

KIC 010580834

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})
010580834-01	OBS	No	2.545354	133.762202	181.6	8.852	9.6	10.1	3.75	7594	7.13	19533.28
010580834-02	OBS	No	2.545402	132.729148	122.8	6.083	8.4	8.8	3.75	7594	4.84	19532.80

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010580834-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010580834-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

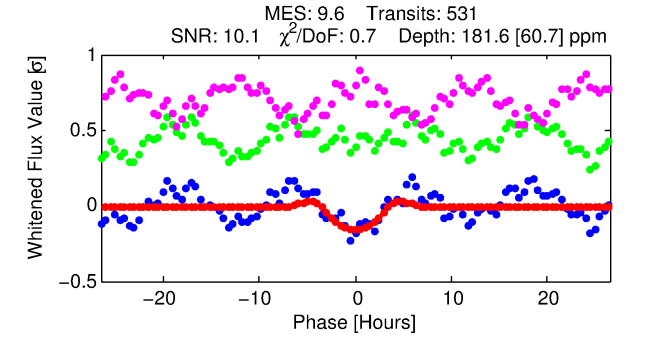
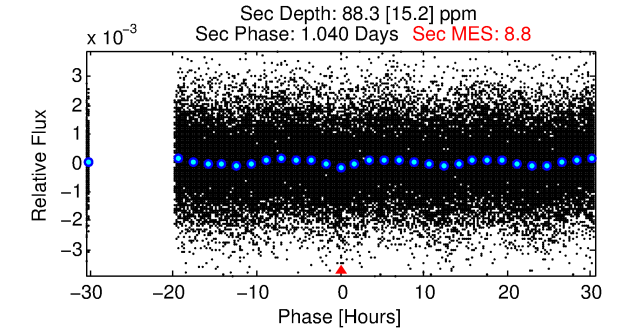
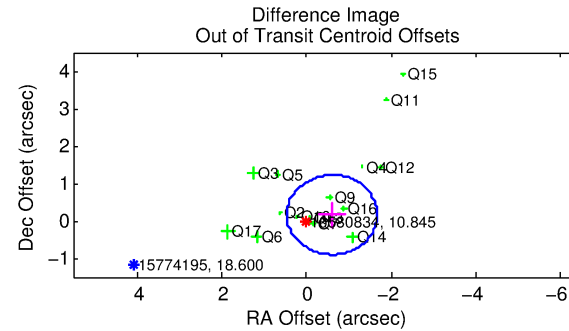
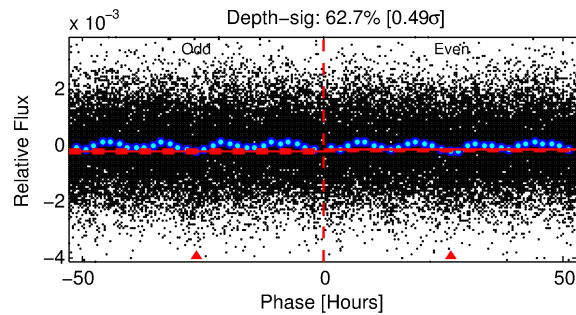
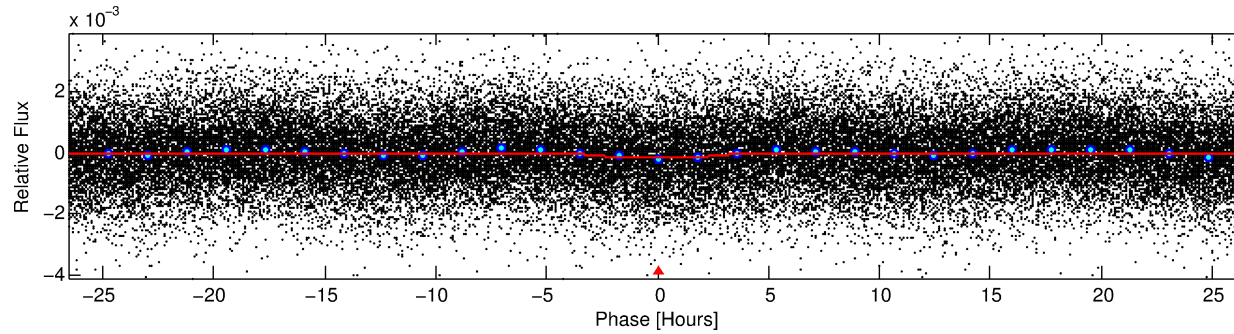
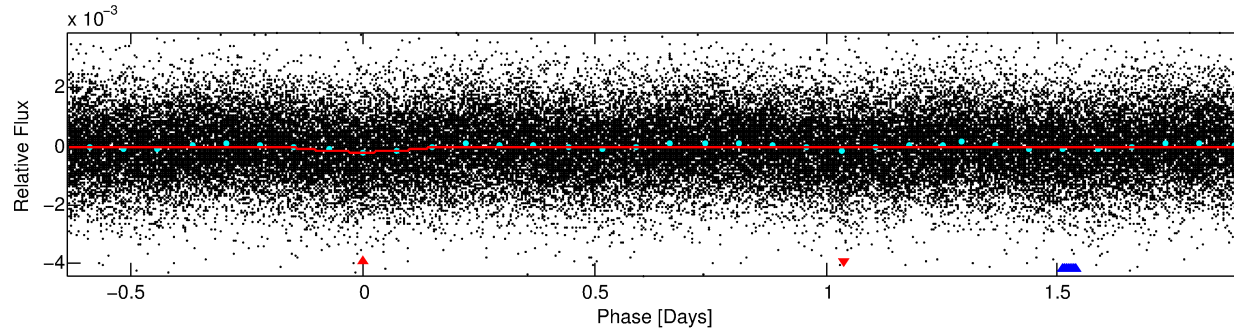
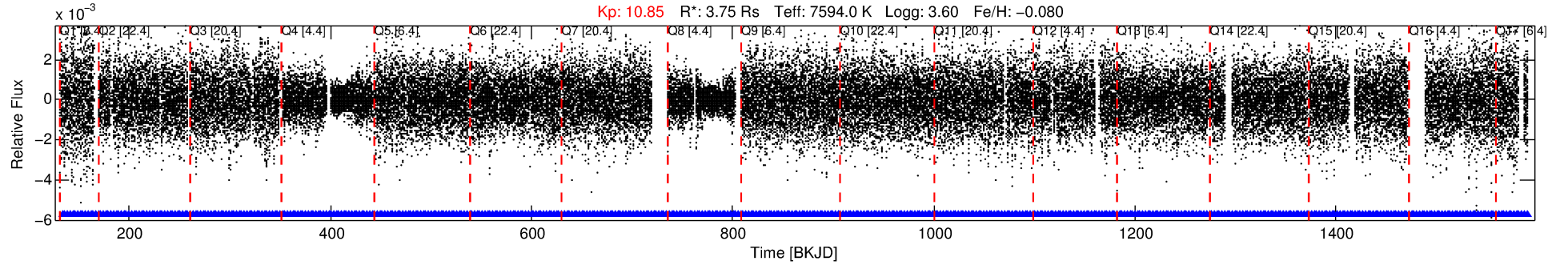
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010580834-01

No Significant Match Found

DV One-Page Summary

KIC: 10580834 Candidate: 1 of 2 Period: 2.545 d



DV Fit Results:

Period = 2.54535 [0.00005] d
Epoch = 133.7622 [0.0150] BKJD
Rp/R* = 0.0174 [0.0065]
a/R* = 1.13 [0.06]
b = 0.99 [0.02]
Seff = 19533.28 [17288.78]
Teq = 3015 [667] K
Rp = 7.13 [4.47] Re
a = 0.0464 [0.0243] AU
Ag = 2.05 [2.38] [0.44 σ]
Teffp = 5580 [1094] K [2.00 σ]

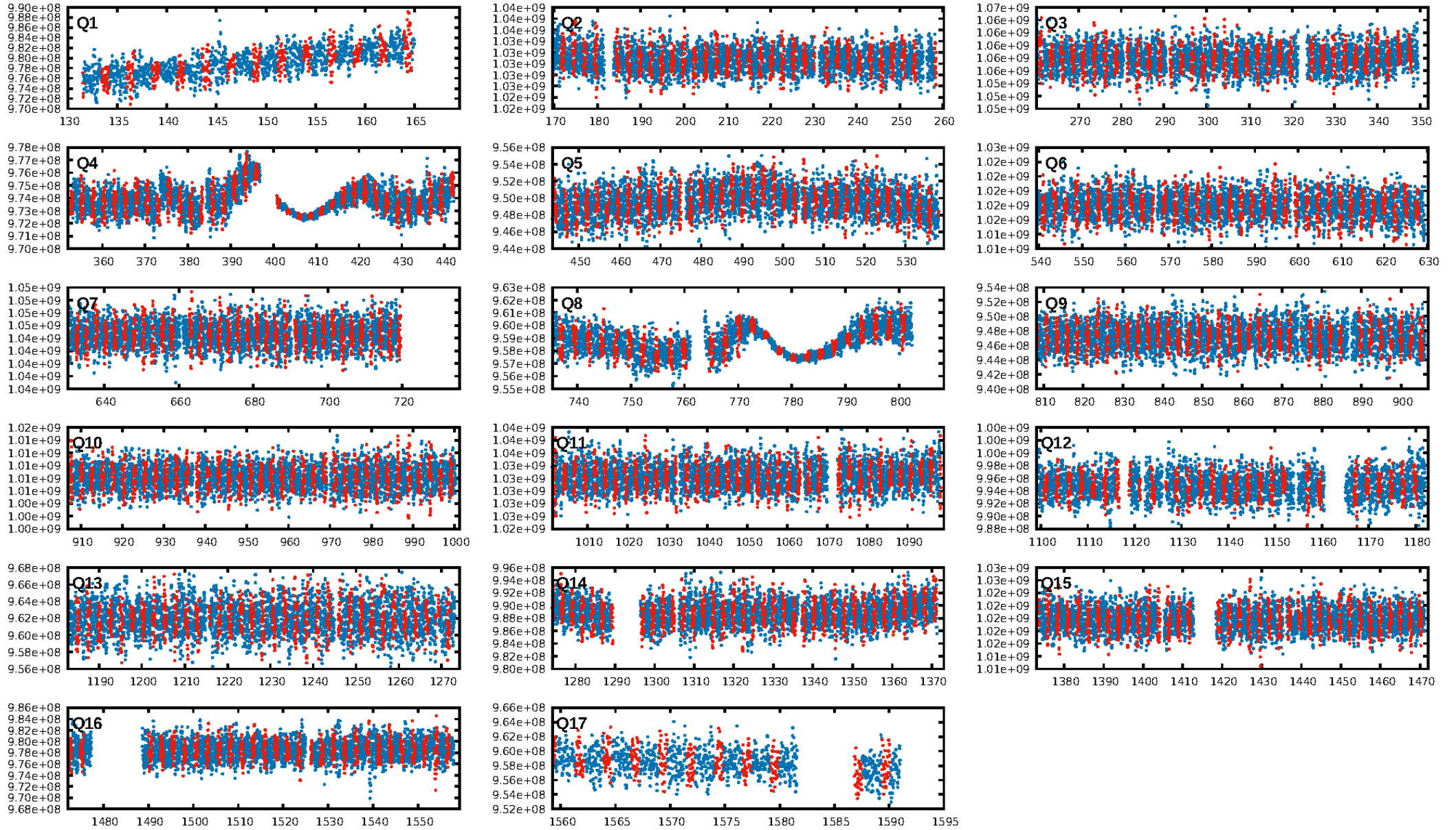
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.93e-14
RollingBand-fgt: 1.00 [507/507]
GhostDiagnostic-chr: 0.9343
Centroid-sig: N/A
Centroid-so: 0.347 arcsec [3.04 σ]
OotOffset-rm: 0.624 arcsec [1.76 σ]
KicOffset-rm: 0.761 arcsec [2.86 σ]
OotOffset-st: 4/4/3/4 [15]
KicOffset-st: 4/4/3/4 [15]
DiffImageQuality-fgm: 0.73 [11/15]
DiffImageOverlap-fno: 1.00 [17/17]

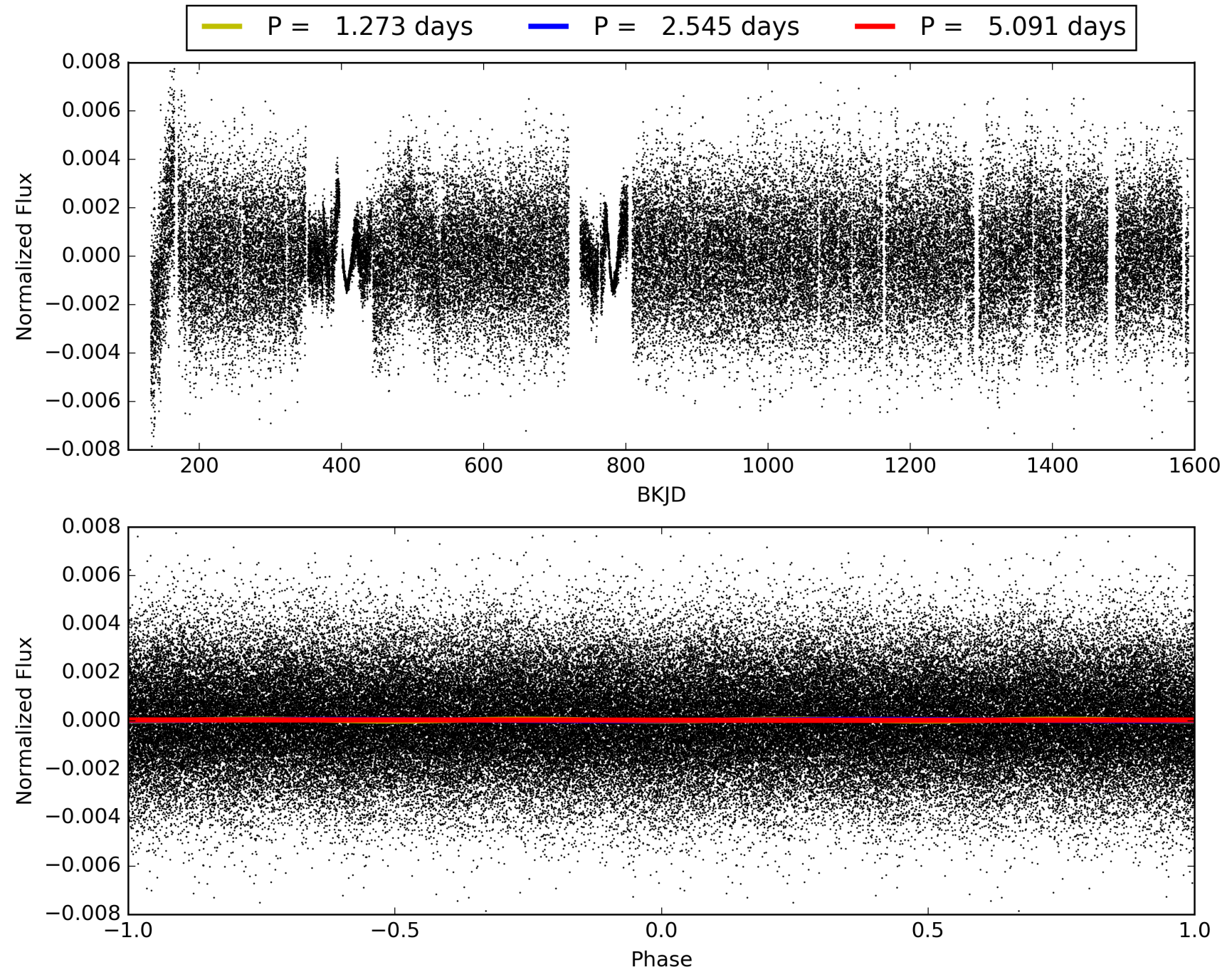
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 17:22:26 Z

