

# KIC 003728701

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003728701-01	OBS	2536.01	51.131930	137.158407	388.3	6.076	16.3	18.9	1.11	6071	2.50	20.41

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003728701-01	OBS	PC	0.88	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.

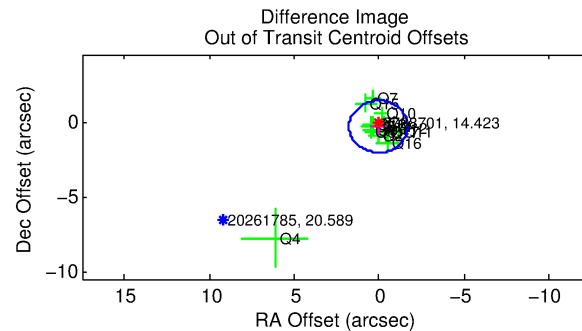
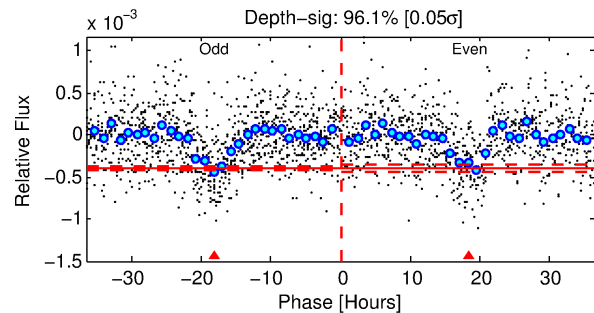
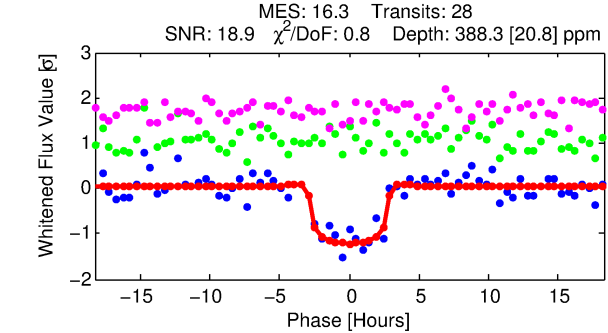
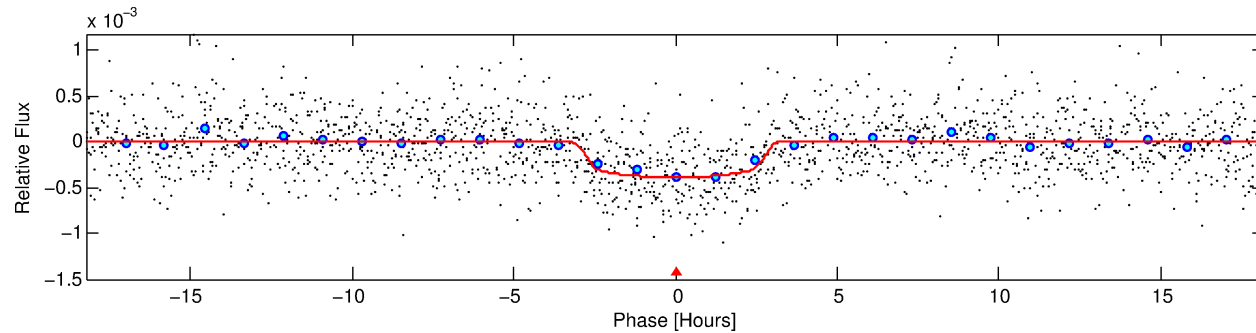
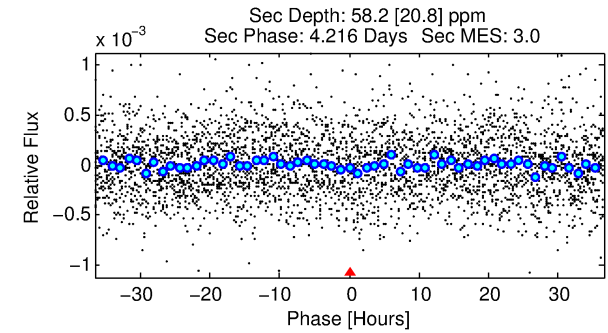
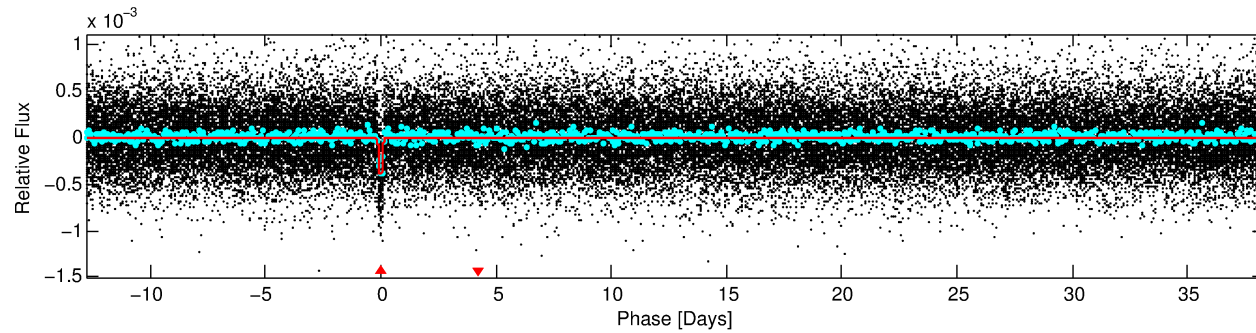
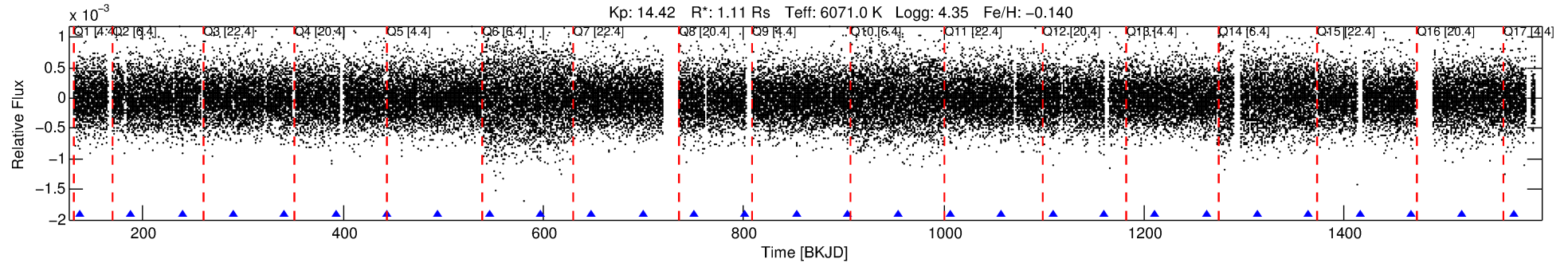
## Ephemeris Match Information For 003728701-01

No Significant Match Found

# DV One-Page Summary

KIC: 3728701 Candidate: 1 of 1 Period: 51.132 d

KOI: K02536.01 Corr: 0.962



## DV Fit Results:

Period = 51.13193 [0.00038] d  
Epoch = 137.1584 [0.0061] BKJD  
Rp/R\* = 0.0207 [0.0030]  
a/R\* = 35.19 [25.32]  
b = 0.86 [0.22]  
Seff = 20.41 [7.98]  
Teff = 542 [53] K  
Rp = 2.49 [0.84] Re  
a = 0.2703 [0.0687] AU  
Ag = 375.92 [220.78] [1.70σ]  
Teffp = 3690 [443] K [7.06σ]

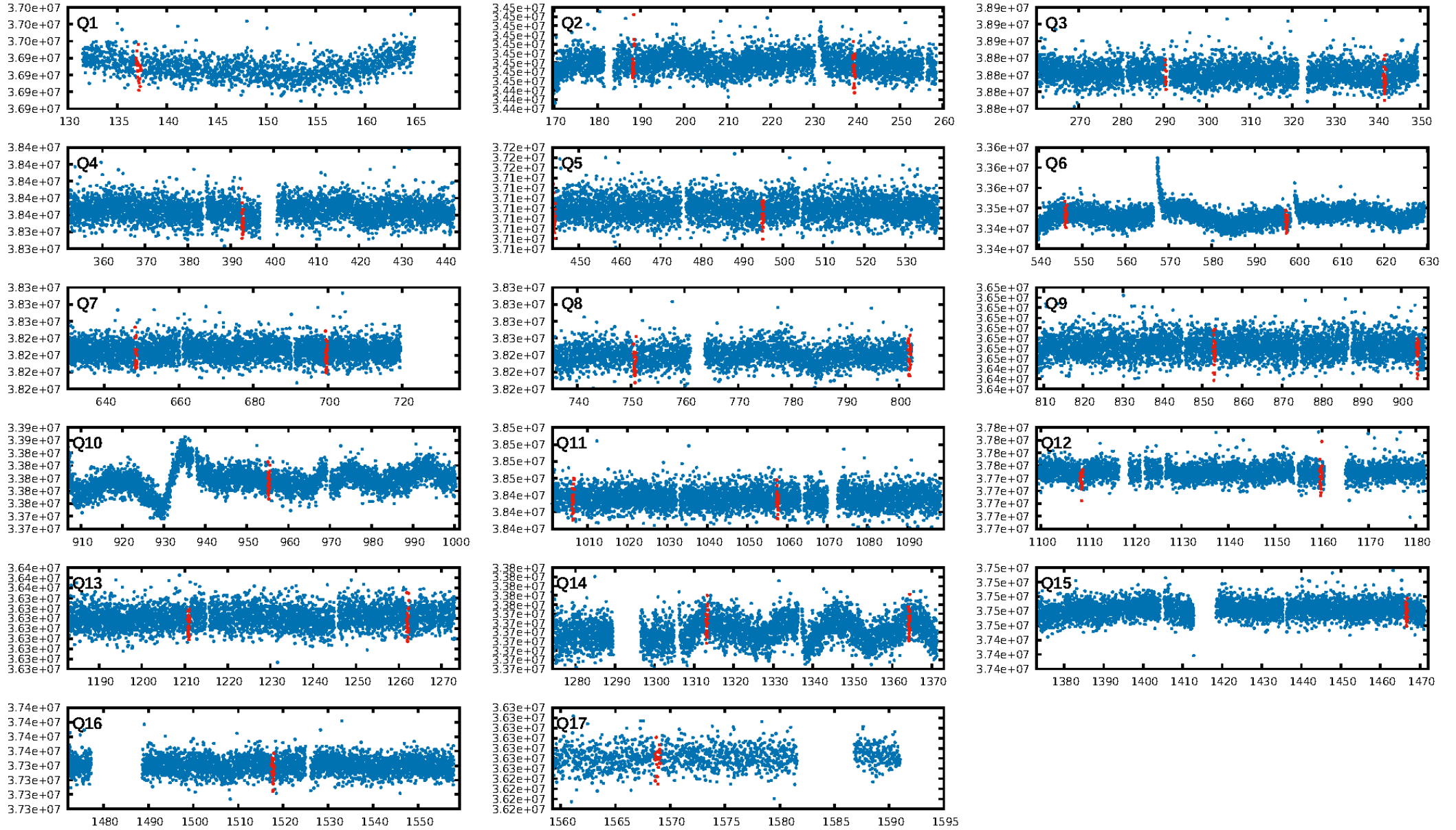
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 96.5%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 3.76e-59  
RollingBand-fgt: 1.00 [26/26]  
GhostDiagnostic-chr: 4.146  
Centroid-sig: 15.4%  
Centroid-so: 0.623 arcsec [0.95σ]  
OotOffset-rm: 0.327 arcsec [0.57σ]  
KicOffset-rm: 0.371 arcsec [0.85σ]  
OotOffset-st: 4/3/4/4 [15]  
KicOffset-st: 4/3/4/4 [15]  
DiffImageQuality-fgm: 0.87 [13/15]  
DiffImageOverlap-fno: 1.00 [17/17]

