

# KIC 009027841

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009027841-01	OBS	4266.01	0.503998	131.645369	1142.1	1.500	10.5	-1.0	0.57	4898	1.90	1572.64

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009027841-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—CENT_NOFITS

**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 009027841-01

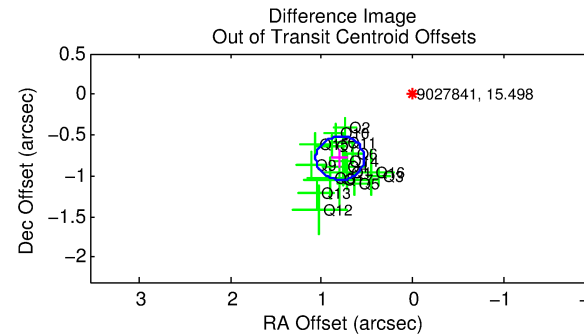
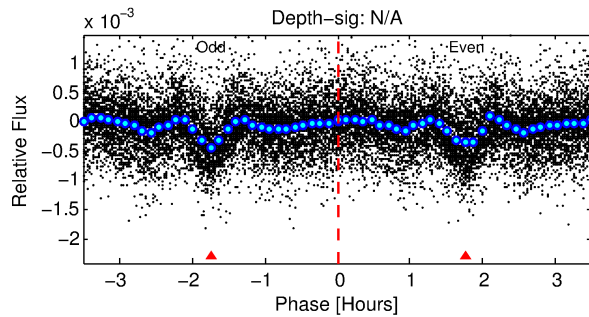
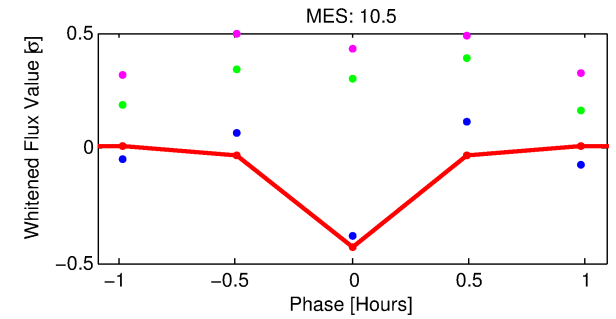
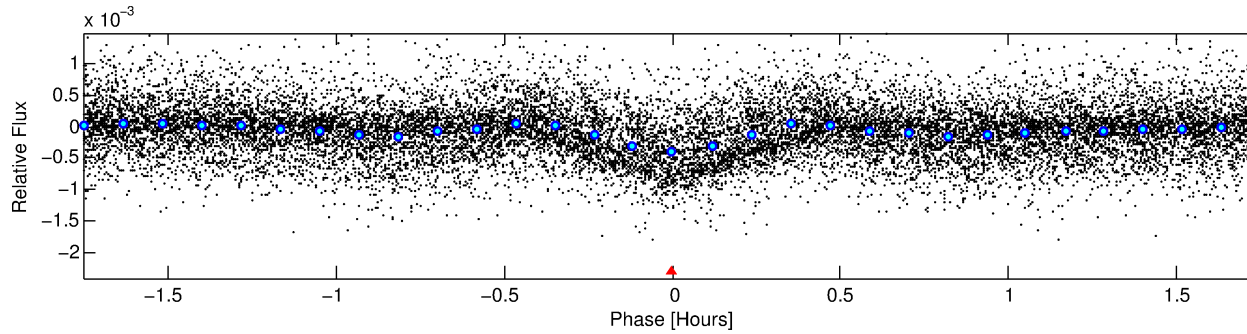
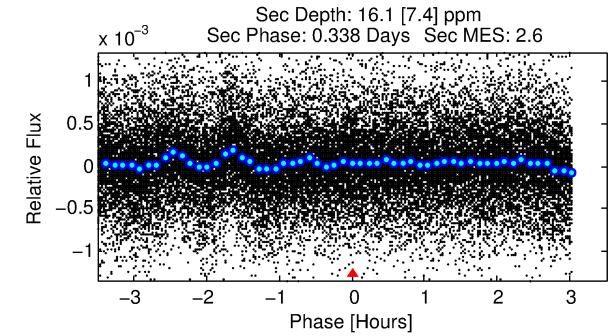
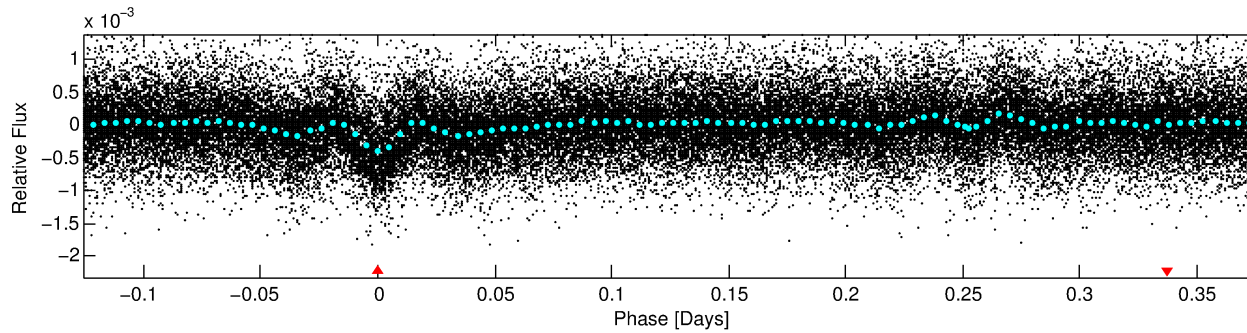
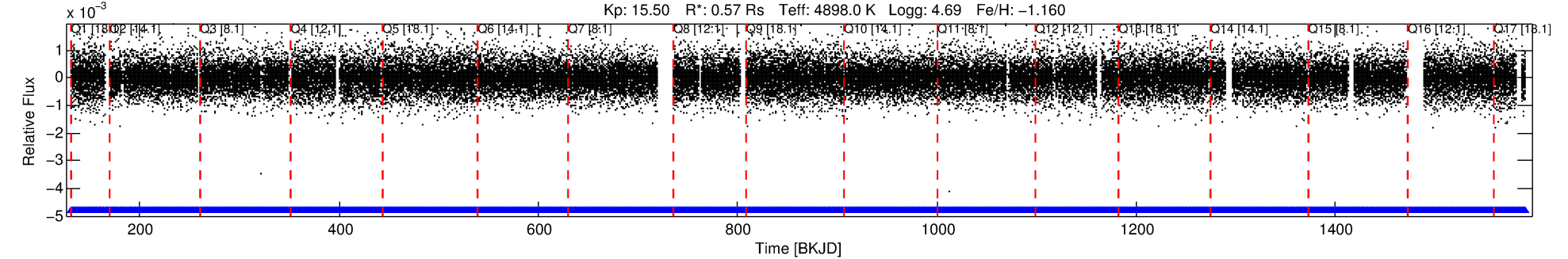
No Significant Match Found

