

KIC 010815466

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})
010815466-01	OBS	No	1.012247	132.301053	39.0	4.165	7.3	6.5	2.59	8527	1.73	55748.42
010815466-02	OBS	No	1.012318	131.736836	55.4	5.279	9.4	10.8	2.59	8527	1.96	55743.22

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010815466-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
010815466-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_SATURATED

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

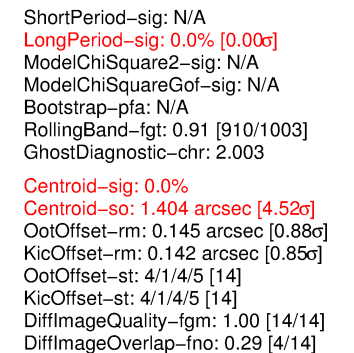
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

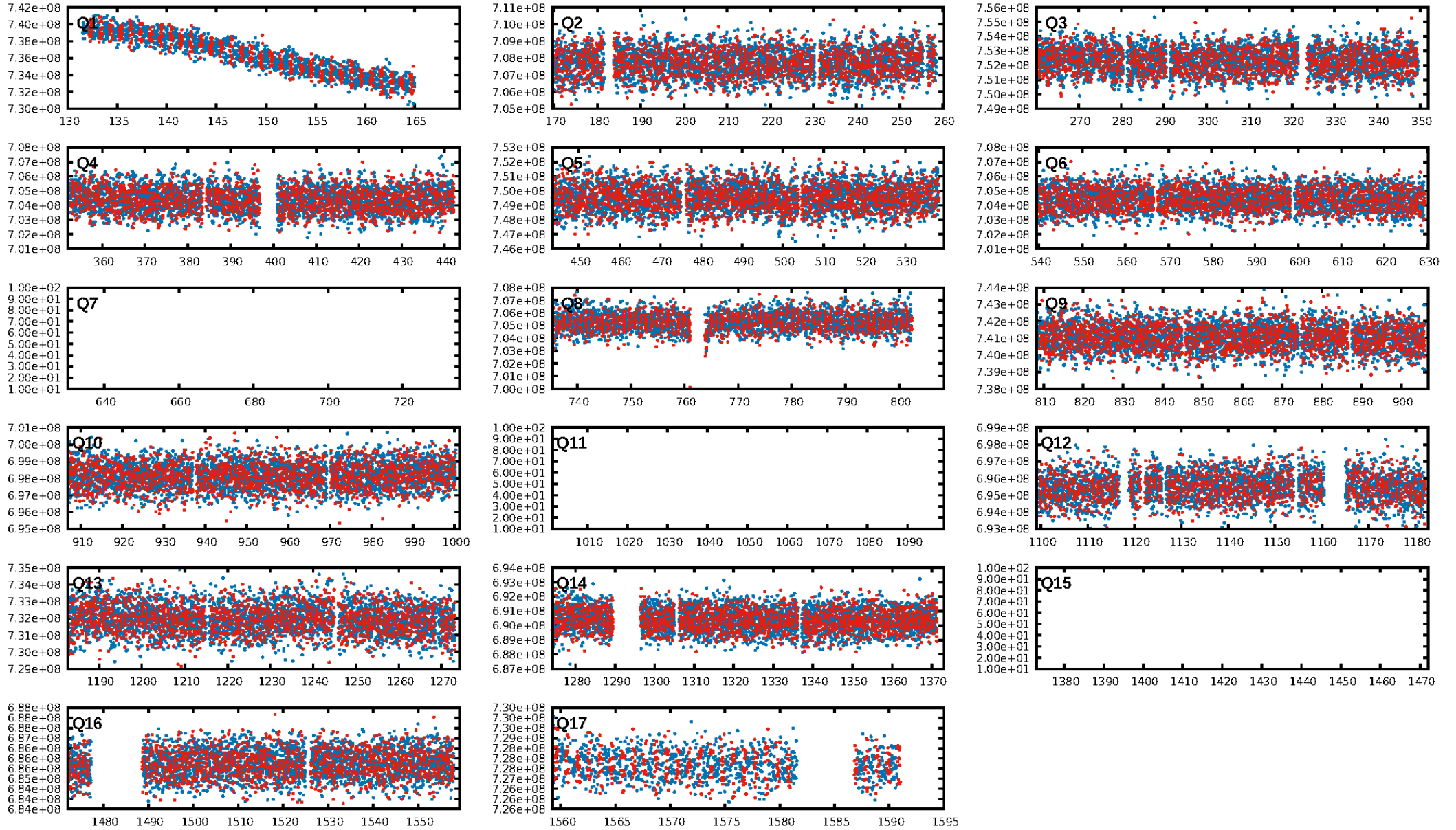
Ephemeris Match Information For 010815466-01

No Significant Match Found

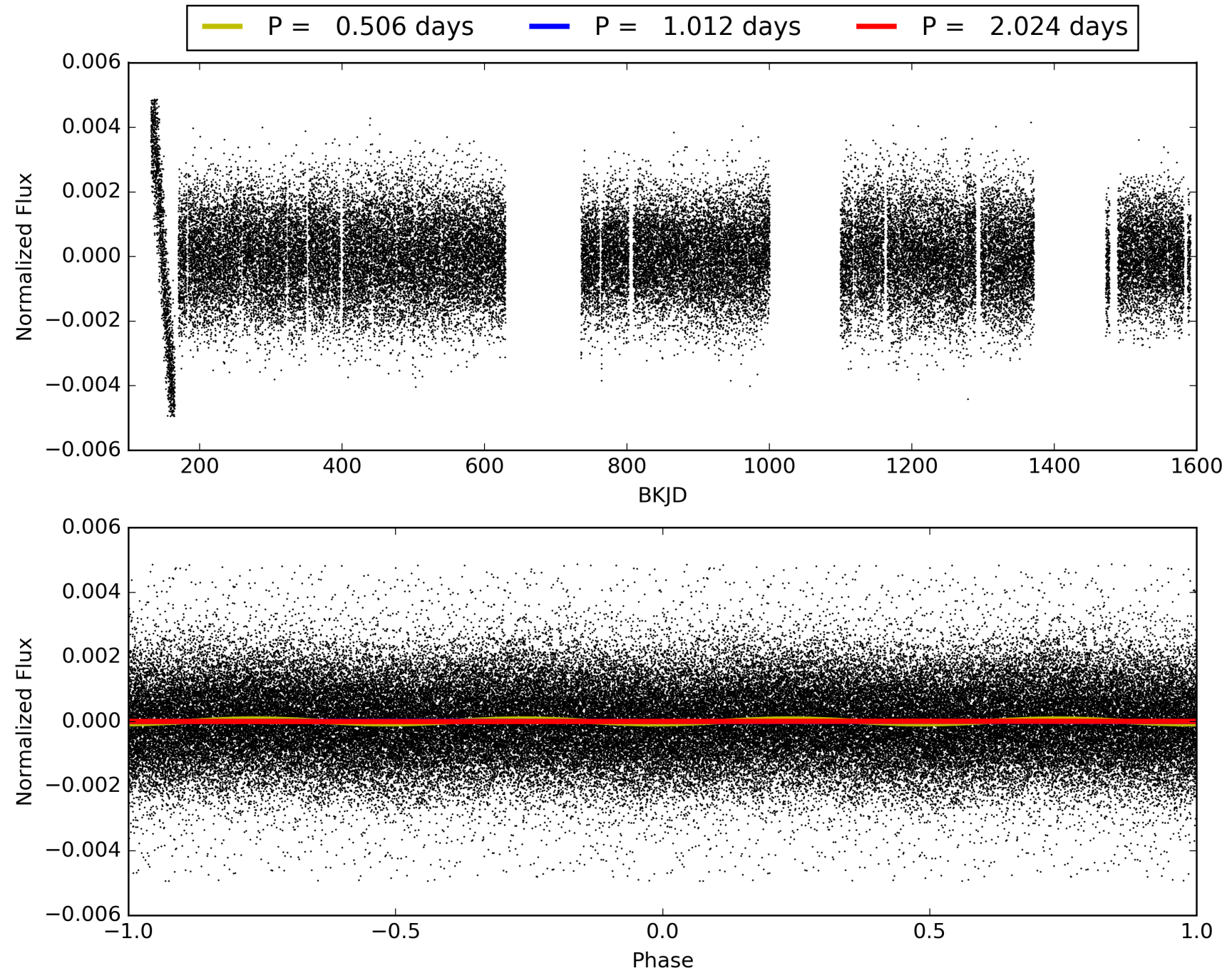
KIC: 10815466 Candidate: 1 of 2 Period: 1.012 d



