

# KIC 007609674

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007609674-01	OBS	3128.01	21.236050	149.876077	98.2	4.307	12.6	12.8	2.56	6035	3.00	285.90

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007609674-01	OBS	PC	0.95	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 007609674-01

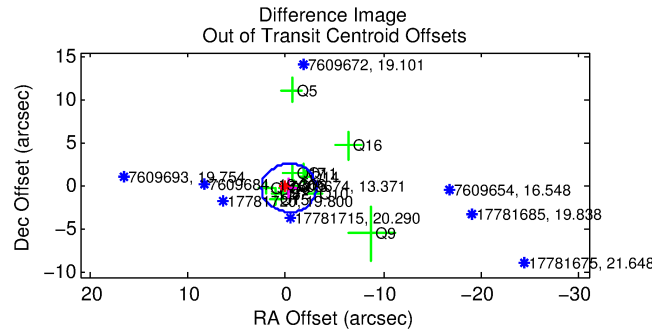
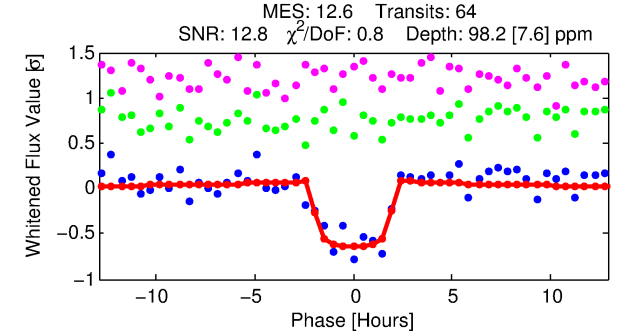
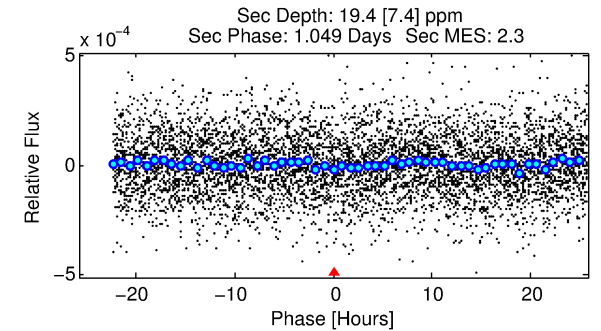
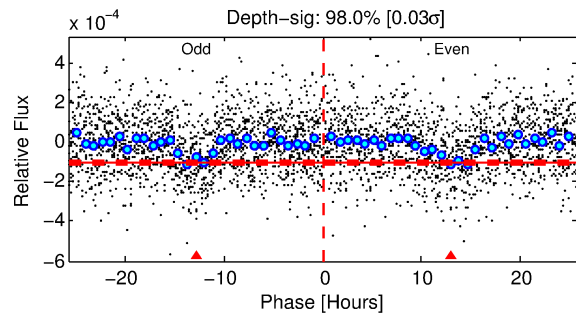
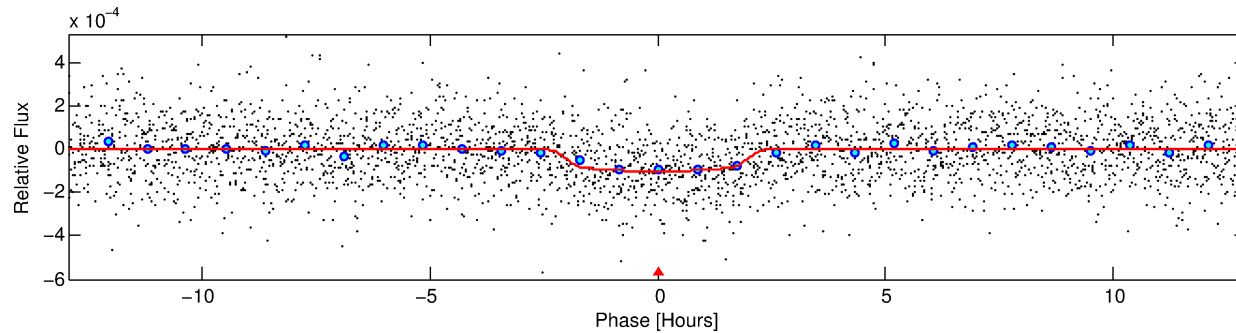
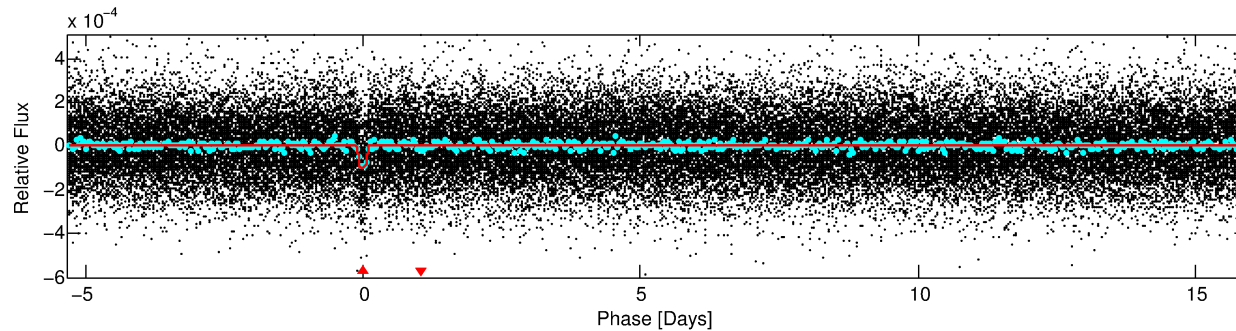
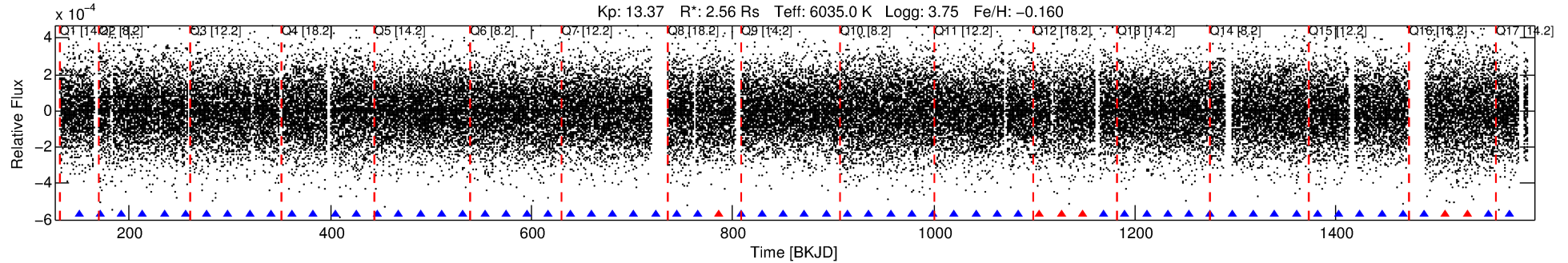
No Significant Match Found

# DV One-Page Summary

KIC: 7609674 Candidate: 1 of 1 Period: 21.236 d

KOI: K03128.01 Corr: 0.956

Kp: 13.37 R\*: 2.56 Rs Teff: 6035.0 K Logg: 3.75 Fe/H: -0.160



## DV Fit Results:

Period = 21.23605 [0.00017] d  
Epoch = 149.8761 [0.0064] BKJD  
Rp/R\* = 0.0108 [0.0032]  
a/R\* = 16.80 [26.62]  
b = 0.91 [0.31]  
Seff = 285.90 [120.23]  
Teq = 1049 [110] K  
Rp = 3.01 [1.30] Re  
a = 0.1650 [0.0451] AU  
Ag = 32.17 [26.46] [1.18σ]  
Teffp = 3861 [693] K [4.01σ]

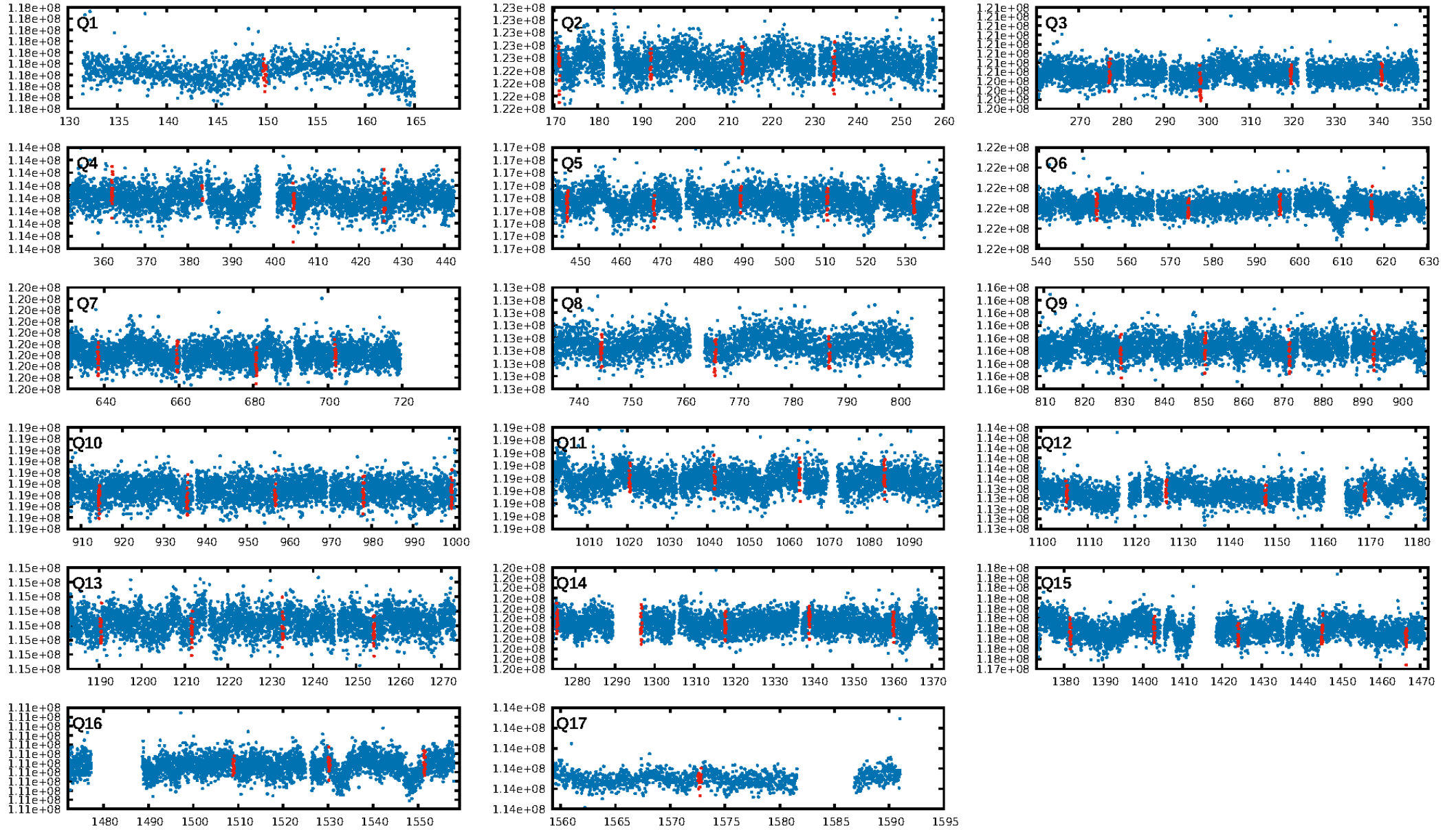
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 100.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.03e-35  
RollingBand-fgt: 0.90 [56/62]  
GhostDiagnostic-chr: -4.111  
Centroid-sig: 44.1%  
Centroid-so: 0.813 arcsec [0.91σ]  
OotOffset-rm: 0.397 arcsec [0.43σ]  
OotOffset-st: 3/3/3/4 [13]  
KicOffset-rm: 0.352 arcsec [0.38σ]  
KicOffset-st: 3/3/3/4 [13]  
DiffImageQuality-fgm: 0.46 [6/13]  
DiffImageOverlap-fno: 1.00 [17/17]

