

# KIC 005612253

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005612253-01	OBS	No	423.088607	157.359066	190.8	15.951	9.2	8.5	1.11	5912	1.60	1.10

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005612253-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—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.

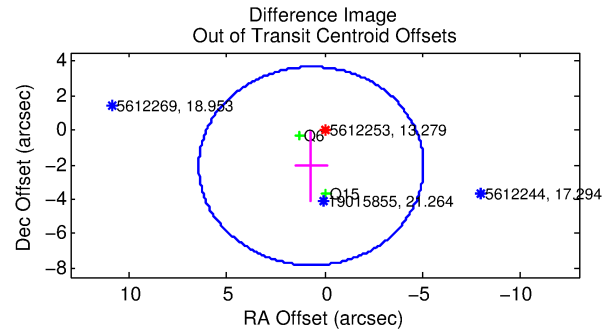
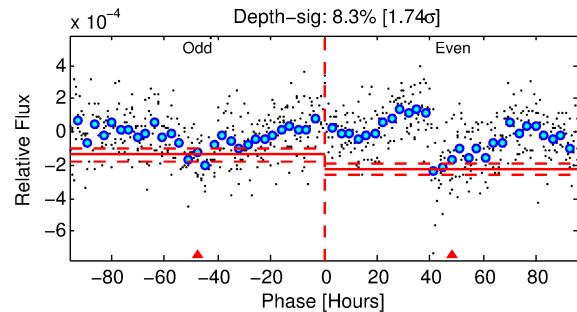
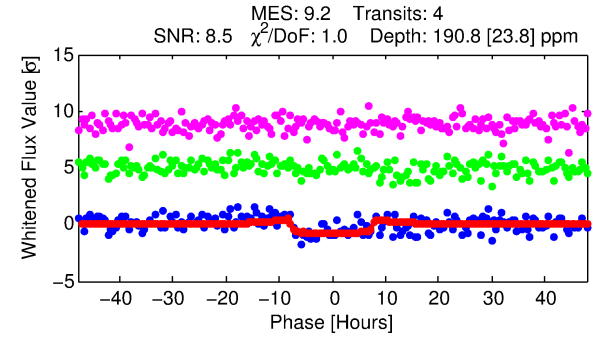
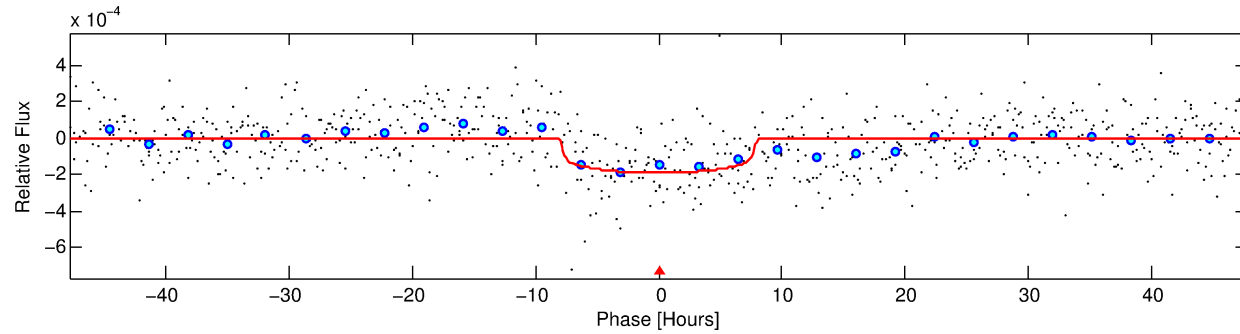
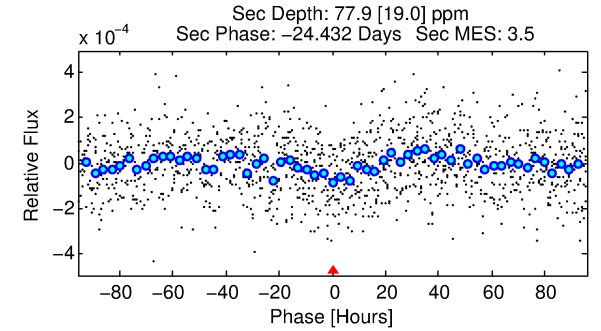
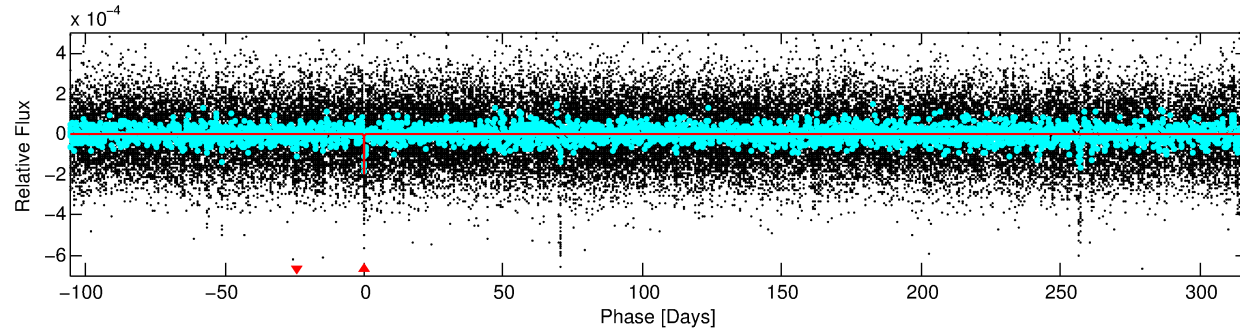
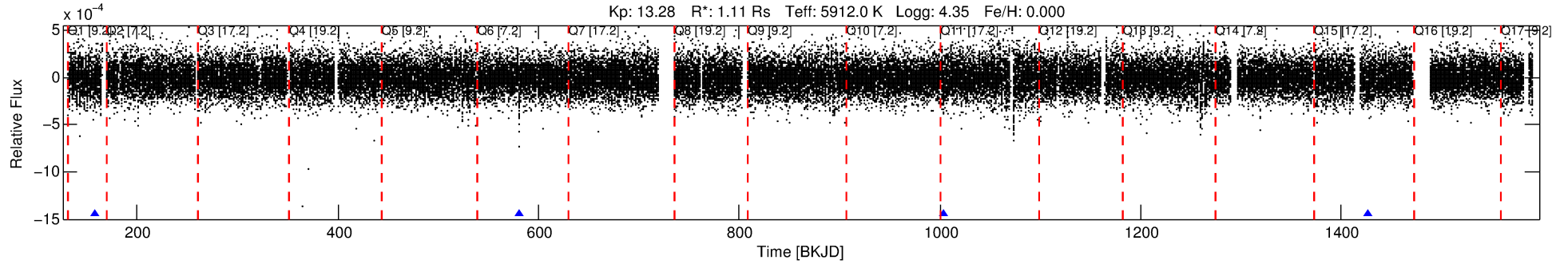
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005612253-01

No Significant Match Found

# DV One-Page Summary

KIC: 5612253 Candidate: 1 of 1 Period: 423.089 d



## DV Fit Results:

Period = 423.08861 [0.00850] d  
Epoch = 157.3591 [0.0146] BKJD  
Rp/R\* = 0.0132 [0.0059]  
a/R\* = 165.46 [336.64]  
b = 0.60 [2.19]  
Seff = 1.10 [0.40]  
Teff = 261 [24] K  
Rp = 1.60 [0.85] Re  
a = 1.1082 [0.2665] AU  
Ag = 20663.53 [20534.93] [1.01σ]  
Teffp = 4837 [1136] K [4.03σ]

