

# KIC 004756798

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004756798-01	OBS	No	0.646676	131.529023	46.8	0.756	9.1	1.4	0.61	5058	0.51	1416.32

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004756798-01	OBS	FP	0.00	1	0	1	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST

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

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

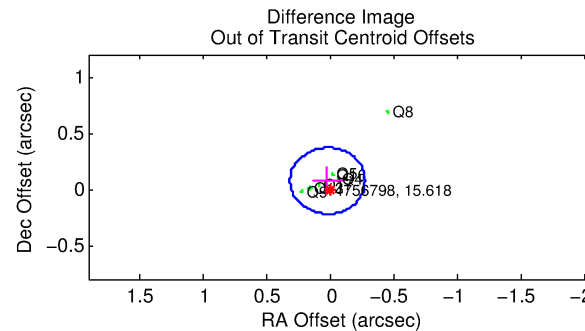
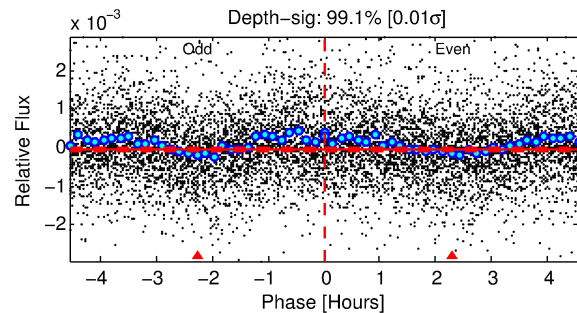
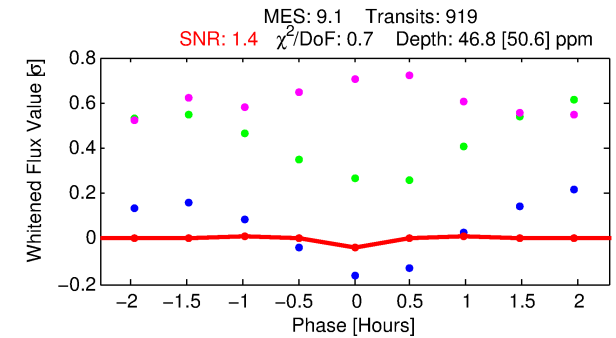
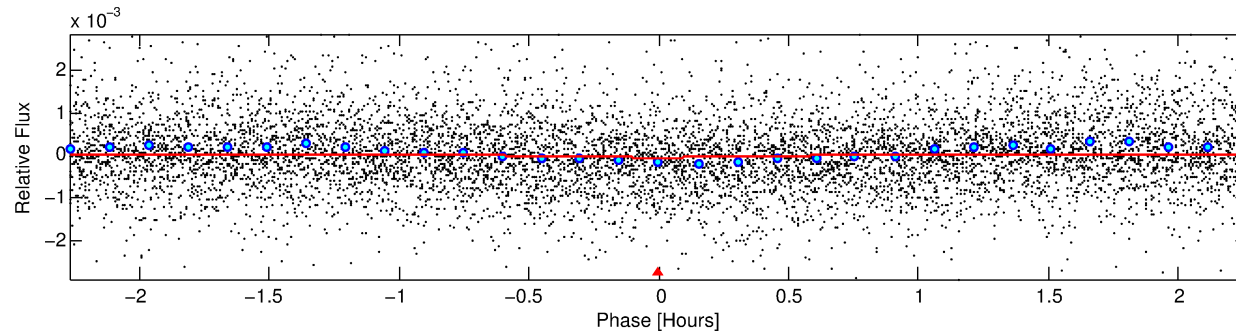
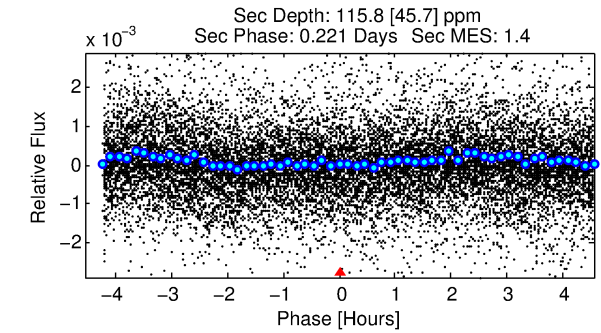
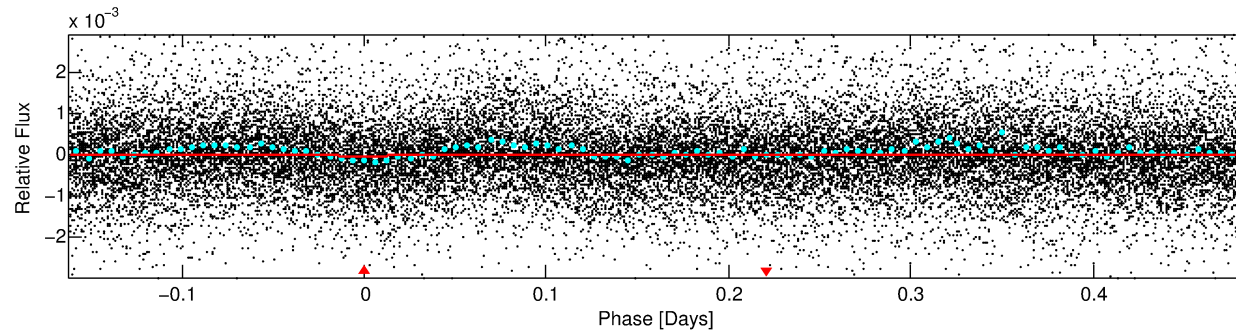
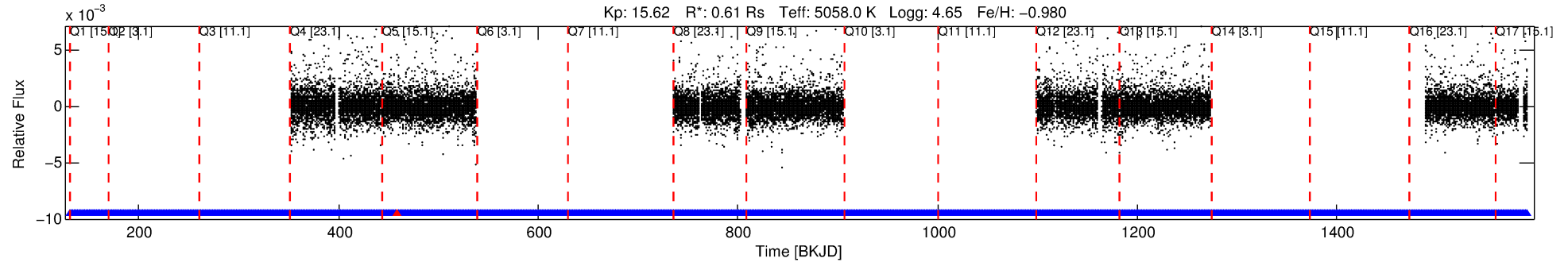
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 004756798-01

No Significant Match Found

# DV One-Page Summary

KIC: 4756798 Candidate: 1 of 1 Period: 0.647 d



## DV Fit Results:

Period = 0.64668 [0.00008] d  
Epoch = 131.5290 [0.0072] BKJD  
Rp/R\* = 0.0076 [0.0165]  
a/R\* = 3.11 [25.69]  
b = 0.90 [2.02]  
Seff = 1416.32 [251.88]  
Teq = 1564 [70] K  
Rp = 0.51 [1.10] Re  
a = 0.0124 [0.0009] AU  
Ag = 37.90 [164.52] [0.22σ]  
Teffp = 6001 [6514] K [0.68σ]

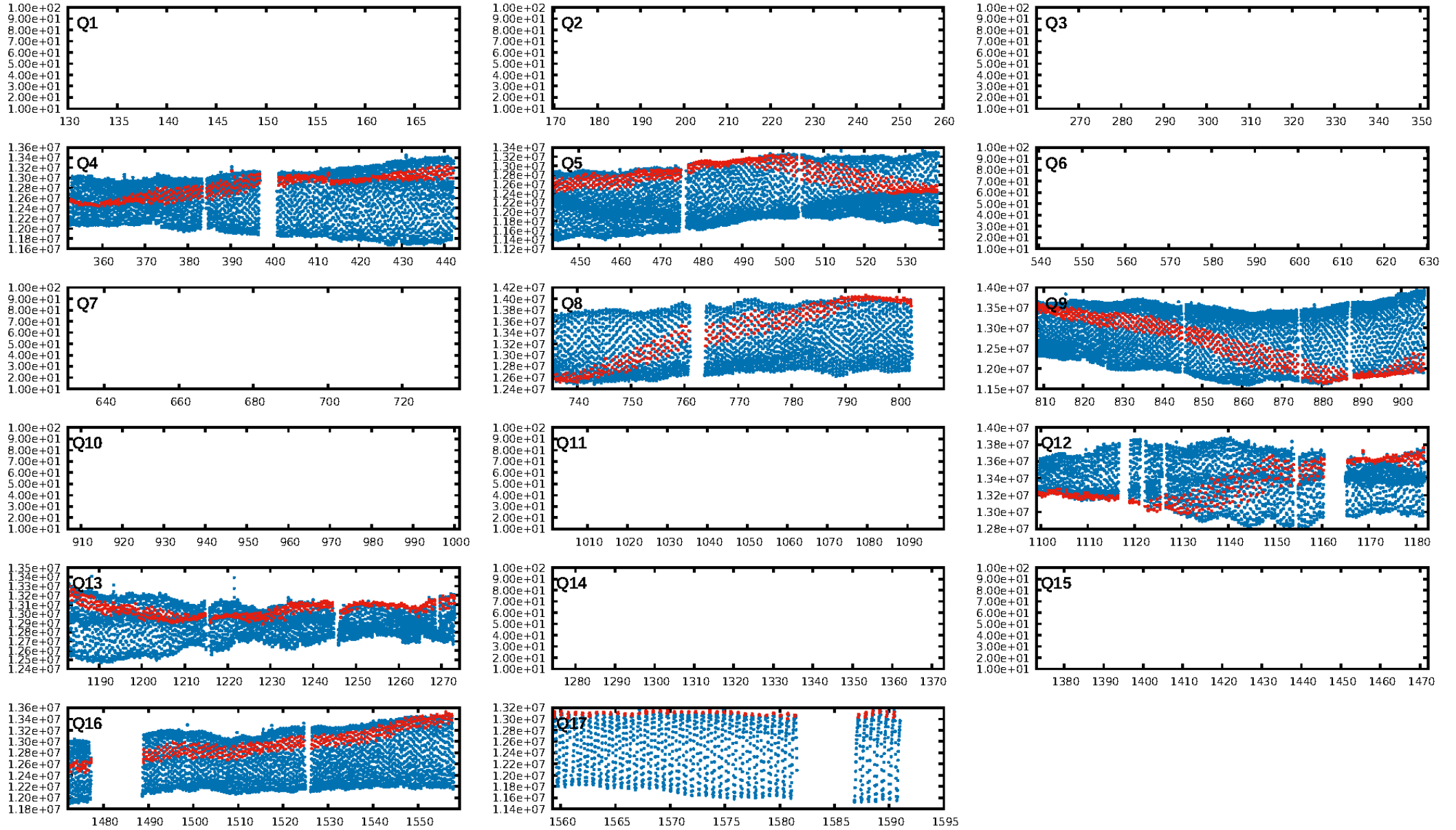
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 8.74e-19  
RollingBand-fgt: 1.00 [877/878]  
GhostDiagnostic-chr: 0.1338  
Centroid-sig: 0.0%  
Centroid-so: 16.818 arcsec [2.85σ]  
OotOffset-rm: 0.076 arcsec [0.77σ]  
KicOffset-rm: 0.201 arcsec [1.86σ]  
OotOffset-st: 0/0/3/4 [7]  
KicOffset-st: 0/0/3/4 [7]  
DiffImageQuality-fgm: 0.14 [1/7]  
DiffImageOverlap-fno: 1.00 [8/8]

