

# KIC 005617854

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005617854-01	OBS	1588.01	3.517493	132.029876	513.8	1.631	42.8	50.0	0.56	4132	1.54	58.27

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005617854-01	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.

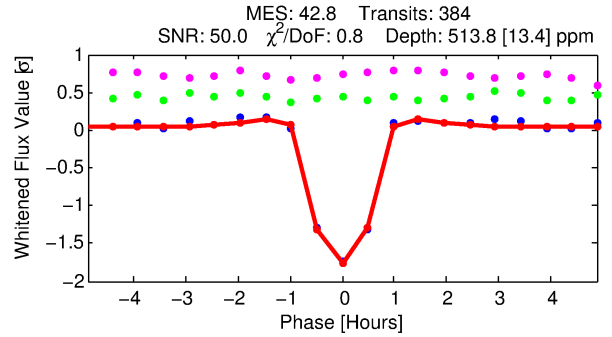
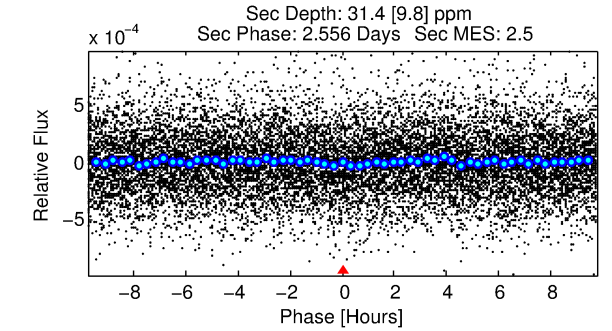
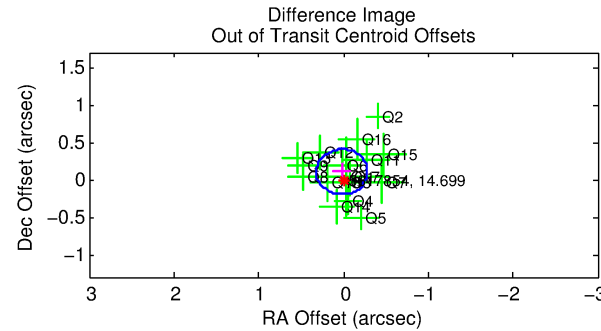
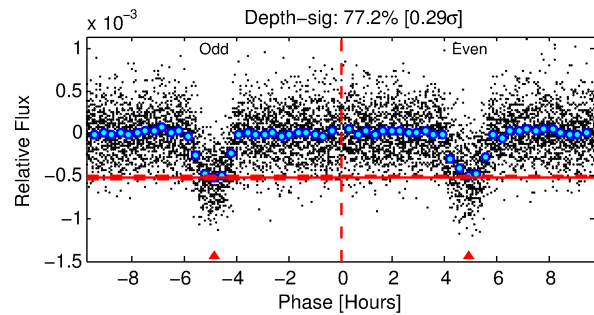
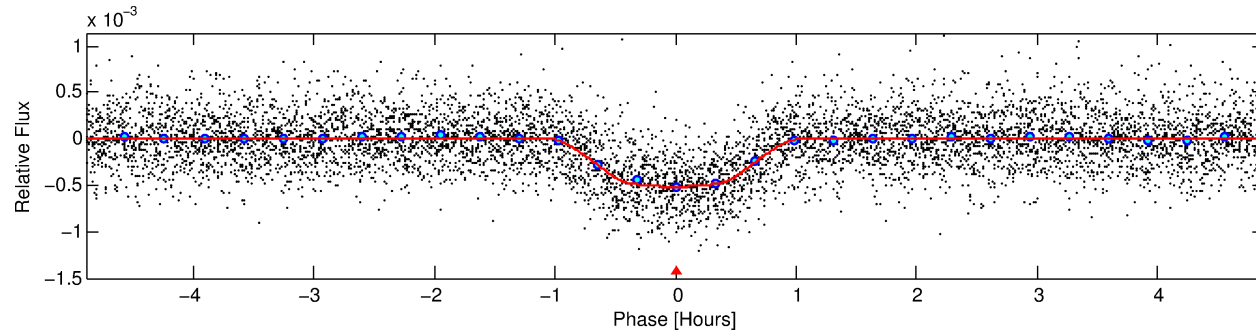
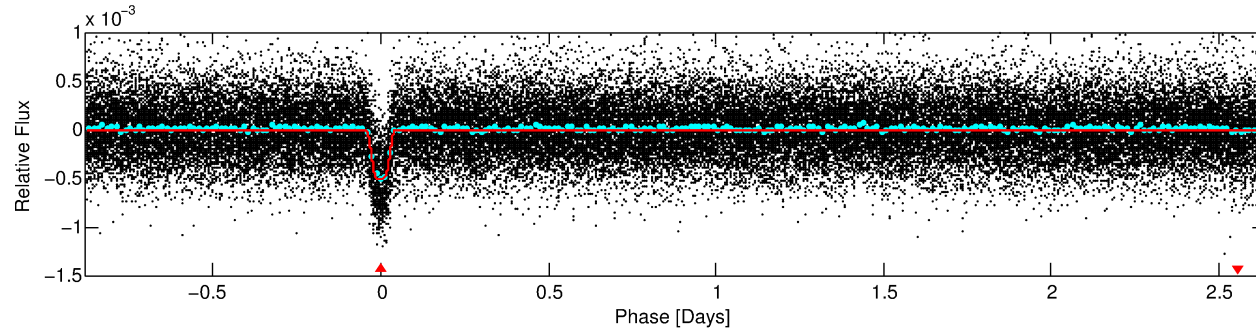
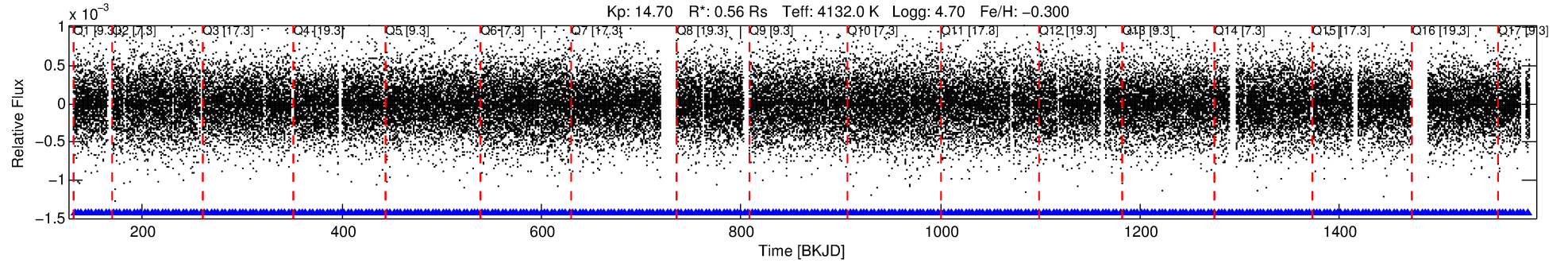
## Ephemeris Match Information For 005617854-01

No Significant Match Found

# DV One-Page Summary

KIC: 5617854 Candidate: 1 of 1 Period: 3.517 d

KOI: K01588.01 Corr: 0.954



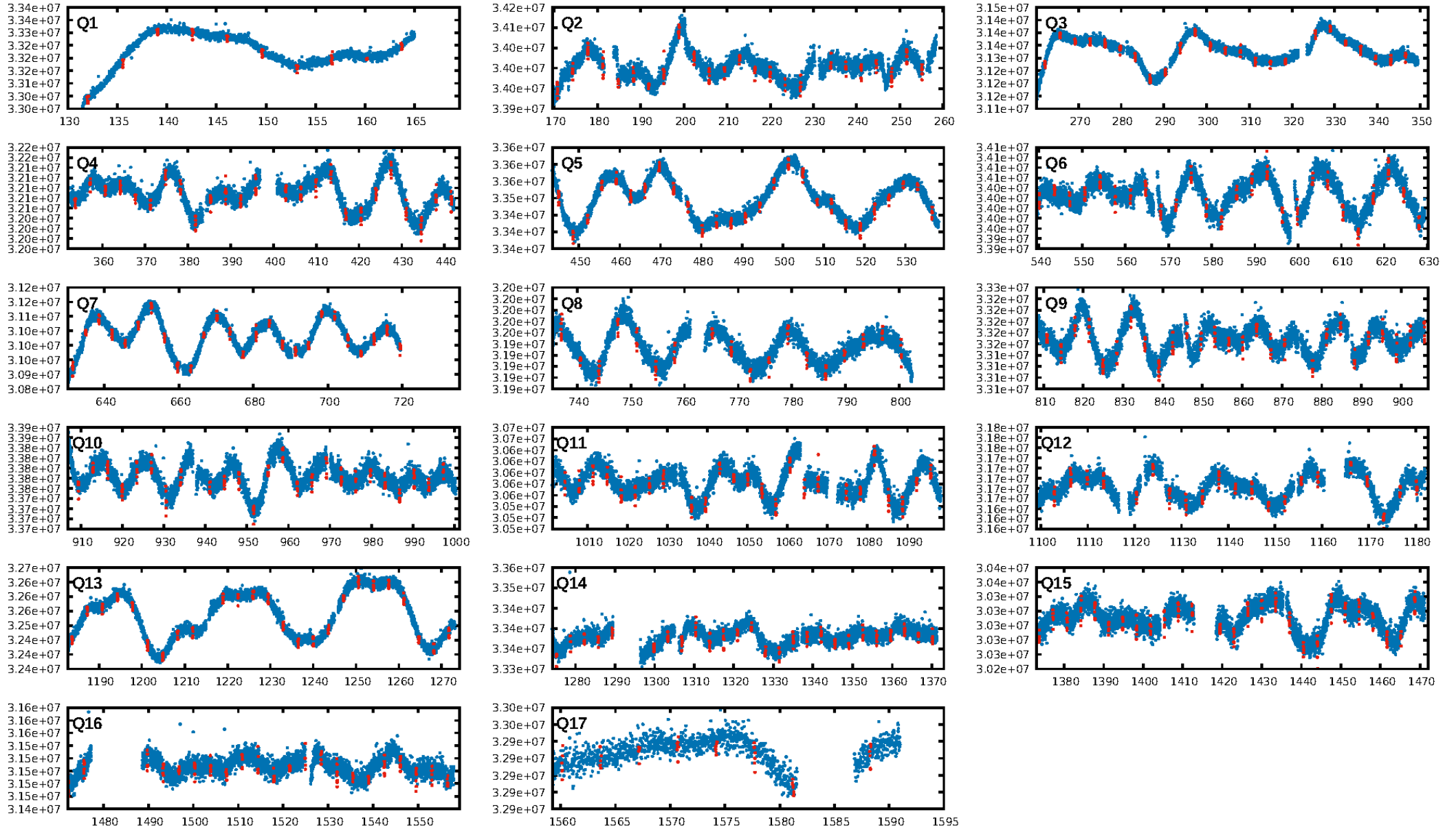
## DV Fit Results:

Period = 3.51749 [0.00000] d  
Epoch = 132.0299 [0.0005] BKJD  
Rp/R\* = 0.0250 [0.0027]  
a/R\* = 8.16 [3.75]  
b = 0.90 [0.10]  
Seff = 58.27 [6.07]  
Teq = 704 [18] K  
Rp = 1.54 [0.19] Re  
a = 0.0378 [0.0016] AU  
Ag = 10.42 [4.01] [2.35 $\sigma$ ]  
Teffp = 1957 [191] K [6.51 $\sigma$ ]

