

KIC 005480884

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})
005480884-01	OBS	No	0.708721	131.854138	169.3	1.042	8.1	8.5	0.52	4607	0.81	680.99
005480884-02	OBS	4841.01	0.708726	132.086184	185.8	0.722	8.1	8.0	0.52	4607	0.86	680.98

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005480884-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_FEW_MEAS
005480884-02	OBS	FP	0.00	1	0	0	0	LPP_DV—SAME_NTL_PERIOD—CENT_KIC_POS

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.

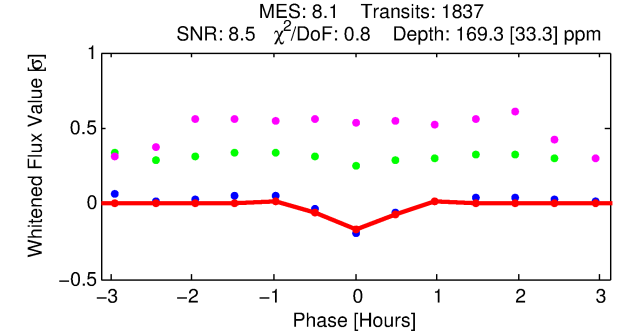
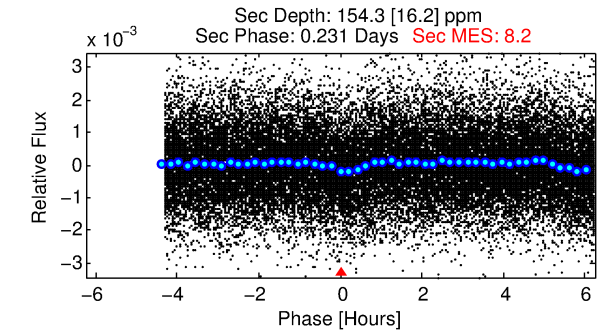
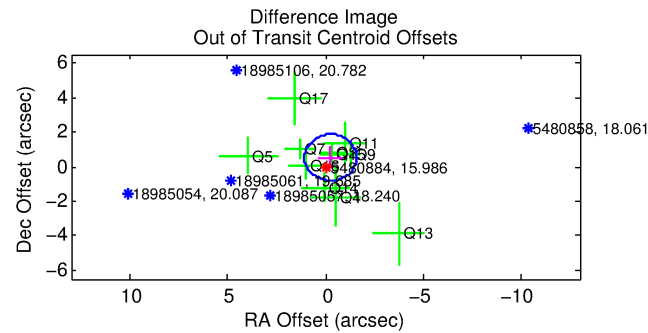
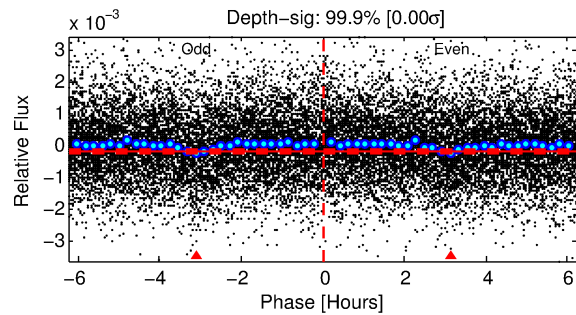
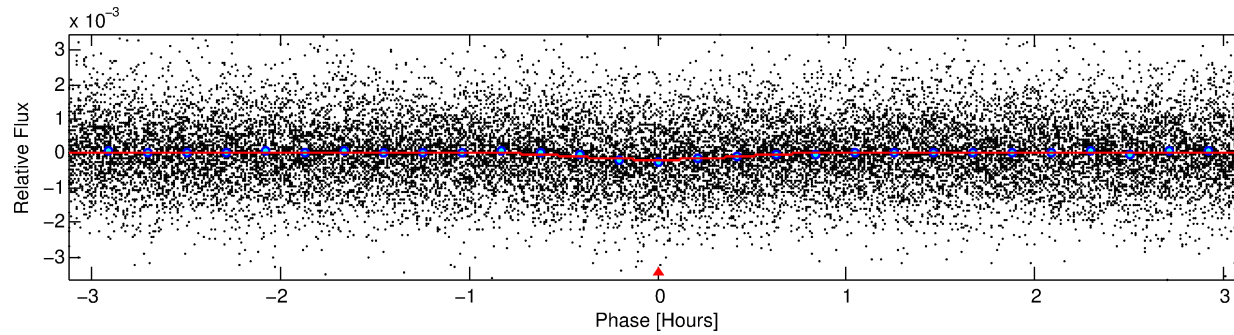
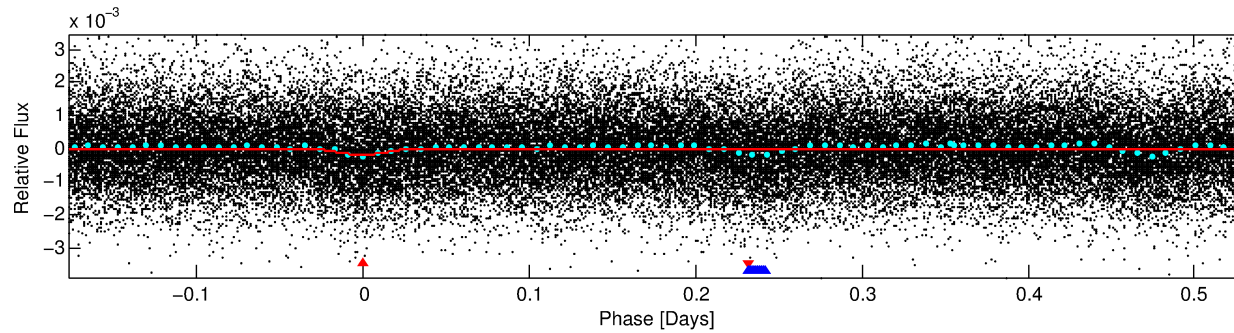
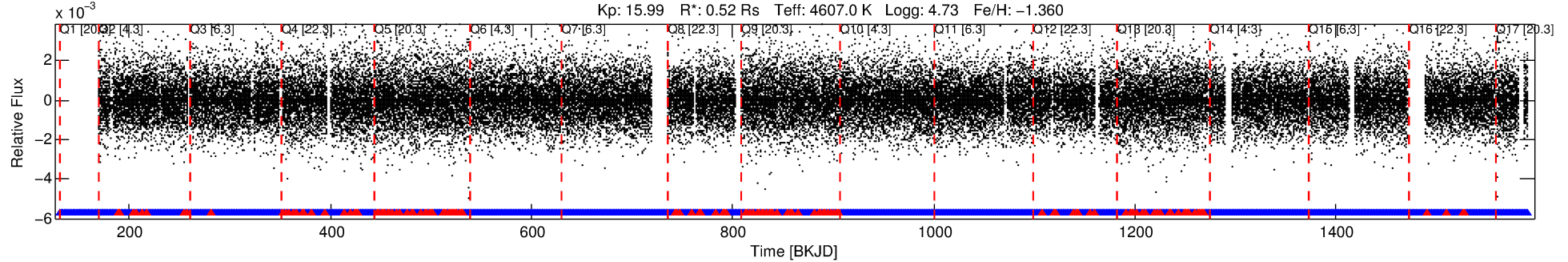
Ephemeris Match Information For 005480884-01

No Significant Match Found

DV One-Page Summary

KIC: 5480884 Candidate: 1 of 2 Period: 0.709 d
KOI: K04841 Corr: No Ephemeris Match

Kp: 15.99 R*: 0.52 Rs Teff: 4607.0 K Logg: 4.73 Fe/H: -1.360



DV Fit Results:

Period = 0.70872 [0.00001] d
Epoch = 131.8541 [0.0020] BKJD
Rp/R* = 0.0144 [0.0176]
a/R* = 2.61 [11.69]
b = 0.90 [1.14]
Seff = 680.99 [110.52]
Teff = 1303 [53] K
Rp = 0.81 [0.99] Re
a = 0.0125 [0.0008] AU
Ag = 20.30 [49.51] [0.39 σ]
Teffp = 4275 [2609] K [1.14 σ]

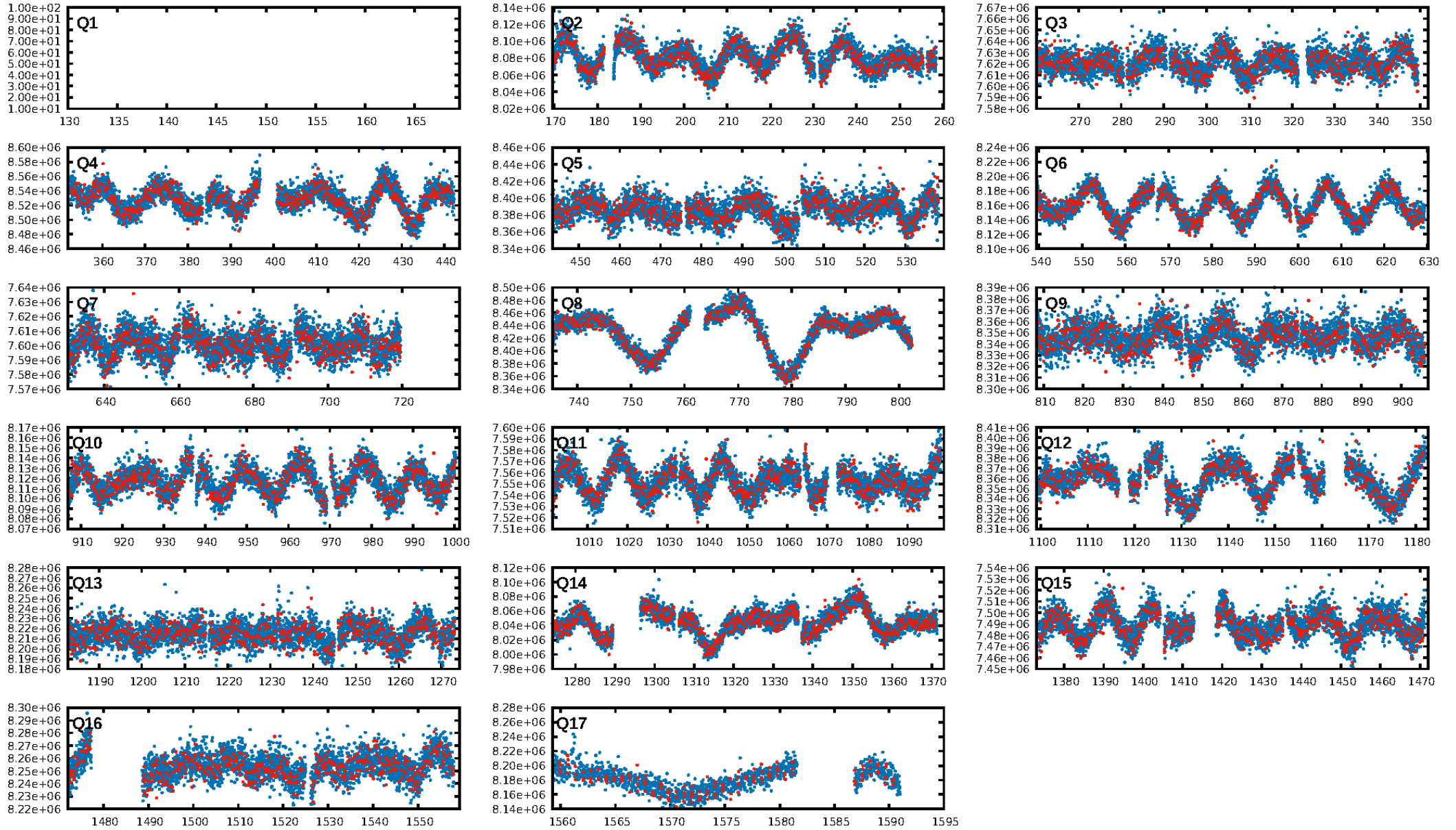
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.69e-16
RollingBand-fgt: 0.92 [1659/1799]
GhostDiagnostic-chr: -9.064
Centroid-sig: 0.0%
Centroid-so: 1.772 arcsec [1.44 σ]
OotOffset-rm: 0.587 arcsec [1.32 σ]
KicOffset-rm: 0.355 arcsec [0.49 σ]
OotOffset-st: 2/3/2/4 [11]
KicOffset-st: 2/3/2/4 [11]
DiffImageQuality-fgm: 0.45 [5/11]
DiffImageOverlap-fno: 0.00 [0/16]

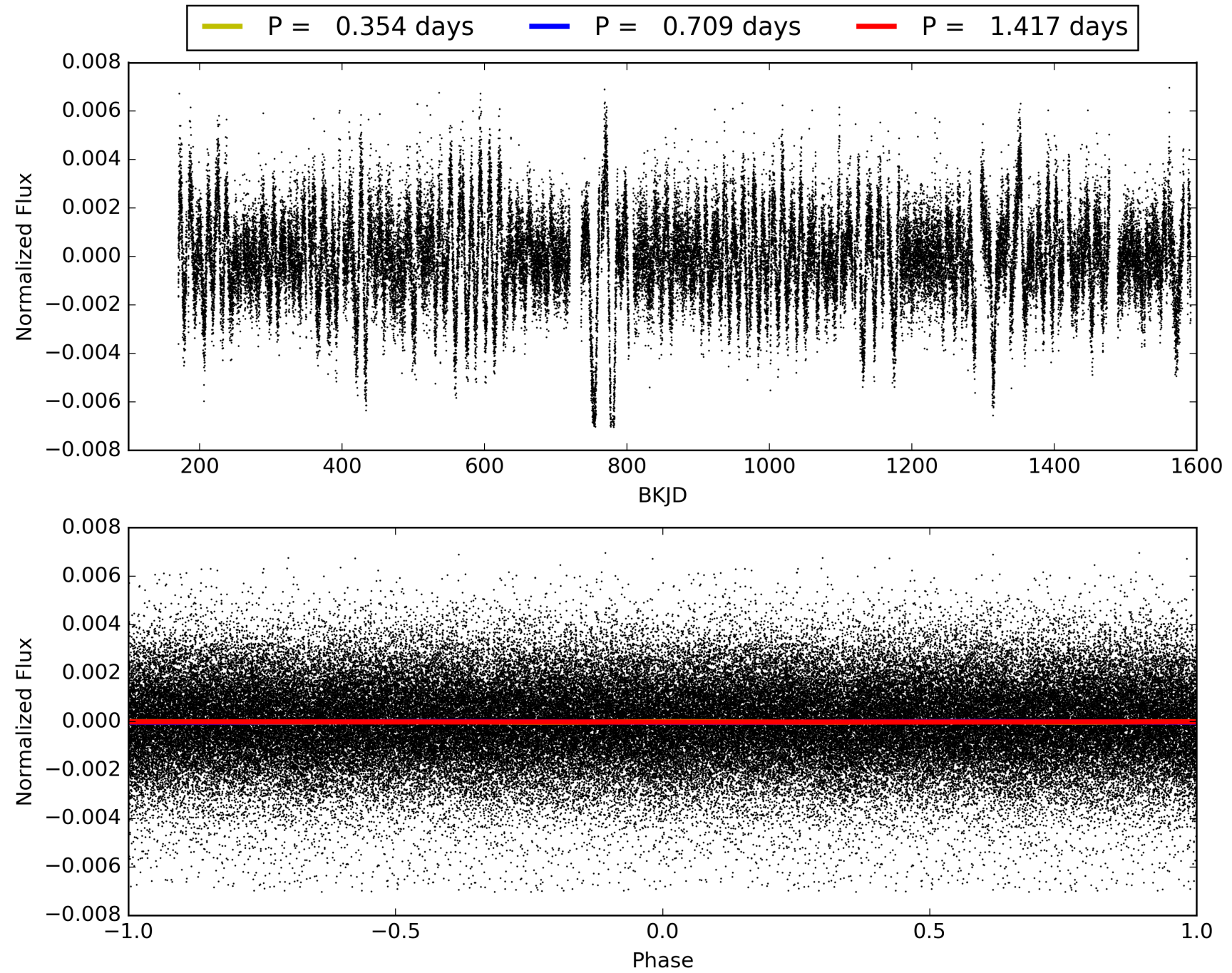
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:41:30 Z

