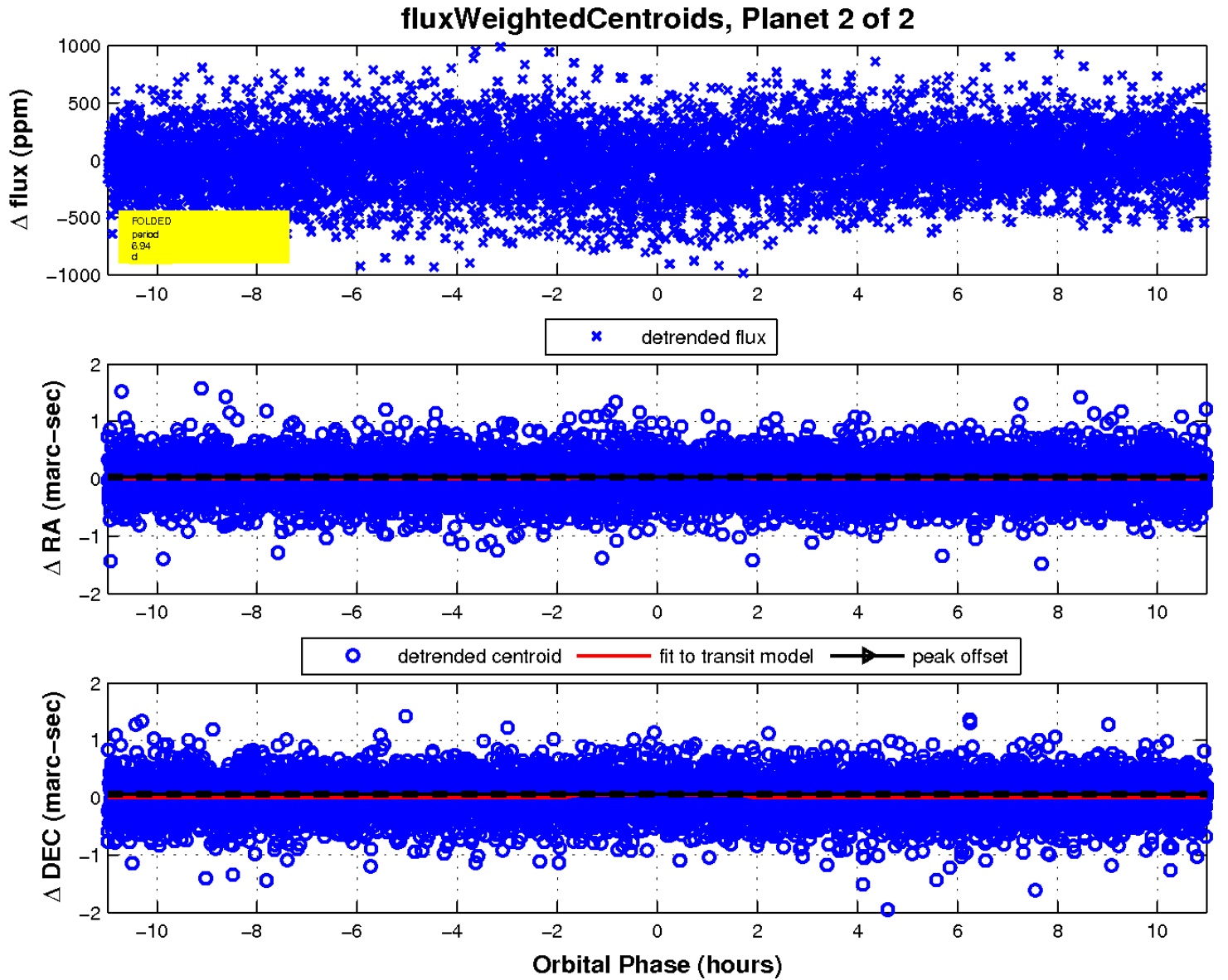
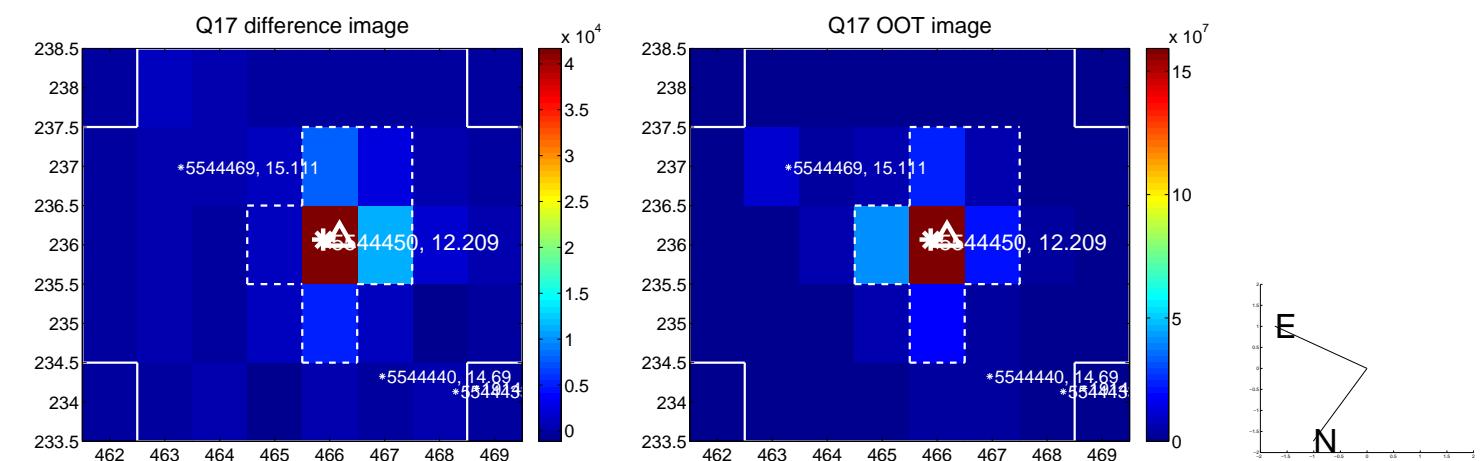
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

