

# KIC 010155286

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010155286-01	OBS	7988.01	333.492880	153.603679	580.8	3.121	7.2	6.6	7.82	4989	22.25	22.72

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010155286-01	OBS	FP	0.09	1	0	0	0	ALL_TRANS_CHASES—CENT_SATURATED

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

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

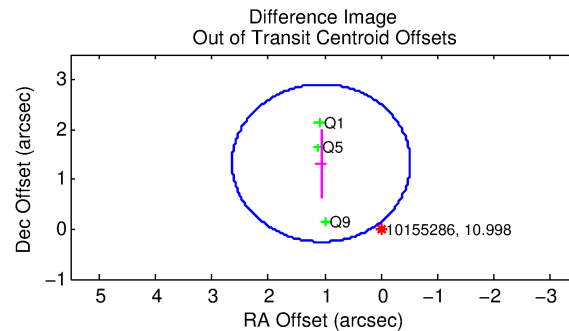
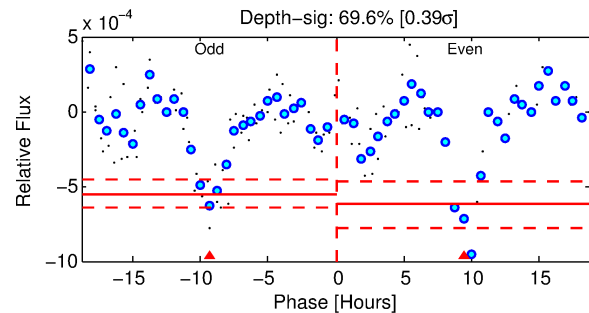
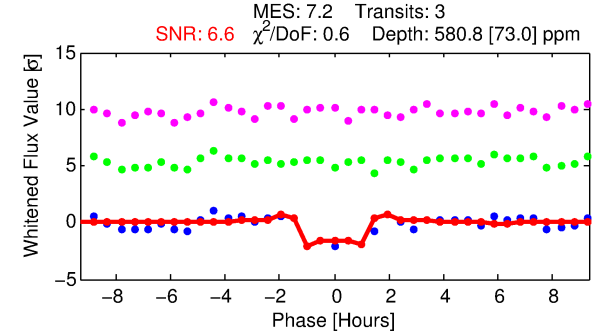
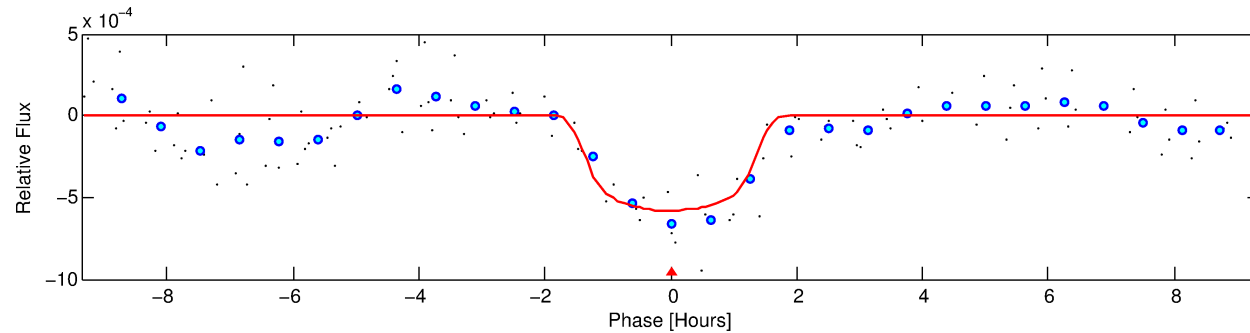
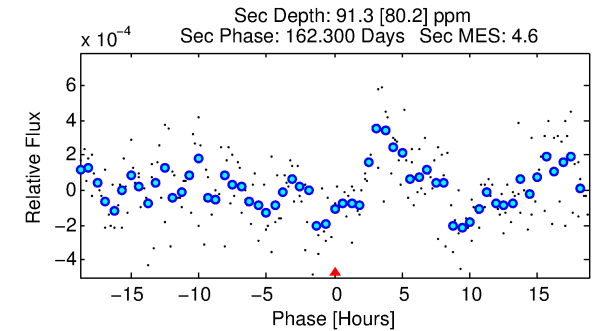
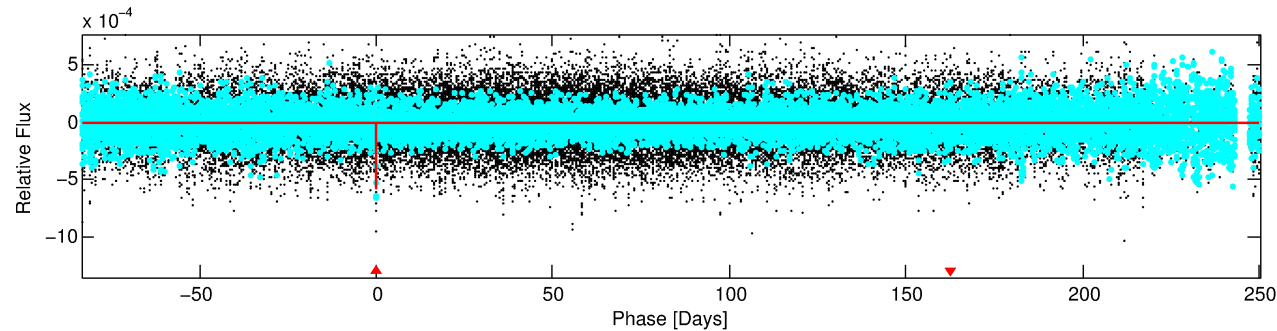
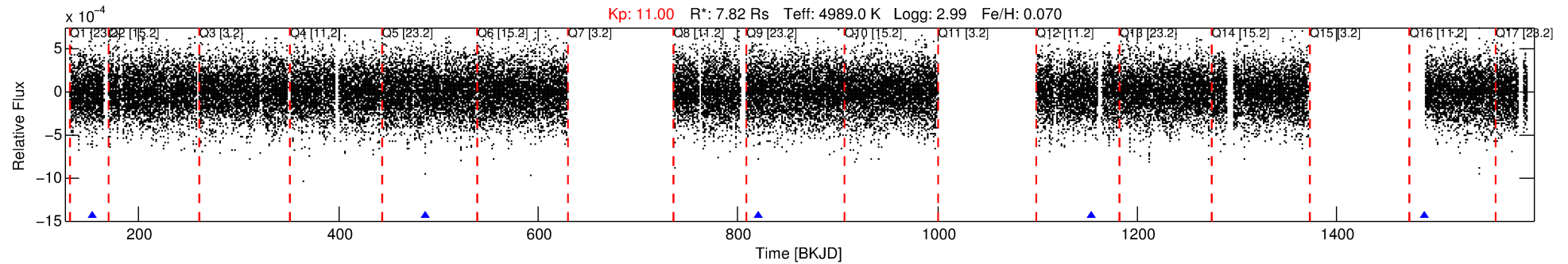
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010155286-01

No Significant Match Found

# DV One-Page Summary

KIC: 10155286 Candidate: 1 of 1 Period: 333.493 d



## DV Fit Results:

Period = 333.49288 [0.00288] d  
Epoch = 153.6037 [0.0032] BKJD  
Rp/R\* = 0.0261 [0.0214]  
a/R\* = 444.81 [1382.33]  
b = 0.87 [0.90]  
Seff = 22.72 [4.47]  
Teq = 557 [27] K  
Rp = 22.25 [19.03] Re  
a = 1.2229 [0.1996] AU  
Ag = 151.64 [283.33] [0.53 sigma]  
Teffp = 3021 [1407] K [1.75 sigma]

