

# KIC 011074541

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011074541-01	OBS	0345.01	29.885002	143.305870	1267.9	4.639	106.2	102.4	0.75	4883	2.88	9.97

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011074541-01	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.

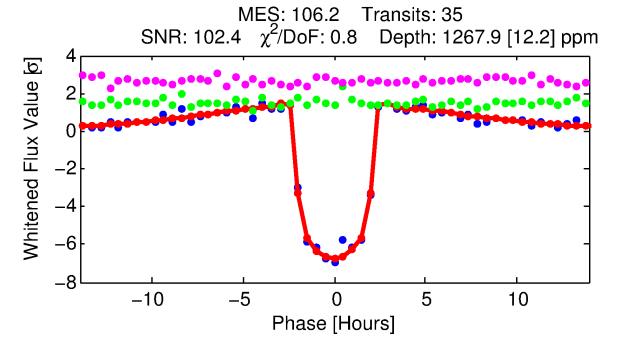
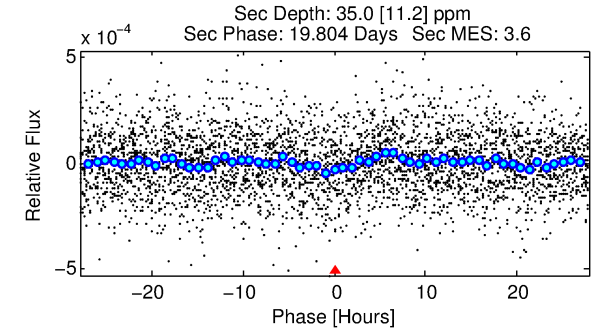
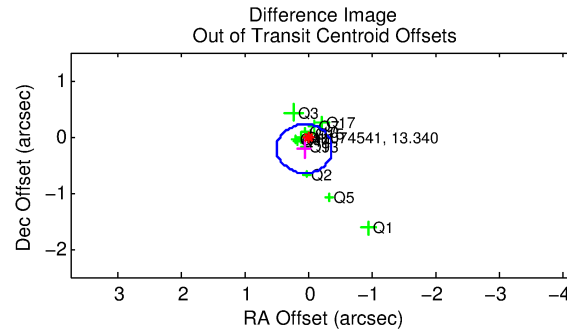
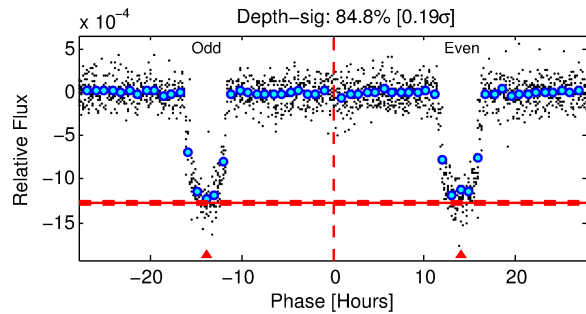
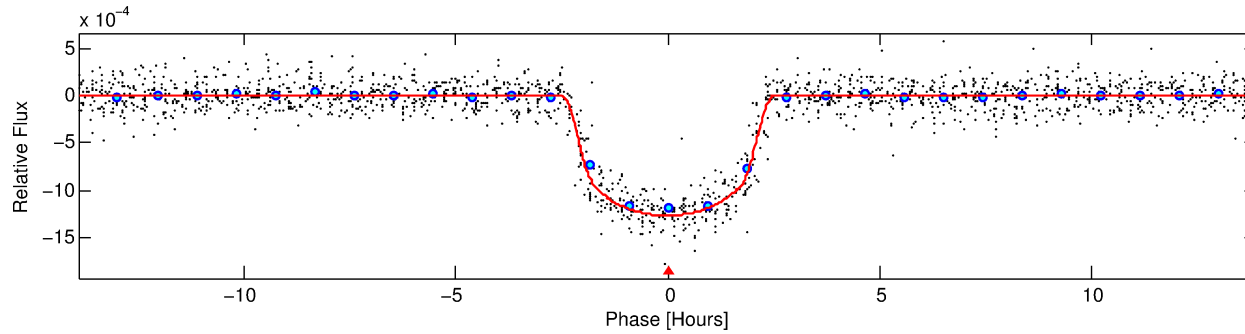
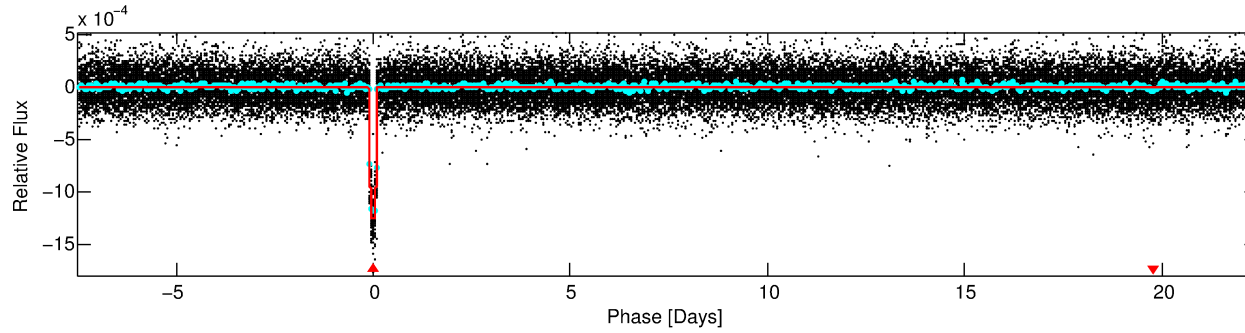
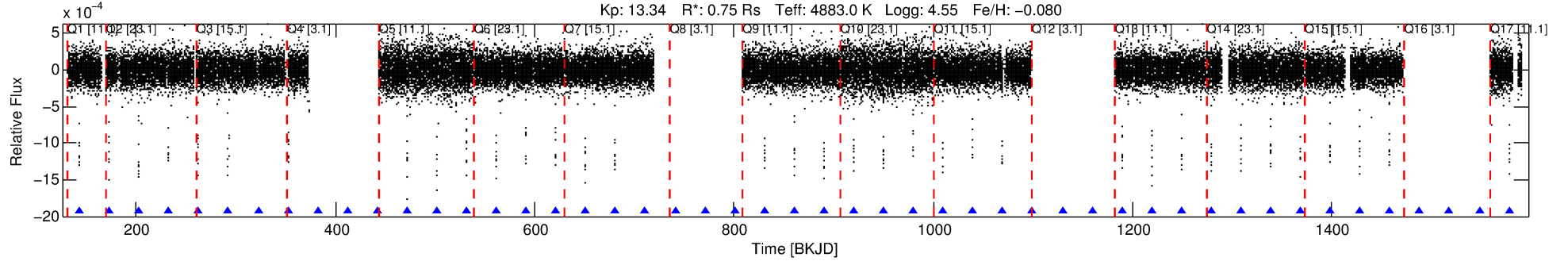
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011074541-01

No Significant Match Found

# DV One-Page Summary

KIC: 11074541 Candidate: 1 of 1 Period: 29.885 d  
KOI: K00345.01 Corr: 0.990



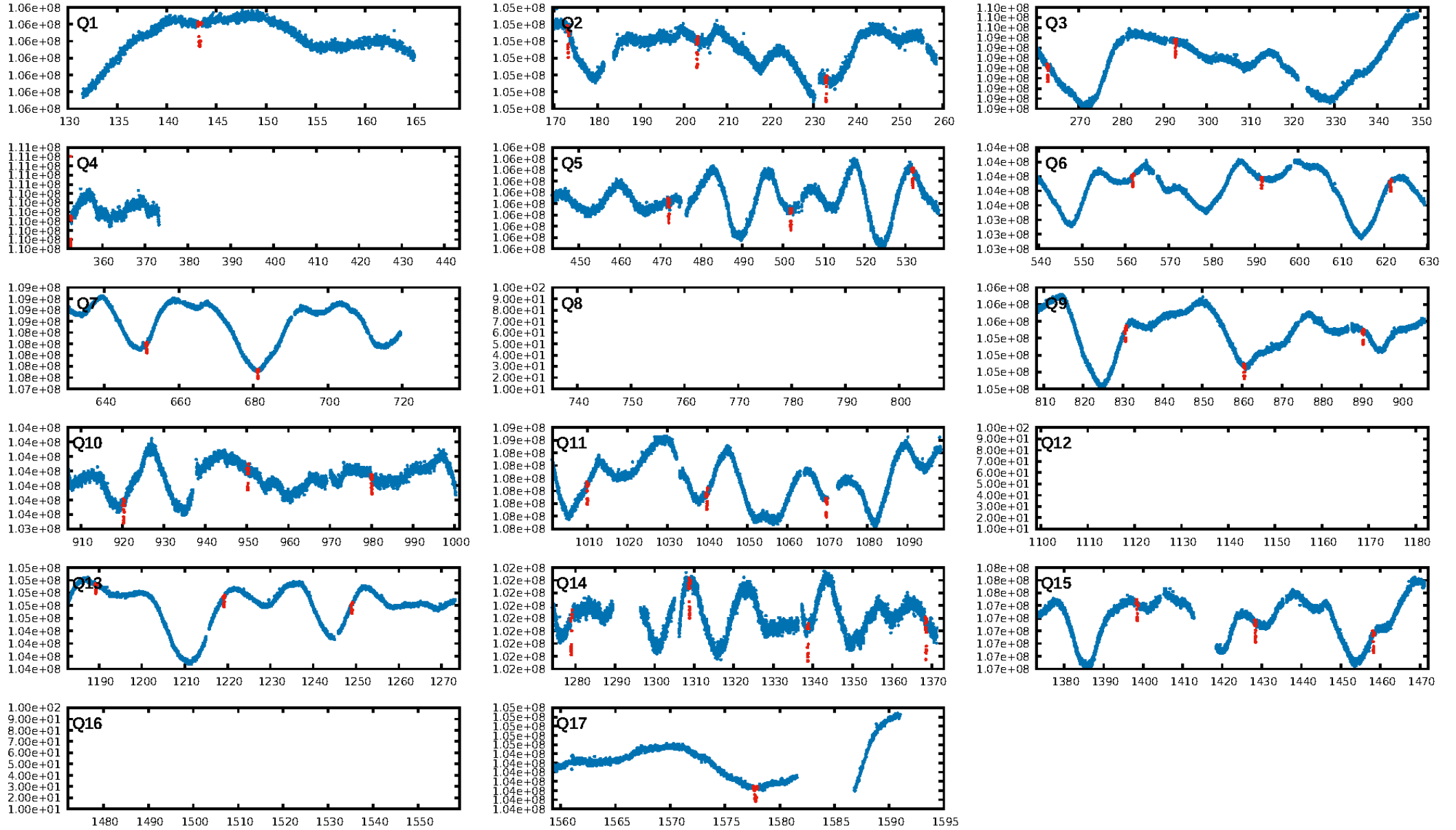
## DV Fit Results:

