

KIC 007045280

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})
007045280-01	OBS	No	0.509552	131.982674	12.7	2.471	8.8	7.2	3.84	6591	1.40	0.00
007045280-02	OBS	No	370.472179	155.118598	226.4	4.304	7.5	7.4	3.84	6591	6.18	17.08

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007045280-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
007045280-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

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

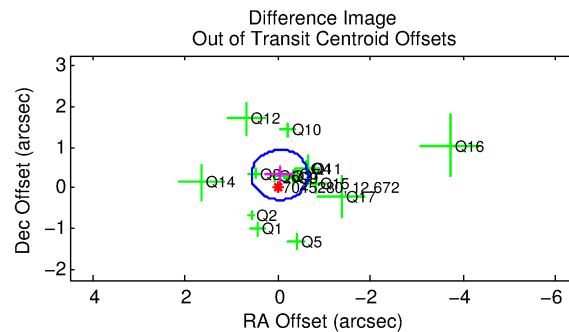
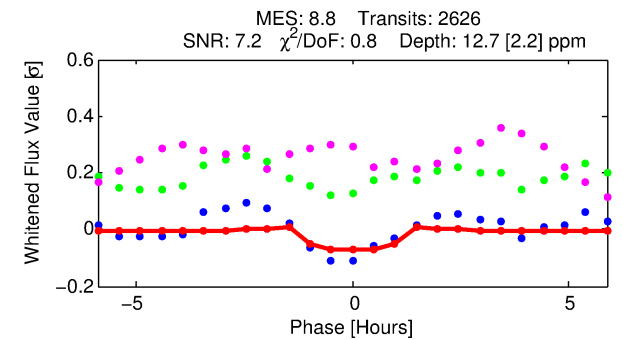
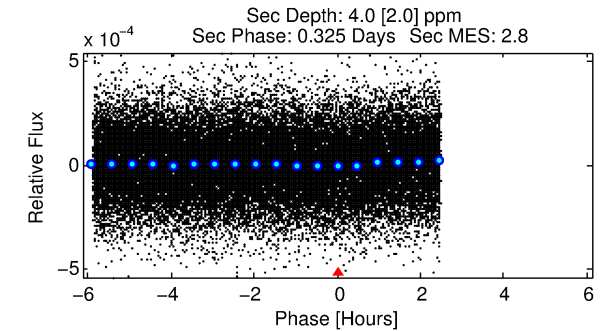
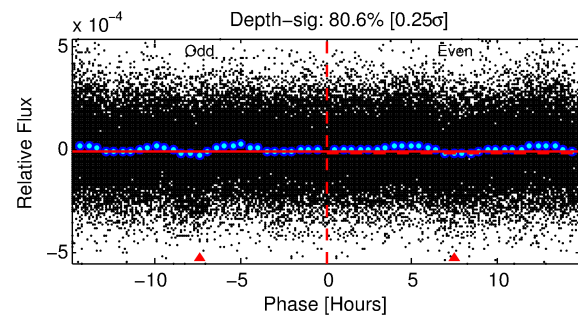
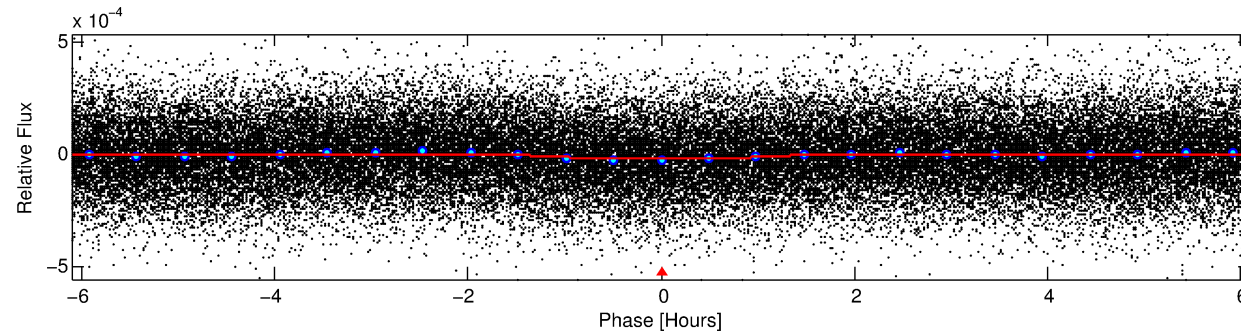
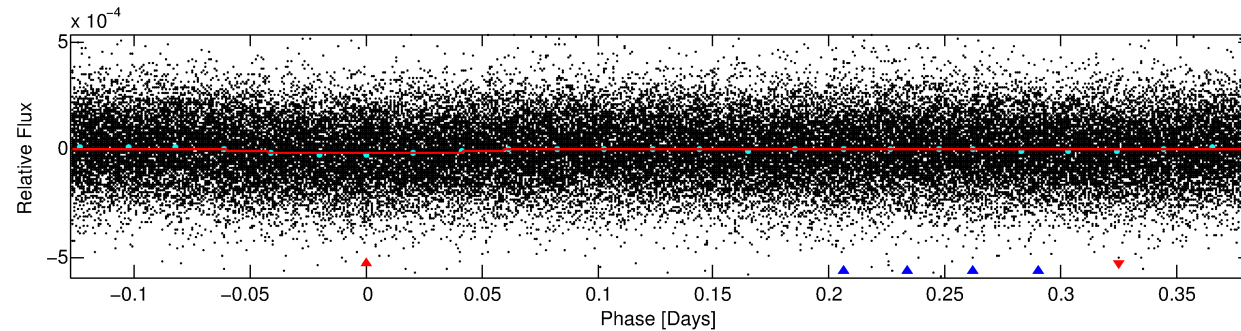
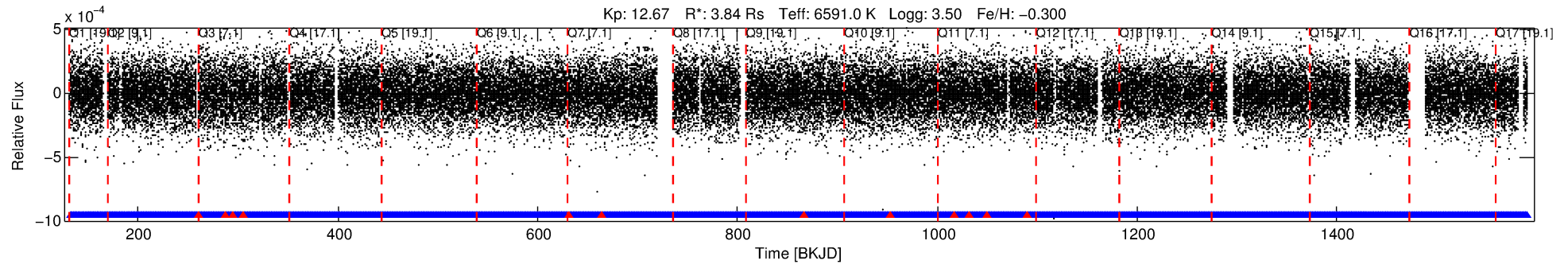
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007045280-01

No Significant Match Found

DV One-Page Summary

KIC: 7045280 Candidate: 1 of 2 Period: 0.510 d



DV Fit Results:

Period = 0.50955 [0.00001] d
Epoch = 131.9827 [0.0035] BKJD
Rp/R* = 0.0033 [0.0016]
a/R* = 1.61 [2.63]
b = 0.38 [5.94]
Seff = N/A
Teq = N/A
Rp = 1.40 [0.88] Re
a = N/A
Ag = N/A
Teffp = N/A

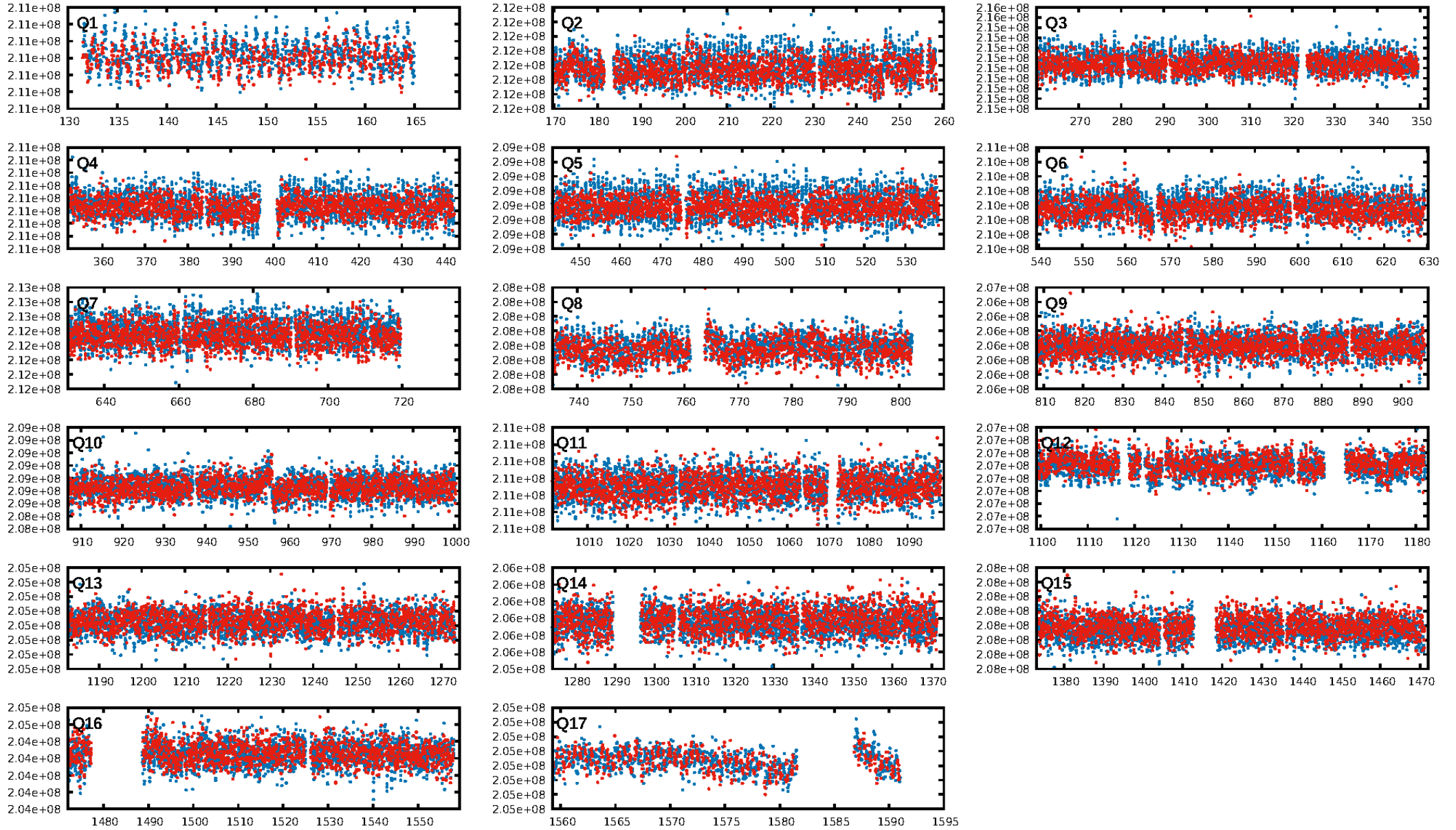
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [1789.22σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.47e-11
RollingBand-fgt: 1.00 [2496/2508]
GhostDiagnostic-chr: 0.8728
Centroid-sig: 2.5%
Centroid-so: 0.847 arcsec [1.02σ]
OotOffset-rm: 0.327 arcsec [1.60σ]
KicOffset-rm: 0.186 arcsec [0.84σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.75 [12/16]
DiffImageOverlap-fno: 1.00 [17/17]

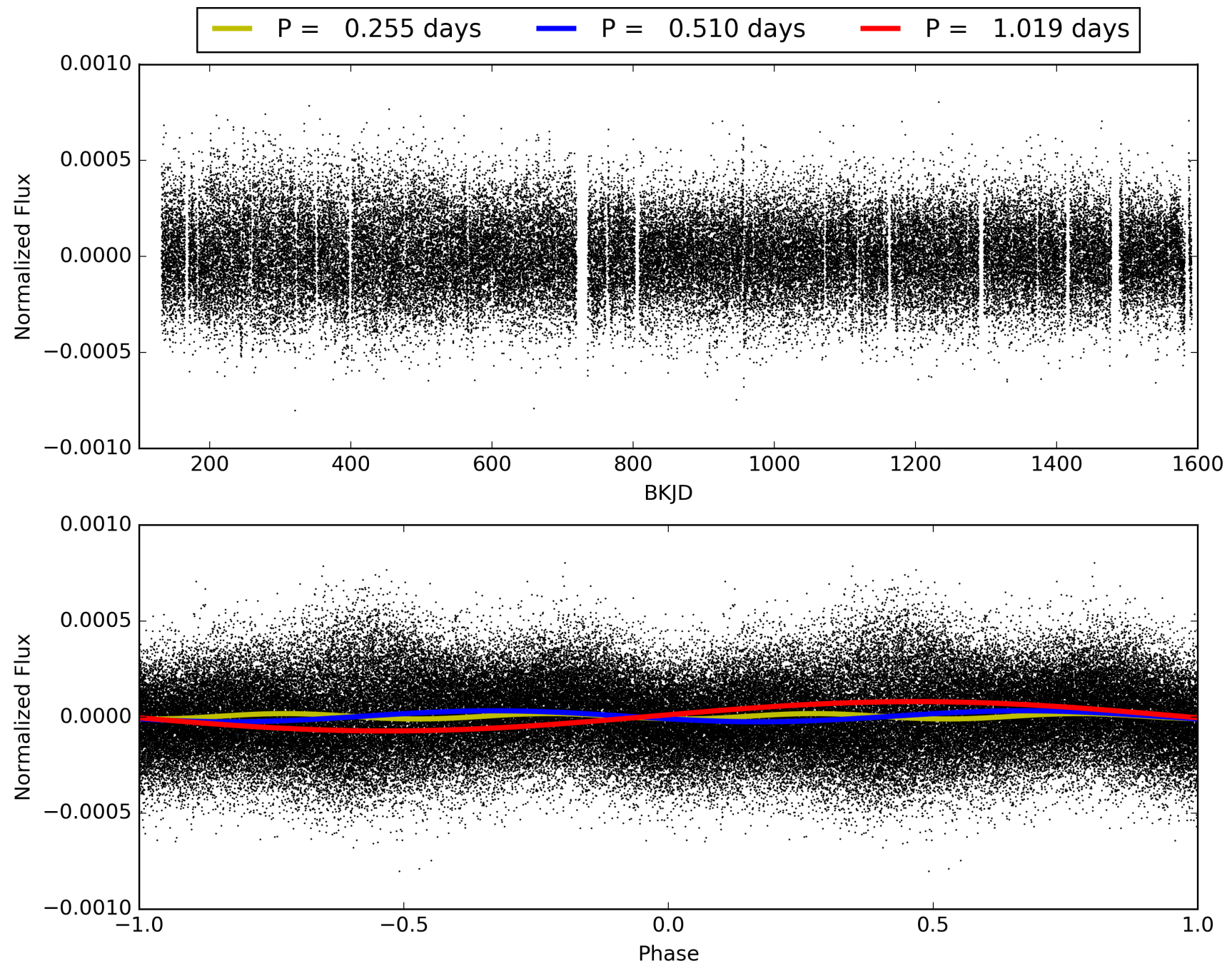
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 11:15:37 Z