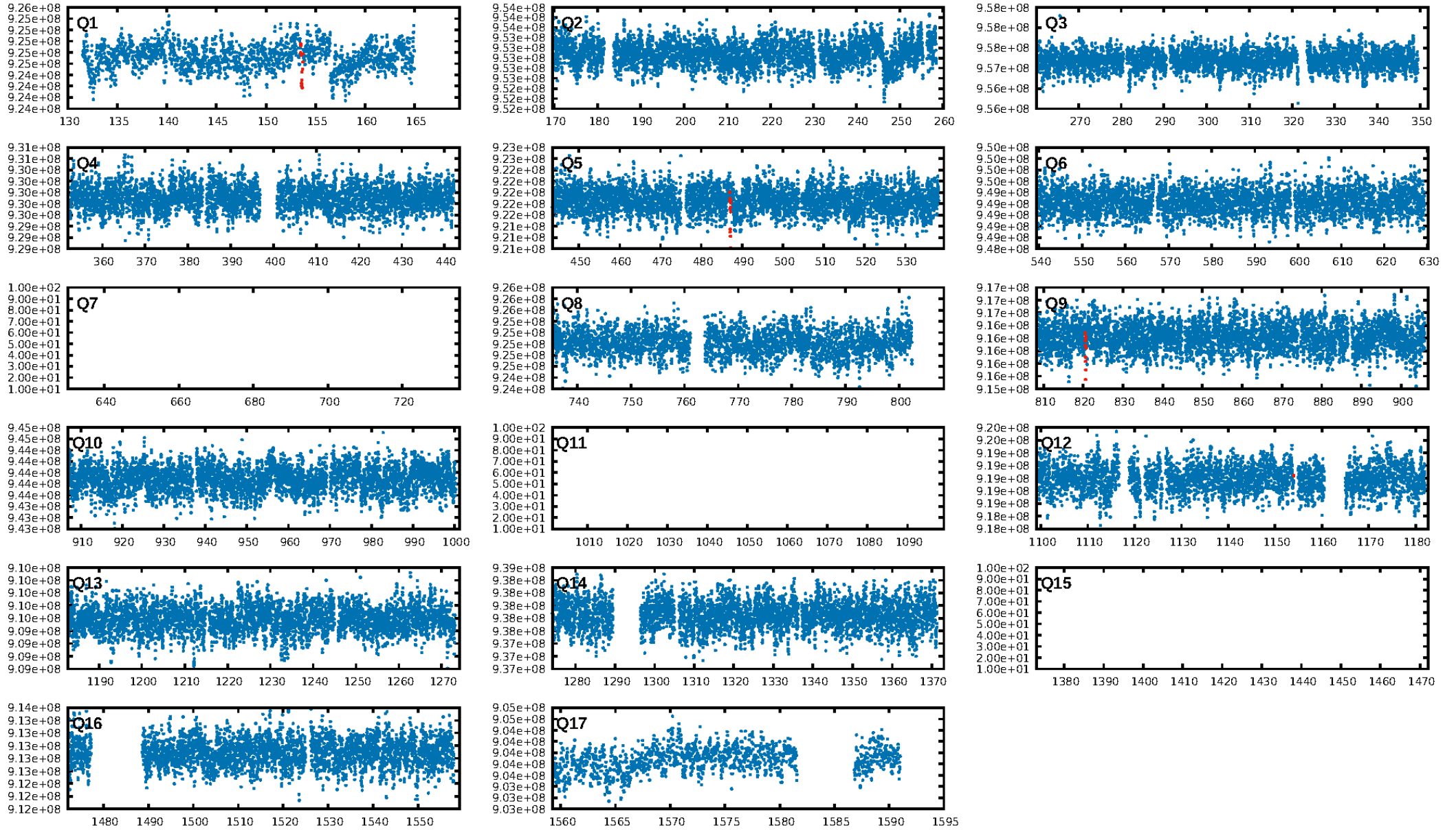
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 66.4%  
ModelChiSquareGof-sig: 99.8%  
Bootstrap-pfa: 1.38e-11  
RollingBand-fgt: 1.00 [2/2]  
GhostDiagnostic-chr: 1.284  
Centroid-sig: 5.2%  
Centroid-so: 0.306 arcsec [0.98 sigma]  
OotOffset-rm: 1.694 arcsec [3.22 sigma]  
KicOffset-rm: 1.996 arcsec [4.34 sigma]  
OotOffset-st: 0/0/0/3 [3]  
KicOffset-st: 0/0/0/3 [3]  
DiffImageQuality-fgm: 1.00 [3/3]  
DiffImageOverlap-fno: 1.00 [3/3]

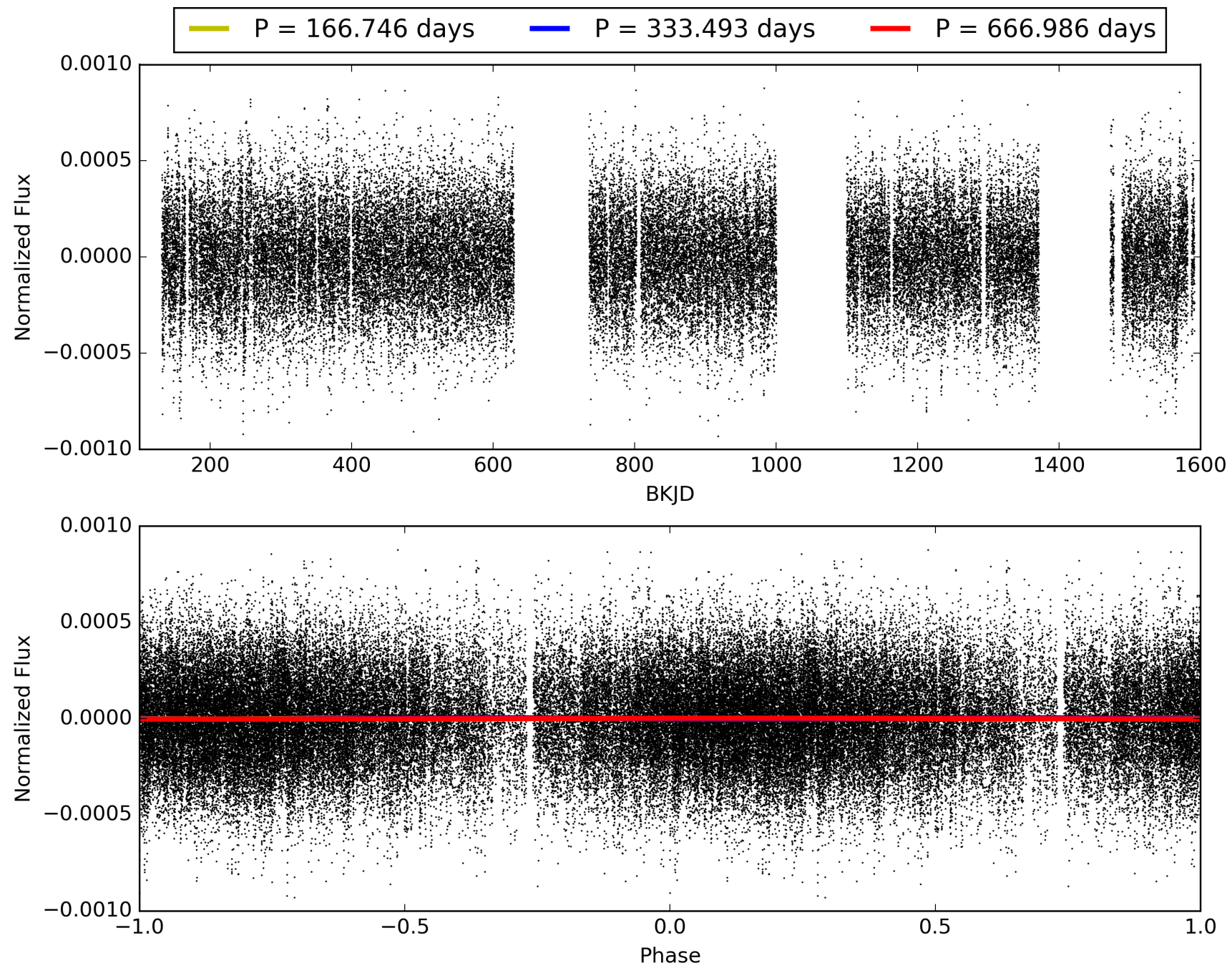
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 19:54:32 Z

