

# KIC 010395543

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010395543-01	OBS	0531.01	3.687459	134.007764	4733.5	0.922	336.3	362.0	0.61	4004	4.53	53.81

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010395543-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS

**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.

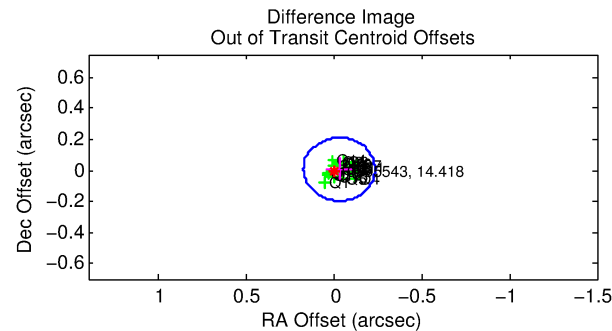
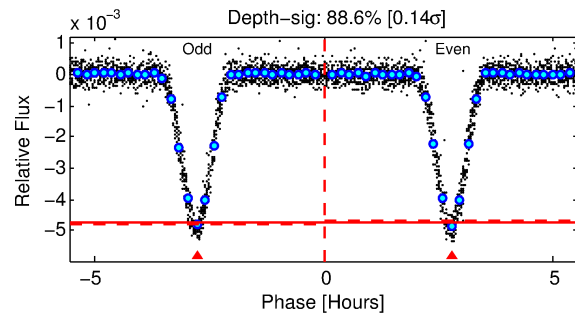
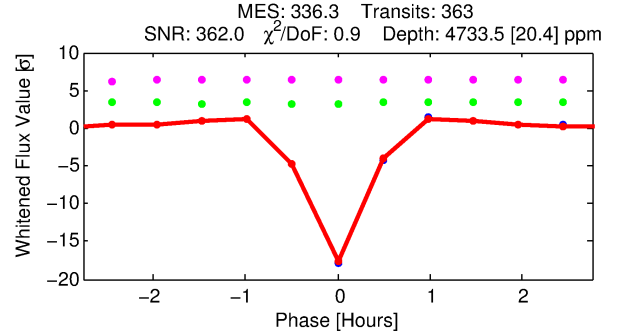
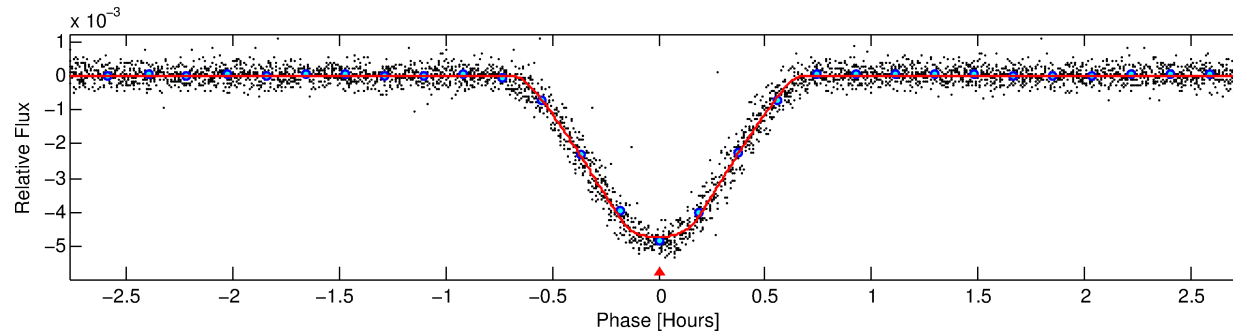
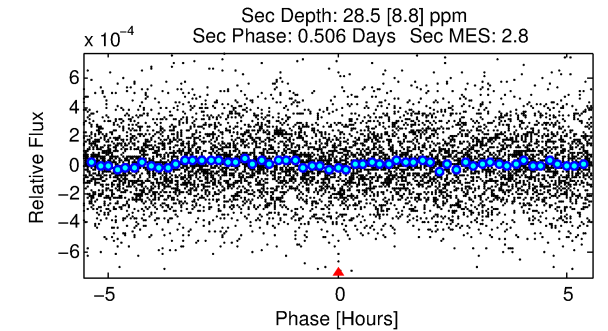
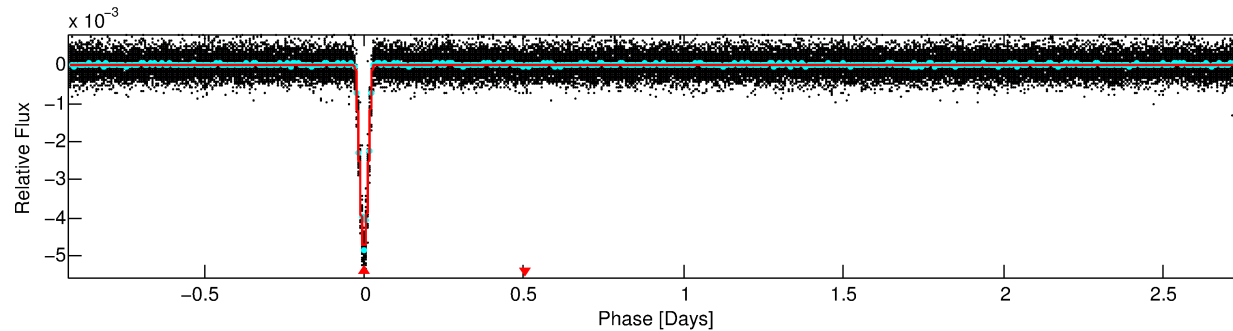
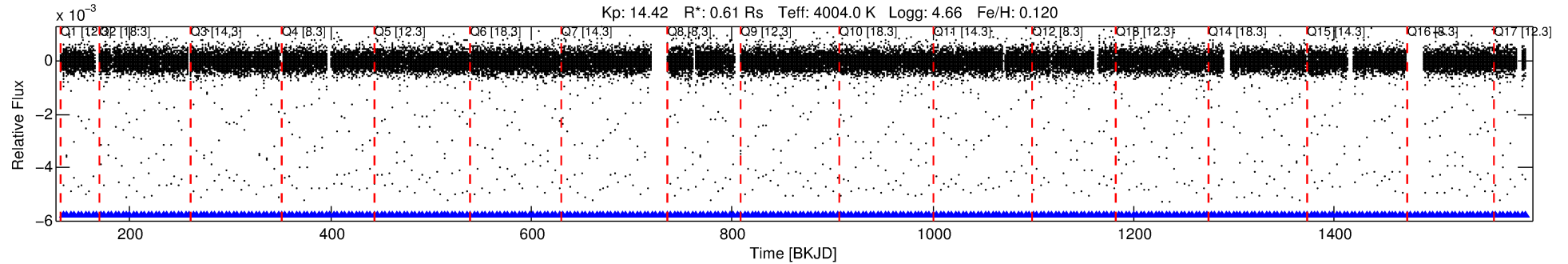
## Ephemeris Match Information For 010395543-01

No Significant Match Found

# DV One-Page Summary

KIC: 10395543 Candidate: 1 of 1 Period: 3.687 d  
KOI: K00531.01 Corr: 0.936

Kp: 14.42 R\*: 0.61 Rs Teff: 4004.0 K Logg: 4.66 Fe/H: 0.120



## DV Fit Results:

Period = 3.68746 [0.00000] d  
Epoch = 134.0078 [0.0000] BKJD  
Rp/R\* = 0.0686 [0.0023]  
a/R\* = 24.68 [2.72]  
b = 0.70 [0.08]  
Seff = 53.81 [5.54]  
Teq = 691 [18] K  
Rp = 4.53 [0.30] Re  
a = 0.0396 [0.0019] AU  
Ag = 1.20 [0.39] [0.52σ]  
Teff = 1118 [91] K [4.60σ]

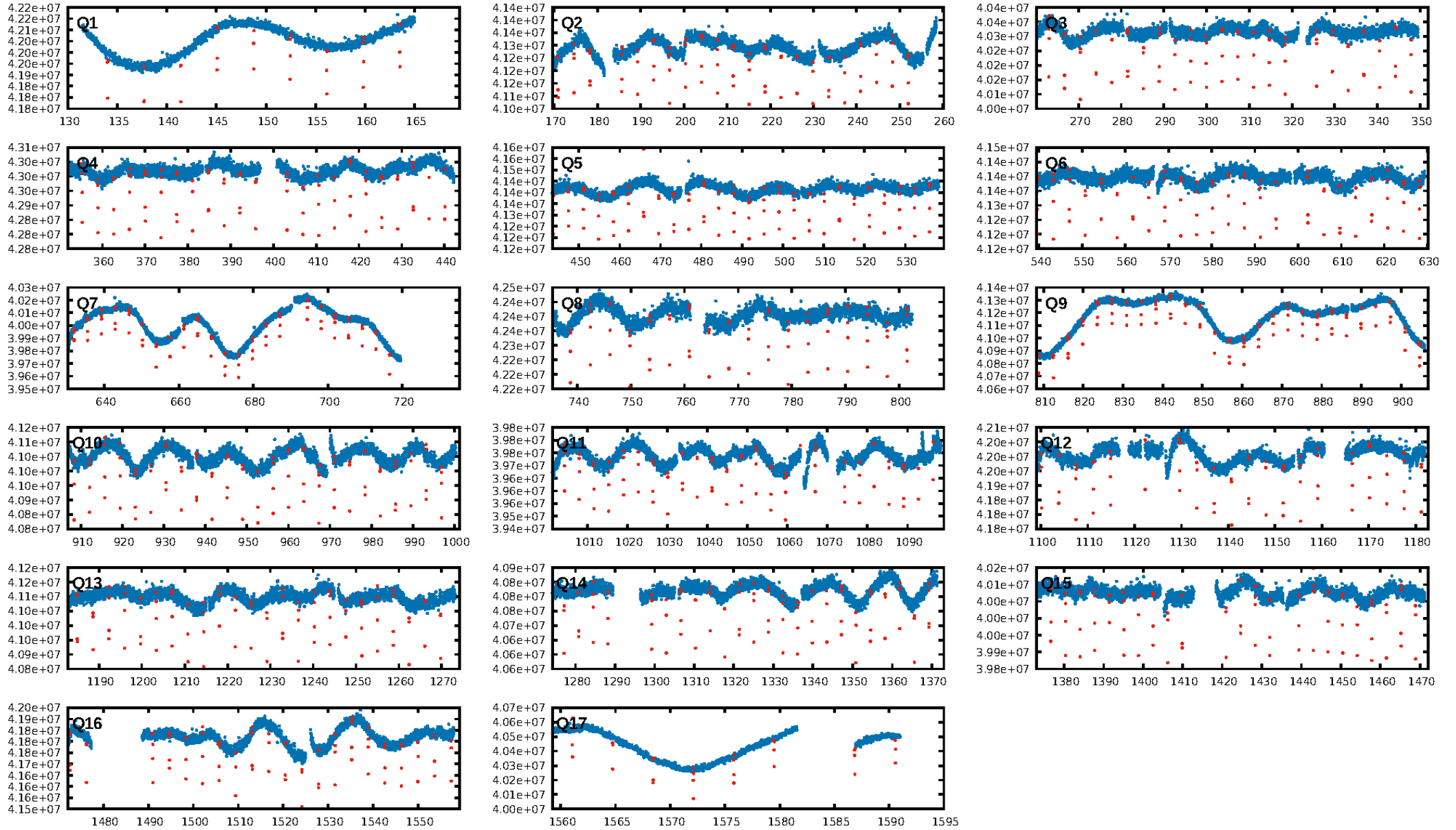
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [346/346]  
GhostDiagnostic-chr: 8.128  
Centroid-sig: 0.0%  
Centroid-so: 0.777 arcsec [30.30σ]  
OotOffset-rm: 0.030 arcsec [0.45σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-rm: 0.821 arcsec [10.55σ]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

