

# KIC 012061222

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
012061222-01	OBS	0484.01	17.205196	140.649368	1071.8	3.986	62.3	64.8	0.69	5211	2.63	22.11

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012061222-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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

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

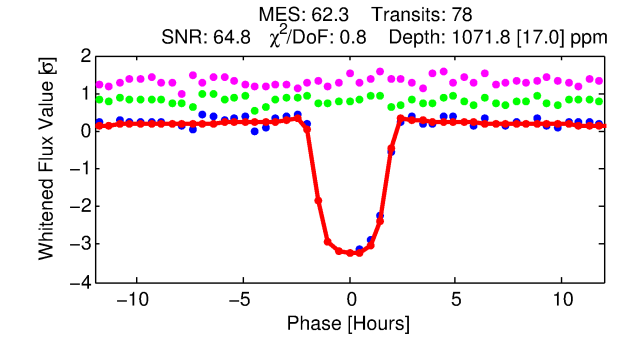
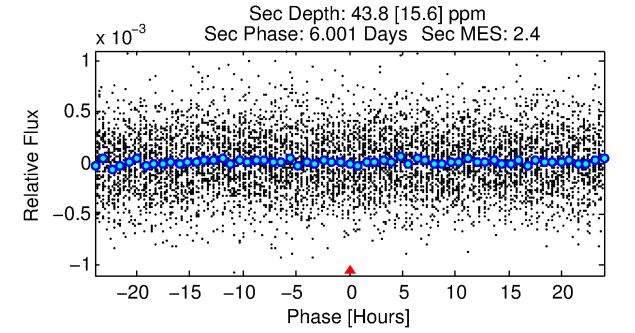
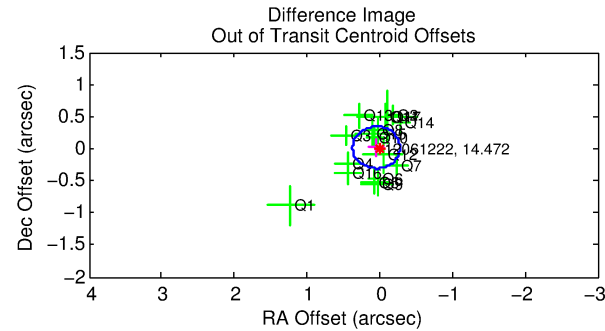
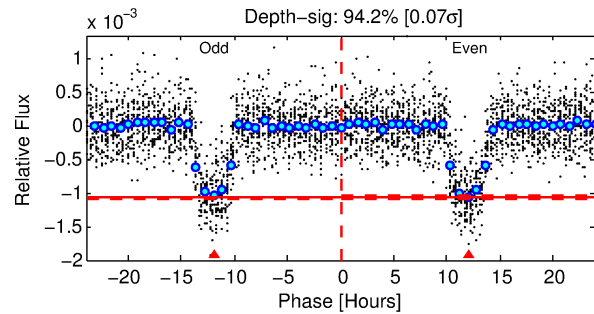
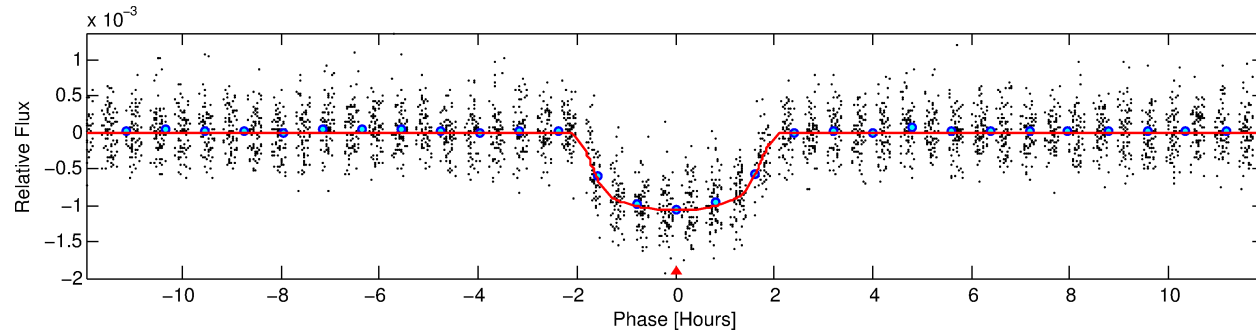
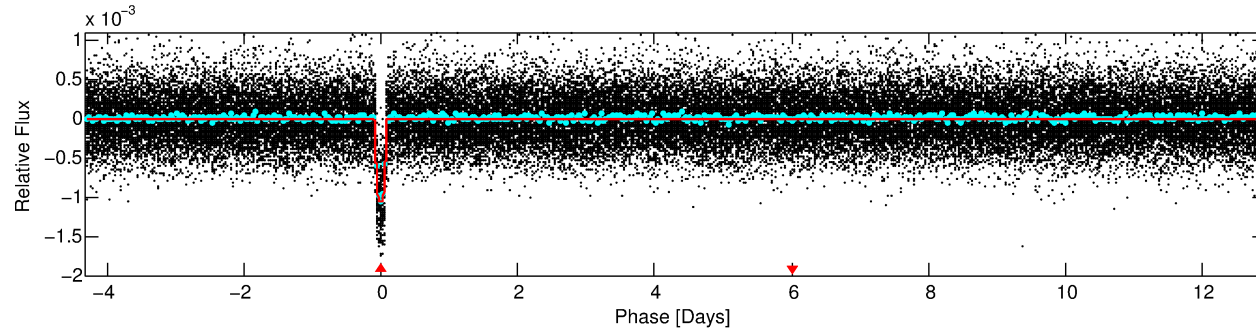
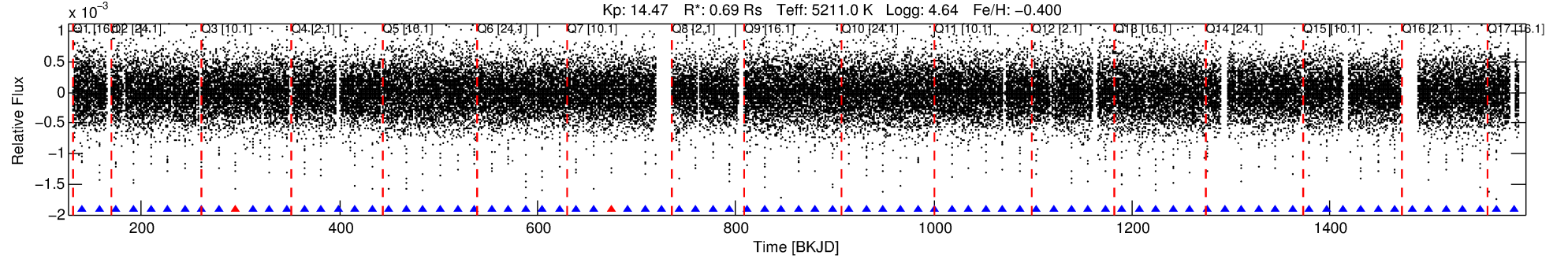
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 012061222-01

No Significant Match Found

# DV One-Page Summary

KIC: 12061222 Candidate: 1 of 1 Period: 17.205 d  
KOI: K00484.01 Corr: 0.953



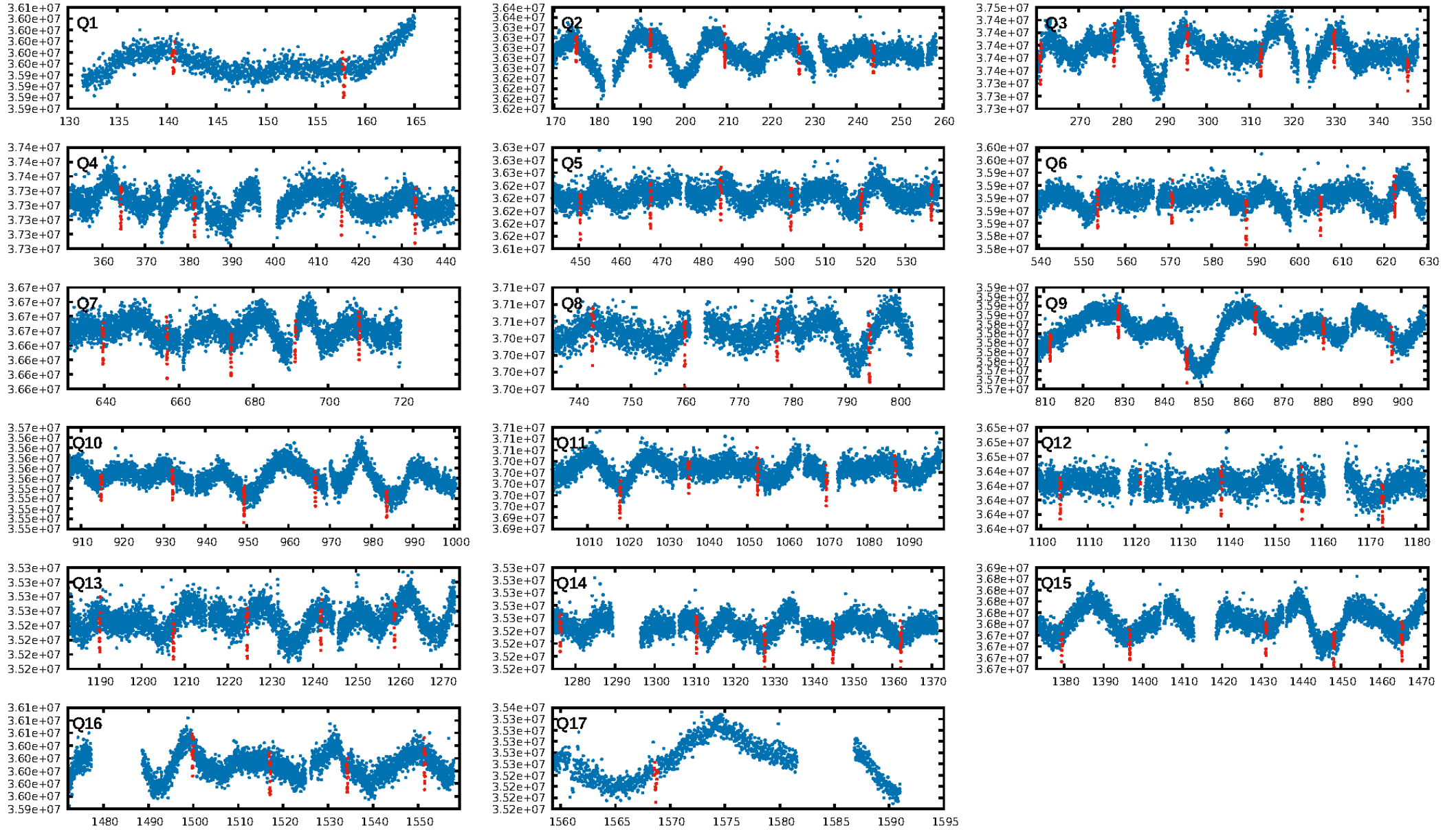
## DV Fit Results:

