

KIC 005385773

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})
005385773-01	OBS	6005.01	12.425245	141.544467	134.2	18.385	13.5	16.3	0.69	5571	0.87	44.66
005385773-02	OBS	No	12.424338	134.057611	148.4	29.130	14.8	18.4	0.69	5571	1.35	44.66

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005385773-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_UNCERTAIN—HALO_GHOST—EPHEM_MATCH
005385773-02	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 005385773-01

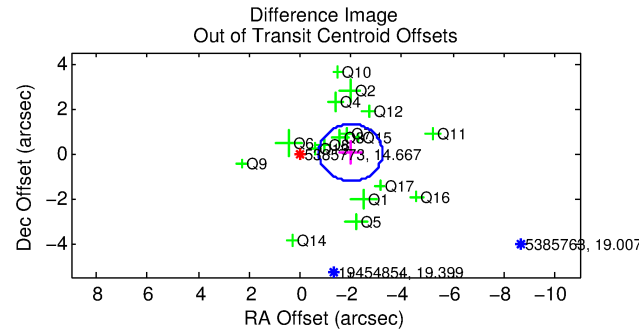
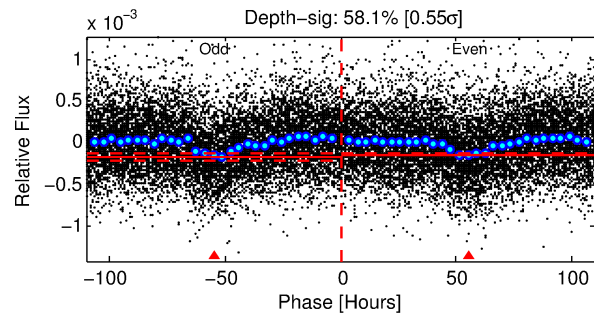
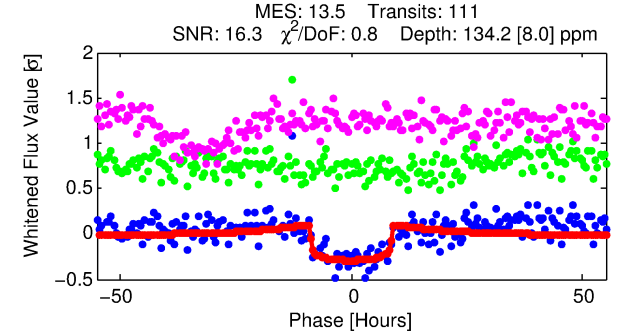
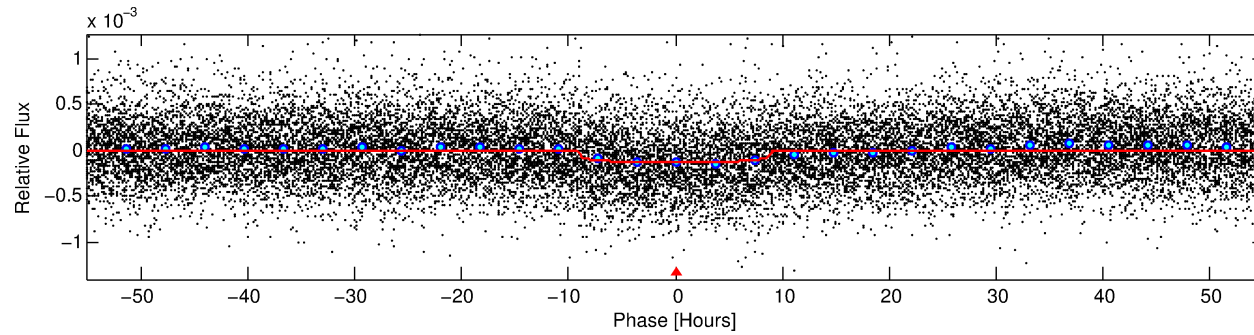
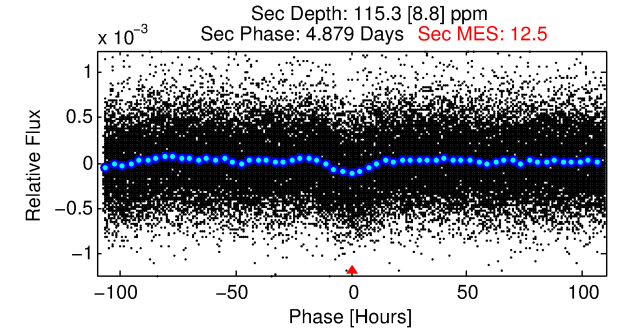
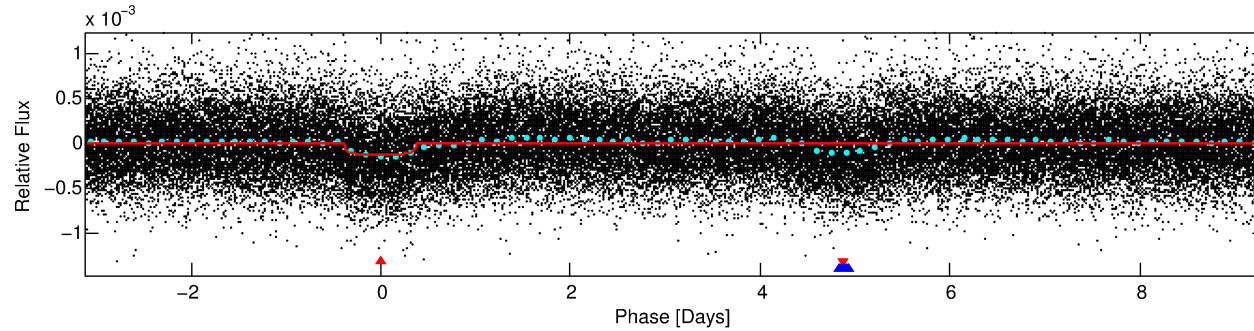
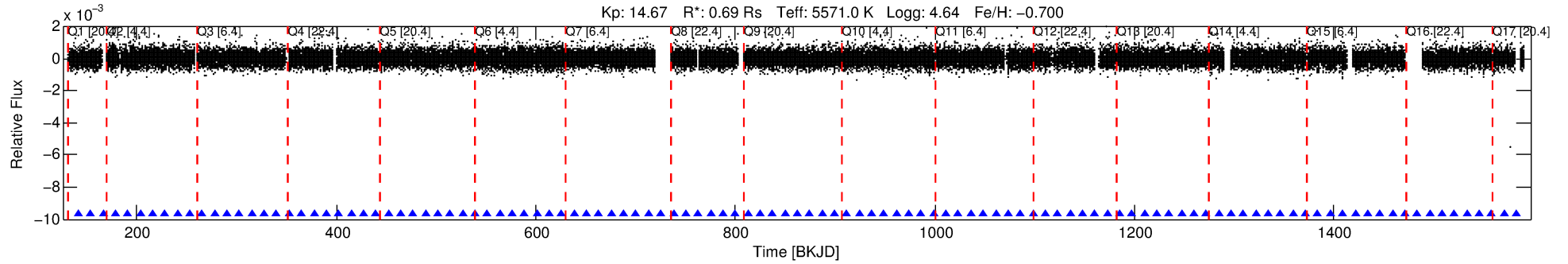
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
005385773-01	5385773	V380-Cyg-pri	5385723	1:1	309.9	-72	-29	5.77	14.67	1081.60	Direct-PRF	0	1.36	0.11

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: 5385773 Candidate: 1 of 2 Period: 12.425 d

KOI: K06005.01 Corr: 0.989



DV Fit Results:

Period = 12.42525 [0.00019] d
Epoch = 141.5445 [0.0124] BKJD
Rp/R* = 0.0116 [0.0018]
a/R* = 3.54 [2.36]
b = 0.76 [0.40]
Seff = 44.66 [10.19]
Teq = 659 [38] K
Rp = 0.87 [0.20] Re
a = 0.0961 [0.0131] AU
Ag = 768.22 [288.33] [2.66σ]
Teffp = 5365 [458] K [10.23σ]

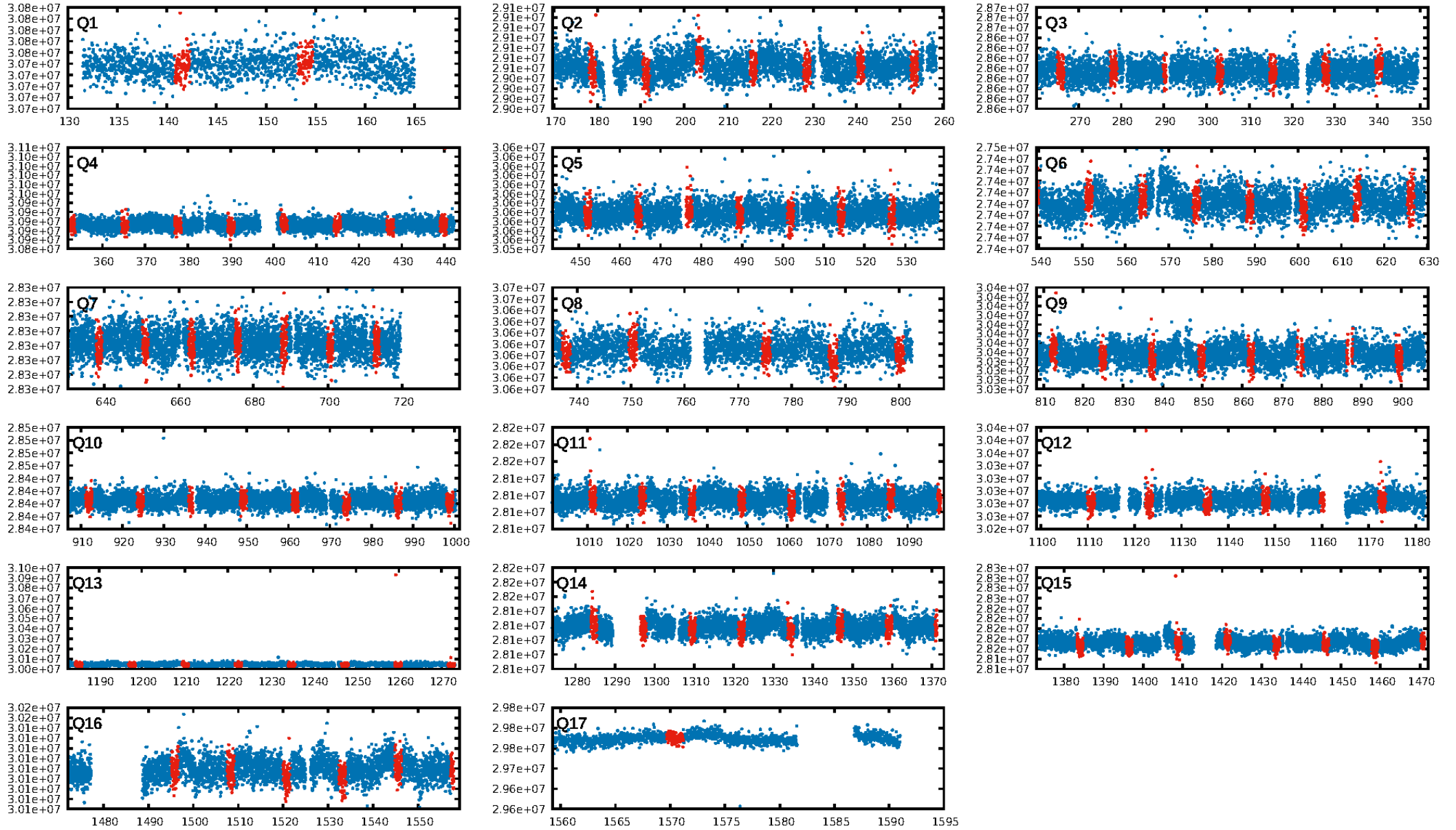
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 6.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.26e-42
RollingBand-fgt: 1.00 [108/108]
GhostDiagnostic-chr: -0.02087
Centroid-sig: 0.0%
Centroid-so: 1.678 arcsec [2.50σ]
OotOffset-rm: 1.985 arcsec [4.73σ]
KicOffset-rm: 1.966 arcsec [4.64σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.53 [9/17]
DiffImageOverlap-fno: 1.00 [17/17]

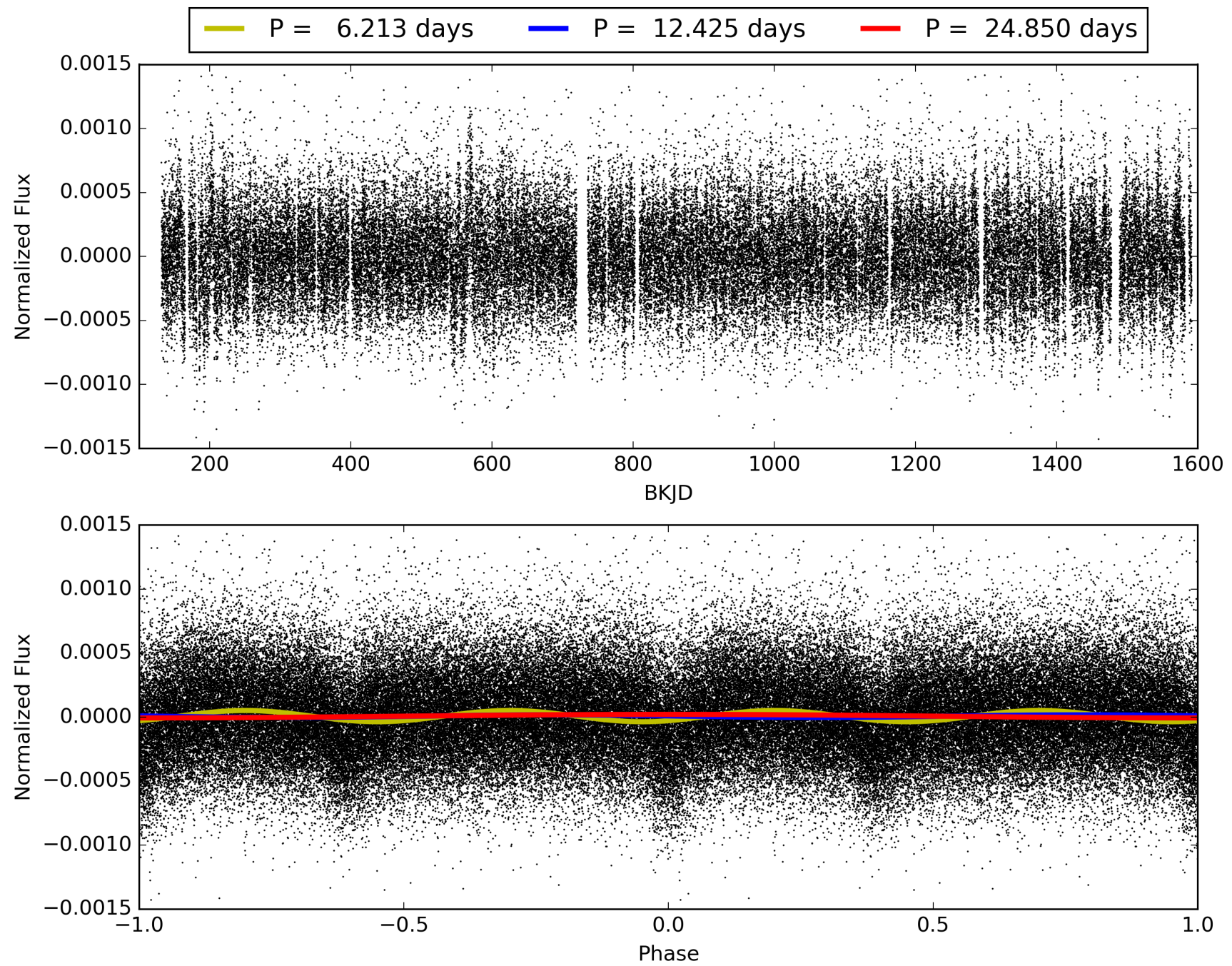
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 17:16:05 Z

