

KIC 006448666

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})
006448666-01	OBS	No	0.554068	131.745537	15.7	1.616	9.2	5.2	2.04	7181	0.82	54746.00
006448666-02	OBS	No	0.554090	131.660471	49.2	1.307	9.0	2.7	2.04	7181	1.67	54743.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006448666-01	OBS	FP	0.00	1	0	1	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED—HALO_GHOST
006448666-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_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.

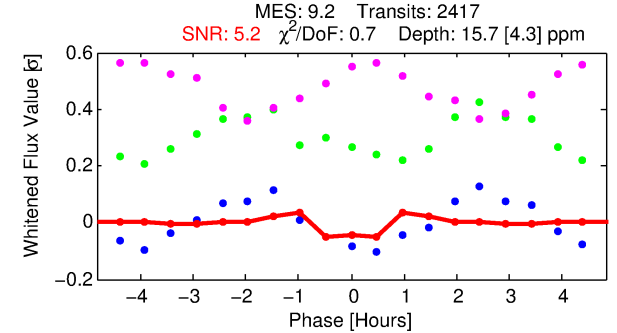
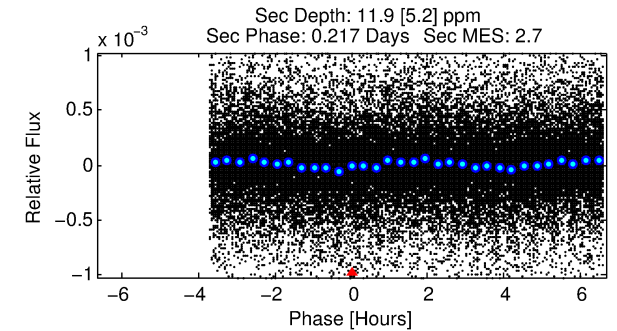
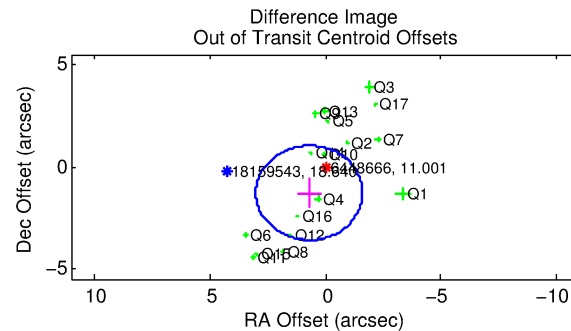
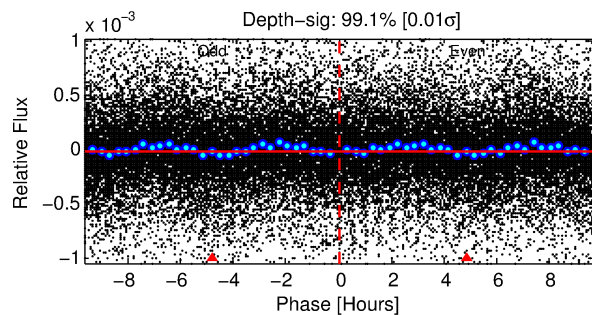
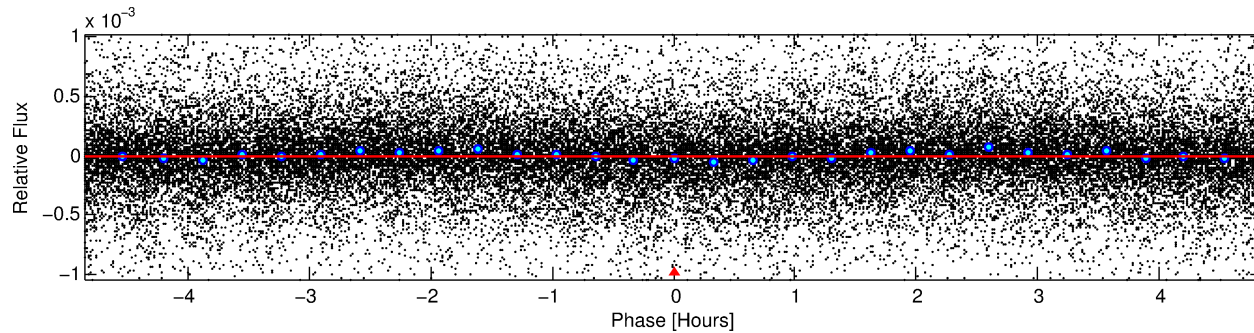
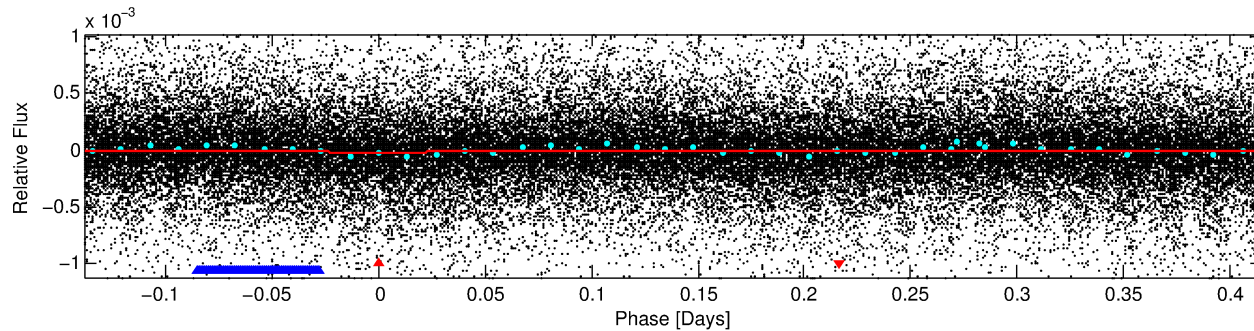
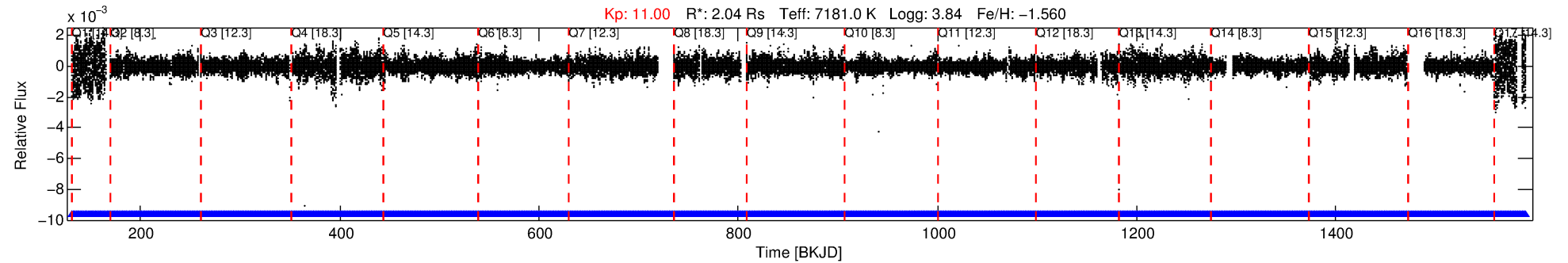
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006448666-01

No Significant Match Found

DV One-Page Summary

KIC: 6448666 Candidate: 1 of 2 Period: 0.554 d



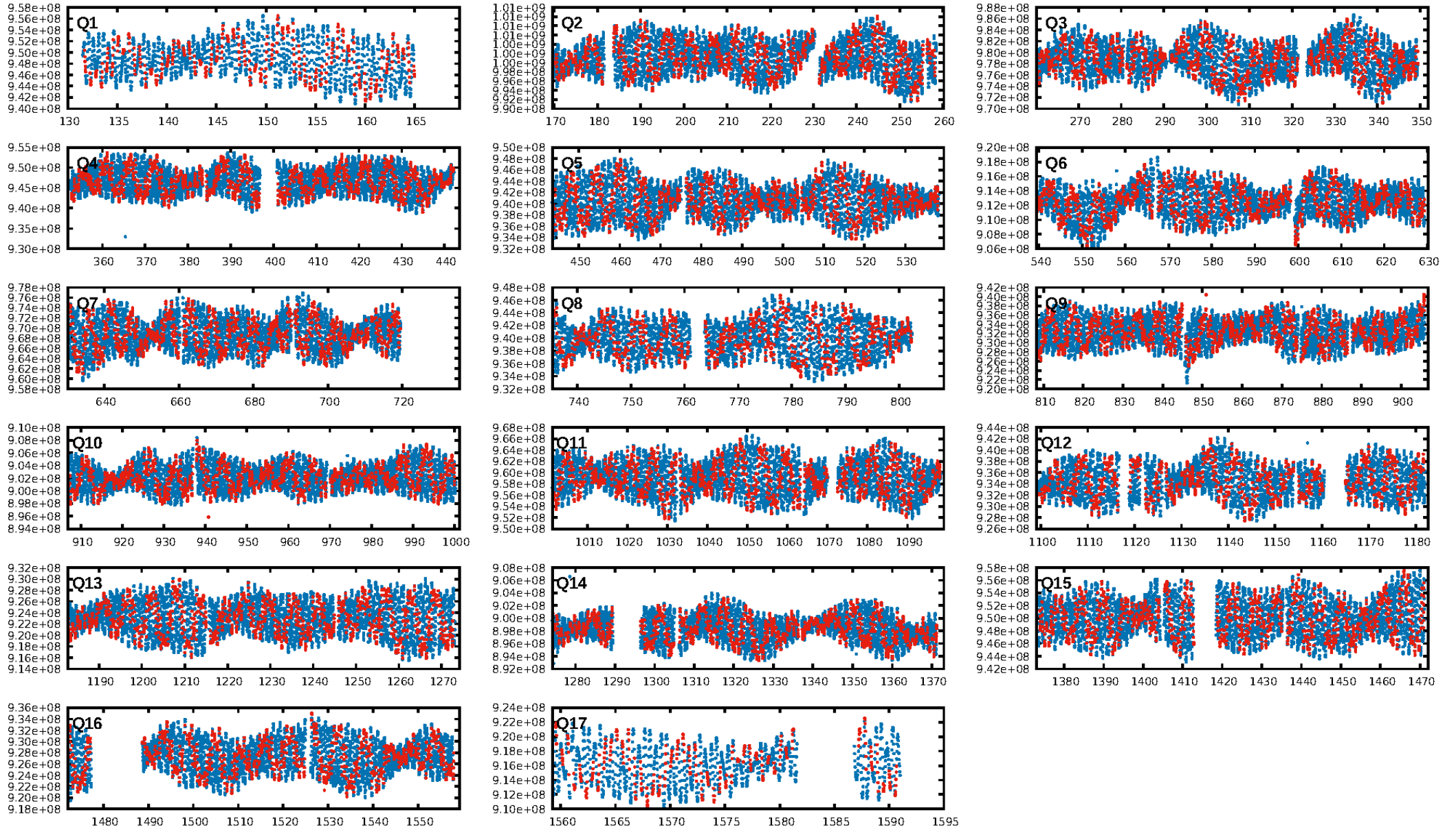
DV Fit Results:

Period = 0.55407 [0.00002] d
Epoch = 131.7455 [0.0022] BKJD
Rp/R* = 0.0037 [0.0027]
a/R* = 2.69 [9.59]
b = 0.05 [88.13]
Seff = 54746.00 [53928.31]
Teff = 3900 [961] K
Rp = 0.82 [0.73] Re
a = 0.0134 [0.0076] AU
Ag = 1.77 [3.19] [0.24 σ]
Teffp = 6957 [2650] K [1.08 σ]

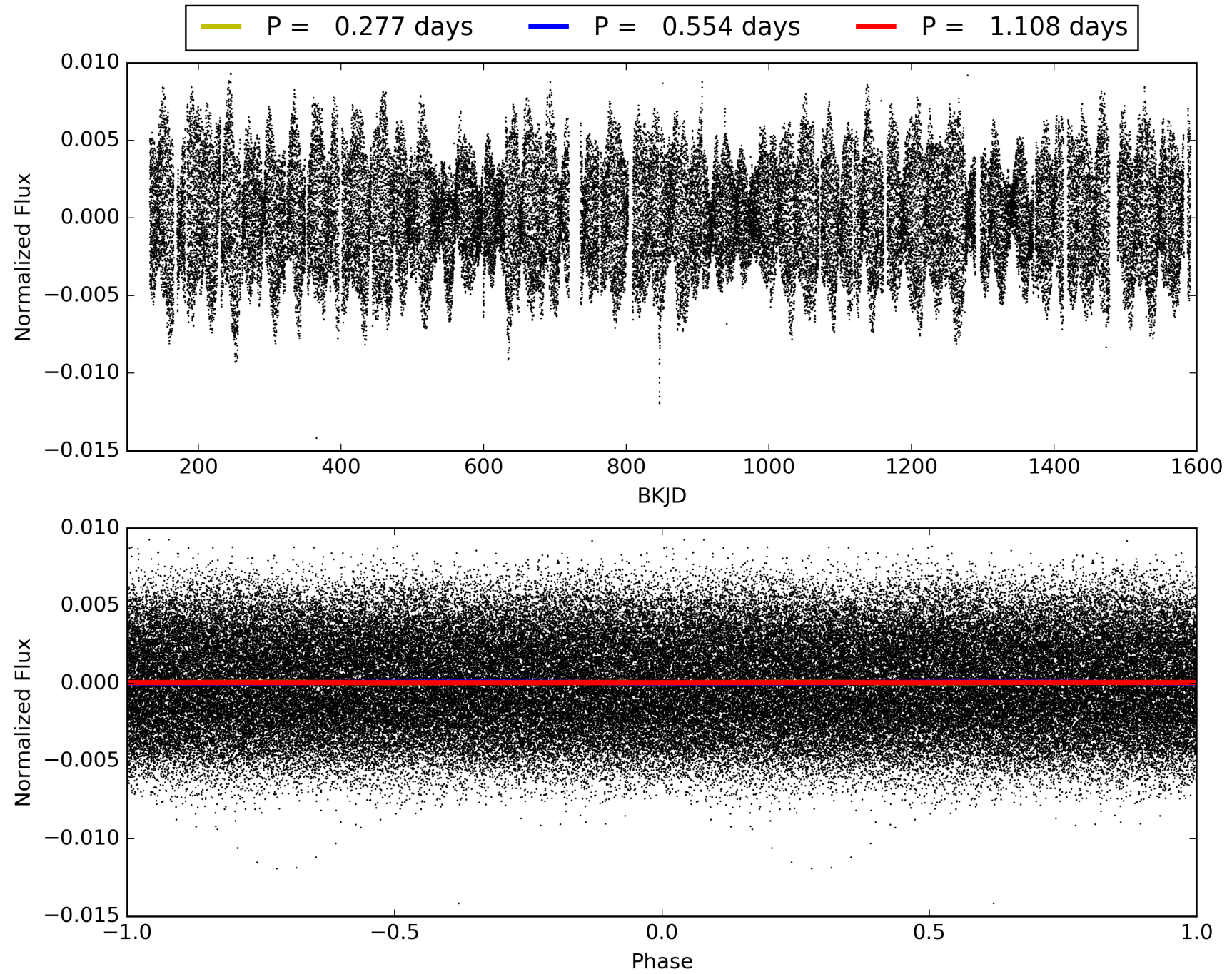
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.08e-38
RollingBand-fgt: 1.00 [2309/2309]
GhostDiagnostic-chr: 0.1746
Centroid-sig: N/A
Centroid-so: 1.100 arcsec [1.40 σ]
OotOffset-rm: 1.466 arcsec [1.90 σ]
KicOffset-rm: 2.436 arcsec [2.97 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.35 [6/17]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 006448666-01, PDC Light Curves

