

# KIC 011495305

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011495305-01	OBS	No	0.731224	131.850396	302.8	2.635	12.4	11.6	1.76	7493	3.59	26310.51
011495305-02	OBS	No	0.731221	132.213721	291.3	2.712	11.1	11.6	1.76	7493	3.23	26310.66

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011495305-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
011495305-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

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

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

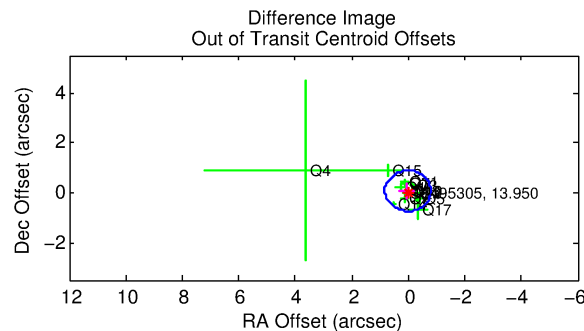
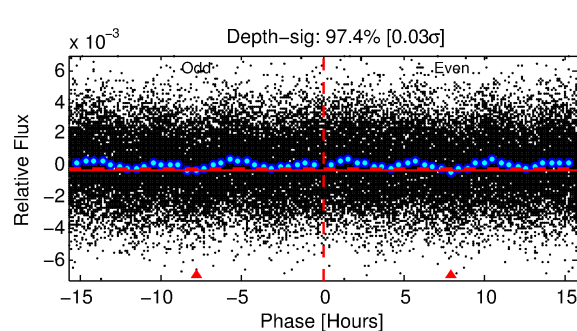
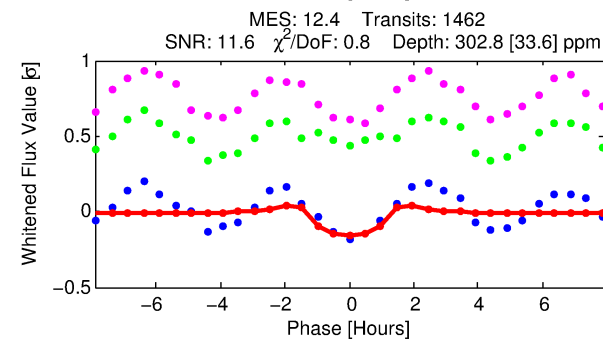
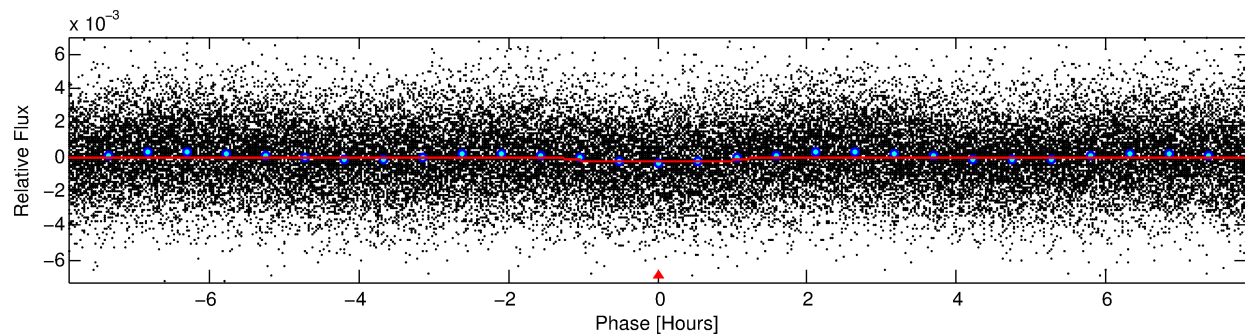
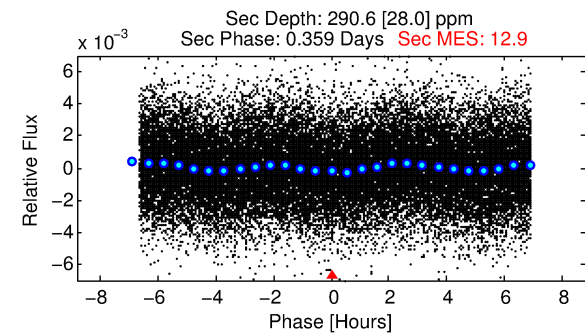
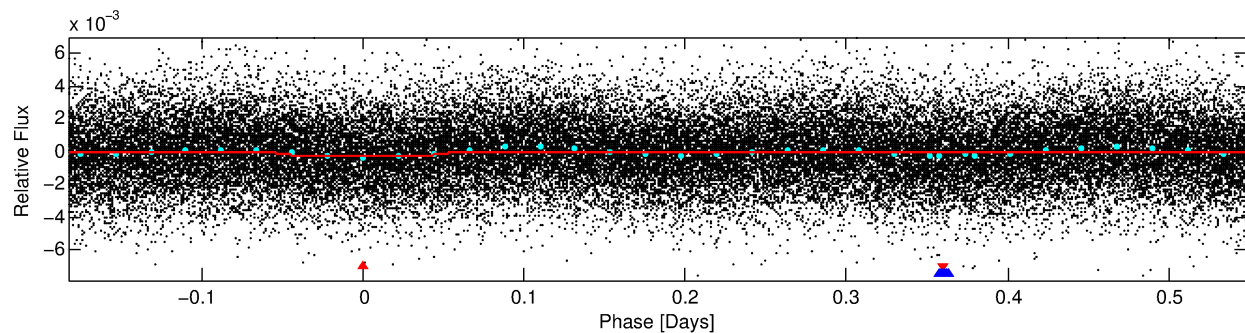
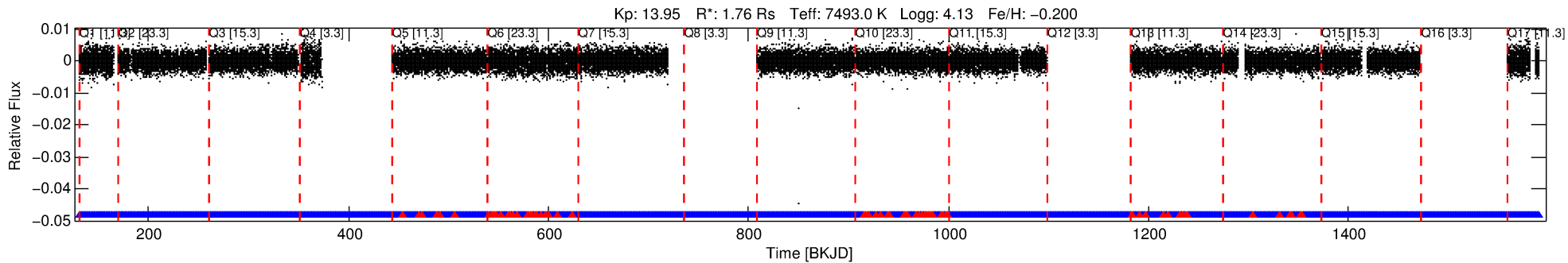
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011495305-01

No Significant Match Found

# DV One-Page Summary

KIC: 11495305 Candidate: 1 of 2 Period: 0.731 d



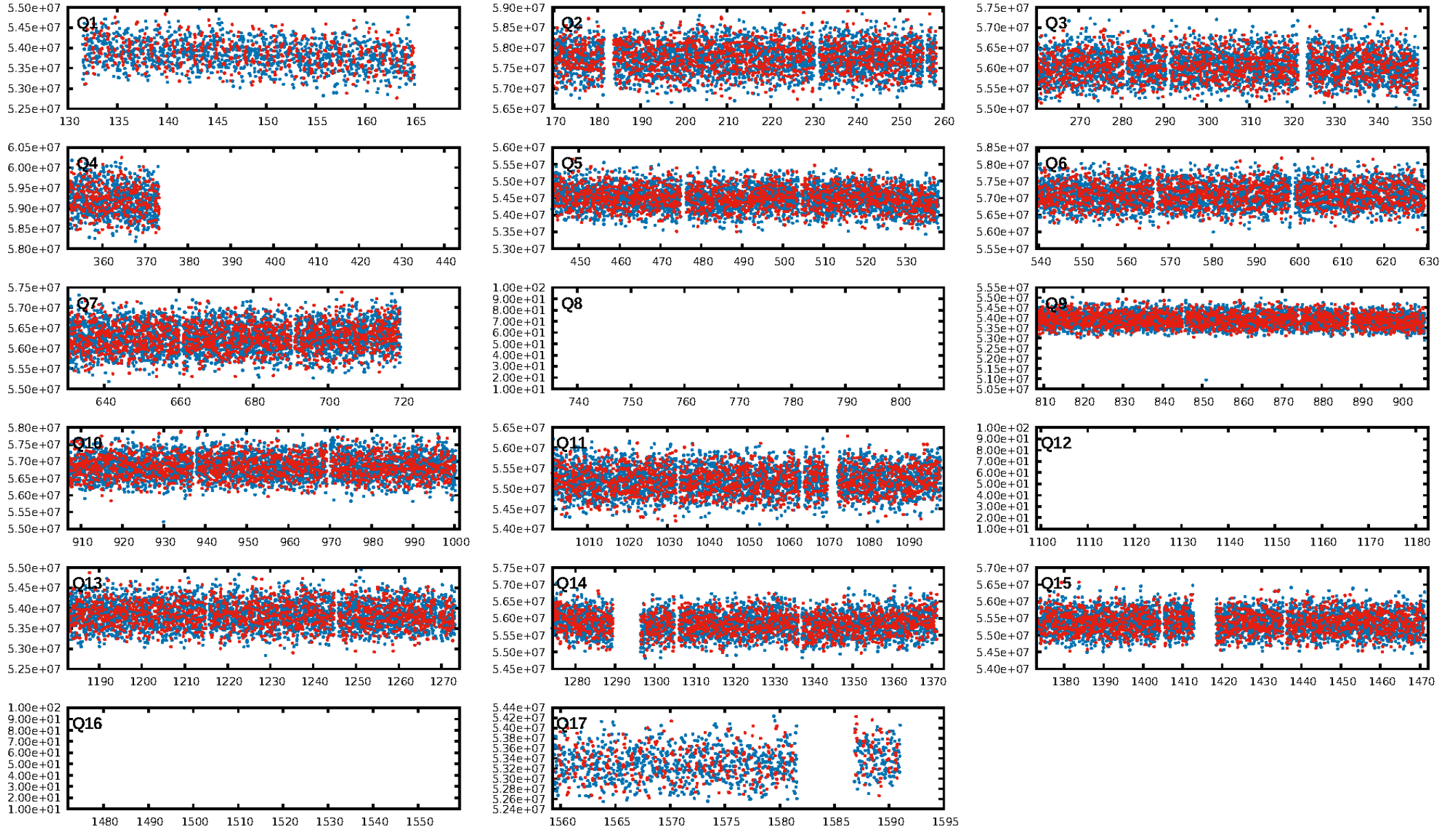
## DV Fit Results:

Period = 0.73122 [0.00001] d  
Epoch = 131.8504 [0.0025] BKJD  
Rp/R\* = 0.0187 [0.0061]  
a/R\* = 1.38 [1.17]  
b = 0.90 [0.38]  
Seff = 26310.51 [9984.01]  
Teff = 3248 [308] K  
Rp = 3.59 [1.56] Re  
a = 0.0182 [0.0044] AU  
Ag = 4.12 [3.04] [1.03σ]  
**Teffp = 7154 [1210] K [3.13σ]**

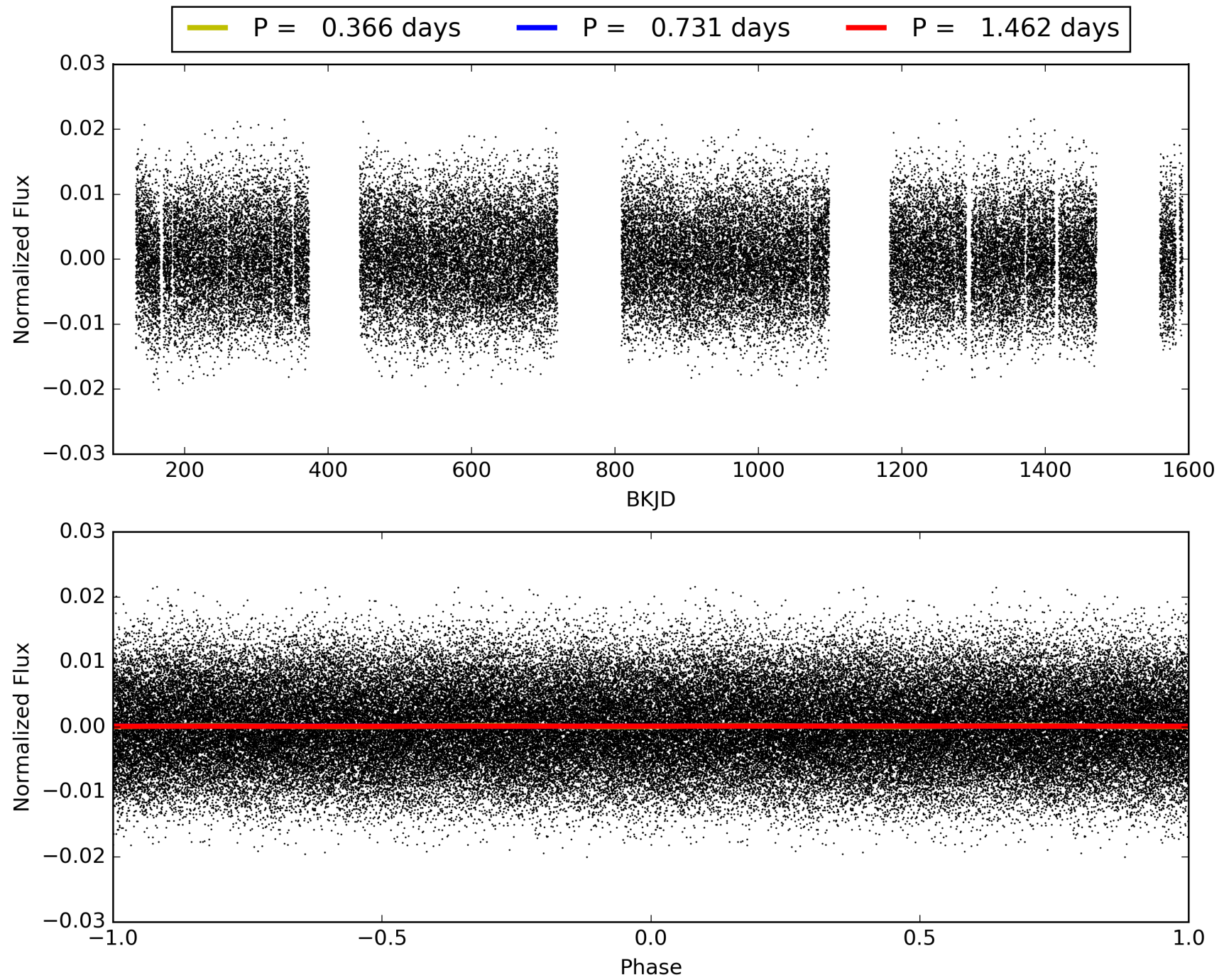
## DV Diagnostic Results:

**ShortPeriod-sig: 0.0% [0.00σ]**  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 4.03e-28  
RollingBand-fgt: 0.94 [1271/1350]  
GhostDiagnostic-chr: 1.439  
Centroid-sig: 13.6%  
Centroid-so: 0.406 arcsec [2.82σ]  
OotOffset-rm: 0.071 arcsec [0.26σ]  
KicOffset-rm: 0.187 arcsec [0.70σ]  
OotOffset-st: 4/4/1/5 [14]  
KicOffset-st: 4/4/1/5 [14]  
DiffImageQuality-fgm: 0.64 [9/14]  
DiffImageOverlap-fno: 1.00 [14/14]