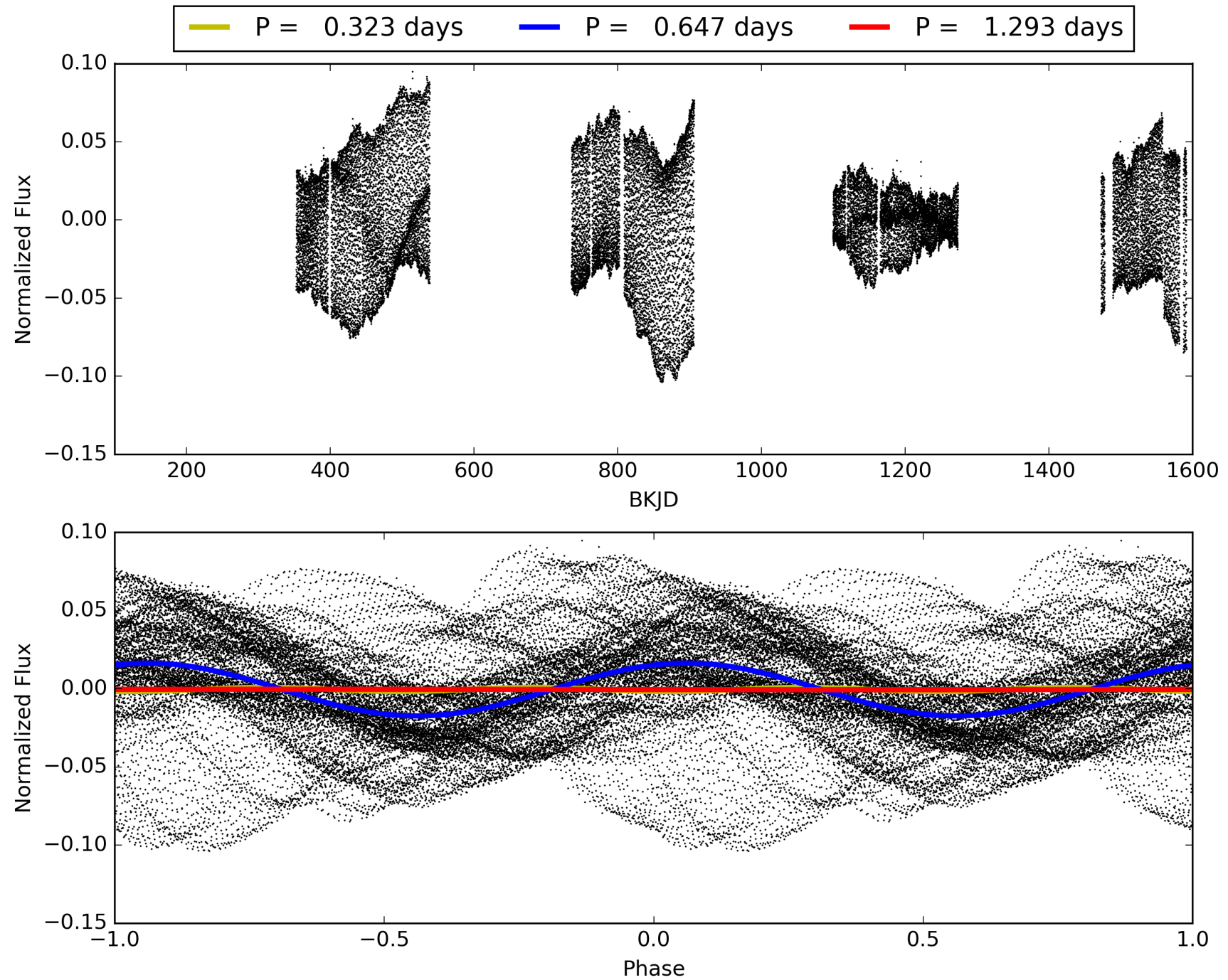
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:38:26 Z