Period = 29.88500 [0.00003] d  
Epoch = 143.3059 [0.0008] BKJD  
Rp/R\* = 0.0353 [0.0021]  
a/R\* = 36.11 [7.19]  
b = 0.73 [0.13]  
Seff = 9.97 [1.29]  
Teq = 453 [15] K  
Rp = 2.88 [0.26] Re  
a = 0.1693 [0.0109] AU  
Ag = 66.43 [23.74] [2.76 $\sigma$ ]  
Teffp = 2000 [176] K [8.77 $\sigma$ ]

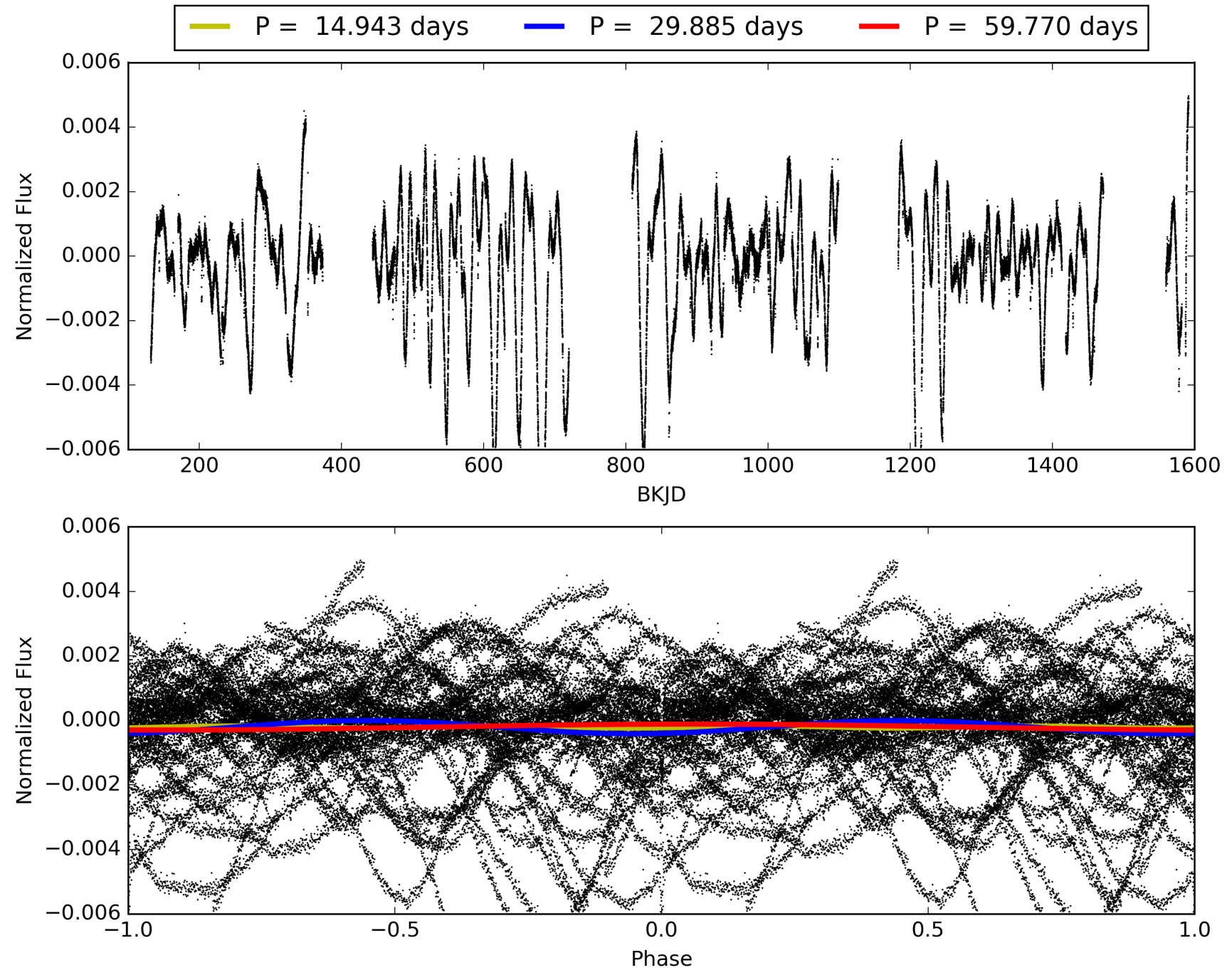
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 51.6%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [32/32]  
GhostDiagnostic-chr: 6.402  
Centroid-sig: 20.8%  
Centroid-so: 0.198 arcsec [2.13 $\sigma$ ]  
OotOffset-rm: 0.227 arcsec [1.57 $\sigma$ ]  
KicOffset-rm: 0.371 arcsec [2.08 $\sigma$ ]  
OotOffset-st: 4/4/0/5 [13]  
KicOffset-st: 4/4/0/5 [13]  
DiffImageQuality-fgm: 1.00 [13/13]  
DiffImageOverlap-fno: 1.00 [13/13]

