

# KIC 004055304

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004055304-01	OBS	2119.01	0.571034	131.657672	216.9	1.052	41.0	51.0	0.89	5132	1.28	3067.47

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004055304-01	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.

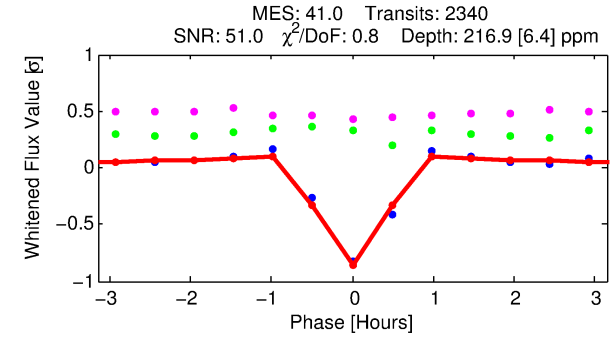
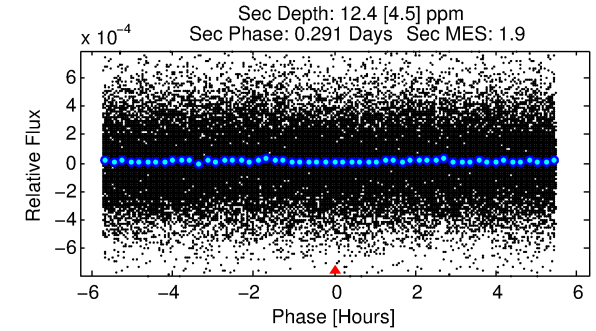
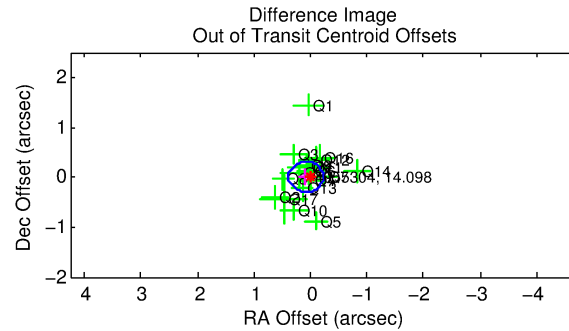
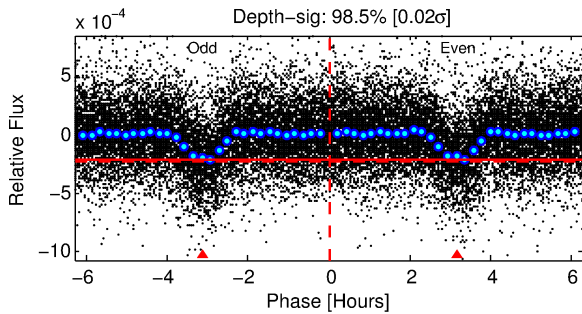
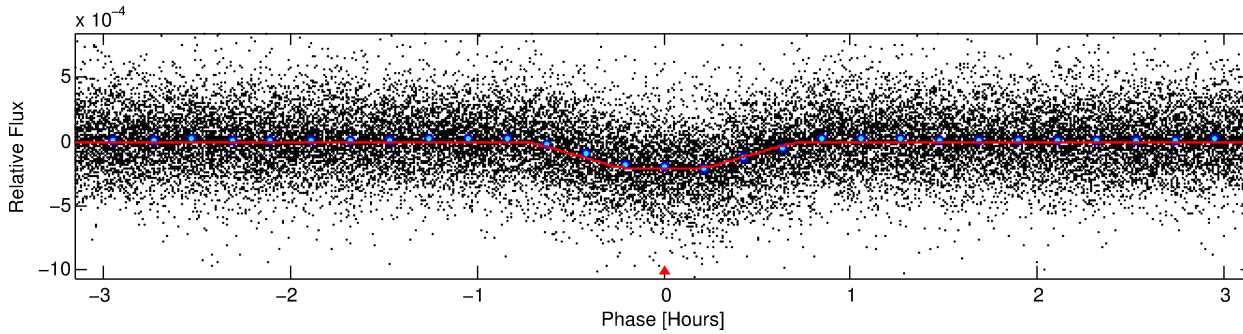
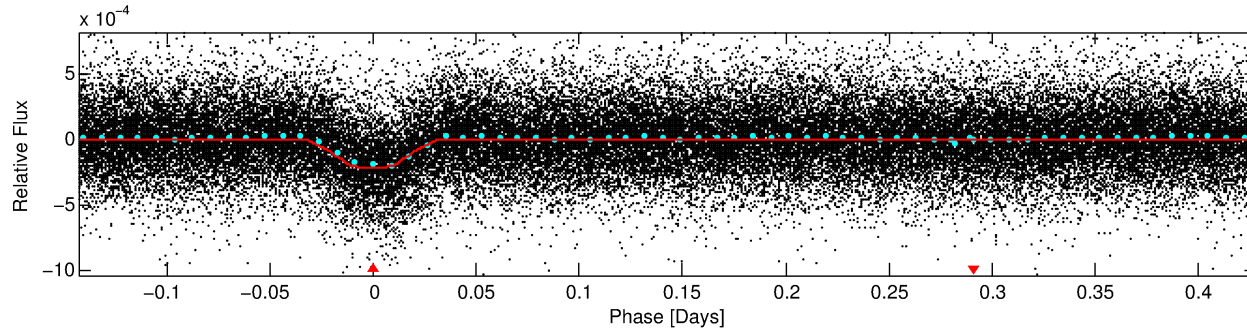
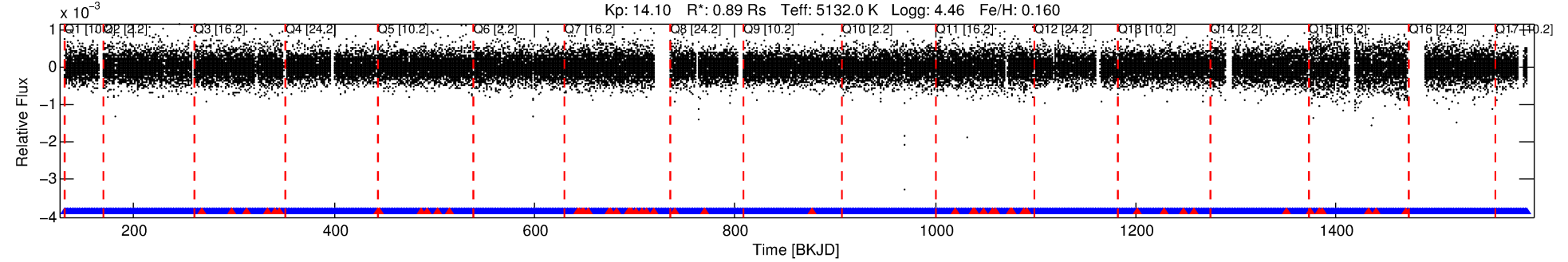
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 004055304-01

No Significant Match Found

# DV One-Page Summary

KIC: 4055304 Candidate: 1 of 1 Period: 0.571 d  
KOI: K02119.01 Corr: 0.925



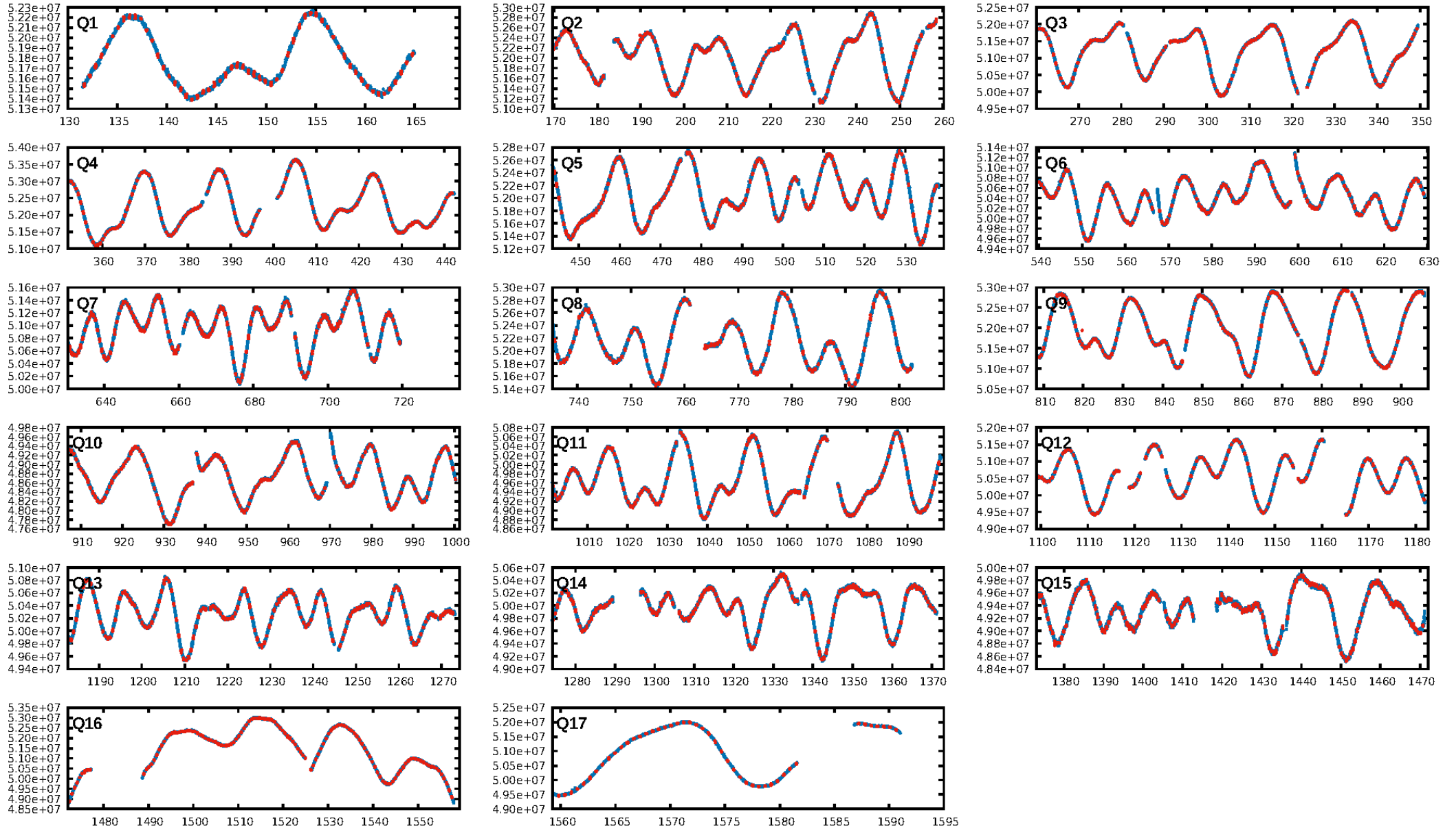
## DV Fit Results:

