

KIC 005385667

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})
005385667-01	OBS	6573.01	12.426307	141.484971	64.6	22.532	10.7	14.3	1.43	5948	1.48	215.06
005385667-02	OBS	No	6.212042	134.108431	40.2	24.747	9.6	10.4	1.43	5948	1.20	542.03

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005385667-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
005385667-02	OBS	FP	0.00	1	0	1	1	LPP_DV—SAME_NTL_PERIOD—CENT_FEW_DIFFS—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.

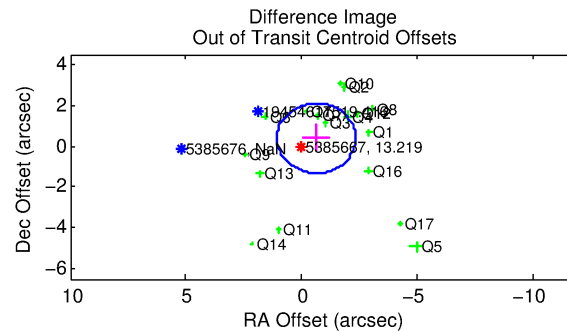
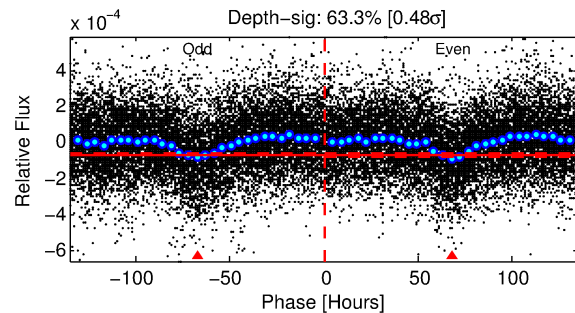
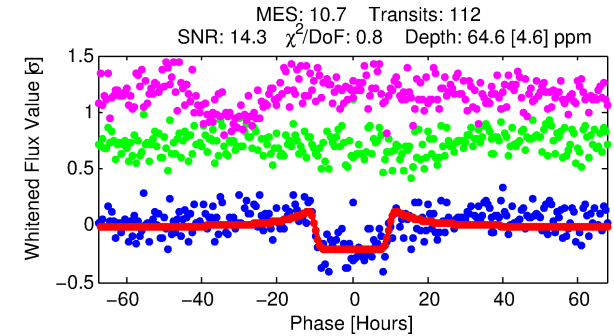
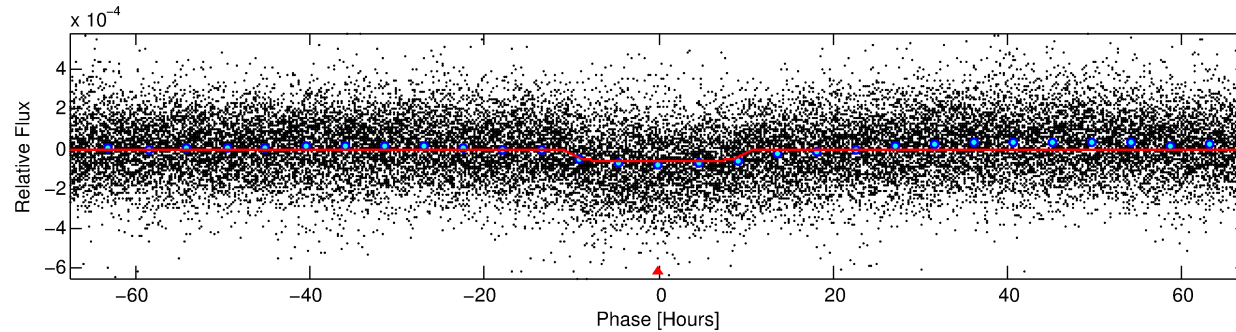
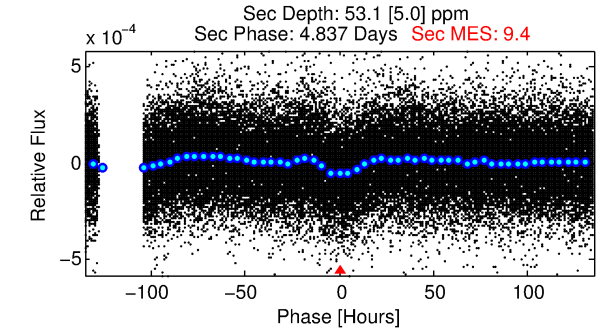
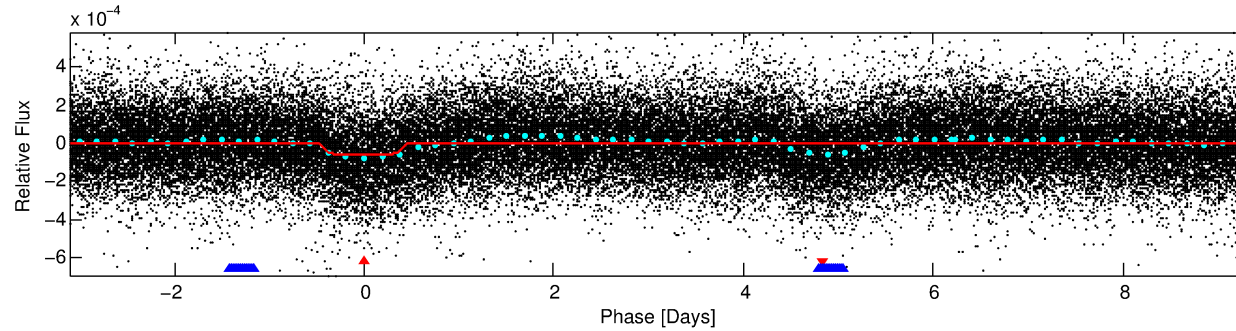
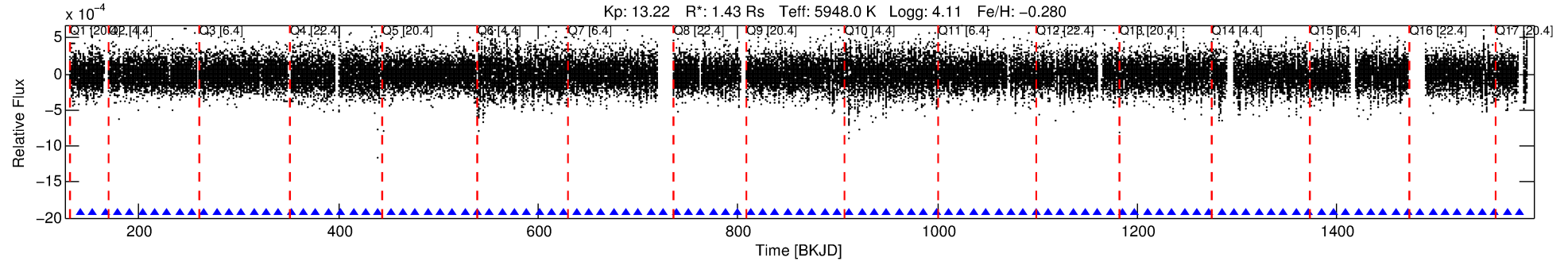
Ephemeris Match Information For 005385667-01

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
005385667-01	5385667	V380-Cyg-pri	5385723	1:1	247.5	-49	-38	5.77	13.22	2229.70	Direct-PRF	0	1.68	1.70

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: 5385667 Candidate: 1 of 2 Period: 12.426 d
KOI: K06573.01 Corr: 0.987



DV Fit Results:

Period = 12.42631 [0.00029] d
Epoch = 141.4850 [0.0187] BKJD
Rp/R* = 0.0095 [0.0005]
a/R* = 1.60 [0.17]
b = 0.96 [0.01]
Seff = 215.06 [127.68]
Teq = 976 [145] K
Rp = 1.48 [0.50] Re
a = 0.1034 [0.0361] AU
Ag = 142.23 [85.00] [1.66σ]
Teffp = 5214 [238] K [15.22σ]

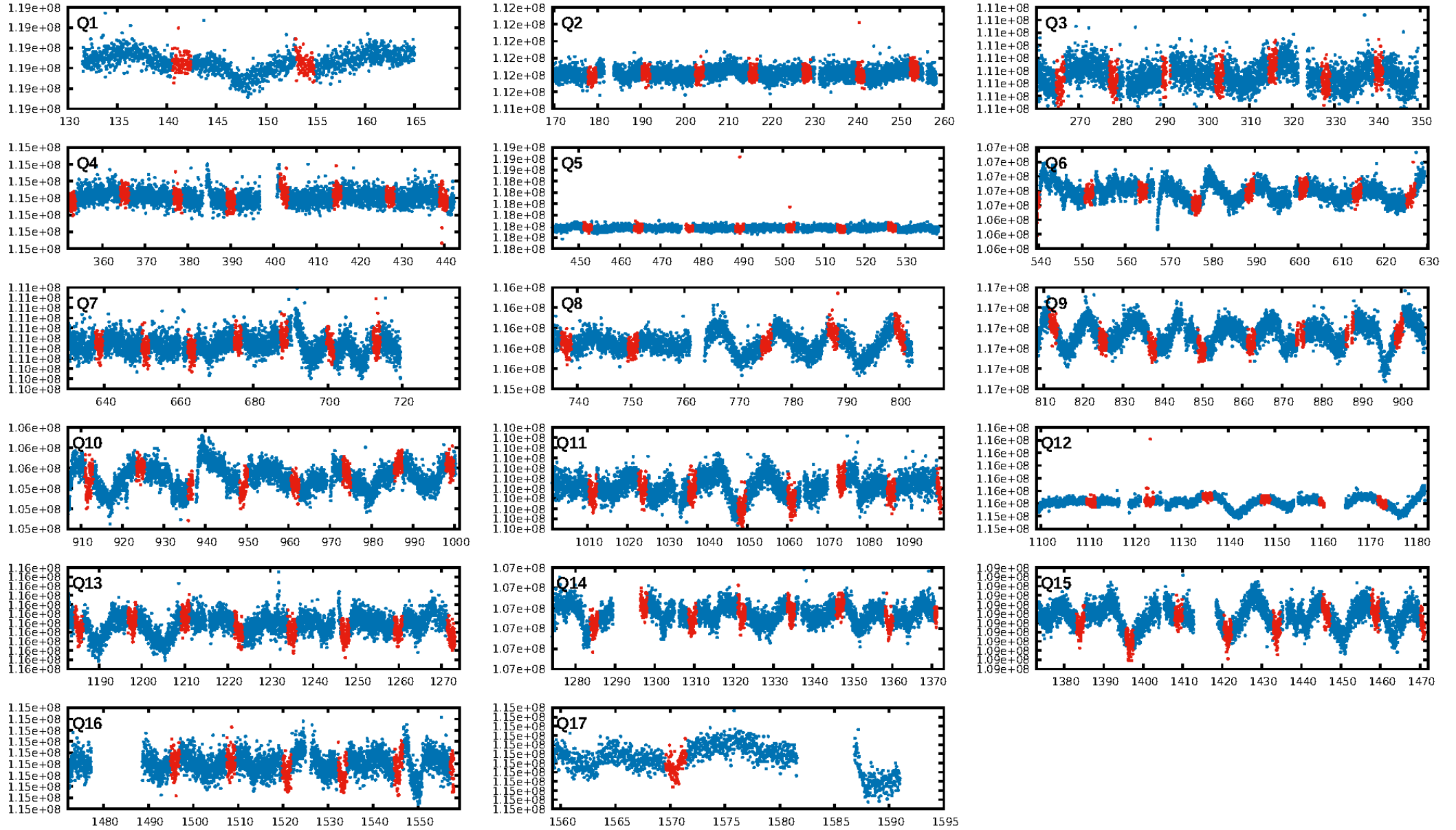
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.46σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 1.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.60e-27
RollingBand-fgt: 1.00 [109/109]
GhostDiagnostic-chr: 0.05185
Centroid-sig: 0.2%
Centroid-so: 1.796 arcsec [2.54σ]
OotOffset-rm: 0.746 arcsec [1.31σ]
KicOffset-rm: 0.752 arcsec [1.20σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.47 [8/17]
DiffImageOverlap-fno: 0.00 [0/17]

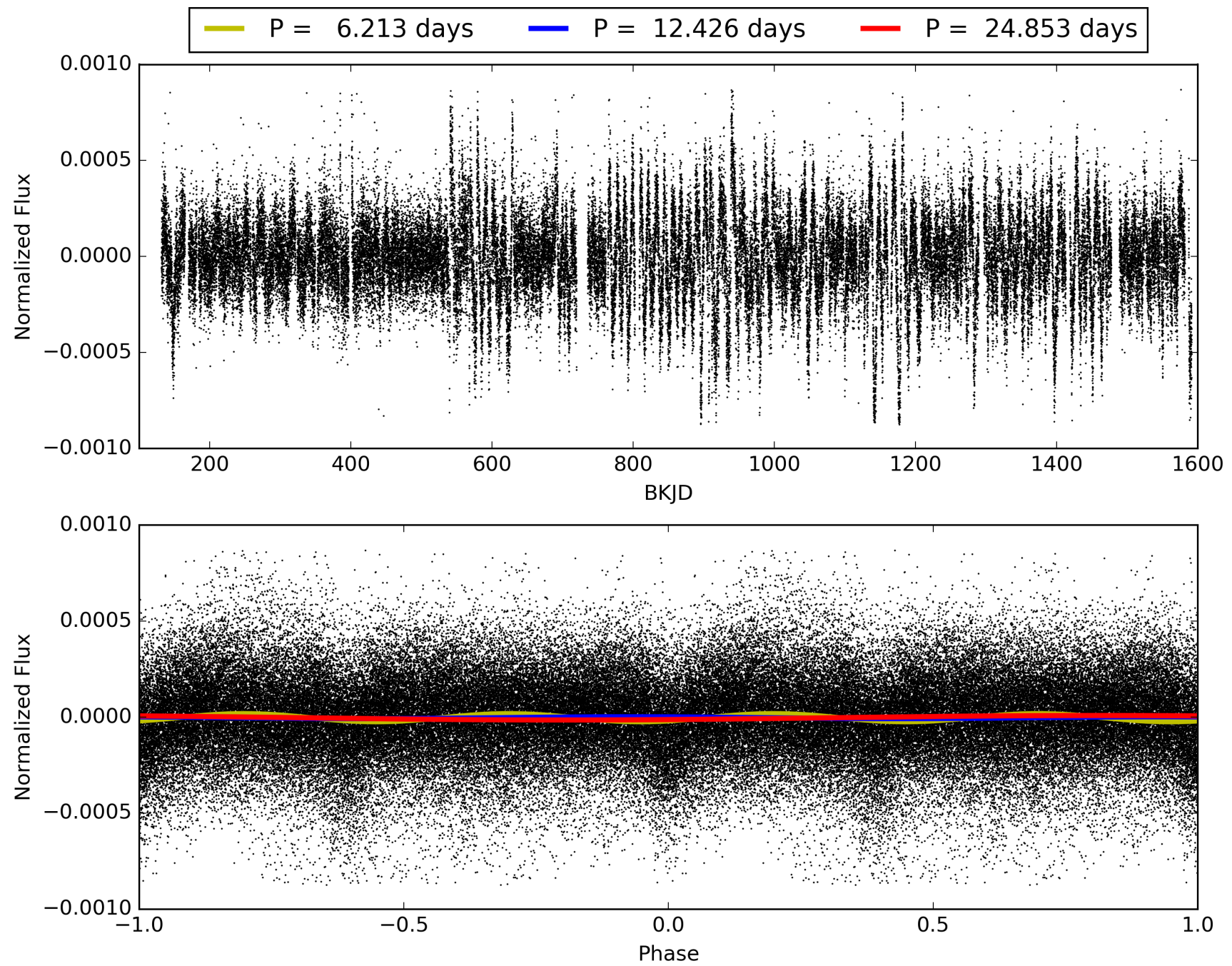
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:19:44 Z

