

# KIC 005775128

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005775128-01	OBS	No	0.956554	131.924076	65.1	2.148	13.7	12.4	4.50	11502	4.10	382816.51
005775128-02	OBS	No	1.991070	133.041707	51.8	16.067	10.2	5.5	4.50	11502	3.49	144041.53

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005775128-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
005775128-02	OBS	FP	0.00	1	0	0	0	LPP_DV

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

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

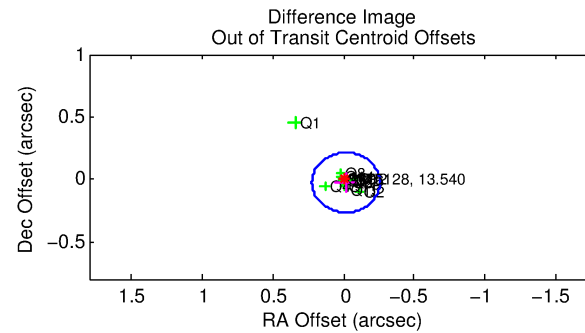
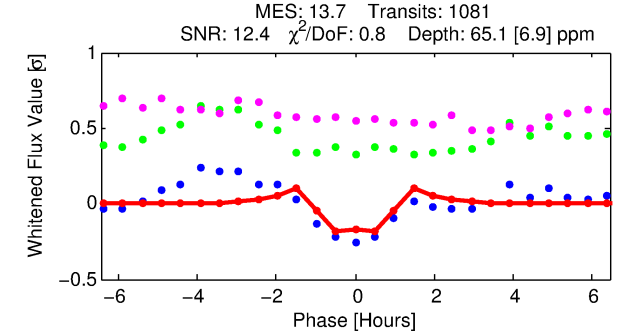
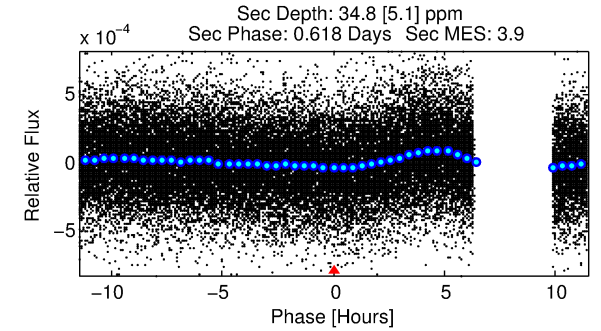
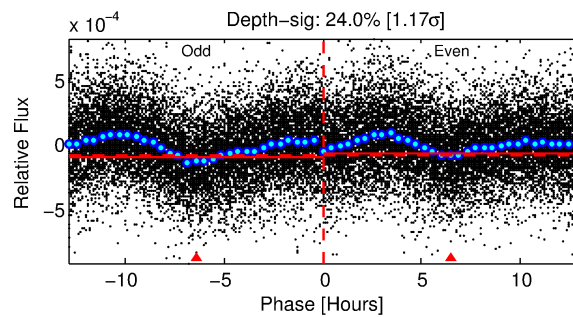
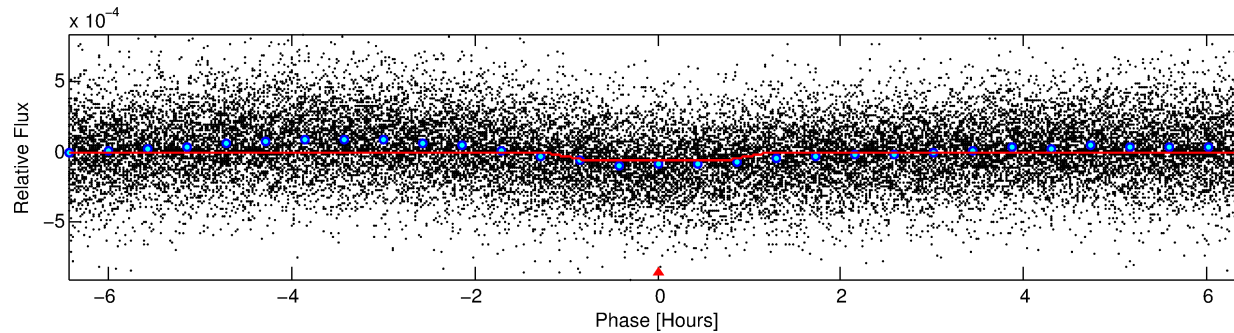
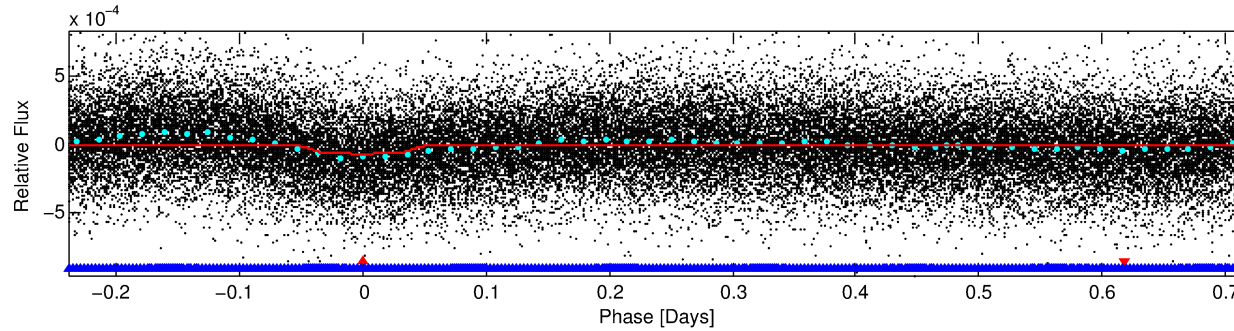
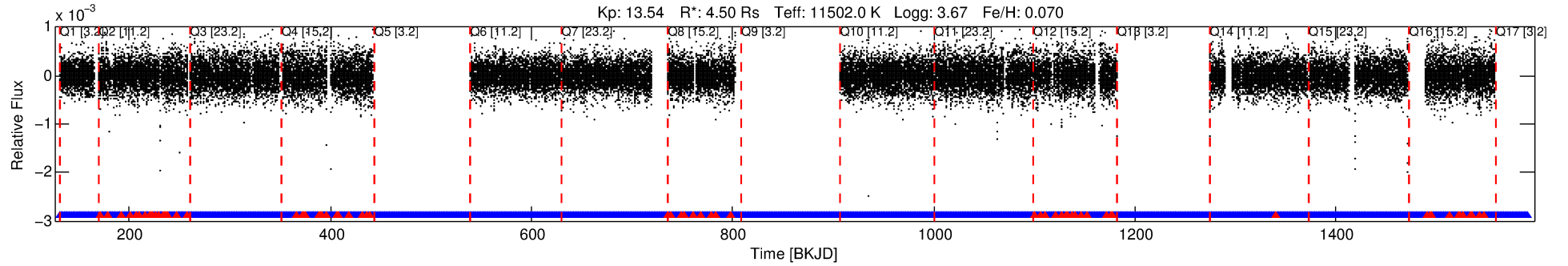
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005775128-01

No Significant Match Found

# DV One-Page Summary

KIC: 5775128 Candidate: 1 of 2 Period: 0.957 d



## DV Fit Results:

Period = 0.95655 [0.00001] d  
Epoch = 131.9241 [0.0014] BKJD  
Rp/R\* = 0.0084 [0.0012]  
a/R\* = 1.92 [1.58]  
b = 0.88 [0.29]  
Seff = 382816.51 [418951.40]  
Teq = 6343 [1735] K  
Rp = 4.10 [2.56] Re  
a = 0.0288 [0.0166] AU  
Ag = 0.94 [0.92] [-0.06 $\sigma$ ]  
Teffp = 9669 [1633] K [1.40 $\sigma$ ]

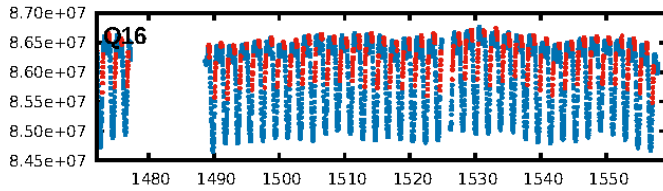
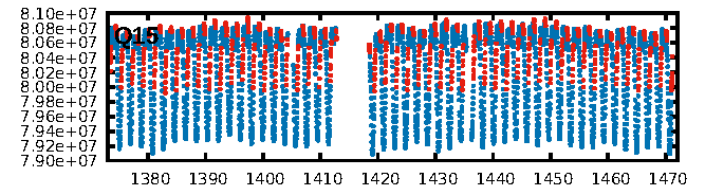
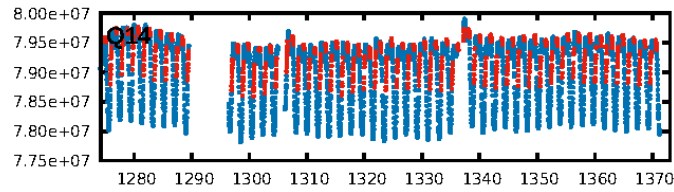
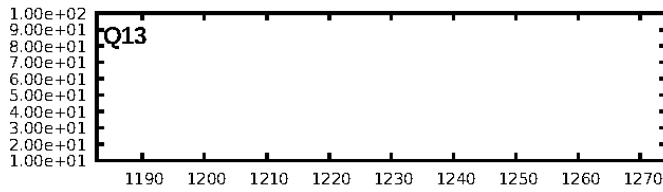
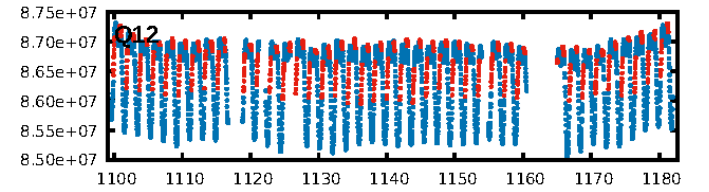
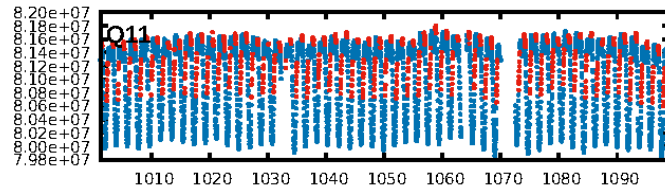
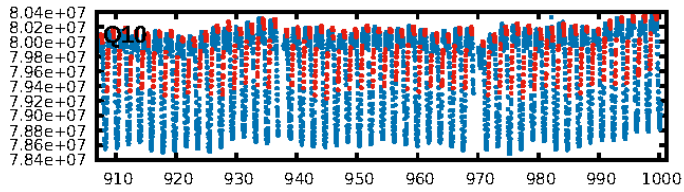
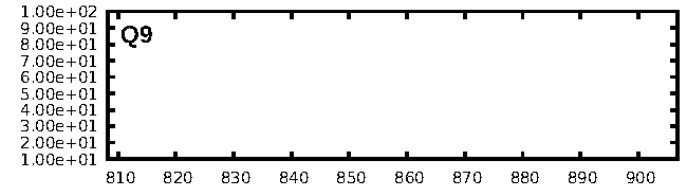
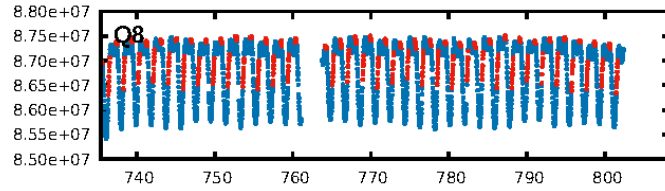
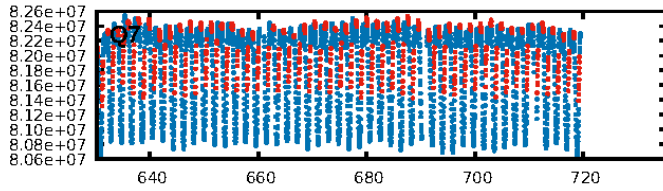
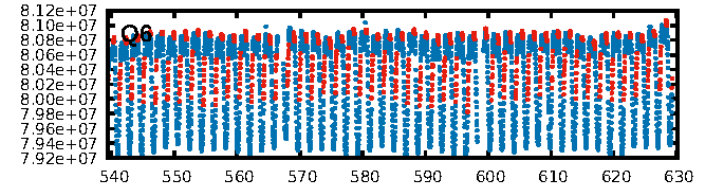
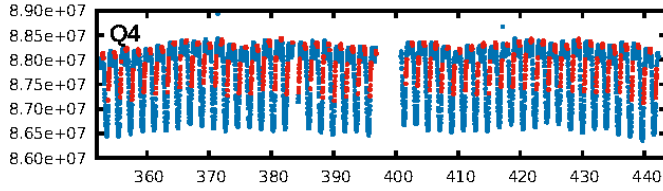
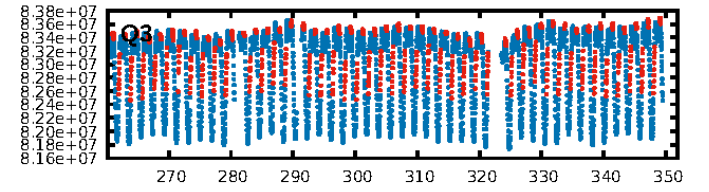
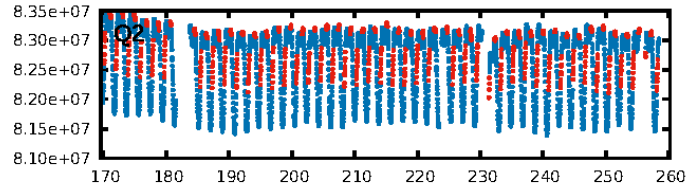
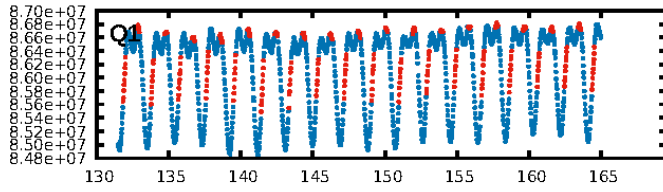
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 87.4% [1.53 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.93 [975/1046]  
GhostDiagnostic-chr: 2.909  
Centroid-sig: 40.4%  
Centroid-so: 0.395 arcsec [0.78 $\sigma$ ]  
OotOffset-rm: 0.031 arcsec [0.39 $\sigma$ ]  
OotOffset-st: 4/4/4/1 [13]  
KicOffset-rm: 0.227 arcsec [2.71 $\sigma$ ]  
KicOffset-st: 4/4/4/1 [13]  
DiffImageQuality-fgm: 0.00 [0/13]  
DiffImageOverlap-fno: 1.00 [13/13]

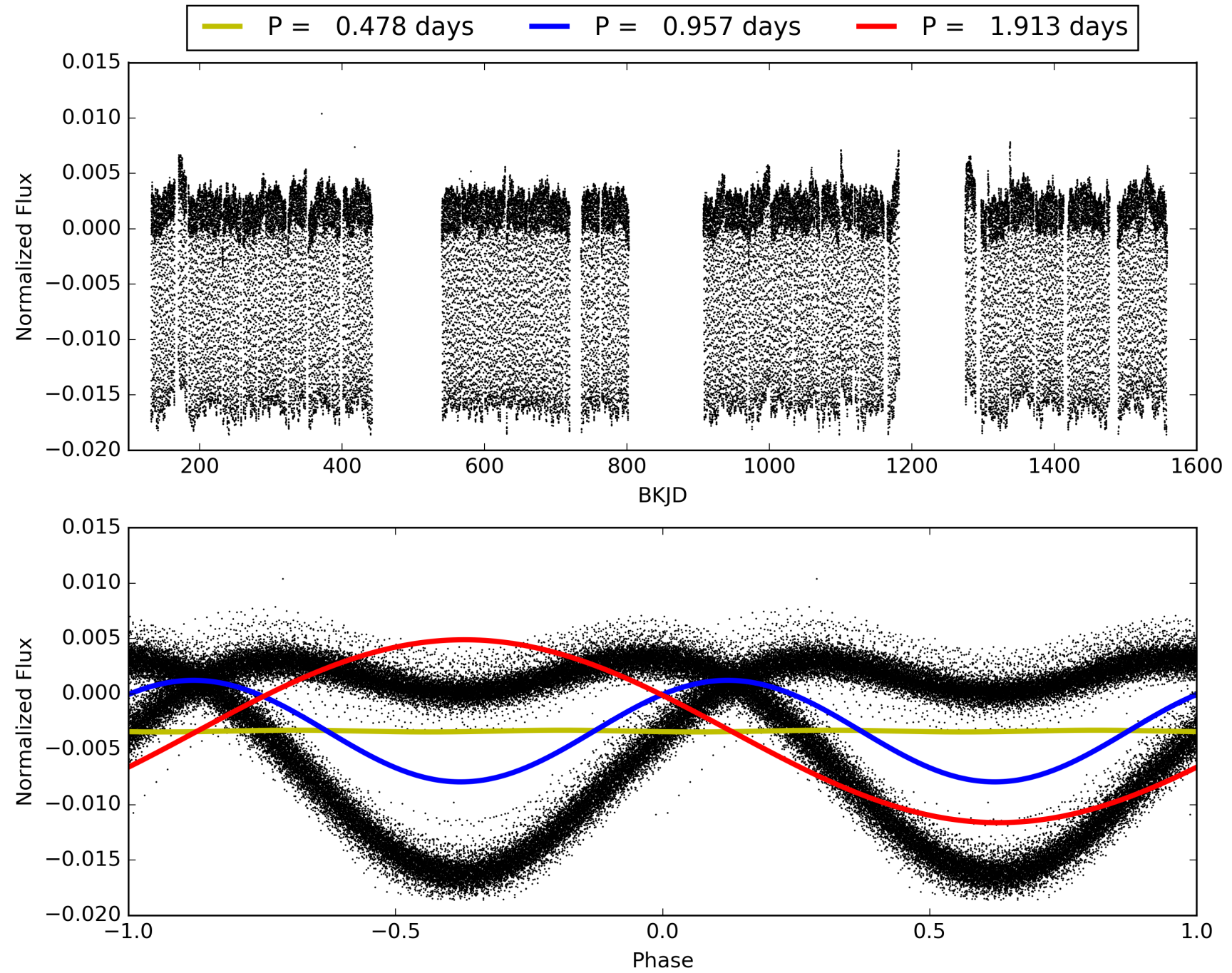
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:28:48 Z