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

TCE 005385773-01, PDC Light Curves

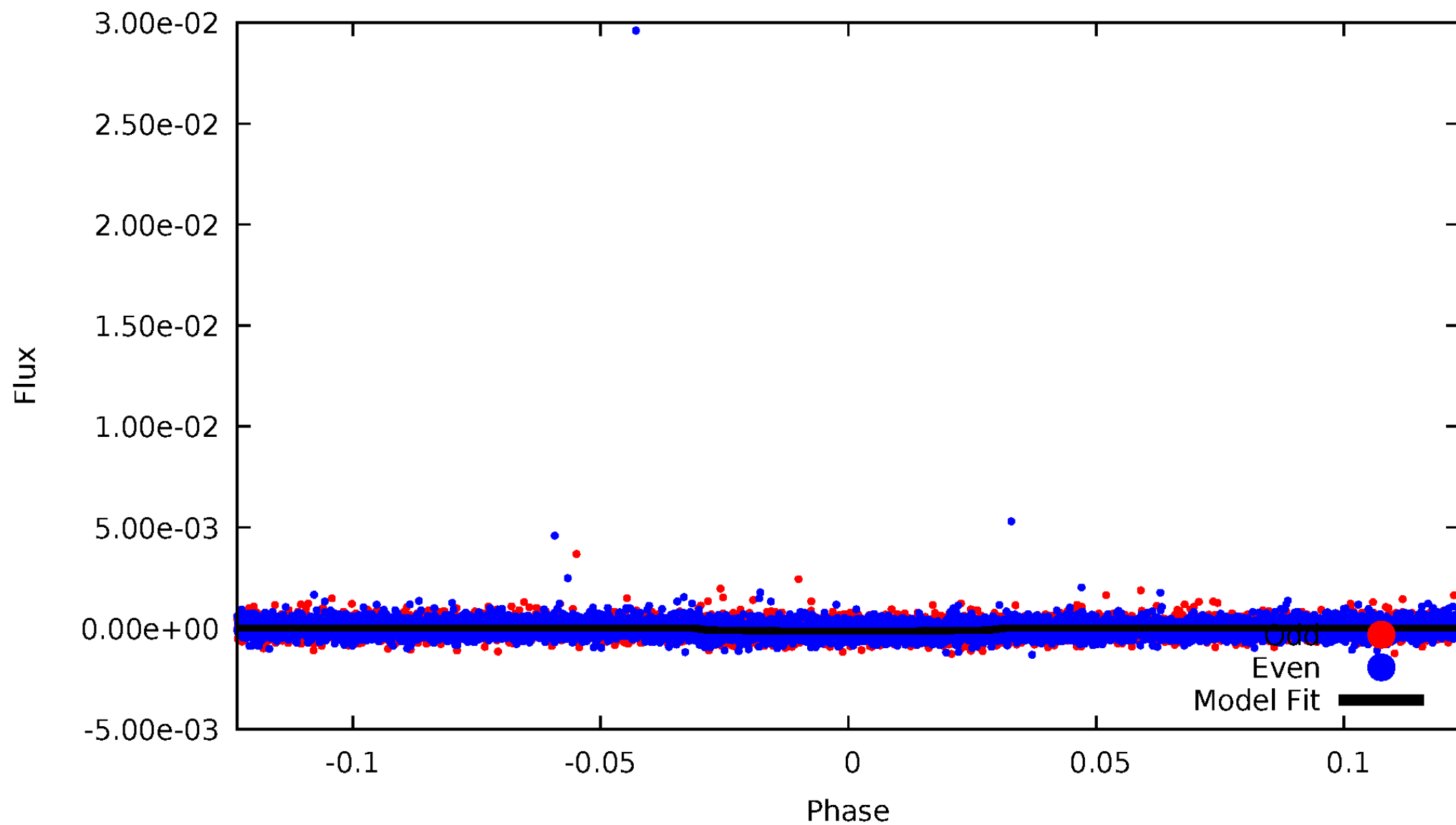


TCE 005385773-01



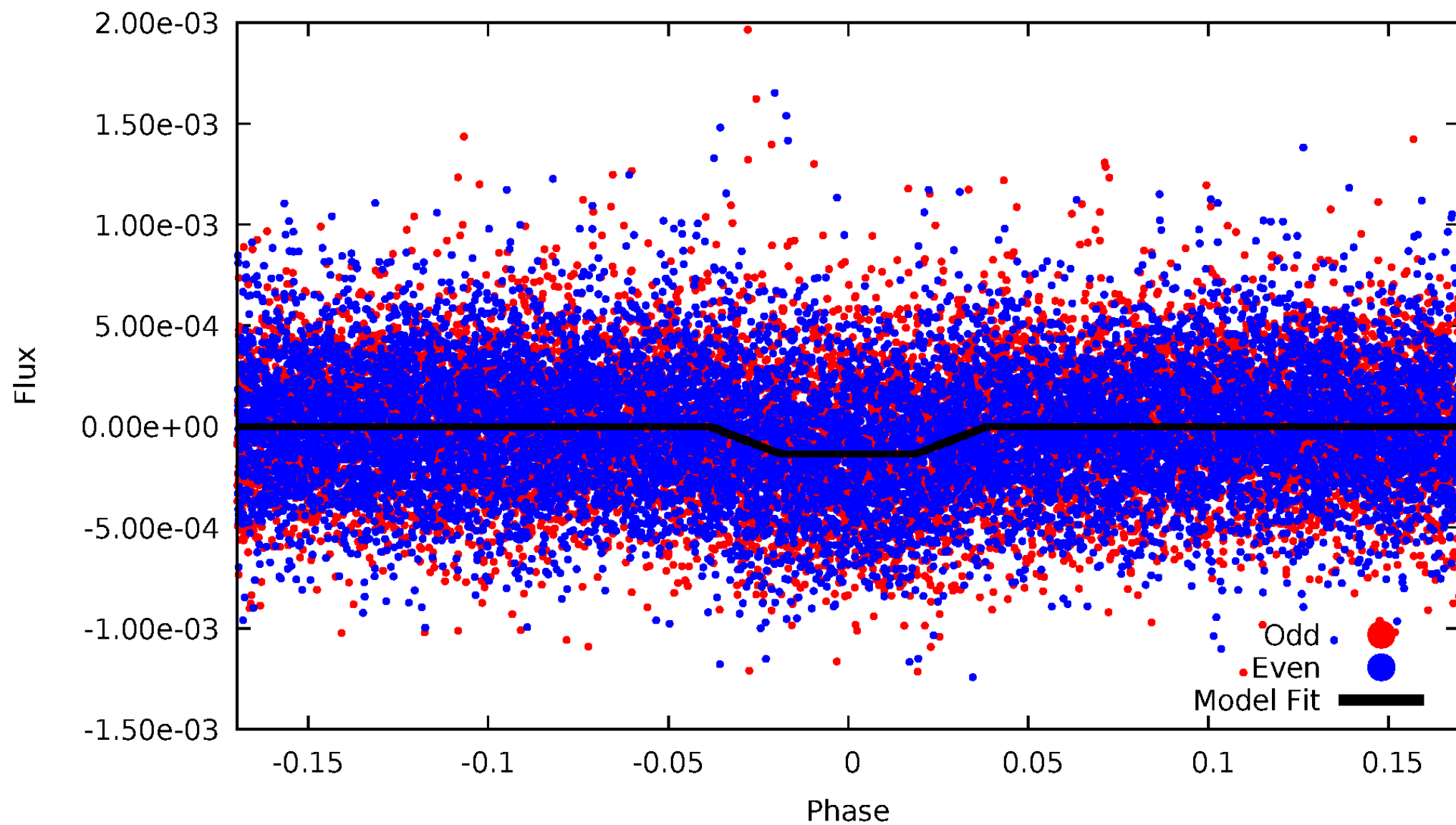
DV Odd/Even

TCE 005385773-01



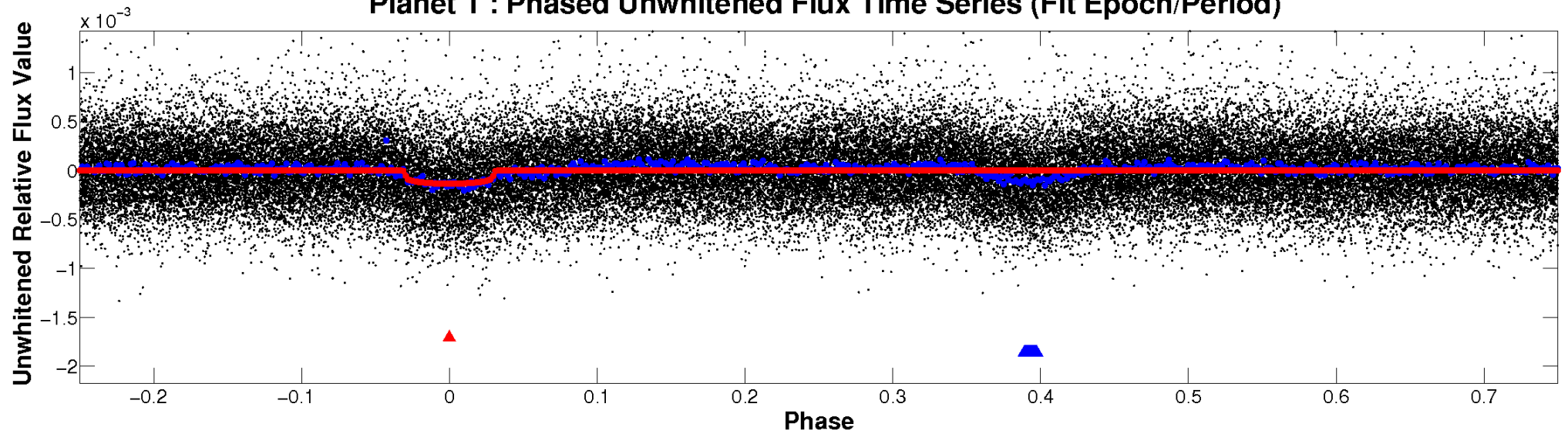
ALT Odd/Even

TCE 005385773-01

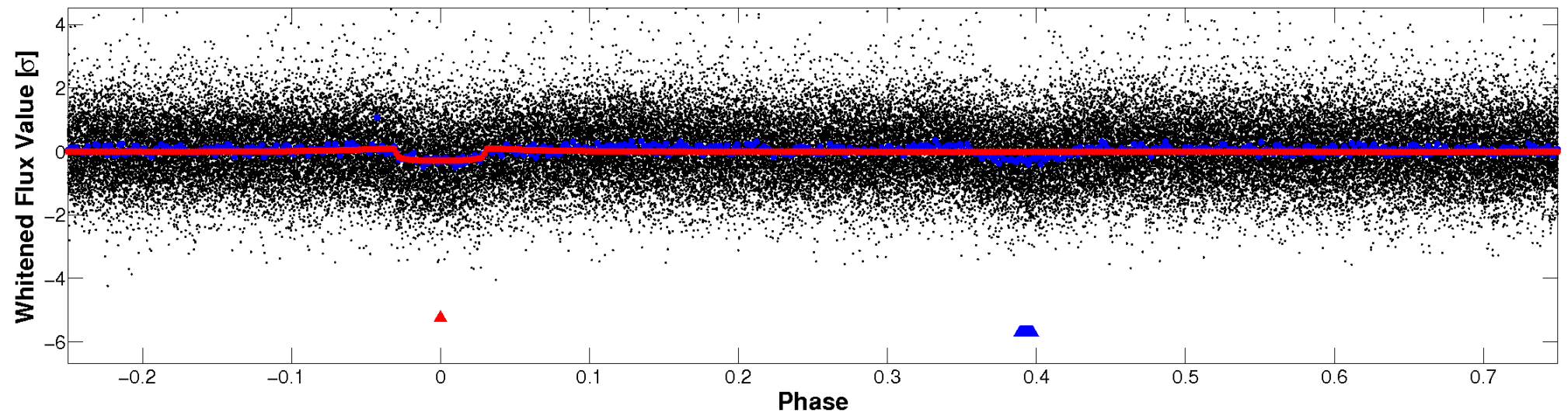


Non-Whitened Vs. Whitened Light Curve

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

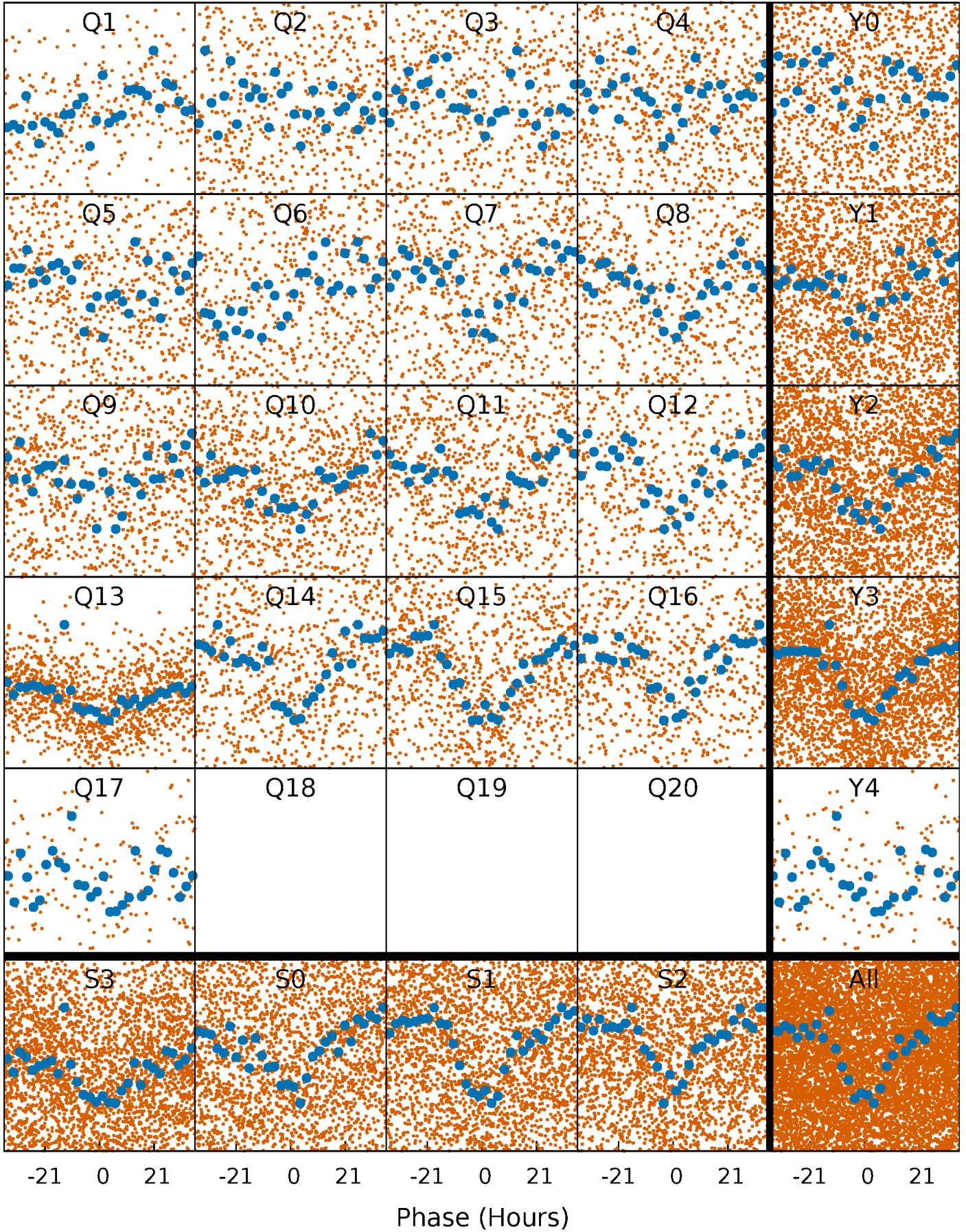


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



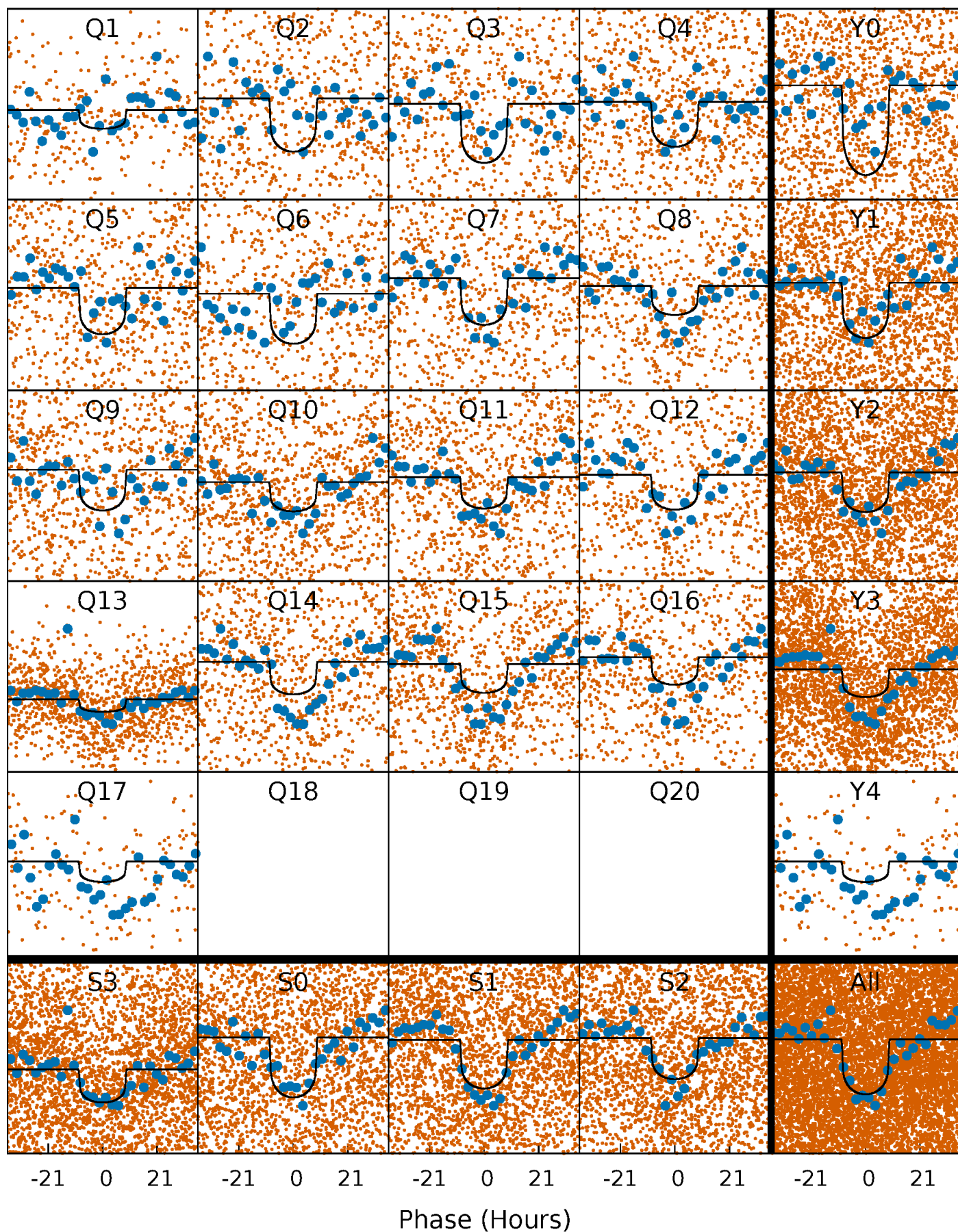
PDC Quarter-Phased Transit Curves

TCE 005385773-01 P= 12.425245 Days $T_0=141.544467$ (BKJD)



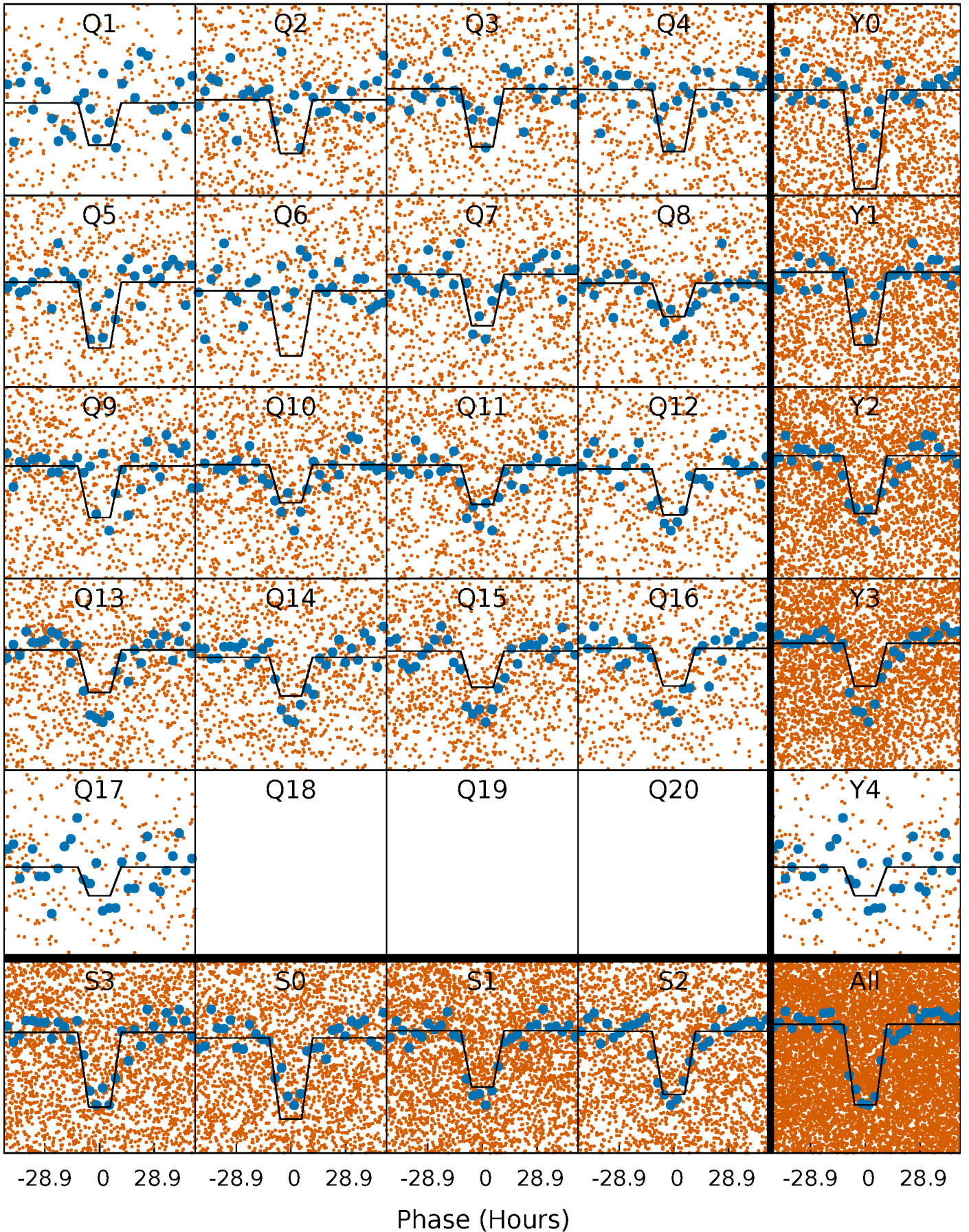
DV Quarter-Phased Transit Curves

TCE 005385773-01 P= 12.425245 Days $T_0=141.544467$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

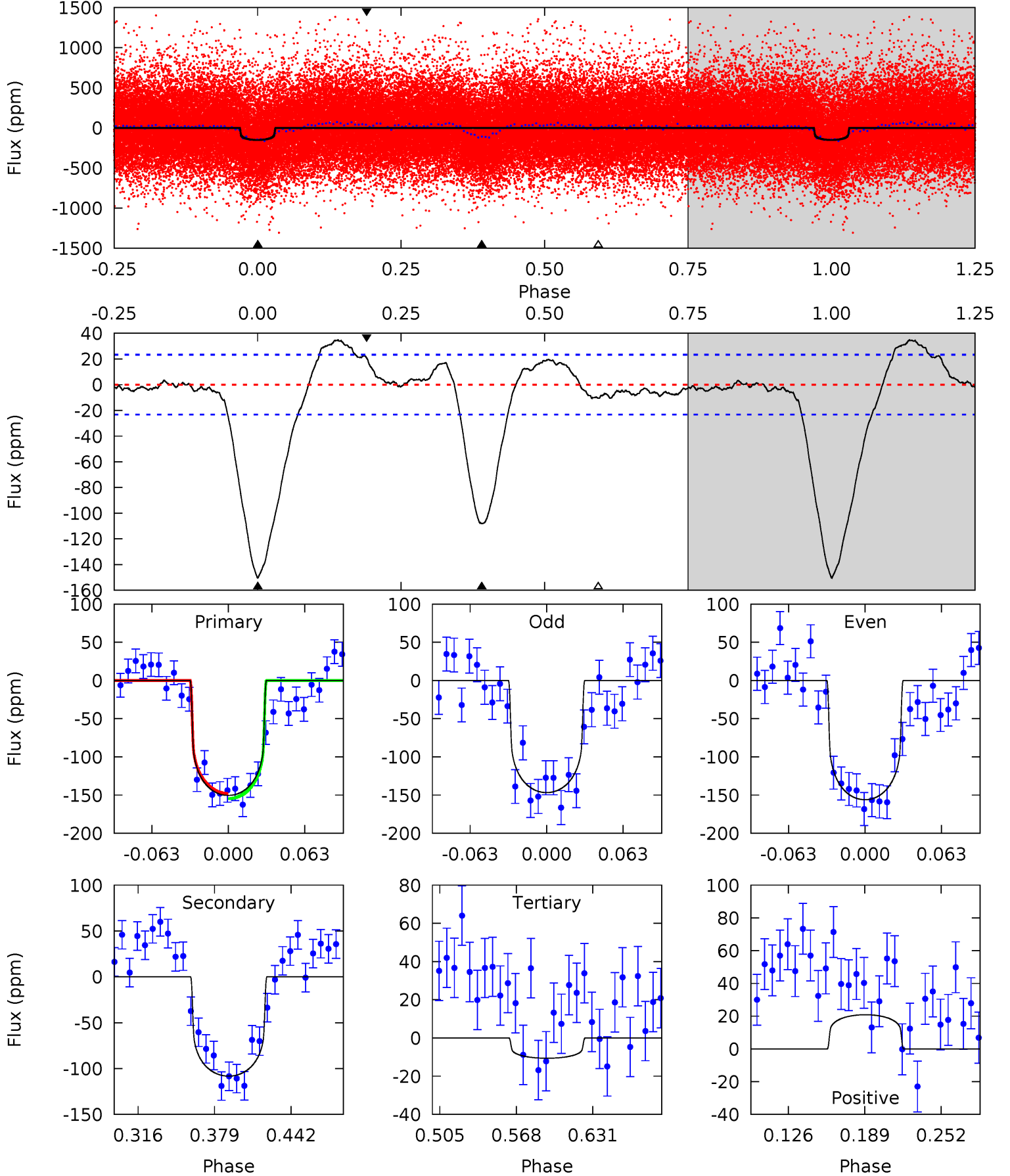
TCE 005385773-01 P= 12.425672 Days $T_0=141.534952$ (BKJD)