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

TCE 005480884-01, PDC Light Curves

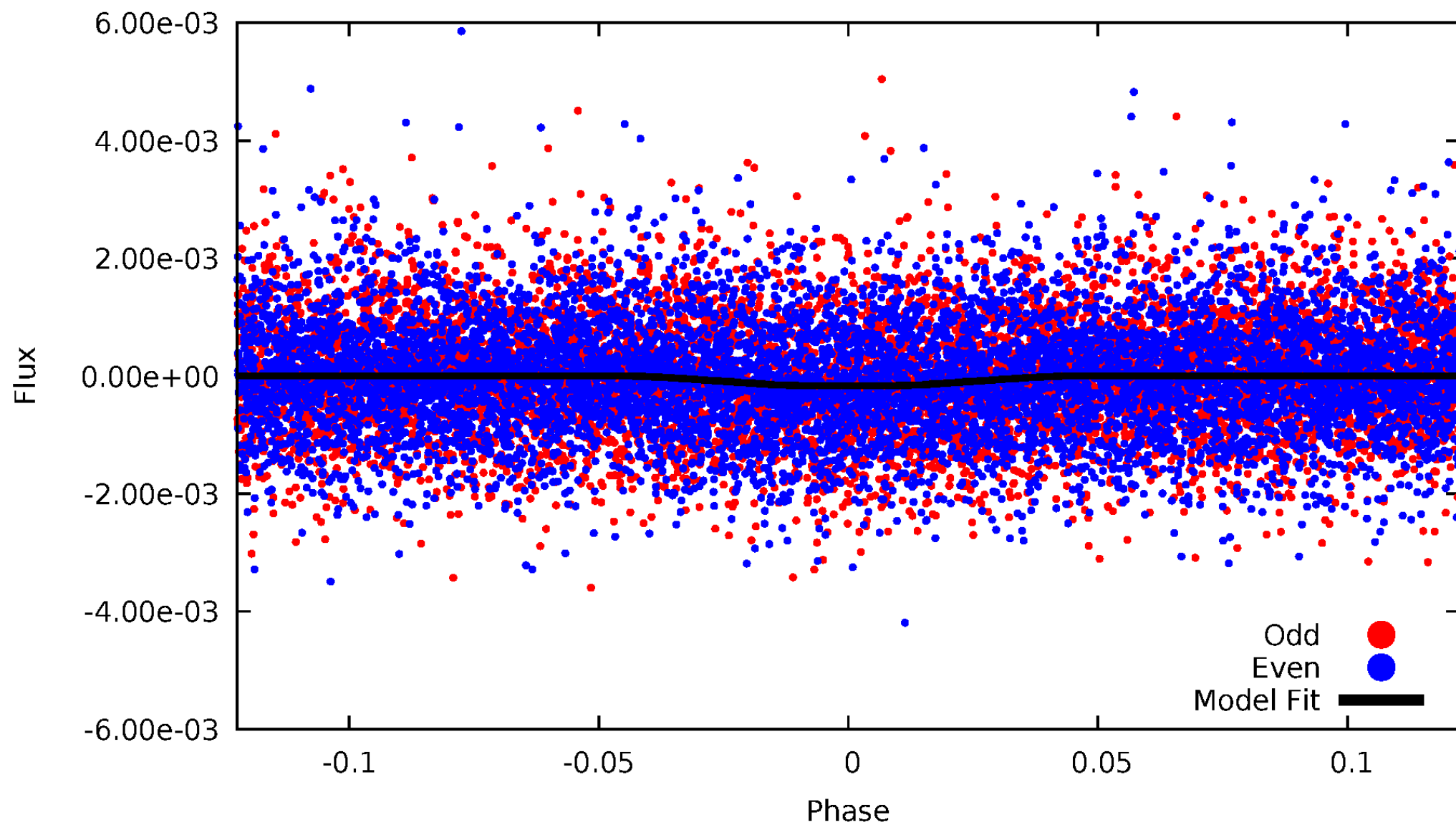


TCE 005480884-01



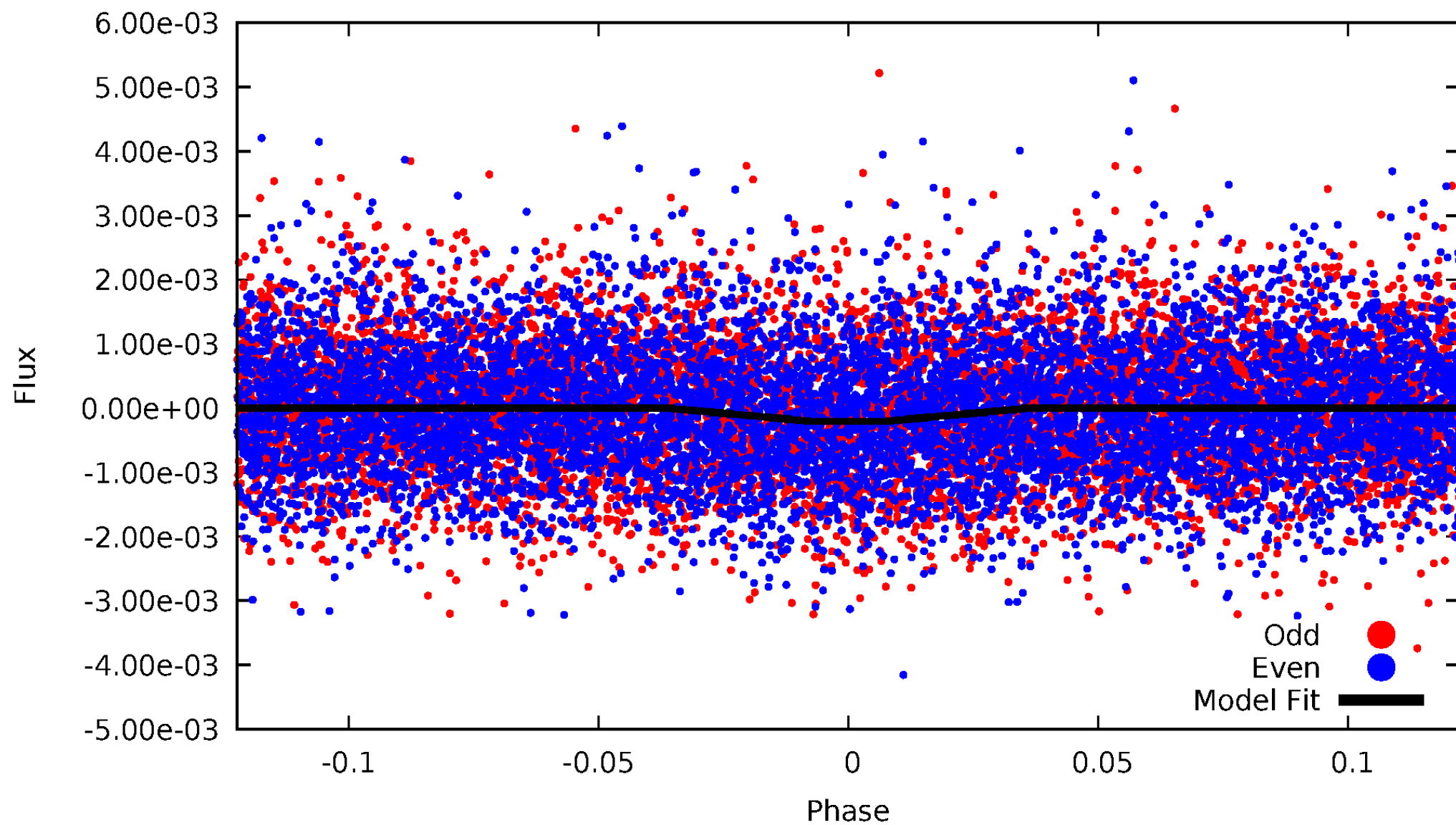
DV Odd/Even

TCE 005480884-01



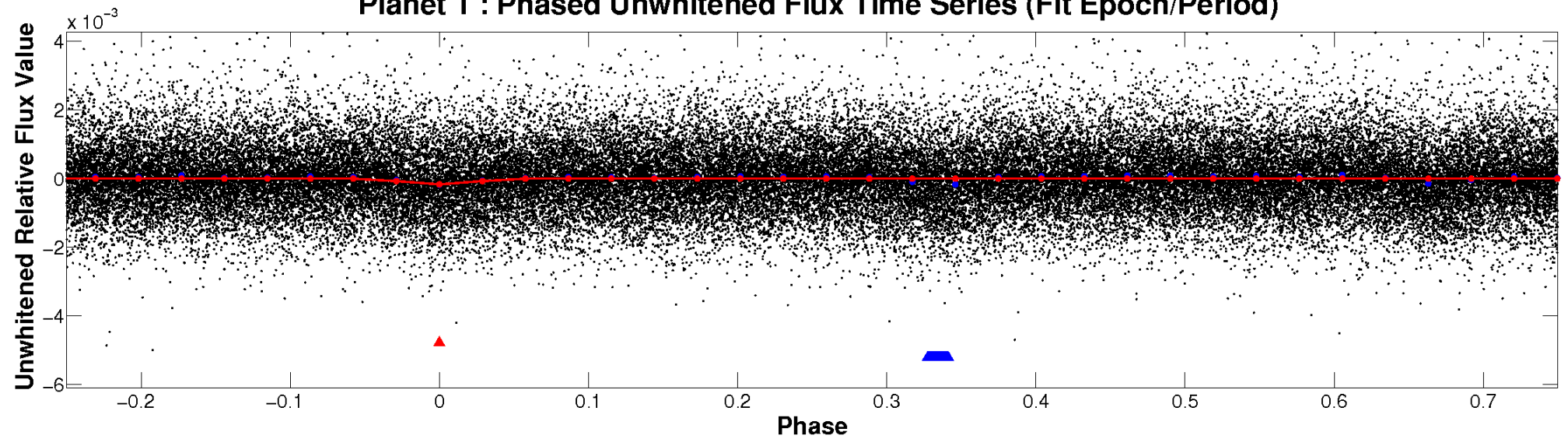
ALT Odd/Even

TCE 005480884-01

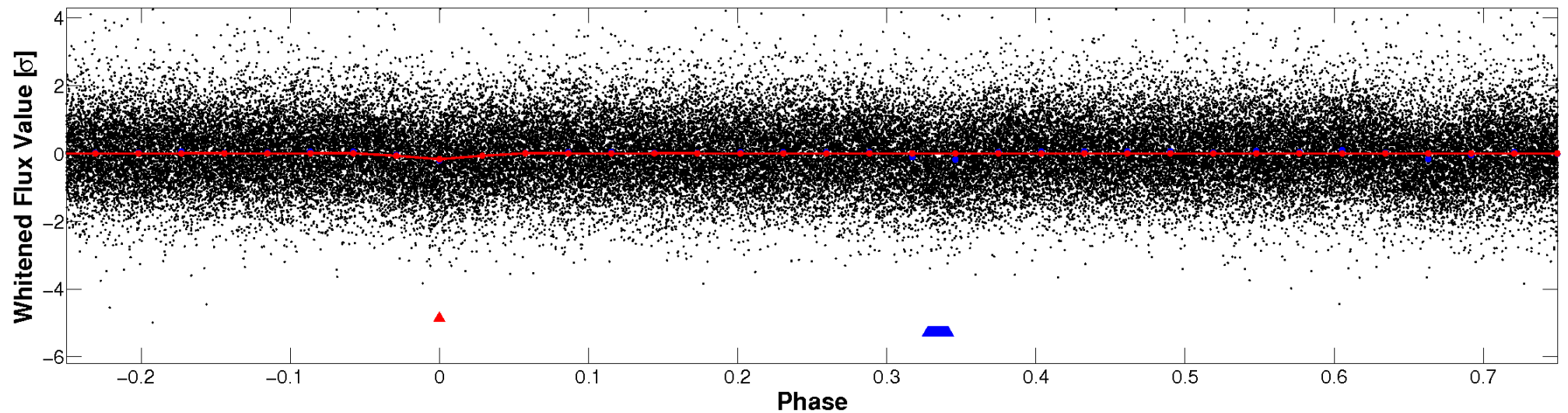


Non-Whitened Vs. Whitened Light Curve

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

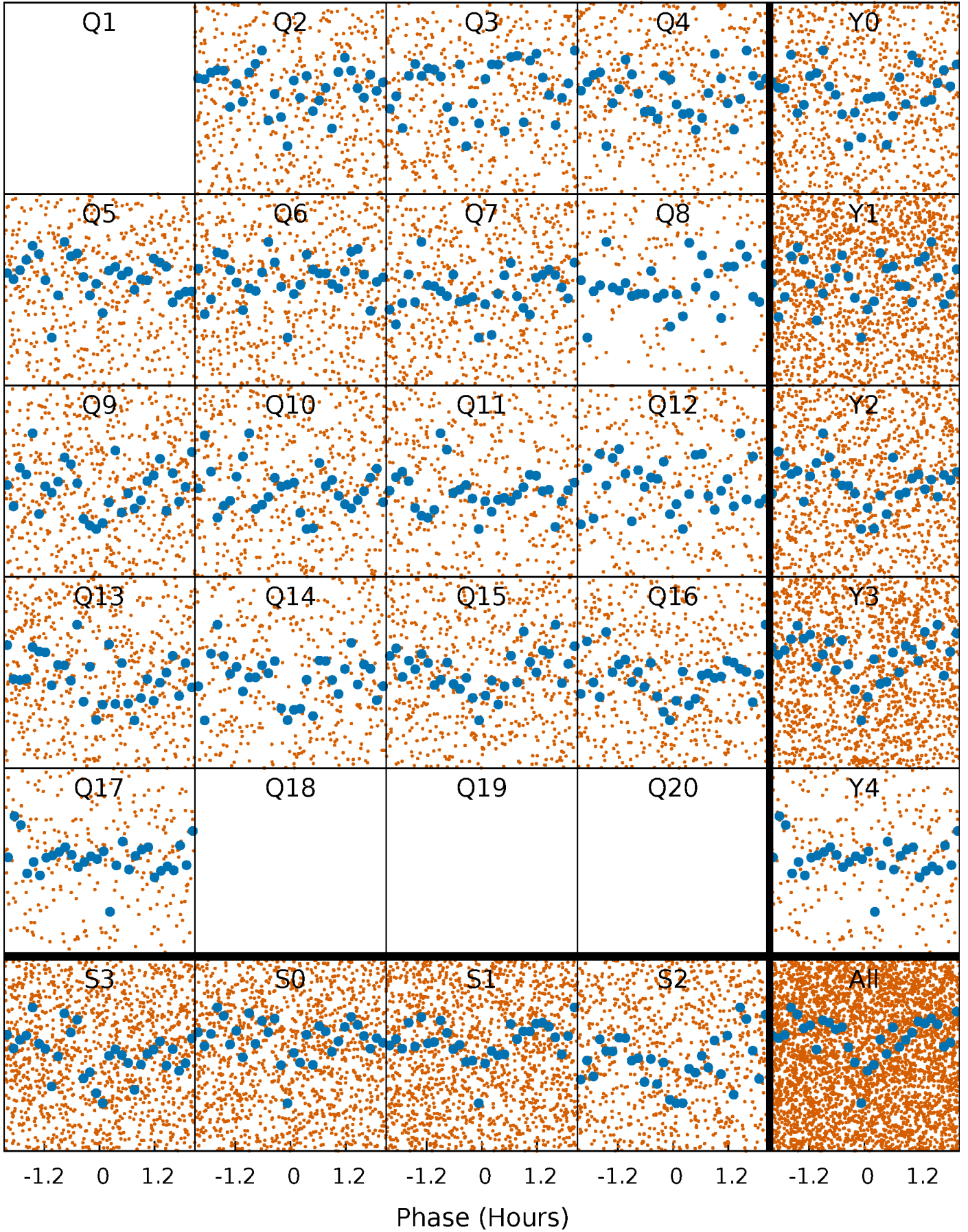


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



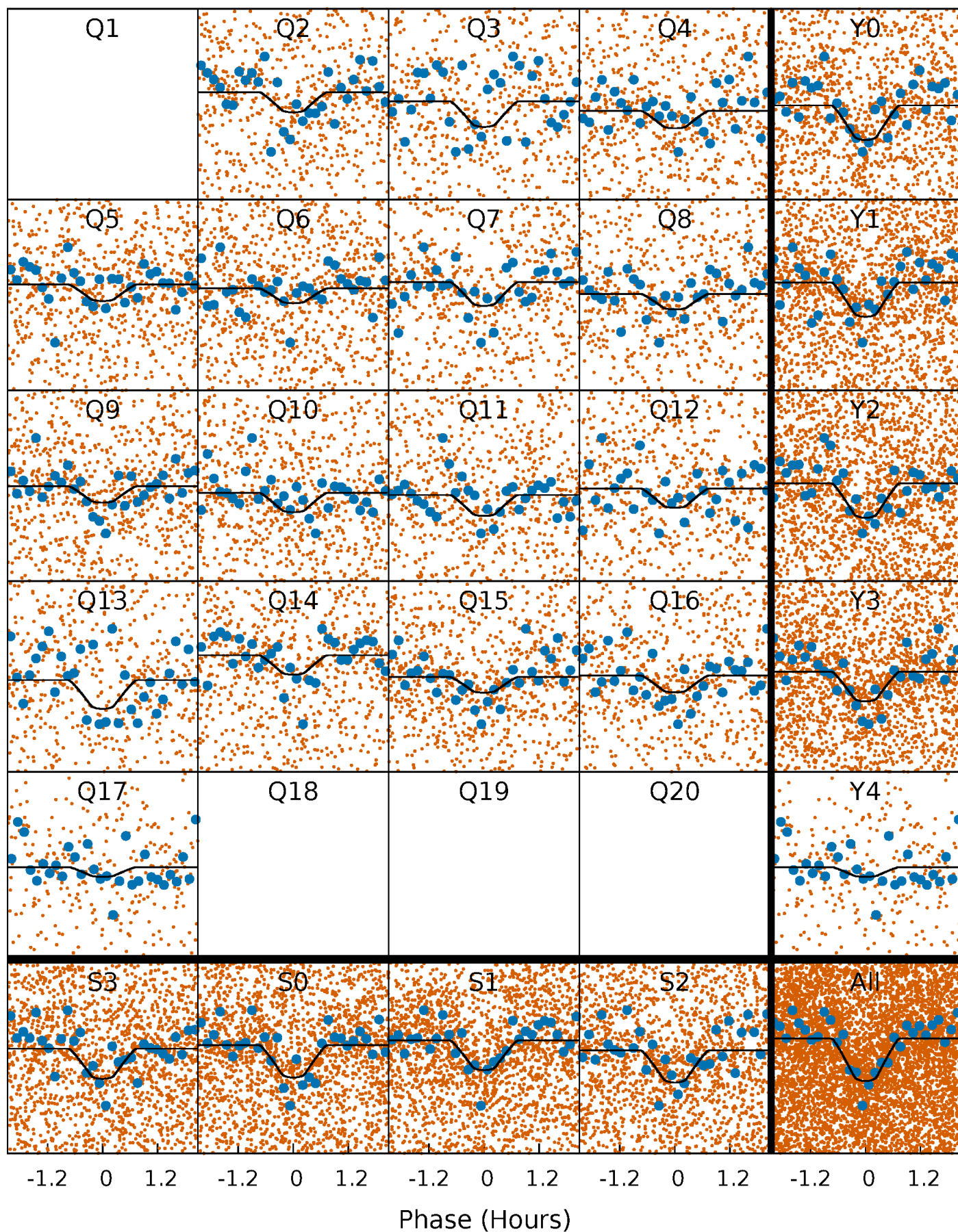
PDC Quarter-Phased Transit Curves

TCE 005480884-01 P= 0.708721 Days $T_0=131.854138$ (BKJD)



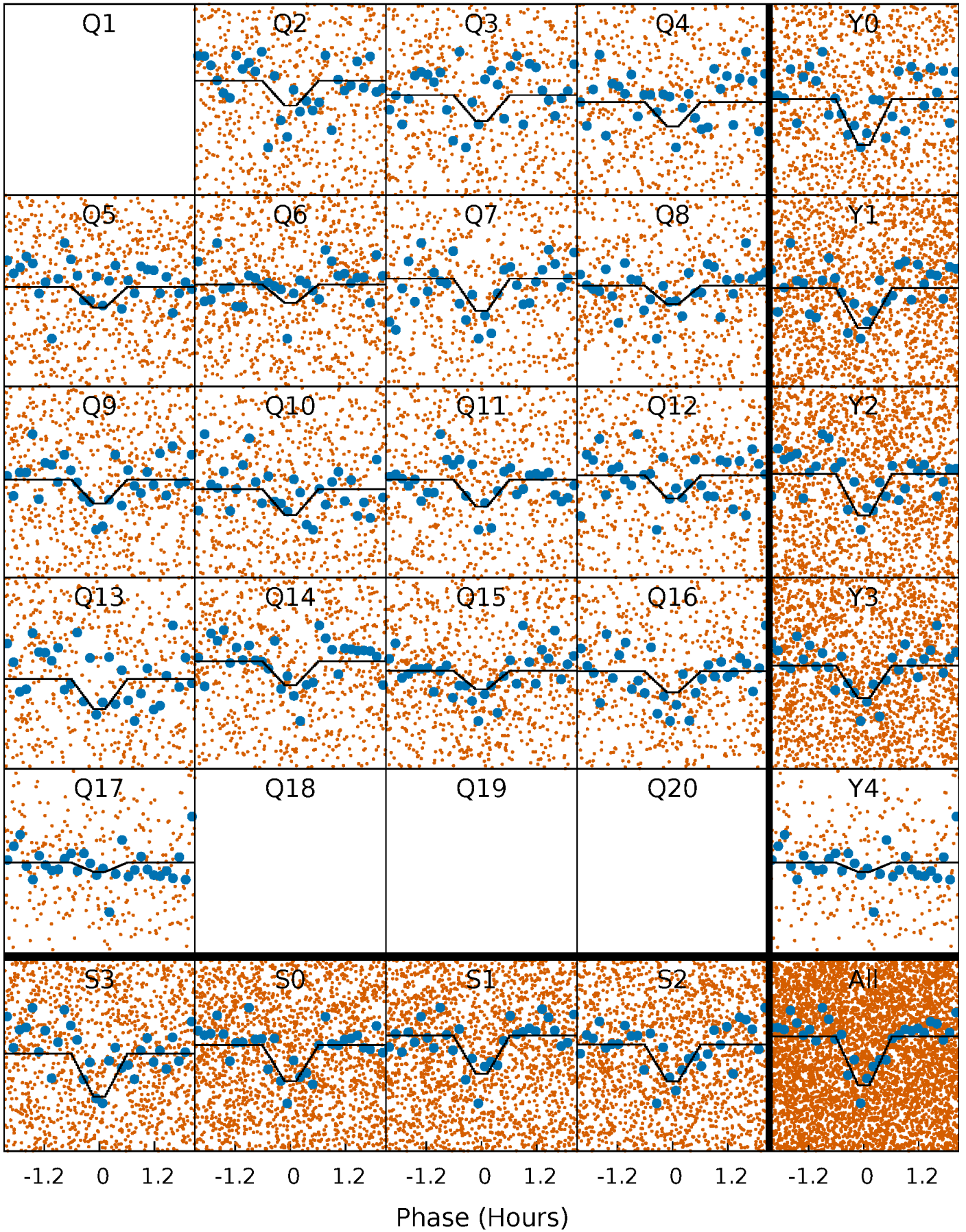
DV Quarter-Phased Transit Curves

TCE 005480884-01 P= 0.708721 Days $T_0=131.854138$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

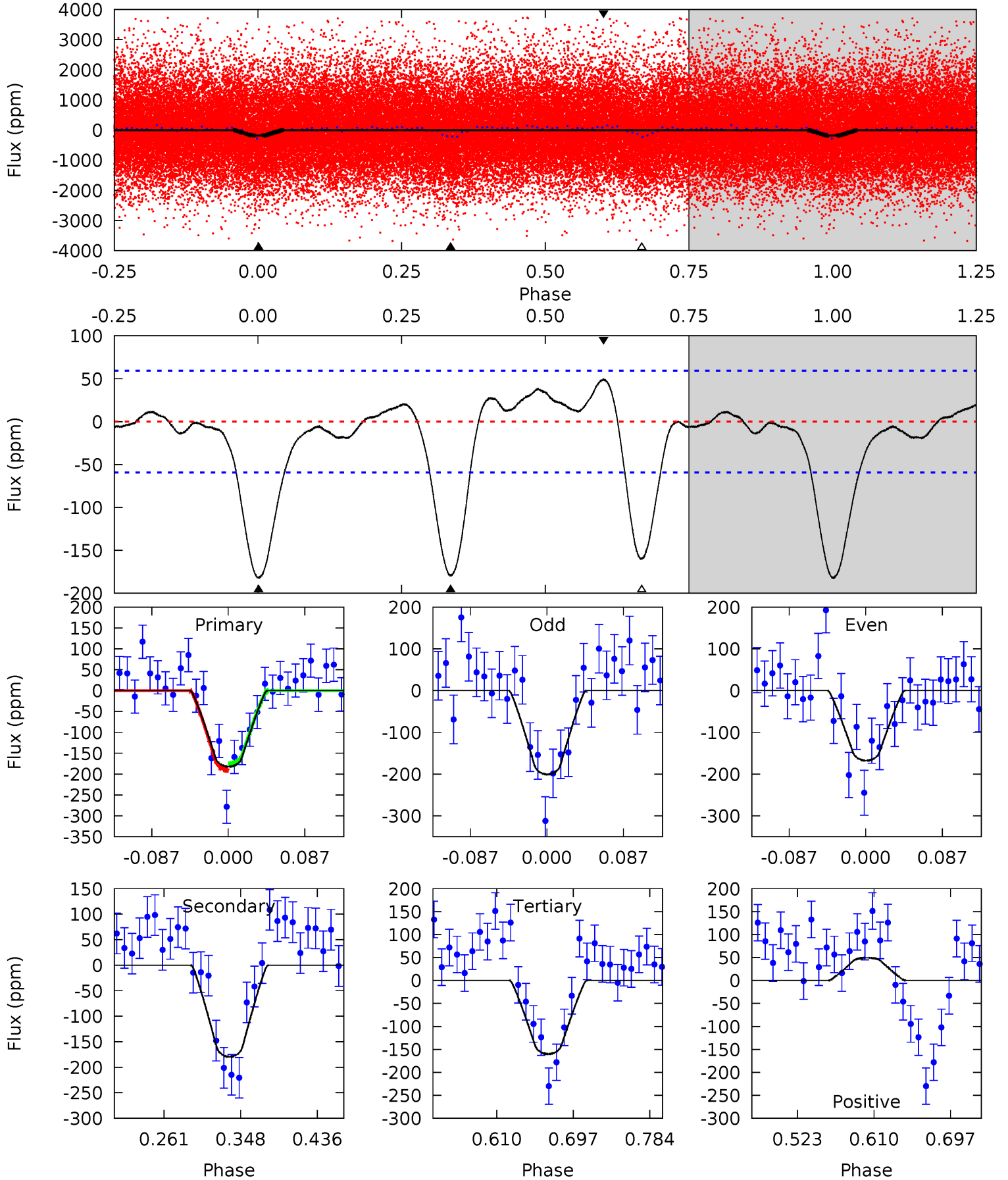
TCE 005480884-01 P= 0.708722 Days $T_0=131.854146$ (BKJD)



