

# KIC 008228992

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008228992-01	OBS	No	370.285455	298.516405	1691.7	61.093	8.3	17.3	0.91	5911	4.58	0.89

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008228992-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—CENT_FEW_DIFFS

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

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

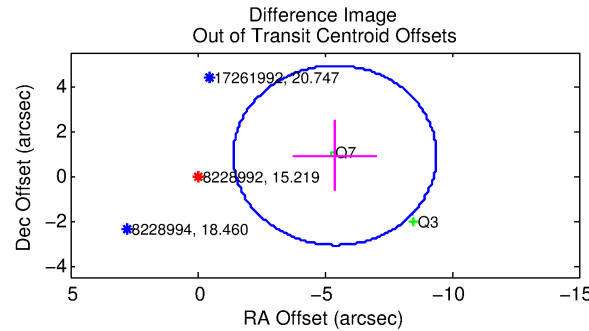
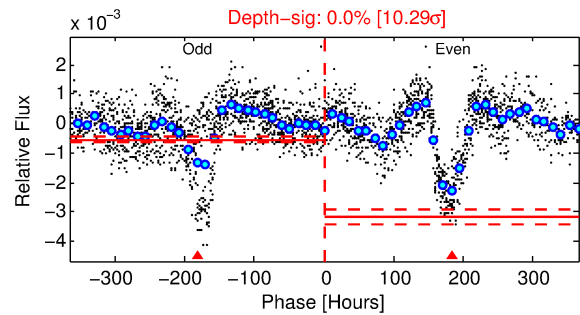
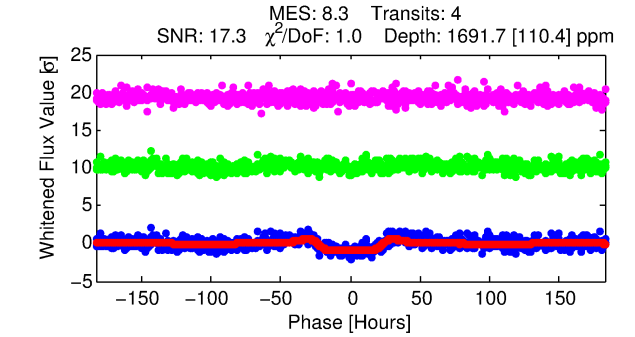
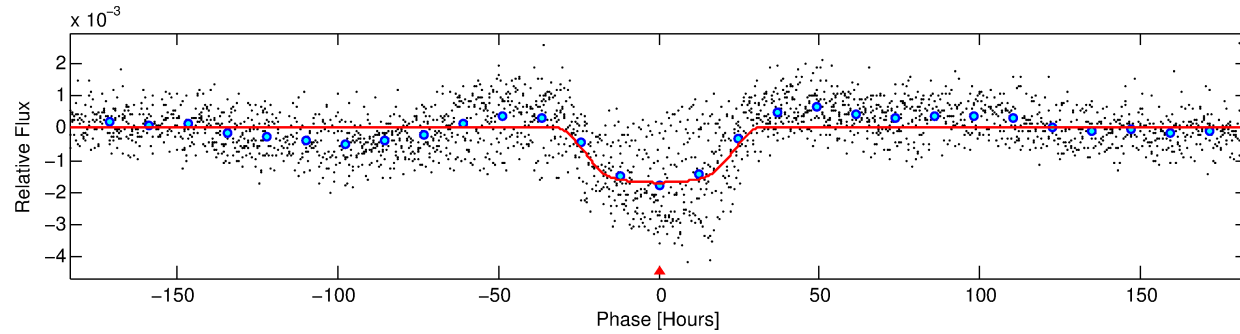
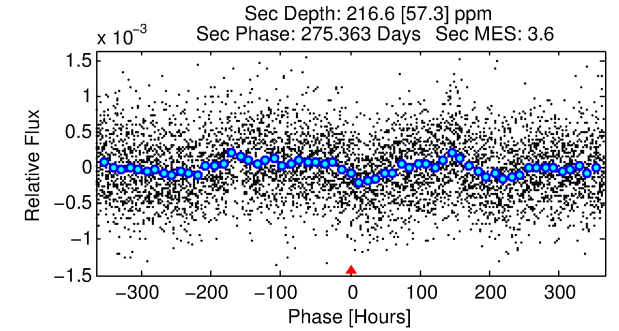
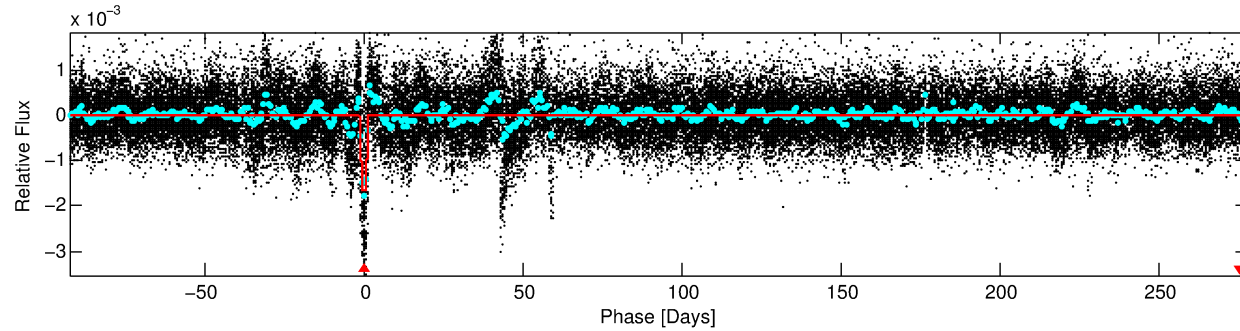
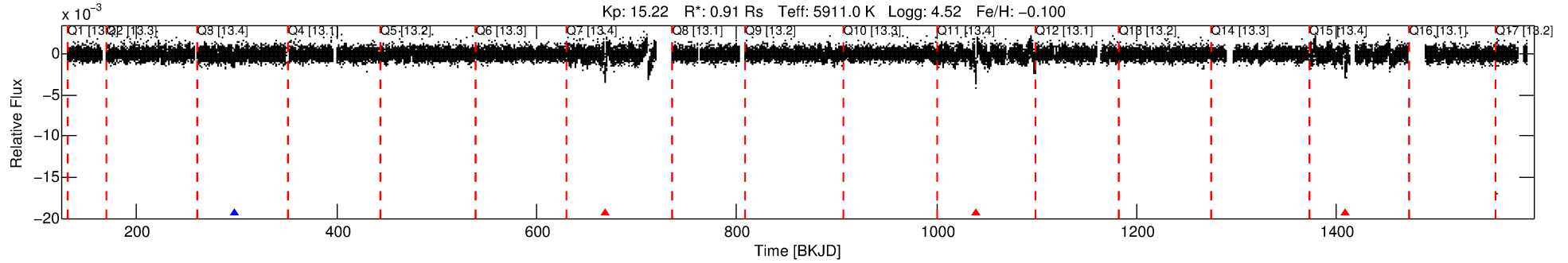
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008228992-01

No Significant Match Found

# DV One-Page Summary

KIC: 8228992 Candidate: 1 of 1 Period: 370.285 d



## DV Fit Results:

Period = 370.28545 [0.02167] d  
Epoch = 298.5164 [0.0389] BKJD  
Rp/R\* = 0.0459 [0.0017]  
a/R\* = 22.67 [1.42]  
b = 0.92 [0.01]  
Seff = 0.89 [0.36]  
Teff = 248 [25] K  
Rp = 4.58 [1.42] Re  
a = 1.0116 [0.2653] AU  
Ag = 5823.61 [2756.38] [2.11σ]  
Teffp = 3348 [251] K [12.29σ]