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

TCE 007045280-01, PDC Light Curves

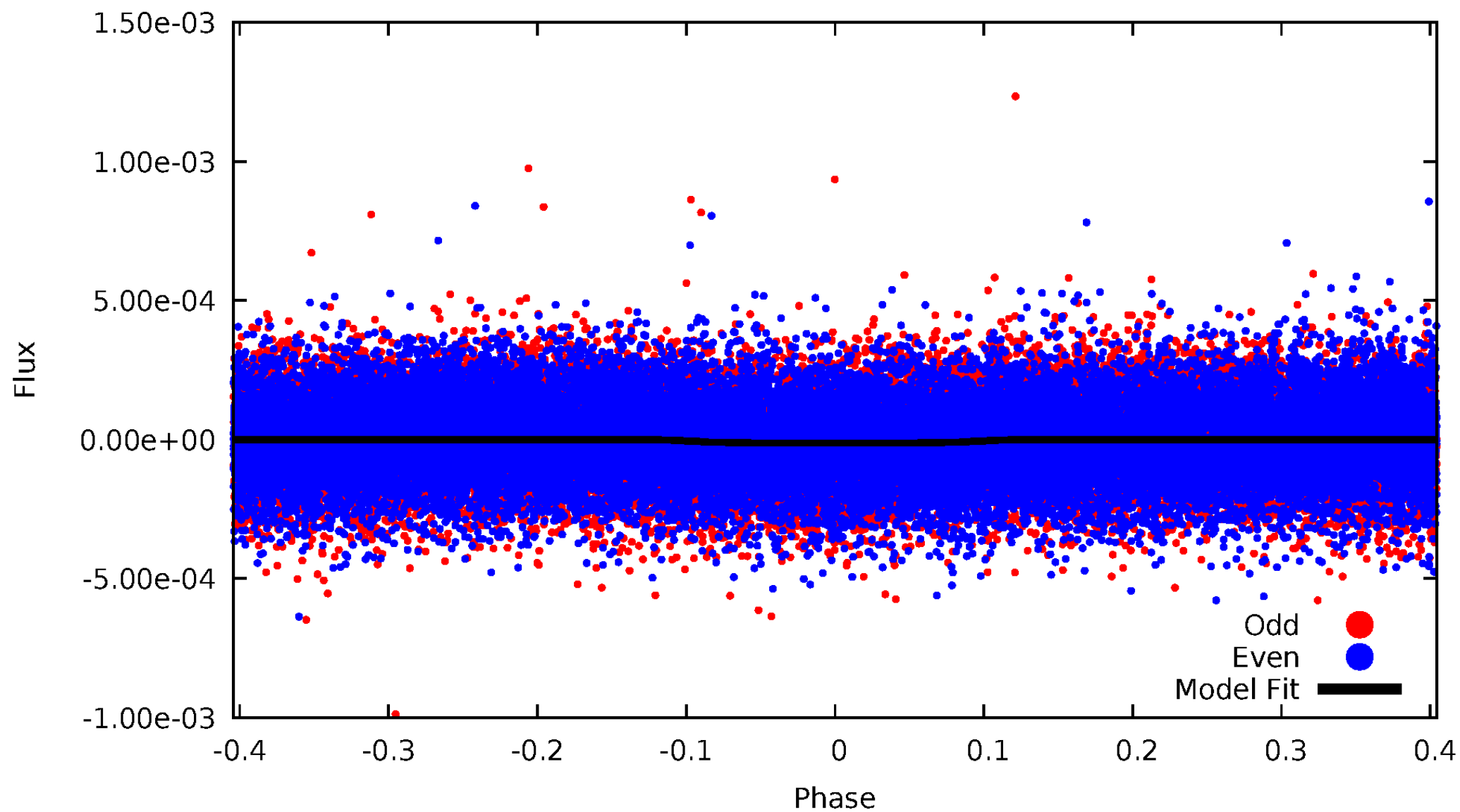


TCE 007045280-01



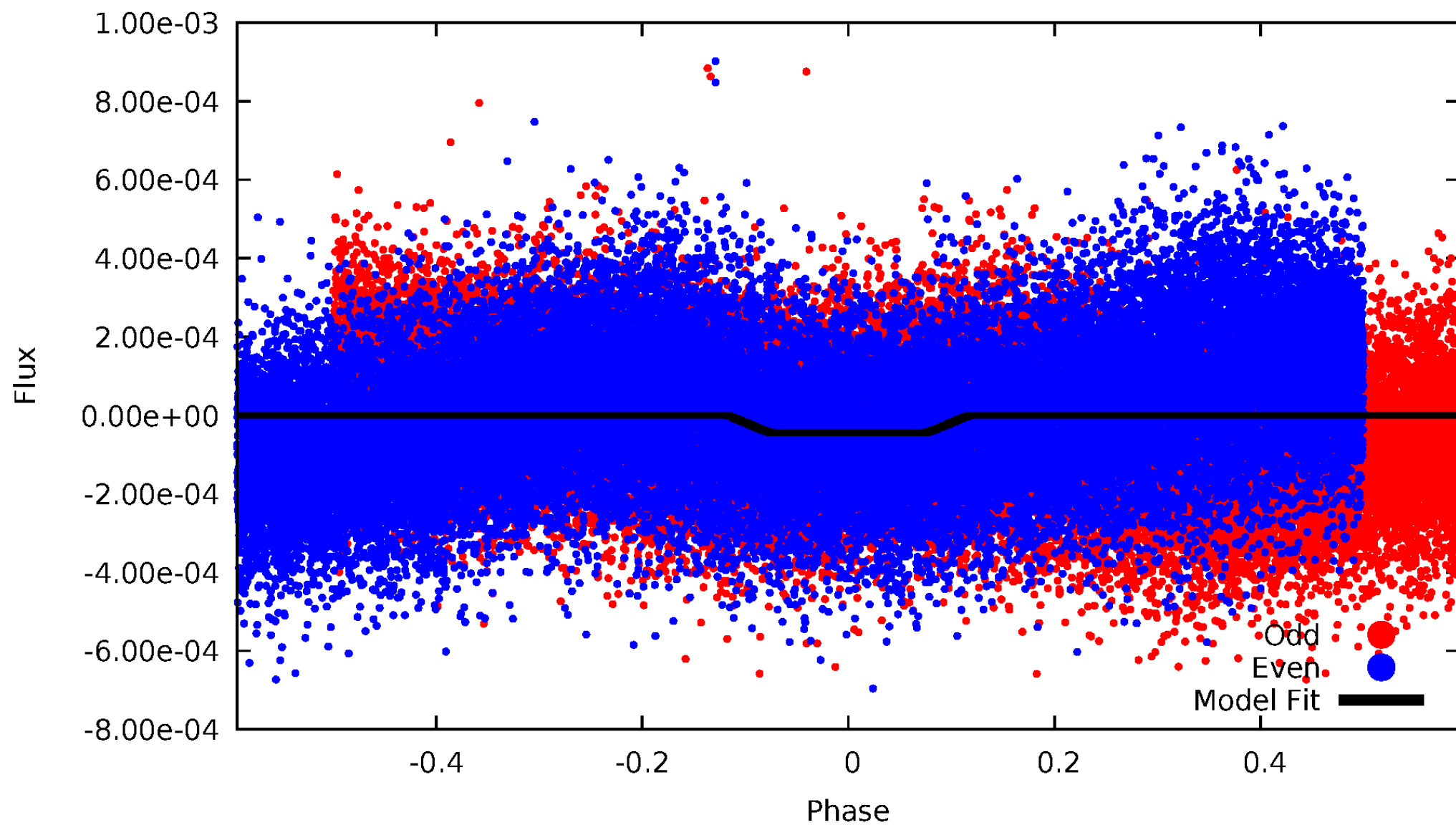
DV Odd/Even

TCE 007045280-01

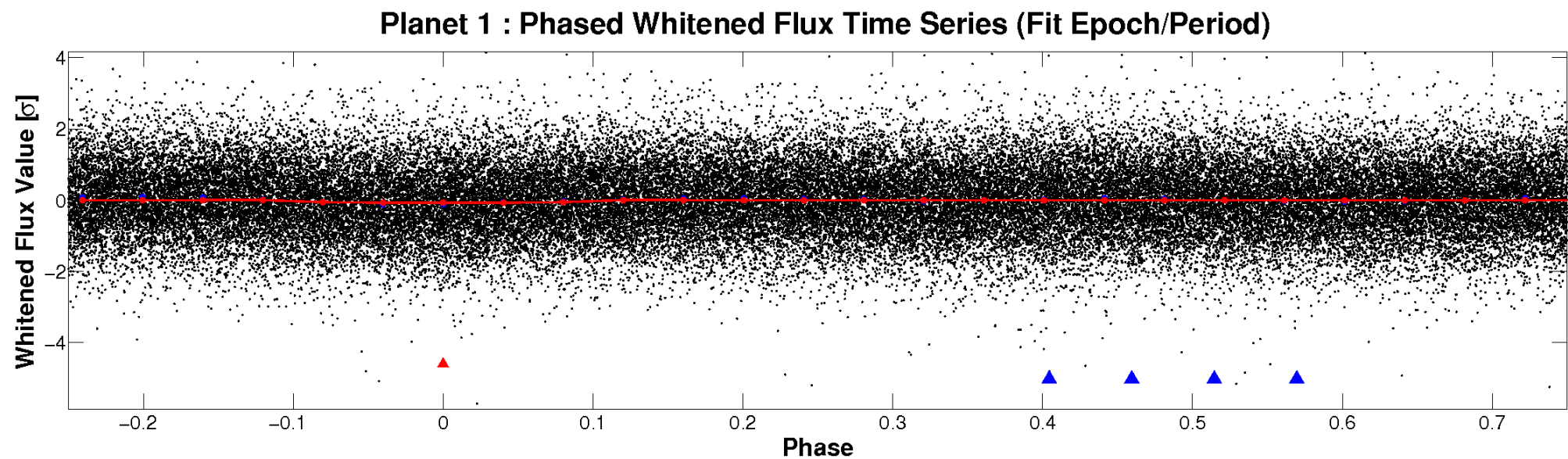
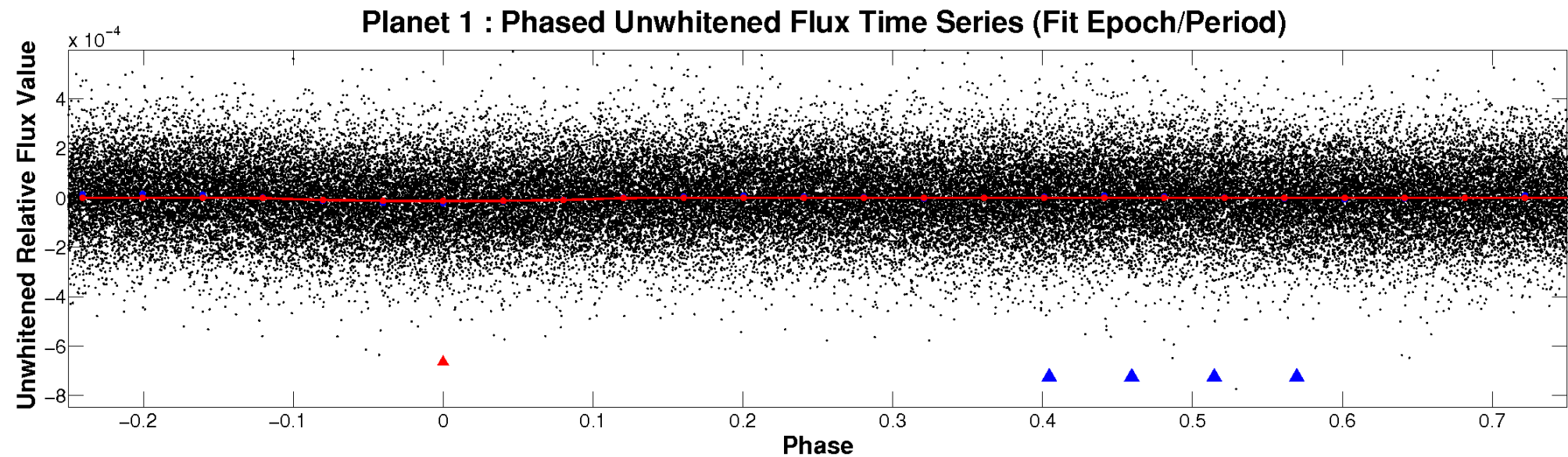


ALT Odd/Even

TCE 007045280-01

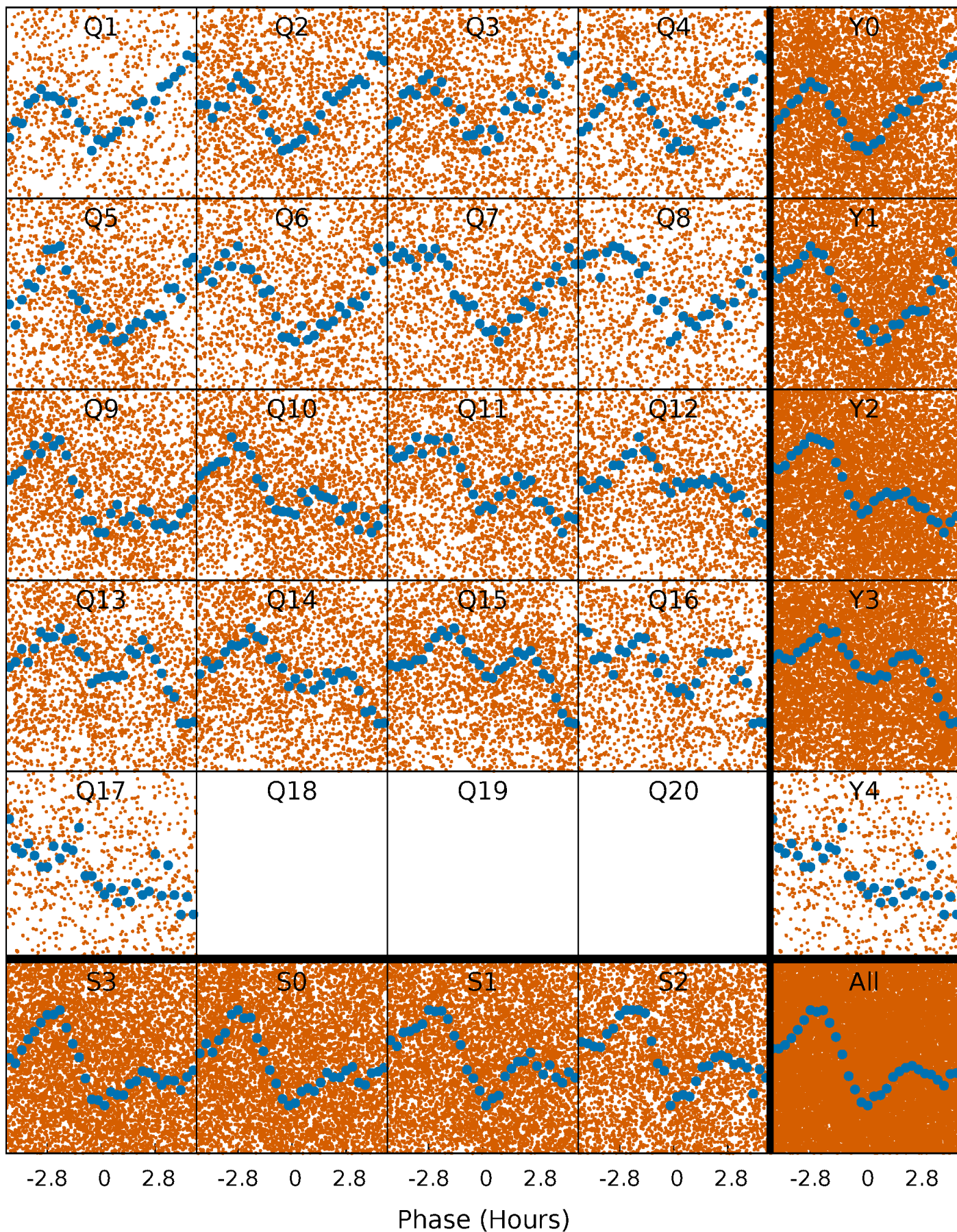


Non-Whitened Vs. Whitened Light Curve



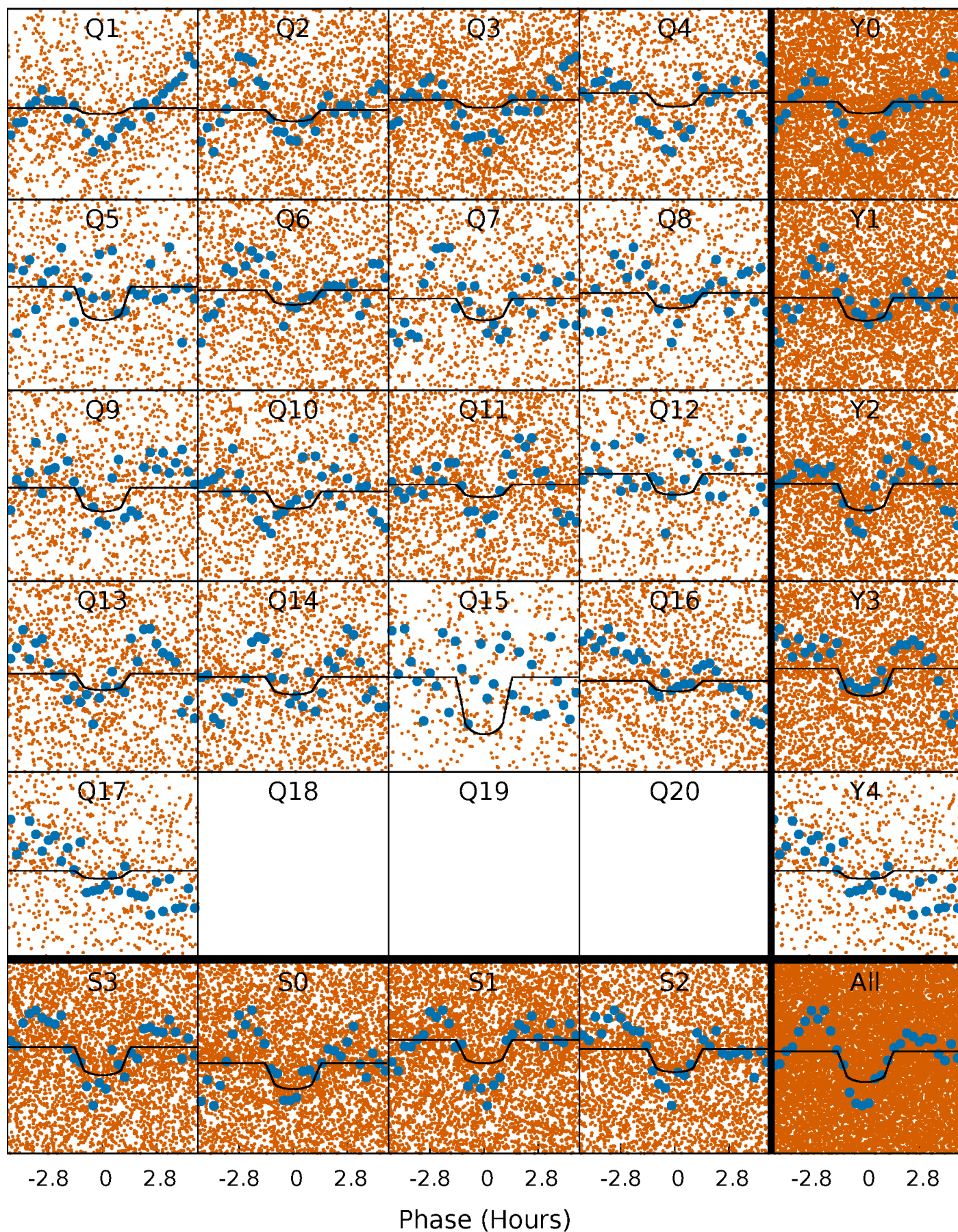
PDC Quarter-Phased Transit Curves

TCE 007045280-01 P= 0.509552 Days $T_0=131.982674$ (BKJD)



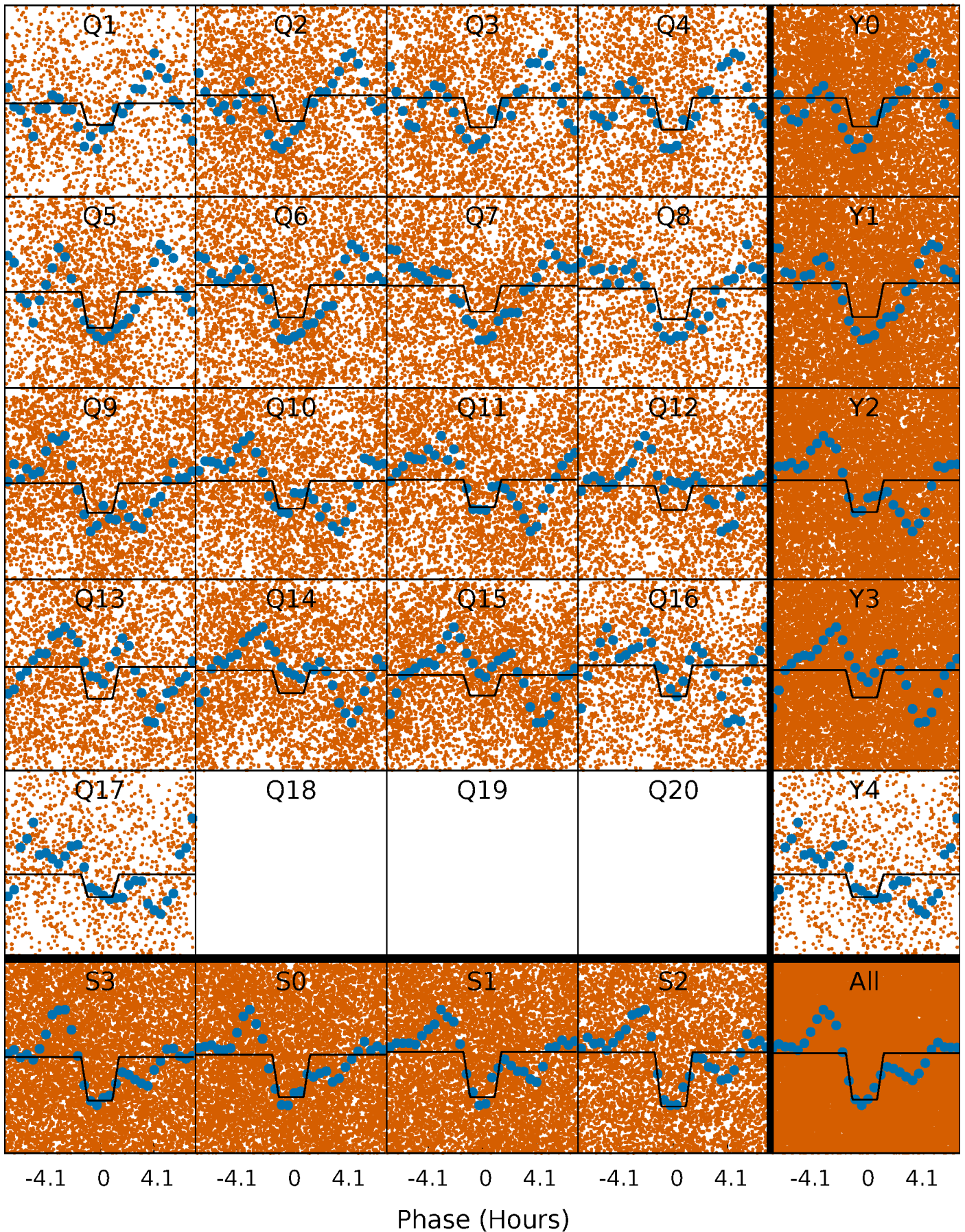
DV Quarter-Phased Transit Curves

TCE 007045280-01 P= 0.509552 Days $T_0=131.982674$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