# TCE 011074541-01, PDC Light Curves

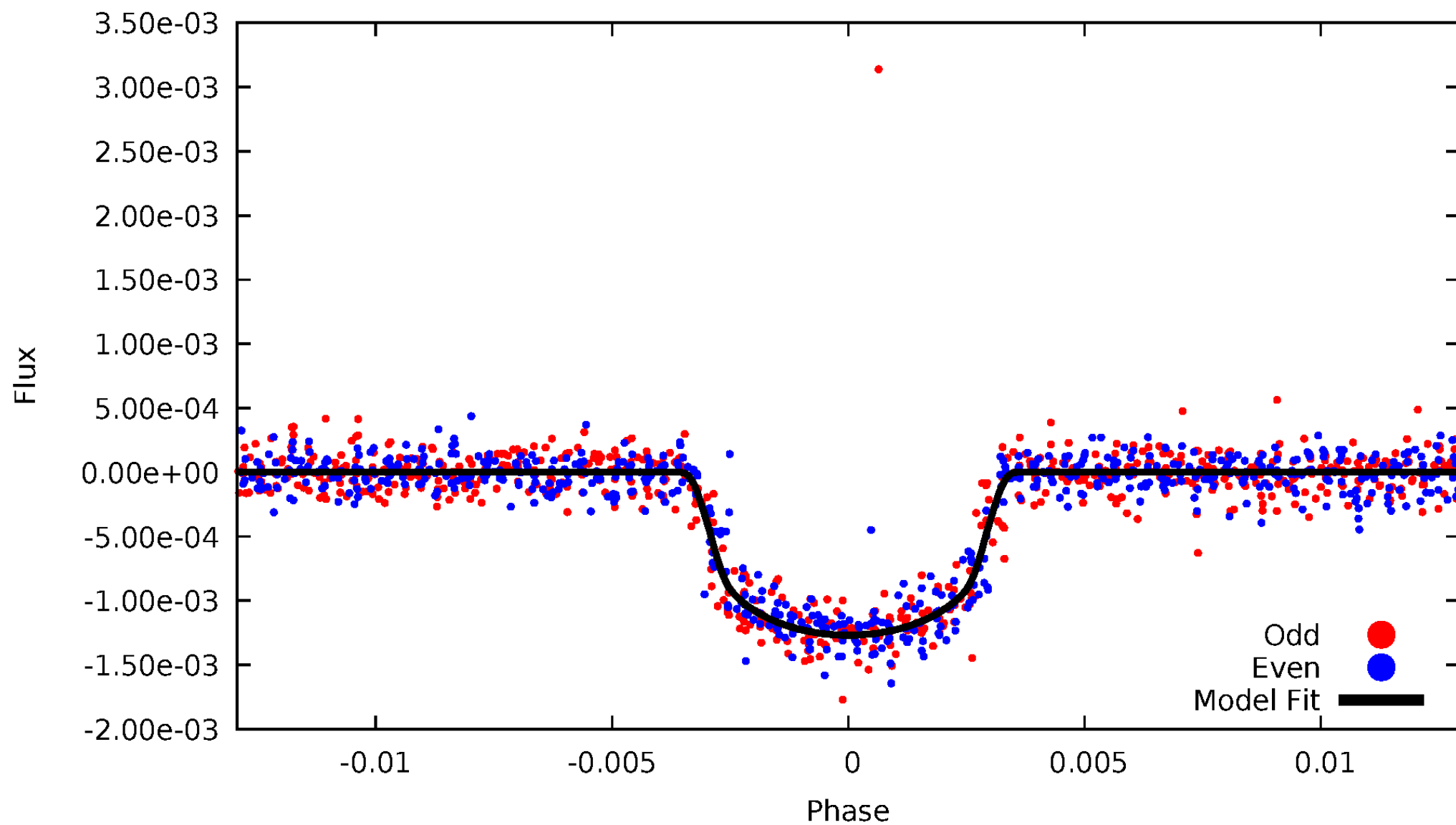


# TCE 011074541-01



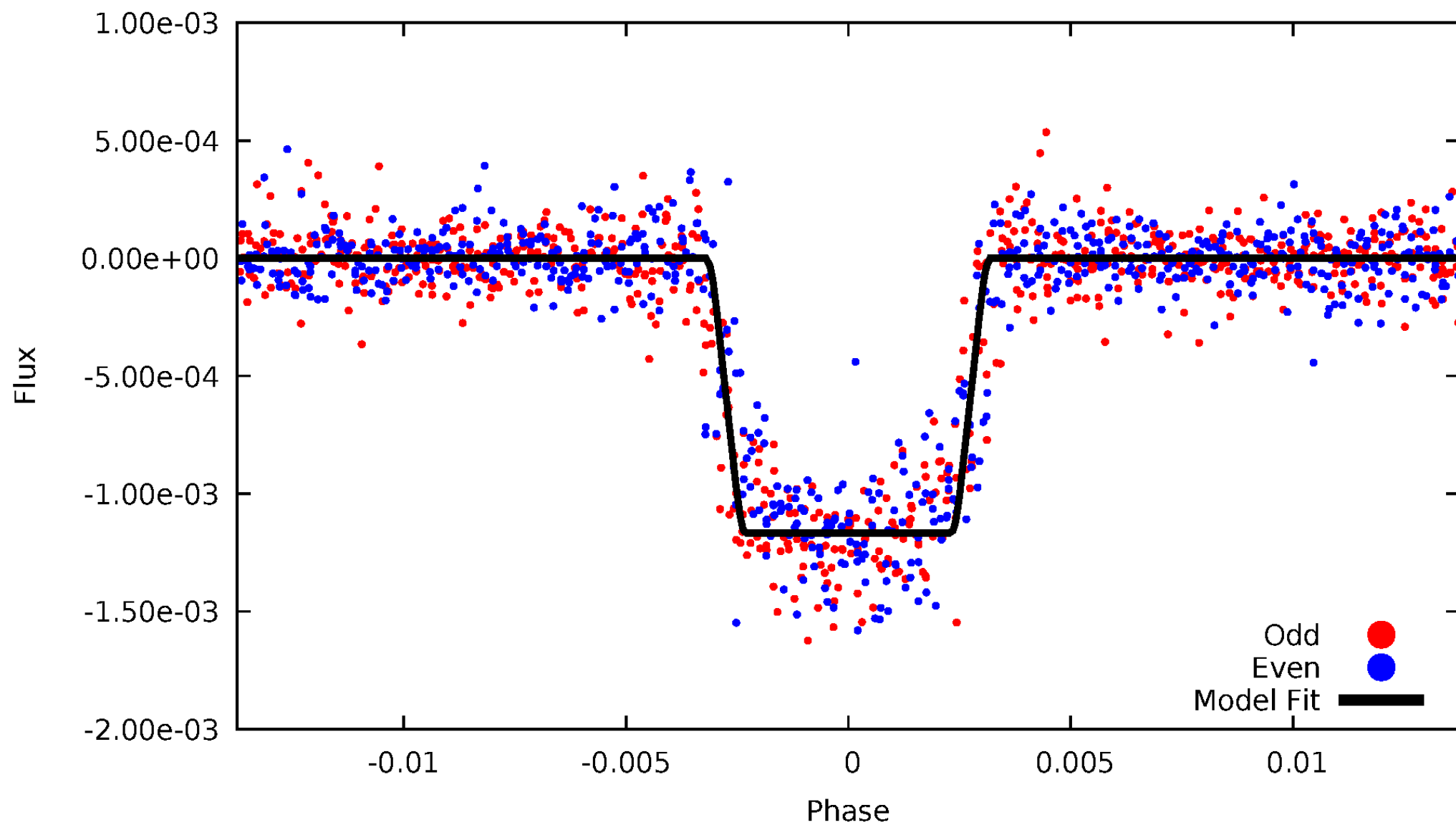
# DV Odd/Even

TCE 011074541-01



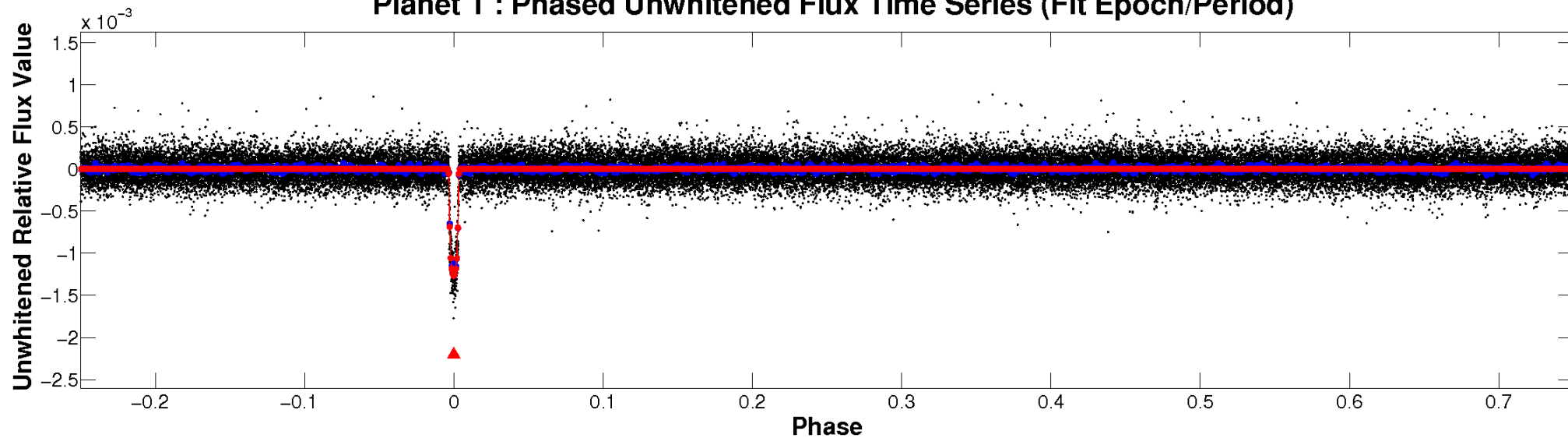
# ALT Odd/Even

TCE 011074541-01

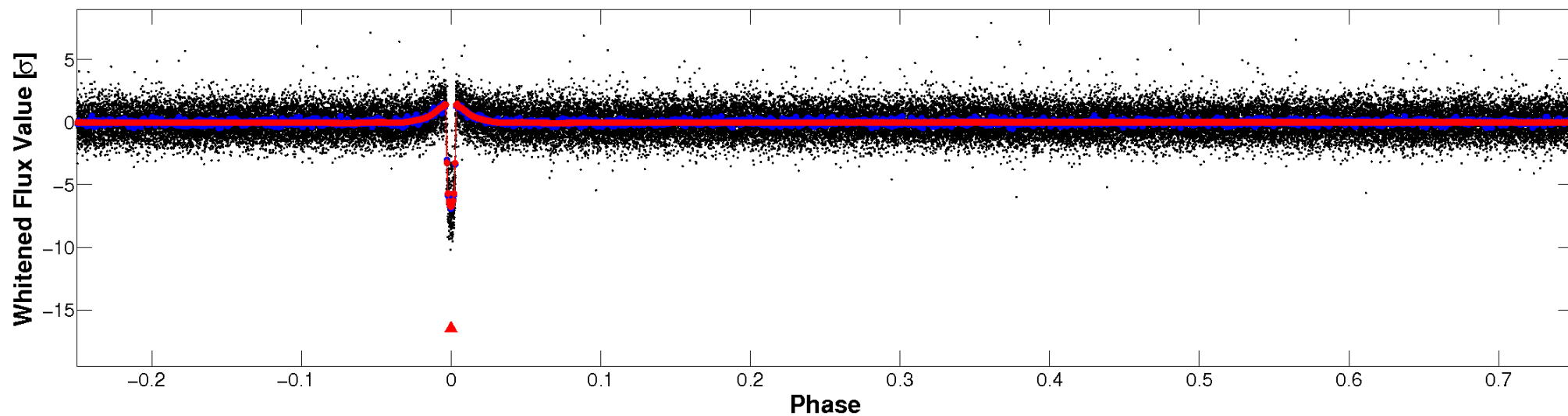


# Non-Whitened Vs. Whitened Light Curve

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

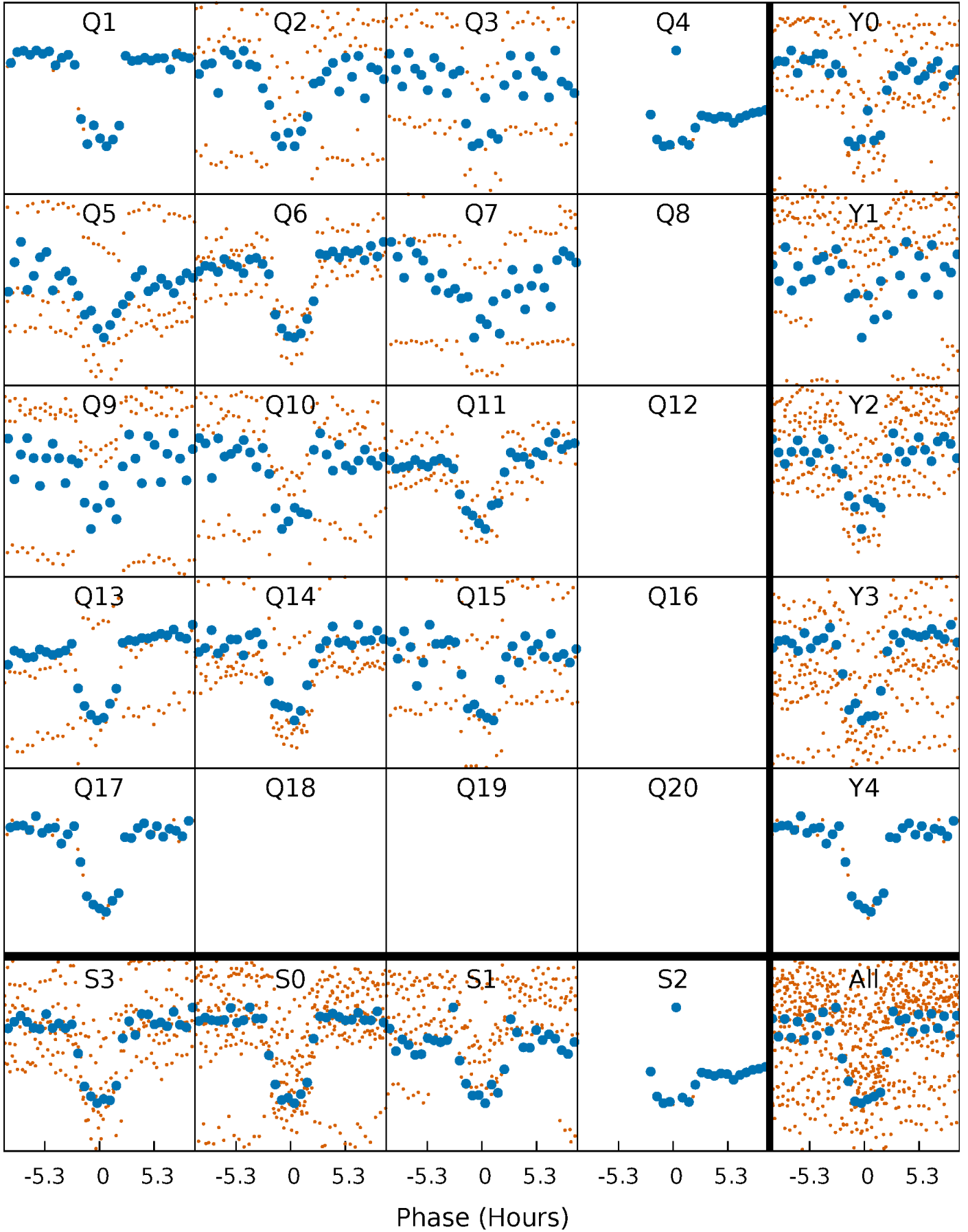