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

TCE 005385667-01, PDC Light Curves

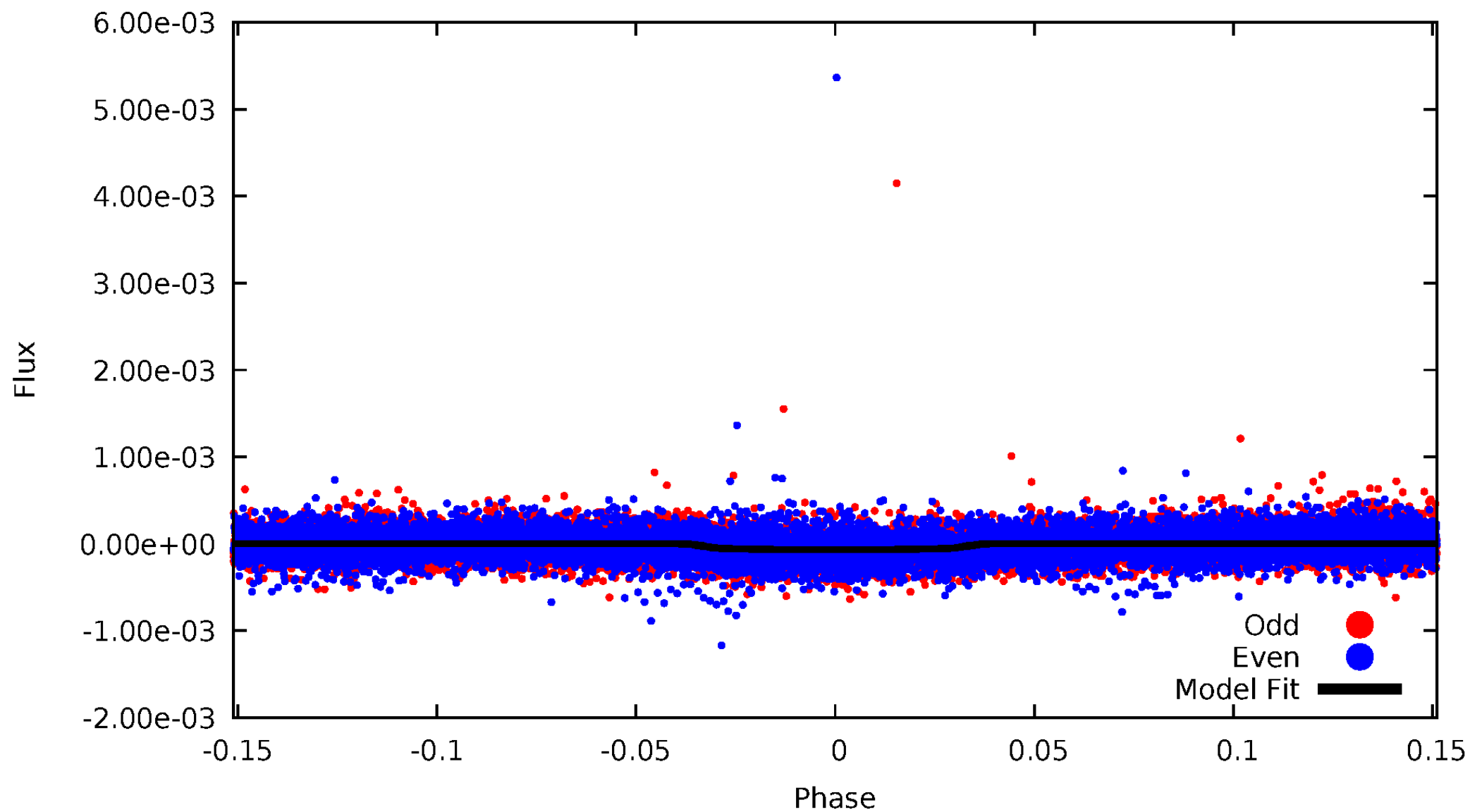


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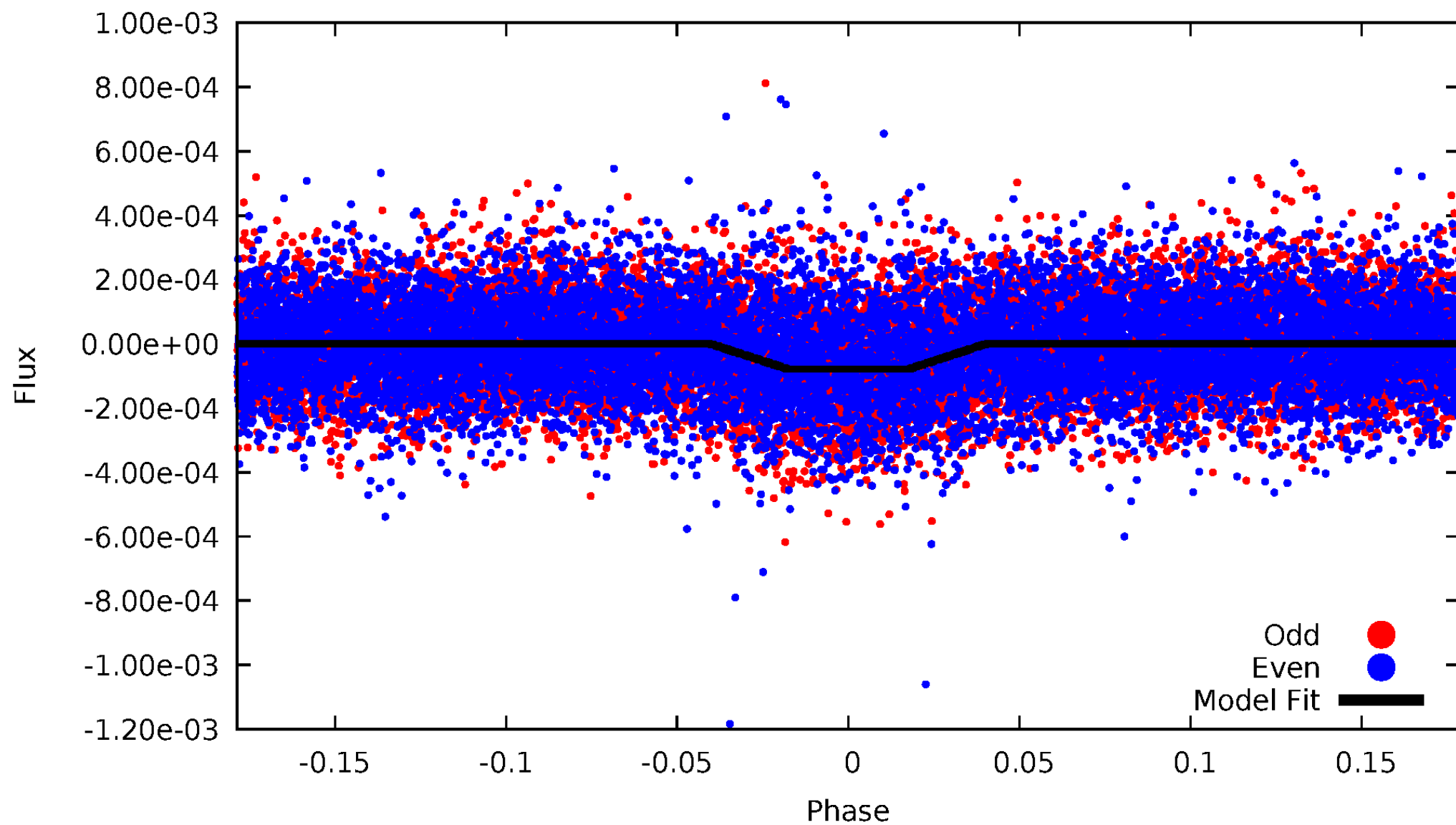
DV Odd/Even

TCE 005385667-01

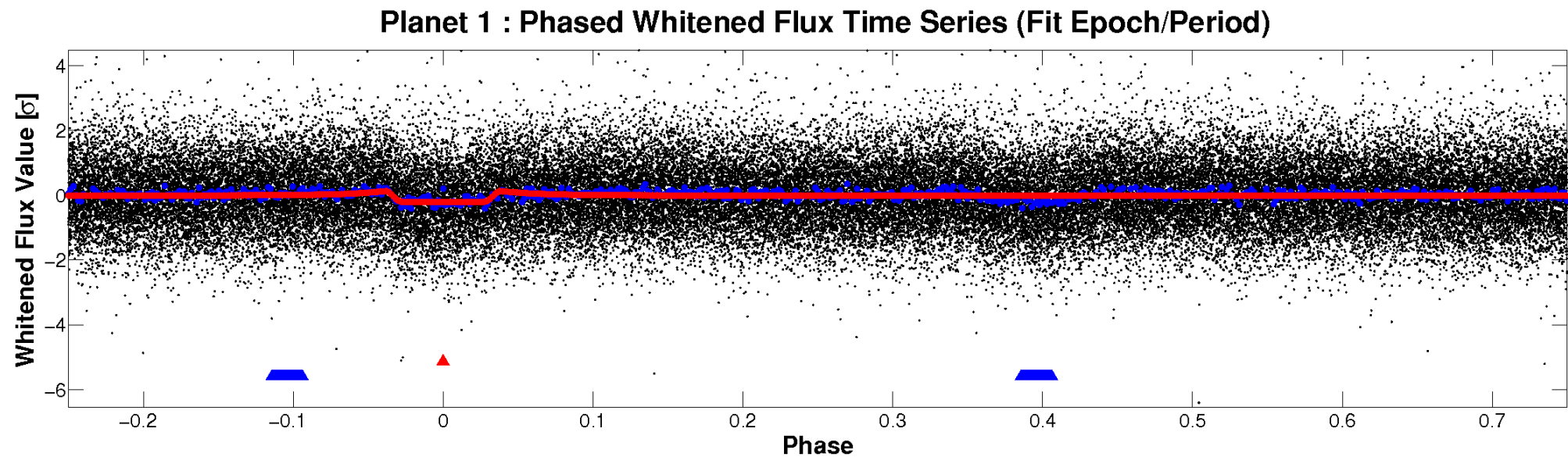
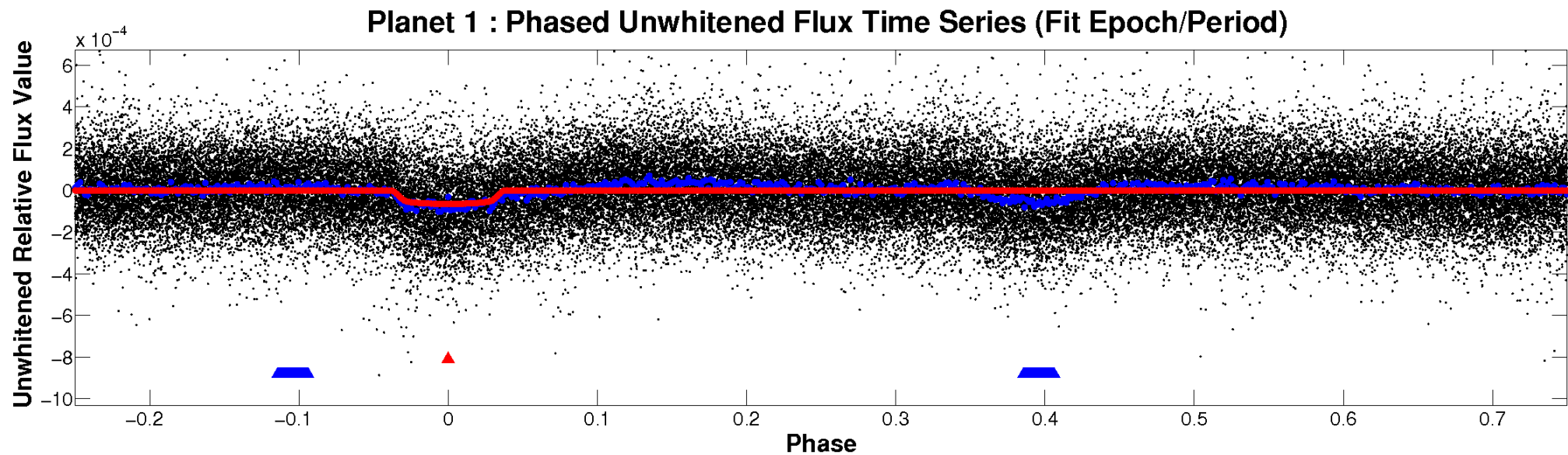


ALT Odd/Even

TCE 005385667-01

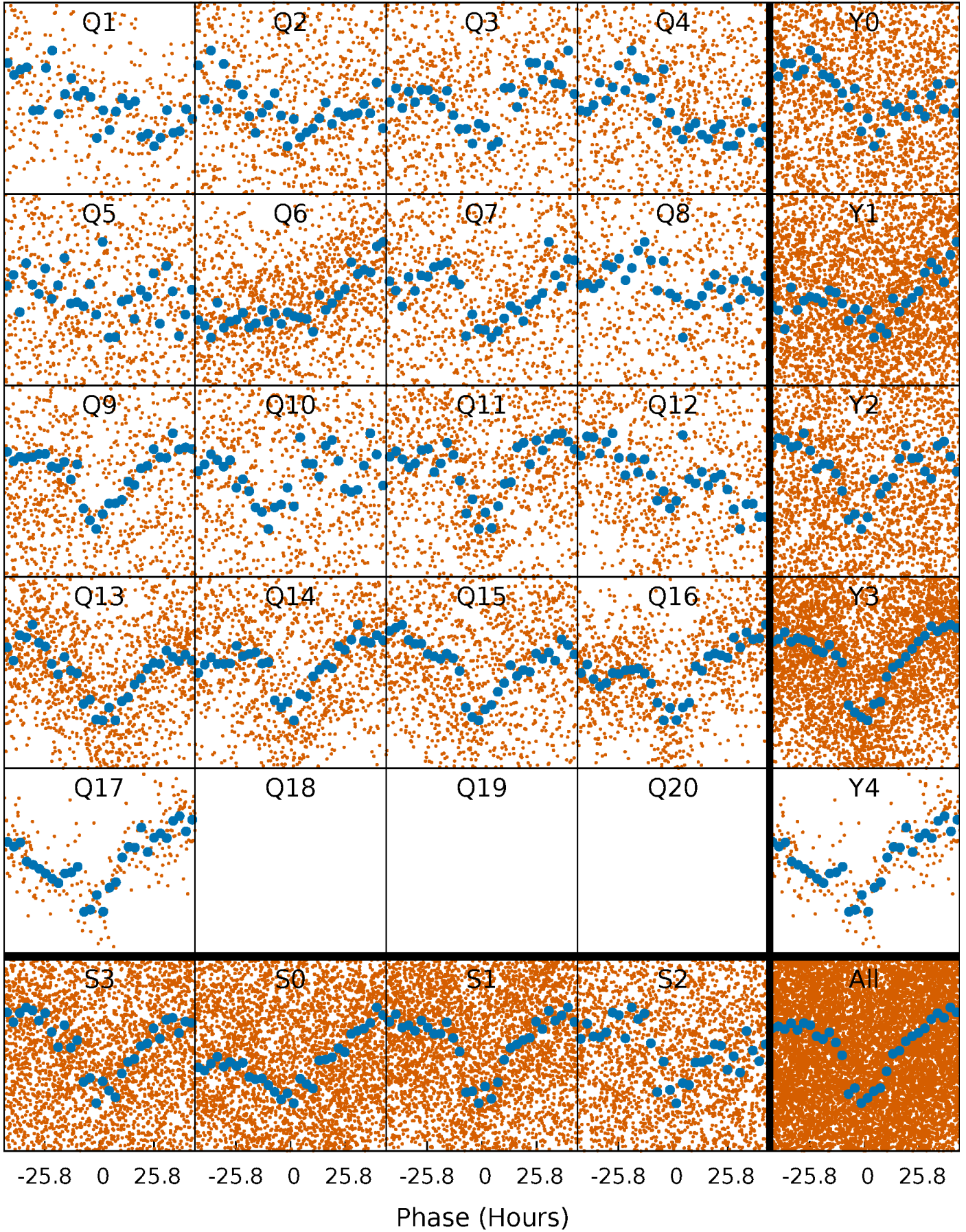


Non-Whitened Vs. Whitened Light Curve



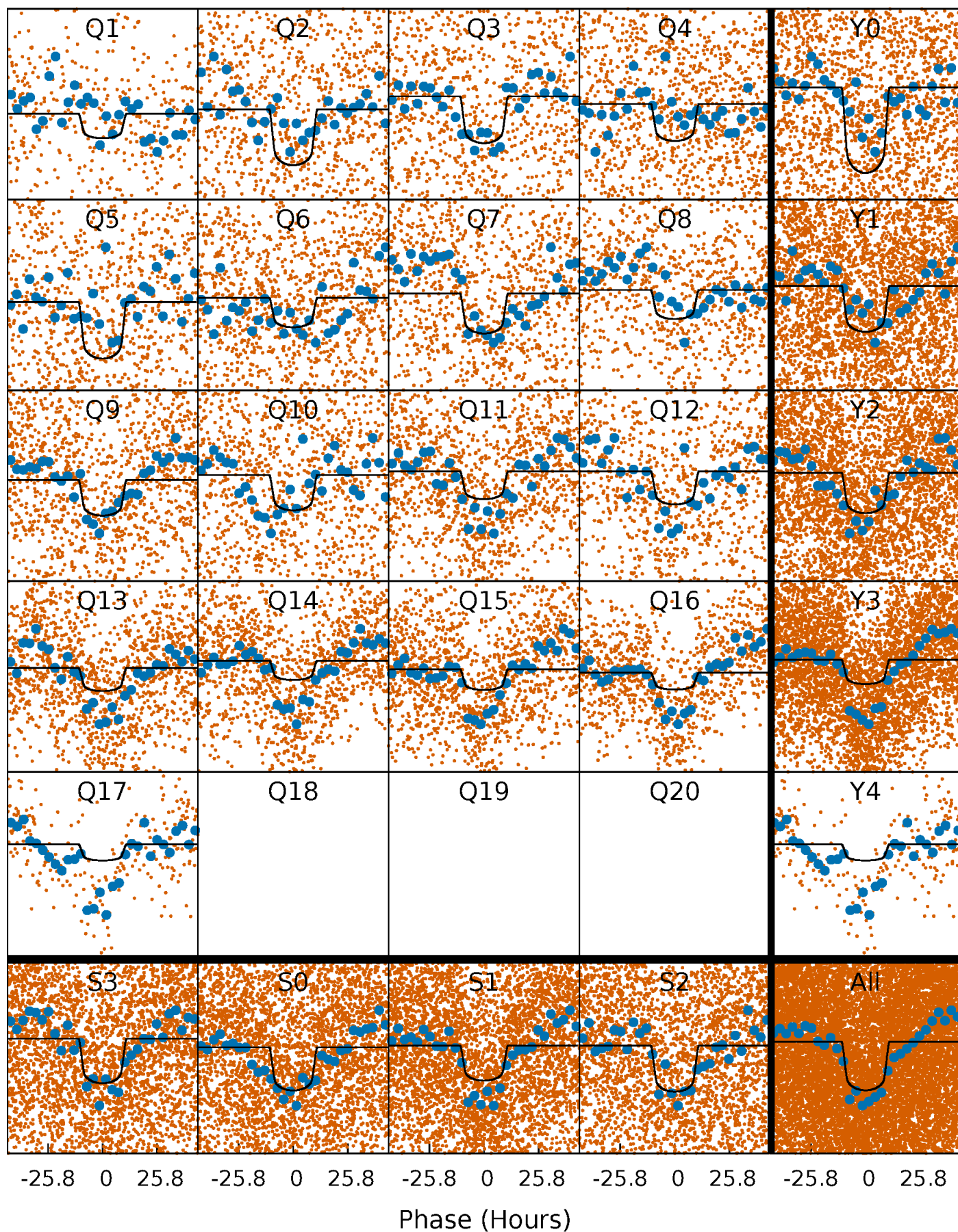
PDC Quarter-Phased Transit Curves

TCE 005385667-01 P= 12.426307 Days $T_0=141.484971$ (BKJD)



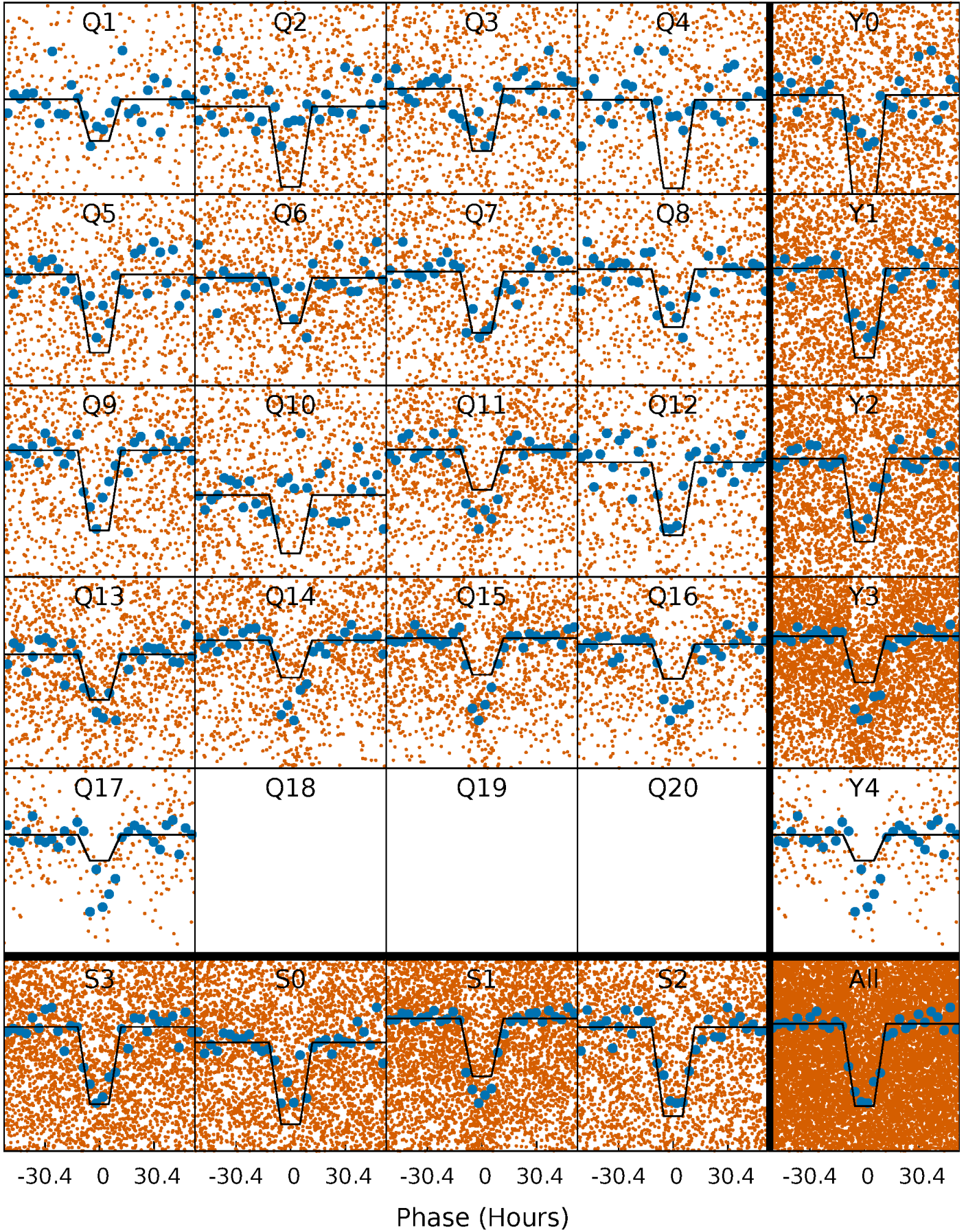
DV Quarter-Phased Transit Curves

TCE 005385667-01 P= 12.426307 Days $T_0=141.484971$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