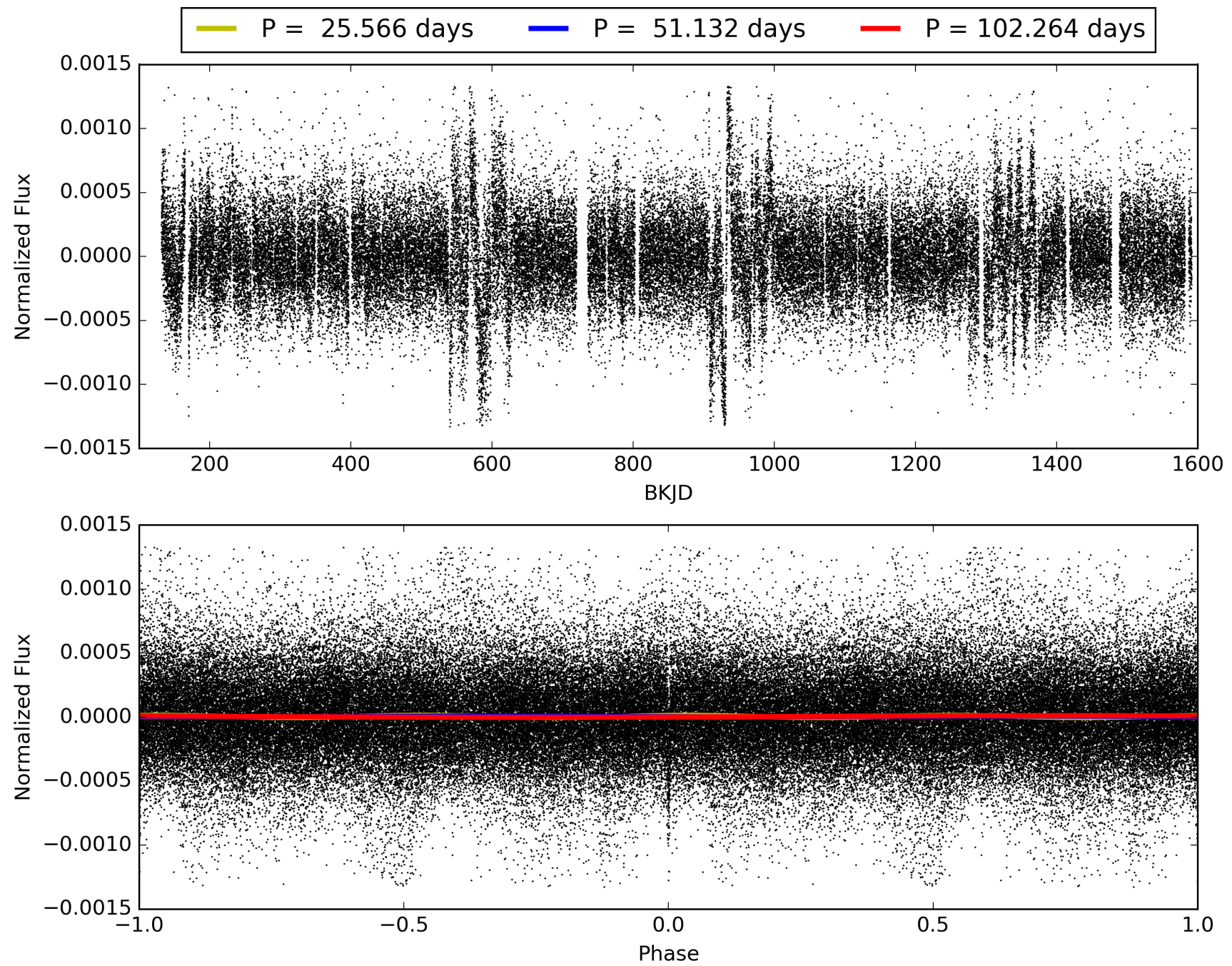
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:15:31 Z