DV Model-Shift Uniqueness Test

005480884-01, P = 0.708721 Days, E = 131.854138 Days

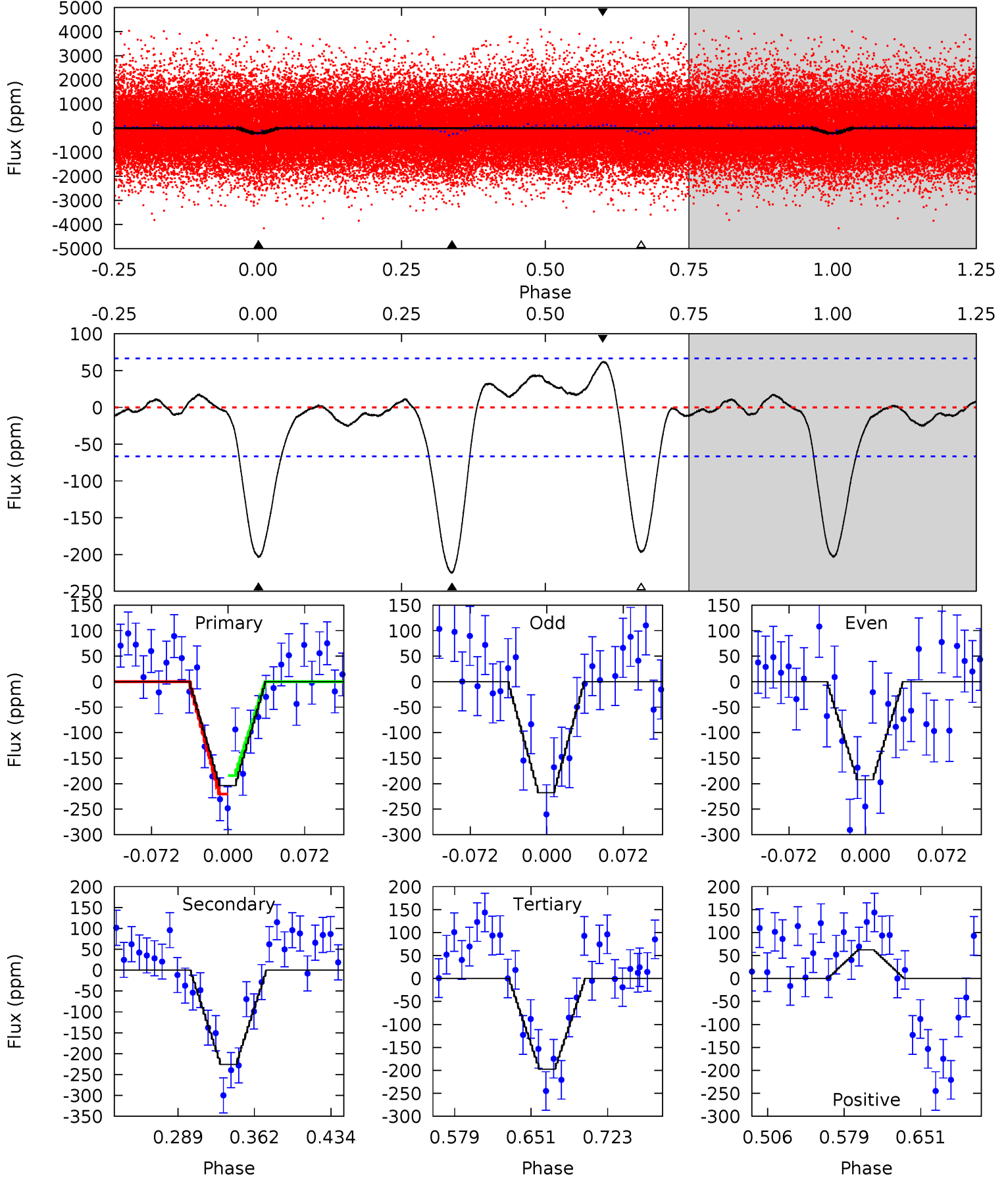
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.1	13.9	12.4	3.82	4.59	1.71	3.31	1.72	10.3	1.52	10.1	1.28	0.92	0.21	0.52



Alt Model-Shift Uniqueness Test

005480884-01, P = 0.708722 Days, E = 131.854146 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.2	15.7	13.7	4.34	4.63	1.80	3.43	0.43	9.83	1.97	11.4	0.89	0.83	0.22	1.26



Stellar Parameters For KIC 005480884

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4607^{+124}_{-152}	$4.733^{+0.052}_{-0.024}$	$-1.360^{+0.300}_{-0.300}$	$0.515^{+0.028}_{-0.039}$	$0.522^{+0.032}_{-0.027}$	$5.395^{+1.157}_{-0.578}$
	+3%/-3%	+1%/-1%	+22%/-22%	+5%/-8%	+6%/-5%	+21%/-11%
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 005480884-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-180 ± 13	$1.09^{+0.85}_{-0.72}$	1804^{+60}_{-61}	3973^{+2288}_{-721}	13^{+99}_{-9}
Alt.	-226 ± 14	$1.09^{+0.82}_{-0.69}$	1810^{+56}_{-70}	4152^{+2393}_{-737}	17^{+111}_{-11}

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

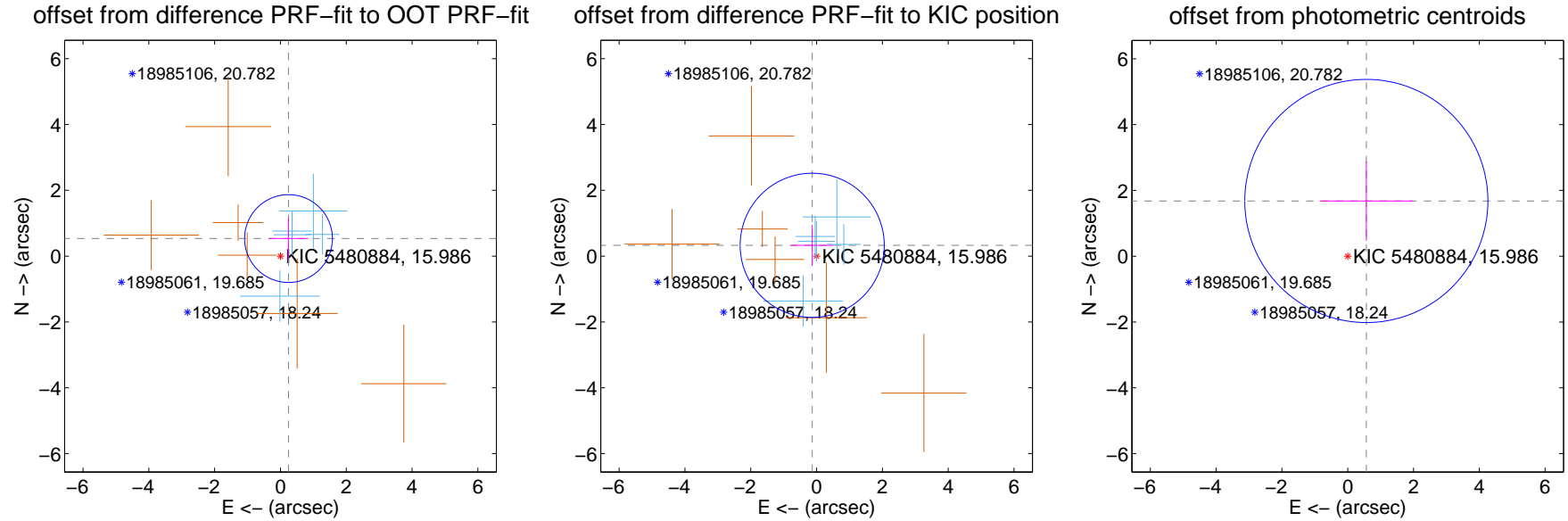
DV Centroid Data

Supplemental centroid analysis for 005480884-01. Kepler magnitude: 15.99. Transit SNR 8.52

There are 5 quarters with good PRF difference image offsets

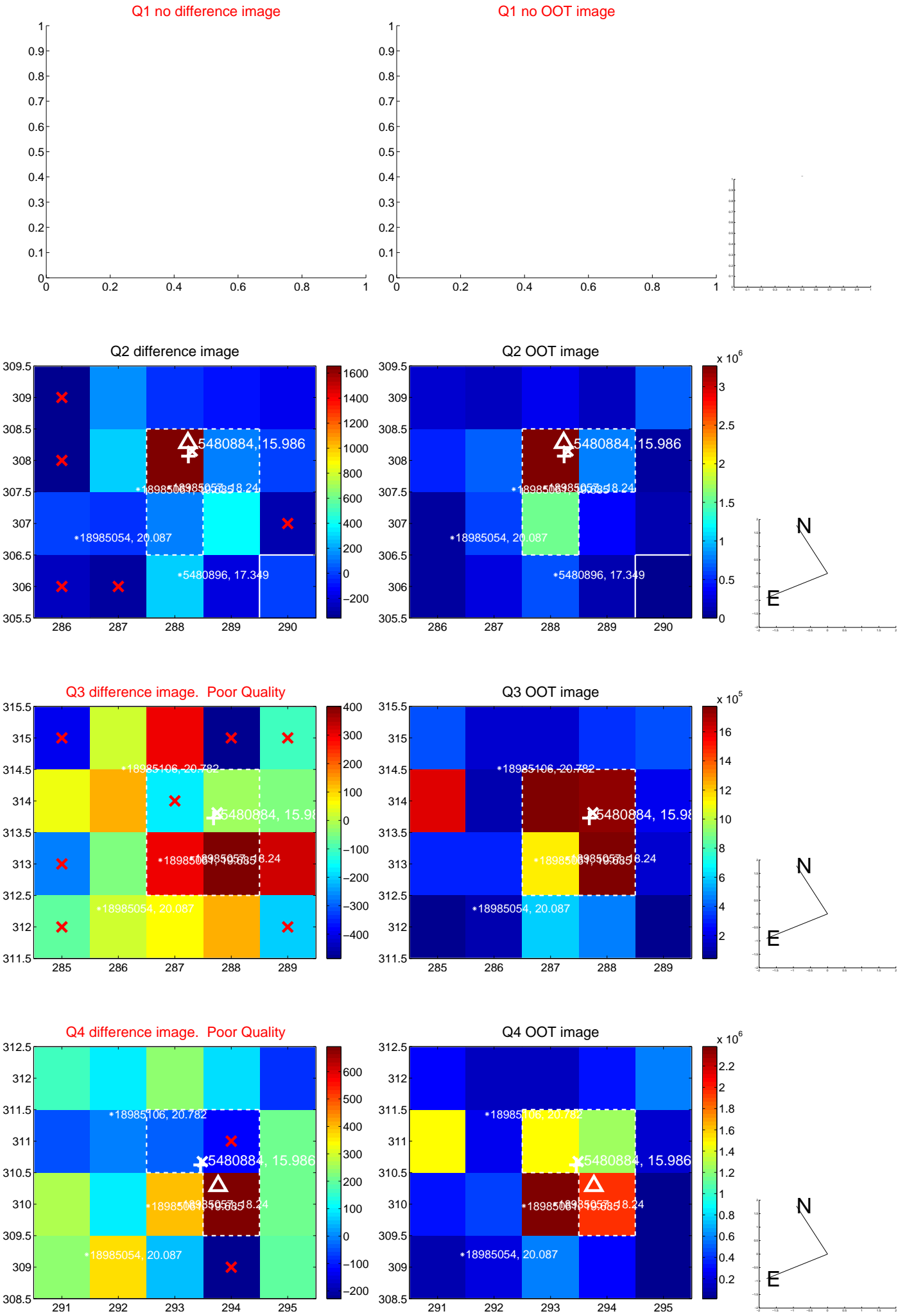
The direct PRF centroid is offset from the target star catalog position by about 0.48 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.587 ± 0.445	1.32	-0.244 ± 0.597	0.534 ± 0.614
PRF-fit source offset from KIC position	0.355 ± 0.730	0.49	0.133 ± 0.644	0.329 ± 0.616
photometric centroid source offset	1.77 ± 1.23	1.44	-0.57 ± 1.42	1.68 ± 1.21

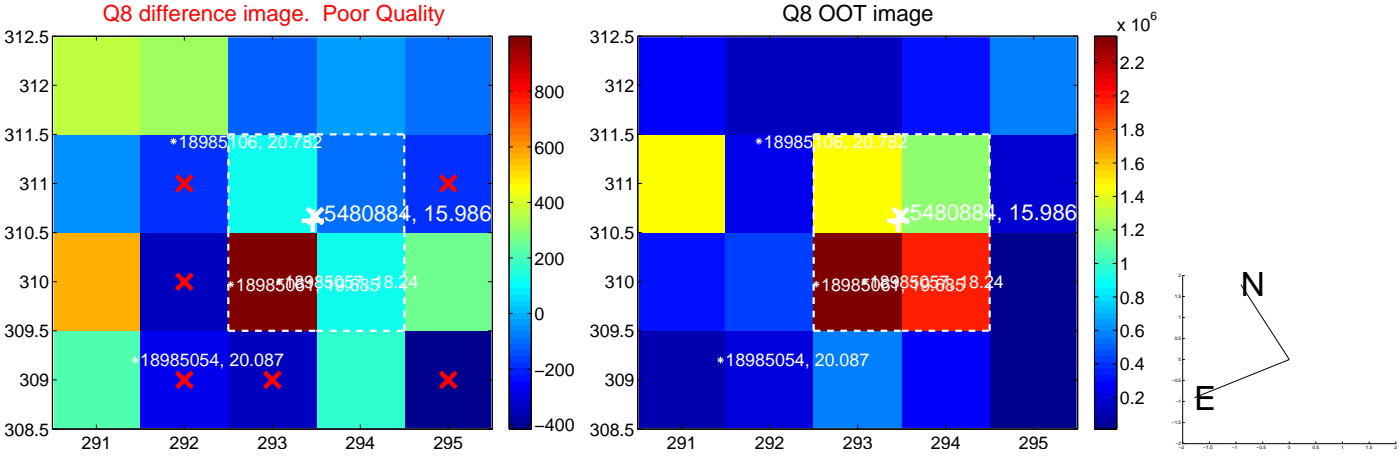
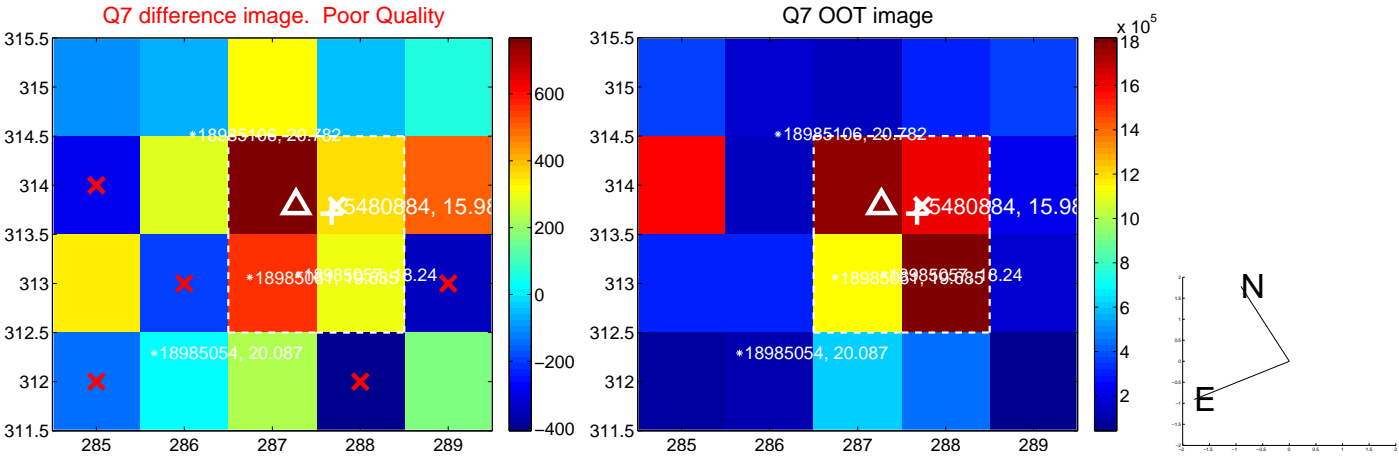
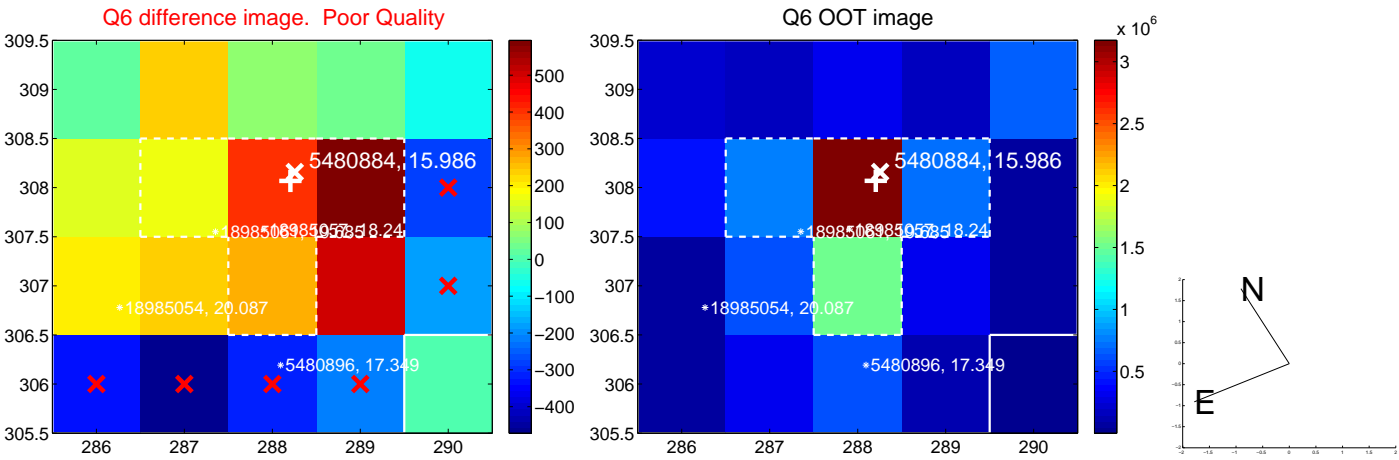
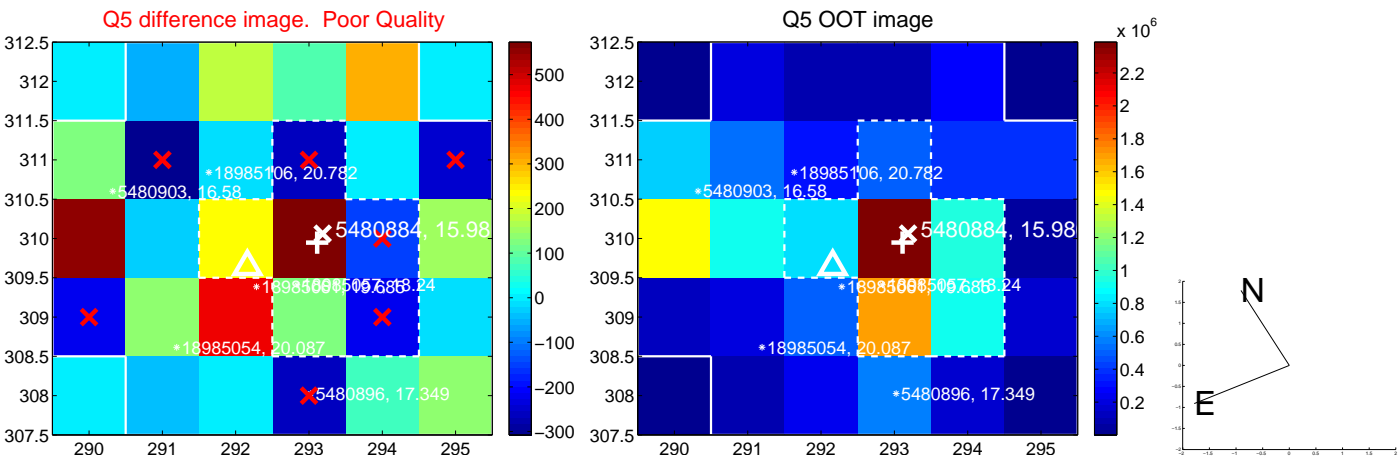