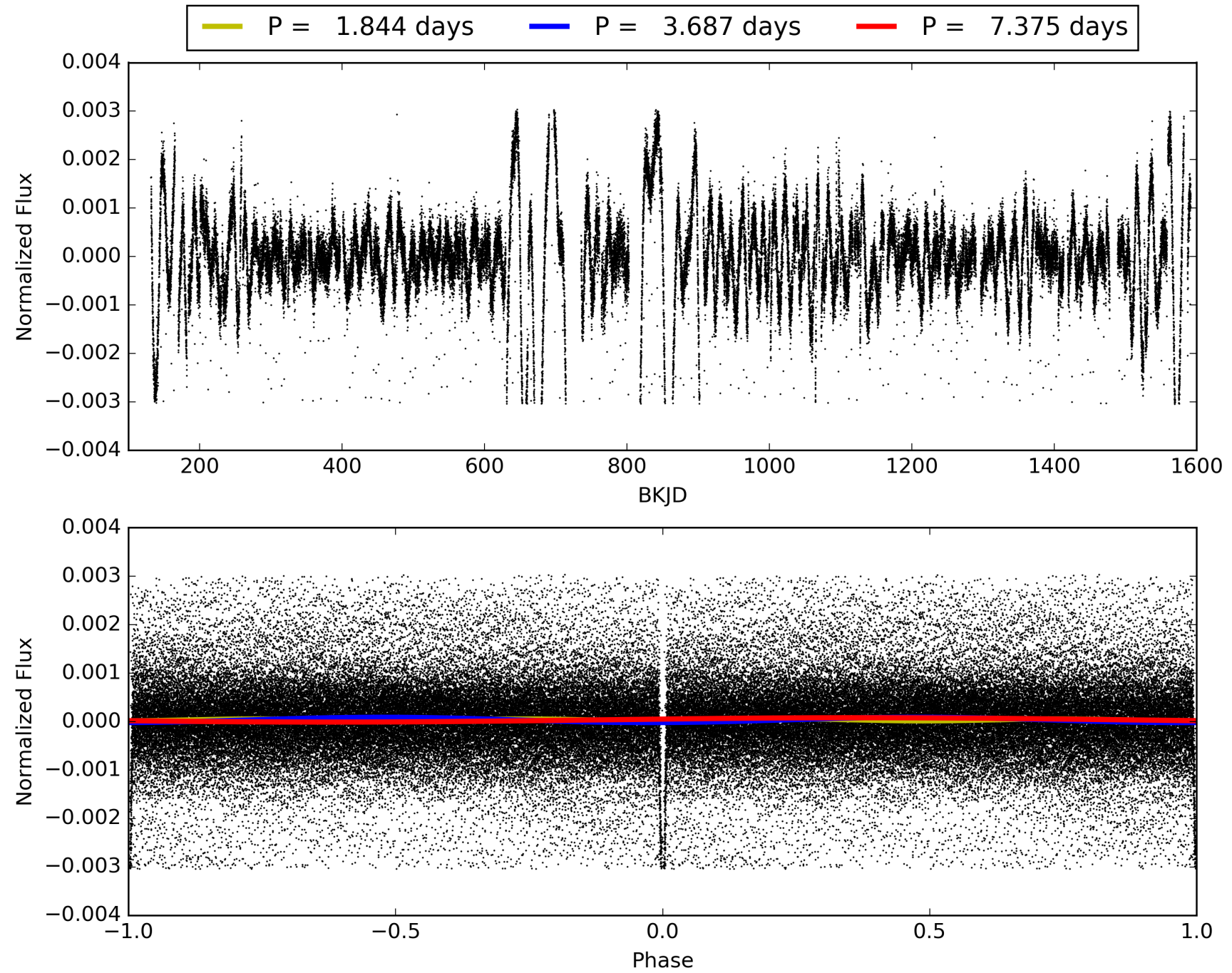
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 21:12:00 Z