# TCE 011495305-01, PDC Light Curves



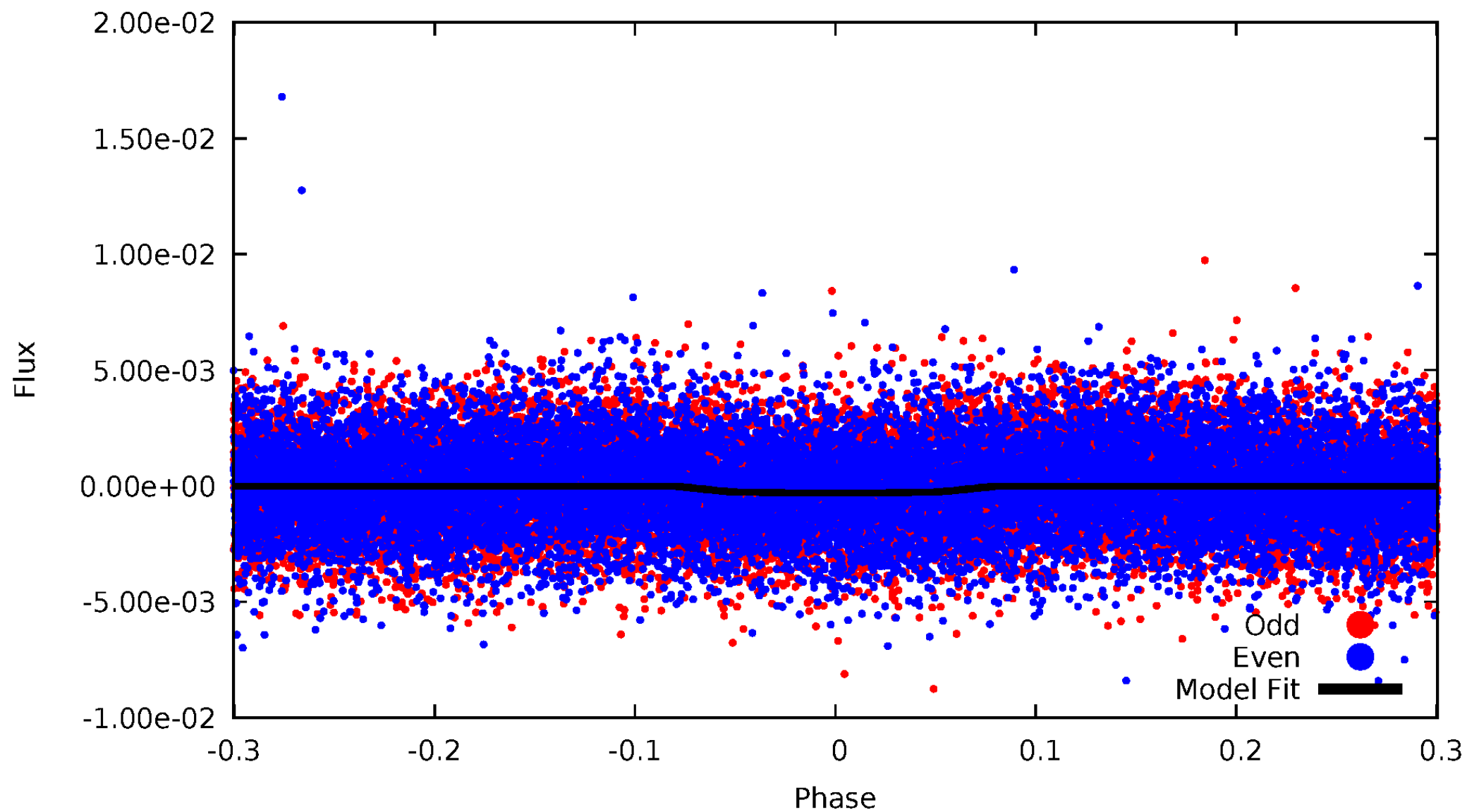
TCE 011495305-01





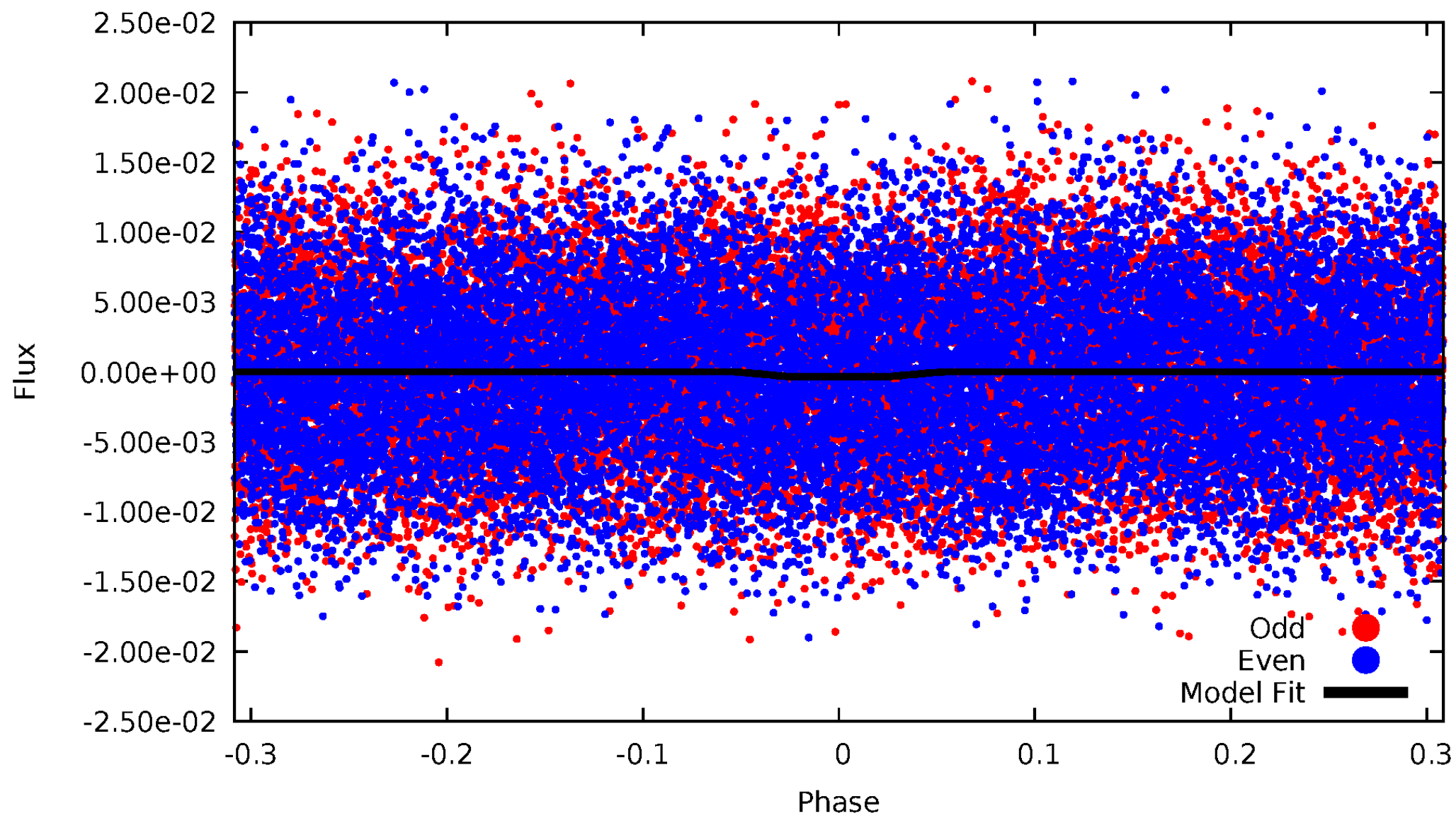
# DV Odd/Even

TCE 011495305-01

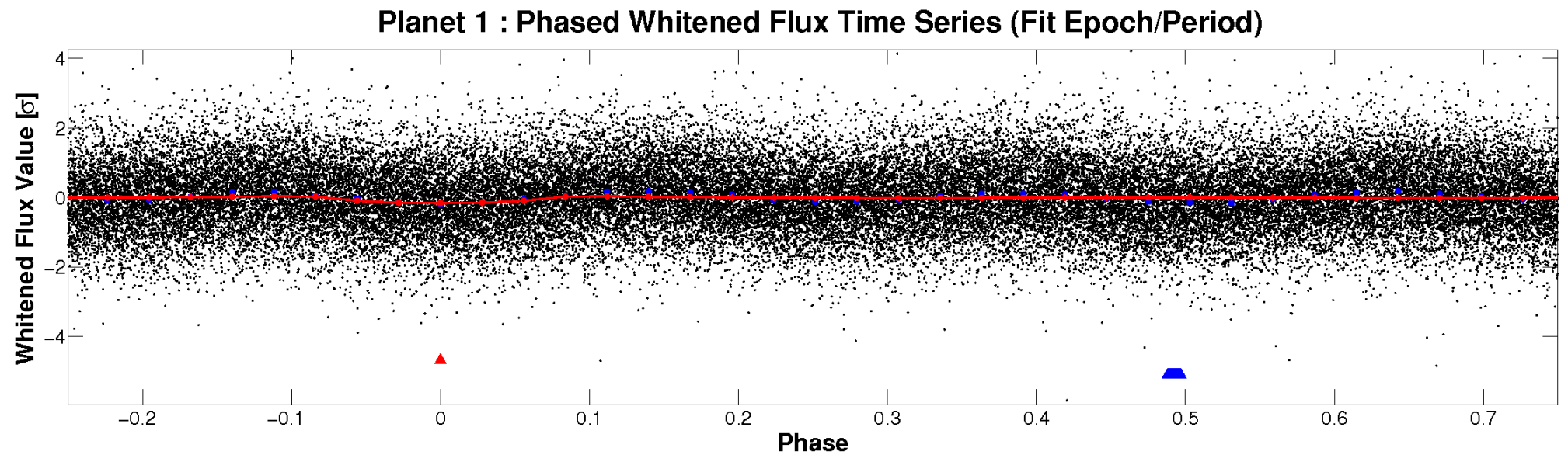
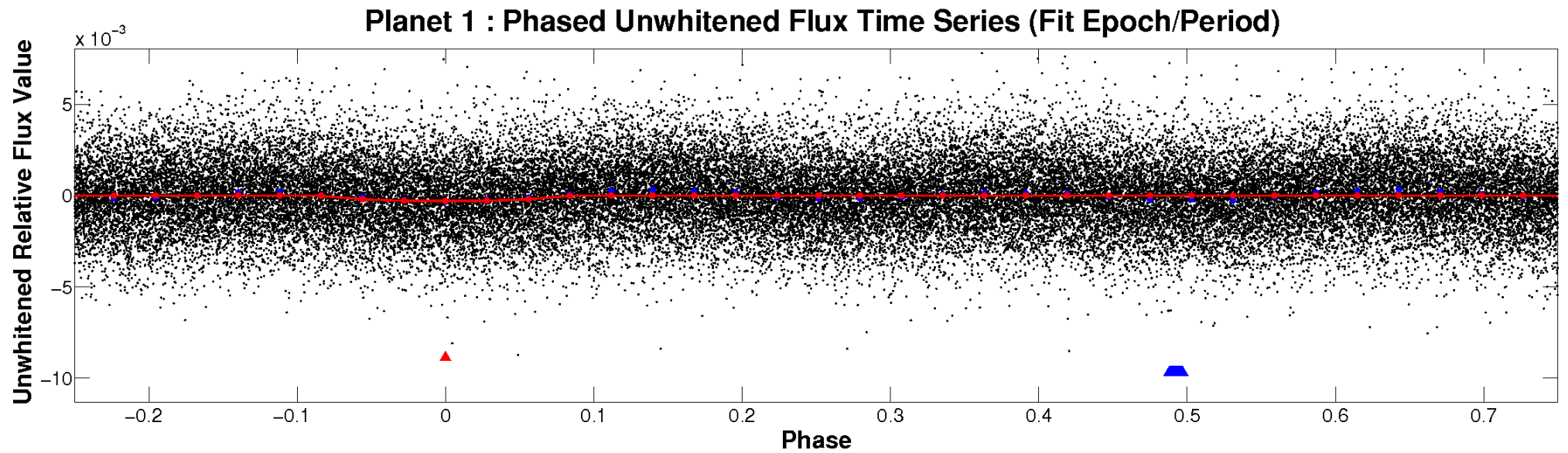


# ALT Odd/Even

TCE 011495305-01

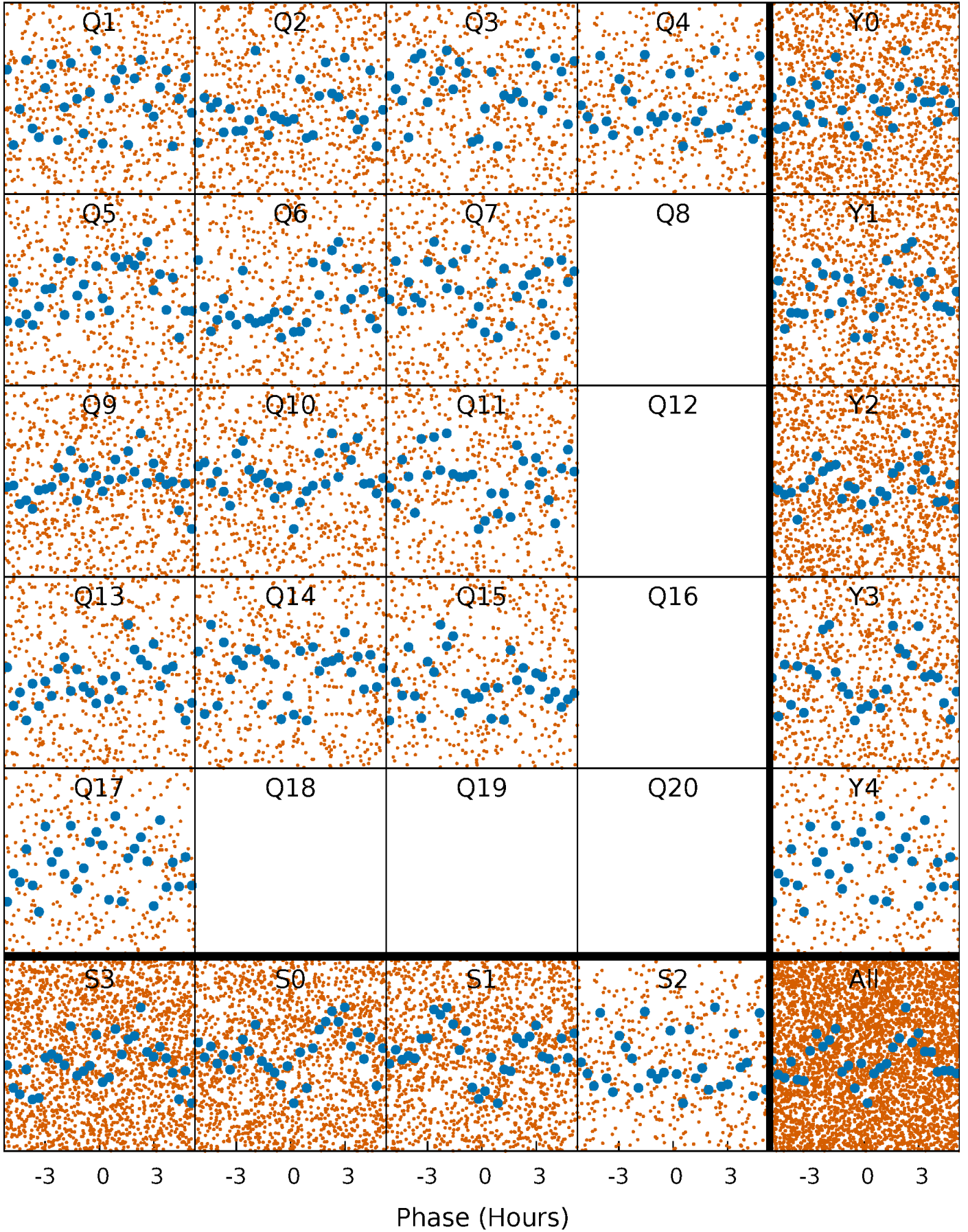


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

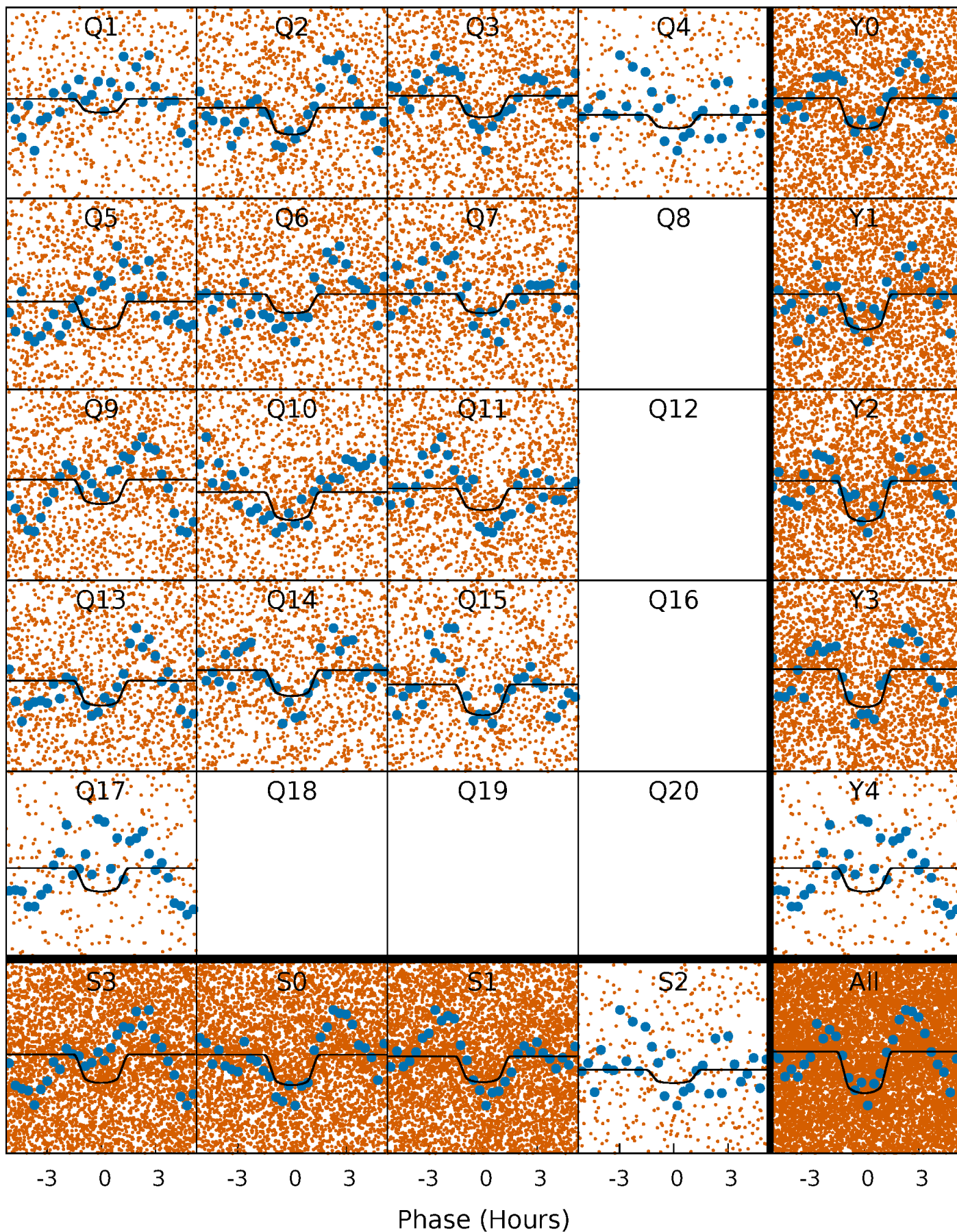
TCE 011495305-01     $P = 0.731224$  Days     $T_0 = 131.850396$  (BKJD)





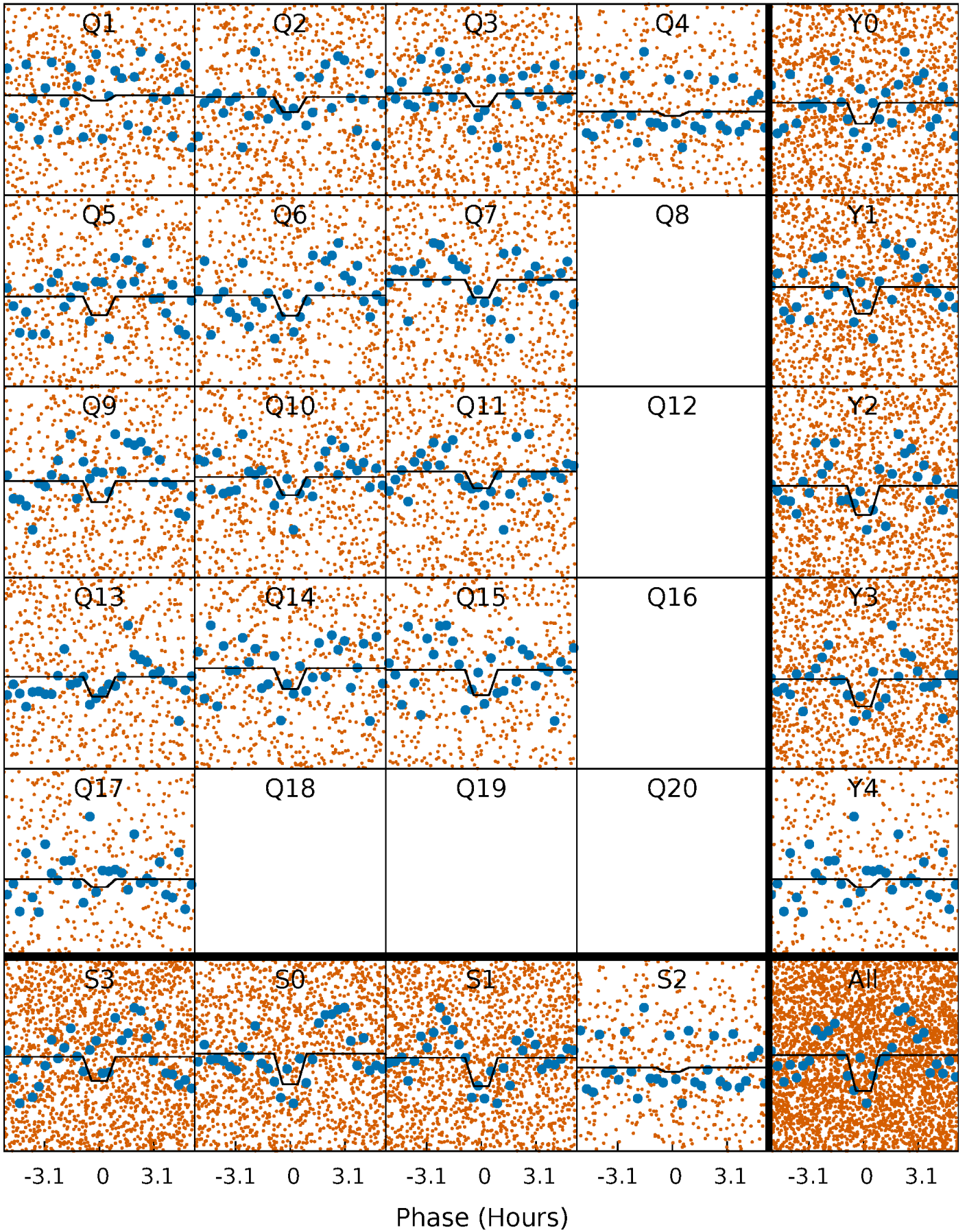
# DV Quarter-Phased Transit Curves

TCE 011495305-01   P= 0.731224 Days    $T_0=131.850396$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

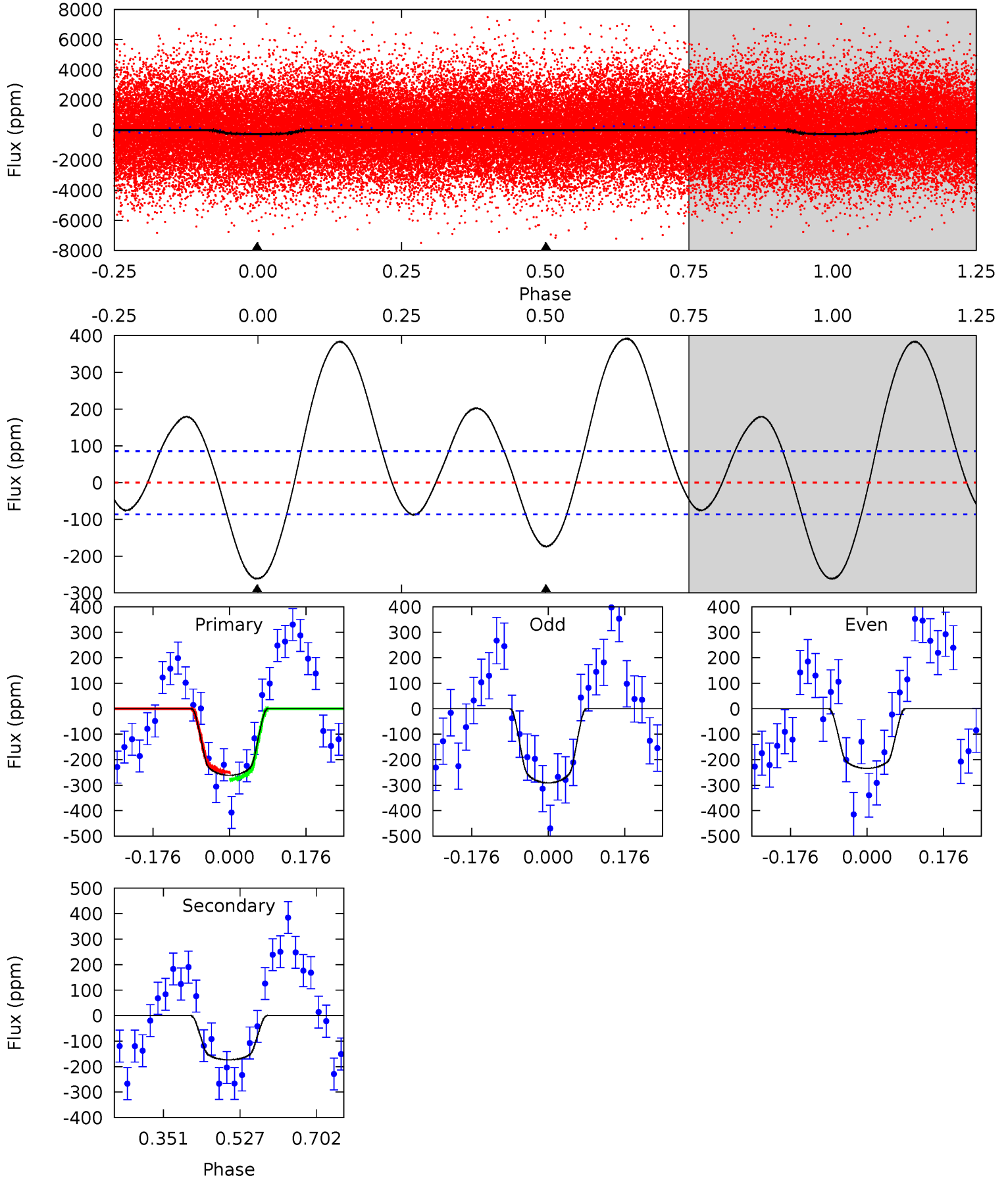
TCE 011495305-01   P= 0.731227 Days    $T_0=131.850178$  (BKJD)