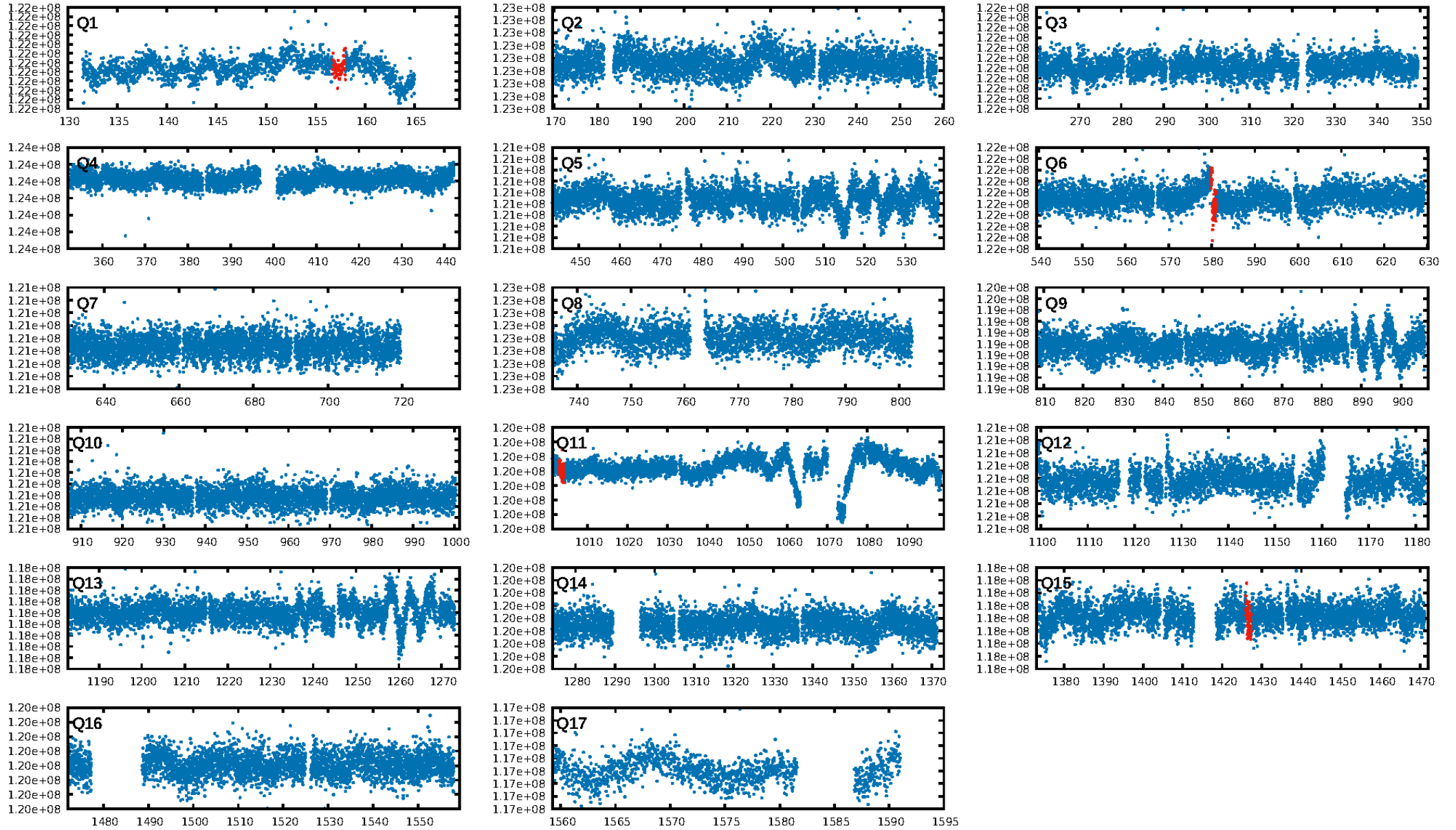
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 8.7%  
ModelChiSquareGof-sig: 99.6%  
**Bootstrap-pfa: 1.12e-12**  
RollingBand-fgt: 1.00 [3/3]  
**GhostDiagnostic-chr: 0.9378**  
Centroid-sig: 2.1%  
Centroid-so: 2.253 arcsec [1.62σ]  
OotOffset-rm: 2.189 arcsec [1.14σ]  
OotOffset-st: 1/1/0/0 [2]  
KicOffset-rm: 2.085 arcsec [1.08σ]  
KicOffset-st: 1/1/0/0 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [3/3]

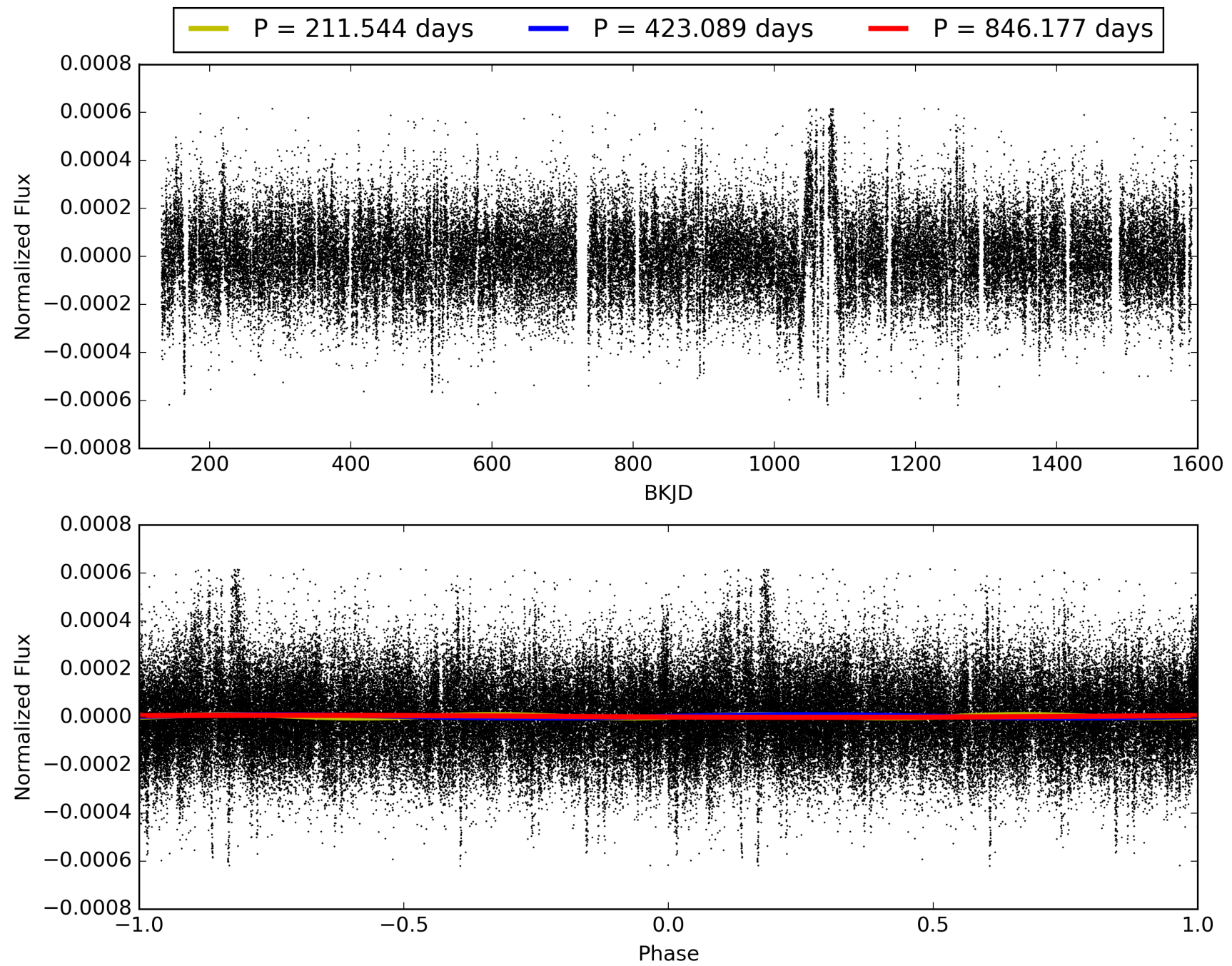
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 16:52:10 Z