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

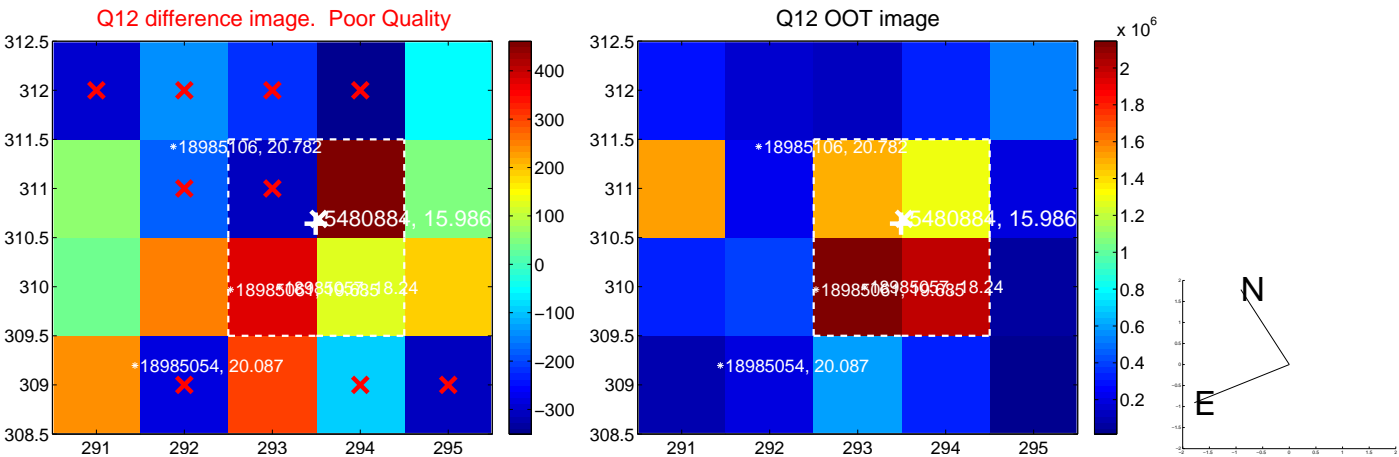
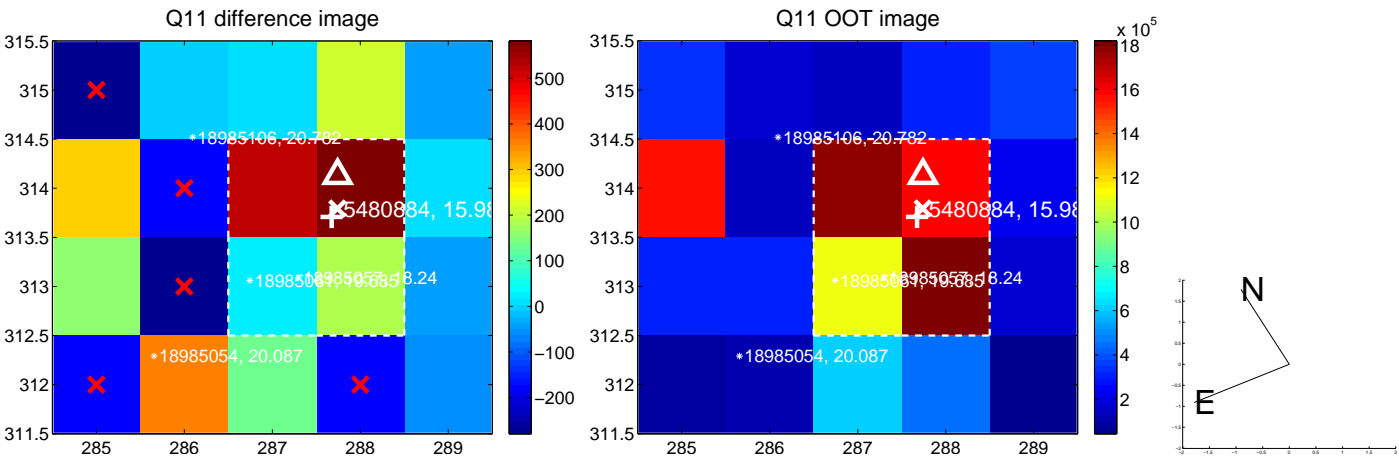
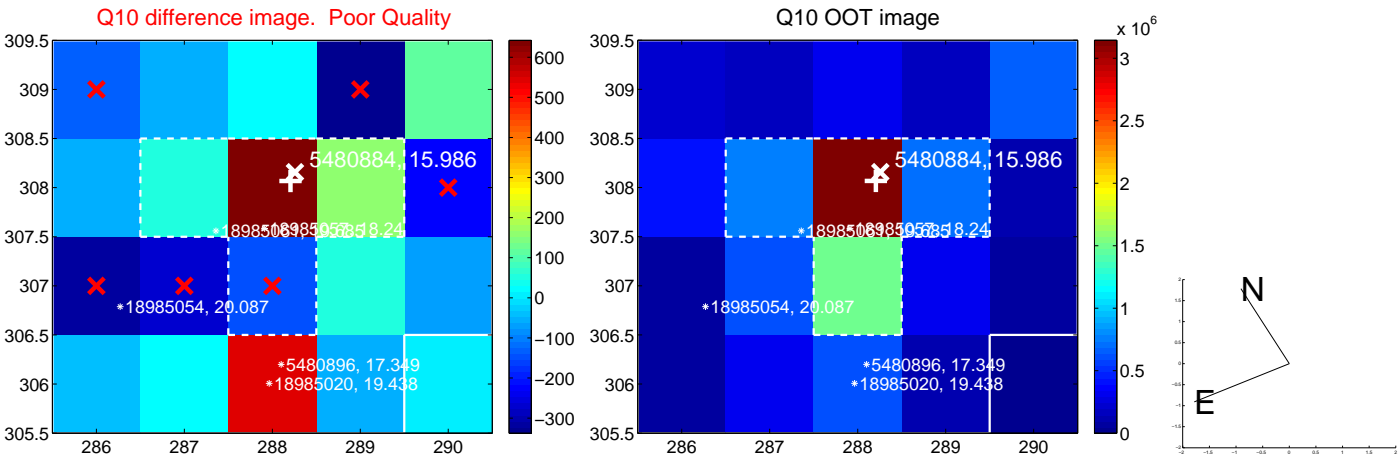
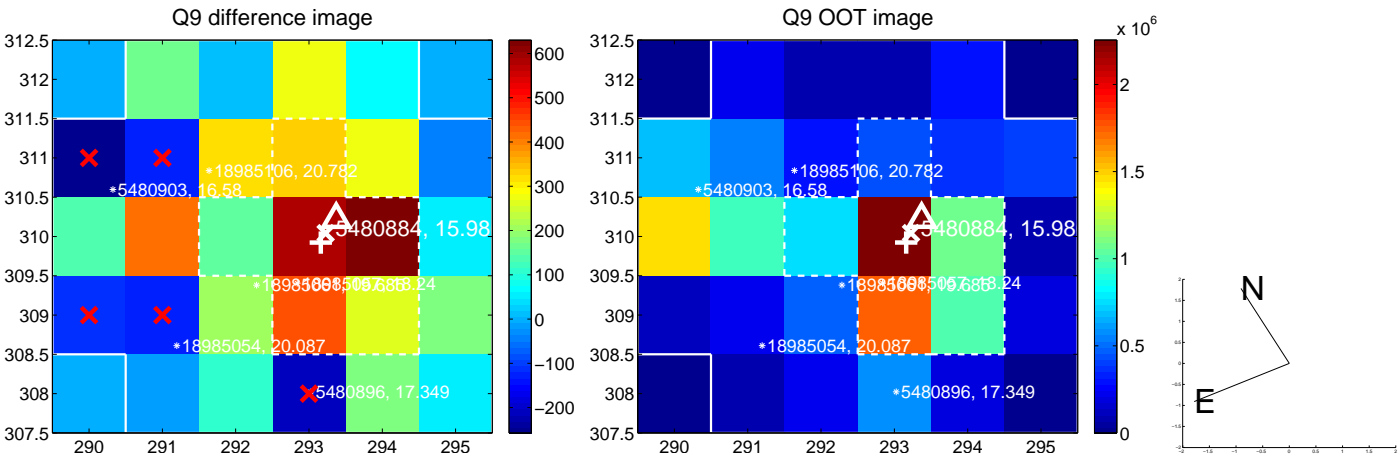
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



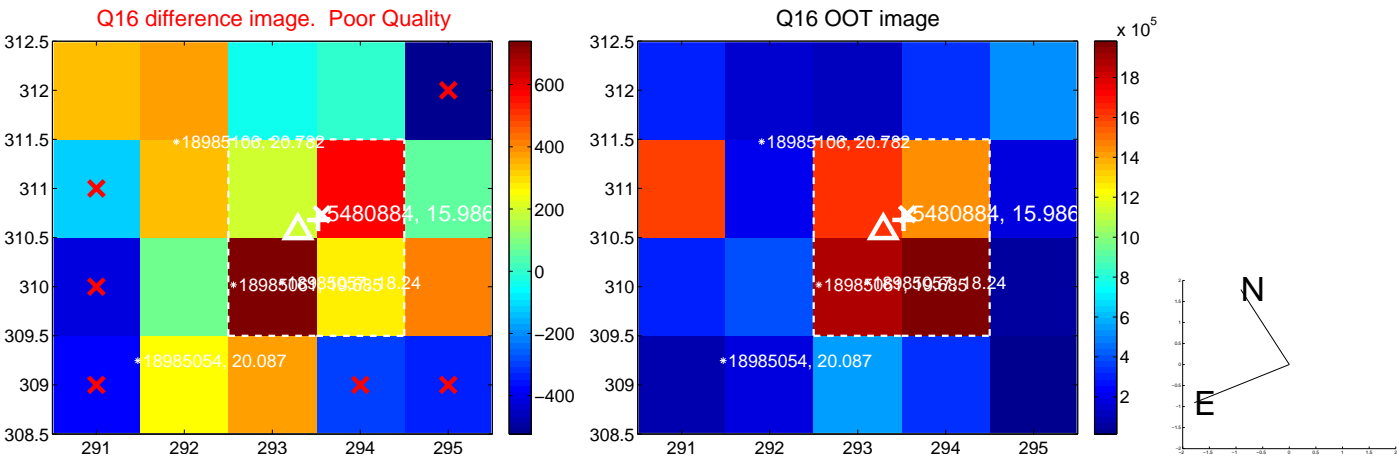
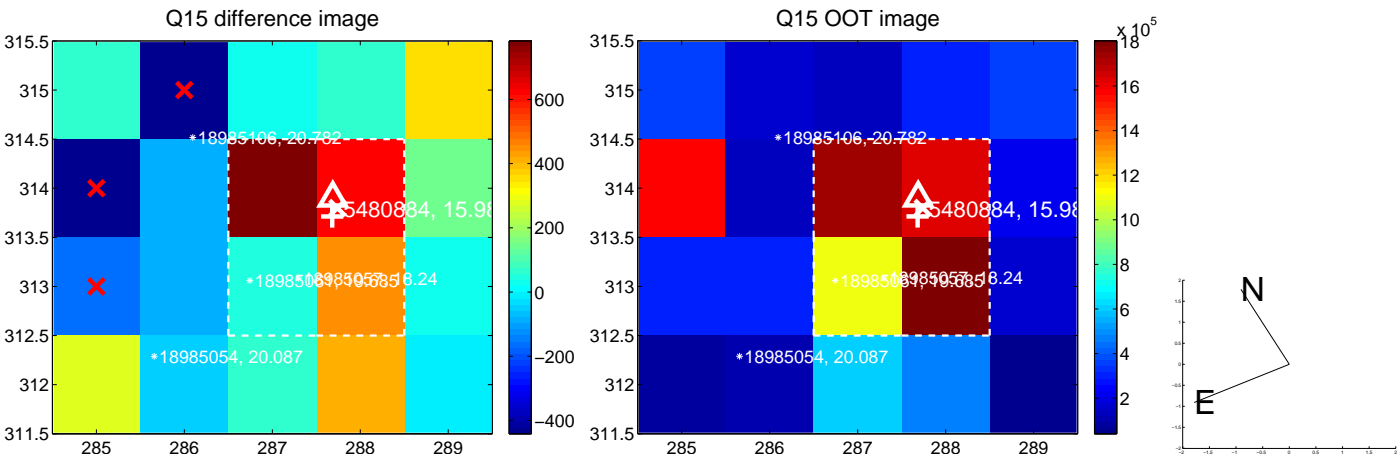
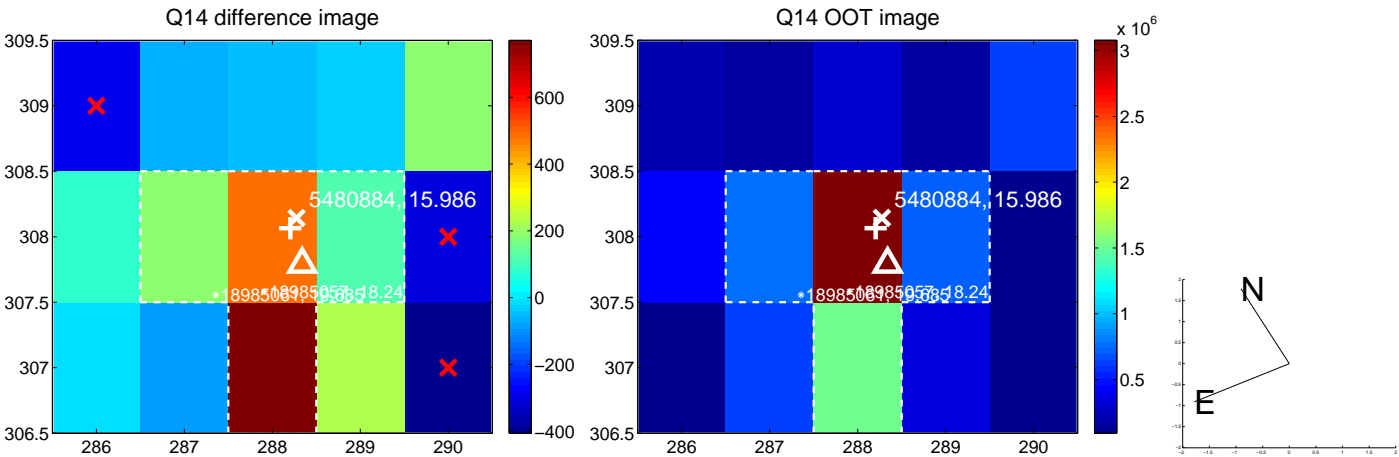
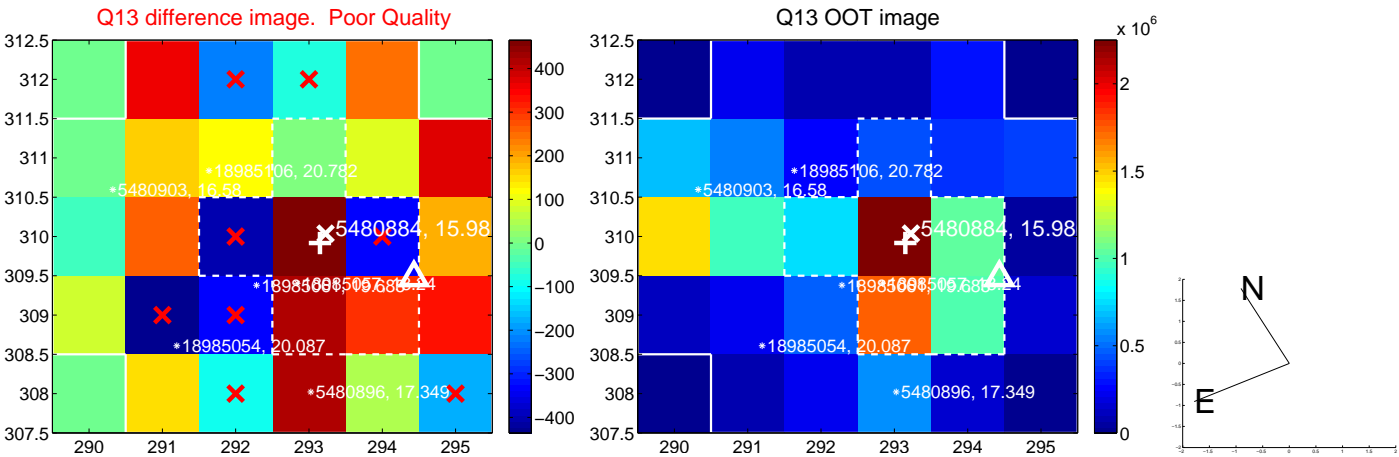
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



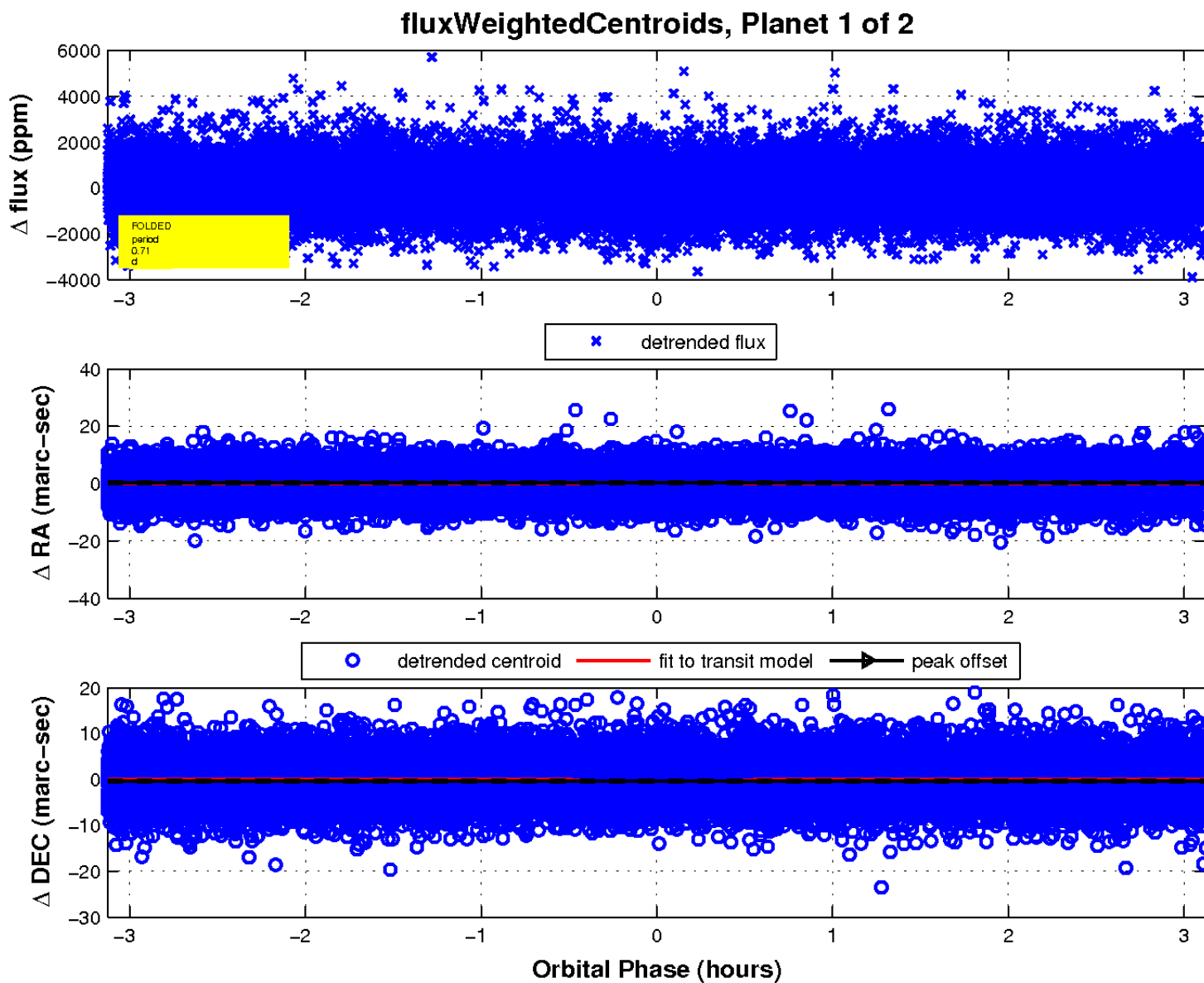
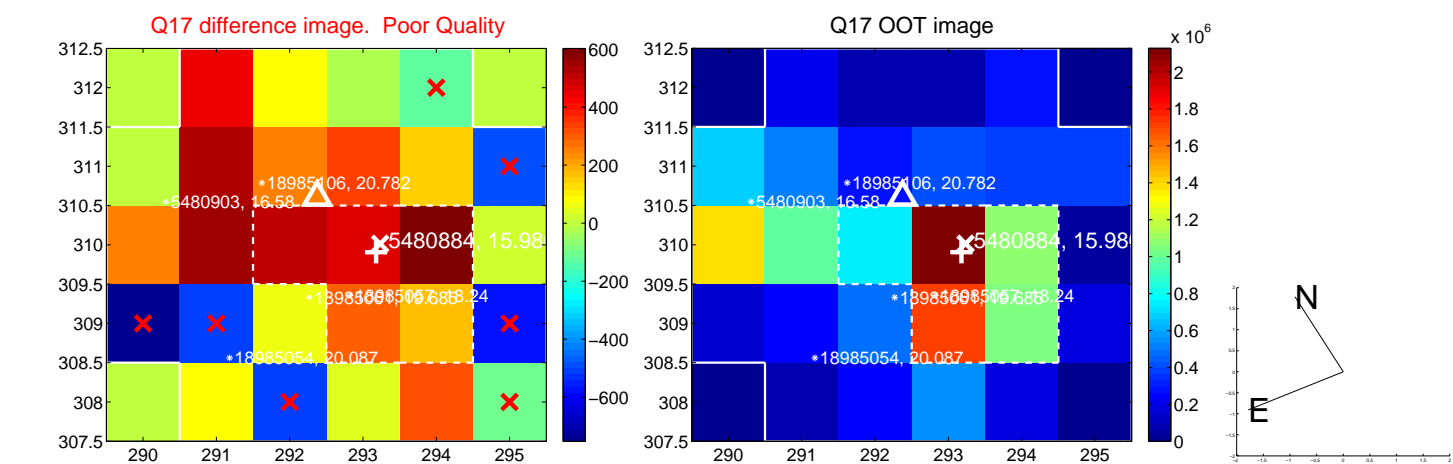
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

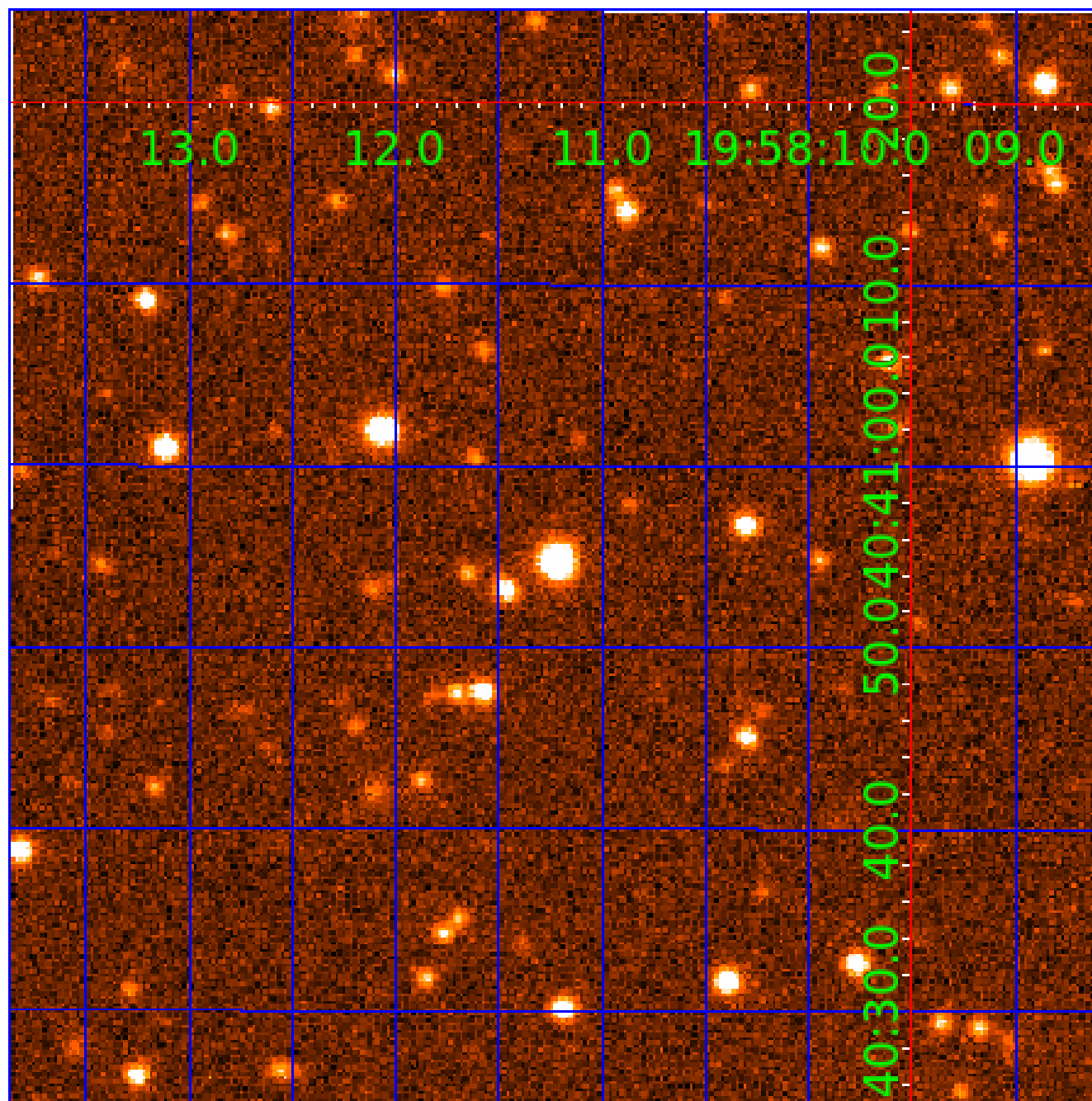


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005480884

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})
005480884-01	OBS	No	0.708721	131.854138	169.3	1.042	8.1	8.5	0.52	4607	0.81	680.99
005480884-02	OBS	4841.01	0.708726	132.086184	185.8	0.722	8.1	8.0	0.52	4607	0.86	680.98