Period = 0.57103 [0.00000] d  
Epoch = 131.6577 [0.0003] BKJD  
Rp/R\* = 0.0132 [0.0046]  
a/R\* = 4.22 [4.78]  
b = 0.10 [11.93]  
Seff = 3067.47 [530.45]  
Teq = 1898 [82] K  
Rp = 1.28 [0.46] Re  
a = 0.0126 [0.0012] AU  
Ag = 0.66 [0.53] [-0.64 $\sigma$ ]  
Teffp = 2647 [518] K [1.43 $\sigma$ ]

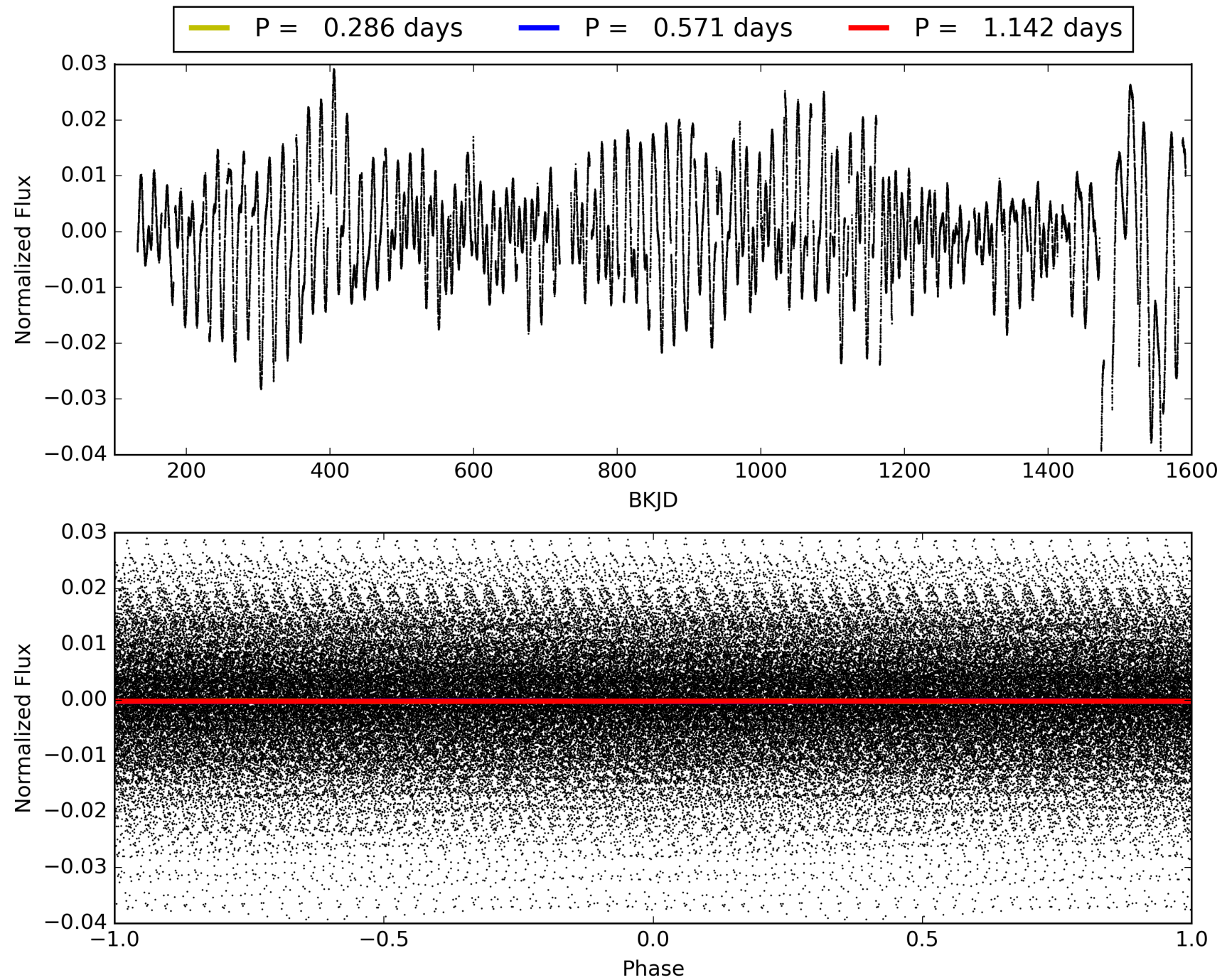
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 0.98 [2180/2234]  
GhostDiagnostic-chr: 3.364  
Centroid-sig: 28.4%  
Centroid-so: 0.367 arcsec [1.56 $\sigma$ ]  
OotOffset-rm: 0.082 arcsec [0.80 $\sigma$ ]  
KicOffset-rm: 0.099 arcsec [0.78 $\sigma$ ]  
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 004055304-01, PDC Light Curves