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

# TCE 005612253-01, PDC Light Curves

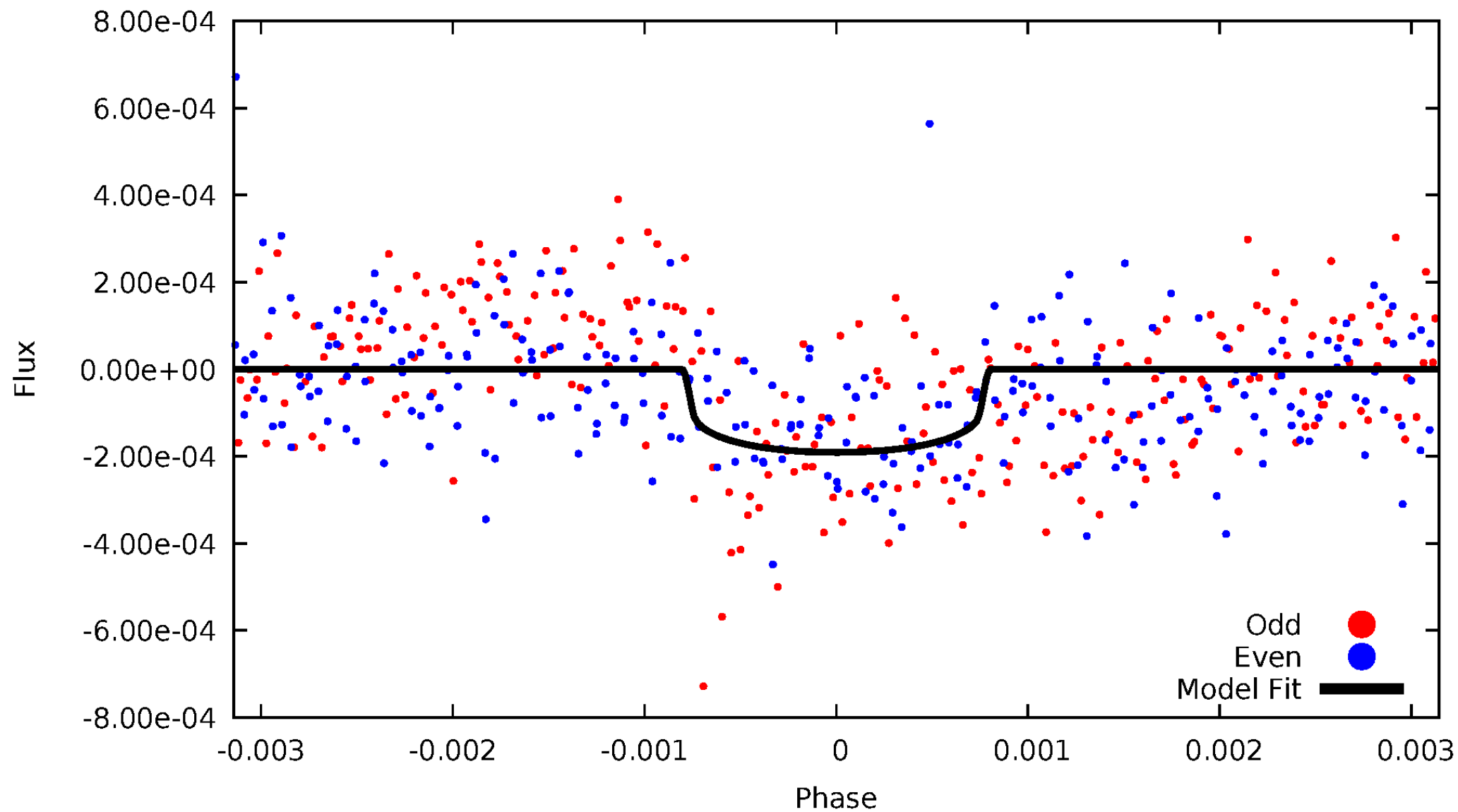


TCE 005612253-01