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

# TCE 010155286-01, PDC Light Curves

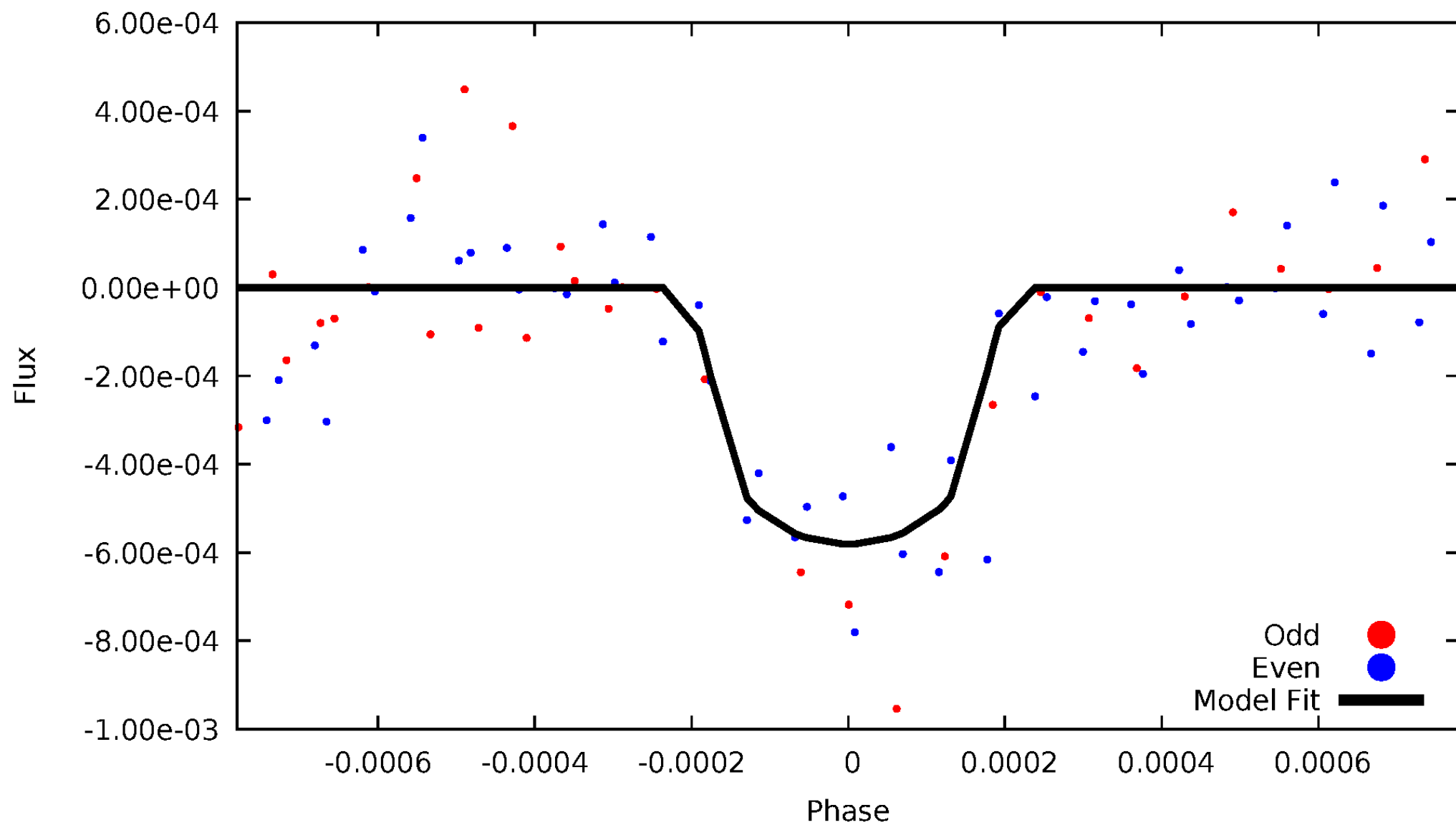


TCE 010155286-01



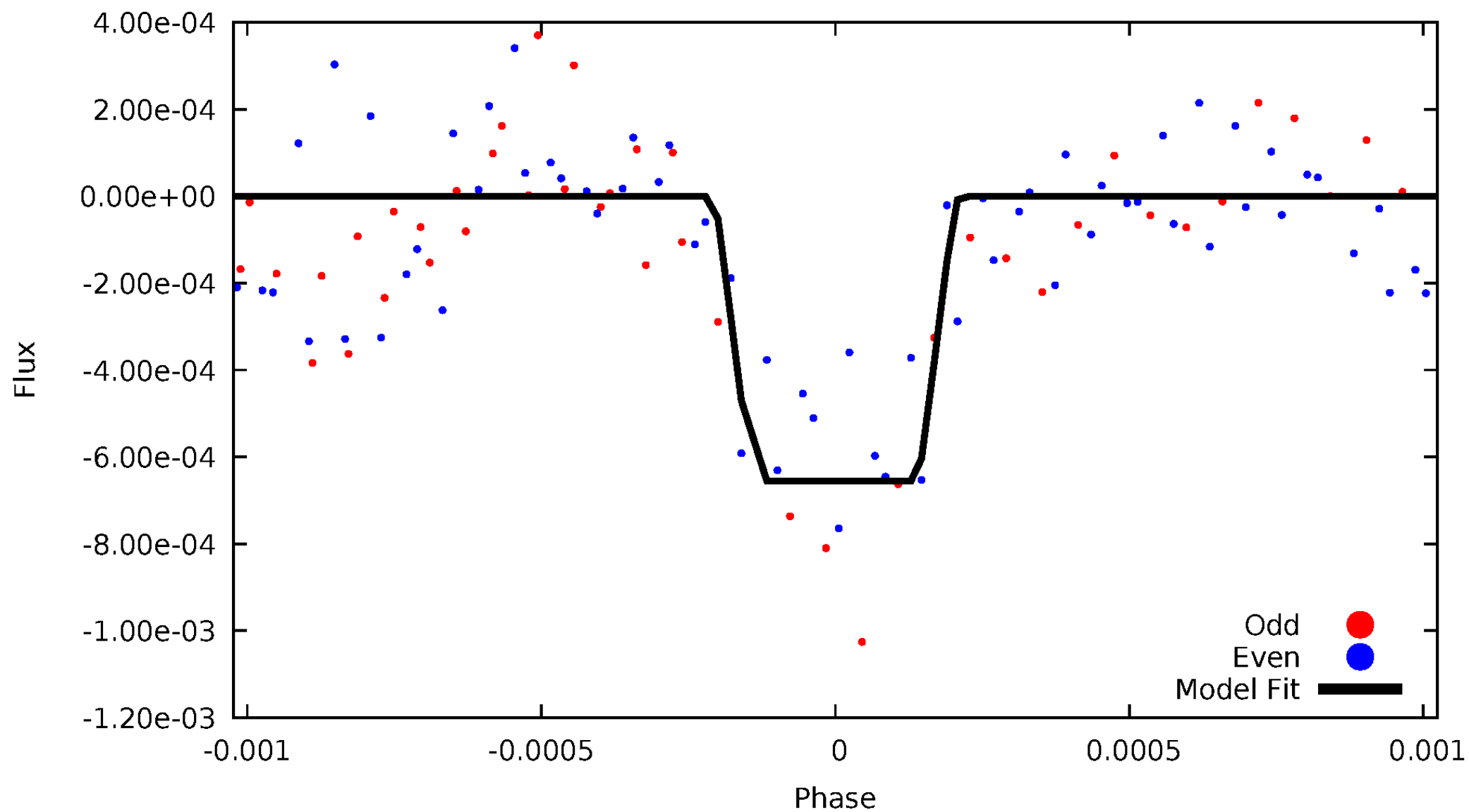
# DV Odd/Even

TCE 010155286-01



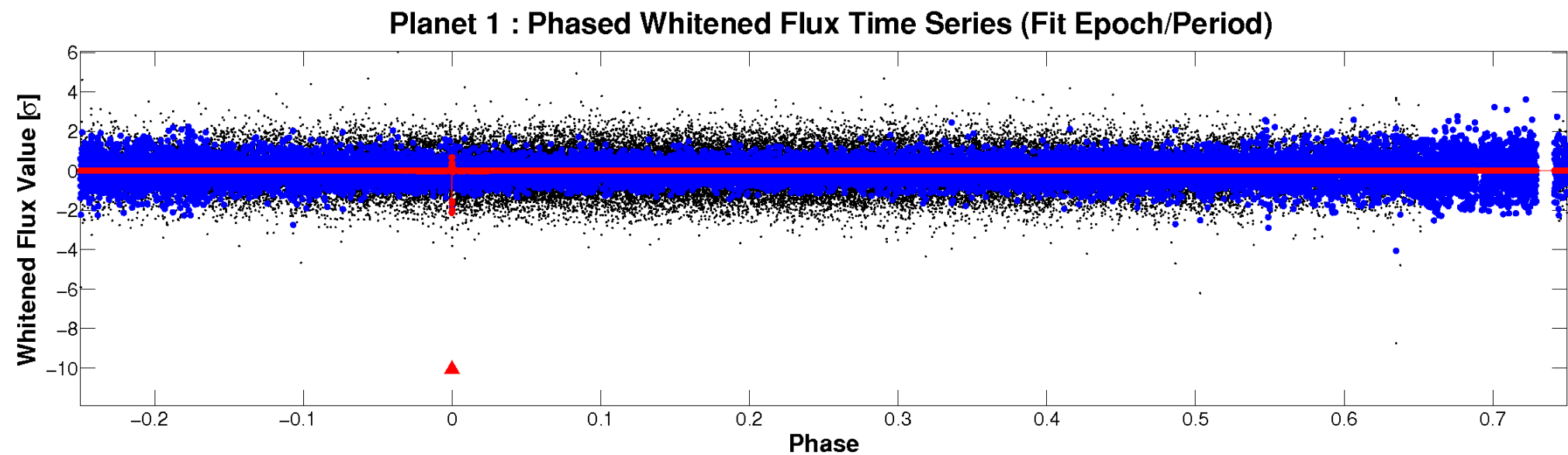
