

# KIC 005129453

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005129453-01	OBS	4208.01	3.057685	133.079489	295.8	1.919	11.3	12.7	0.73	4483	1.53	141.01

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005129453-01	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.

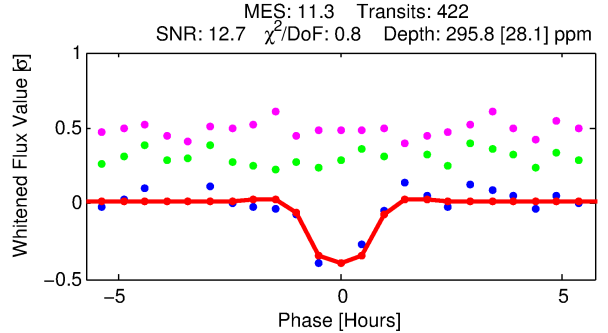
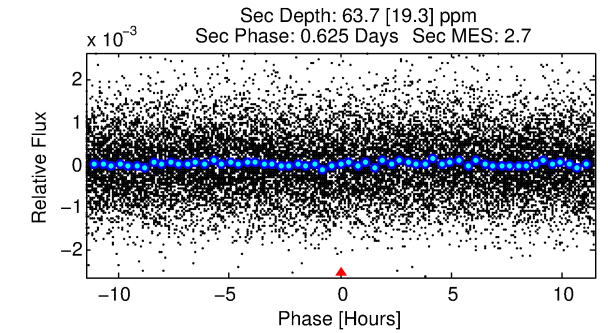
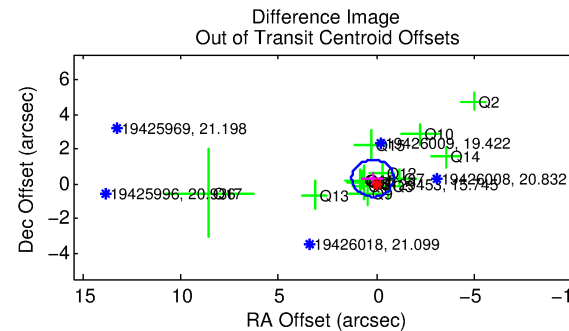
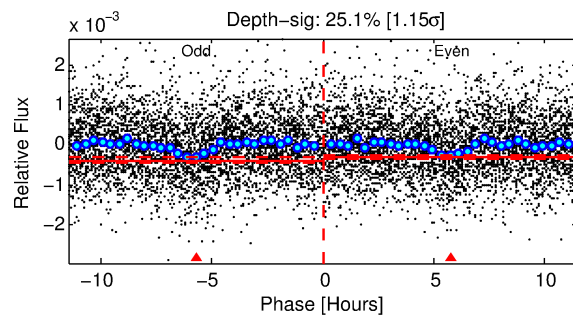
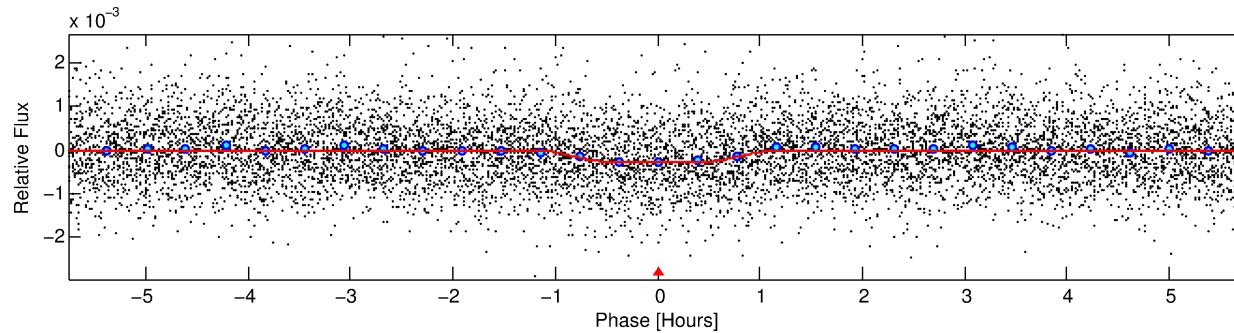
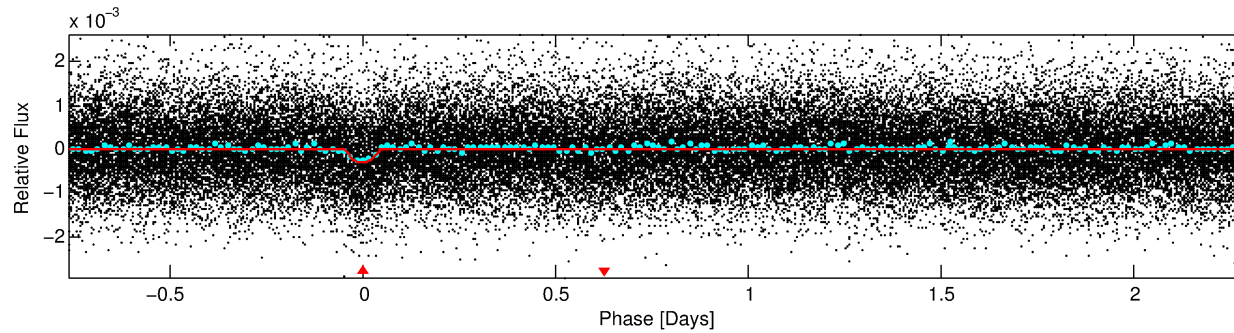
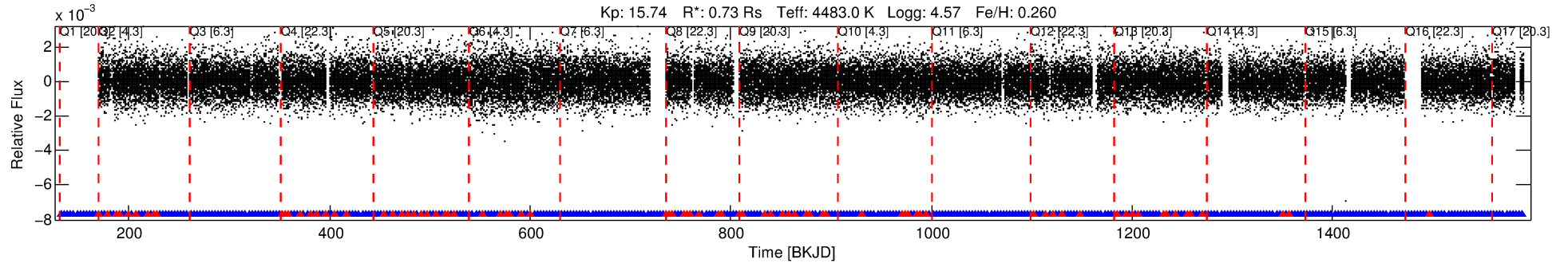
## Ephemeris Match Information For 005129453-01

No Significant Match Found

# DV One-Page Summary

KIC: 5129453 Candidate: 1 of 1 Period: 3.058 d

KOI: K04208.01 Corr: 0.952



## DV Fit Results:

Period = 3.05768 [0.00001] d  
Epoch = 133.0795 [0.0027] BKJD  
Rp/R\* = 0.0192 [0.0171]  
a/R\* = 6.28 [19.09]  
b = 0.88 [0.82]  
Seff = 141.01 [22.10]  
Teq = 879 [34] K  
Rp = 1.53 [1.37] Re  
a = 0.0370 [0.0027] AU  
Ag = 20.57 [37.28] [0.52 $\sigma$ ]  
Teffp = 2893 [1311] K [1.54 $\sigma$ ]

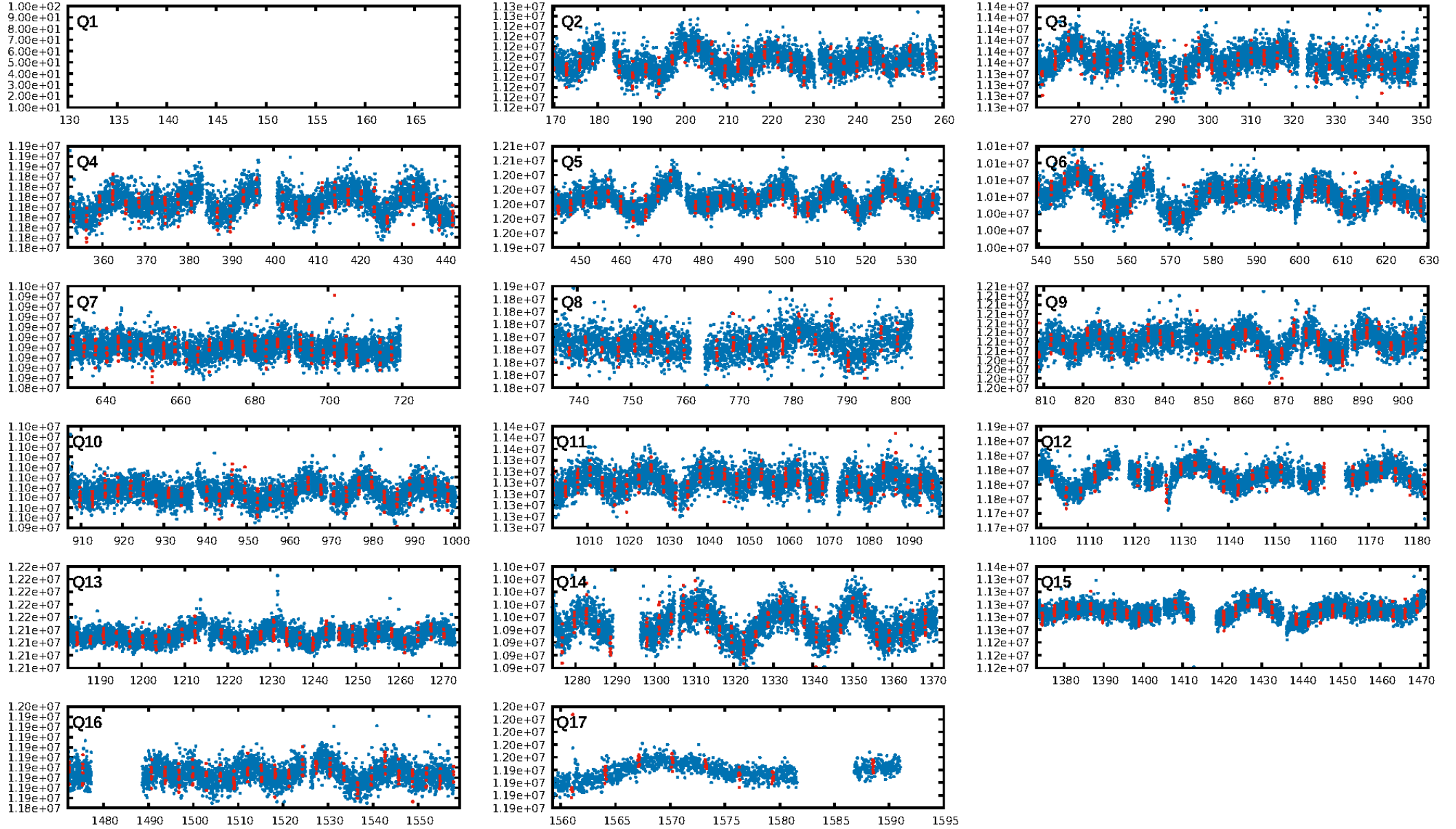
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.79e-29  
RollingBand-fgt: 0.81 [334/414]  
GhostDiagnostic-chr: 3.653  
Centroid-sig: 0.1%  
Centroid-so: 0.106 arcsec [0.12 $\sigma$ ]  
OotOffset-rm: 0.383 arcsec [1.08 $\sigma$ ]  
KicOffset-rm: 0.459 arcsec [0.69 $\sigma$ ]  
OotOffset-st: 3/4/3/4 [14]  
KicOffset-st: 3/4/3/4 [14]  
DiffImageQuality-fgm: 0.64 [9/14]  
DiffImageOverlap-fno: 1.00 [16/16]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 08:34:44 Z