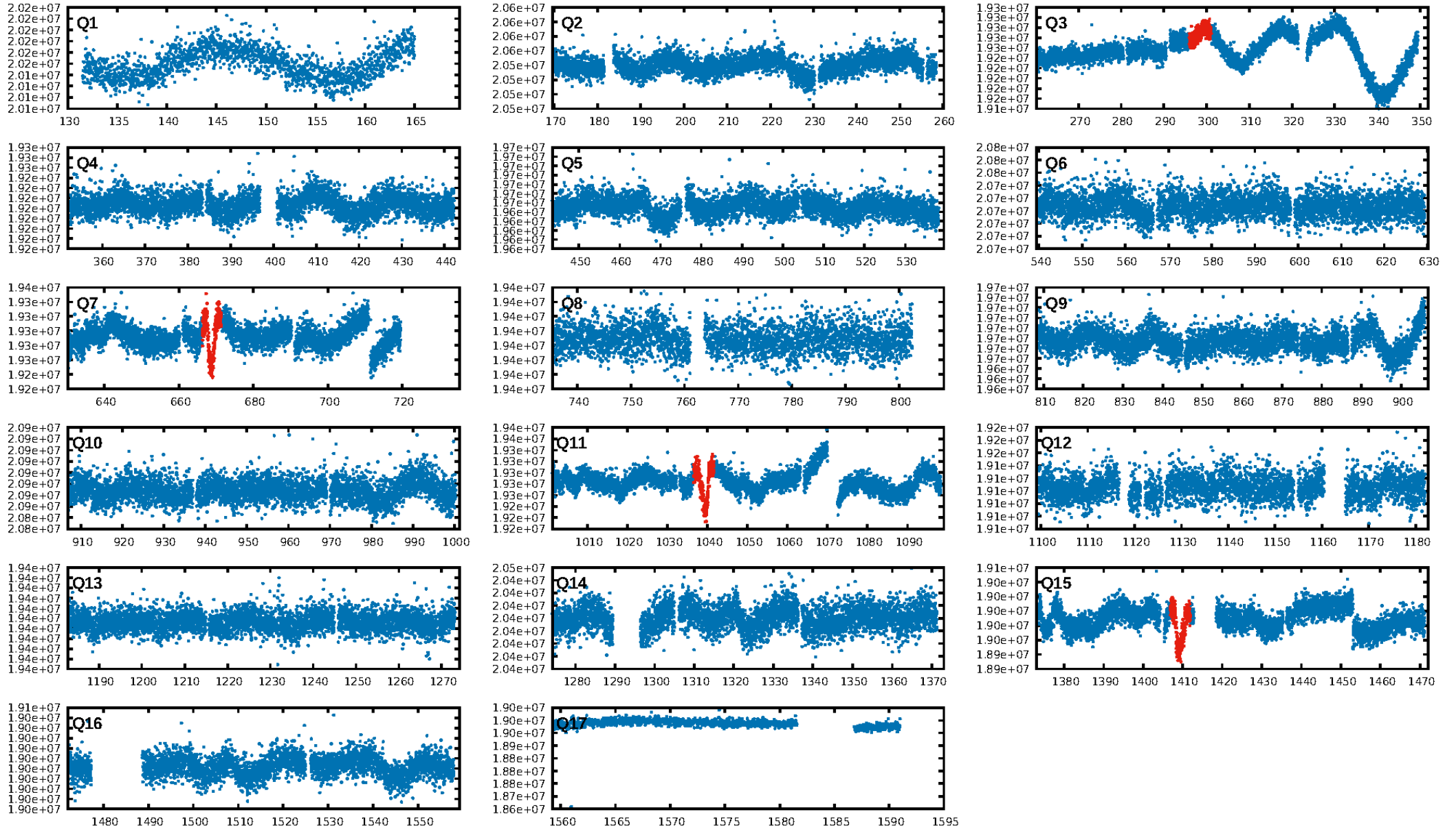
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 98.8%  
Bootstrap-pfa: 5.22e-10  
RollingBand-fgt: 0.25 [1/4]  
GhostDiagnostic-chr: 0.41  
Centroid-sig: 1.3%  
Centroid-so: 0.611 arcsec [0.88σ]  
OotOffset-rm: 5.479 arcsec [4.11σ]  
KicOffset-rm: 5.476 arcsec [7.55σ]  
OotOffset-st: 0/2/0/0 [2]  
KicOffset-st: 0/2/0/0 [2]  
DiffImageQuality-fgm: 0.00 [0/2]  
DiffImageOverlap-fno: 1.00 [2/2]

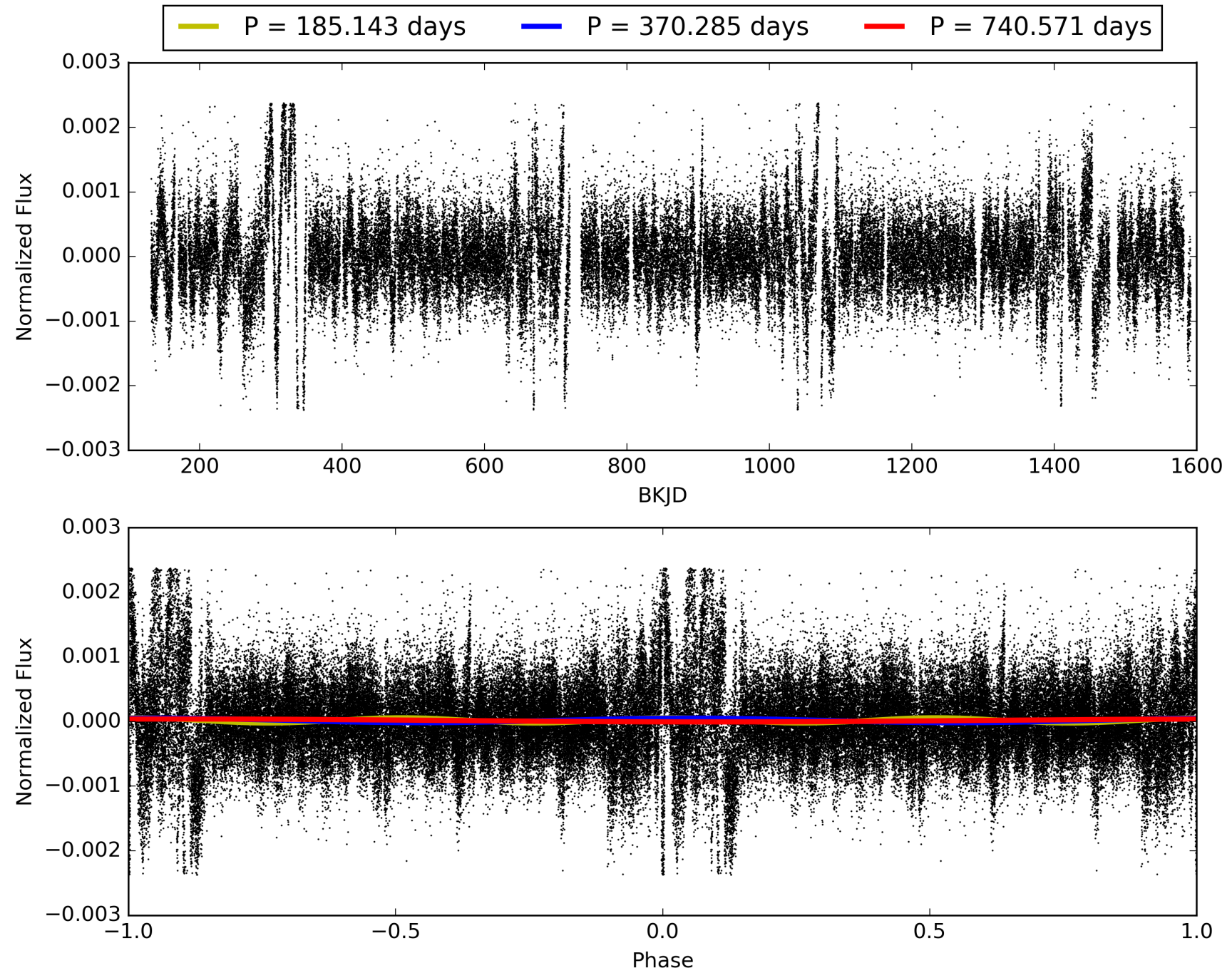
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:33:43 Z

