

KIC 005385575

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})
005385575-01	OBS	3965.01	12.425300	141.539432	503.5	24.431	19.5	26.0	0.74	4594	2.26	23.87
005385575-02	OBS	No	12.425627	133.964648	562.4	30.422	13.1	24.0	0.74	4594	2.43	23.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005385575-01	OBS	FP	0.00	1	0	1	1	LPP_DV—HALO_GHOST—EPHEM_MATCH
005385575-02	OBS	FP	0.00	1	0	1	1	LPP_DV—SAME_NTL_PERIOD—HALO_GHOST—EPHEM_MATCH

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.

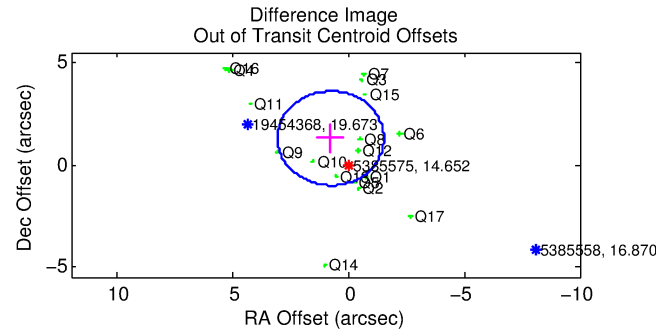
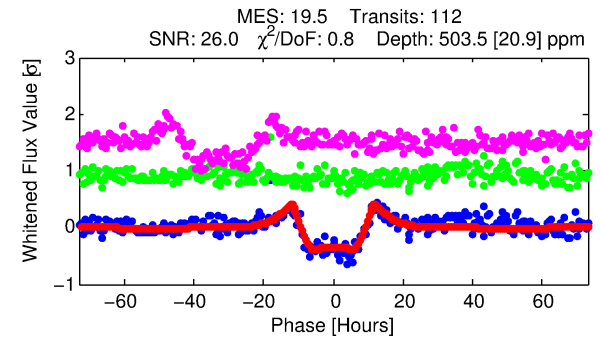
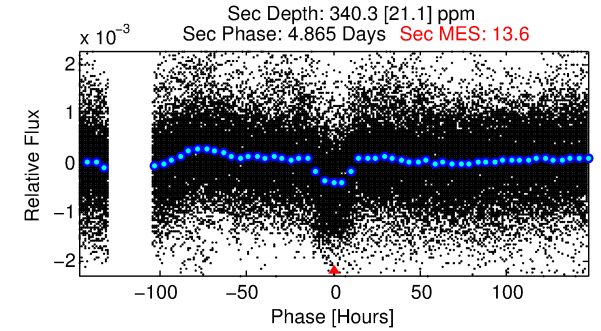
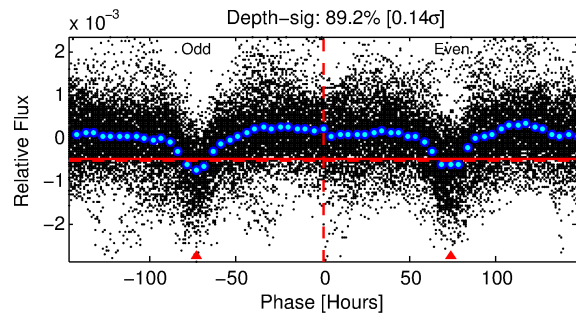
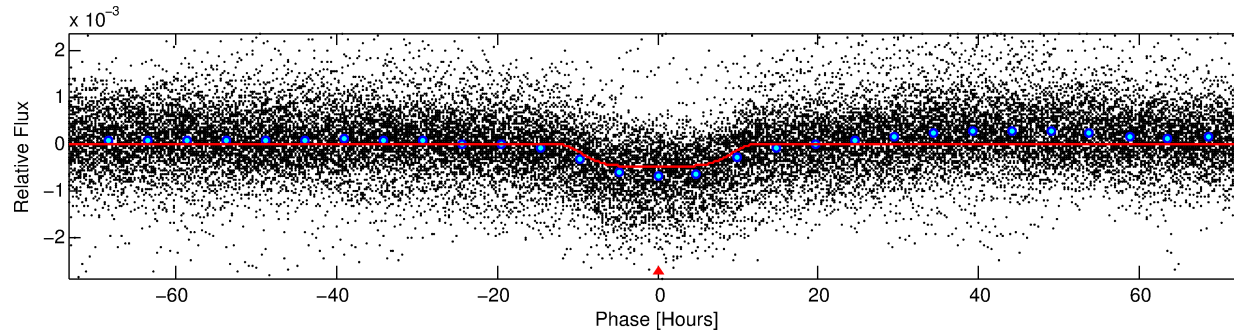
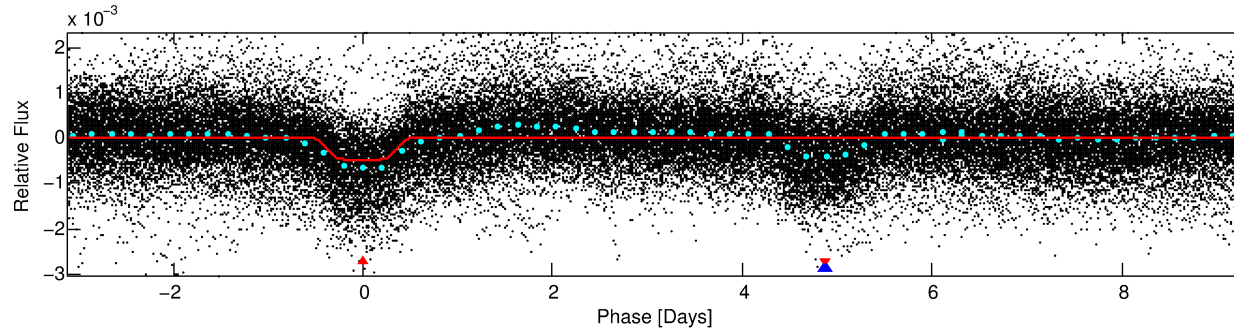
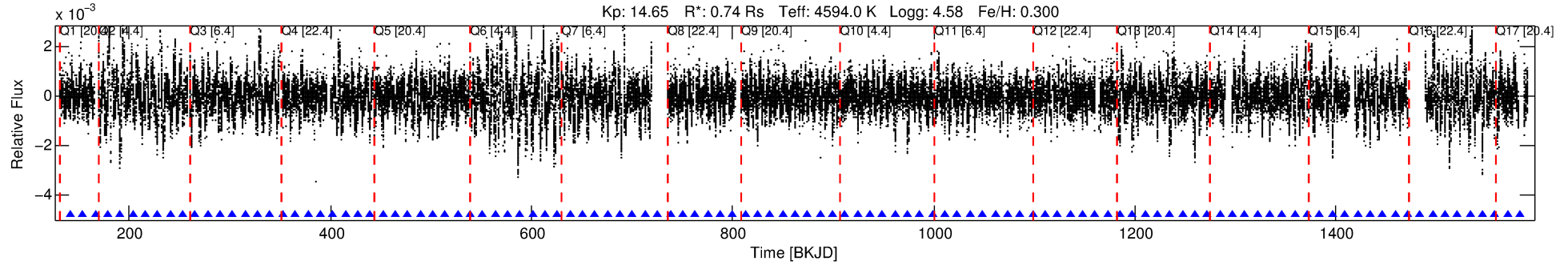
Ephemeris Match Information For 005385575-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
005385575-01	5385575	V380-Cyg-pri	5385723	1:1	151.6	-14	-35	5.77	14.65	287.57	Direct-PRF	0	1.21	0.05

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 5385575 Candidate: 1 of 2 Period: 12.425 d
KOI: K03965.01 Corr: 0.986



DV Fit Results:

Period = 12.42530 [0.00017] d
Epoch = 141.5394 [0.0107] BKJD
Rp/R* = 0.0278 [0.0007]
a/R* = 1.79 [0.05]
b = 0.95 [0.00]
Seff = 23.87 [3.45]
Teq = 564 [20] K
Rp = 2.26 [0.17] Re
a = 0.0961 [0.0055] AU
Ag = 338.93 [38.26] [8.83 σ]
Teffp = 3739 [135] K [23.31 σ]

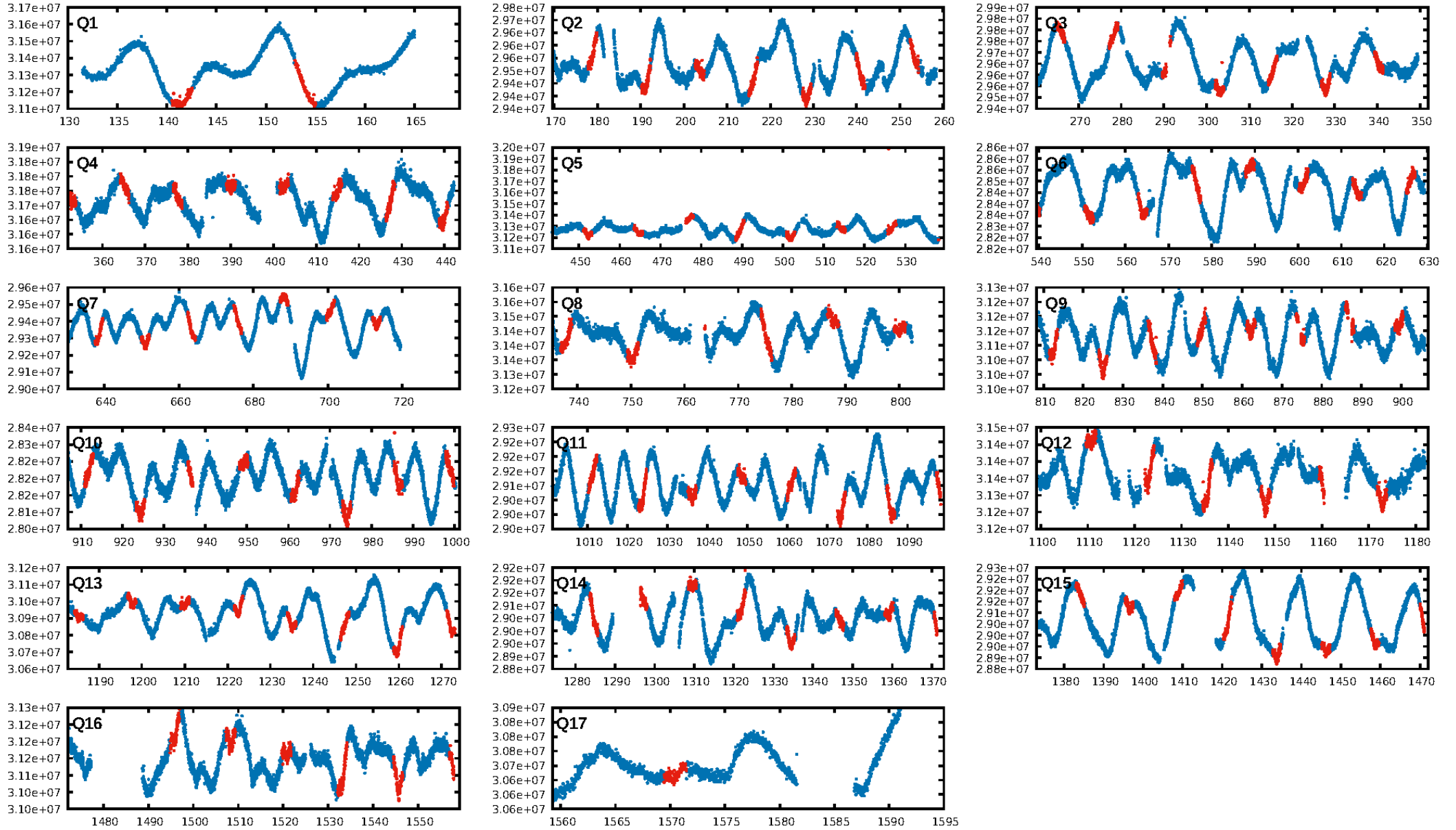
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: 23.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.83e-110
RollingBand-fgt: 1.00 [109/109]
GhostDiagnostic-chr: 0.01228
Centroid-sig: 0.0%
Centroid-so: 2.645 arcsec [10.20 σ]
OotOffset-rm: 1.506 arcsec [1.96 σ]
KicOffset-rm: 1.305 arcsec [1.80 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.41 [7/17]
DiffImageOverlap-fno: 1.00 [17/17]

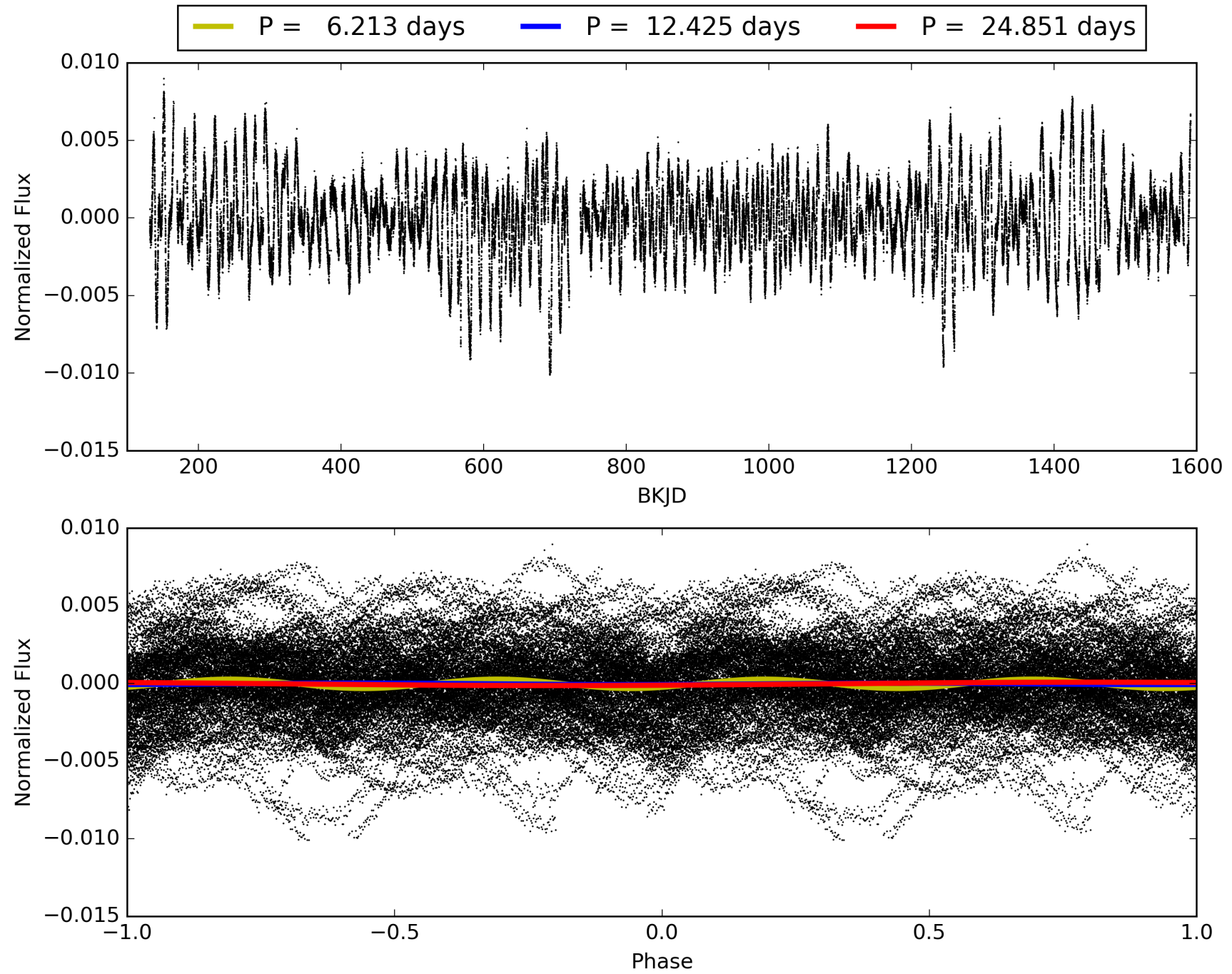
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 14:11:28 Z