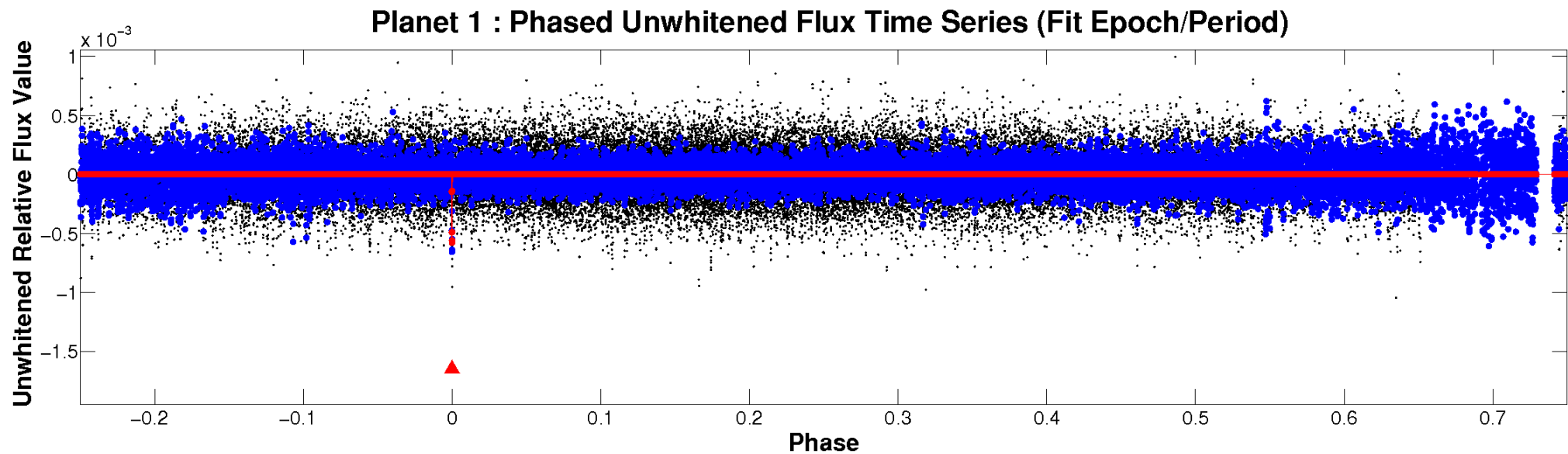
# ALT Odd/Even

TCE 010155286-01



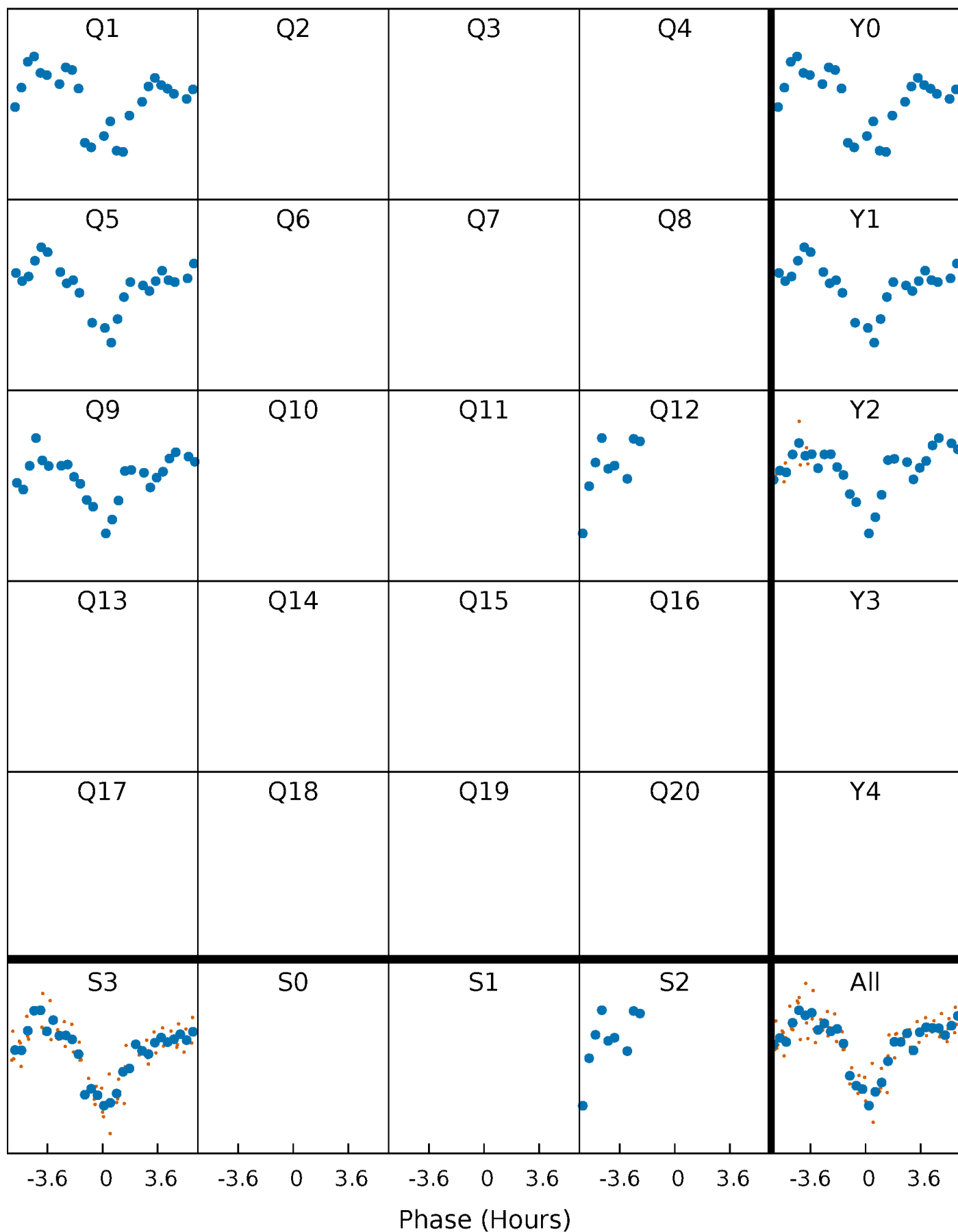


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

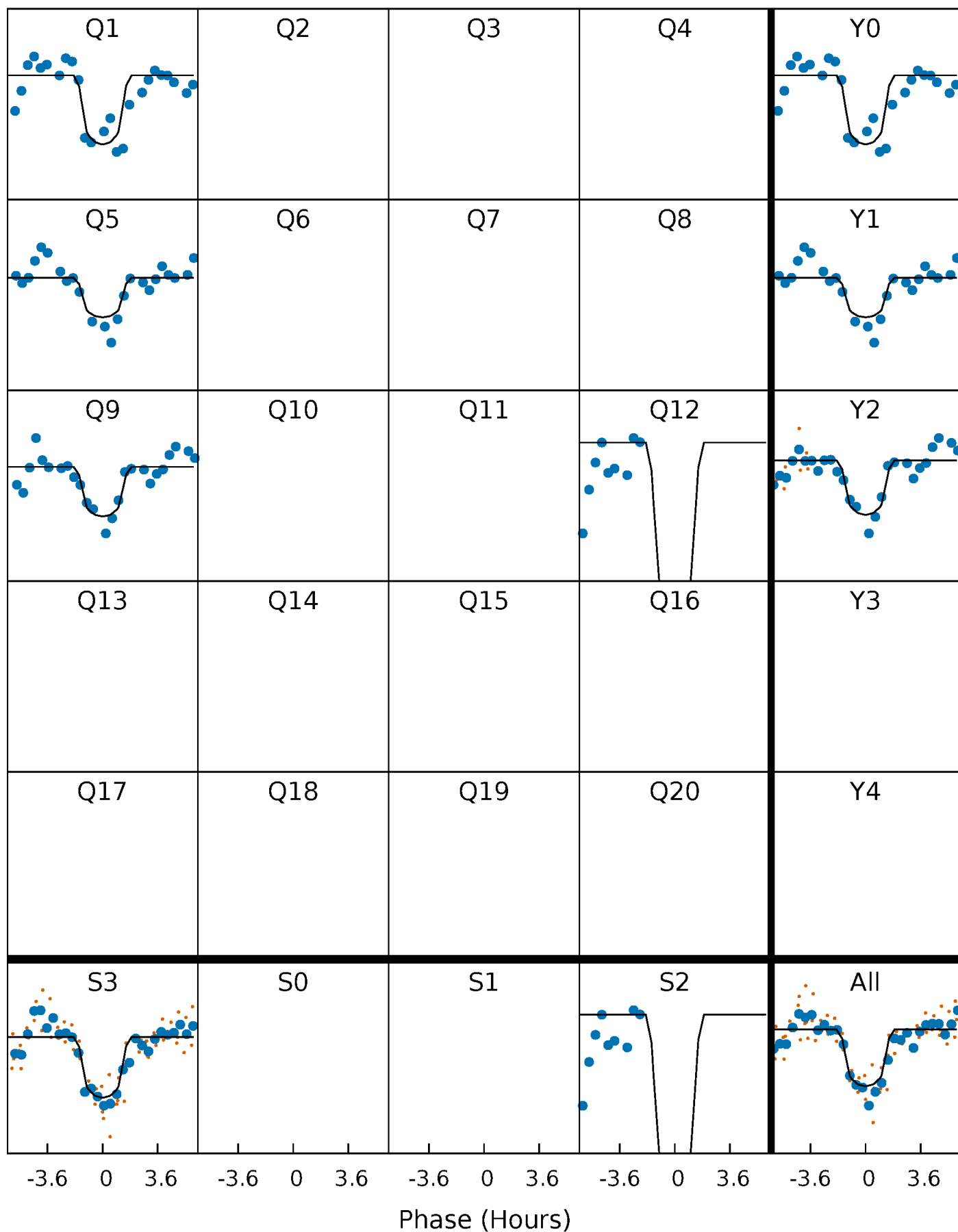
TCE 010155286-01 P=333.492880 Days  $T_0=153.603679$  (BKJD)





