

KIC 008590527

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})
008590527-01	OBS	7065.01	0.739771	131.964216	19080.1	1.782	2811.7	1857.2	1.85	6465	32.41	19529.15
008590527-02	OBS	No	0.739760	131.598494	1791.3	1.500	185.9	-1.0	1.85	6465	7.89	19529.53

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008590527-01	OBS	FP	0.23	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
008590527-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—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 008590527-01

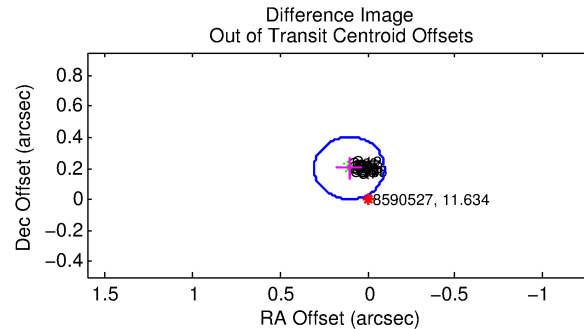
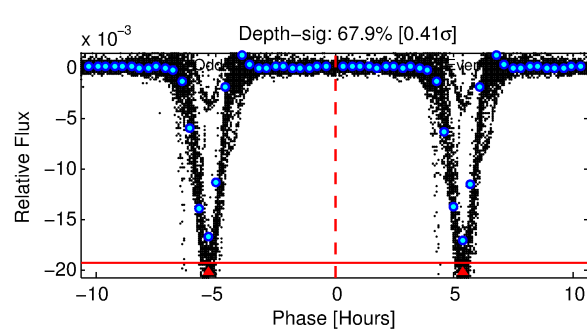
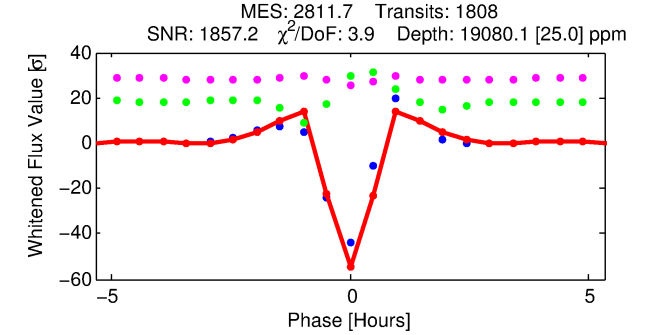
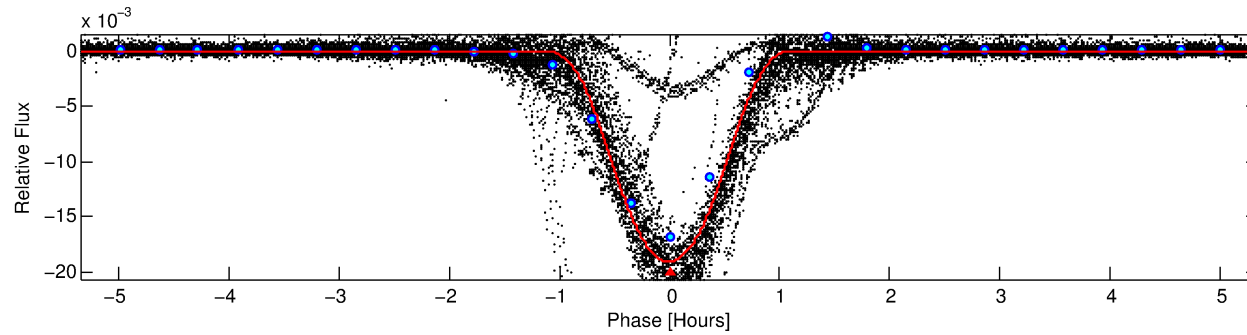
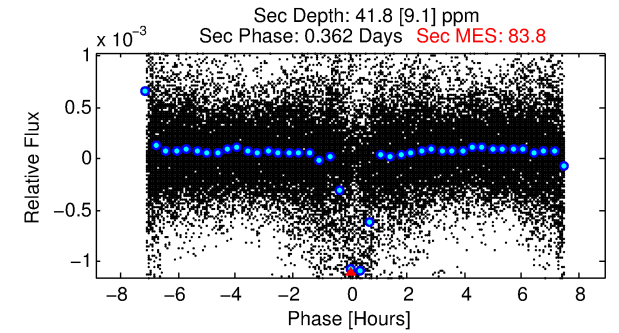
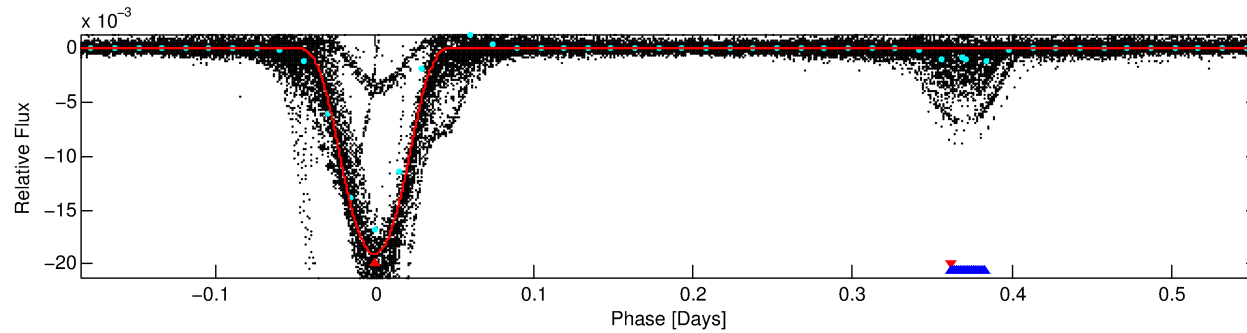
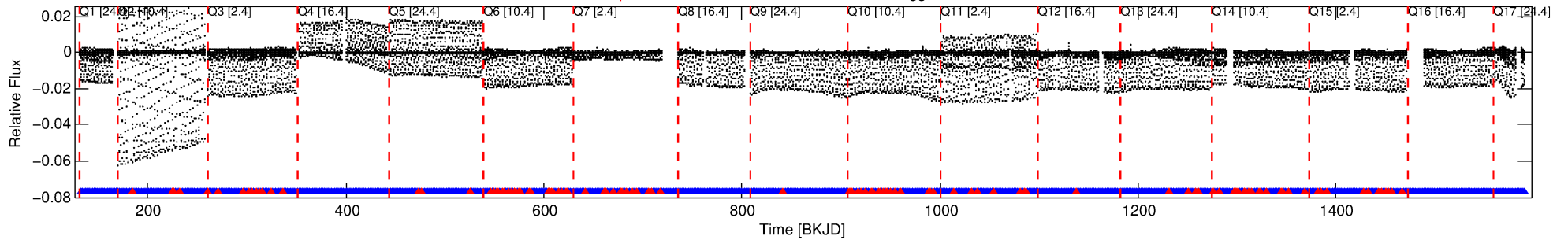
No Significant Match Found

DV One-Page Summary

KIC: 8590527 Candidate: 1 of 2 Period: 0.740 d

KOI: K07065.01 Corr: 0.952

Kp: 11.63 R*: 1.85 Rs Teff: 6465.0 K Logg: 3.95 Fe/H: -0.520



DV Fit Results:

Period = 0.73977 [0.00000] d
Epoch = 131.9642 [0.0000] BKJD
Rp/R* = 0.1608 [0.0014]
a/R* = 2.55 [0.01]
b = 0.89 [0.00]
Seff = 19529.15 [13844.78]
Teff = 3014 [534] K
Rp = 32.41 [13.09] Re
a = 0.0165 [0.0069] AU
Ag = 0.01 [0.00] [-226.83σ]
Teffp = 1296 [81] K [-3.18σ]

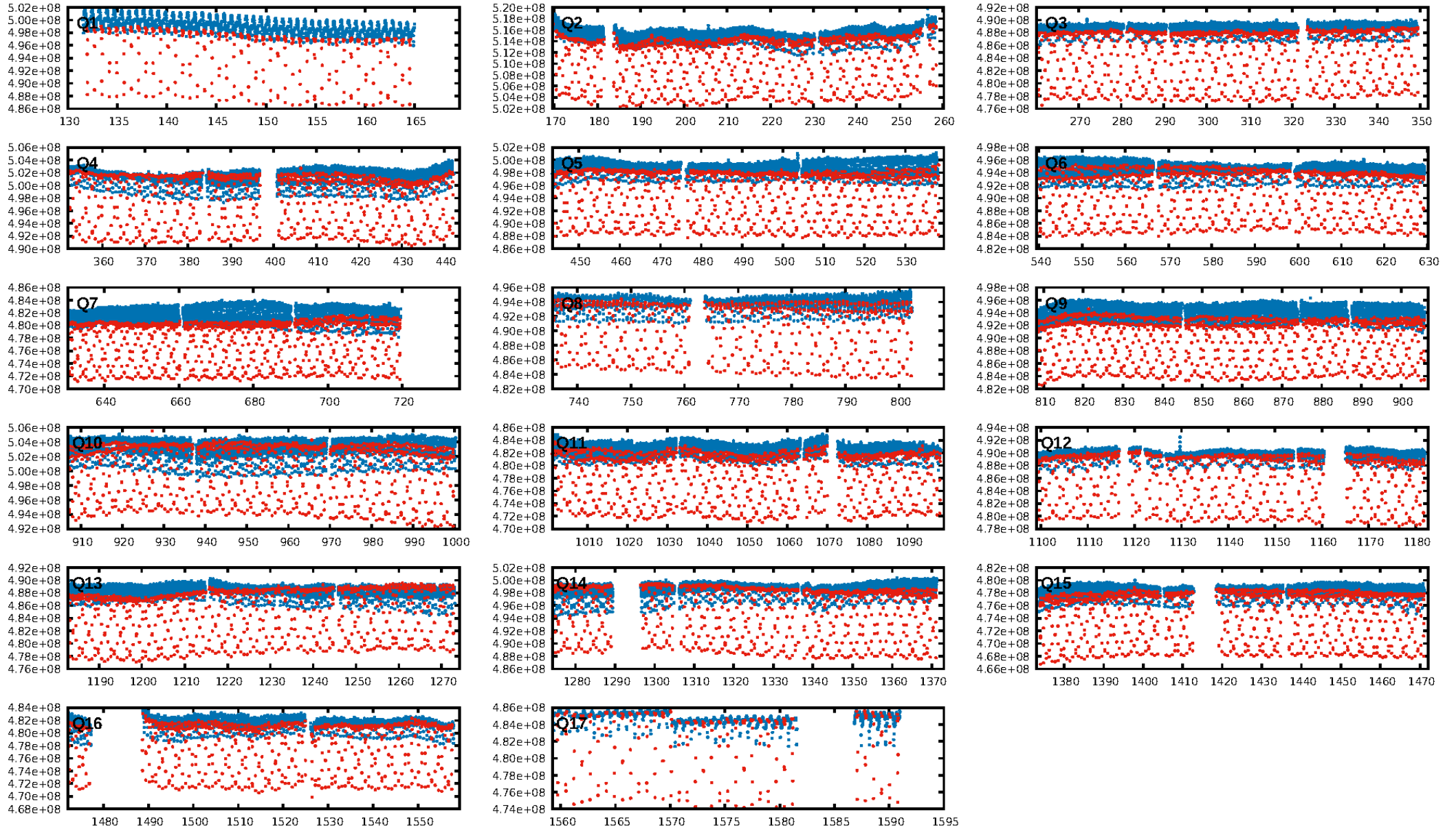
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.93 [1608/1727]
GhostDiagnostic-chr: 3.641
Centroid-sig: N/A
Centroid-so: 0.236 arcsec [201.45σ]
OotOffset-rm: 0.227 arcsec [3.40σ]
KicOffset-rm: 0.304 arcsec [4.50σ]
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]

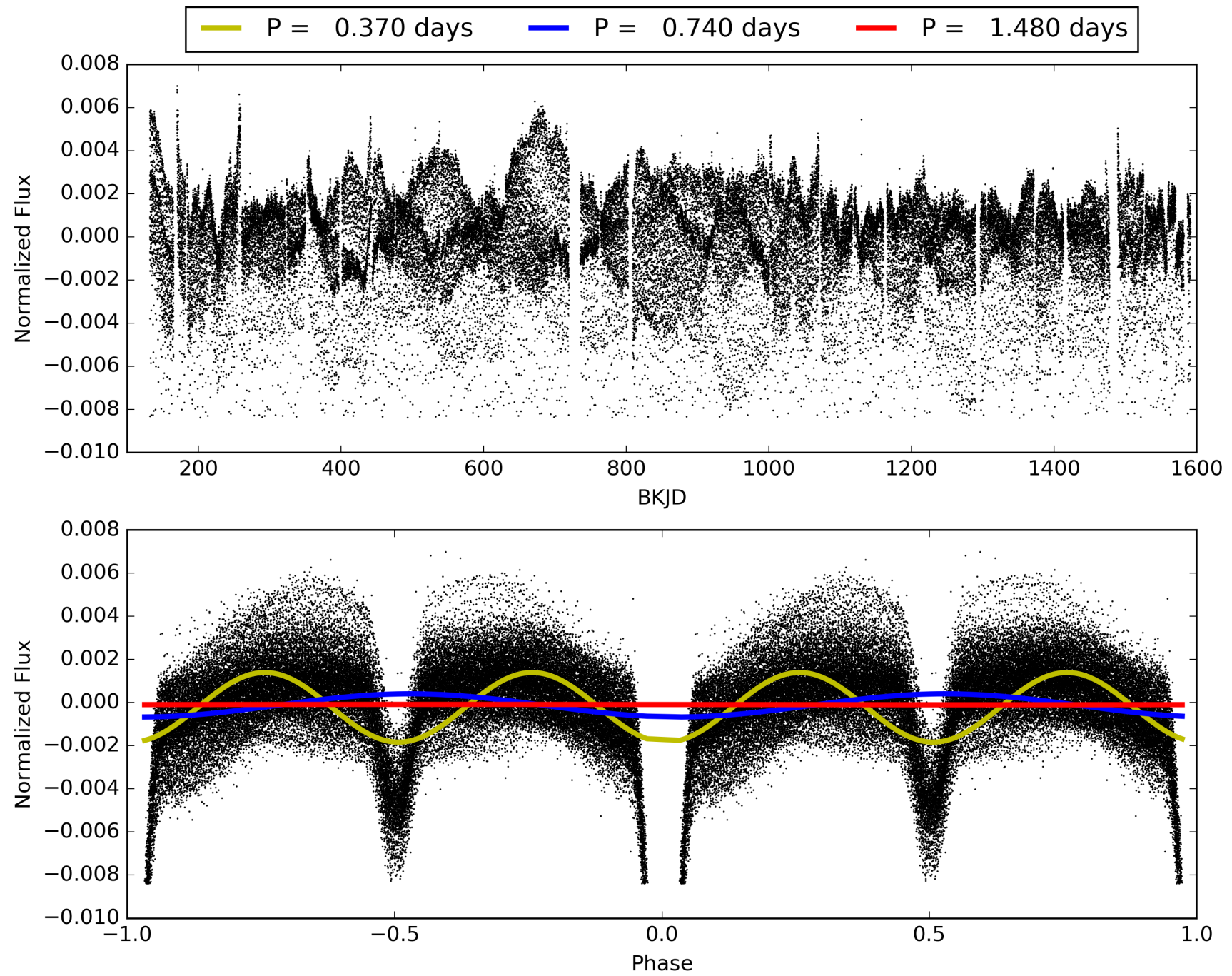
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:56:28 Z

