

# KIC 005775232

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005775232-01	OBS	No	0.957679	132.041082	73.9	6.535	11.8	14.7	2.66	7113	3.04	30057.86
005775232-02	OBS	No	0.533708	132.026619	104.6	1.500	16.3	-1.0	2.66	7113	2.76	65540.92

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005775232-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
005775232-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—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](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

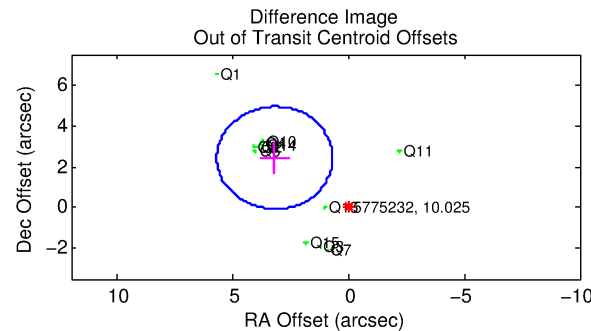
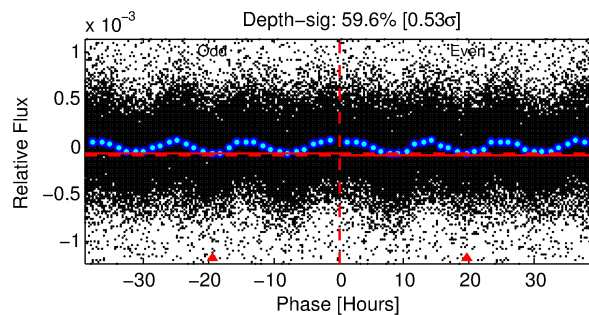
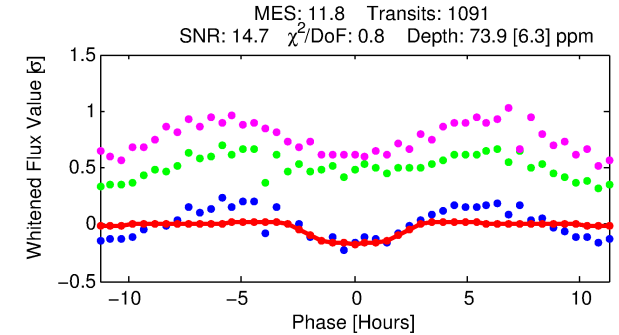
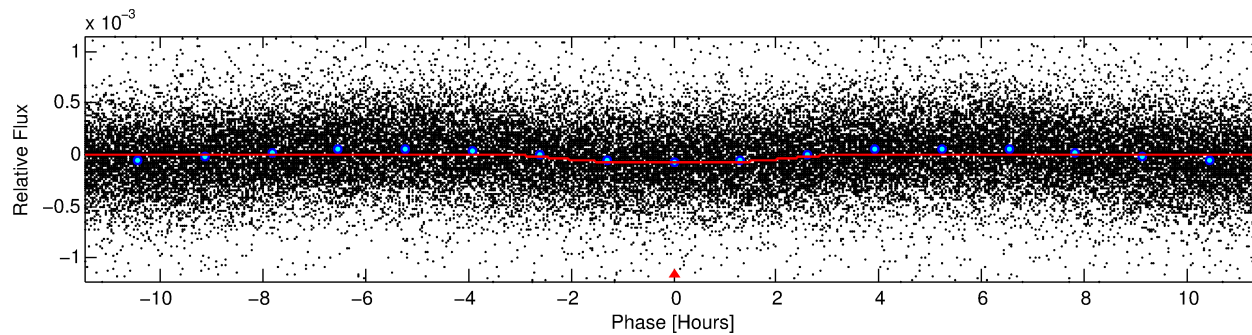
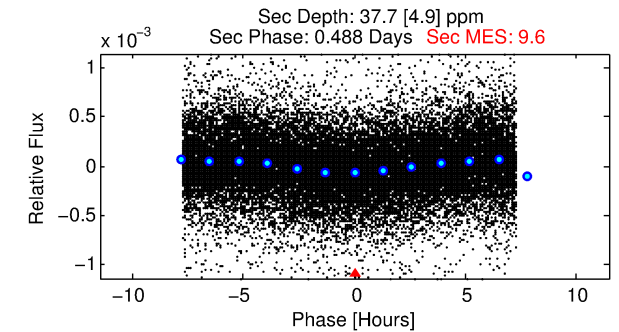
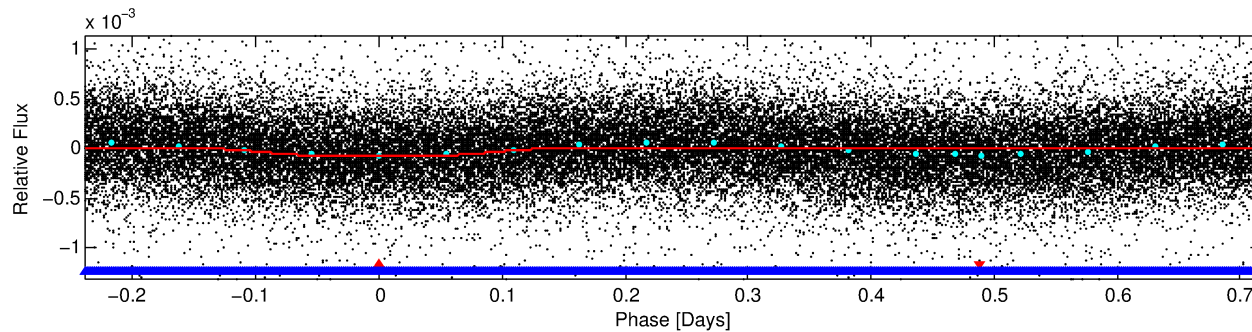
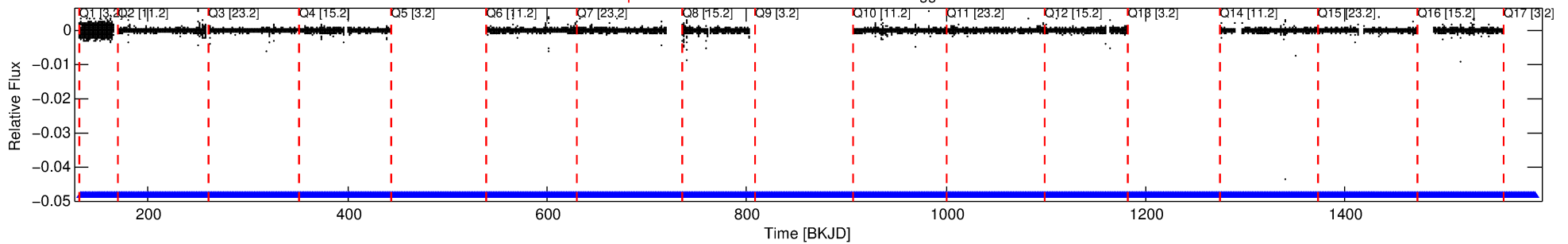
## Ephemeris Match Information For 005775232-01

No Significant Match Found

# DV One-Page Summary

KIC: 5775232 Candidate: 1 of 2 Period: 0.958 d

Kp: 10.02 R\*: 2.66 Rs Teff: 7113.0 K Logg: 3.85 Fe/H: 0.070



## DV Fit Results:

Period = 0.95768 [0.00001] d  
Epoch = 132.0411 [0.0053] BKJD  
Rp/R\* = 0.0105 [0.0005]  
a/R\* = 1.03 [0.01]  
b = 0.98 [0.00]  
Seff = 30057.86 [17601.39]  
Teq = 3357 [492] K  
Rp = 3.05 [1.19] Re  
a = 0.0232 [0.0084] AU  
Ag = 1.21 [0.71] [0.29σ]  
Teffp = 5442 [291] K [3.65σ]

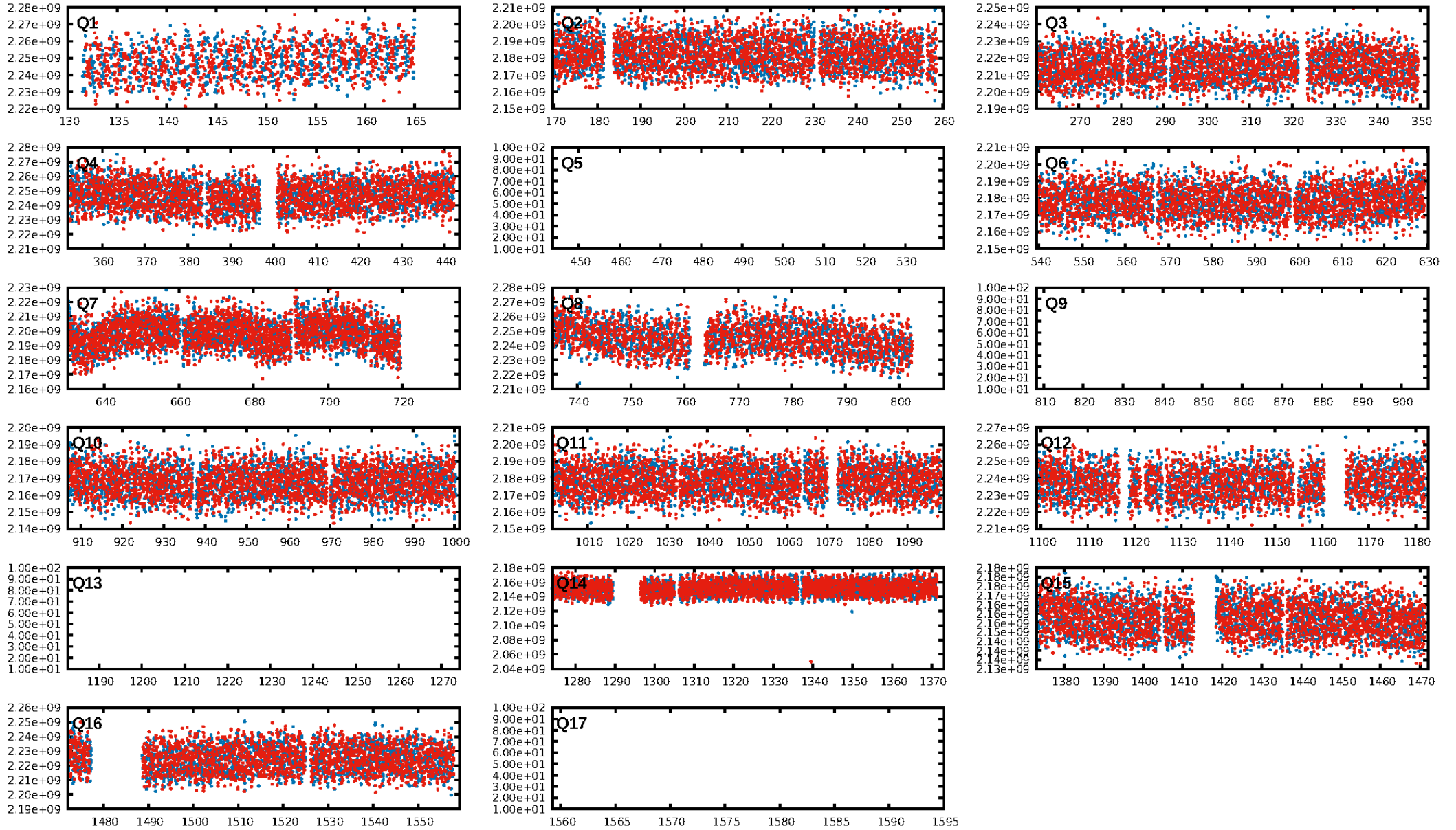
## DV Diagnostic Results:

ShortPeriod-sig: 87.1% [1.52σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1056/1056]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 0.0%  
Centroid-so: 1.639 arcsec [6.92σ]  
OotOffset-rm: 4.017 arcsec [4.81σ]  
KicOffset-rm: 5.368 arcsec [5.76σ]  
OotOffset-st: 4/4/3/1 [12]  
KicOffset-st: 4/4/3/1 [12]  
DiffImageQuality-fgm: 0.33 [4/12]  
DiffImageOverlap-fno: 0.00 [0/13]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:31:58 Z

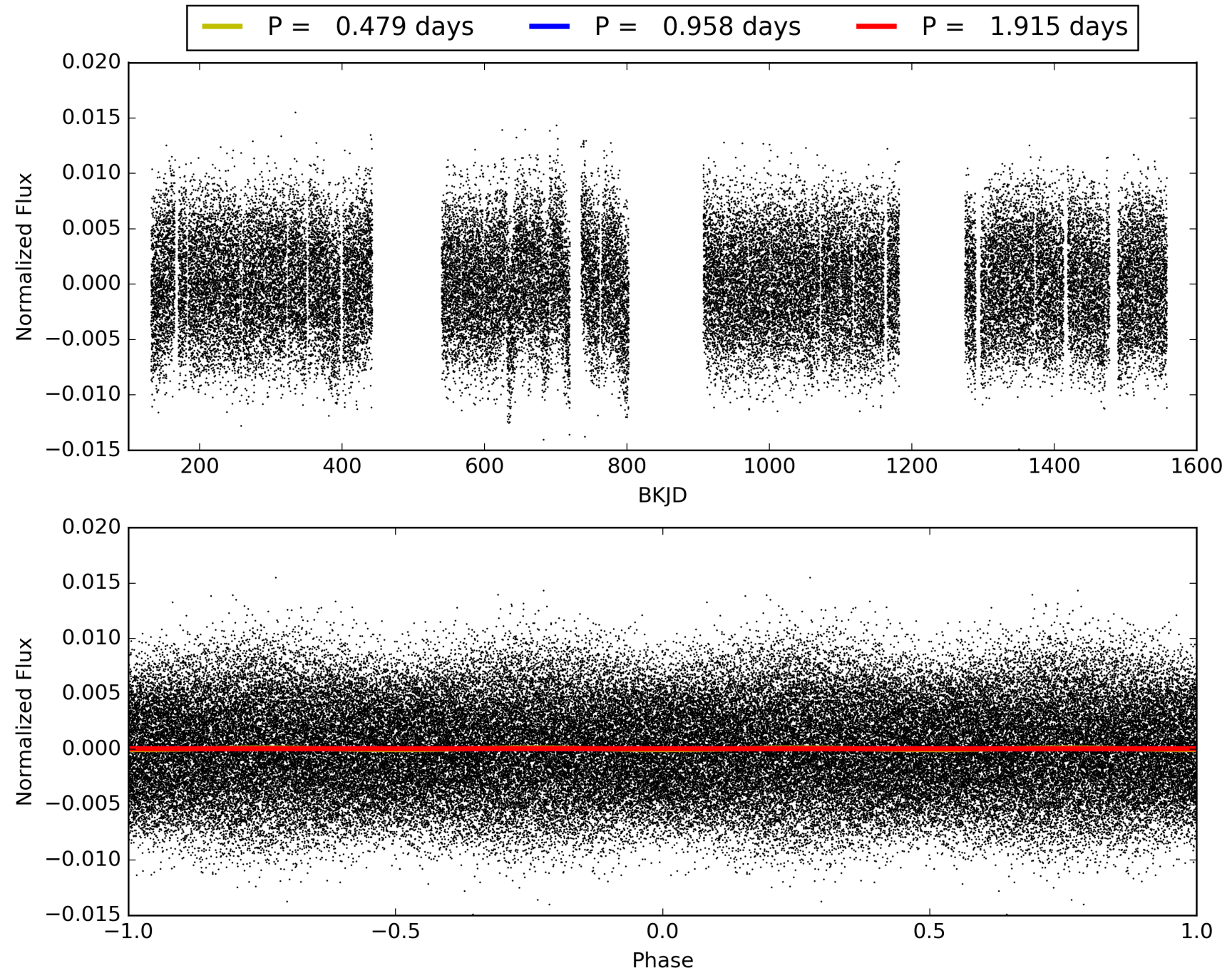
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 005775232-01, PDC Light Curves