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

# TCE 003728701-01, PDC Light Curves

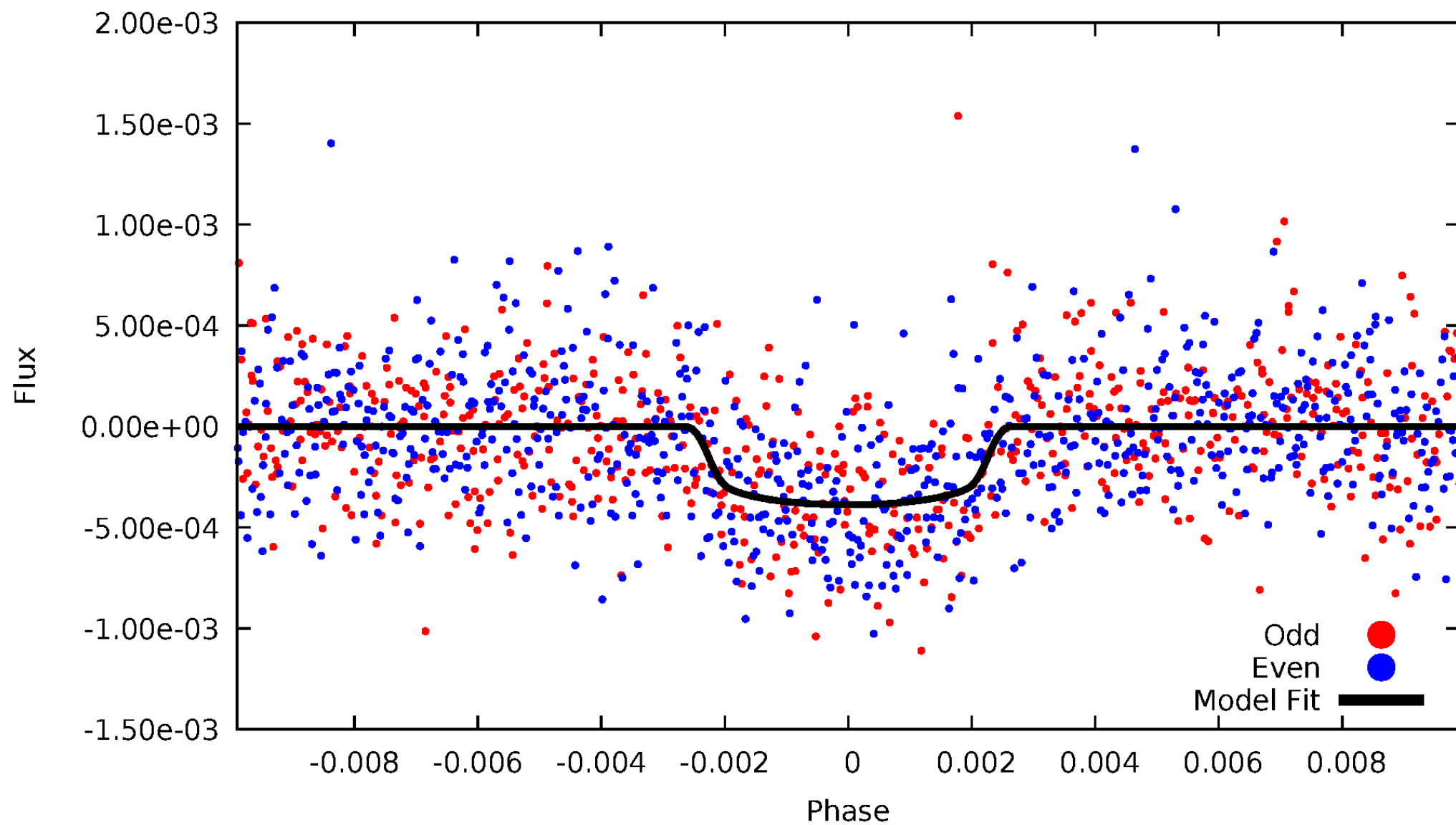


TCE 003728701-01



# DV Odd/Even

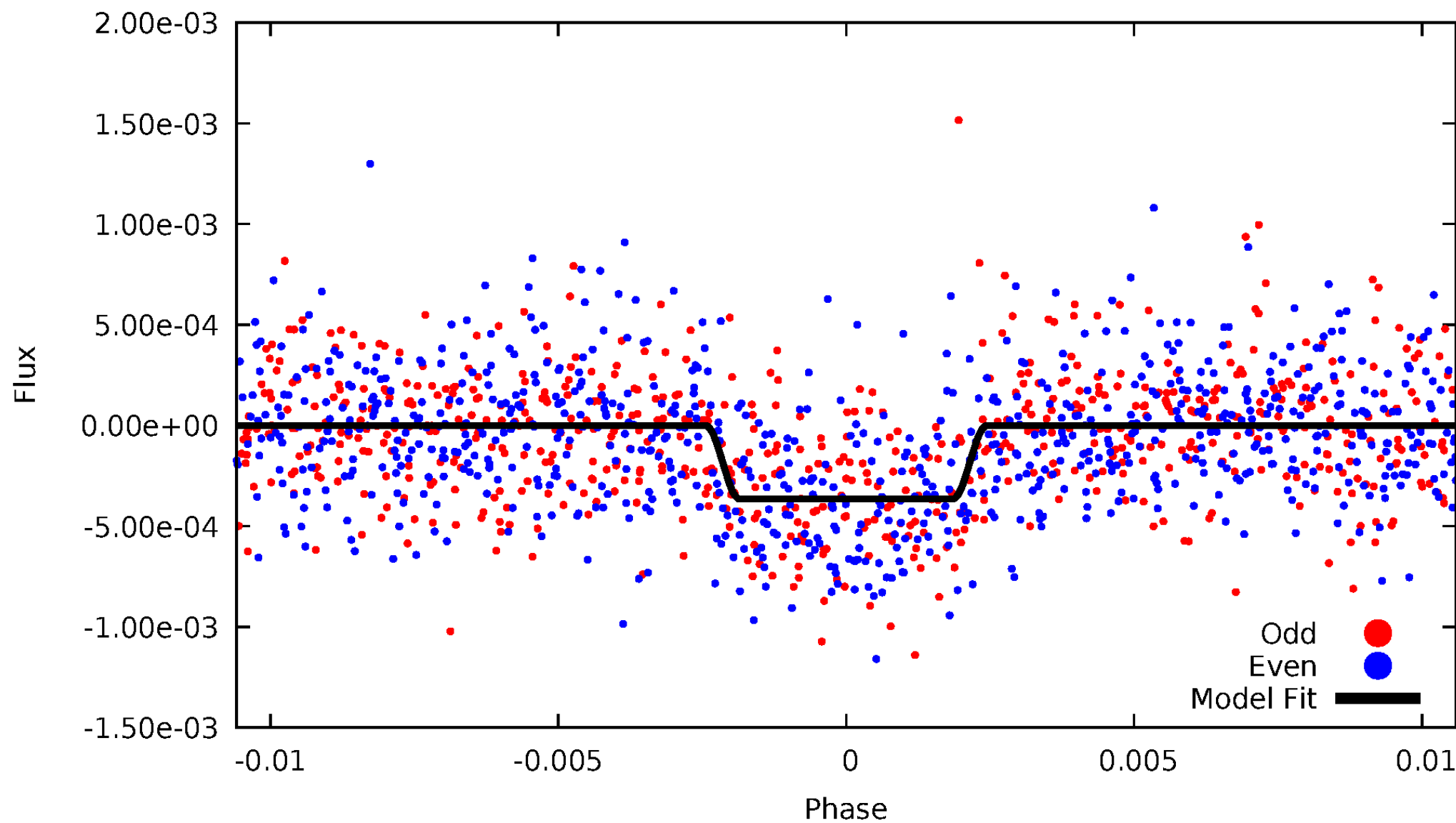
TCE 003728701-01



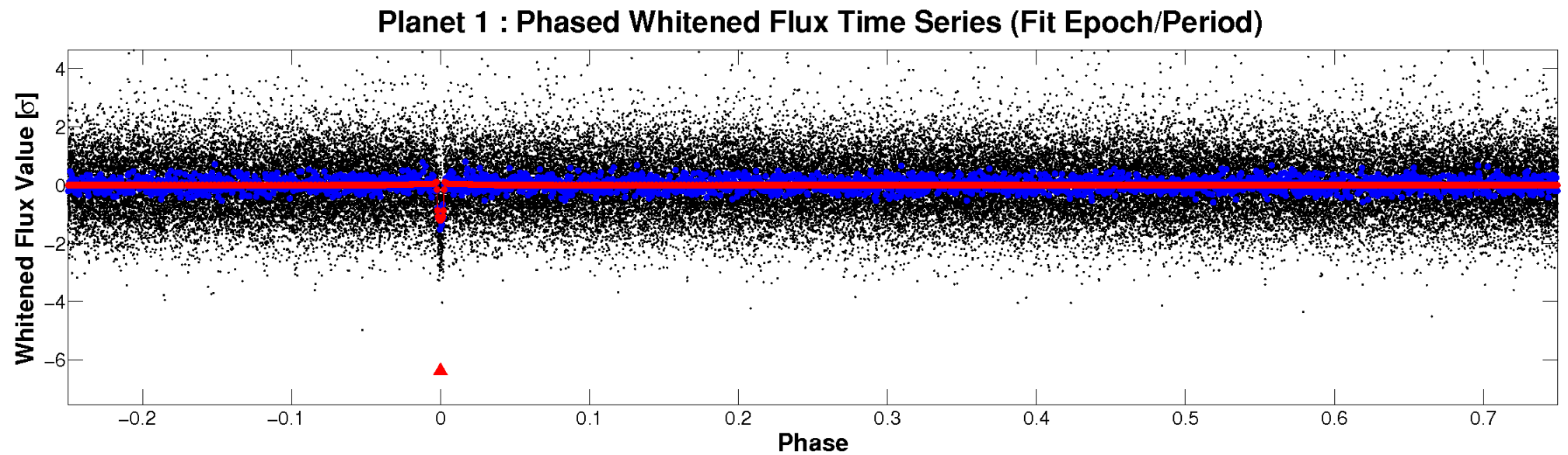
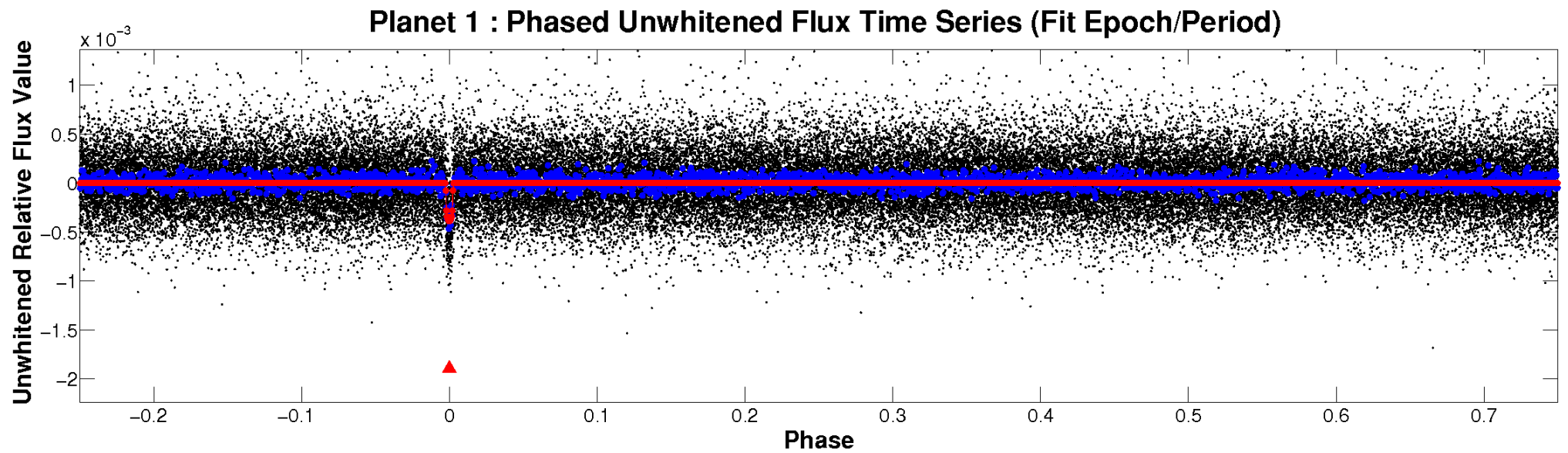