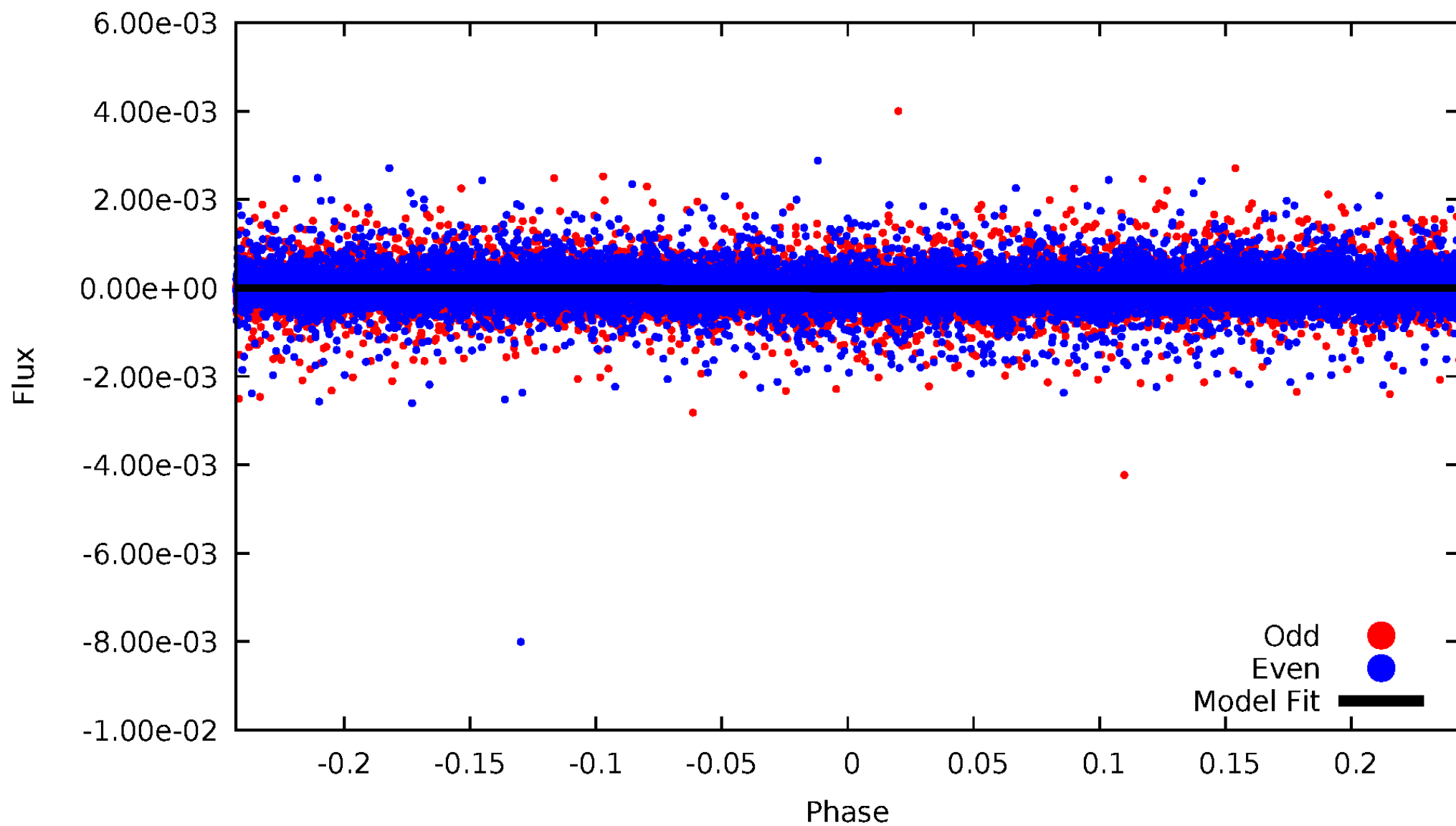


TCE 006448666-01



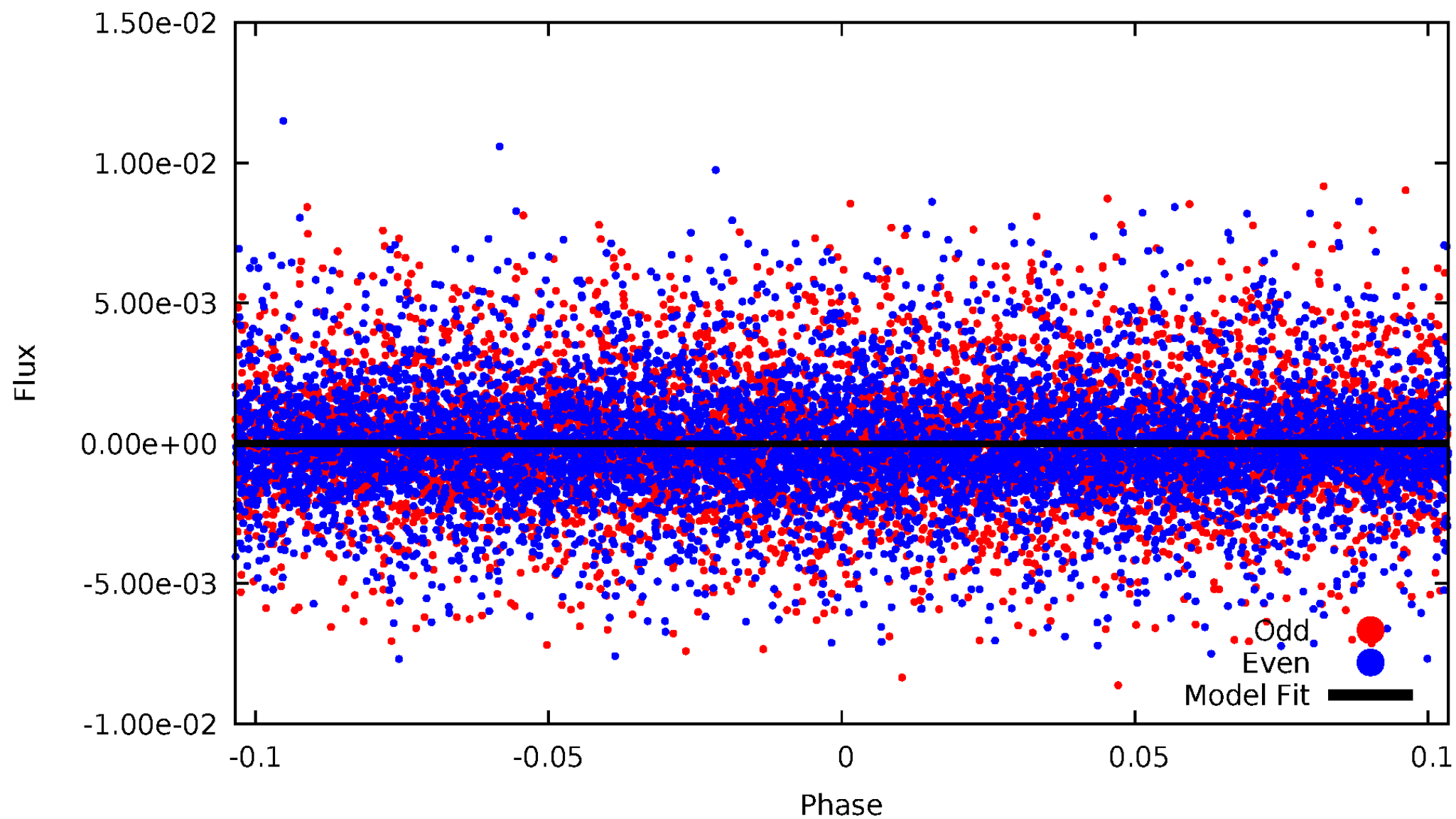
DV Odd/Even

TCE 006448666-01



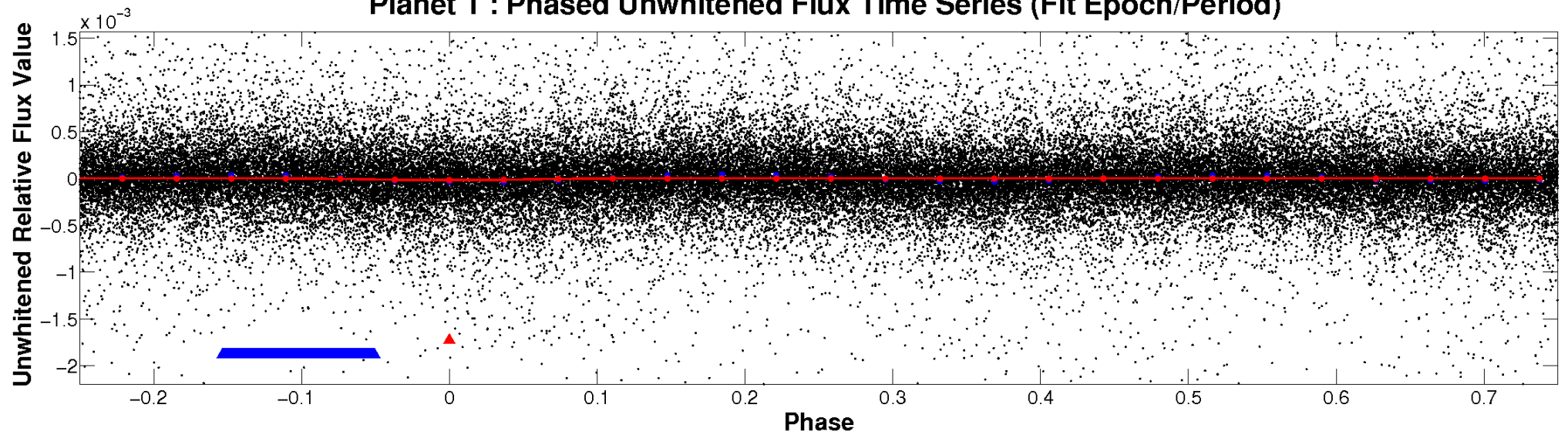
ALT Odd/Even

TCE 006448666-01

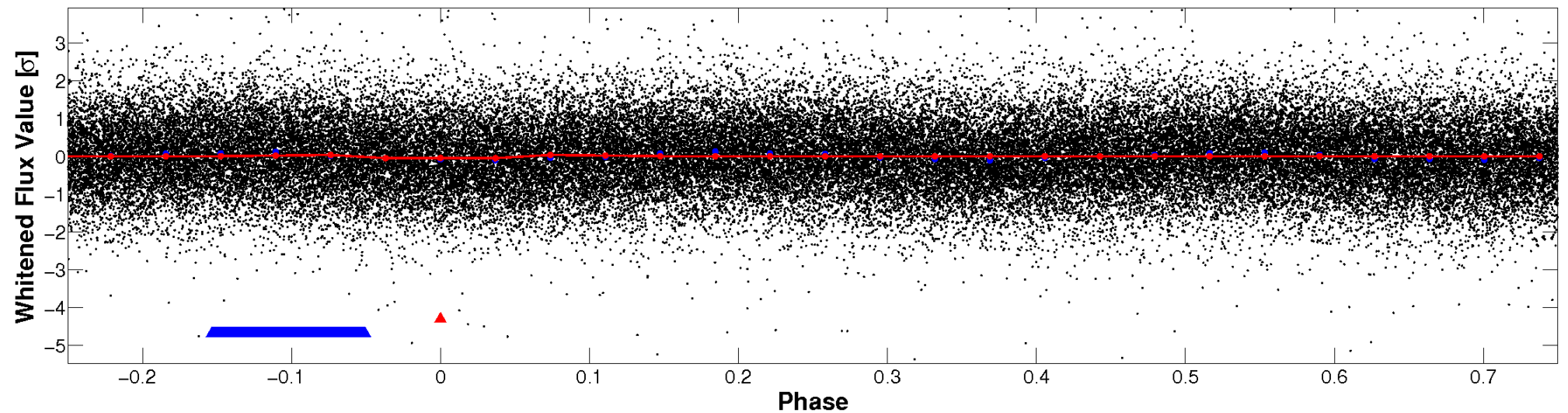


Non-Whitened Vs. Whitened Light Curve

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

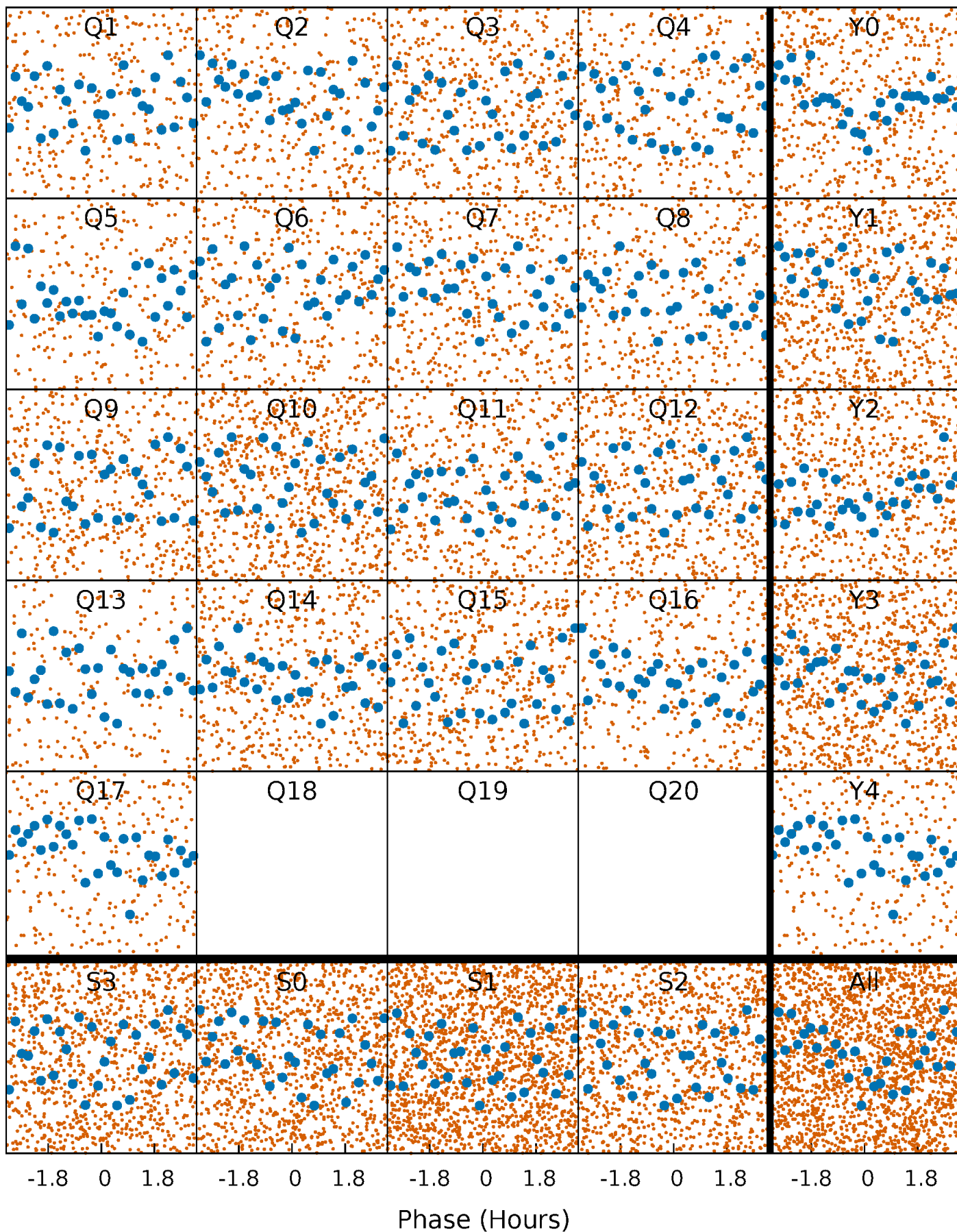


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



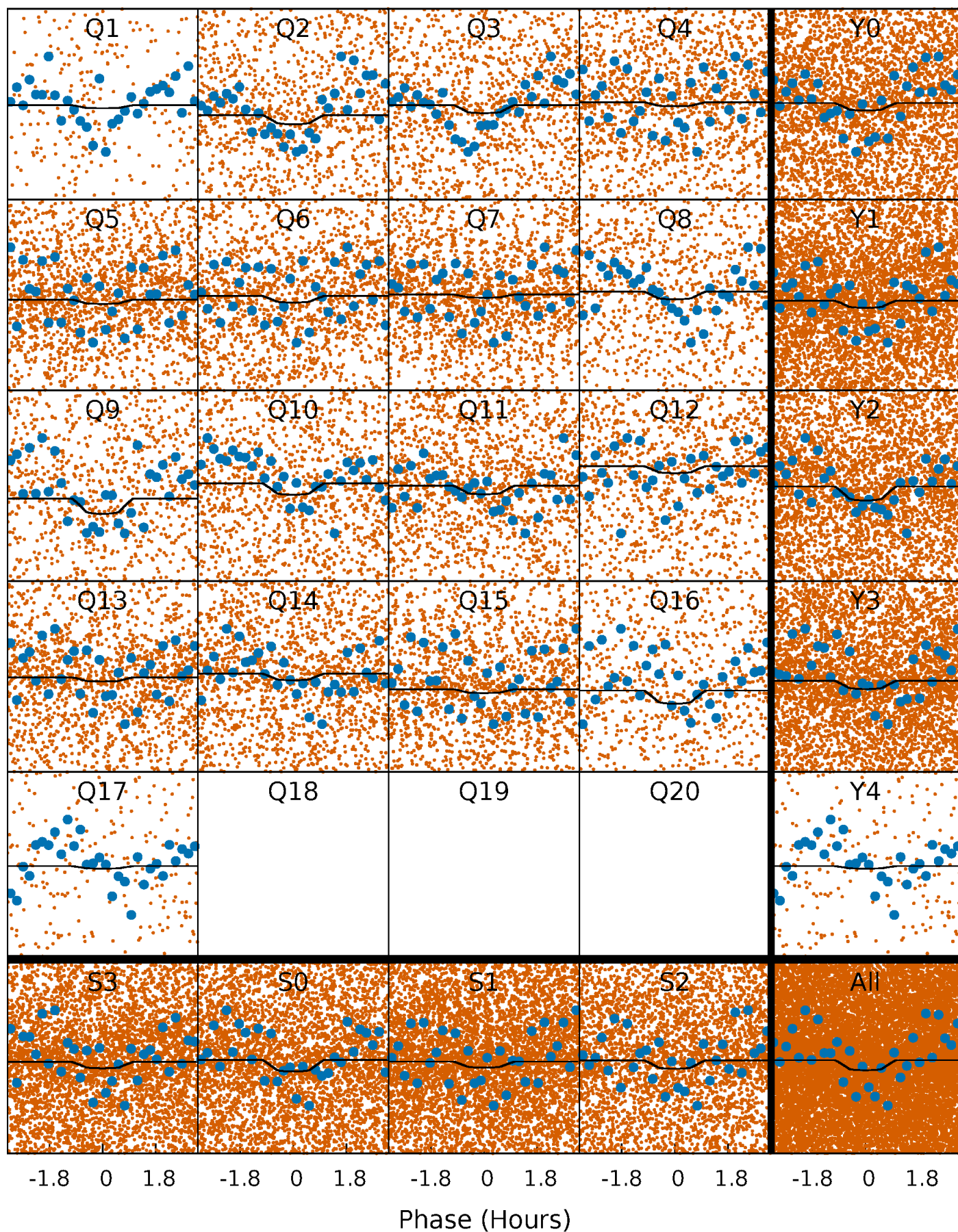
PDC Quarter-Phased Transit Curves

TCE 006448666-01 P= 0.554068 Days $T_0=131.745537$ (BKJD)



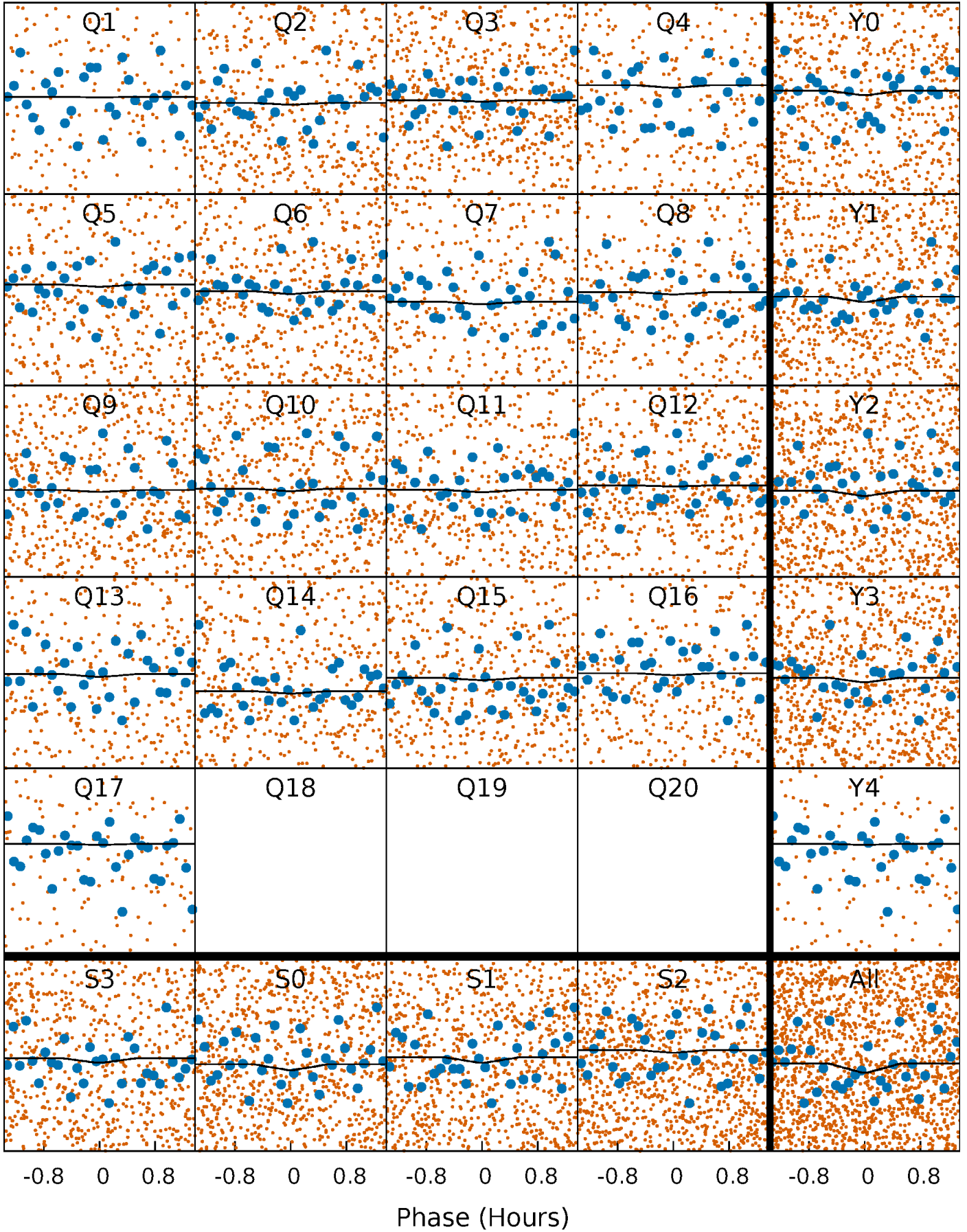
DV Quarter-Phased Transit Curves

TCE 006448666-01 P= 0.554068 Days $T_0=131.745537$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

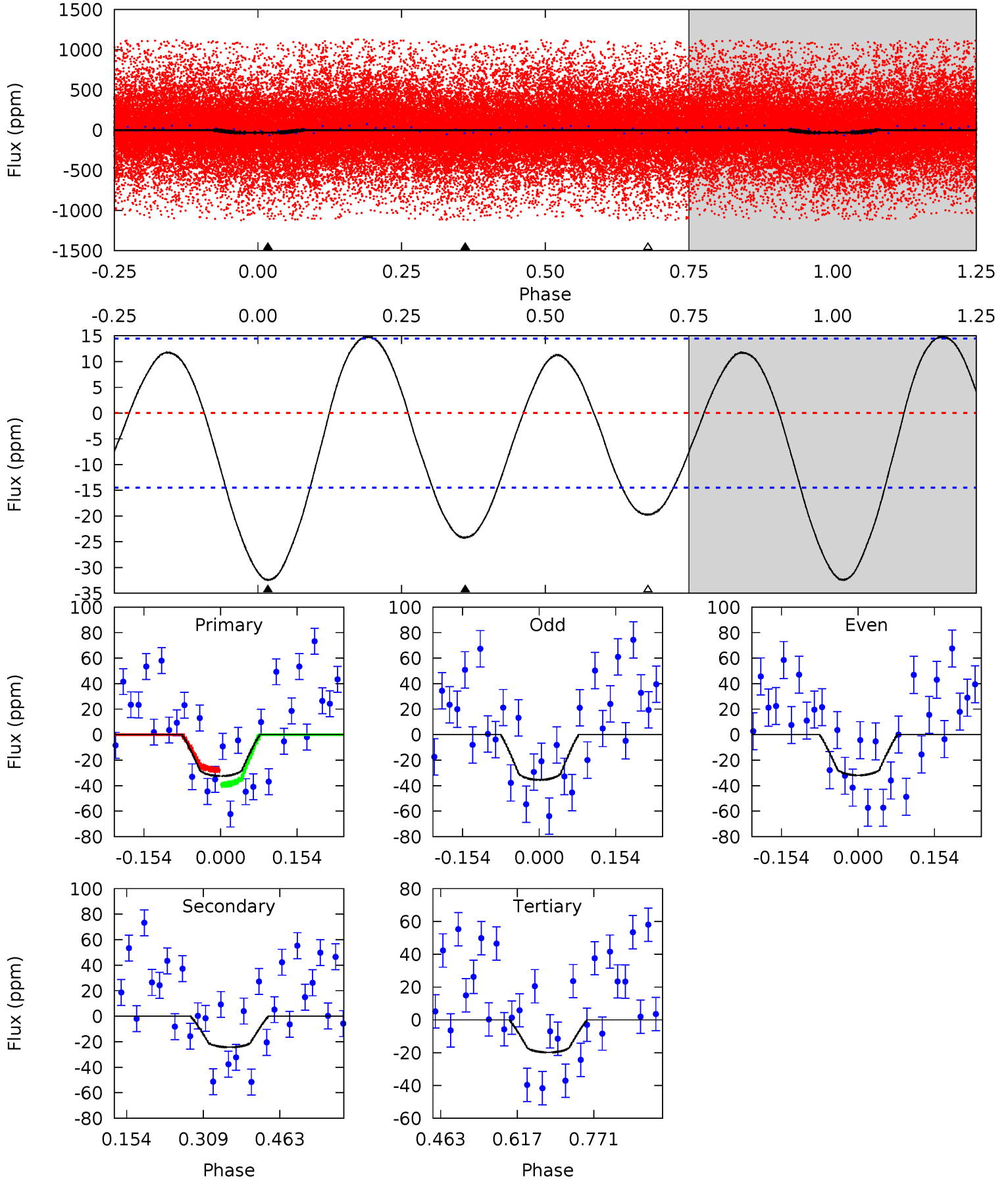
TCE 006448666-01 P= 0.554081 Days $T_0=131.739085$ (BKJD)