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

# TCE 004756798-01, PDC Light Curves

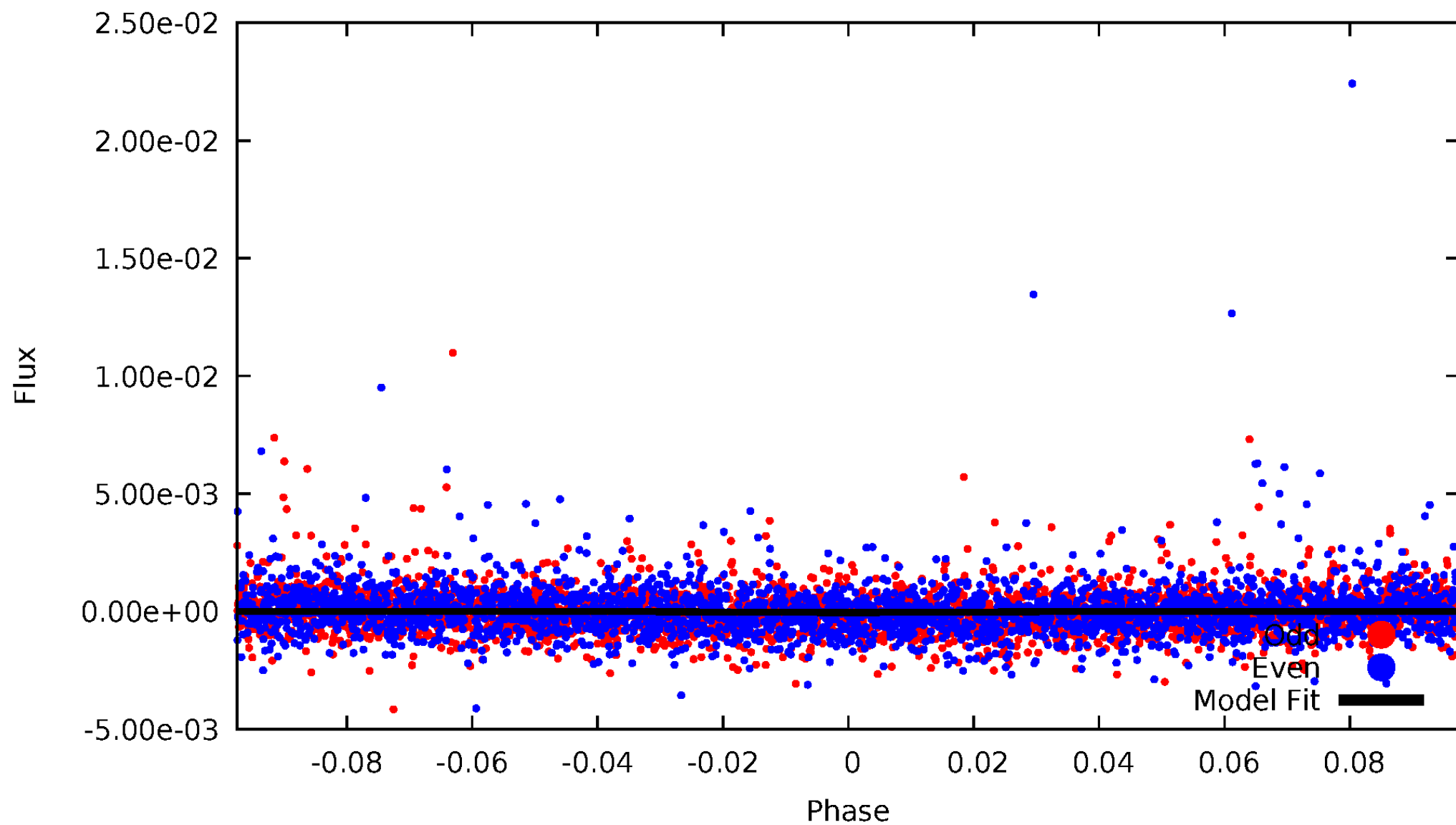


TCE 004756798-01



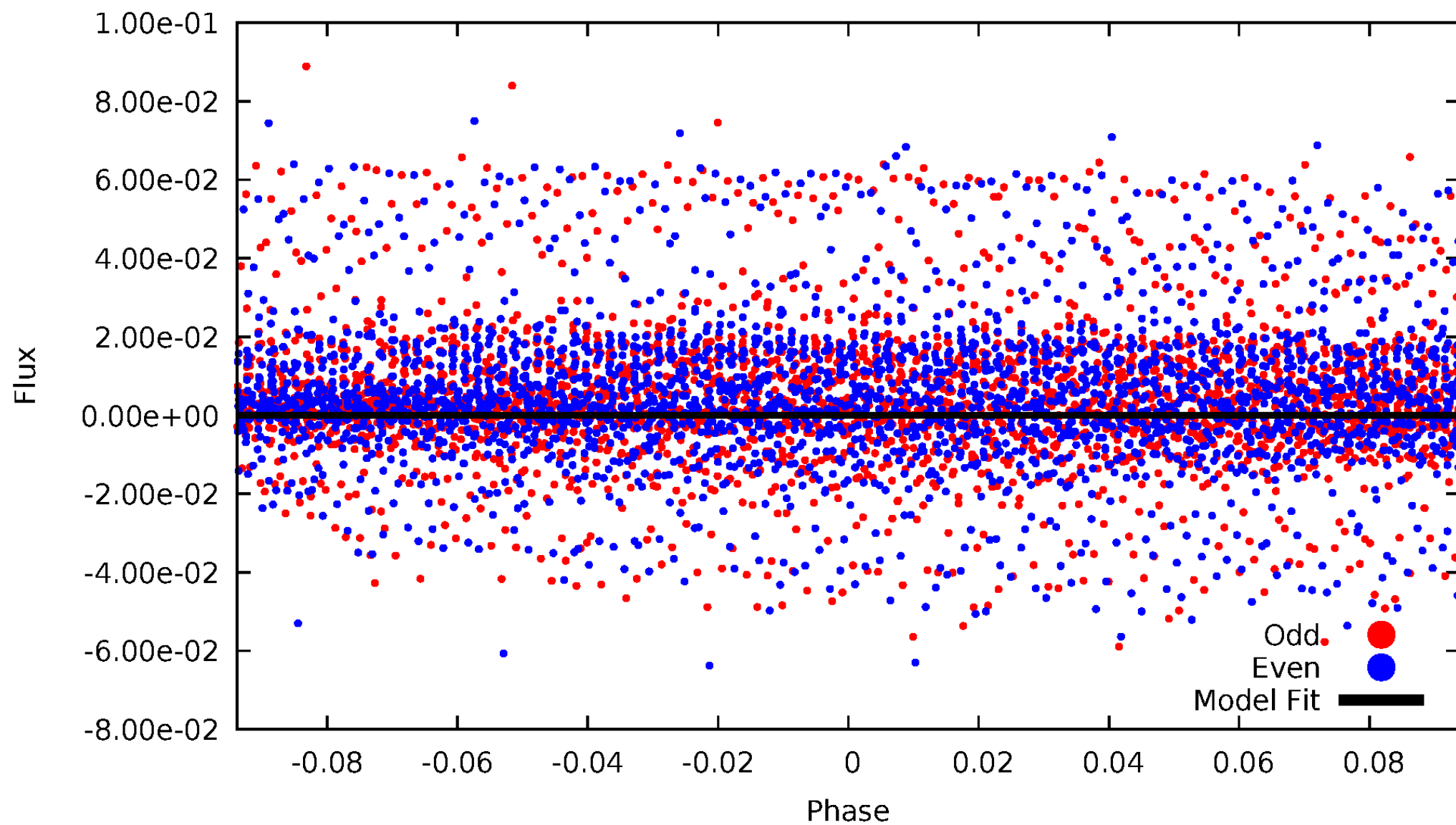
# DV Odd/Even

TCE 004756798-01



# ALT Odd/Even

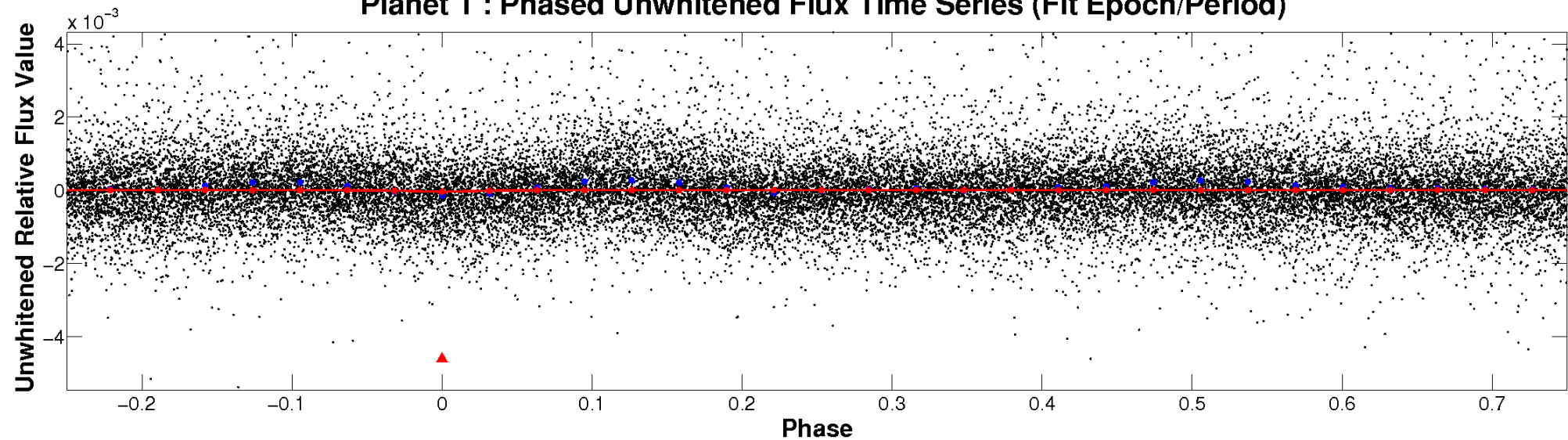
TCE 004756798-01



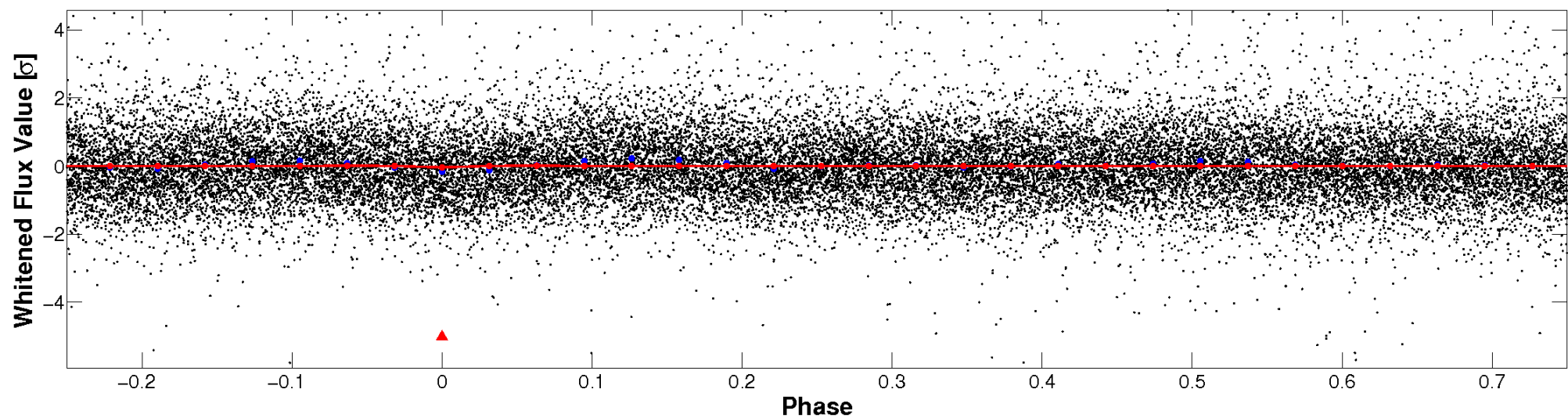


# Non-Whitened Vs. Whitened Light Curve

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

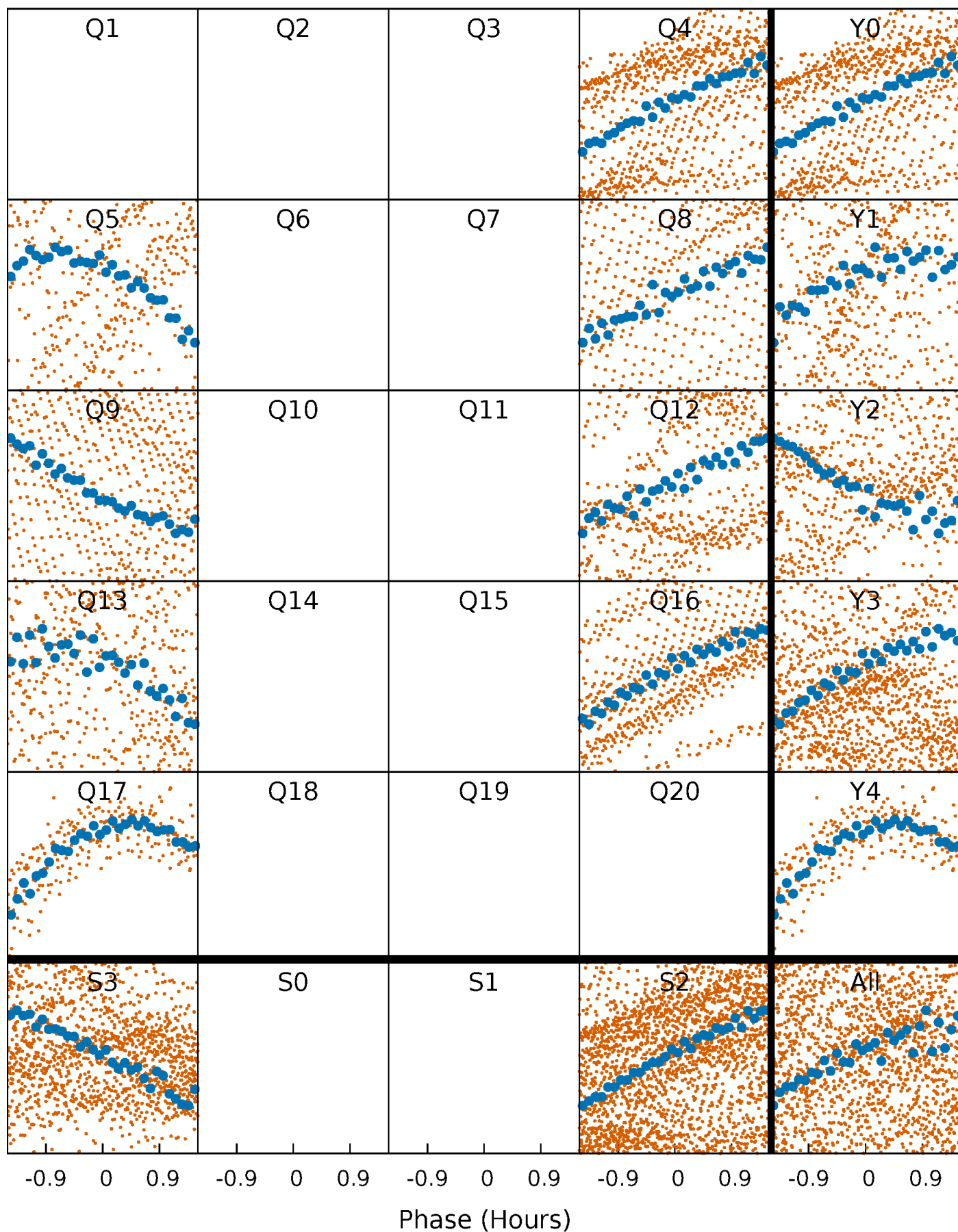