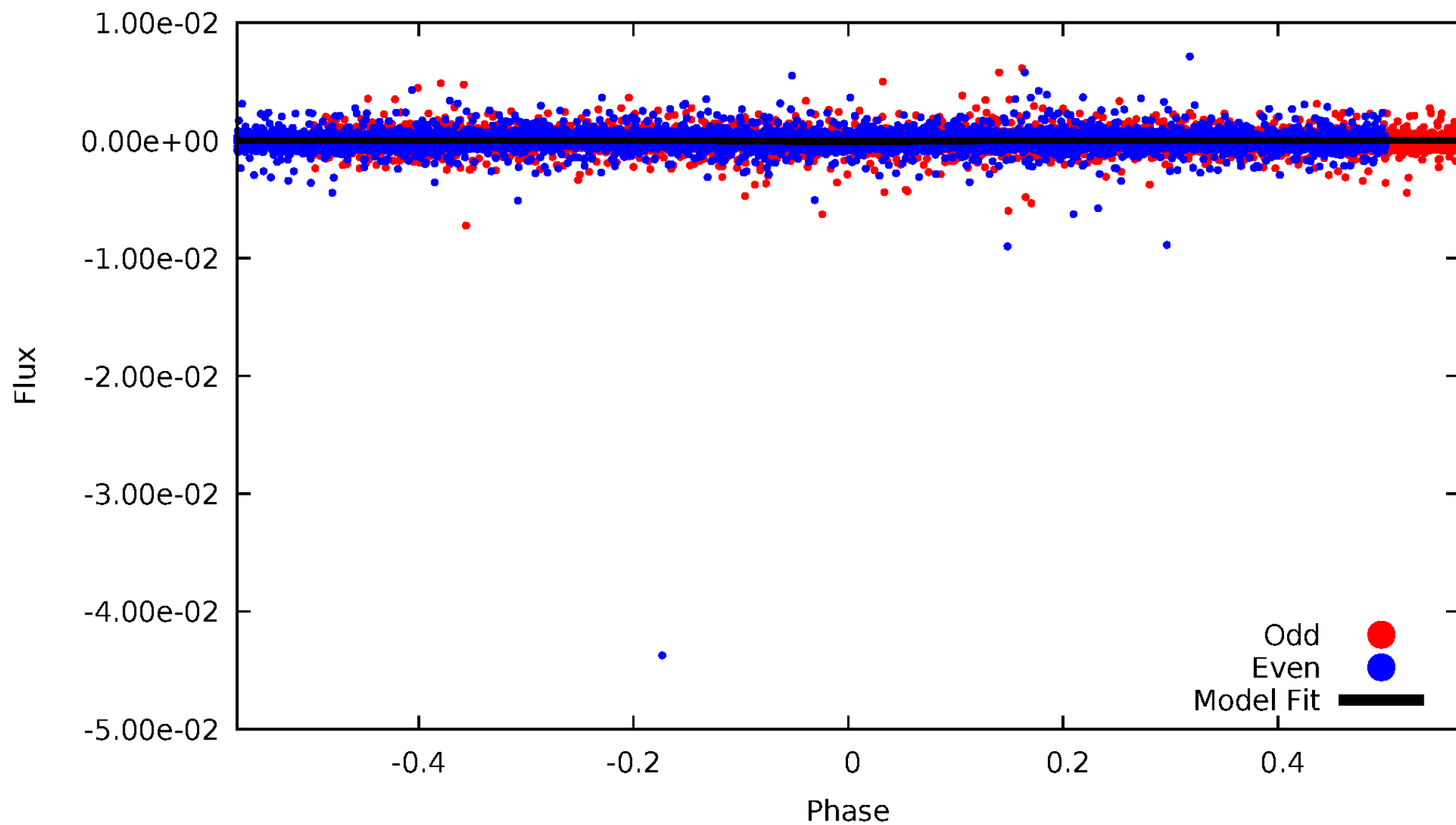


TCE 005775232-01



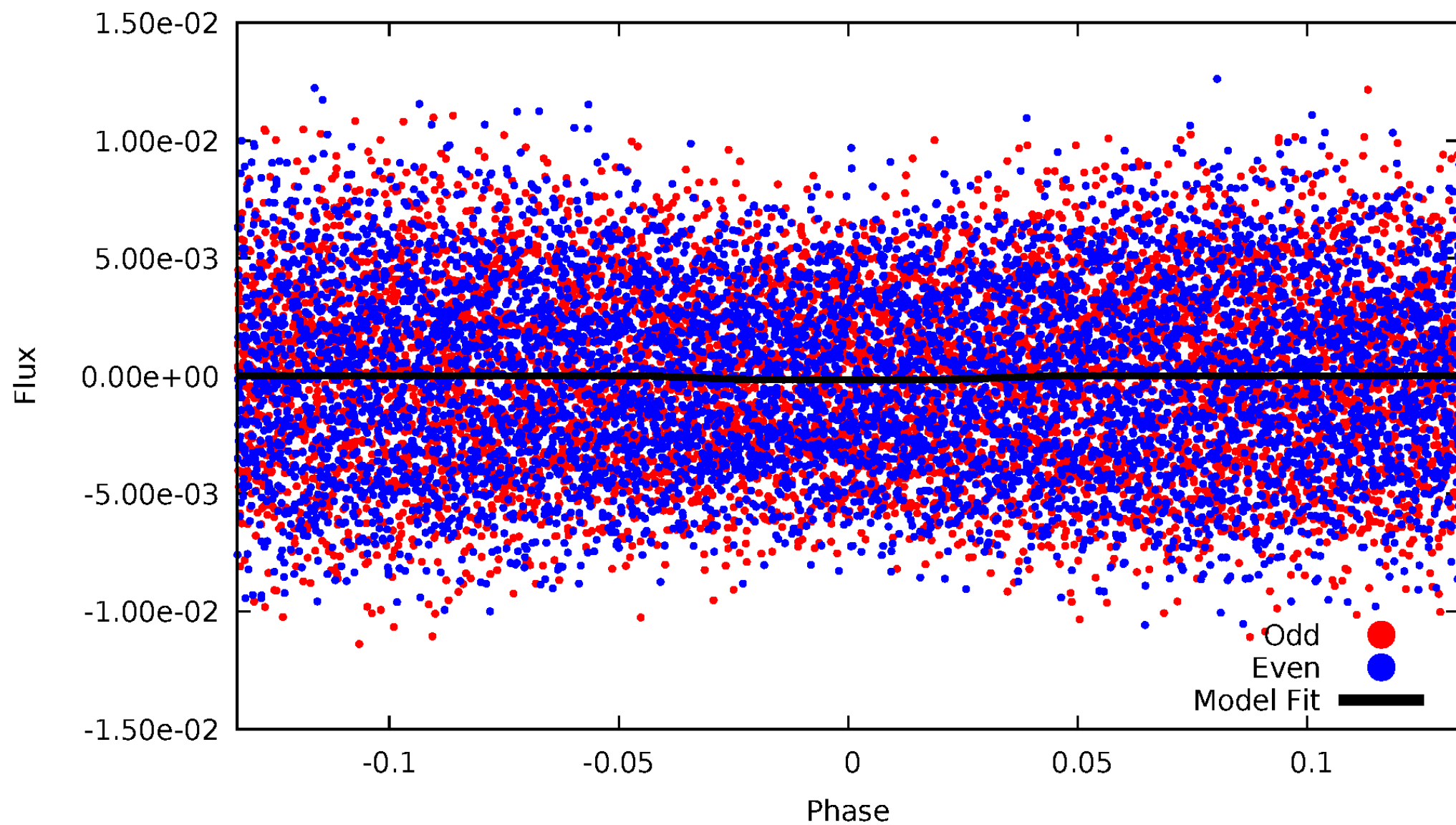
# DV Odd/Even

TCE 005775232-01



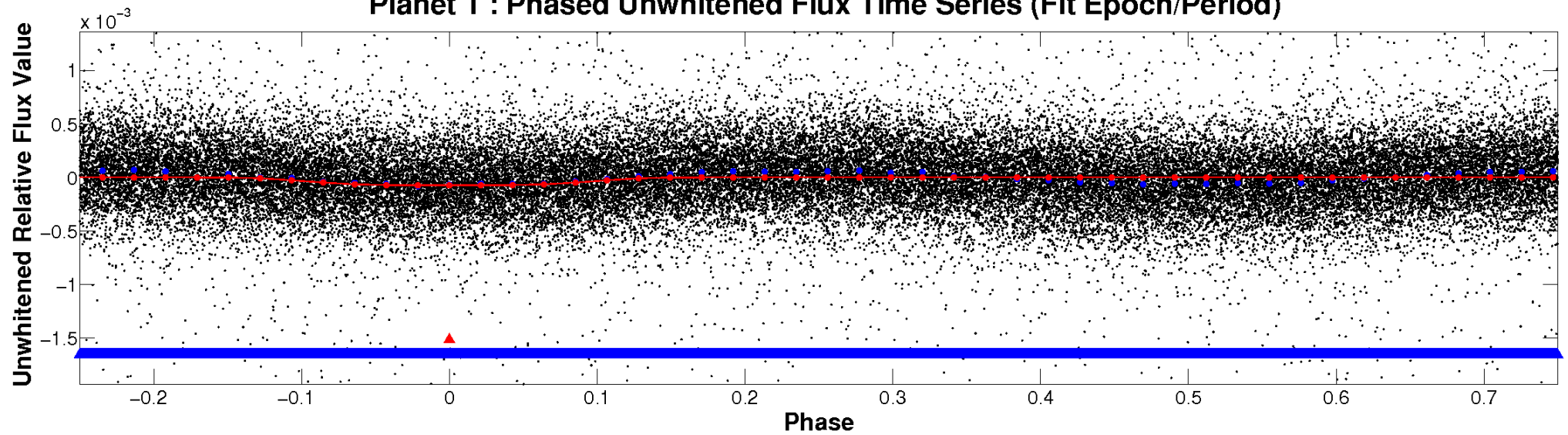
# ALT Odd/Even

TCE 005775232-01

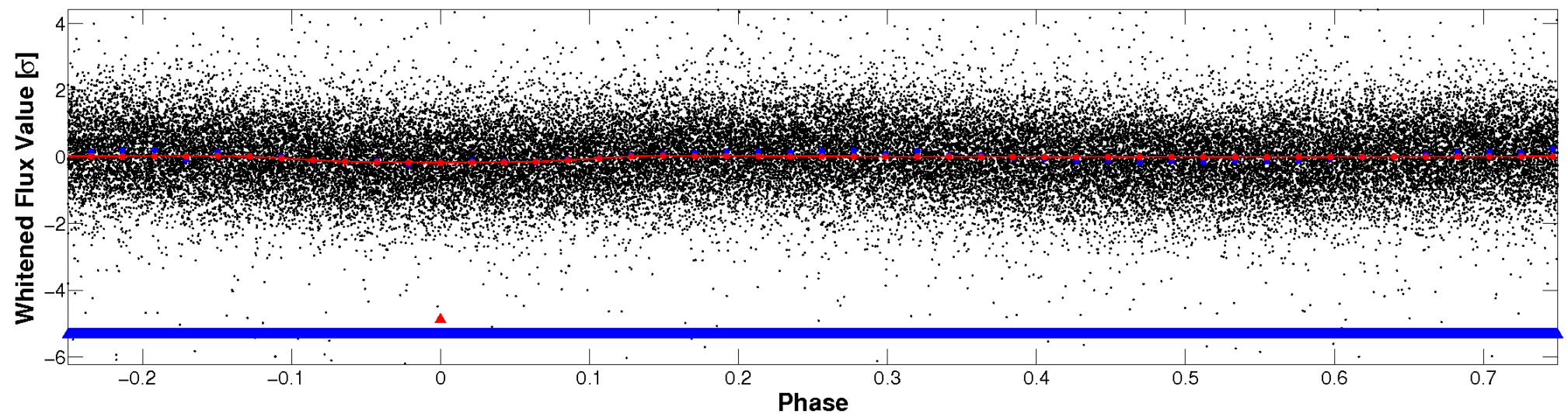


# Non-Whitened Vs. Whitened Light Curve

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



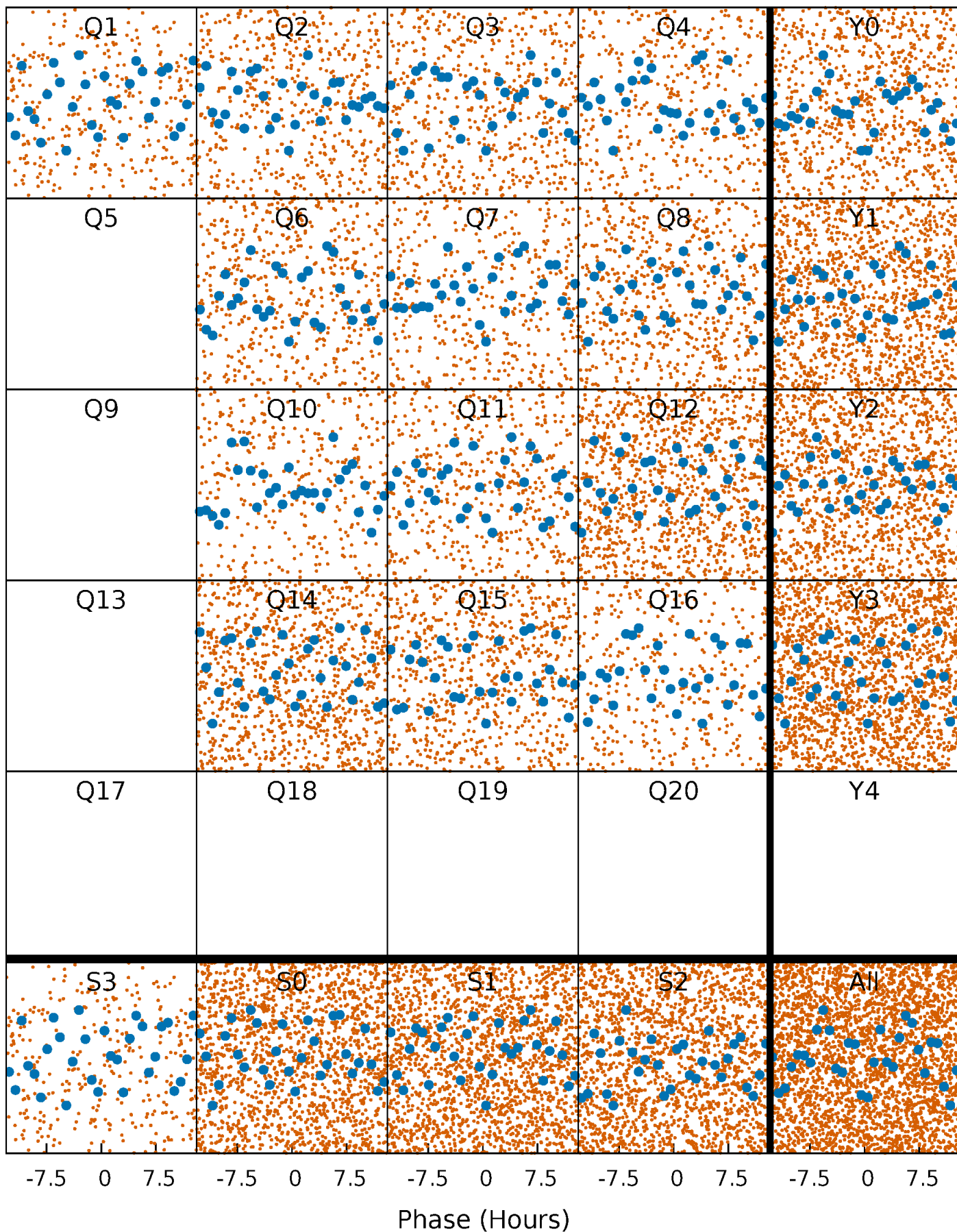
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

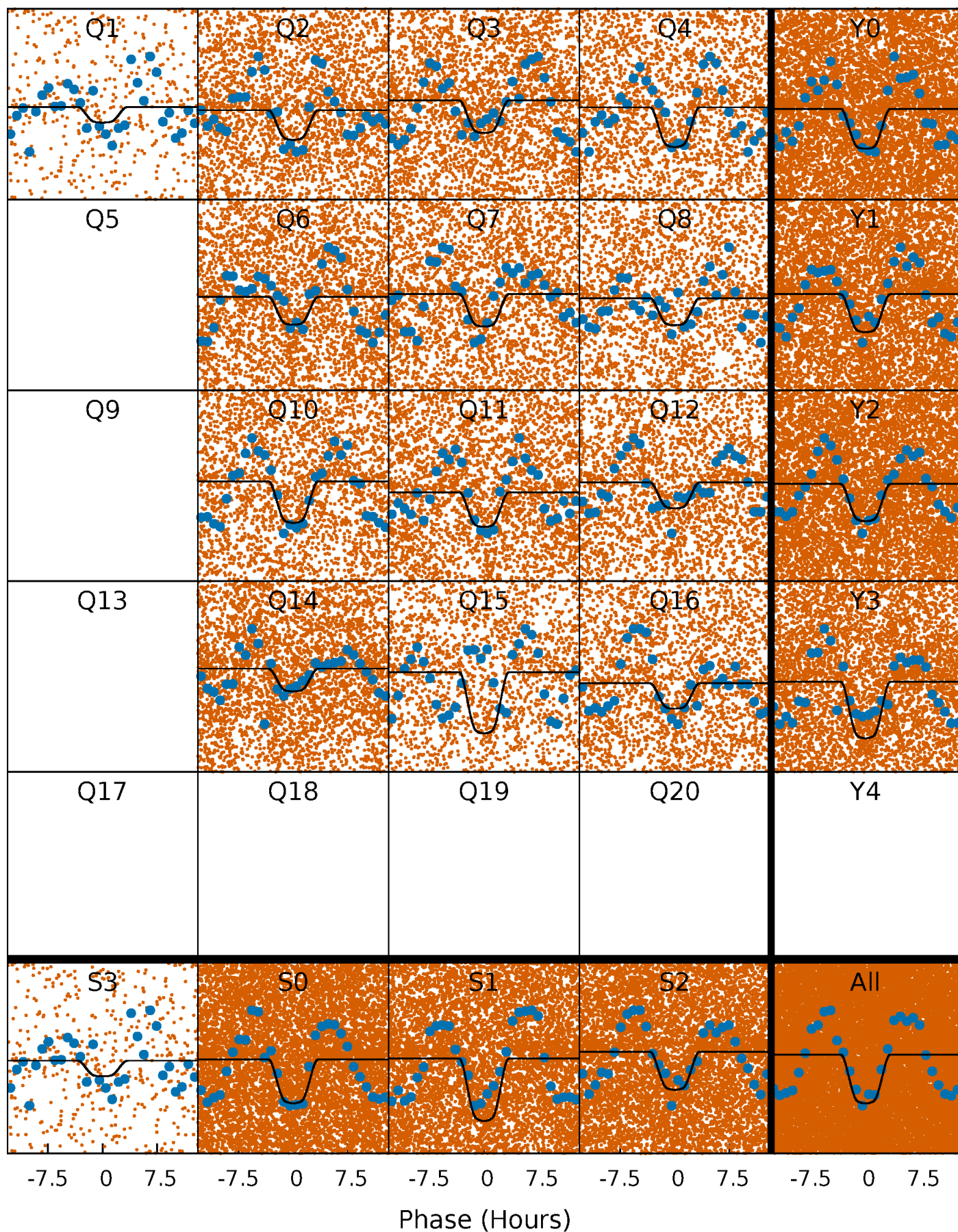
TCE 005775232-01 P= 0.957679 Days  $T_0=132.041082$  (BKJD)





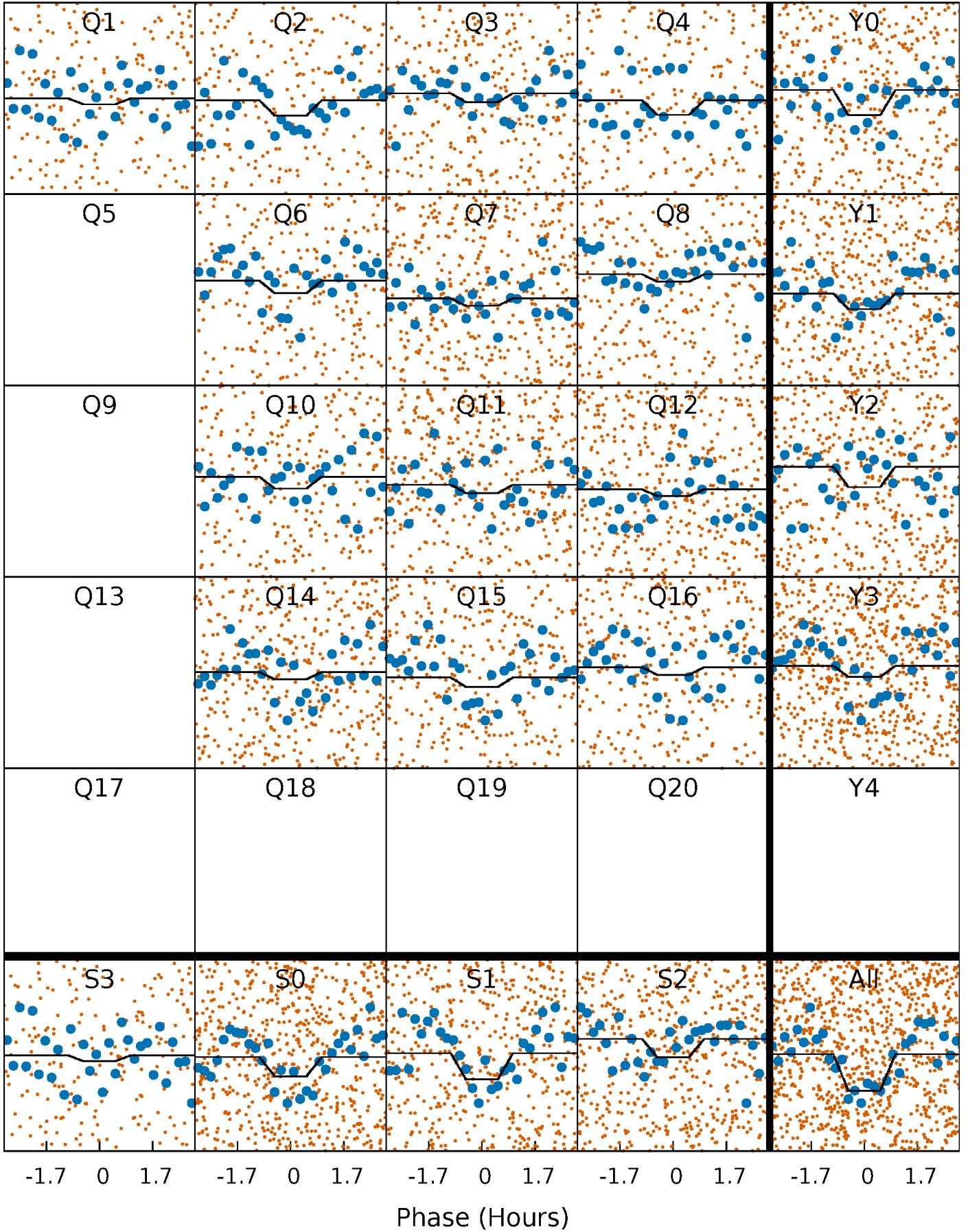
# DV Quarter-Phased Transit Curves

TCE 005775232-01 P= 0.957679 Days  $T_0=132.041082$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