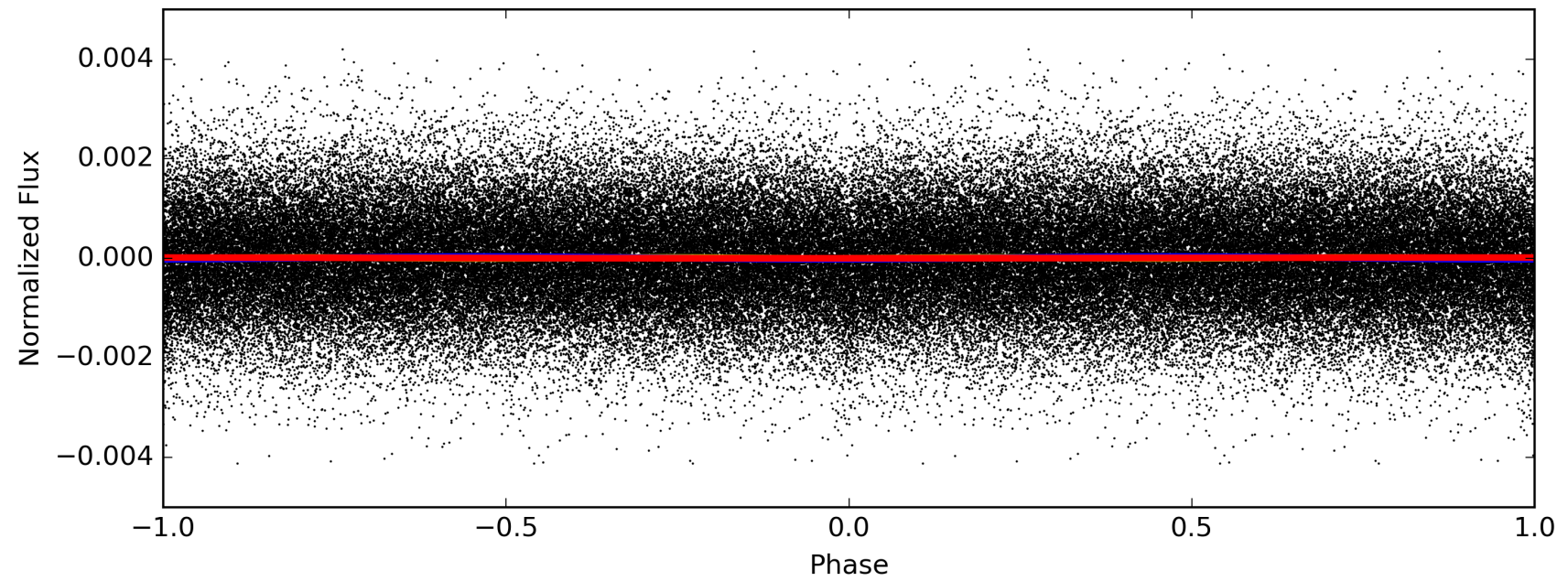
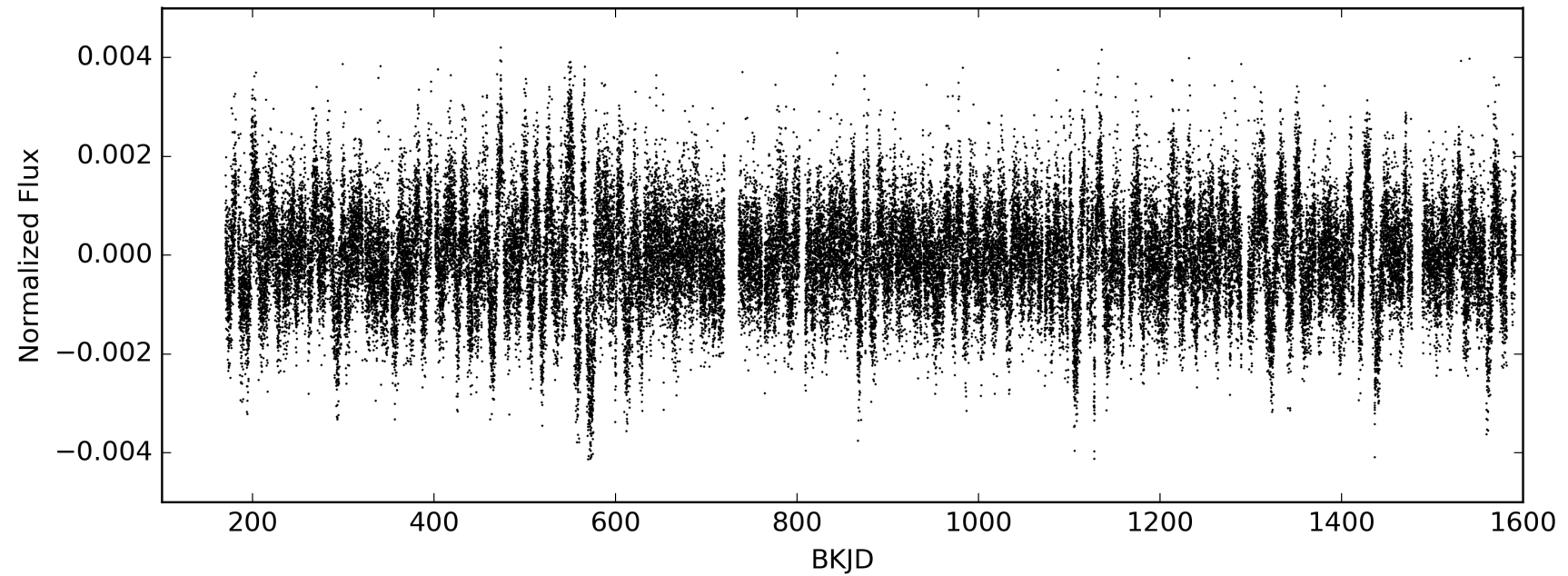
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 005129453-01, PDC Light Curves