# ALT Odd/Even

TCE 003728701-01

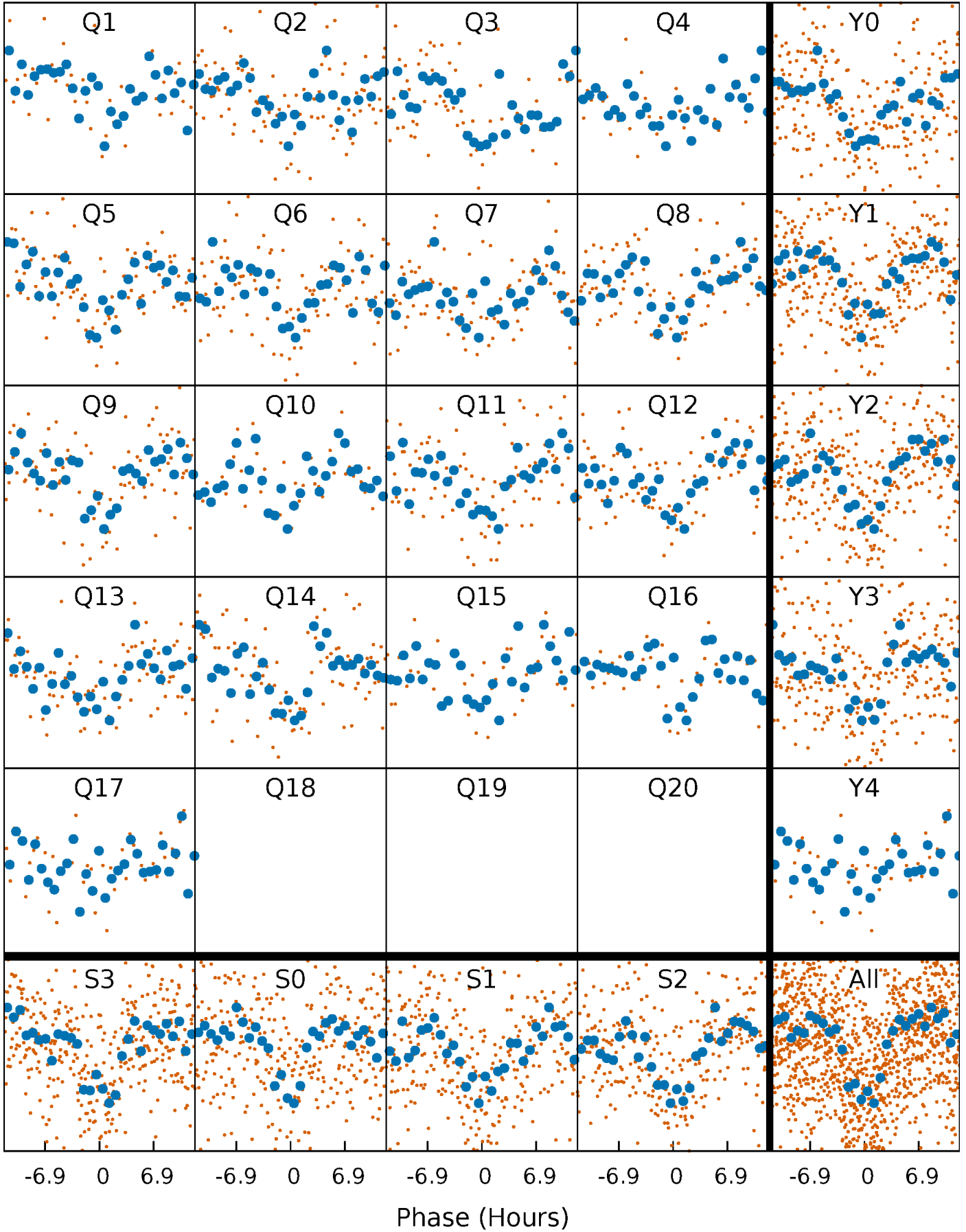


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

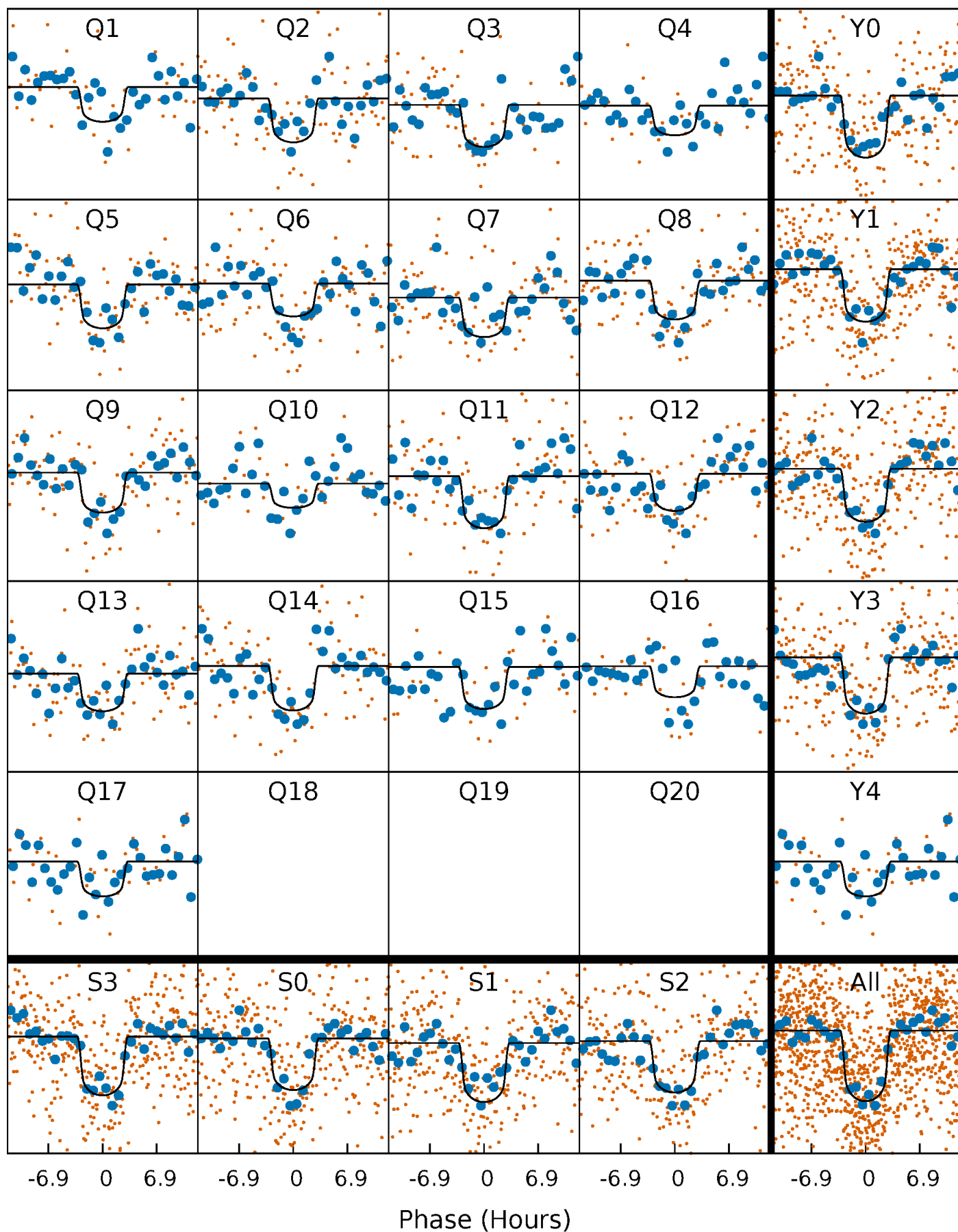
TCE 003728701-01 P= 51.131930 Days  $T_0=137.158407$  (BKJD)





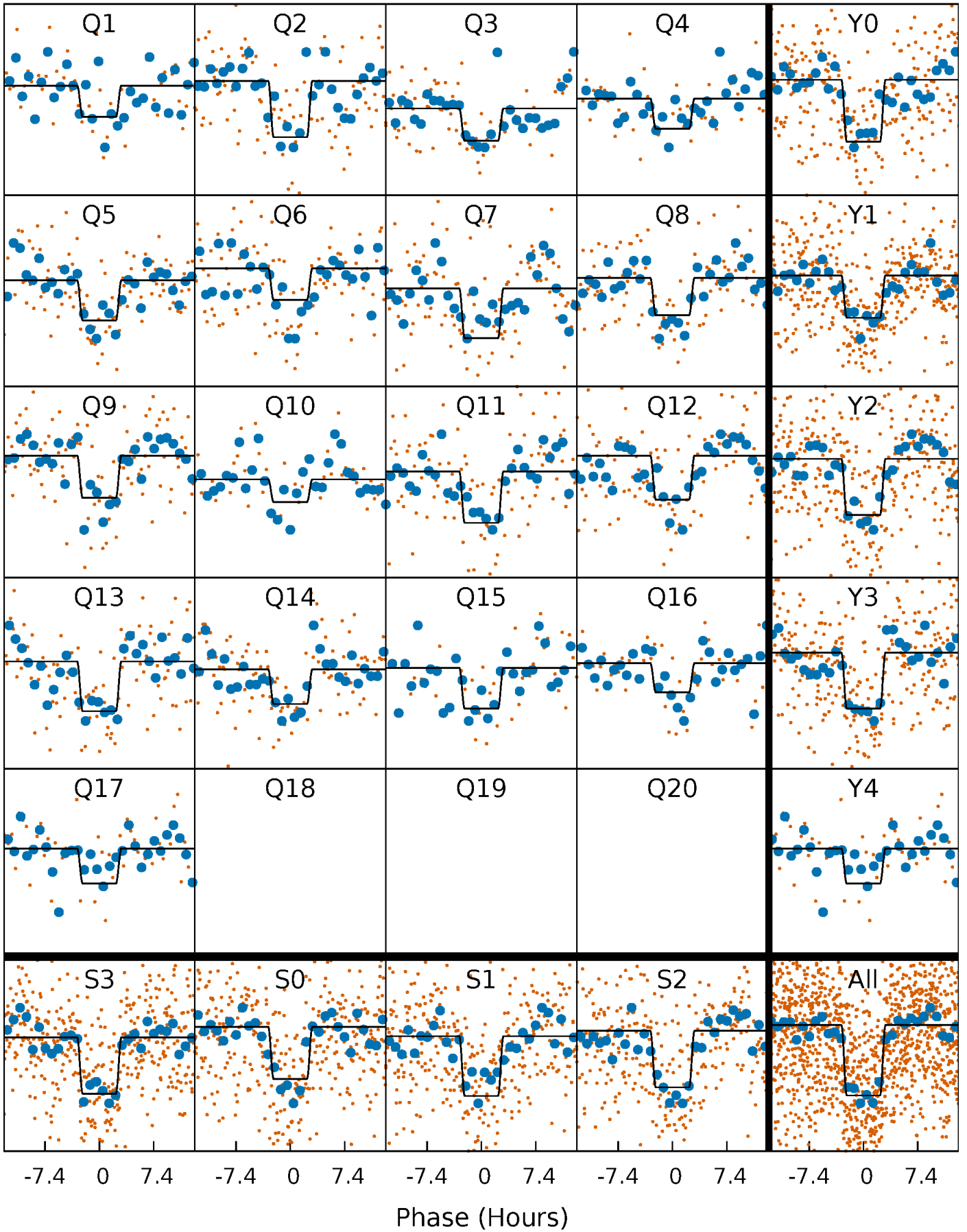
# DV Quarter-Phased Transit Curves

TCE 003728701-01 P= 51.131930 Days  $T_0=137.158407$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

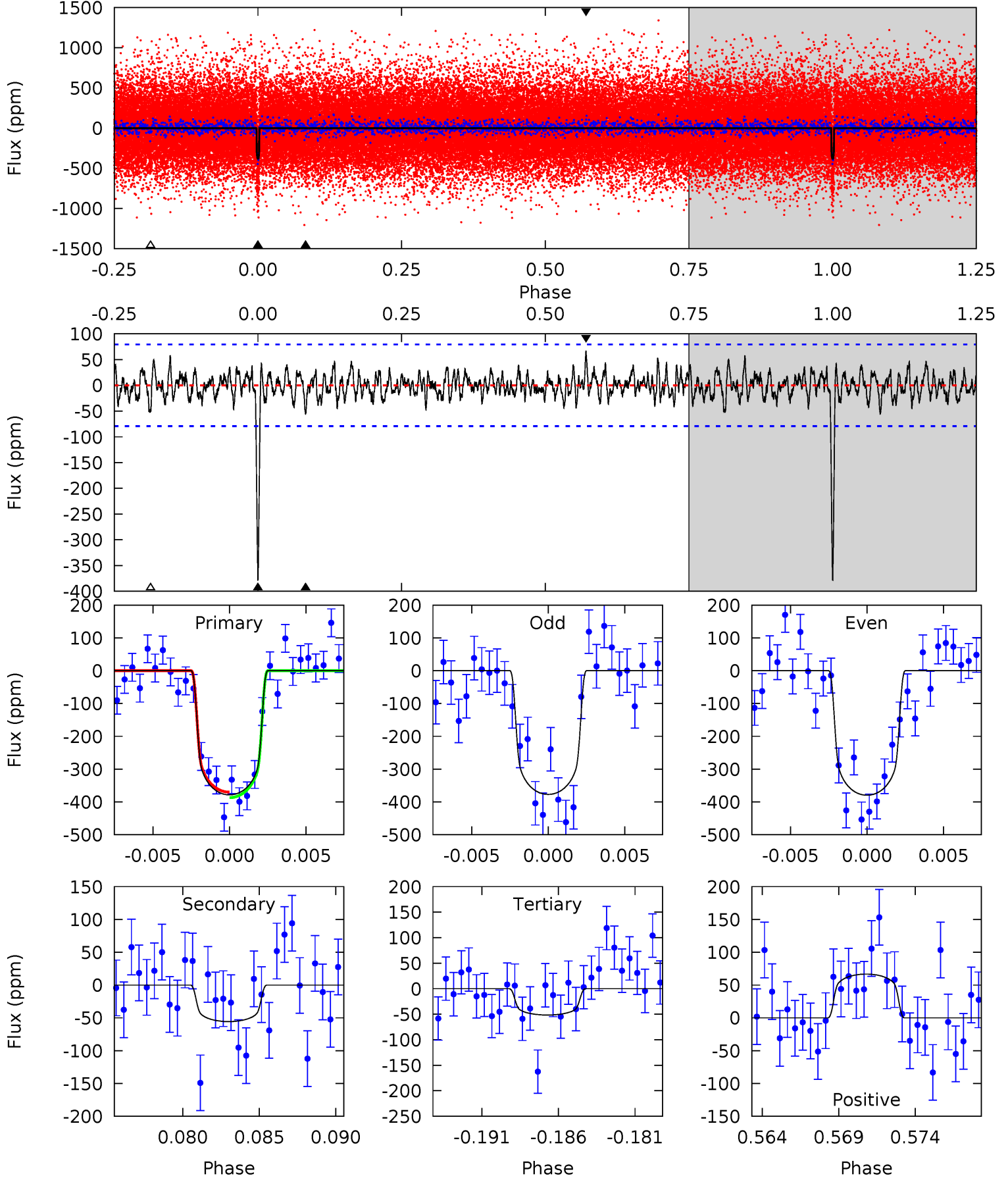
TCE 003728701-01 P= 51.132394 Days  $T_0=137.148945$  (BKJD)