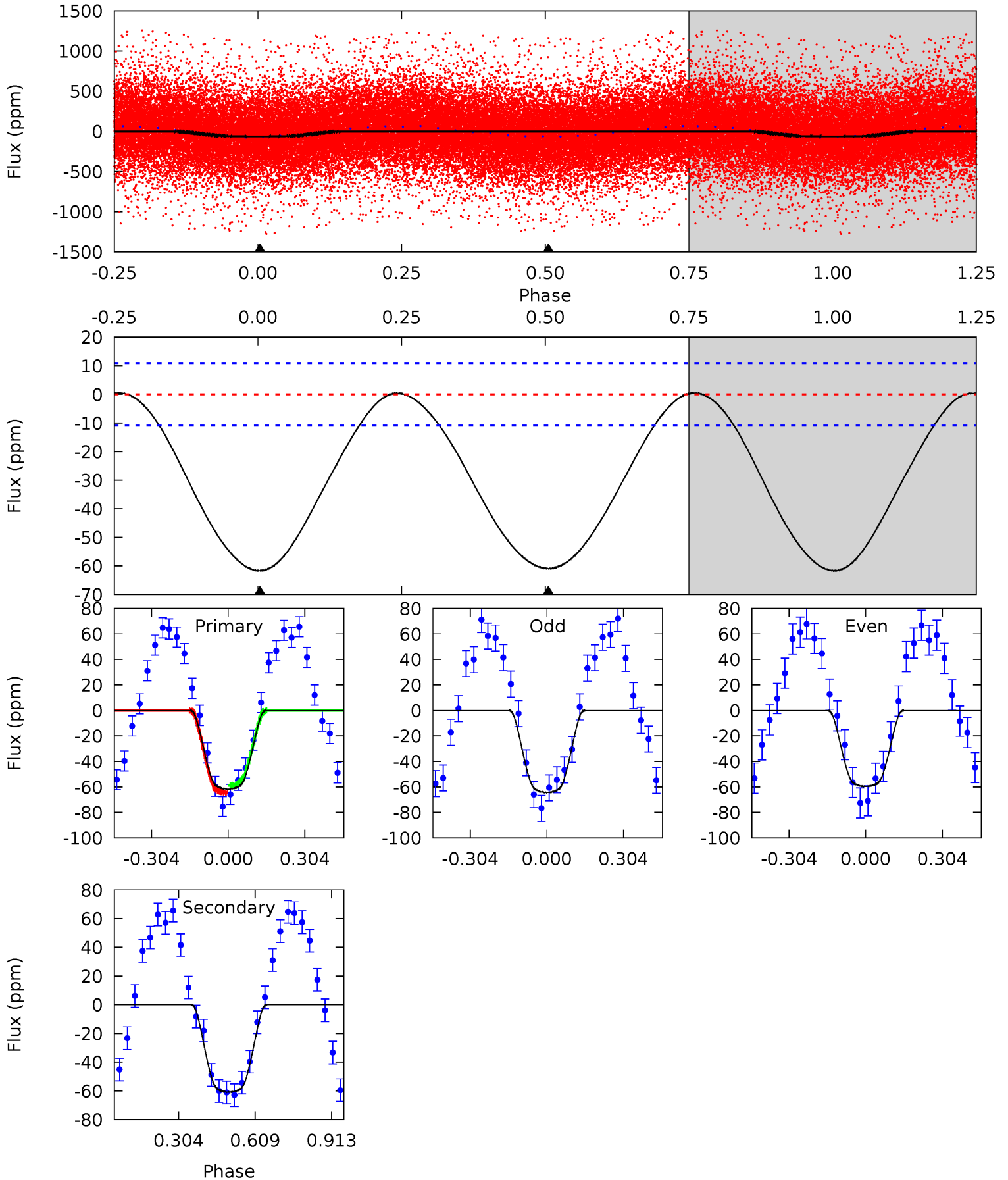
TCE 005775232-01 P= 0.957695 Days  $T_0=132.033931$  (BKJD)



# DV Model-Shift Uniqueness Test

005775232-01, P = 0.957679 Days, E = 131.083403 Days

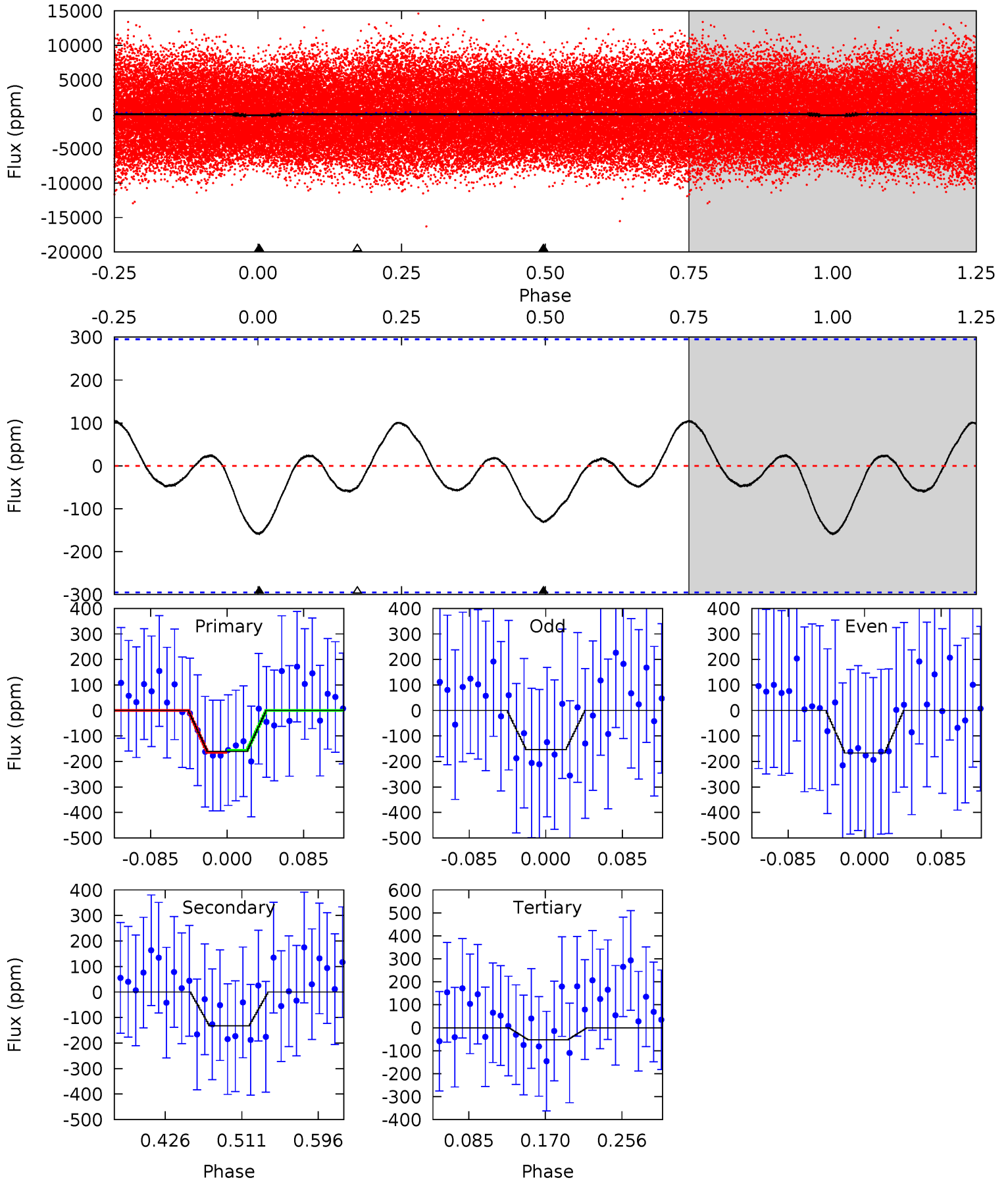
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.4	24.1	0	0	4.33	1.03	0.34	24.4	24.4	24.1	24.1	0.95	0.91	0.01	1.23



# Alt Model-Shift Uniqueness Test

005775232-01, P = 0.957695 Days, E = 131.076236 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
2.50	2.07	0.82	0	4.60	1.72	0.75	1.68	2.50	1.25	2.07	0.10	0.62	0.40	0.06





### Stellar Parameters For KIC 005775232

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7113^{+160}_{-249}$	$3.849^{+0.330}_{-0.132}$	$0.070^{+0.200}_{-0.350}$	$2.659^{+0.555}_{-1.030}$	$1.819^{+0.200}_{-0.400}$	$0.136^{+0.308}_{-0.054}$
	+2%/-4%	+9%/-3%	+286%/-500%	+21%/-39%	+11%/-22%	+226%/-39%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 005775232-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-61 \pm 3$	$2.96^{+0.42}_{-0.58}$	$4601^{+316}_{-455}$	$5818^{+265}_{-236}$	$2.046^{+1.040}_{-0.468}$
Alt.	$-133 \pm 64$	$3.55^{+0.52}_{-0.72}$	$4603^{+338}_{-453}$	$6580^{+895}_{-1147}$	$3.220^{+2.280}_{-1.670}$

$T_{max}$  = 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

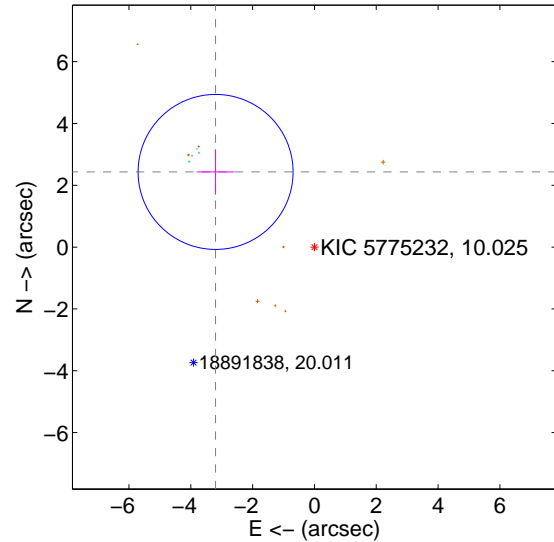
Supplemental centroid analysis for 005775232-01. **Kepler magnitude: 10.03.** Transit SNR 14.69

There are 4 quarters with good PRF difference image offsets

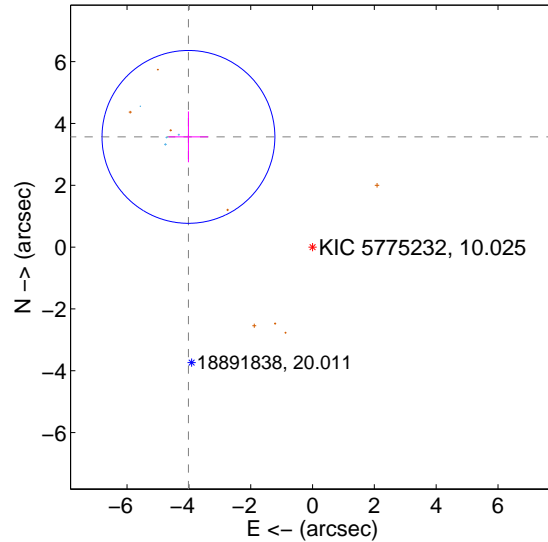
The OOT PRF centroid is offset from the target star catalog position by about 2.12 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>4.017 \pm 0.835</math></b>	<b>4.81</b>	$3.197 \pm 0.611$	$2.431 \pm 0.733$
PRF-fit source offset from KIC position	<b><math>5.368 \pm 0.932</math></b>	<b>5.76</b>	$4.013 \pm 0.642$	$3.565 \pm 0.822$
photometric centroid source offset	<b><math>1.64 \pm 0.24</math></b>	<b>6.92</b>	$1.40 \pm 0.25$	$0.85 \pm 0.21$

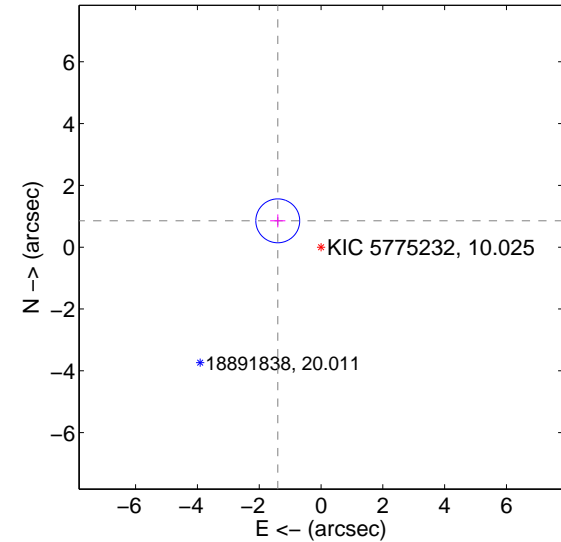
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

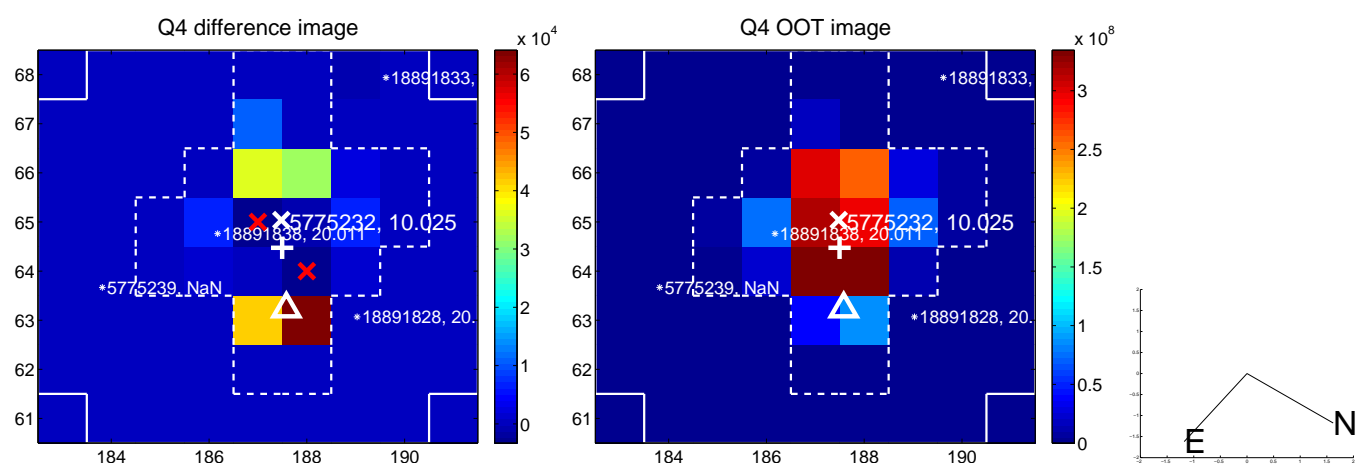
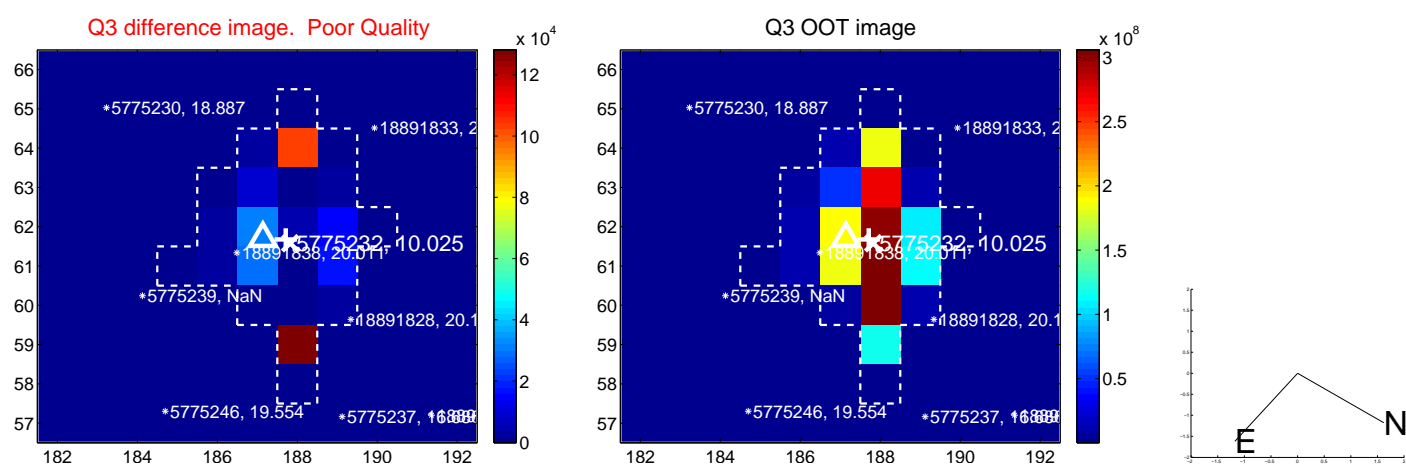
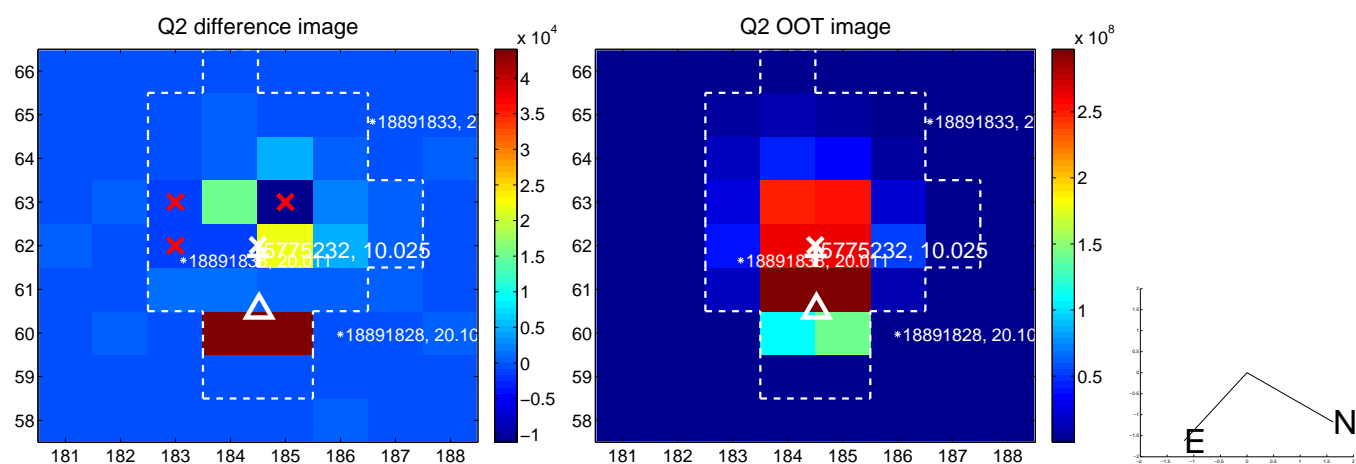
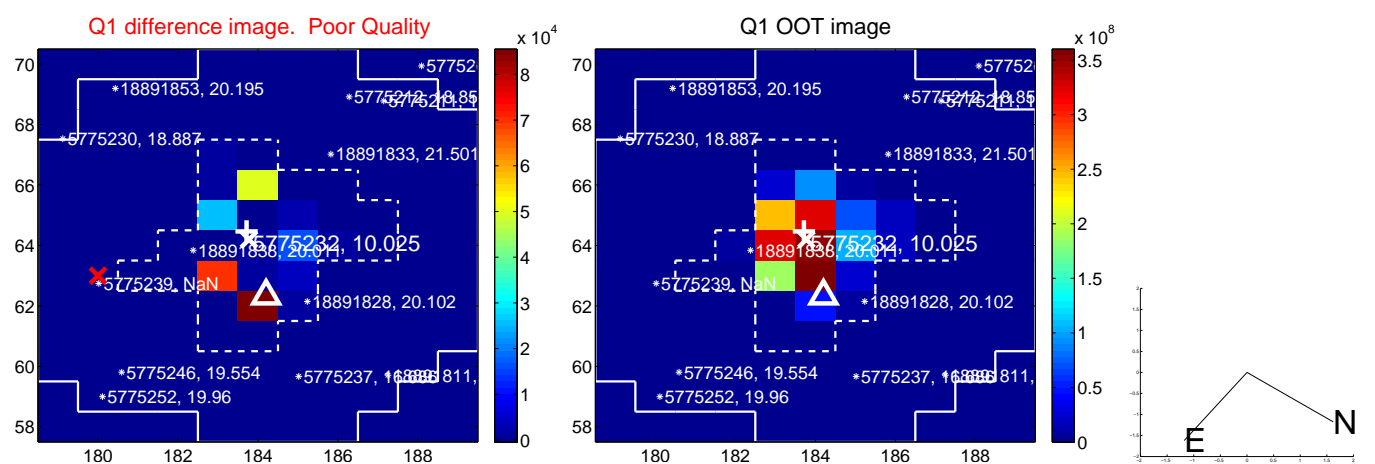