TCE 010815466-01, PDC Light Curves

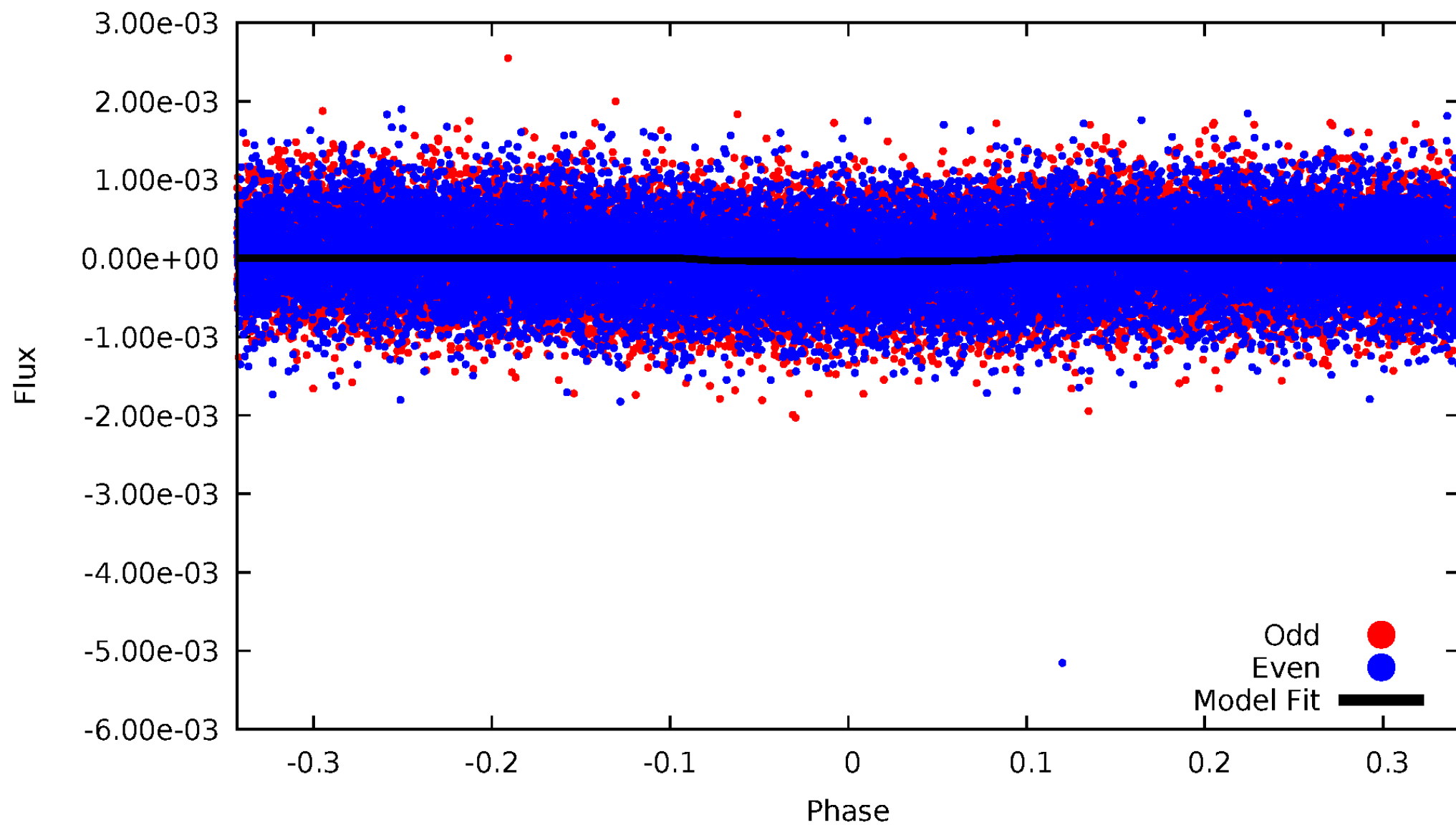


TCE 010815466-01



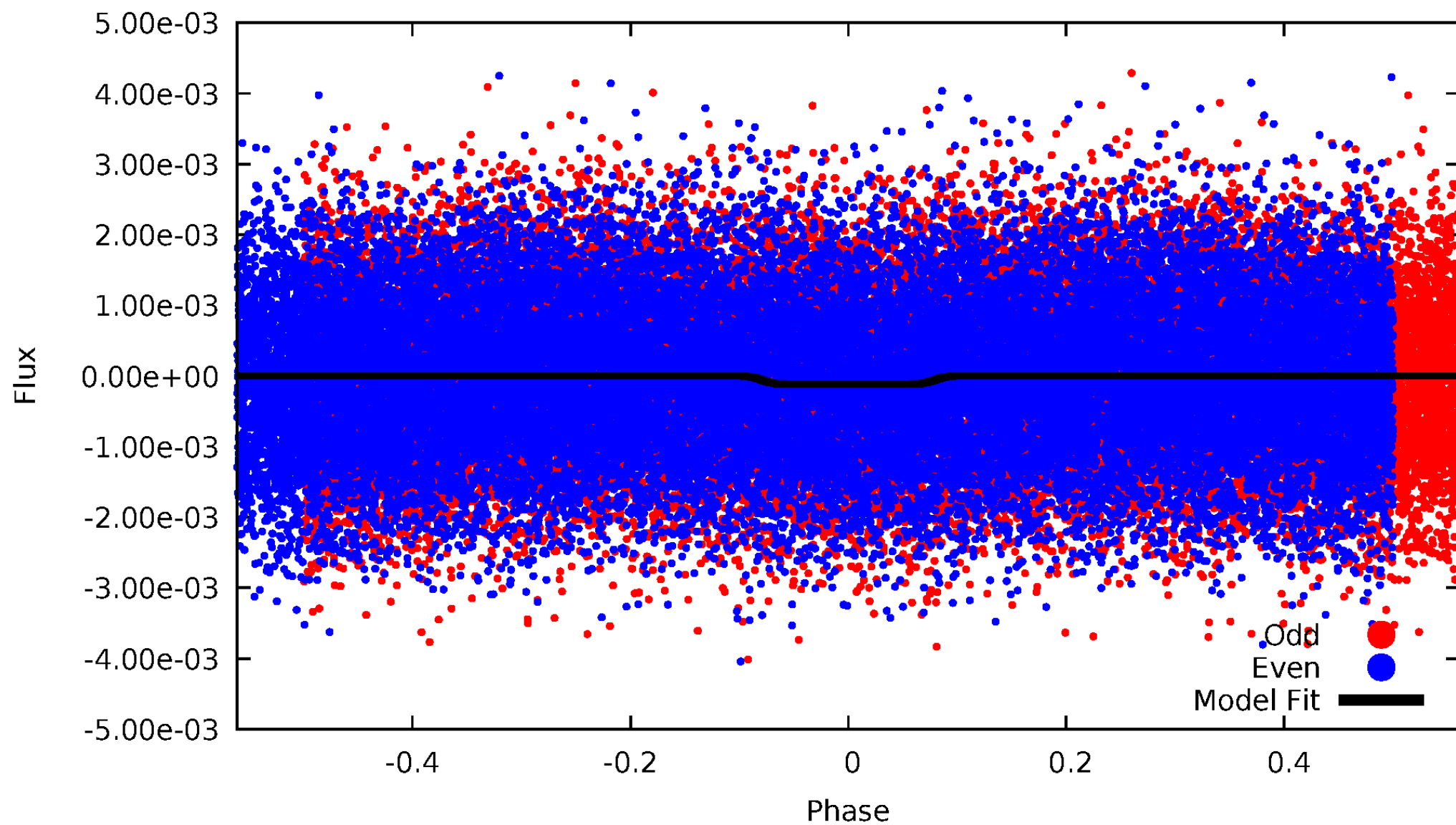
DV Odd/Even

TCE 010815466-01



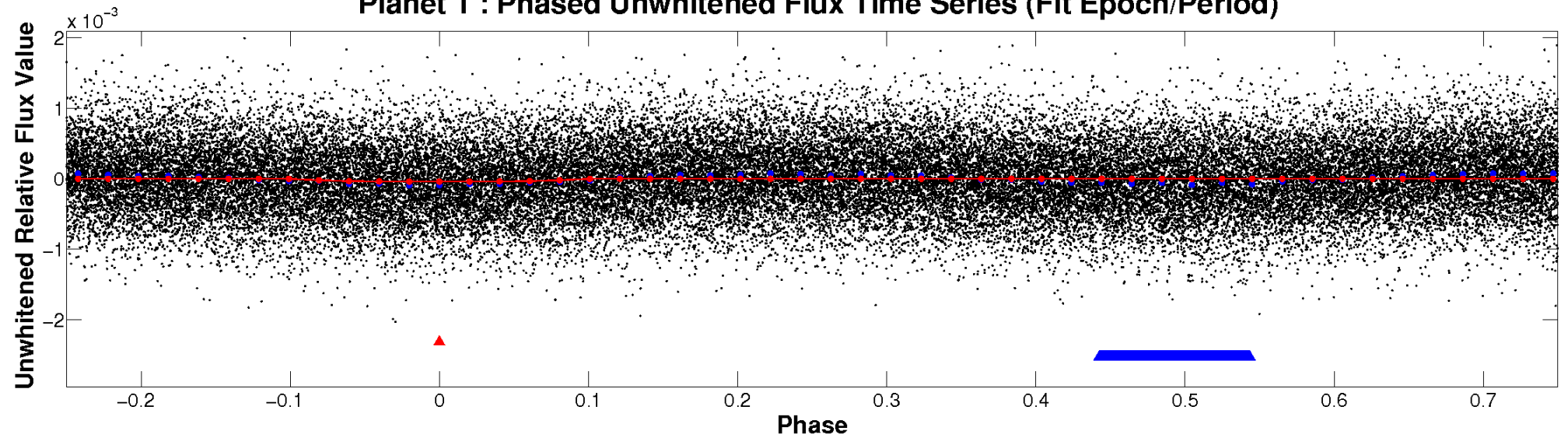
ALT Odd/Even

TCE 010815466-01

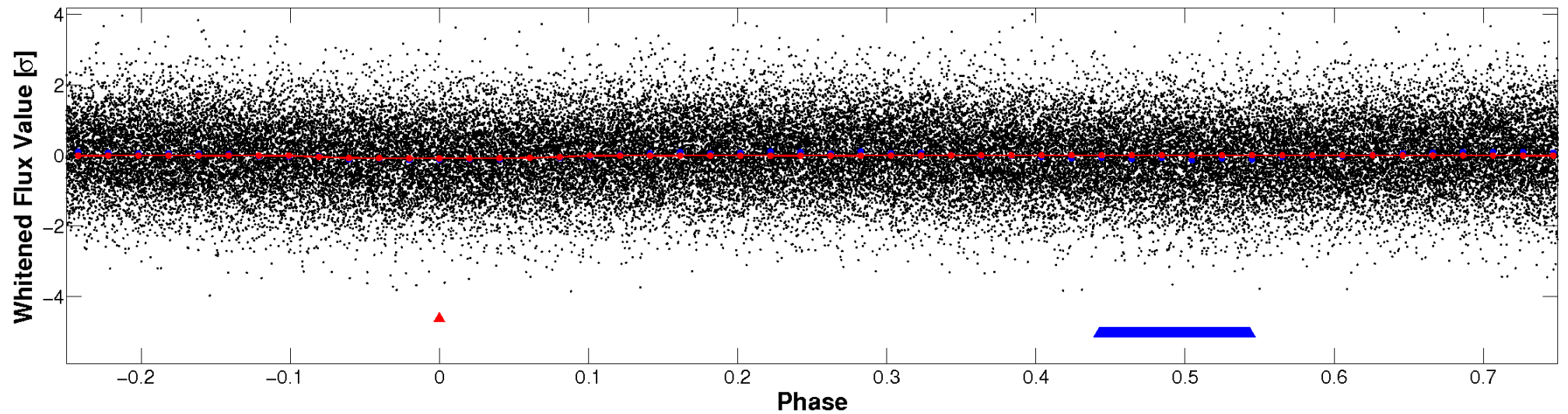


Non-Whitened Vs. Whitened Light Curve

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

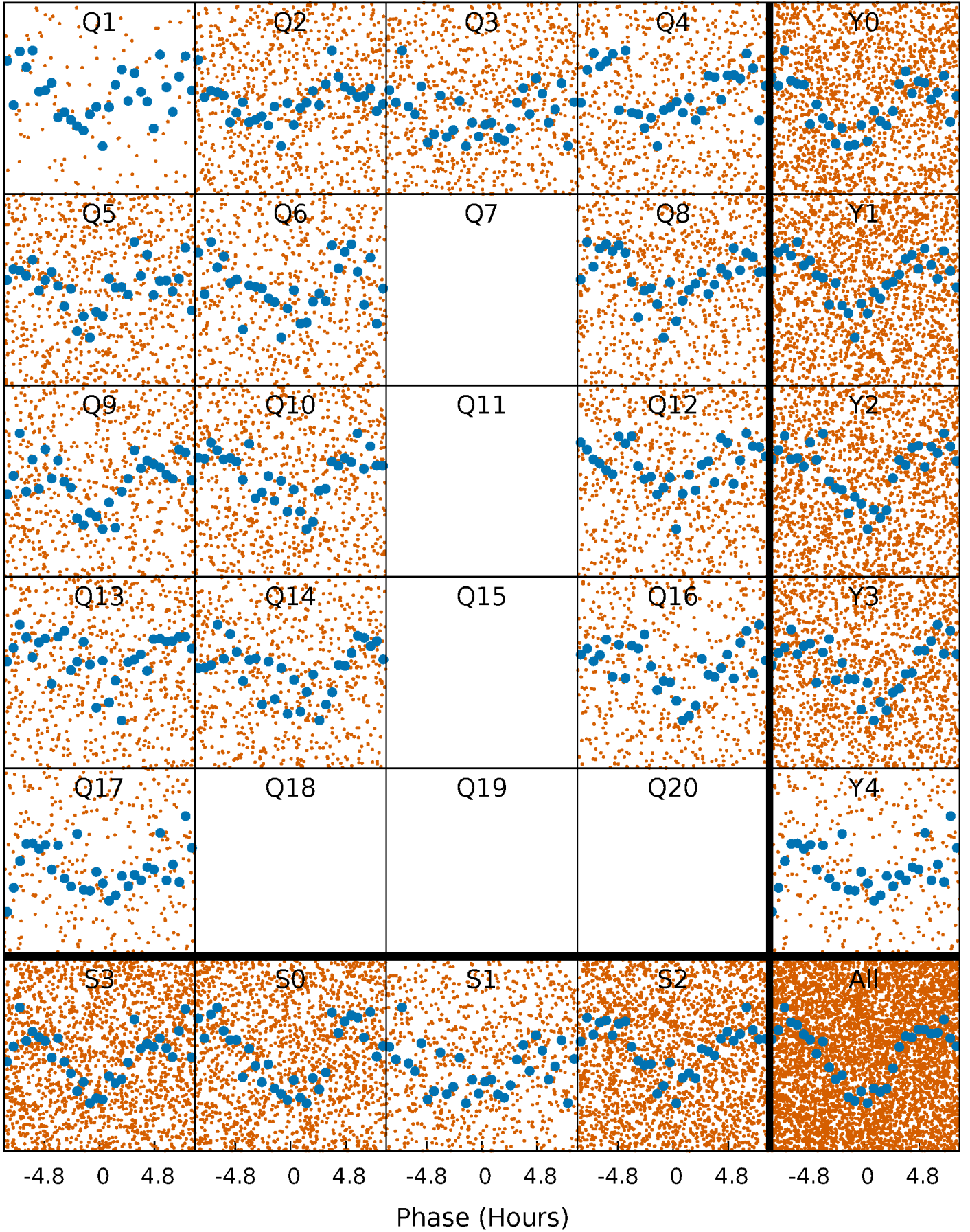


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



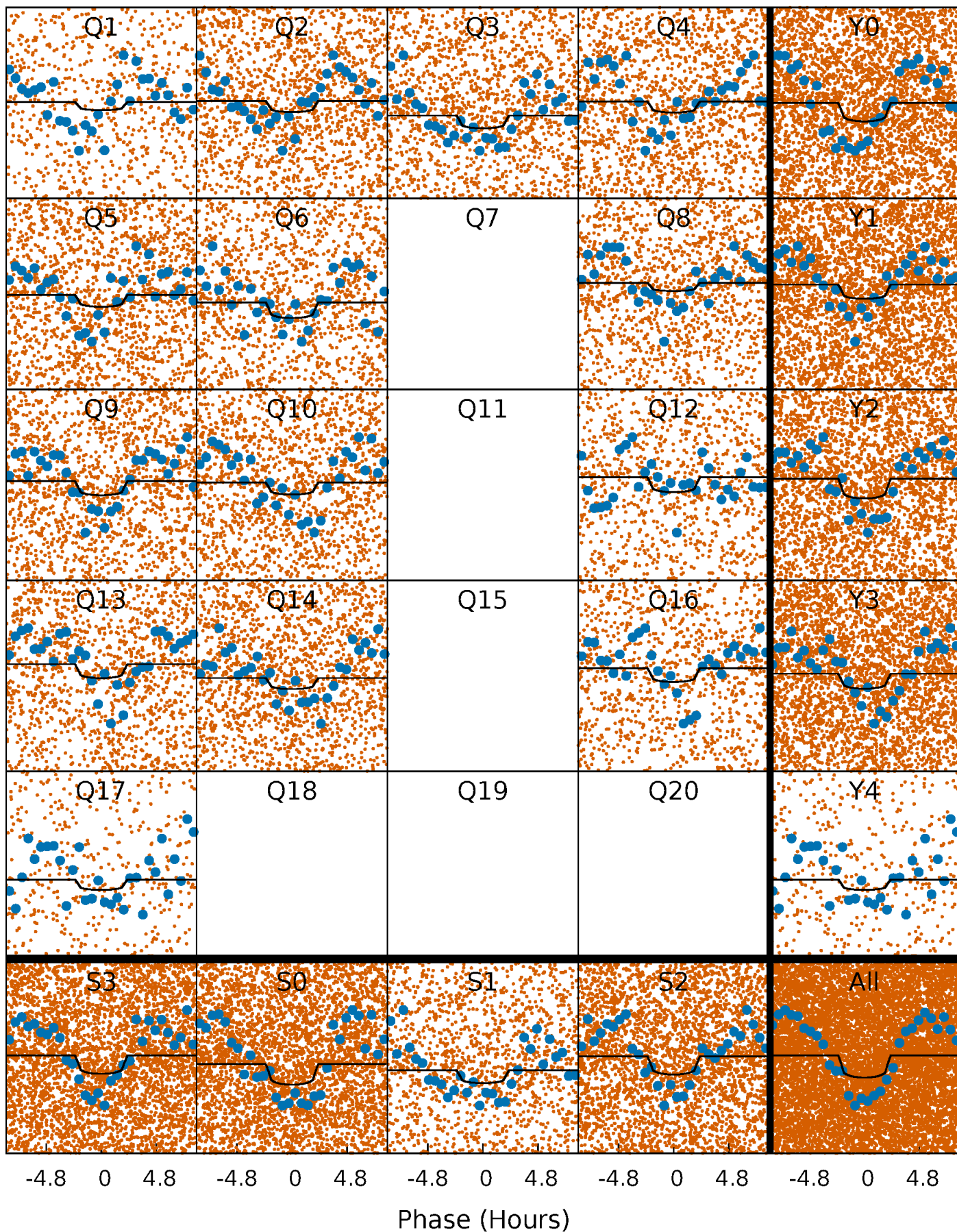
PDC Quarter-Phased Transit Curves

TCE 010815466-01 P= 1.012247 Days $T_0=132.301053$ (BKJD)



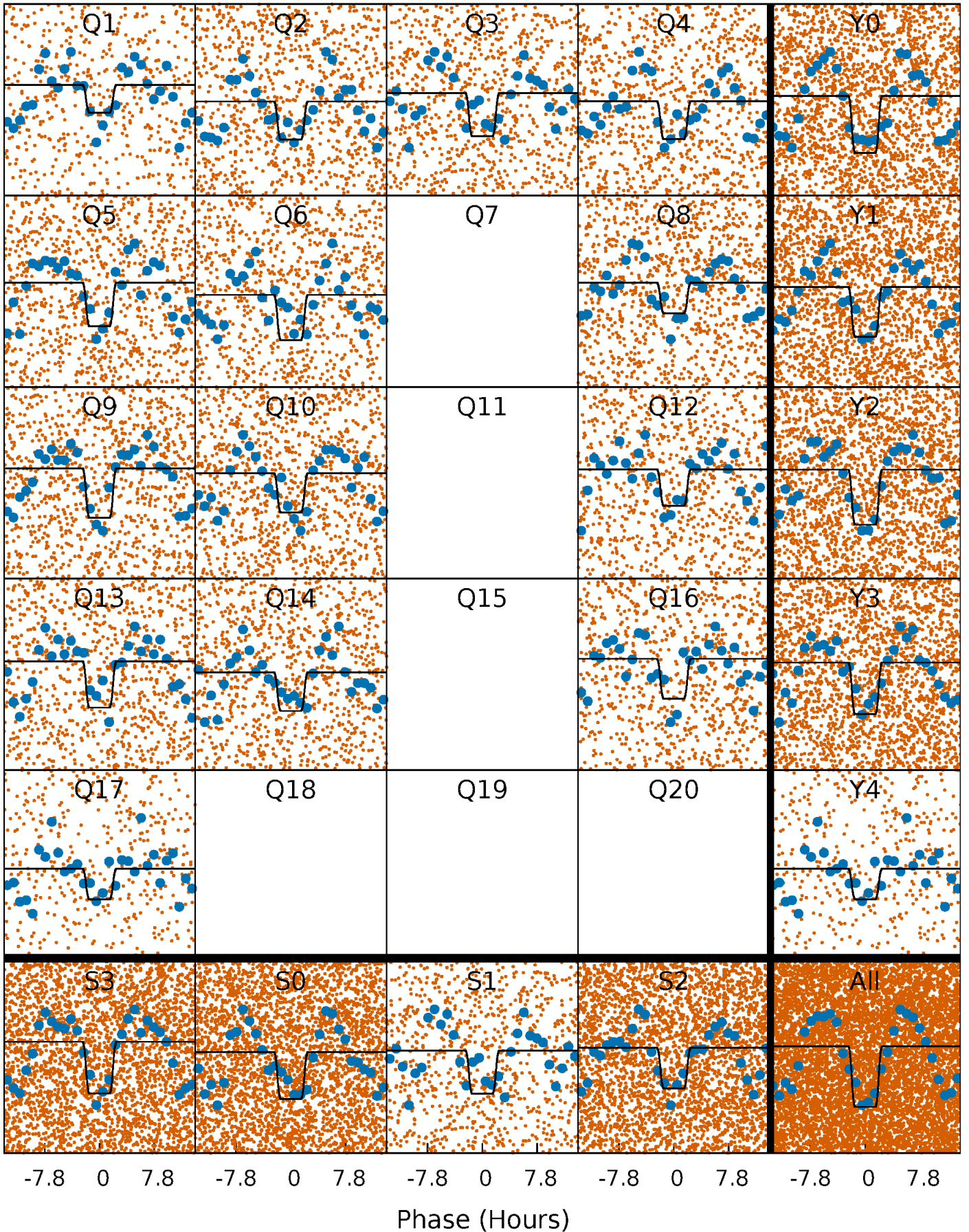
DV Quarter-Phased Transit Curves

TCE 010815466-01 P= 1.012247 Days $T_0=132.301053$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

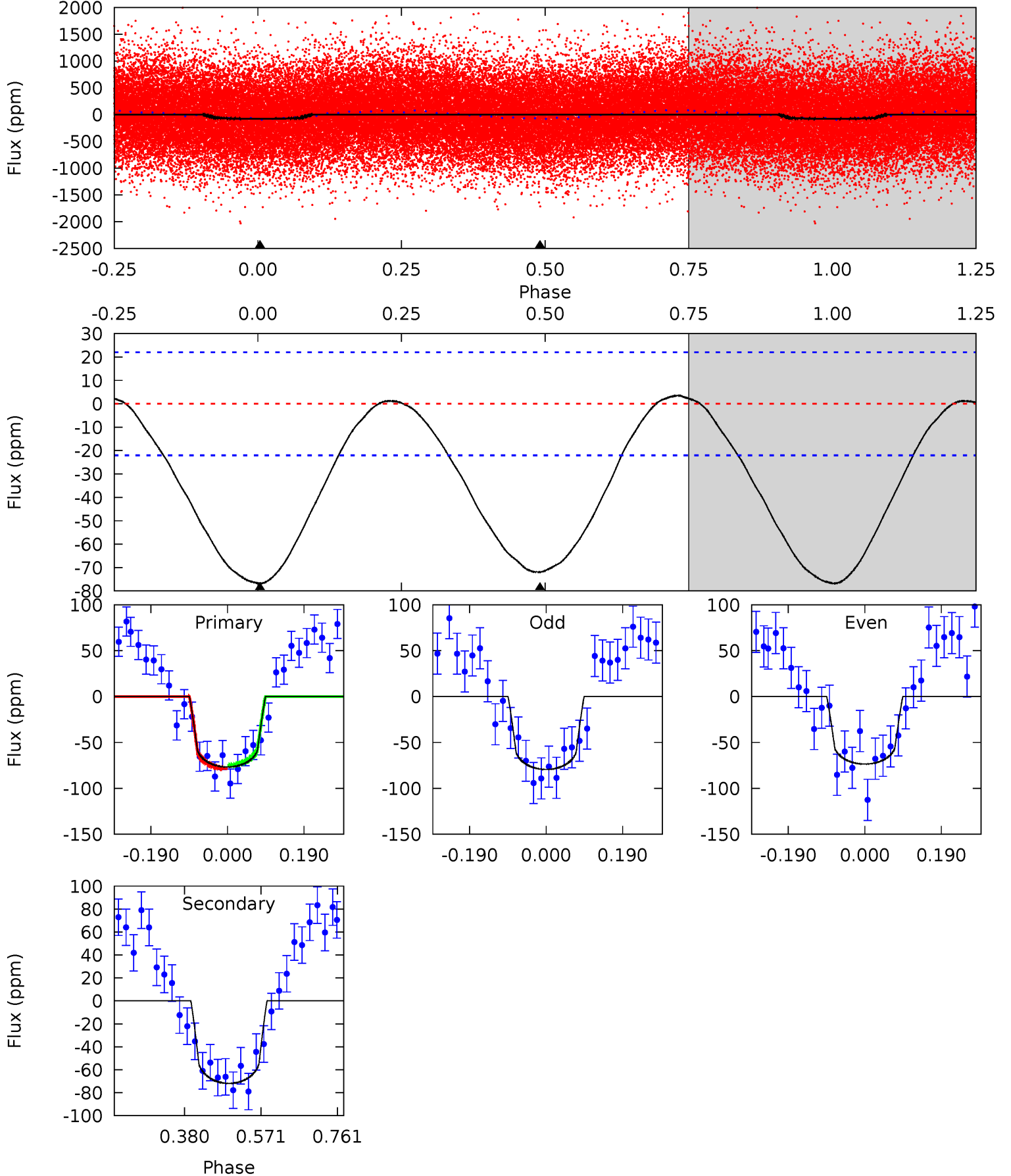
TCE 010815466-01 P= 1.012346 Days $T_0=132.222960$ (BKJD)



DV Model-Shift Uniqueness Test

010815466-01, P = 1.012247 Days, E = 131.288806 Days

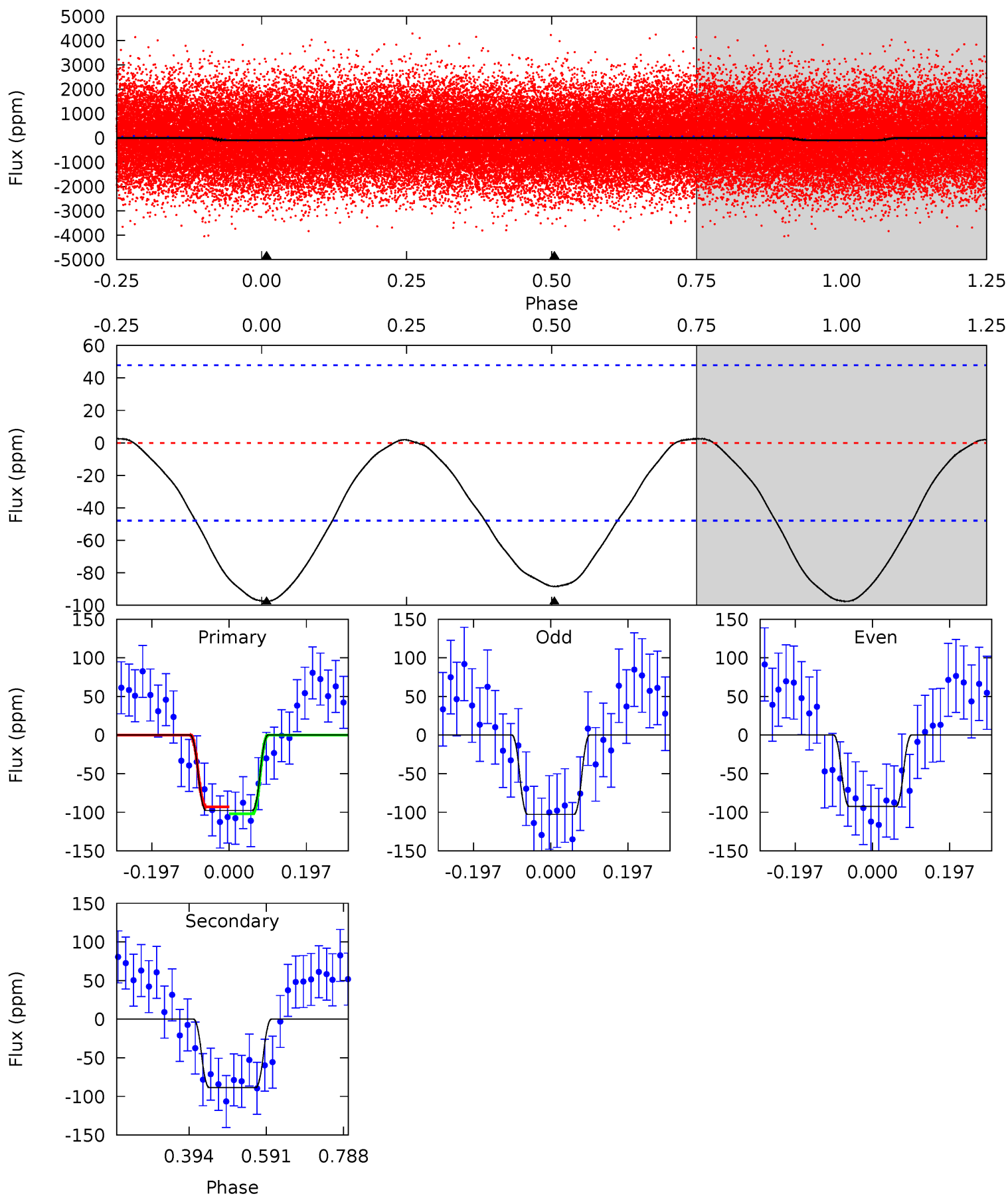
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.4	14.4	0	0	4.43	1.31	0.83	15.4	15.4	14.4	14.4	0.59	1.01	0.04	0.37



