

KIC 003543270

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})
003543270-01	OBS	6339.01	4.176930	133.196670	68634.6	5.087	2460.9	2260.3	0.71	5462	24.15	183.59
003543270-02	OBS	No	4.176931	135.284593	27202.9	5.049	1007.1	864.6	0.71	5462	18.44	183.59

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003543270-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
003543270-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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.

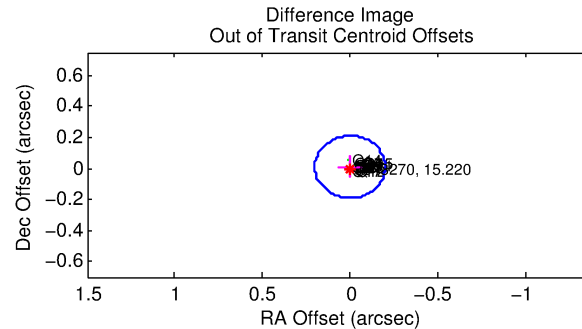
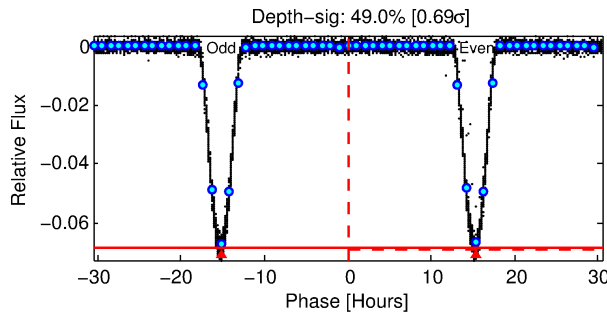
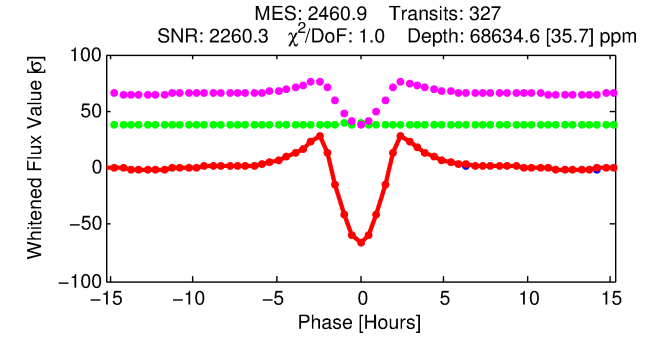
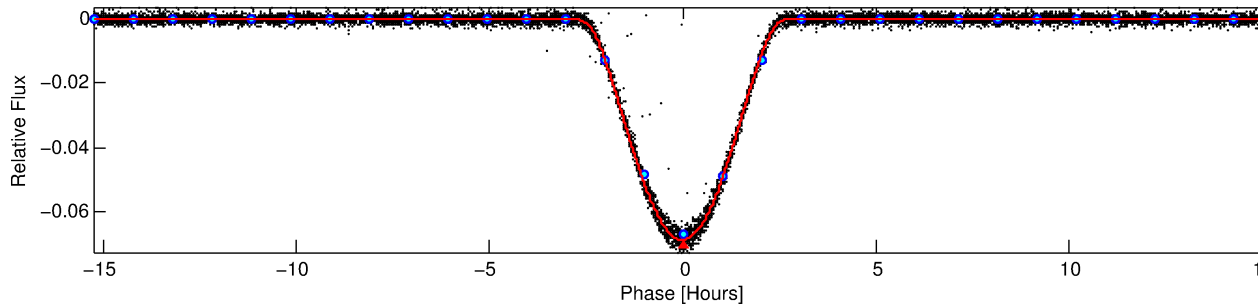
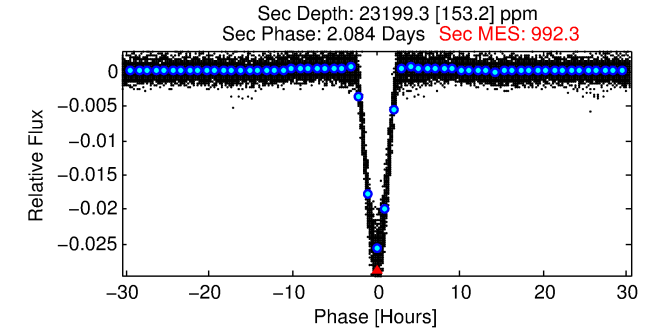
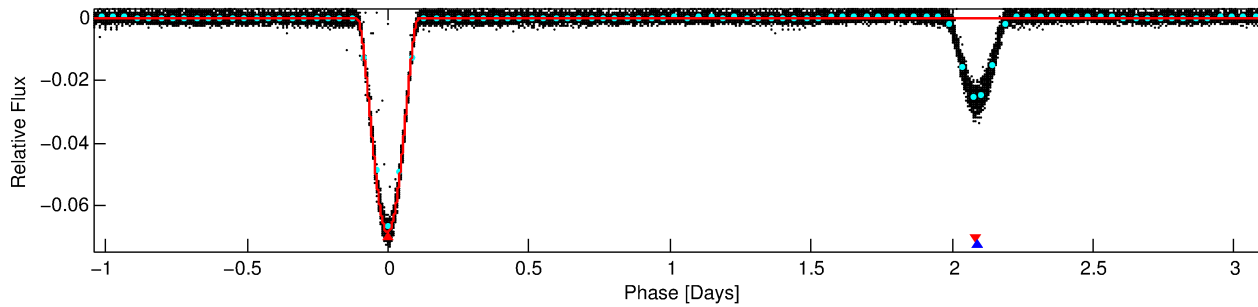
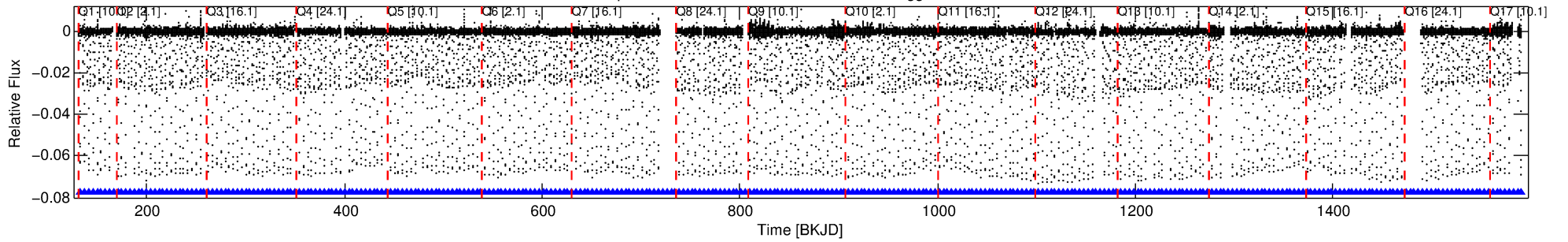
Ephemeris Match Information For 003543270-01

No Significant Match Found

DV One-Page Summary

KIC: 3543270 Candidate: 1 of 2 Period: 4.177 d
KOI: K06339.01 Corr: 0.987

Kp: 15.22 R*: 0.71 Rs Teff: 5462.0 K Logg: 4.63 Fe/H: -0.500



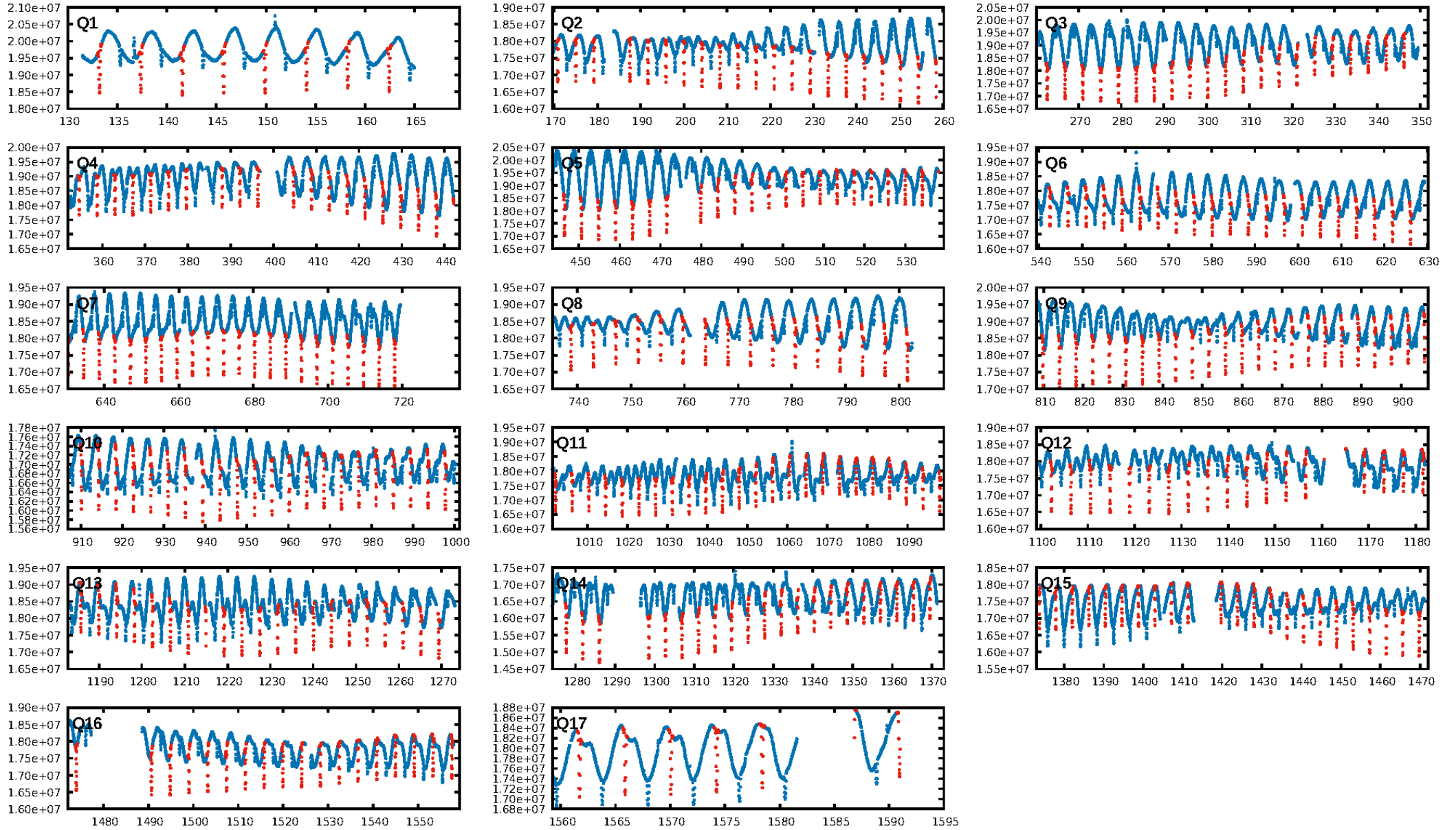
DV Fit Results:

Period = 4.17693 [0.00000] d
Epoch = 133.1967 [0.0000] BKJD
Rp/R* = 0.3126 [0.0020]
a/R* = 6.35 [0.00]
b = 0.85 [0.00]
Seff = 183.59 [42.11]
Teq = 939 [54] K
Rp = 24.15 [4.06] Re
a = 0.0467 [0.0064] AU
Ag = 47.65 [9.38] [4.97σ]
Teffp = 3813 [114] K [22.82σ]

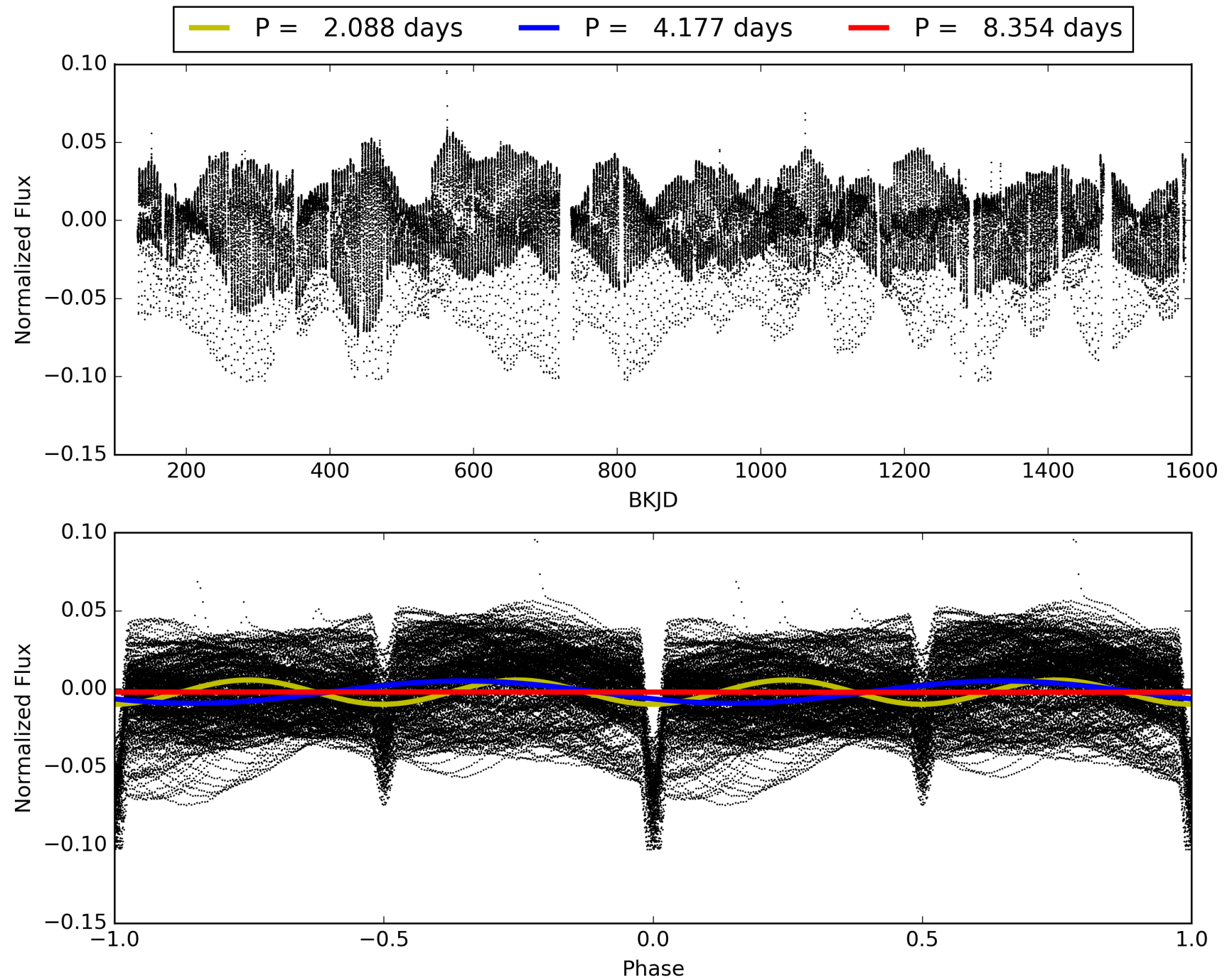
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [312/312]
GhostDiagnostic-chr: 1.429
Centroid-sig: 0.0%
Centroid-so: 0.206 arcsec [58.90σ]
OotOffset-rm: 0.011 arcsec [0.16σ]
KicOffset-rm: 0.084 arcsec [1.18σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 003543270-01, PDC Light Curves

