

# KIC 003935534

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003935534-01	OBS	No	405.172016	421.635521	340.0	8.268	7.4	7.0	0.89	6286	1.80	0.99

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003935534-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—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.

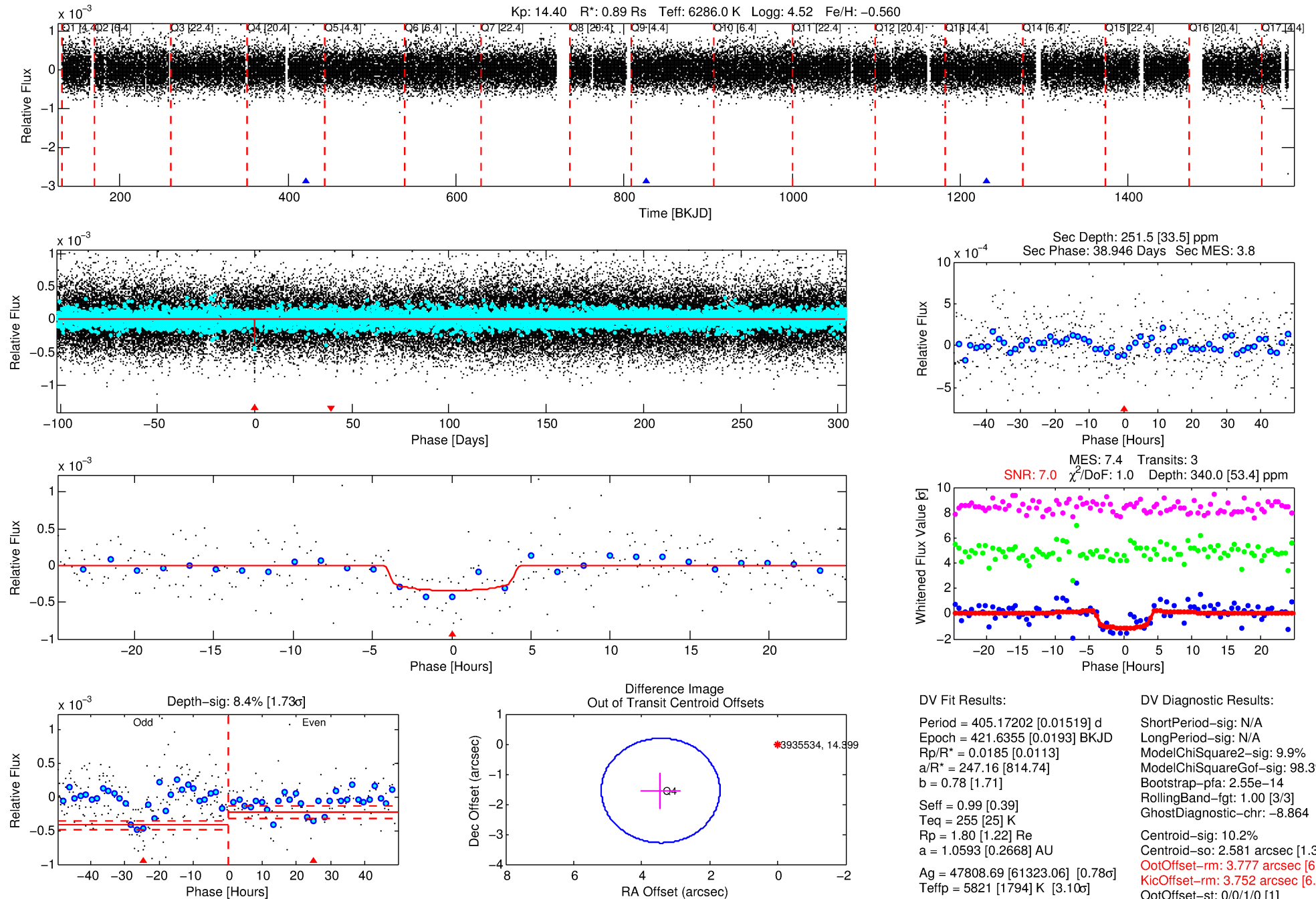
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003935534-01

No Significant Match Found

# DV One-Page Summary

KIC: 3935534 Candidate: 1 of 1 Period: 405.172 d



## DV Fit Results:

Period = 405.17202 [0.01519] d  
Epoch = 421.6355 [0.0193] BKJD  
Rp/R\* = 0.0185 [0.0113]  
a/R\* = 247.16 [814.74]  
b = 0.78 [1.71]  
Seff = 0.99 [0.39]  
Teff = 255 [25] K  
Rp = 1.80 [1.22] Re  
a = 1.0593 [0.2668] AU  
Ag = 47808.69 [61323.06] [0.78 $\sigma$ ]  
Teffp = 5821 [1794] K [3.10 $\sigma$ ]

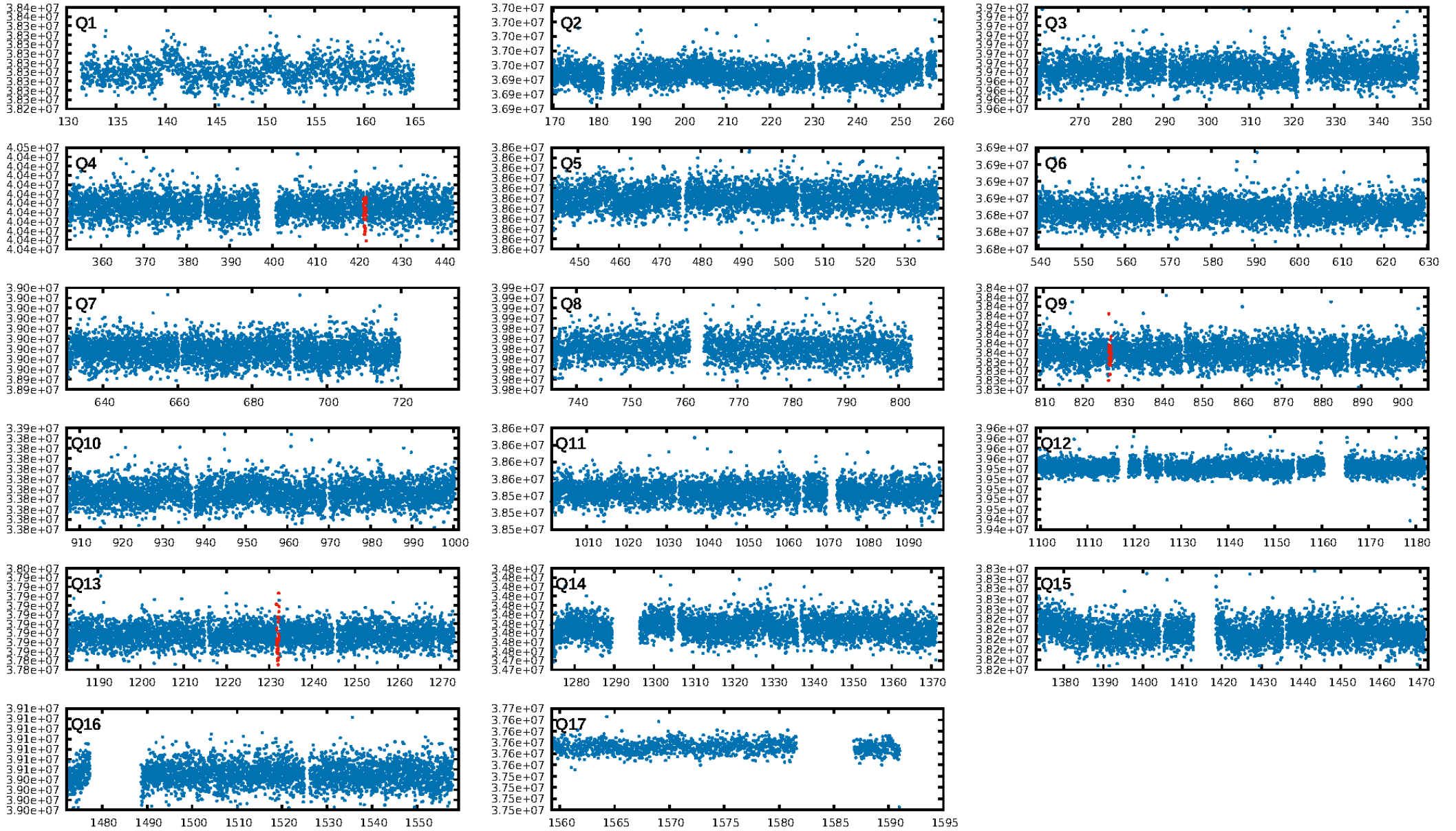
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 9.9%  
ModelChiSquareGof-sig: 98.3%  
Bootstrap-pfa: 2.55e-14  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -8.864  
Centroid-sig: 10.2%  
Centroid-so: 2.581 arcsec [1.39 $\sigma$ ]  
OotOffset-rm: 3.777 arcsec [6.51 $\sigma$ ]  
KicOffset-rm: 3.752 arcsec [6.47 $\sigma$ ]  
OotOffset-st: 0/0/1/0 [1]  
KicOffset-st: 0/0/1/0 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 1.00 [2/2]