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

TCE 008590527-01, PDC Light Curves

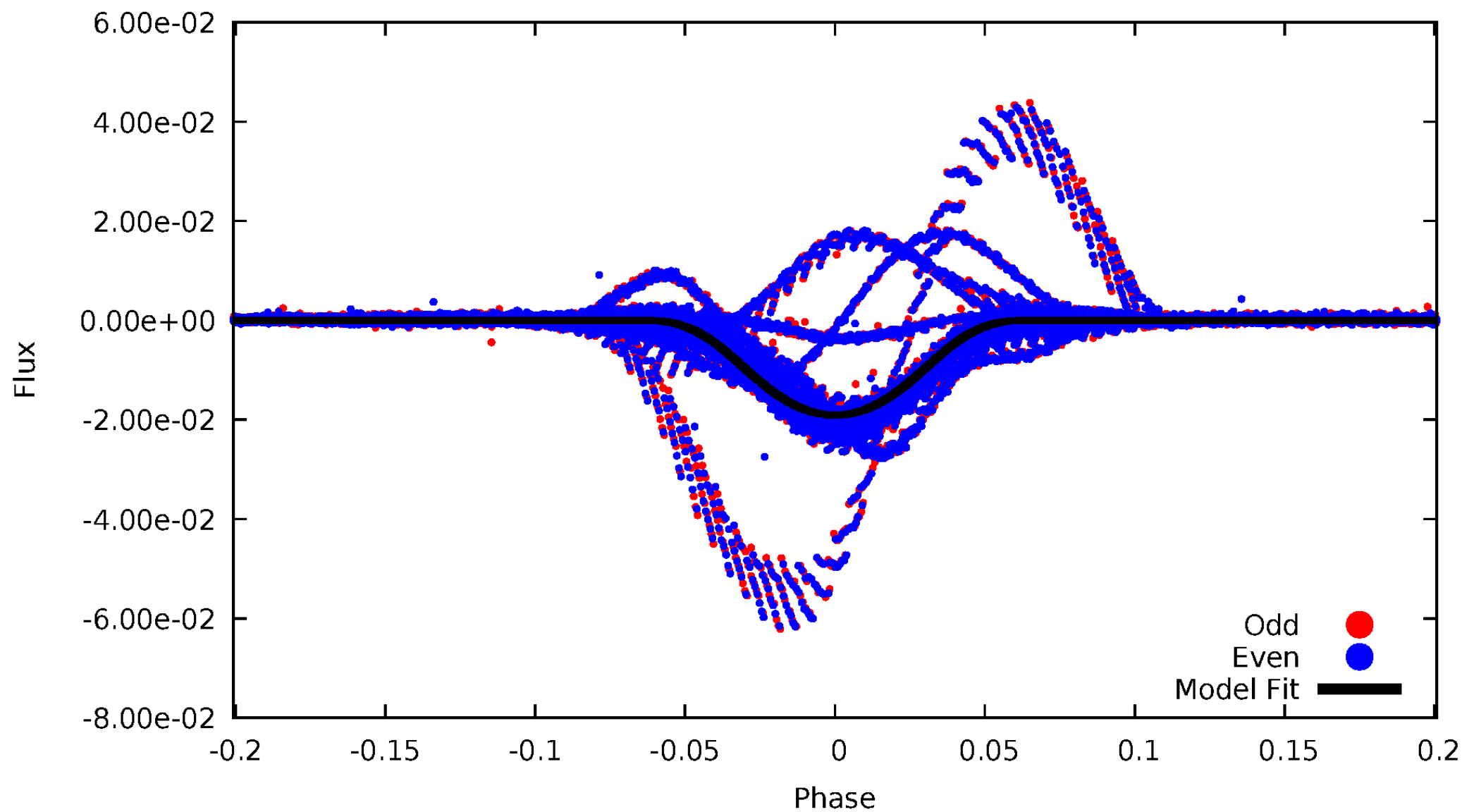


TCE 008590527-01



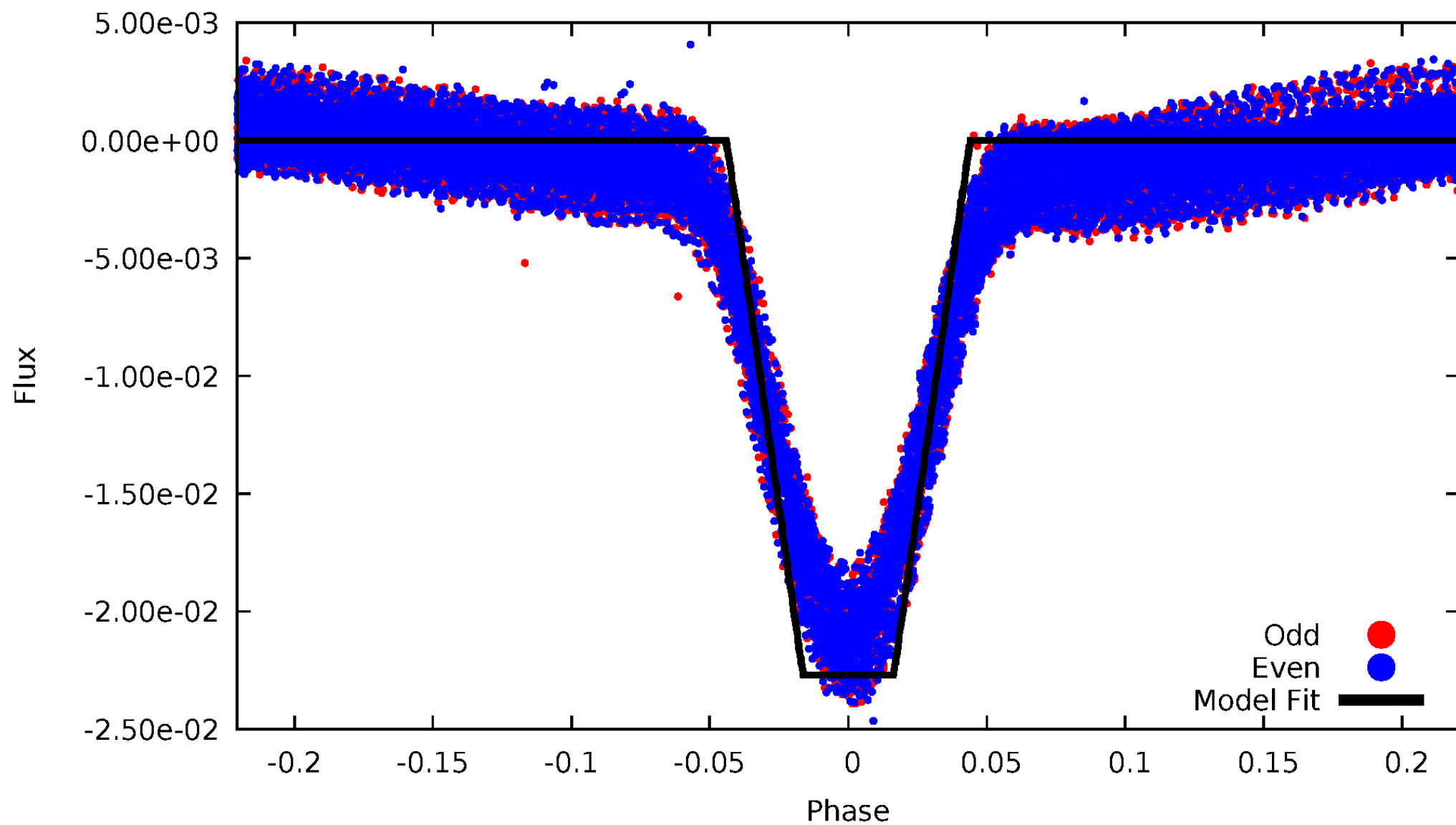
DV Odd/Even

TCE 008590527-01



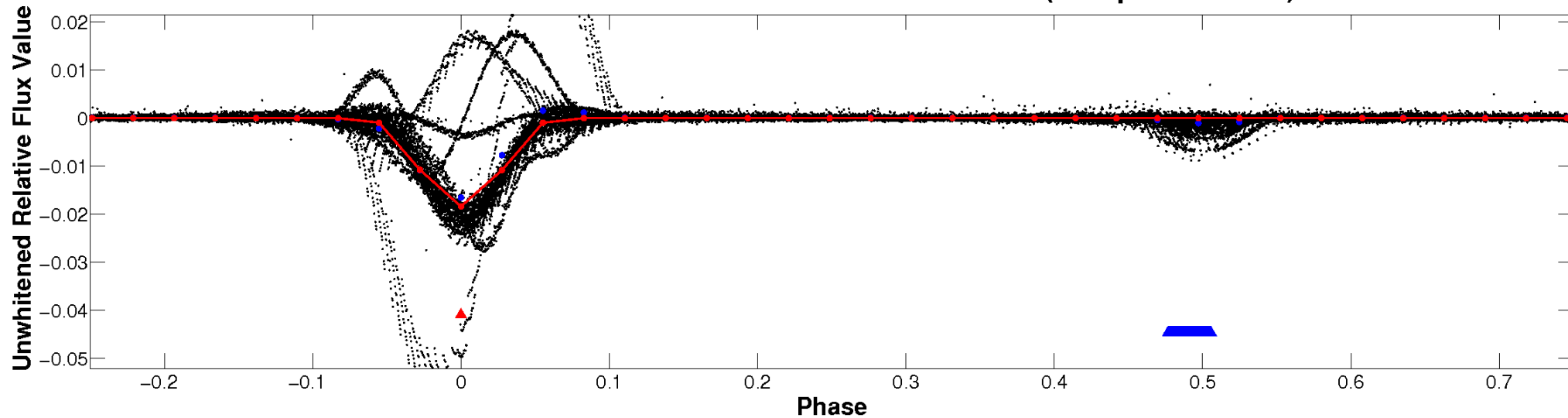
ALT Odd/Even

TCE 008590527-01

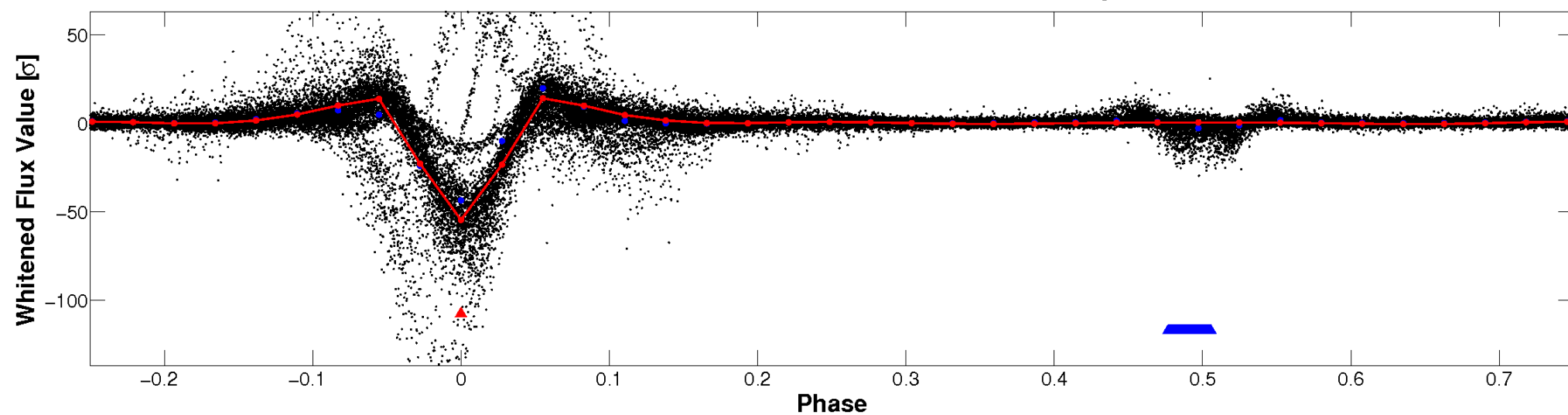


Non-Whitened Vs. Whitened Light Curve

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

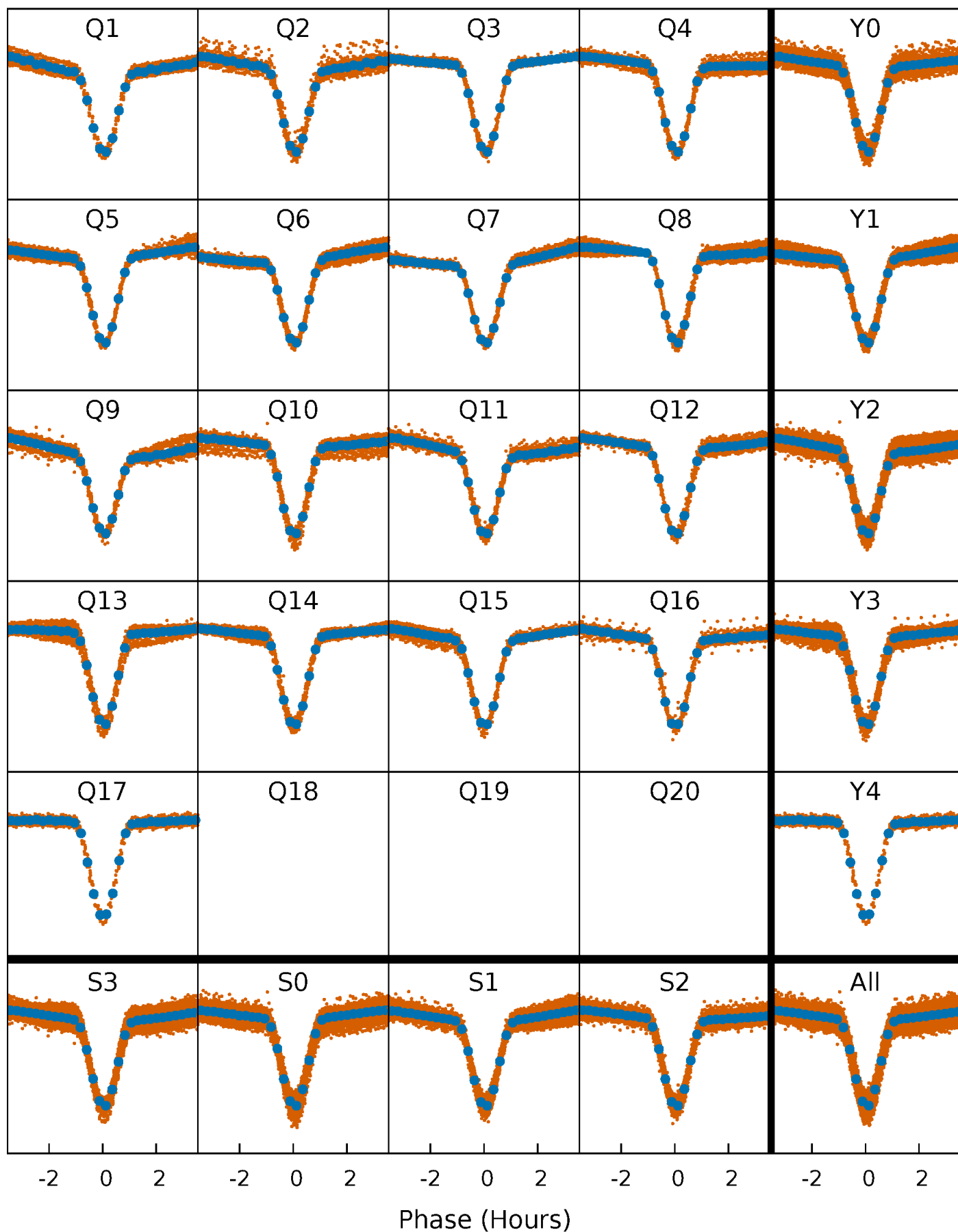


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



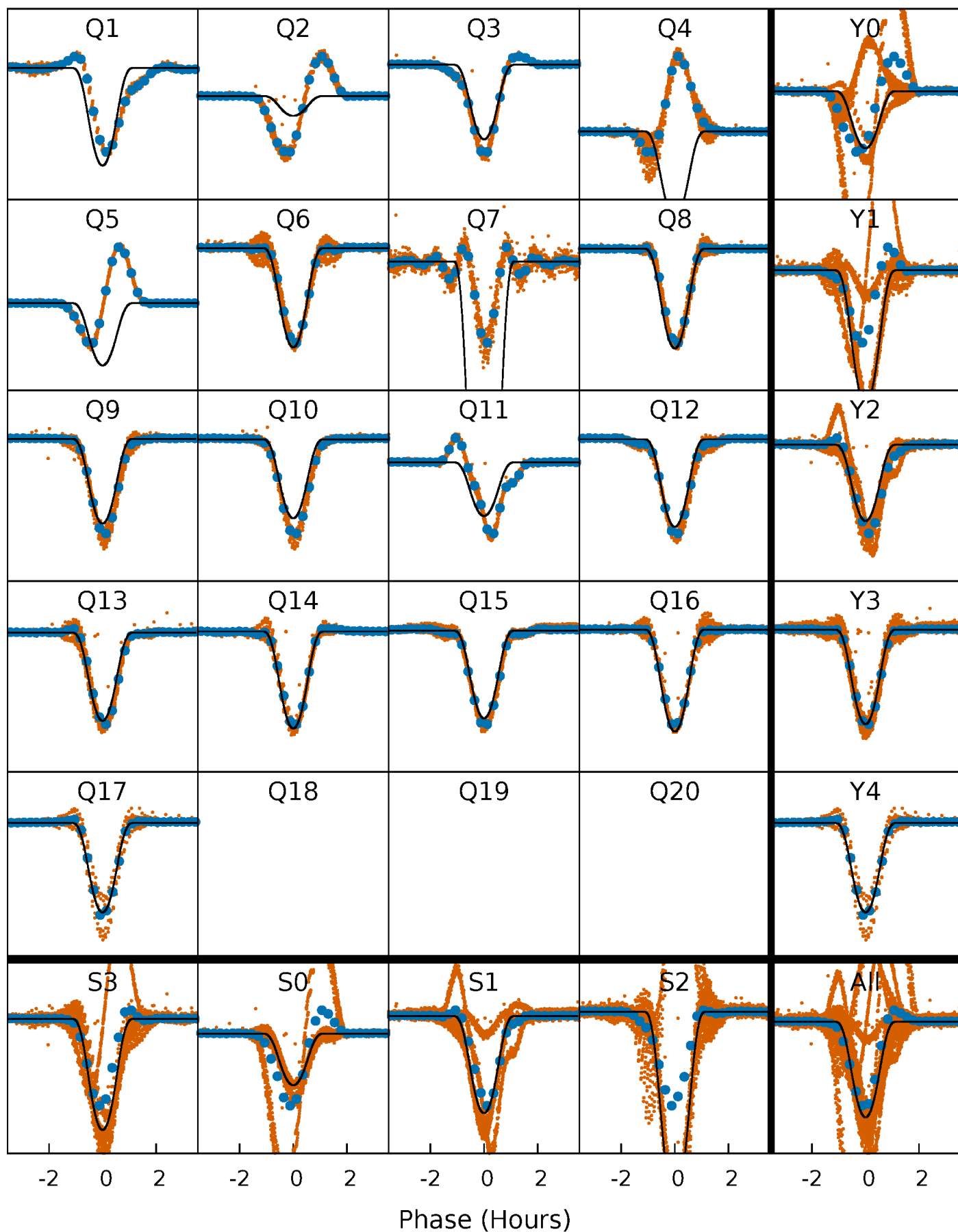
PDC Quarter-Phased Transit Curves

TCE 008590527-01 P= 0.739771 Days $T_0=131.964216$ (BKJD)



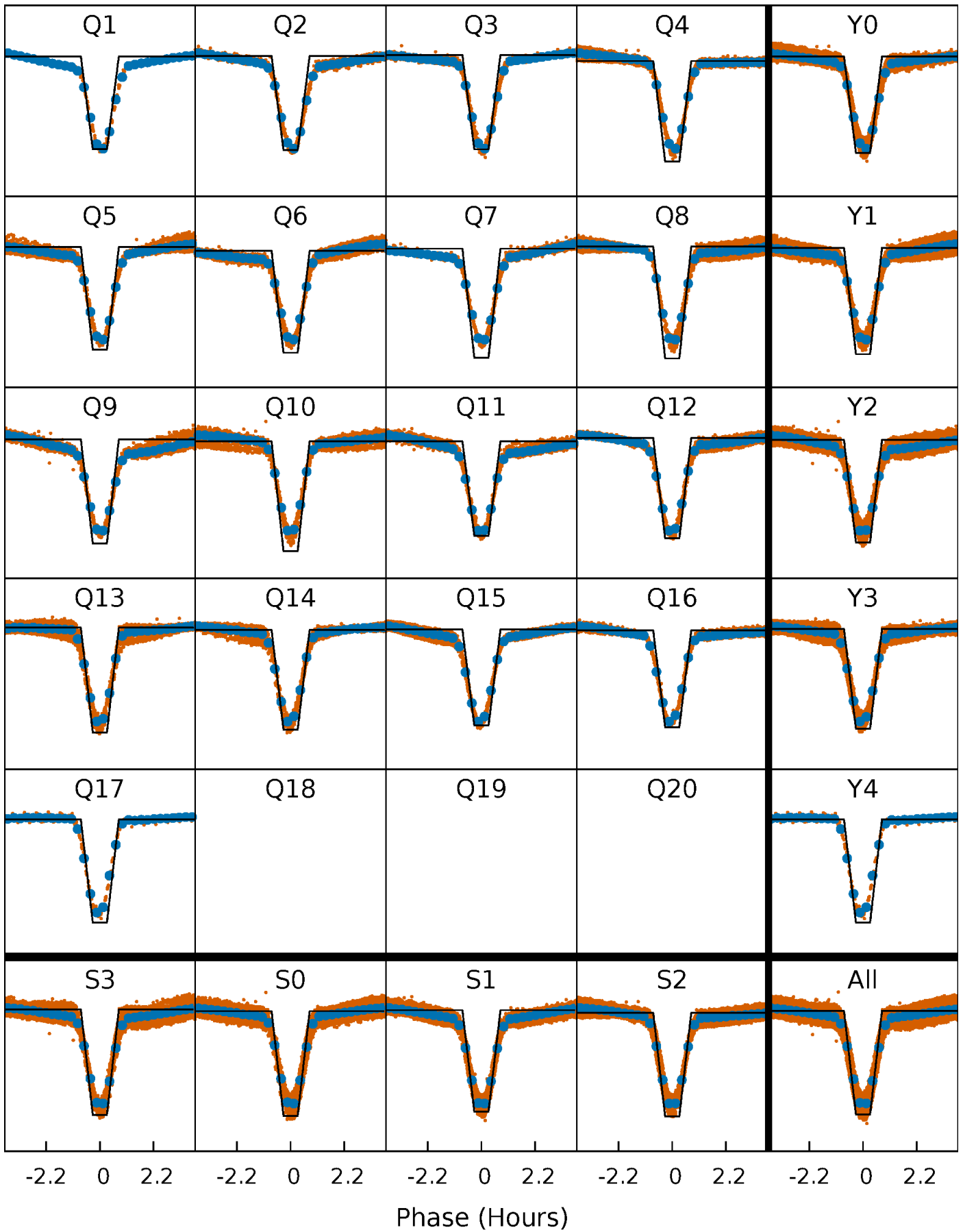
DV Quarter-Phased Transit Curves

TCE 008590527-01 P= 0.739771 Days $T_0=131.964216$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