# DV One-Page Summary

KIC: 9027841 Candidate: 1 of 1 Period: 0.504 d

KOI: K04266 Corr: No Ephemeris Match

Kp: 15.50 R\*: 0.57 Rs Teff: 4898.0 K Logg: 4.69 Fe/H: -1.160



## TPS TCE Results:

Period = 0.50400 d  
Epoch = 131.6454 BKJD

DV fit results are unavailable

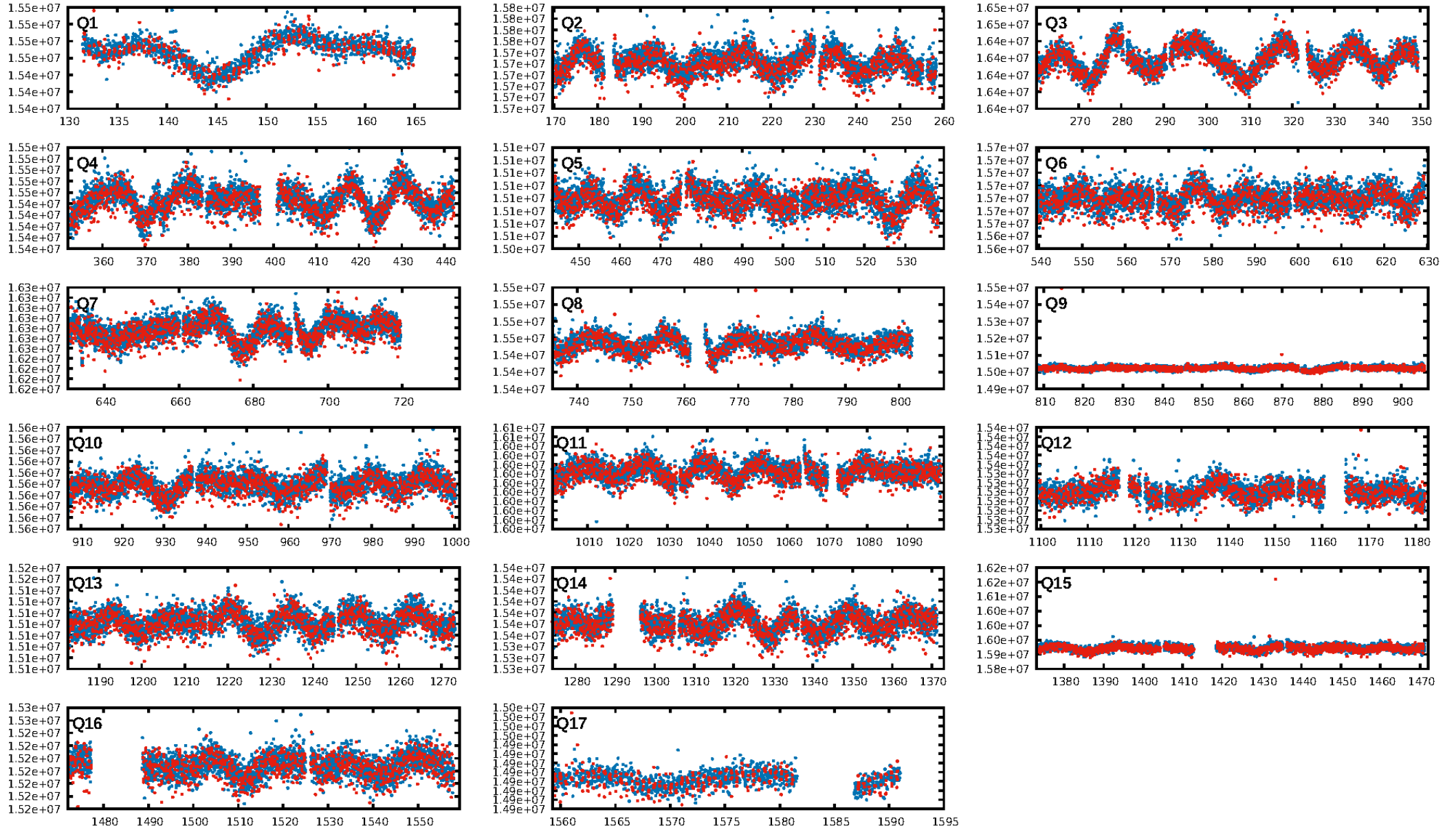
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 5.95e-27  
RollingBand-fgt: 1.00 [2533/2533]  
GhostDiagnostic-chr: 1.398  
Centroid-sig: 0.0%  
Centroid-so: 1.406 arcsec [10.91σ]  
OotOffset-rm: 1.117 arcsec [12.64σ]  
KicOffset-rm: 1.188 arcsec [13.26σ]  
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]

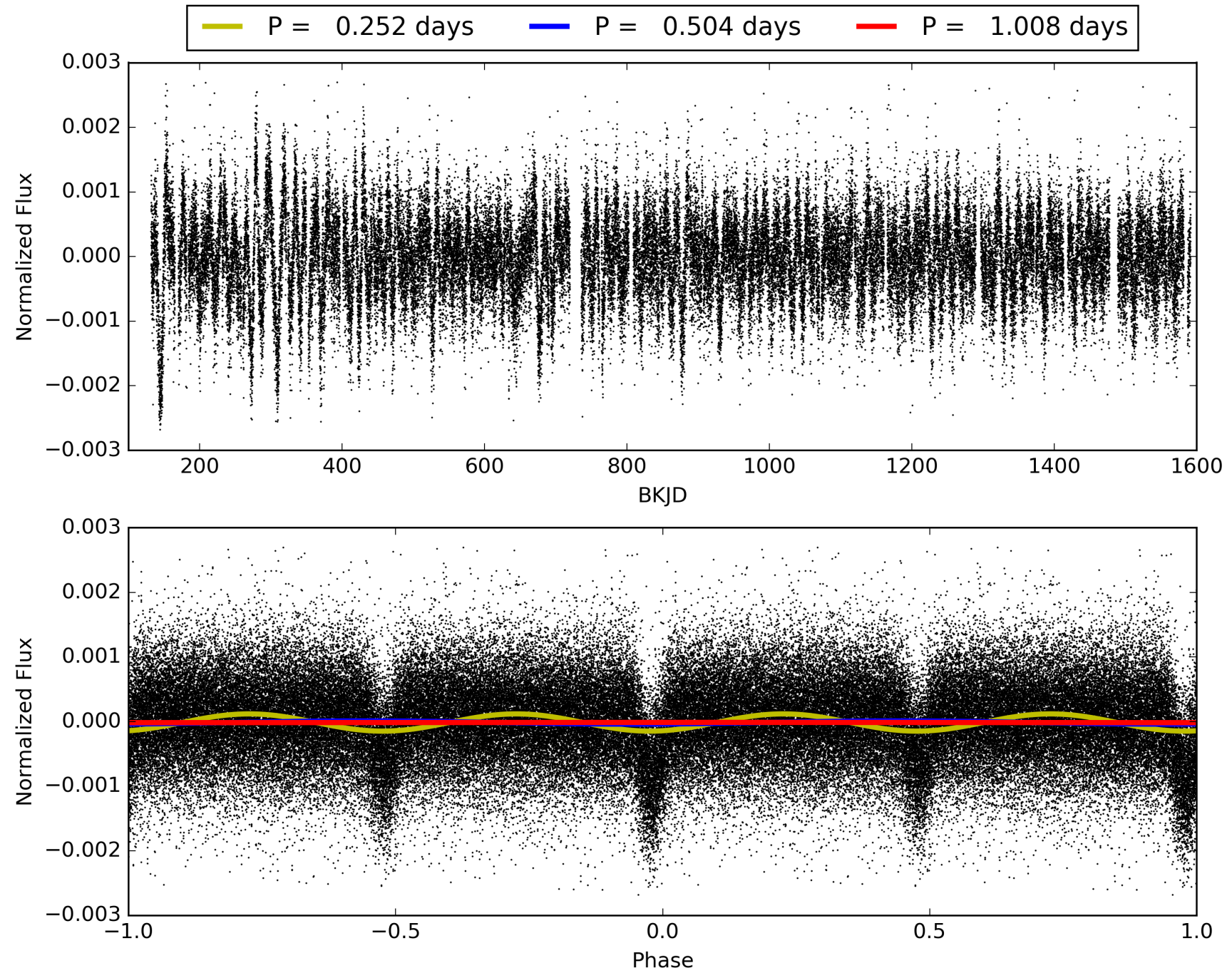
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 17:59:05 Z