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005480884-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_FEW_MEAS
005480884-02	OBS	FP	0.00	1	0	0	0	LPP_DV—SAME_NTL_PERIOD—CENT_KIC_POS

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

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

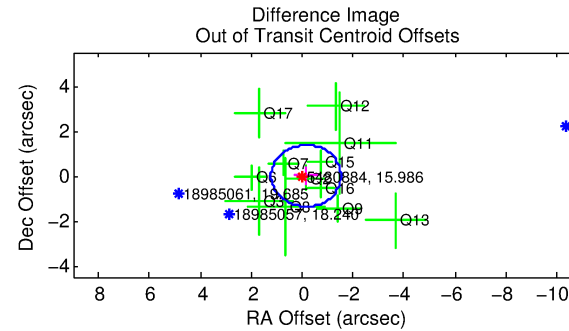
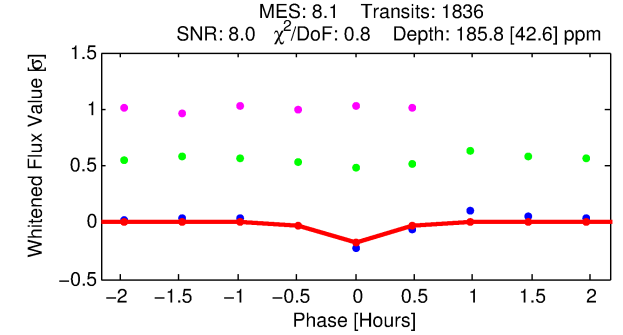
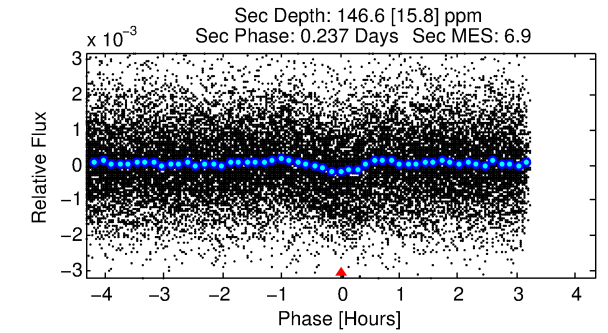
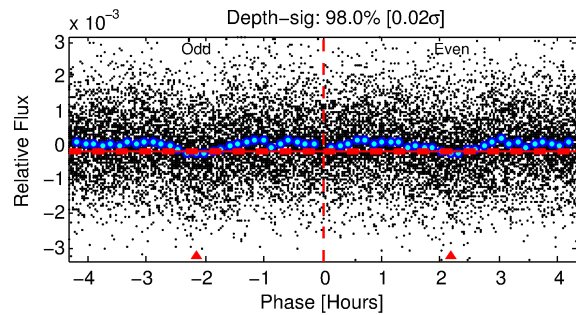
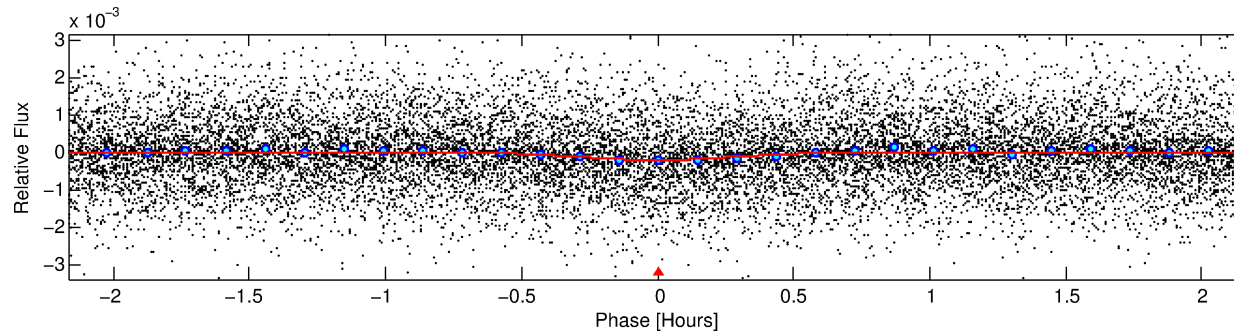
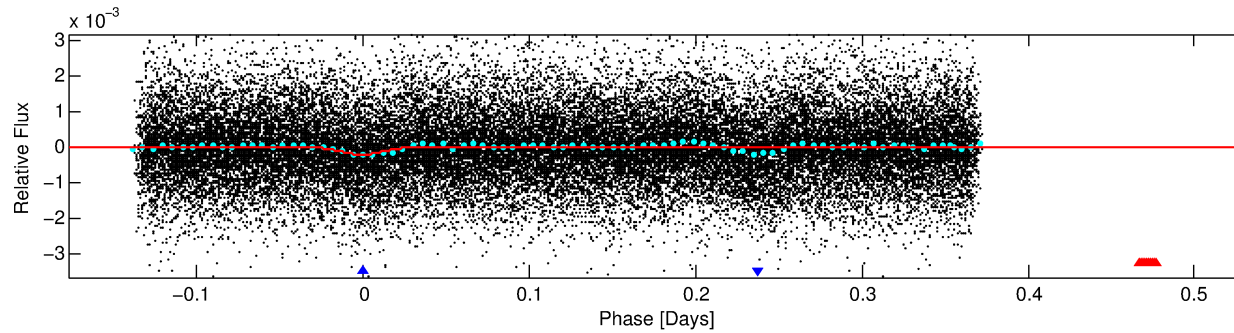
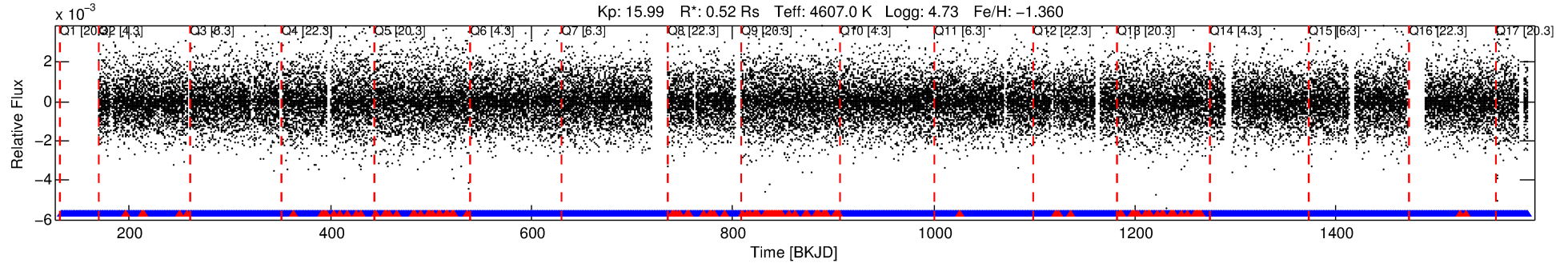
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005480884-02

No Significant Match Found

DV One-Page Summary

KIC: 5480884 Candidate: 2 of 2 Period: 0.709 d
KOI: K04841.01 Corr: 0.885



DV Fit Results:

Period = 0.70873 [0.00001] d
Epoch = 132.0862 [0.0017] BKJD
Rp/R* = 0.0153 [0.0118]
a/R* = 3.67 [11.17]
b = 0.90 [0.73]
Seff = 680.98 [110.51]
Teq = 1303 [53] K
Rp = 0.86 [0.67] Re
a = 0.0125 [0.0008] AU
Ag = 17.18 [26.74] [0.60σ]
Teff = 4100 [1598] K [1.75σ]

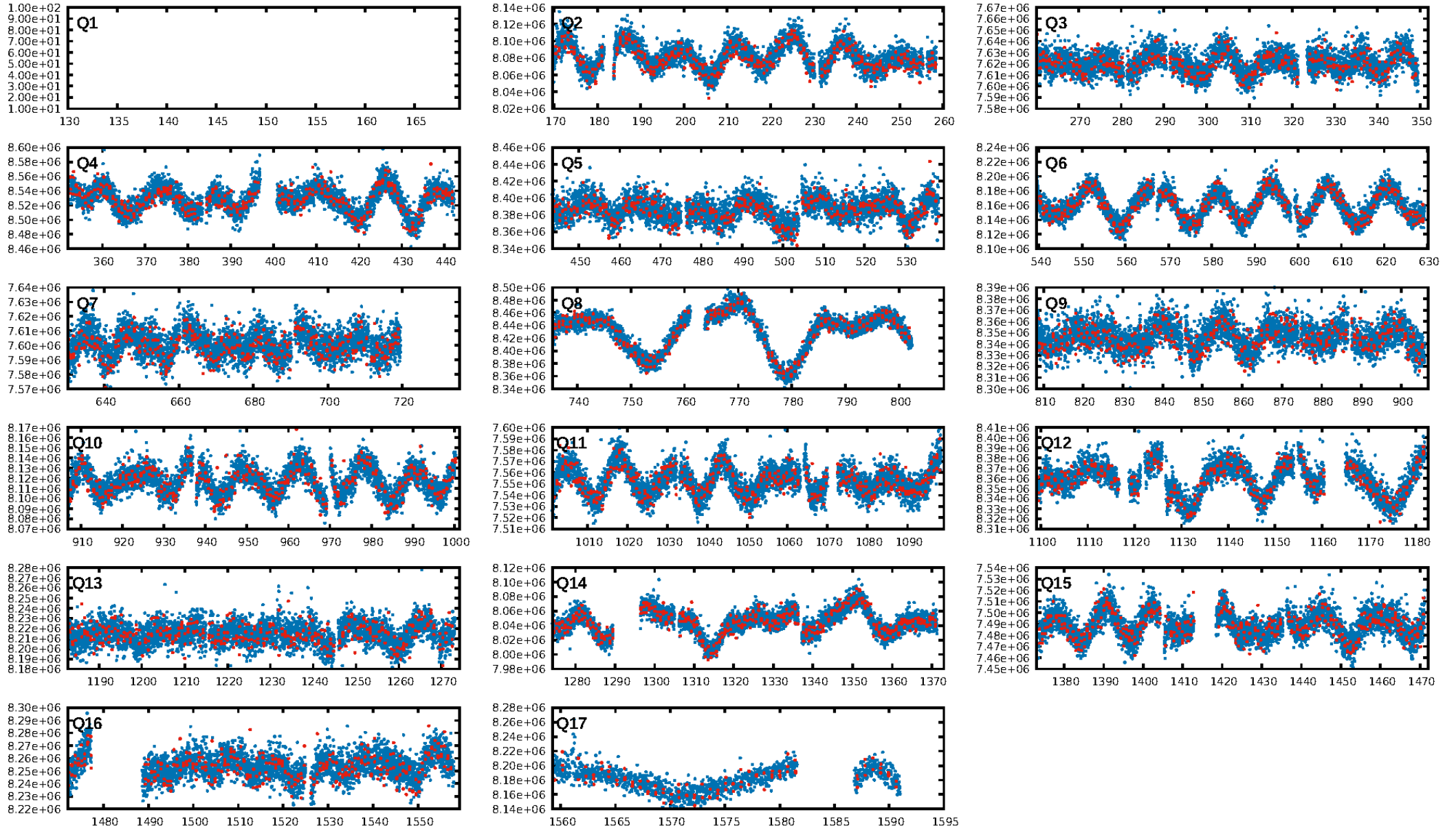
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.53e-16
RollingBand-fgt: 0.94 [1684/1798]
GhostDiagnostic-chr: 3.616
Centroid-sig: 0.1%
Centroid-so: 3.502 arcsec [2.60σ]
OotOffset-rm: 0.153 arcsec [0.34σ]
KicOffset-rm: 0.272 arcsec [0.68σ]
OotOffset-st: 2/4/3/3 [12]
KicOffset-st: 2/4/3/3 [12]
DiffImageQuality-fgm: 0.25 [3/12]
DiffImageOverlap-fno: 0.00 [0/16]

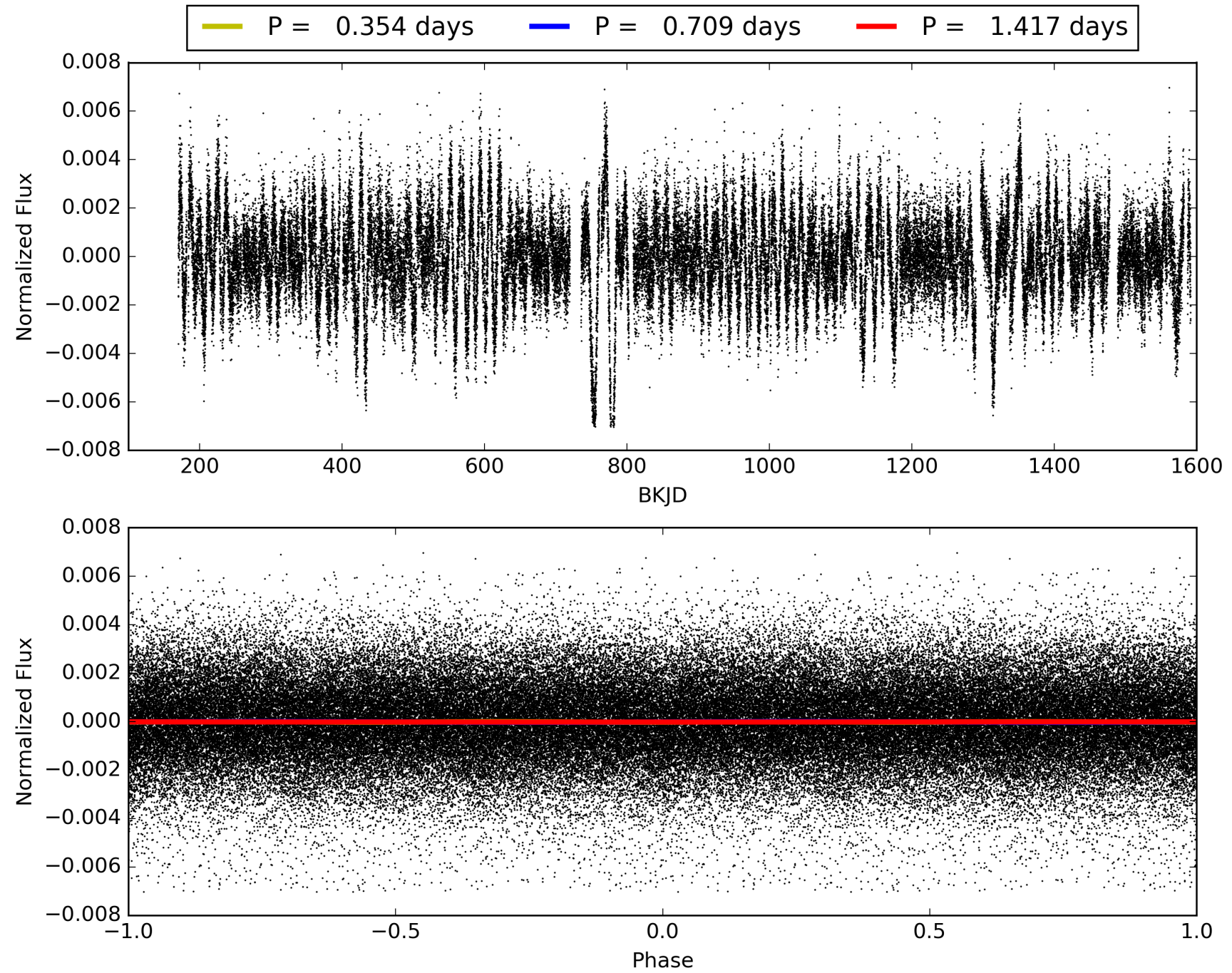
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:41:40 Z

