

# KIC 006364071

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006364071-01	OBS	No	5.243173	132.820385	30.5	12.813	8.1	8.4	0.85	5576	0.59	186.07

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006364071-01	OBS	FP	0.00	1	0	1	1	LPP_DV—HALO_GHOST—EPHEM_MATCH

**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.

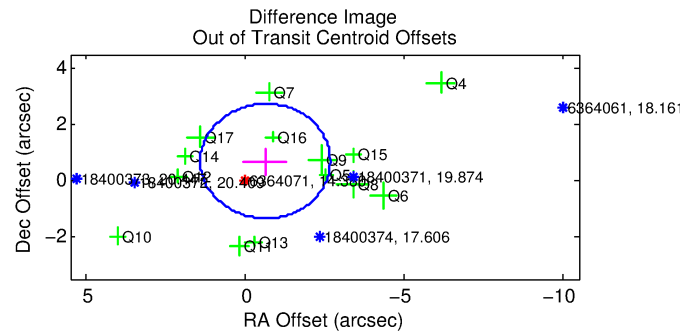
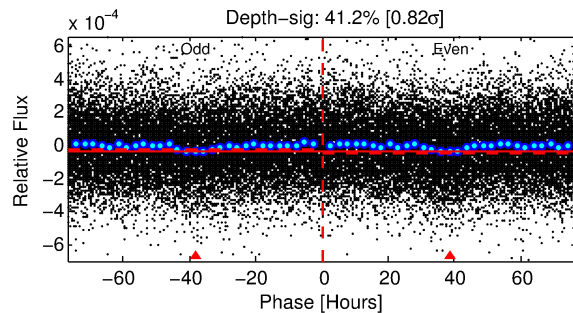
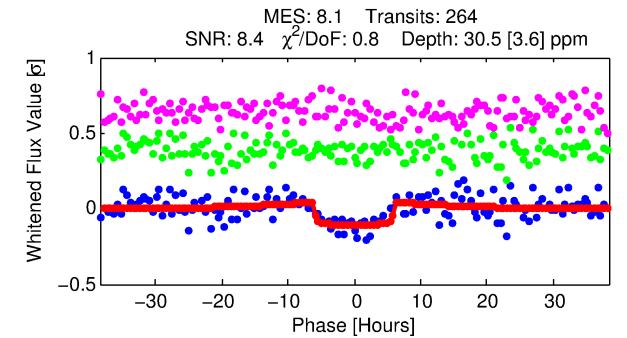
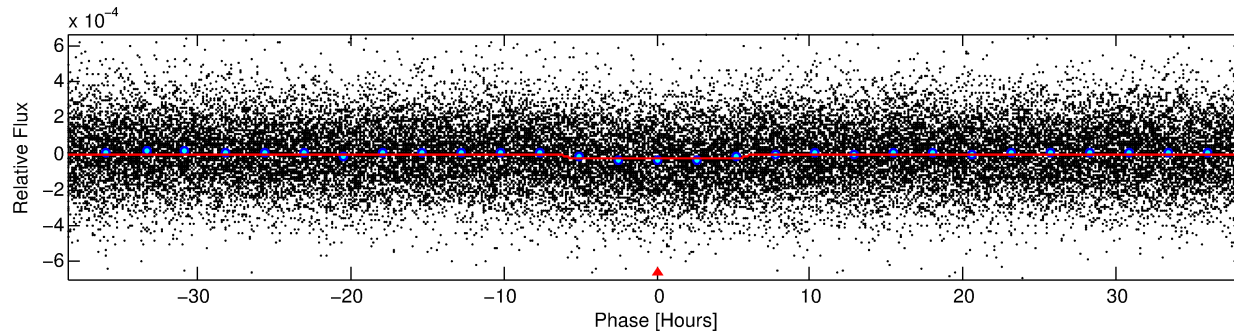
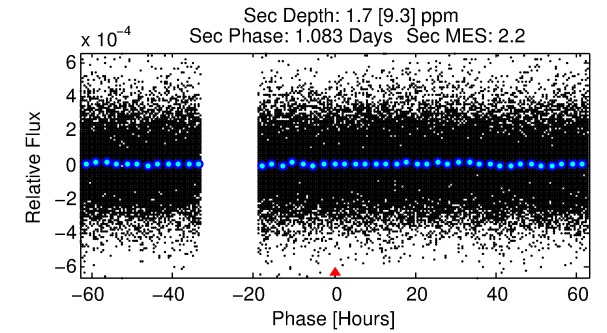
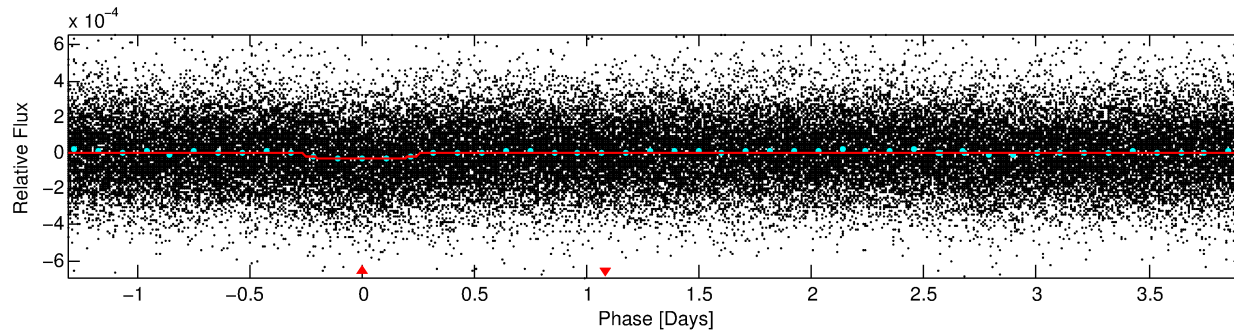
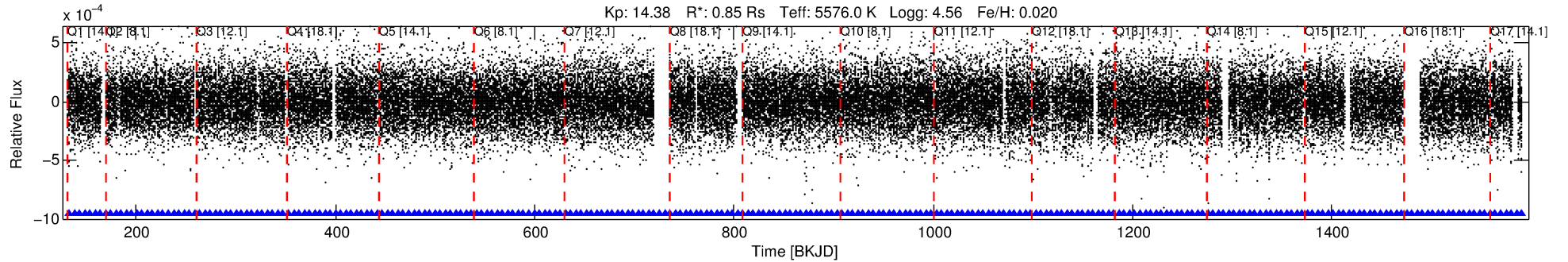
## Ephemeris Match Information For 006364071-01

TCE (1)	KIC	Parent (2)	Parent KIC	P <sub>1</sub> :P <sub>2</sub>	Dist (″)	$\Delta$ Row	$\Delta$ Col	m <sub>2</sub>	m <sub>1</sub>	D <sub>2</sub> /D <sub>1</sub>	Mechanism	Flag	$\sigma_P$	$\sigma_T$
006364071-01	6364071	006364126-01	6364126	1:1	88.0	-22	0	14.90	14.38	3.53	Direct-PRF	1	1.88	2.05

**Notes:** P<sub>1</sub>:P<sub>2</sub> is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column. m<sub>2</sub> and m<sub>1</sub> are the magnitudes of the parent and child. D<sub>2</sub>/D<sub>1</sub> is the parent's transit depth divided by the child's.  $\sigma_P$  and  $\sigma_T$  are the significance of the match in period and epoch. For a match to be considered significant  $\sigma_P < 5.0$  and  $\sigma_T < 5.0$ . Matches which have  $\sigma_P$  and  $\sigma_T$  very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 6364071 Candidate: 1 of 1 Period: 5.243 d



## DV Fit Results:

Period = 5.24317 [0.00011] d  
Epoch = 132.8204 [0.0145] BKJD  
Rp/R\* = 0.0063 [0.0010]  
a/R\* = 1.50 [0.64]  
b = 0.94 [0.10]  
Seff = 186.07 [37.16]  
Teff = 942 [47] K  
Rp = 0.59 [0.12] Re  
a = 0.0581 [0.0071] AU  
Ag = 8.94 [50.09] [0.16σ]  
Teffp = 2518 [3526] K [0.45σ]