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

TCE 010580834-01, PDC Light Curves

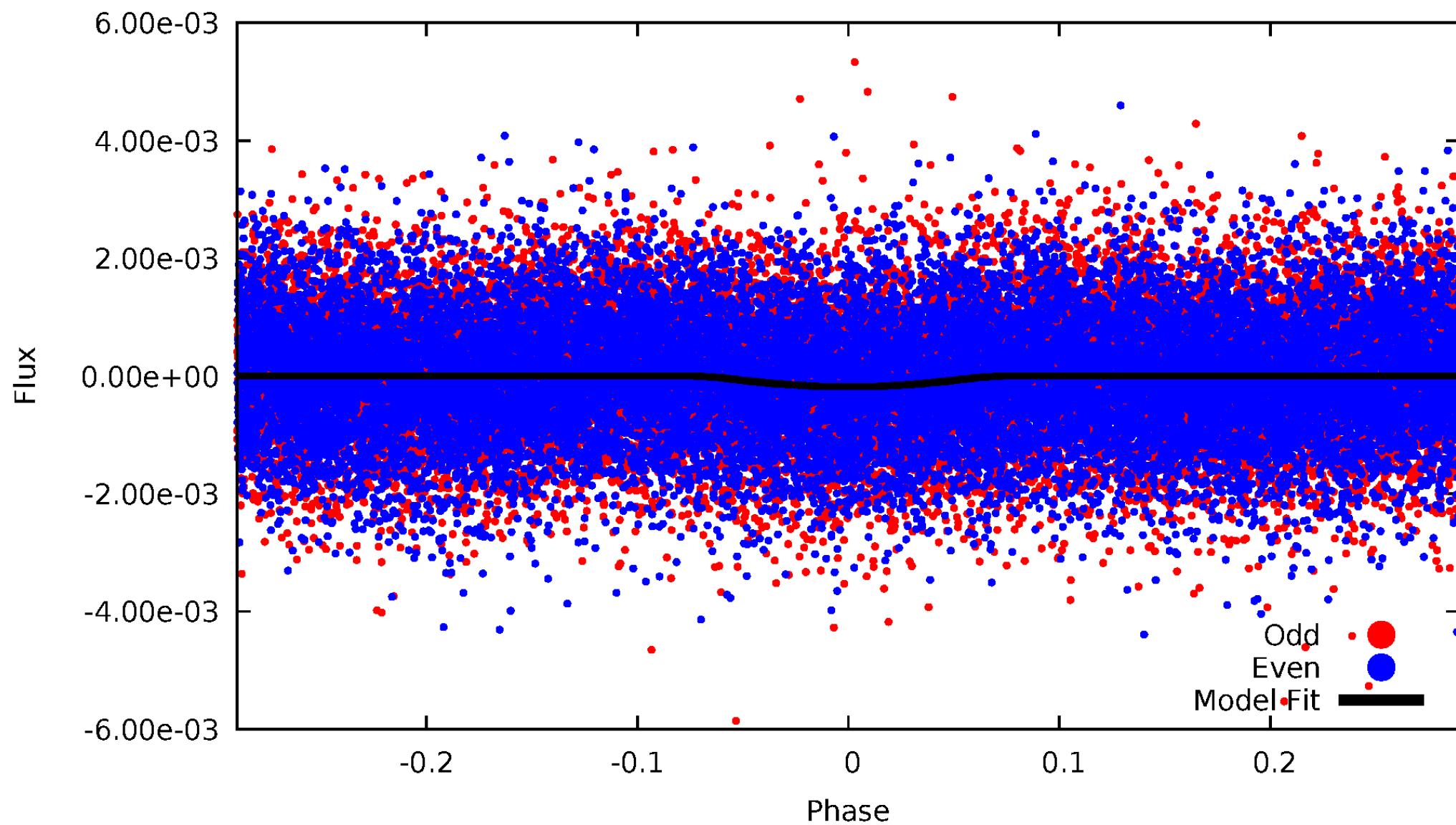


TCE 010580834-01



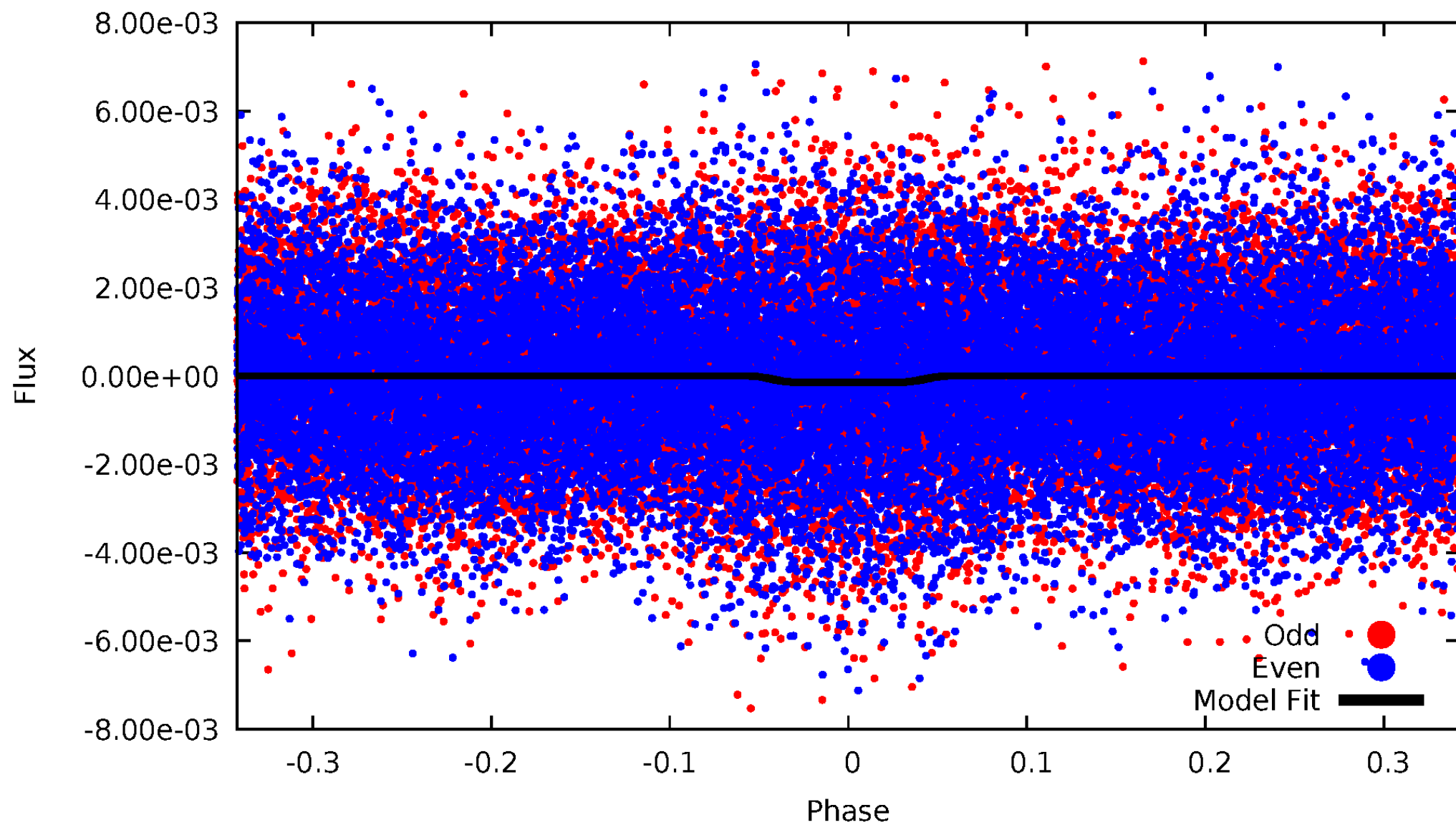
DV Odd/Even

TCE 010580834-01

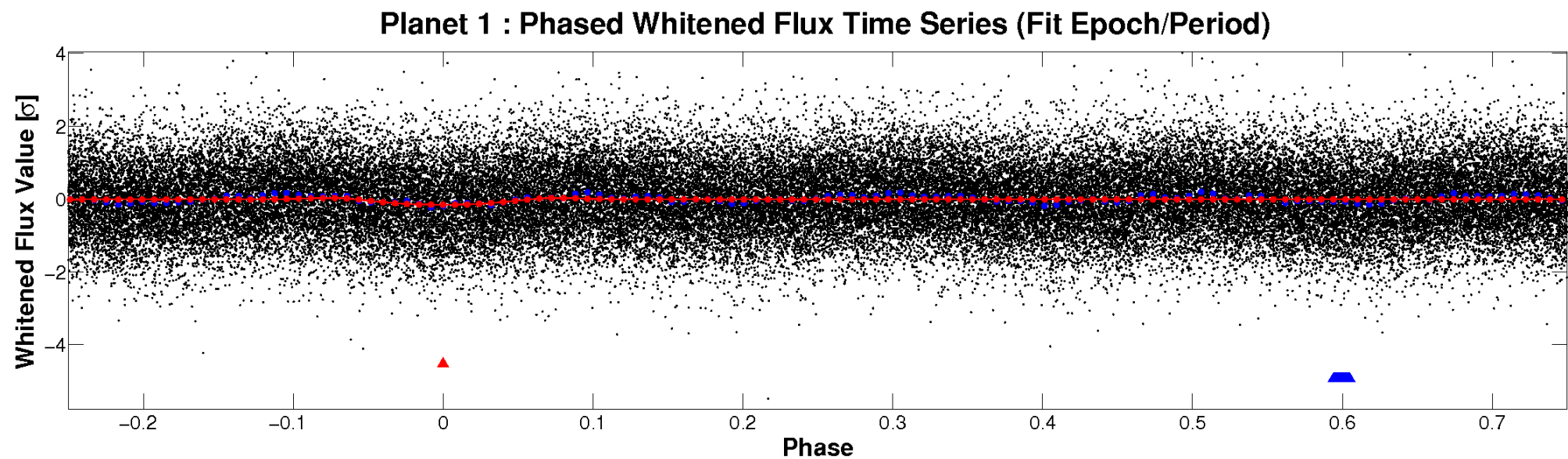
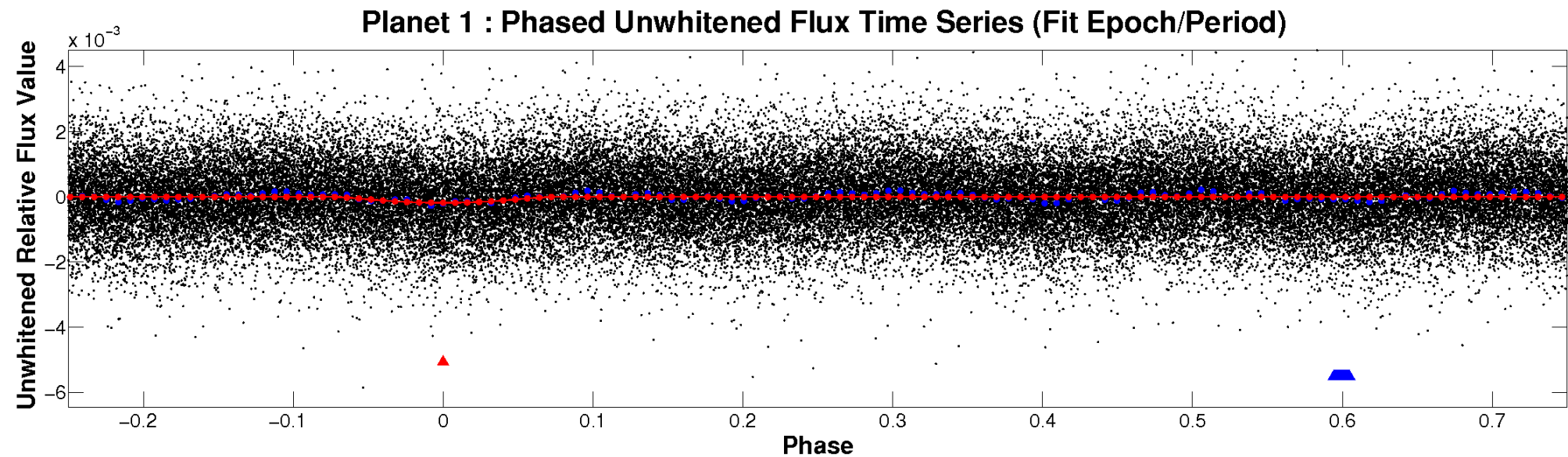


ALT Odd/Even

TCE 010580834-01

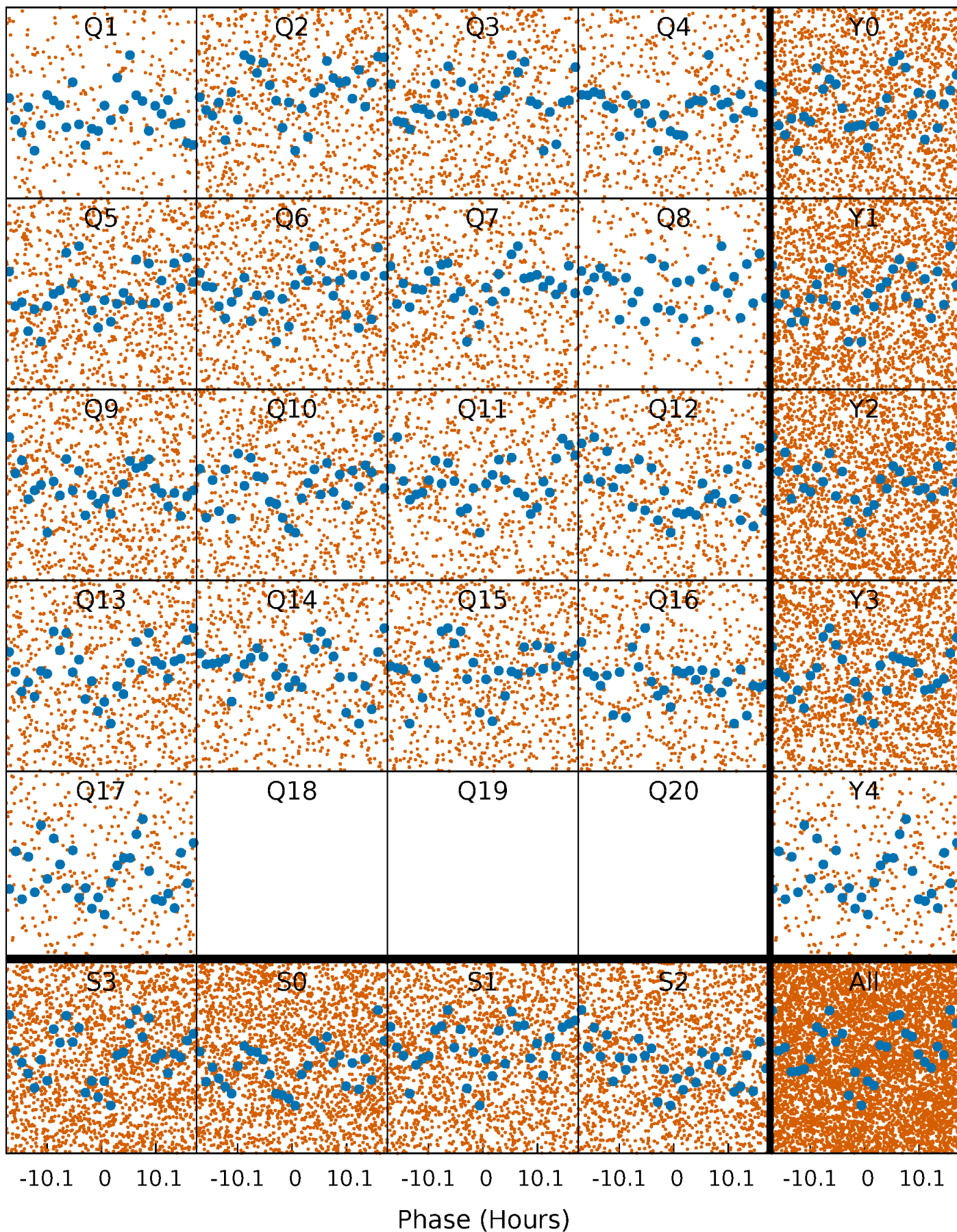


Non-Whitened Vs. Whitened Light Curve



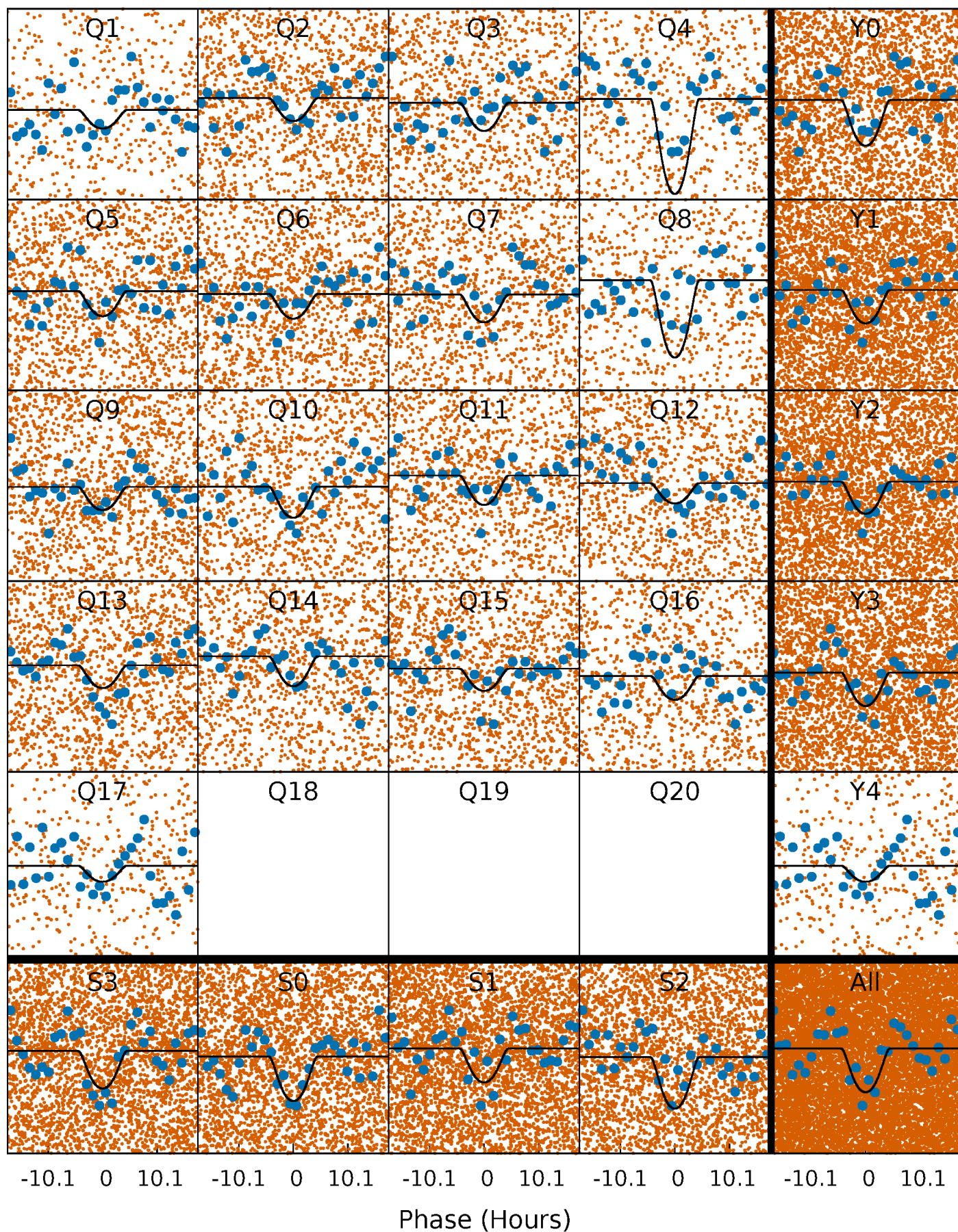
PDC Quarter-Phased Transit Curves

TCE 010580834-01 P= 2.545354 Days $T_0=133.762202$ (BKJD)



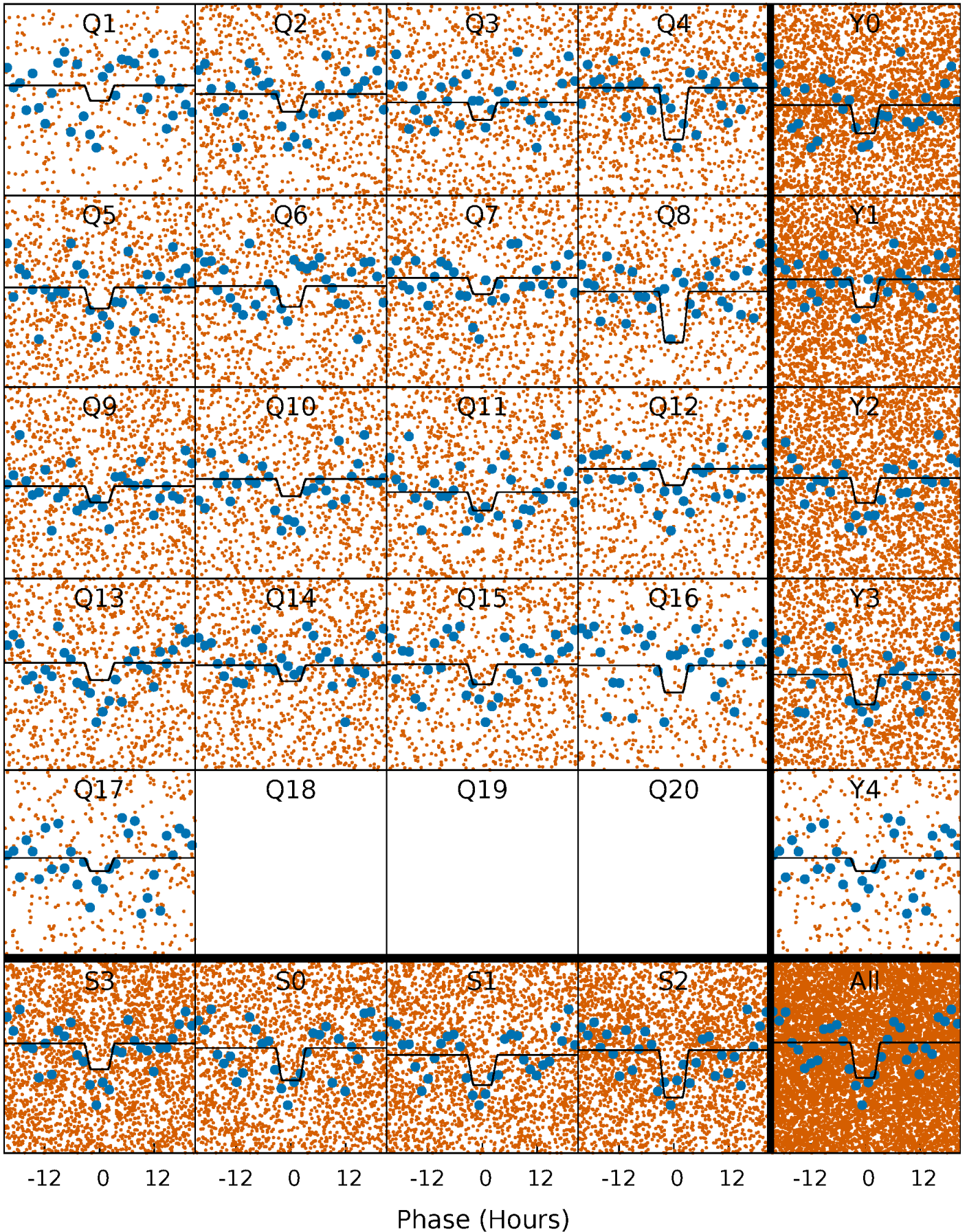
DV Quarter-Phased Transit Curves

TCE 010580834-01 P= 2.545354 Days $T_0=133.762202$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