offset from photometric centroids

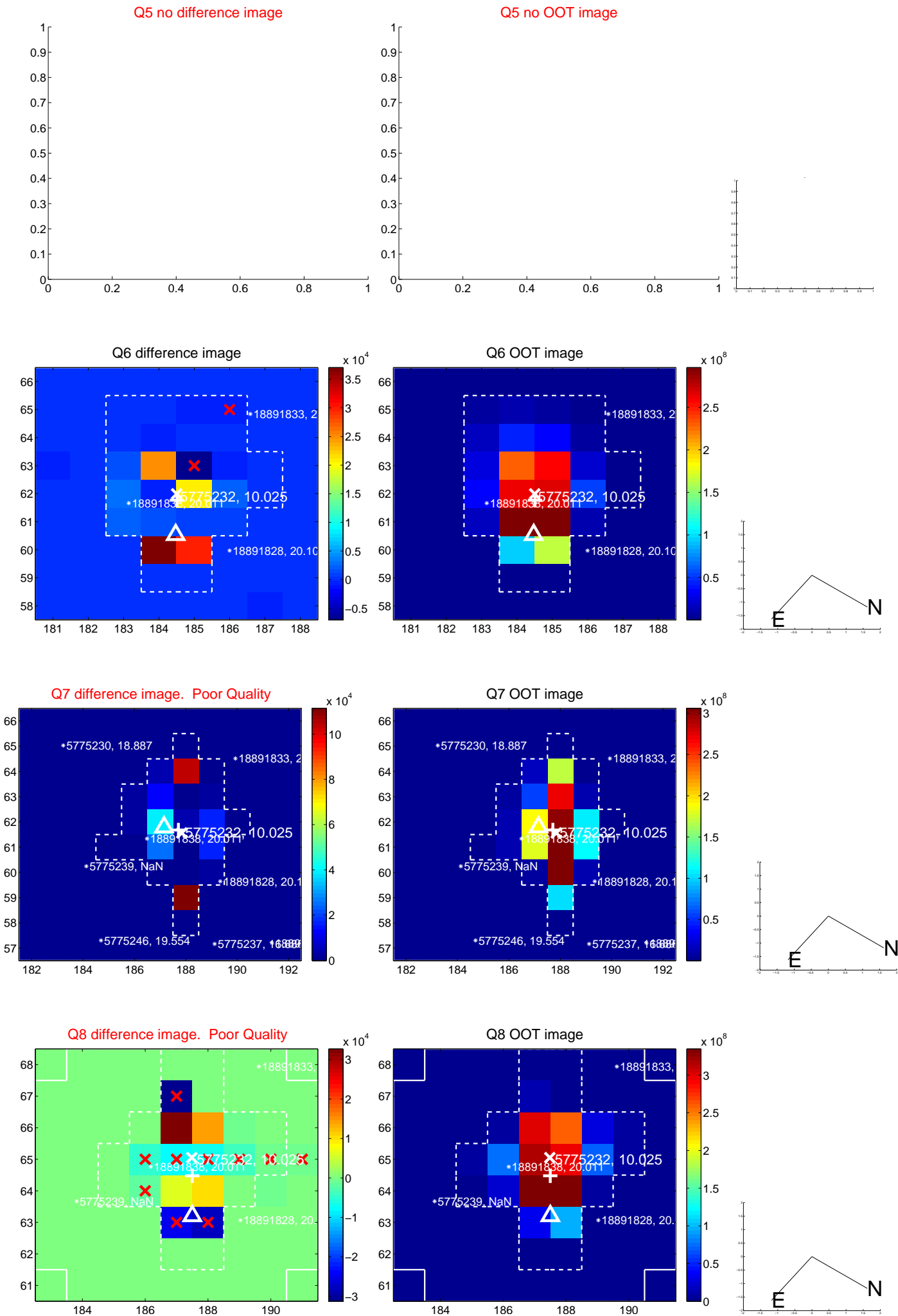


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

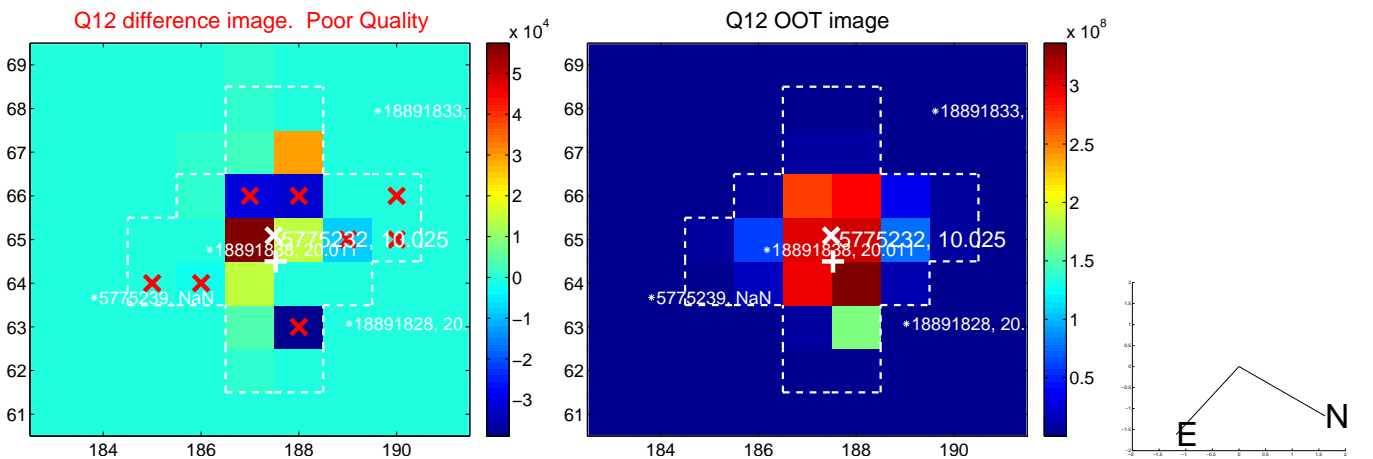
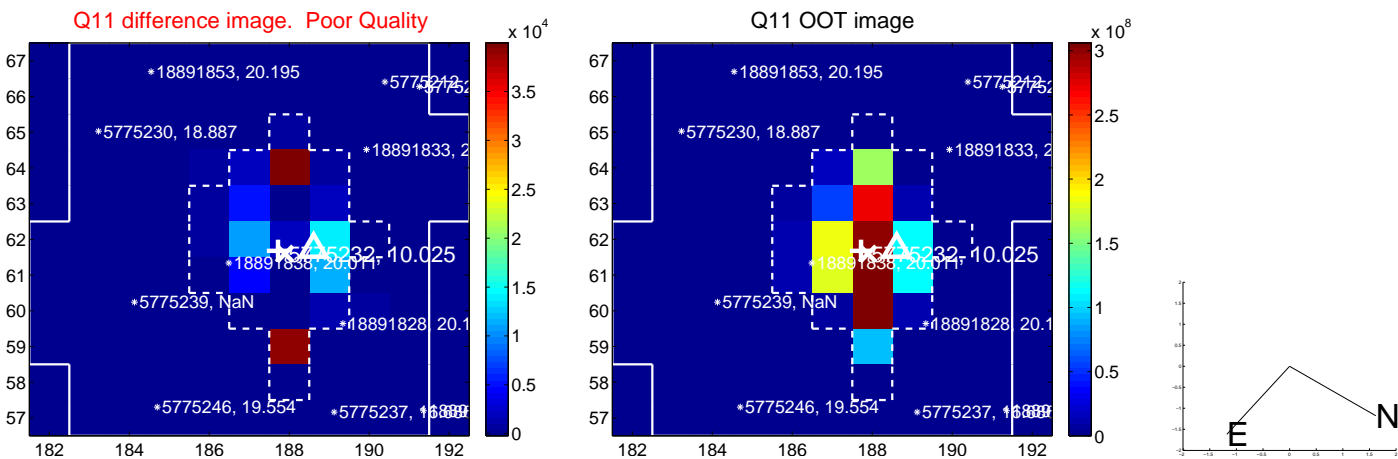
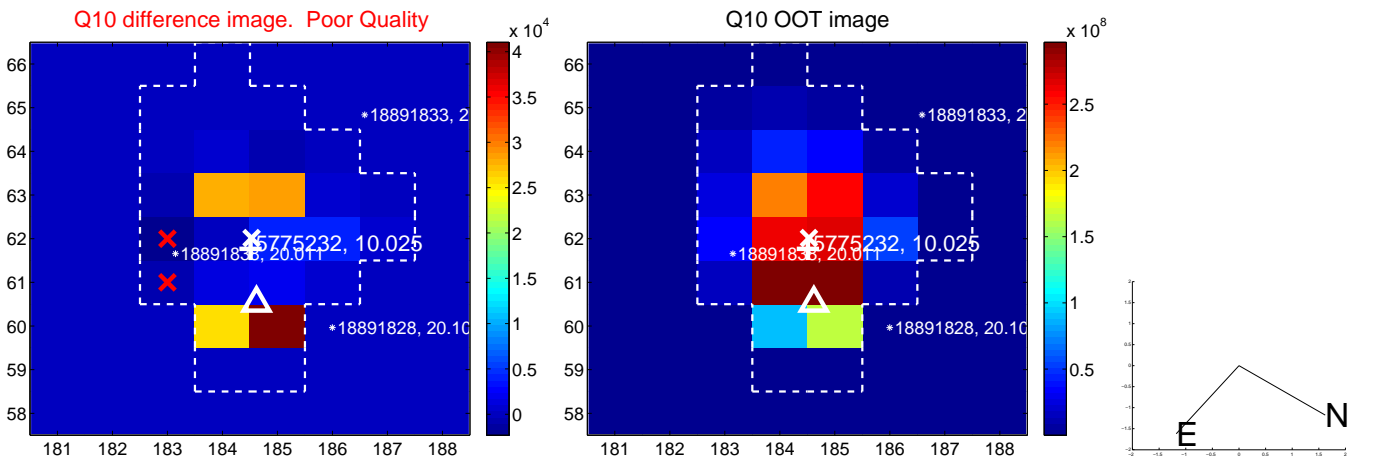
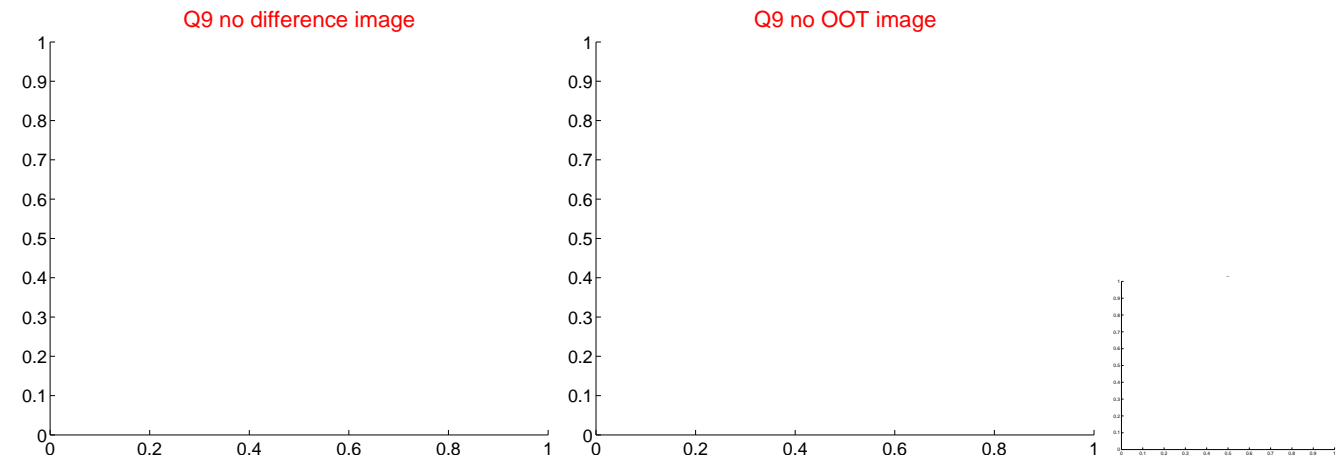


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

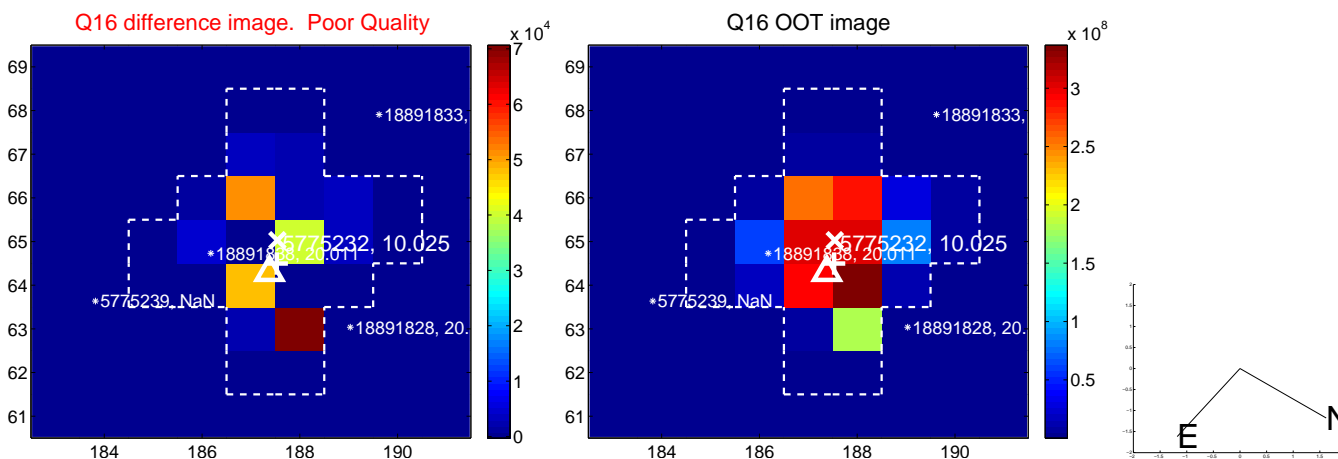
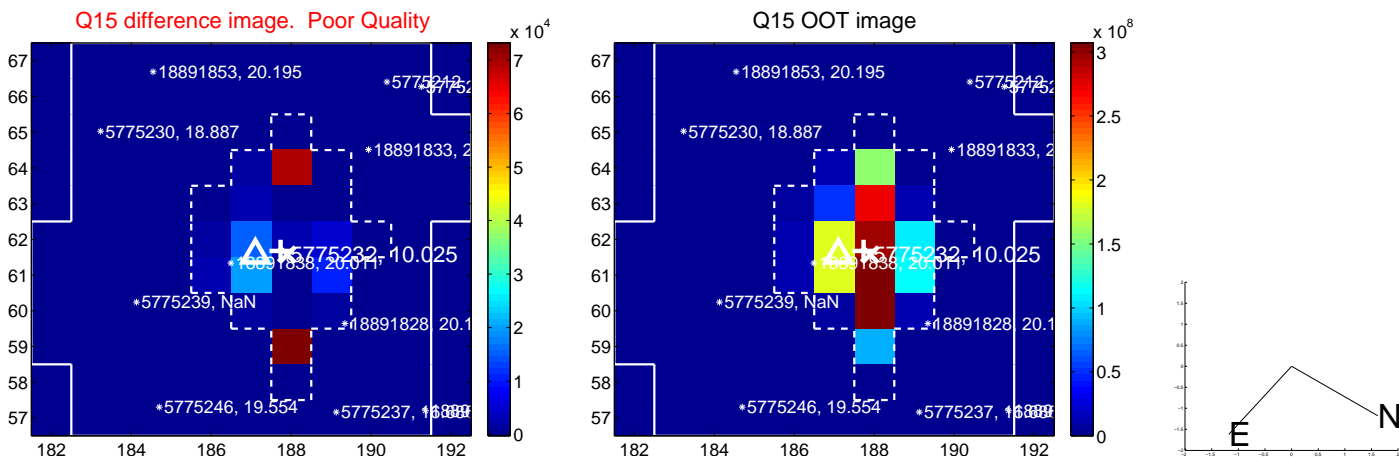
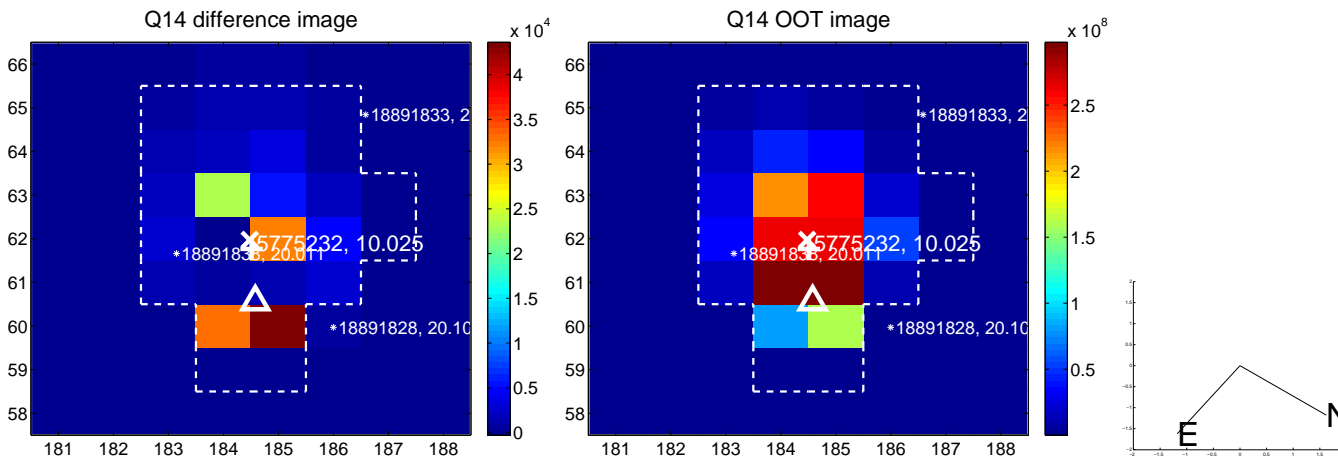
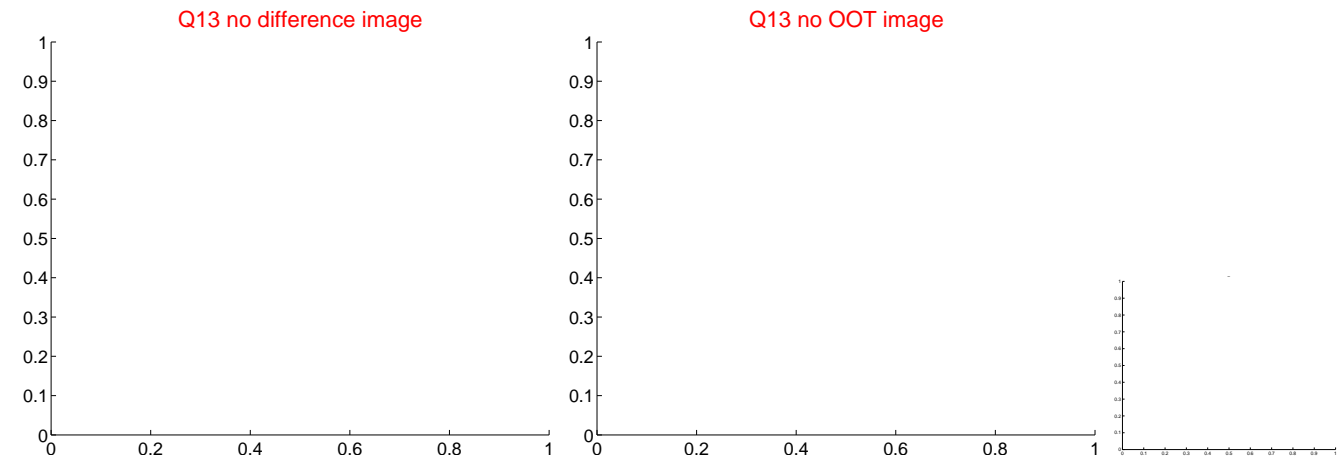