Period = 17.20520 [0.00003] d  
Epoch = 140.6494 [0.0014] BKJD  
Rp/R\* = 0.0349 [0.0022]  
a/R\* = 18.80 [4.62]  
b = 0.86 [0.07]  
Seff = 22.11 [4.43]  
Teff = 553 [28] K  
Rp = 2.63 [0.41] Re  
a = 0.1191 [0.0142] AU  
Ag = 49.57 [20.45] [2.38 $\sigma$ ]  
Teffp = 2268 [222] K [7.66 $\sigma$ ]

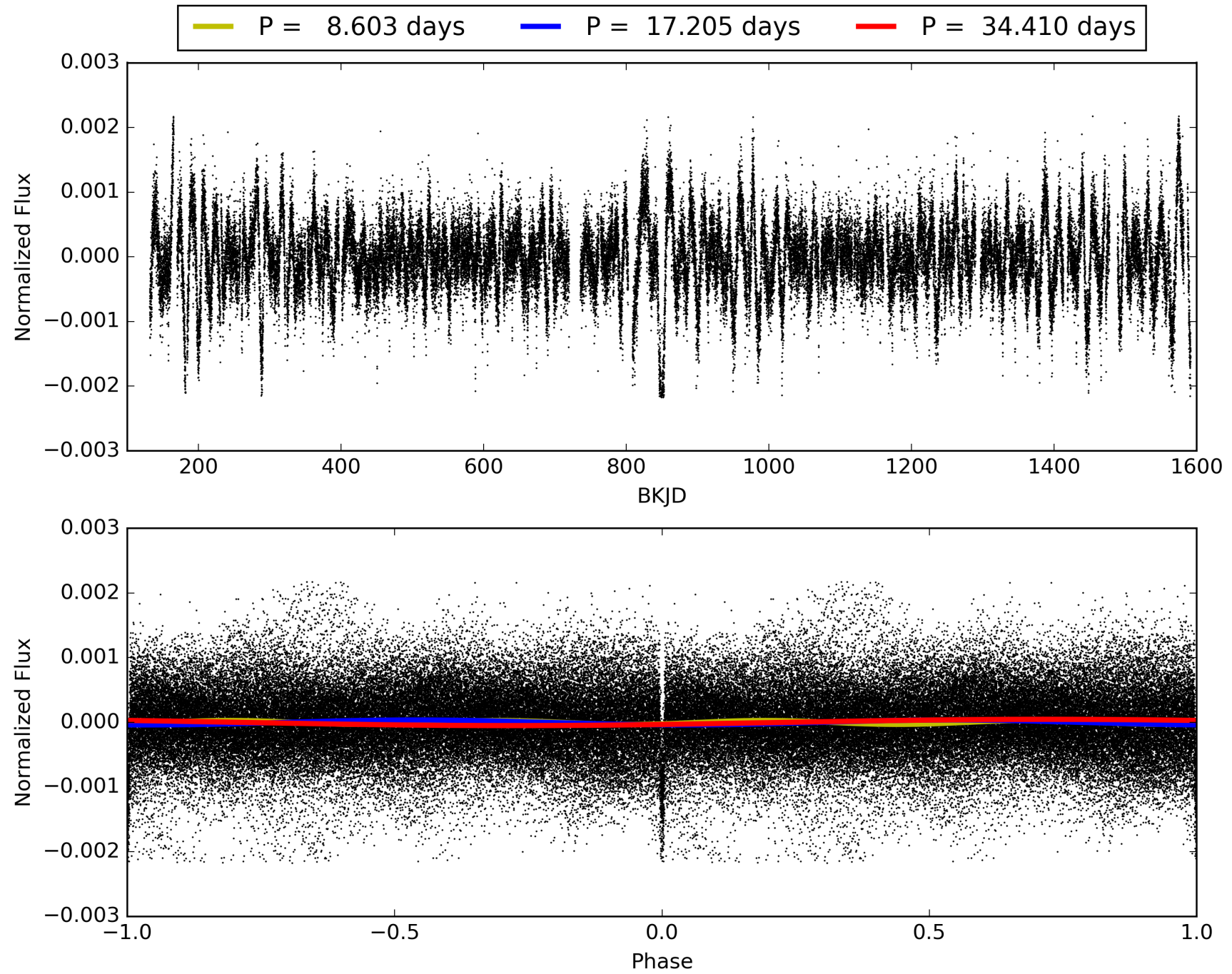
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 91.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 0.97 [73/75]  
GhostDiagnostic-chr: 3.576  
Centroid-sig: 5.2%  
Centroid-so: 0.566 arcsec [3.27 $\sigma$ ]  
OotOffset-rm: 0.051 arcsec [0.47 $\sigma$ ]  
KicOffset-rm: 0.295 arcsec [2.47 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 012061222-01, PDC Light Curves

