

# KIC 010585749

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010585749-01	OBS	4563.01	54.332035	144.769722	159.4	11.120	9.5	9.8	1.22	5500	1.75	16.40

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010585749-01	OBS	PC	0.60	0	0	0	0	CENT_FEW_MEAS

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

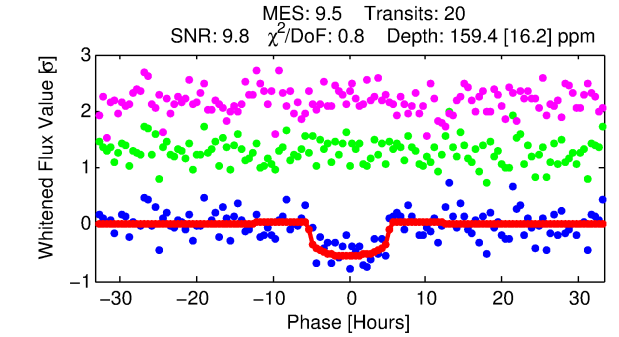
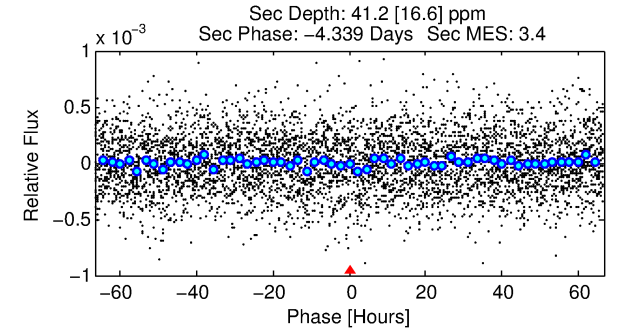
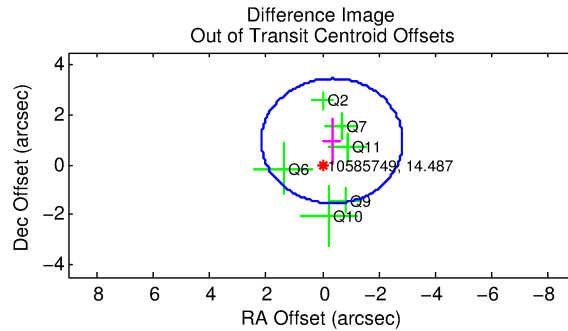
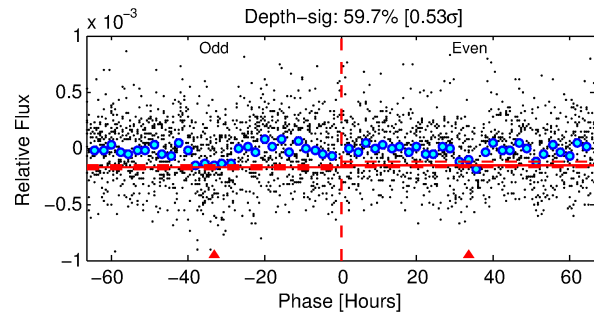
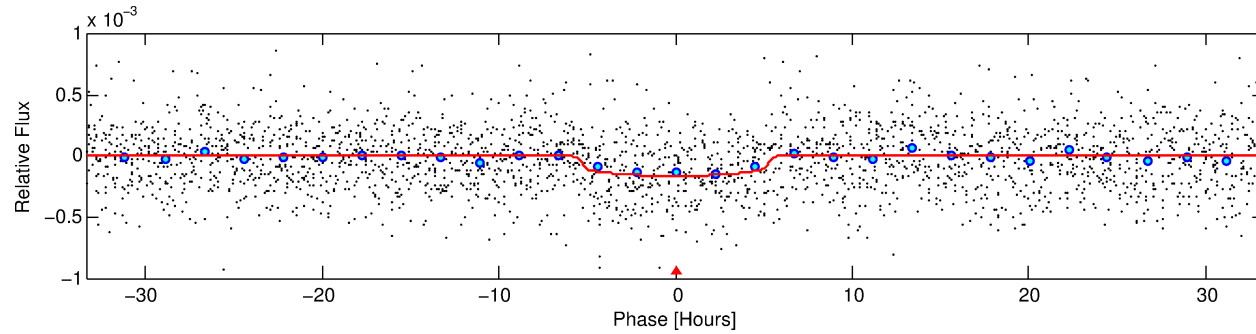
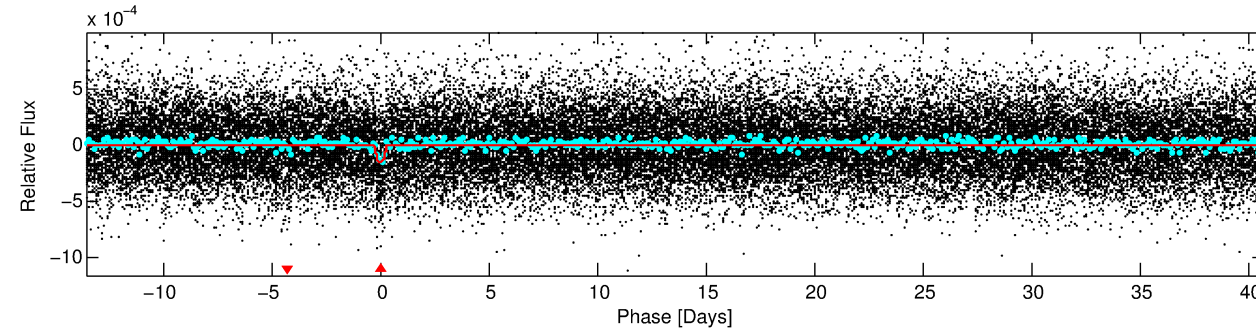
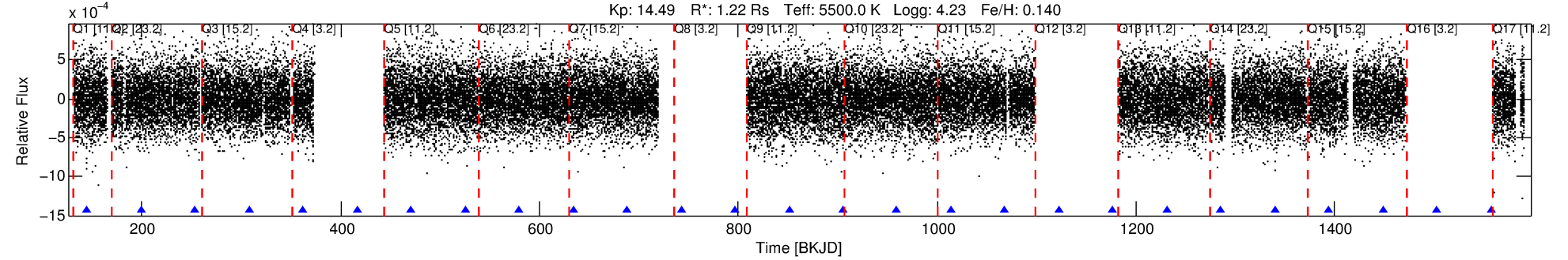
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010585749-01

No Significant Match Found

# DV One-Page Summary

KIC: 10585749 Candidate: 1 of 1 Period: 54.332 d  
KOI: K04563.01 Corr: 0.955



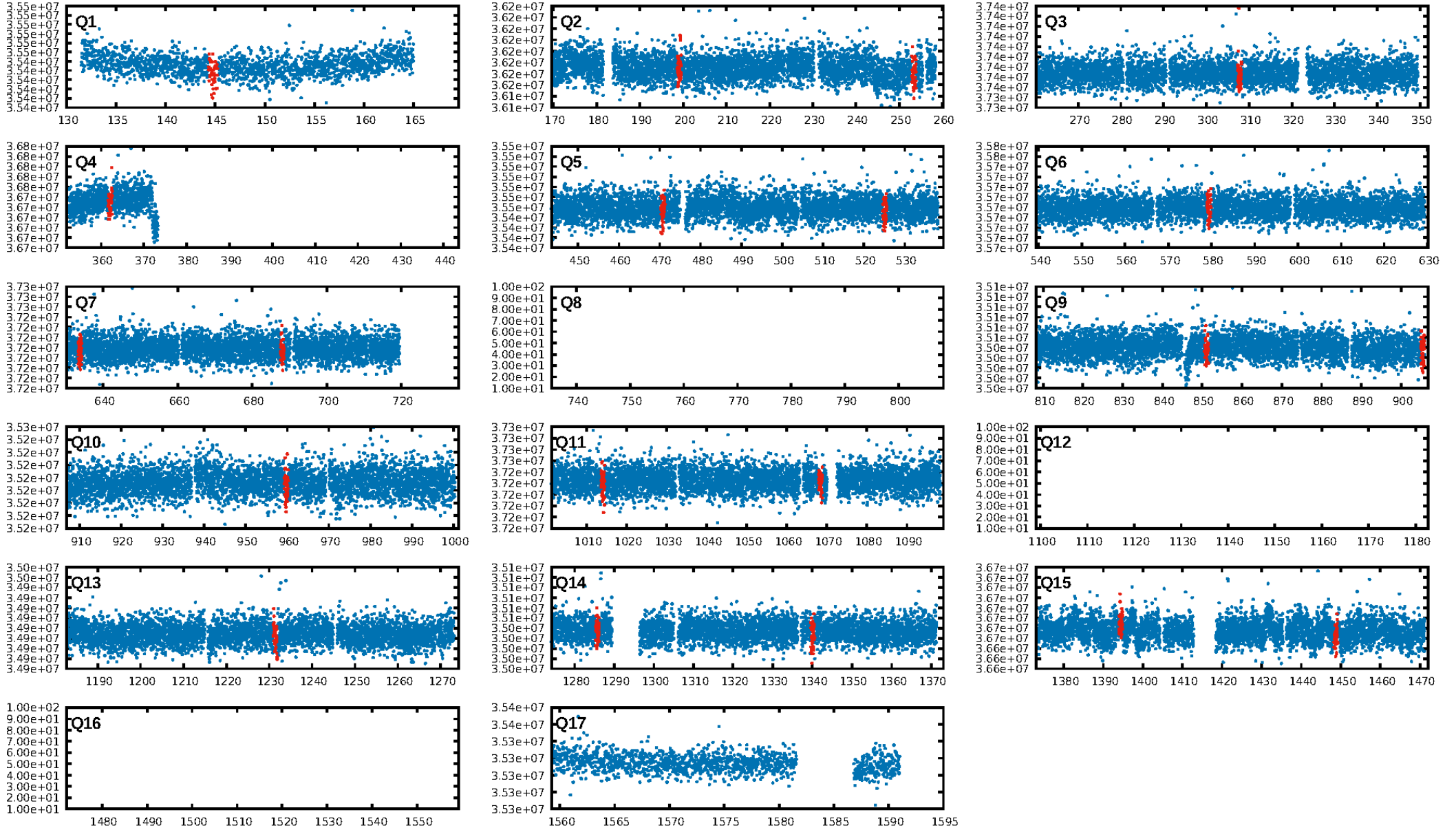
## DV Fit Results:

Period = 54.33204 [0.00120] d  
Epoch = 144.7697 [0.0174] BKJD  
Rp/R\* = 0.0131 [0.0049]  
a/R\* = 21.62 [33.90]  
b = 0.83 [0.59]  
Seff = 16.40 [5.45]  
Teff = 513 [43] K  
Rp = 1.75 [0.74] Re  
a = 0.2730 [0.0539] AU  
Ag = 553.39 [503.17] [1.10 $\sigma$ ]  
Teffp = 3848 [819] K [4.07 $\sigma$ ]

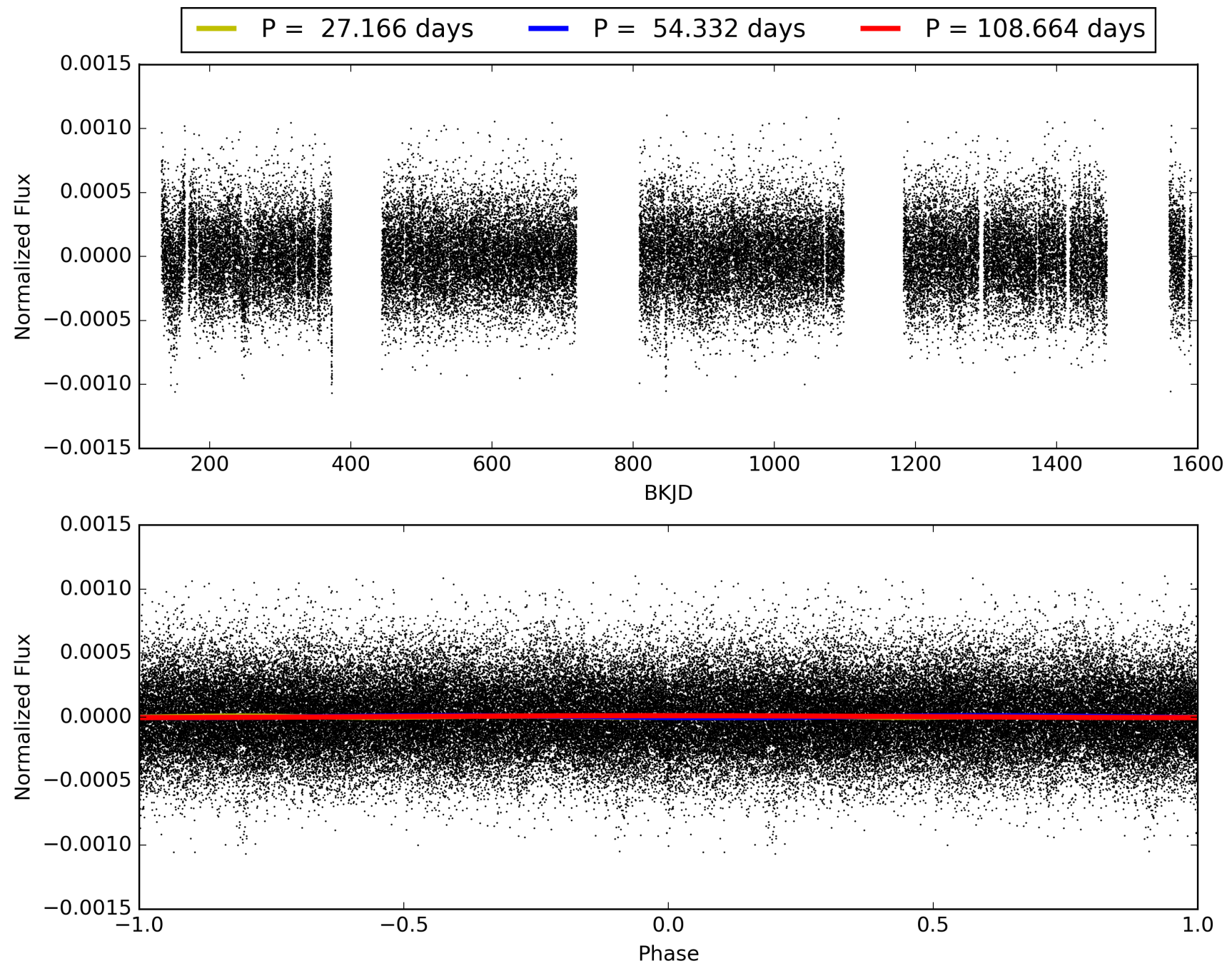
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 87.1%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.08e-20  
RollingBand-fgt: 1.00 [18/18]  
GhostDiagnostic-chr: -2.724  
Centroid-sig: 9.2%  
Centroid-so: 1.467 arcsec [1.12 $\sigma$ ]  
OotOffset-rm: 1.007 arcsec [1.21 $\sigma$ ]  
KicOffset-rm: 0.997 arcsec [1.22 $\sigma$ ]  
OotOffset-st: 3/2/0/1 [6]  
KicOffset-st: 3/2/0/1 [6]  
DiffImageQuality-fgm: 0.67 [4/6]  
DiffImageOverlap-fno: 1.00 [12/12]