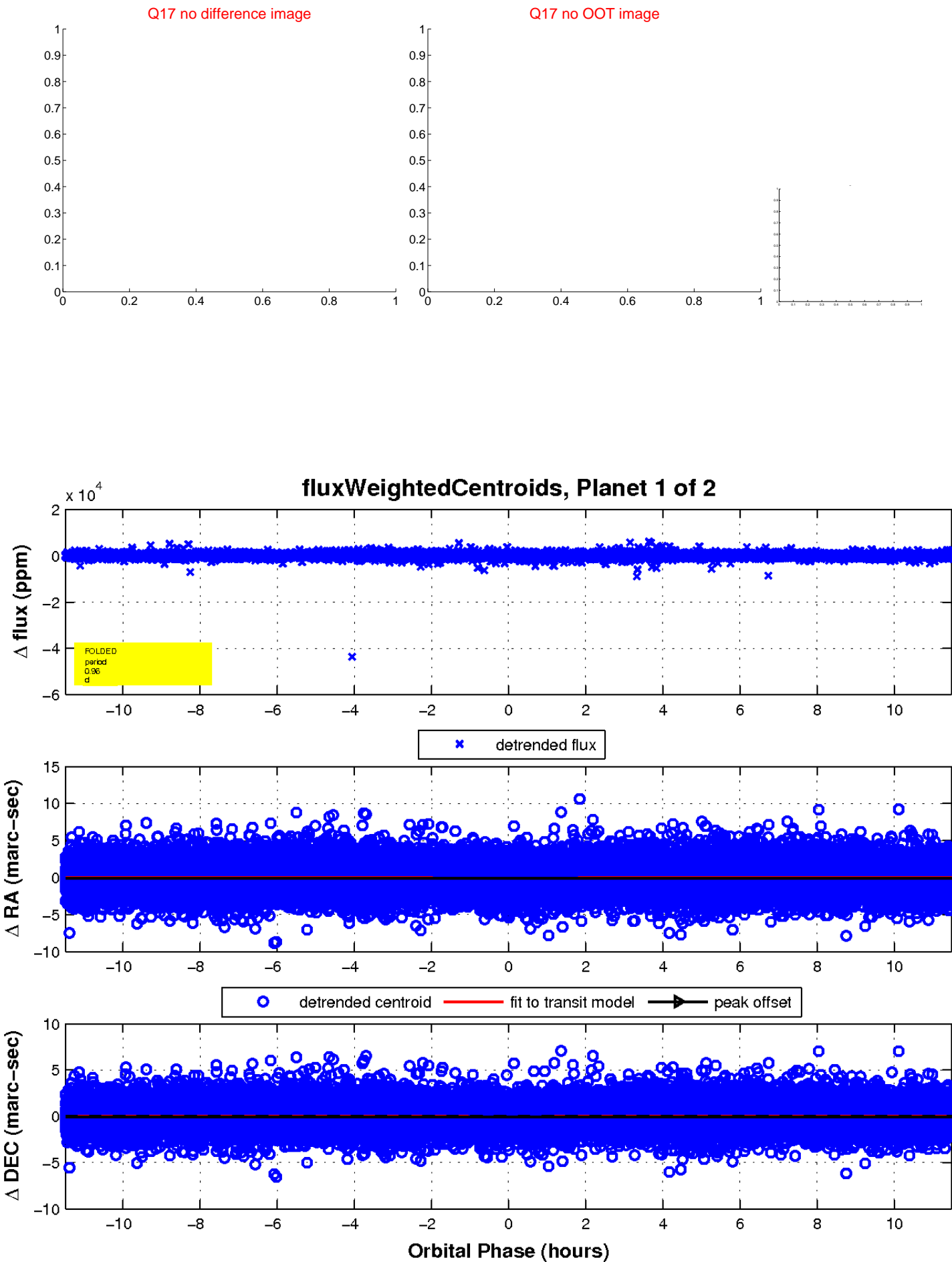
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

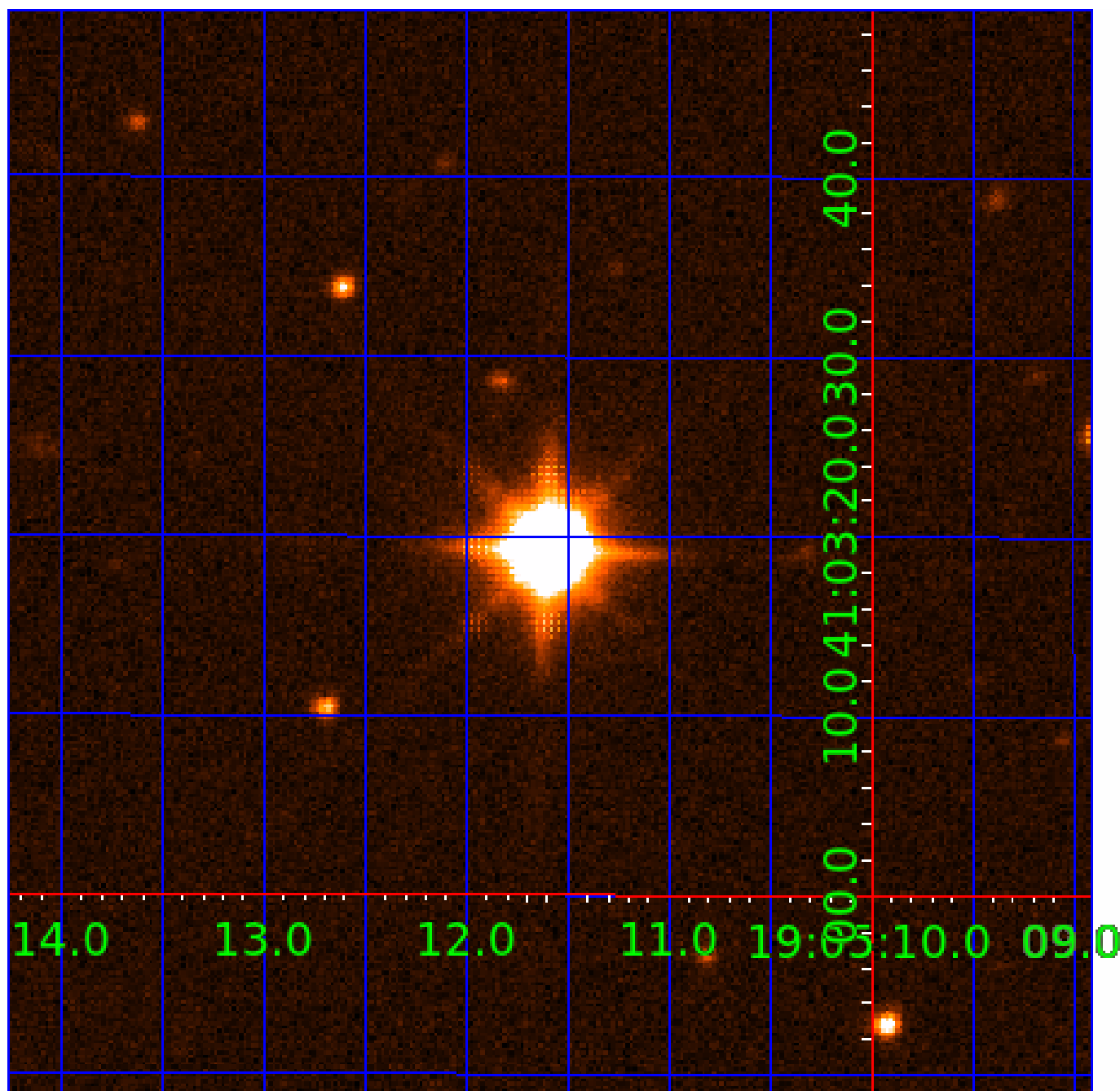


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 005775232

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005775232-01	OBS	No	0.957679	132.041082	73.9	6.535	11.8	14.7	2.66	7113	3.04	30057.86
005775232-02	OBS	No	0.533708	132.026619	104.6	1.500	16.3	-1.0	2.66	7113	2.76	65540.92

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005775232-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
005775232-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

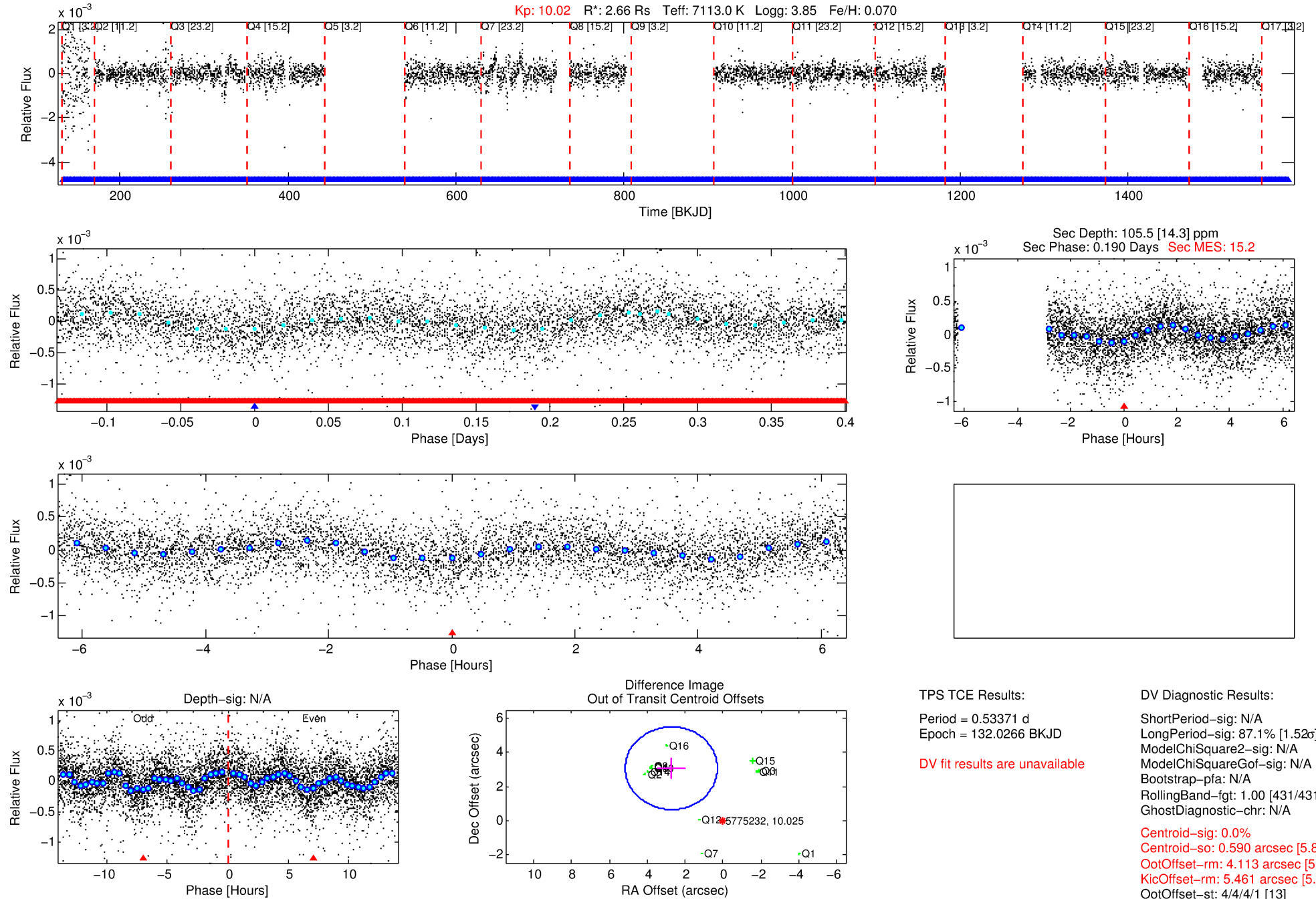
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005775232-02

No Significant Match Found

# DV One-Page Summary

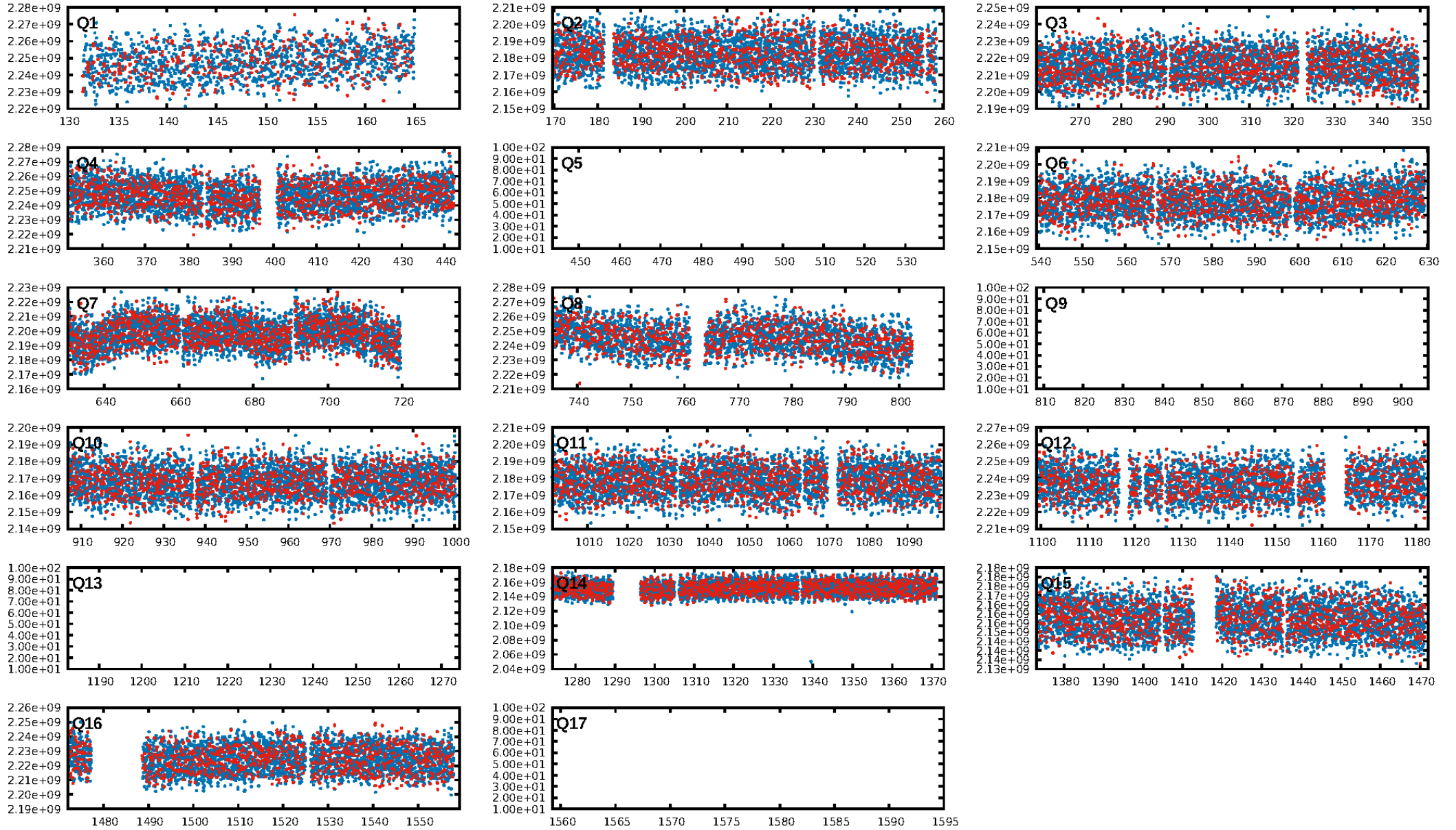
KIC: 5775232 Candidate: 2 of 2 Period: 0.534 d



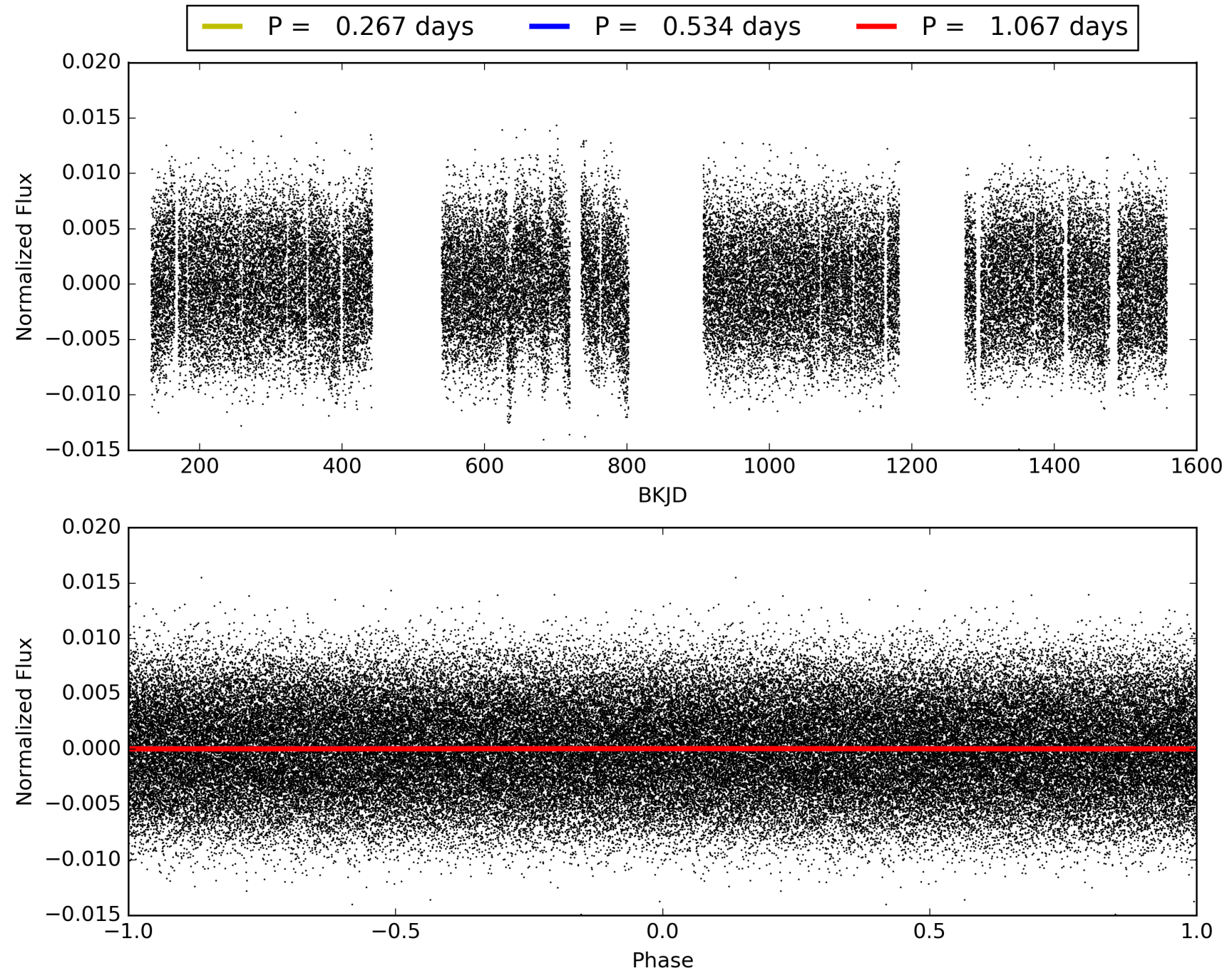
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:32:09 Z