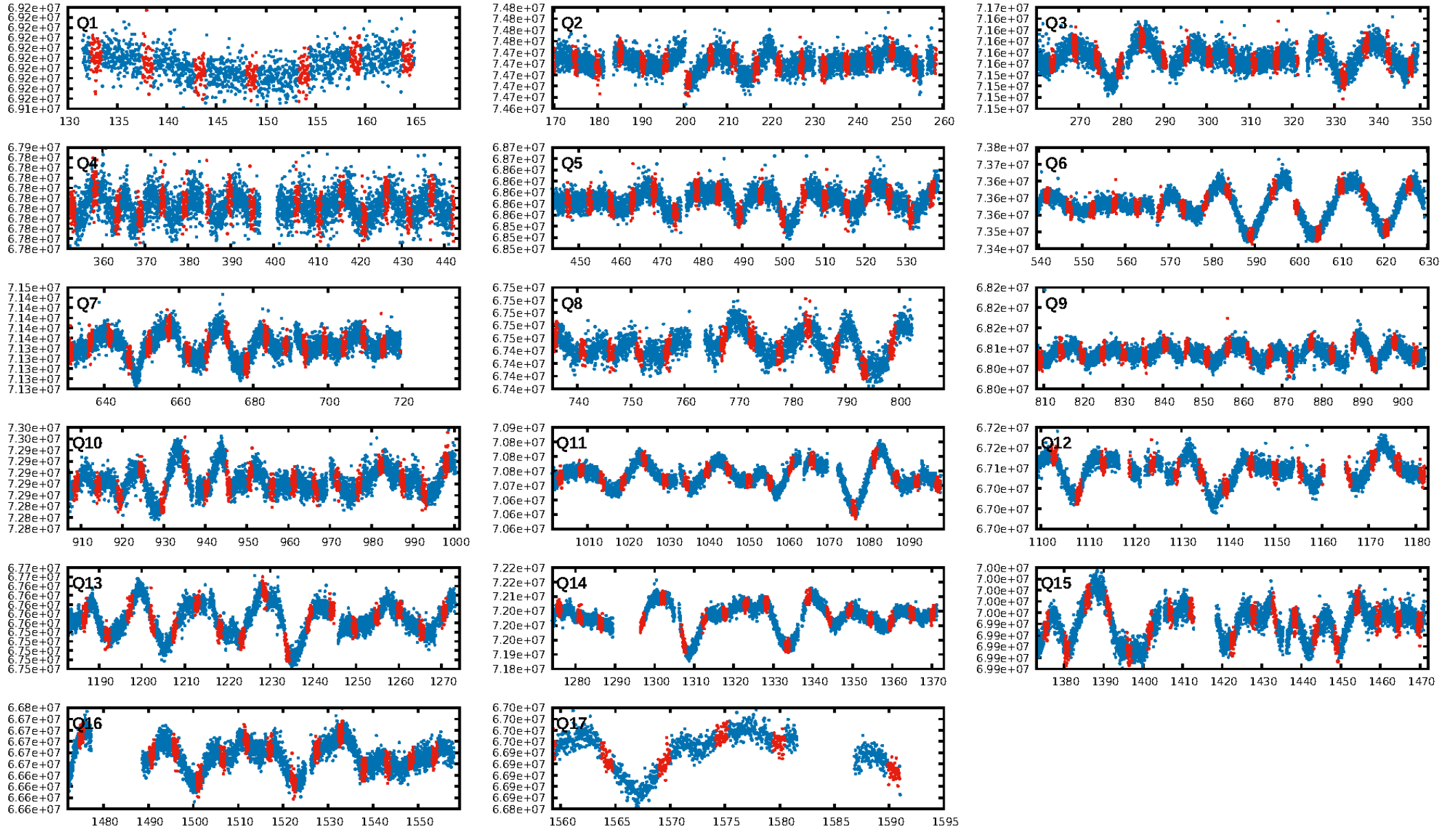
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.37e-15  
RollingBand-fgt: 1.00 [252/252]  
**GhostDiagnostic-chr: 0.1365**  
Centroid-sig: 3.2%  
Centroid-so: 1.422 arcsec [1.43σ]  
OotOffset-rm: 0.944 arcsec [1.39σ]  
OotOffset-st: 3/3/4/4 [14]  
KicOffset-rm: 0.853 arcsec [1.26σ]  
KicOffset-st: 3/3/4/4 [14]  
DiffImageQuality-fgm: 0.36 [5/14]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 04:24:52 Z

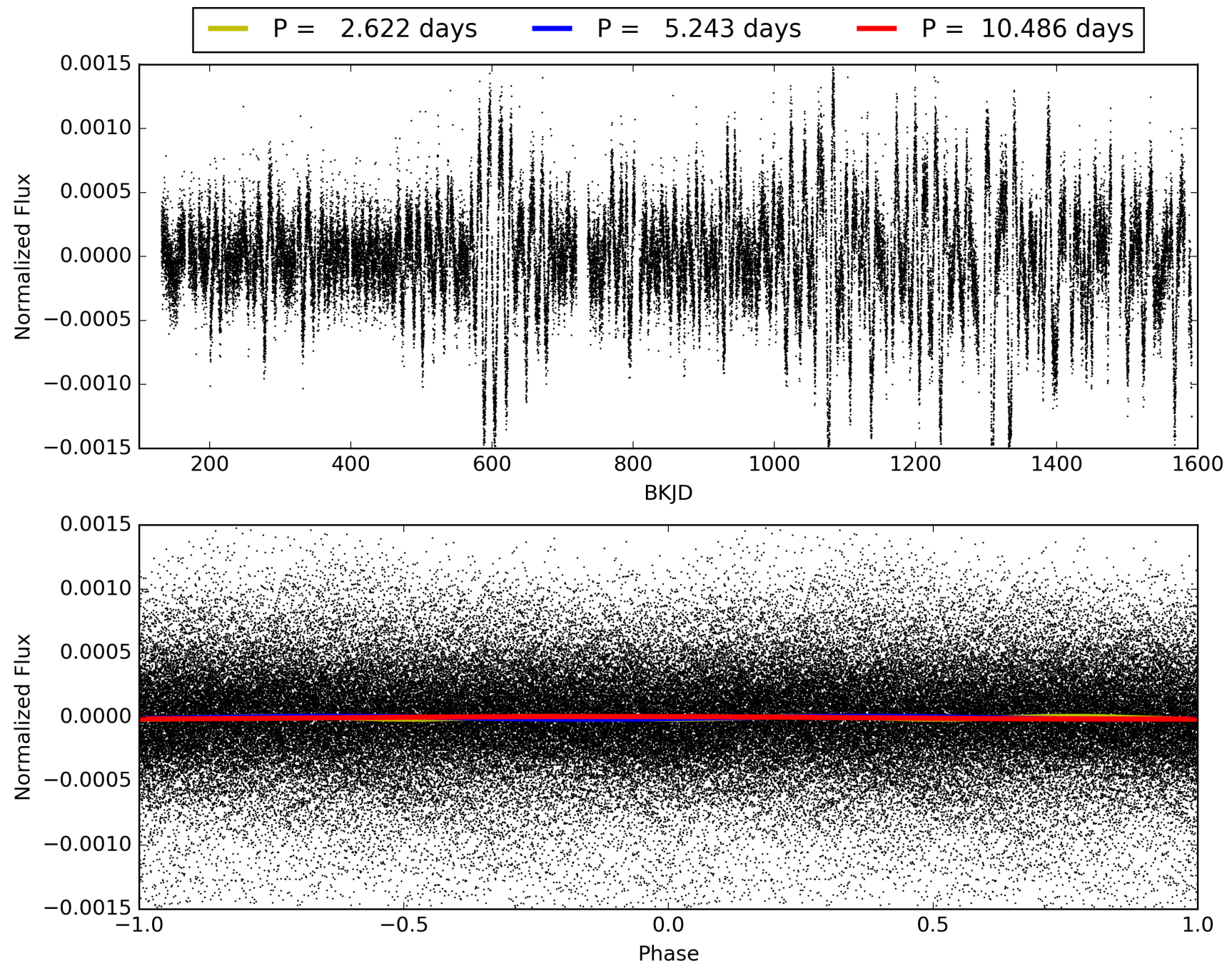
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 006364071-01, PDC Light Curves