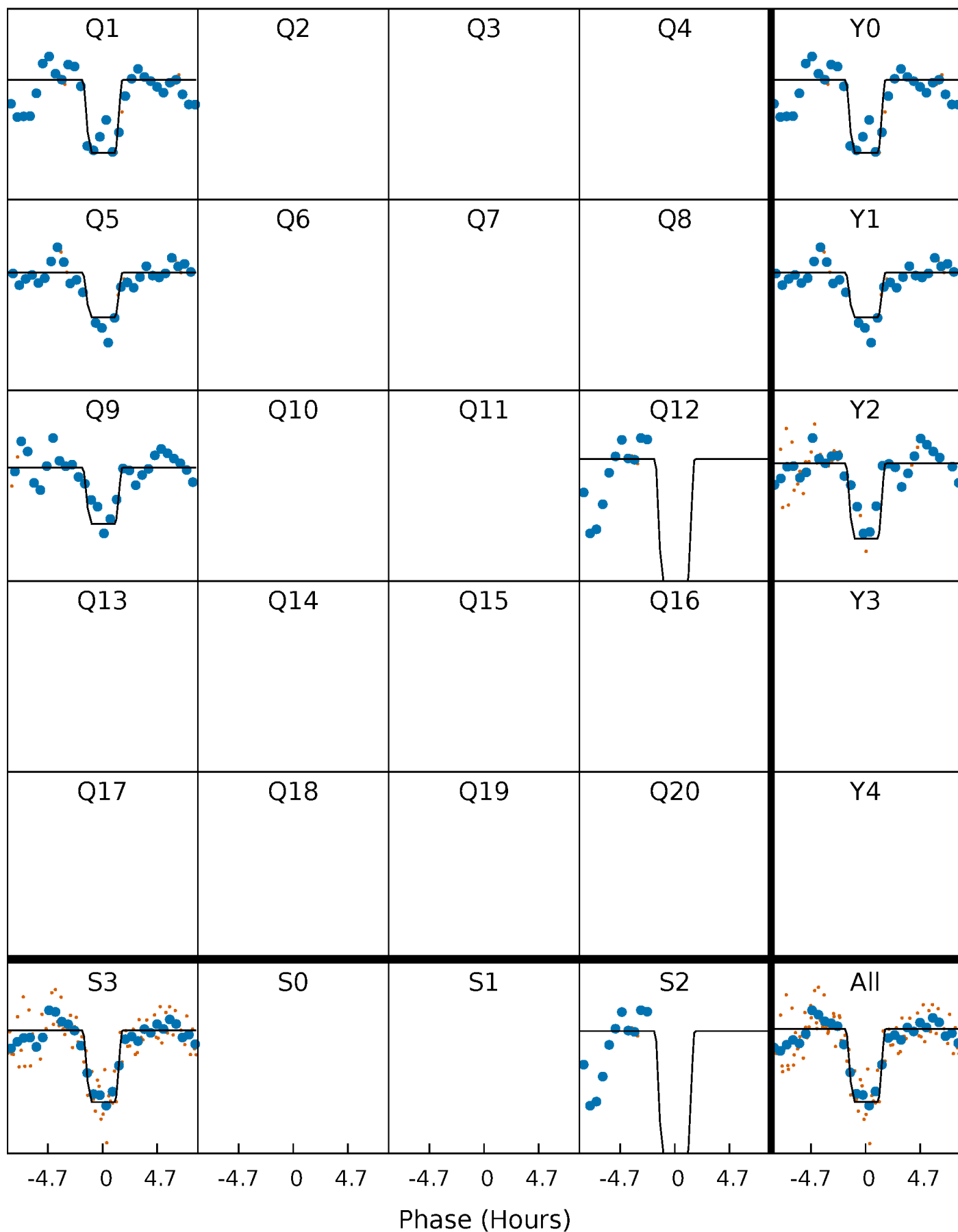
# DV Quarter-Phased Transit Curves

TCE 010155286-01     $P=333.492880$  Days     $T_0=153.603679$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

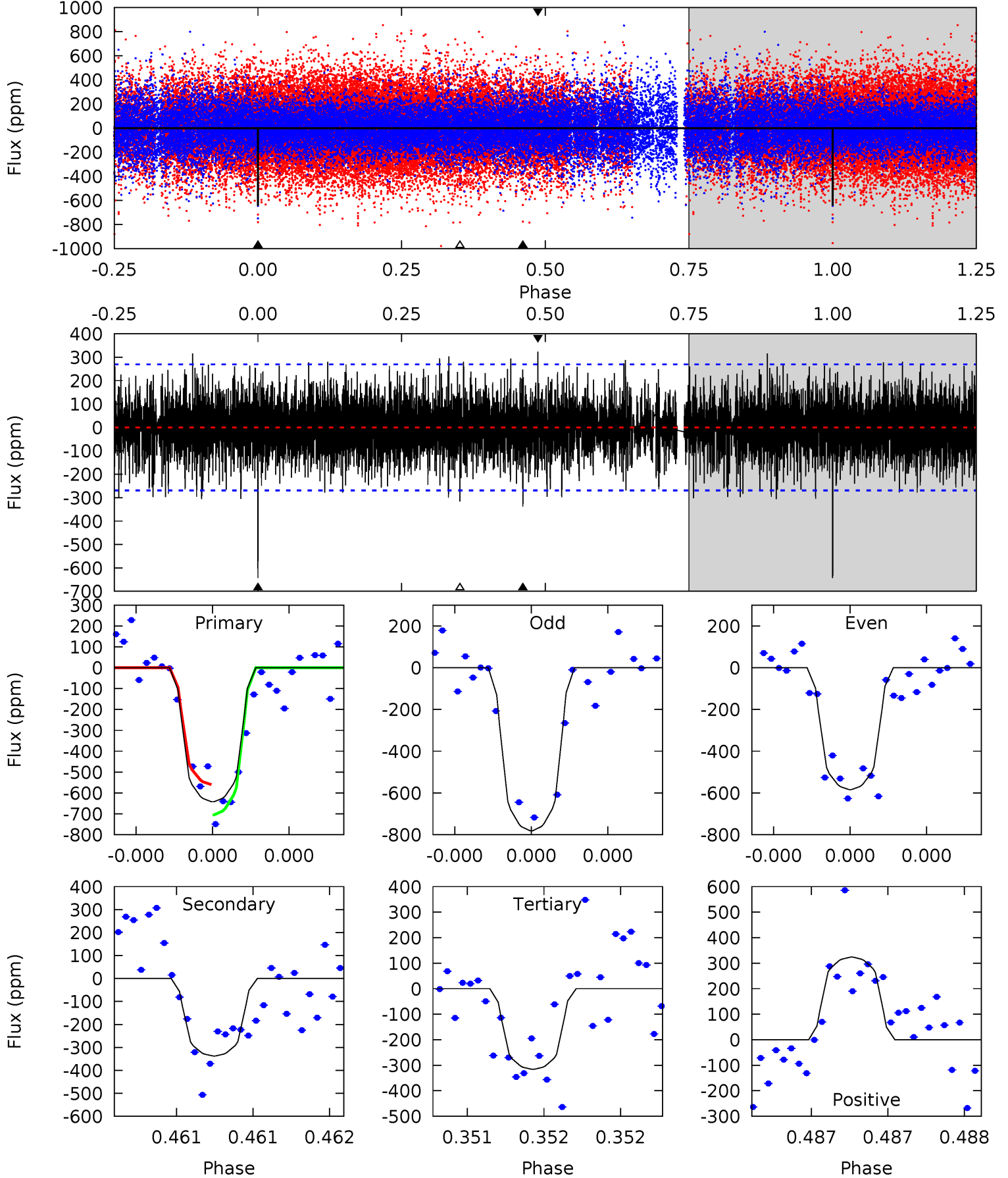
TCE 010155286-01 P=333.488179 Days  $T_0=153.613838$  (BKJD)