DV Model-Shift Uniqueness Test

006448666-01, P = 0.554068 Days, E = 131.191469 Days

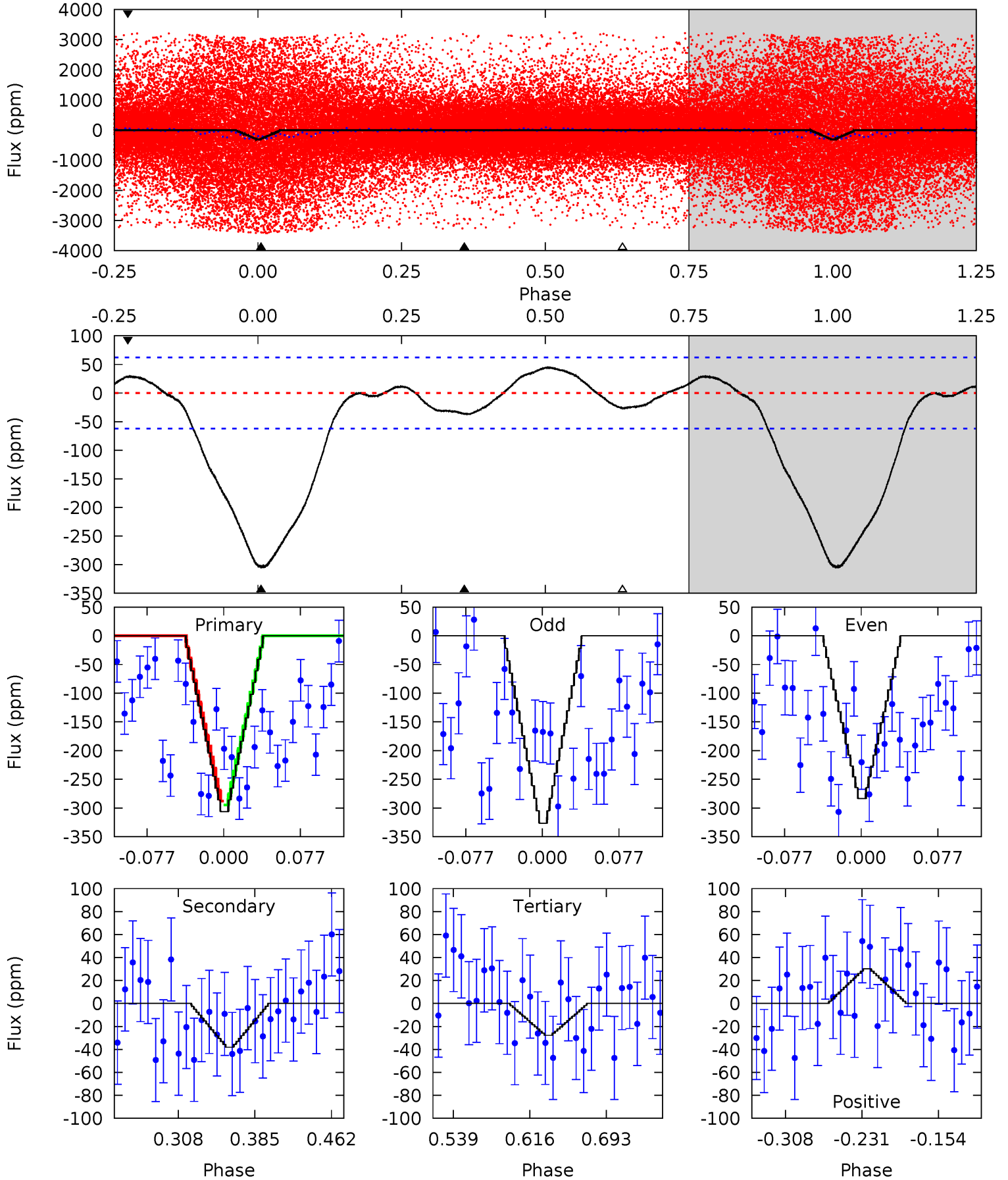
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.0	7.51	6.13	0	4.47	1.42	3.71	3.91	10.0	1.38	7.51	0.57	1.67	0.31	1.82



Alt Model-Shift Uniqueness Test

006448666-01, P = 0.554081 Days, E = 131.185004 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.8	2.84	2.06	2.24	4.62	1.77	3.47	20.7	20.5	0.77	0.60	1.61	0.24	0.13	0



Stellar Parameters For KIC 006448666

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7181^{+226}_{-301}	$3.843^{+0.592}_{-0.148}$	$-1.560^{+0.300}_{-0.250}$	$2.038^{+0.562}_{-1.043}$	$1.054^{+0.078}_{-0.144}$	$0.175^{+1.148}_{-0.088}$
	+3%/-4%	+15%/-4%	+19%/-16%	+28%/-51%	+7%/-14%	+655%/-50%
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 006448666-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-24 ± 3	$0.80^{+0.60}_{-0.48}$	5289^{+466}_{-730}	7778^{+7773}_{-2076}	$3.747^{+21.085}_{-2.523}$
Alt.	-38 ± 13	$0.99^{+0.62}_{-0.51}$	5313^{+469}_{-813}	7840^{+4966}_{-2168}	$3.826^{+11.483}_{-2.581}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

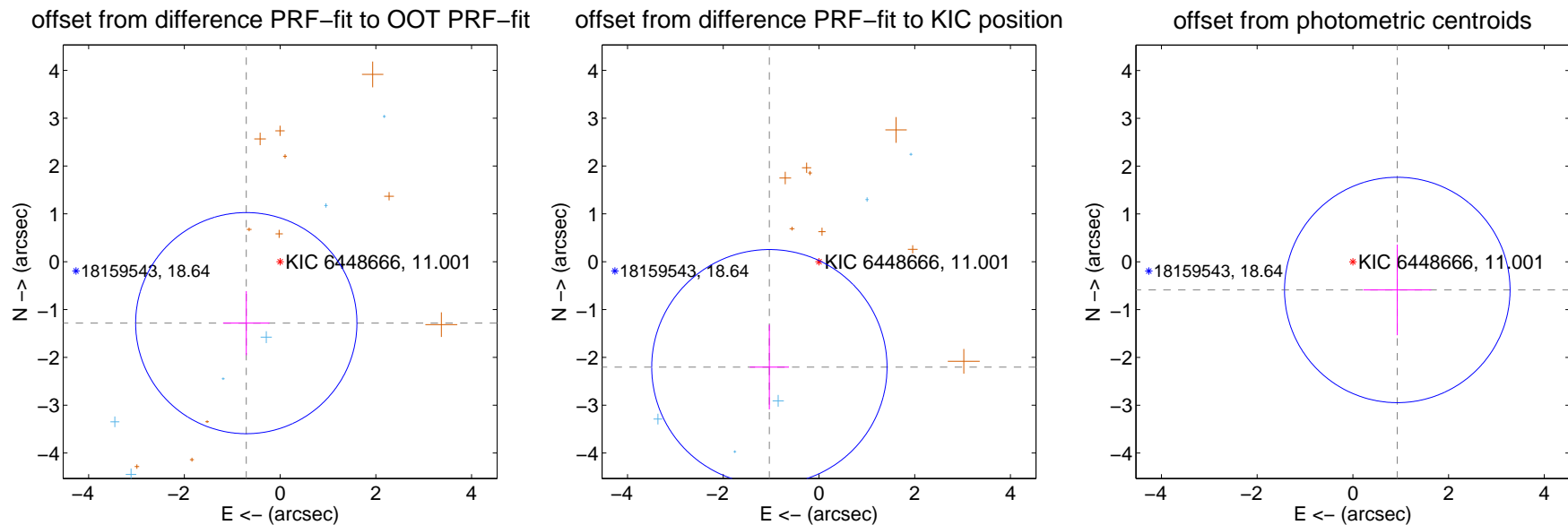
DV Centroid Data

Supplemental centroid analysis for 006448666-01. **Kepler magnitude: 11.00.** Transit SNR 5.22

There are 6 quarters with good PRF difference image offsets

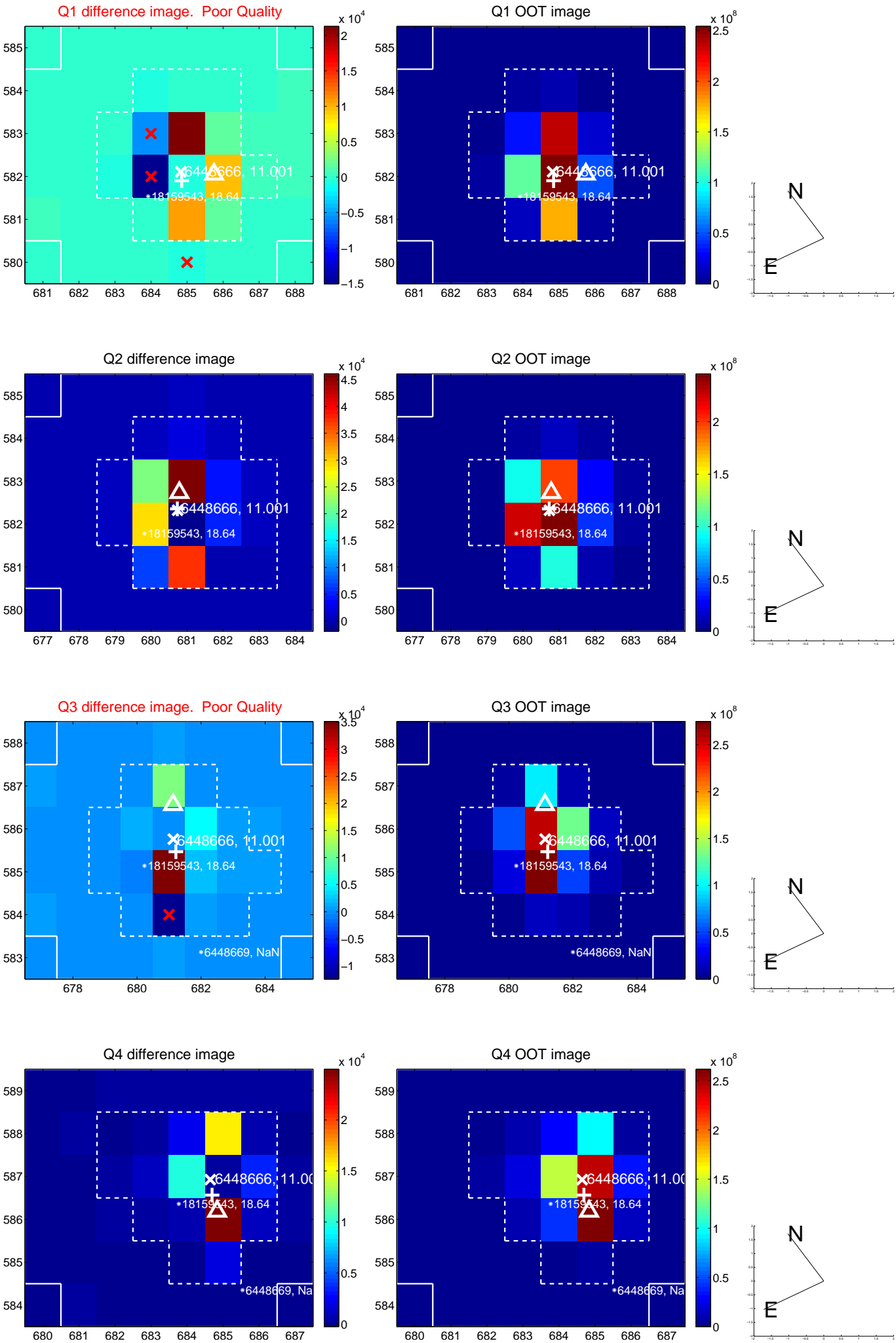
The direct PRF centroid is offset from the target star catalog position by about 0.83 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.466 ± 0.770	1.90	0.707 ± 0.485	-1.285 ± 0.670
PRF-fit source offset from KIC position	2.436 ± 0.819	2.97	1.037 ± 0.410	-2.204 ± 0.885
photometric centroid source offset	1.10 ± 0.79	1.40	-0.93 ± 0.71	-0.59 ± 0.95

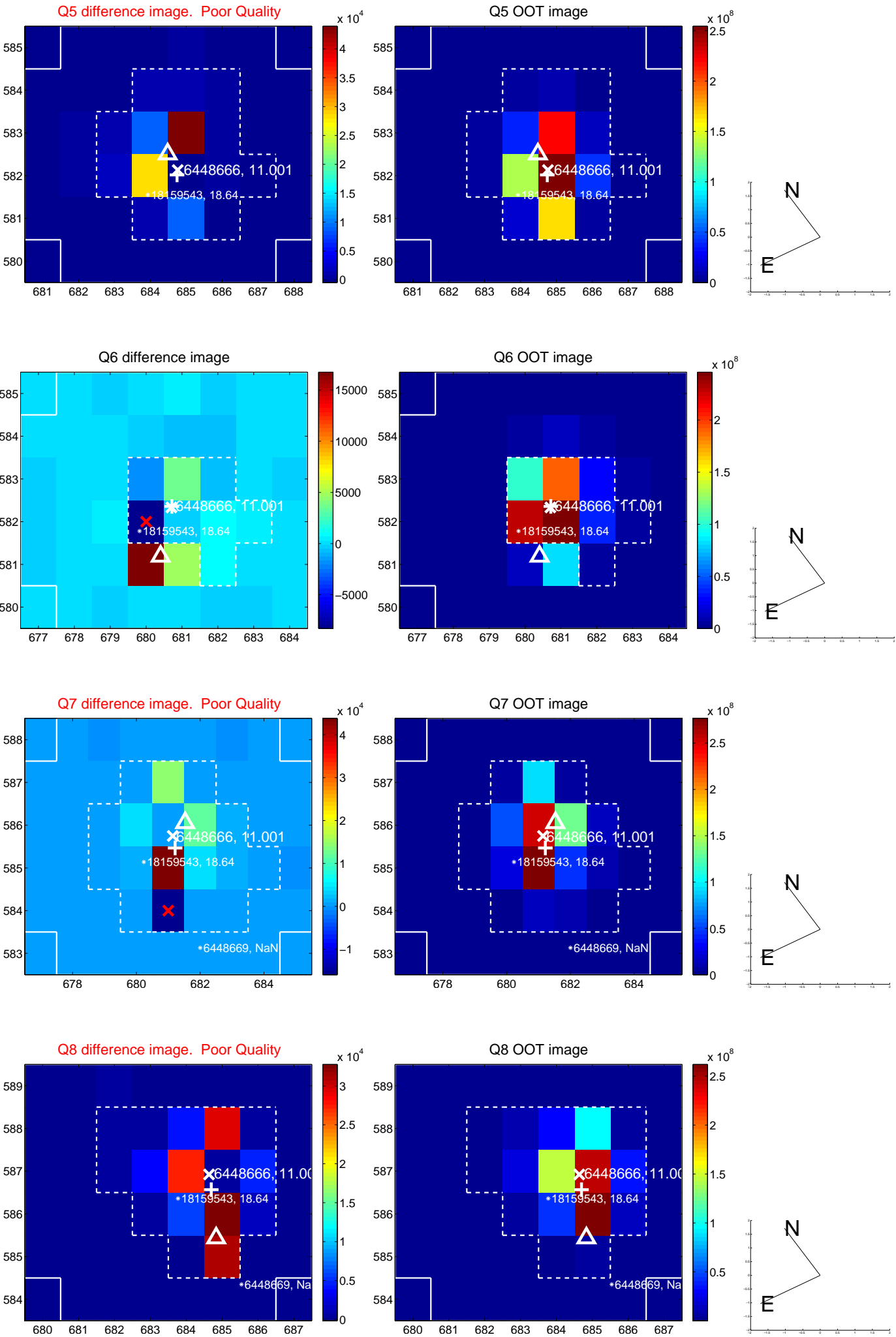


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

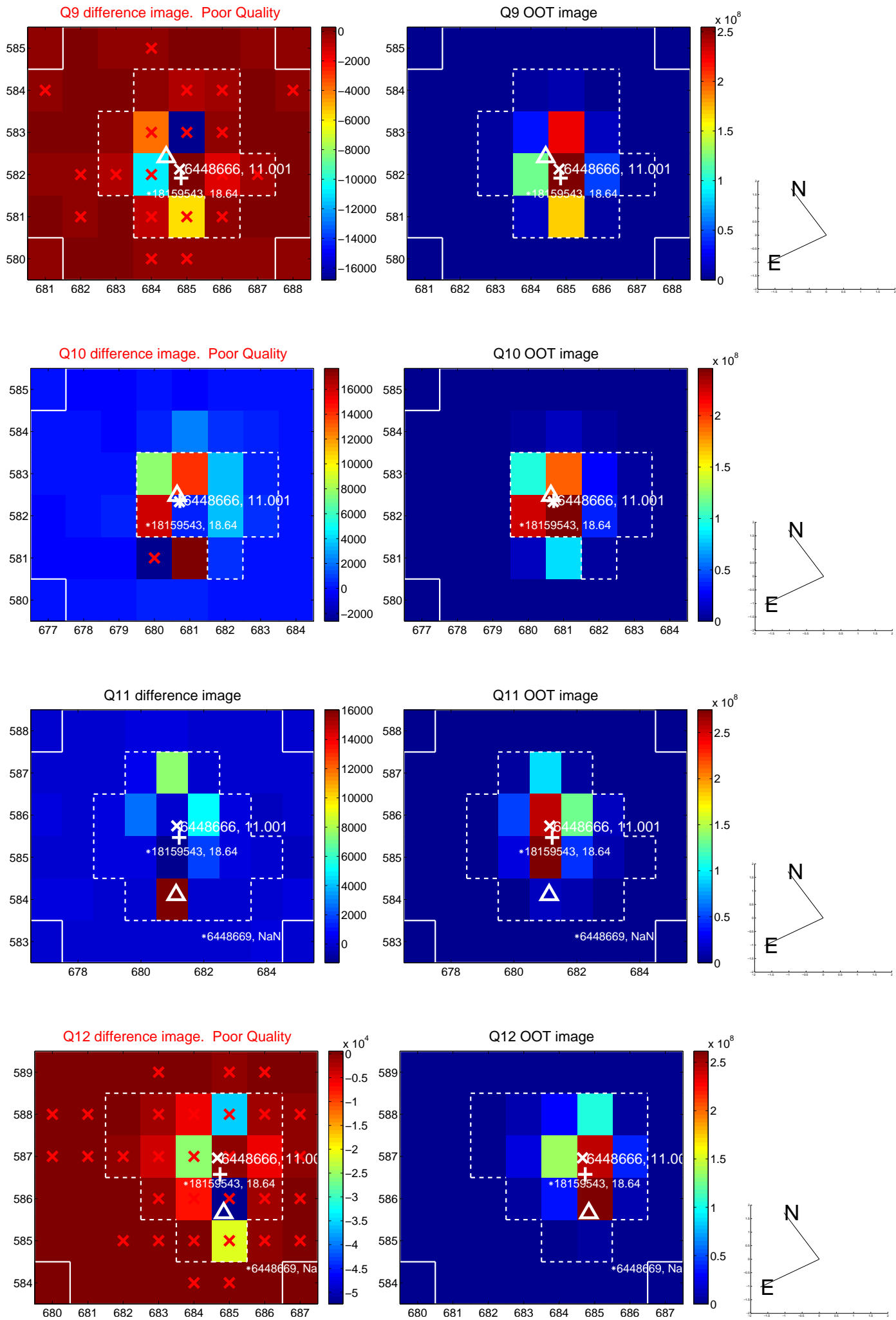
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



