

# KIC 003337432

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R <sub>★</sub> (R <sub>☉</sub> )	T <sub>★</sub> (K)	R <sub>p</sub> (R <sub>⊕</sub> )	S <sub>p</sub> (S <sub>⊕</sub> )
003337432-01	OBS	2265.01	2.976037	132.970014	115.8	5.232	20.2	22.8	2.09	6208	4.40	3036.25

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003337432-01	OBS	FP	0.00	0	0	1	1	CENT_KIC_POS—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.

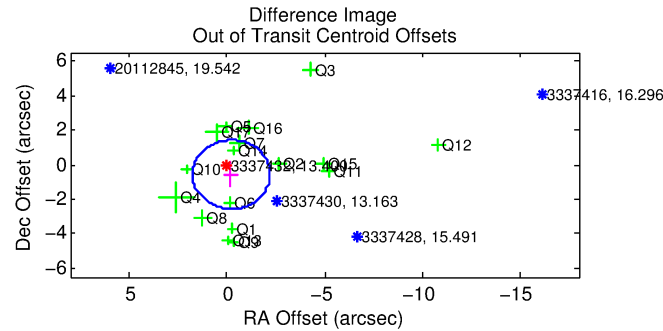
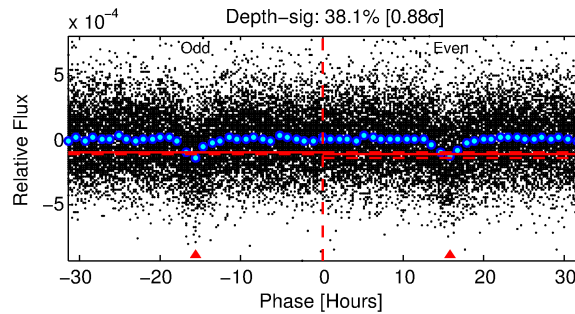
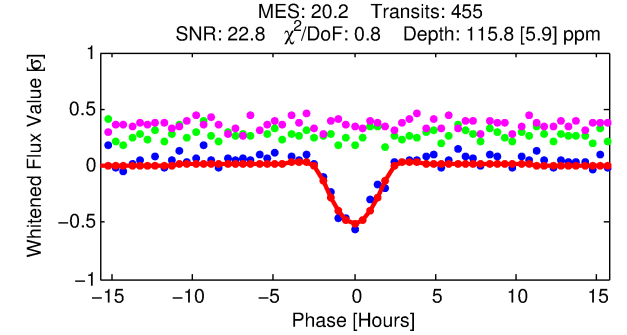
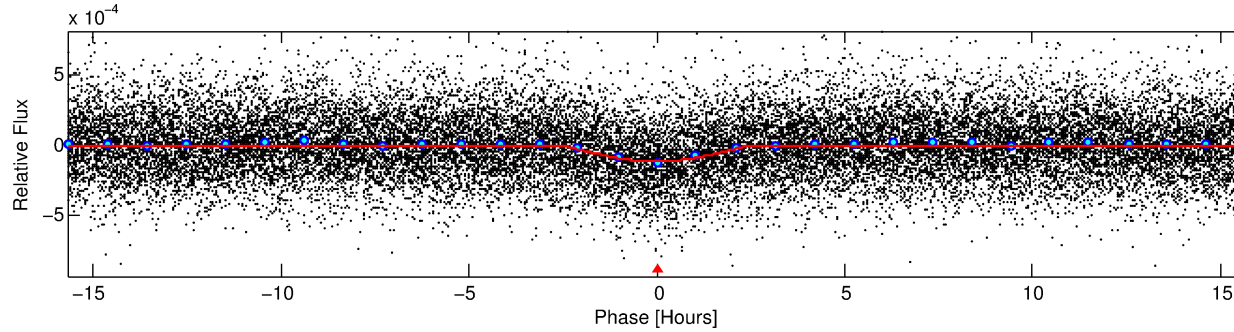
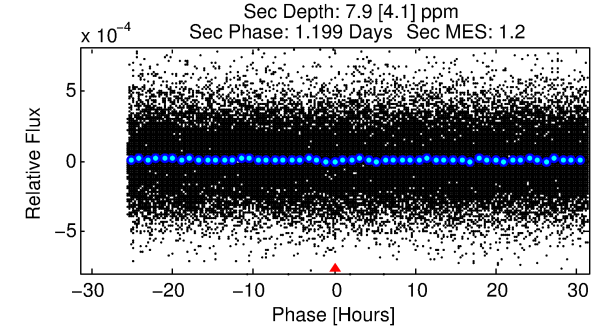
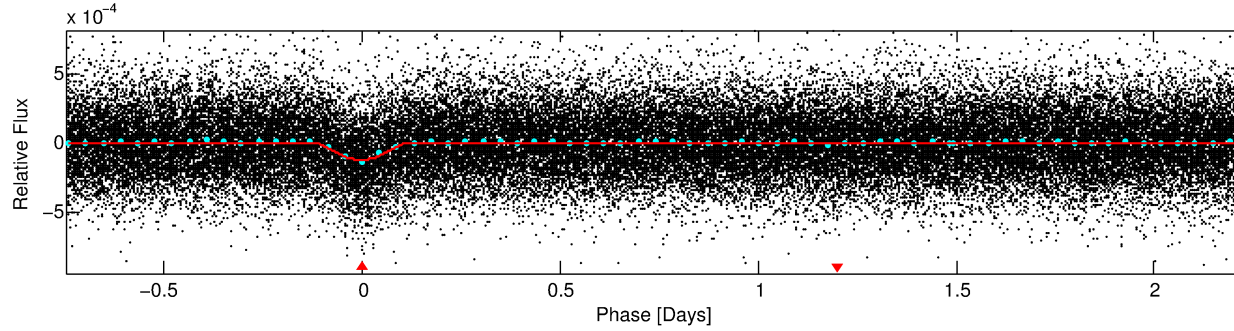
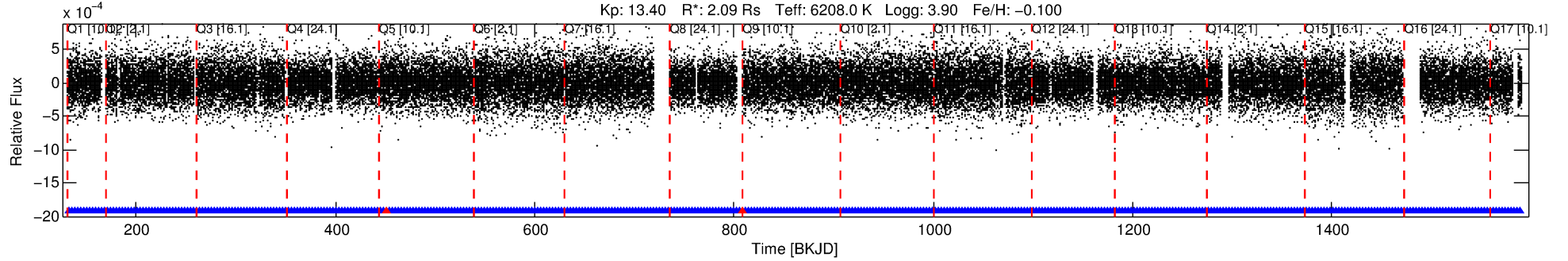
## Ephemeris Match Information For 003337432-01

TCE (1)	KIC	Parent (2)	Parent KIC	P <sub>1</sub> :P <sub>2</sub>	Dist (″)	ΔRow	ΔCol	m <sub>2</sub>	m <sub>1</sub>	D <sub>2</sub> /D <sub>1</sub>	Mechanism	Flag	σ <sub>P</sub>	σ <sub>T</sub>
003337432-01	3337432	4980.01	3439031	1:1	82.4	19	-8	11.29	13.40	3847.80	Direct-PRF	0	0.52	0.03

**Notes:** P<sub>1</sub>:P<sub>2</sub> is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol 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. σ<sub>P</sub> and σ<sub>T</sub> are the significance of the match in period and epoch. For a match to be considered significant σ<sub>P</sub> < 5.0 and σ<sub>T</sub> < 5.0. Matches which have σ<sub>P</sub> and σ<sub>T</sub> very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 3337432 Candidate: 1 of 1 Period: 2.976 d  
KOI: K02265.01 Corr: 0.818



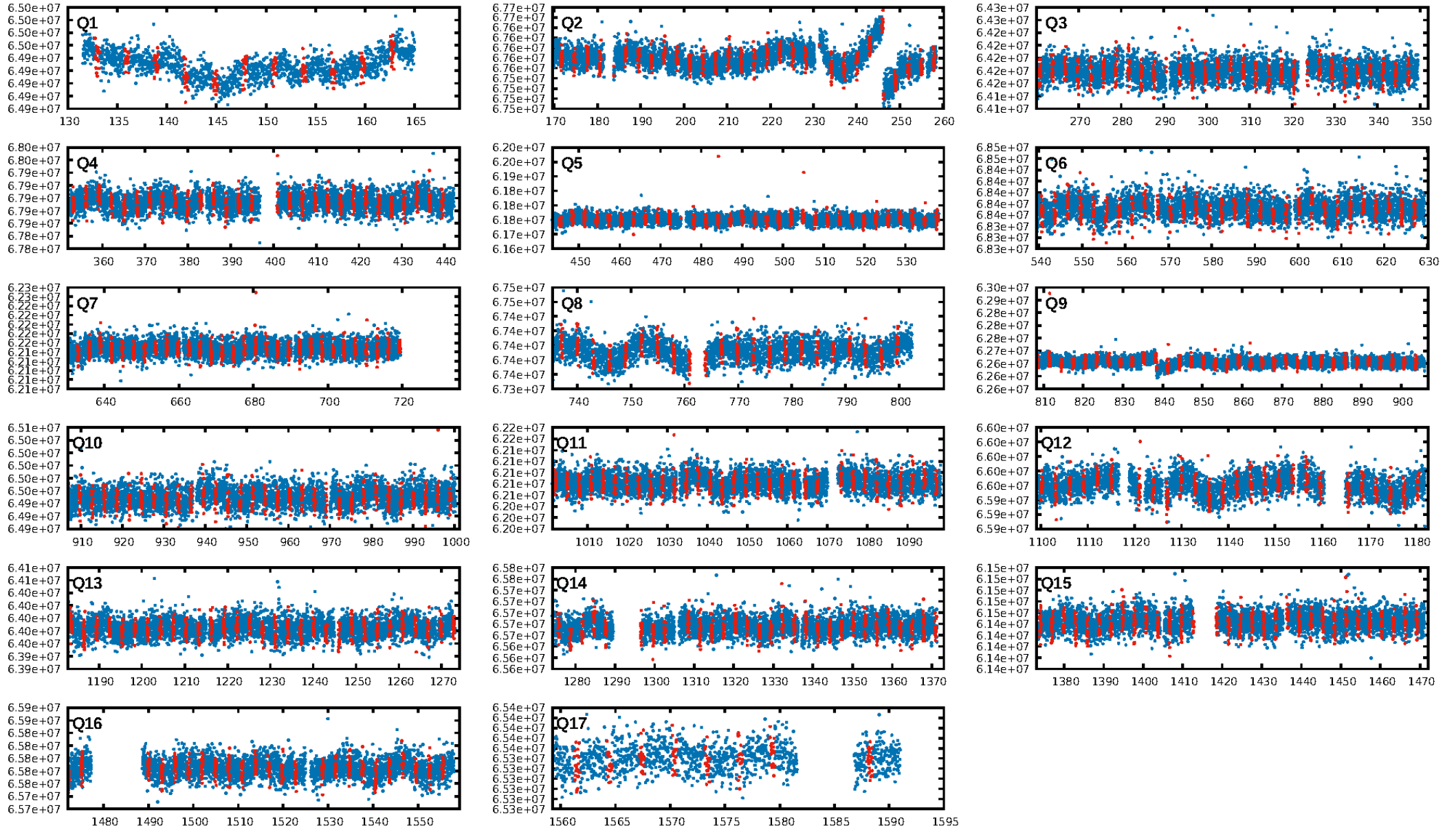
## DV Fit Results:

