

# KIC 005529894

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005529894-01	OBS	No	553.787450	316.326323	608.4	5.021	8.7	6.0	0.82	5517	2.19	0.34

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005529894-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—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.

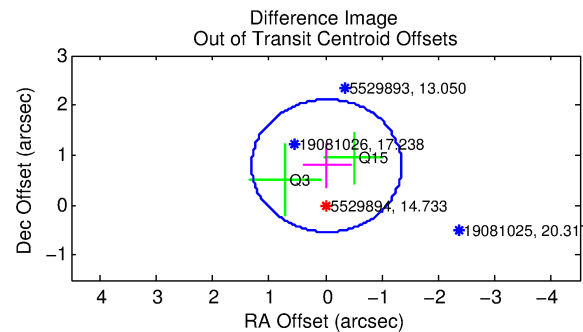
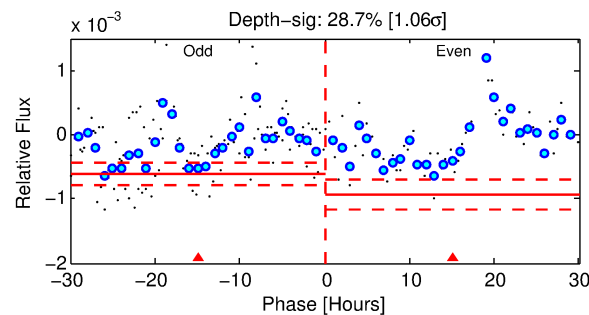
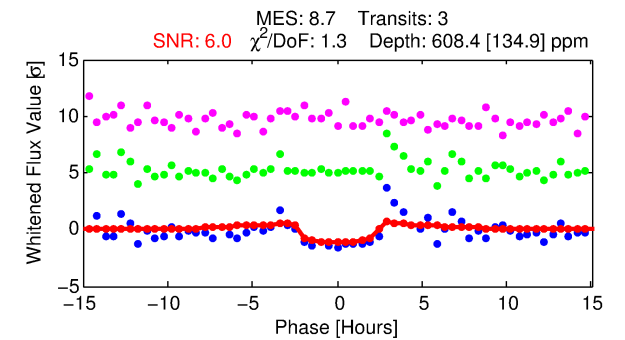
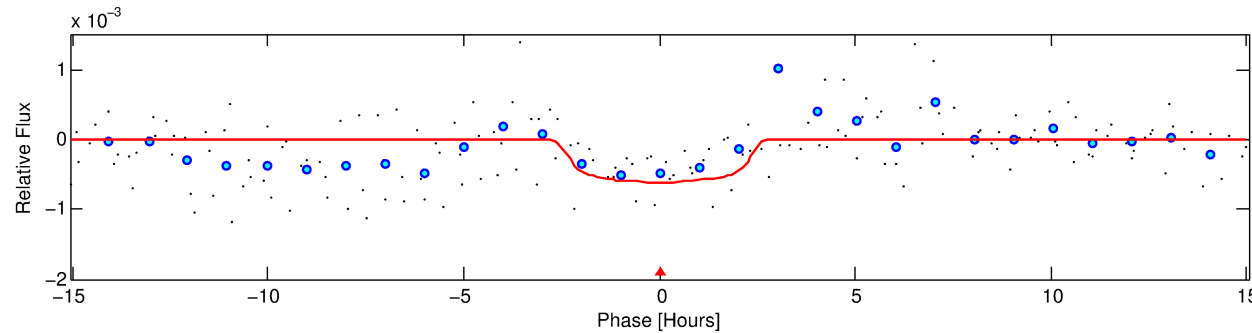
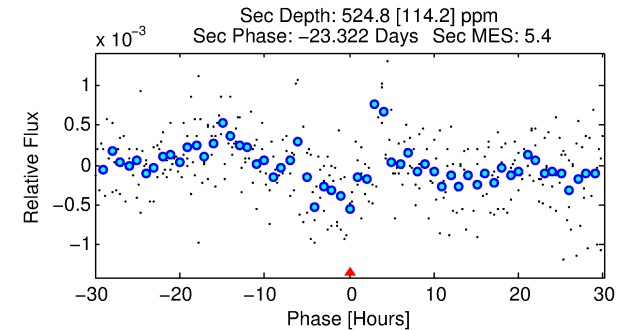
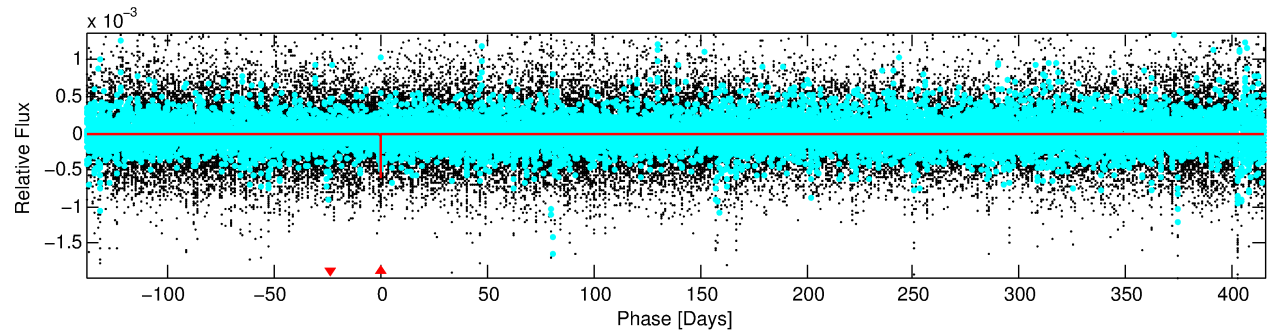
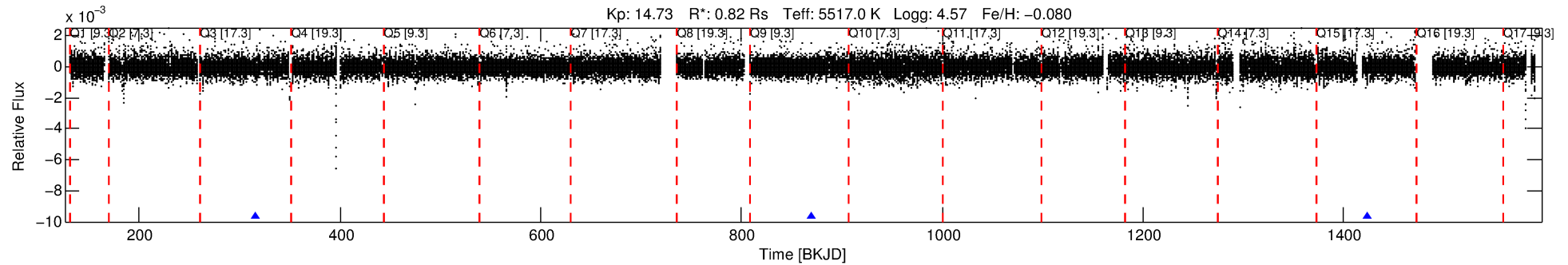
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005529894-01

No Significant Match Found

# DV One-Page Summary

KIC: 5529894 Candidate: 1 of 1 Period: 553.787 d



## DV Fit Results:

Period = 553.78745 [0.01034] d  
Epoch = 316.3263 [0.0140] BKJD  
Rp/R\* = 0.0245 [0.0251]  
a/R\* = 597.33 [2481.20]  
b = 0.74 [2.58]  
Seff = 0.34 [0.11]  
Teq = 195 [15] K  
Rp = 2.19 [2.30] Re  
a = 1.2778 [0.2614] AU  
Ag = 98491.28 [204795.35] [0.48 $\sigma$ ]  
Teff = 5337 [2750] K [1.87 $\sigma$ ]