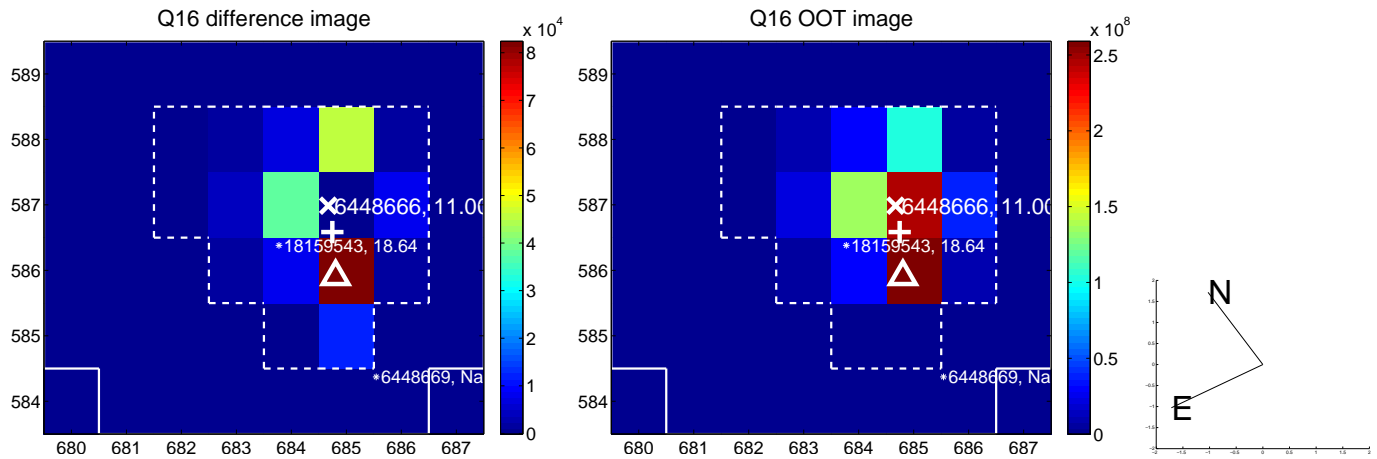
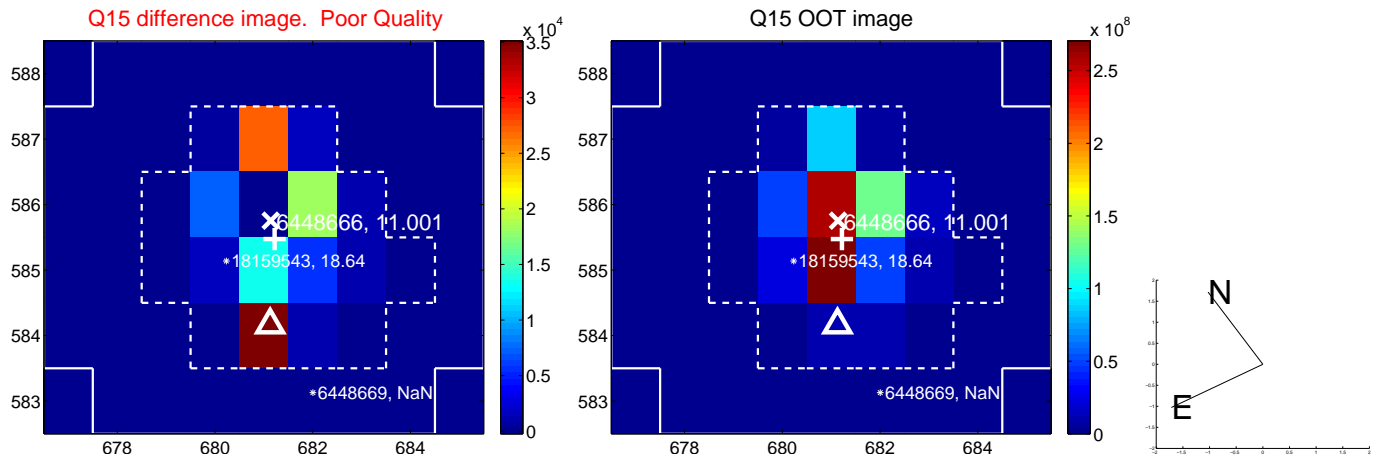
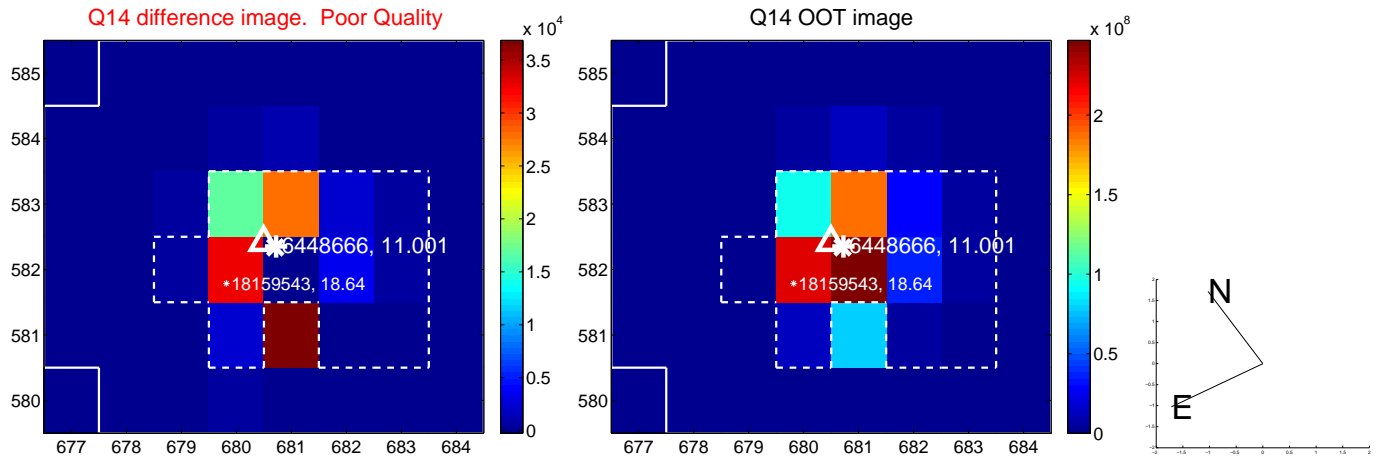
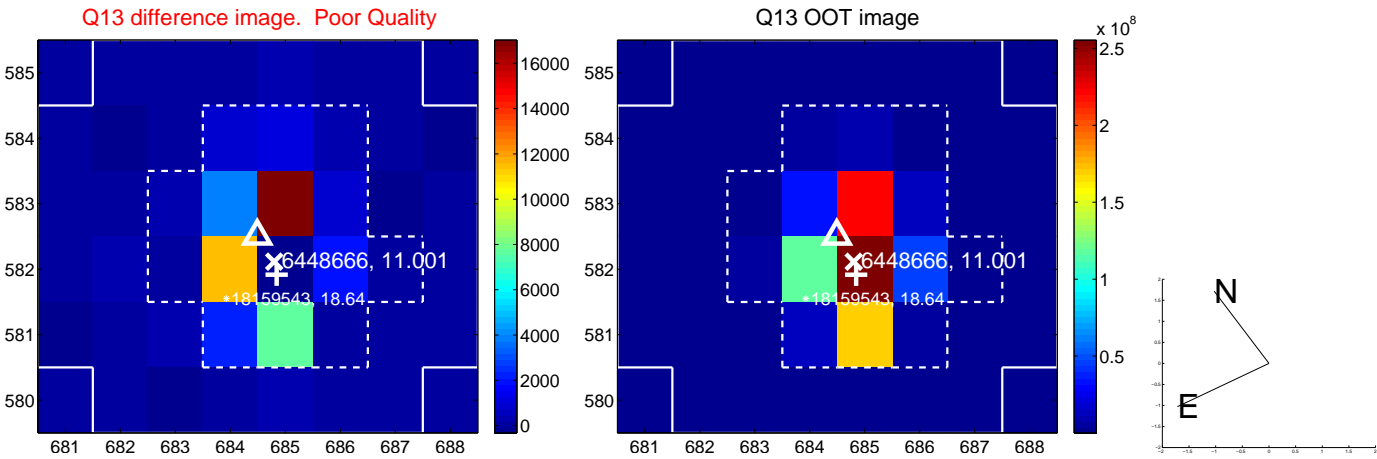
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



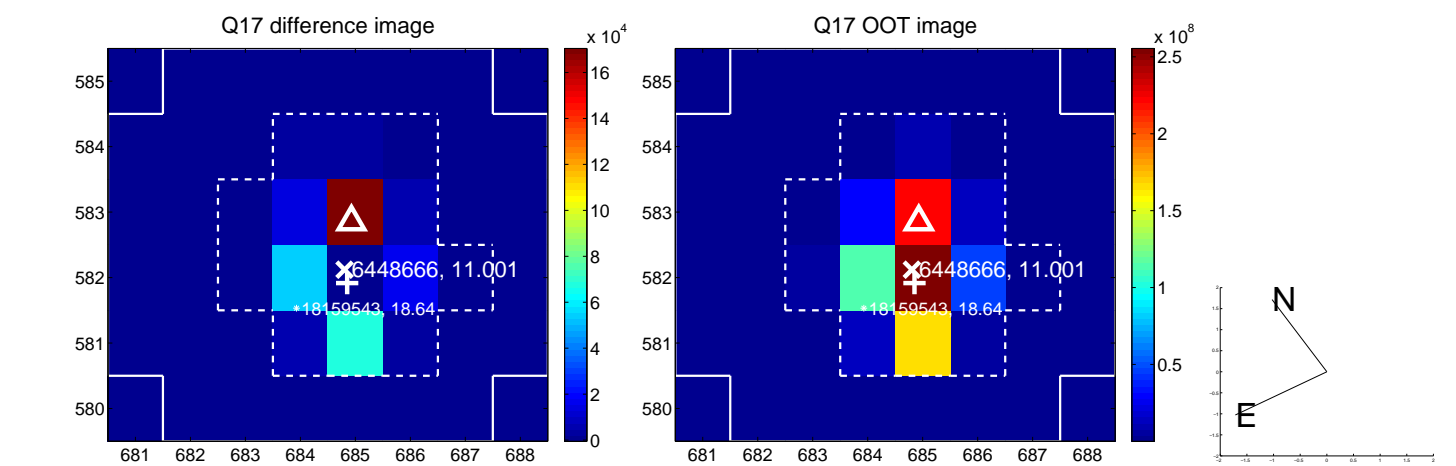
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



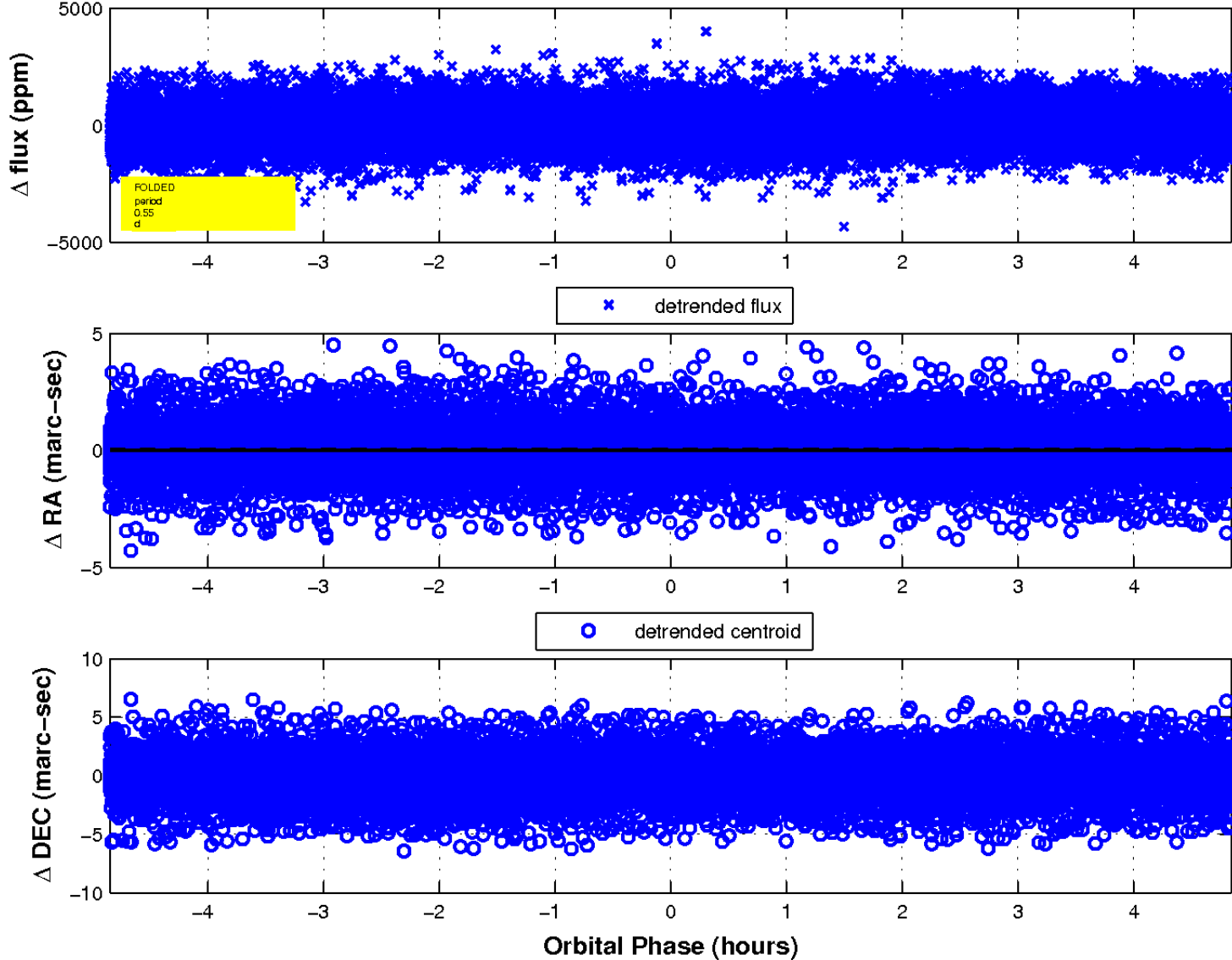
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

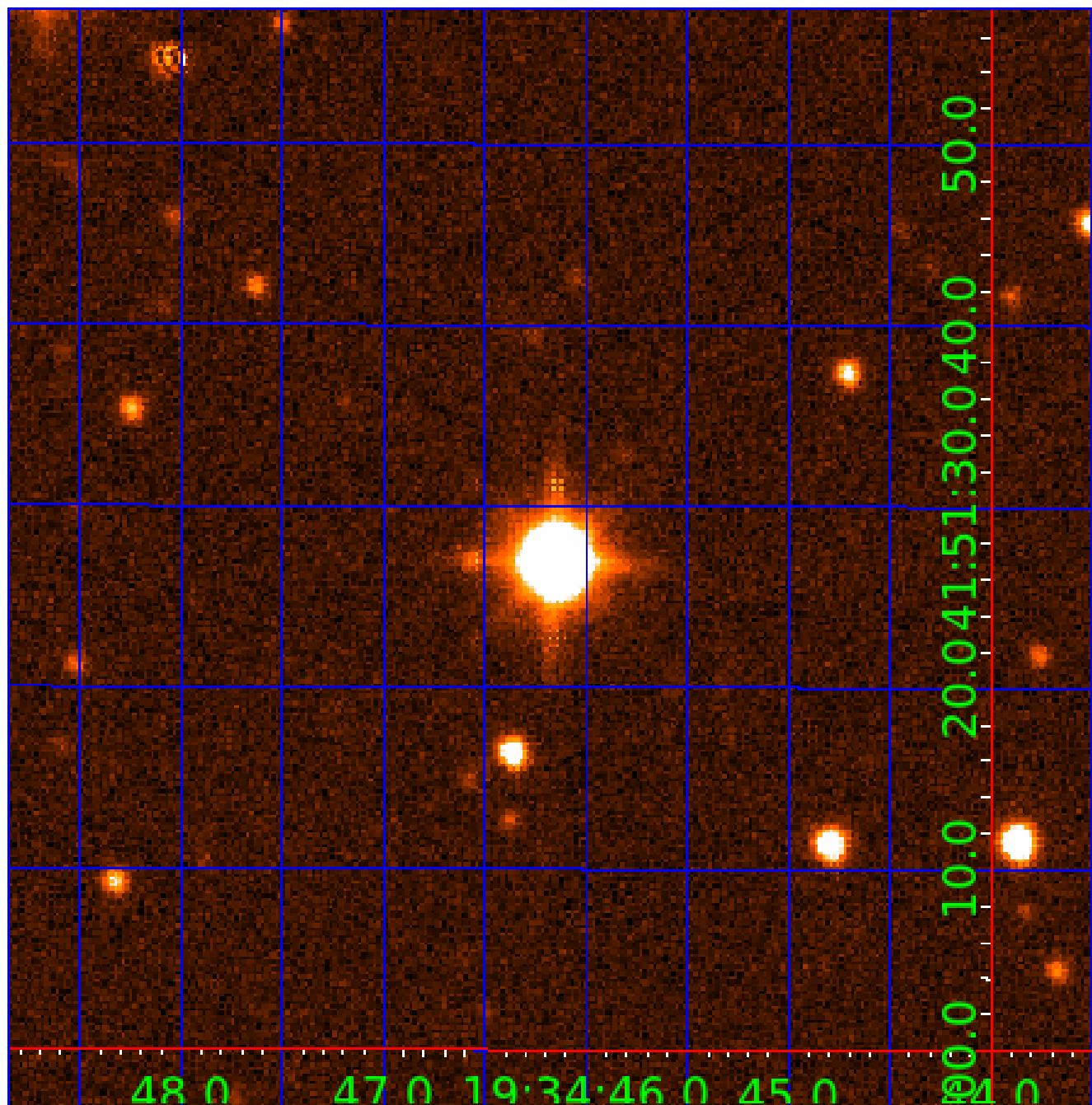


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 006448666

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})
006448666-01	OBS	No	0.554068	131.745537	15.7	1.616	9.2	5.2	2.04	7181	0.82	54746.00
006448666-02	OBS	No	0.554090	131.660471	49.2	1.307	9.0	2.7	2.04	7181	1.67	54743.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006448666-01	OBS	FP	0.00	1	0	1	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED—HALO_GHOST
006448666-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_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.