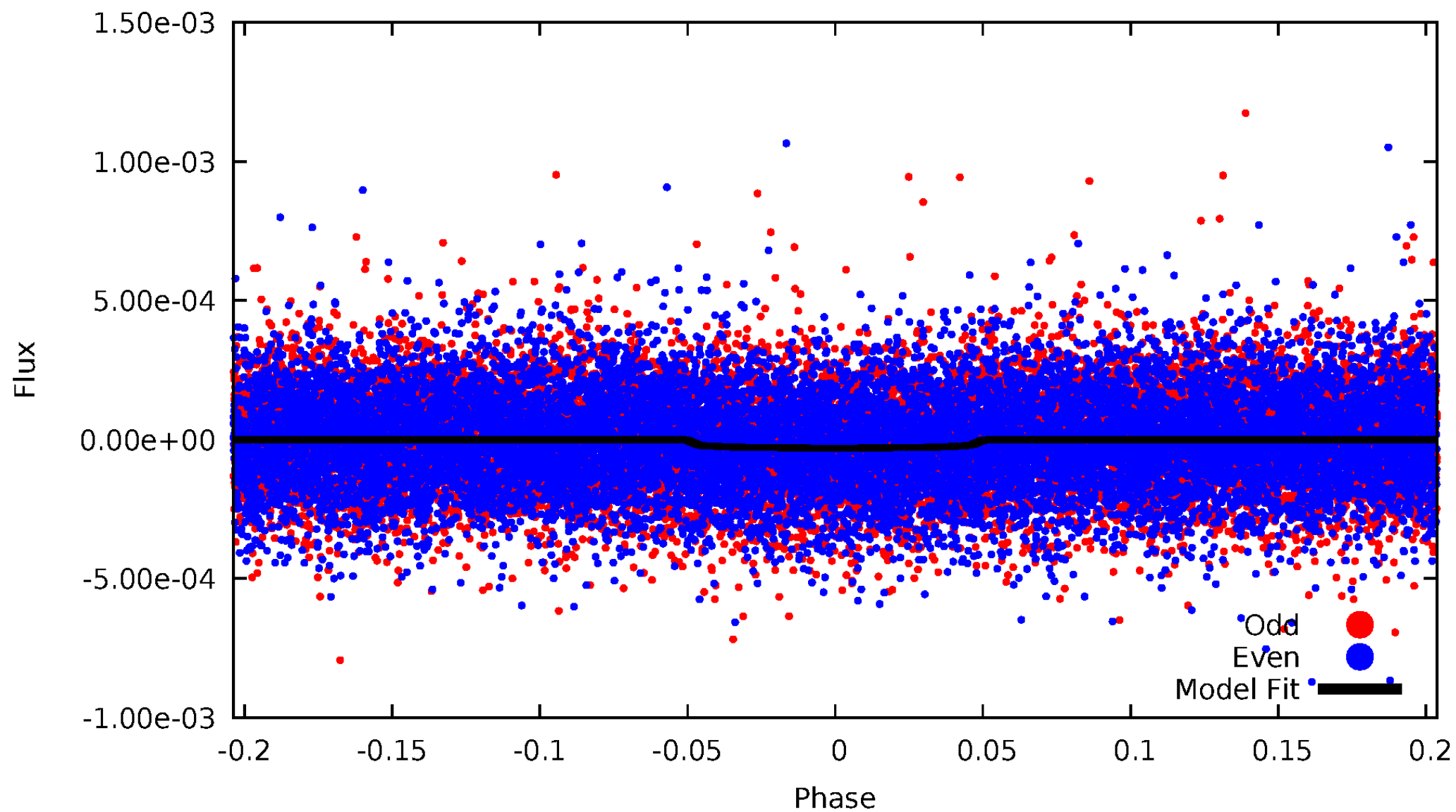


TCE 006364071-01



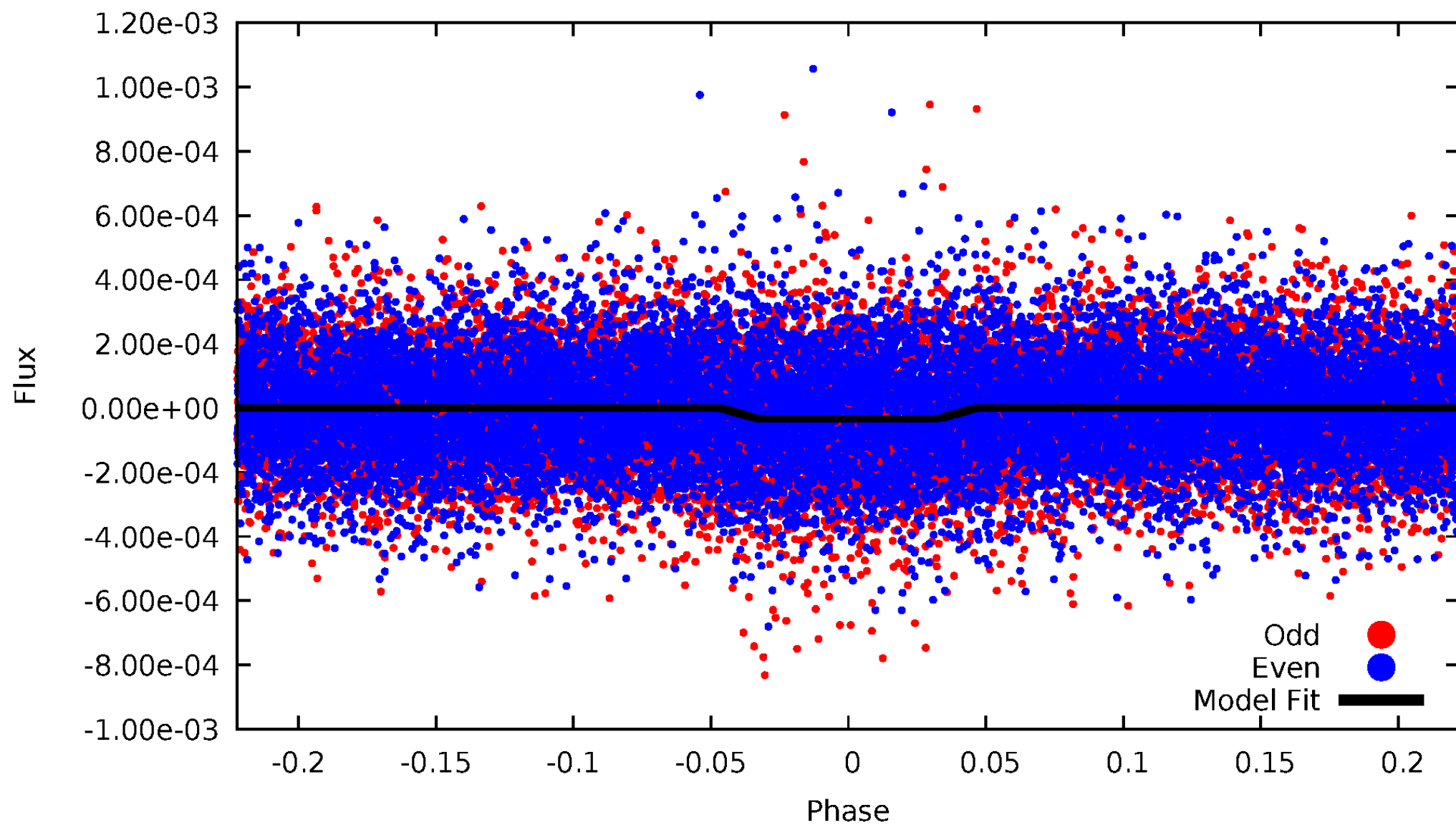
# DV Odd/Even

TCE 006364071-01



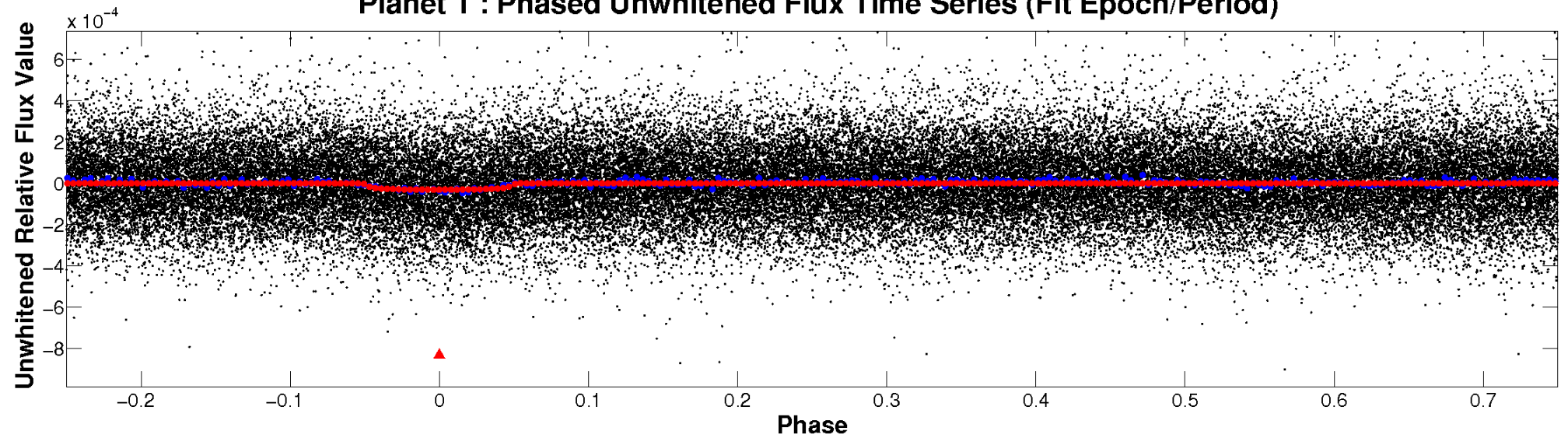
# ALT Odd/Even

TCE 006364071-01

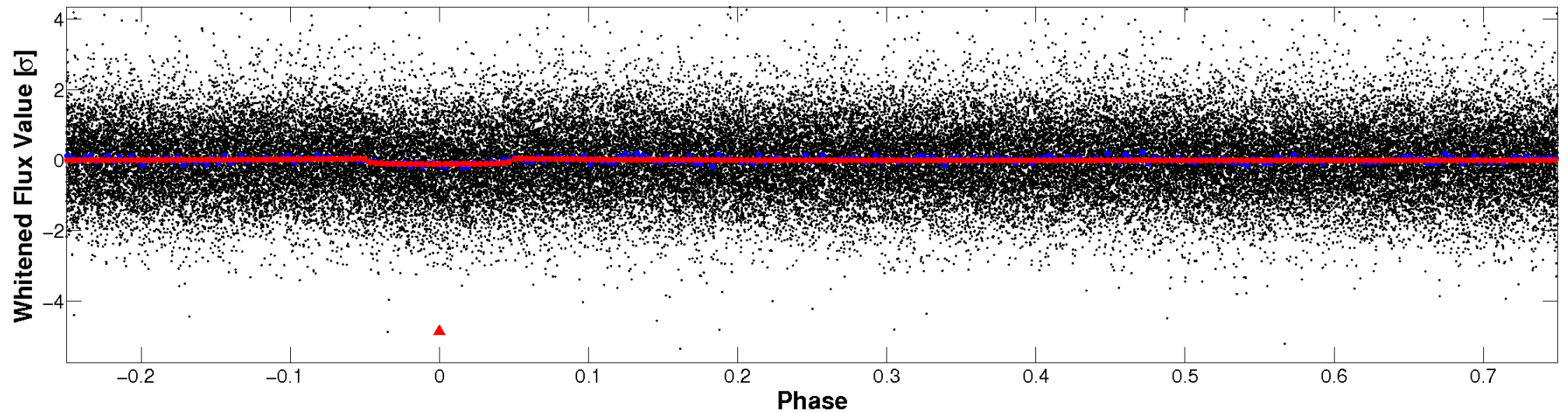