DV Model-Shift Uniqueness Test

005385773-01, P = 12.425245 Days, E = 129.119222 Days

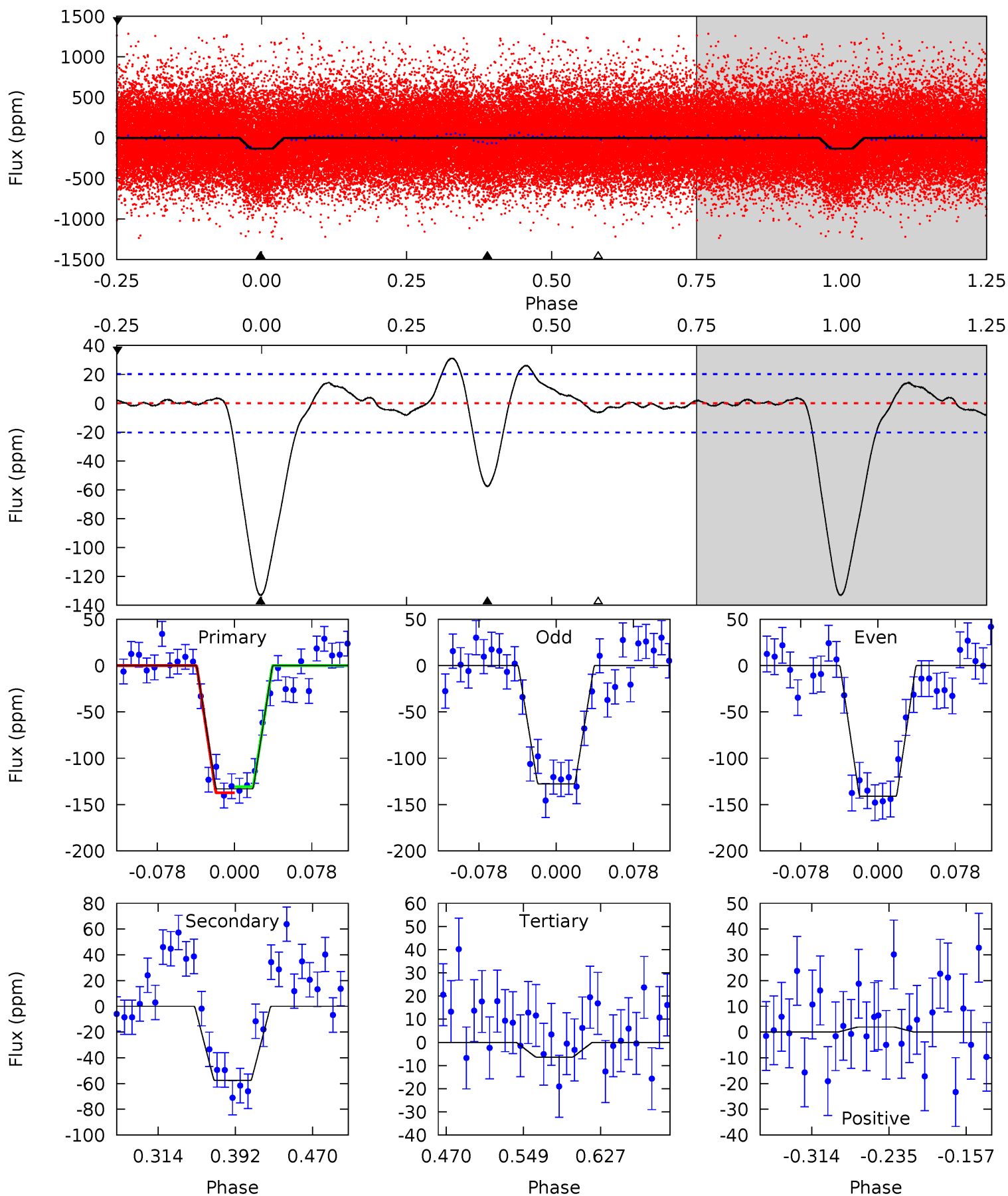
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.1	21.6	2.12	4.17	4.66	1.86	2.45	27.9	25.9	19.5	17.5	0.93	0.88	0.19	0.67



Alt Model-Shift Uniqueness Test

005385773-01, P = 12.425672 Days, E = 129.109280 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.3	13.1	1.45	0.44	4.62	1.76	1.32	28.9	29.9	11.7	12.7	1.53	0.82	0.19	0.75



Stellar Parameters For KIC 005385773

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5571^{+165}_{-148}	$4.643^{+0.028}_{-0.105}$	$-0.700^{+0.300}_{-0.300}$	$0.691^{+0.114}_{-0.045}$	$0.776^{+0.066}_{-0.073}$	$3.319^{+0.475}_{-1.101}$
	+3%/-3%	+1%/-2%	+43%/-43%	+16%/-7%	+9%/-9%	+14%/-33%
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 005385773-01 / KOI 6005.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-108 ± 5	$0.90^{+0.18}_{-0.13}$	938^{+40}_{-36}	5272^{+445}_{-321}	667^{+242}_{-190}
Alt.	-58 ± 4	$0.90^{+0.16}_{-0.15}$	935^{+40}_{-36}	4648^{+377}_{-290}	361^{+167}_{-102}

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

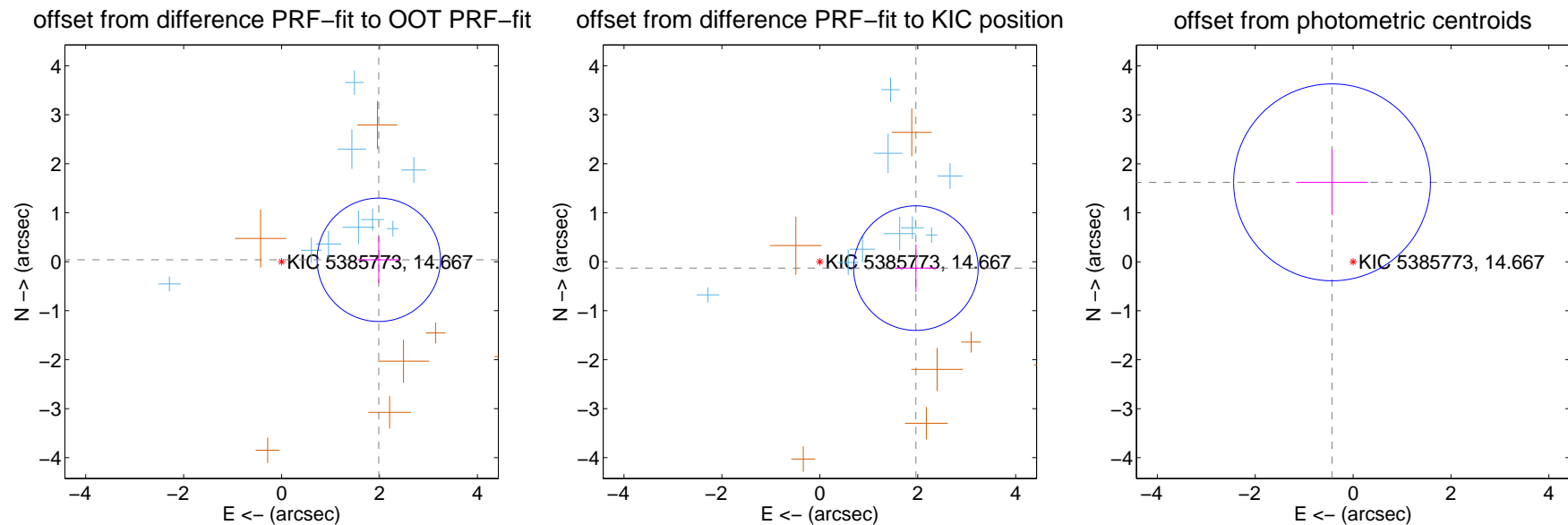
DV Centroid Data

Supplemental centroid analysis for 005385773-01. Kepler magnitude: 14.67. Transit SNR 16.34

There are 9 quarters with good PRF difference image offsets

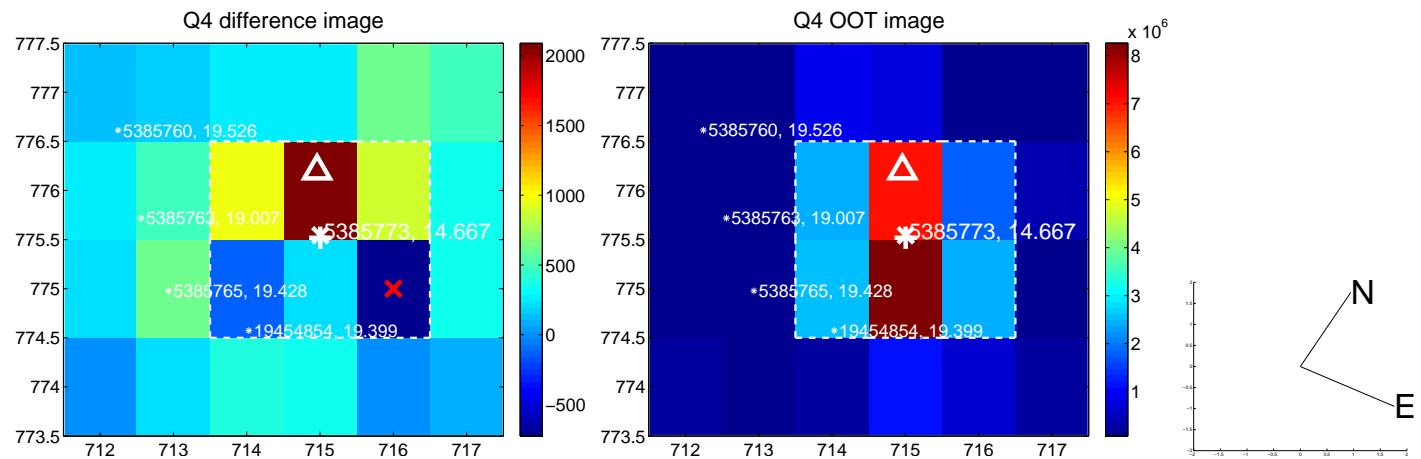
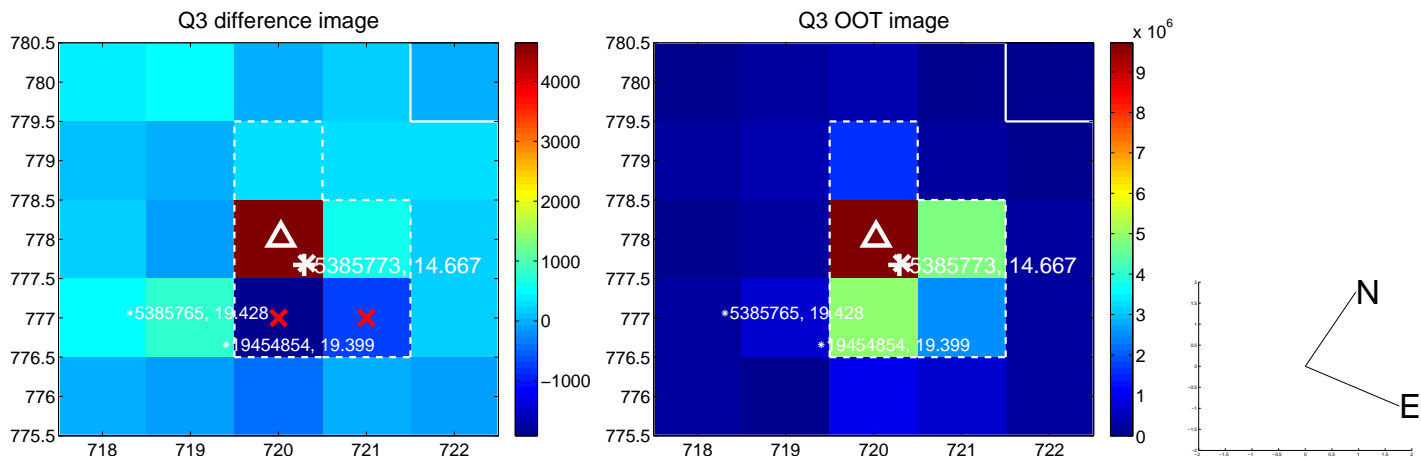
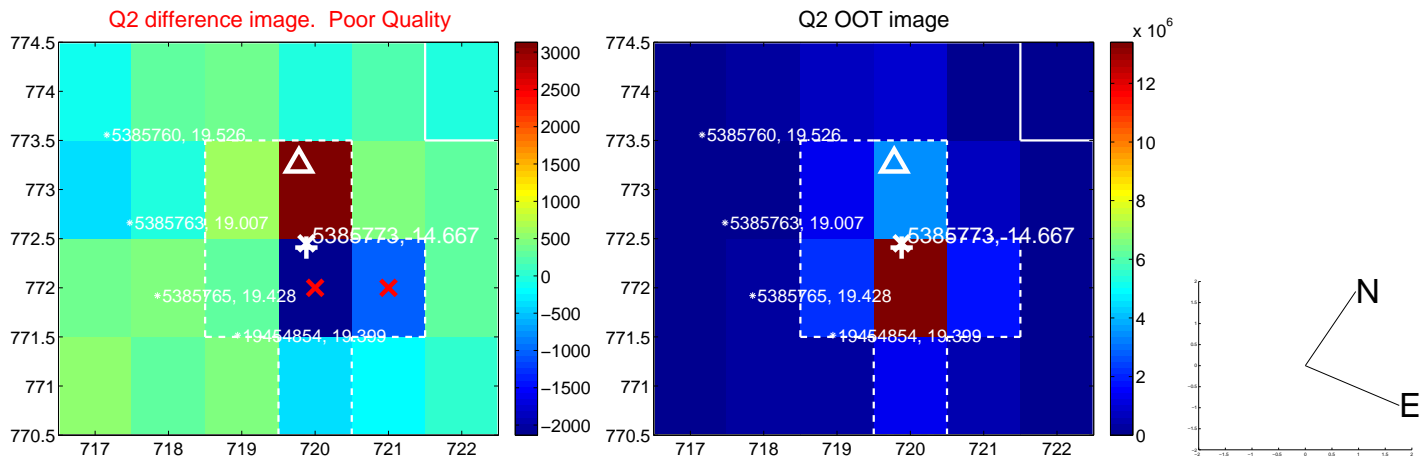
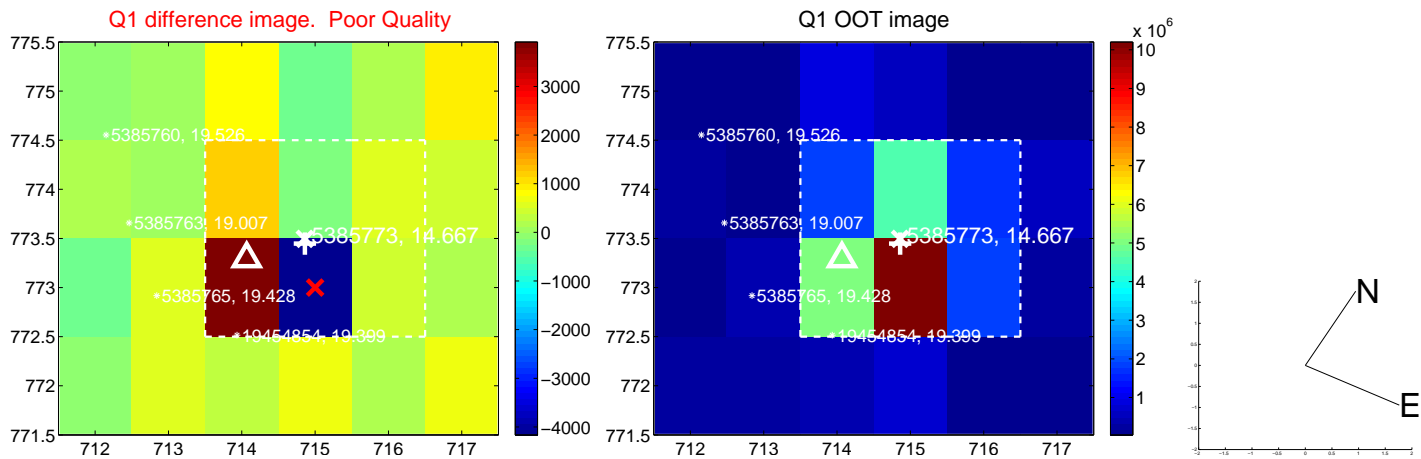
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.985 ± 0.420	4.73	-1.985 ± 0.418	0.038 ± 0.480
PRF-fit source offset from KIC position	1.966 ± 0.424	4.64	-1.961 ± 0.426	-0.131 ± 0.485
photometric centroid source offset	1.68 ± 0.67	2.50	0.43 ± 0.73	1.62 ± 0.67

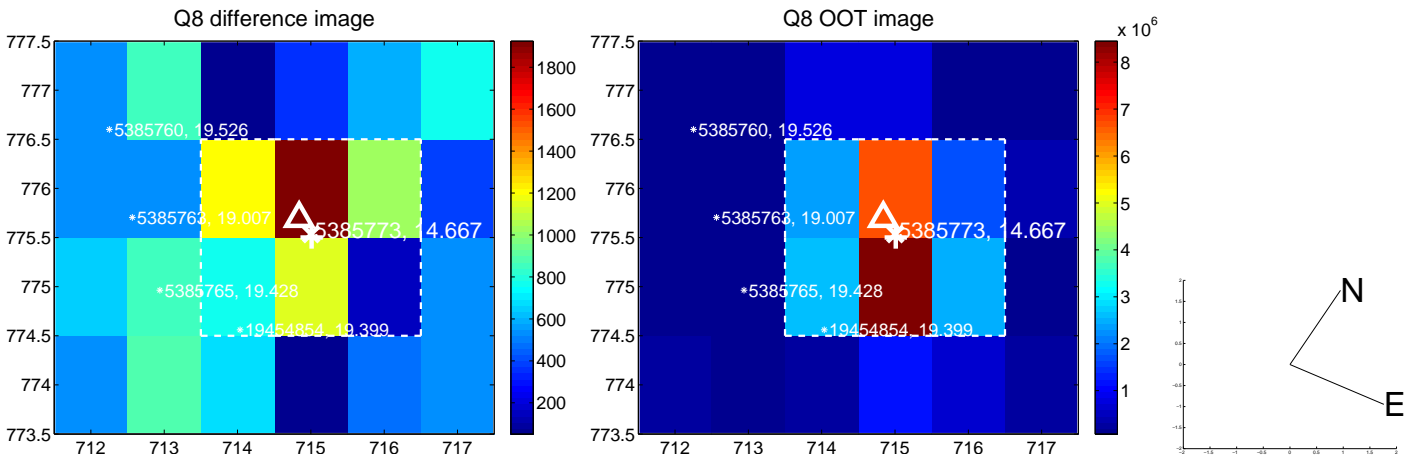
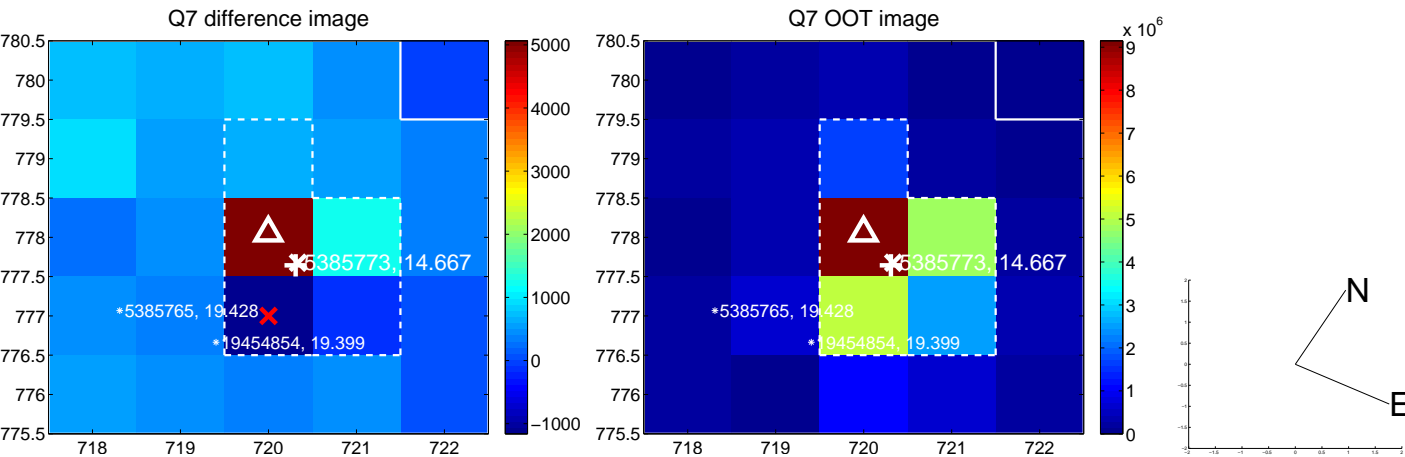
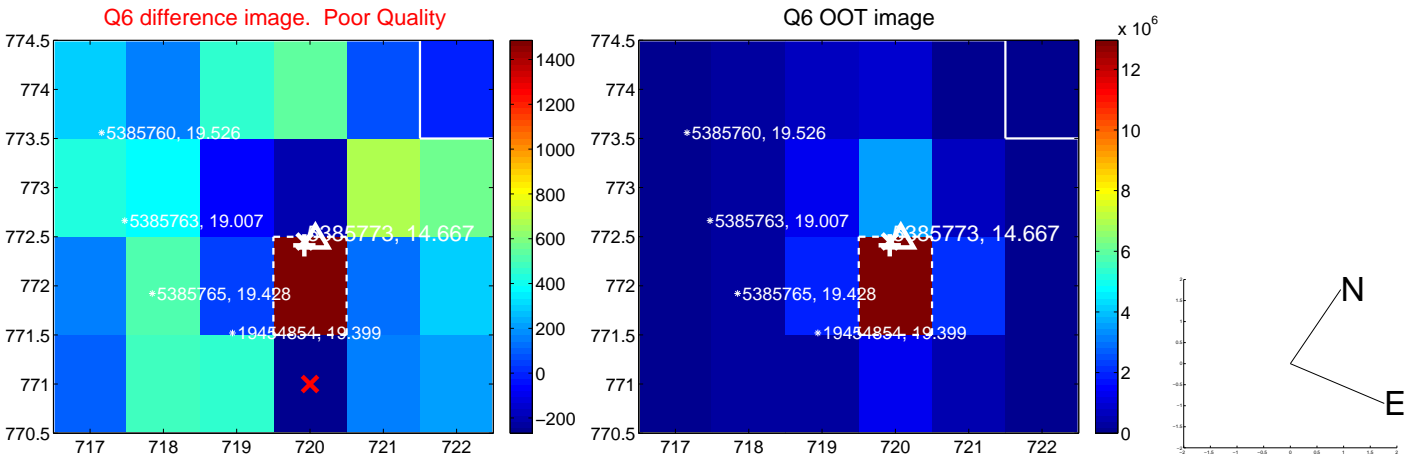
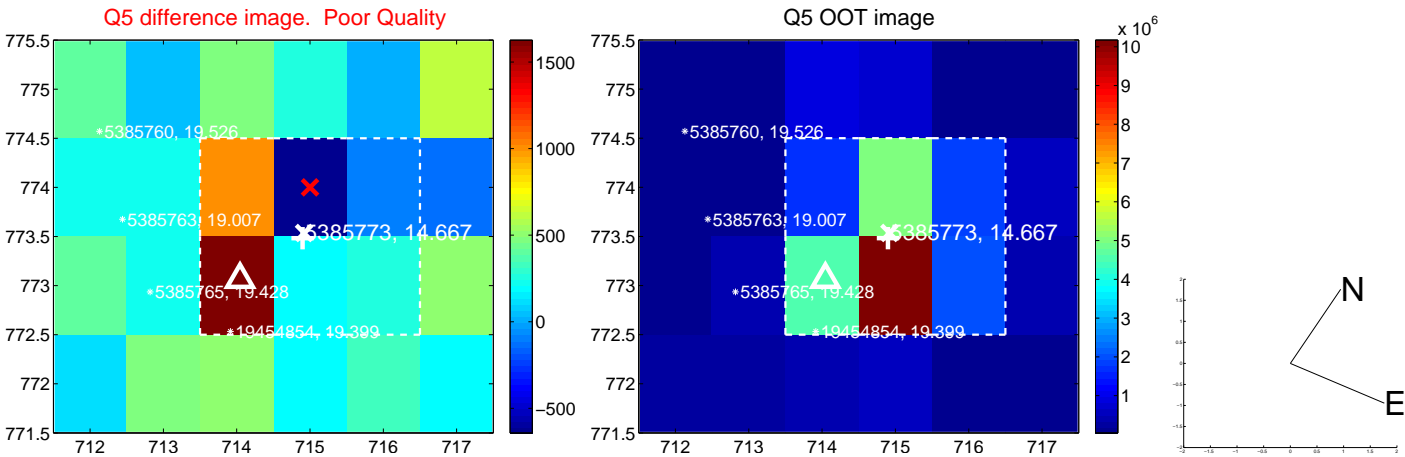