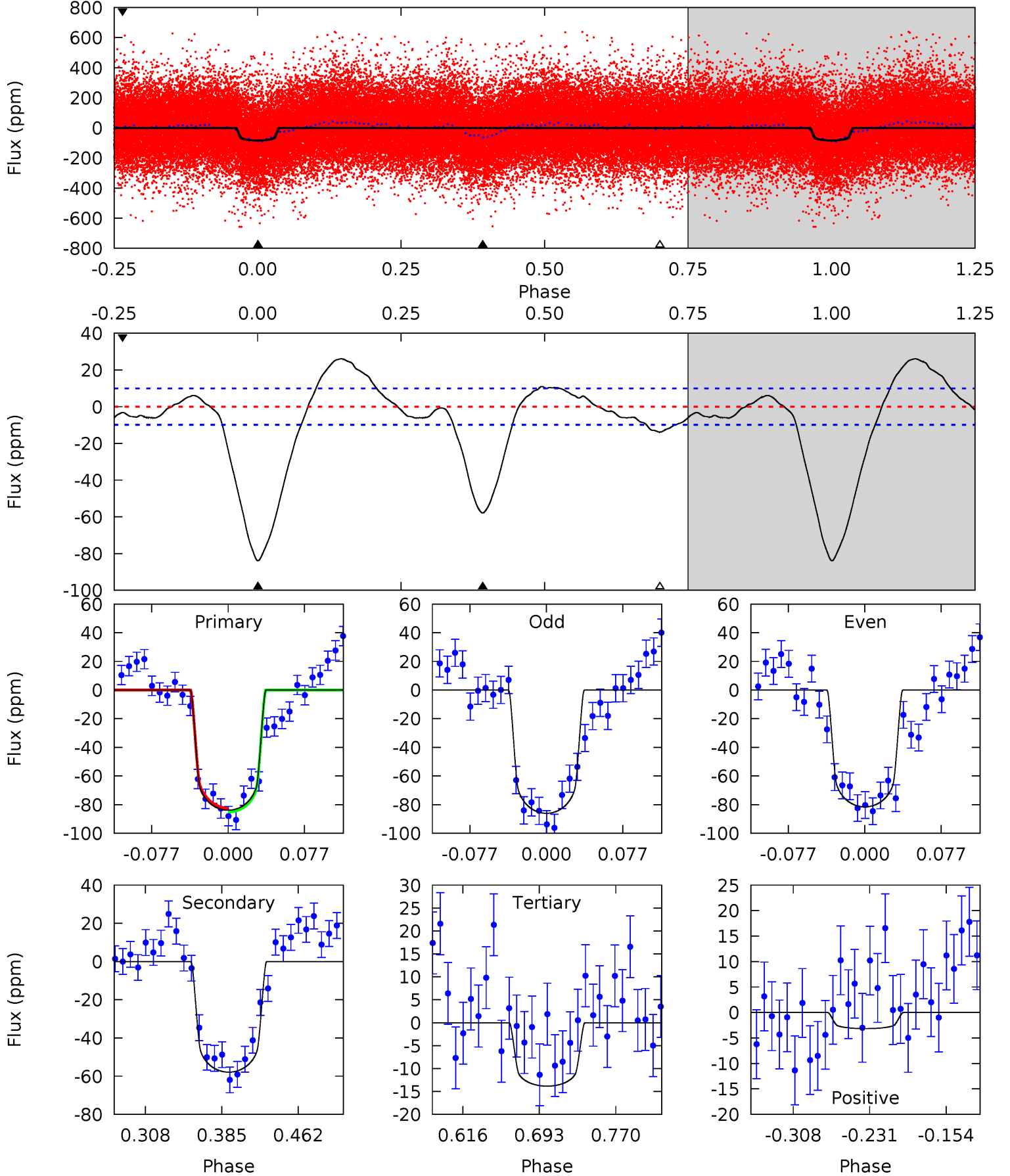
TCE 005385667-01 P= 12.424613 Days $T_0=141.601513$ (BKJD)



DV Model-Shift Uniqueness Test

005385667-01, P = 12.426307 Days, E = 129.058664 Days

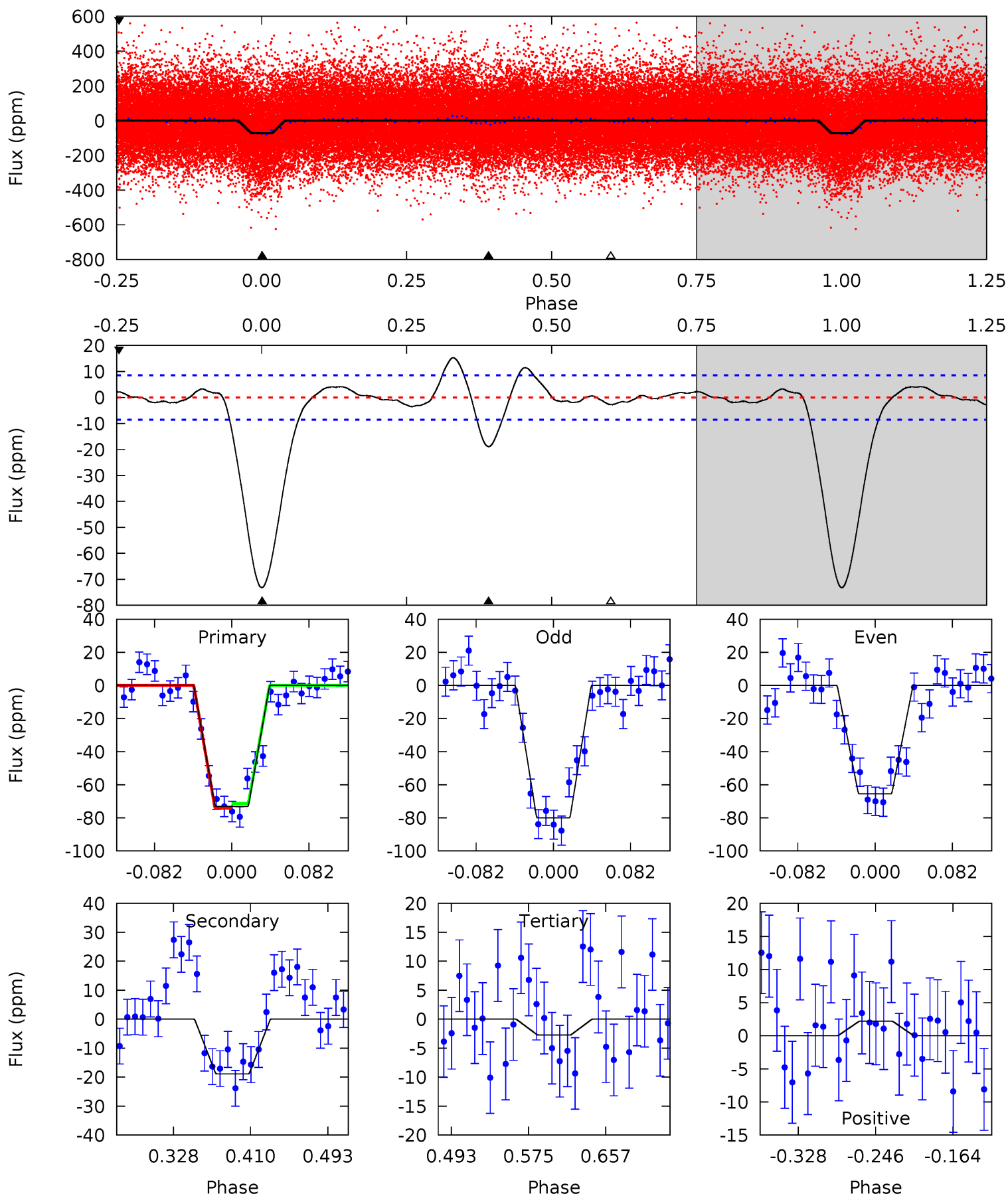
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
39.1	27.0	6.45	-1.48	4.62	1.77	4.61	32.7	40.6	20.5	28.5	1.05	1.07	0.24	0.56



Alt Model-Shift Uniqueness Test

005385667-01, P = 12.424613 Days, E = 129.176900 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
39.5	10.2	1.47	1.18	4.61	1.74	1.15	38.0	38.3	8.72	9.00	3.92	1.18	0.17	0.82



Stellar Parameters For KIC 005385667

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5948^{+161}_{-178}	$4.106^{+0.350}_{-0.150}$	$-0.280^{+0.300}_{-0.300}$	$1.432^{+0.391}_{-0.478}$	$0.957^{+0.141}_{-0.115}$	$0.459^{+1.069}_{-0.223}$
	+3%/-3%	+9%/-4%	+107%/-107%	+27%/-33%	+15%/-12%	+233%/-49%
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 005385667-01 / KOI 6573.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-58 ± 2	$1.45^{+0.24}_{-0.28}$	1338^{+114}_{-129}	5358^{+190}_{-200}	163^{+87}_{-42}
Alt.	-19 ± 2	$1.35^{+0.25}_{-0.28}$	1339^{+113}_{-139}	4372^{+167}_{-158}	62^{+32}_{-18}

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

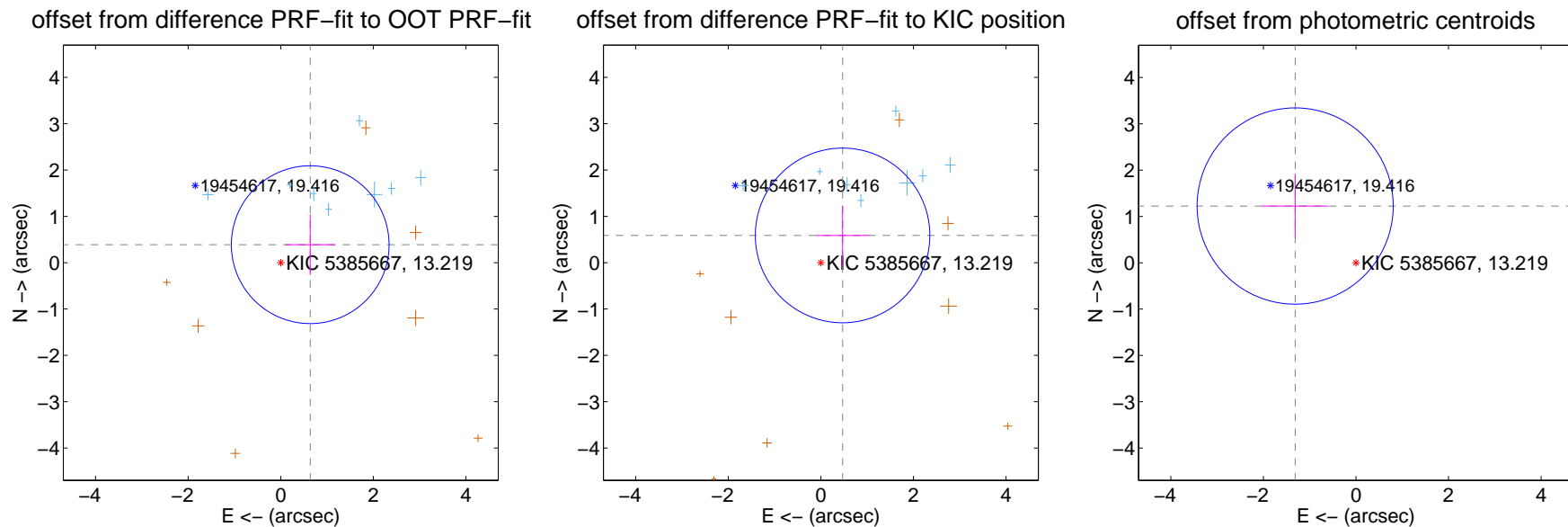
DV Centroid Data

Supplemental centroid analysis for 005385667-01. Kepler magnitude: 13.22. Transit SNR 14.26

There are 8 quarters with good PRF difference image offsets

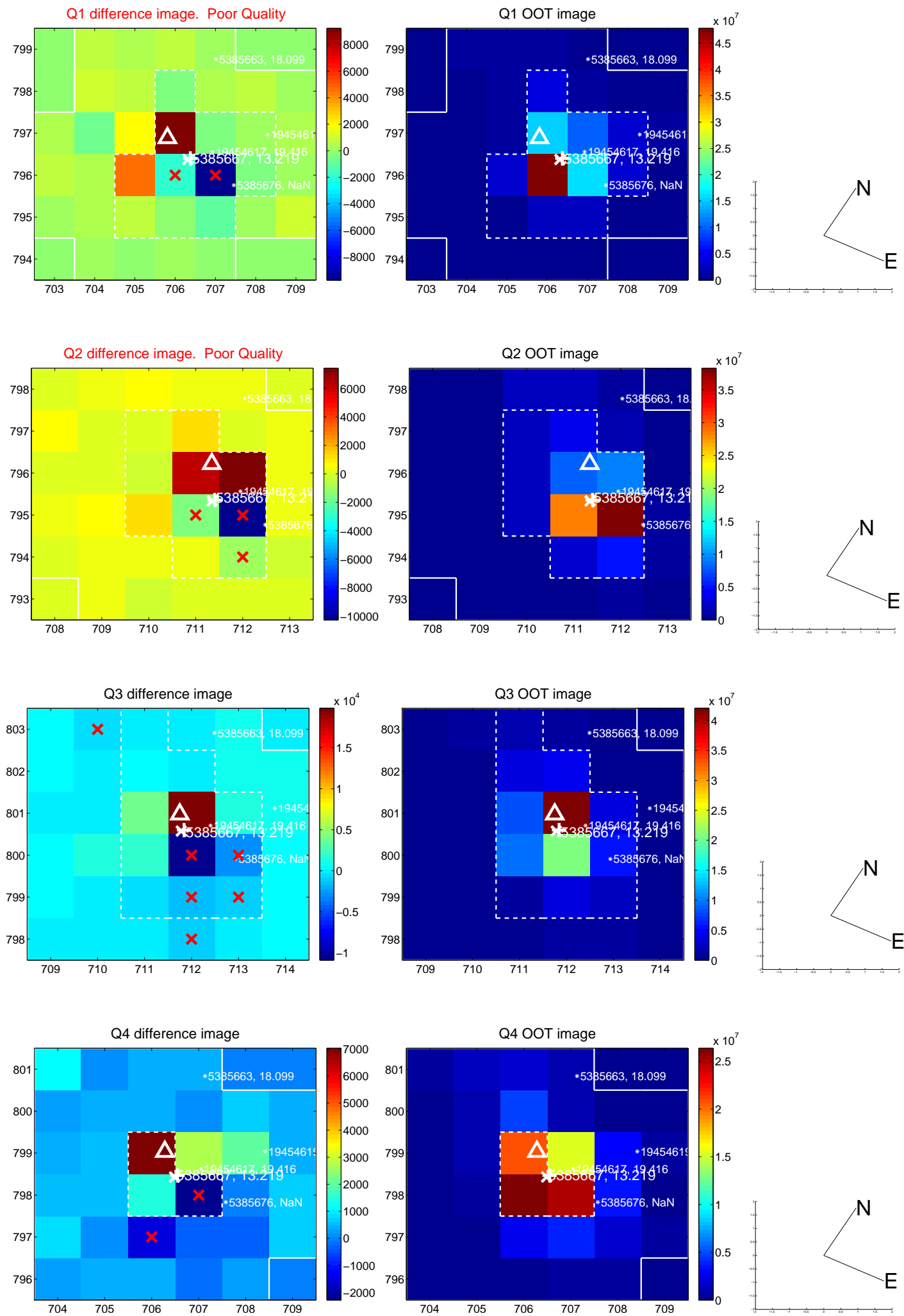
The direct PRF centroid is offset from the target star catalog position by about 0.34 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.746 ± 0.568	1.31	-0.637 ± 0.538	0.389 ± 0.655
PRF-fit source offset from KIC position	0.752 ± 0.628	1.20	-0.469 ± 0.569	0.588 ± 0.642
photometric centroid source offset	1.80 ± 0.71	2.54	1.31 ± 0.72	1.22 ± 0.69