# DV Model-Shift Uniqueness Test

003728701-01, P = 51.131930 Days, E = 86.026477 Days

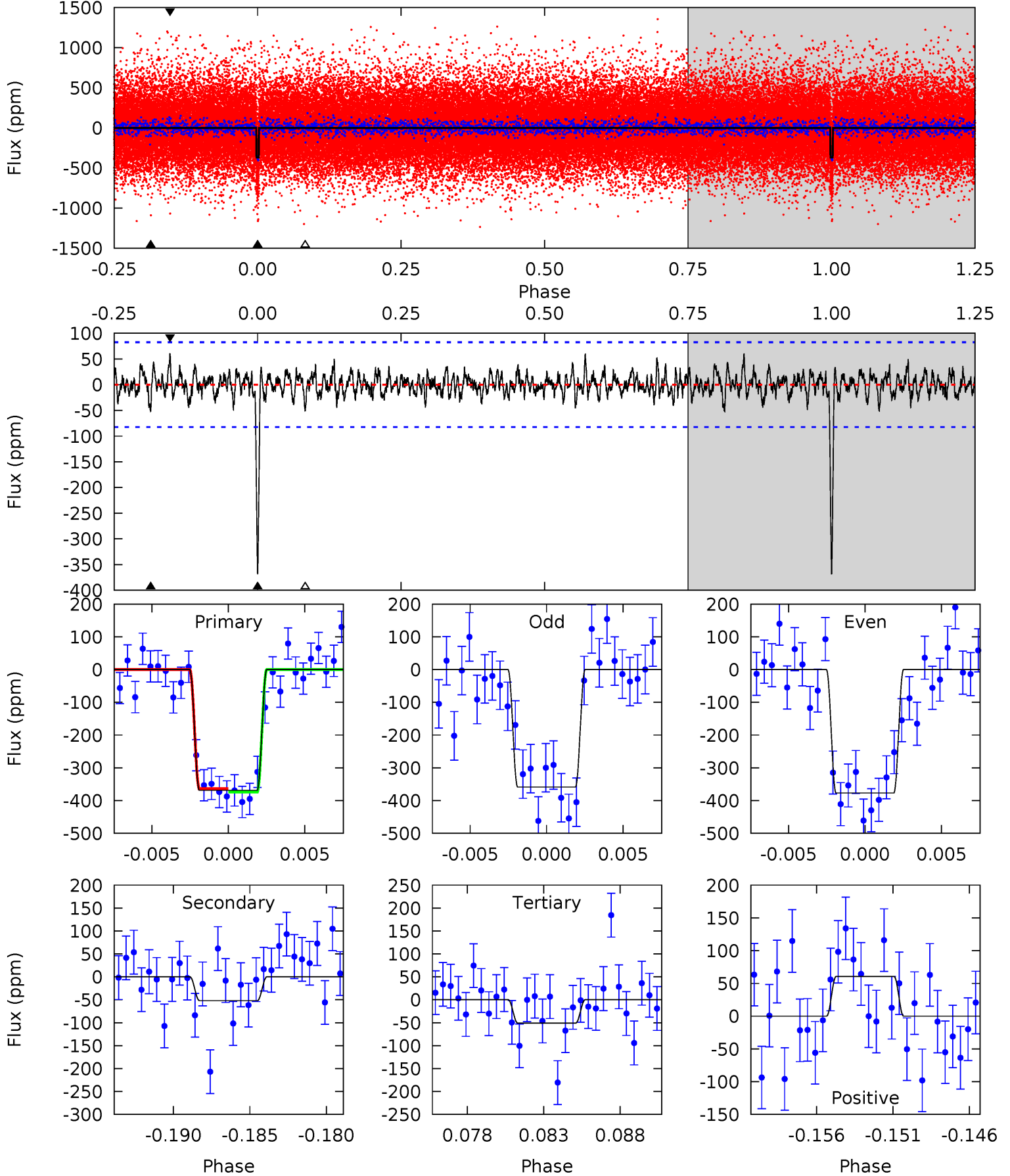
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.6	3.61	3.35	4.33	5.15	2.79	1.21	21.2	20.2	0.27	-0.72	0.08	1.00	0.15	0.55



# Alt Model-Shift Uniqueness Test

003728701-01, P = 51.132394 Days, E = 86.016551 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
23.1	3.26	3.19	3.79	5.16	2.82	1.05	19.9	19.3	0.06	-0.54	0.57	0.96	0.14	0.32



### Stellar Parameters For KIC 003728701

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6071^{+189}_{-210}$	$4.353^{+0.132}_{-0.198}$	$-0.140^{+0.300}_{-0.300}$	$1.107^{+0.338}_{-0.182}$	$1.005^{+0.167}_{-0.112}$	$1.045^{+0.627}_{-0.529}$
	+3%/-3%	+3%/-5%	+214%/-214%	+31%/-16%	+17%/-11%	+60%/-51%
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 003728701-01 / KOI 2536.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-56 \pm 15$	$2.56^{+0.53}_{-0.49}$	$762^{+57}_{-48}$	$3970^{+298}_{-299}$	$344^{+209}_{-141}$
Alt.	$-52 \pm 16$	$2.33^{+0.55}_{-0.45}$	$761^{+58}_{-47}$	$4010^{+395}_{-301}$	$371^{+260}_{-153}$

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



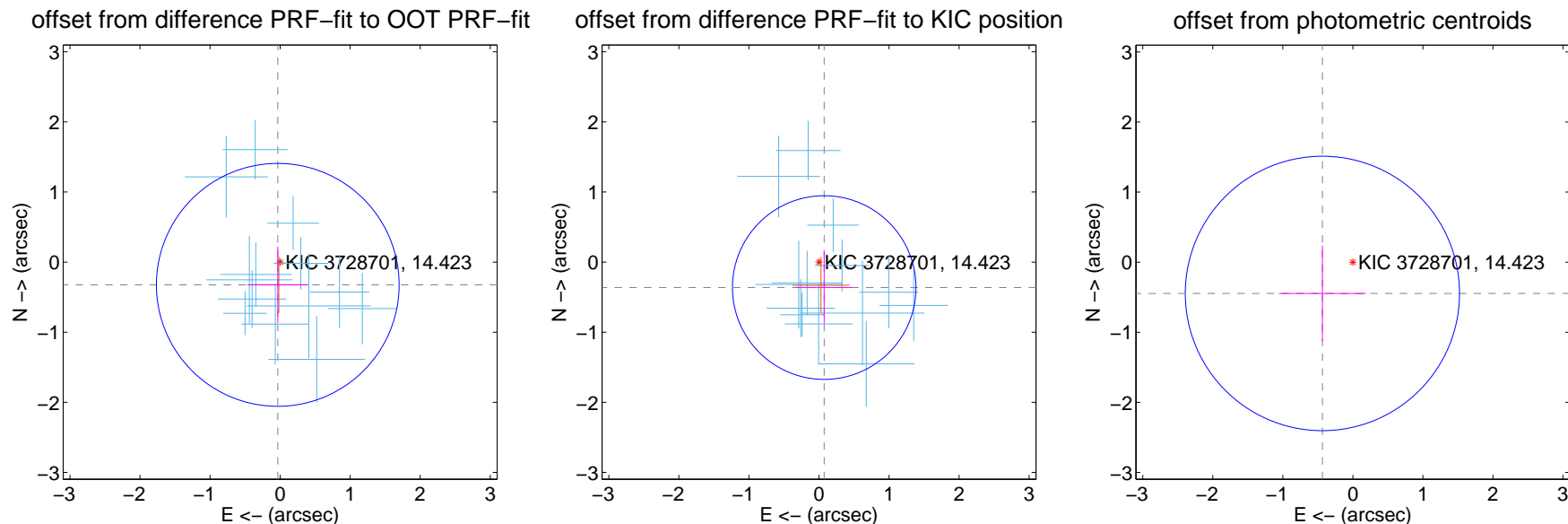
## DV Centroid Data

Supplemental centroid analysis for 003728701-01. Kepler magnitude: 14.42. Transit SNR 18.87