# DV Model-Shift Uniqueness Test

011495305-01, P = 0.731224 Days, E = 131.119172 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.5	8.97	0	0	4.45	1.35	5.77	13.5	13.5	8.97	8.97	1.48	0.87	0.60	0.72

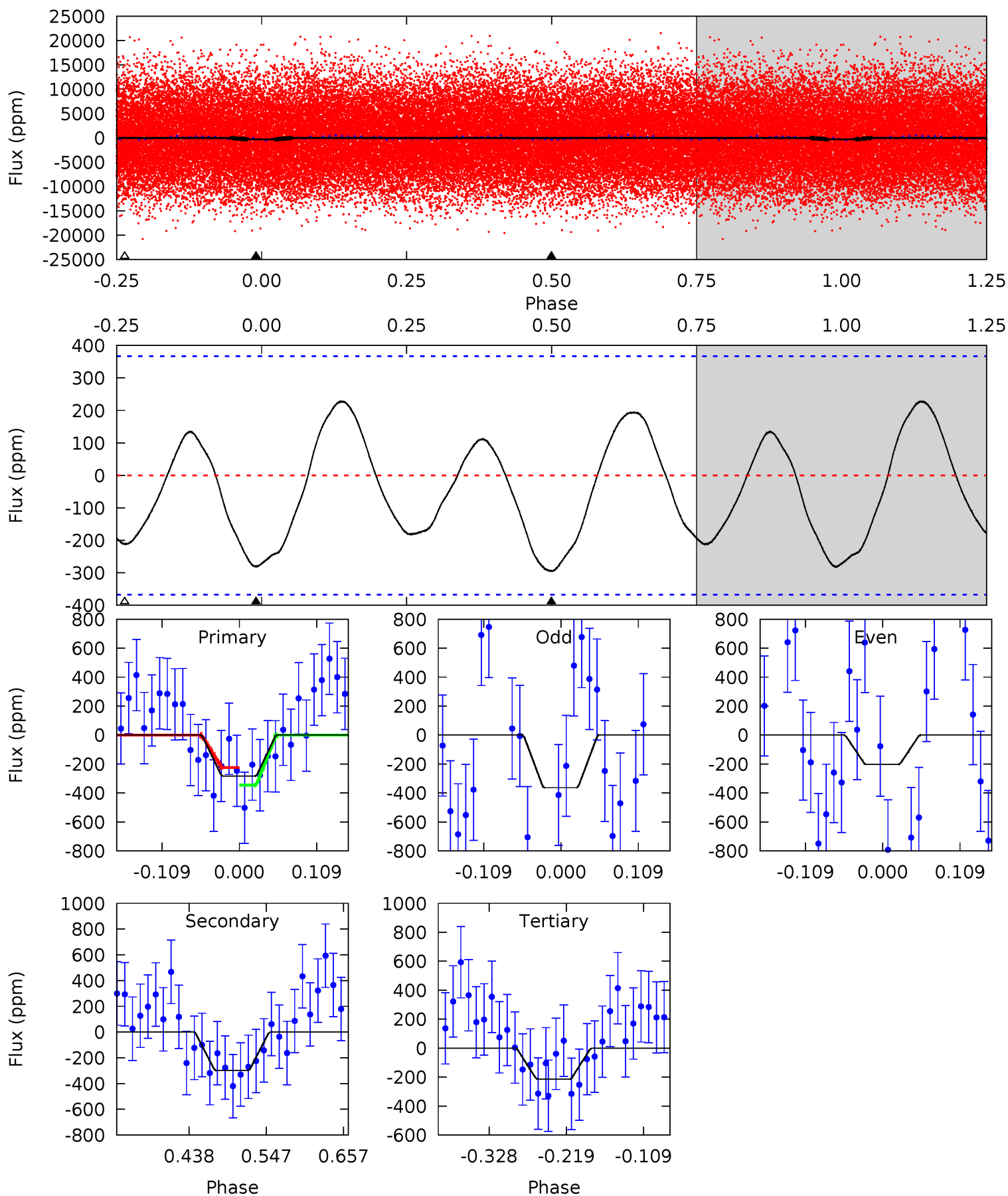




# Alt Model-Shift Uniqueness Test

011495305-01, P = 0.731227 Days, E = 131.118951 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.51	3.68	2.64	0	4.55	1.60	1.74	0.86	3.51	1.03	3.68	0.99	0.80	0.44	0.75





### Stellar Parameters For KIC 011495305

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7493^{+235}_{-314}$	$4.126^{+0.149}_{-0.182}$	$-0.200^{+0.250}_{-0.350}$	$1.758^{+0.513}_{-0.373}$	$1.506^{+0.220}_{-0.242}$	$0.390^{+0.341}_{-0.194}$
	+3%/-4%	+4%/-4%	+125%/-175%	+29%/-21%	+15%/-16%	+87%/-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 011495305-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-173 \pm 19$	$3.65^{+1.20}_{-1.25}$	$4544^{+356}_{-317}$	$5959^{+1540}_{-897}$	$2.378^{+3.139}_{-1.095}$
Alt.	$-297 \pm 81$	$3.50^{+1.39}_{-1.18}$	$4546^{+344}_{-333}$	$7039^{+2227}_{-1197}$	$4.392^{+5.680}_{-2.231}$

$T_{max}$  = 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  $A_{obs} \gg 1.0$

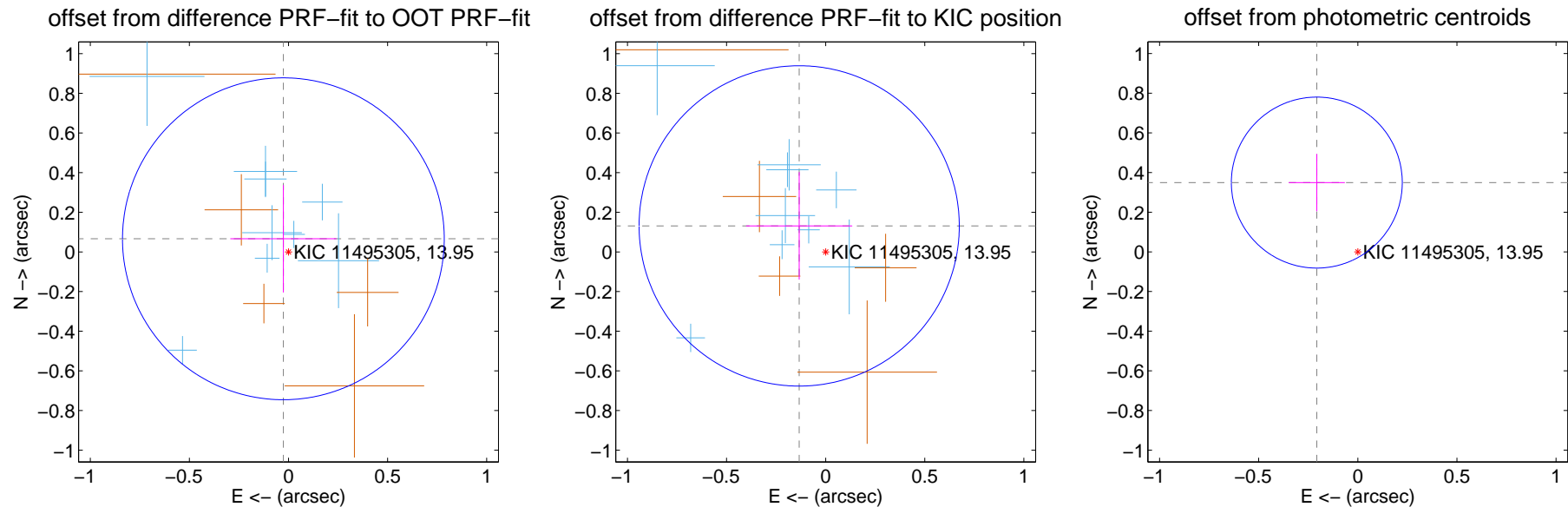
## DV Centroid Data

Supplemental centroid analysis for 011495305-01. Kepler magnitude: 13.95. Transit SNR 11.59

There are 9 quarters with good PRF difference image offsets

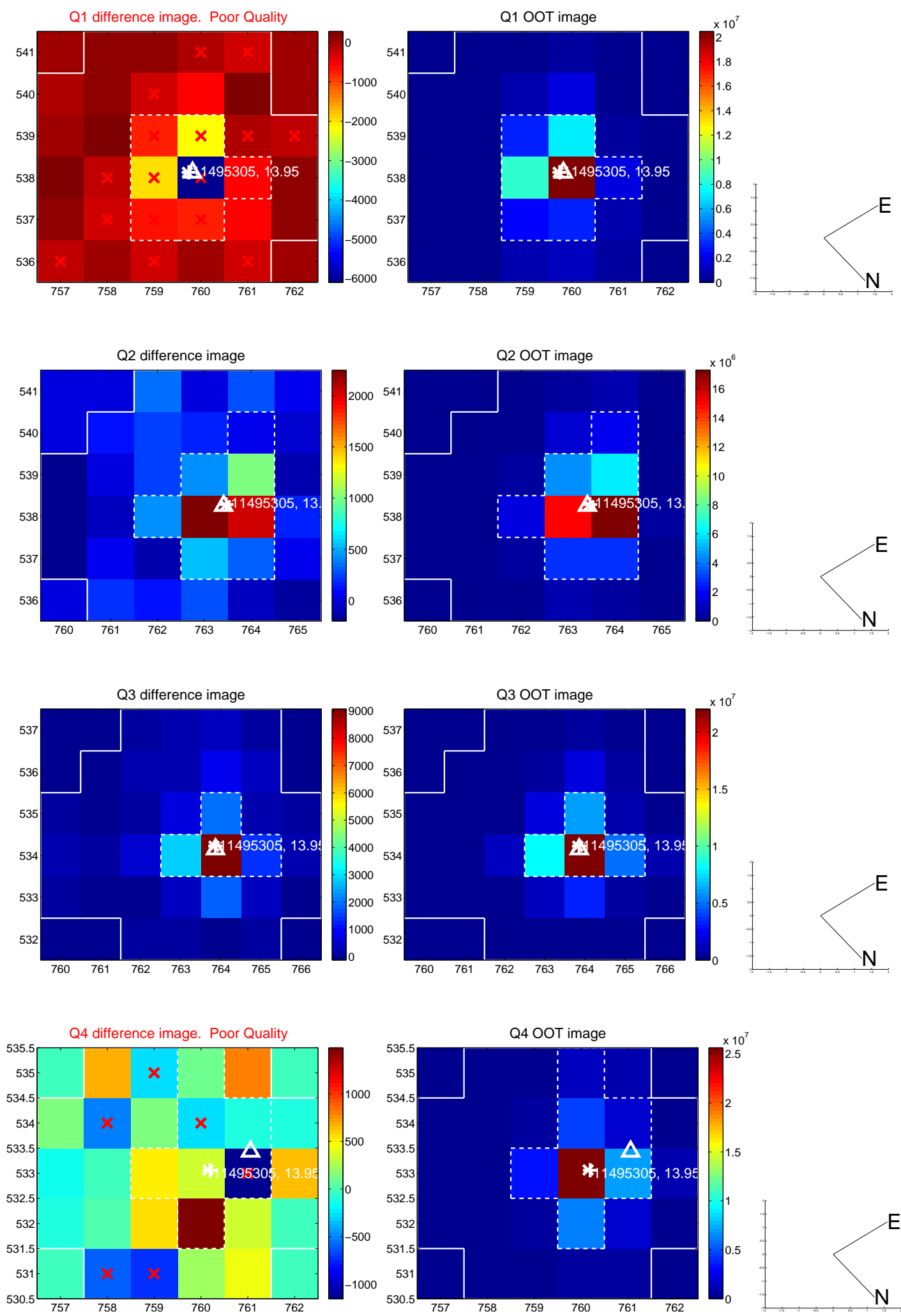
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.071 \pm 0.271$	0.26	$0.026 \pm 0.268$	$0.066 \pm 0.271$
PRF-fit source offset from KIC position	$0.187 \pm 0.269$	0.70	$0.134 \pm 0.268$	$0.131 \pm 0.271$
photometric centroid source offset	$0.41 \pm 0.14$	2.82	$0.21 \pm 0.14$	$0.35 \pm 0.14$

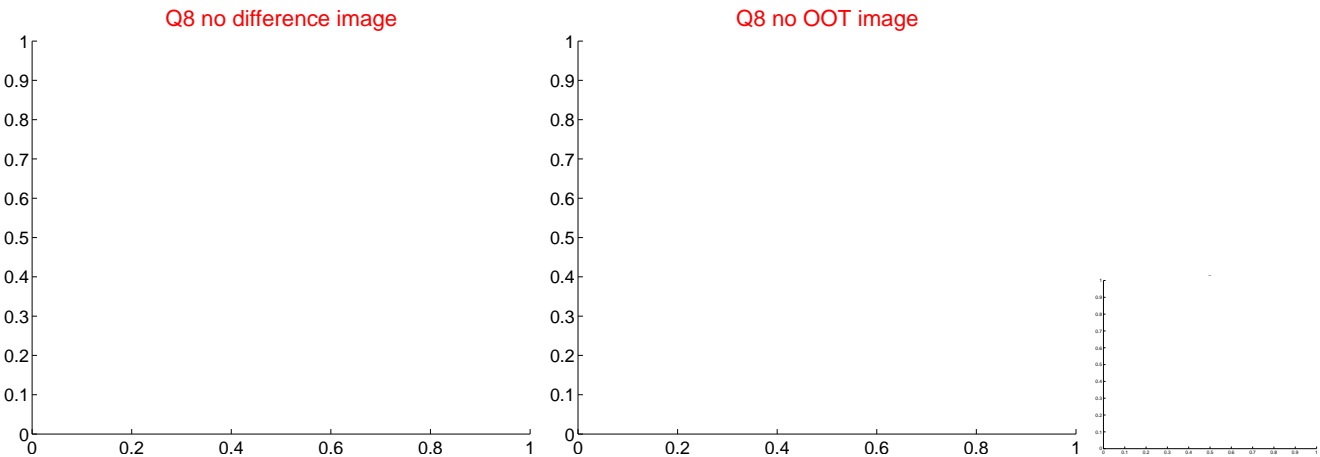
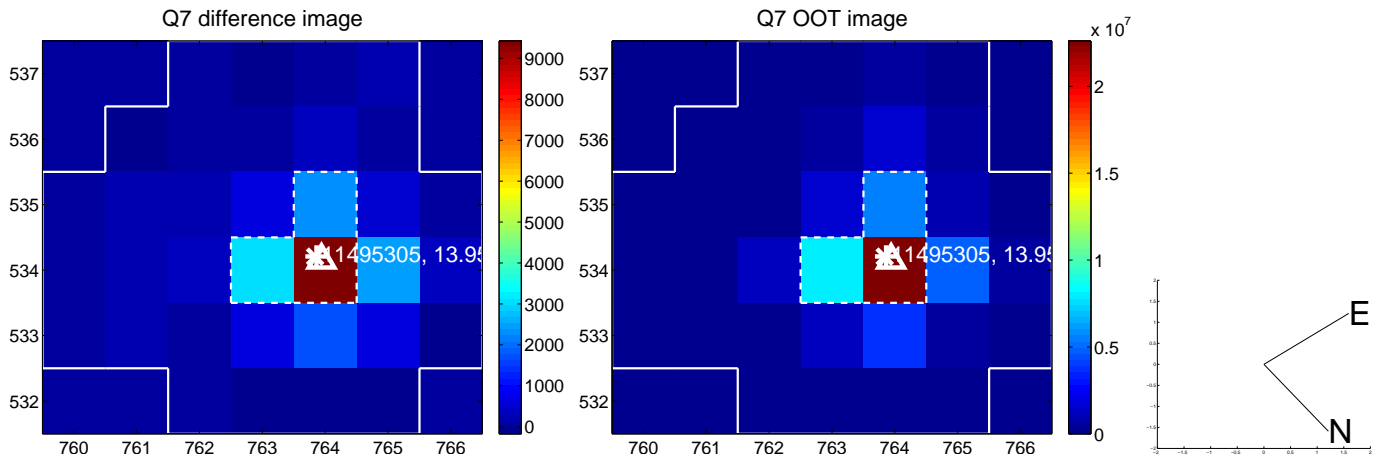
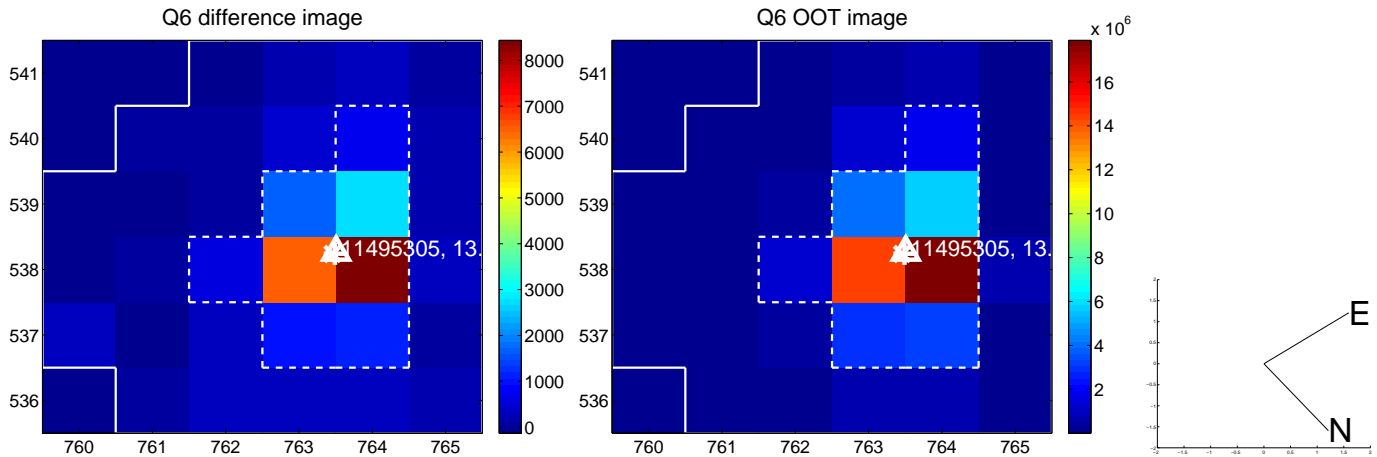
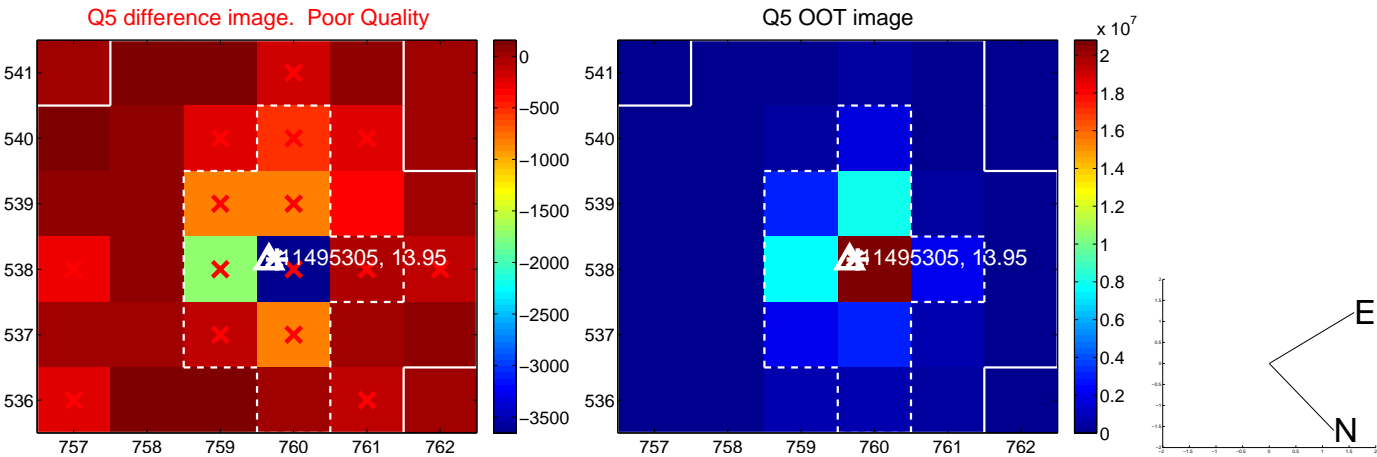