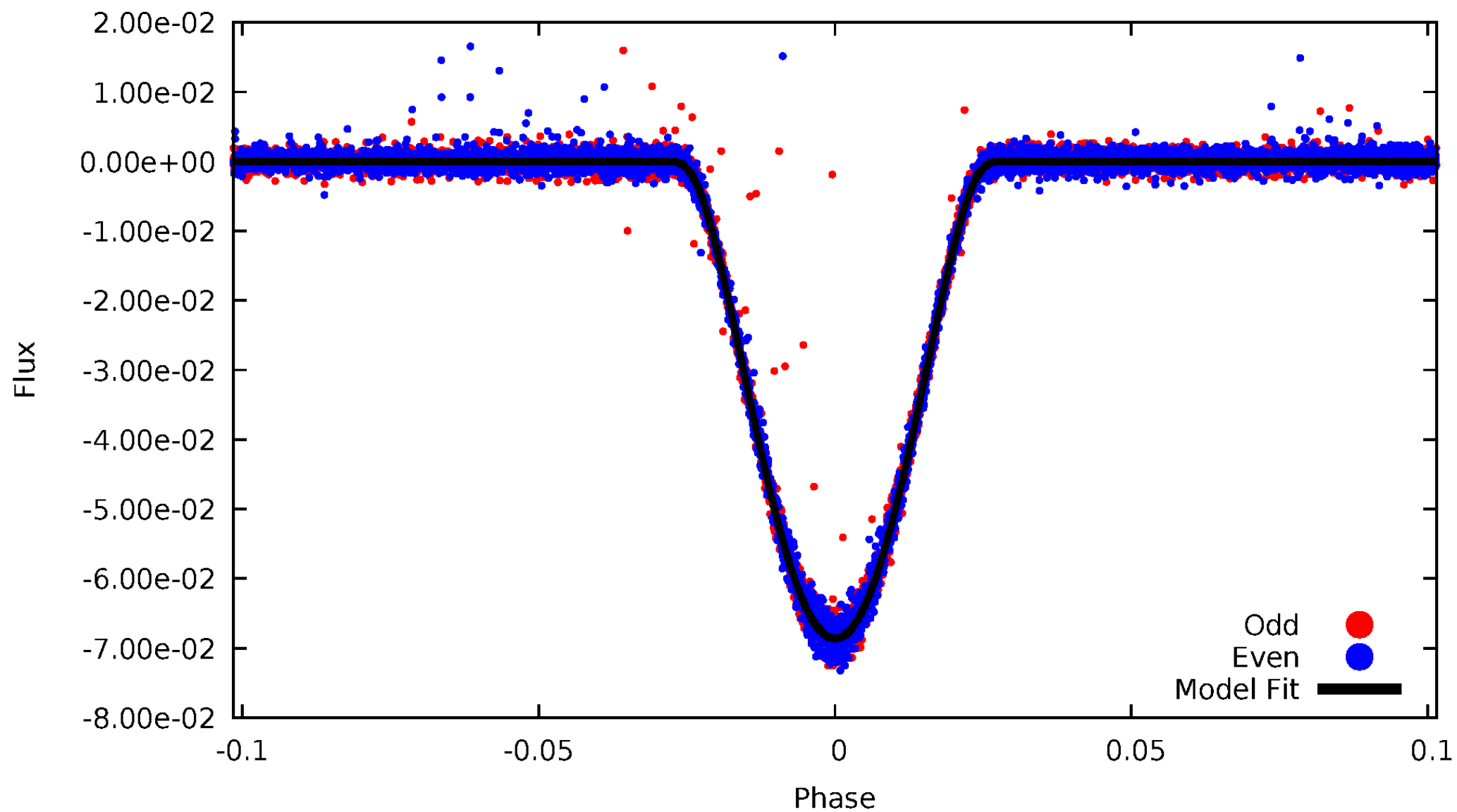


TCE 003543270-01



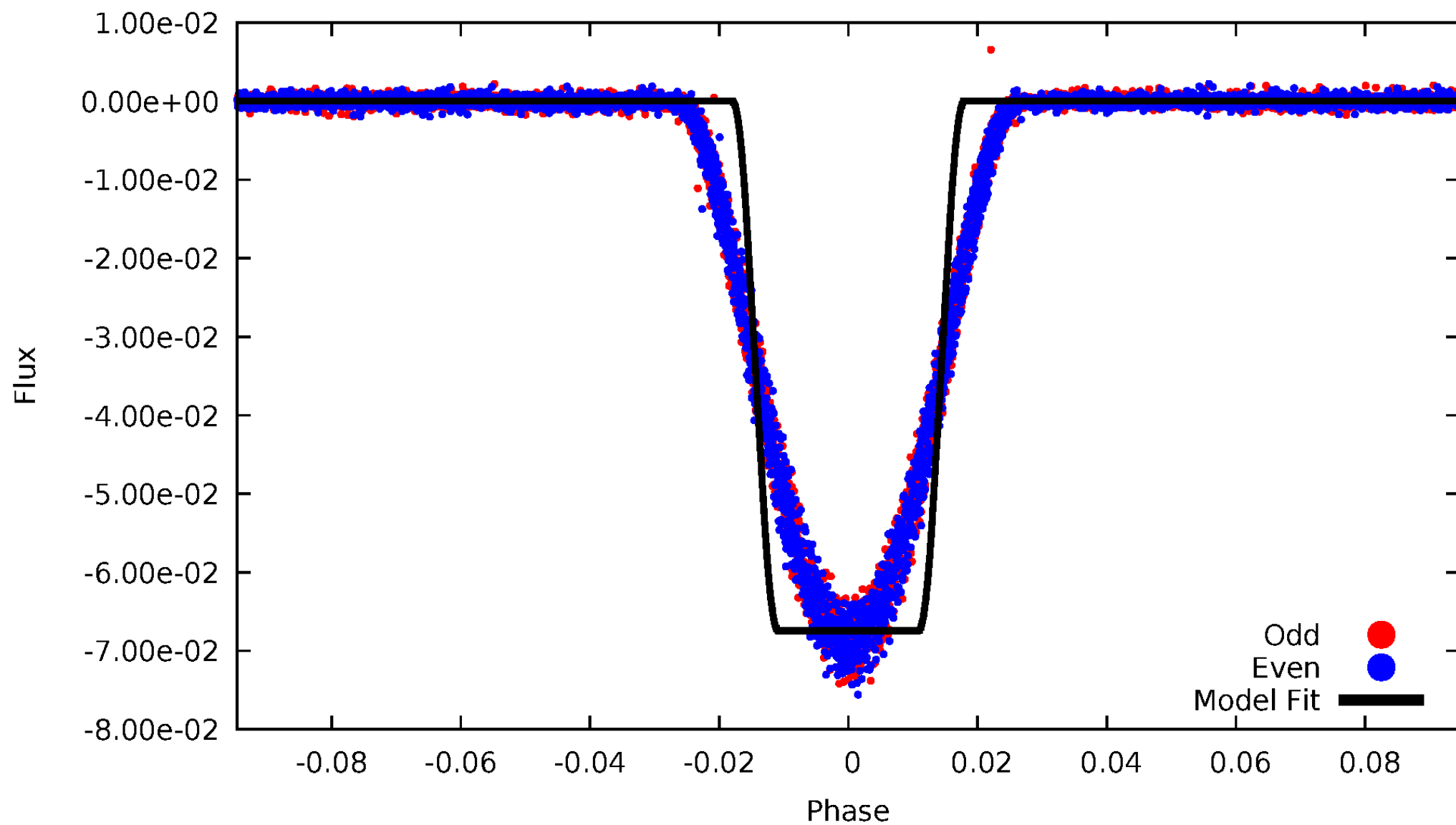
DV Odd/Even

TCE 003543270-01



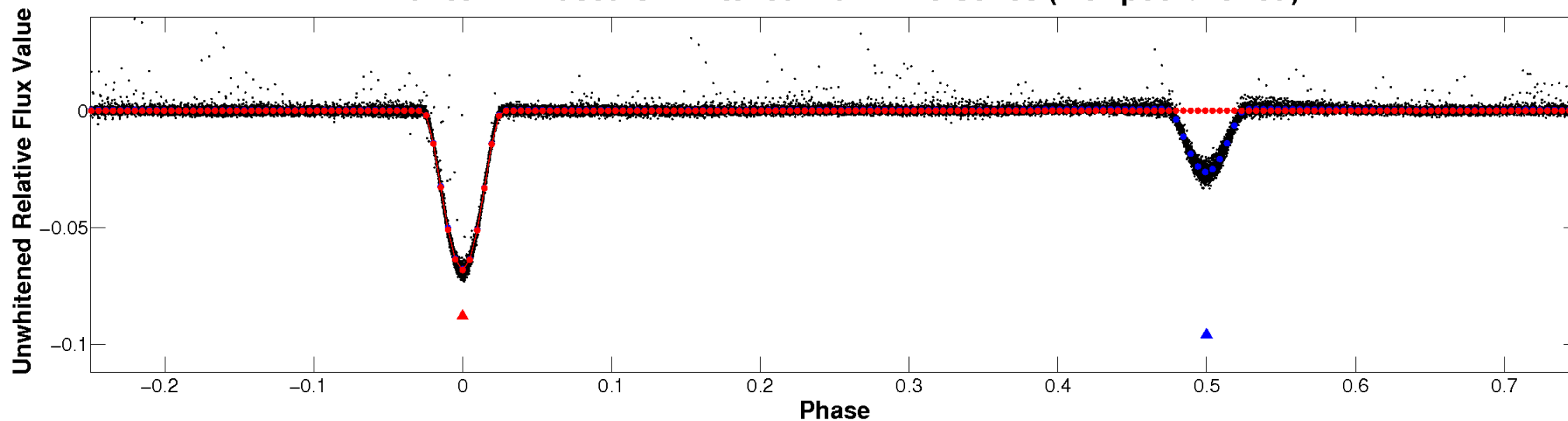
ALT Odd/Even

TCE 003543270-01

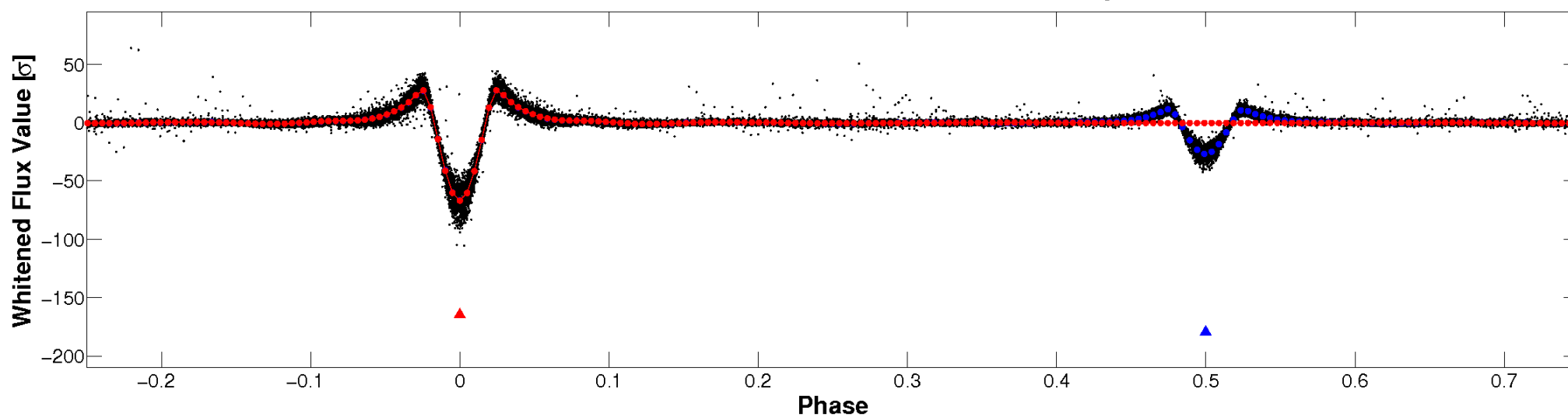


Non-Whitened Vs. Whitened Light Curve

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

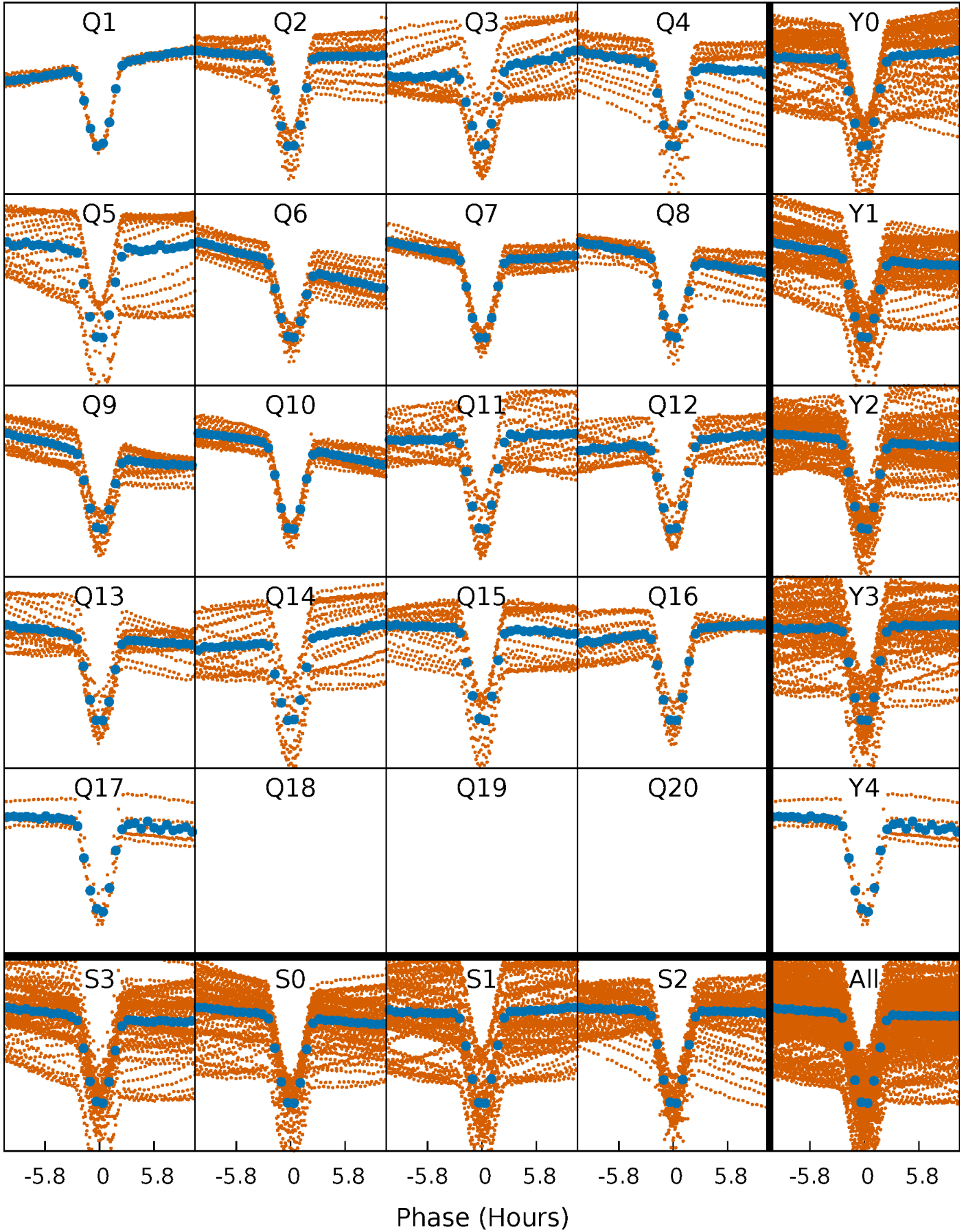


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



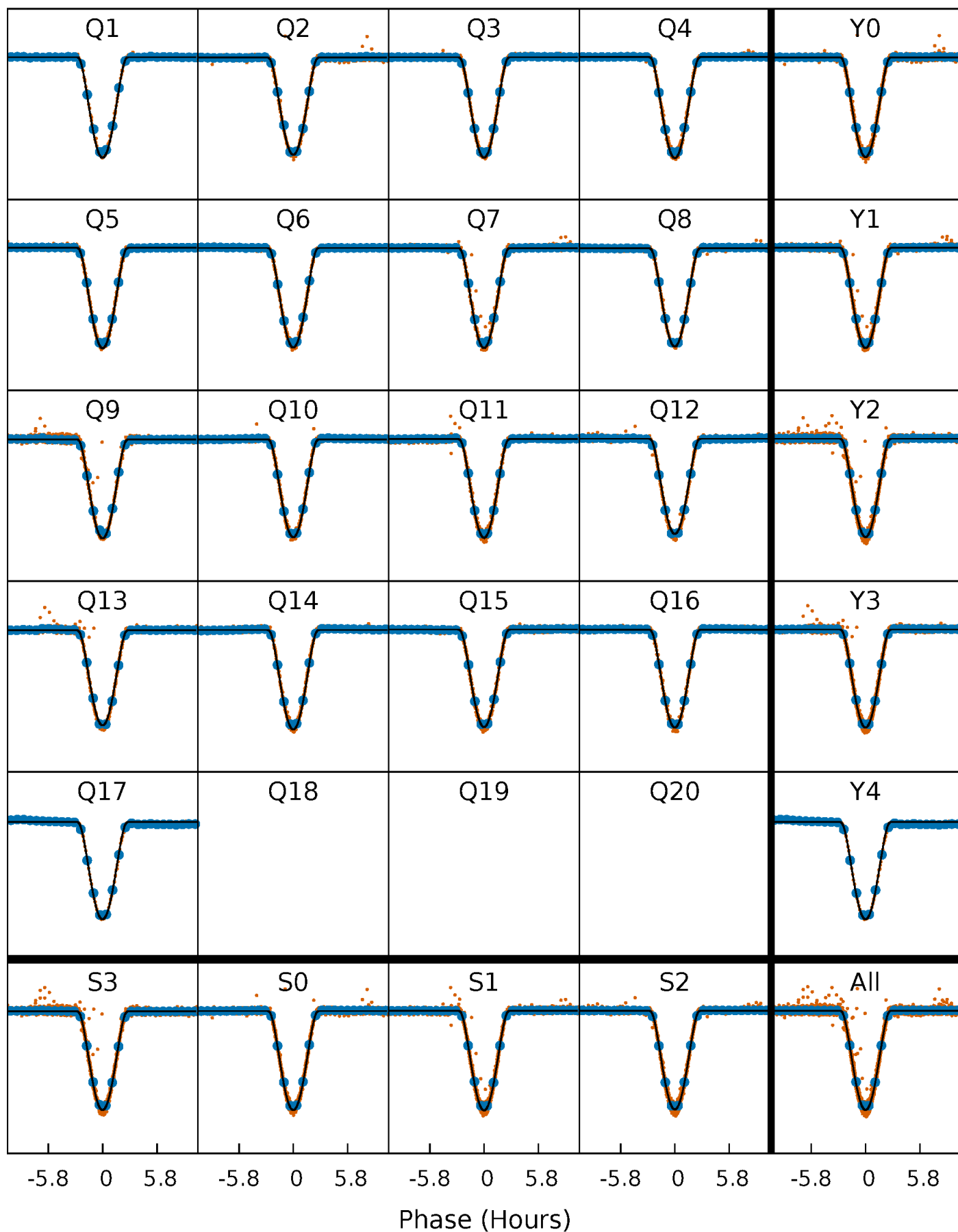
PDC Quarter-Phased Transit Curves

TCE 003543270-01 P= 4.176930 Days $T_0=133.196670$ (BKJD)



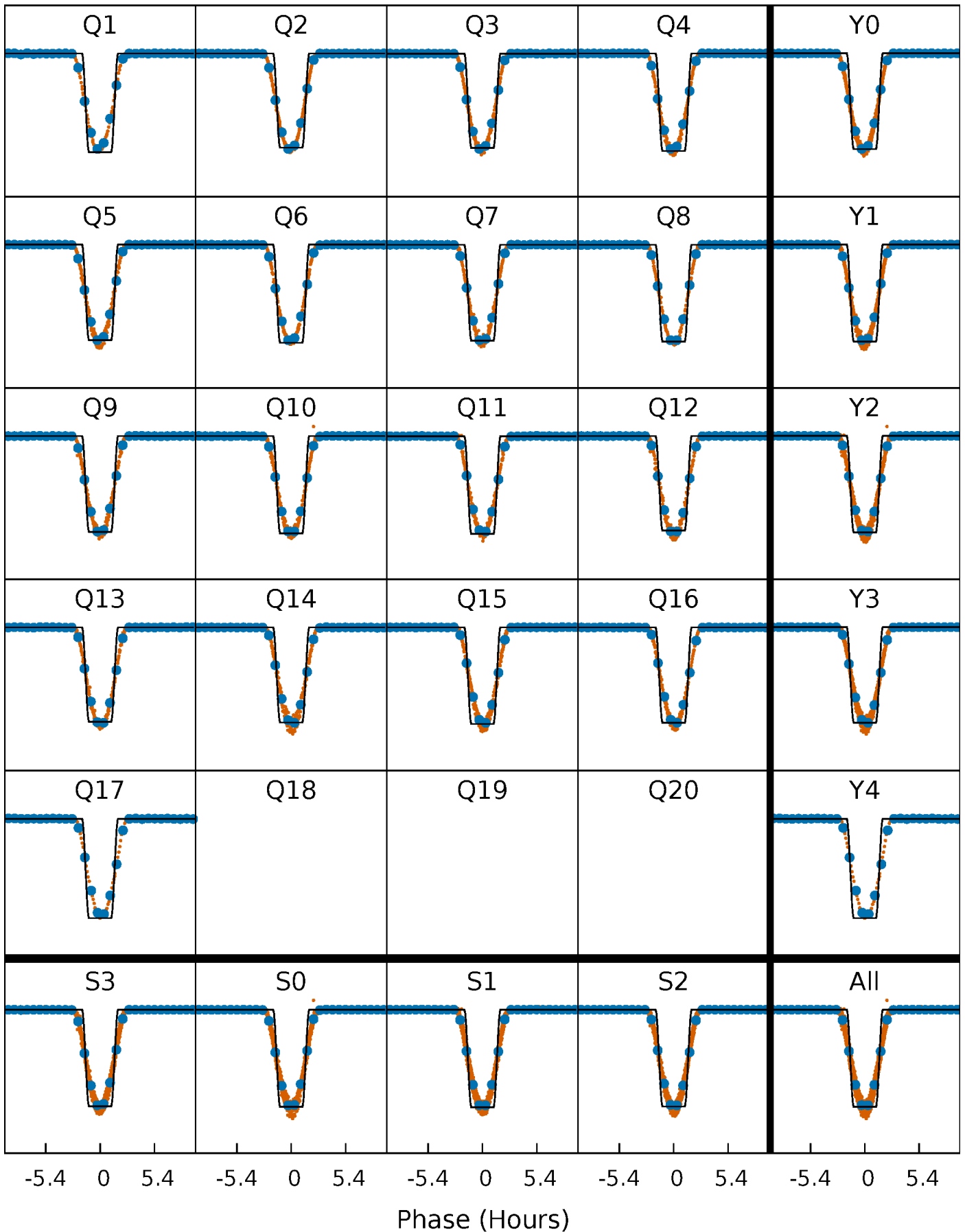
DV Quarter-Phased Transit Curves

TCE 003543270-01 P= 4.176930 Days $T_0=133.196670$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