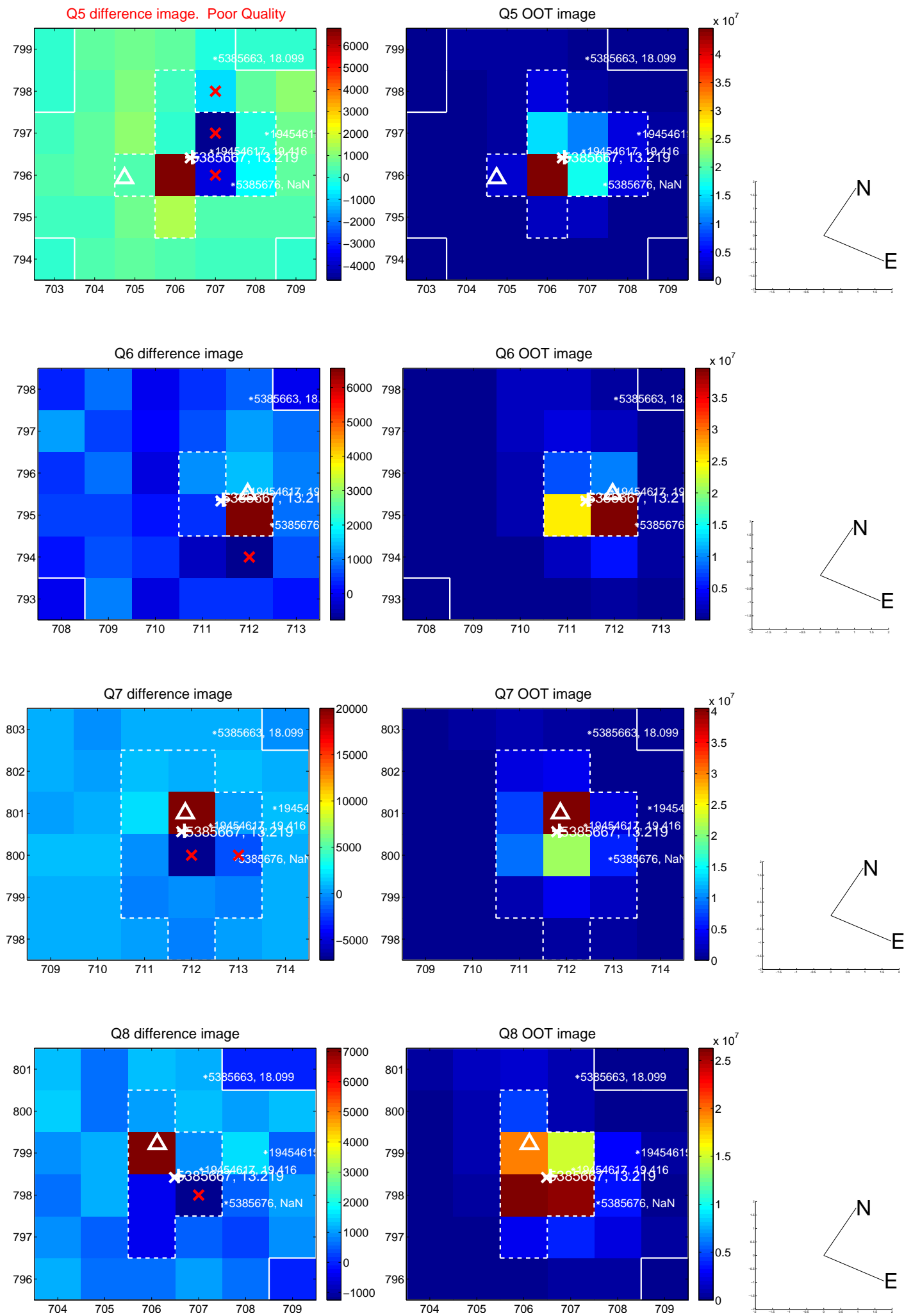


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

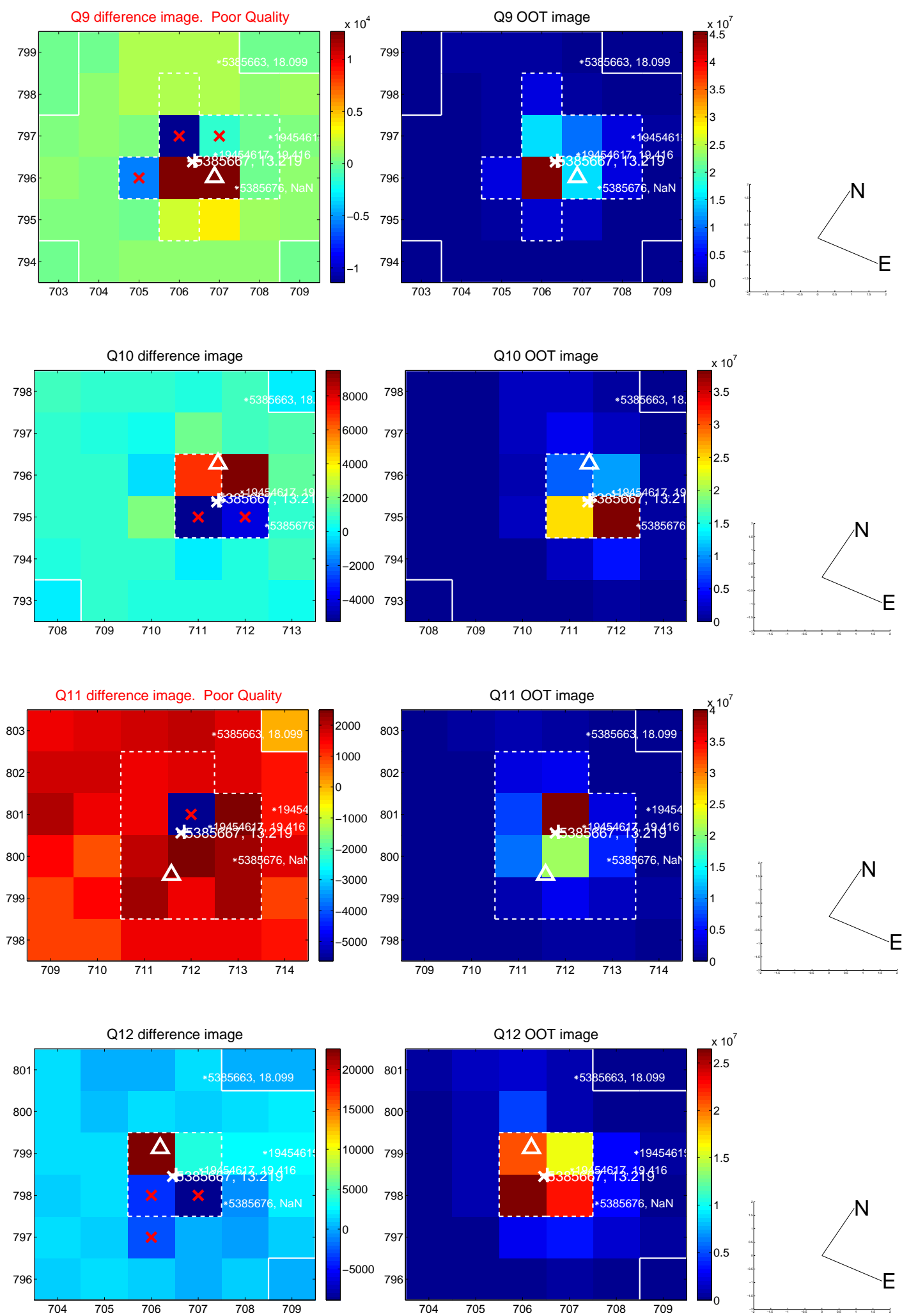
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



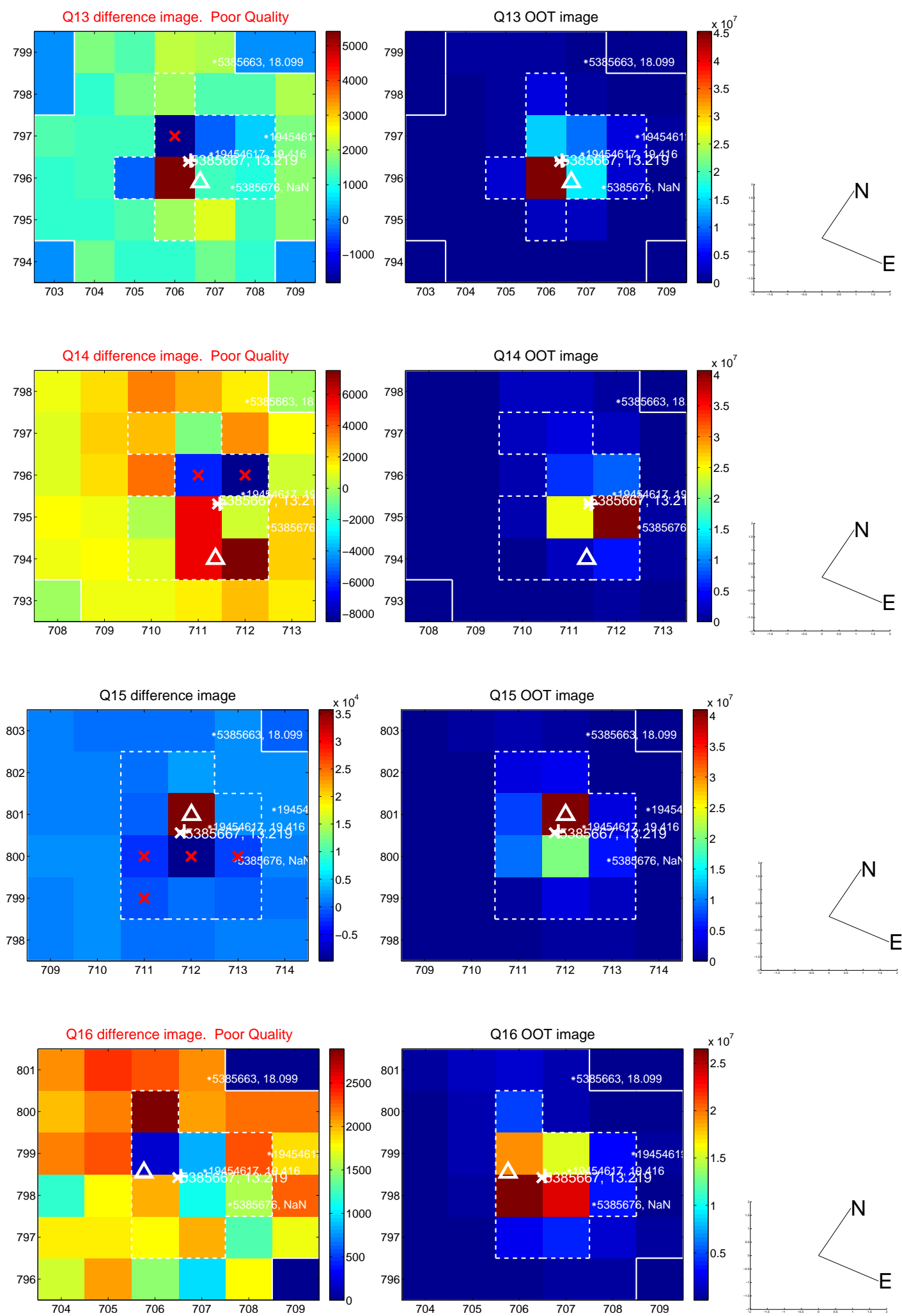
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



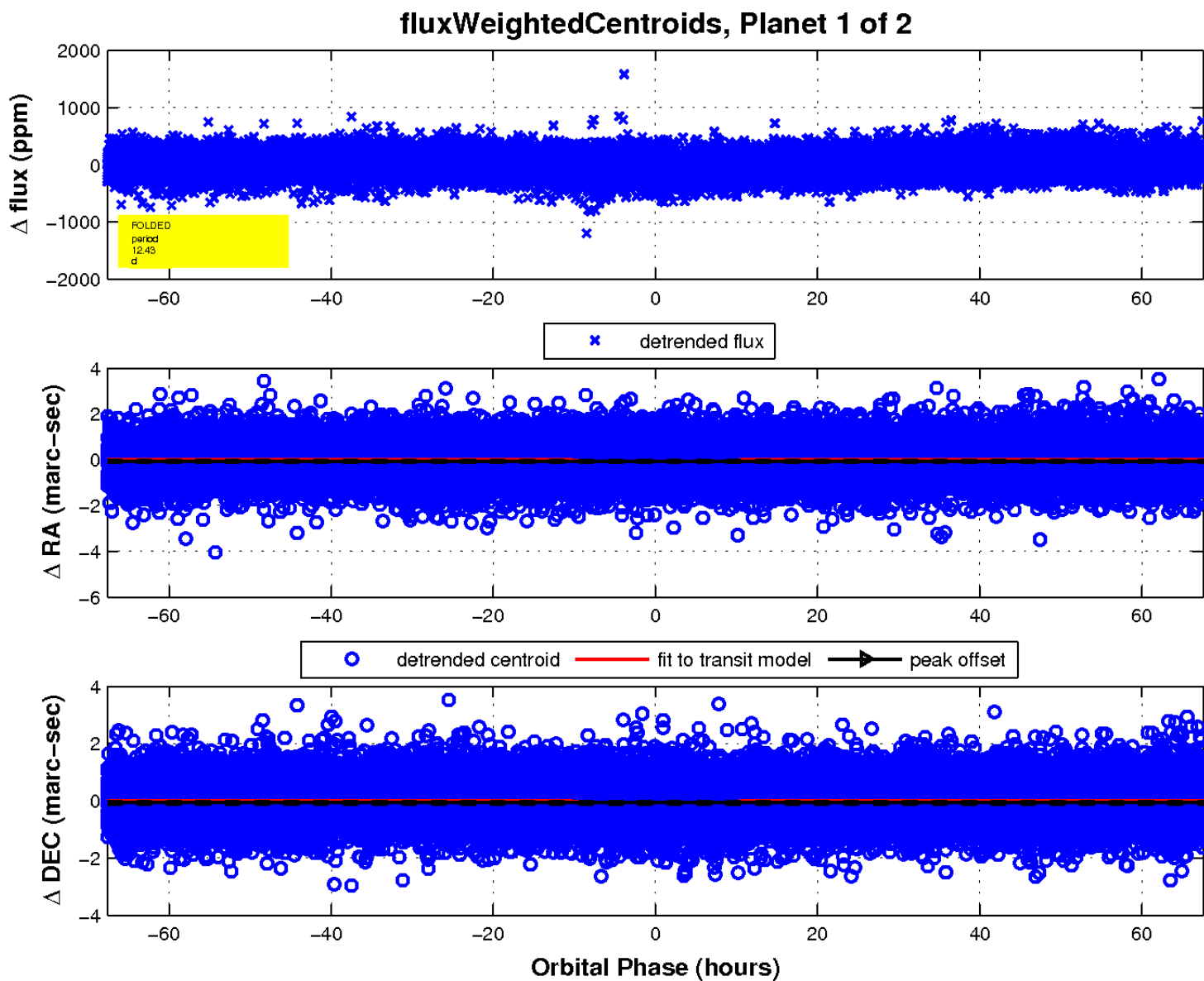
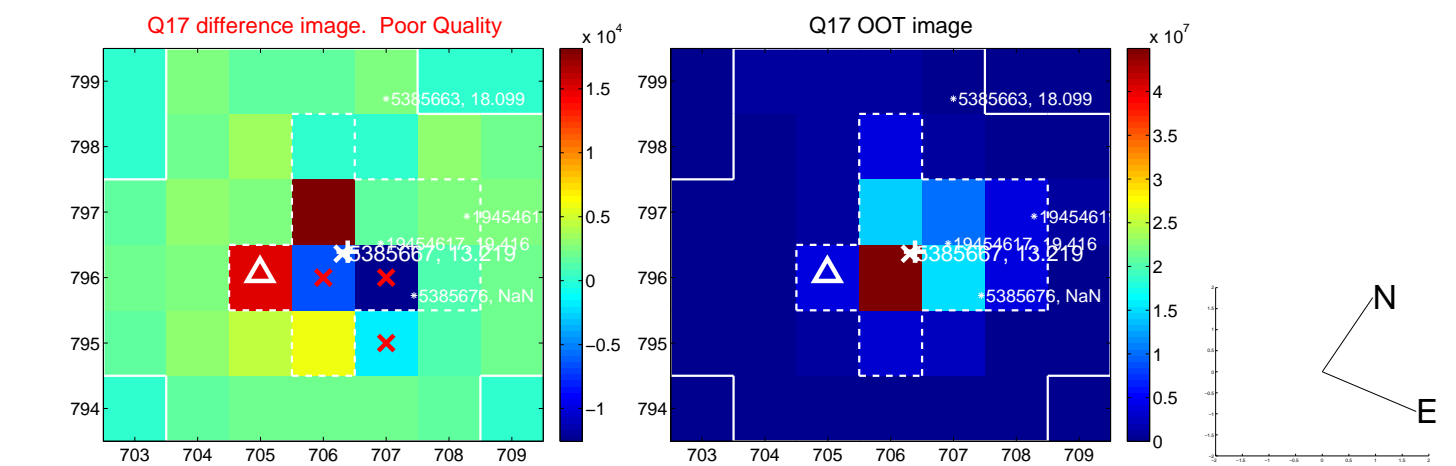
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

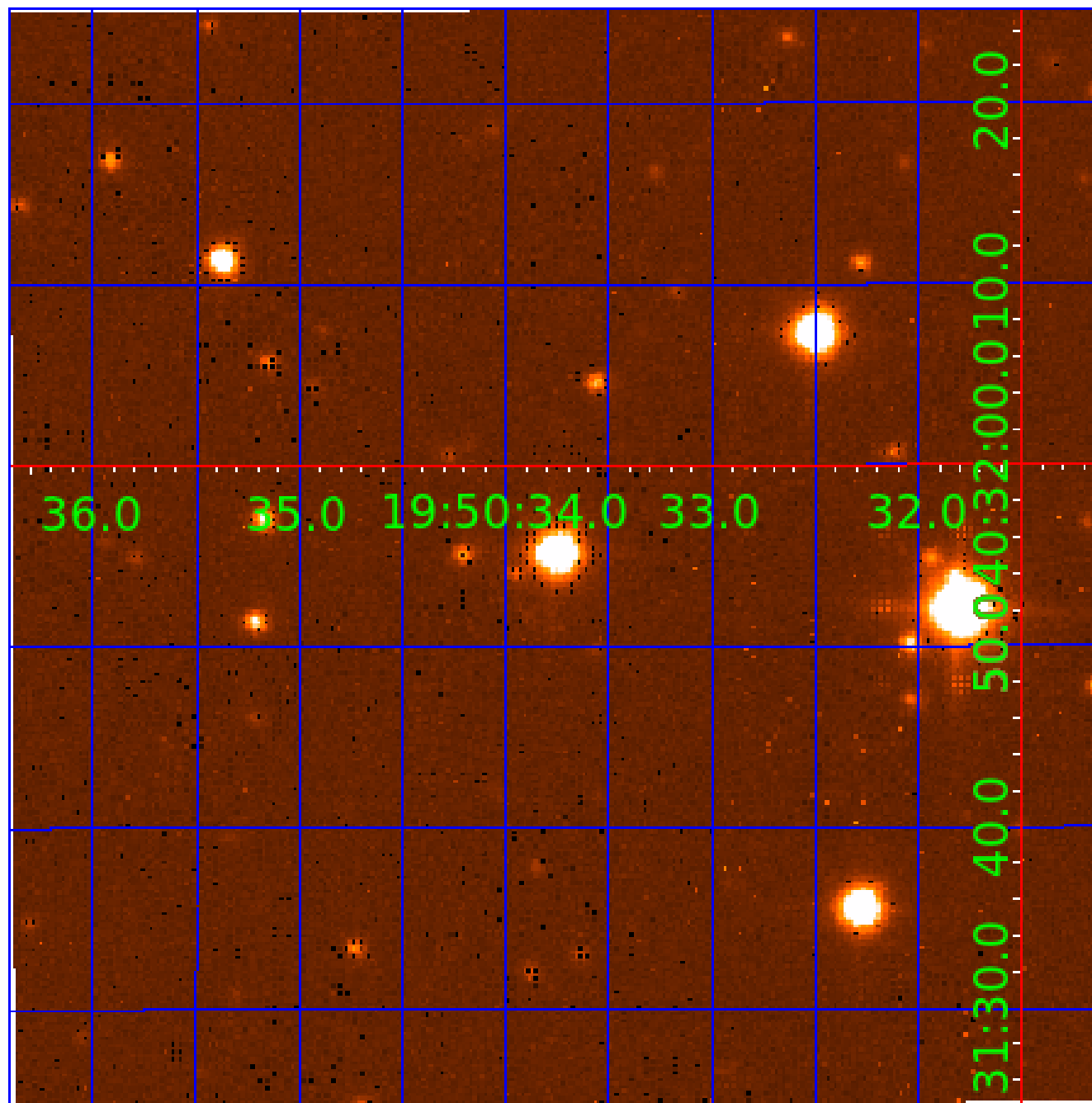


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005385667

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})
005385667-01	OBS	6573.01	12.426307	141.484971	64.6	22.532	10.7	14.3	1.43	5948	1.48	215.06
005385667-02	OBS	No	6.212042	134.108431	40.2	24.747	9.6	10.4	1.43	5948	1.20	542.03

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005385667-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
005385667-02	OBS	FP	0.00	1	0	1	1	LPP_DV—SAME_NTL_PERIOD—CENT_FEW_DIFFS—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 005385667-02