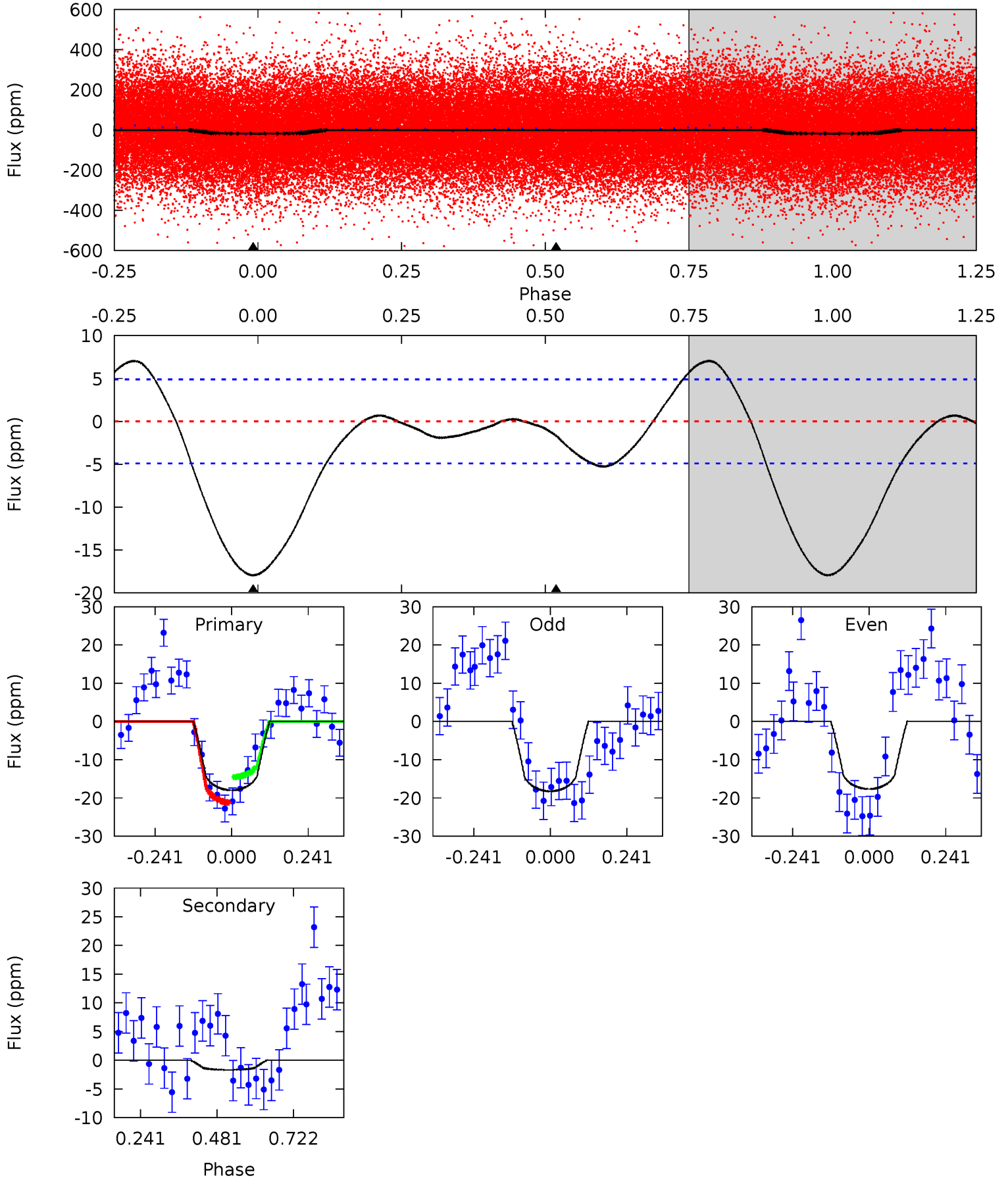
TCE 007045280-01 P= 0.509548 Days $T_0=132.008193$ (BKJD)



DV Model-Shift Uniqueness Test

007045280-01, P = 0.509552 Days, E = 131.473122 Days

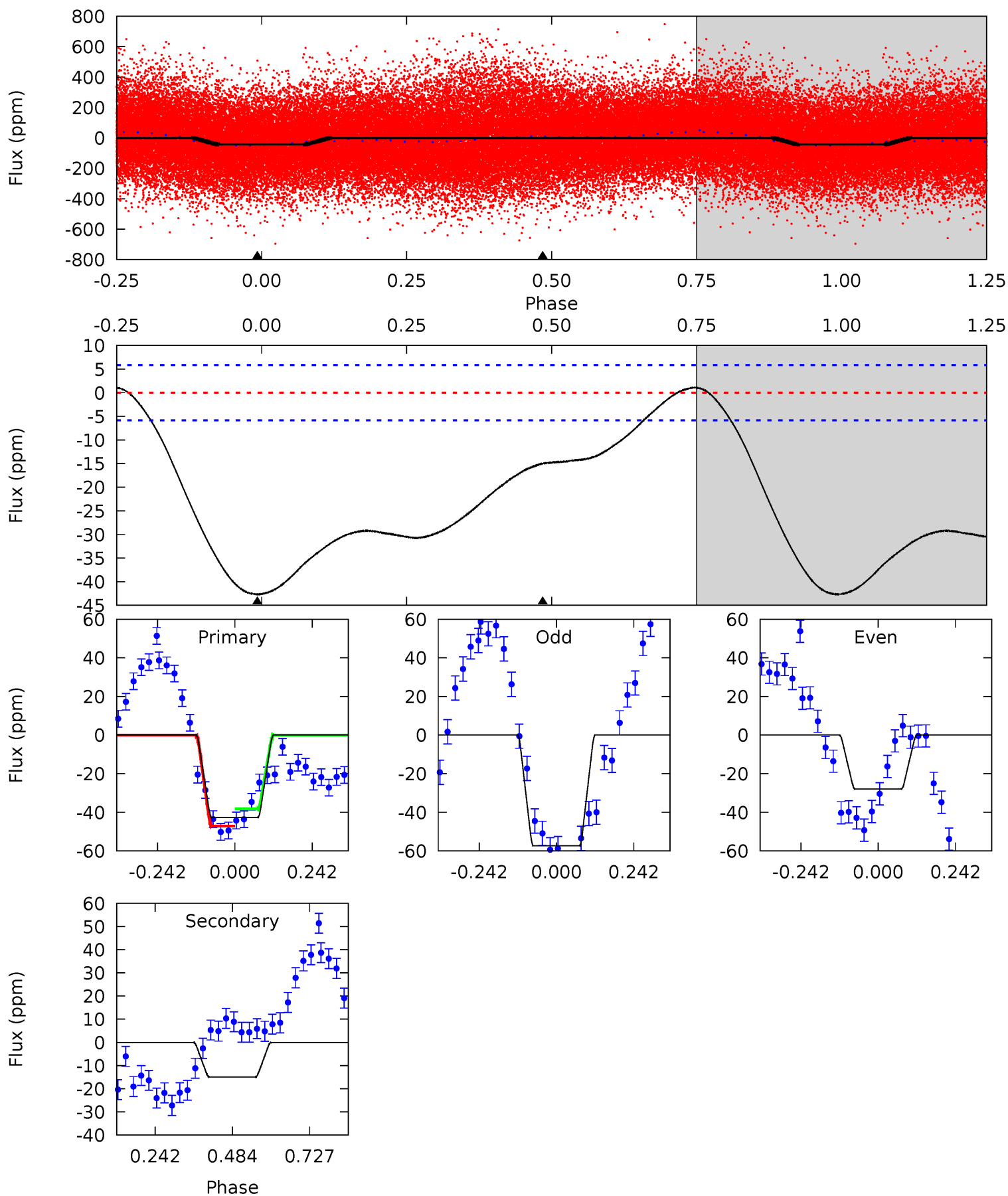
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.0	1.50	0	0	4.38	1.17	2.44	16.0	16.0	1.50	1.50	0.26	1.10	0.28	3.02



Alt Model-Shift Uniqueness Test

007045280-01, P = 0.509548 Days, E = 131.498645 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.0	11.2	0	0	4.38	1.17	11.4	32.0	32.0	11.2	11.2	10.9	1.05	0.02	3.29



Stellar Parameters For KIC 007045280

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6591^{+180}_{-180}	$3.503^{+0.360}_{-0.090}$	$-0.300^{+0.350}_{-0.300}$	$3.838^{+0.404}_{-1.516}$	$1.711^{+0.213}_{-0.396}$	$0.043^{+0.122}_{-0.012}$
	+3%/-3%	+10%/-3%	+117%/-100%	+11%/-39%	+12%/-23%	+285%/-28%
Source	PHO1	FLK73	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 007045280-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2 ± 1	$1.27^{+0.75}_{-0.60}$	6416^{+350}_{-629}	-4694^{+8899}_{-612}	$0.109^{+0.321}_{-0.086}$
Alt.	-15 ± 1	$2.60^{+0.81}_{-0.76}$	6401^{+368}_{-607}	-3398^{+8085}_{-1221}	$0.271^{+0.252}_{-0.115}$

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

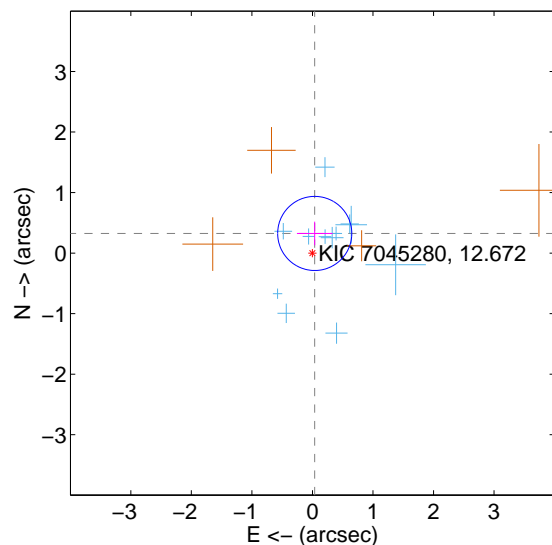
Supplemental centroid analysis for 007045280-01. Kepler magnitude: 12.67. Transit SNR 7.21

There are 12 quarters with good PRF difference image offsets

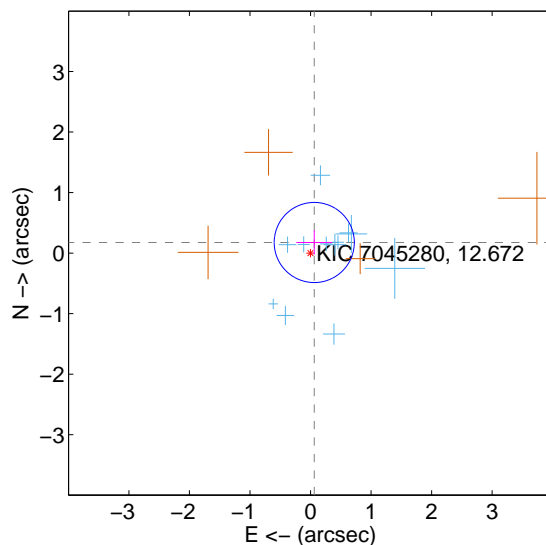
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.327 ± 0.204	1.60	-0.038 ± 0.295	0.325 ± 0.196
PRF-fit source offset from KIC position	0.186 ± 0.221	0.84	-0.062 ± 0.295	0.175 ± 0.200
photometric centroid source offset	0.85 ± 0.83	1.02	-0.09 ± 0.77	0.84 ± 0.83

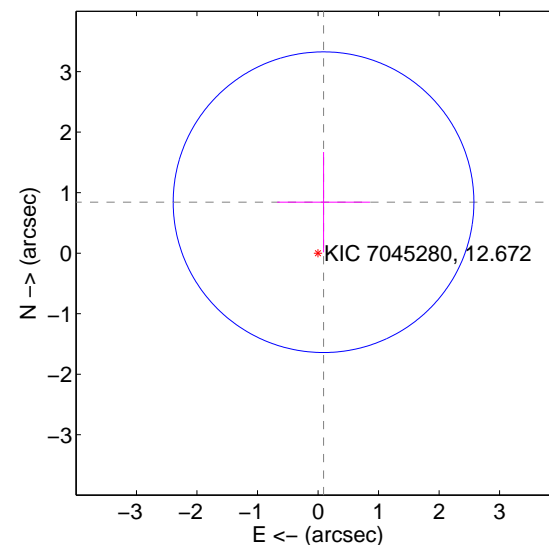
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

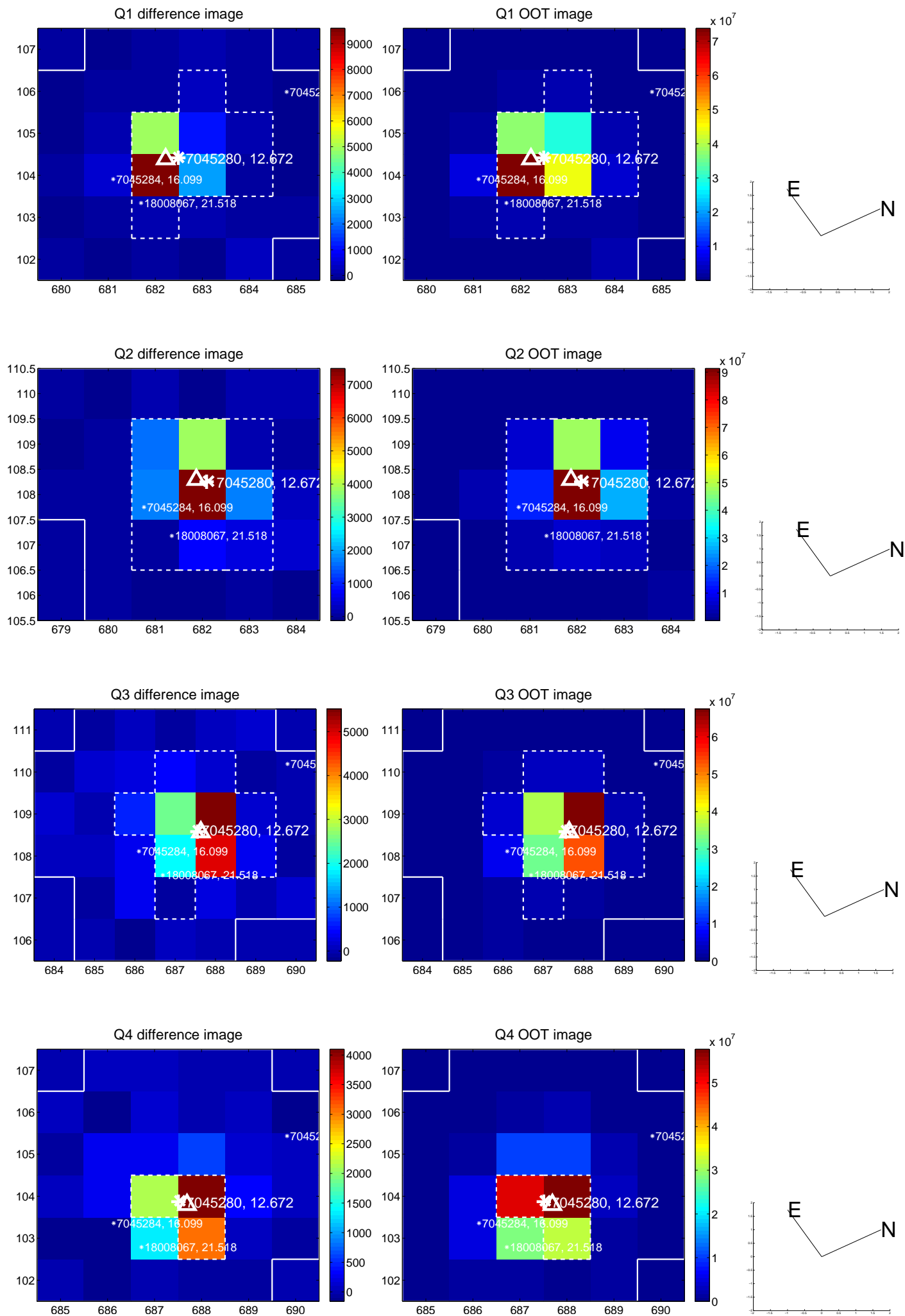


offset from photometric centroids

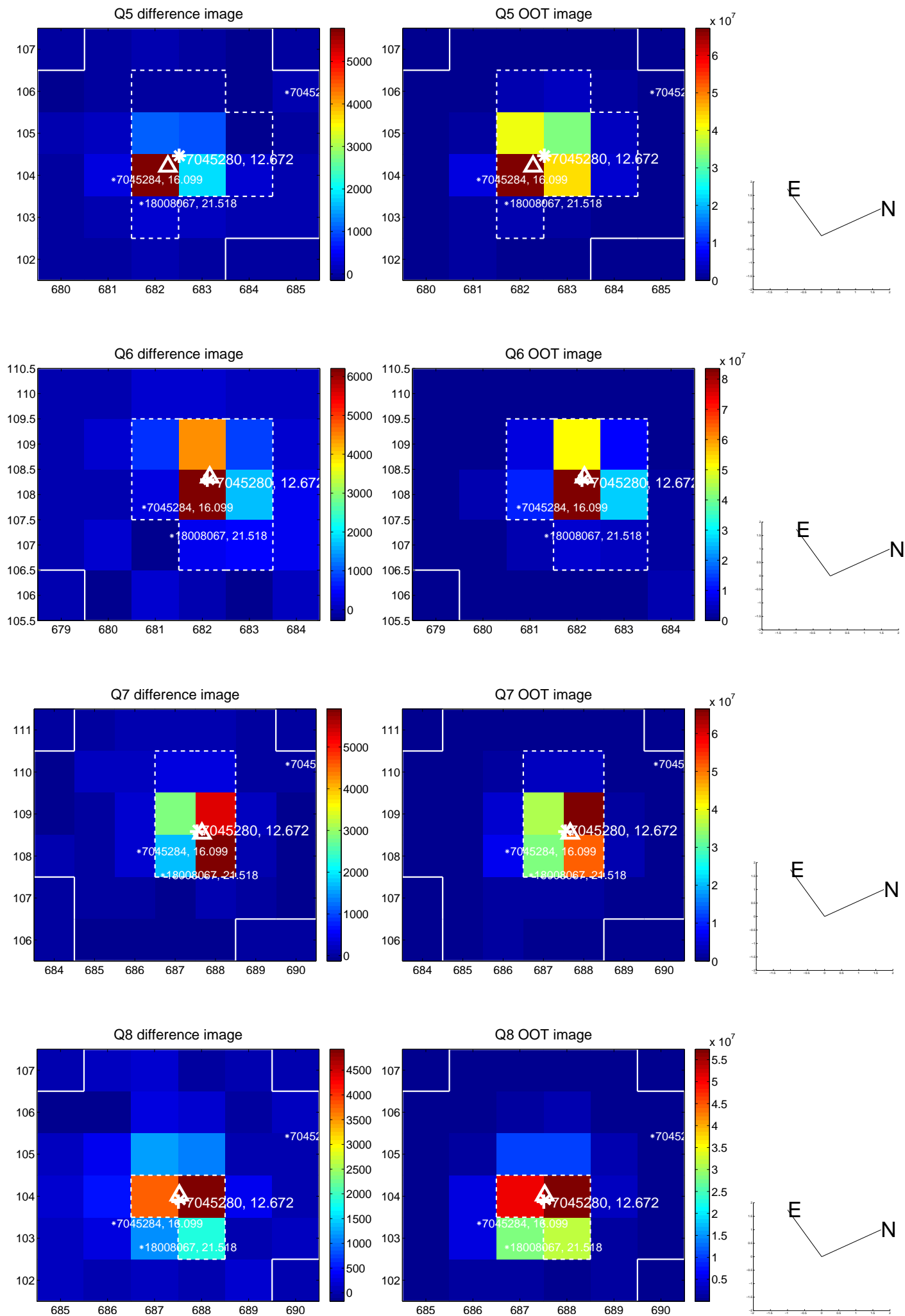


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

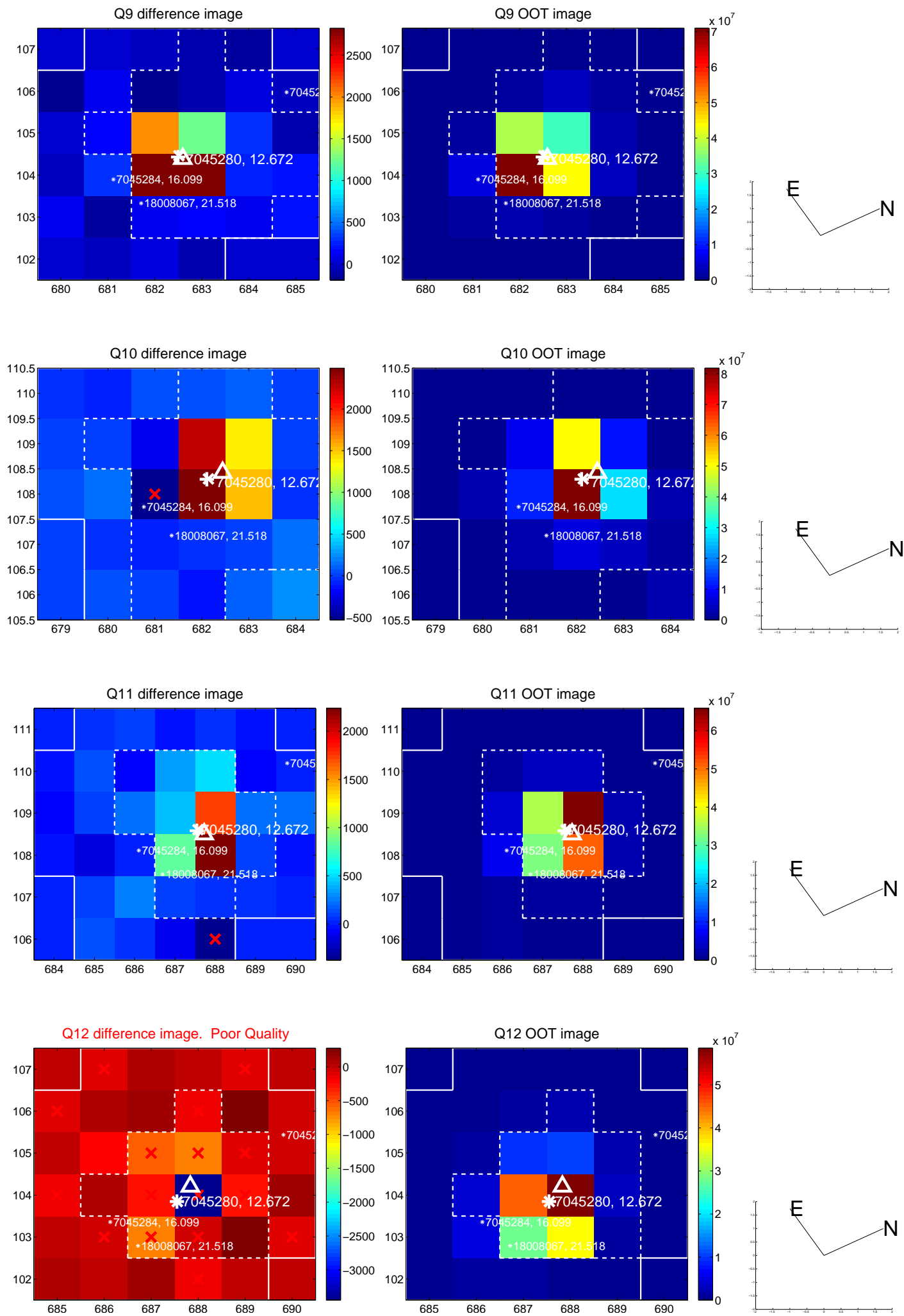
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