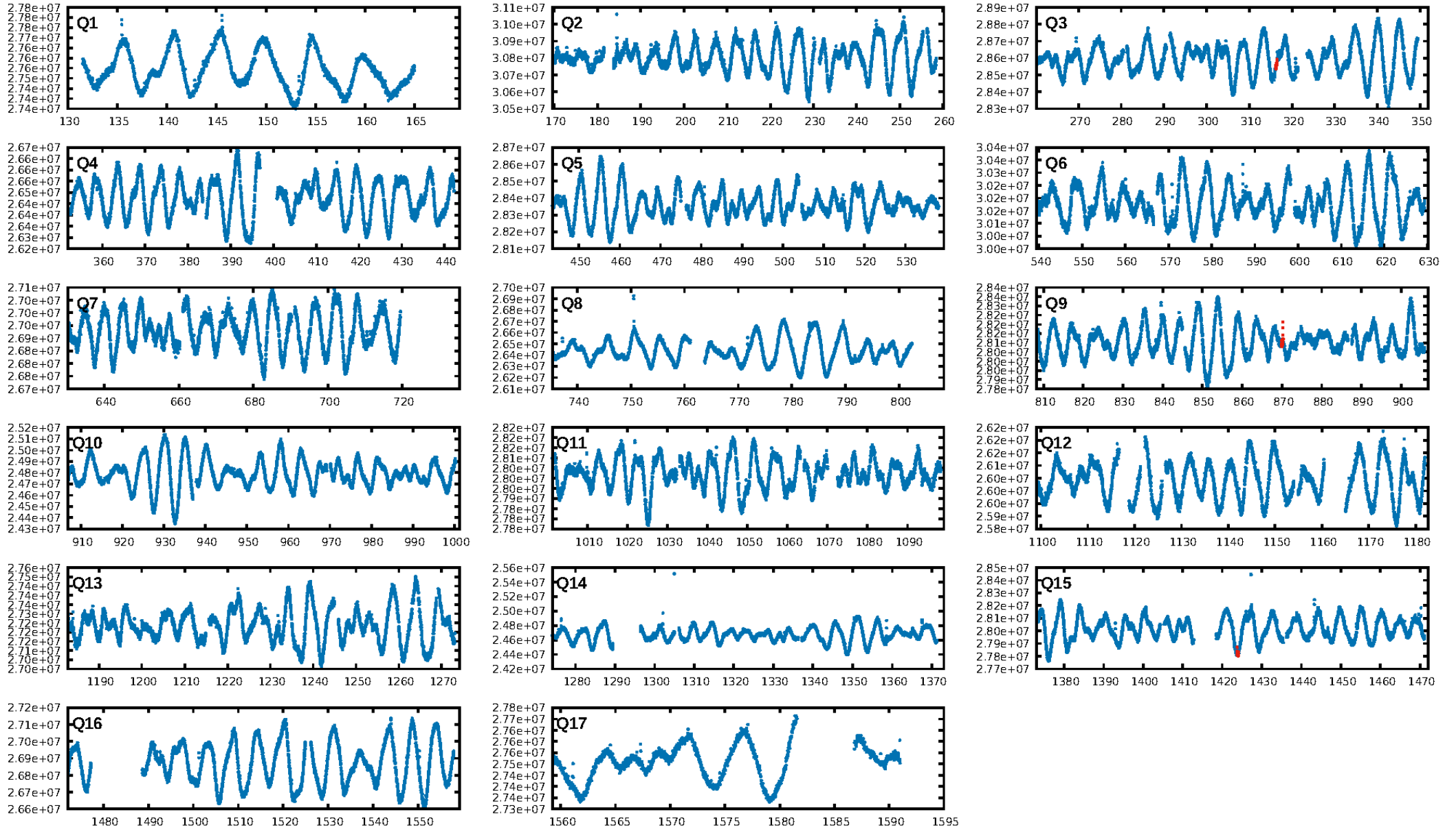
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 32.8%  
ModelChiSquareGof-sig: 96.9%  
**Bootstrap-pfa: 2.25e-08**  
RollingBand-fgt: 1.00 [3/3]  
**GhostDiagnostic-chr: 0.3135**  
Centroid-sig: 38.6%  
Centroid-so: 1.956 arcsec [1.27 $\sigma$ ]  
OotOffset-rm: 0.789 arcsec [1.78 $\sigma$ ]  
OotOffset-st: 0/2/0/0 [2]  
KicOffset-rm: 0.205 arcsec [0.32 $\sigma$ ]  
KicOffset-st: 0/2/0/0 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 1.00 [3/3]

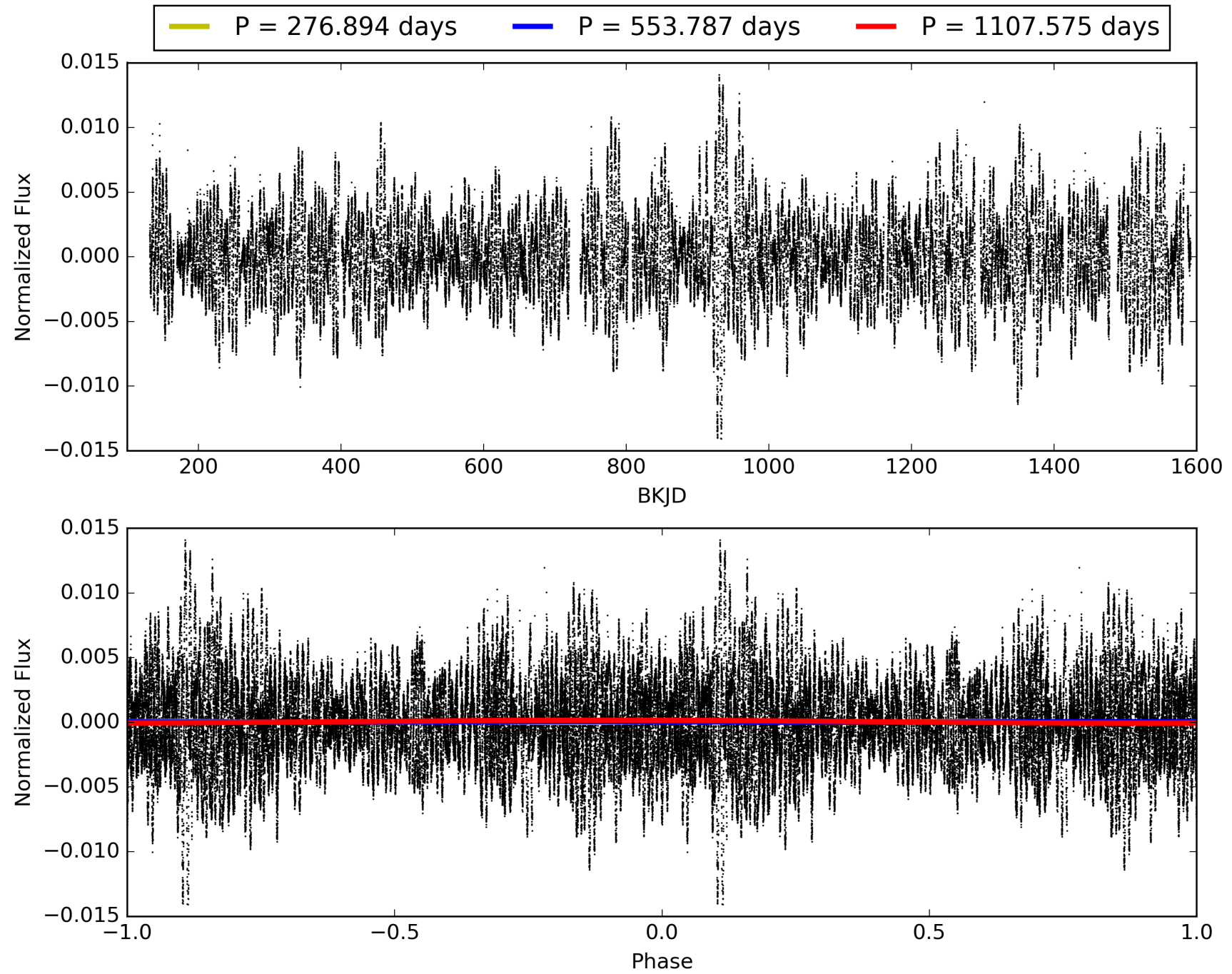
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:49:29 Z