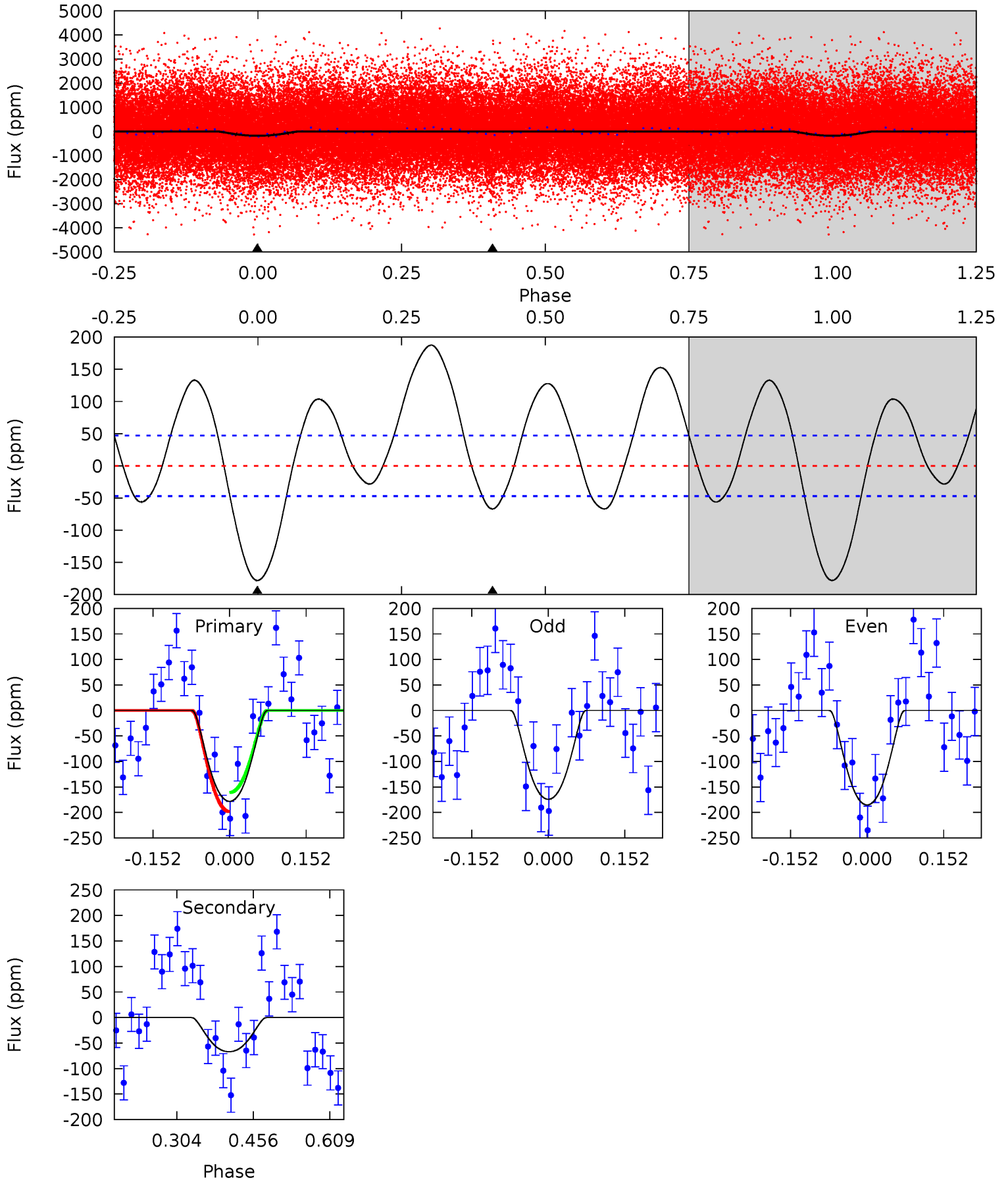
TCE 010580834-01 P= 2.545417 Days $T_0=133.749732$ (BKJD)



DV Model-Shift Uniqueness Test

010580834-01, P = 2.545354 Days, E = 131.216848 Days

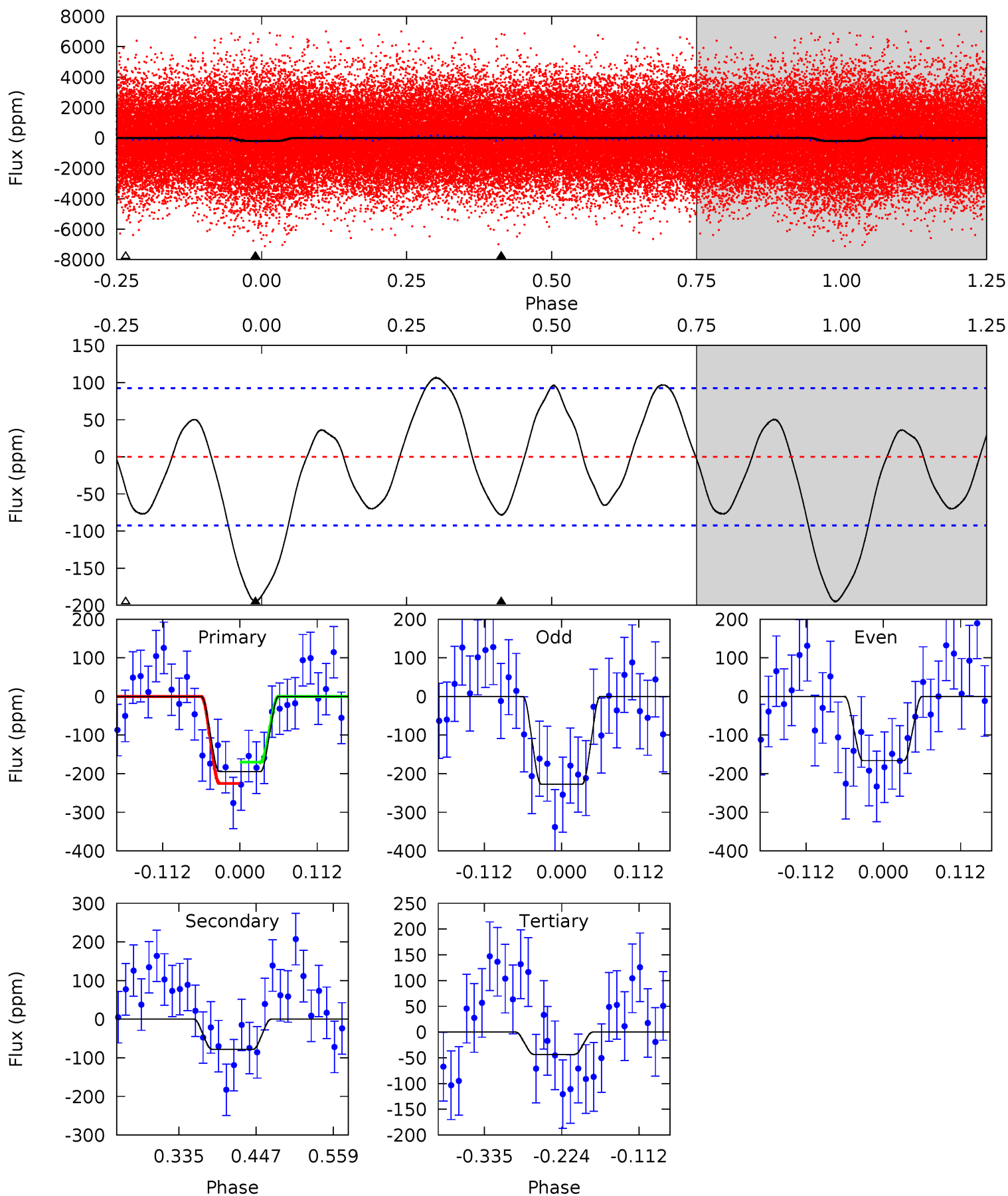
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.0	6.38	0	0	4.48	1.43	6.30	17.0	17.0	6.38	6.38	0.52	0.99	0.51	1.79



Alt Model-Shift Uniqueness Test

010580834-01, P = 2.545417 Days, E = 131.204315 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.57	3.84	2.13	0	4.54	1.59	2.67	7.44	9.57	1.71	3.84	1.50	1.56	0.35	1.35



Stellar Parameters For KIC 010580834

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7594^{+212}_{-318}	$3.601^{+0.522}_{-0.058}$	$-0.080^{+0.200}_{-0.300}$	$3.754^{+0.632}_{-1.895}$	$2.054^{+0.280}_{-0.559}$	$0.055^{+0.306}_{-0.016}$
	+3%/-4%	+14%/-2%	+250%/-375%	+17%/-50%	+14%/-27%	+560%/-28%
Source	KIC0	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 010580834-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-67 ± 11	$6.21^{+2.88}_{-2.68}$	3995^{+296}_{-511}	4971^{+1328}_{-827}	$2.056^{+4.134}_{-1.105}$
Alt.	-78 ± 20	$4.23^{+2.84}_{-2.31}$	4004^{+300}_{-502}	6185^{+3803}_{-1231}	$5.015^{+19.671}_{-3.182}$

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

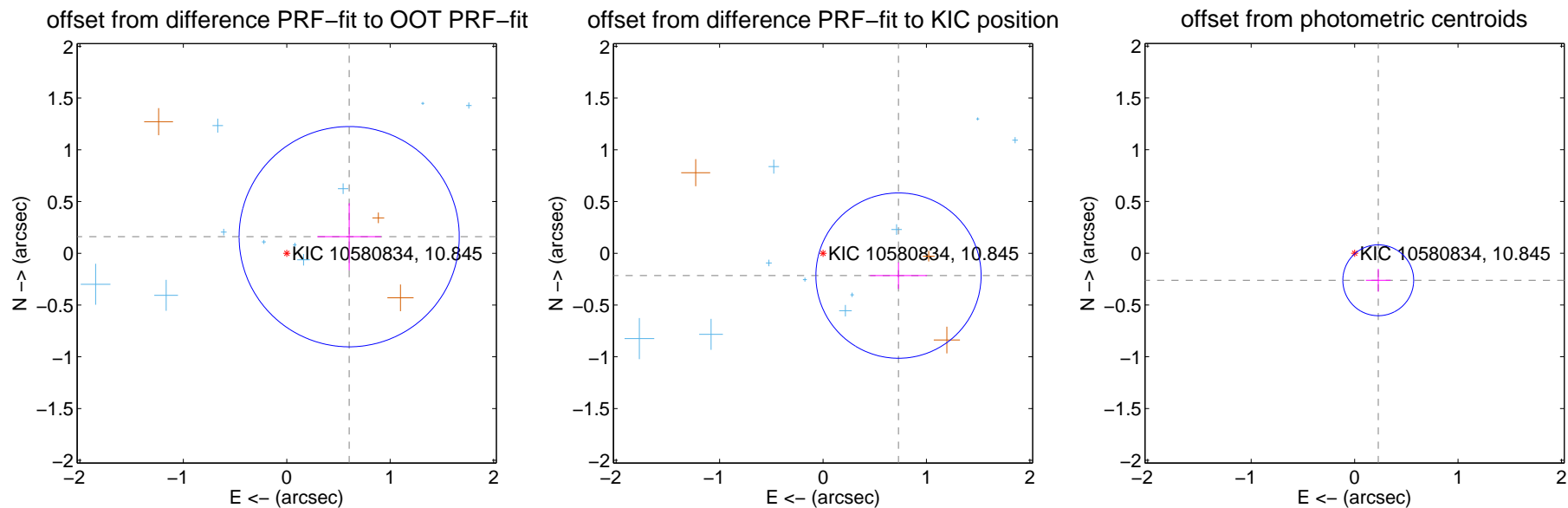
DV Centroid Data

Supplemental centroid analysis for 010580834-01. **Kepler magnitude: 10.85.** Transit SNR 10.08

There are 11 quarters with good PRF difference image offsets

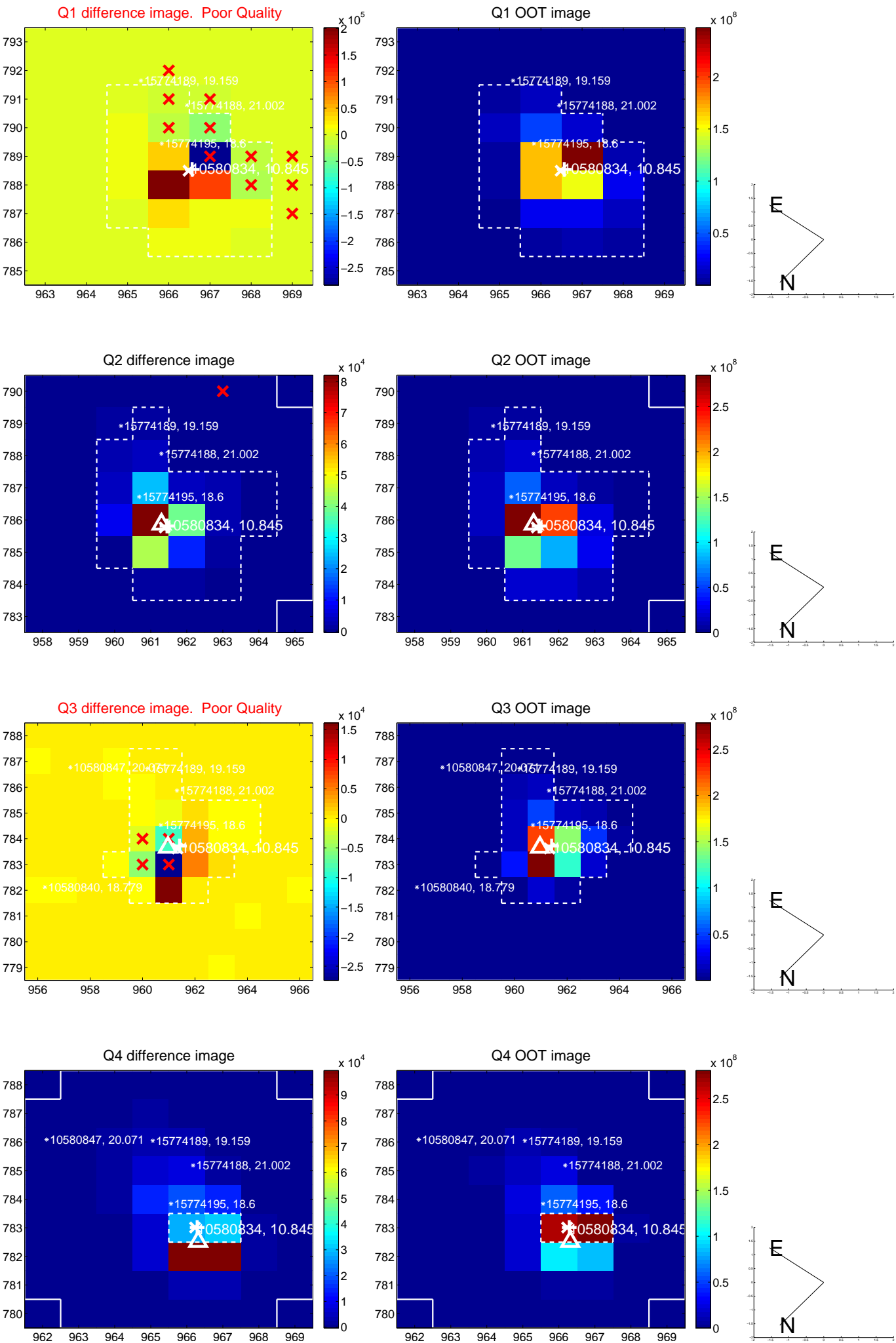
The direct PRF centroid is offset from the target star catalog position by about 0.53 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.624 ± 0.355	1.76	-0.603 ± 0.308	0.160 ± 0.324
PRF-fit source offset from KIC position	0.761 ± 0.266	2.86	-0.730 ± 0.275	-0.216 ± 0.128
photometric centroid source offset	0.35 ± 0.11	3.04	-0.23 ± 0.12	-0.26 ± 0.11

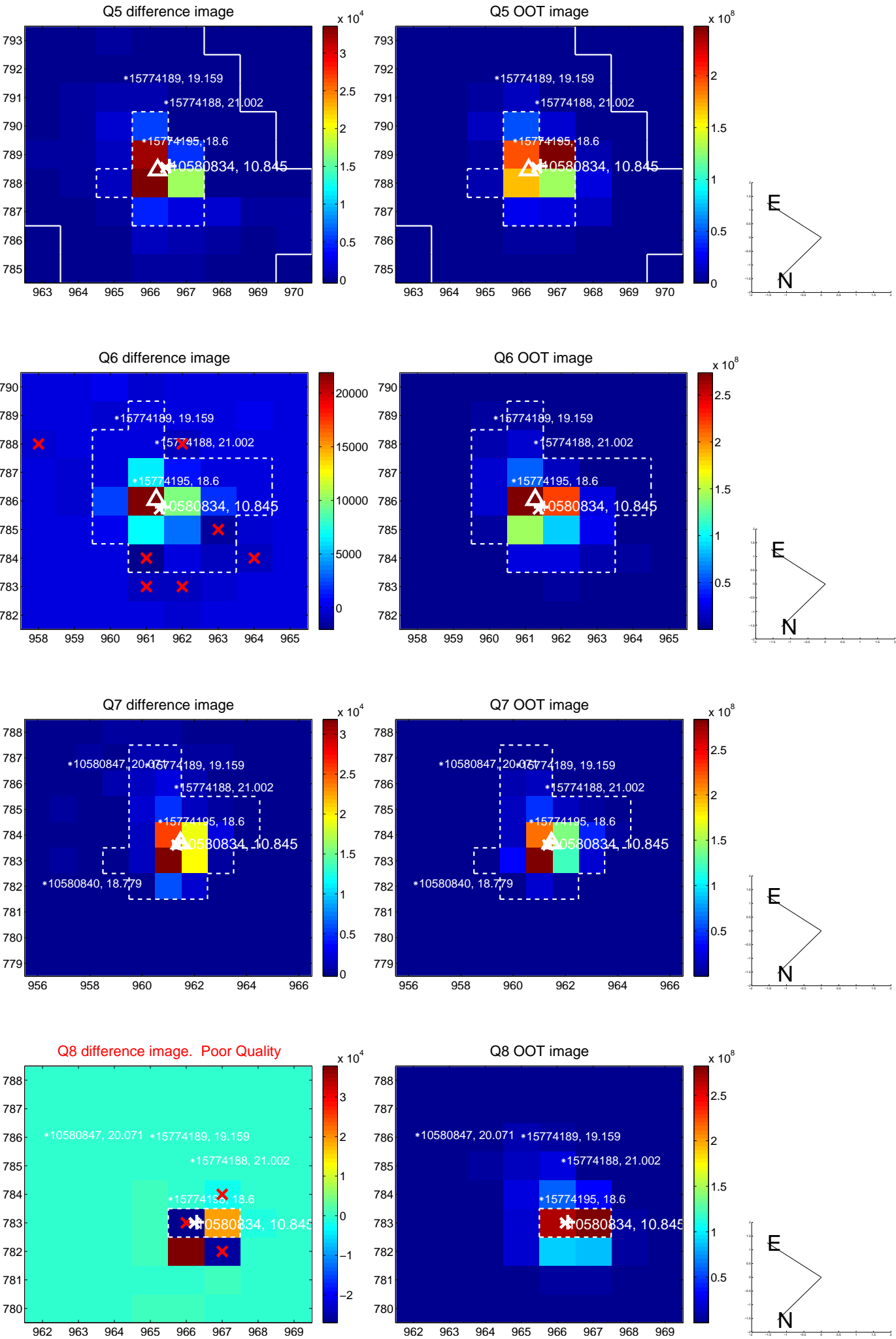


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

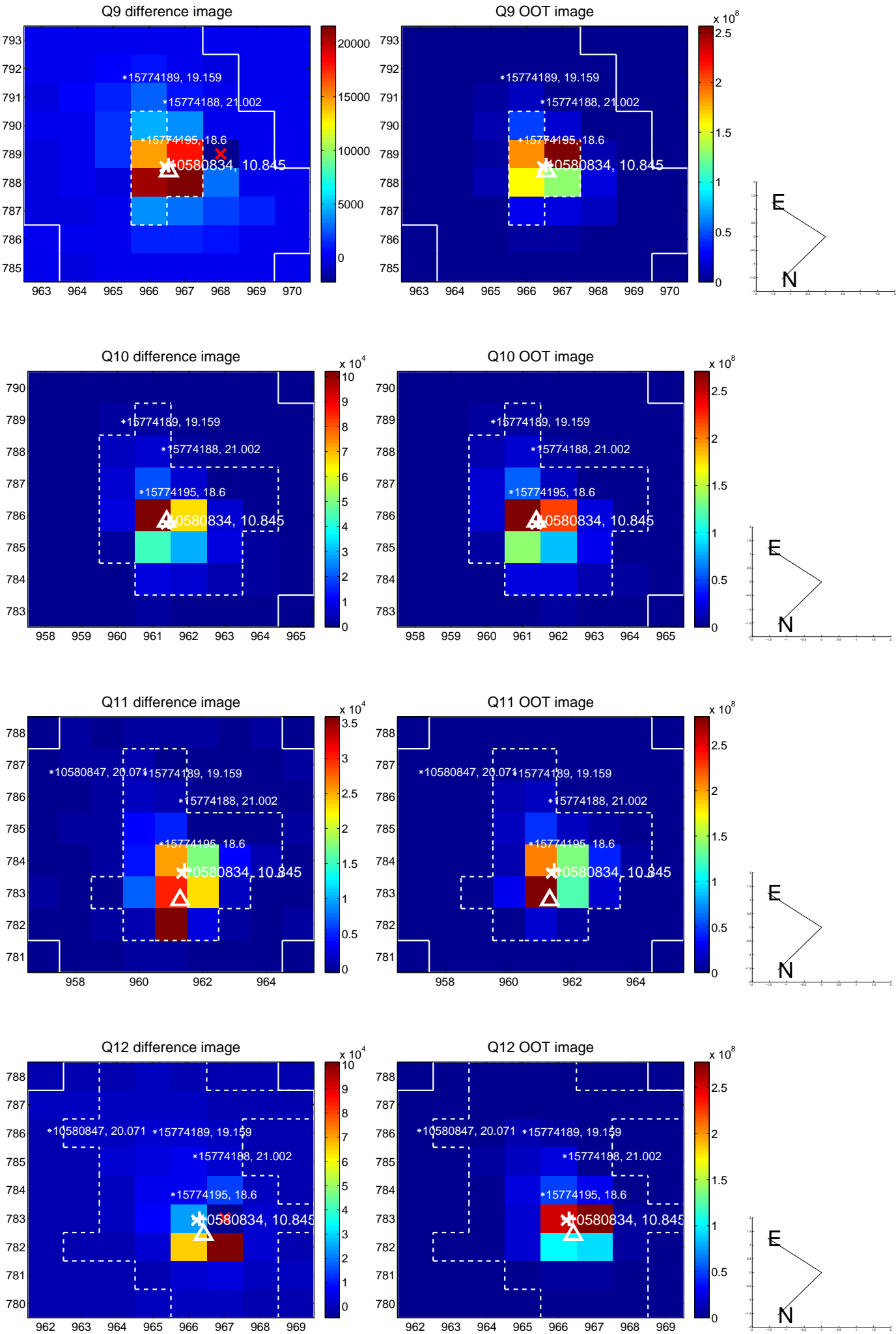
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