# TCE 010585749-01, PDC Light Curves

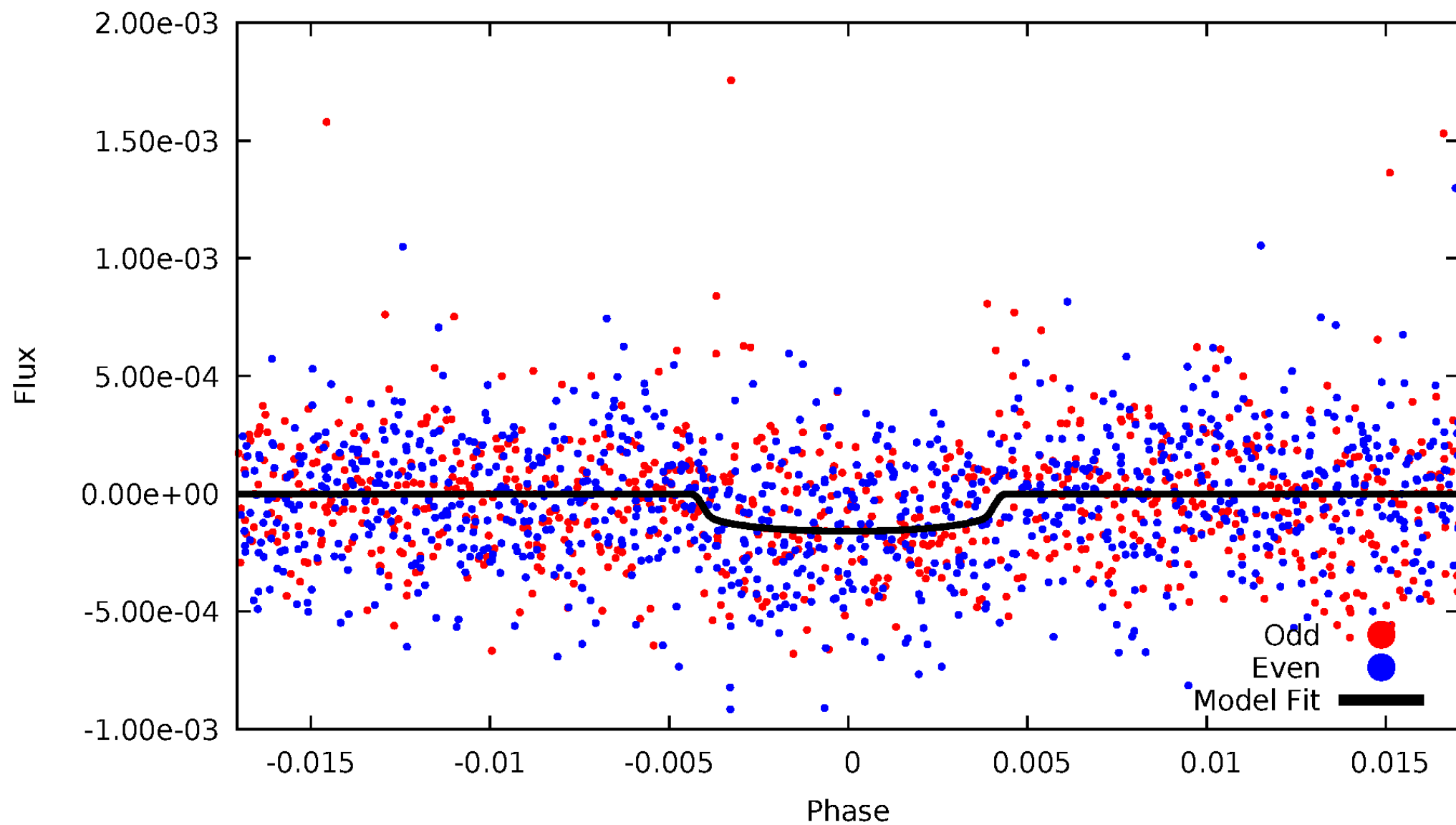


TCE 010585749-01



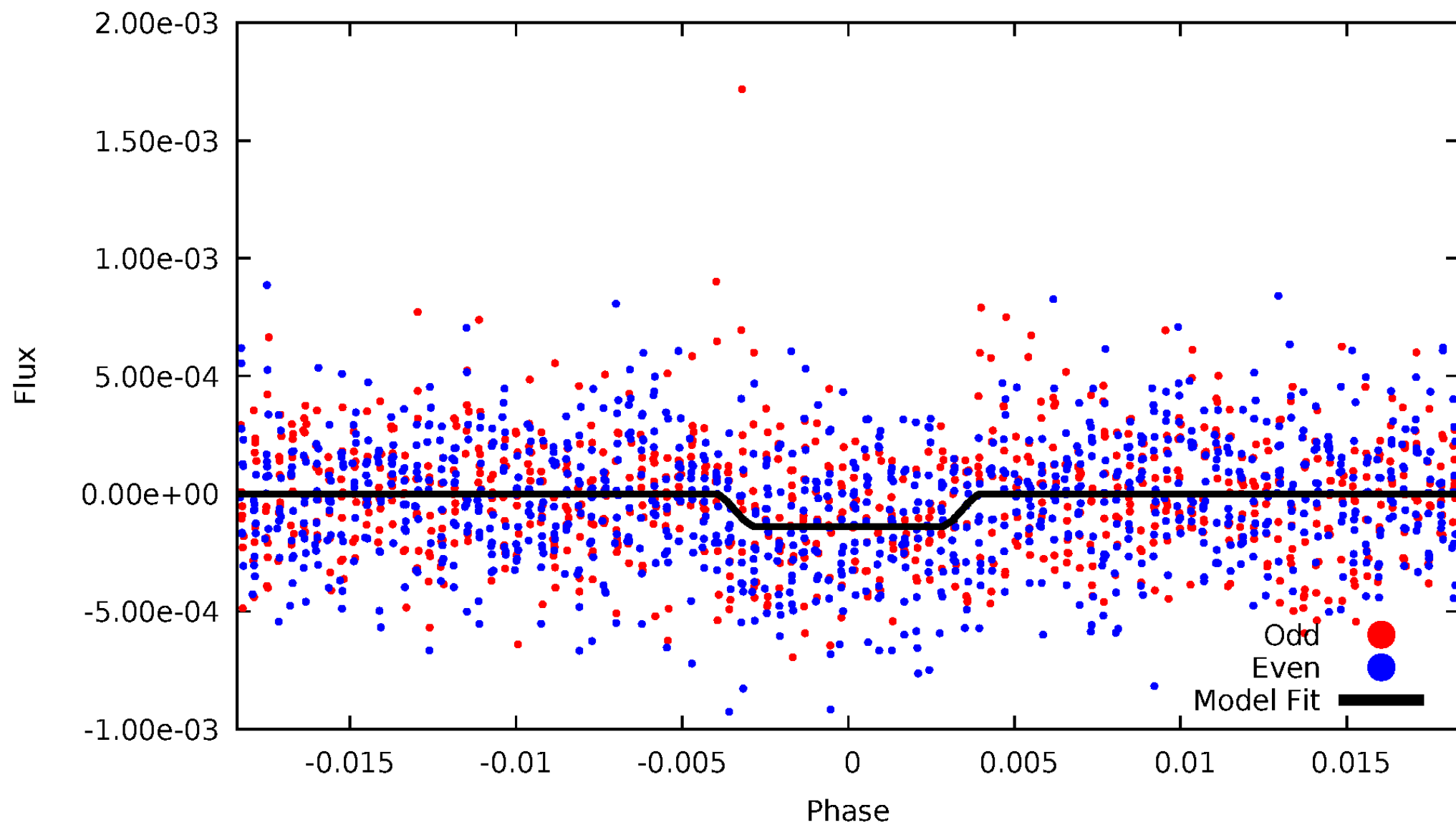
# DV Odd/Even

TCE 010585749-01



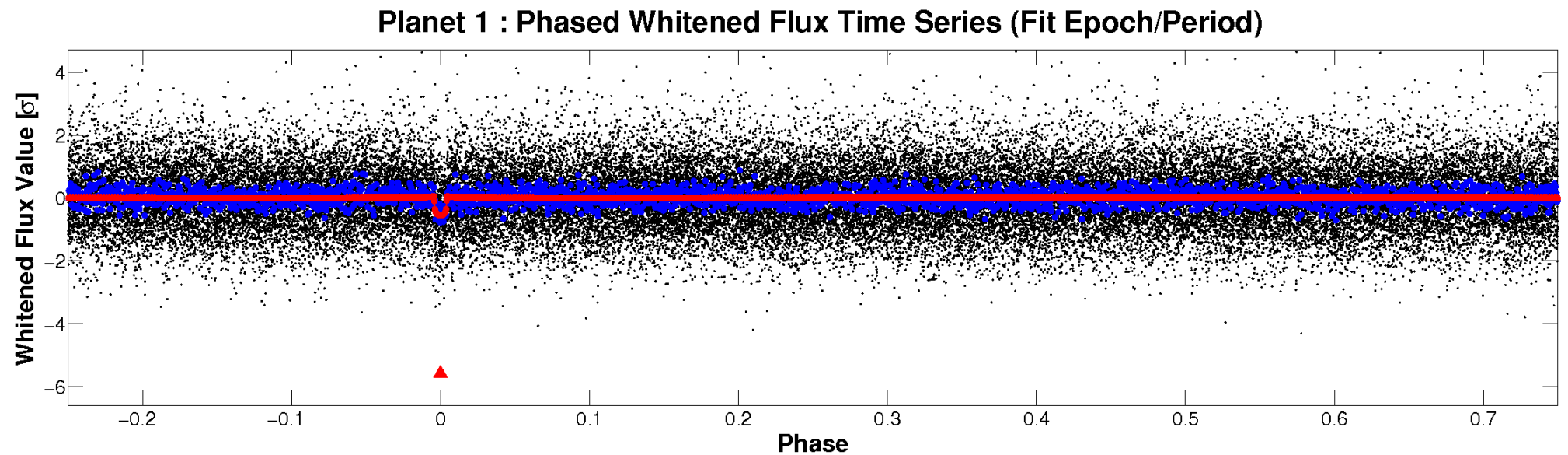
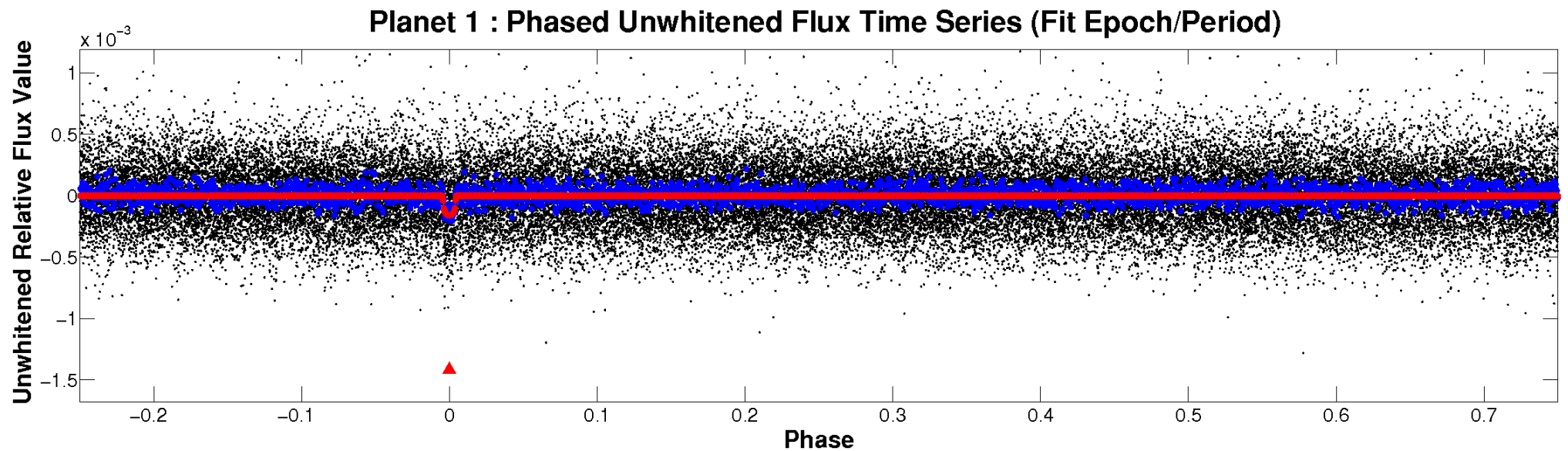
# ALT Odd/Even