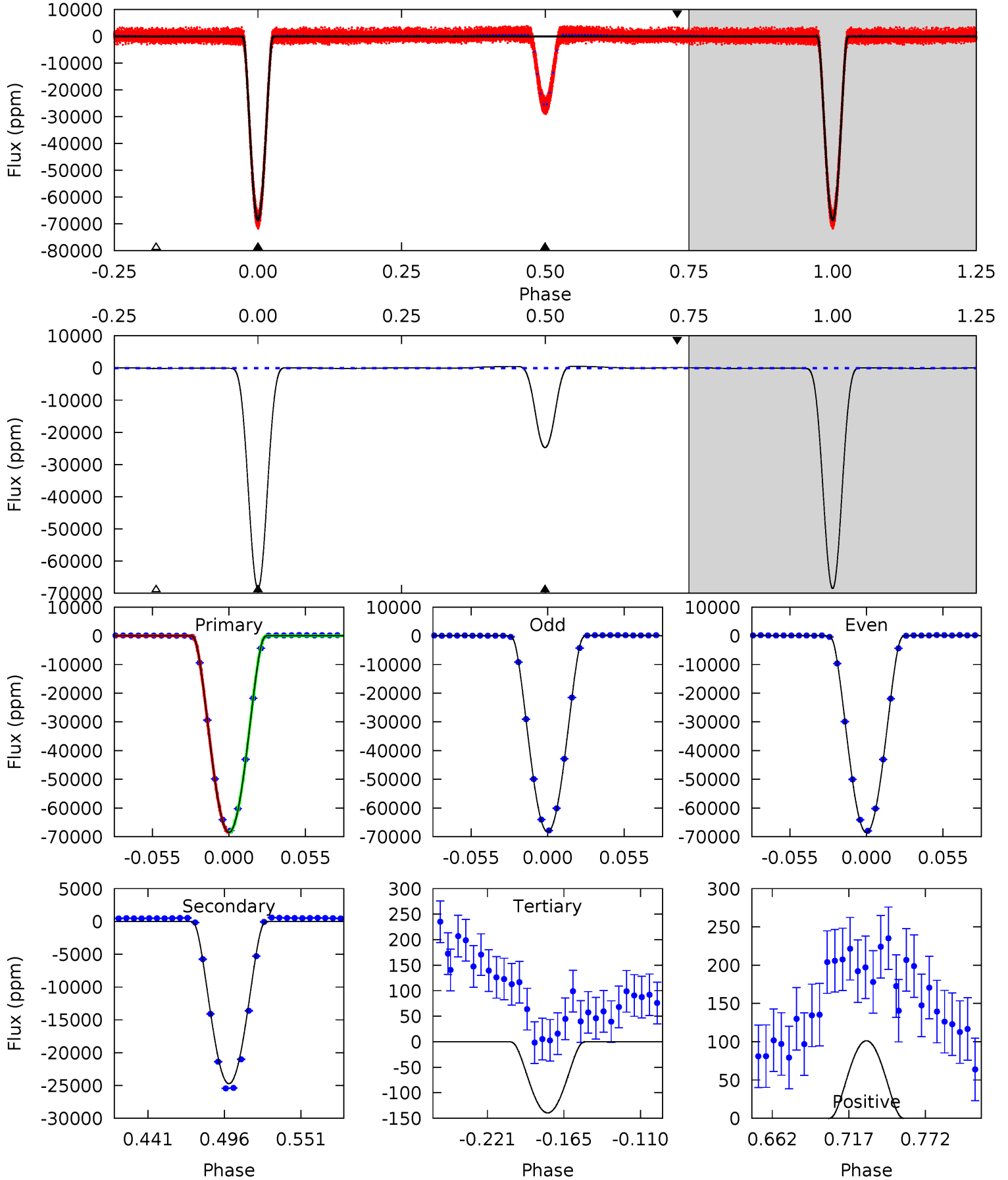
TCE 003543270-01 P= 4.176905 Days $T_0=133.201017$ (BKJD)



DV Model-Shift Uniqueness Test

003543270-01, P = 4.176930 Days, E = 129.019740 Days

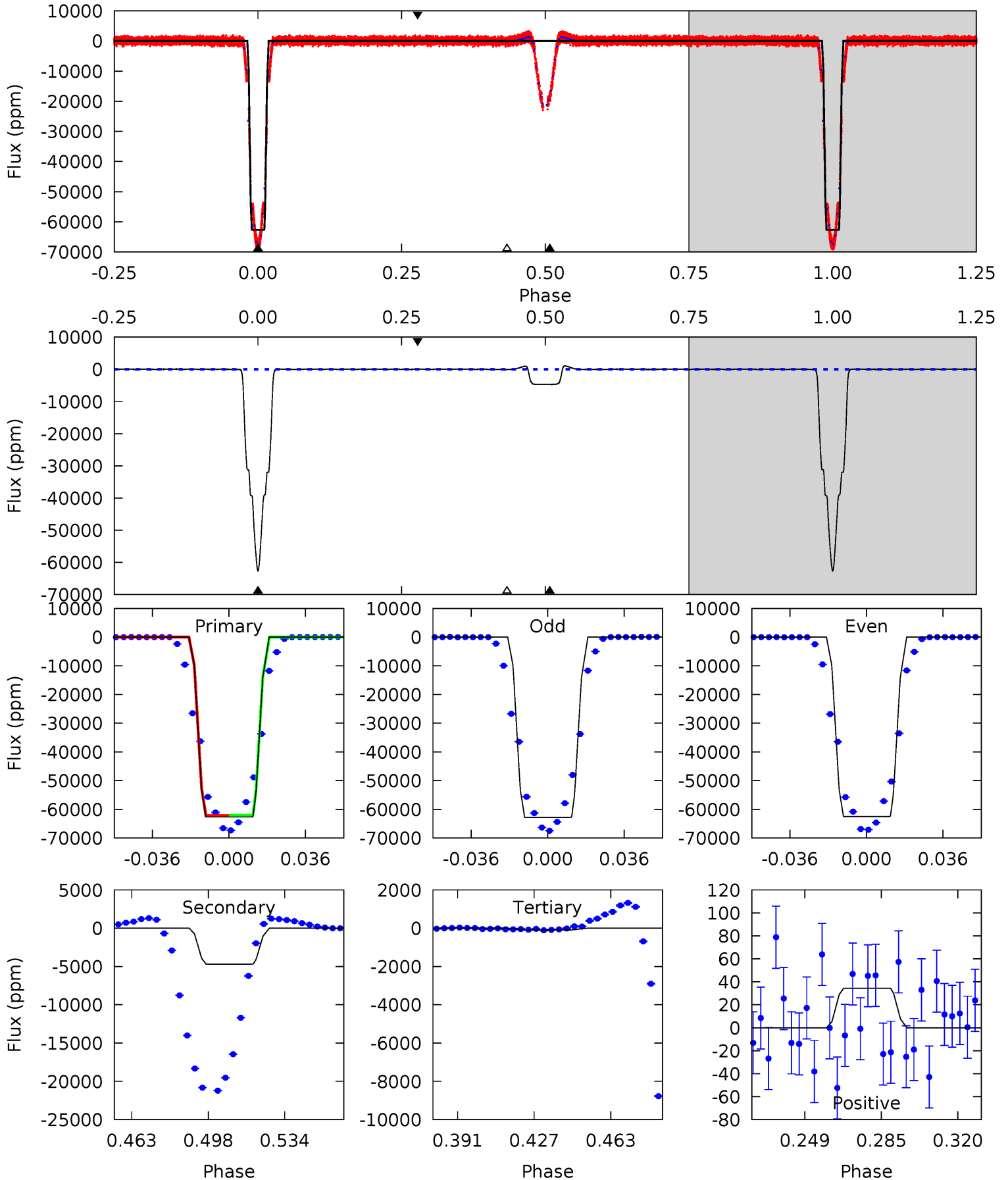
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4936	1782	10.1	7.30	4.69	1.92	11.6	4926	4929	1772	1775	8.33	0.99	0.01	0.14



Alt Model-Shift Uniqueness Test

003543270-01, P = 4.176905 Days, E = 129.024112 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3960	296.1	5.51	2.17	4.78	2.10	7.15	3954	3958	290.6	293.9	8.99	1.00	0.02	3.93



Stellar Parameters For KIC 003543270

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5462^{+162}_{-162}	$4.628^{+0.035}_{-0.105}$	$-0.500^{+0.300}_{-0.300}$	$0.708^{+0.119}_{-0.051}$	$0.799^{+0.075}_{-0.090}$	$3.173^{+0.476}_{-1.091}$
	+3%/-3%	+1%/-2%	+60%/-60%	+17%/-7%	+9%/-11%	+15%/-34%
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 003543270-01 / KOI 6339.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-24727 ± 14	$24.84^{+2.17}_{-1.56}$	1330^{+62}_{-56}	4145^{+101}_{-100}	49^{+5}_{-7}
Alt.	-4687 ± 16	$20.47^{+1.87}_{-1.11}$	1331^{+52}_{-53}	3323^{+63}_{-65}	13^{+1}_{-2}

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

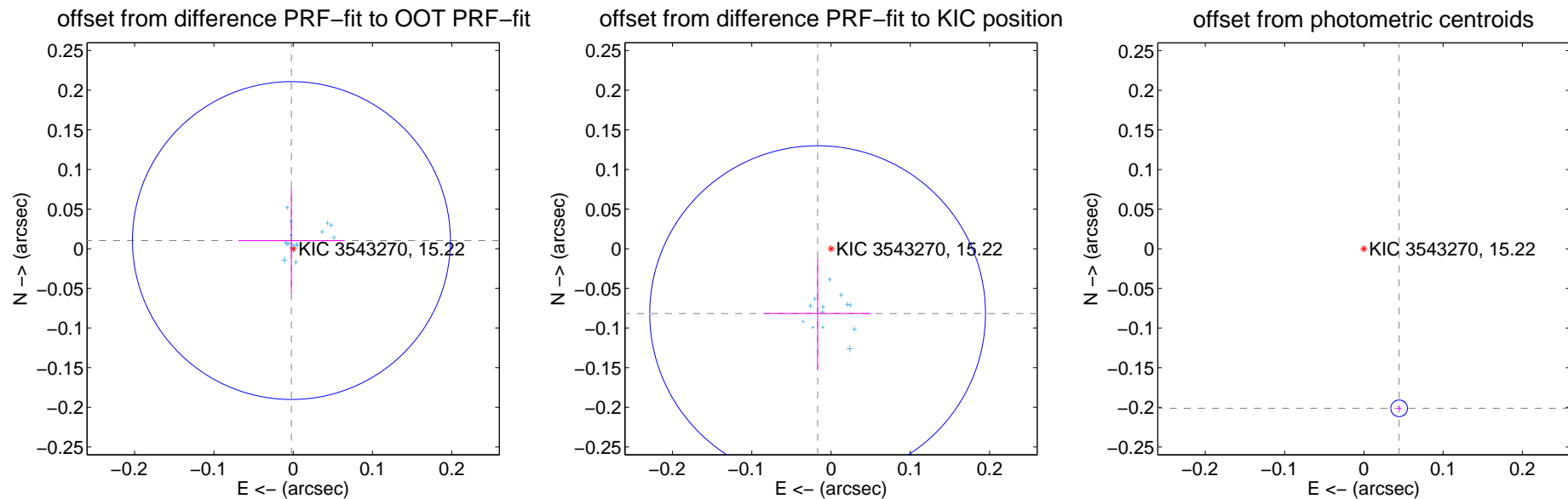
DV Centroid Data

Supplemental centroid analysis for 003543270-01. Kepler magnitude: 15.22. Transit SNR 2260.28

There are 17 quarters with good PRF difference image offsets

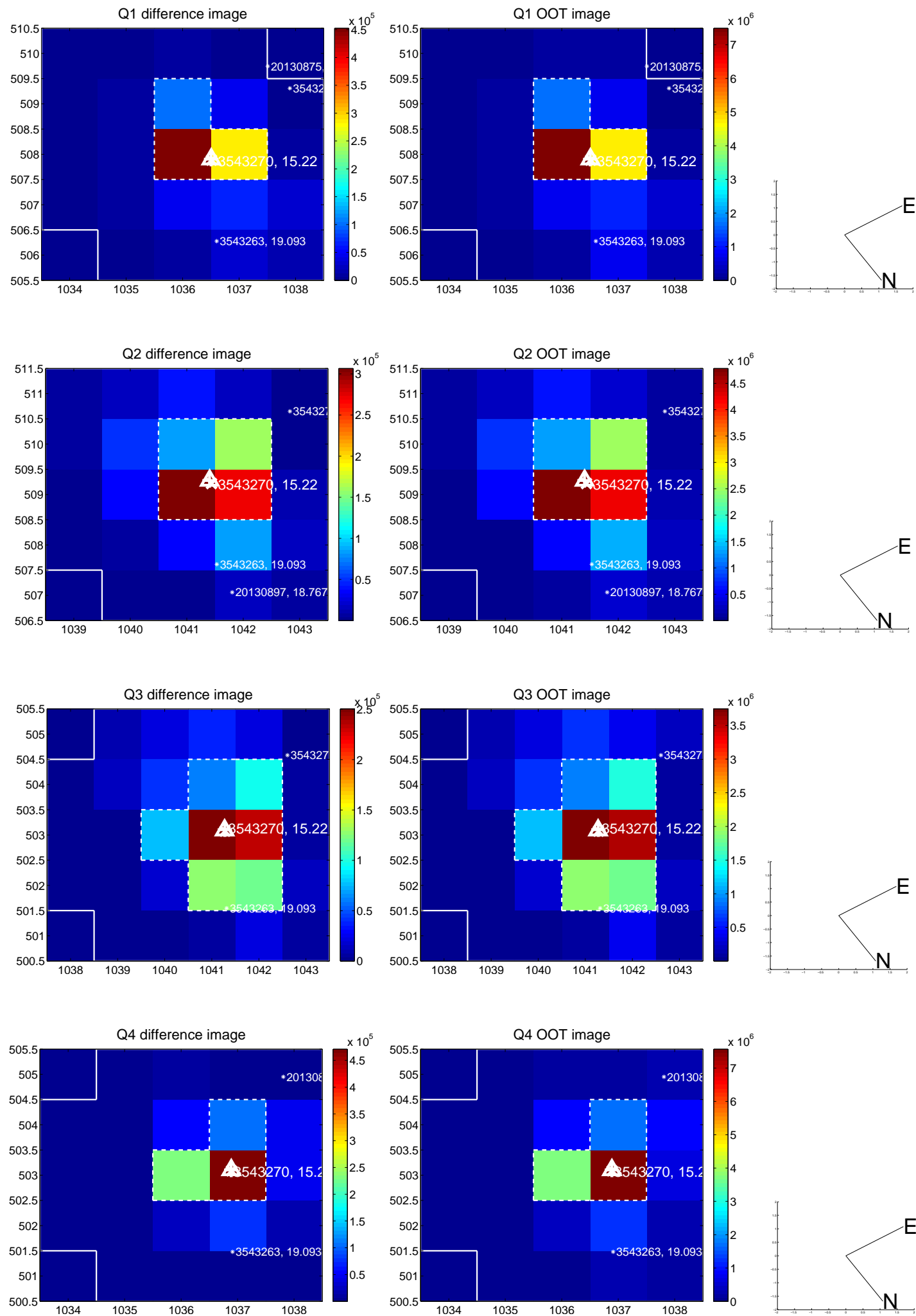
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.011 ± 0.067	0.16	0.002 ± 0.067	0.010 ± 0.067
PRF-fit source offset from KIC position	0.084 ± 0.071	1.18	0.017 ± 0.067	-0.082 ± 0.070
photometric centroid source offset	0.21 ± 0.00	58.90	-0.04 ± 0.00	-0.20 ± 0.00