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

# TCE 005775232-02, PDC Light Curves



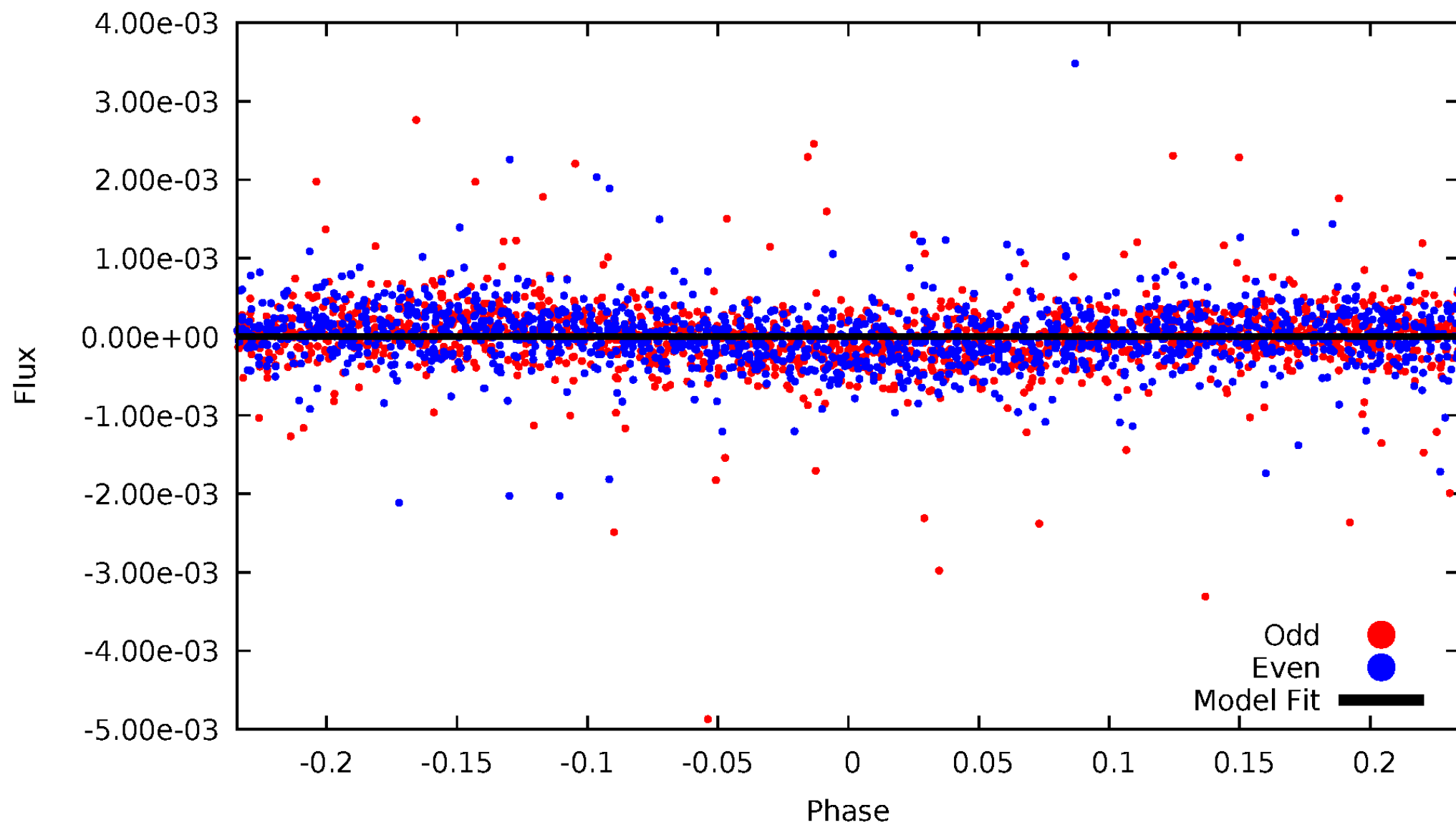
TCE 005775232-02





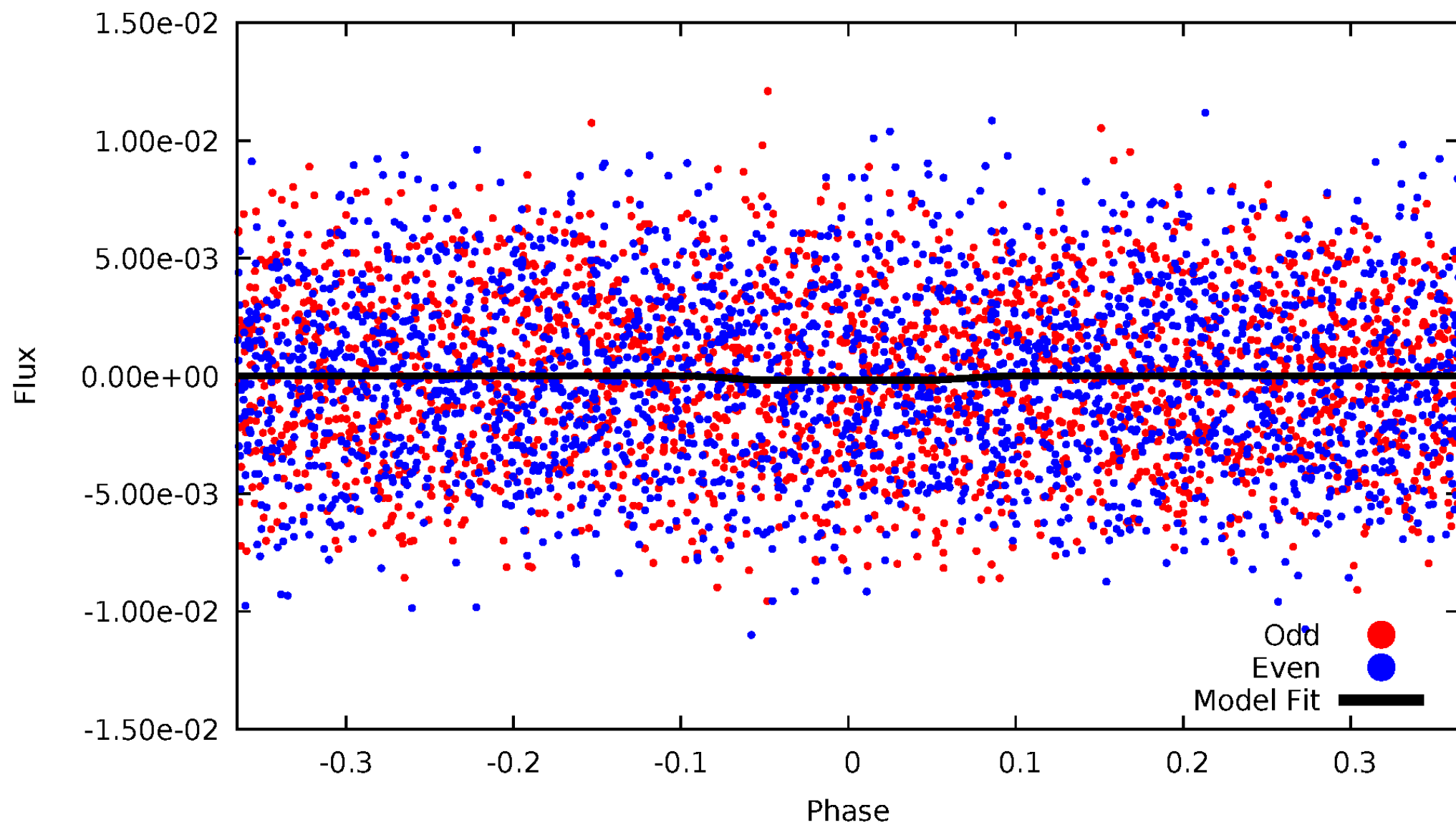
DV Odd/Even

TCE 005775232-02



# ALT Odd/Even

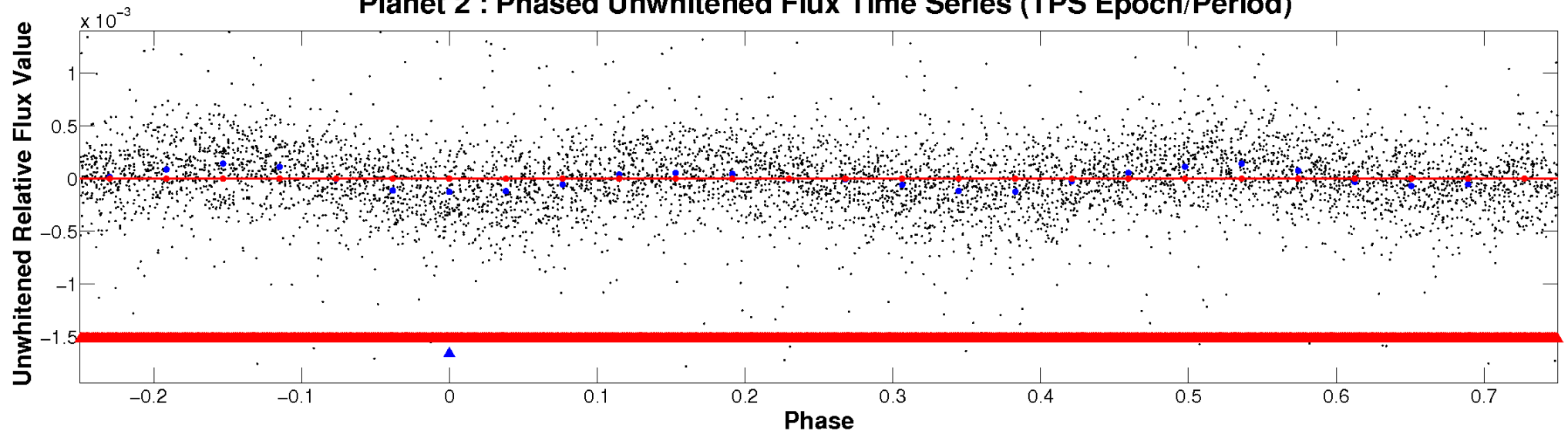
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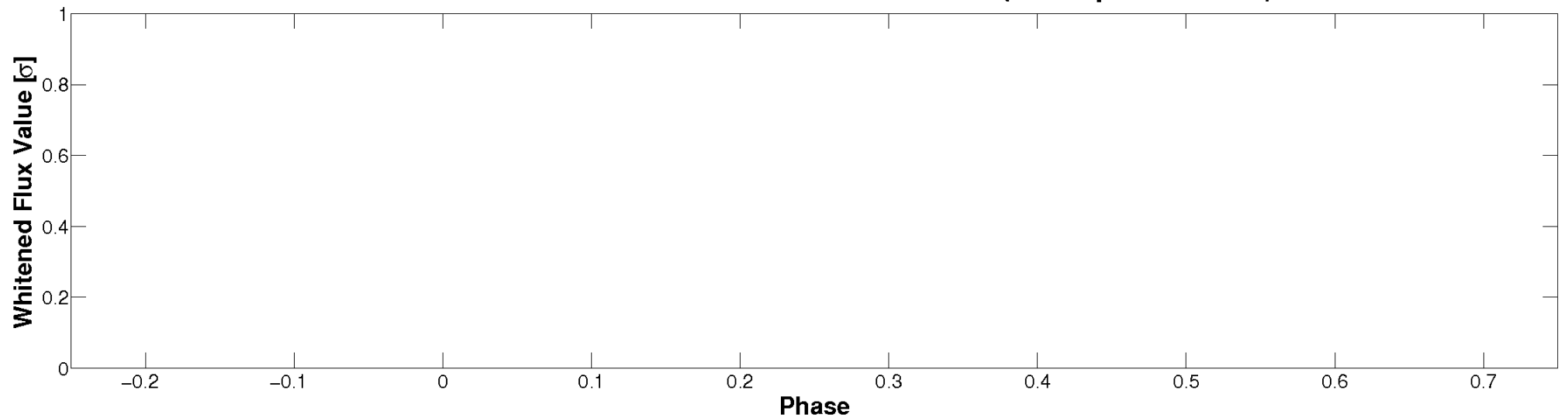


# Non-Whitened Vs. Whitened Light Curve

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

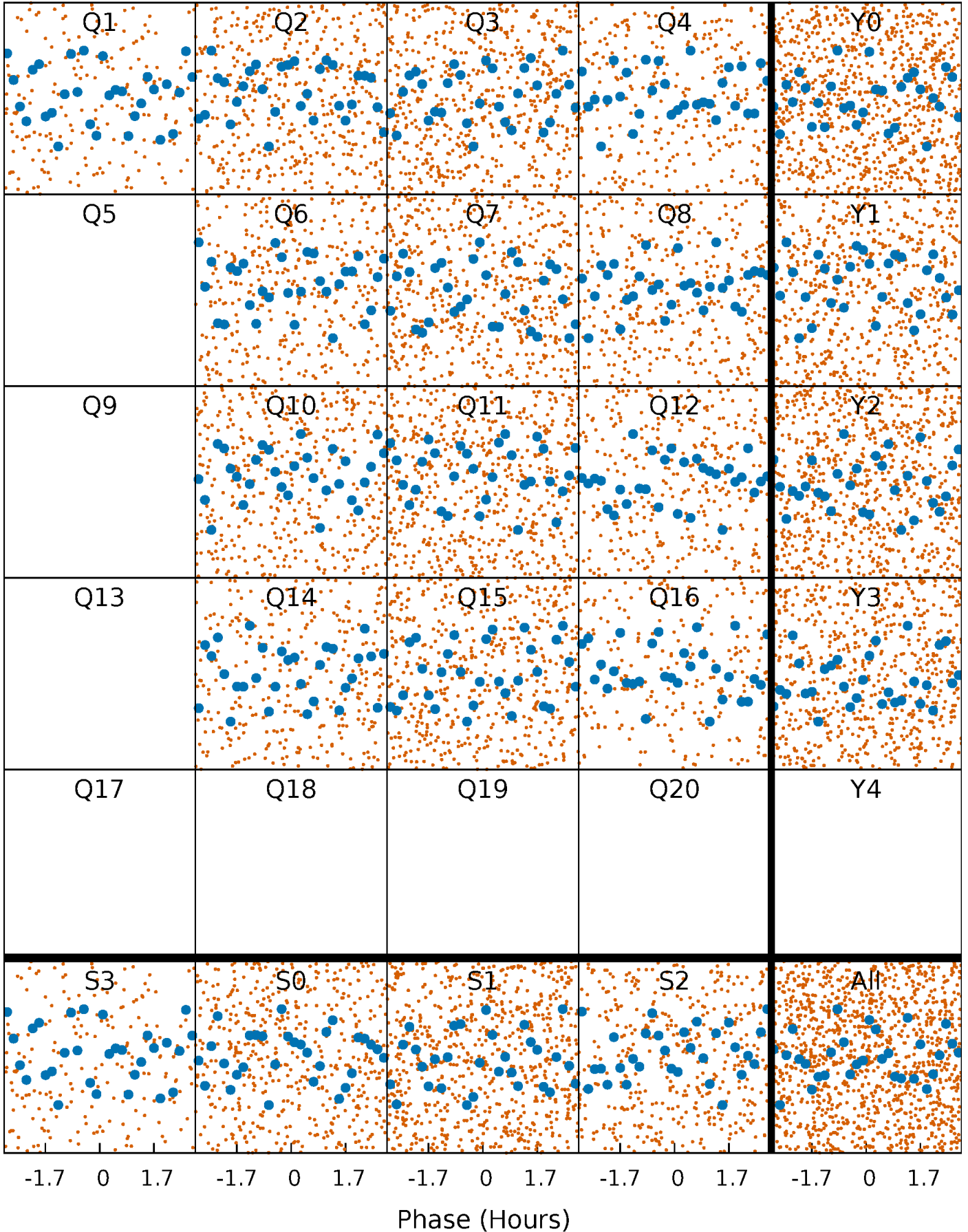


**Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



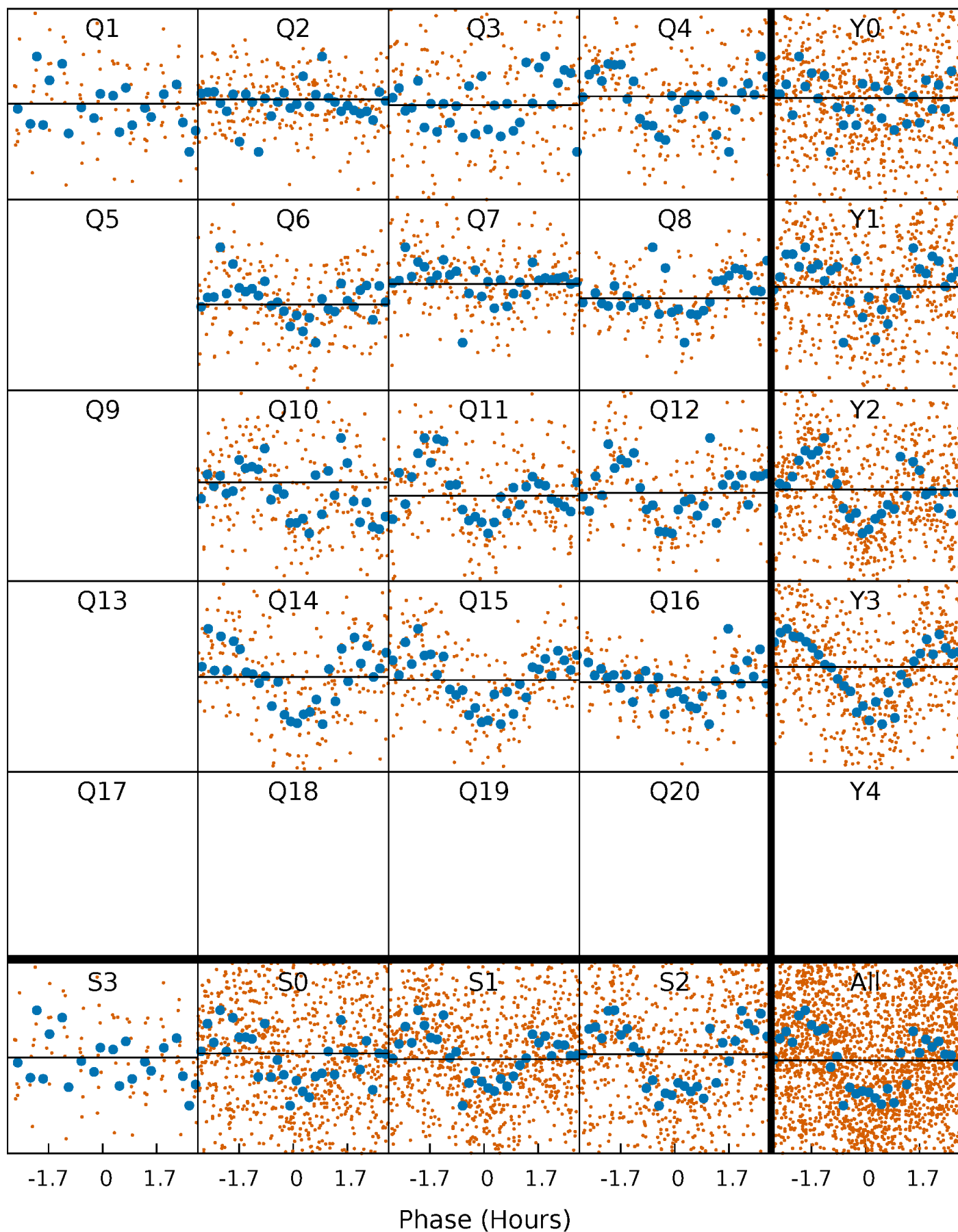
# PDC Quarter-Phased Transit Curves

TCE 005775232-02 P= 0.533708 Days  $T_0=132.026619$  (BKJD)