TCE 010585749-01



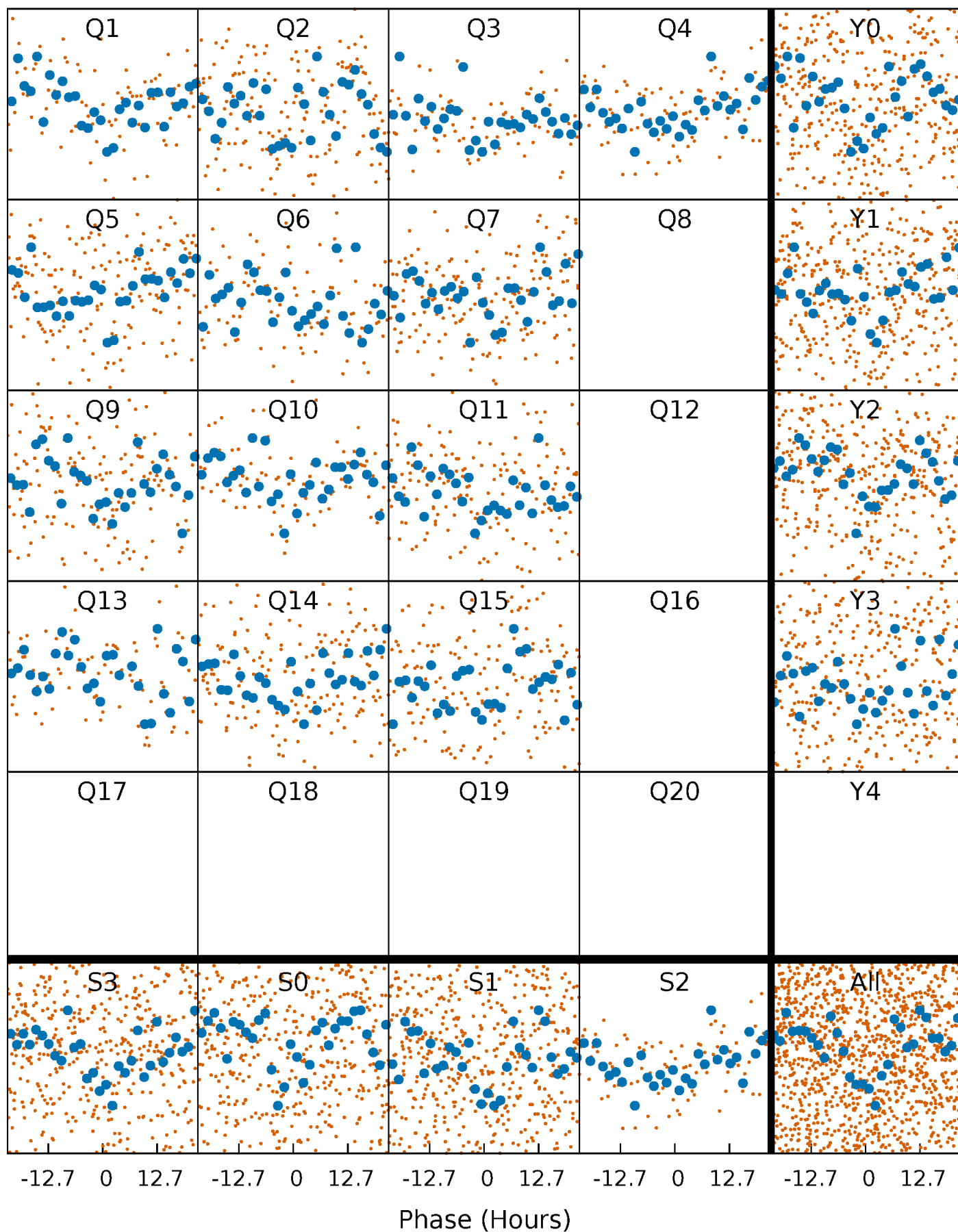


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

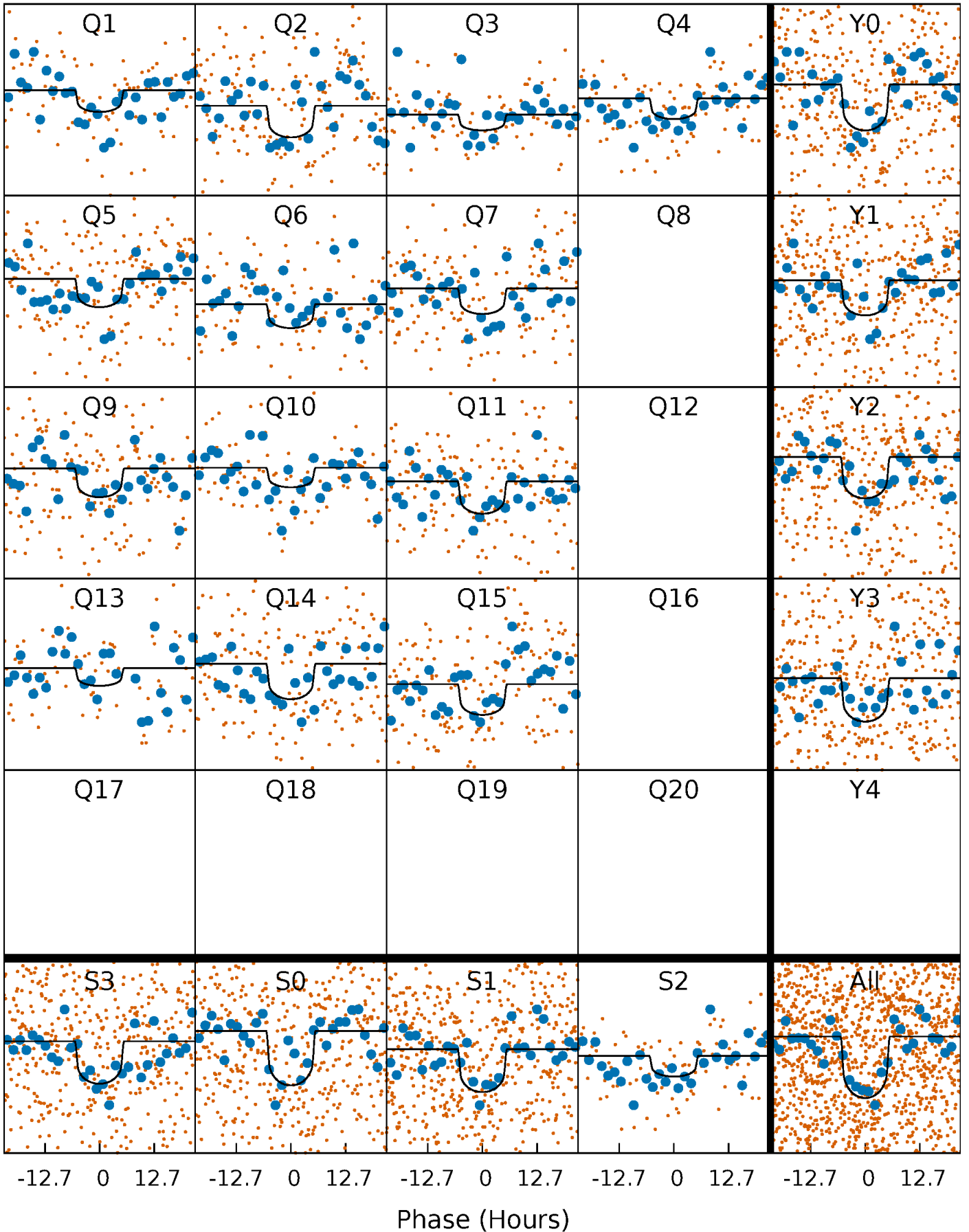
TCE 010585749-01 P= 54.332035 Days  $T_0=144.769722$  (BKJD)





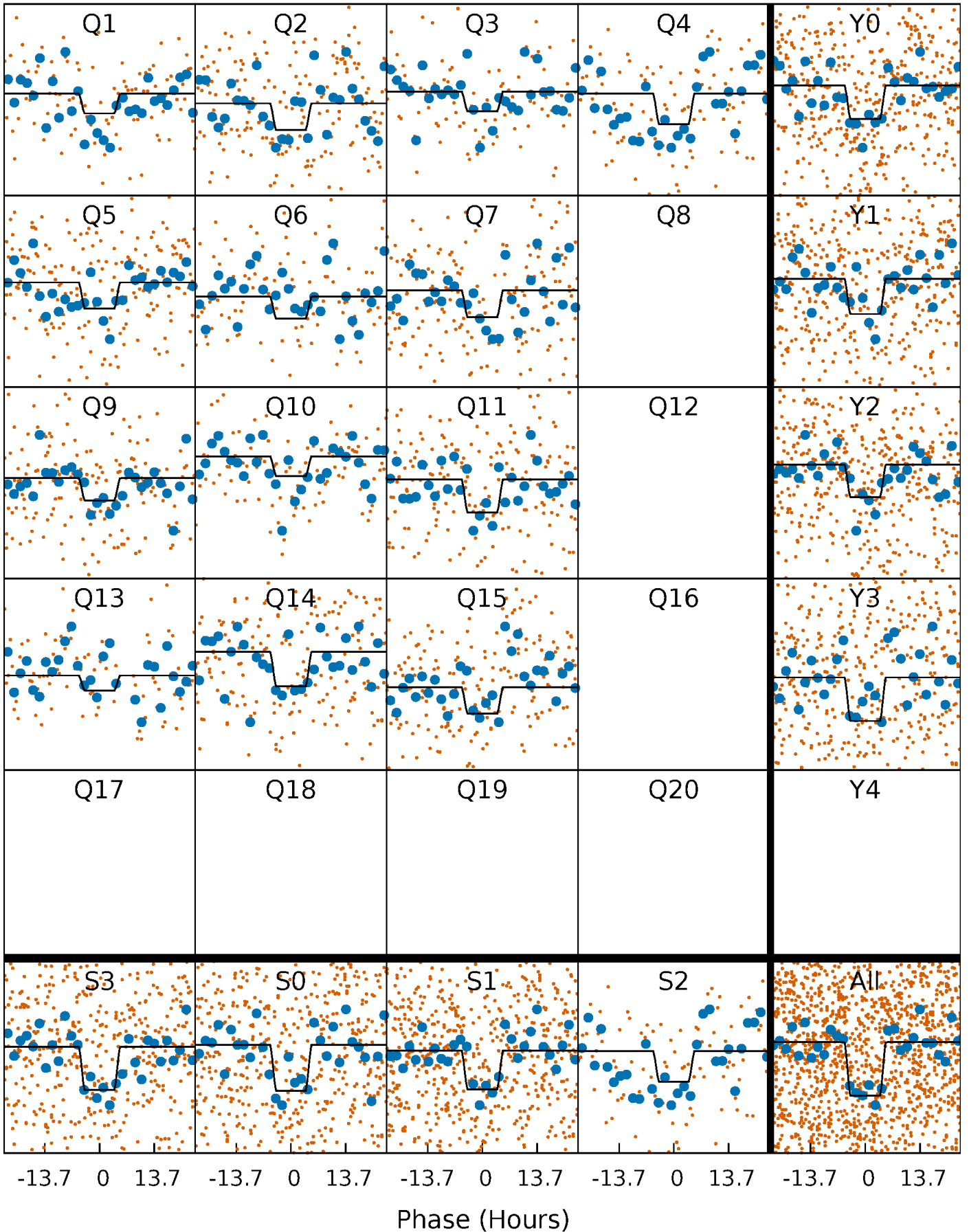
# DV Quarter-Phased Transit Curves

TCE 010585749-01 P= 54.332035 Days  $T_0=144.769722$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