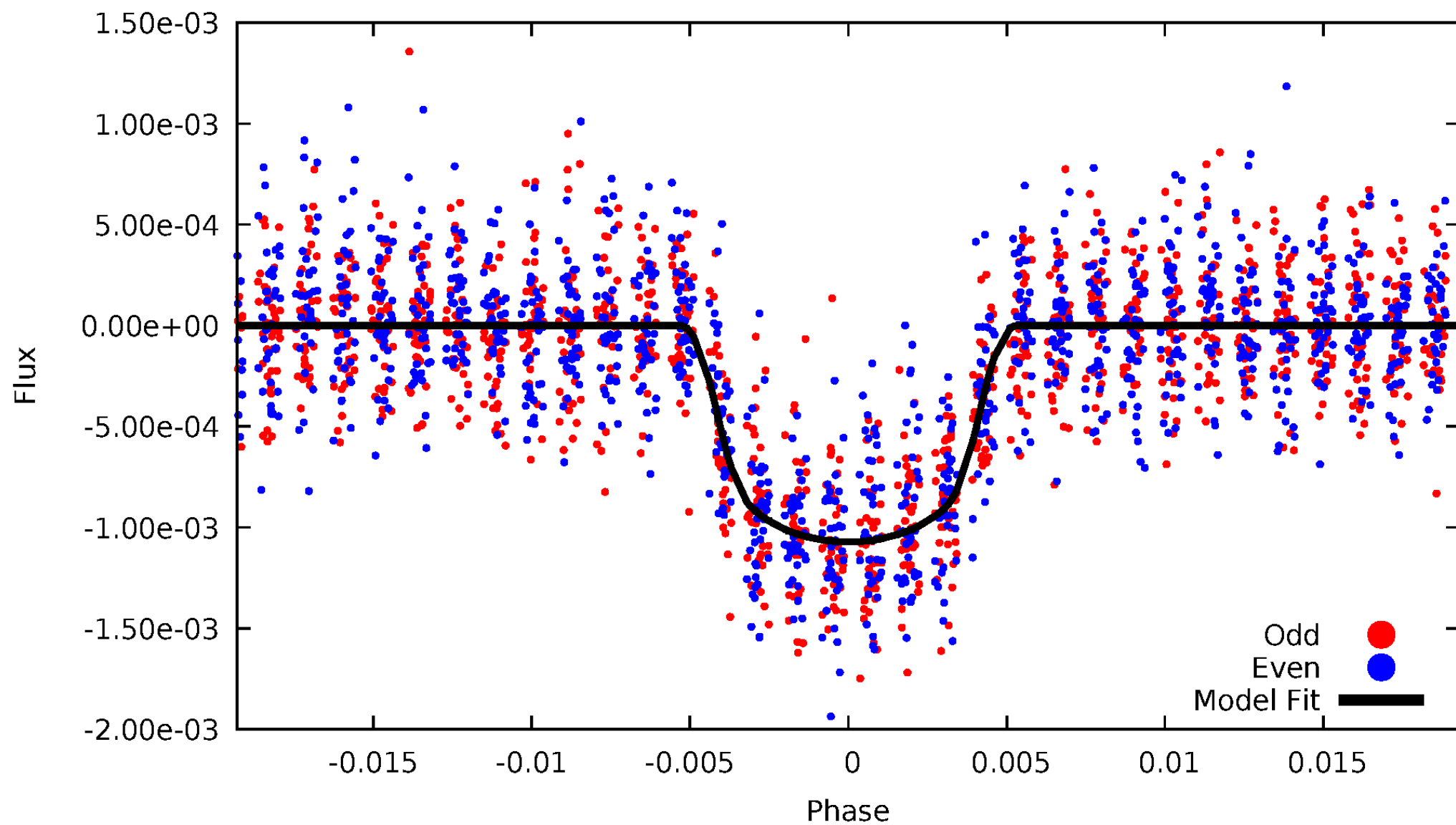


TCE 012061222-01



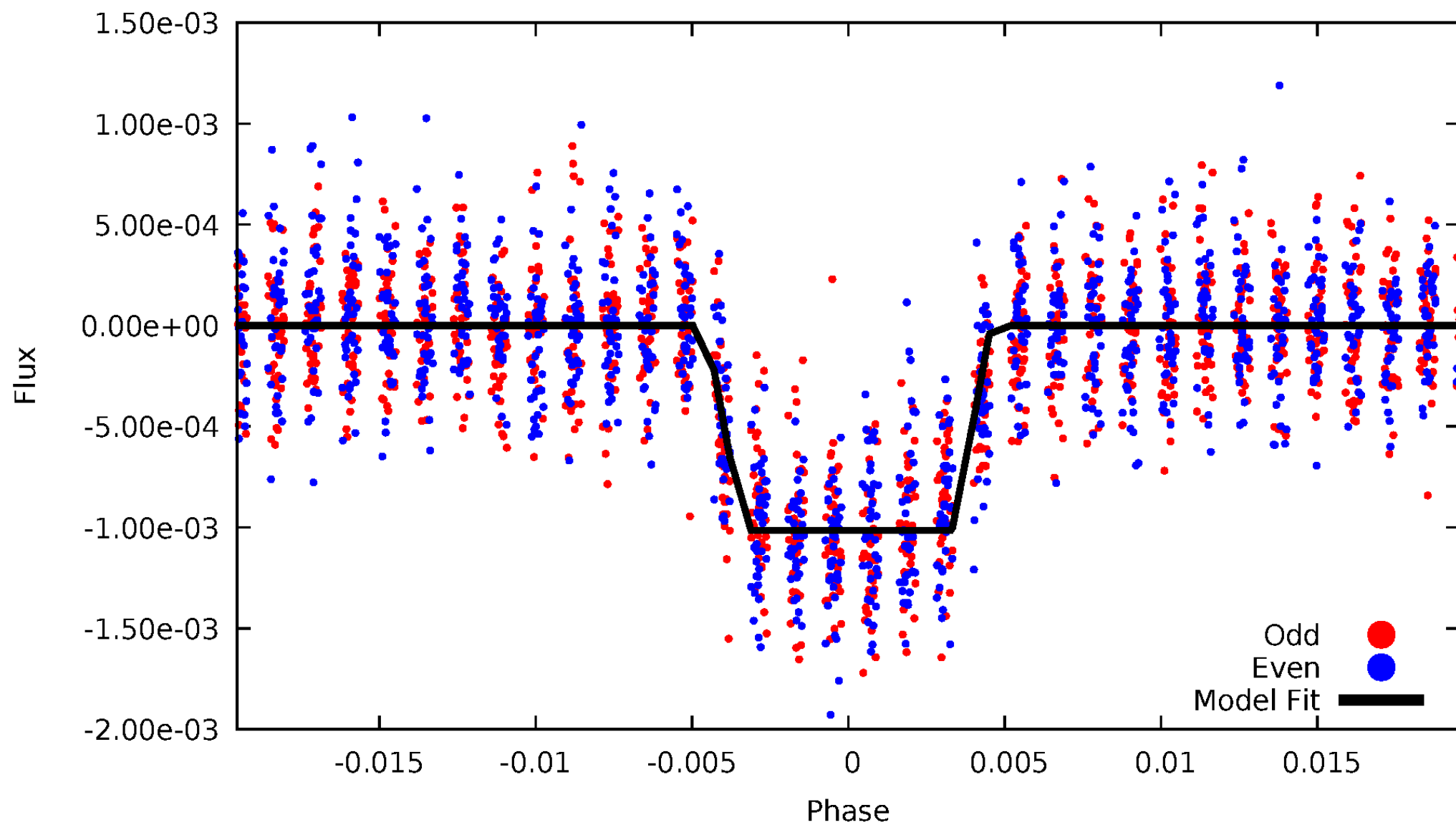
# DV Odd/Even

TCE 012061222-01



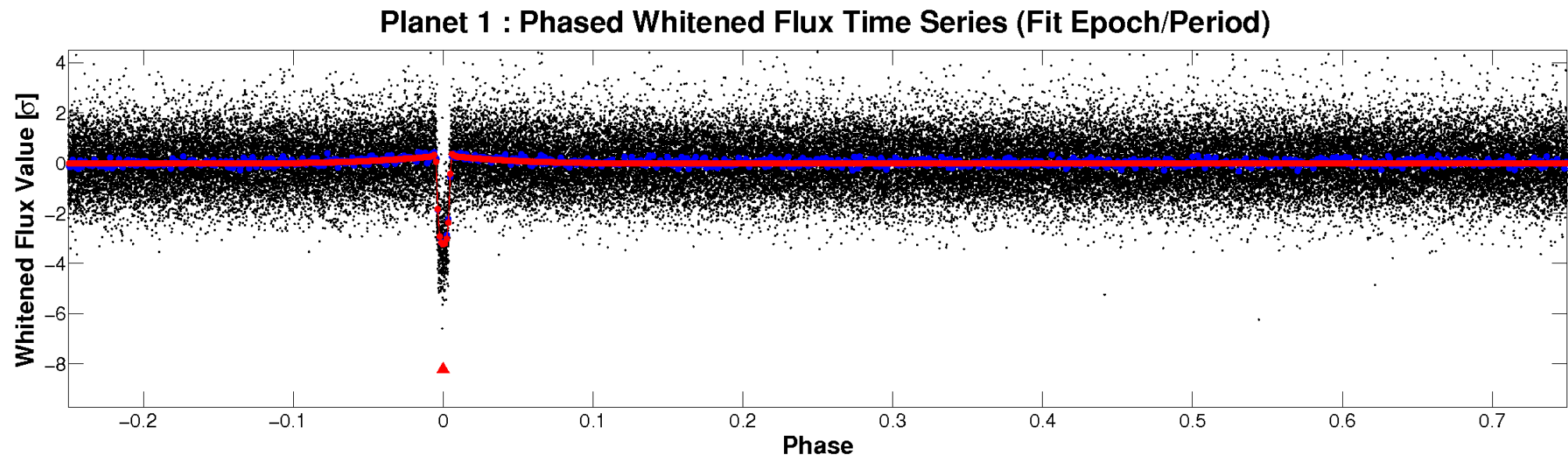
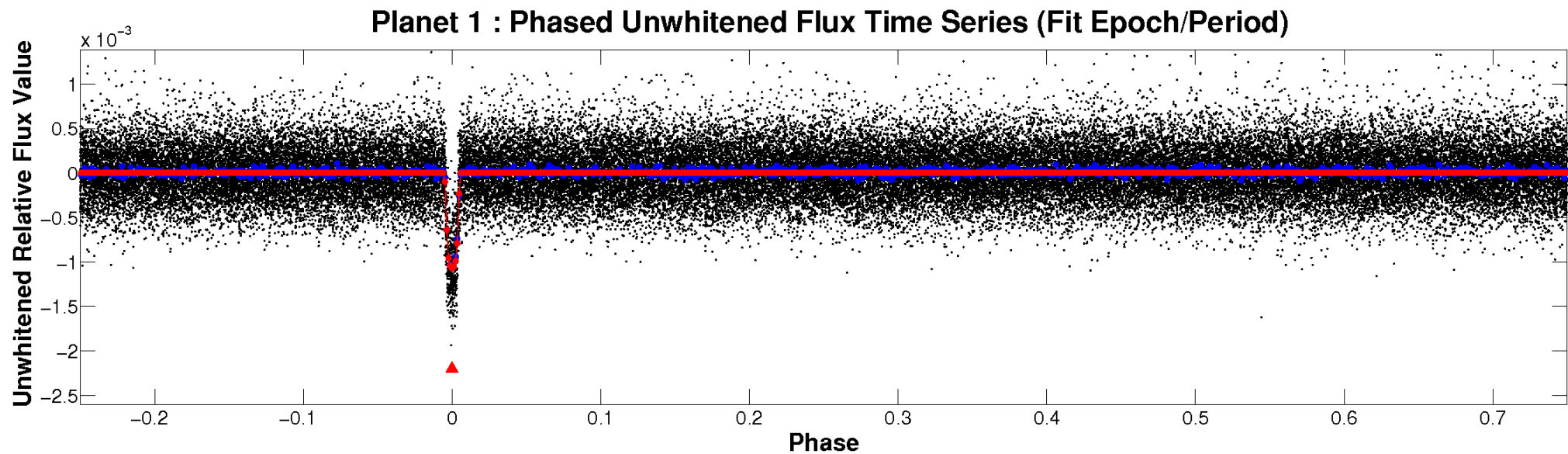
# ALT Odd/Even