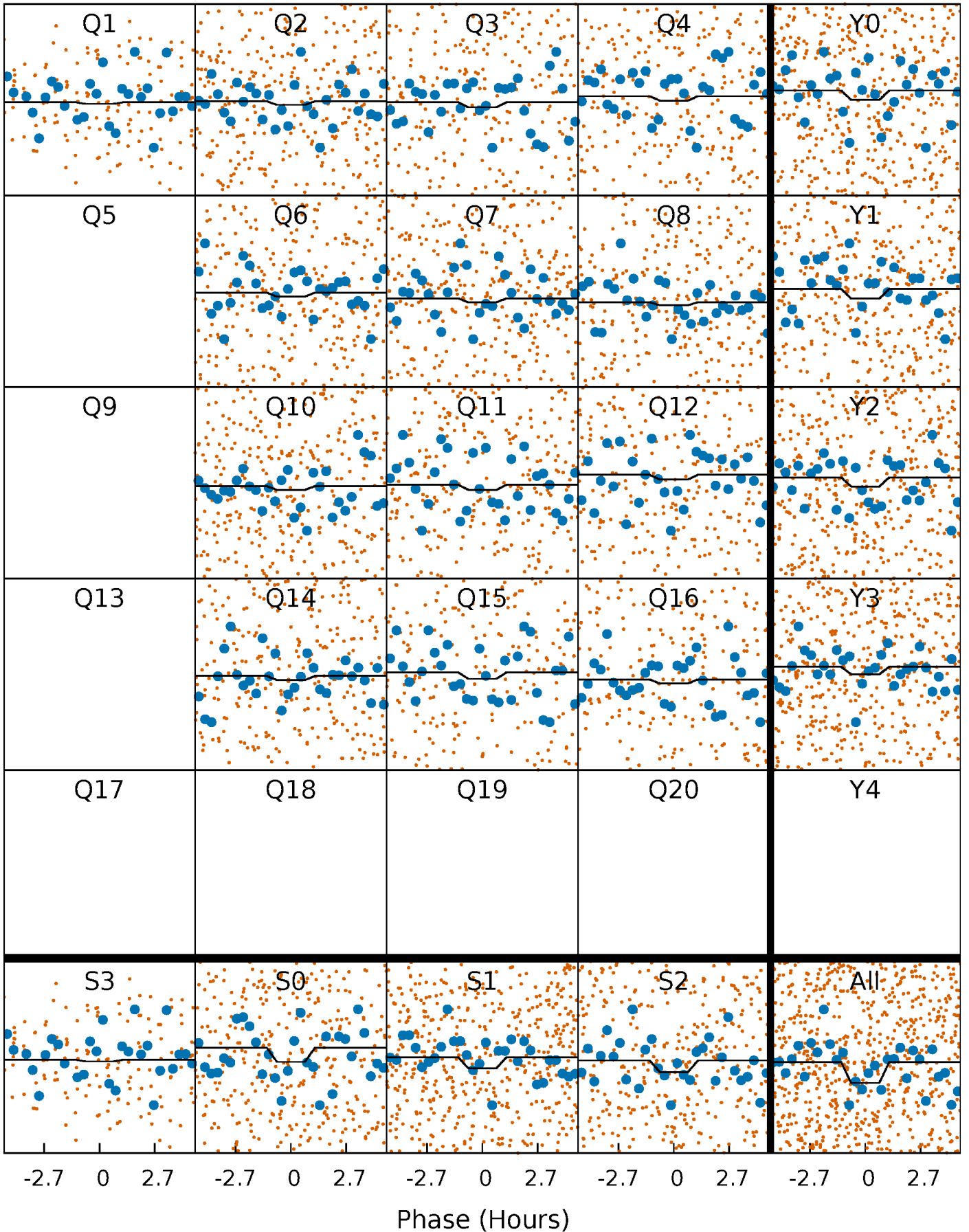
# DV Quarter-Phased Transit Curves

TCE 005775232-02     $P = 0.533708$  Days     $T_0 = 132.026619$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

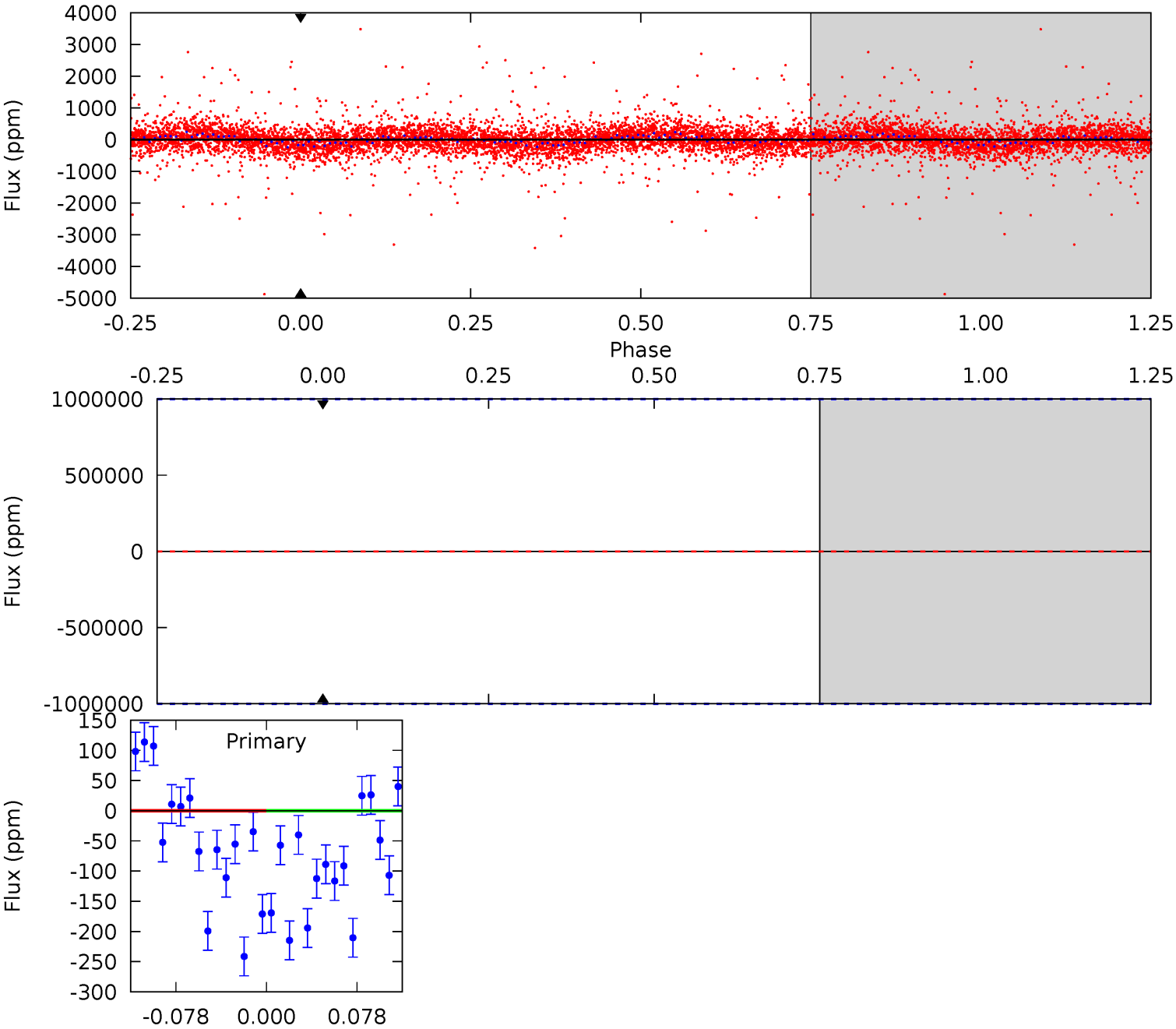
TCE 005775232-02   P= 0.533708 Days    $T_0=132.045776$  (BKJD)



# DV Model-Shift Uniqueness Test

005775232-02, P = 0.533708 Days, E = 131.492911 Days

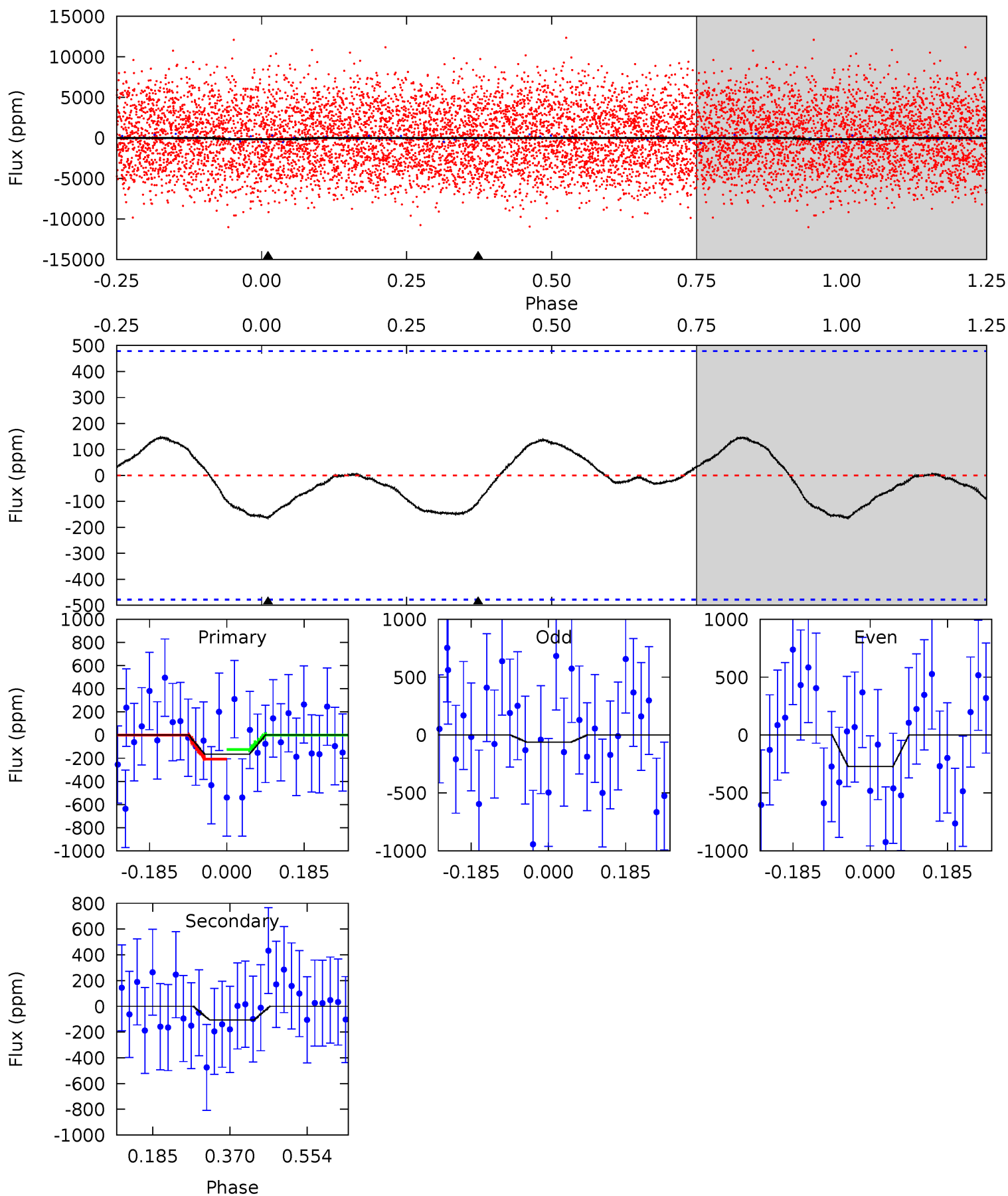
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

005775232-02, P = 0.533708 Days, E = 131.512068 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
1.53	0.97	0	0	4.43	1.33	0.48	1.53	1.53	0.97	0.97	0.99	1.30	0.47	0.38





### Stellar Parameters For KIC 005775232

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7113^{+160}_{-249}$	$3.849^{+0.330}_{-0.132}$	$0.070^{+0.200}_{-0.350}$	$2.659^{+0.555}_{-1.030}$	$1.819^{+0.200}_{-0.400}$	$0.136^{+0.308}_{-0.054}$
	+2%/-4%	+9%/-3%	+286%/-500%	+21%/-39%	+11%/-22%	+226%/-39%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 005775232-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 1000000$	$18.04^{+21.21}_{-12.19}$	$5621^{+384}_{-558}$	$-4831^{+50874}_{-31810}$	$-0.072^{+91.048}_{-62.038}$
Alt.	$-105 \pm 108$	$19.22^{+21.19}_{-13.49}$	$5600^{+393}_{-593}$	$-4505^{+1719}_{-405}$	$0.024^{+0.263}_{-0.027}$

$T_{max}$  = 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

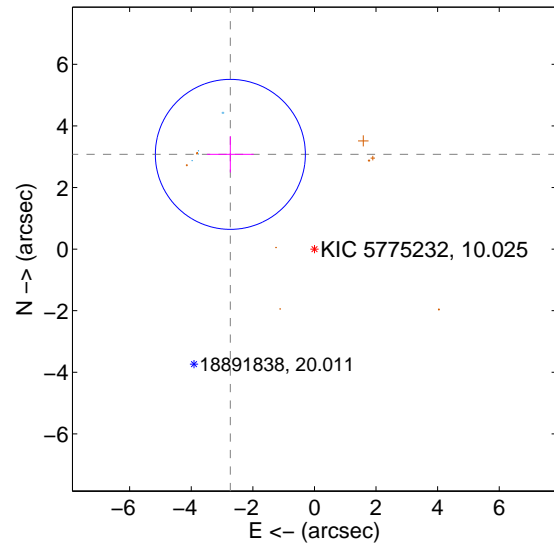
Supplemental centroid analysis for 005775232-02. **Kepler magnitude: 10.03.** Transit SNR -1.00

There are 4 quarters with good PRF difference image offsets

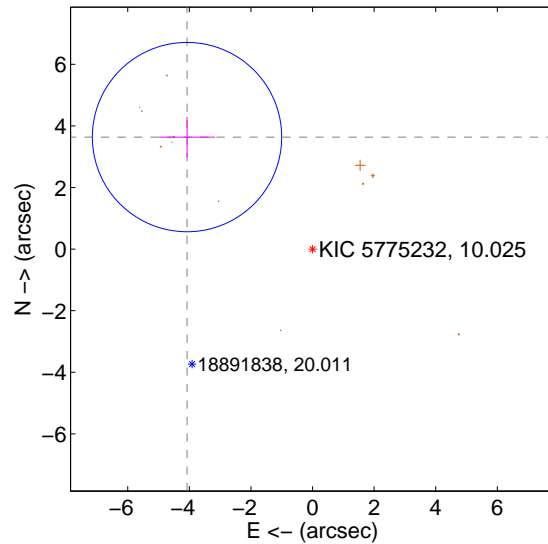
The OOT PRF centroid is offset from the target star catalog position by about 2.14 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$4.113 \pm 0.812$	<b>5.07</b>	$2.730 \pm 0.757$	$3.076 \pm 0.588$
PRF-fit source offset from KIC position	$5.461 \pm 1.024$	<b>5.33</b>	$4.074 \pm 0.913$	$3.637 \pm 0.655$
photometric centroid source offset	$0.59 \pm 0.10$	<b>5.84</b>	$0.26 \pm 0.12$	$0.53 \pm 0.10$

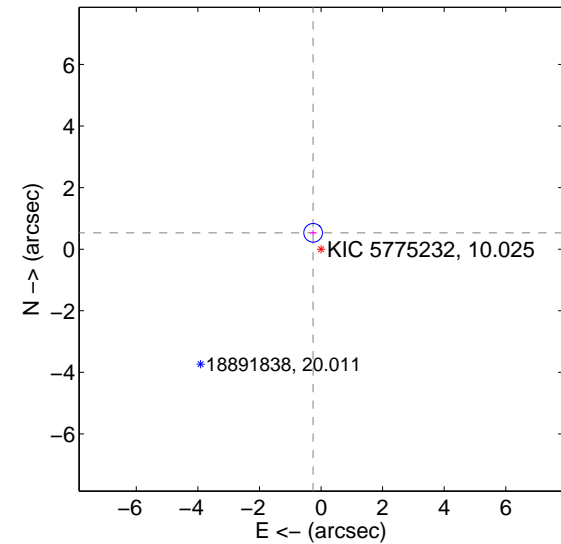
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