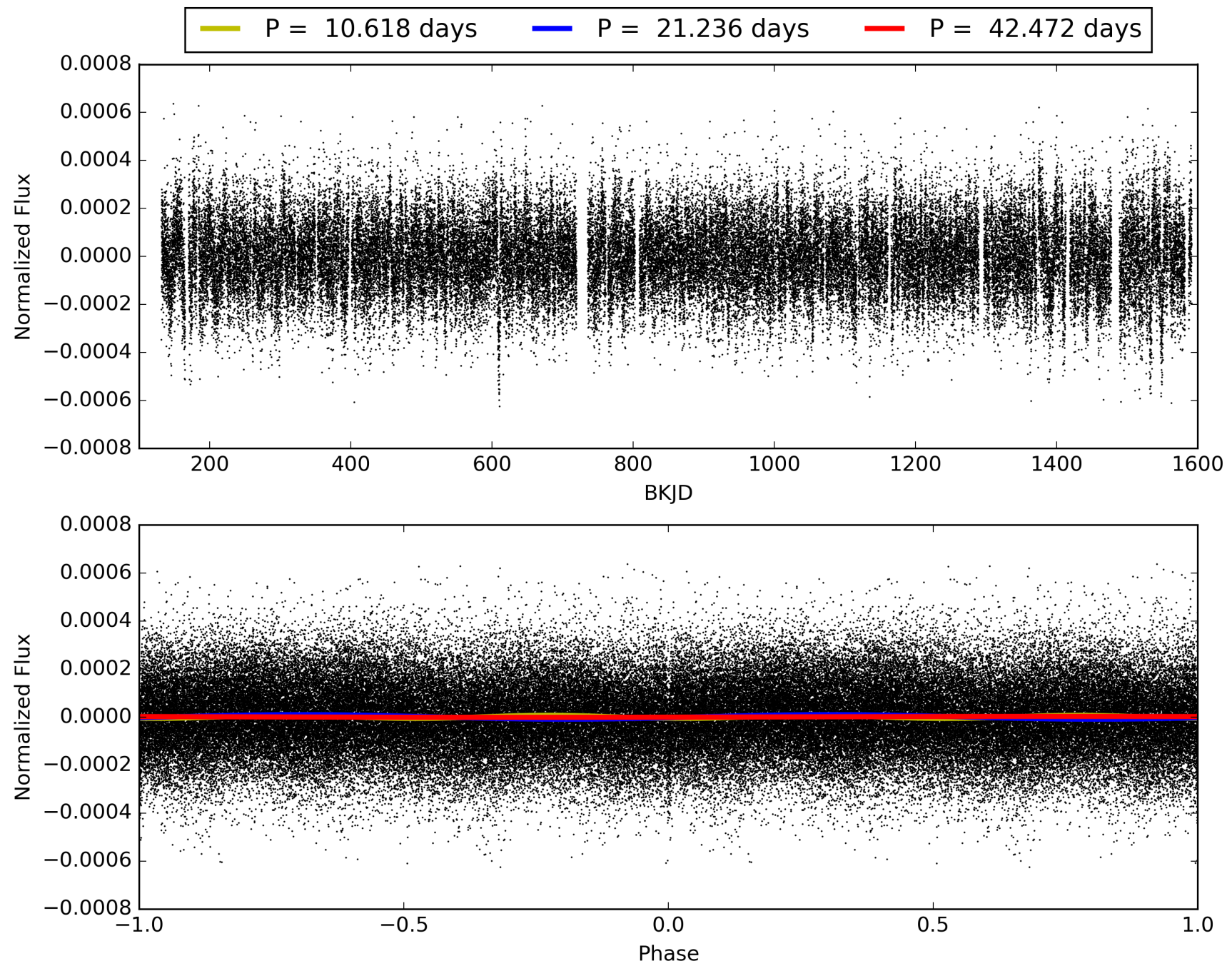
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:10:15 Z