Period = 2.97604 [0.00002] d  
Epoch = 132.9700 [0.0047] BKJD  
Rp/R\* = 0.0193 [0.0262]  
a/R\* = 1.34 [0.20]  
b = 1.00 [0.04]  
Seff = 3036.25 [2206.96]  
Teq = 1893 [344] K  
Rp = 4.40 [6.29] Re  
a = 0.0437 [0.0192] AU  
Ag = 0.43 [1.23] [-0.46σ]  
Teffp = 2371 [1642] K [0.29σ]

## DV Diagnostic Results:

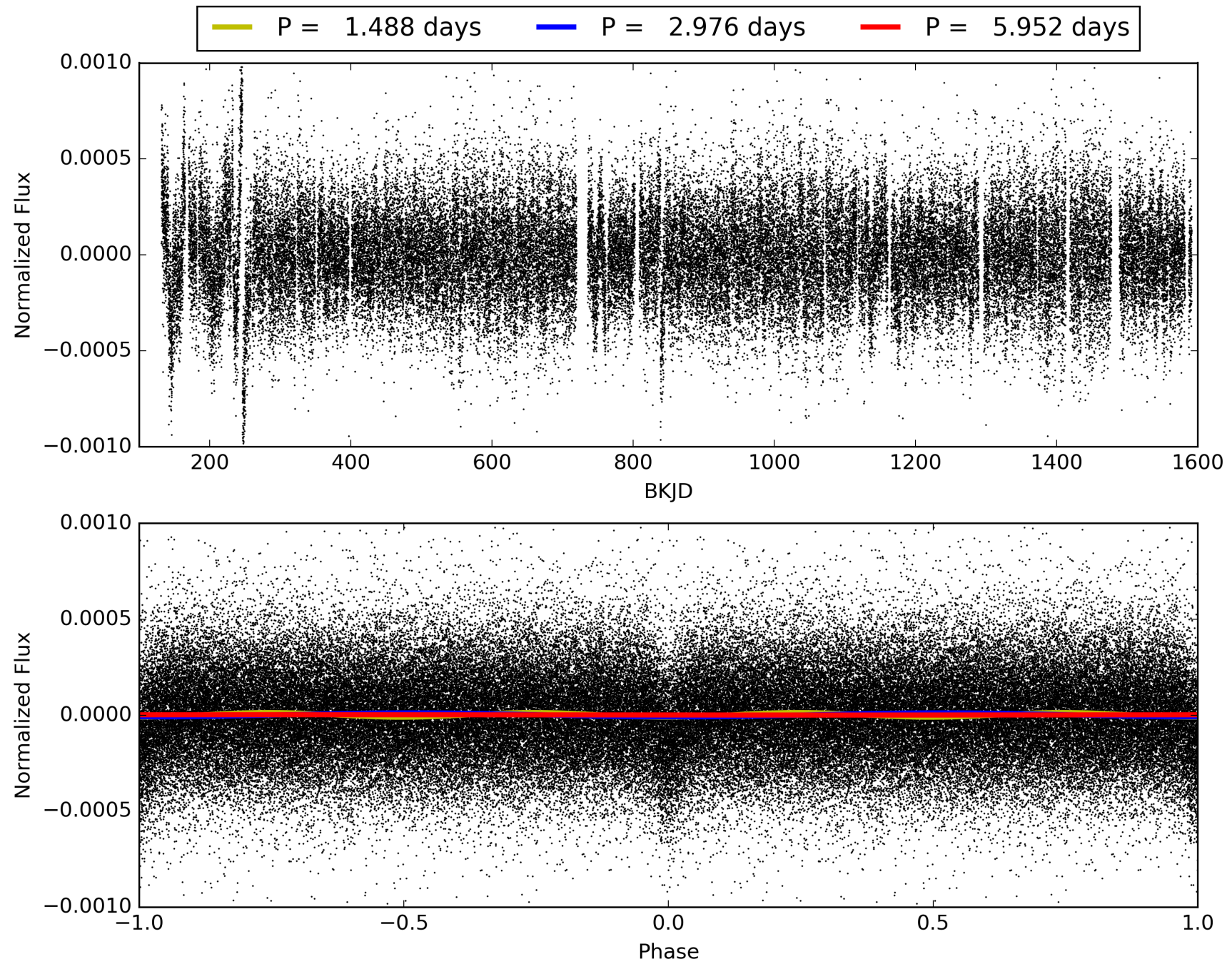
ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 3.25e-87  
RollingBand-fgt: 1.00 [434/436]  
**GhostDiagnostic-chr: 0.03607**  
Centroid-sig: 0.0%  
Centroid-so: 0.053 arcsec [0.11σ]  
OotOffset-rm: 0.609 arcsec [0.92σ]  
KicOffset-rm: 1.017 arcsec [1.48σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.18 [3/17]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 003337432-01, PDC Light Curves