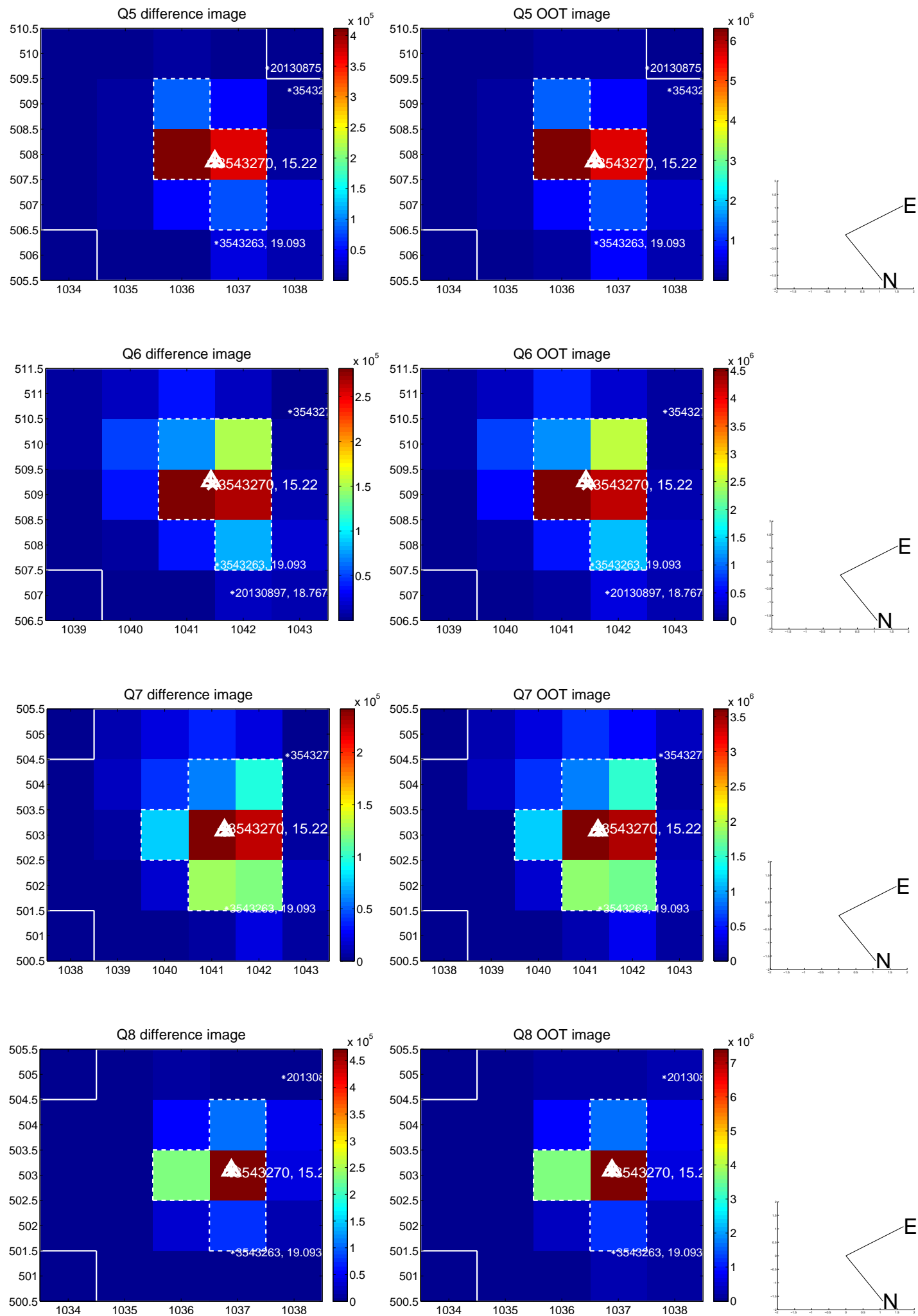


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

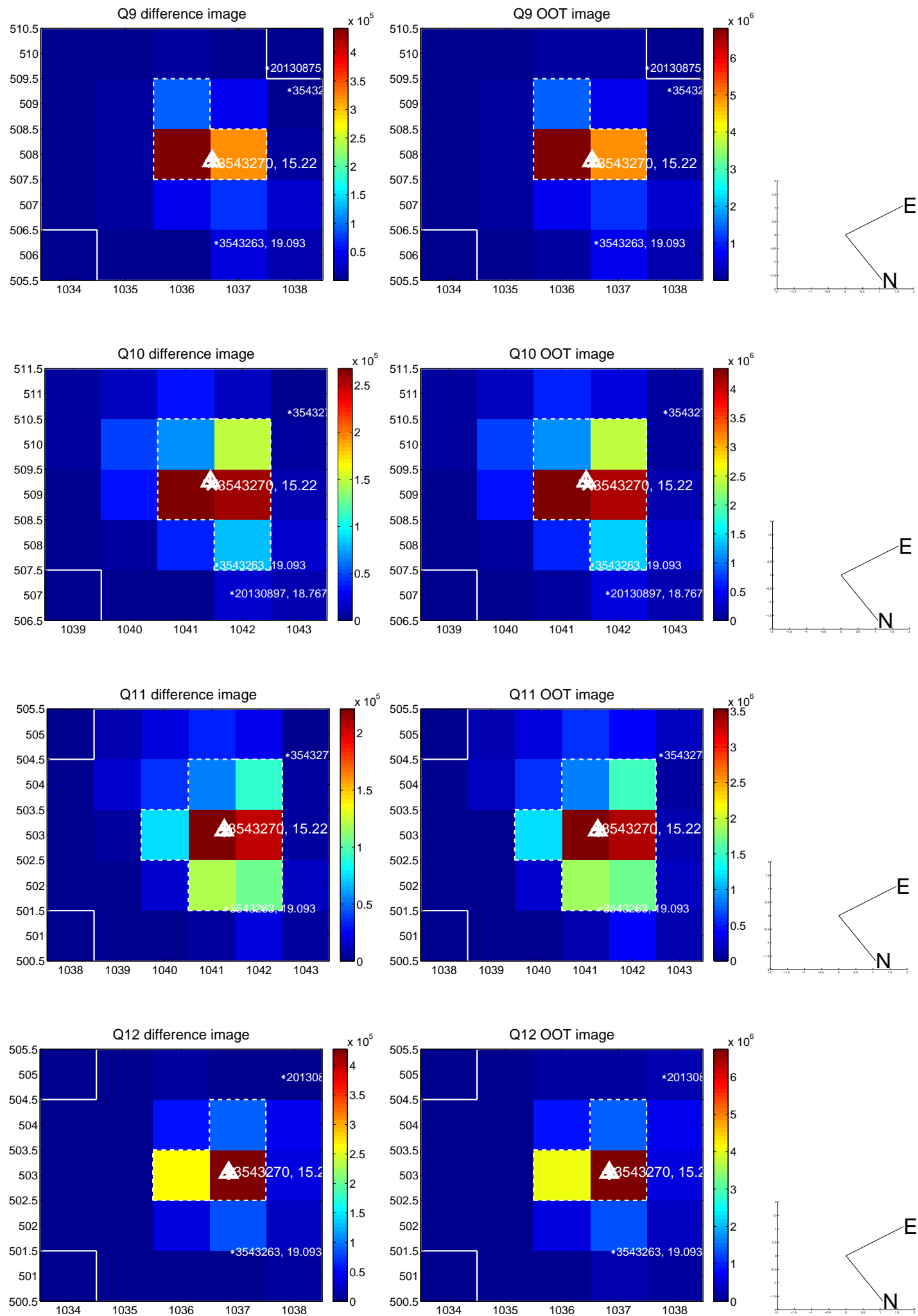
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



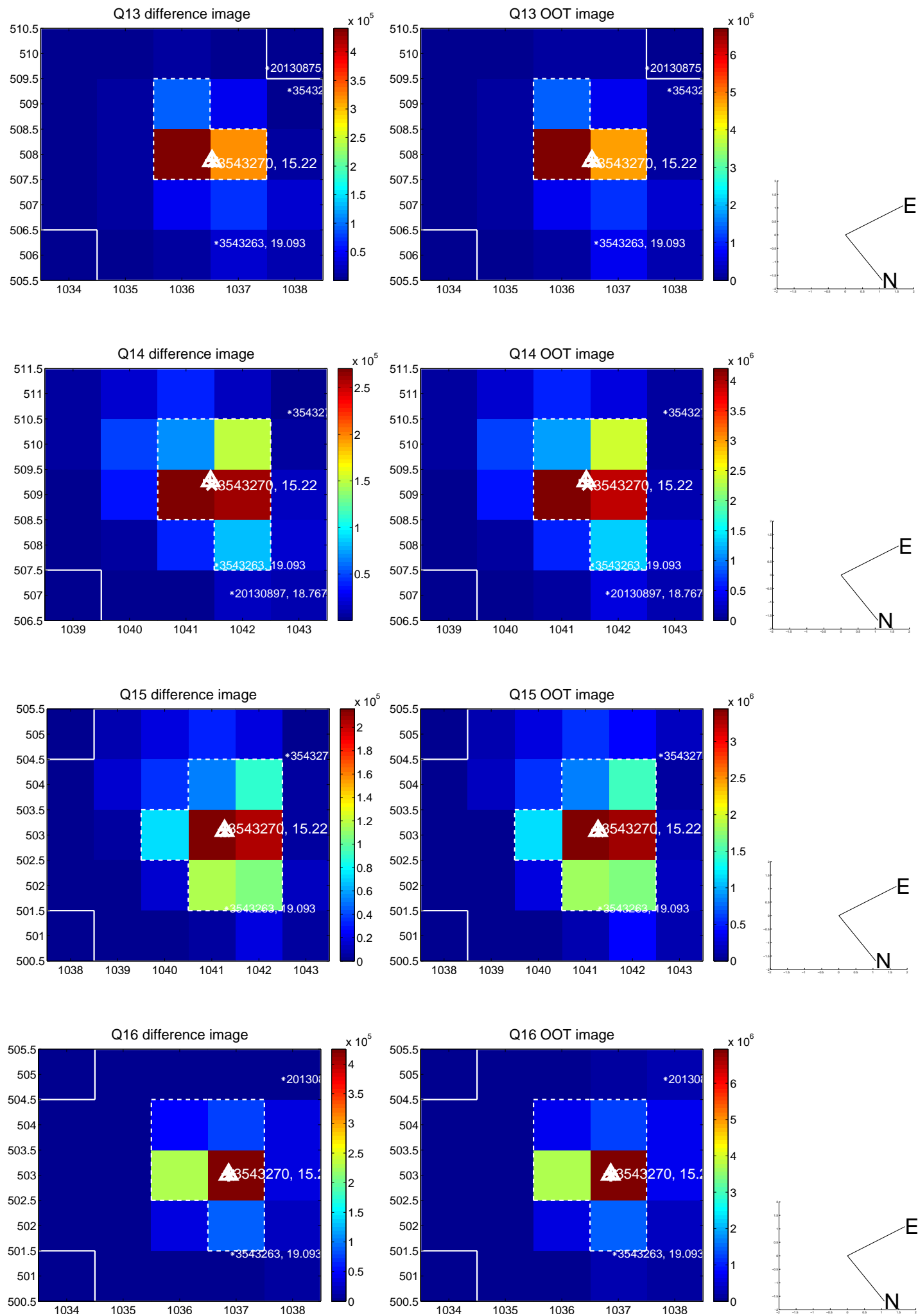
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



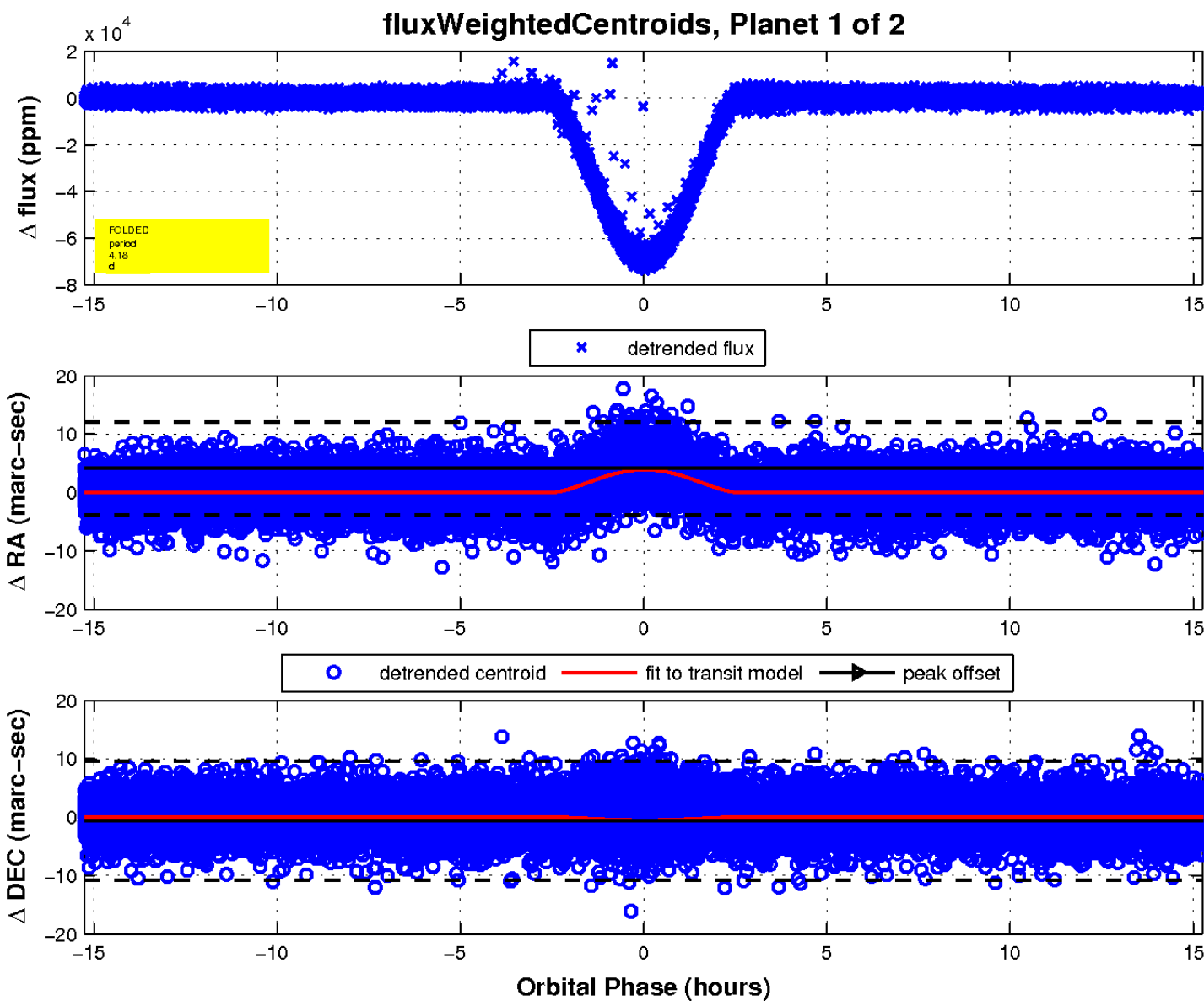
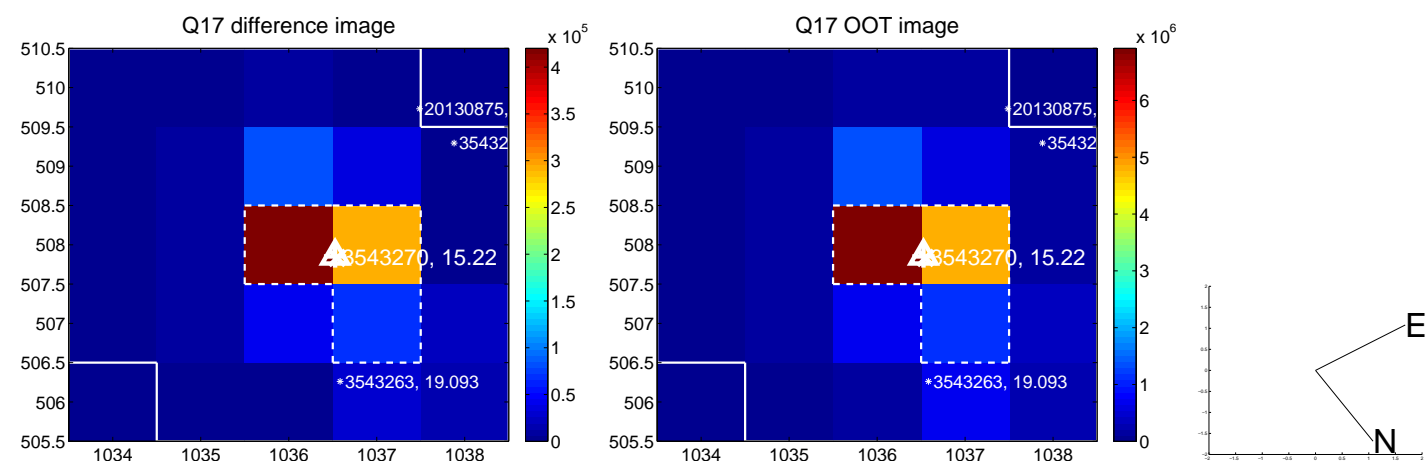
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

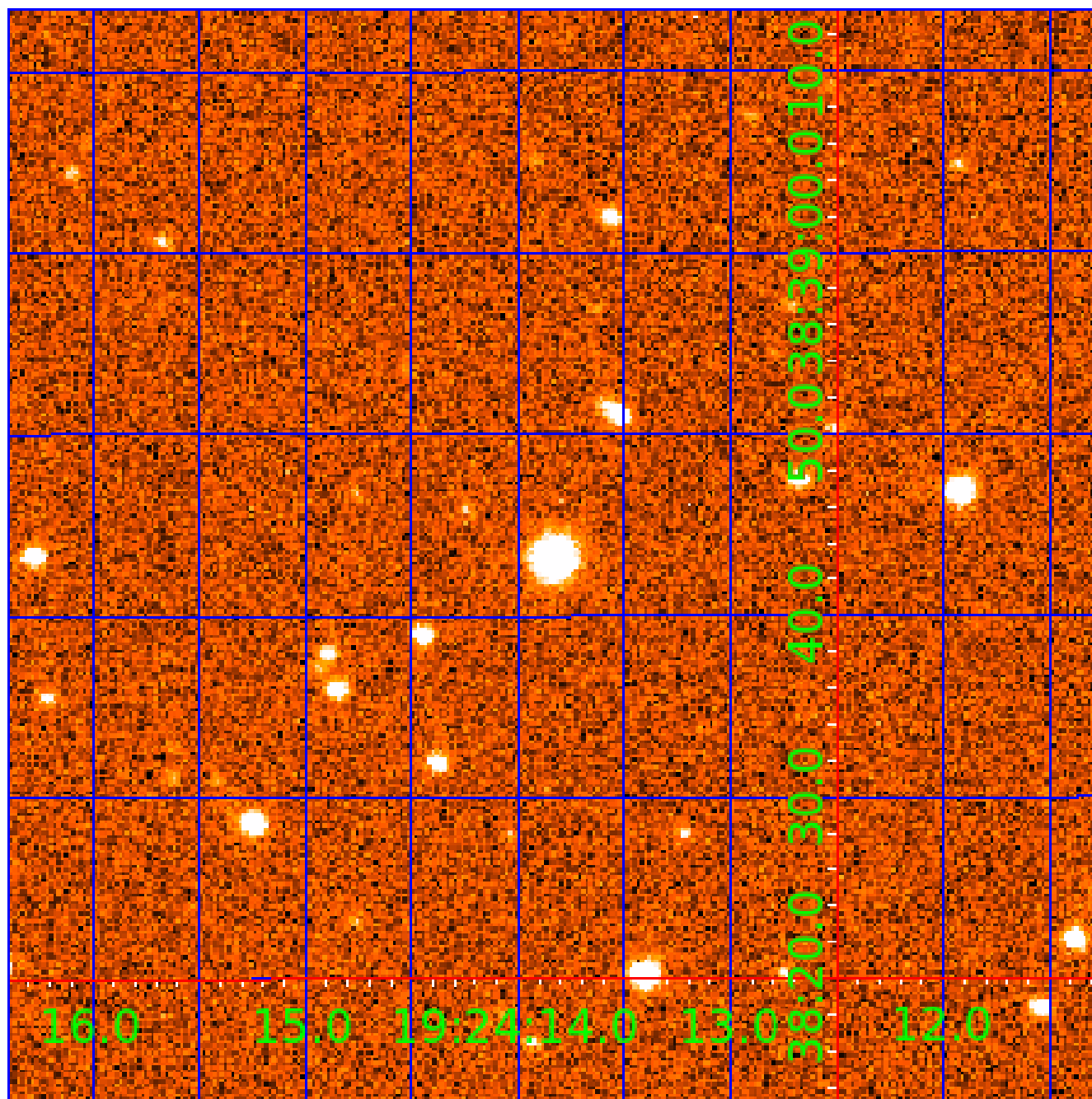


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003543270

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})
003543270-01	OBS	6339.01	4.176930	133.196670	68634.6	5.087	2460.9	2260.3	0.71	5462	24.15	183.59
003543270-02	OBS	No	4.176931	135.284593	27202.9	5.049	1007.1	864.6	0.71	5462	18.44	183.59