There are 13 quarters with good PRF difference image offsets

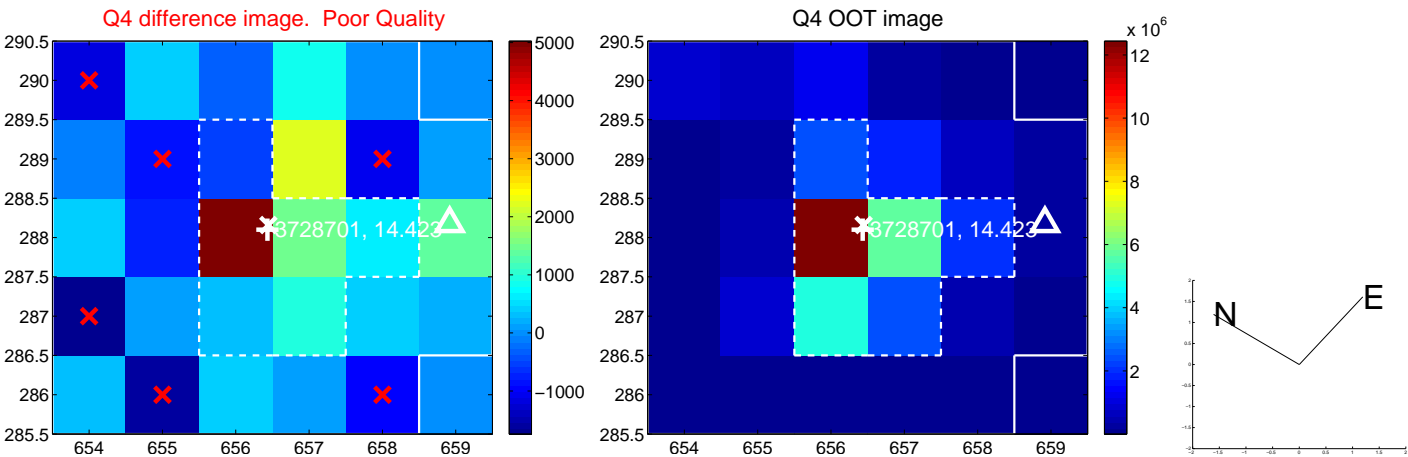
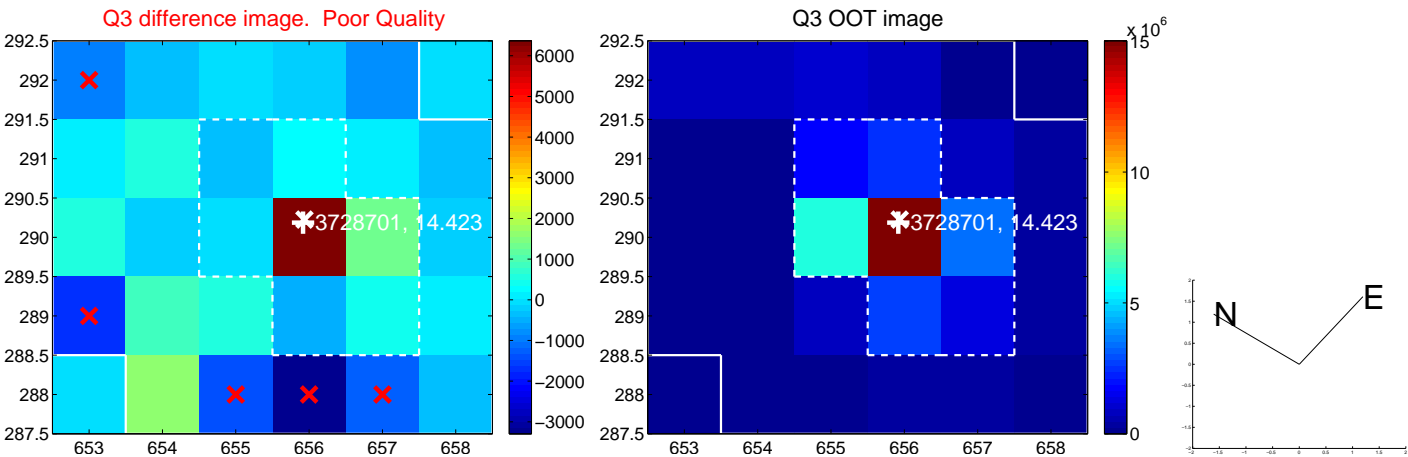
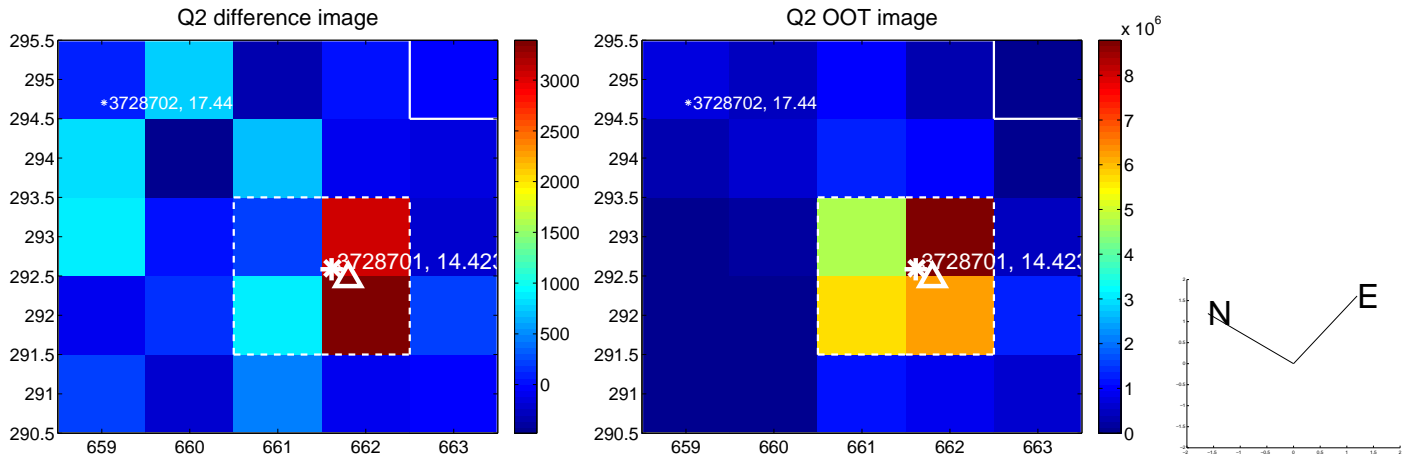
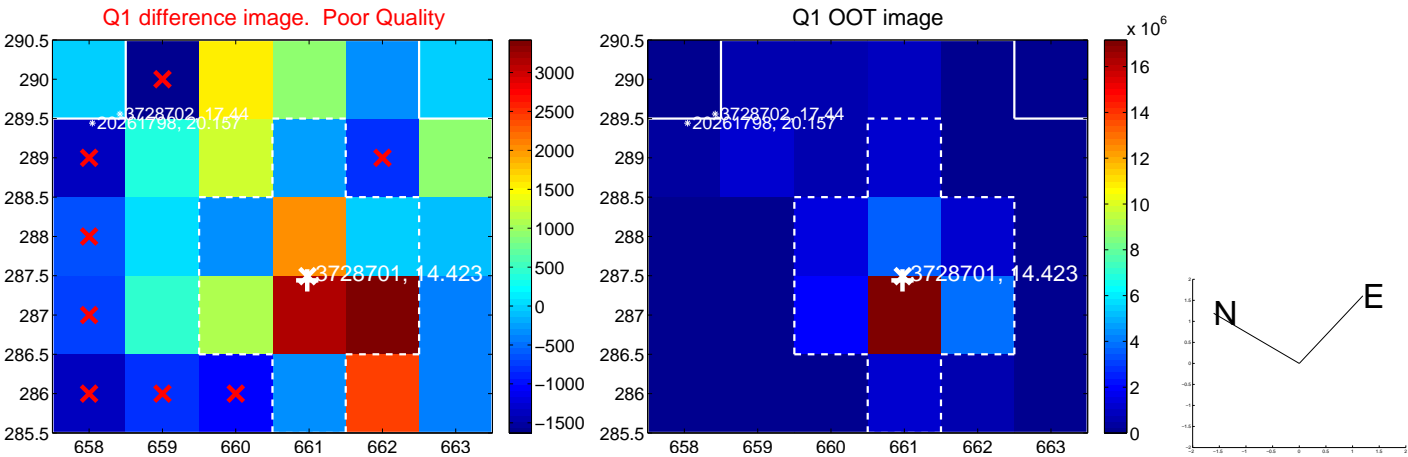
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.327 \pm 0.577$	0.57	$0.033 \pm 0.436$	$-0.325 \pm 0.543$
PRF-fit source offset from KIC position	$0.371 \pm 0.437$	0.85	$-0.075 \pm 0.408$	$-0.363 \pm 0.510$
photometric centroid source offset	$0.62 \pm 0.65$	0.95	$0.43 \pm 0.62$	$-0.45 \pm 0.68$