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

# TCE 009027841-01, PDC Light Curves

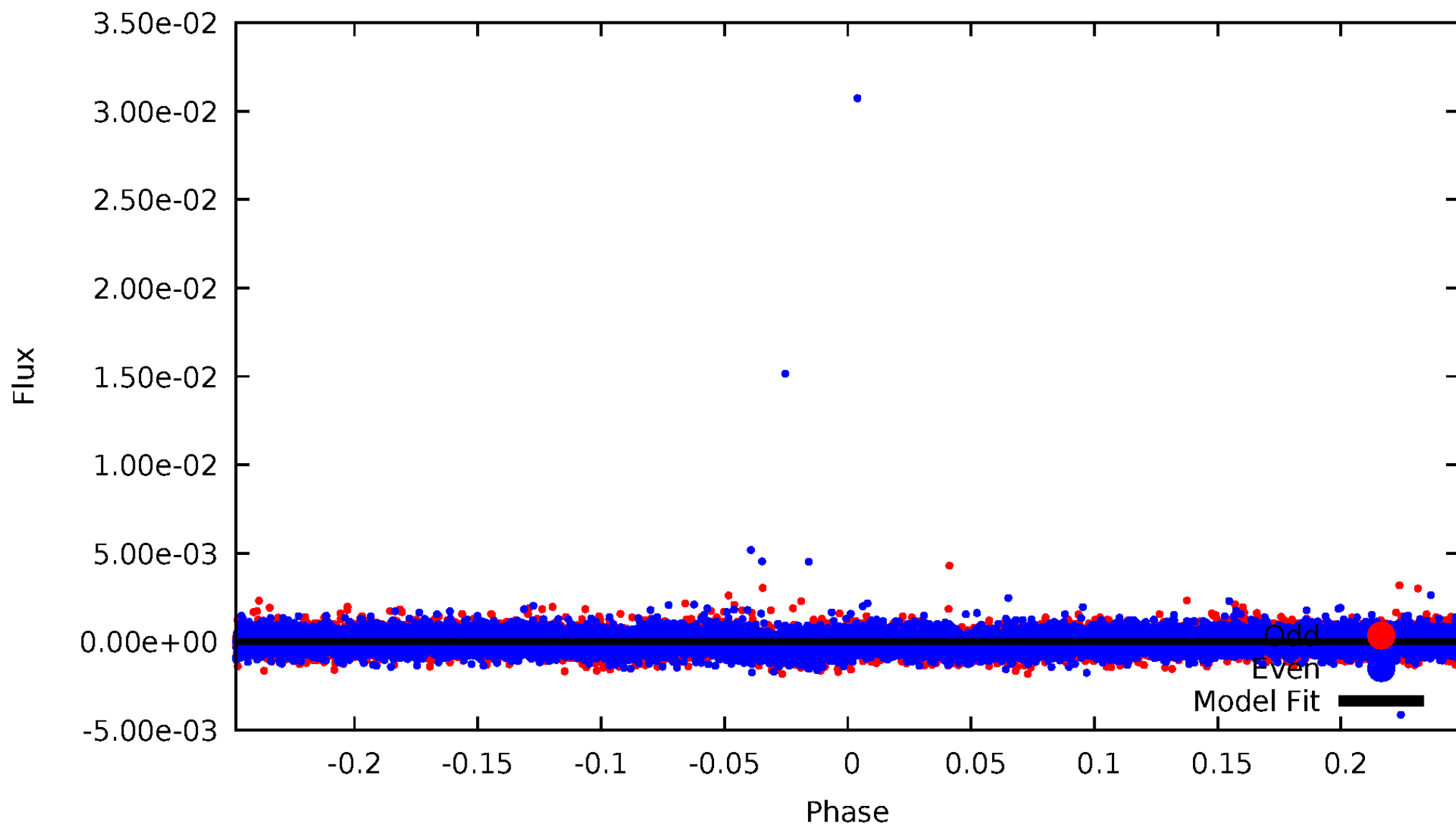


TCE 009027841-01



# DV Odd/Even

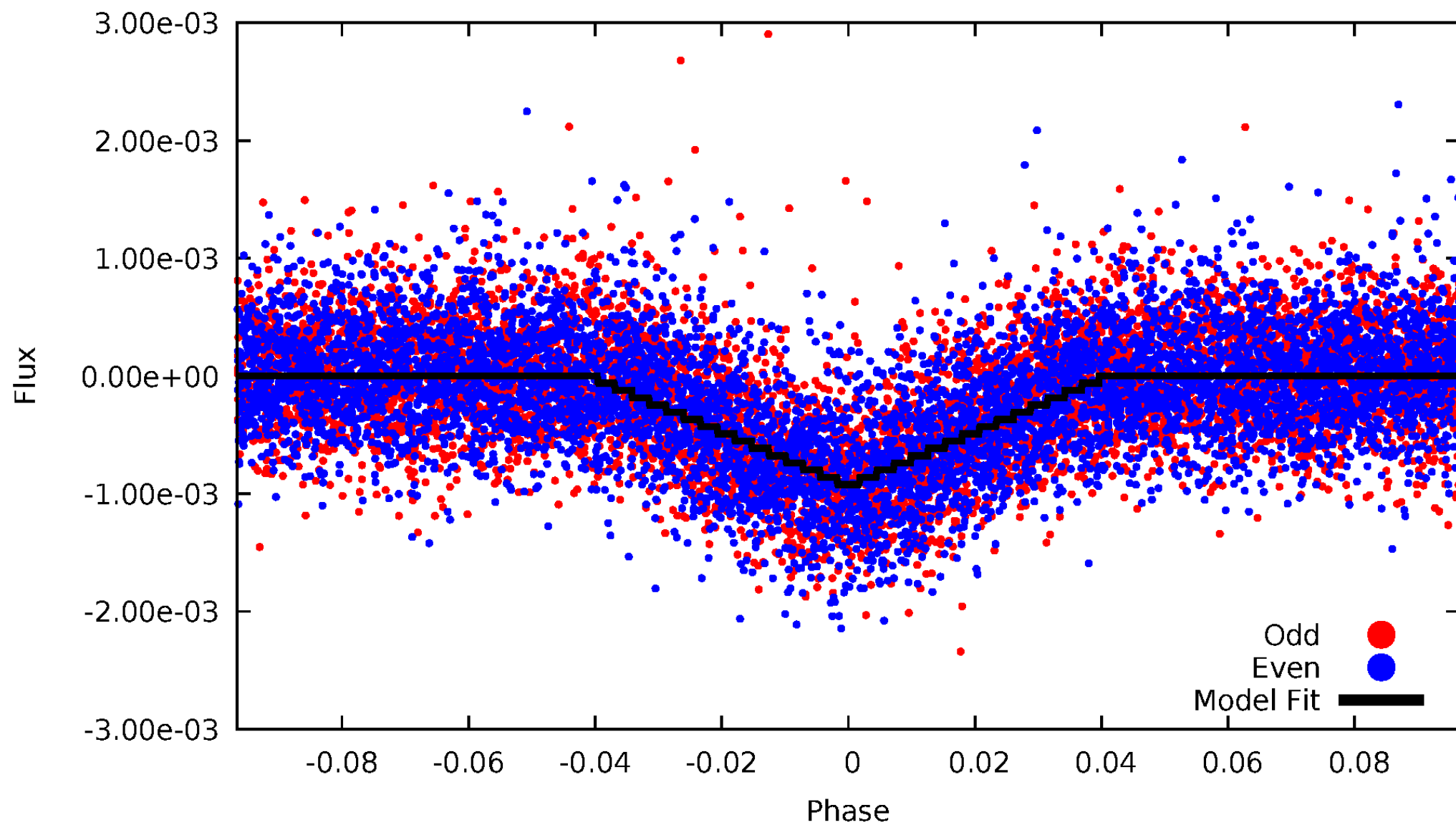
TCE 009027841-01



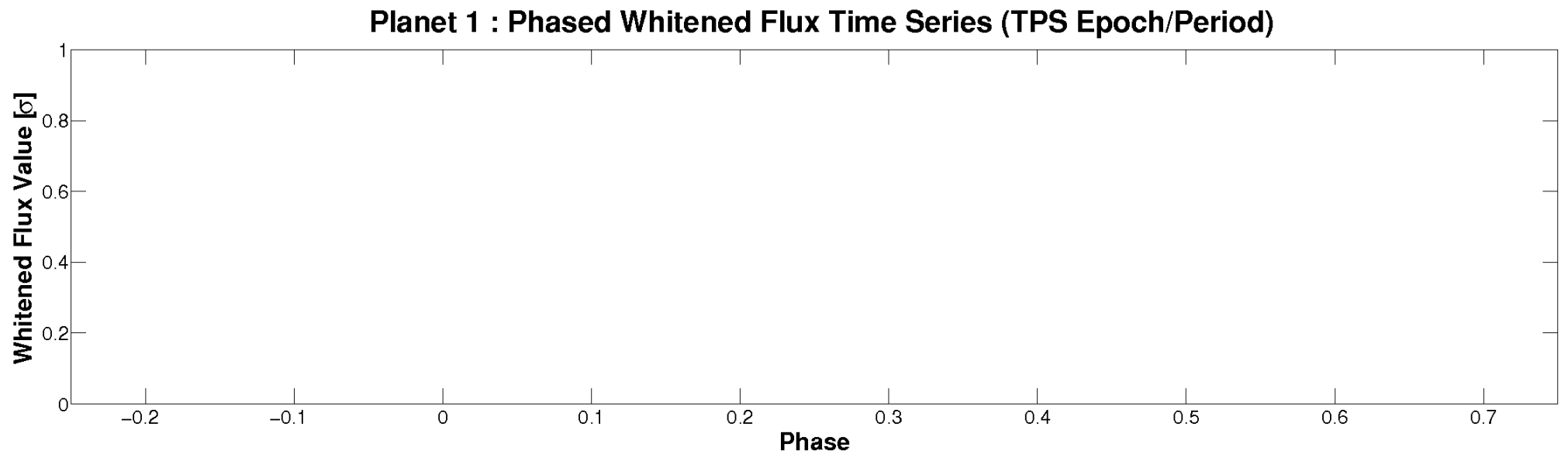
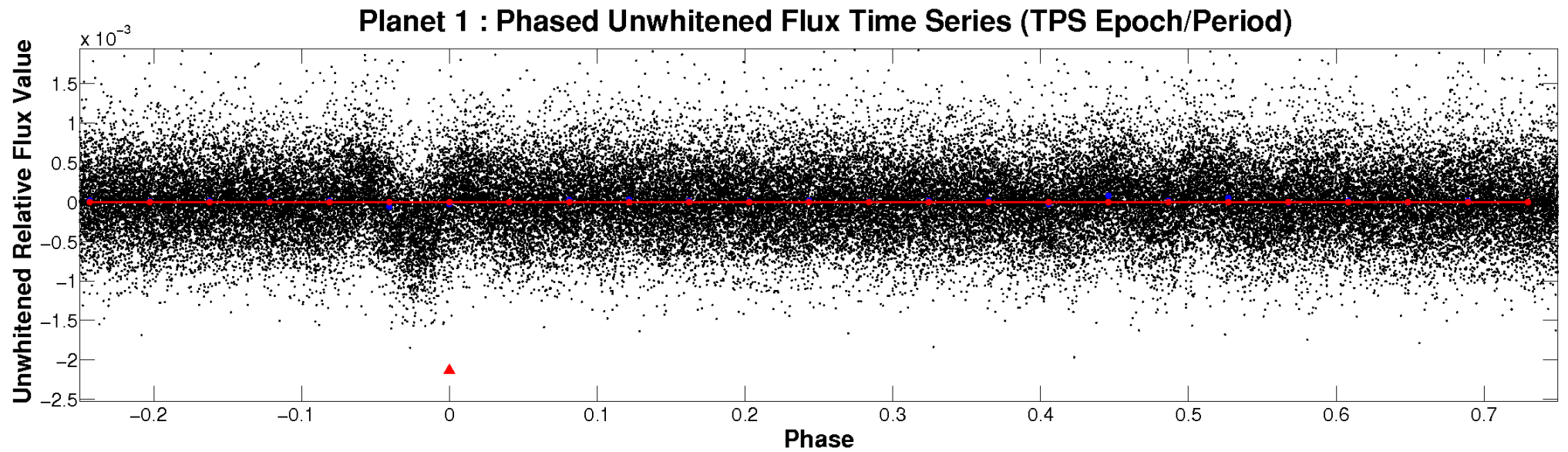