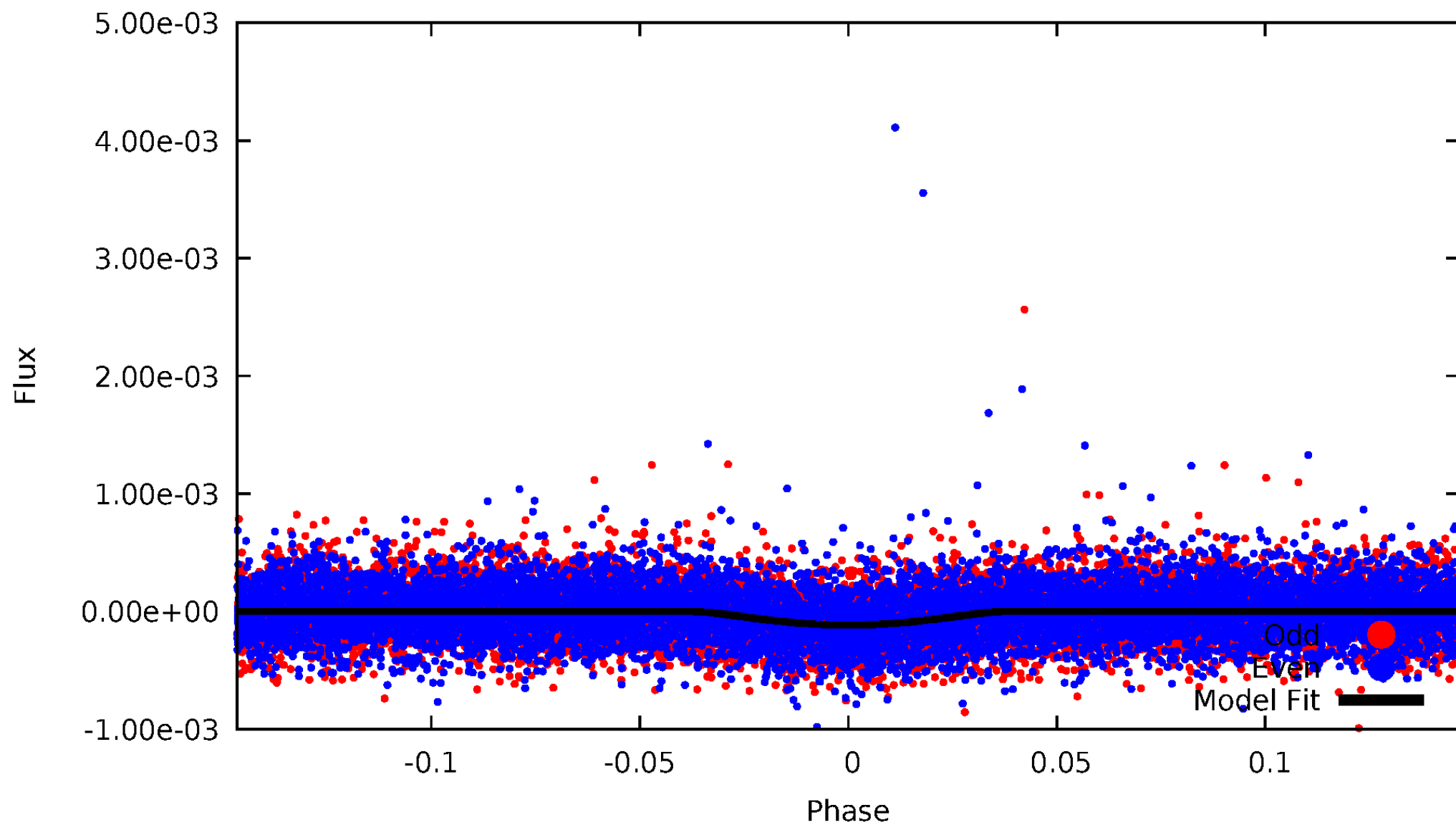


TCE 003337432-01



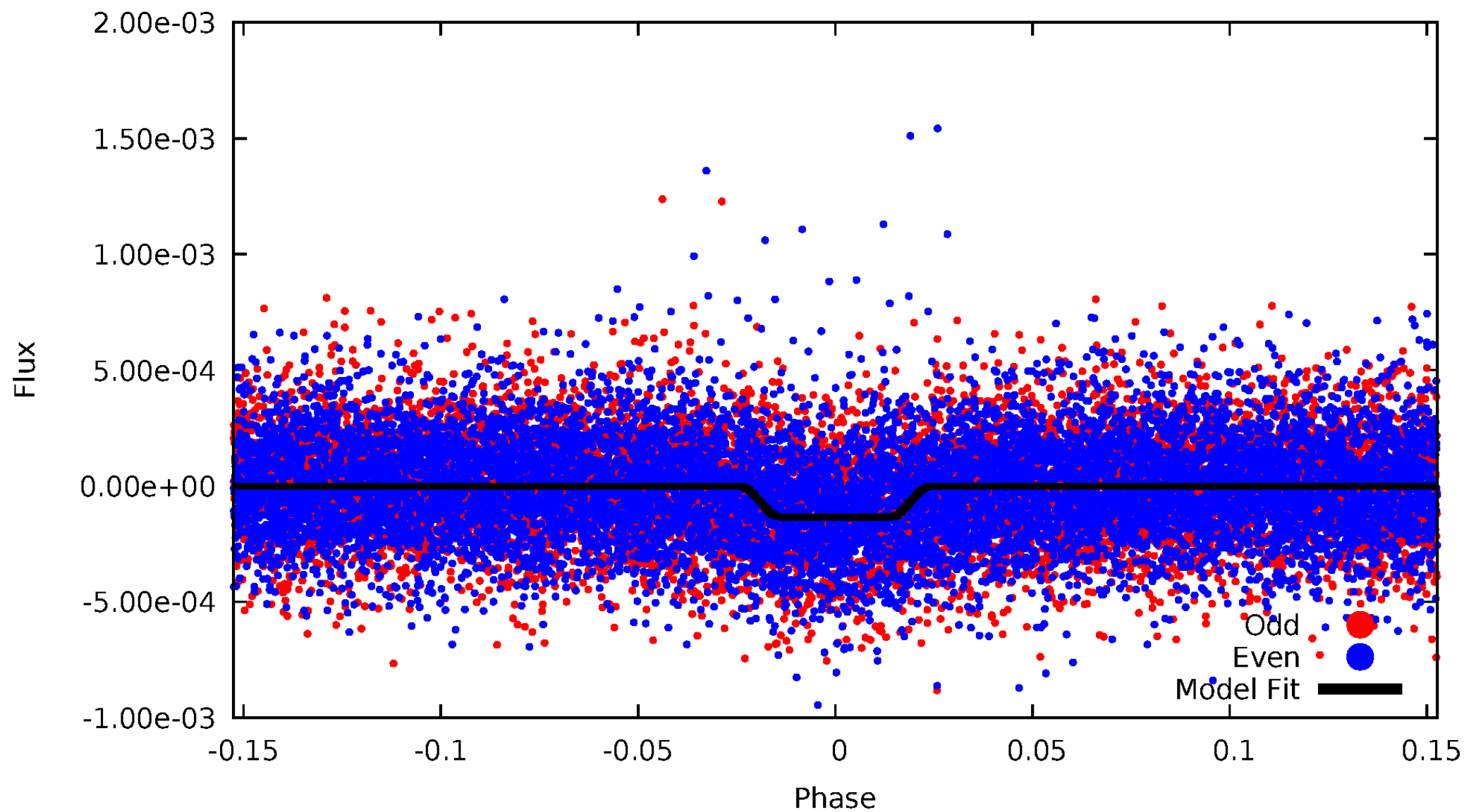
# DV Odd/Even

TCE 003337432-01

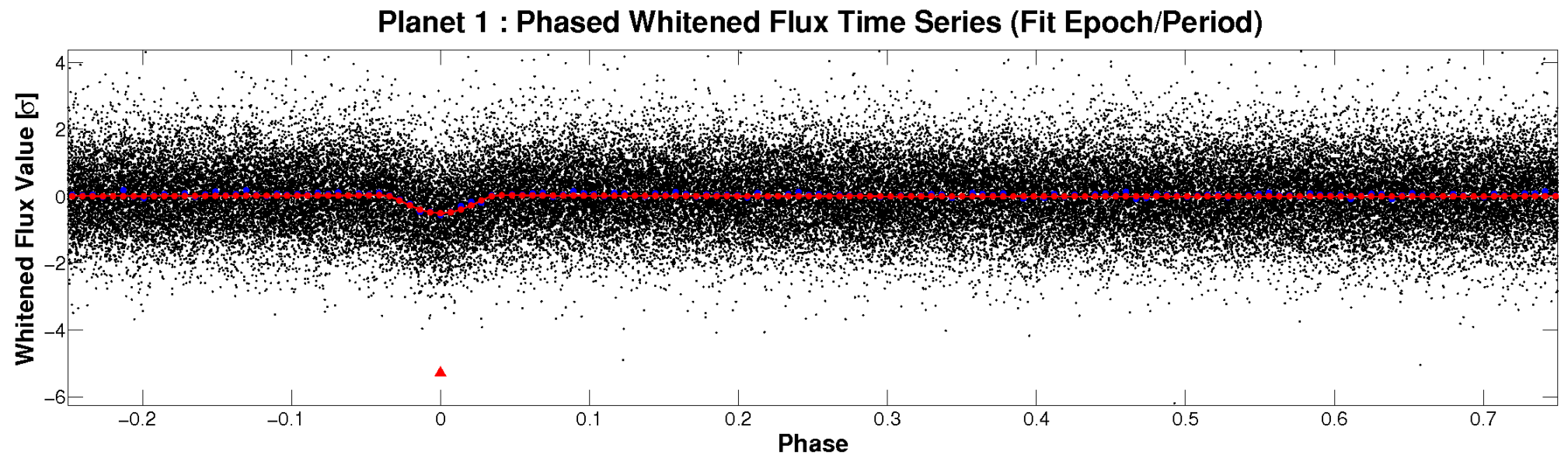
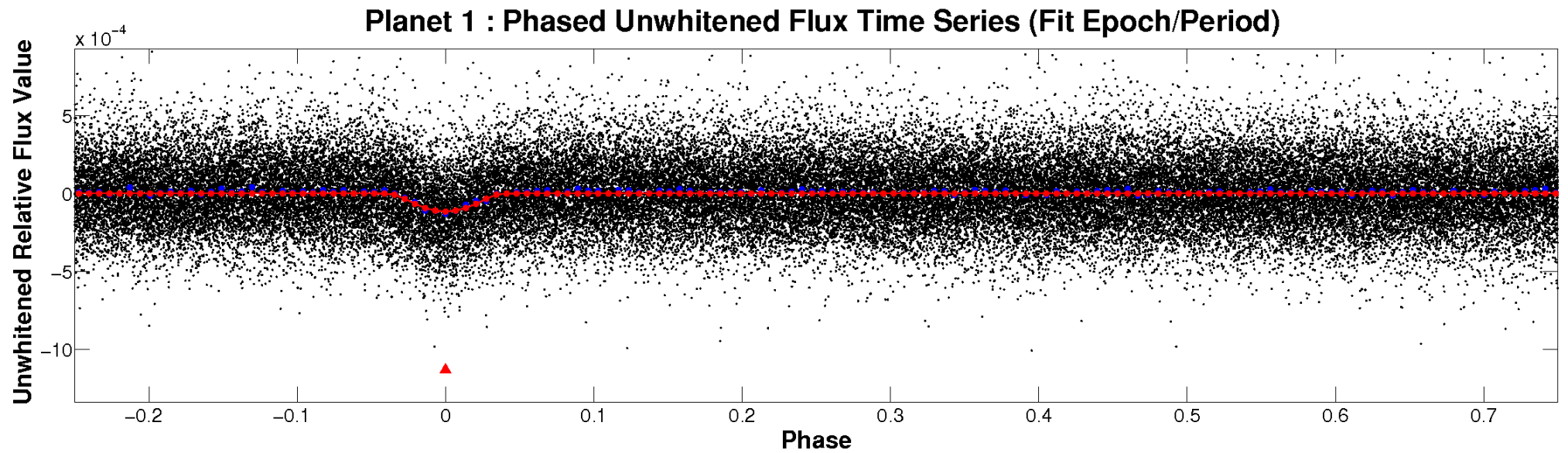


# ALT Odd/Even

TCE 003337432-01



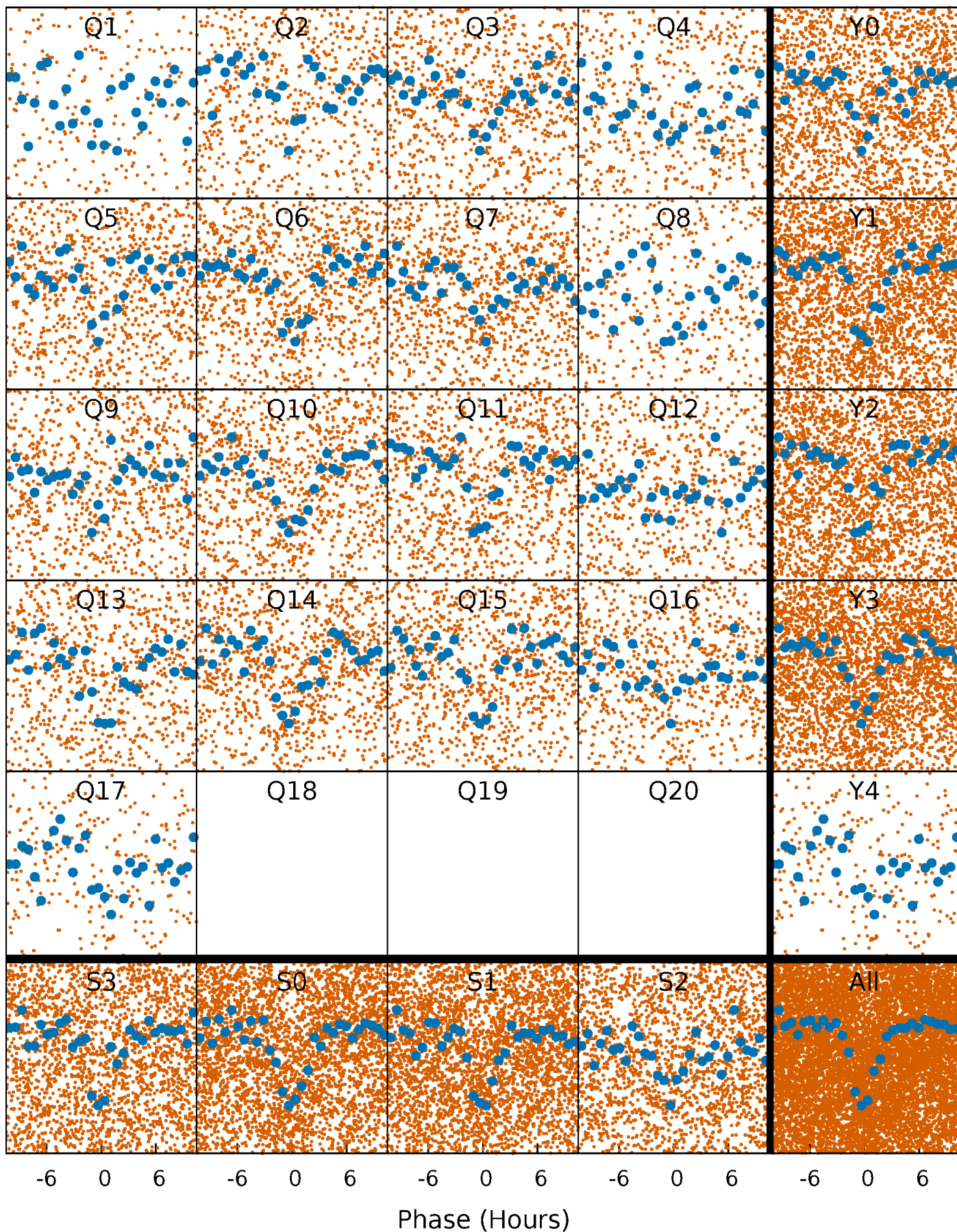
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