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

# TCE 005529894-01, PDC Light Curves

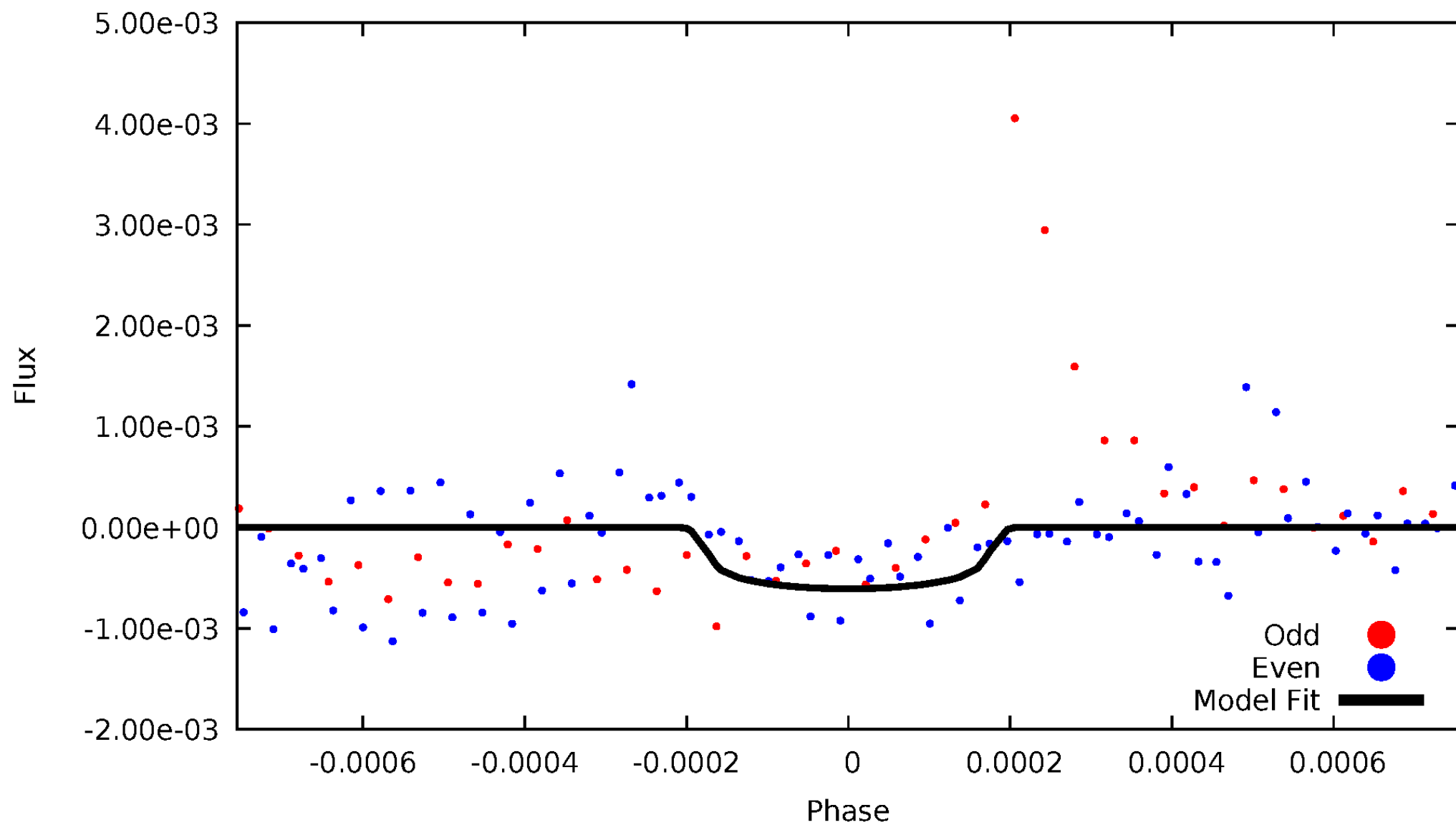


TCE 005529894-01



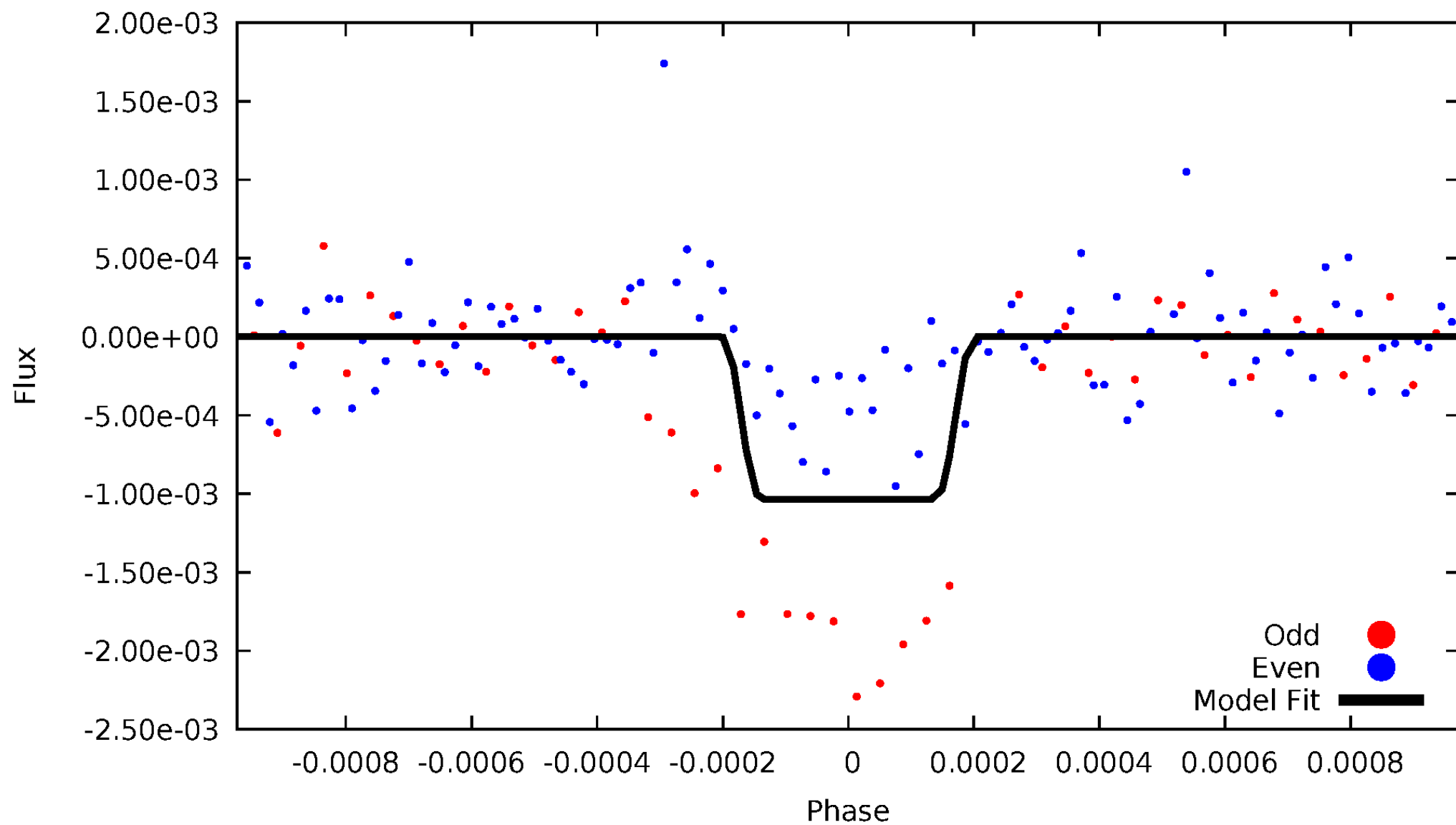
# DV Odd/Even

TCE 005529894-01



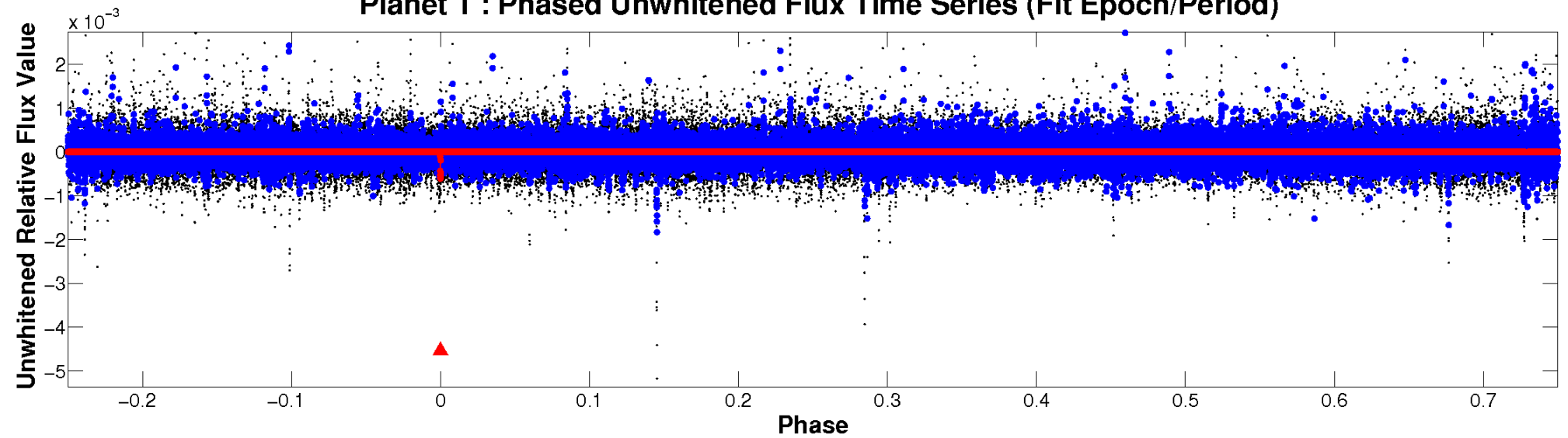