# ALT Odd/Even

TCE 009027841-01

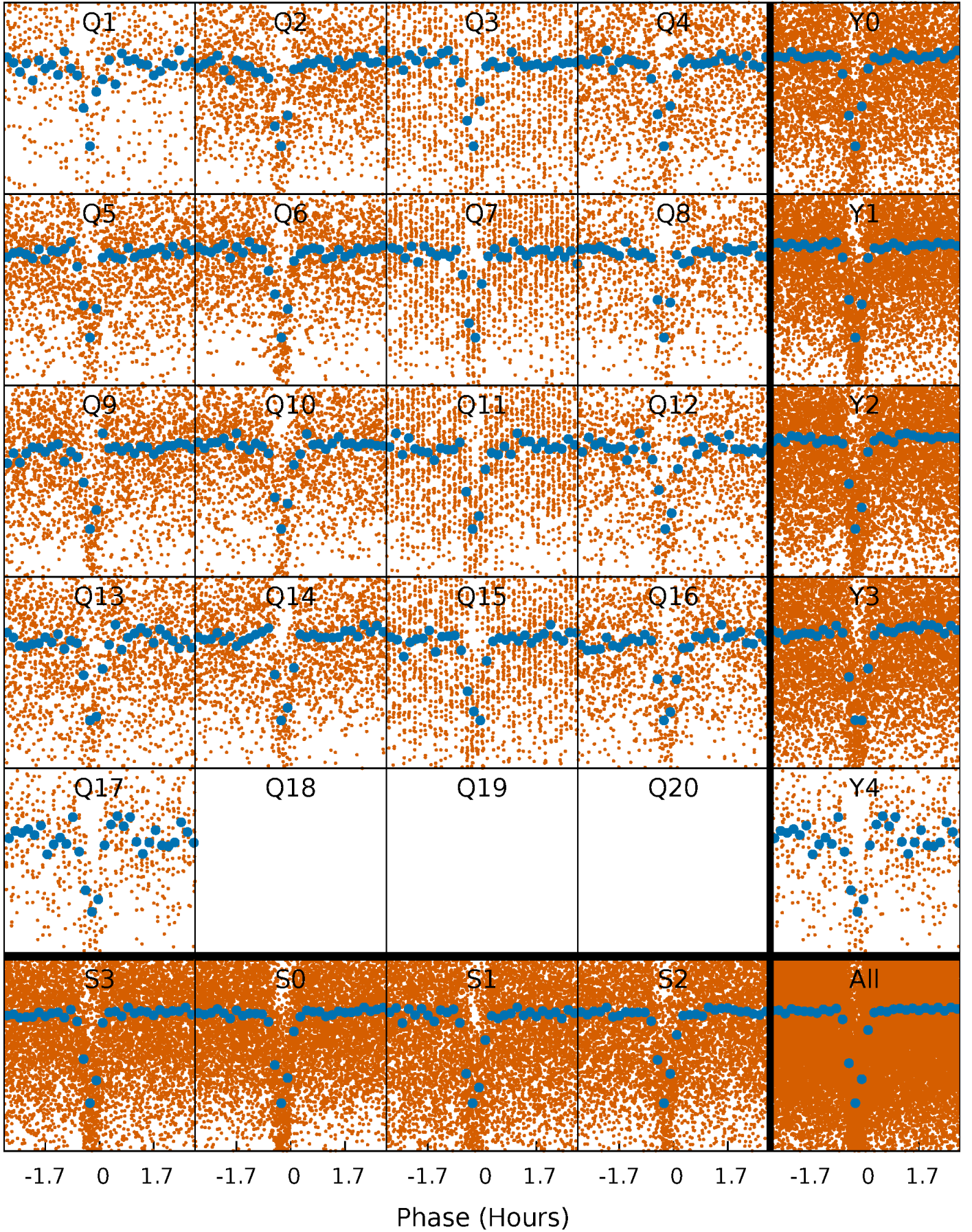


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

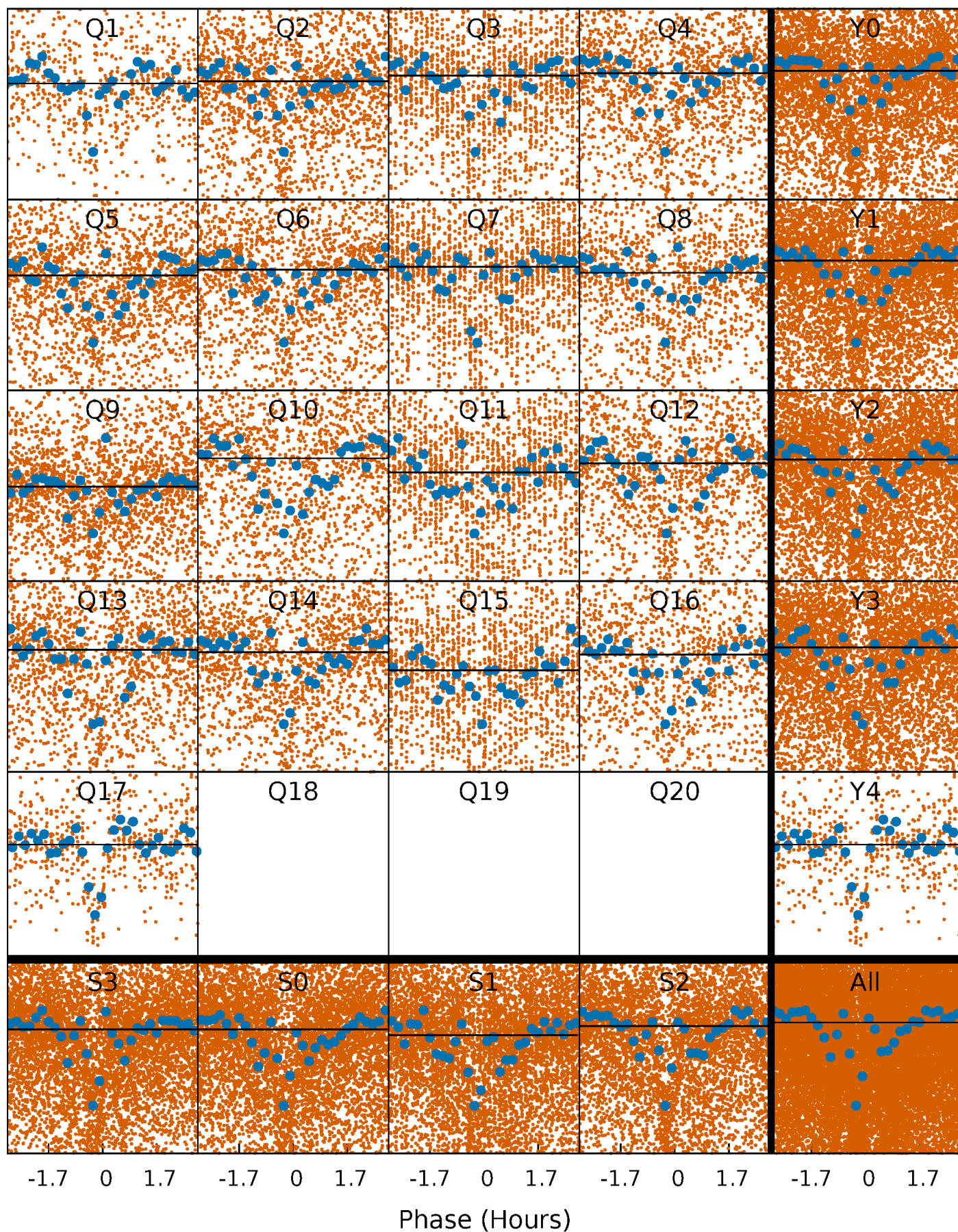
TCE 009027841-01   P= 0.503998 Days    $T_0=131.645369$  (BKJD)