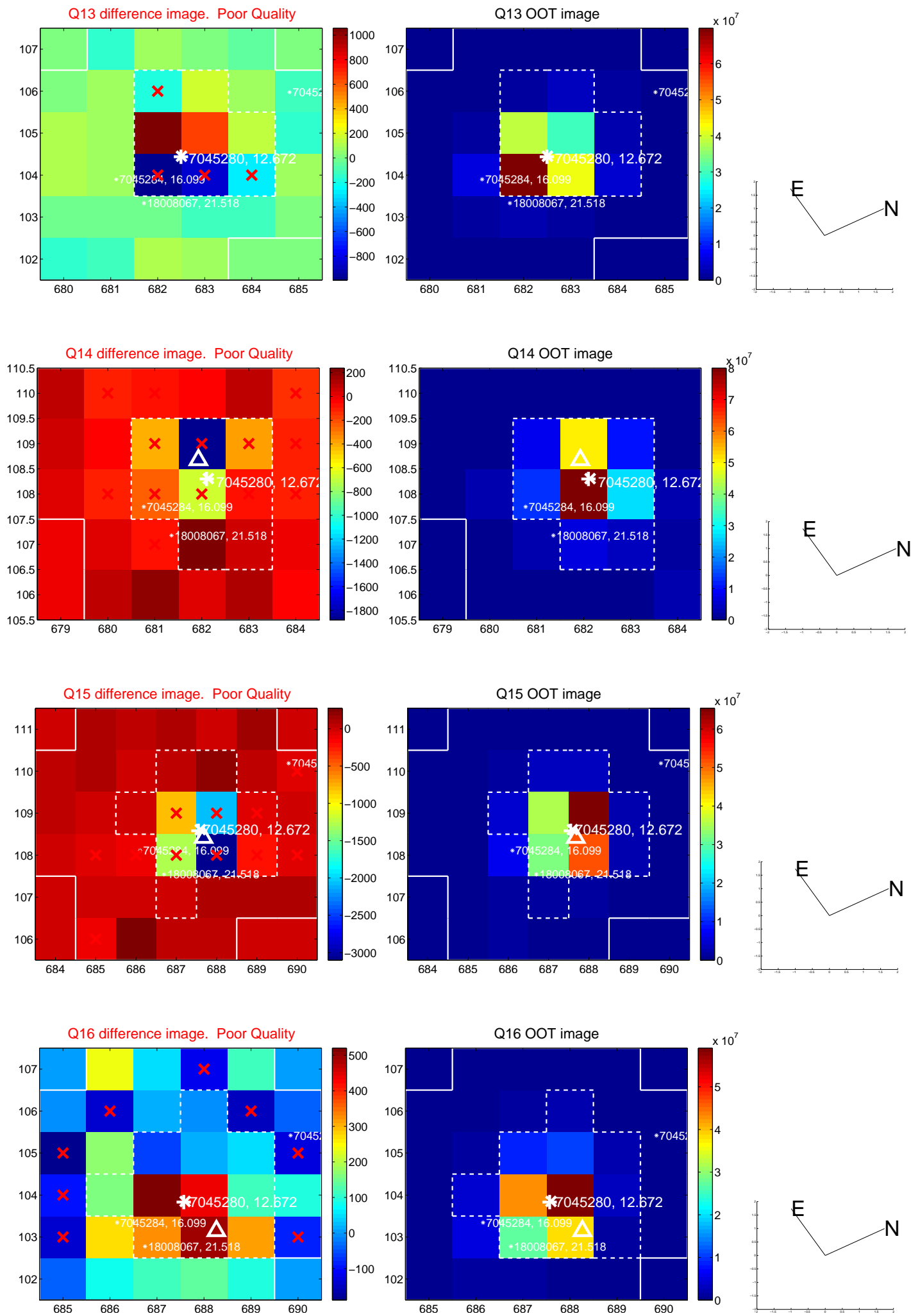
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



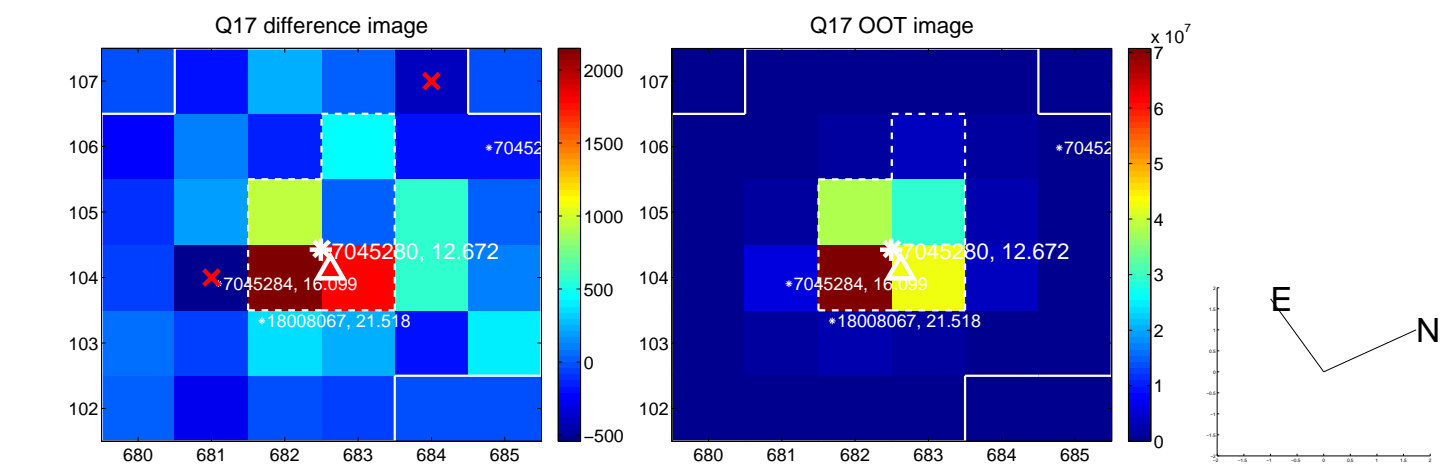
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



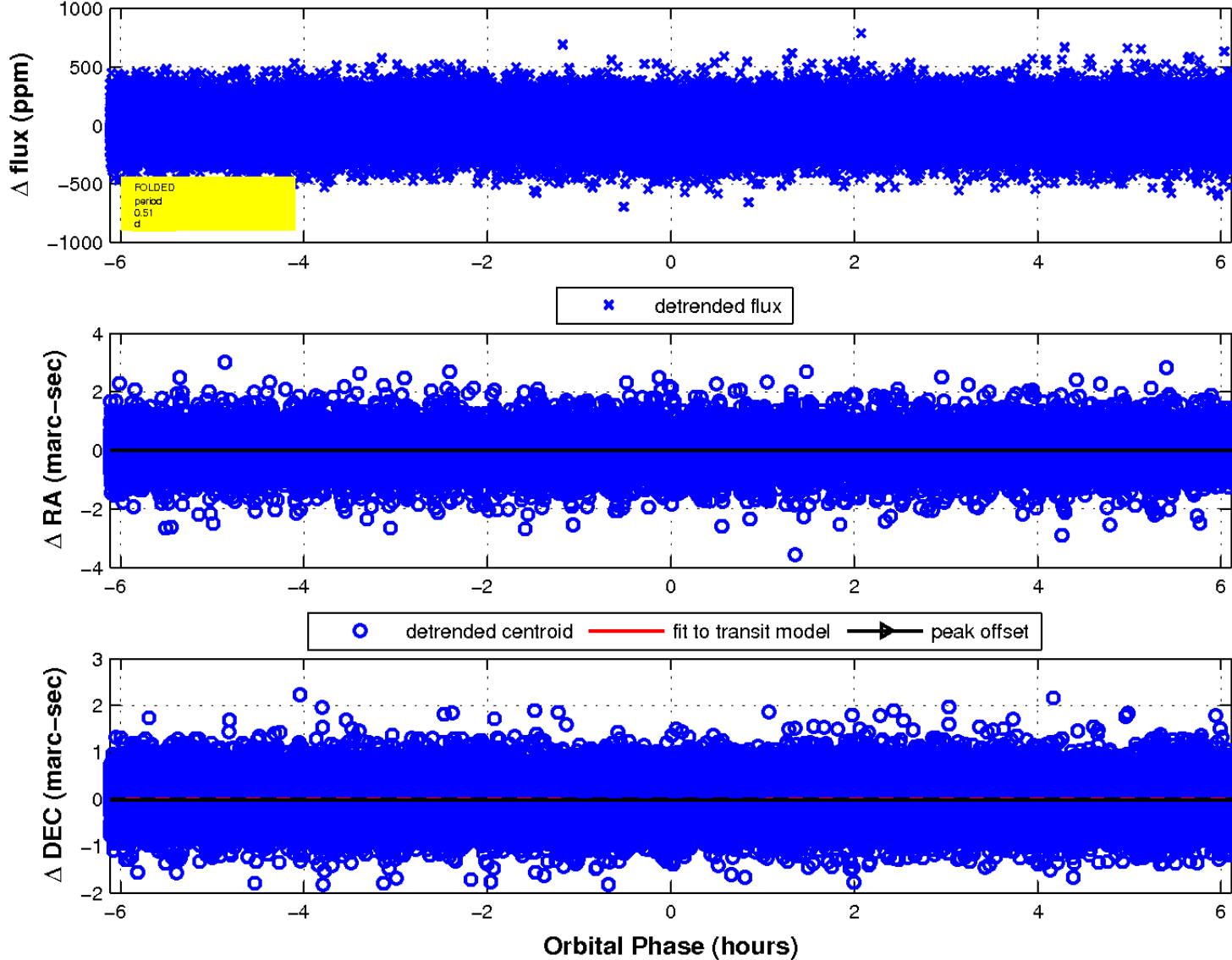
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



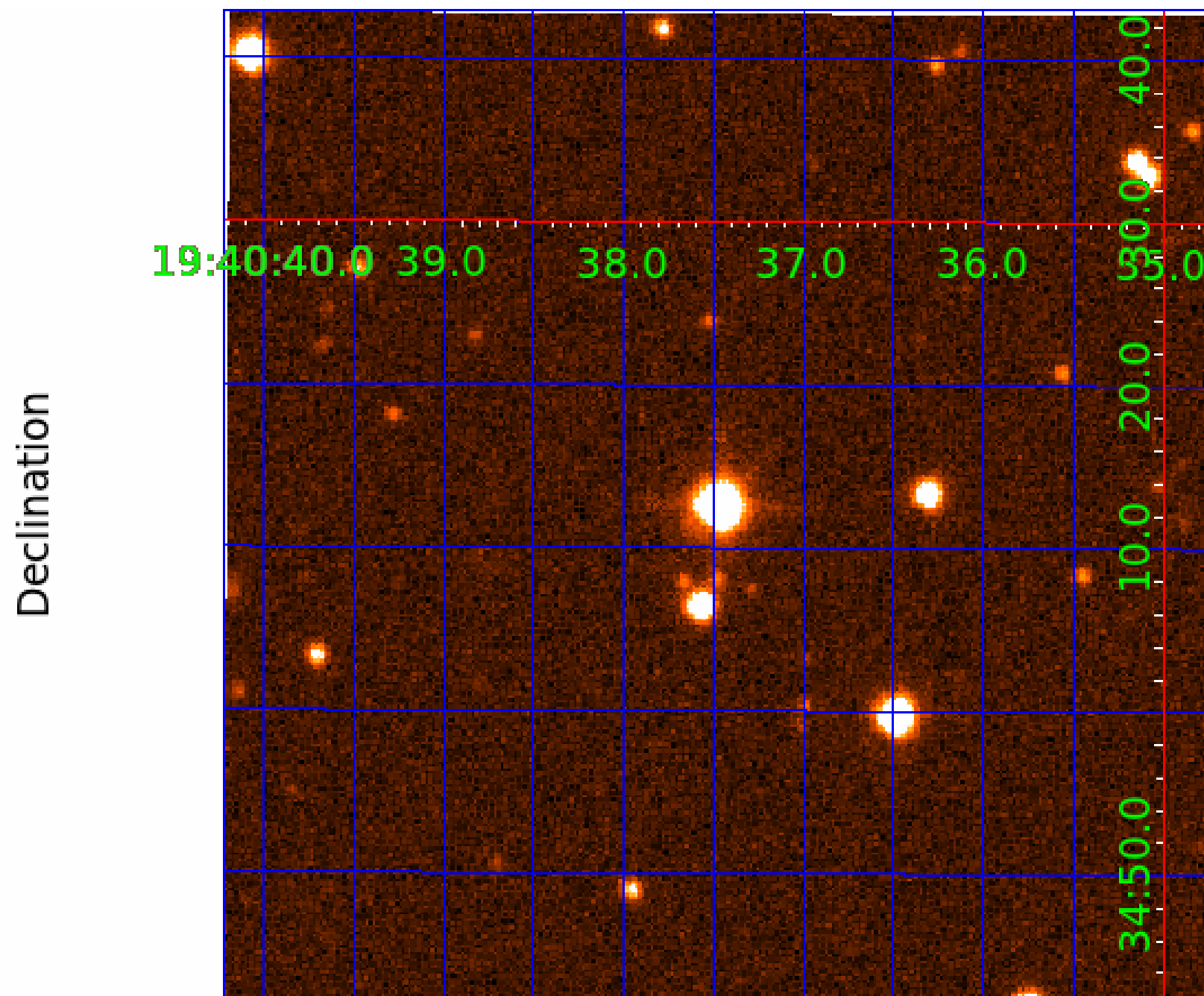
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 2



UKIRT Image



KIC 007045280

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})
007045280-01	OBS	No	0.509552	131.982674	12.7	2.471	8.8	7.2	3.84	6591	1.40	0.00
007045280-02	OBS	No	370.472179	155.118598	226.4	4.304	7.5	7.4	3.84	6591	6.18	17.08

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007045280-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
007045280-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

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

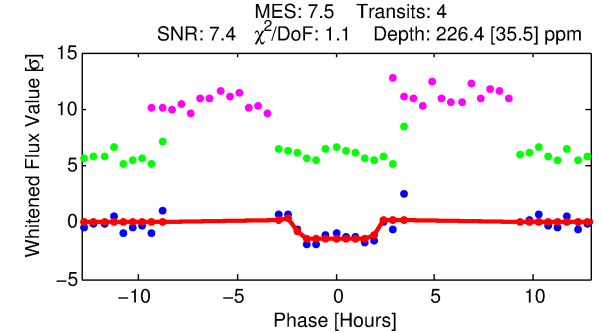
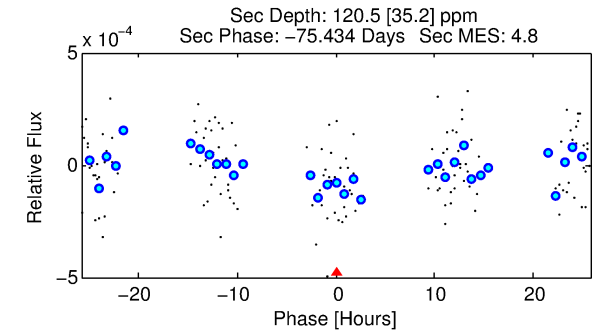
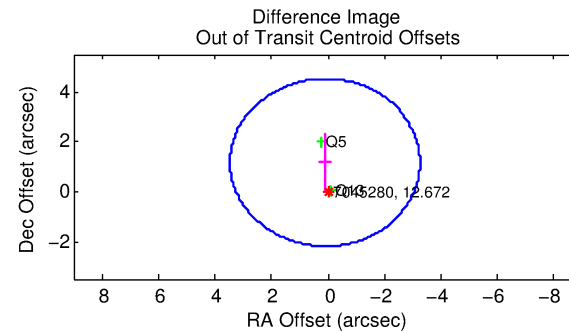
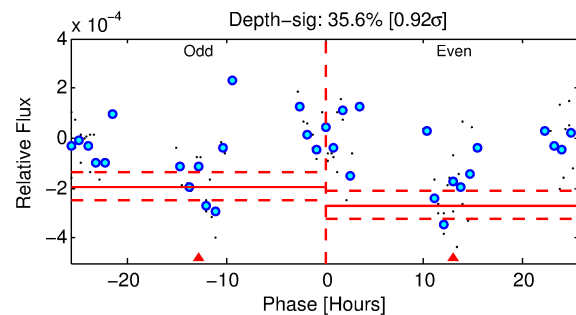
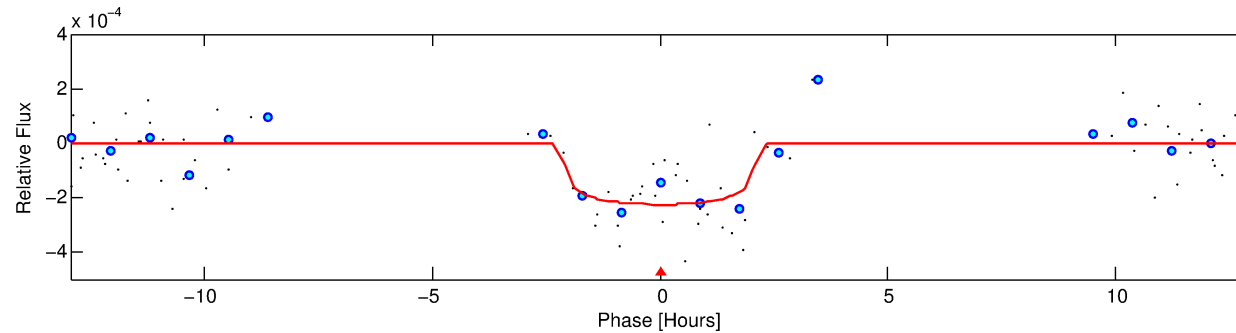
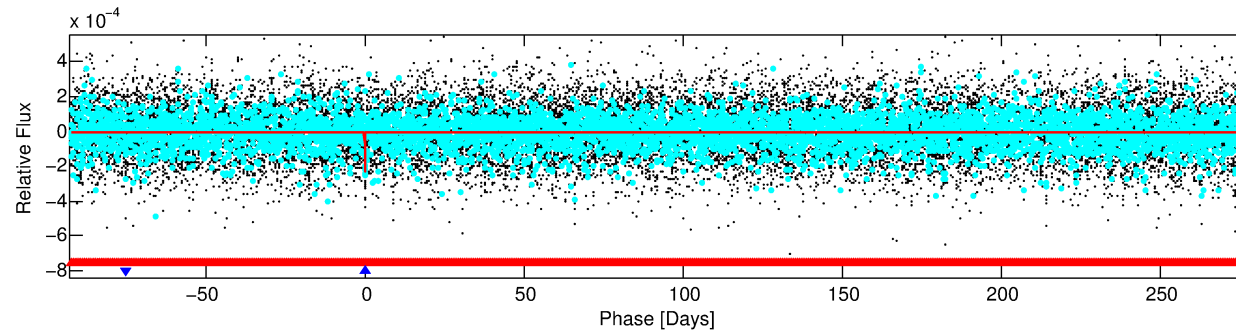
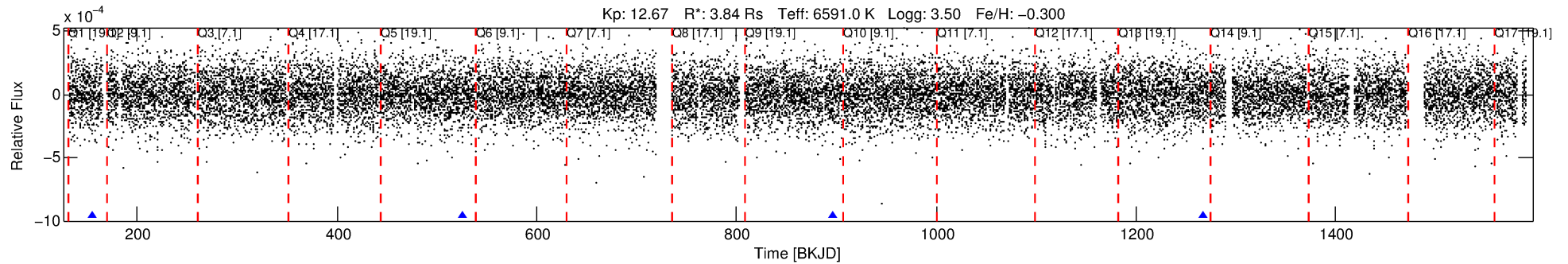
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007045280-02