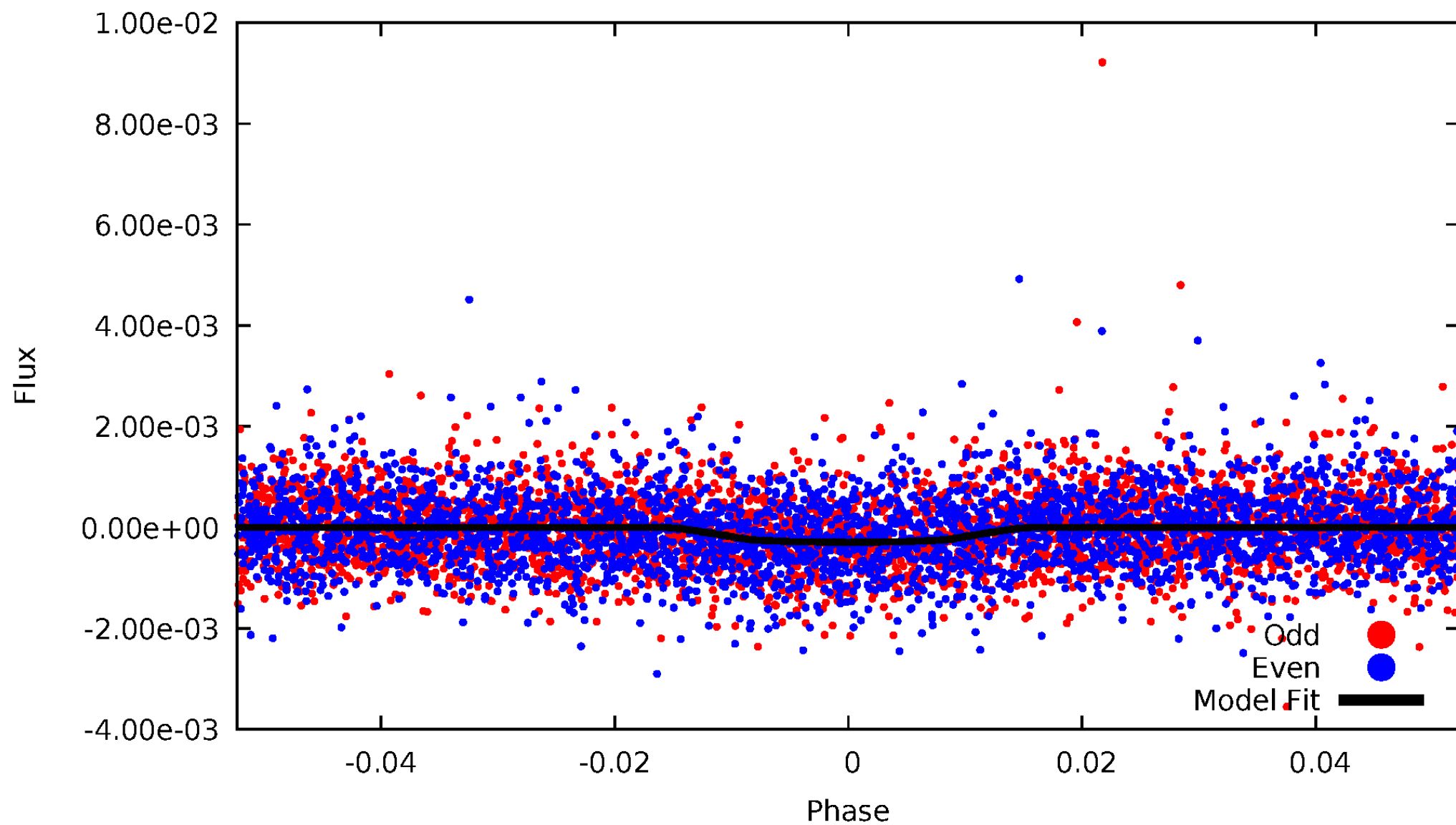
TCE 005129453-01

— P = 1.529 days — P = 3.058 days — P = 6.115 days



# DV Odd/Even

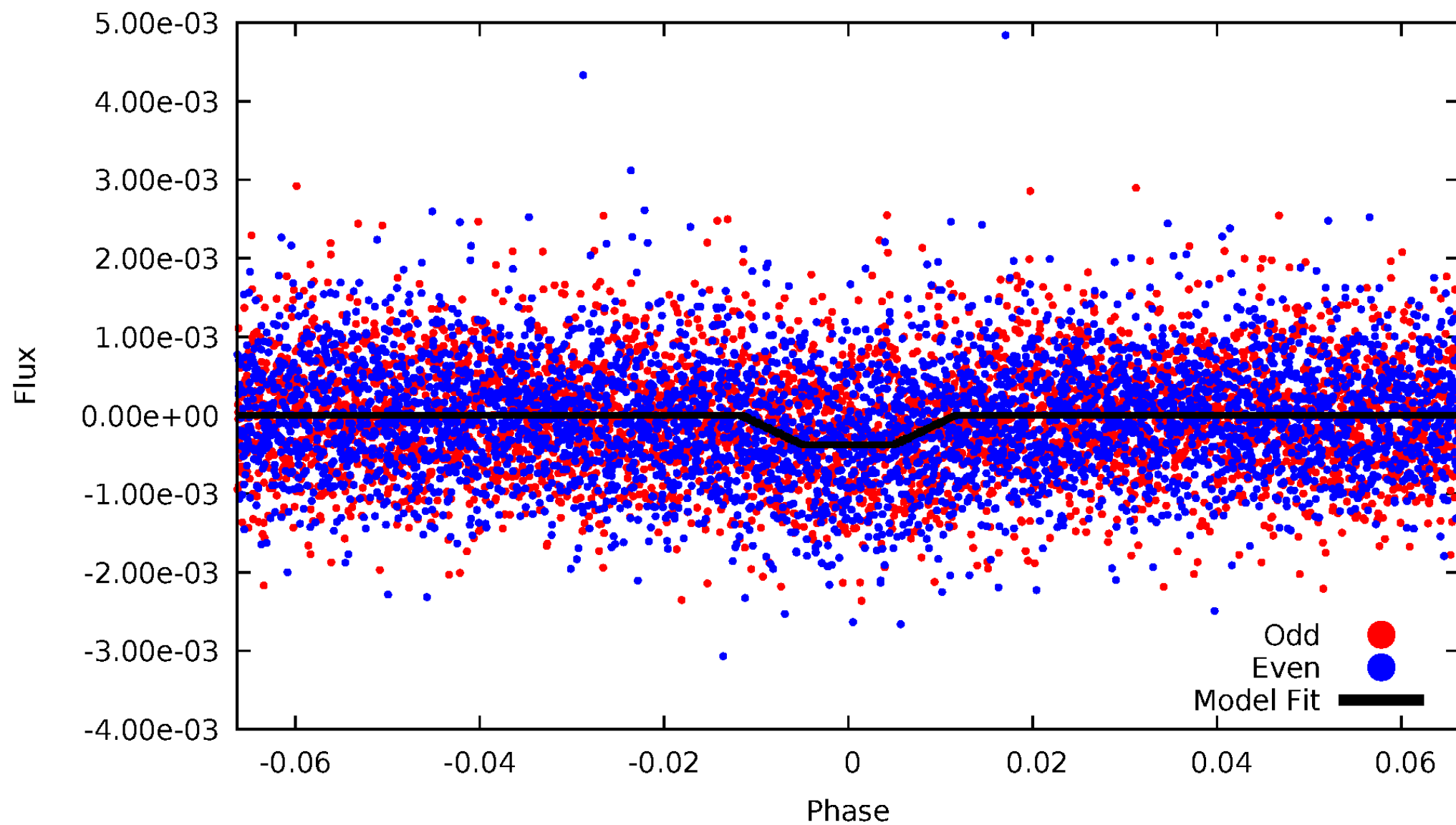
TCE 005129453-01





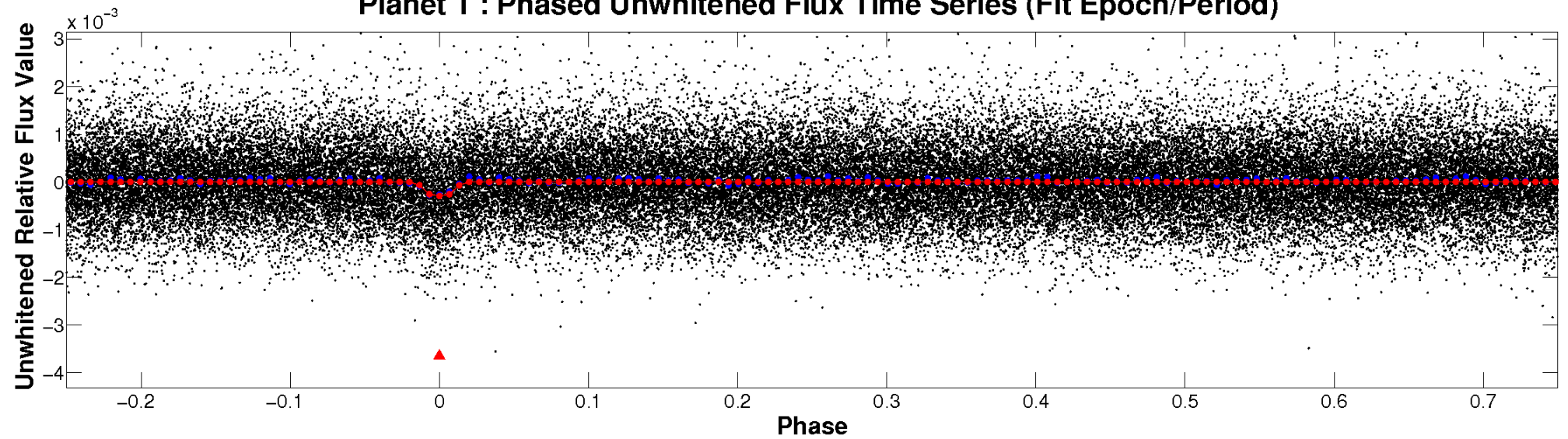
# ALT Odd/Even

TCE 005129453-01

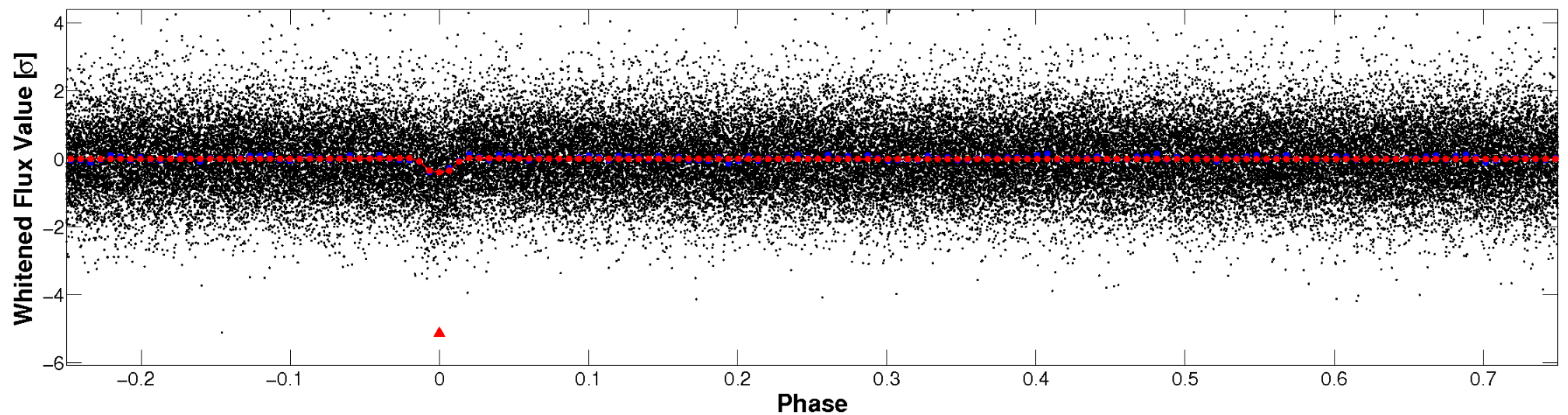


# Non-Whitened Vs. Whitened Light Curve

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