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

# TCE 008228992-01, PDC Light Curves

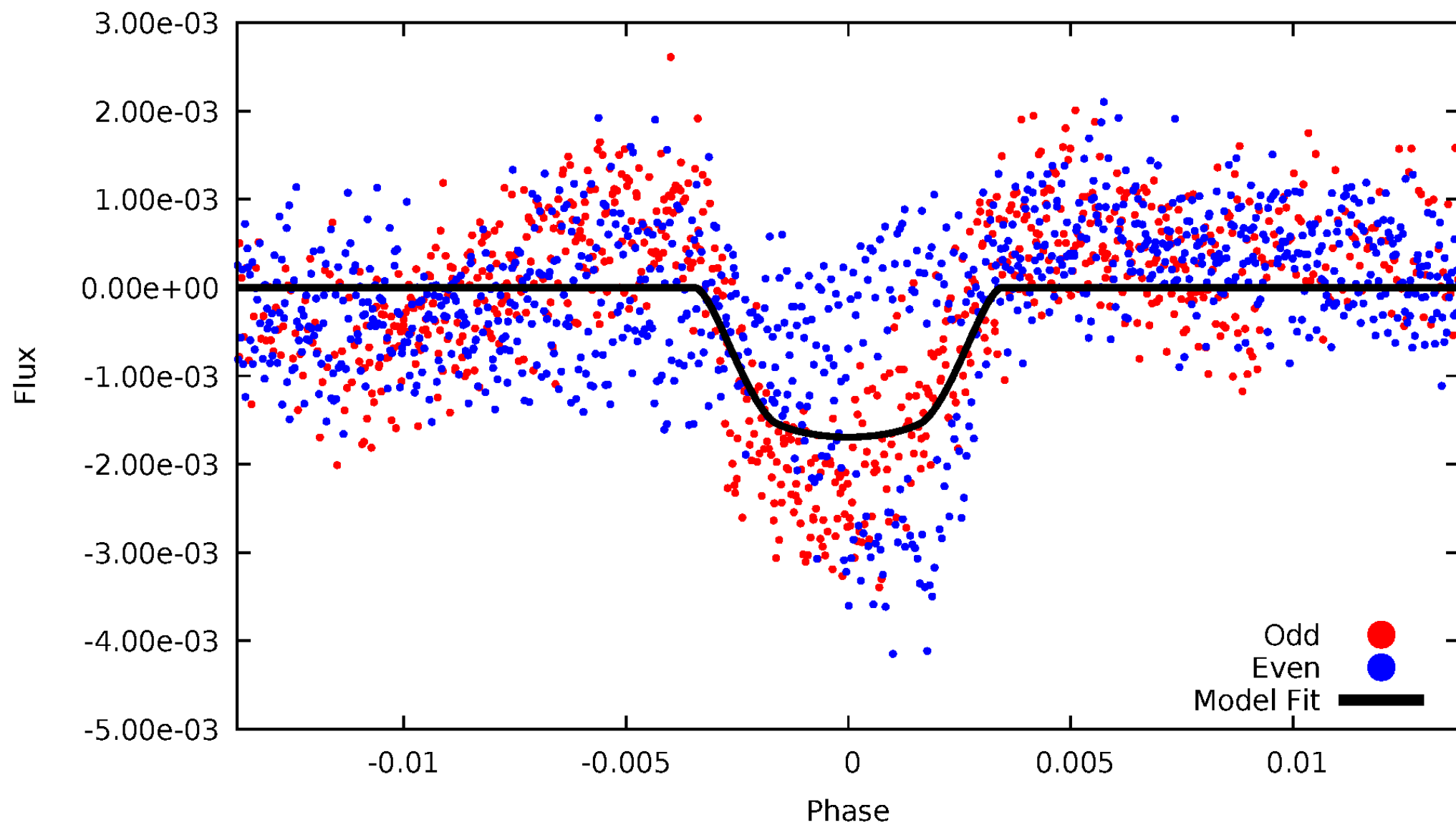


TCE 008228992-01



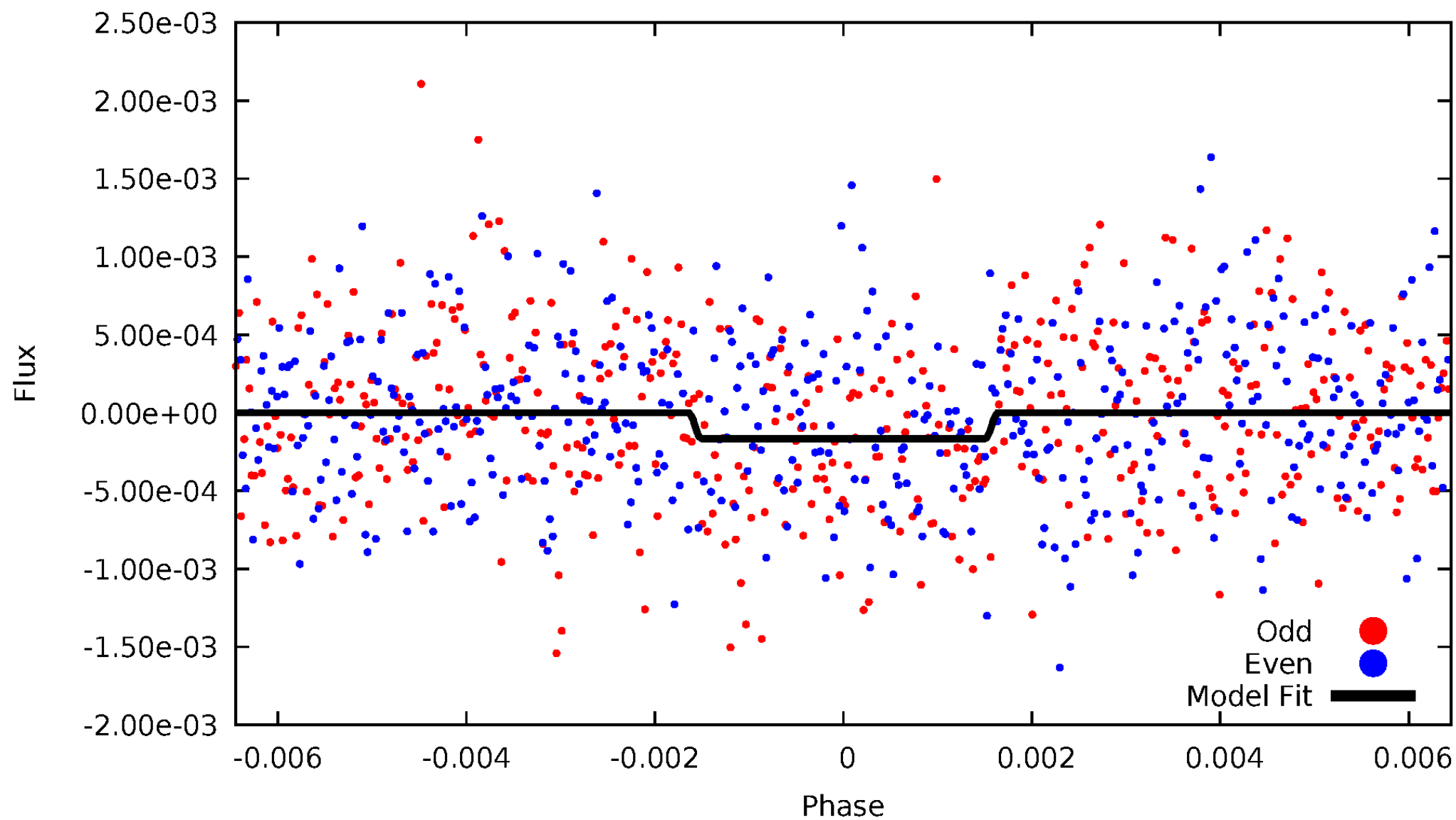
# DV Odd/Even

TCE 008228992-01