No Significant Match Found

DV One-Page Summary

KIC: 7045280 Candidate: 2 of 2 Period: 370.472 d



DV Fit Results:

Period = 370.47218 [0.01855] d
Epoch = 155.1186 [0.0261] BKJD
Rp/R* = 0.0148 [0.0269]
a/R* = 484.42 [5067.42]
b = 0.70 [7.57]
Seff = 17.08 [10.62]
Teq = 518 [81] K
Rp = 6.18 [11.53] Re
a = 1.2076 [0.4609] AU
Ag = 2530.00 [9383.89] [0.27 σ]
Teffp = 5684 [5201] K [0.99 σ]

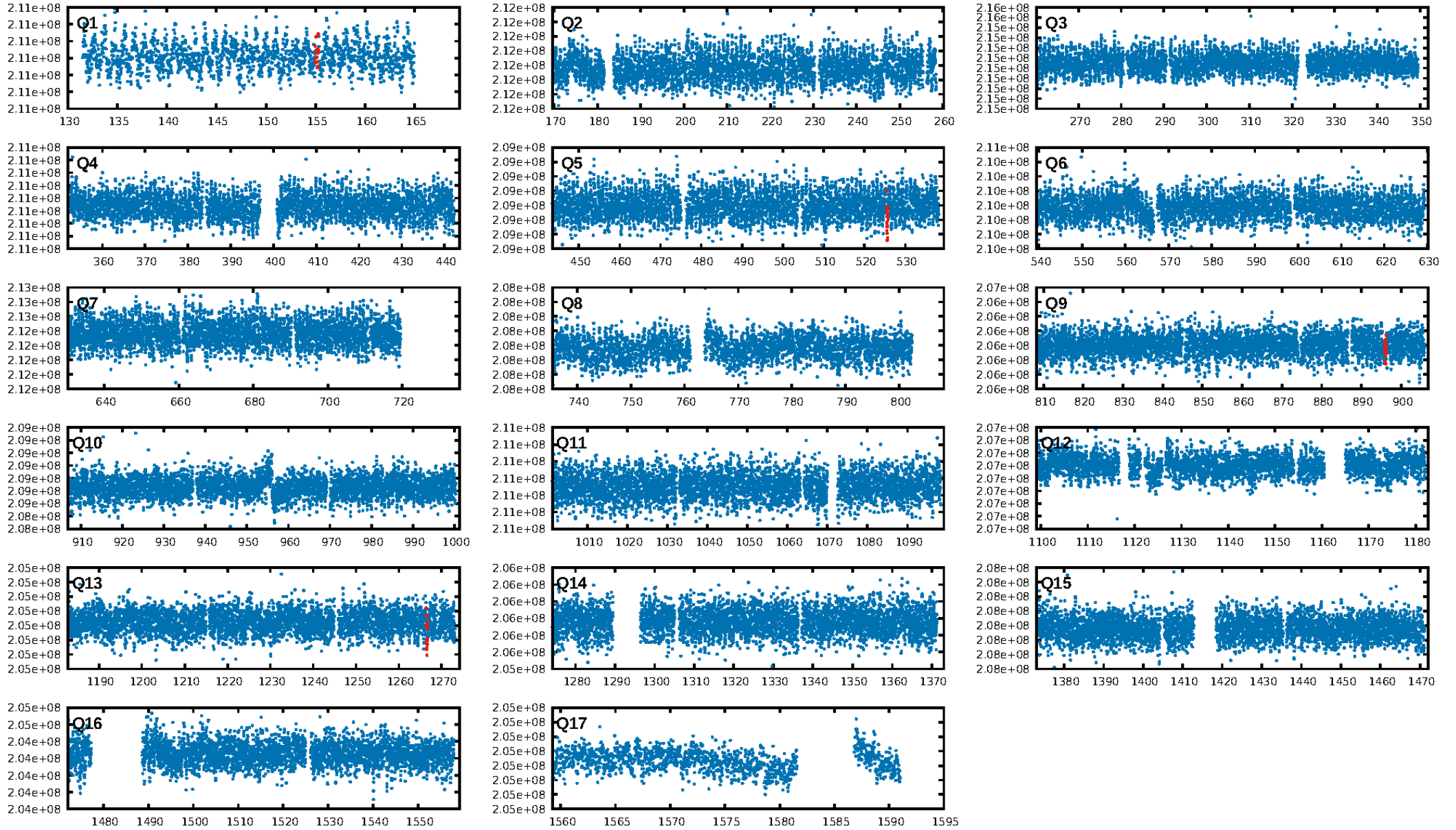
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1789.22 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 19.8%
ModelChiSquareGof-sig: 95.5%
Bootstrap-pfa: 2.04e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 5.287
Centroid-sig: 58.6%
Centroid-so: 0.313 arcsec [0.38 σ]
OotOffset-rm: 1.170 arcsec [1.05 σ]
OotOffset-st: 0/0/0/2 [2]
KicOffset-rm: 1.150 arcsec [1.00 σ]
KicOffset-st: 0/0/0/2 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 0.00 [0/4]

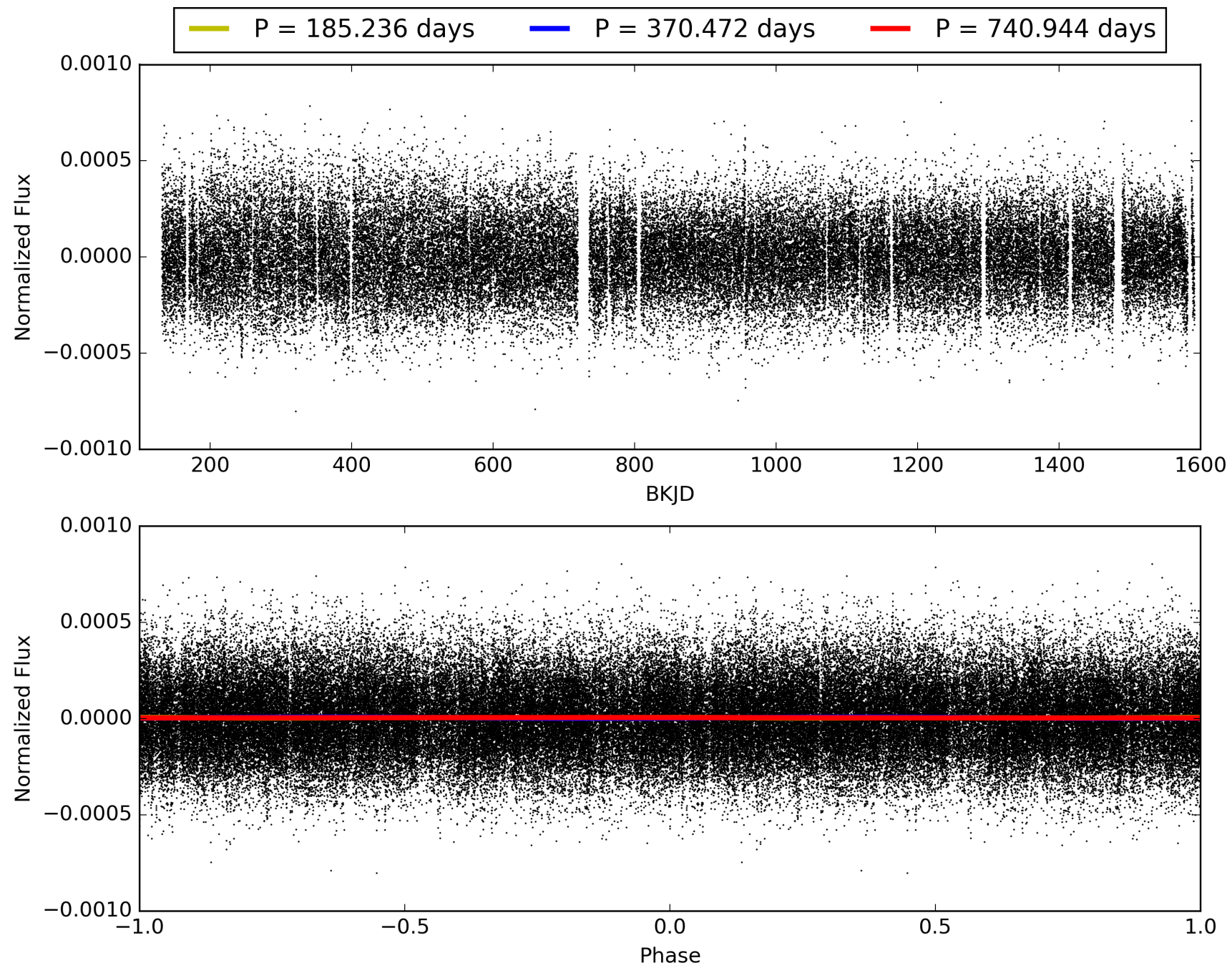
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 11:15:51 Z