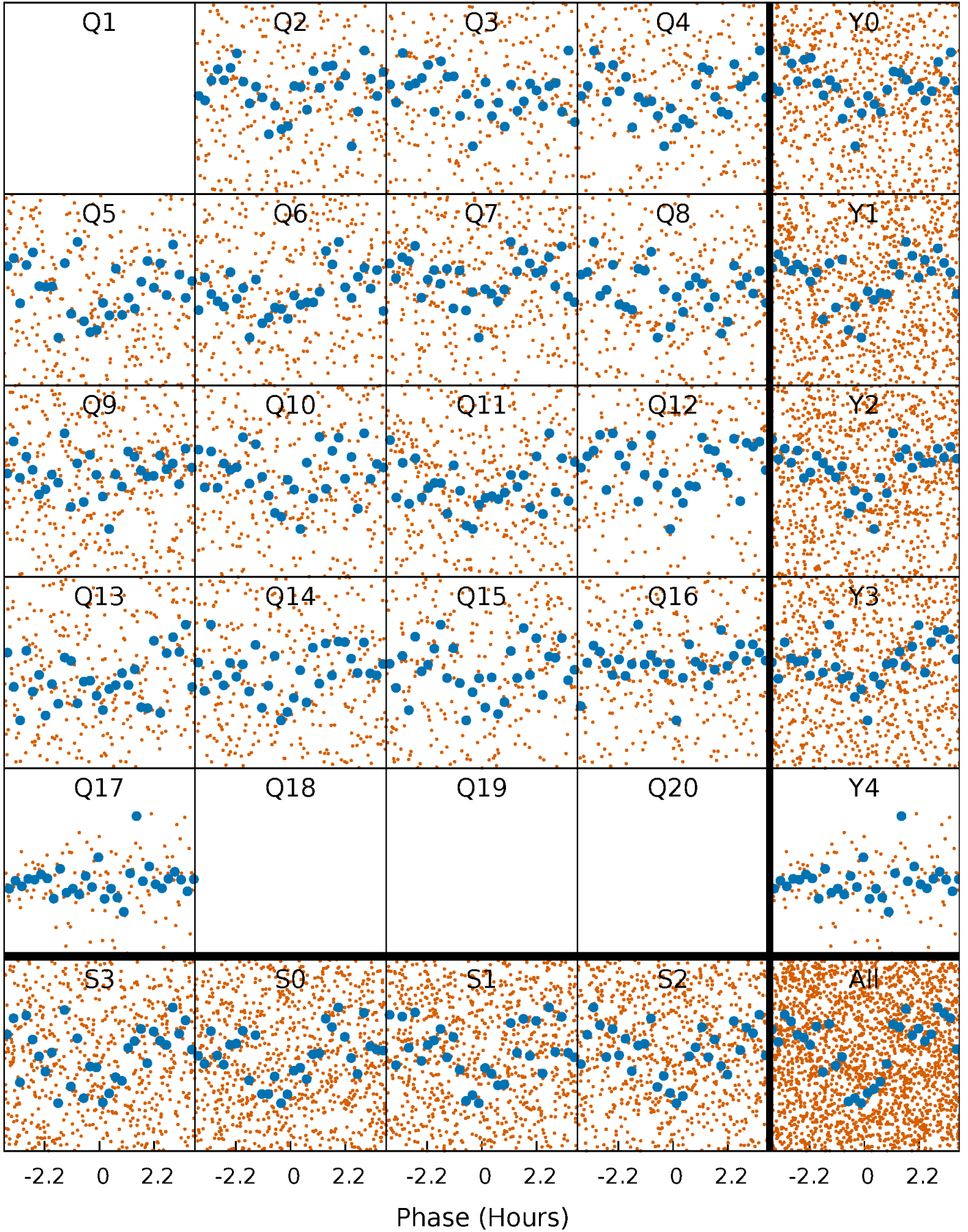


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

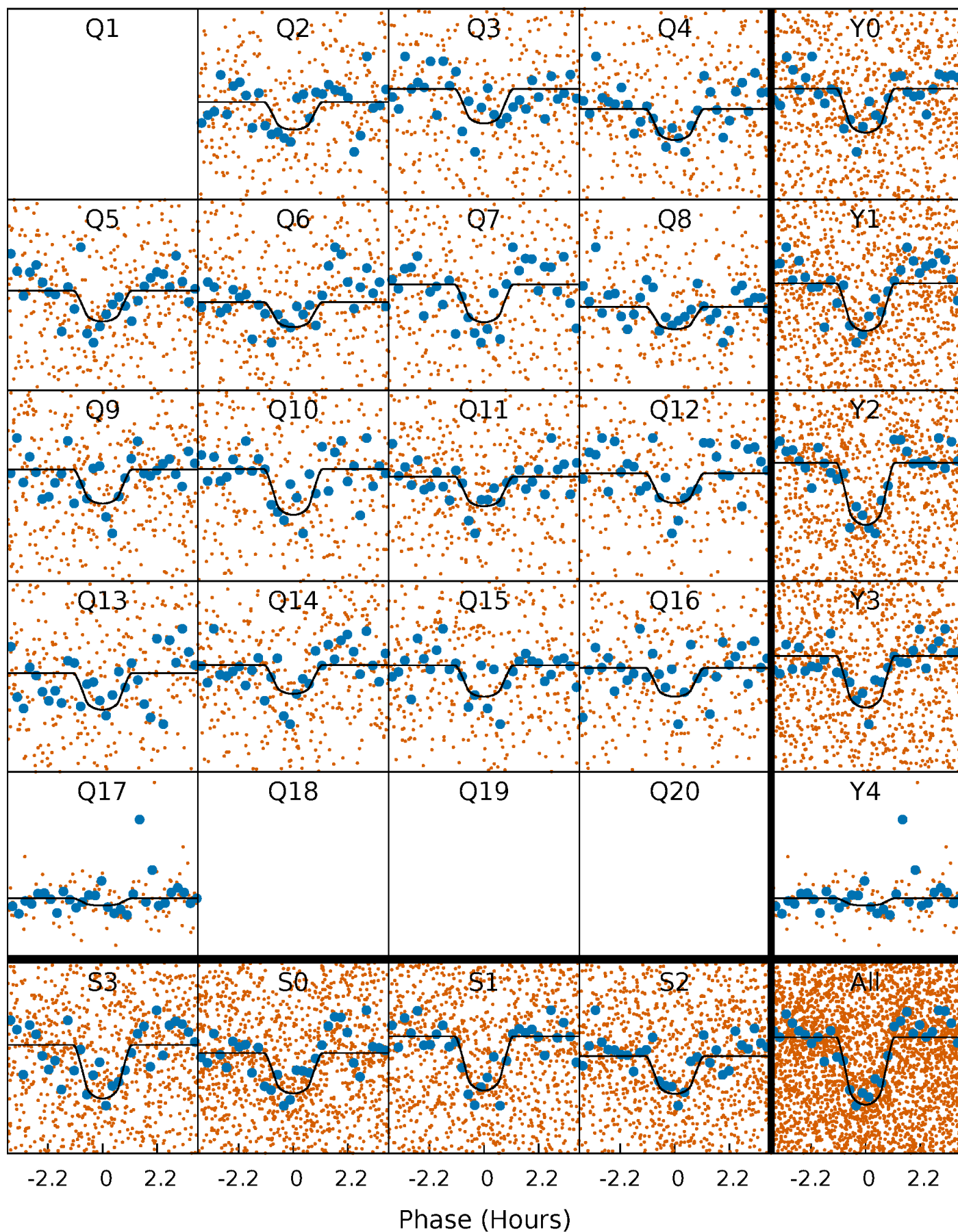
TCE 005129453-01 P= 3.057685 Days  $T_0=133.079489$  (BKJD)





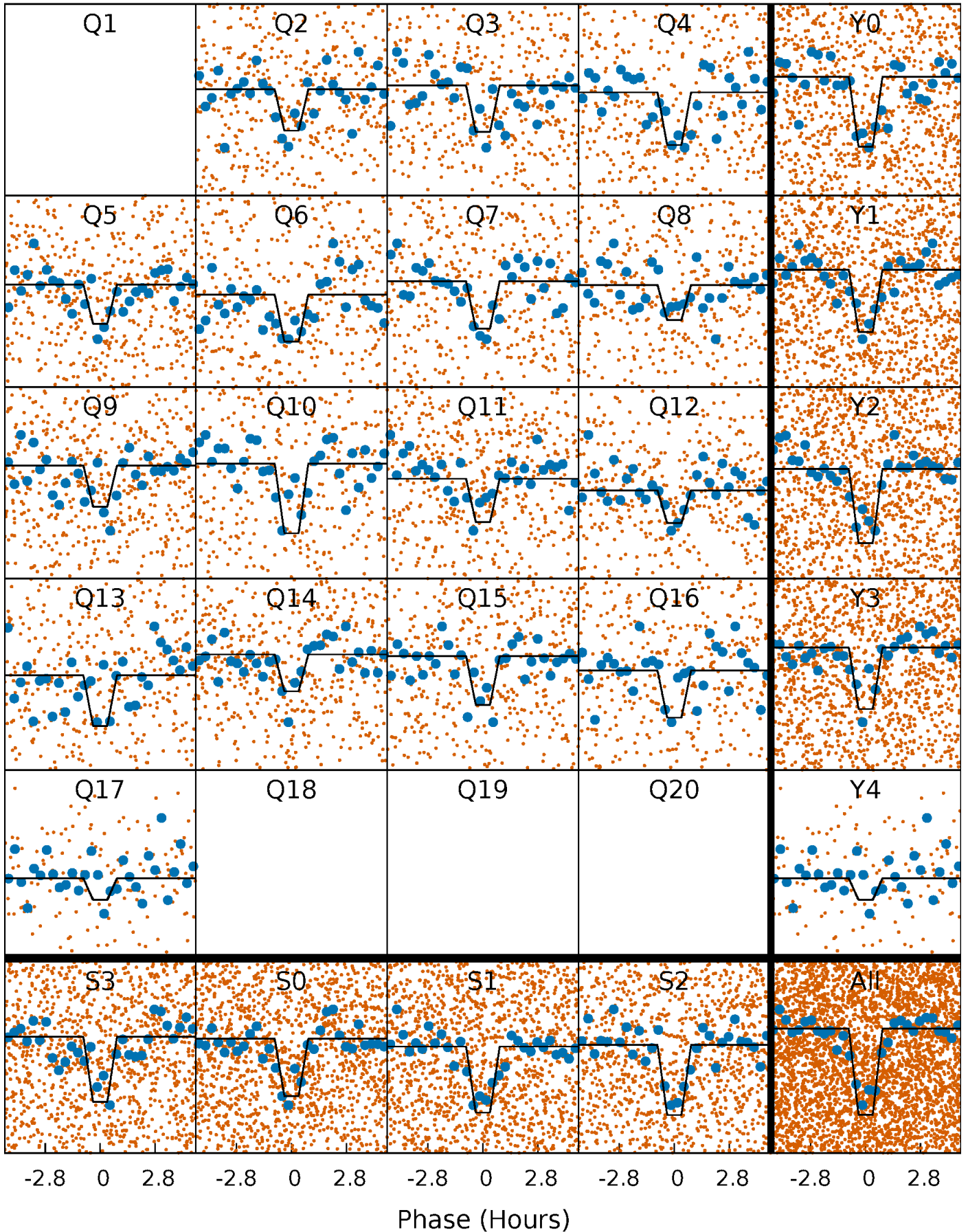
# DV Quarter-Phased Transit Curves

TCE 005129453-01 P= 3.057685 Days  $T_0=133.079489$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