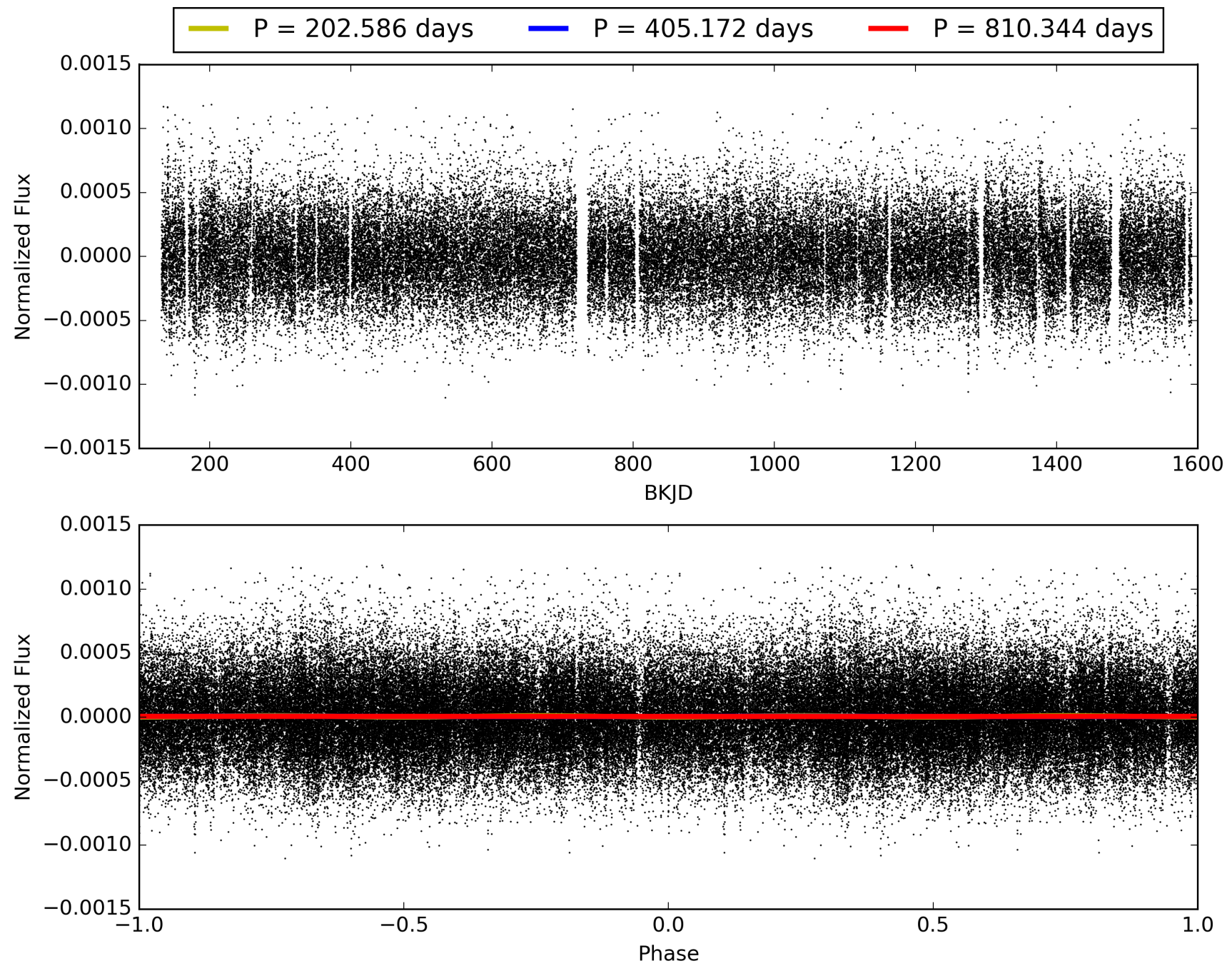
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:31:41 Z