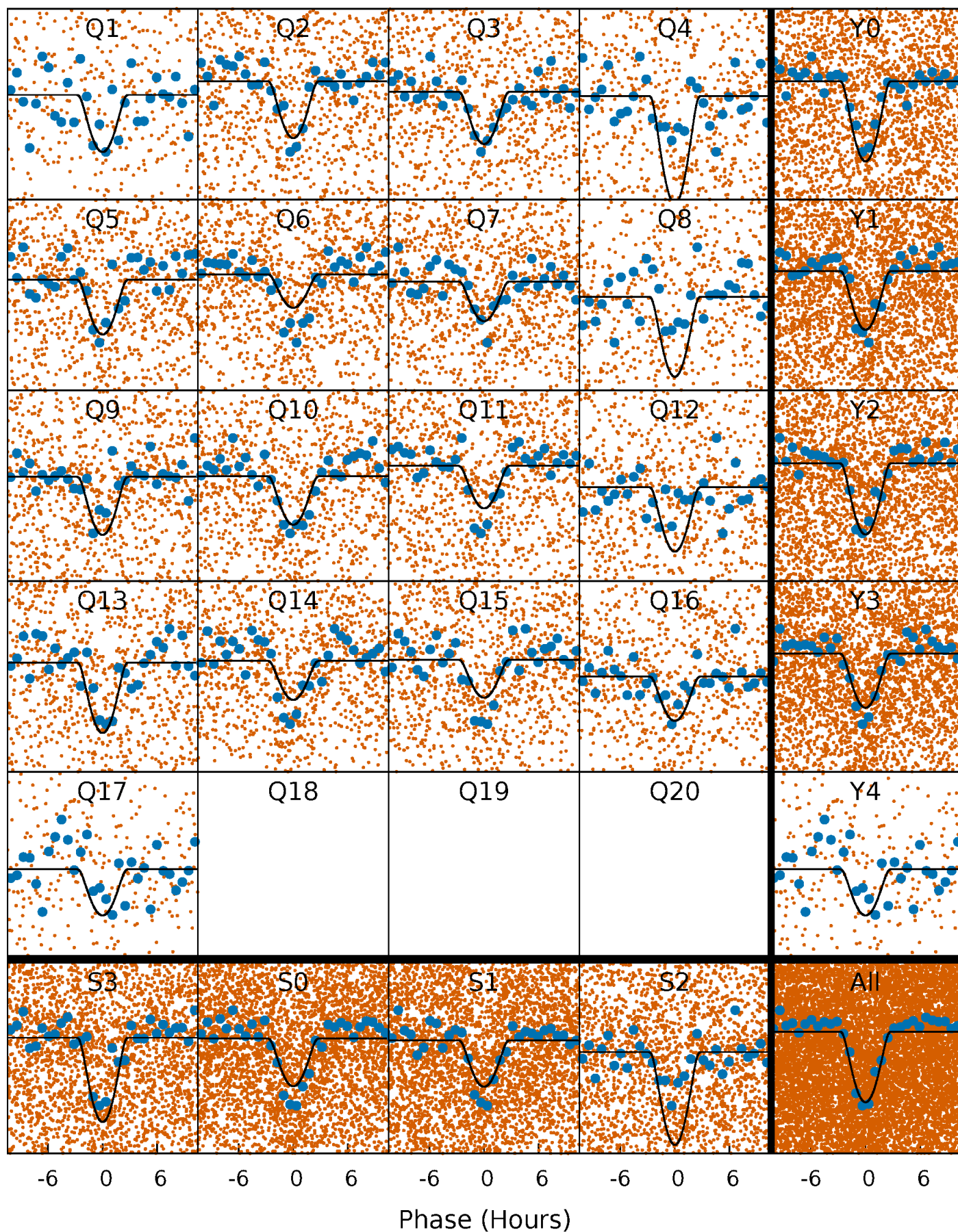
TCE 003337432-01 P= 2.976037 Days  $T_0=132.970014$  (BKJD)





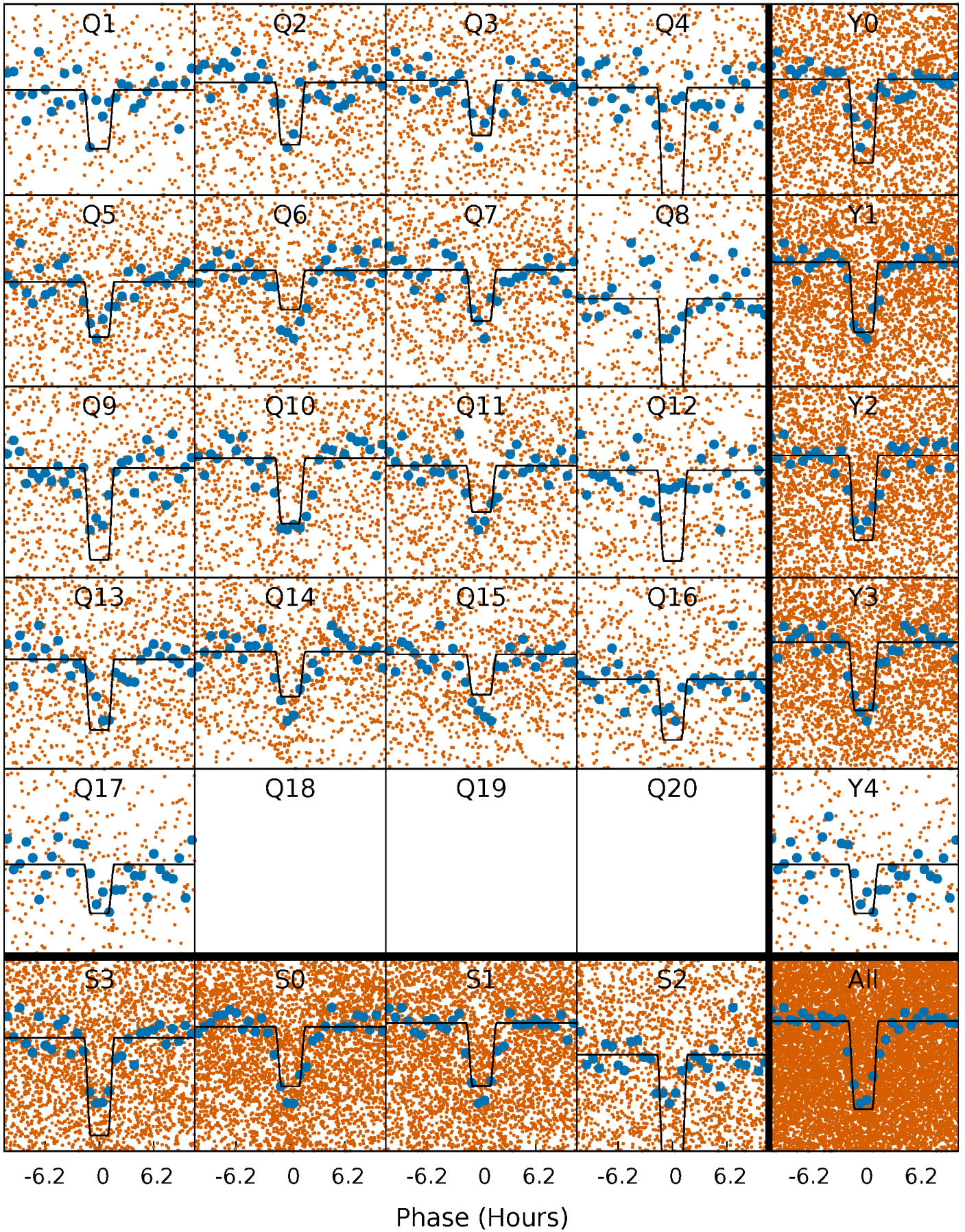
# DV Quarter-Phased Transit Curves

TCE 003337432-01 P= 2.976037 Days  $T_0=132.970014$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 003337432-01 P= 2.975988 Days  $T_0=132.981955$  (BKJD)