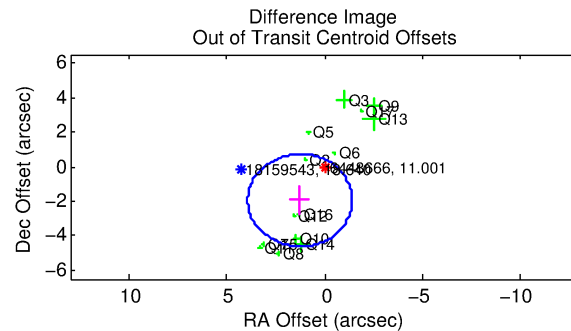
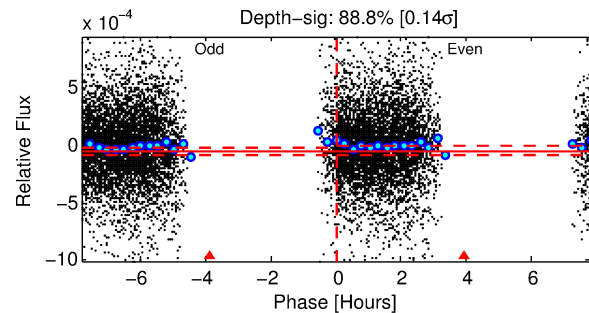
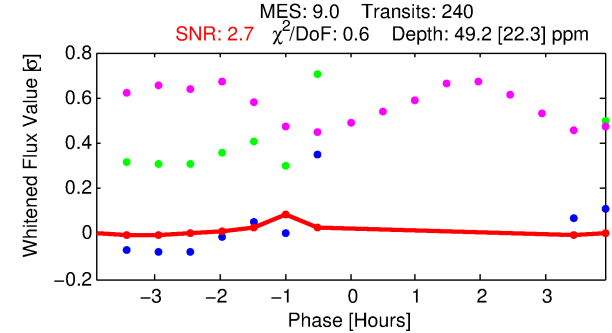
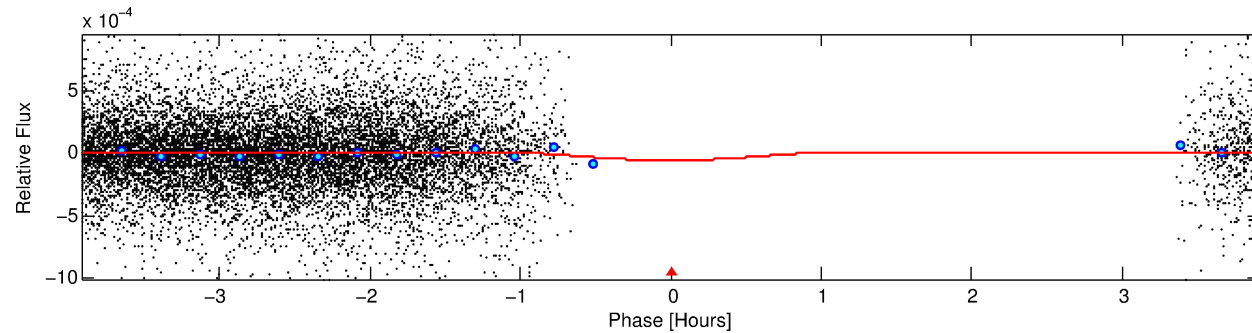
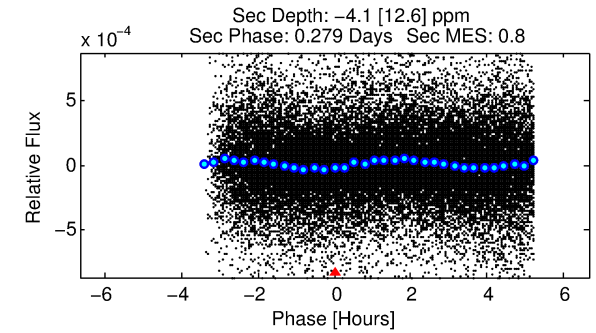
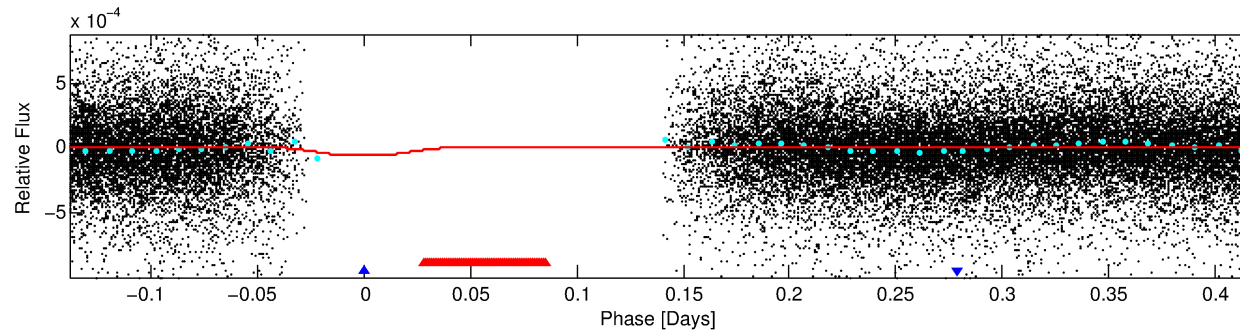
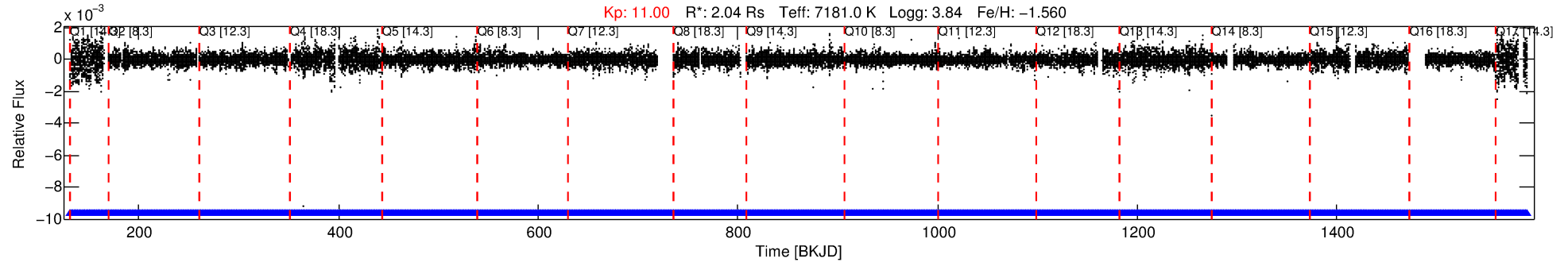
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006448666-02

No Significant Match Found

DV One-Page Summary

KIC: 6448666 Candidate: 2 of 2 Period: 0.554 d



DV Fit Results:

Period = 0.55409 [0.00002] d
Epoch = 131.6605 [0.0116] BKJD
Rp/R* = 0.0075 [0.0057]
a/R* = 1.72 [5.24]
b = 0.91 [0.96]
Seff = 54743.14 [53925.50]
Teq = 3900 [961] K
Rp = 1.67 [1.53] Re
a = 0.0134 [0.0076] AU
Ag = N/A
Teffp = N/A

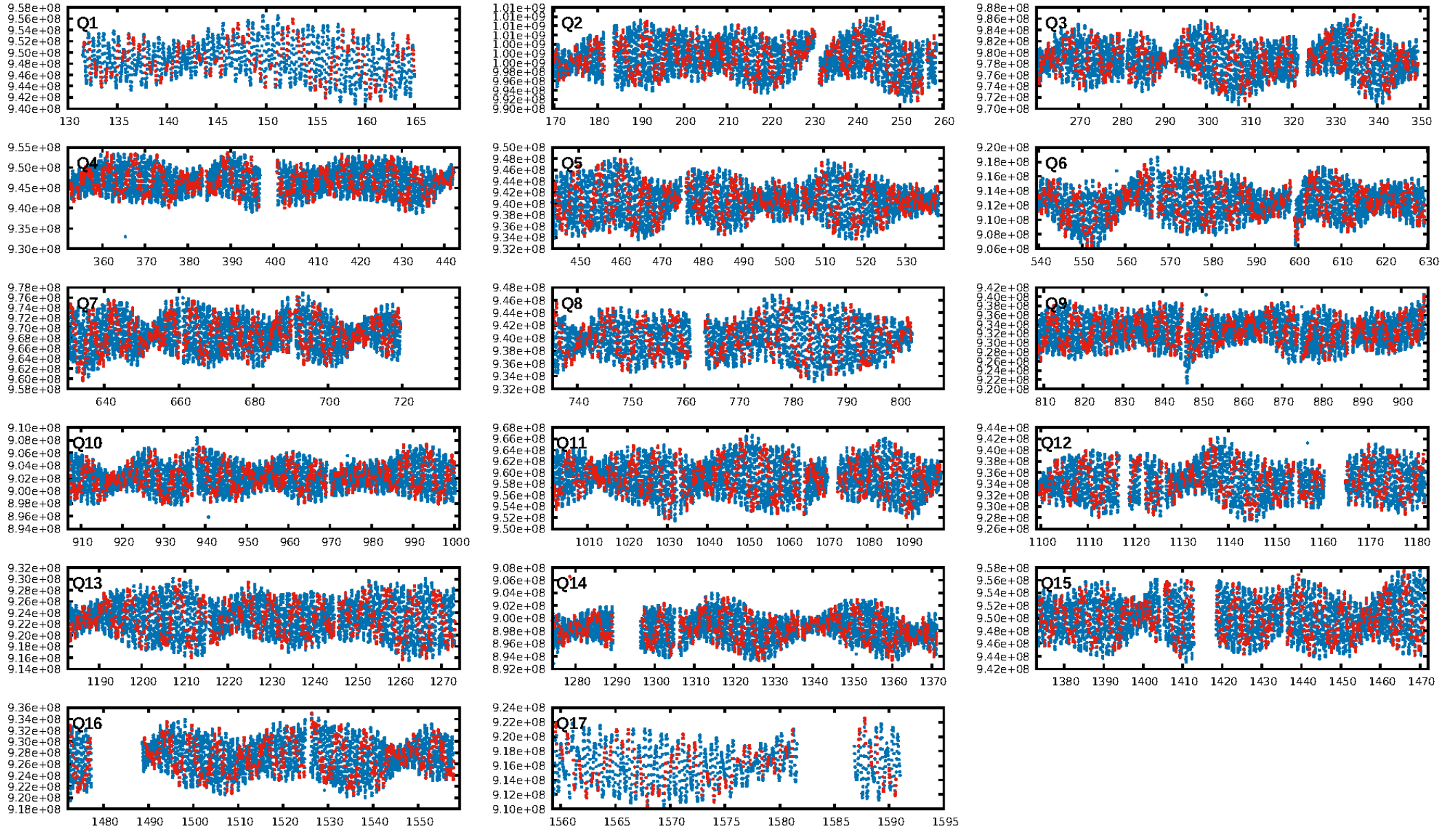
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 94.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.14e-37
RollingBand-fgt: 1.00 [196/196]
GhostDiagnostic-chr: -0.8402
Centroid-sig: N/A
Centroid-so: 0.129 arcsec [0.54σ]
OotOffset-rm: 2.320 arcsec [2.61σ]
KicOffset-rm: 5.069 arcsec [5.00σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 0.31 [5/16]
DiffImageOverlap-fno: 0.00 [0/17]

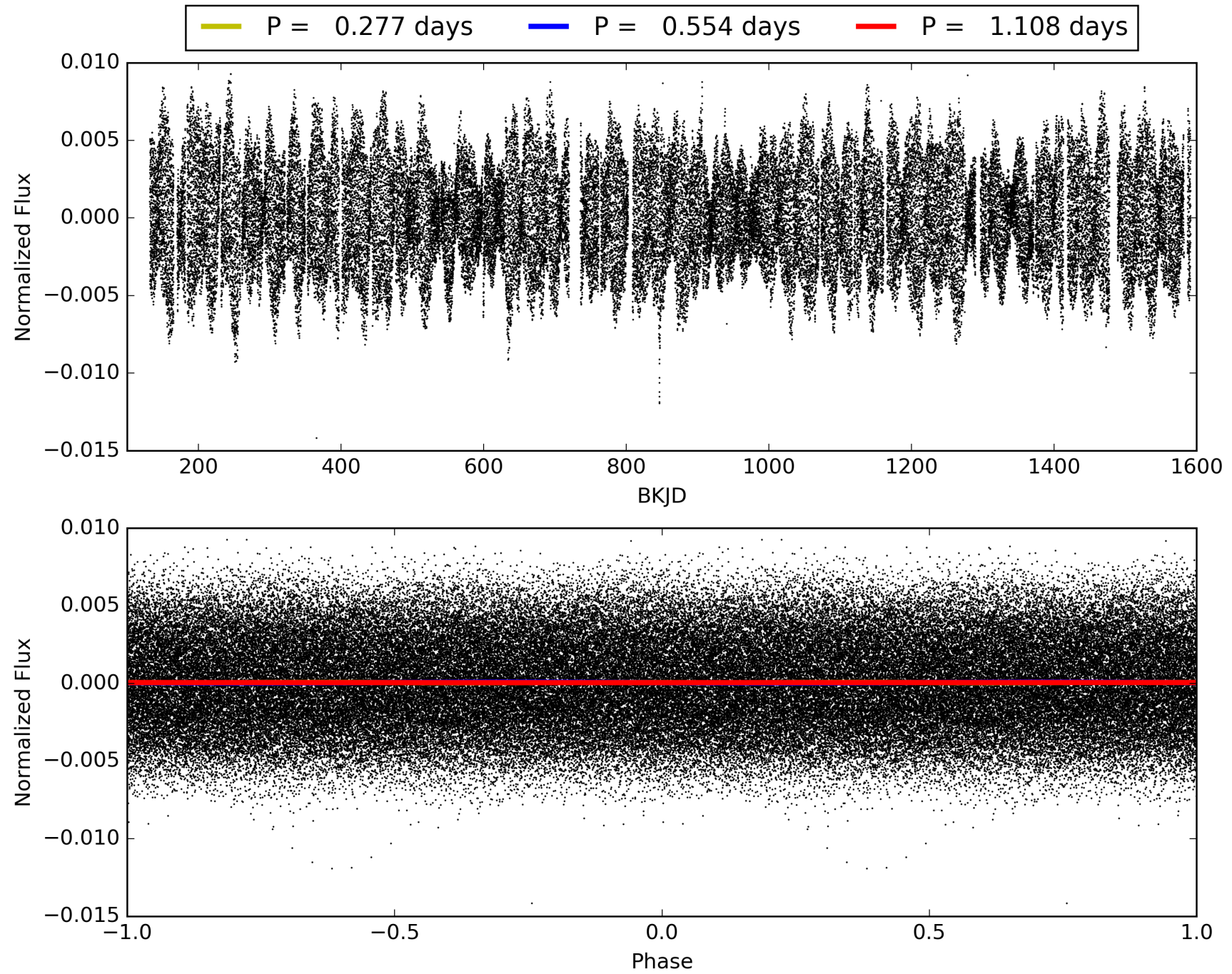
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 10:17:31 Z