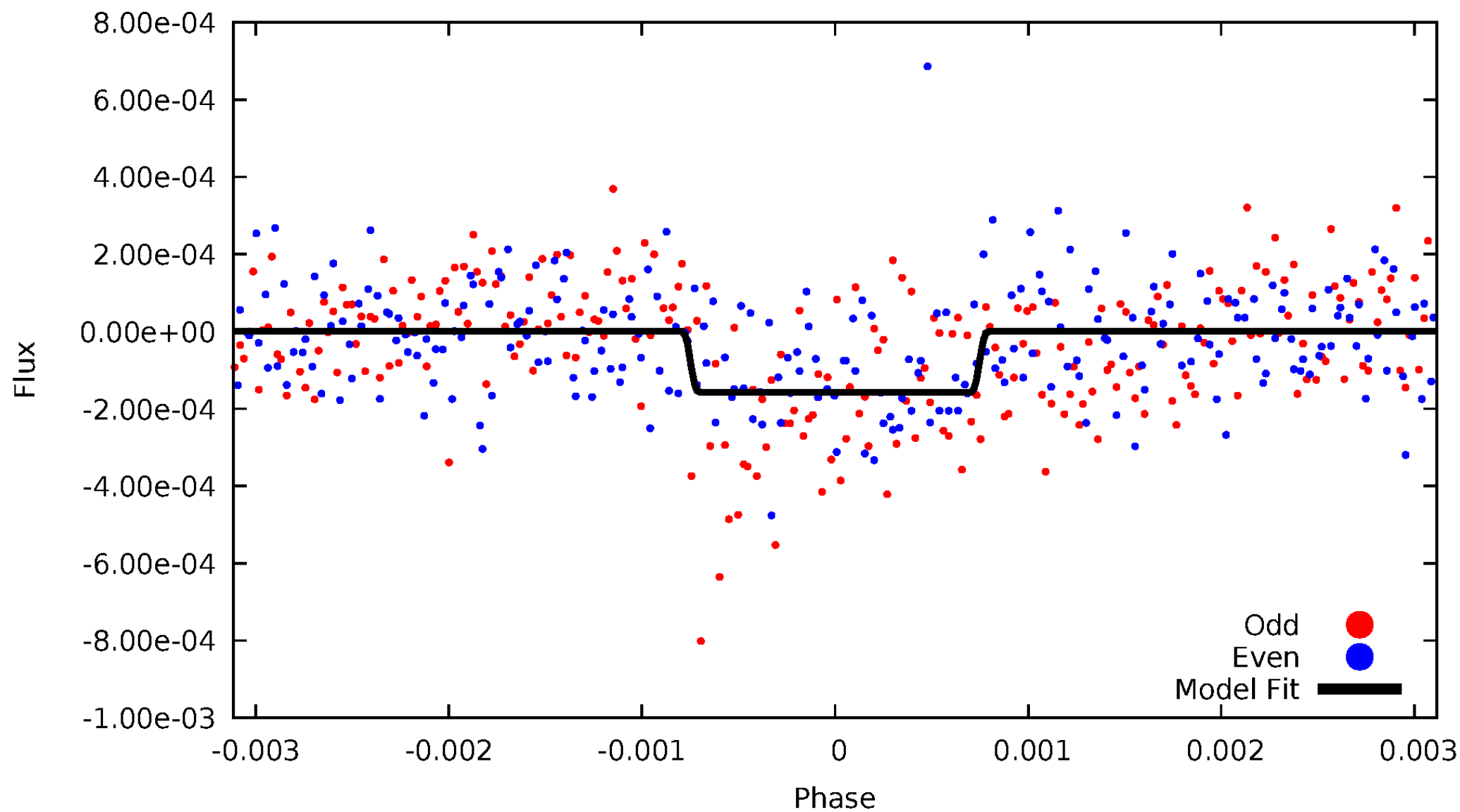
# DV Odd/Even

TCE 005612253-01



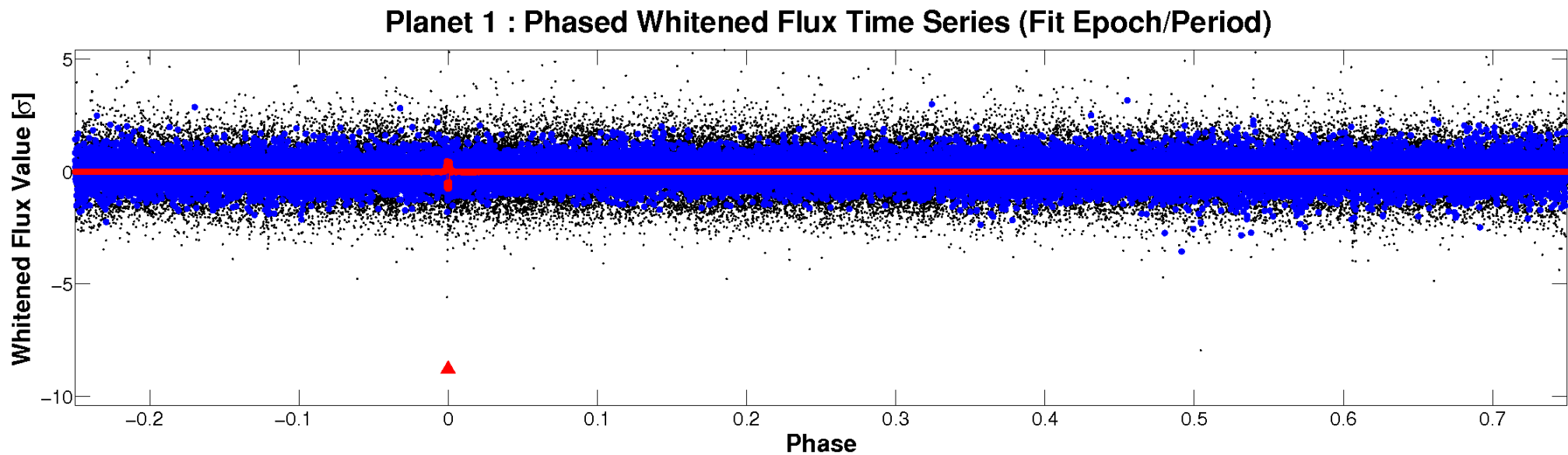
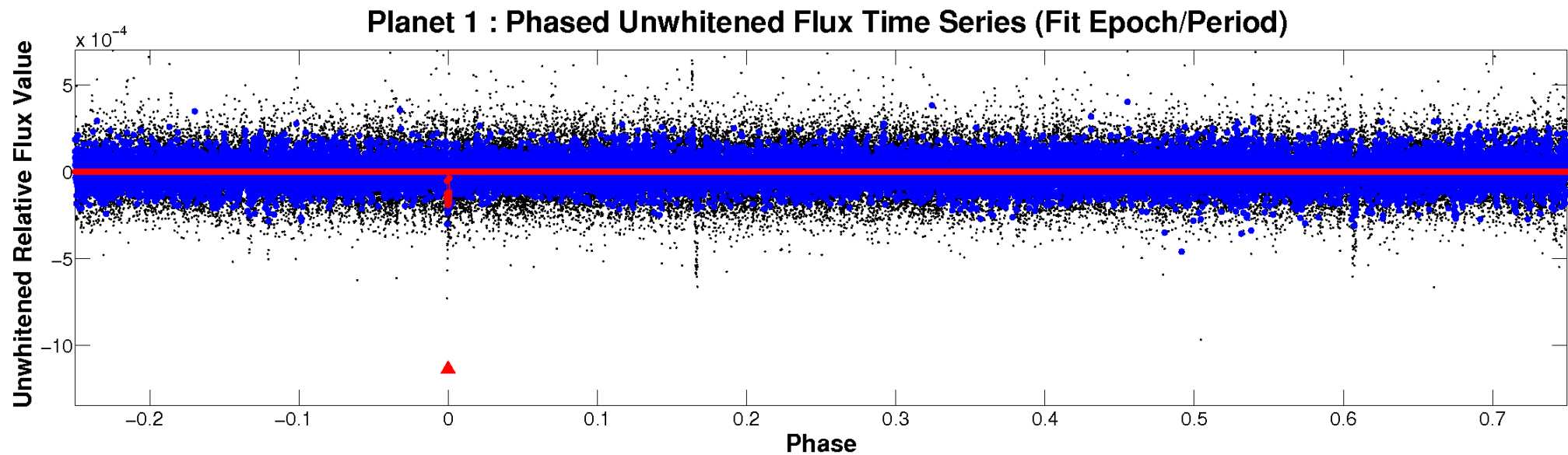
# ALT Odd/Even