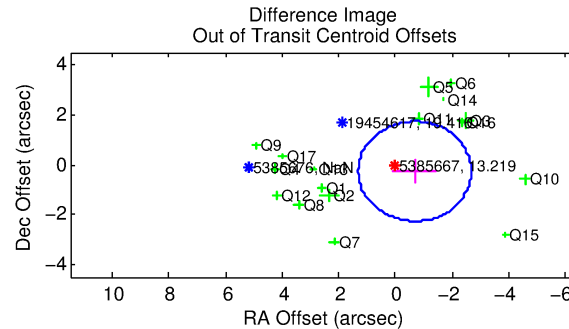
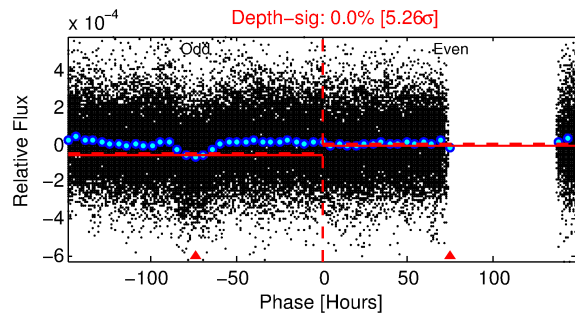
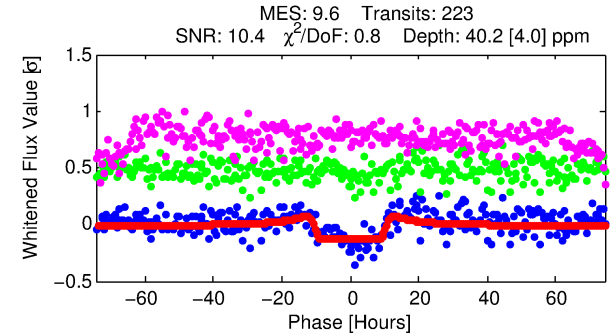
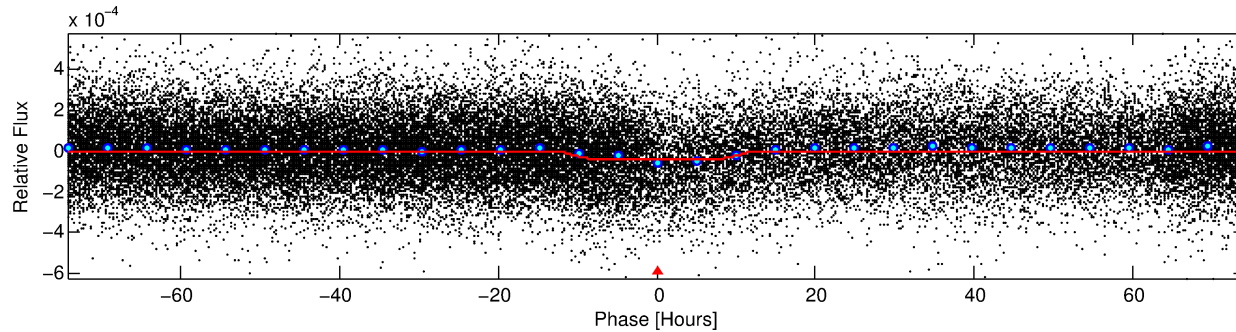
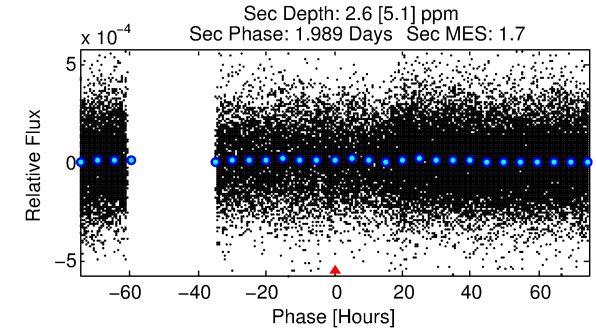
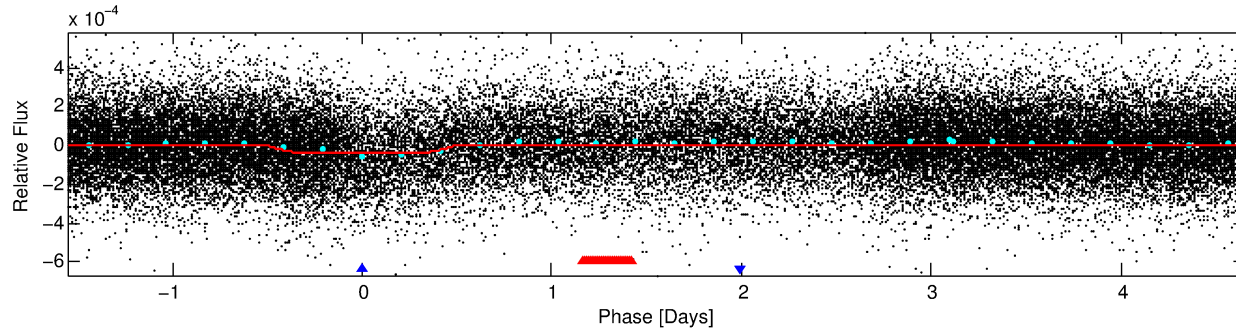
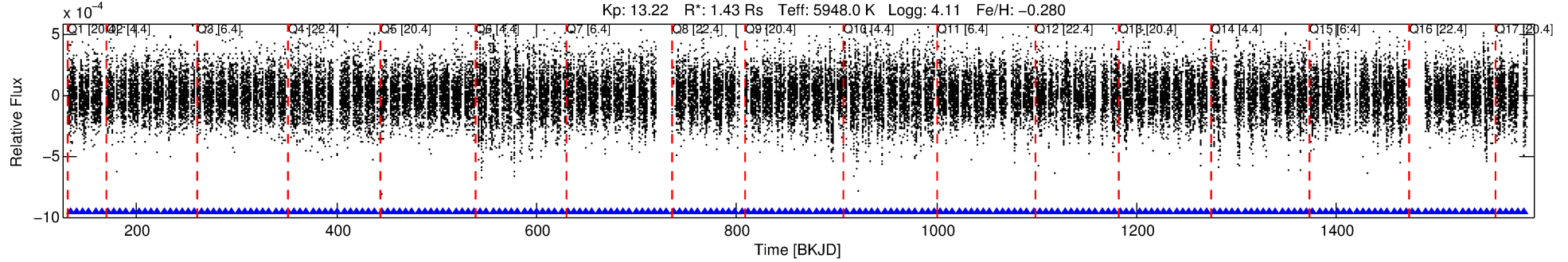
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
005385667-02	5385667	005385509-02	5385509	1:2	99.1	-12	21	15.71	13.22	6.40	Direct-PRF	1	4.39	1.23

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: 5385667 Candidate: 2 of 2 Period: 6.212 d
KOI: K06573 Corr: No Ephemeris Match

Kp: 13.22 R*: 1.43 Rs Teff: 5948.0 K Logg: 4.11 Fe/H: -0.280



DV Fit Results:

Period = 6.21204 [0.00021] d
Epoch = 134.1084 [0.0277] BKJD
Rp/R* = 0.0077 [0.0005]
a/R* = 1.10 [0.04]
b = 0.98 [0.01]
Seff = 542.04 [321.82]
Teff = 1230 [183] K
Rp = 1.20 [0.41] Re
a = 0.0651 [0.0227] AU
Ag = 4.20 [8.59] [0.37σ]
Teffp = 2724 [1336] K [1.11σ]

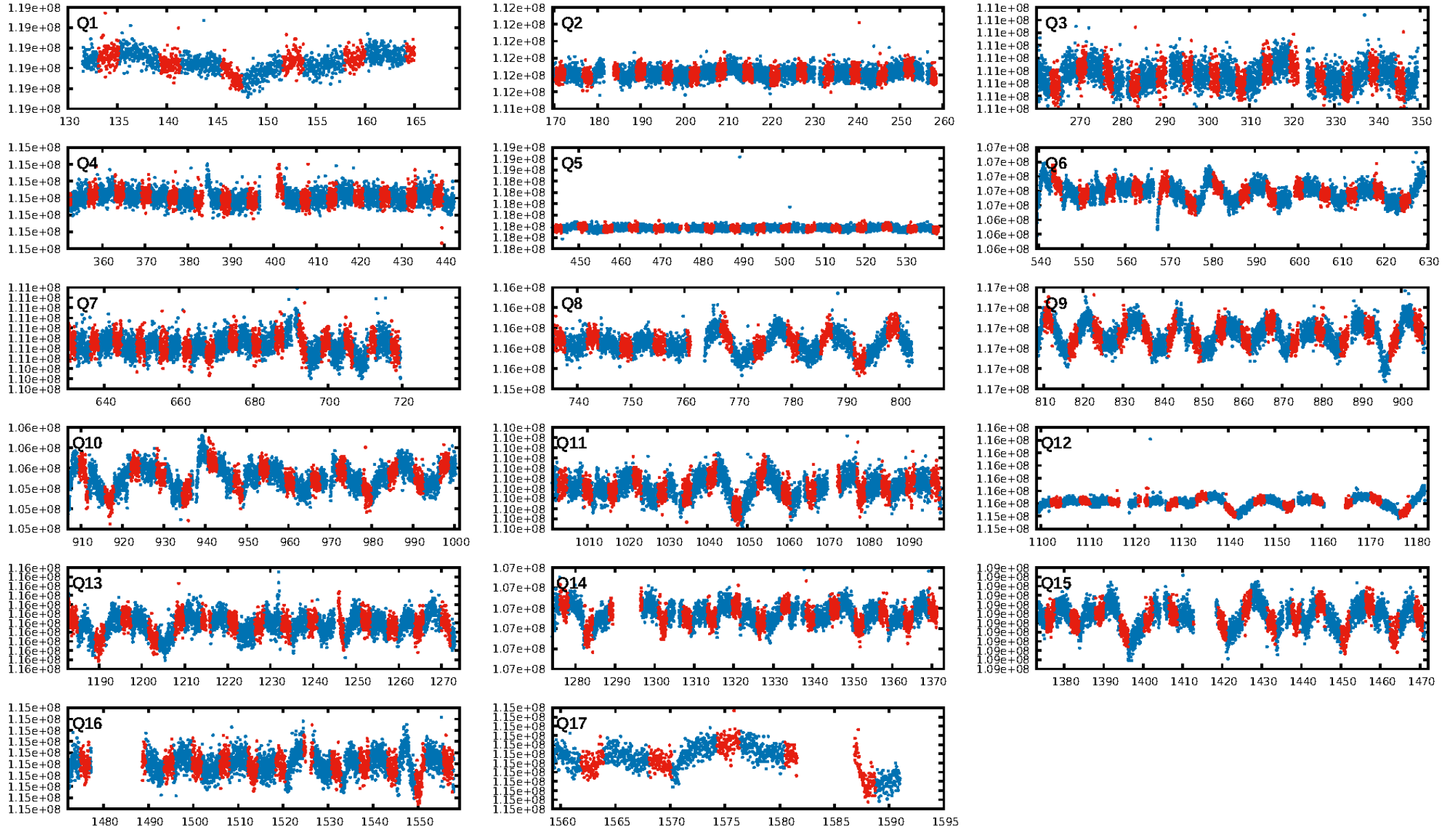
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [4.46σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.98e-22
RollingBand-fgt: 1.00 [212/212]
GhostDiagnostic-chr: 0.04585
Centroid-sig: 0.0%
Centroid-so: 2.407 arcsec [3.22σ]
OotOffset-rm: 0.737 arcsec [1.11σ]
KicOffset-rm: 0.546 arcsec [0.74σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.18 [3/17]
DiffImageOverlap-fno: 1.00 [17/17]

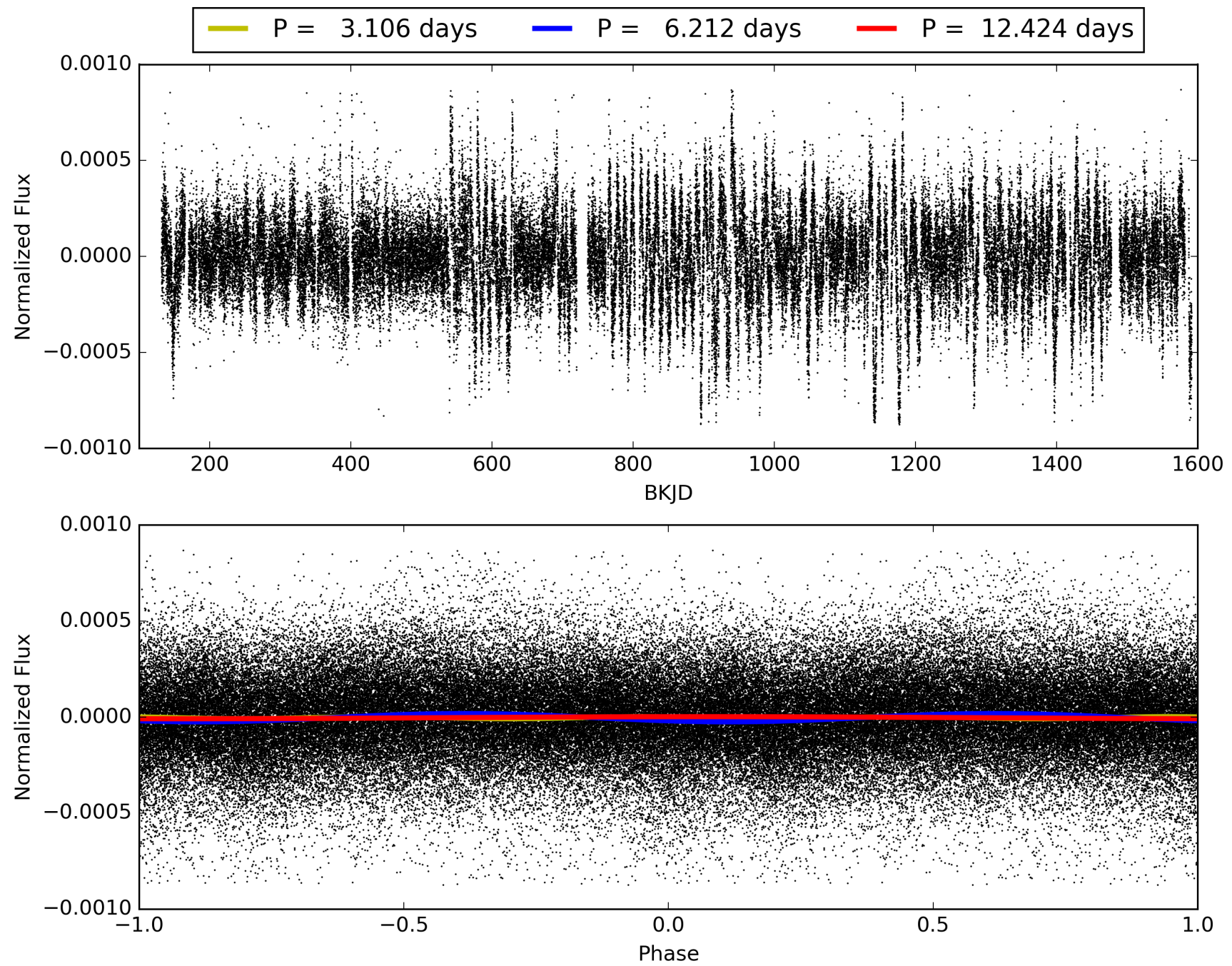
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:19:56 Z