TCE 012061222-01



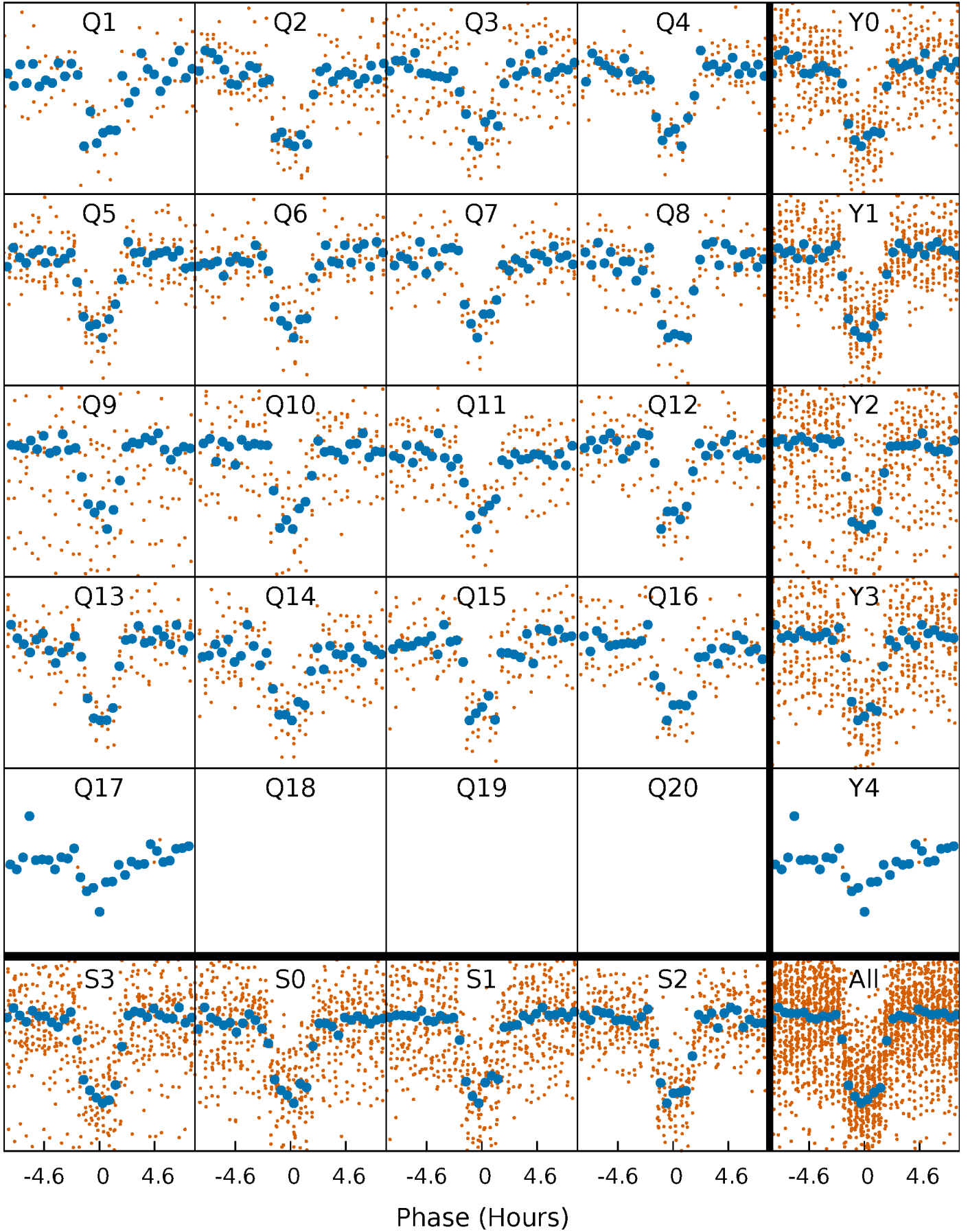


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

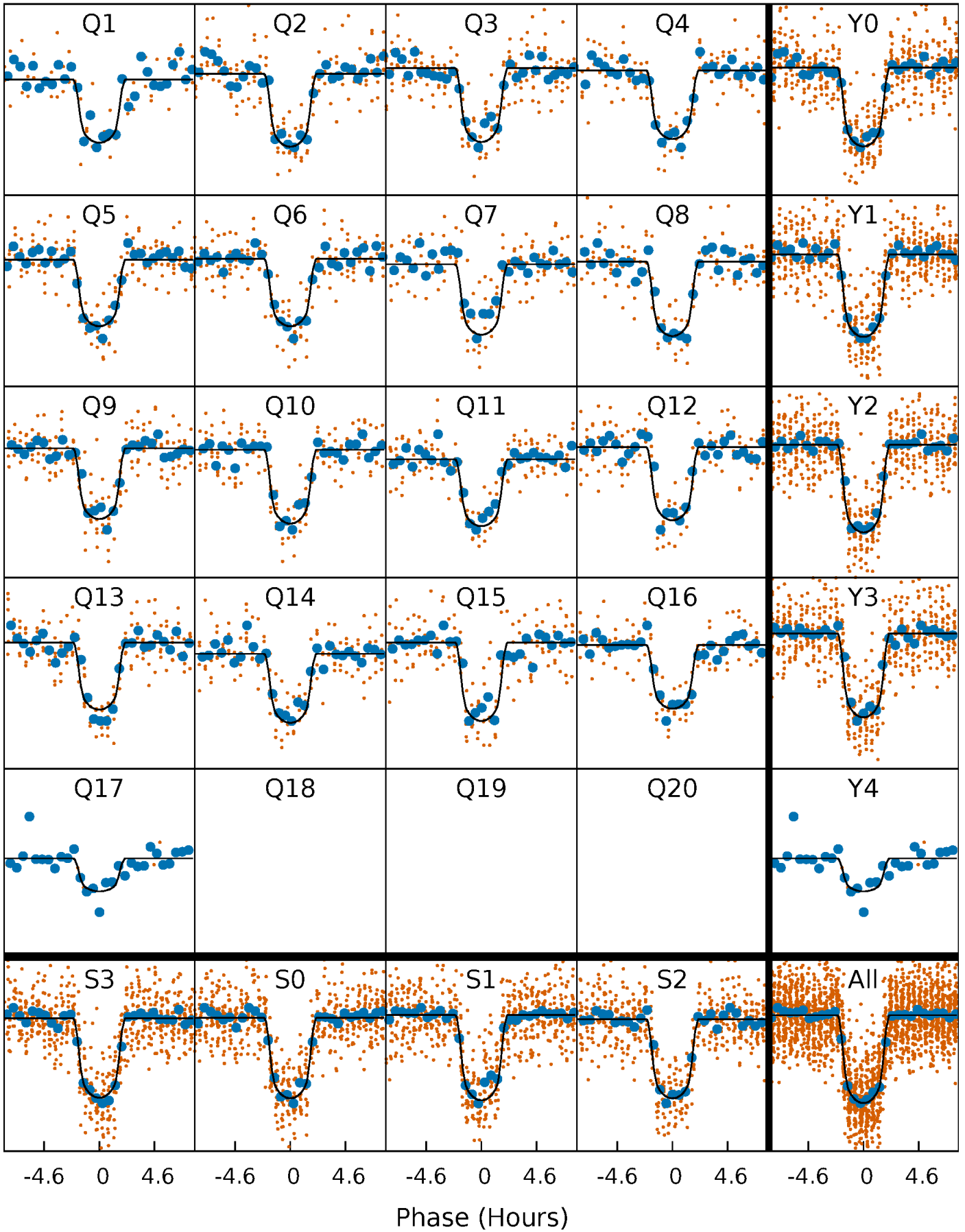
TCE 012061222-01 P= 17.205196 Days  $T_0=140.649368$  (BKJD)