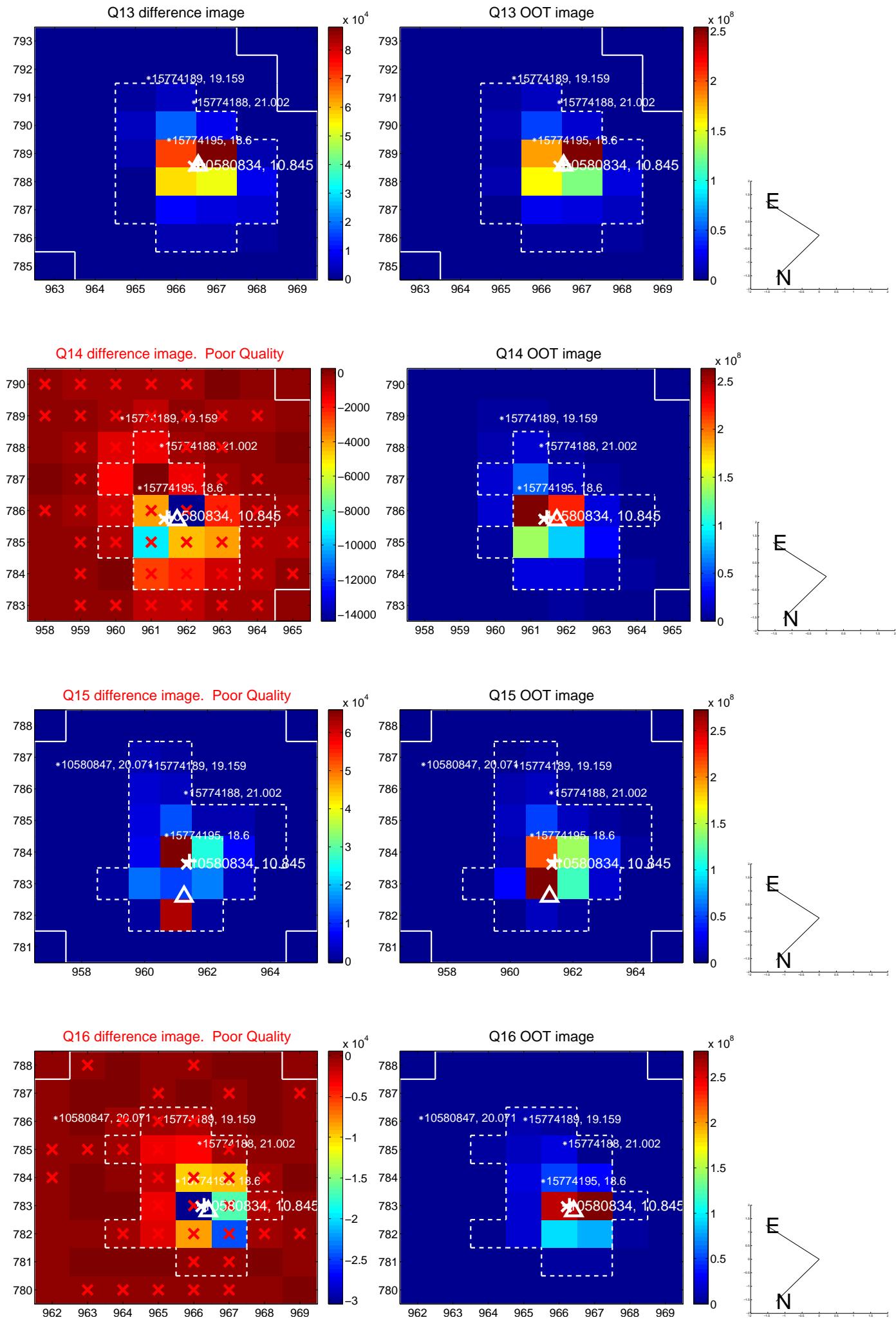
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



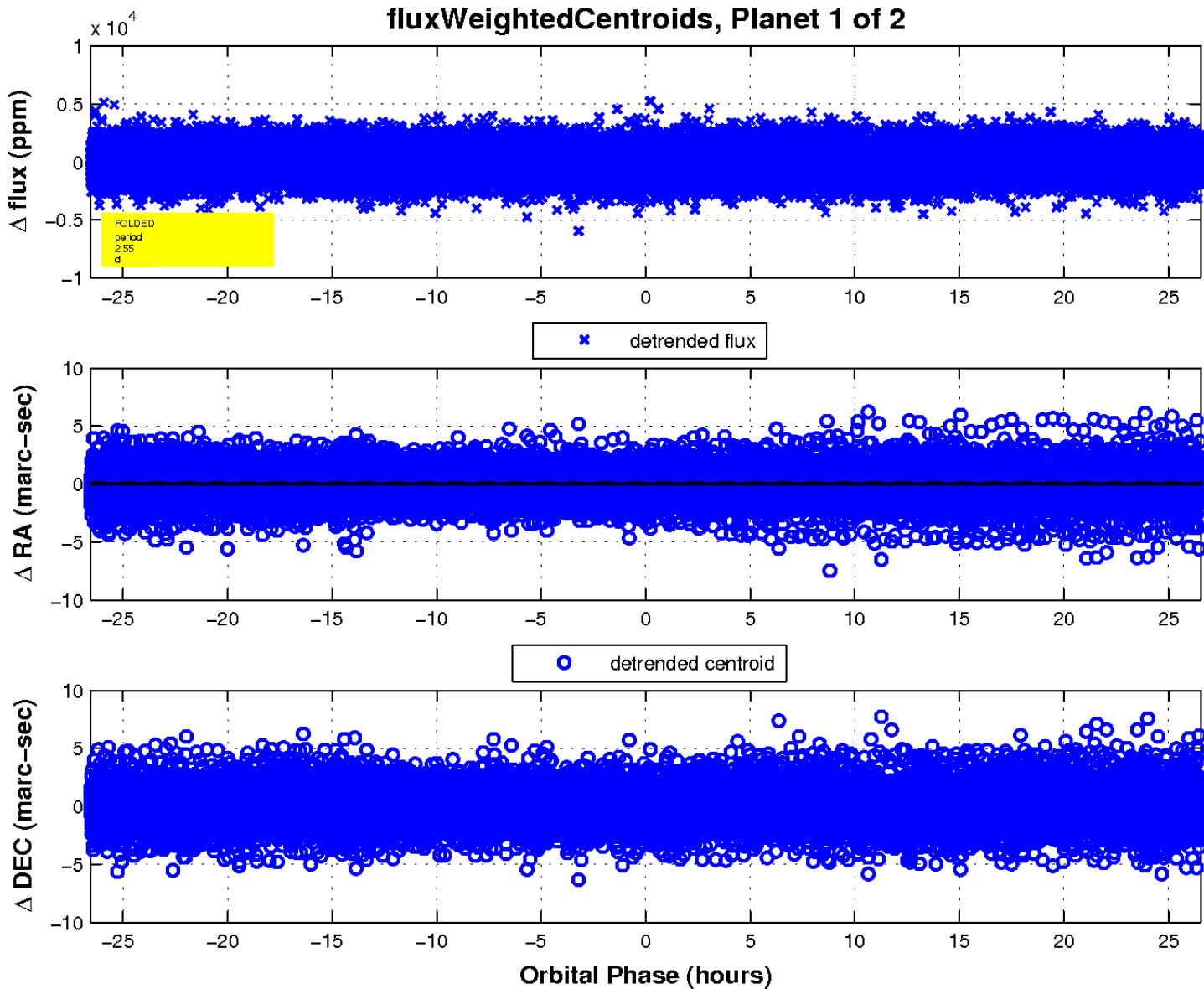
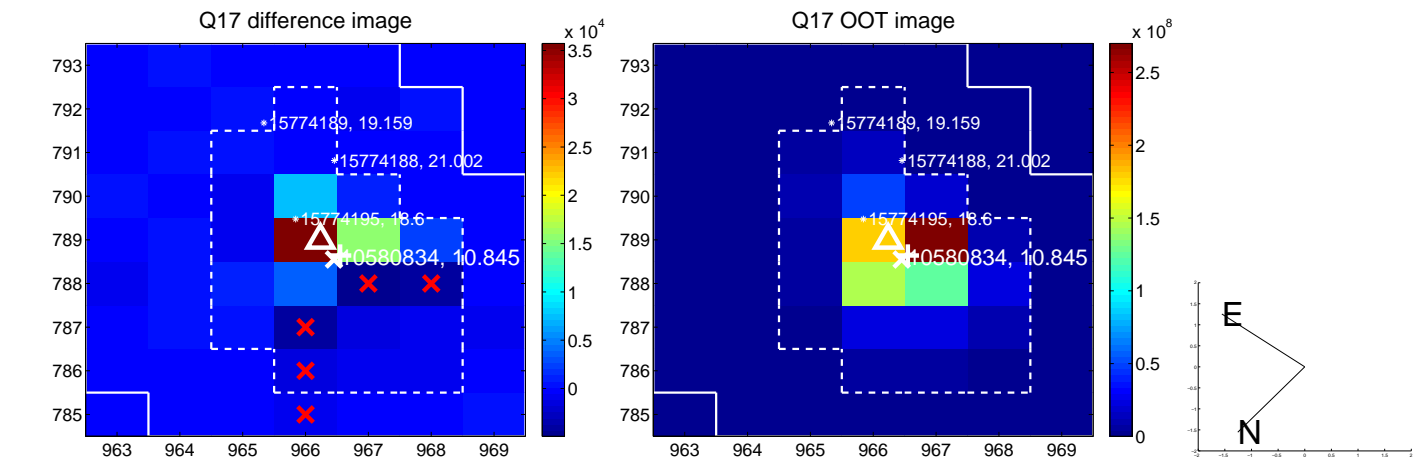
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

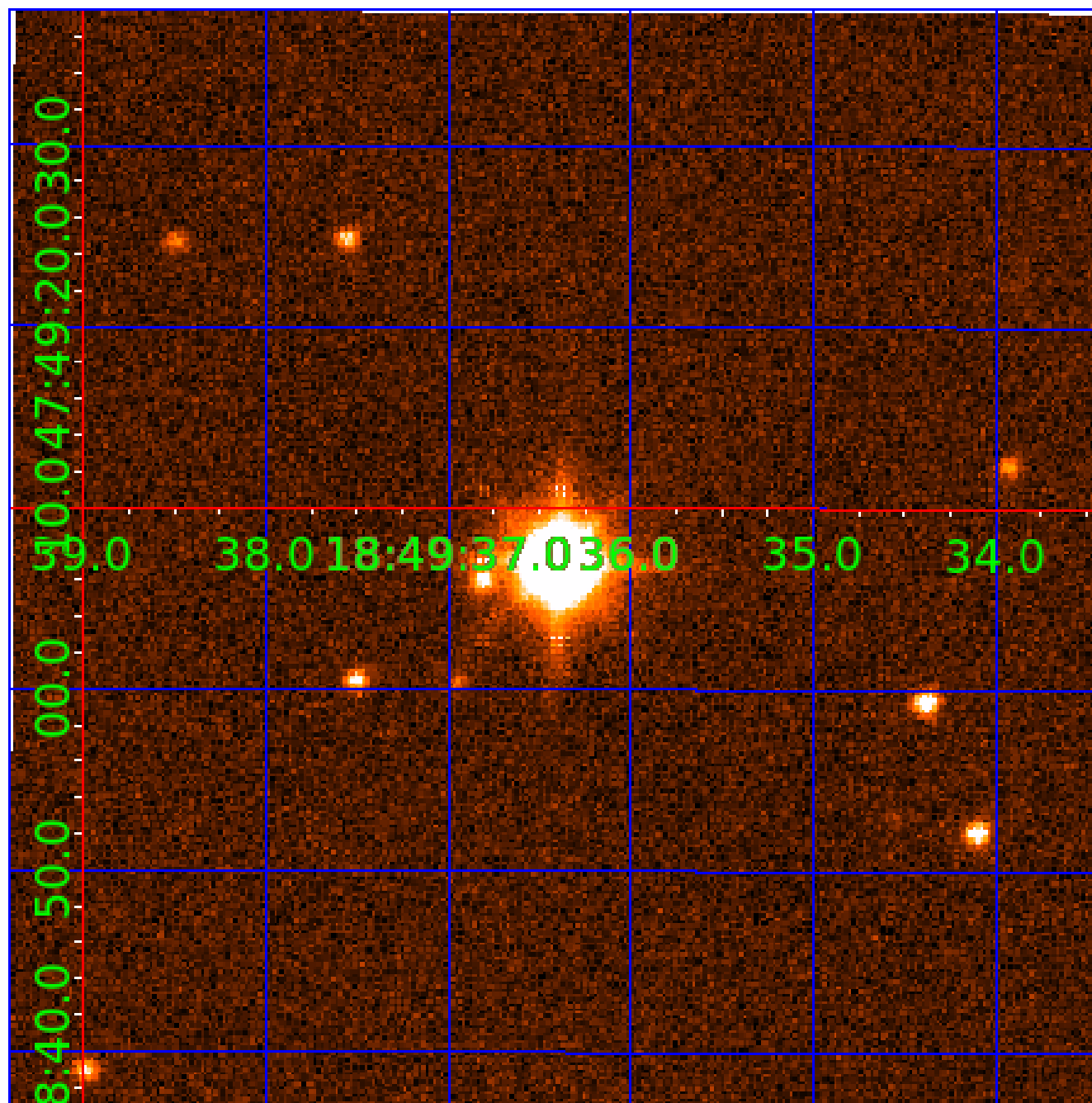


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010580834

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})
010580834-01	OBS	No	2.545354	133.762202	181.6	8.852	9.6	10.1	3.75	7594	7.13	19533.28
010580834-02	OBS	No	2.545402	132.729148	122.8	6.083	8.4	8.8	3.75	7594	4.84	19532.80

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010580834-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010580834-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

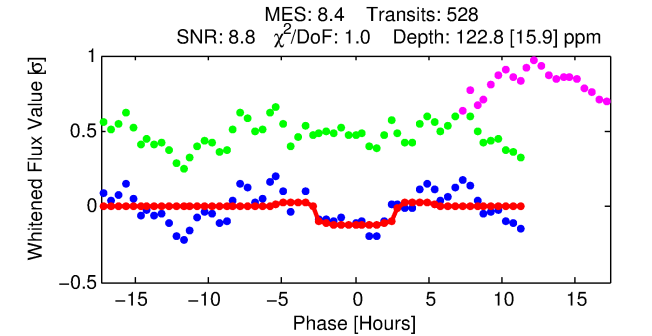
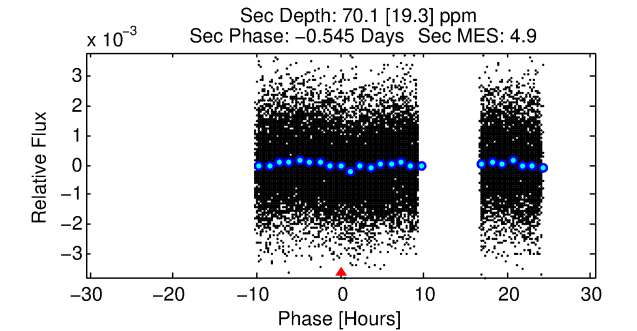
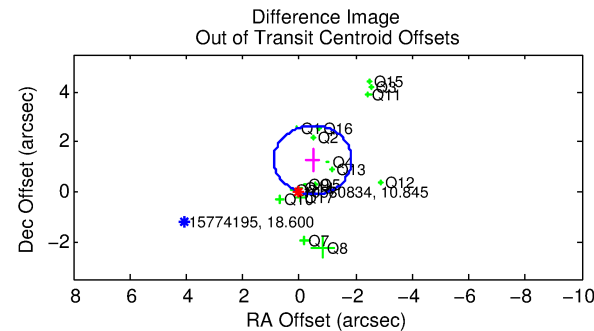
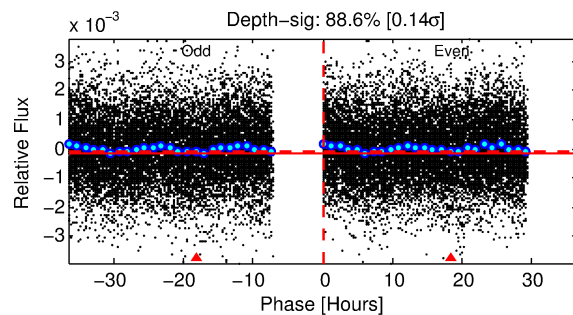
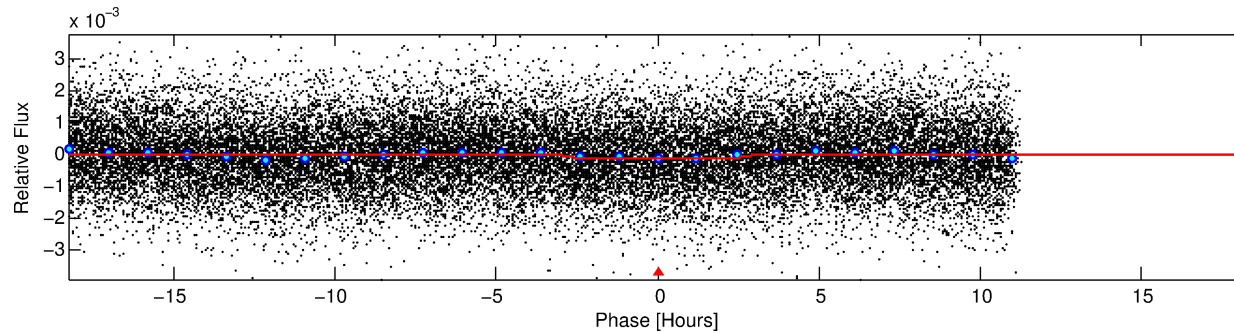
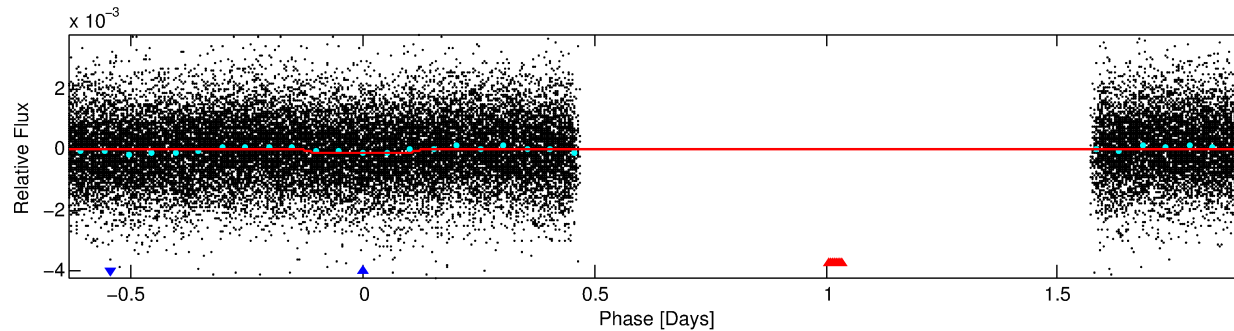
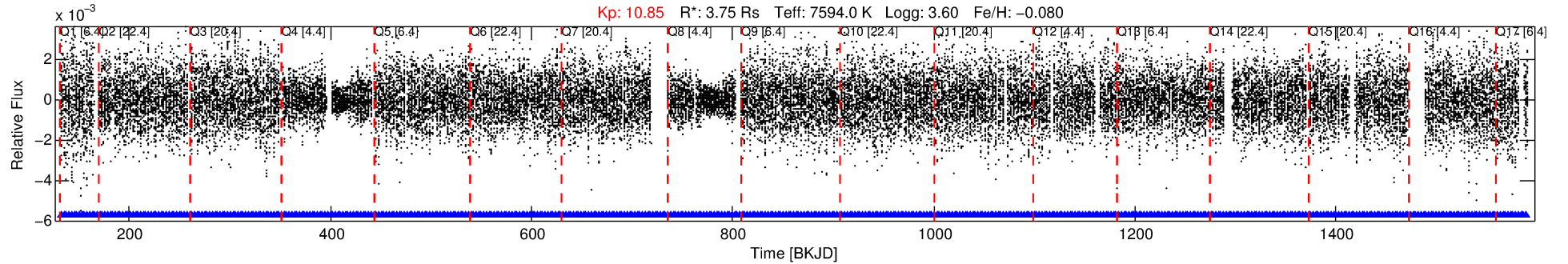
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010580834-02