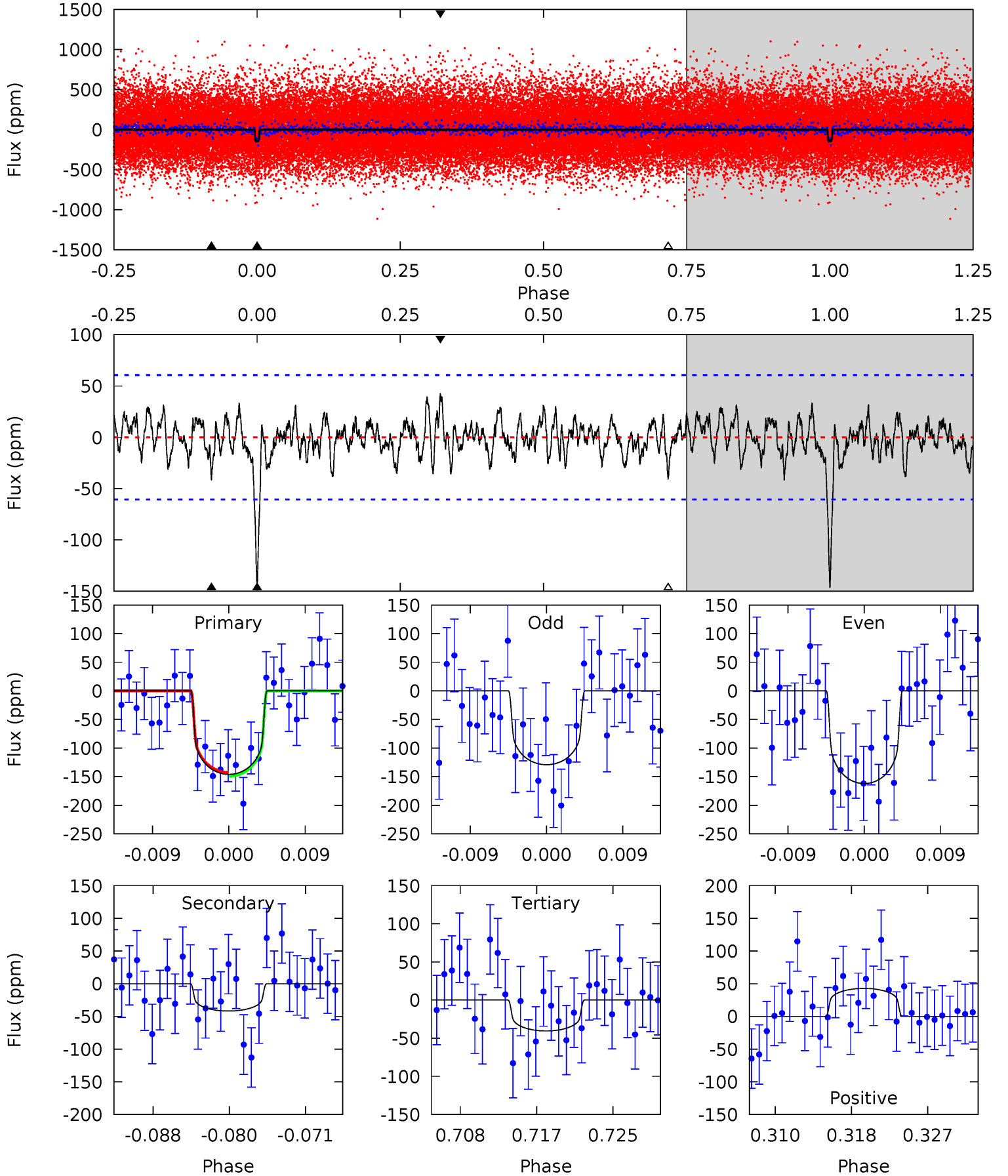
TCE 010585749-01     $P = 54.333075$  Days     $T_0 = 144.762302$  (BKJD)



# DV Model-Shift Uniqueness Test

010585749-01, P = 54.332035 Days, E = 90.437687 Days

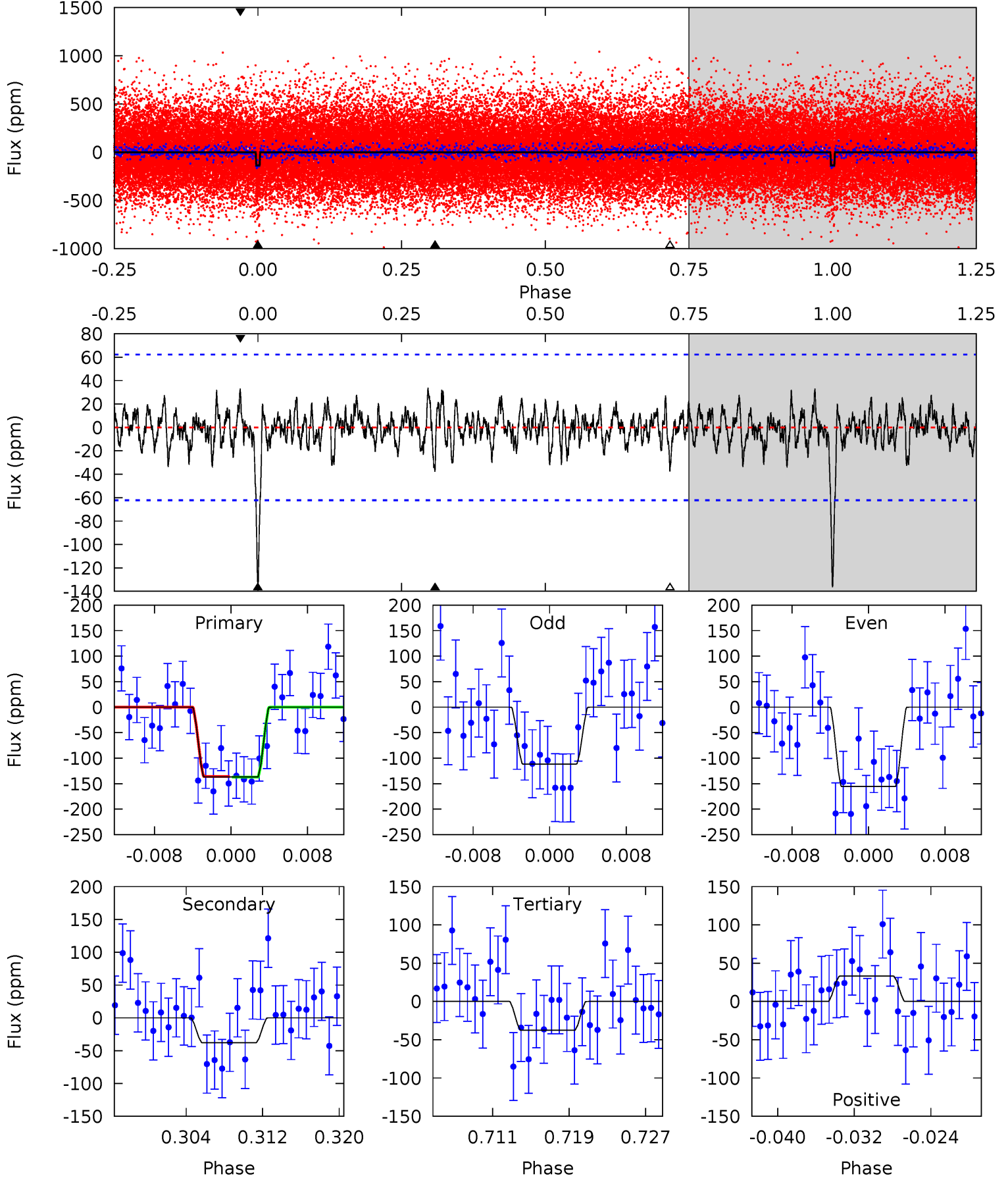
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.2	3.48	3.38	3.57	5.05	2.62	1.18	8.80	8.60	0.10	-0.09	1.36	0.96	0.23	0.27



# Alt Model-Shift Uniqueness Test

010585749-01, P = 54.333075 Days, E = 90.429227 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
11.1	3.08	3.06	2.69	5.07	2.65	0.94	8.06	8.43	0.02	0.39	1.78	0.83	0.20	0.05



### Stellar Parameters For KIC 010585749

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5500^{+88}_{-66}$	$4.228^{+0.195}_{-0.120}$	$0.140^{+0.150}_{-0.100}$	$1.221^{+0.193}_{-0.236}$	$0.920^{+0.066}_{-0.039}$	$0.712^{+0.637}_{-0.220}$
	+2%/-1%	+5%/-3%	+107%/-71%	+16%/-19%	+7%/-4%	+90%/-31%
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 010585749-01 / KOI 4563.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-42 \pm 12$	$1.71^{+0.68}_{-0.66}$	$714^{+34}_{-39}$	$4130^{+872}_{-504}$	$578^{+1034}_{-307}$
Alt.	$-38 \pm 12$	$1.56^{+0.67}_{-0.64}$	$715^{+36}_{-42}$	$4196^{+1003}_{-559}$	$645^{+1247}_{-372}$

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

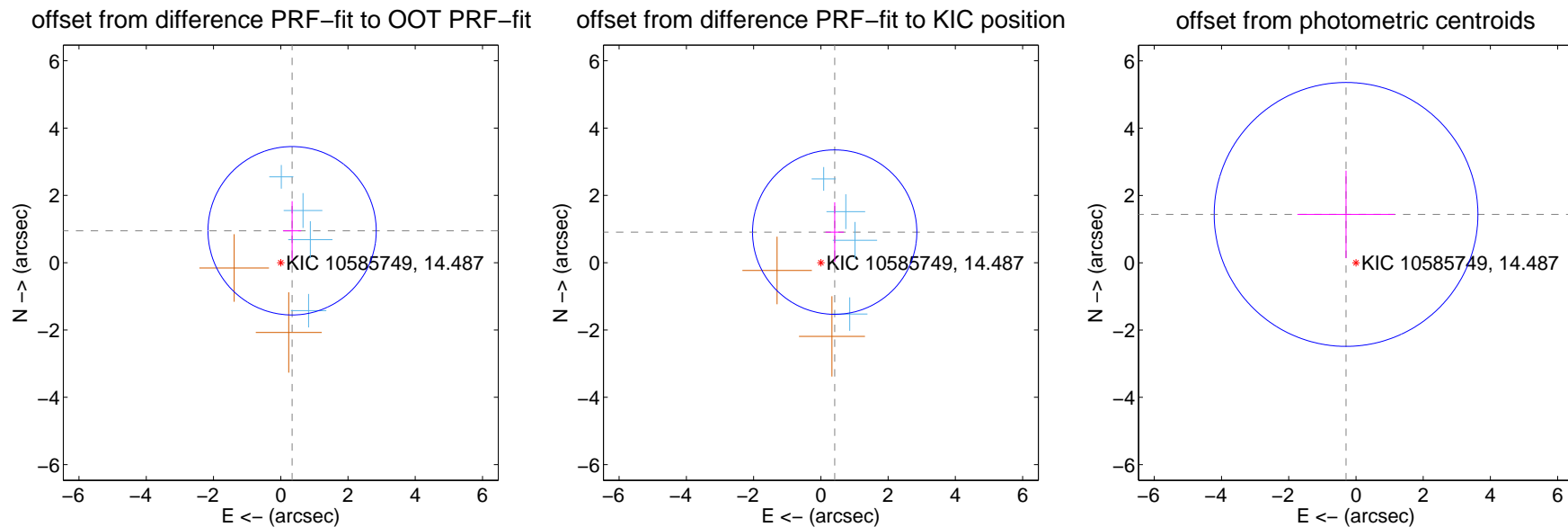
## DV Centroid Data

Supplemental centroid analysis for 010585749-01. Kepler magnitude: 14.49. Transit SNR 9.82