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

TCE 007045280-02, PDC Light Curves

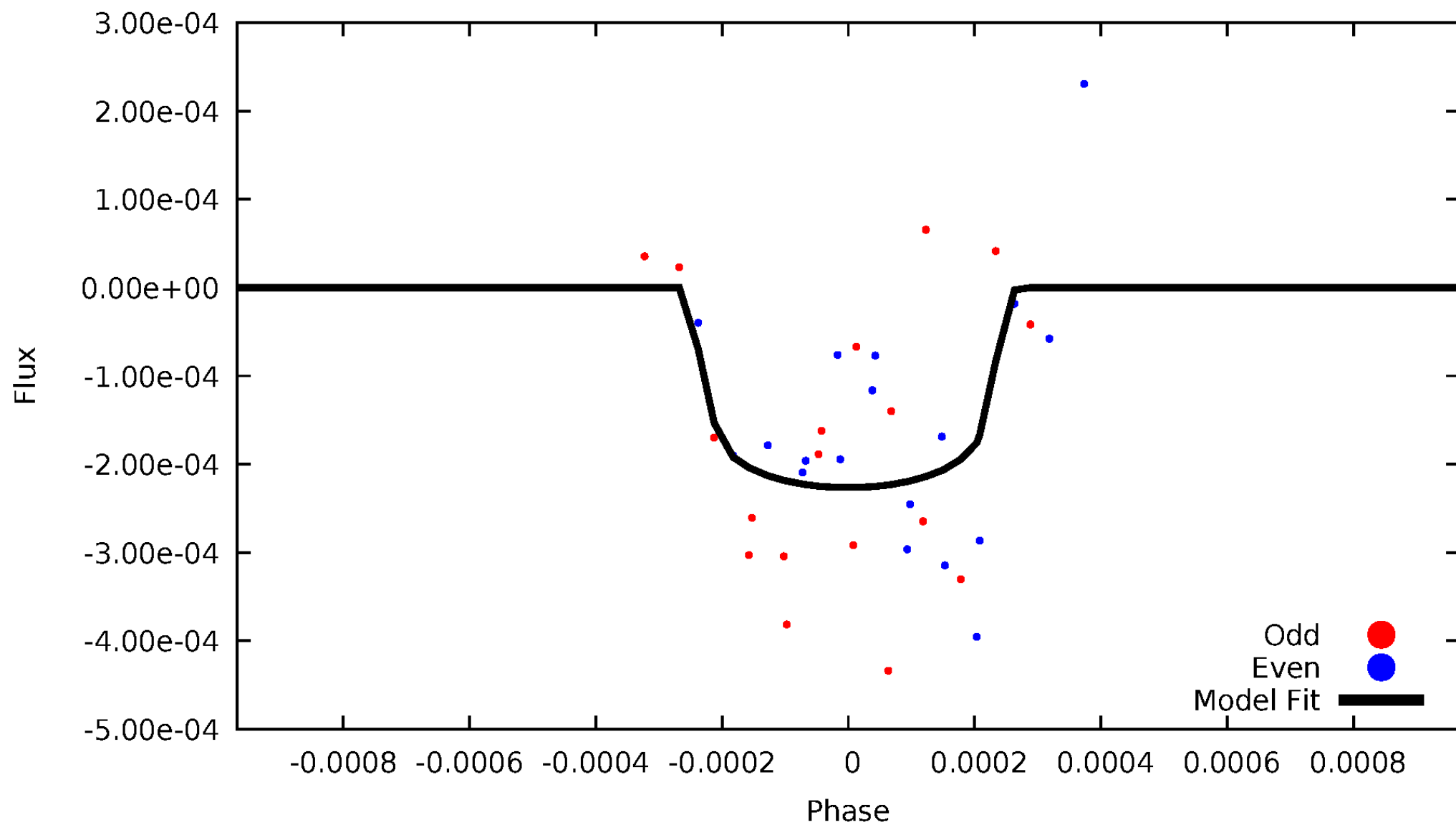


TCE 007045280-02



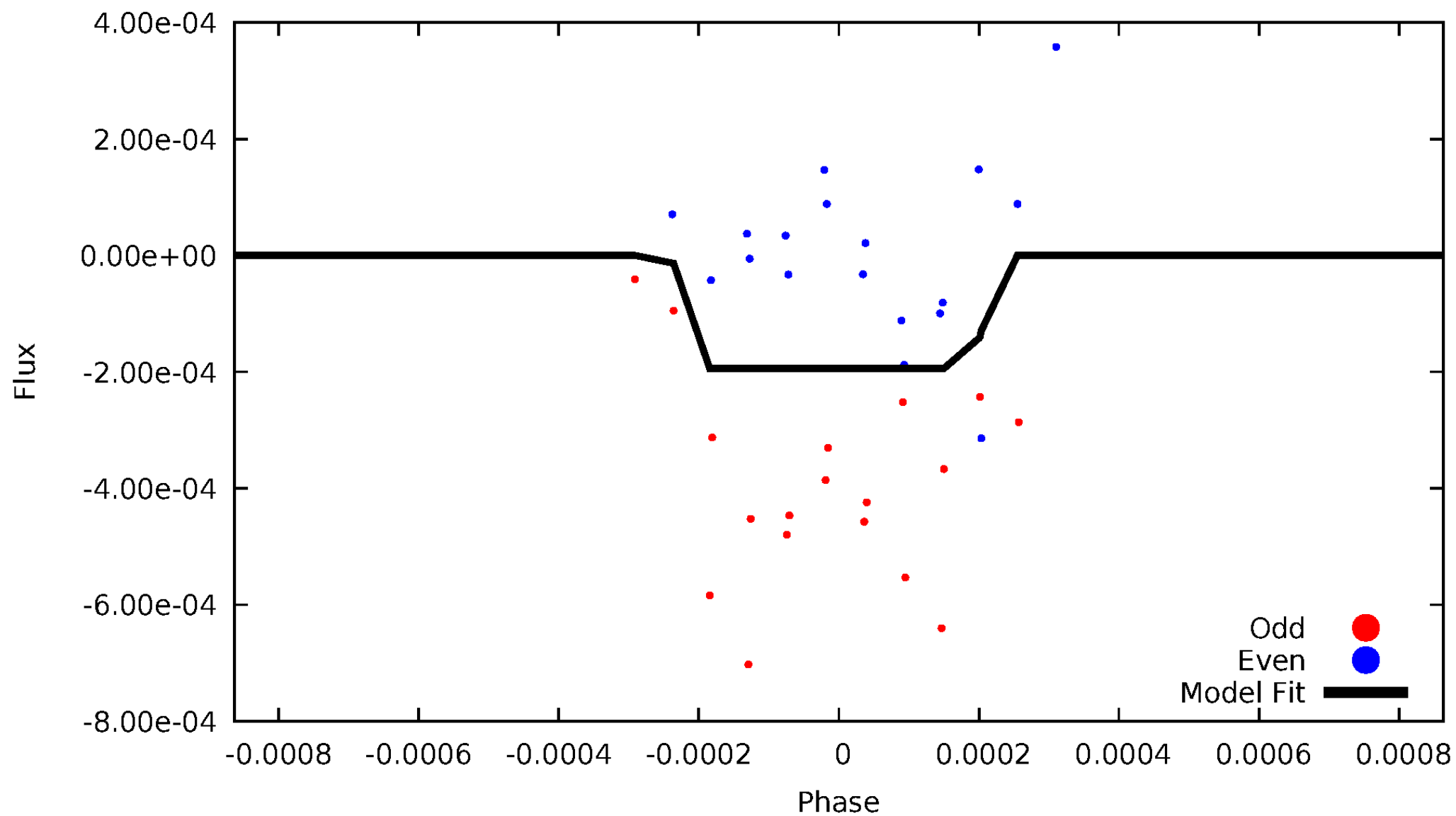
DV Odd/Even

TCE 007045280-02



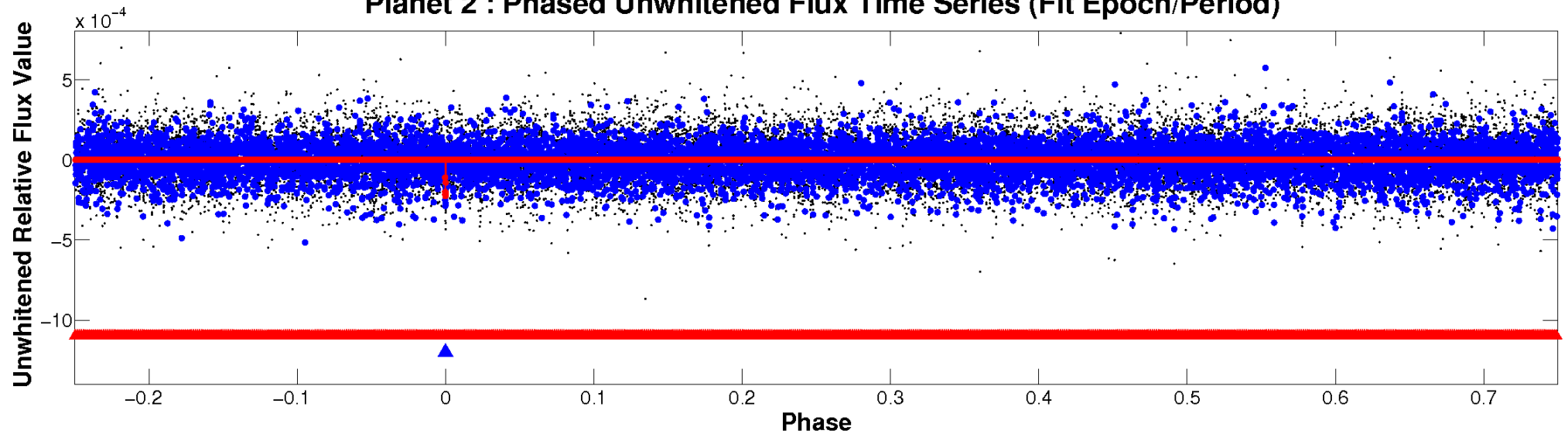
ALT Odd/Even

TCE 007045280-02

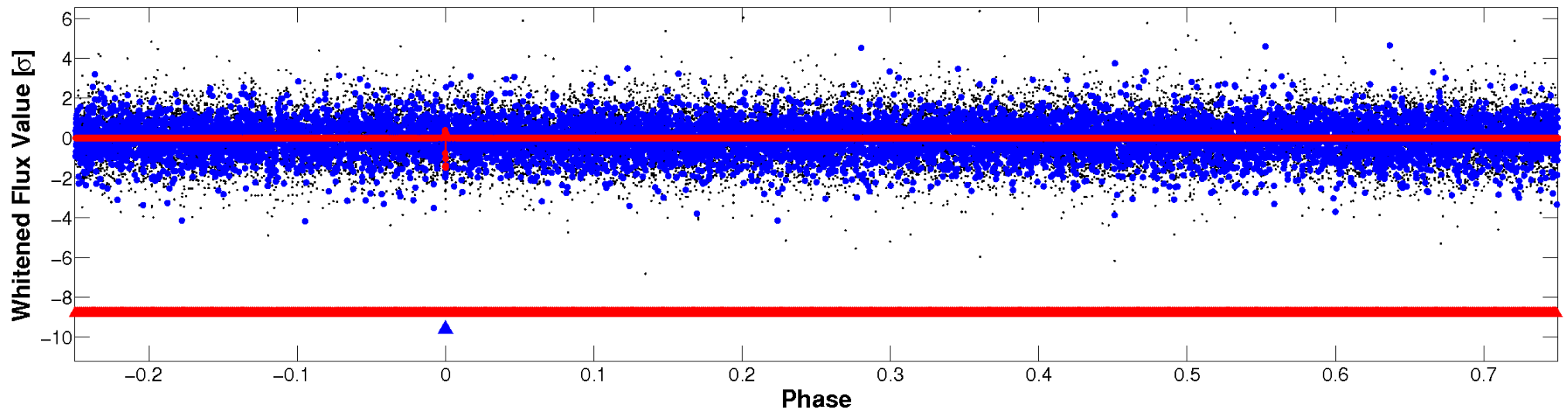


Non-Whitened Vs. Whitened Light Curve

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

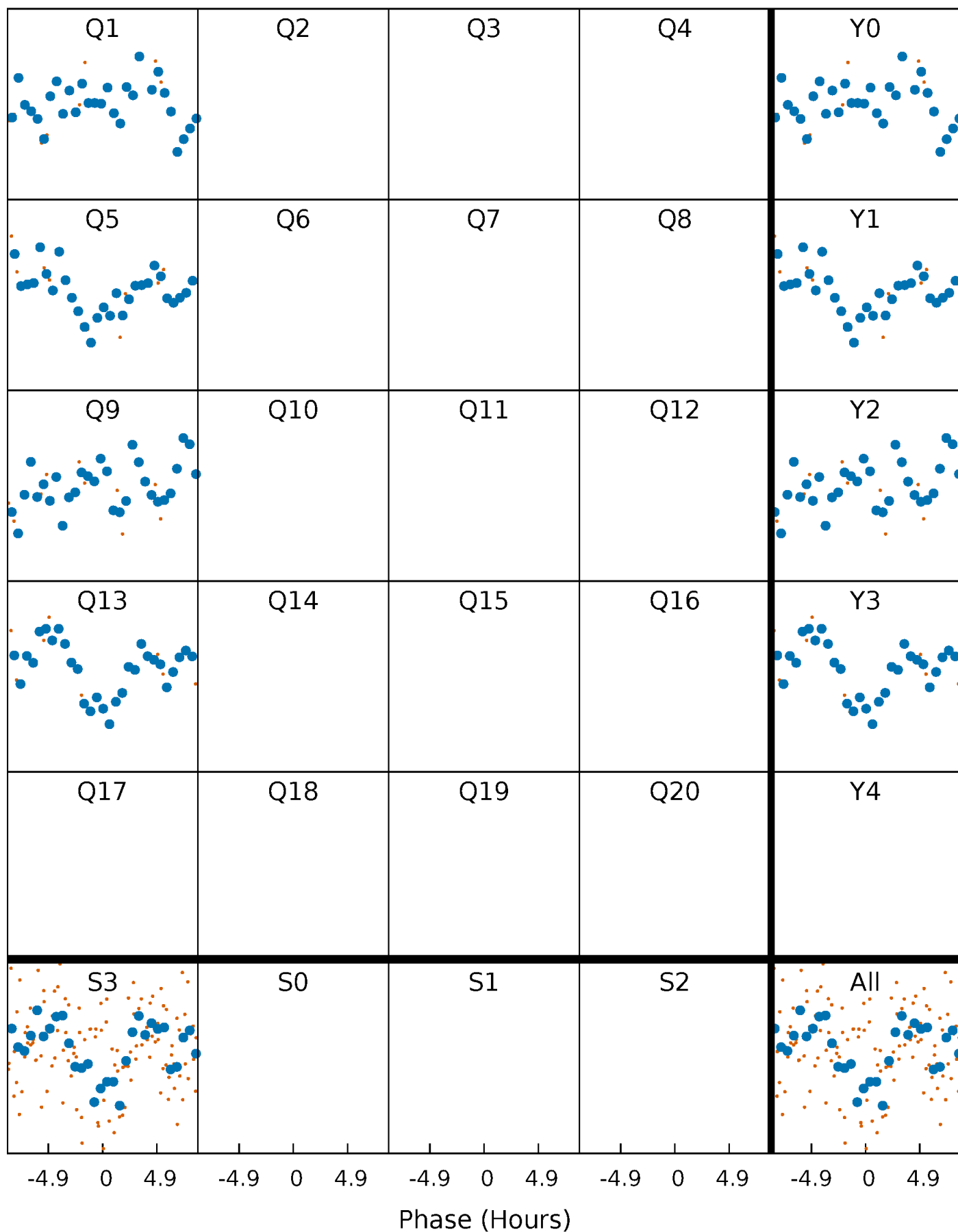


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



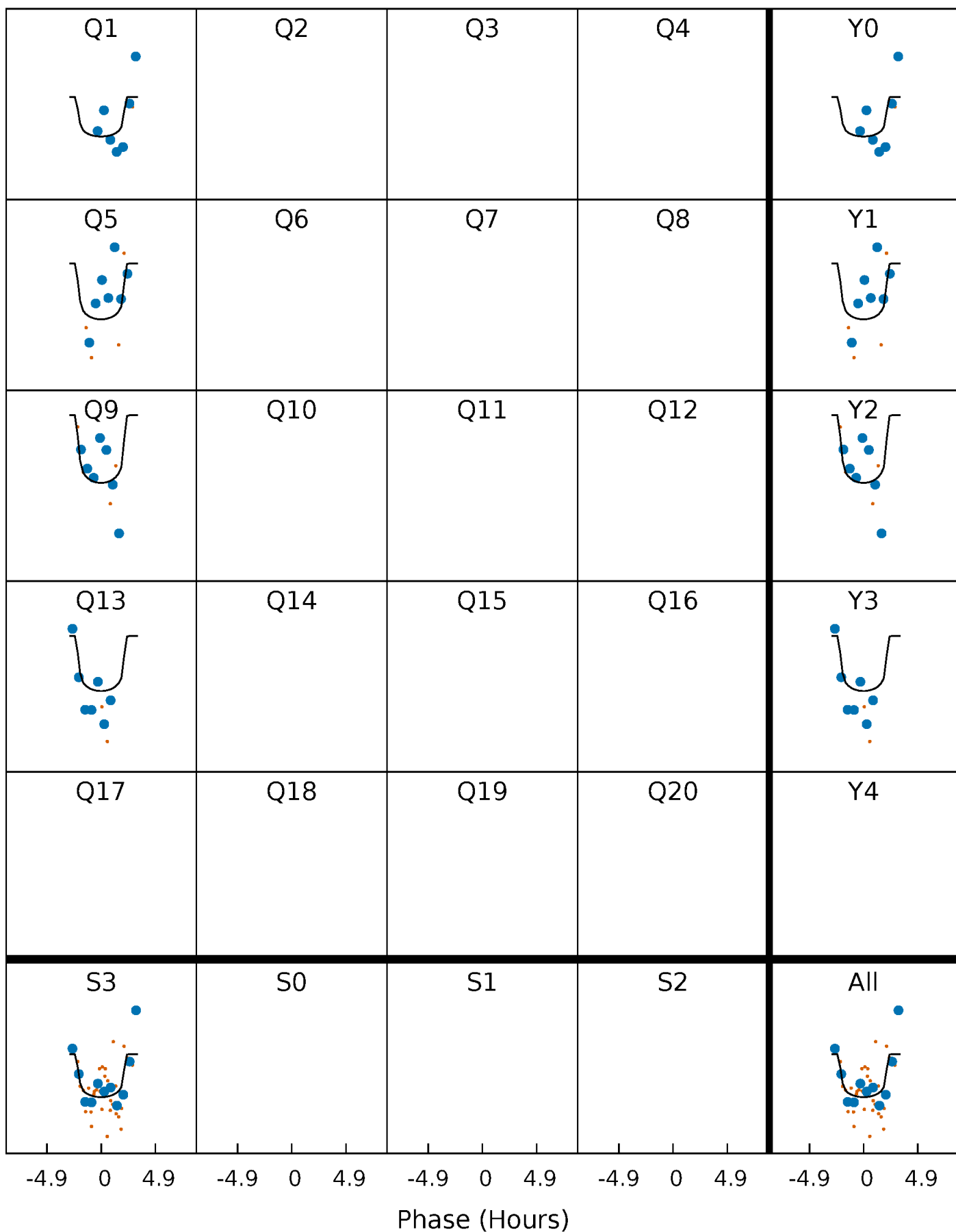
PDC Quarter-Phased Transit Curves

TCE 007045280-02 $P=370.472179$ Days $T_0=155.118598$ (BKJD)



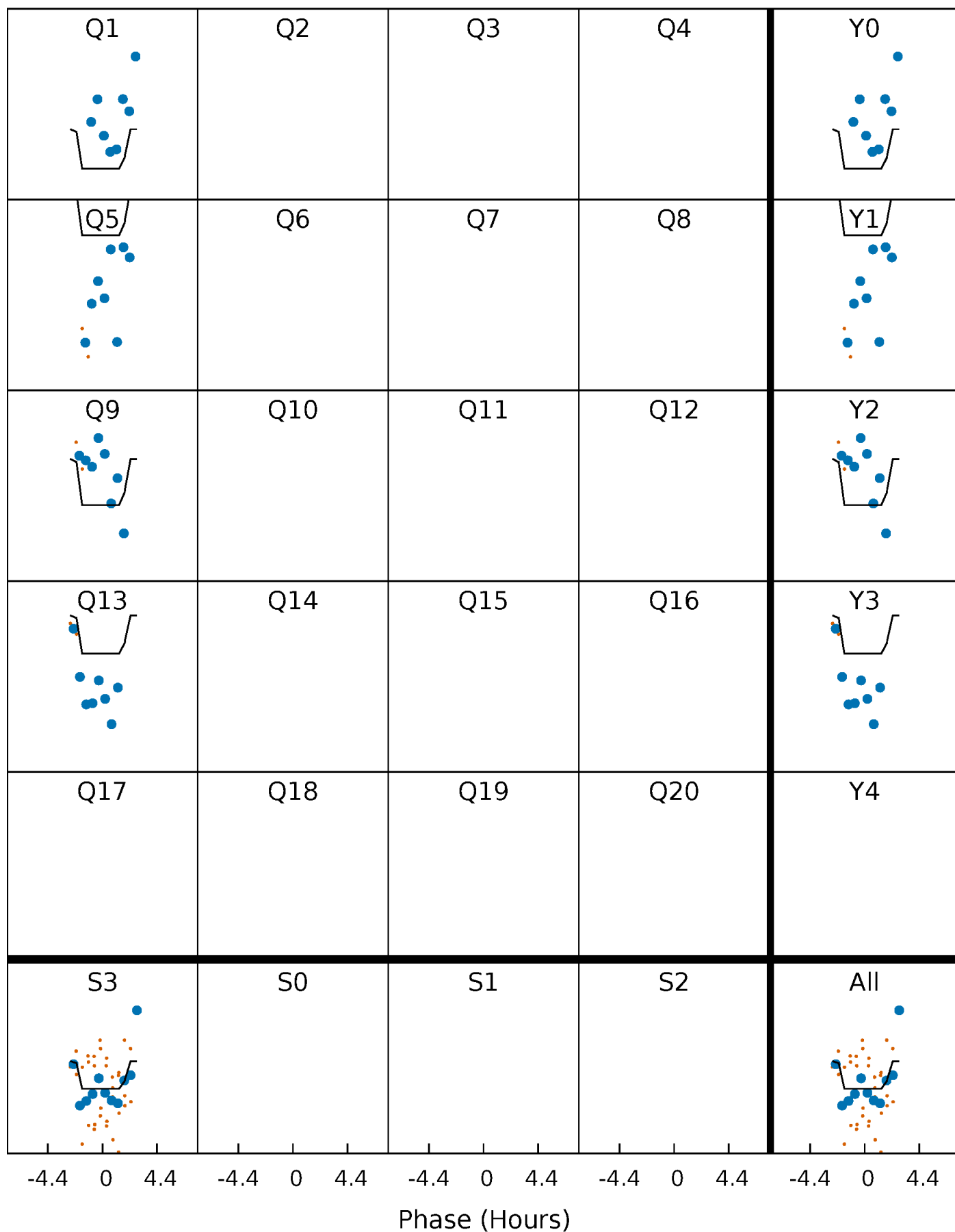
DV Quarter-Phased Transit Curves

TCE 007045280-02 $P=370.472179$ Days $T_0=155.118598$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

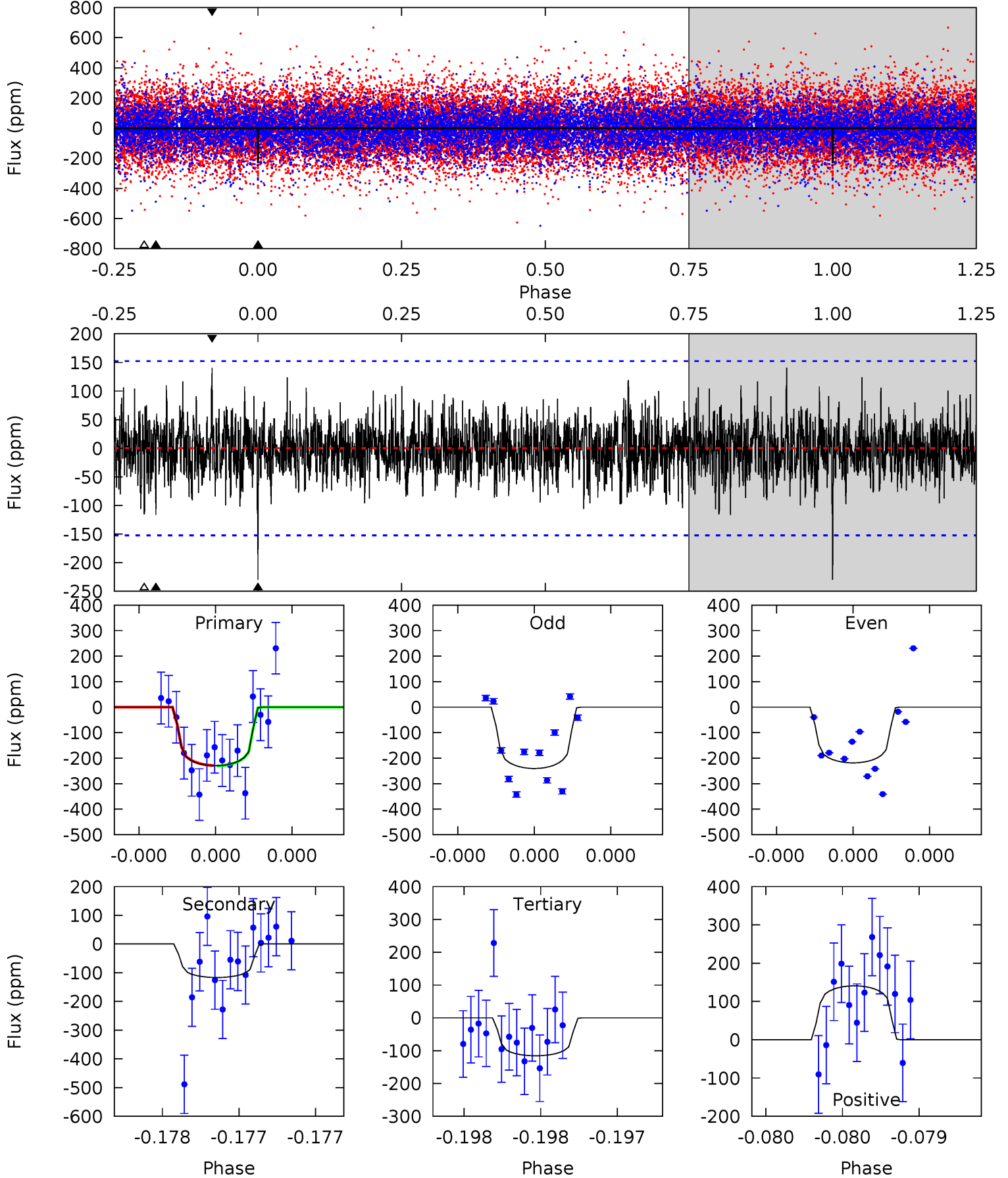
TCE 007045280-02 P=370.460443 Days $T_0=155.142080$ (BKJD)



DV Model-Shift Uniqueness Test

007045280-02, P = 370.472179 Days, E = 155.118598 Days

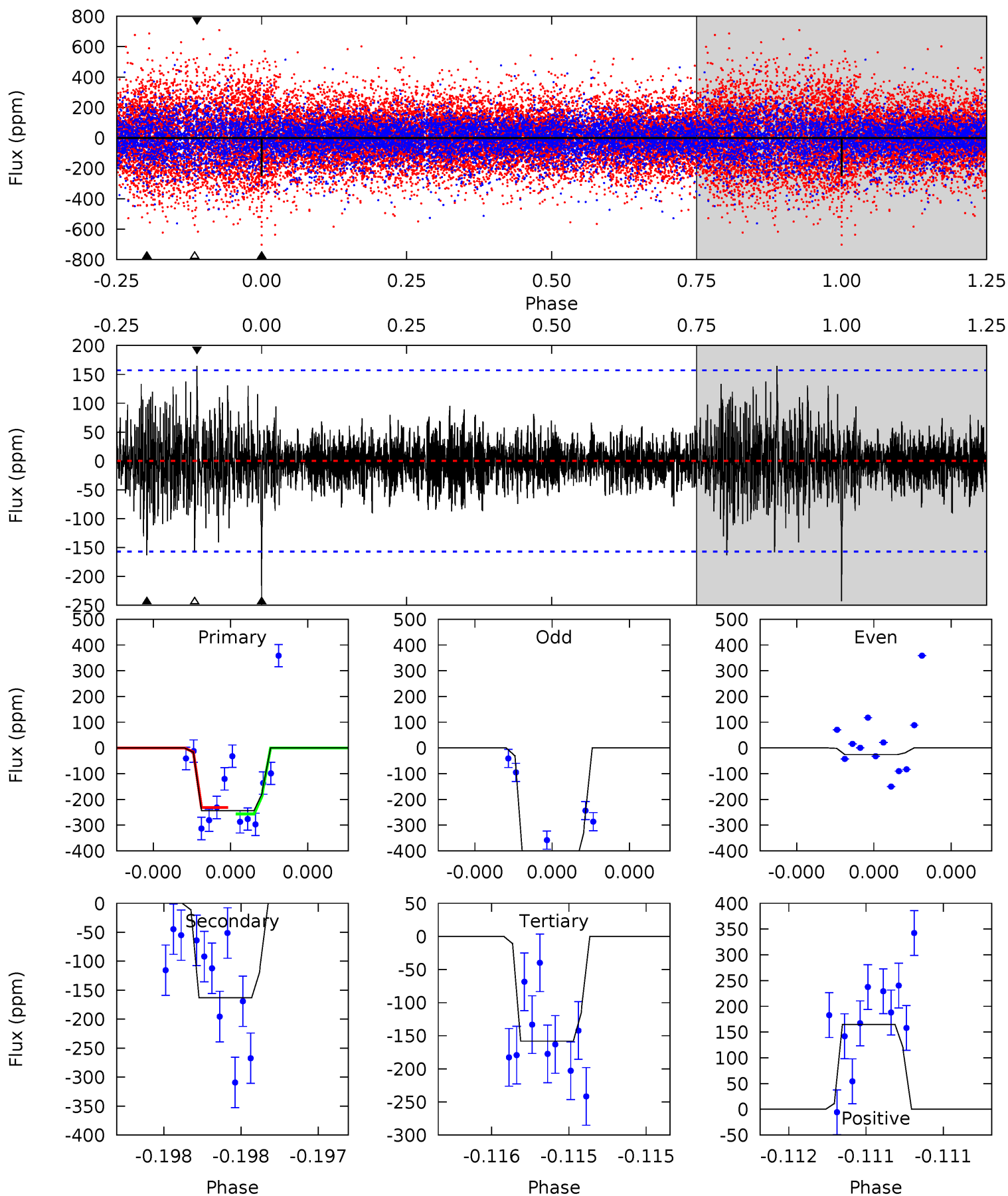
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.42	4.28	4.24	5.16	5.58	3.49	1.30	4.18	3.26	0.04	-0.89	0.41	1.05	0.38	0.03