No Significant Match Found

DV One-Page Summary

KIC: 10580834 Candidate: 2 of 2 Period: 2.545 d



DV Fit Results:

Period = 2.54540 [0.00003] d
Epoch = 132.7291 [0.0069] BKJD
Rp/R* = 0.0118 [0.0027]
a/R* = 1.75 [1.58]
b = 0.90 [0.28]
Seff = 19532.80 [17288.34]
Teq = 3015 [667] K
Rp = 4.84 [2.67] Re
a = 0.0464 [0.0243] AU
Ag = 3.54 [3.60] [0.71 σ]
Teffp = 6394 [887] K [3.04 σ]

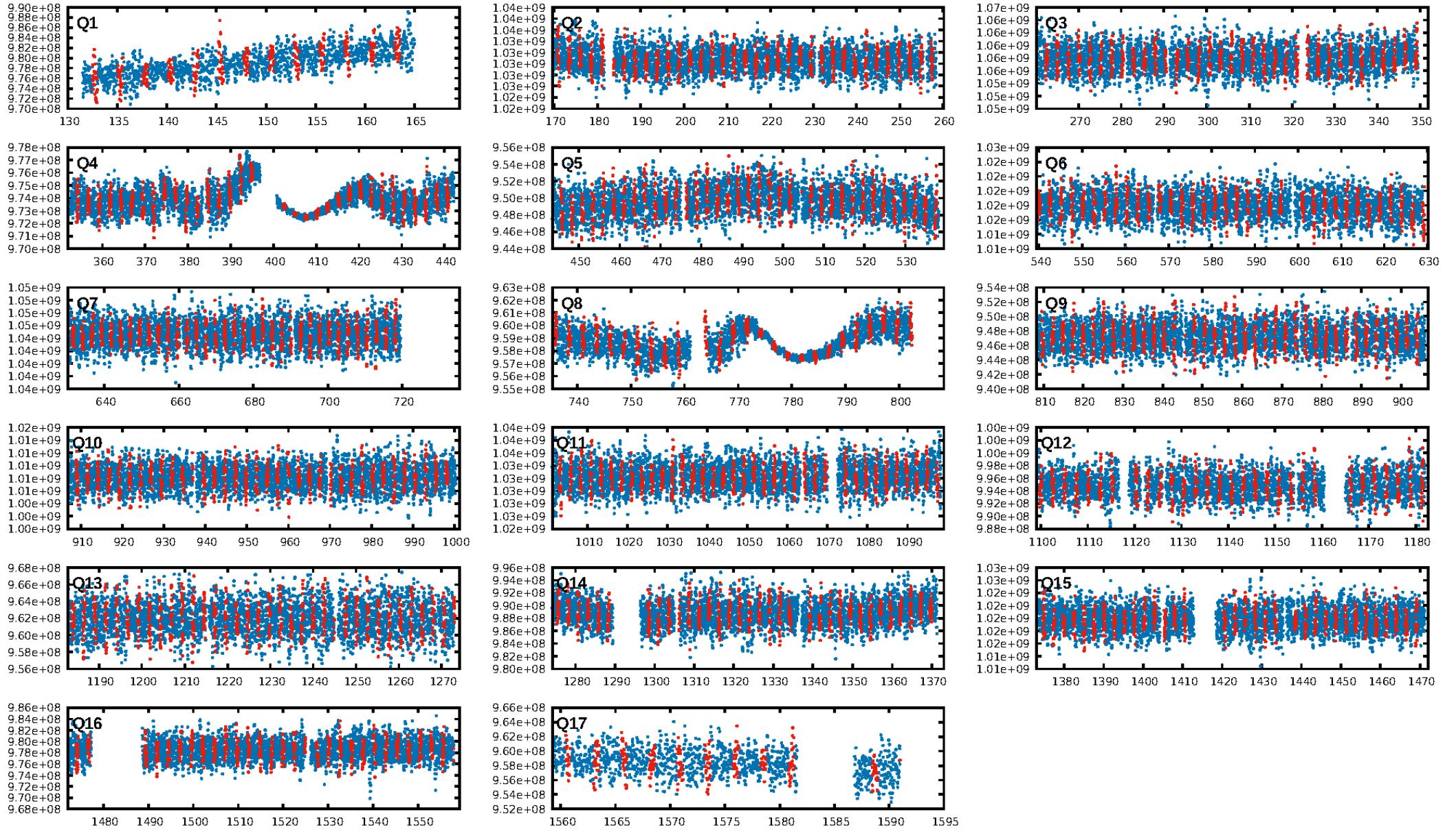
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.58e-12
RollingBand-fgt: 1.00 [505/505]
GhostDiagnostic-chr: 0.489
Centroid-sig: N/A
Centroid-so: 0.348 arcsec [2.41 σ]
OotOffset-rm: 1.354 arcsec [2.95 σ]
KicOffset-rm: 1.179 arcsec [2.53 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.59 [10/17]
DiffImageOverlap-fno: 1.00 [17/17]

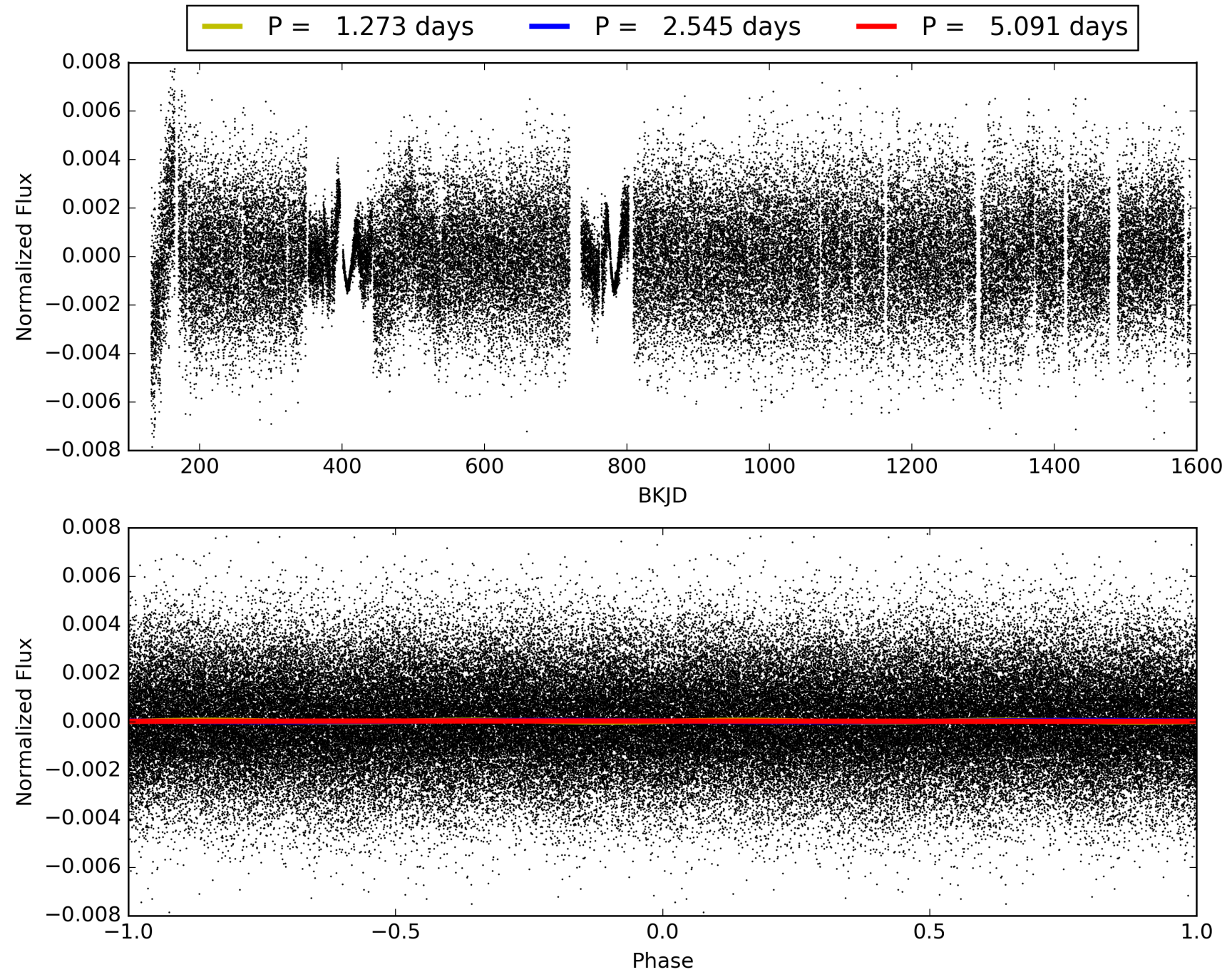
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 17:22:37 Z