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

TCE 005385667-02, PDC Light Curves

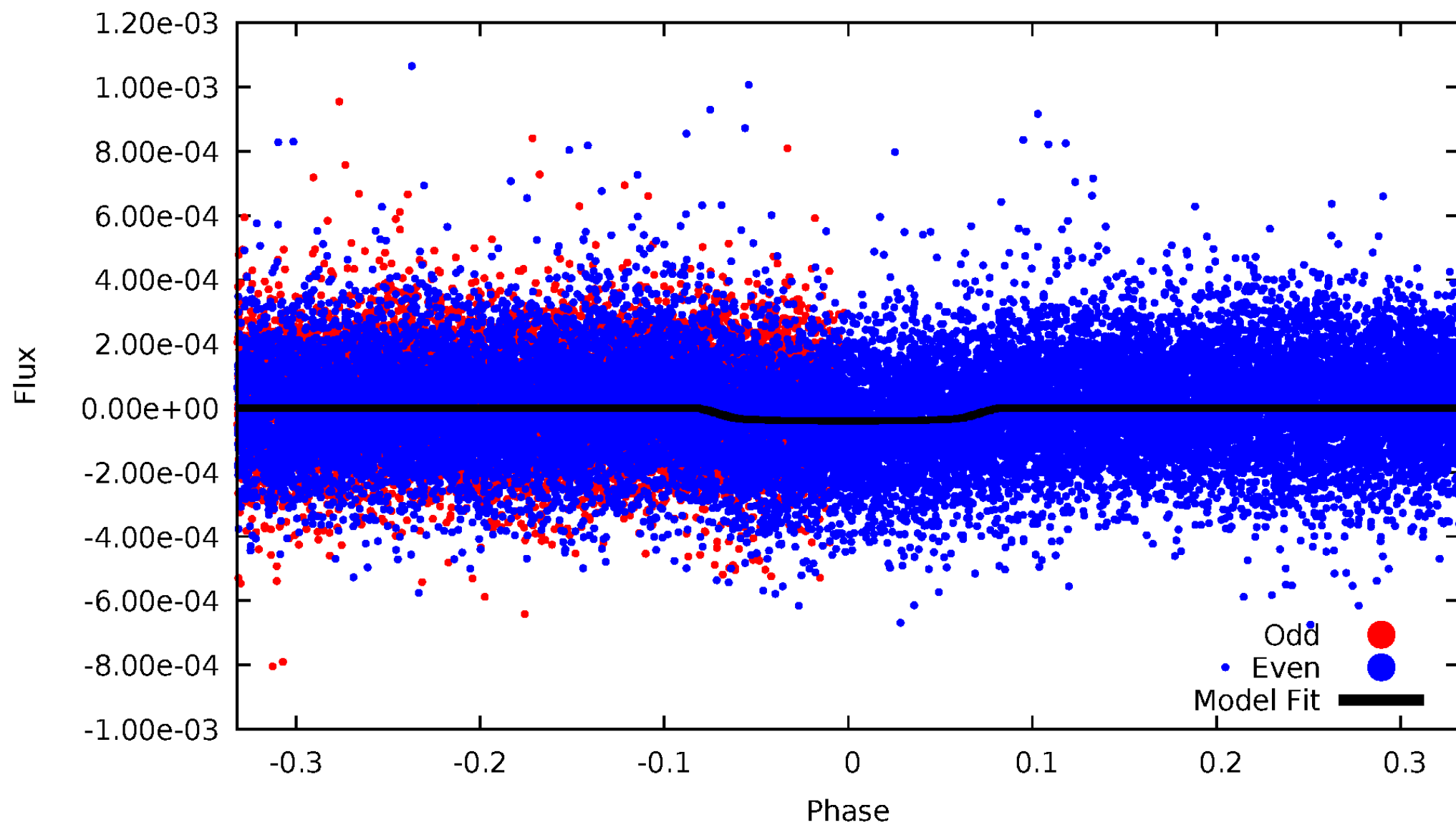


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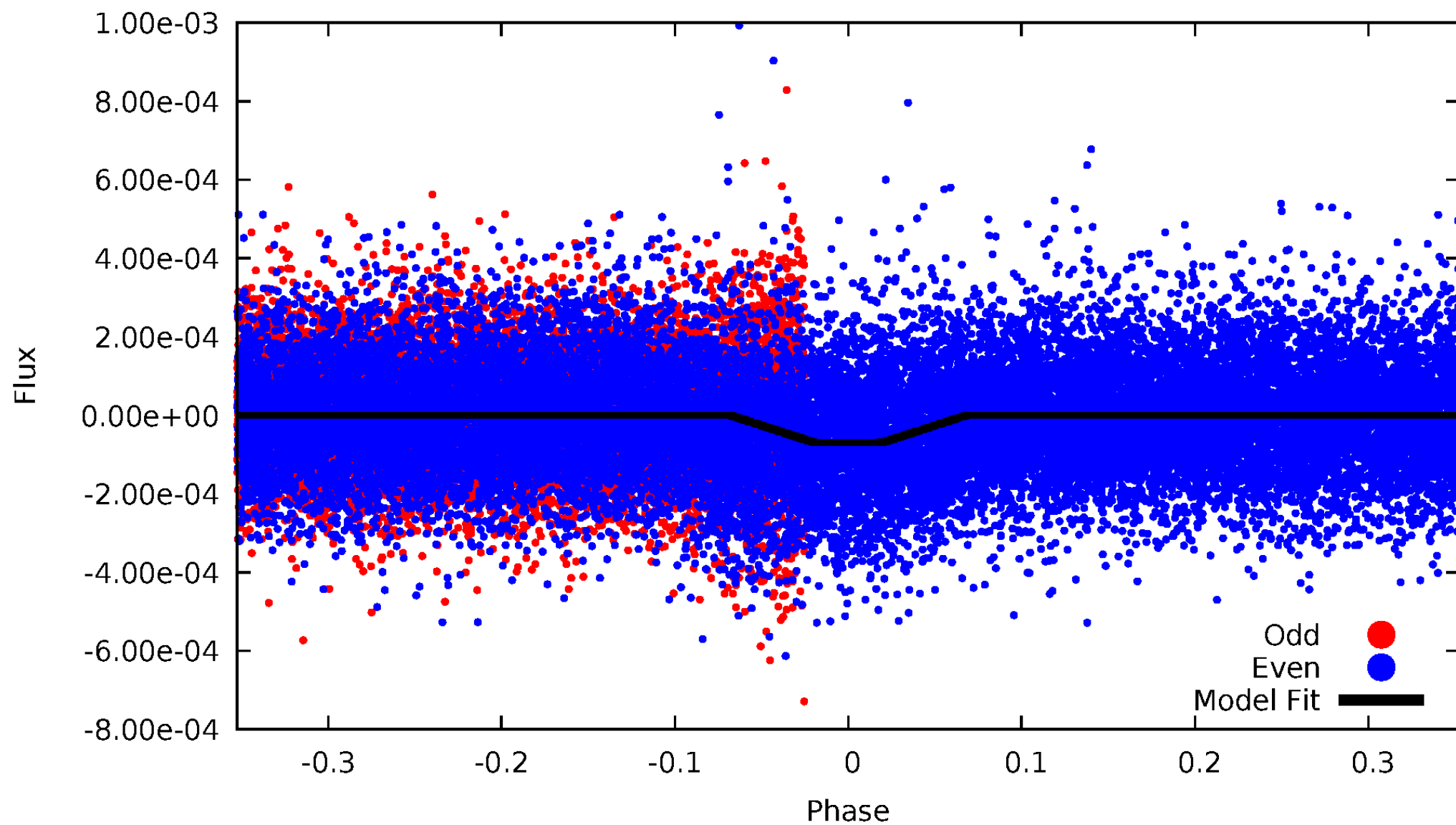
DV Odd/Even

TCE 005385667-02



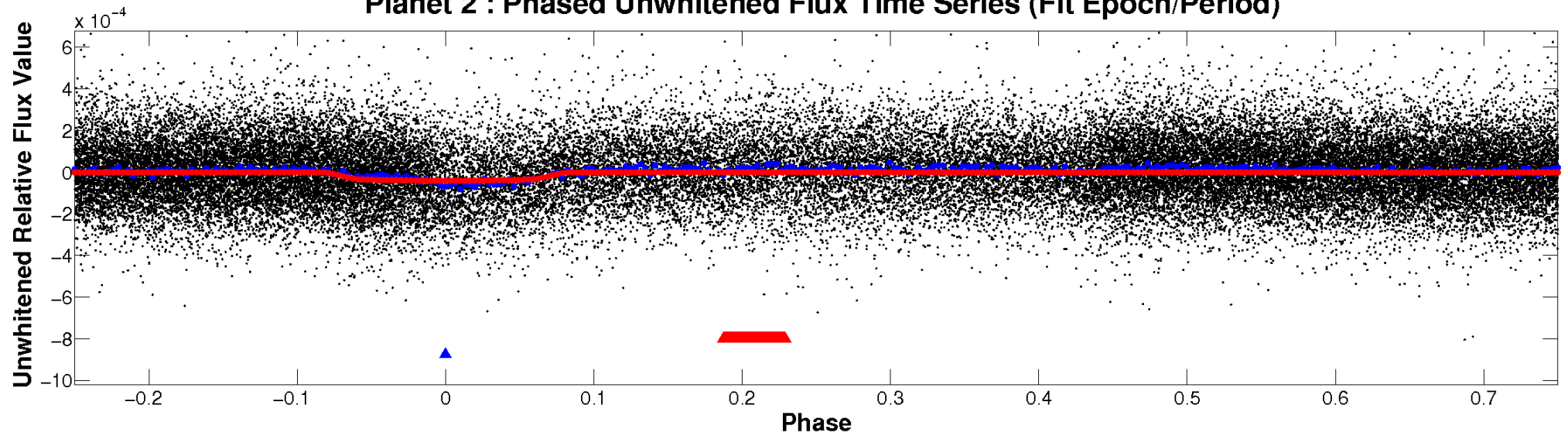
ALT Odd/Even

TCE 005385667-02

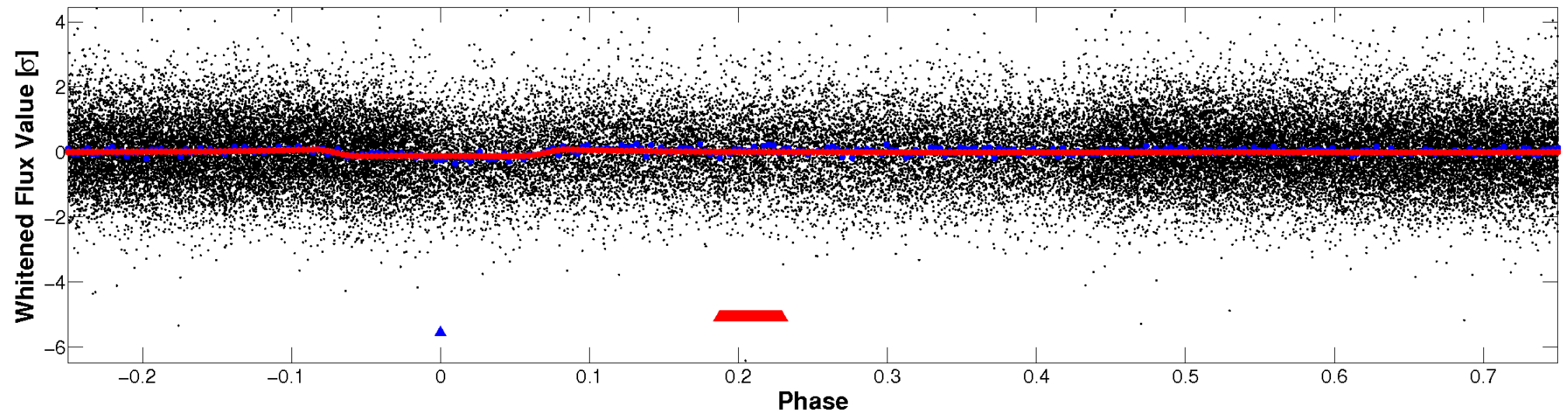


Non-Whitened Vs. Whitened Light Curve

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

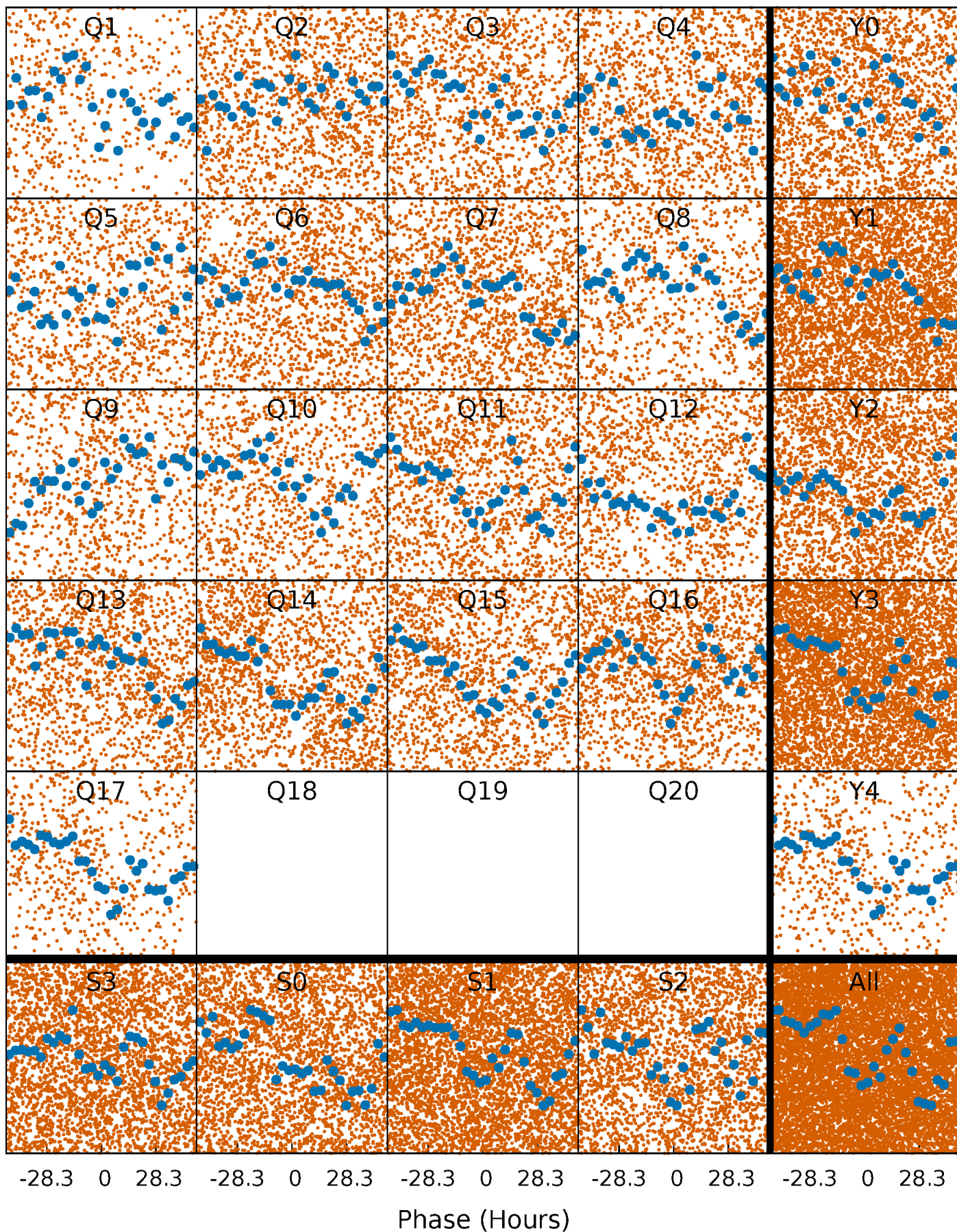


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



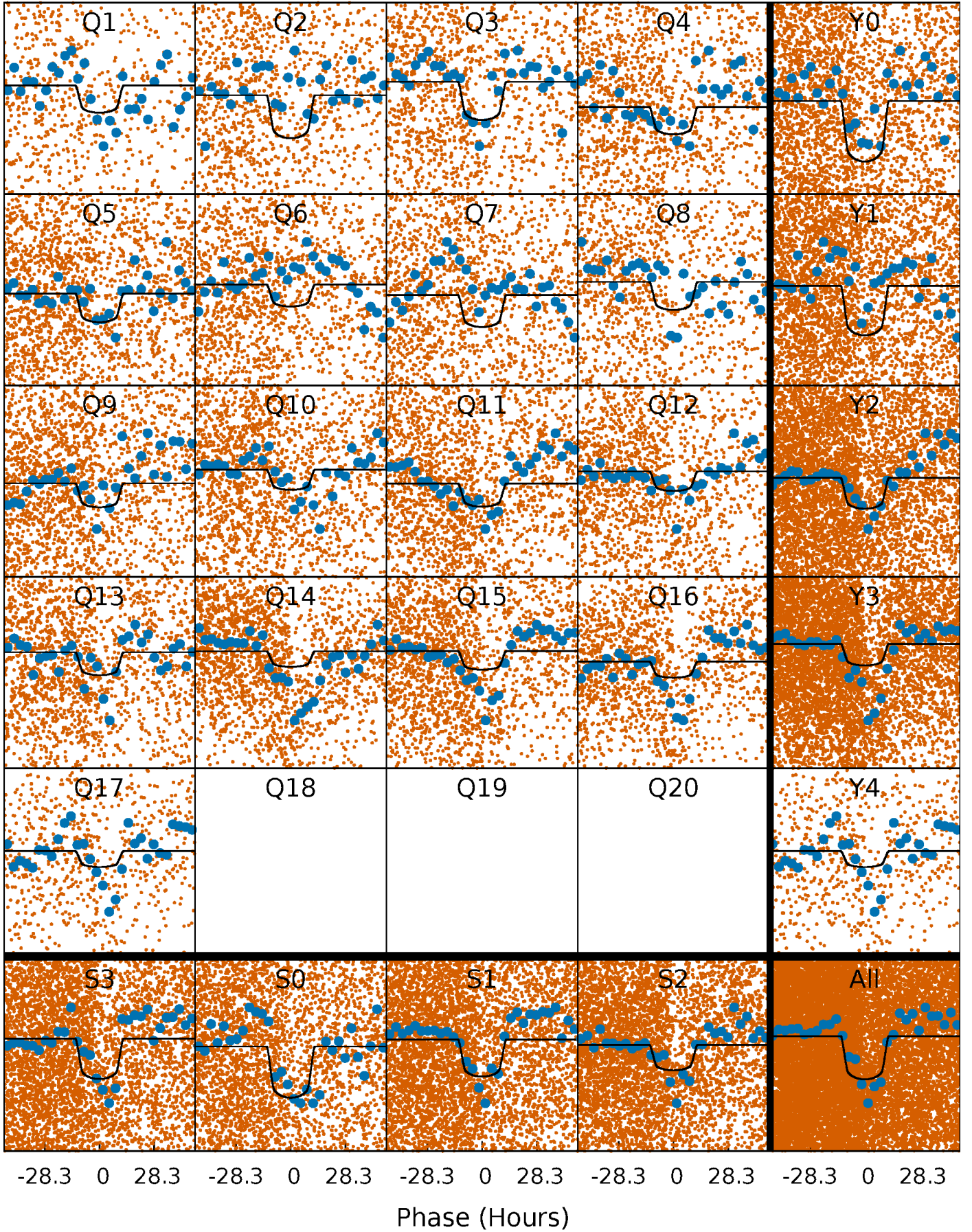
PDC Quarter-Phased Transit Curves

TCE 005385667-02 P= 6.212042 Days $T_0=134.108431$ (BKJD)



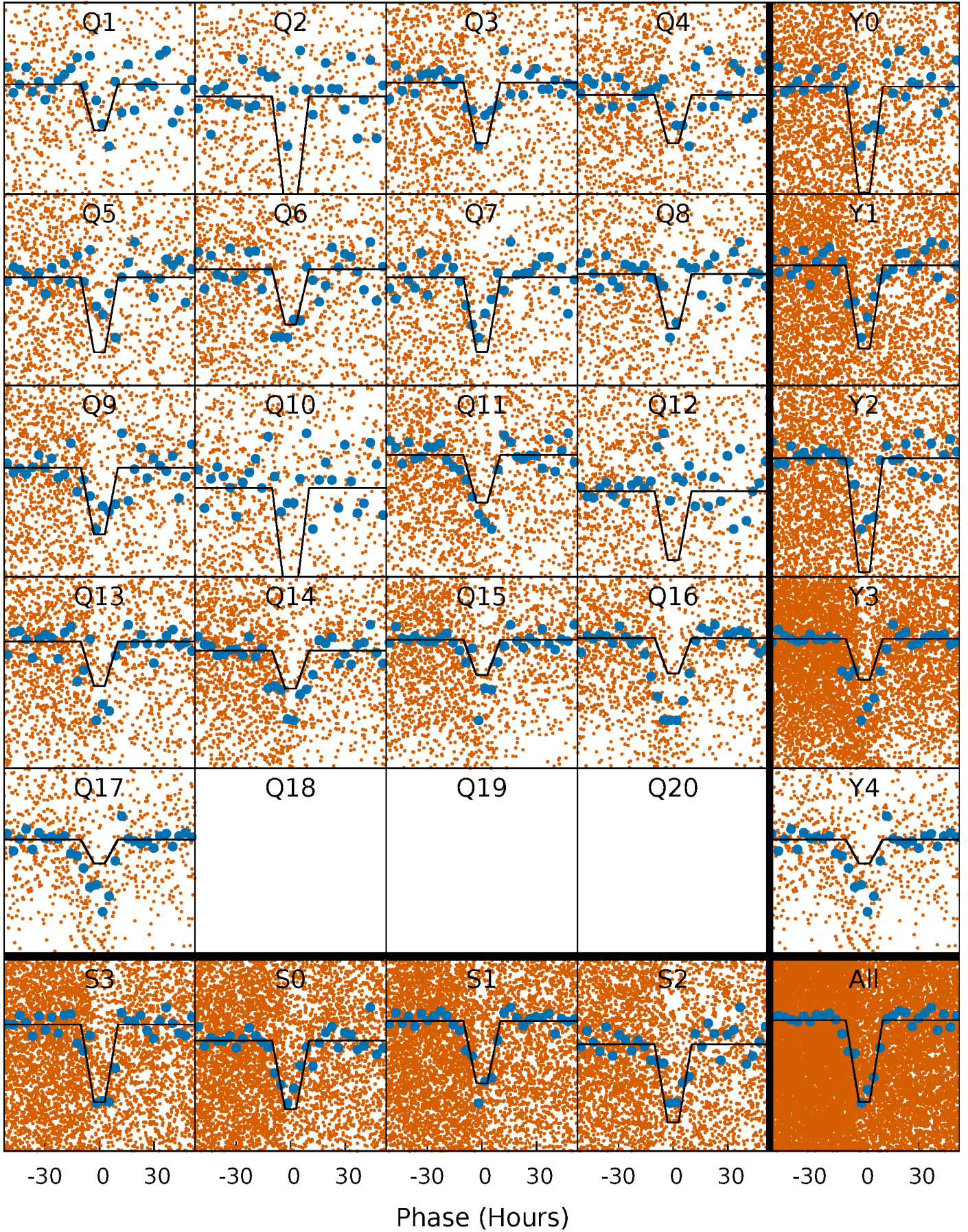
DV Quarter-Phased Transit Curves

TCE 005385667-02 $P = 6.212042$ Days $T_0 = 134.108431$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