TCE 005612253-01



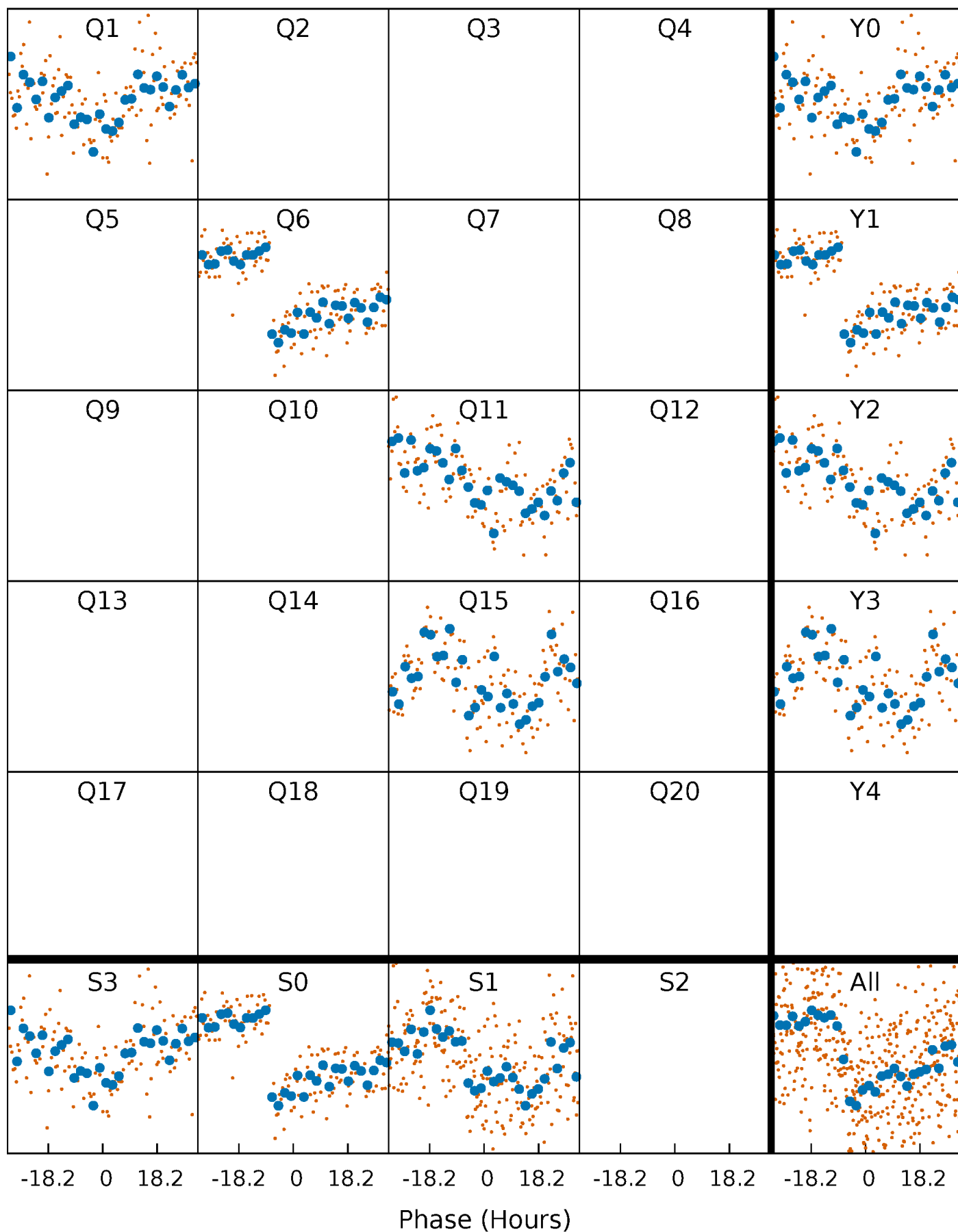


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

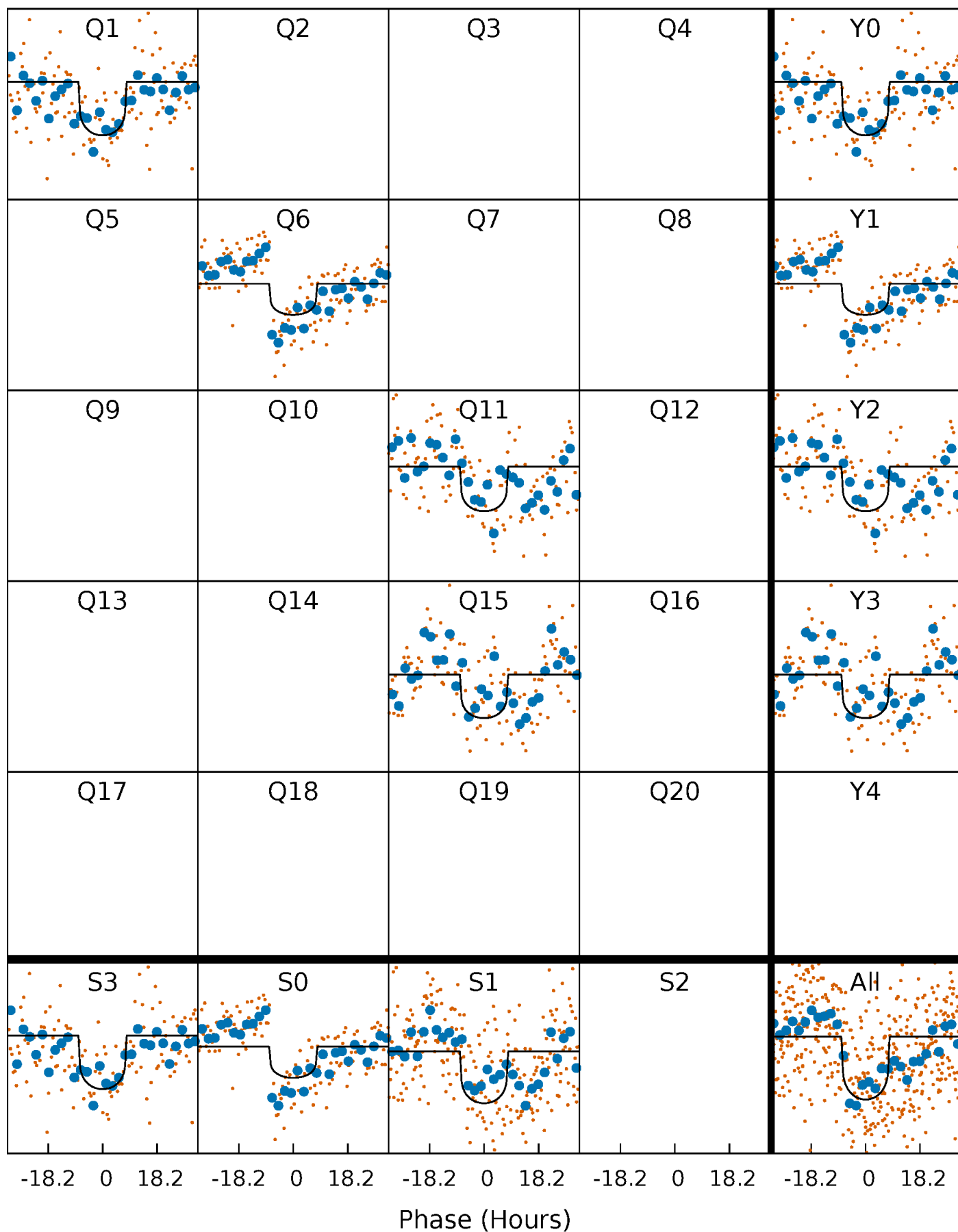
TCE 005612253-01 P=423.088607 Days  $T_0=157.359066$  (BKJD)





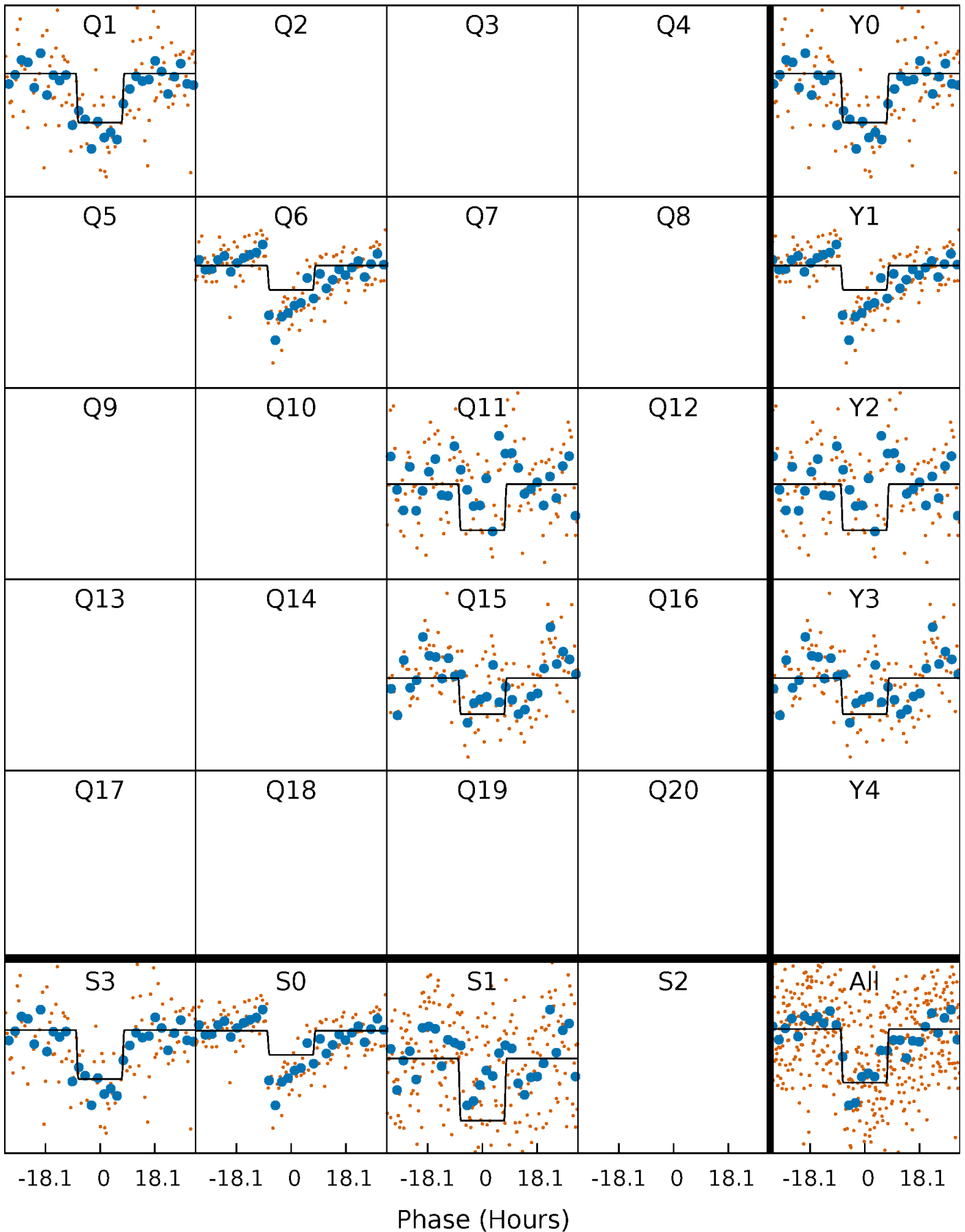
# DV Quarter-Phased Transit Curves

TCE 005612253-01 P=423.088607 Days  $T_0=157.359066$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