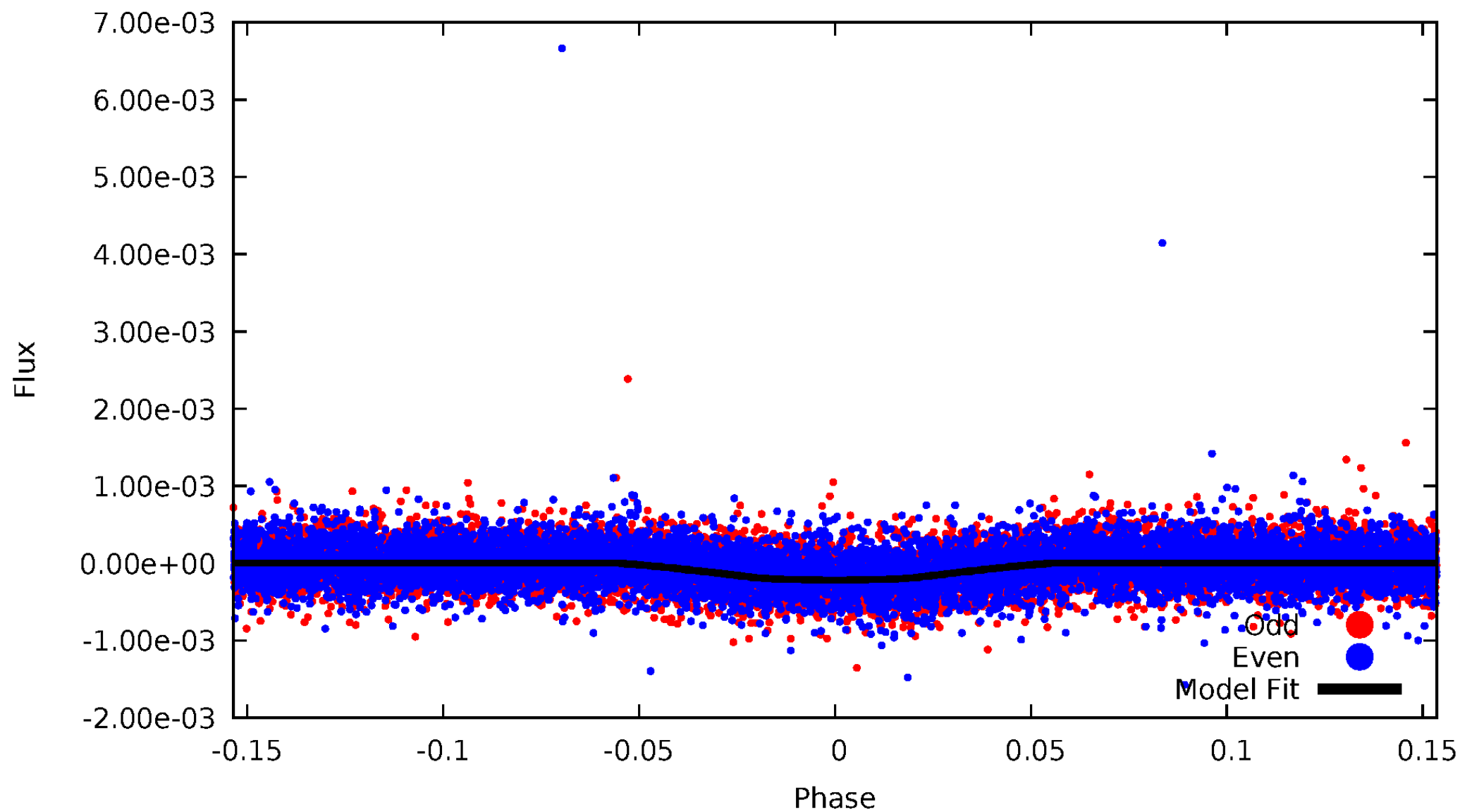


TCE 004055304-01



# DV Odd/Even

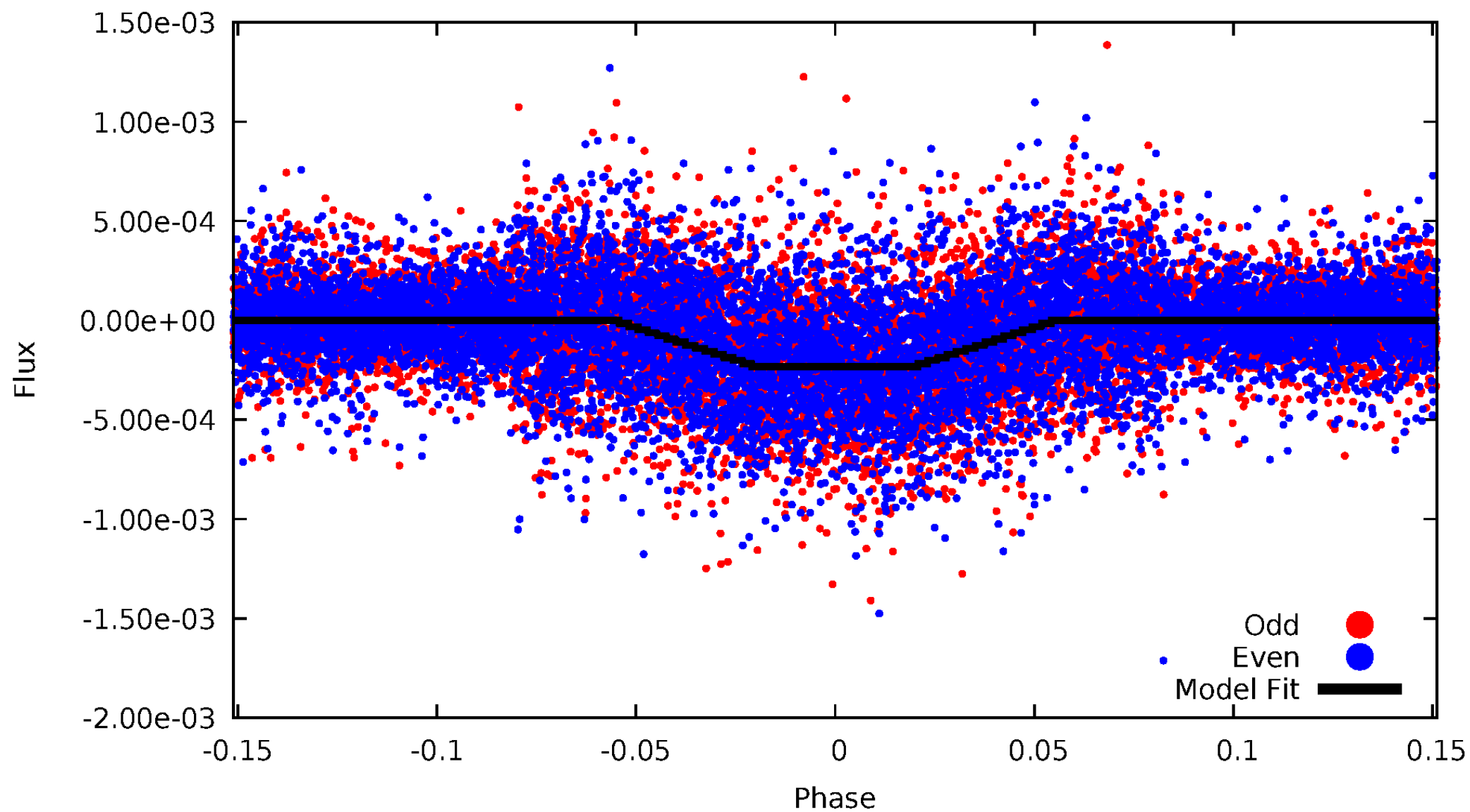
TCE 004055304-01



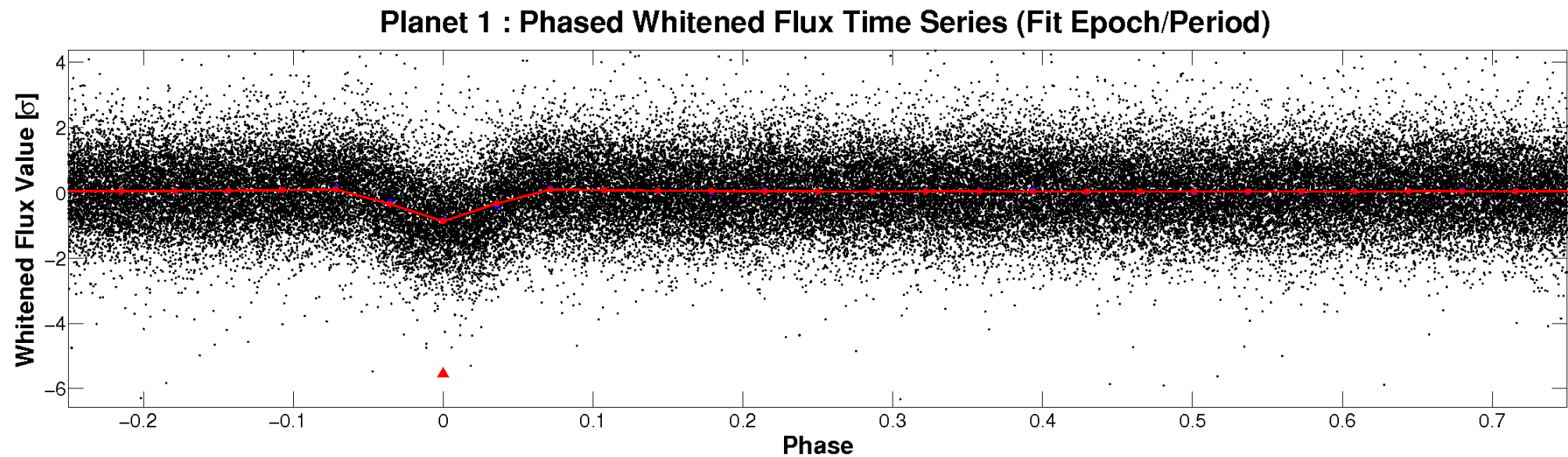
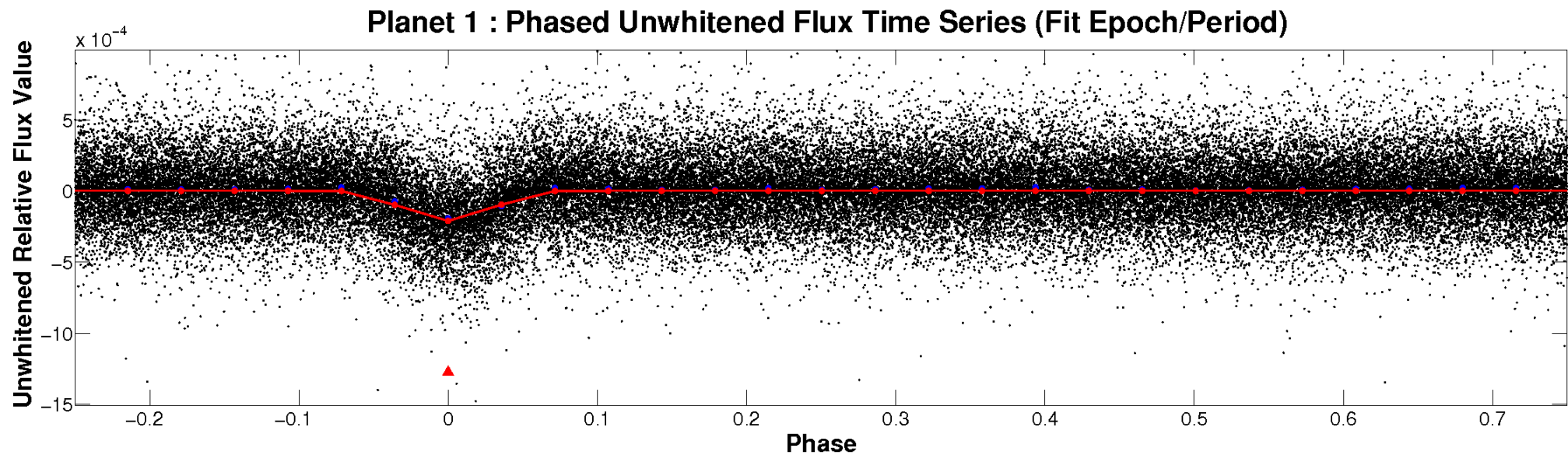