# ALT Odd/Even

TCE 005529894-01

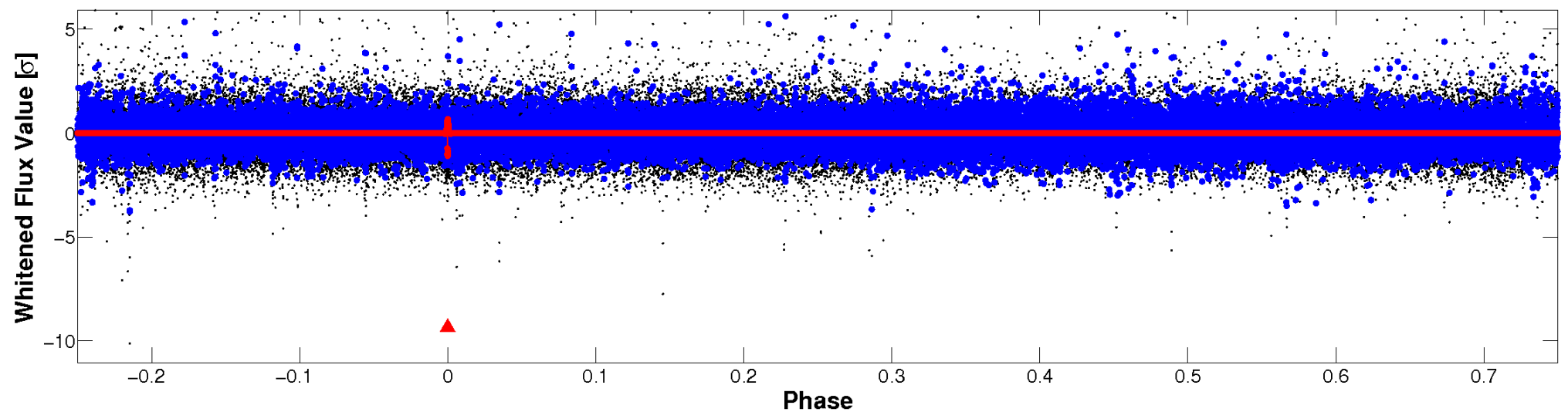


# Non-Whitened Vs. Whitened Light Curve

**Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)**

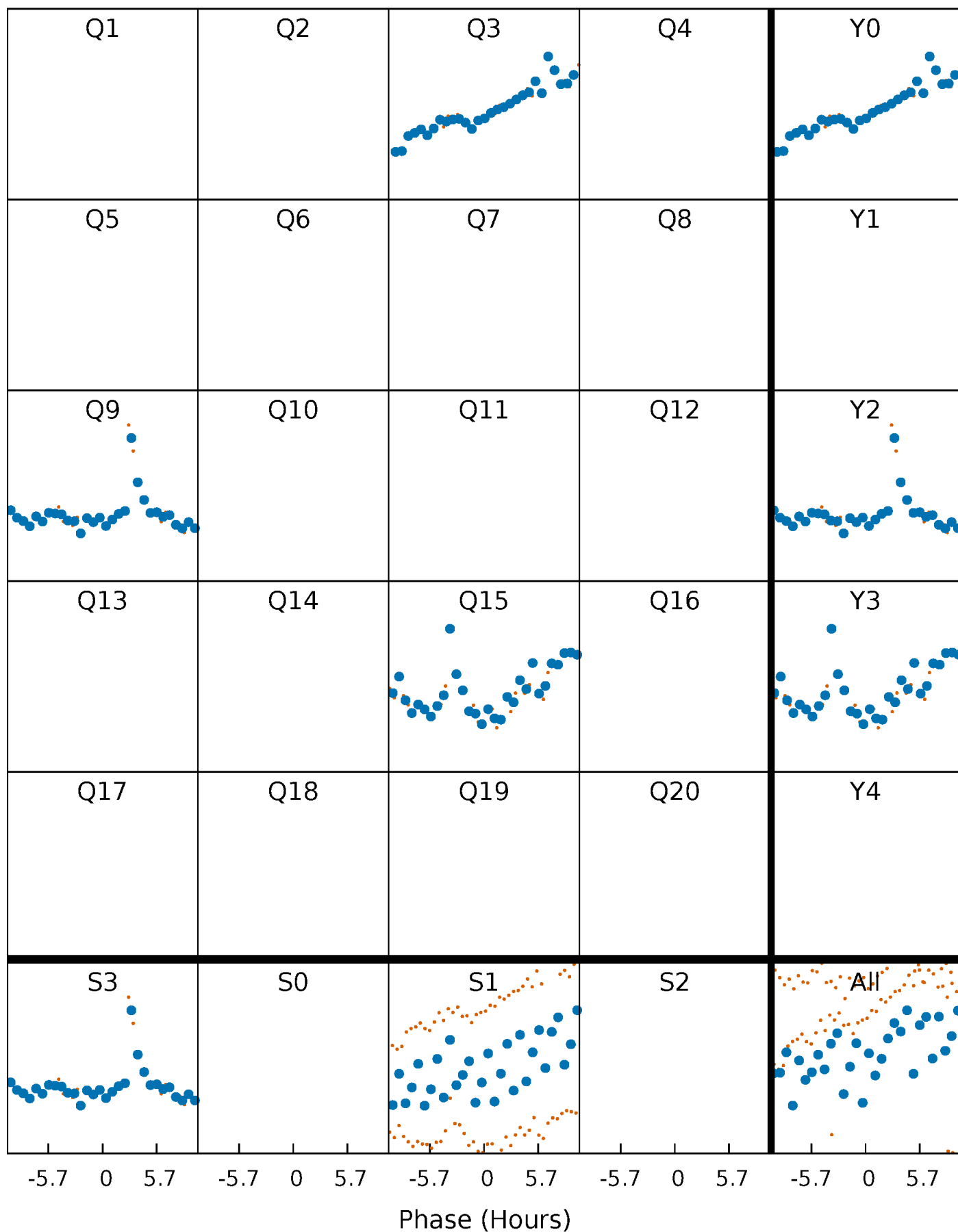


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