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

# TCE 010395543-01, PDC Light Curves

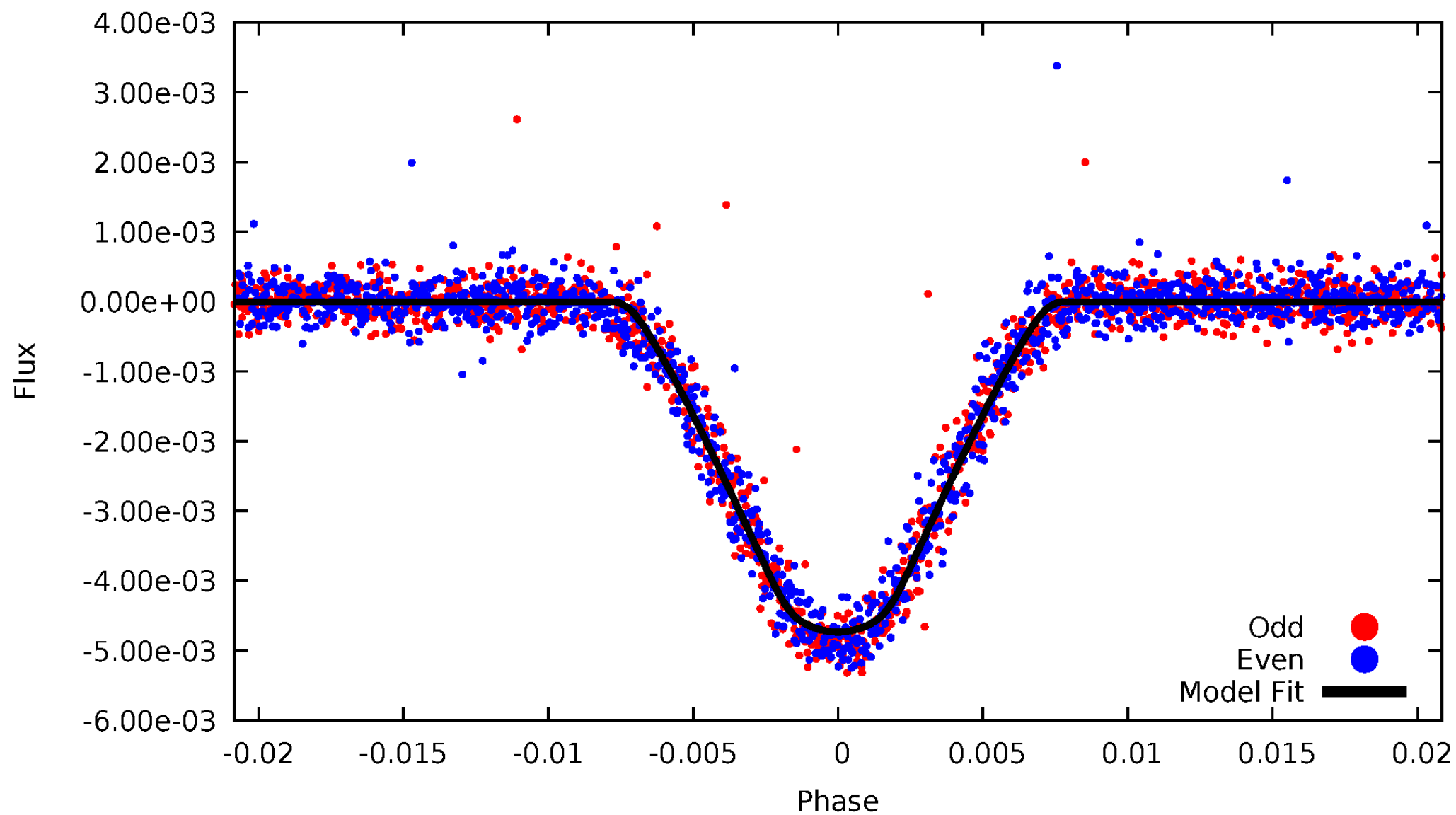


TCE 010395543-01



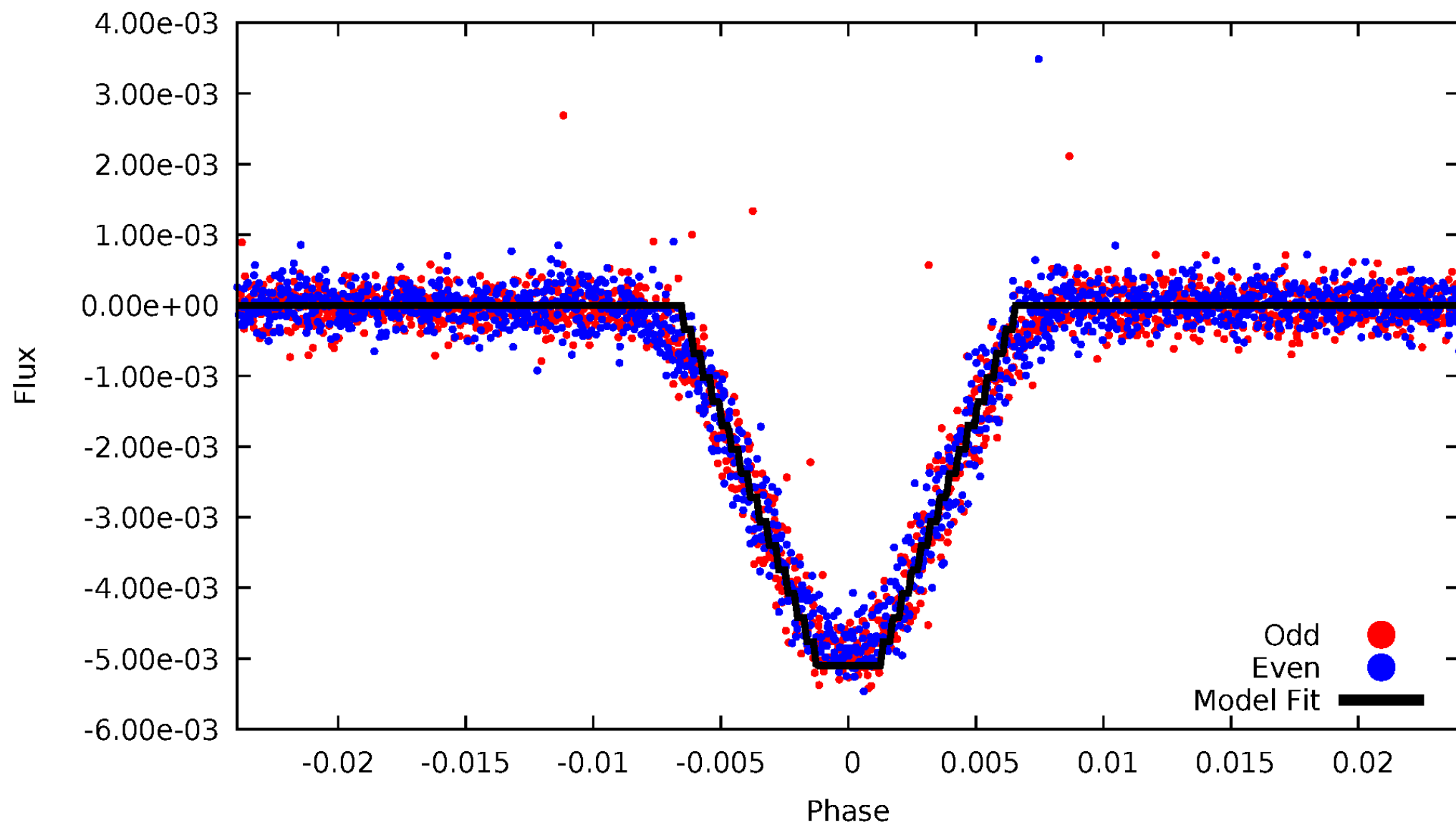
# DV Odd/Even

TCE 010395543-01



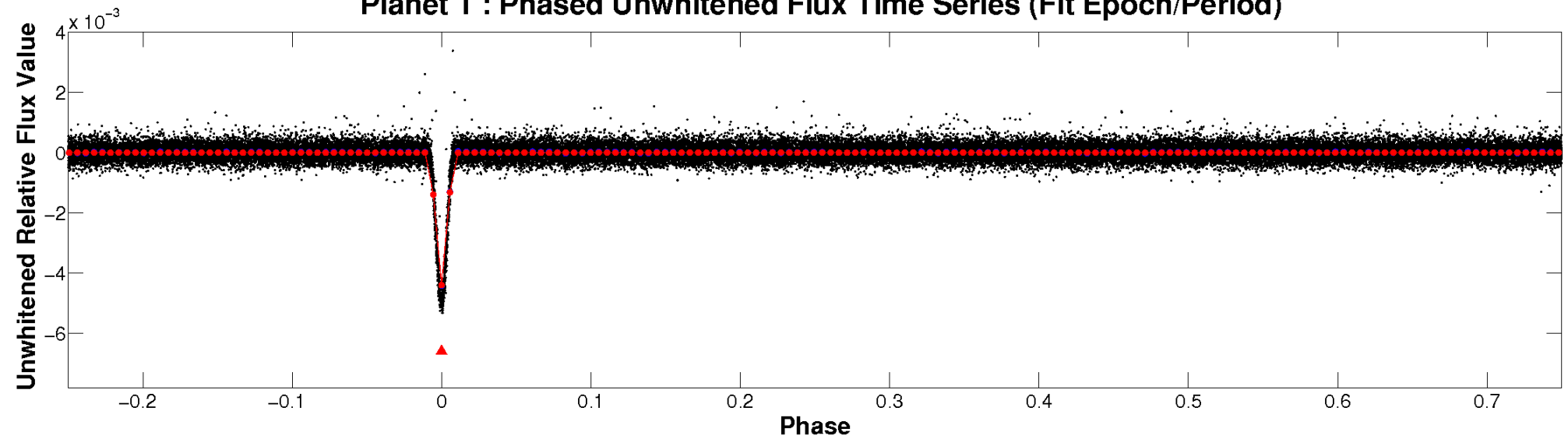
# ALT Odd/Even

TCE 010395543-01

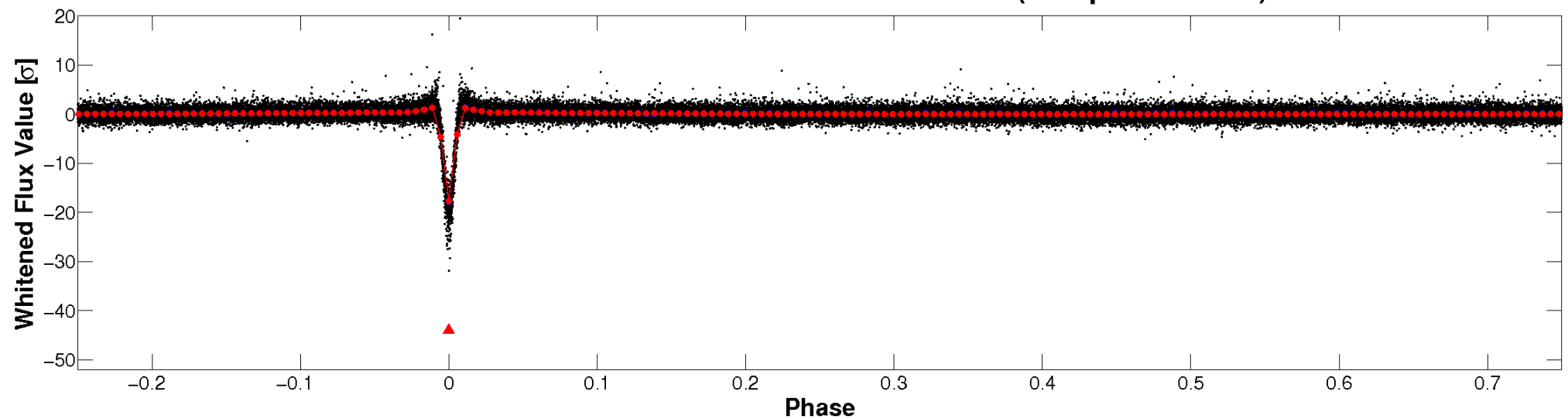


# Non-Whitened Vs. Whitened Light Curve

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



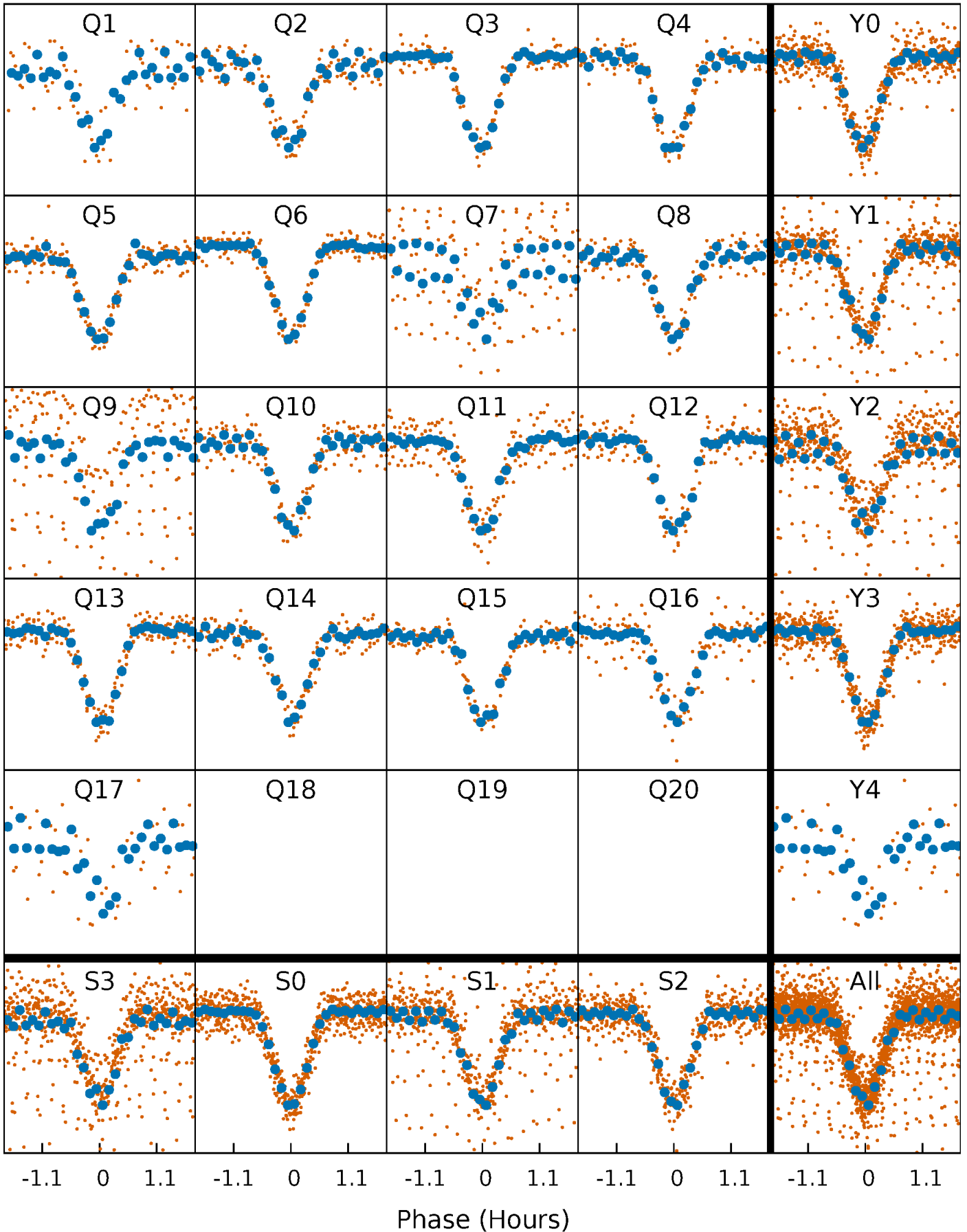
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