# ALT Odd/Even

TCE 004055304-01

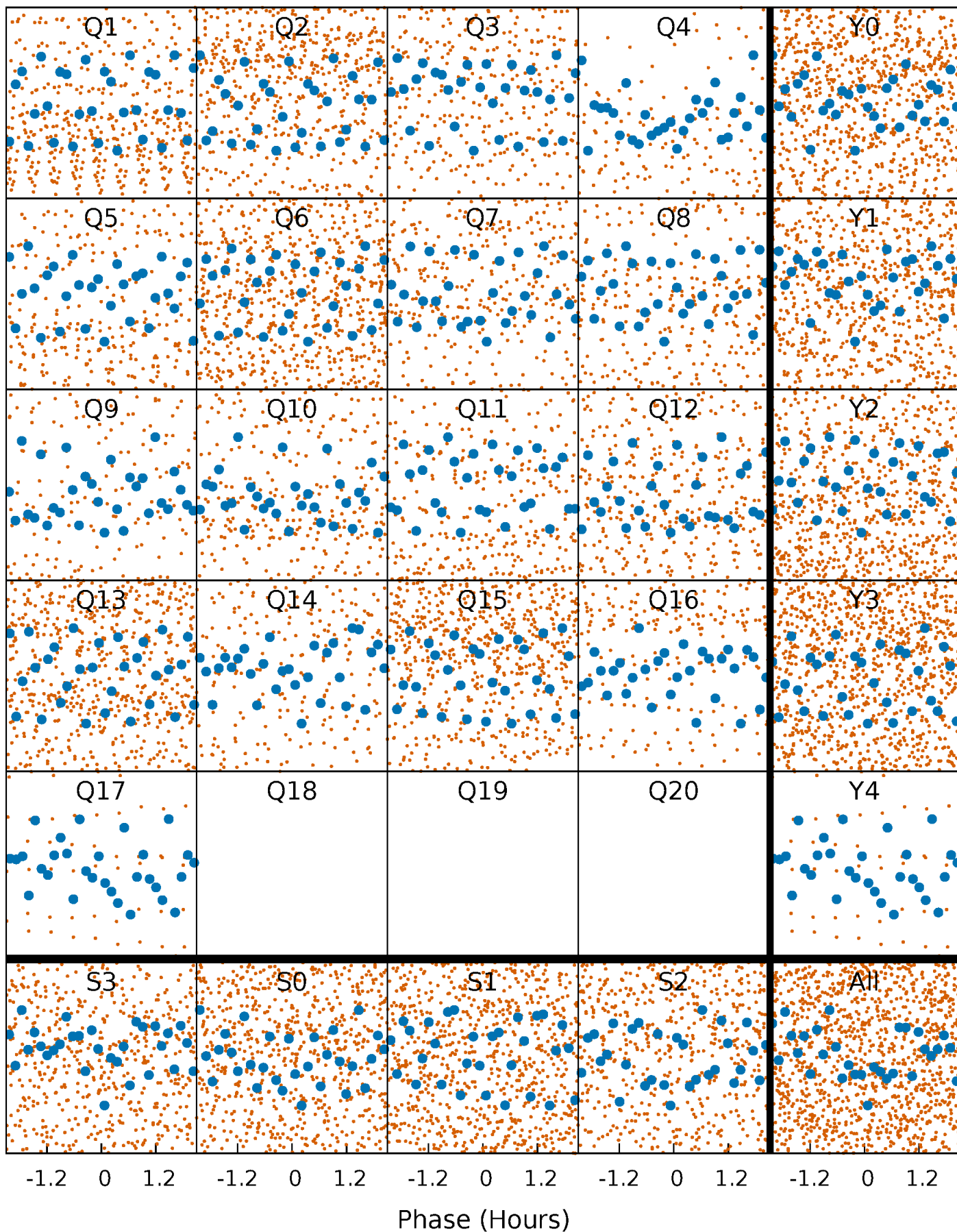


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

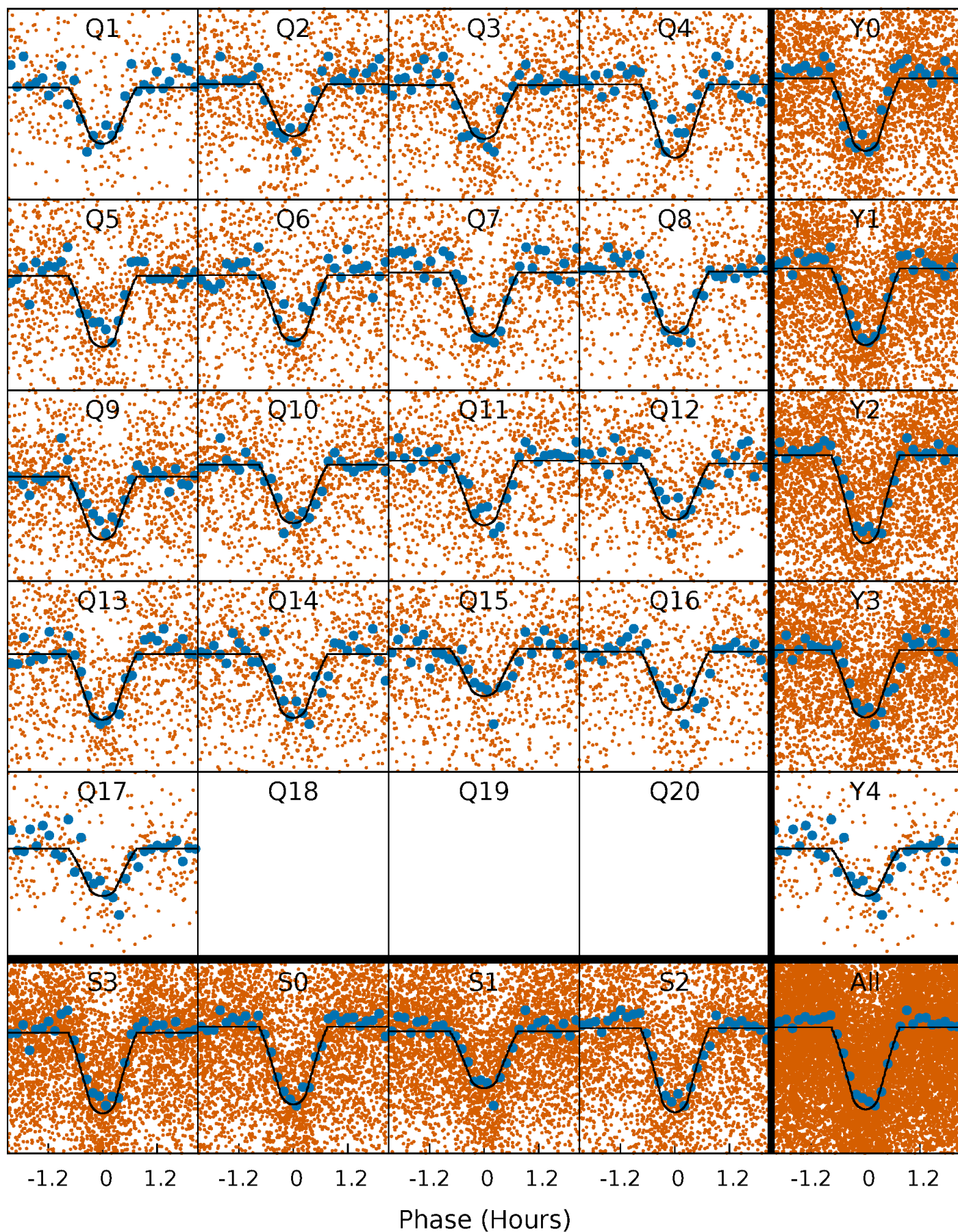
TCE 004055304-01     $P = 0.571034$  Days     $T_0 = 131.657672$  (BKJD)





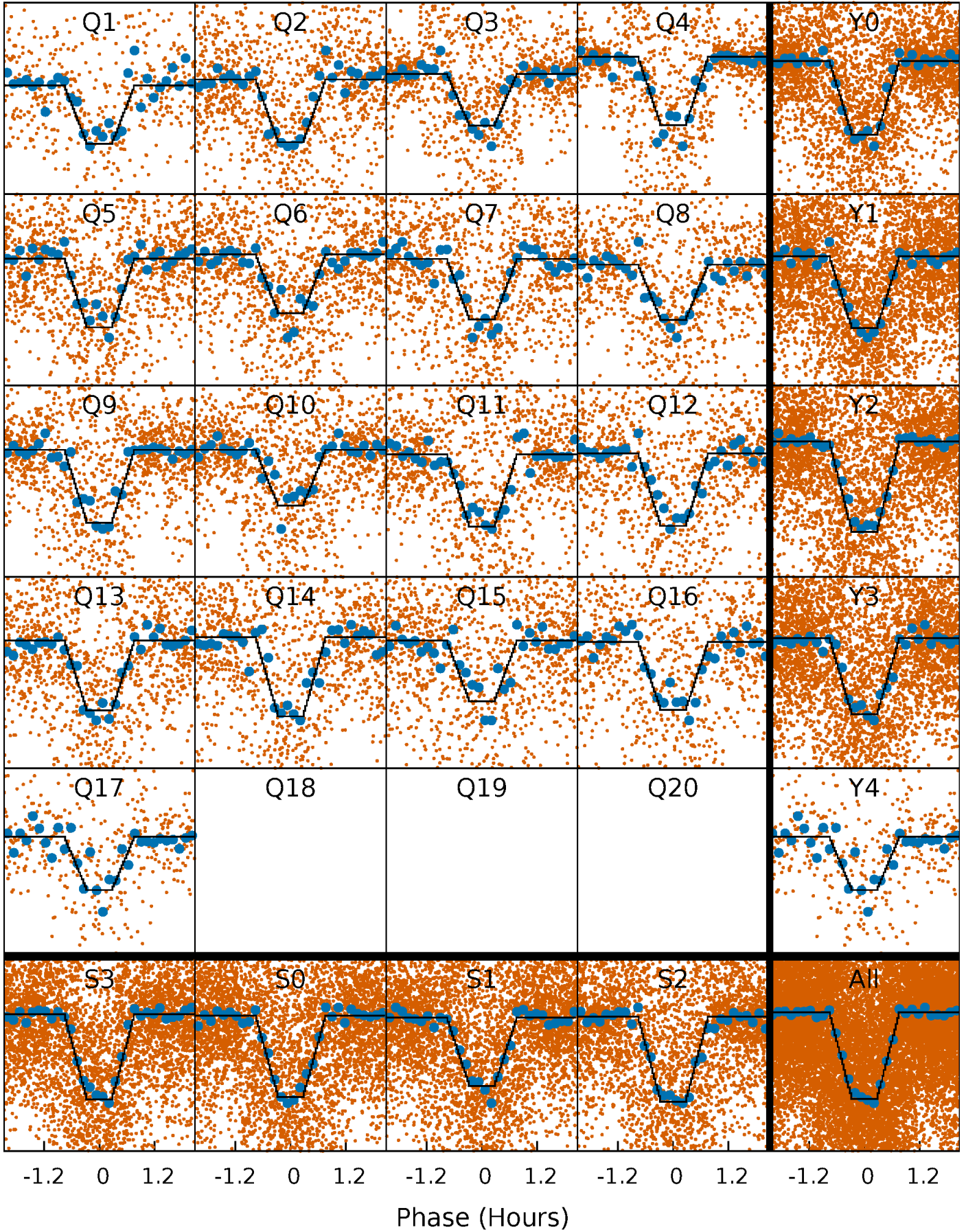
# DV Quarter-Phased Transit Curves

TCE 004055304-01 P= 0.571034 Days  $T_0=131.657672$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 004055304-01   P= 0.571037 Days    $T_0=131.655175$  (BKJD)