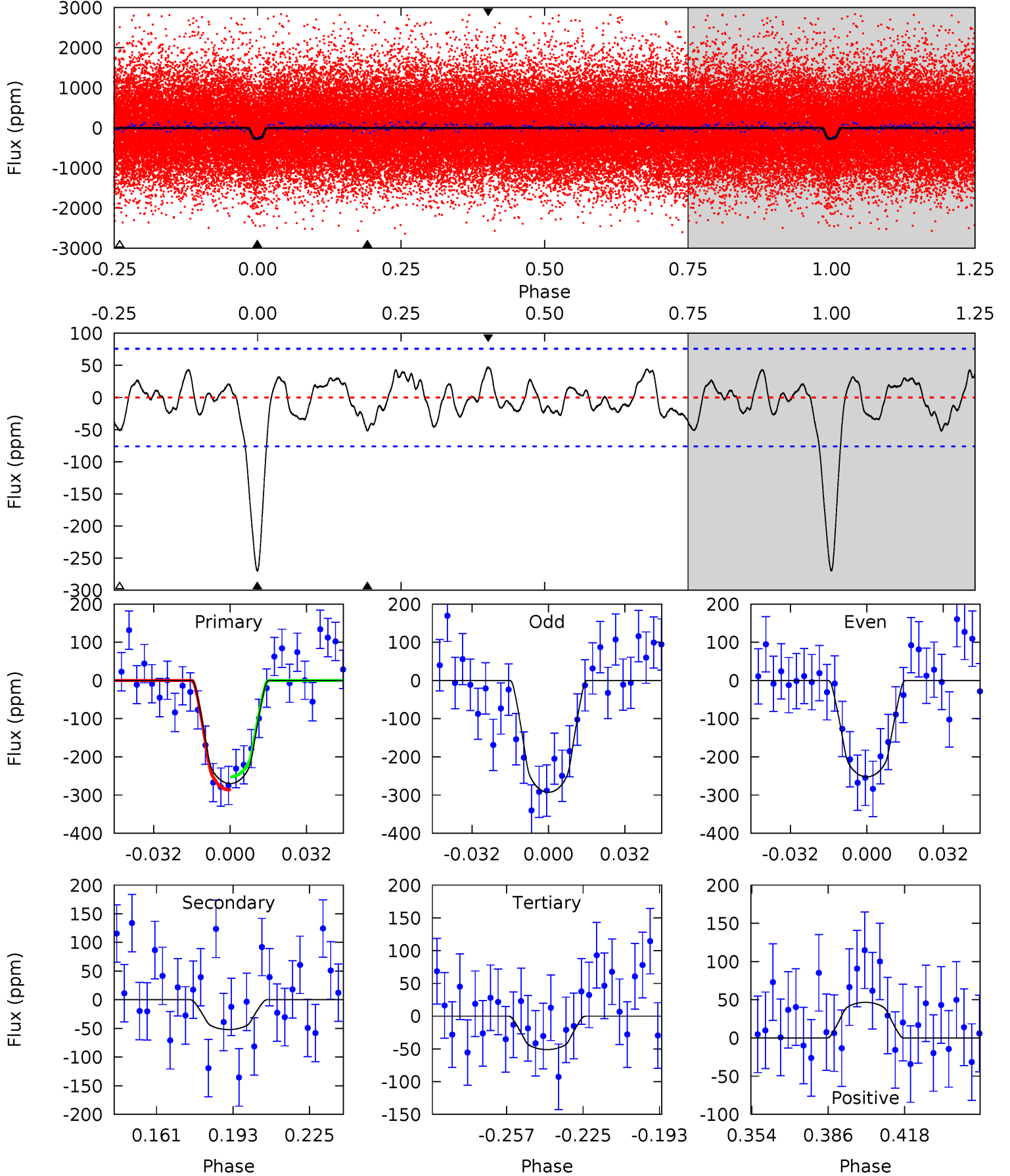
TCE 005129453-01 P= 3.057751 Days  $T_0=133.059658$  (BKJD)



# DV Model-Shift Uniqueness Test

005129453-01, P = 3.057685 Days, E = 133.079489 Days

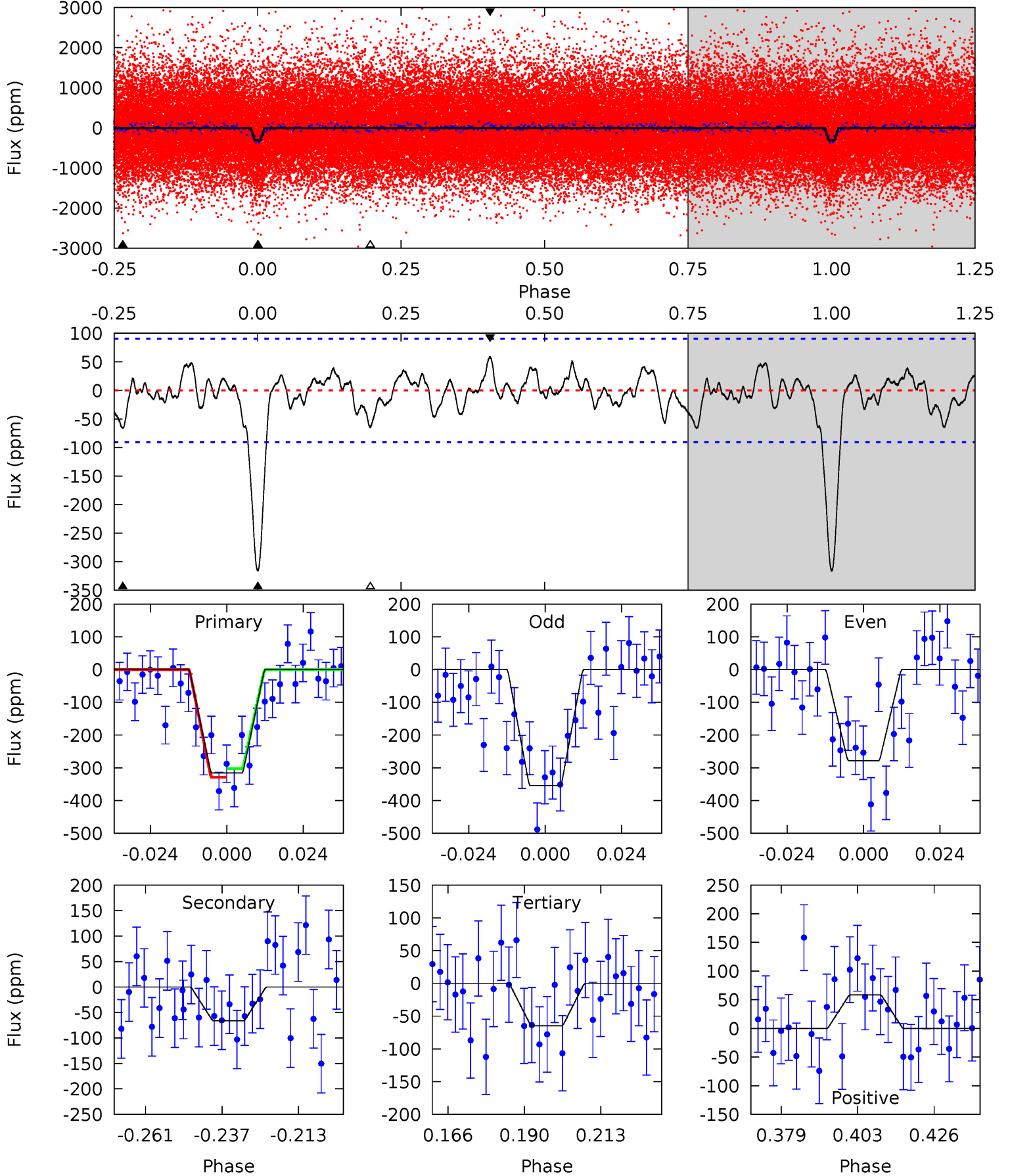
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.1	3.28	3.23	2.95	4.80	2.14	1.39	13.8	14.1	0.06	0.34	1.28	1.05	0.15	1.08



# Alt Model-Shift Uniqueness Test

005129453-01, P = 3.057751 Days, E = 133.059658 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
16.9	3.54	3.47	3.13	4.86	2.26	1.23	13.5	13.8	0.07	0.41	2.05	0.98	0.16	0.71