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

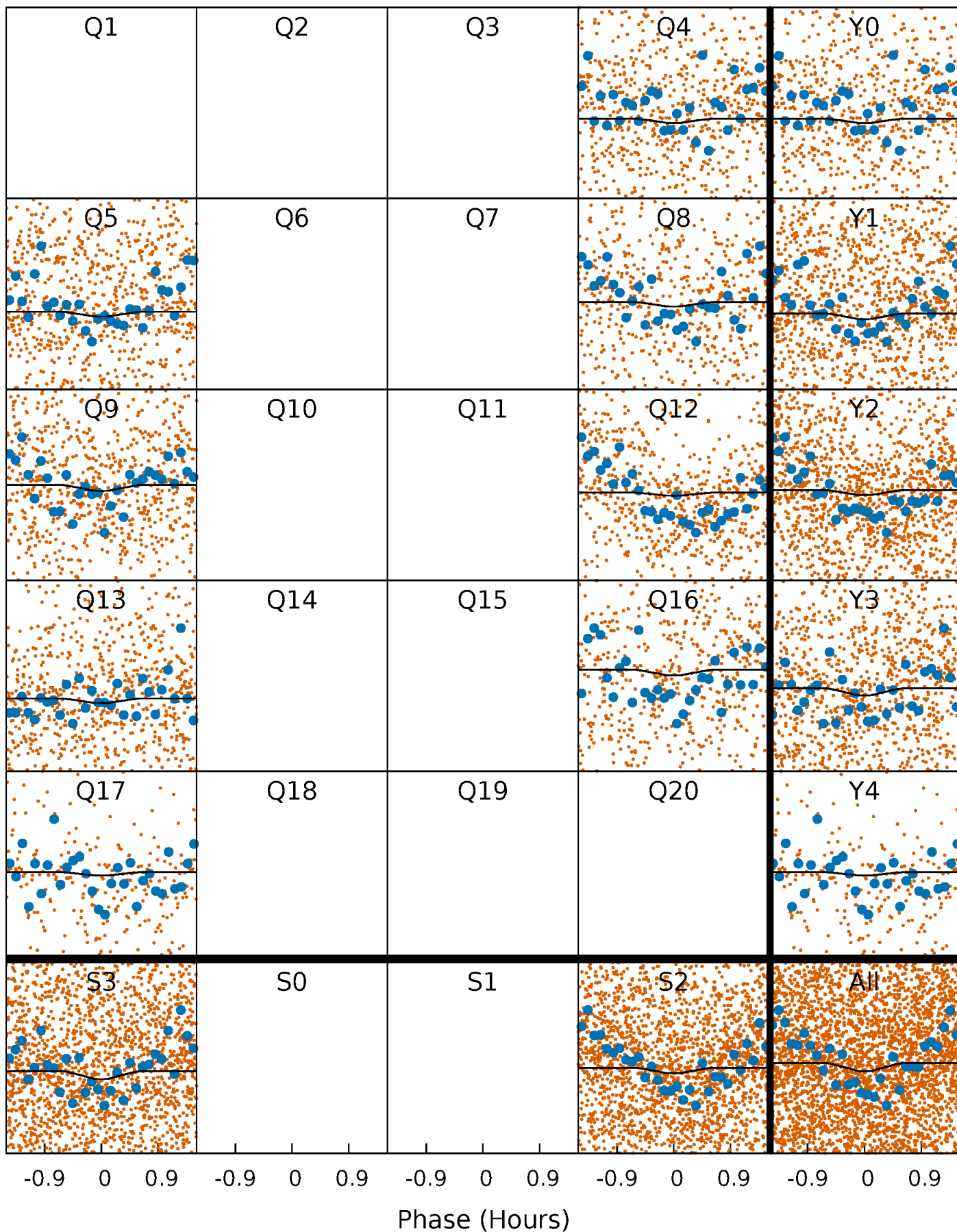
TCE 004756798-01     $P = 0.646676$  Days     $T_0 = 131.529023$  (BKJD)





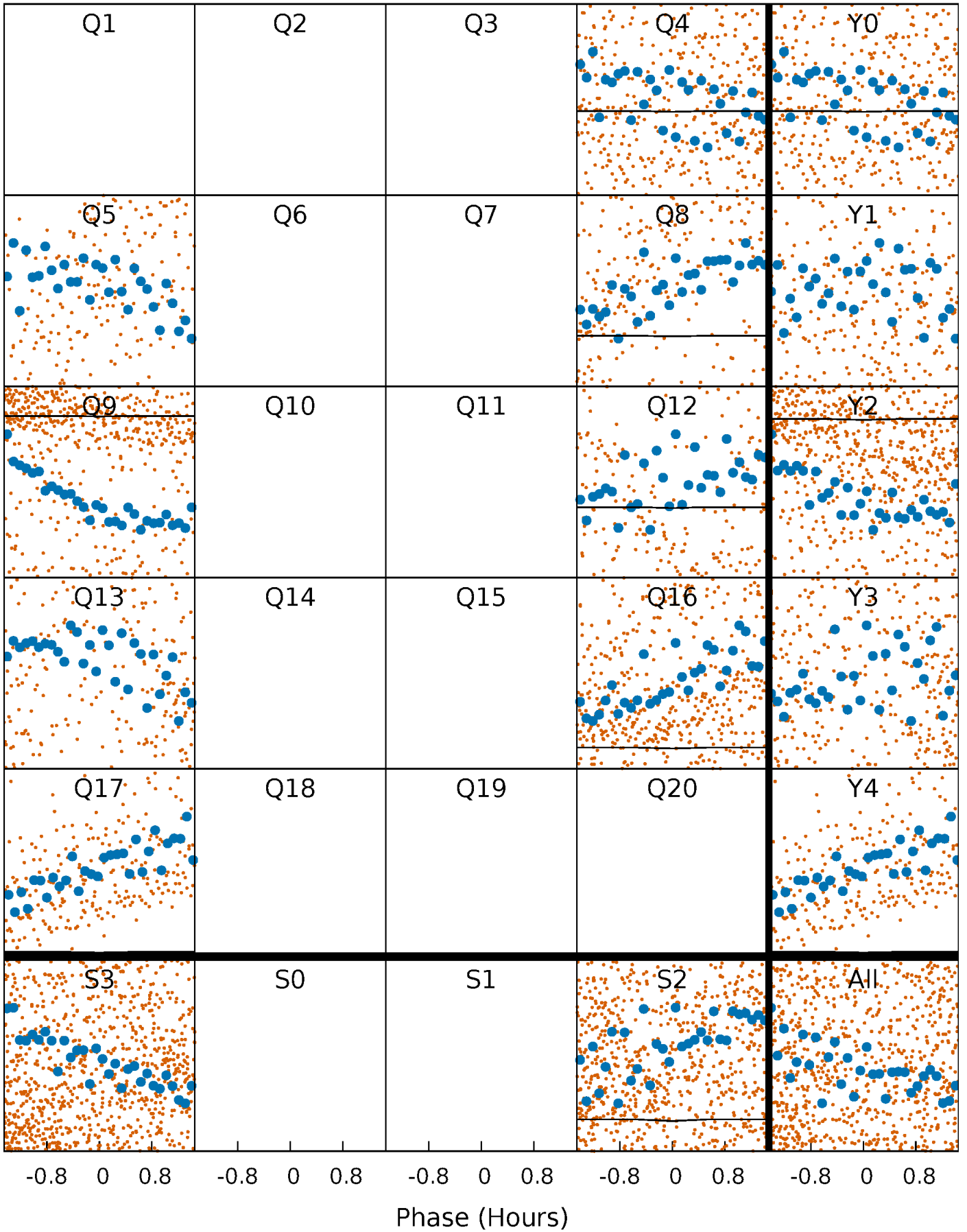
# DV Quarter-Phased Transit Curves

TCE 004756798-01   P= 0.646676 Days    $T_0=131.529023$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

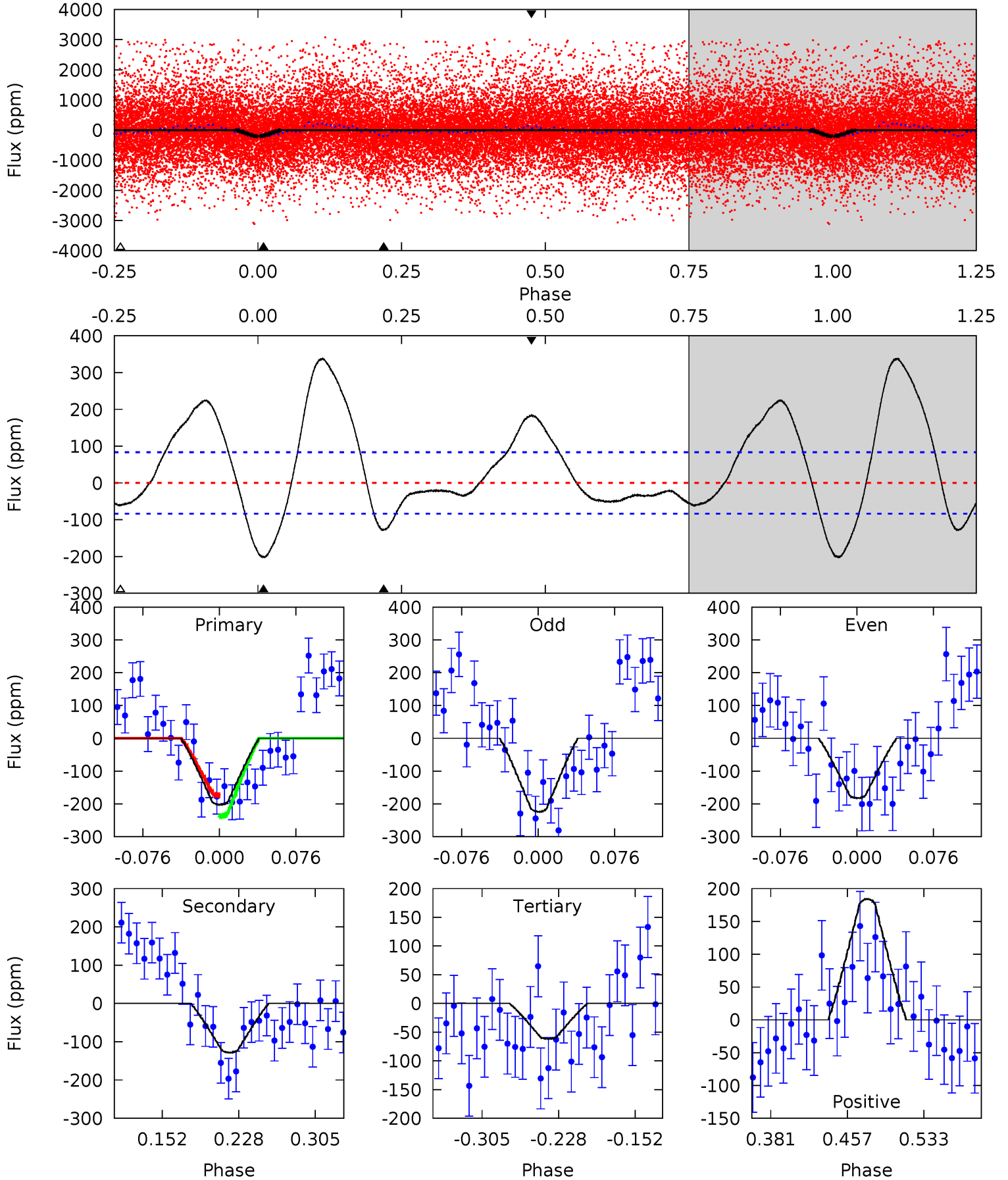
TCE 004756798-01 P= 0.646680 Days  $T_0=131.529021$  (BKJD)