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

TCE 010580834-02, PDC Light Curves

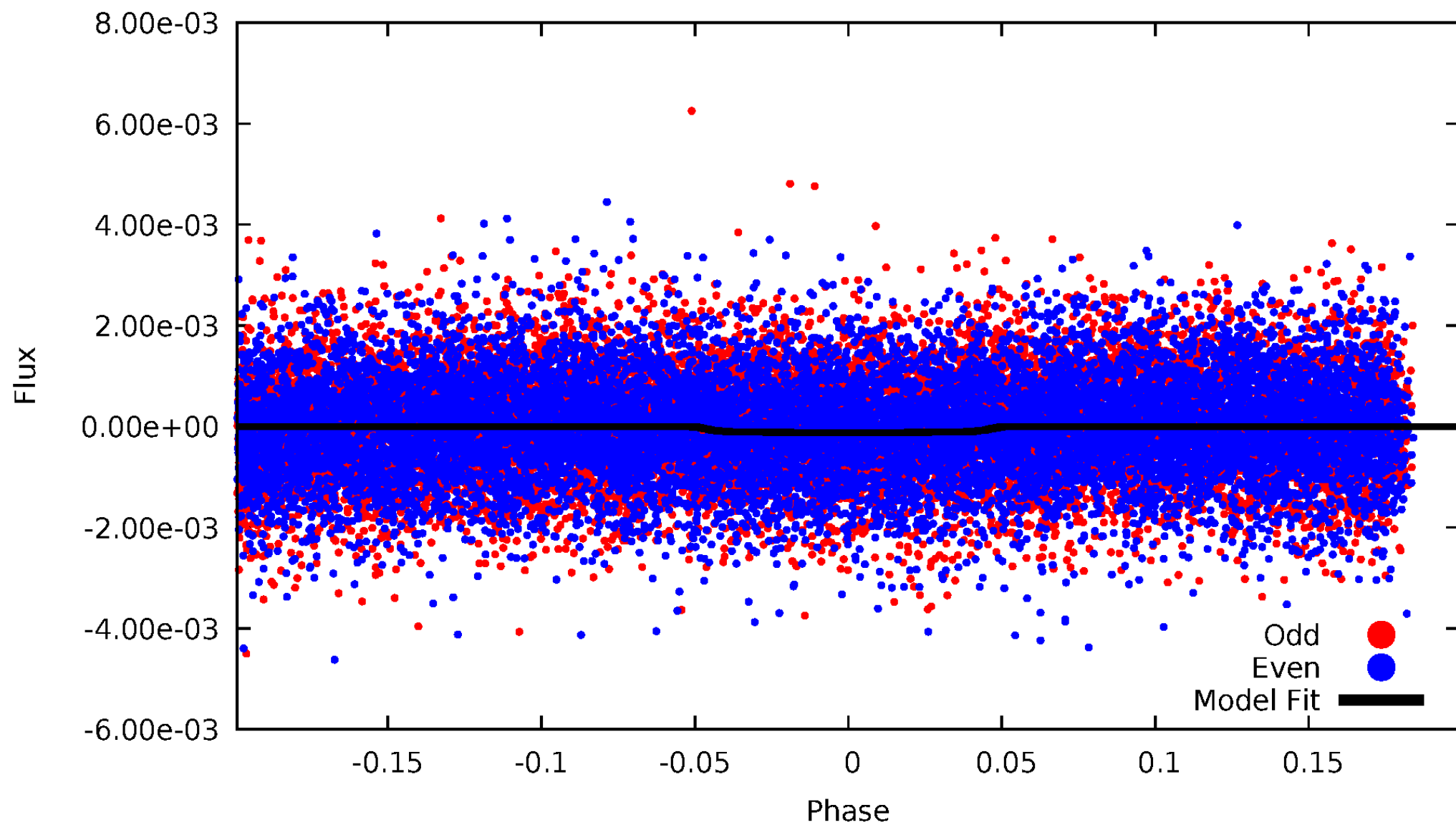


TCE 010580834-02



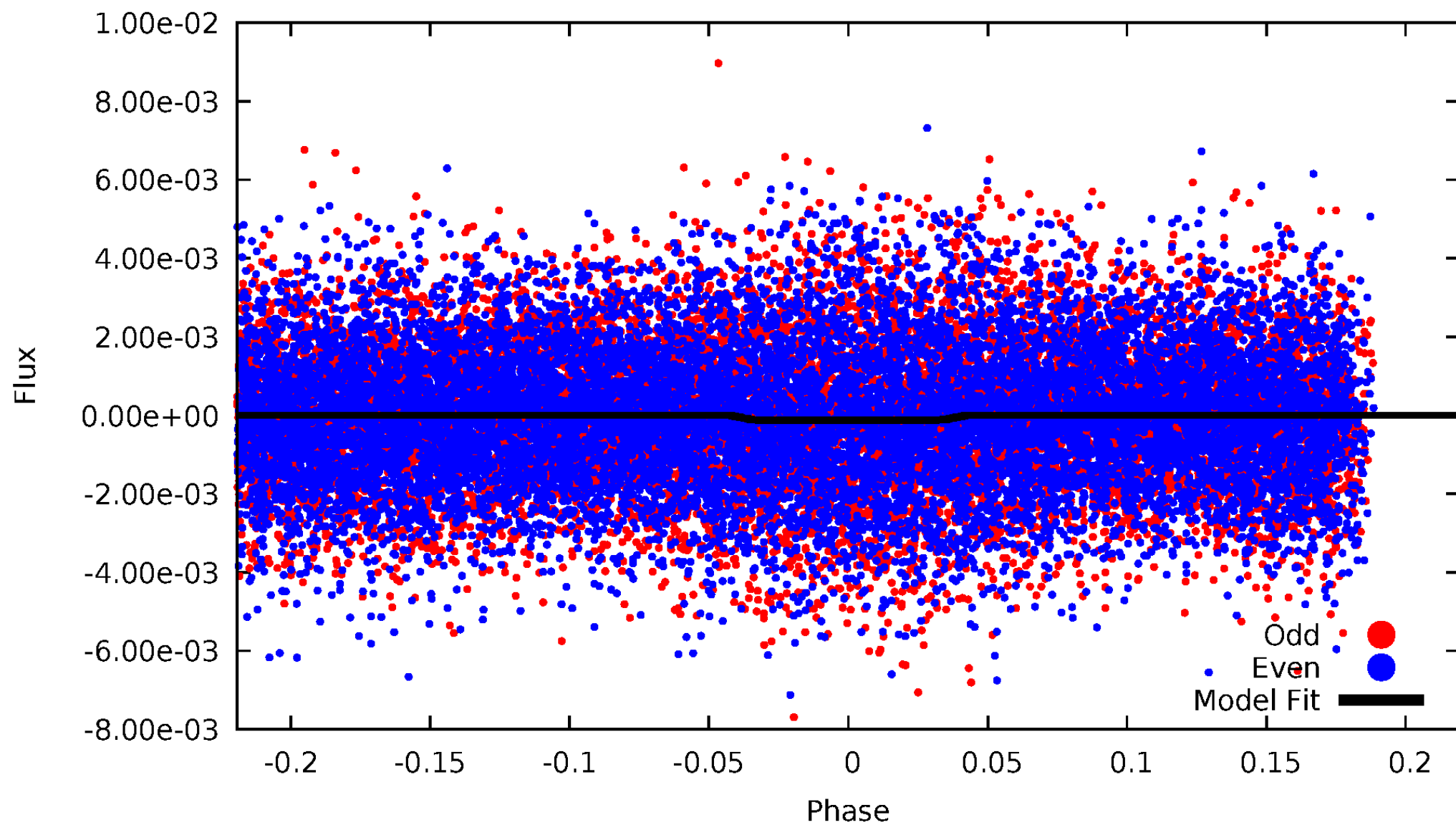
DV Odd/Even

TCE 010580834-02



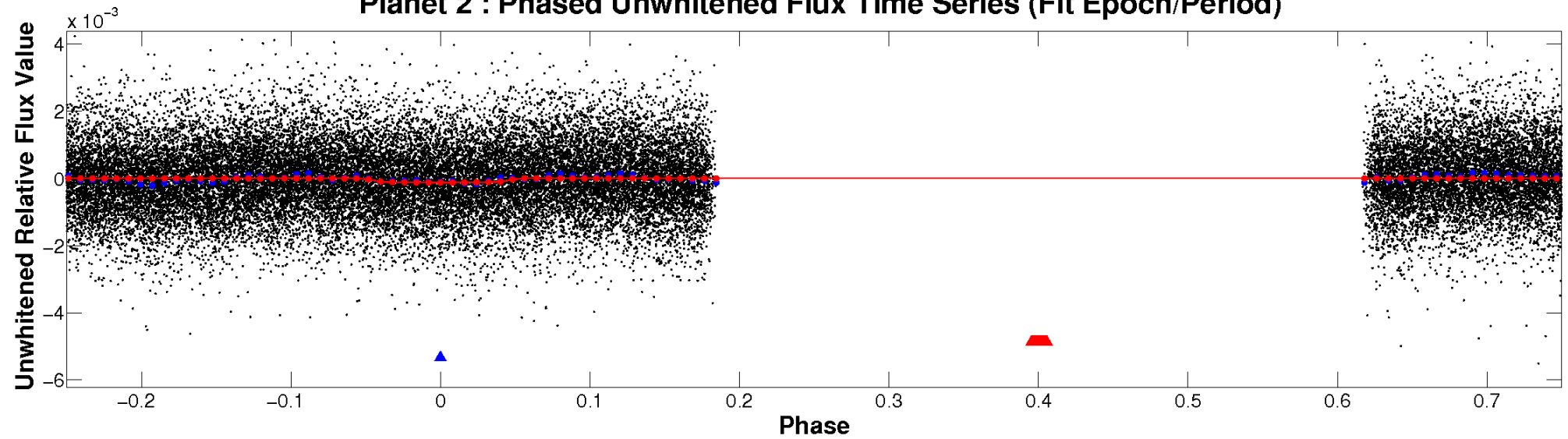
ALT Odd/Even

TCE 010580834-02

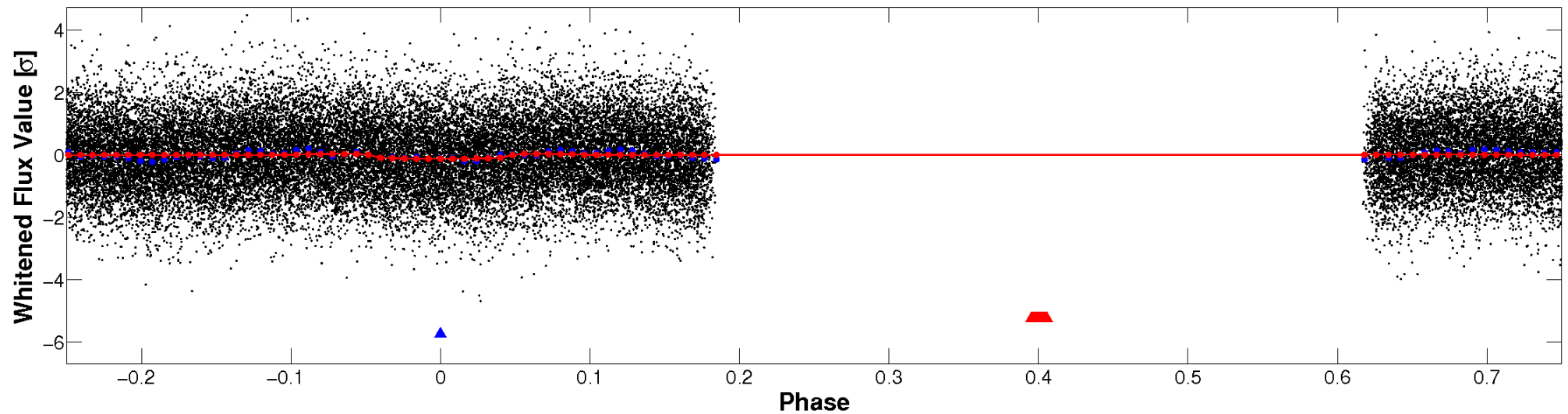


Non-Whitened Vs. Whitened Light Curve

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

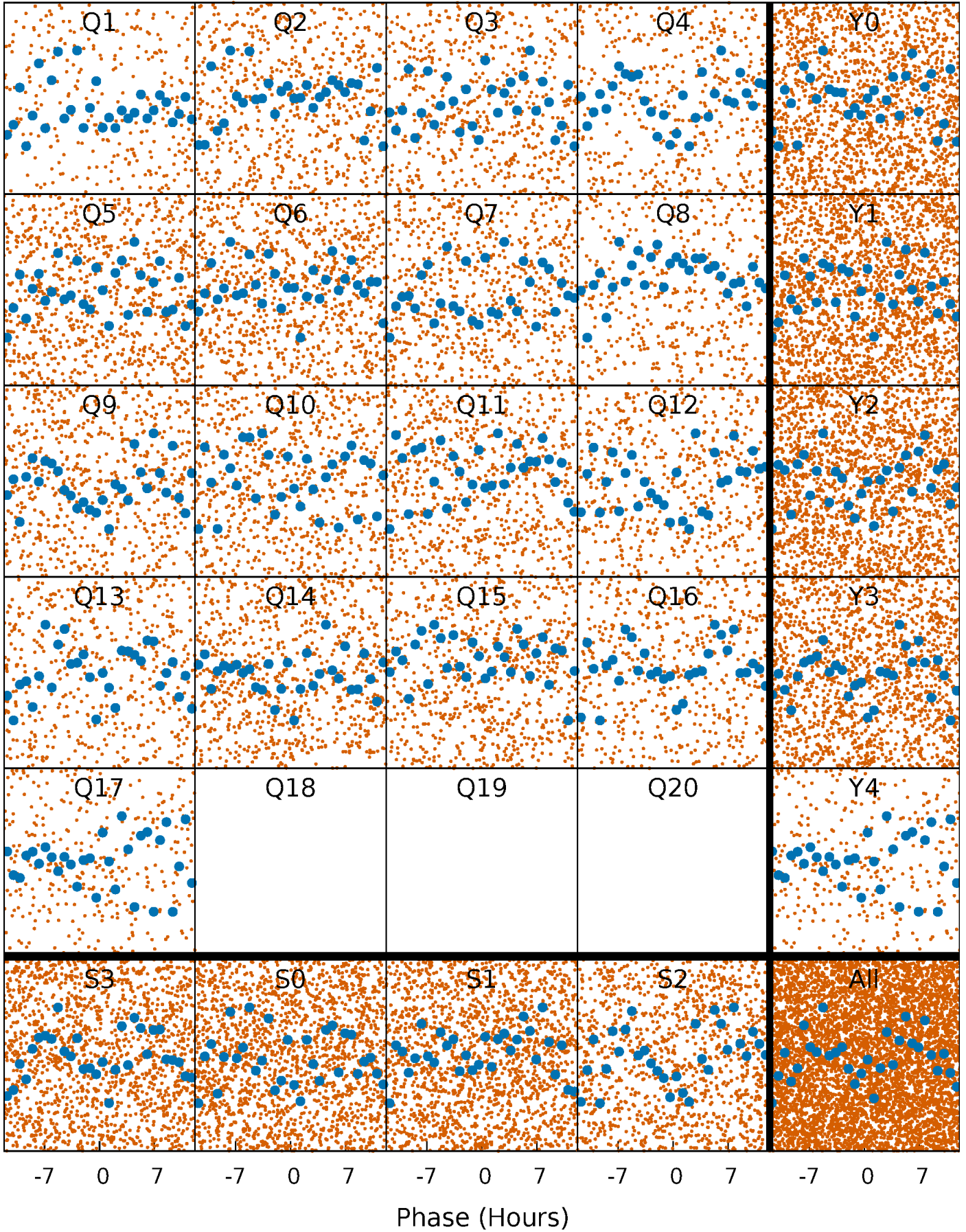


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



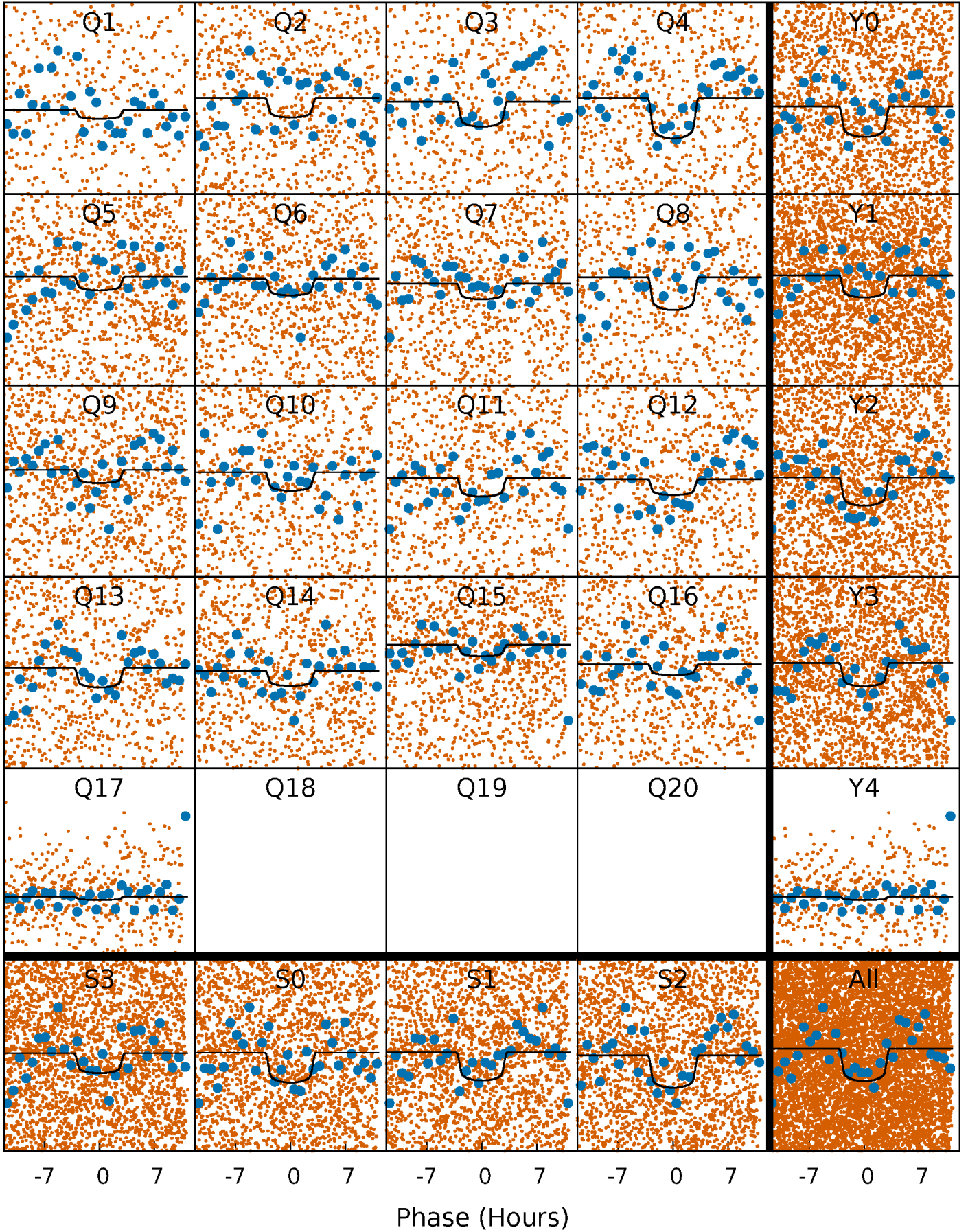
PDC Quarter-Phased Transit Curves

TCE 010580834-02 P= 2.545402 Days $T_0=132.729148$ (BKJD)



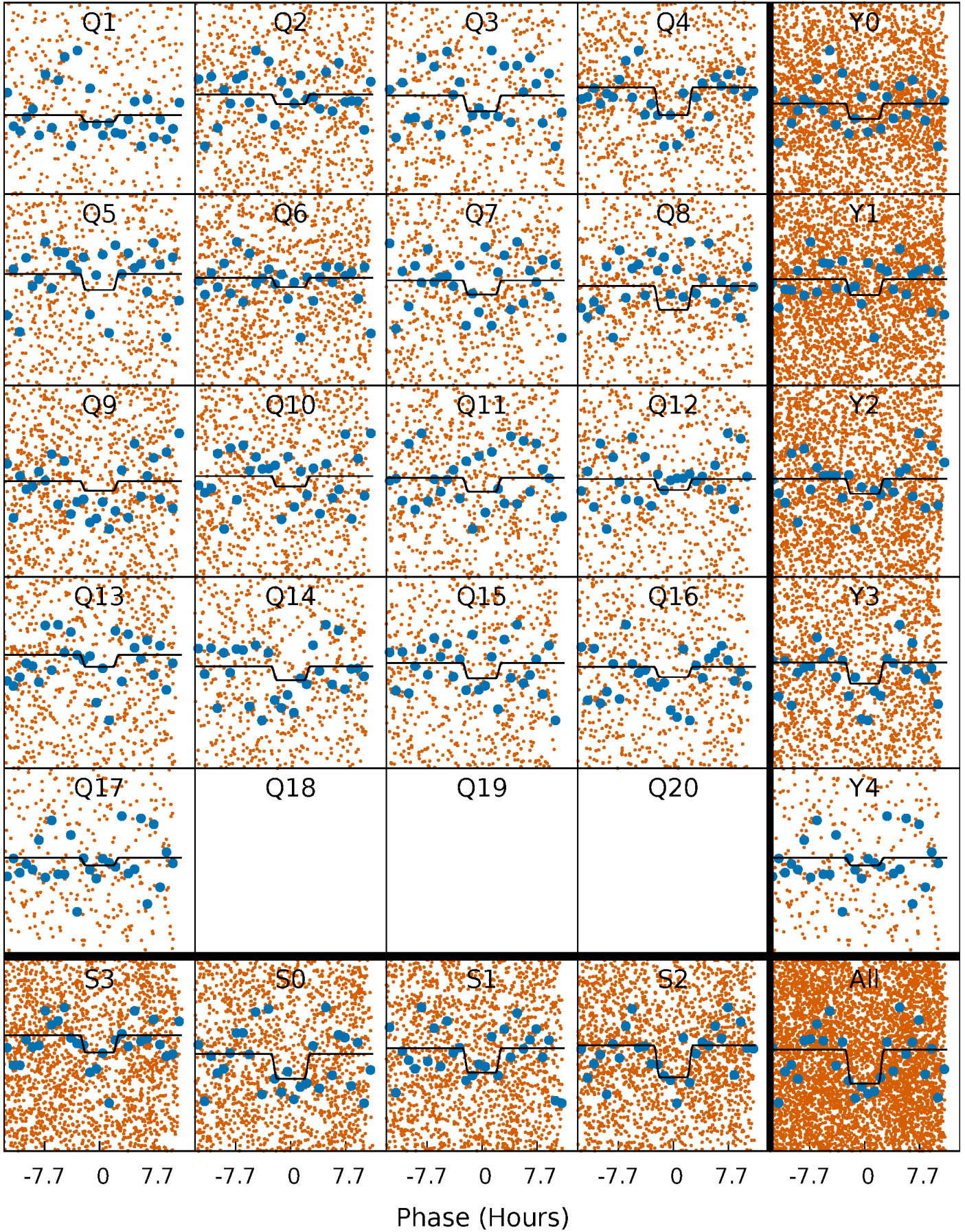
DV Quarter-Phased Transit Curves

TCE 010580834-02 P= 2.545402 Days $T_0=132.729148$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

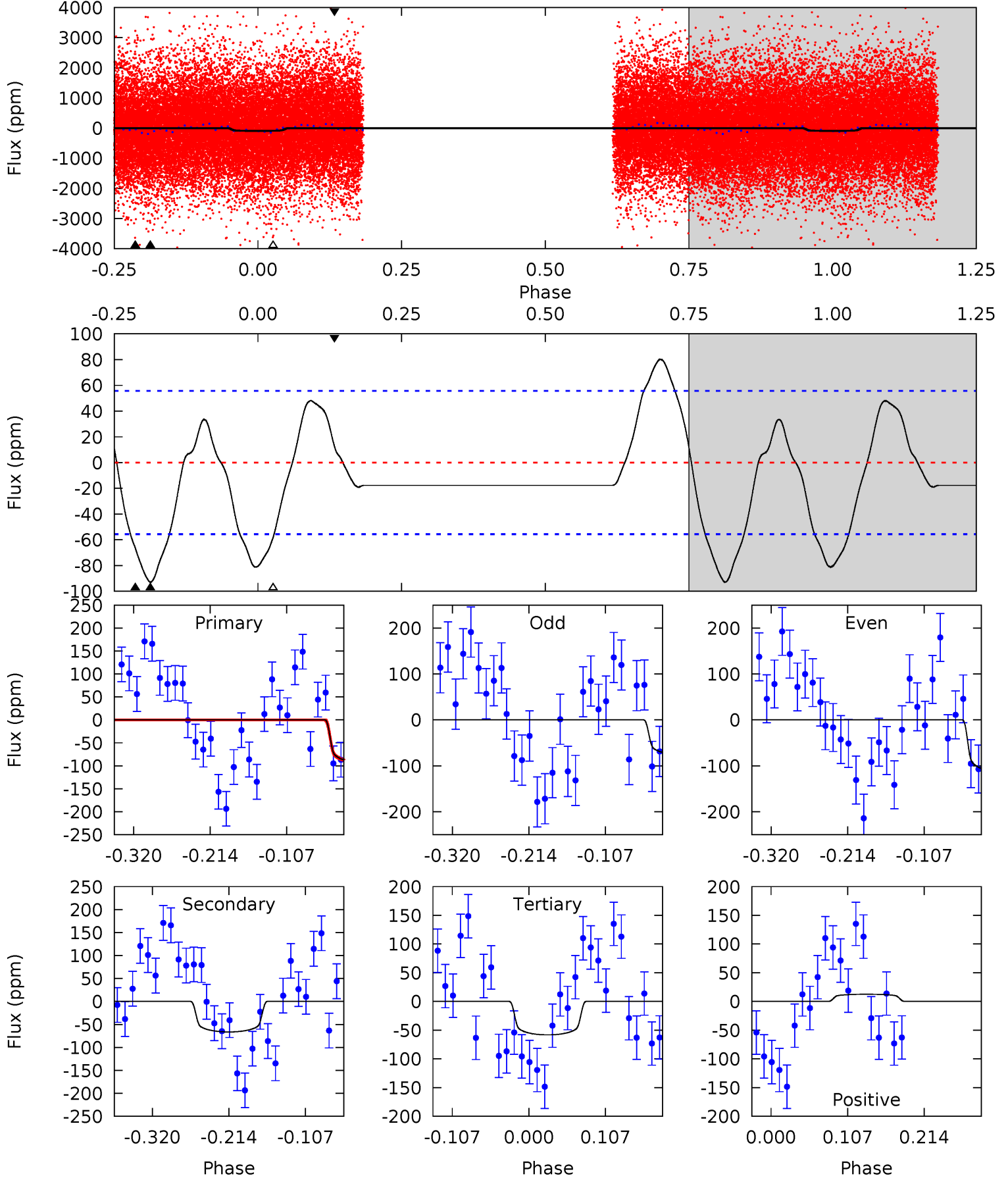
TCE 010580834-02 P= 2.545441 Days $T_0=132.717674$ (BKJD)