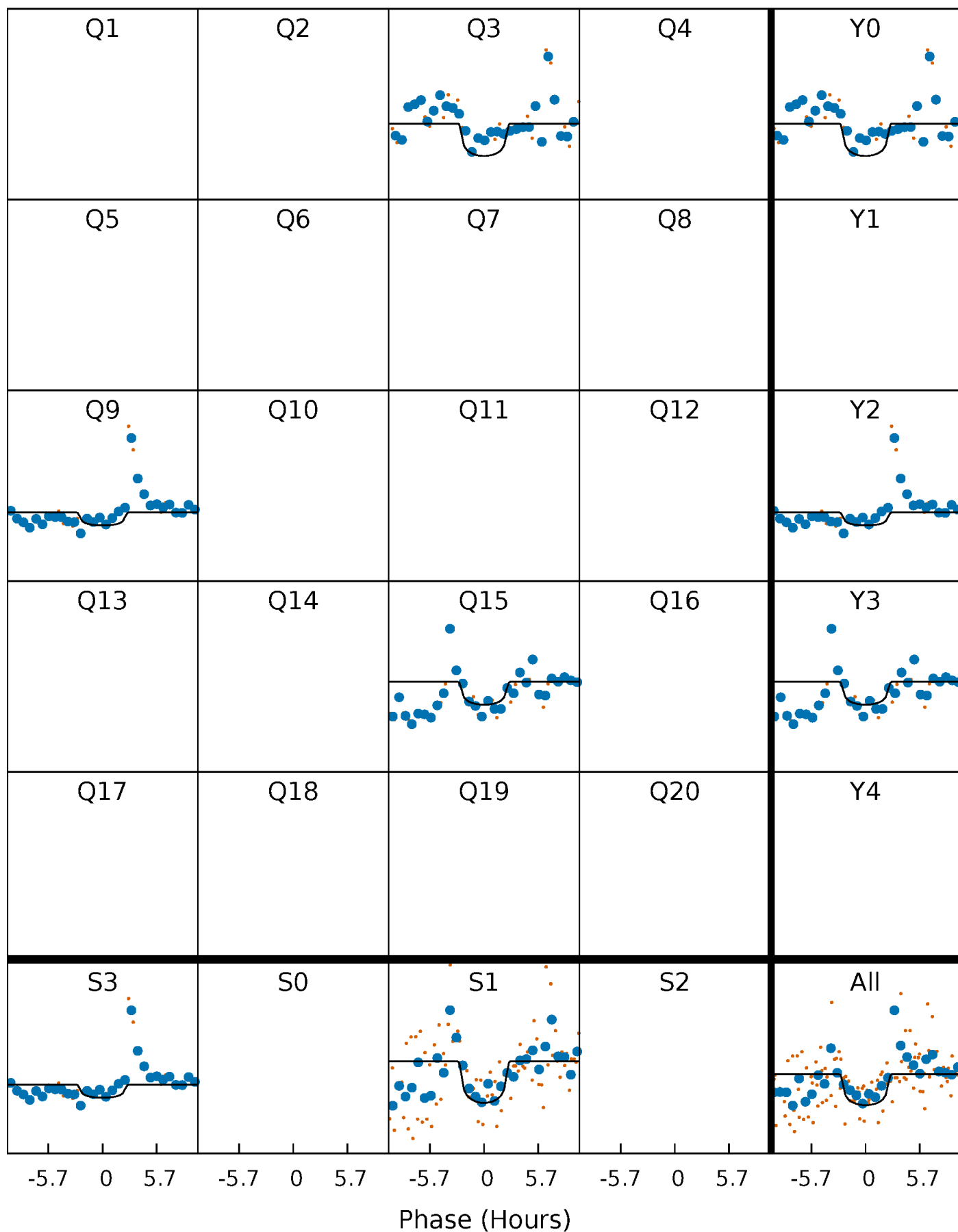
TCE 005529894-01 P=553.787450 Days  $T_0=316.326324$  (BKJD)





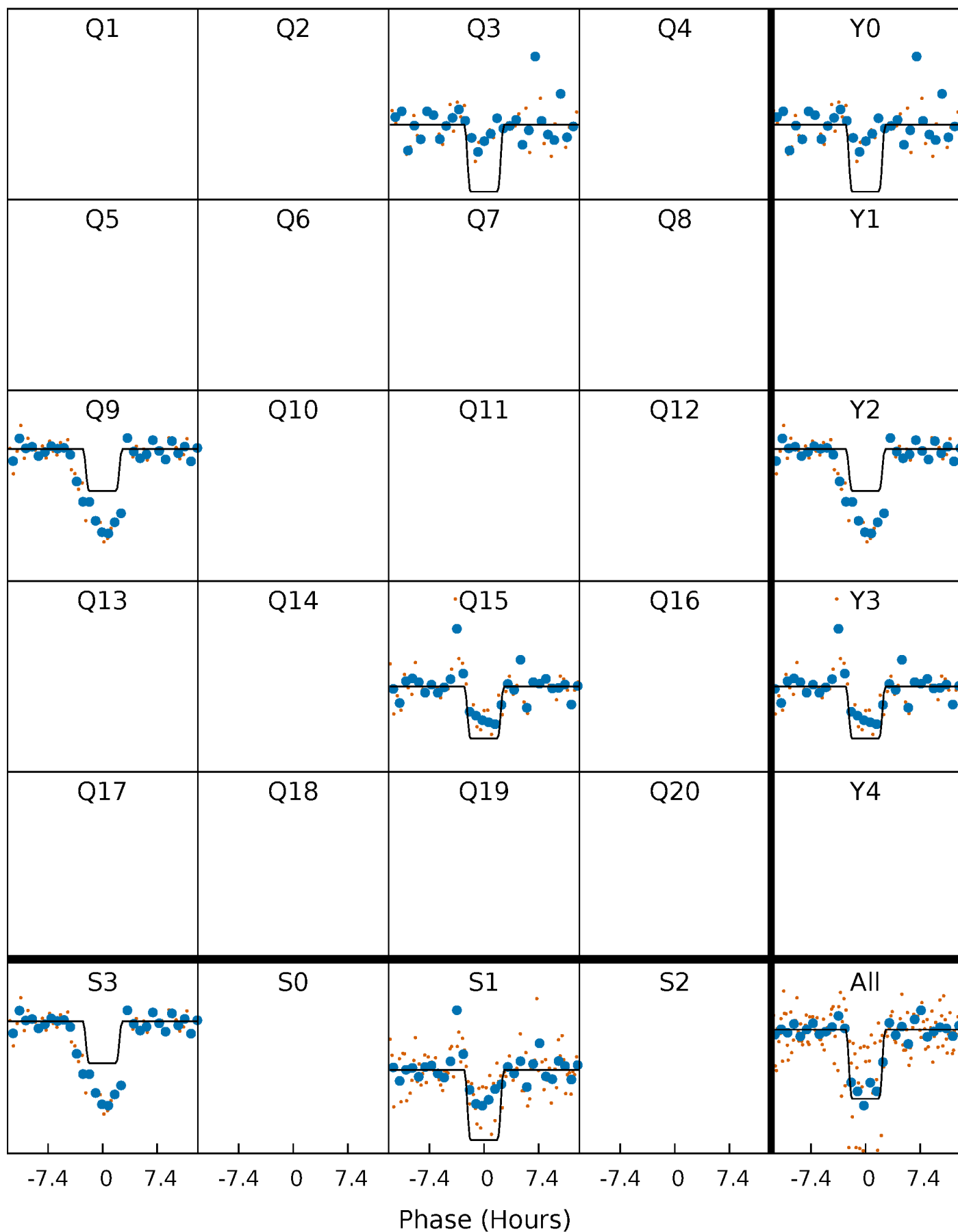
# DV Quarter-Phased Transit Curves

TCE 005529894-01 P=553.787450 Days  $T_0=316.326324$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