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

TCE 005385575-01, PDC Light Curves

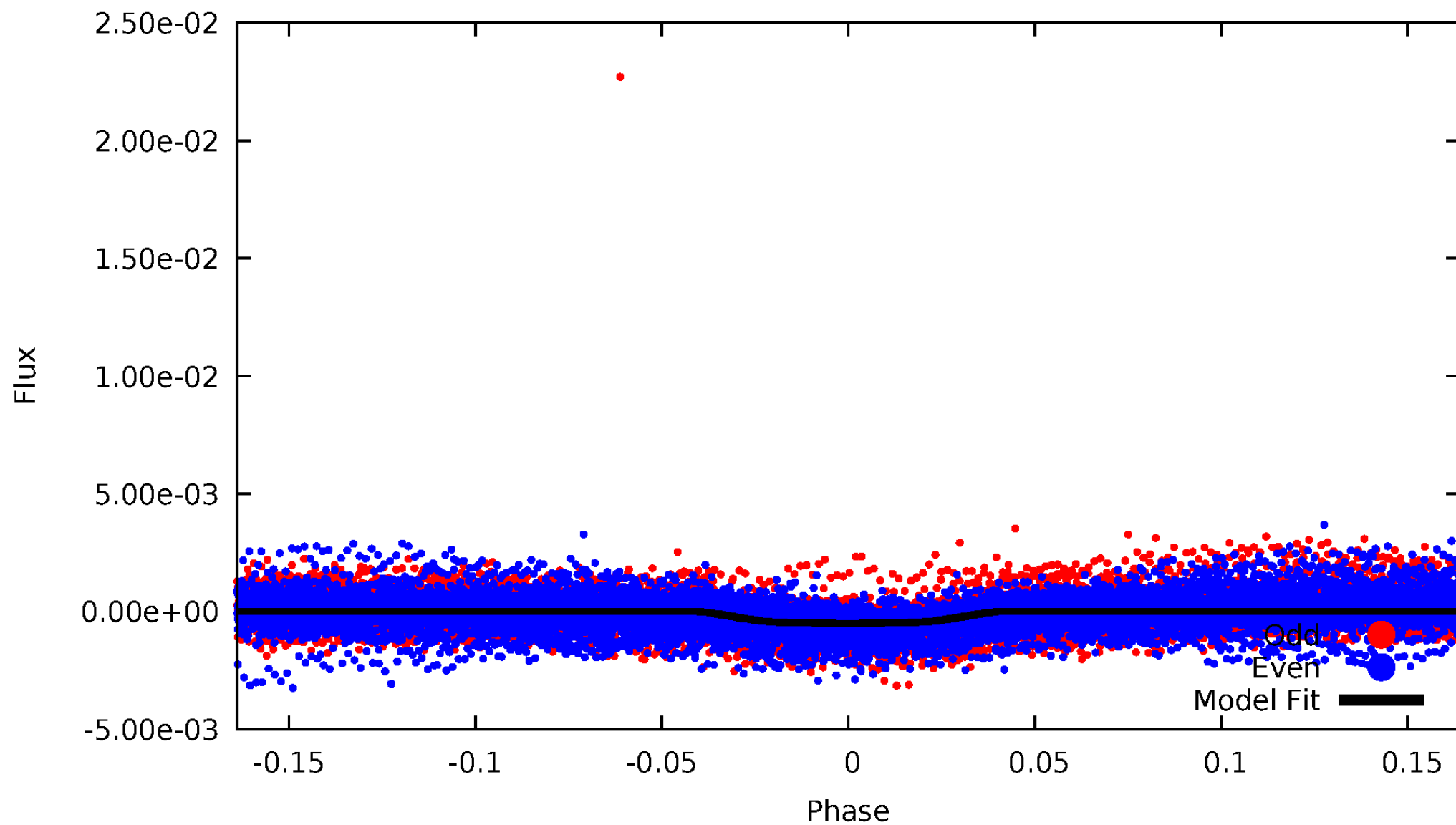


TCE 005385575-01



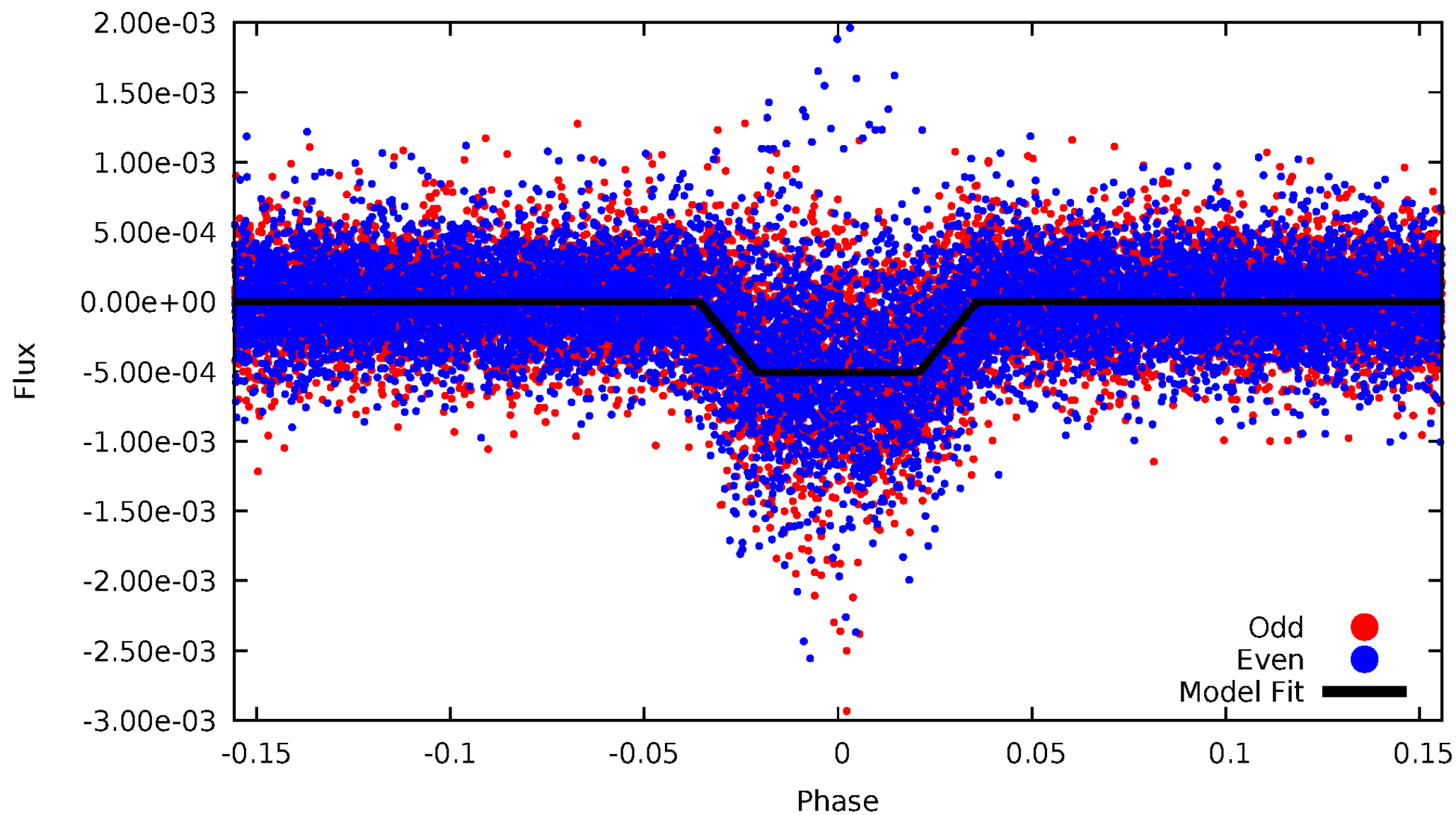
DV Odd/Even

TCE 005385575-01

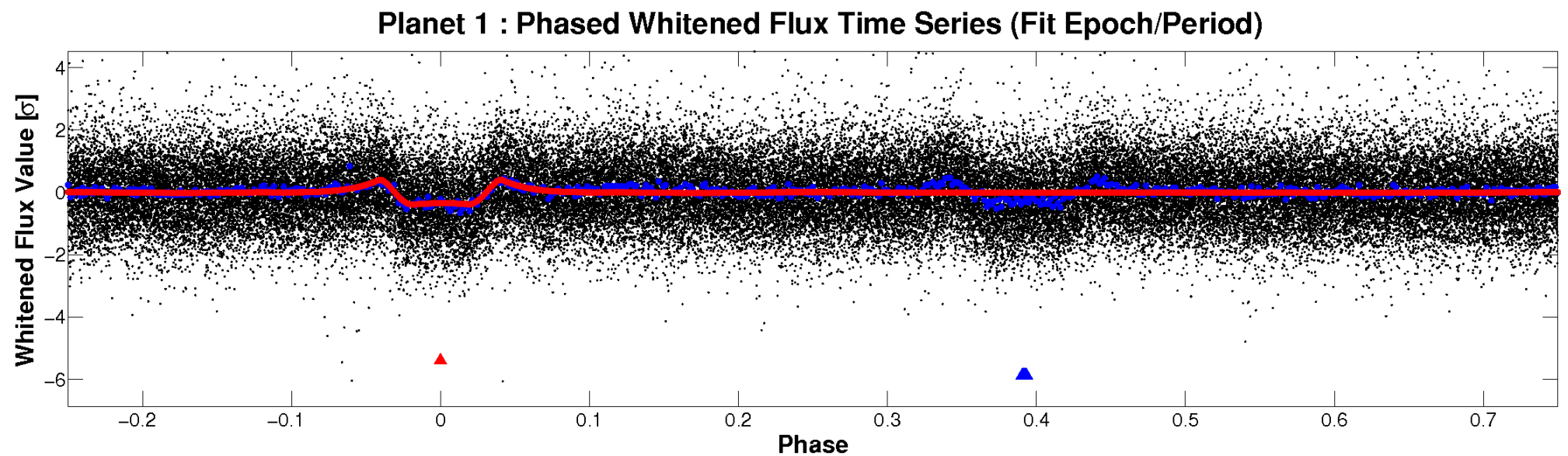
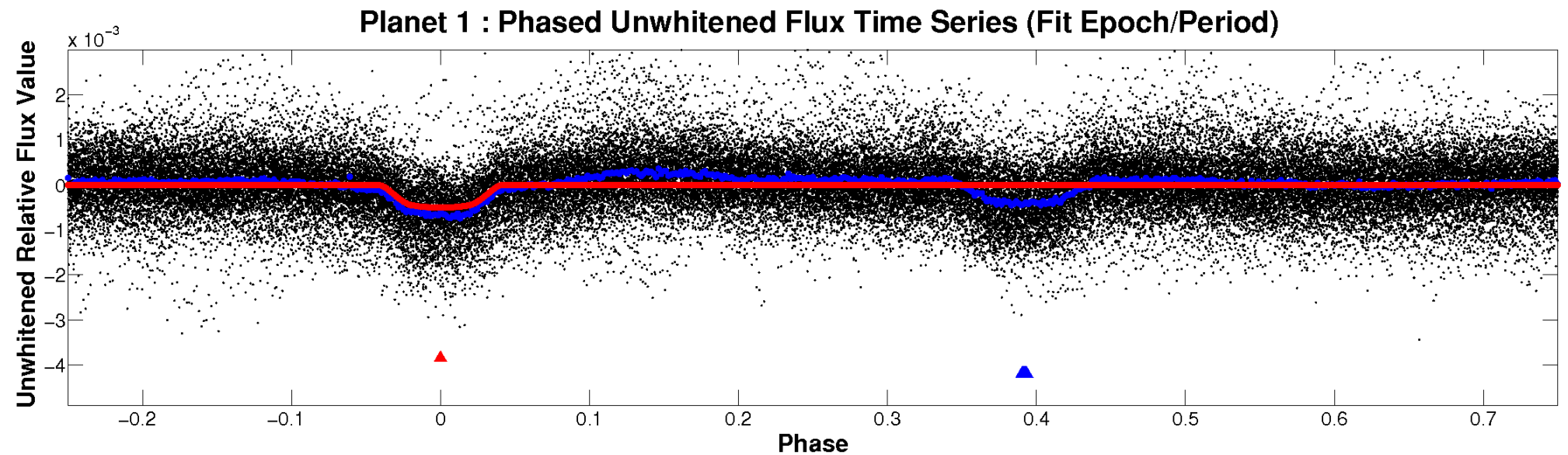


ALT Odd/Even

TCE 005385575-01

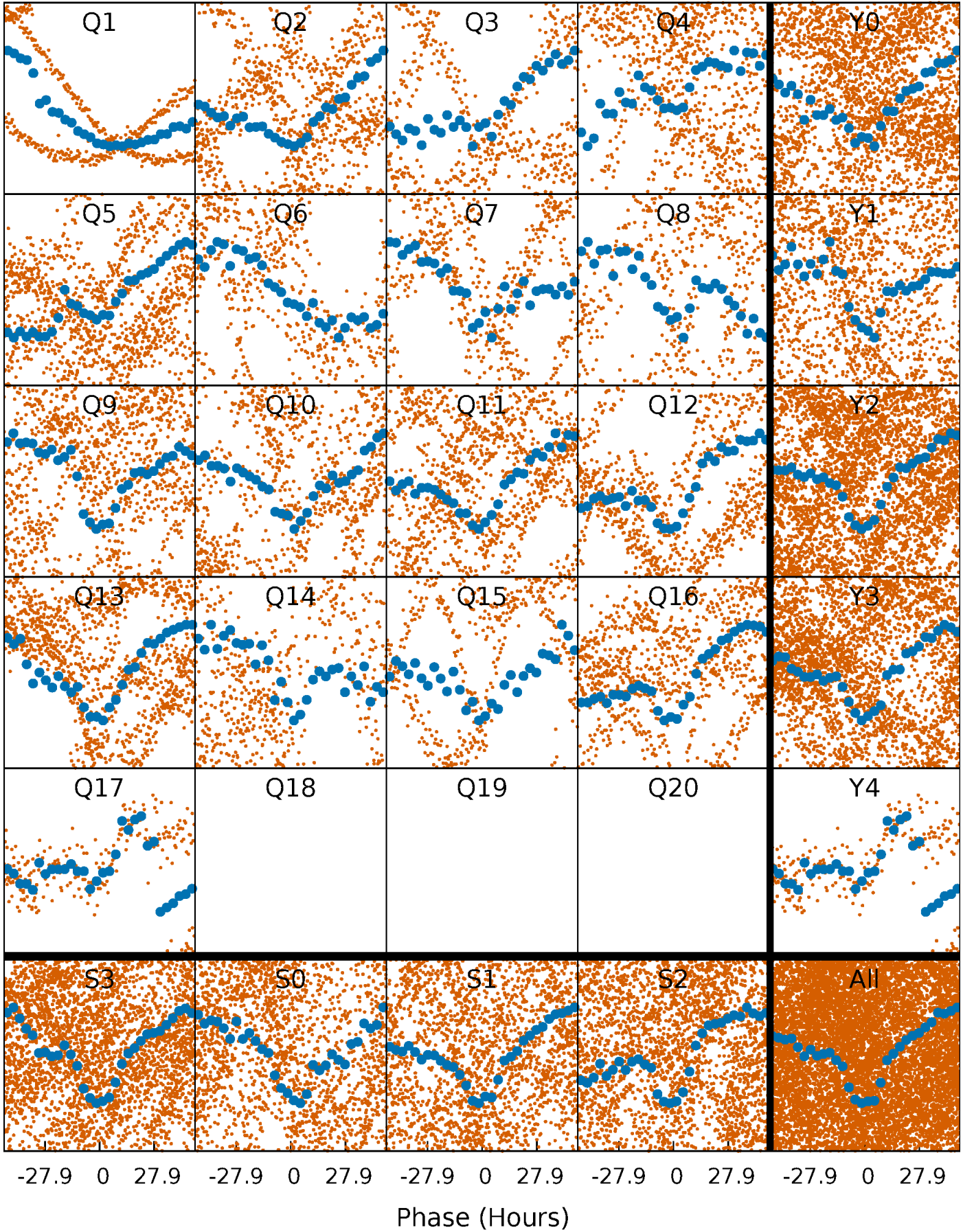


Non-Whitened Vs. Whitened Light Curve



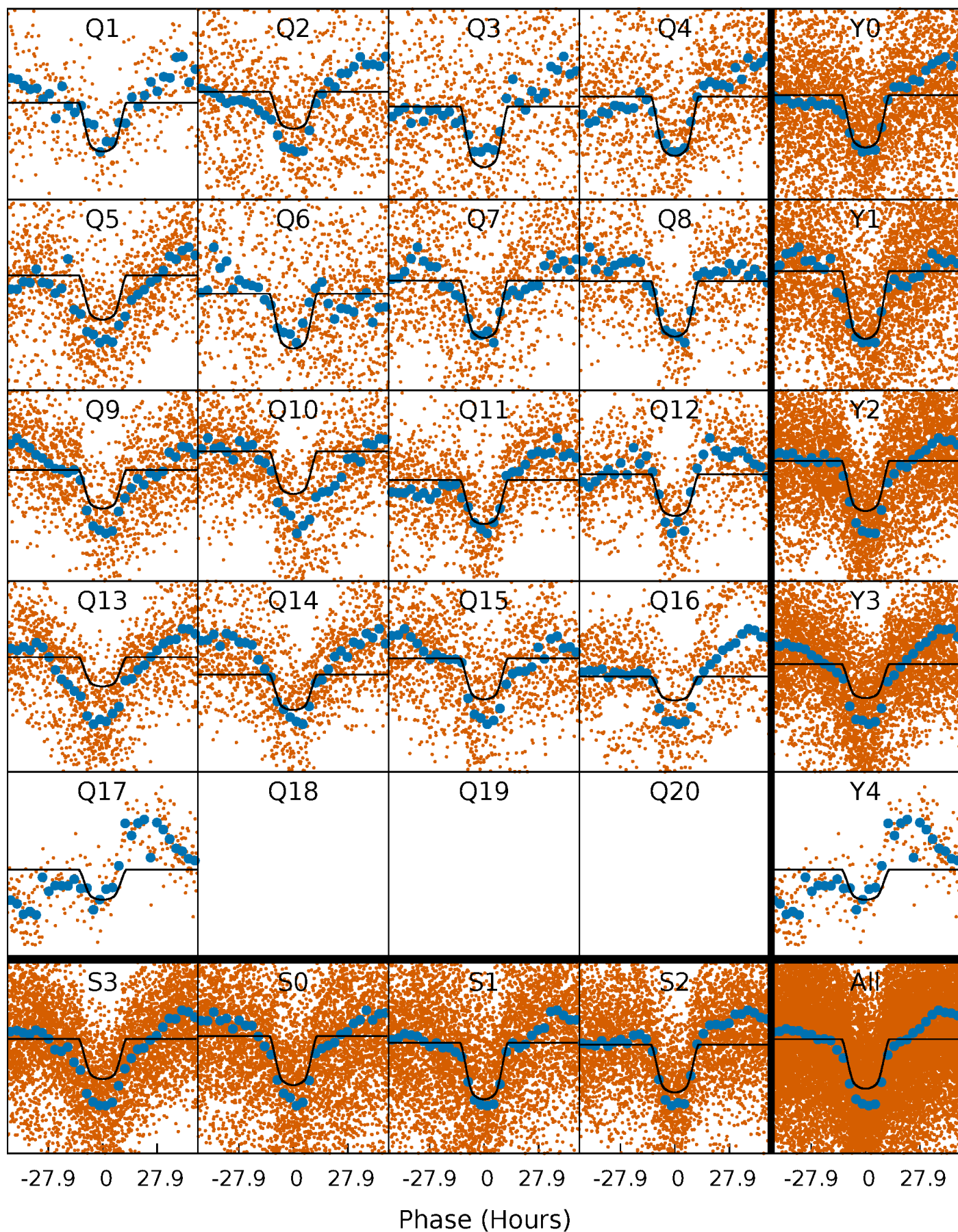
PDC Quarter-Phased Transit Curves

TCE 005385575-01 P= 12.425300 Days $T_0=141.539432$ (BKJD)