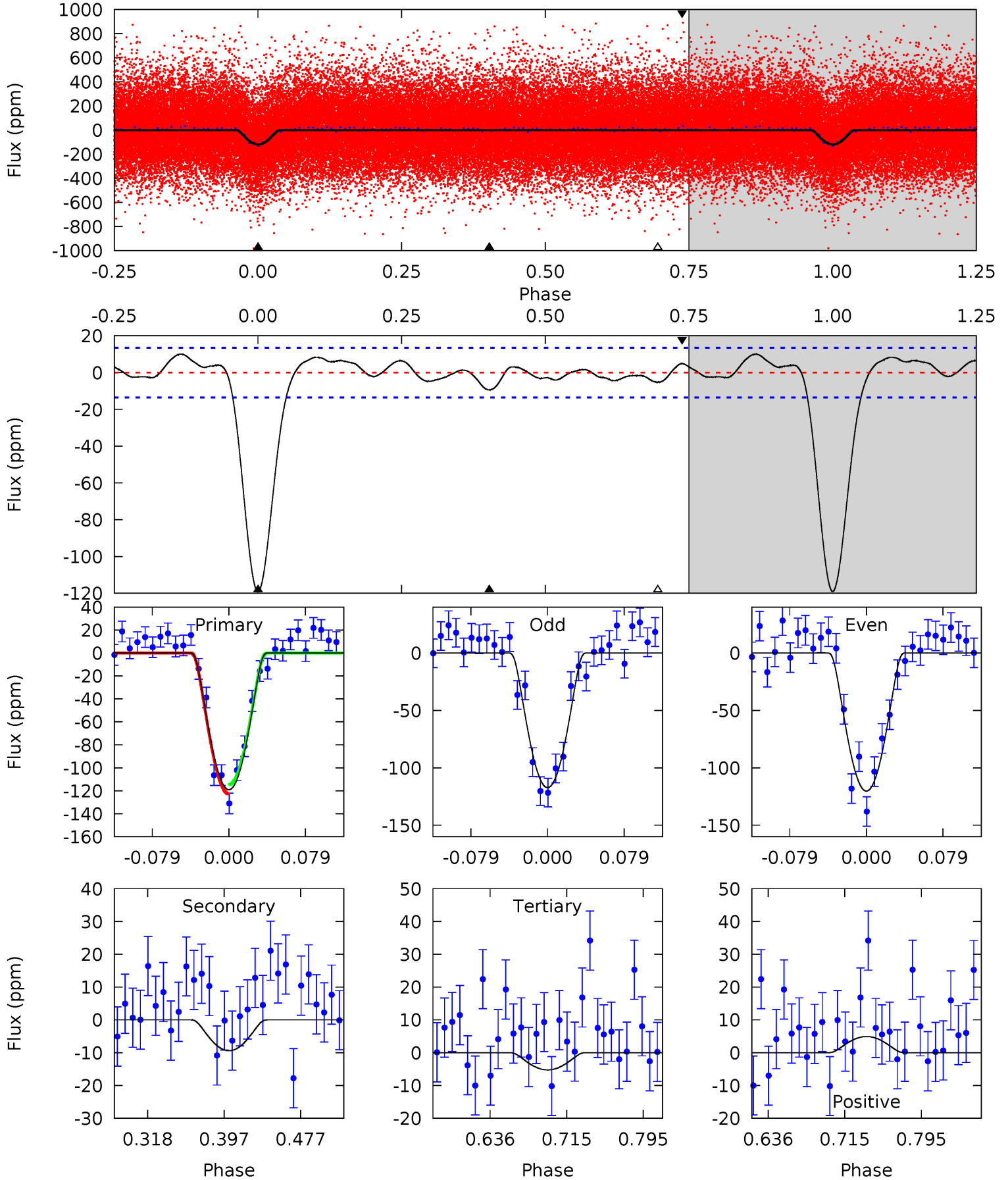




# DV Model-Shift Uniqueness Test

003337432-01, P = 2.976037 Days, E = 129.993977 Days

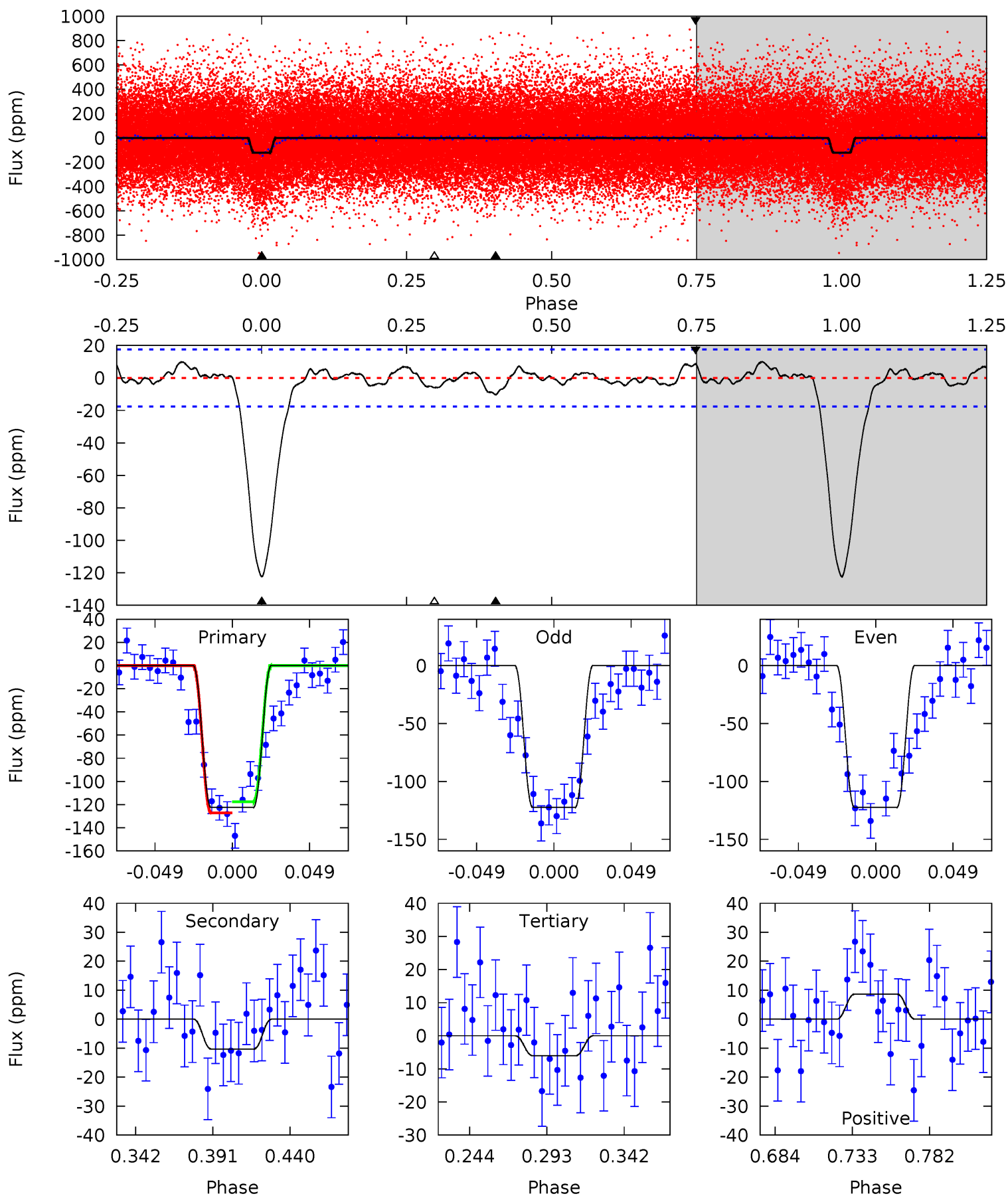
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
40.6	3.20	1.79	1.67	4.61	1.75	1.43	38.8	38.9	1.41	1.53	0.52	1.01	0.08	1.38



# Alt Model-Shift Uniqueness Test

003337432-01, P = 2.975988 Days, E = 130.005967 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
32.8	2.76	1.62	2.32	4.71	1.97	0.98	31.2	30.5	1.15	0.45	0.00	0.95	0.08	1.26





### Stellar Parameters For KIC 003337432

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6208^{+198}_{-242}$	$3.898^{+0.420}_{-0.140}$	$-0.100^{+0.250}_{-0.300}$	$2.088^{+0.501}_{-0.931}$	$1.256^{+0.191}_{-0.263}$	$0.195^{+0.717}_{-0.078}$
	+3%/-4%	+11%/-4%	+250%/-300%	+24%/-45%	+15%/-21%	+369%/-40%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 003337432-01 / KOI 2265.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-9 \pm 3$	$5.81^{+5.54}_{-3.82}$	$2582^{+216}_{-299}$	$-2072^{+5804}_{-711}$	$0.271^{+2.048}_{-0.200}$
Alt.	$-10 \pm 4$	$4.60^{+4.97}_{-3.05}$	$2588^{+218}_{-288}$	$2635^{+1570}_{-5333}$	$0.485^{+3.762}_{-0.384}$

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

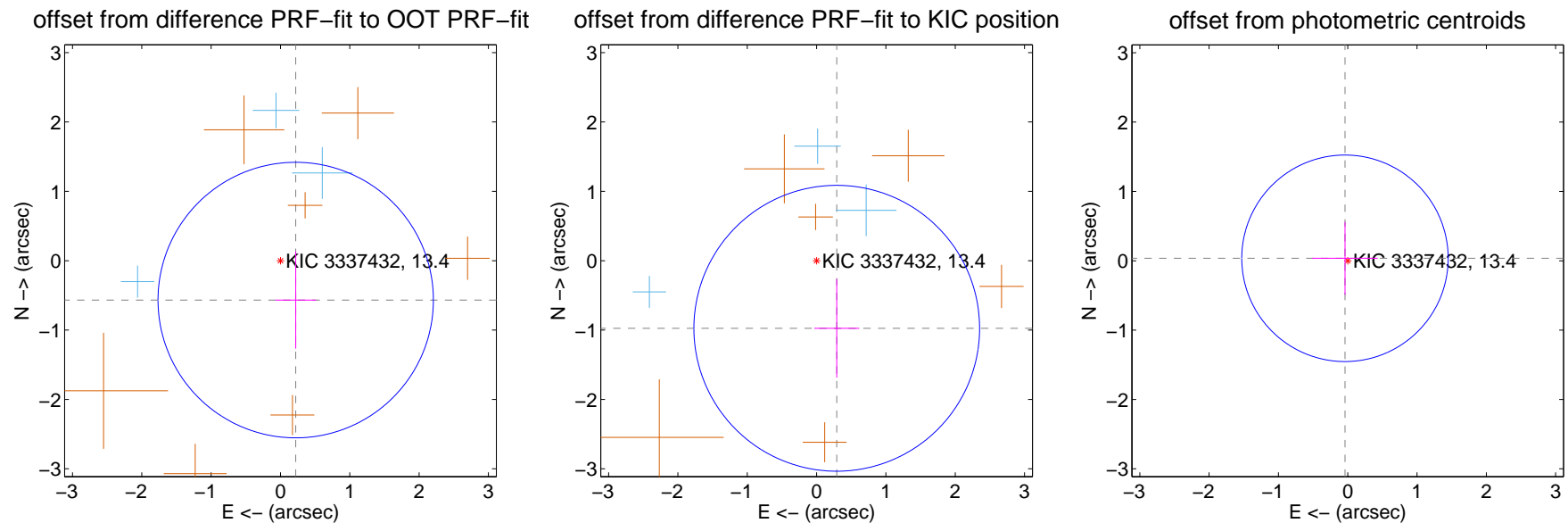
## DV Centroid Data

Supplemental centroid analysis for 003337432-01. Kepler magnitude: 13.40. Transit SNR 22.84