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

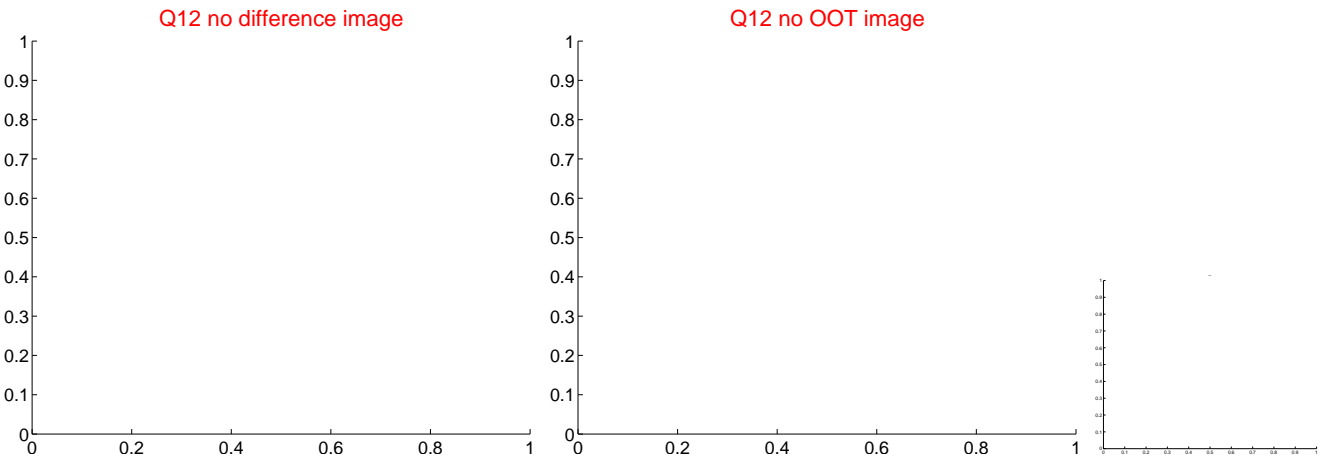
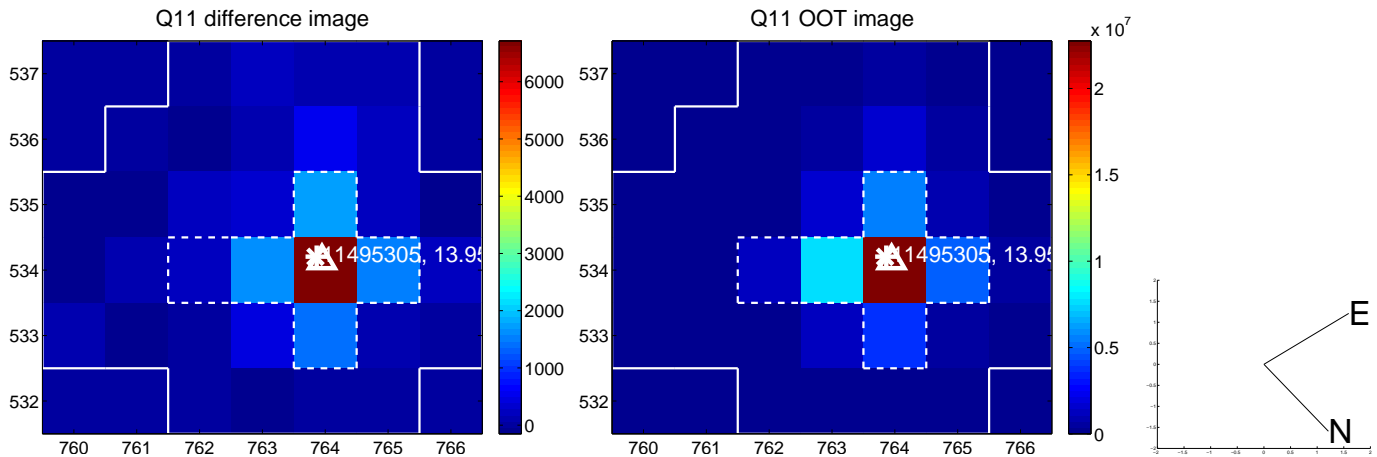
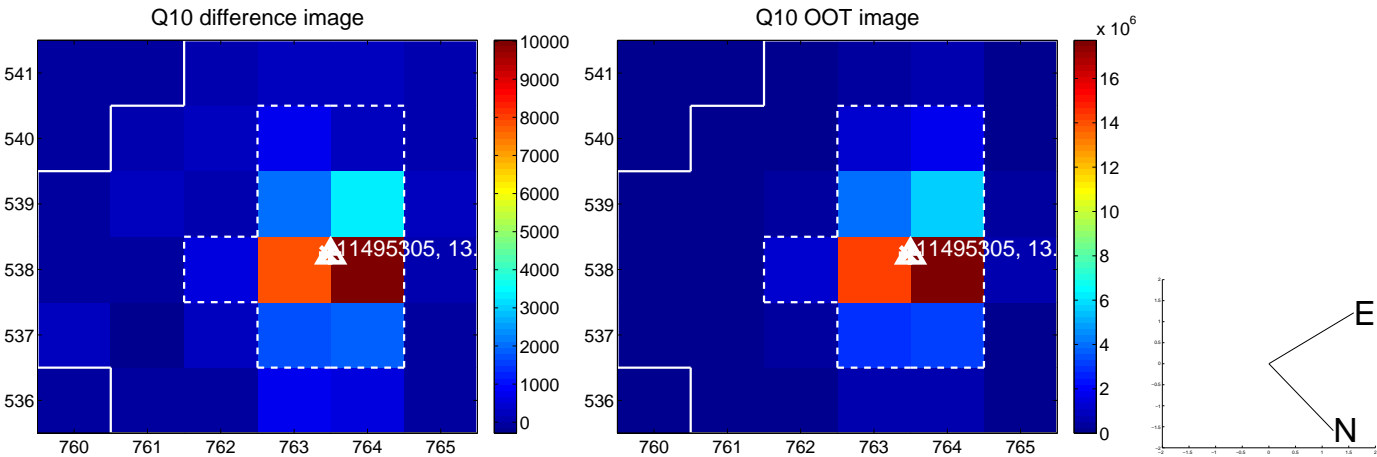
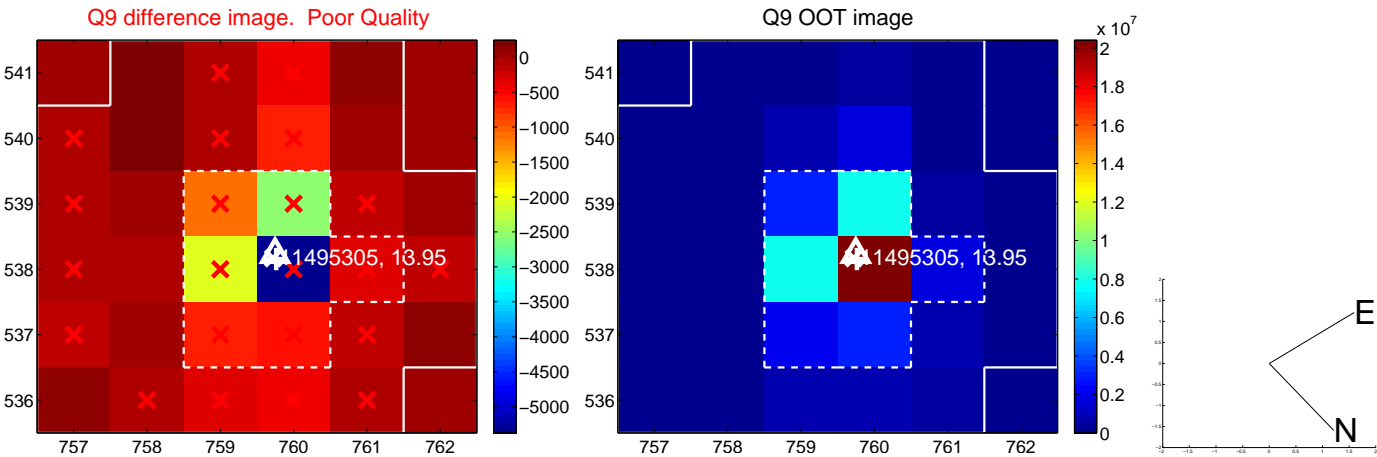


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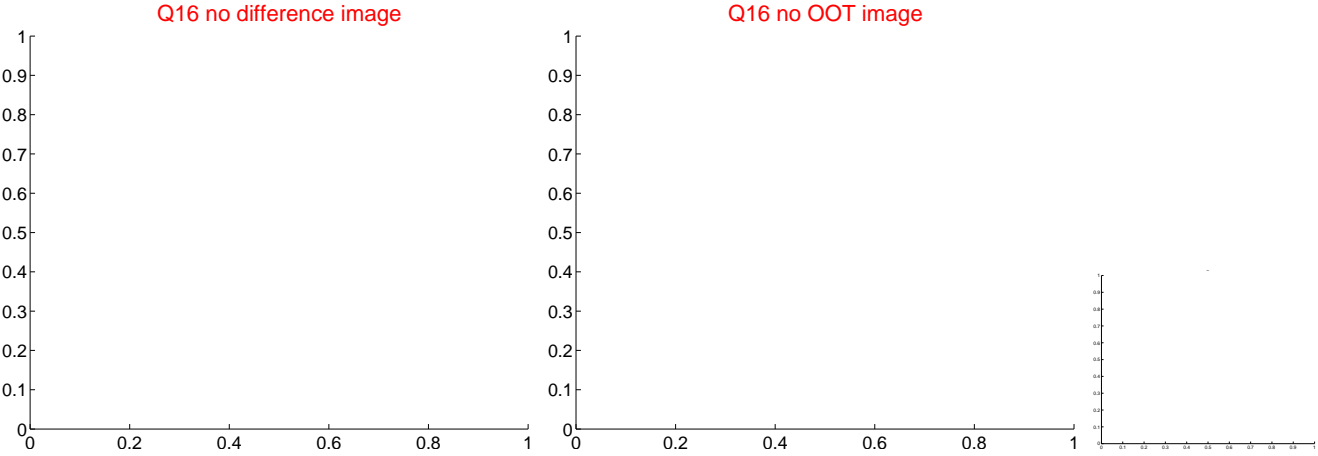
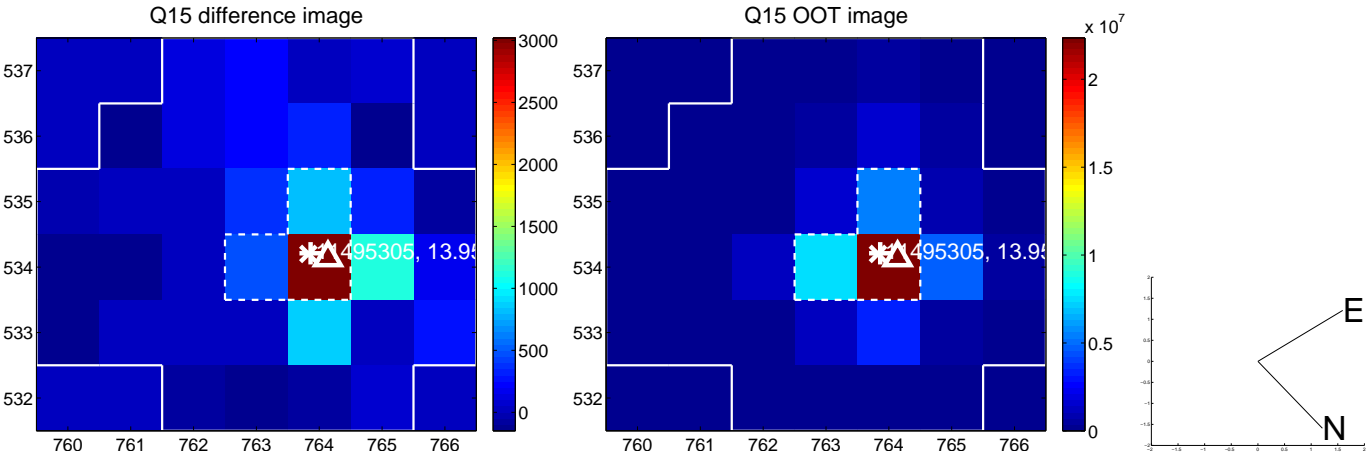
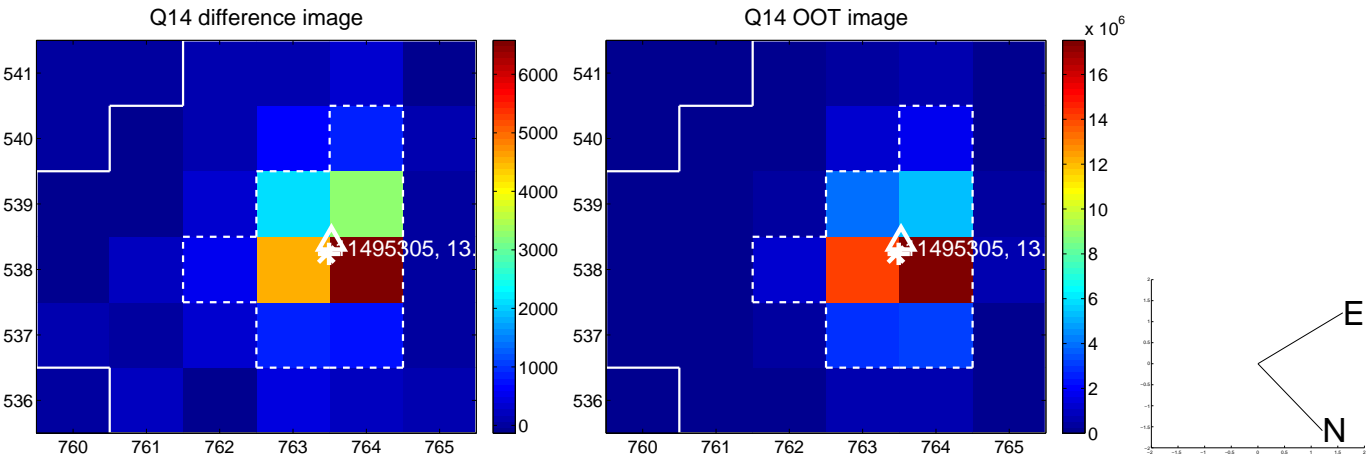
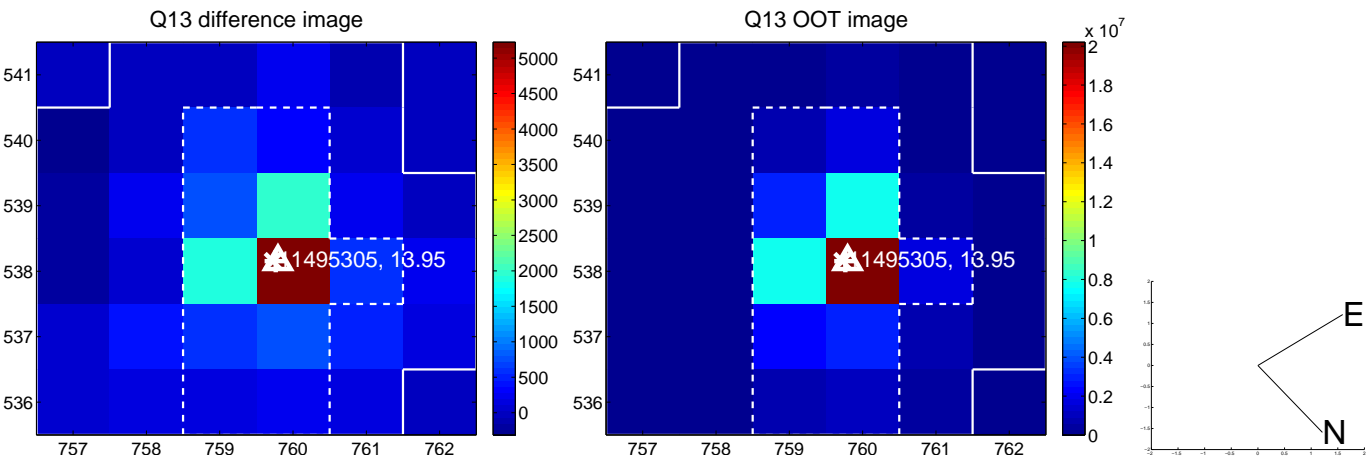




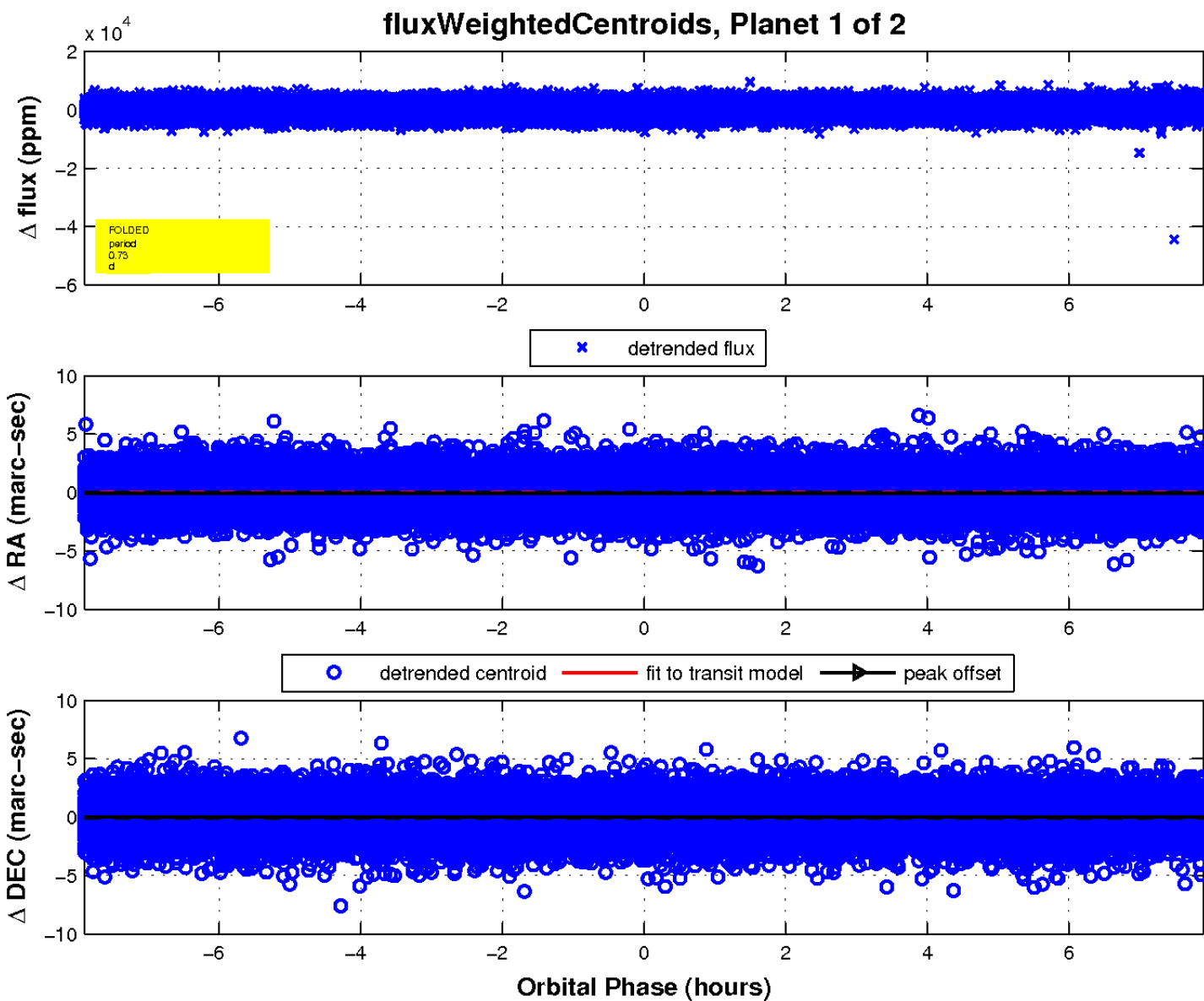
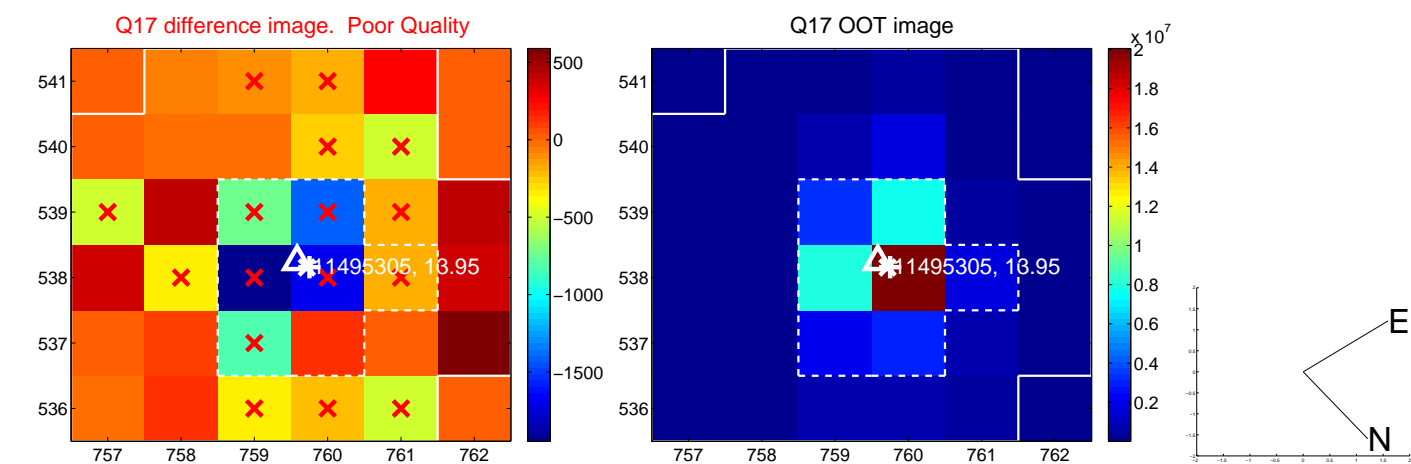
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