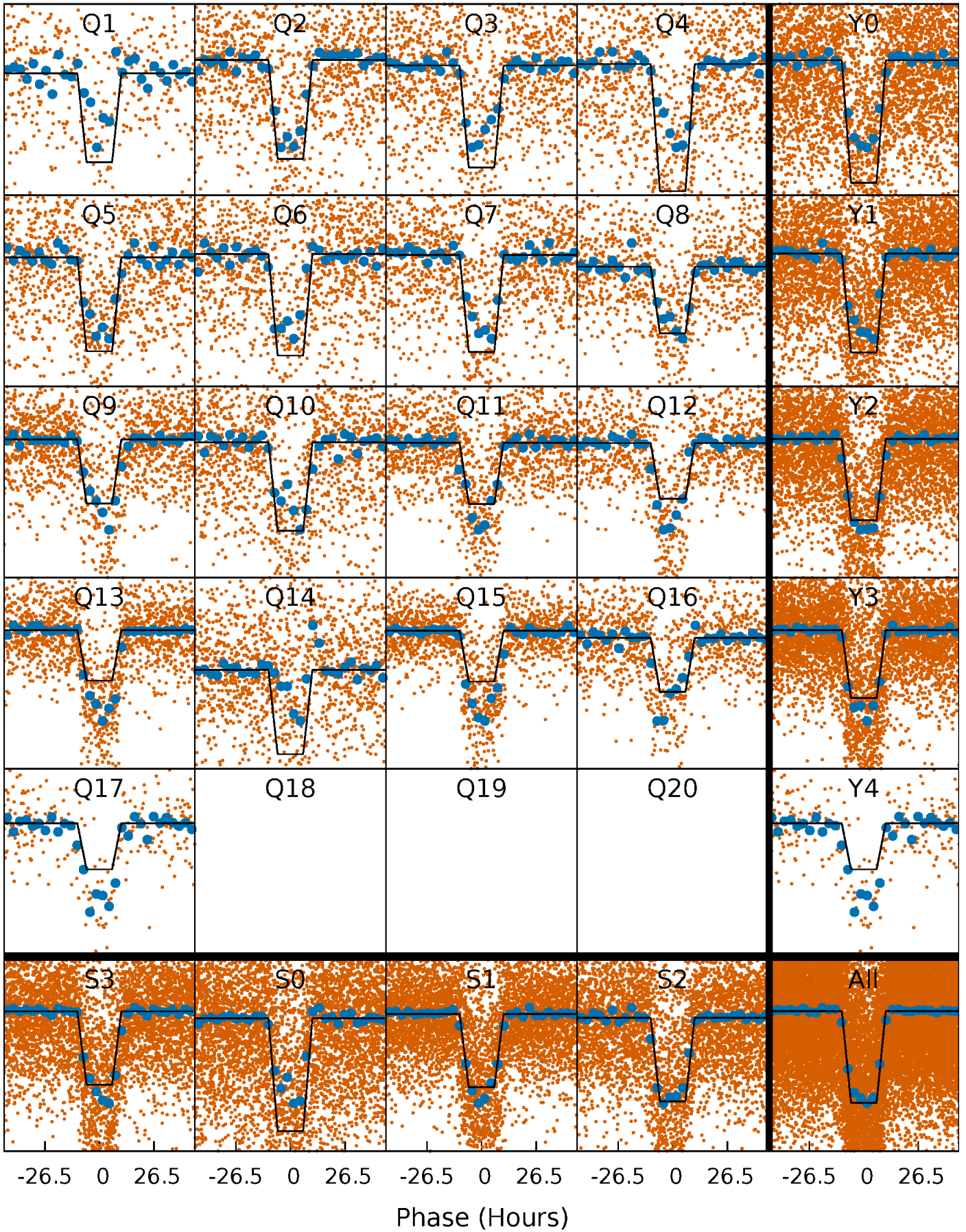
DV Quarter-Phased Transit Curves

TCE 005385575-01 P= 12.425300 Days $T_0=141.539432$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

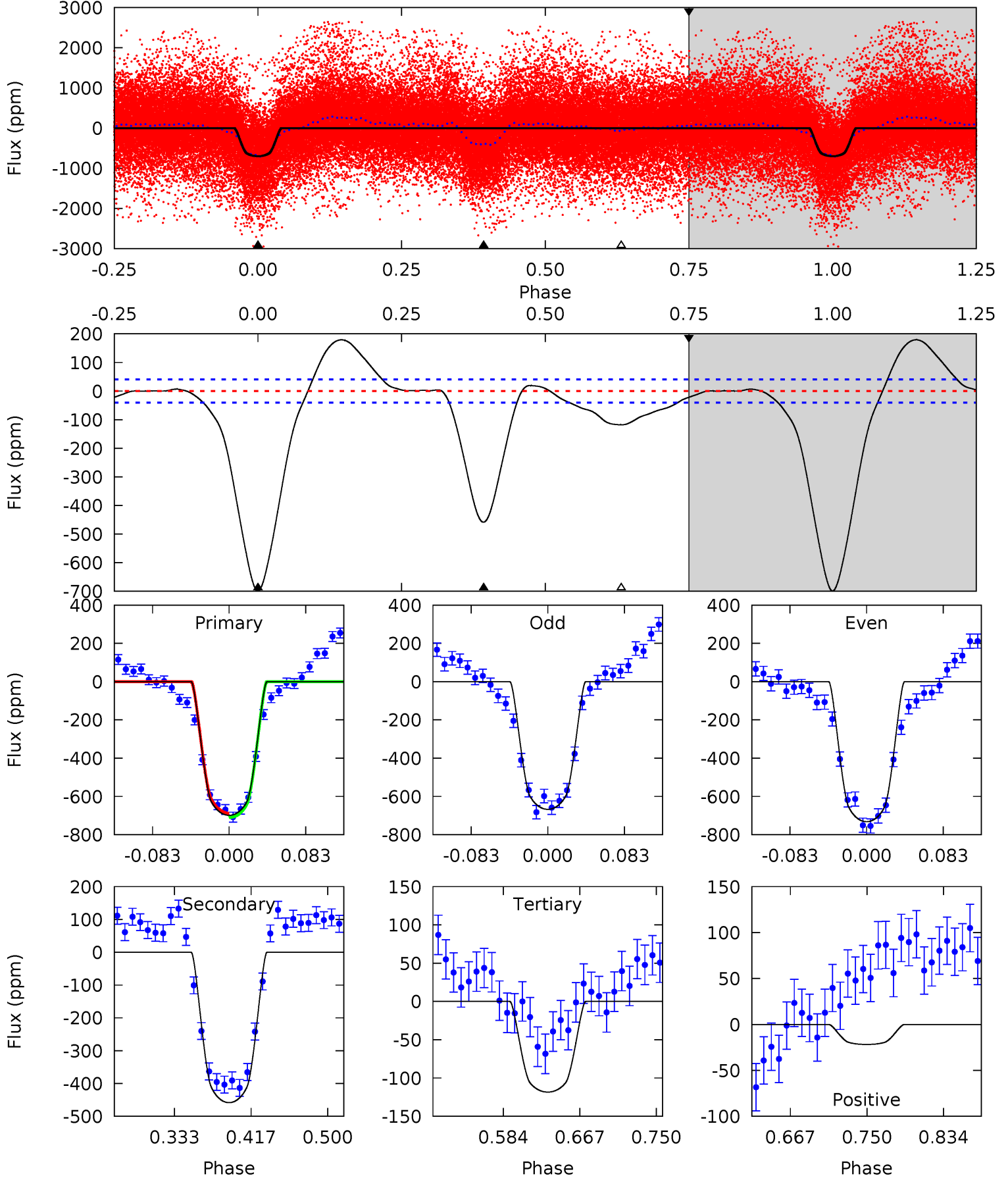
TCE 005385575-01 P= 12.425672 Days $T_0=141.521155$ (BKJD)



DV Model-Shift Uniqueness Test

005385575-01, P = 12.425300 Days, E = 129.114132 Days

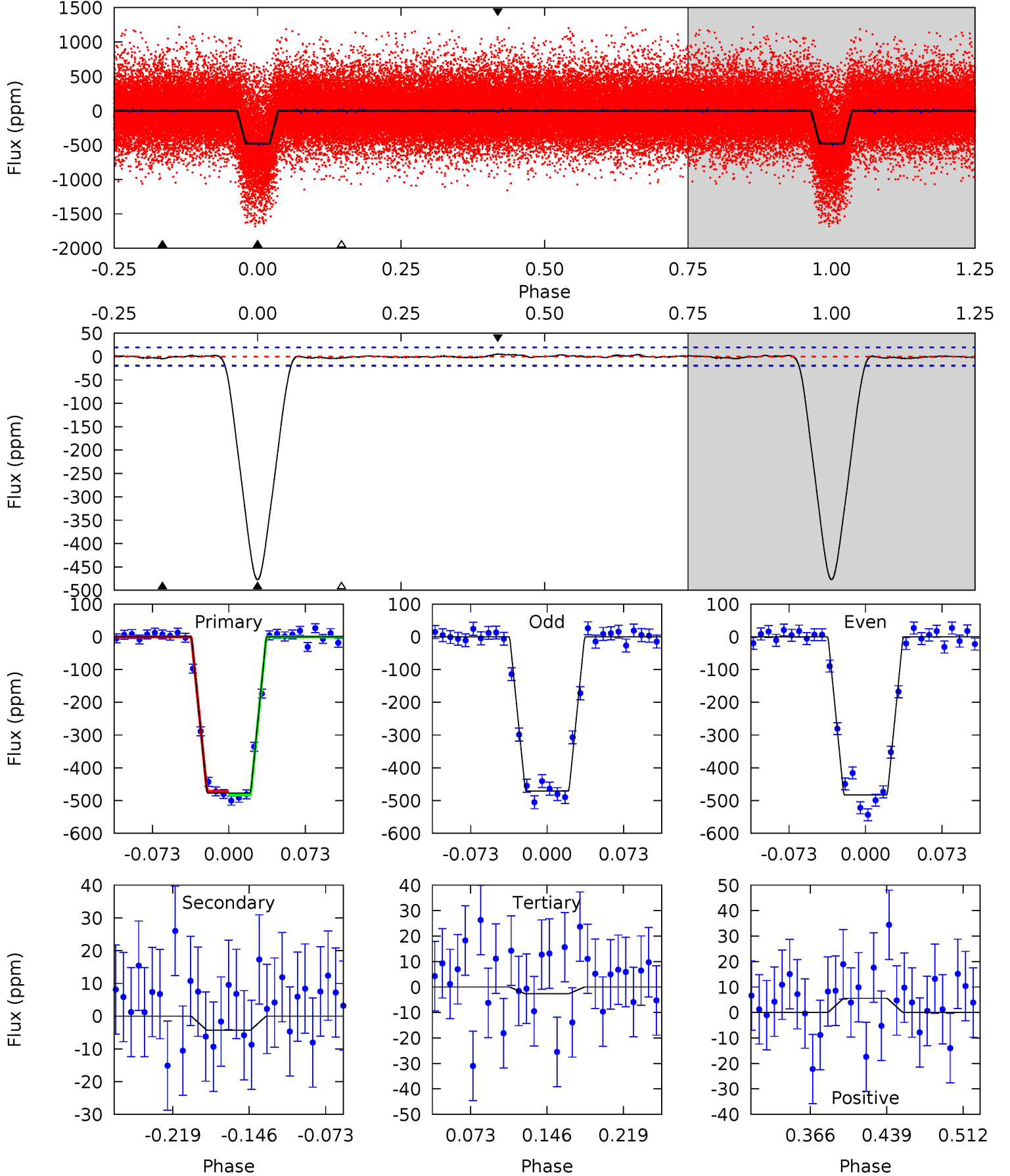
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
79.7	52.3	13.5	-2.49	4.60	1.73	8.36	66.2	82.2	38.8	54.8	3.69	1.23	0.20	1.22



Alt Model-Shift Uniqueness Test

005385575-01, P = 12.425672 Days, E = 129.095483 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
112.8	1.02	0.62	1.32	4.63	1.79	0.47	112.2	111.5	0.40	-0.30	1.39	1.09	0.01	1.34



Stellar Parameters For KIC 005385575

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4594^{+138}_{-138}	$4.580^{+0.042}_{-0.028}$	$0.300^{+0.150}_{-0.300}$	$0.743^{+0.031}_{-0.053}$	$0.765^{+0.039}_{-0.053}$	$2.626^{+0.515}_{-0.241}$
	+3%/-3%	+1%/-1%	+50%/-100%	+4%/-7%	+5%/-7%	+20%/-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 005385575-01 / KOI 3965.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-458 ± 9	$2.25^{+0.09}_{-0.10}$	786^{+26}_{-25}	4157^{+130}_{-110}	461^{+39}_{-31}
Alt.	-4 ± 4	$1.82^{+0.08}_{-0.09}$	784^{+26}_{-26}	2257^{+189}_{-3861}	$6.556^{+6.343}_{-6.433}$

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 $A_{obs} \gg 1.0$

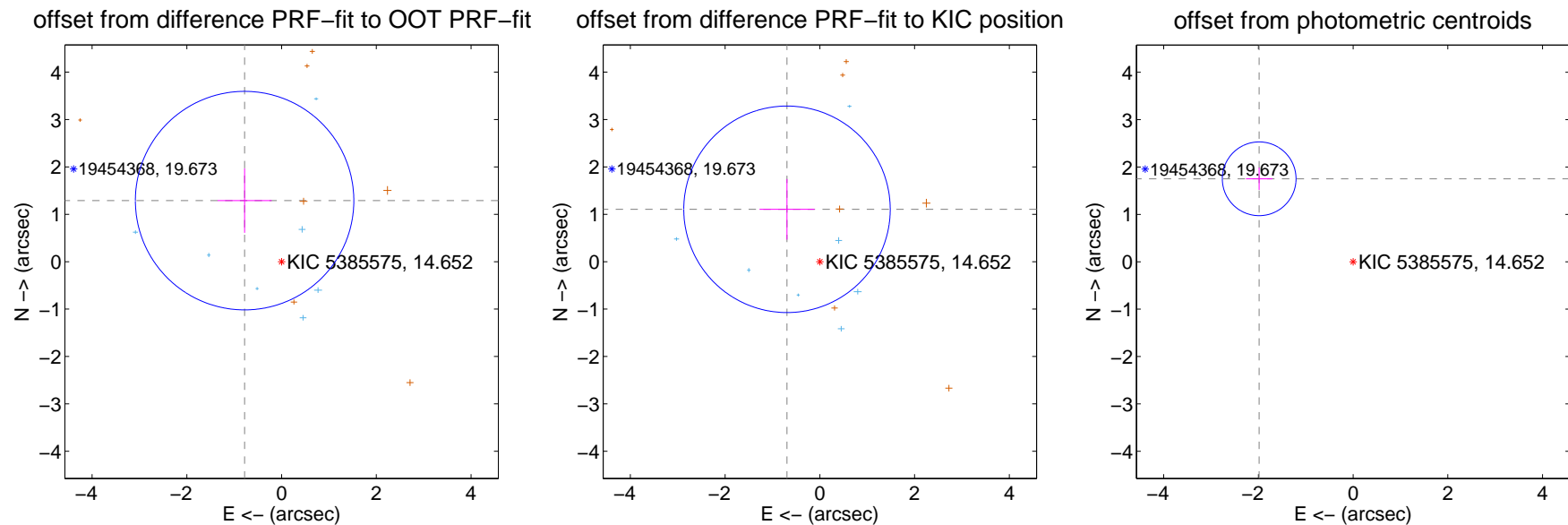
DV Centroid Data

Supplemental centroid analysis for 005385575-01. Kepler magnitude: 14.65. Transit SNR 25.98

There are 7 quarters with good PRF difference image offsets

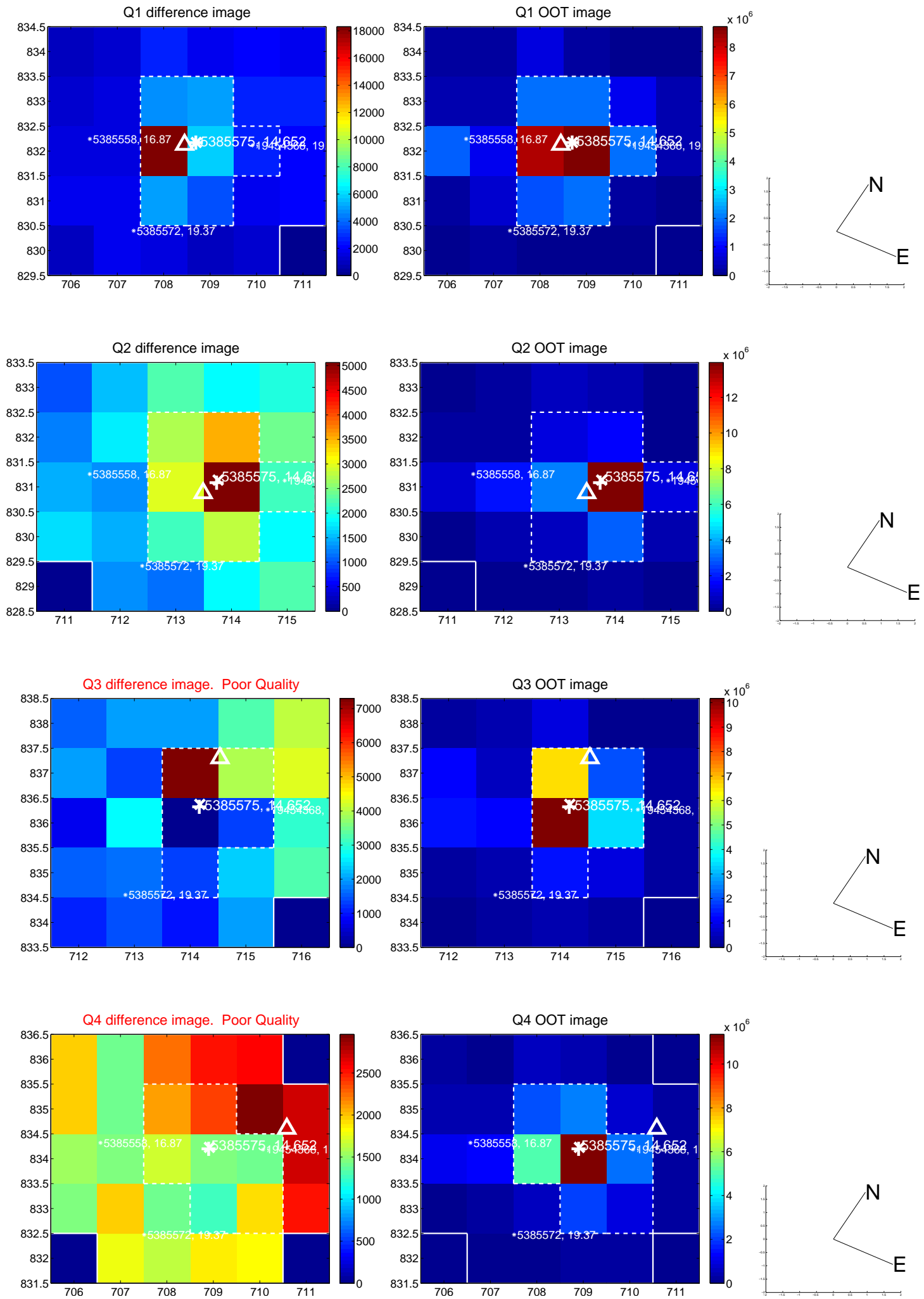
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.506 ± 0.768	1.96	0.780 ± 0.572	1.289 ± 0.680
PRF-fit source offset from KIC position	1.305 ± 0.726	1.80	0.693 ± 0.581	1.105 ± 0.638
photometric centroid source offset	2.65 ± 0.26	10.20	1.98 ± 0.28	1.75 ± 0.23