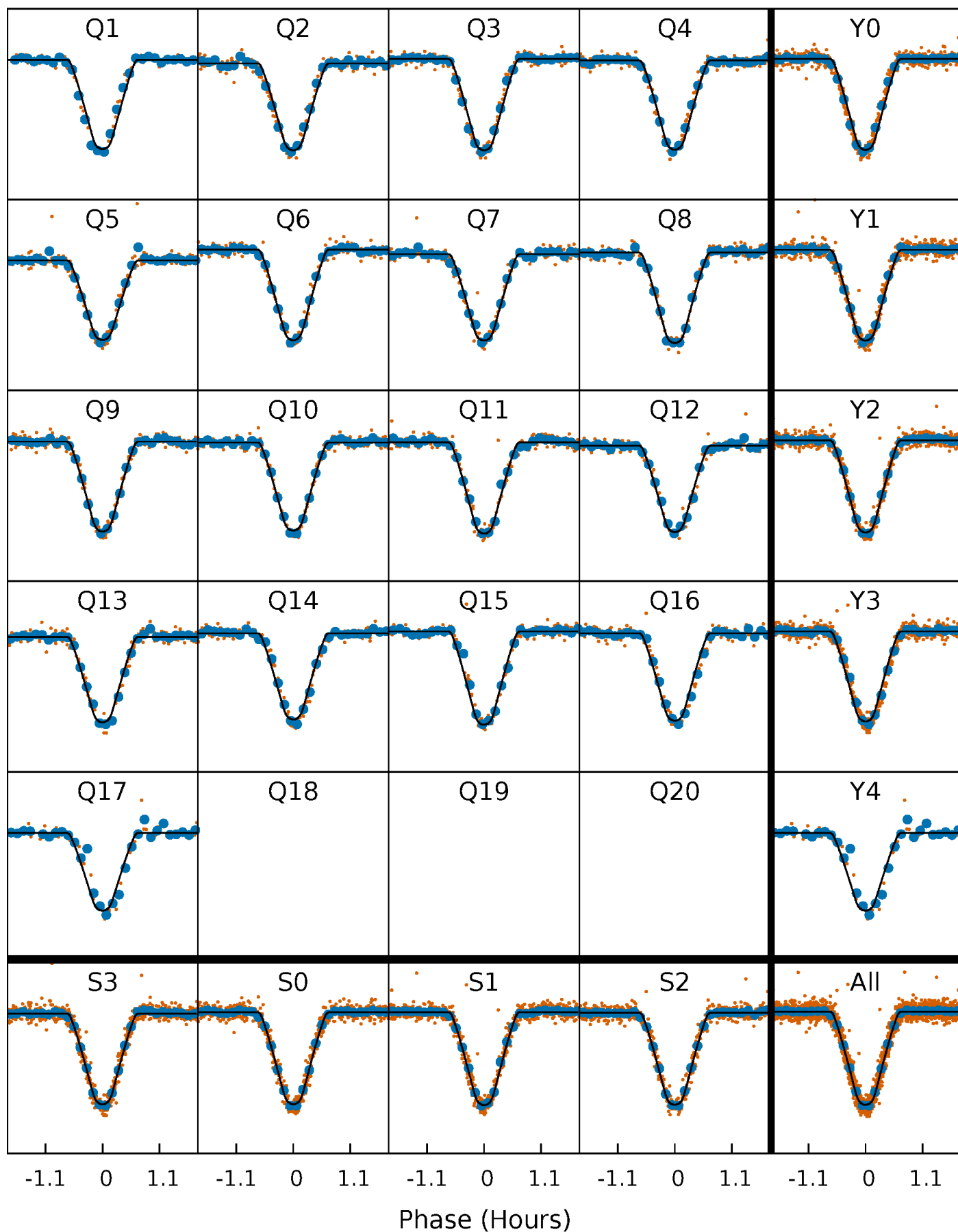
TCE 010395543-01 P= 3.687459 Days  $T_0=134.007764$  (BKJD)





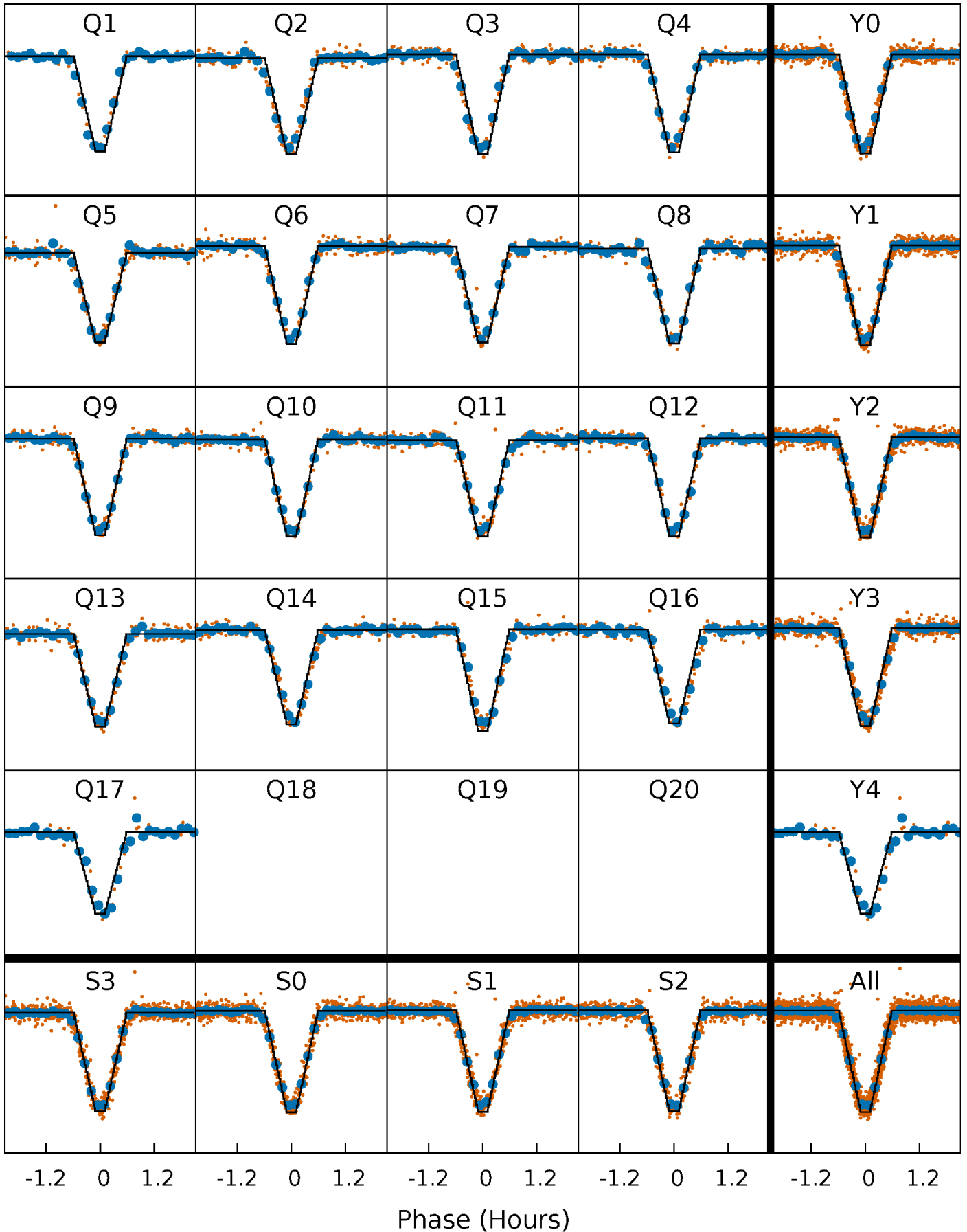
# DV Quarter-Phased Transit Curves

TCE 010395543-01 P= 3.687459 Days  $T_0=134.007764$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

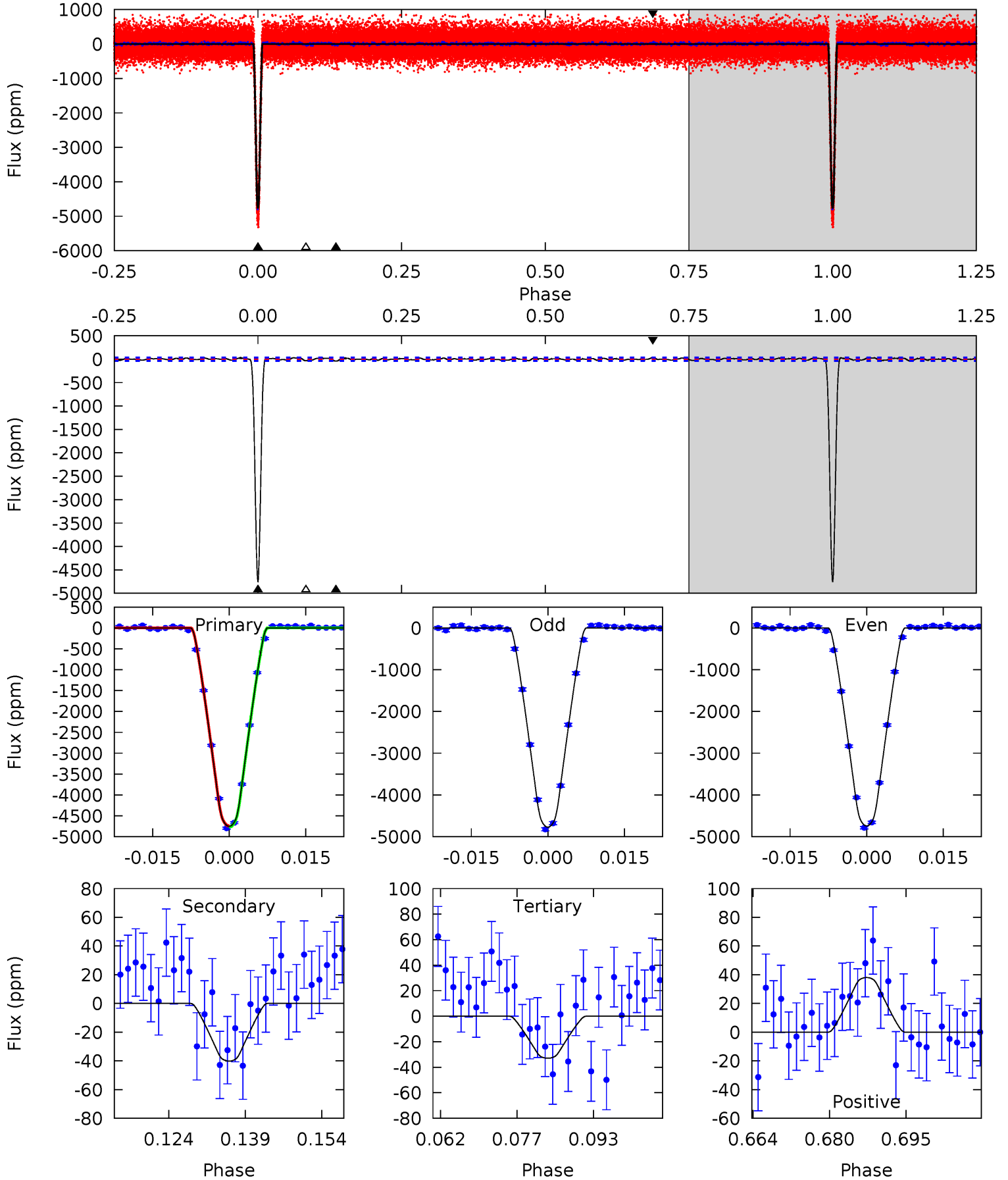
TCE 010395543-01   P= 3.687456 Days    $T_0=134.008350$  (BKJD)