## DV Diagnostic Results:

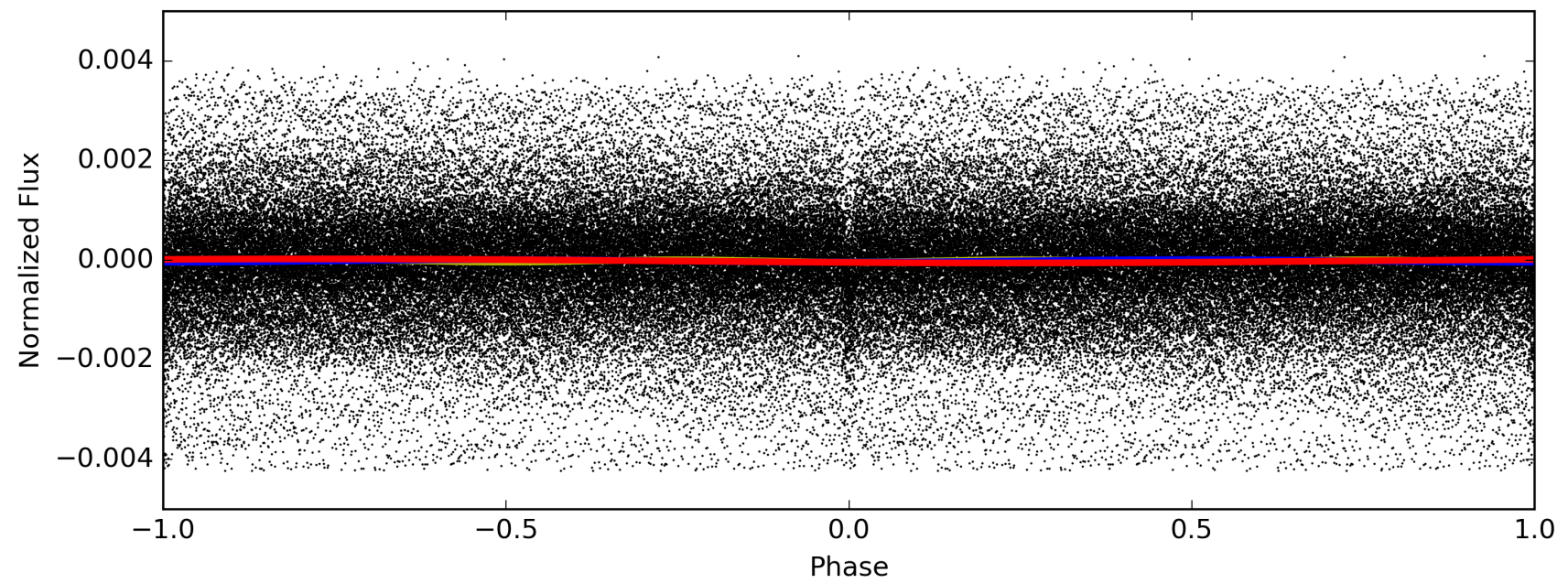
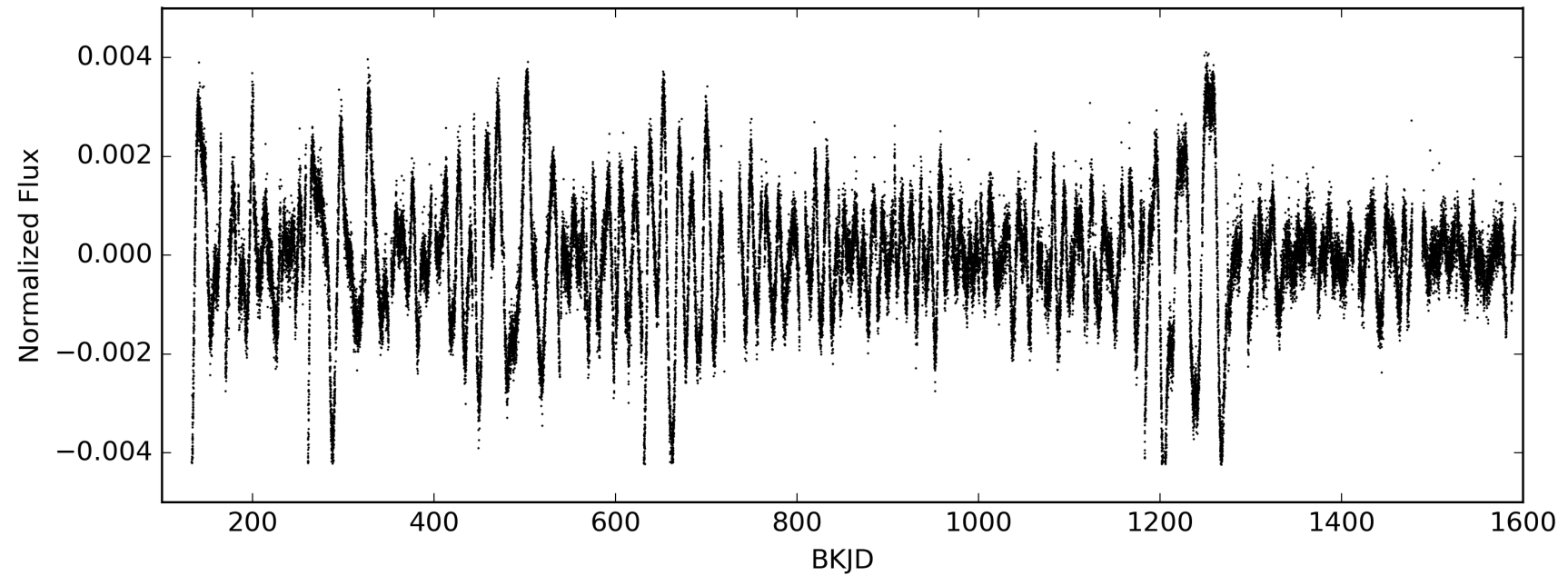
ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [366/366]  
GhostDiagnostic-chr: 5.055  
Centroid-sig: 5.3%  
Centroid-so: 0.950 arcsec [3.98 $\sigma$ ]  
OotOffset-rm: 0.104 arcsec [1.03 $\sigma$ ]  
KicOffset-rm: 0.709 arcsec [6.49 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 005617854-01, PDC Light Curves



