

# KIC 006227560

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006227560-01	OBS	3650.01	2.401748	133.711089	16690.2	2.193	789.4	381.2	0.56	4577	10.92	147.15

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006227560-01	OBS	FP	0.00	0	1	0	0	DEPTH_ODDEVEN_DV—DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED

**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.

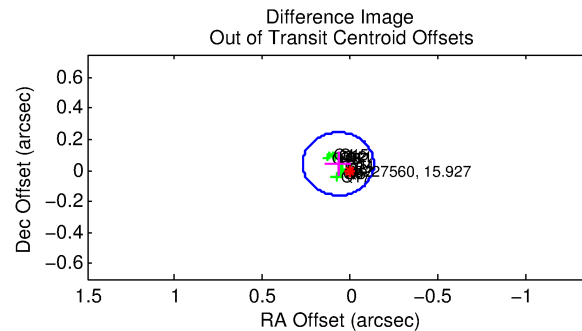
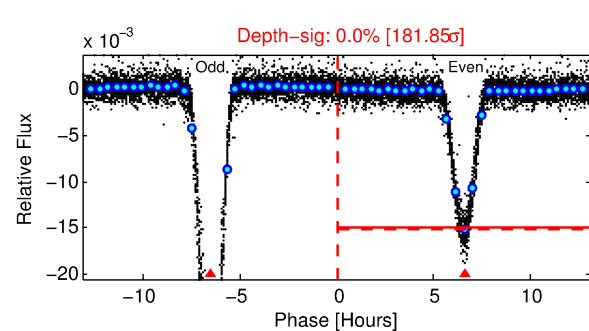
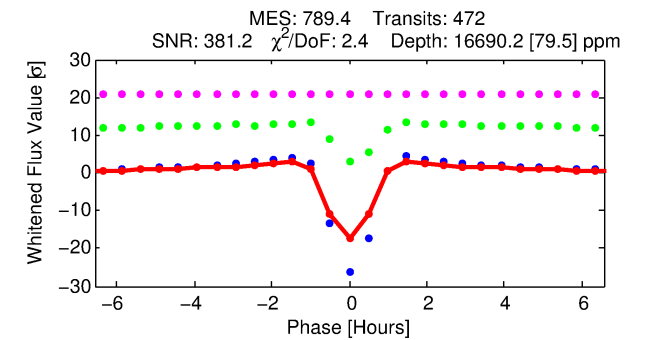
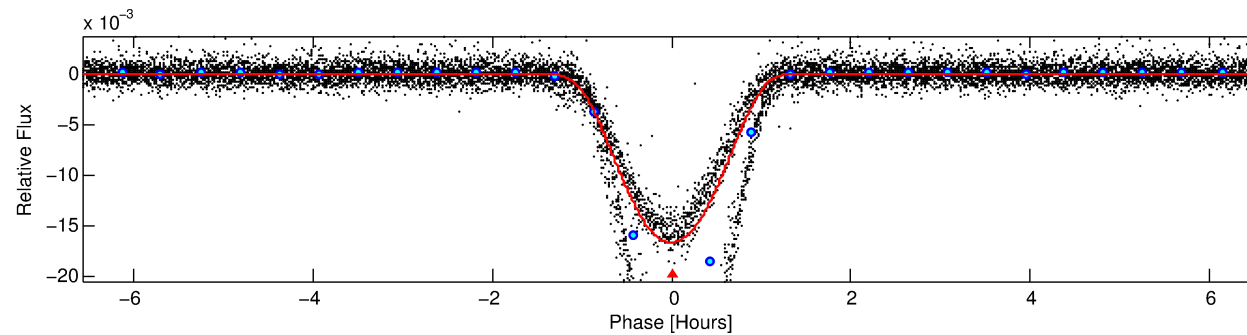
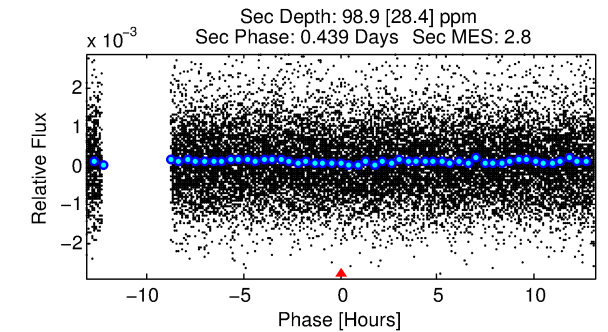
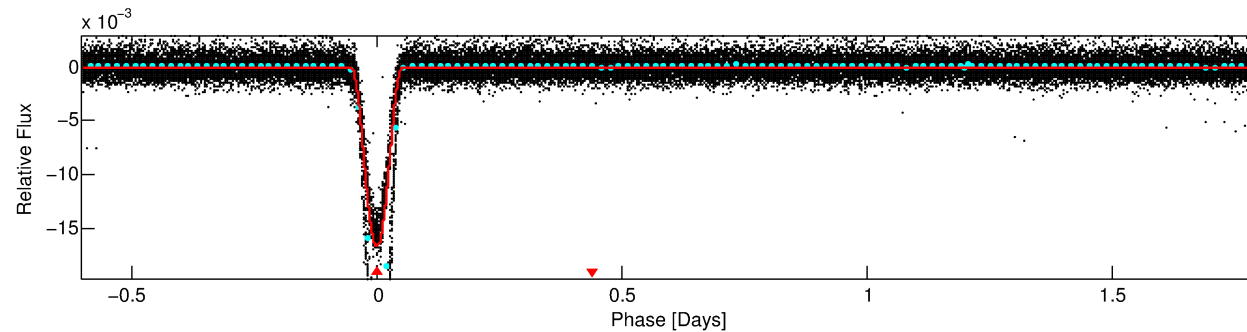
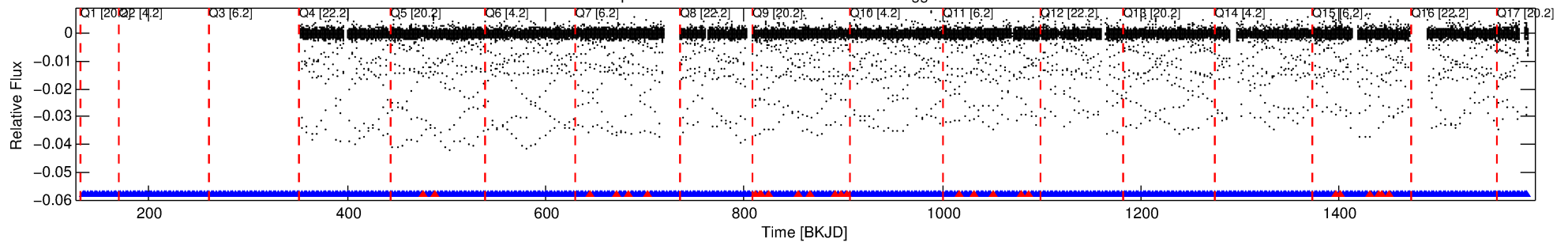
## Ephemeris Match Information For 006227560-01

No Significant Match Found

# DV One-Page Summary

KIC: 6227560 Candidate: 1 of 1 Period: 2.402 d  
KOI: K03650.01 Corr: 0.979

Kp: 15.93 R\*: 0.56 Rs Teff: 4577.0 K Logg: 4.69 Fe/H: -0.900



## DV Fit Results:

Period = 2.40175 [0.00000] d  
Epoch = 133.7111 [0.0001] BKJD  
Rp/R\* = 0.1797 [0.0202]  
a/R\* = 6.02 [0.12]  
b = 0.94 [0.03]  
Seff = 147.15 [25.09]  
Teq = 888 [38] K  
Rp = 10.92 [1.49] Re  
a = 0.0288 [0.0019] AU  
Ag = 0.38 [0.14] [-4.36σ]  
Teffp = 1077 [105] K [1.69σ]