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

# TCE 003935534-01, PDC Light Curves

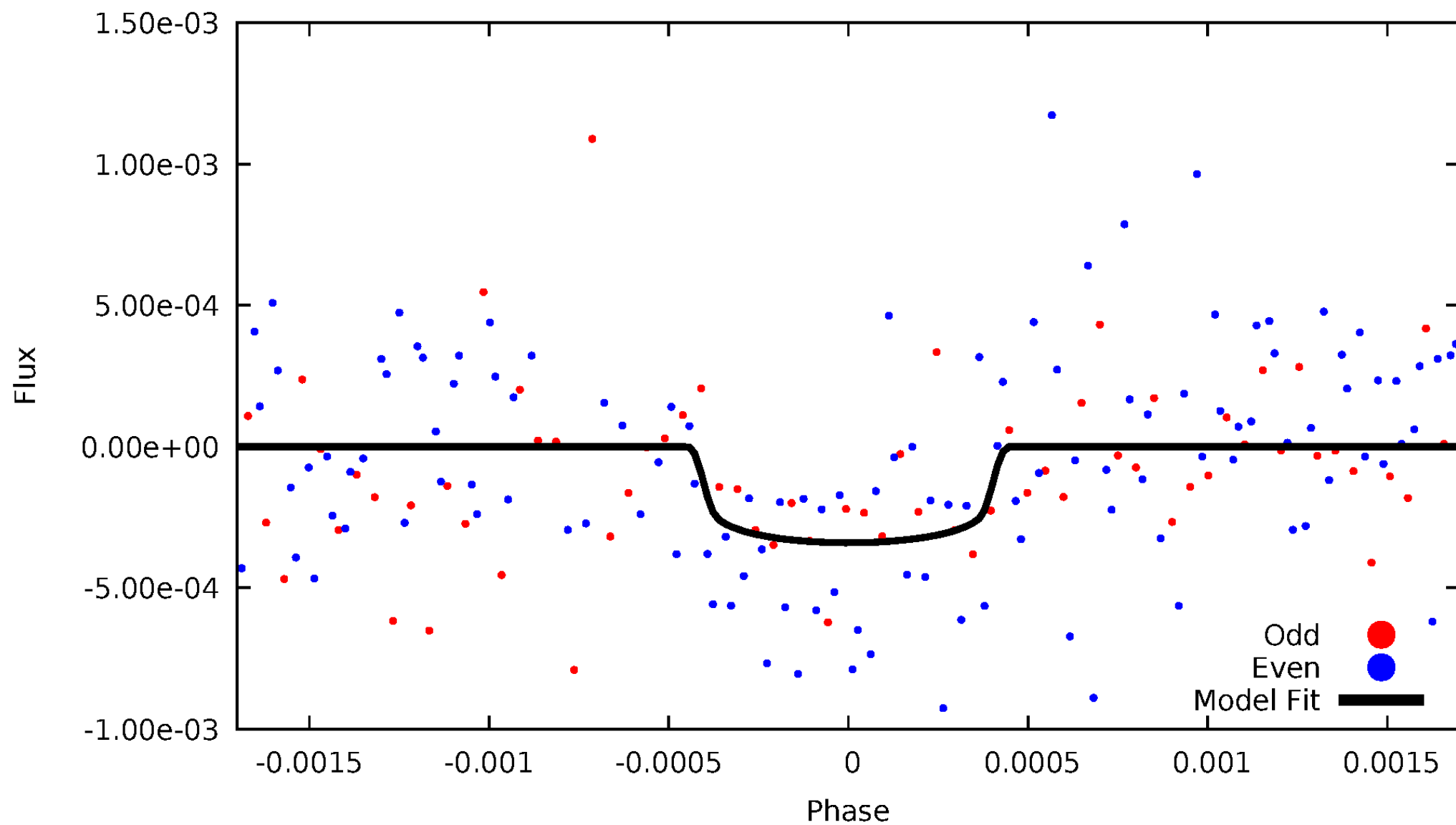


TCE 003935534-01



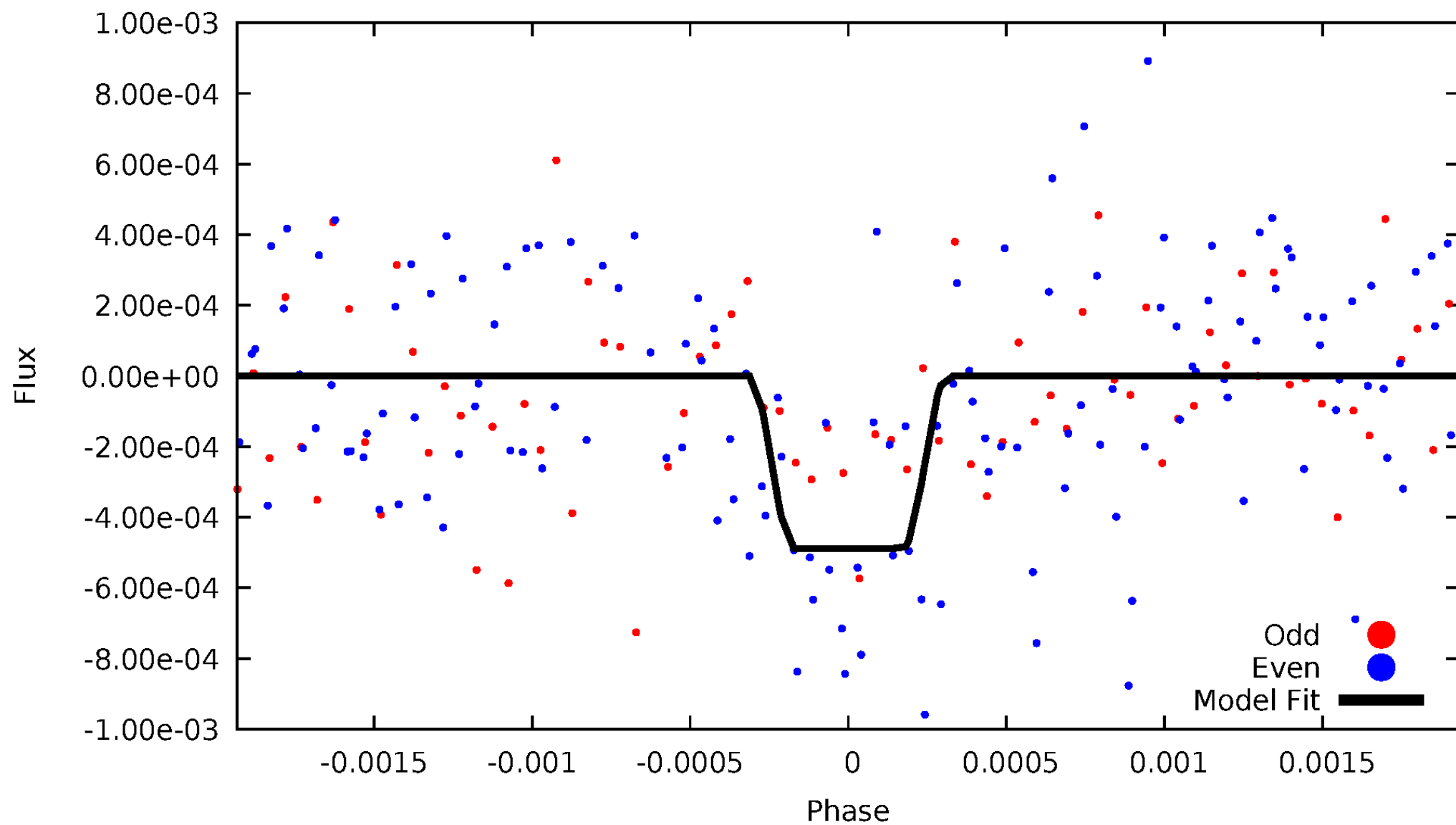
# DV Odd/Even

TCE 003935534-01



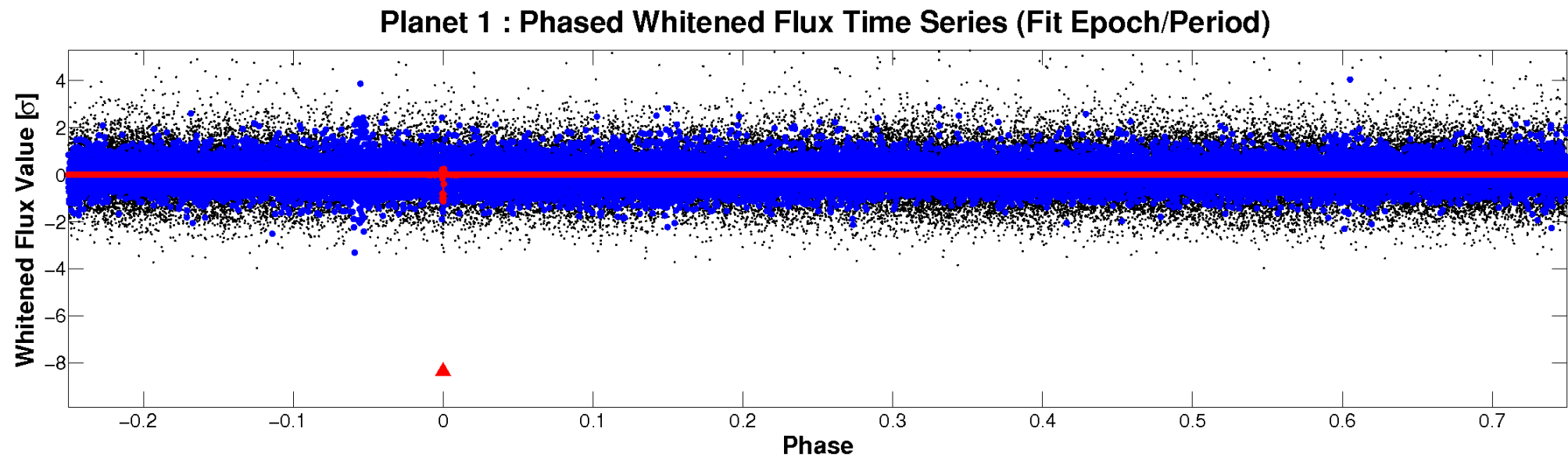
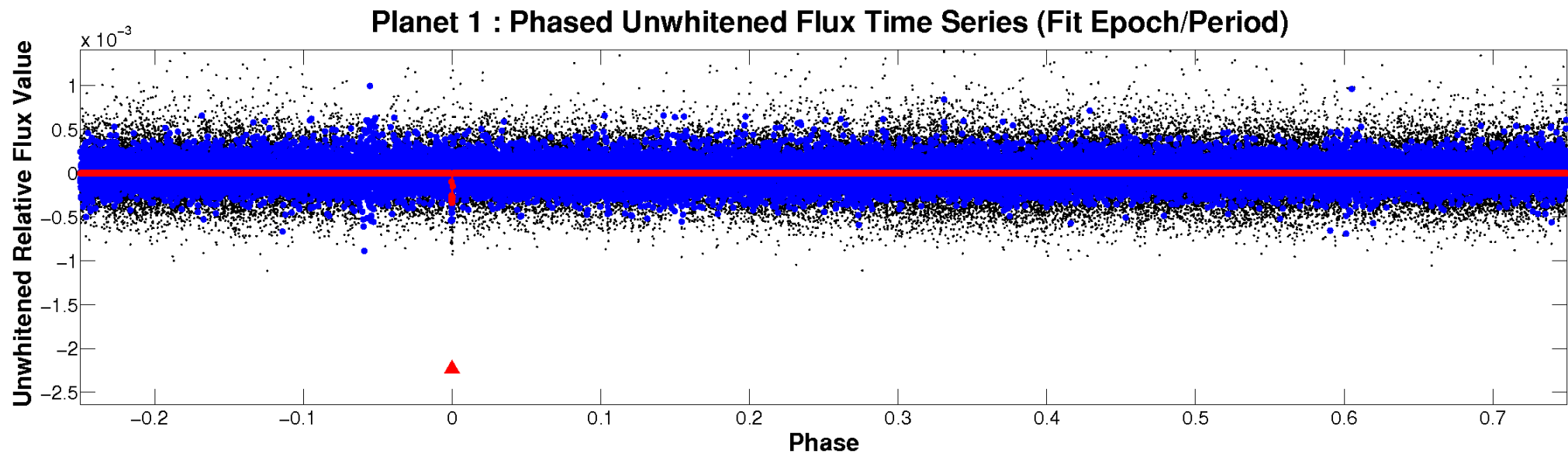
# ALT Odd/Even