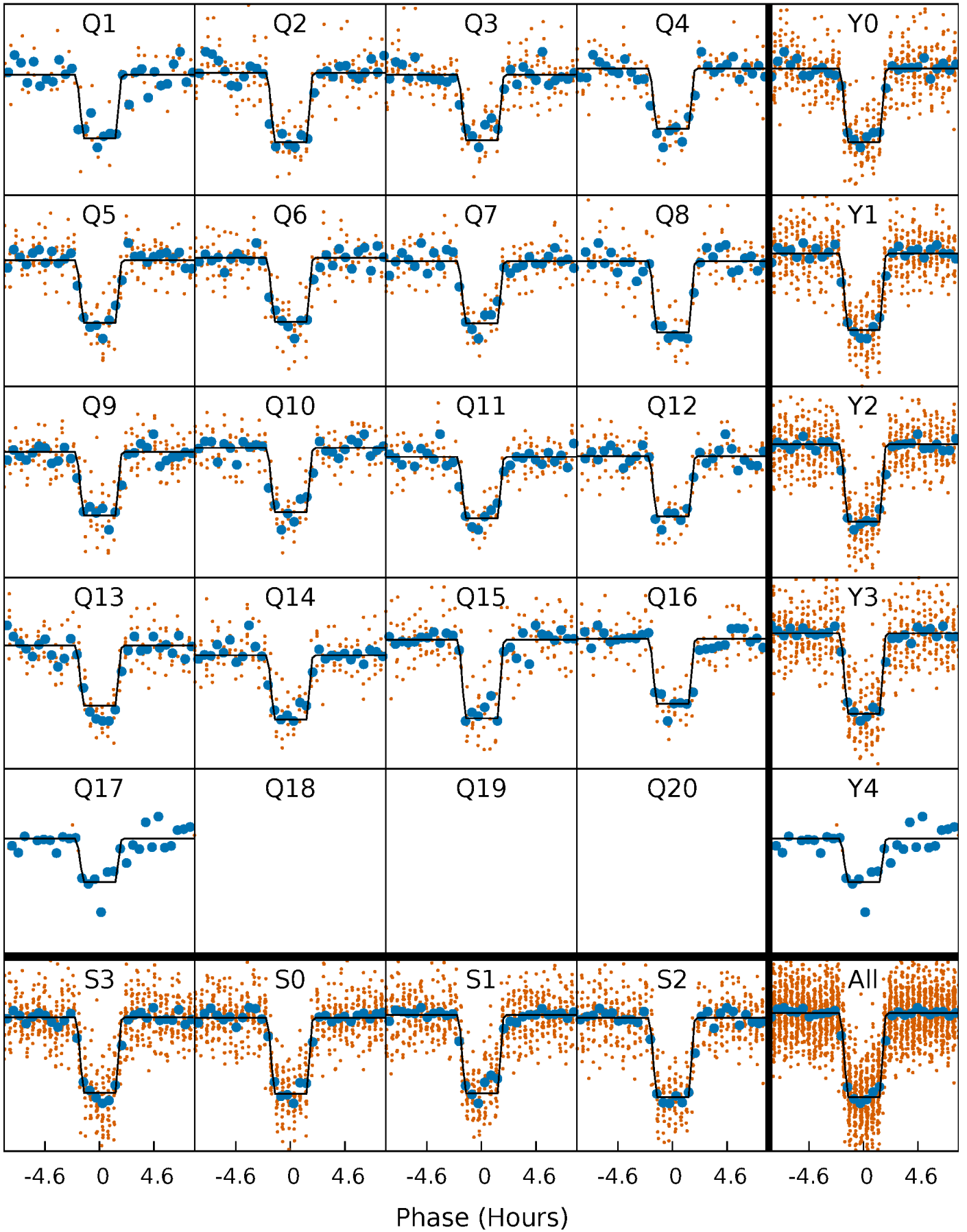
# DV Quarter-Phased Transit Curves

TCE 012061222-01 P= 17.205196 Days  $T_0=140.649368$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

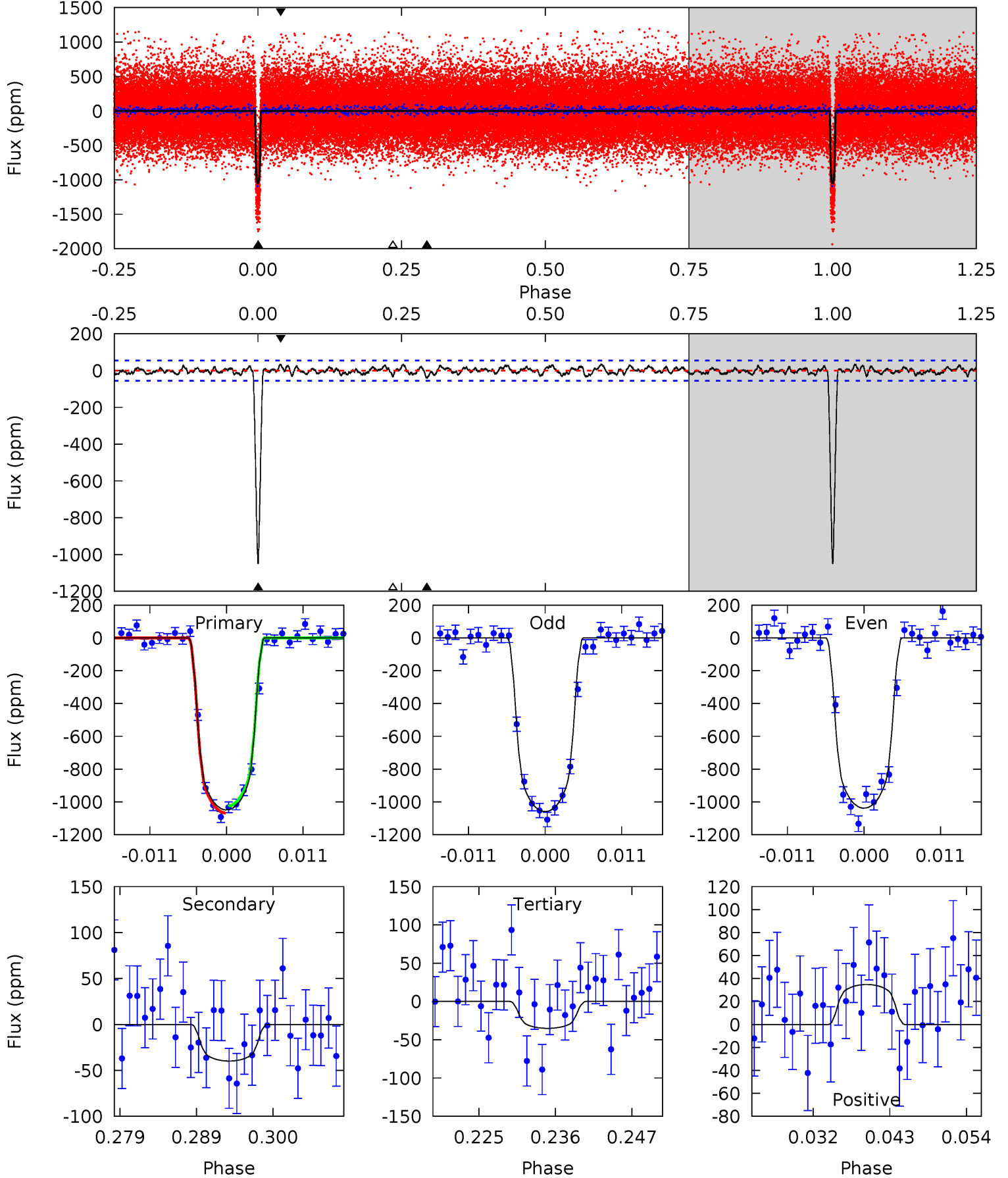
TCE 012061222-01 P= 17.205155 Days  $T_0=140.651084$  (BKJD)



# DV Model-Shift Uniqueness Test

012061222-01,  $P = 17.205196$  Days,  $E = 123.444172$  Days

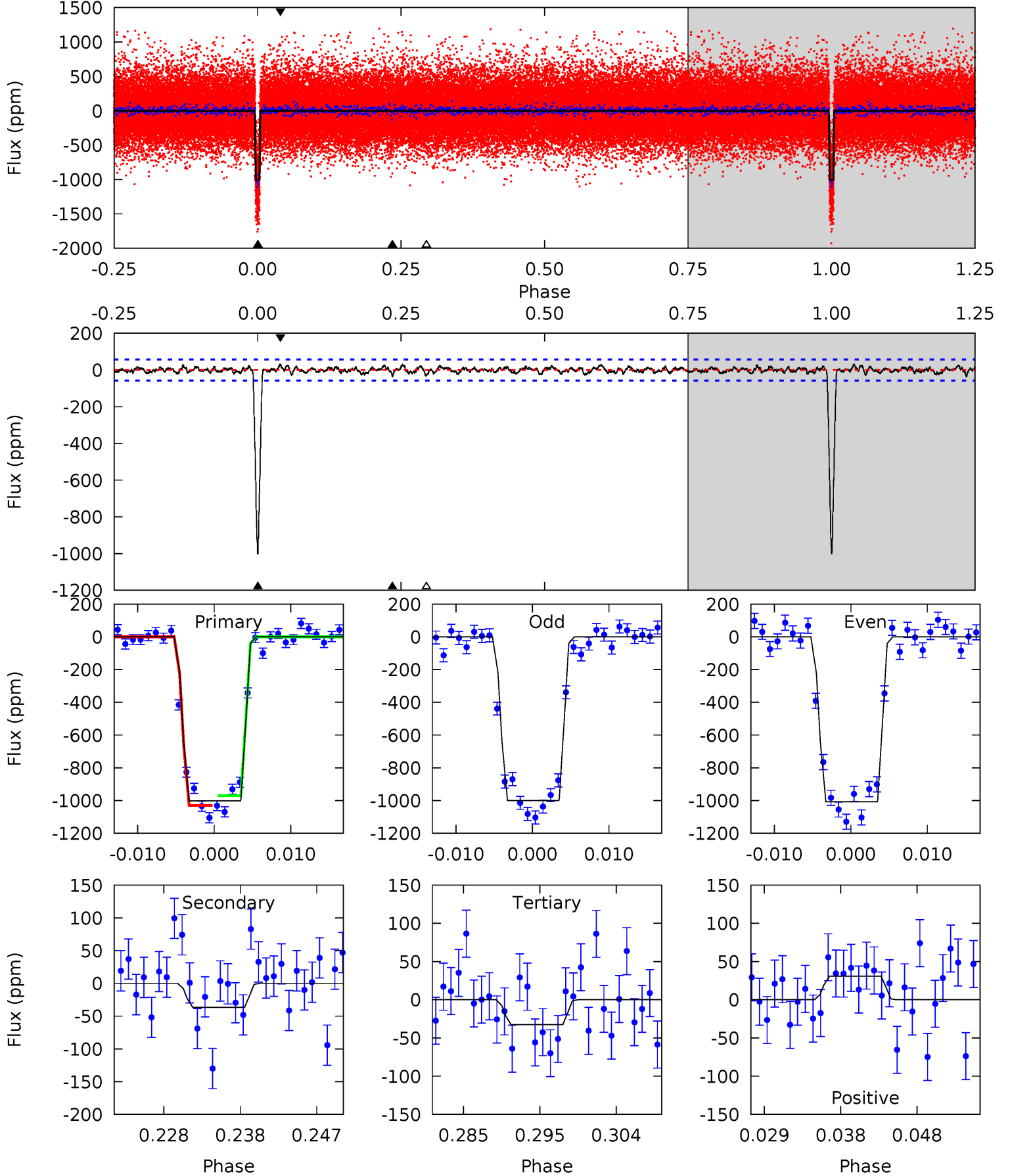
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
96.0	3.65	3.21	3.18	5.01	2.55	1.22	92.7	92.8	0.44	0.47	0.95	0.99	0.03	1.98