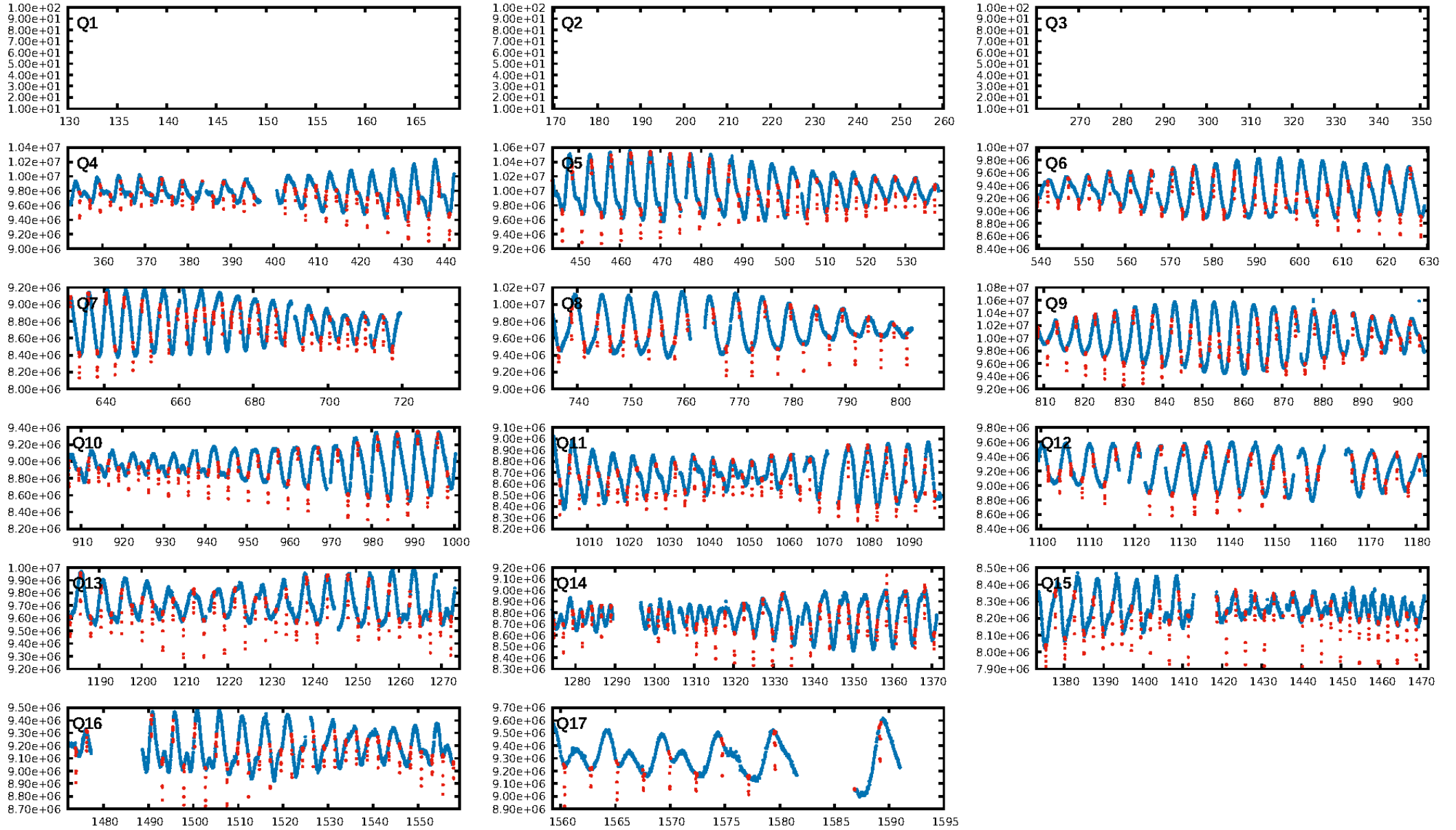
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 0.94 [436/462]  
GhostDiagnostic-chr: 1.208  
Centroid-sig: 0.0%  
Centroid-so: 0.191 arcsec [8.65σ]  
OotOffset-rm: 0.082 arcsec [1.21σ]  
KicOffset-rm: 0.132 arcsec [1.83σ]  
OotOffset-st: 3/3/4/4 [14]  
KicOffset-st: 3/3/4/4 [14]  
DiffImageQuality-fgm: 1.00 [14/14]  
DiffImageOverlap-fno: 1.00 [14/14]

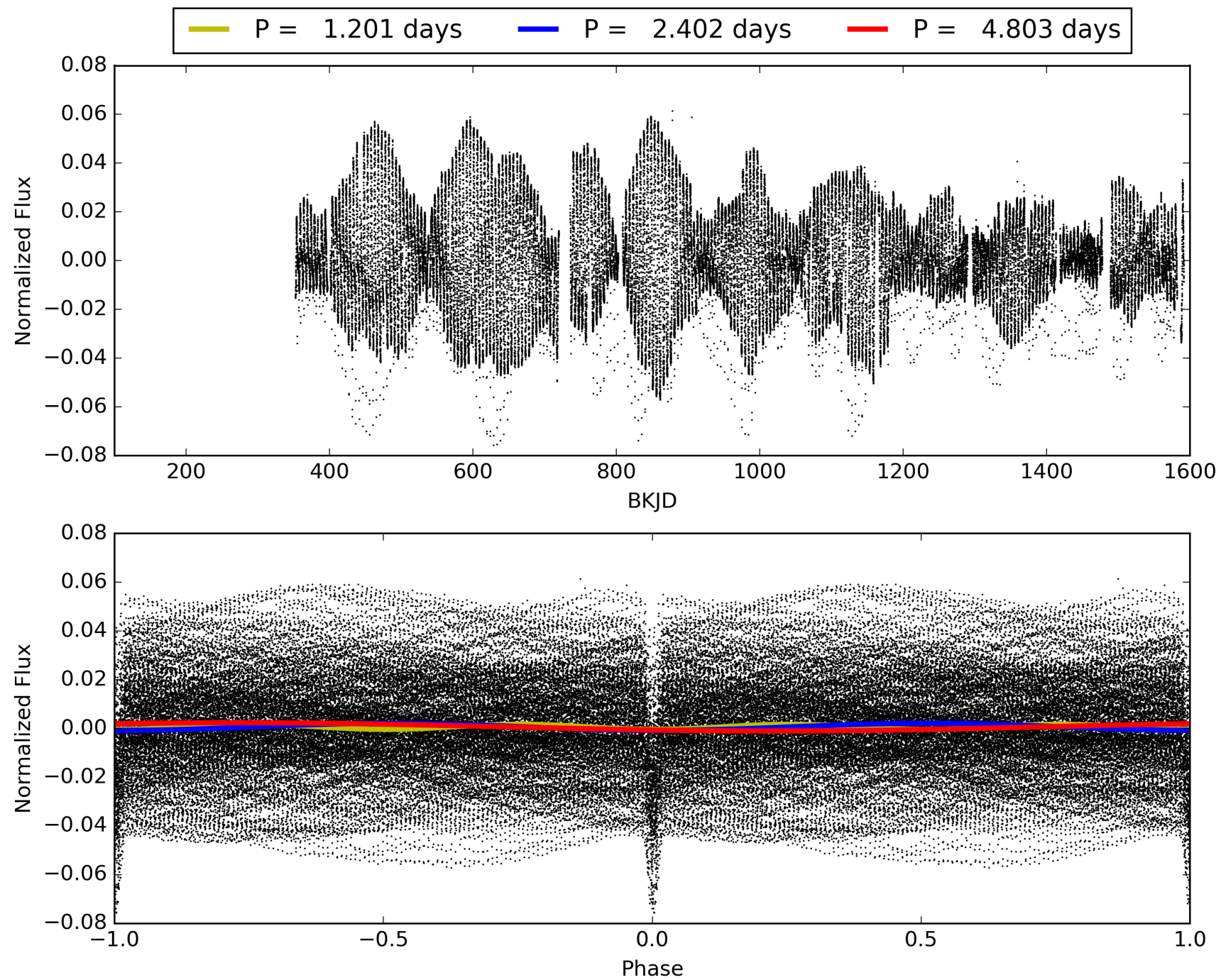
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:41:27 Z