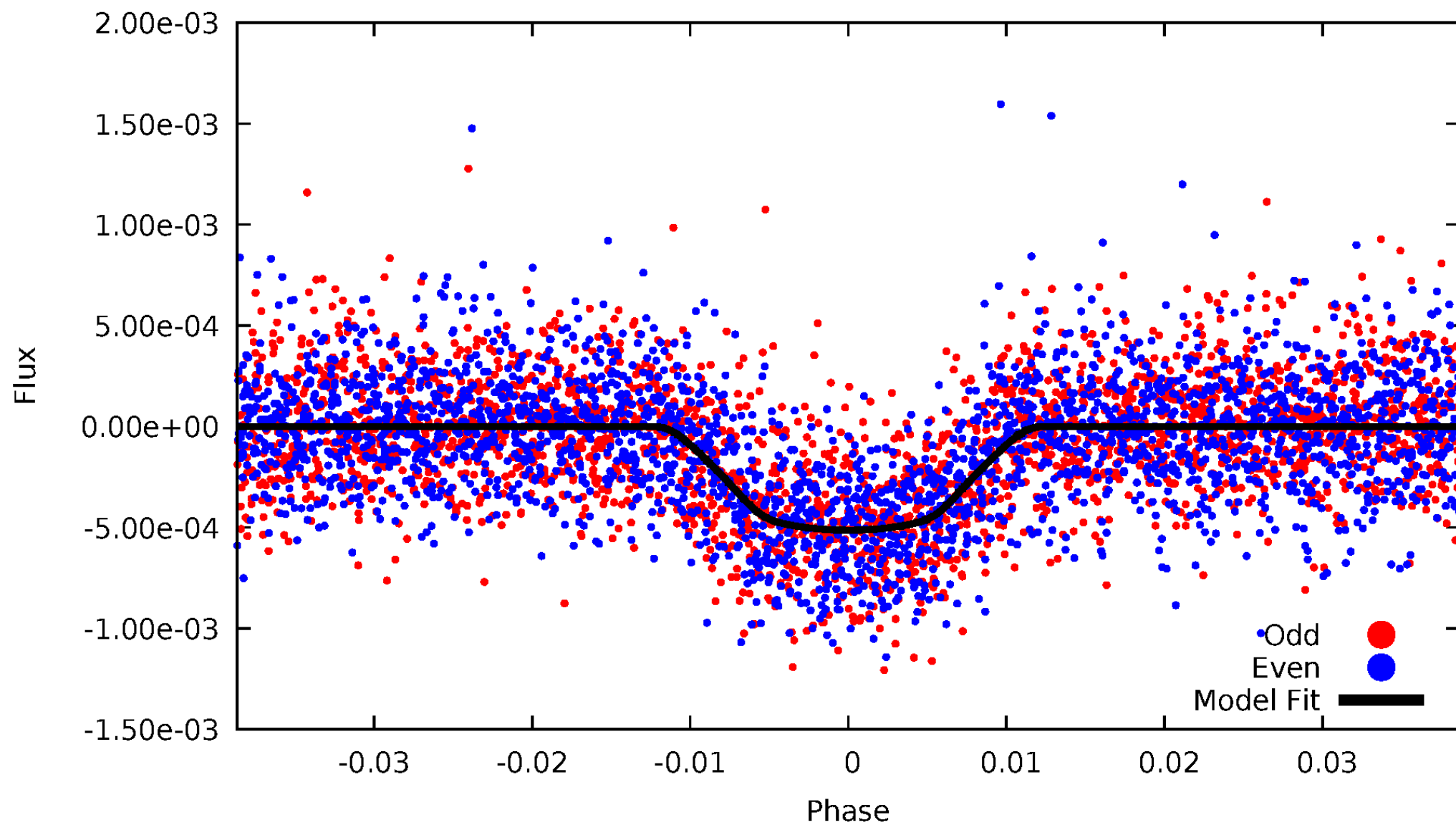
TCE 005617854-01

— P = 1.759 days — P = 3.517 days — P = 7.035 days



# DV Odd/Even

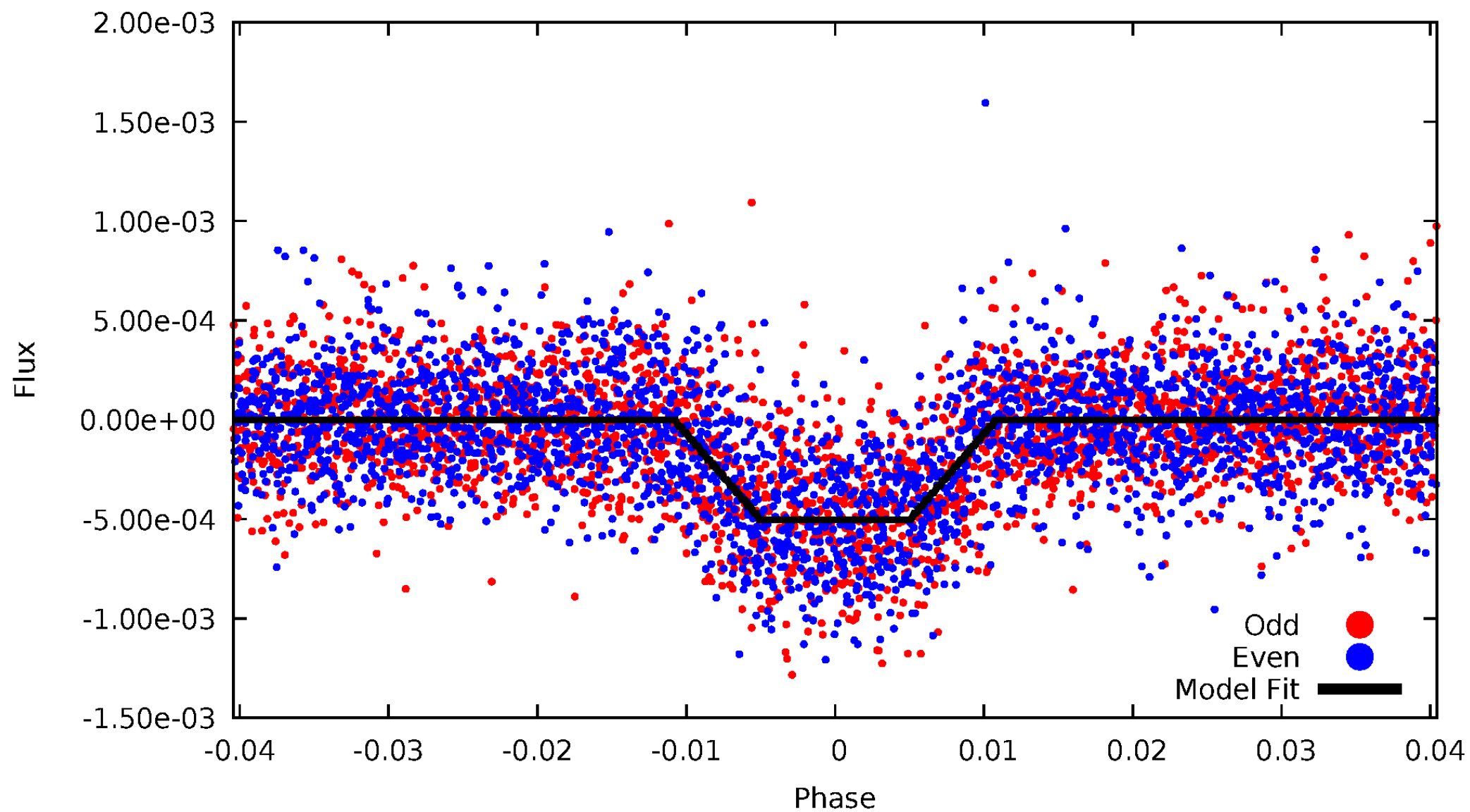
TCE 005617854-01



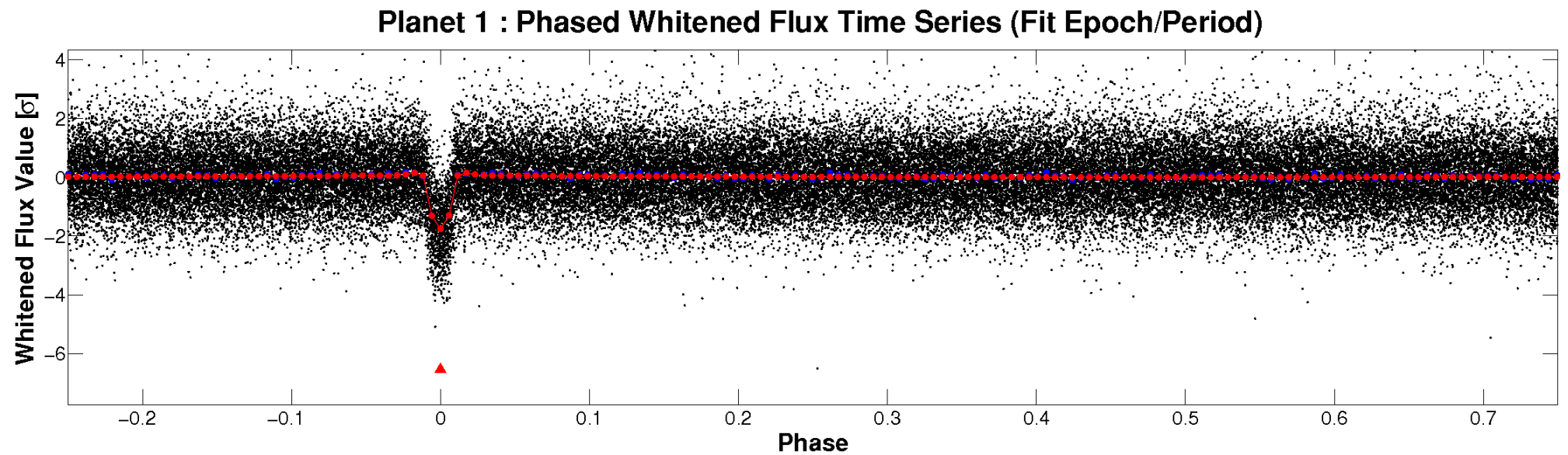
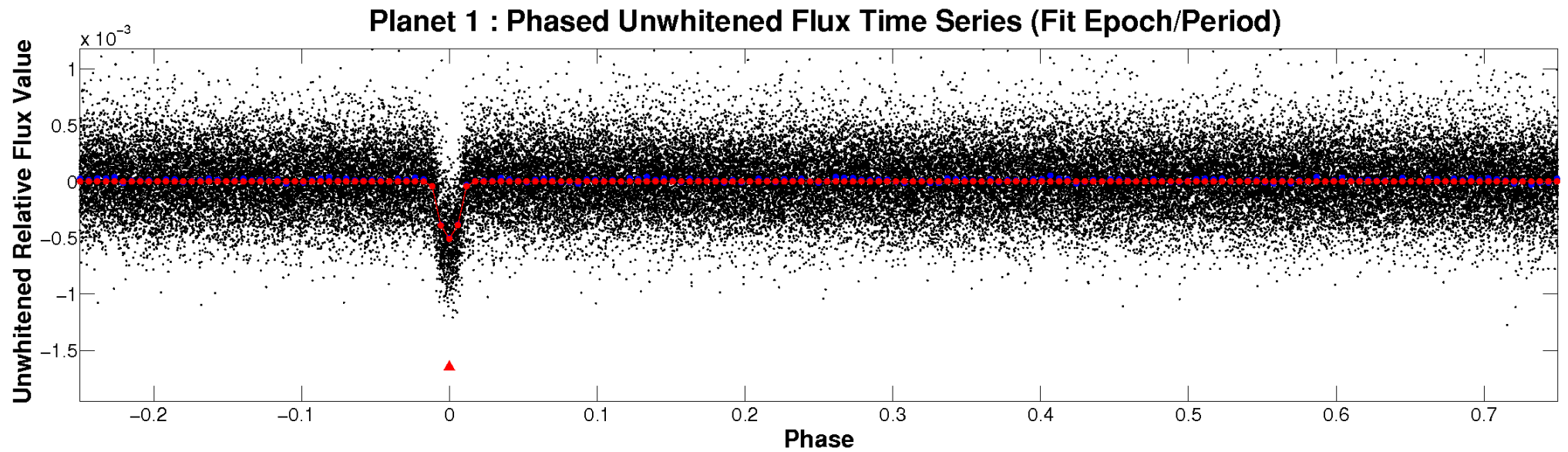