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

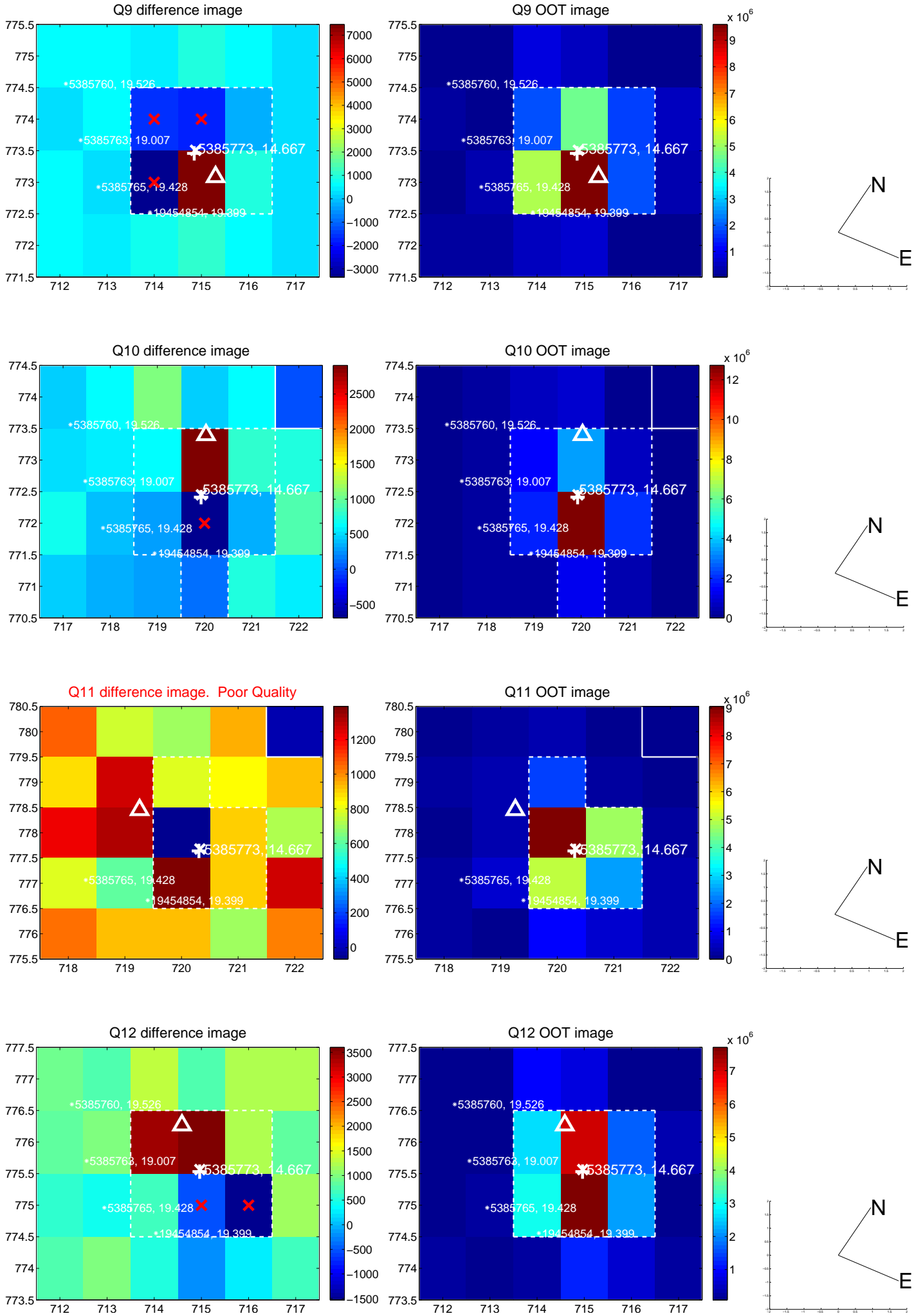
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



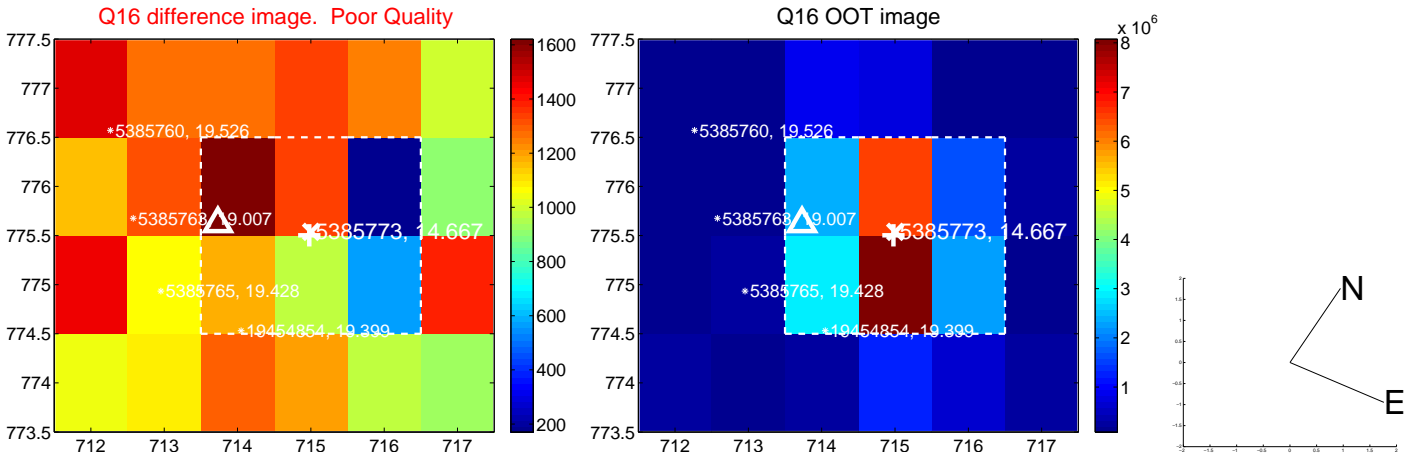
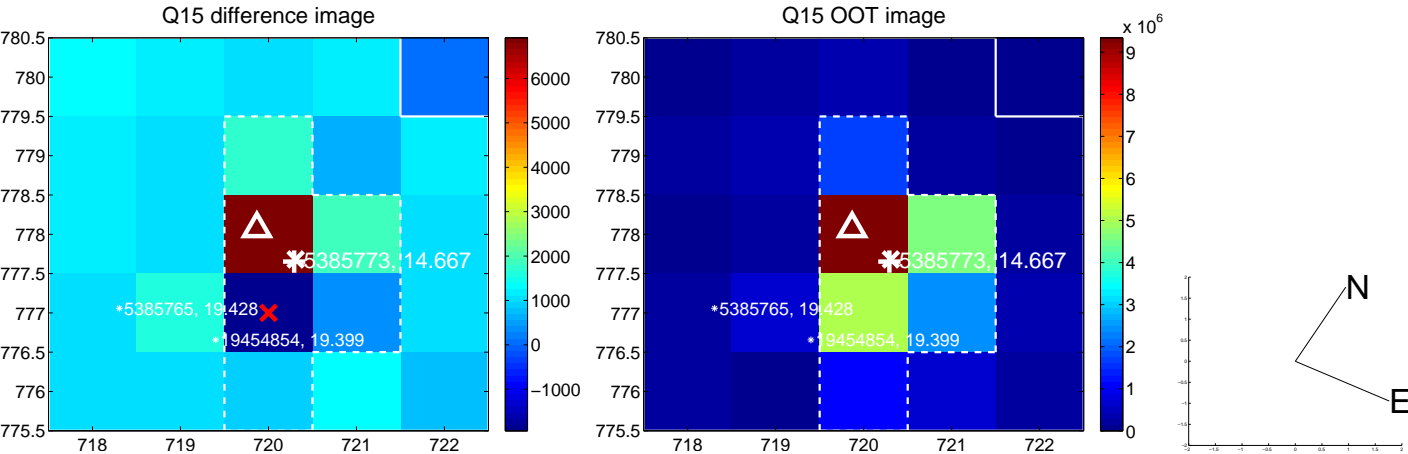
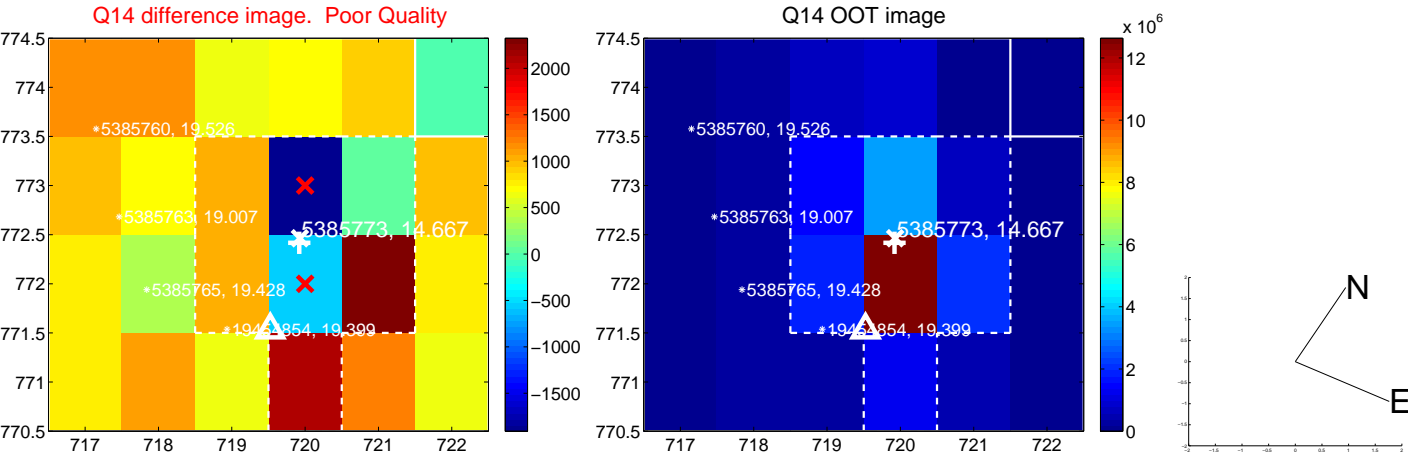
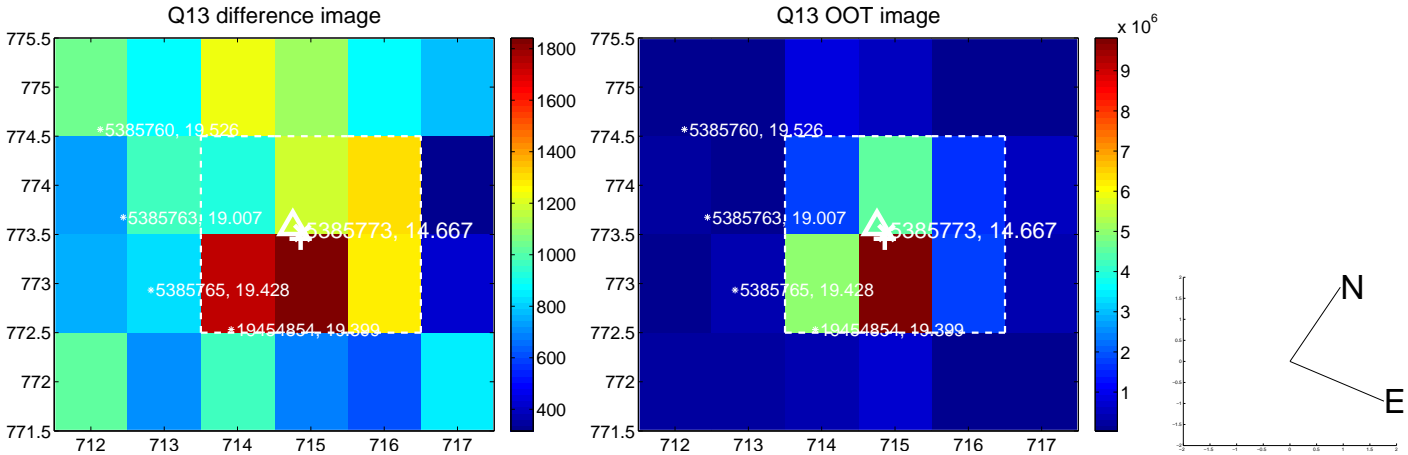
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



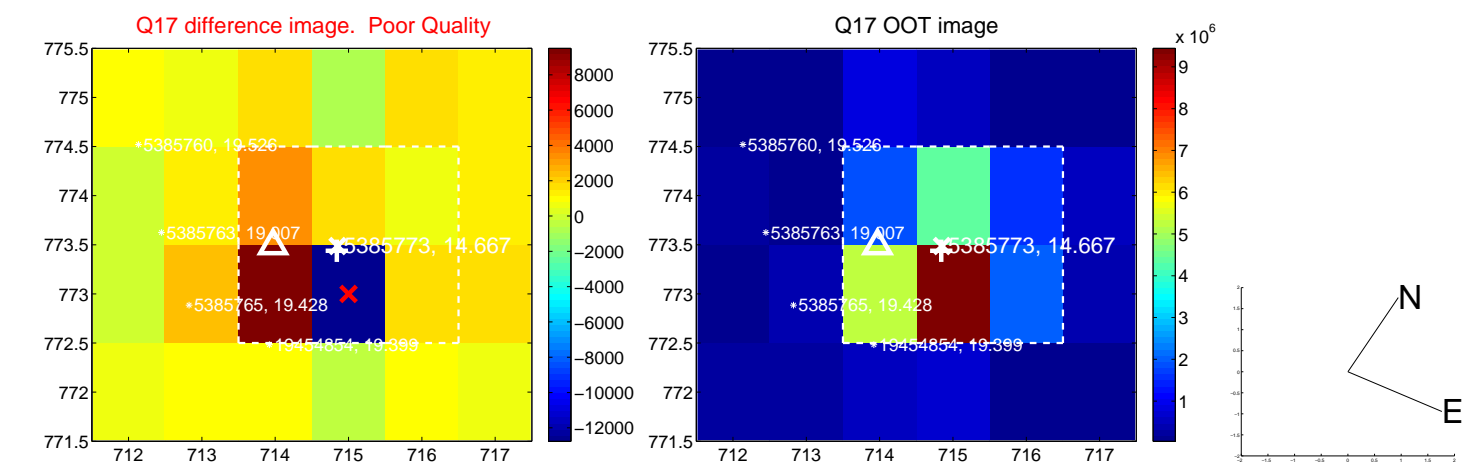
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



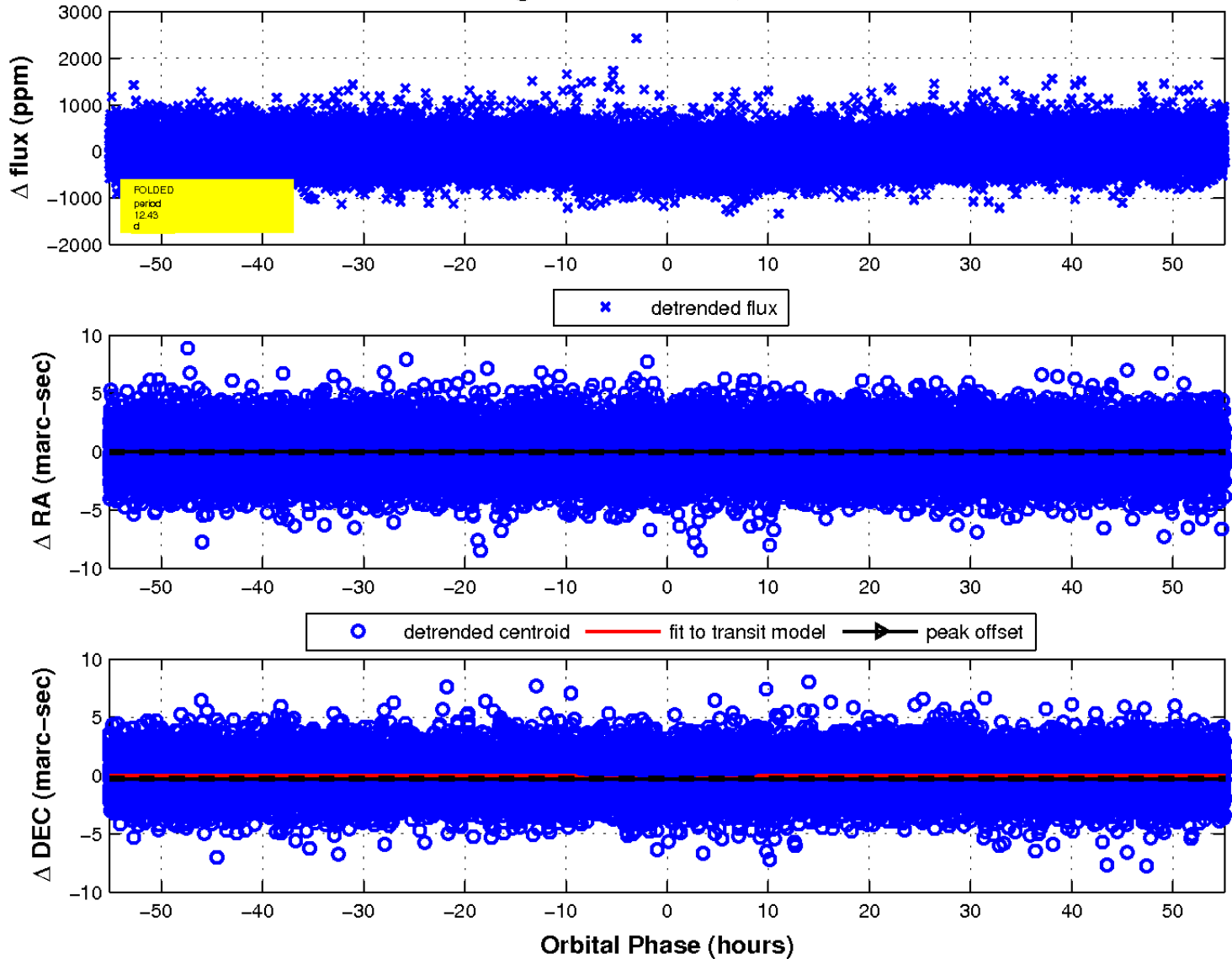
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

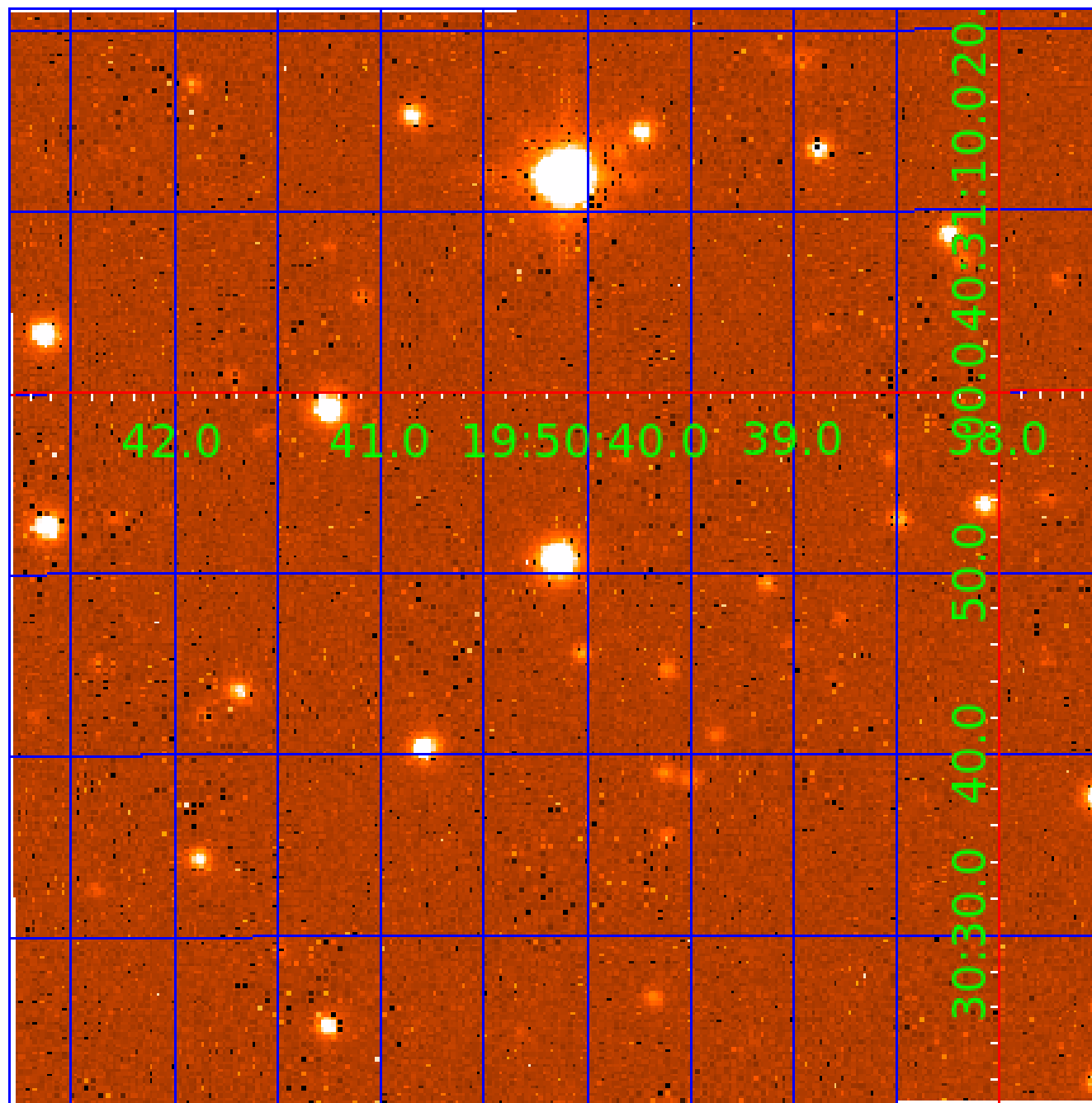


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 005385773

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})
005385773-01	OBS	6005.01	12.425245	141.544467	134.2	18.385	13.5	16.3	0.69	5571	0.87	44.66
005385773-02	OBS	No	12.424338	134.057611	148.4	29.130	14.8	18.4	0.69	5571	1.35	44.66

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005385773-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_UNCERTAIN—HALO_GHOST—EPHEM_MATCH
005385773-02	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.