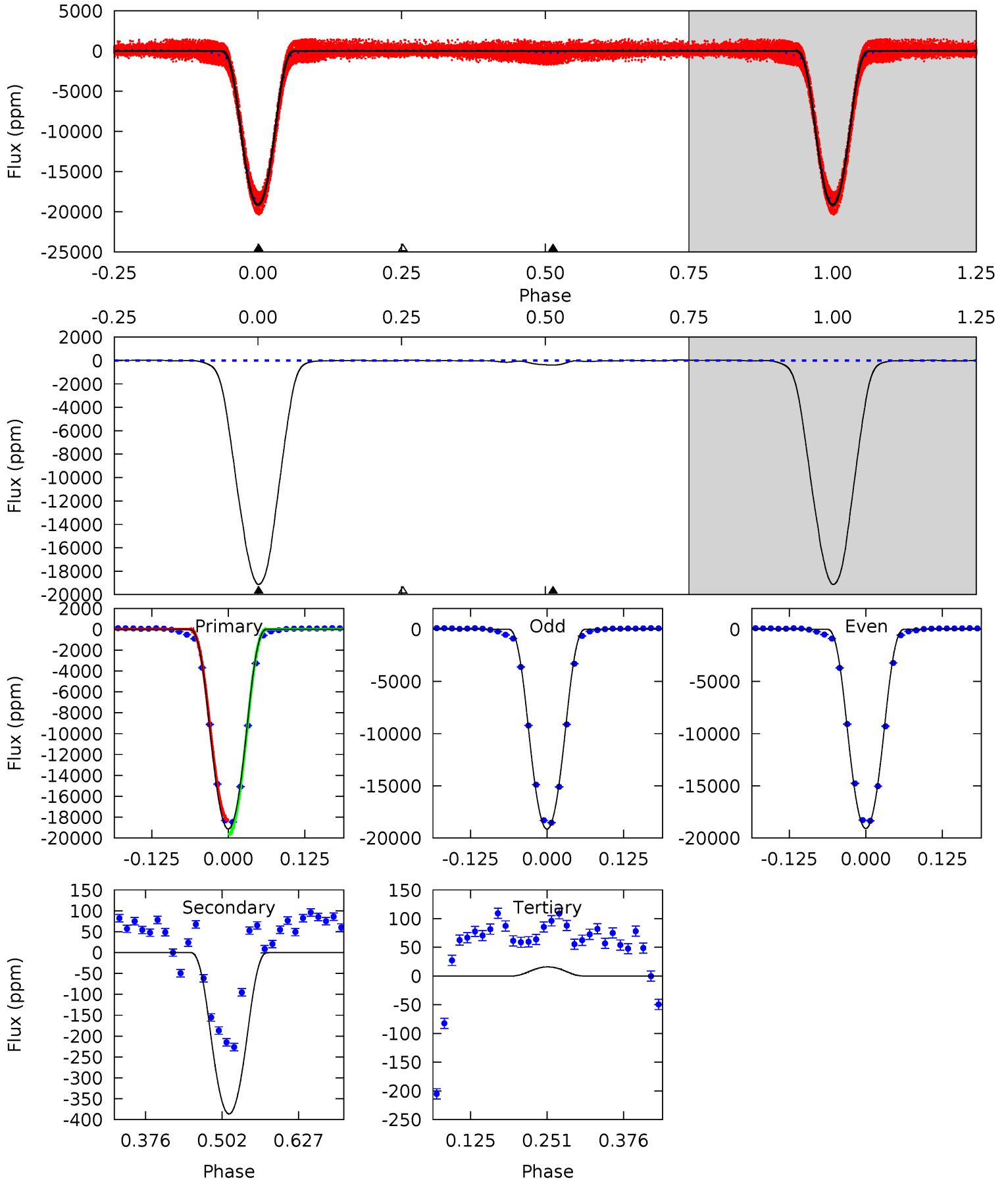
TCE 008590527-01 P= 0.739773 Days $T_0=131.964012$ (BKJD)



DV Model-Shift Uniqueness Test

008590527-01, P = 0.739771 Days, E = 131.224445 Days

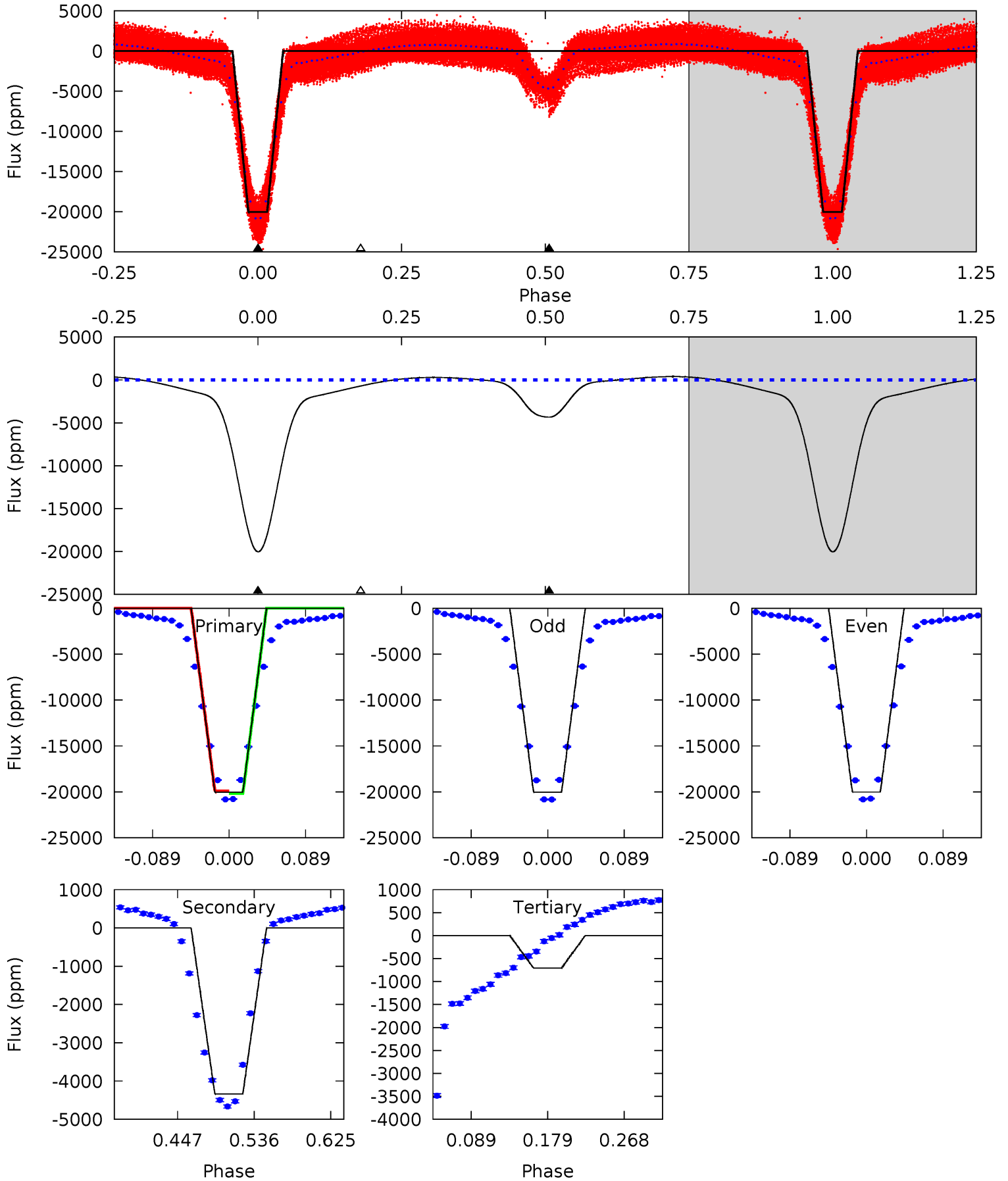
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3650	73.7	-3.04	0	4.52	1.53	4.17	3653	3650	76.7	73.7	5.07	0.86	0.00	129.8



Alt Model-Shift Uniqueness Test

008590527-01, P = 0.739773 Days, E = 131.224239 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1268	274.4	44.7	0	4.59	1.70	41.5	1223	1268	229.7	274.4	0.93	1.00	0.02	9.38



Stellar Parameters For KIC 008590527

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6465^{+155}_{-194}	$3.947^{+0.420}_{-0.140}$	$-0.520^{+0.300}_{-0.300}$	$1.847^{+0.435}_{-0.746}$	$1.101^{+0.161}_{-0.161}$	$0.246^{+0.799}_{-0.102}$
	+2%/-3%	+11%/-4%	+58%/-58%	+24%/-40%	+15%/-15%	+325%/-41%
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 008590527-01 / KOI 7065.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-386 ± 5	$31.92^{+4.35}_{-7.47}$	4119^{+343}_{-471}	-3638^{+367}_{-224}	$0.059^{+0.039}_{-0.013}$
Alt.	-4337 ± 16	$29.93^{+4.10}_{-6.19}$	4128^{+317}_{-438}	4054^{+175}_{-177}	$0.738^{+0.447}_{-0.155}$

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 $A_{obs} \gg 1.0$

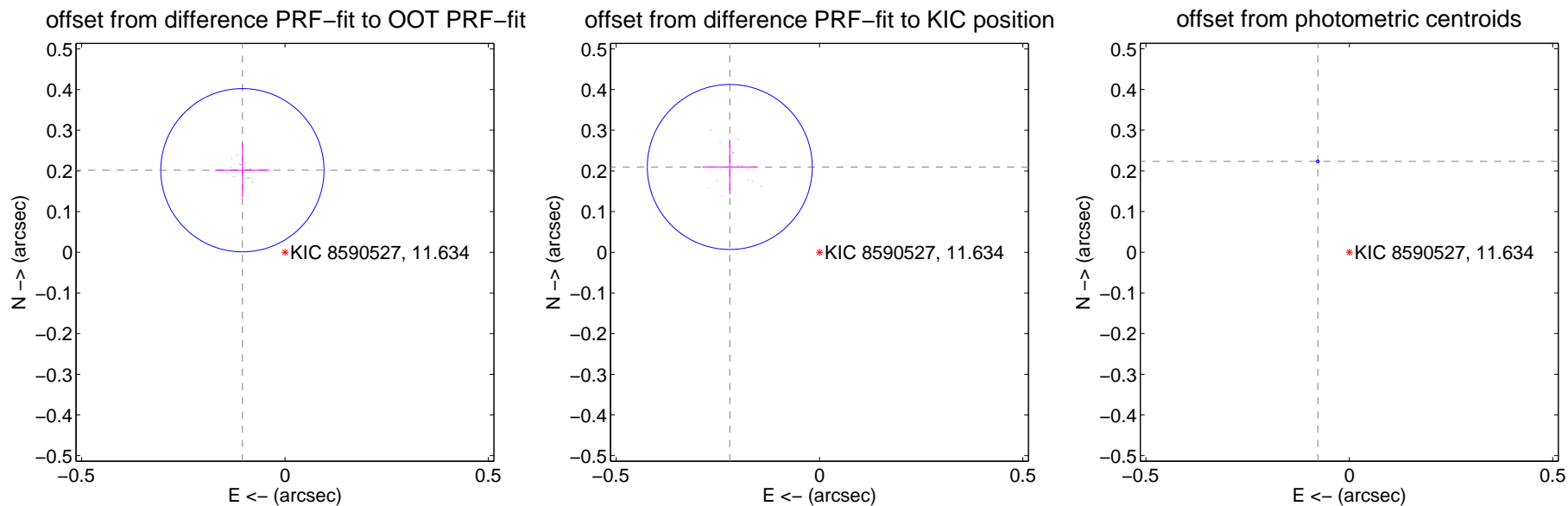
DV Centroid Data

Supplemental centroid analysis for 008590527-01. **Kepler magnitude: 11.63.** Transit SNR 1857.25

There are 17 quarters with good PRF difference image offsets

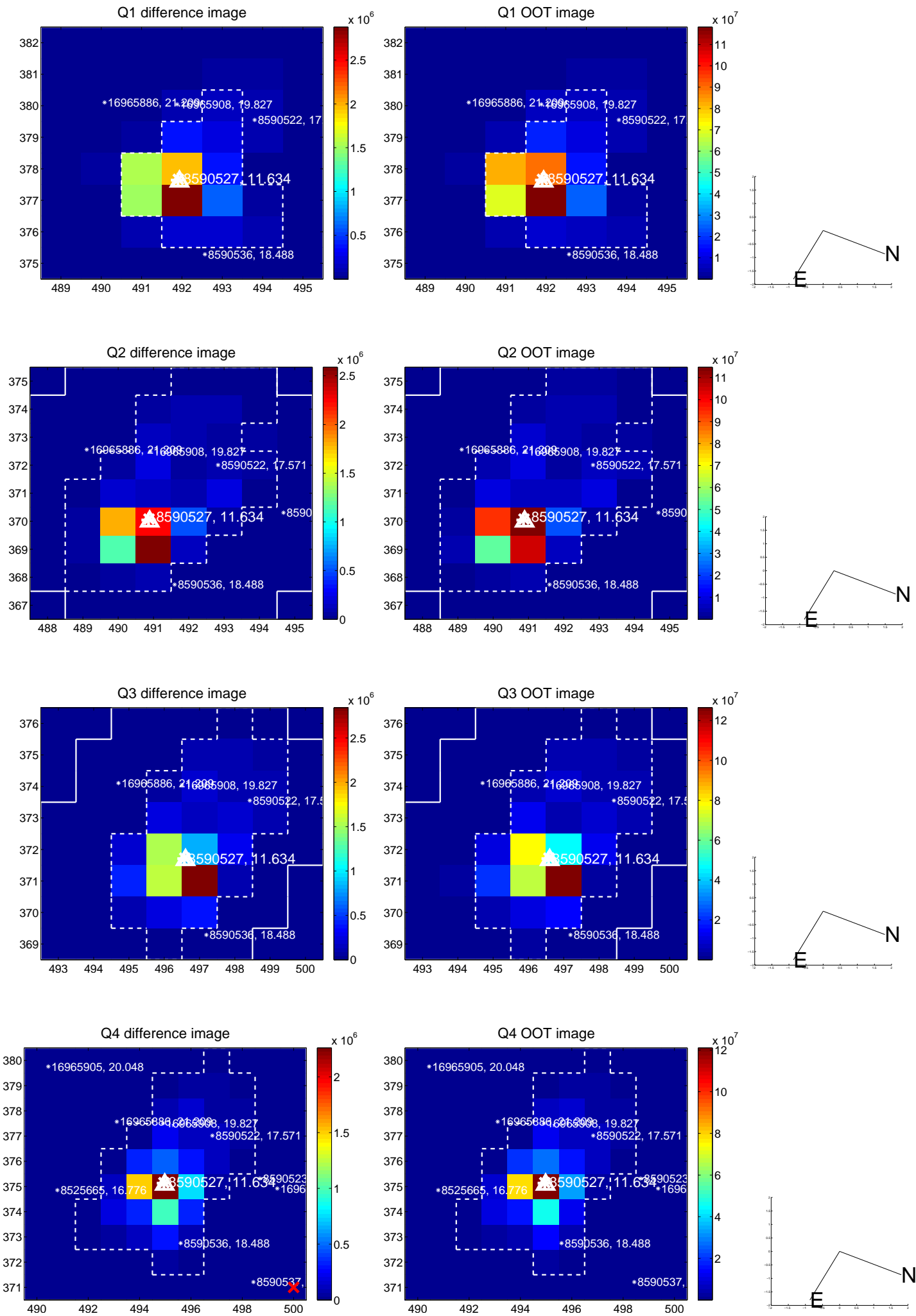
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.227 ± 0.067	3.40	0.105 ± 0.067	0.202 ± 0.067
PRF-fit source offset from KIC position	0.304 ± 0.068	4.50	0.221 ± 0.068	0.210 ± 0.068
photometric centroid source offset	0.24 ± 0.00	201.45	0.08 ± 0.00	0.22 ± 0.00