# ALT Odd/Even

TCE 005617854-01

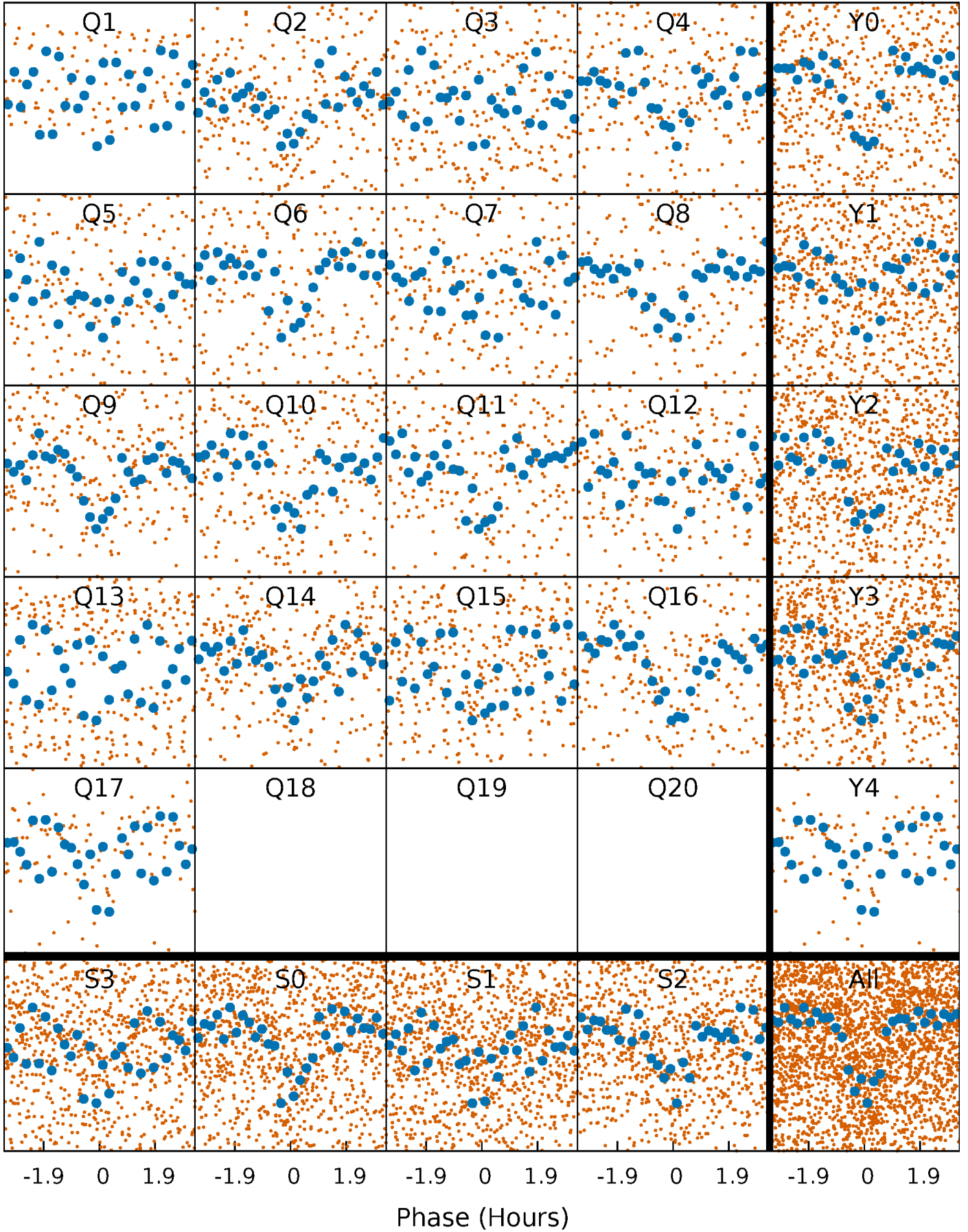


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

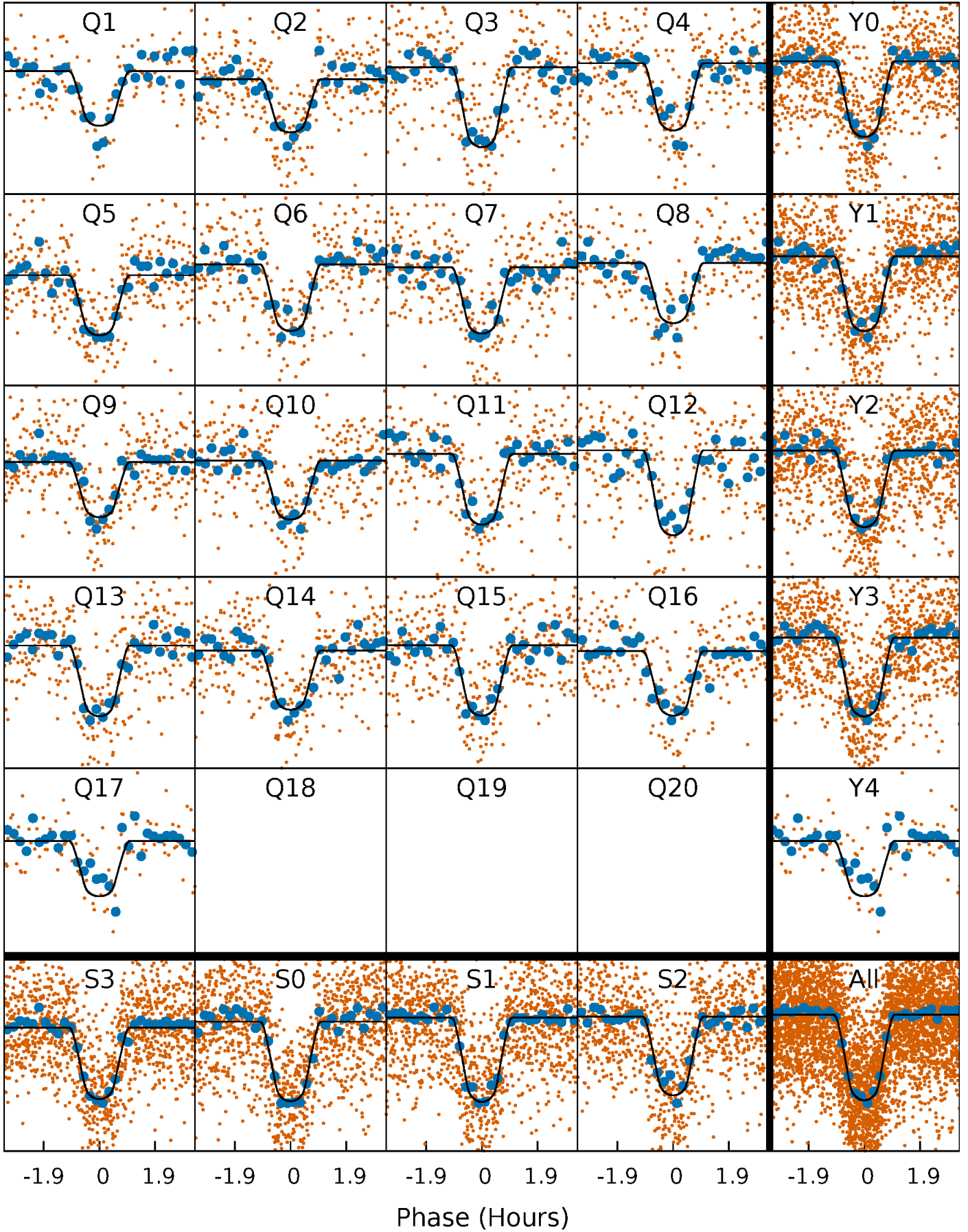
TCE 005617854-01   P= 3.517493 Days    $T_0=132.029876$  (BKJD)





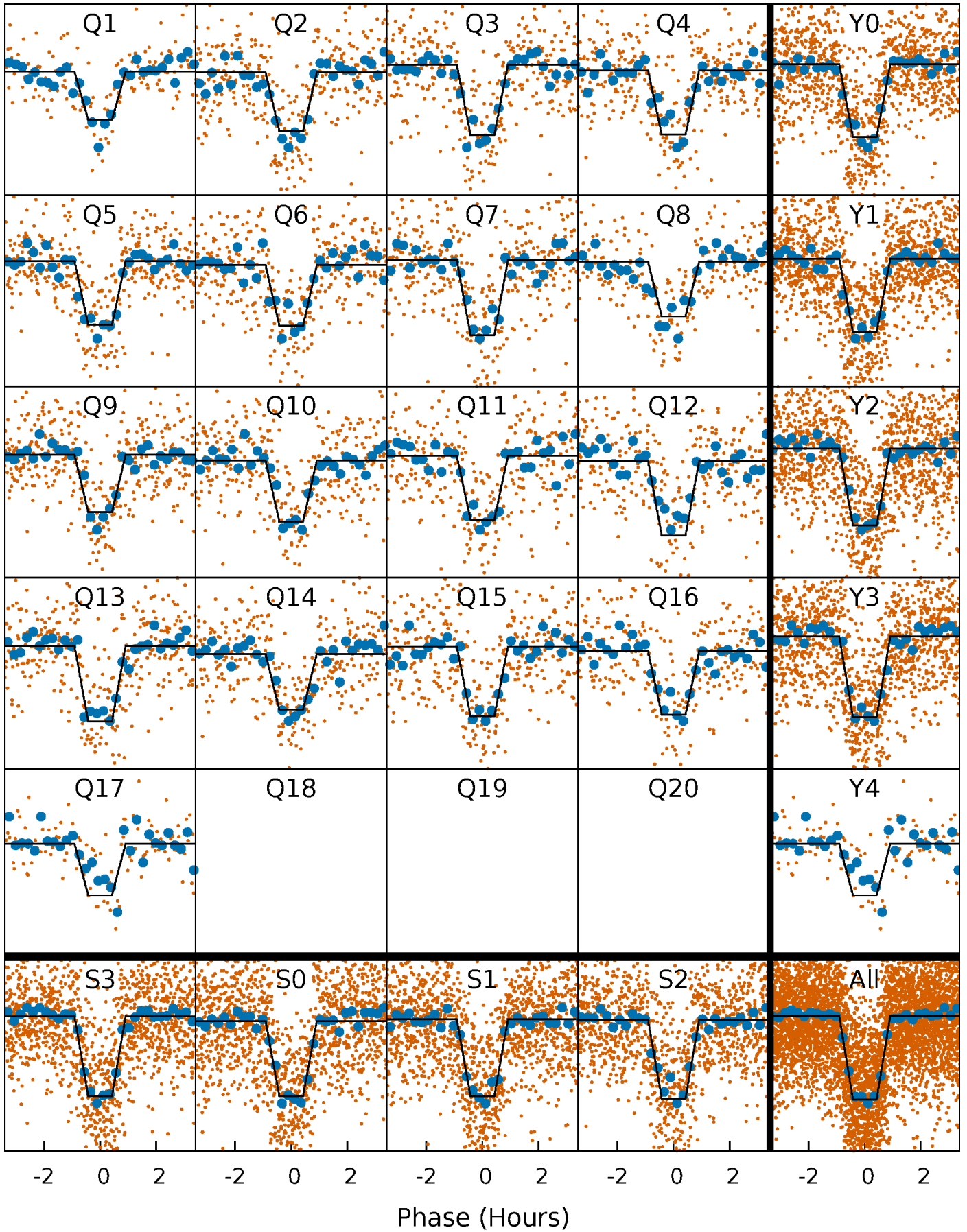
# DV Quarter-Phased Transit Curves

TCE 005617854-01 P= 3.517493 Days  $T_0=132.029876$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

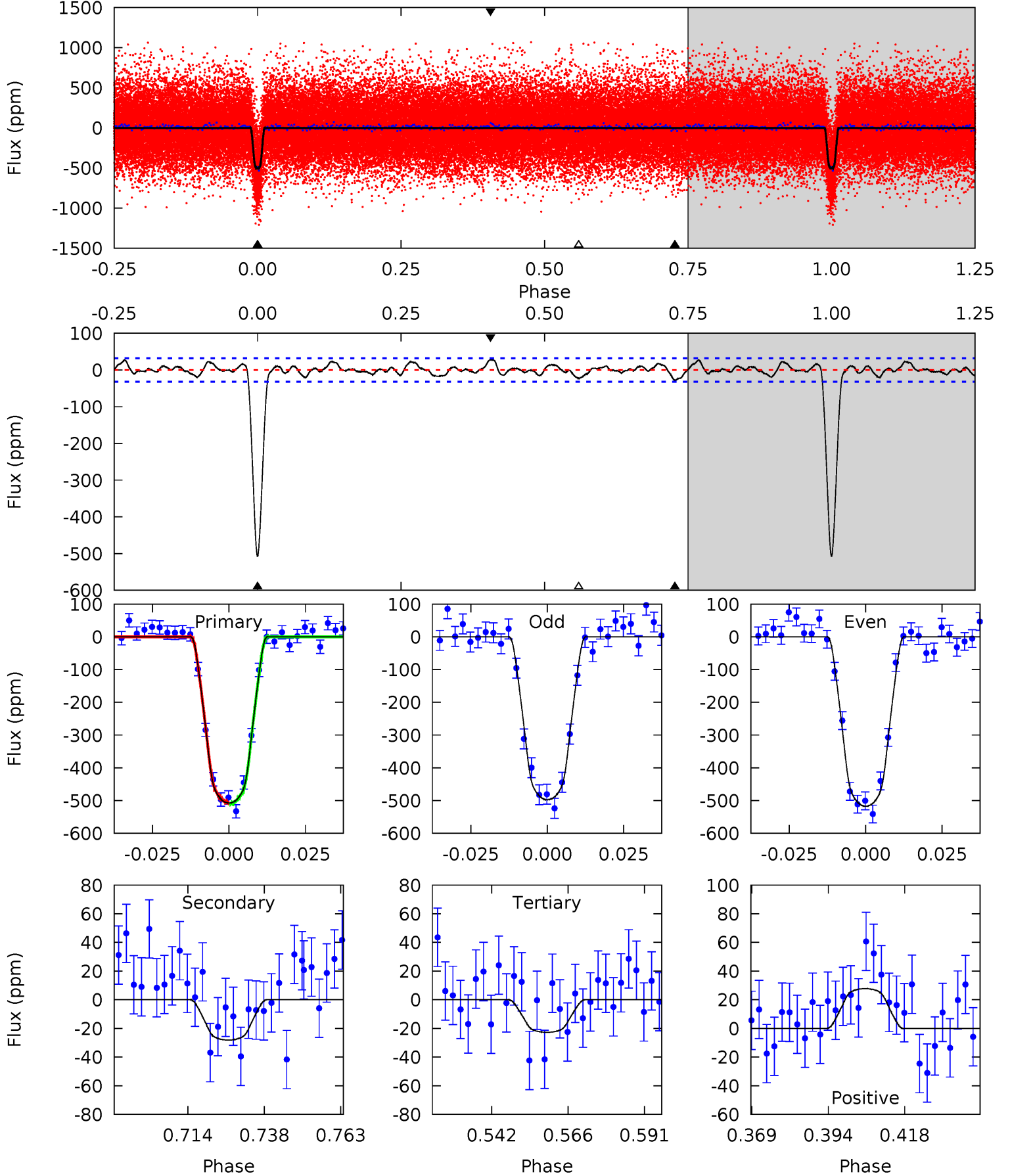
TCE 005617854-01 P= 3.517479 Days  $T_0=132.032187$  (BKJD)