# DV Model-Shift Uniqueness Test

004756798-01, P = 0.646676 Days, E = 131.529023 Days

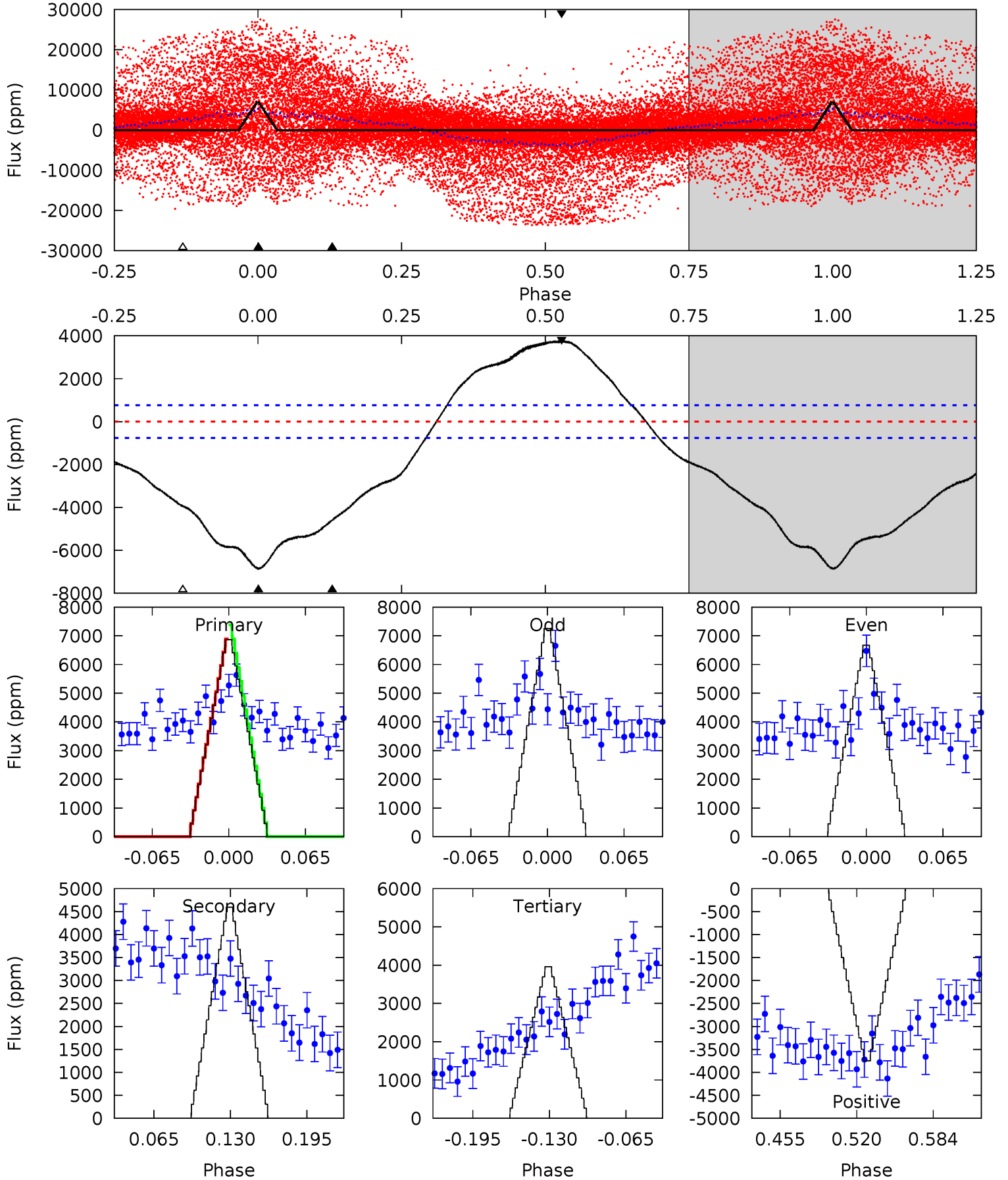
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	7.11	3.41	10.2	4.62	1.77	6.22	7.81	1.02	3.70	-3.09	1.16	0.99	0.63	1.78



# Alt Model-Shift Uniqueness Test

004756798-01, P = 0.646680 Days, E = 131.529021 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
41.8	28.0	24.1	22.8	4.65	1.85	16.7	17.7	19.0	3.88	5.16	1.79	1.39	0.35	0



### Stellar Parameters For KIC 004756798

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5058^{+181}_{-181}$	$4.651^{+0.060}_{-0.035}$	$-0.980^{+0.300}_{-0.300}$	$0.608^{+0.047}_{-0.047}$	$0.603^{+0.055}_{-0.026}$	$3.787^{+0.929}_{-0.574}$
	+4%/-4%	+1%/-1%	+31%/-31%	+8%/-8%	+9%/-4%	+25%/-15%
Source	KIC0	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 004756798-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-128 \pm 18$	$1.01^{+0.86}_{-0.68}$	$2177^{+96}_{-86}$	$4478^{+2882}_{-930}$	$11^{+87}_{-7}$
Alt.	$-4594 \pm 164$	$0.99^{+0.83}_{-0.65}$	$2178^{+80}_{-85}$	$12632^{+30667}_{-4620}$	$400^{+2992}_{-283}$

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



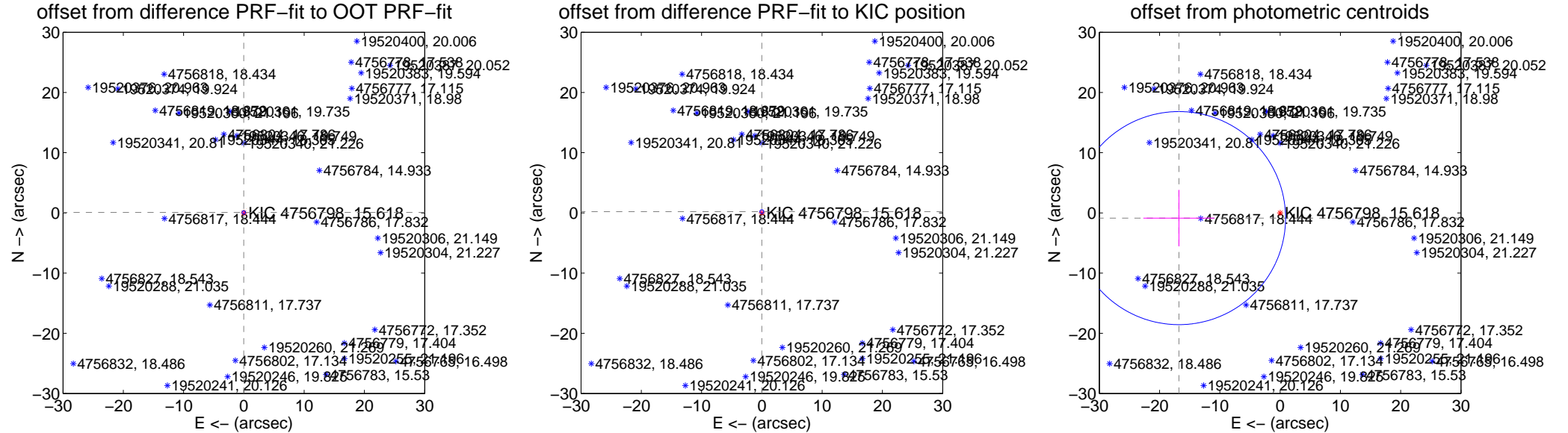
## DV Centroid Data

Supplemental centroid analysis for 004756798-01. Kepler magnitude: 15.62. Transit SNR 1.43