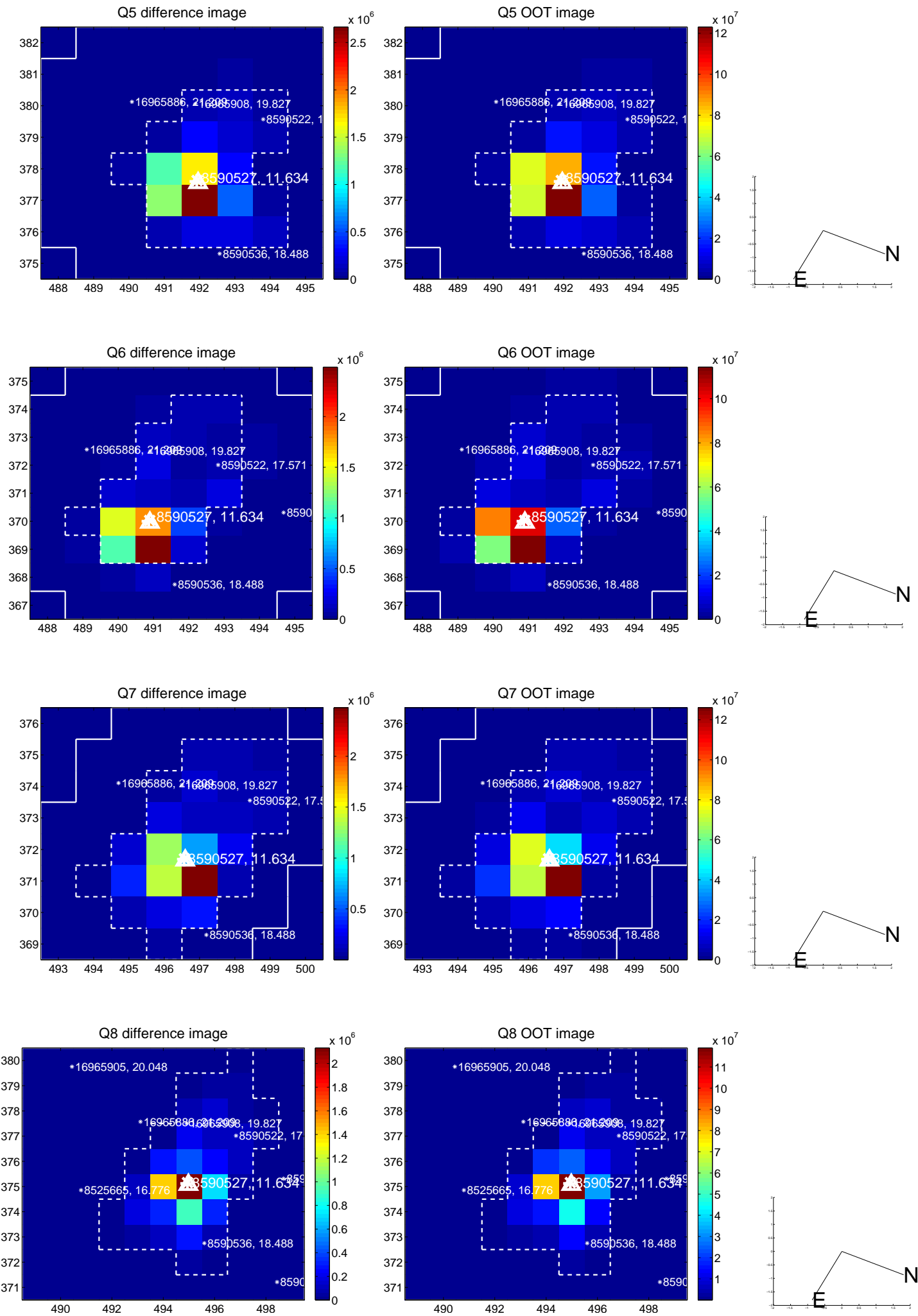


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

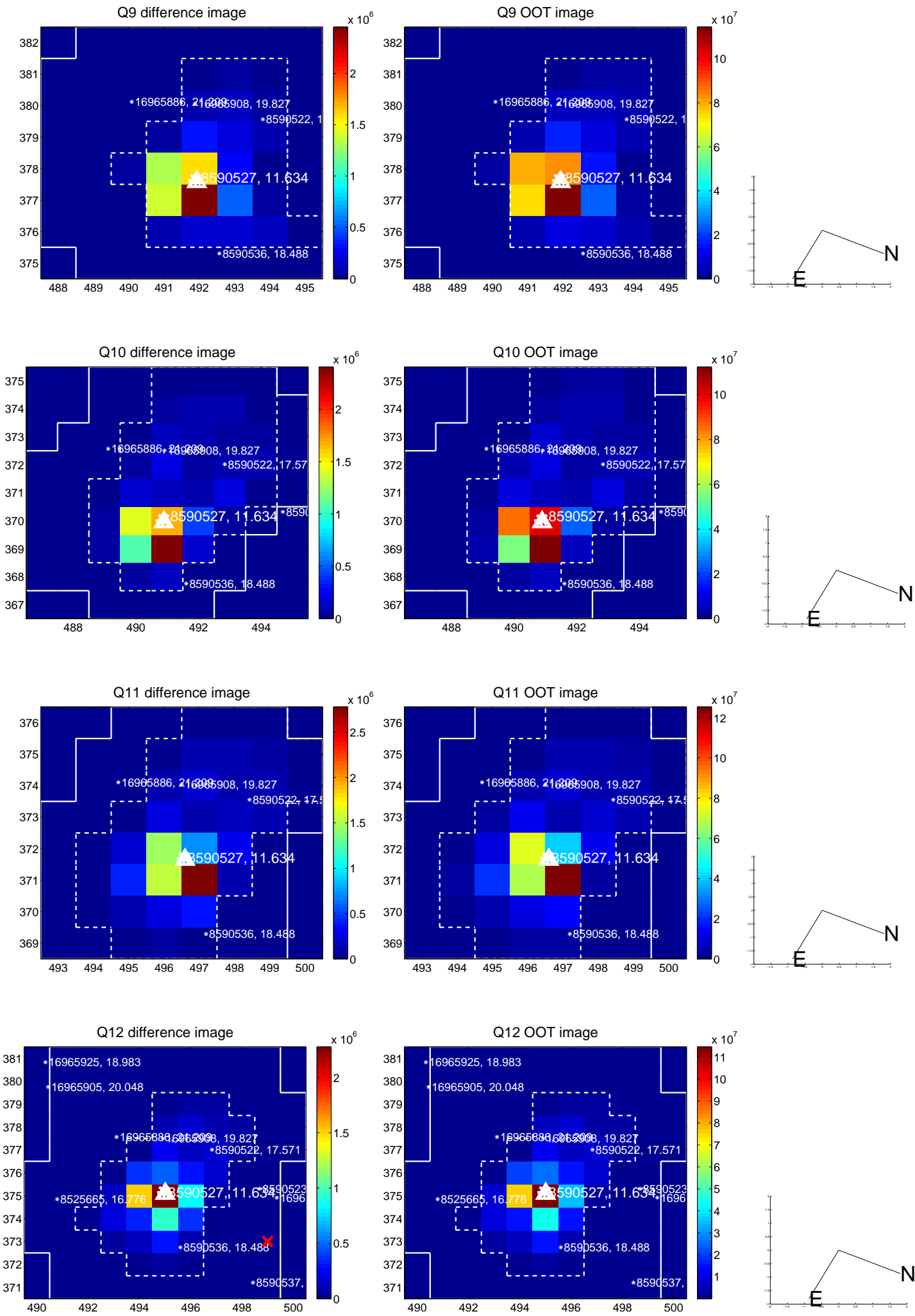
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



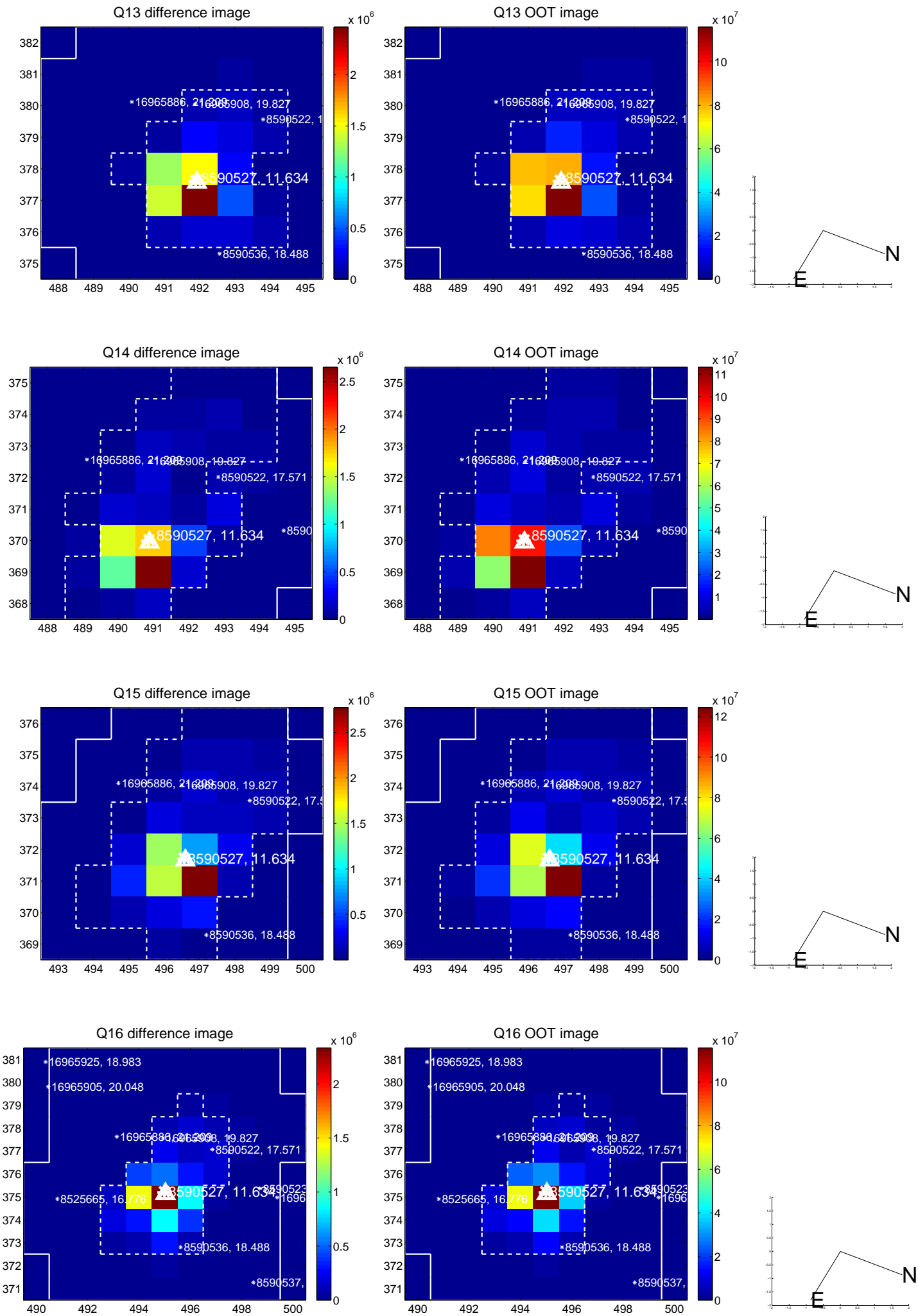
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



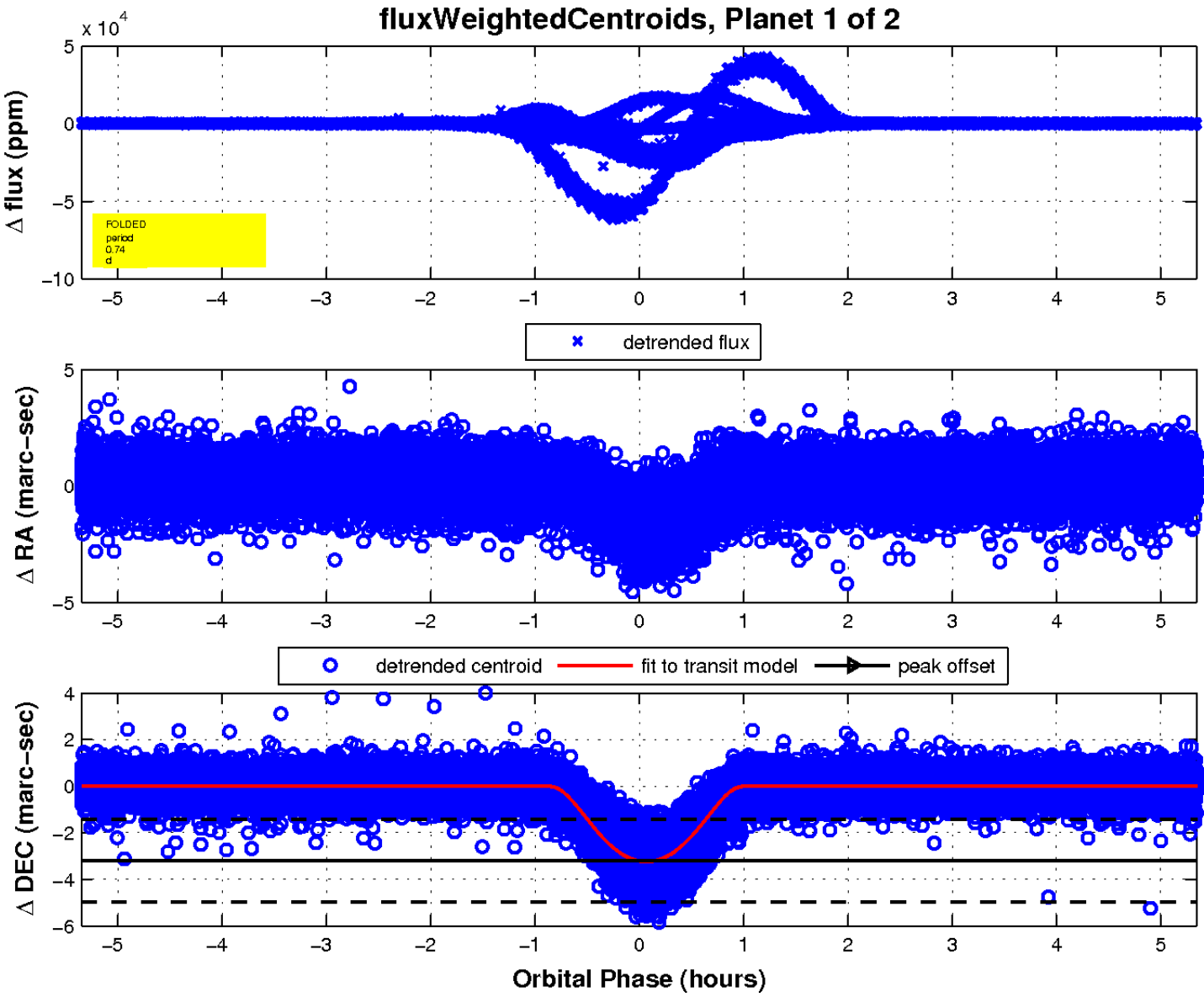
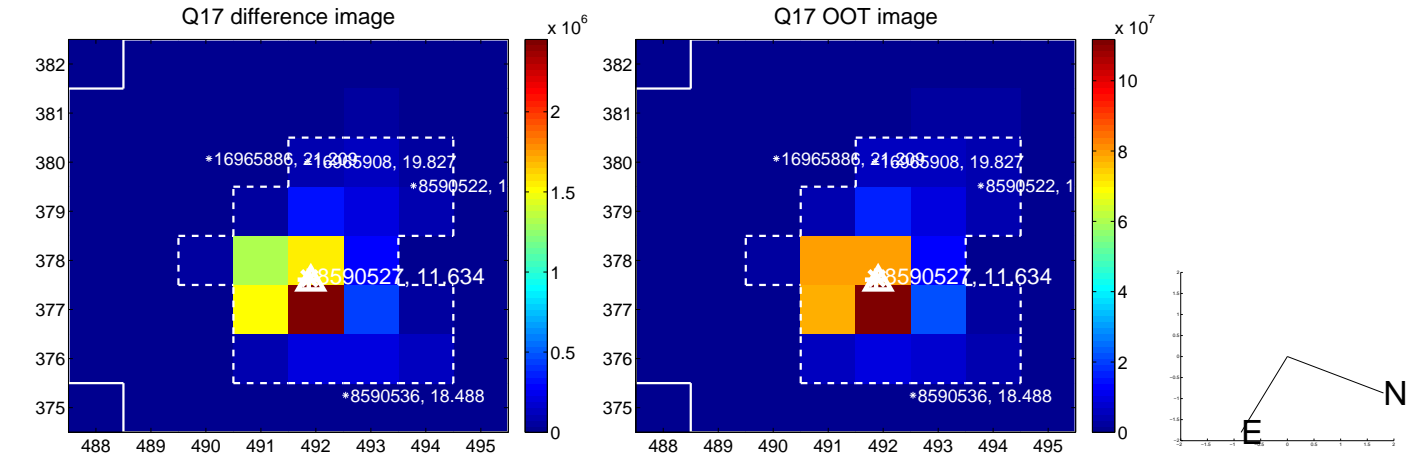
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

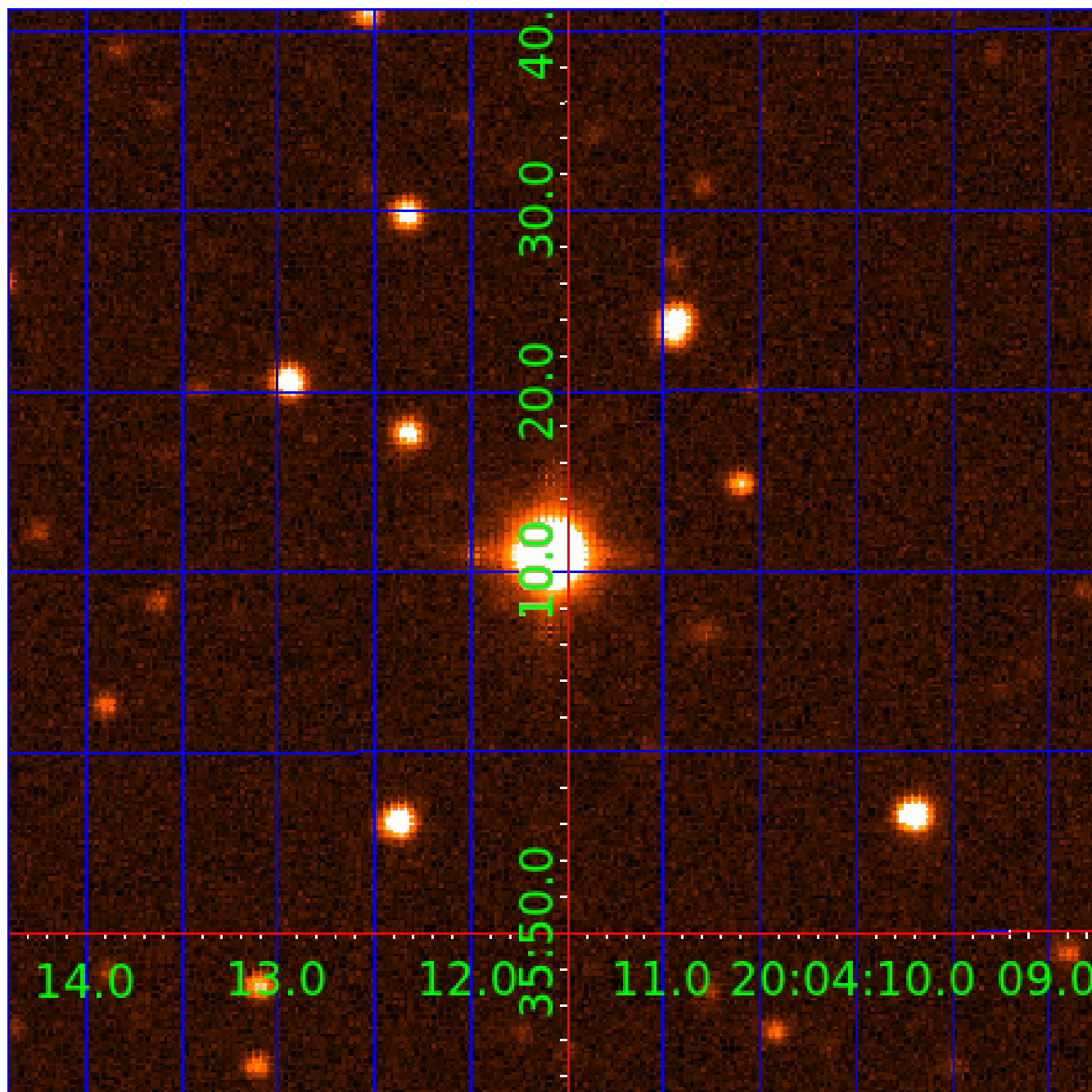


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008590527

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})
008590527-01	OBS	7065.01	0.739771	131.964216	19080.1	1.782	2811.7	1857.2	1.85	6465	32.41	19529.15
008590527-02	OBS	No	0.739760	131.598494	1791.3	1.500	185.9	-1.0	1.85	6465	7.89	19529.53