# Non-Whitened Vs. Whitened Light Curve

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



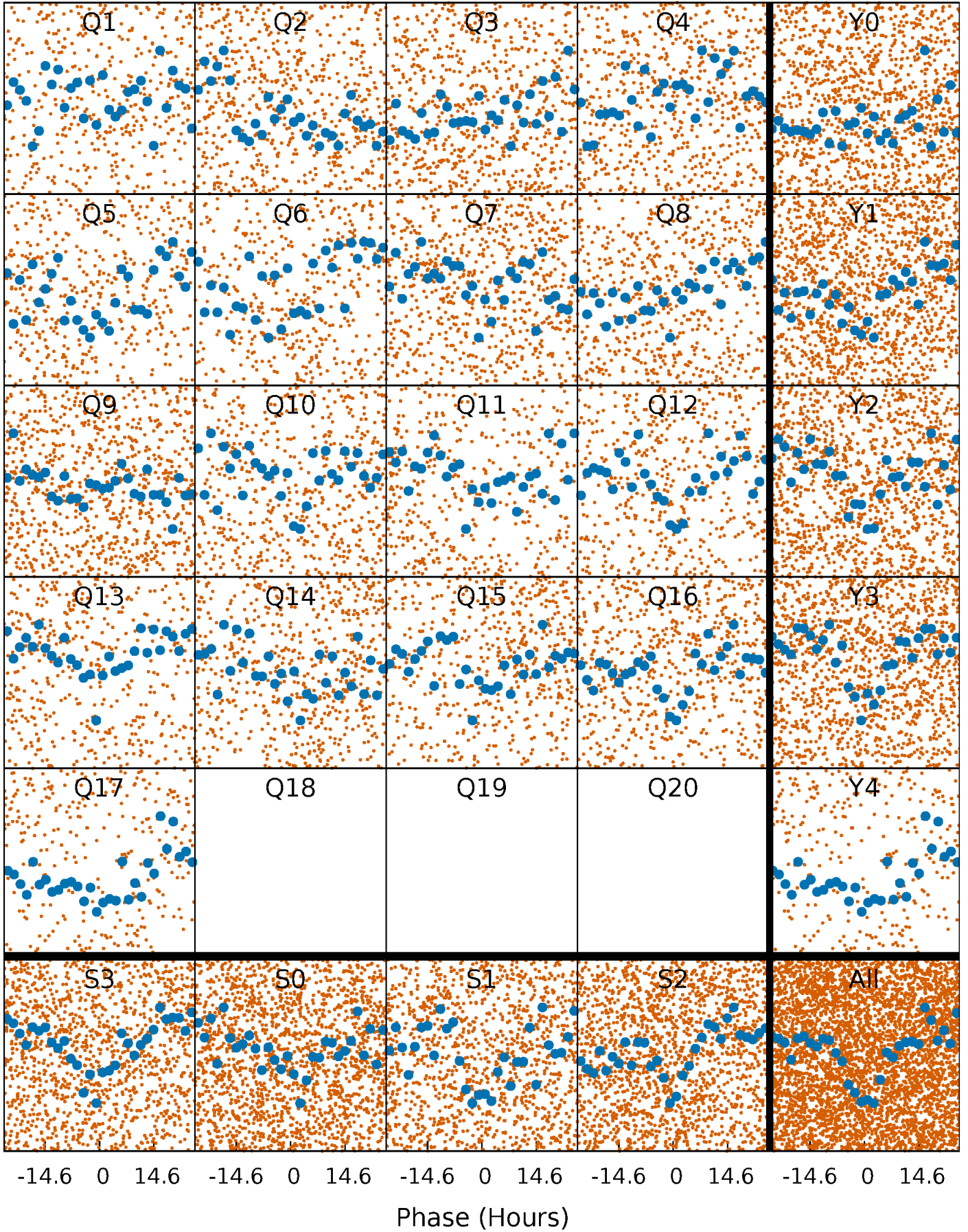
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

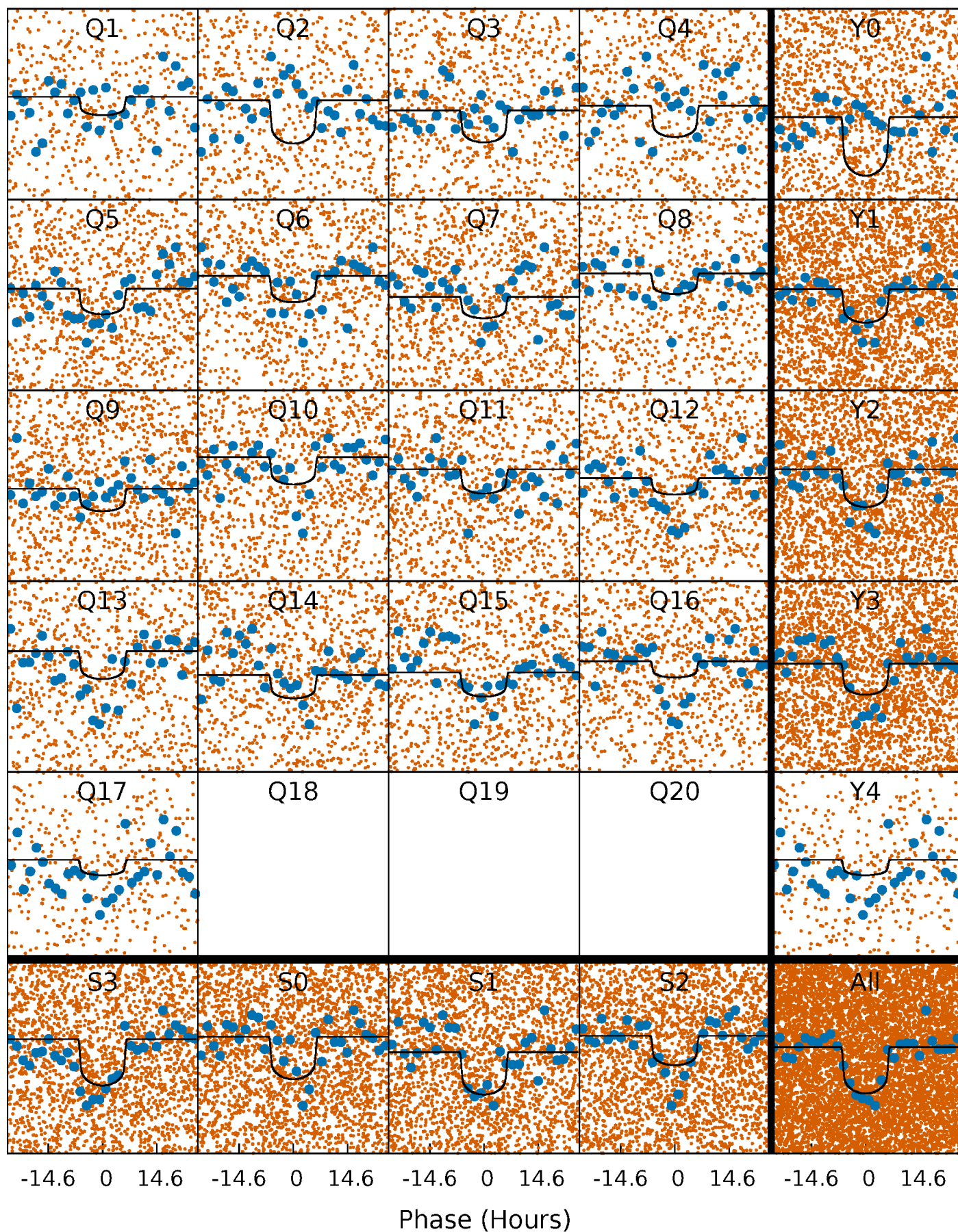
TCE 006364071-01   P= 5.243173 Days    $T_0=132.820385$  (BKJD)