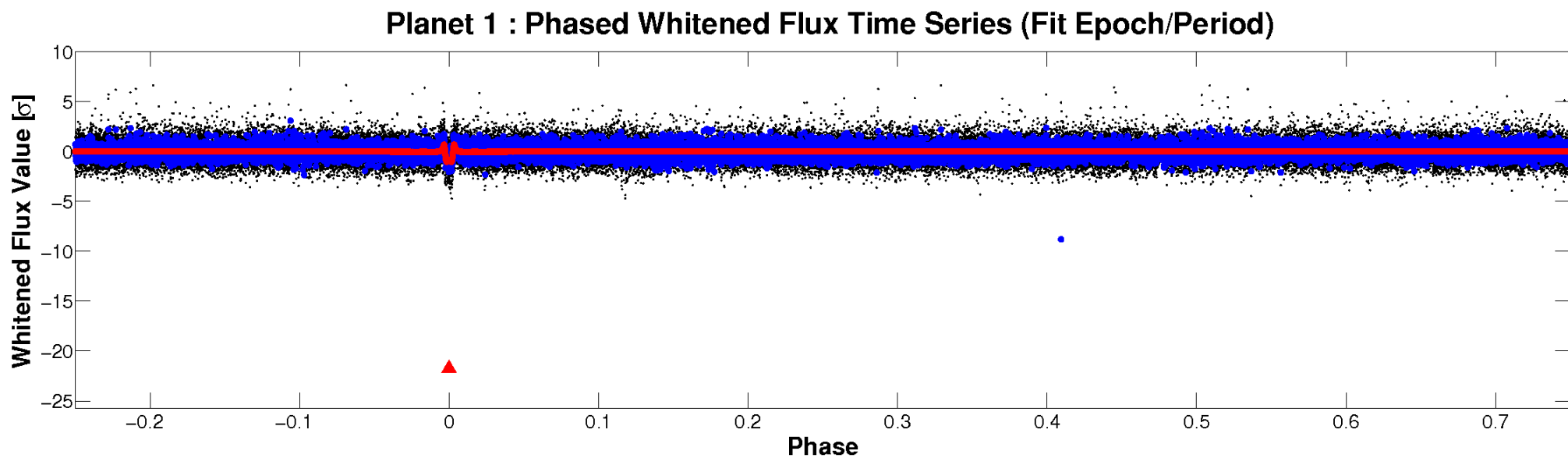
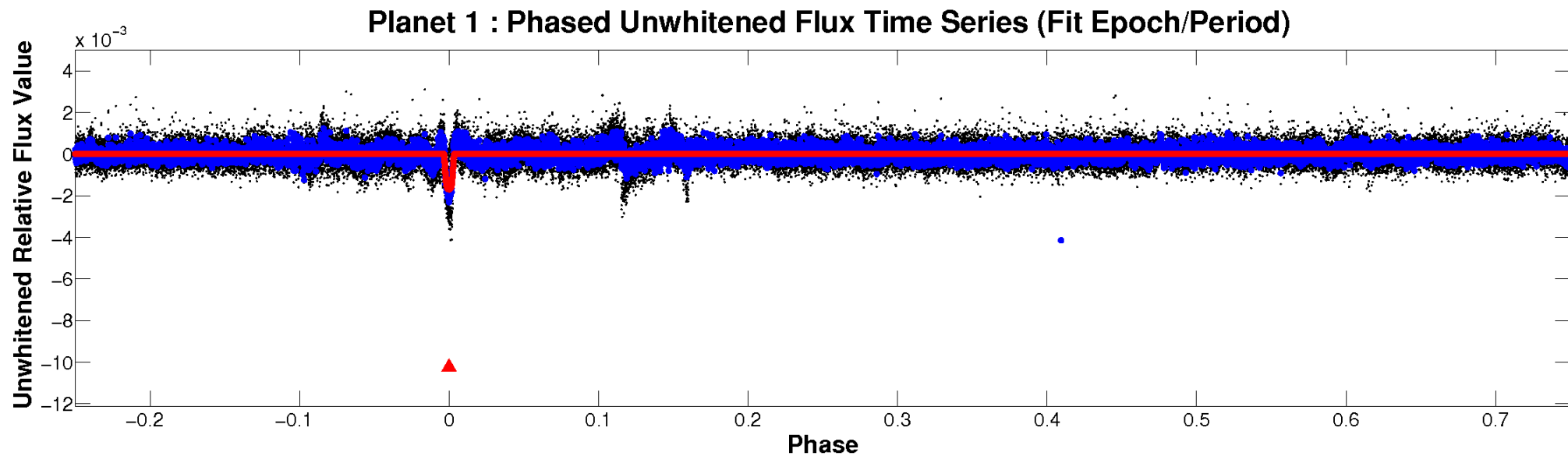


# ALT Odd/Even

TCE 008228992-01



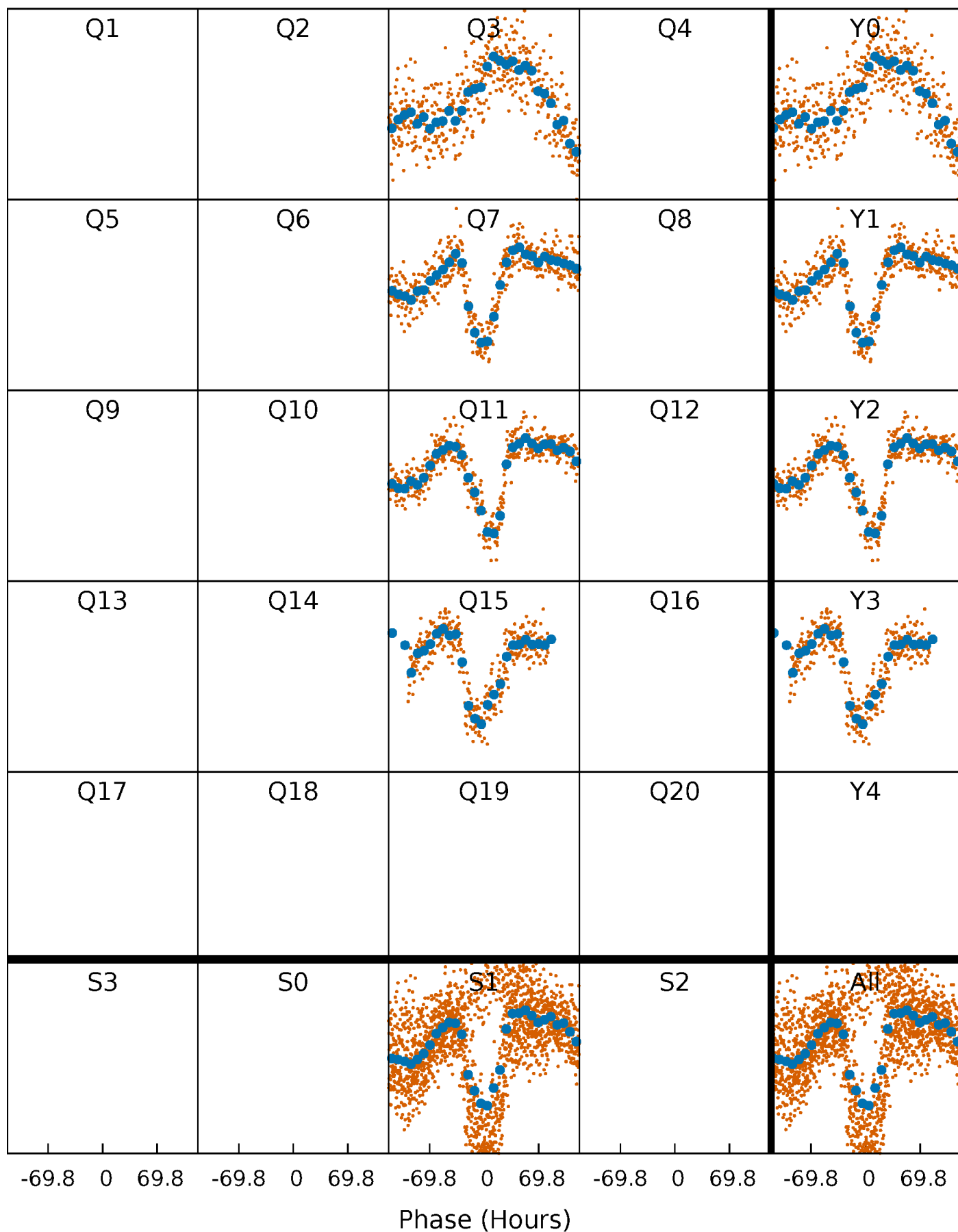
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