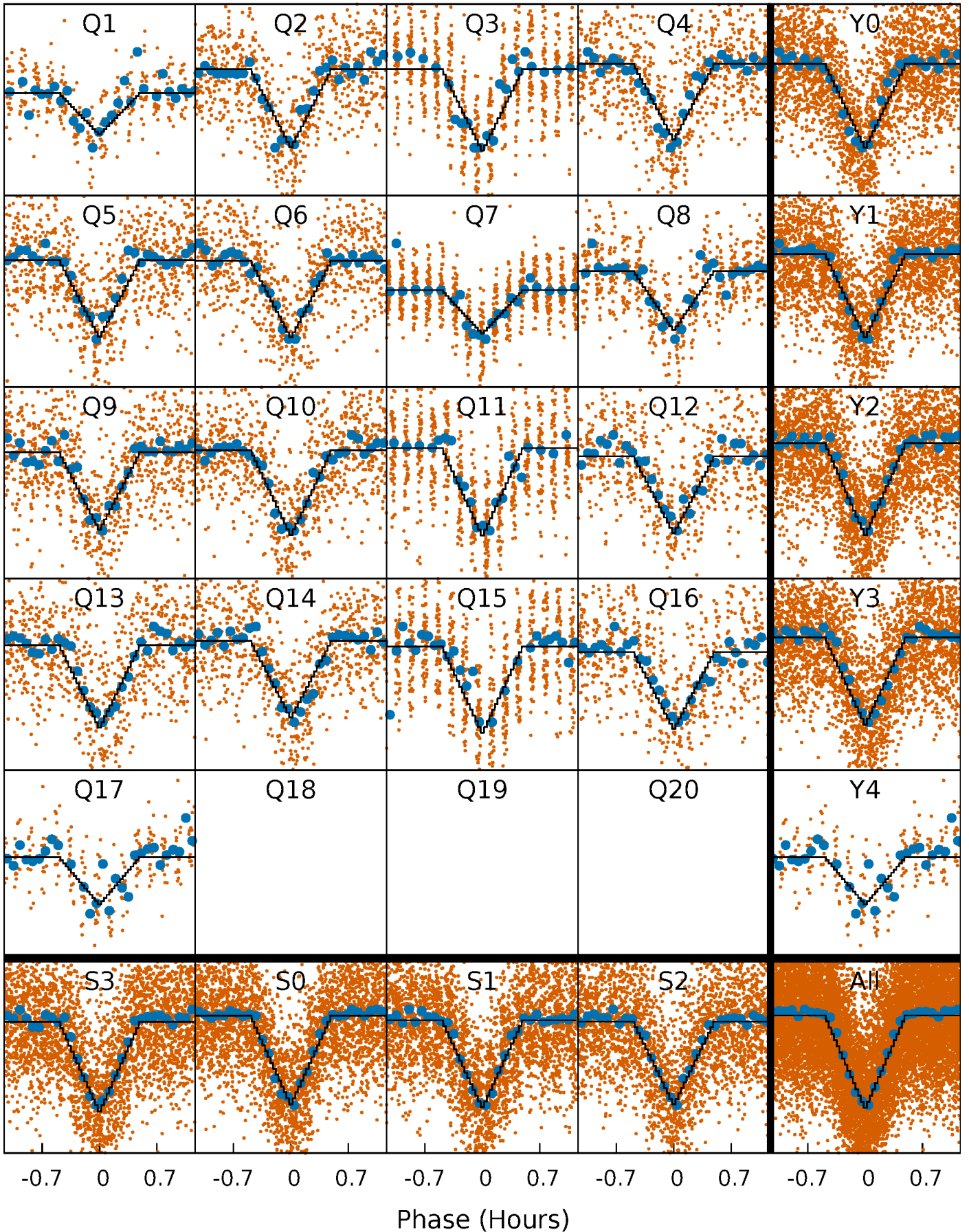
# DV Quarter-Phased Transit Curves

TCE 009027841-01 P= 0.503998 Days  $T_0=131.645369$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

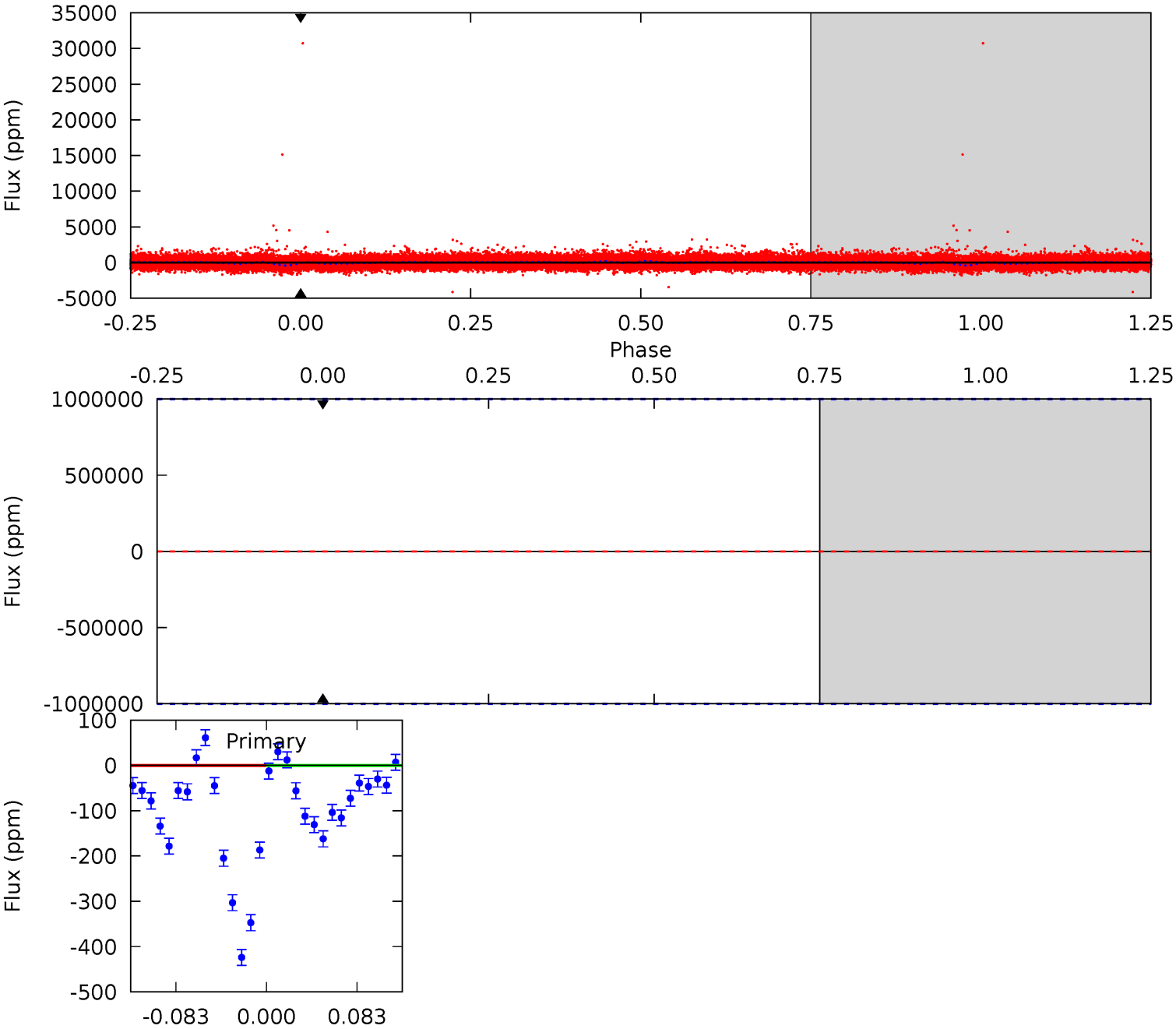
TCE 009027841-01 P= 0.503998 Days  $T_0=131.634382$  (BKJD)