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003543270-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
003543270-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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 003543270-02

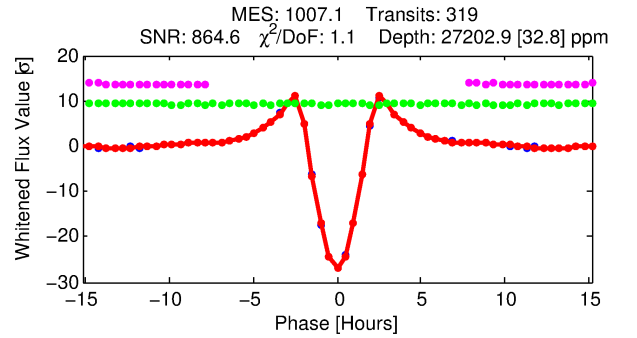
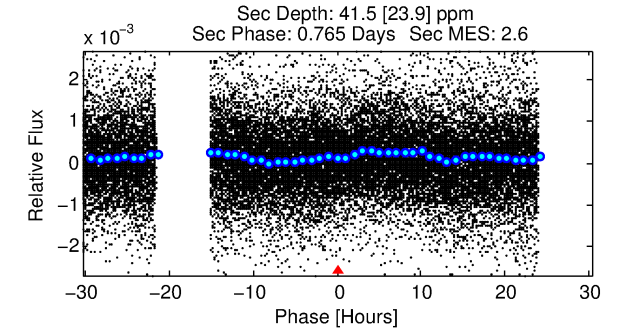
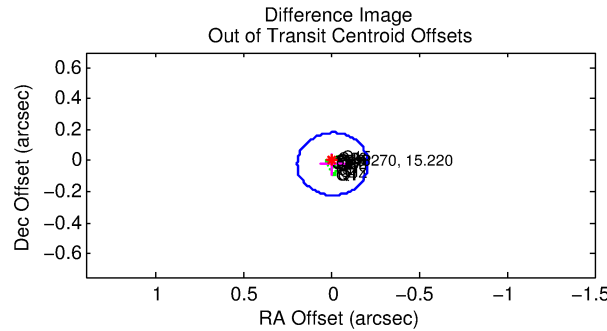
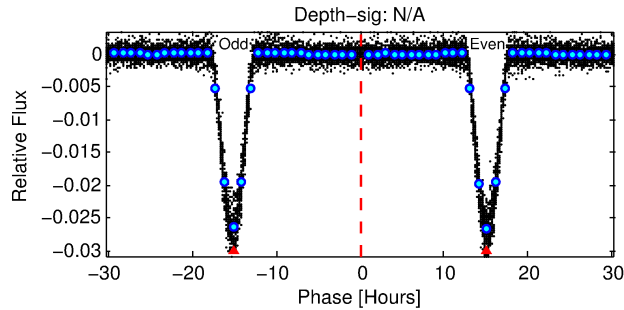
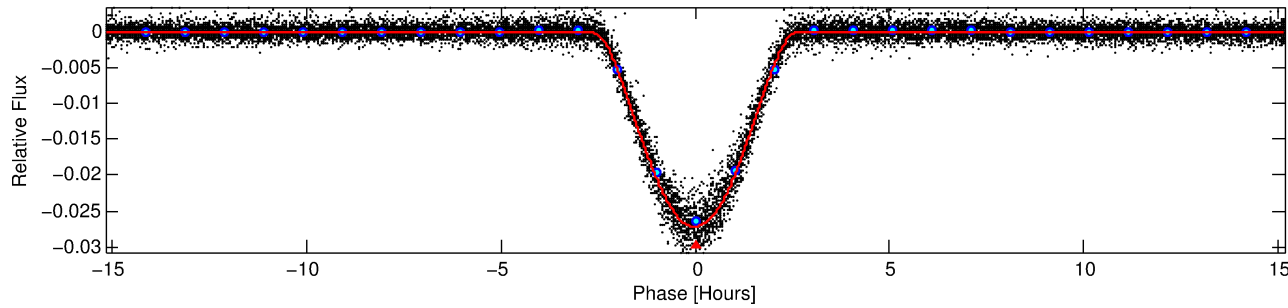
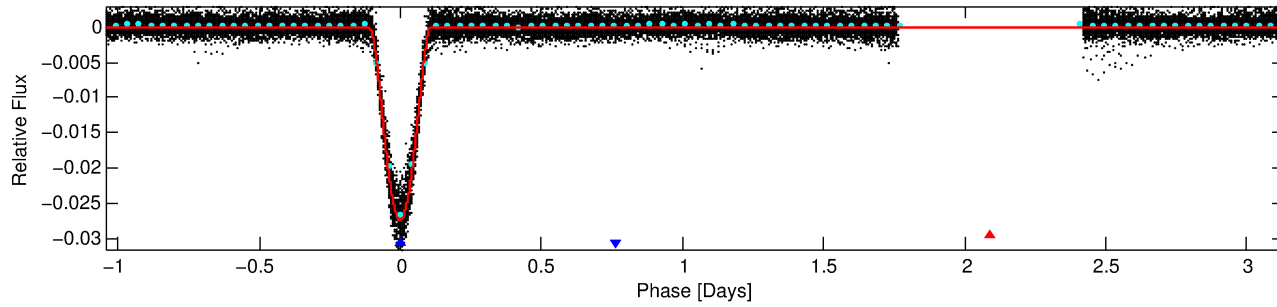
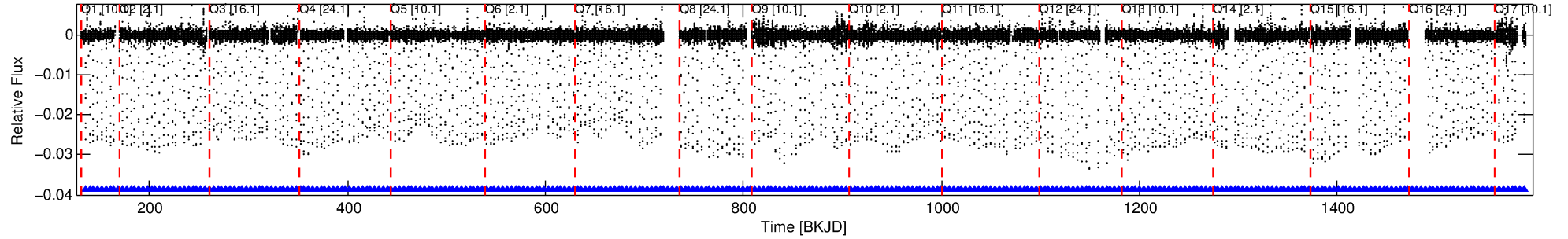
No Significant Match Found

DV One-Page Summary

KIC: 3543270 Candidate: 2 of 2 Period: 4.177 d

KOI: K06339 Corr: No Ephemeris Match

Kp: 15.22 R*: 0.71 Rs Teff: 5462.0 K Logg: 4.63 Fe/H: -0.500



DV Fit Results:

Period = 4.17693 [0.00000] d
Epoch = 135.2846 [0.0001] BKJD
Rp/R* = 0.2386 [0.0074]
a/R* = 5.05 [0.02]
b = 0.96 [0.01]
Seff = 183.59 [42.11]
Teq = 939 [54] K
Rp = 18.44 [3.15] Re
a = 0.0467 [0.0064] AU
Ag = 0.15 [0.09] [-9.54σ]
Teff = 897 [133] K [-0.29σ]

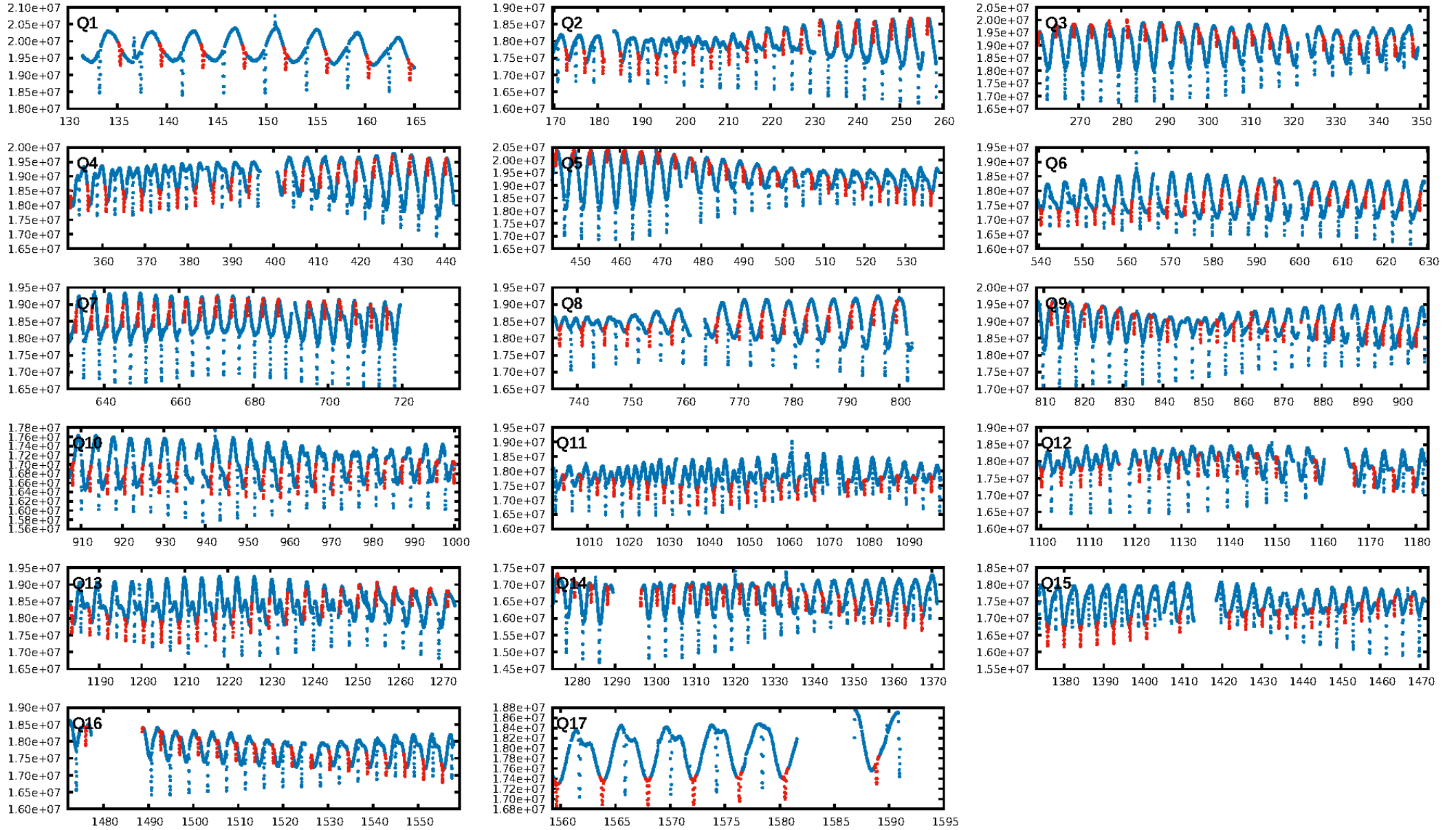
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [304/304]
GhostDiagnostic-chr: 1.372
Centroid-sig: 0.0%
Centroid-so: 0.214 arcsec [24.20σ]
OotOffset-rm: 0.022 arcsec [0.32σ]
KicOffset-rm: 0.113 arcsec [1.57σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

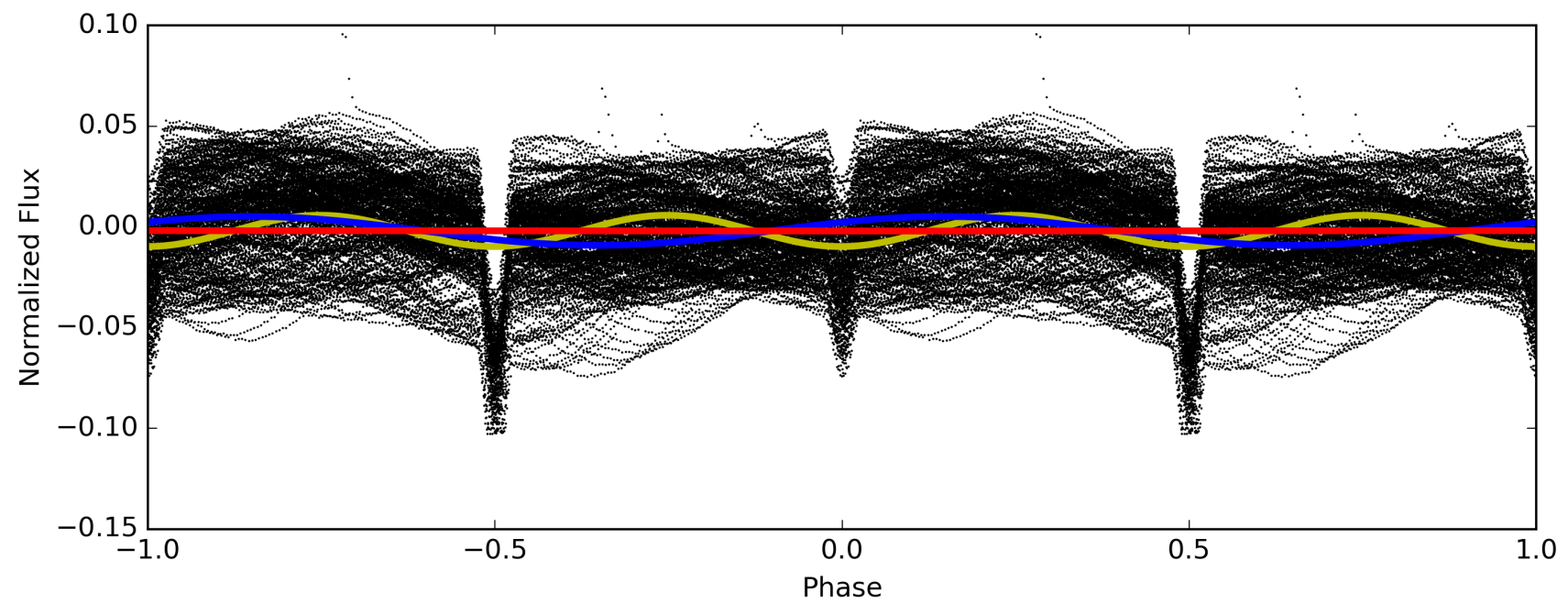
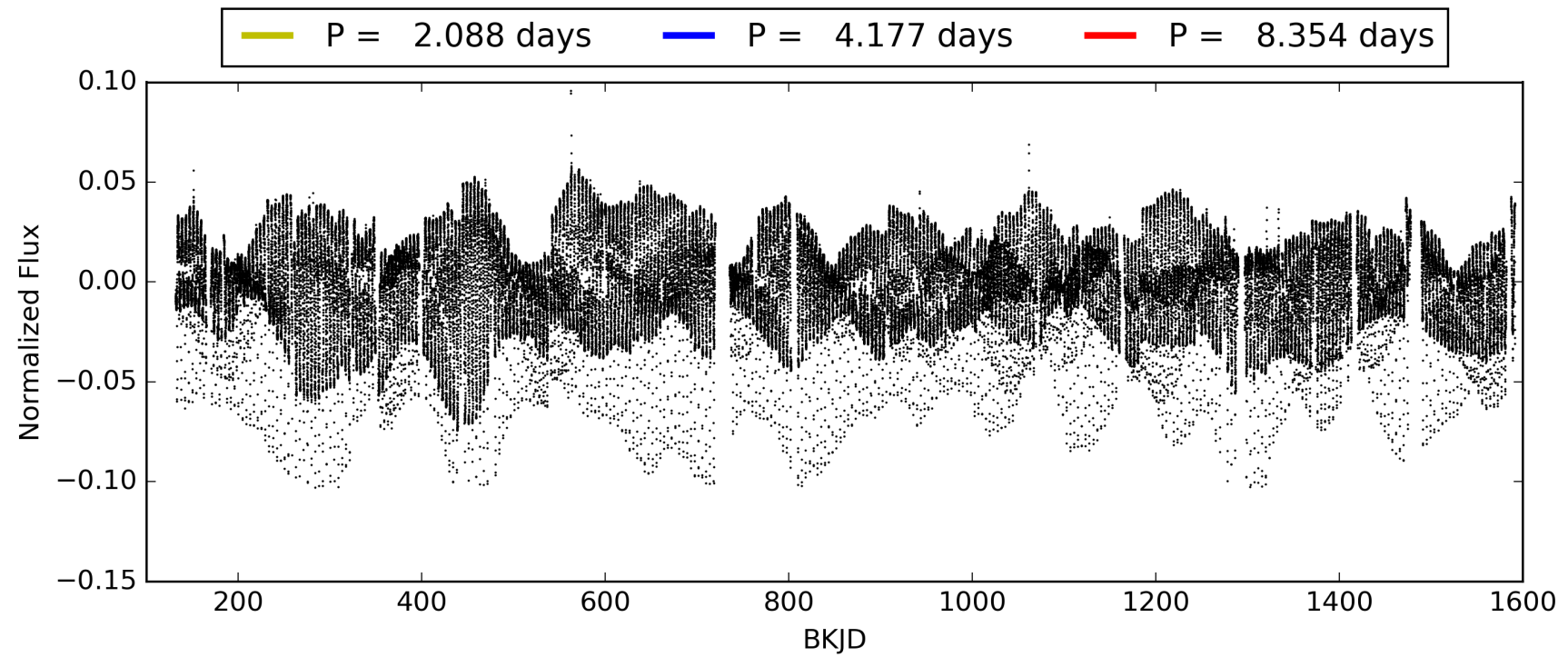
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 07:54:44 Z