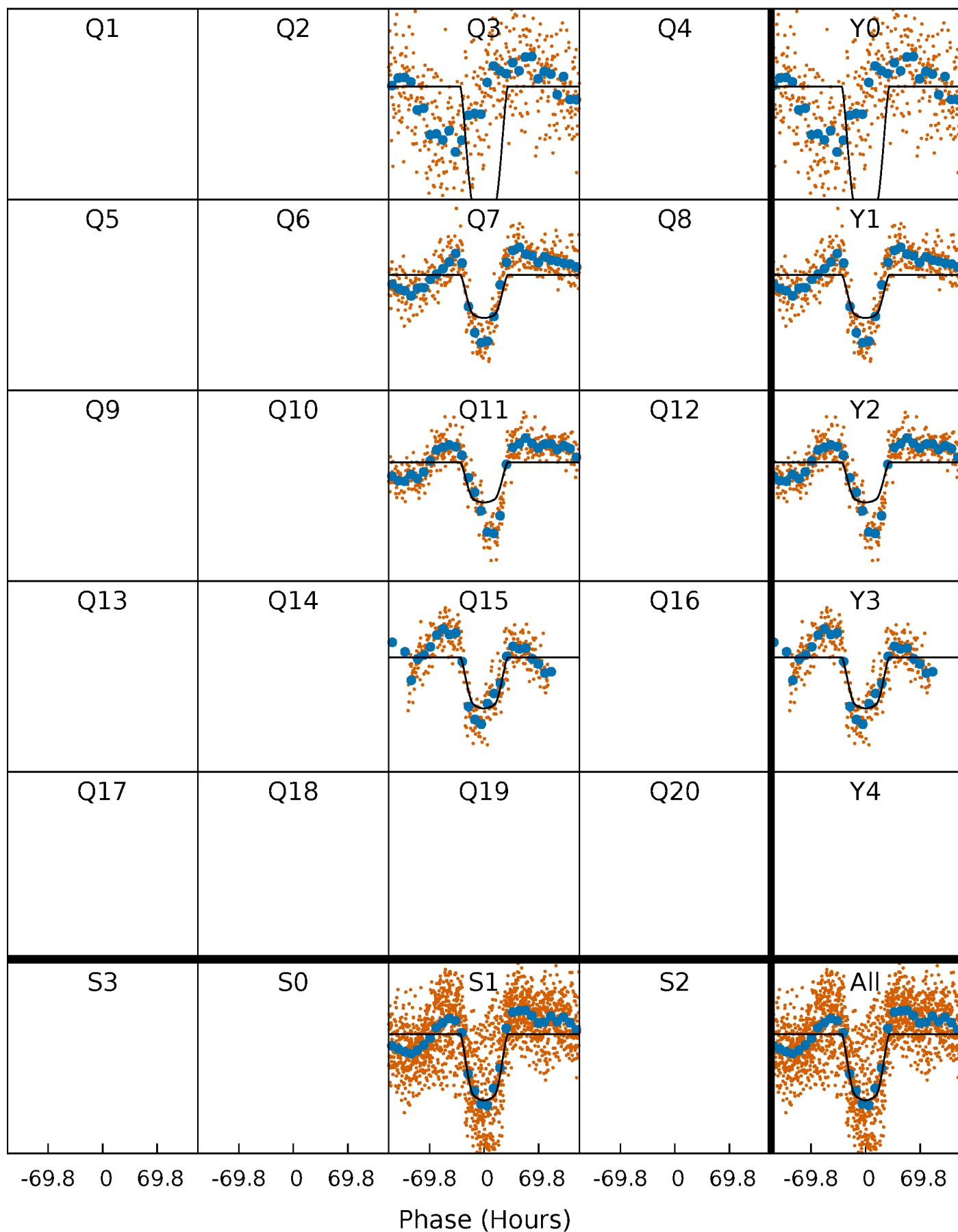
TCE 008228992-01 P=370.285455 Days  $T_0=298.516405$  (BKJD)





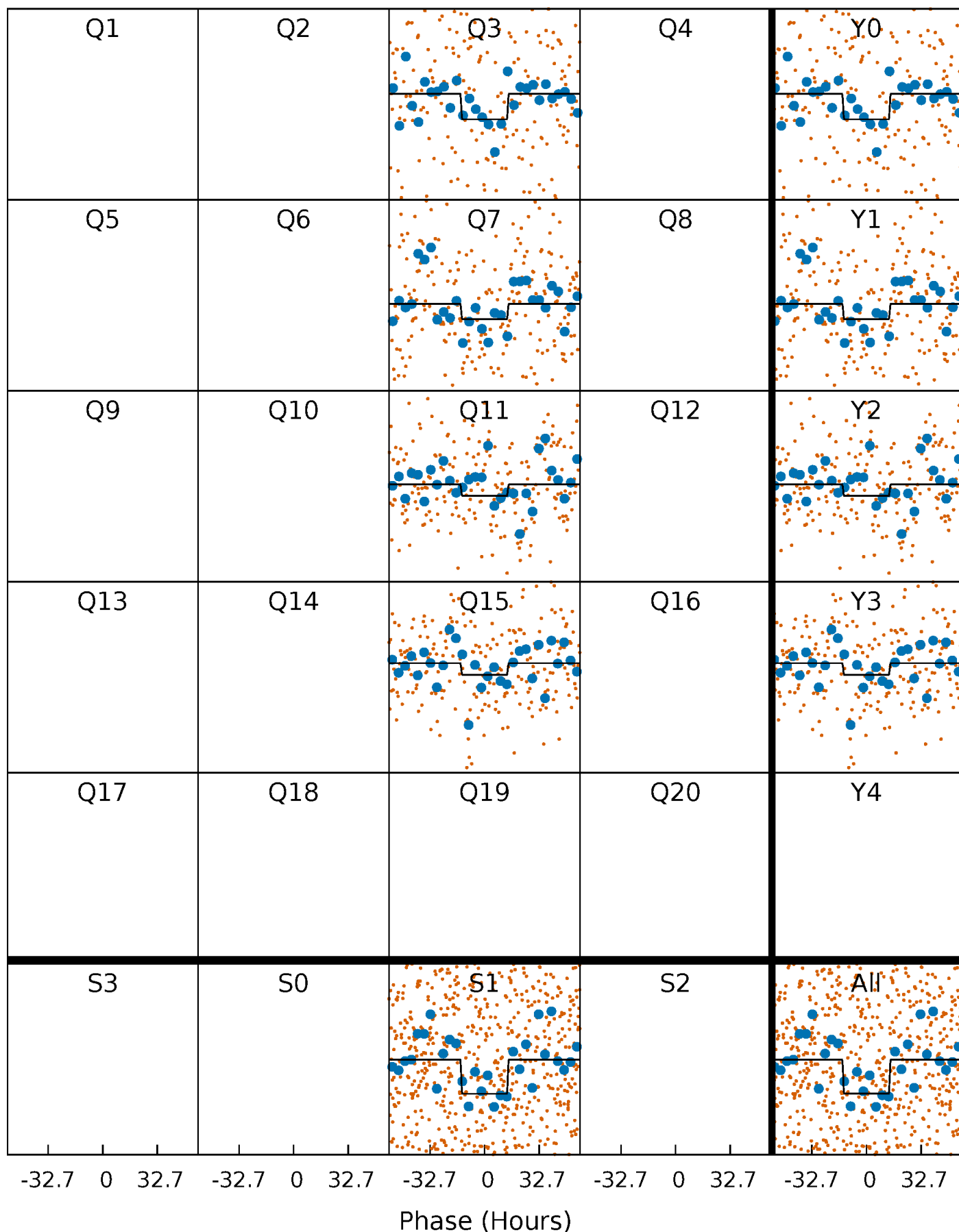
# DV Quarter-Phased Transit Curves

TCE 008228992-01 P=370.285455 Days  $T_0=298.516405$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