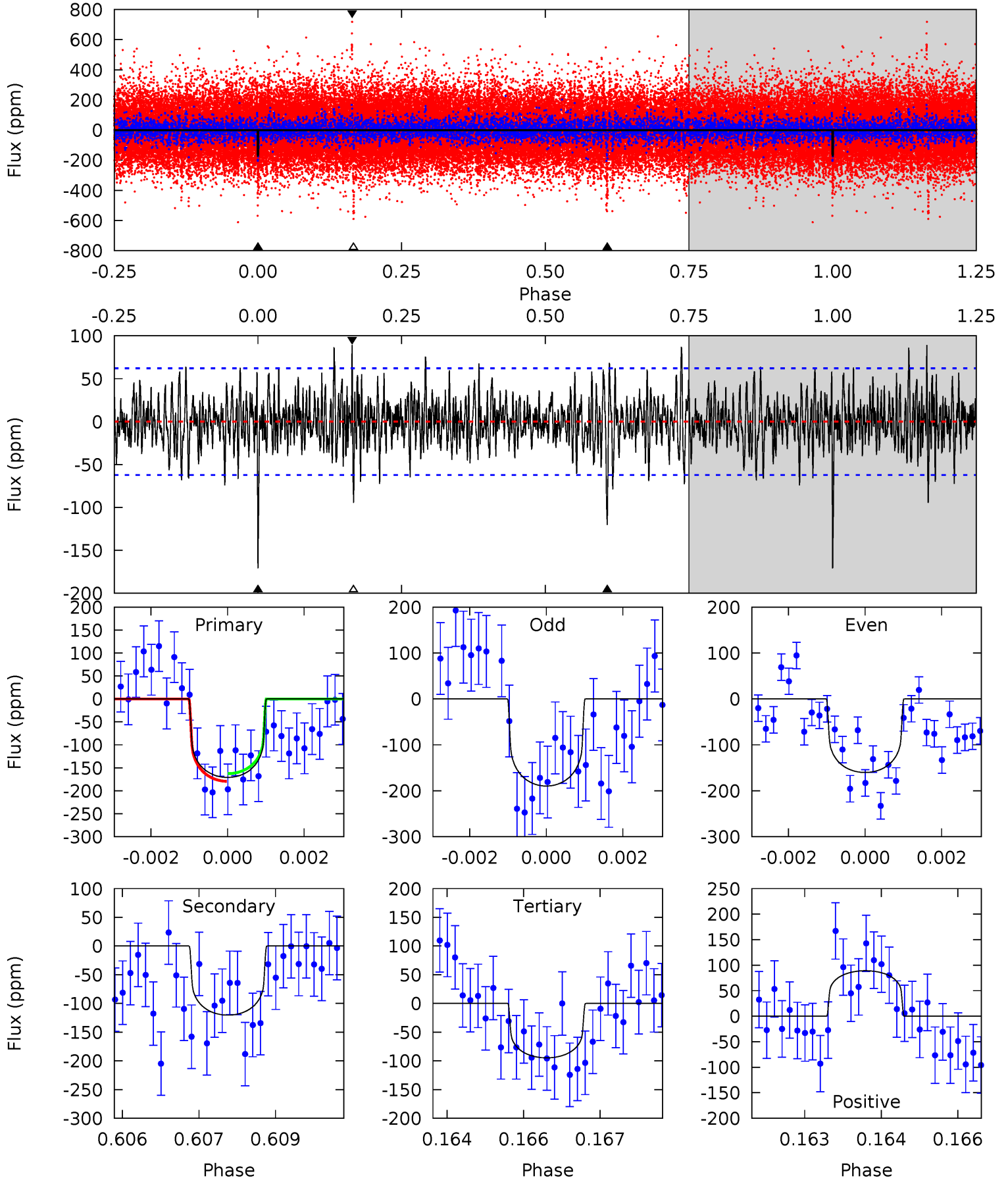
TCE 005612253-01 P=423.090482 Days  $T_0=157.358343$  (BKJD)



# DV Model-Shift Uniqueness Test

005612253-01, P = 423.088607 Days, E = 157.359066 Days

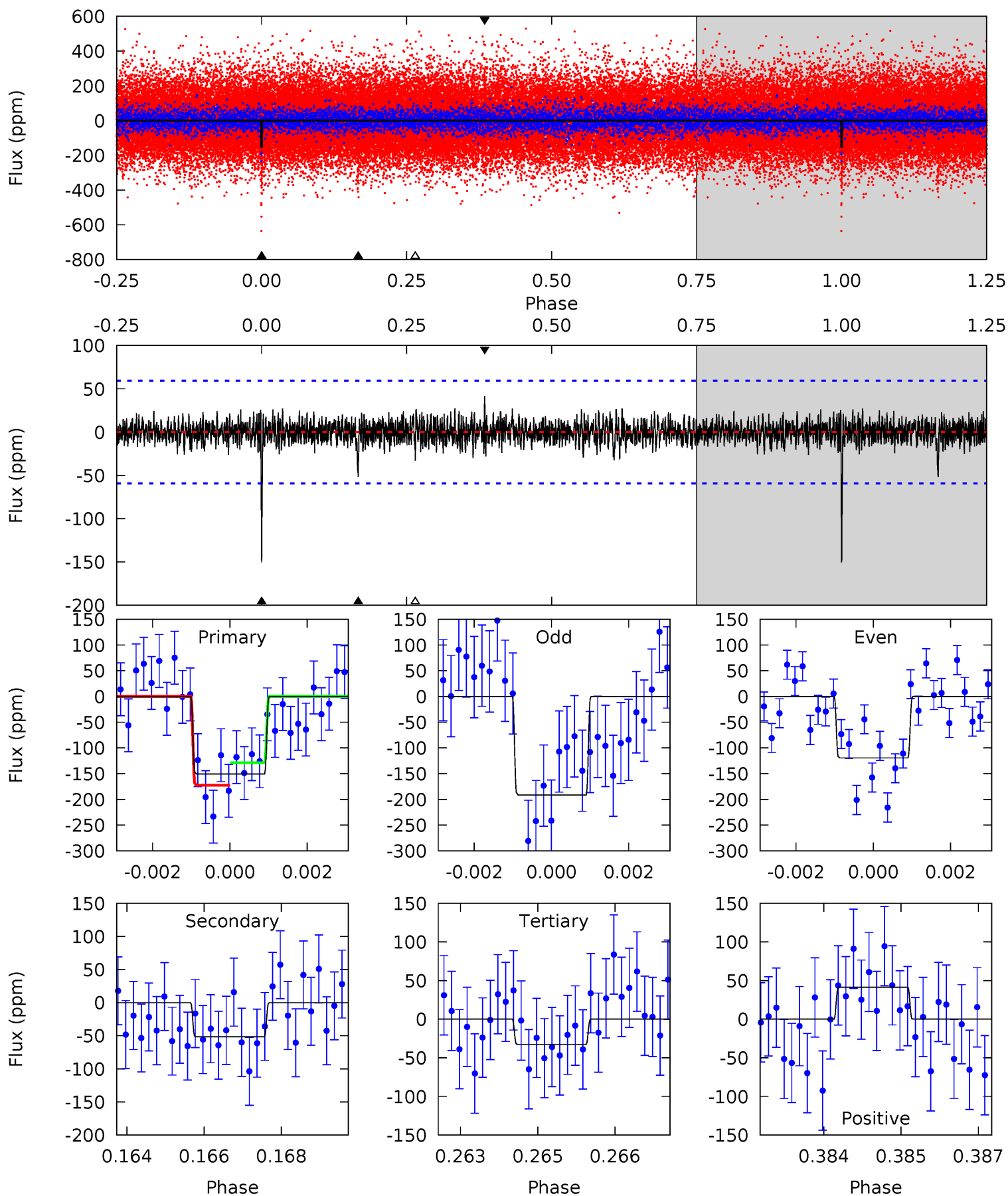
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.7	10.4	8.17	7.68	5.37	3.16	2.06	6.57	7.05	2.21	2.69	1.28	1.14	0.34	0.72



# Alt Model-Shift Uniqueness Test

005612253-01, P = 423.090482 Days, E = 157.358343 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
13.6	4.68	2.97	3.75	5.37	3.16	0.85	10.7	9.87	1.71	0.93	3.27	1.14	0.22	1.98



### Stellar Parameters For KIC 005612253

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5912^{+158}_{-176}$	$4.354^{+0.124}_{-0.186}$	$0.000^{+0.250}_{-0.300}$	$1.109^{+0.322}_{-0.198}$	$1.014^{+0.138}_{-0.110}$	$1.045^{+0.618}_{-0.527}$
	+3%/-3%	+3%/-4%	+inf%/-inf%	+29%/-18%	+14%/-11%	+59%/-50%
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 005612253-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-120 \pm 12$	$1.59^{+0.79}_{-0.73}$	$366^{+26}_{-19}$	$5437^{+2062}_{-769}$	$31638^{+79135}_{-17350}$
Alt.	$-52 \pm 11$	$1.59^{+0.78}_{-0.76}$	$367^{+27}_{-20}$	$4594^{+1452}_{-644}$	$13769^{+33672}_{-7855}$

$T_{max}$  = 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

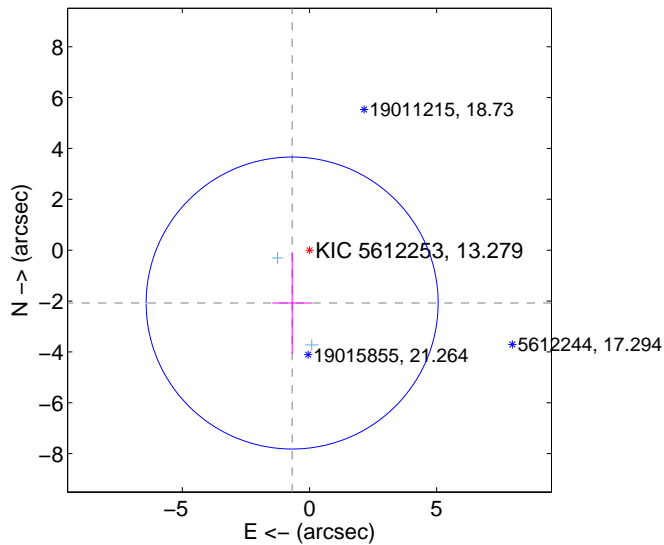
Supplemental centroid analysis for 005612253-01. Kepler magnitude: 13.28. Transit SNR 8.46