# DV Model-Shift Uniqueness Test

010395543-01, P = 3.687459 Days, E = 130.320305 Days

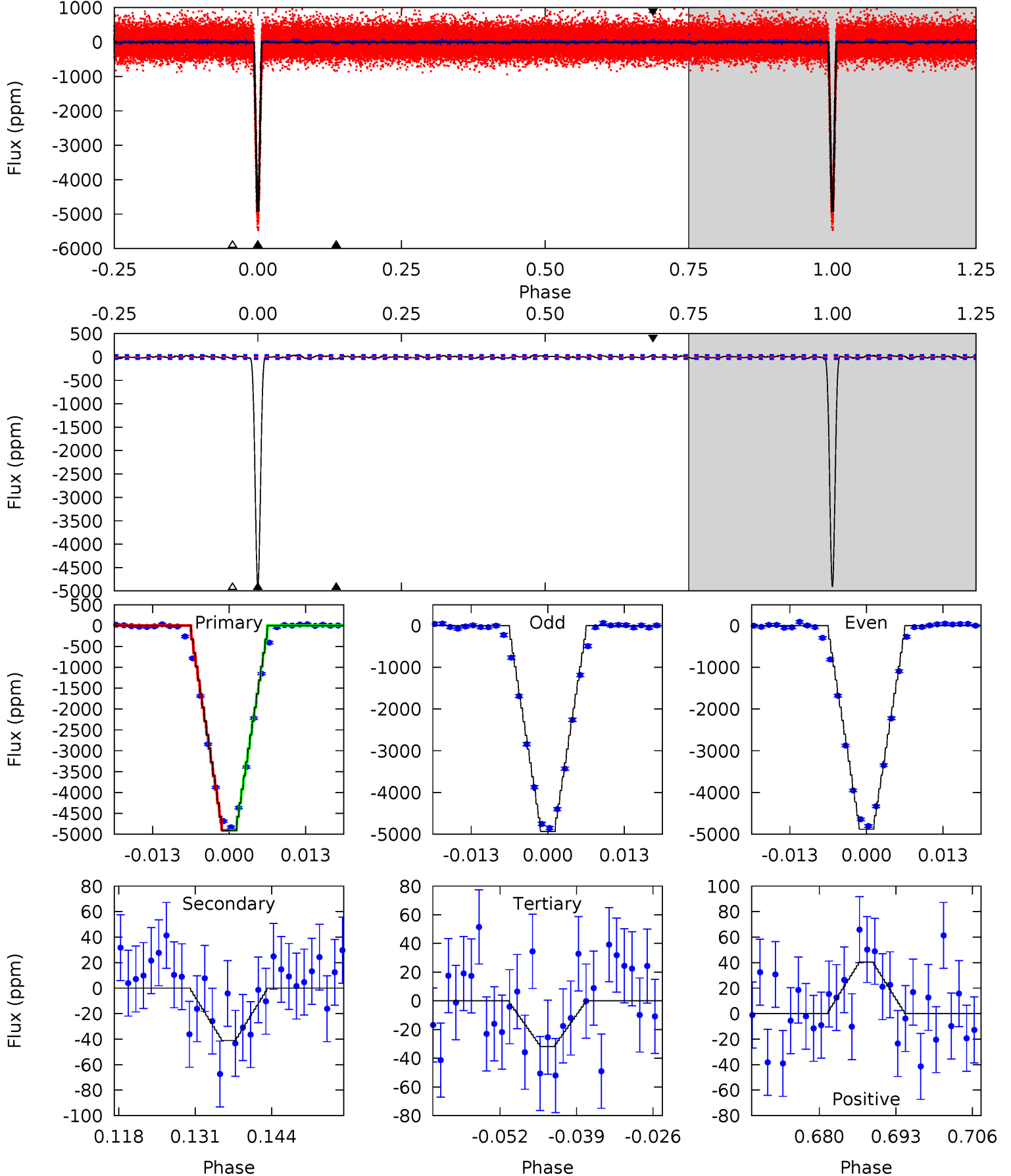
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
669.2	5.66	4.64	5.36	4.94	2.42	1.82	664.6	663.9	1.02	0.30	2.13	1.00	0.01	1.74



# Alt Model-Shift Uniqueness Test

010395543-01, P = 3.687456 Days, E = 130.320894 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
610.9	5.11	3.97	5.03	4.97	2.48	1.66	607.0	605.9	1.14	0.08	3.53	1.00	0.01	0.26



### Stellar Parameters For KIC 010395543

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4004^{+79}_{-79}$	$4.659^{+0.035}_{-0.015}$	$0.120^{+0.150}_{-0.150}$	$0.606^{+0.023}_{-0.035}$	$0.611^{+0.030}_{-0.033}$	$3.863^{+0.555}_{-0.270}$
	+2%/-2%	+1%/-0%	+125%/-125%	+4%/-6%	+5%/-5%	+14%/-7%
Source	SPE70	SPE60	SPE70	DSEP		

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

### Secondary Eclipse Parameters for KIC 010395543-01 / KOI 0531.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-40 \pm 7$	$4.51^{+0.20}_{-0.20}$	$960^{+23}_{-20}$	$2059^{+51}_{-64}$	$1.727^{+0.338}_{-0.349}$
Alt.	$-41 \pm 8$	$4.70^{+0.20}_{-0.21}$	$961^{+20}_{-23}$	$2042^{+53}_{-63}$	$1.624^{+0.341}_{-0.324}$

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

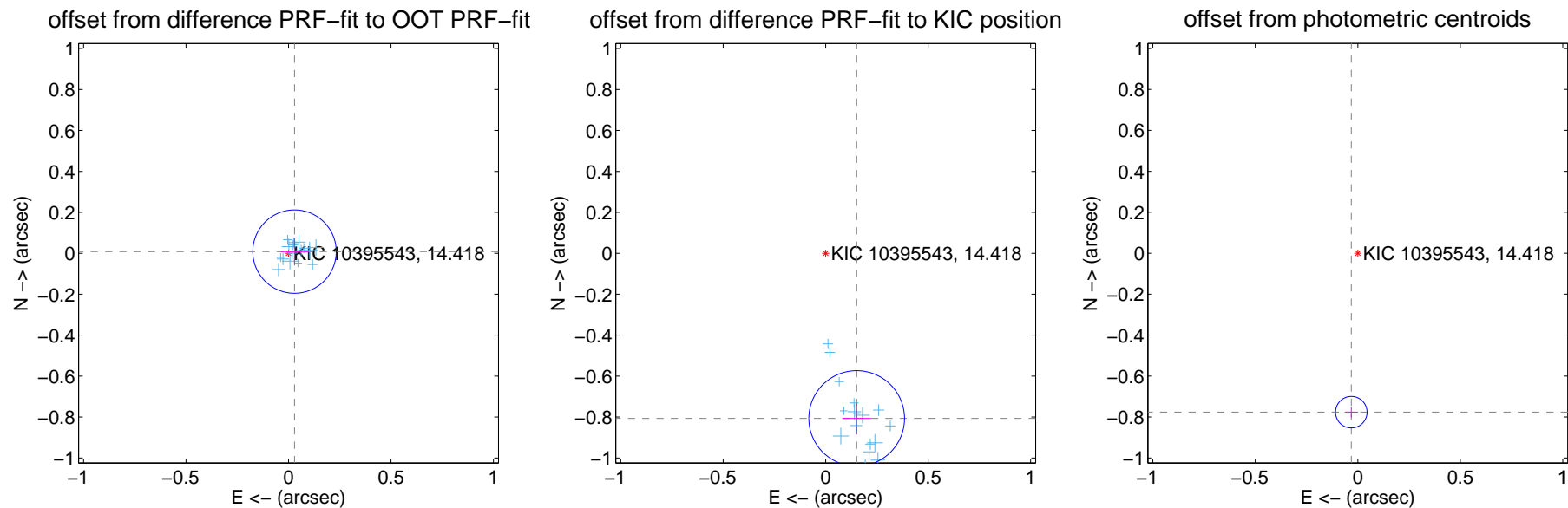
## DV Centroid Data

Supplemental centroid analysis for 010395543-01. Kepler magnitude: 14.42. Transit SNR 361.97