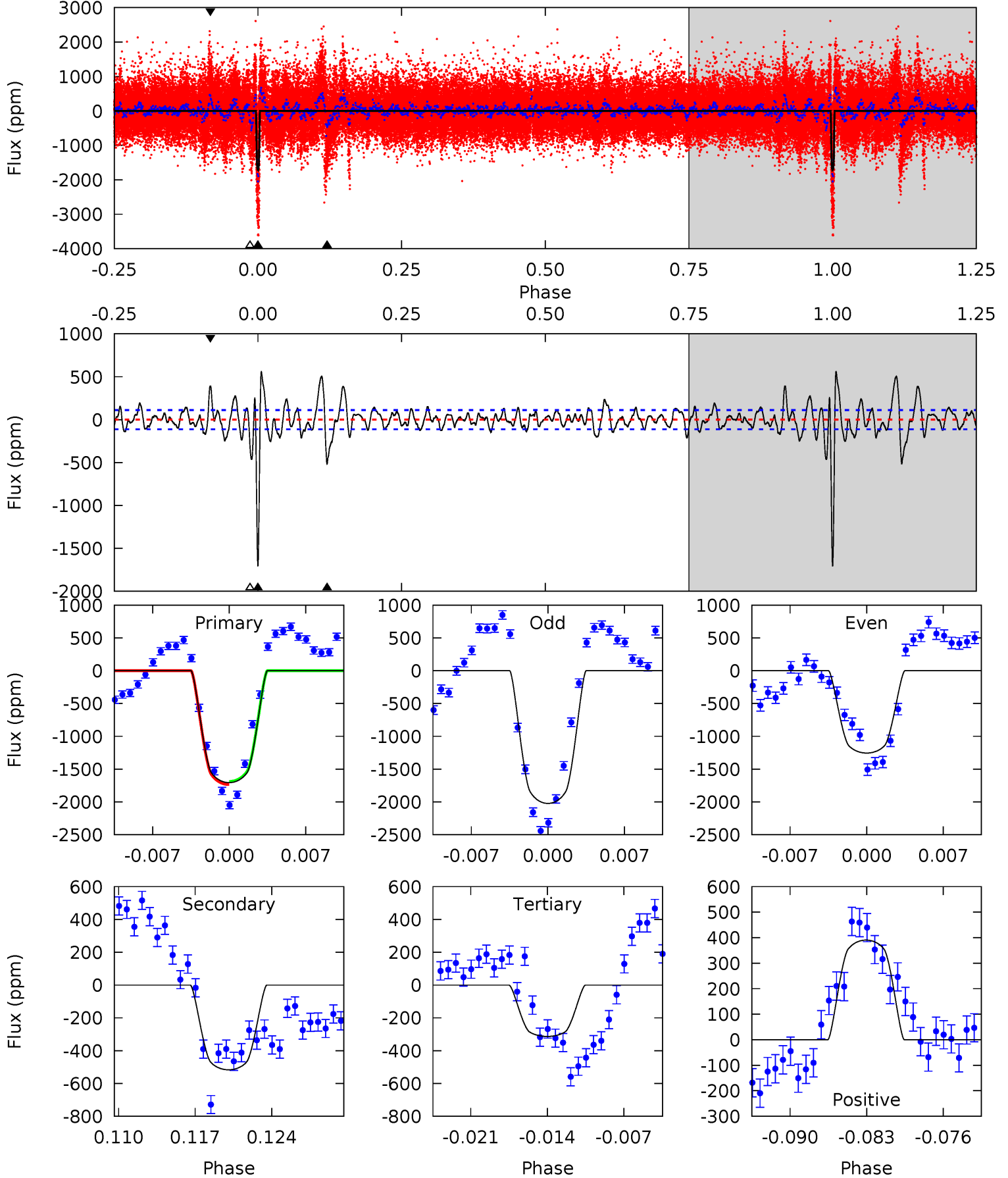
TCE 008228992-01     $P=369.915548$  Days     $T_0=299.063700$  (BKJD)



# DV Model-Shift Uniqueness Test

008228992-01, P = 370.285455 Days, E = 298.516405 Days

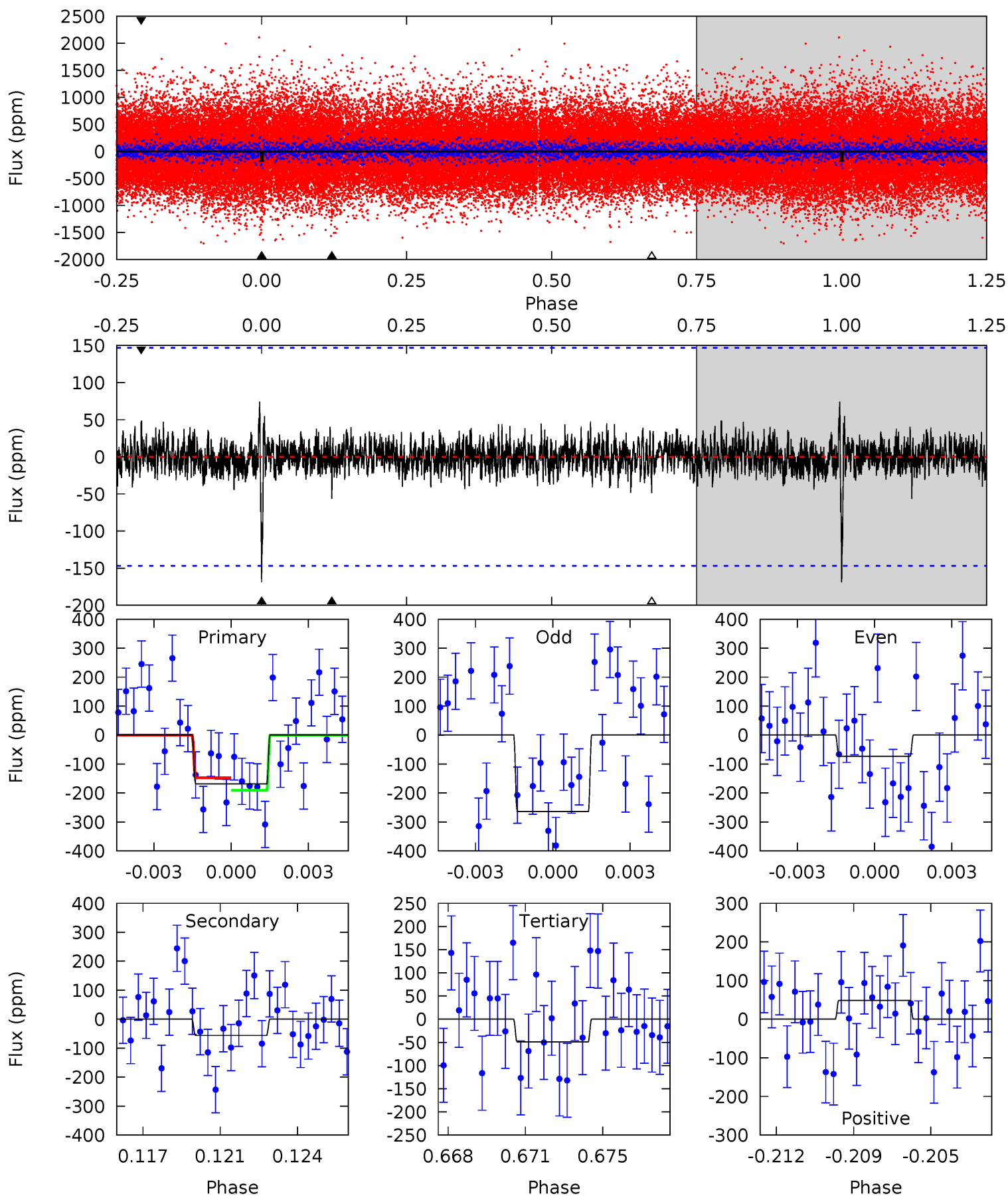
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
78.0	23.6	14.3	17.9	5.10	2.70	5.33	63.7	60.2	9.30	5.77	18.0	0.82	0.25	1.05



# Alt Model-Shift Uniqueness Test

008228992-01, P = 369.915548 Days, E = 299.063700 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
6.02	2.01	1.74	1.73	5.24	2.94	0.52	4.28	4.29	0.27	0.27	3.42	0.80	0.31	0.77