There are 1 quarters with good PRF difference image offsets

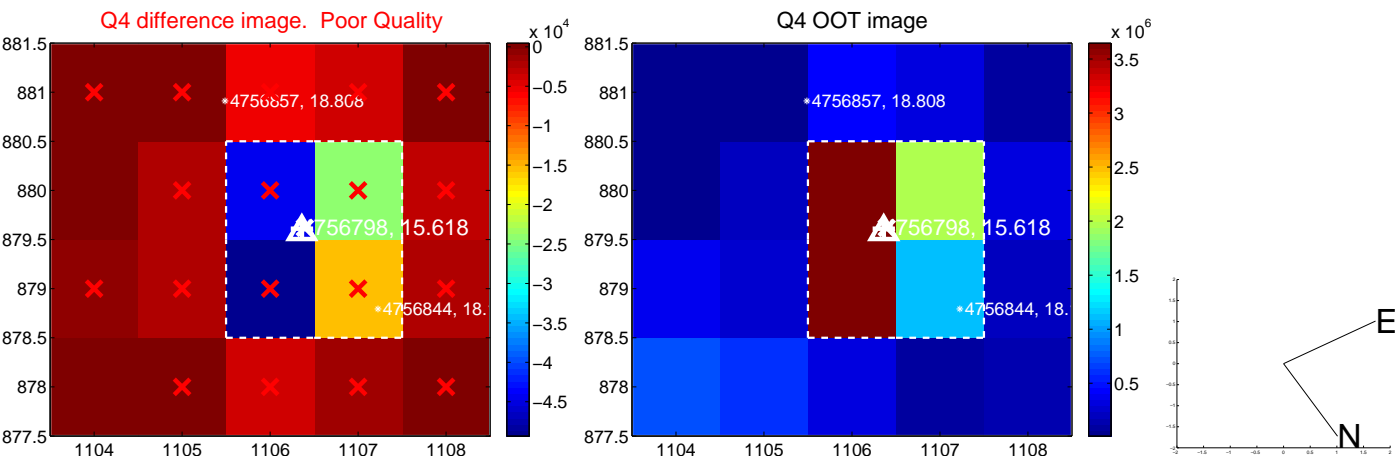
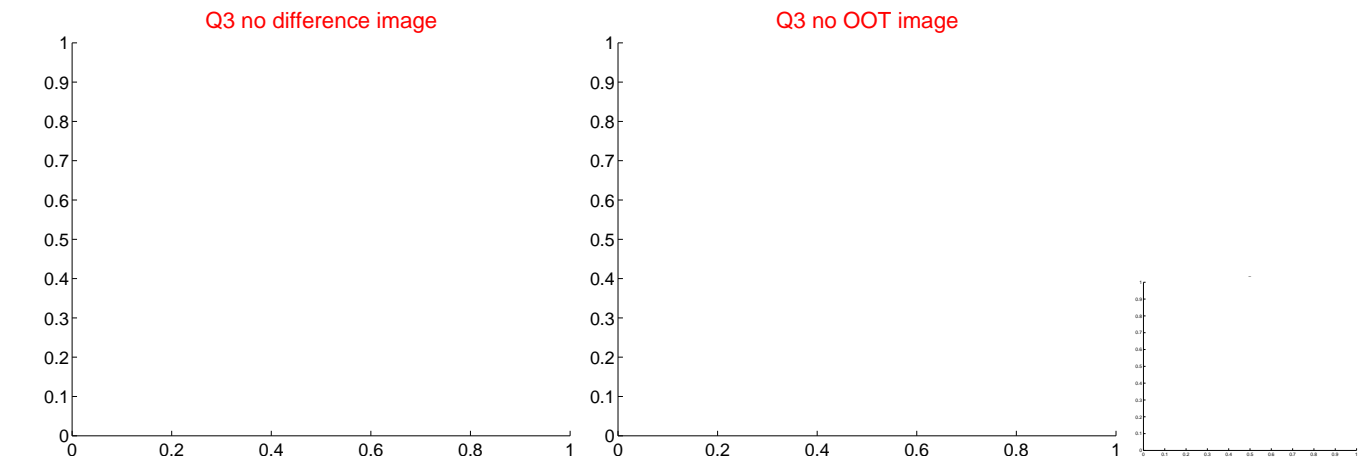
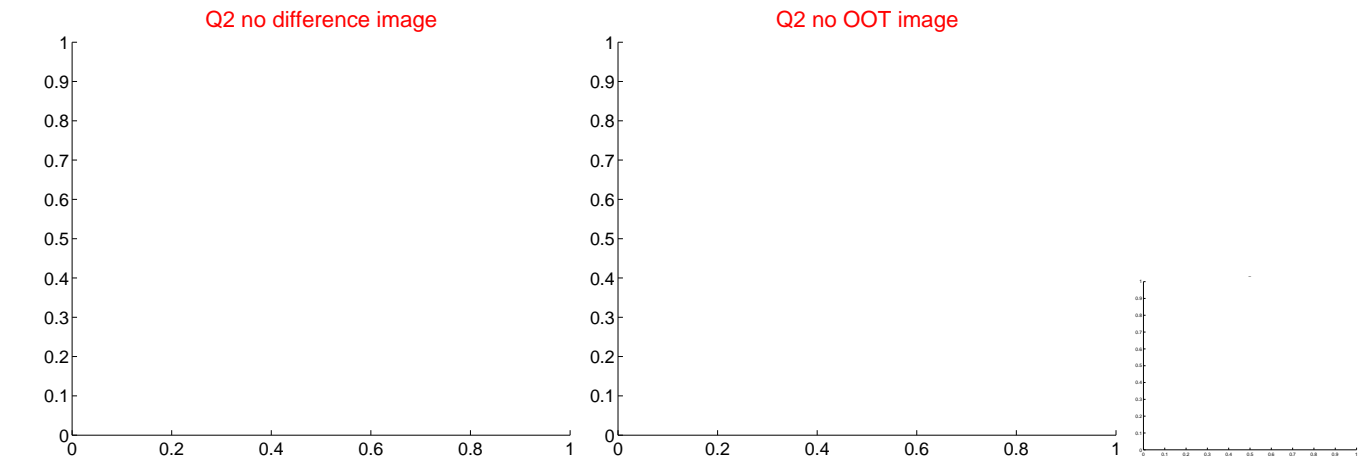
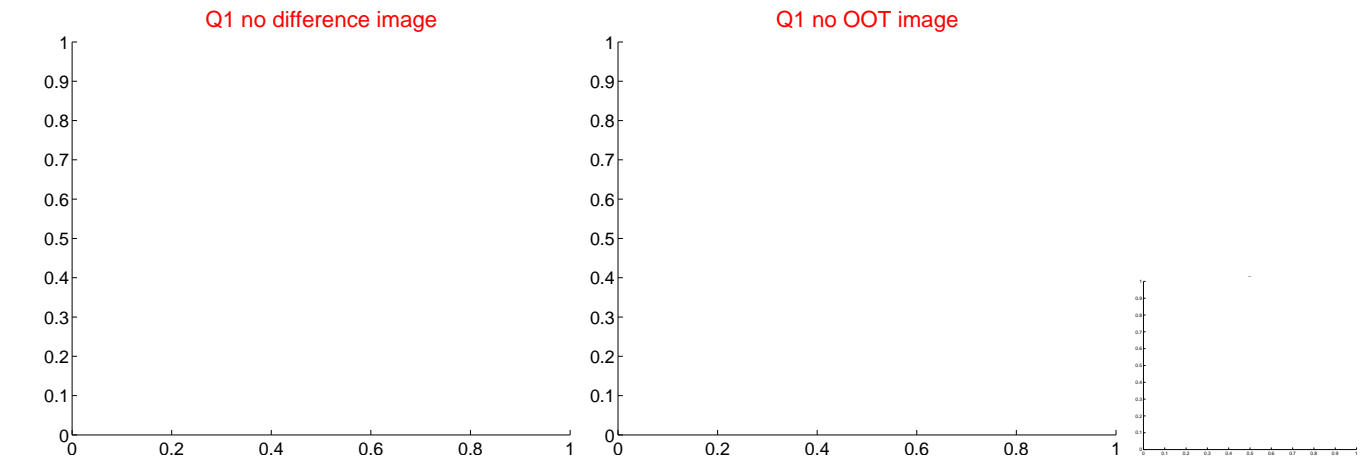
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.076 \pm 0.098$	0.77	$0.018 \pm 0.111$	$0.074 \pm 0.116$
PRF-fit source offset from KIC position	$0.201 \pm 0.108$	1.86	$0.004 \pm 0.106$	$0.201 \pm 0.109$
photometric centroid source offset	$16.82 \pm 5.90$	2.85	$16.80 \pm 5.90$	$-0.87 \pm 4.69$

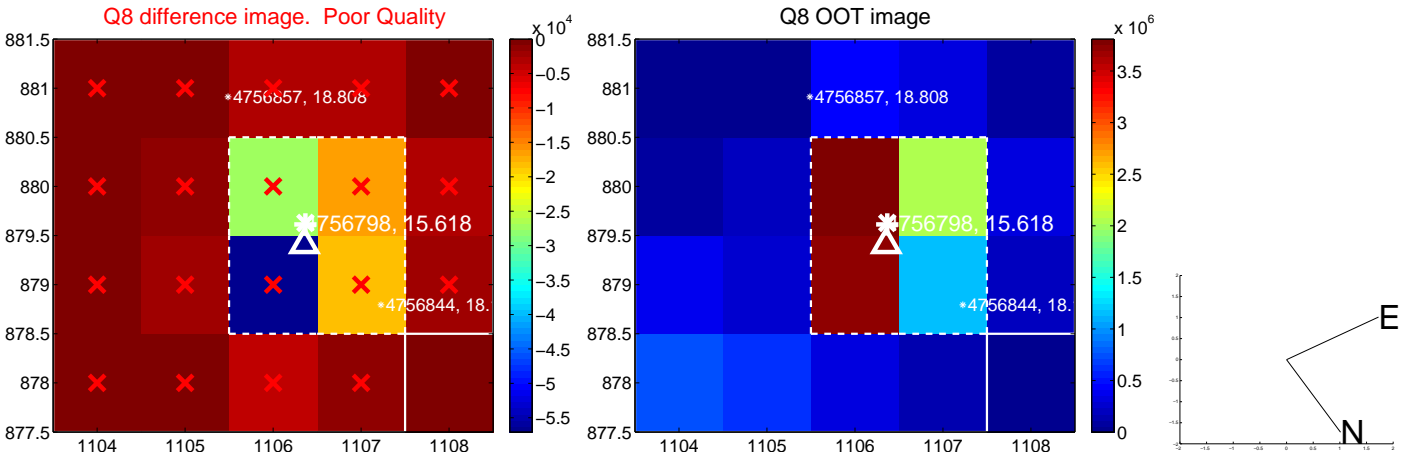
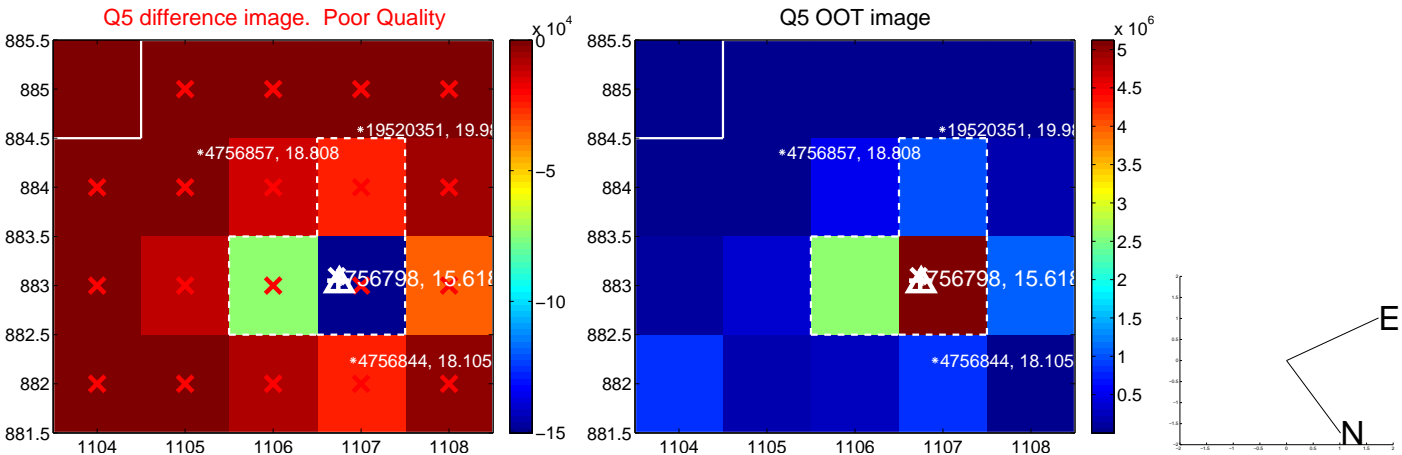