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008590527-01	OBS	FP	0.23	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
008590527-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—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 008590527-02

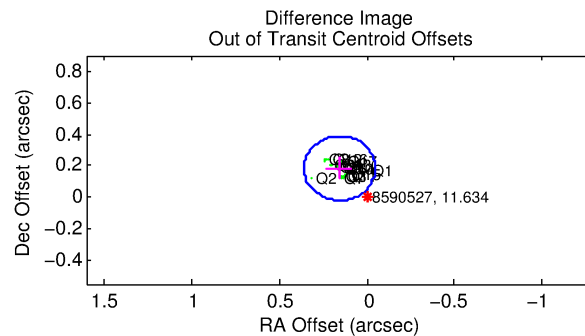
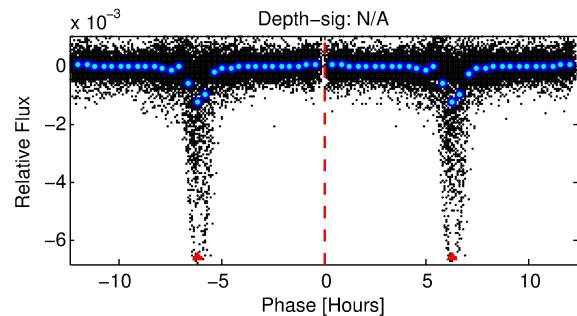
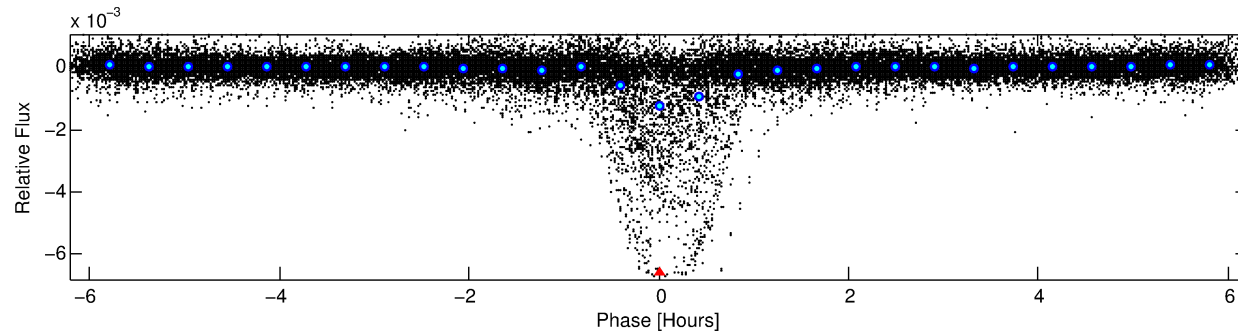
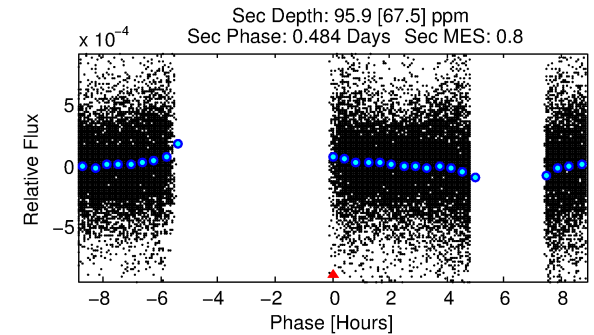
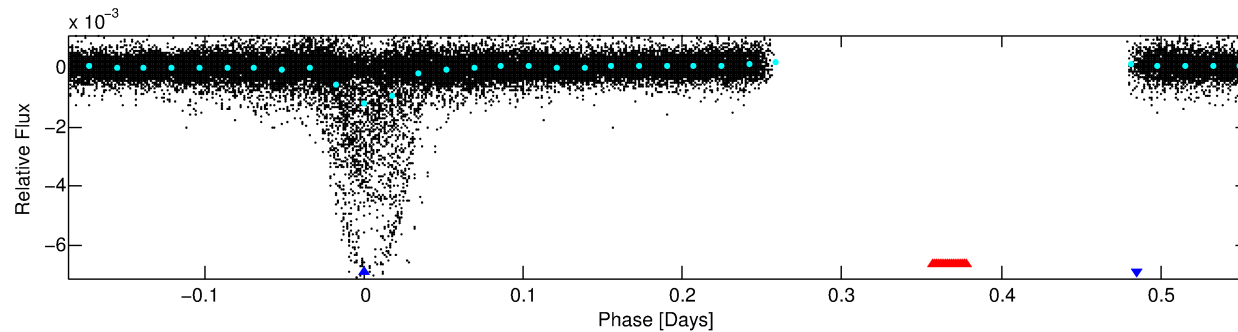
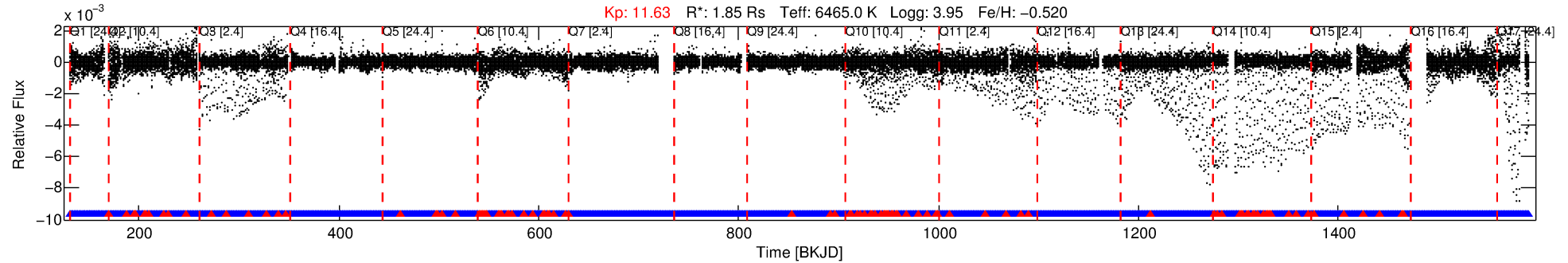
No Significant Match Found

DV One-Page Summary

KIC: 8590527 Candidate: 2 of 2 Period: 0.740 d

KOI: K07065 Corr: No Ephemeris Match

Kp: 11.63 R*: 1.85 Rs Teff: 6465.0 K Logg: 3.95 Fe/H: -0.520



TPS TCE Results:

Period = 0.73976 d
Epoch = 131.5985 BKJD

DV fit results are unavailable

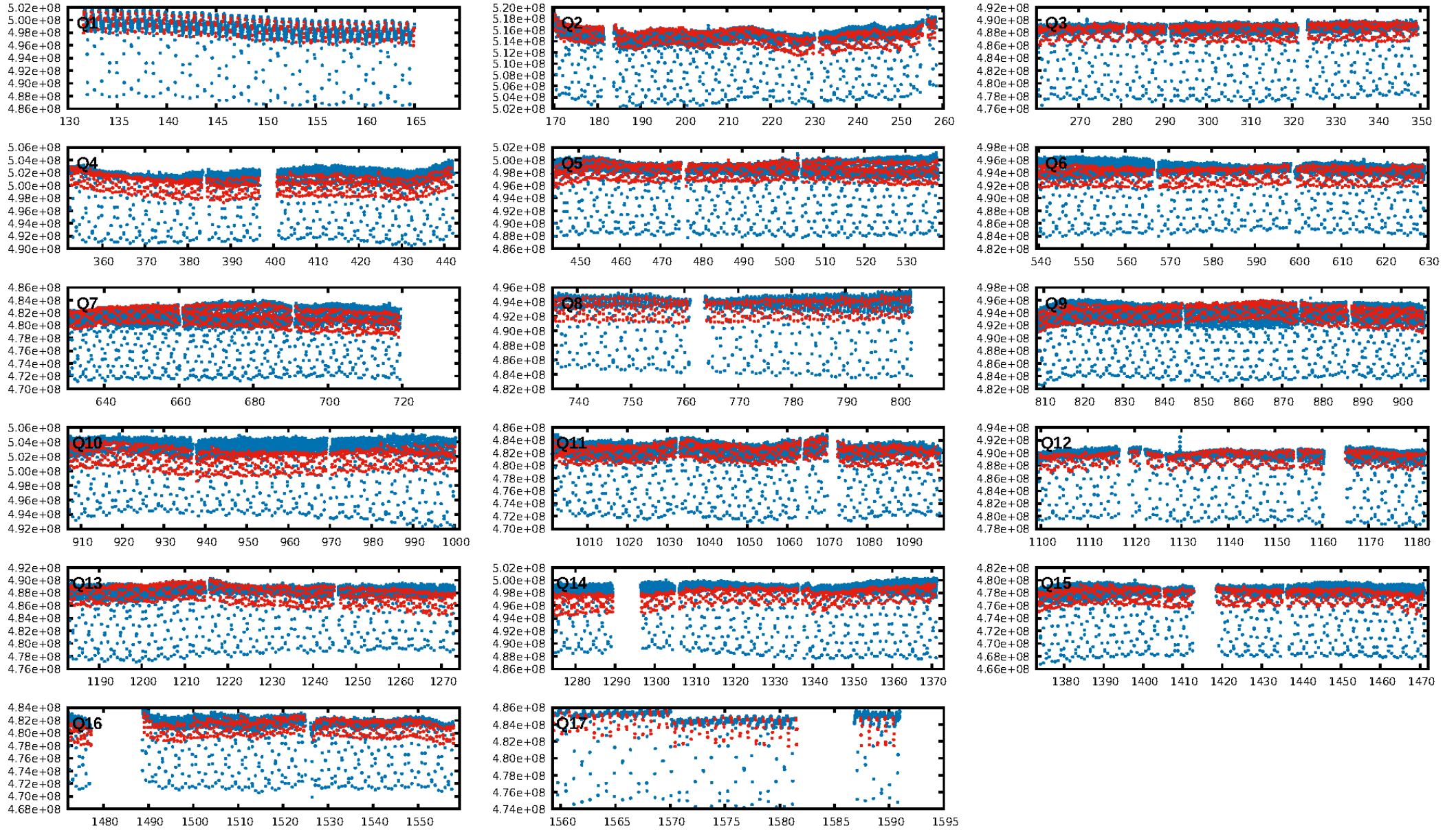
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.94 [1618/1725]
GhostDiagnostic-chr: 1.928
Centroid-sig: N/A
Centroid-so: 0.073 arcsec [21.38σ]
OotOffset-rm: 0.242 arcsec [3.56σ]
KicOffset-rm: 0.334 arcsec [4.79σ]
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]

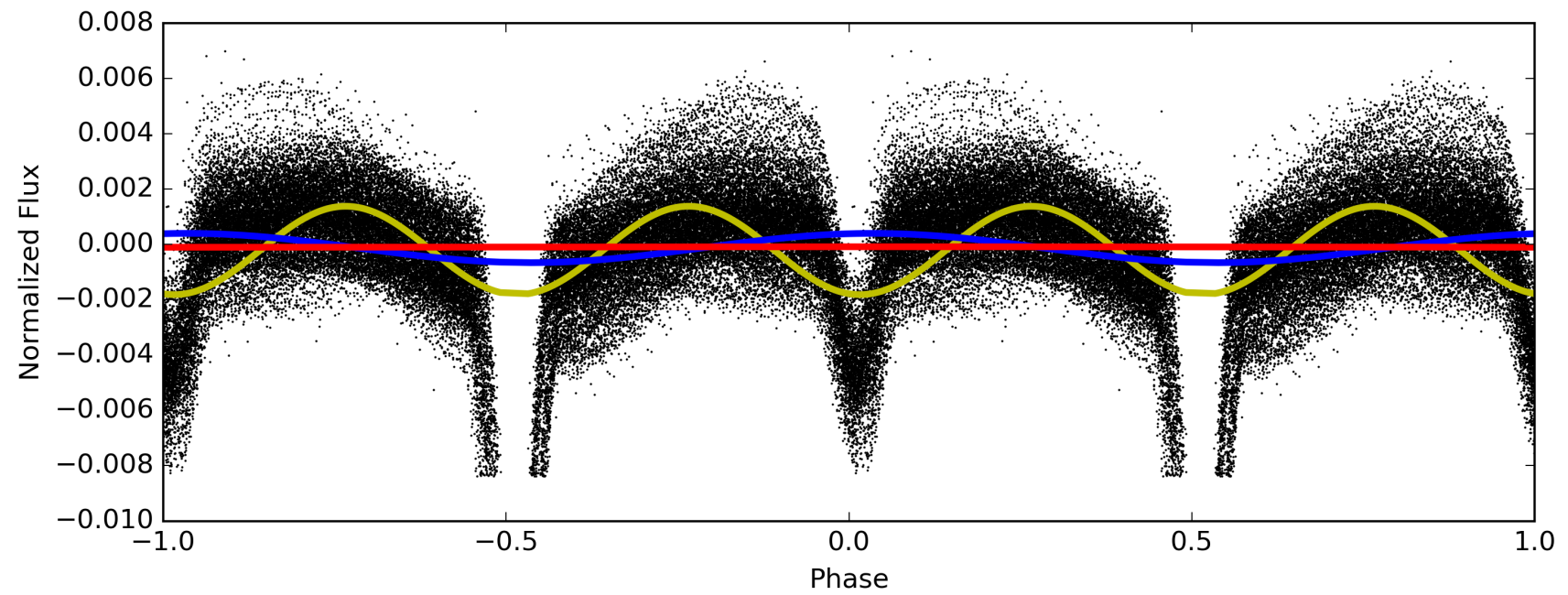
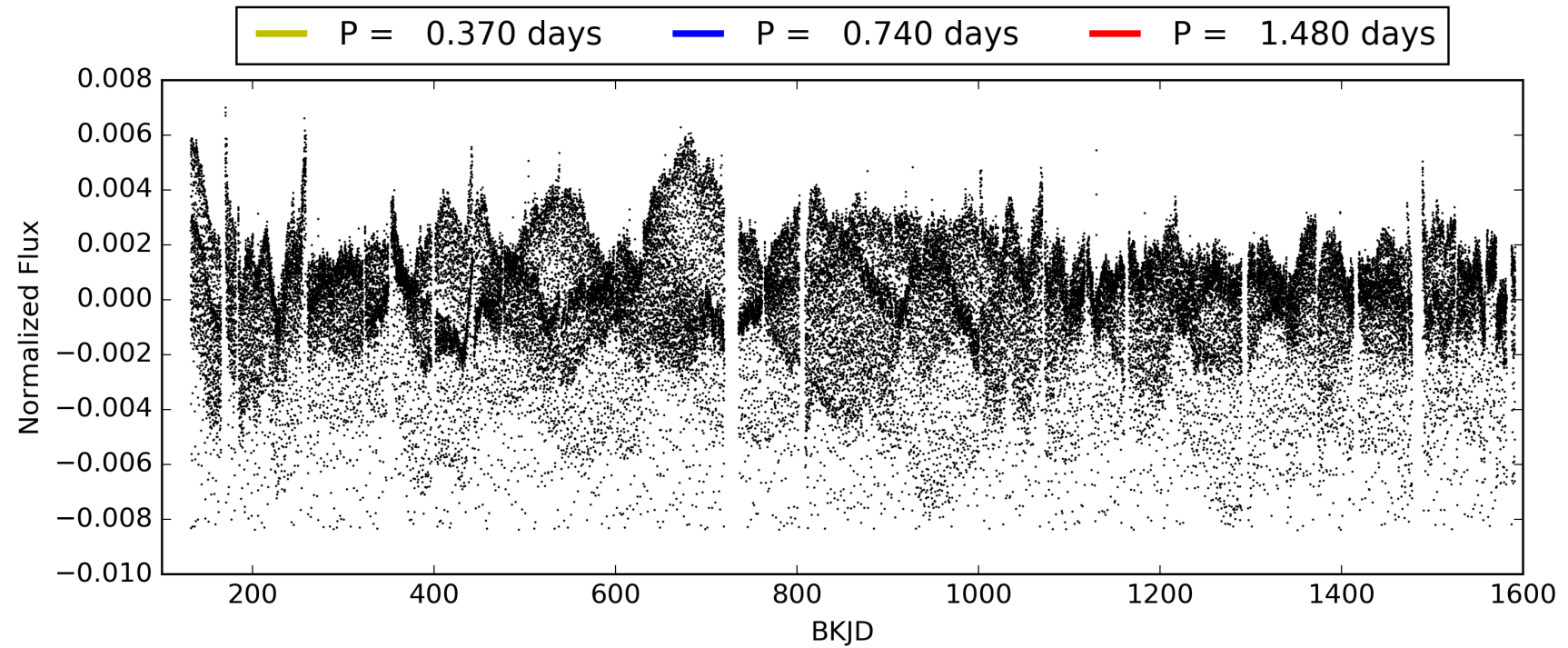
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:56:37 Z