There are 3 quarters with good PRF difference image offsets

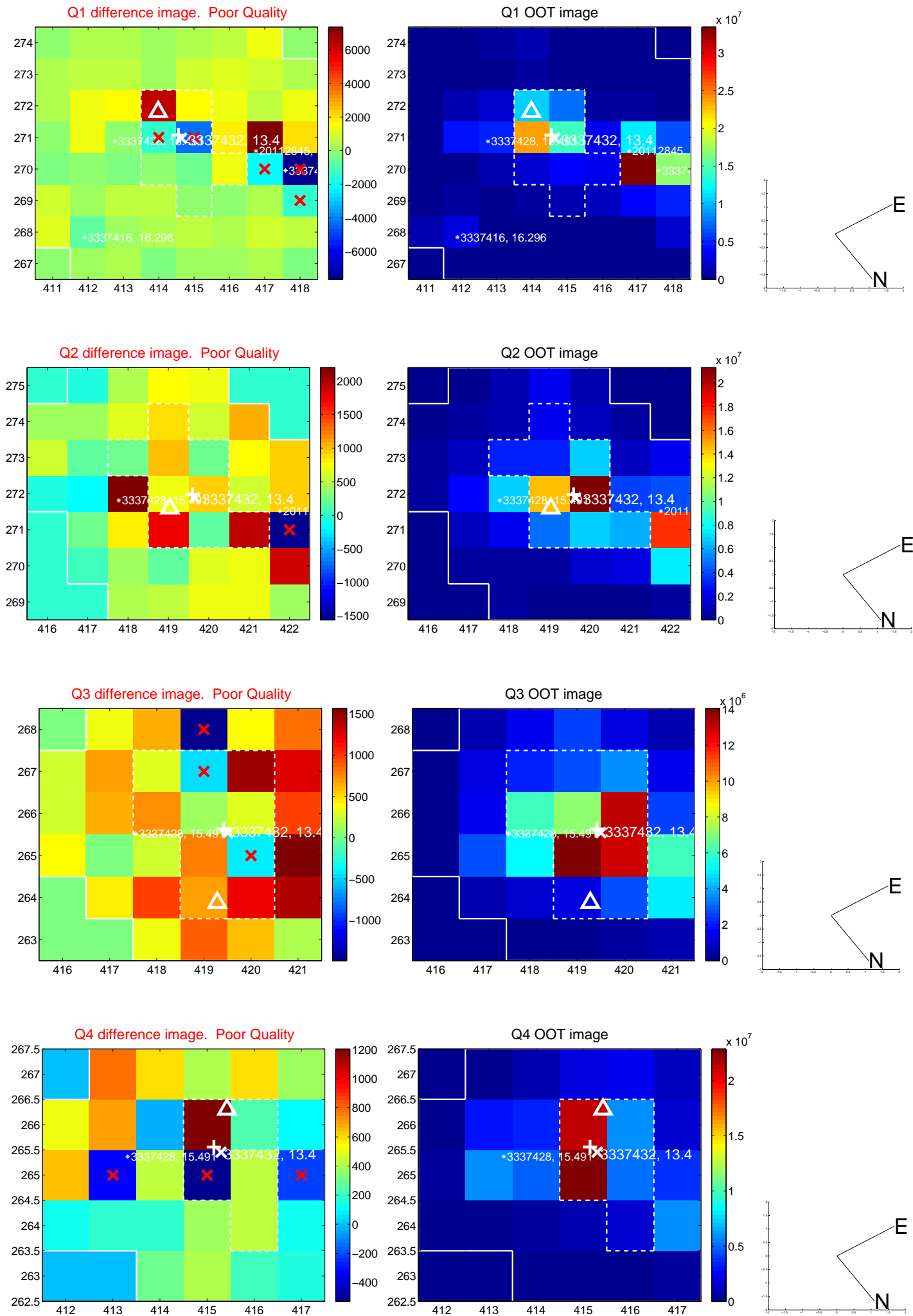
The direct PRF centroid is offset from the target star catalog position by about 0.57 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.609 \pm 0.662$	0.92	$-0.220 \pm 0.293$	$-0.568 \pm 0.701$
PRF-fit source offset from KIC position	$1.017 \pm 0.687$	1.48	$-0.291 \pm 0.325$	$-0.974 \pm 0.710$
photometric centroid source offset	$0.05 \pm 0.50$	0.11	$0.04 \pm 0.47$	$0.04 \pm 0.53$

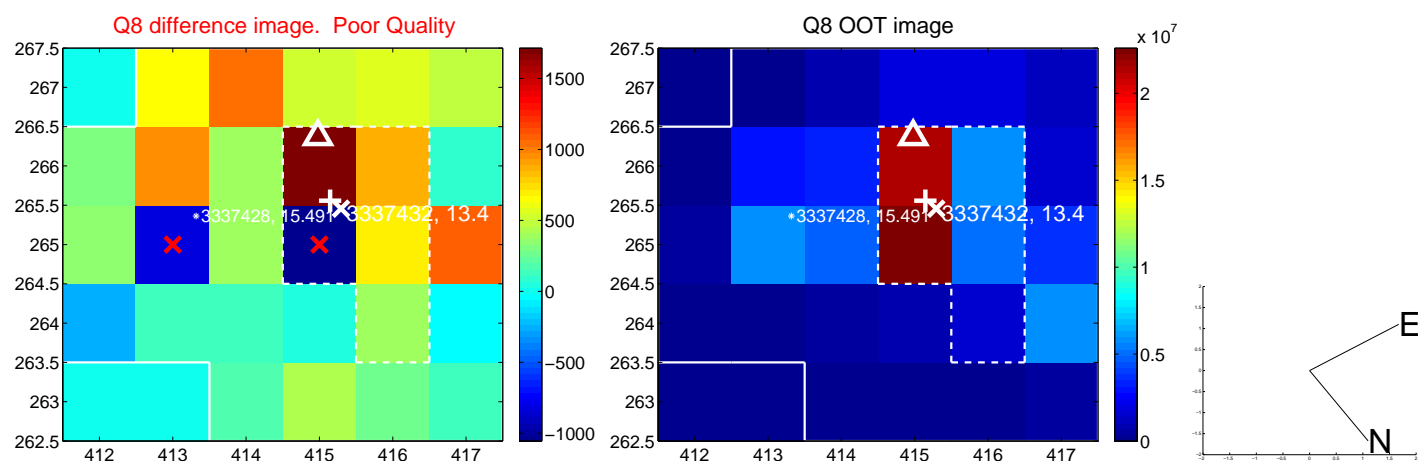
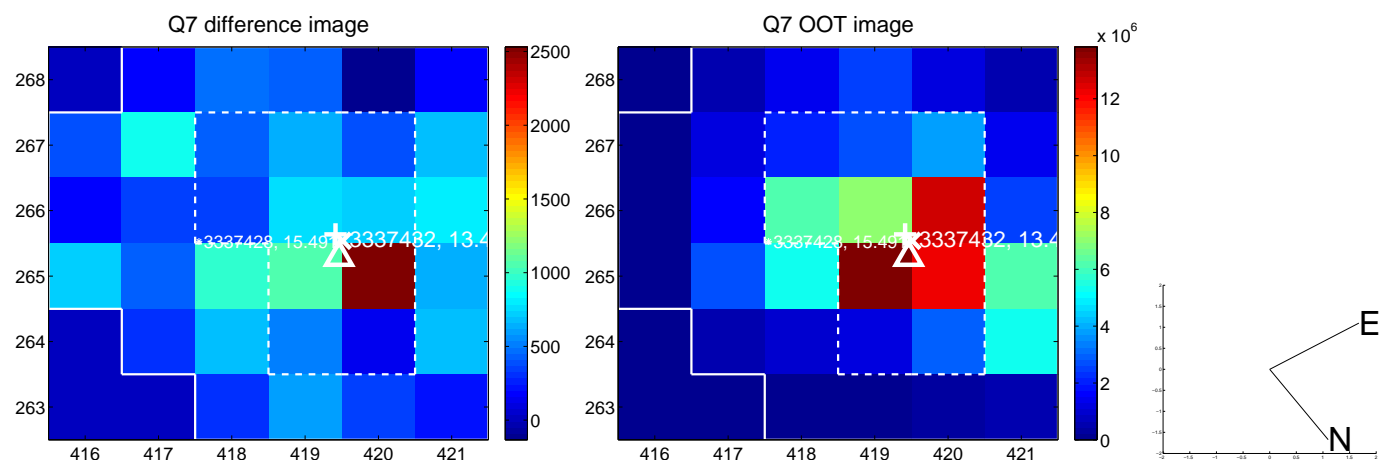
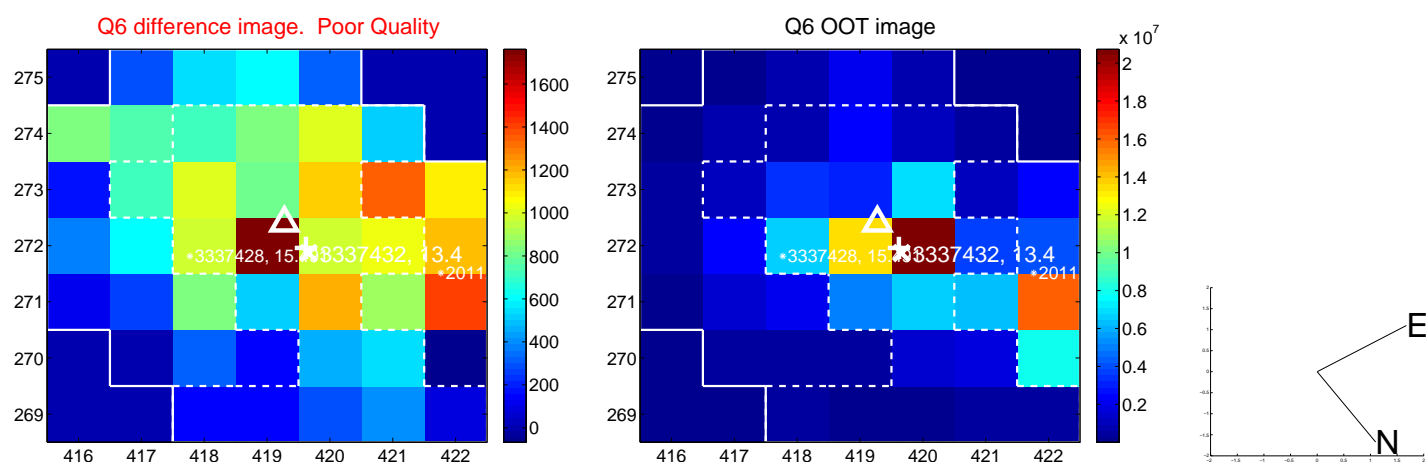
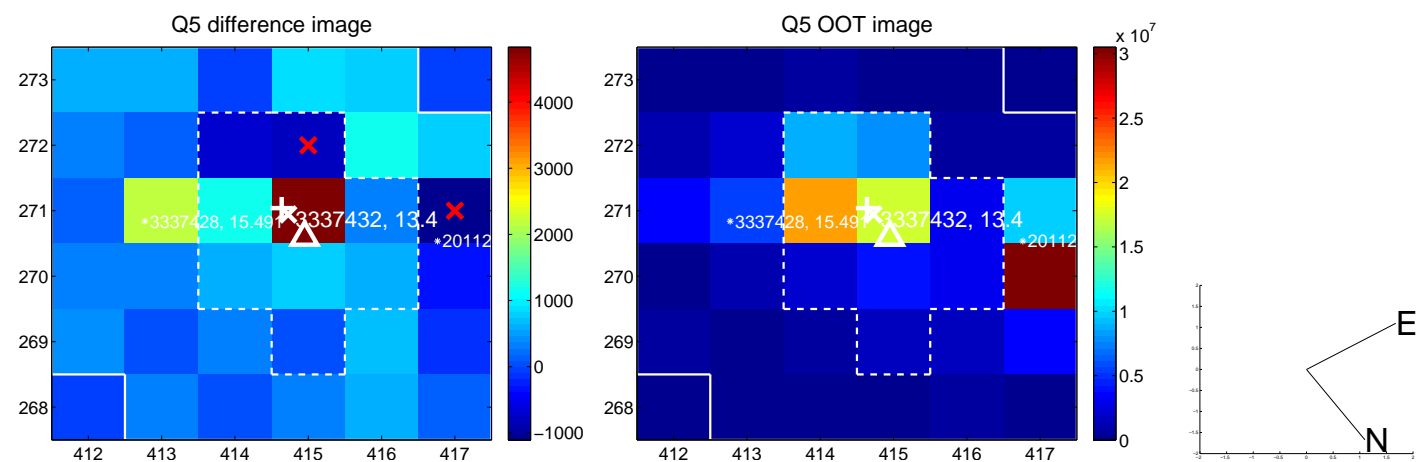