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

TCE 006448666-02, PDC Light Curves

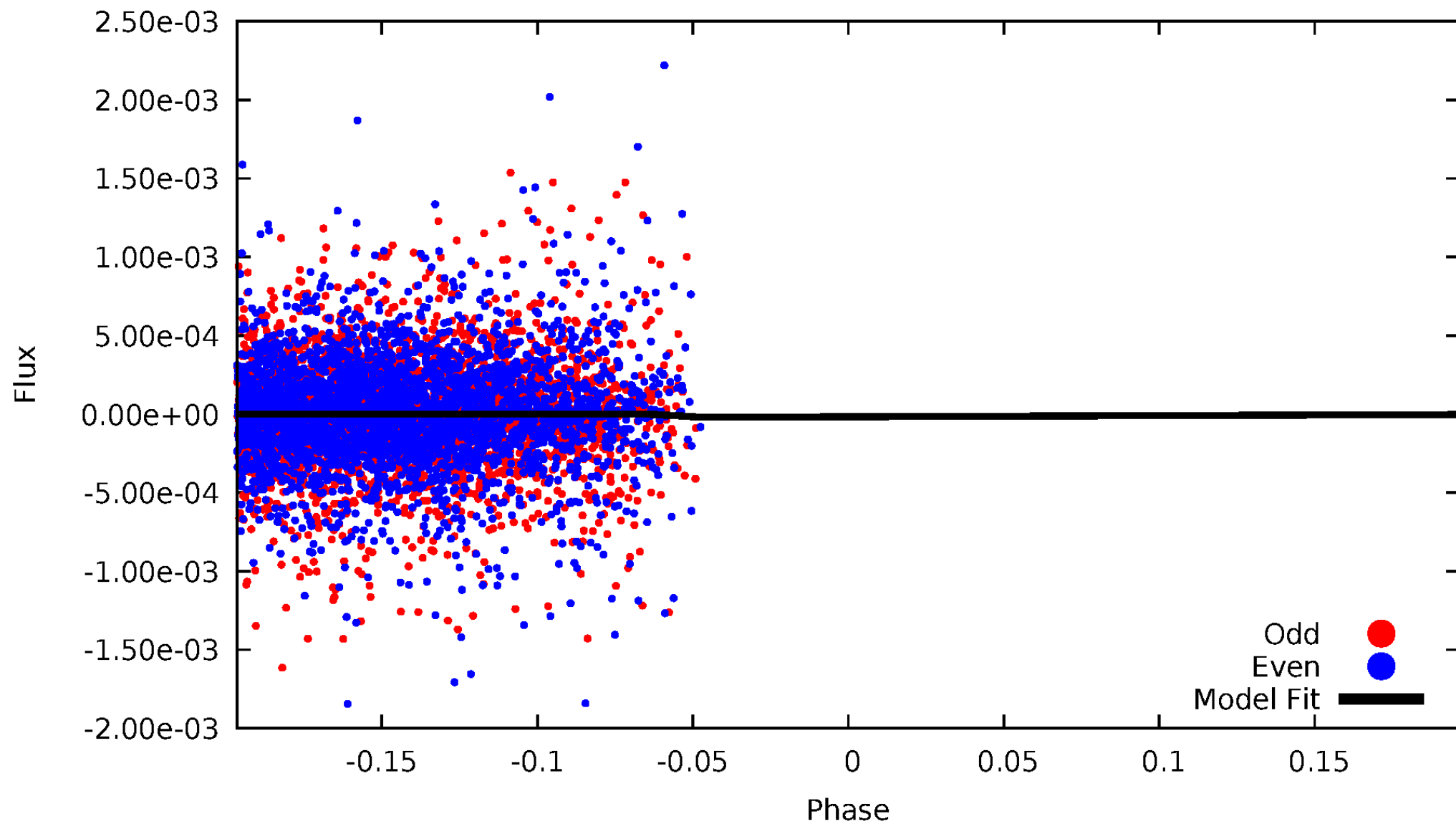


TCE 006448666-02



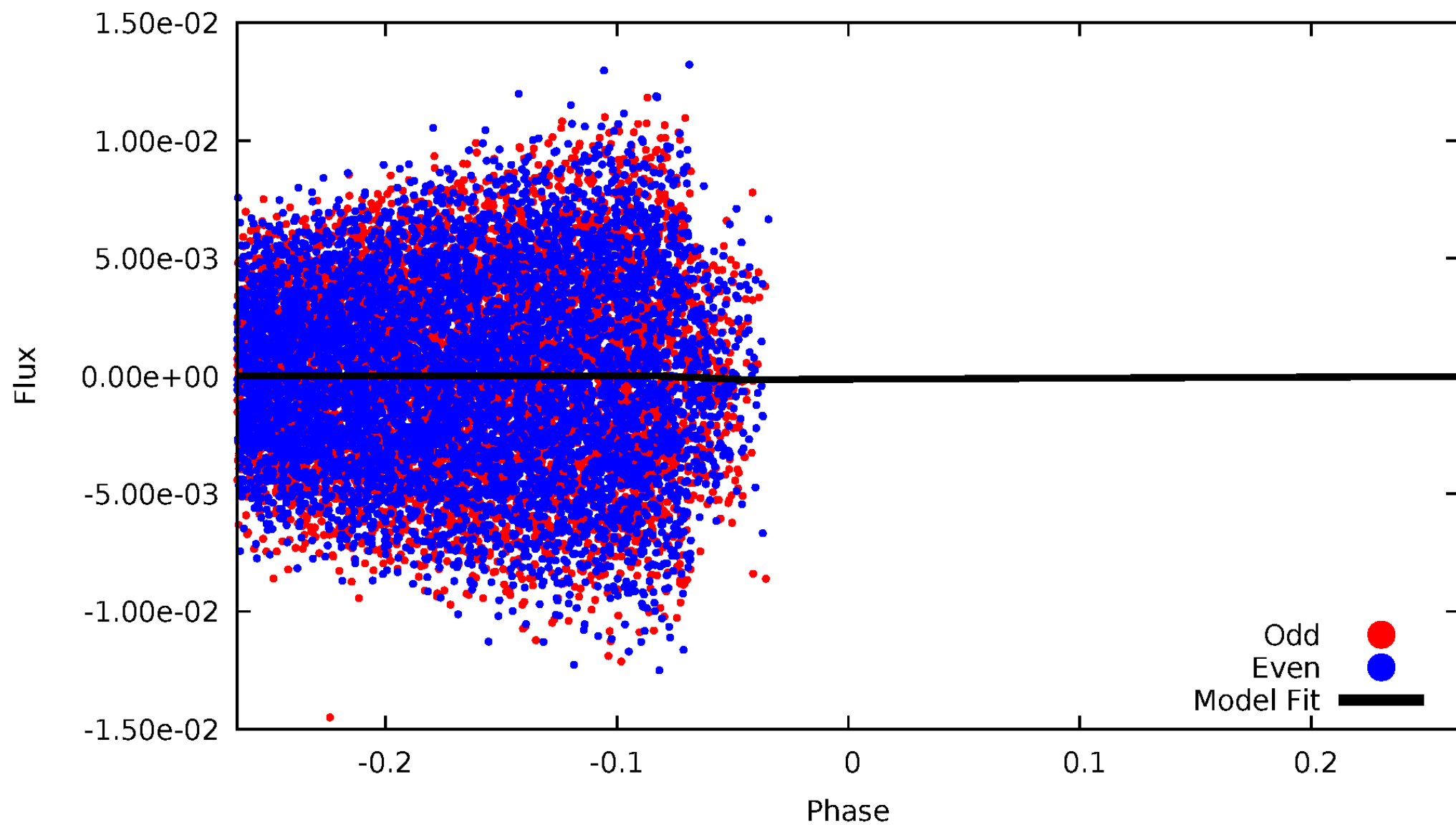
DV Odd/Even

TCE 006448666-02



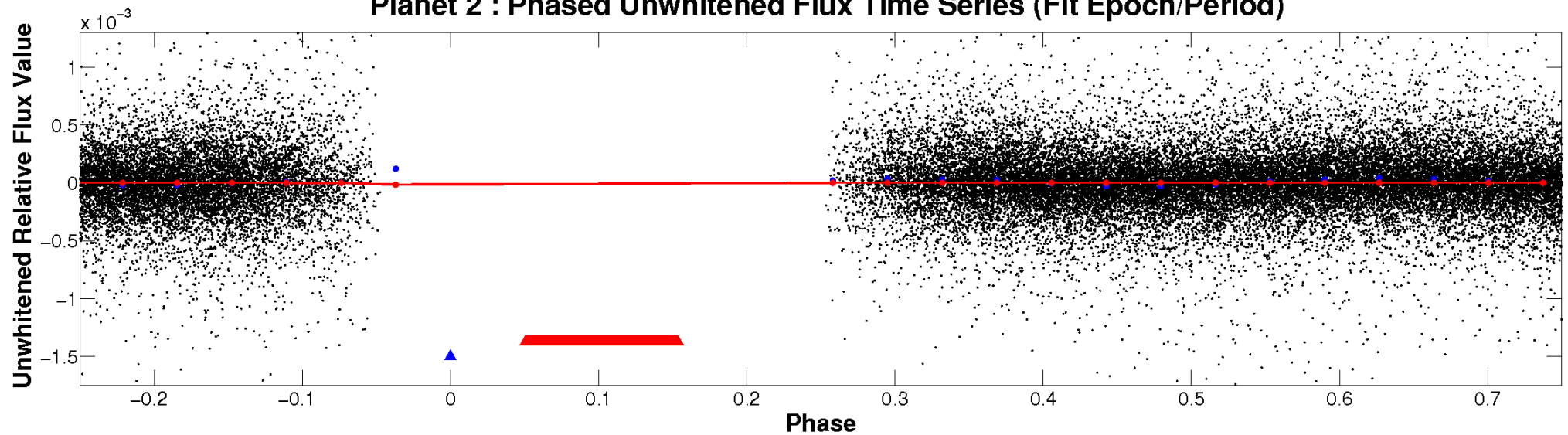
ALT Odd/Even

TCE 006448666-02

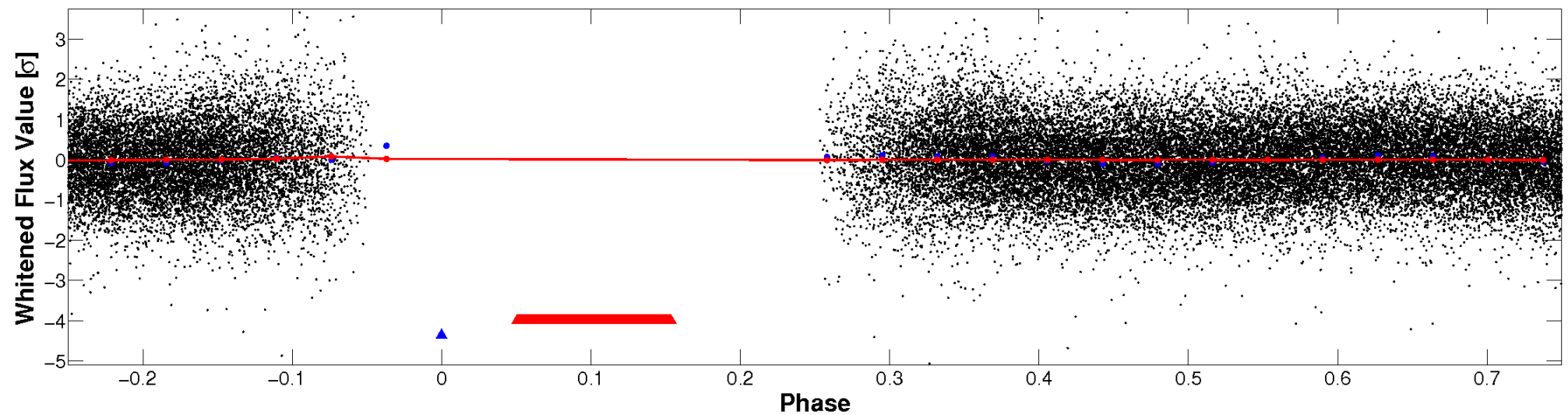


Non-Whitened Vs. Whitened Light Curve

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

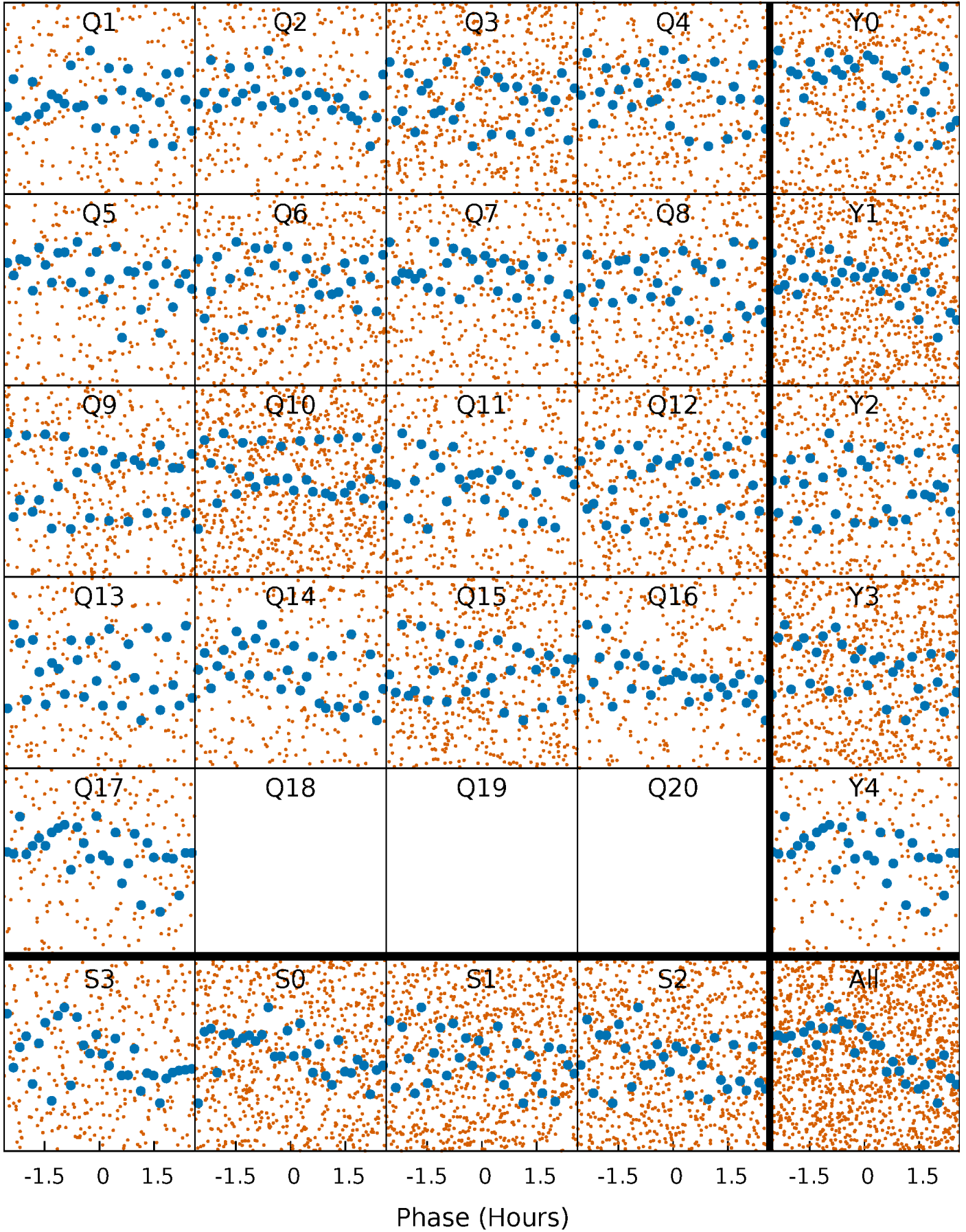


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



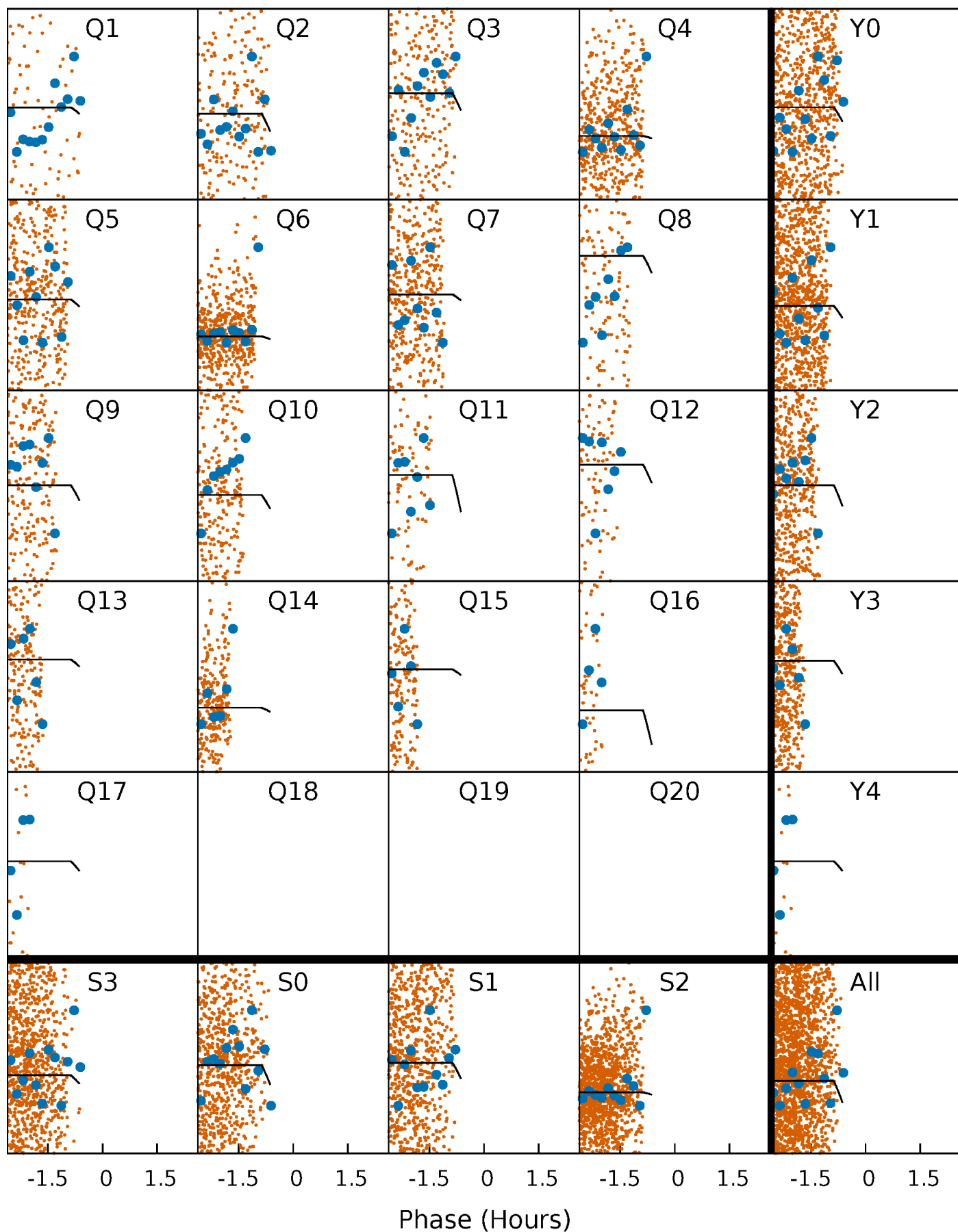
PDC Quarter-Phased Transit Curves

TCE 006448666-02 P= 0.554090 Days $T_0=131.660471$ (BKJD)



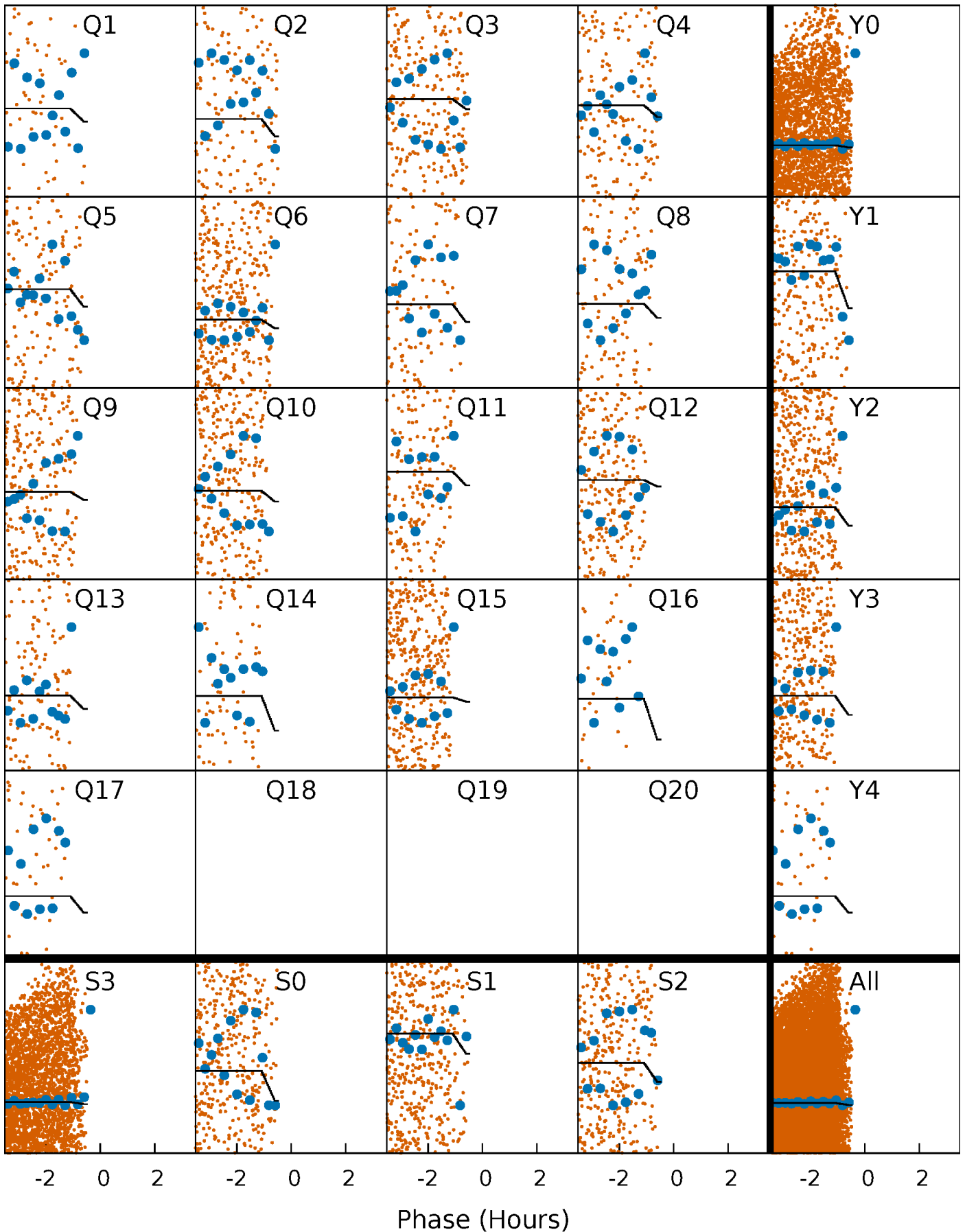
DV Quarter-Phased Transit Curves

TCE 006448666-02 P= 0.554090 Days $T_0=131.660471$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

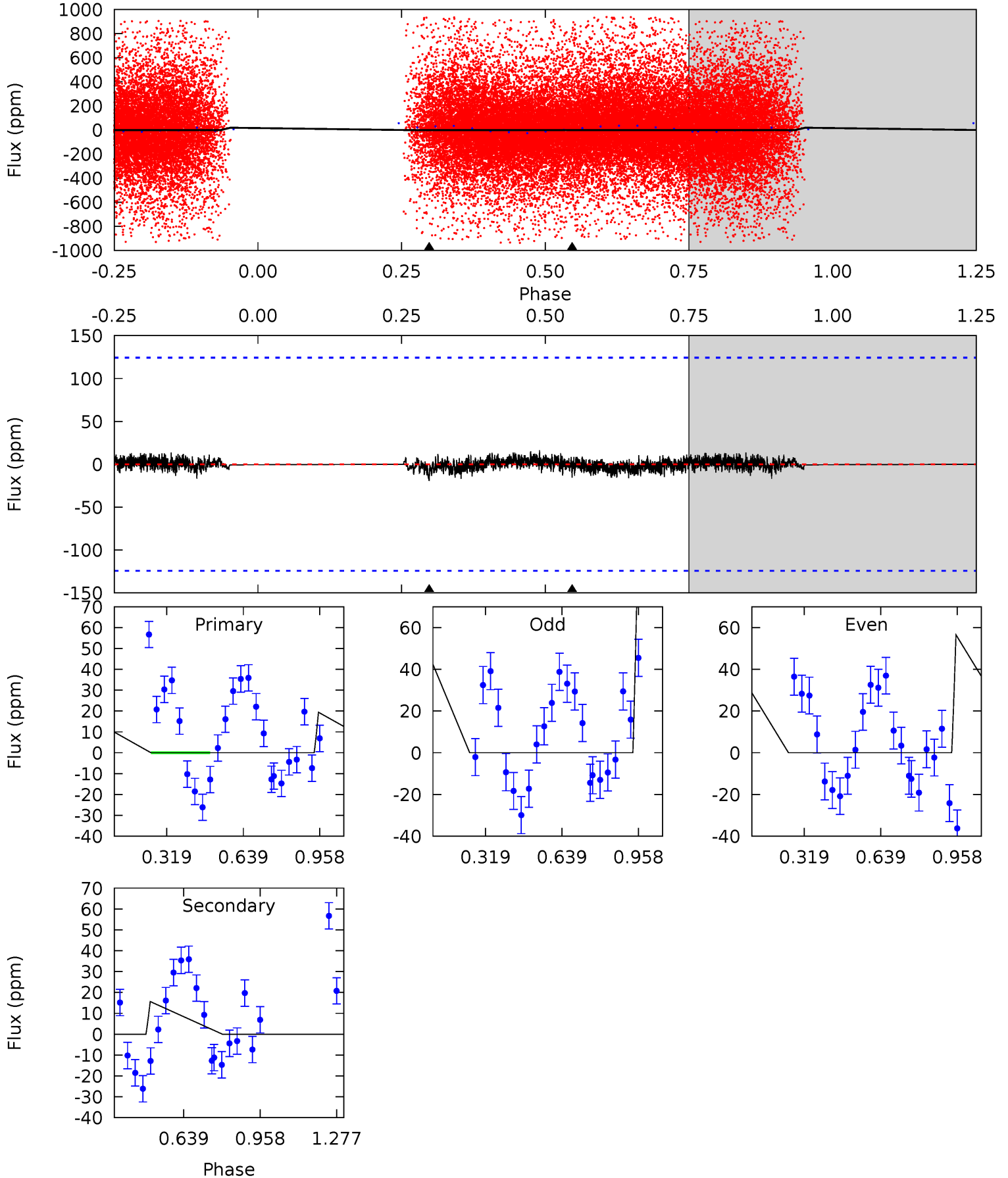
TCE 006448666-02 P= 0.554081 Days $T_0=131.653330$ (BKJD)