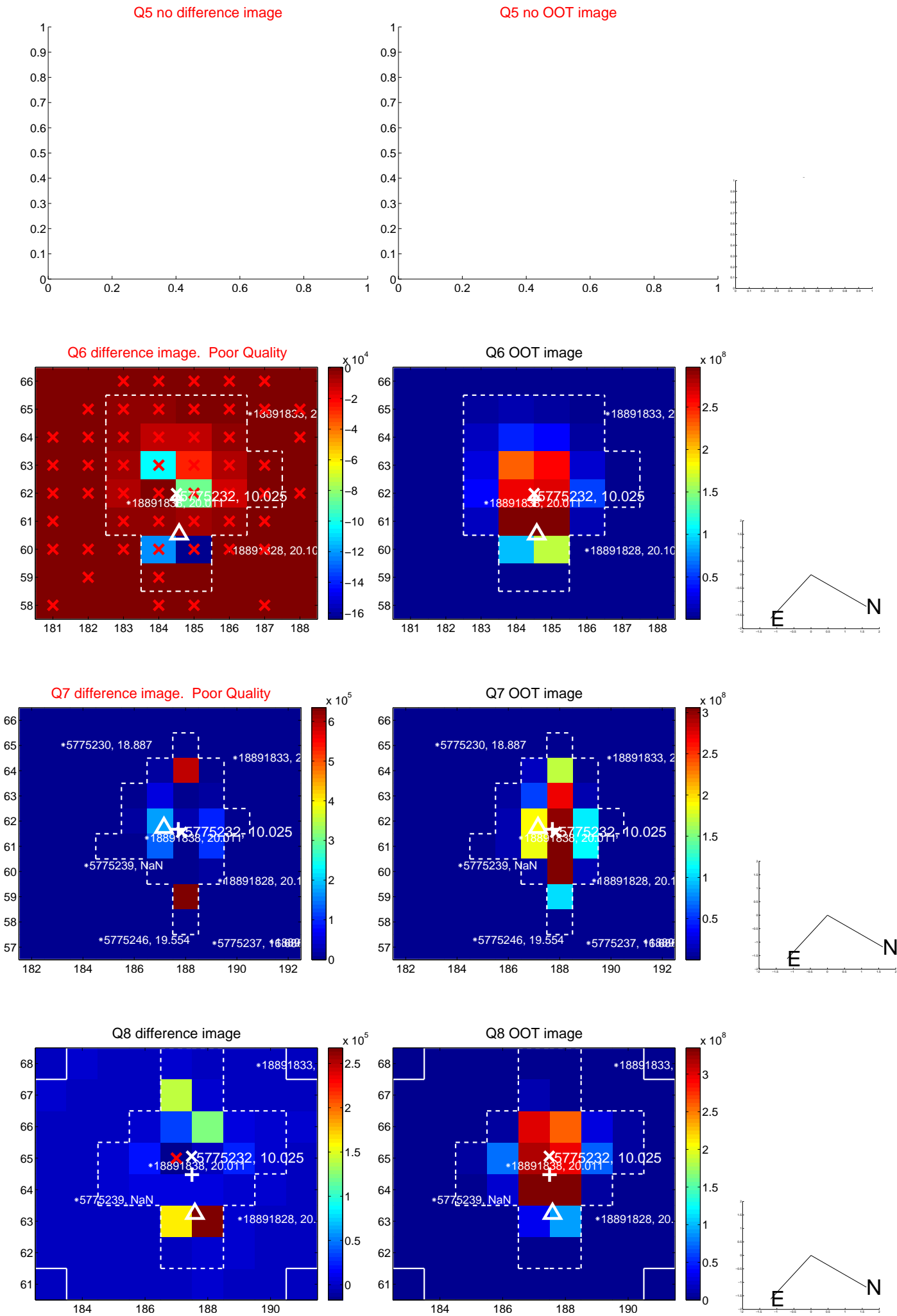
offset from photometric centroids



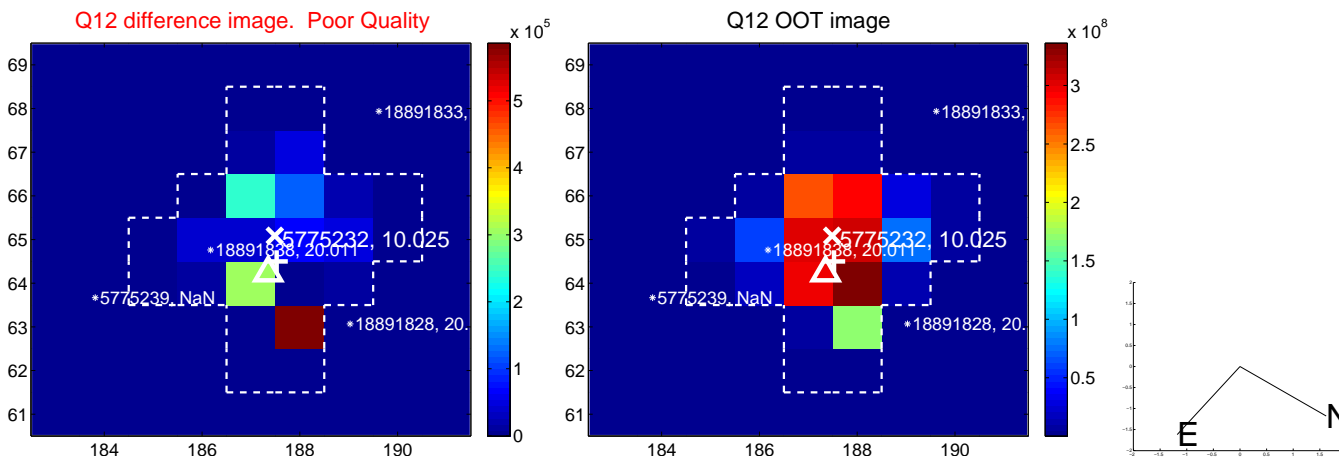
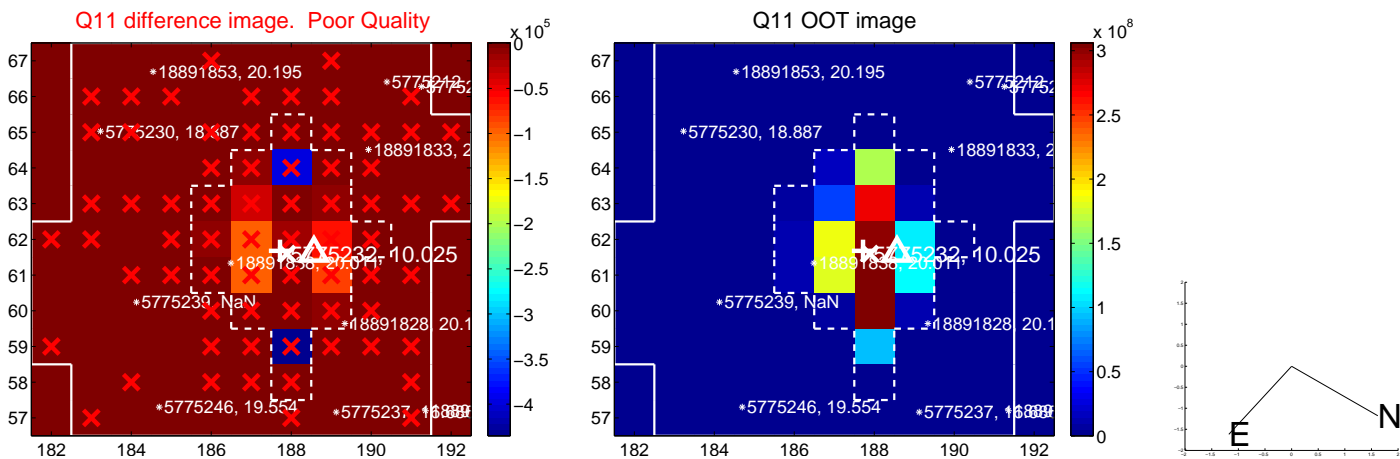
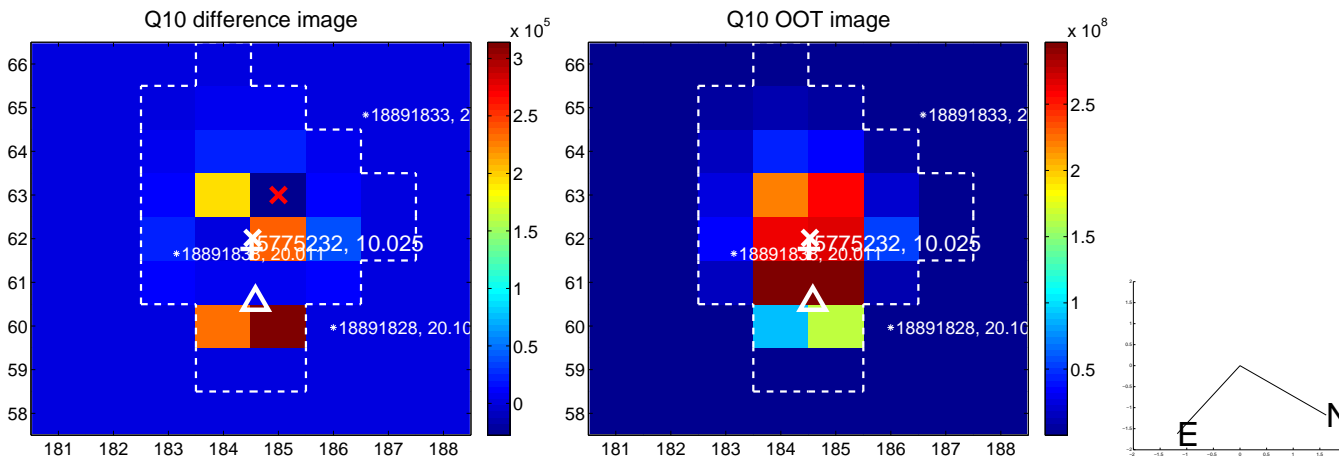
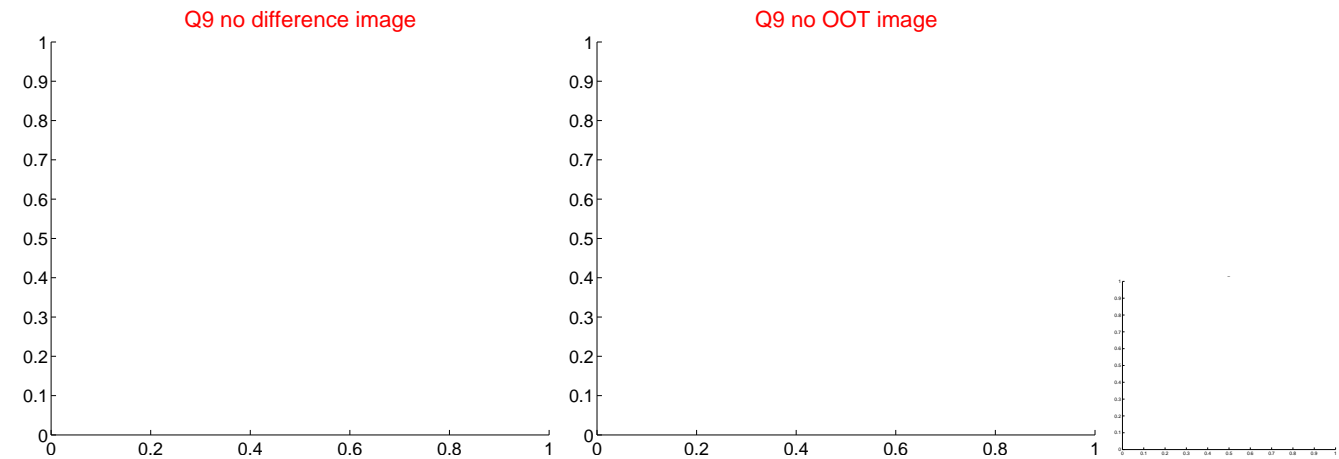
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



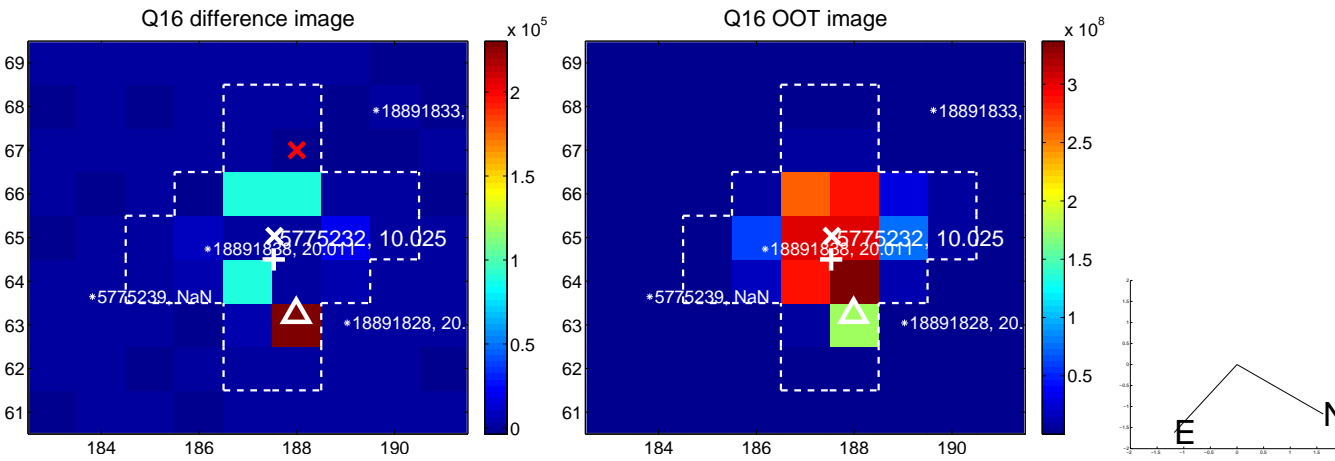
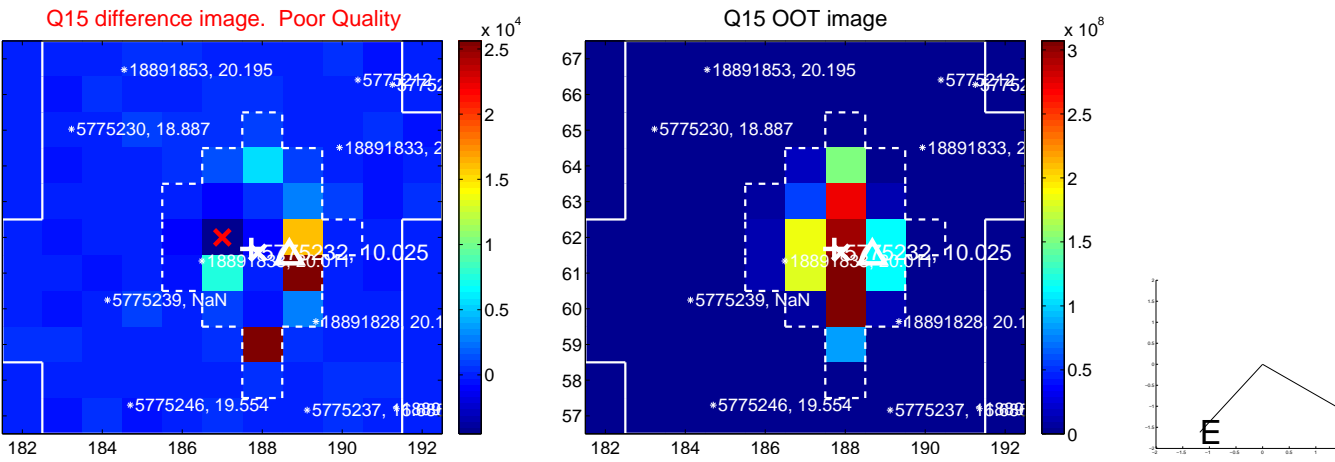
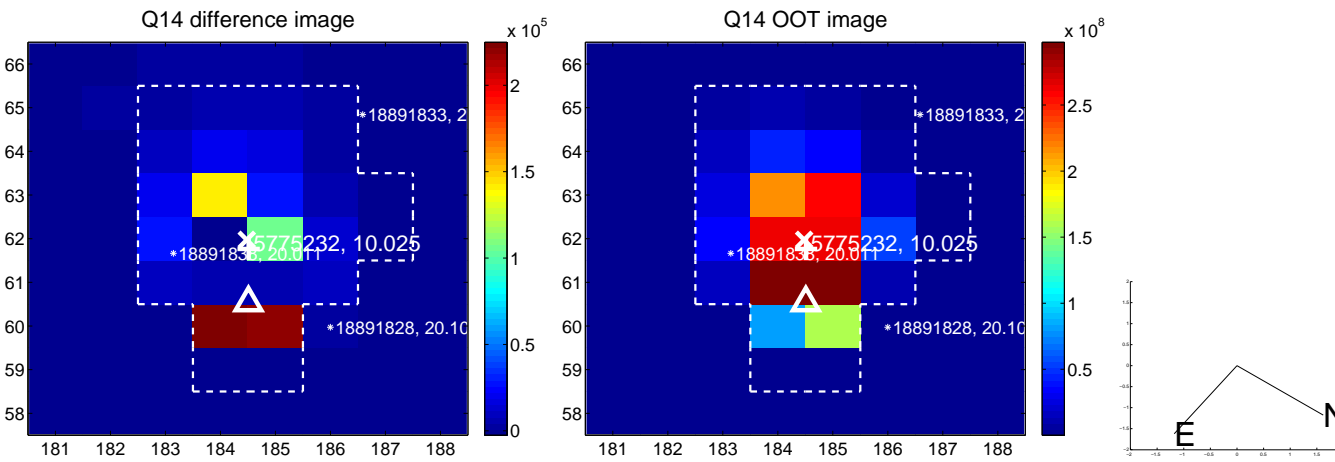
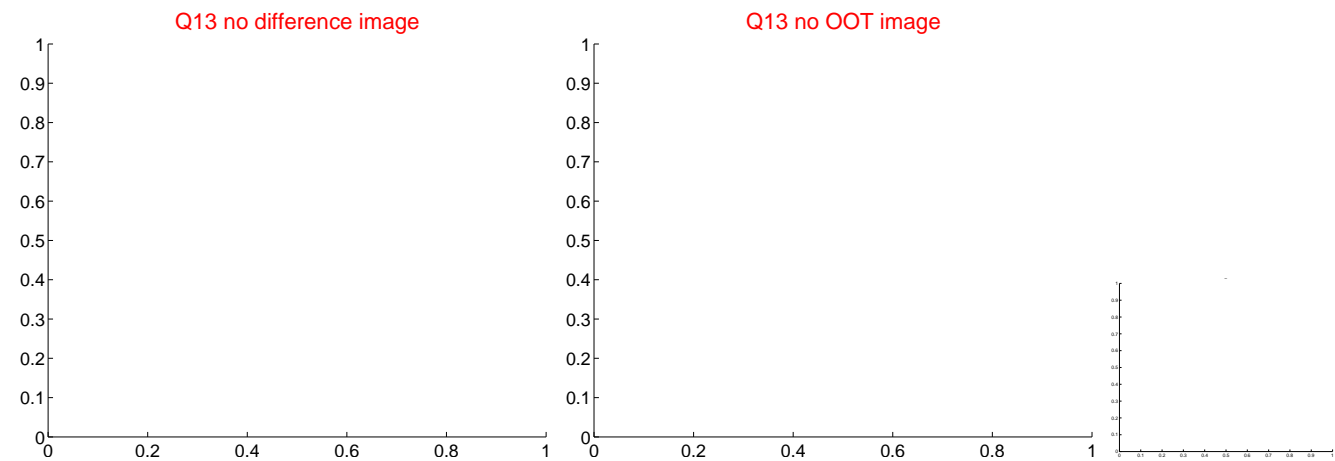
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

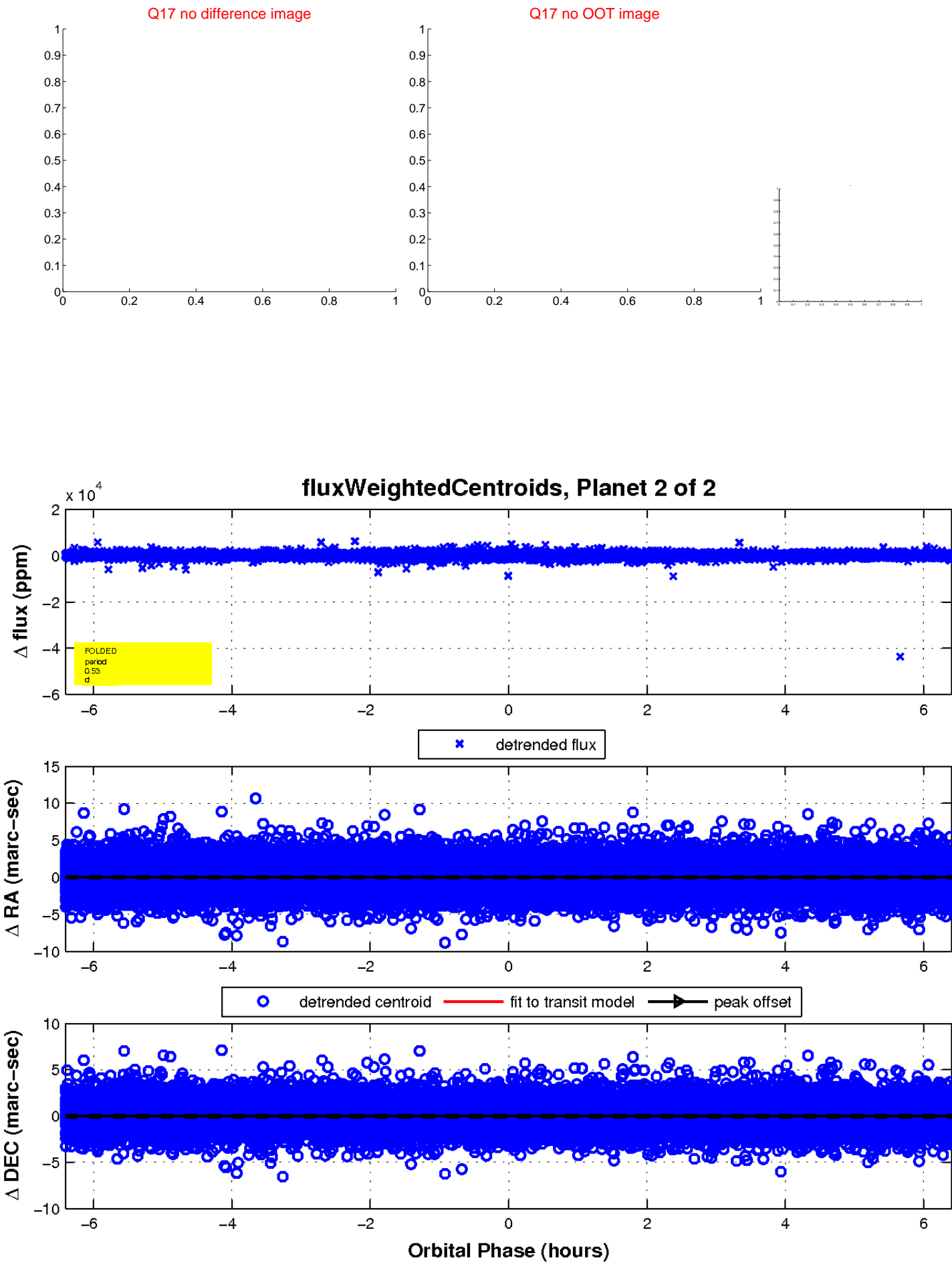


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