Alt Model-Shift Uniqueness Test

010815466-01, P = 1.012346 Days, E = 131.210614 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.01	8.17	0	0	4.42	1.29	0.32	9.01	9.01	8.17	8.17	0.47	1.02	0.03	0.41



Stellar Parameters For KIC 010815466

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8527^{+237}_{-356}	$3.860^{+0.374}_{-0.066}$	$-0.420^{+0.150}_{-0.350}$	$2.593^{+0.263}_{-1.053}$	$1.777^{+0.085}_{-0.339}$	$0.143^{+0.426}_{-0.031}$
	+3%/-4%	+10%/-2%	+36%/-83%	+10%/-41%	+5%/-19%	+297%/-21%
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 010815466-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-72 ± 5	$1.73^{+1.17}_{-1.03}$	5327^{+326}_{-462}	9807^{+13337}_{-2731}	$7.413^{+38.297}_{-4.753}$
Alt.	-88 ± 11	$2.68^{+1.29}_{-1.15}$	5329^{+330}_{-577}	7617^{+3633}_{-1554}	$3.780^{+7.077}_{-2.151}$

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 $A_{obs} \gg 1.0$

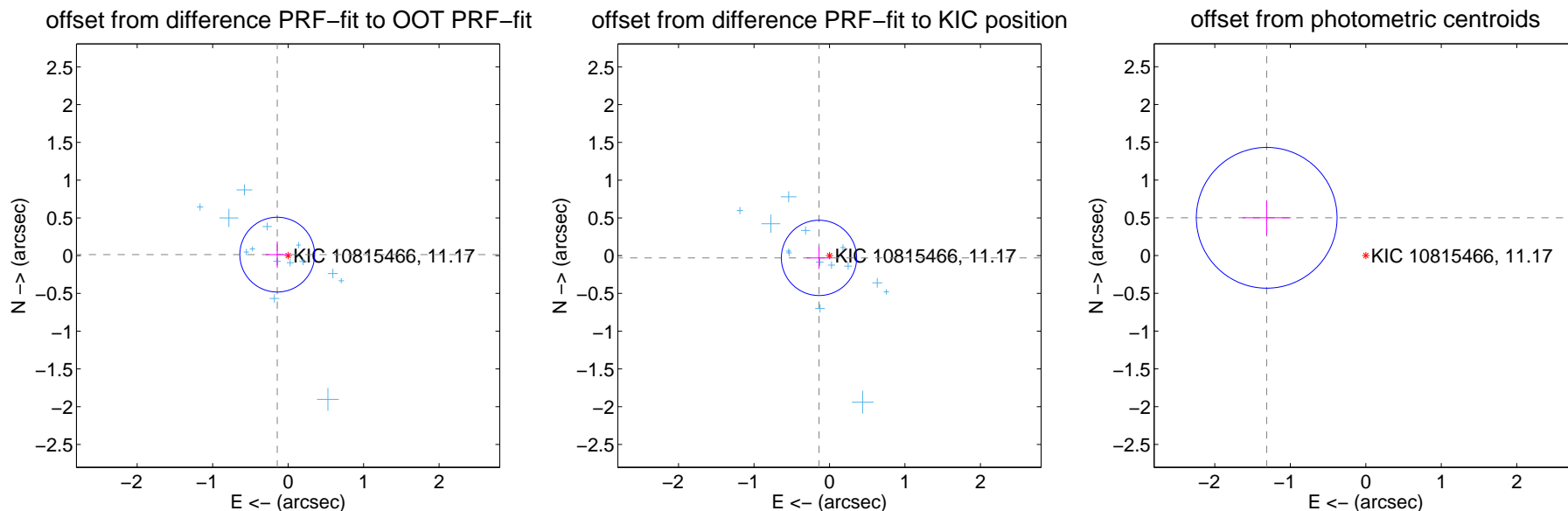
DV Centroid Data

Supplemental centroid analysis for 010815466-01. **Kepler magnitude: 11.17.** Transit SNR 6.54

There are 14 quarters with good PRF difference image offsets

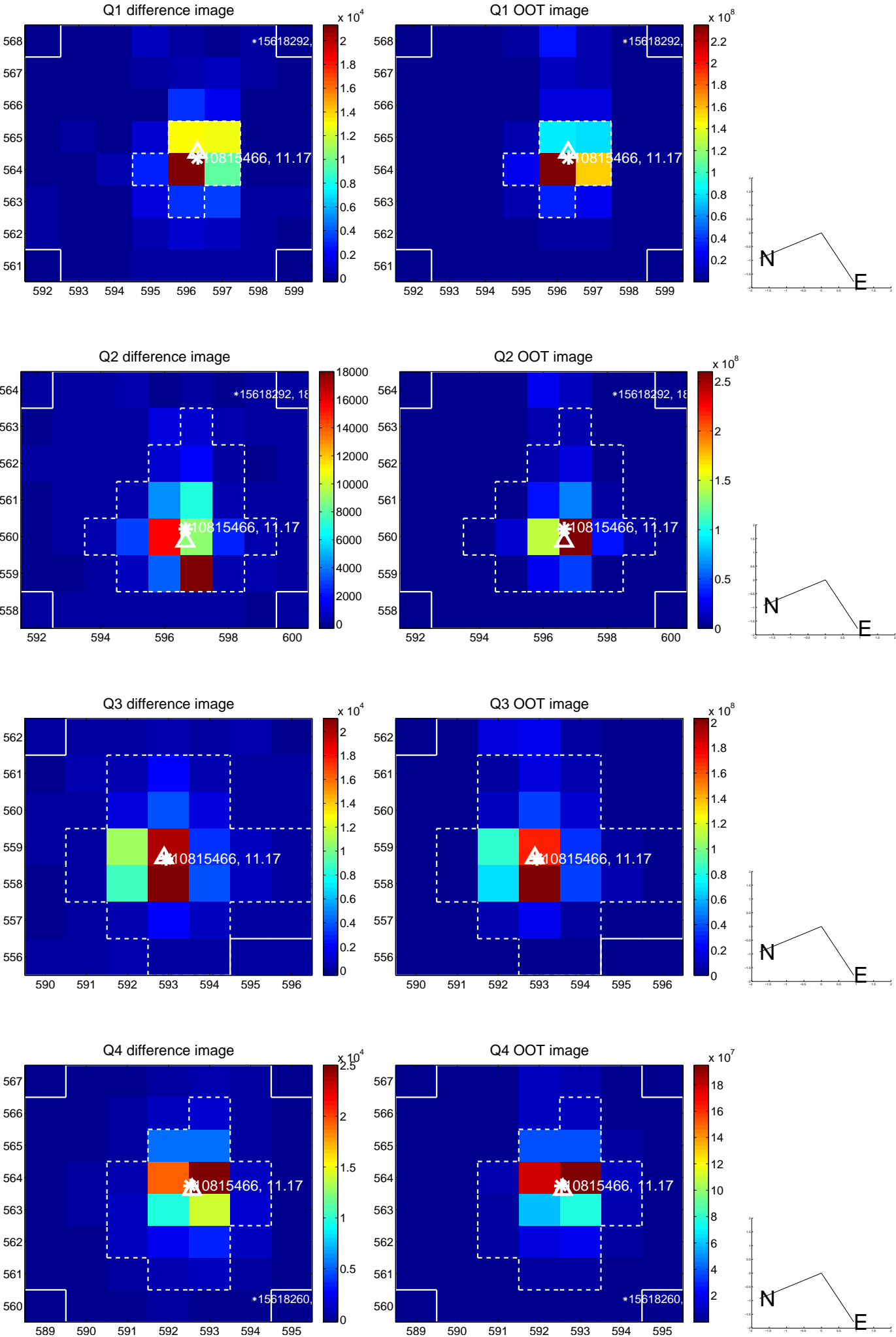
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.145 ± 0.165	0.88	0.144 ± 0.155	0.013 ± 0.176
PRF-fit source offset from KIC position	0.142 ± 0.166	0.85	0.139 ± 0.167	-0.029 ± 0.146
photometric centroid source offset	1.40 ± 0.31	4.52	1.31 ± 0.32	0.50 ± 0.23

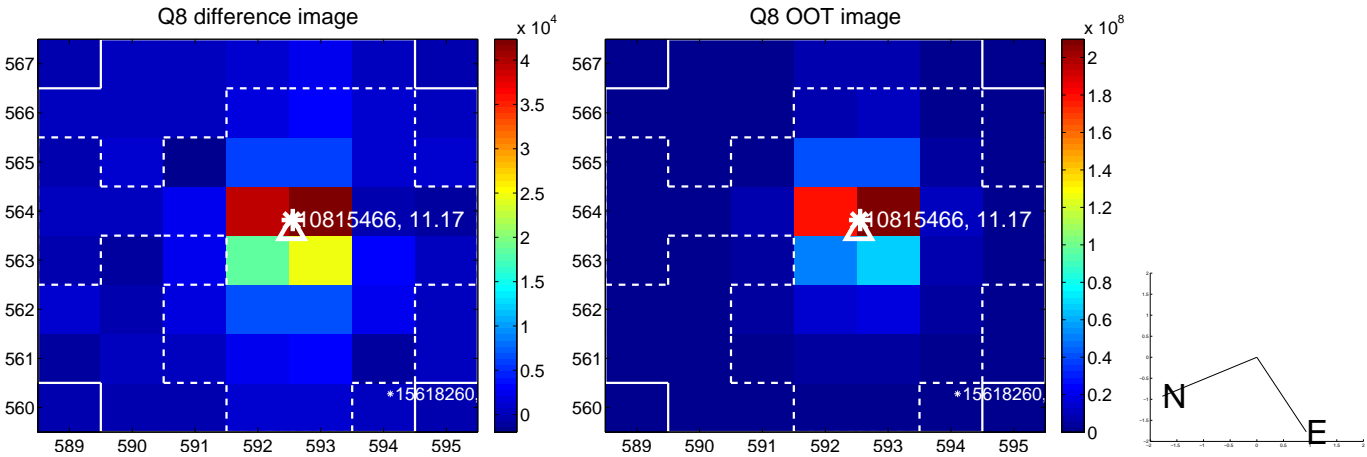
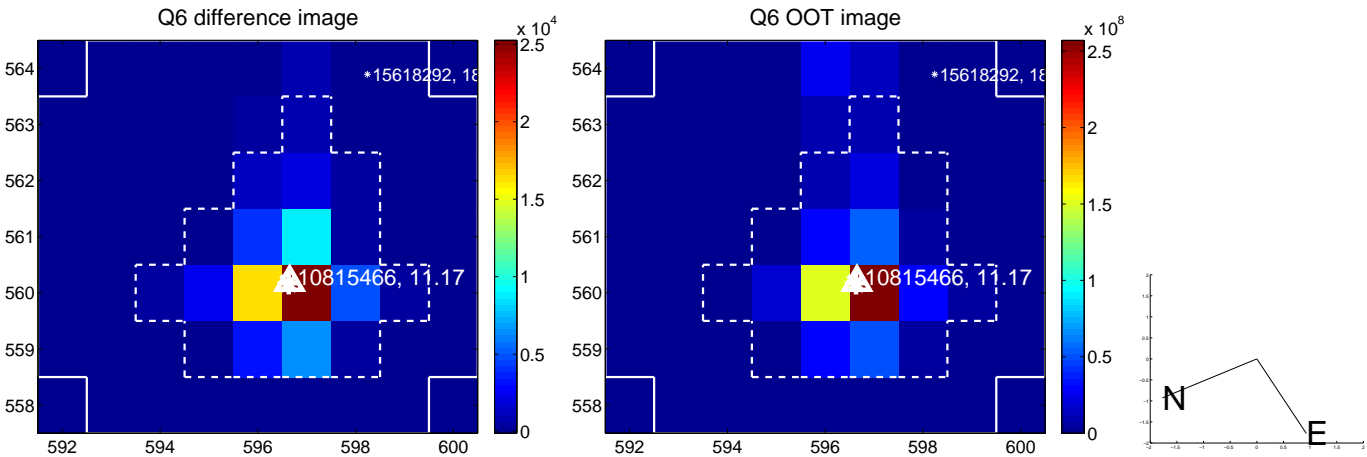
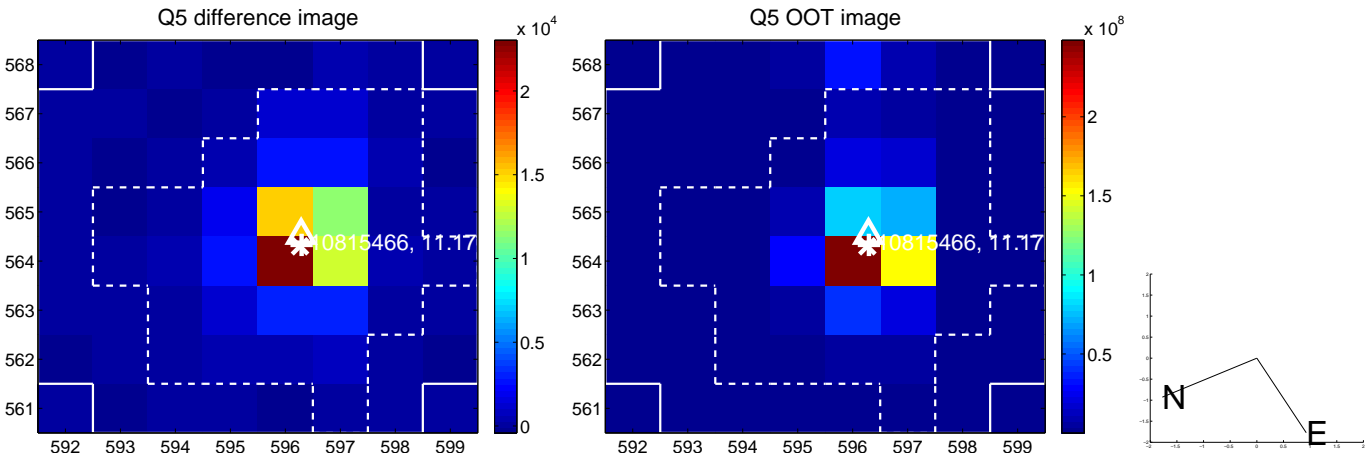


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

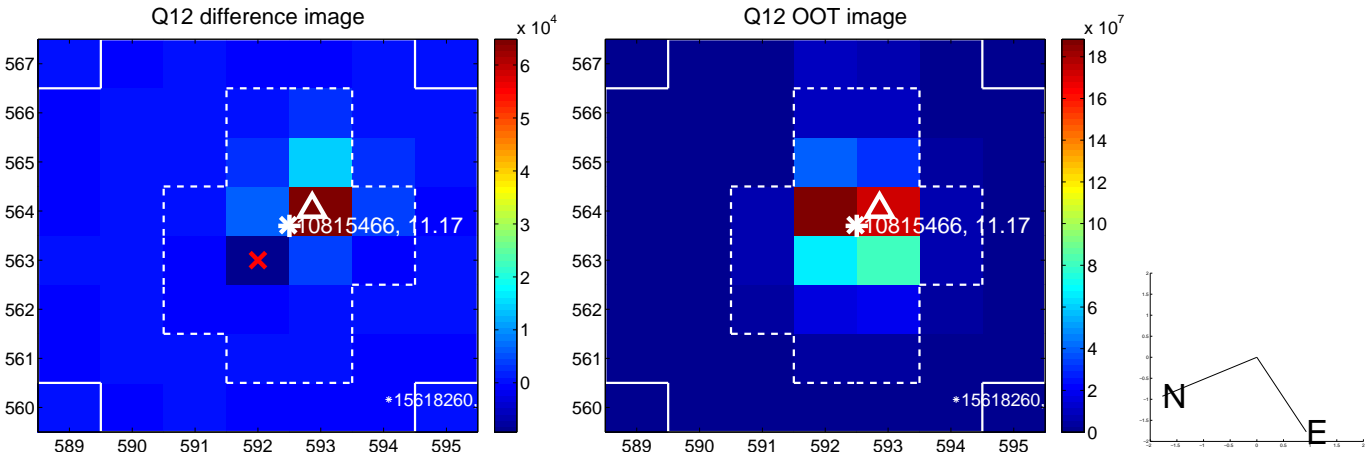
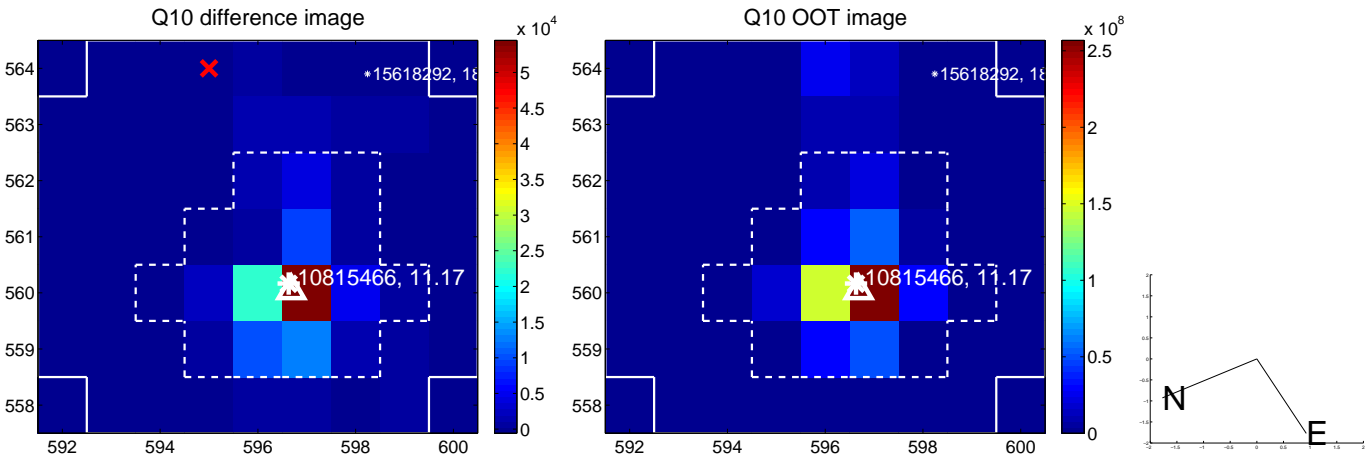
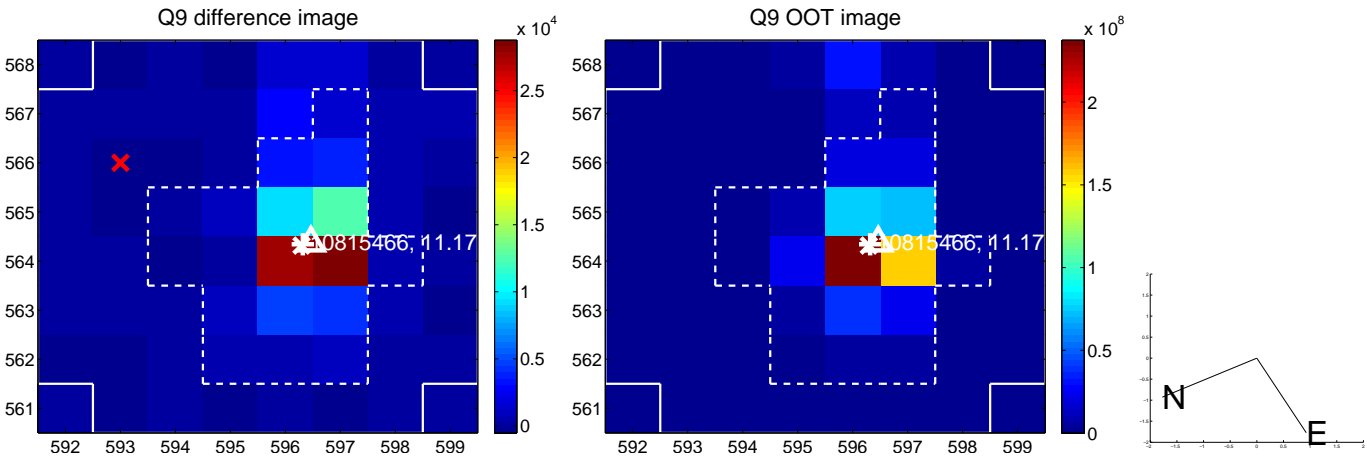
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