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

TCE 003543270-02, PDC Light Curves

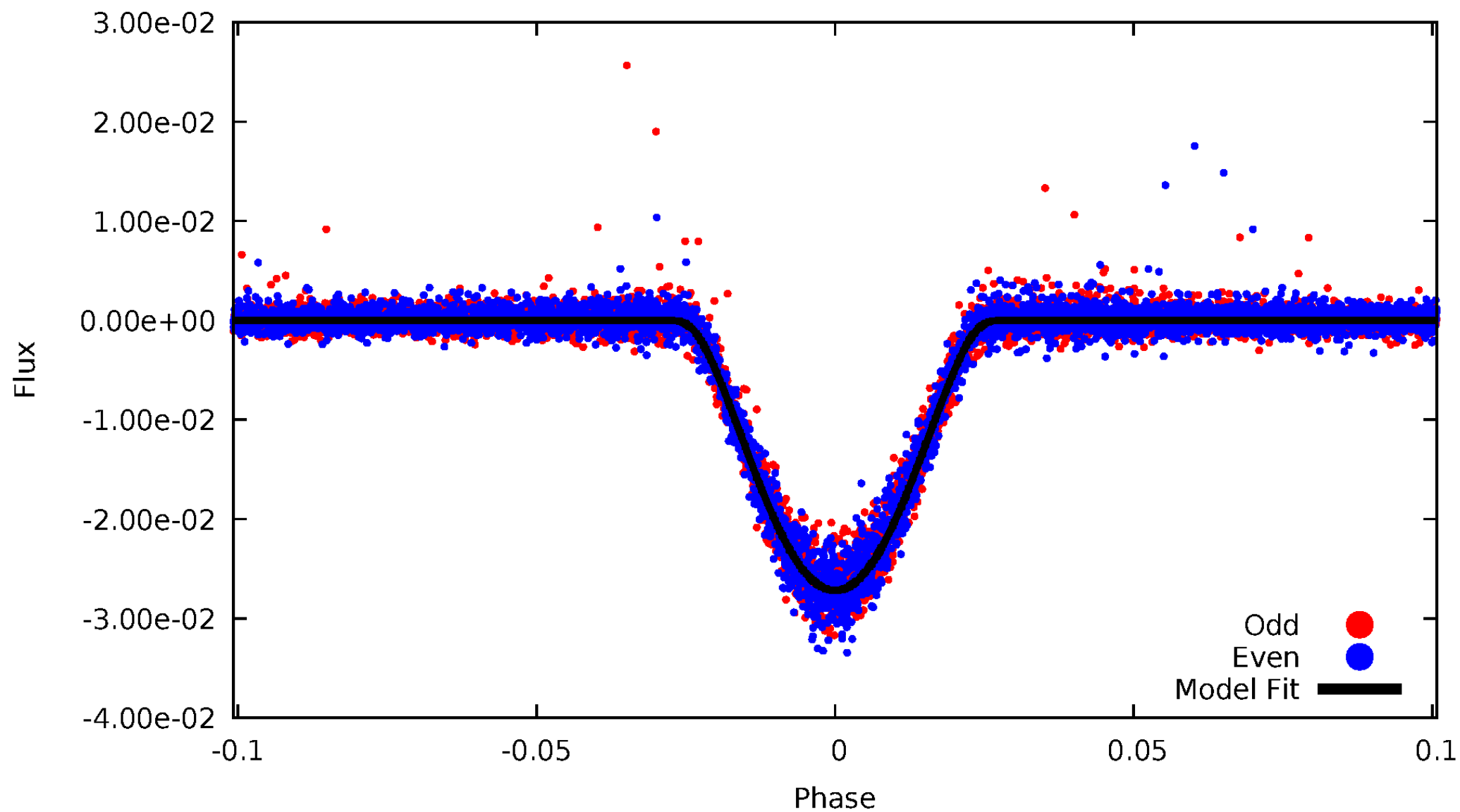


TCE 003543270-02



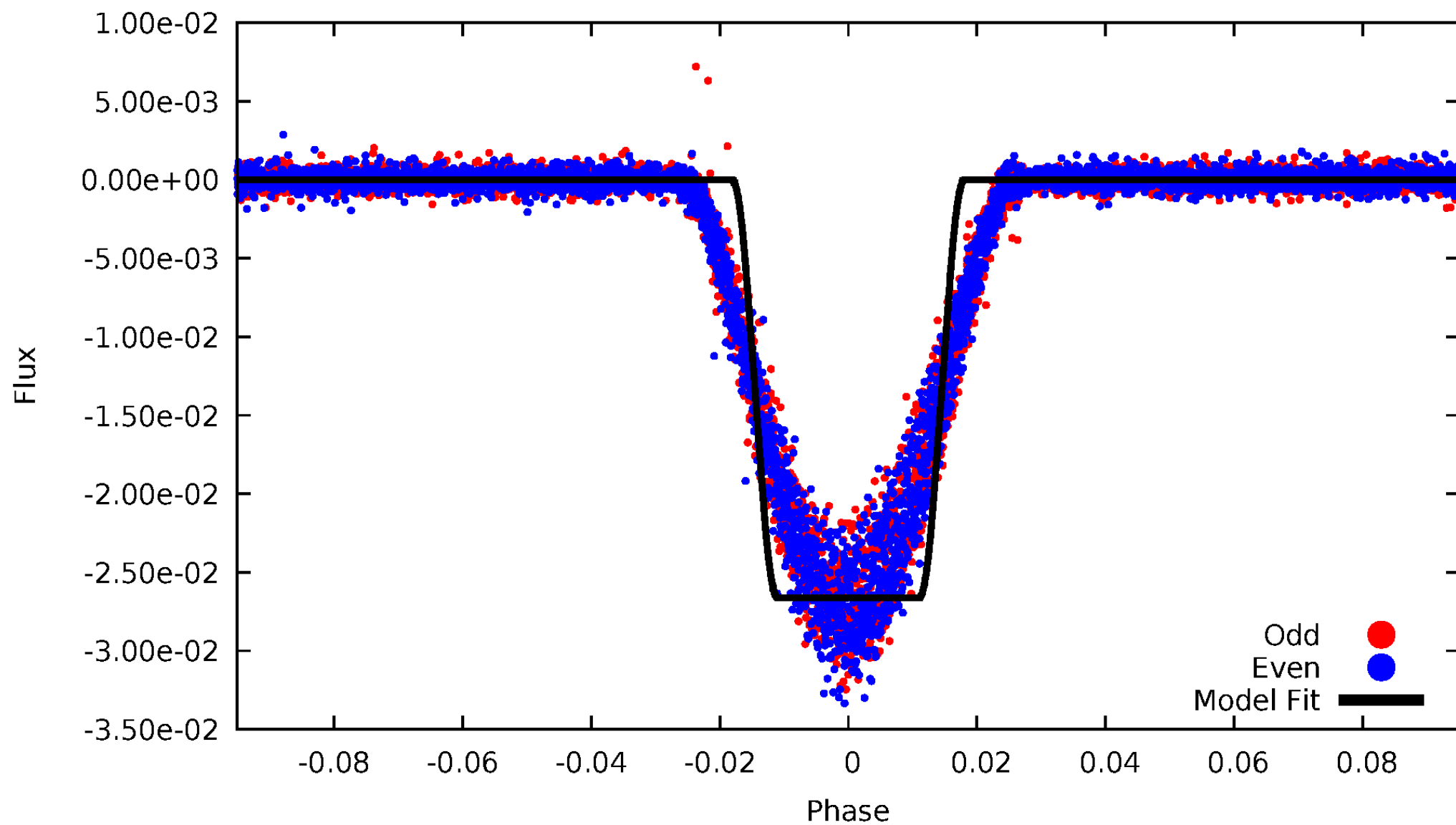
DV Odd/Even

TCE 003543270-02



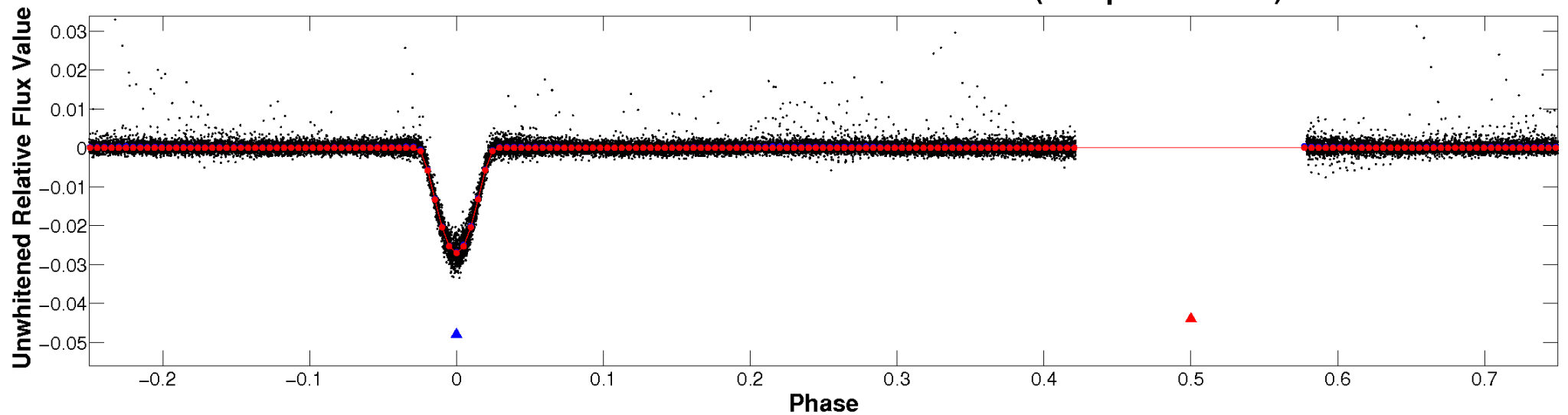
ALT Odd/Even

TCE 003543270-02

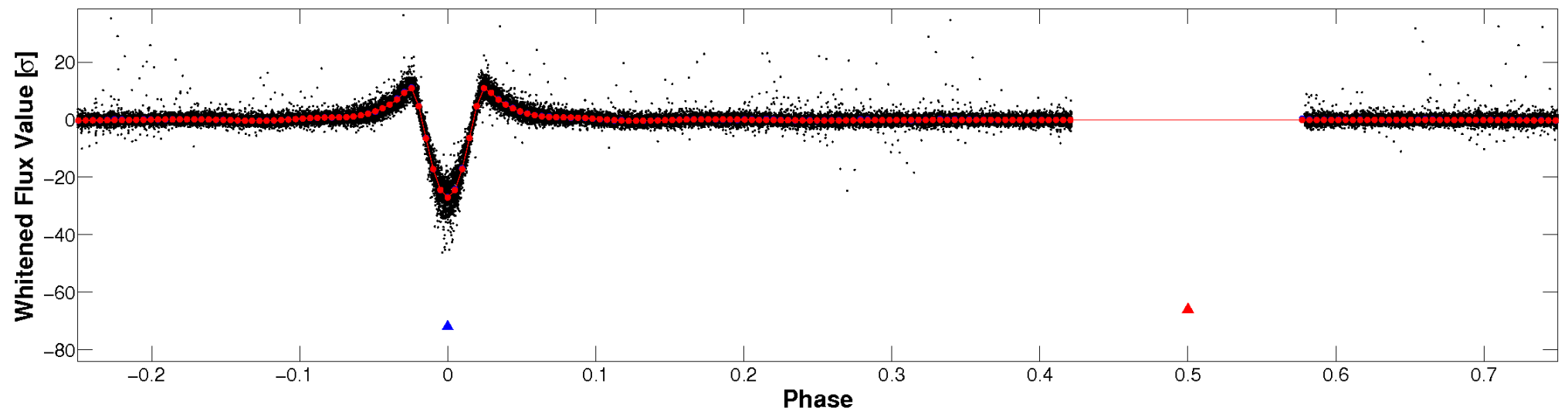


Non-Whitened Vs. Whitened Light Curve

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

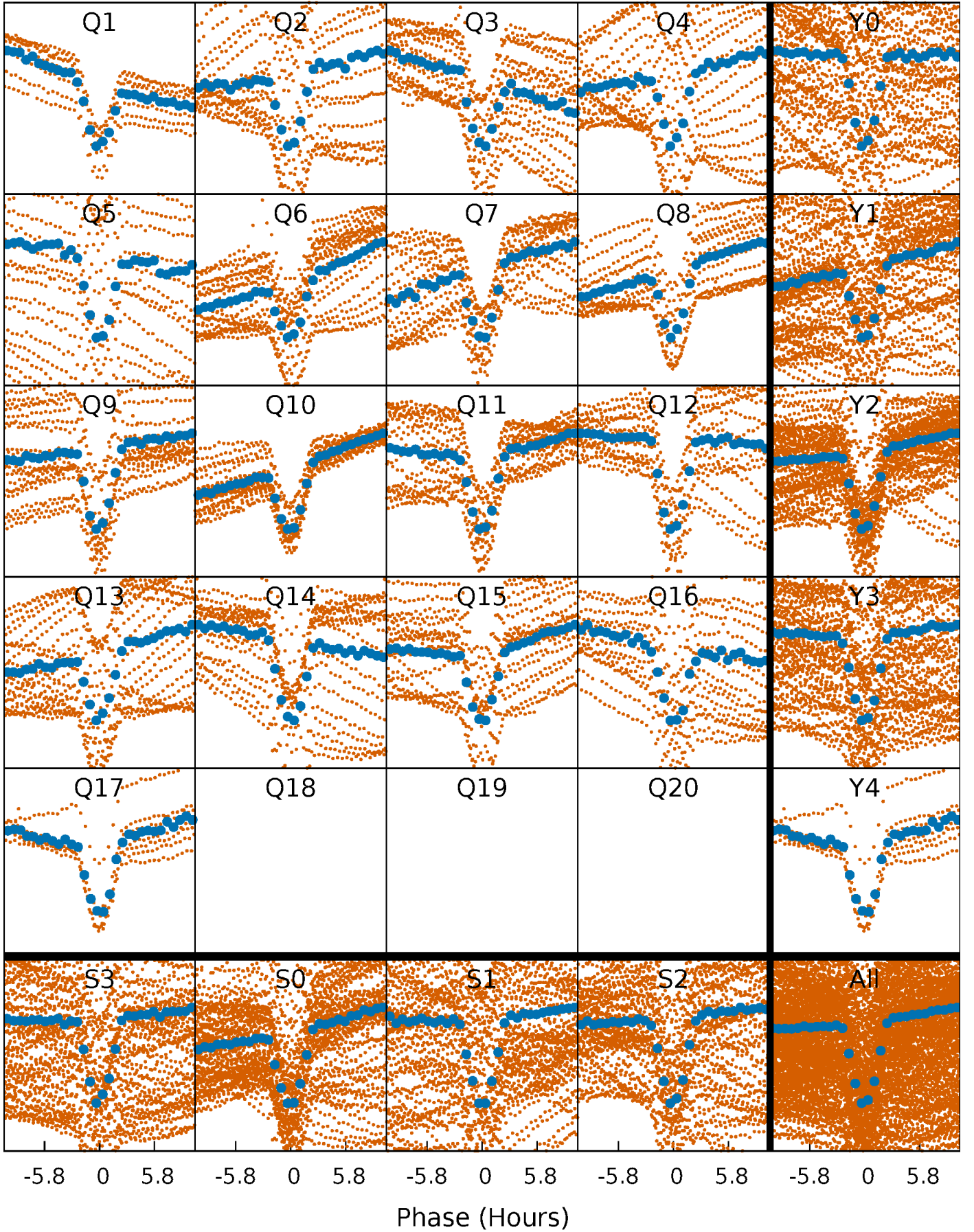


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



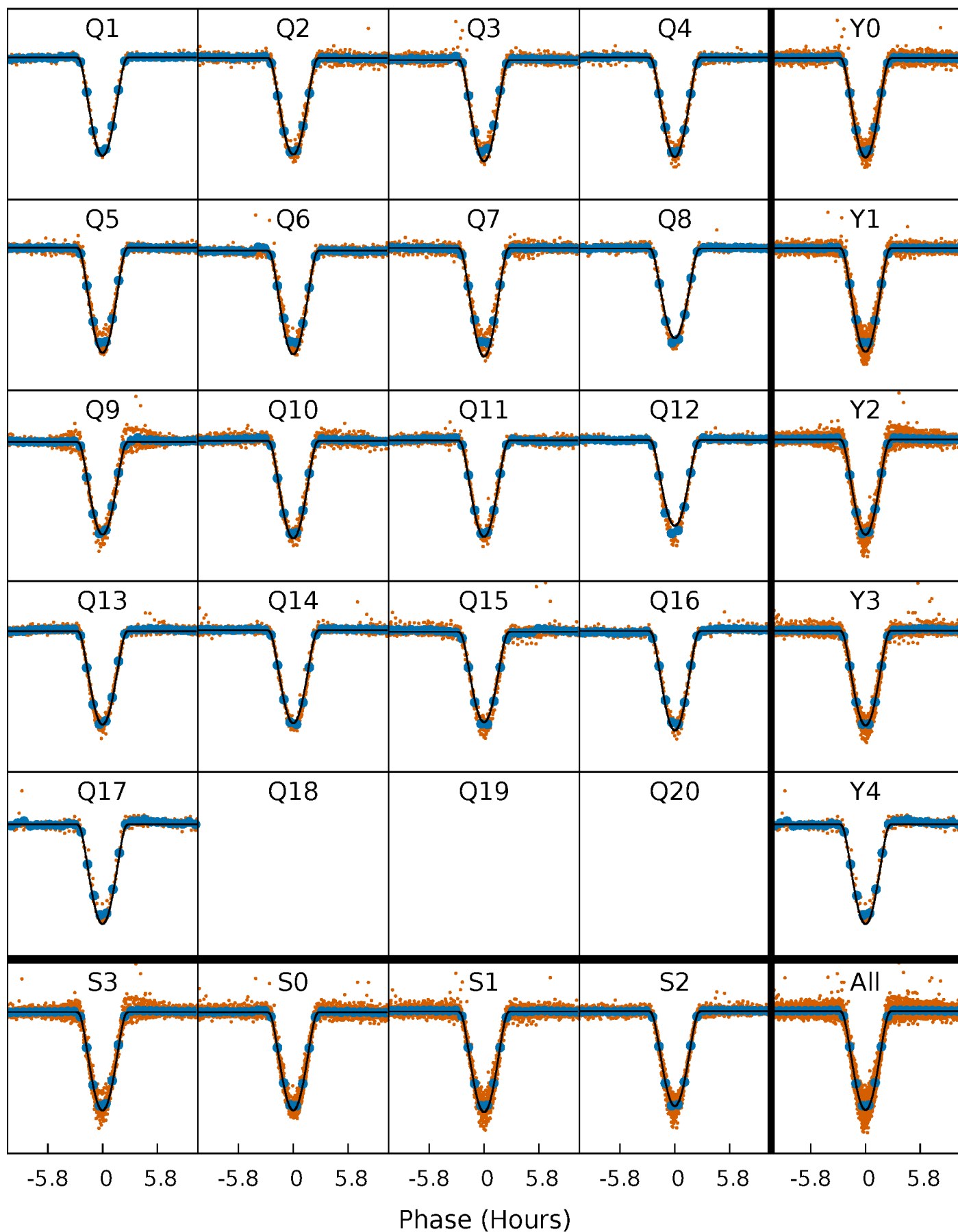
PDC Quarter-Phased Transit Curves

TCE 003543270-02 P= 4.176931 Days $T_0=135.284593$ (BKJD)