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

# TCE 005775128-01, PDC Light Curves



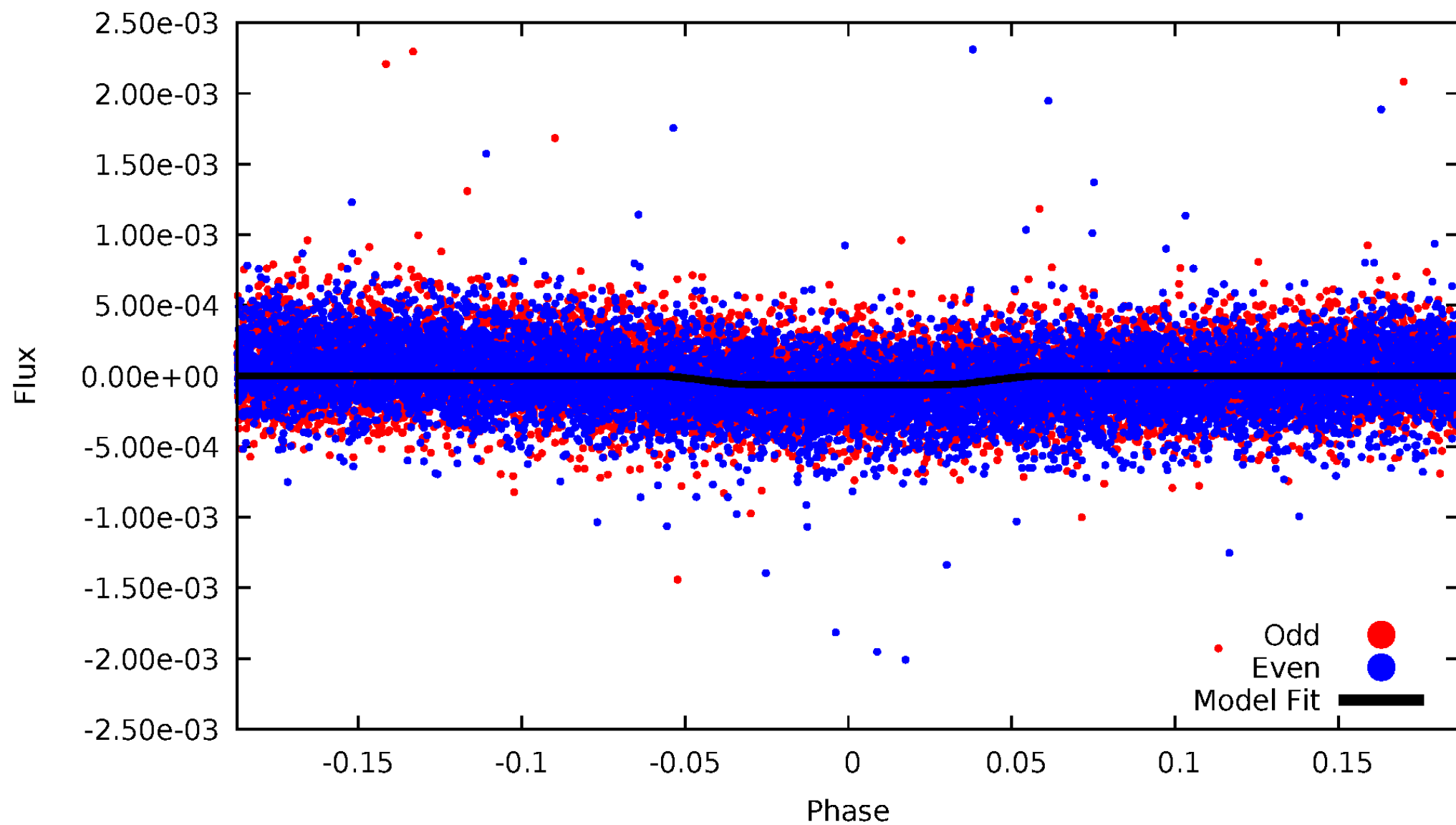
TCE 005775128-01





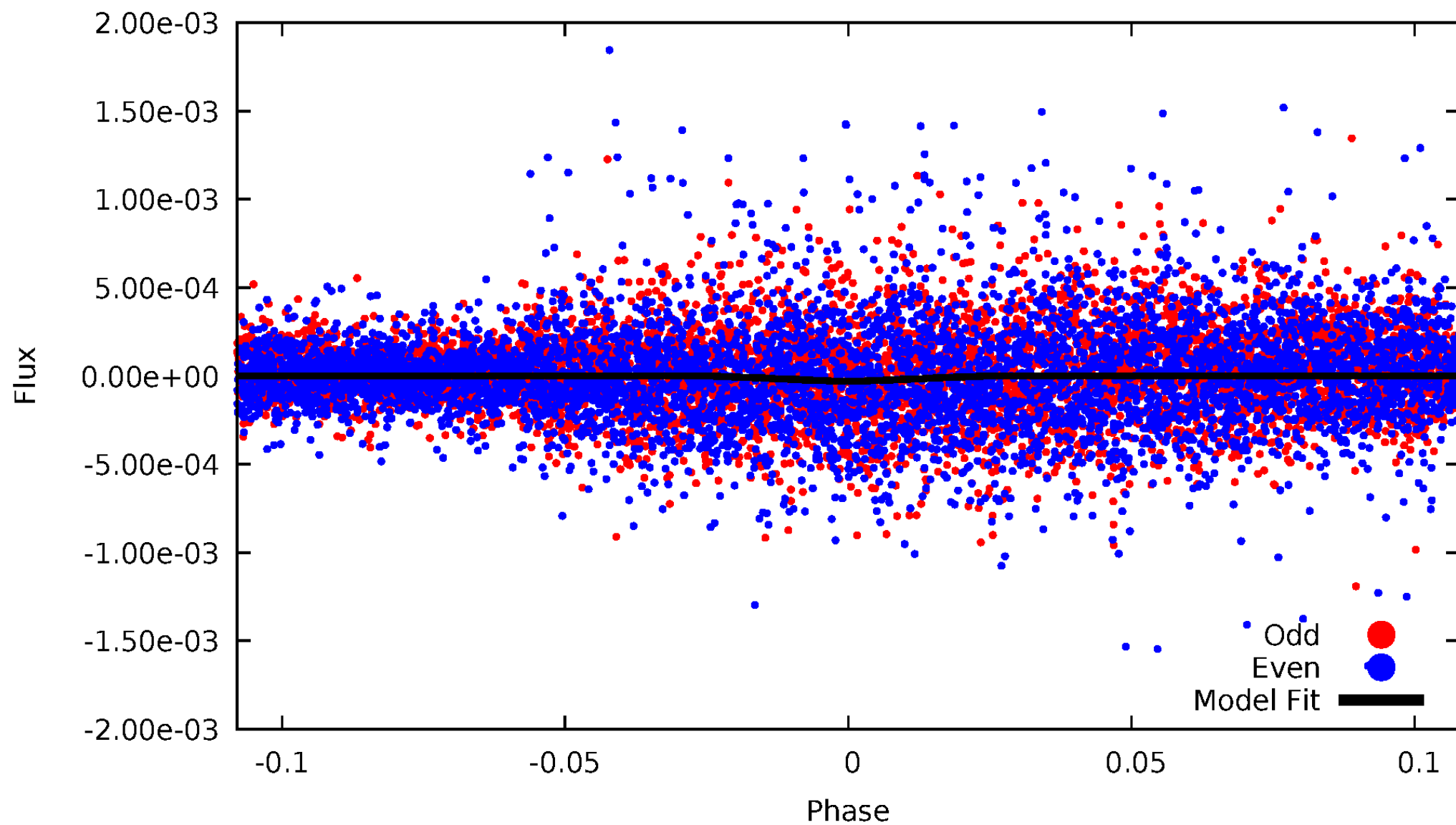
# DV Odd/Even

TCE 005775128-01



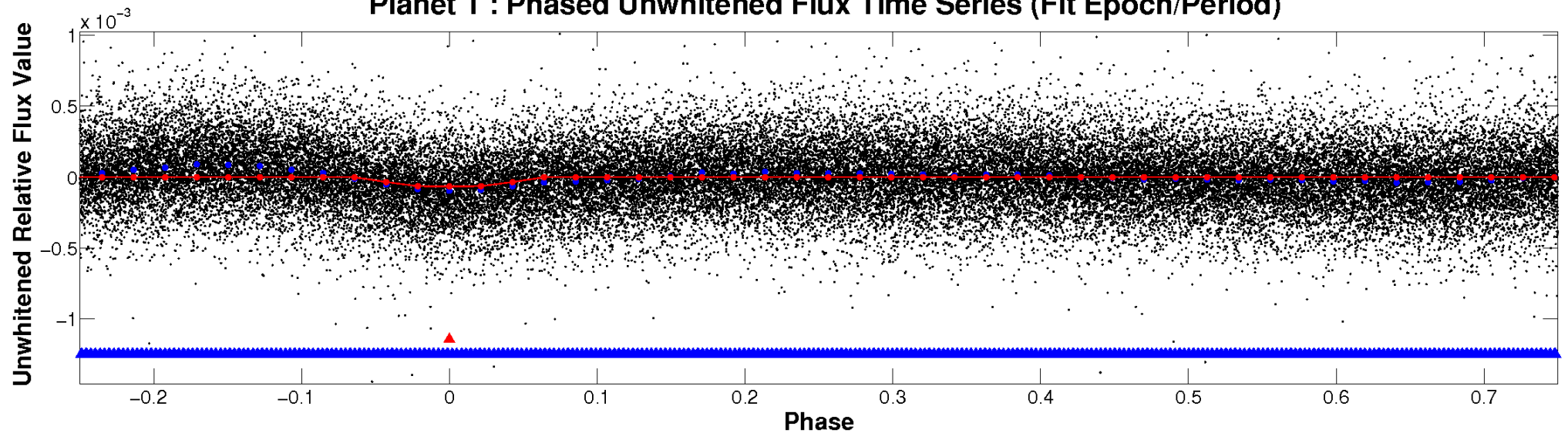
# ALT Odd/Even

TCE 005775128-01

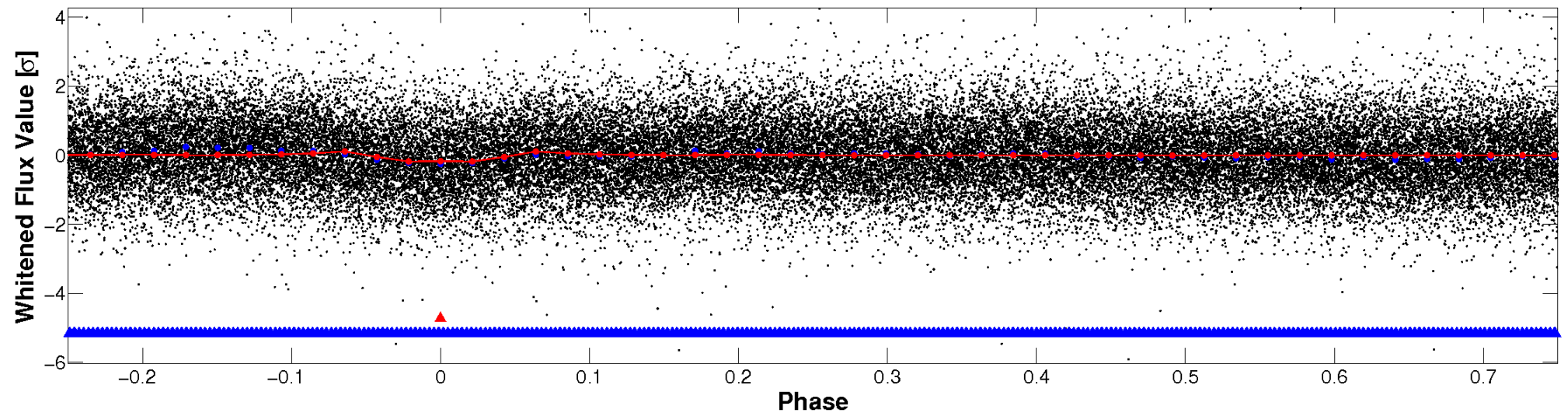


# Non-Whitened Vs. Whitened Light Curve

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

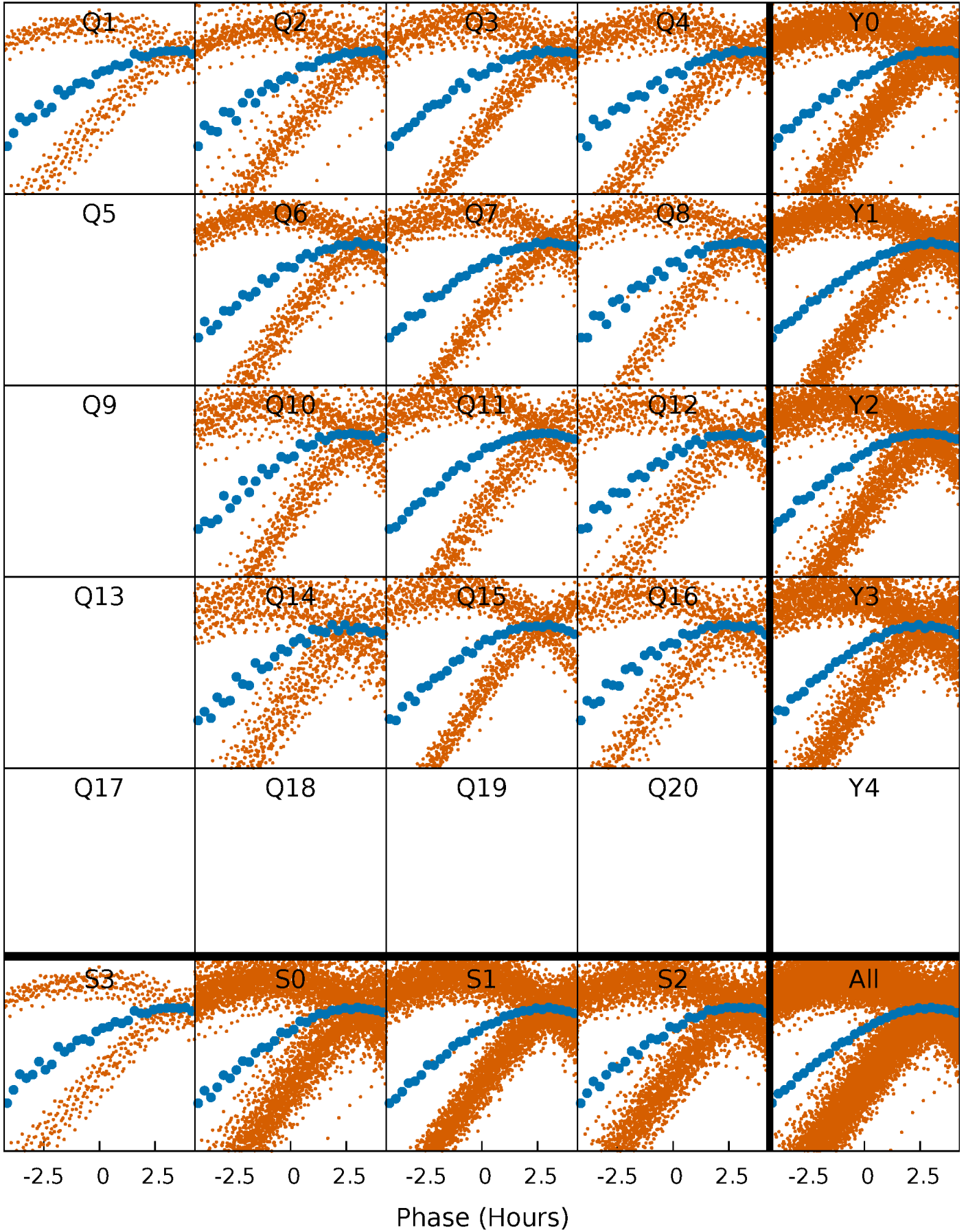


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

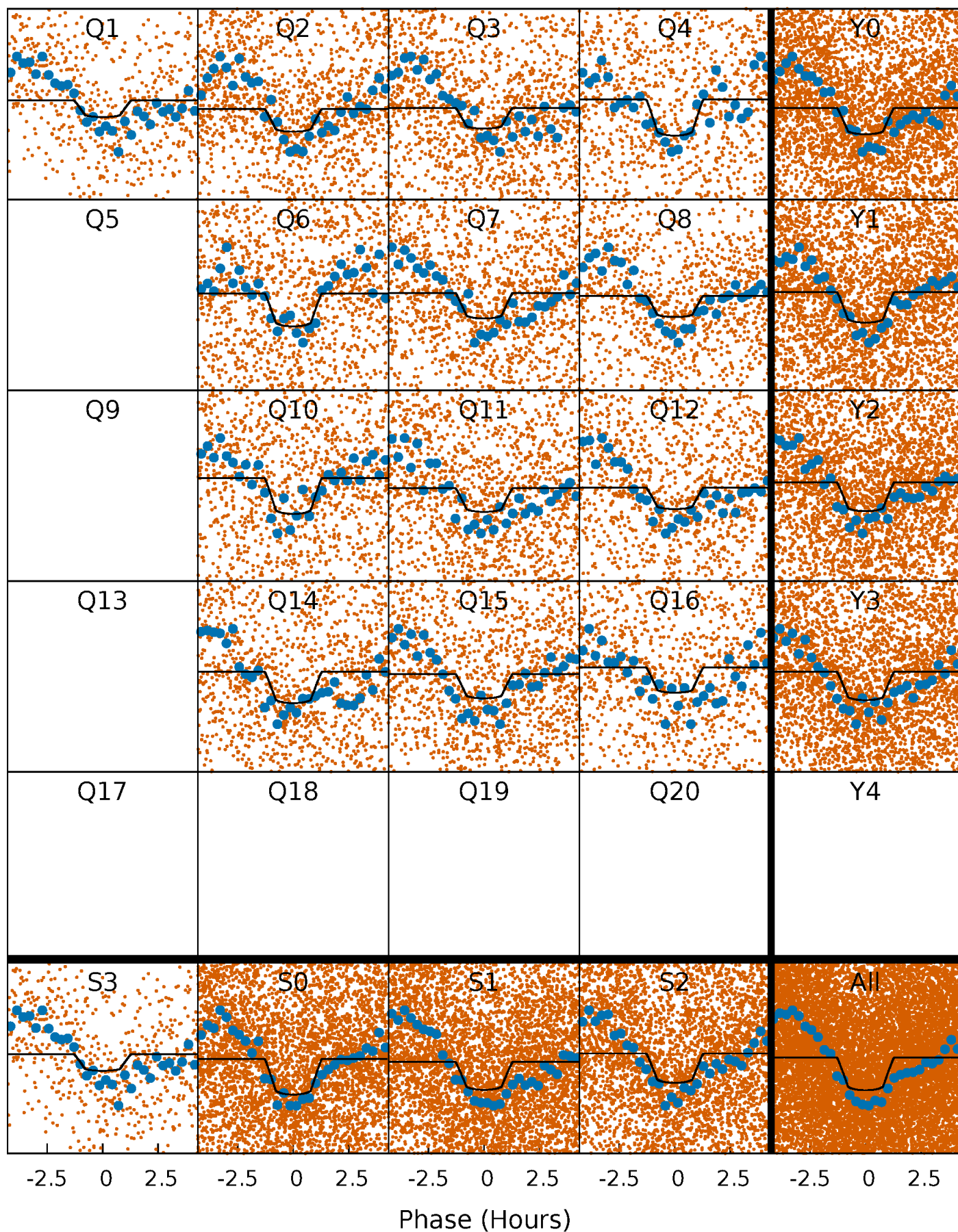
TCE 005775128-01 P= 0.956554 Days  $T_0=131.924076$  (BKJD)