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

# TCE 007609674-01, PDC Light Curves

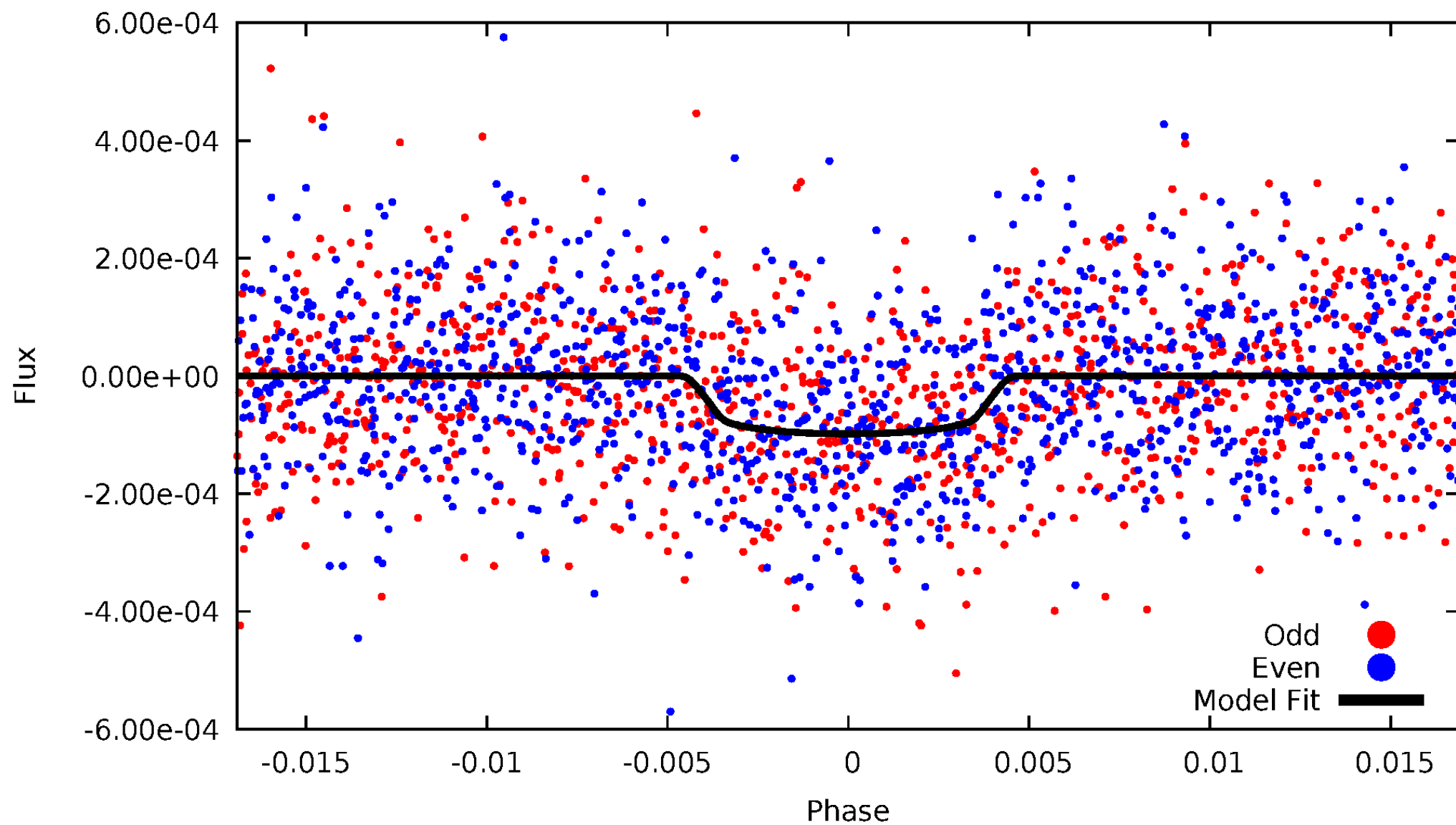


TCE 007609674-01



# DV Odd/Even

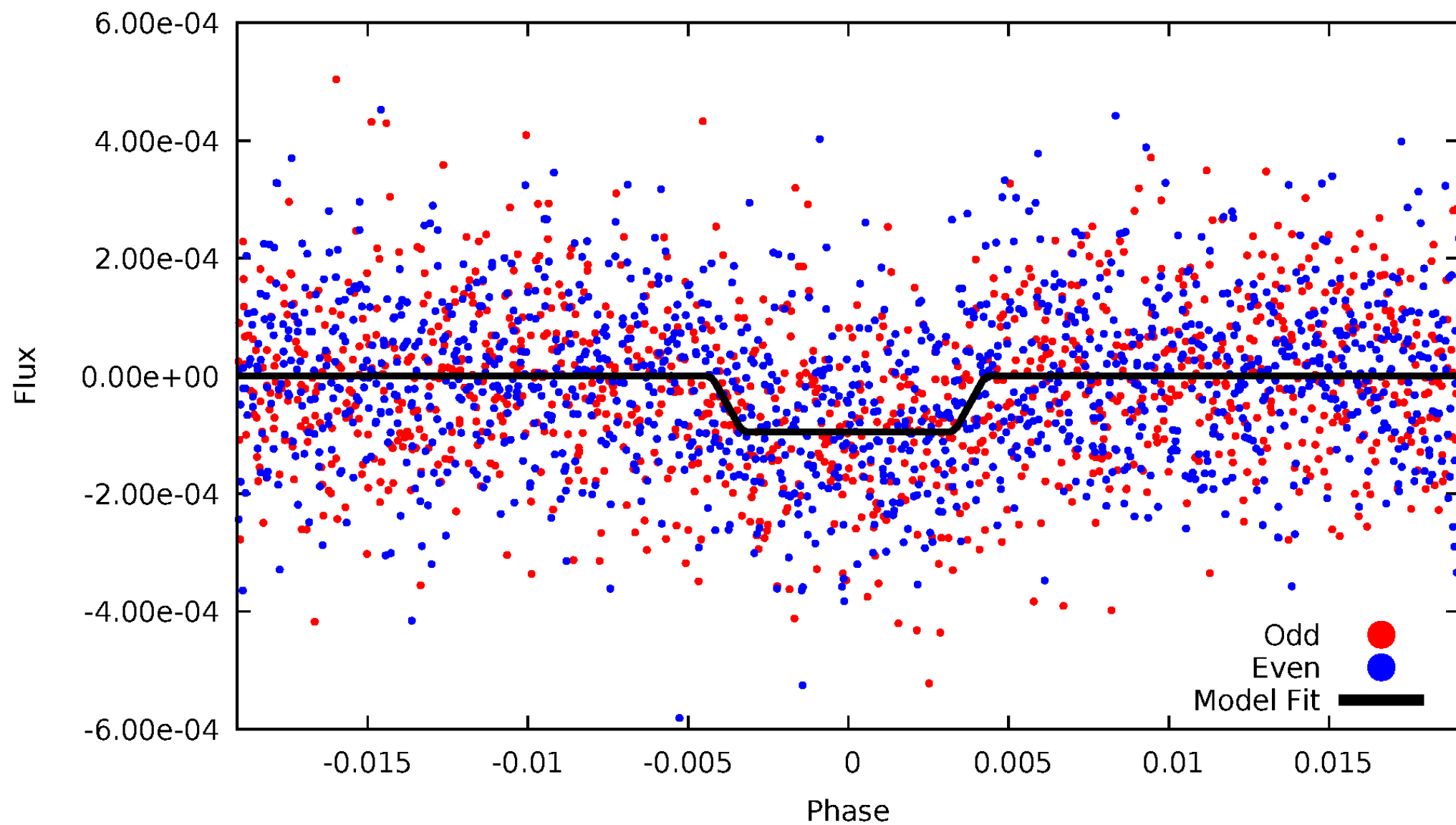
TCE 007609674-01





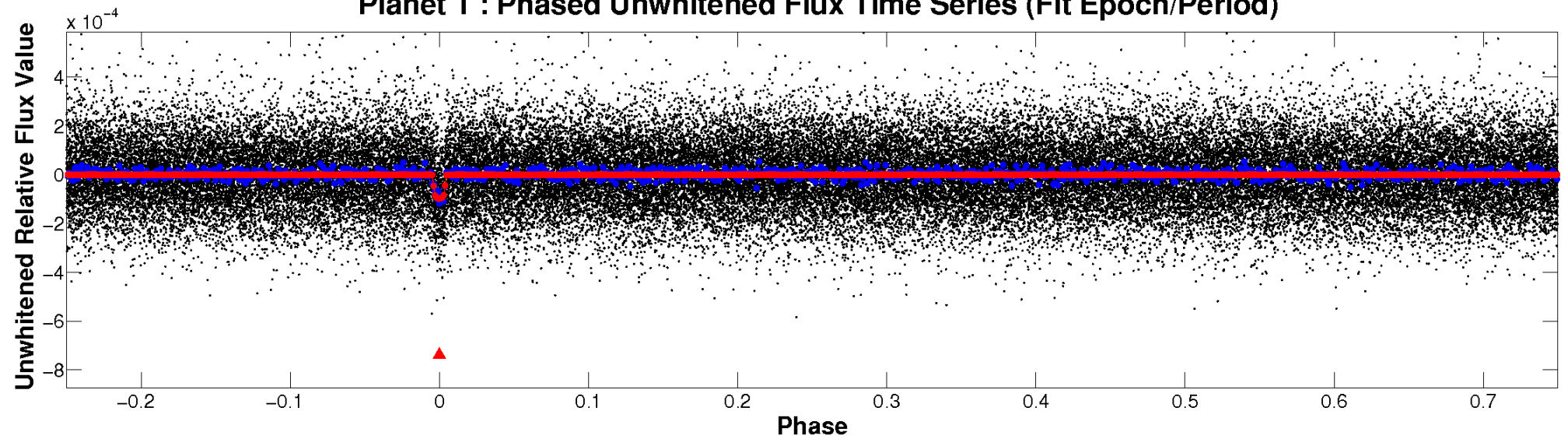
# ALT Odd/Even

TCE 007609674-01

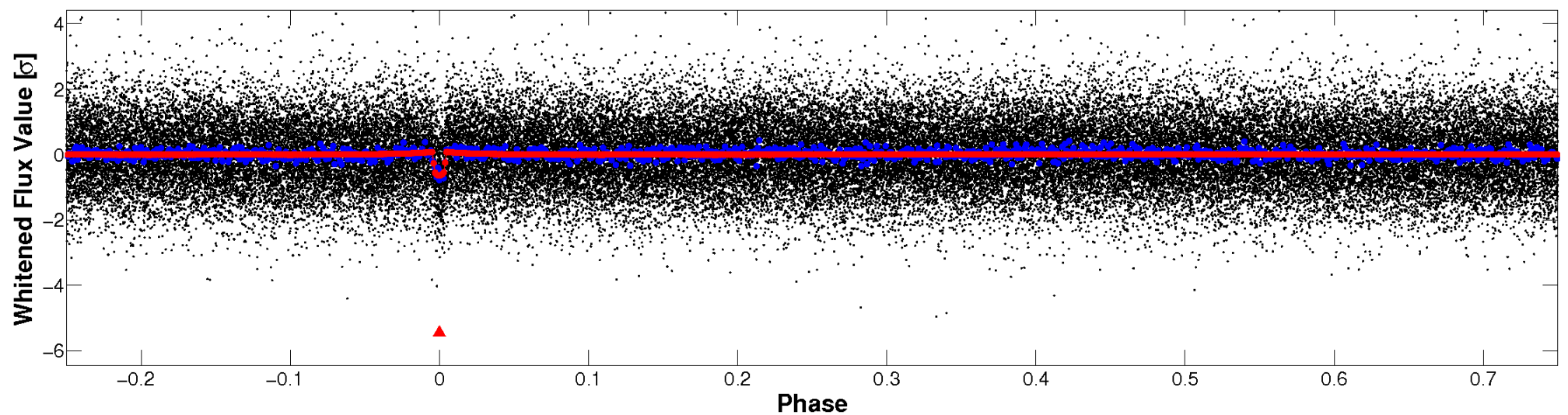


# Non-Whitened Vs. Whitened Light Curve

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