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

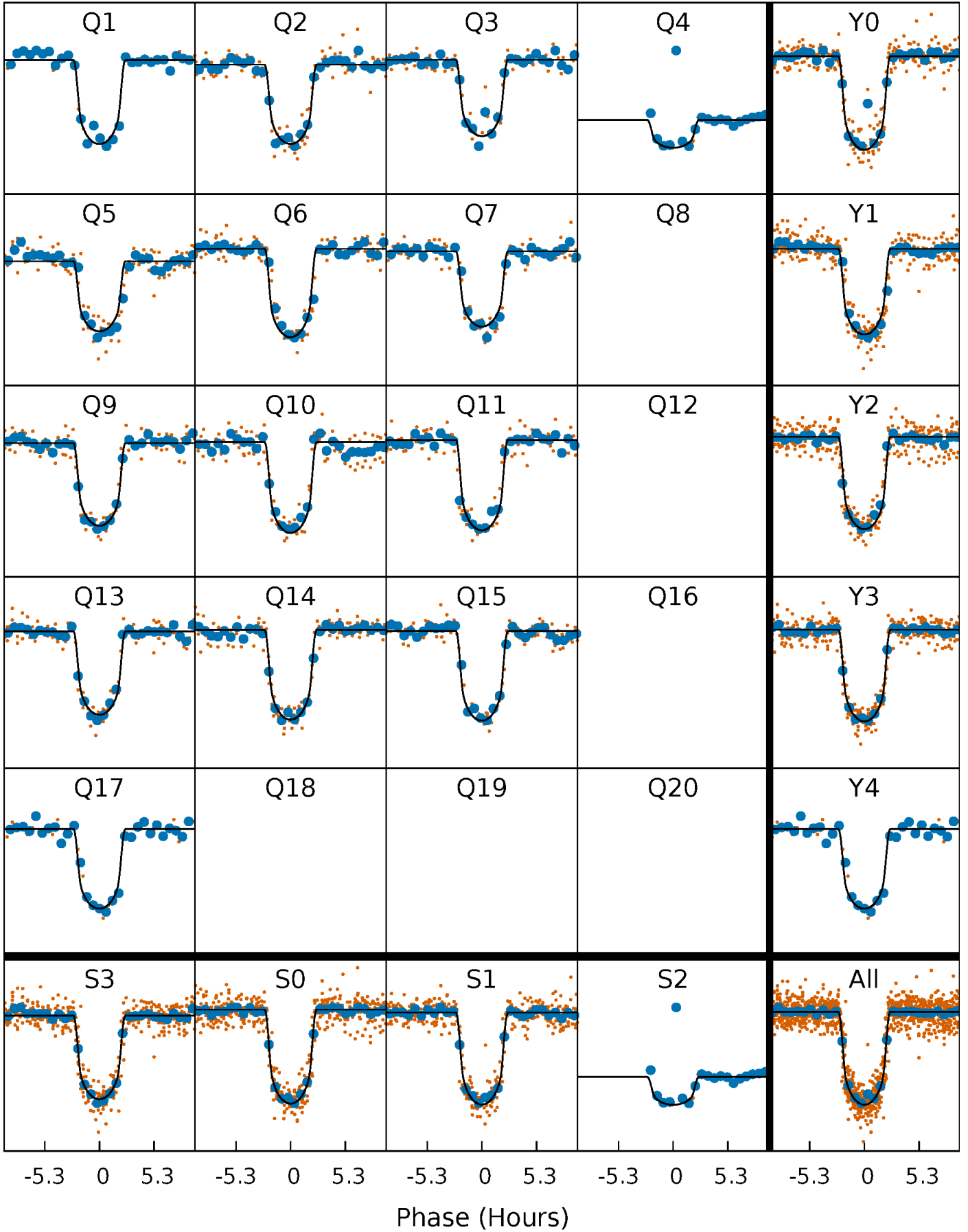
TCE 011074541-01 P= 29.885002 Days  $T_0=143.305870$  (BKJD)





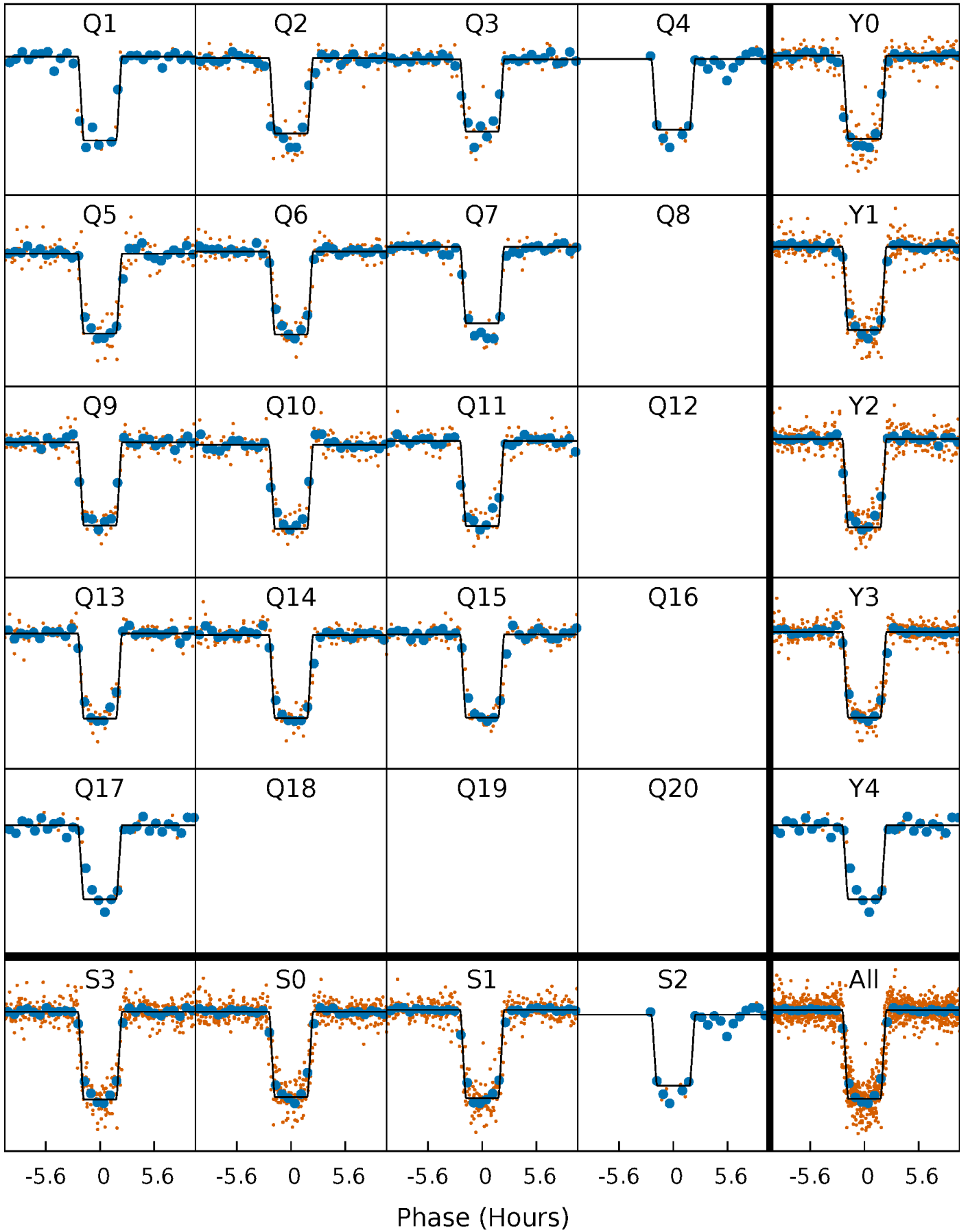
# DV Quarter-Phased Transit Curves

TCE 011074541-01 P= 29.885002 Days  $T_0=143.305870$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

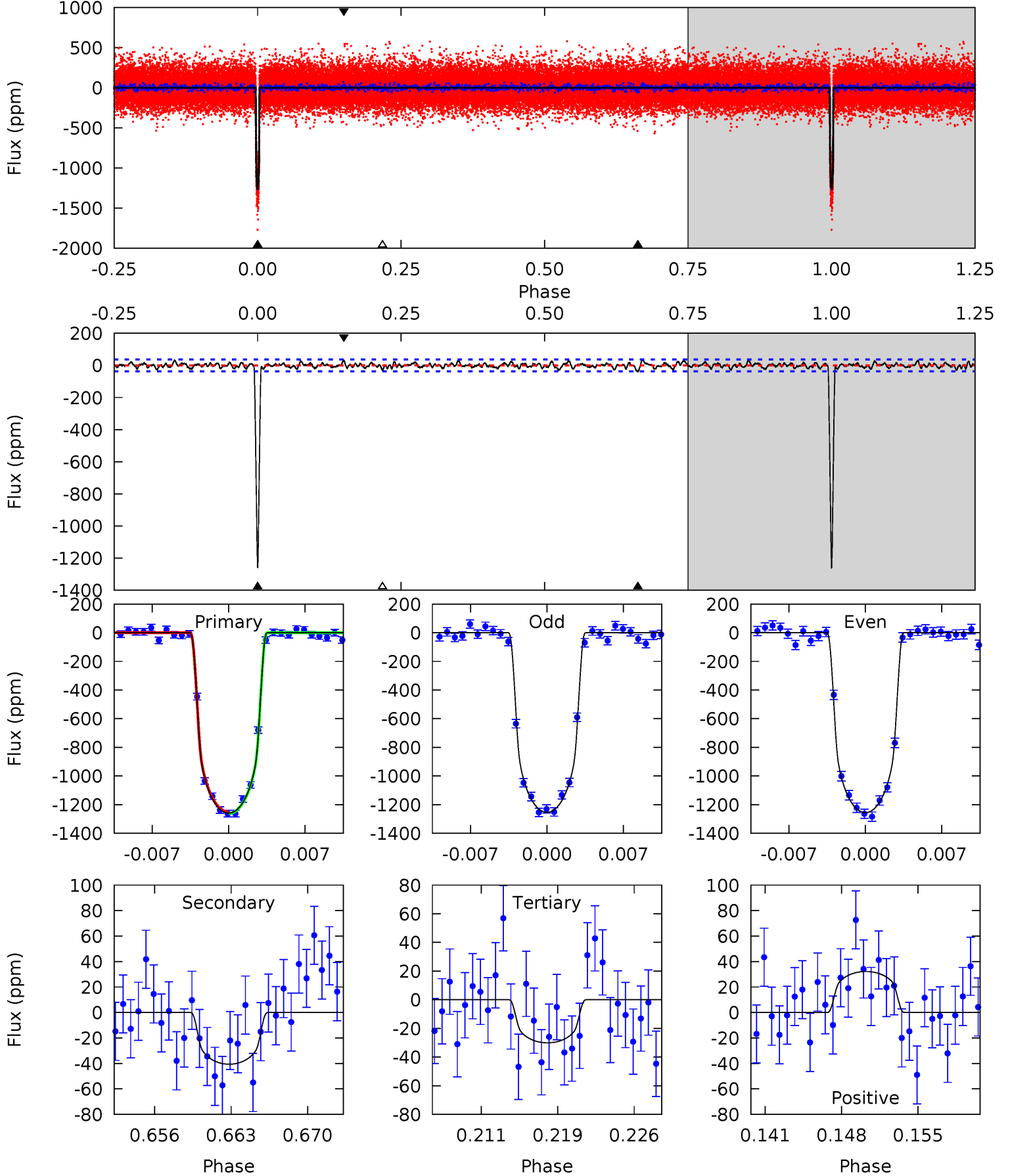
TCE 011074541-01 P= 29.884547 Days  $T_0=143.317244$  (BKJD)