# Alt Model-Shift Uniqueness Test

012061222-01,  $P = 17.205155$  Days,  $E = 123.445929$  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
87.7	3.22	2.86	2.69	5.04	2.59	0.95	84.9	85.0	0.36	0.53	0.28	1.01	0.03	2.64



### Stellar Parameters For KIC 012061222

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5211^{+141}_{-141}$	$4.643^{+0.030}_{-0.090}$	$-0.400^{+0.350}_{-0.300}$	$0.689^{+0.100}_{-0.050}$	$0.766^{+0.075}_{-0.075}$	$3.303^{+0.517}_{-0.950}$
	+3%/-3%	+1%/-2%	+87%/-75%	+15%/-7%	+10%/-10%	+16%/-29%
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 012061222-01 / KOI 0484.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-40 \pm 11$	$2.69^{+0.26}_{-0.23}$	$781^{+31}_{-25}$	$2892^{+123}_{-142}$	$42^{+15}_{-12}$
Alt.	$-37 \pm 11$	$2.46^{+0.23}_{-0.21}$	$782^{+31}_{-27}$	$2934^{+144}_{-168}$	$46^{+19}_{-15}$

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

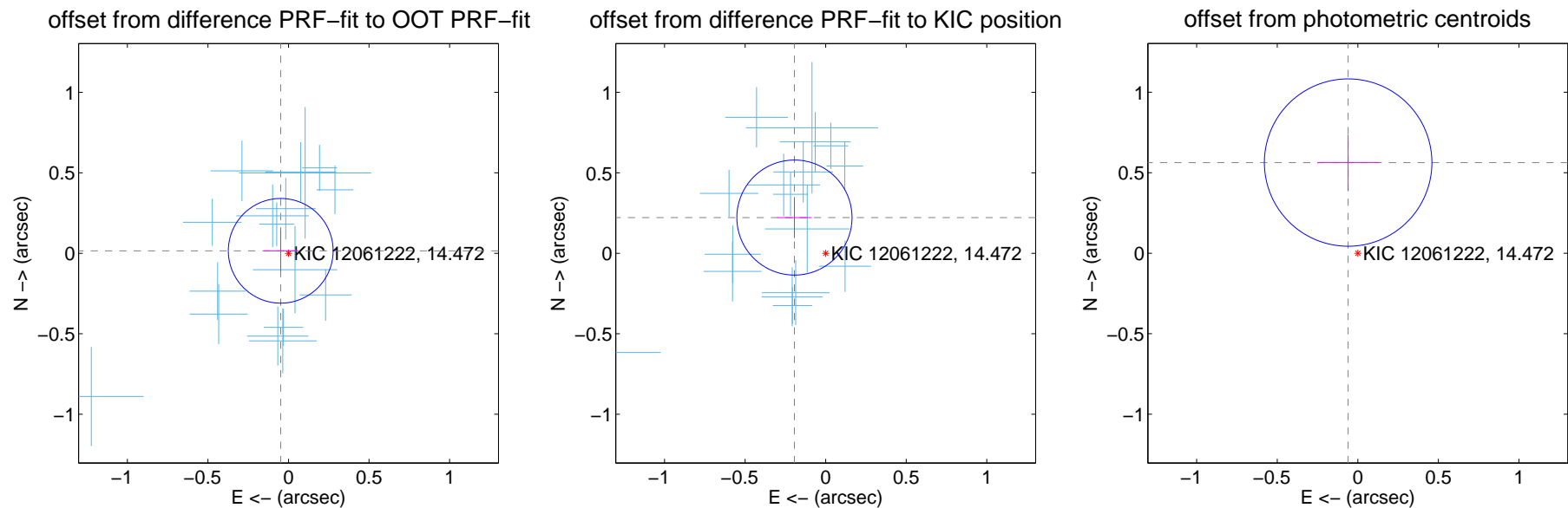
## DV Centroid Data

Supplemental centroid analysis for 012061222-01. Kepler magnitude: 14.47. Transit SNR 64.84

There are 17 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.34 arcsec

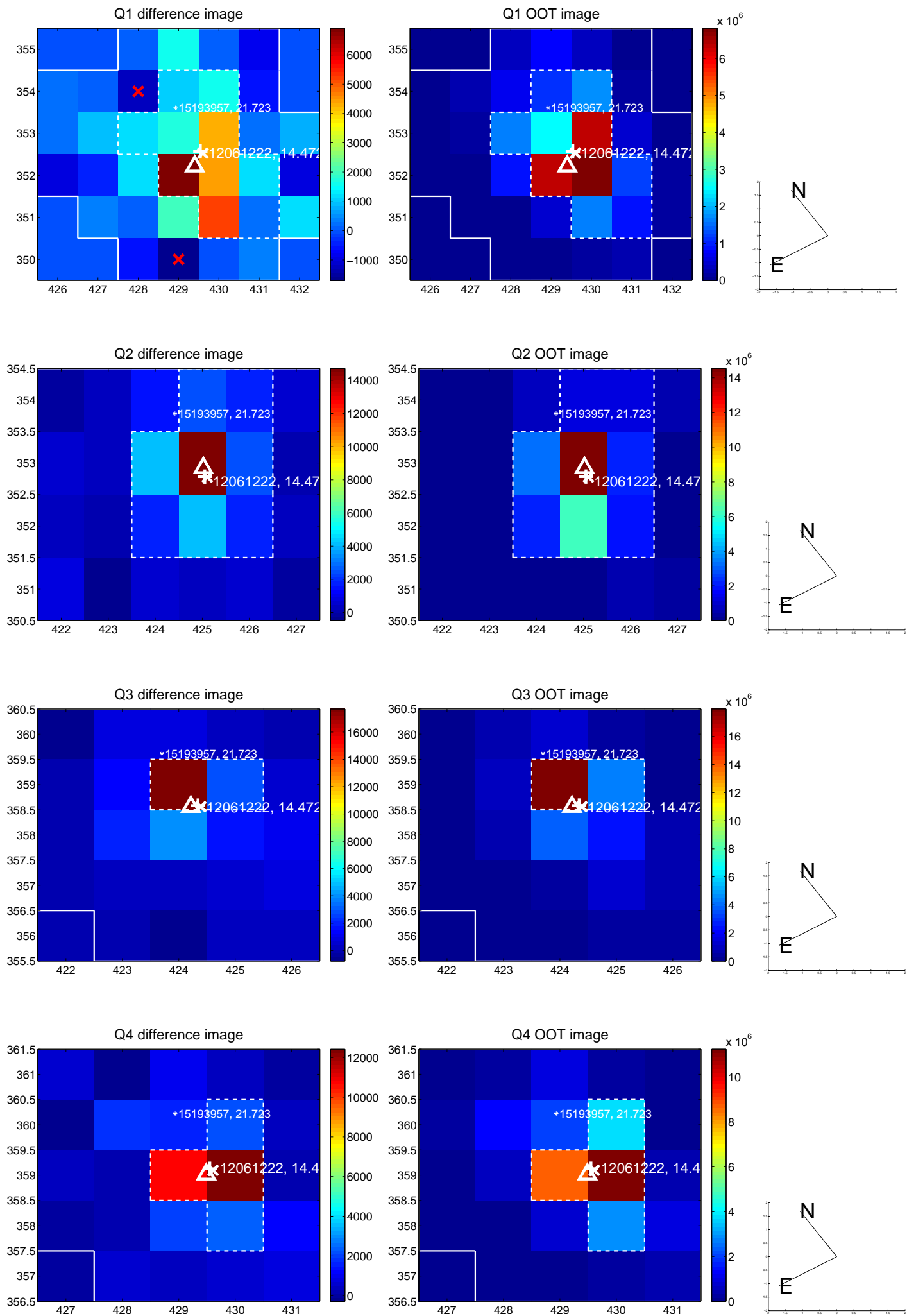
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.051 \pm 0.108$	0.47	$0.048 \pm 0.106$	$0.015 \pm 0.128$
PRF-fit source offset from KIC position	$0.295 \pm 0.119$	2.47	$0.194 \pm 0.108$	$0.222 \pm 0.127$
photometric centroid source offset	$0.57 \pm 0.17$	3.27	$0.06 \pm 0.19$	$0.56 \pm 0.17$