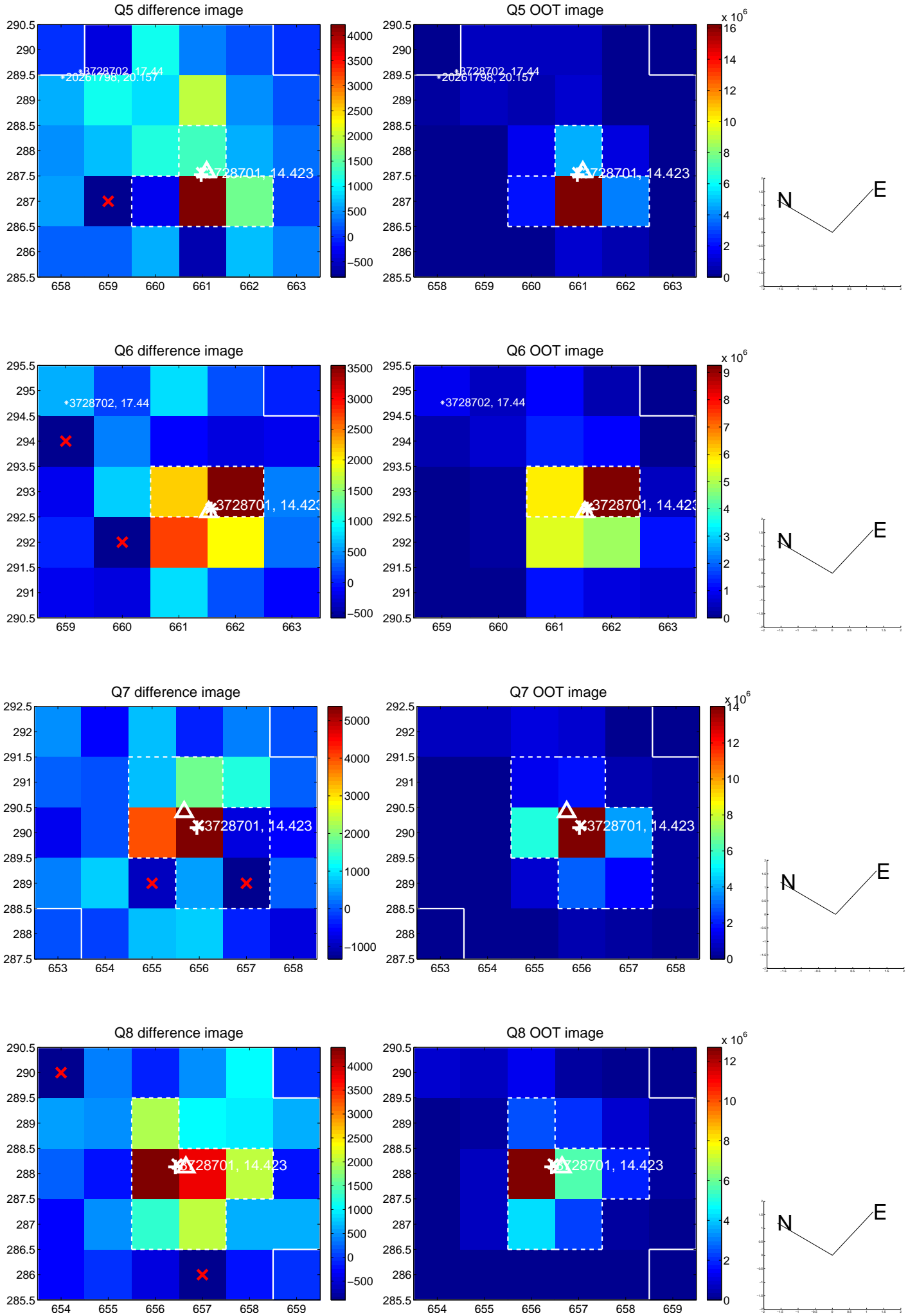


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

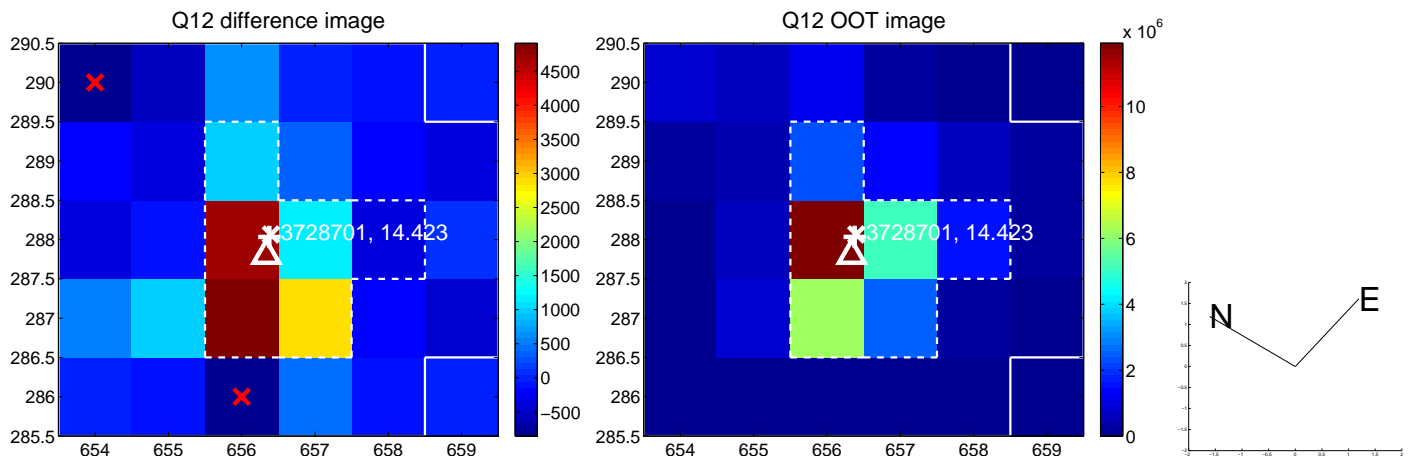
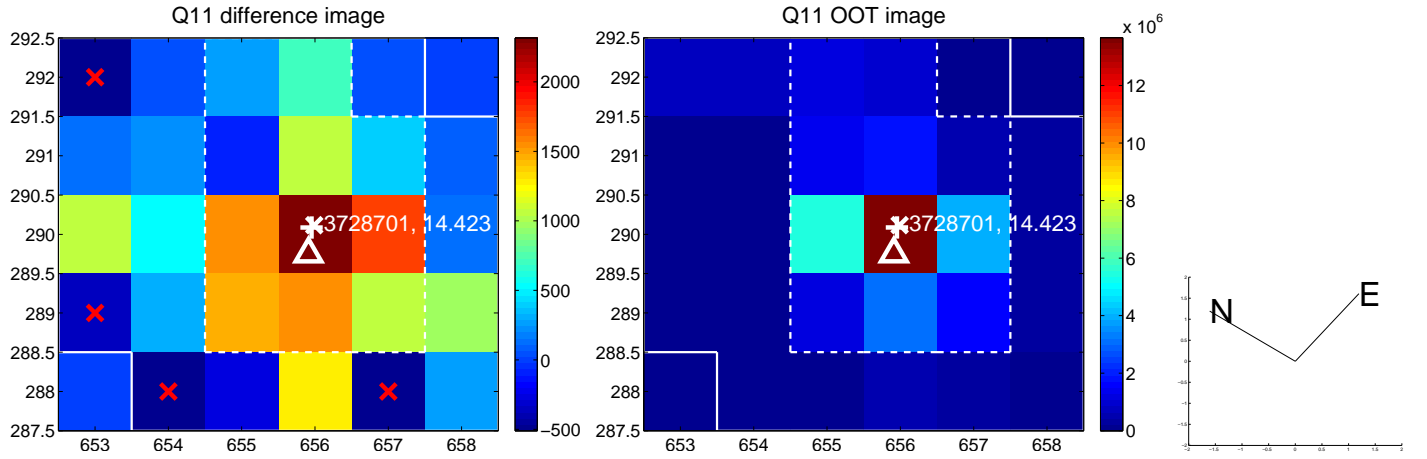
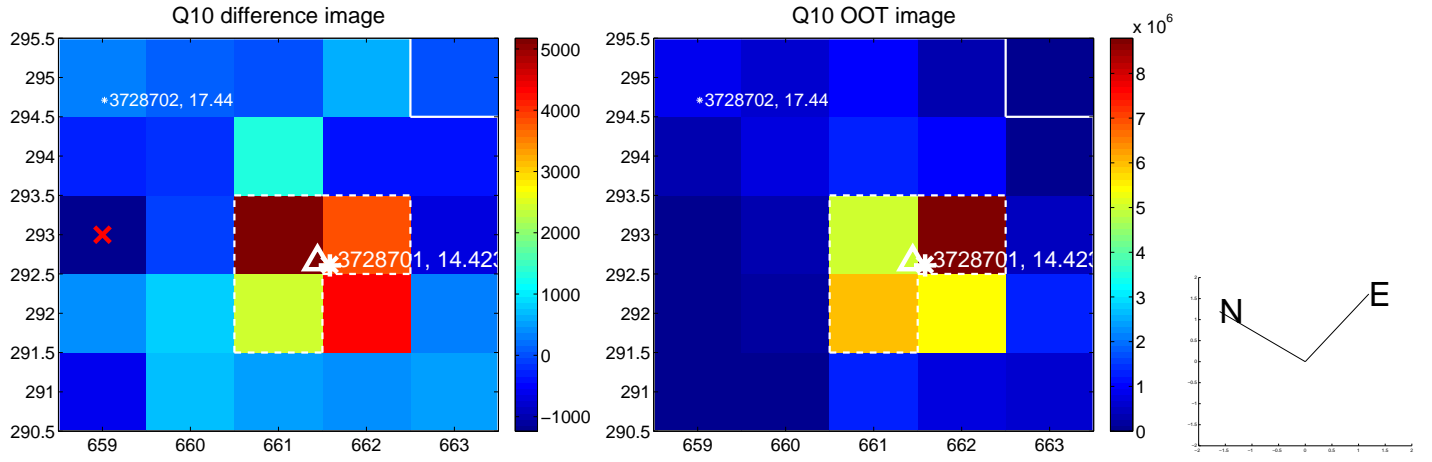
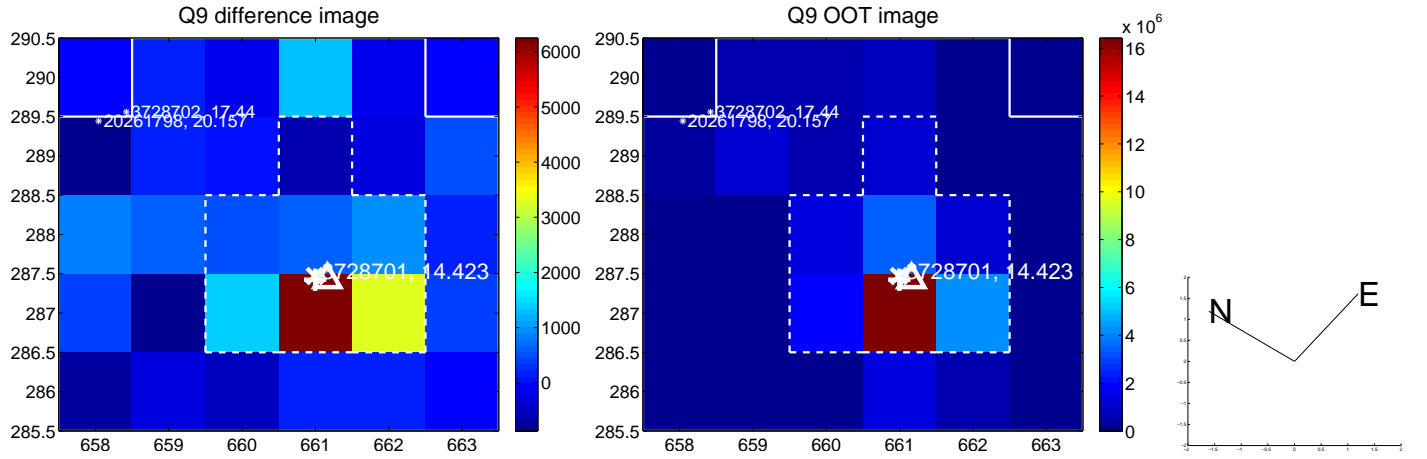
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