# DV Model-Shift Uniqueness Test

011074541-01,  $P = 29.885002$  Days,  $E = 113.420868$  Days

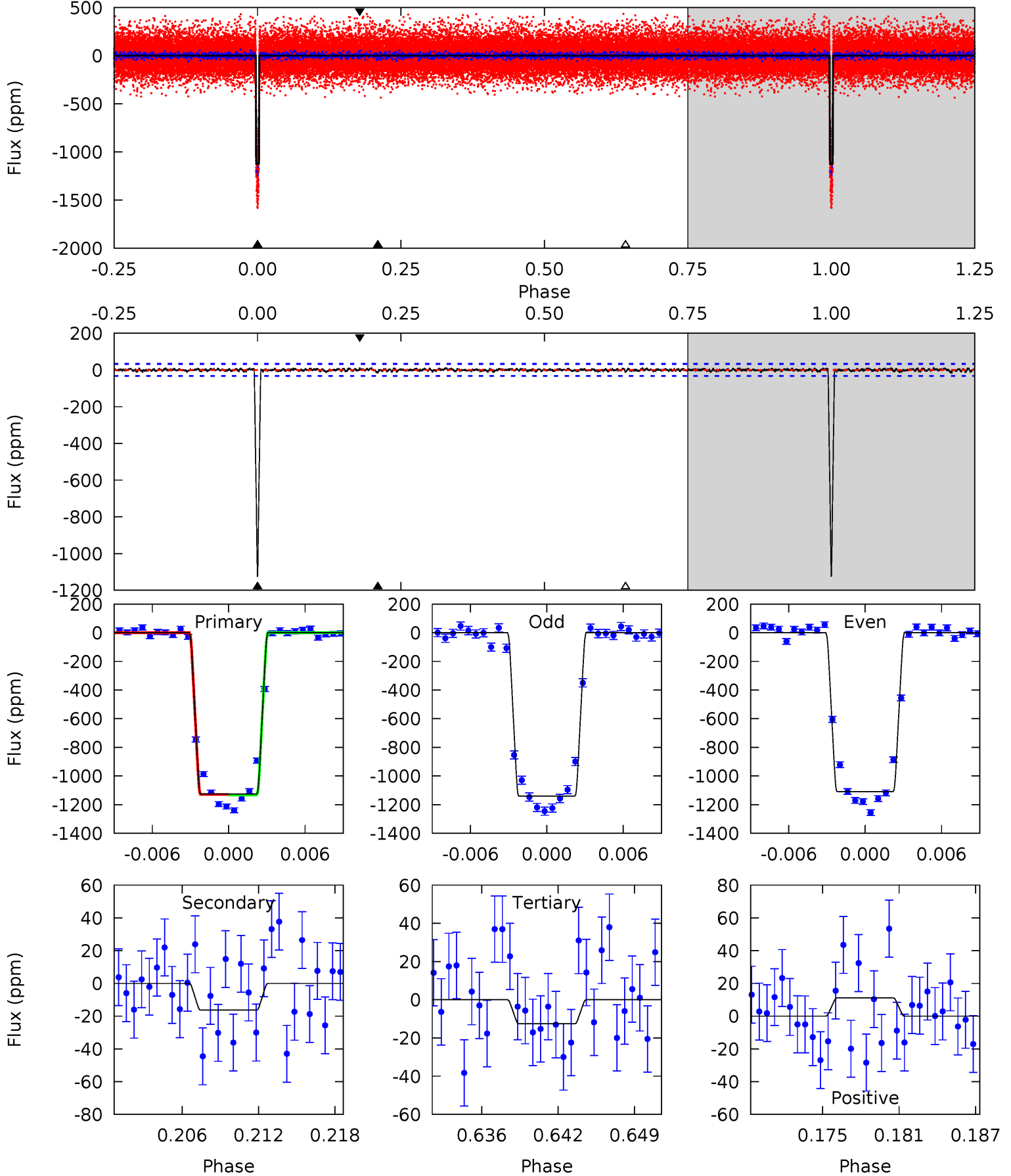
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
171.7	5.54	4.10	4.39	5.09	2.69	1.50	167.6	167.3	1.44	1.15	0.15	0.98	0.03	0.68



# Alt Model-Shift Uniqueness Test

011074541-01, P = 29.884547 Days, E = 113.432697 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
176.7	2.56	1.97	1.75	5.12	2.74	0.60	174.7	174.9	0.59	0.81	2.49	1.02	0.01	0.28



### Stellar Parameters For KIC 011074541

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4883^{+97}_{-97}$	$4.549^{+0.060}_{-0.020}$	$-0.080^{+0.150}_{-0.150}$	$0.749^{+0.033}_{-0.051}$	$0.725^{+0.052}_{-0.030}$	$2.431^{+0.566}_{-0.208}$
	+2%/-2%	+1%/-0%	+188%/-188%	+4%/-7%	+7%/-4%	+23%/-9%
Source	SPE3	SPE3	SPE3	DSEP		

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

### Secondary Eclipse Parameters for KIC 011074541-01 / KOI 0345.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-41 \pm 7$	$2.86^{+0.21}_{-0.19}$	$629^{+15}_{-15}$	$2783^{+86}_{-92}$	$79^{+19}_{-17}$
Alt.	$-16 \pm 6$	$2.77^{+0.19}_{-0.18}$	$629^{+15}_{-15}$	$2485^{+123}_{-137}$	$33^{+15}_{-13}$

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

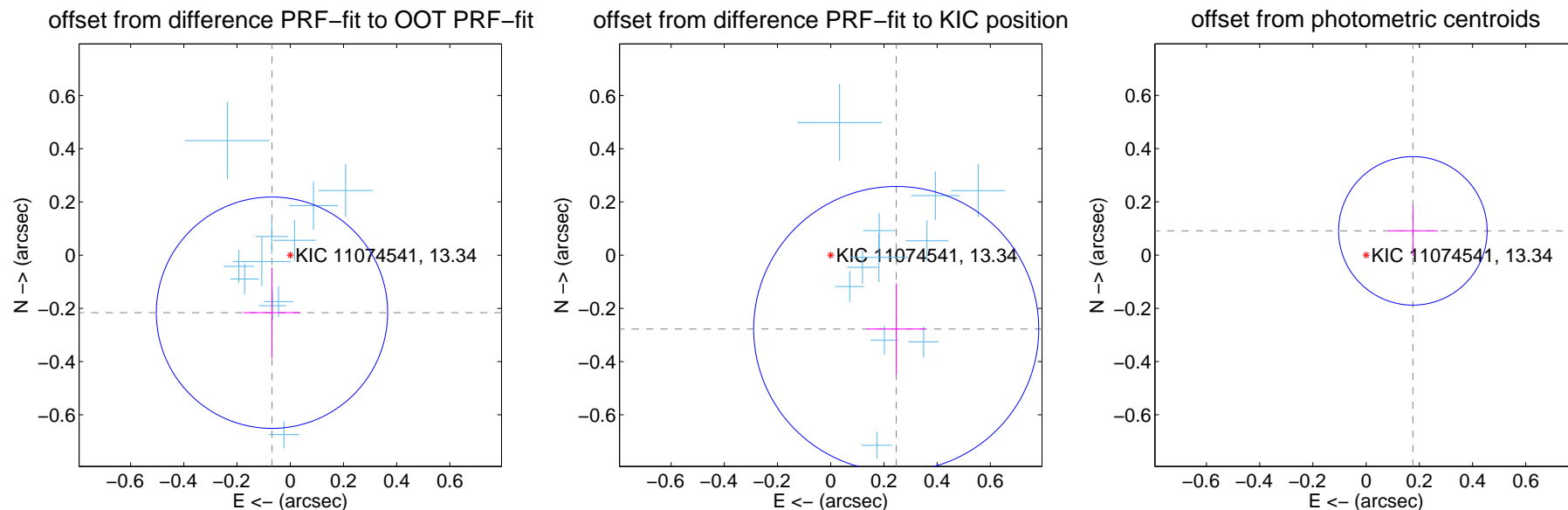
## DV Centroid Data

Supplemental centroid analysis for 011074541-01. Kepler magnitude: 13.34. Transit SNR 102.40