DV Model-Shift Uniqueness Test

010580834-02, P = 2.545402 Days, E = 130.183746 Days

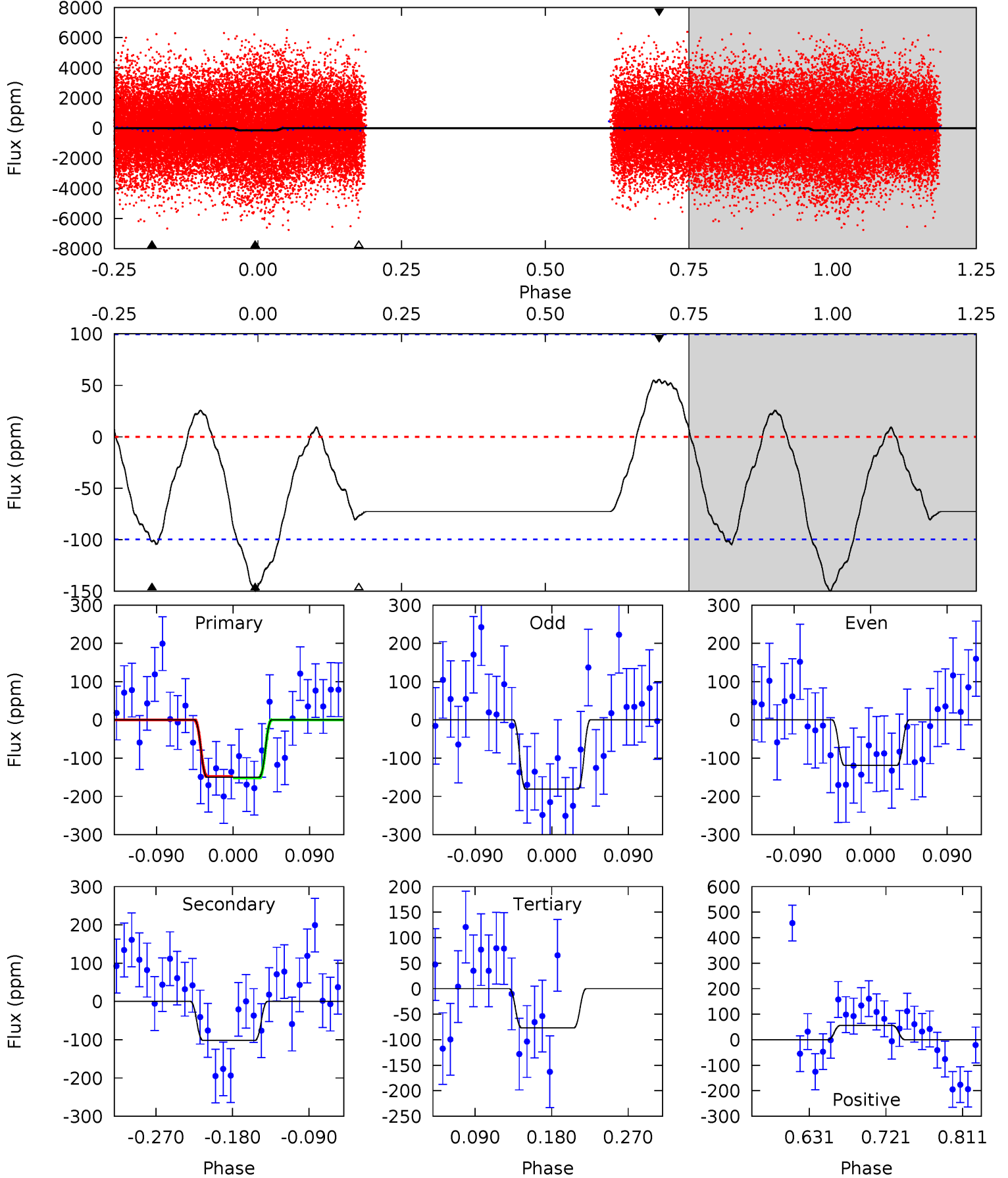
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.60	5.42	4.76	1.02	4.55	1.61	3.62	2.84	6.57	0.66	4.40	1.53	0.97	0.46	0.00



Alt Model-Shift Uniqueness Test

010580834-02, P = 2.545441 Days, E = 130.172233 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.89	4.67	3.54	2.57	4.59	1.69	1.98	3.35	4.32	1.14	2.10	1.43	1.22	0.27	0.07



Stellar Parameters For KIC 010580834

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7594^{+212}_{-318}	$3.601^{+0.522}_{-0.058}$	$-0.080^{+0.200}_{-0.300}$	$3.754^{+0.632}_{-1.895}$	$2.054^{+0.280}_{-0.559}$	$0.055^{+0.306}_{-0.016}$
	+3%/-4%	+14%/-2%	+250%/-375%	+17%/-50%	+14%/-27%	+560%/-28%
Source	KIC0	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 010580834-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-66 ± 12	$4.29^{+1.41}_{-1.35}$	3988^{+312}_{-486}	6016^{+991}_{-686}	$4.210^{+4.862}_{-1.784}$
Alt.	-102 ± 22	$3.98^{+1.48}_{-1.25}$	3982^{+303}_{-525}	7012^{+1491}_{-933}	$7.366^{+8.378}_{-3.311}$

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

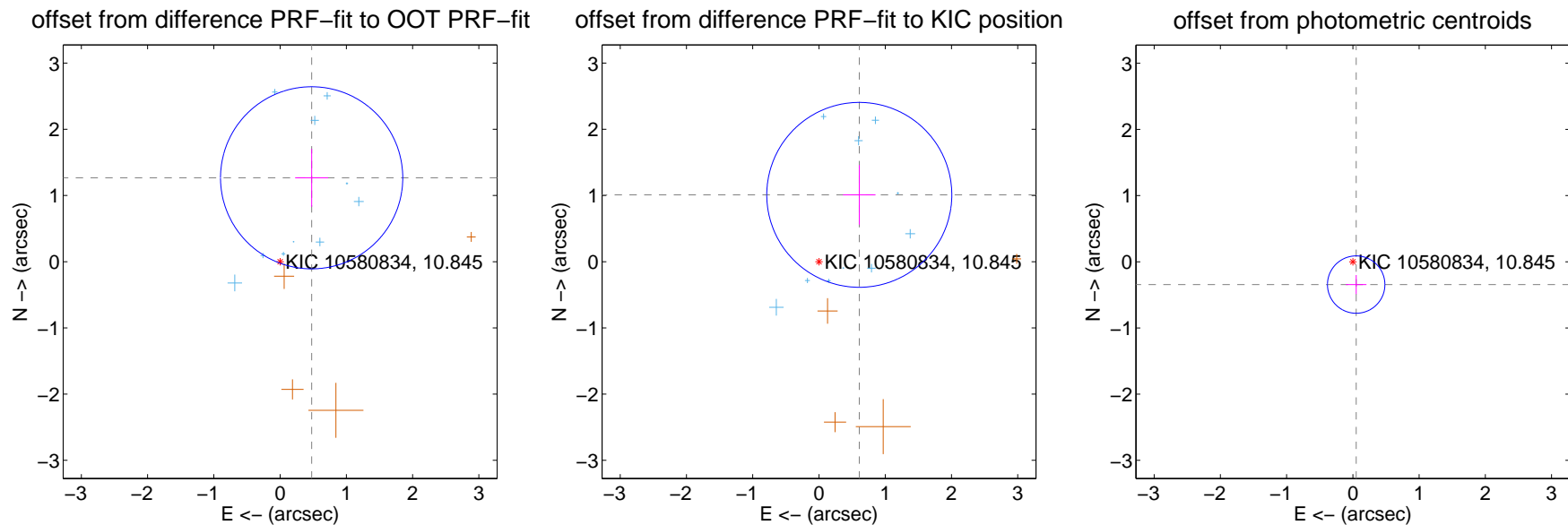
DV Centroid Data

Supplemental centroid analysis for 010580834-02. **Kepler magnitude: 10.85.** Transit SNR 8.78

There are 10 quarters with good PRF difference image offsets

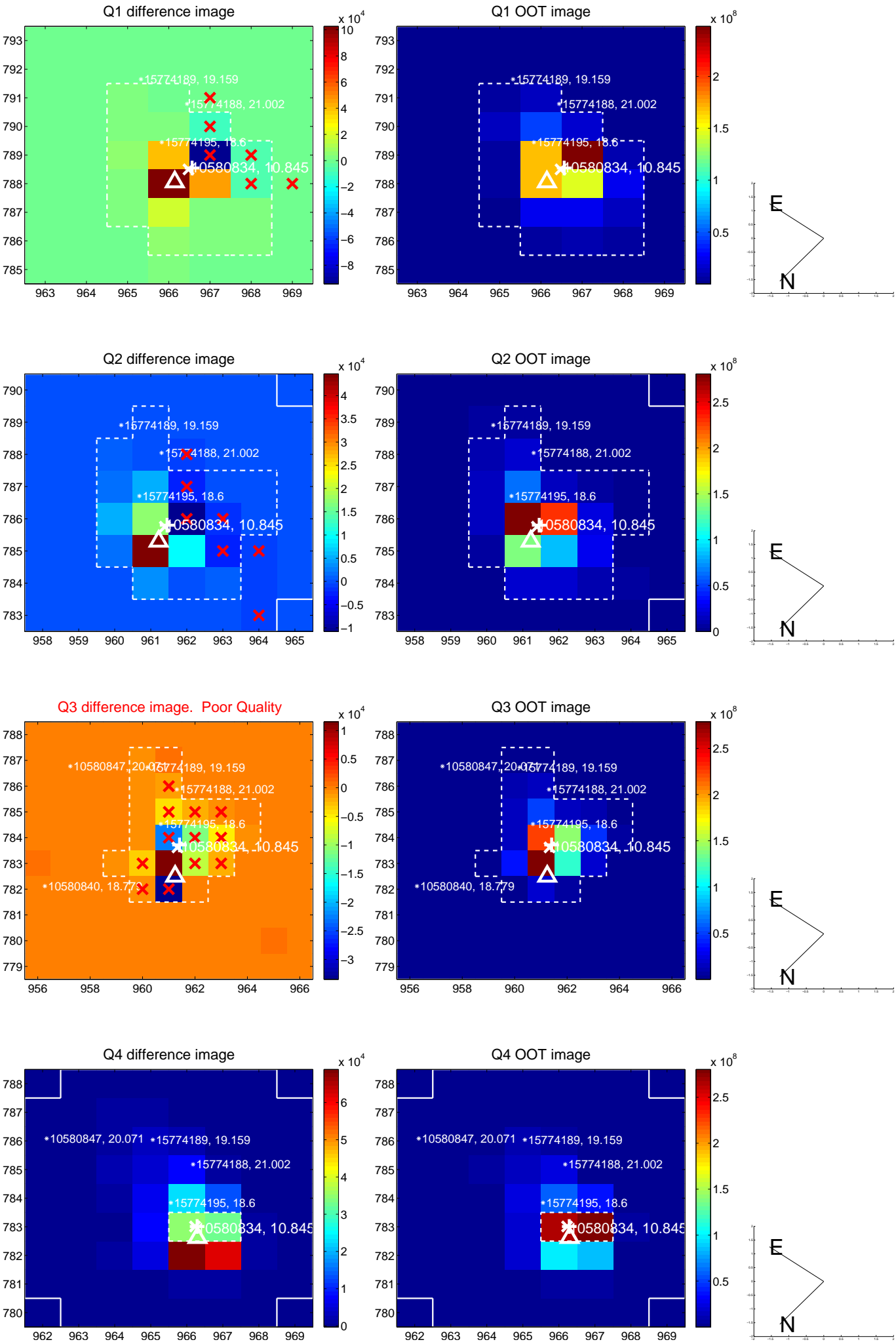
The direct PRF centroid is offset from the target star catalog position by about 0.53 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.354 ± 0.459	2.95	-0.476 ± 0.248	1.268 ± 0.437
PRF-fit source offset from KIC position	1.179 ± 0.466	2.53	-0.608 ± 0.245	1.010 ± 0.449
photometric centroid source offset	0.35 ± 0.14	2.41	-0.05 ± 0.16	-0.34 ± 0.14

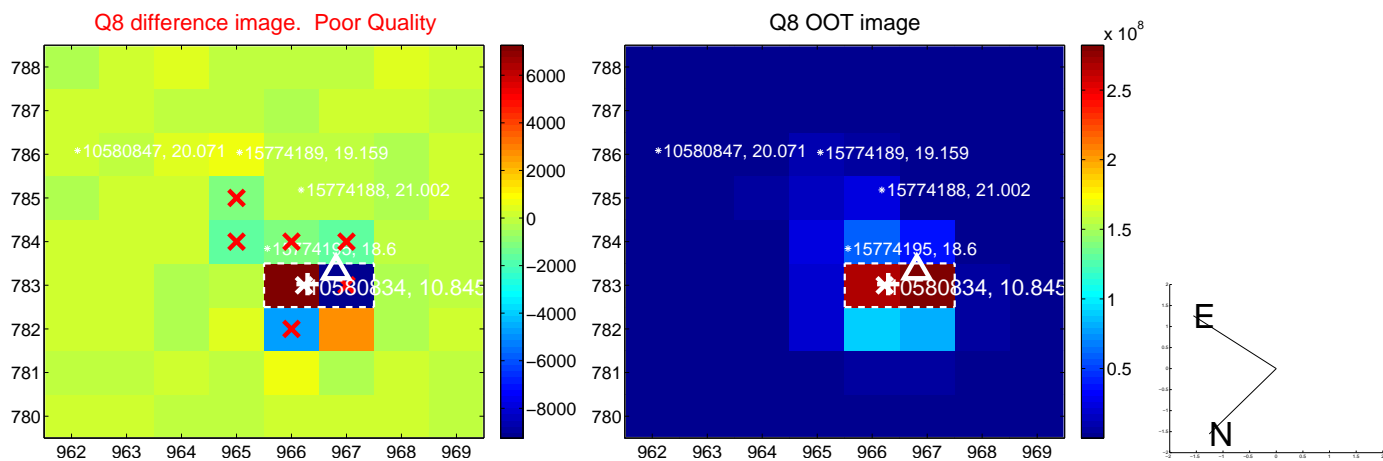
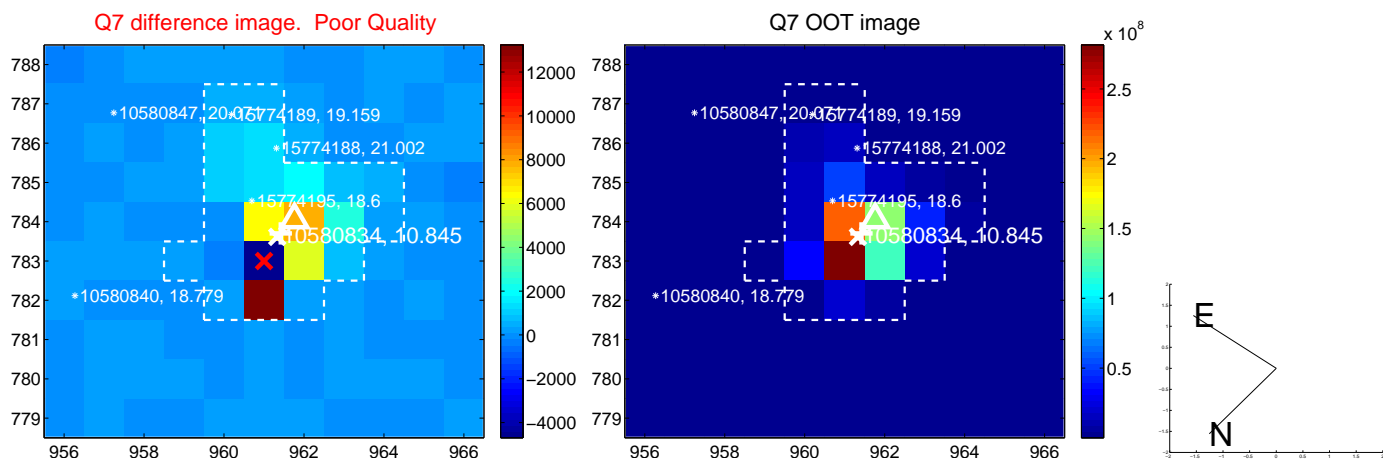
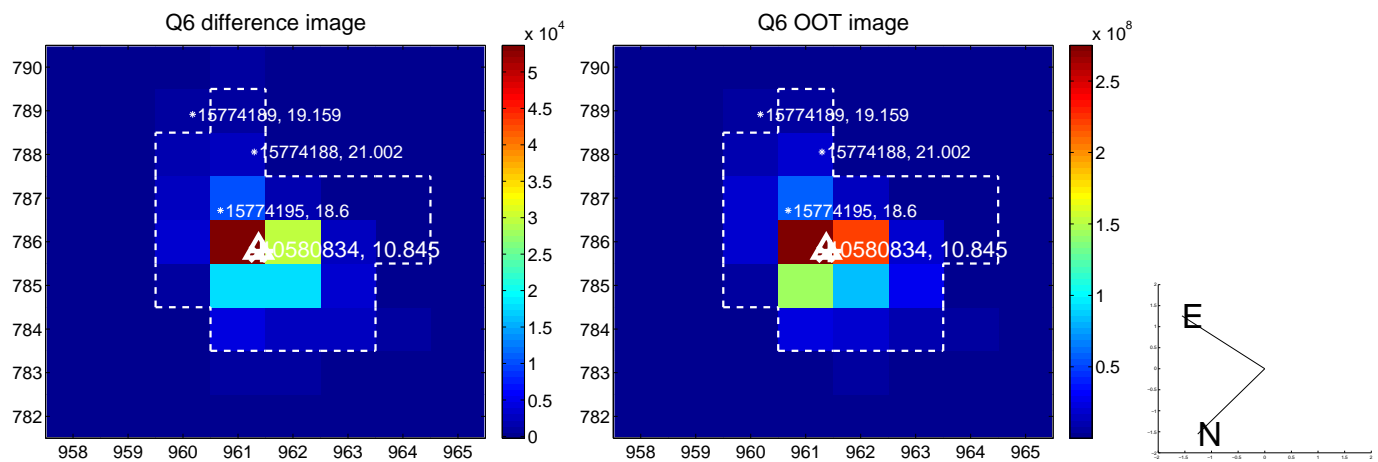
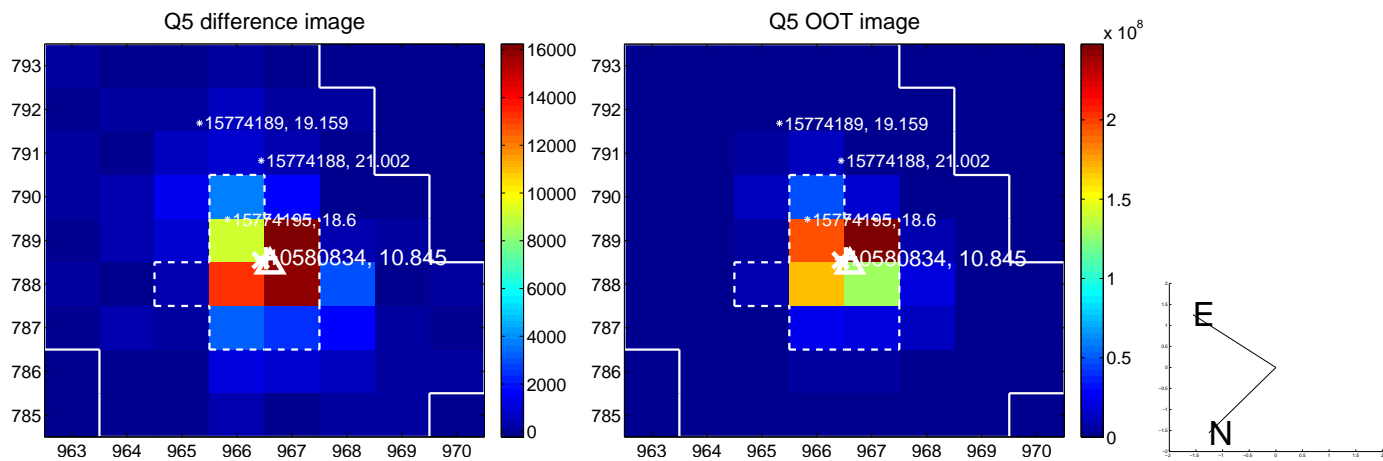