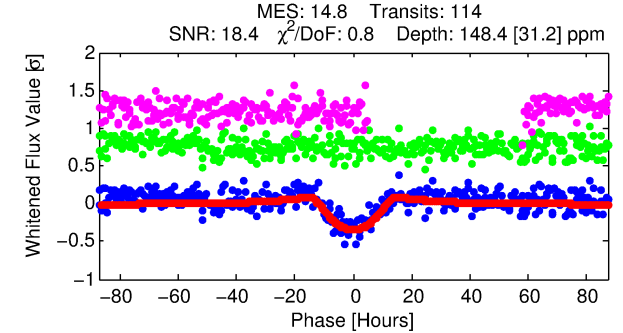
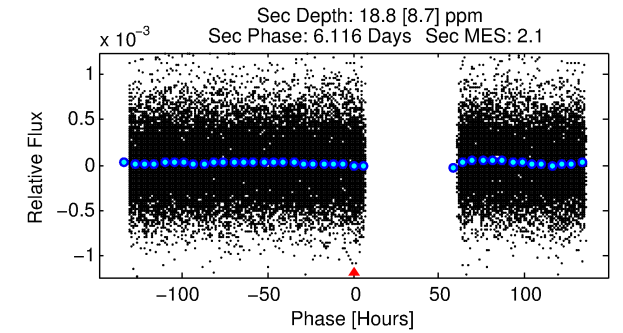
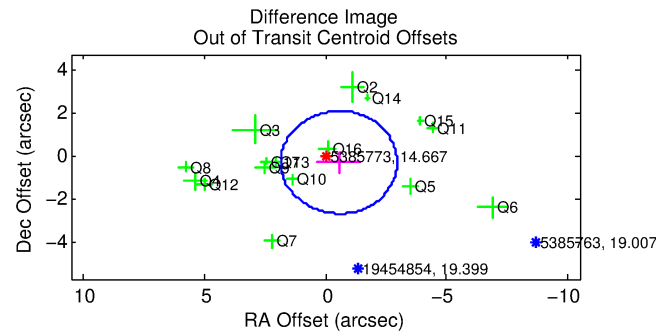
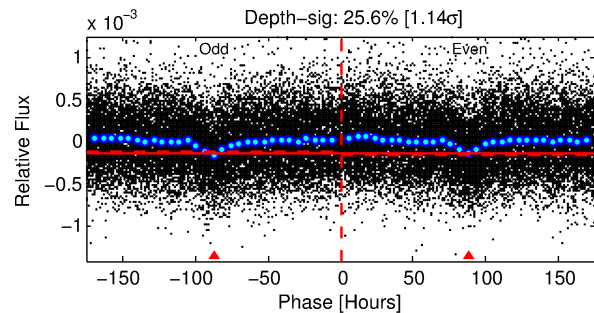
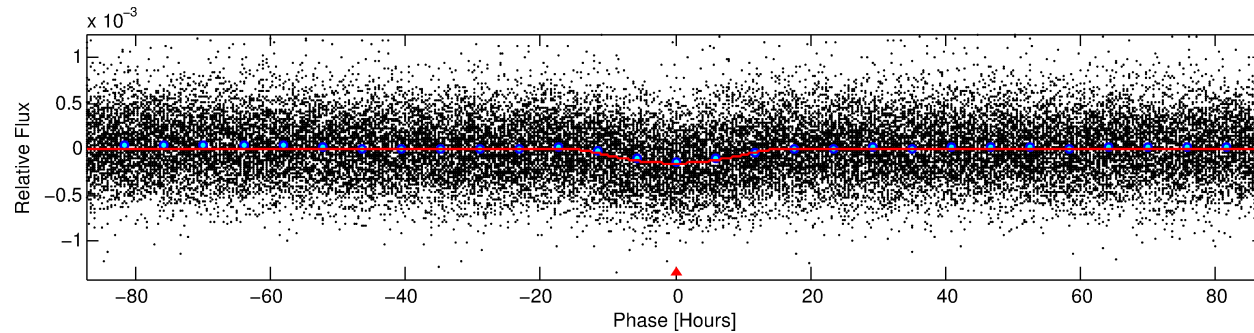
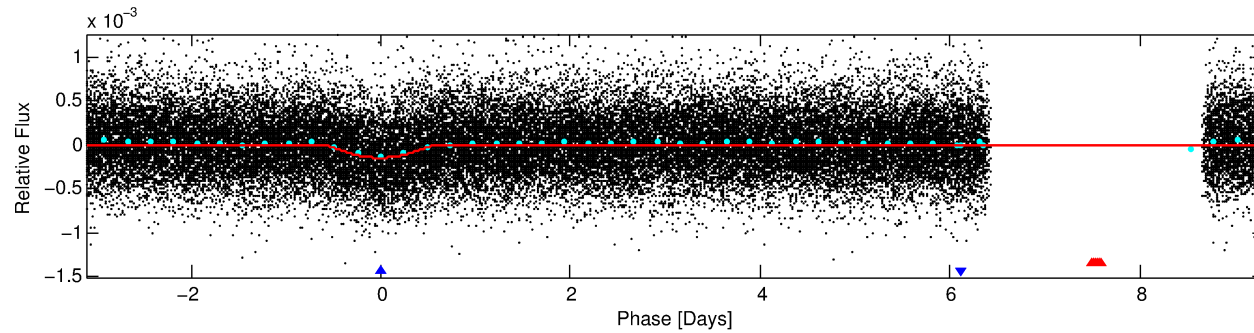
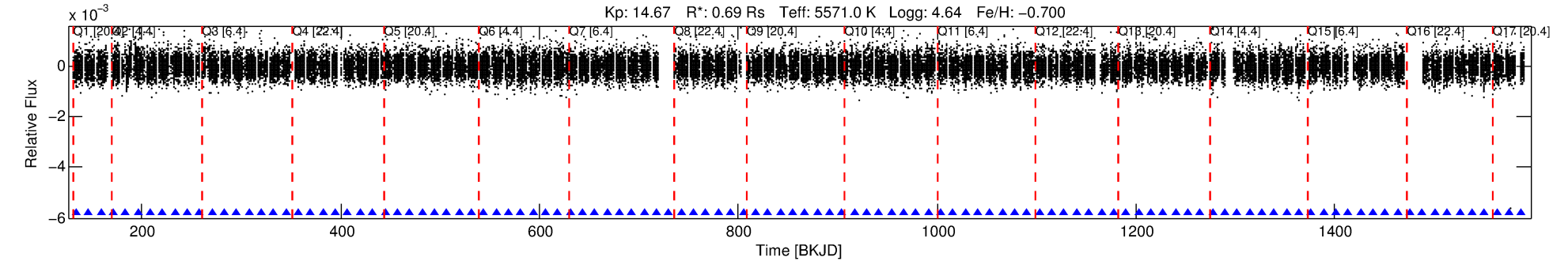
Ephemeris Match Information For 005385773-02

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
005385773-02	5385773	V380-Cyg-sec	5385723	1:1	309.9	-72	-29	5.77	14.67	871.86	Direct-PRF	0	3.28	3.41

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: 5385773 Candidate: 2 of 2 Period: 12.424 d
KOI: K06005 Corr: No Ephemeris Match



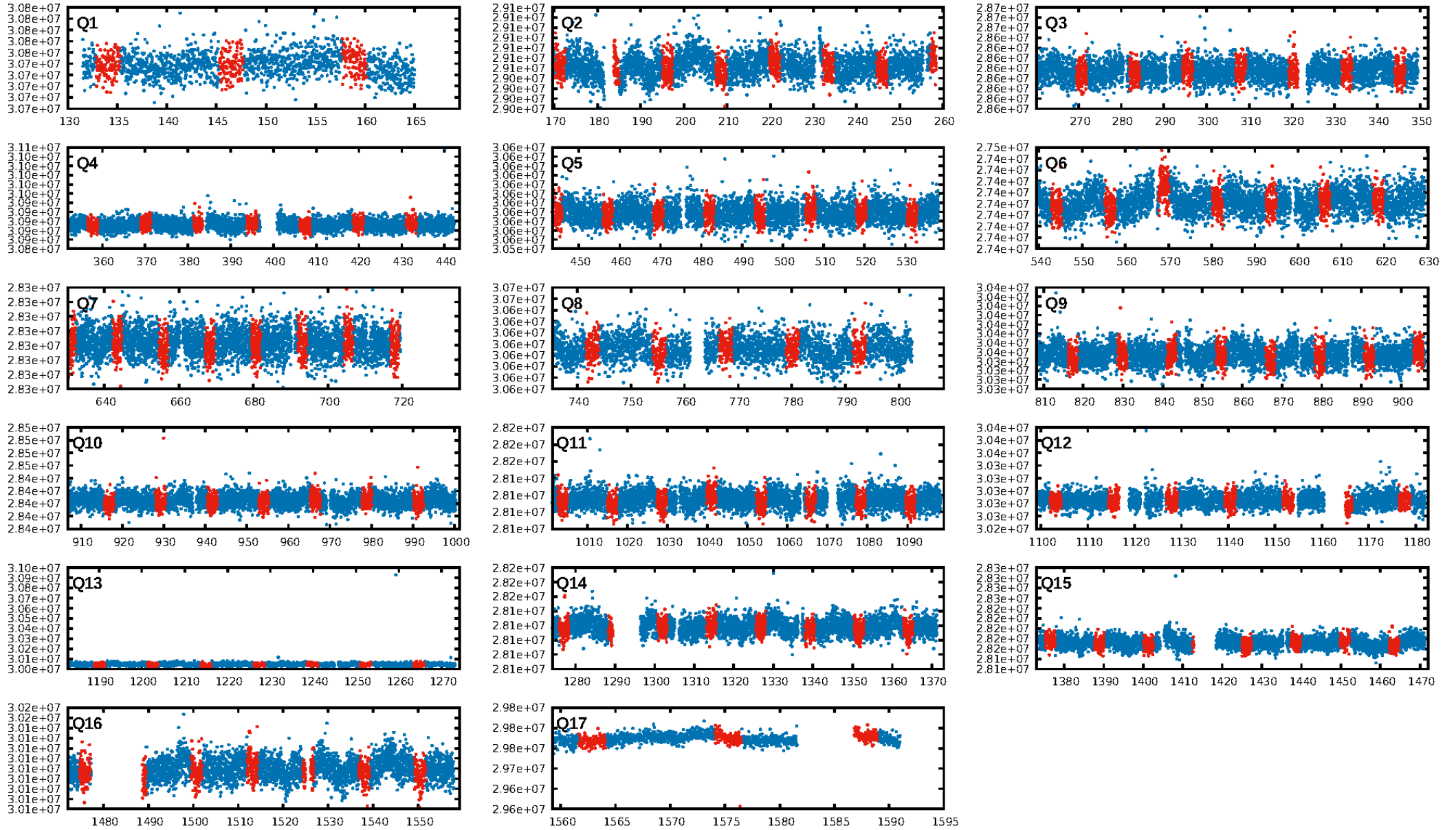
DV Fit Results:

Period = 12.42434 [0.00048] d
Epoch = 134.0576 [0.0316] BKJD
Rp/R* = 0.0179 [0.0087]
a/R* = 1.25 [0.09]
b = 0.99 [0.02]
Seff = 44.66 [10.19]
Teq = 659 [38] K
Rp = 1.35 [0.69] Re
a = 0.0961 [0.0131] AU
Ag = 52.29 [57.03] [0.90 σ]
Teffp = 2741 [740] K [2.81 σ]

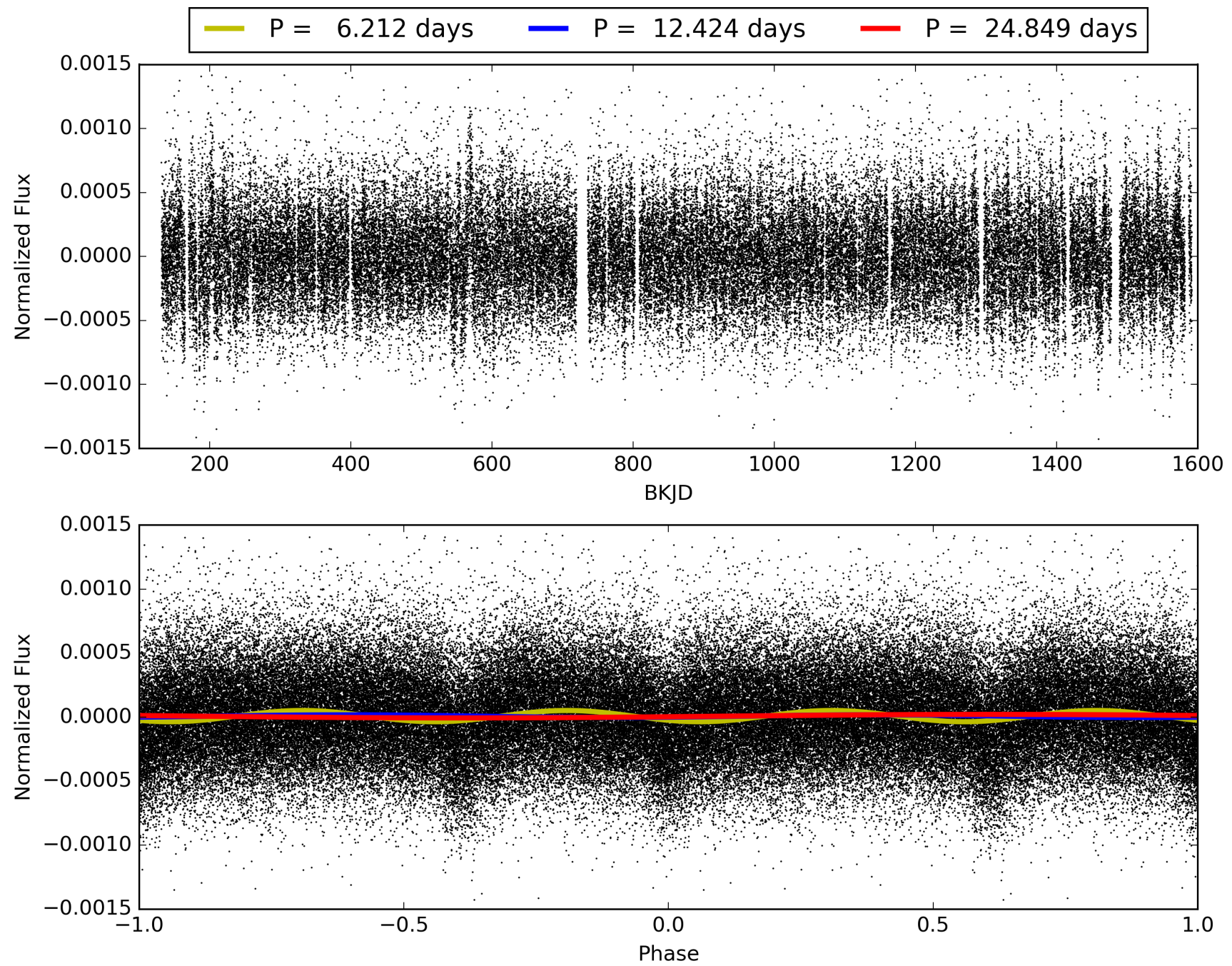
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00 σ]
ModelChiSquare2-sig: 48.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.28e-50
RollingBand-fgt: 1.00 [108/108]
GhostDiagnostic-chr: 0.0839
Centroid-sig: 0.0%
Centroid-so: 1.747 arcsec [2.75 σ]
OotOffset-rm: 0.631 arcsec [0.79 σ]
KicOffset-rm: 0.708 arcsec [0.98 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.31 [5/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 005385773-02, PDC Light Curves