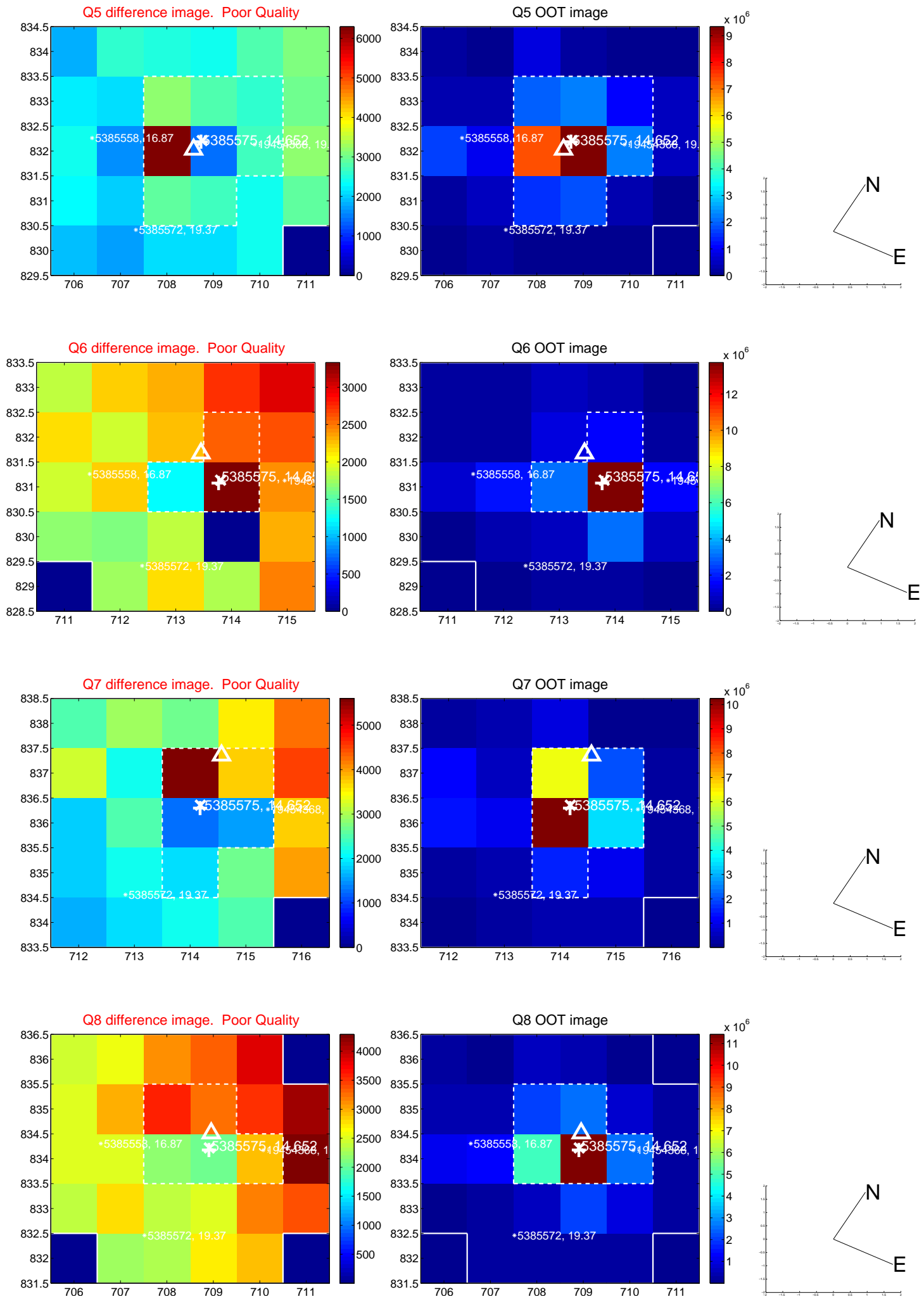


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

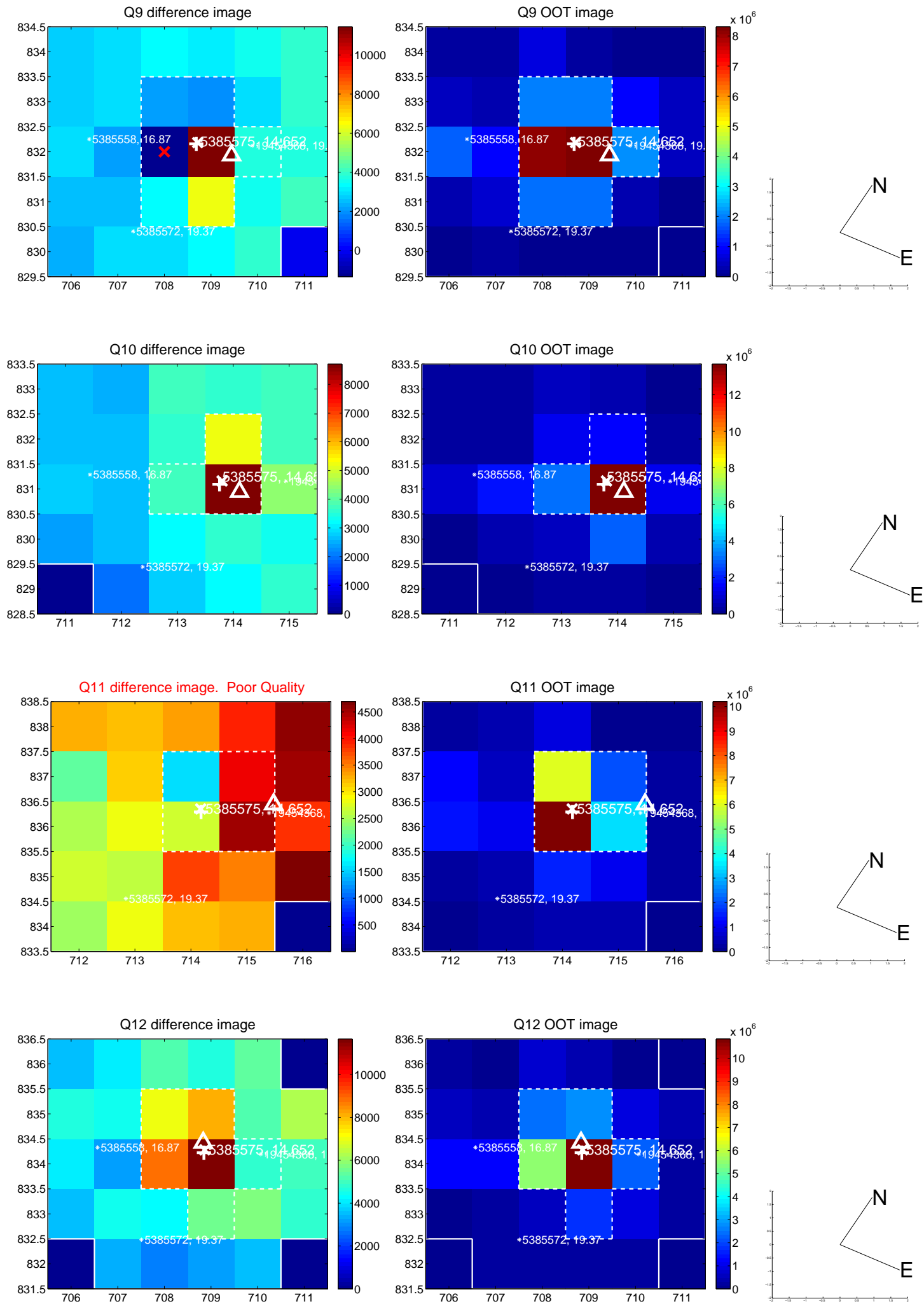
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



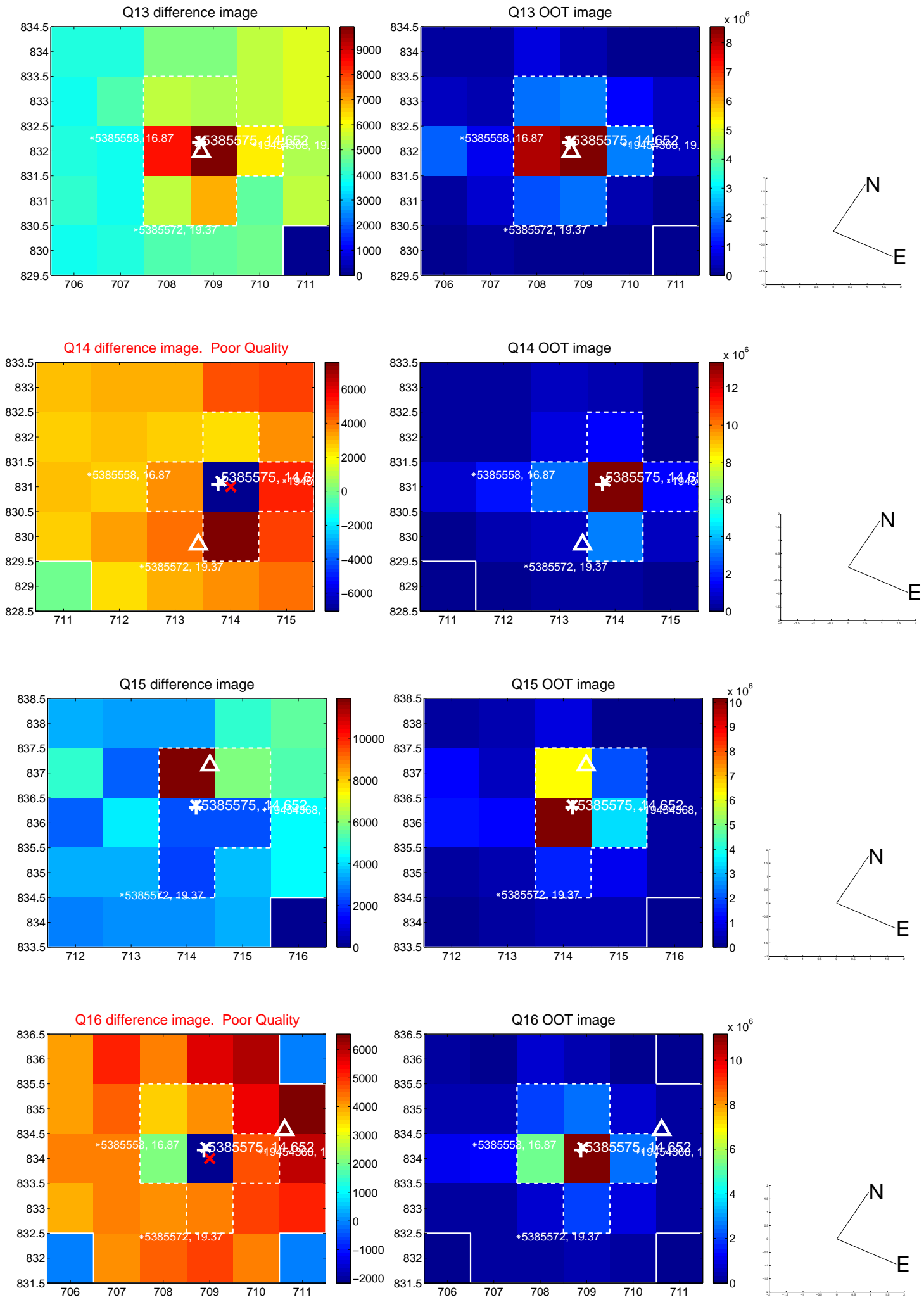
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



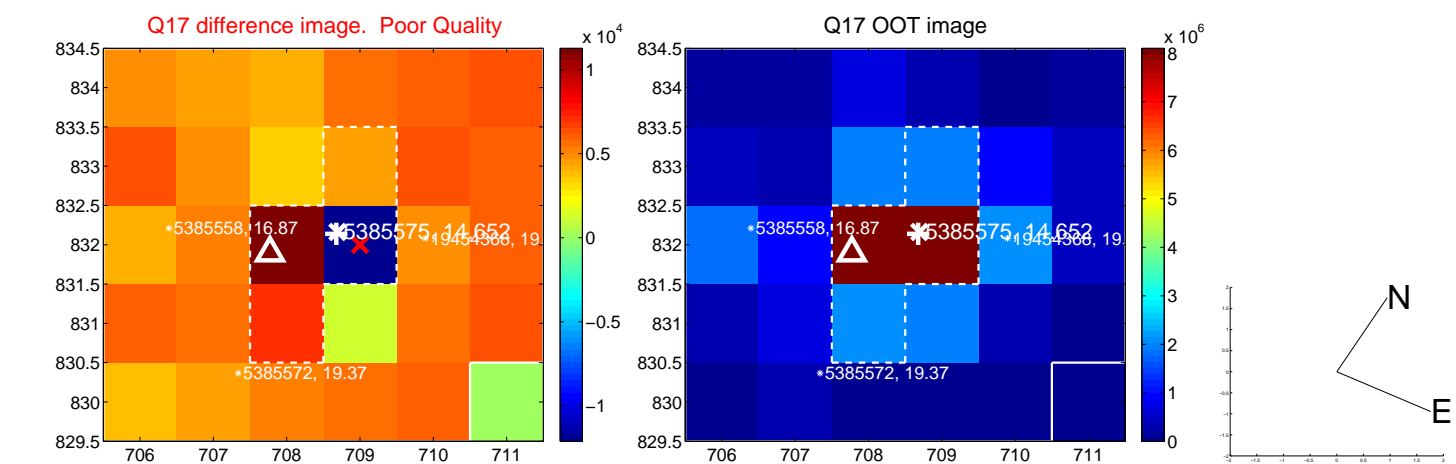
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