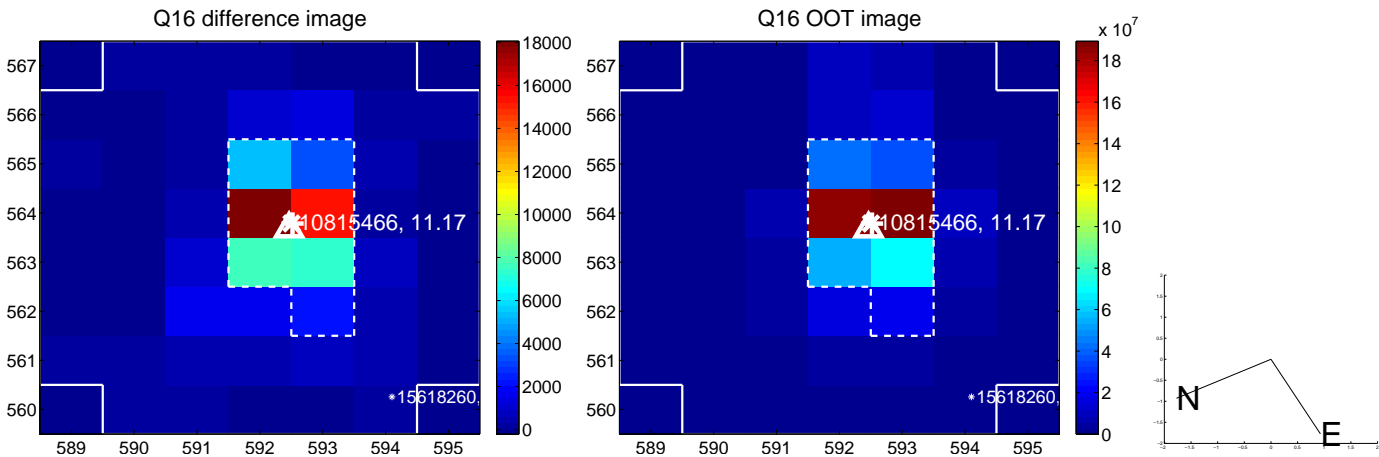
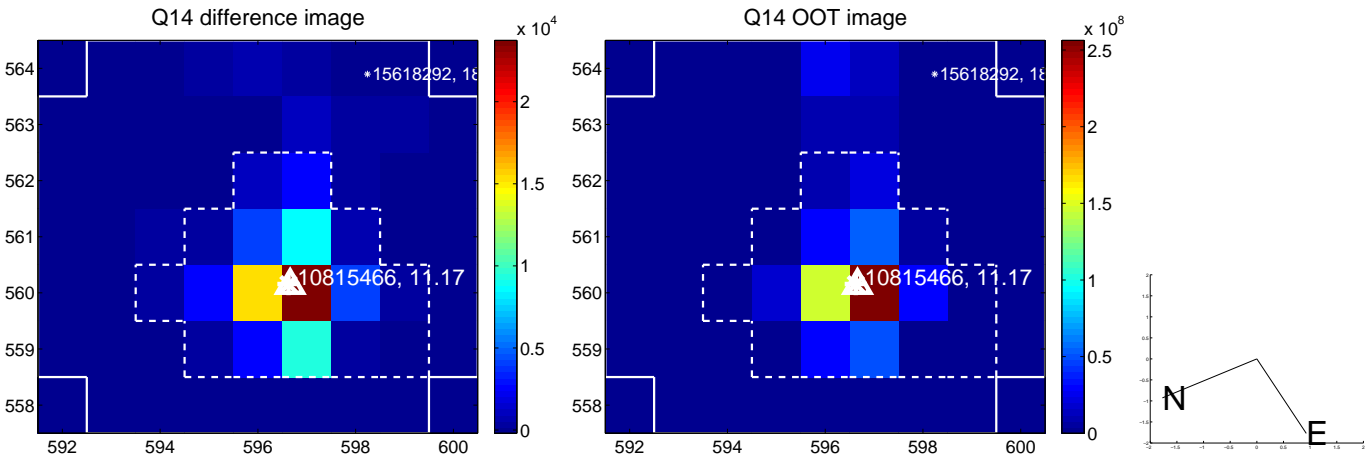
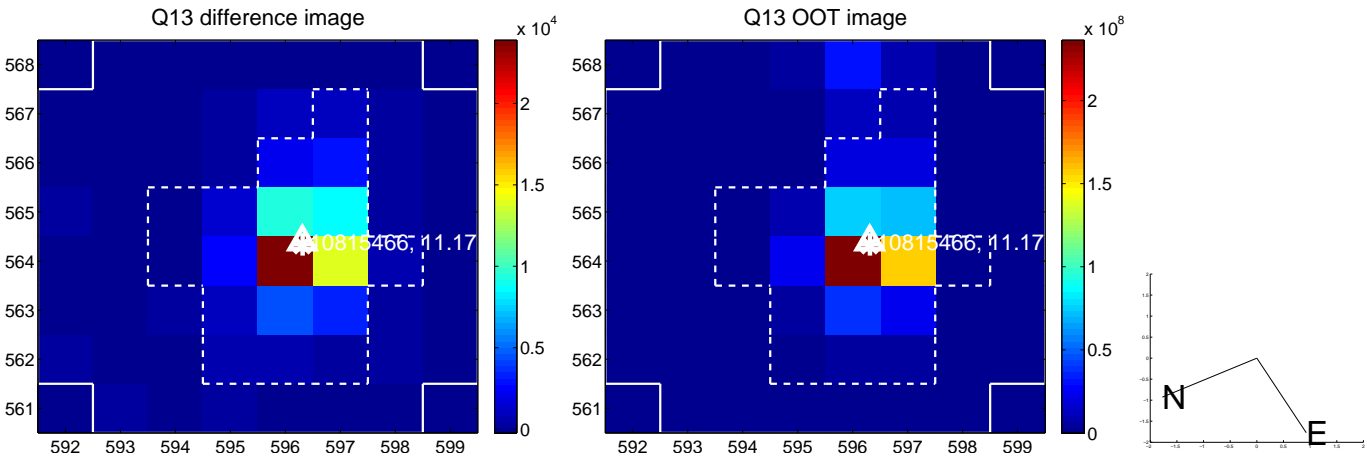
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



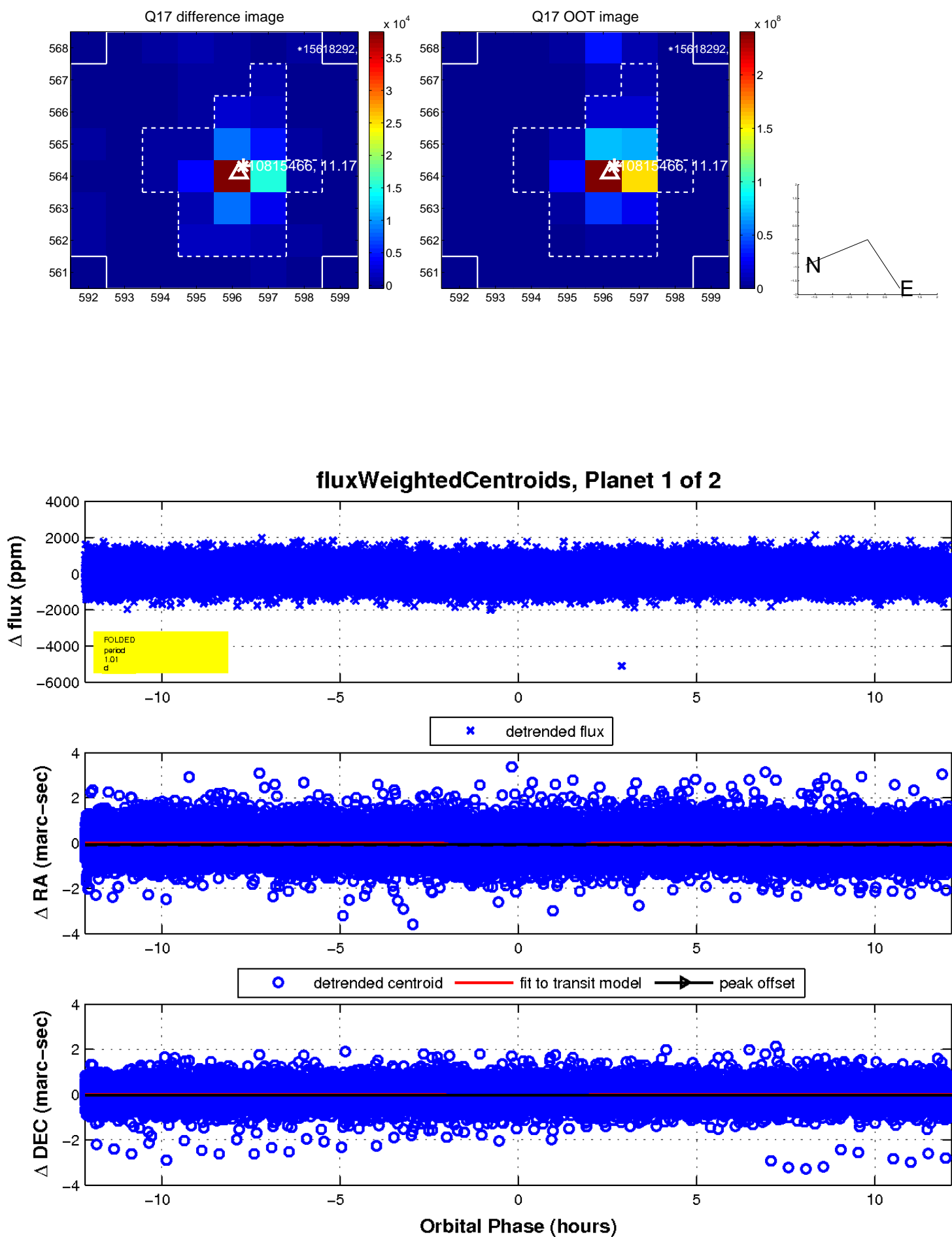
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

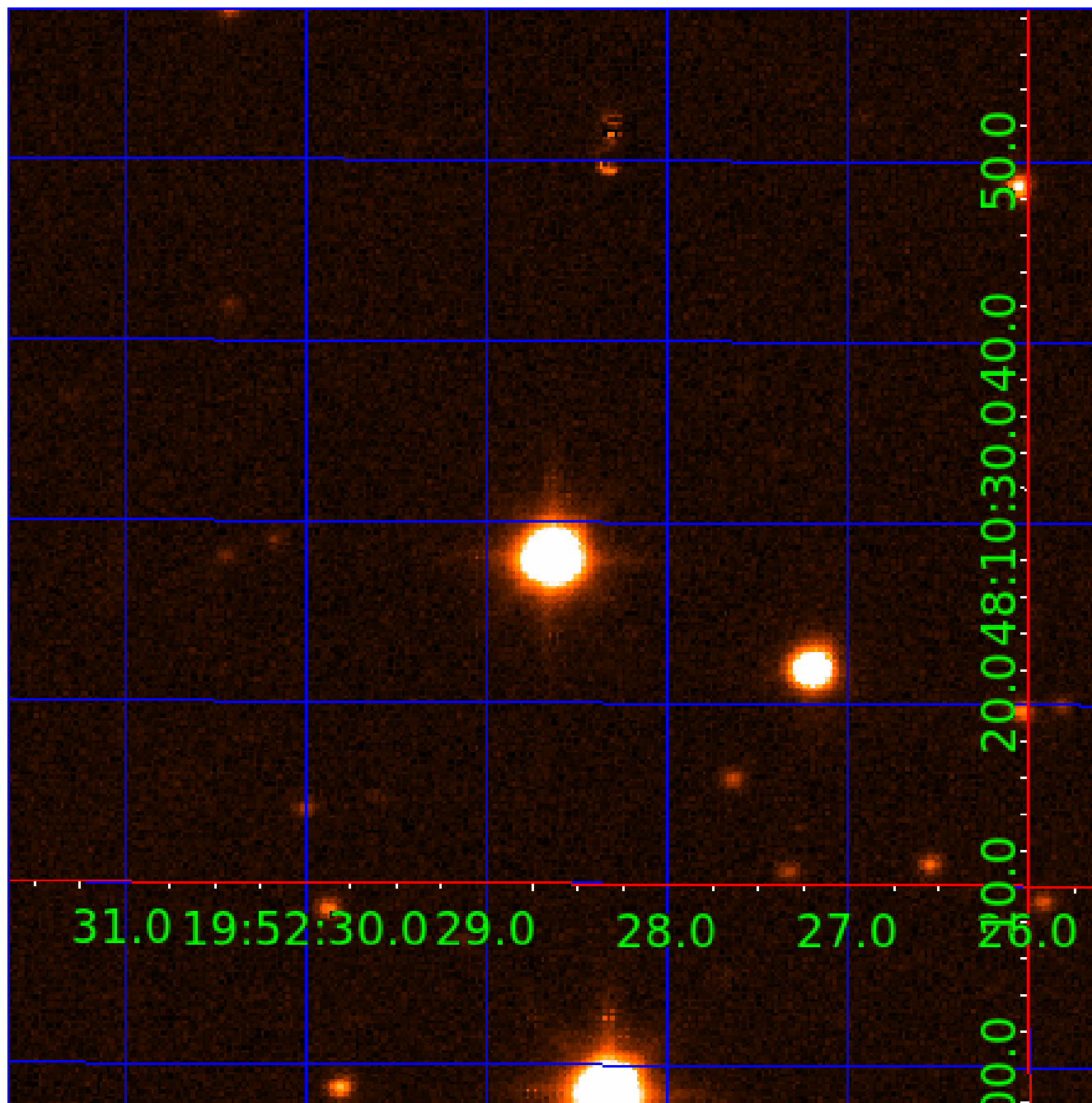


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010815466

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})
010815466-01	OBS	No	1.012247	132.301053	39.0	4.165	7.3	6.5	2.59	8527	1.73	55748.42
010815466-02	OBS	No	1.012318	131.736836	55.4	5.279	9.4	10.8	2.59	8527	1.96	55743.22

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010815466-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
010815466-02	OBS	FP	0.00	1	0	0	0	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.