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

# TCE 006227560-01, PDC Light Curves

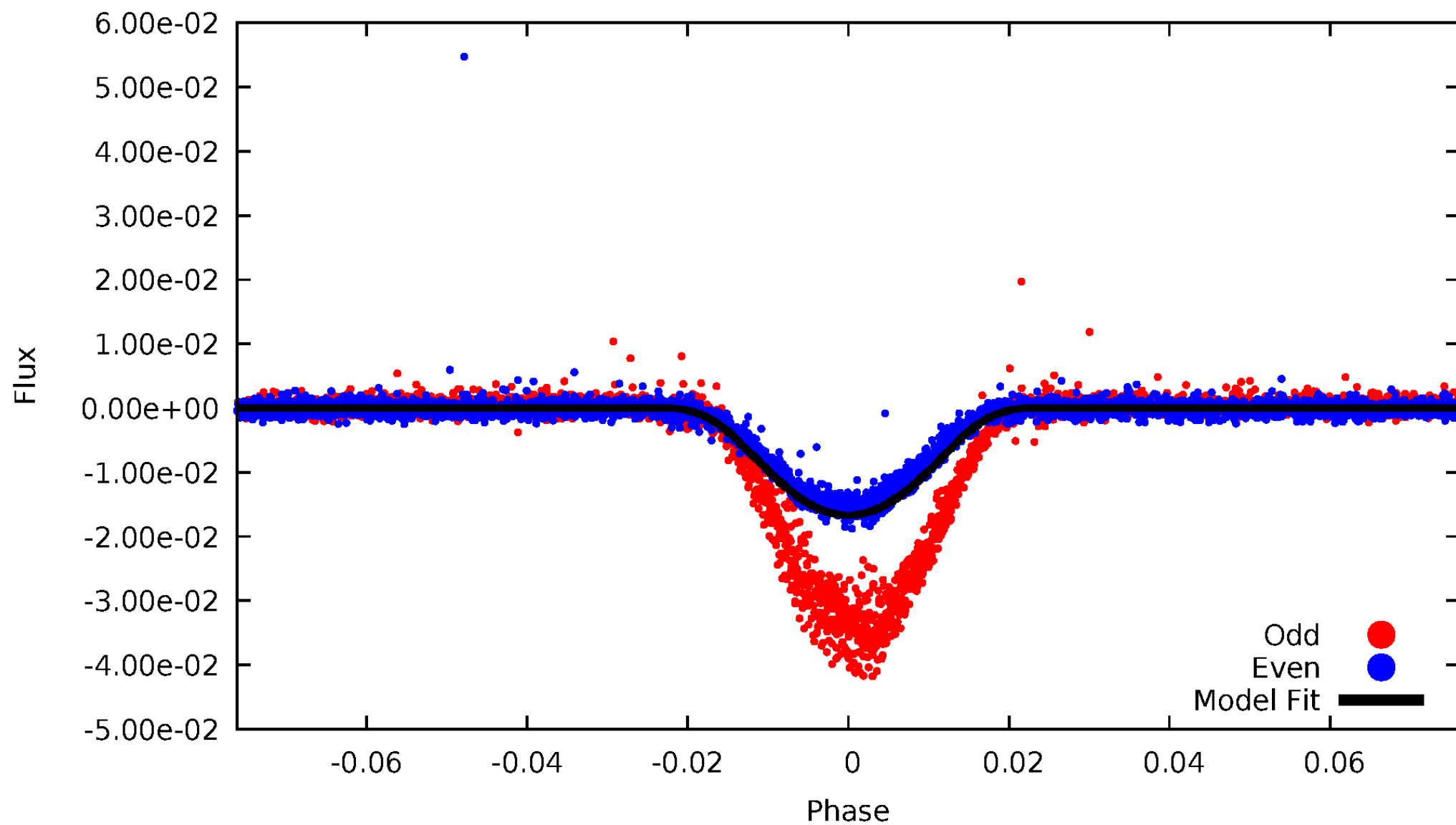


TCE 006227560-01



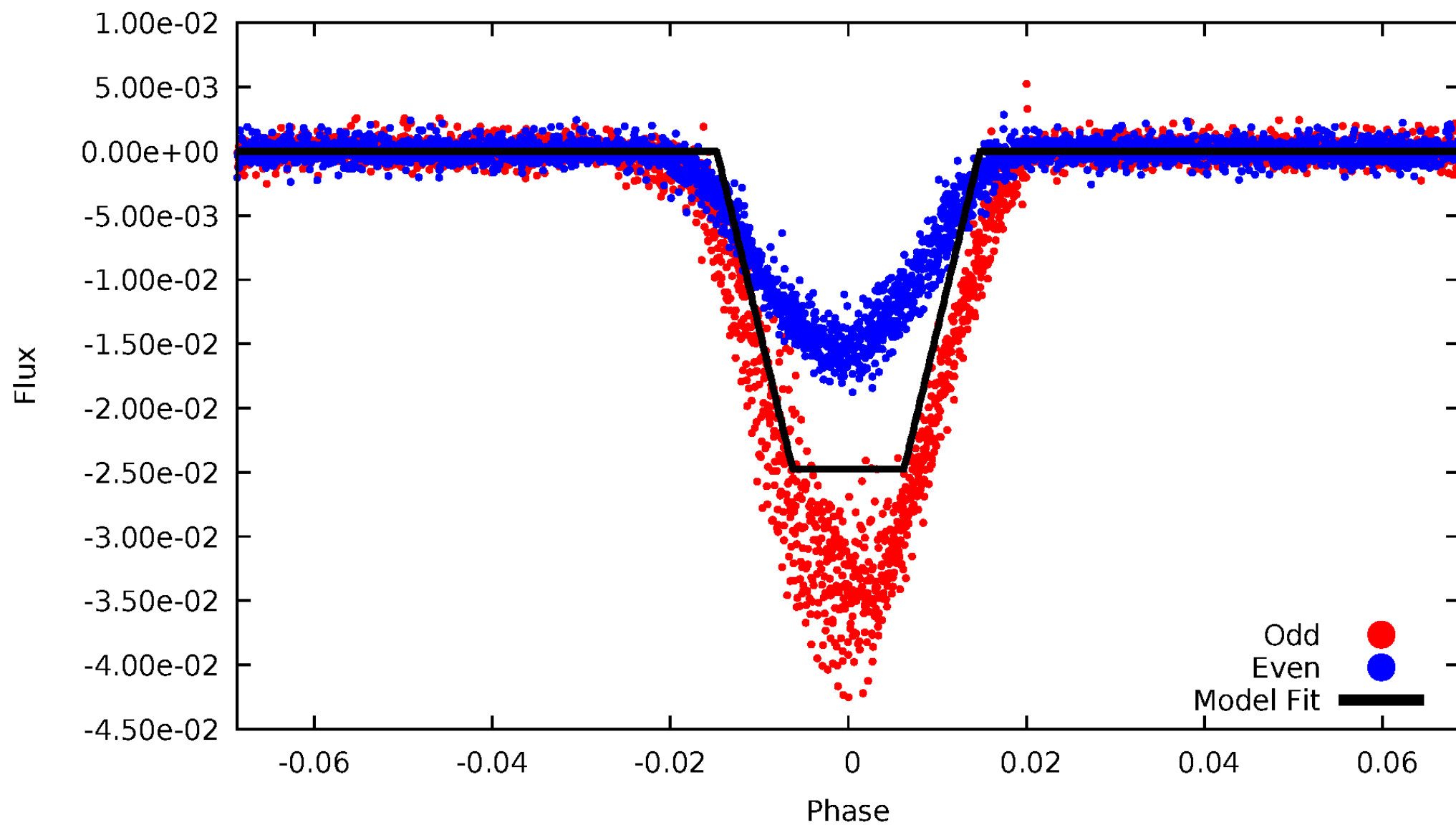
# DV Odd/Even

TCE 006227560-01



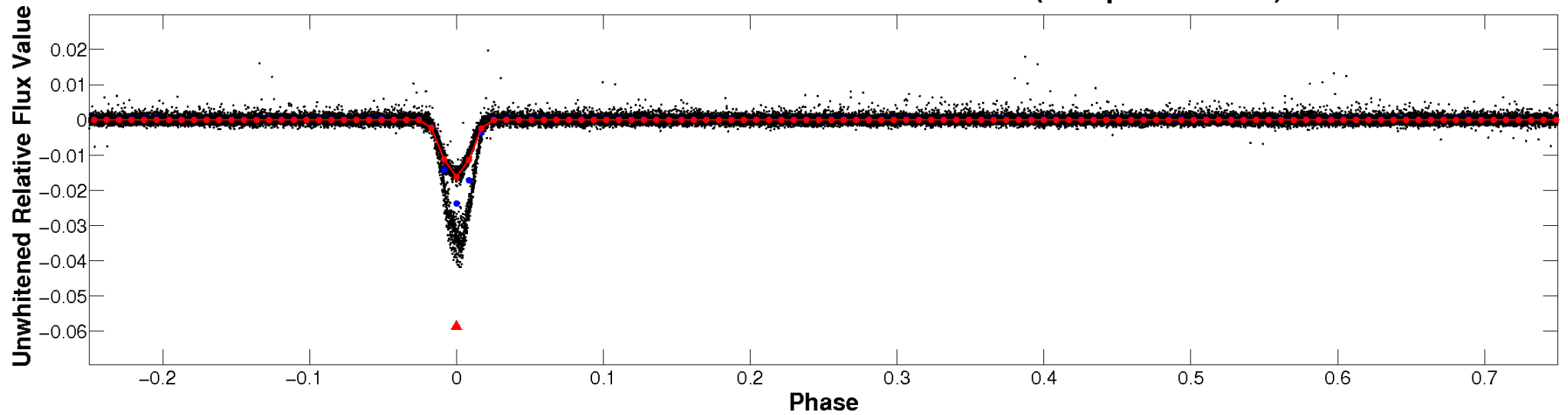