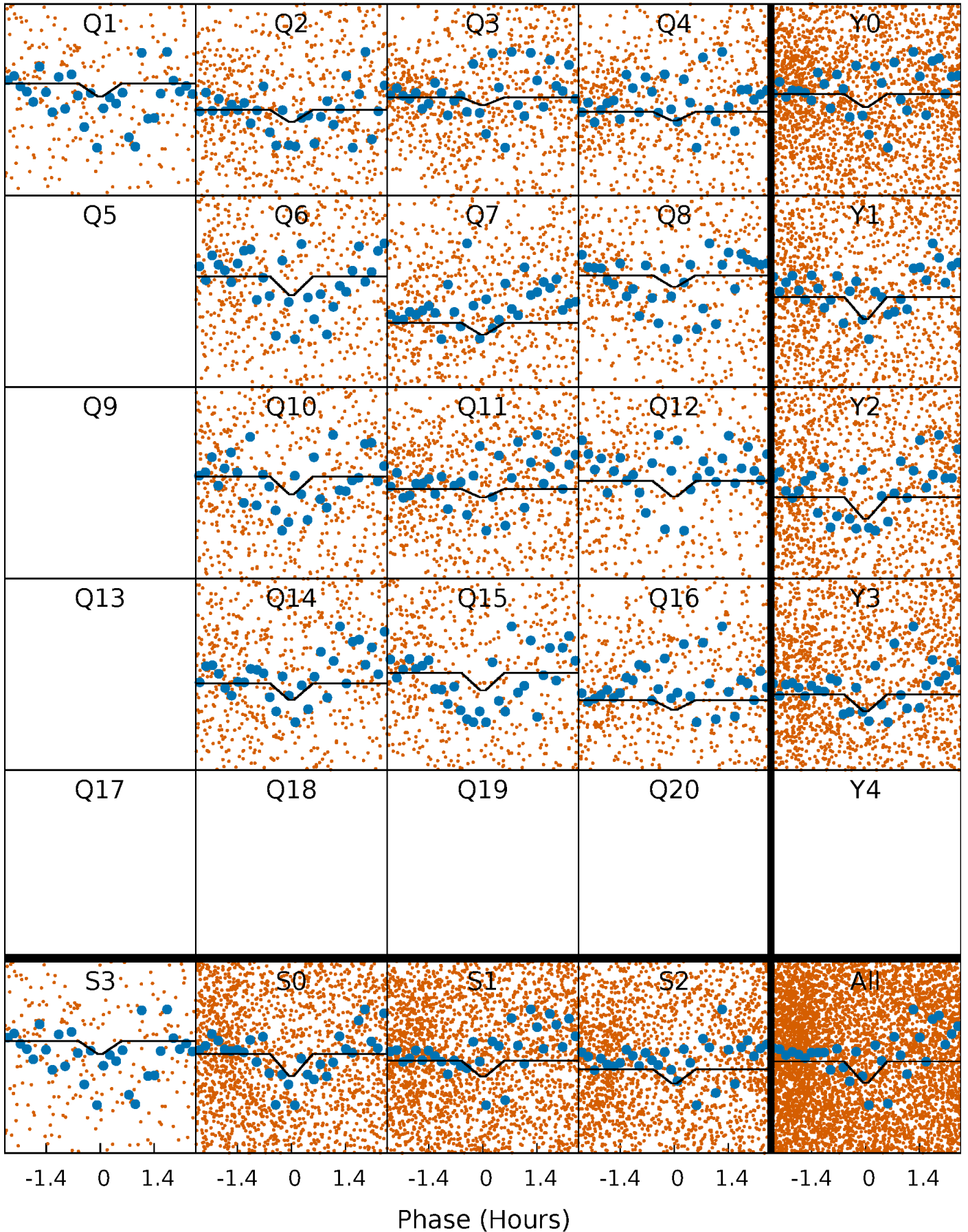
# DV Quarter-Phased Transit Curves

TCE 005775128-01 P= 0.956554 Days  $T_0=131.924076$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

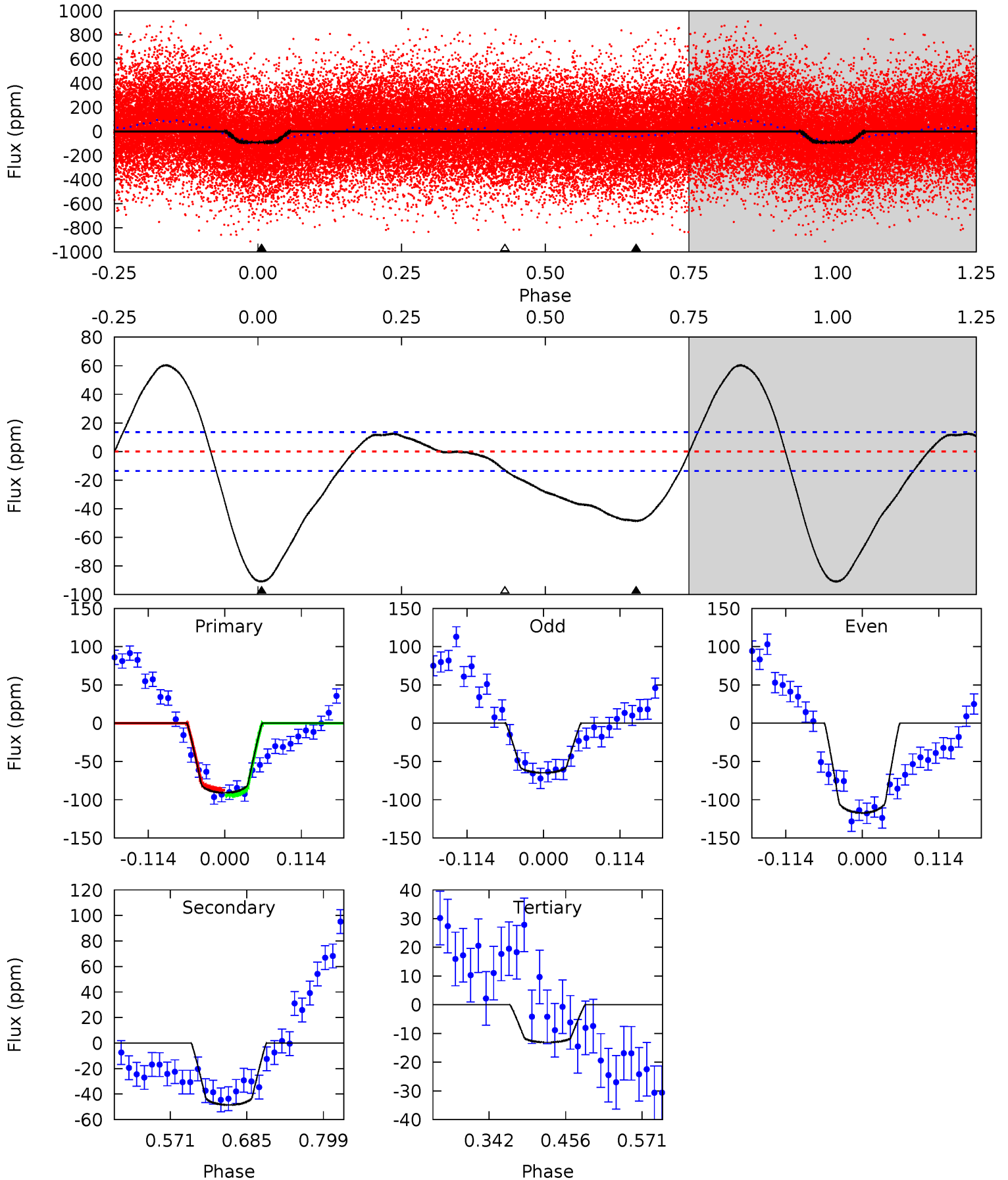
TCE 005775128-01 P= 0.956531 Days  $T_0=131.919442$  (BKJD)



# DV Model-Shift Uniqueness Test

005775128-01, P = 0.956554 Days, E = 130.967522 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
30.5	16.3	4.39	0	4.54	1.58	8.70	26.1	30.5	11.9	16.3	8.77	1.04	0.40	1.08

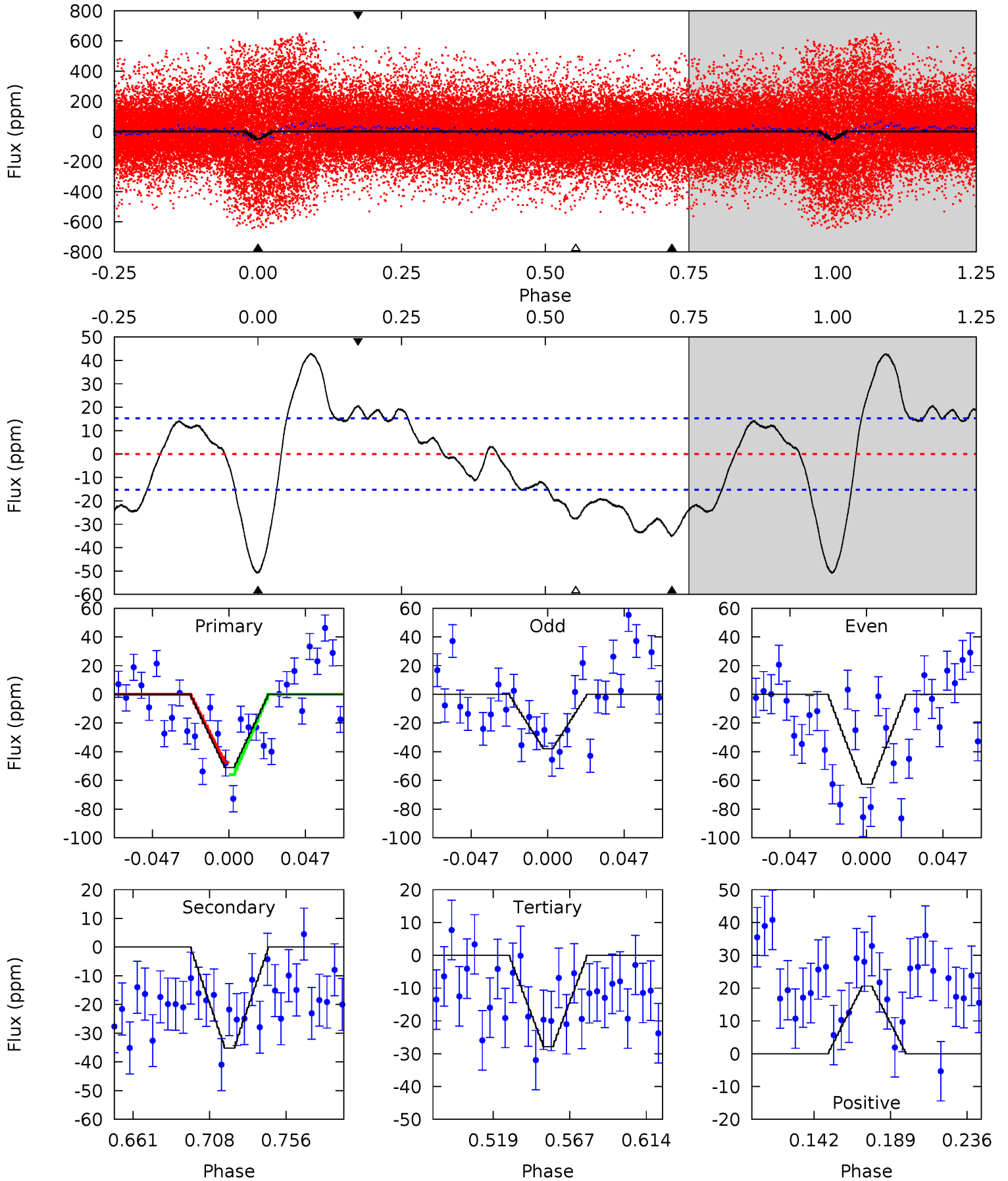




# Alt Model-Shift Uniqueness Test

005775128-01, P = 0.956531 Days, E = 130.962911 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
15.8	10.9	8.62	6.38	4.72	1.98	5.68	7.16	9.40	2.28	4.52	3.82	0.53	0.46	1.32



### Stellar Parameters For KIC 005775128

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$11502^{+457}_{-1715}$	$3.673^{+0.536}_{-0.100}$	$0.070^{+0.250}_{-0.600}$	$4.497^{+0.483}_{-2.740}$	$3.472^{+0.069}_{-1.353}$	$0.054^{+0.407}_{-0.017}$
	+4%/-15%	+15%/-3%	+357%/-857%	+11%/-61%	+2%/-39%	+757%/-31%
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 005775128-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-49 \pm 3$	$3.79^{+0.92}_{-1.18}$	$8286^{+995}_{-1461}$	$8937^{+1530}_{-1338}$	$1.511^{+1.404}_{-0.524}$
Alt.	$-35 \pm 3$	$2.29^{+0.81}_{-0.75}$	$8311^{+984}_{-1505}$	$11728^{+3661}_{-2486}$	$2.889^{+3.372}_{-1.259}$

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



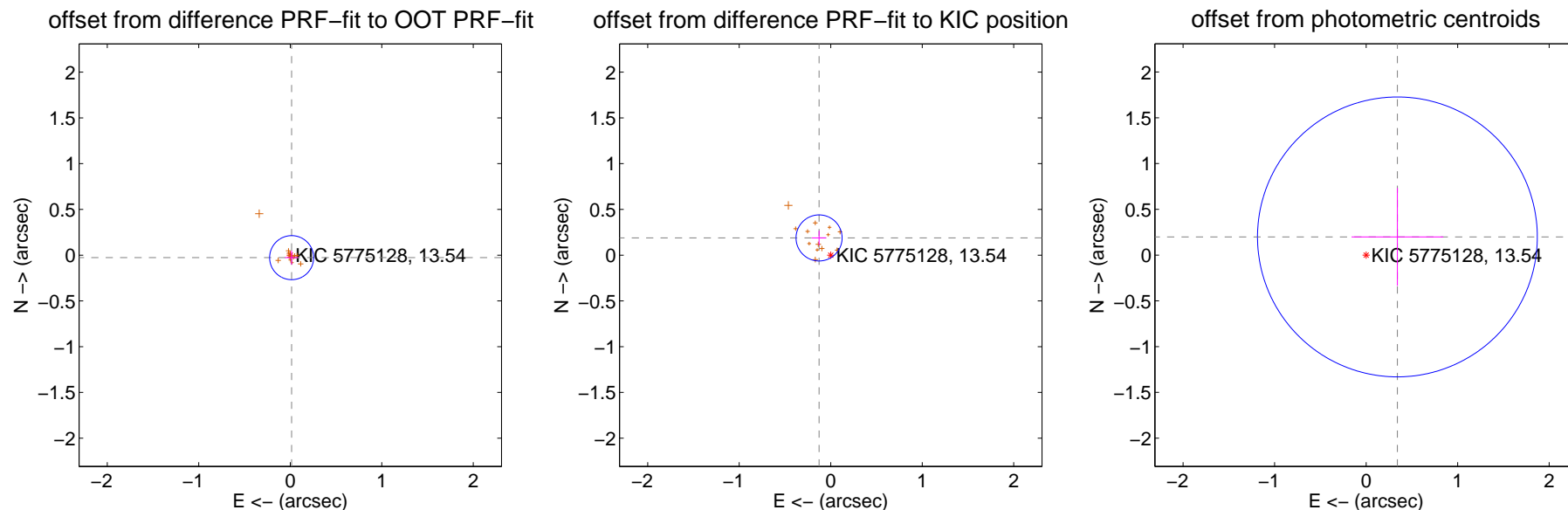
## DV Centroid Data

Supplemental centroid analysis for 005775128-01. Kepler magnitude: 13.54. Transit SNR 12.36

There are 0 quarters with good PRF difference image offsets

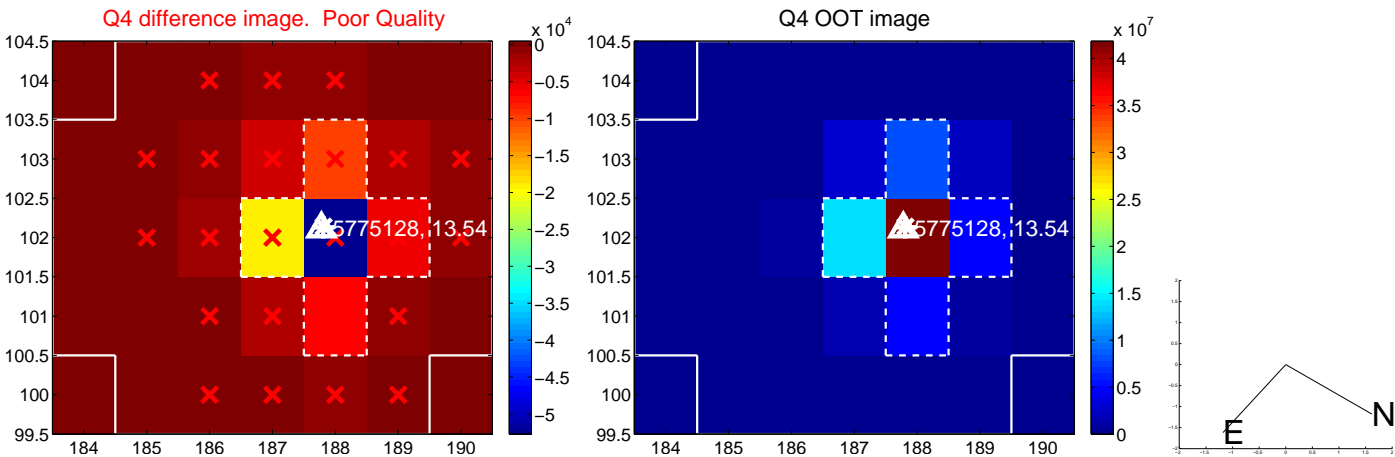
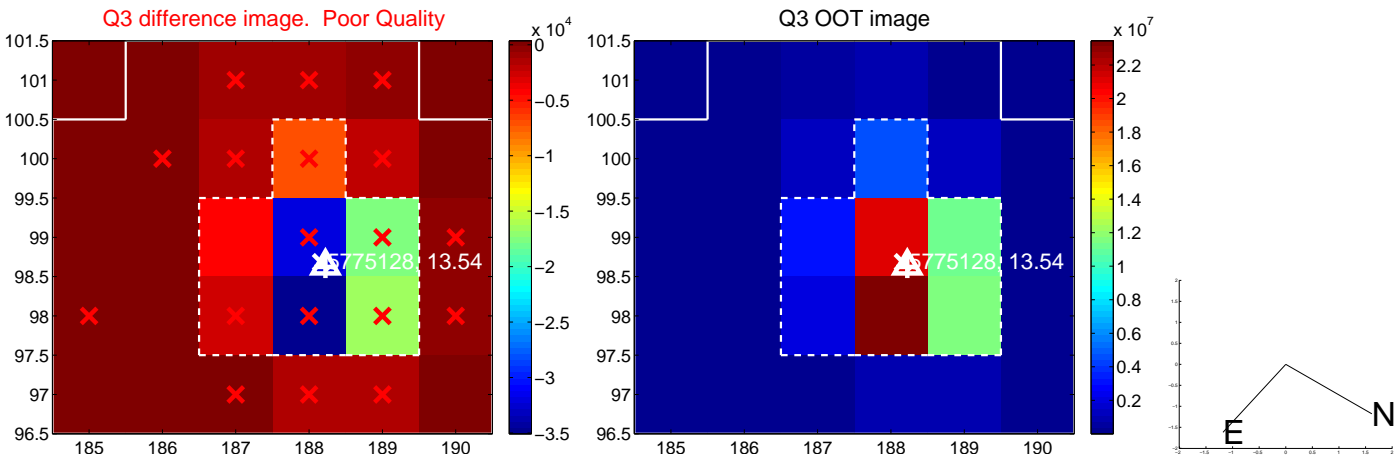
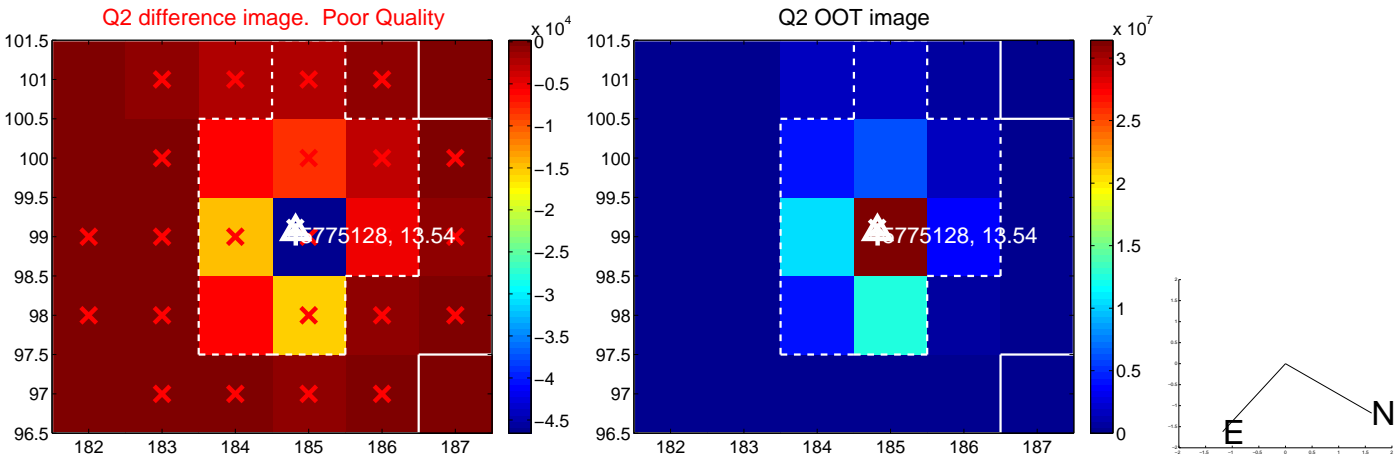
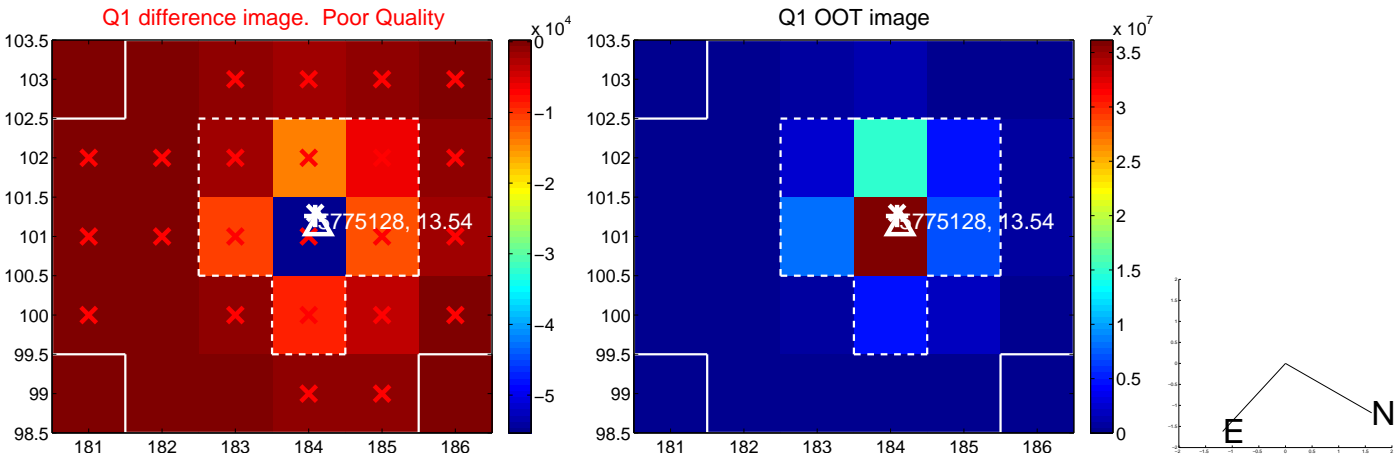
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.031 \pm 0.080$	0.39	$-0.015 \pm 0.073$	$-0.027 \pm 0.076$
PRF-fit source offset from KIC position	$0.227 \pm 0.084$	2.71	$0.127 \pm 0.079$	$0.188 \pm 0.079$
photometric centroid source offset	$0.40 \pm 0.51$	0.78	$-0.34 \pm 0.50$	$0.20 \pm 0.53$