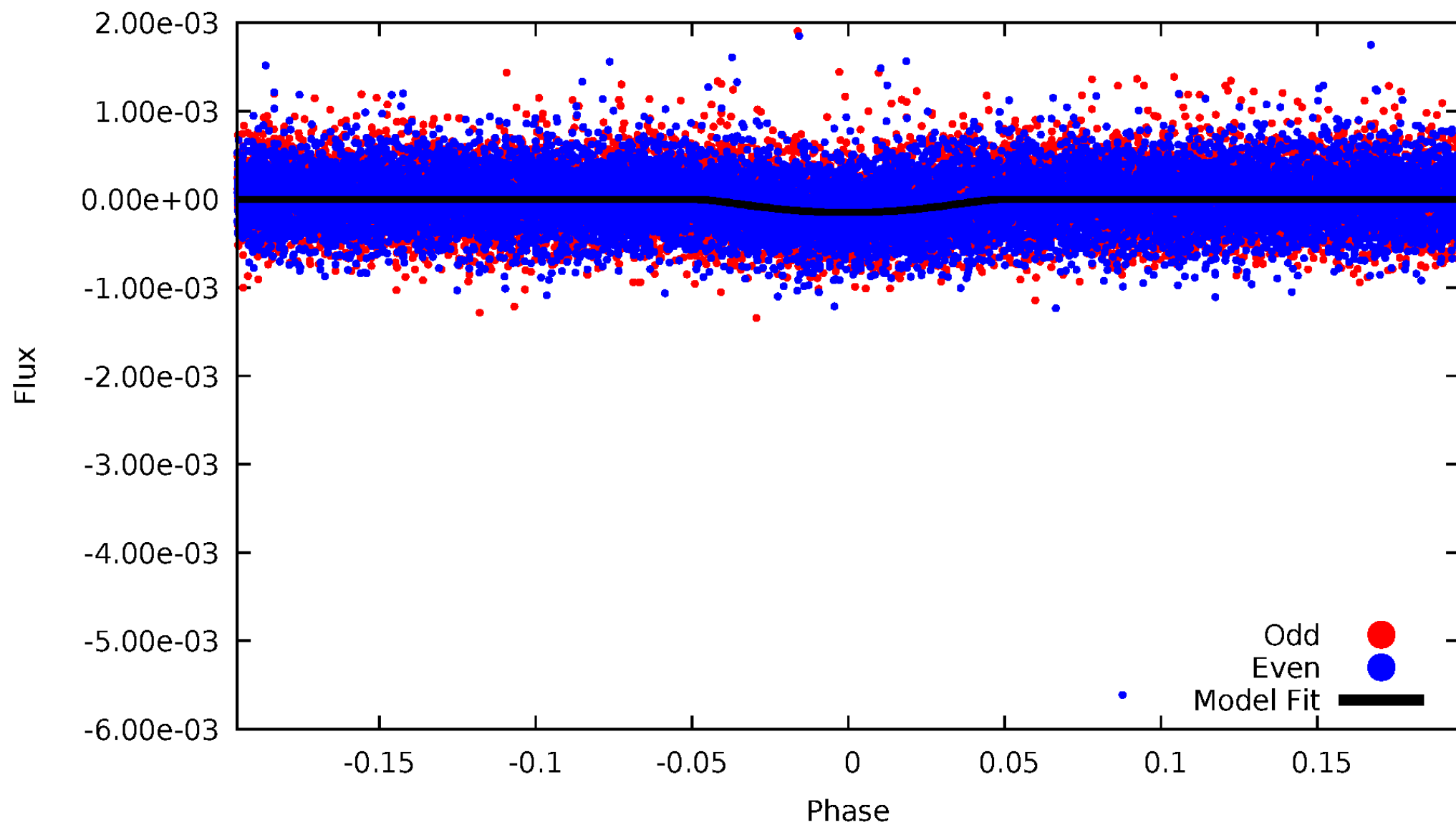


TCE 005385773-02



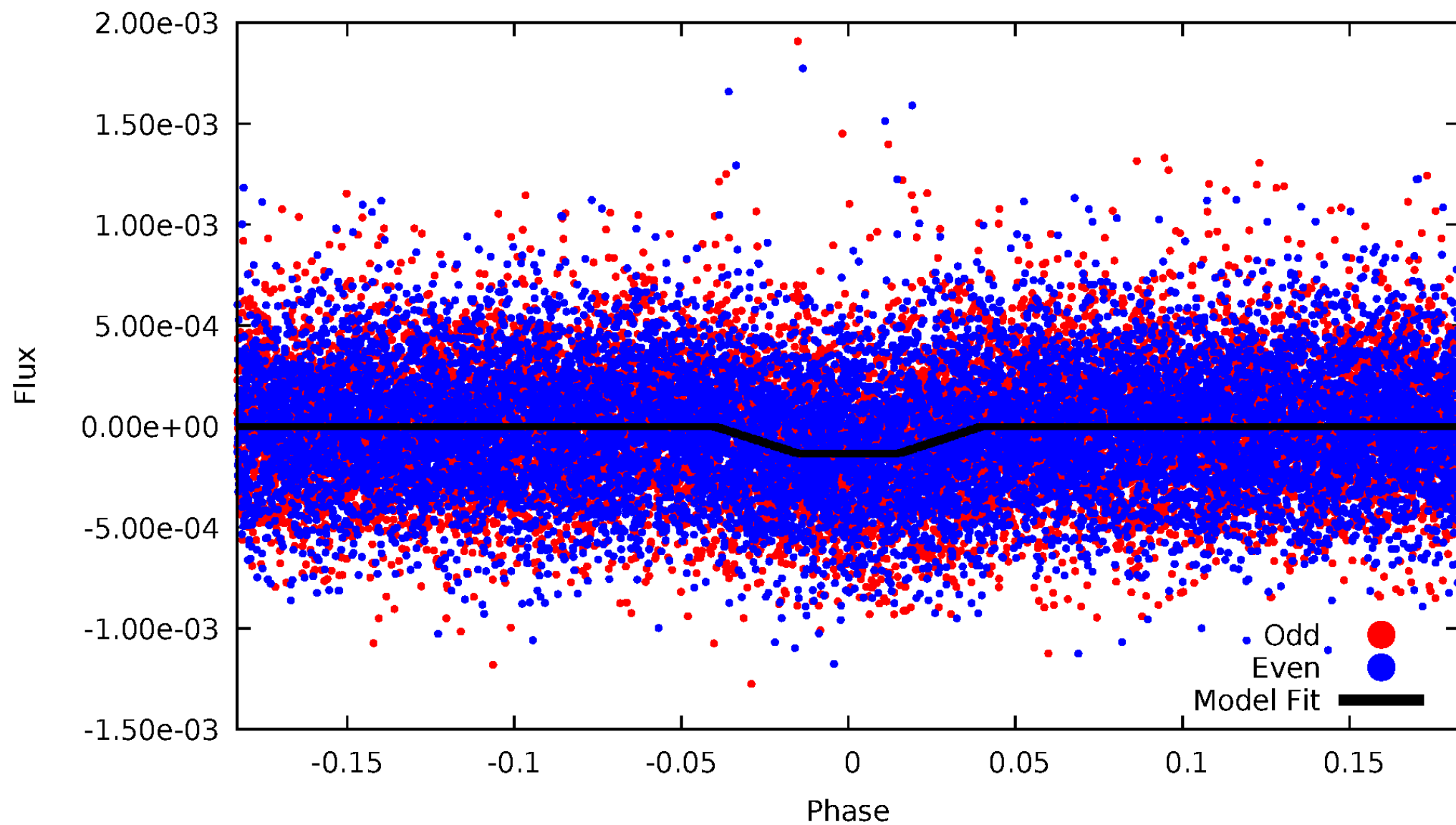
DV Odd/Even

TCE 005385773-02



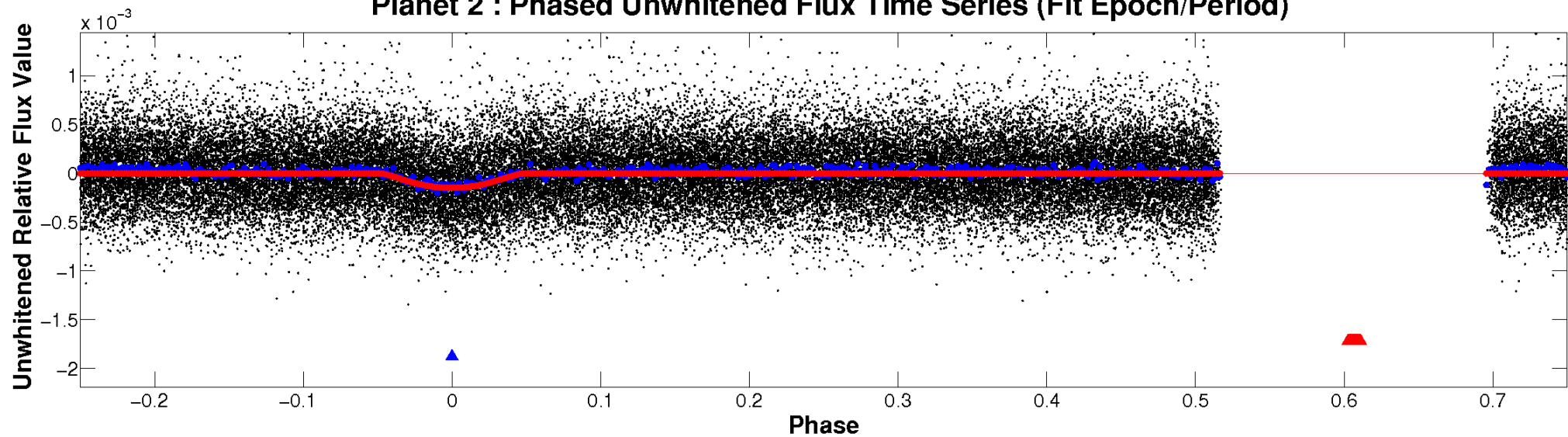
ALT Odd/Even

TCE 005385773-02

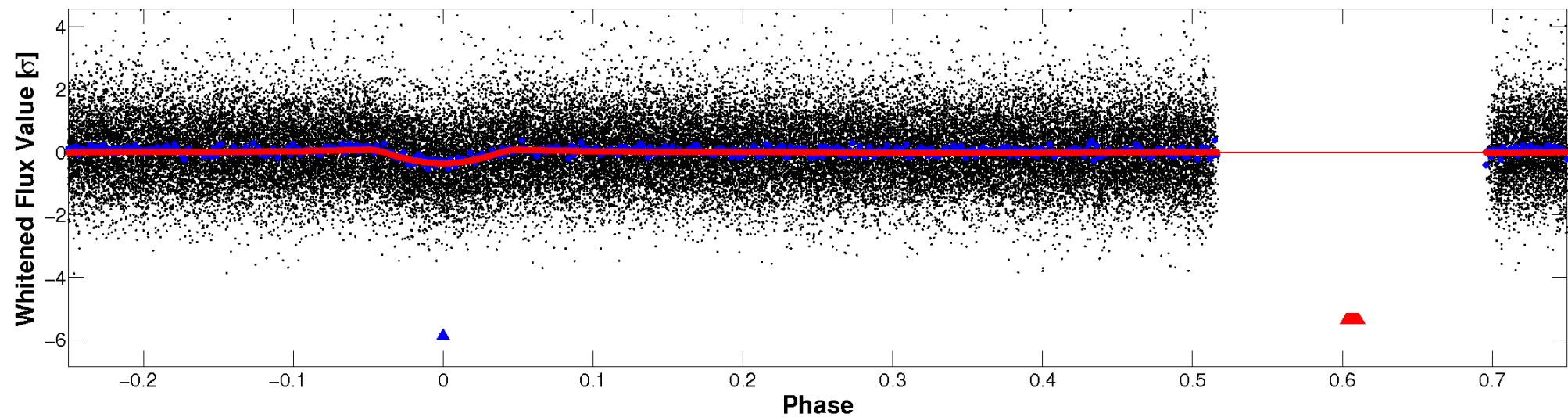


Non-Whitened Vs. Whitened Light Curve

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

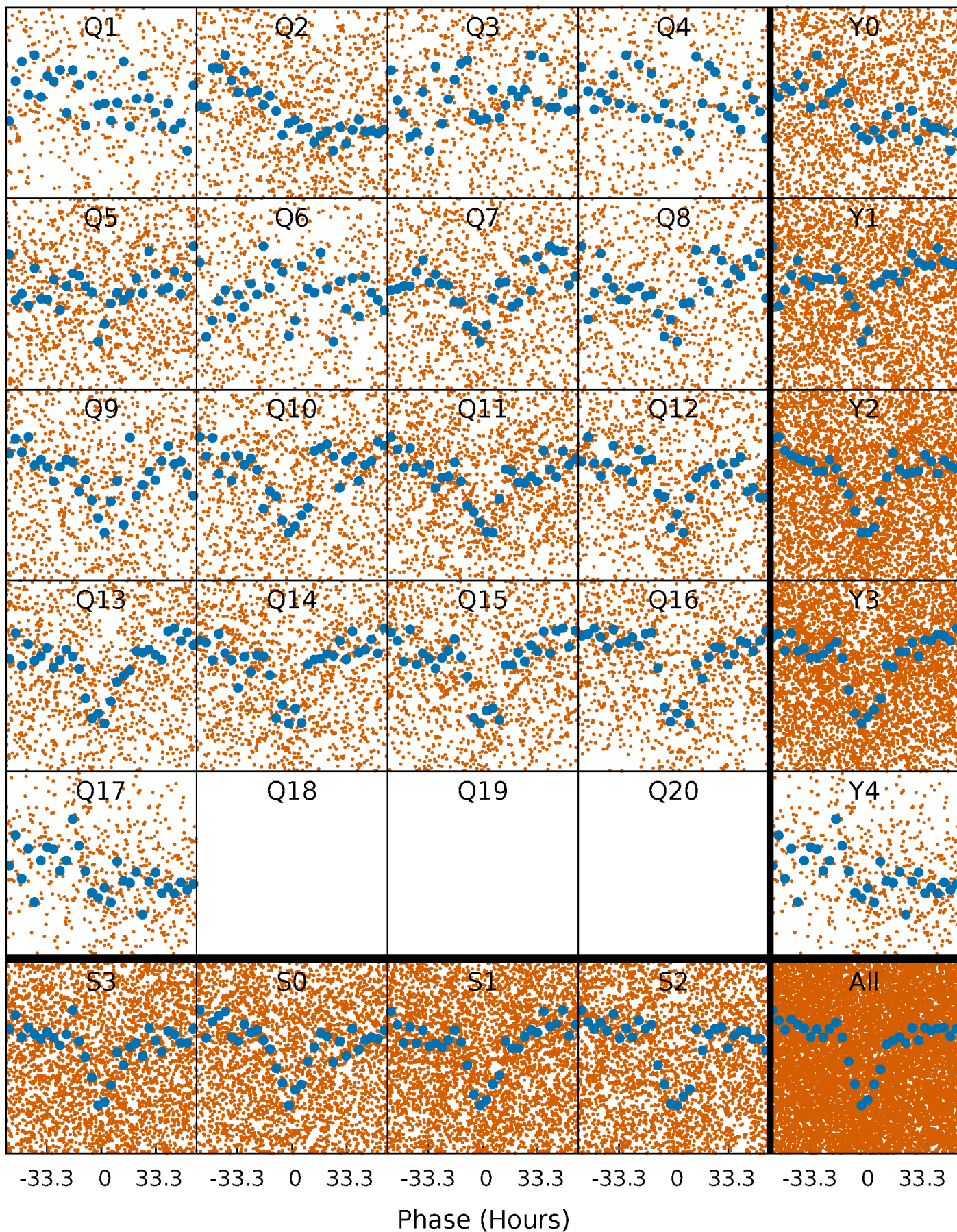


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



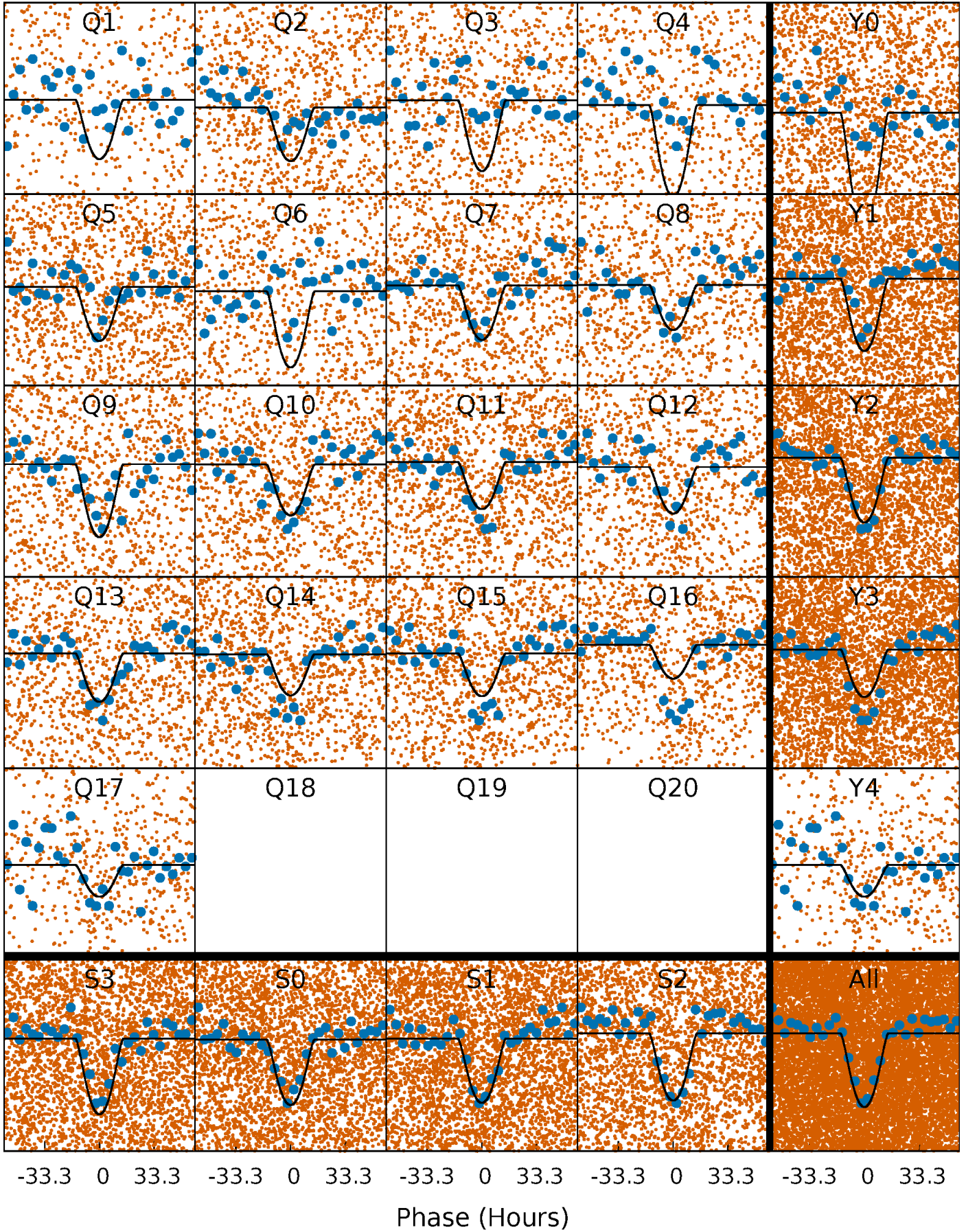
PDC Quarter-Phased Transit Curves

TCE 005385773-02 P= 12.424338 Days $T_0=134.057611$ (BKJD)



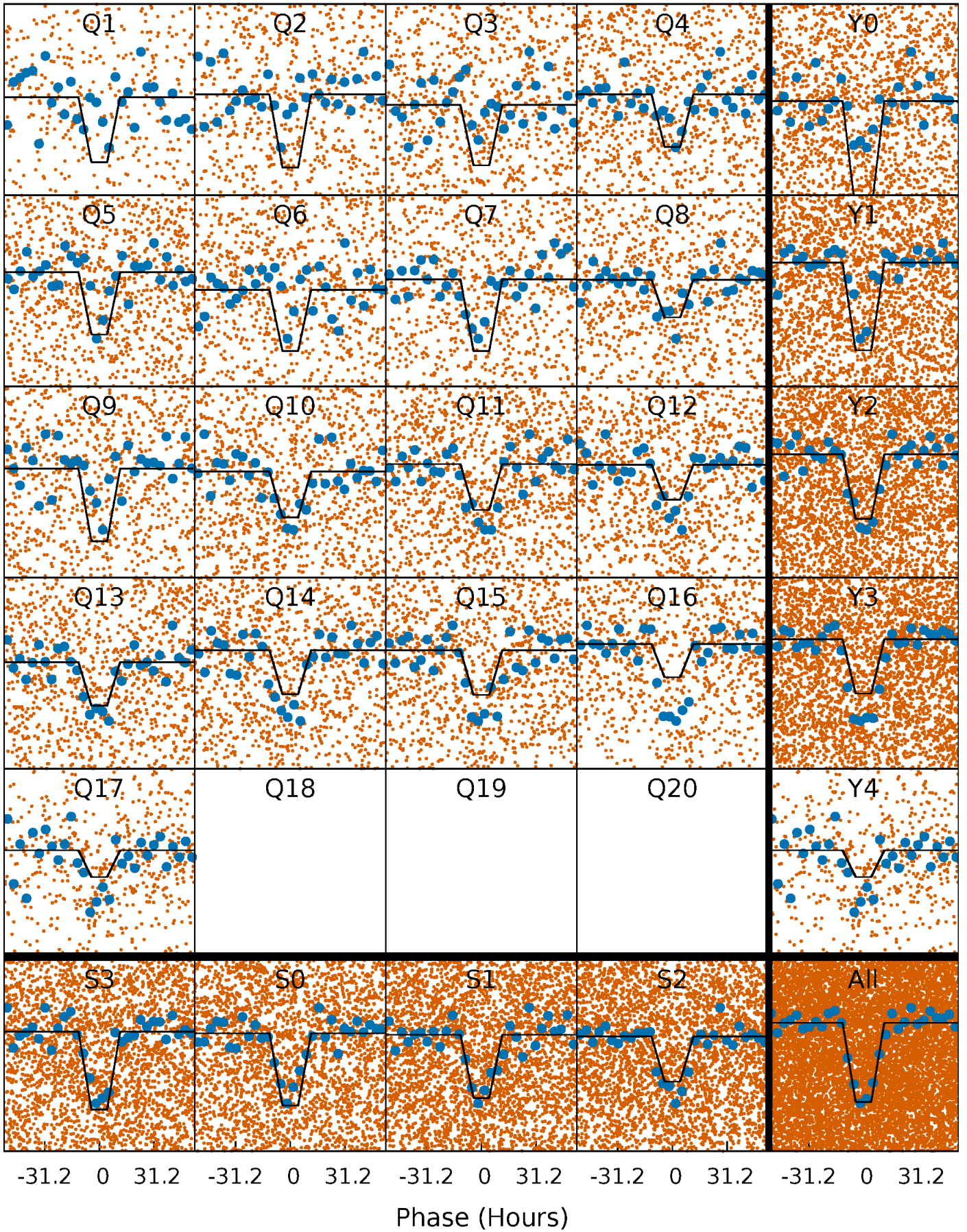
DV Quarter-Phased Transit Curves

TCE 005385773-02 P= 12.424338 Days $T_0=134.057611$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

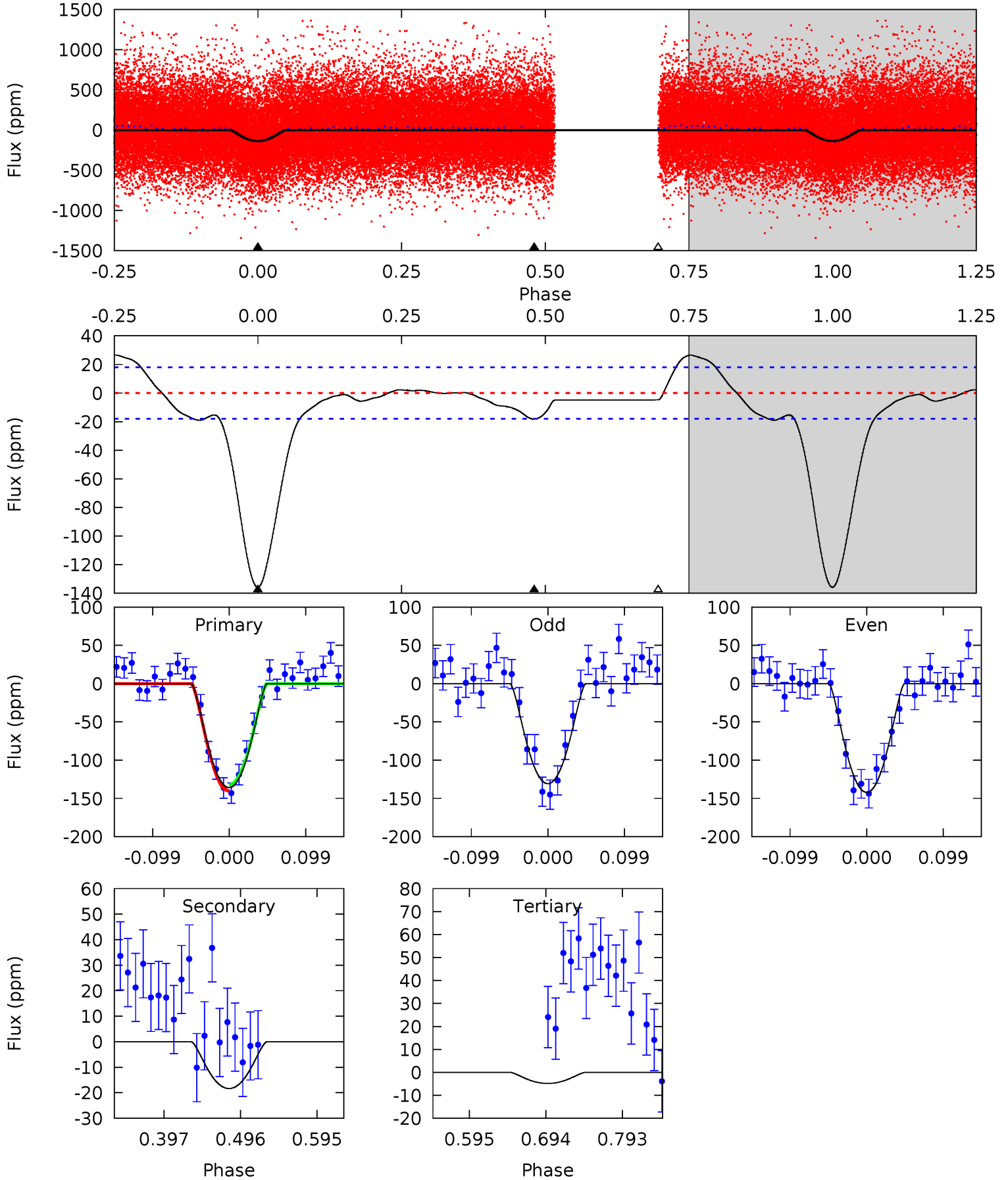
TCE 005385773-02 P= 12.424613 Days $T_0=134.025082$ (BKJD)