# ALT Odd/Even

TCE 006227560-01

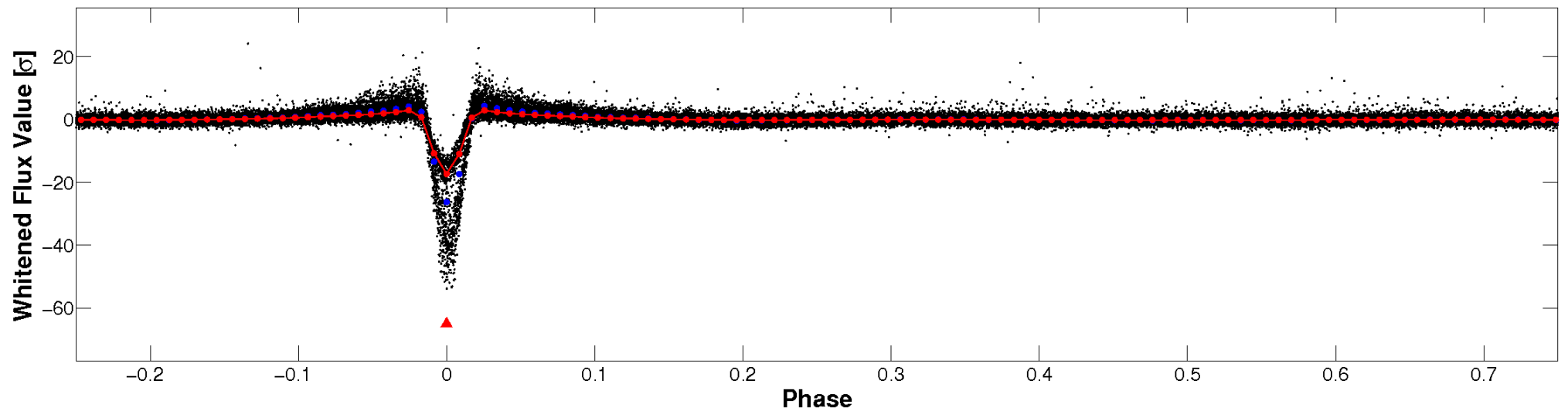


# Non-Whitened Vs. Whitened Light Curve

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



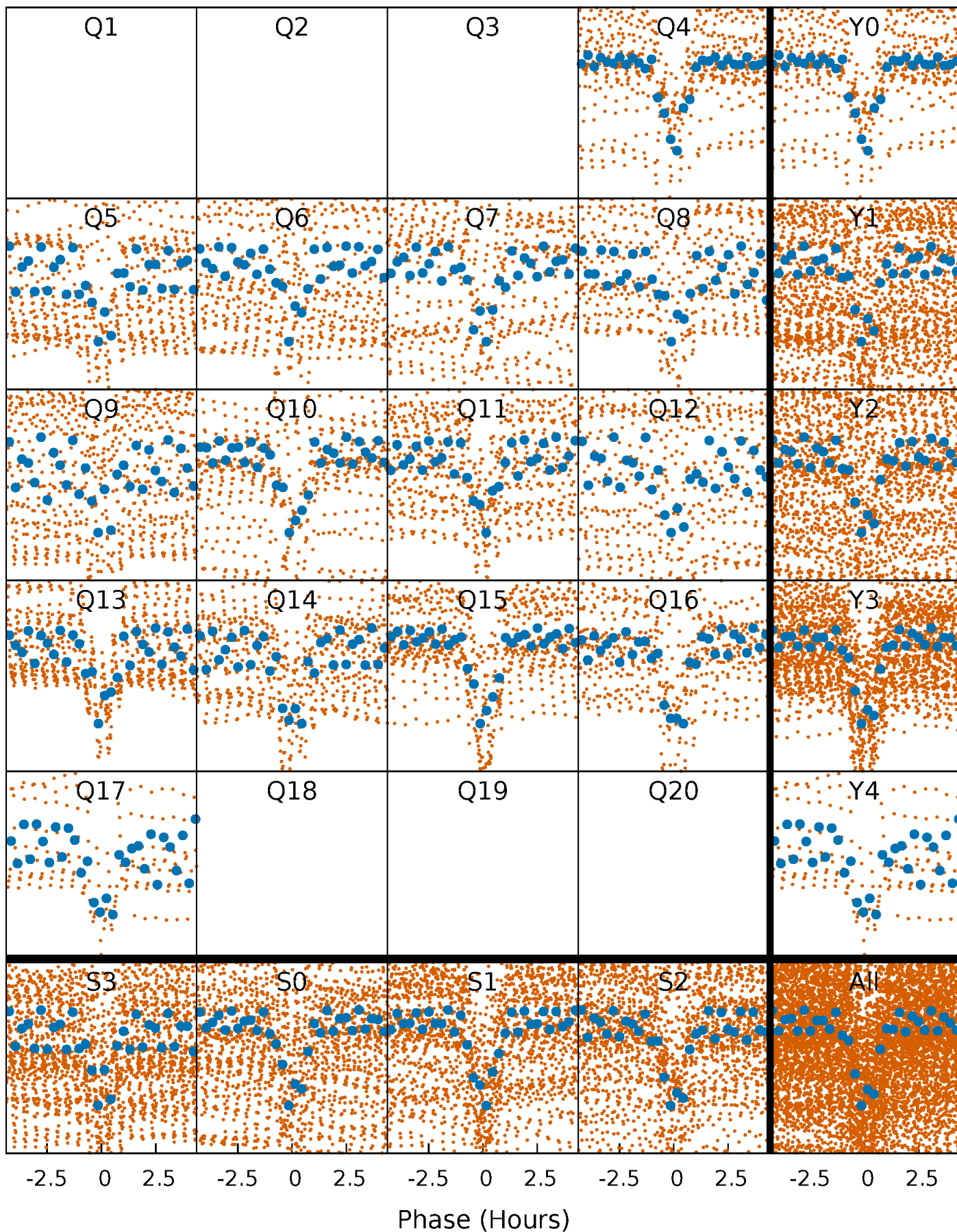
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