# DV Model-Shift Uniqueness Test

010155286-01, P = 333.492880 Days, E = 153.603679 Days

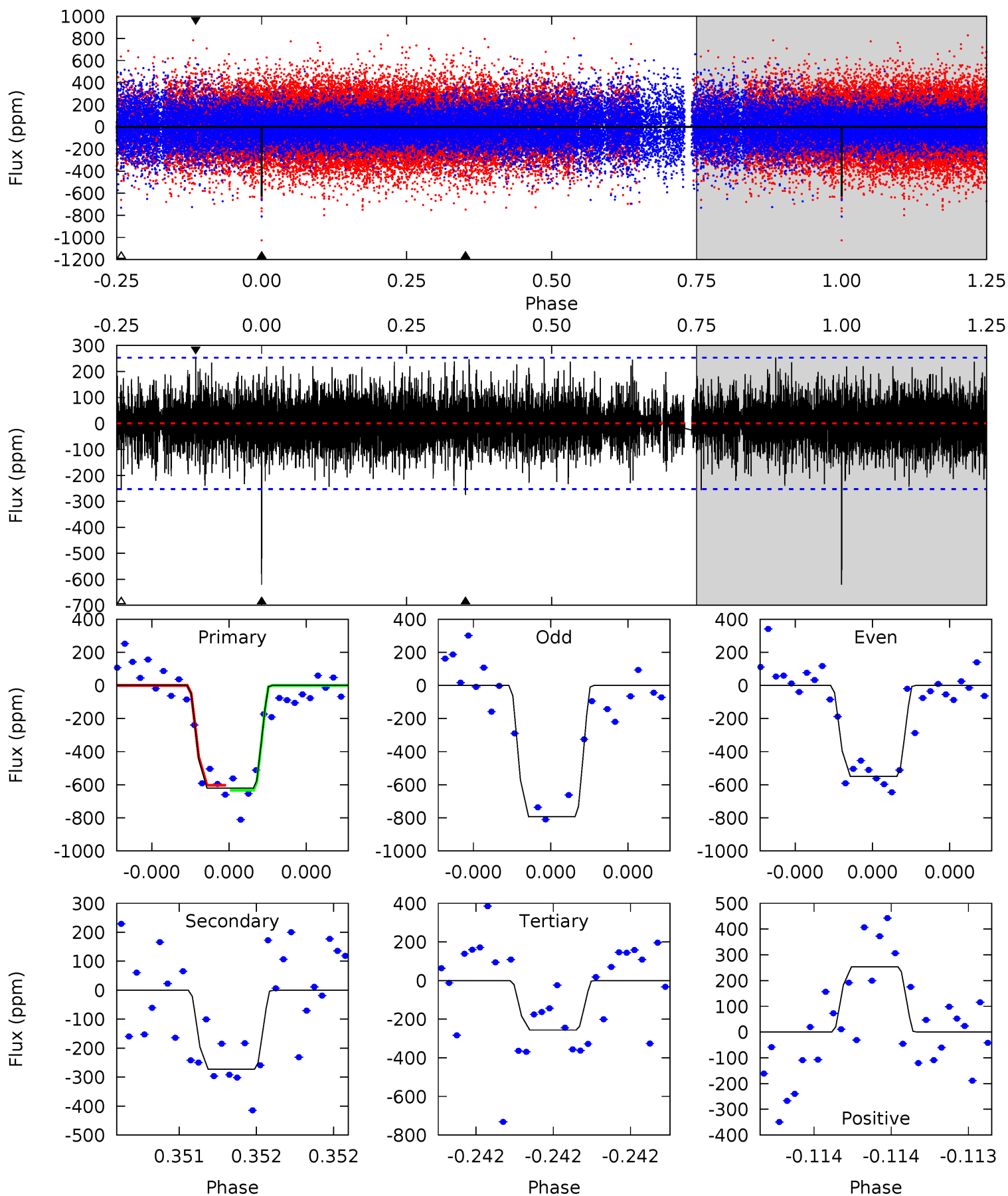
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.4	7.02	6.57	6.74	5.60	3.53	1.84	6.79	6.62	0.45	0.28	1.85	1.10	0.34	1.47



# Alt Model-Shift Uniqueness Test

010155286-01, P = 333.488179 Days, E = 153.613838 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
13.8	6.05	5.69	5.63	5.61	3.54	1.58	8.08	8.14	0.36	0.42	2.42	1.07	0.29	0.33



### Stellar Parameters For KIC 010155286

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$4989^{+39}_{-128}$	$2.992^{+0.030}_{-0.027}$	$0.070^{+0.100}_{-0.250}$	$7.824^{+0.223}_{-1.896}$	$2.190^{+0.225}_{-0.845}$	$0.006^{+0.002}_{-0.000}$
	+1%/-3%	+1%/-1%	+143%/-357%	+3%/-24%	+10%/-39%	+36%/-7%
Source	SPE74	AST9	SPE74	DSEP		

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

### Secondary Eclipse Parameters for KIC 010155286-01 / KOI 7988.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-337 \pm 48$	$24.47^{+16.83}_{-14.34}$	$775^{+13}_{-21}$	$4164^{+1843}_{-685}$	$471^{+2133}_{-312}$
Alt.	$-273 \pm 45$	$24.84^{+18.27}_{-14.66}$	$774^{+13}_{-21}$	$3972^{+1789}_{-641}$	$361^{+1762}_{-240}$

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

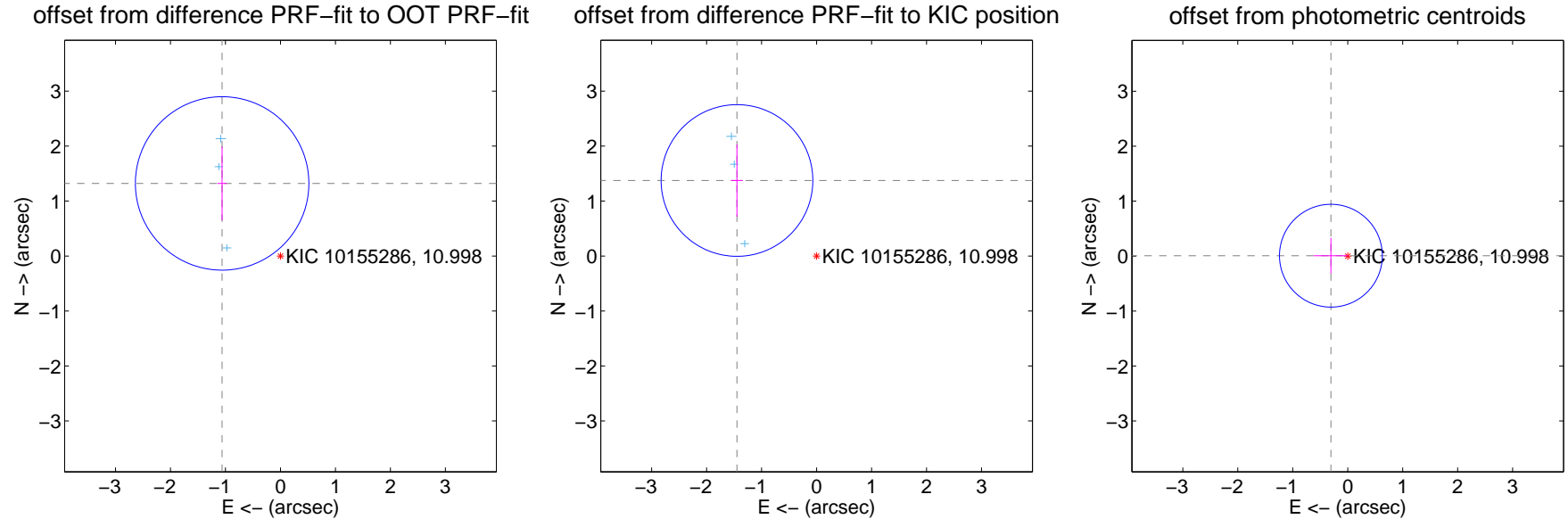
## DV Centroid Data

Supplemental centroid analysis for 010155286-01. **Kepler magnitude: 11.00.** Transit SNR 6.63