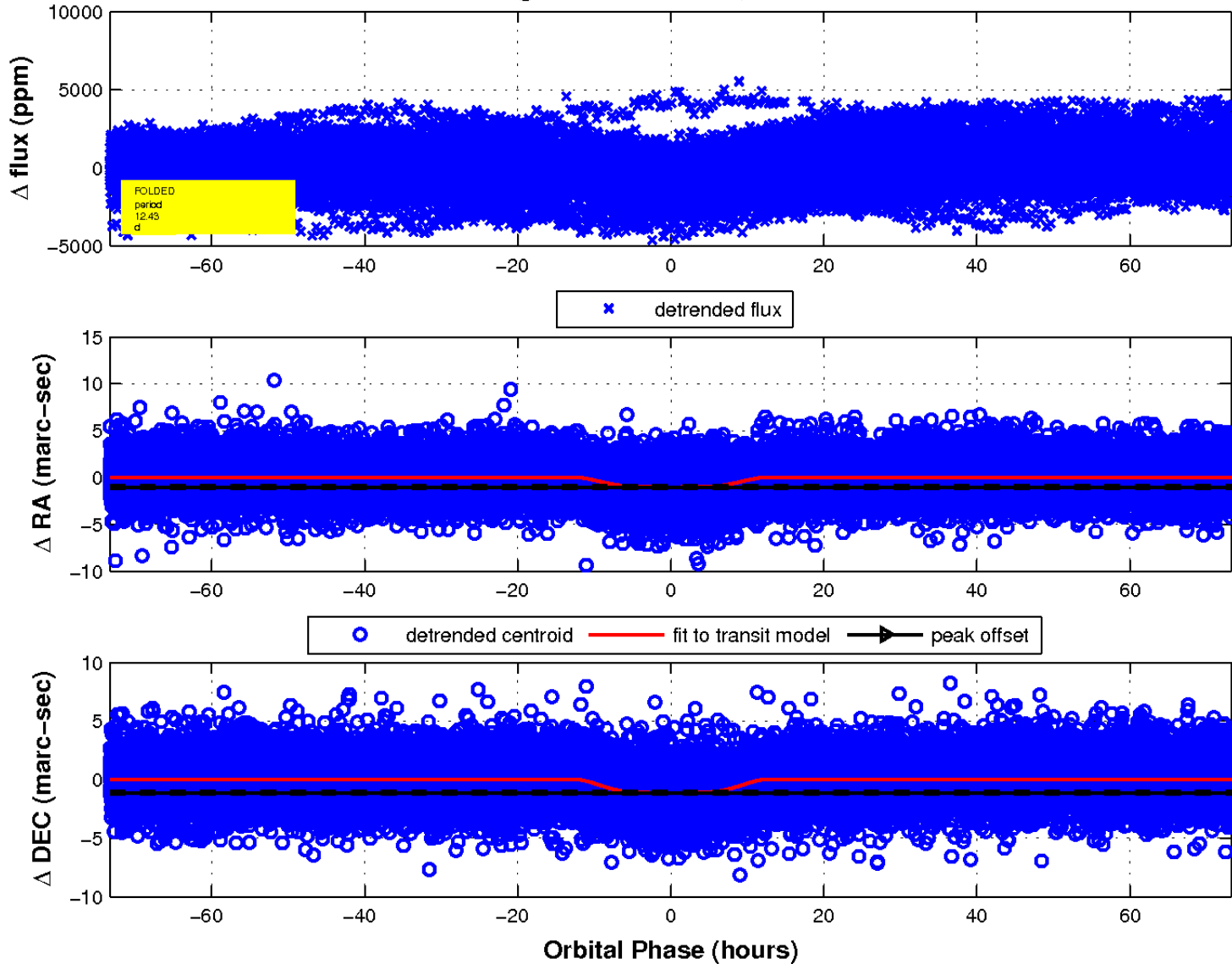
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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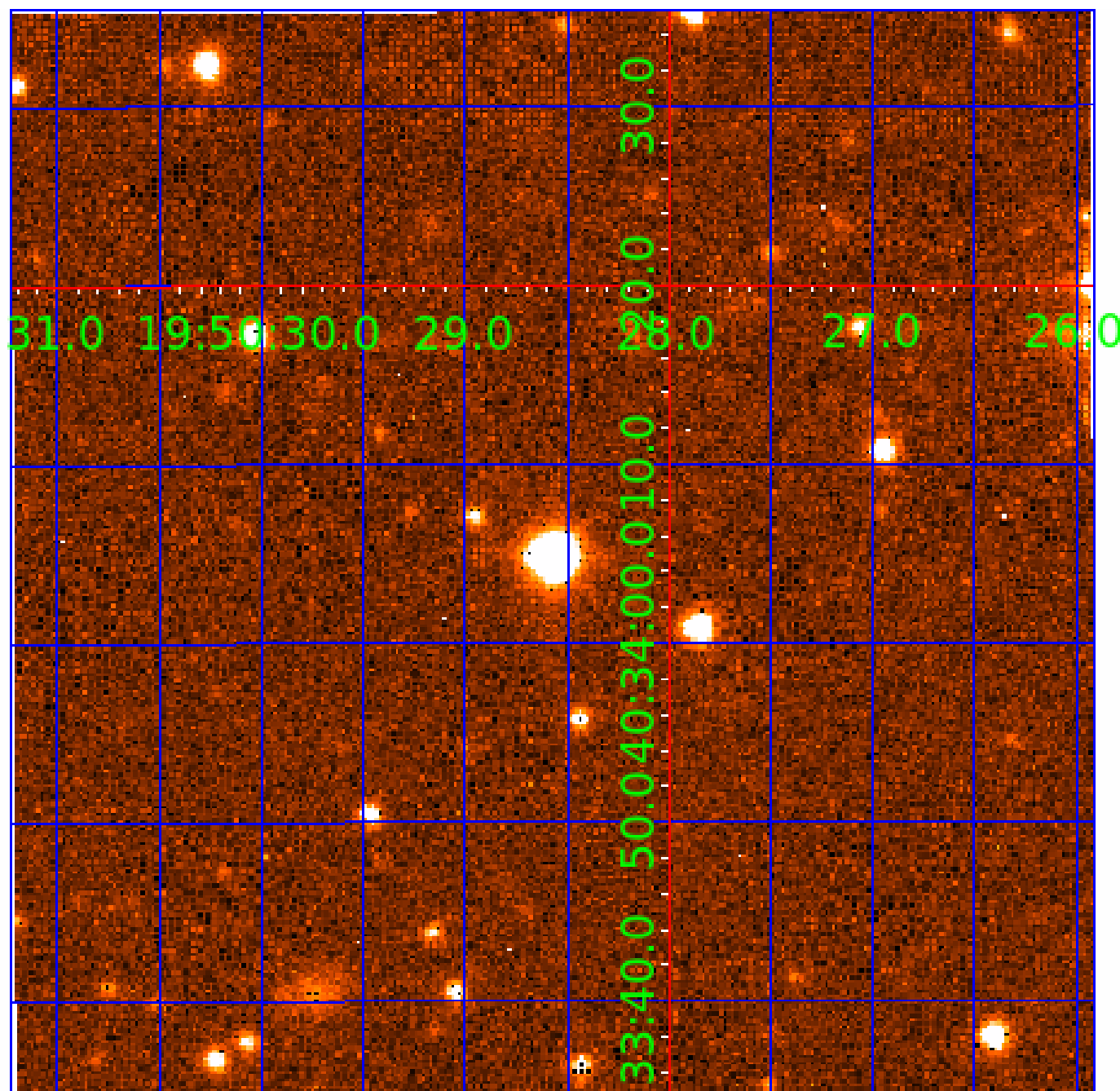


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 005385575

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})
005385575-01	OBS	3965.01	12.425300	141.539432	503.5	24.431	19.5	26.0	0.74	4594	2.26	23.87
005385575-02	OBS	No	12.425627	133.964648	562.4	30.422	13.1	24.0	0.74	4594	2.43	23.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005385575-01	OBS	FP	0.00	1	0	1	1	LPP_DV—HALO_GHOST—EPHEM_MATCH
005385575-02	OBS	FP	0.00	1	0	1	1	LPP_DV—SAME_NTL_PERIOD—HALO_GHOST—EPHEM_MATCH

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 005385575-02

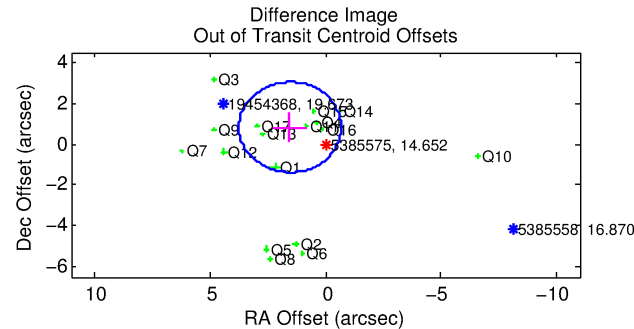
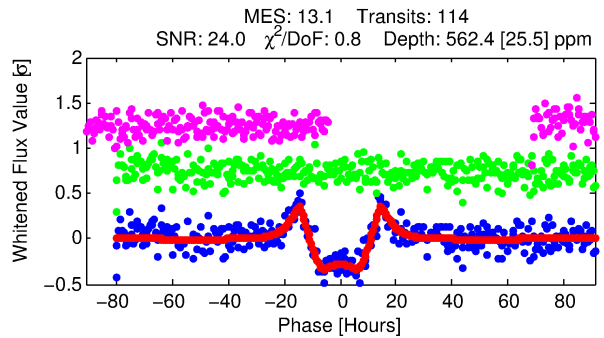
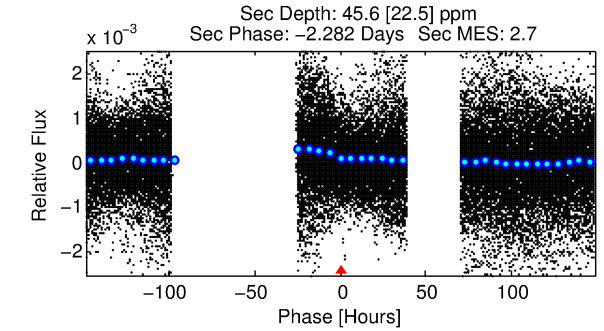
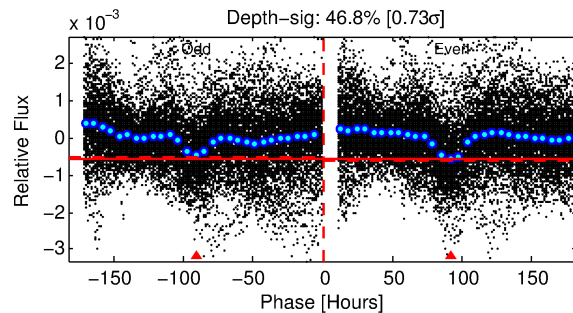
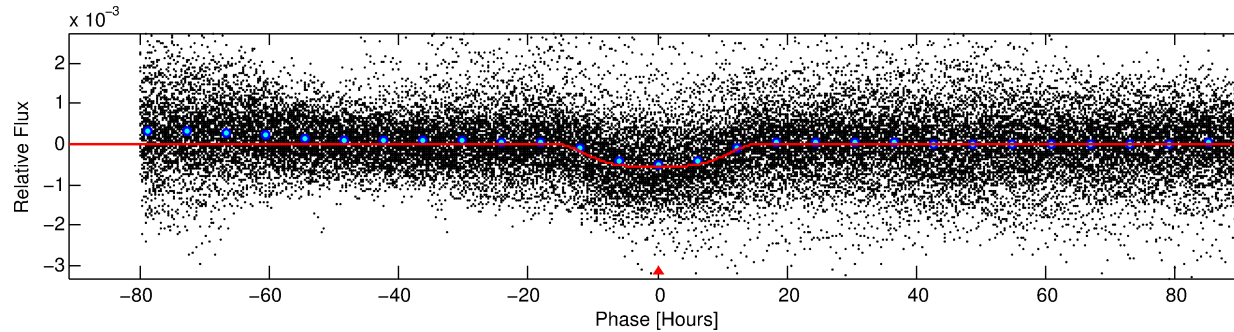
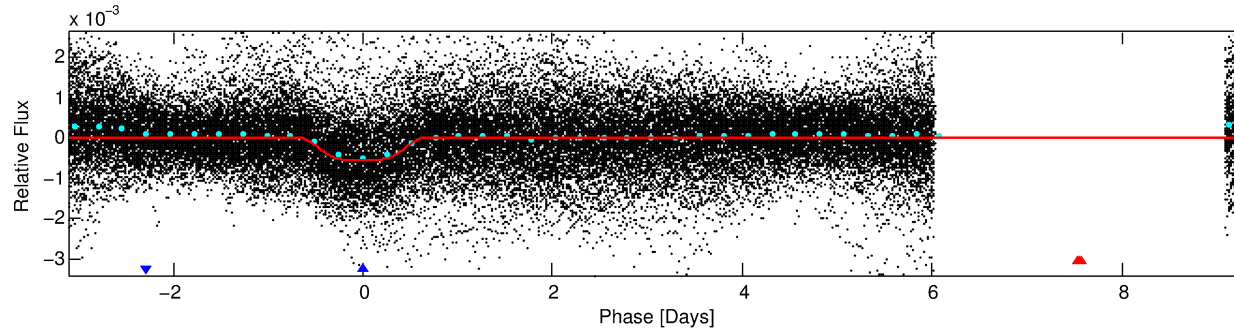
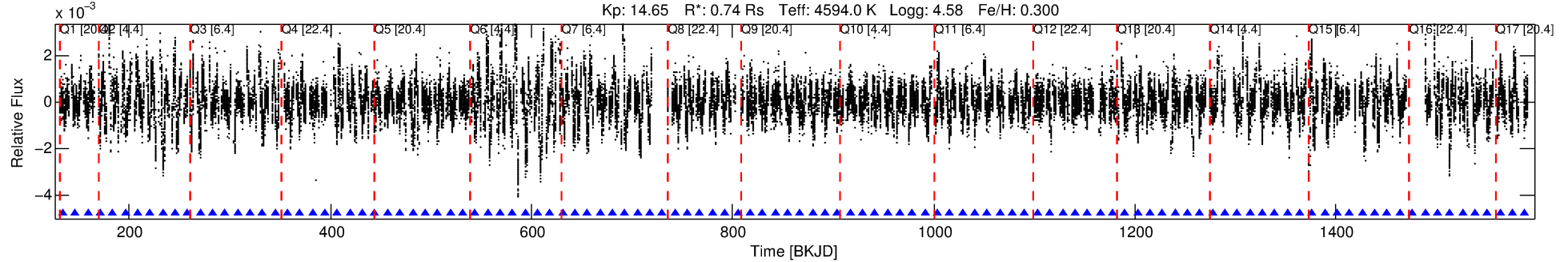
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
005385575-02	5385575	V380-Cyg-sec	5385723	1:1	151.6	-14	-35	5.77	14.65	229.60	Direct-PRF	0	0.41	0.52

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 5385575 Candidate: 2 of 2 Period: 12.426 d
KOI: K03965 Corr: No Ephemeris Match

Kp: 14.65 R*: 0.74 Rs Teff: 4594.0 K Logg: 4.58 Fe/H: 0.300



DV Fit Results:

Period = 12.42563 [0.00021] d
Epoch = 133.9646 [0.0139] BKJD
Rp/R* = 0.0300 [0.0008]
a/R* = 1.52 [0.03]
b = 0.96 [0.00]
Seff = 23.87 [3.45]
Teq = 564 [20] K
Rp = 2.43 [0.18] Re
a = 0.0961 [0.0055] AU
Ag = 39.16 [19.65] [1.94σ]
Teff = 2180 [278] K [5.80σ]

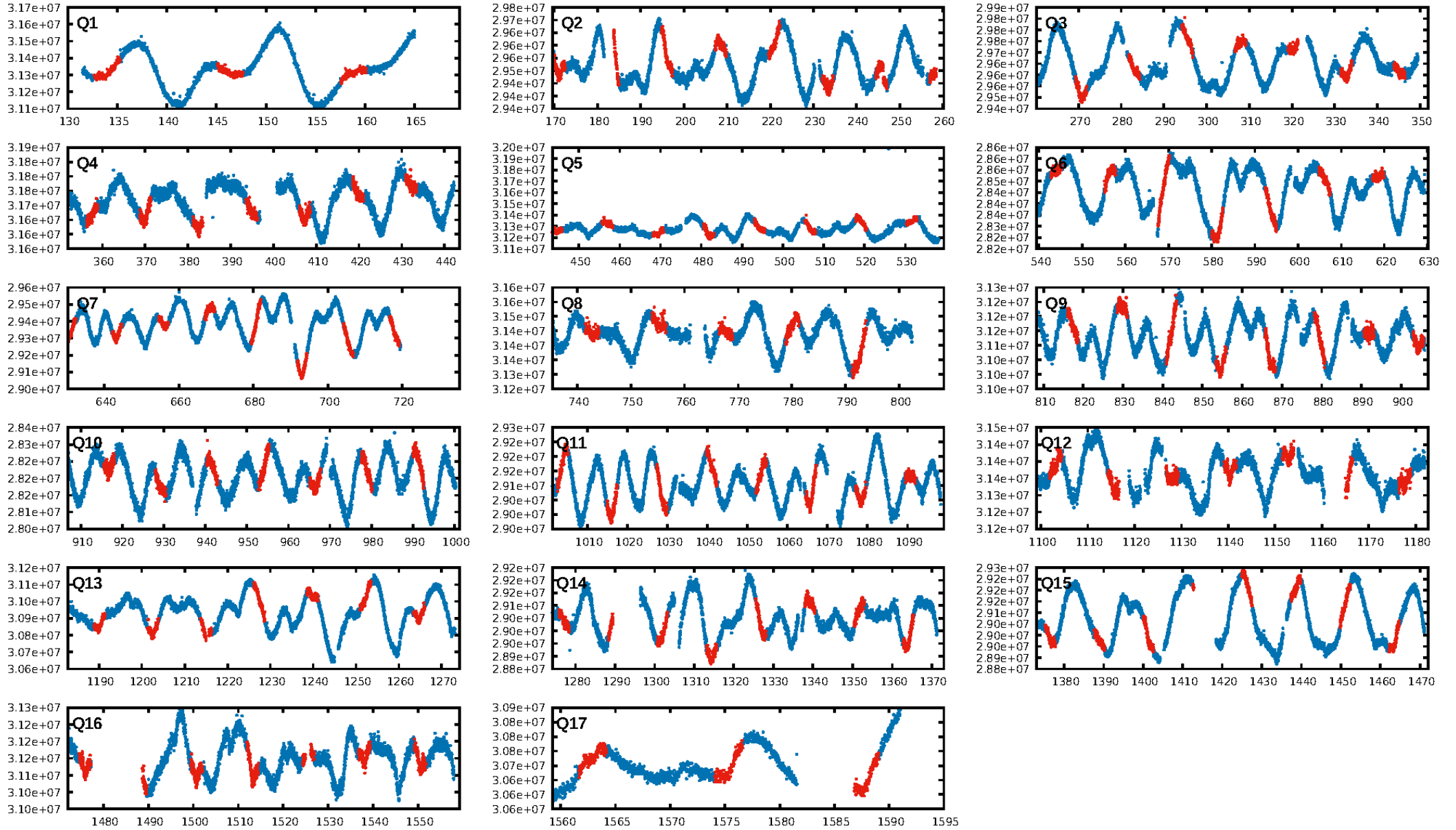
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 9.95e-51
RollingBand-fgt: 1.00 [108/108]
GhostDiagnostic-chr: 0.1212
Centroid-sig: 0.0%
Centroid-so: 2.320 arcsec [10.00σ]
OotOffset-rm: 1.751 arcsec [2.38σ]
KicOffset-rm: 1.759 arcsec [2.39σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.41 [7/17]
DiffImageOverlap-fno: 1.00 [17/17]