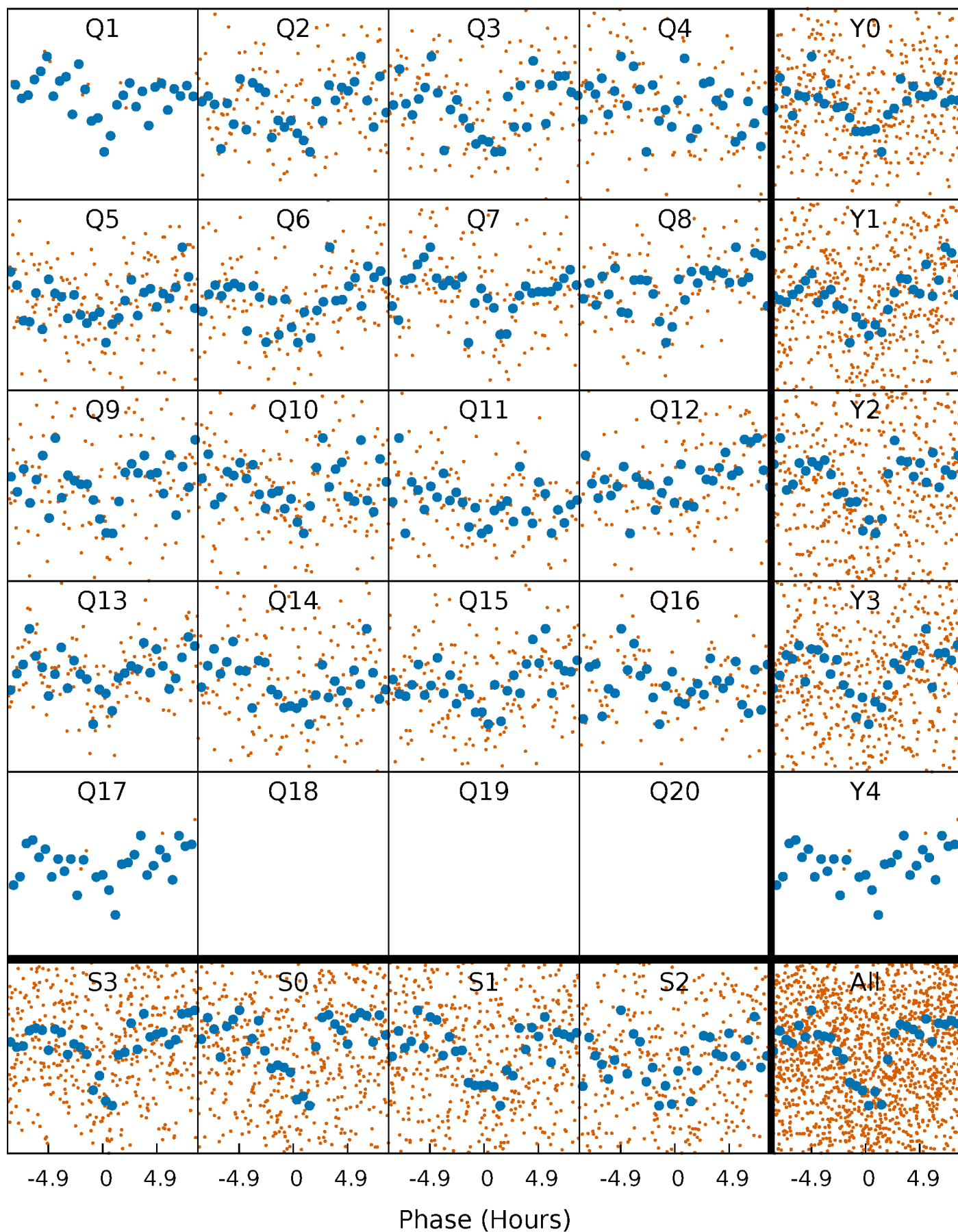


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

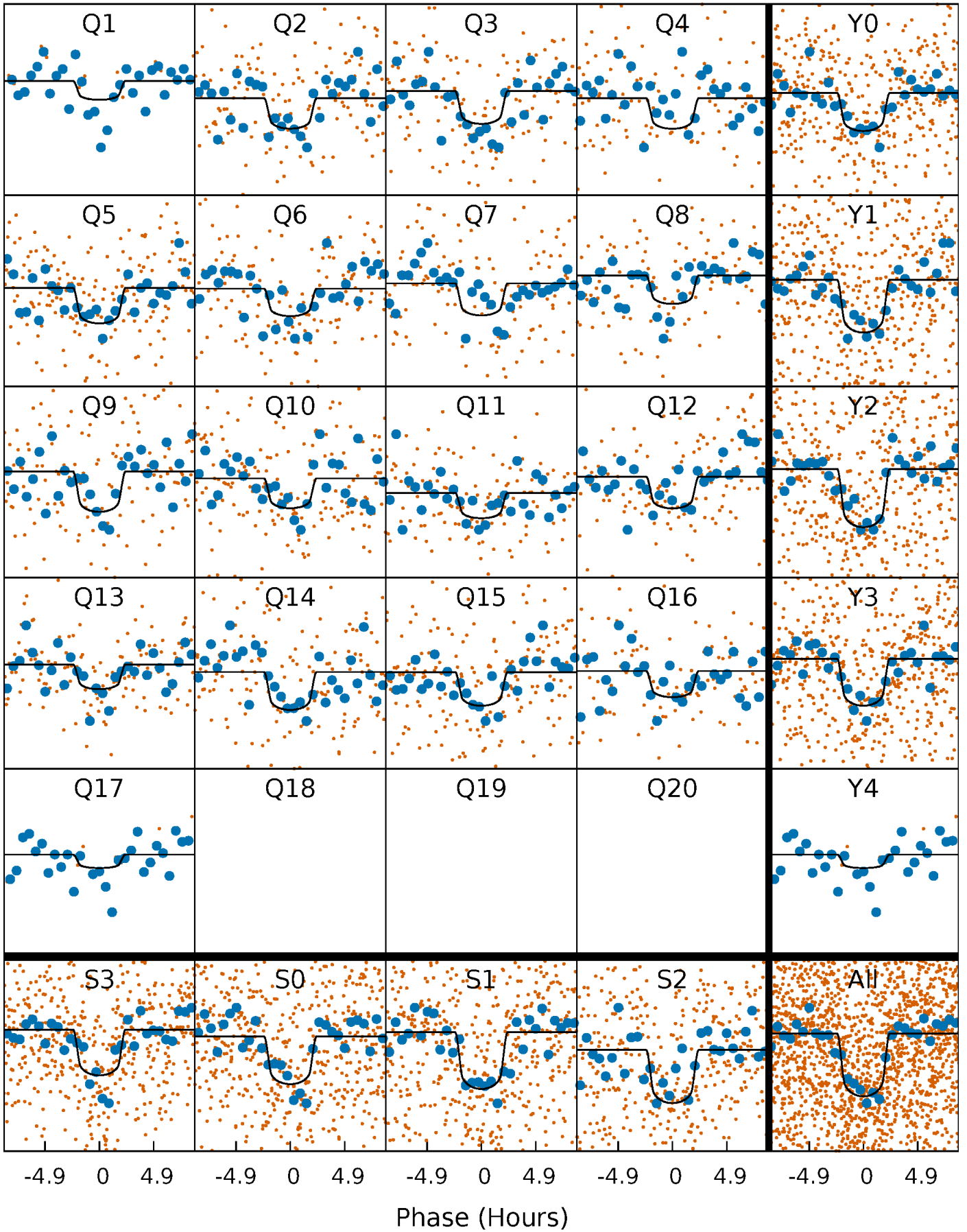
TCE 007609674-01 P= 21.236050 Days  $T_0=149.876077$  (BKJD)





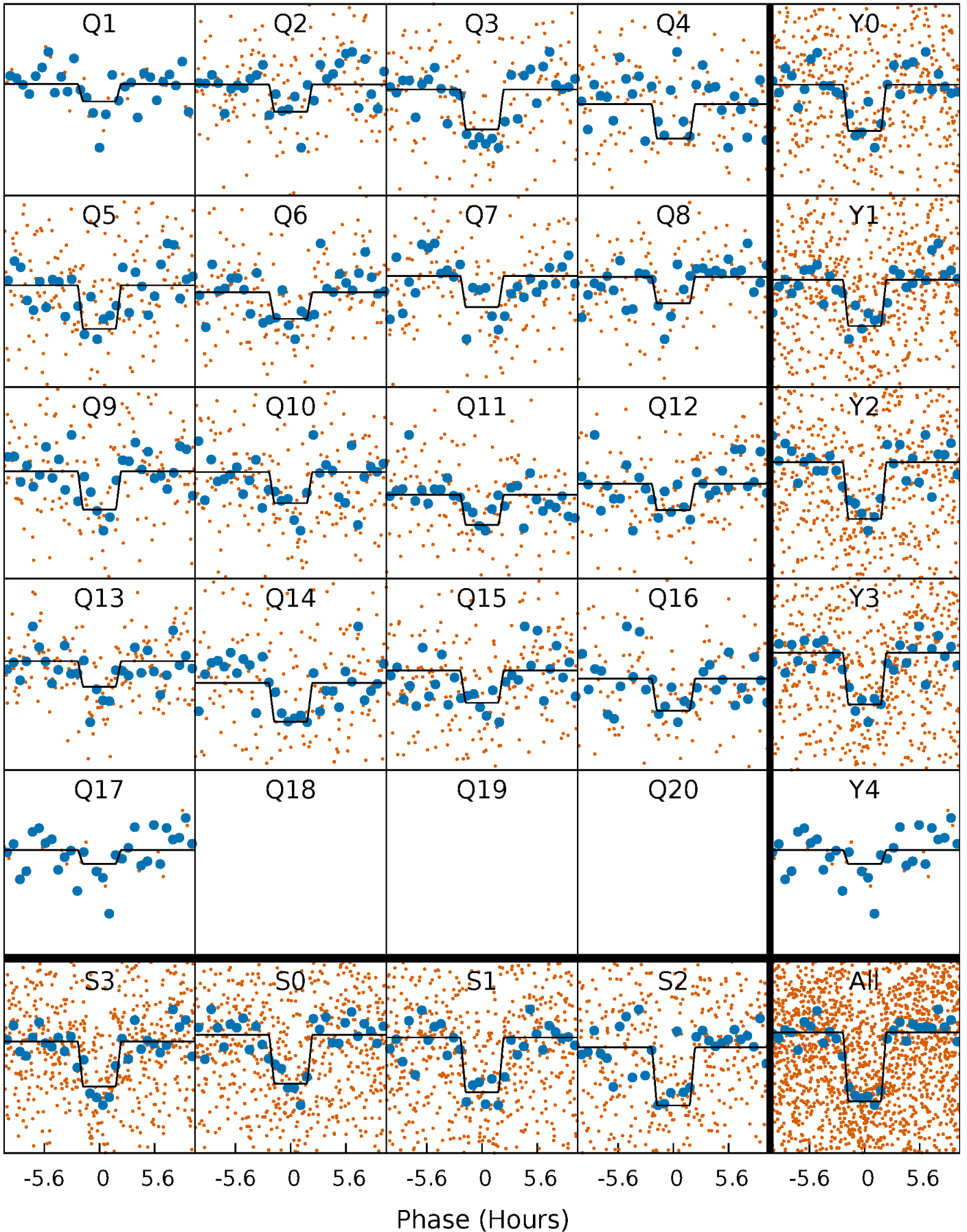
# DV Quarter-Phased Transit Curves

TCE 007609674-01 P= 21.236050 Days  $T_0=149.876077$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