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

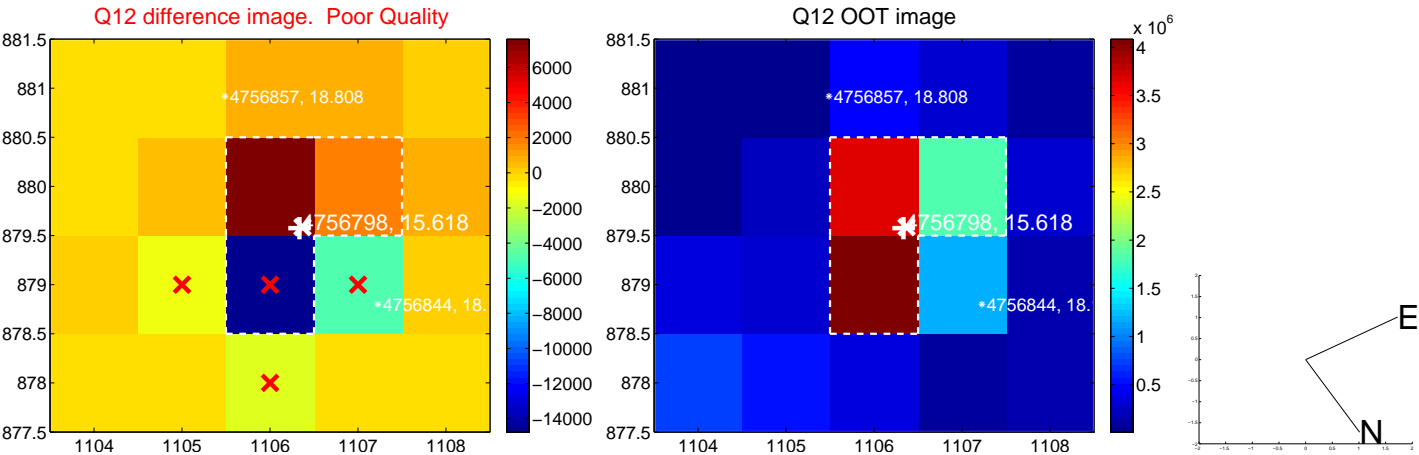
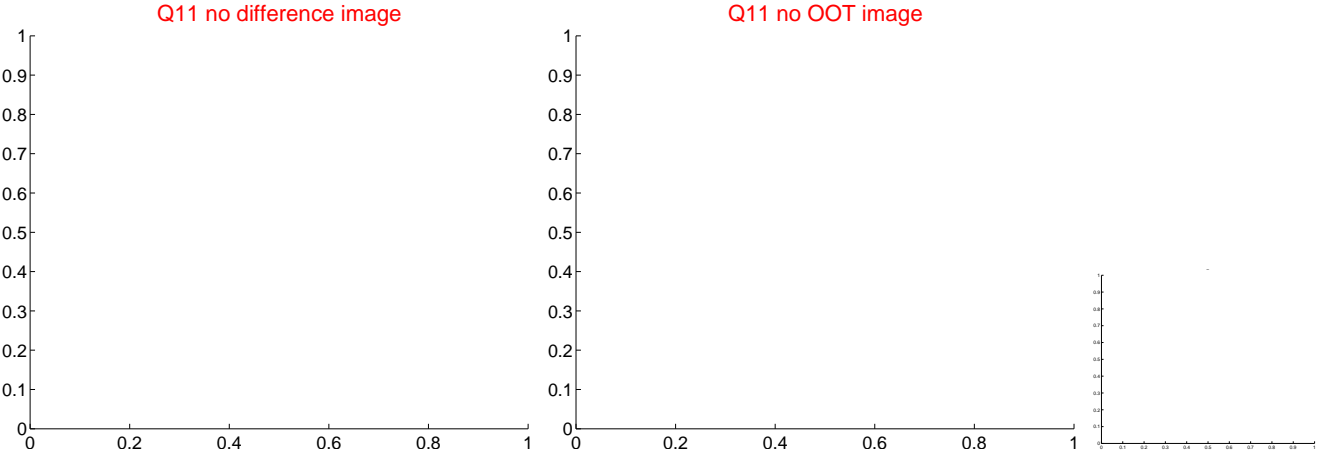
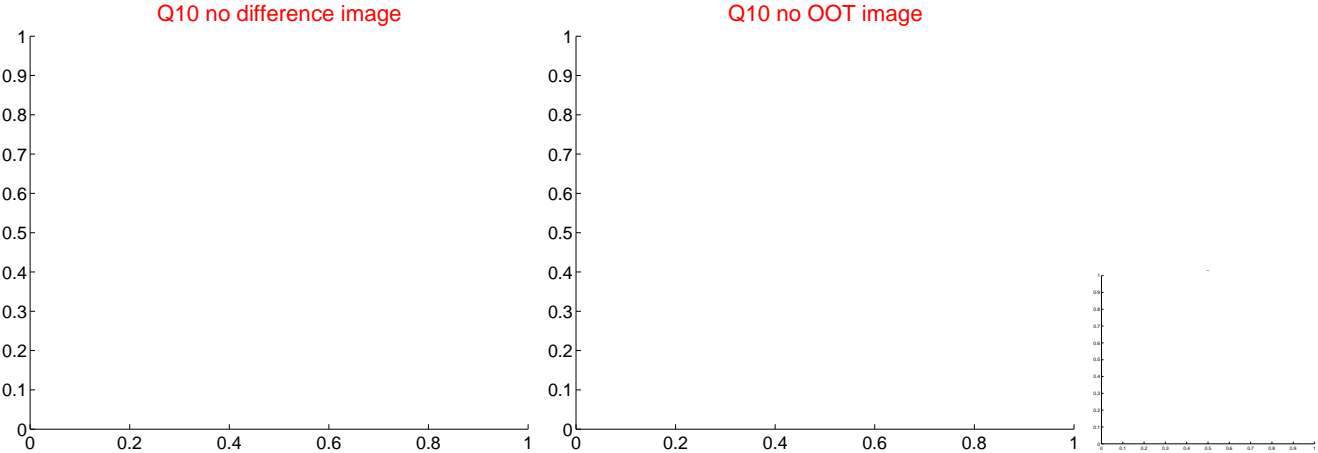
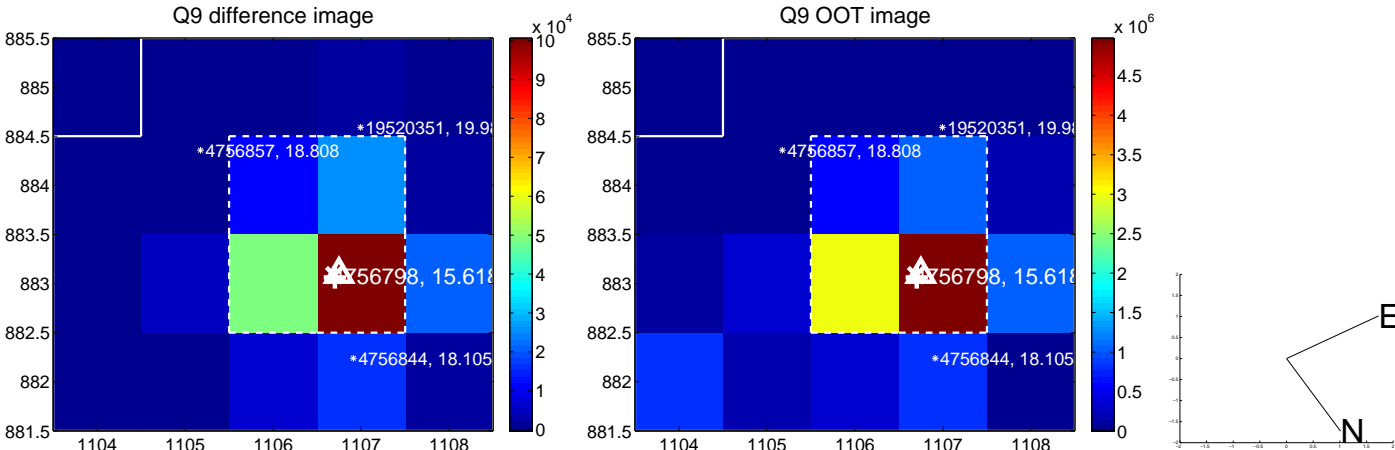
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