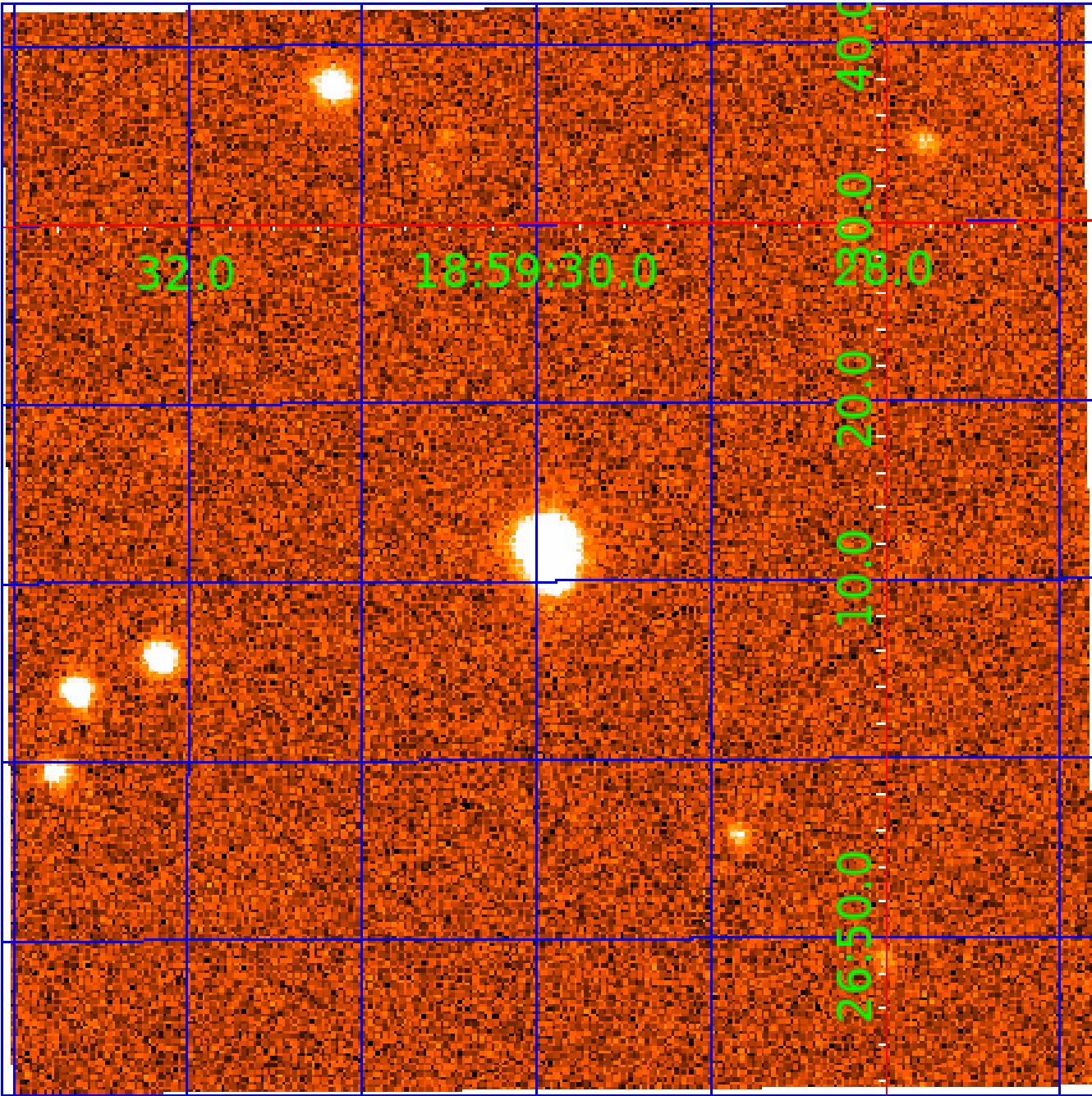


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 011495305

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011495305-01	OBS	No	0.731224	131.850396	302.8	2.635	12.4	11.6	1.76	7493	3.59	26310.51
011495305-02	OBS	No	0.731221	132.213721	291.3	2.712	11.1	11.6	1.76	7493	3.23	26310.66

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011495305-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
011495305-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

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

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

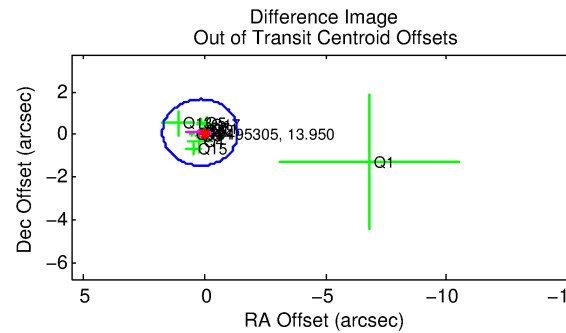
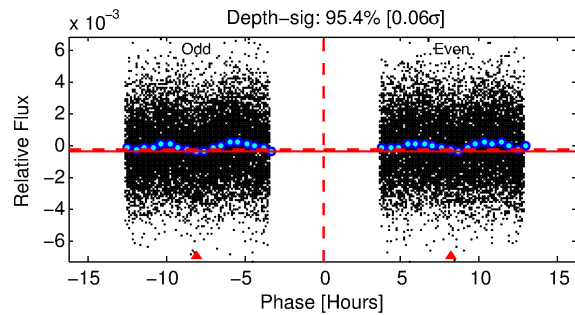
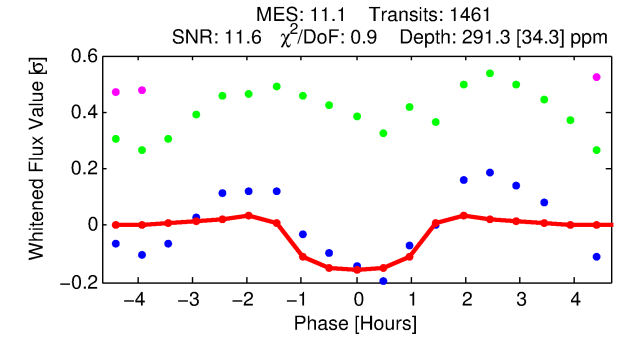
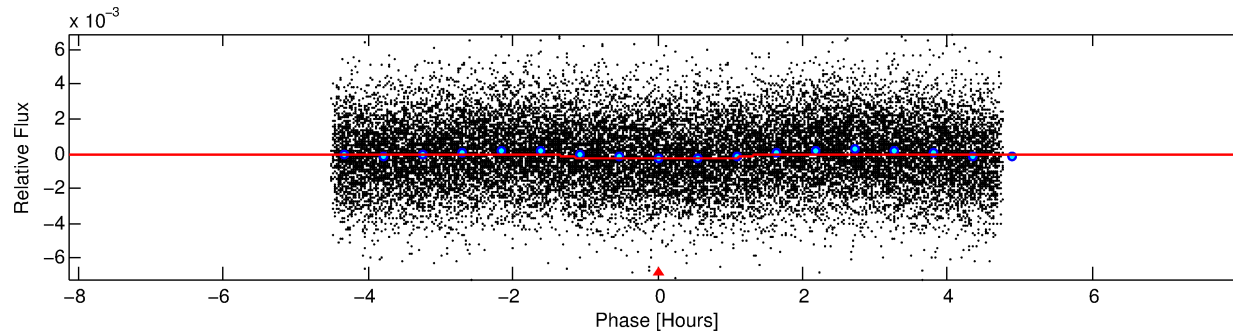
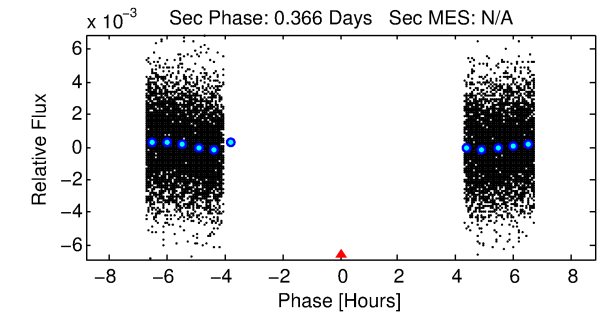
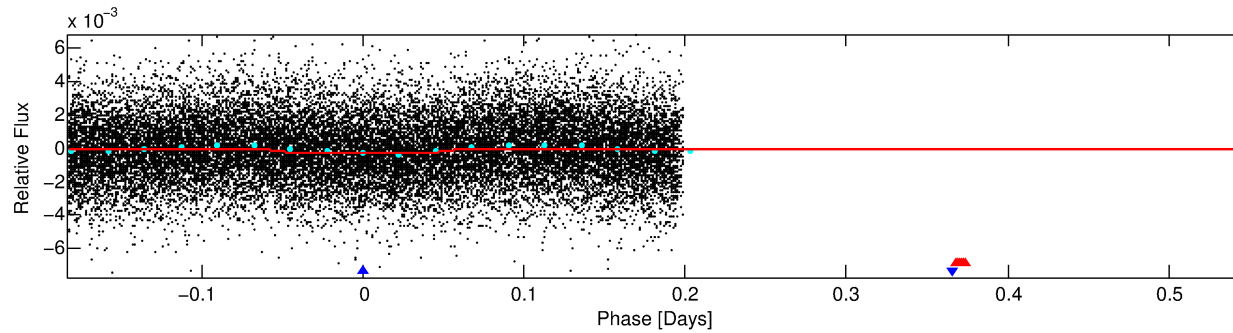
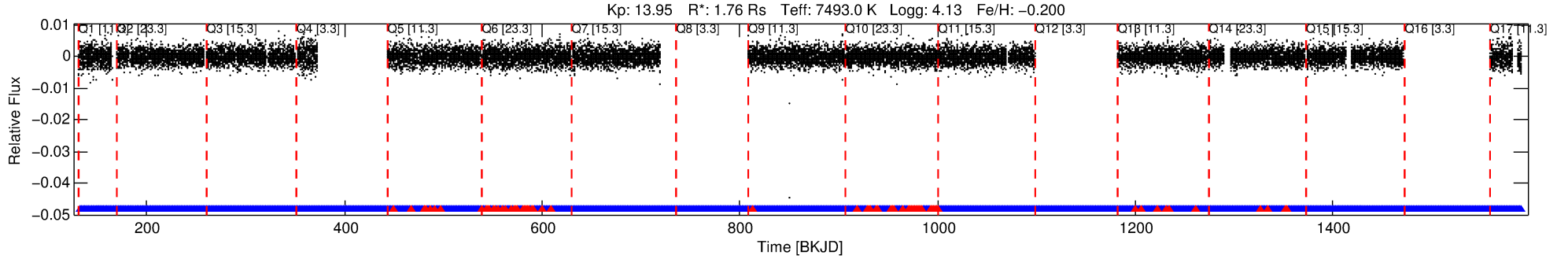
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011495305-02

No Significant Match Found

# DV One-Page Summary

KIC: 11495305 Candidate: 2 of 2 Period: 0.731 d



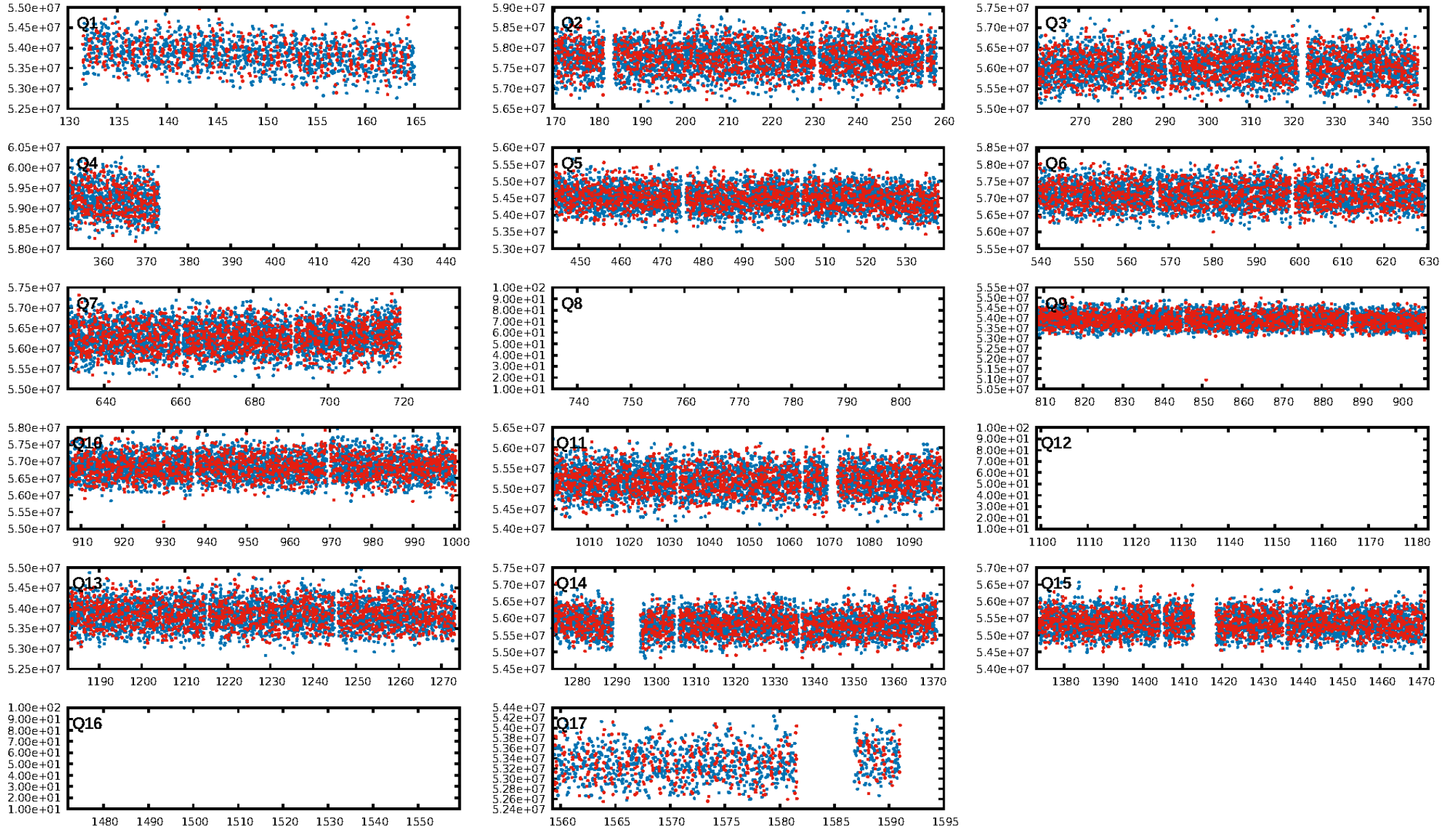
## DV Fit Results:

Period = 0.73122 [0.00001] d  
Epoch = 132.2137 [0.0027] BKJD  
Rp/R\* = 0.0169 [0.0144]  
a/R\* = 1.69 [5.01]  
b = 0.72 [3.04]  
Seff = 26310.66 [9984.07]  
Teff = 3248 [308] K  
Rp = 3.23 [2.92] Re  
a = 0.0182 [0.0044] AU

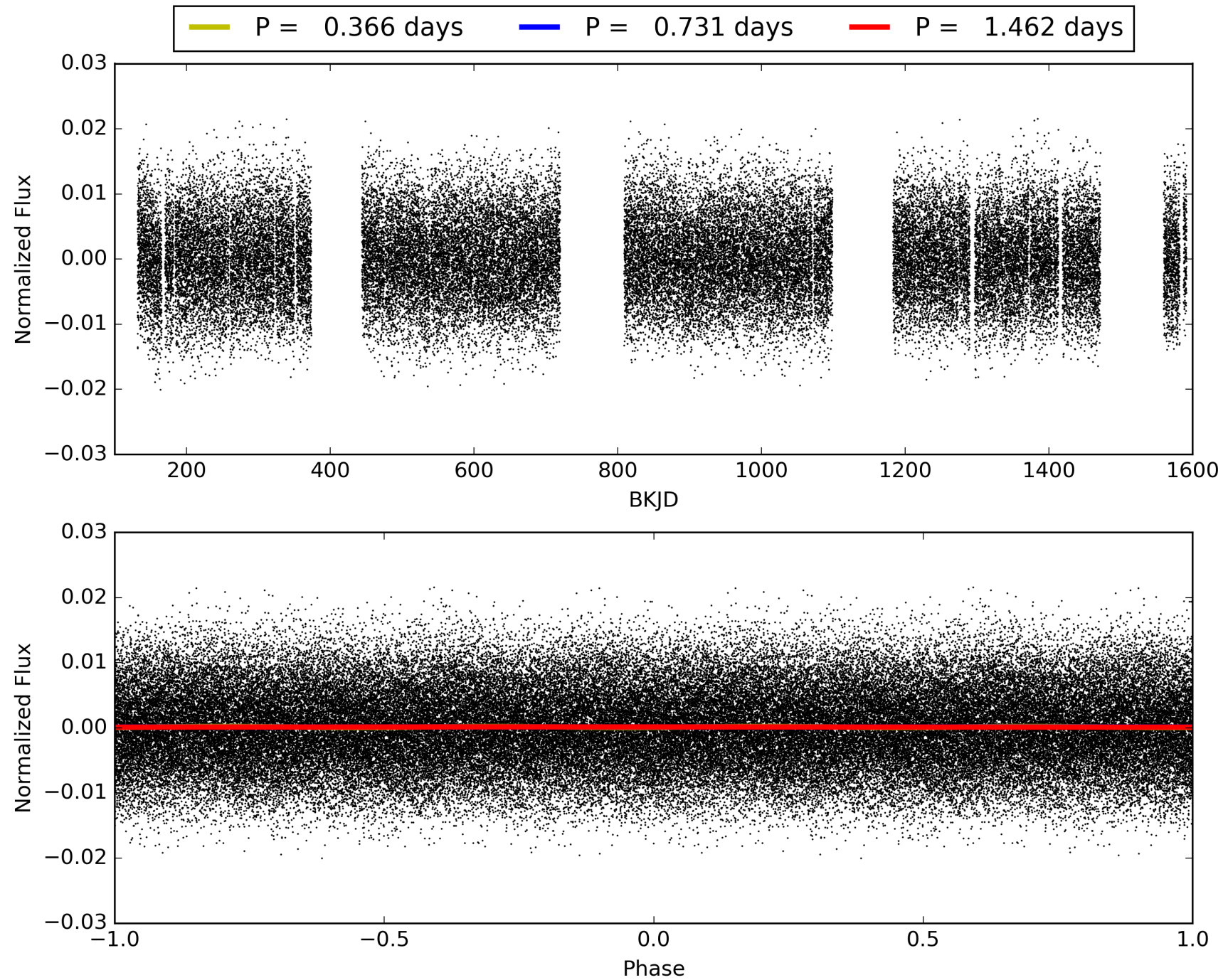
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 3.99e-23  
RollingBand-fgt: 0.94 [1271/1350]  
GhostDiagnostic-chr: 1.263  
Centroid-sig: 0.5%  
Centroid-so: 0.518 arcsec [3.60σ]  
OotOffset-rm: 0.204 arcsec [0.39σ]  
KicOffset-rm: 0.337 arcsec [0.74σ]  
OotOffset-st: 4/4/1/5 [14]  
KicOffset-st: 4/4/1/5 [14]  
DiffImageQuality-fgm: 0.79 [11/14]  
DiffImageOverlap-fno: 1.00 [14/14]