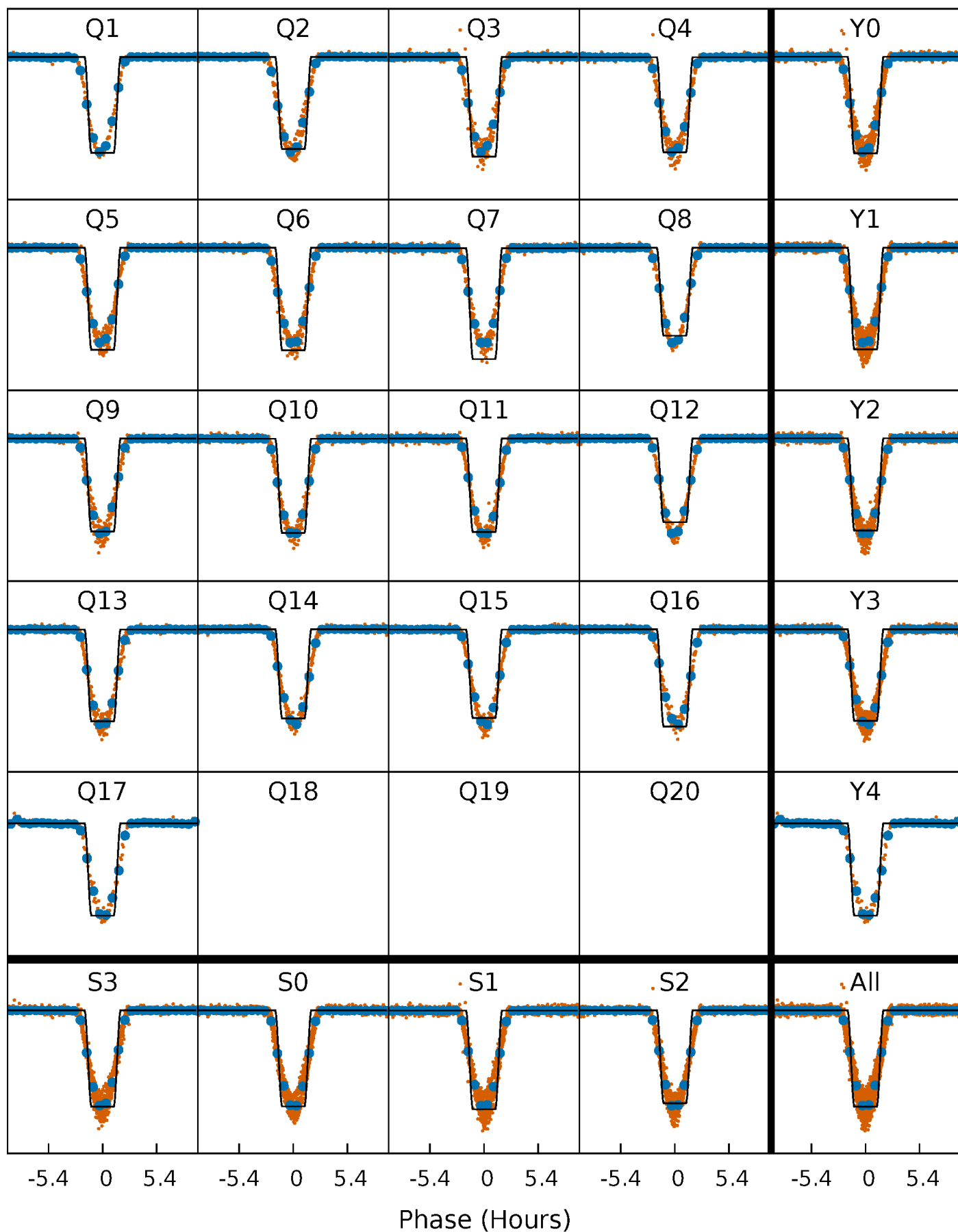
DV Quarter-Phased Transit Curves

TCE 003543270-02 P= 4.176931 Days $T_0=135.284593$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

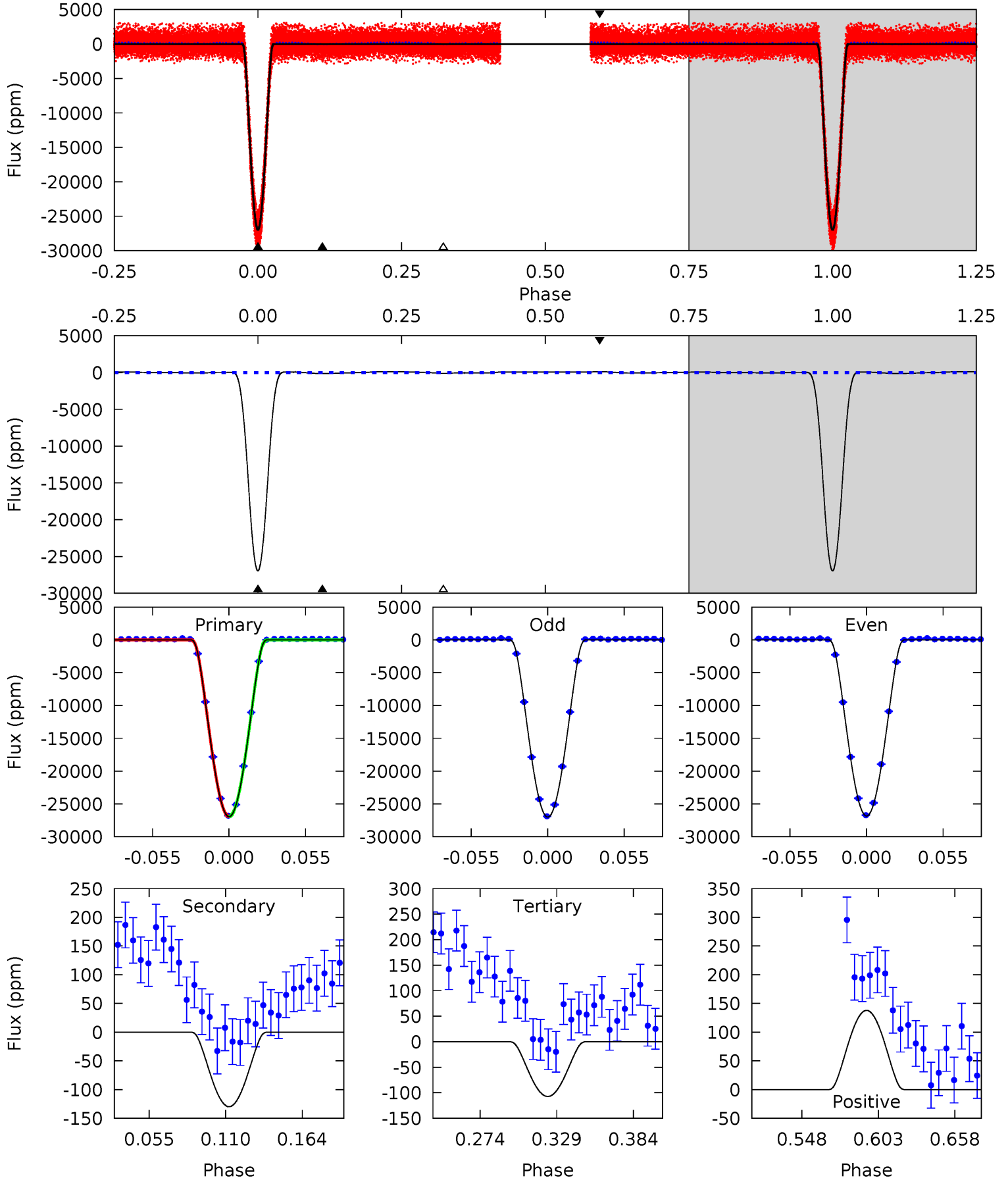
TCE 003543270-02 $P = 4.176905$ Days $T_0 = 135.288862$ (BKJD)



DV Model-Shift Uniqueness Test

003543270-02, P = 4.176931 Days, E = 131.107662 Days

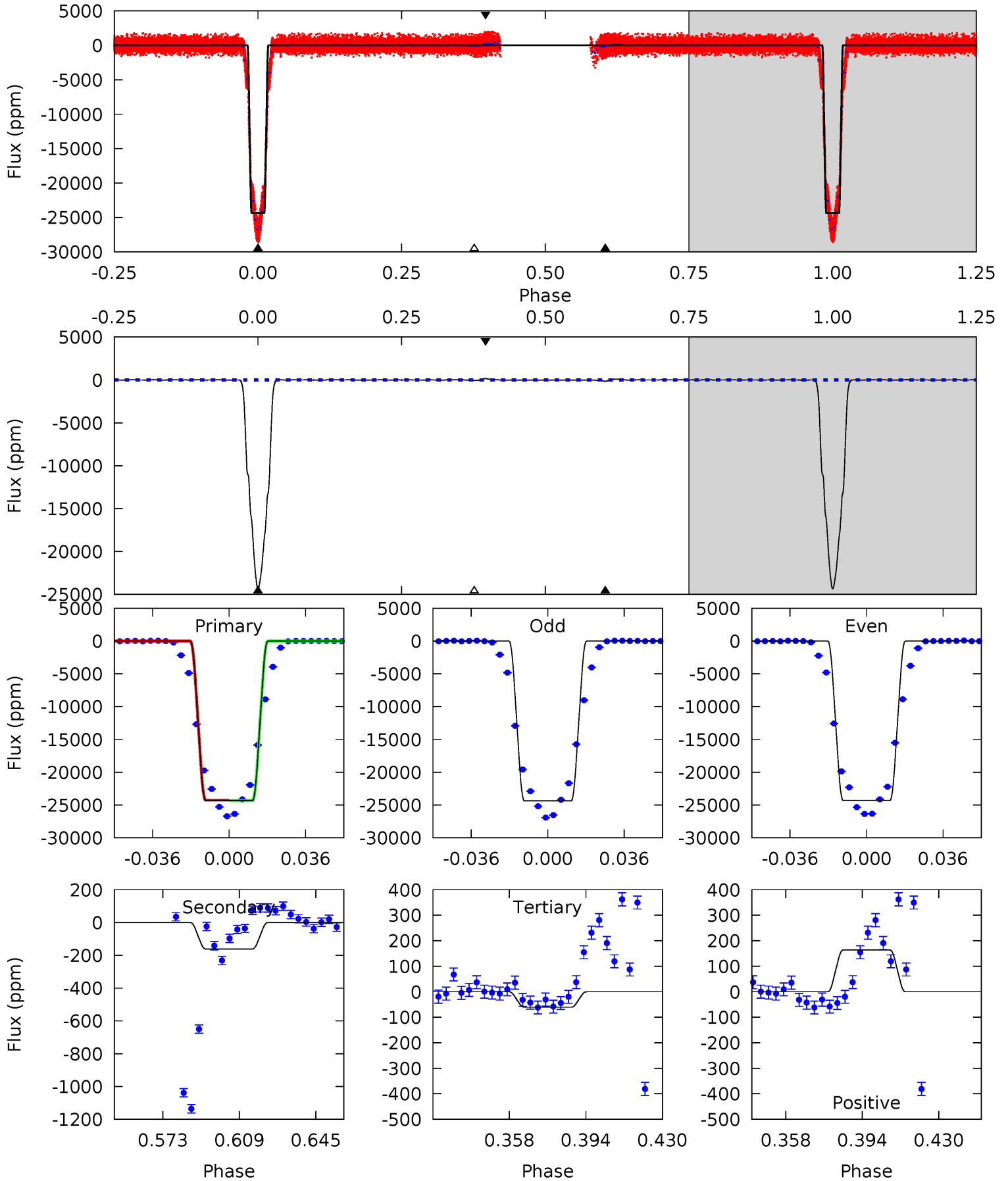
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1982	9.54	7.89	10.1	4.69	1.92	4.53	1974	1971	1.66	-0.60	6.29	1.00	0.01	0.49



Alt Model-Shift Uniqueness Test

003543270-02, P = 4.176905 Days, E = 131.111957 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1786	11.8	4.46	12.0	4.78	2.10	1.46	1781	1774	7.36	-0.17	2.61	1.00	0.01	0



Stellar Parameters For KIC 003543270

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5462^{+162}_{-162}	$4.628^{+0.035}_{-0.105}$	$-0.500^{+0.300}_{-0.300}$	$0.708^{+0.119}_{-0.051}$	$0.799^{+0.075}_{-0.090}$	$3.173^{+0.476}_{-1.091}$
	+3%/-3%	+1%/-2%	+60%/-60%	+17%/-7%	+9%/-11%	+15%/-34%
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 003543270-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-130 ± 14	$18.91^{+1.79}_{-1.27}$	1327^{+59}_{-51}	1902^{+76}_{-112}	$0.432^{+0.075}_{-0.065}$
Alt.	-161 ± 14	$12.95^{+1.20}_{-1.03}$	1328^{+58}_{-50}	2320^{+56}_{-59}	$1.149^{+0.212}_{-0.183}$

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 $A_{obs} \gg 1.0$

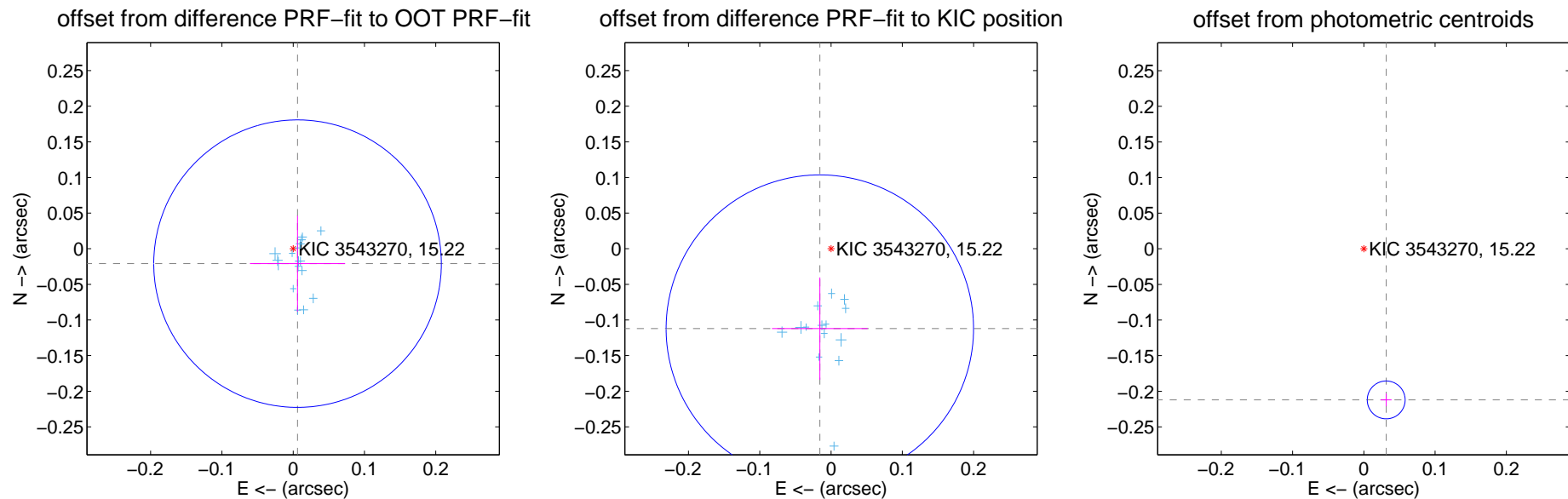
DV Centroid Data

Supplemental centroid analysis for 003543270-02. Kepler magnitude: 15.22. Transit SNR 864.61

There are 17 quarters with good PRF difference image offsets

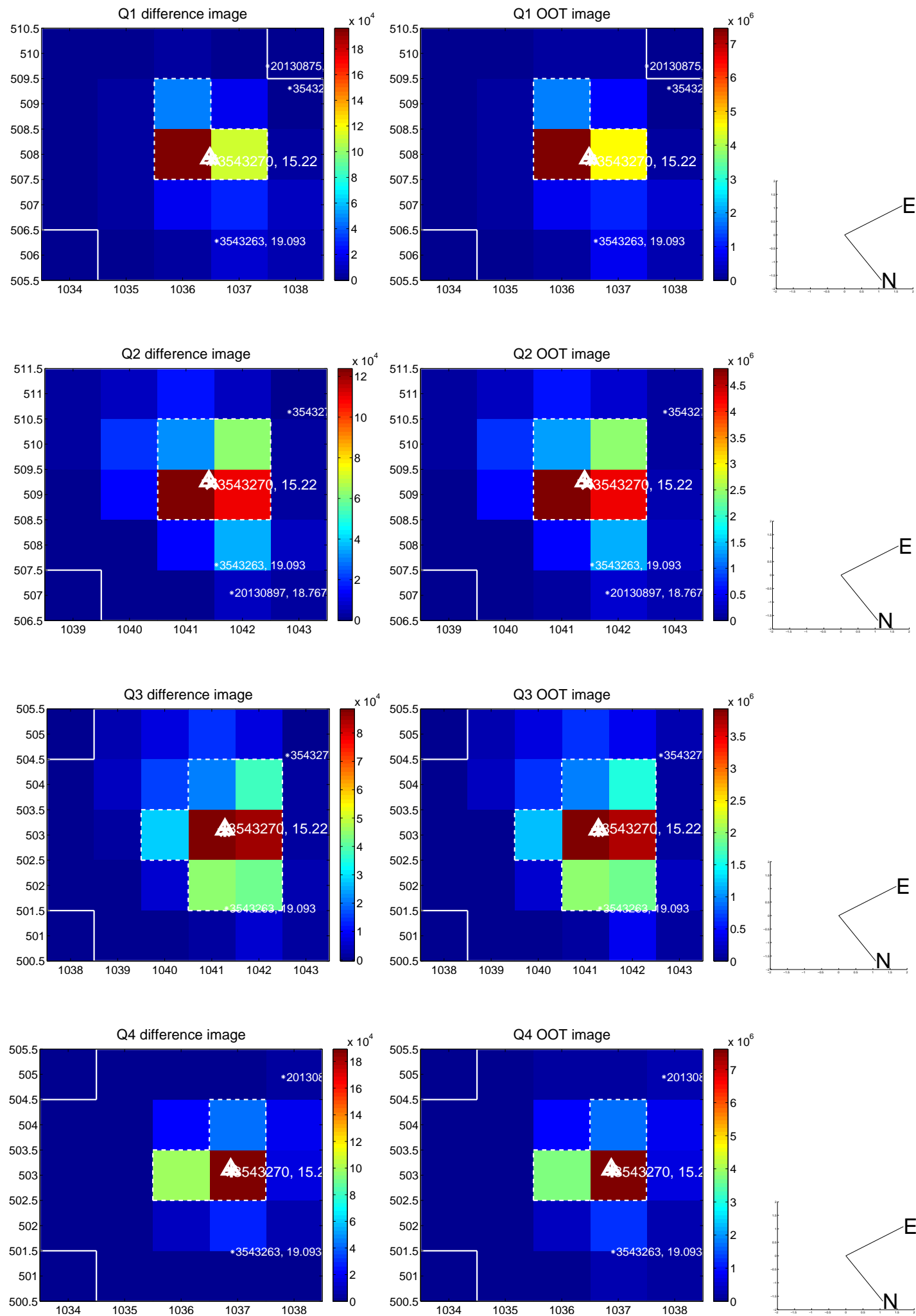
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.022 ± 0.067	0.32	-0.006 ± 0.067	-0.021 ± 0.067
PRF-fit source offset from KIC position	0.113 ± 0.072	1.57	0.016 ± 0.067	-0.112 ± 0.072
photometric centroid source offset	0.21 ± 0.01	24.20	-0.03 ± 0.01	-0.21 ± 0.01