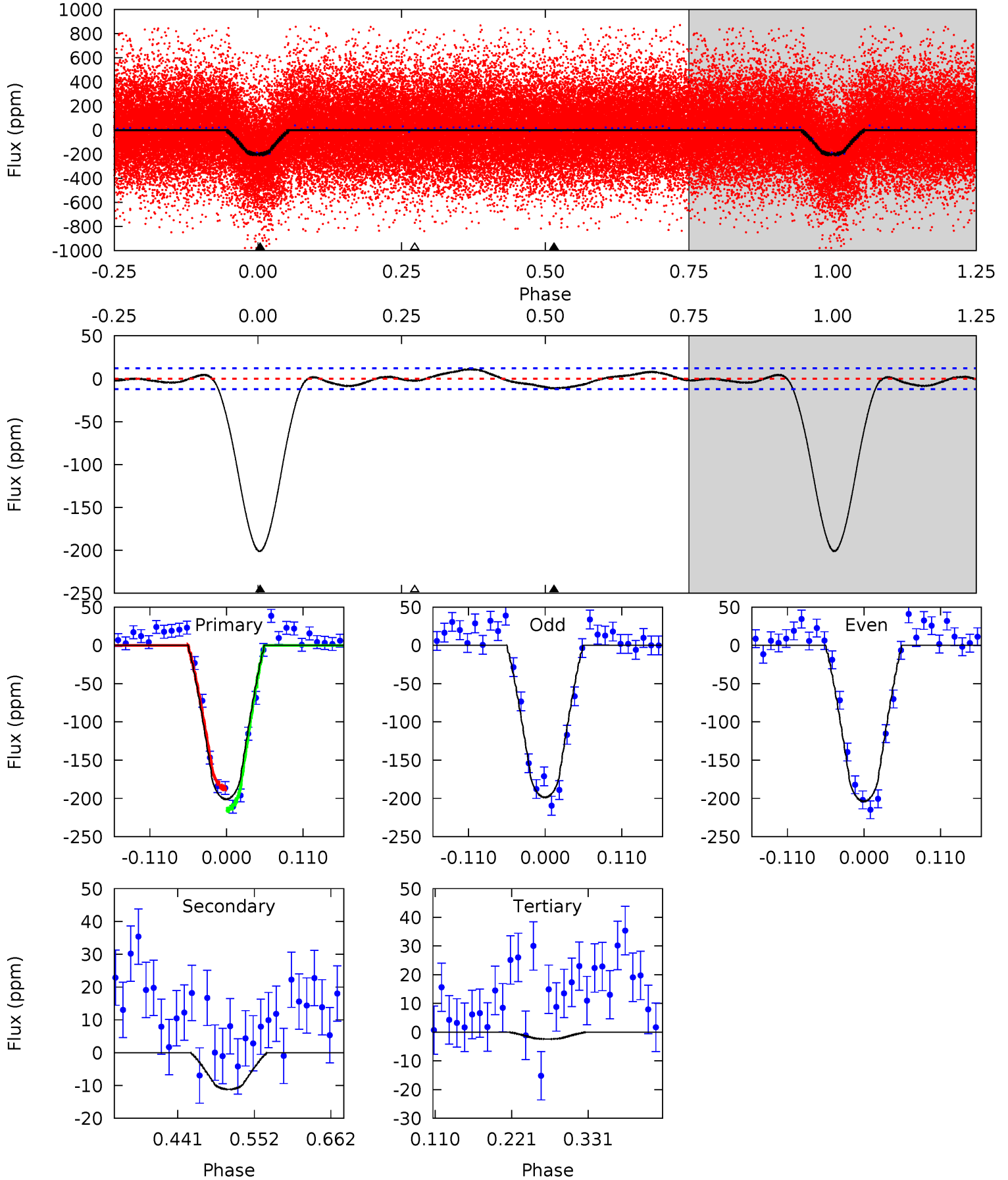




# DV Model-Shift Uniqueness Test

004055304-01, P = 0.571034 Days, E = 131.086638 Days

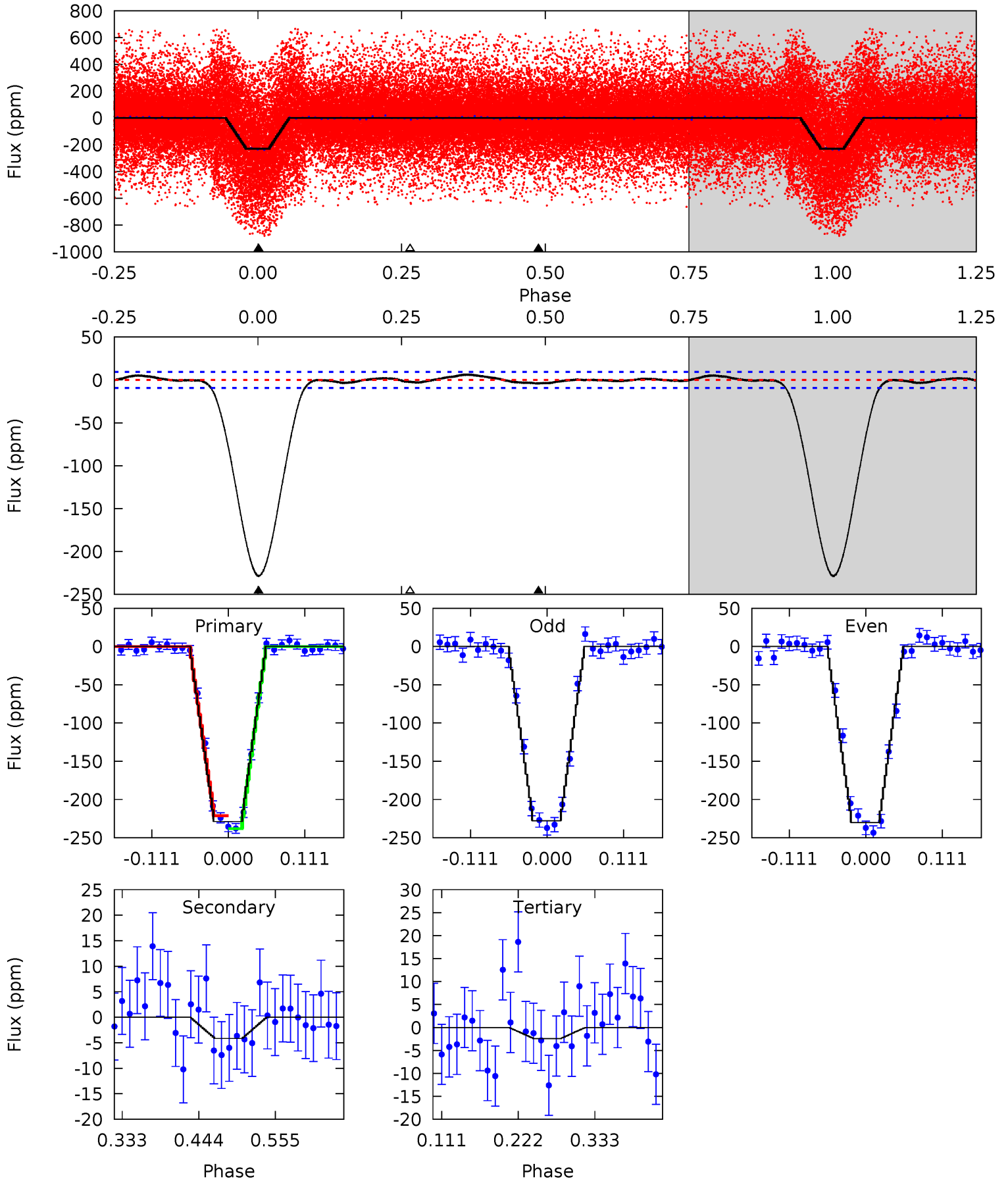
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
75.3	4.18	0.89	0	4.54	1.60	1.89	74.4	75.3	3.29	4.18	0.97	0.99	0.05	5.32



# Alt Model-Shift Uniqueness Test

004055304-01, P = 0.571037 Days, E = 131.084138 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
111.1	2.02	1.17	0	4.54	1.59	1.13	109.9	111.1	0.84	2.02	0.58	0.98	0.03	4.12



### Stellar Parameters For KIC 004055304

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5132^{+84}_{-77}$	$4.457^{+0.096}_{-0.036}$	$0.160^{+0.150}_{-0.150}$	$0.886^{+0.045}_{-0.083}$	$0.820^{+0.058}_{-0.031}$	$1.660^{+0.594}_{-0.204}$
	+2%/-2%	+2%/-1%	+94%/-94%	+5%/-9%	+7%/-4%	+36%/-12%
Source	SPE90	SPE90	SPE90	DSEP		

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

### Secondary Eclipse Parameters for KIC 004055304-01 / KOI 2119.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-11 \pm 3$	$1.26^{+0.46}_{-0.45}$	$2630^{+67}_{-79}$	$2867^{+618}_{-873}$	$0.616^{+0.898}_{-0.304}$
Alt.	$-4 \pm 2$	$1.45^{+0.48}_{-0.44}$	$2636^{+66}_{-77}$	$-2560^{+4986}_{-206}$	$0.169^{+0.217}_{-0.101}$

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



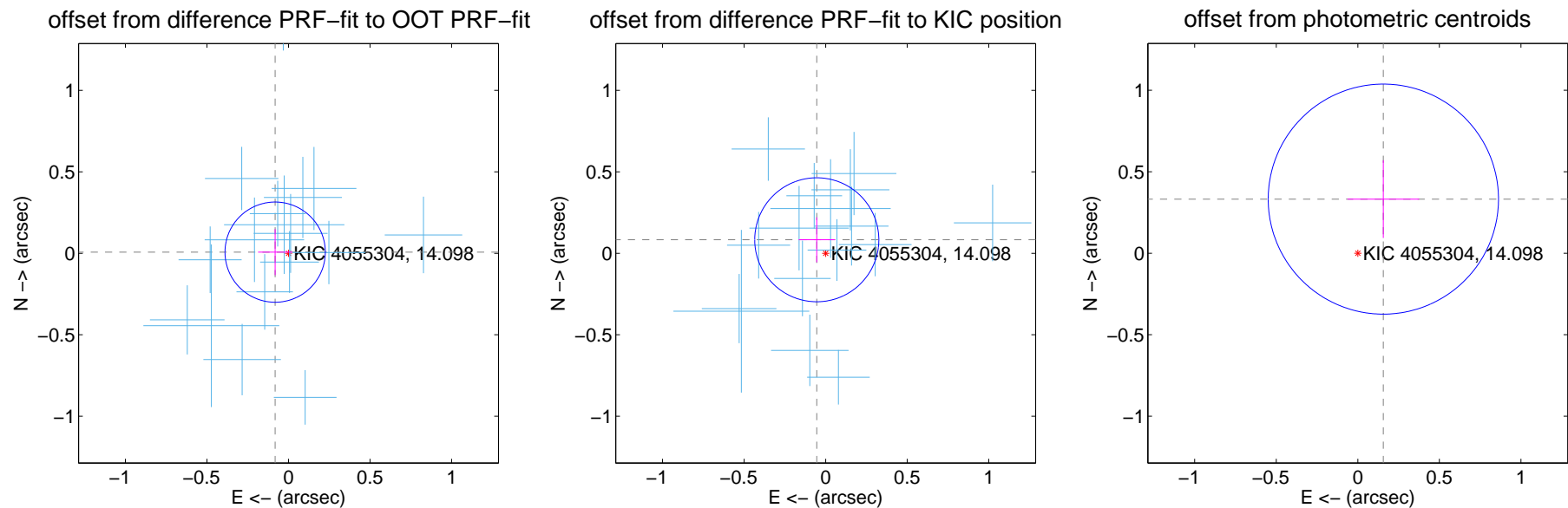
## DV Centroid Data

Supplemental centroid analysis for 004055304-01. Kepler magnitude: 14.10. Transit SNR 51.01