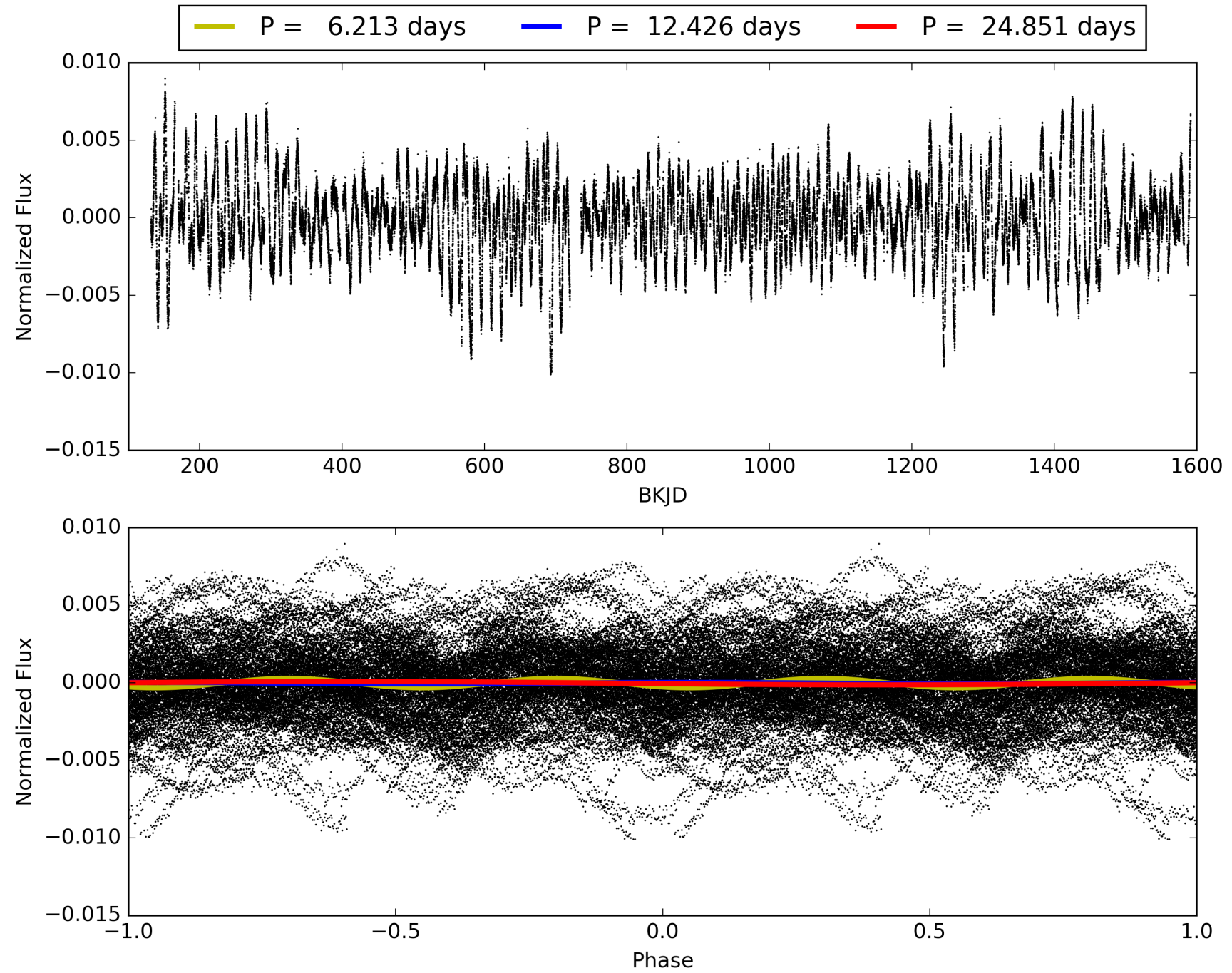
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 14:11:39 Z