**There are 3 quarters with good PRF difference image offsets**

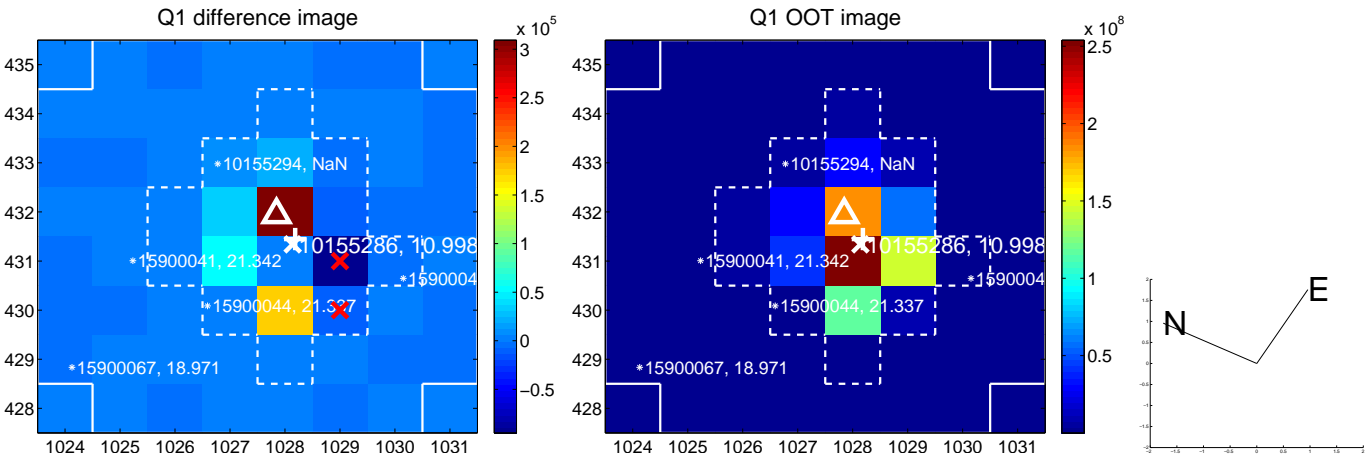
The direct PRF centroid is offset from the target star catalog position by about 0.34 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b>1.694 <math>\pm</math> 0.526</b>	<b>3.22</b>	1.061 $\pm$ 0.084	1.321 $\pm$ 0.671
PRF-fit source offset from KIC position	<b>1.996 <math>\pm</math> 0.460</b>	<b>4.34</b>	1.448 $\pm$ 0.108	1.374 $\pm$ 0.658
photometric centroid source offset	0.31 $\pm$ 0.31	0.98	0.31 $\pm$ 0.31	0.01 $\pm$ 0.32



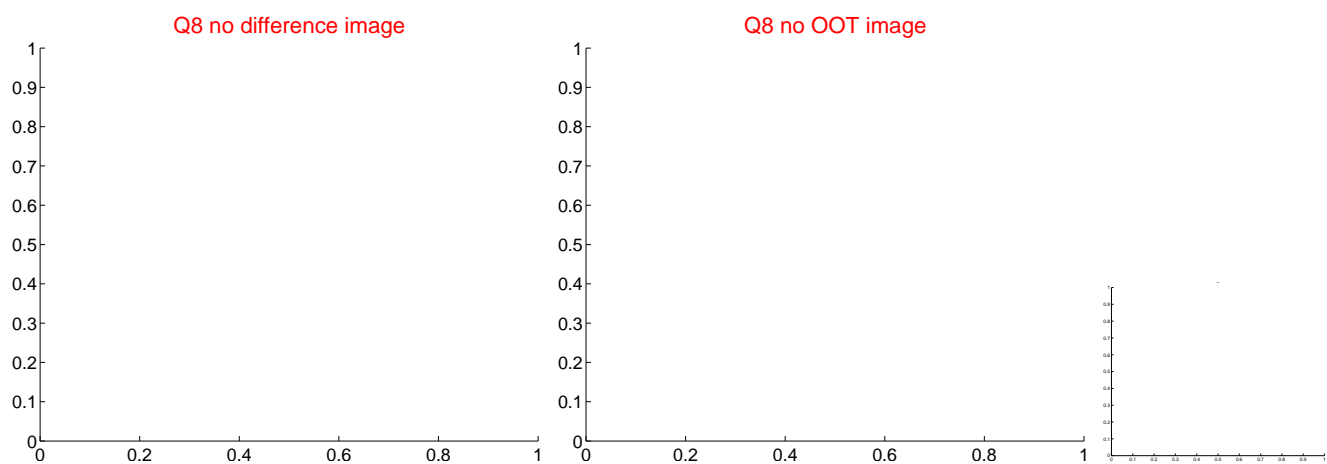
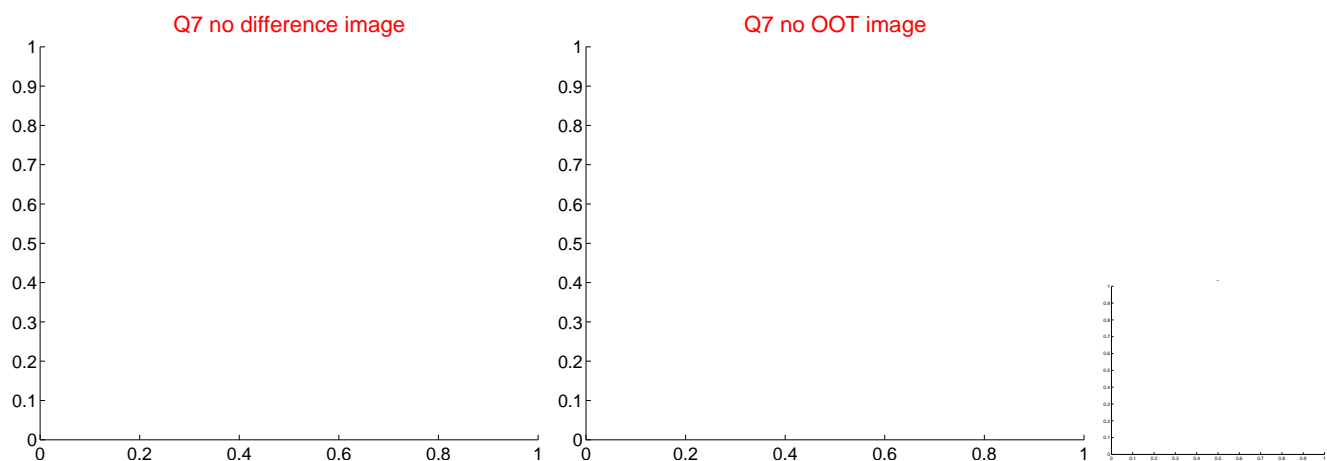
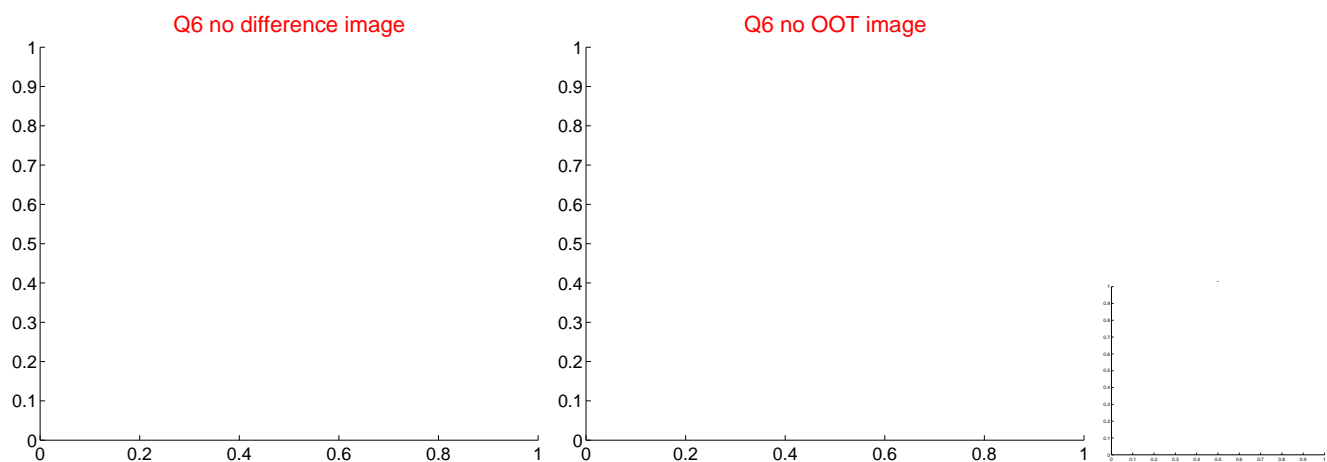
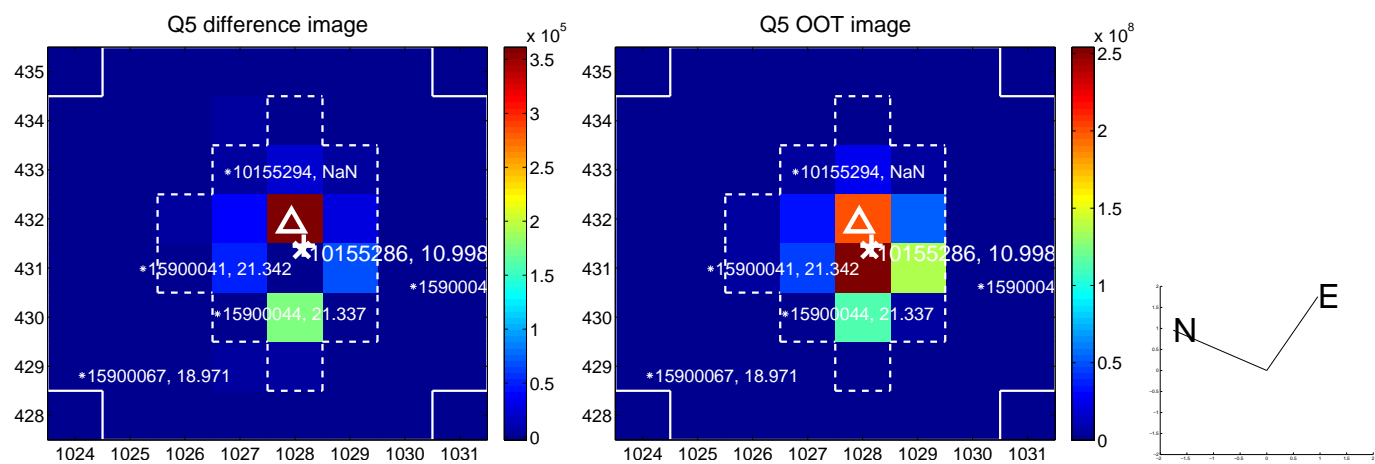
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