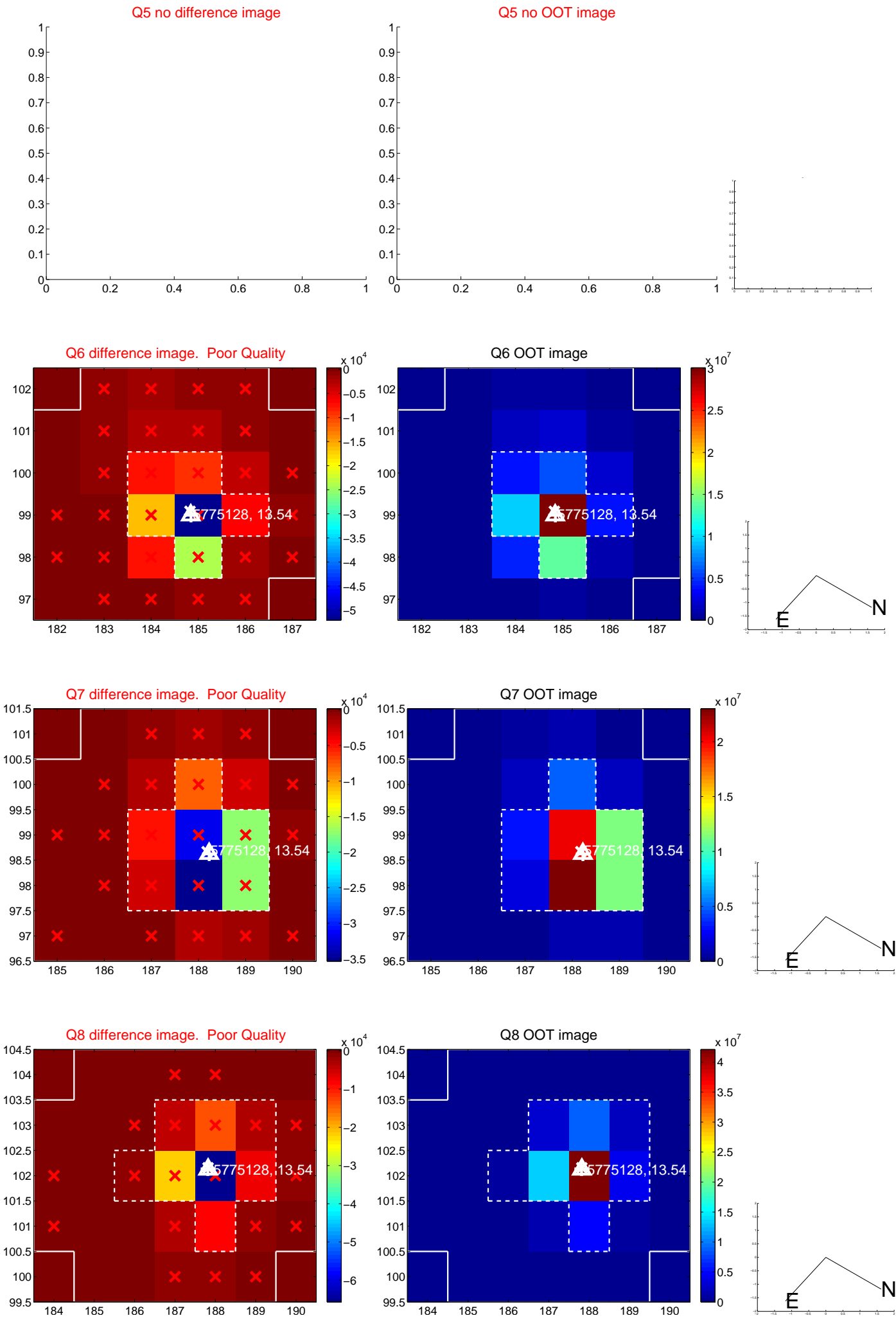


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

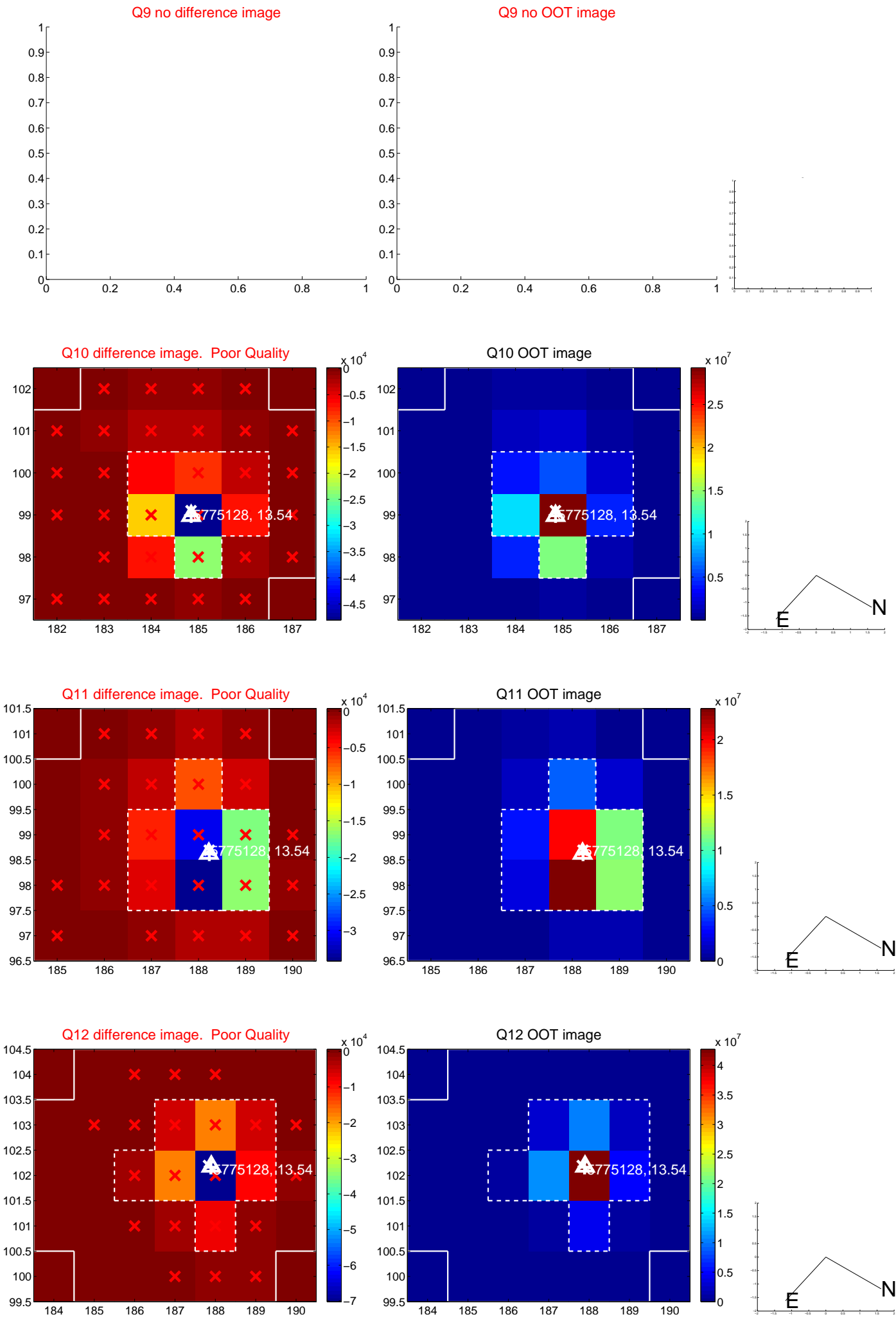
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



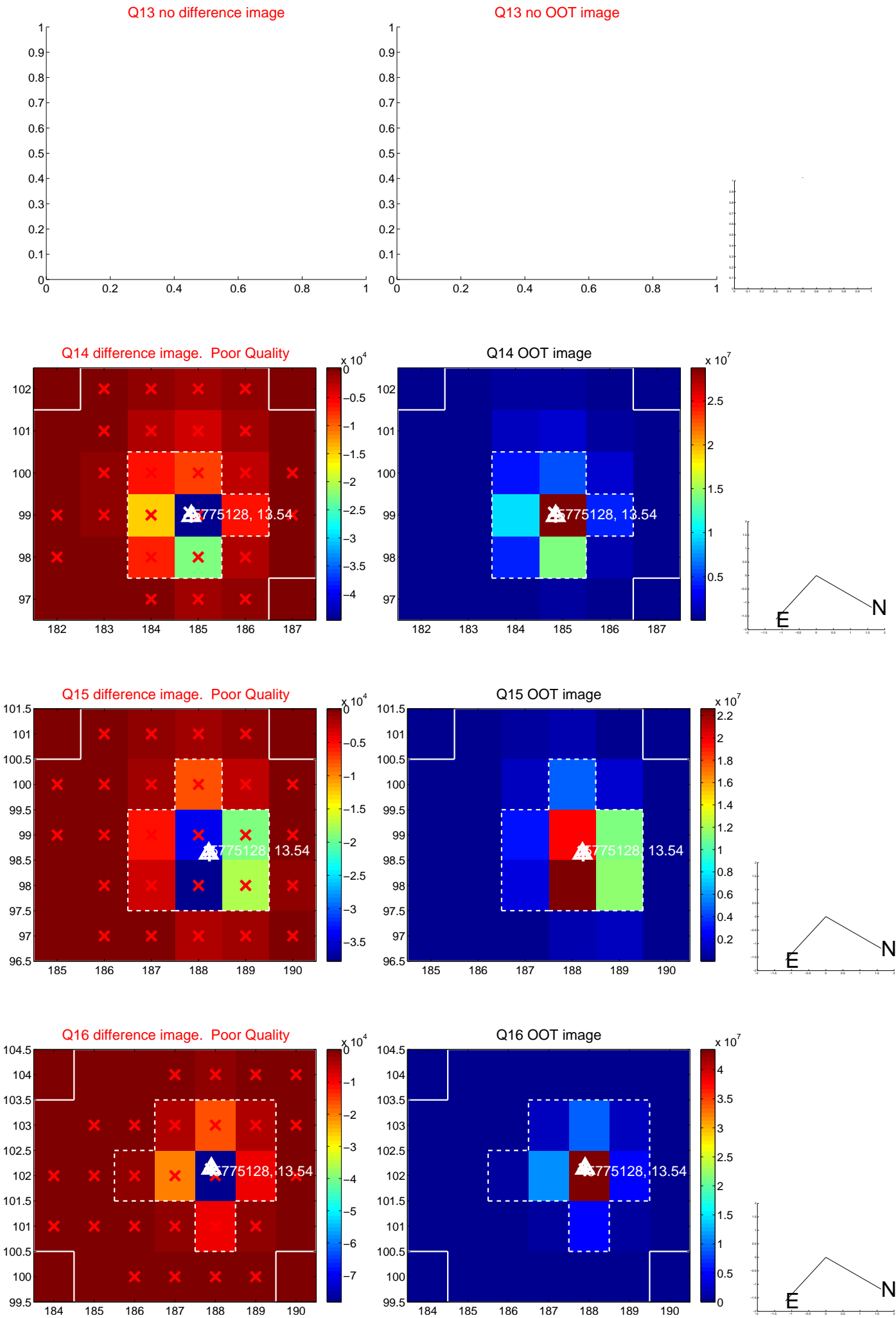
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