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

TCE 005385575-02, PDC Light Curves

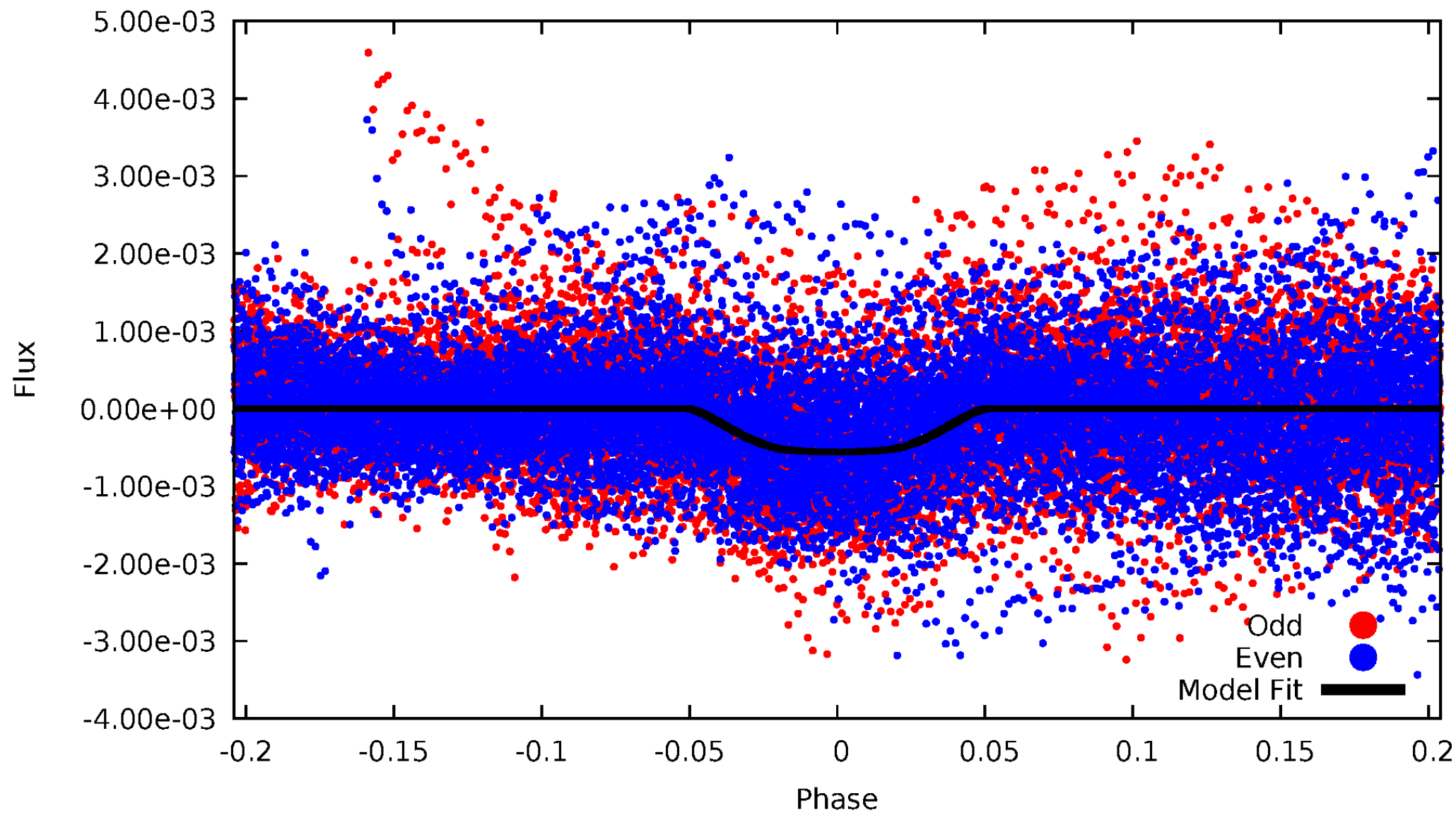


TCE 005385575-02



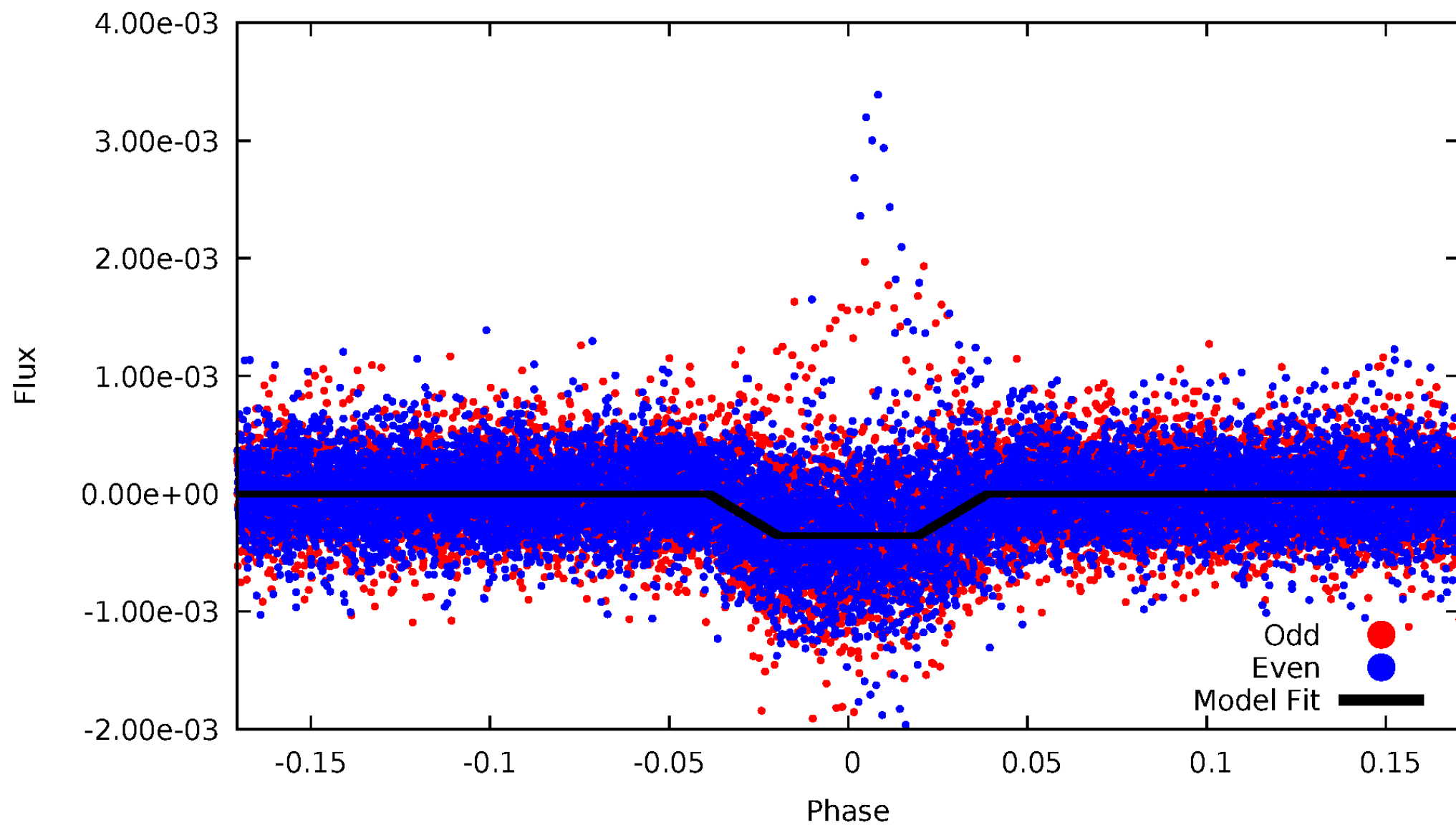
DV Odd/Even

TCE 005385575-02



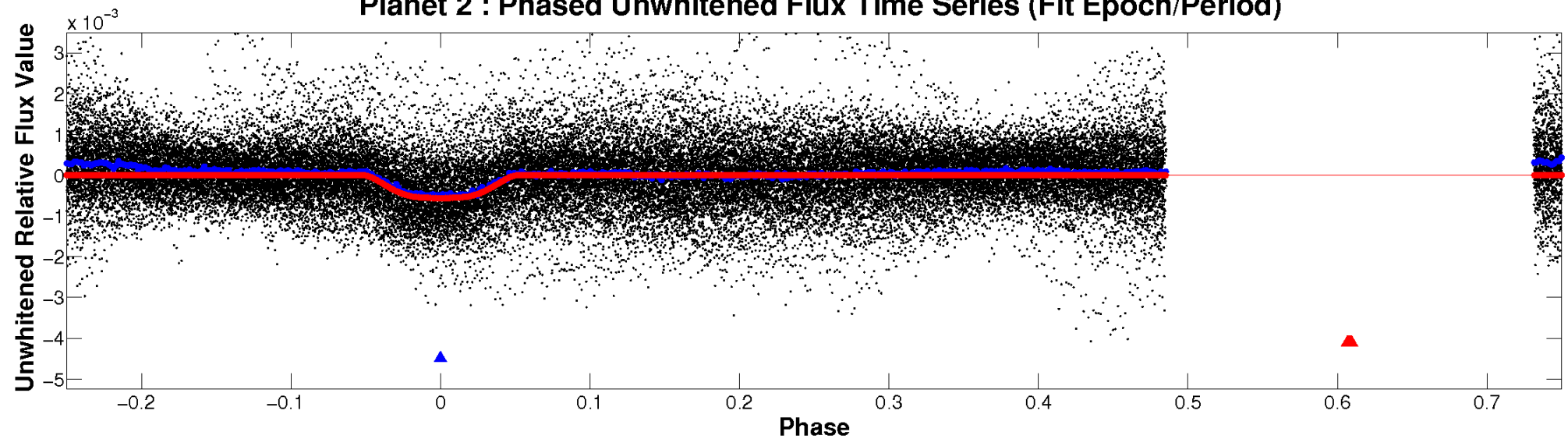
ALT Odd/Even

TCE 005385575-02

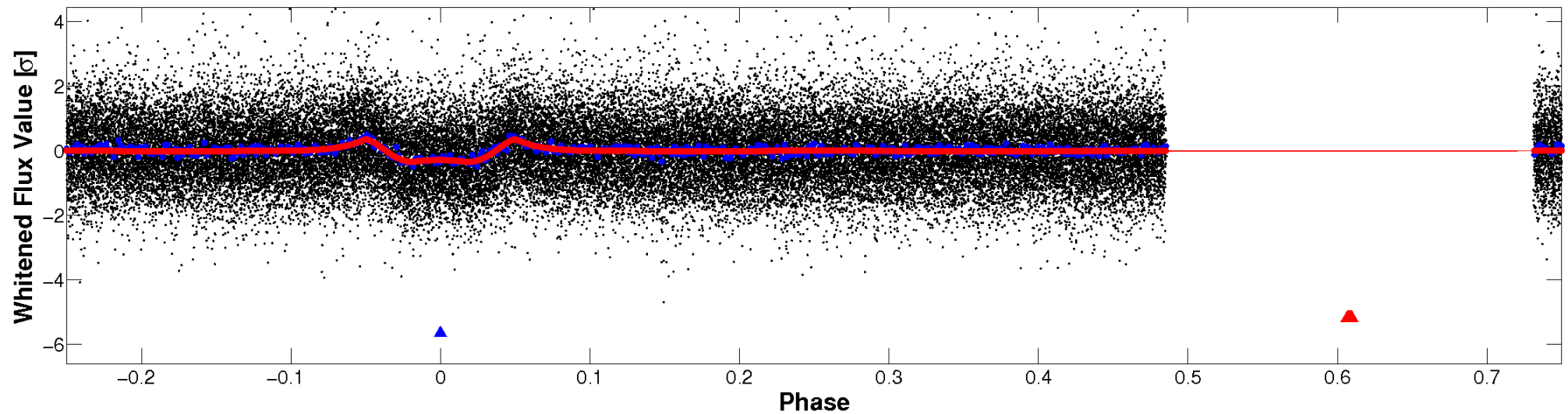


Non-Whitened Vs. Whitened Light Curve

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

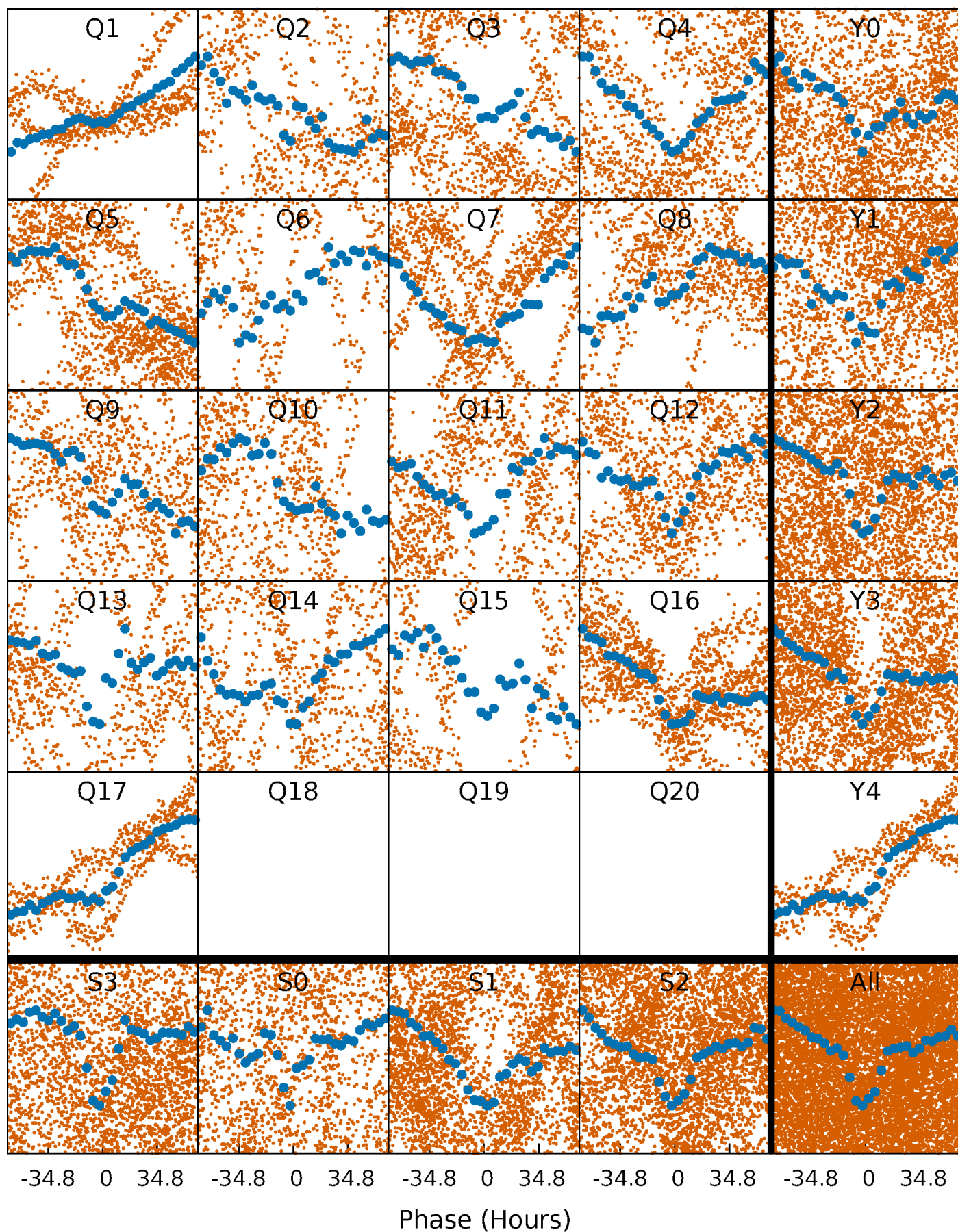


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



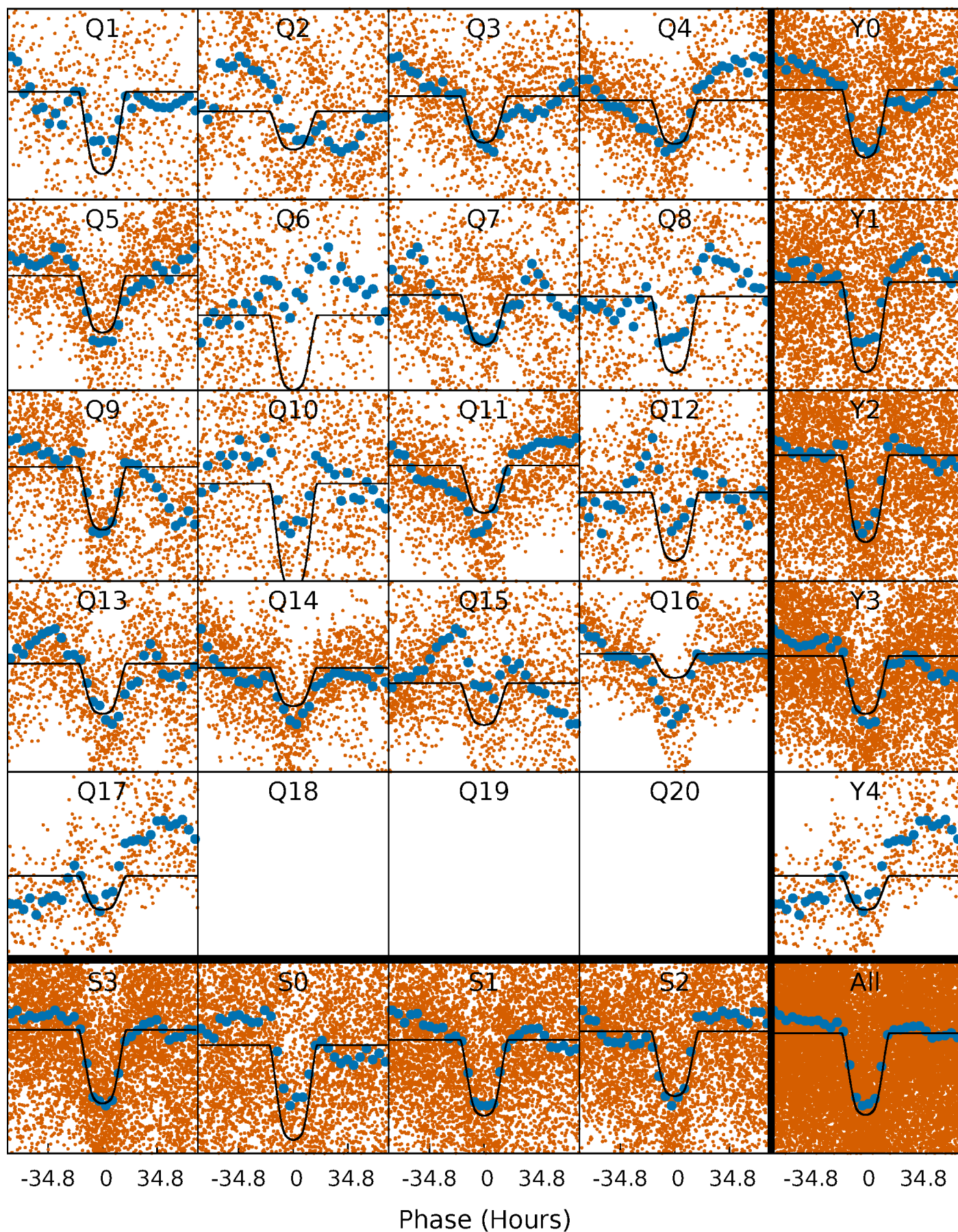
PDC Quarter-Phased Transit Curves

TCE 005385575-02 P= 12.425627 Days $T_0=133.964648$ (BKJD)



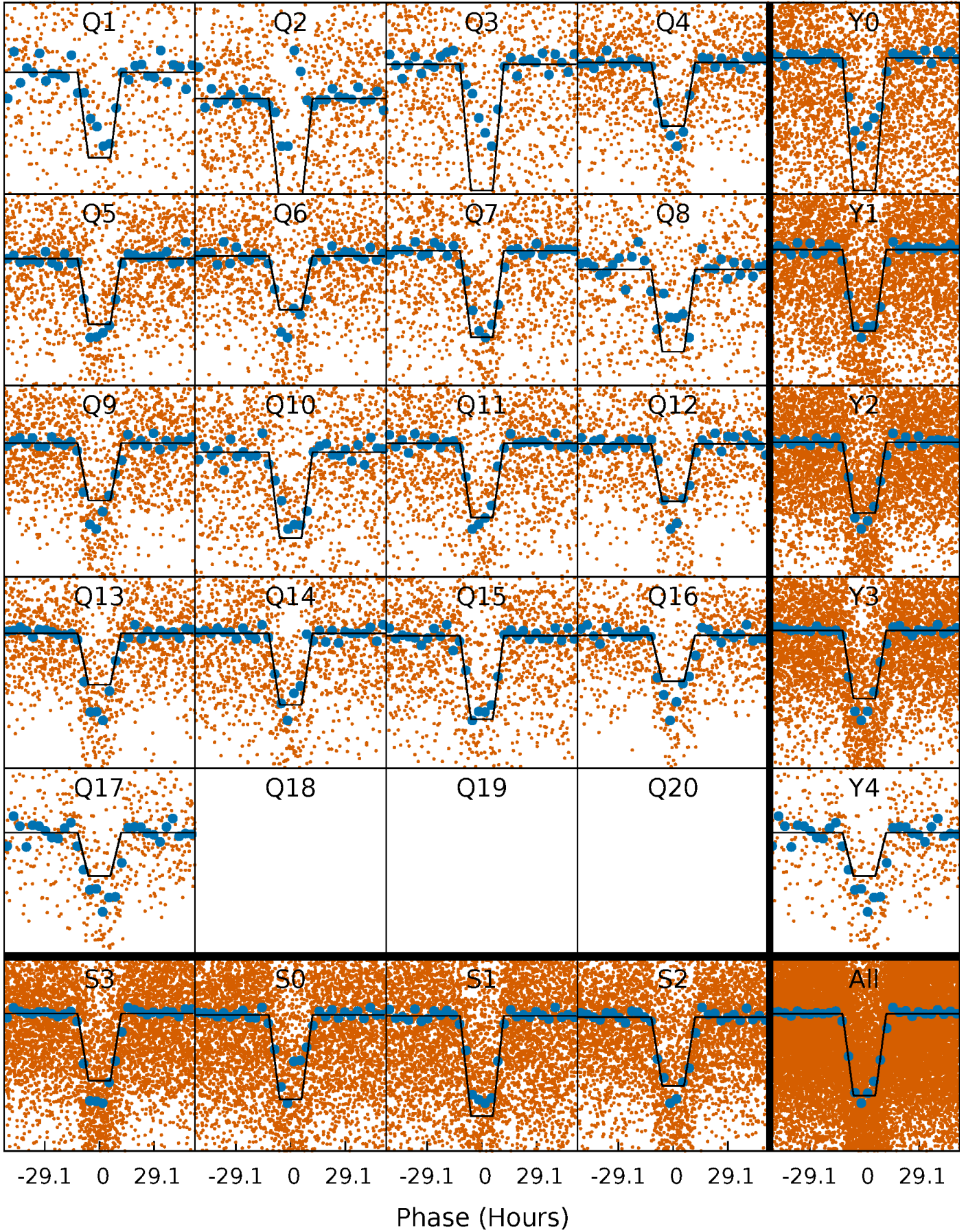
DV Quarter-Phased Transit Curves

TCE 005385575-02 P= 12.425627 Days $T_0=133.964648$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

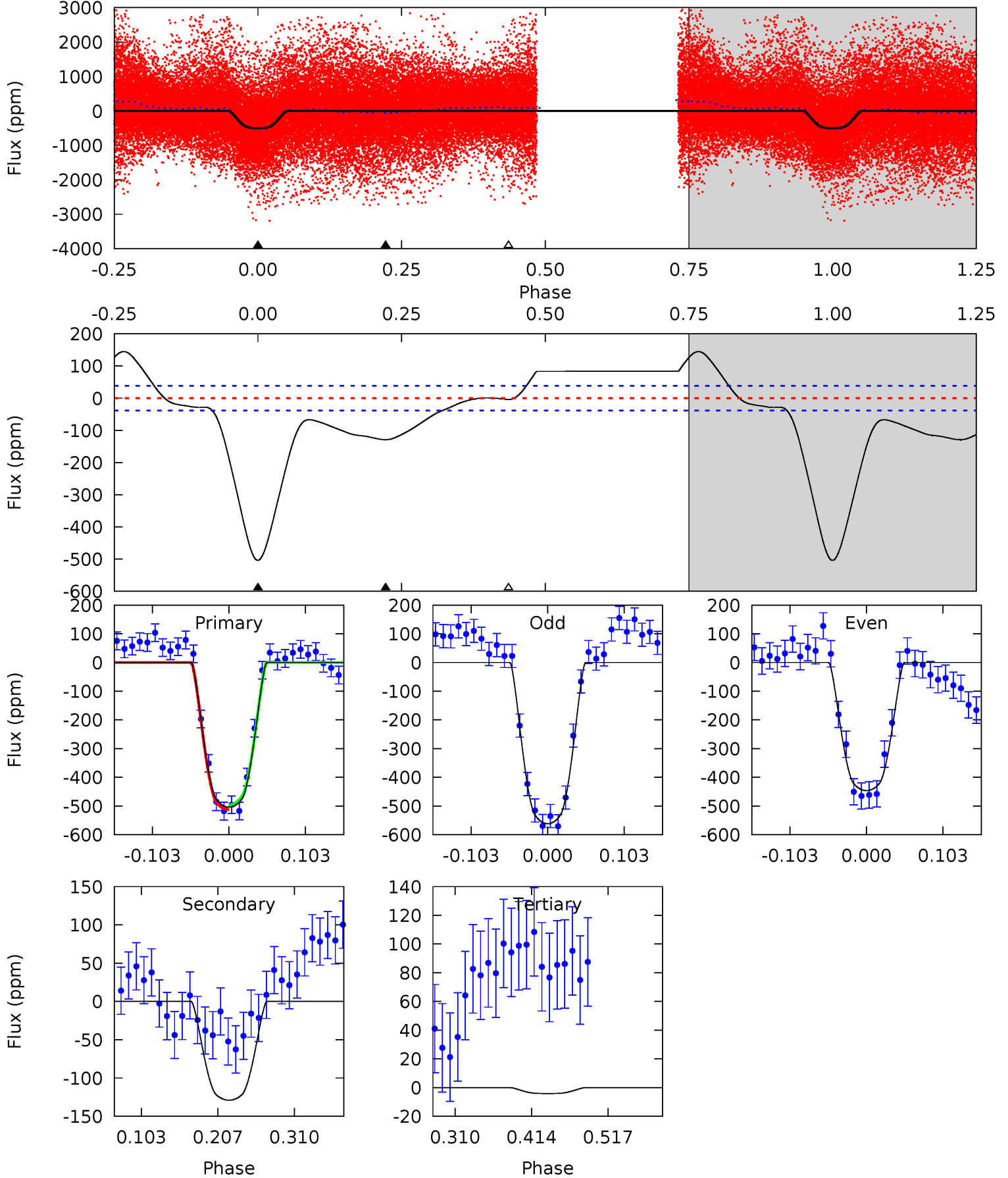
TCE 005385575-02 P= 12.424613 Days $T_0=134.002277$ (BKJD)



DV Model-Shift Uniqueness Test

005385575-02, P = 12.425627 Days, E = 121.539021 Days

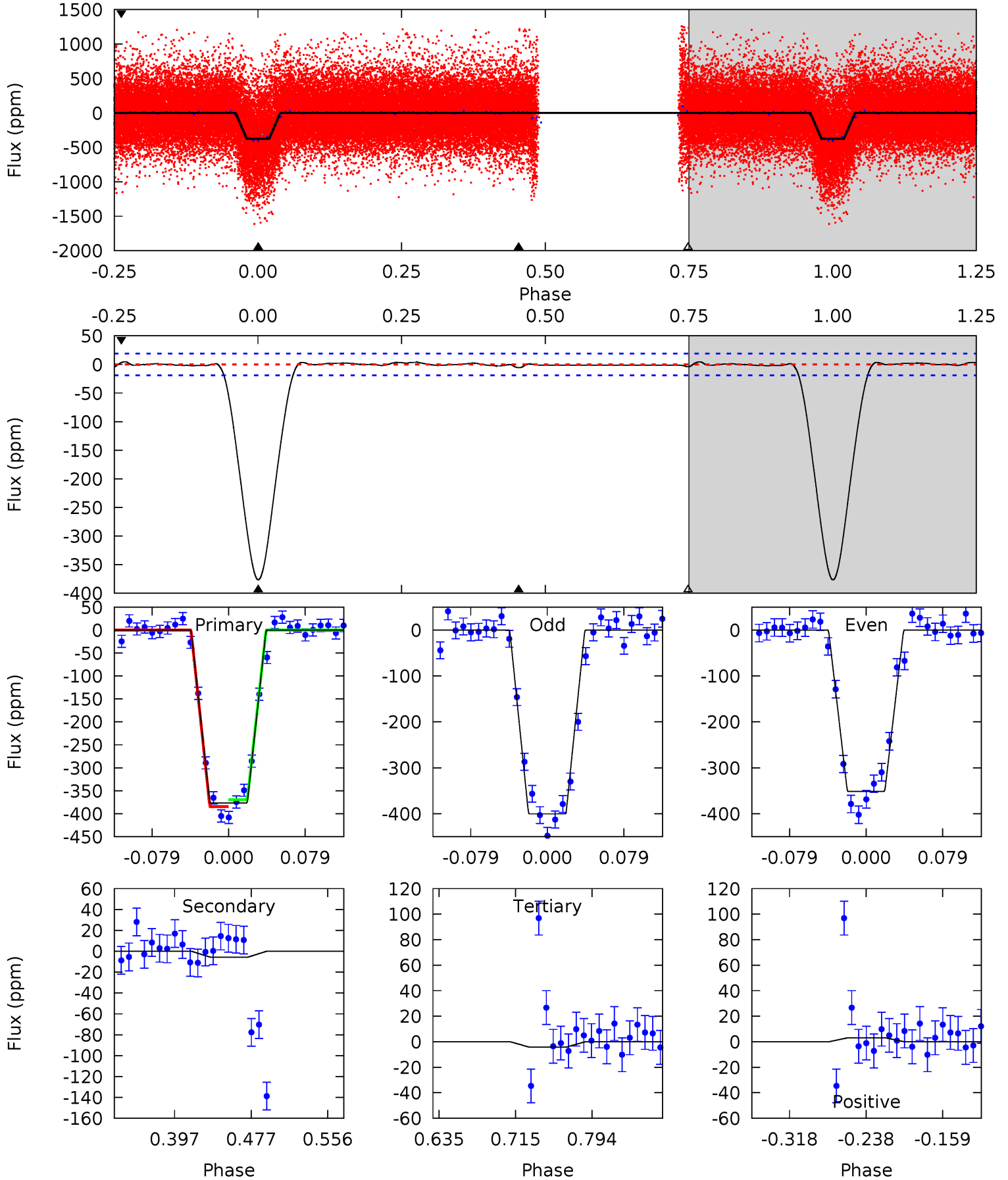
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
59.9	15.3	0.50	0	4.56	1.63	6.91	59.4	59.9	14.8	15.3	6.74	0.77	0.22	0.90



Alt Model-Shift Uniqueness Test

005385575-02, P = 12.424613 Days, E = 121.577664 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
91.6	1.38	1.02	0.75	4.61	1.75	0.43	90.6	90.9	0.36	0.63	5.91	0.93	0.01	1.90



Stellar Parameters For KIC 005385575

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4594^{+138}_{-138}	$4.580^{+0.042}_{-0.028}$	$0.300^{+0.150}_{-0.300}$	$0.743^{+0.031}_{-0.053}$	$0.765^{+0.039}_{-0.053}$	$2.626^{+0.515}_{-0.241}$
	+3%/-3%	+1%/-1%	+50%/-100%	+4%/-7%	+5%/-7%	+20%/-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 005385575-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-129 ± 8	$2.43^{+0.10}_{-0.11}$	785^{+27}_{-26}	3288^{+91}_{-91}	112^{+10}_{-11}
Alt.	-6 ± 4	$1.53^{+0.08}_{-0.08}$	785^{+26}_{-26}	2447^{+181}_{-335}	13^{+10}_{-9}