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

TCE 008590527-02, PDC Light Curves

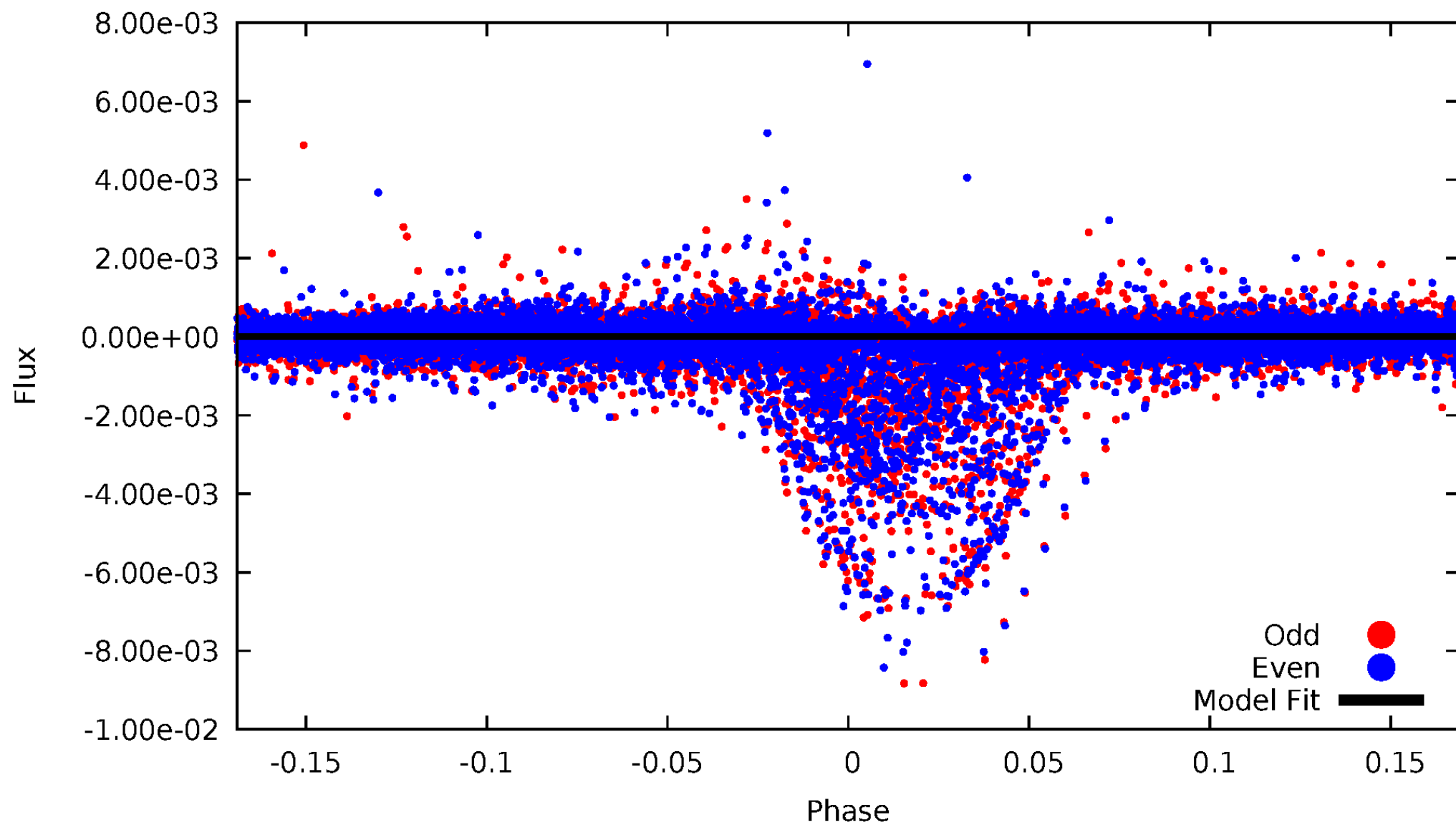


TCE 008590527-02



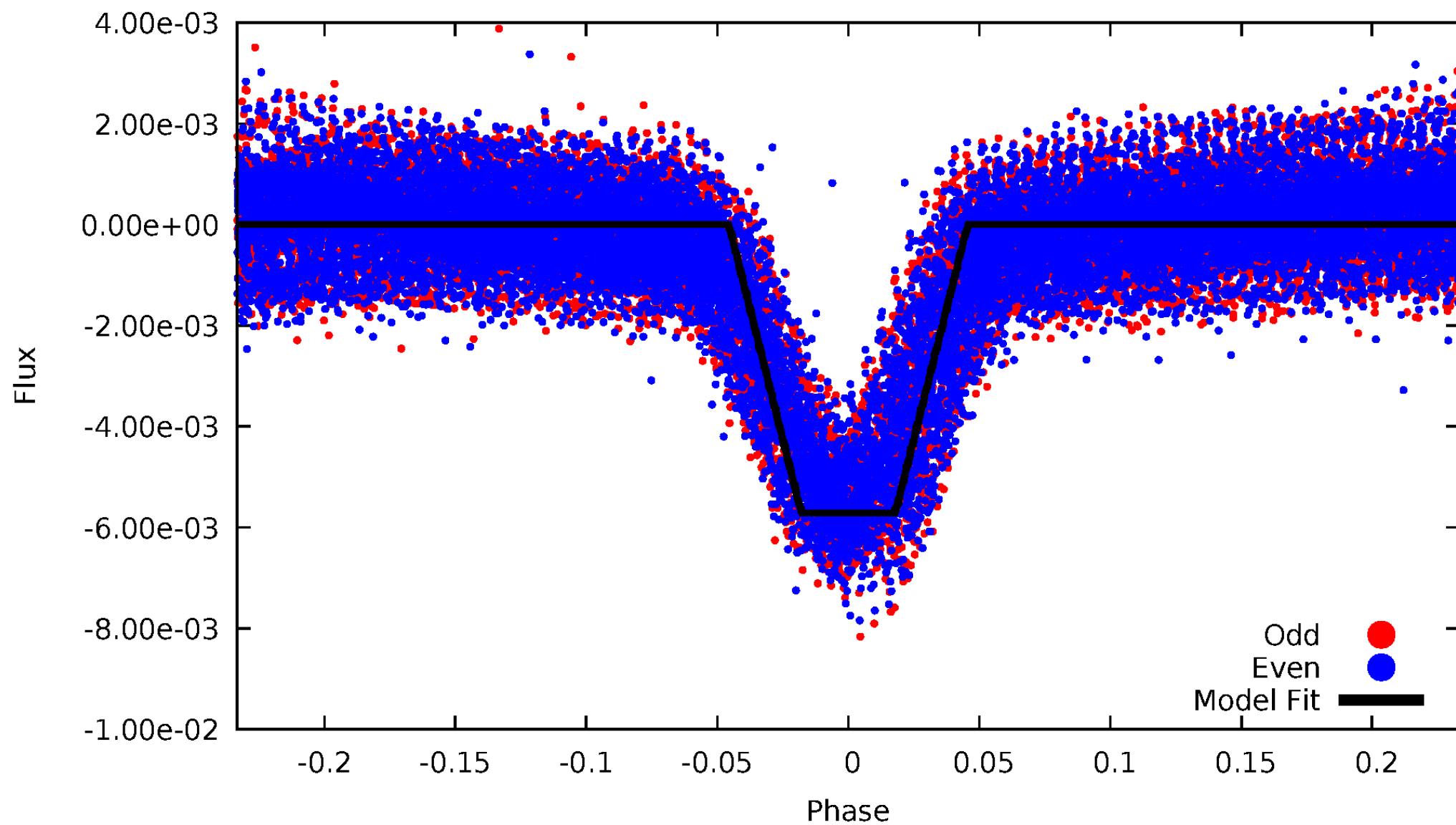
DV Odd/Even

TCE 008590527-02



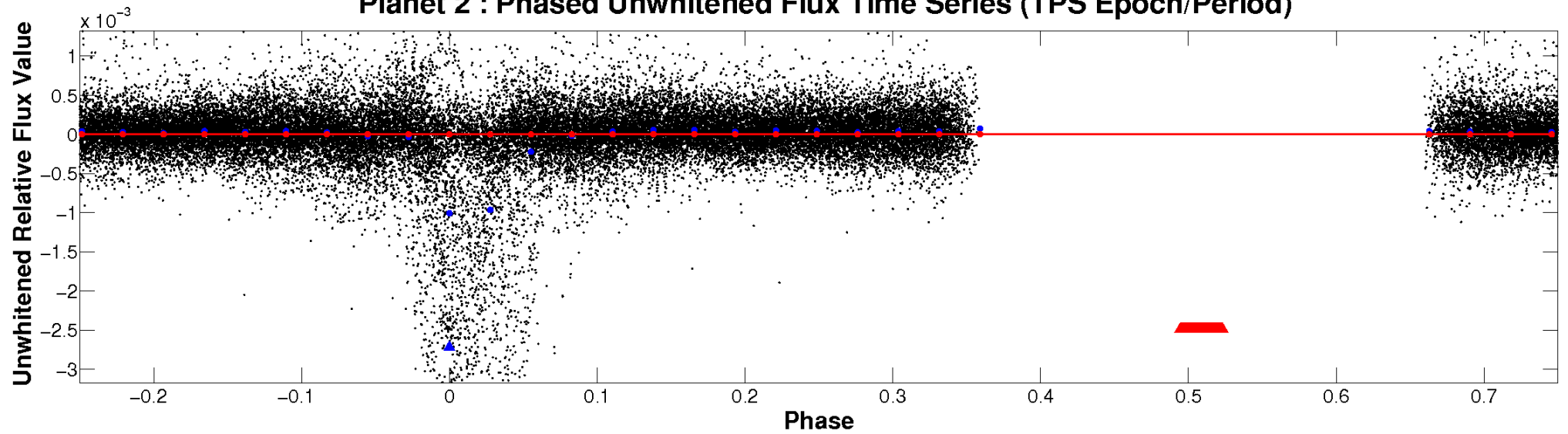
ALT Odd/Even

TCE 008590527-02

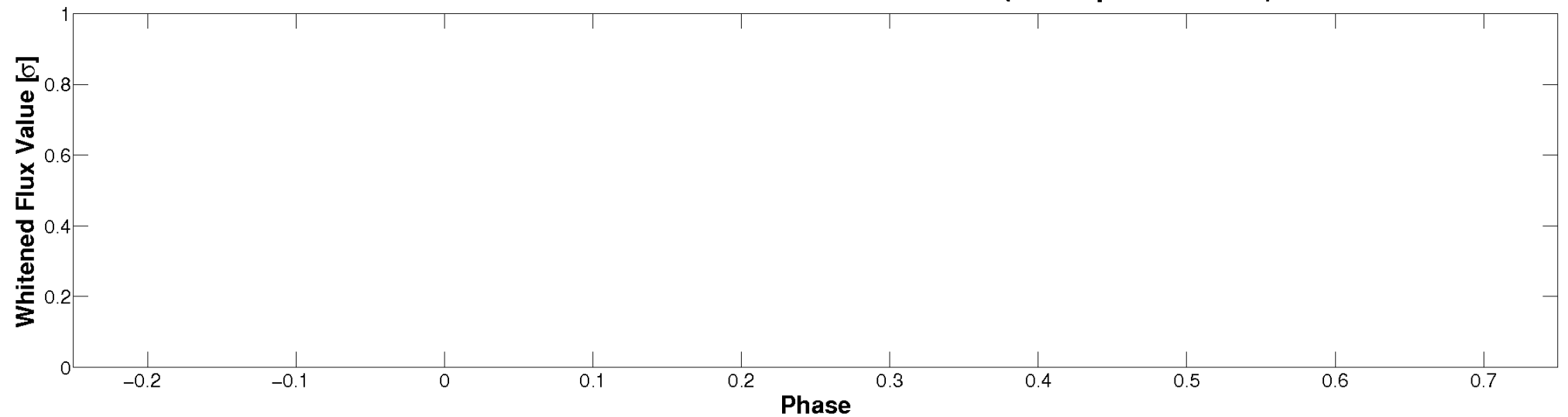


Non-Whitened Vs. Whitened Light Curve

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

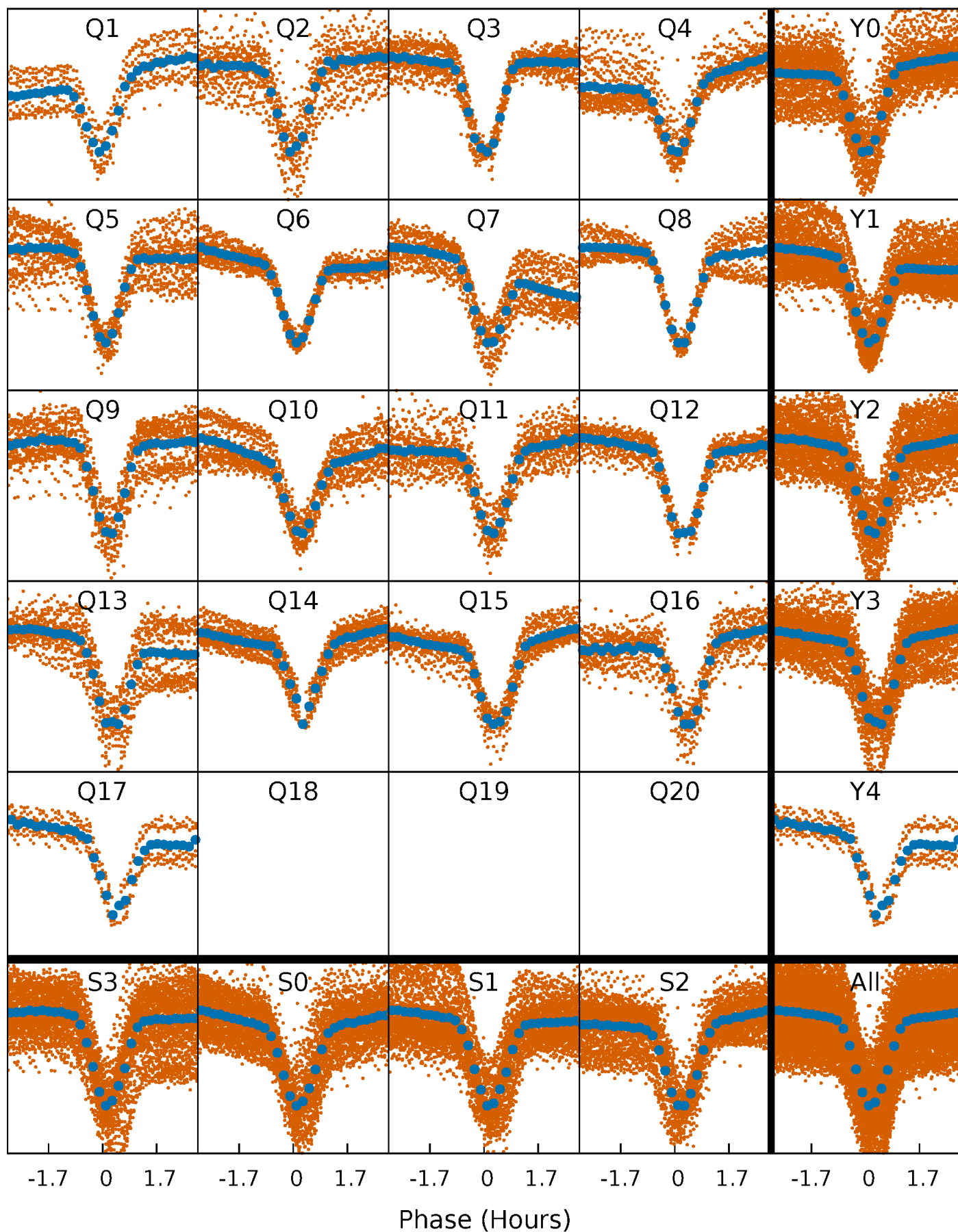


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



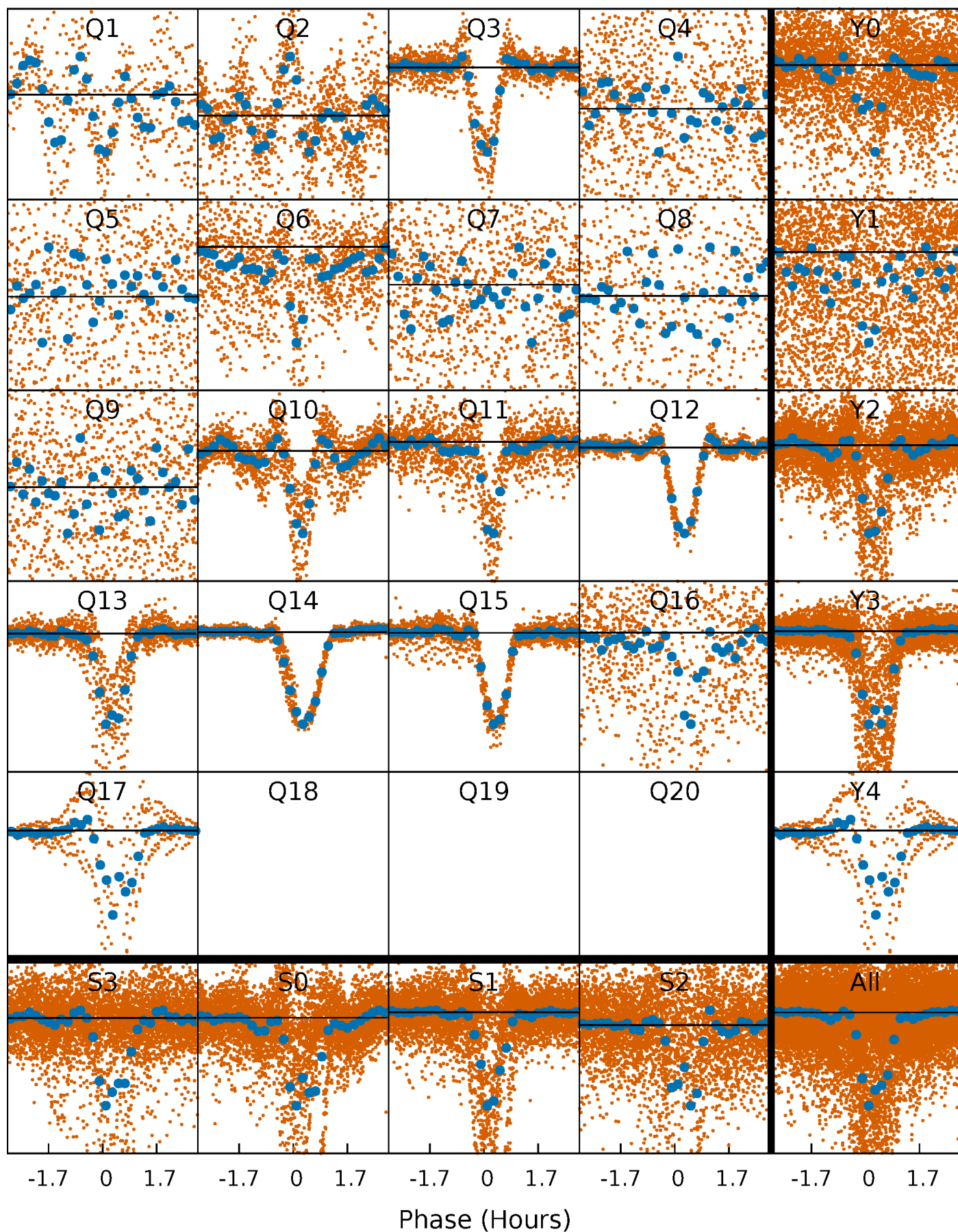
PDC Quarter-Phased Transit Curves

TCE 008590527-02 P= 0.739760 Days $T_0=131.598494$ (BKJD)