Alt Model-Shift Uniqueness Test

007045280-02, P = 370.460443 Days, E = 155.142080 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.64	5.79	5.62	5.85	5.58	3.49	1.17	3.02	2.79	0.17	-0.06	7.58	1.00	0.40	0.45



Stellar Parameters For KIC 007045280

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6591^{+180}_{-180}	$3.503^{+0.360}_{-0.090}$	$-0.300^{+0.350}_{-0.300}$	$3.838^{+0.404}_{-1.516}$	$1.711^{+0.213}_{-0.396}$	$0.043^{+0.122}_{-0.012}$
	+3%/-3%	+10%/-3%	+117%/-100%	+11%/-39%	+12%/-23%	+285%/-28%
Source	PHO1	FLK73	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 007045280-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-117 ± 27	$9.51^{+9.31}_{-6.56}$	713^{+40}_{-71}	4534^{+3548}_{-1000}	1028^{+9684}_{-785}
Alt.	-163 ± 28	$9.47^{+9.54}_{-6.44}$	711^{+40}_{-73}	4777^{+4182}_{-1013}	1354^{+12852}_{-991}

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 $A_{obs} \gg 1.0$

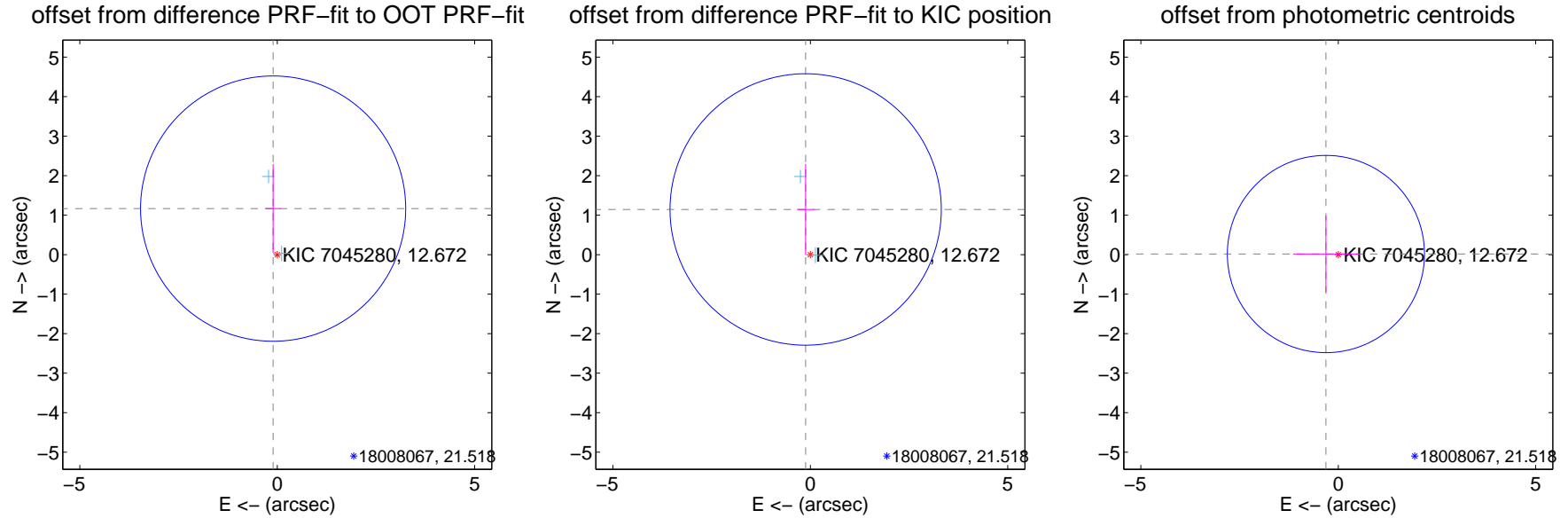
DV Centroid Data

Supplemental centroid analysis for 007045280-02. Kepler magnitude: 12.67. Transit SNR 7.42

There are 2 quarters with good PRF difference image offsets

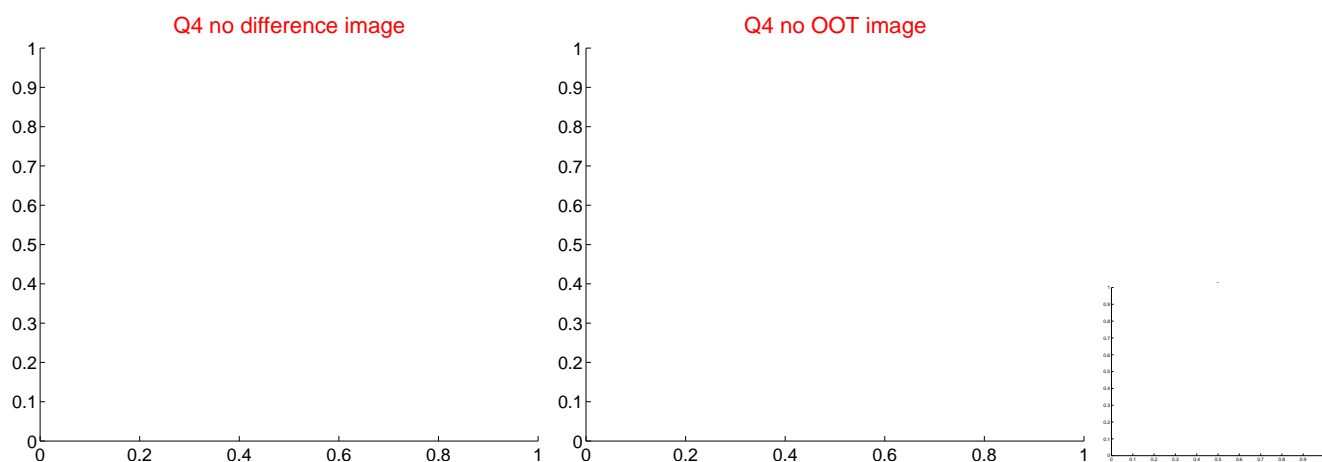
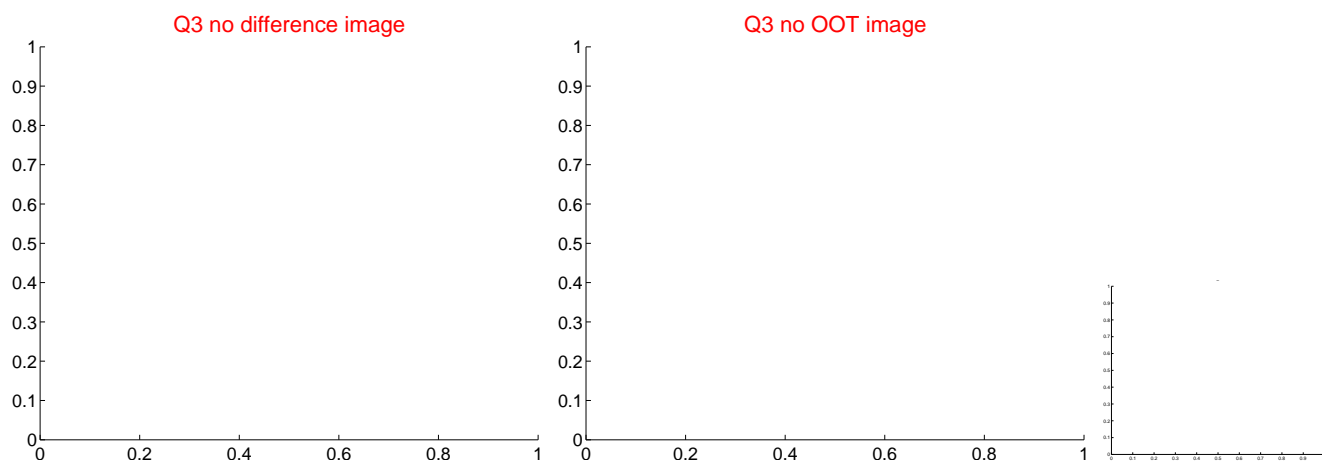
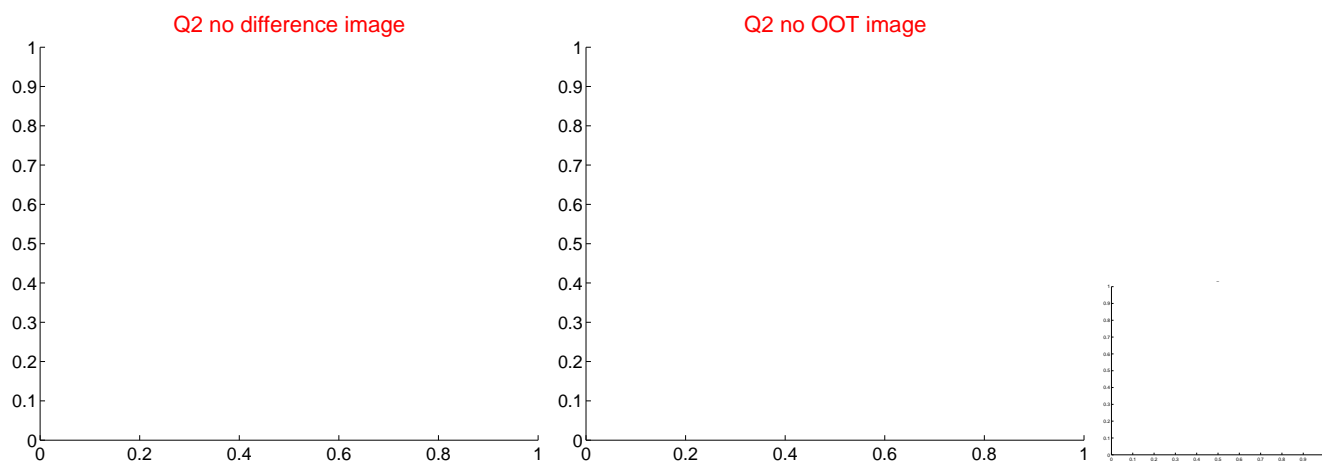
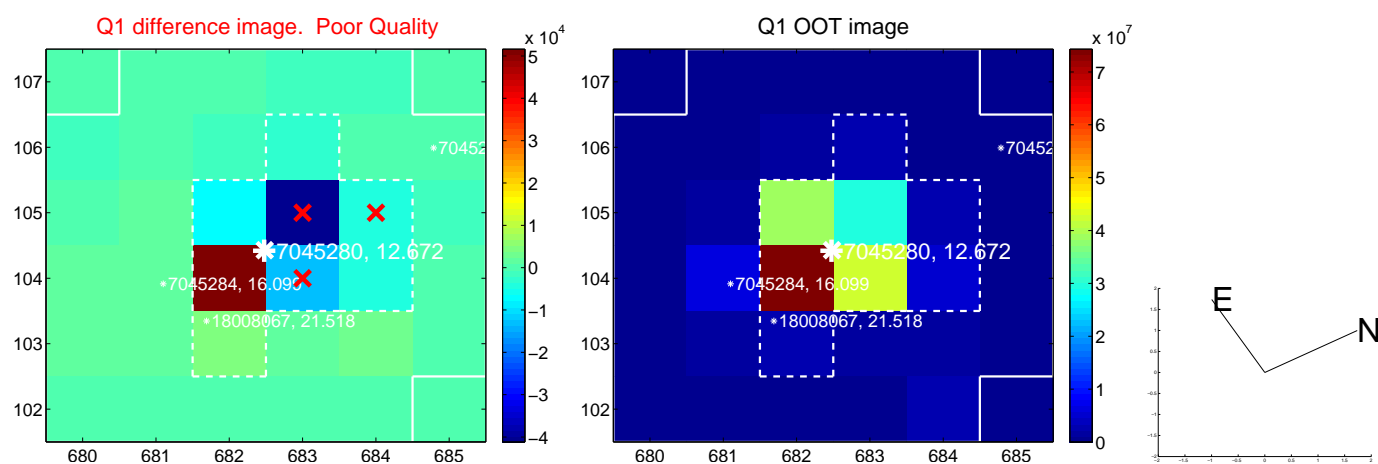
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.170 ± 1.119	1.05	0.104 ± 0.198	1.165 ± 1.123
PRF-fit source offset from KIC position	1.150 ± 1.145	1.00	0.119 ± 0.222	1.144 ± 1.151
photometric centroid source offset	0.31 ± 0.83	0.38	0.31 ± 0.83	0.02 ± 0.97

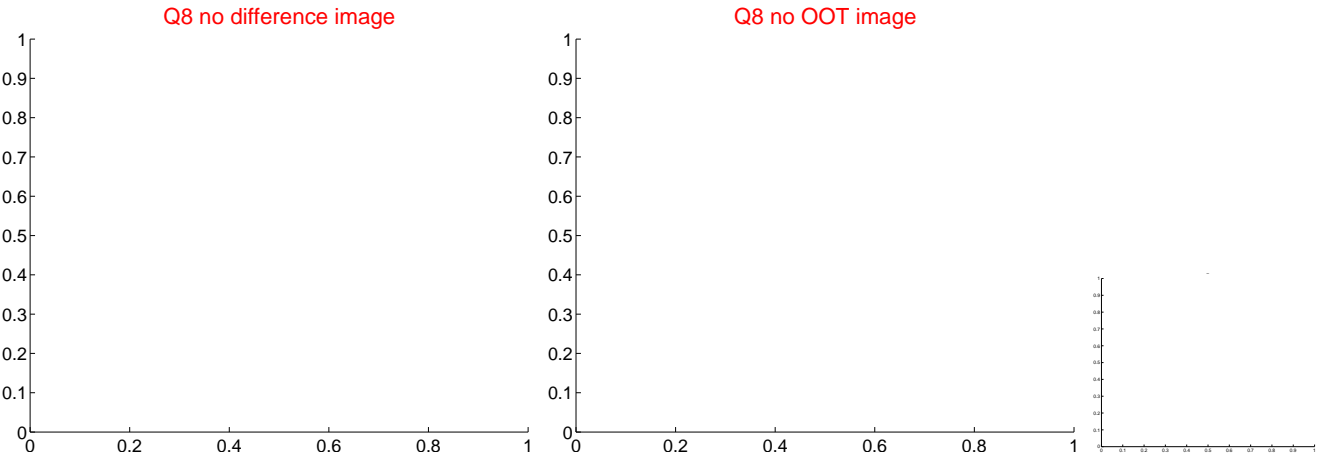
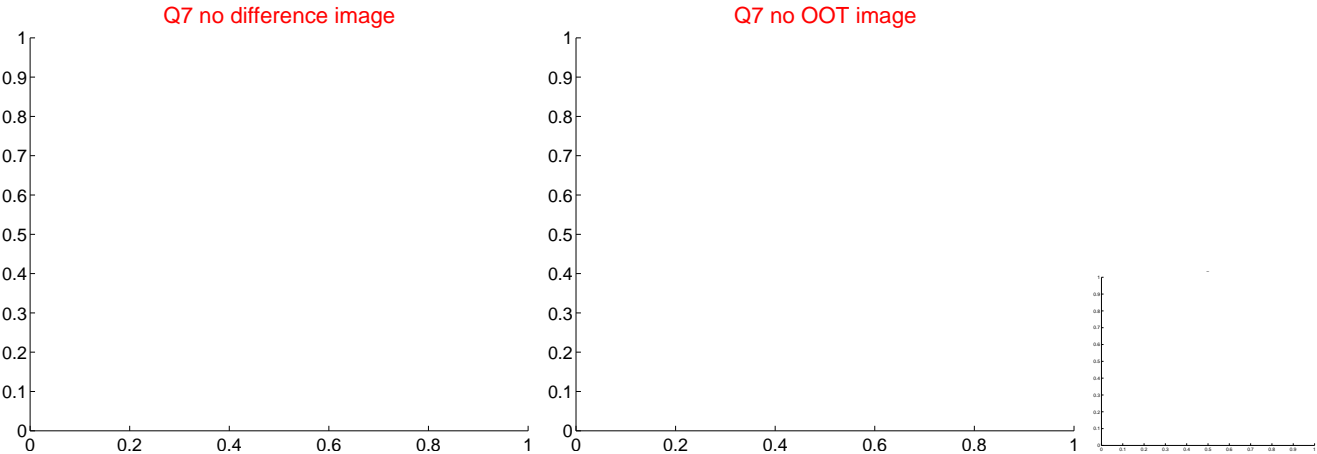
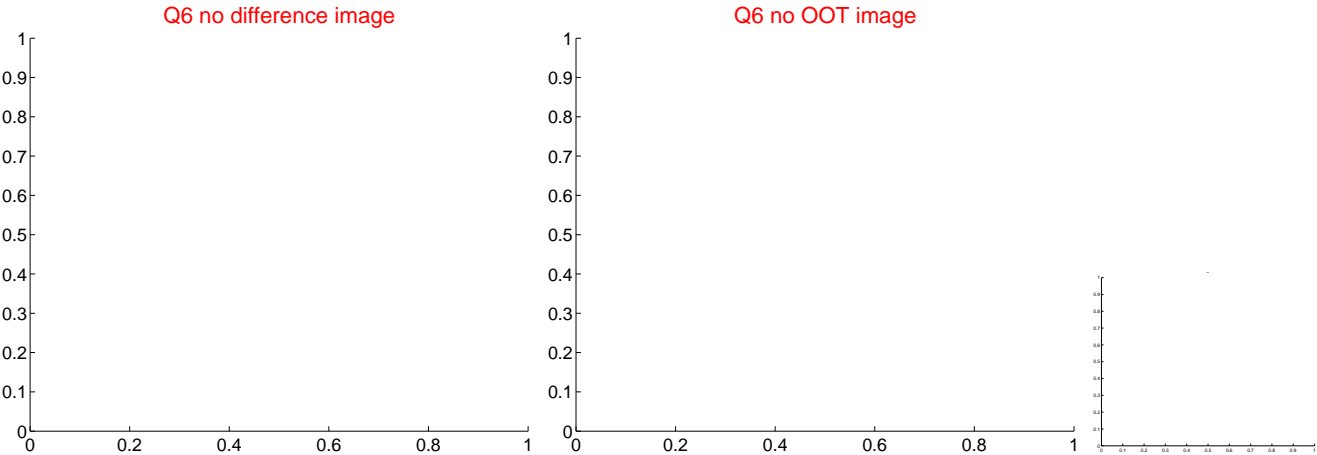
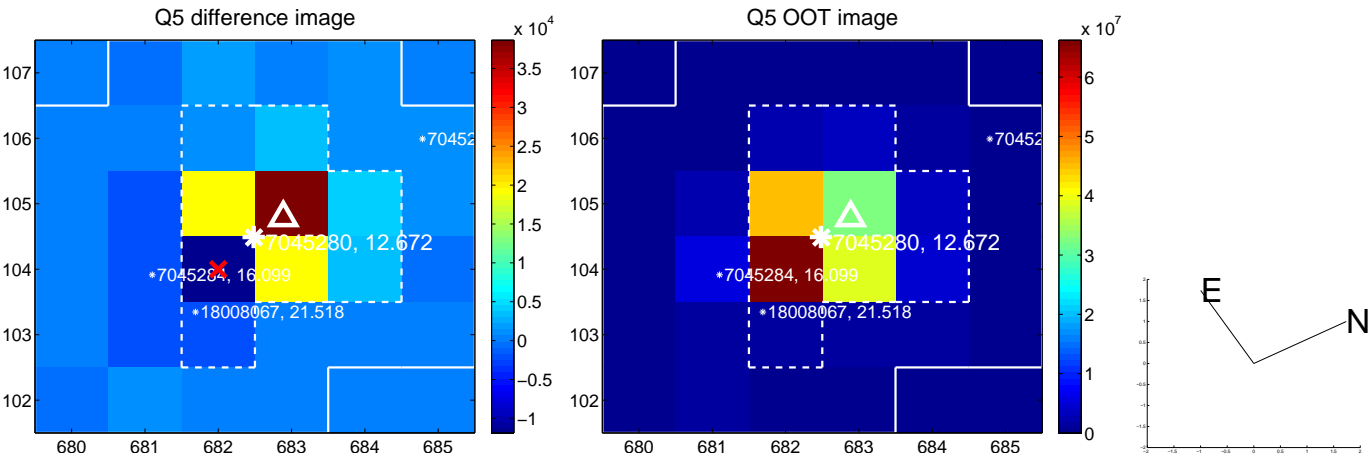