# TCE 011495305-02, PDC Light Curves



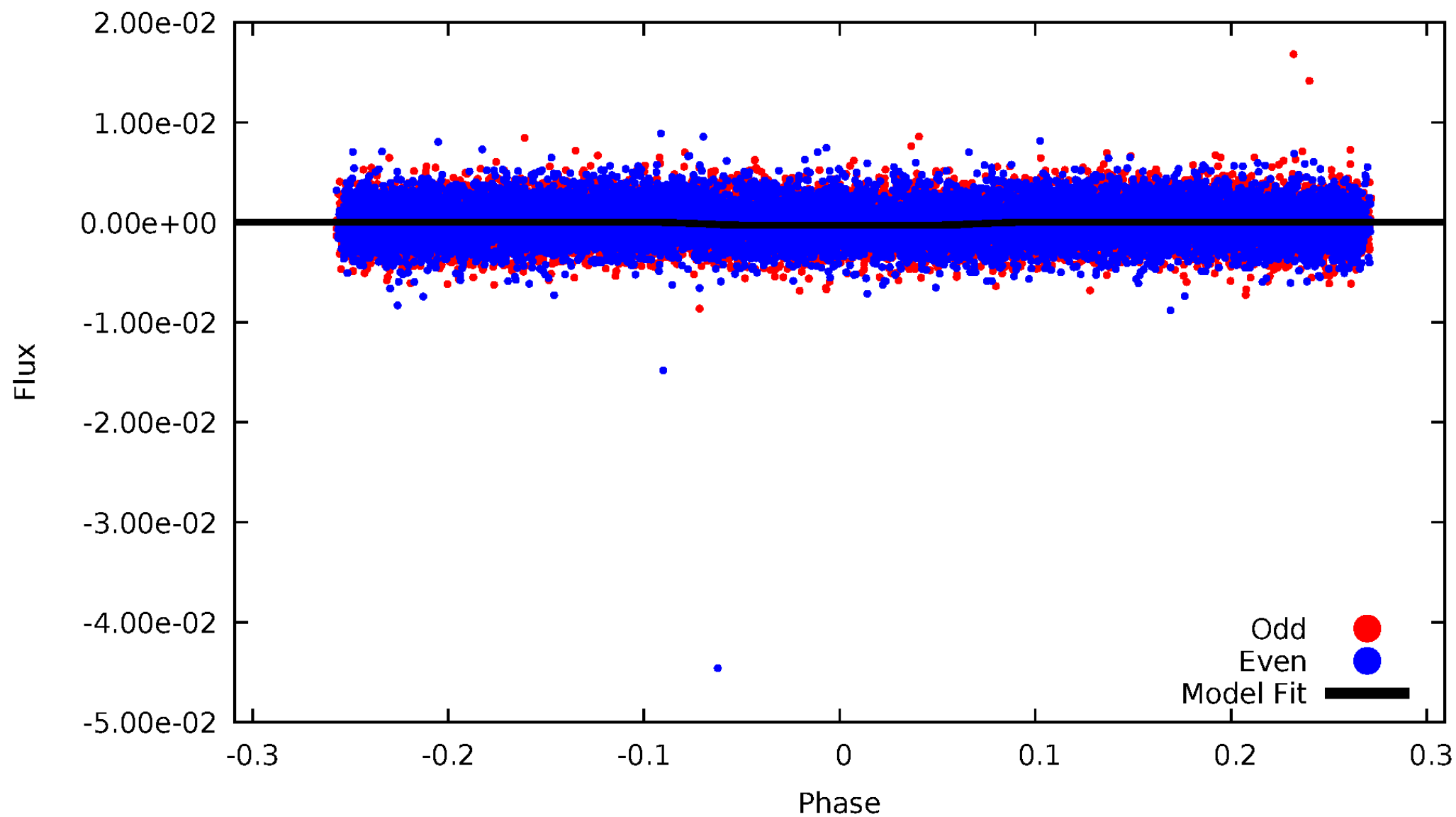
TCE 011495305-02





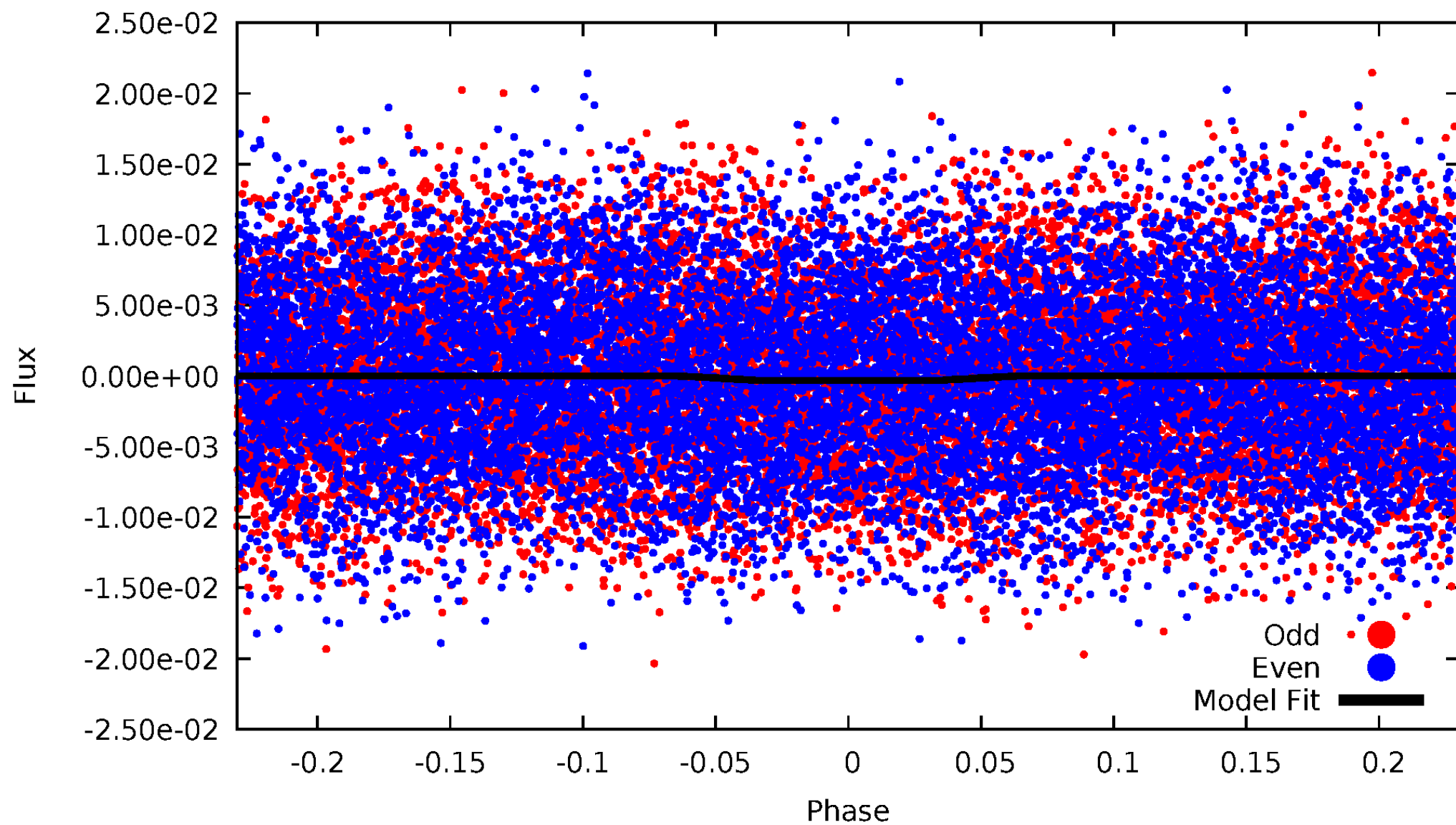
# DV Odd/Even

TCE 011495305-02



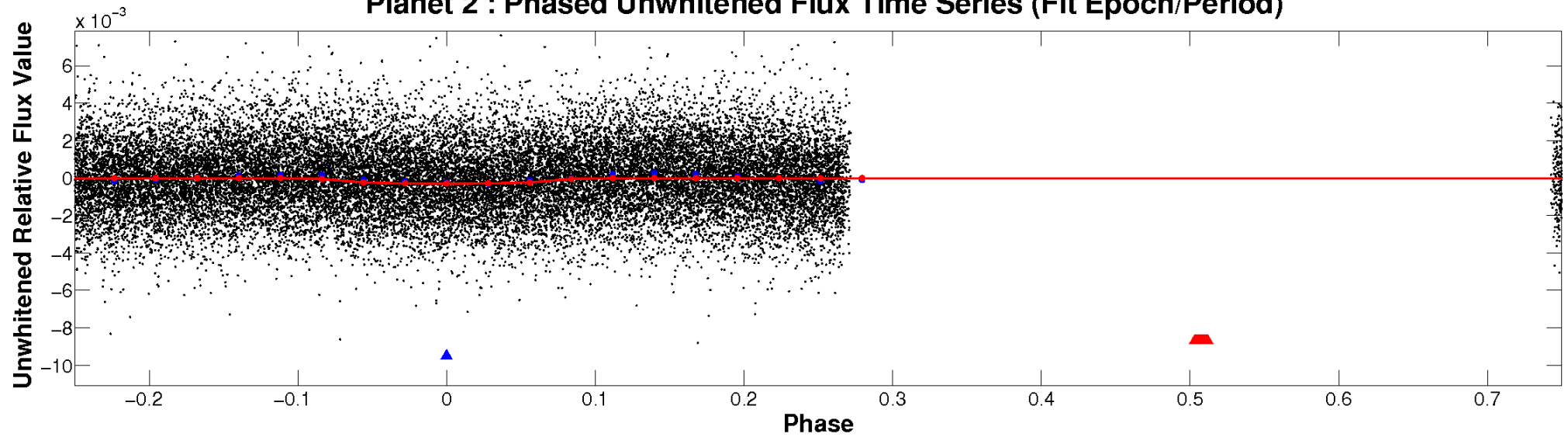
# ALT Odd/Even

TCE 011495305-02

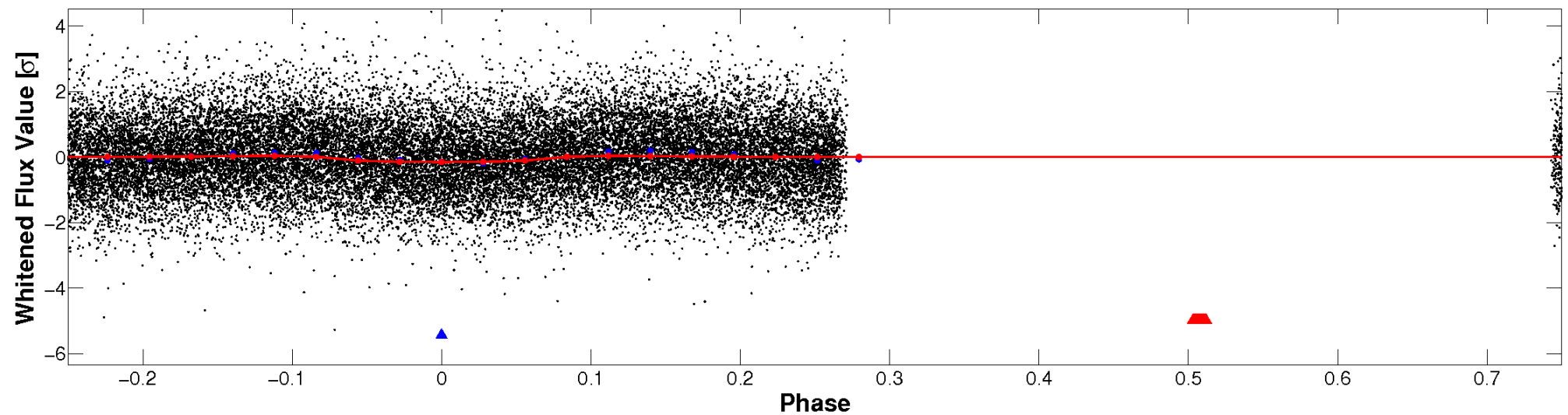


# Non-Whitened Vs. Whitened Light Curve

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

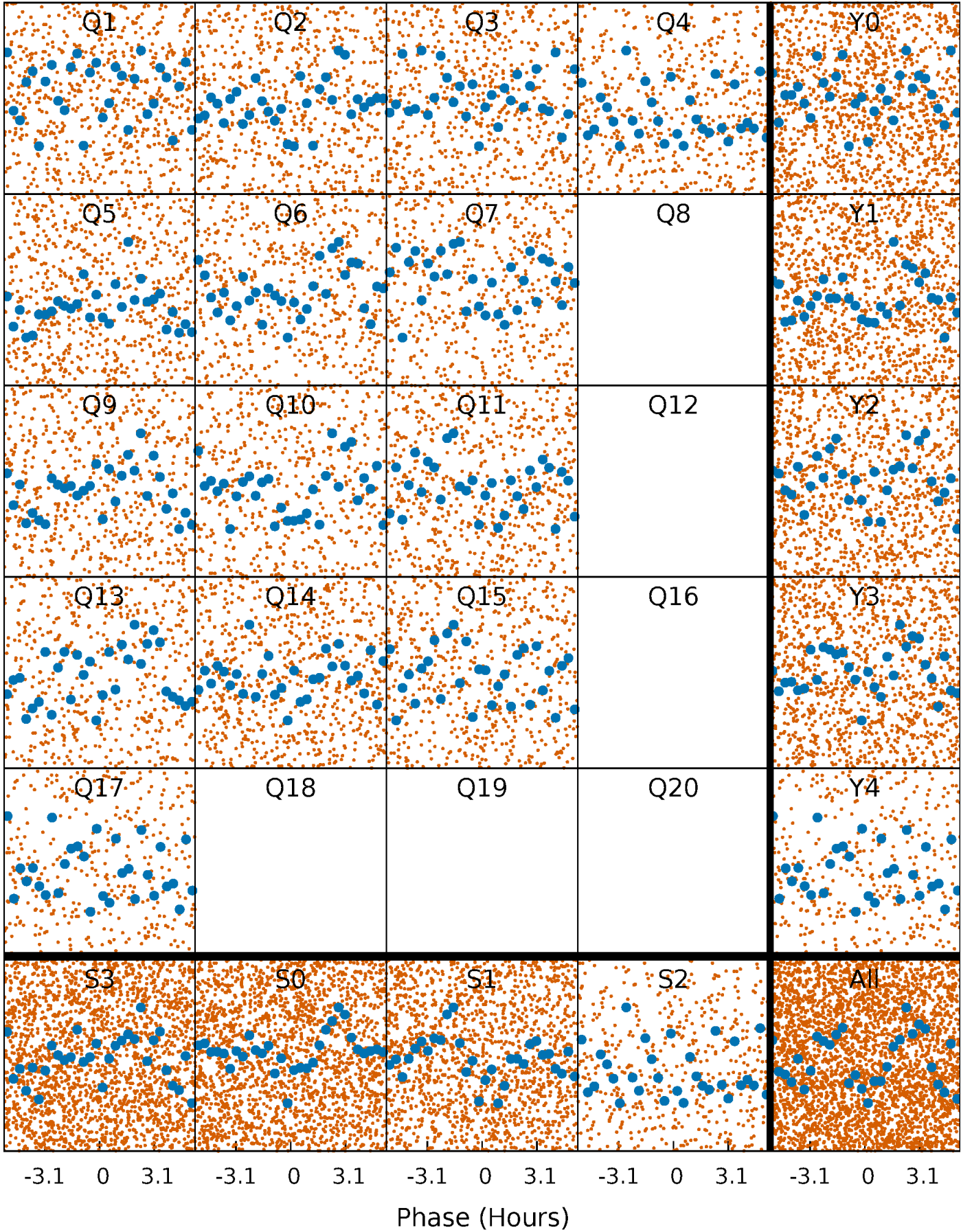


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

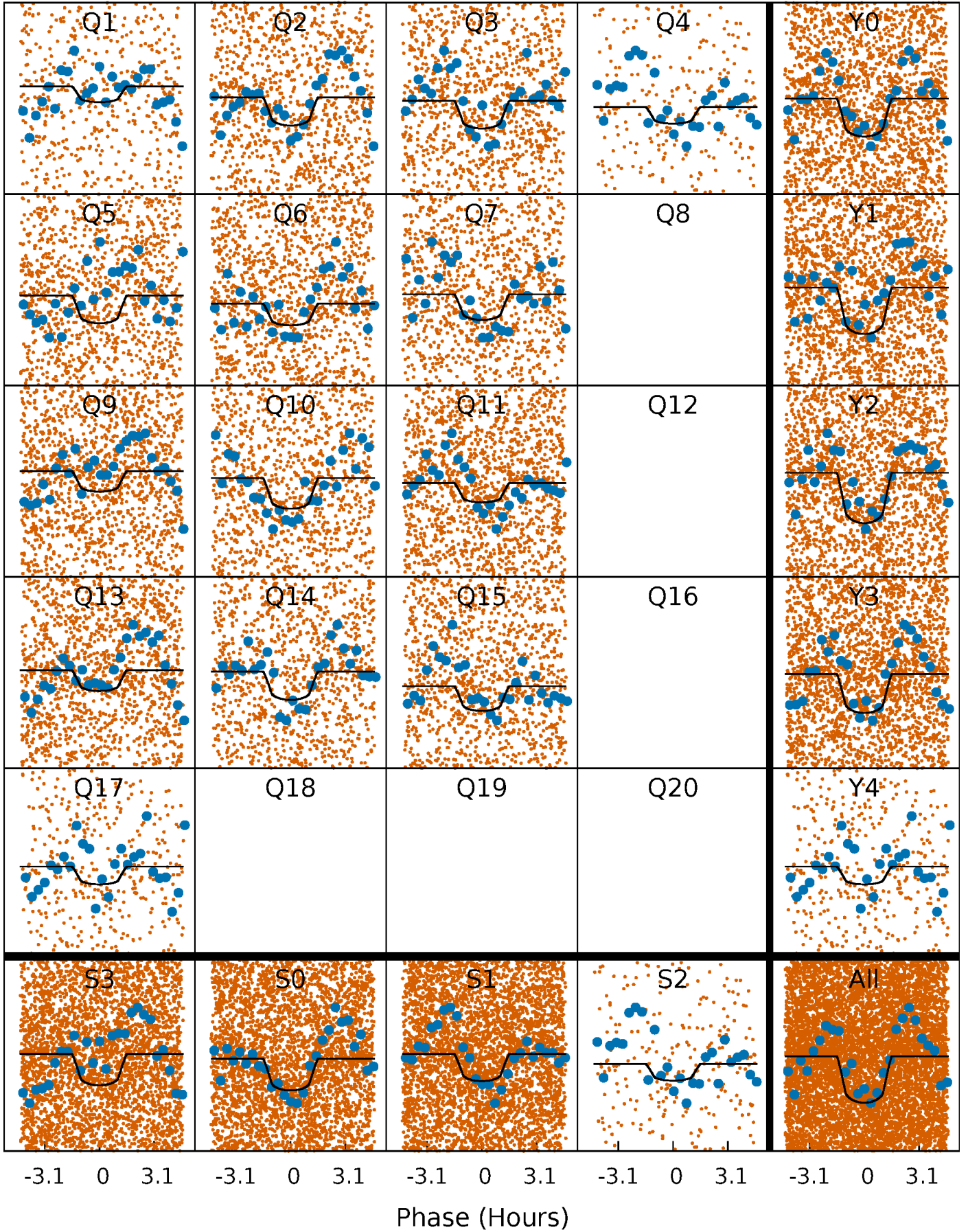
TCE 011495305-02   P= 0.731221 Days    $T_0=132.213720$  (BKJD)





# DV Quarter-Phased Transit Curves

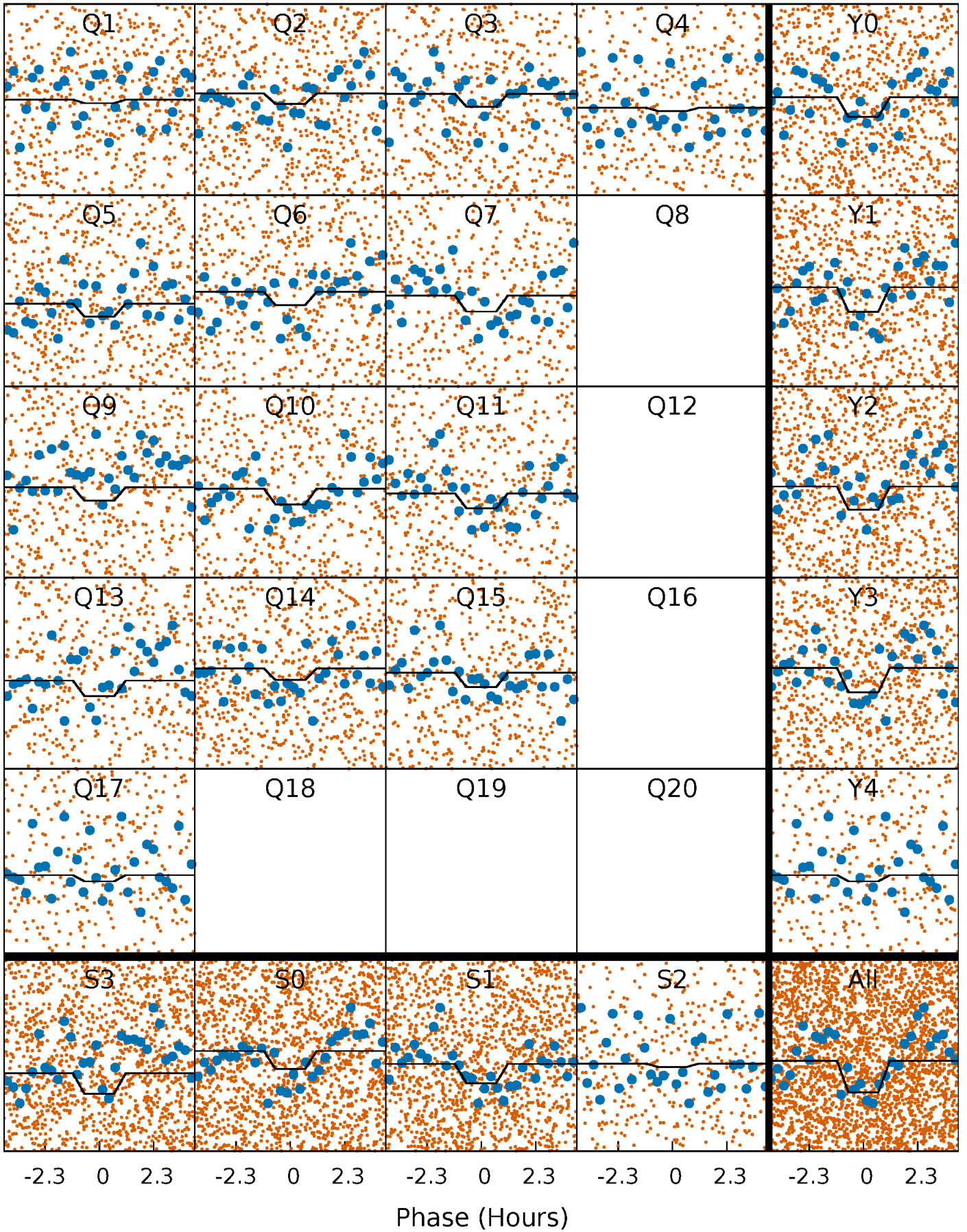
TCE 011495305-02   P= 0.731221 Days    $T_0=132.213720$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