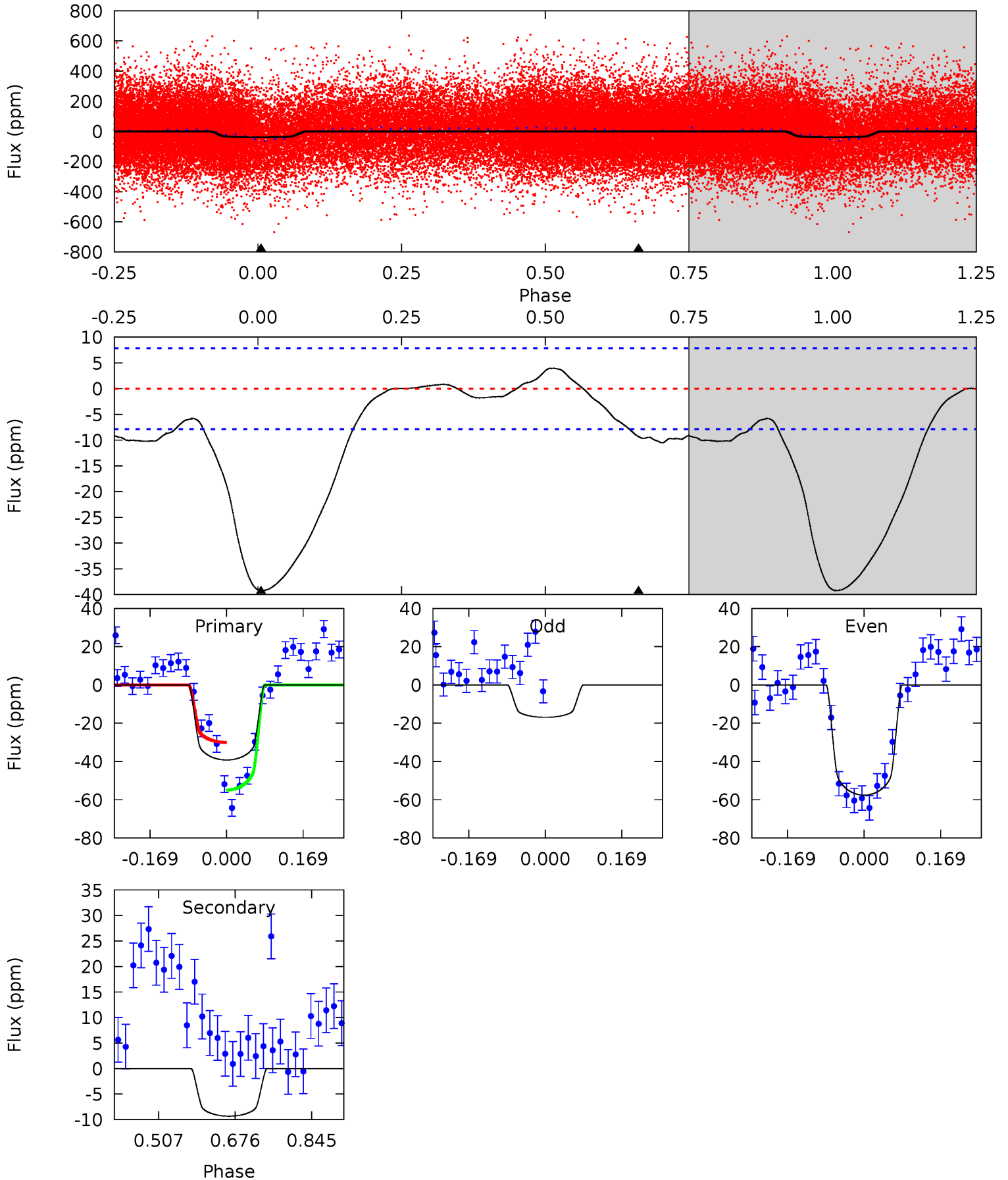
TCE 005385667-02 P= 6.213033 Days $T_0=134.028215$ (BKJD)



DV Model-Shift Uniqueness Test

005385667-02, P = 6.212042 Days, E = 127.896389 Days

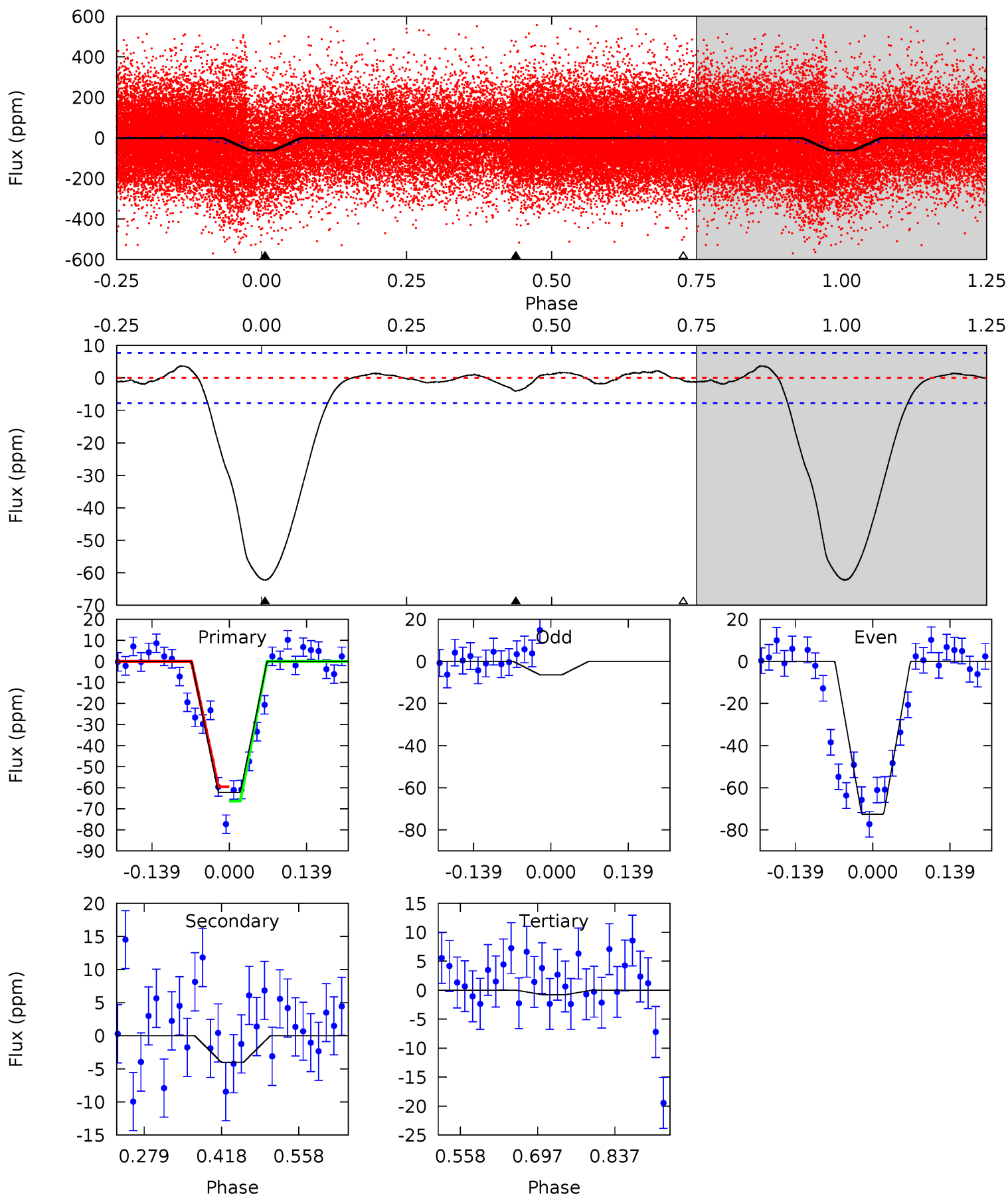
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.2	5.28	0	0	4.45	1.38	1.17	22.2	22.2	5.28	5.28	10.7	1.29	0.09	6.82



Alt Model-Shift Uniqueness Test

005385667-02, P = 6.213033 Days, E = 127.815182 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.2	2.33	0.46	0	4.49	1.48	0.80	35.7	36.2	1.87	2.33	15.1	0.87	0.06	1.94



Stellar Parameters For KIC 005385667

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5948^{+161}_{-178}	$4.106^{+0.350}_{-0.150}$	$-0.280^{+0.300}_{-0.300}$	$1.432^{+0.391}_{-0.478}$	$0.957^{+0.141}_{-0.115}$	$0.459^{+1.069}_{-0.223}$
	+3%/-3%	+9%/-4%	+107%/-107%	+27%/-33%	+15%/-12%	+233%/-49%
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 005385667-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-9 ± 2	$1.18^{+0.22}_{-0.23}$	1702^{+137}_{-159}	4027^{+189}_{-189}	16^{+9}_{-5}
Alt.	-4 ± 2	$1.27^{+0.21}_{-0.27}$	1688^{+128}_{-177}	3383^{+238}_{-285}	$5.791^{+4.787}_{-2.691}$

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

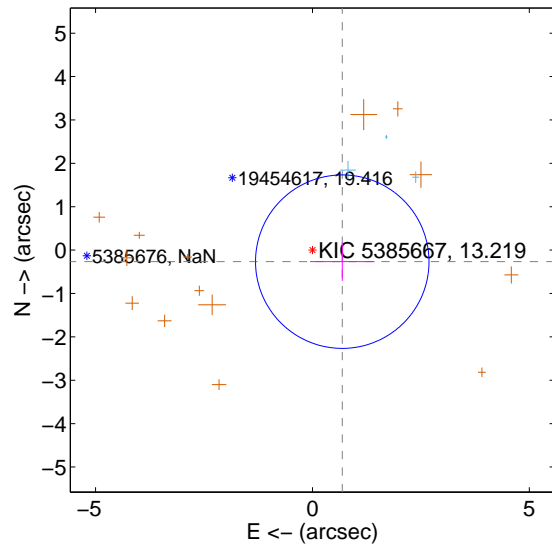
Supplemental centroid analysis for 005385667-02. Kepler magnitude: 13.22. Transit SNR 10.36

There are 3 quarters with good PRF difference image offsets

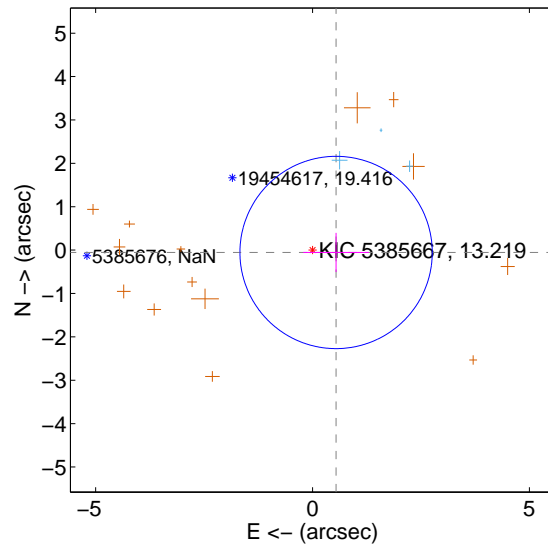
The direct PRF centroid is offset from the target star catalog position by about 0.35 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.737 ± 0.666	1.11	-0.687 ± 0.744	-0.266 ± 0.443
PRF-fit source offset from KIC position	0.546 ± 0.739	0.74	-0.543 ± 0.757	-0.055 ± 0.451
photometric centroid source offset	2.41 ± 0.75	3.22	1.24 ± 0.76	2.06 ± 0.74

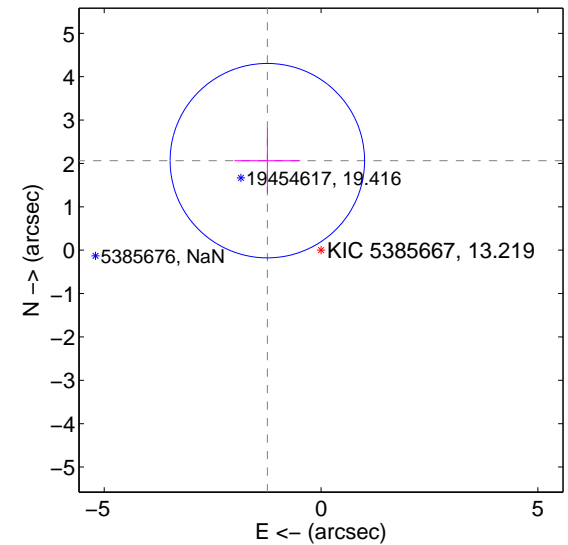
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