There are 17 quarters with good PRF difference image offsets

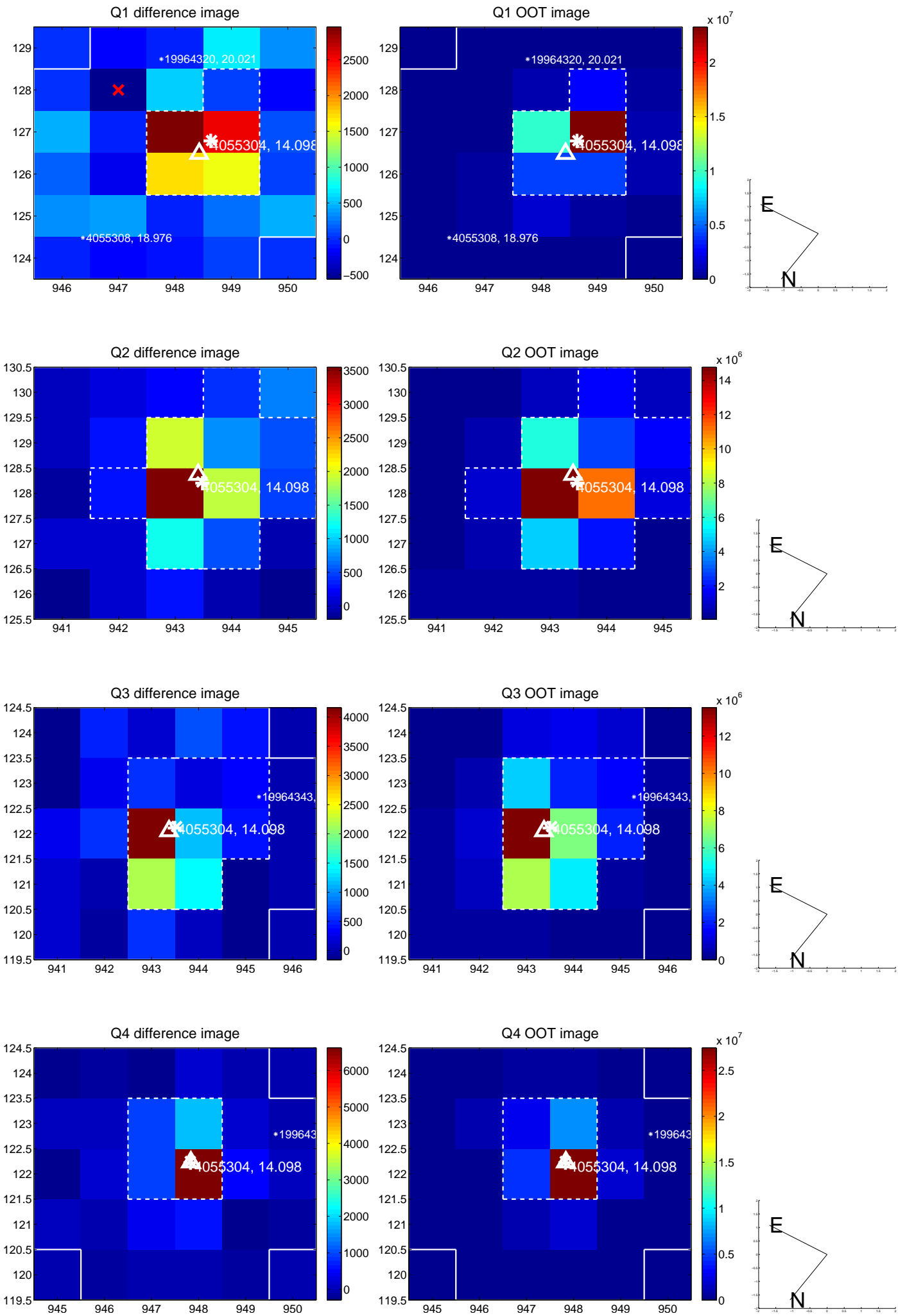
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.082 \pm 0.103$	0.80	$0.082 \pm 0.105$	$0.007 \pm 0.141$
PRF-fit source offset from KIC position	$0.099 \pm 0.127$	0.78	$0.054 \pm 0.111$	$0.083 \pm 0.138$
photometric centroid source offset	$0.37 \pm 0.24$	1.56	$-0.16 \pm 0.22$	$0.33 \pm 0.24$