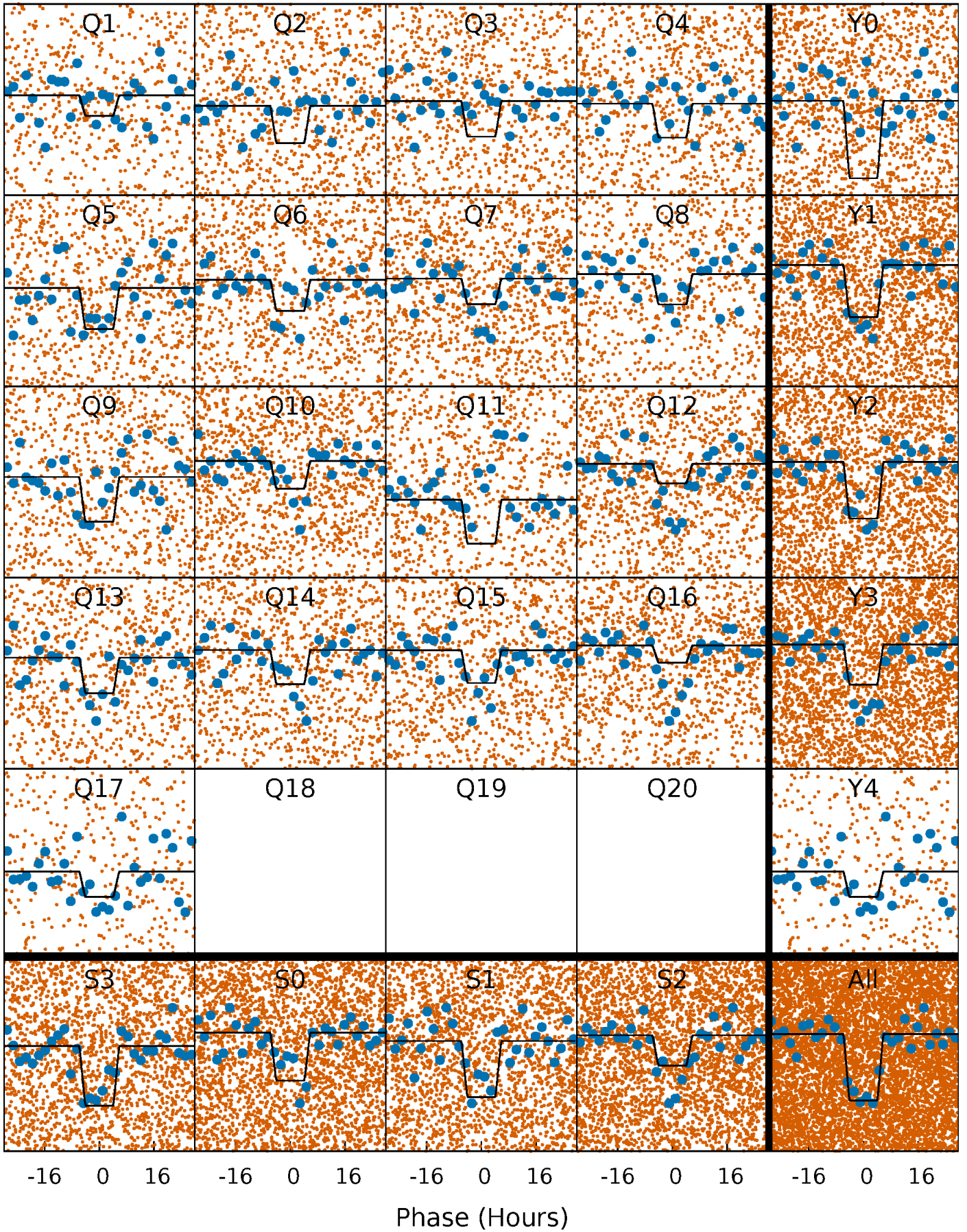
# DV Quarter-Phased Transit Curves

TCE 006364071-01 P= 5.243173 Days  $T_0=132.820385$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 006364071-01 P= 5.243240 Days  $T_0=132.791142$  (BKJD)

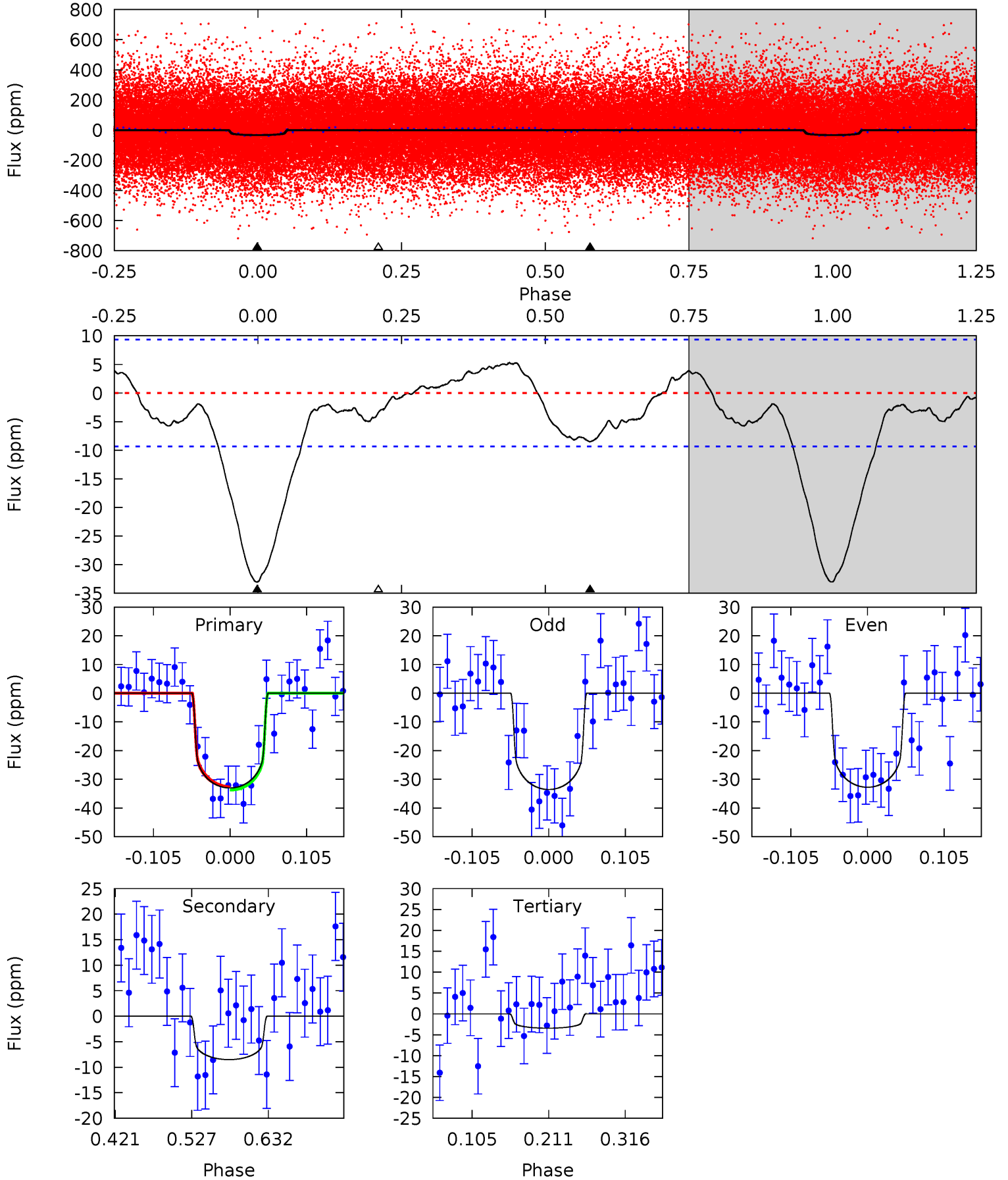




# DV Model-Shift Uniqueness Test

006364071-01, P = 5.243173 Days, E = 127.577212 Days

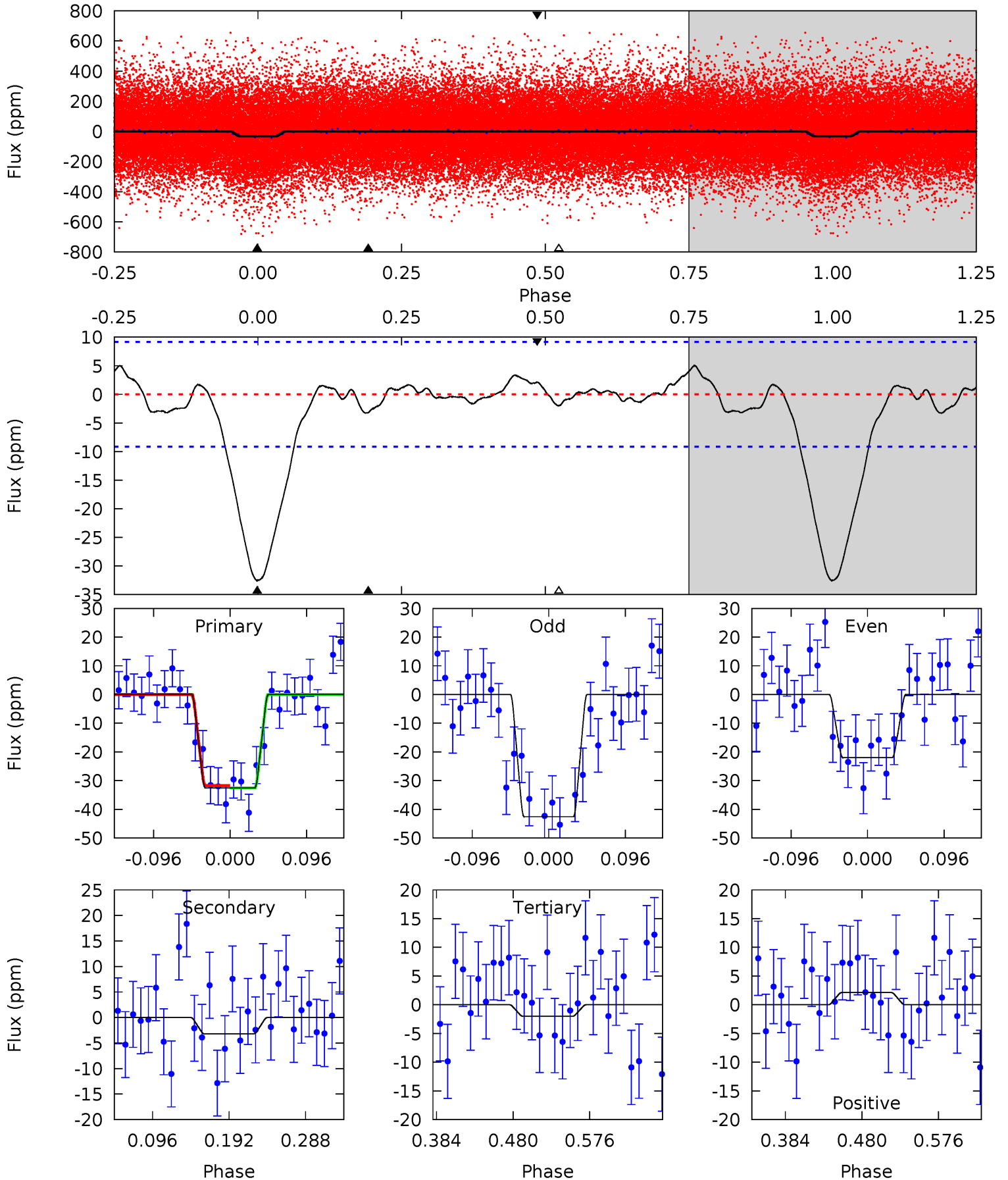
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.1	4.15	1.67	0	4.55	1.62	1.60	14.4	16.1	2.48	4.15	0.19	1.09	0.14	0.27