TCE 003935534-01



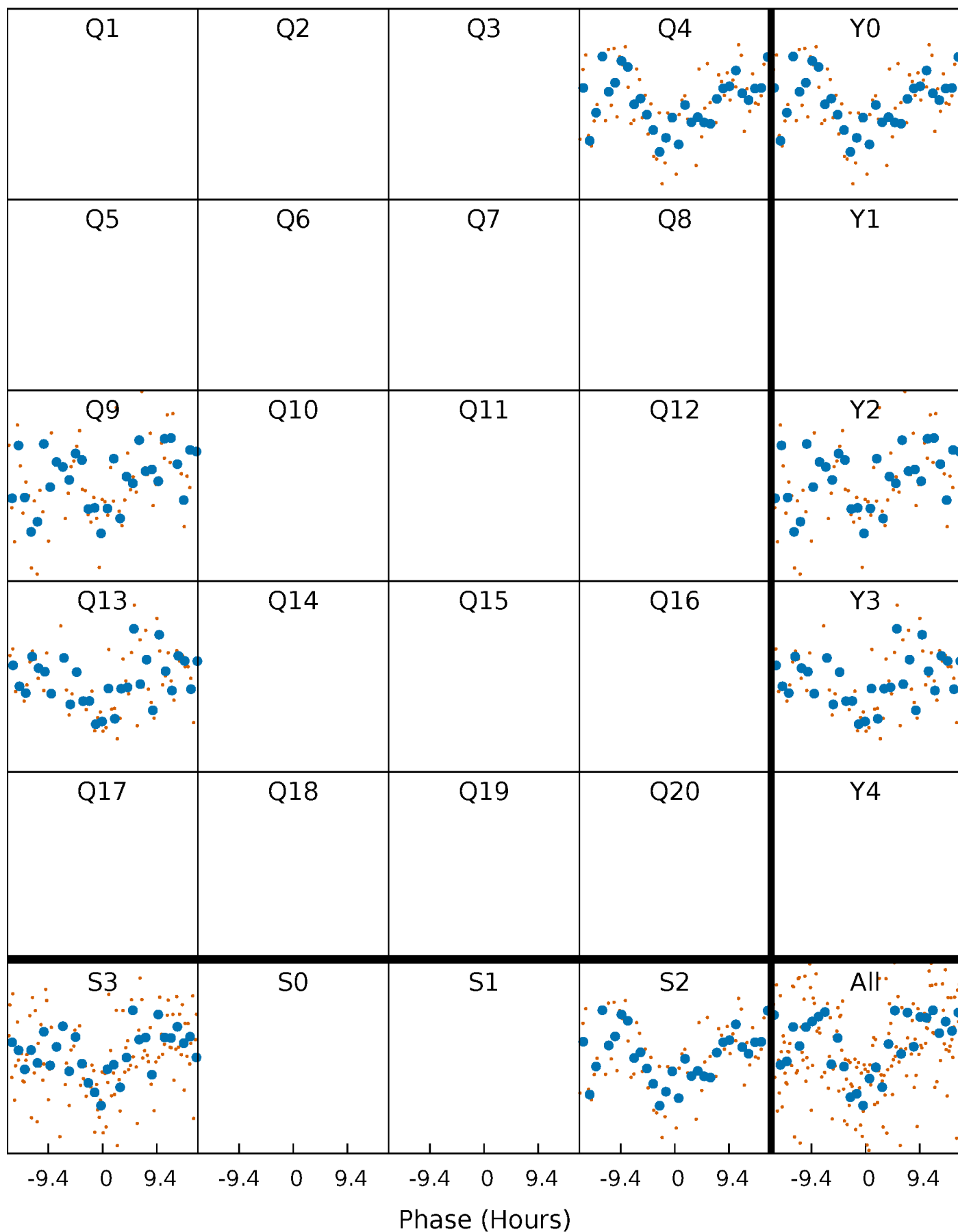


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

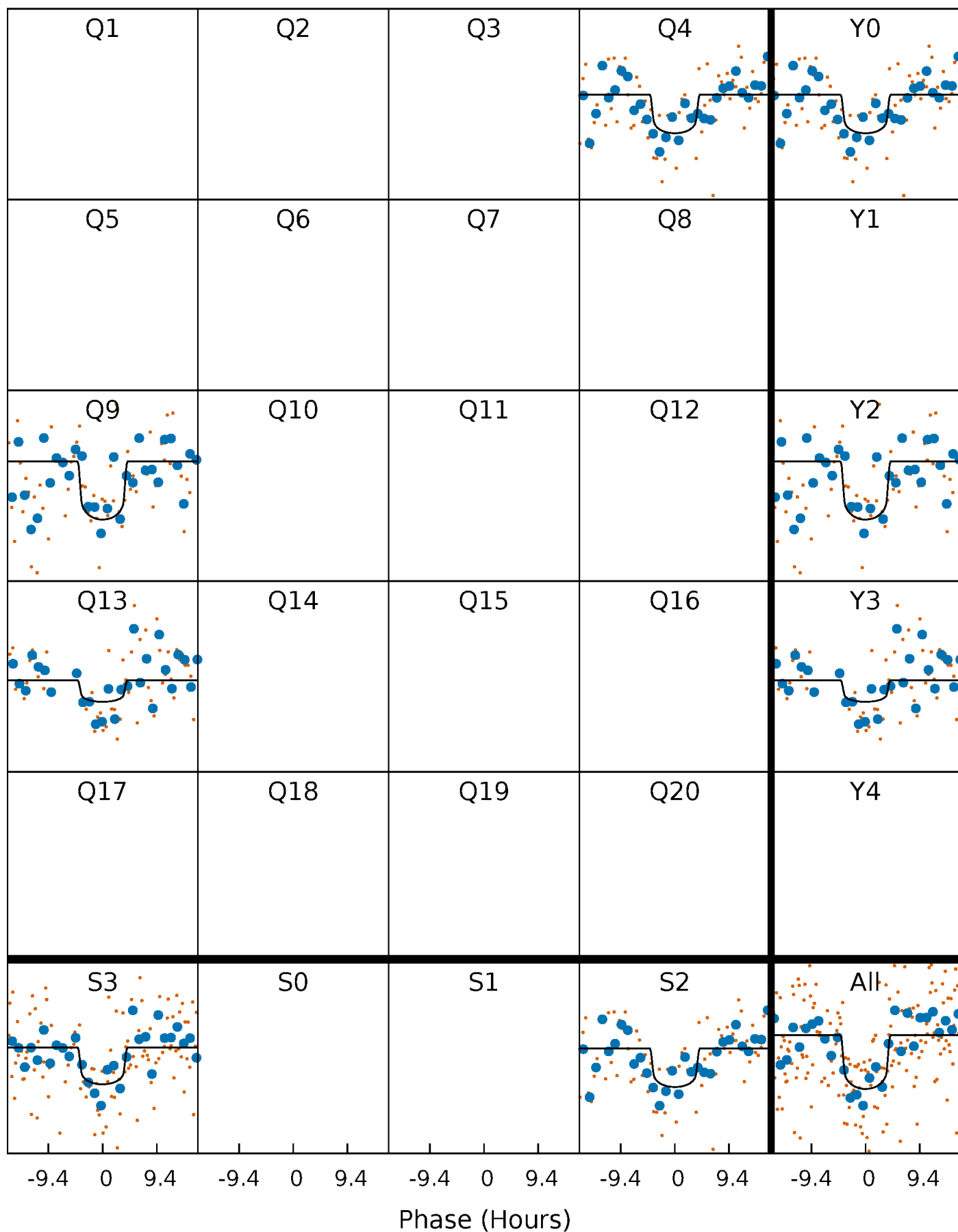
TCE 003935534-01 P=405.172016 Days  $T_0=421.635521$  (BKJD)