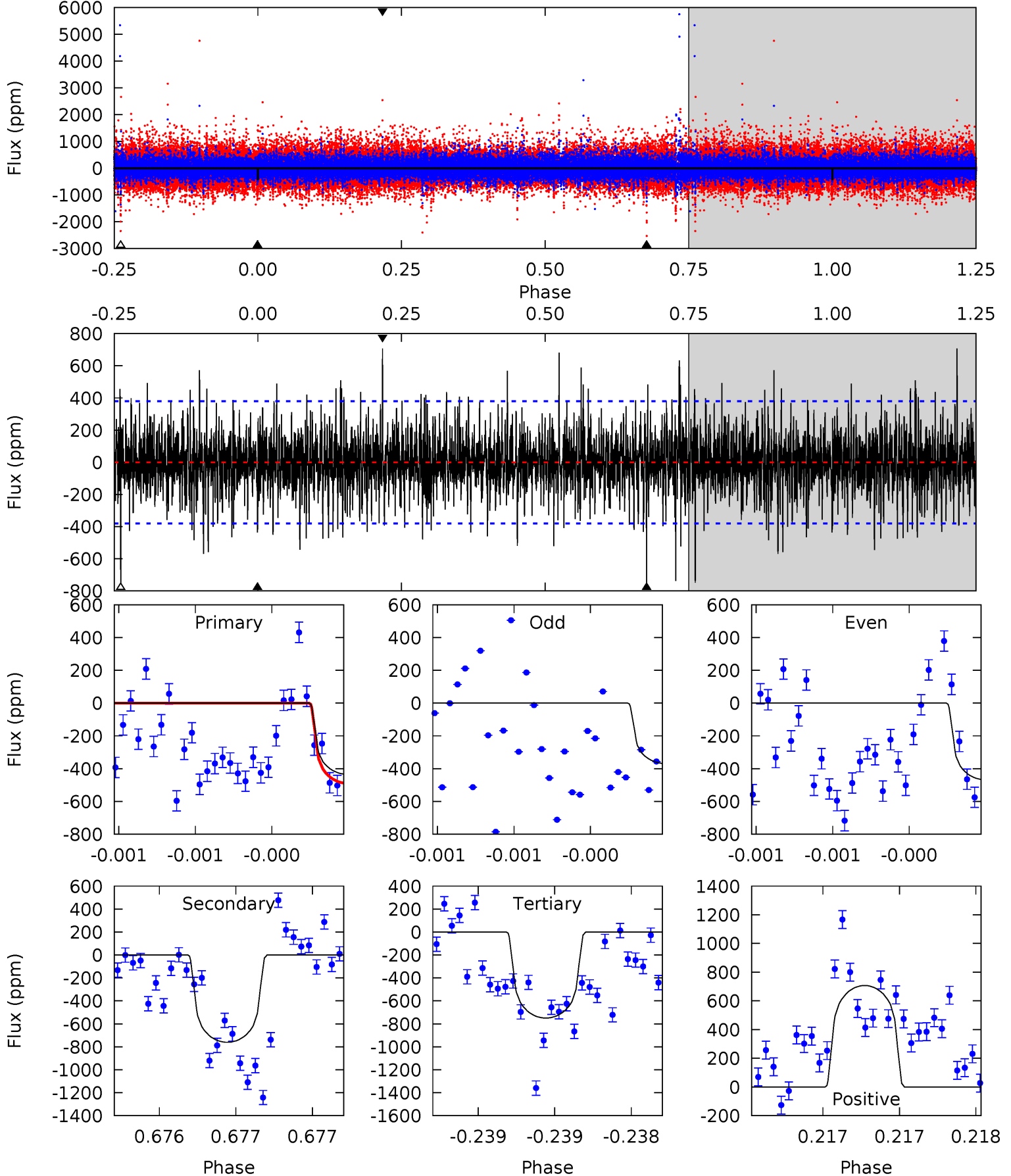
TCE 005529894-01 P=553.797154 Days  $T_0=316.321049$  (BKJD)



# DV Model-Shift Uniqueness Test

005529894-01, P = 553.787450 Days, E = 316.326324 Days

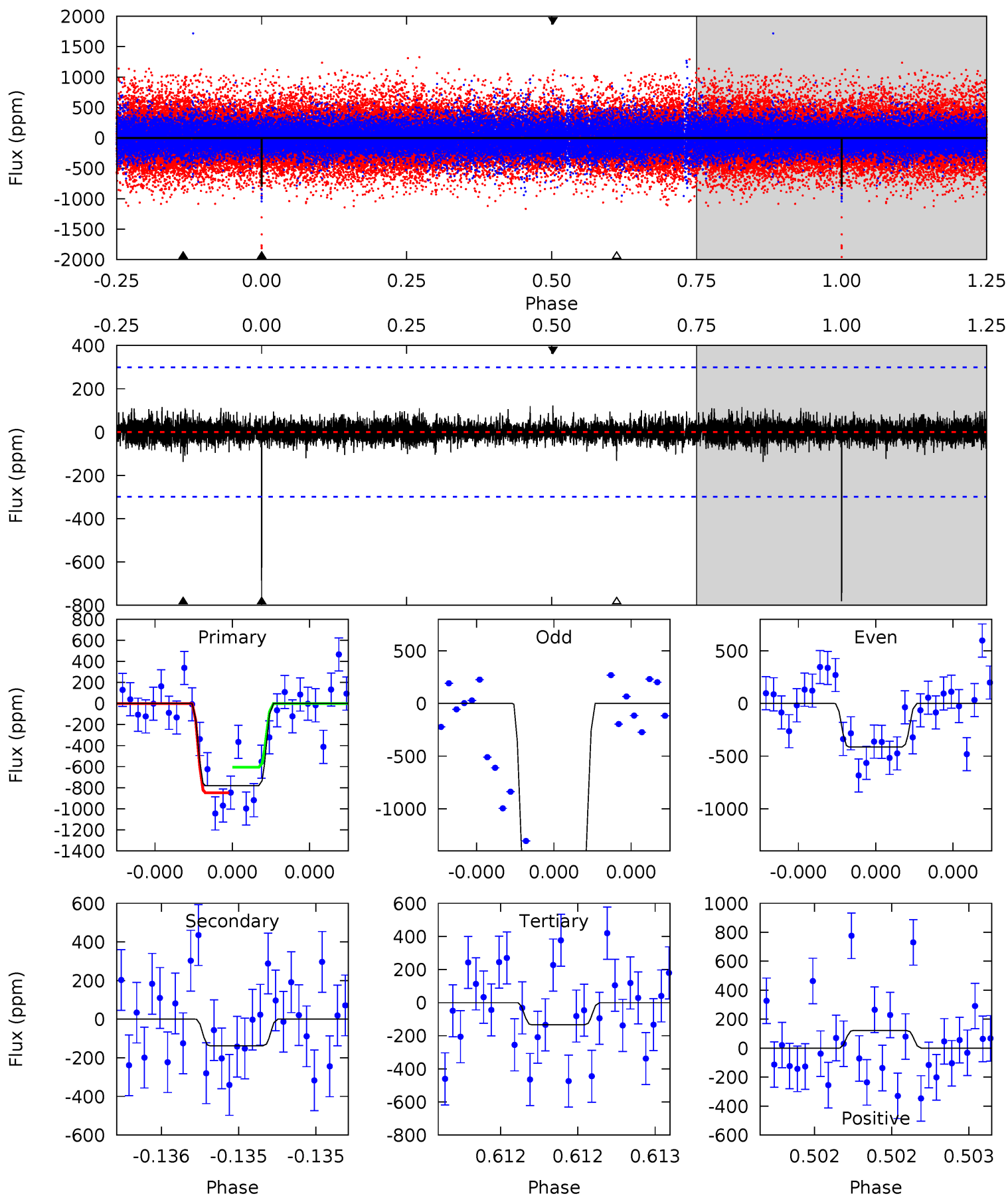
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.42	11.2	11.1	10.4	5.61	3.54	2.09	-4.63	-4.00	0.16	0.79	0.65	1.18	0.48	0.83



# Alt Model-Shift Uniqueness Test

005529894-01, P = 553.797154 Days, E = 316.321049 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
14.7	2.58	2.51	2.29	5.62	3.55	0.49	12.2	12.4	0.07	0.29	14.4	1.52	0.13	2.23



### Stellar Parameters For KIC 005529894

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5517^{+149}_{-149}$	$4.569^{+0.040}_{-0.160}$	$-0.080^{+0.300}_{-0.300}$	$0.819^{+0.201}_{-0.067}$	$0.910^{+0.083}_{-0.102}$	$2.332^{+0.376}_{-1.055}$
	+3%/-3%	+1%/-4%	+375%/-375%	+25%/-8%	+9%/-11%	+16%/-45%
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 005529894-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-760 \pm 68$	$2.68^{+2.21}_{-1.66}$	$277^{+16}_{-11}$	$5406^{+3729}_{-1184}$	$93756^{+550099}_{-65758}$
Alt.	$-137 \pm 53$	$3.17^{+2.24}_{-1.78}$	$276^{+16}_{-10}$	$3608^{+1505}_{-575}$	$11383^{+55151}_{-7848}$

$T_{\text{max}}$  = 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

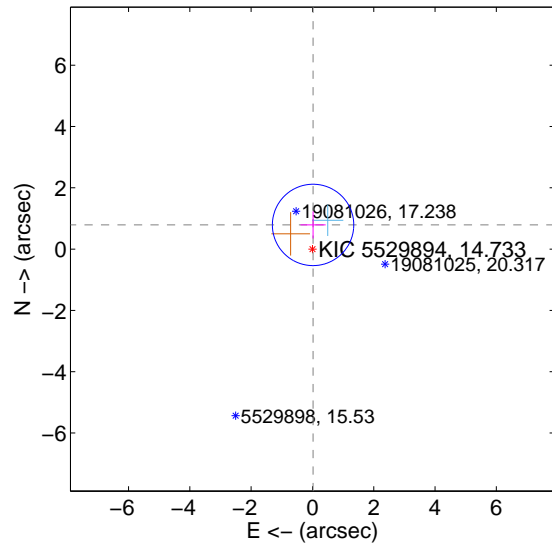
Supplemental centroid analysis for 005529894-01. Kepler magnitude: 14.73. Transit SNR 5.95