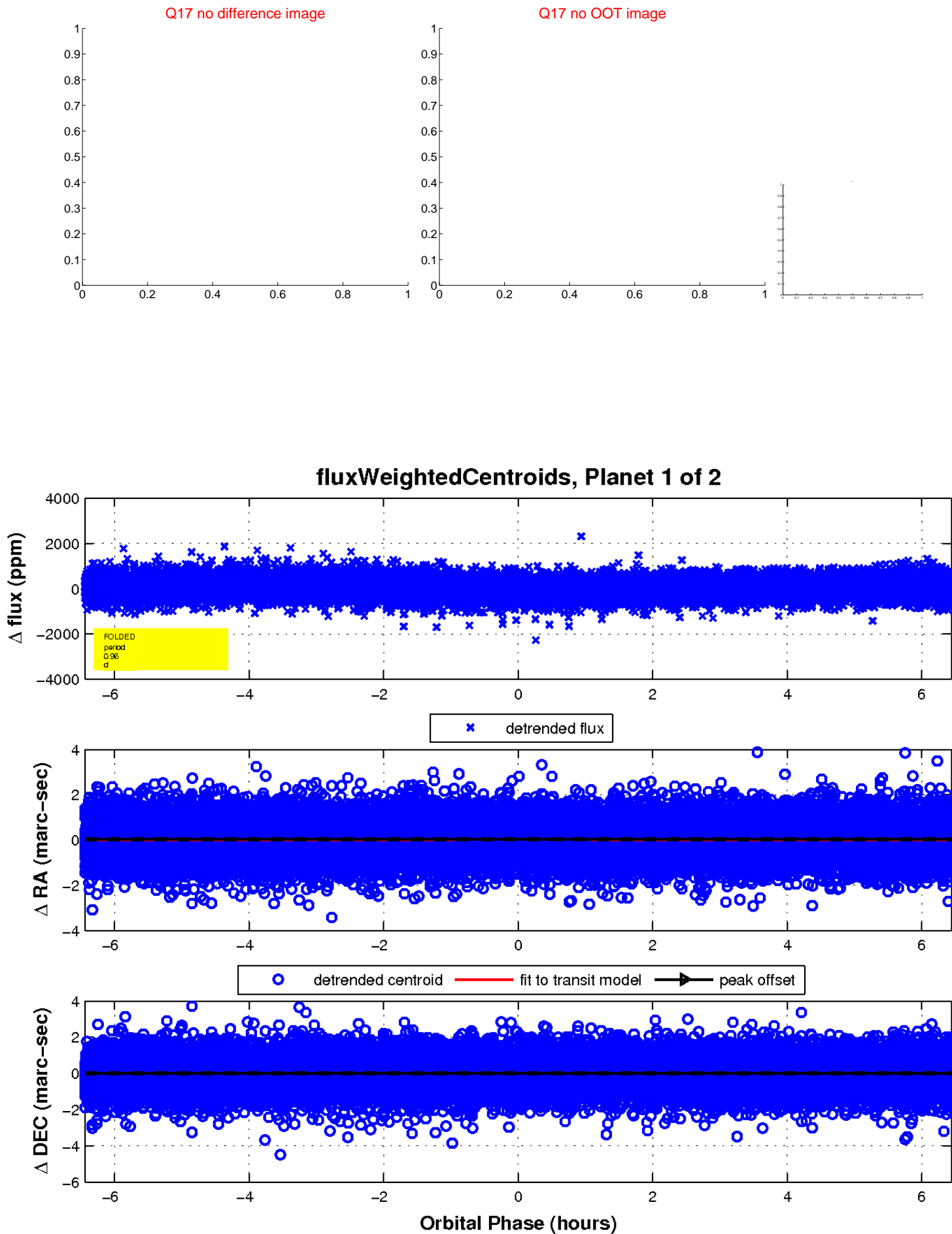


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



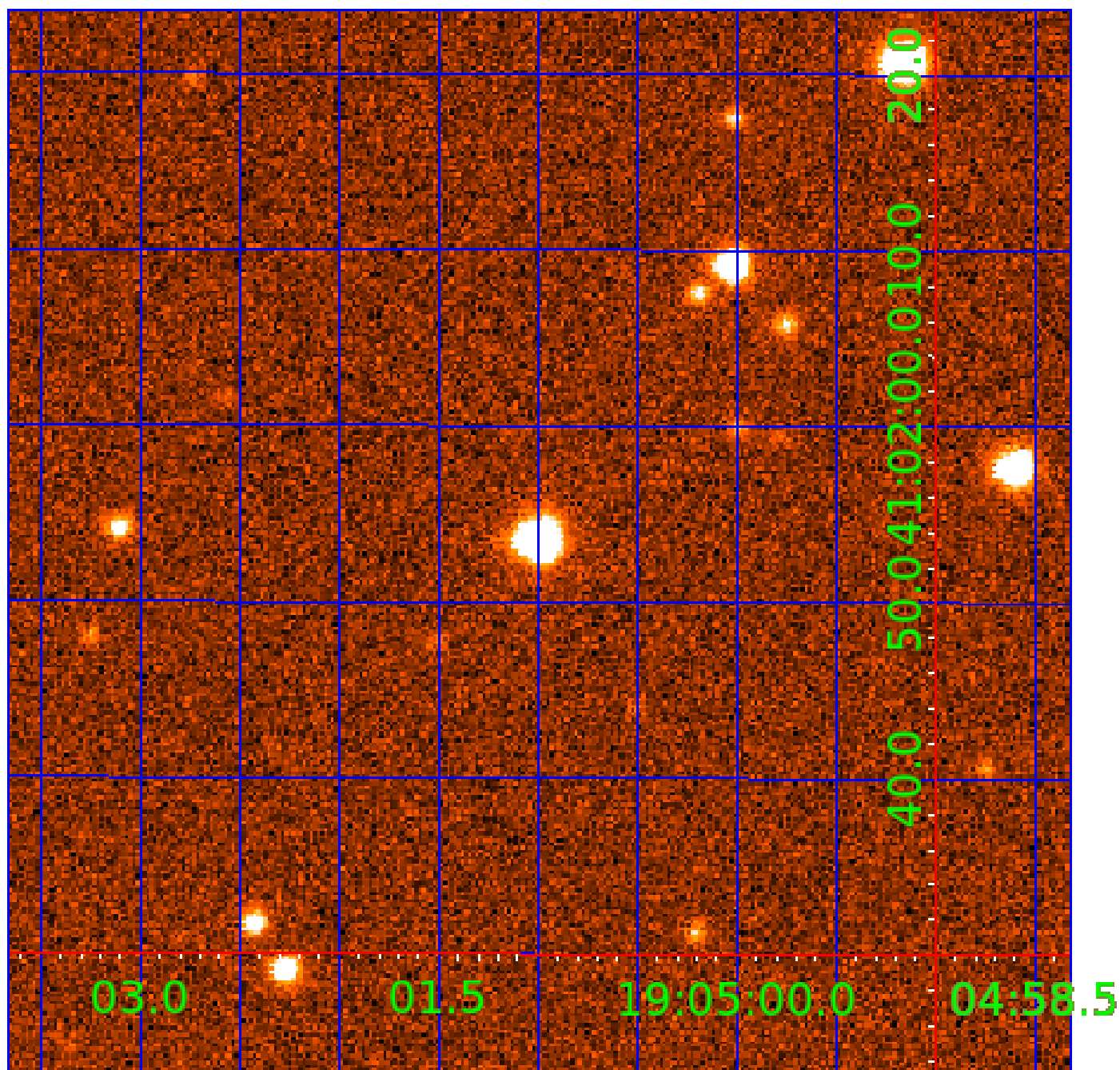


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 005775128

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
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005775128-02	OBS	No	1.991070	133.041707	51.8	16.067	10.2	5.5	4.50	11502	3.49	144041.53

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005775128-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
005775128-02	OBS	FP	0.00	1	0	0	0	LPP_DV

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

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

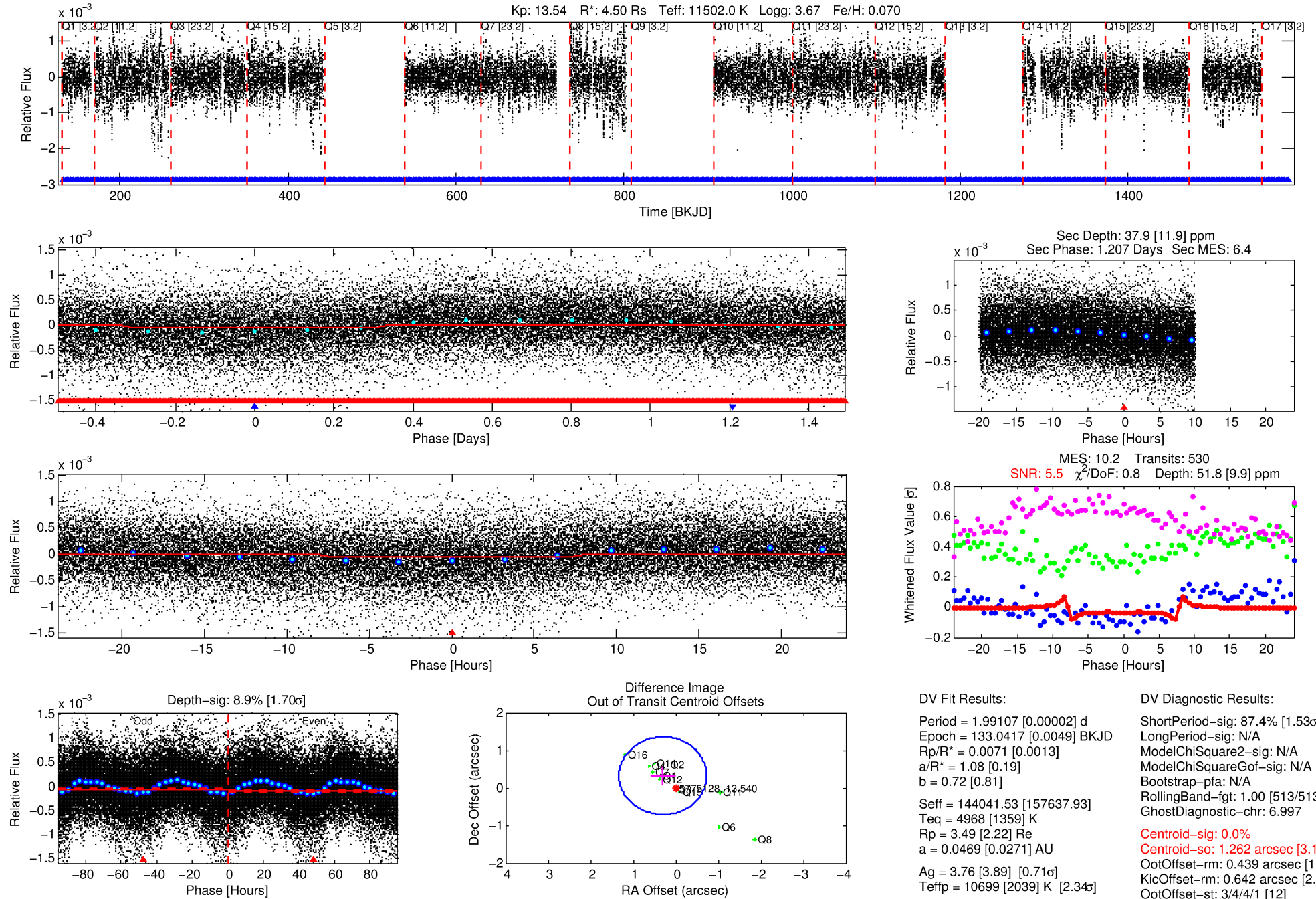
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005775128-02

No Significant Match Found

# DV One-Page Summary

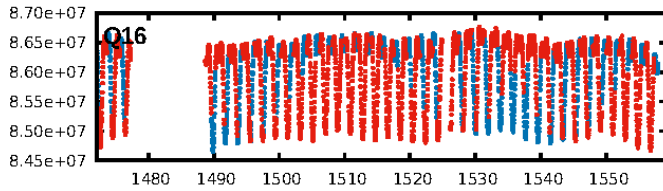
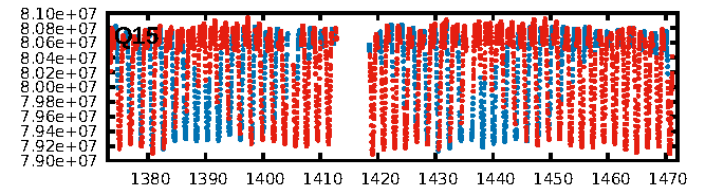
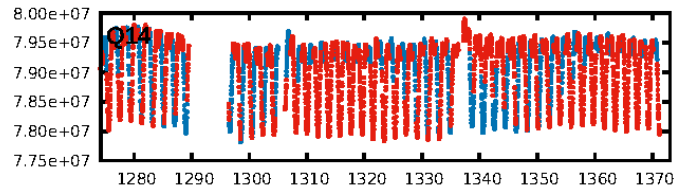
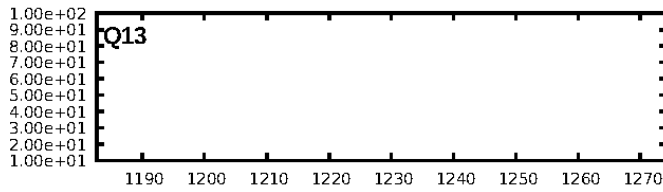
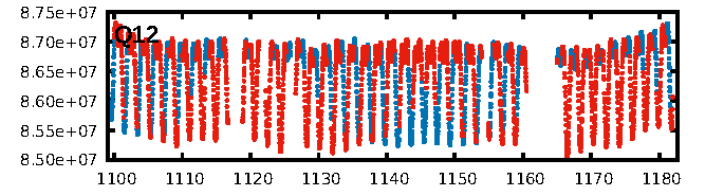
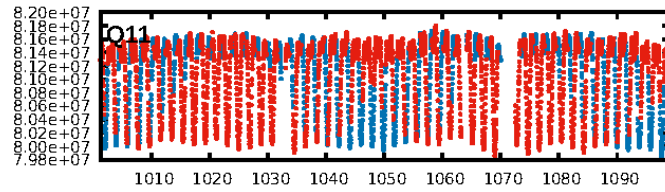
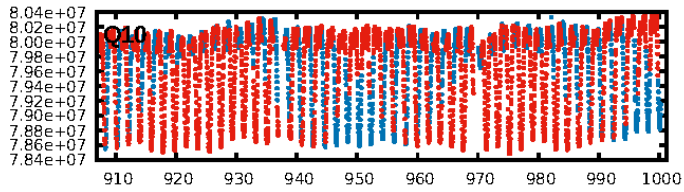
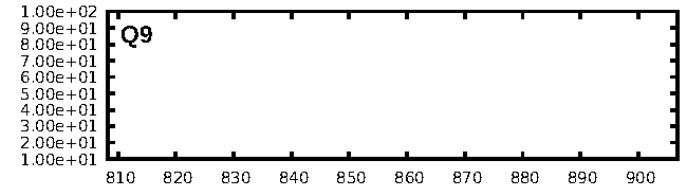
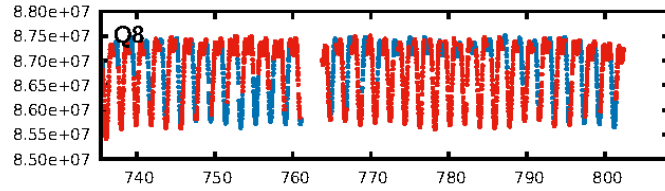
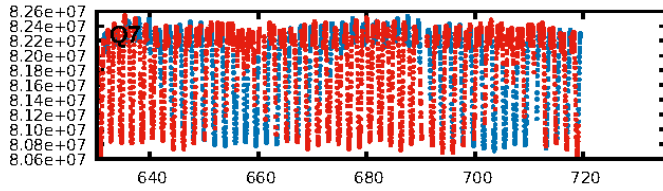
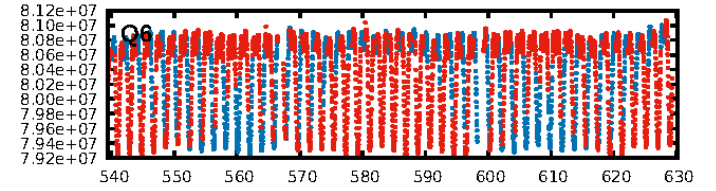
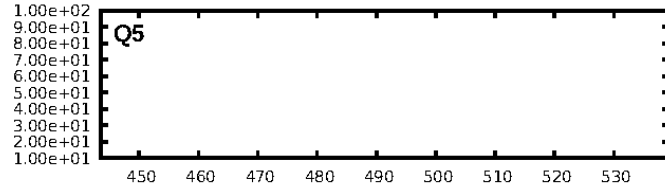
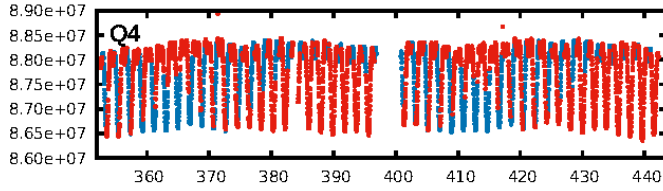
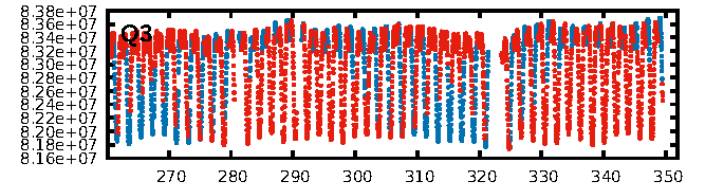
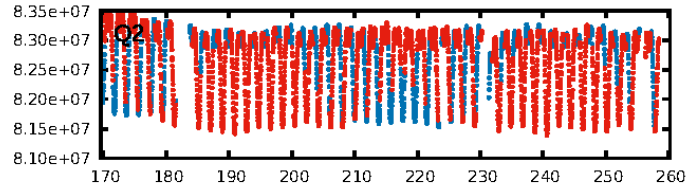
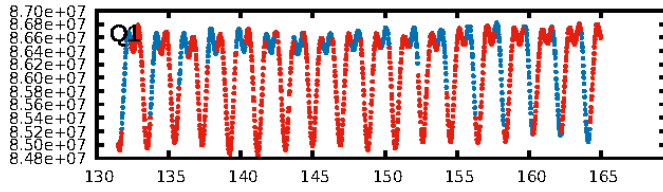
KIC: 5775128 Candidate: 2 of 2 Period: 1.991 d



Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:29:00 Z

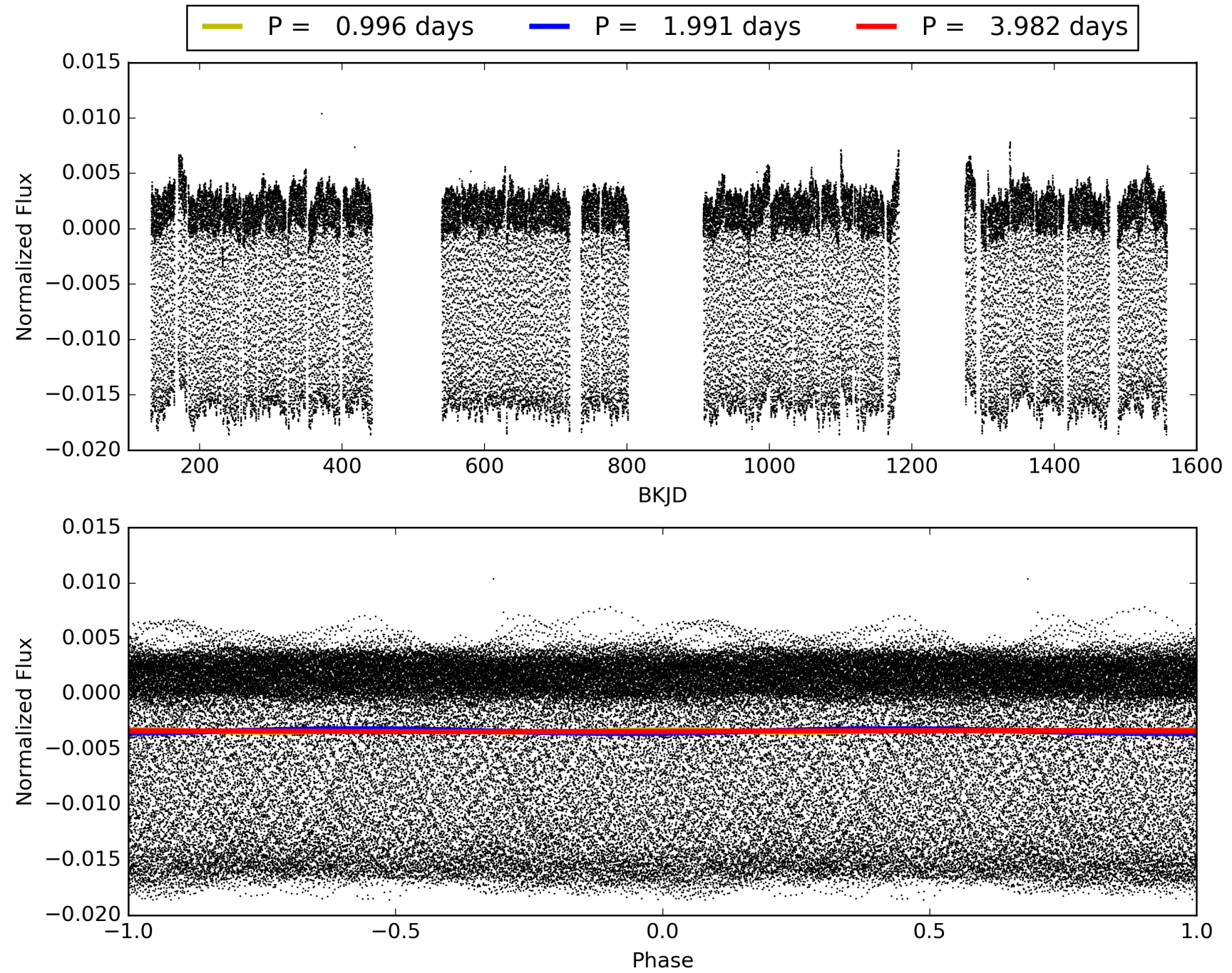
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 005775128-02, PDC Light Curves