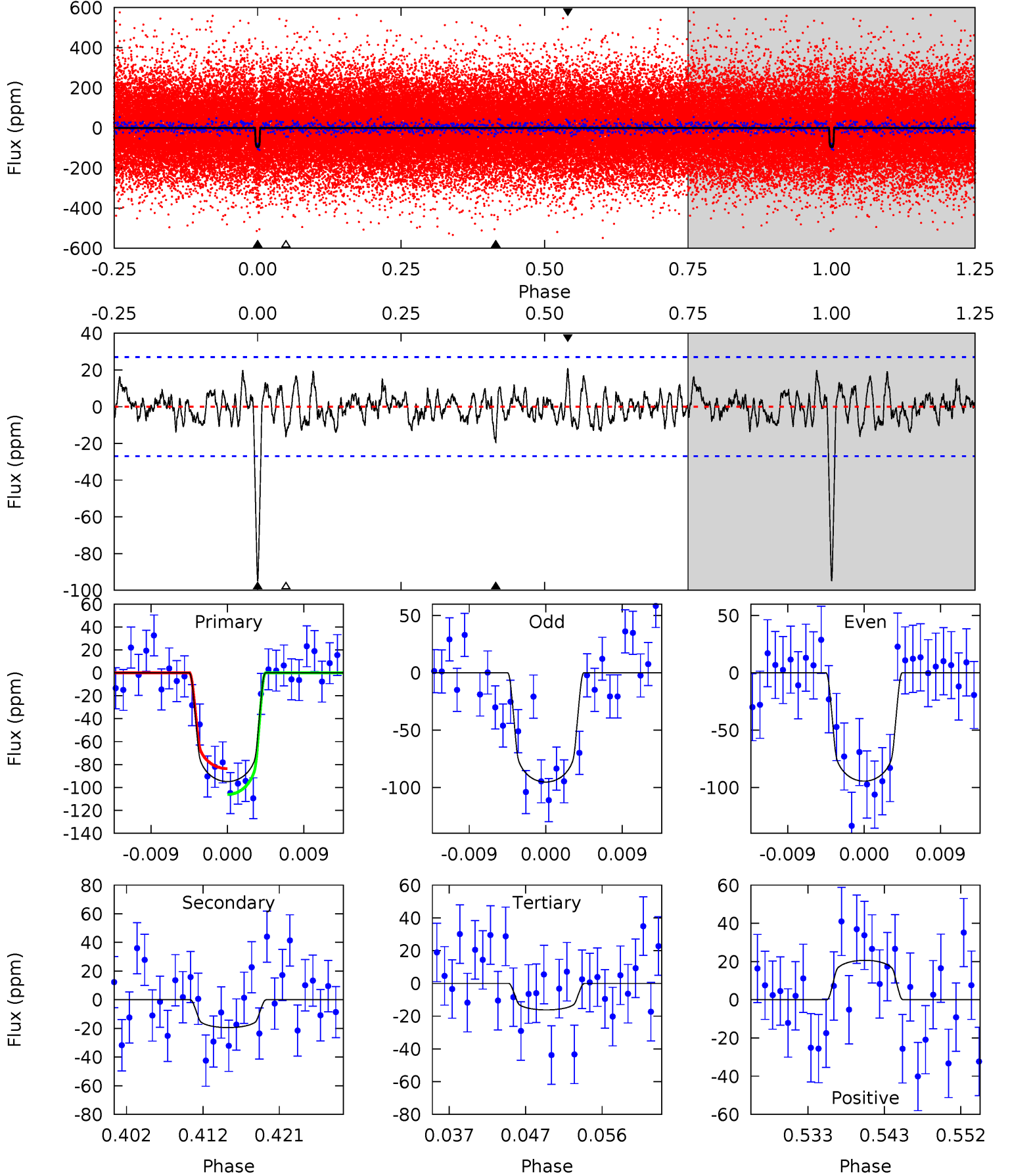
TCE 007609674-01 P= 21.235844 Days  $T_0=149.885944$  (BKJD)



# DV Model-Shift Uniqueness Test

007609674-01, P = 21.236050 Days, E = 128.640027 Days

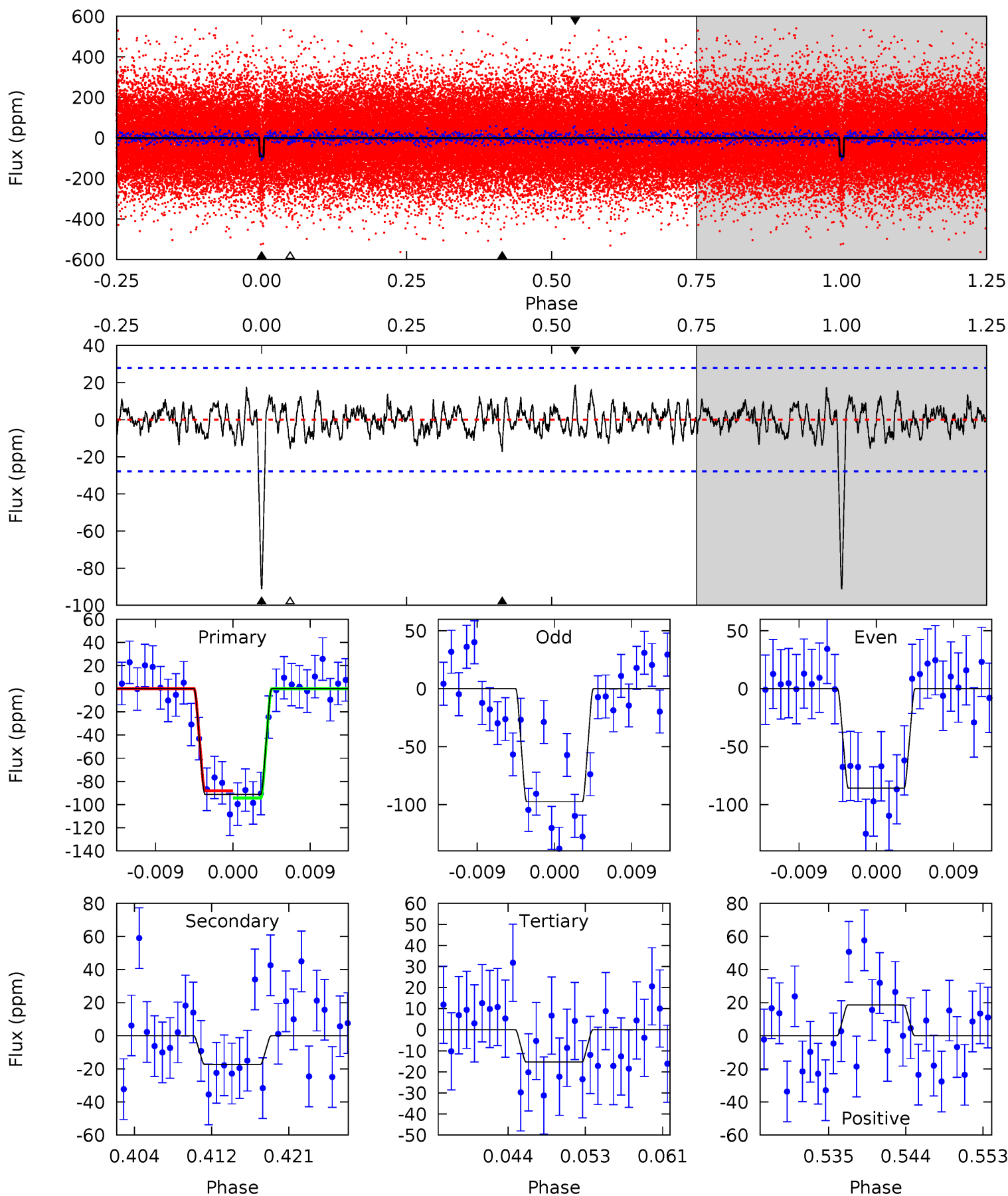
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.7	3.63	3.02	3.85	5.04	2.60	1.17	14.7	13.9	0.60	-0.23	0.07	0.91	0.18	2.11



# Alt Model-Shift Uniqueness Test

007609674-01, P = 21.235844 Days, E = 128.650100 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
16.6	3.16	2.79	3.38	5.05	2.62	1.06	13.8	13.2	0.37	-0.22	1.06	0.96	0.17	0.57



### Stellar Parameters For KIC 007609674

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6035^{+132}_{-120}$	$3.745^{+0.231}_{-0.082}$	$-0.160^{+0.150}_{-0.150}$	$2.559^{+0.343}_{-0.800}$	$1.328^{+0.132}_{-0.227}$	$0.112^{+0.160}_{-0.036}$
	+2%/-2%	+6%/-2%	+94%/-94%	+13%/-31%	+10%/-17%	+143%/-32%
Source	SPE59	SPE59	SPE59	DSEP		

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

### Secondary Eclipse Parameters for KIC 007609674-01 / KOI 3128.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-19 \pm 5$	$2.93^{+0.88}_{-0.96}$	$1452^{+73}_{-104}$	$4106^{+631}_{-408}$	$32^{+42}_{-14}$
Alt.	$-17 \pm 6$	$2.62^{+1.01}_{-0.93}$	$1445^{+71}_{-104}$	$4123^{+745}_{-437}$	$35^{+50}_{-18}$

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



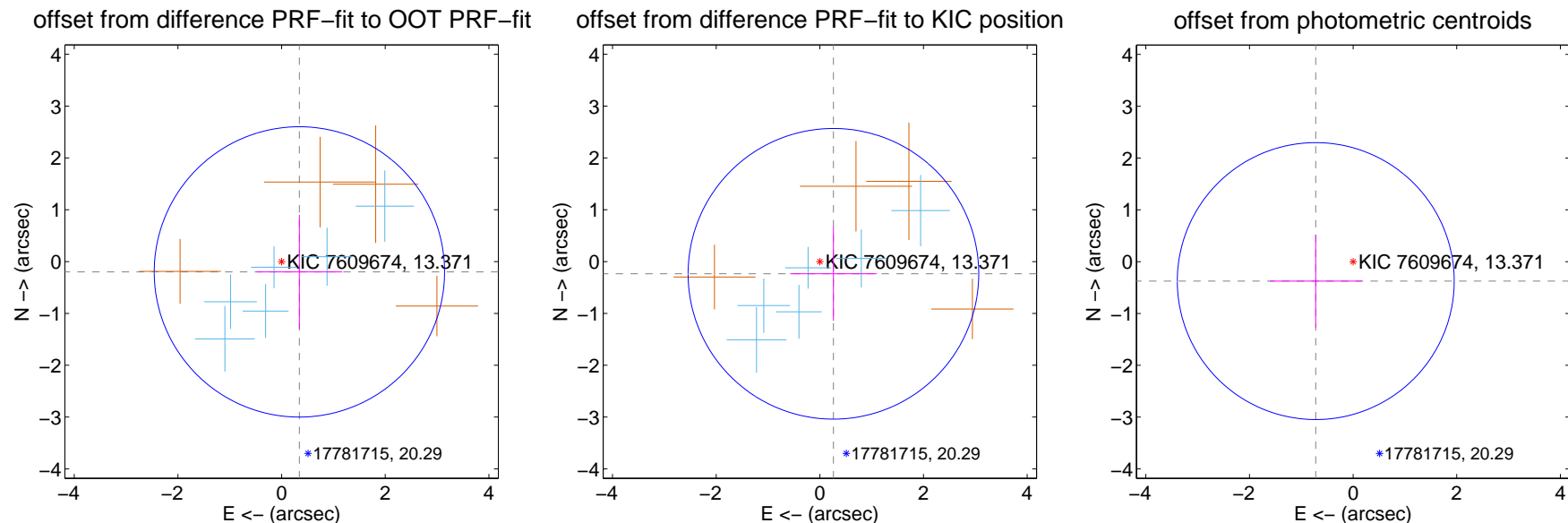
## DV Centroid Data

Supplemental centroid analysis for 007609674-01. Kepler magnitude: 13.37. Transit SNR 12.80