There are 1 quarters with good PRF difference image offsets

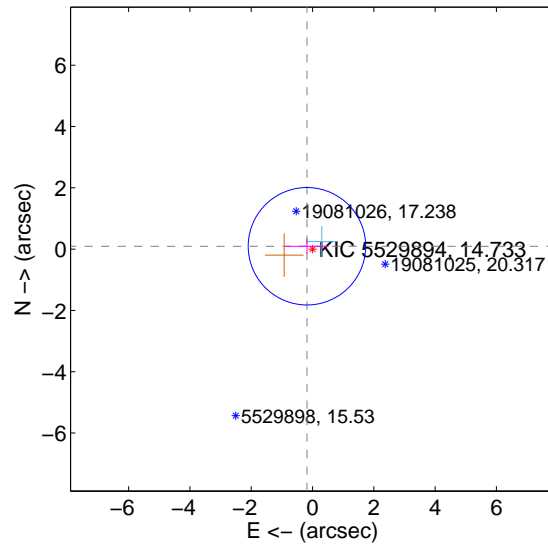
The direct PRF centroid is offset from the target star catalog position by about 0.72 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.789 \pm 0.442$	1.78	$-0.020 \pm 0.411$	$0.789 \pm 0.443$
PRF-fit source offset from KIC position	$0.205 \pm 0.638$	0.32	$0.182 \pm 0.705$	$0.093 \pm 0.254$
photometric centroid source offset	$1.96 \pm 1.54$	1.27	$-0.48 \pm 1.32$	$-1.90 \pm 1.55$

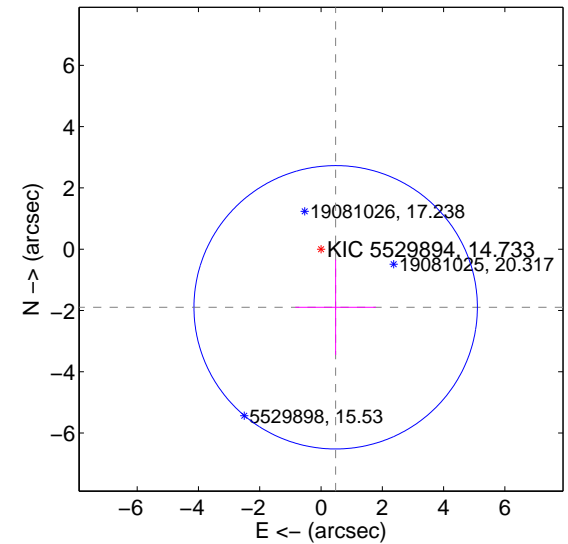
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

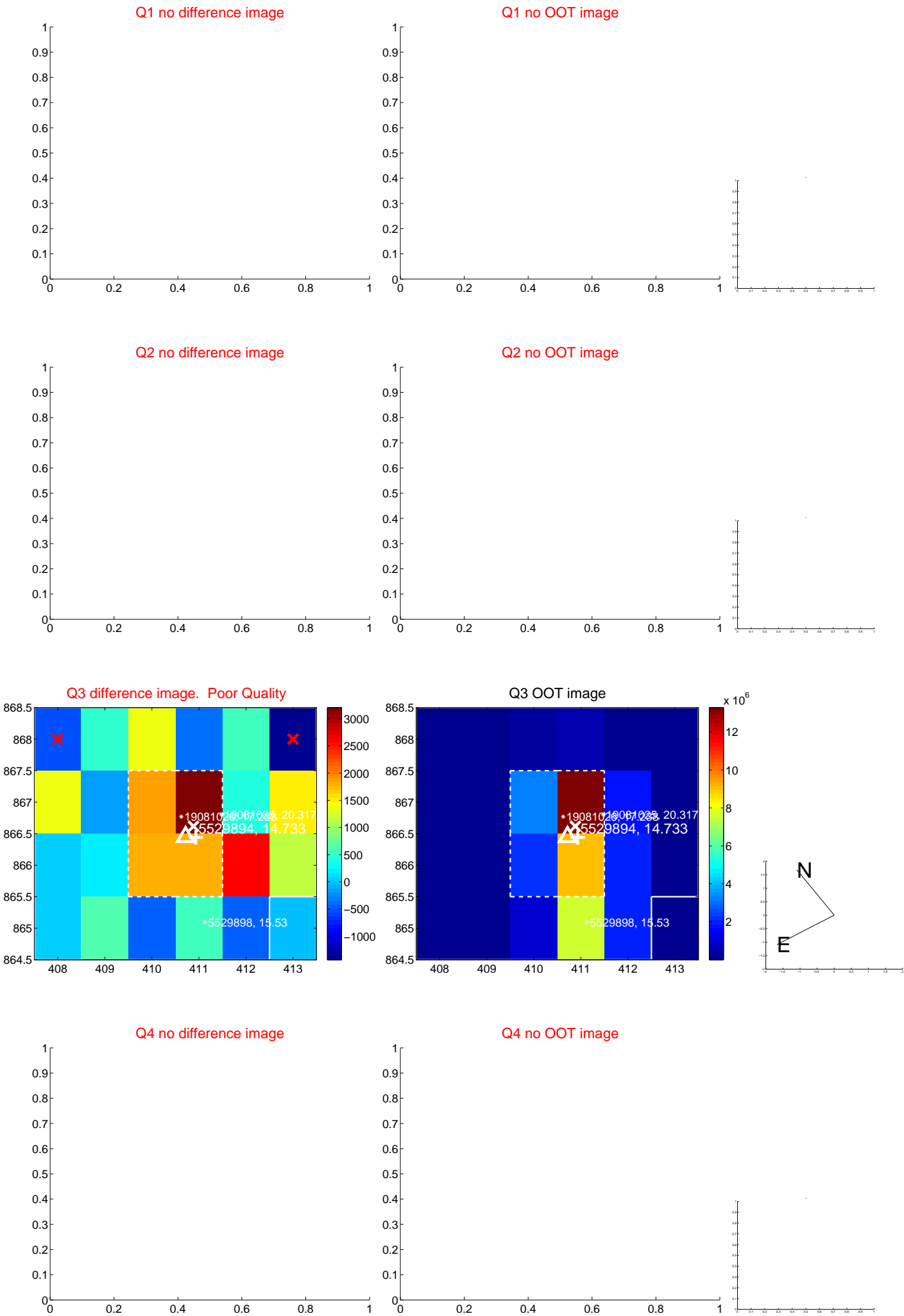


offset from photometric centroids



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.