### Stellar Parameters For KIC 005129453

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4483^{+132}_{-132}$	$4.570^{+0.056}_{-0.016}$	$0.260^{+0.150}_{-0.300}$	$0.731^{+0.025}_{-0.063}$	$0.723^{+0.046}_{-0.050}$	$2.610^{+0.655}_{-0.188}$
	+3%/-3%	+1%/-0%	+58%/-115%	+3%/-9%	+6%/-7%	+25%/-7%
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 005129453-01 / KOI 4208.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-52 \pm 16$	$1.77^{+1.29}_{-1.08}$	$1219^{+39}_{-40}$	$3065^{+1100}_{-458}$	$13^{+67}_{-9}$
Alt.	$-66 \pm 19$	$1.72^{+1.20}_{-0.98}$	$1219^{+40}_{-41}$	$3205^{+1079}_{-474}$	$17^{+83}_{-11}$

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

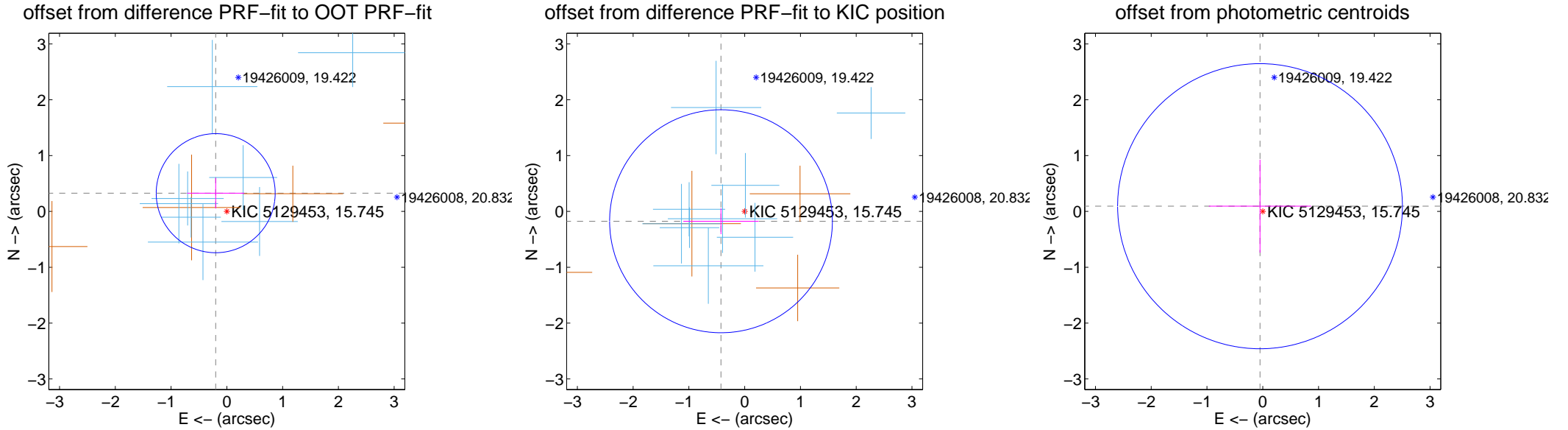
## DV Centroid Data

Supplemental centroid analysis for 005129453-01. Kepler magnitude: 15.74. Transit SNR 12.71

There are 9 quarters with good PRF difference image offsets

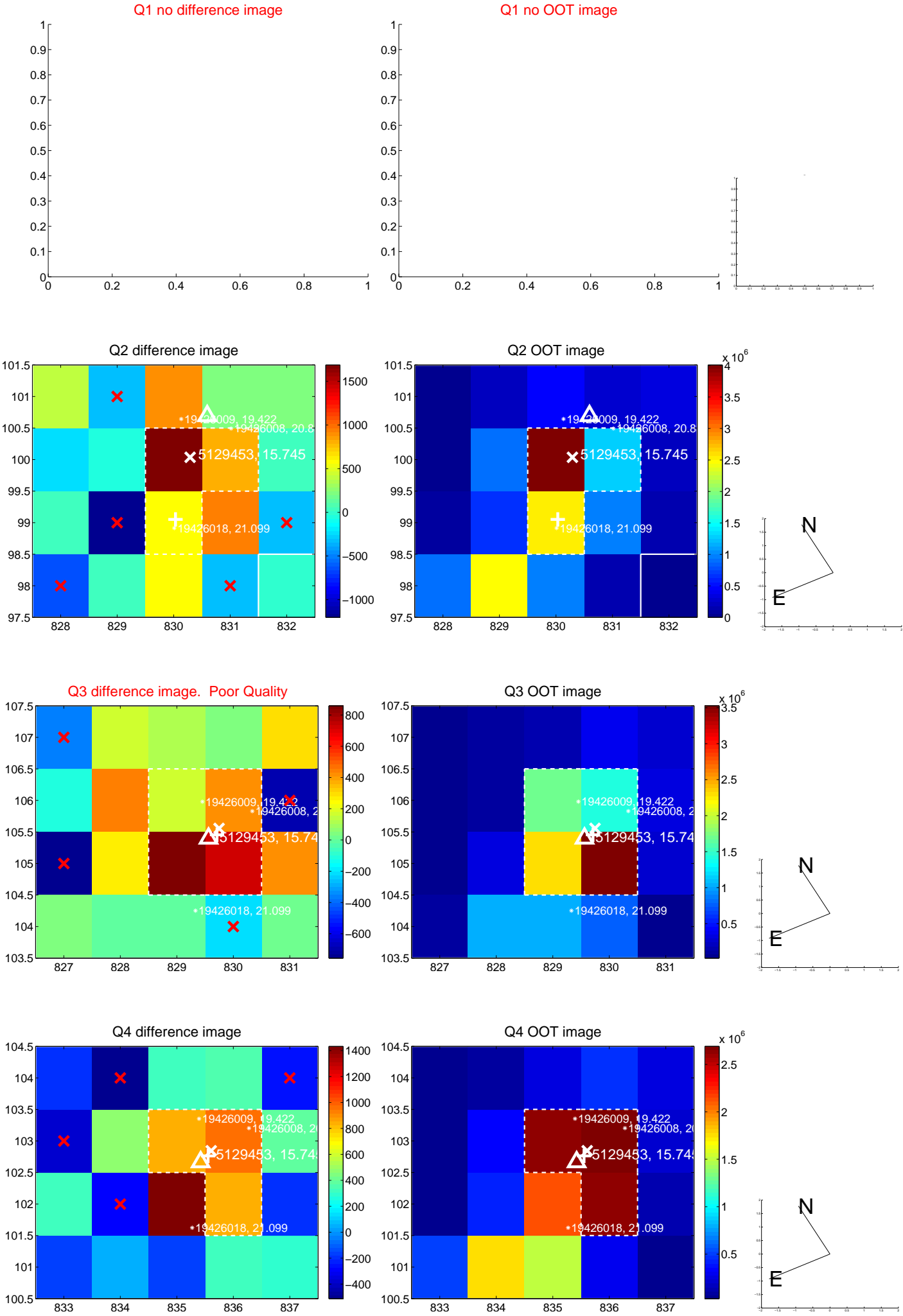
The direct PRF centroid is offset from the target star catalog position by about 0.54 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.383 \pm 0.356$	1.08	$0.200 \pm 0.513$	$0.327 \pm 0.275$
PRF-fit source offset from KIC position	$0.459 \pm 0.666$	0.69	$0.425 \pm 0.676$	$-0.176 \pm 0.231$
photometric centroid source offset	$0.11 \pm 0.85$	0.12	$0.05 \pm 0.92$	$0.09 \pm 0.83$