### Stellar Parameters For KIC 008228992

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5911^{+158}_{-176}$	$4.519^{+0.038}_{-0.212}$	$-0.100^{+0.300}_{-0.300}$	$0.914^{+0.282}_{-0.094}$	$1.006^{+0.127}_{-0.127}$	$1.854^{+0.389}_{-0.992}$
	+3%/-3%	+1%/-5%	+300%/-300%	+31%/-10%	+13%/-13%	+21%/-54%
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 008228992-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-517 \pm 22$	$4.80^{+0.76}_{-0.45}$	$357^{+25}_{-16}$	$4376^{+125}_{-127}$	$12427^{+2330}_{-2837}$
Alt.	$-56 \pm 28$	$1.35^{+0.27}_{-0.20}$	$355^{+24}_{-17}$	$4681^{+487}_{-568}$	$17056^{+12521}_{-8678}$

$T_{max}$  = 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

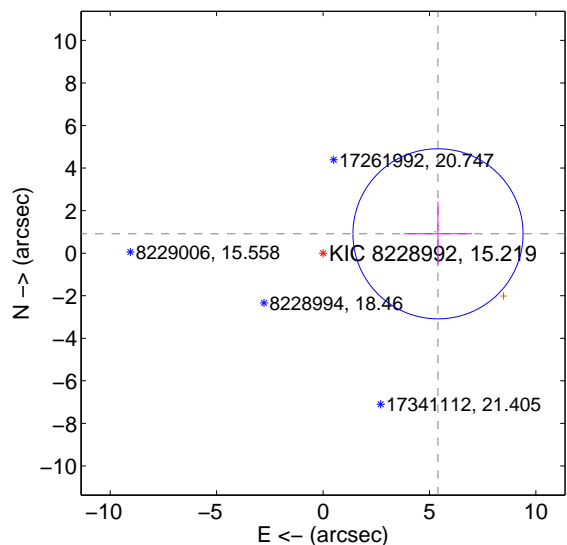
Supplemental centroid analysis for 008228992-01. Kepler magnitude: 15.22. Transit SNR 17.35

There are 0 quarters with good PRF difference image offsets

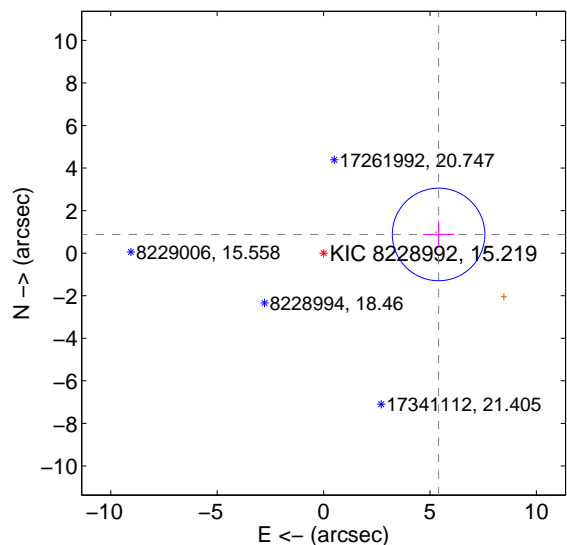
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$5.479 \pm 1.332$	4.11	$-5.403 \pm 1.606$	$0.910 \pm 1.514$
PRF-fit source offset from KIC position	$5.476 \pm 0.725$	7.55	$-5.405 \pm 0.727$	$0.880 \pm 0.638$
photometric centroid source offset	$0.61 \pm 0.70$	0.88	$0.49 \pm 0.76$	$0.37 \pm 0.55$

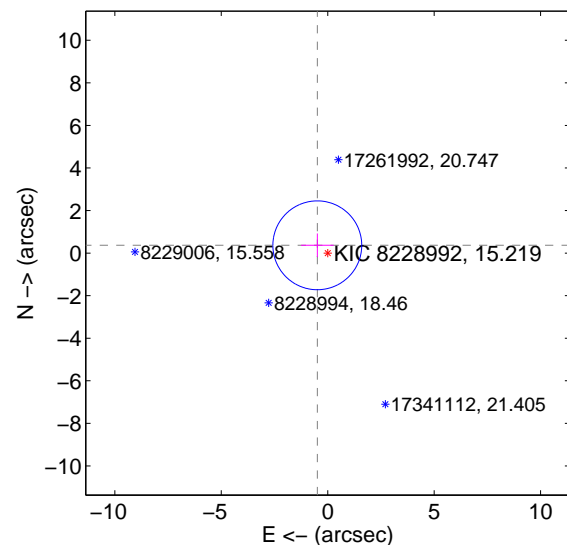
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