There are 13 quarters with good PRF difference image offsets

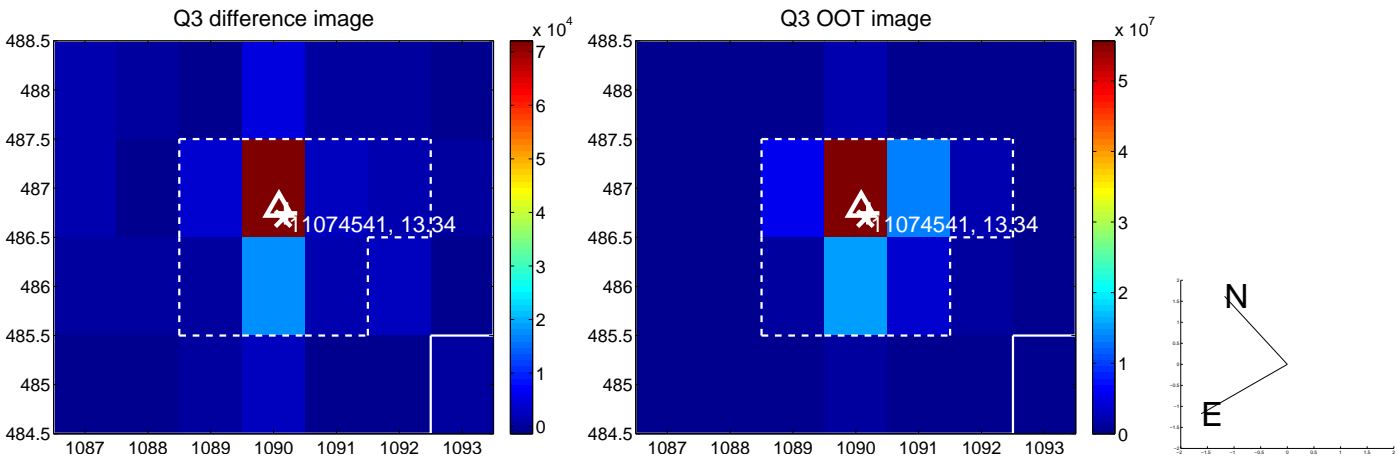
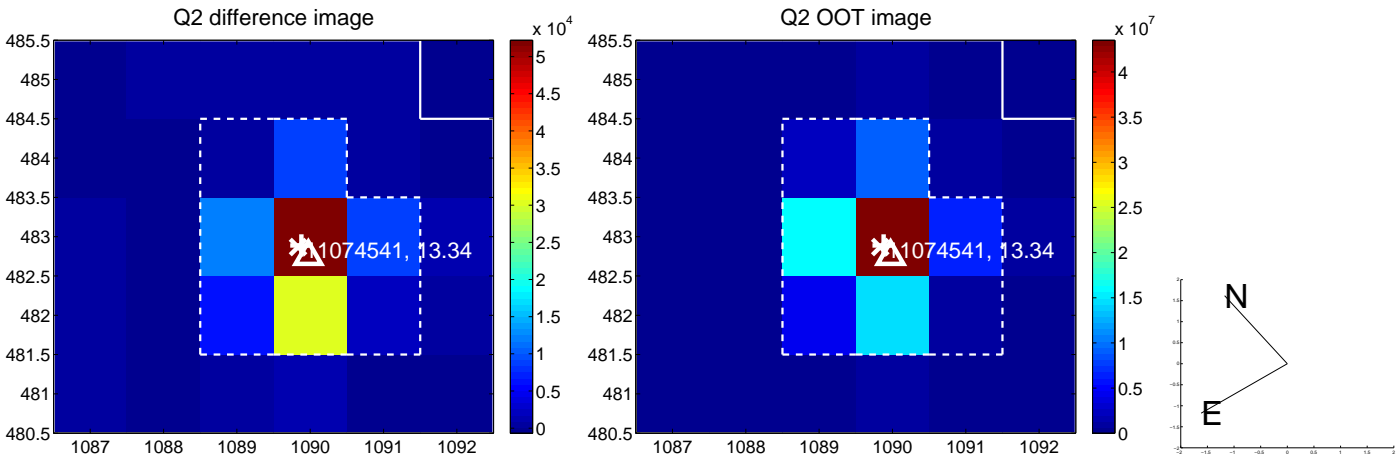
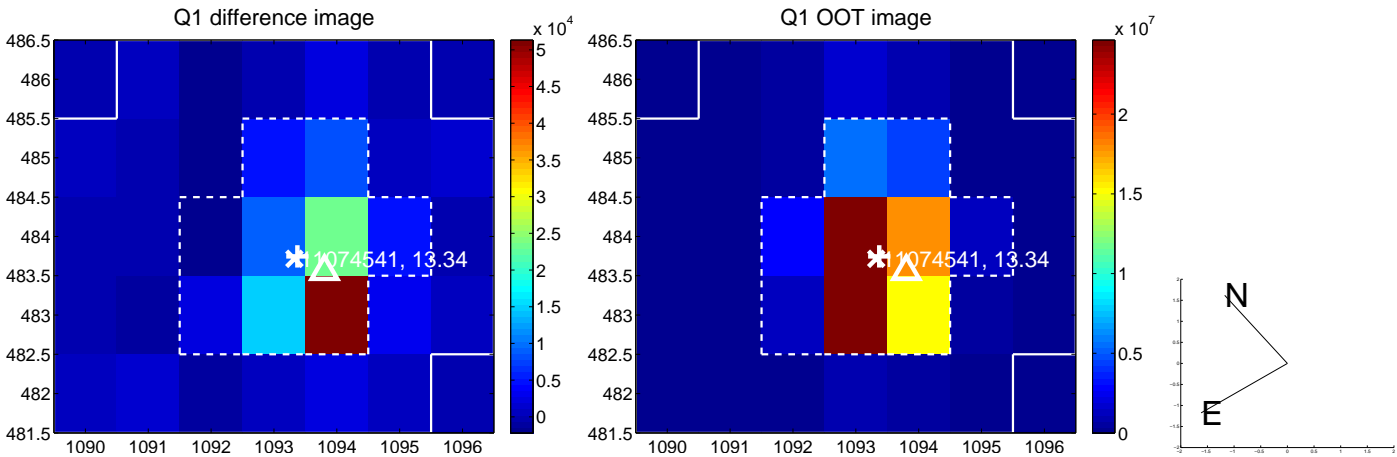
The direct PRF centroid is offset from the target star catalog position by about 0.35 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.227 \pm 0.145$	1.57	$0.069 \pm 0.107$	$-0.216 \pm 0.170$
PRF-fit source offset from KIC position	$0.371 \pm 0.179$	2.08	$-0.246 \pm 0.111$	$-0.278 \pm 0.171$
photometric centroid source offset	$0.20 \pm 0.09$	2.13	$-0.18 \pm 0.09$	$0.09 \pm 0.09$

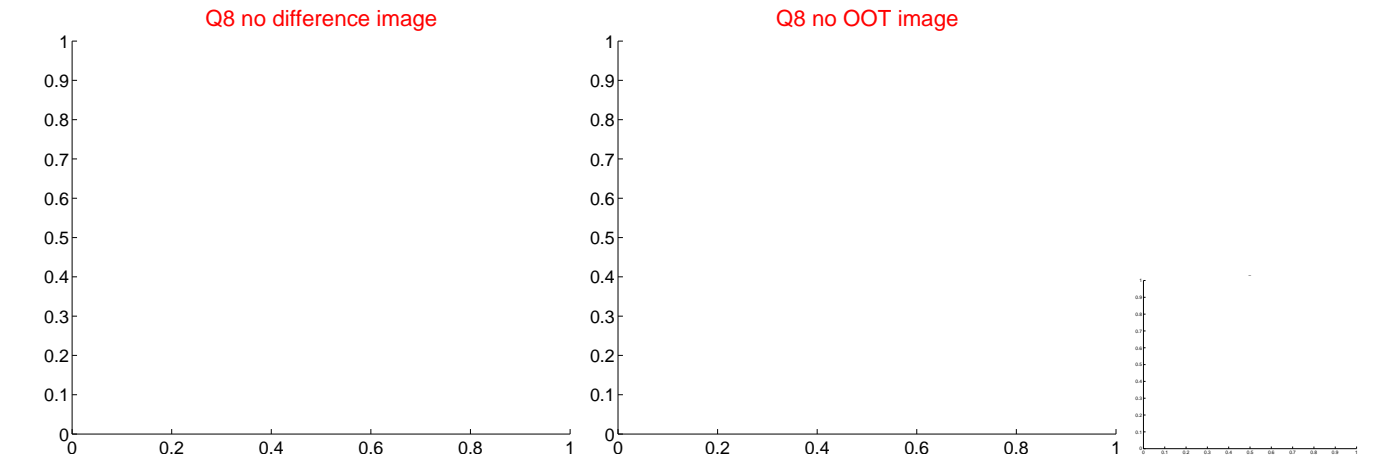
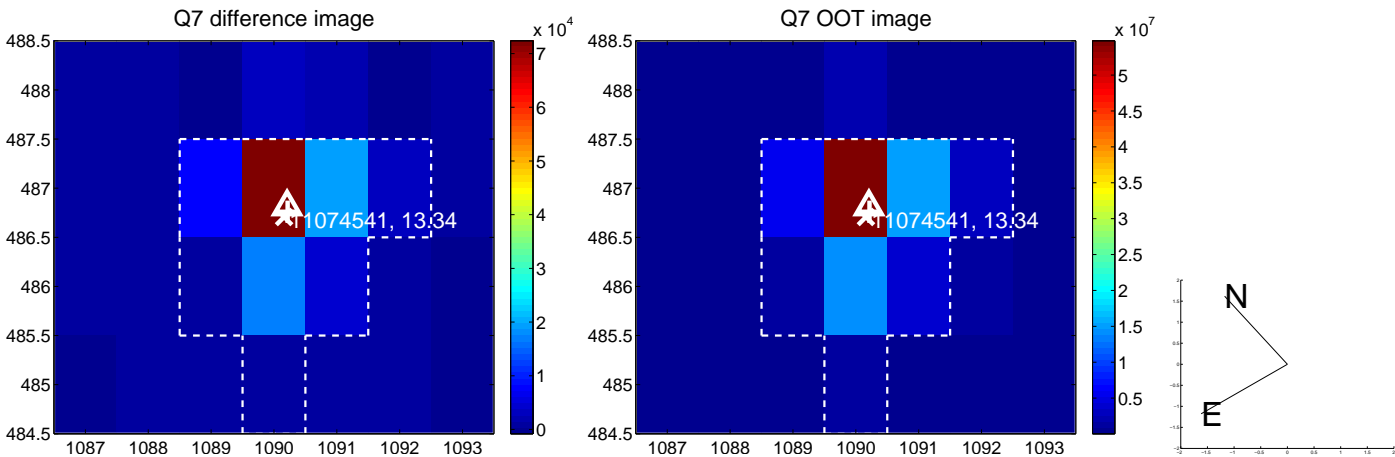
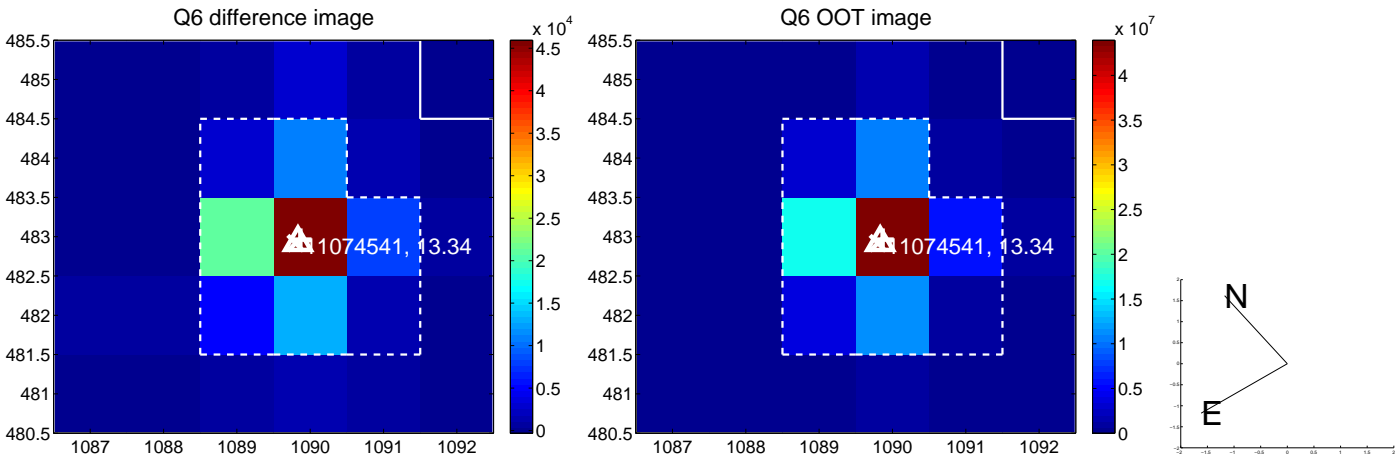
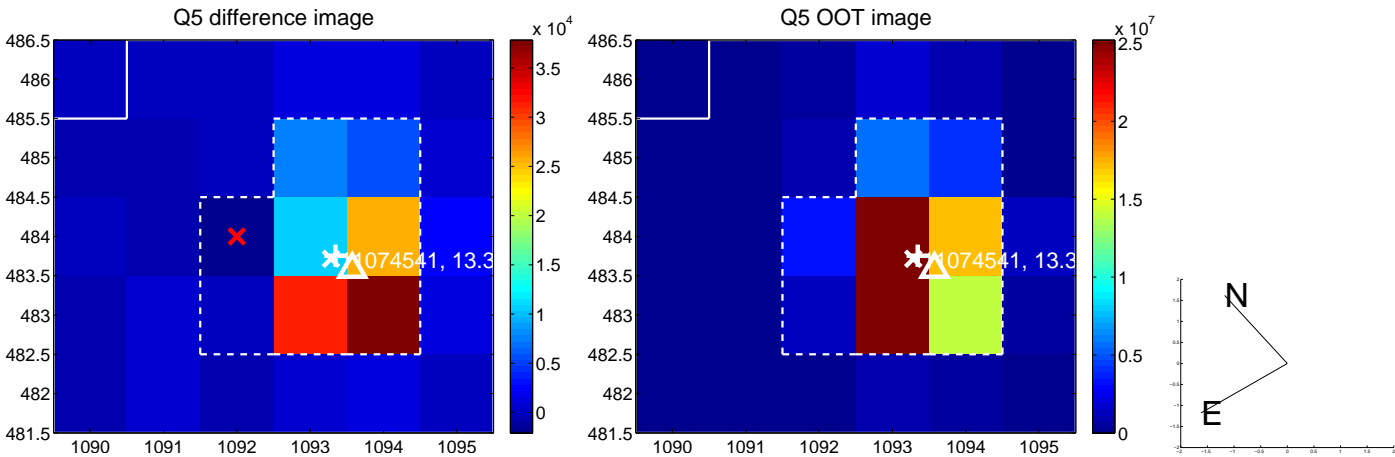