# DV Model-Shift Uniqueness Test

005617854-01, P = 3.517493 Days, E = 128.512383 Days

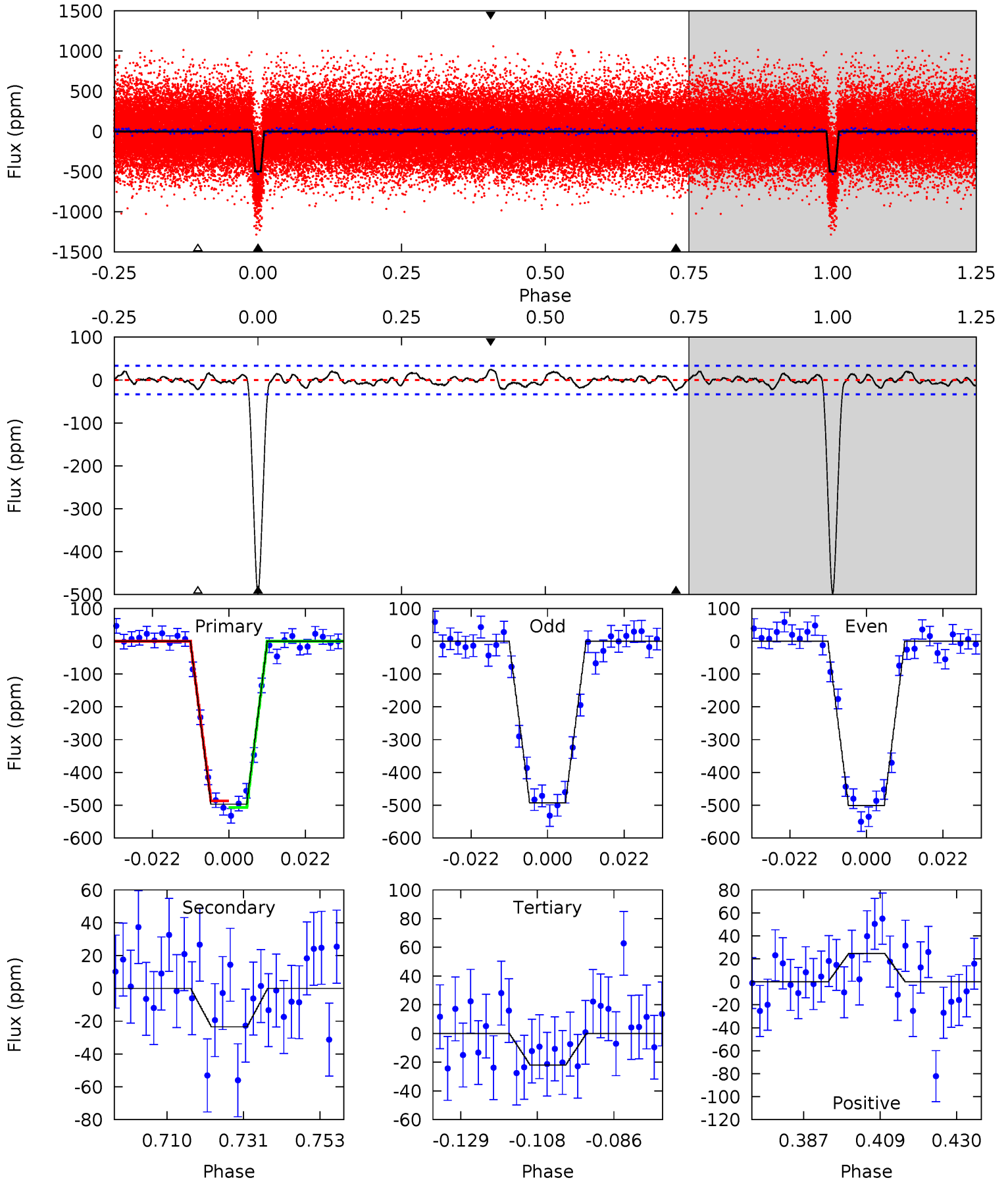
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
76.4	4.24	3.42	4.18	4.85	2.25	1.51	73.0	72.3	0.81	0.05	1.49	1.00	0.05	0.33



# Alt Model-Shift Uniqueness Test

005617854-01, P = 3.517479 Days, E = 128.514708 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
72.8	3.44	3.22	3.64	4.88	2.30	1.33	69.6	69.2	0.22	-0.20	0.61	0.98	0.05	1.48



### Stellar Parameters For KIC 005617854

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4132^{+82}_{-91}$	$4.699^{+0.025}_{-0.028}$	$-0.300^{+0.150}_{-0.150}$	$0.564^{+0.030}_{-0.030}$	$0.578^{+0.031}_{-0.034}$	$4.544^{+0.556}_{-0.496}$
	+2%/-2%	+1%/-1%	+50%/-50%	+5%/-5%	+5%/-6%	+12%/-11%
Source	SPE60	SPE60	SPE60	DSEP		

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

### Secondary Eclipse Parameters for KIC 005617854-01 / KOI 1588.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-28 \pm 7$	$1.54^{+0.17}_{-0.17}$	$984^{+22}_{-25}$	$2573^{+123}_{-113}$	$9.086^{+3.531}_{-2.701}$
Alt.	$-23 \pm 7$	$1.38^{+0.16}_{-0.19}$	$985^{+22}_{-24}$	$2592^{+143}_{-145}$	$9.400^{+4.694}_{-3.169}$

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



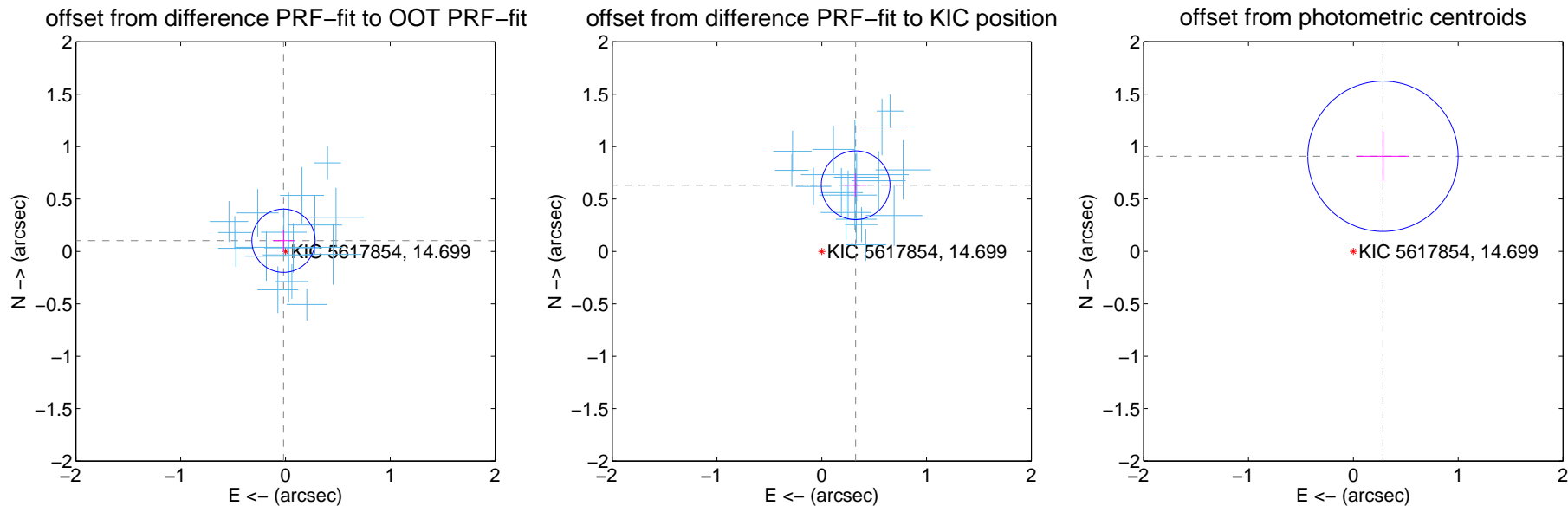
## DV Centroid Data

Supplemental centroid analysis for 005617854-01. Kepler magnitude: 14.70. Transit SNR 49.99

There are 17 quarters with good PRF difference image offsets

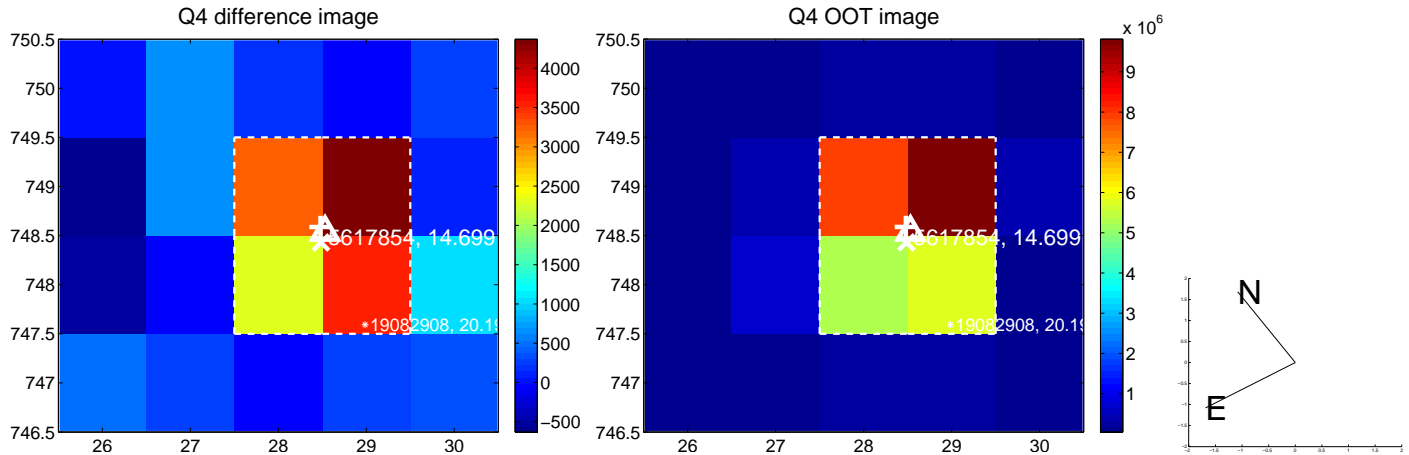
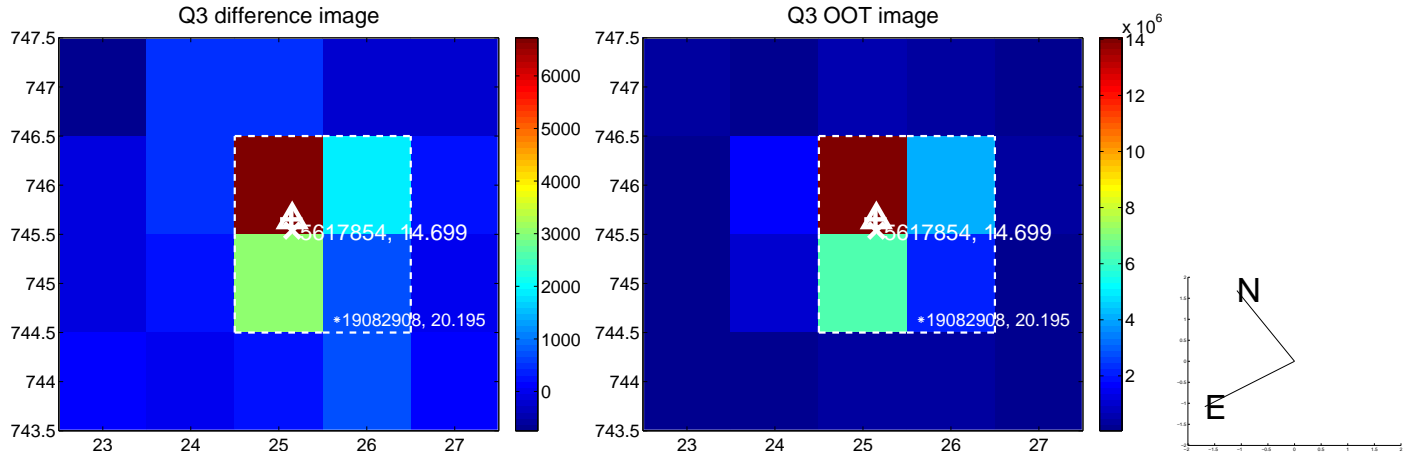
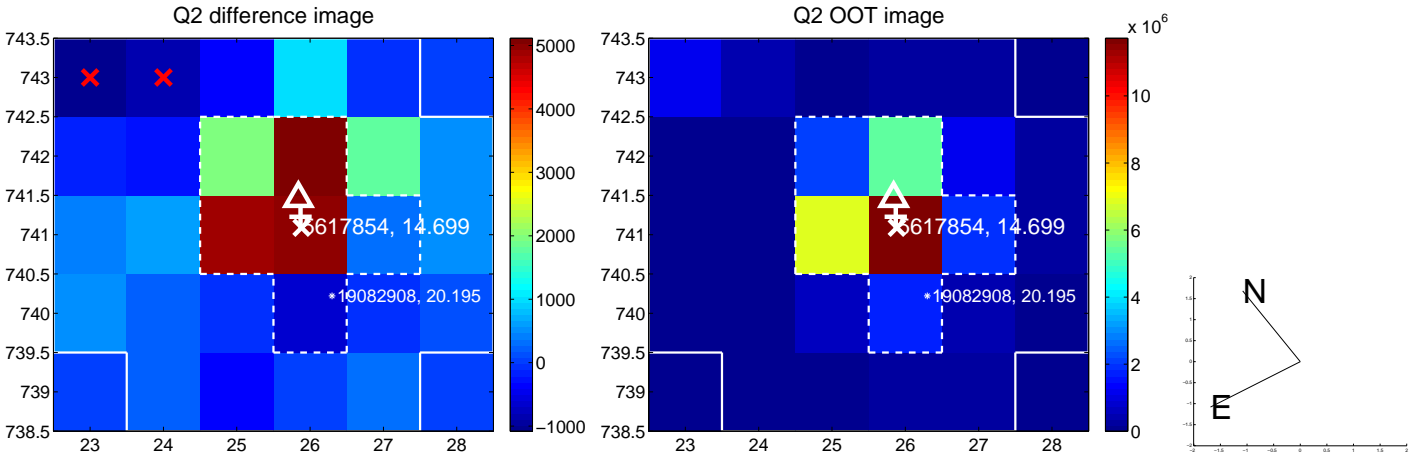
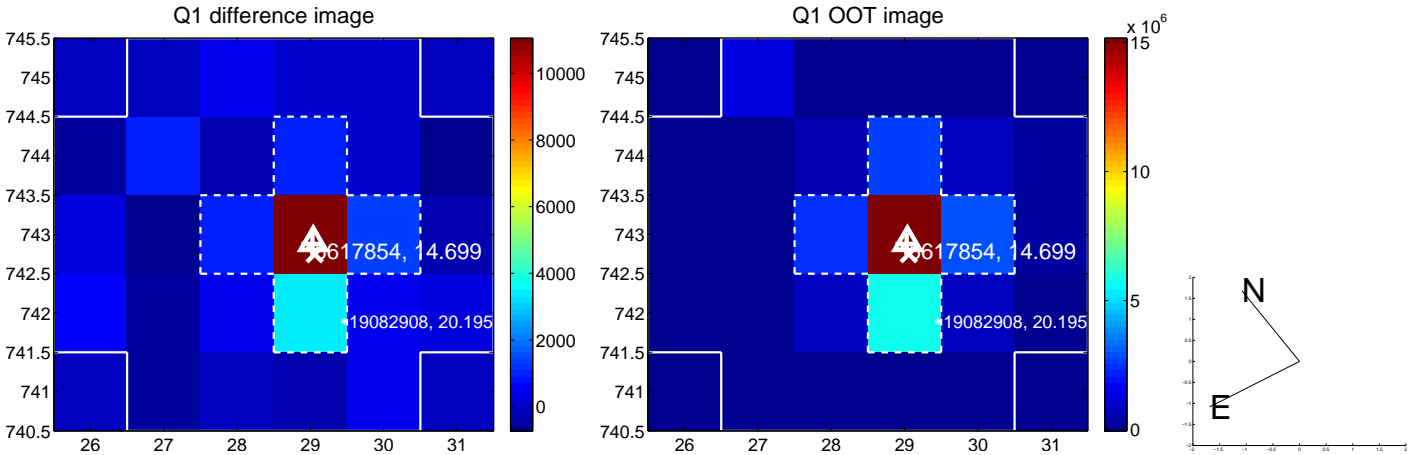
The direct PRF centroid is offset from the target star catalog position by about 0.75 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.104 \pm 0.101$	1.03	$0.019 \pm 0.102$	$0.102 \pm 0.102$
PRF-fit source offset from KIC position	$0.709 \pm 0.109$	6.49	$-0.323 \pm 0.106$	$0.632 \pm 0.110$
photometric centroid source offset	$0.95 \pm 0.24$	3.98	$-0.28 \pm 0.25$	$0.91 \pm 0.24$