# Alt Model-Shift Uniqueness Test

006364071-01, P = 5.243240 Days, E = 127.547902 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
16.3	1.59	1.01	1.06	4.57	1.66	0.91	15.2	15.2	0.59	0.53	5.13	1.11	0.13	0.19





### Stellar Parameters For KIC 006364071

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$5576^{+74}_{-83}$	$4.556^{+0.019}_{-0.110}$	$0.020^{+0.150}_{-0.150}$	$0.852^{+0.113}_{-0.038}$	$0.953^{+0.039}_{-0.072}$	$2.170^{+0.208}_{-0.663}$
	+1%/-1%	+0%/-2%	+750%/-750%	+13%/-4%	+4%/-8%	+10%/-31%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 006364071-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-9 \pm 2$	$0.60^{+0.11}_{-0.10}$	$1331^{+47}_{-30}$	$4059^{+317}_{-292}$	$42^{+21}_{-14}$
Alt.	$-3 \pm 2$	$0.55^{+0.12}_{-0.10}$	$1334^{+47}_{-31}$	$3515^{+410}_{-538}$	$18^{+17}_{-12}$

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

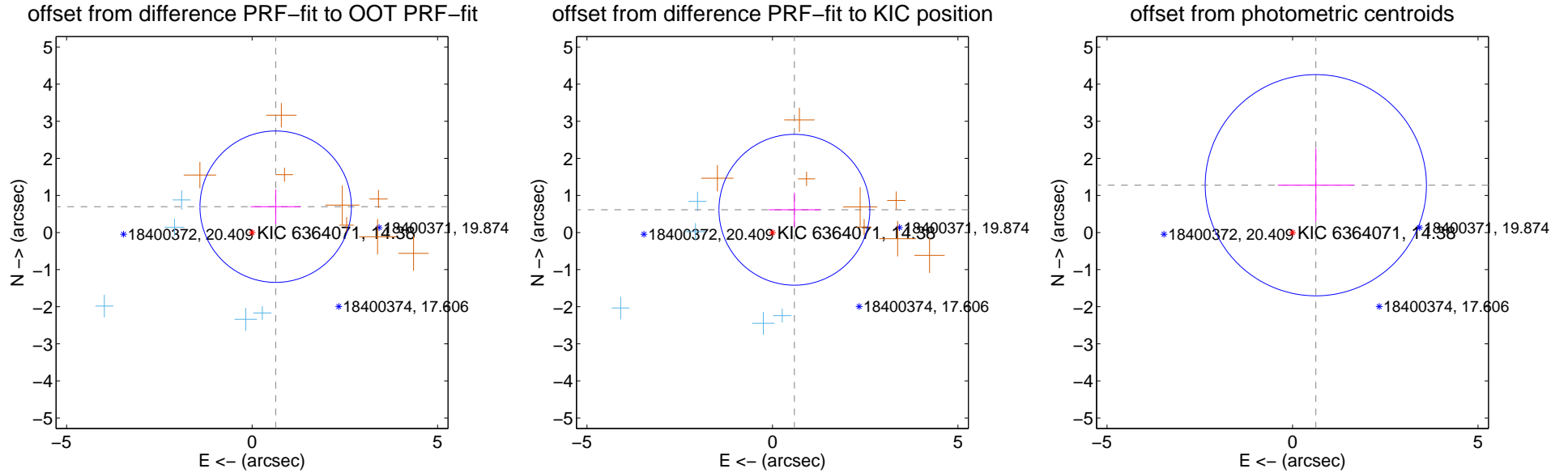
## DV Centroid Data

Supplemental centroid analysis for 006364071-01. Kepler magnitude: 14.38. Transit SNR 8.43