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

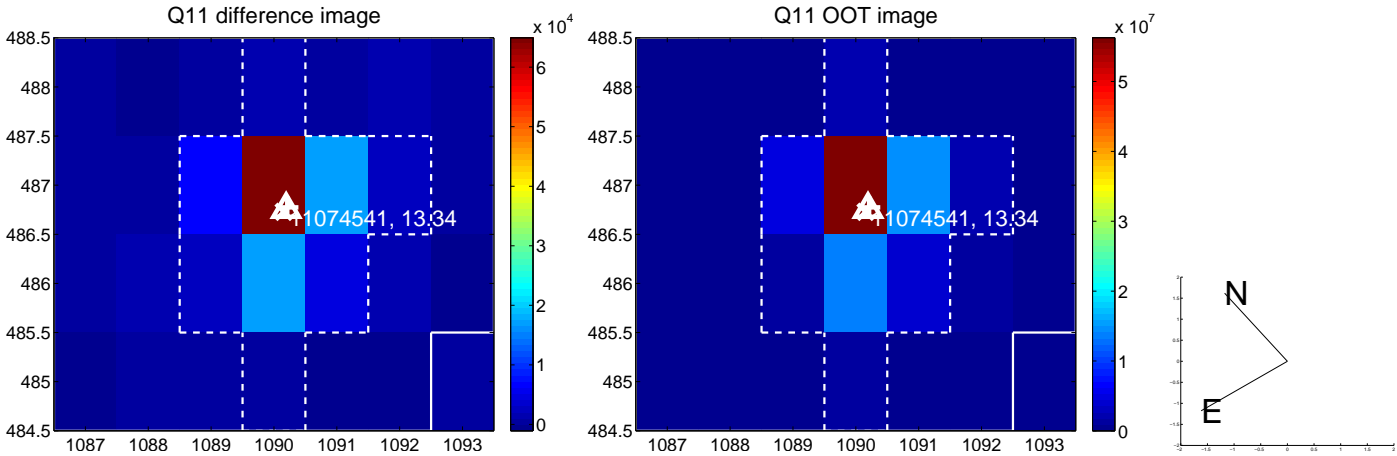
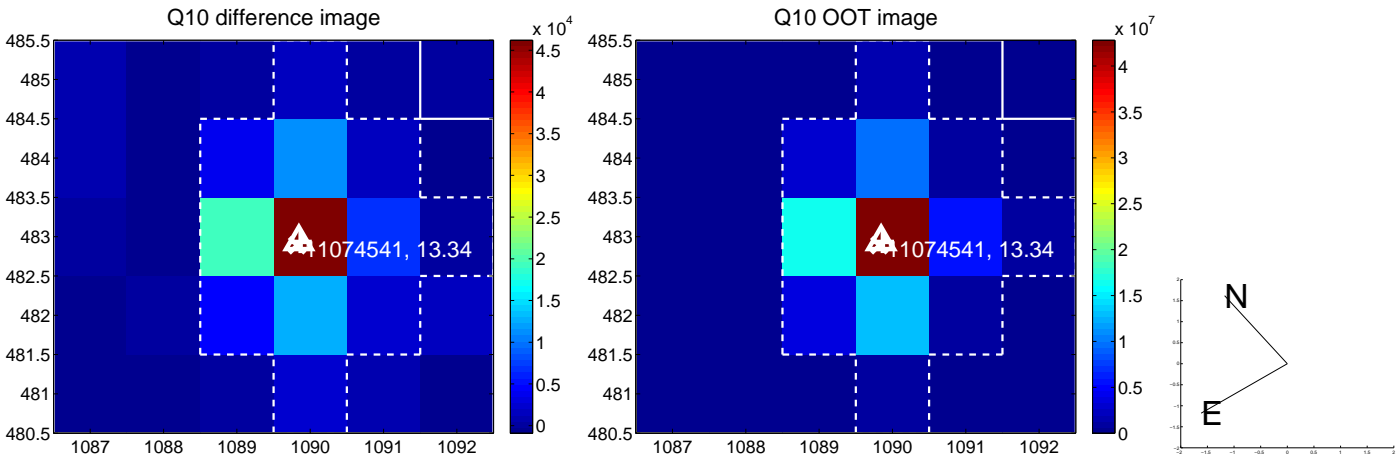
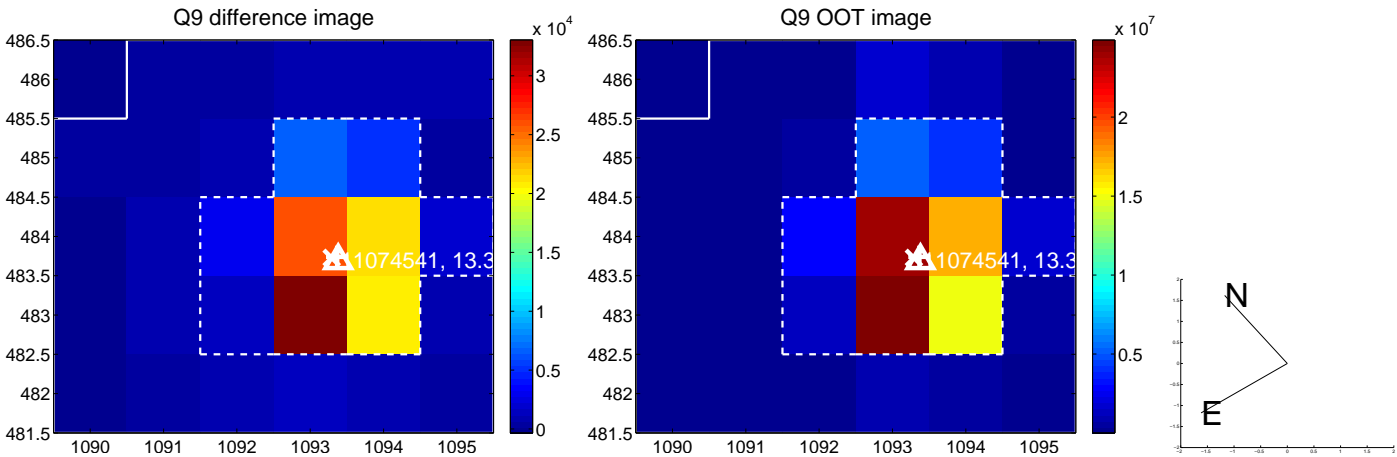