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

TCE 005480884-02, PDC Light Curves

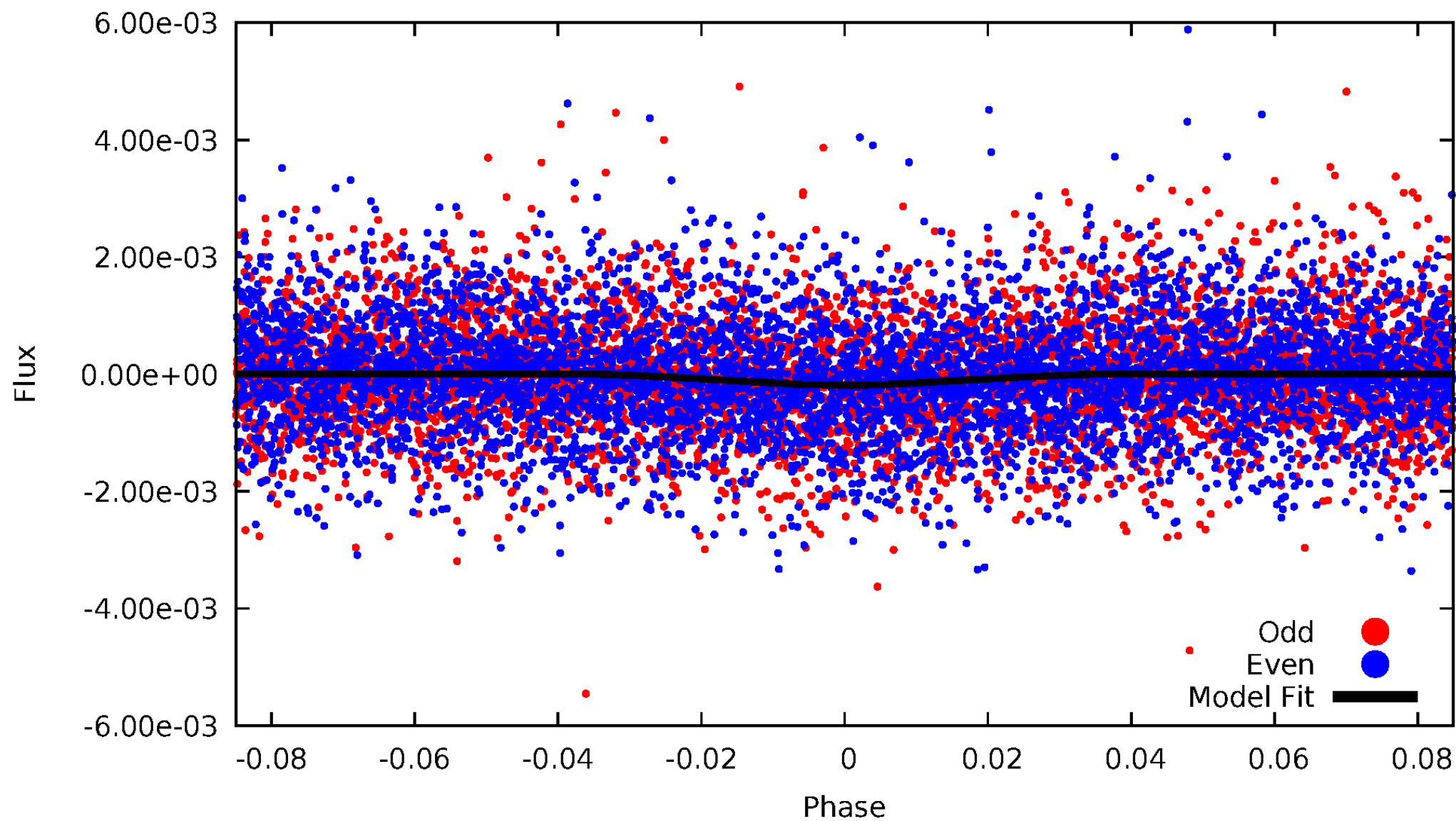


TCE 005480884-02



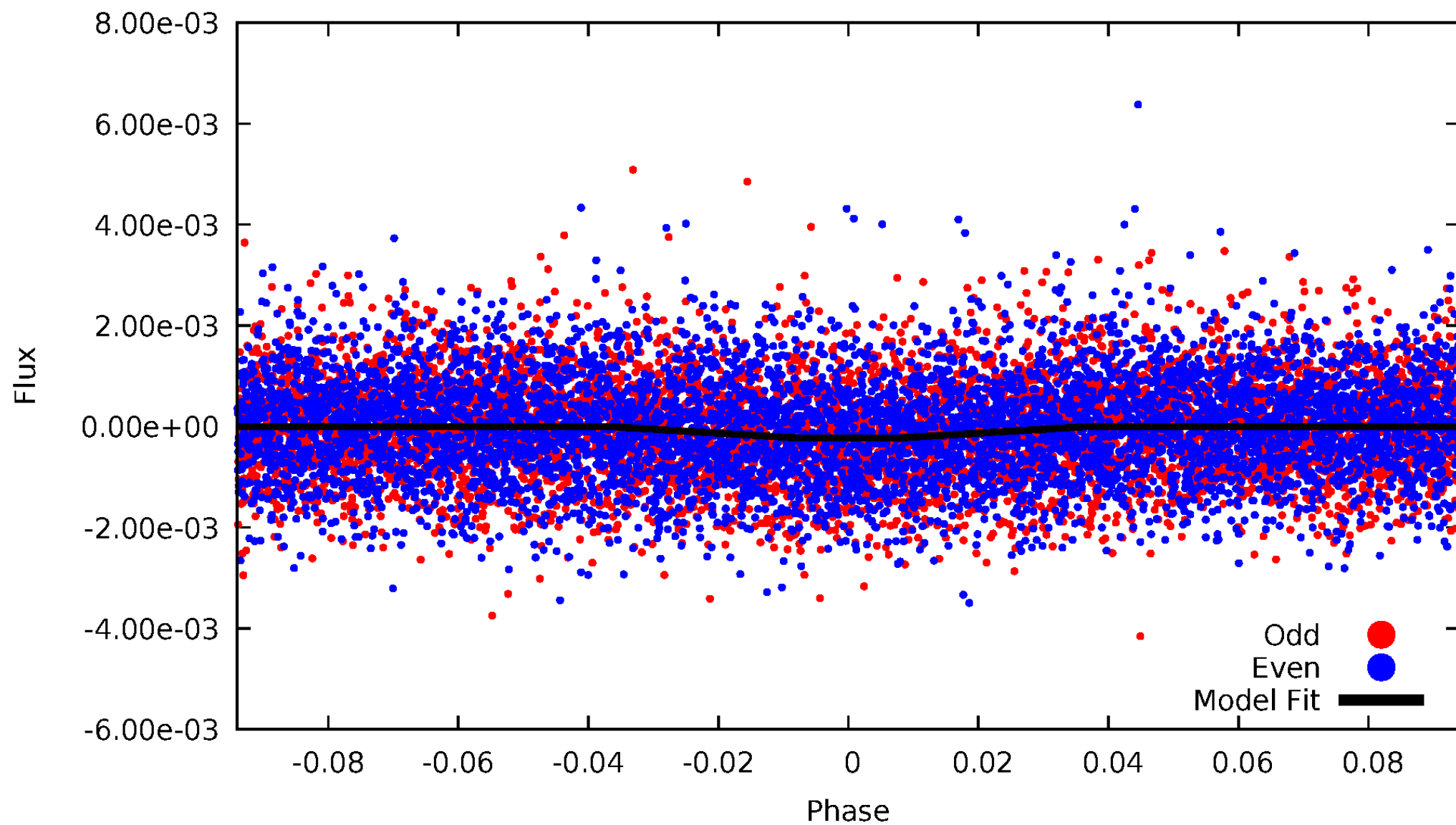
DV Odd/Even

TCE 005480884-02



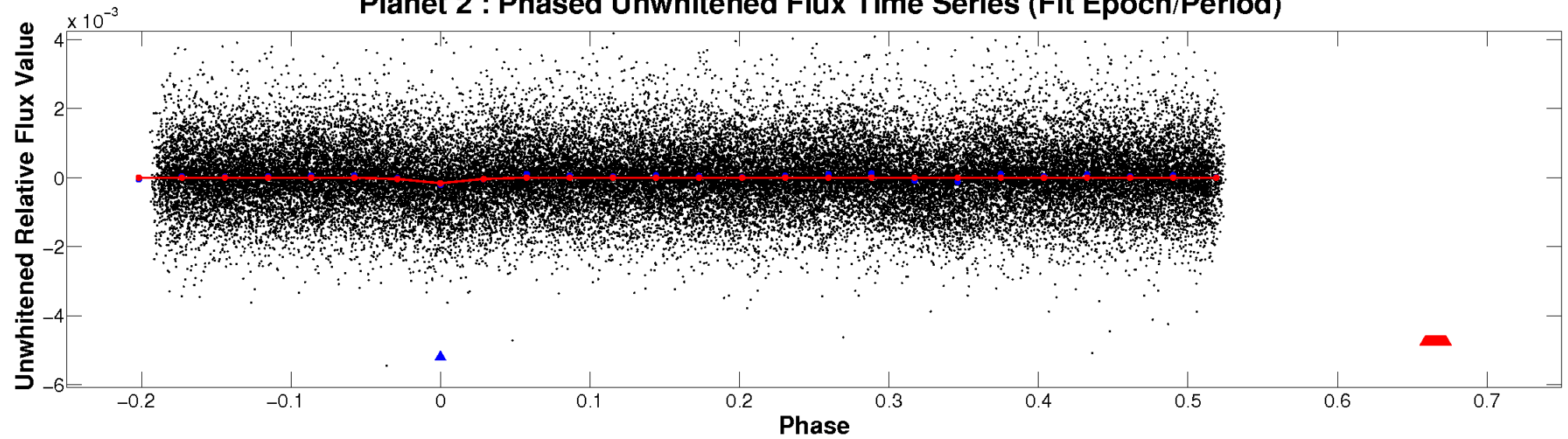
ALT Odd/Even

TCE 005480884-02

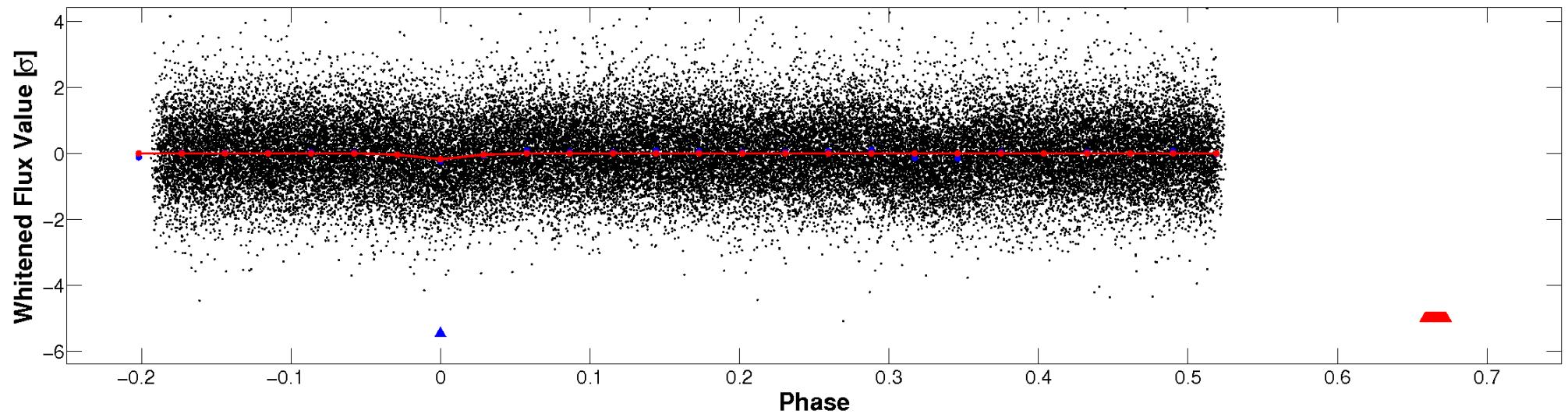


Non-Whitened Vs. Whitened Light Curve

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

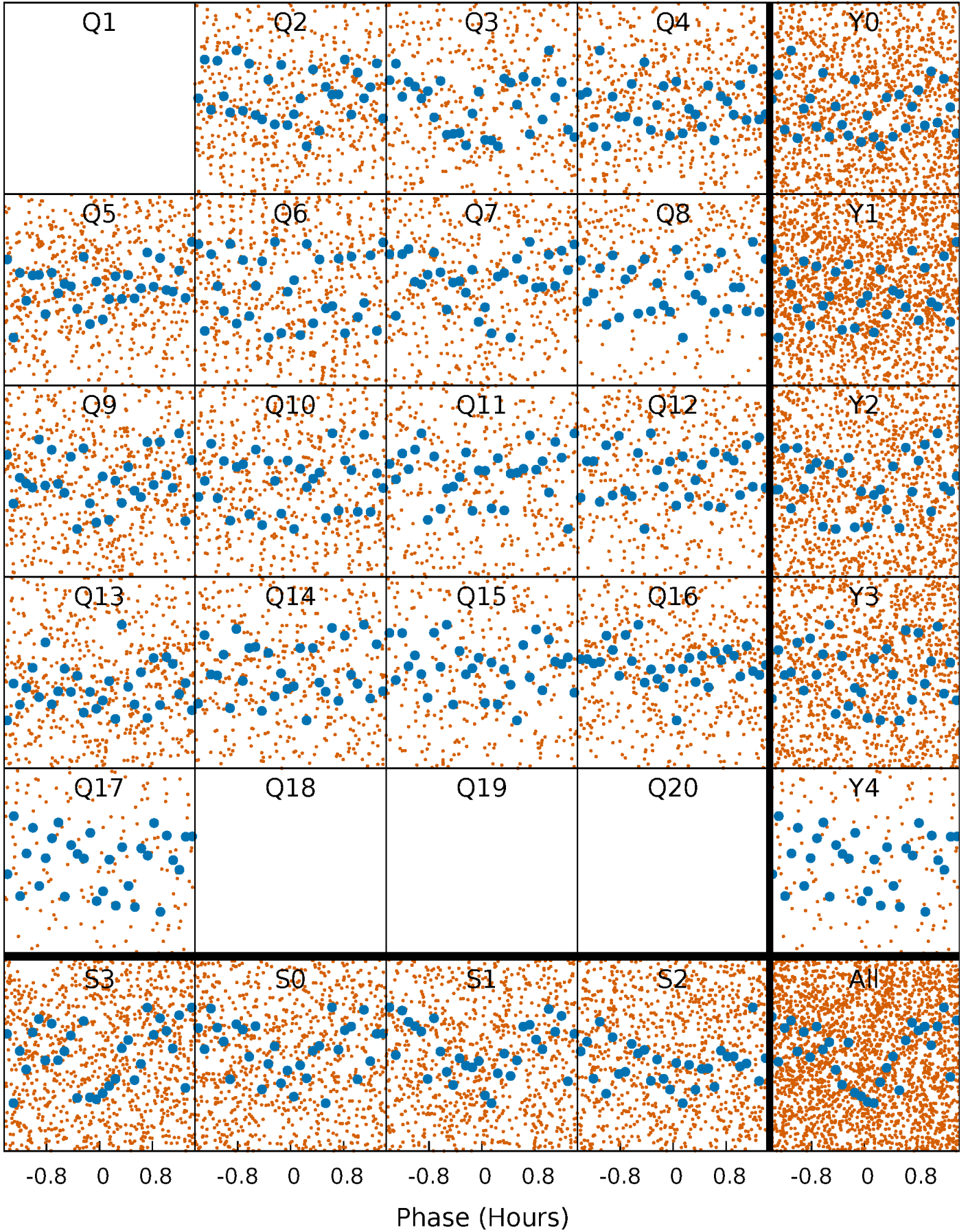


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



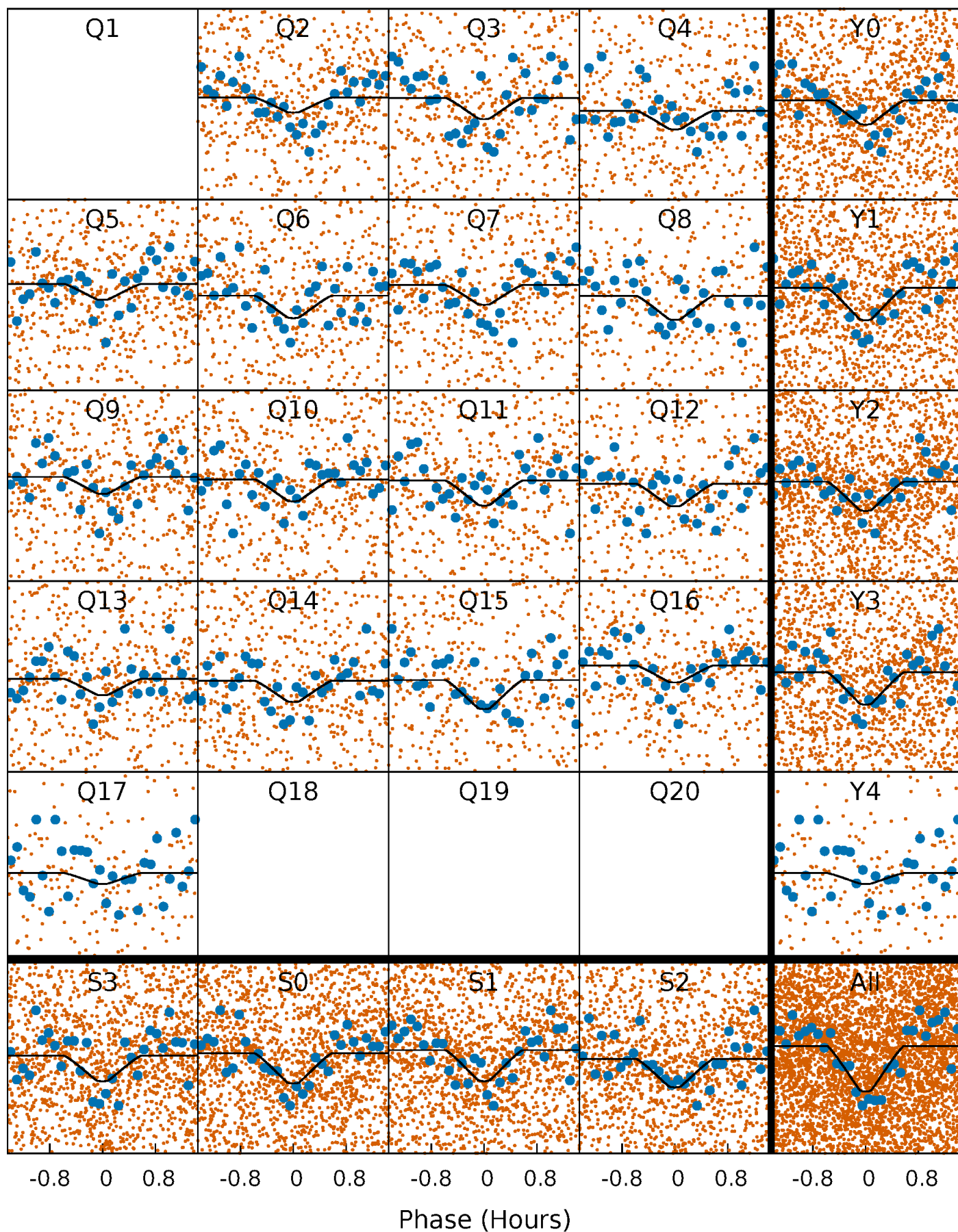
PDC Quarter-Phased Transit Curves

TCE 005480884-02 P= 0.708726 Days $T_0=132.086184$ (BKJD)



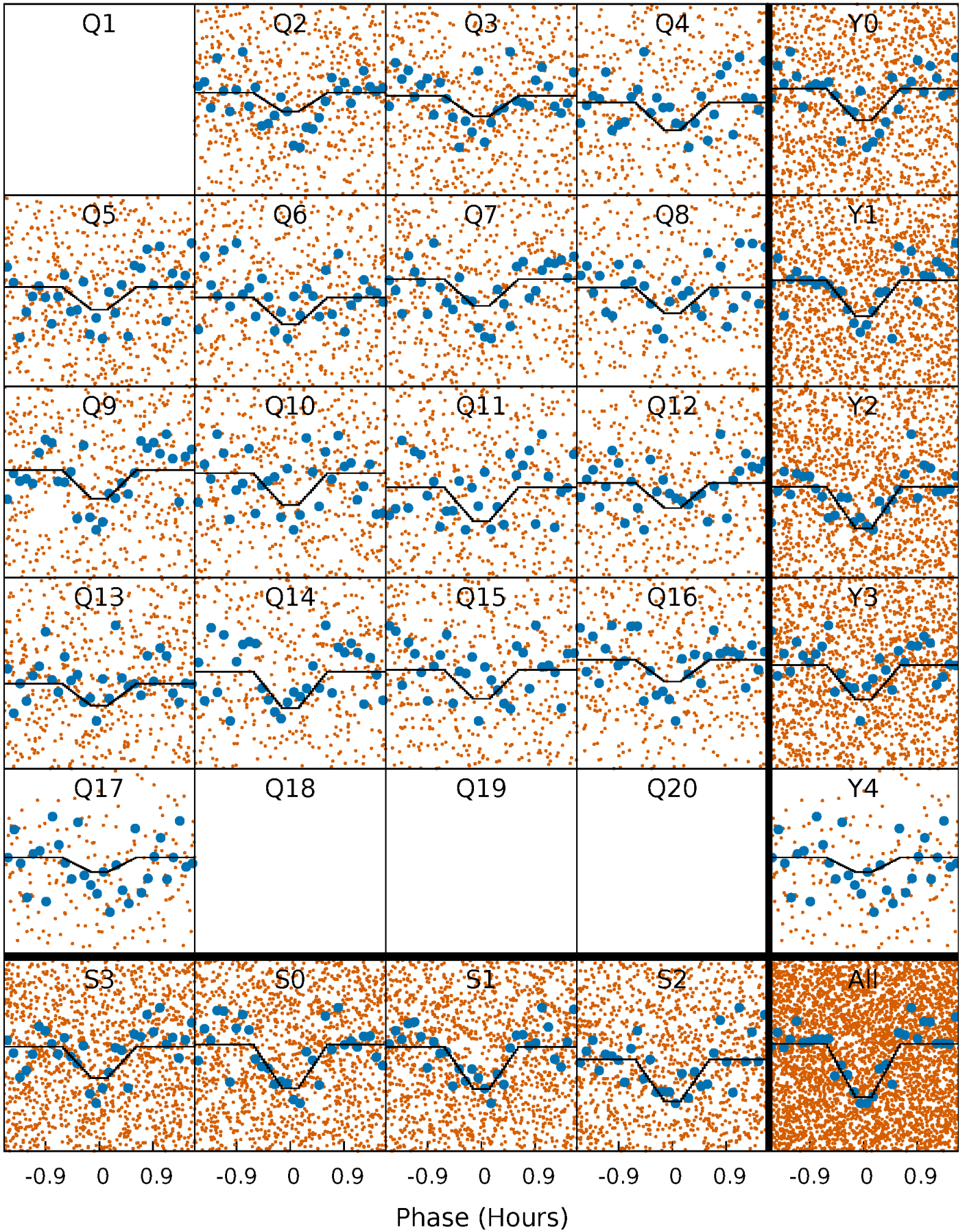
DV Quarter-Phased Transit Curves

TCE 005480884-02 $P = 0.708726$ Days $T_0 = 132.086184$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

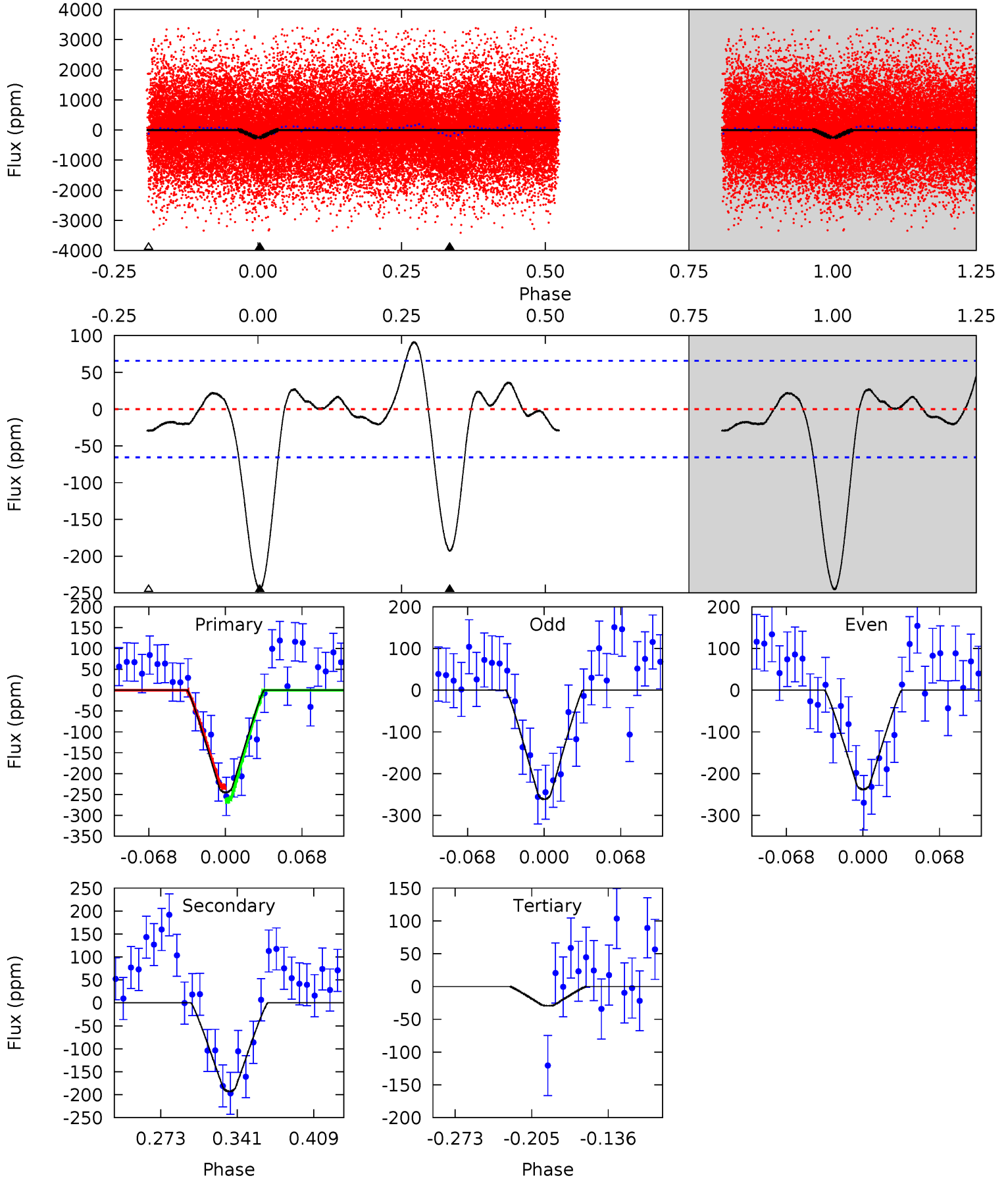
TCE 005480884-02 P= 0.708728 Days $T_0=132.086154$ (BKJD)