There are 17 quarters with good PRF difference image offsets

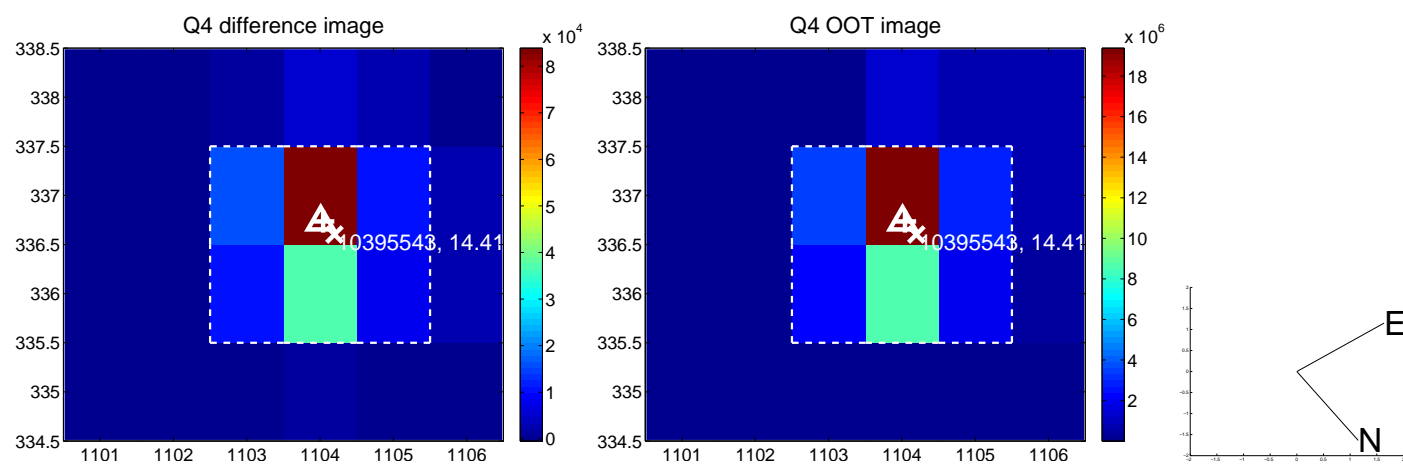
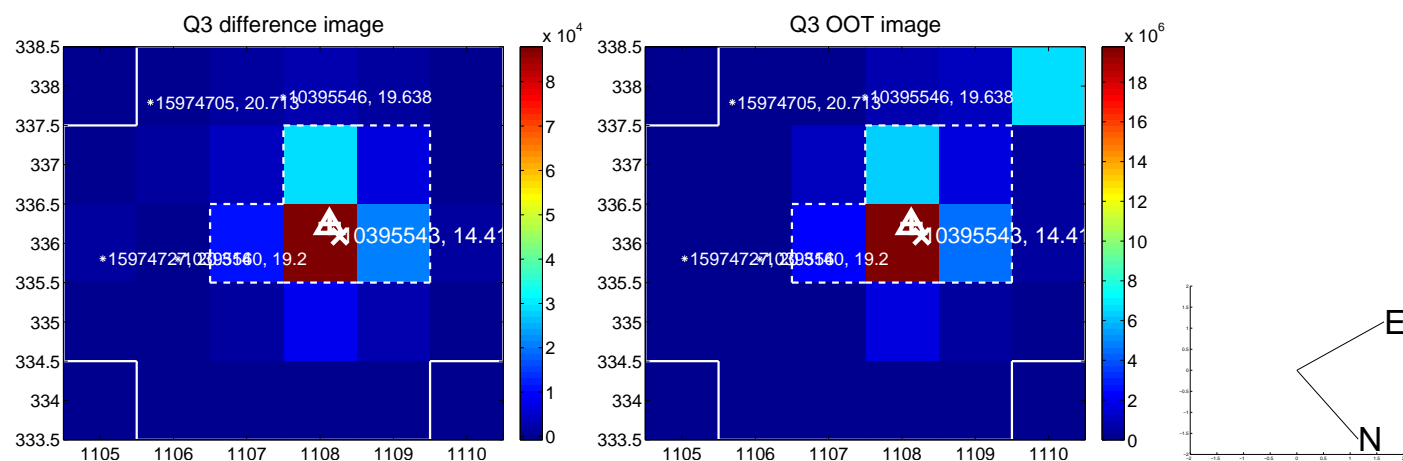
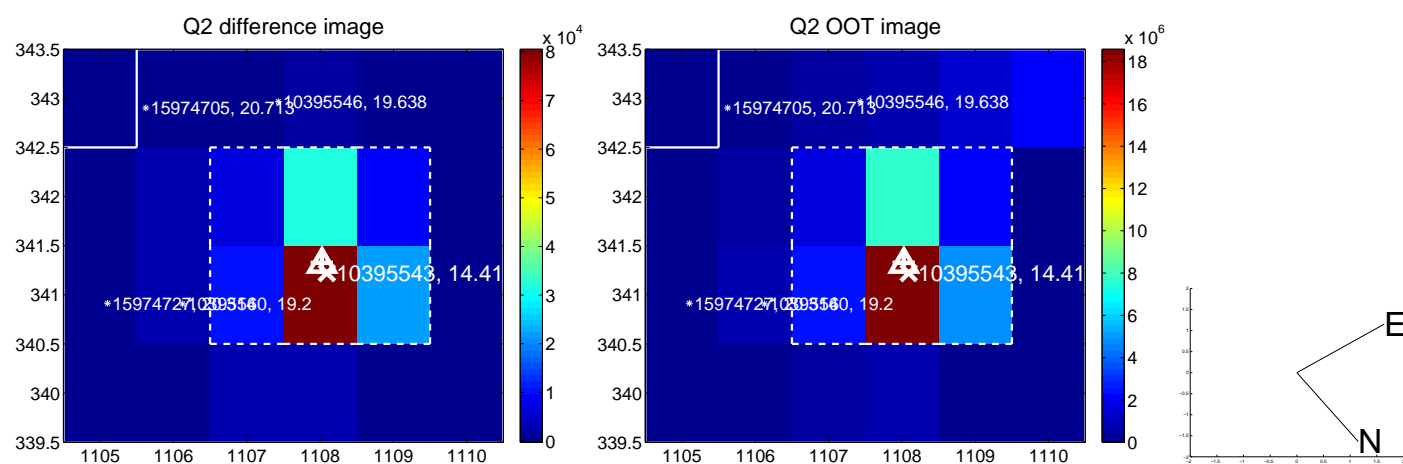
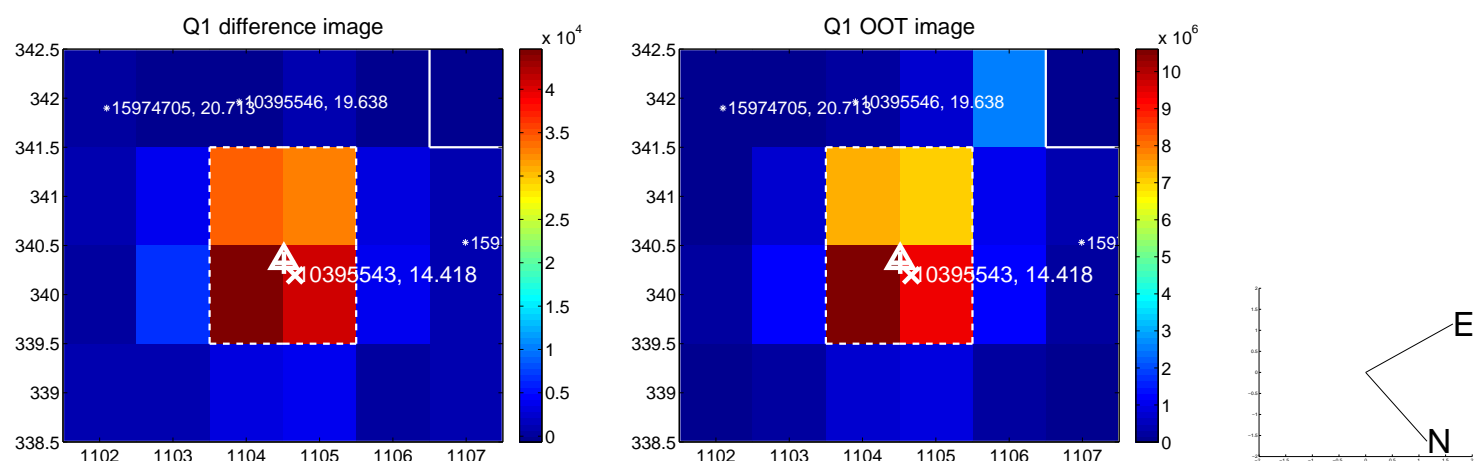
The direct PRF centroid is offset from the target star catalog position by about 1.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.030 \pm 0.068$	0.45	$-0.029 \pm 0.068$	$0.008 \pm 0.068$
PRF-fit source offset from KIC position	$0.821 \pm 0.078$	10.55	$-0.151 \pm 0.070$	$-0.807 \pm 0.077$
photometric centroid source offset	$0.78 \pm 0.03$	30.30	$0.03 \pm 0.03$	$-0.78 \pm 0.03$



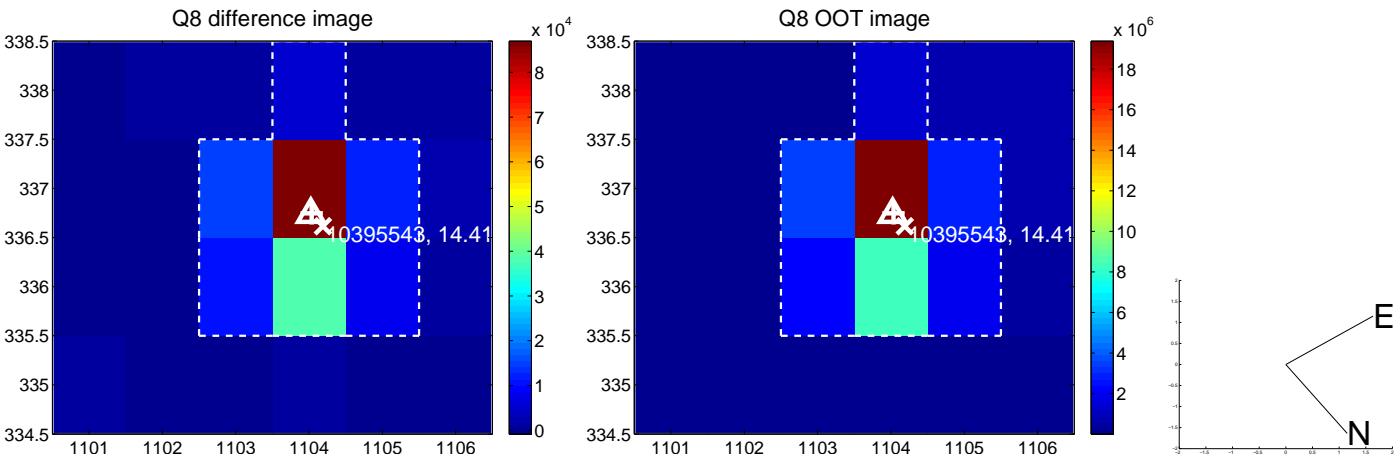
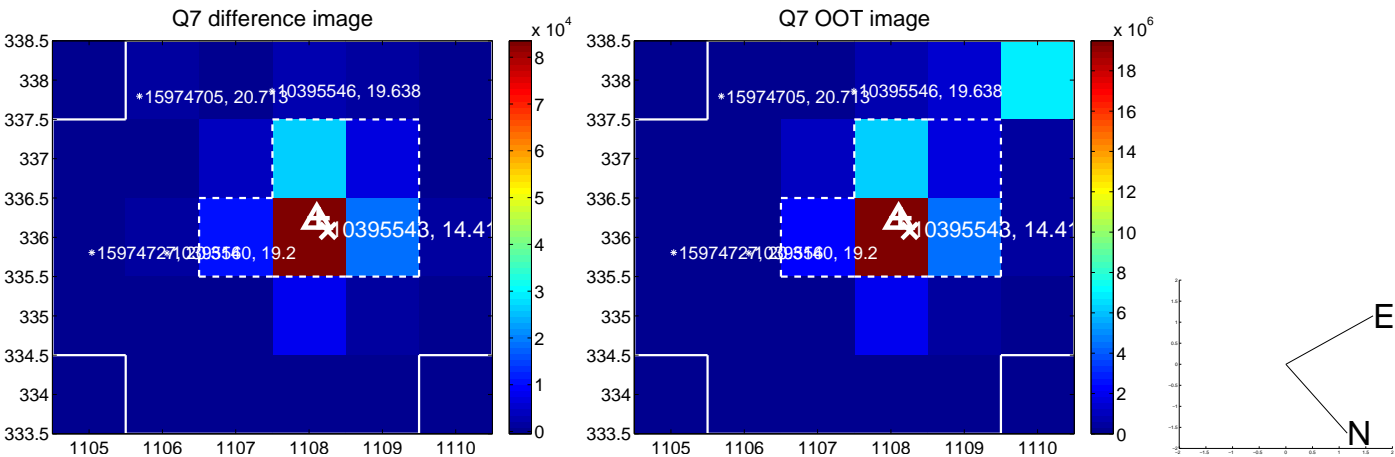
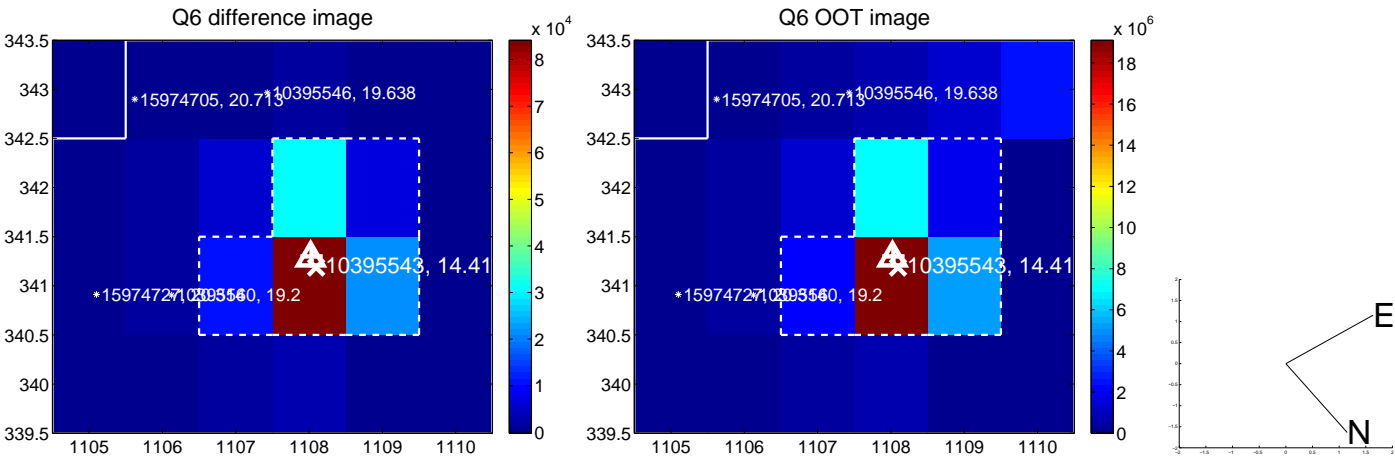
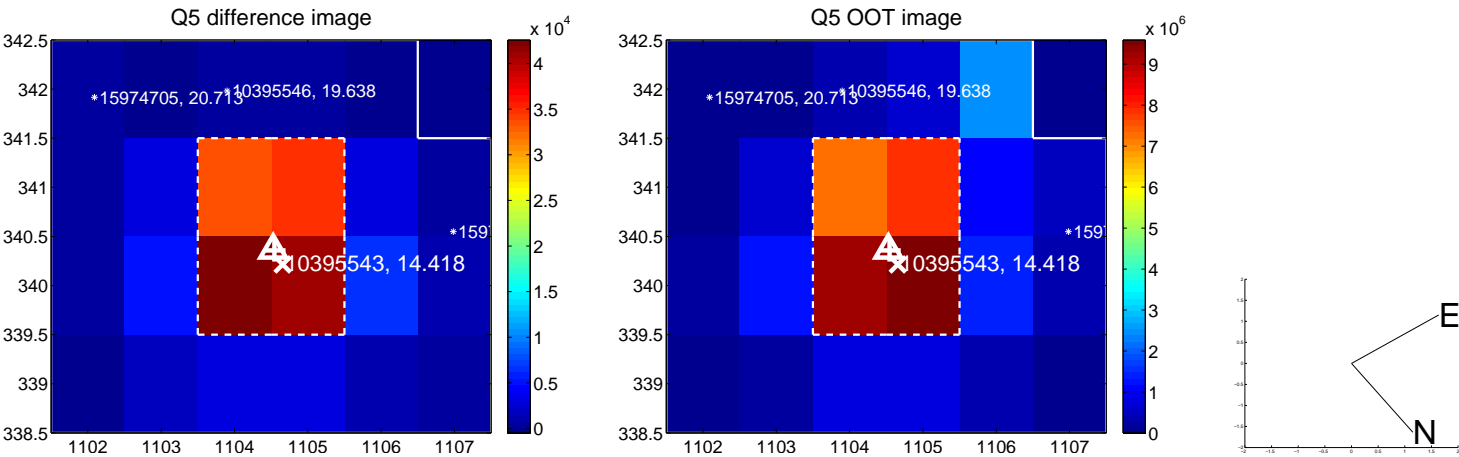
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