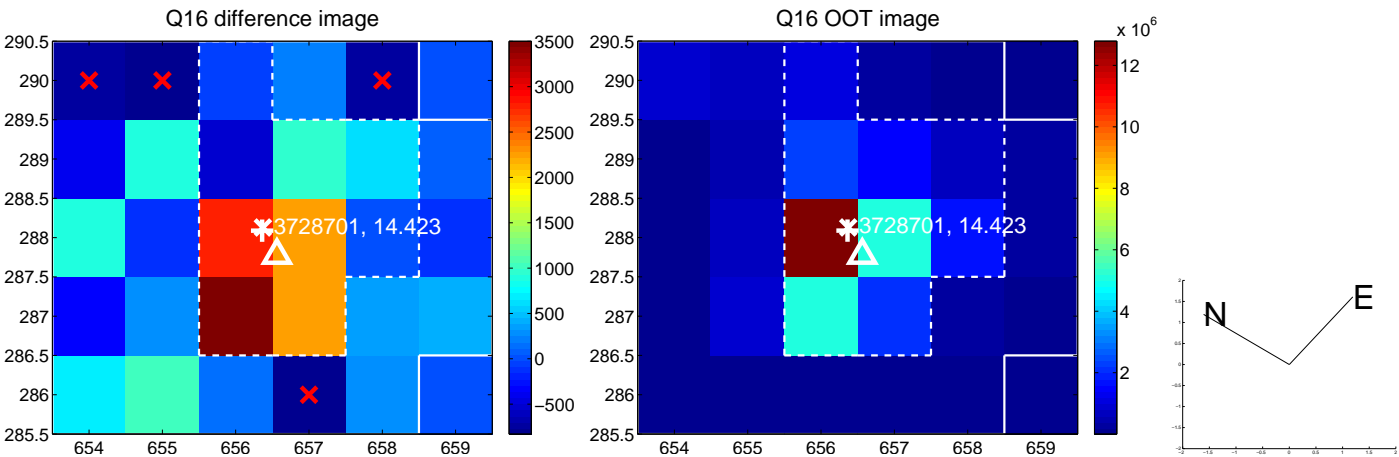
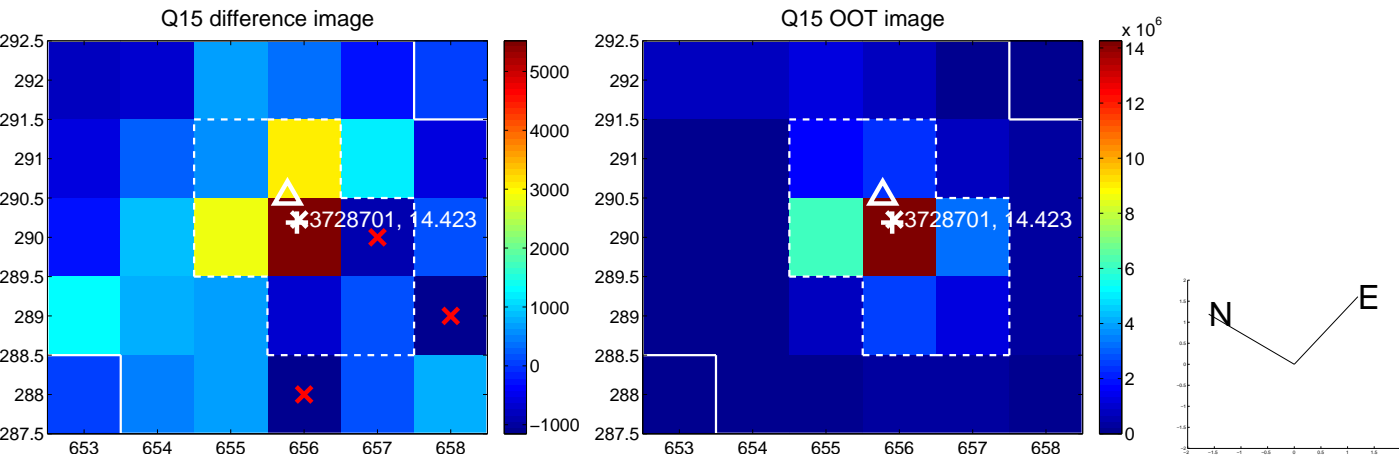
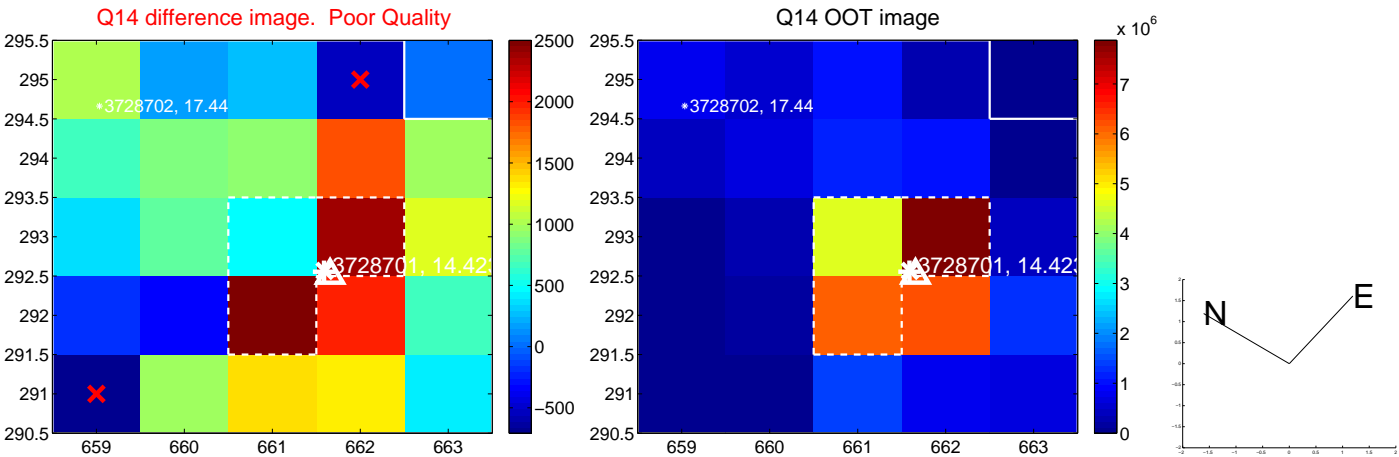
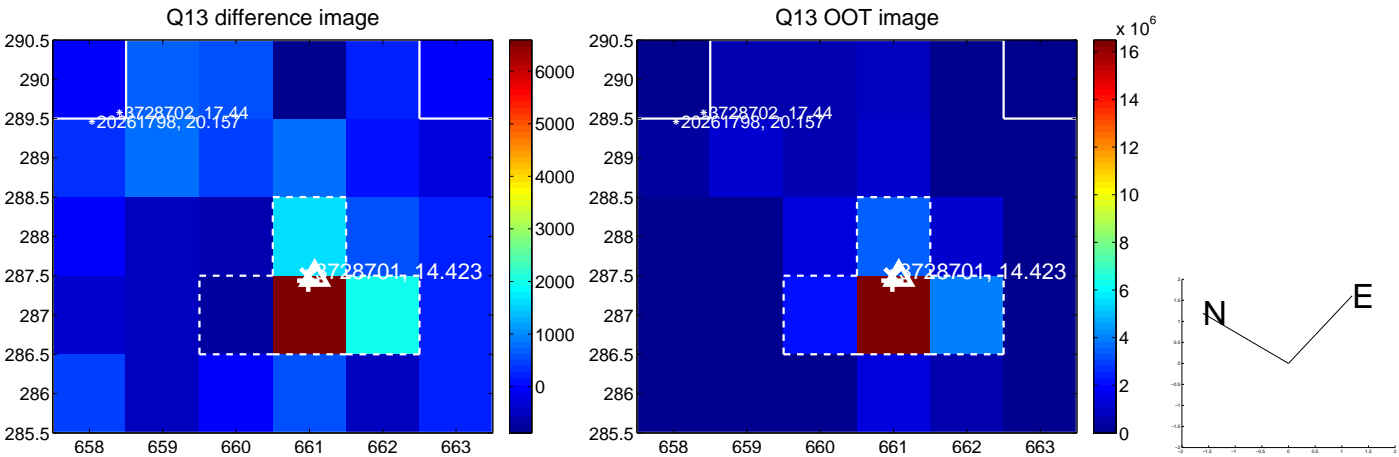
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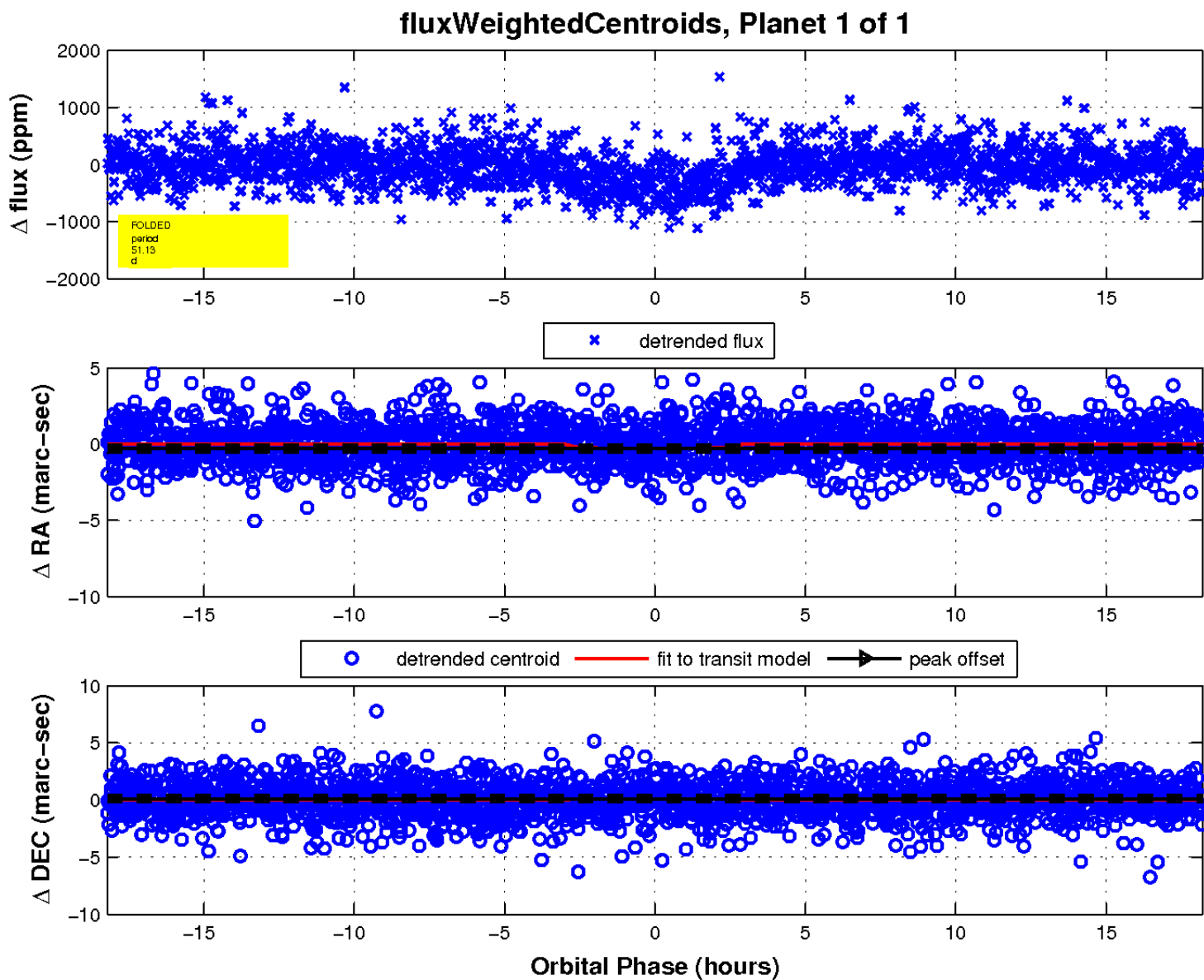
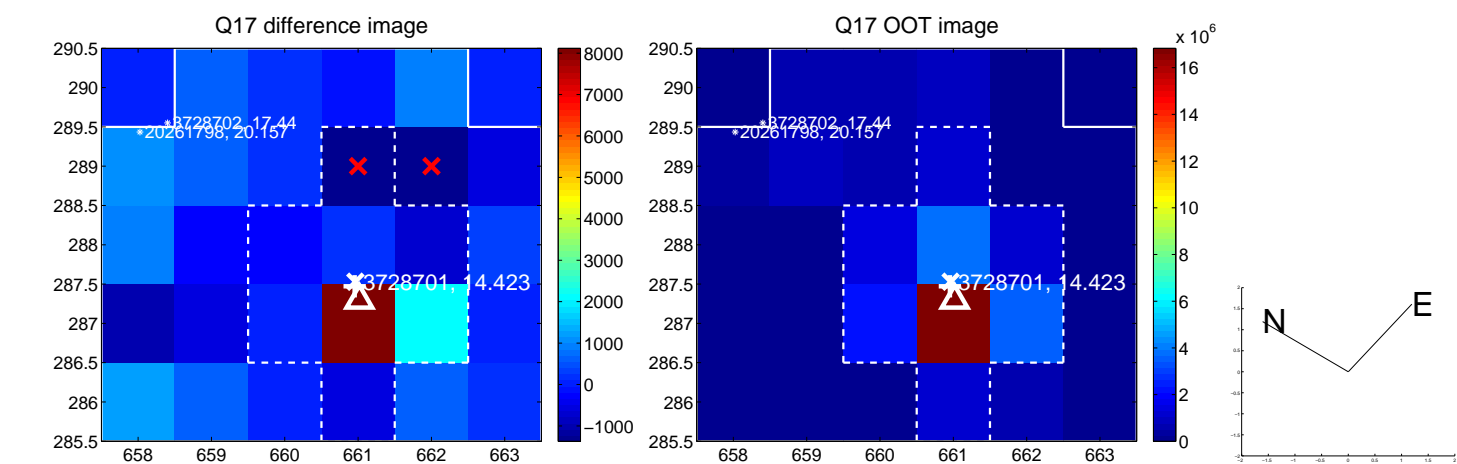


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white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination