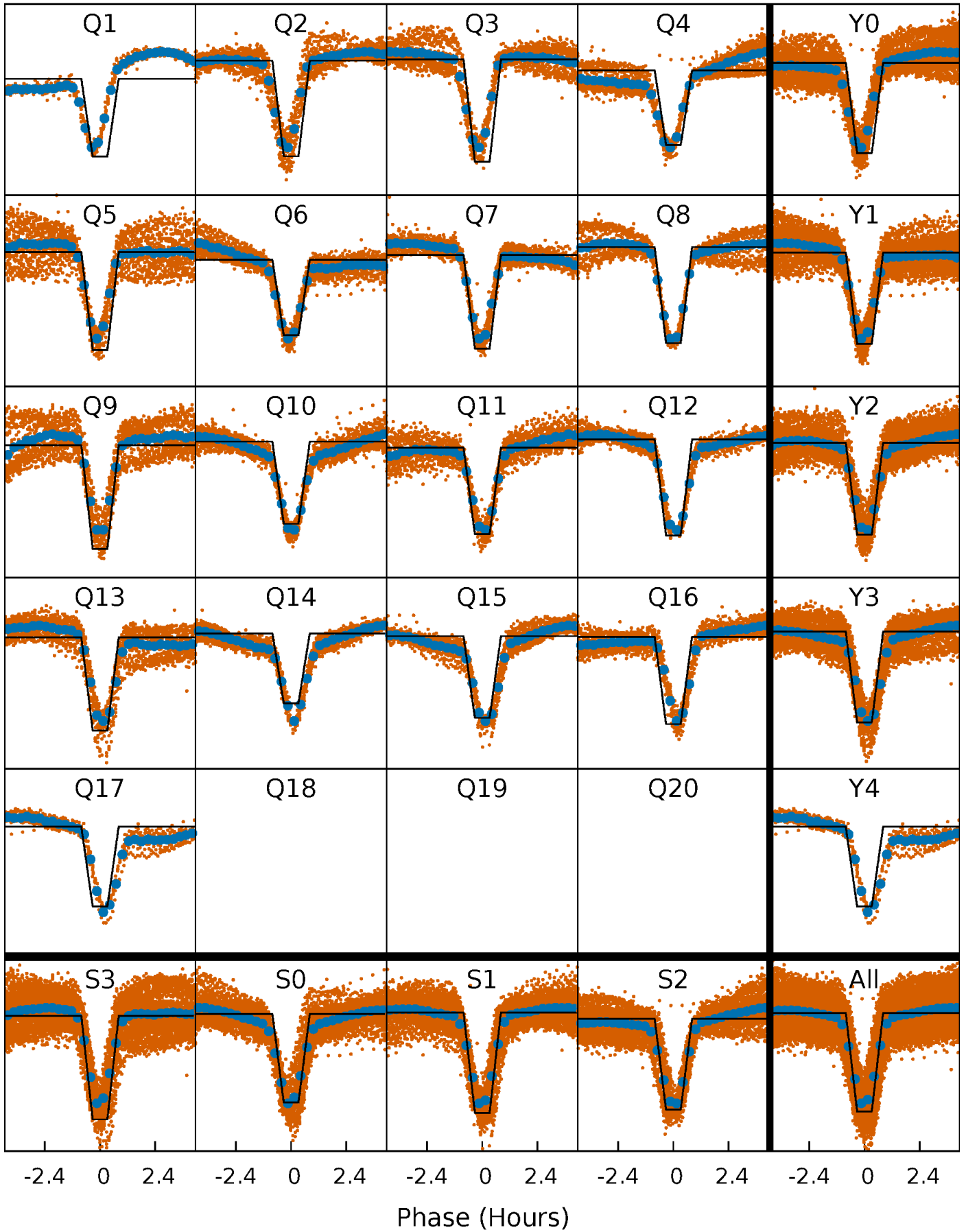
DV Quarter-Phased Transit Curves

TCE 008590527-02 P= 0.739760 Days $T_0=131.598494$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

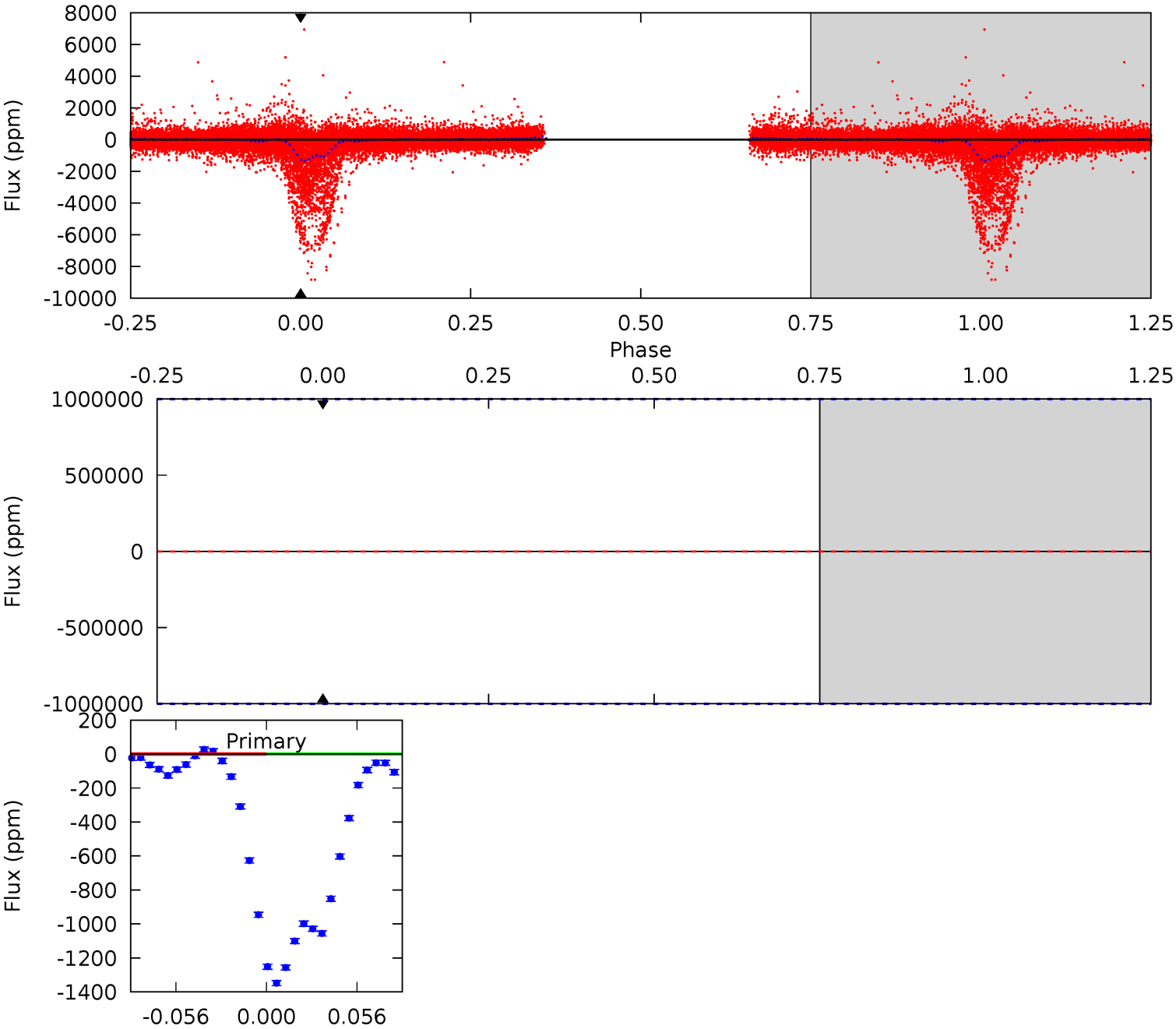
TCE 008590527-02 $P = 0.739760$ Days $T_0 = 131.606905$ (BKJD)



DV Model-Shift Uniqueness Test

008590527-02, P = 0.739760 Days, E = 130.858734 Days

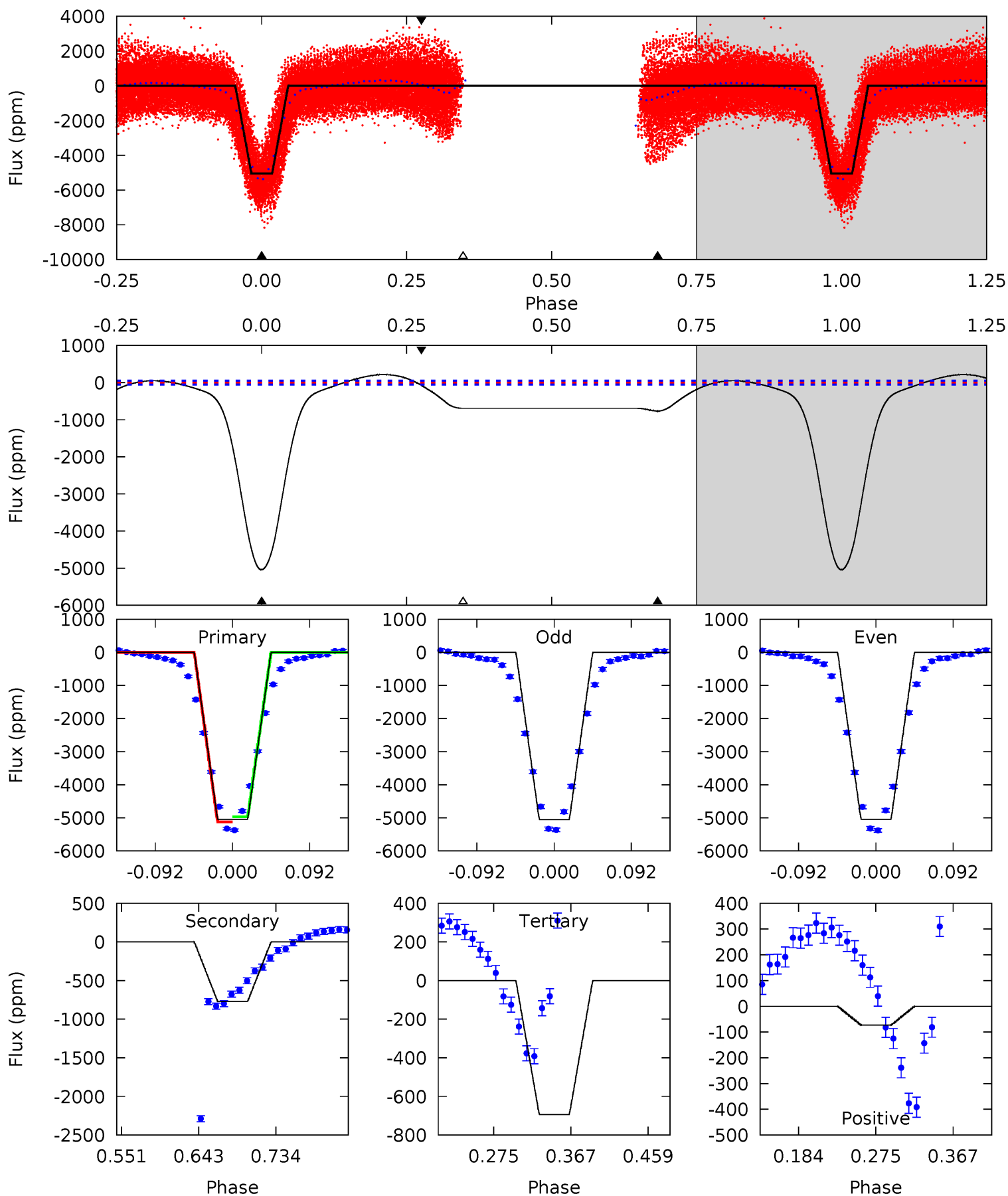
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

008590527-02, P = 0.739760 Days, E = 130.867145 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
429.2	65.3	59.0	-6.20	4.58	1.69	17.1	370.2	435.4	6.32	71.5	0.32	1.00	0.04	6.86



Stellar Parameters For KIC 008590527

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6465^{+155}_{-194}	$3.947^{+0.420}_{-0.140}$	$-0.520^{+0.300}_{-0.300}$	$1.847^{+0.435}_{-0.746}$	$1.101^{+0.161}_{-0.161}$	$0.246^{+0.799}_{-0.102}$
	+2%/-3%	+11%/-4%	+58%/-58%	+24%/-40%	+15%/-15%	+325%/-41%
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 008590527-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$15.66^{+16.52}_{-10.63}$	4143^{+286}_{-454}	-6395^{+27050}_{-20324}	$-3.198^{+86.011}_{-143.958}$
Alt.	-768 ± 12	$19.52^{+18.41}_{-13.20}$	4135^{+308}_{-497}	2203^{+3313}_{-5816}	$0.307^{+2.565}_{-0.223}$

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

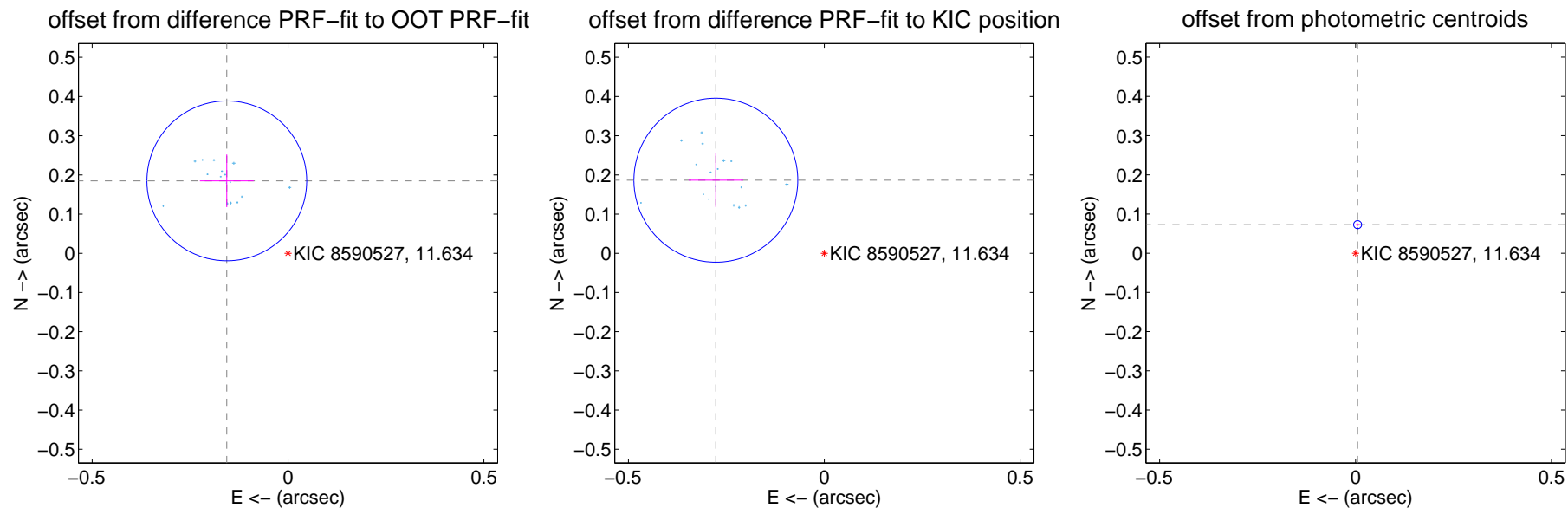
DV Centroid Data

Supplemental centroid analysis for 008590527-02. **Kepler magnitude: 11.63.** Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

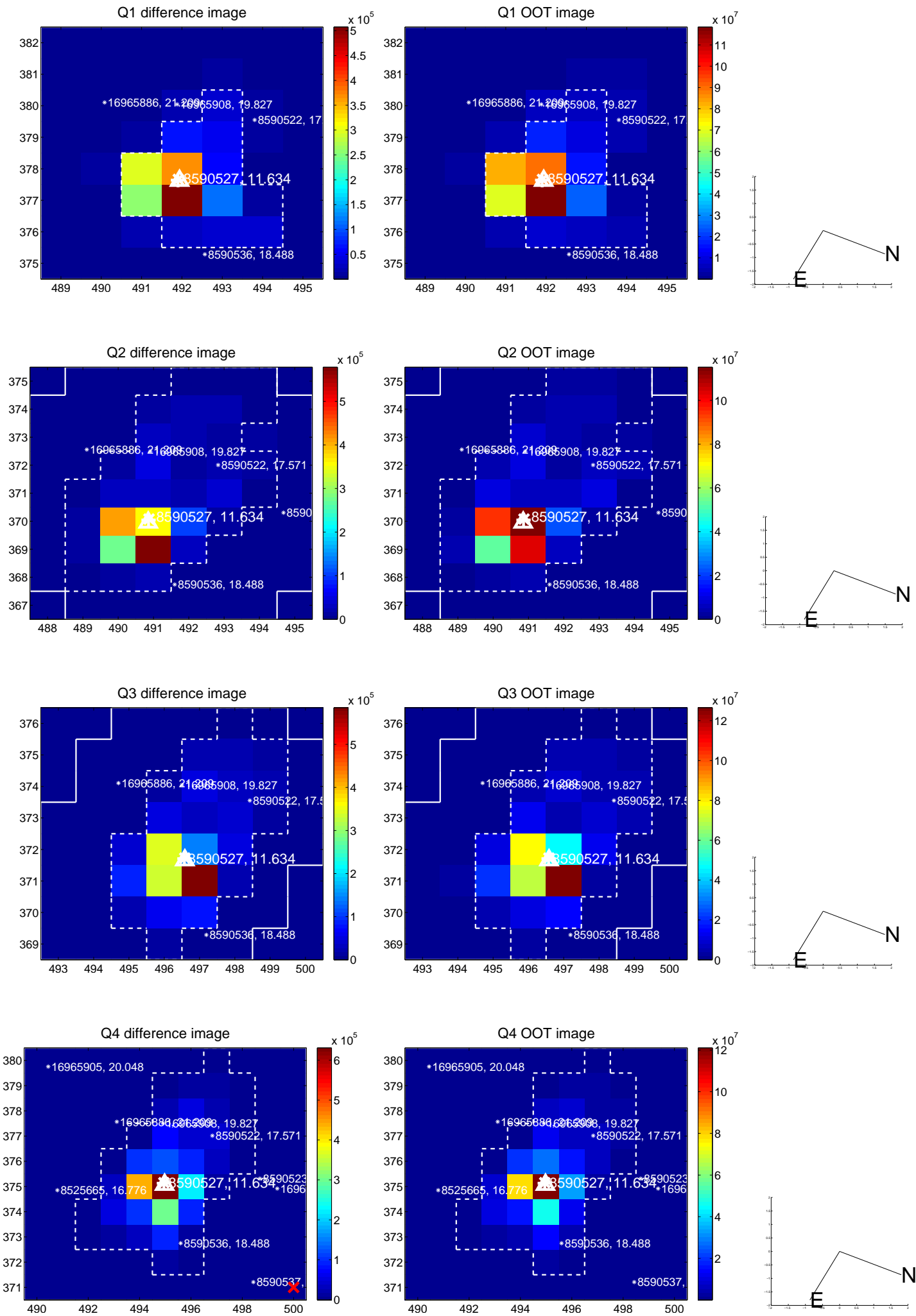
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.242 \pm 0.068	3.56	0.156 \pm 0.069	0.185 \pm 0.067
PRF-fit source offset from KIC position	0.334 \pm 0.070	4.79	0.277 \pm 0.070	0.186 \pm 0.069
photometric centroid source offset	0.07 \pm 0.00	21.38	-0.01 \pm 0.00	0.07 \pm 0.00