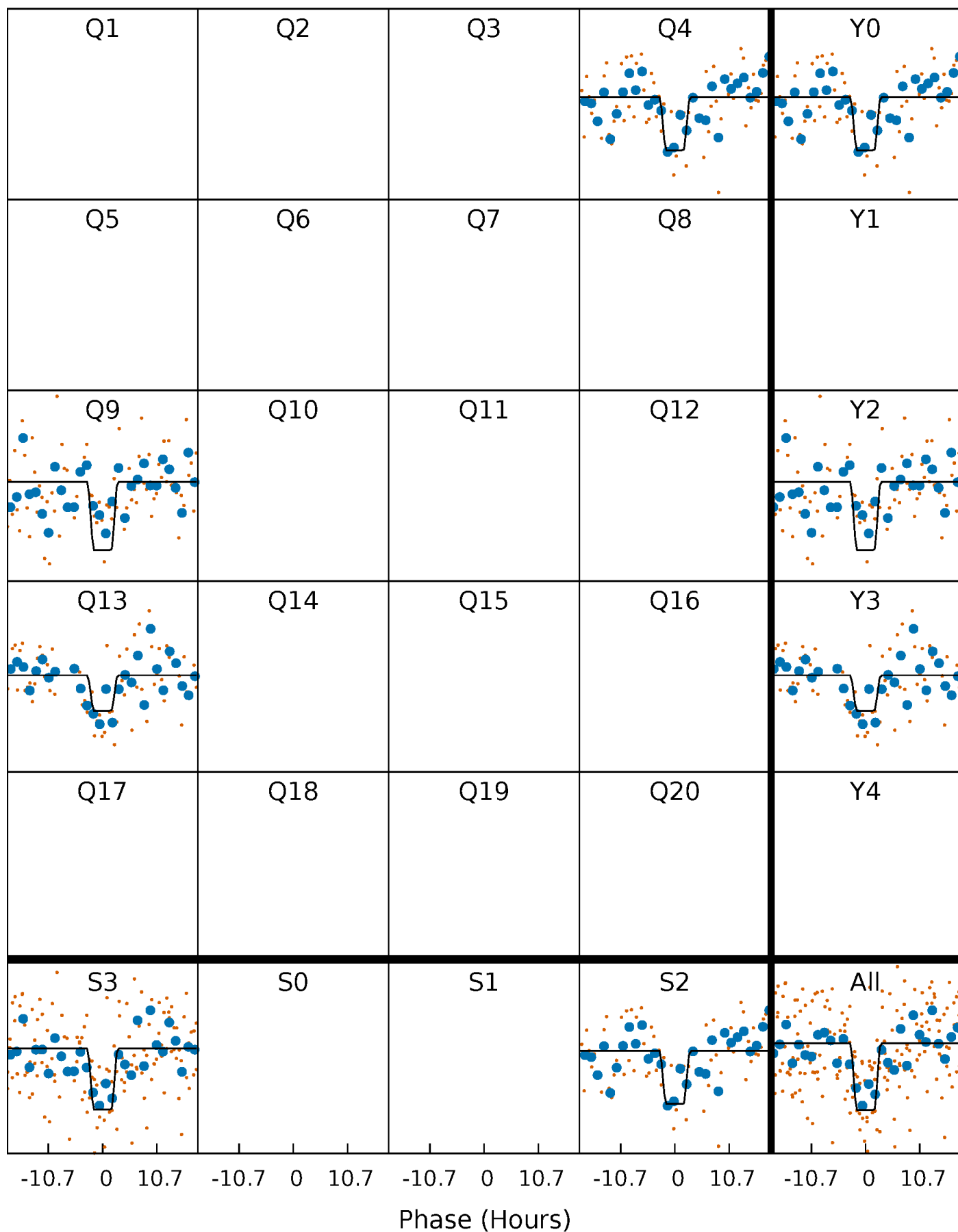
# DV Quarter-Phased Transit Curves

TCE 003935534-01 P=405.172016 Days  $T_0=421.635521$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

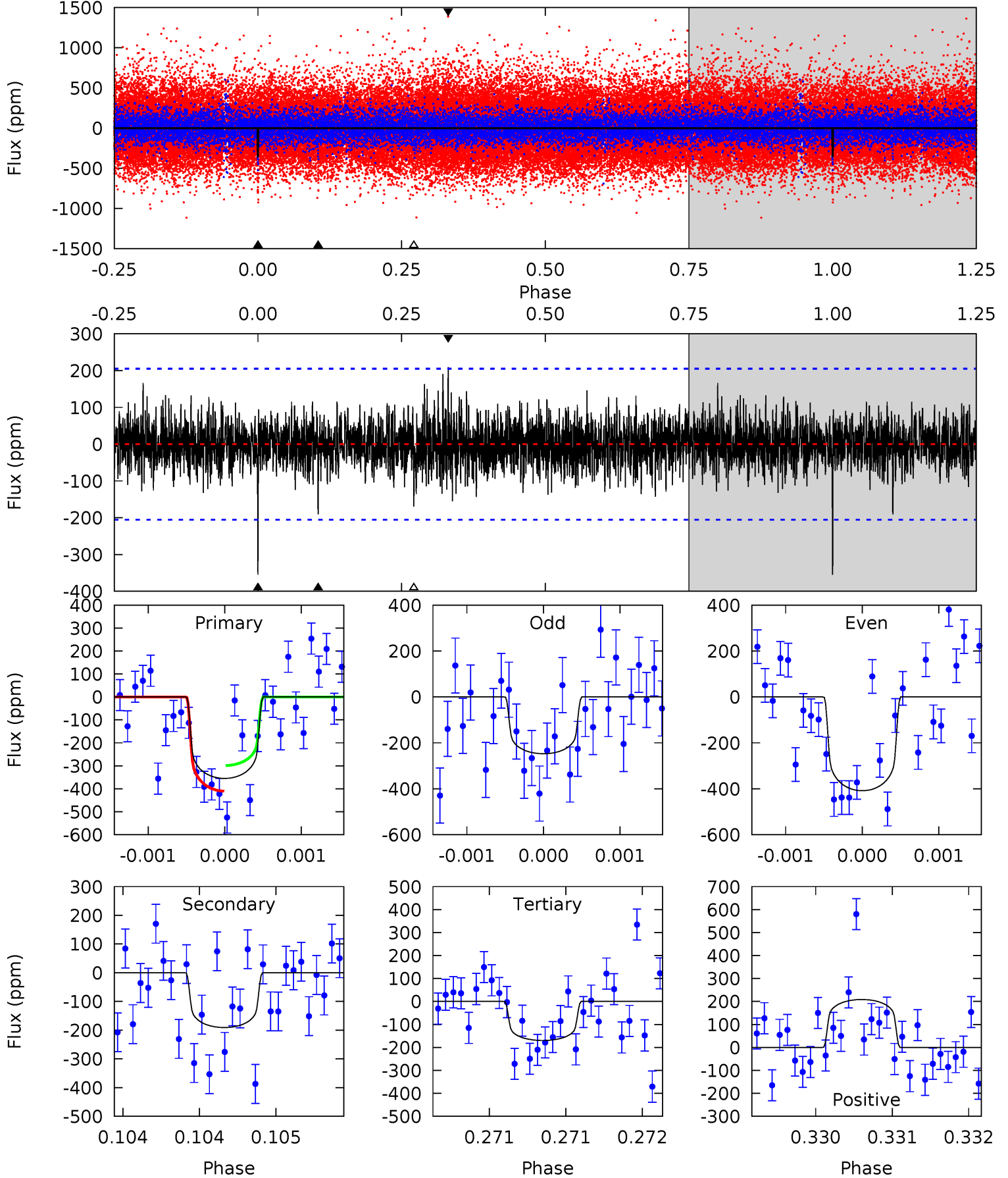
TCE 003935534-01 P=405.217928 Days  $T_0=421.552523$  (BKJD)