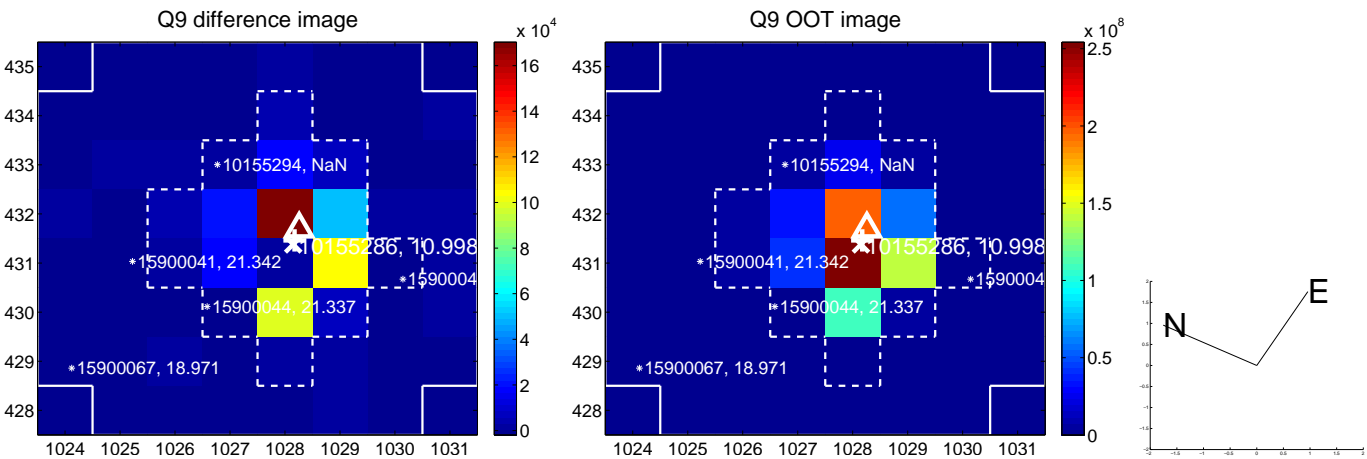




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



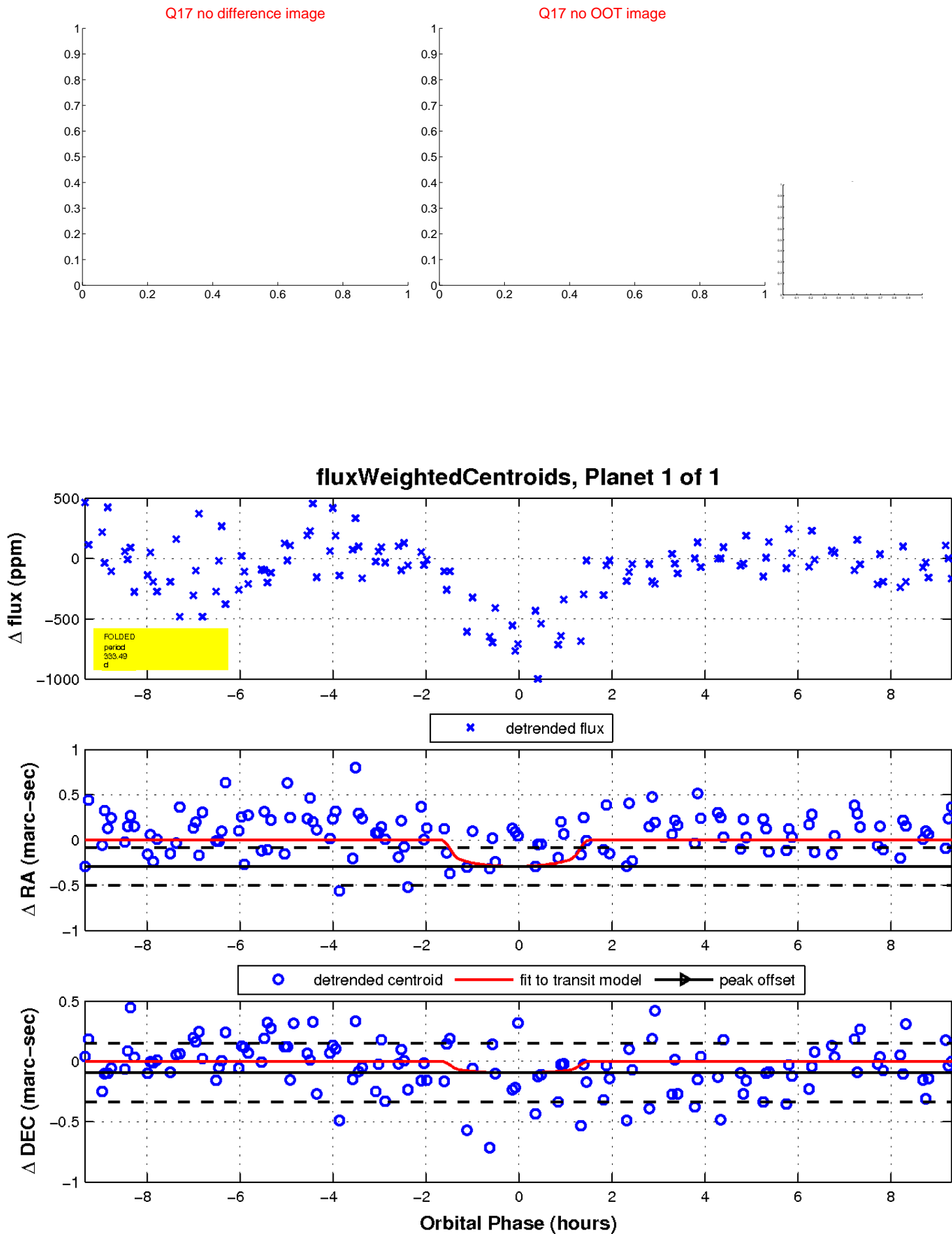
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



UKIRT Image