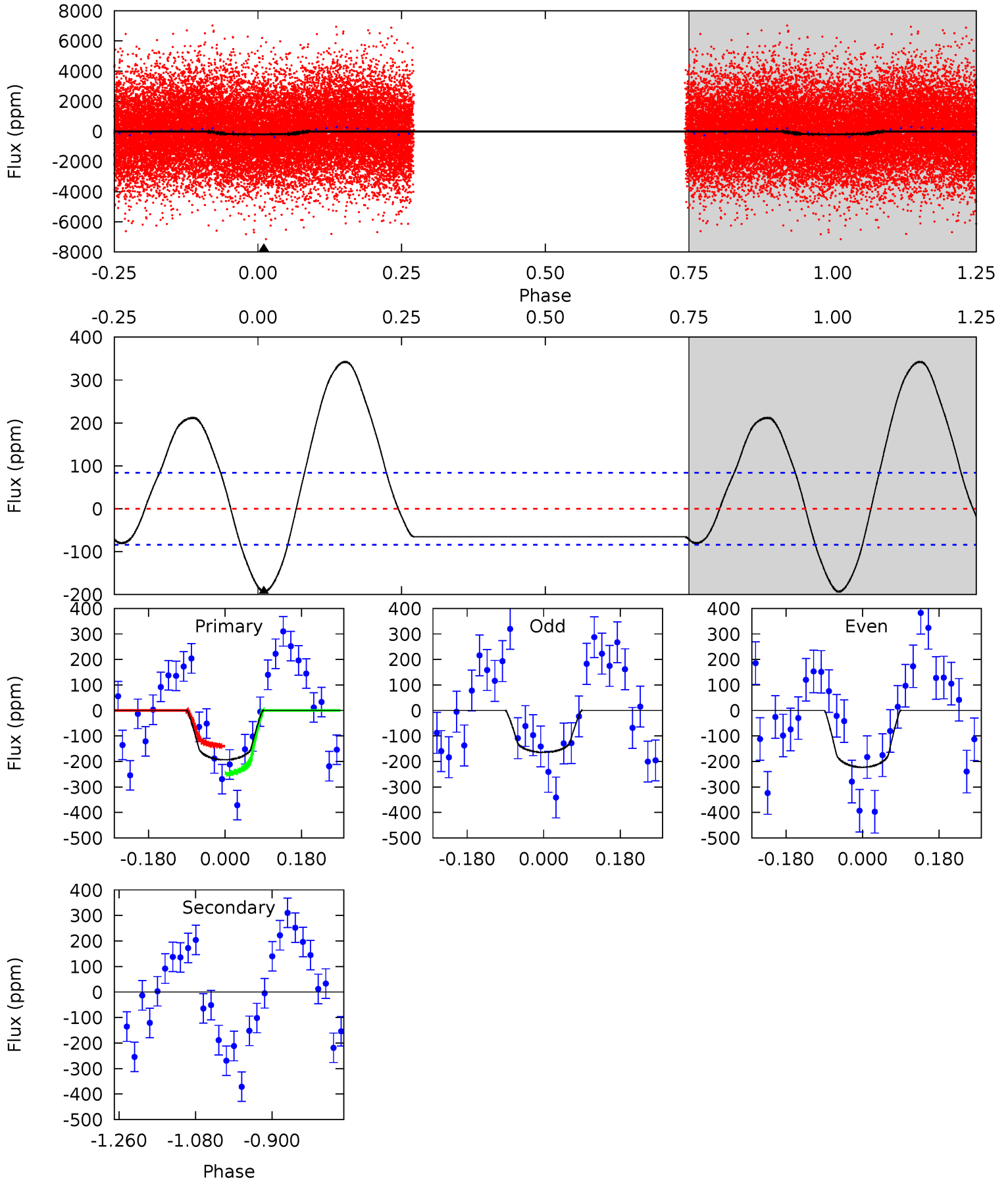
TCE 011495305-02   P= 0.731227 Days    $T_0=132.209802$  (BKJD)



# DV Model-Shift Uniqueness Test

011495305-02, P = 0.731221 Days, E = 131.482499 Days

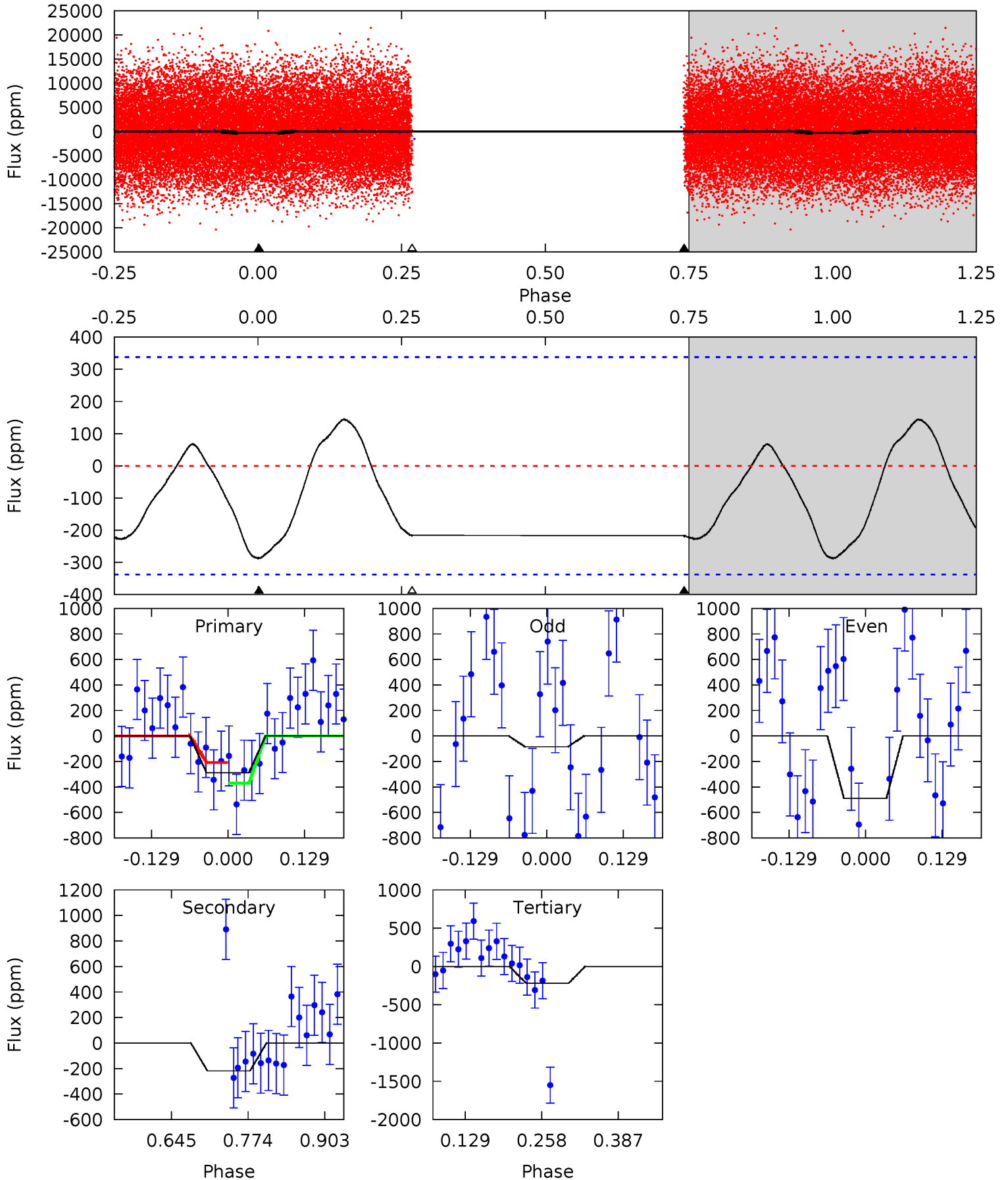
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.3	0	0	0	4.44	1.34	4.79	10.3	10.3	0	0	1.56	0.80	0.64	2.87



# Alt Model-Shift Uniqueness Test

011495305-02, P = 0.731227 Days, E = 131.478575 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.85	2.92	2.91	0	4.51	1.52	1.69	0.94	3.85	0.01	2.92	2.71	0.99	0.33	1.10



### Stellar Parameters For KIC 011495305

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7493^{+235}_{-314}$	$4.126^{+0.149}_{-0.182}$	$-0.200^{+0.250}_{-0.350}$	$1.758^{+0.513}_{-0.373}$	$1.506^{+0.220}_{-0.242}$	$0.390^{+0.341}_{-0.194}$
	+3%/-4%	+4%/-4%	+125%/-175%	+29%/-21%	+15%/-16%	+87%/-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 011495305-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 19$	$3.64^{+2.74}_{-2.18}$	$4555^{+352}_{-309}$	$-4010^{+7356}_{-645}$	$-0.003^{+0.410}_{-0.306}$
Alt.	$-219 \pm 75$	$4.06^{+2.45}_{-2.47}$	$4536^{+371}_{-310}$	$5972^{+4733}_{-1635}$	$2.276^{+12.051}_{-1.513}$

$T_{max}$  = 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  $A_{obs} \gg 1.0$

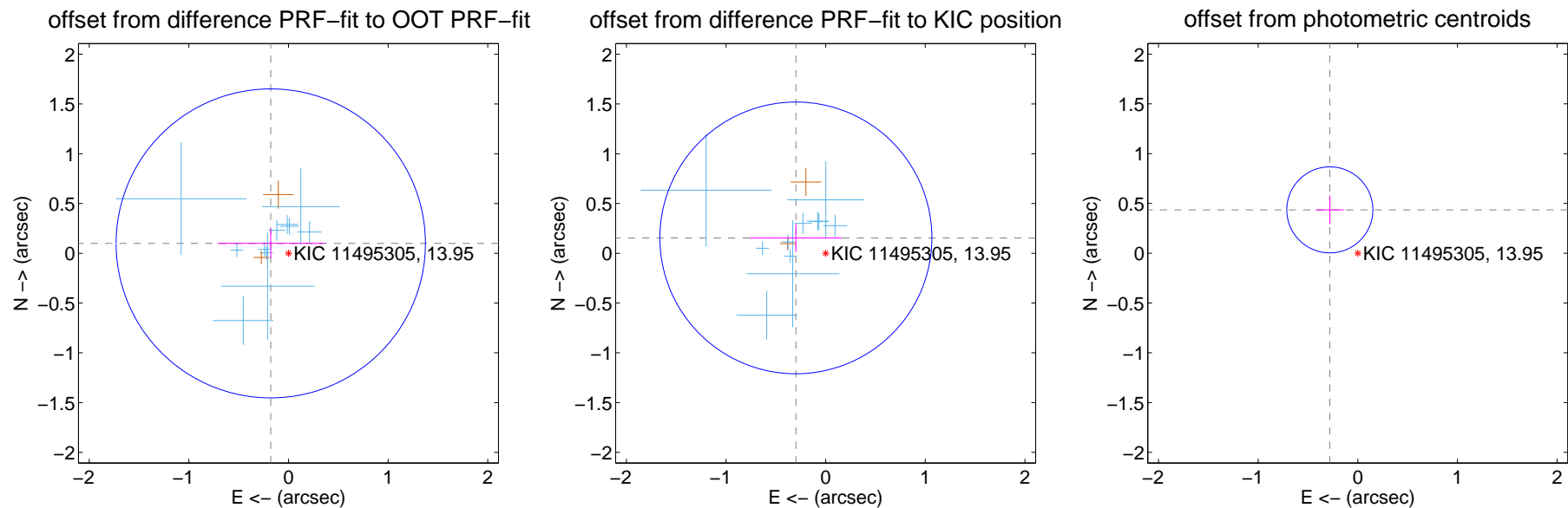
## DV Centroid Data

Supplemental centroid analysis for 011495305-02. Kepler magnitude: 13.95. Transit SNR 11.61

There are 11 quarters with good PRF difference image offsets

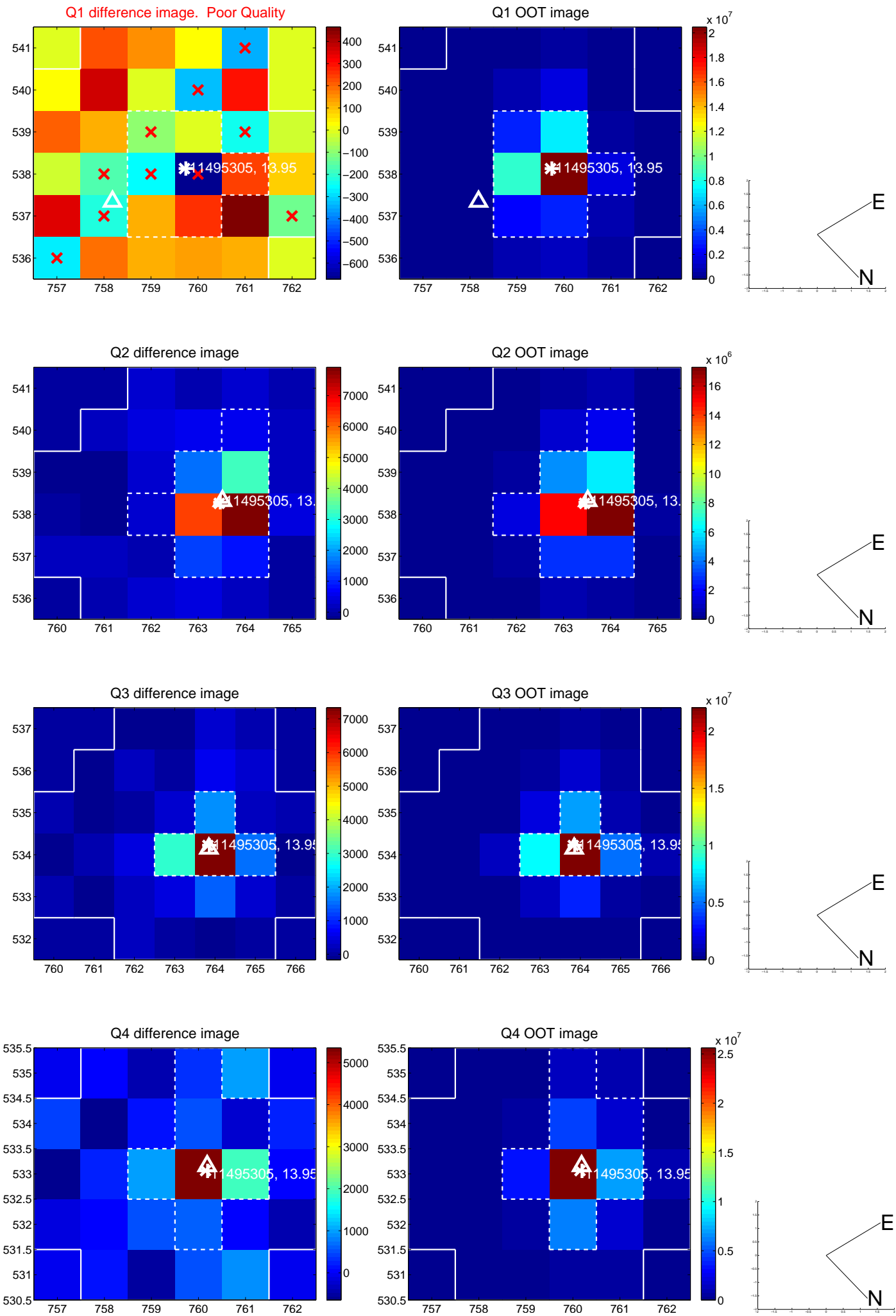
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.204 \pm 0.517$	0.39	$0.178 \pm 0.536$	$0.099 \pm 0.148$
PRF-fit source offset from KIC position	$0.337 \pm 0.455$	0.74	$0.299 \pm 0.465$	$0.154 \pm 0.142$
photometric centroid source offset	$0.52 \pm 0.14$	3.60	$0.28 \pm 0.14$	$0.44 \pm 0.14$



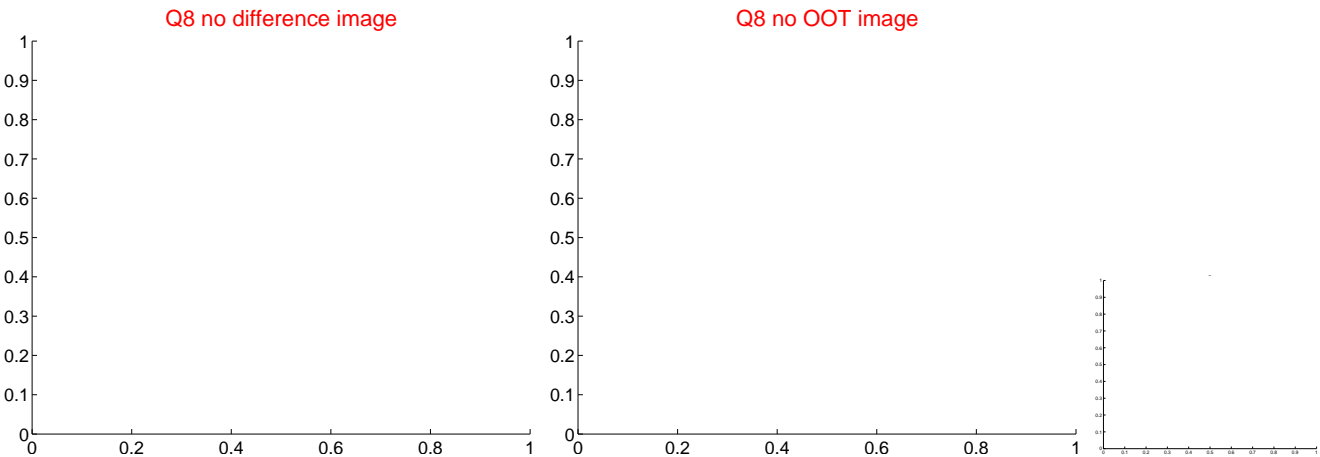
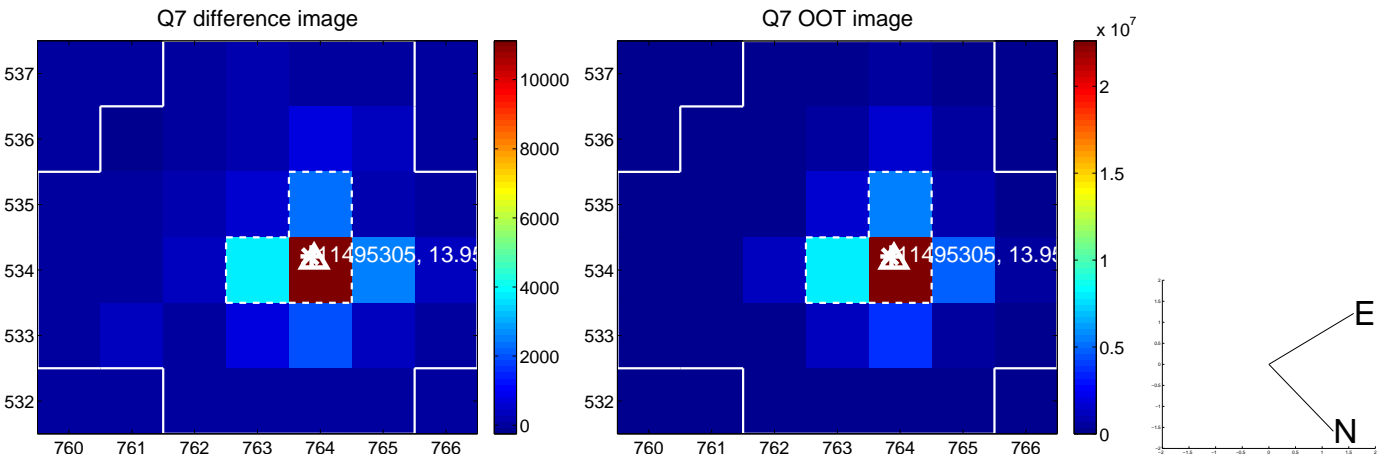
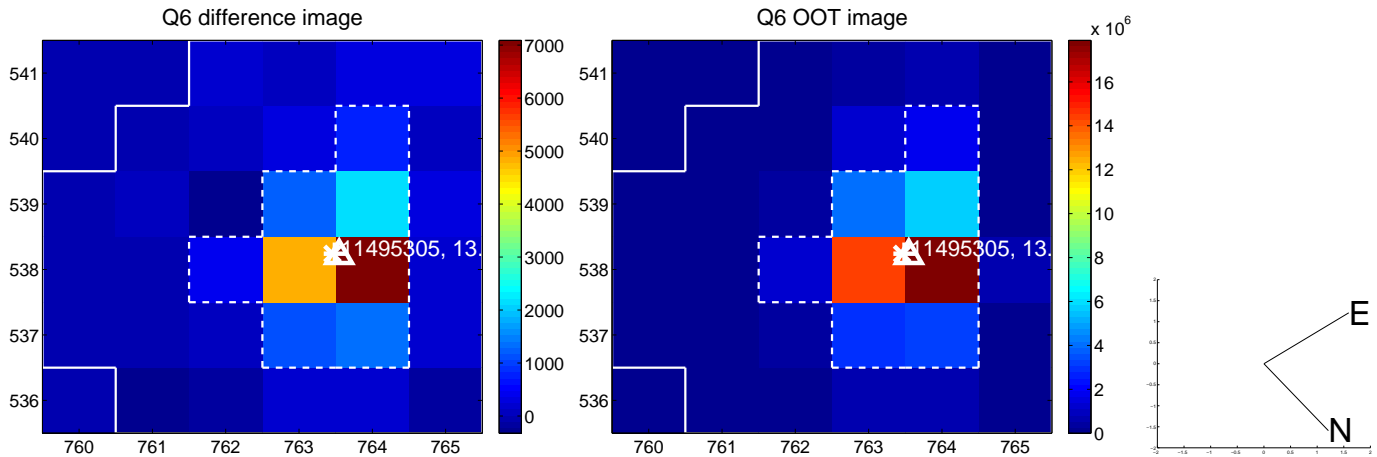
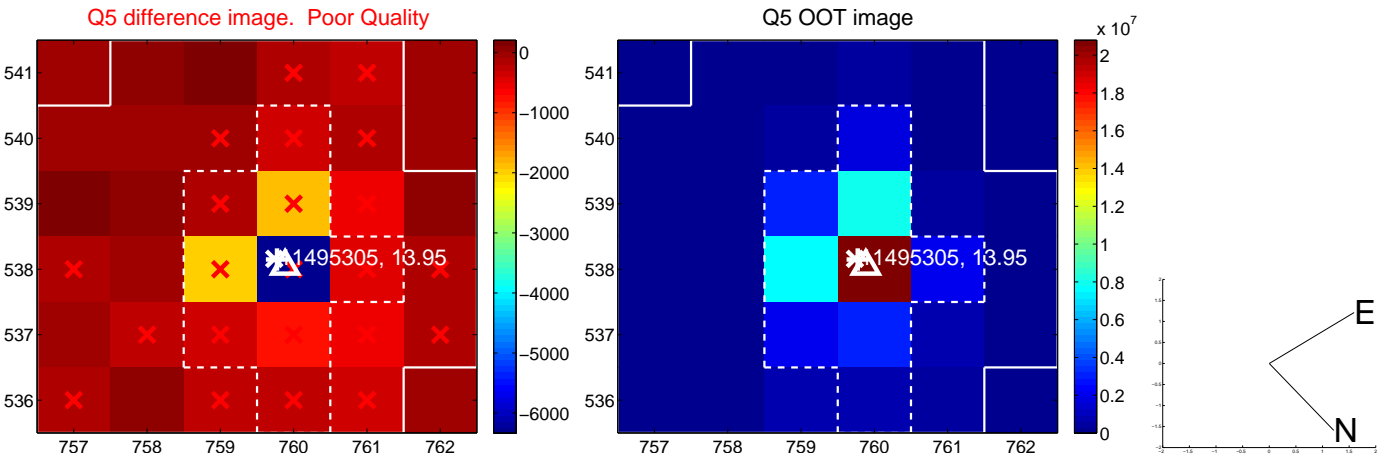
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