# DV Model-Shift Uniqueness Test

003935534-01, P = 405.172016 Days, E = 16.463505 Days

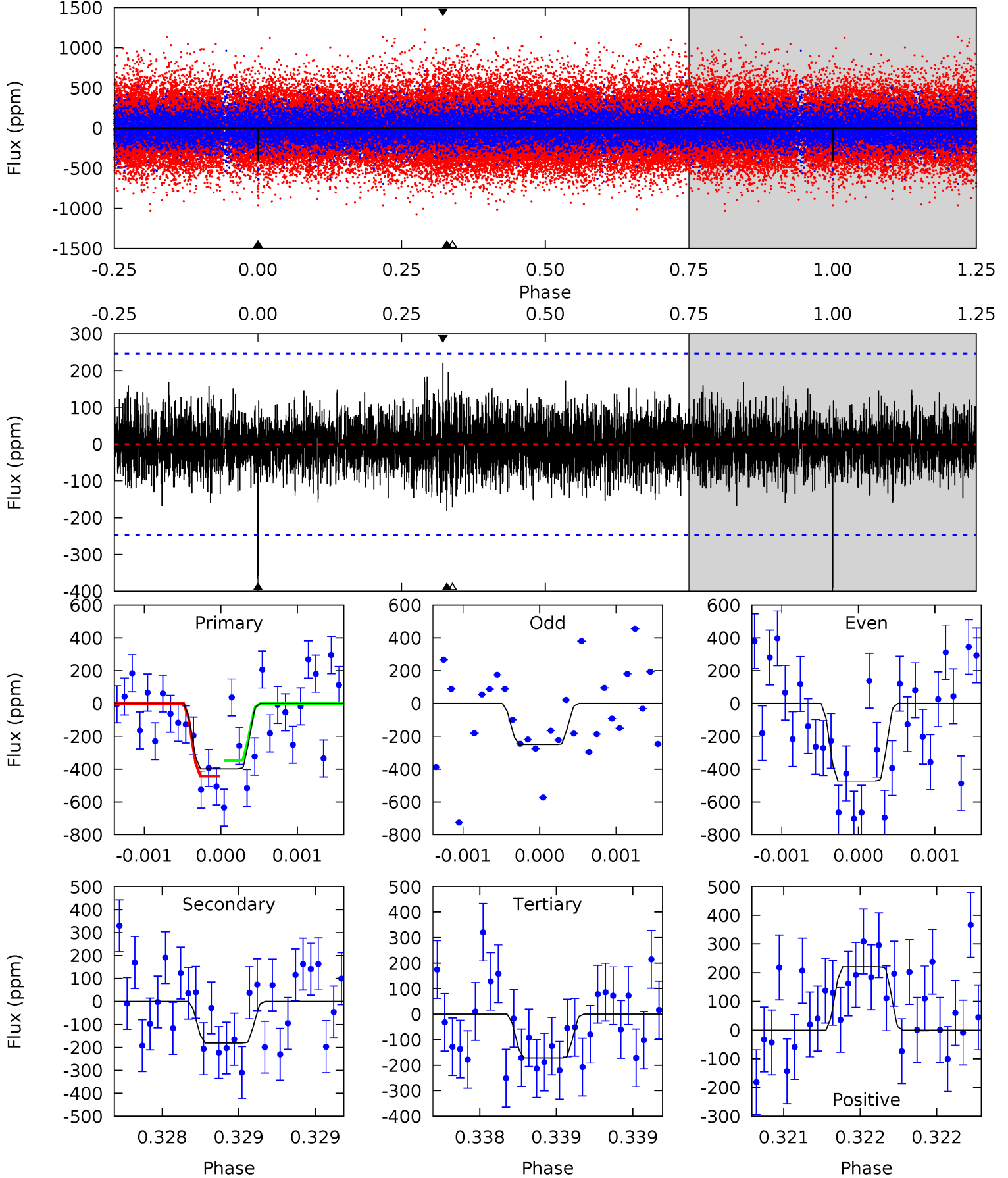
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.46	5.09	4.53	5.56	5.47	3.32	1.24	4.93	3.90	0.56	-0.47	2.05	1.03	0.37	1.49



# Alt Model-Shift Uniqueness Test

003935534-01, P = 405.217928 Days, E = 16.334595 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
8.94	4.05	3.85	4.95	5.53	3.41	1.13	5.09	3.99	0.20	-0.90	2.35	1.05	0.36	1.05



### Stellar Parameters For KIC 003935534

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6286^{+169}_{-188}$	$4.521^{+0.039}_{-0.208}$	$-0.560^{+0.300}_{-0.300}$	$0.893^{+0.261}_{-0.082}$	$0.964^{+0.105}_{-0.116}$	$1.909^{+0.383}_{-0.986}$
	+3%/-3%	+1%/-5%	+54%/-54%	+29%/-9%	+11%/-12%	+20%/-52%
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 003935534-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-191 \pm 38$	$2.00^{+1.15}_{-1.02}$	$364^{+26}_{-16}$	$5313^{+2323}_{-907}$	$28180^{+96798}_{-16695}$
Alt.	$-181 \pm 45$	$2.31^{+1.19}_{-1.16}$	$366^{+25}_{-16}$	$4960^{+1943}_{-755}$	$20178^{+62576}_{-11819}$

$T_{\text{max}}$  = 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

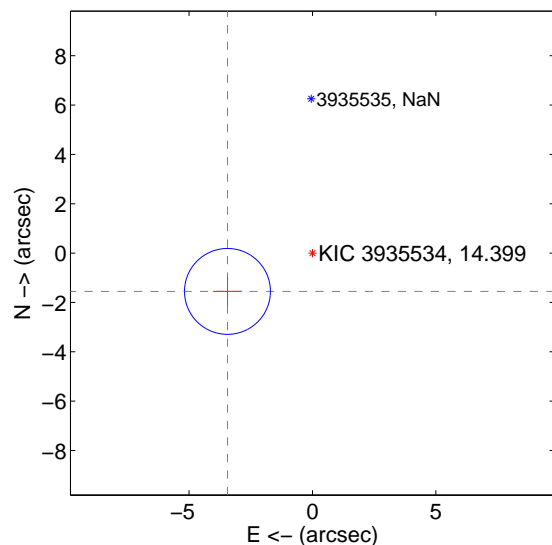
Supplemental centroid analysis for 003935534-01. Kepler magnitude: 14.40. Transit SNR 7.04

There are 0 quarters with good PRF difference image offsets

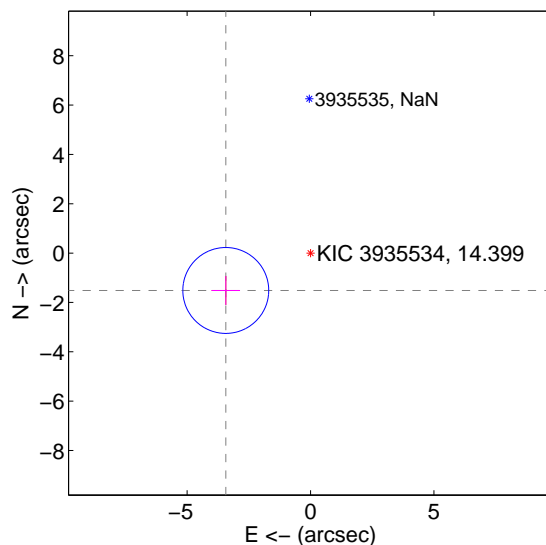
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.777 \pm 0.580$	6.51	$3.443 \pm 0.578$	$-1.552 \pm 0.589$
PRF-fit source offset from KIC position	$3.752 \pm 0.580$	6.47	$3.434 \pm 0.578$	$-1.514 \pm 0.589$
photometric centroid source offset	$2.58 \pm 1.86$	1.39	$-1.39 \pm 1.70$	$-2.17 \pm 1.93$