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

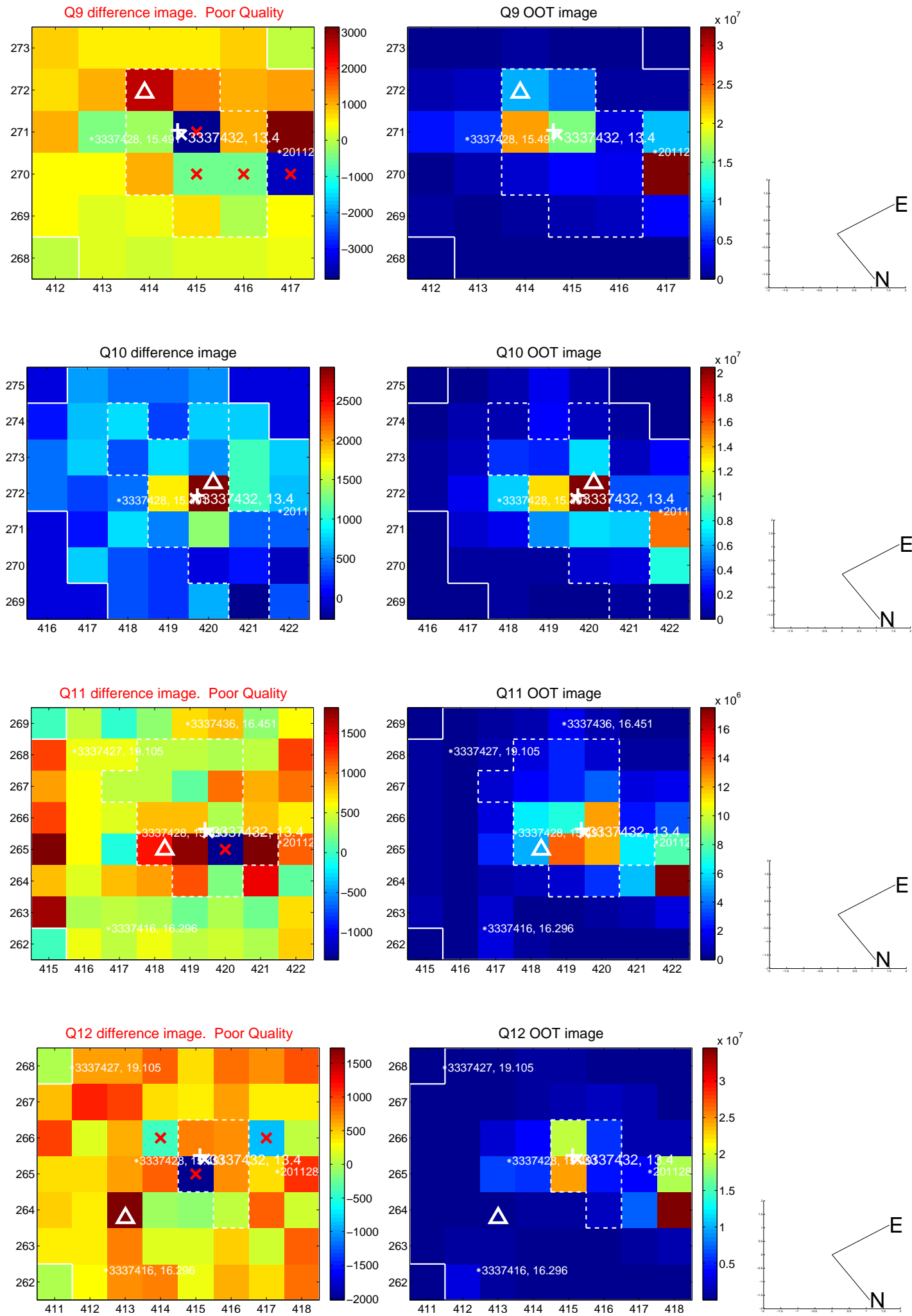


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

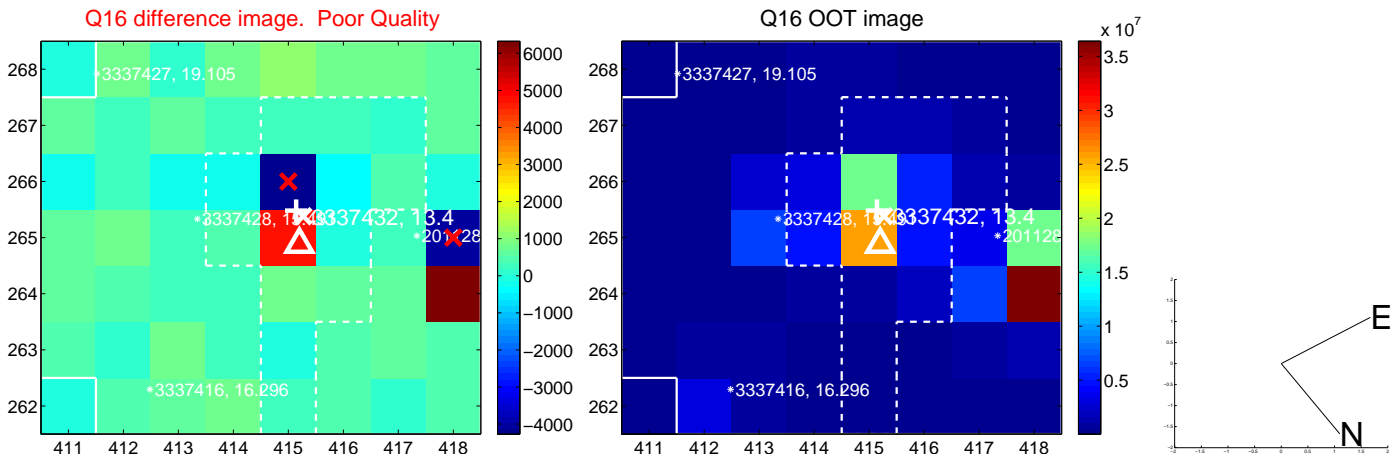
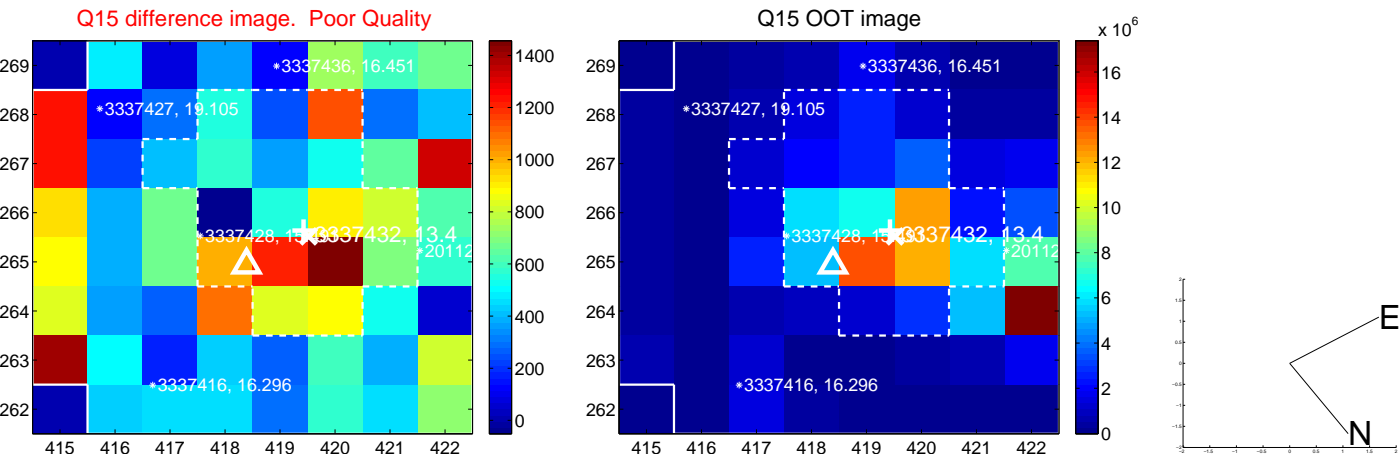