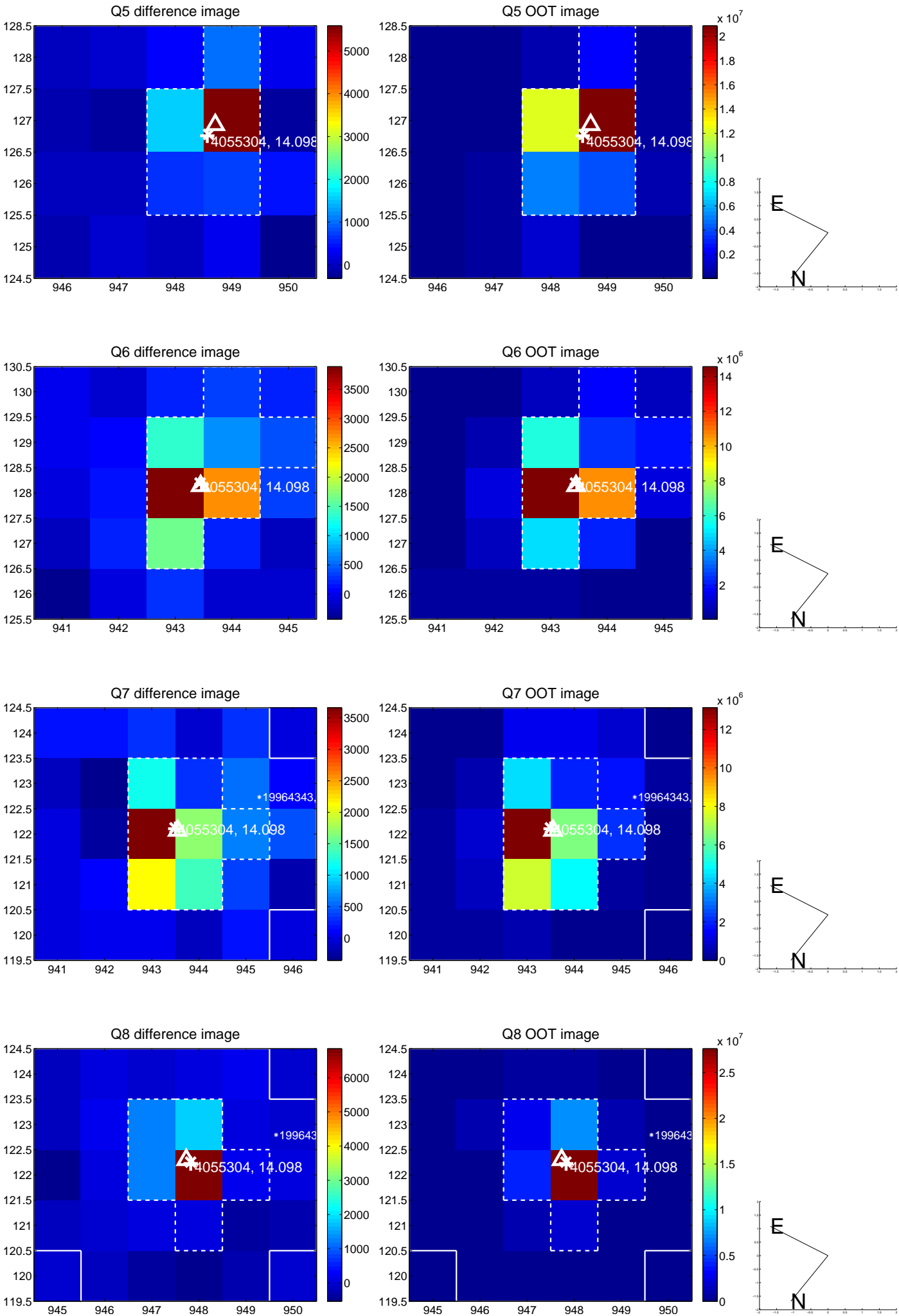


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

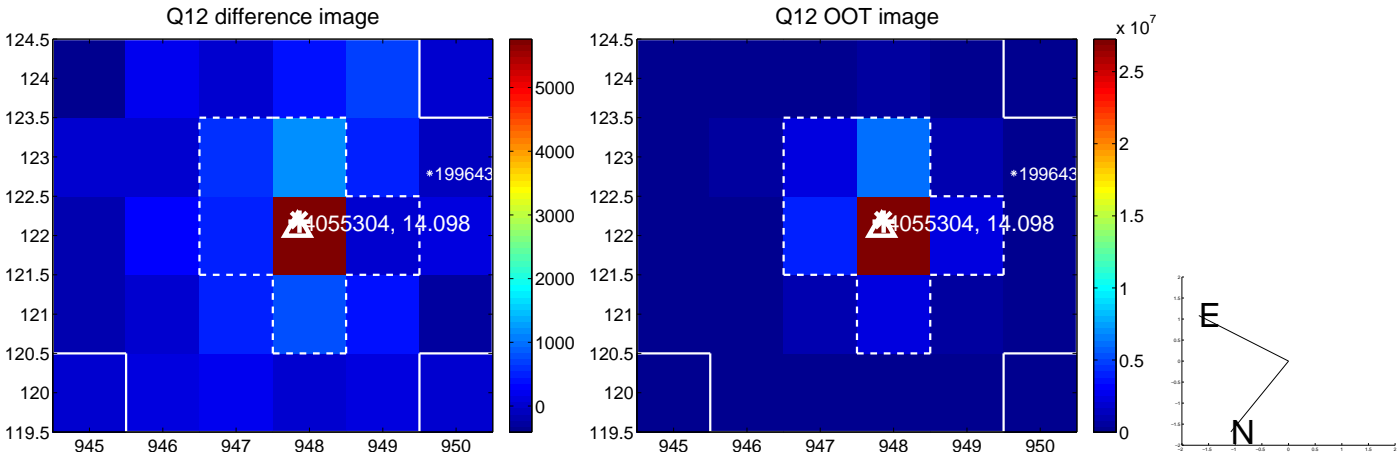
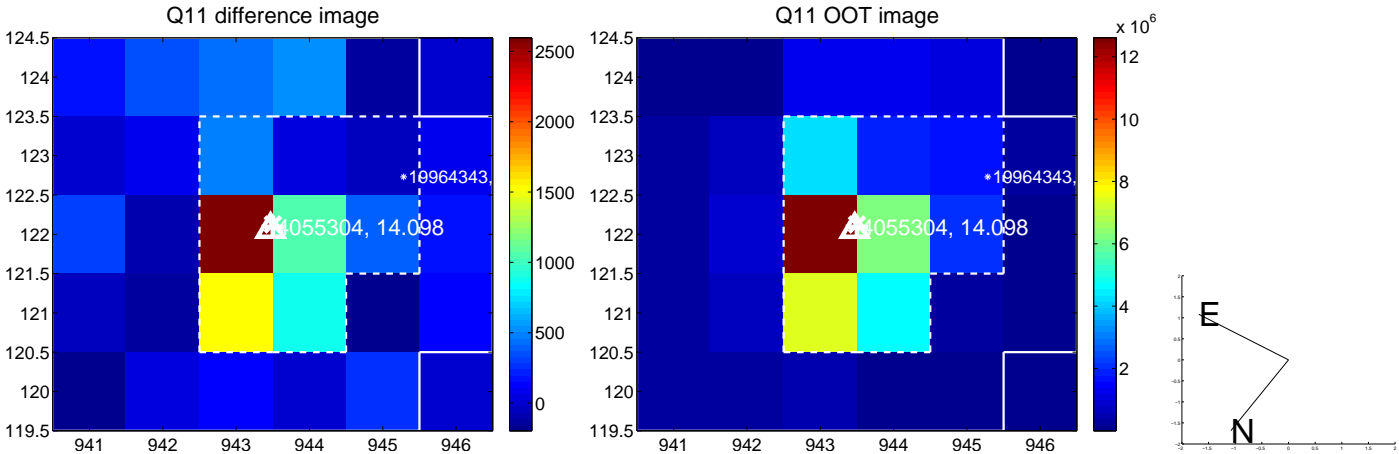
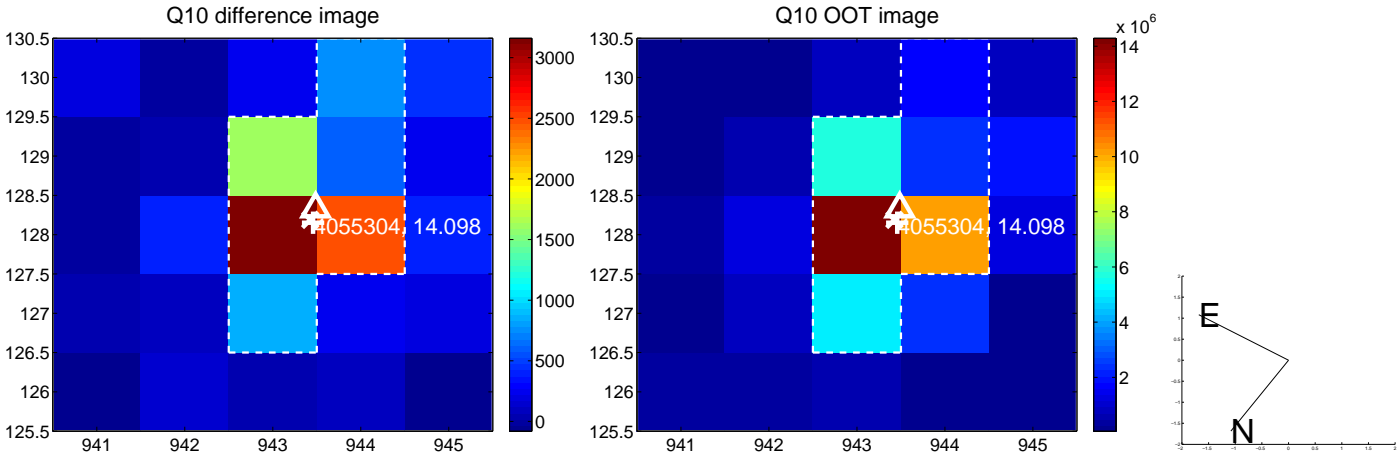
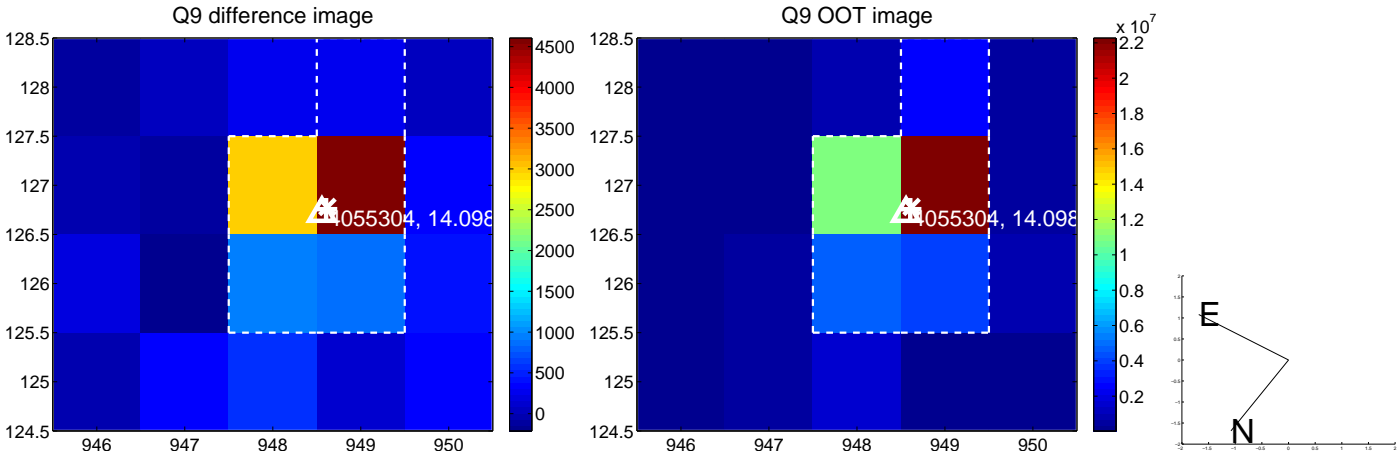
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