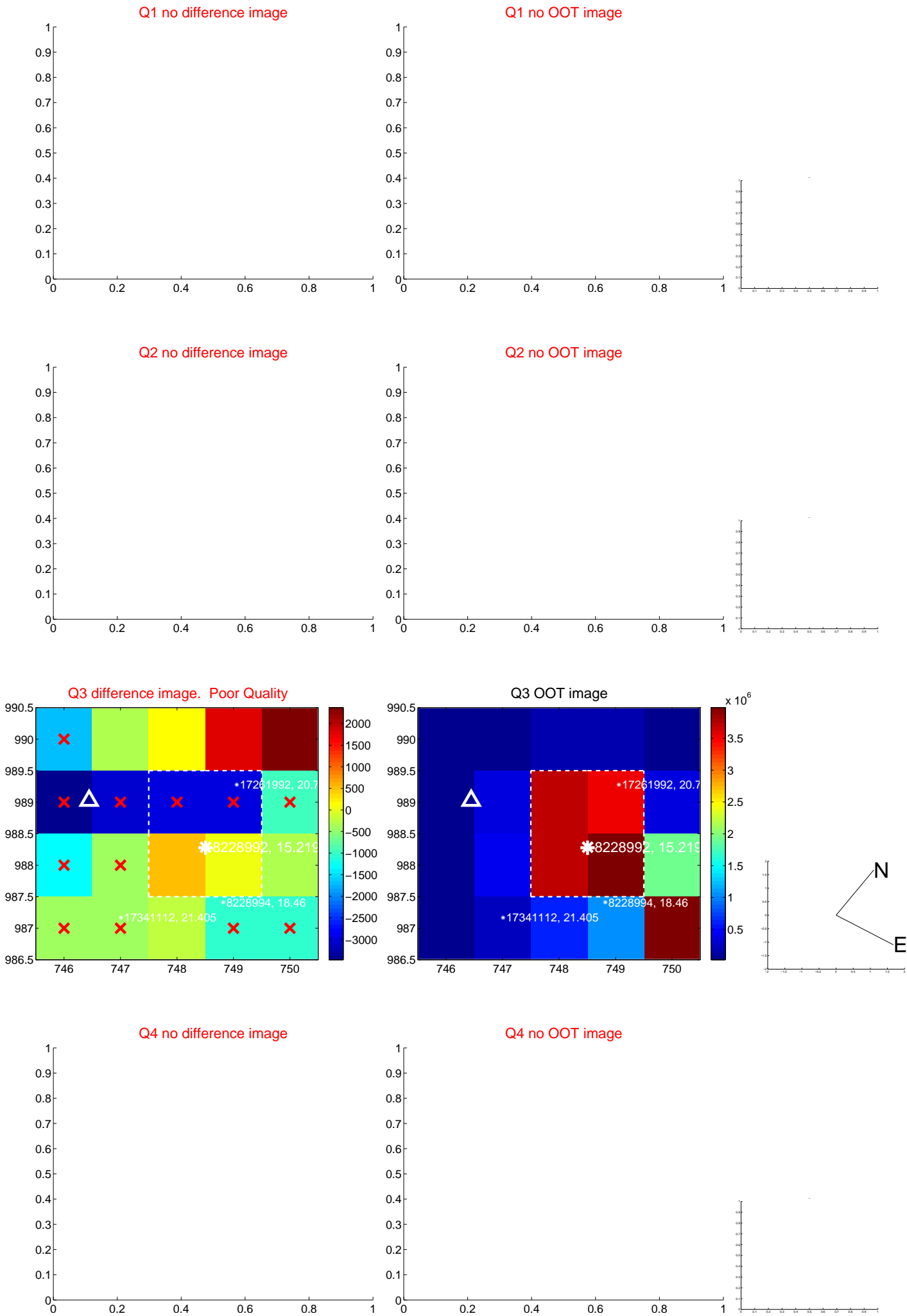


offset from photometric centroids



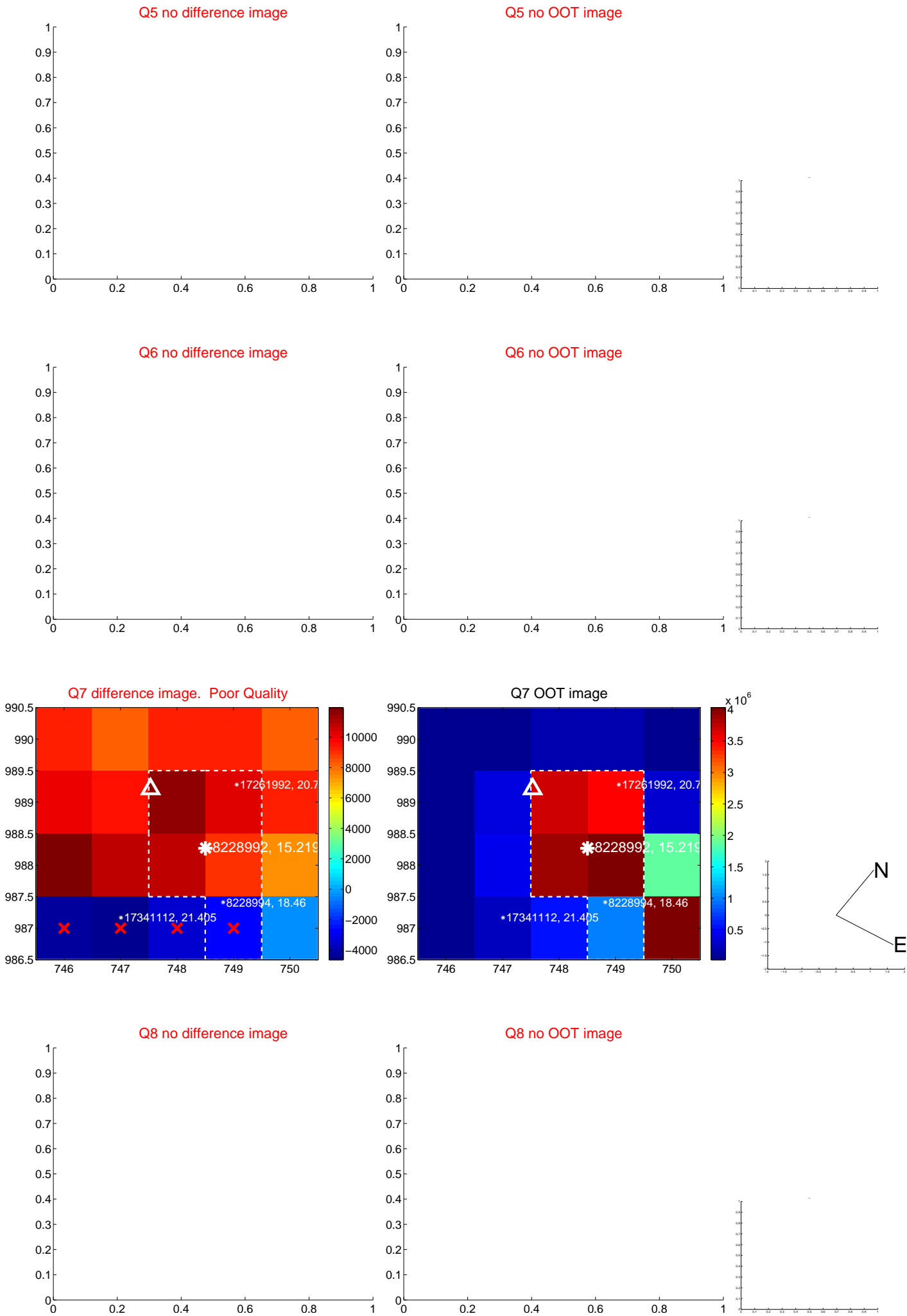
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



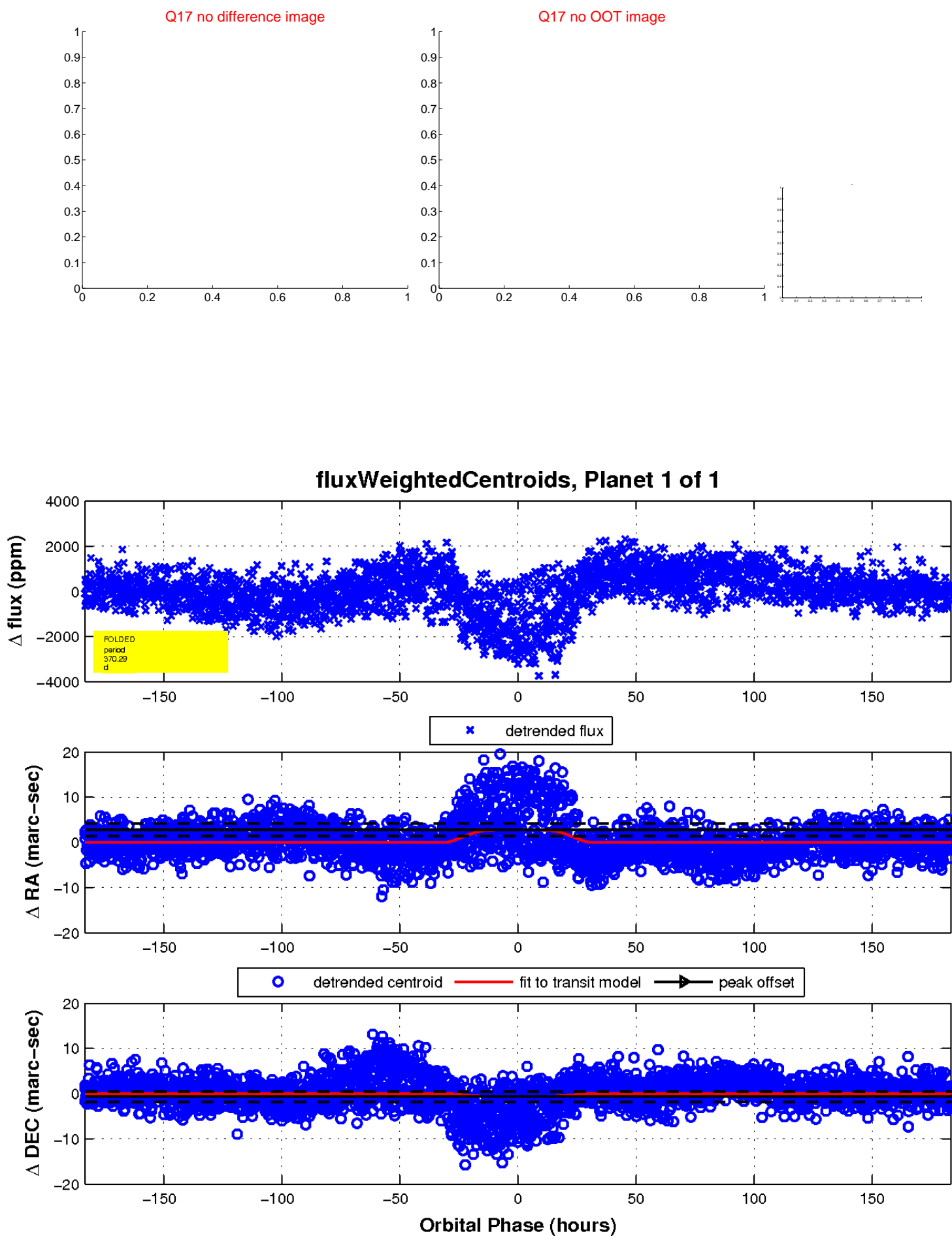
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