There are 5 quarters with good PRF difference image offsets

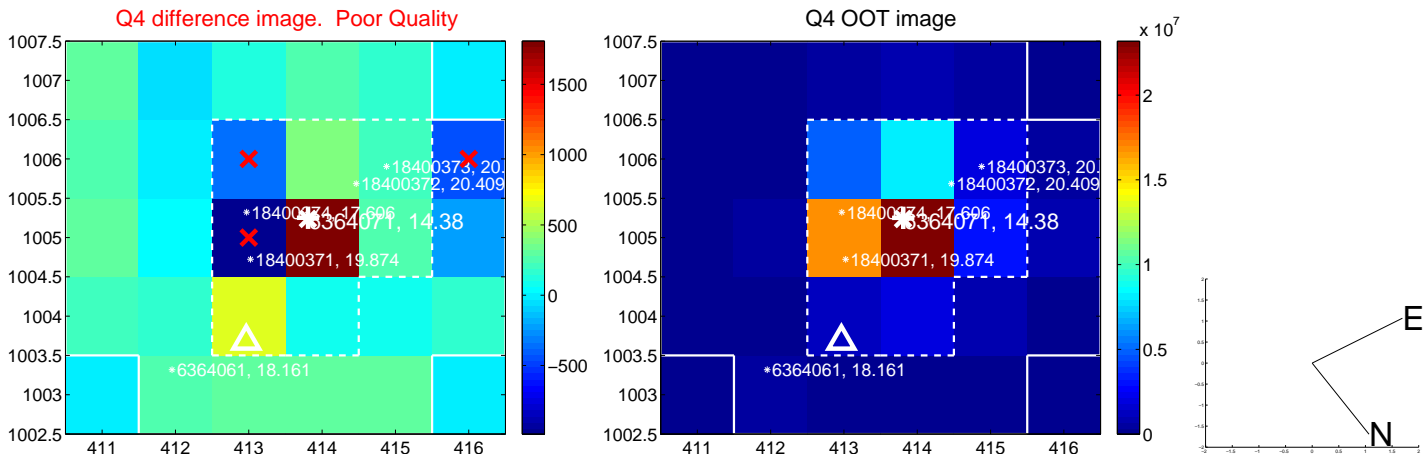
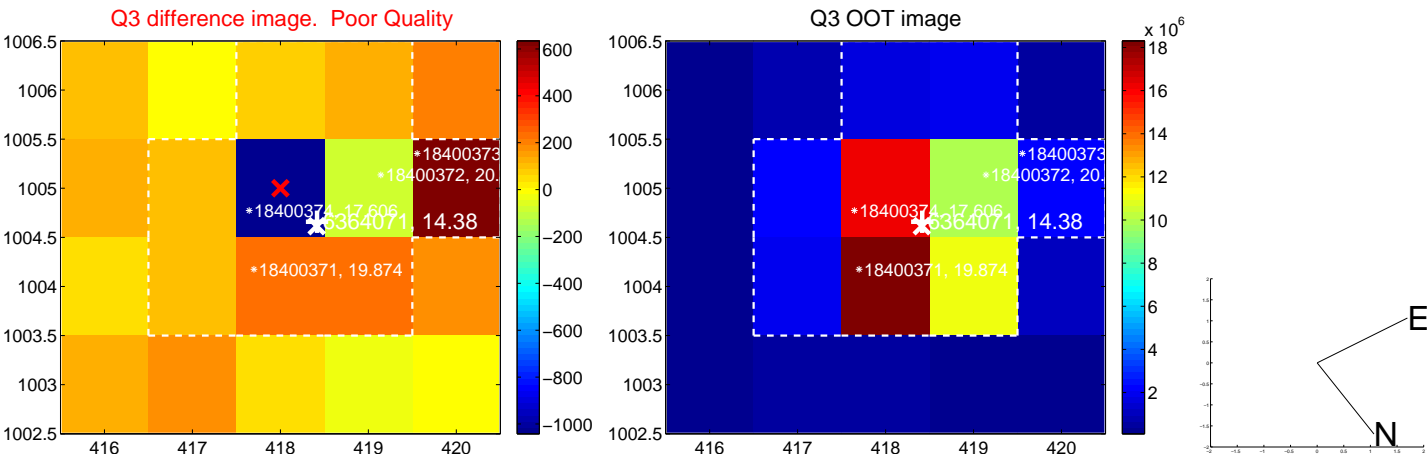
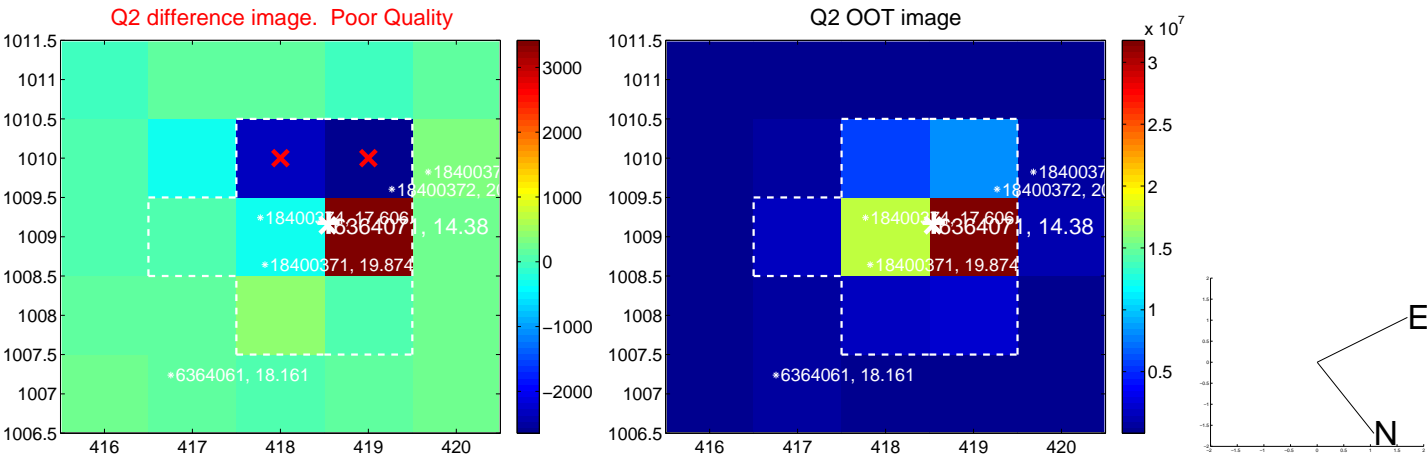
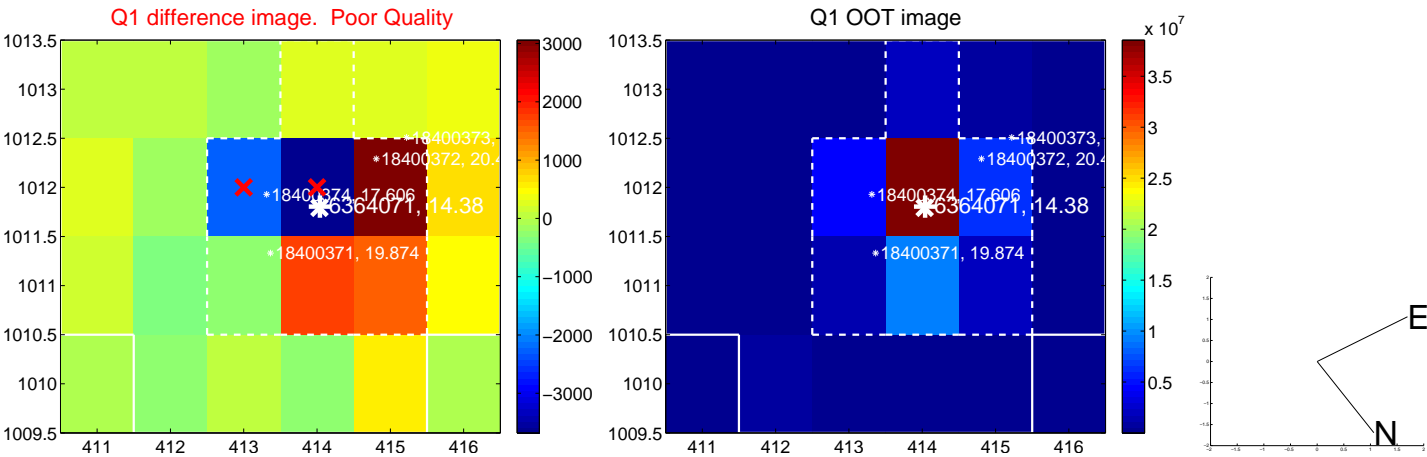
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.944 \pm 0.680$	1.39	$-0.636 \pm 0.671$	$0.697 \pm 0.466$
PRF-fit source offset from KIC position	$0.853 \pm 0.678$	1.26	$-0.592 \pm 0.694$	$0.614 \pm 0.459$
photometric centroid source offset	$1.42 \pm 0.99$	1.43	$-0.63 \pm 1.03$	$1.28 \pm 0.99$



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.

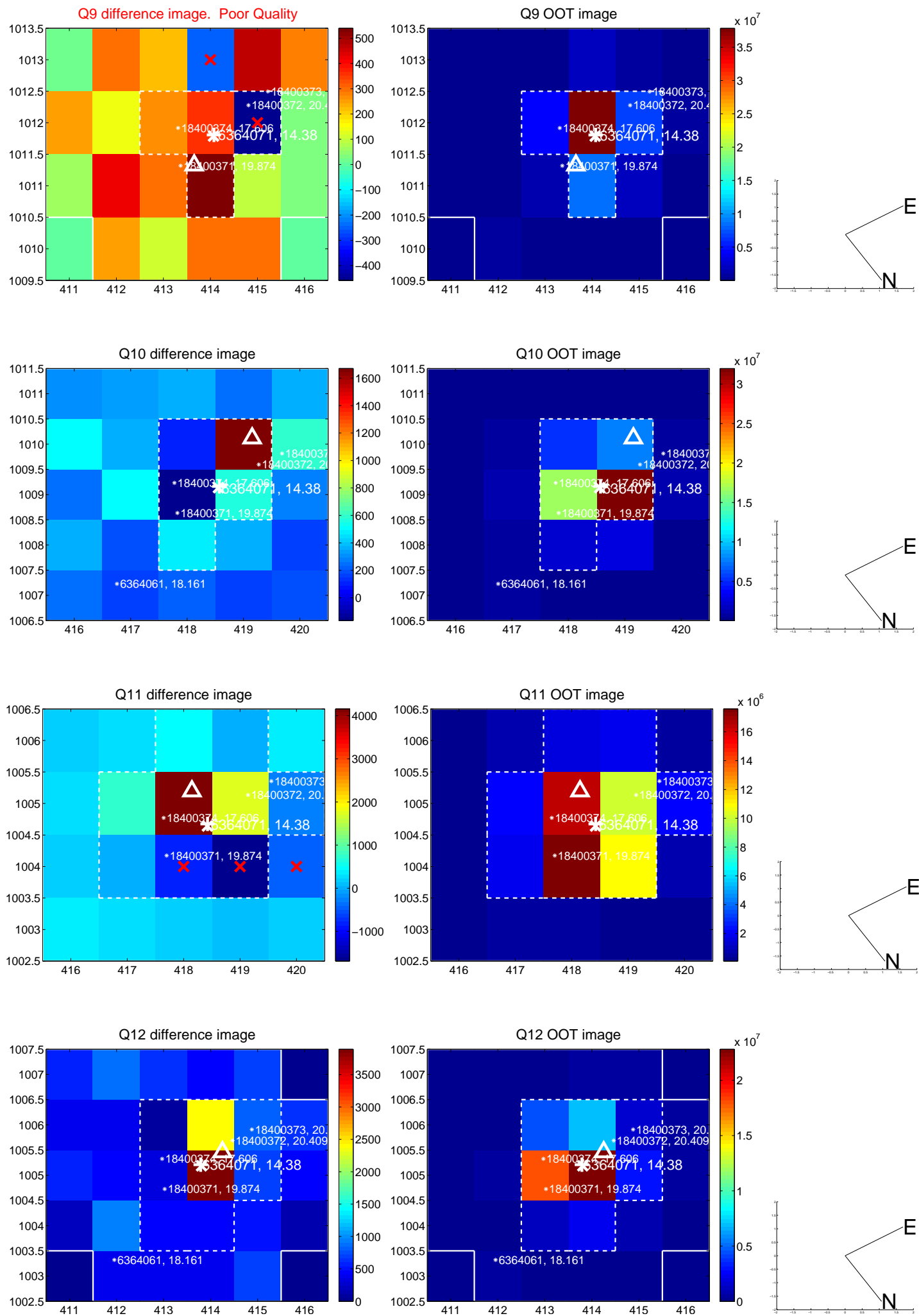
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