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

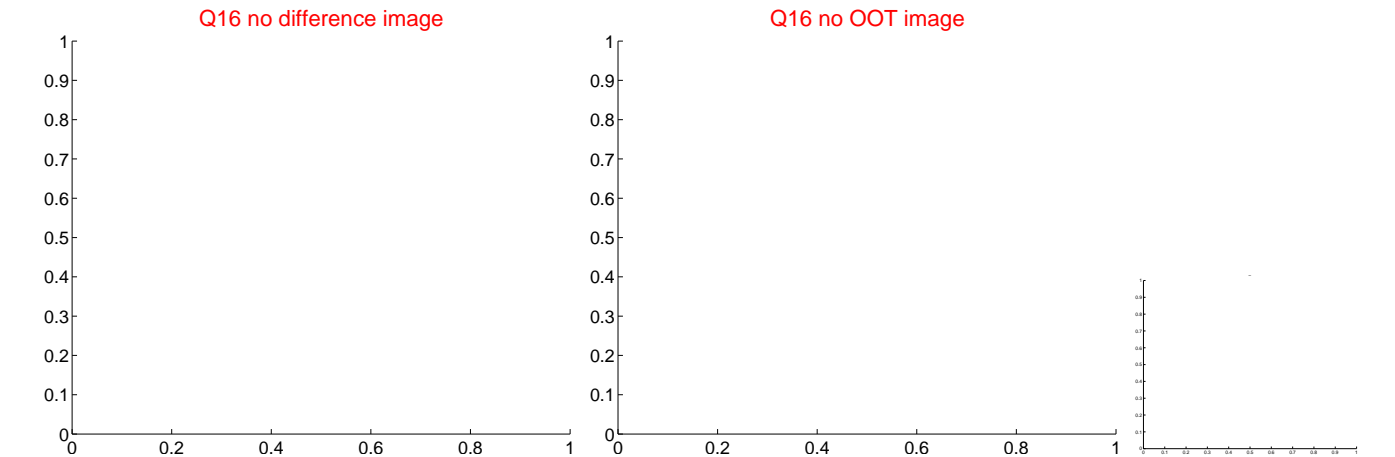
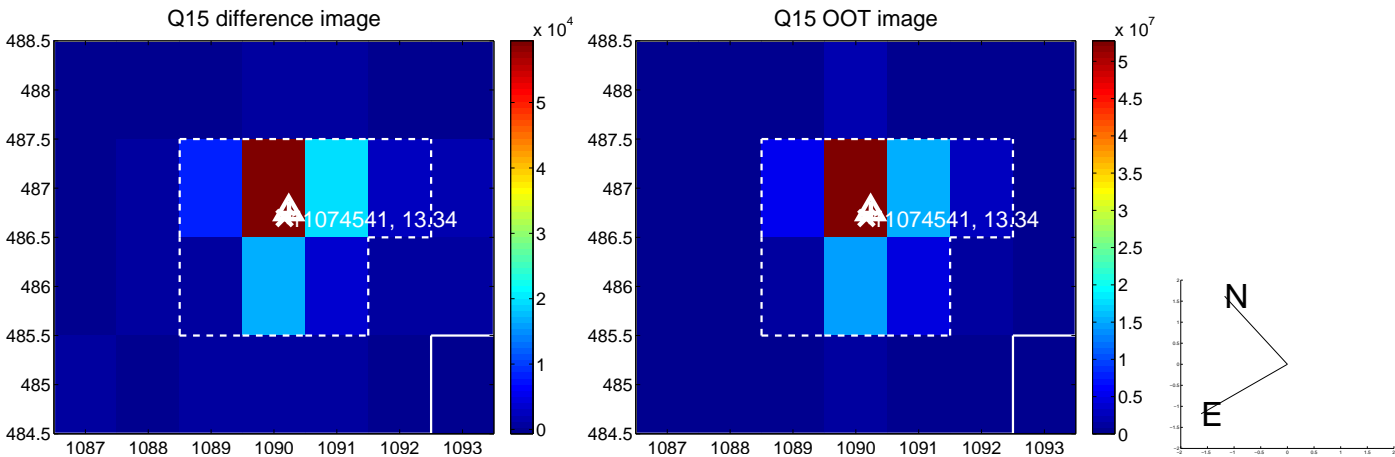
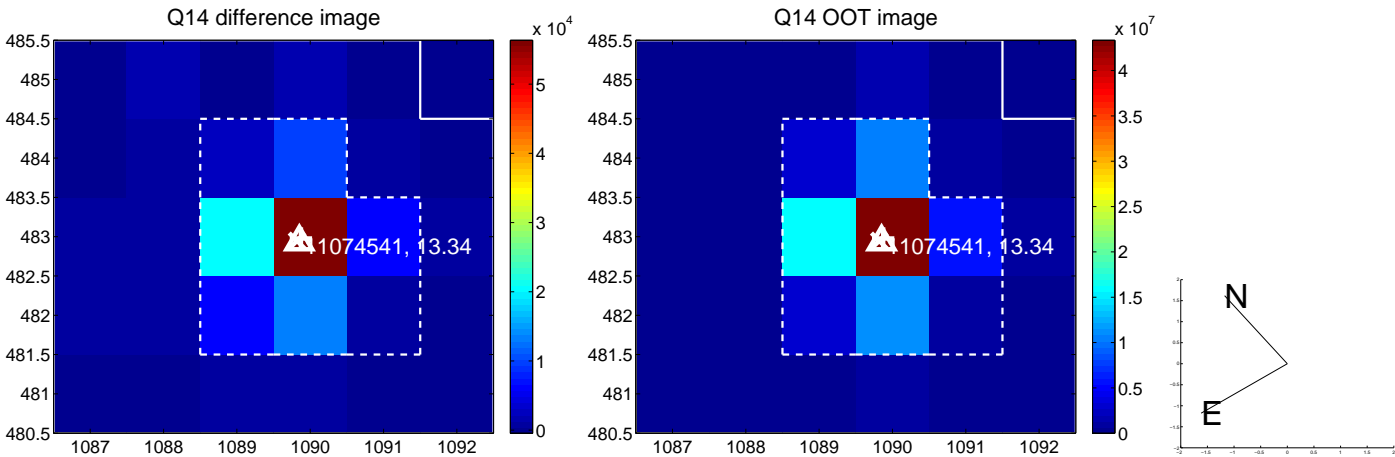
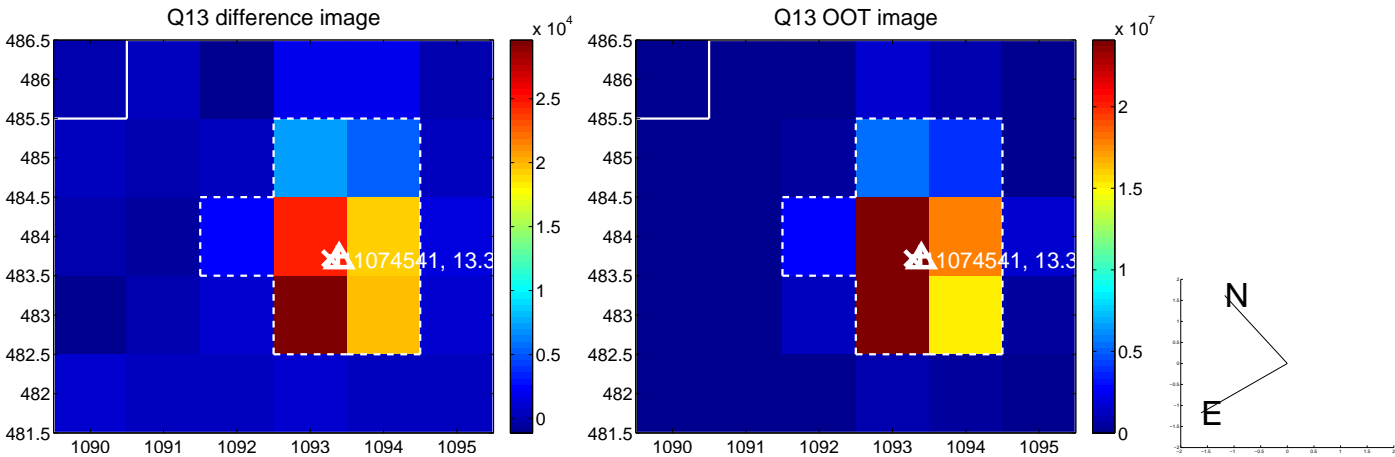




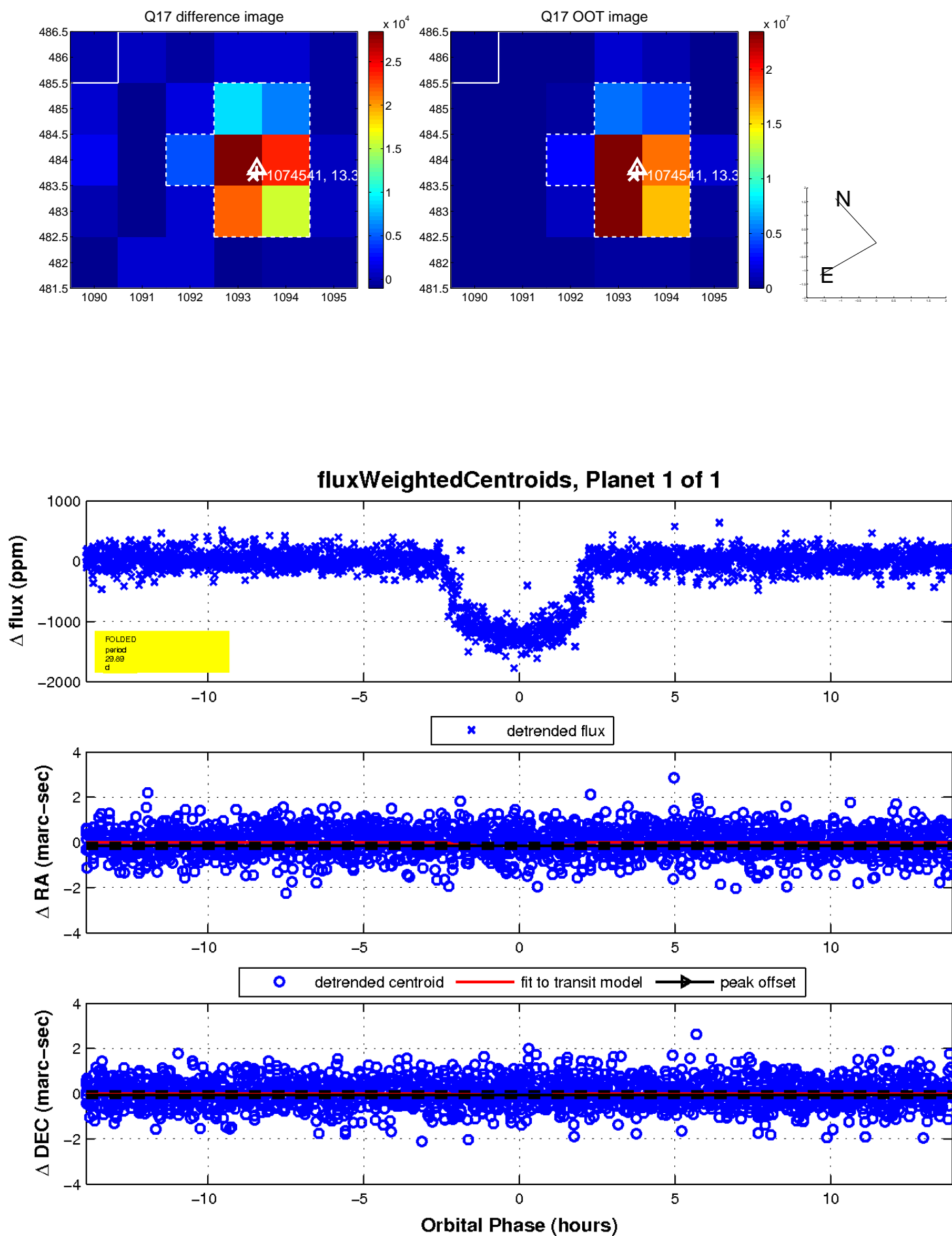
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