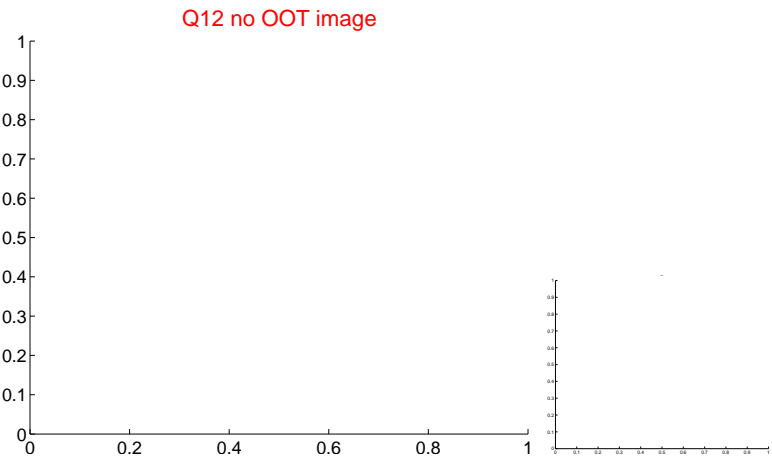
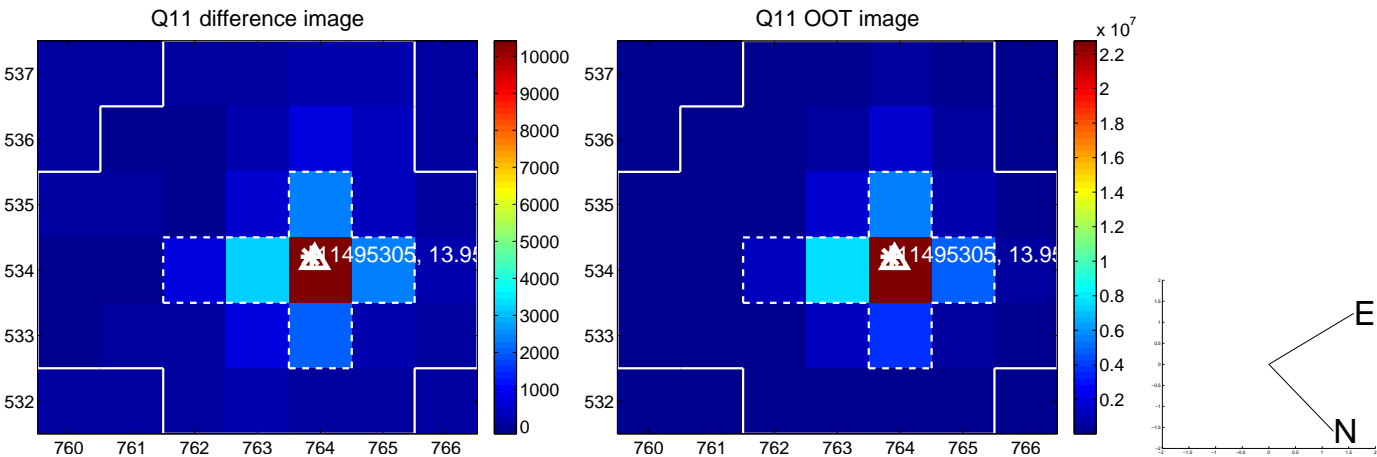
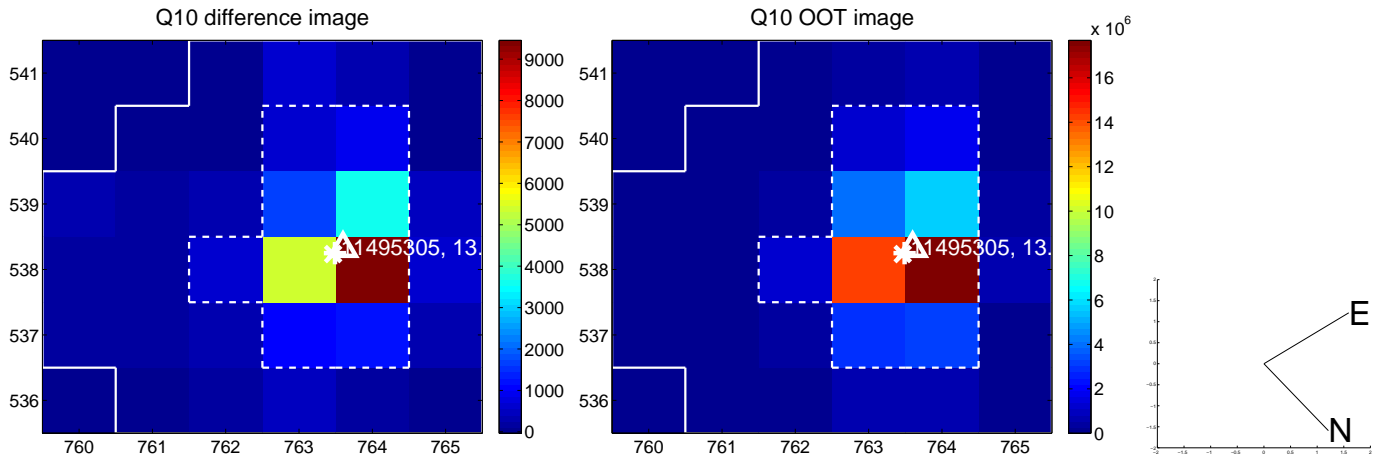
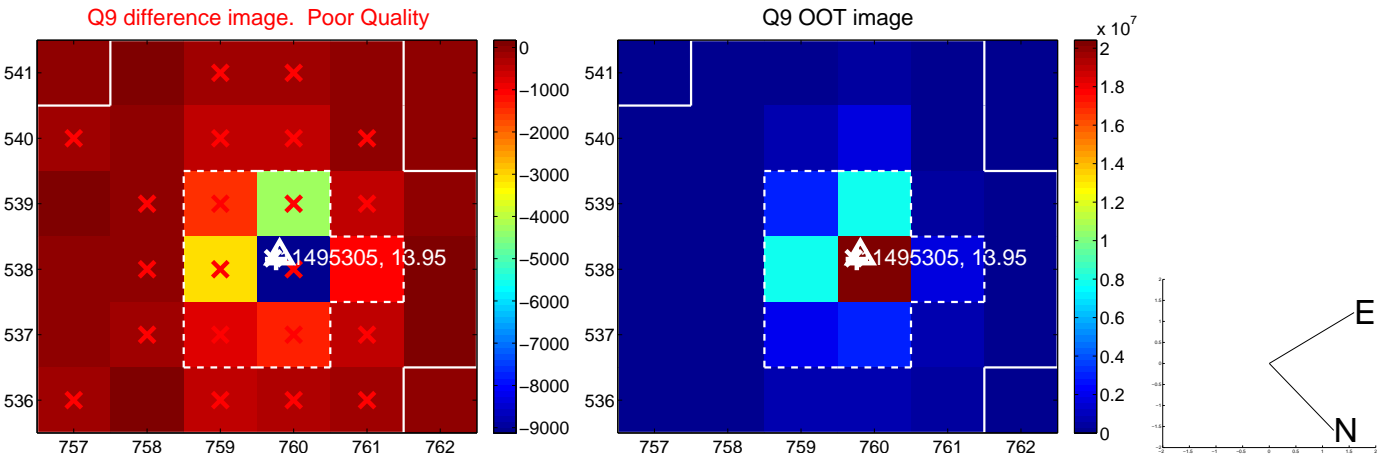




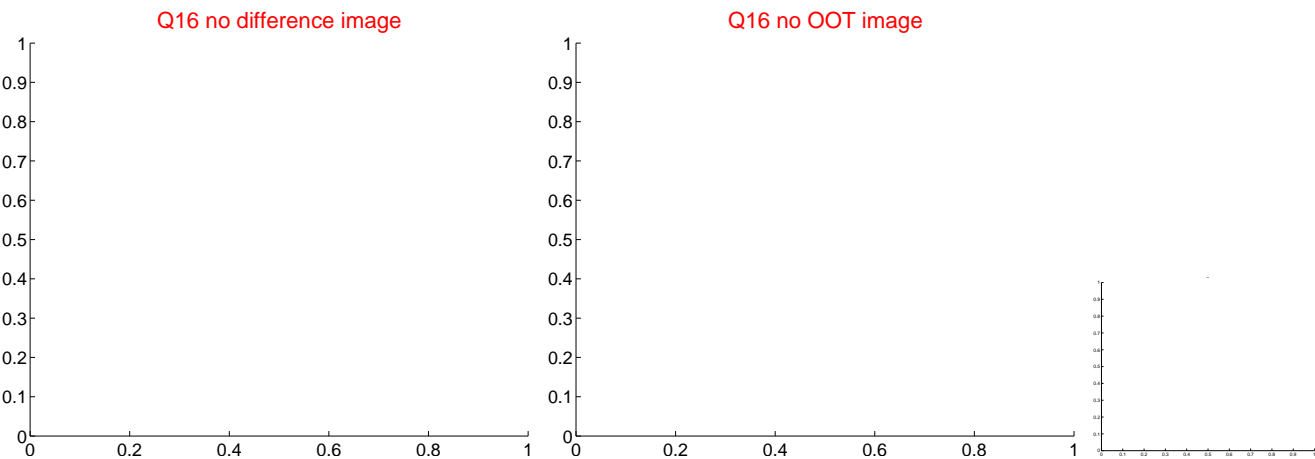
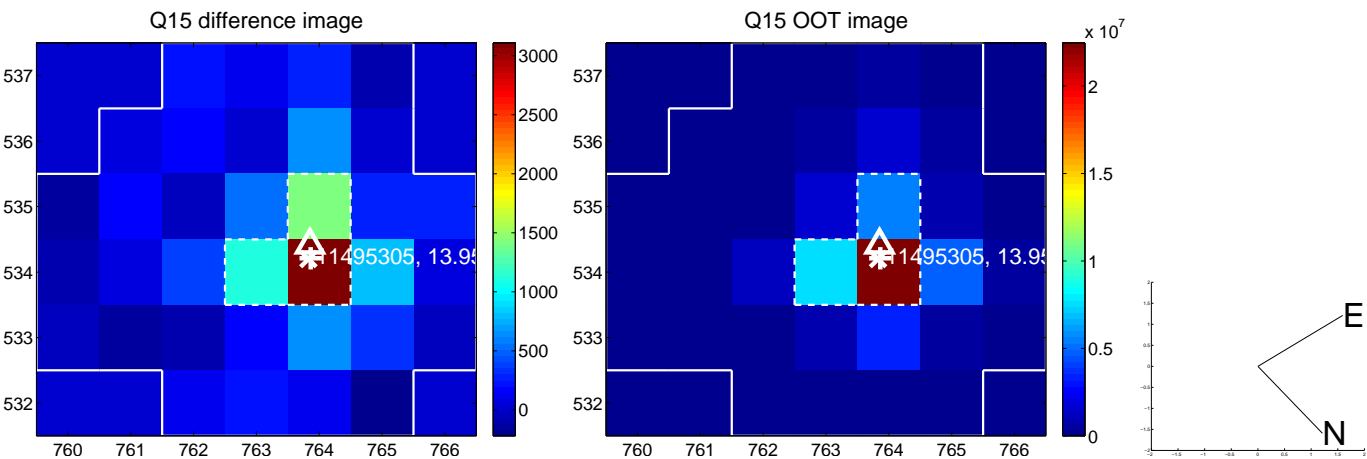
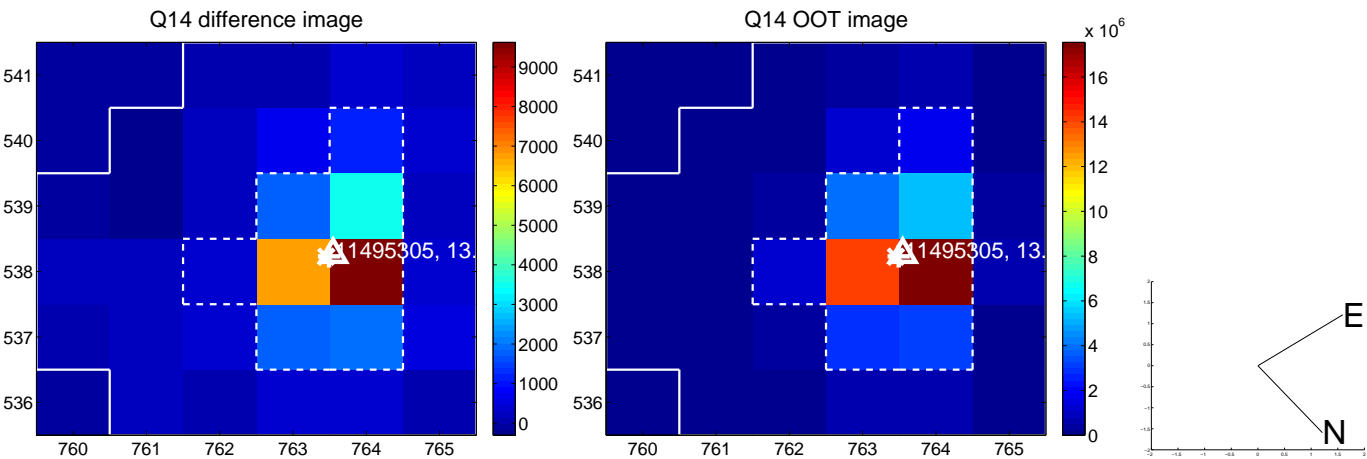
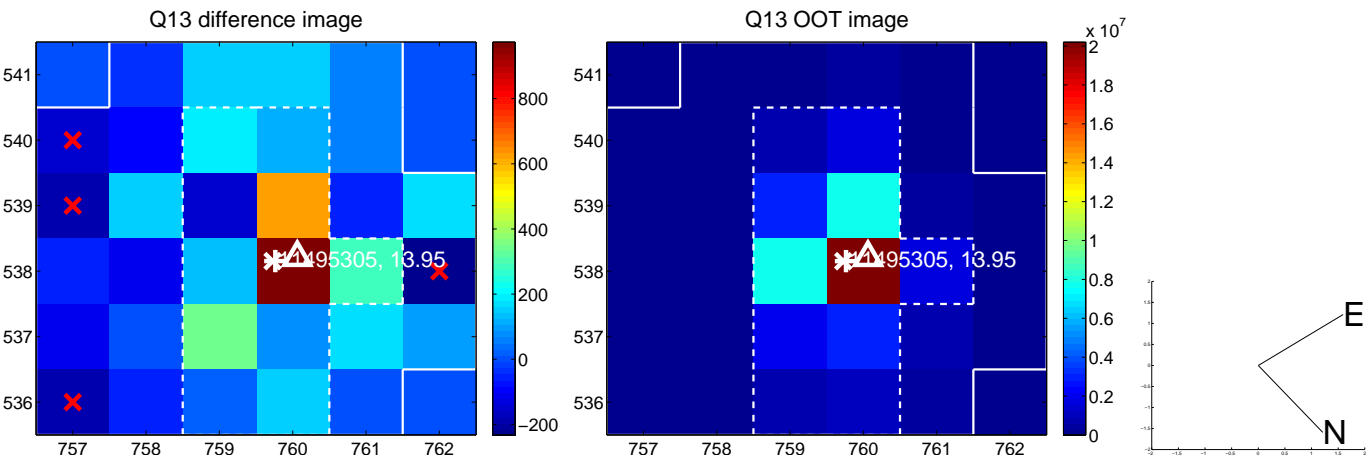
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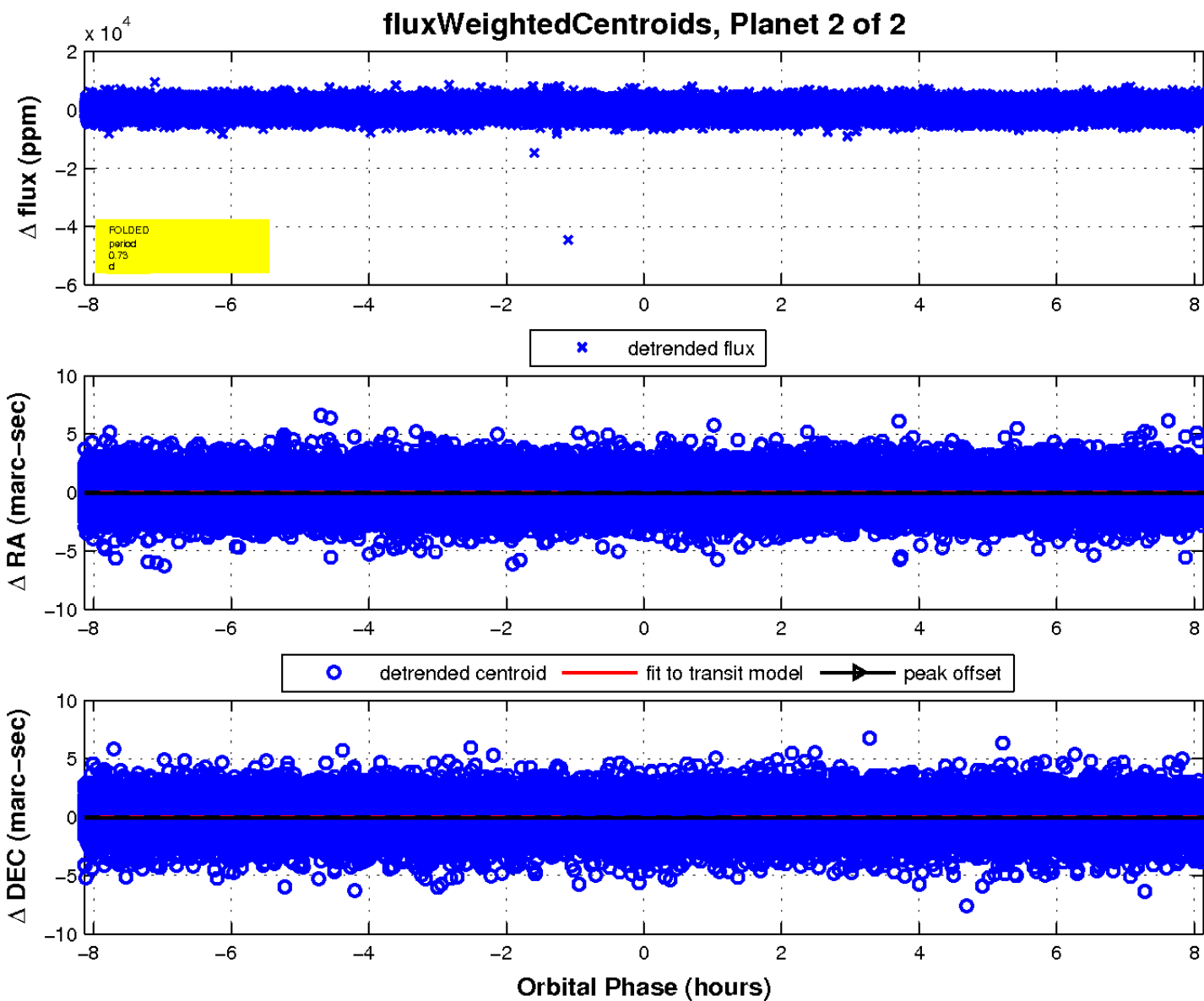
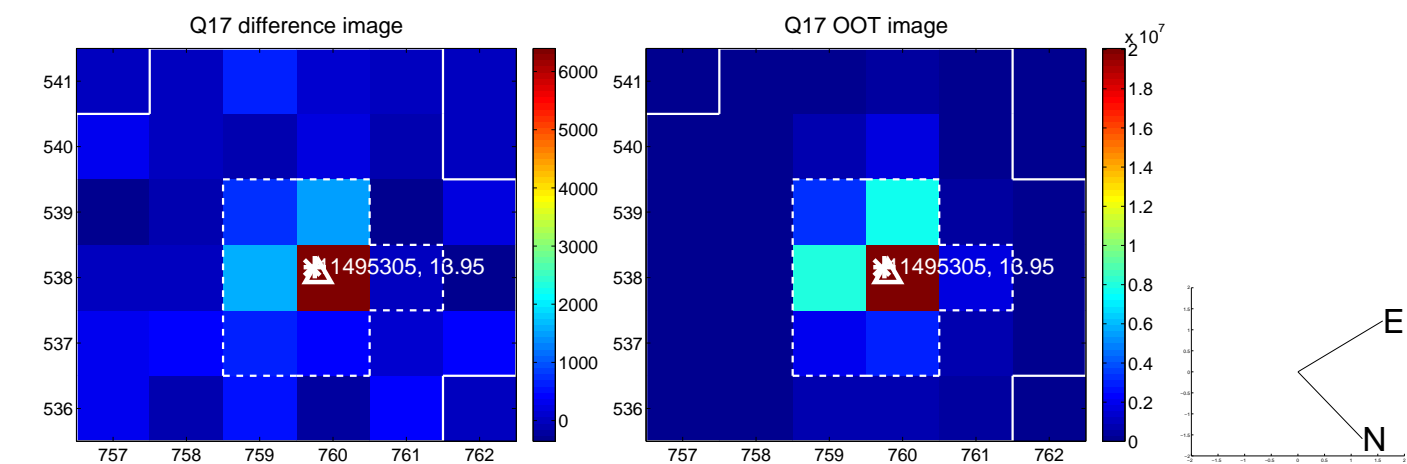
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white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination