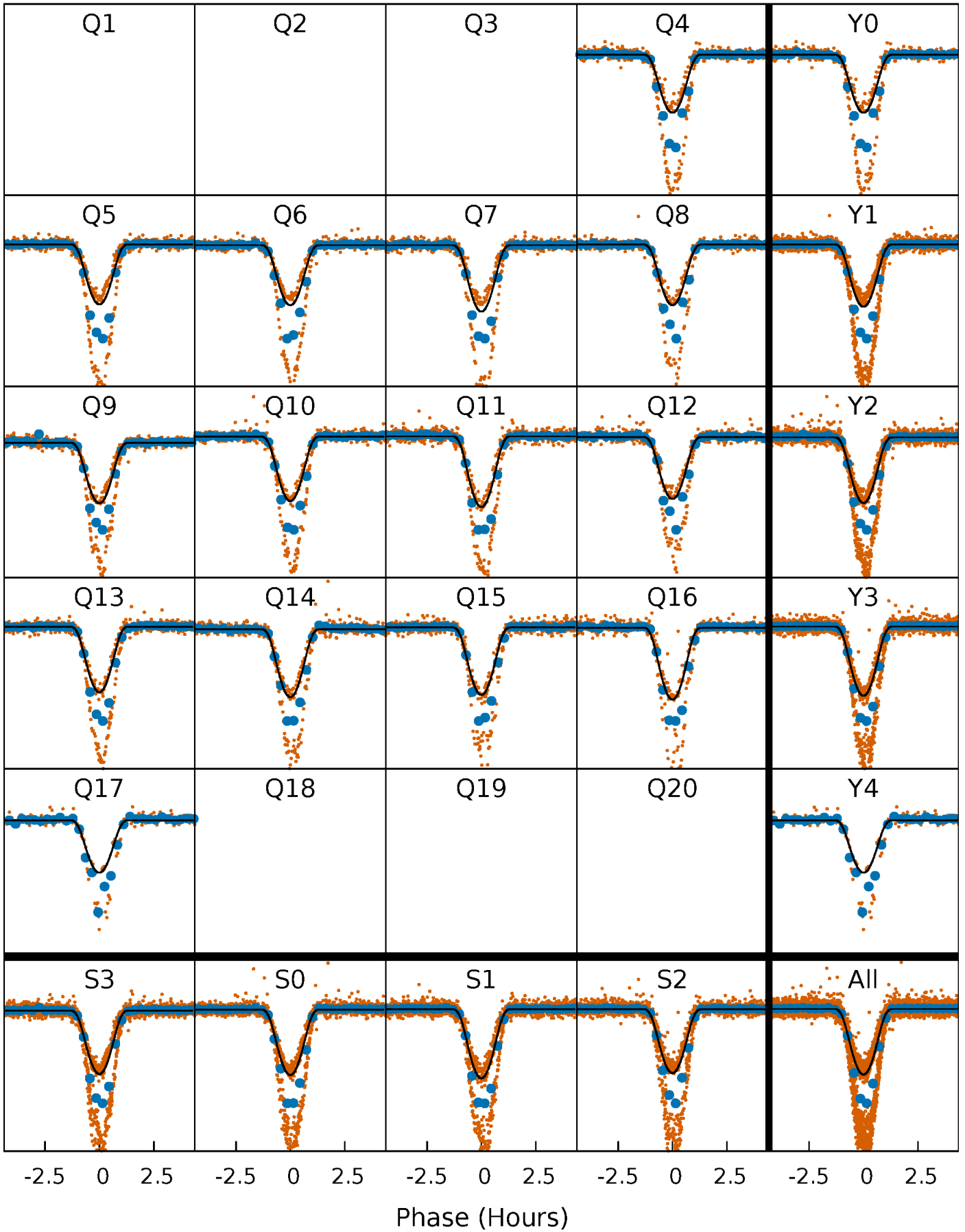
TCE 006227560-01 P= 2.401748 Days  $T_0=133.711089$  (BKJD)