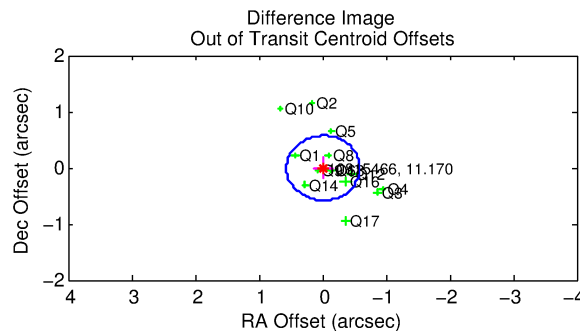
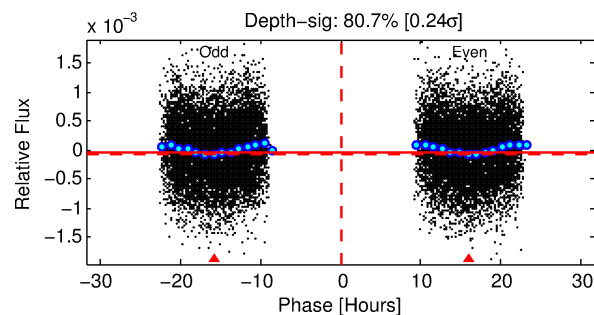
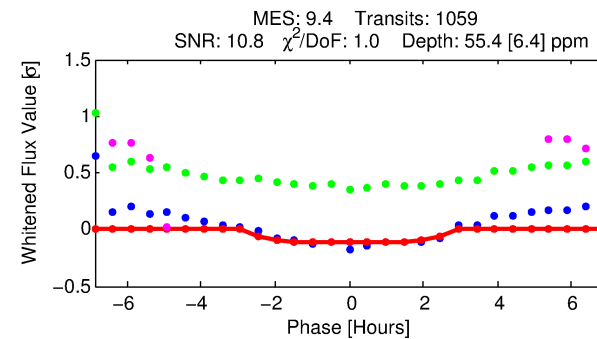
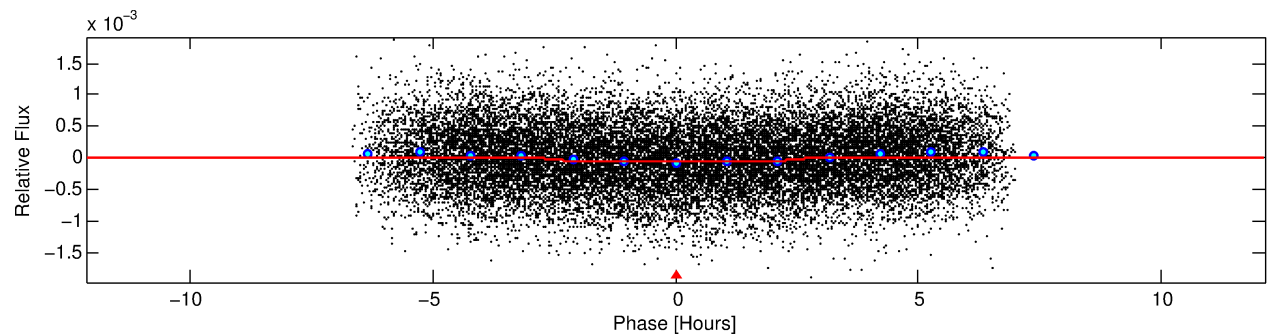
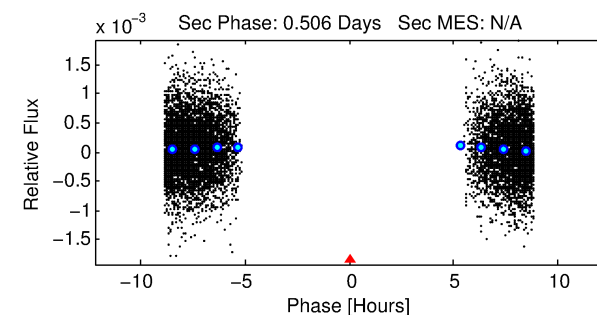
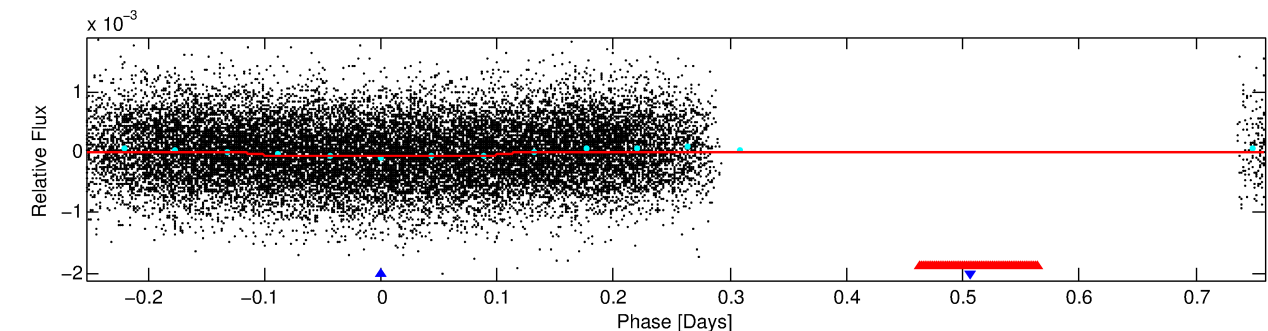
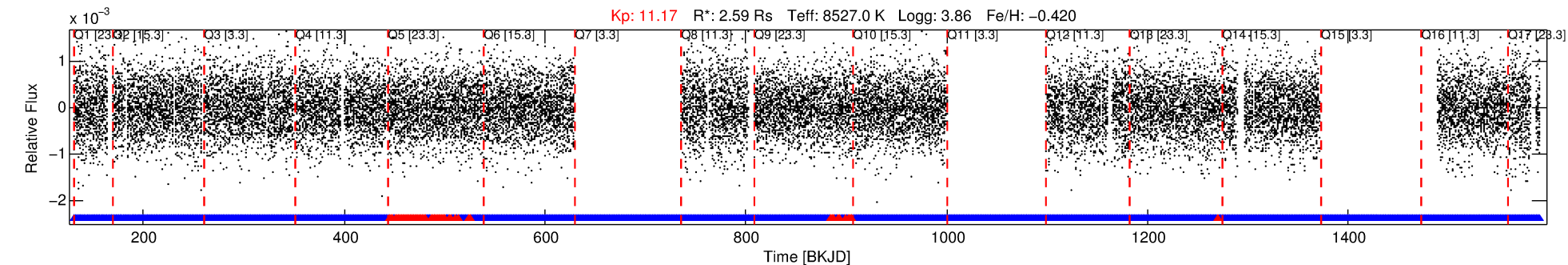
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010815466-02

No Significant Match Found

DV One-Page Summary

KIC: 10815466 Candidate: 2 of 2 Period: 1.012 d



DV Fit Results:

Period = 1.01232 [0.00002] d
Epoch = 131.7368 [0.0059] BKJD
Rp/R* = 0.0069 [0.0080]
a/R* = 1.59 [6.56]
b = 0.13 [51.80]
Seff = 55743.22 [36586.69]
Teq = 3918 [643] K
Rp = 1.96 [2.39] Re
a = 0.0239 [0.0094] AU

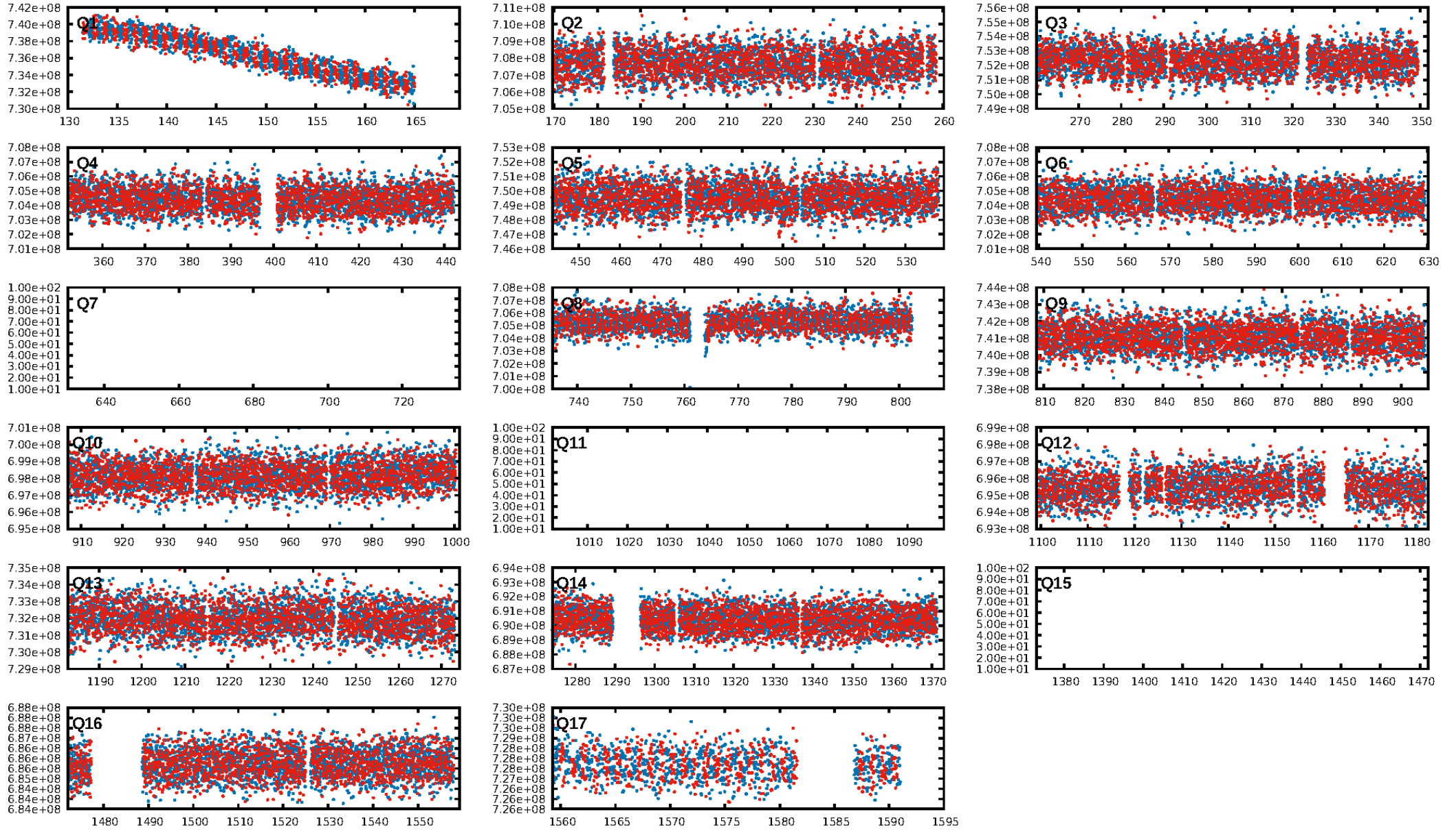
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.94 [938/1000]
GhostDiagnostic-chr: 1.645
Centroid-sig: 0.0%
Centroid-so: 0.631 arcsec [3.24σ]
OotOffset-rm: 0.010 arcsec [0.05σ]
KicOffset-rm: 0.127 arcsec [0.73σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 0.00 [0/14]

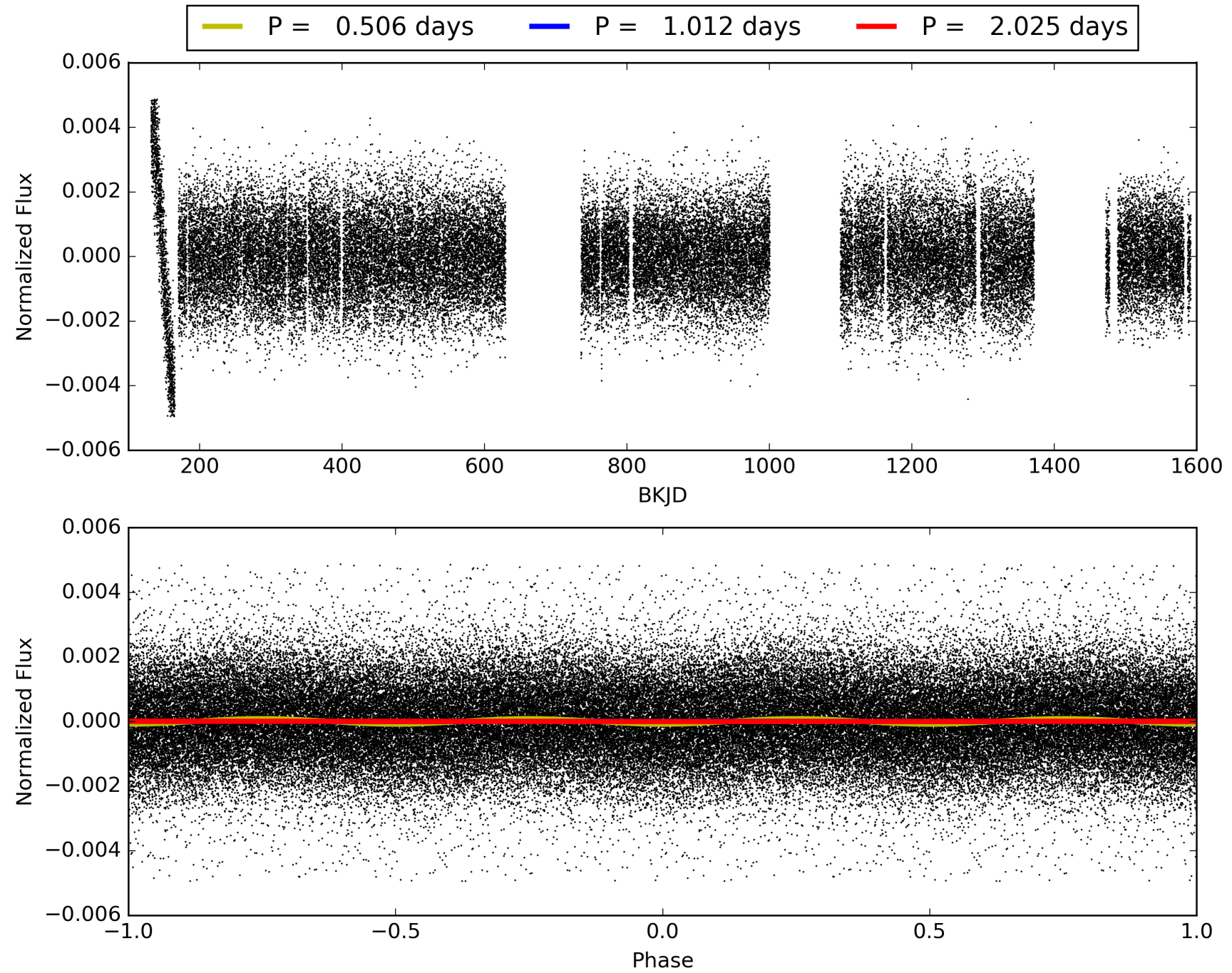
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 12:45:47 Z