There are 6 quarters with good PRF difference image offsets

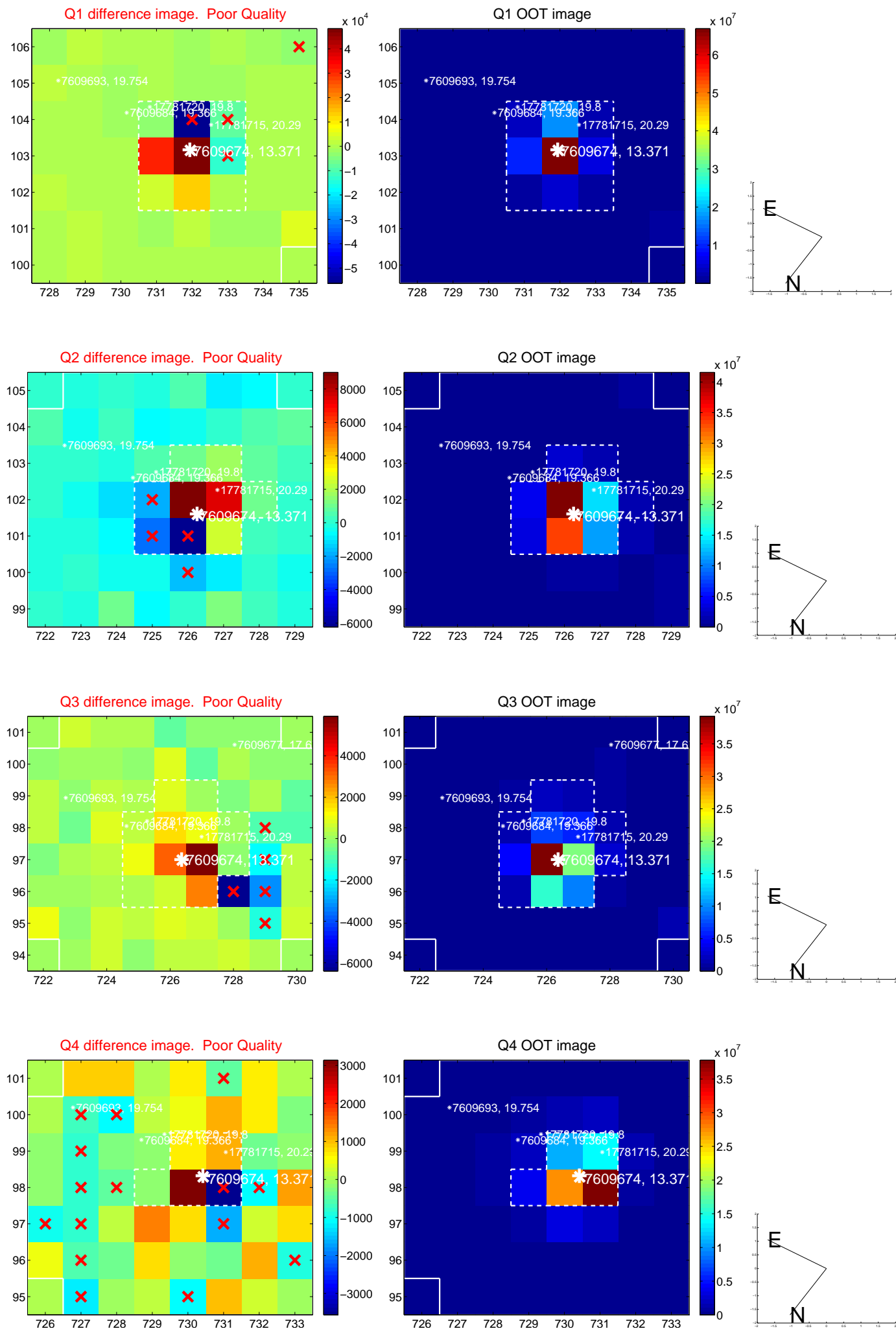
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.397 \pm 0.934$	0.43	$-0.344 \pm 0.825$	$-0.199 \pm 1.100$
PRF-fit source offset from KIC position	$0.352 \pm 0.935$	0.38	$-0.262 \pm 0.835$	$-0.235 \pm 0.907$
photometric centroid source offset	$0.81 \pm 0.89$	0.91	$0.72 \pm 0.89$	$-0.37 \pm 0.90$