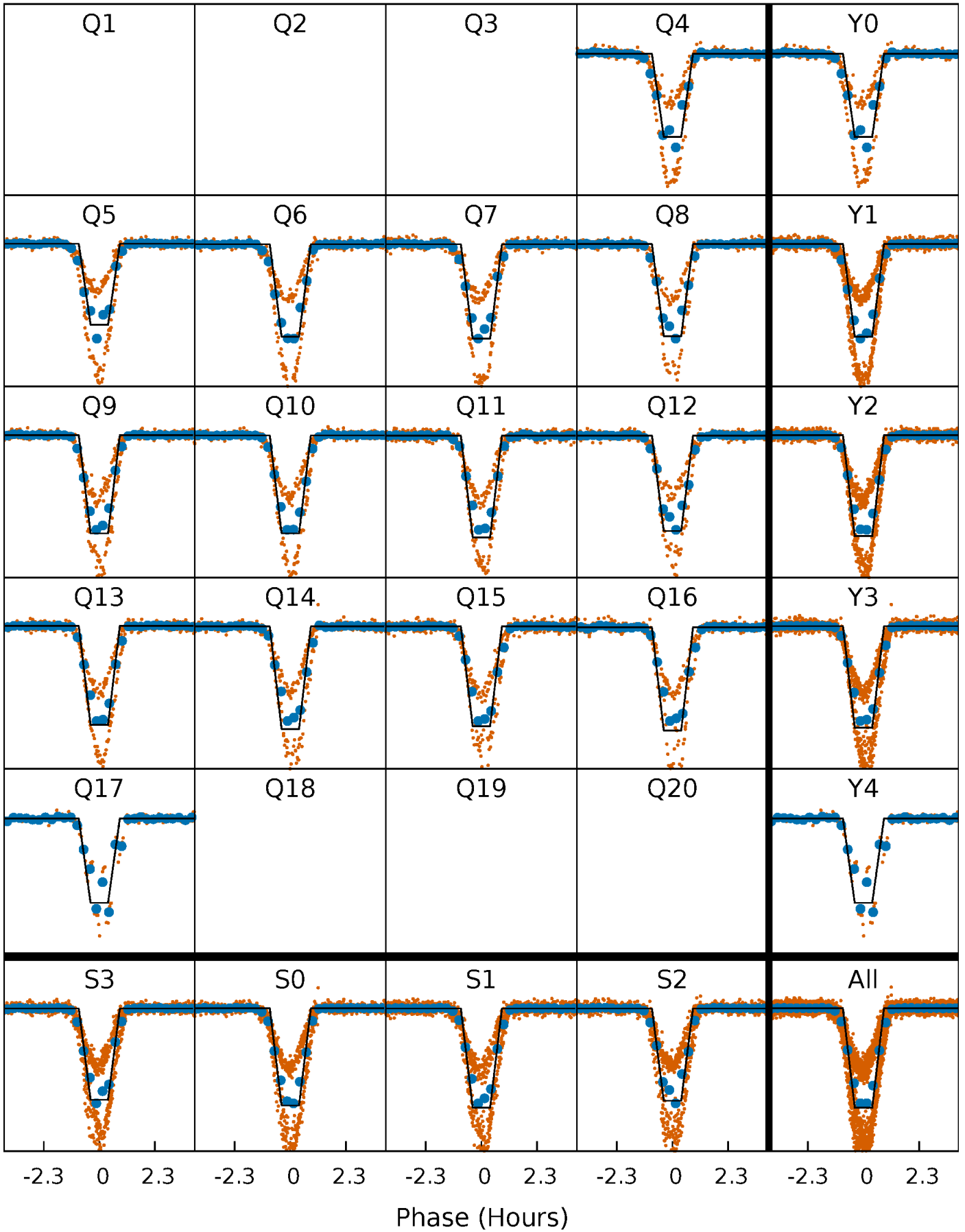
# DV Quarter-Phased Transit Curves

TCE 006227560-01 P= 2.401748 Days  $T_0=133.711089$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

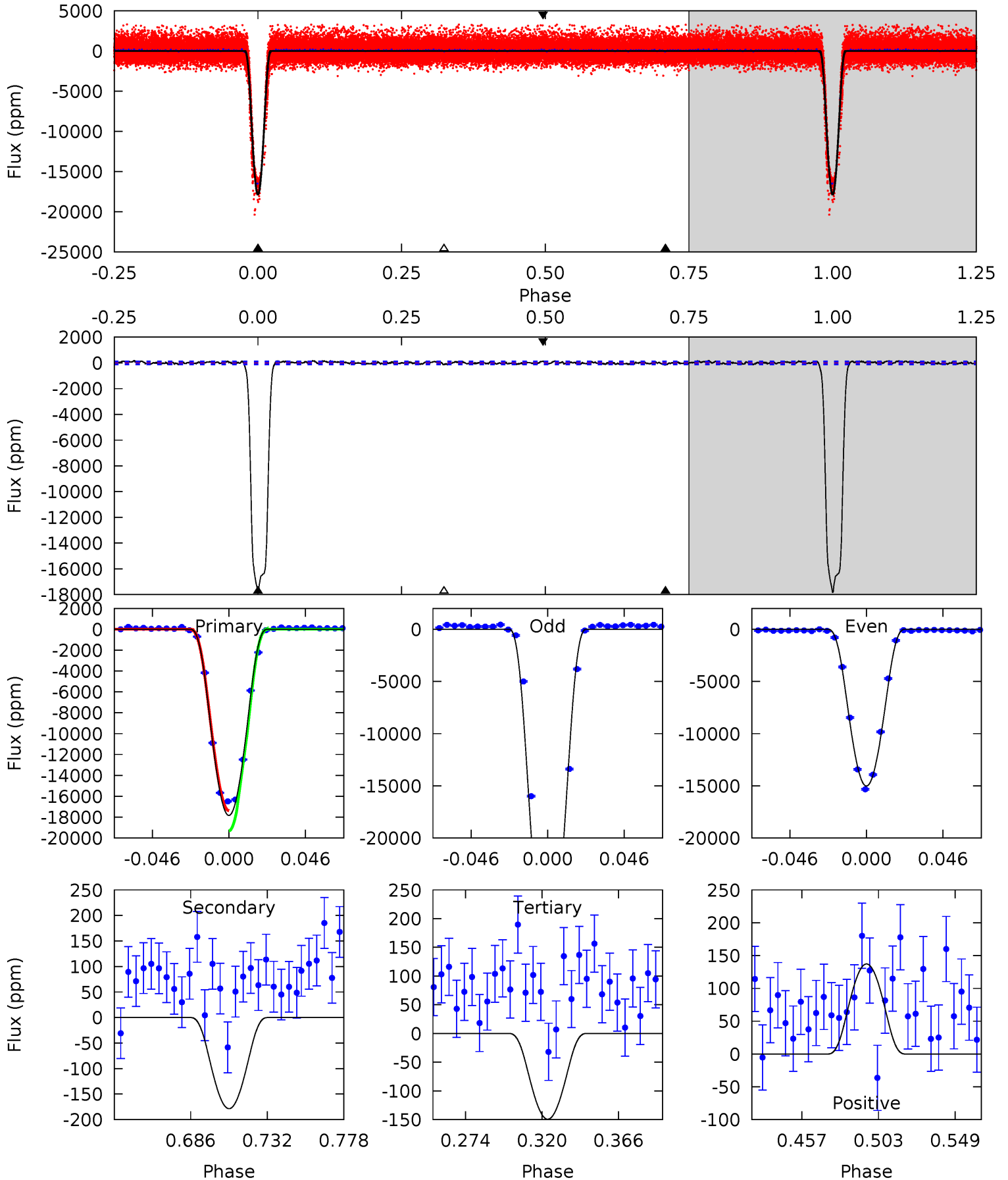
TCE 006227560-01 P= 2.401740 Days  $T_0=133.715609$  (BKJD)