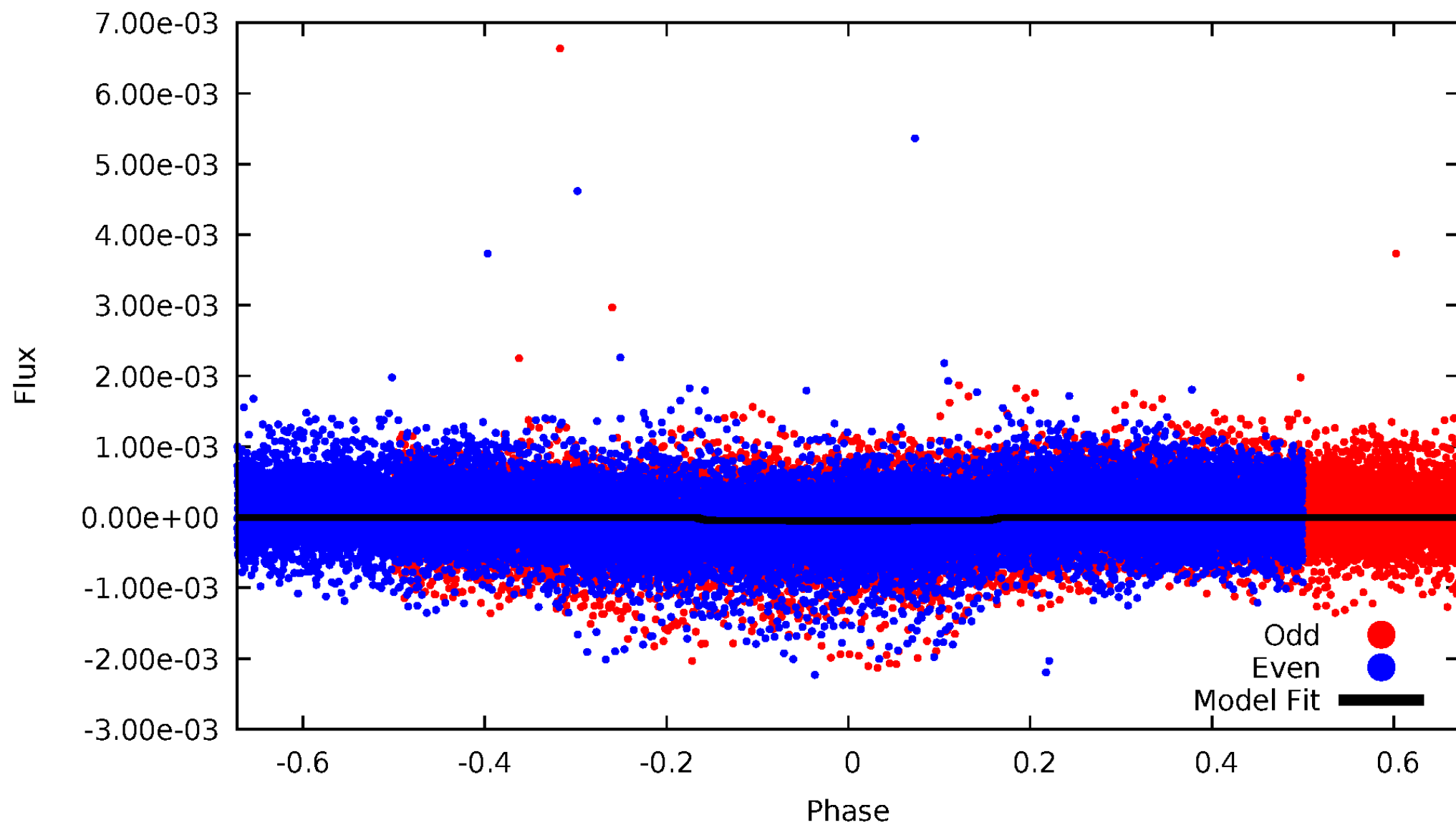


TCE 005775128-02



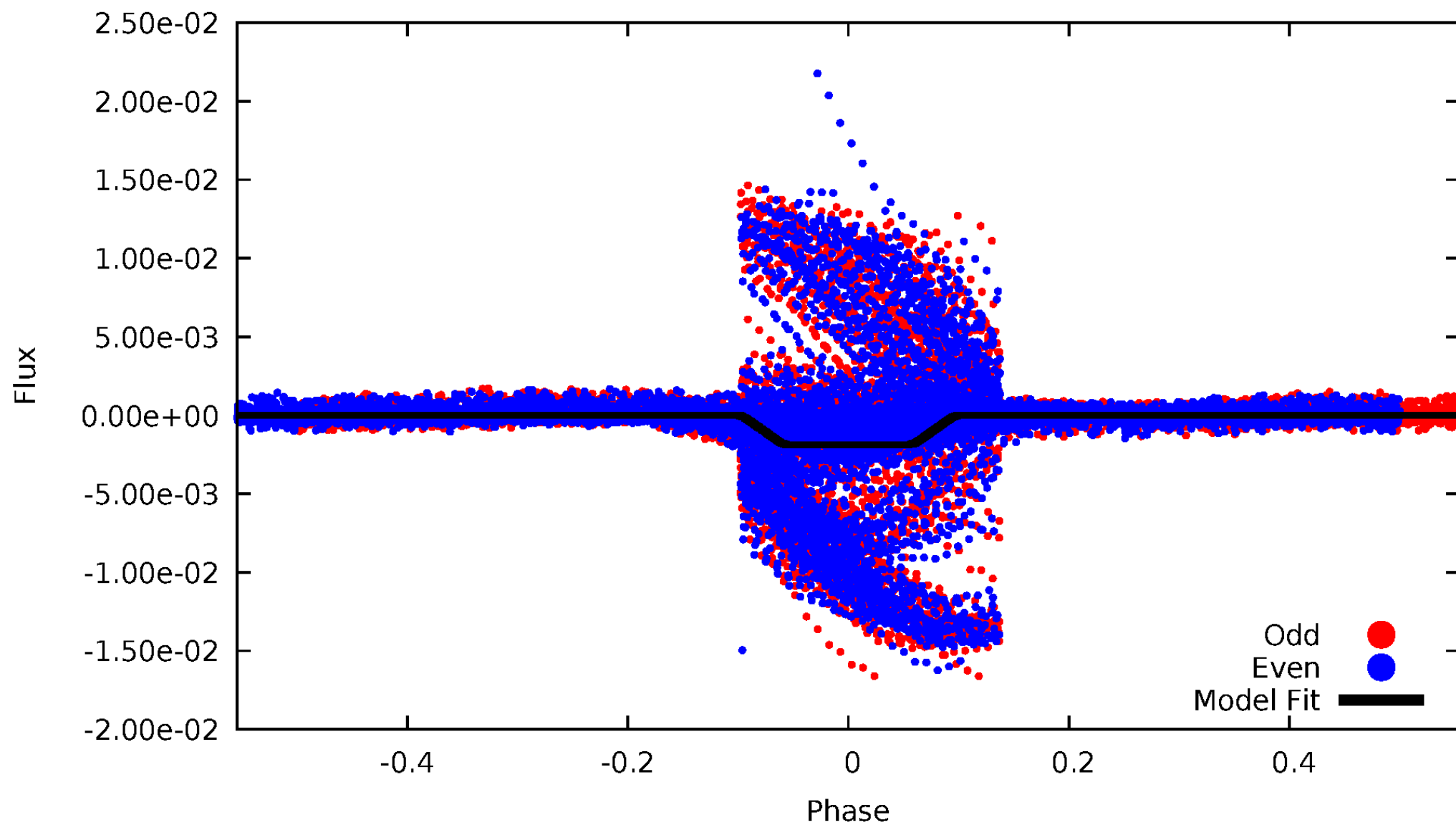
# DV Odd/Even

TCE 005775128-02



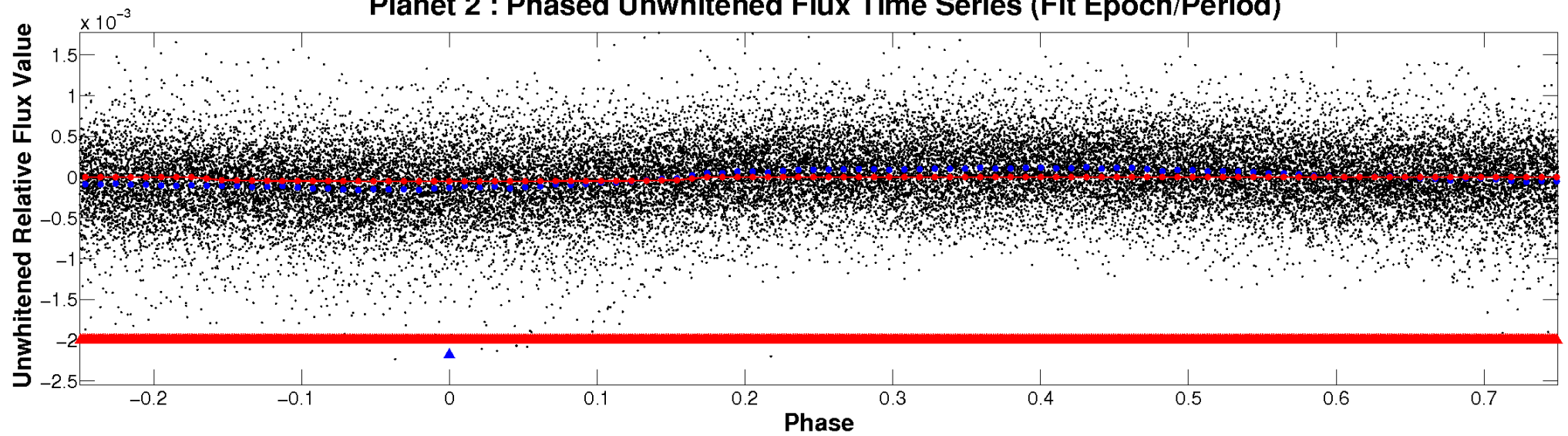
# ALT Odd/Even

TCE 005775128-02

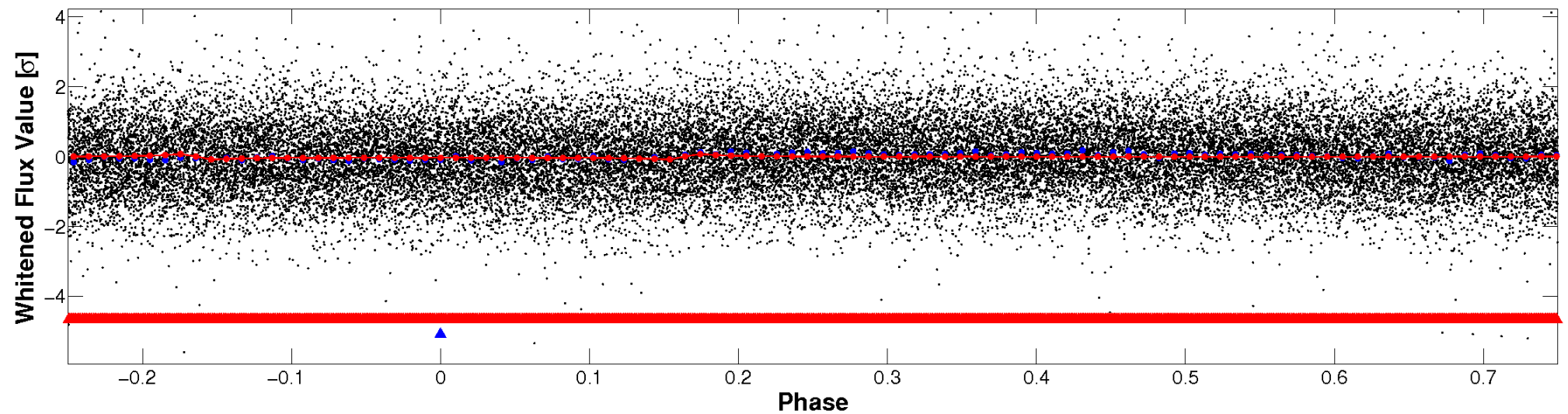


# Non-Whitened Vs. Whitened Light Curve

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



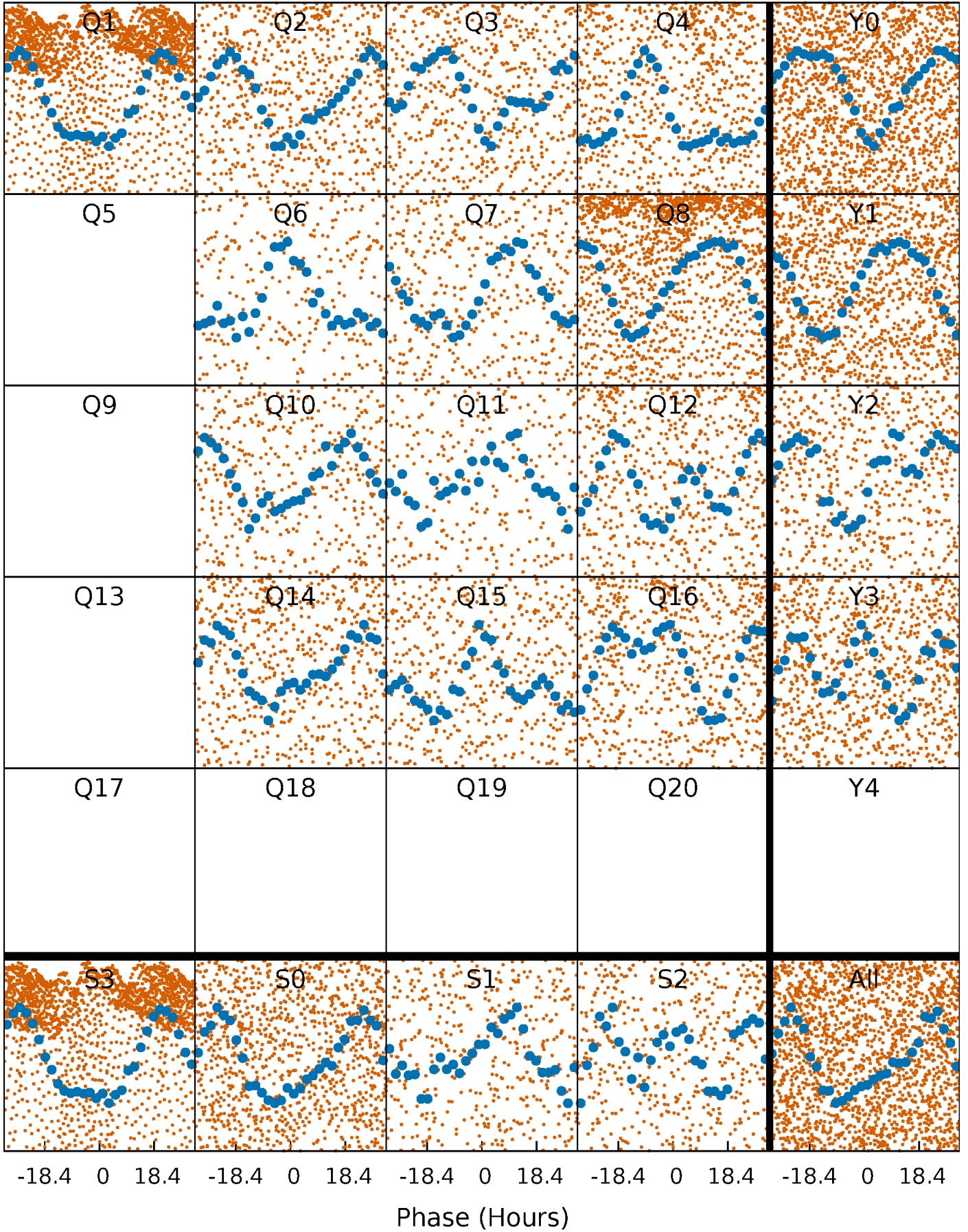
## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)





# PDC Quarter-Phased Transit Curves

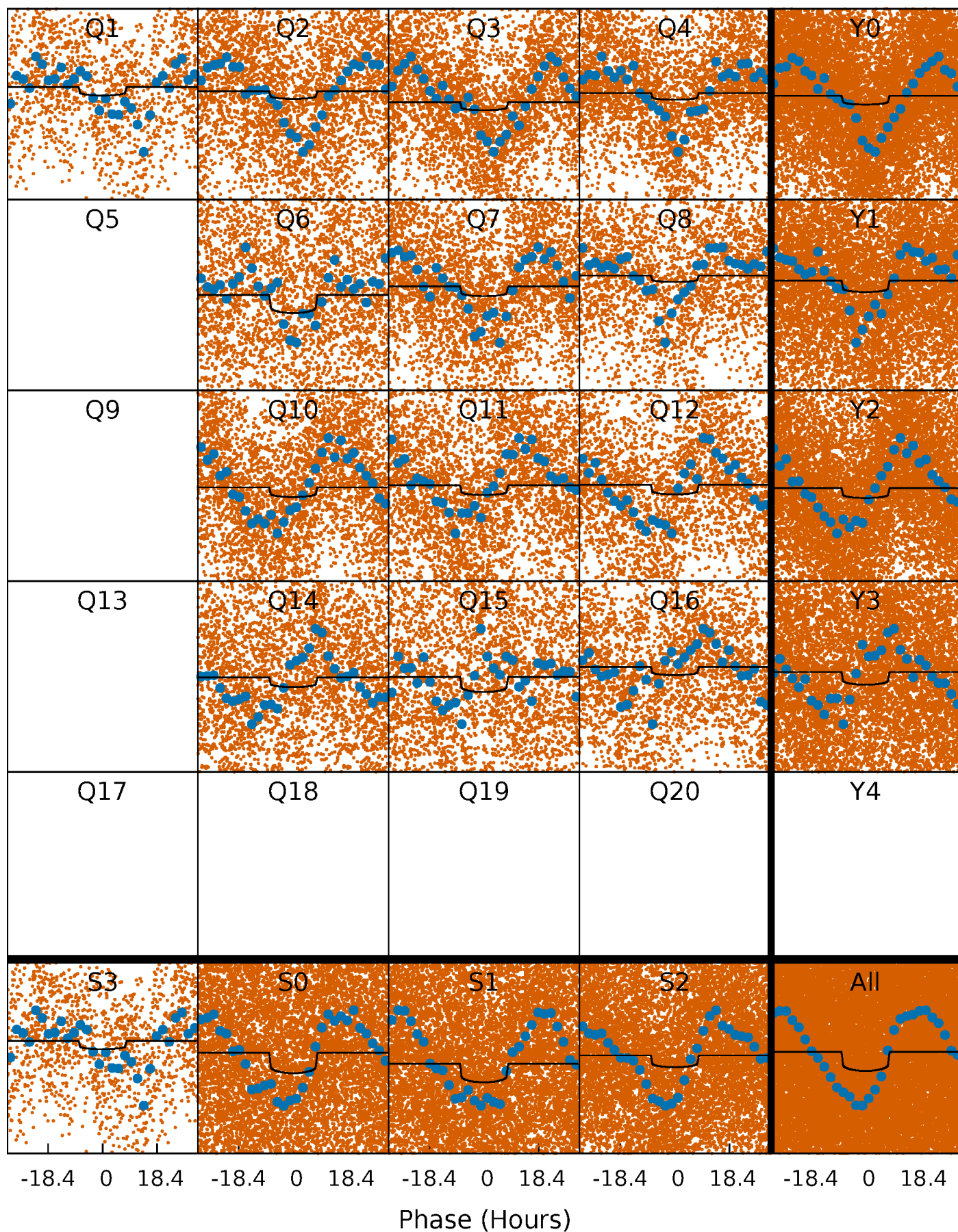
TCE 005775128-02   P= 1.991070 Days    $T_0=133.041707$  (BKJD)