There are 4 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

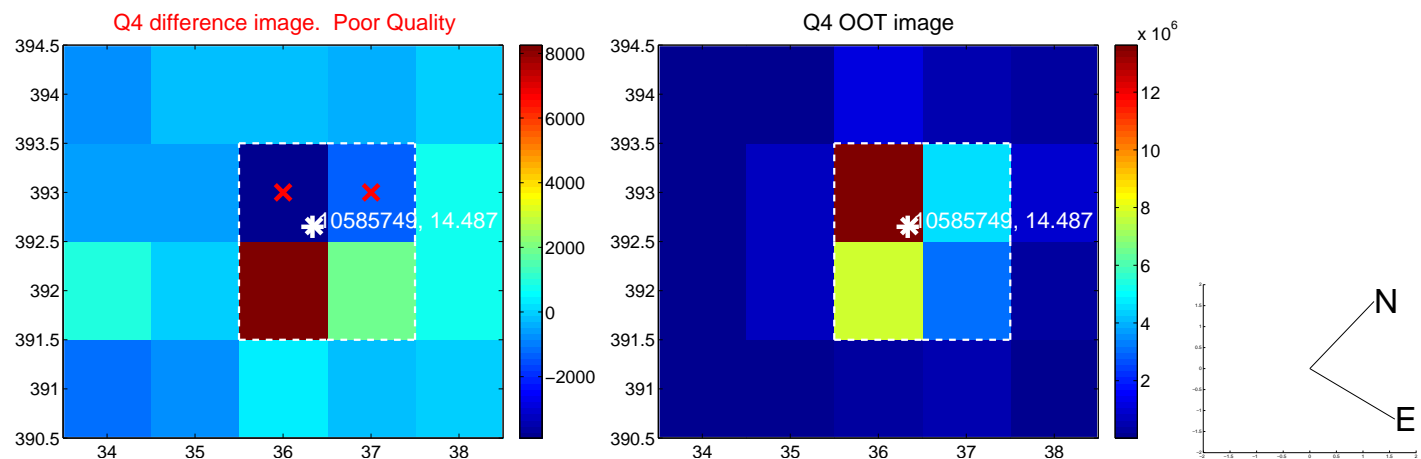
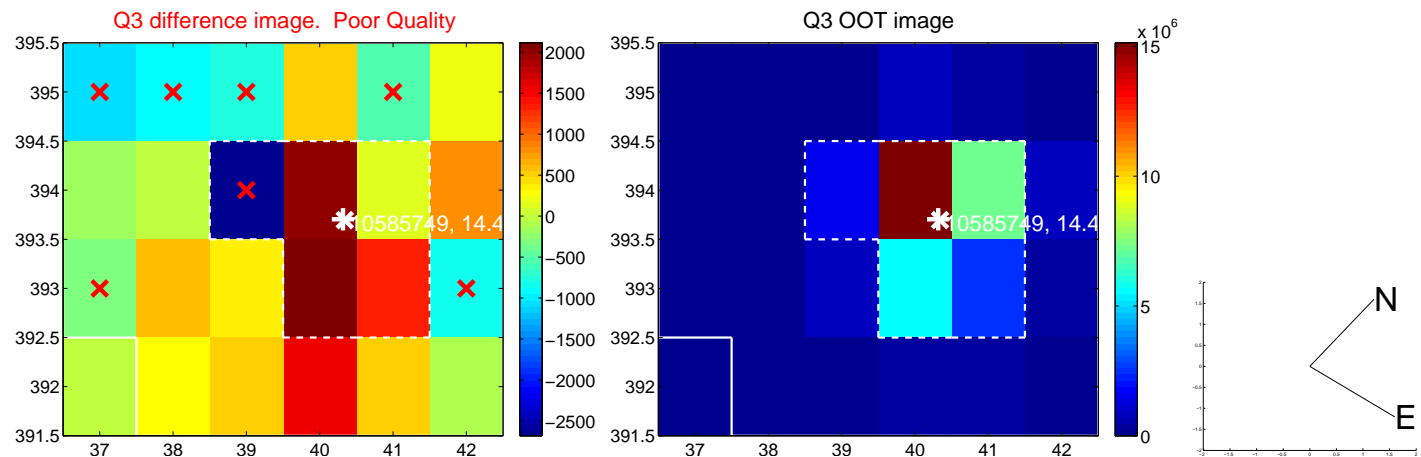
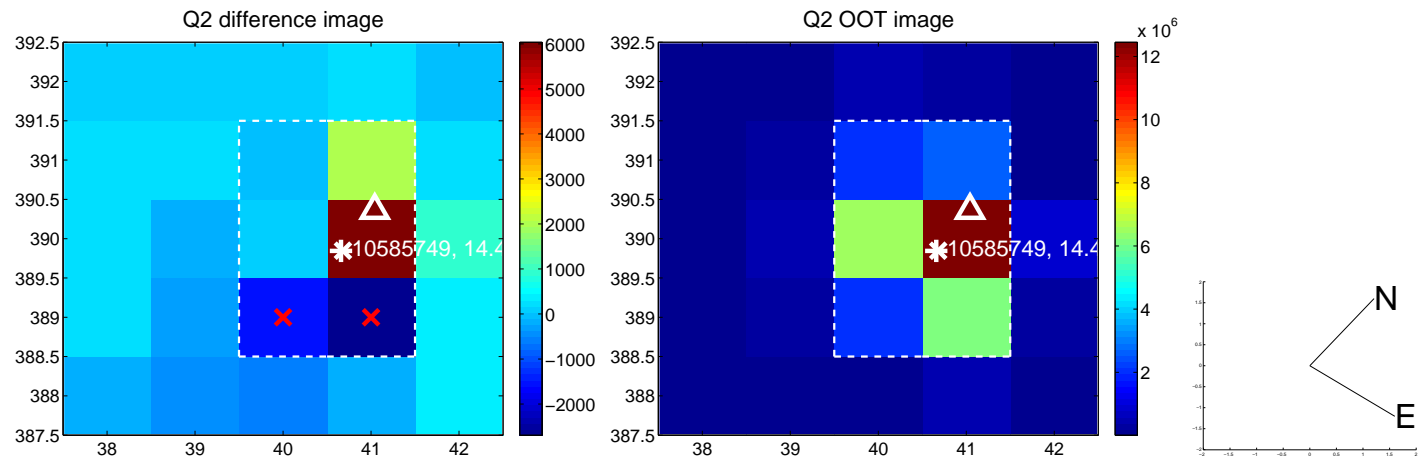
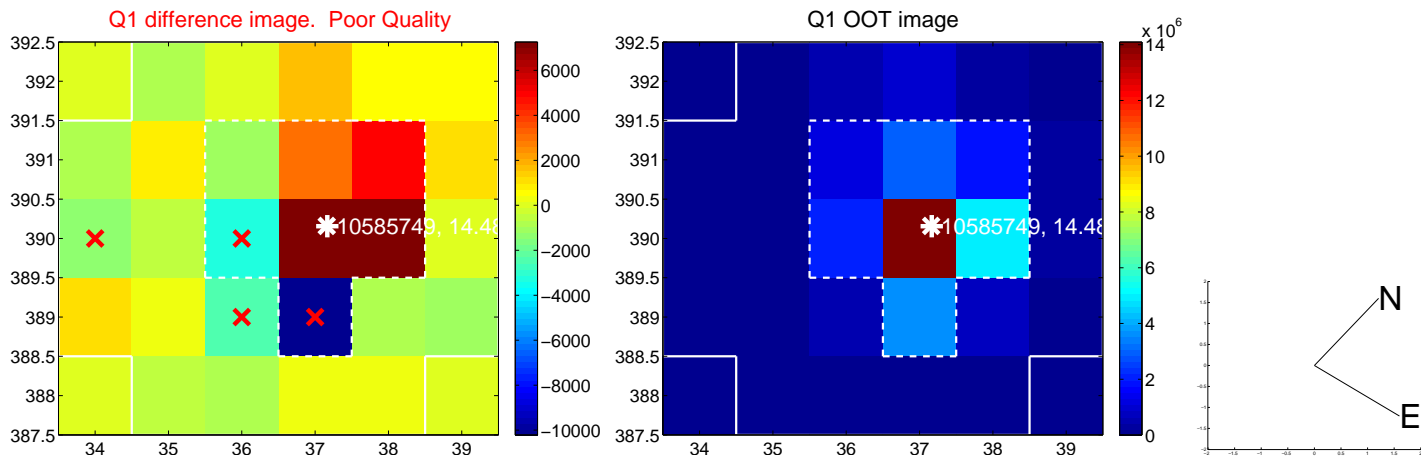
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.007 \pm 0.834$	1.21	$-0.338 \pm 0.273$	$0.949 \pm 0.880$
PRF-fit source offset from KIC position	$0.997 \pm 0.814$	1.22	$-0.411 \pm 0.273$	$0.909 \pm 0.885$
photometric centroid source offset	$1.47 \pm 1.31$	1.12	$0.29 \pm 1.45$	$1.44 \pm 1.30$