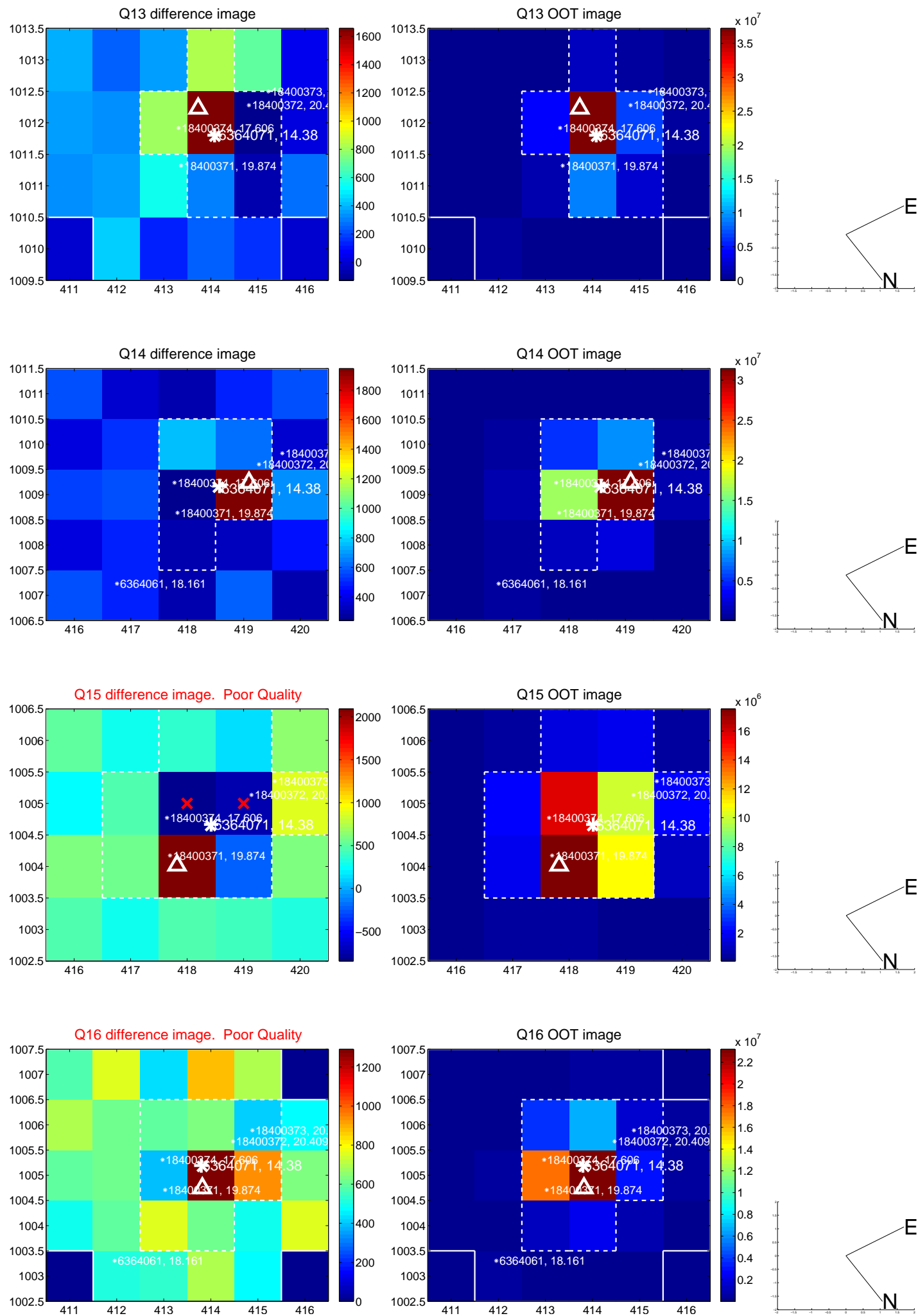




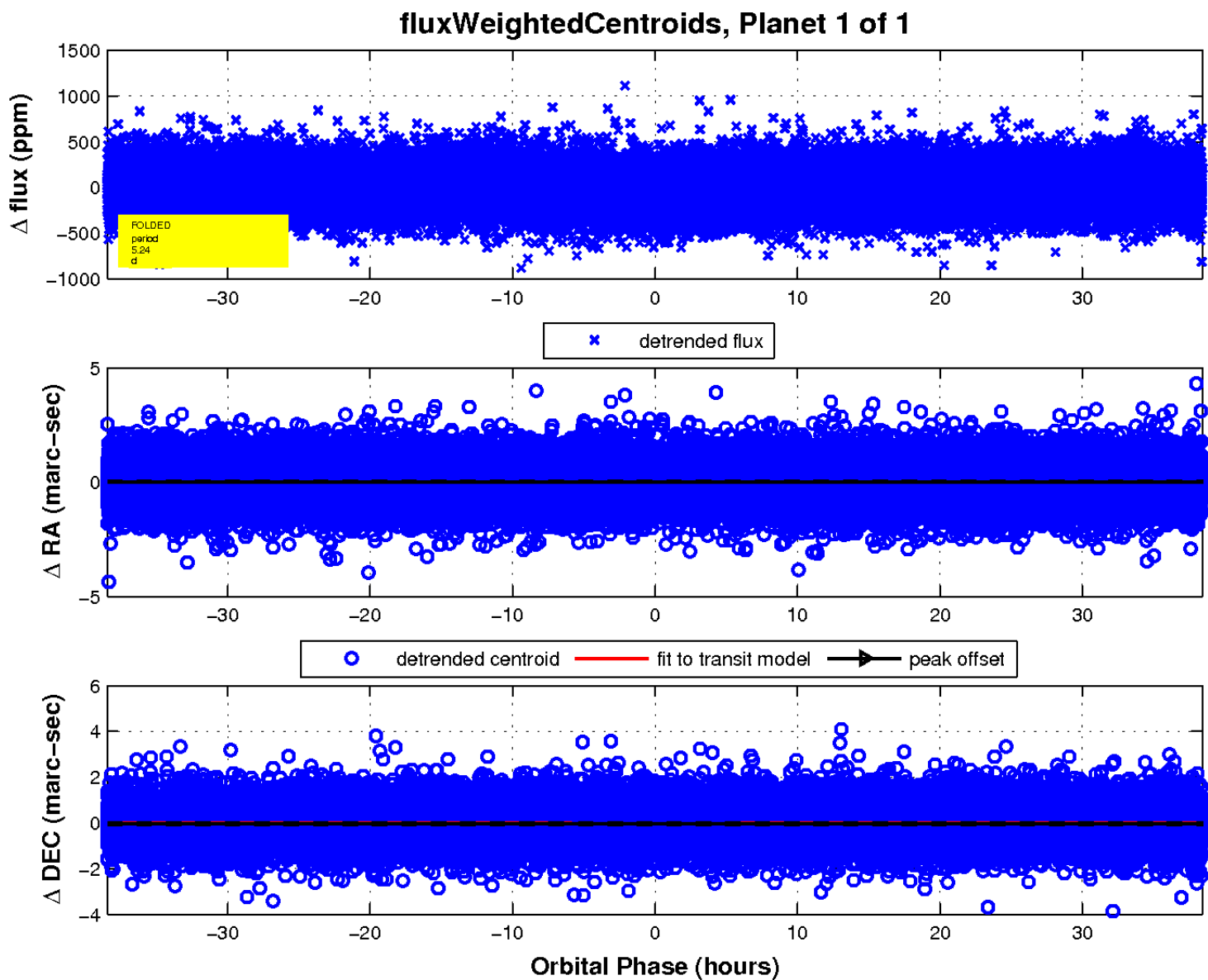
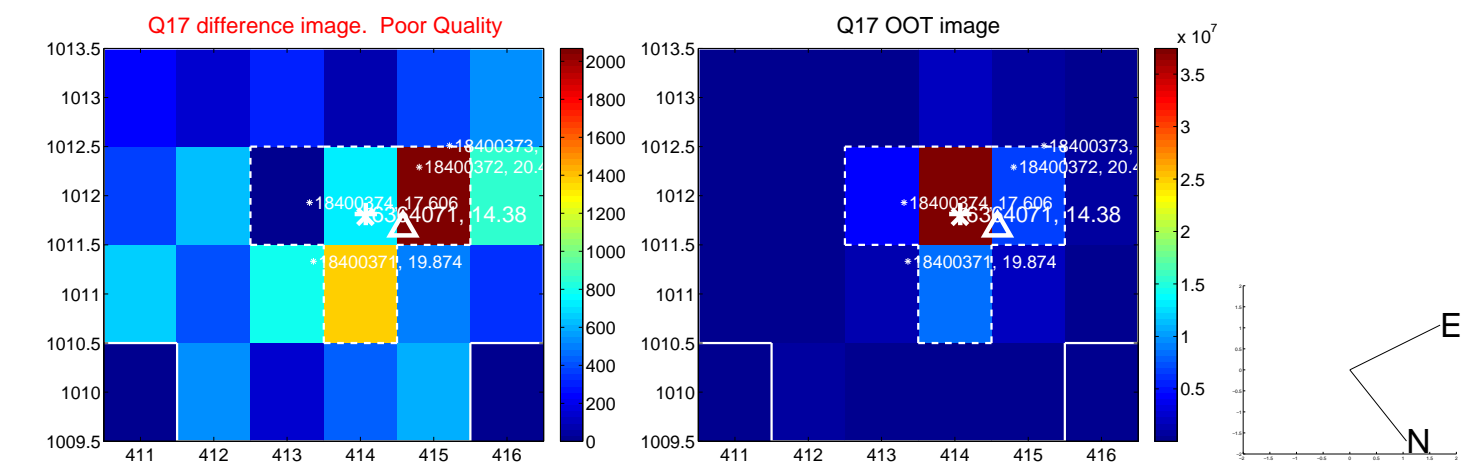
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