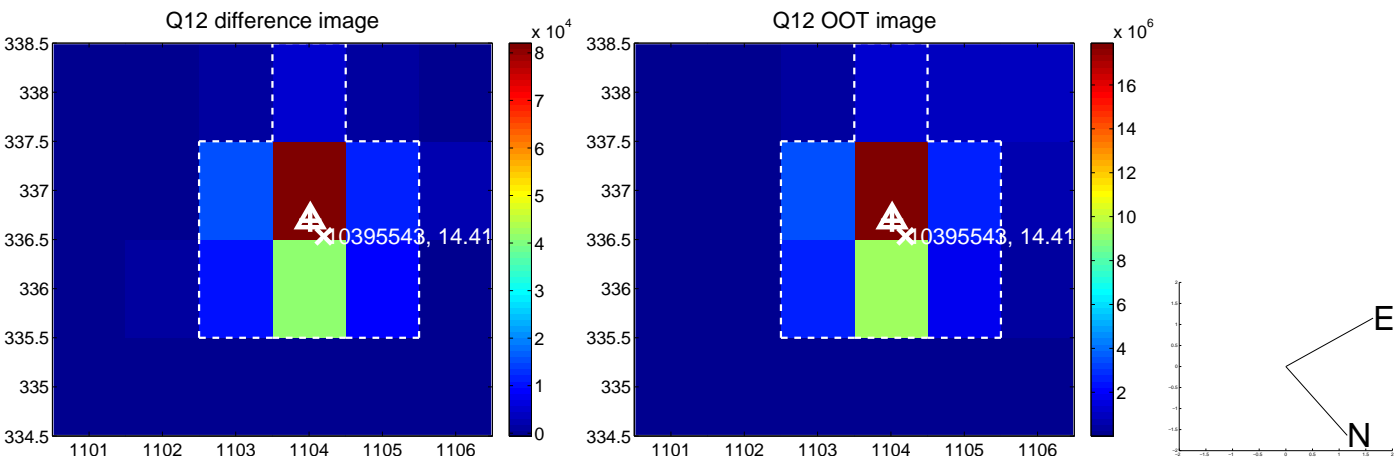
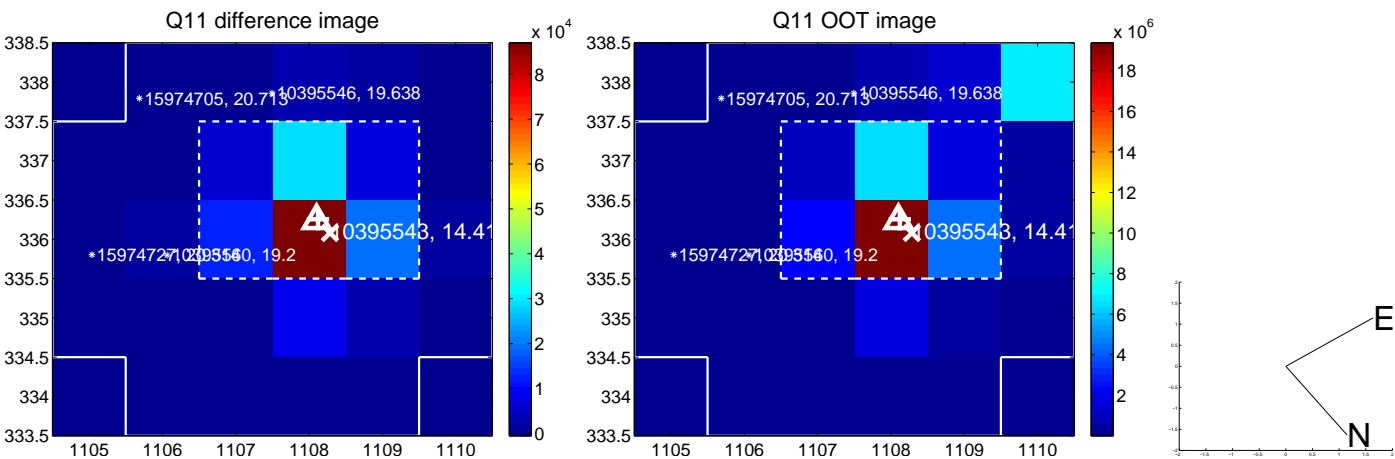
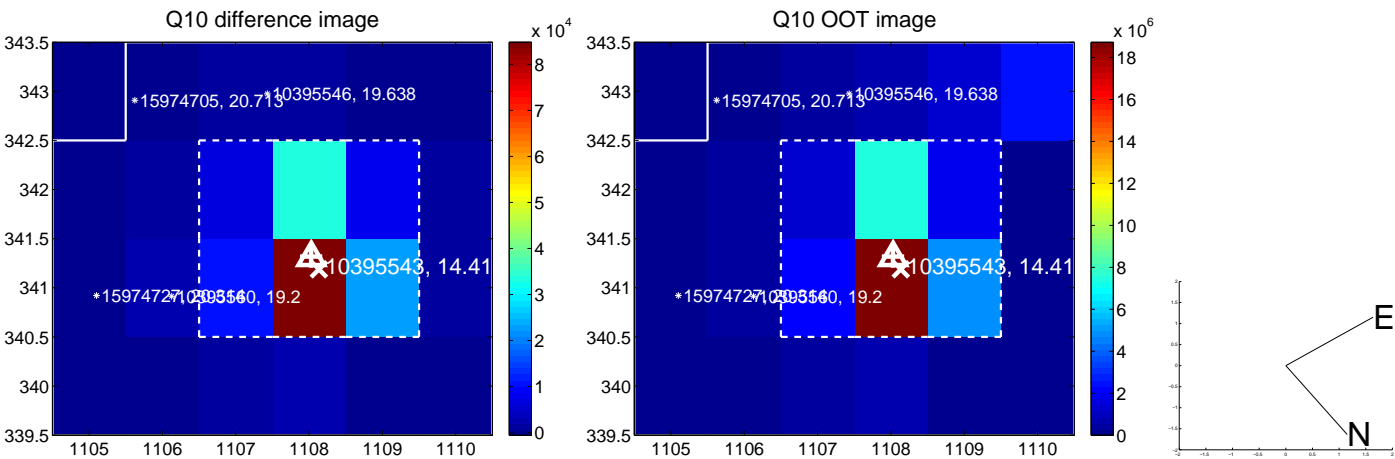
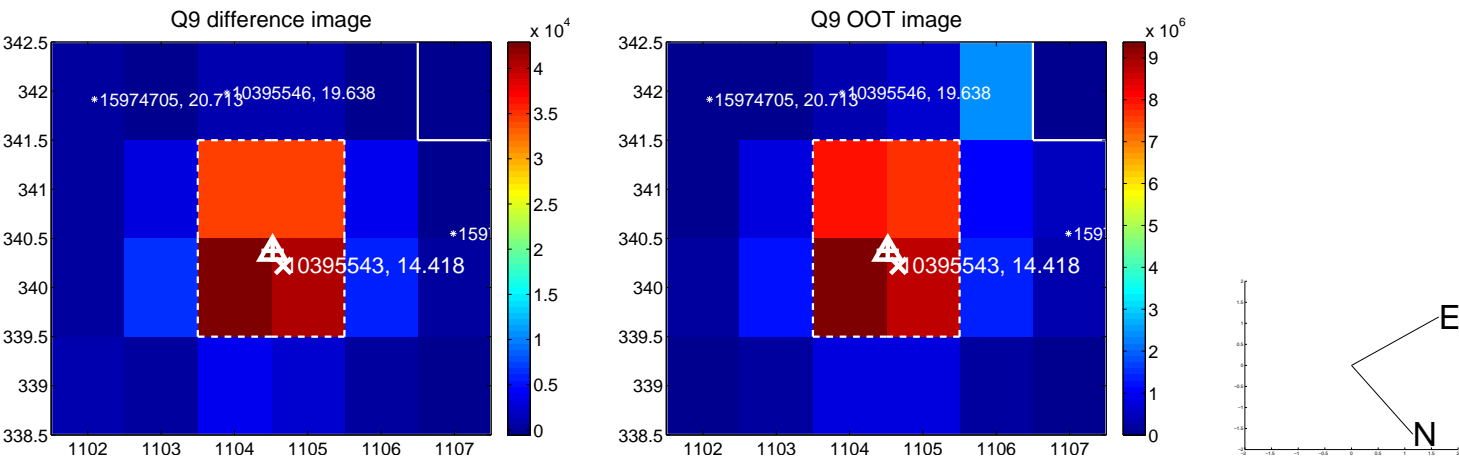