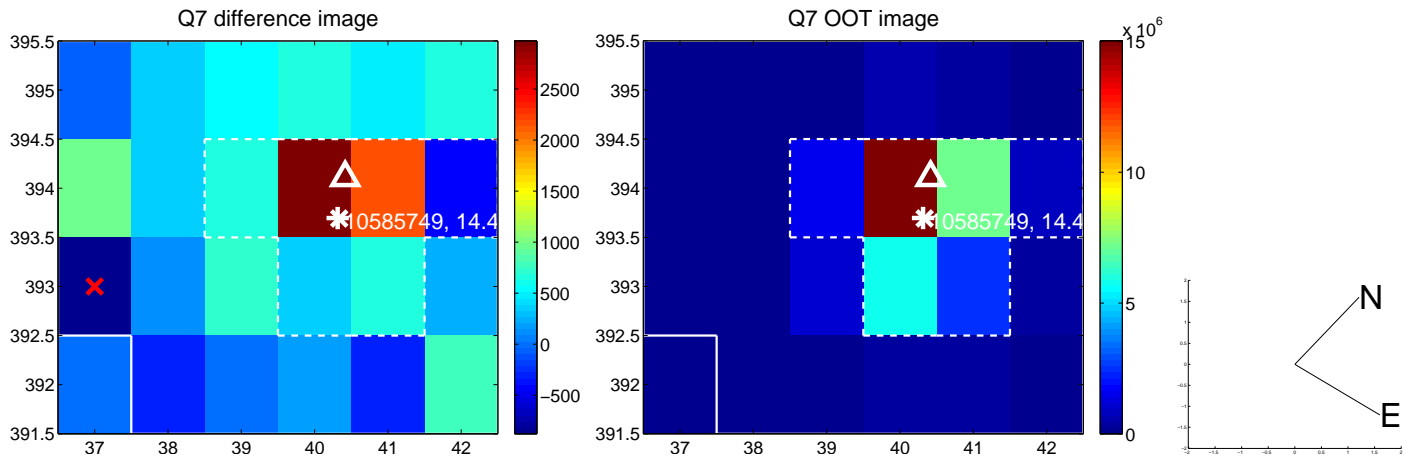
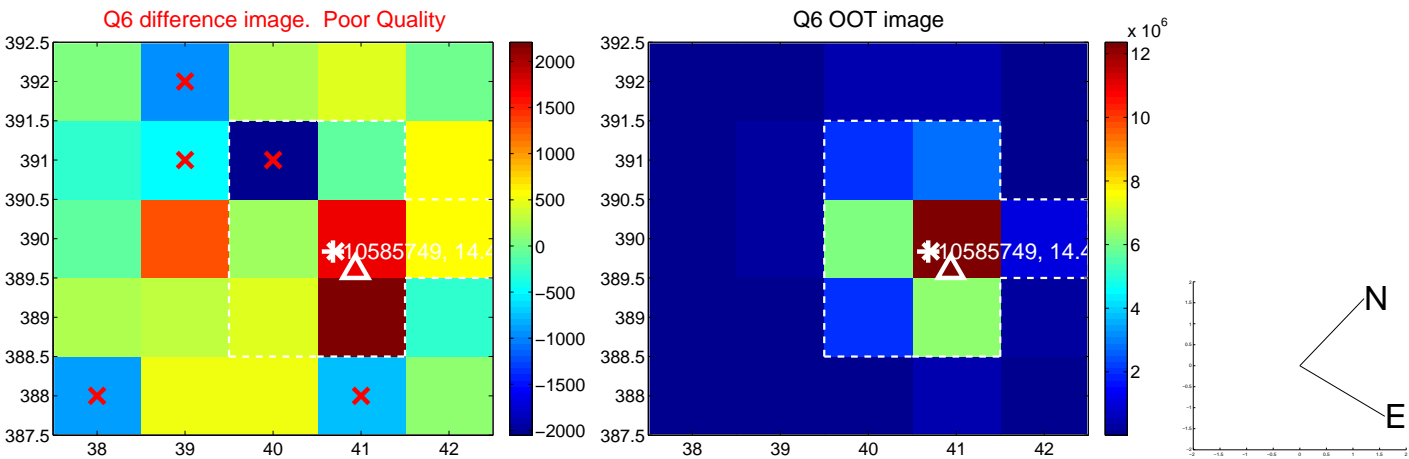
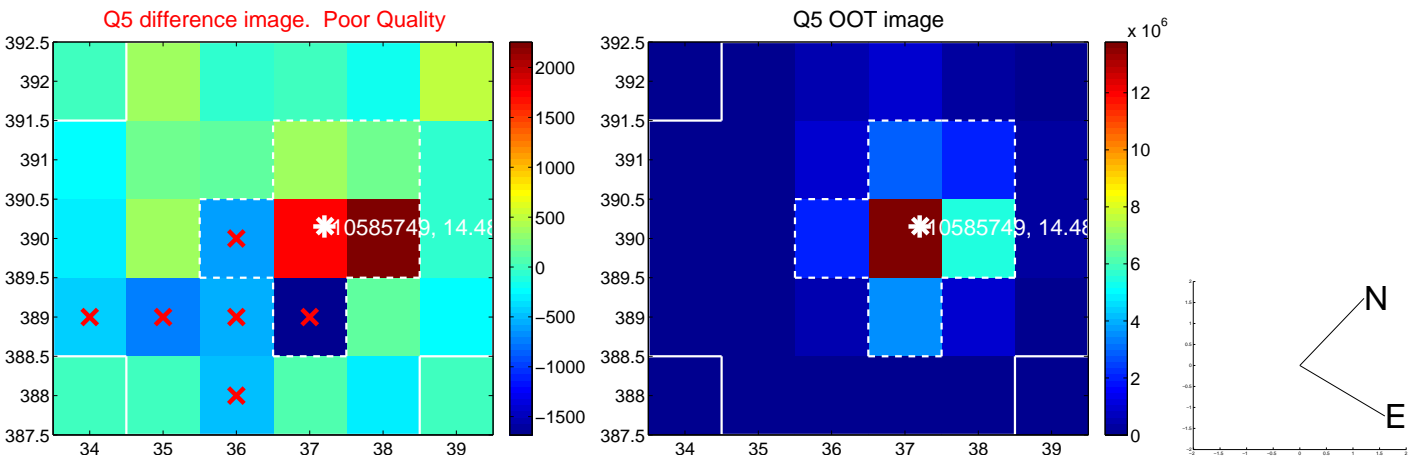
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



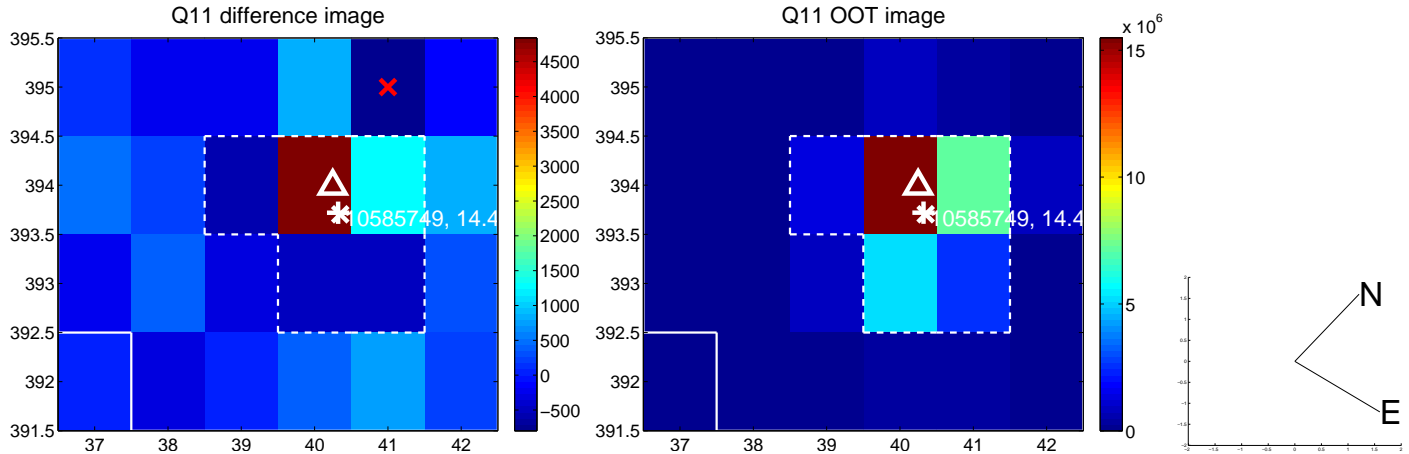
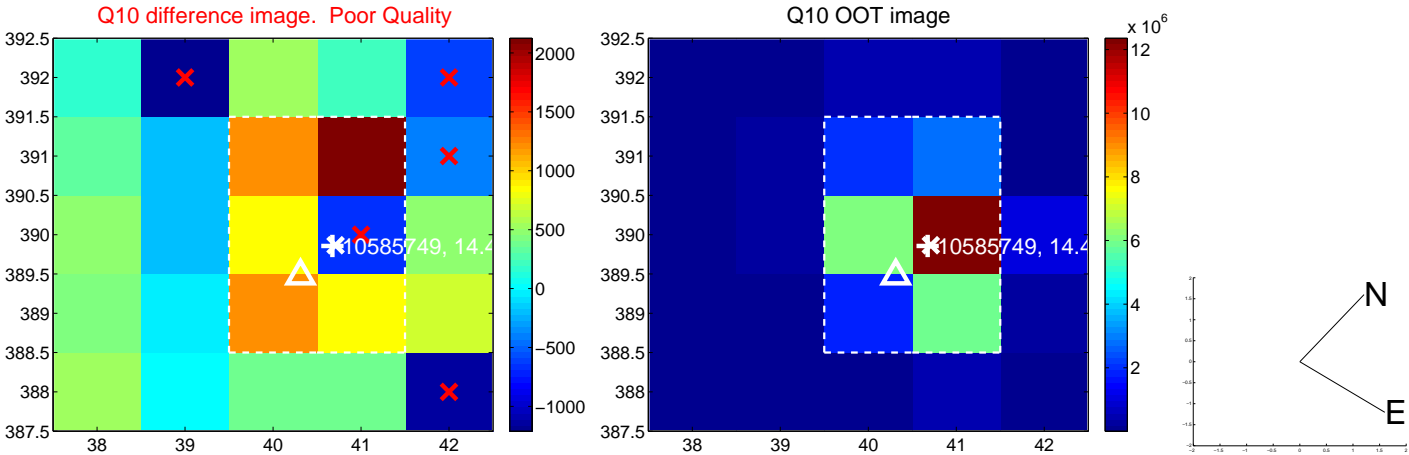
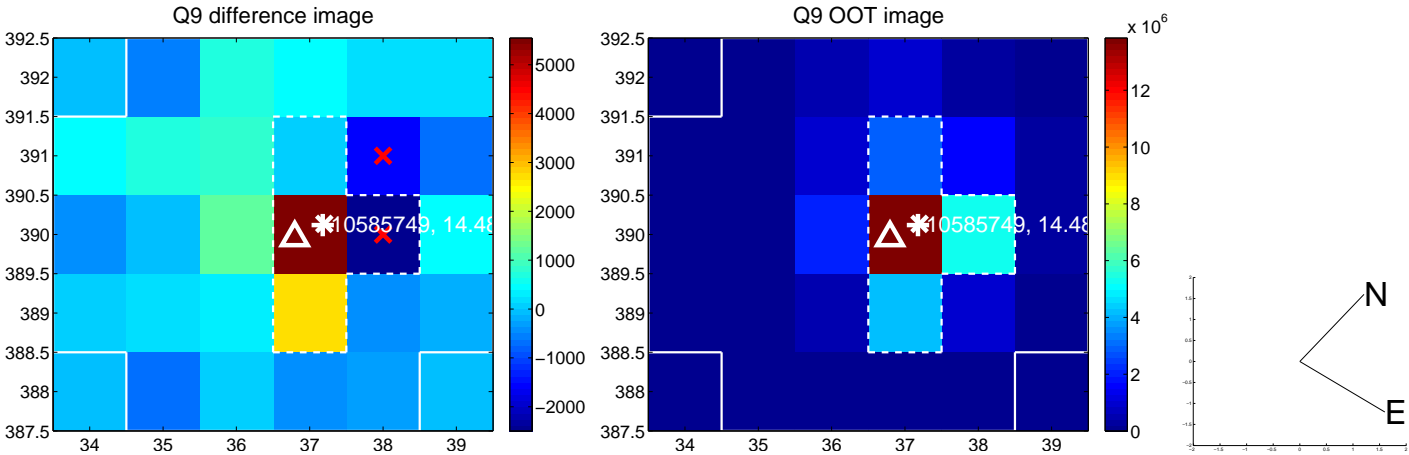
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