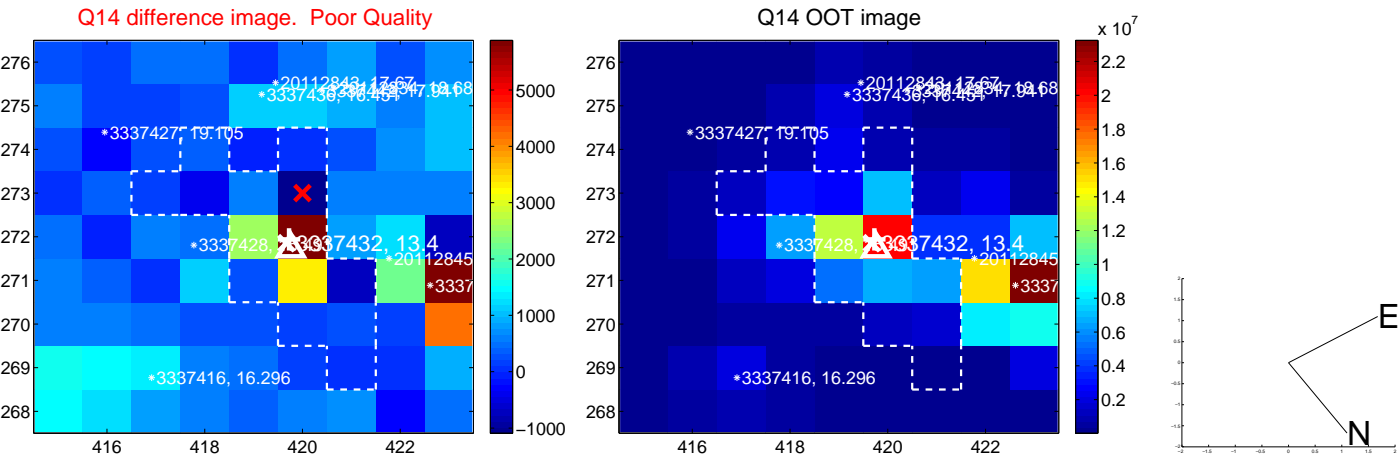
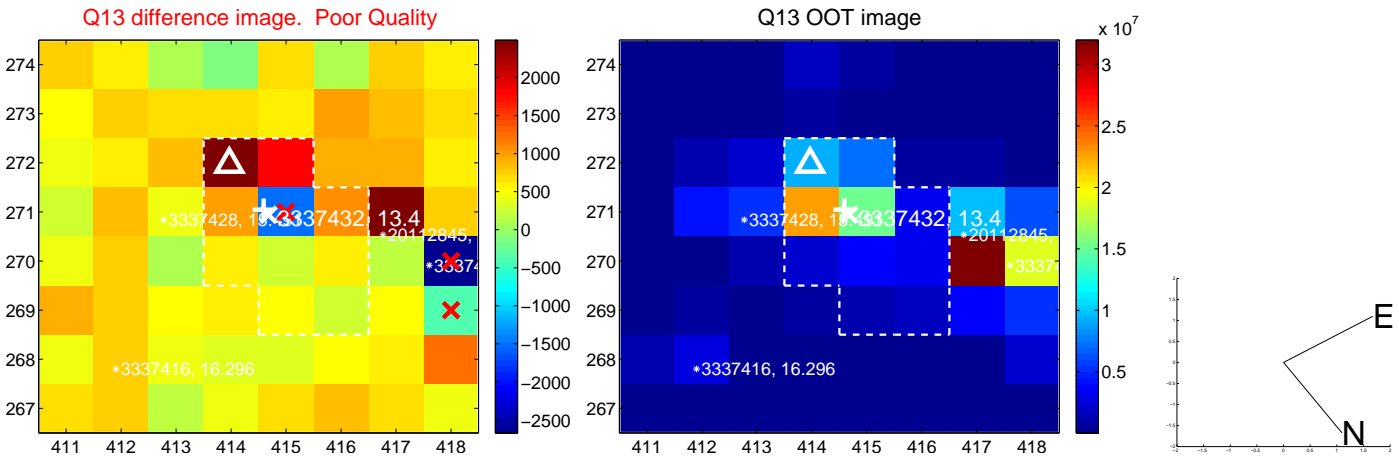




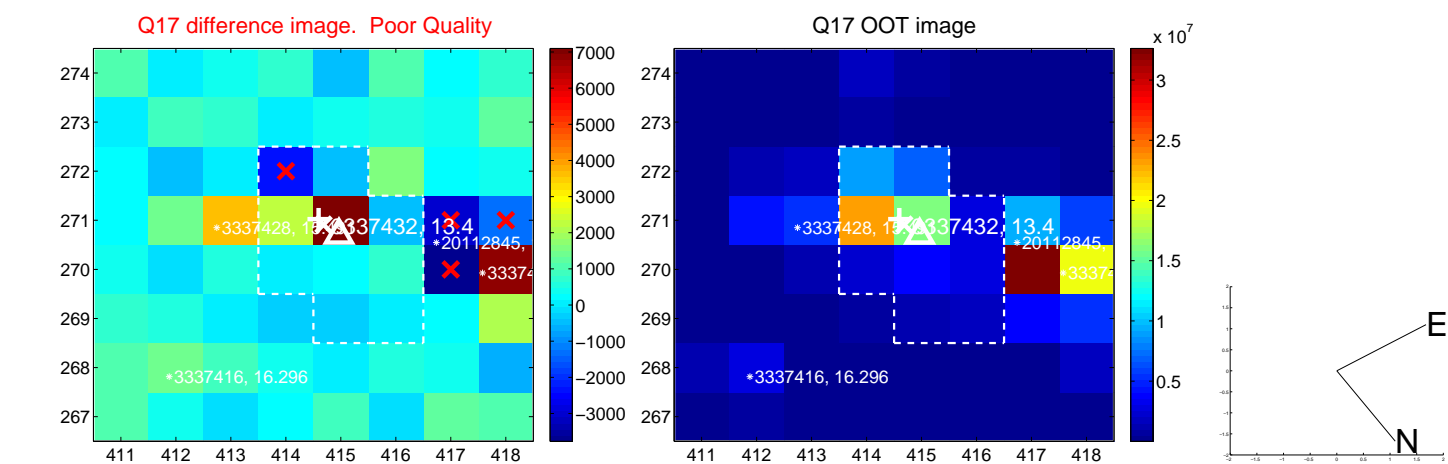
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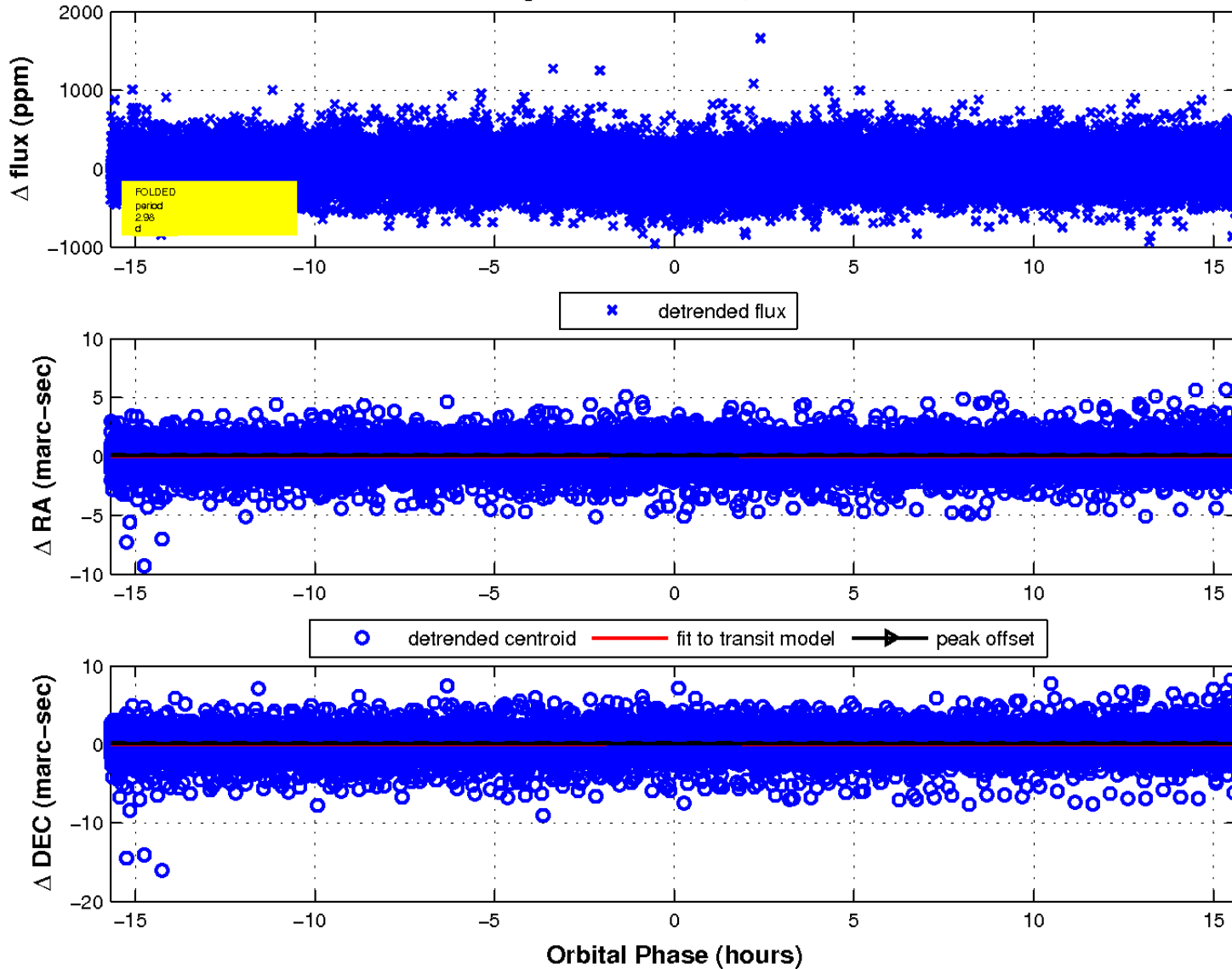
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