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

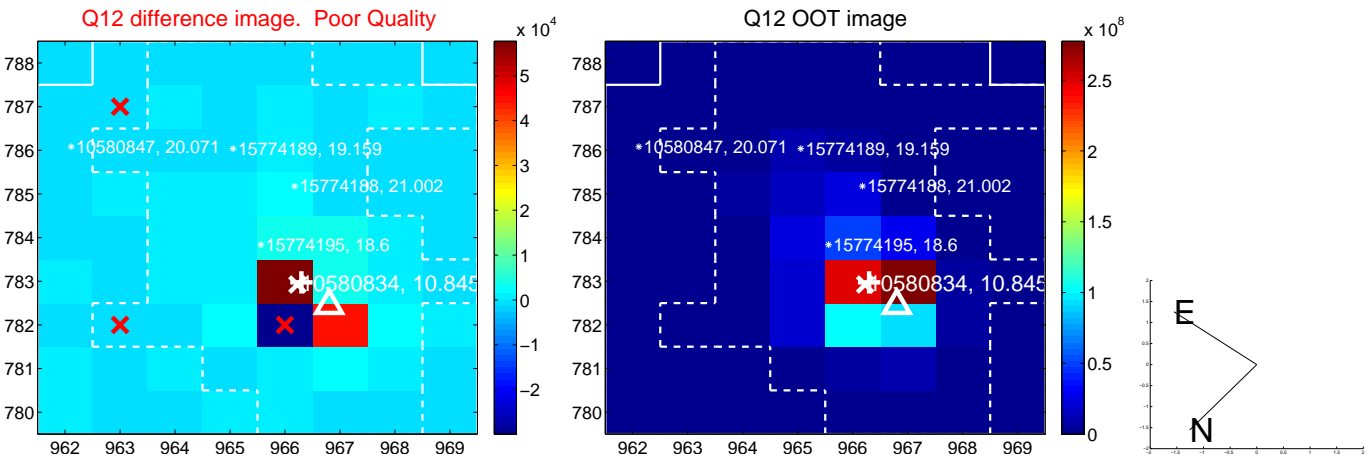
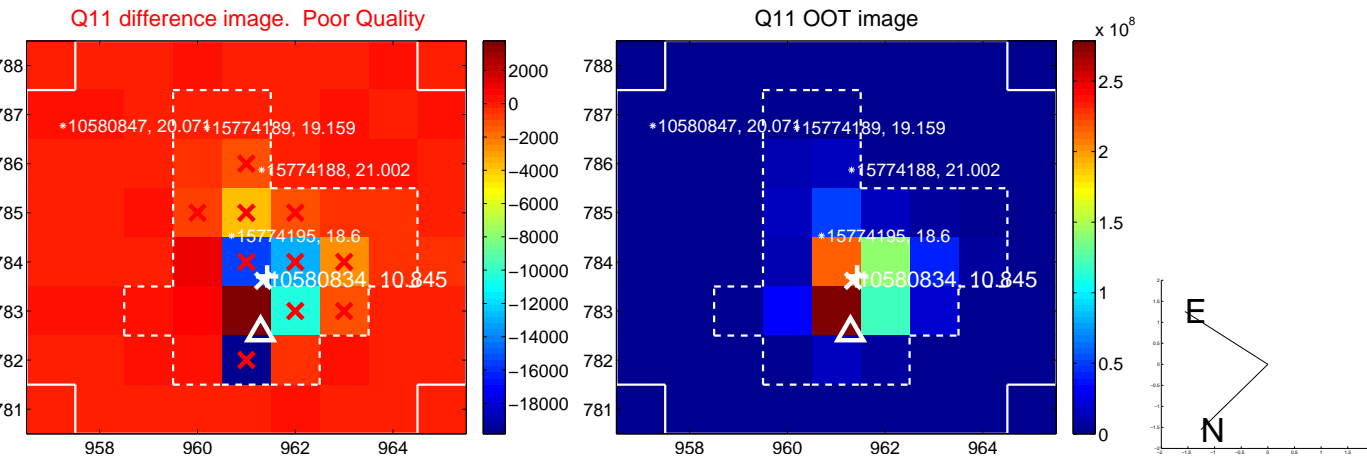
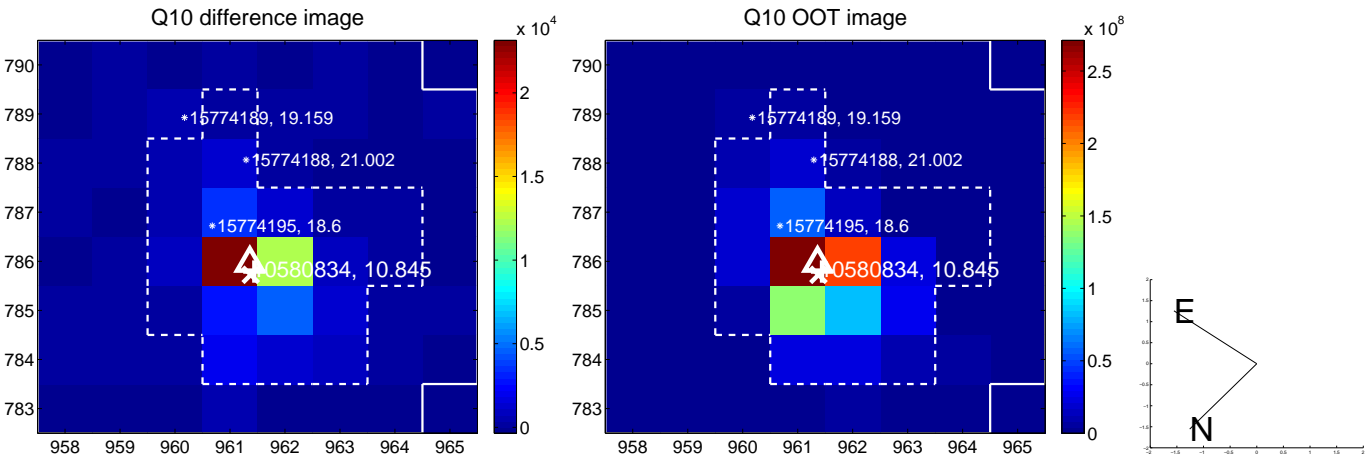
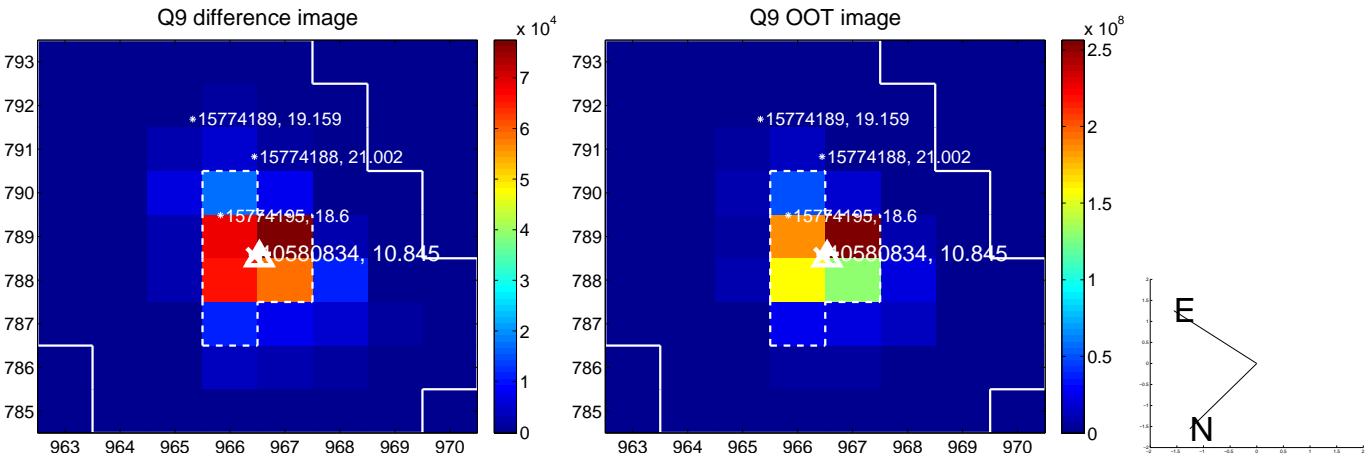
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



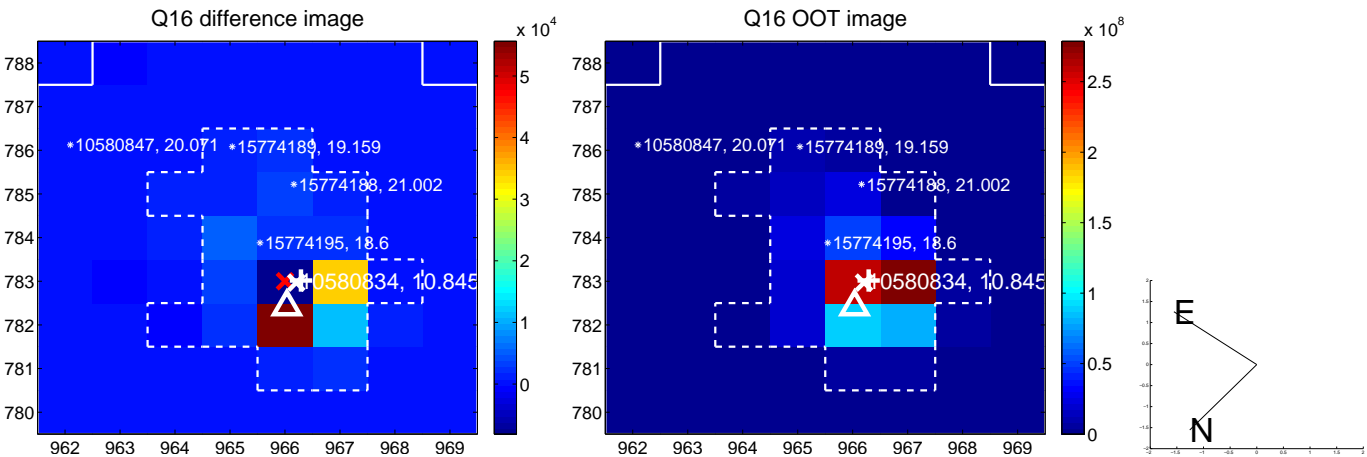
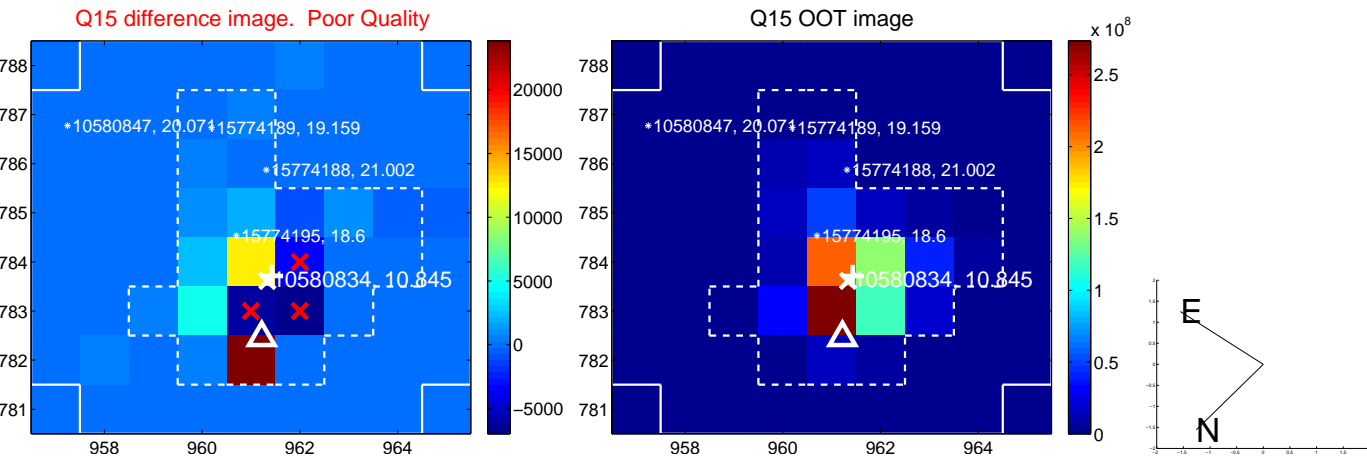
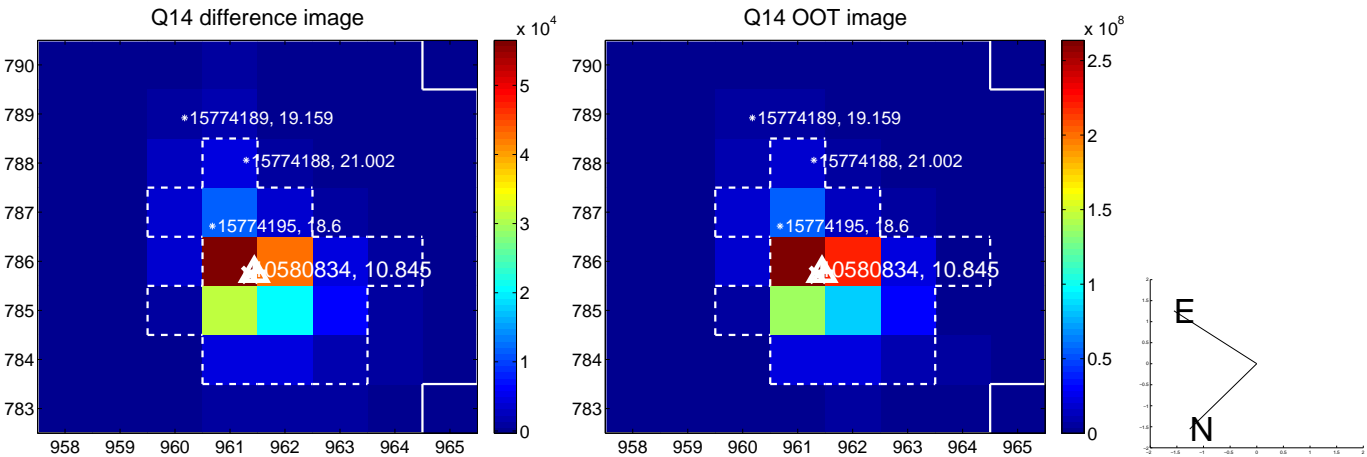
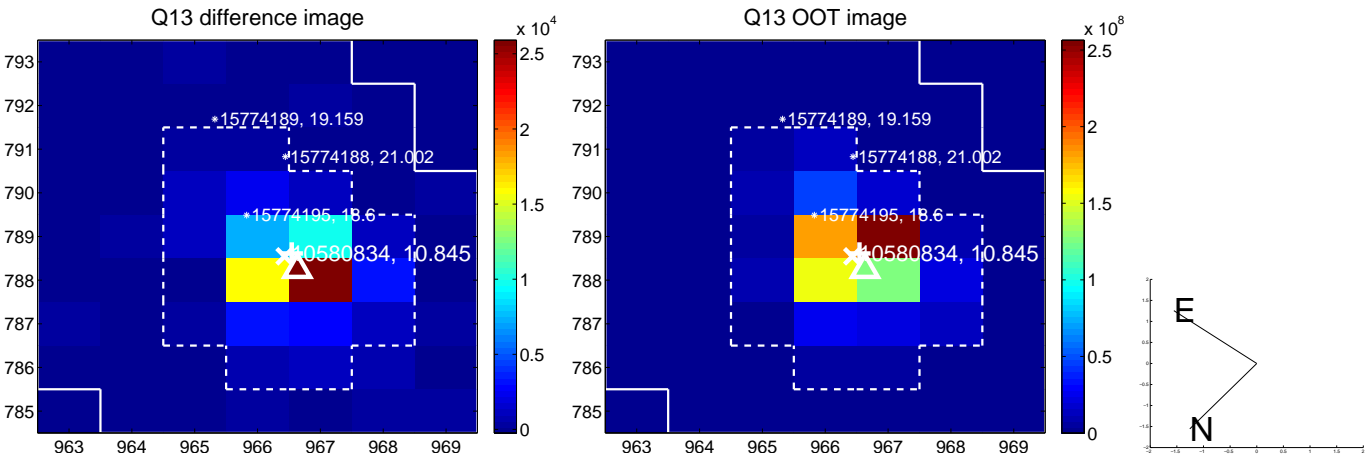
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



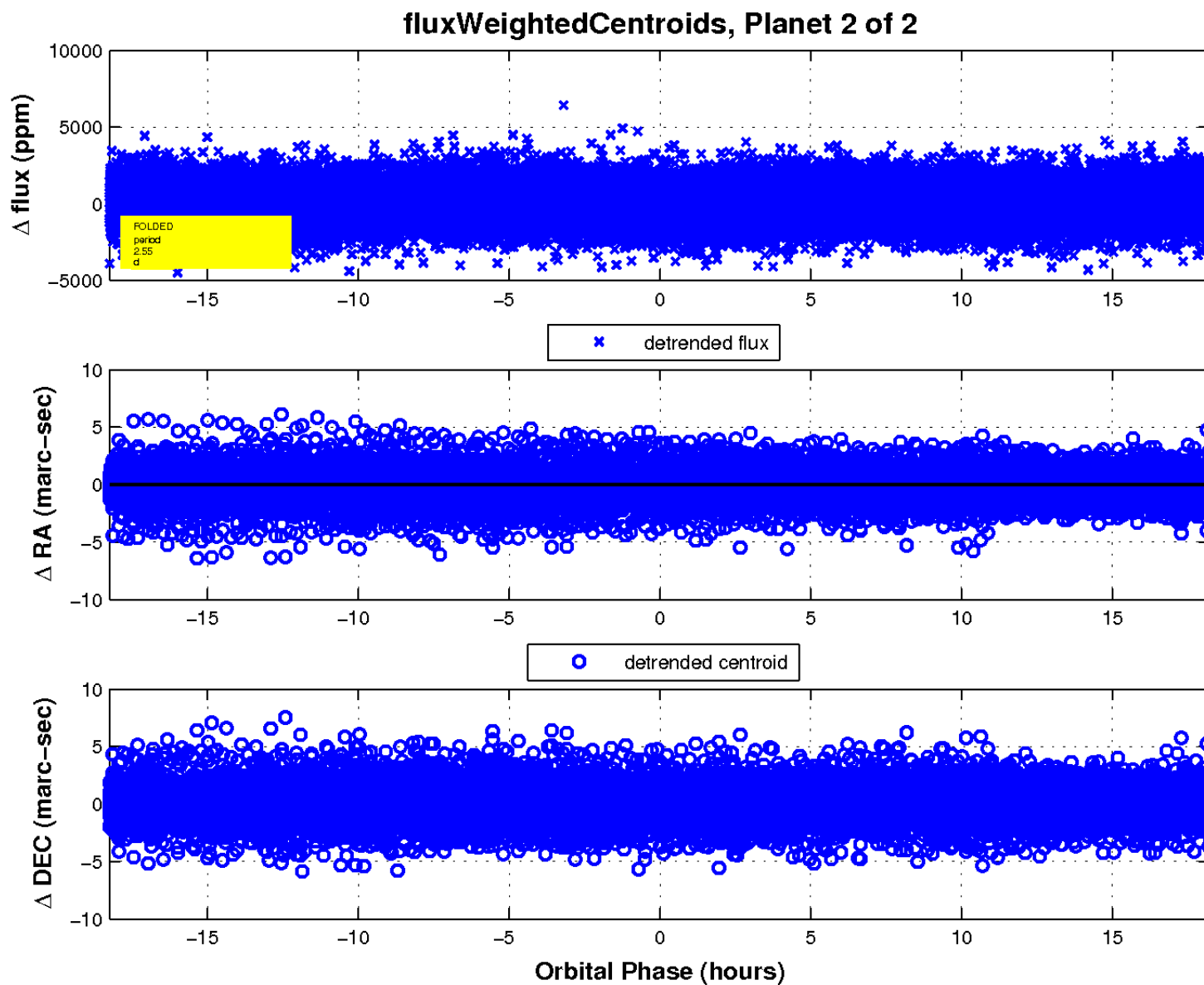
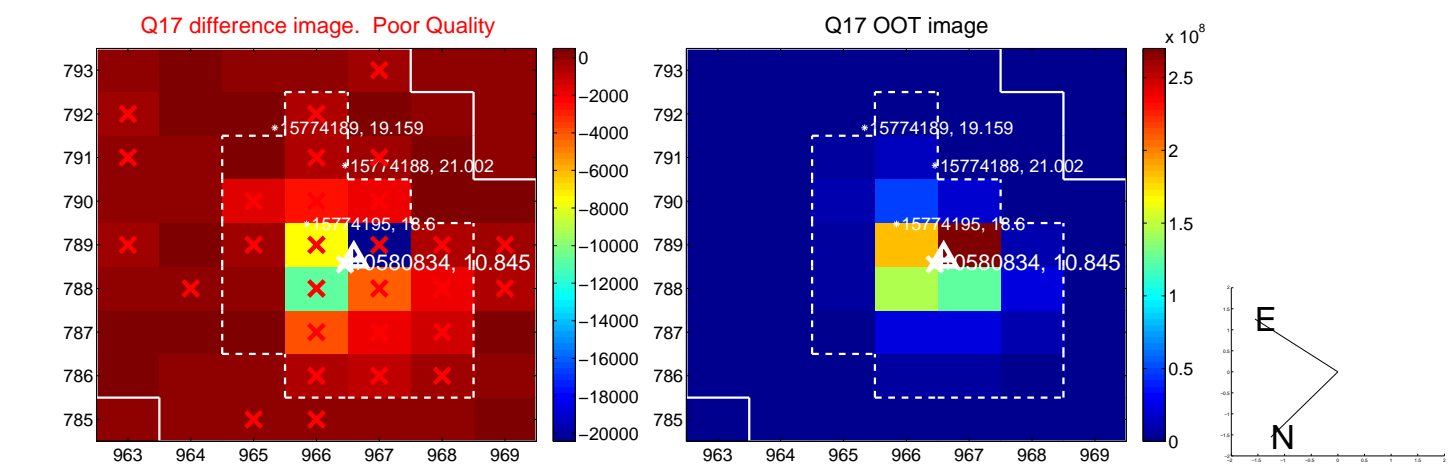
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