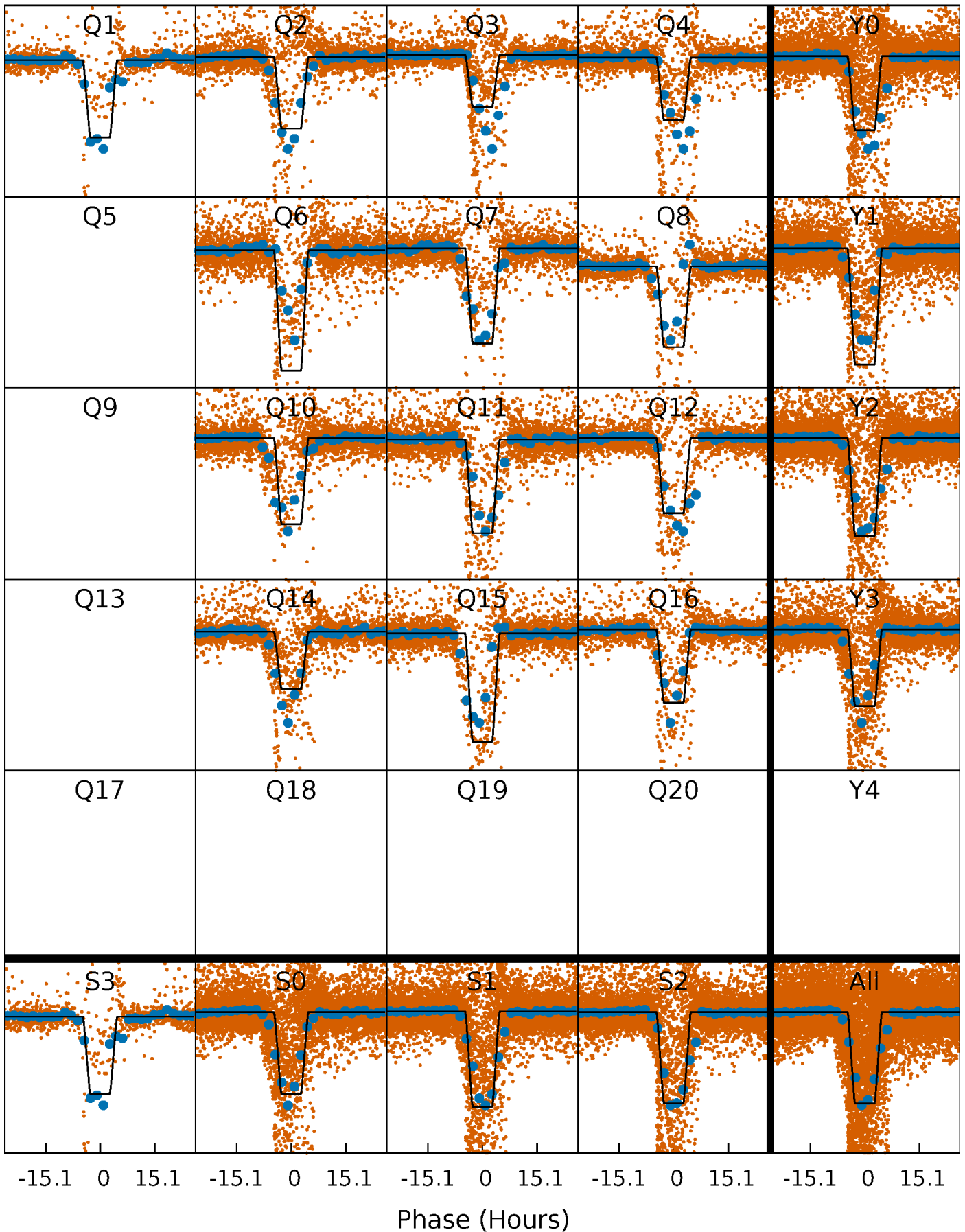
# DV Quarter-Phased Transit Curves

TCE 005775128-02 P= 1.991070 Days  $T_0=133.041707$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

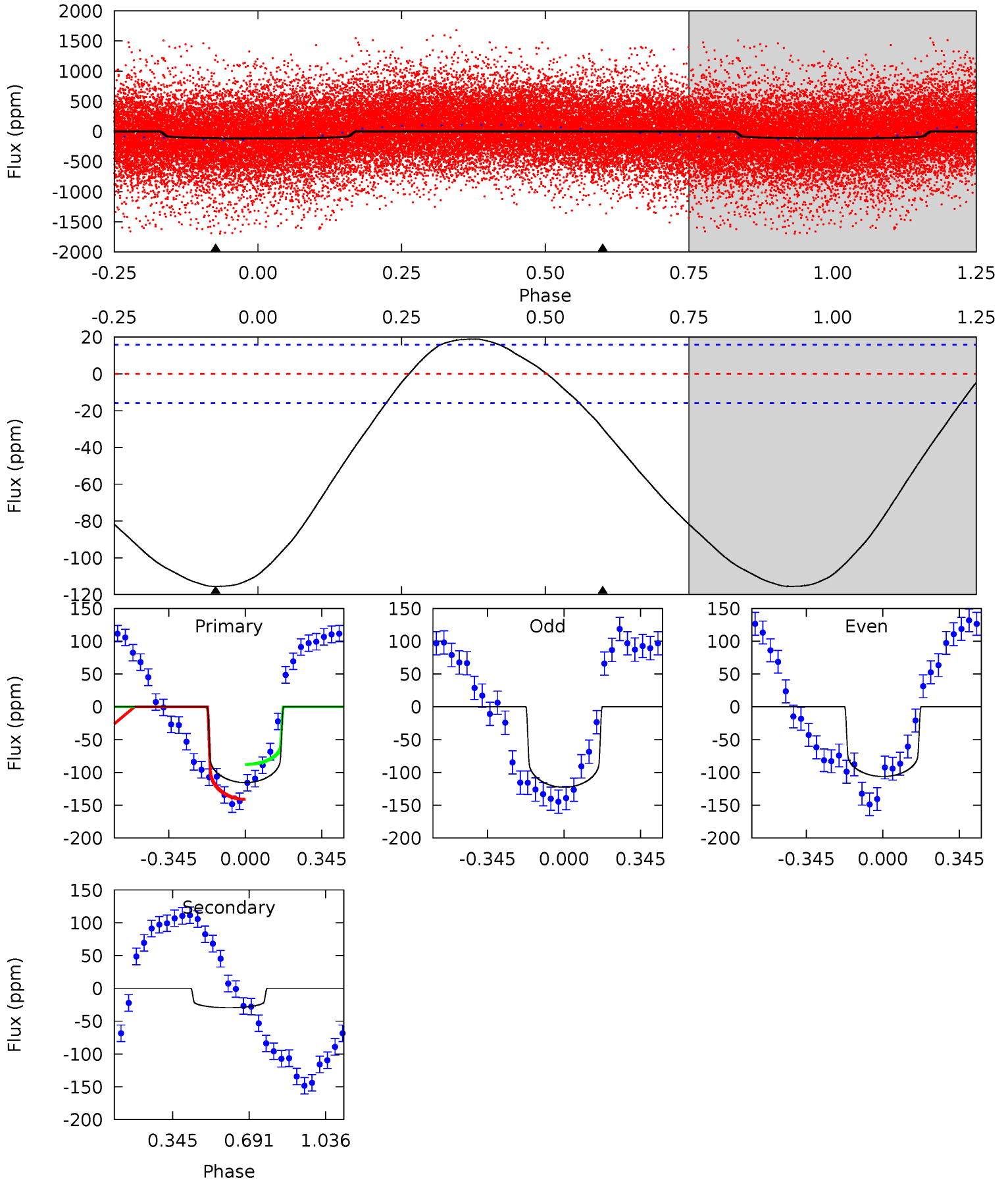
TCE 005775128-02 P= 1.990589 Days  $T_0=133.087745$  (BKJD)



# DV Model-Shift Uniqueness Test

005775128-02, P = 1.991070 Days, E = 131.050637 Days

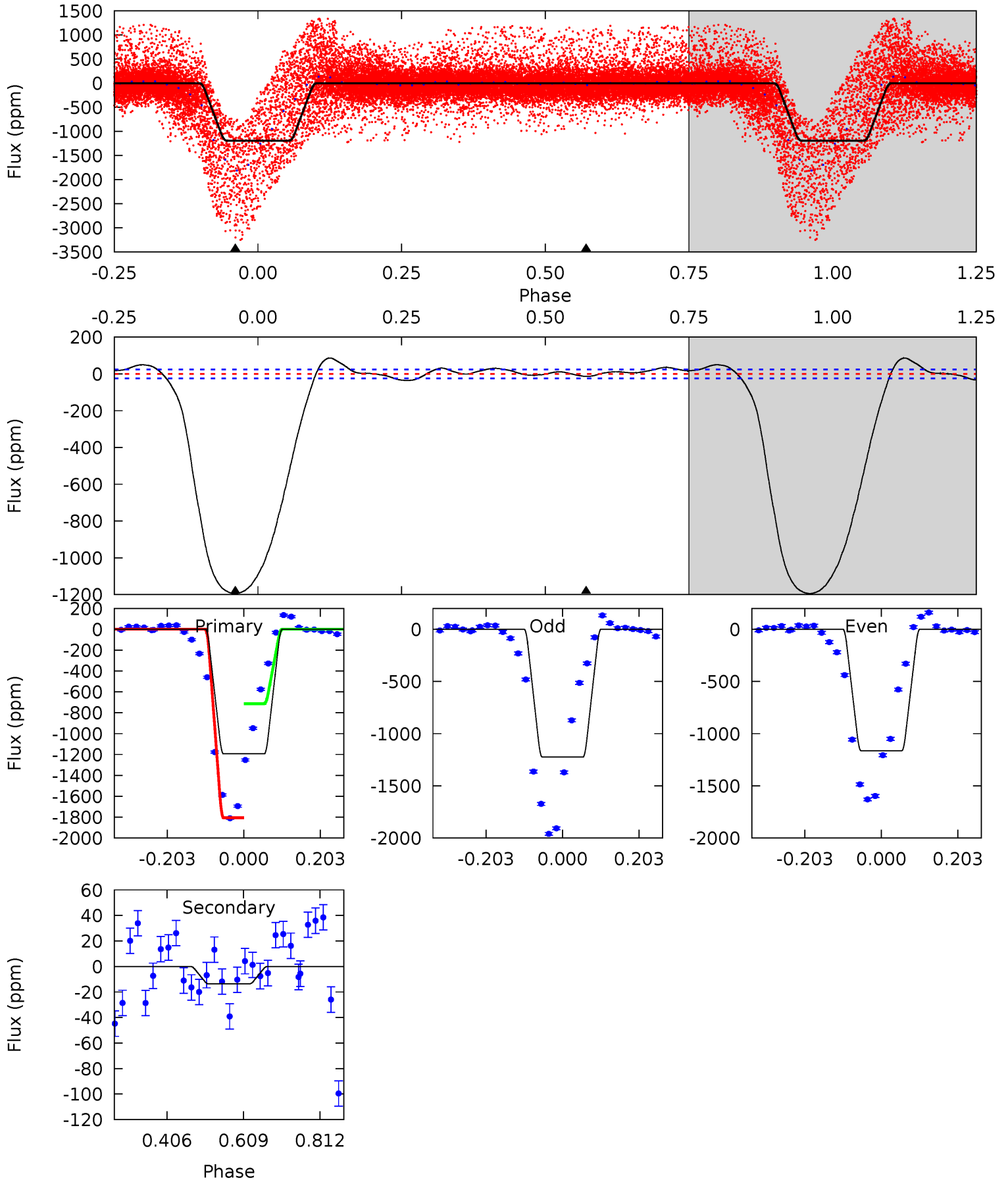
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.3	8.00	0	0	4.30	0.94	2.80	31.3	31.3	8.00	8.00	2.21	1.15	0.14	6.94



# Alt Model-Shift Uniqueness Test

005775128-02, P = 1.990589 Days, E = 131.097156 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
217.3	2.47	0	0	4.41	1.27	3.54	217.3	217.3	2.47	2.47	5.43	1.23	0.07	0



### Stellar Parameters For KIC 005775128

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$11502^{+457}_{-1715}$	$3.673^{+0.536}_{-0.100}$	$0.070^{+0.250}_{-0.600}$	$4.497^{+0.483}_{-2.740}$	$3.472^{+0.069}_{-1.353}$	$0.054^{+0.407}_{-0.017}$
	+4%/-15%	+15%/-3%	+357%/-857%	+11%/-61%	+2%/-39%	+757%/-31%
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 005775128-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-30 \pm 4$	$3.11^{+0.91}_{-0.95}$	$6386^{+916}_{-1170}$	$8777^{+1625}_{-1288}$	$3.525^{+3.253}_{-1.388}$
Alt.	$-14 \pm 5$	$20.59^{+2.19}_{-6.29}$	$6424^{+852}_{-1103}$	$-4680^{+652}_{-429}$	$0.041^{+0.034}_{-0.017}$

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature  
 $T_{\text{obs}}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )  
 $A_{\text{obs}}$  = 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

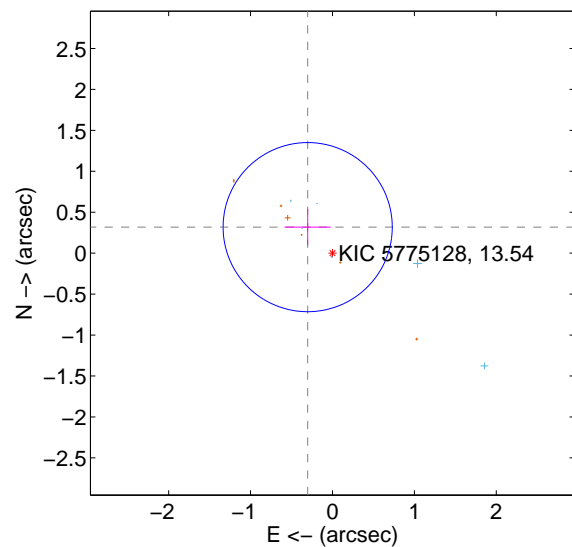
Supplemental centroid analysis for 005775128-02. Kepler magnitude: 13.54. Transit SNR 5.49

There are 6 quarters with good PRF difference image offsets

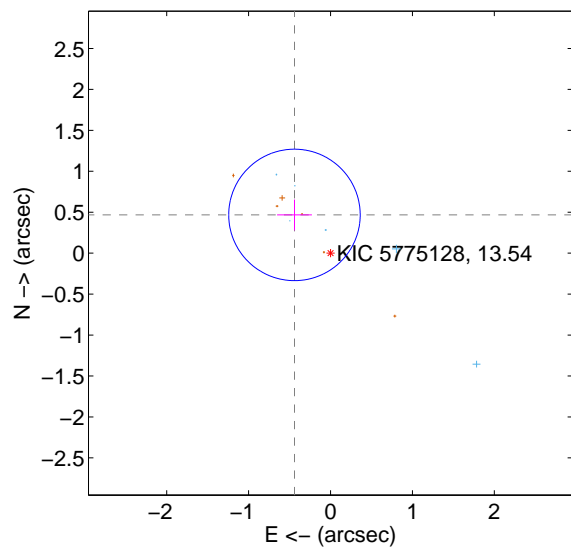
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.439 \pm 0.344$	1.28	$0.303 \pm 0.282$	$0.318 \pm 0.221$
PRF-fit source offset from KIC position	$0.642 \pm 0.268$	2.40	$0.440 \pm 0.212$	$0.467 \pm 0.188$
photometric centroid source offset	$1.26 \pm 0.40$	3.15	$0.84 \pm 0.39$	$0.94 \pm 0.41$

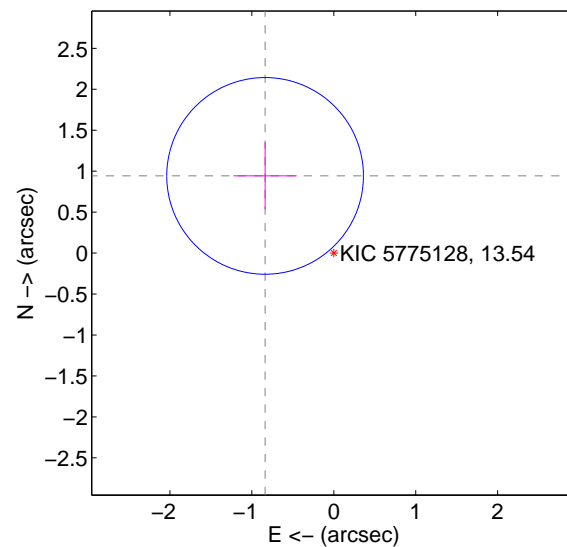
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