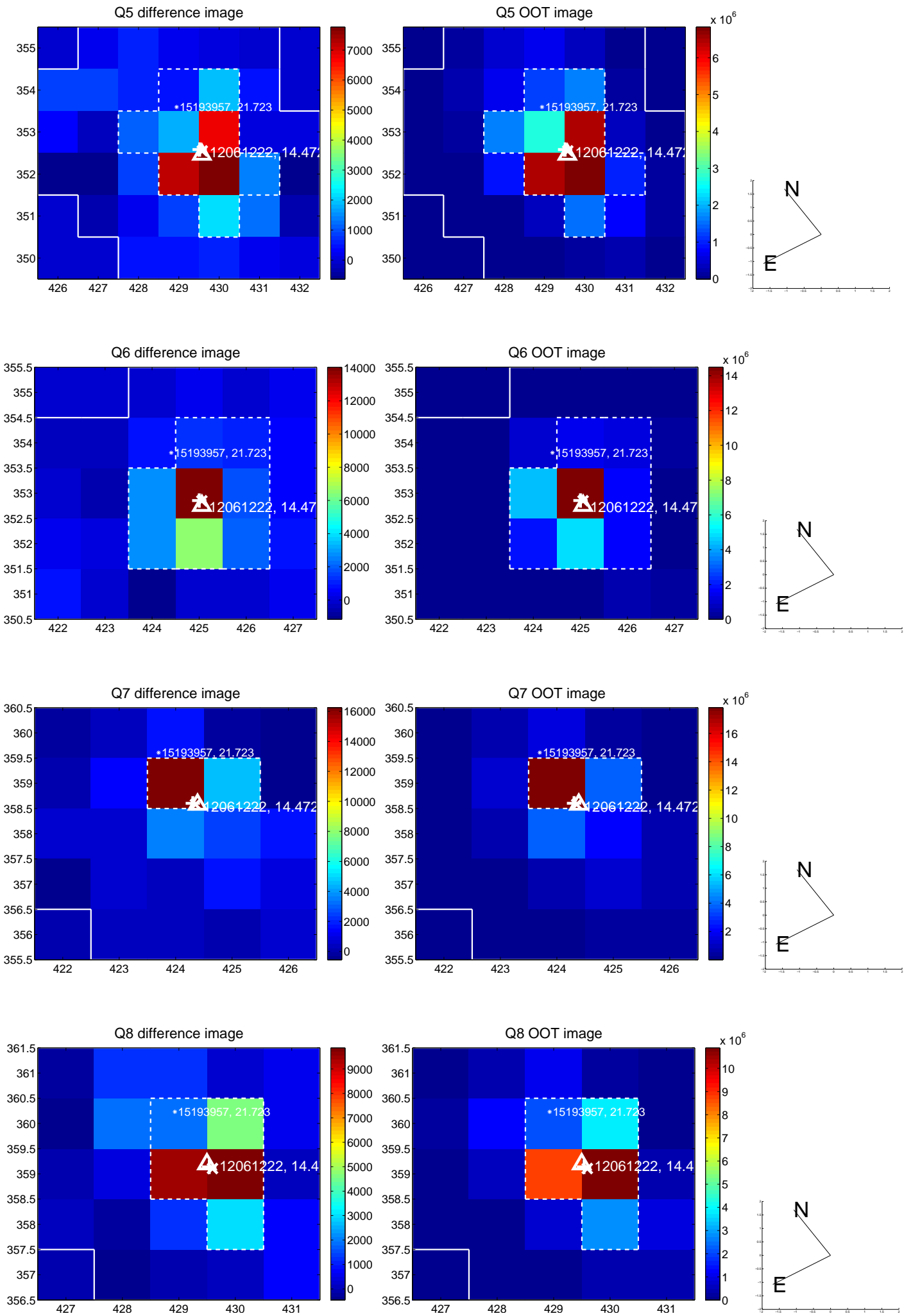
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



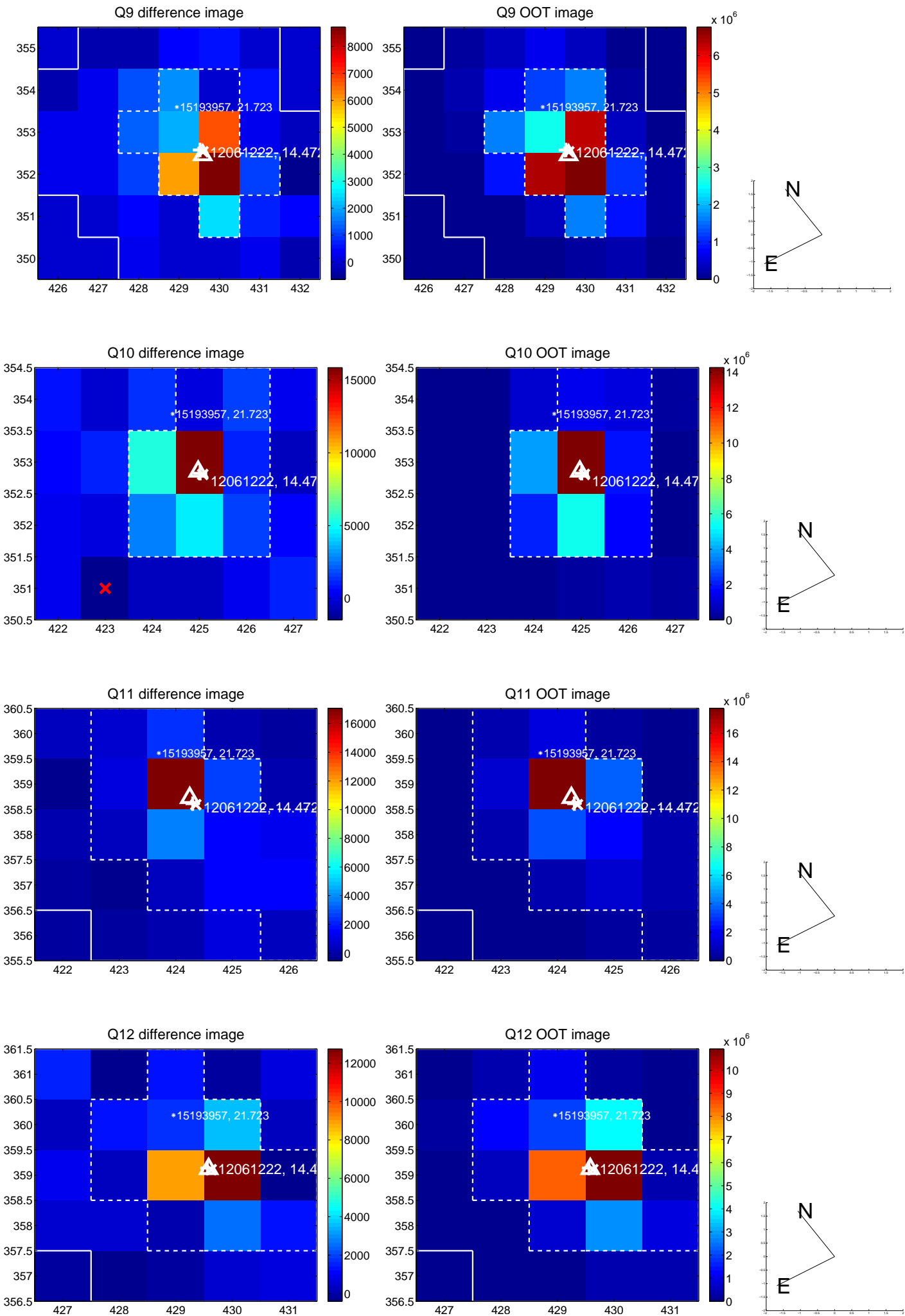
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