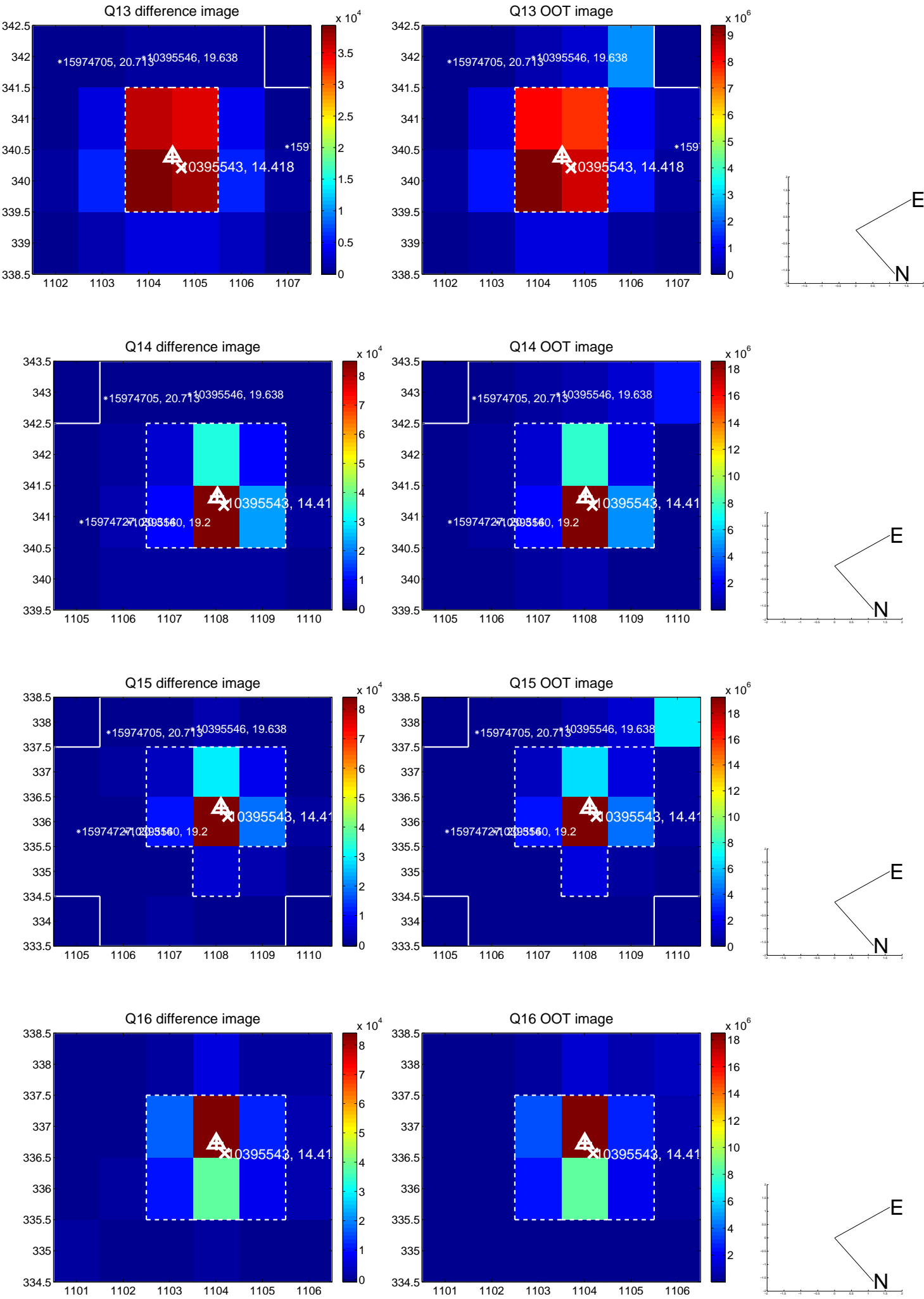
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



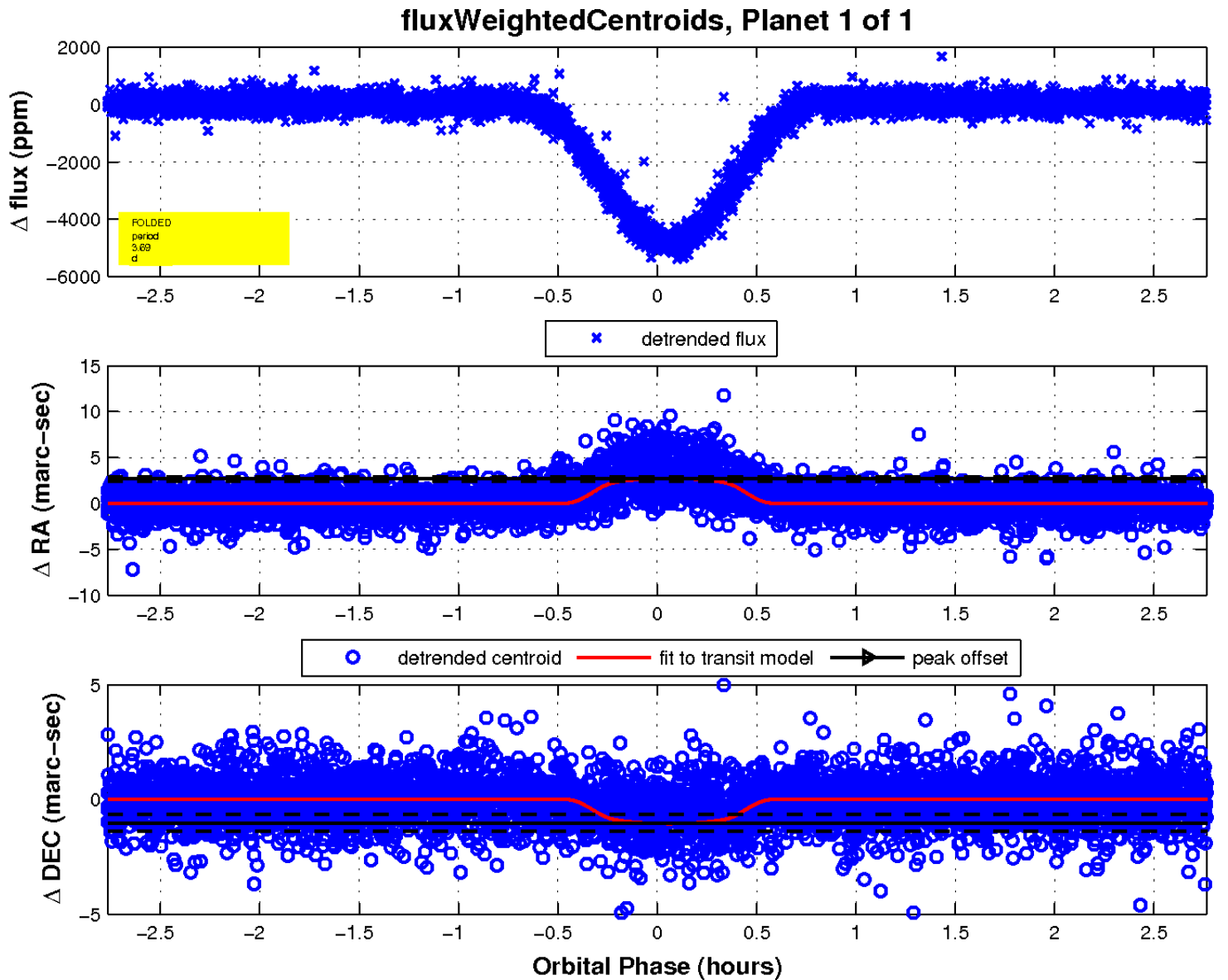
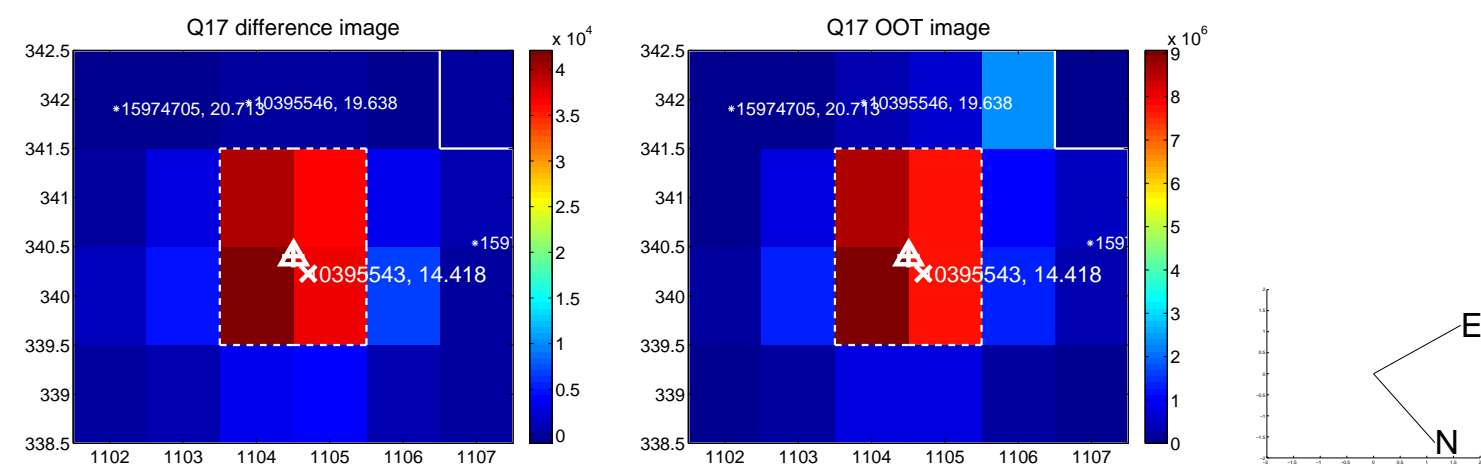
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