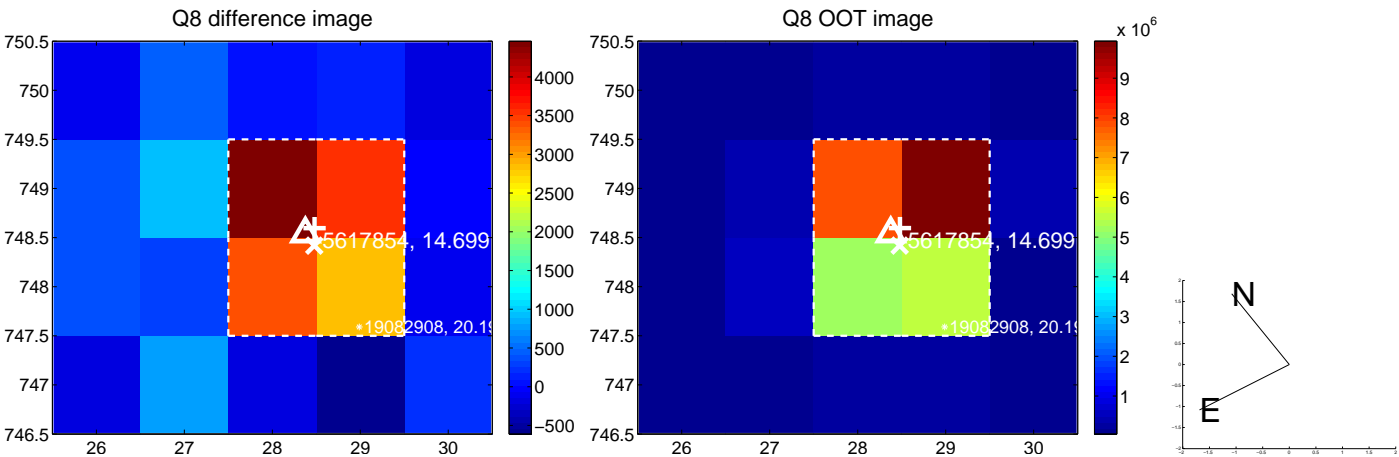
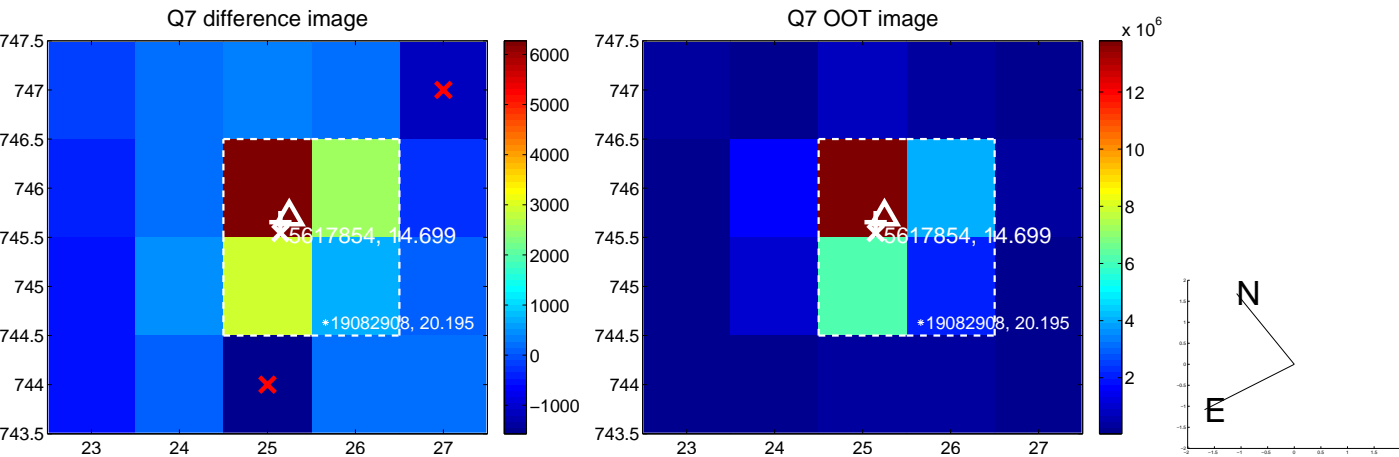
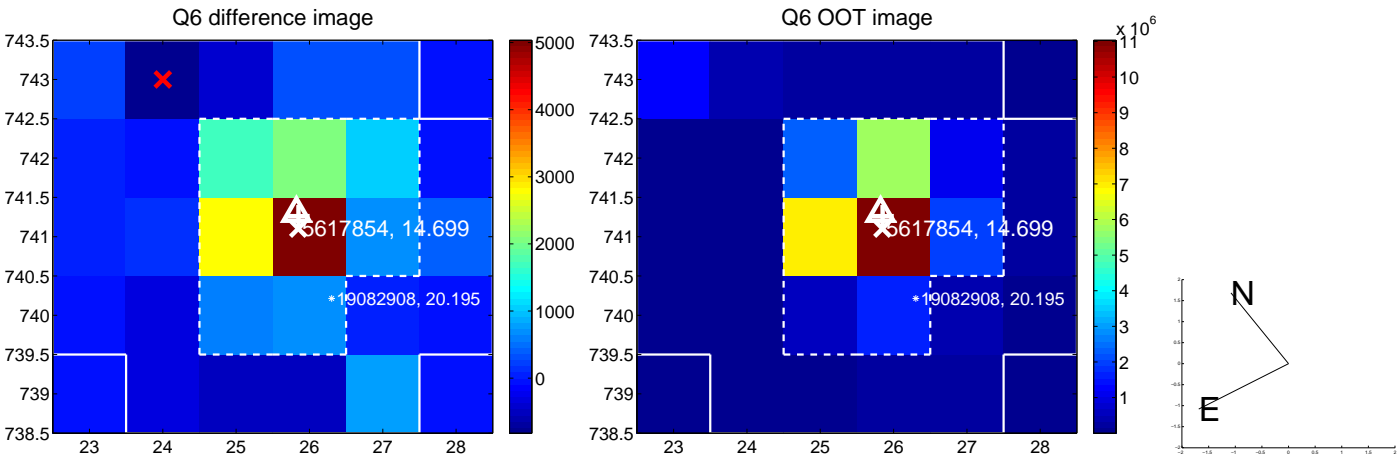
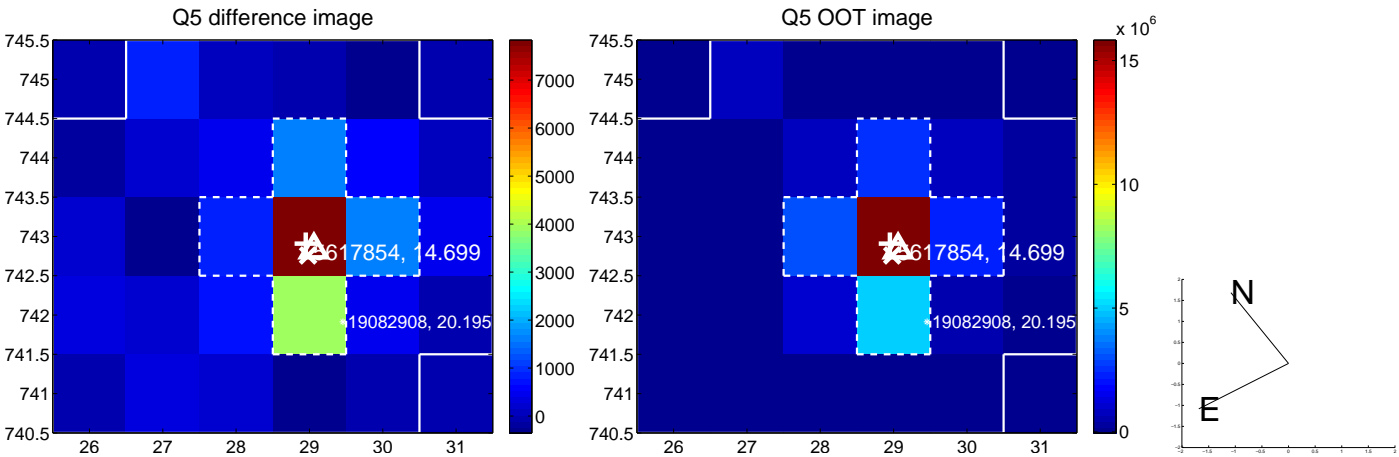