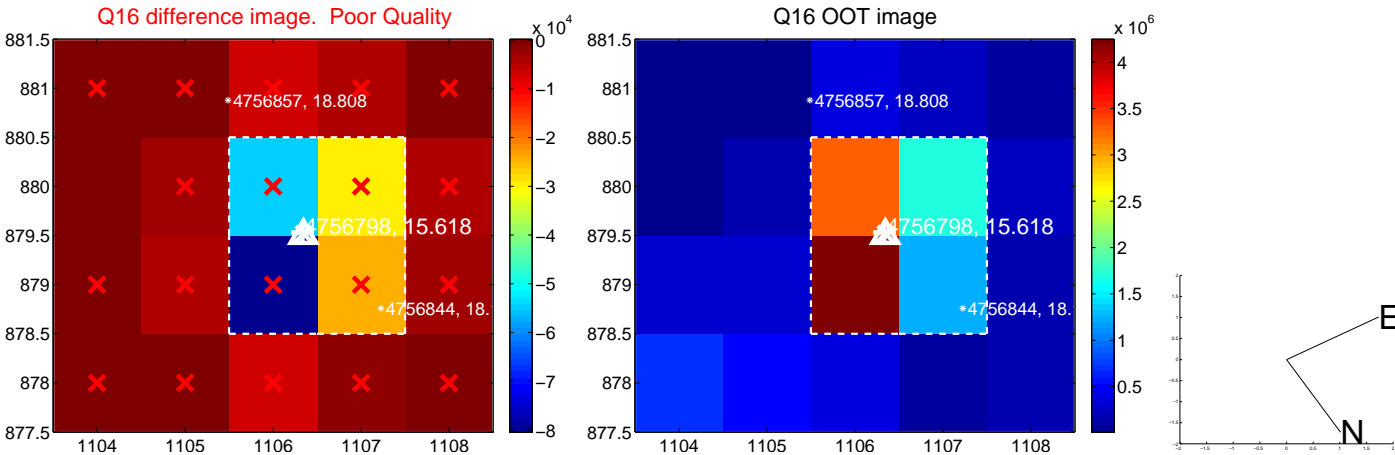
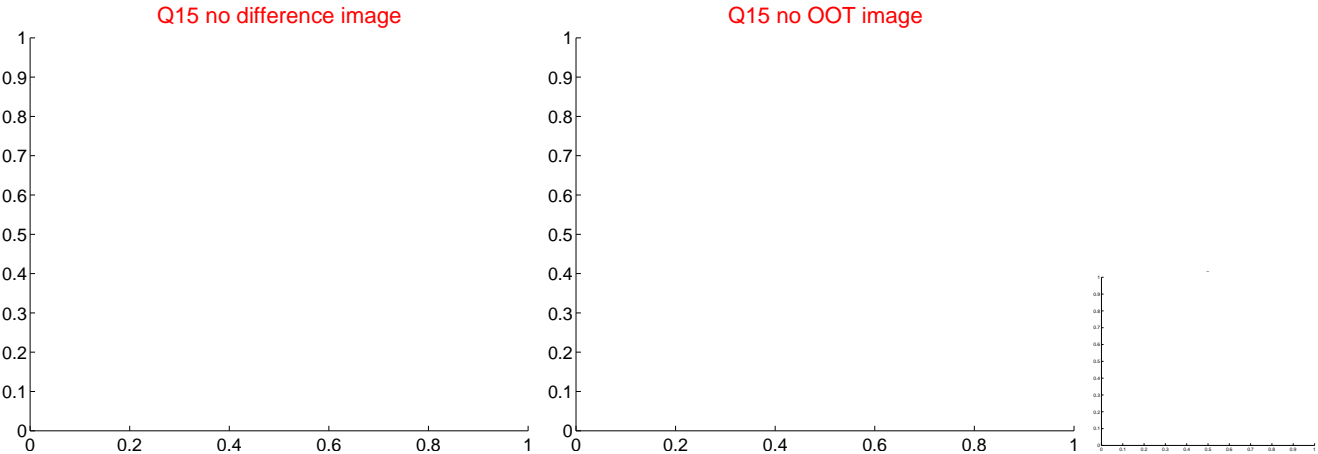
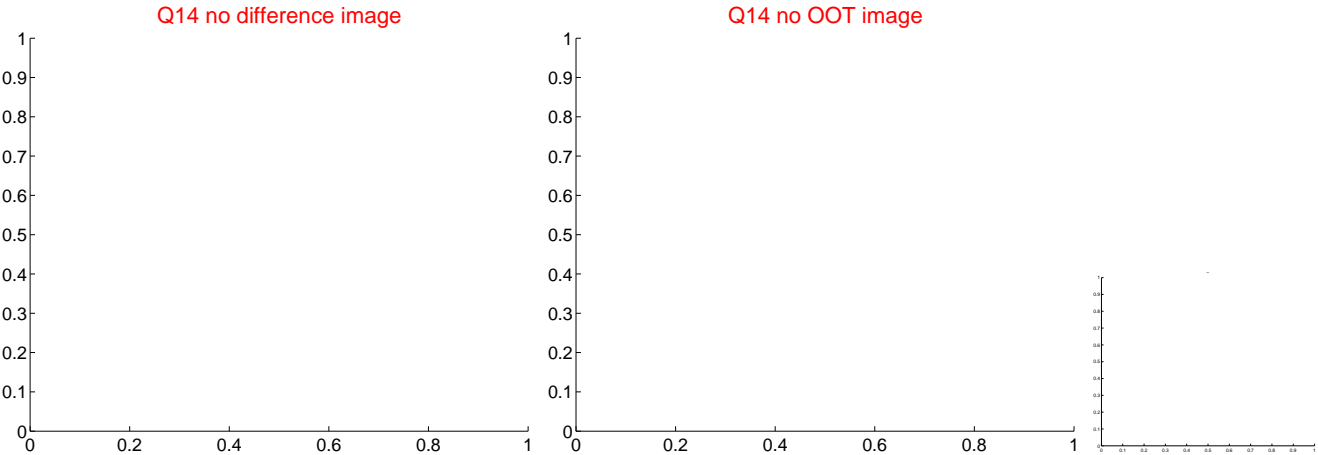
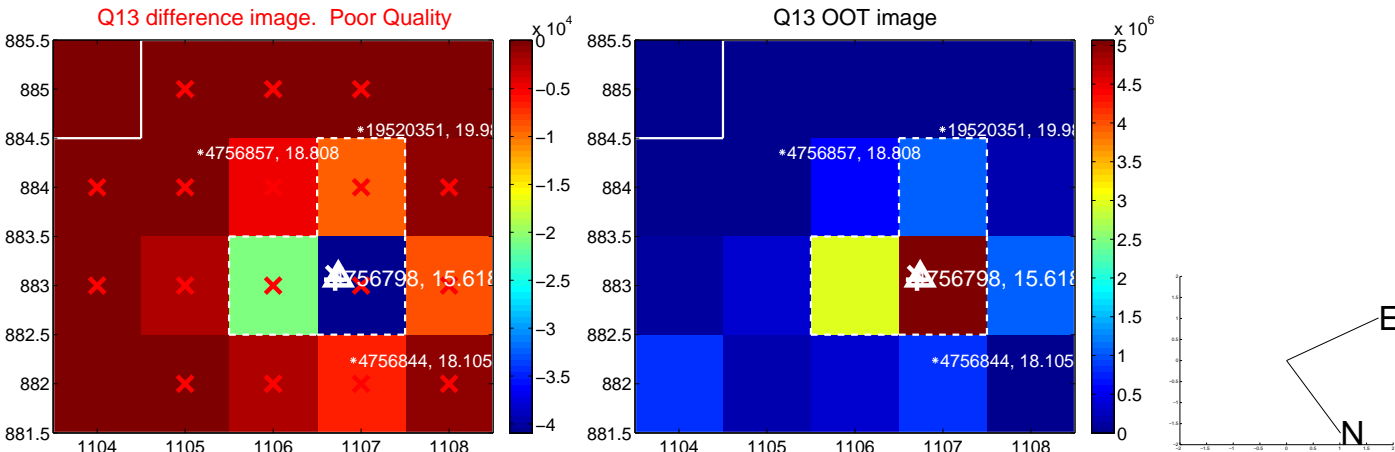
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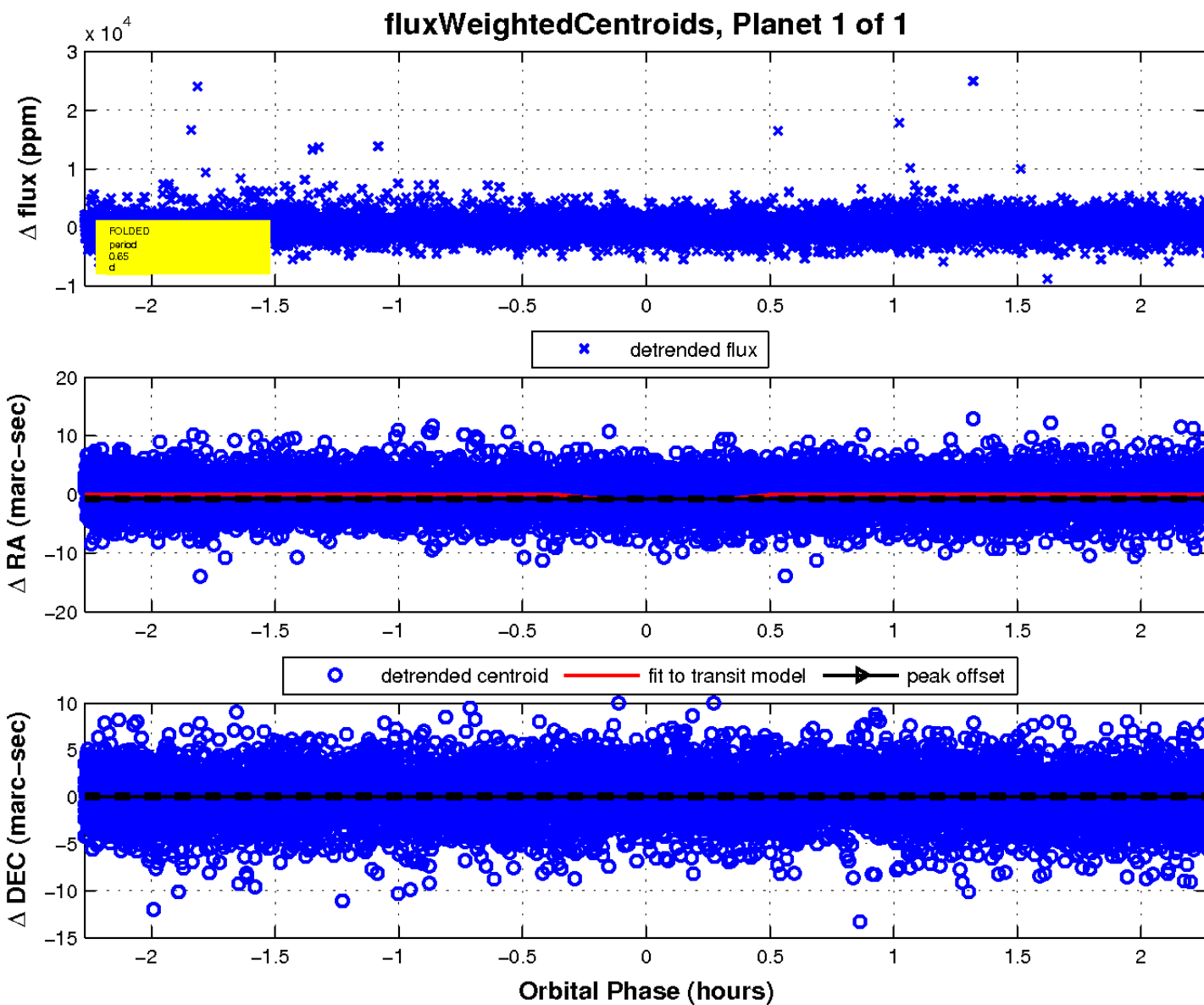
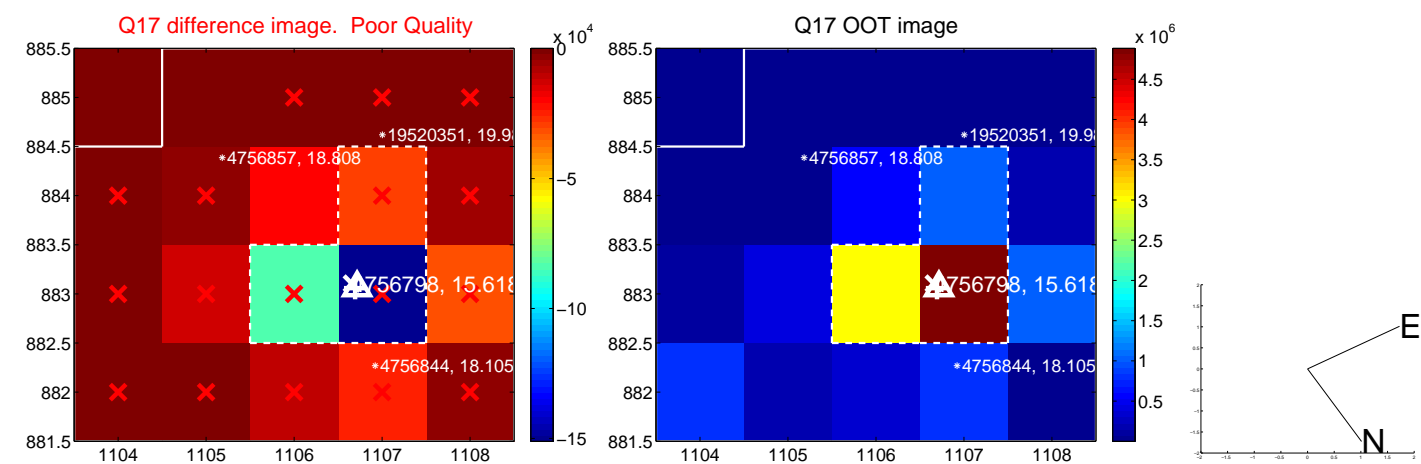


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