# DV Model-Shift Uniqueness Test

009027841-01, P = 0.503998 Days, E = 131.141371 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
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0

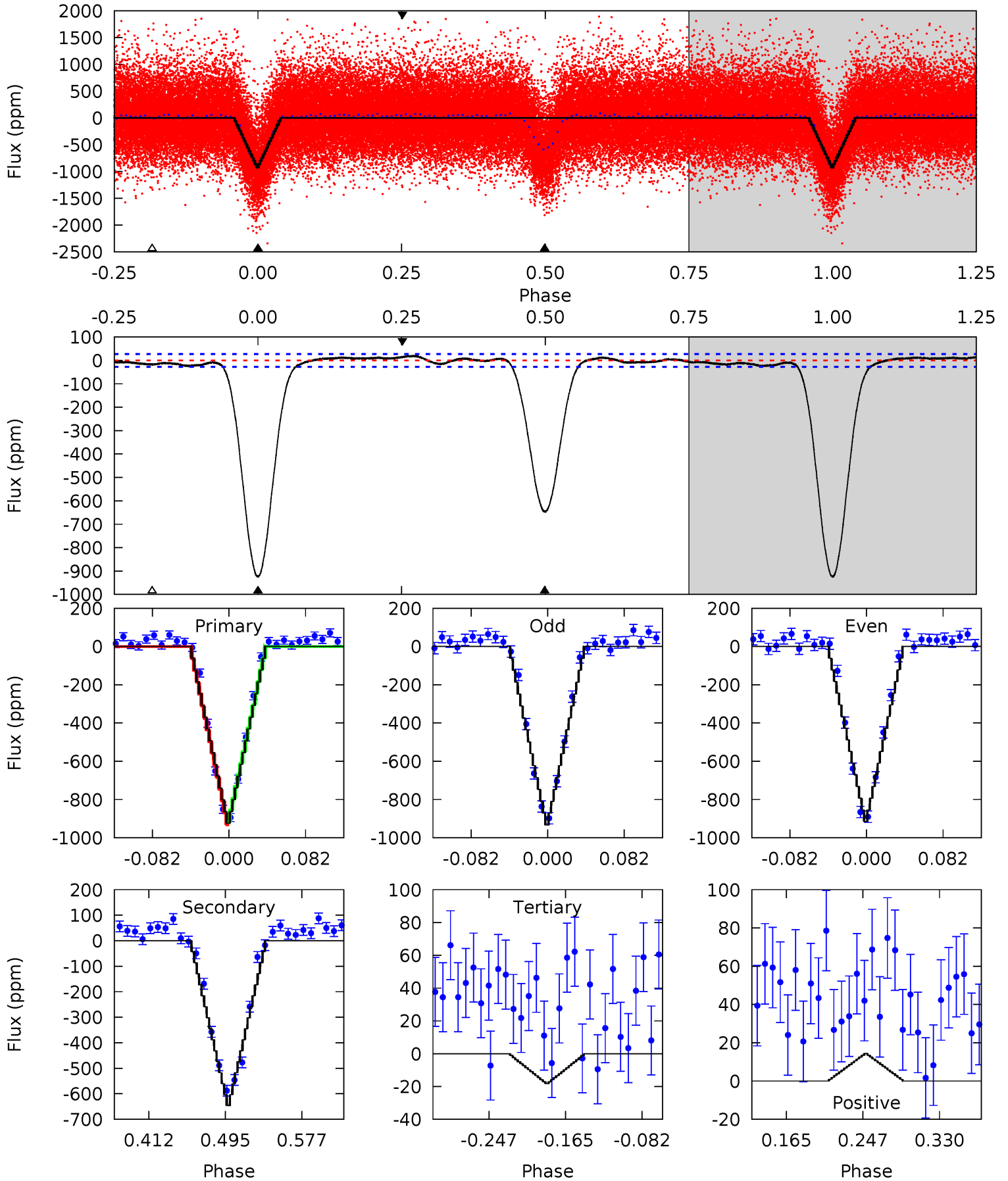




# Alt Model-Shift Uniqueness Test

009027841-01, P = 0.503998 Days, E = 131.130384 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
155.7	108.9	3.08	2.43	4.61	1.74	1.78	152.6	153.3	105.8	106.4	1.58	0.98	0.02	1.46





### Stellar Parameters For KIC 009027841

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4898^{+146}_{-146}$	$4.686^{+0.054}_{-0.027}$	$-1.160^{+0.300}_{-0.300}$	$0.568^{+0.033}_{-0.037}$	$0.570^{+0.042}_{-0.024}$	$4.383^{+0.866}_{-0.497}$
	+3%/-3%	+1%/-1%	+26%/-26%	+6%/-7%	+7%/-4%	+20%/-11%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 009027841-01 / KOI 4266.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$5.21^{+4.80}_{-3.59}$	$2232^{+74}_{-77}$	$3734^{+11051}_{-14491}$	$3.746^{+514.119}_{-269.197}$
Alt.	$-647 \pm 6$	$4.78^{+4.81}_{-3.23}$	$2234^{+77}_{-83}$	$3208^{+1646}_{-895}$	$1.652^{+14.262}_{-1.231}$

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

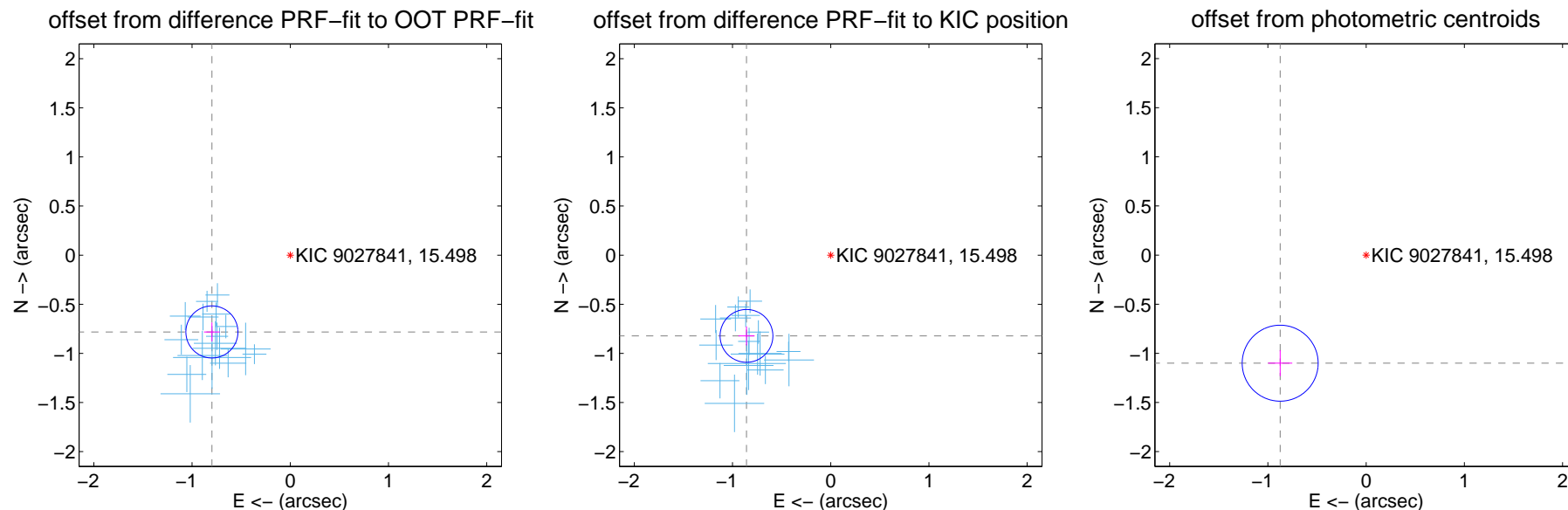
## DV Centroid Data

Supplemental centroid analysis for 009027841-01. Kepler magnitude: 15.50. Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