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

TCE 010815466-02, PDC Light Curves

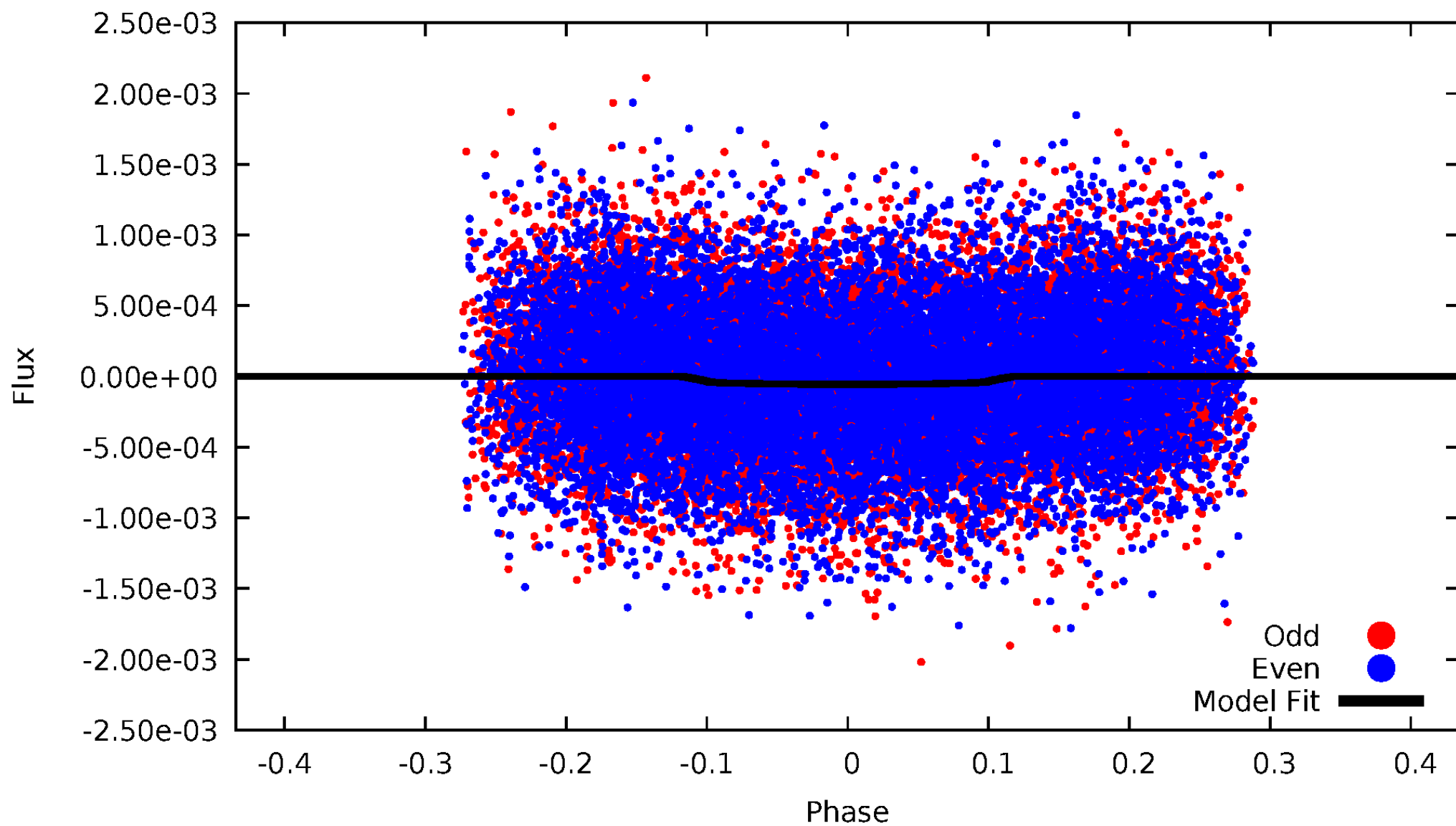


TCE 010815466-02



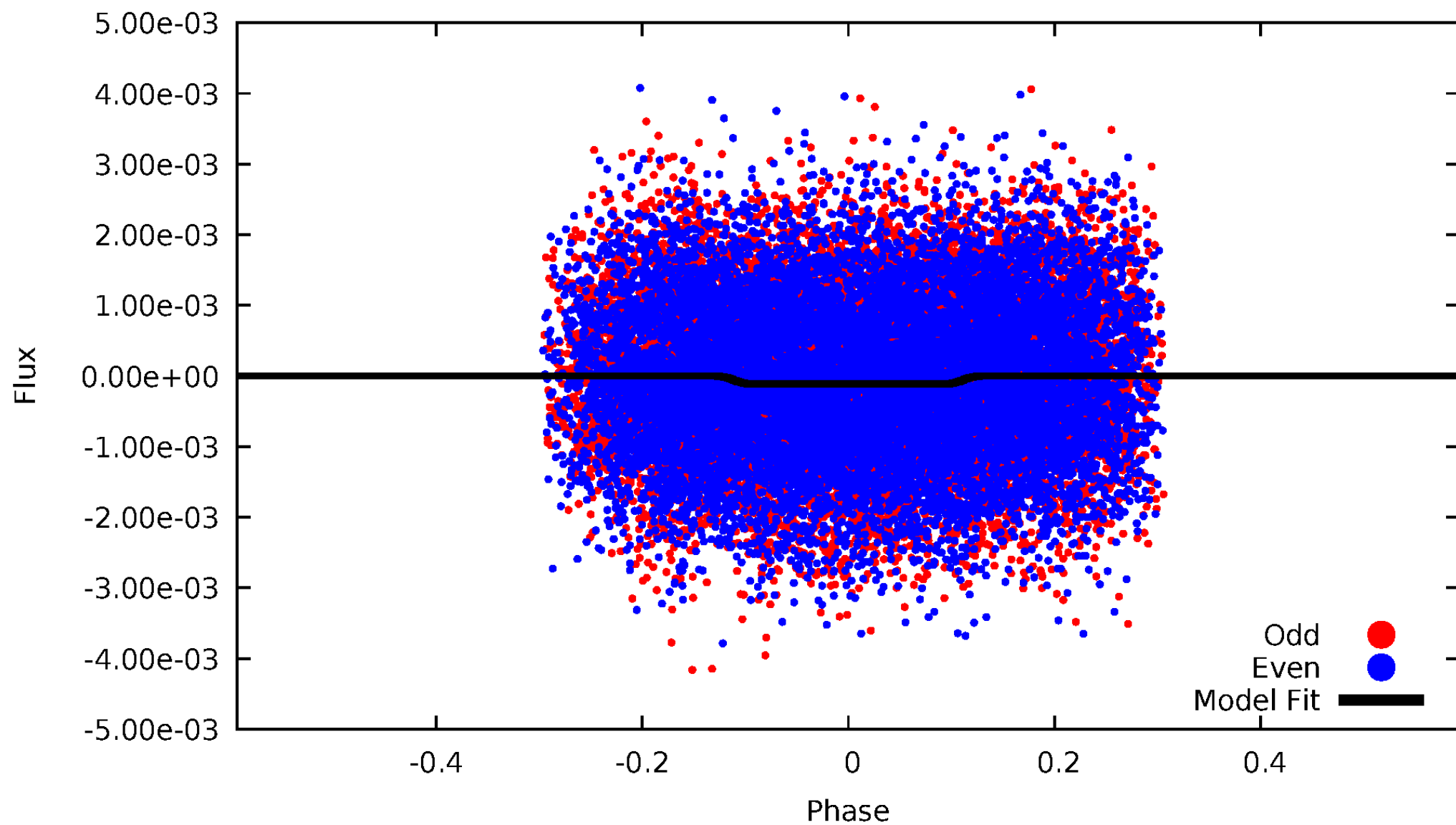
DV Odd/Even

TCE 010815466-02



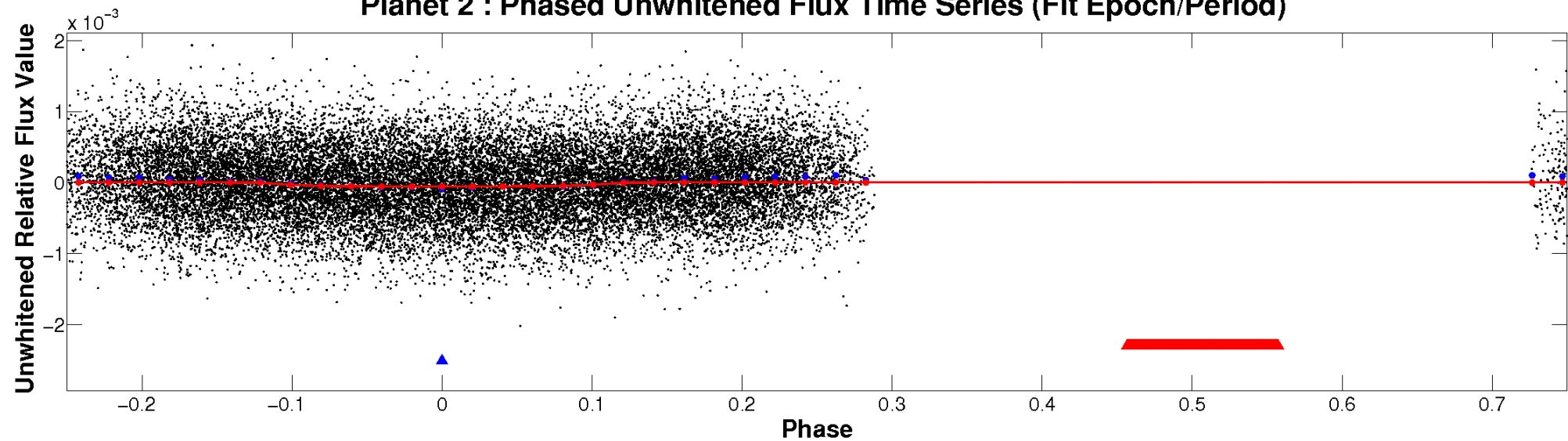
ALT Odd/Even

TCE 010815466-02

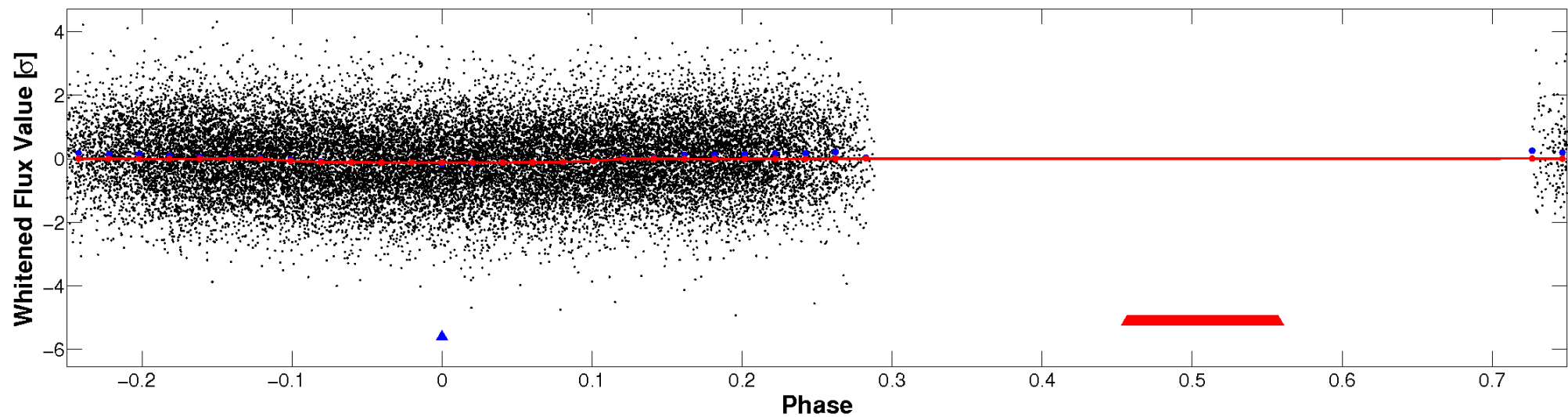


Non-Whitened Vs. Whitened Light Curve

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

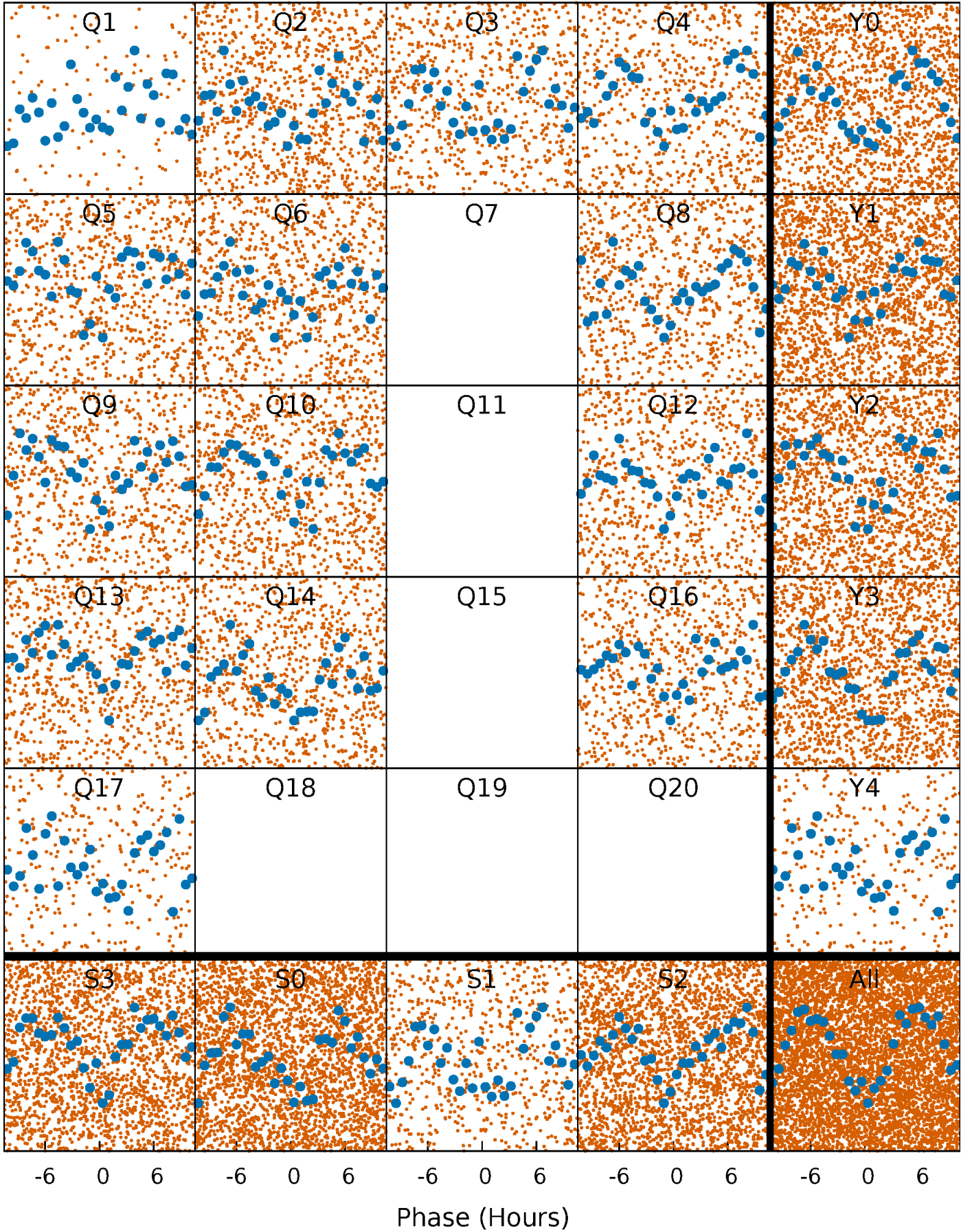


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



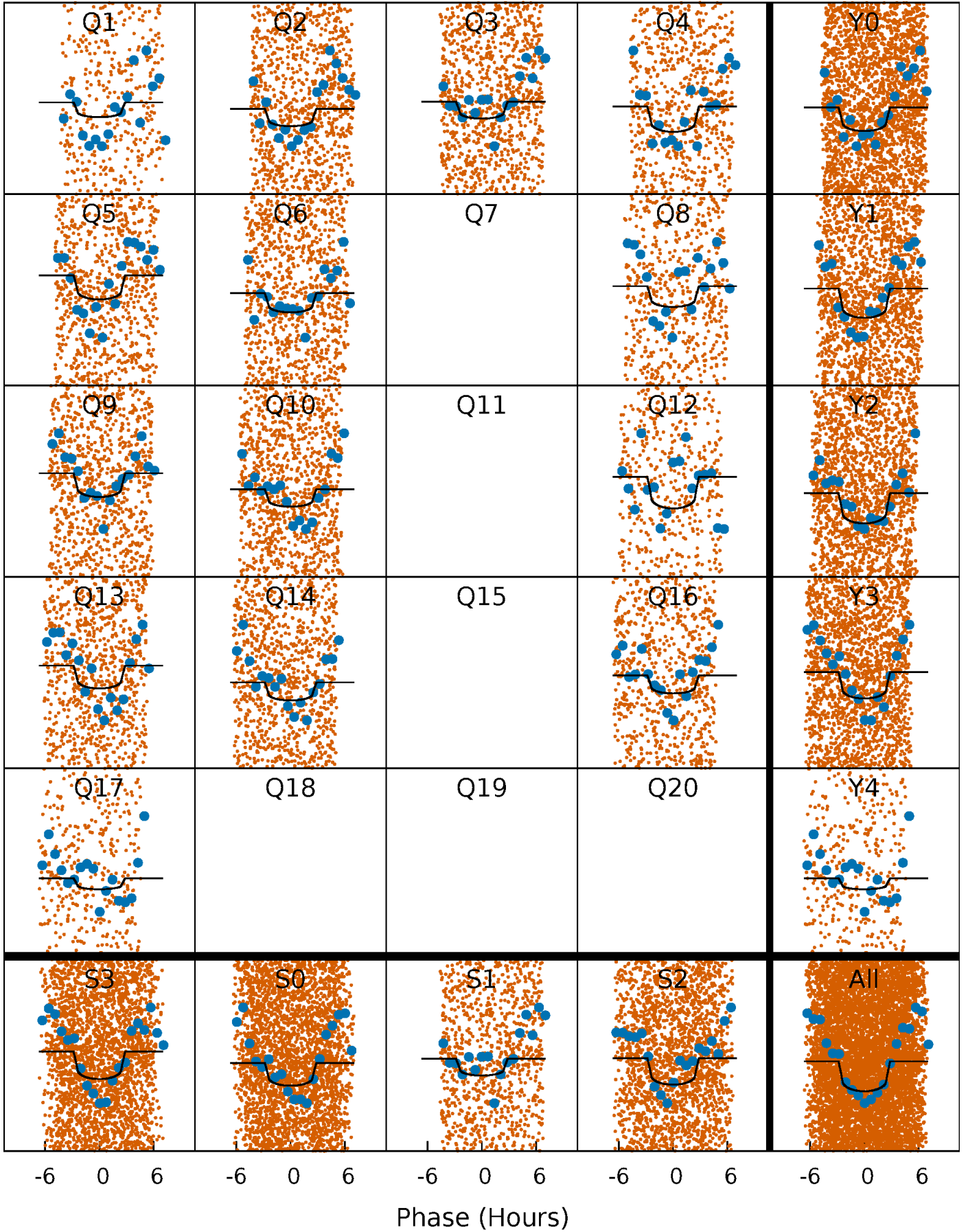
PDC Quarter-Phased Transit Curves

TCE 010815466-02 P= 1.012318 Days $T_0=131.736836$ (BKJD)



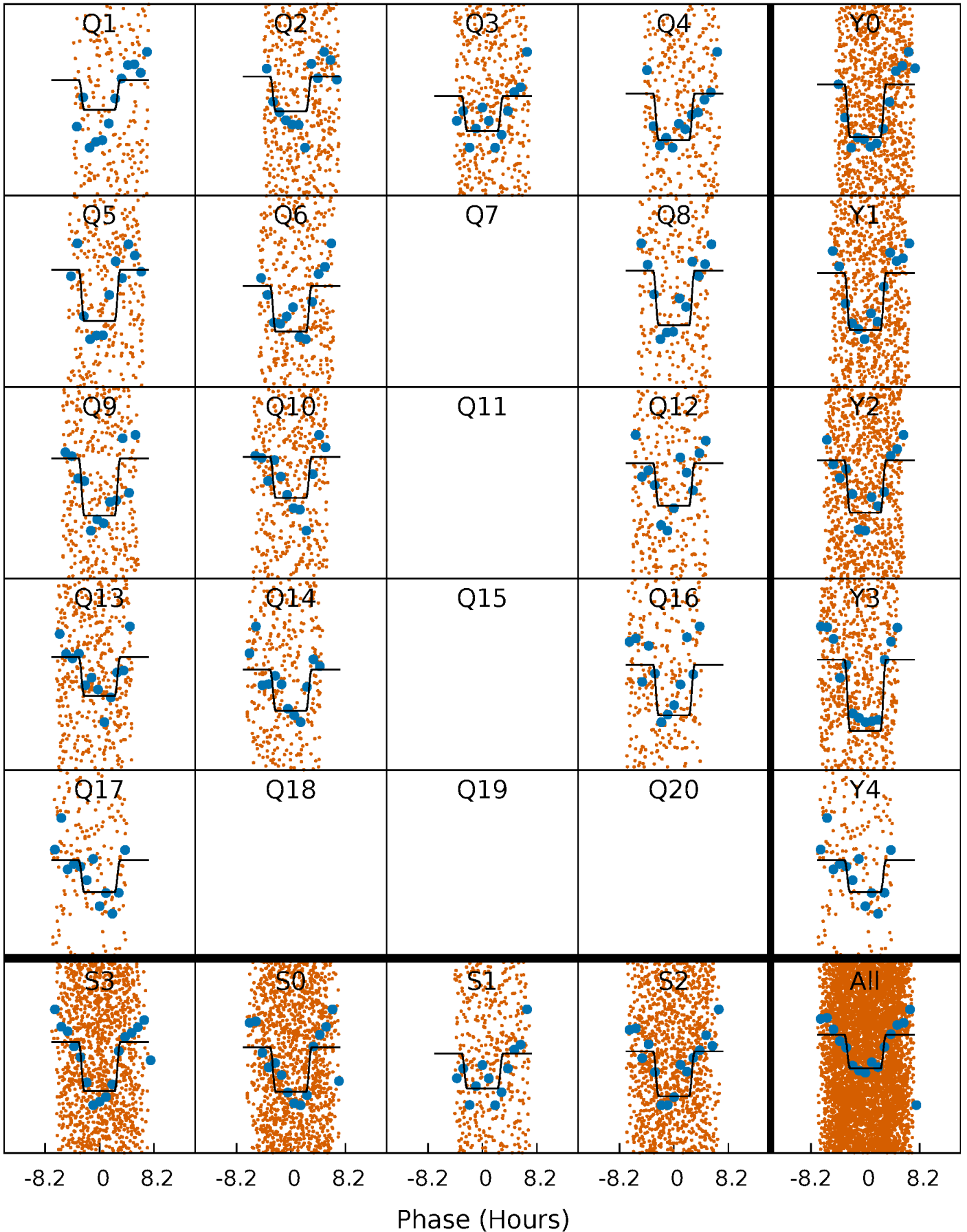
DV Quarter-Phased Transit Curves

TCE 010815466-02 P= 1.012318 Days $T_0=131.736836$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

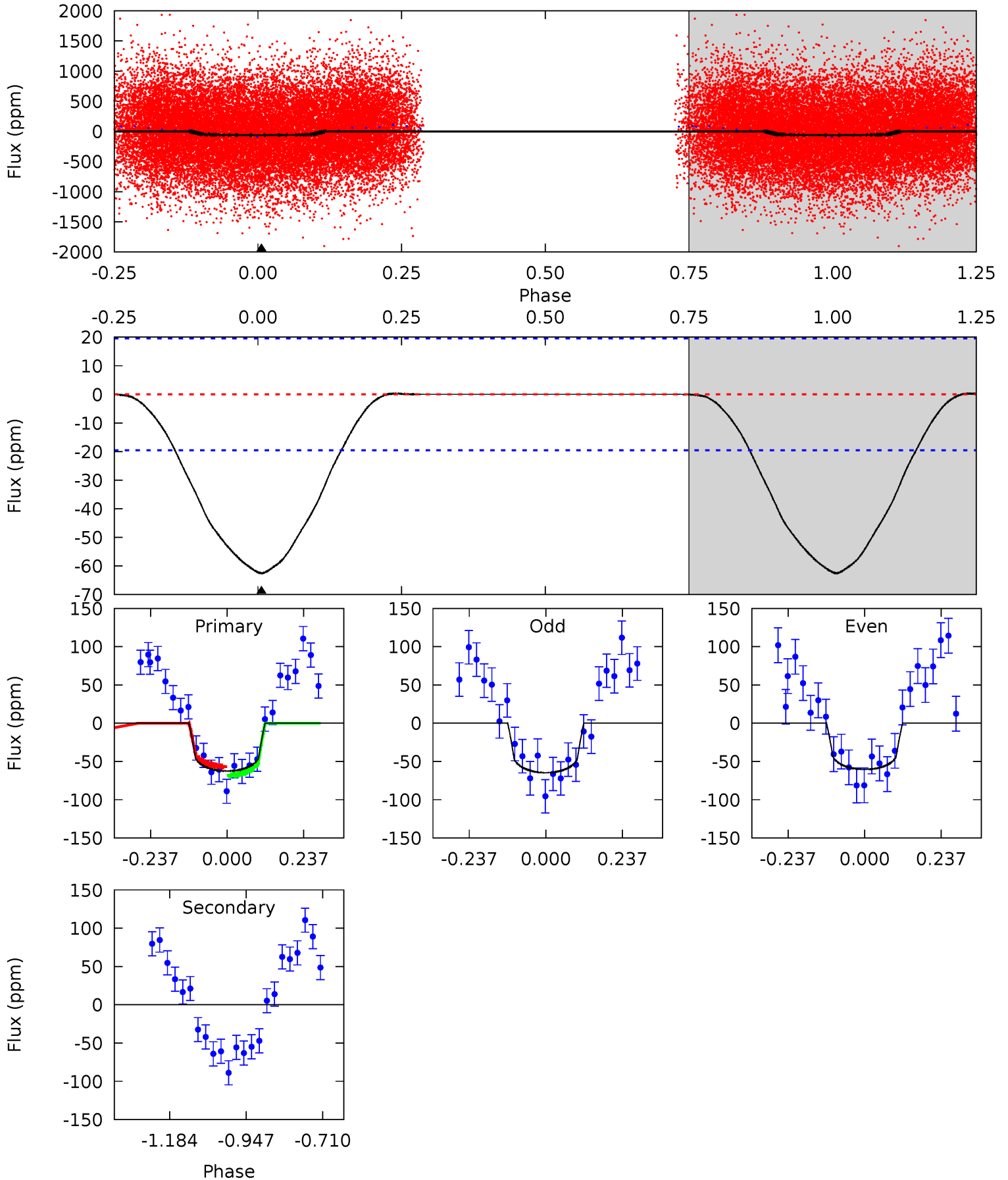
TCE 010815466-02 P= 1.012346 Days $T_0=131.718926$ (BKJD)