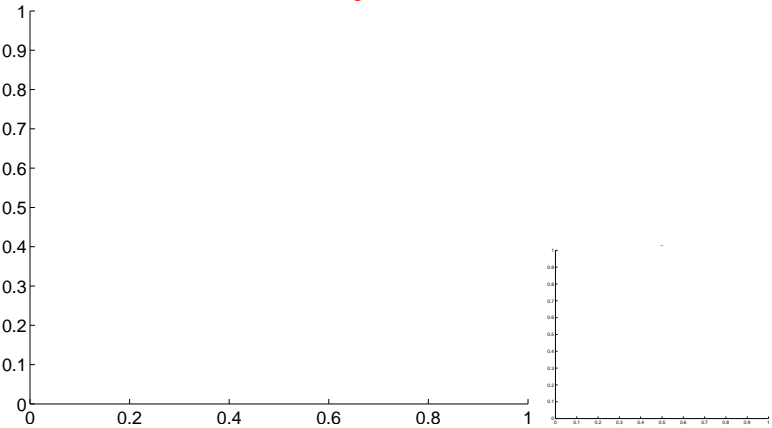


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

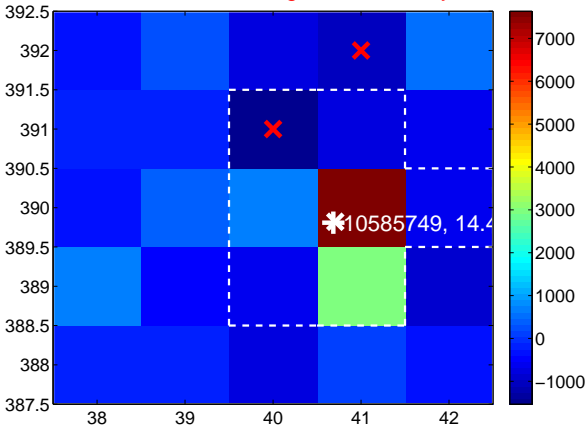
Q13 no difference image



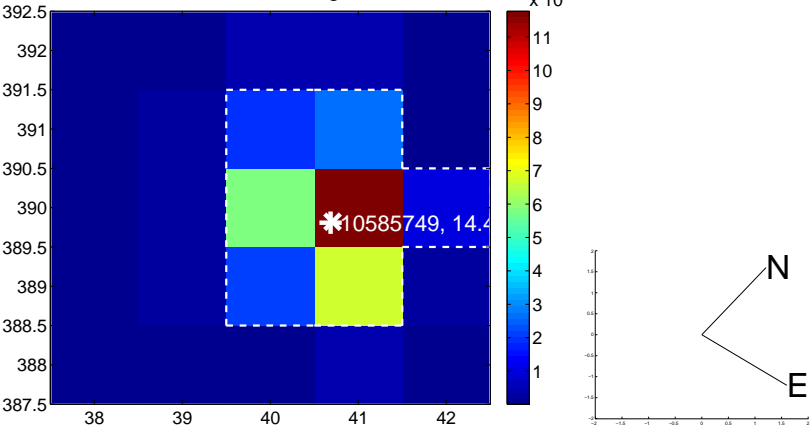
Q13 no OOT image



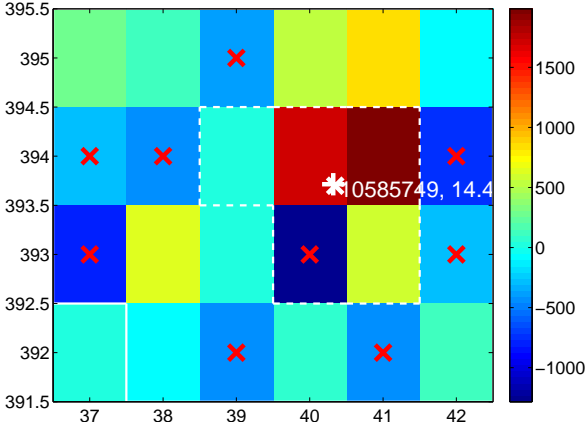
Q14 difference image. Poor Quality



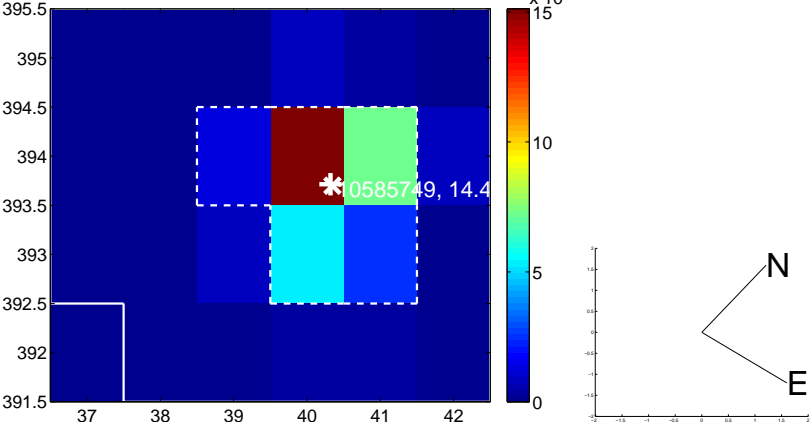
Q14 OOT image



Q15 difference image. Poor Quality



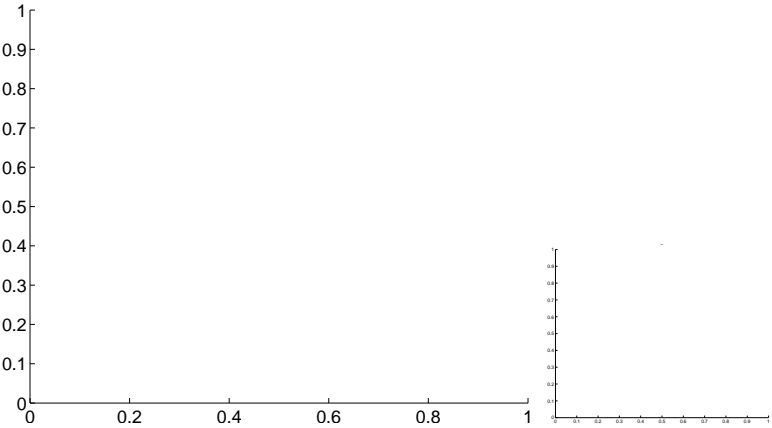
Q15 OOT image



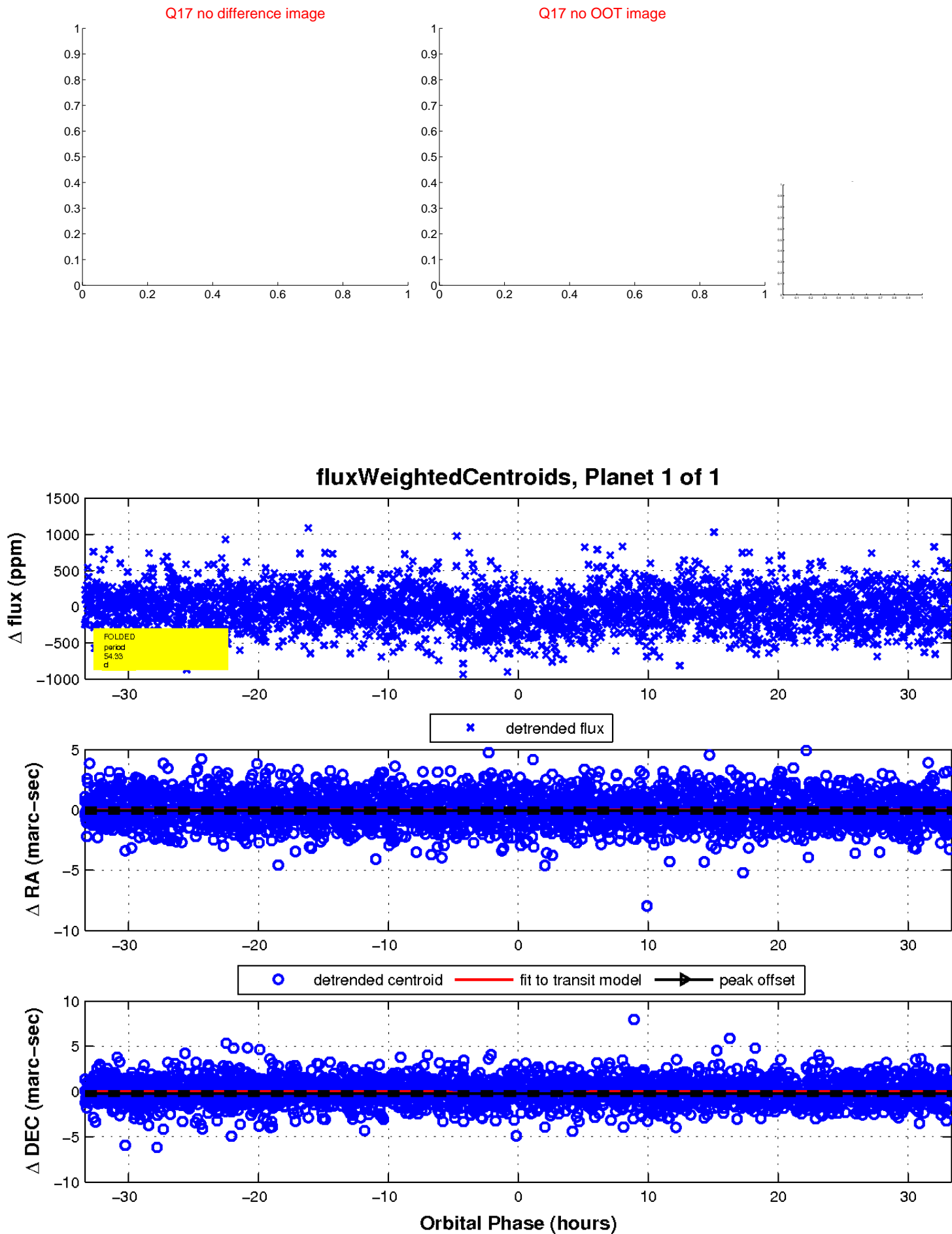
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