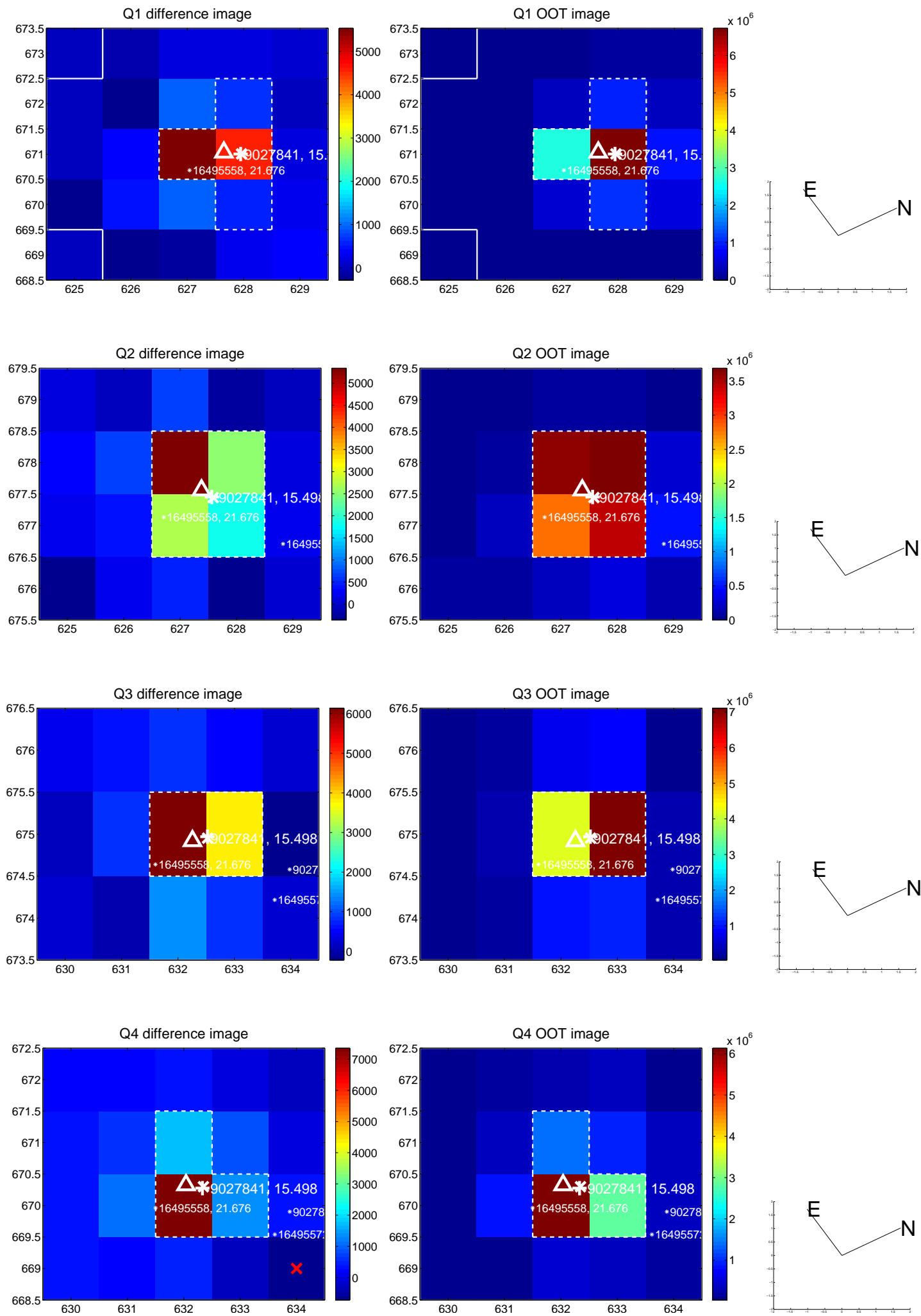
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.117 \pm 0.088$	12.64	$0.798 \pm 0.081$	$-0.782 \pm 0.096$
PRF-fit source offset from KIC position	$1.188 \pm 0.090$	13.26	$0.858 \pm 0.083$	$-0.822 \pm 0.097$
photometric centroid source offset	$1.41 \pm 0.13$	10.91	$0.88 \pm 0.12$	$-1.10 \pm 0.13$



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.

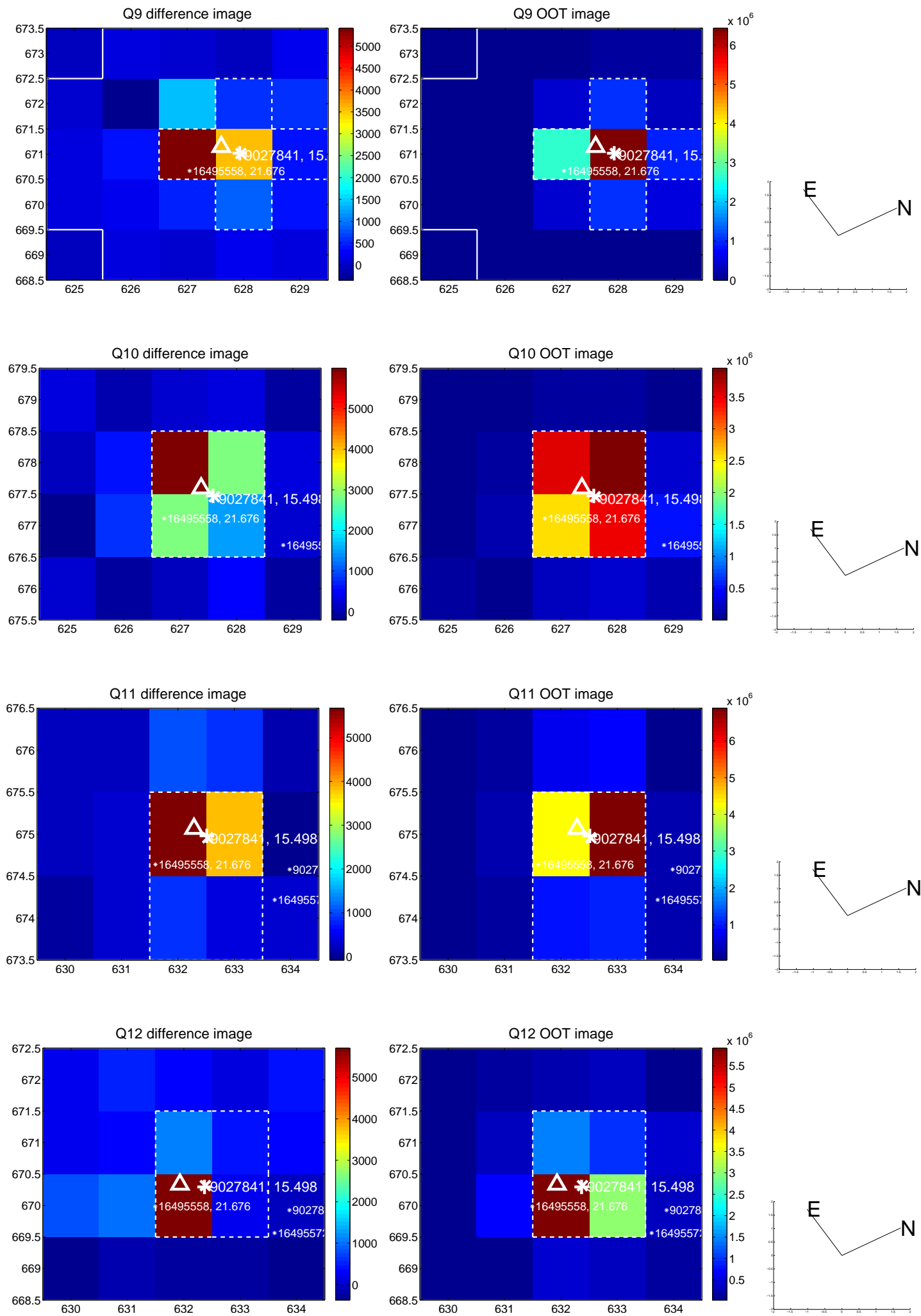
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