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

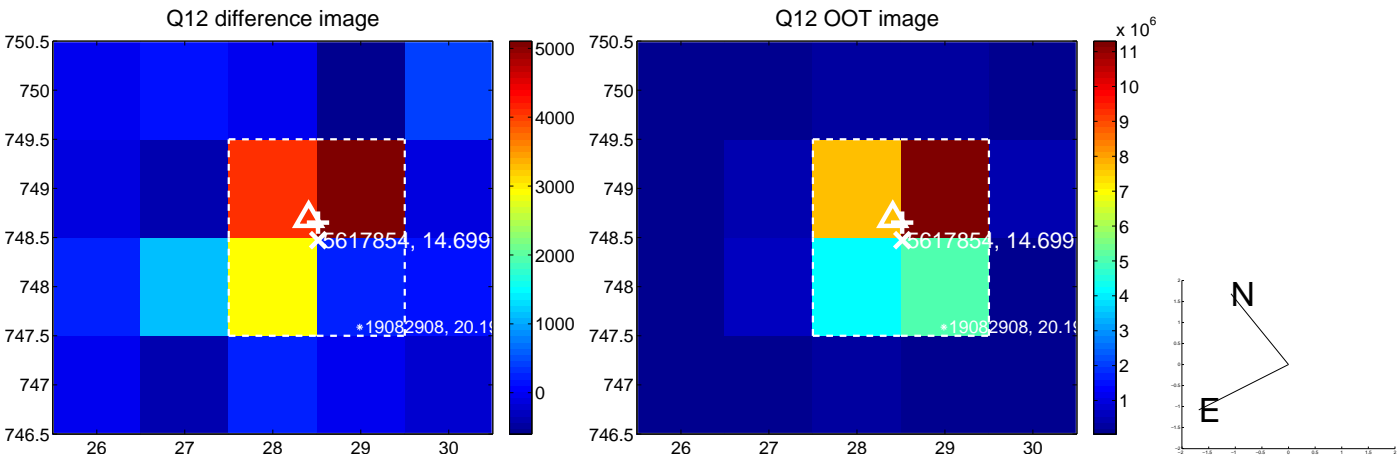
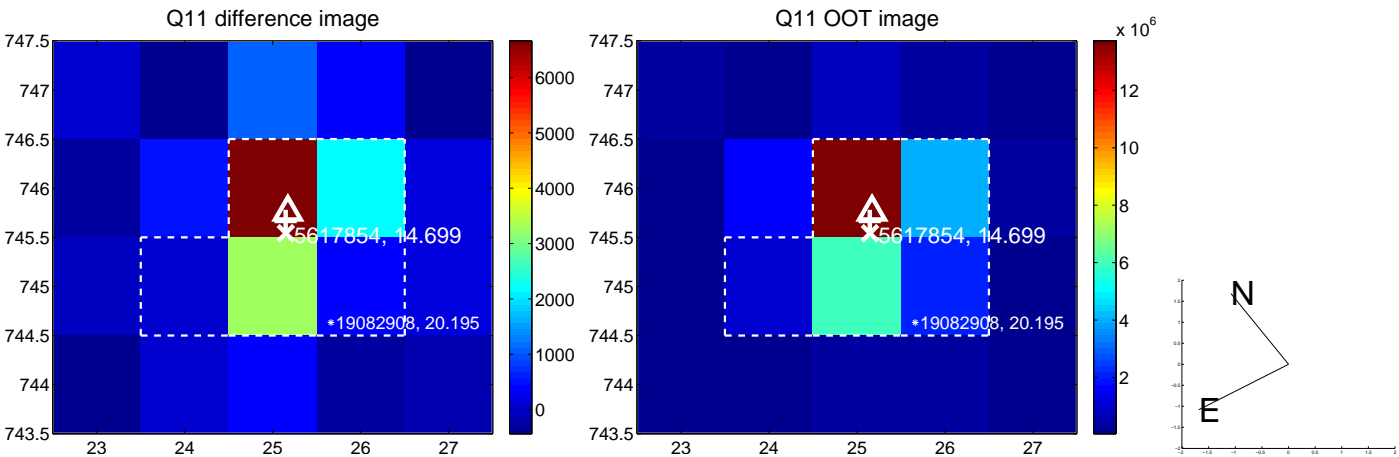
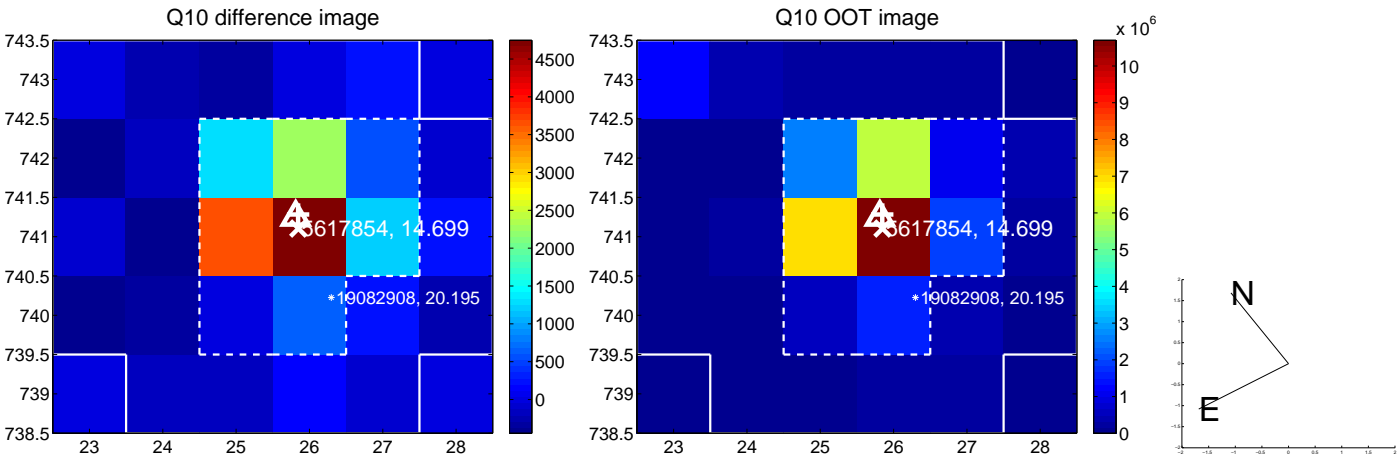
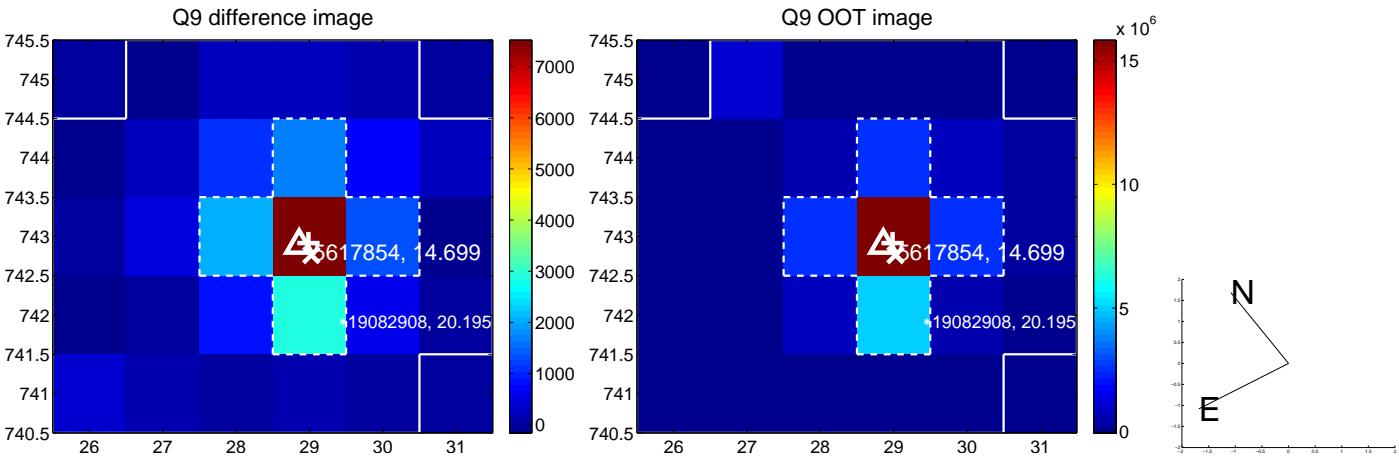
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