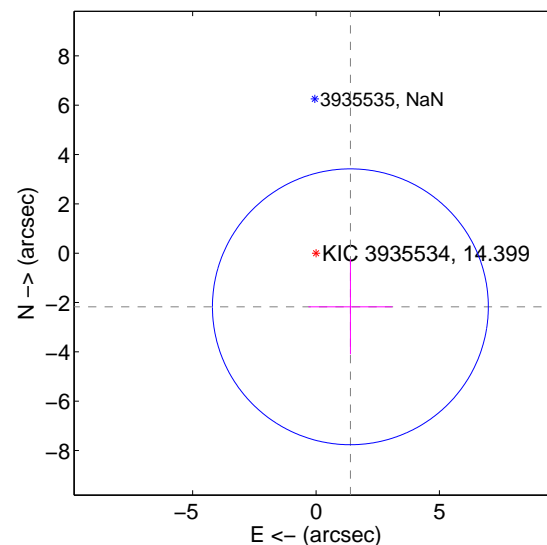
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

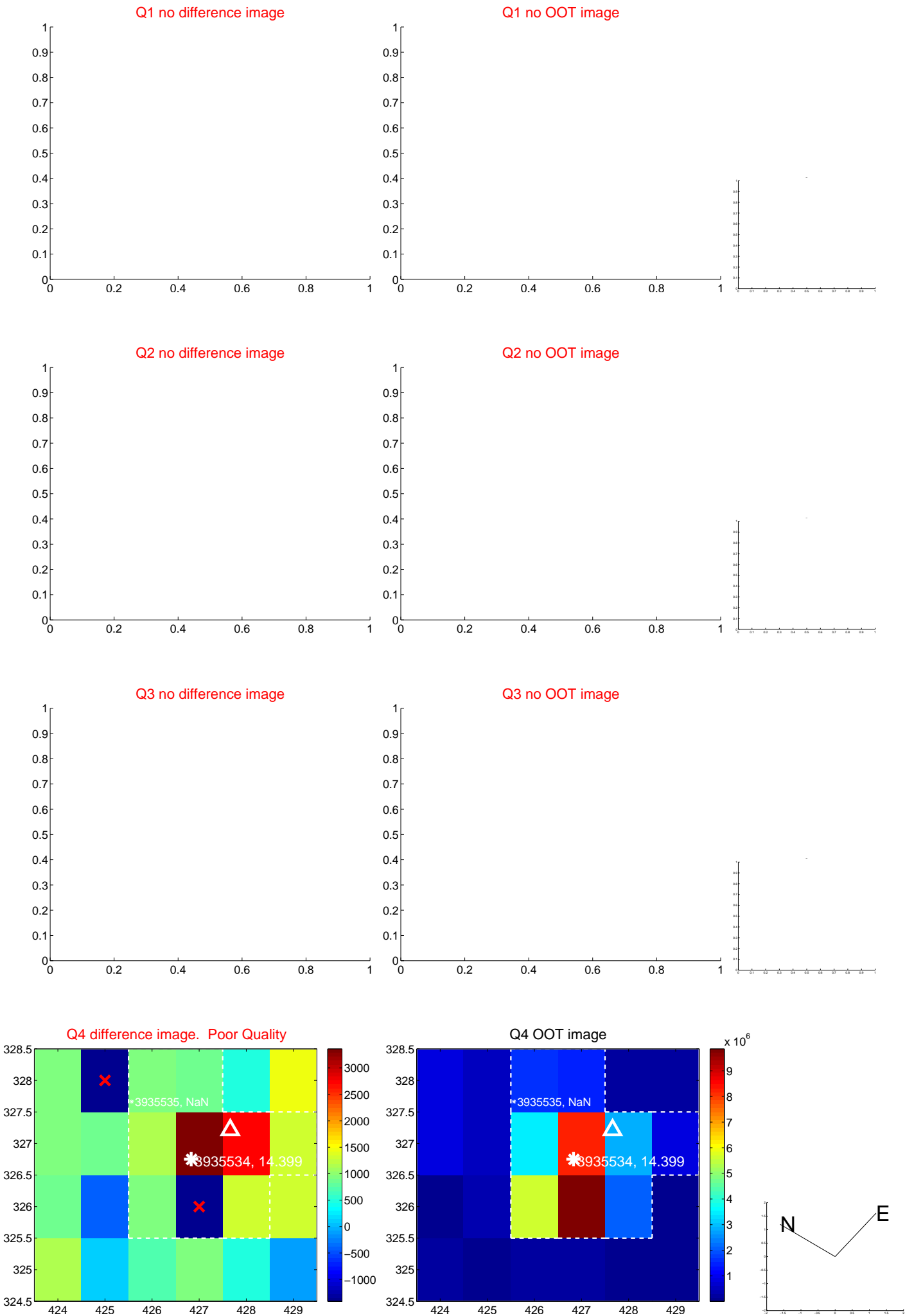


offset from photometric centroids



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.