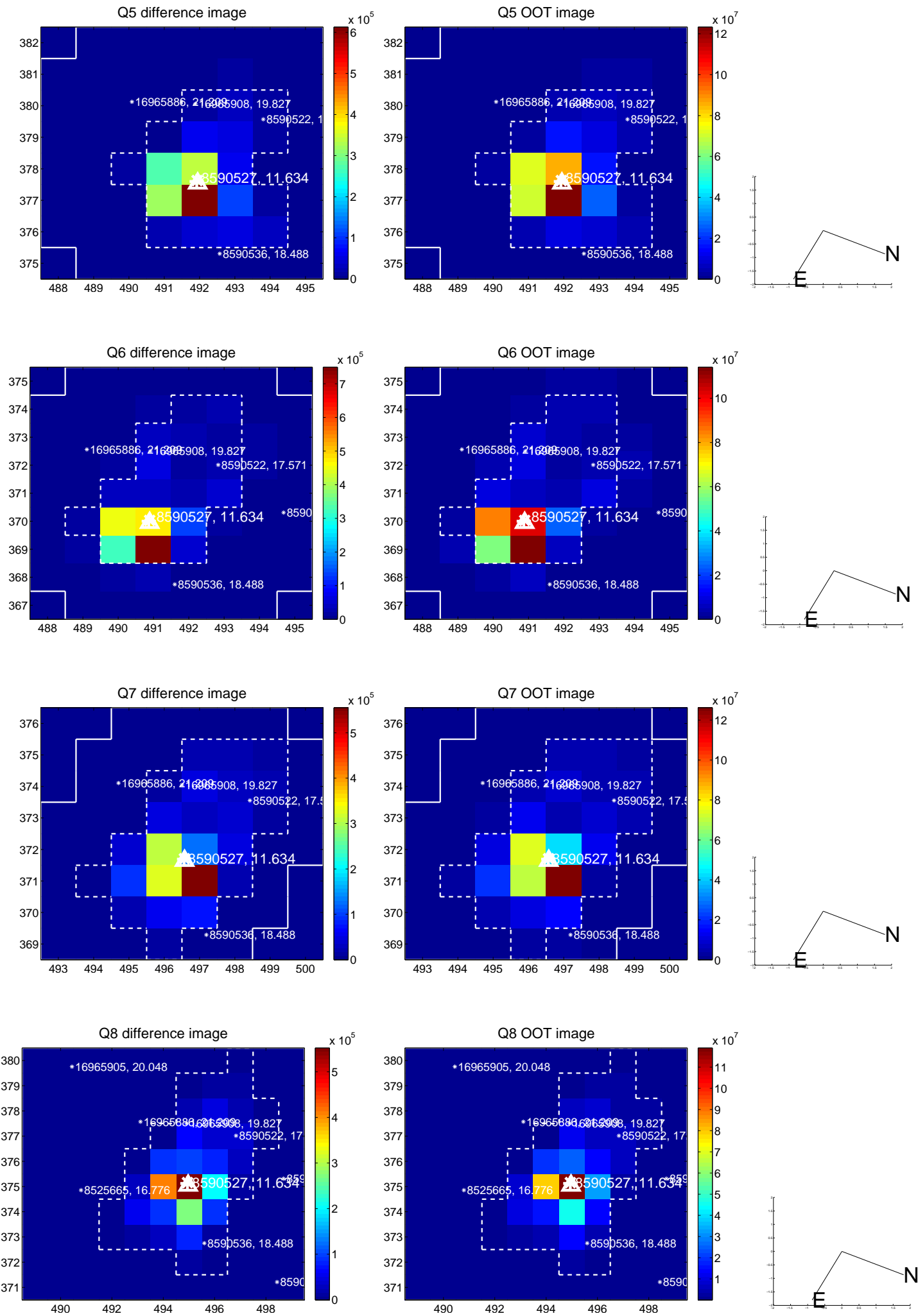


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

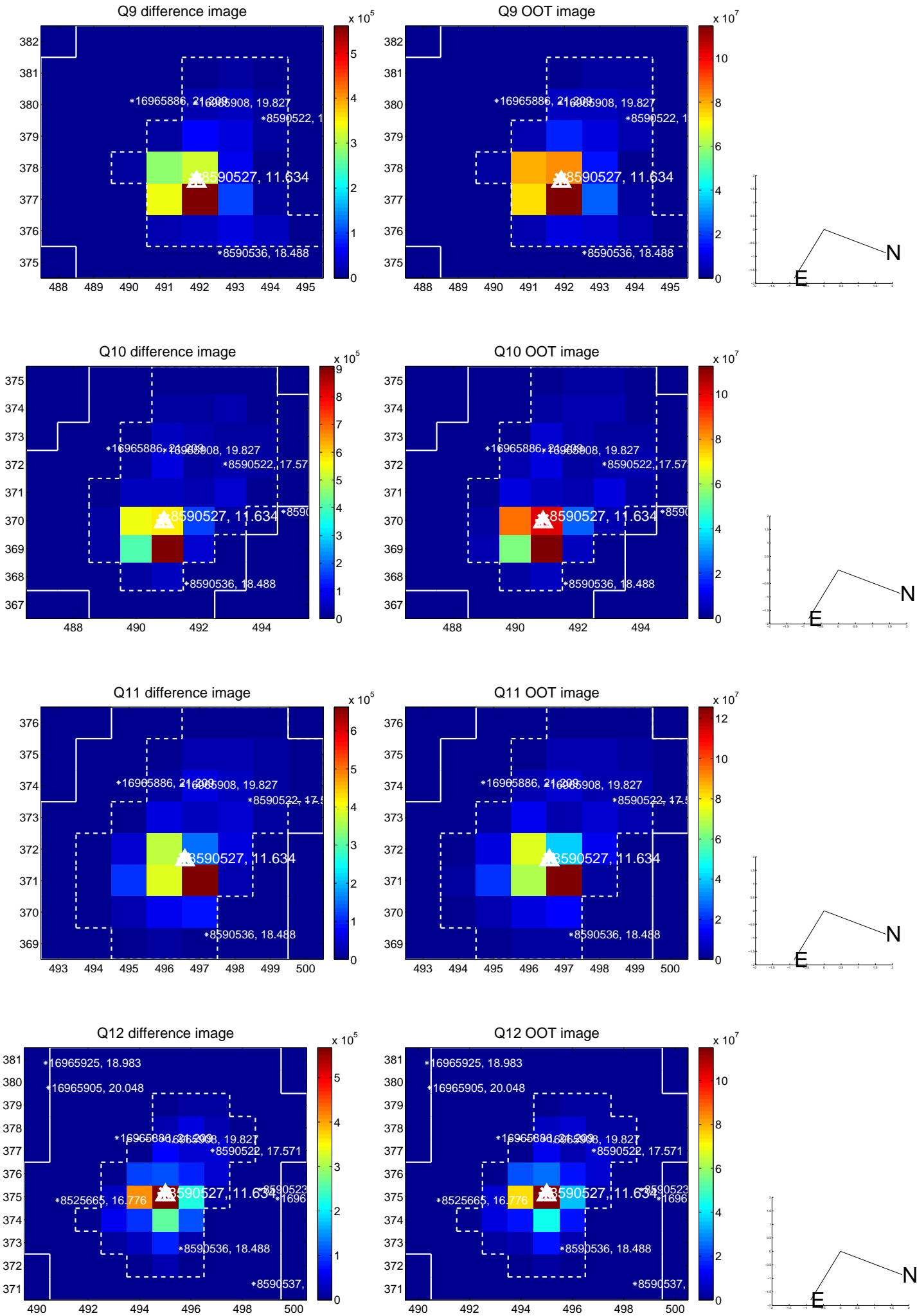
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



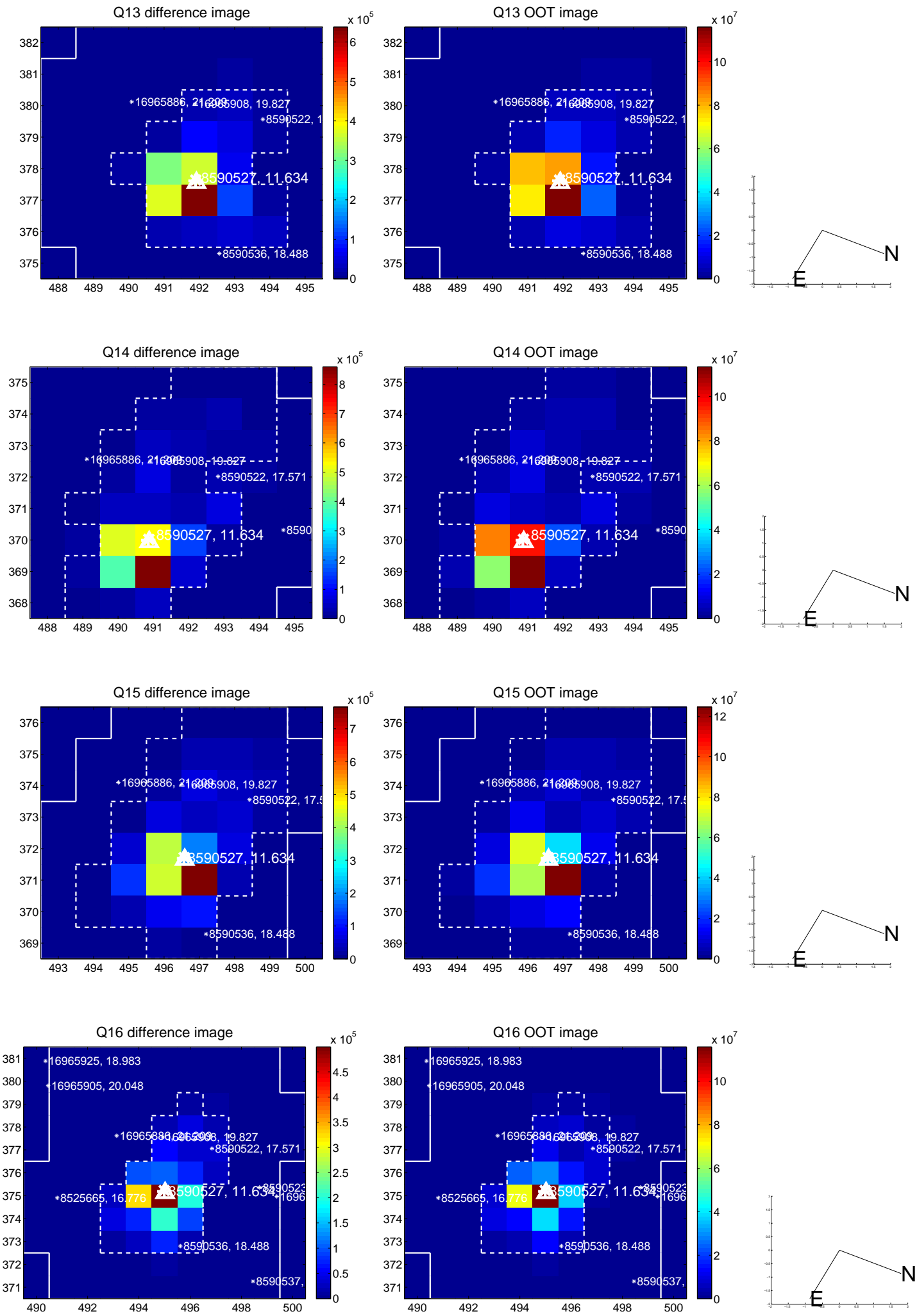
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



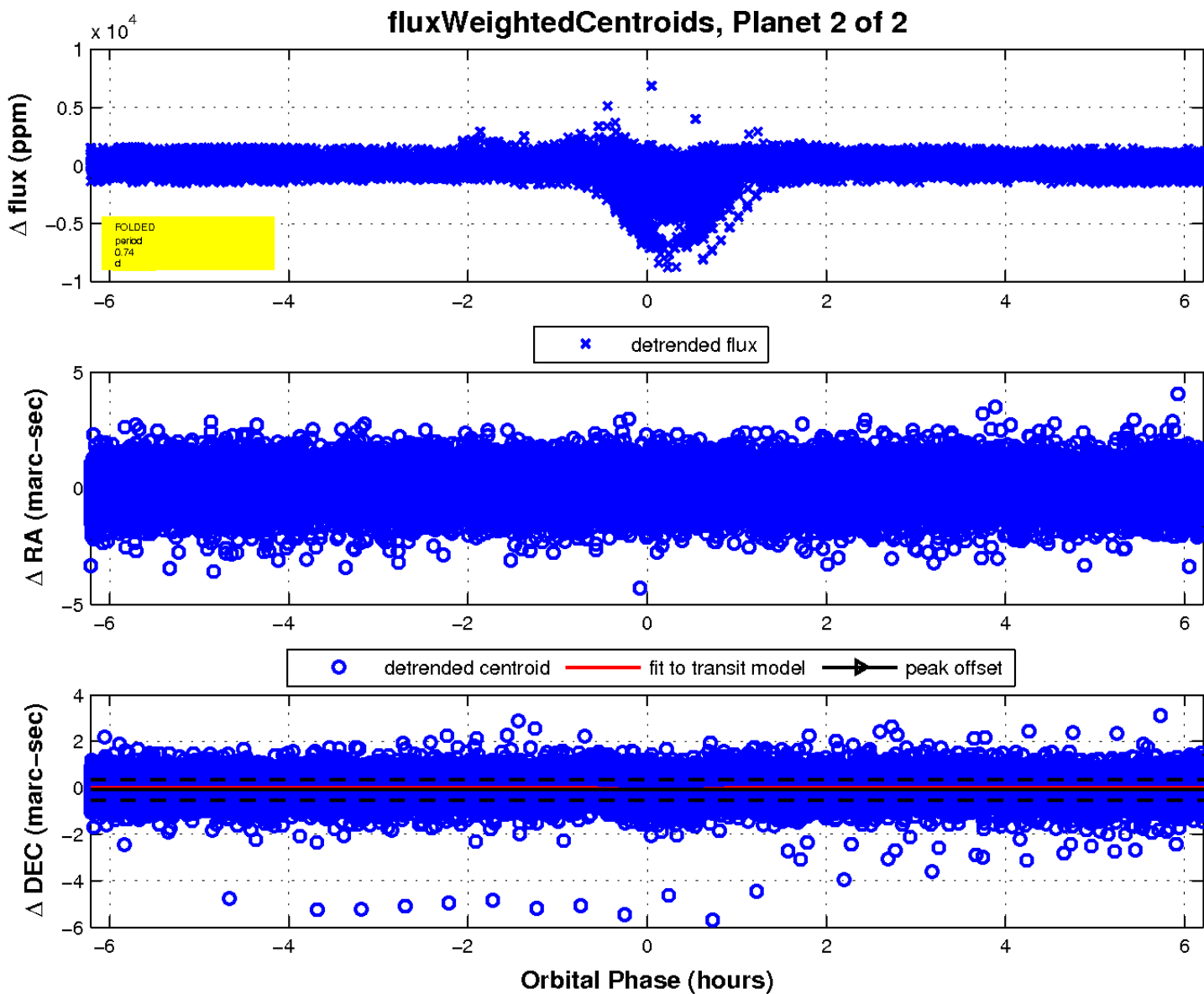
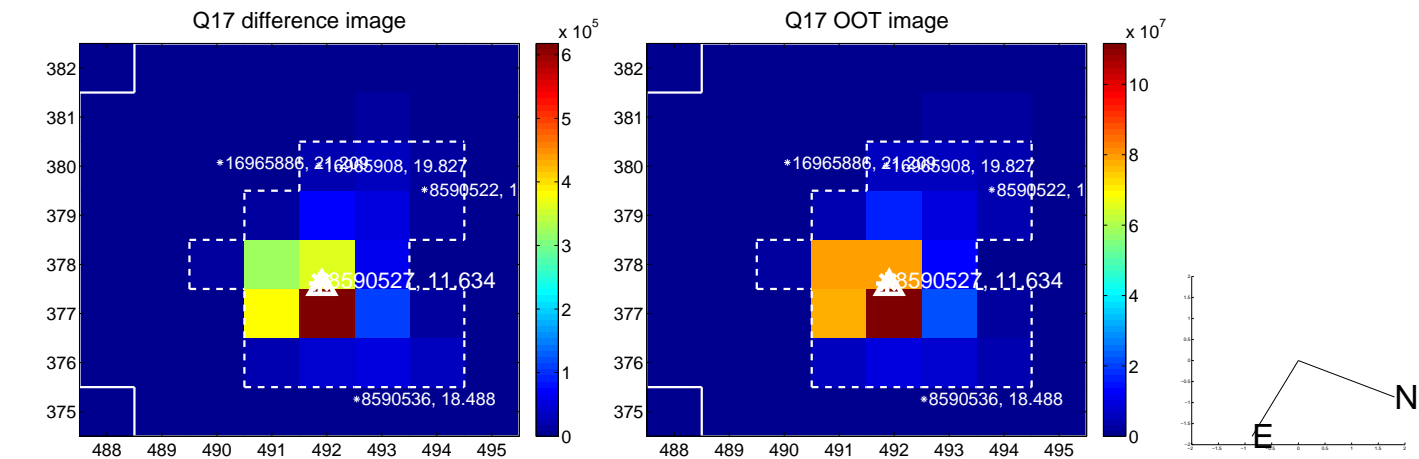
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