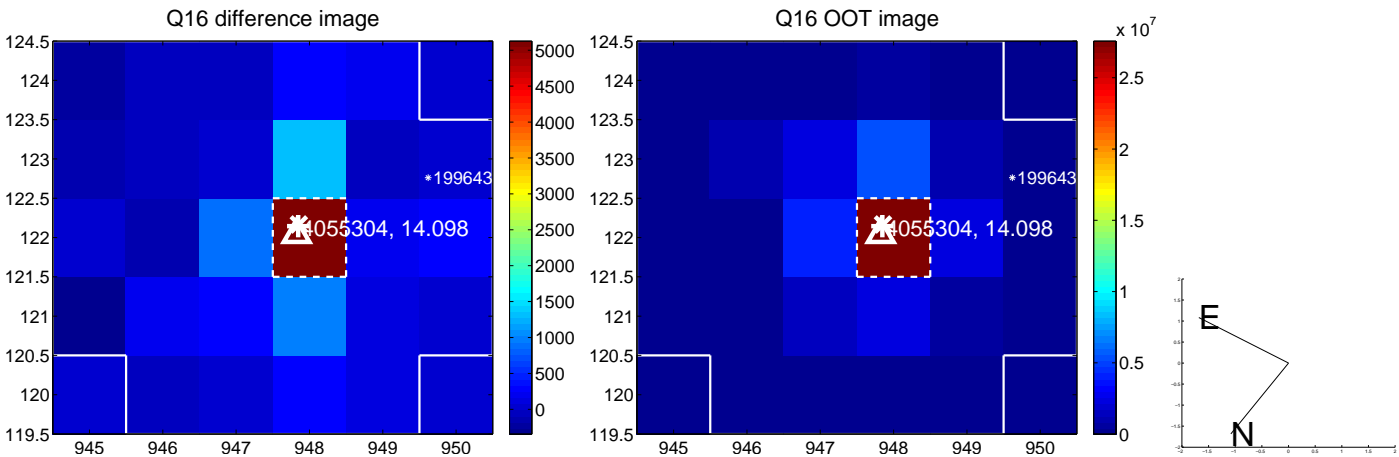
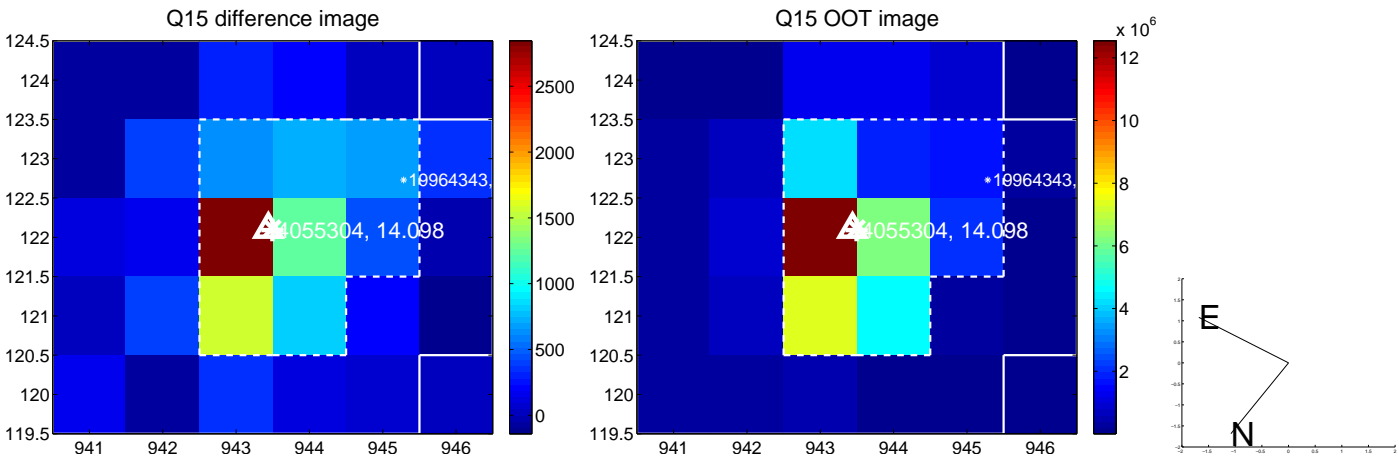
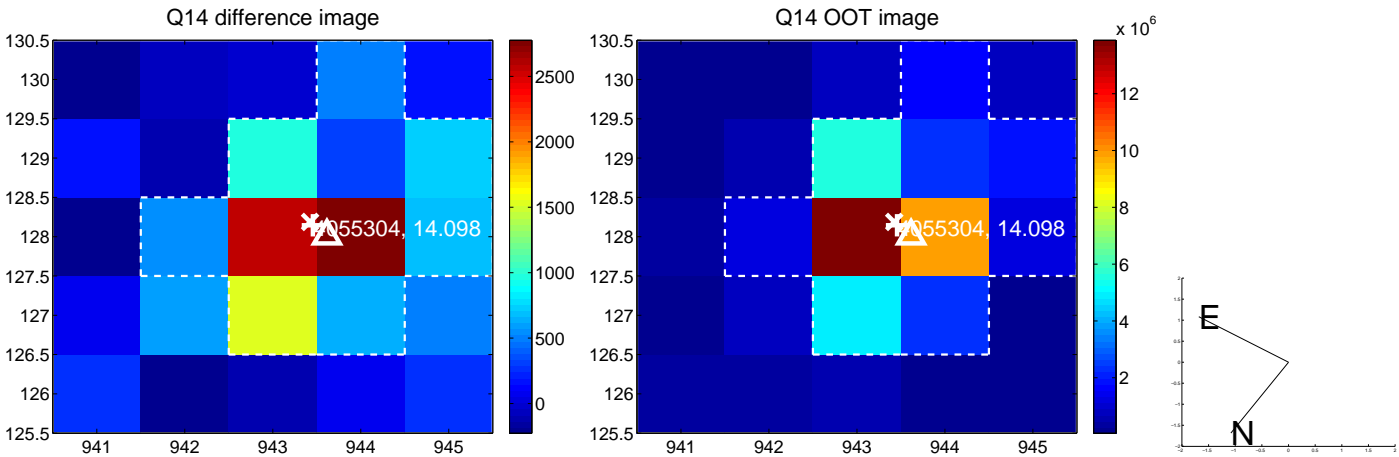
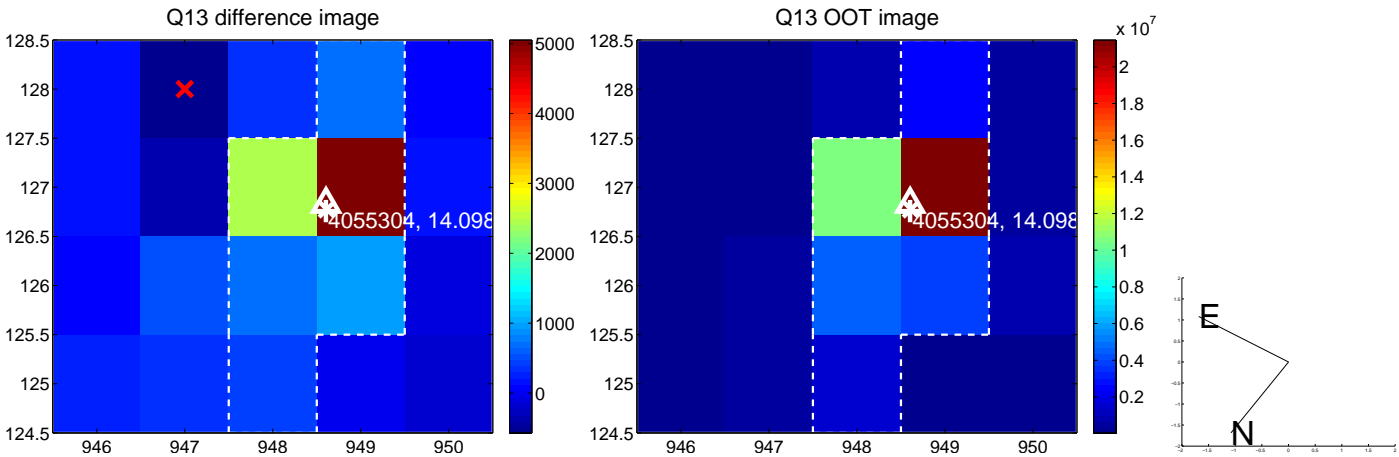
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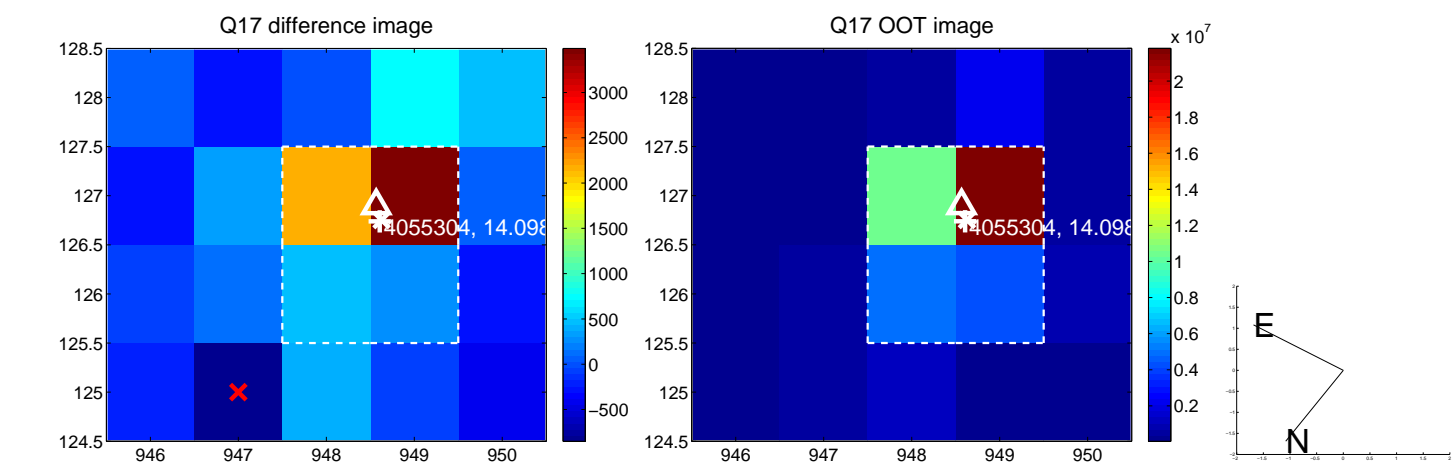


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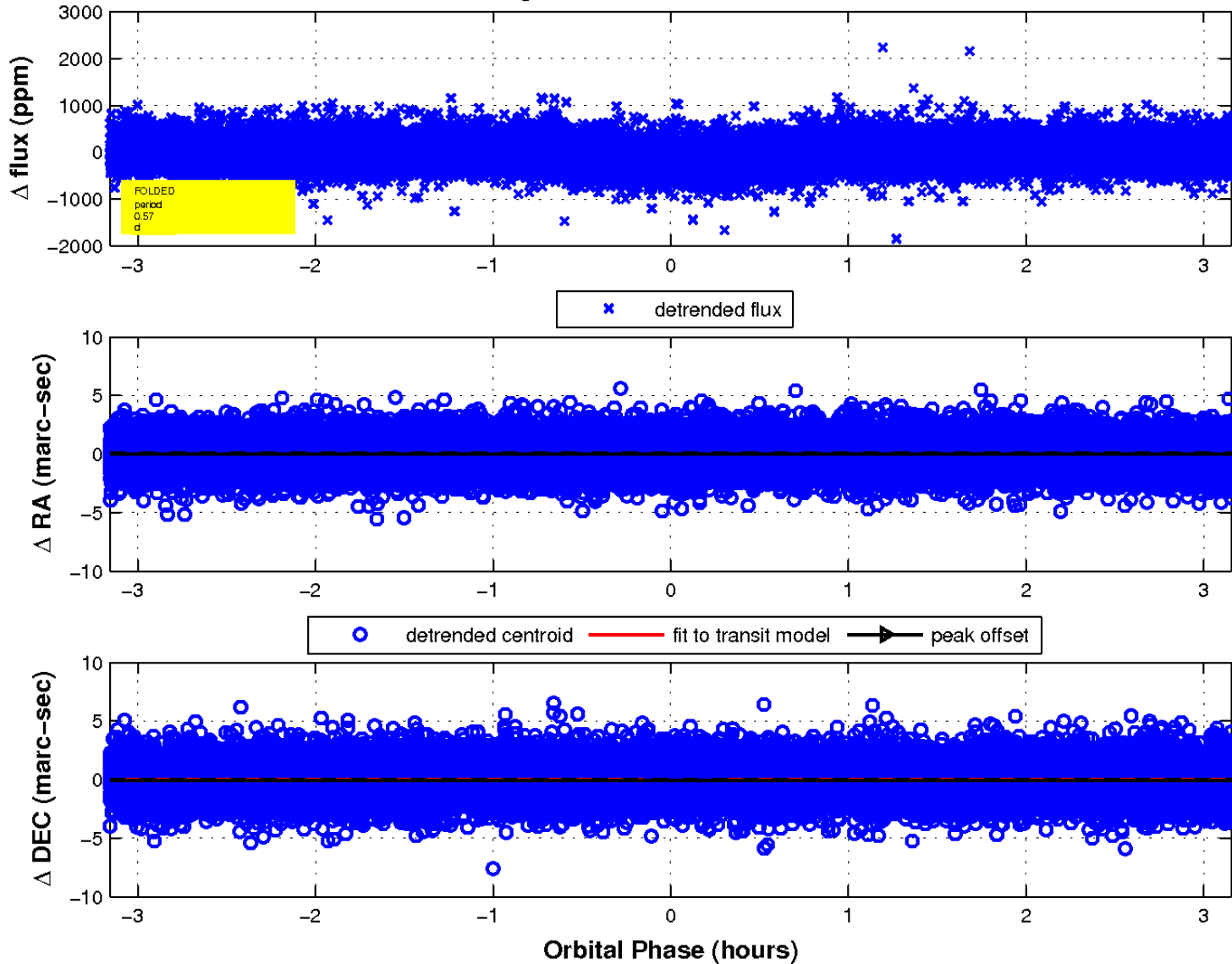




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