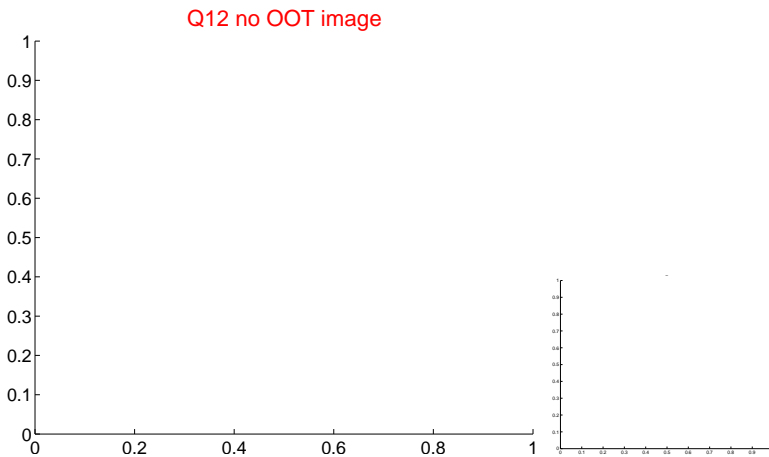
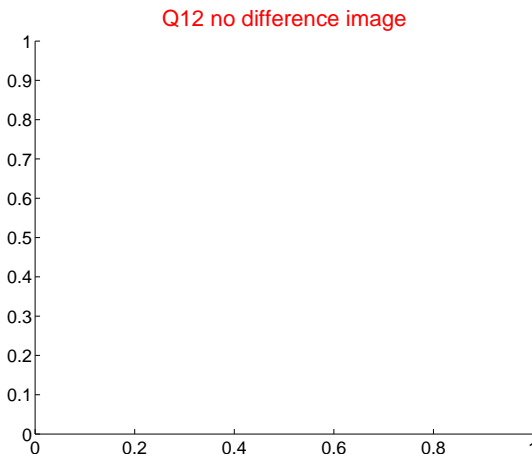
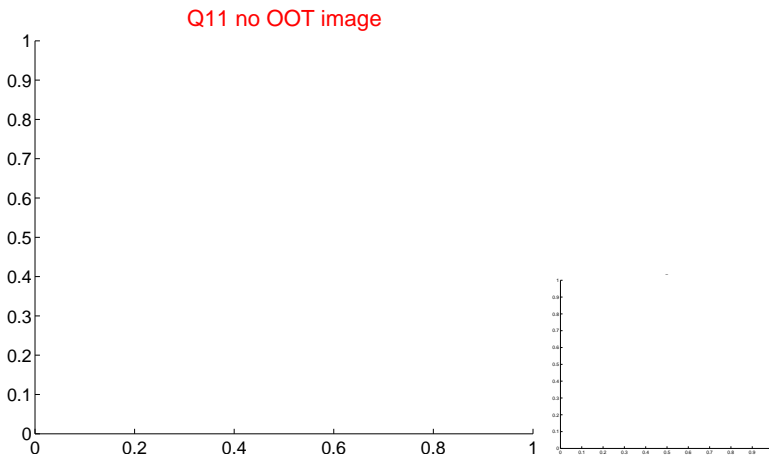
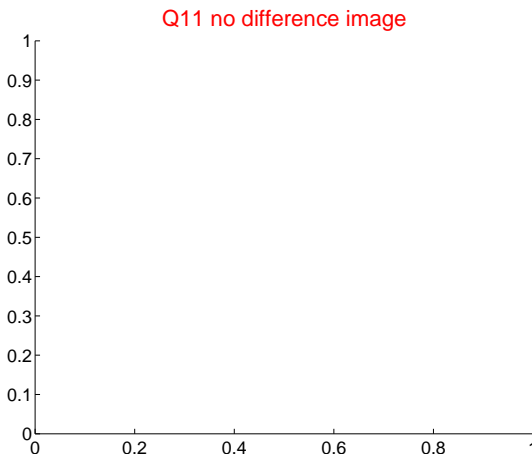
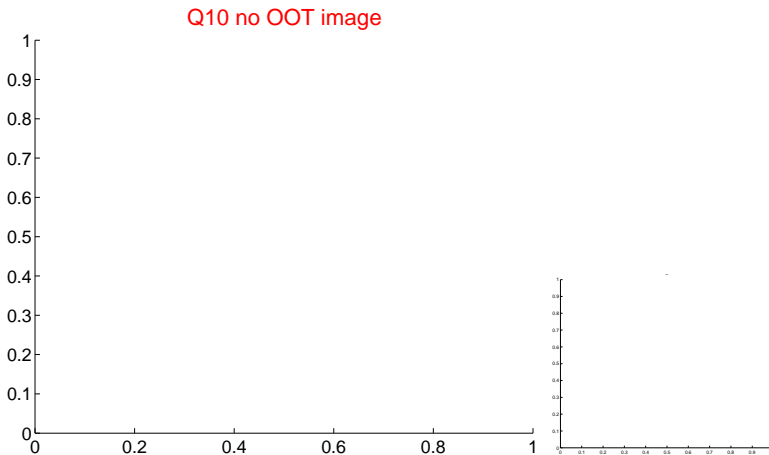
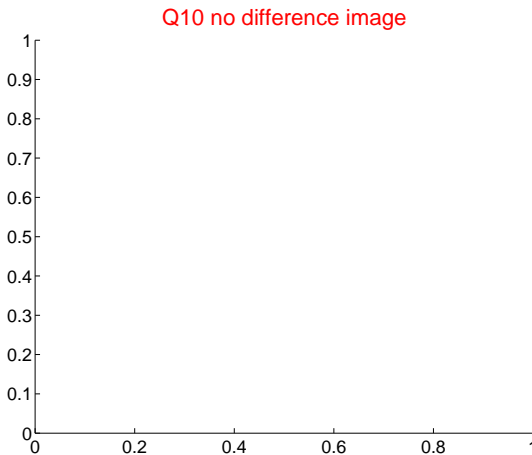
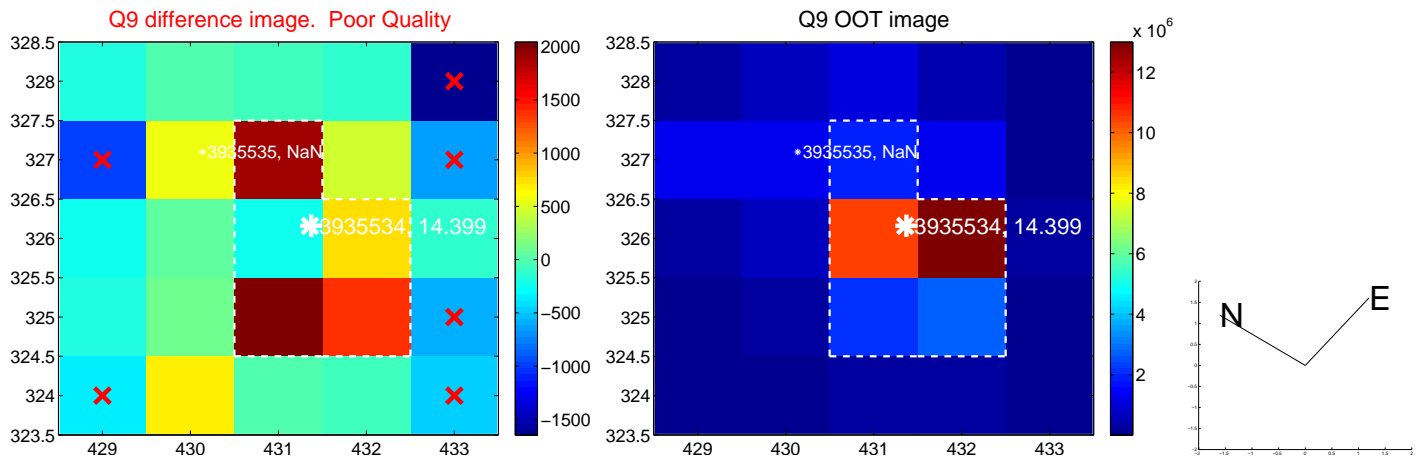




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



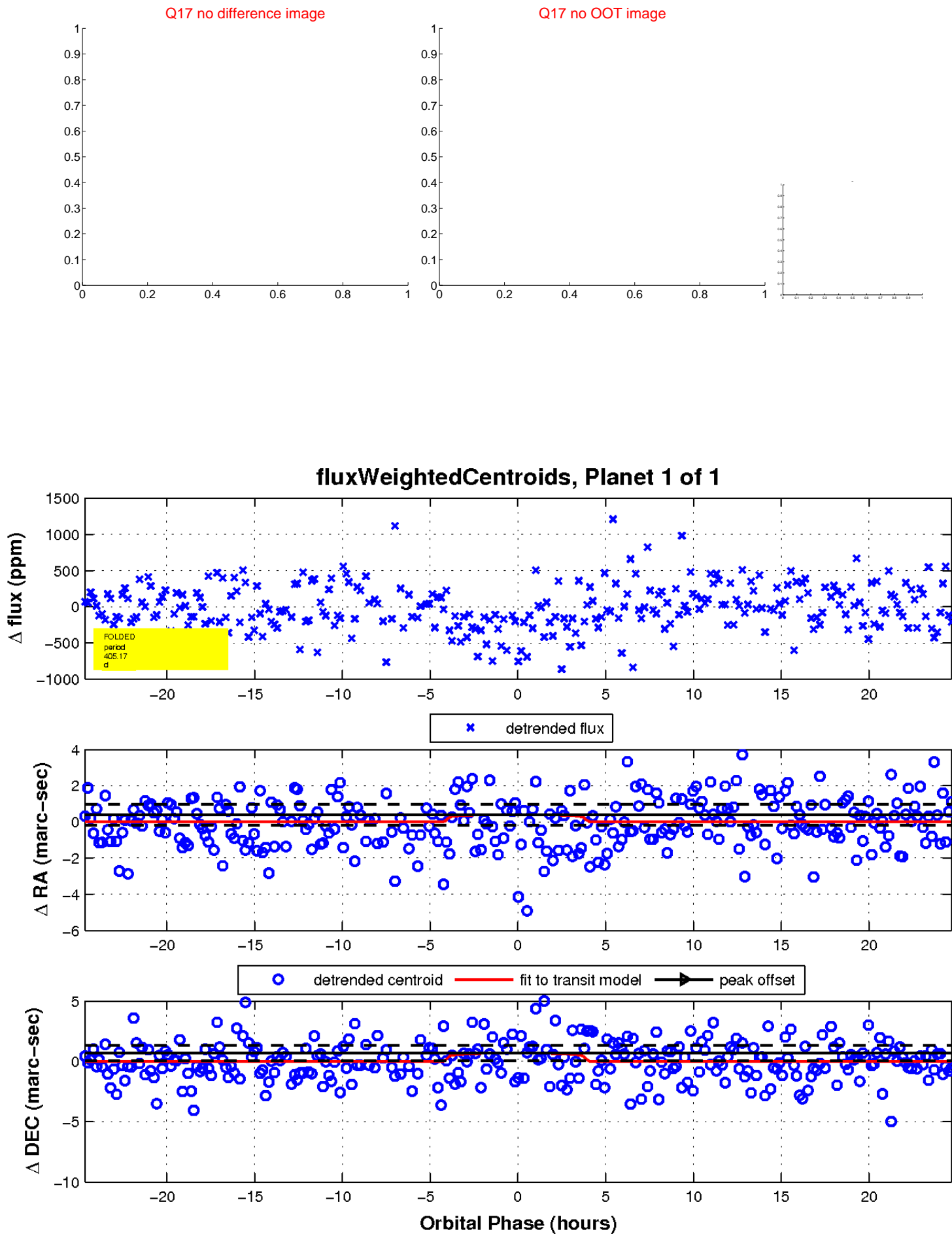
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



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