DV Model-Shift Uniqueness Test

006448666-02, P = 0.554090 Days, E = 131.106381 Days

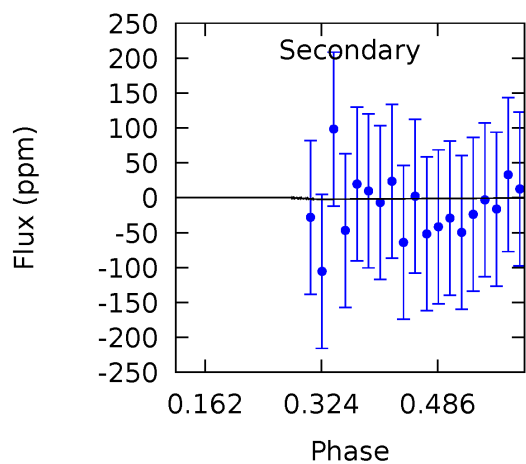
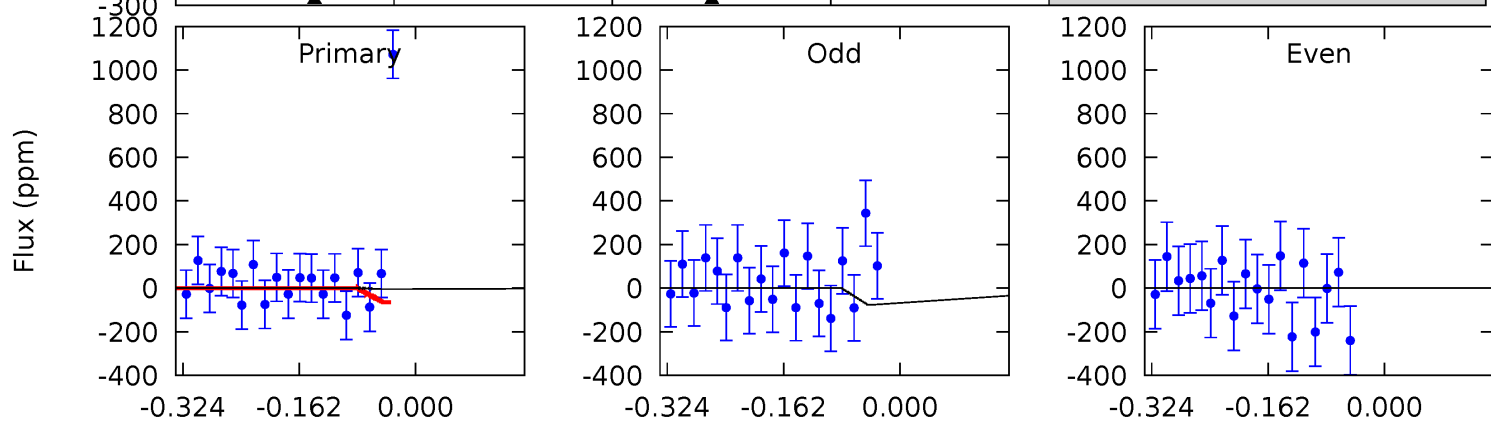
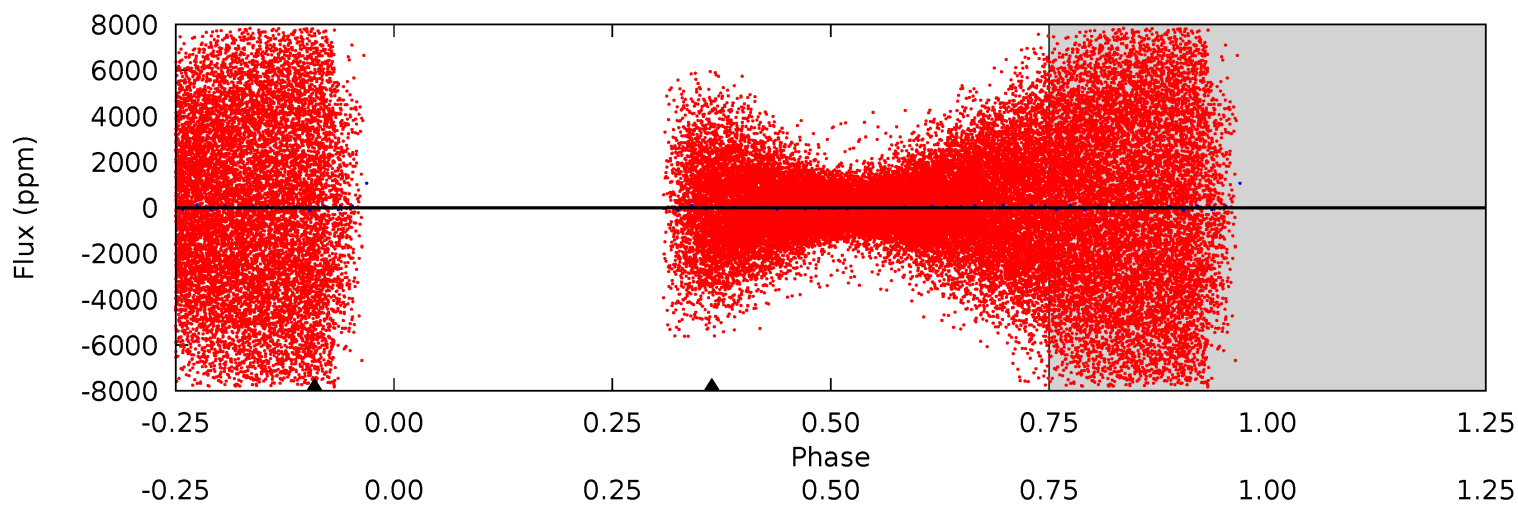
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.67	0.54	0	0	4.31	1.00	0.15	0.67	0.67	0.54	0.54	0.50	0	0.46	0



Alt Model-Shift Uniqueness Test

006448666-02, P = 0.554081 Days, E = 131.099249 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.09	0.04	0	0	4.46	1.40	0.01	0.09	0.09	0.04	0.04	0	0	0.42	0



Stellar Parameters For KIC 006448666

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7181^{+226}_{-301}	$3.843^{+0.592}_{-0.148}$	$-1.560^{+0.300}_{-0.250}$	$2.038^{+0.562}_{-1.043}$	$1.054^{+0.078}_{-0.144}$	$0.175^{+1.148}_{-0.088}$
	+3%/-4%	+15%/-4%	+19%/-16%	+28%/-51%	+7%/-14%	+655%/-50%
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 006448666-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-16 ± 29	$1.57^{+1.27}_{-0.87}$	5280^{+483}_{-756}	3968^{+3638}_{-9379}	$0.456^{+3.290}_{-0.886}$
Alt.	-2 ± 58	$2.46^{+1.38}_{-1.21}$	5253^{+508}_{-784}	-4338^{+10055}_{-1873}	$0.021^{+1.542}_{-1.206}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

DV Centroid Data

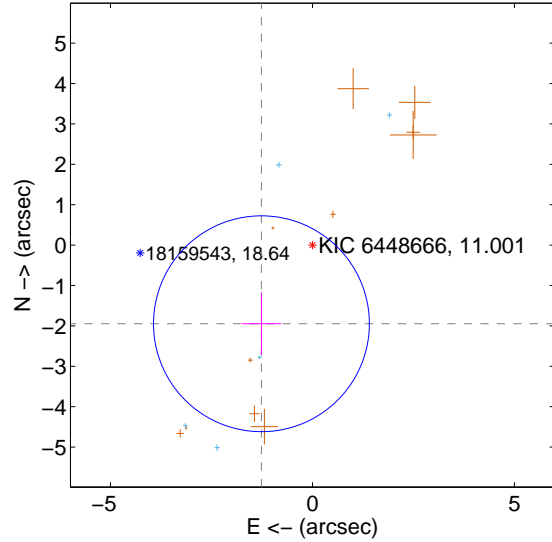
Supplemental centroid analysis for 006448666-02. **Kepler magnitude: 11.00.** Transit SNR 2.65

There are 5 quarters with good PRF difference image offsets

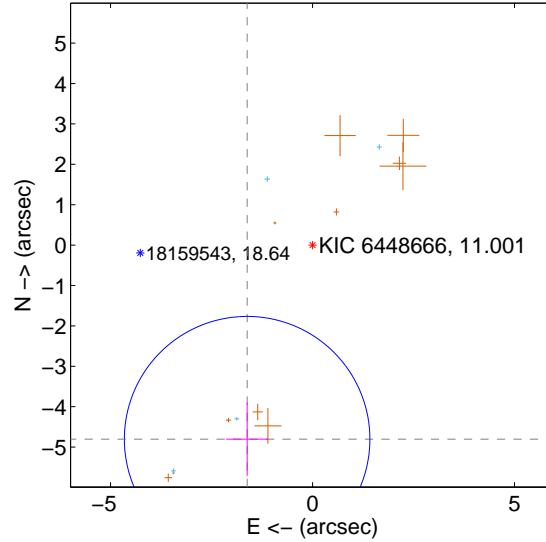
The direct PRF centroid is offset from the target star catalog position by about 0.83 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.320 ± 0.890	2.61	1.263 ± 0.485	-1.947 ± 0.777
PRF-fit source offset from KIC position	5.069 ± 1.013	5.00	1.619 ± 0.518	-4.804 ± 0.908
photometric centroid source offset	0.13 ± 0.24	0.54	-0.13 ± 0.24	0.00 ± 0.31

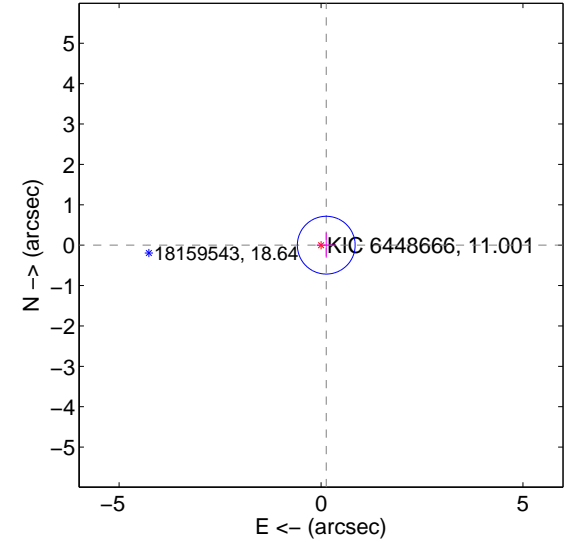
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

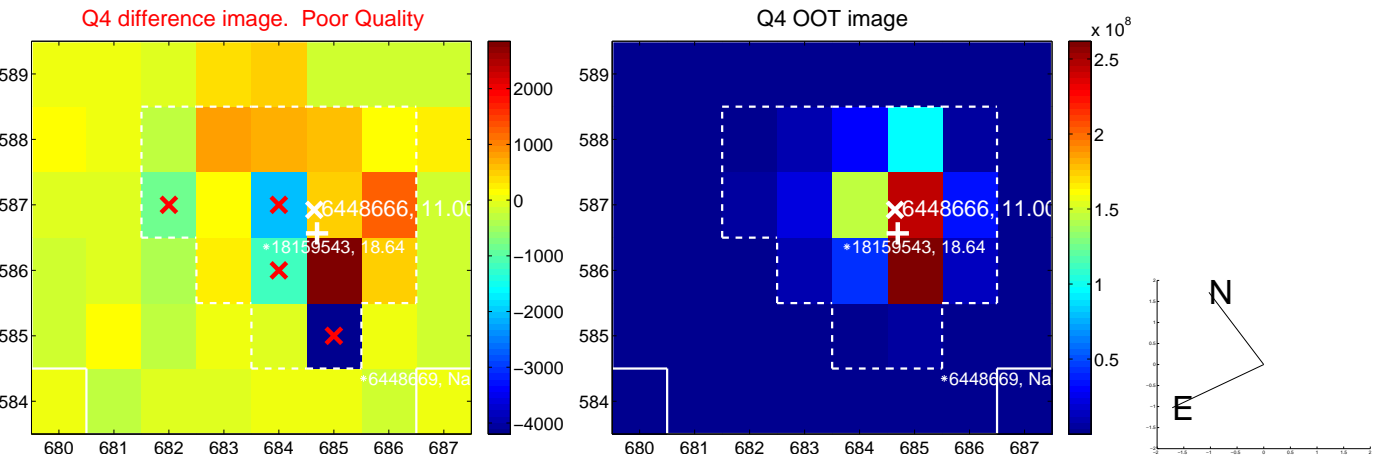
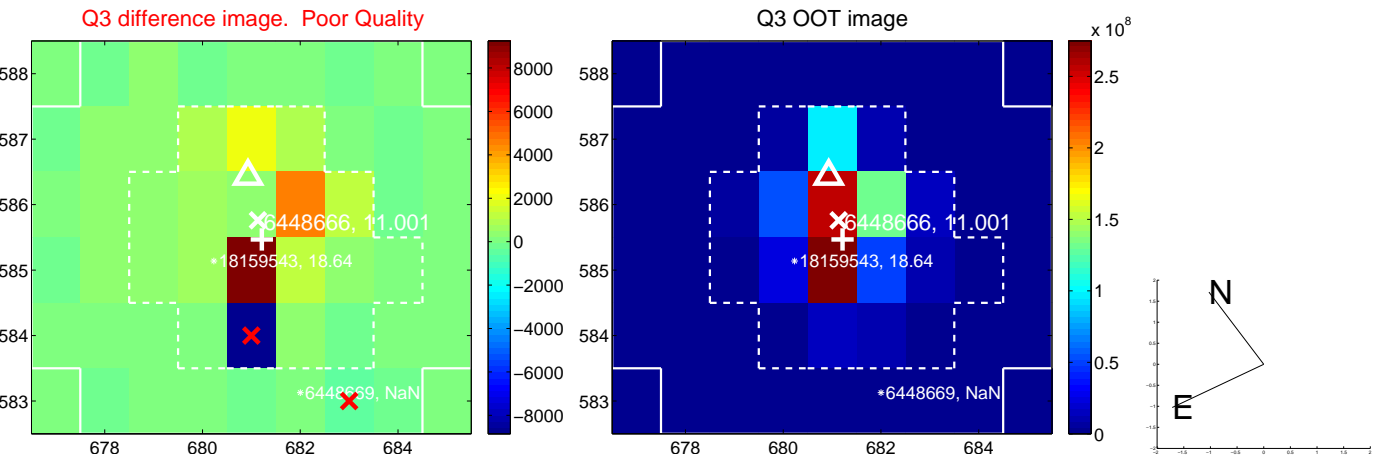
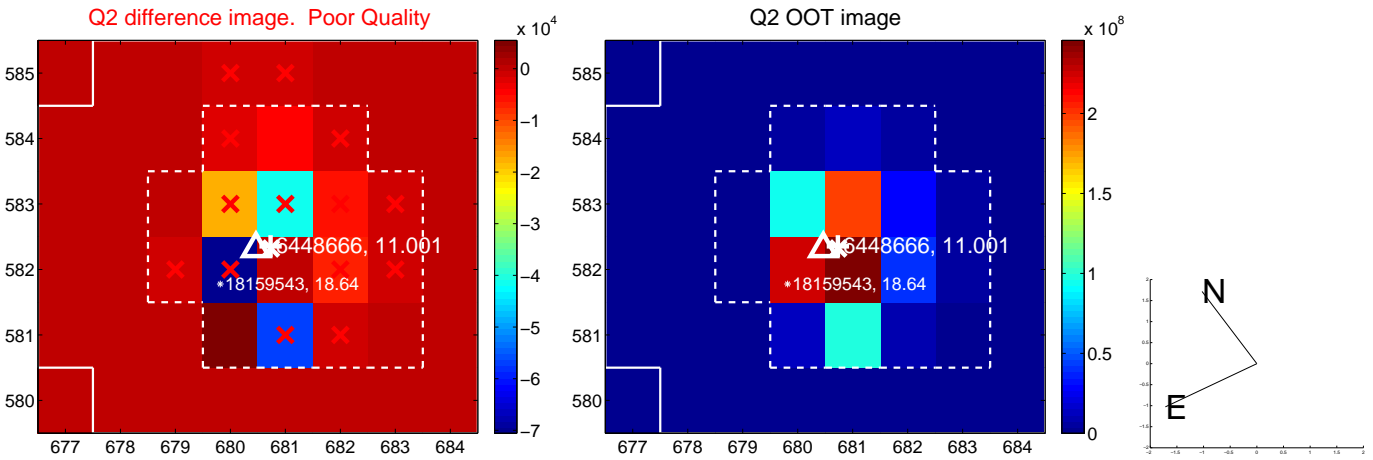
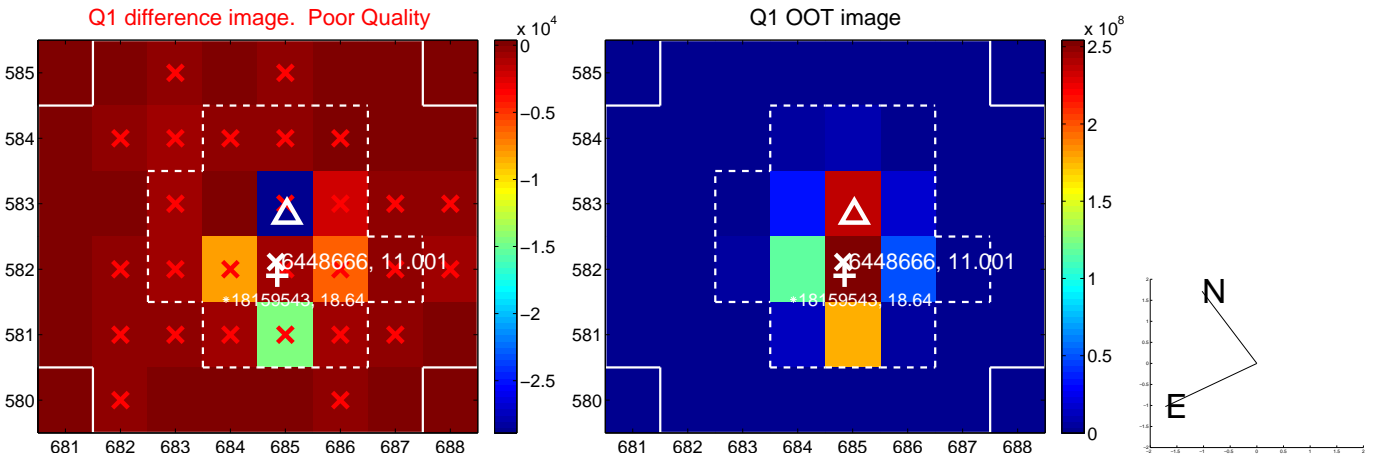