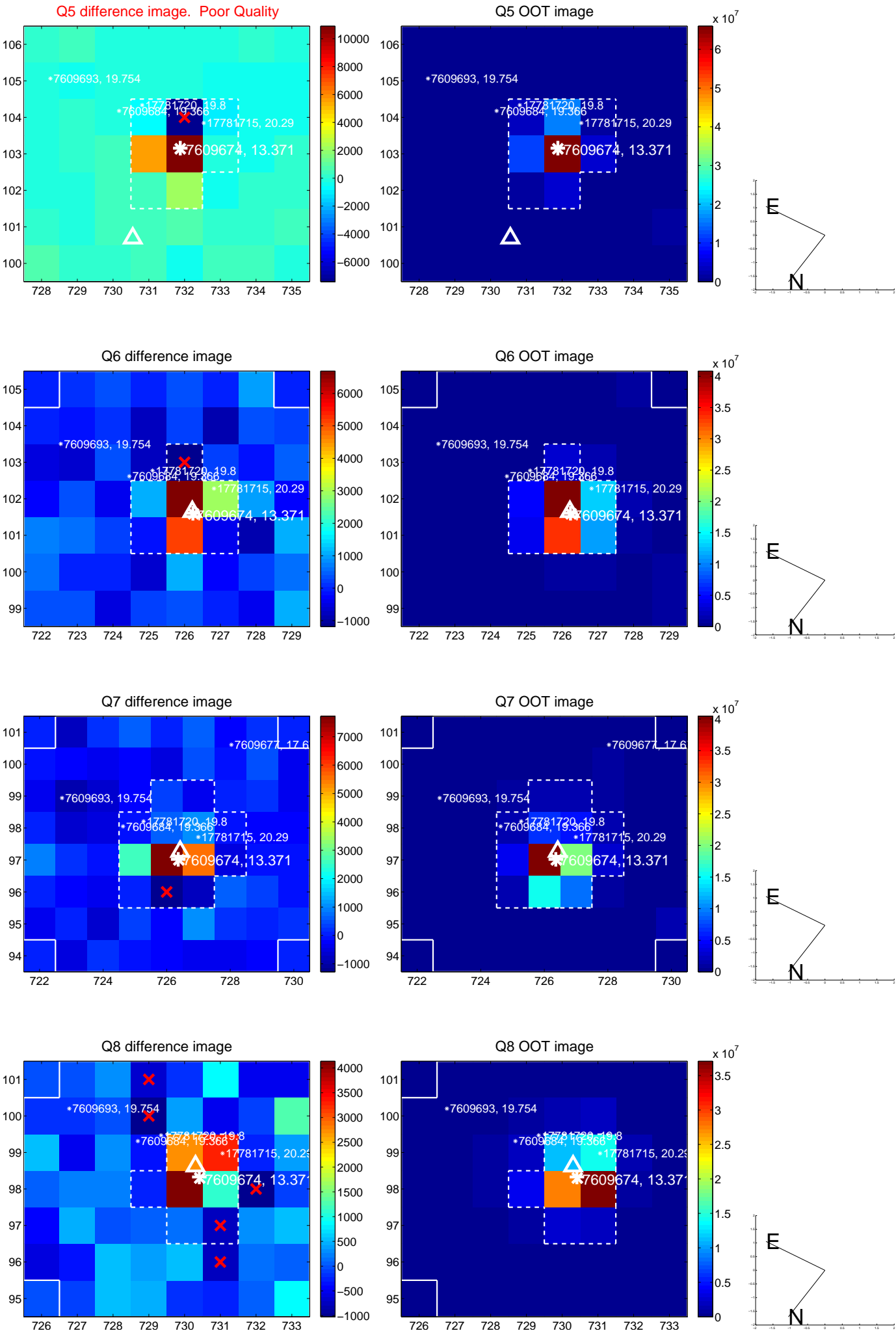


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

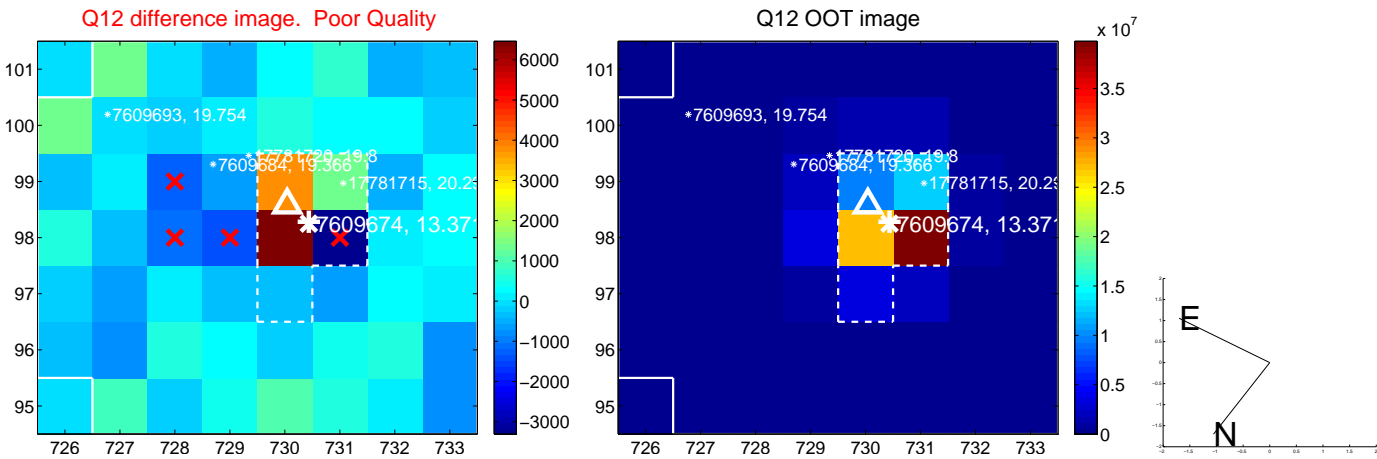
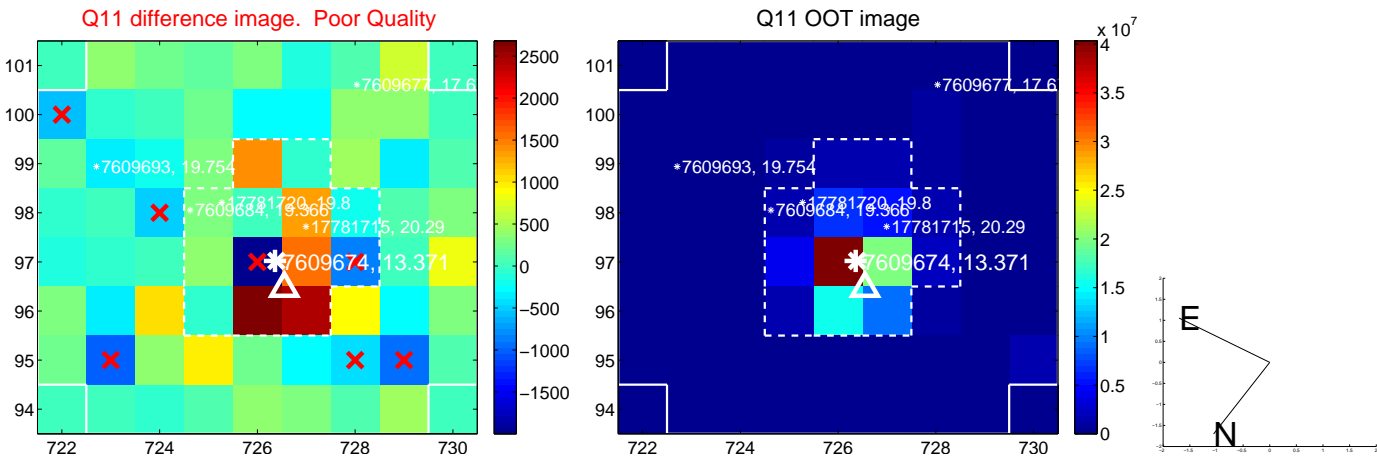
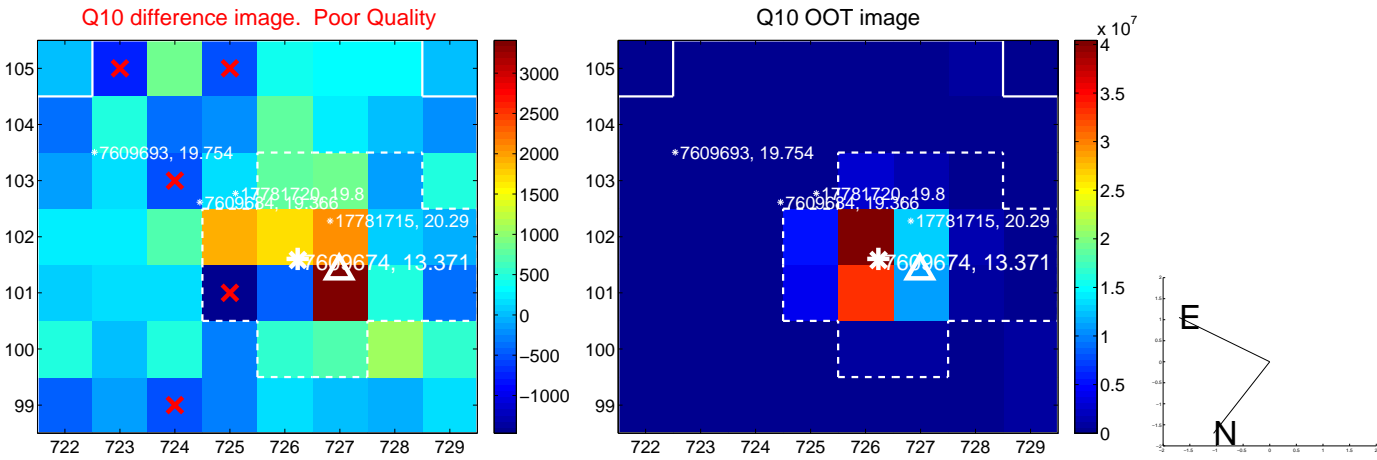
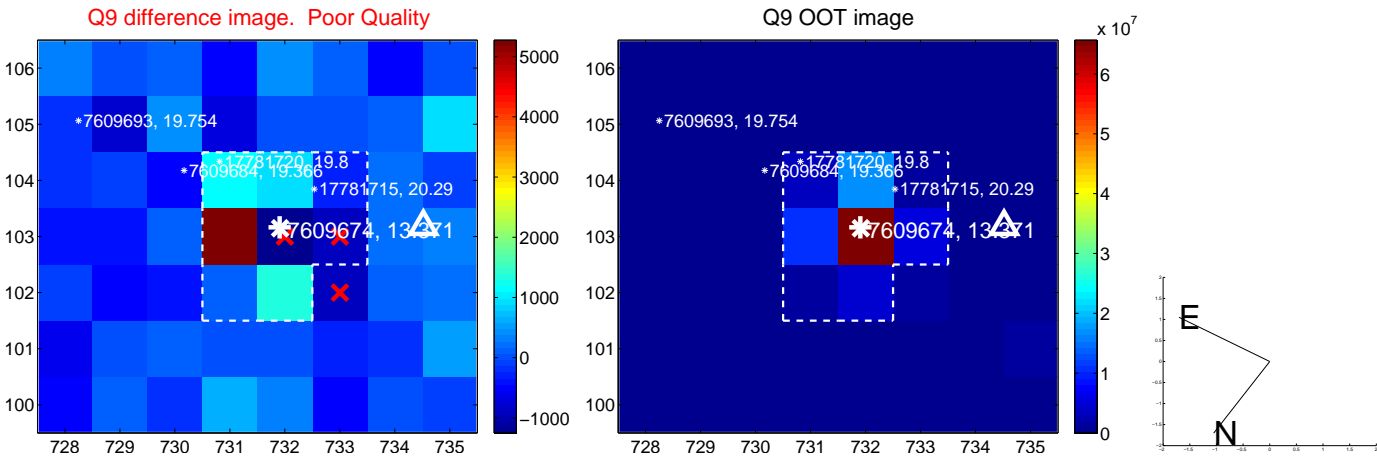
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