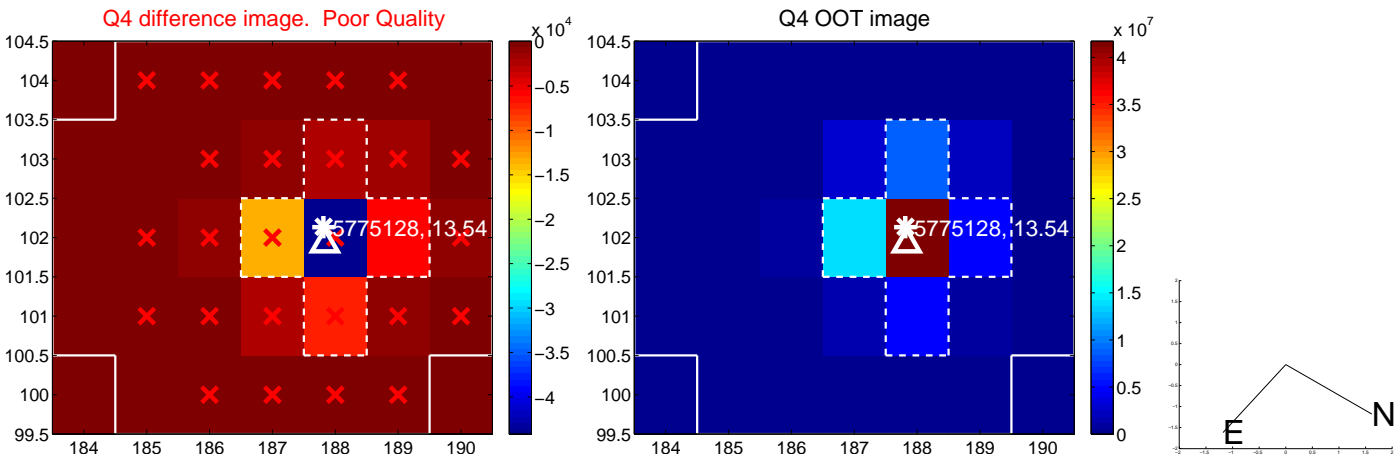
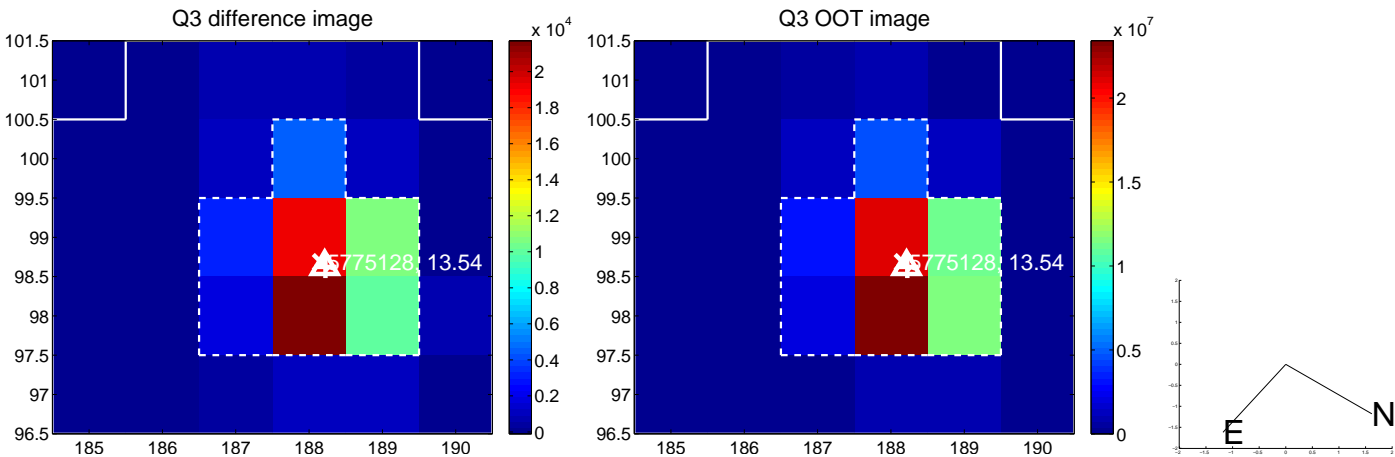
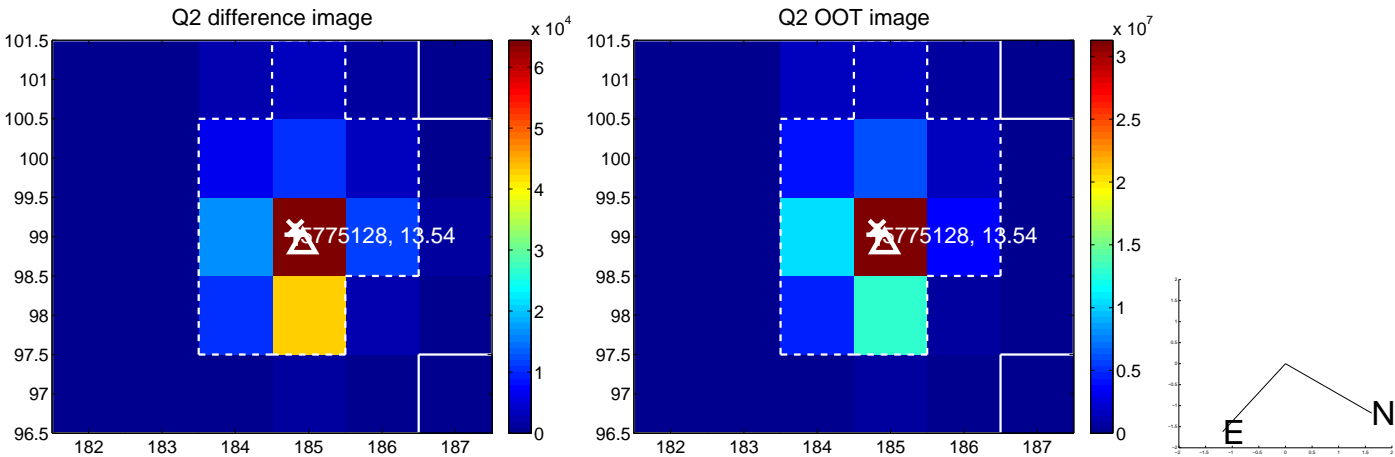
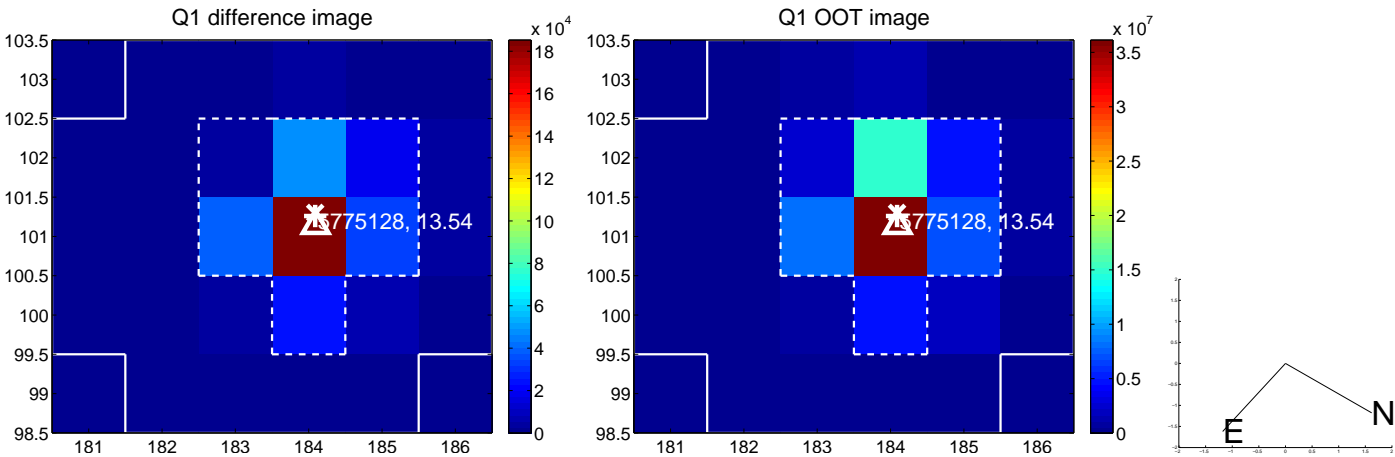
offset from photometric centroids



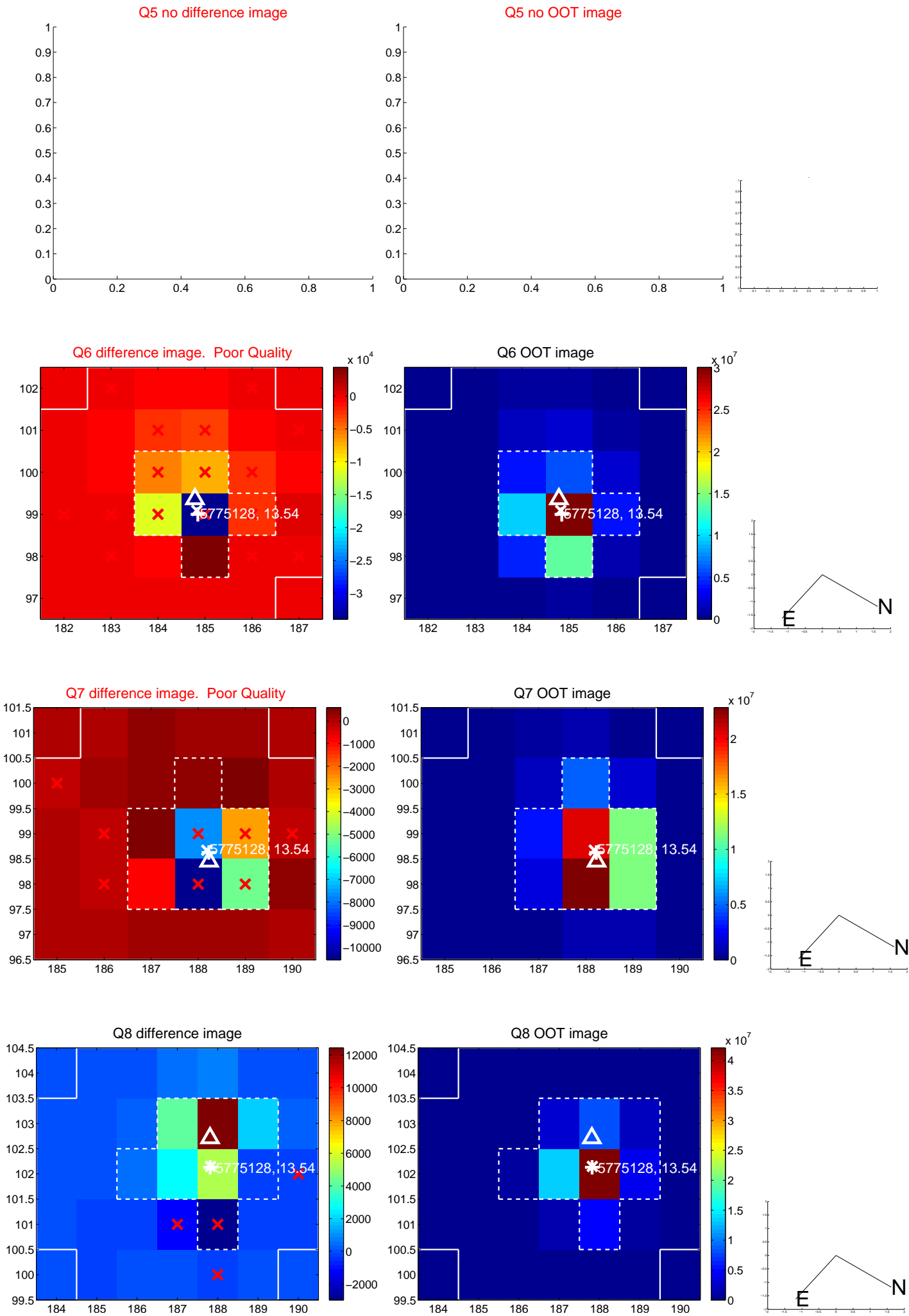
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



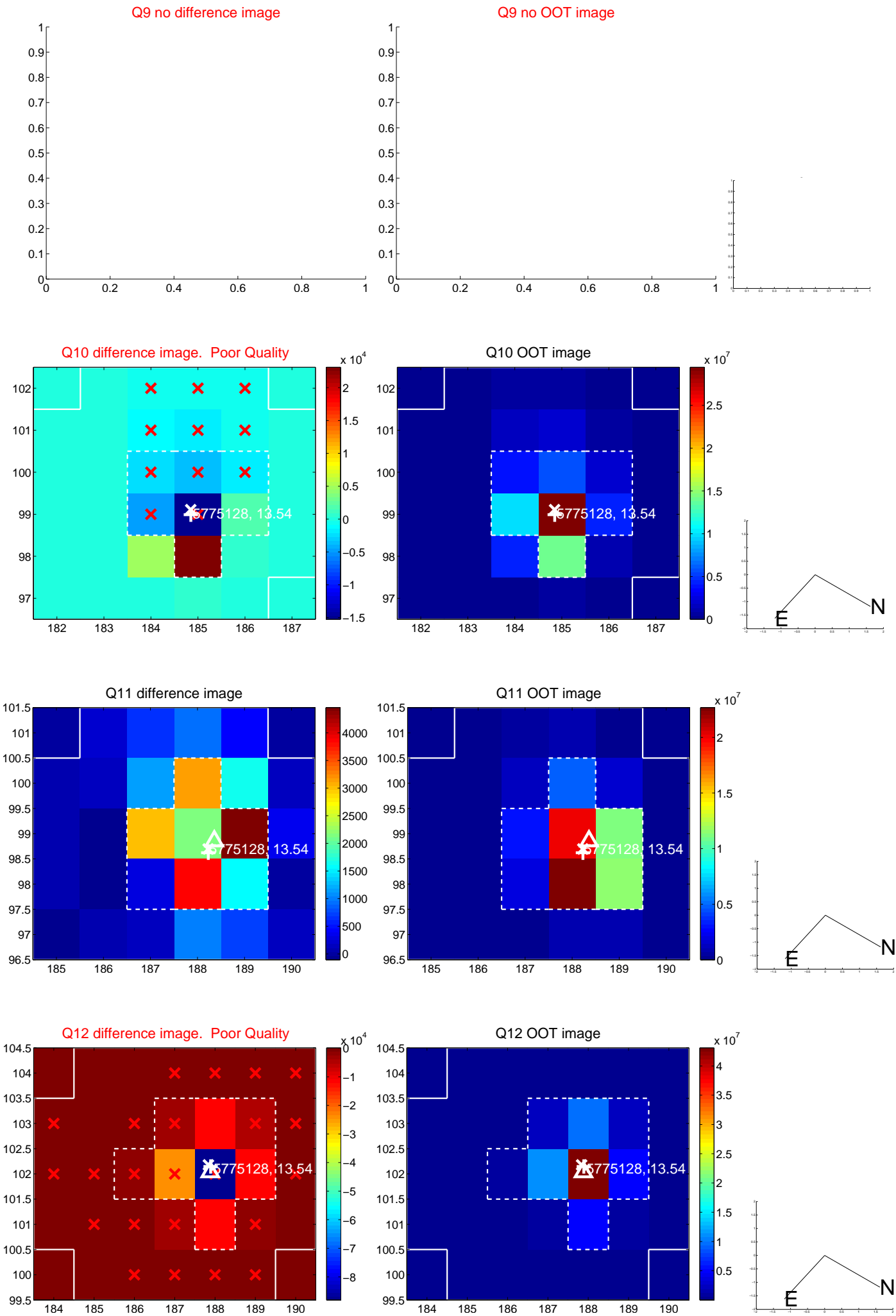
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



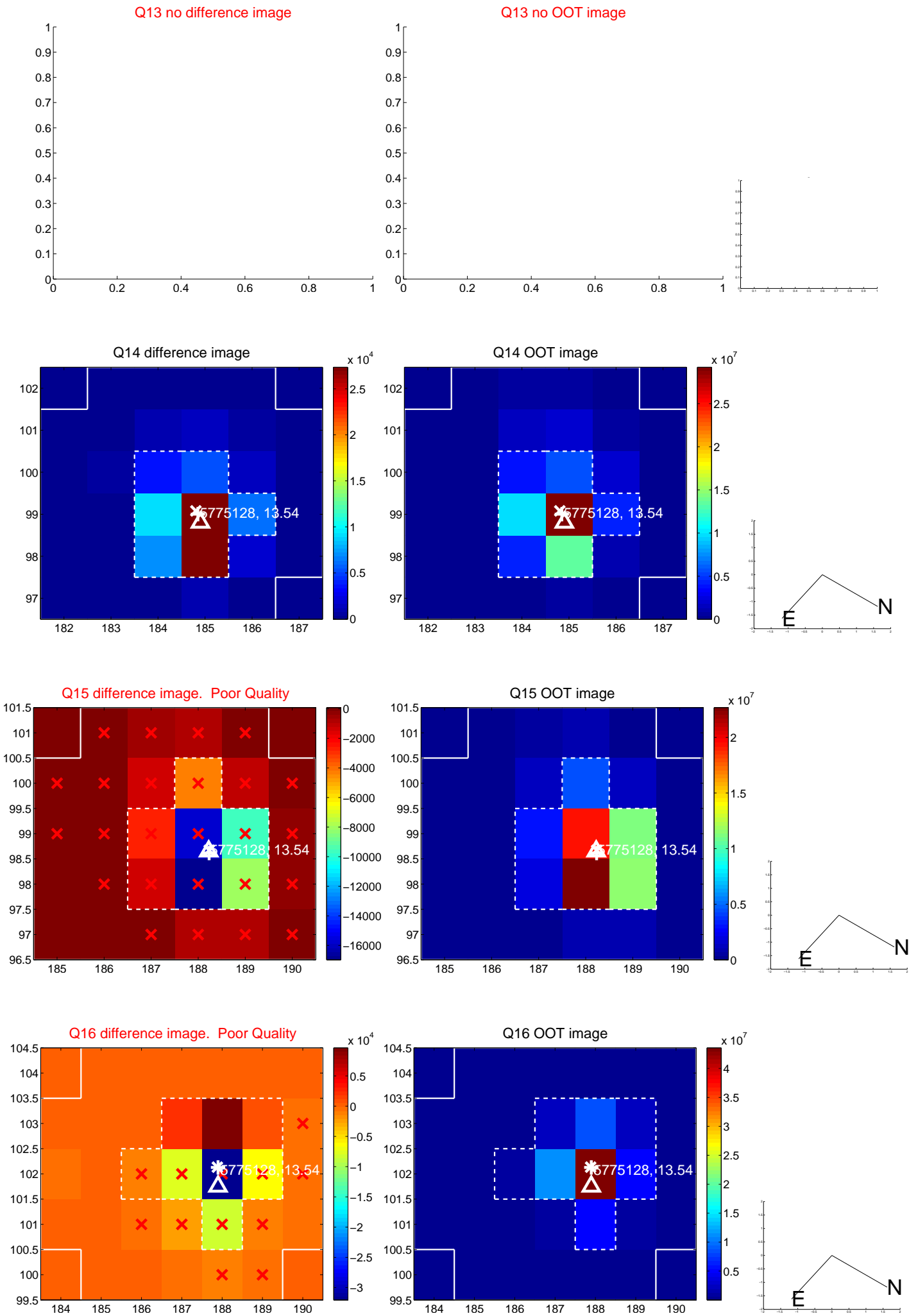
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



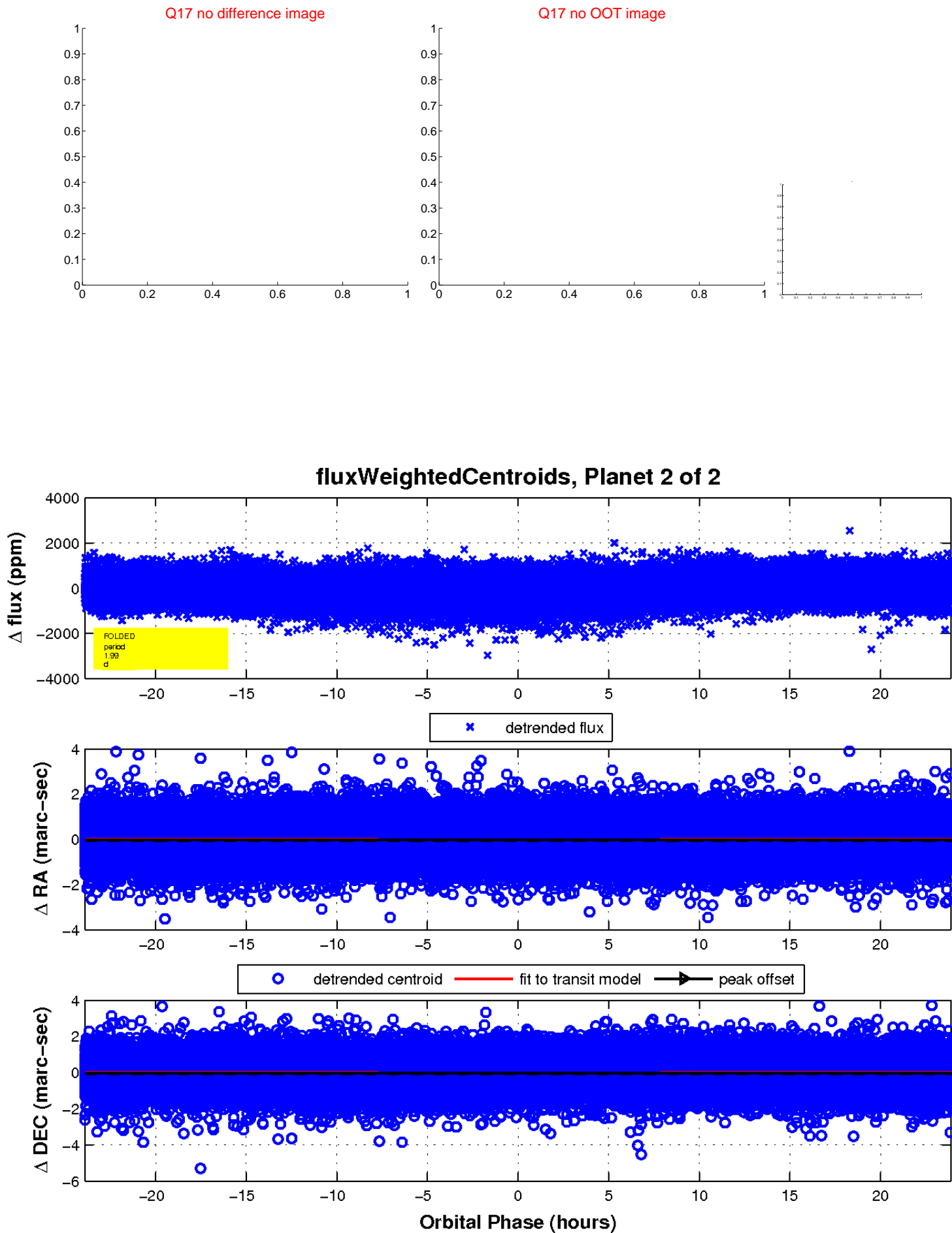
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