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

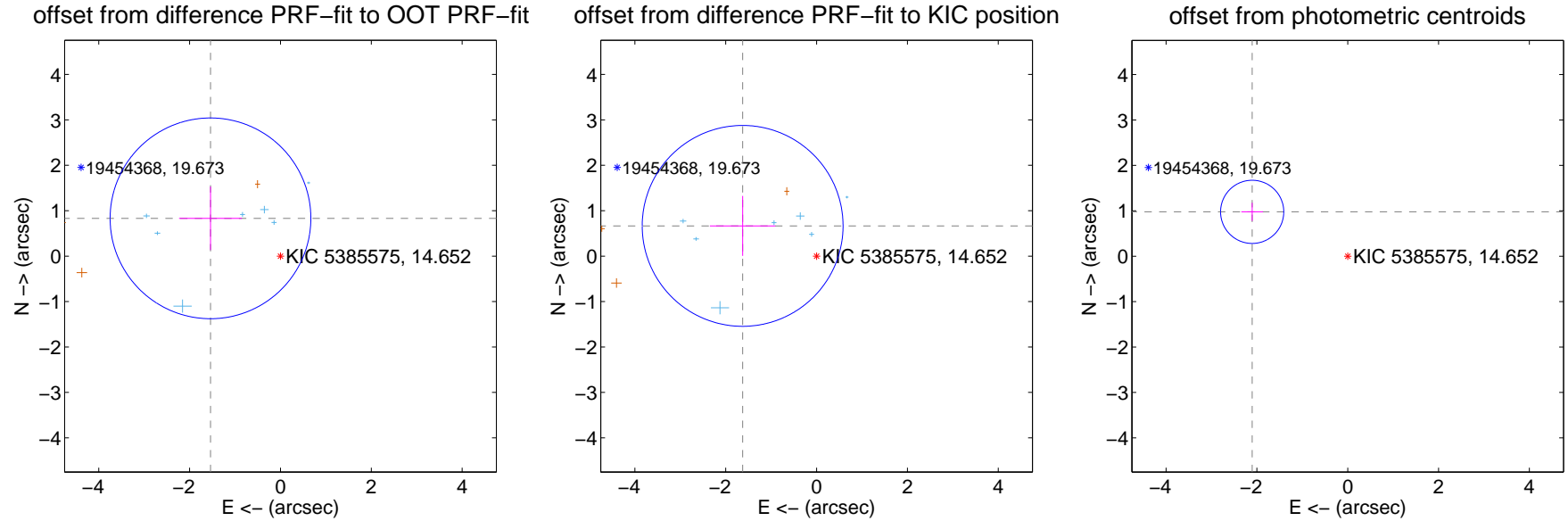
DV Centroid Data

Supplemental centroid analysis for 005385575-02. Kepler magnitude: 14.65. Transit SNR 23.98

There are 7 quarters with good PRF difference image offsets

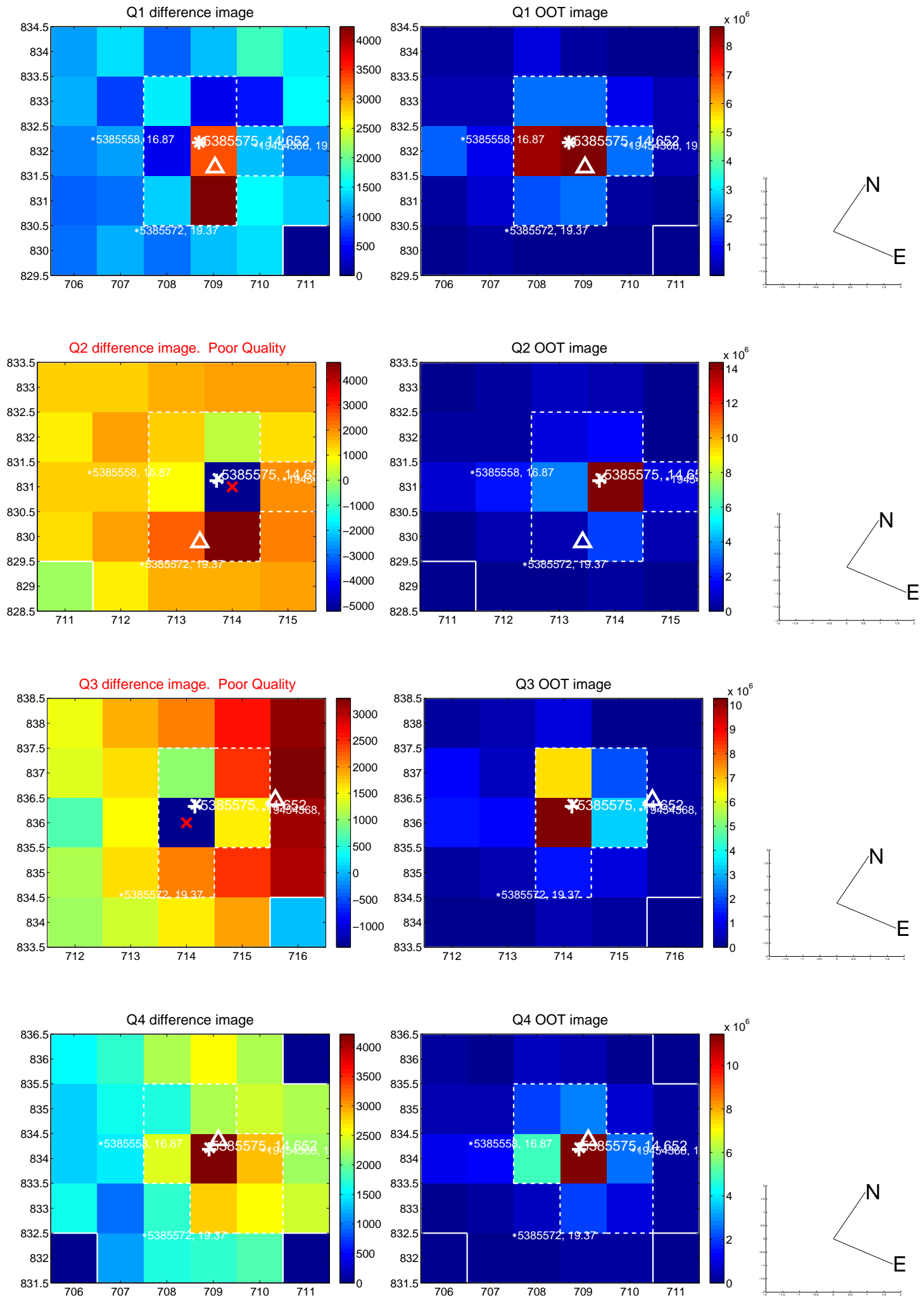
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.751 ± 0.737	2.38	1.541 ± 0.692	0.832 ± 0.699
PRF-fit source offset from KIC position	1.759 ± 0.737	2.39	1.628 ± 0.721	0.666 ± 0.660
photometric centroid source offset	2.32 ± 0.23	10.00	2.10 ± 0.24	0.98 ± 0.20

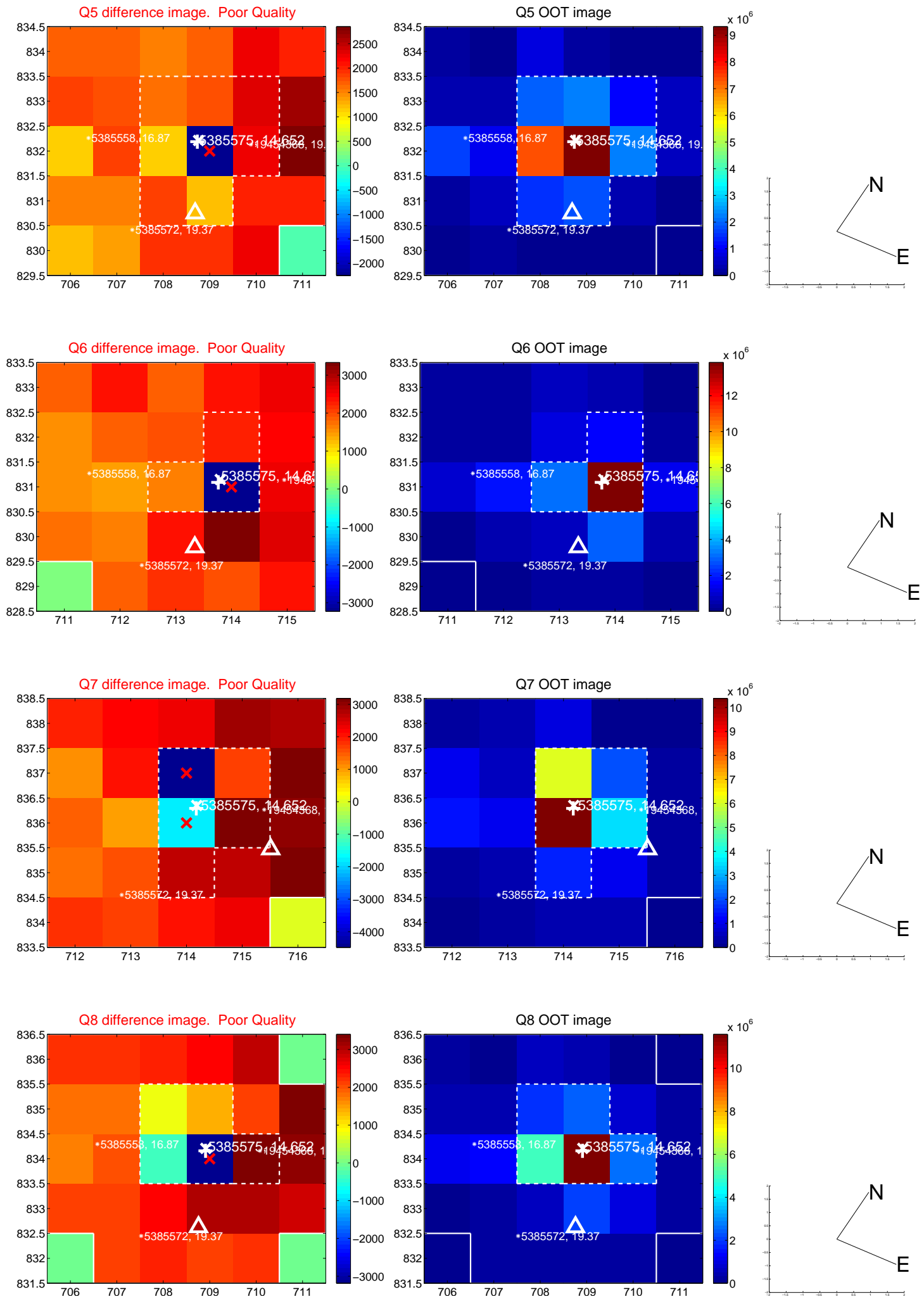


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

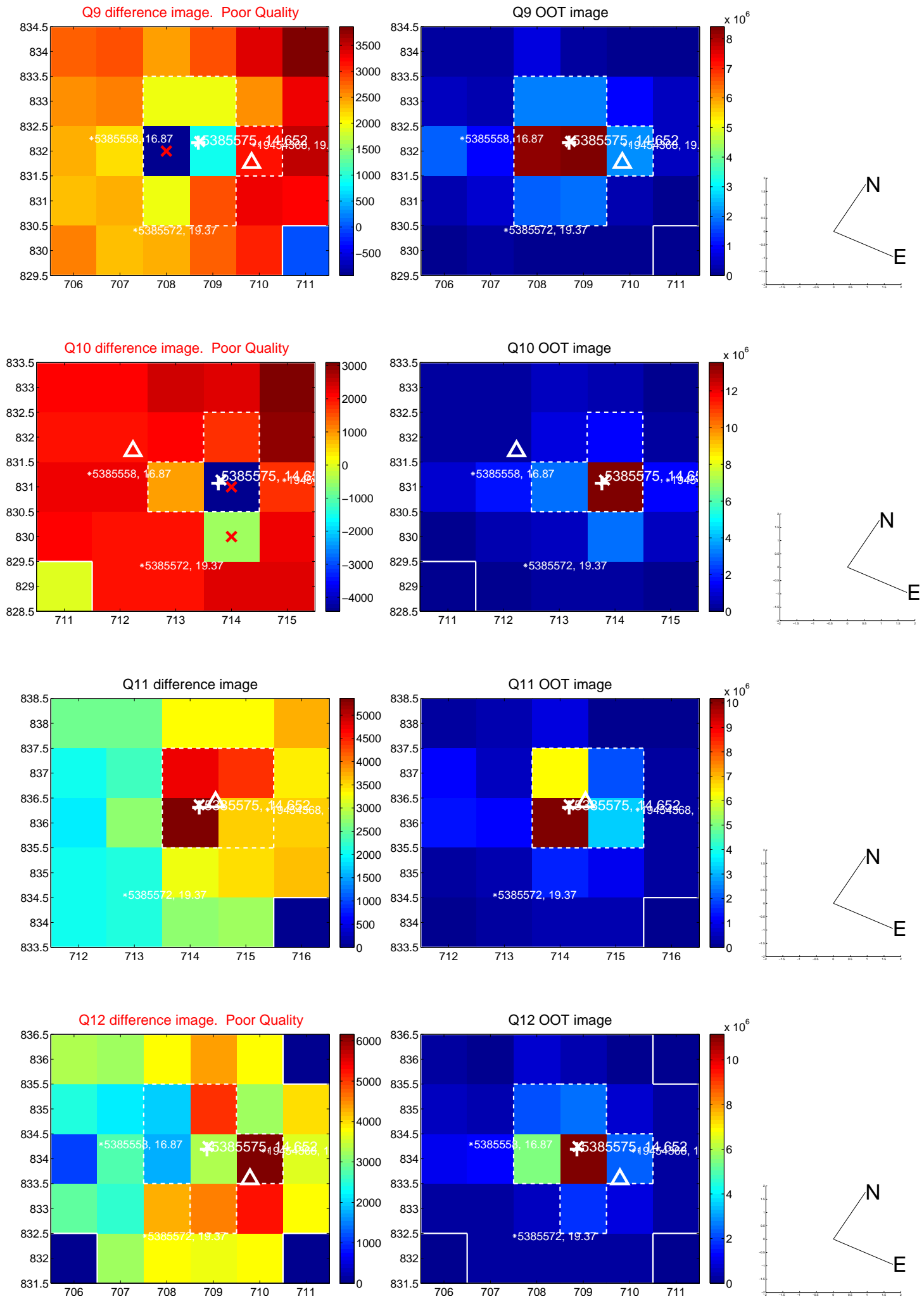
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



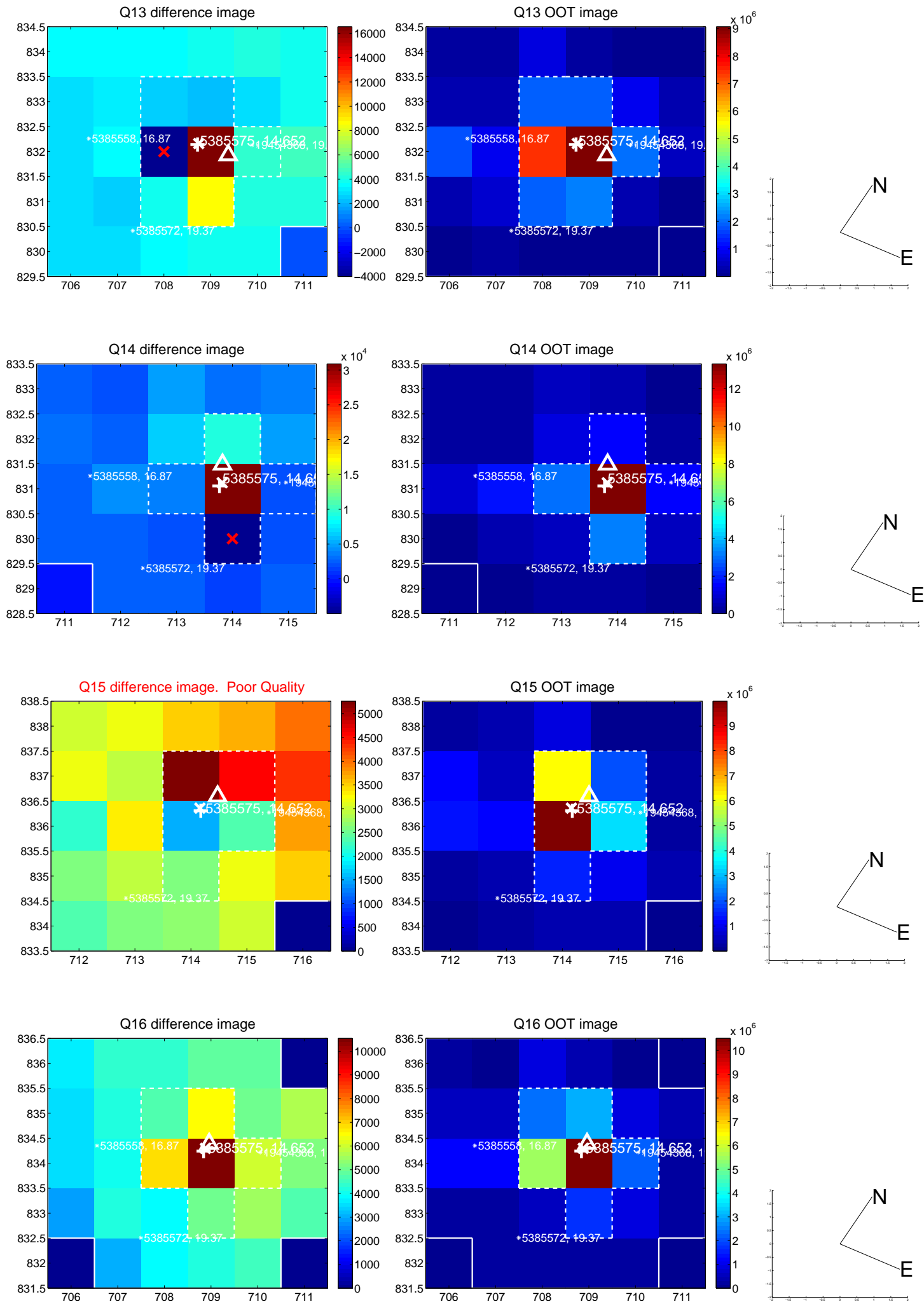
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