DV Model-Shift Uniqueness Test

005385773-02, P = 12.424338 Days, E = 121.633273 Days

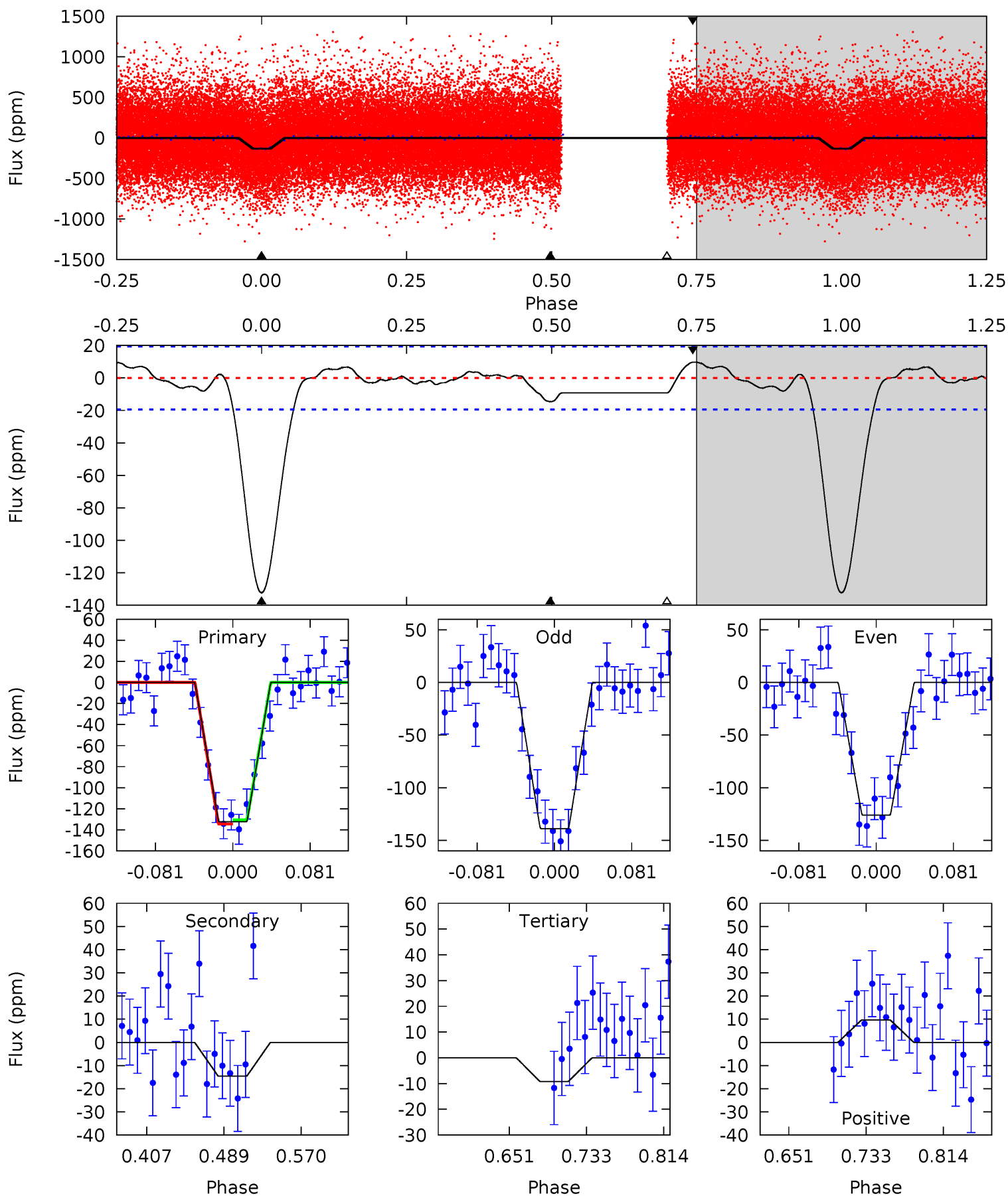
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.5	4.65	1.22	0	4.57	1.65	2.78	33.2	34.5	3.43	4.65	1.44	1.06	0.16	0.97



Alt Model-Shift Uniqueness Test

005385773-02, P = 12.424613 Days, E = 121.600469 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.4	3.47	2.19	2.30	4.61	1.74	1.05	29.2	29.1	1.28	1.17	1.53	1.01	0.07	0.46



Stellar Parameters For KIC 005385773

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5571^{+165}_{-148}	$4.643^{+0.028}_{-0.105}$	$-0.700^{+0.300}_{-0.300}$	$0.691^{+0.114}_{-0.045}$	$0.776^{+0.066}_{-0.073}$	$3.319^{+0.475}_{-1.101}$
	+3%/-3%	+1%/-2%	+43%/-43%	+16%/-7%	+9%/-9%	+14%/-33%
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 005385773-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-18 ± 4	$1.41^{+0.65}_{-0.63}$	933^{+45}_{-32}	3267^{+728}_{-367}	46^{+111}_{-26}
Alt.	-15 ± 4	$0.98^{+0.65}_{-0.54}$	939^{+36}_{-35}	3519^{+1292}_{-506}	73^{+338}_{-47}

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

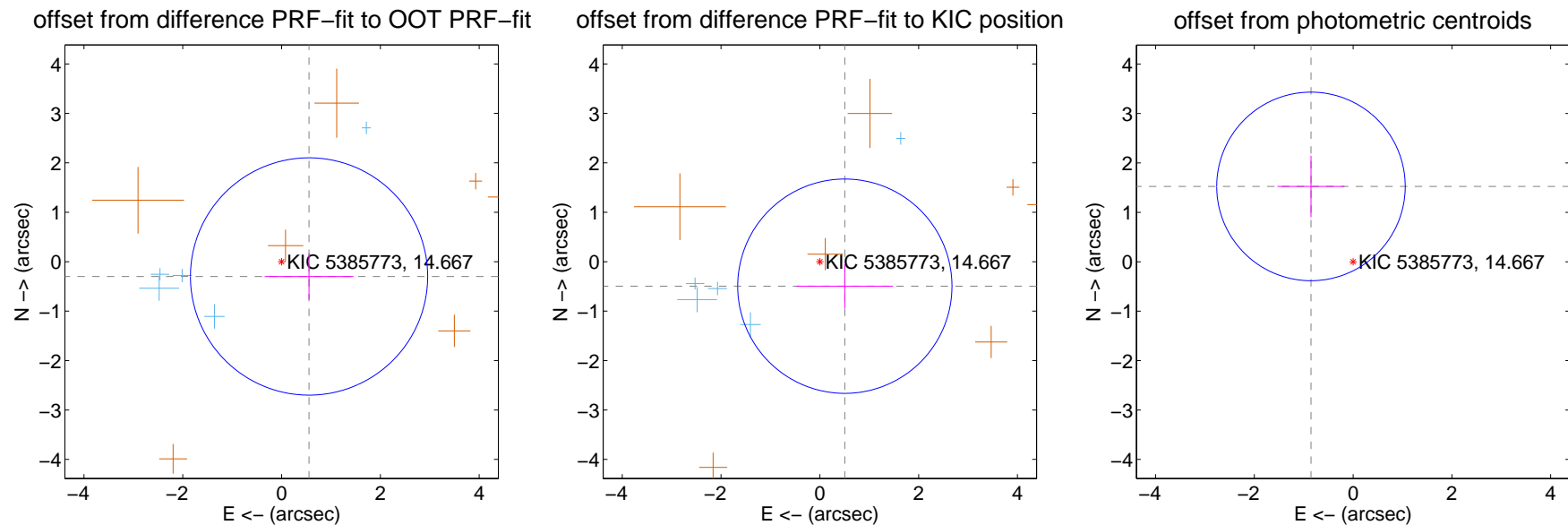
DV Centroid Data

Supplemental centroid analysis for 005385773-02. Kepler magnitude: 14.67. Transit SNR 18.41

There are 5 quarters with good PRF difference image offsets

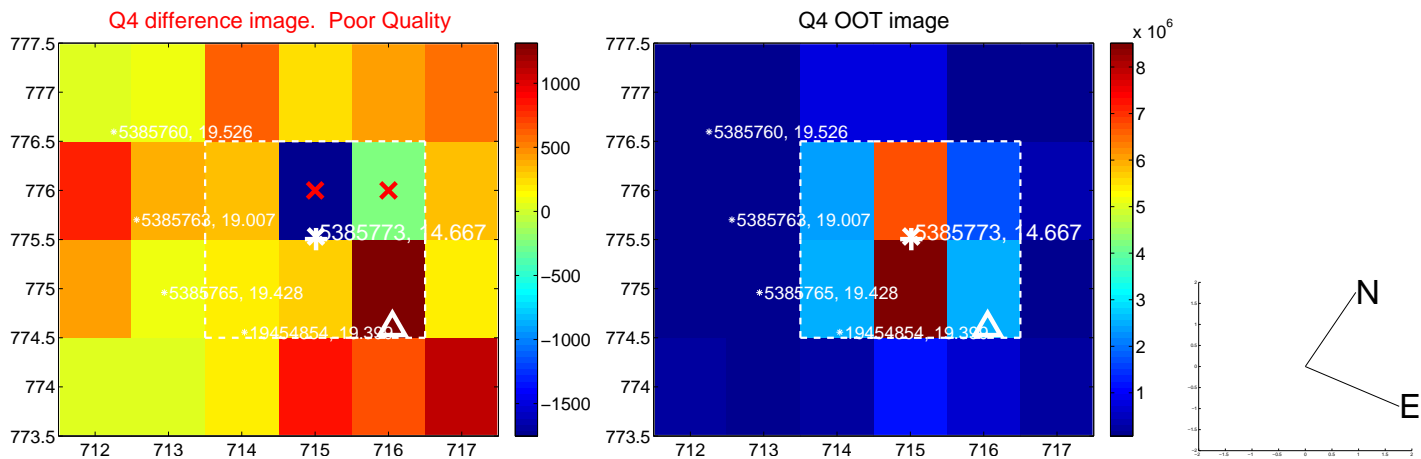
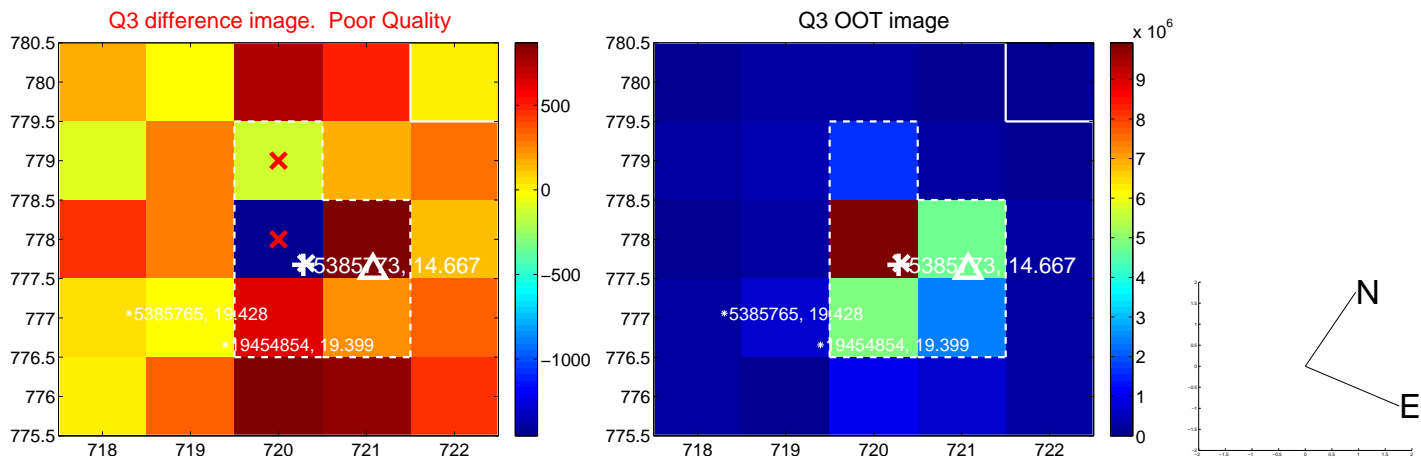
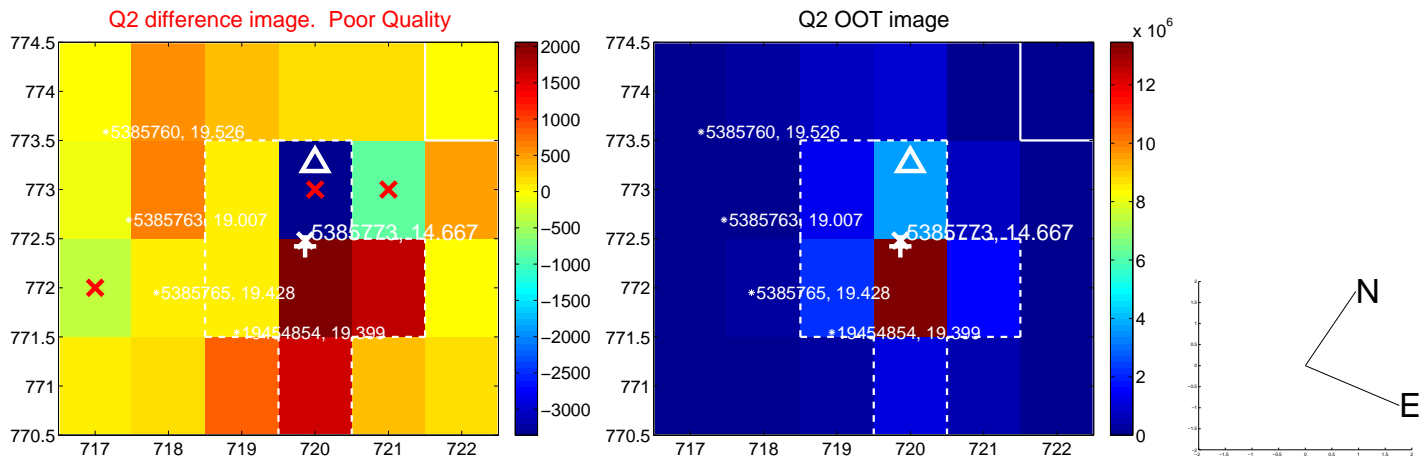
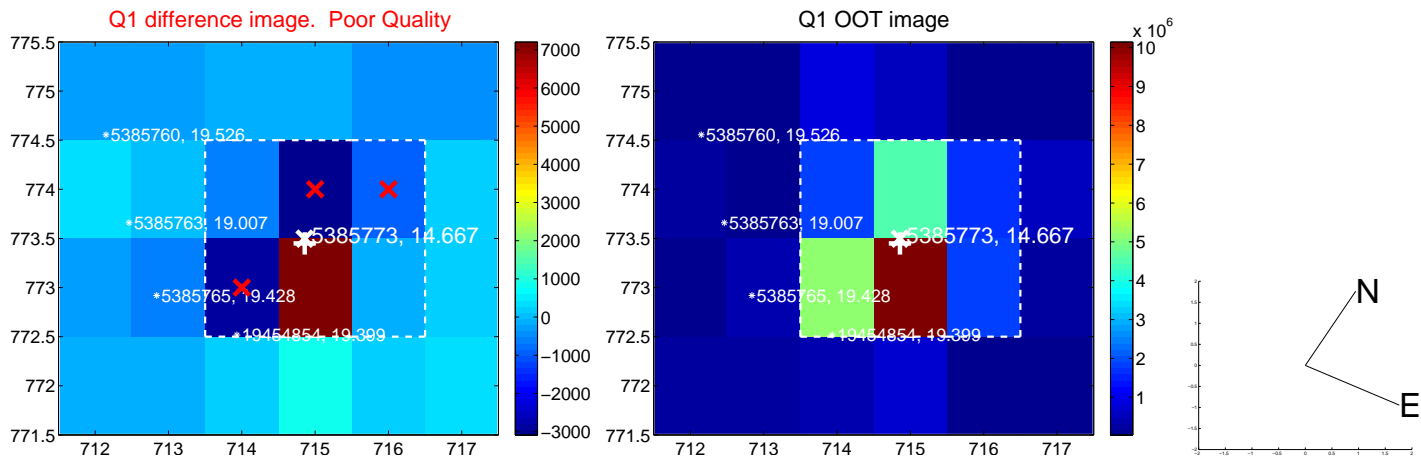
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.631 ± 0.800	0.79	-0.556 ± 0.898	-0.299 ± 0.468
PRF-fit source offset from KIC position	0.708 ± 0.723	0.98	-0.506 ± 0.976	-0.496 ± 0.448
photometric centroid source offset	1.75 ± 0.64	2.75	0.85 ± 0.68	1.52 ± 0.62

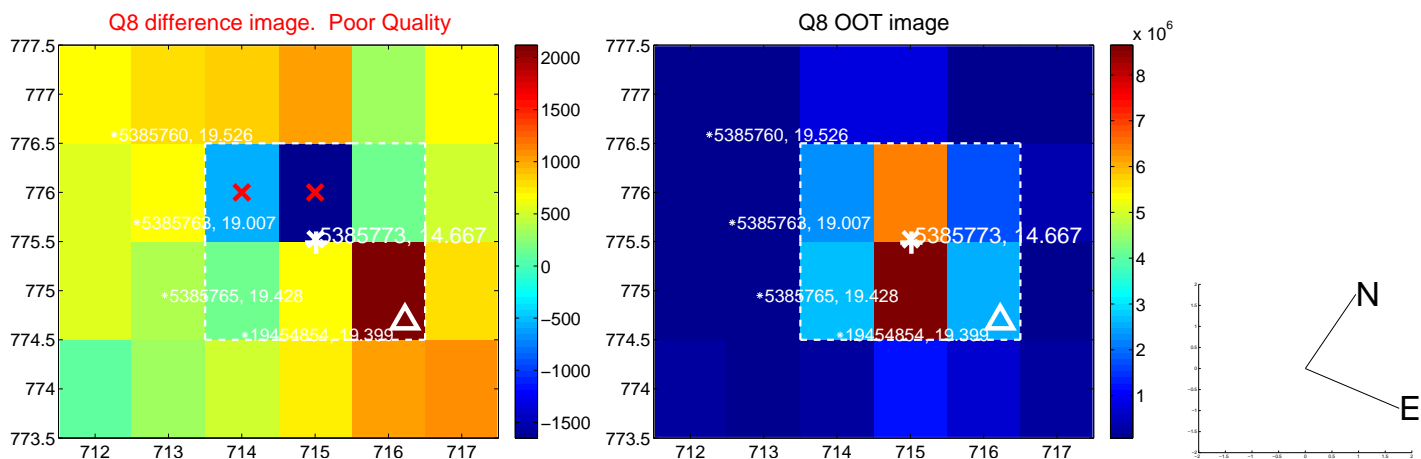
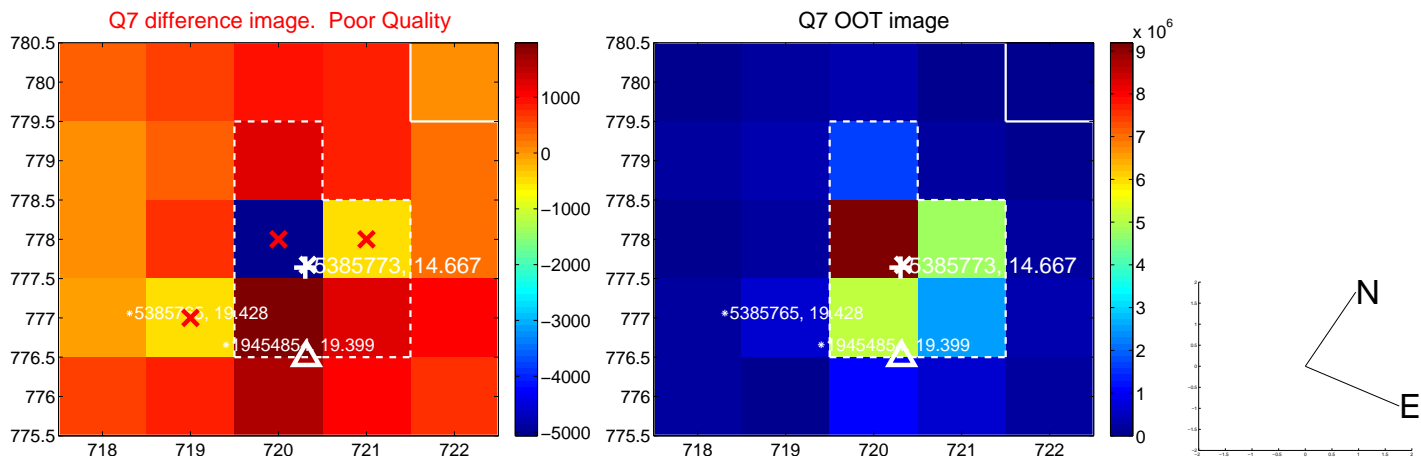
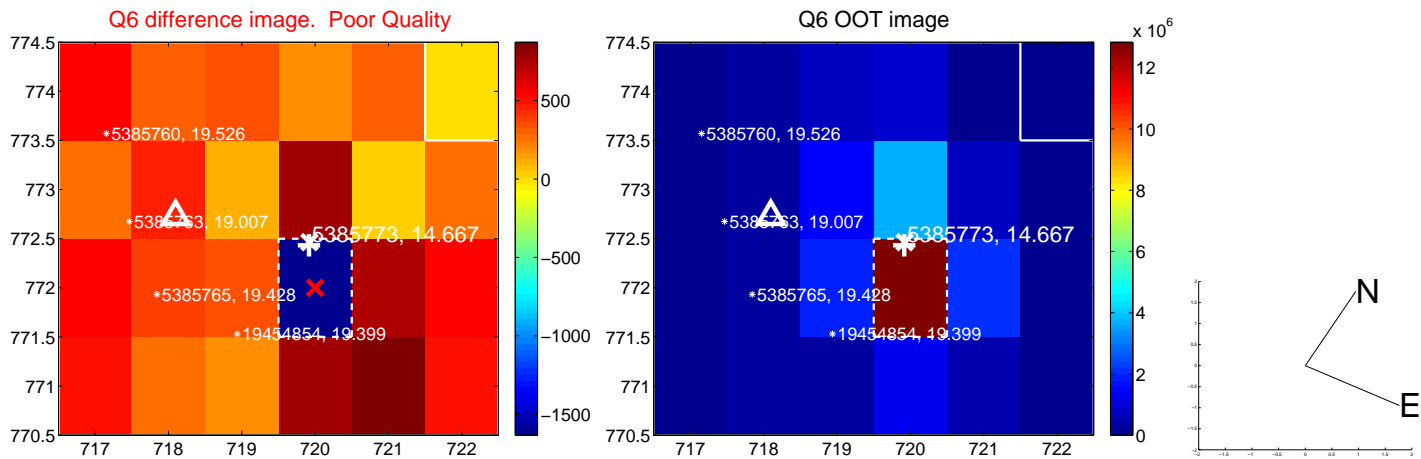
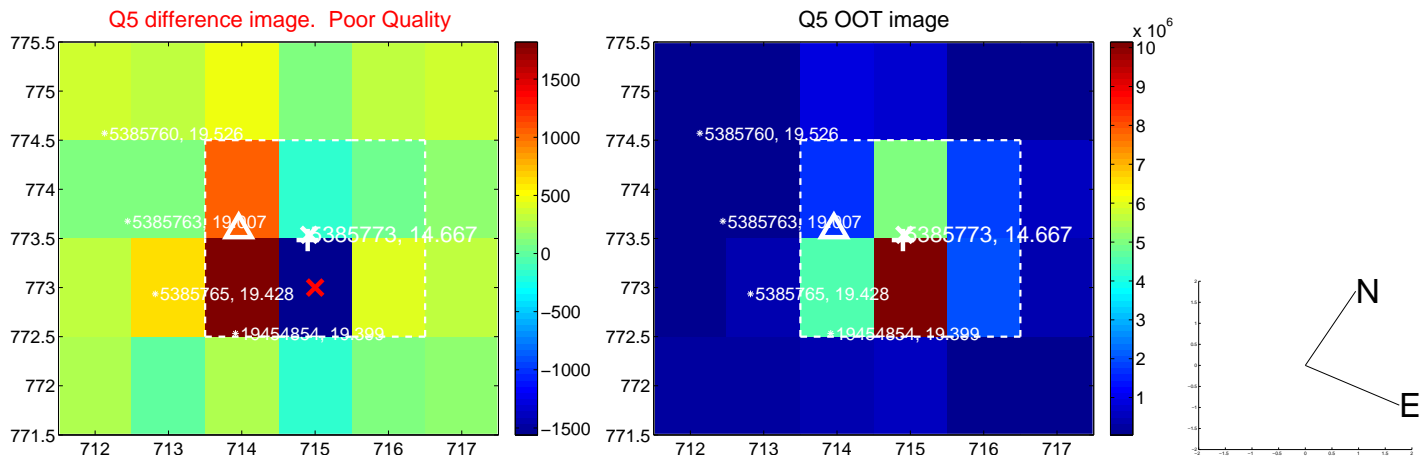