# DV Model-Shift Uniqueness Test

006227560-01, P = 2.401748 Days, E = 133.711089 Days

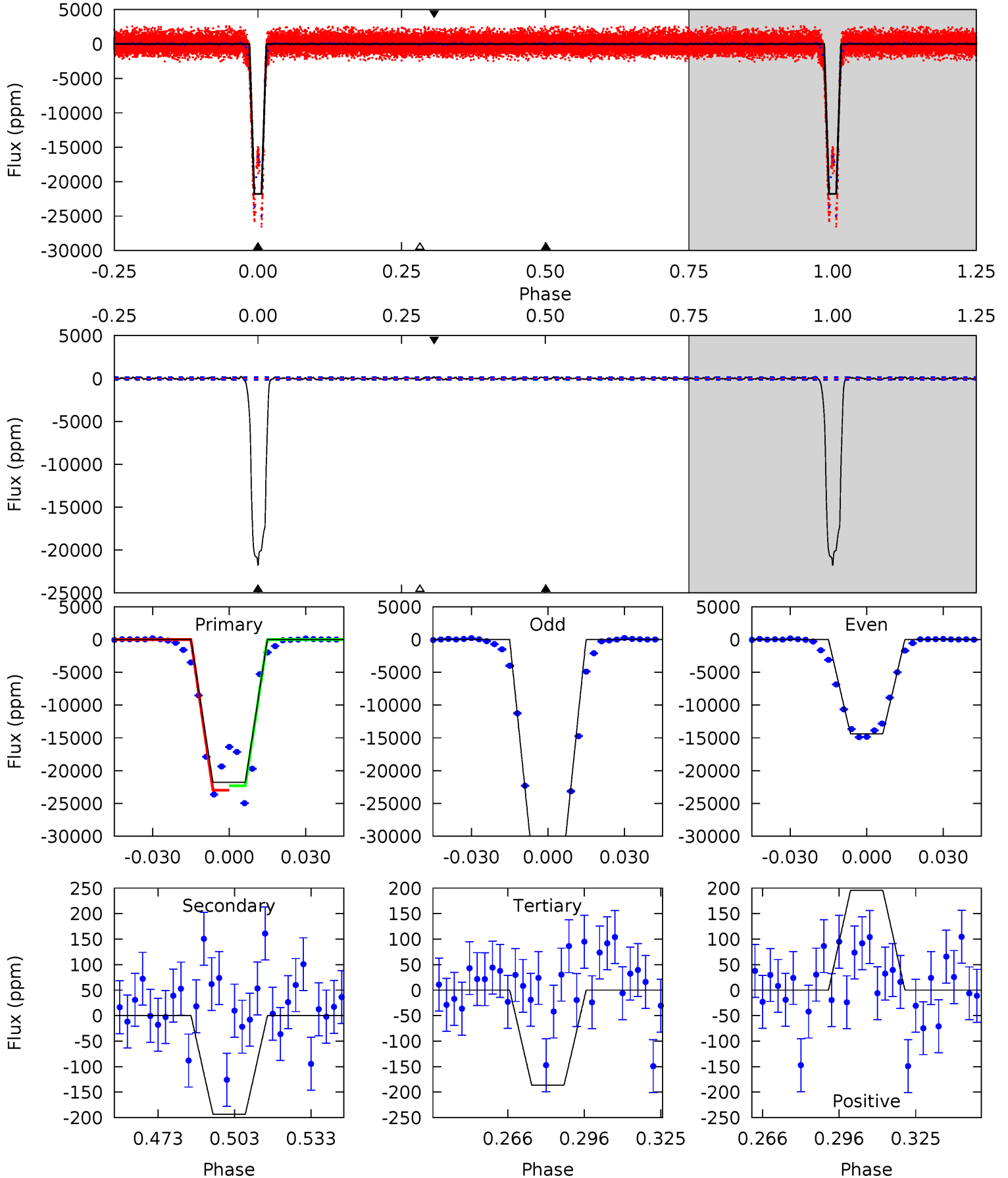
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
802.5	8.03	6.72	6.17	4.73	2.00	2.64	795.8	796.3	1.32	1.86	534.7	1.38	0.01	0



# Alt Model-Shift Uniqueness Test

006227560-01, P = 2.401740 Days, E = 133.715609 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
625.7	5.55	5.36	5.62	4.81	2.18	1.66	620.3	620.1	0.20	-0.07	412.1	1.38	0.01	0



### Stellar Parameters For KIC 006227560

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$4577^{+162}_{-162}$	$4.688^{+0.052}_{-0.032}$	$-0.900^{+0.300}_{-0.300}$	$0.557^{+0.043}_{-0.043}$	$0.552^{+0.049}_{-0.031}$	$4.489^{+0.961}_{-0.608}$
	+4%/-4%	+1%/-1%	+33%/-33%	+8%/-8%	+9%/-6%	+21%/-14%
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 006227560-01 / KOI 3650.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-179 \pm 22$	$10.84^{+1.28}_{-1.31}$	$1234^{+50}_{-44}$	$2039^{+100}_{-108}$	$0.691^{+0.224}_{-0.152}$
Alt.	$-193 \pm 35$	$9.55^{+1.26}_{-1.36}$	$1232^{+49}_{-47}$	$2152^{+119}_{-121}$	$0.966^{+0.375}_{-0.255}$

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

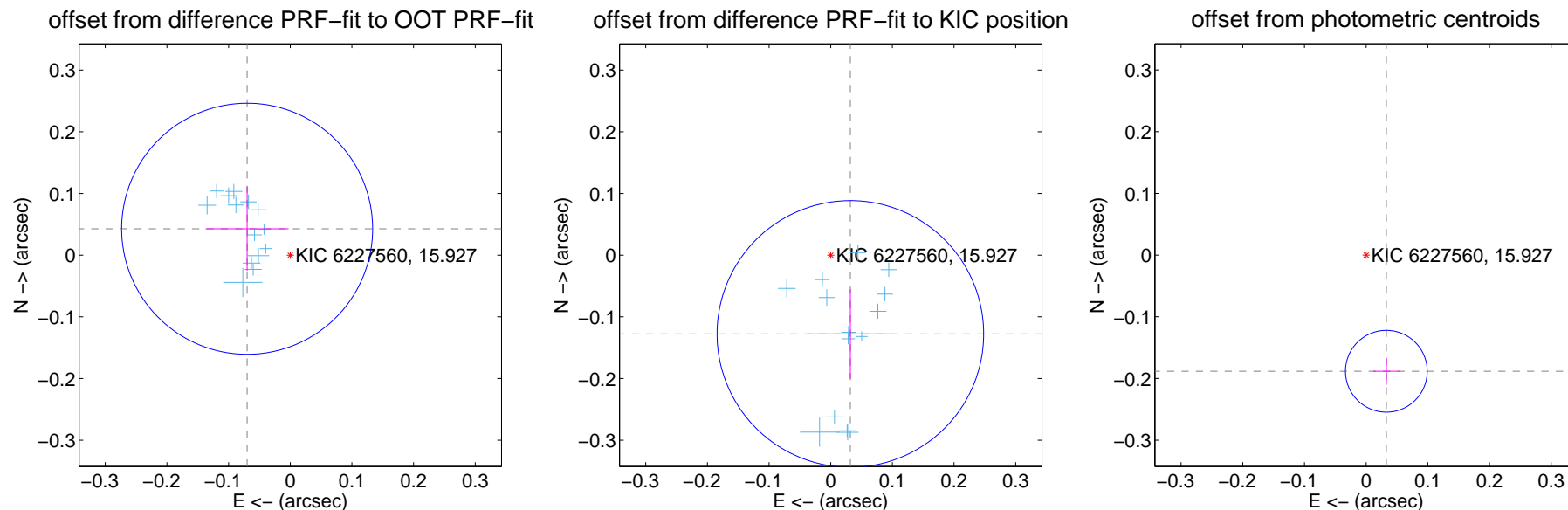
## DV Centroid Data

Supplemental centroid analysis for 006227560-01. Kepler magnitude: 15.93. Transit SNR 381.17