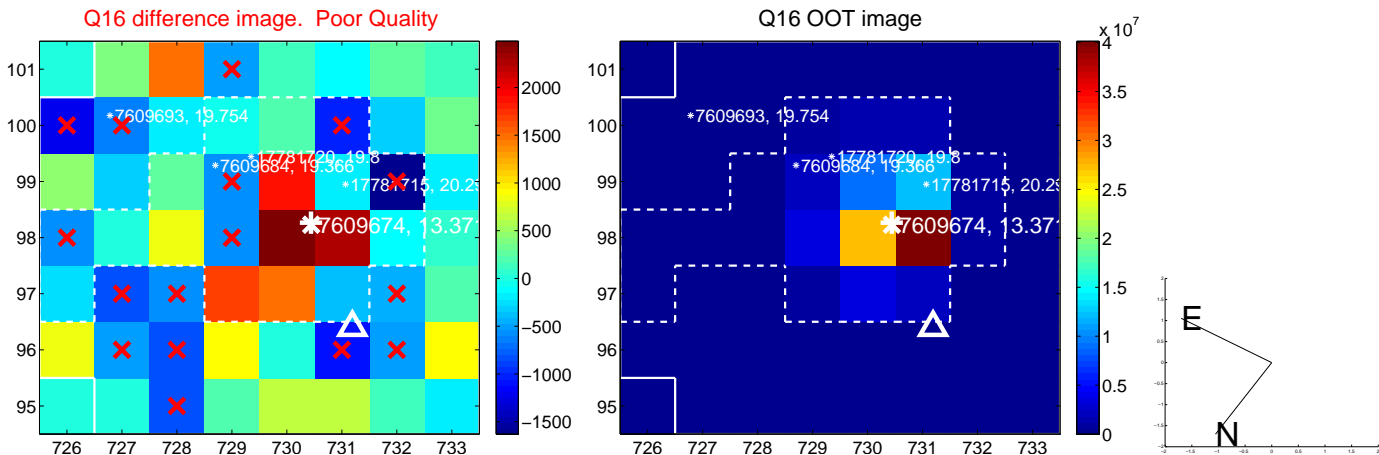
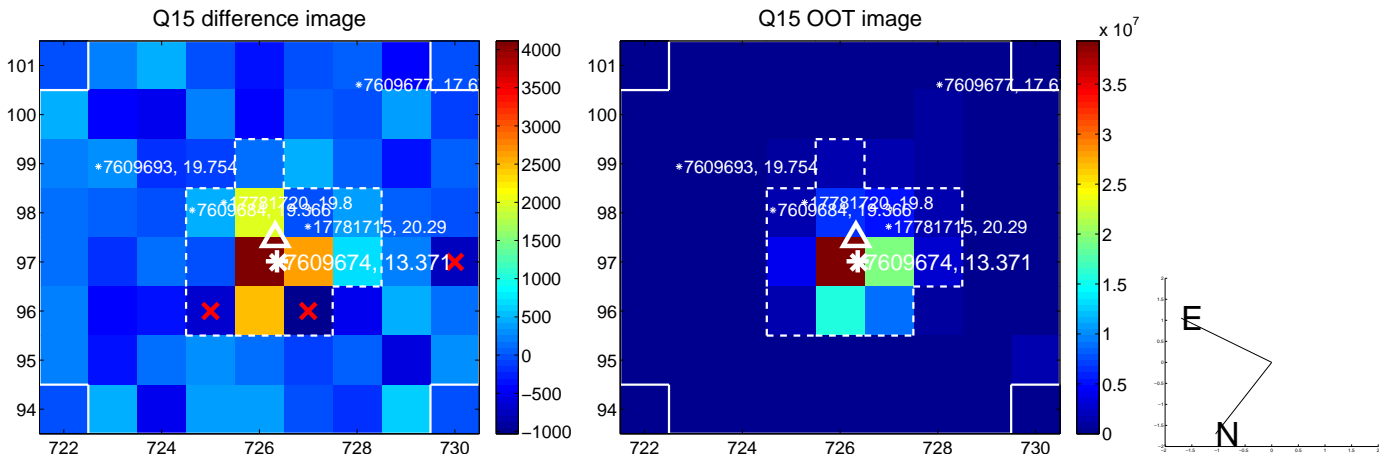
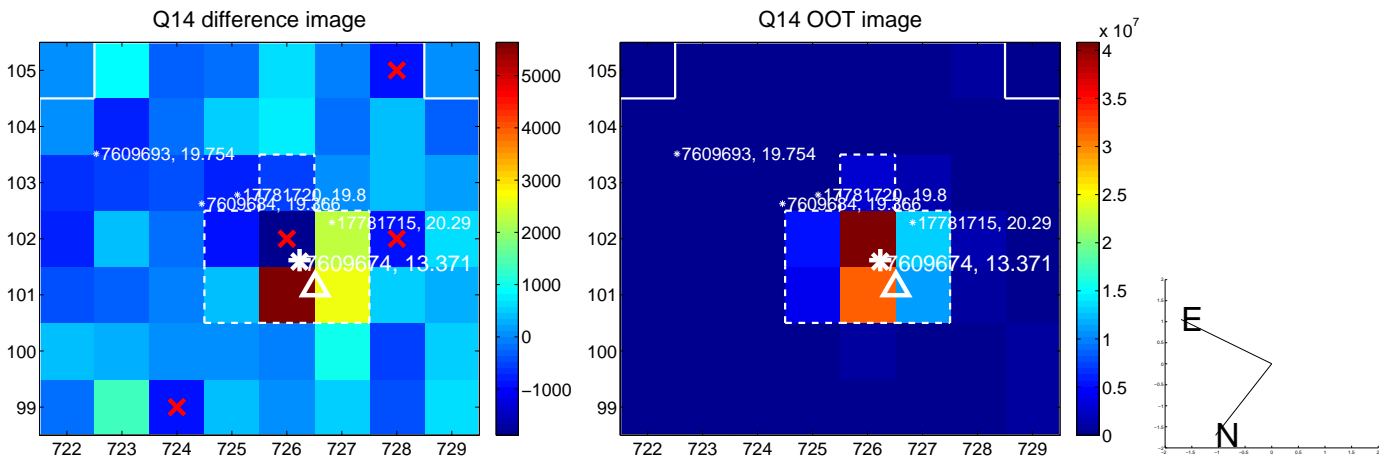
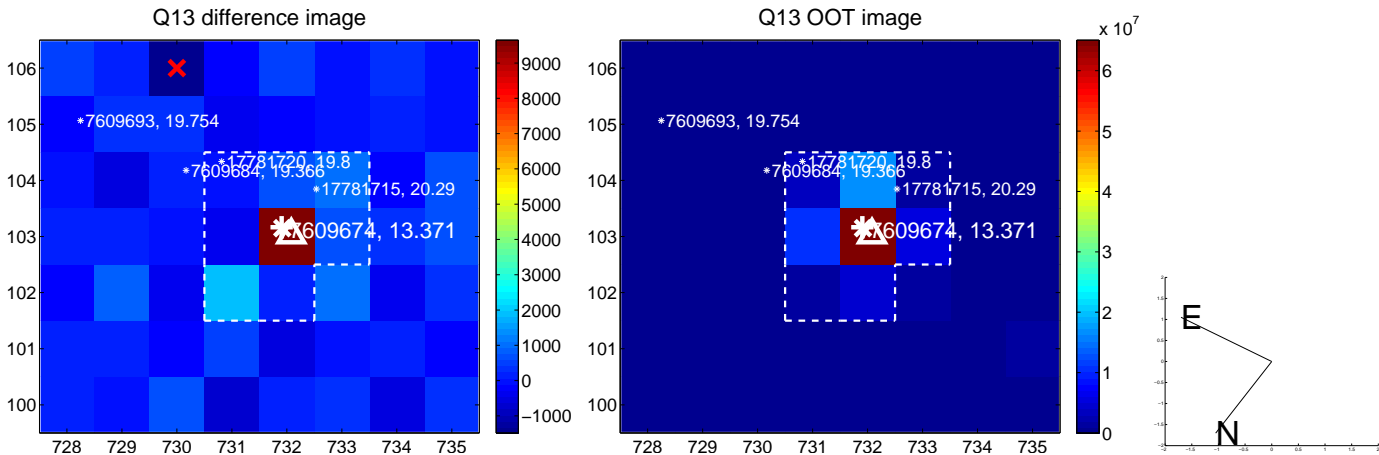
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

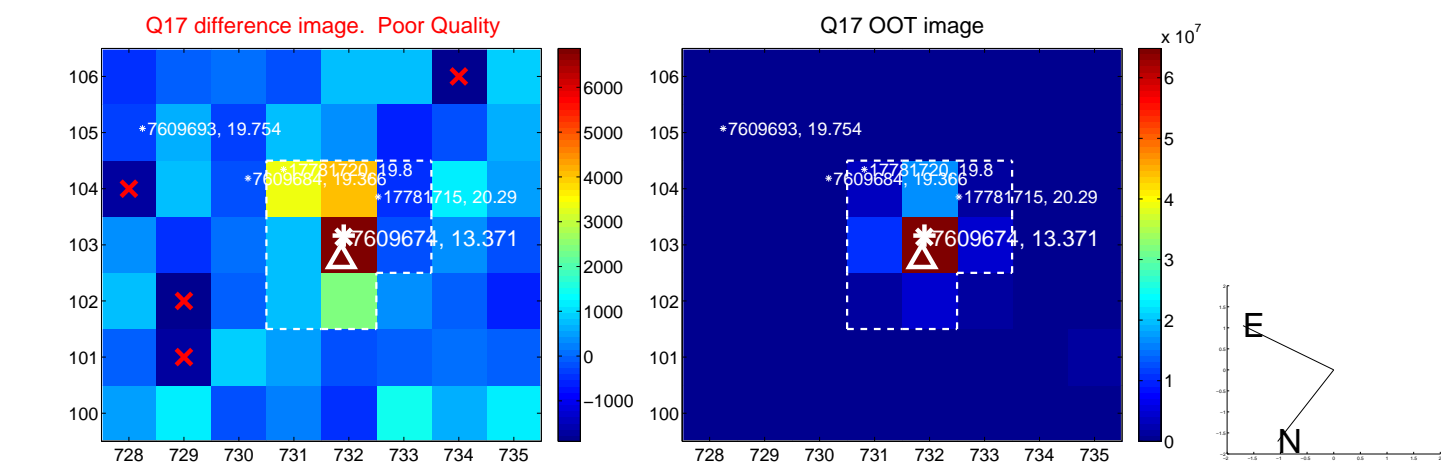


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

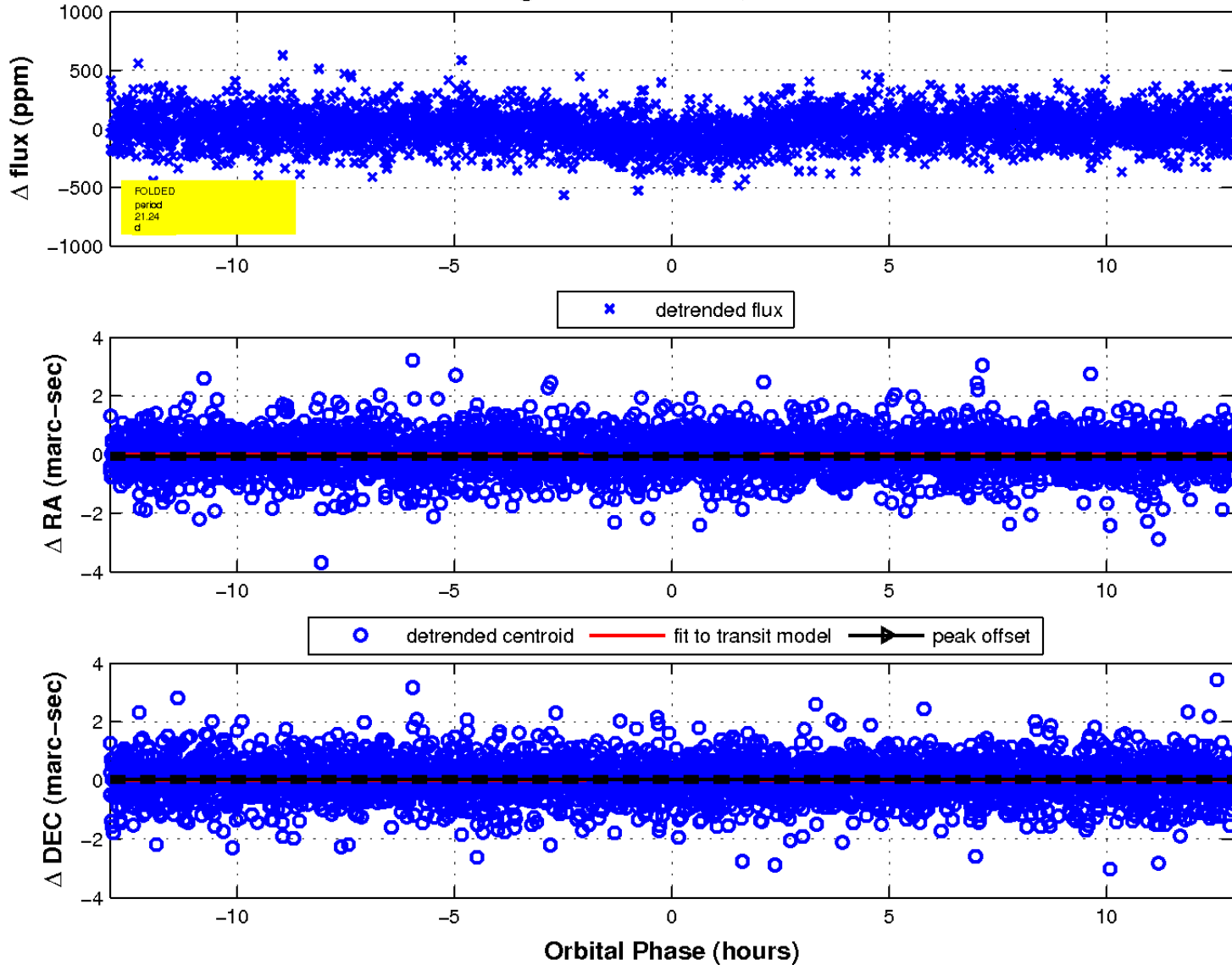




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