There are 2 quarters with good PRF difference image offsets

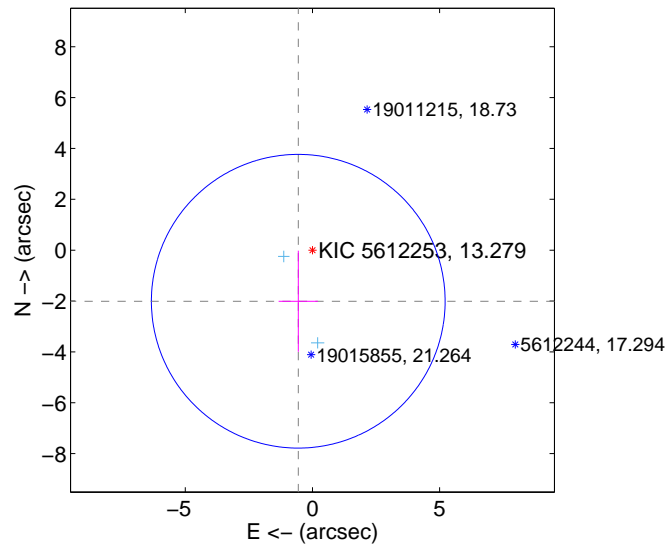
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.189 \pm 1.914$	1.14	$0.682 \pm 0.779$	$-2.079 \pm 1.998$
PRF-fit source offset from KIC position	$2.085 \pm 1.925$	1.08	$0.558 \pm 0.774$	$-2.009 \pm 1.987$
photometric centroid source offset	$2.25 \pm 1.39$	1.62	$1.46 \pm 1.49$	$1.72 \pm 1.31$

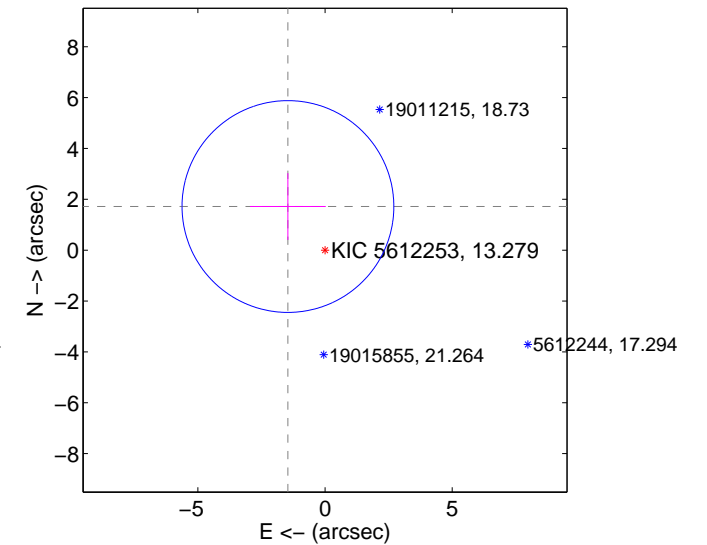
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

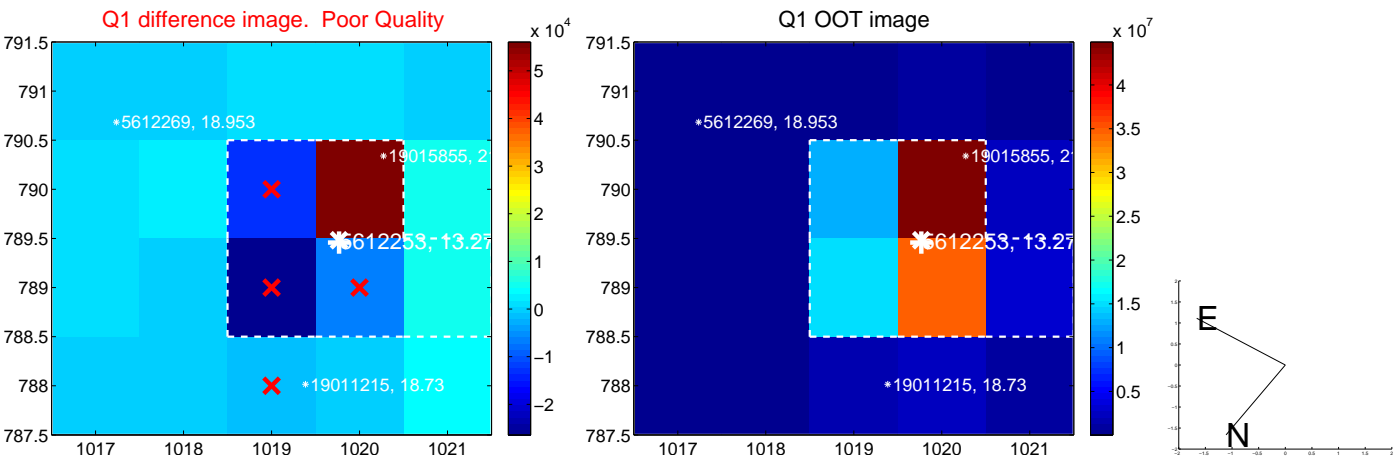


offset from photometric centroids



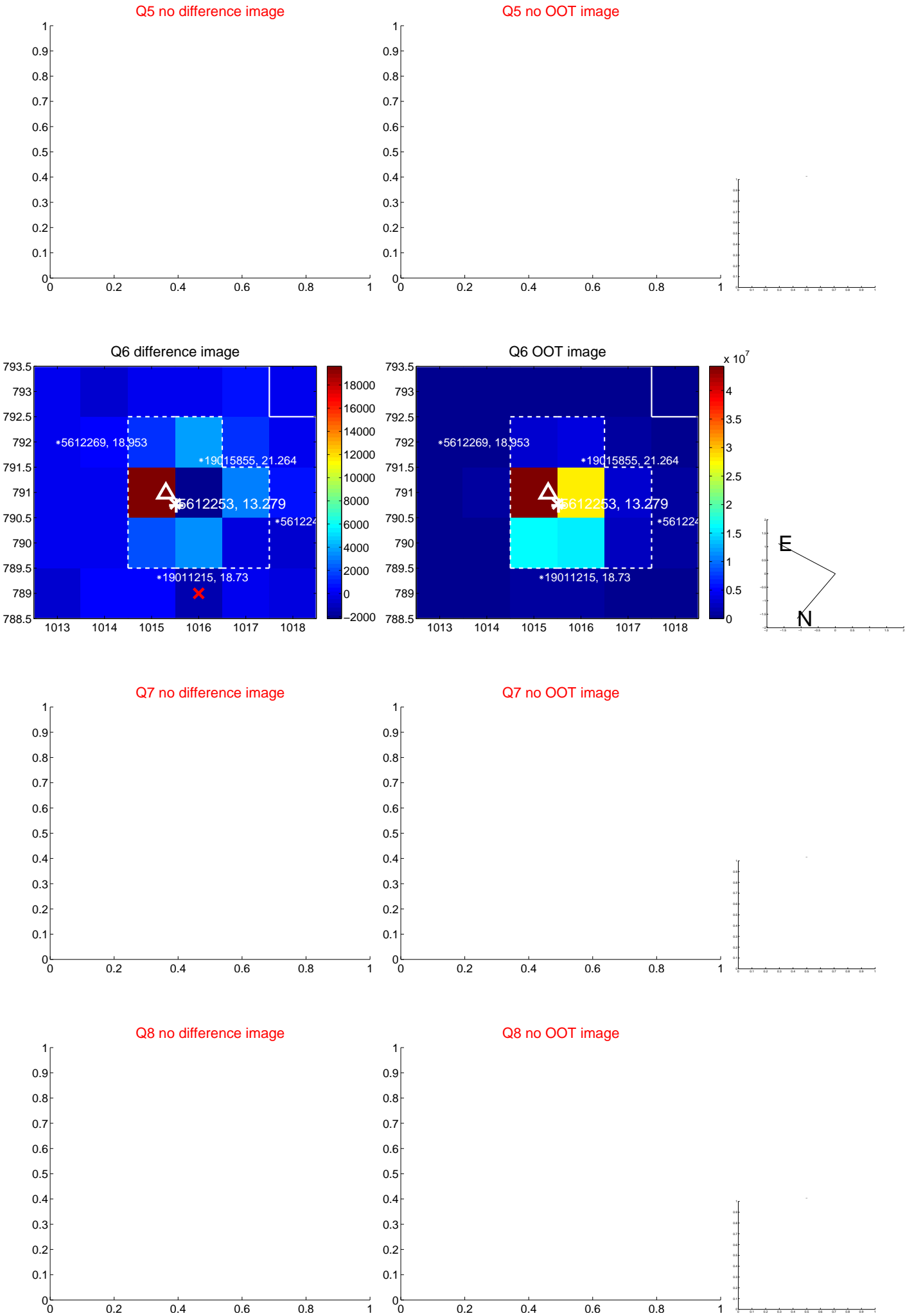
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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