DV Model-Shift Uniqueness Test

010815466-02, P = 1.012318 Days, E = 130.724518 Days

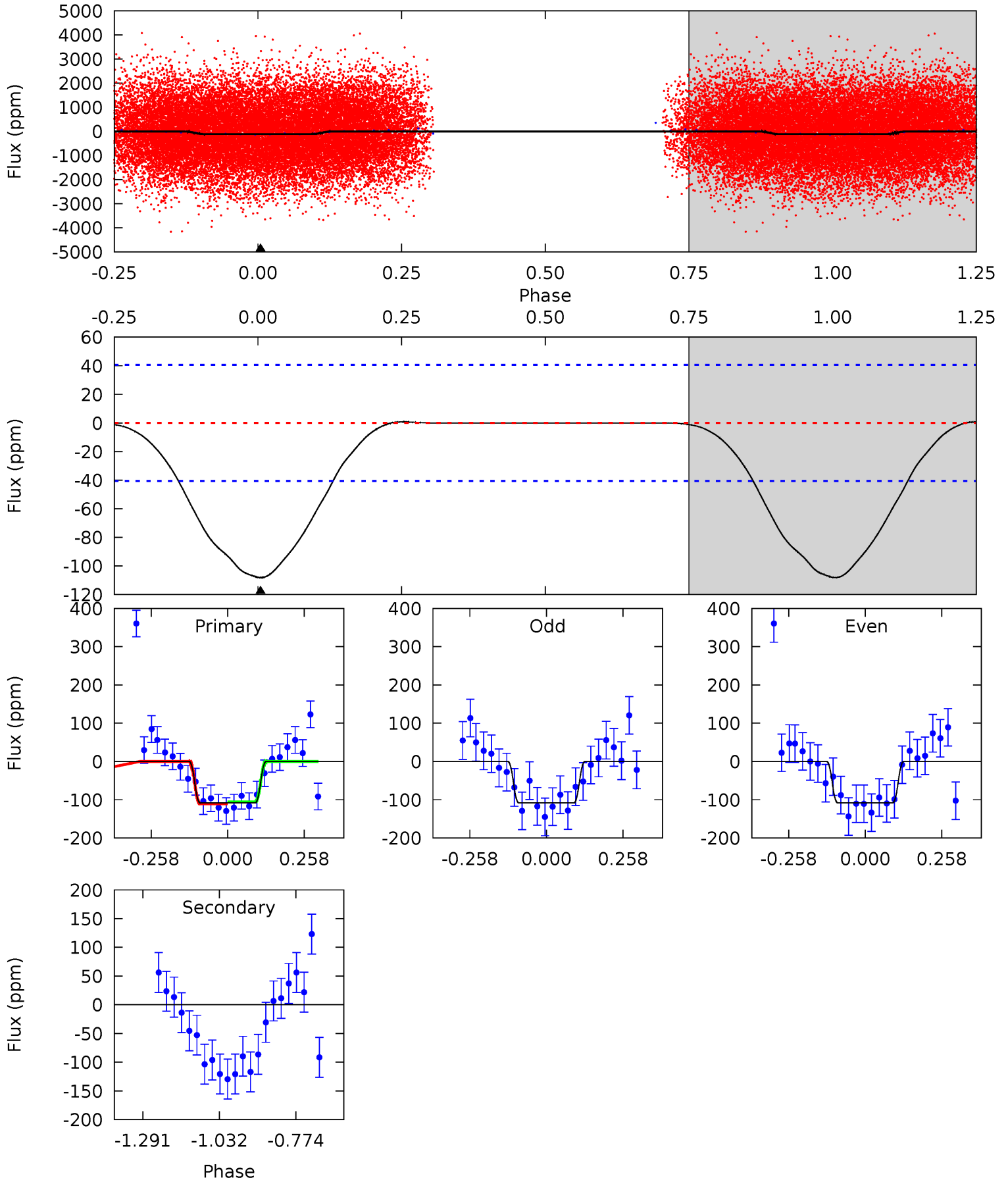
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.0	0	0	0	4.38	1.18	0.13	14.0	14.0	0	0	0.48	1.05	0.00	1.29



Alt Model-Shift Uniqueness Test

010815466-02, P = 1.012346 Days, E = 130.706580 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.6	0	0	0	4.36	1.13	0.17	11.6	11.6	0	0	0.01	1.02	0.01	0.27



Stellar Parameters For KIC 010815466

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8527^{+237}_{-356}	$3.860^{+0.374}_{-0.066}$	$-0.420^{+0.150}_{-0.350}$	$2.593^{+0.263}_{-1.053}$	$1.777^{+0.085}_{-0.339}$	$0.143^{+0.426}_{-0.031}$
	+3%/-4%	+10%/-2%	+36%/-83%	+10%/-41%	+5%/-19%	+297%/-21%
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 010815466-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 4	$2.20^{+1.96}_{-1.39}$	5312^{+325}_{-512}	-4346^{+8177}_{-814}	$0.011^{+0.448}_{-0.372}$
Alt.	0 ± 9	$2.91^{+2.02}_{-1.72}$	5313^{+313}_{-566}	-4399^{+7927}_{-1104}	$-0.013^{+0.427}_{-0.623}$

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 $A_{obs} \gg 1.0$

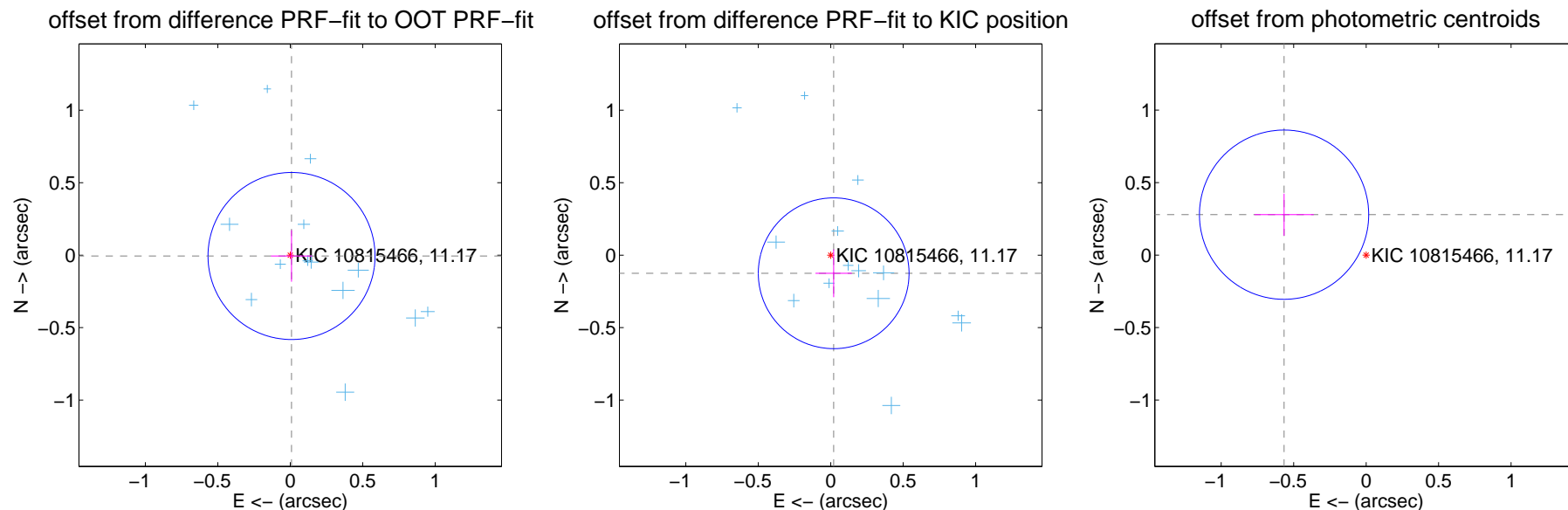
DV Centroid Data

Supplemental centroid analysis for 010815466-02. **Kepler magnitude: 11.17.** Transit SNR 10.83

There are 14 quarters with good PRF difference image offsets

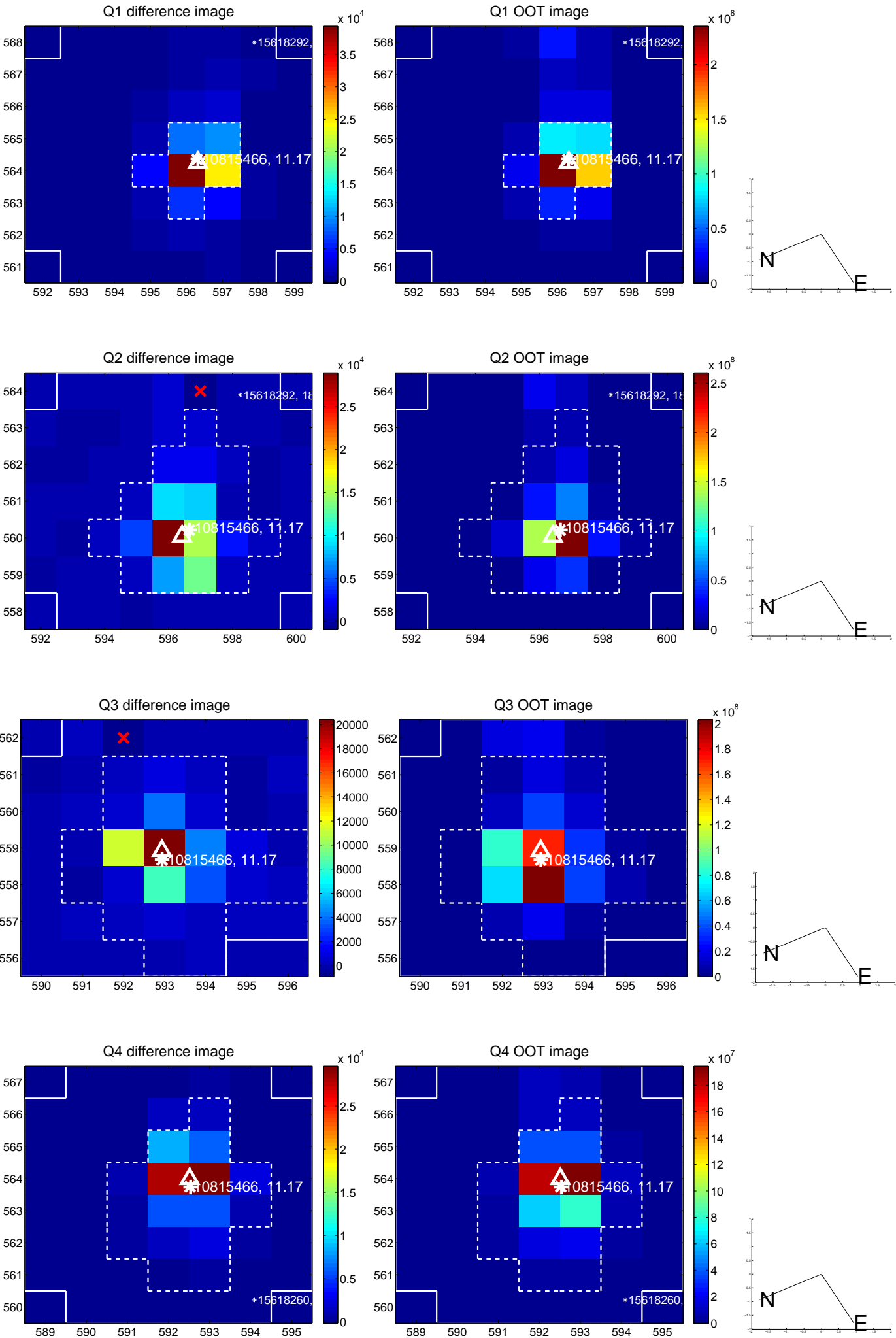
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.010 ± 0.192	0.05	-0.009 ± 0.142	-0.006 ± 0.178
PRF-fit source offset from KIC position	0.127 ± 0.173	0.73	-0.020 ± 0.125	-0.125 ± 0.165
photometric centroid source offset	0.63 ± 0.19	3.24	0.57 ± 0.20	0.28 ± 0.15

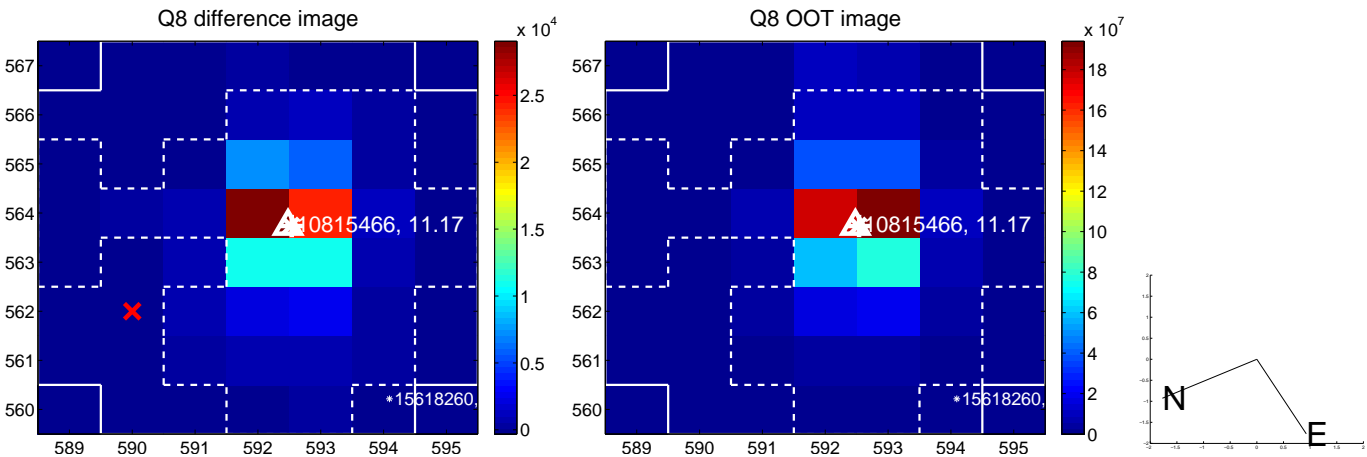
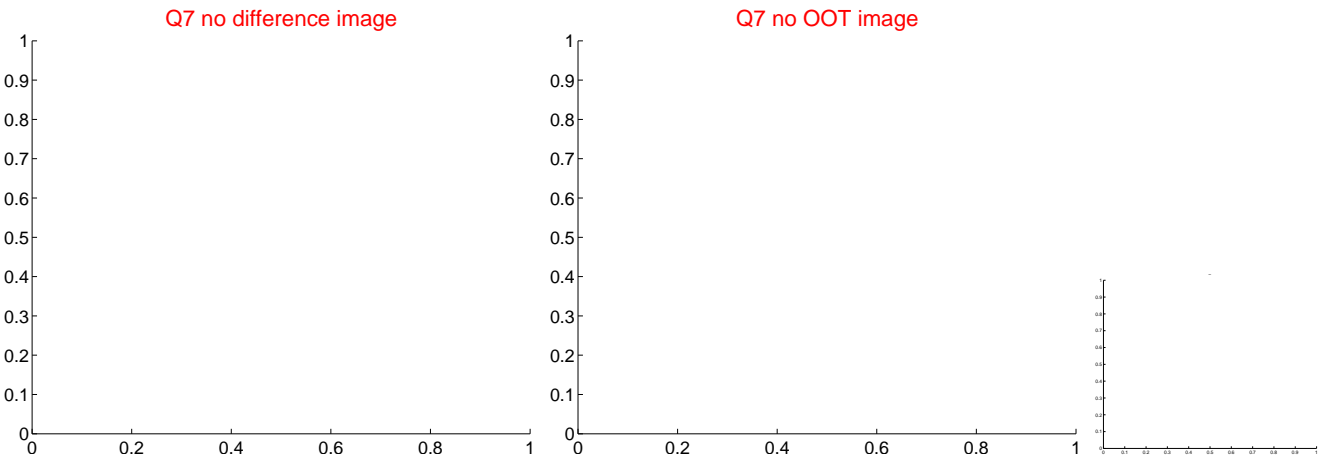
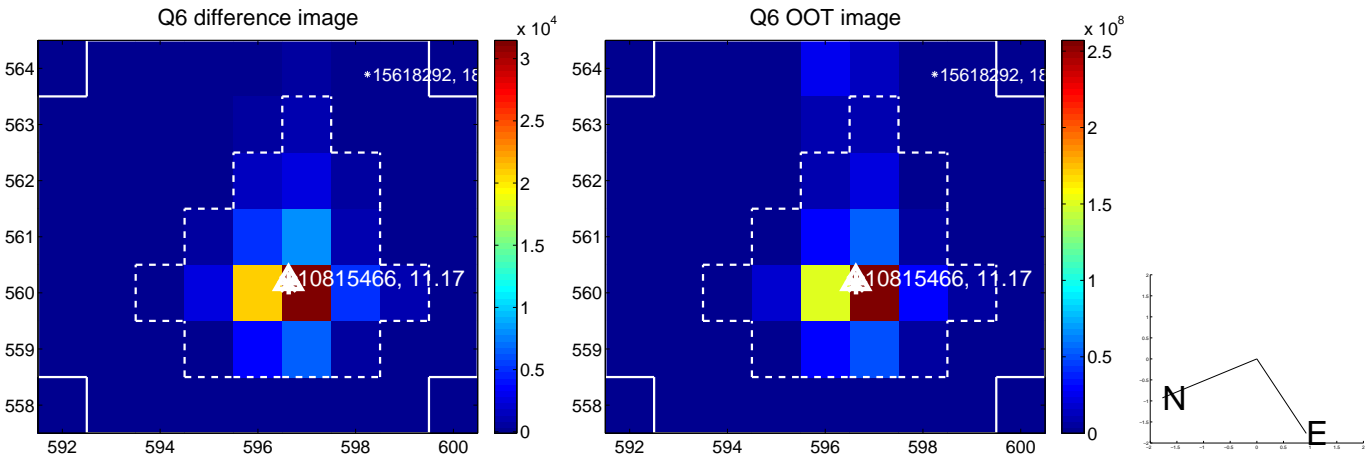
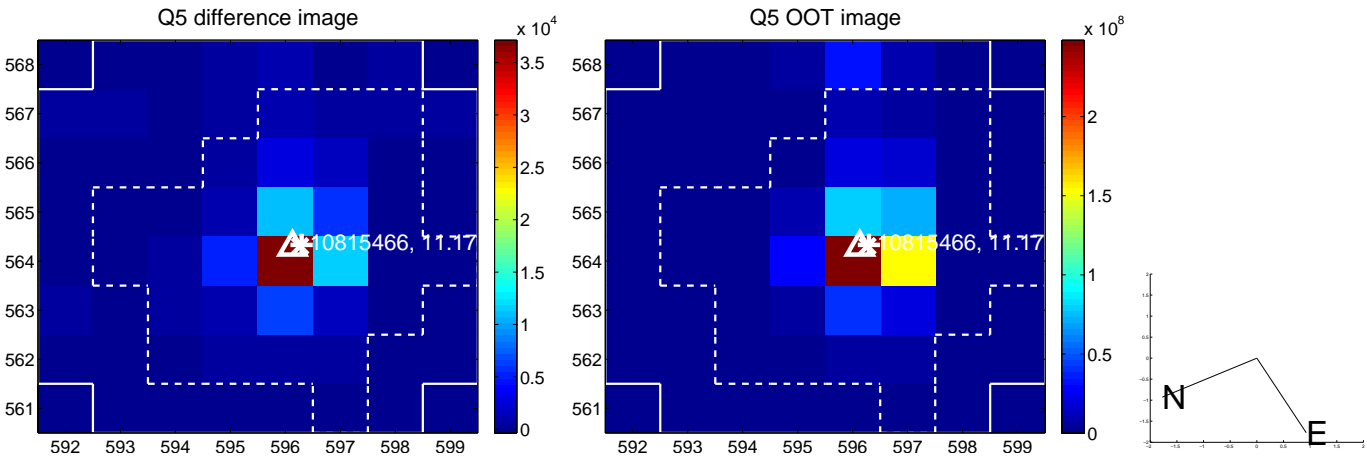