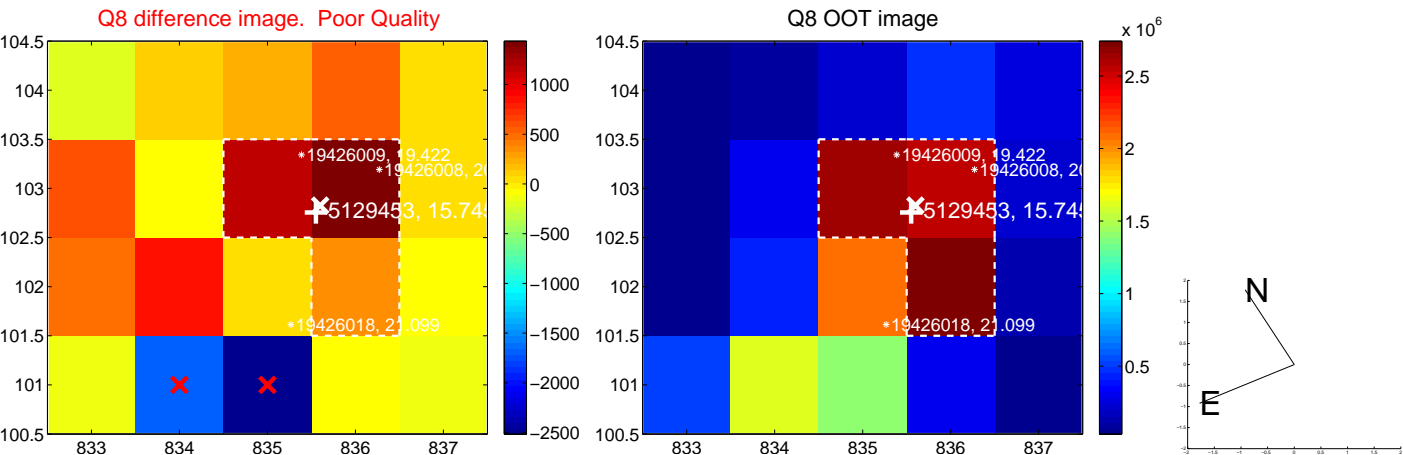
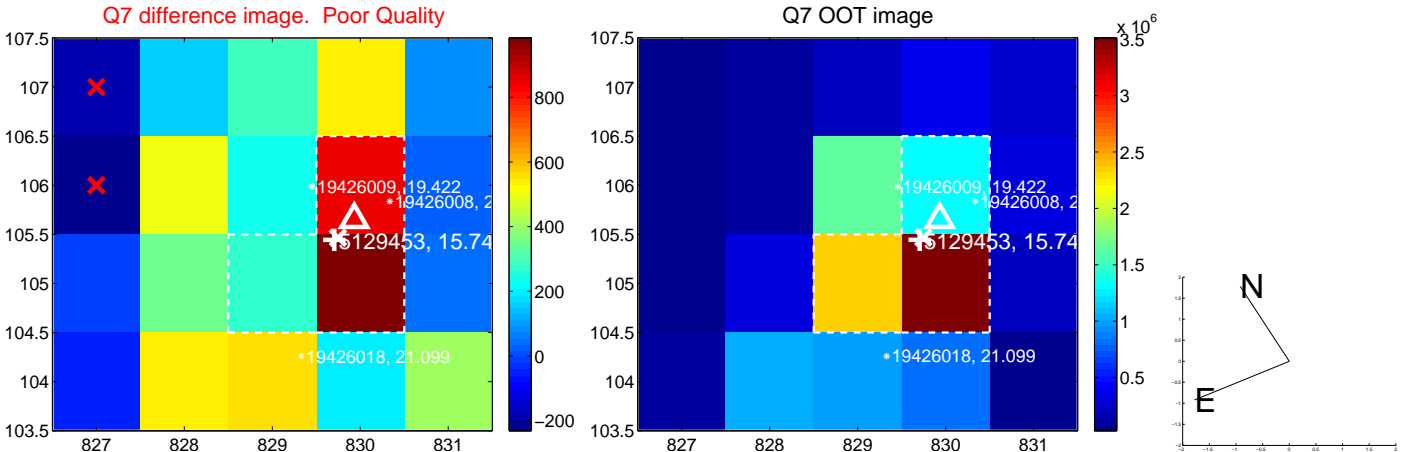
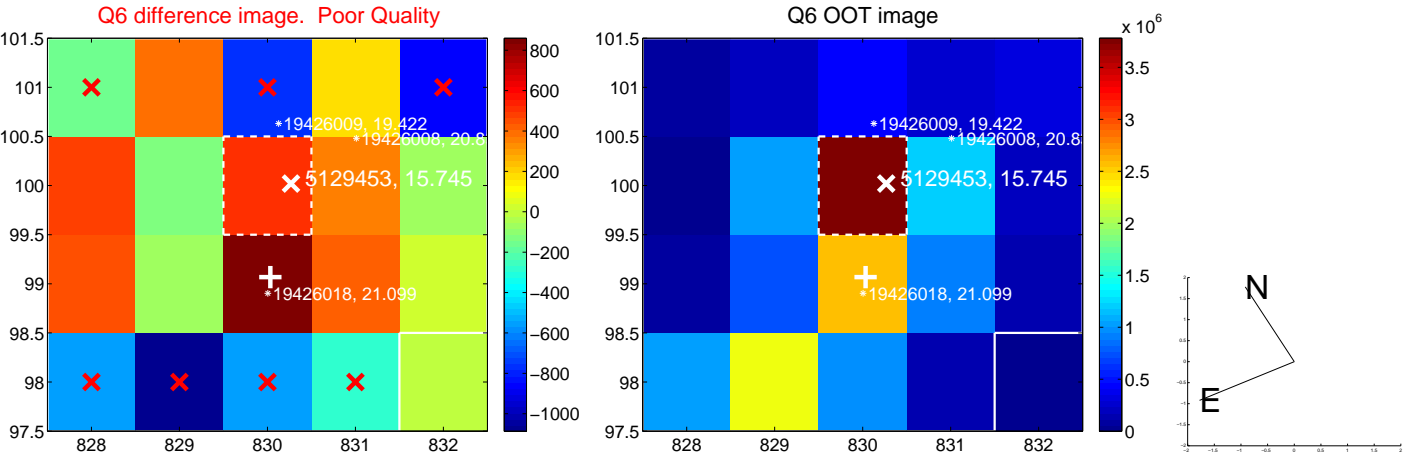
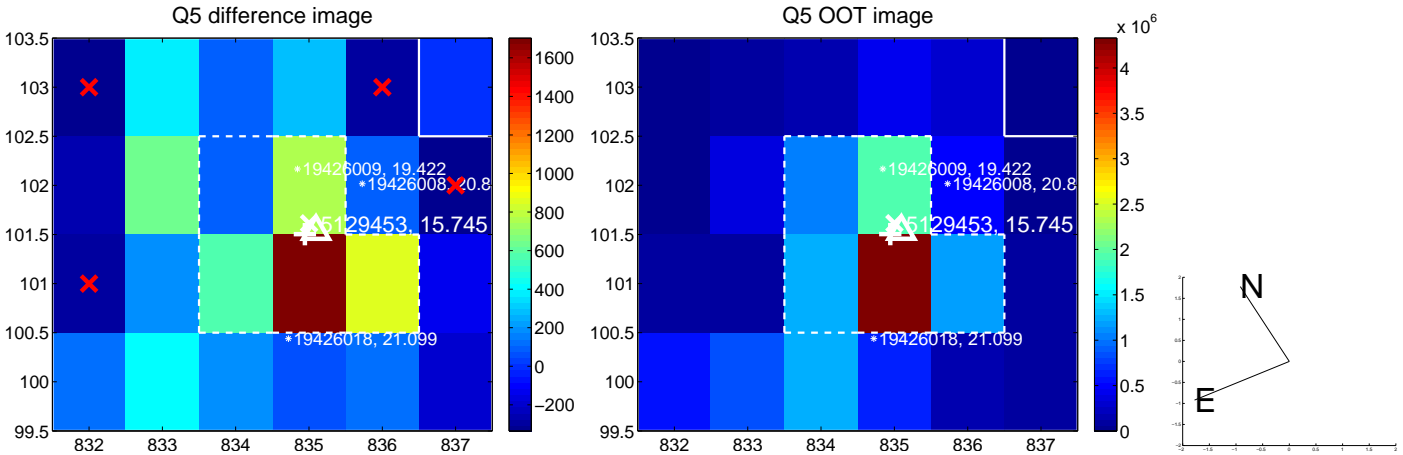


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



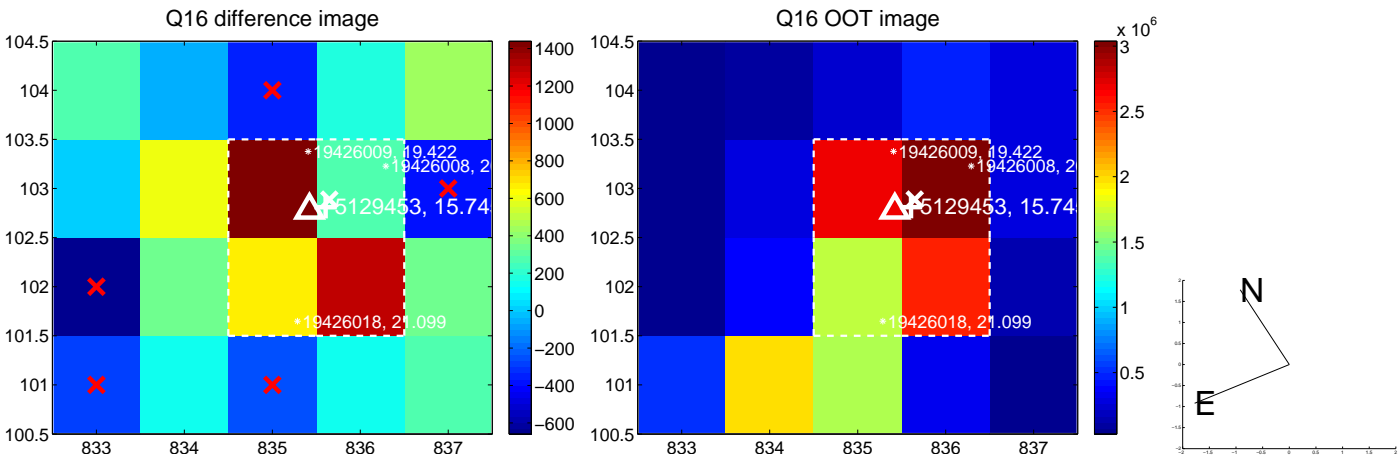
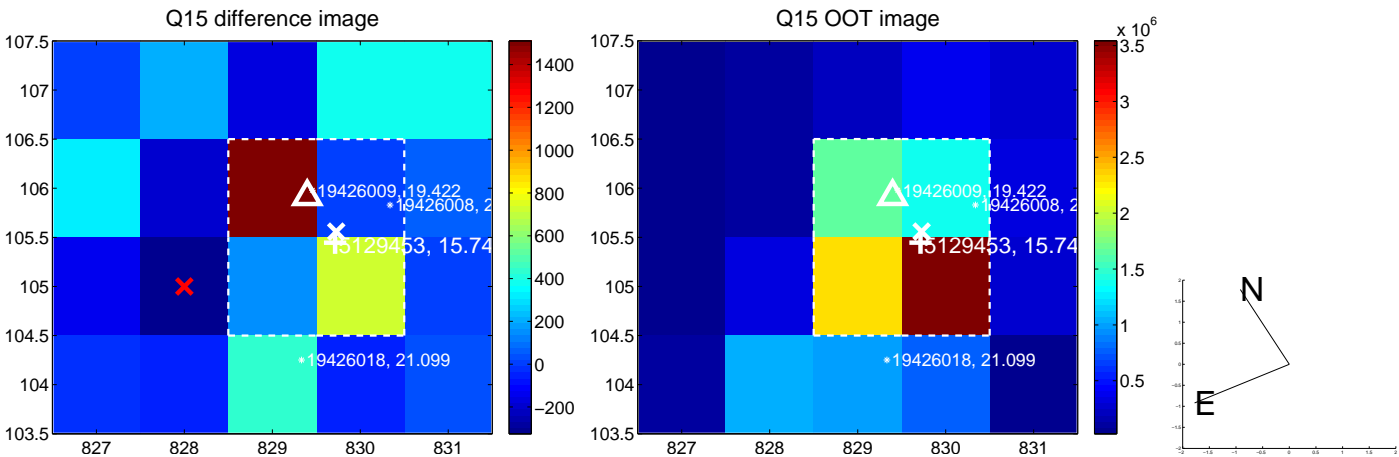
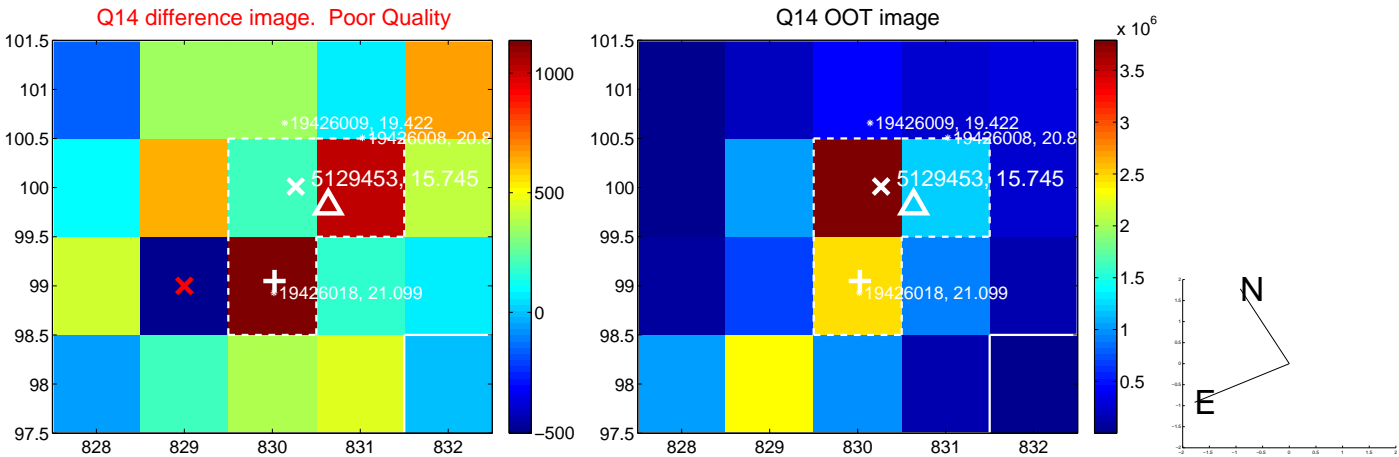
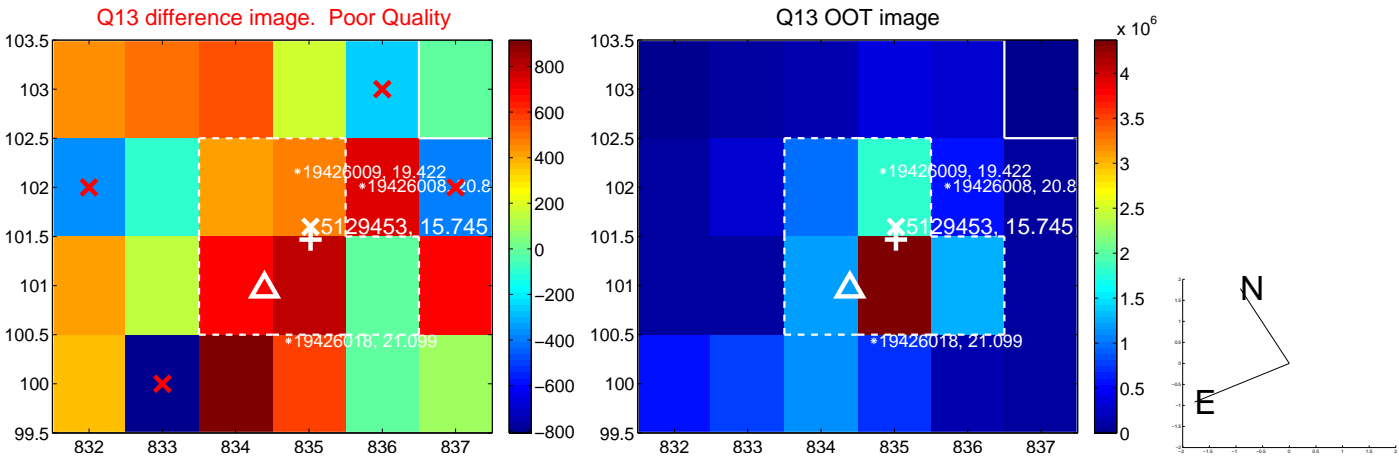
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