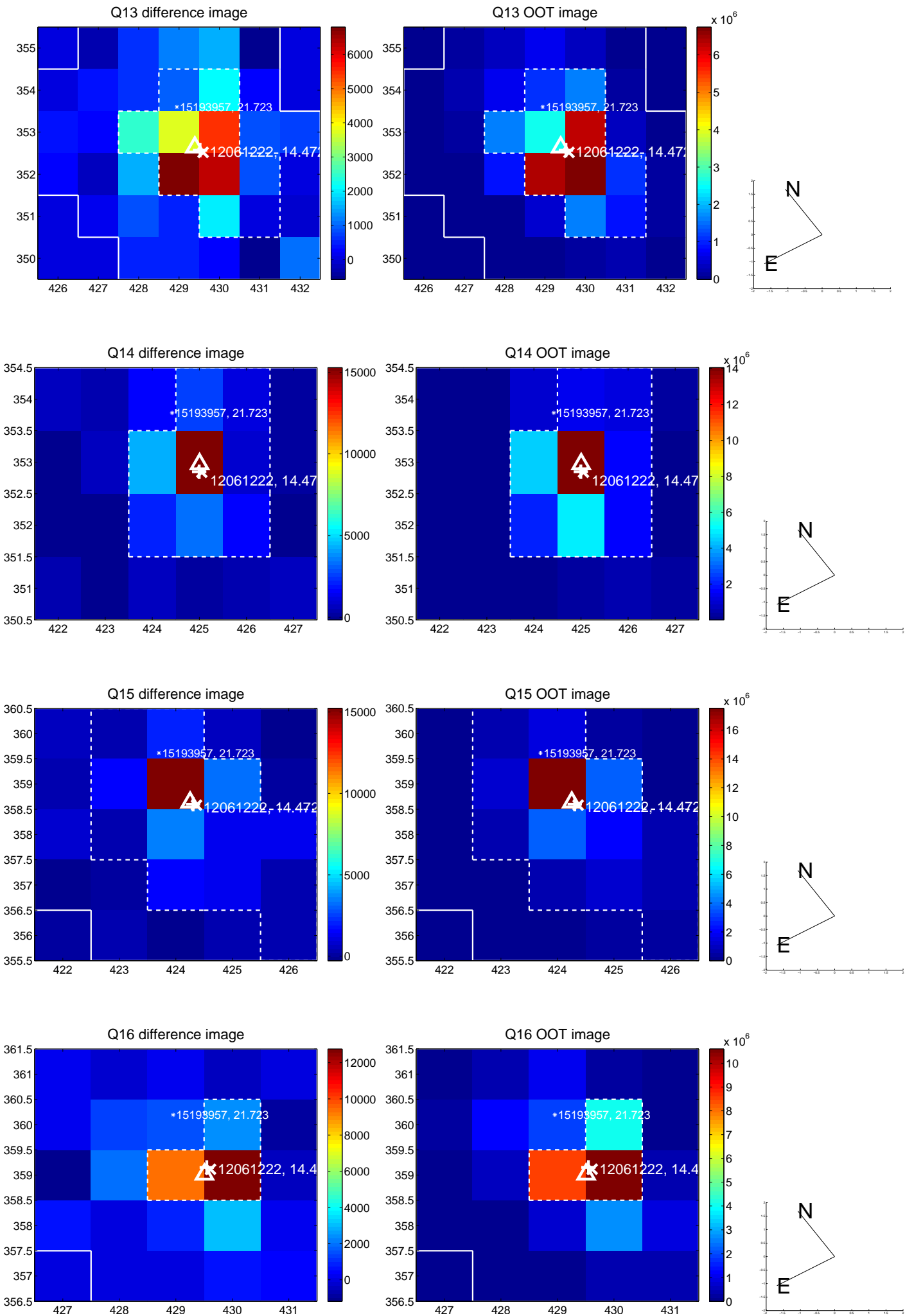
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



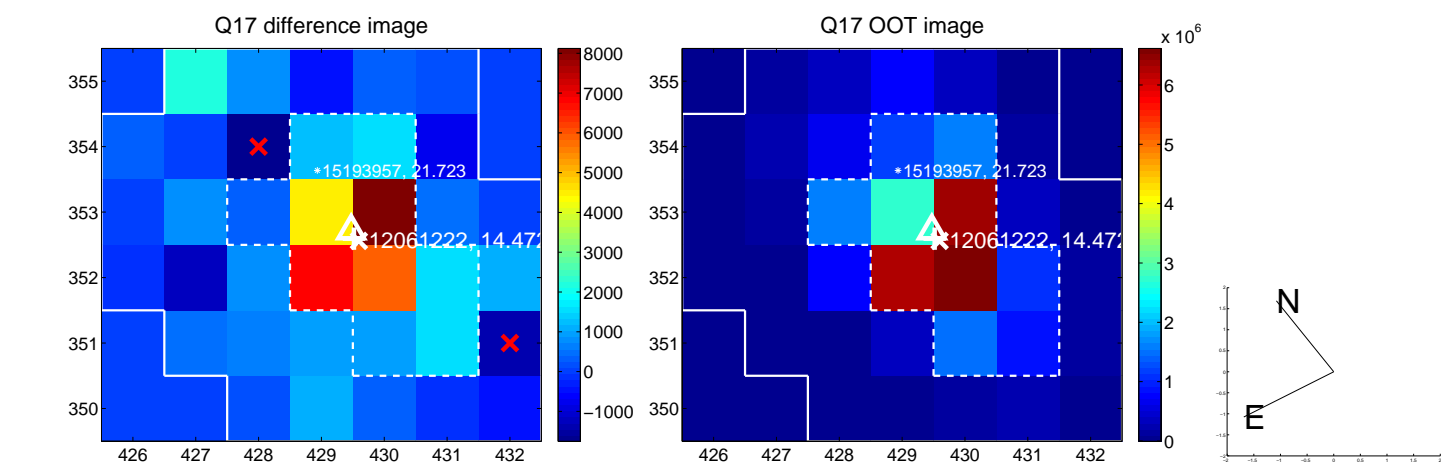
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



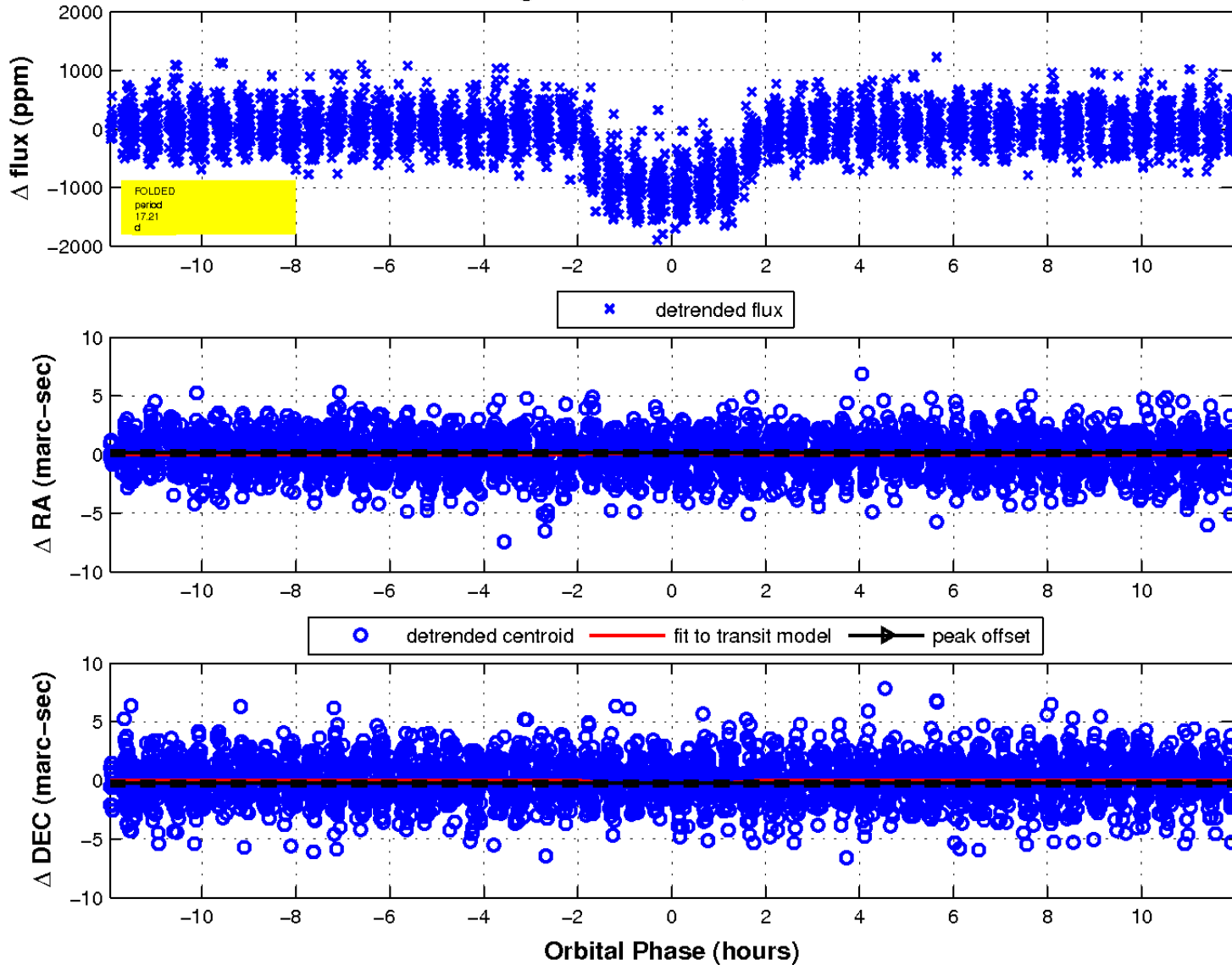
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