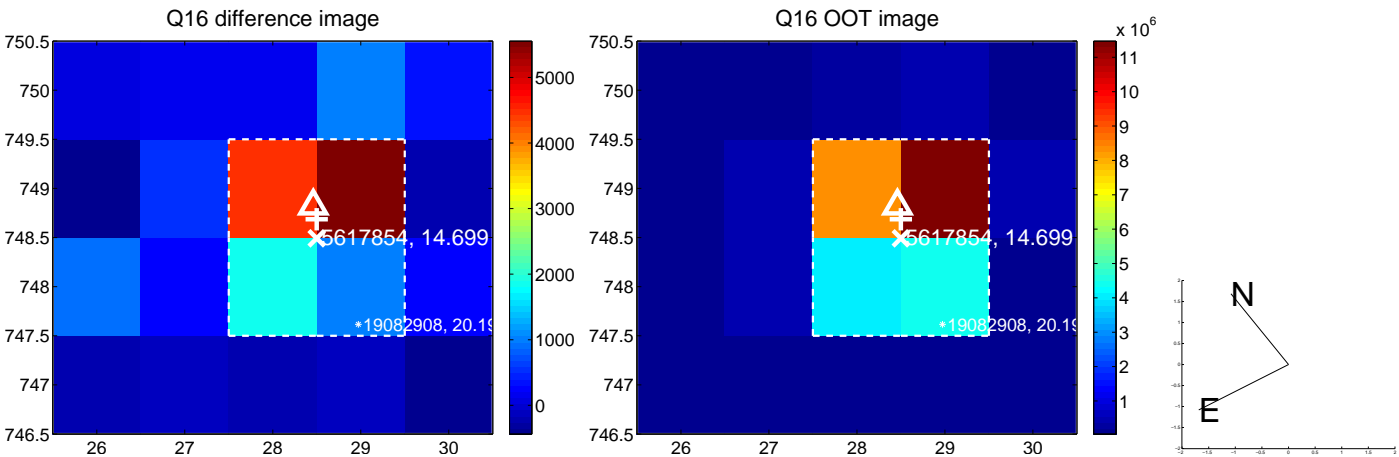
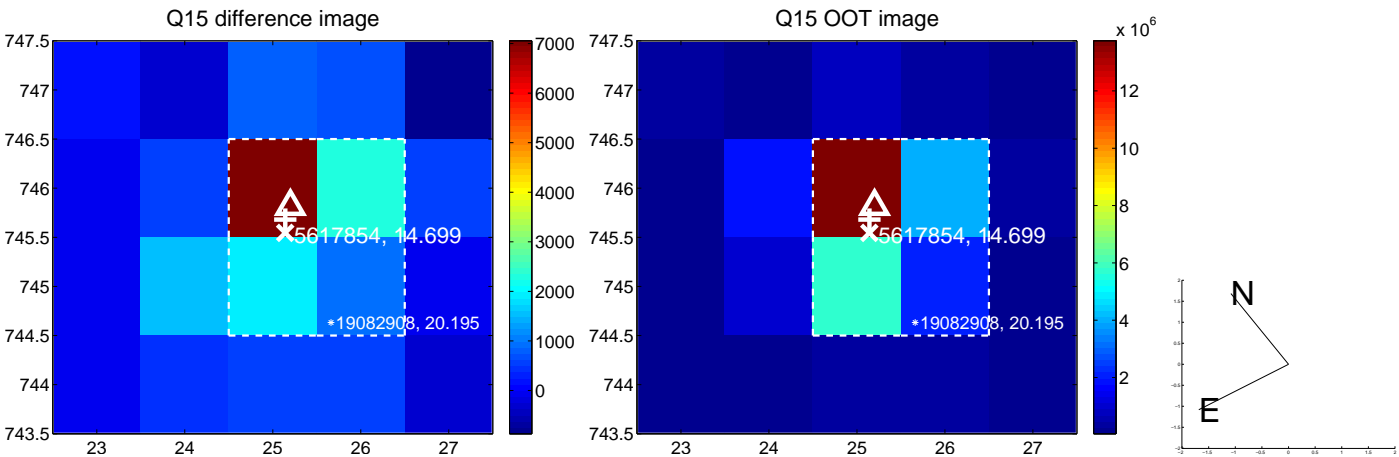
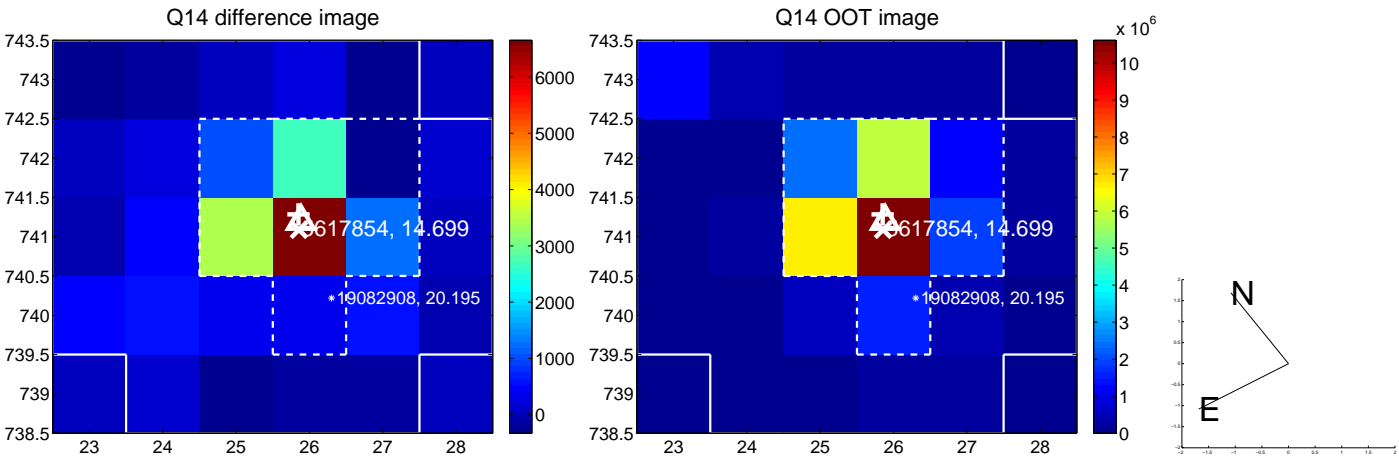
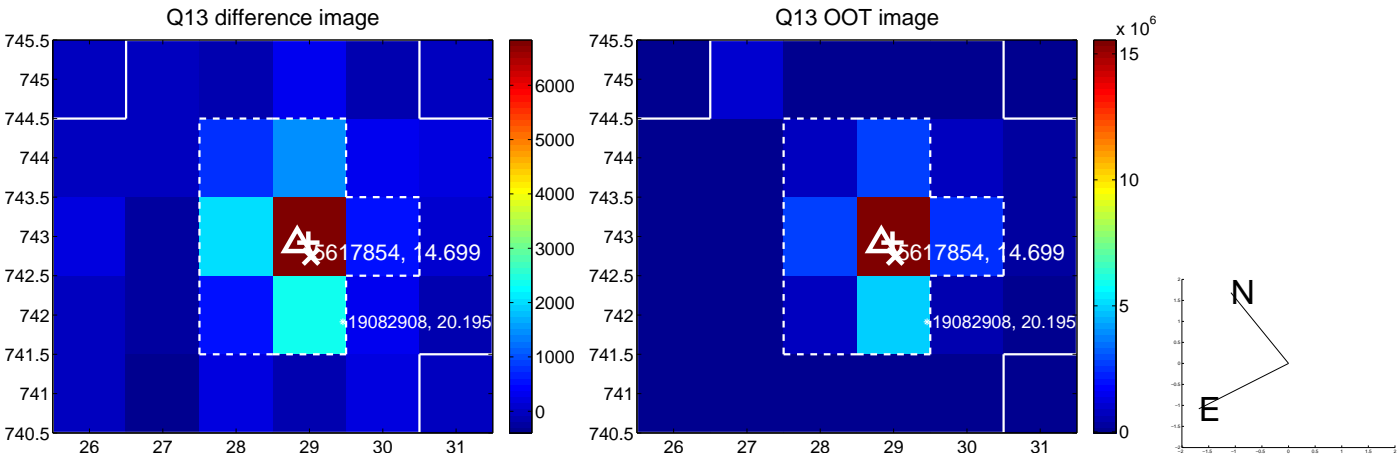
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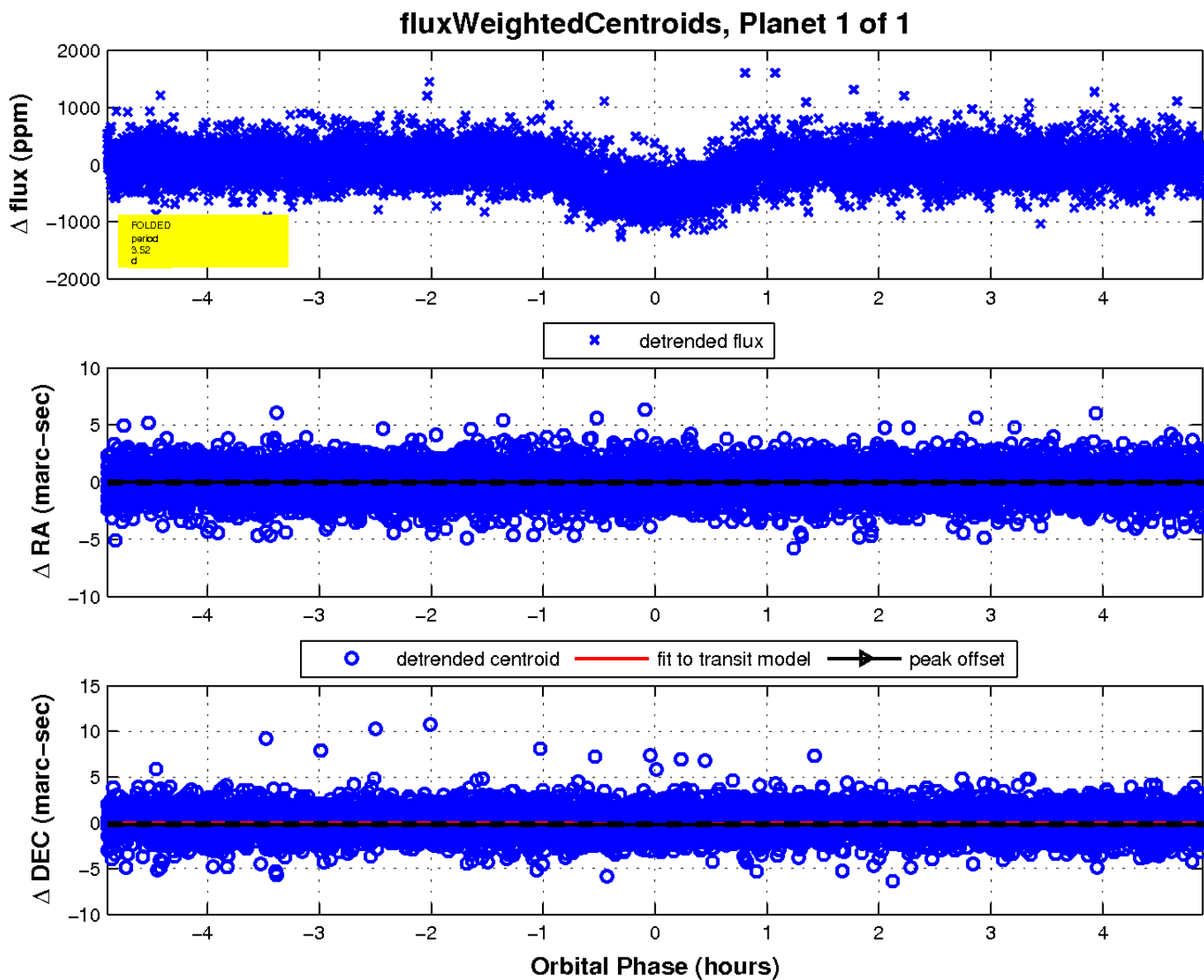
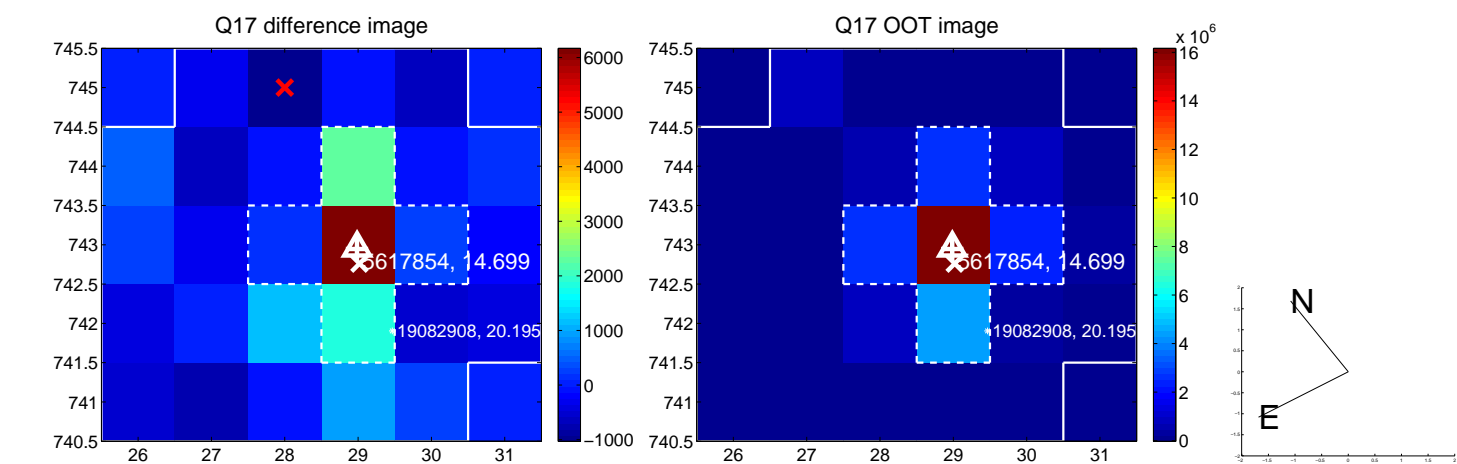


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