offset from photometric centroids

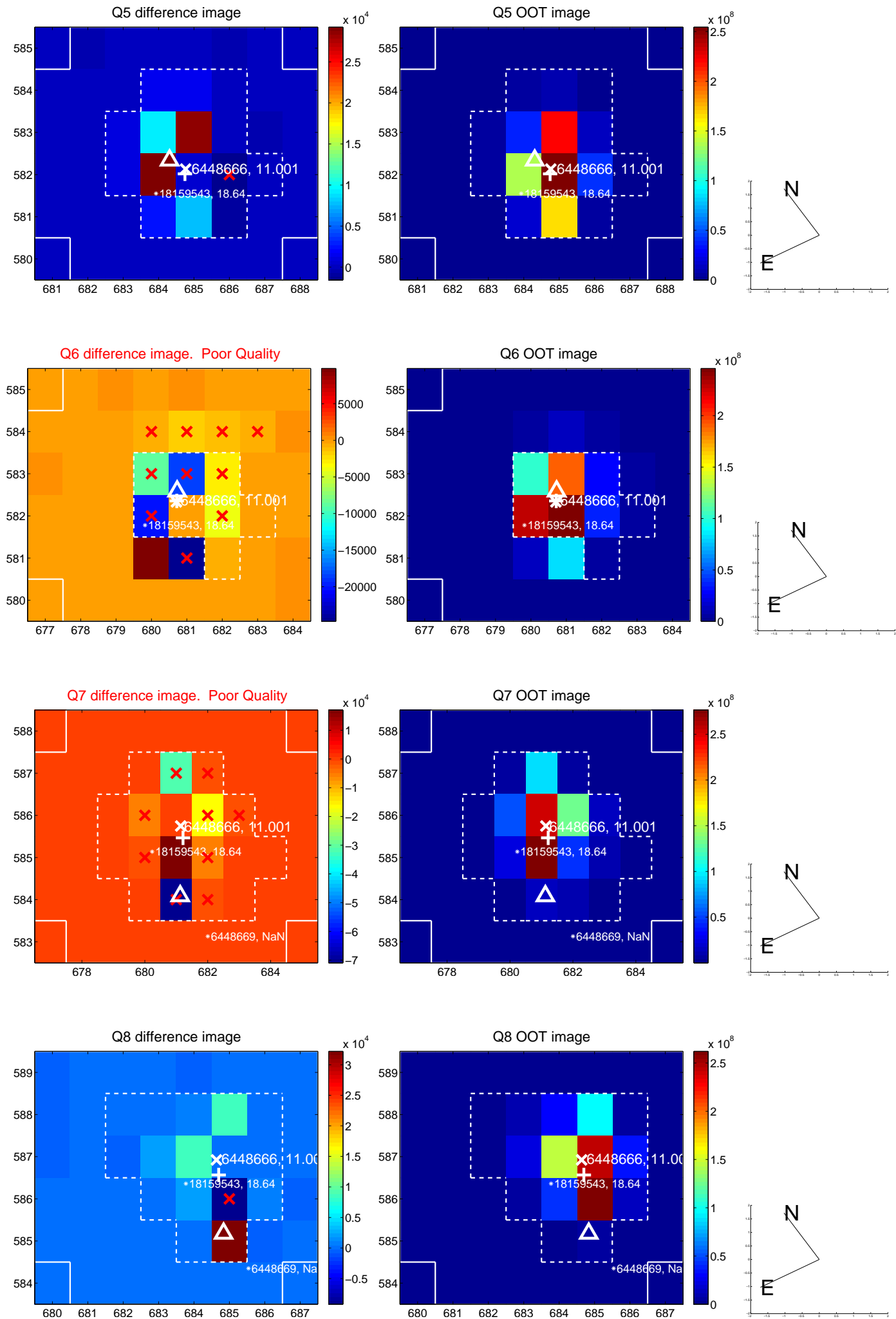


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

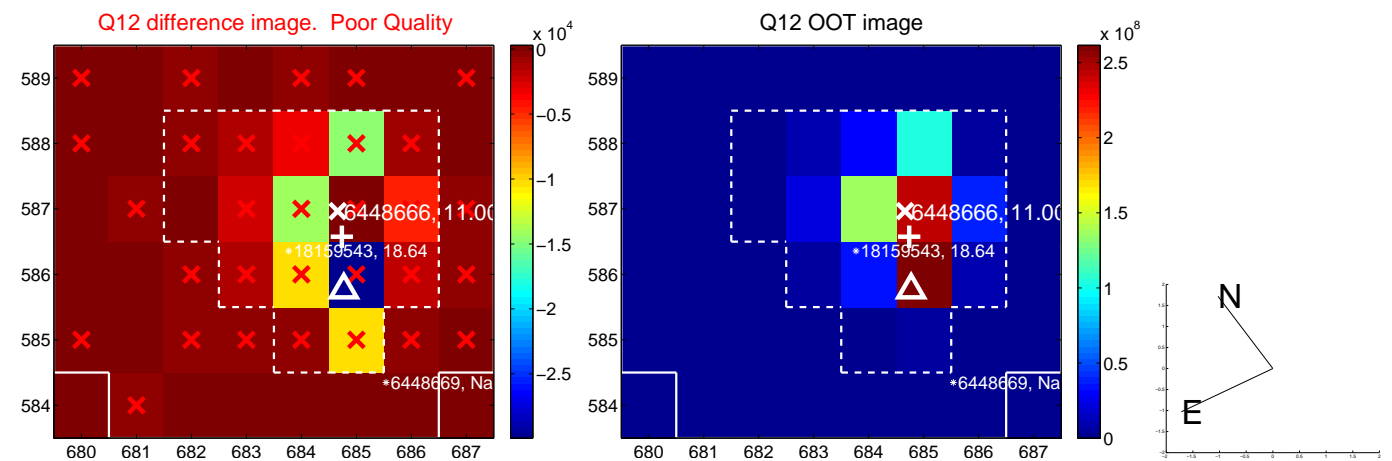
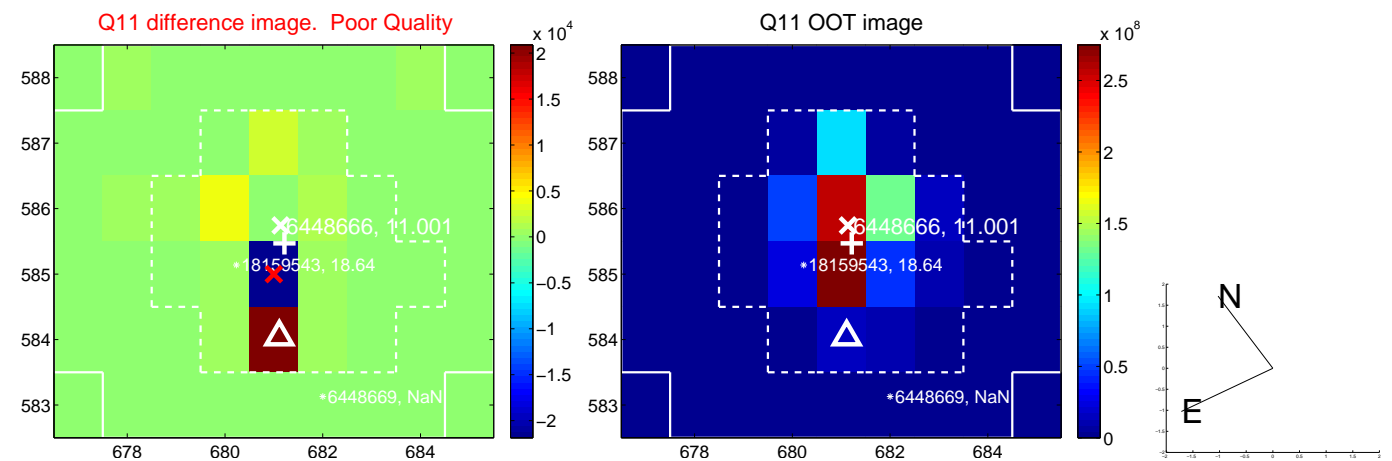
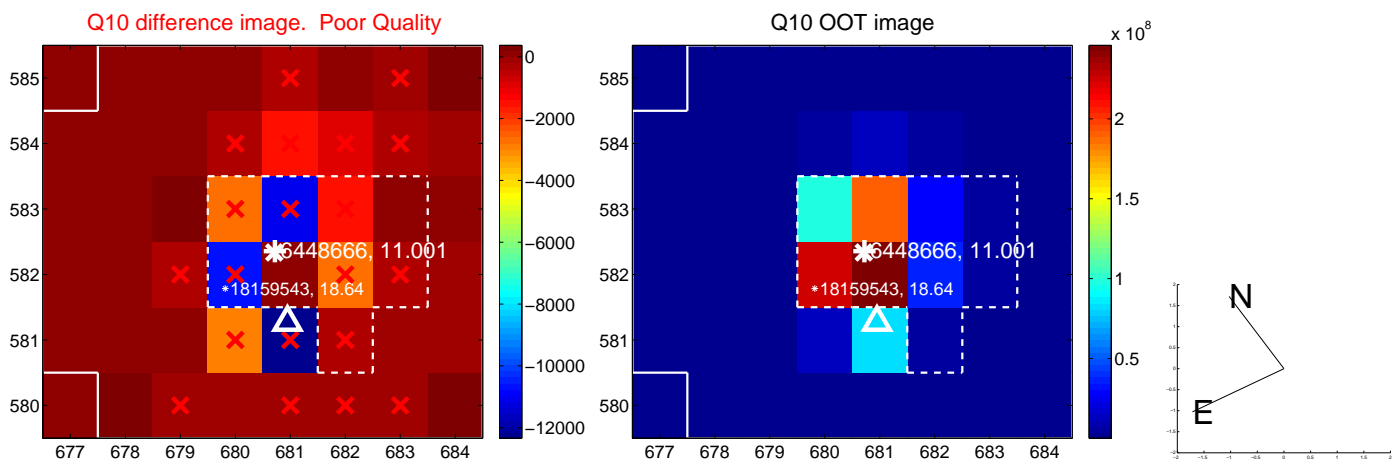
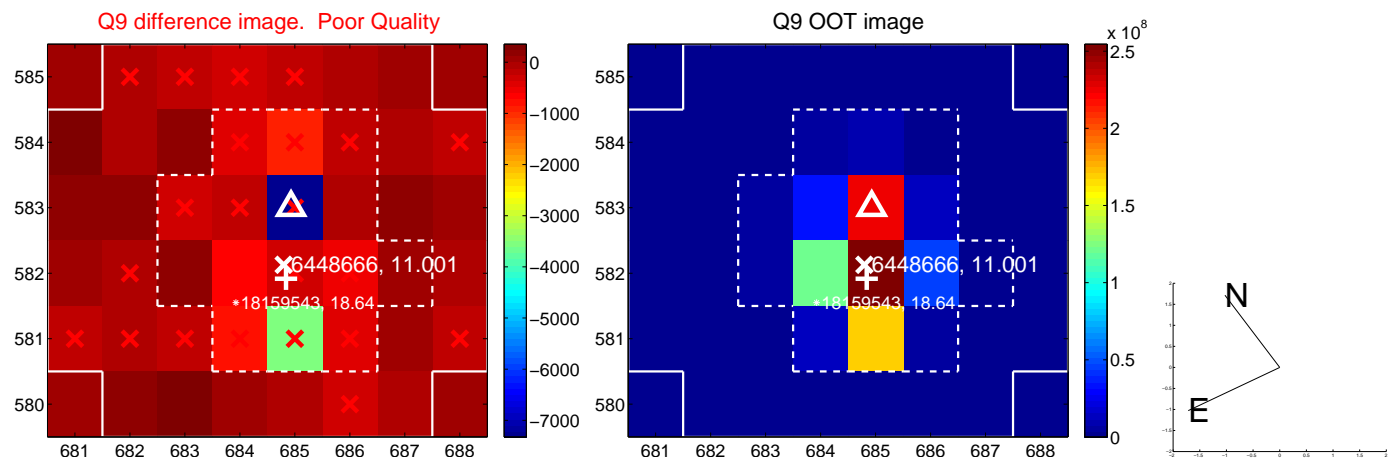
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



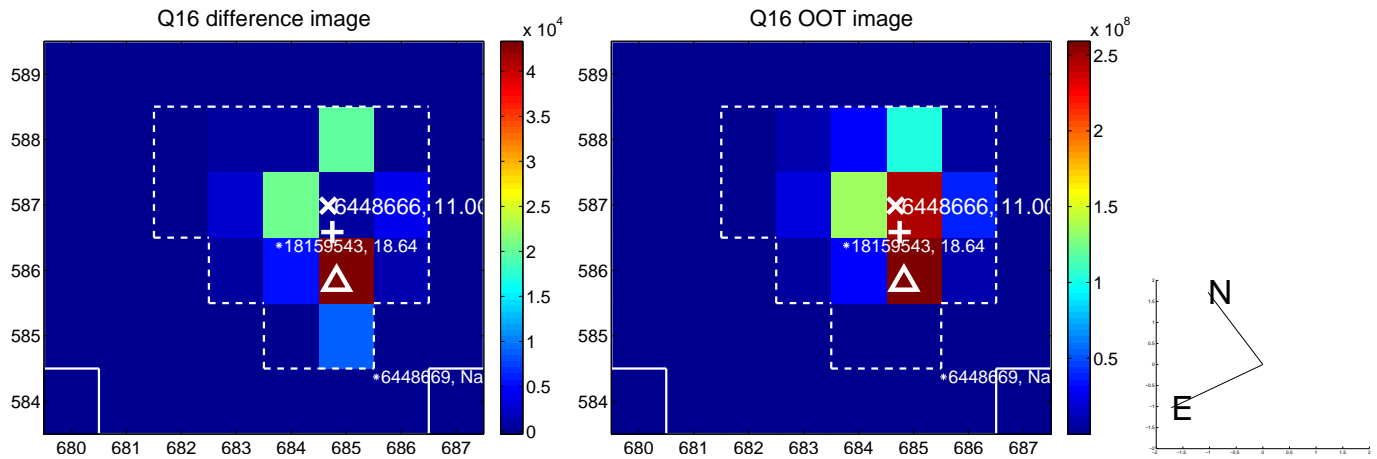
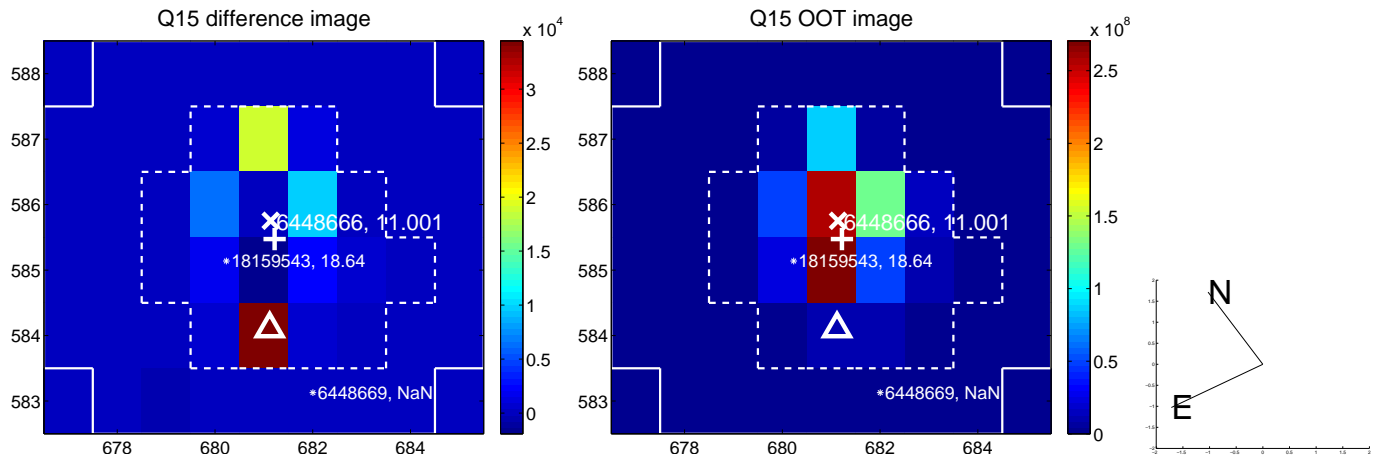
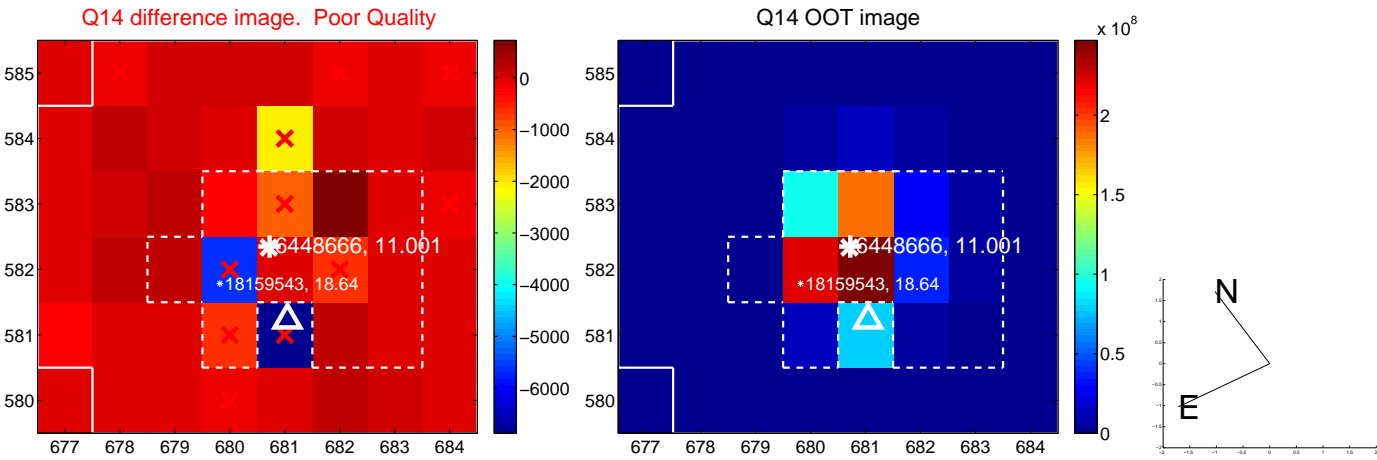
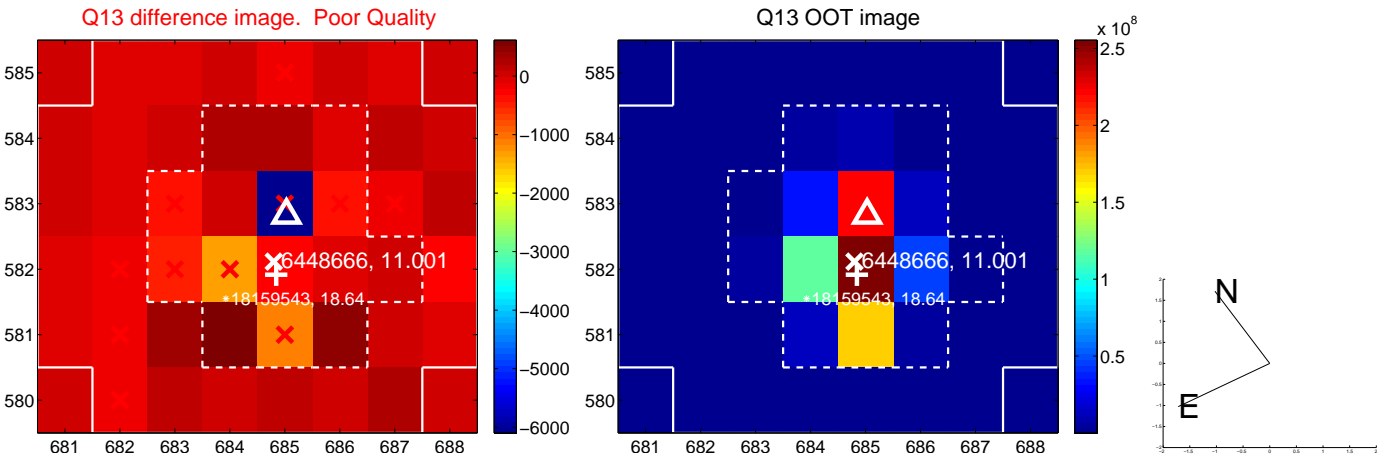
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



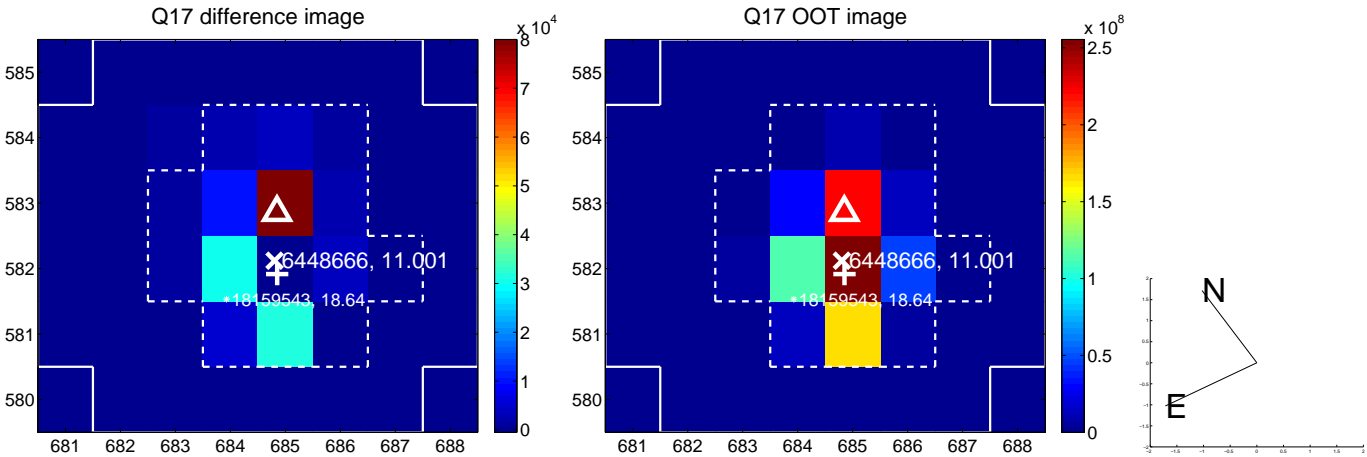
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



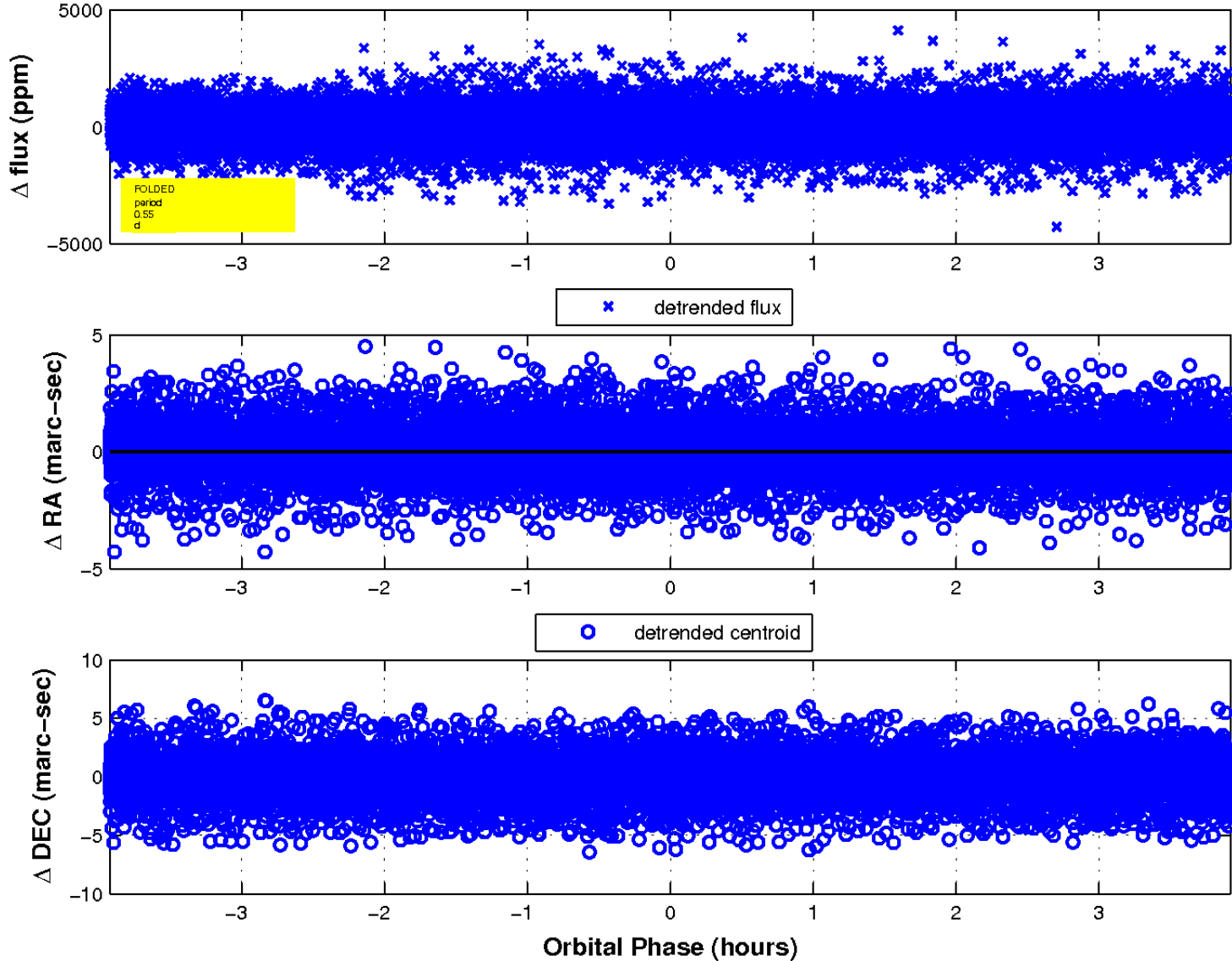
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