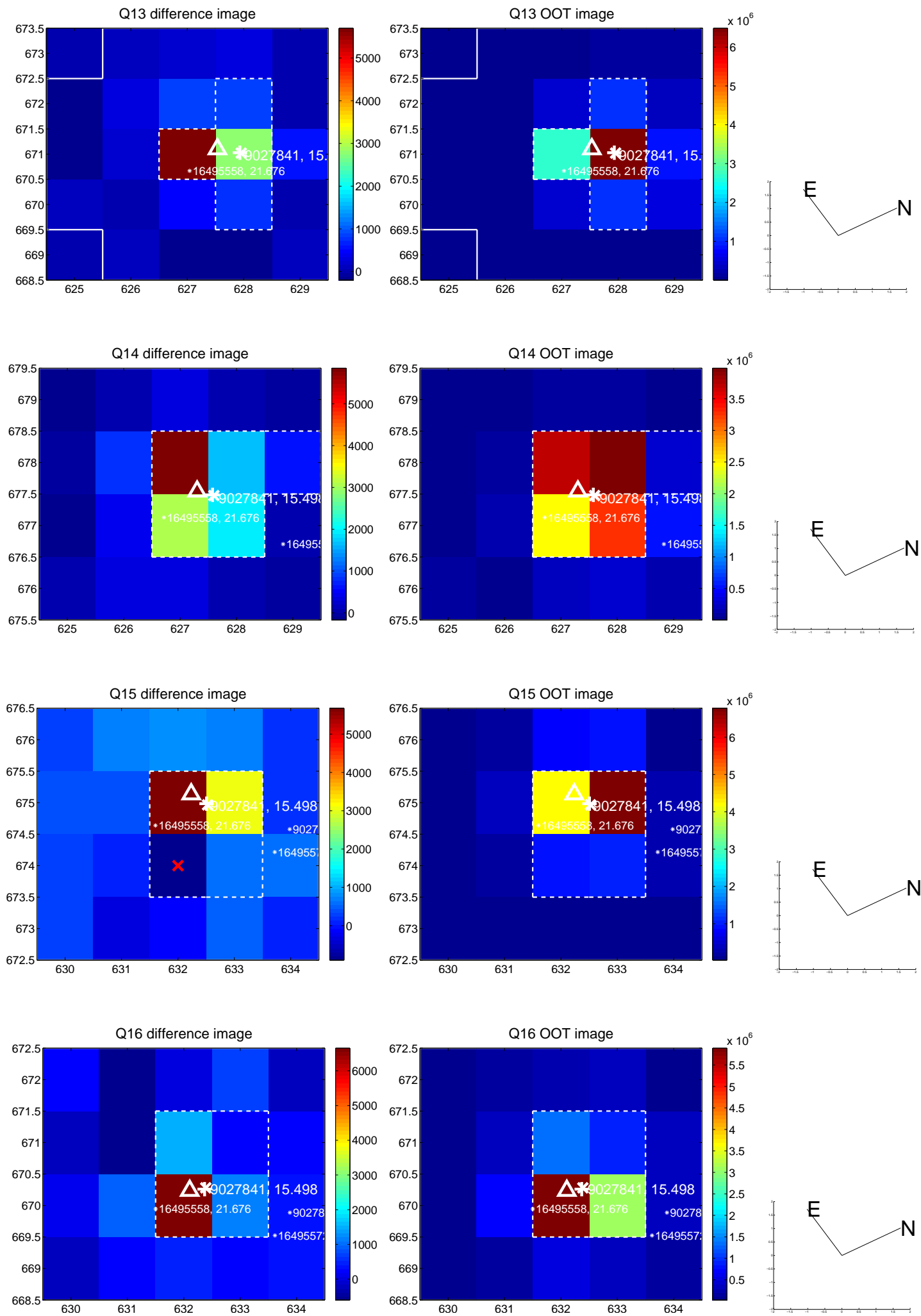




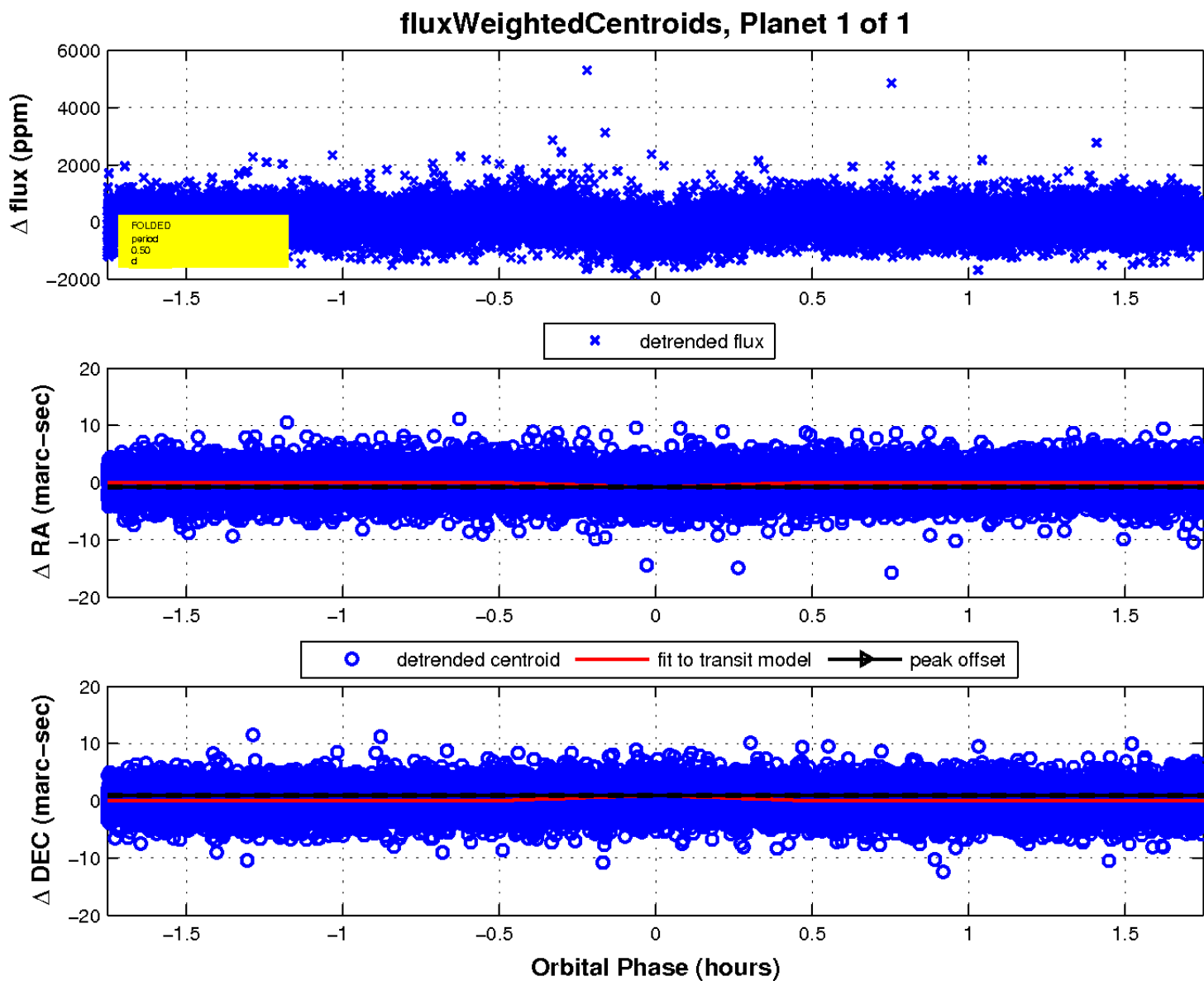
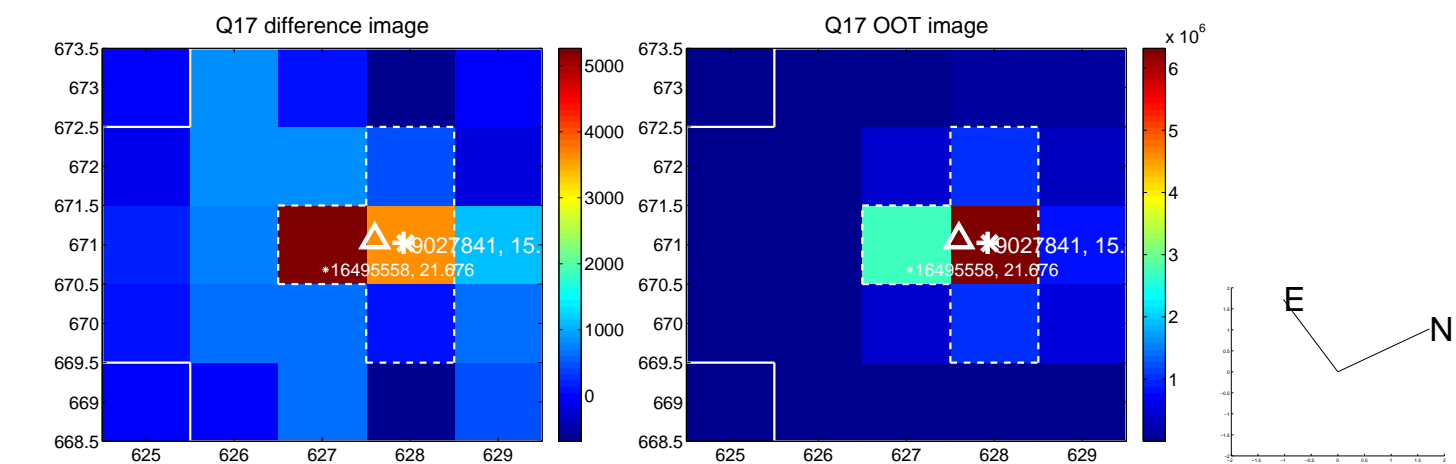
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



UKIRT Image

Declination