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

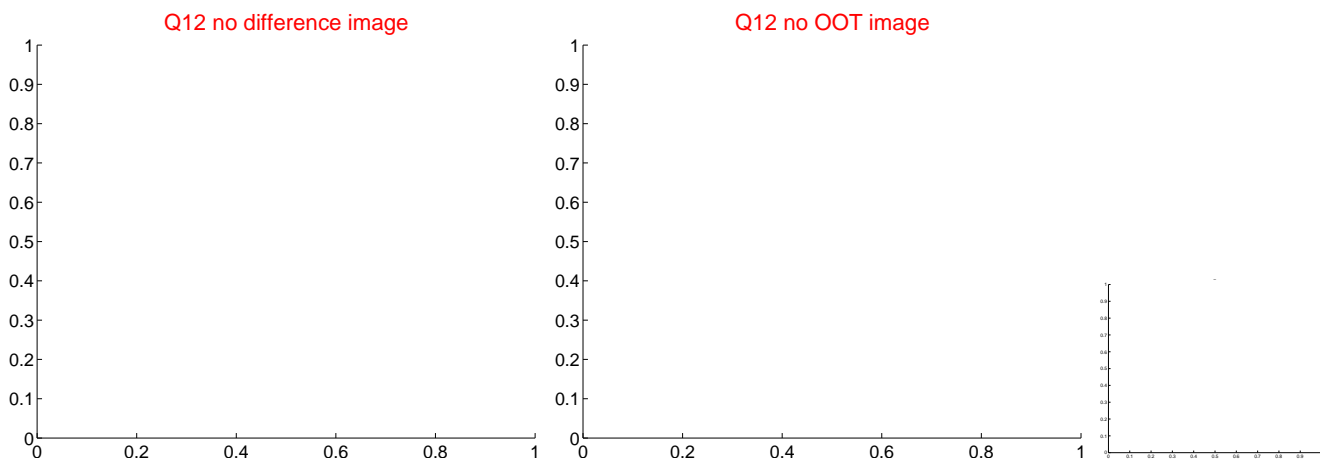
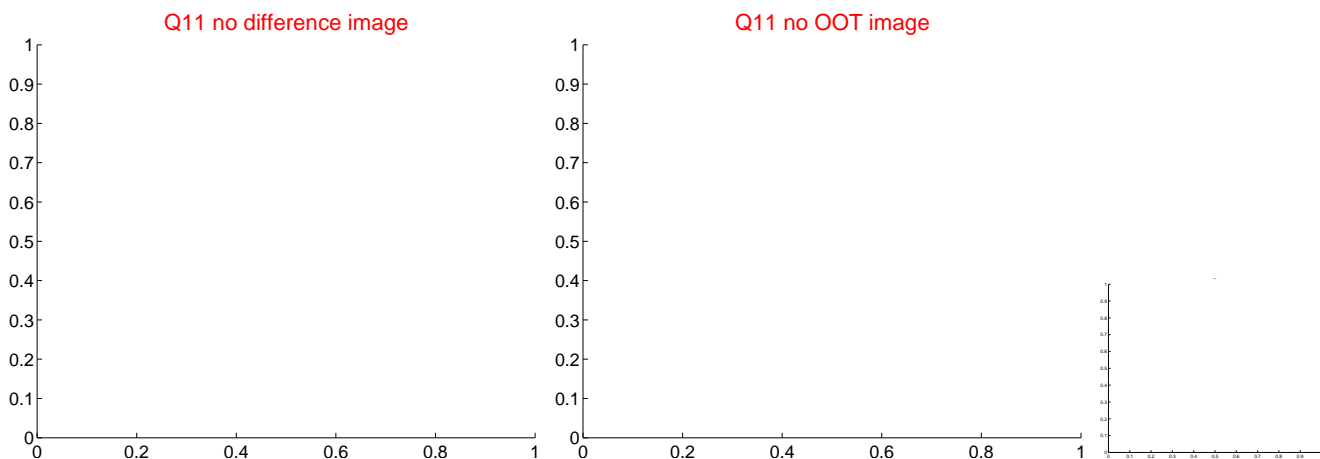
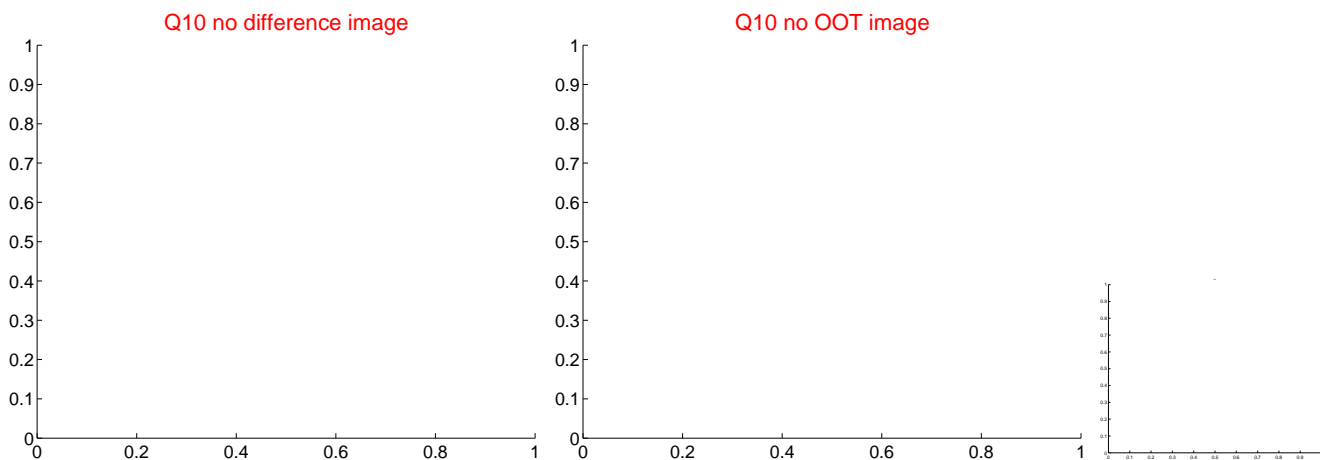
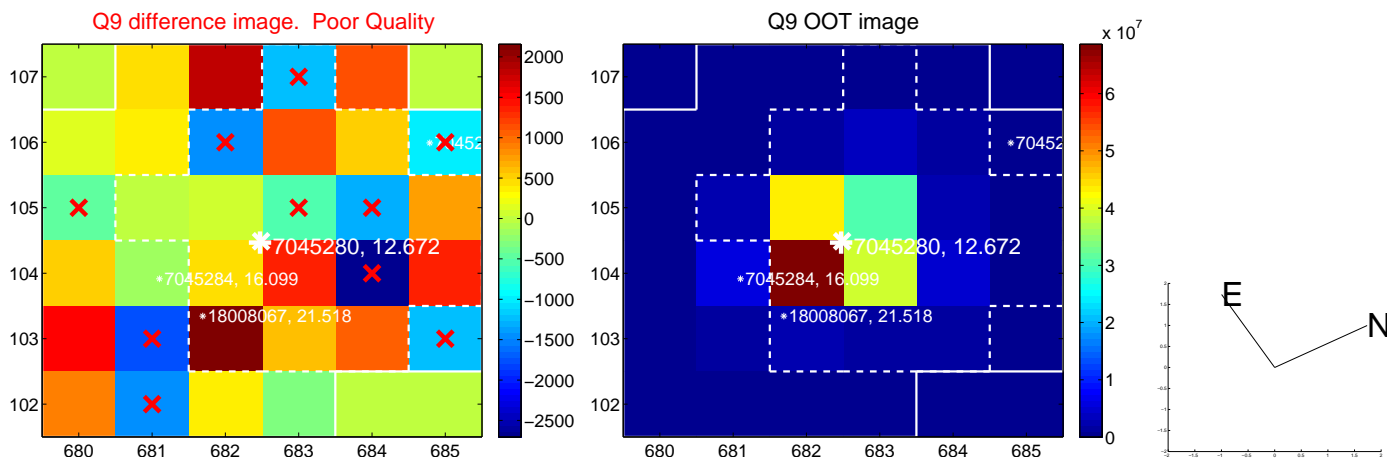
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



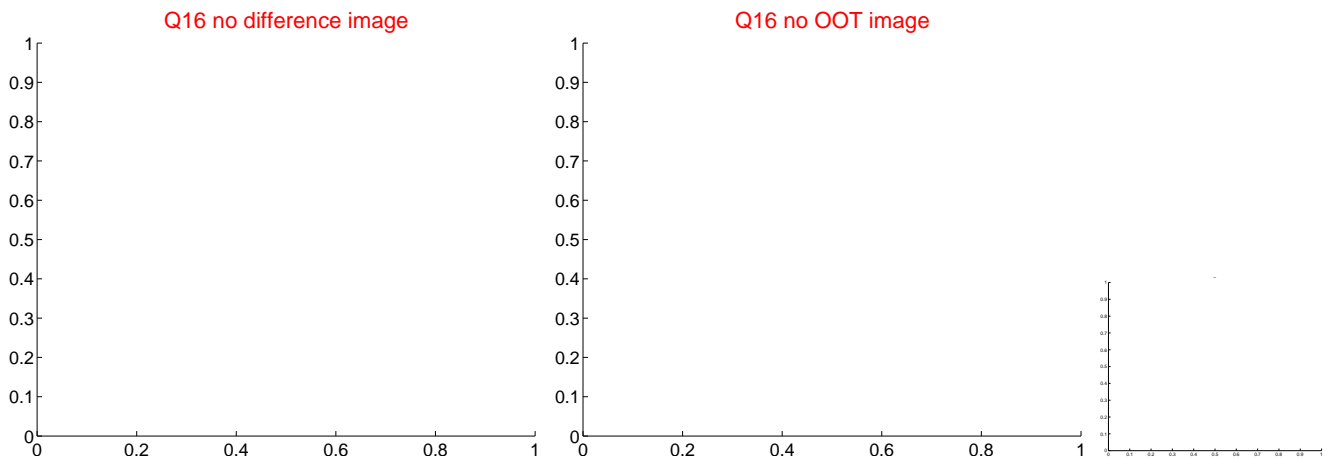
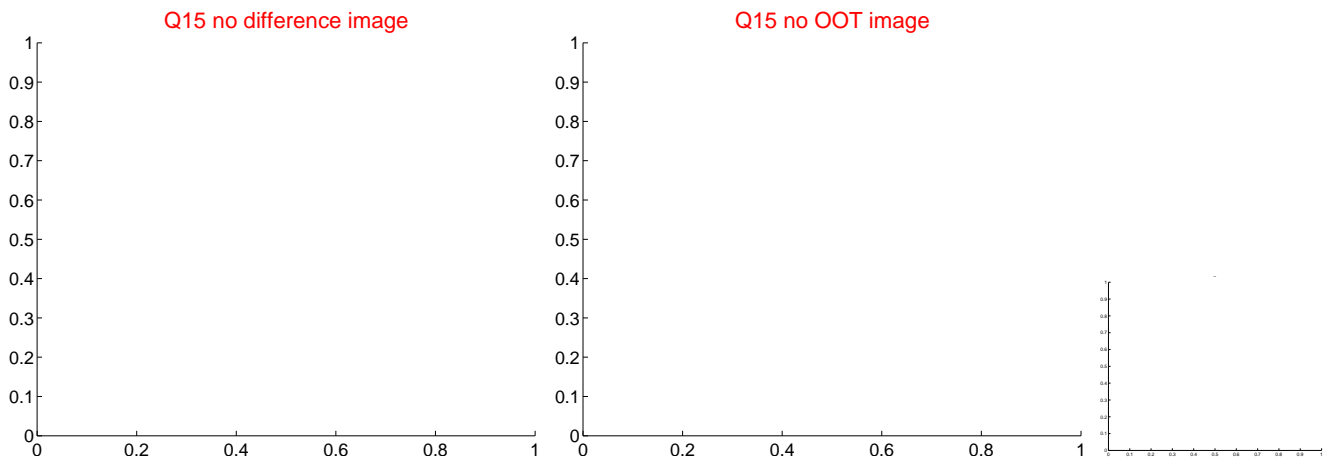
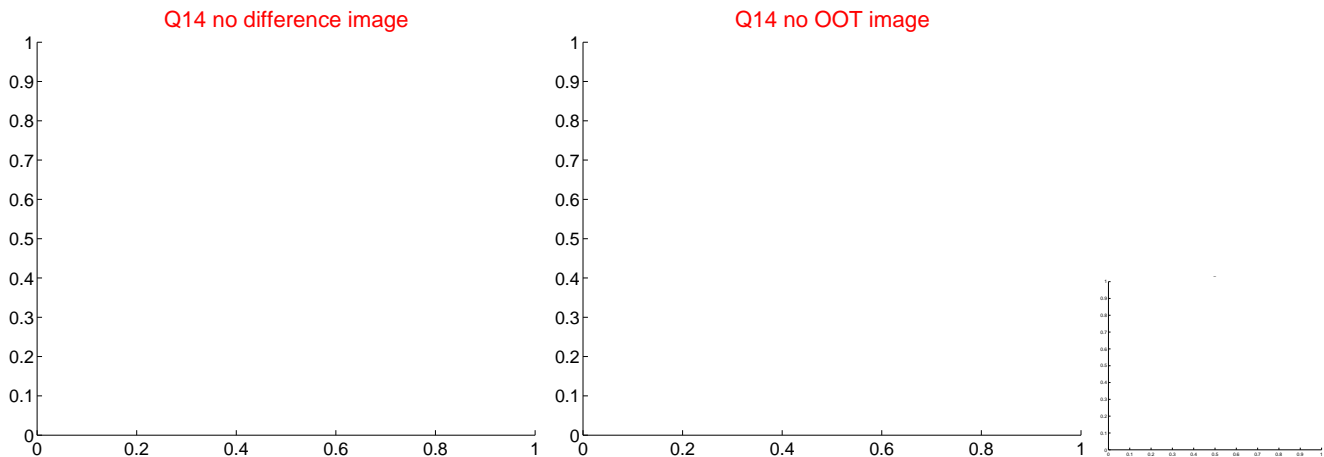
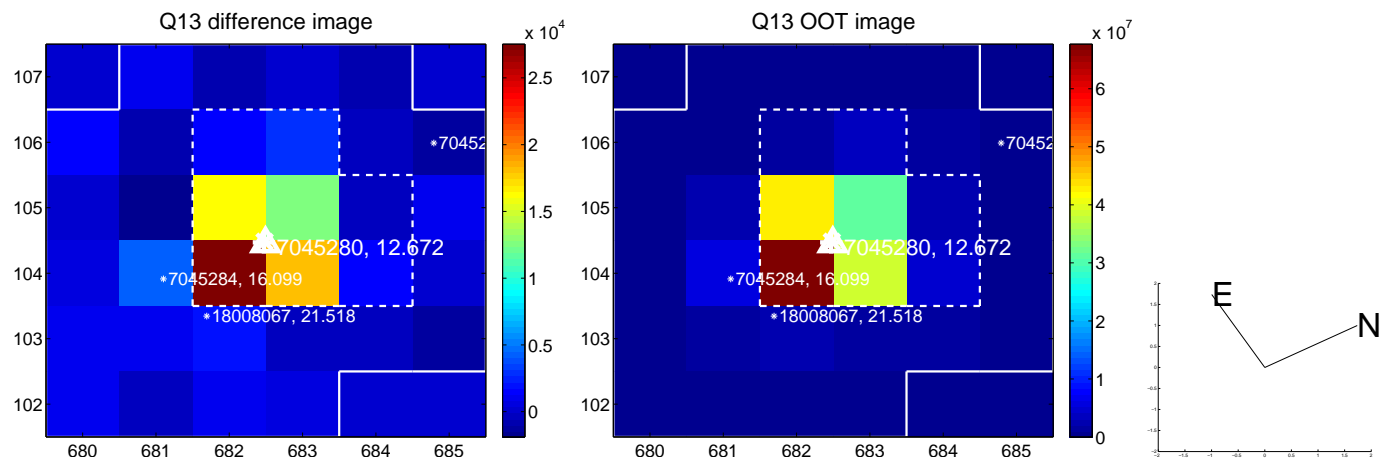
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



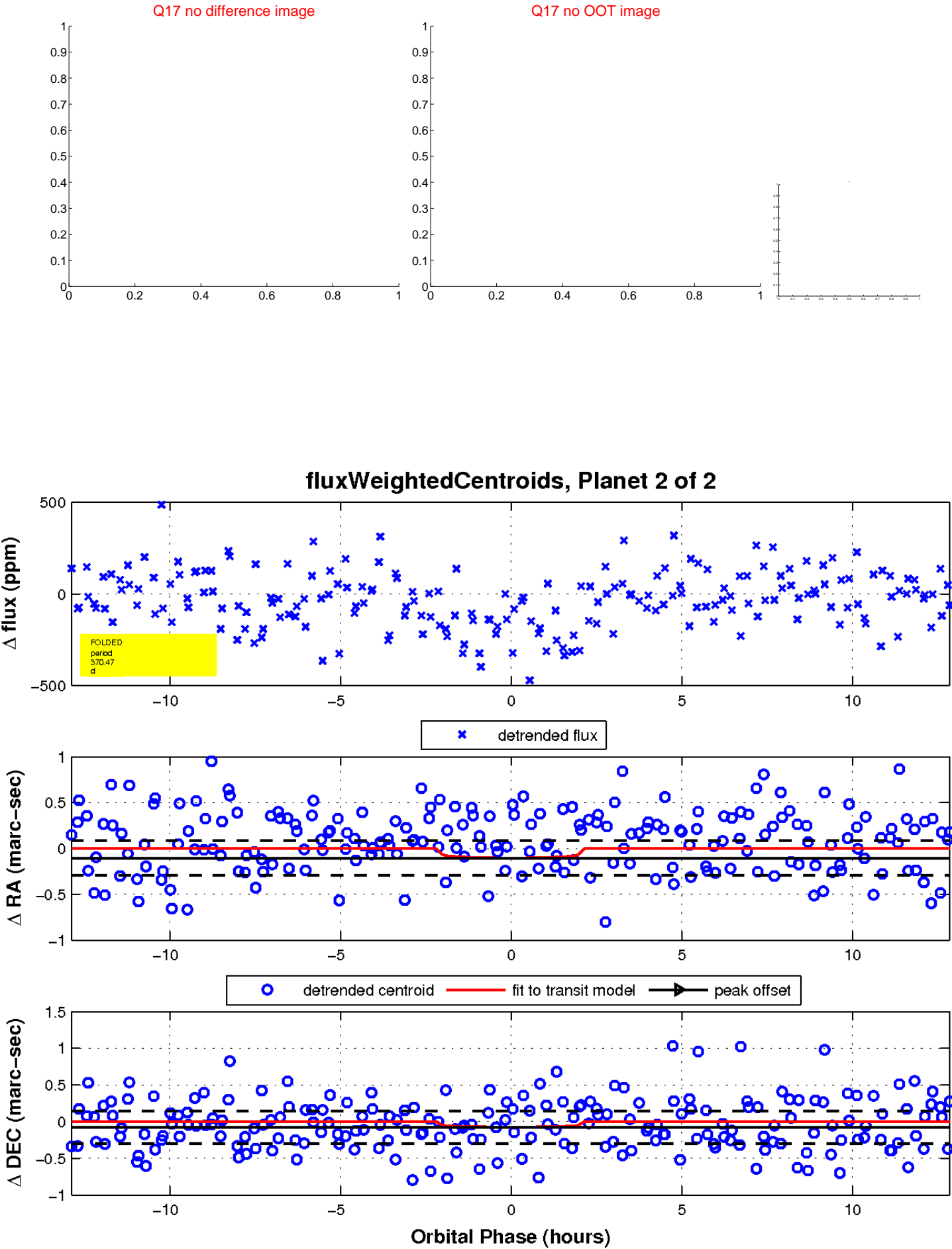
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