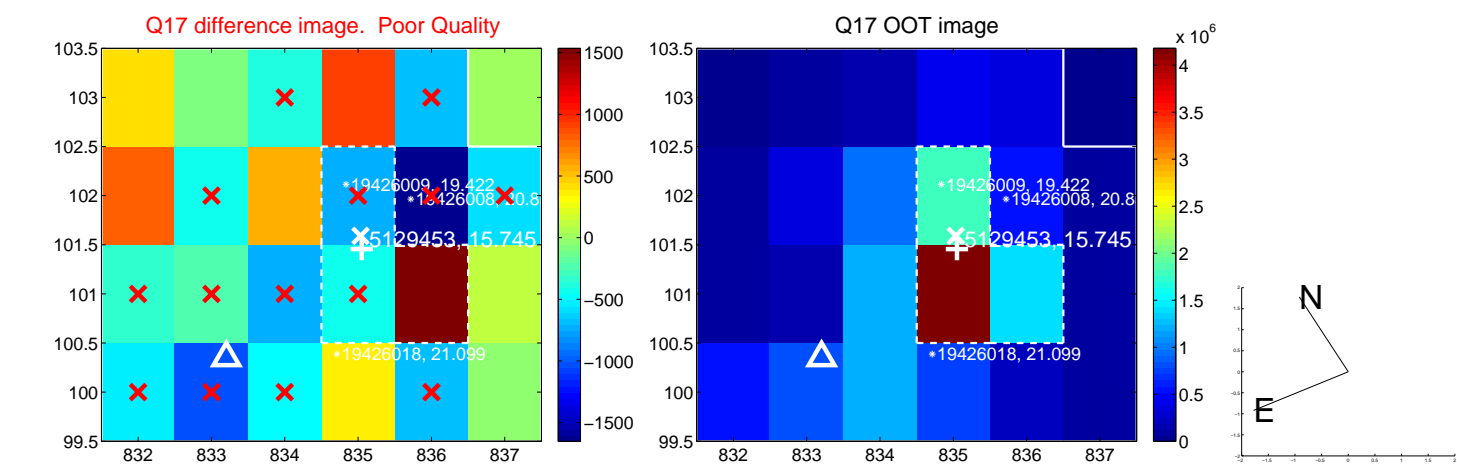




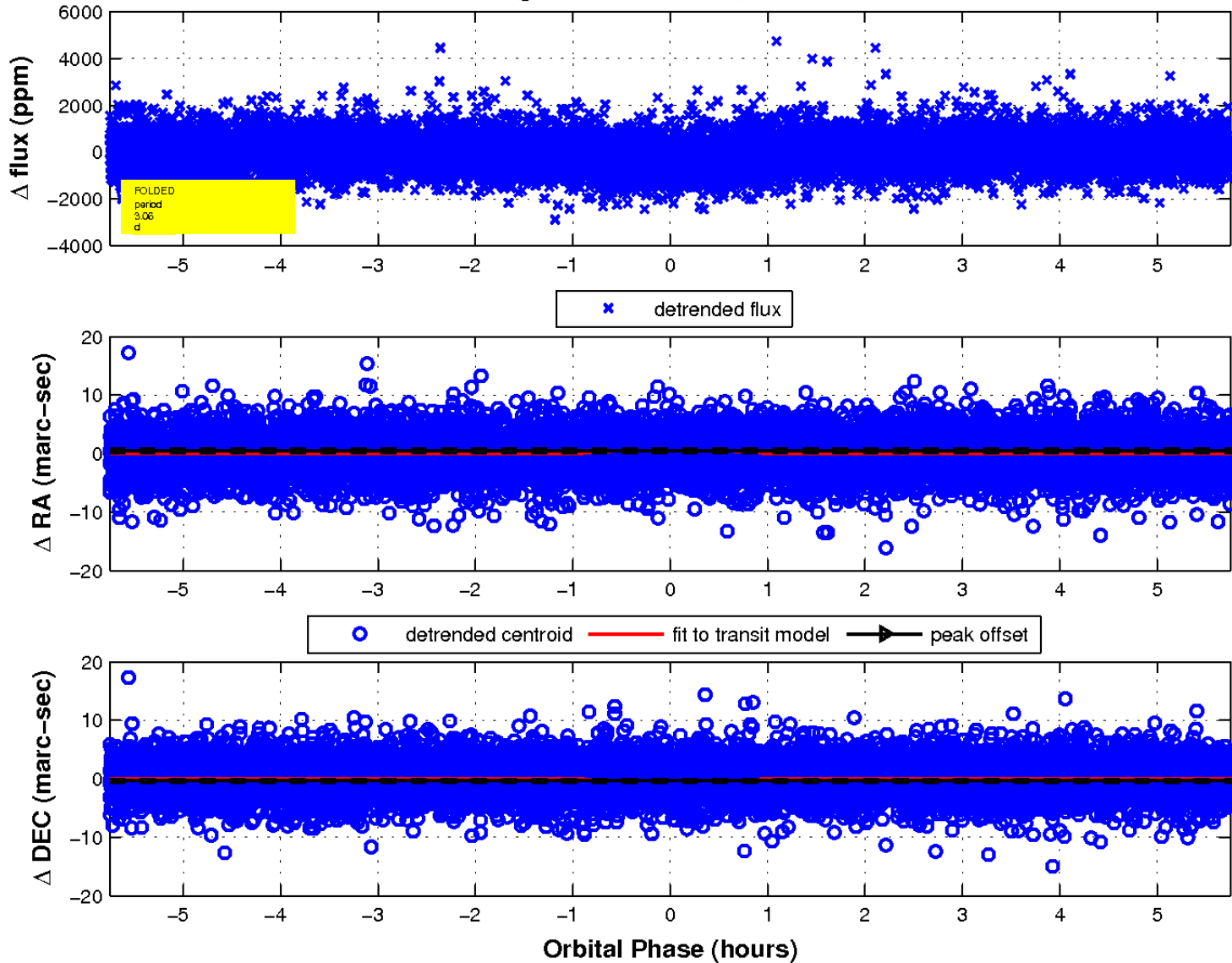
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