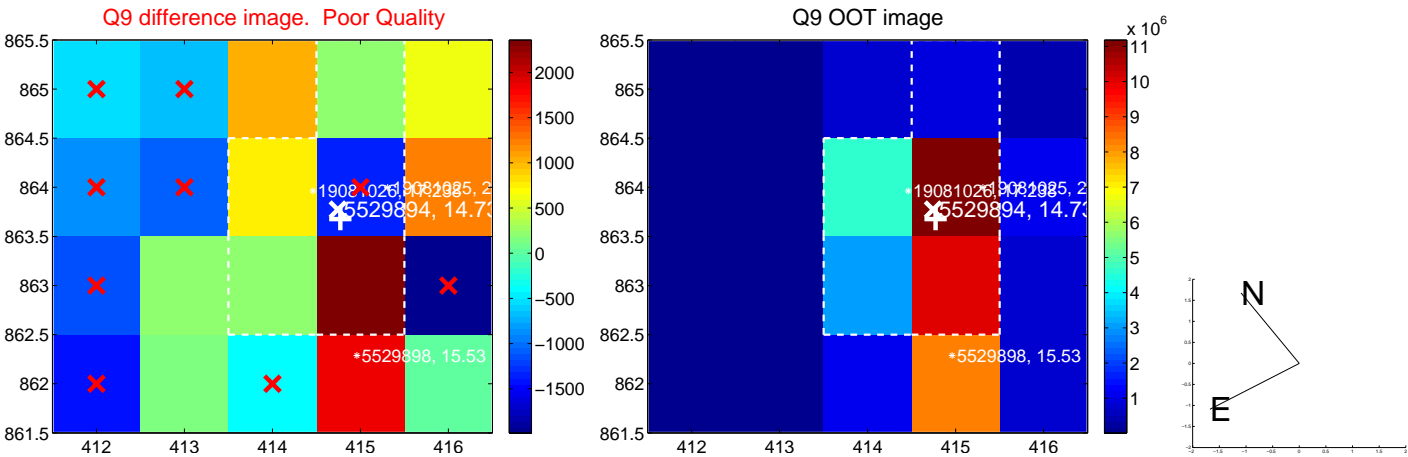


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

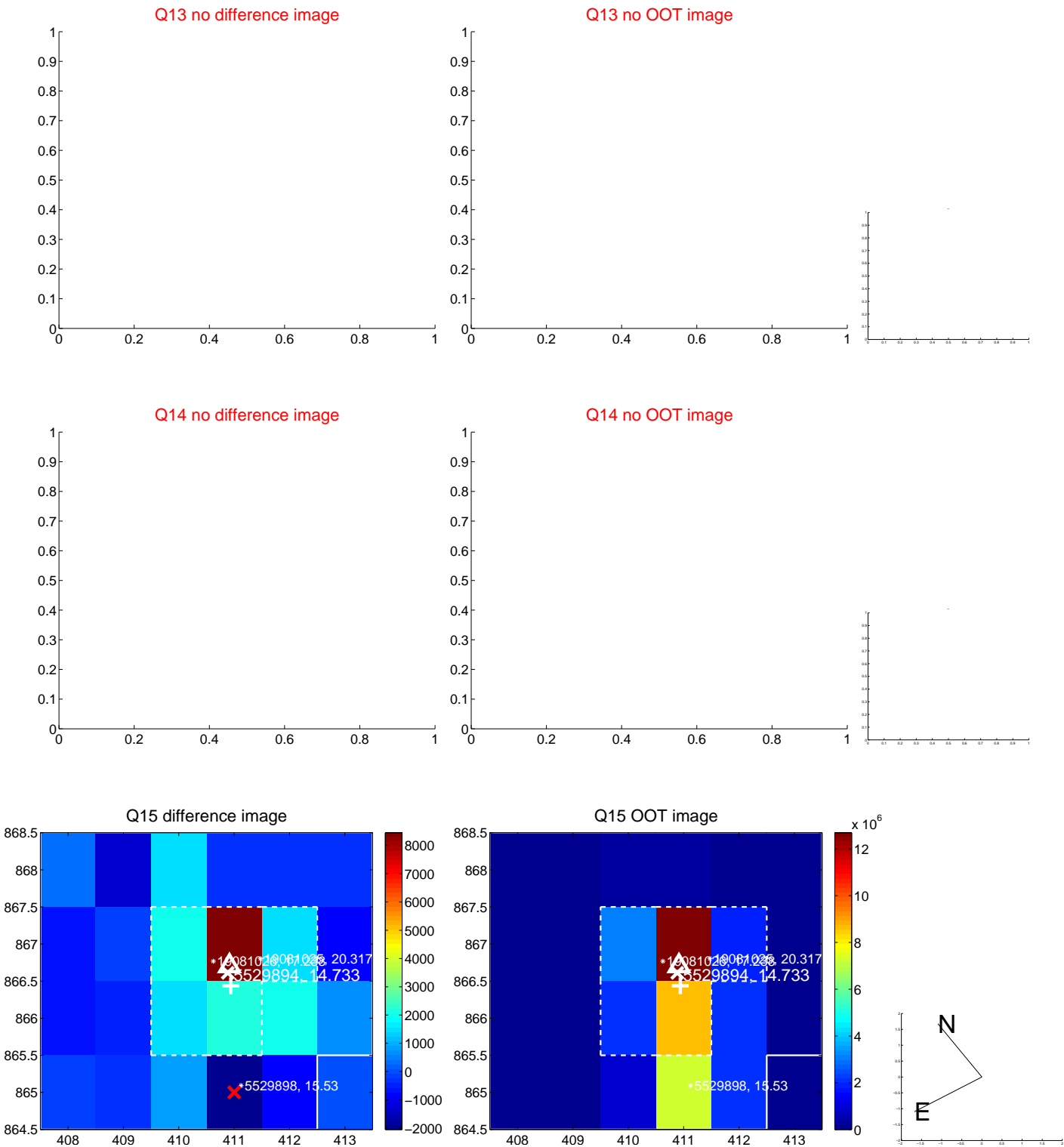




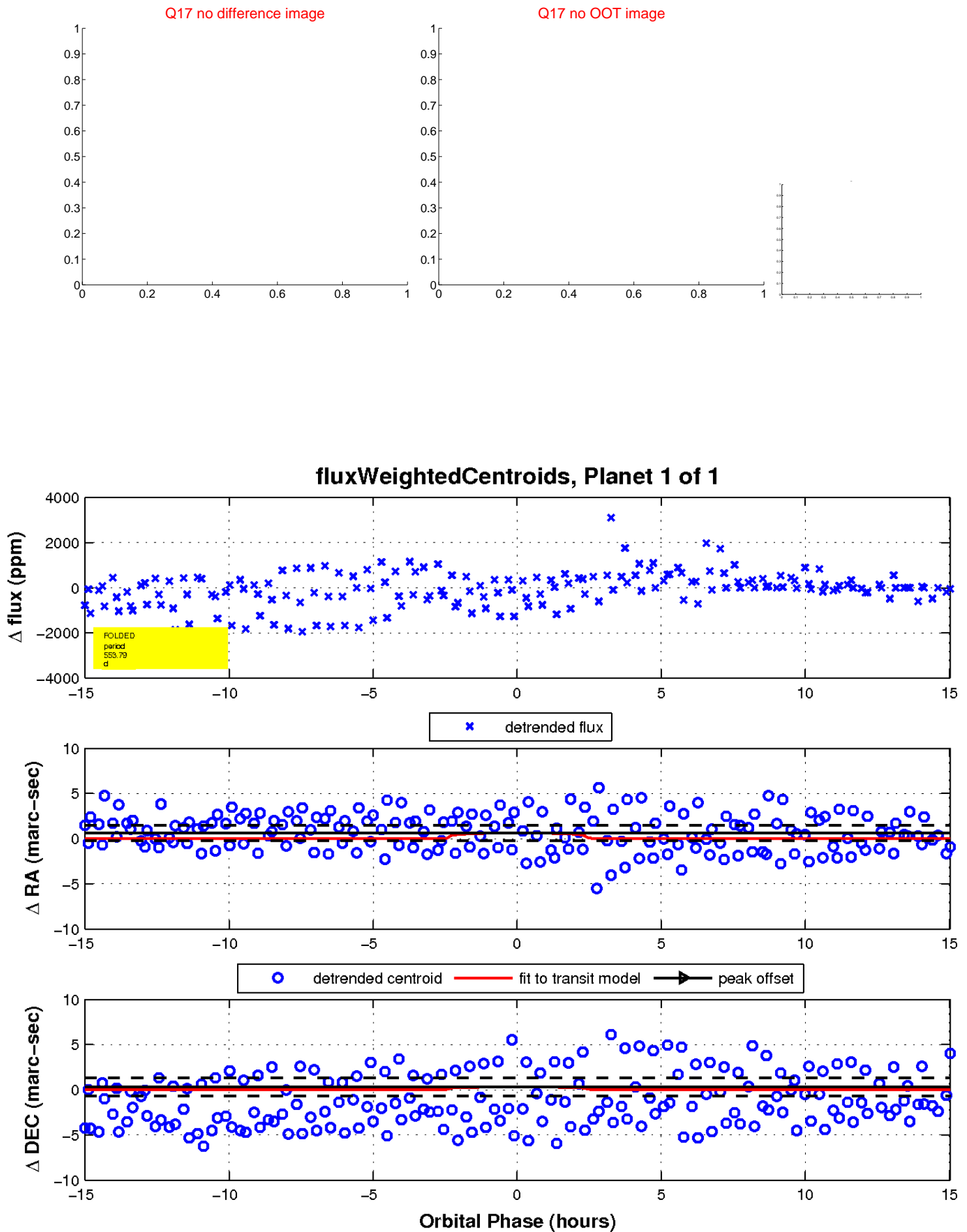
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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



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



UKIRT Image

Declination