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

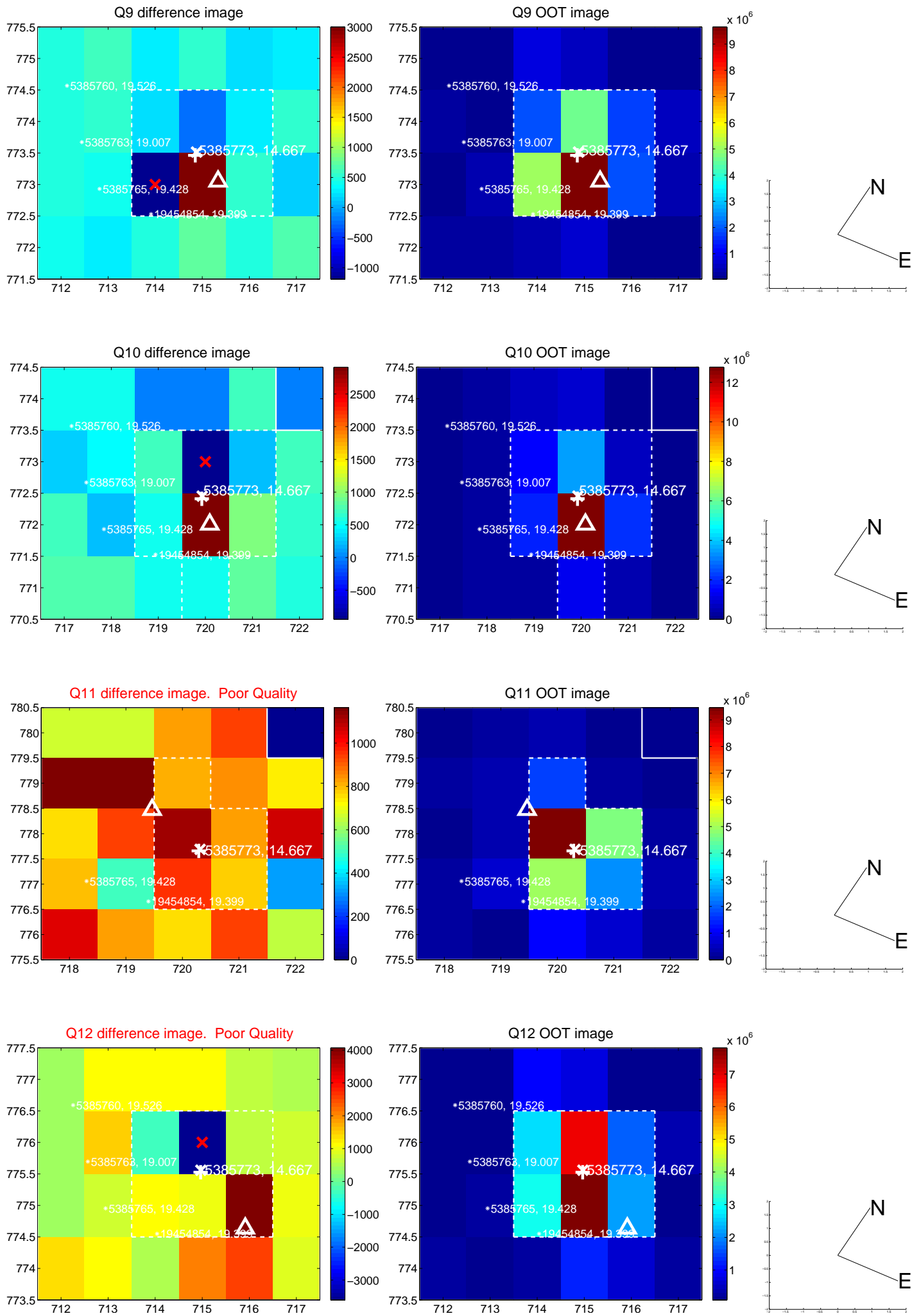
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



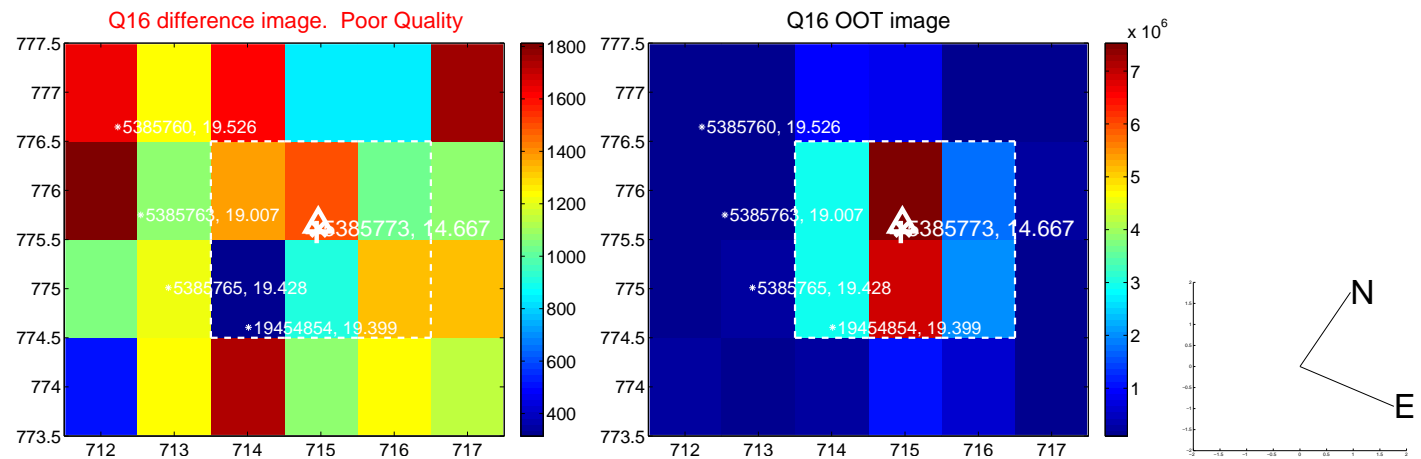
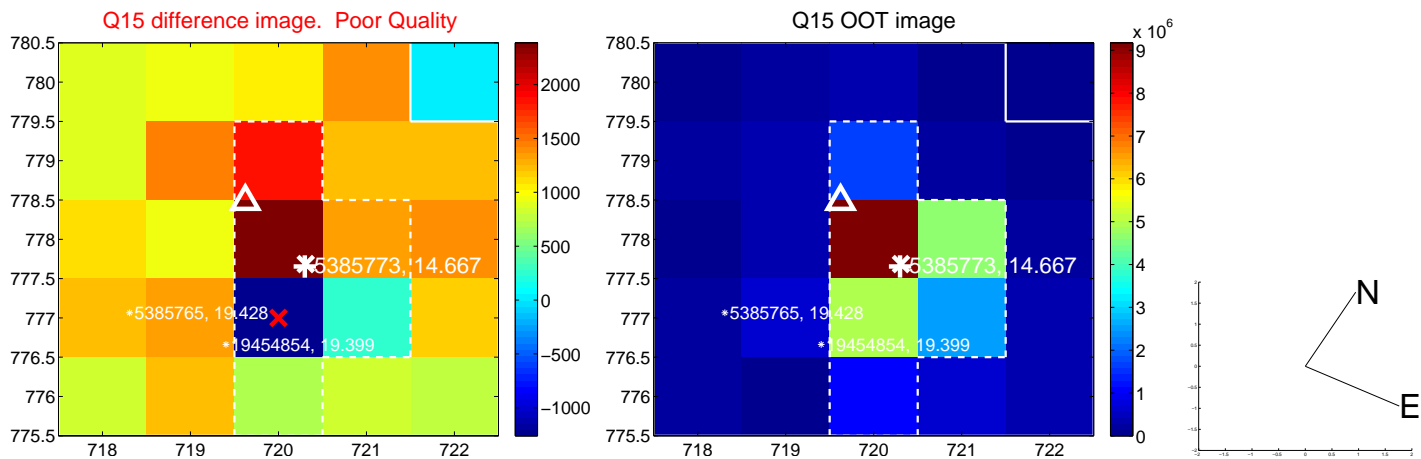
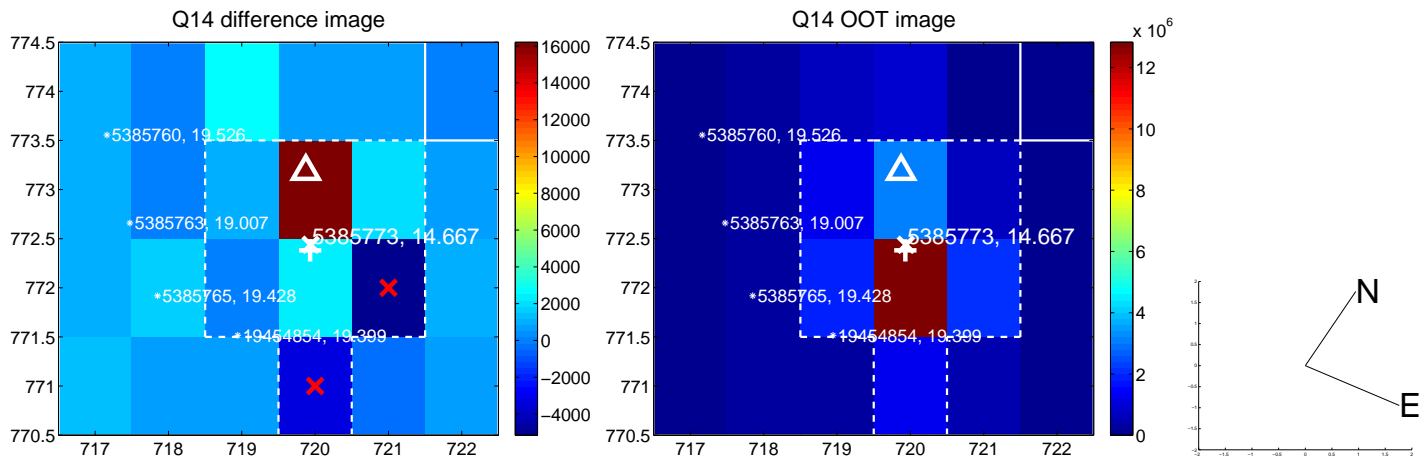
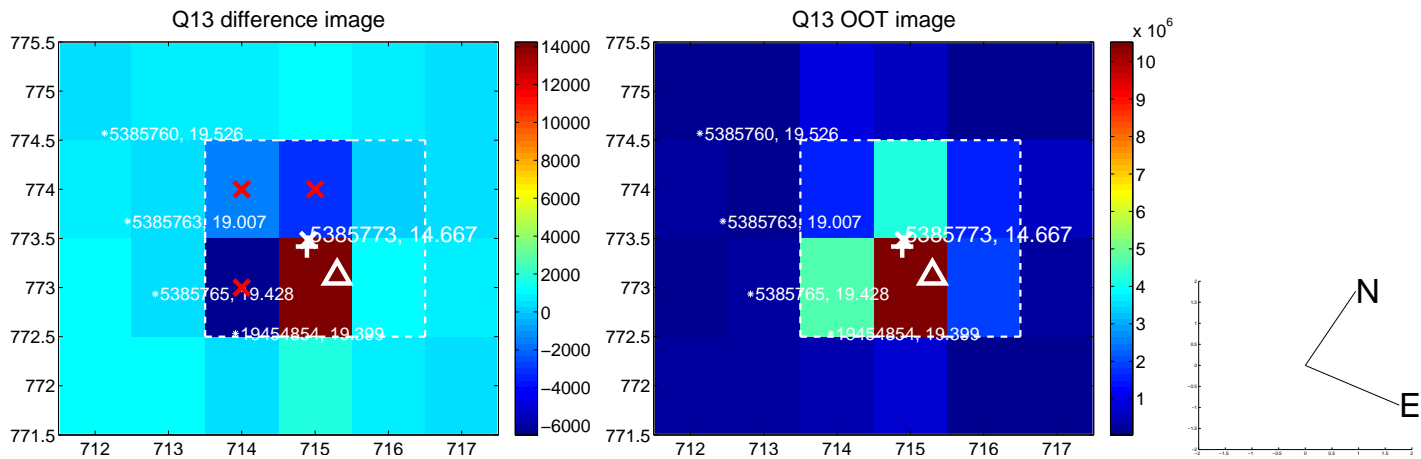
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



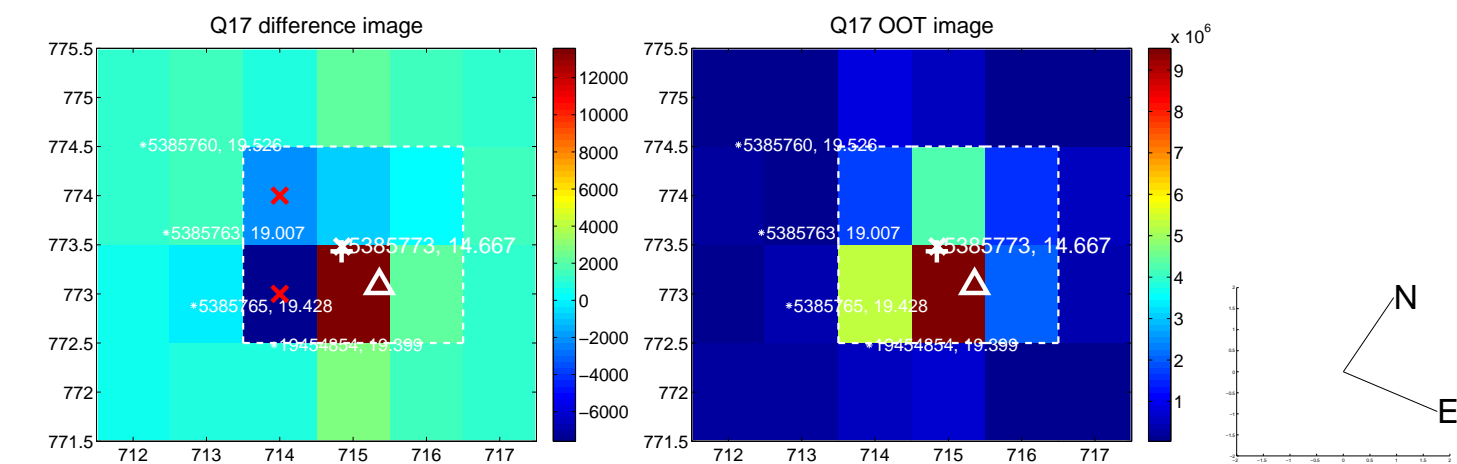
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



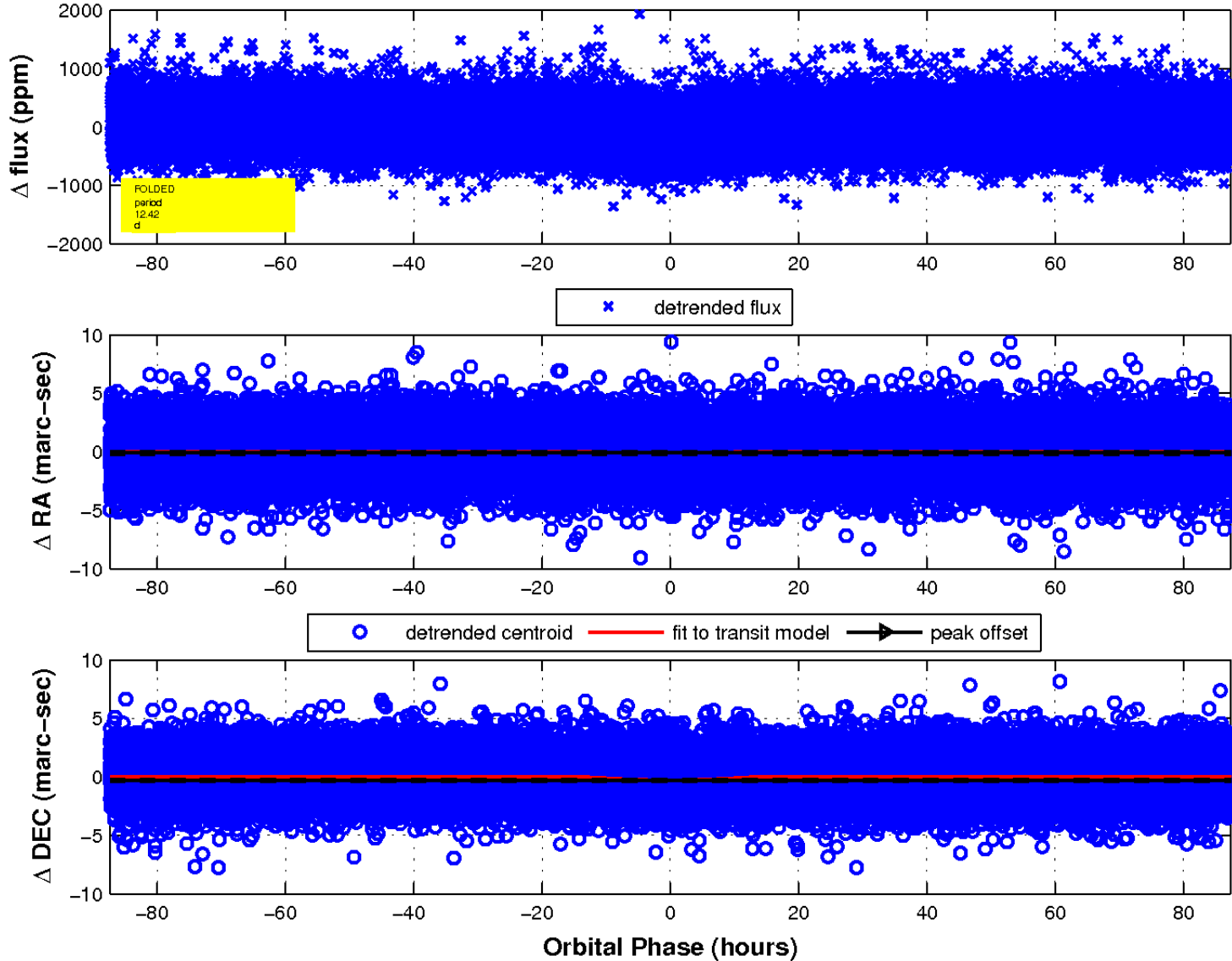
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