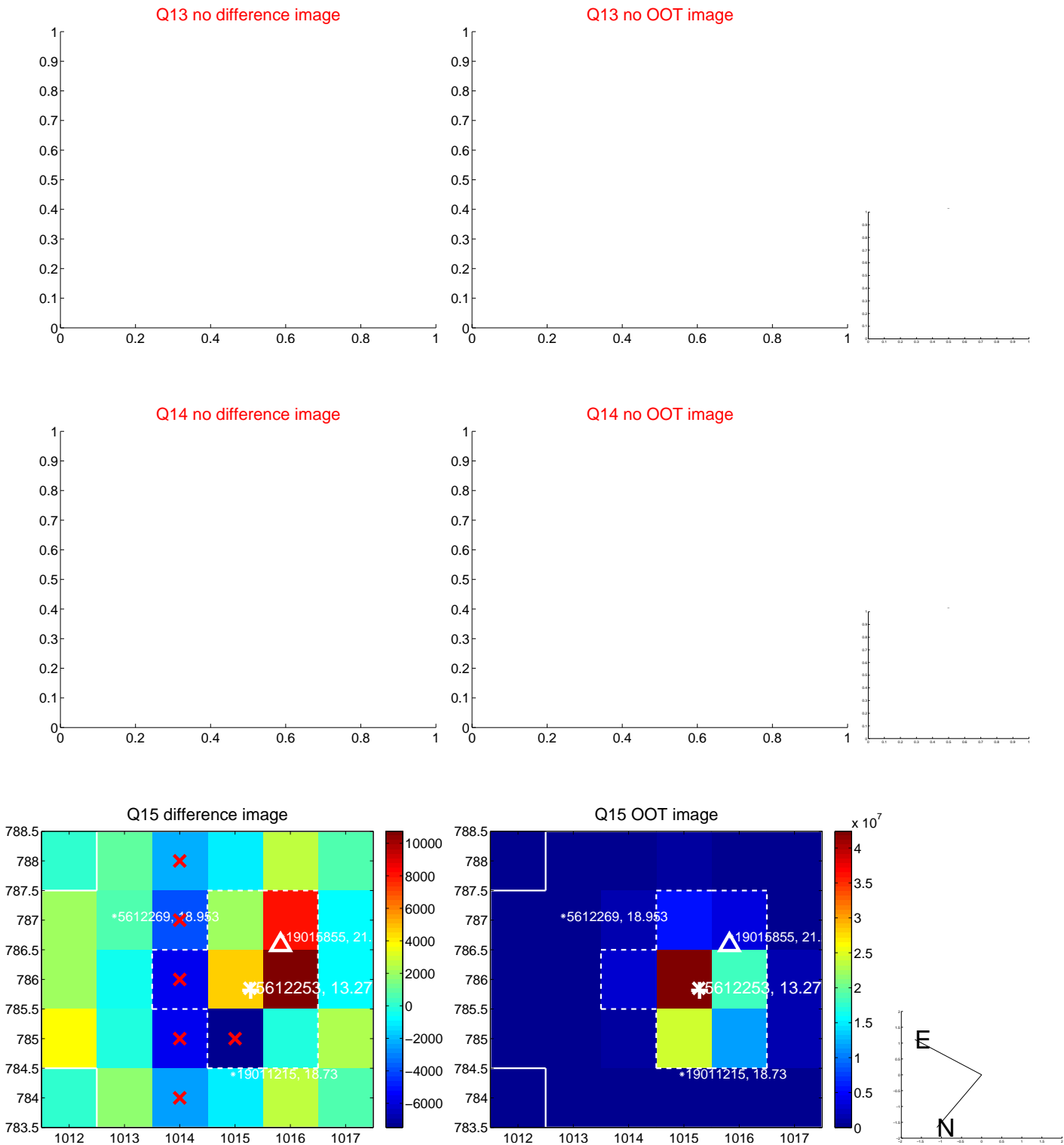
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



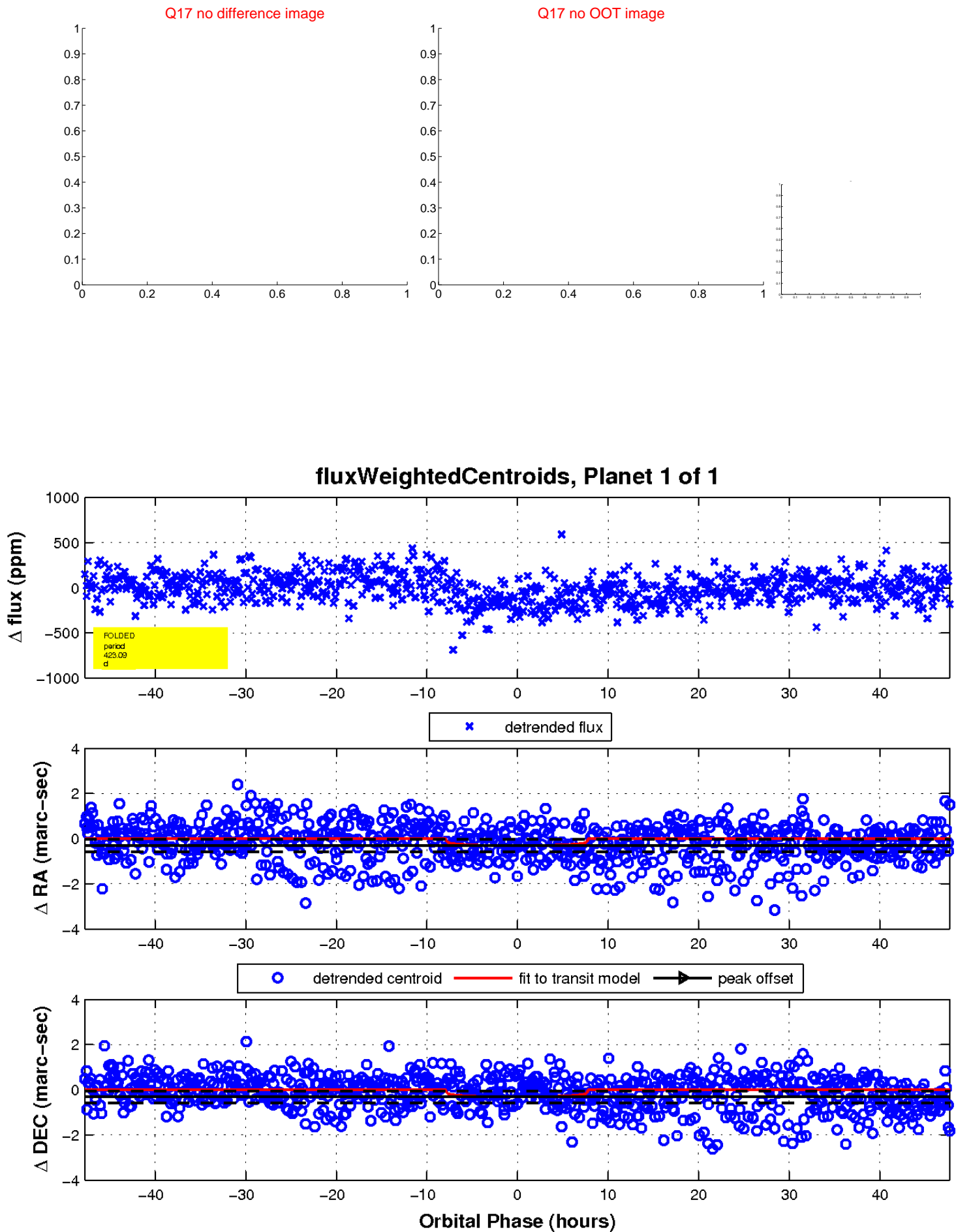
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