DV Model-Shift Uniqueness Test

005480884-02, P = 0.708726 Days, E = 132.086184 Days

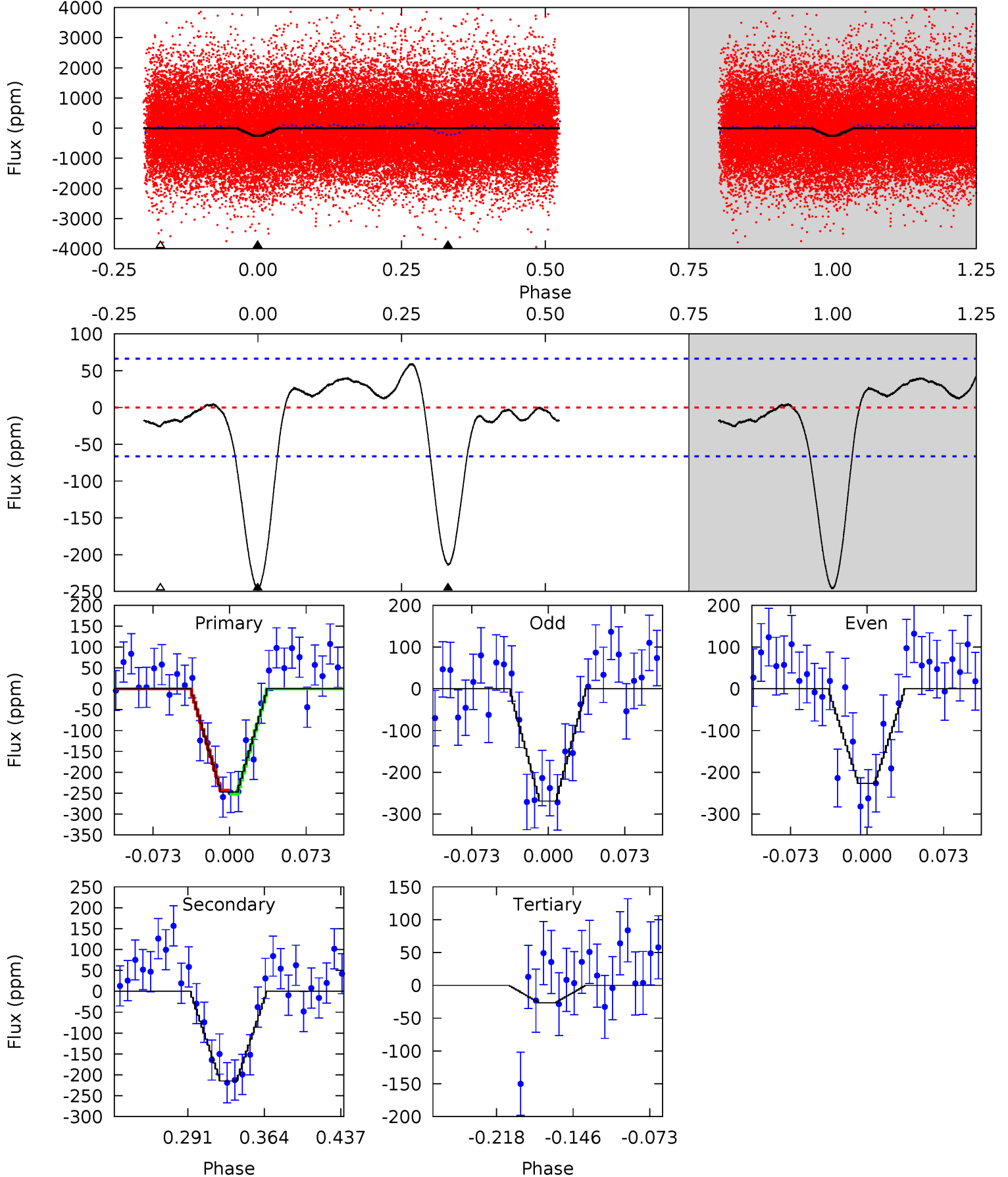
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.3	13.6	2.08	0	4.64	1.82	1.48	15.3	17.3	11.5	13.6	0.83	1.11	0.27	1.17



Alt Model-Shift Uniqueness Test

005480884-02, P = 0.708728 Days, E = 132.086154 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.2	15.0	1.85	0	4.63	1.79	1.46	15.4	17.2	13.1	15.0	1.49	0.96	0.20	0.34



Stellar Parameters For KIC 005480884

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4607^{+124}_{-152}	$4.733^{+0.052}_{-0.024}$	$-1.360^{+0.300}_{-0.300}$	$0.515^{+0.028}_{-0.039}$	$0.522^{+0.032}_{-0.027}$	$5.395^{+1.157}_{-0.578}$
	+3%/-3%	+1%/-1%	+22%/-22%	+5%/-8%	+6%/-5%	+21%/-11%
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 005480884-02 / KOI 4841.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-193 ± 14	$0.93^{+0.69}_{-0.53}$	1813^{+55}_{-68}	4279^{+1911}_{-748}	19^{+95}_{-13}
Alt.	-215 ± 14	$0.91^{+0.64}_{-0.53}$	1808^{+58}_{-62}	4397^{+2083}_{-794}	23^{+109}_{-15}

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

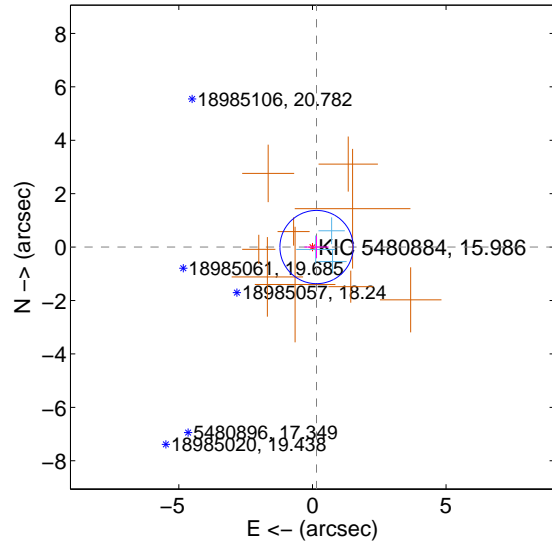
Supplemental centroid analysis for 005480884-02. Kepler magnitude: 15.99. Transit SNR 7.96

There are 3 quarters with good PRF difference image offsets

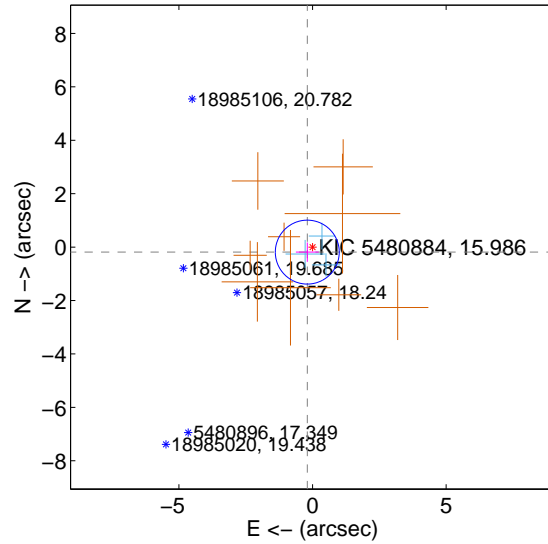
The direct PRF centroid is offset from the target star catalog position by about 0.48 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.153 ± 0.457	0.34	-0.153 ± 0.458	0.002 ± 0.408
PRF-fit source offset from KIC position	0.272 ± 0.399	0.68	0.196 ± 0.430	-0.188 ± 0.362
photometric centroid source offset	3.50 ± 1.35	2.60	0.82 ± 1.56	-3.40 ± 1.34

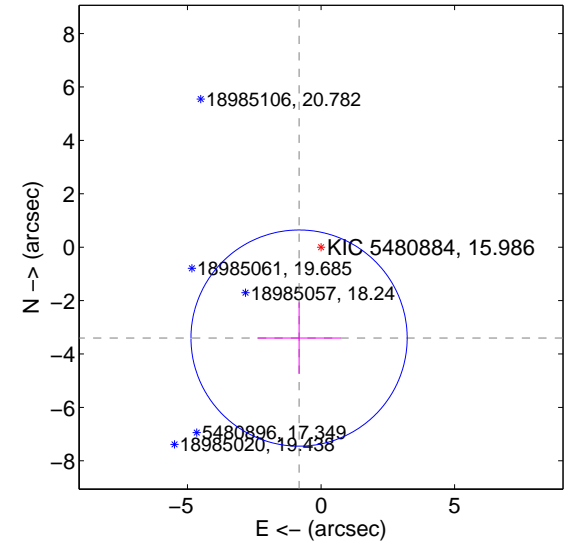
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

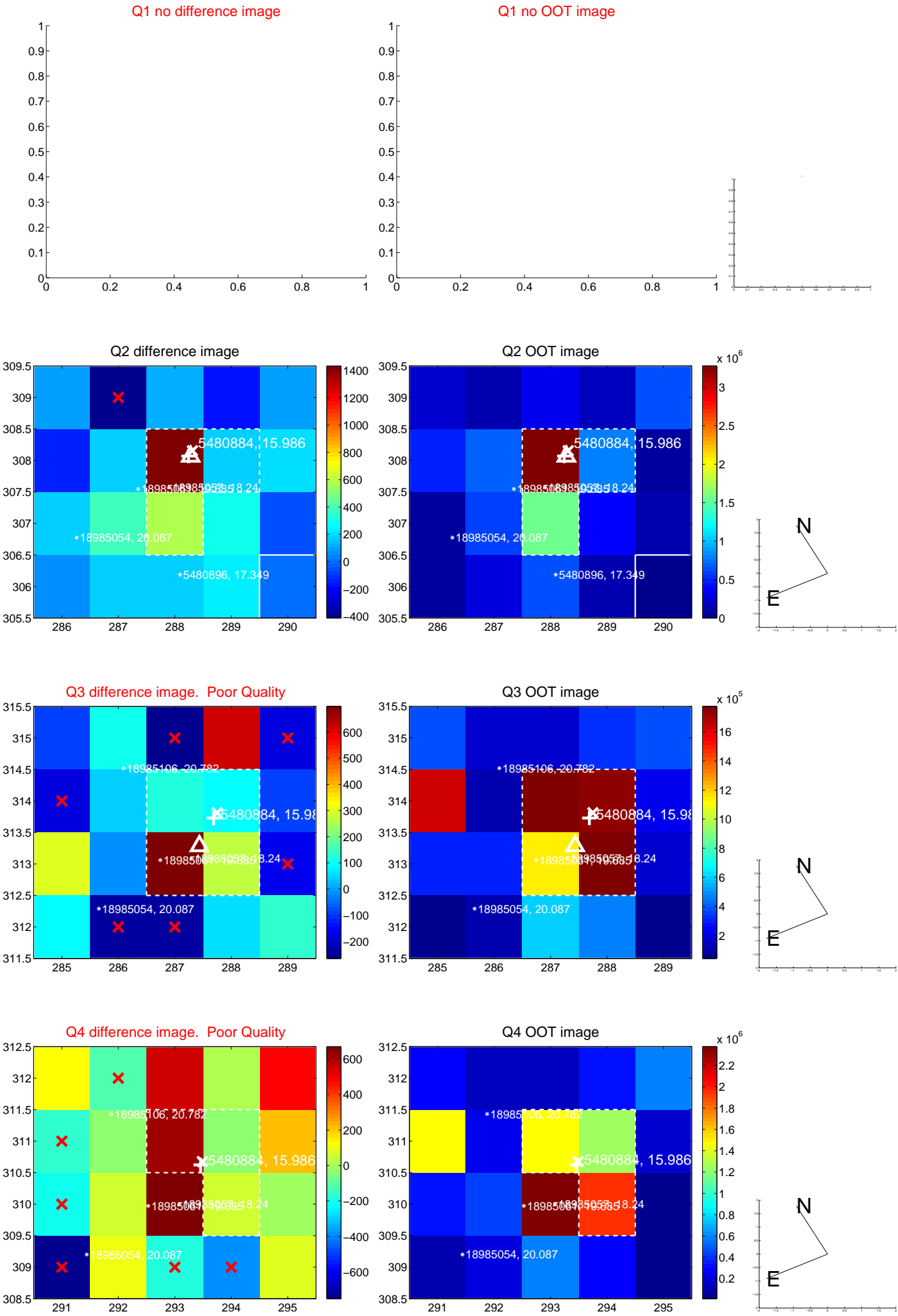


offset from photometric centroids

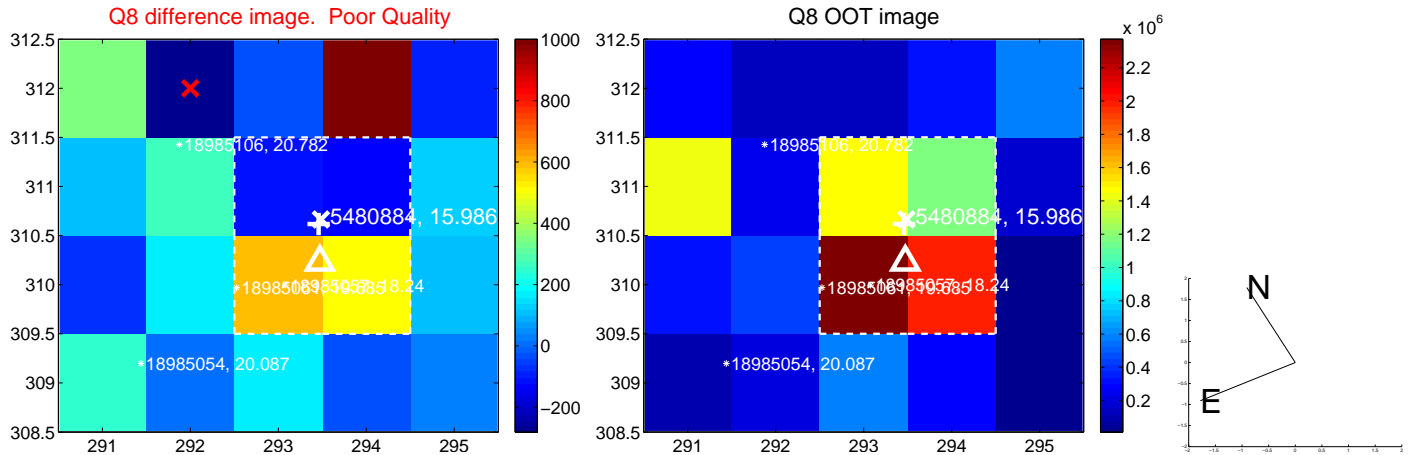
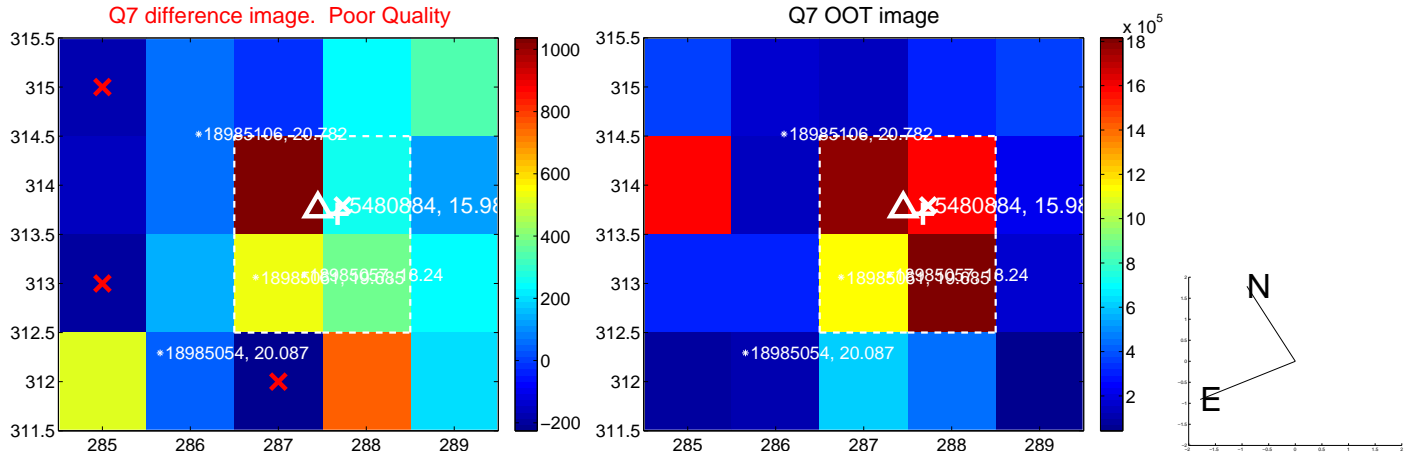
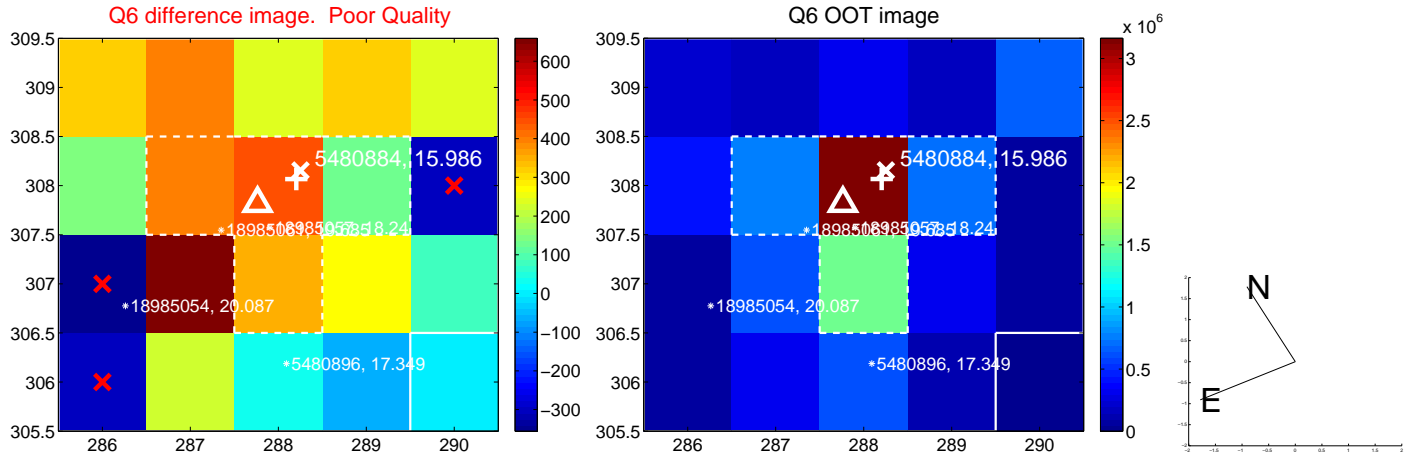
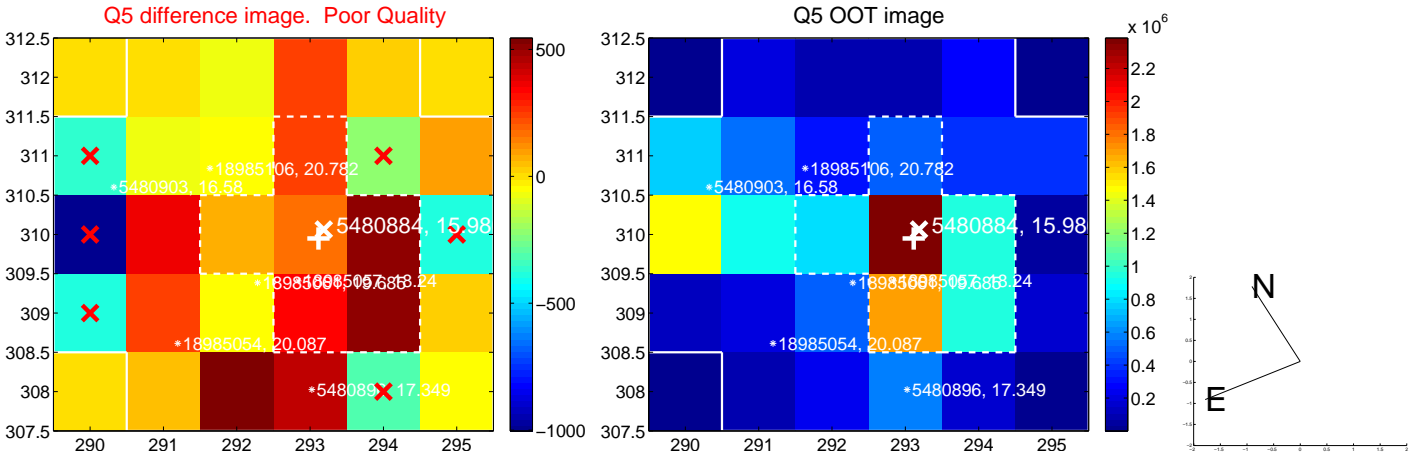