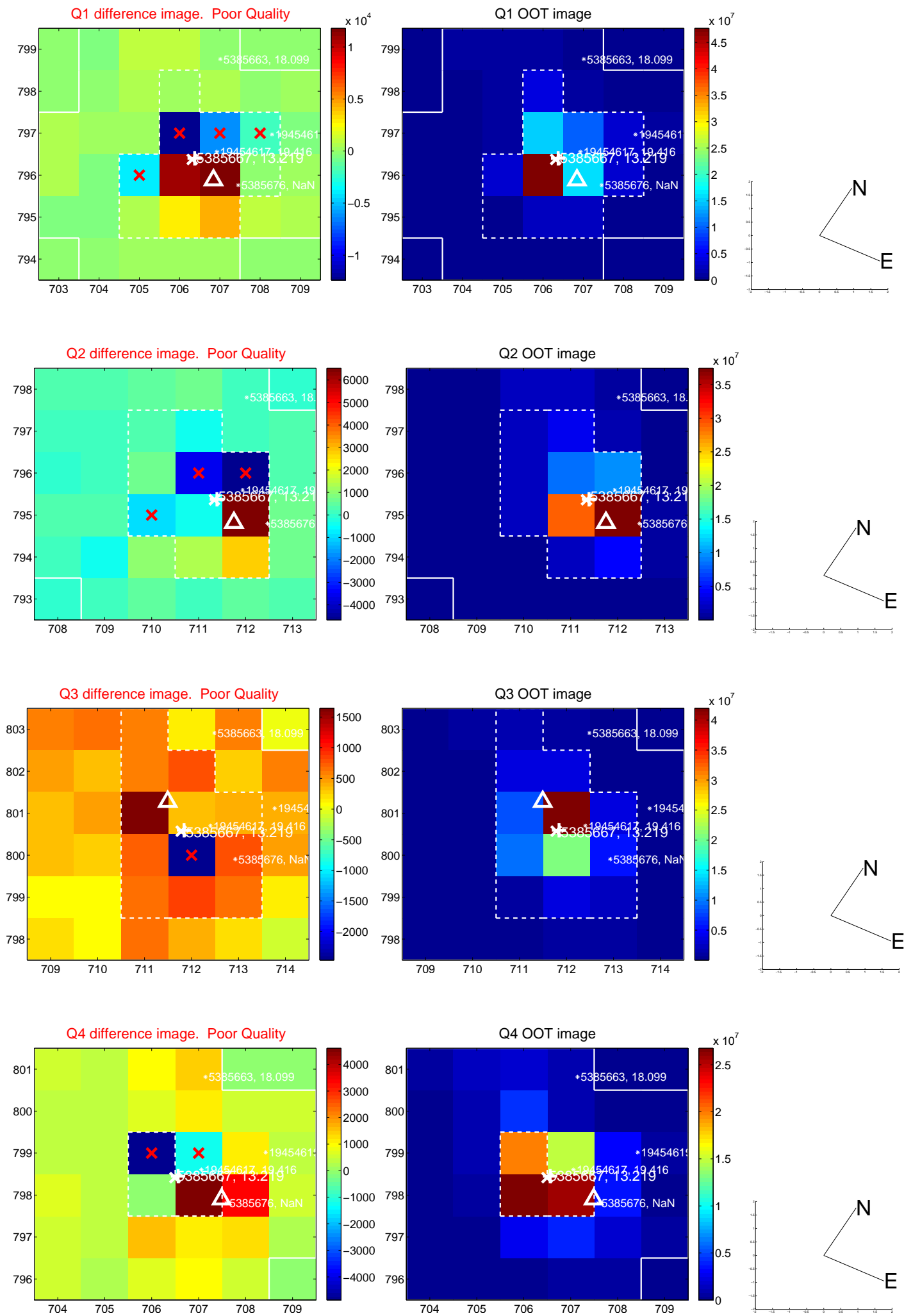


offset from photometric centroids

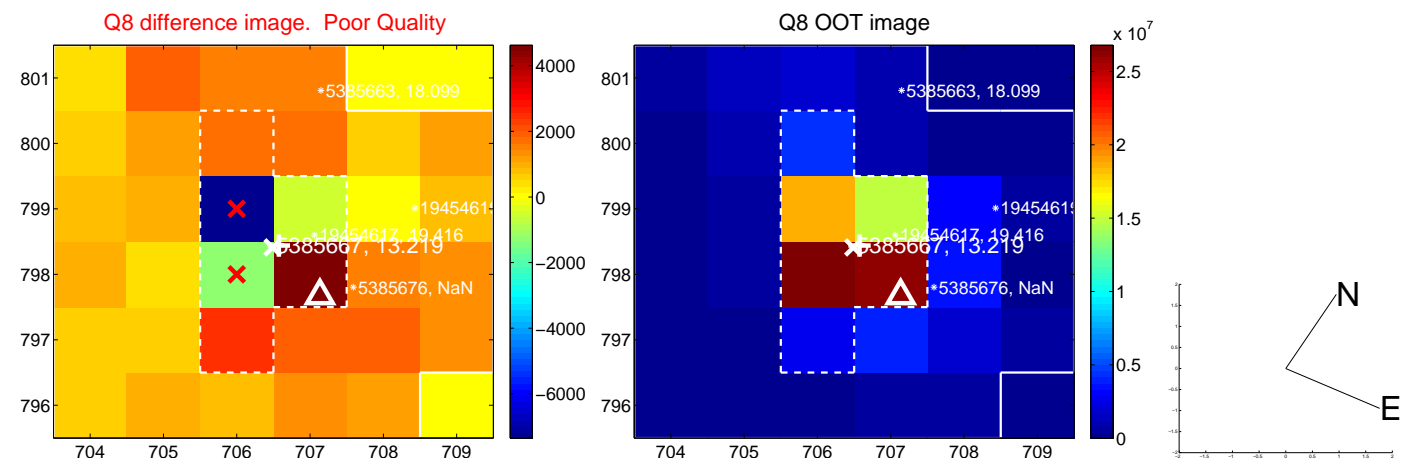
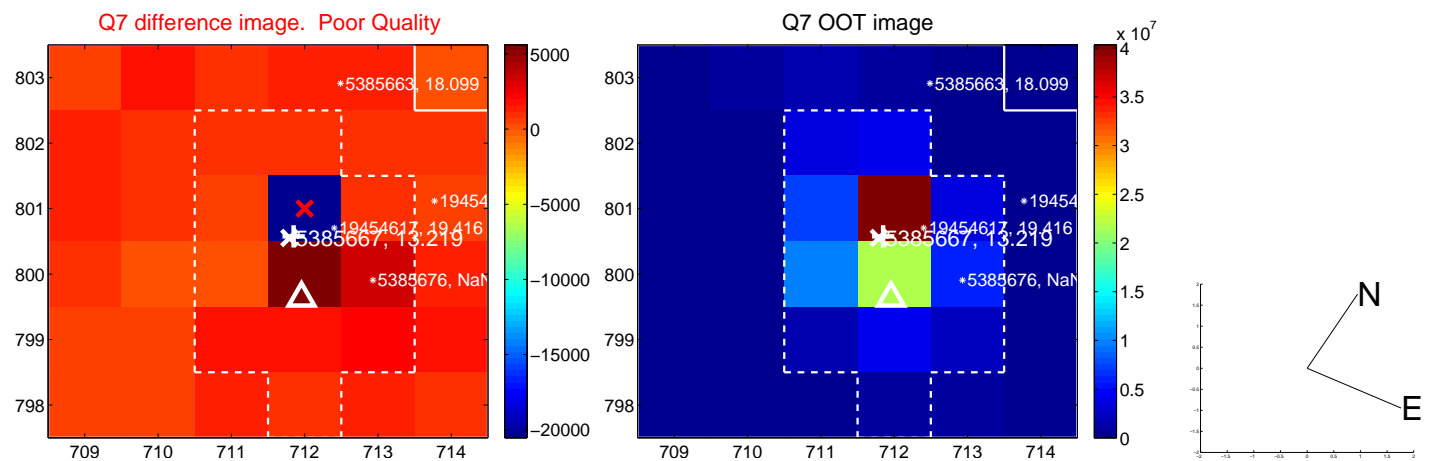
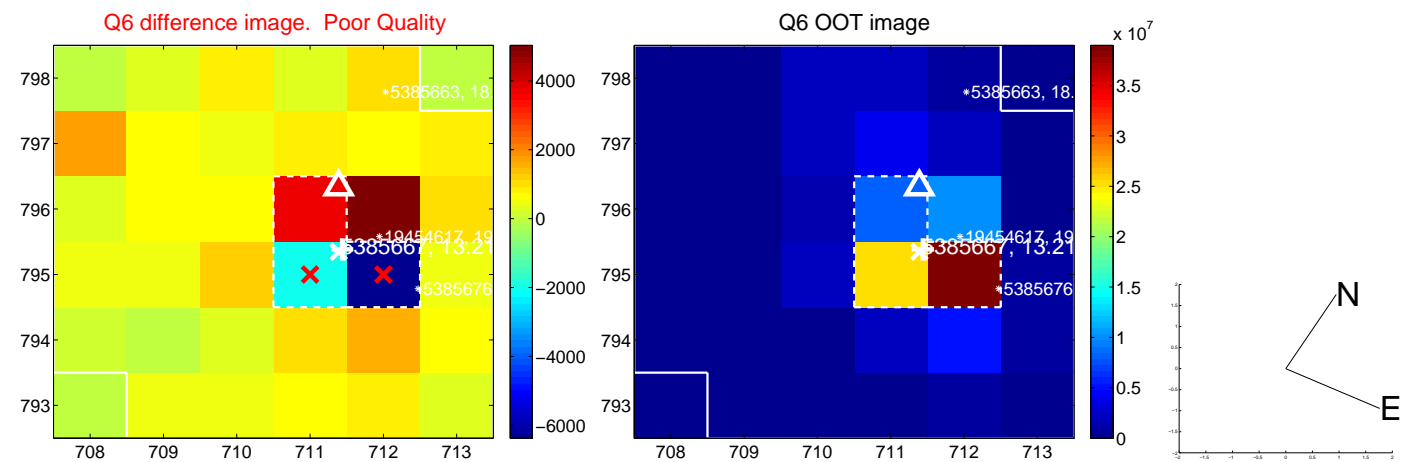
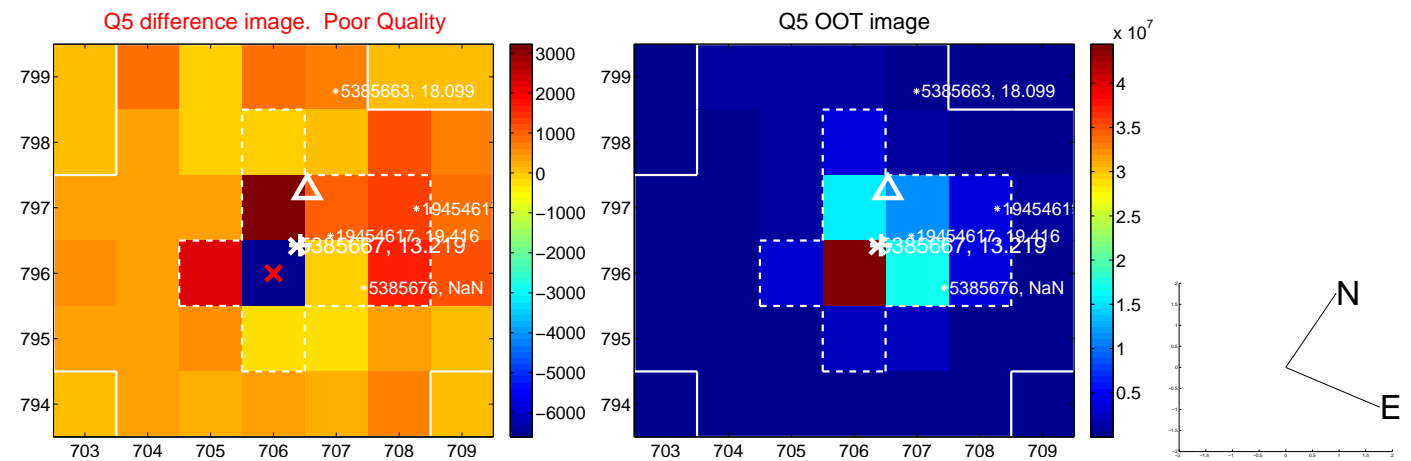


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

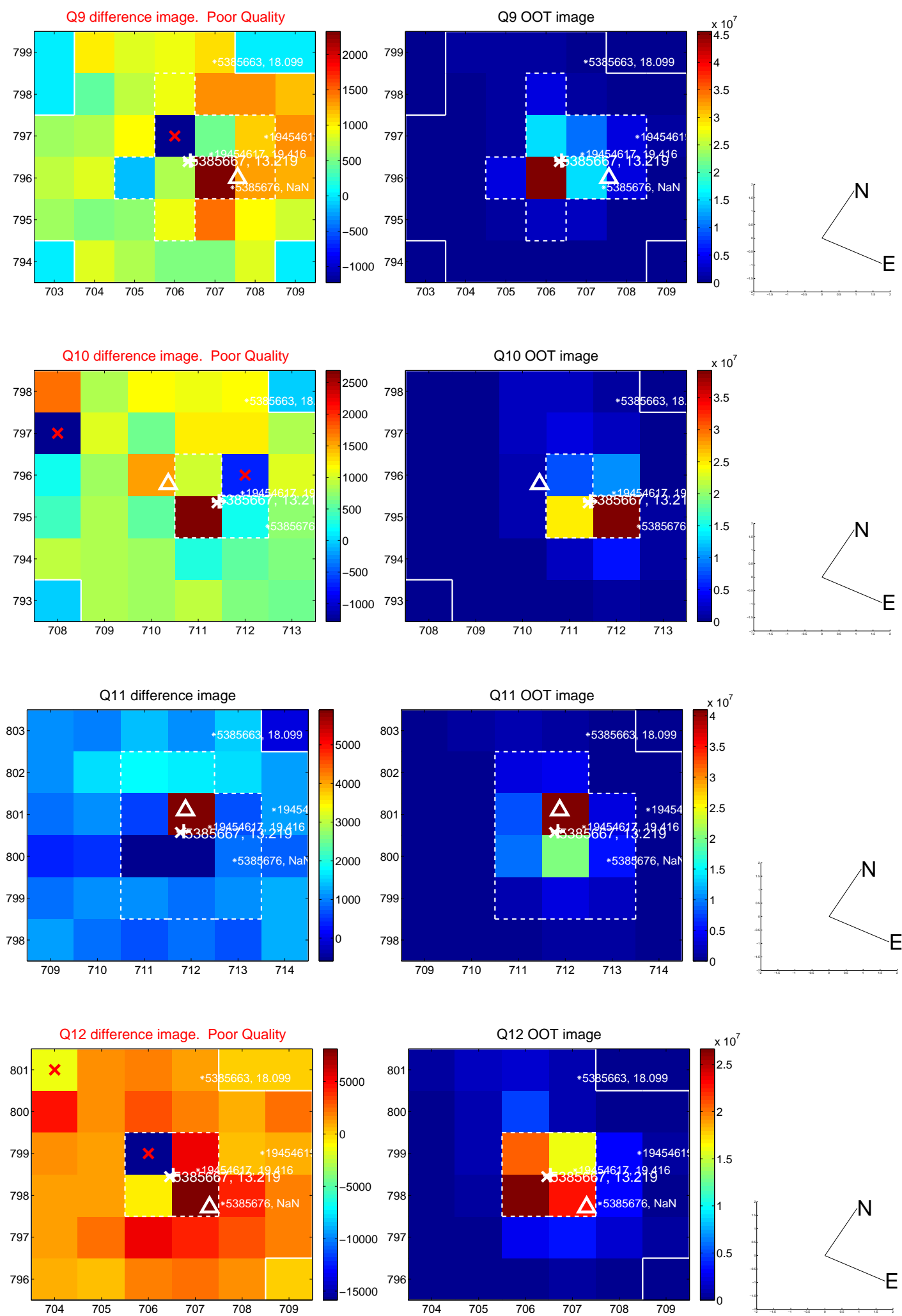
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



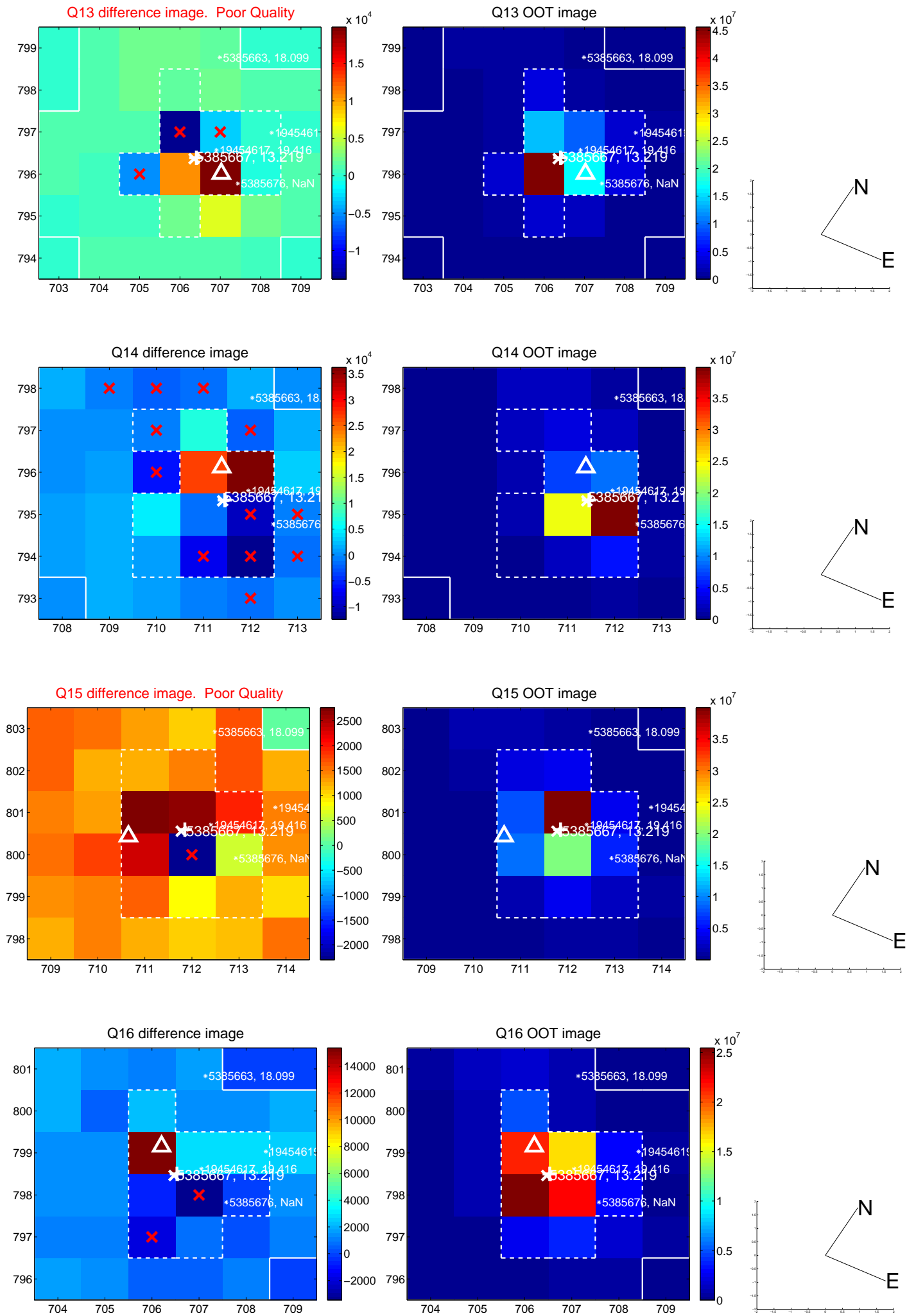
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



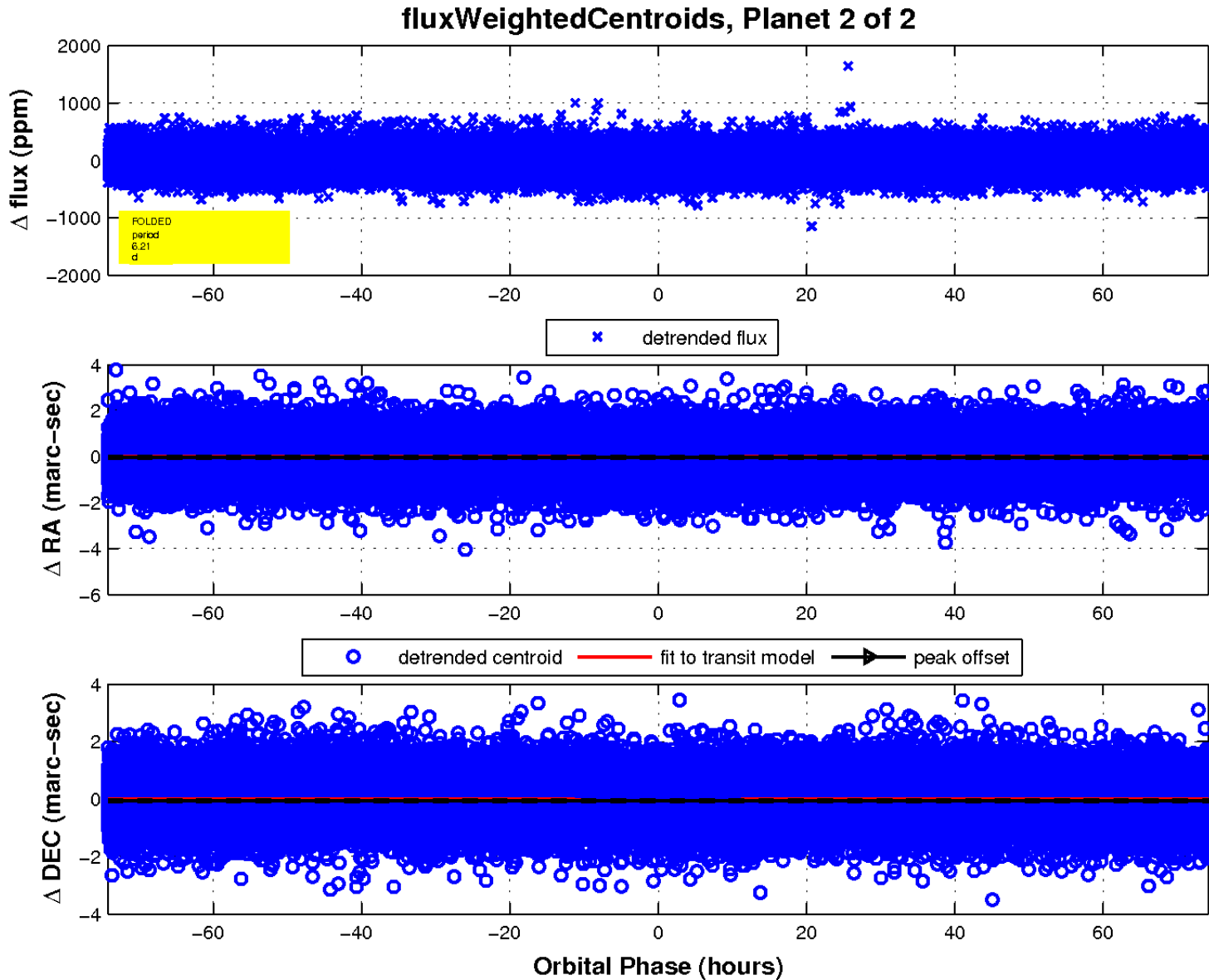
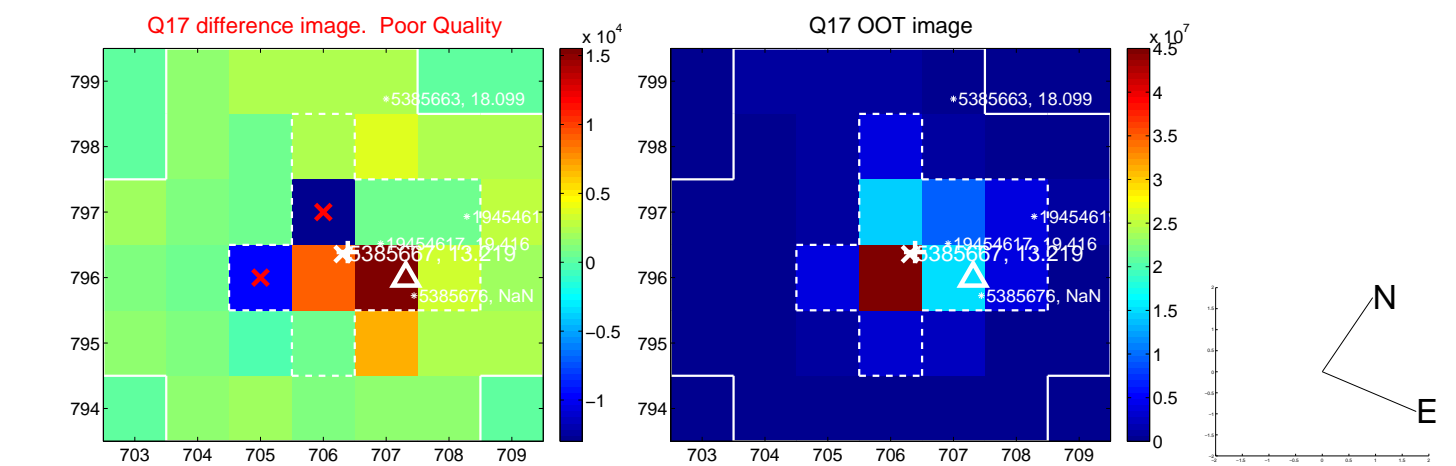
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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



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



UKIRT Image

Declination