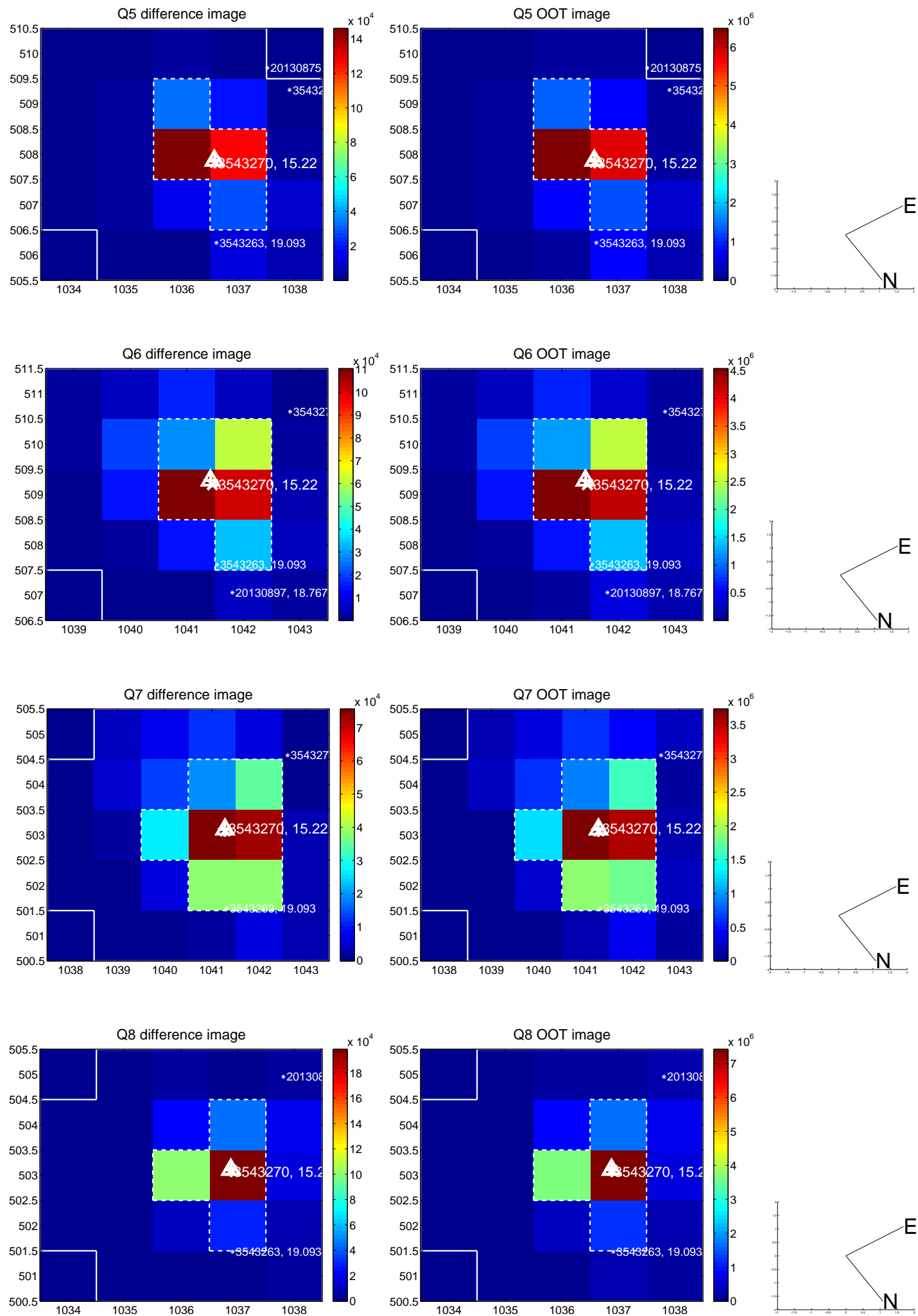


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

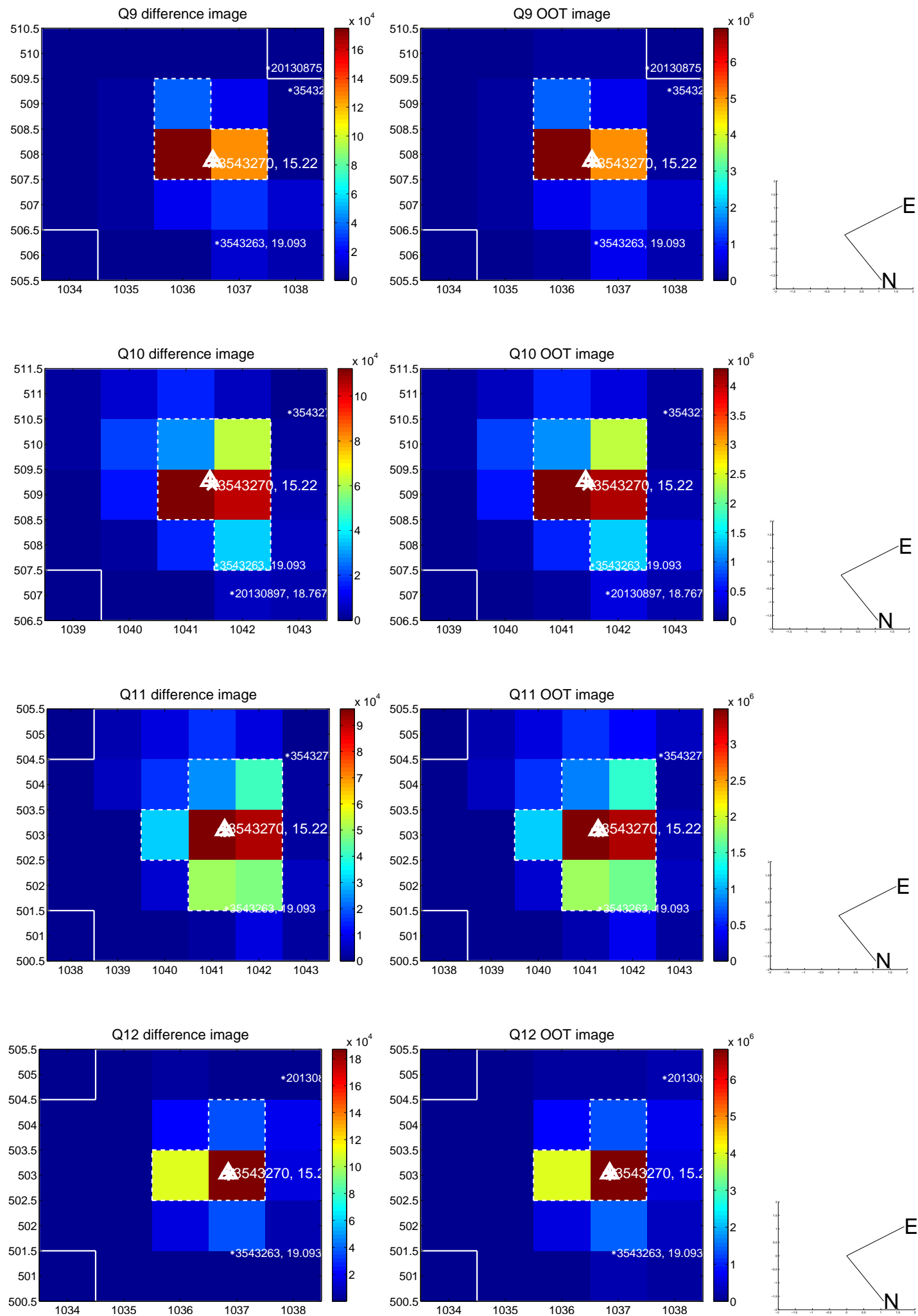
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



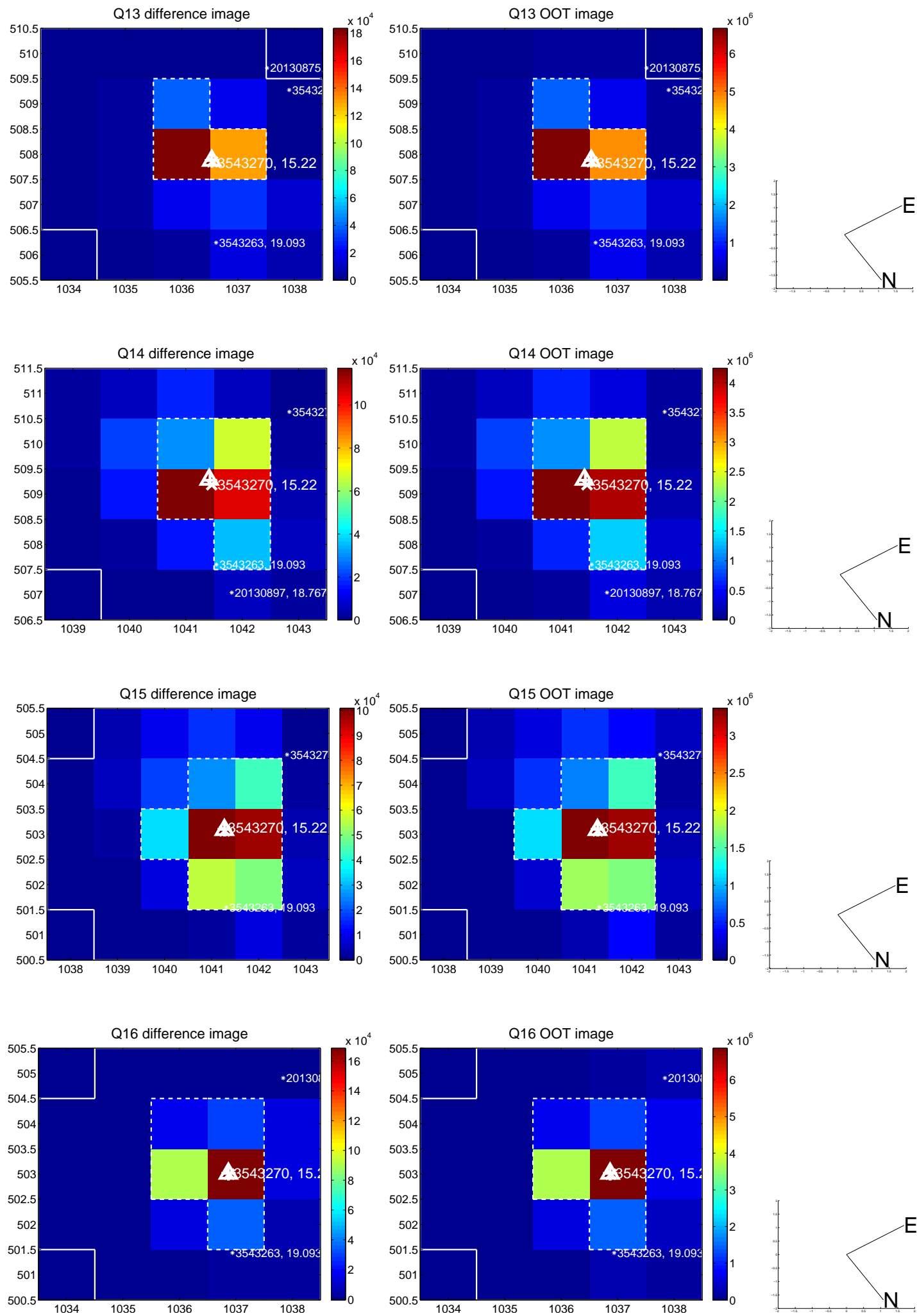
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



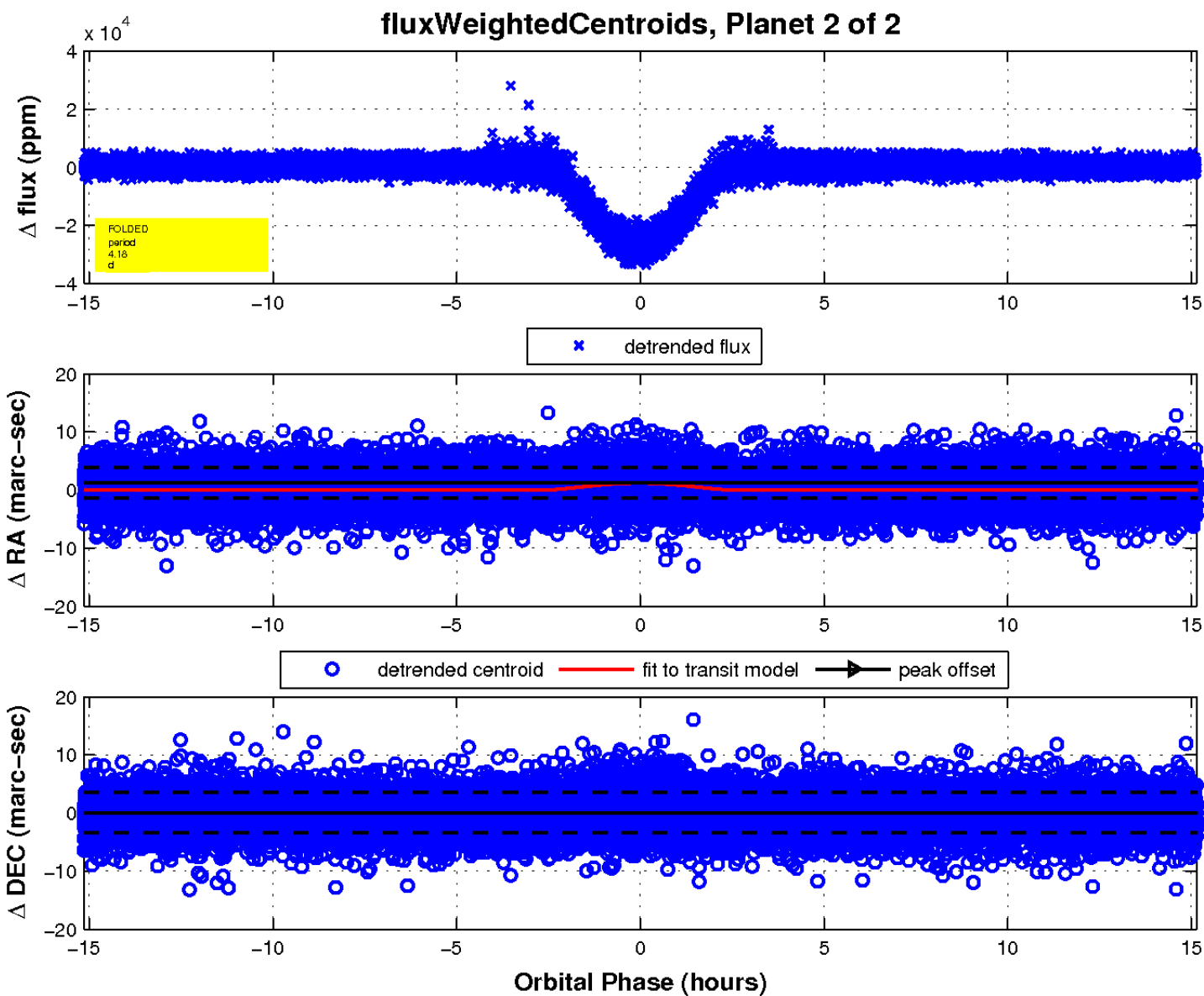
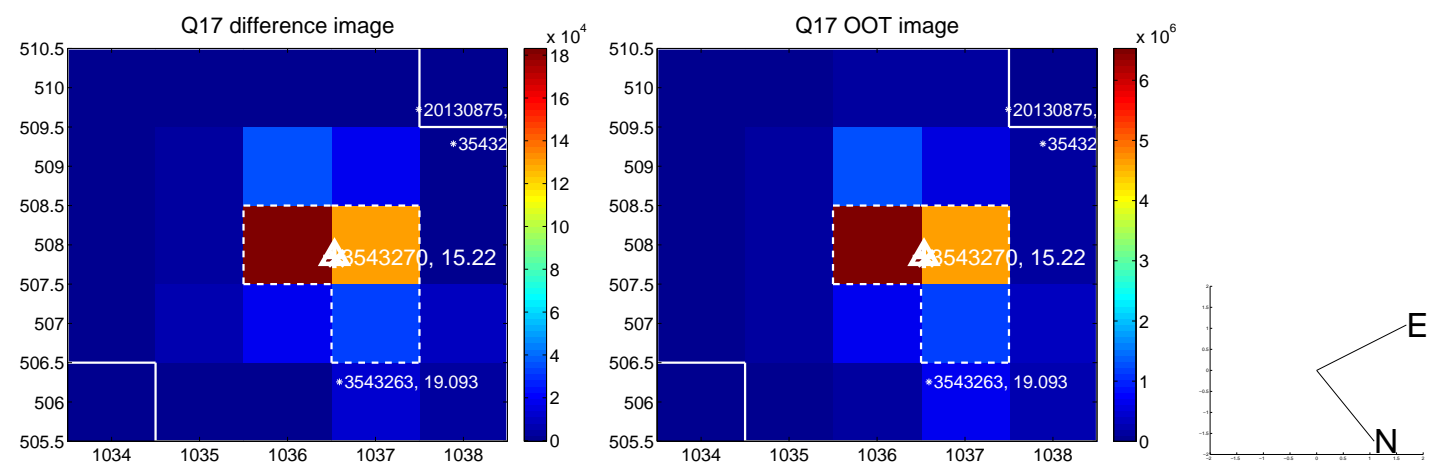
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