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

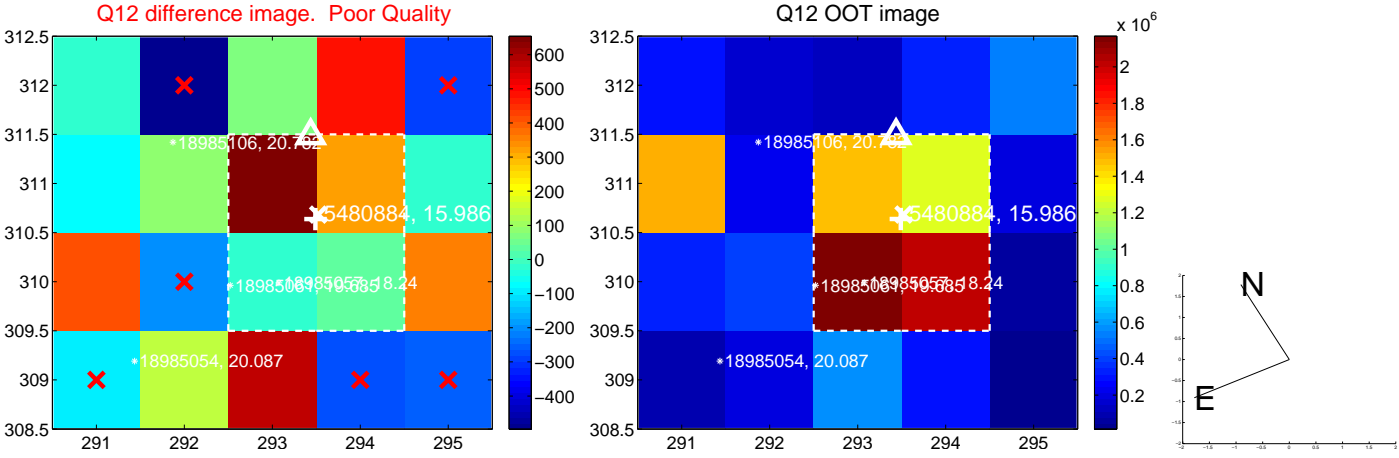
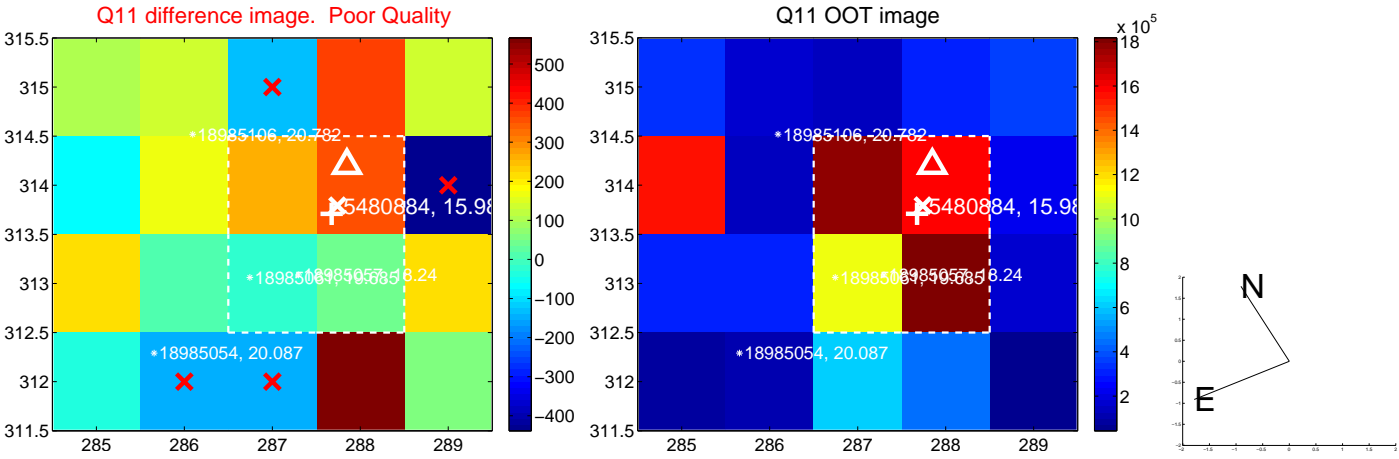
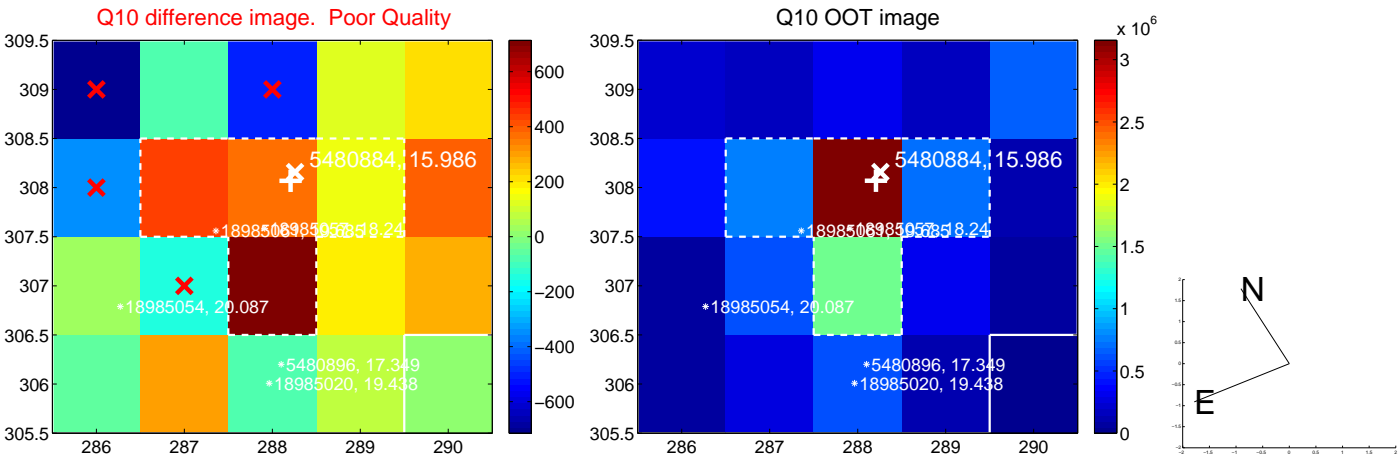
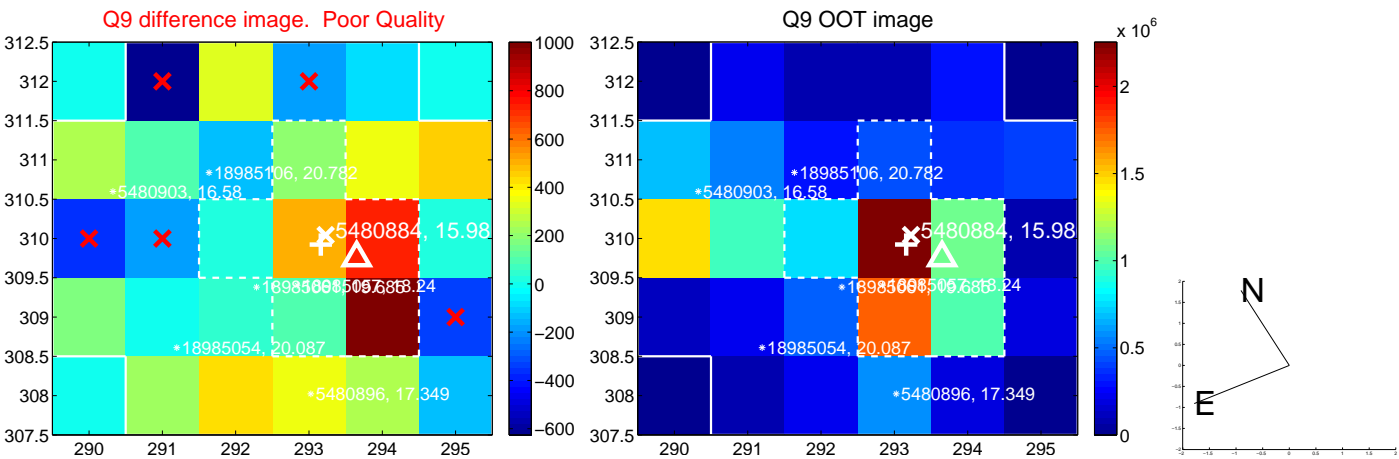
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



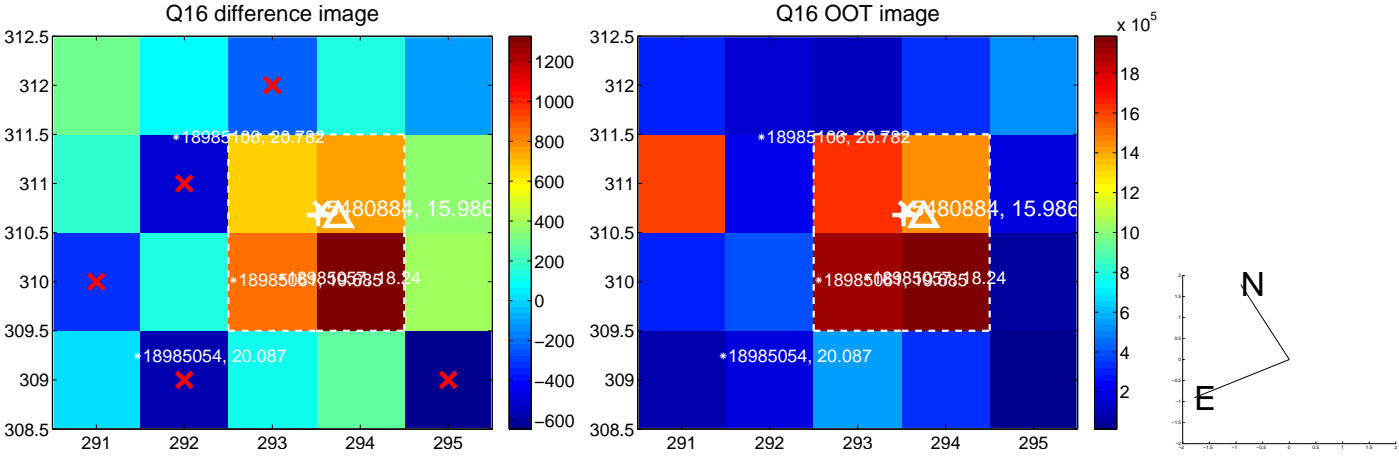
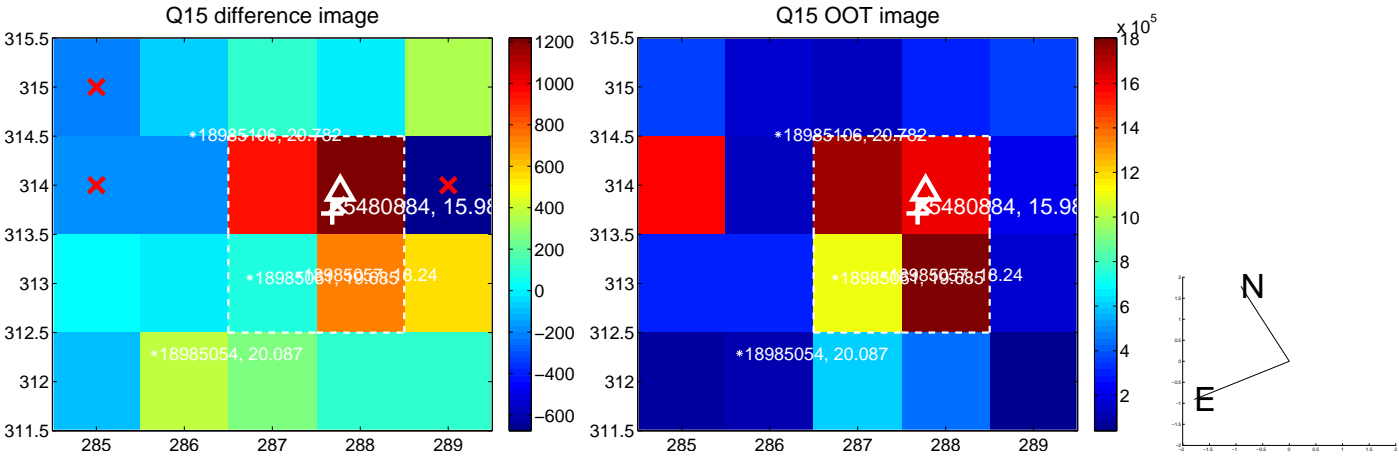
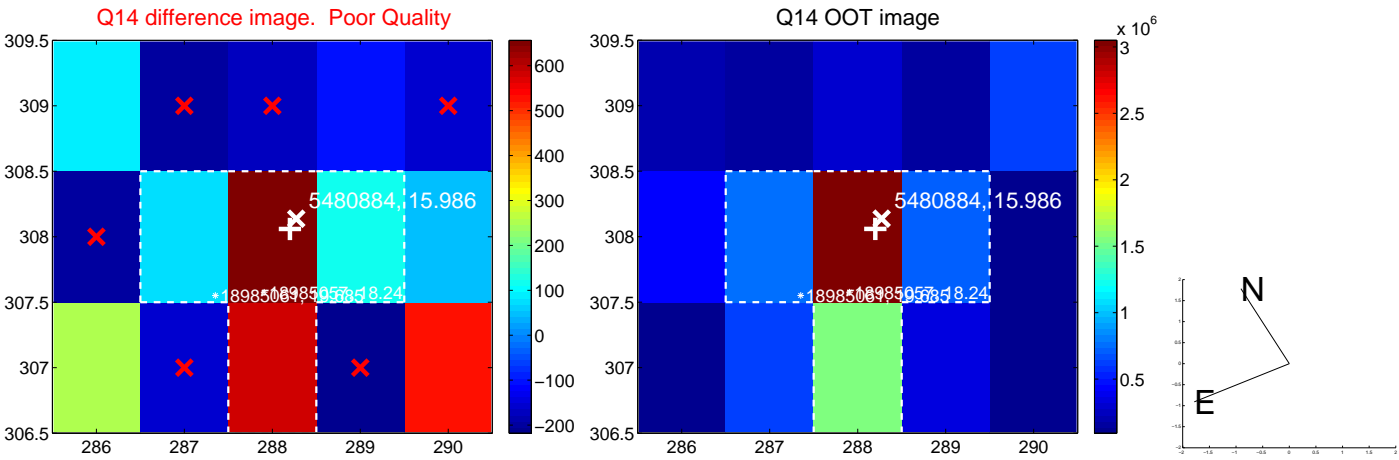
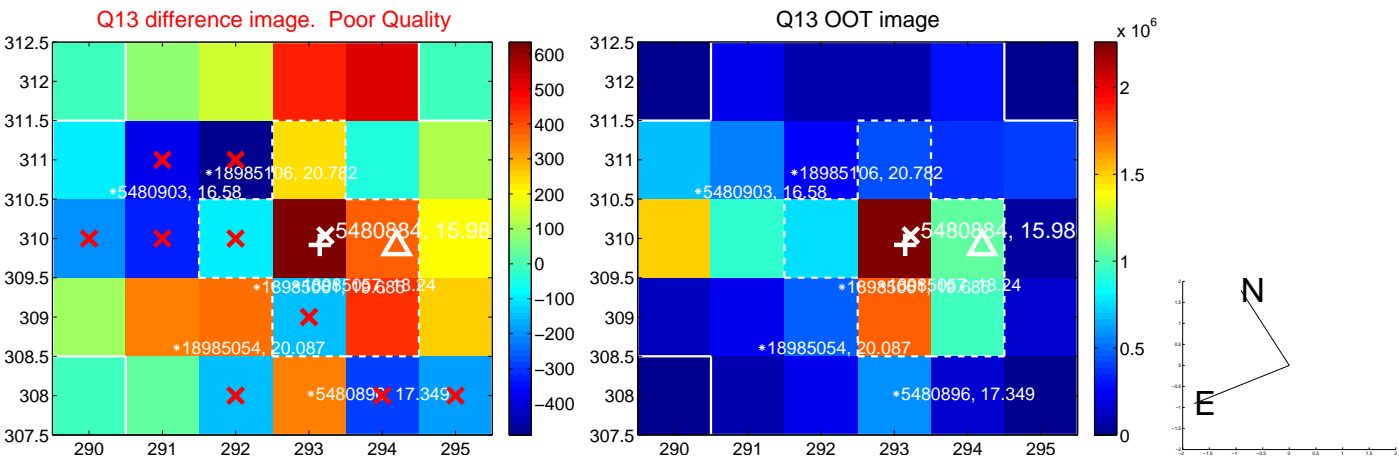
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



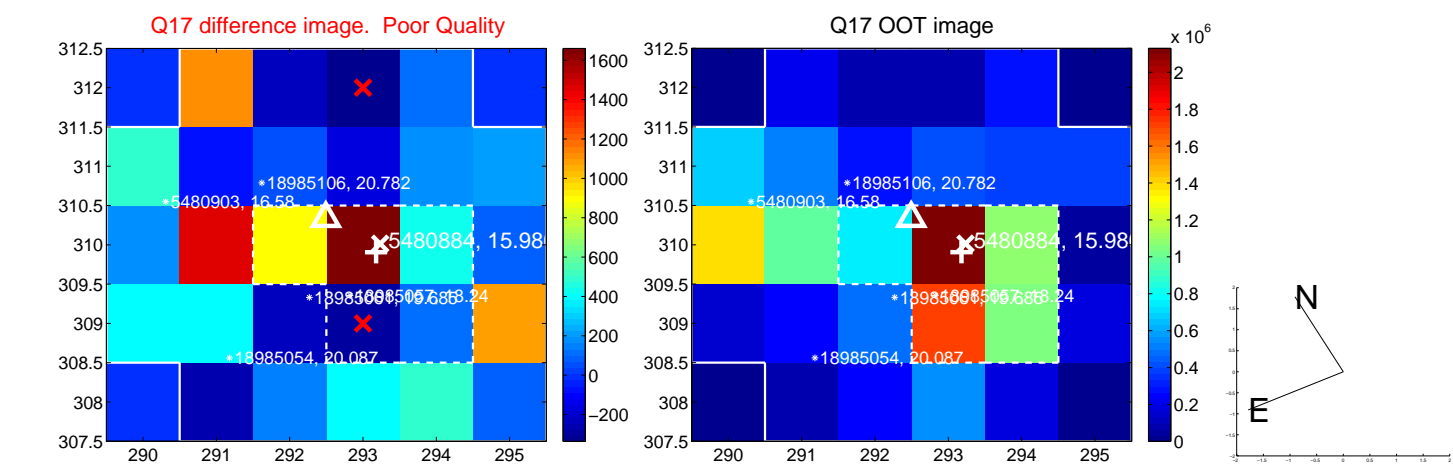
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



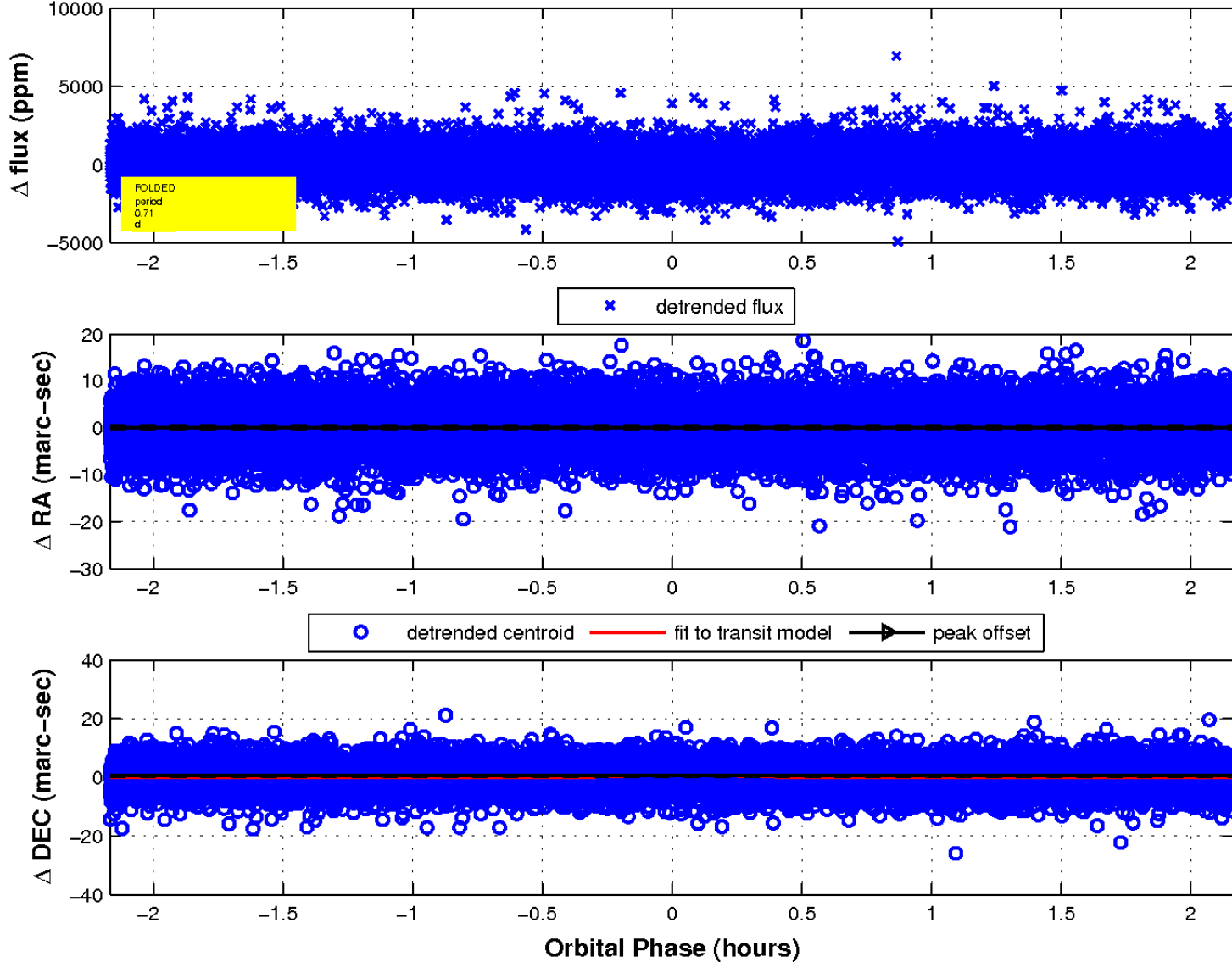
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