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

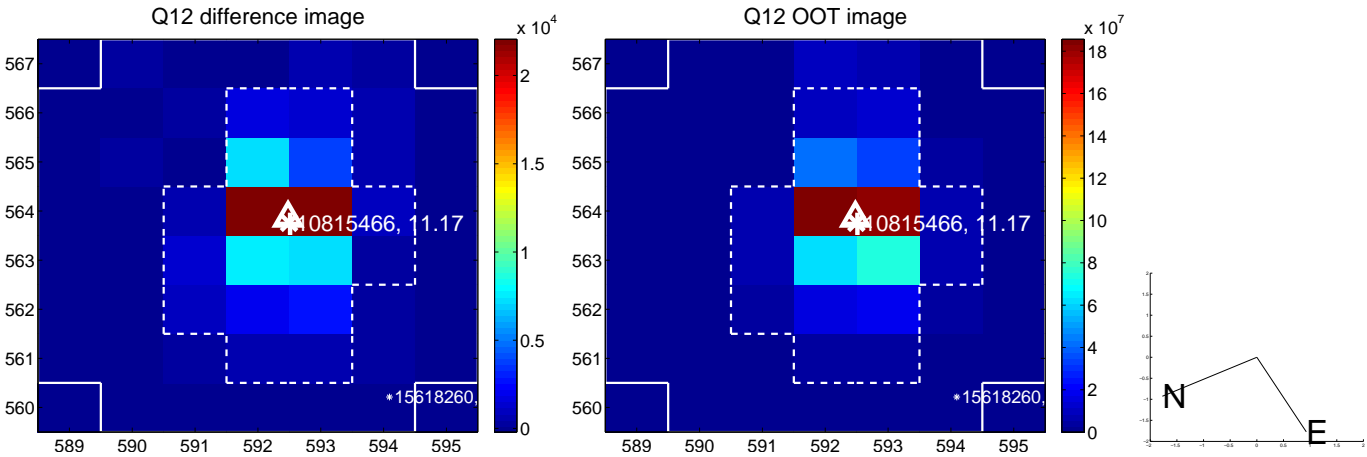
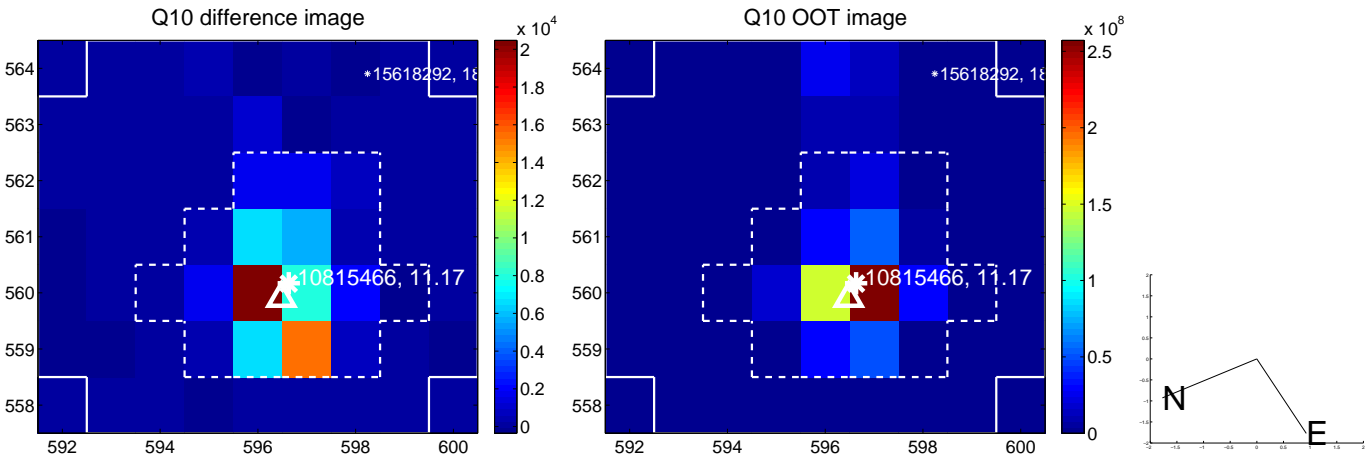
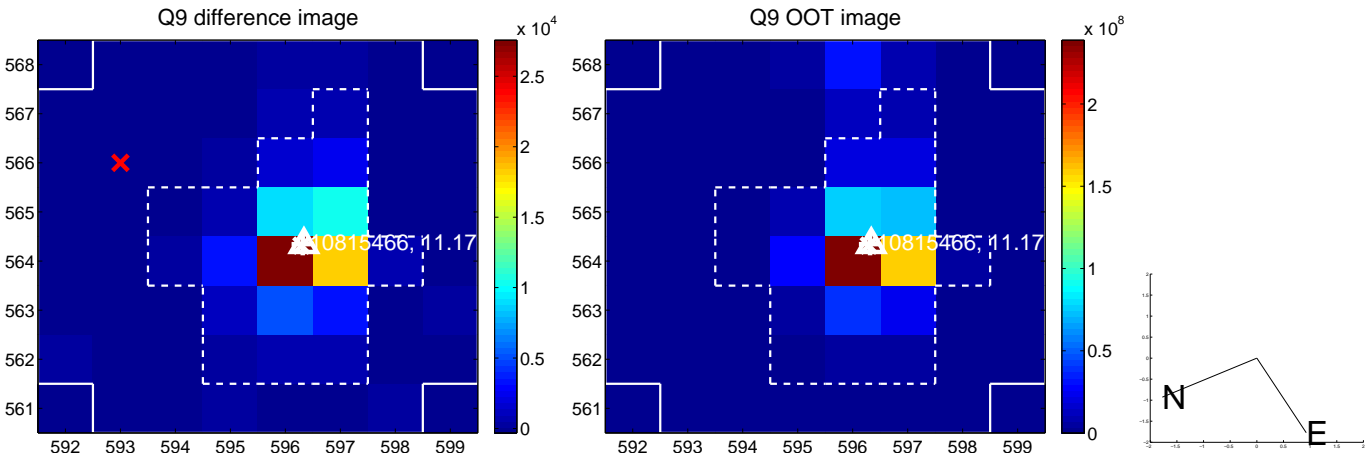
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



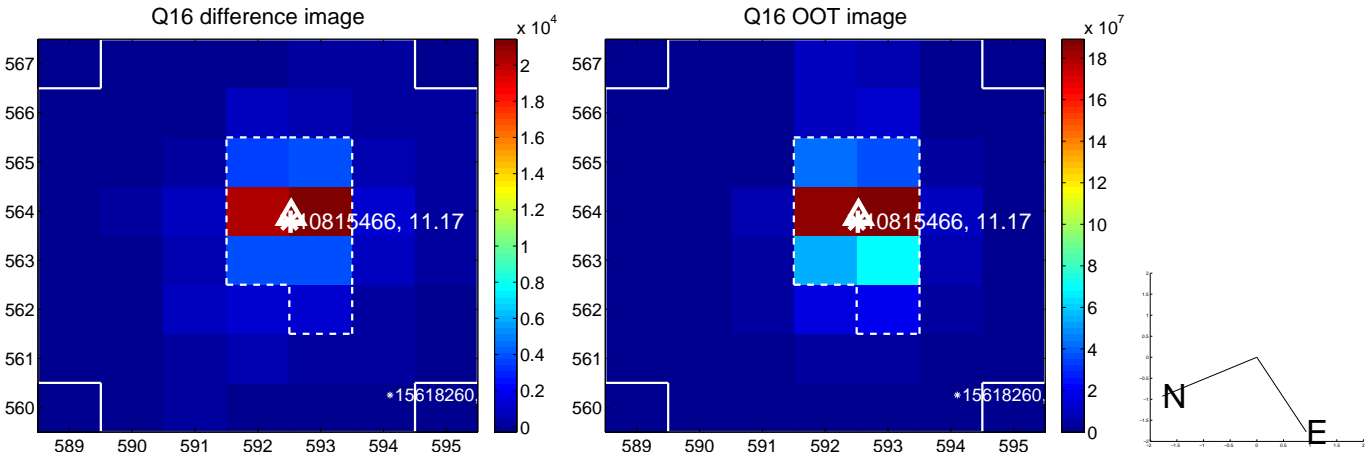
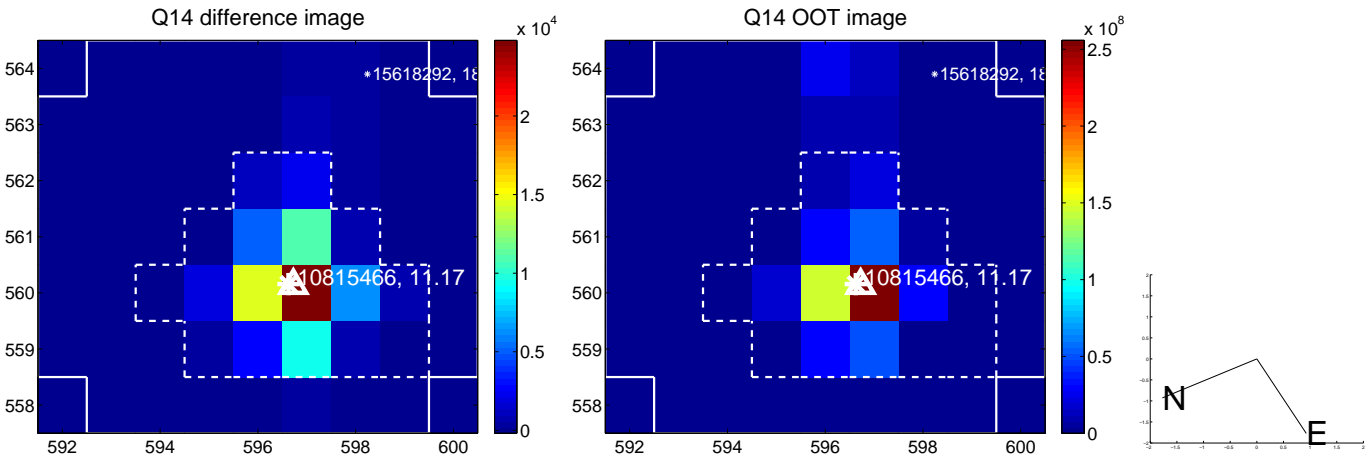
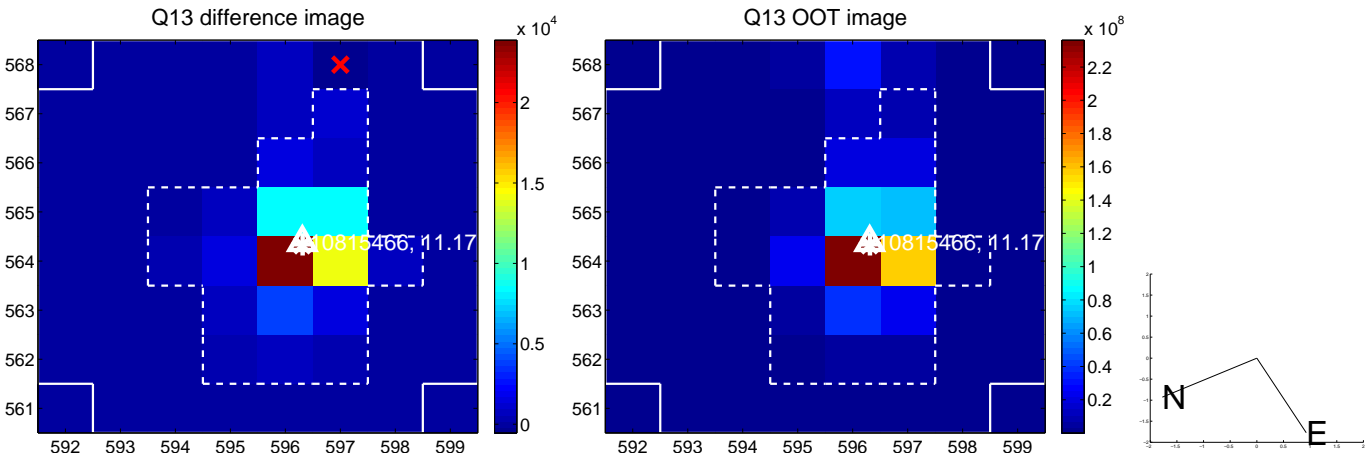
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



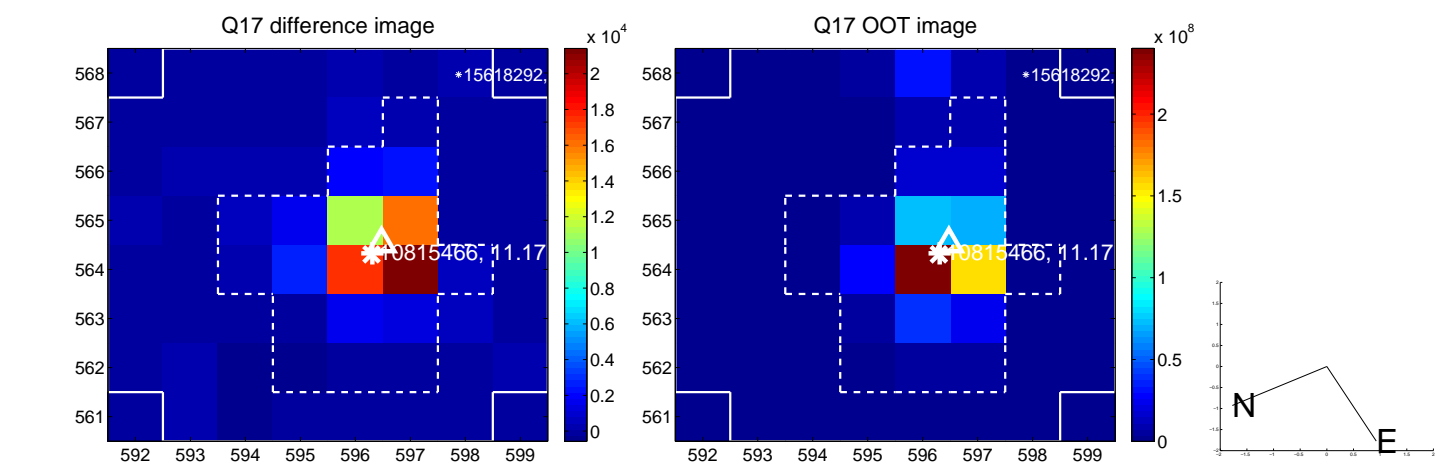
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



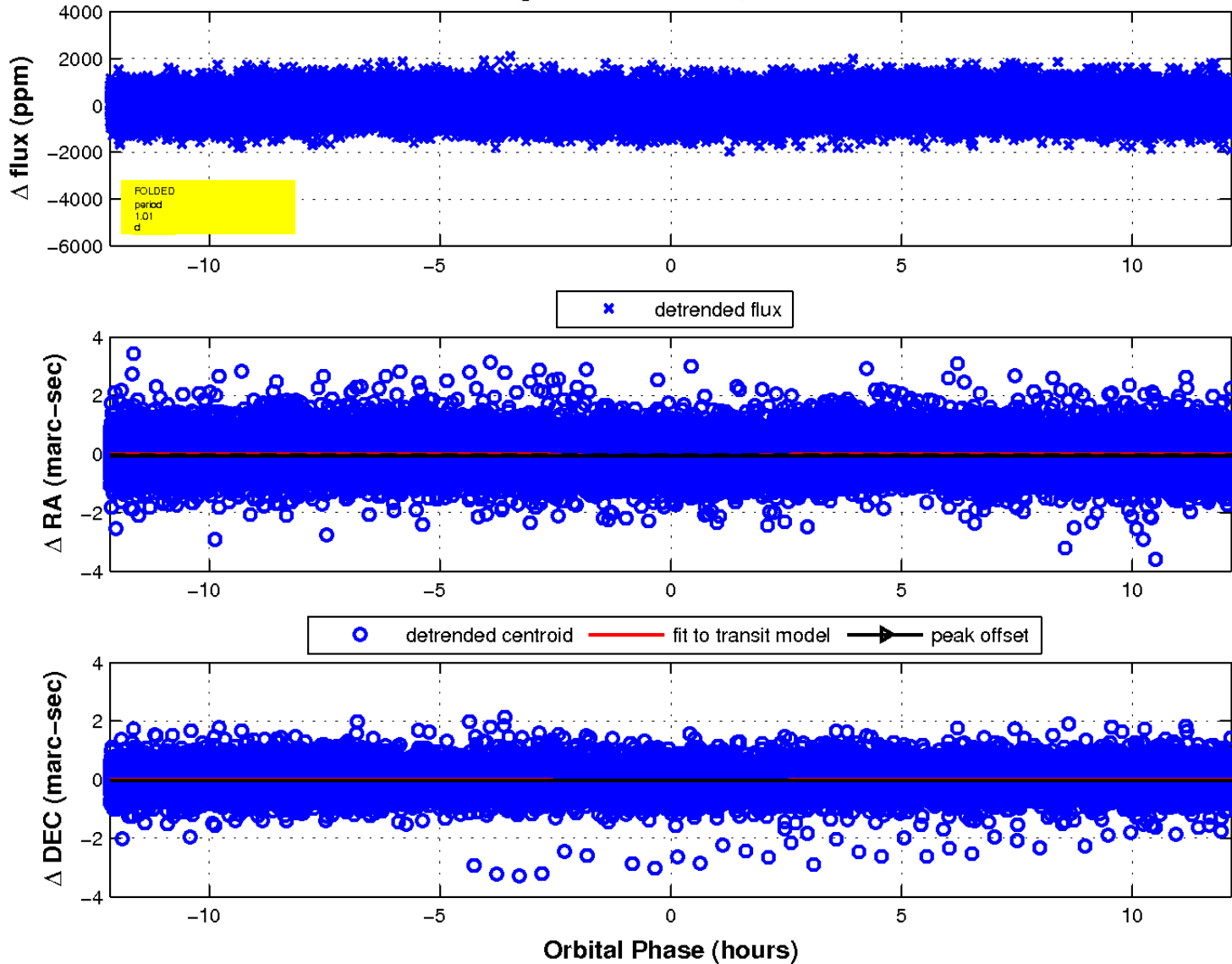
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