There are 14 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

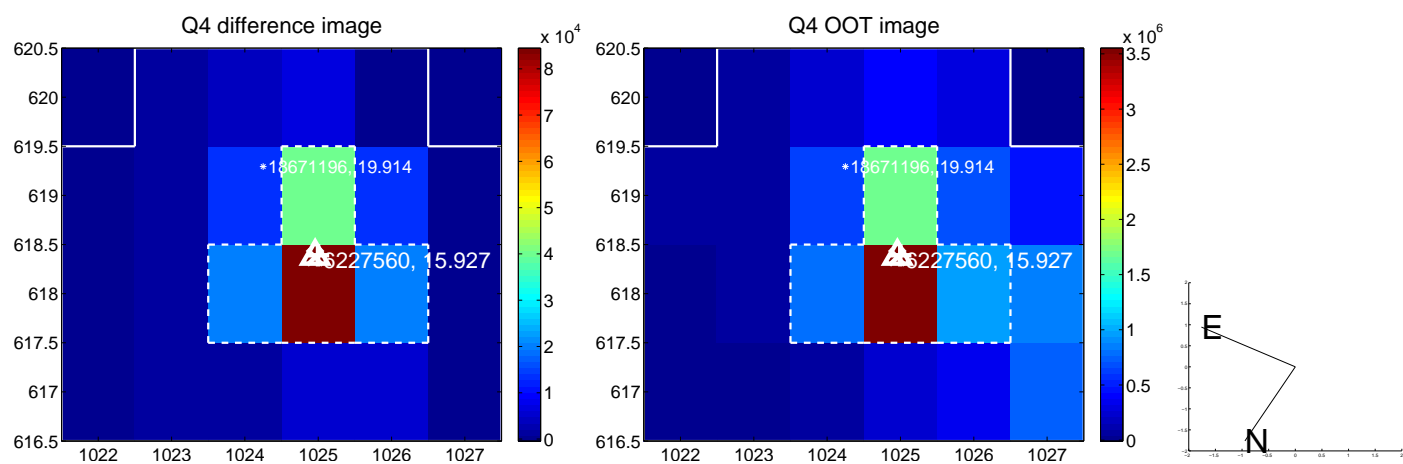
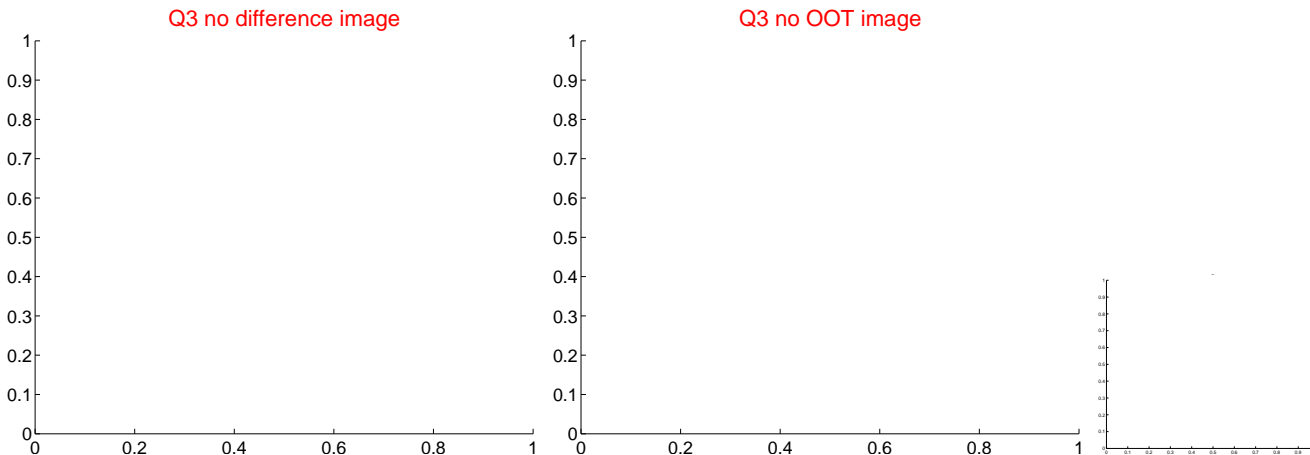
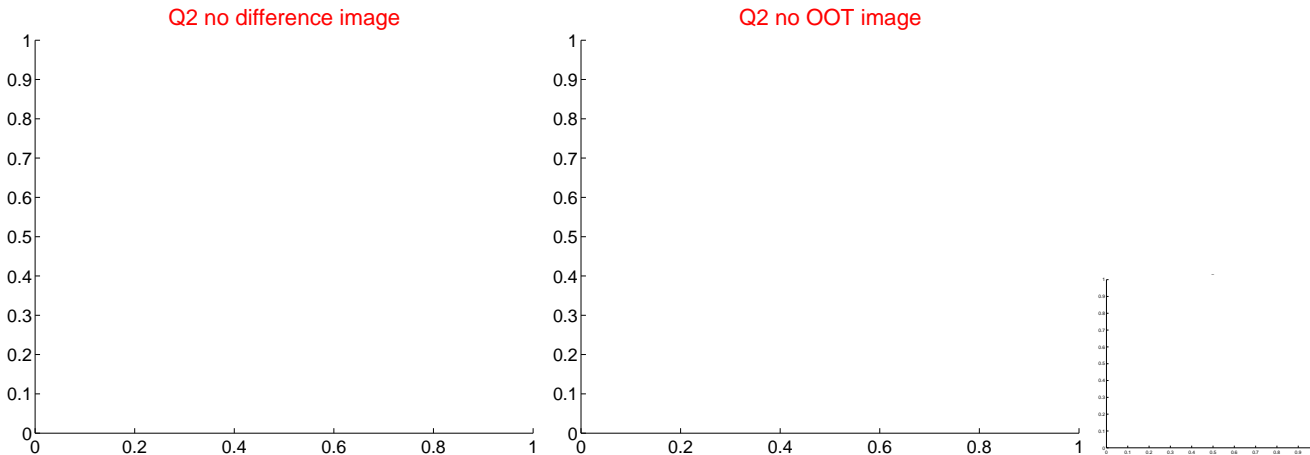
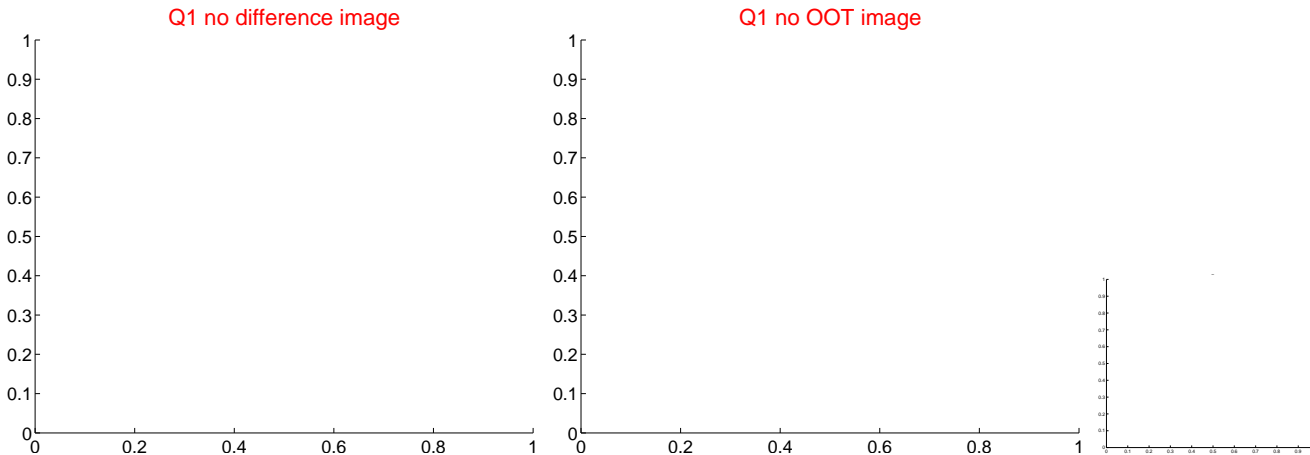
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.082 \pm 0.068$	1.21	$0.070 \pm 0.067$	$0.043 \pm 0.068$
PRF-fit source offset from KIC position	$0.132 \pm 0.072$	1.83	$-0.032 \pm 0.068$	$-0.128 \pm 0.072$
photometric centroid source offset	$0.19 \pm 0.02$	8.65	$-0.03 \pm 0.02$	$-0.19 \pm 0.02$



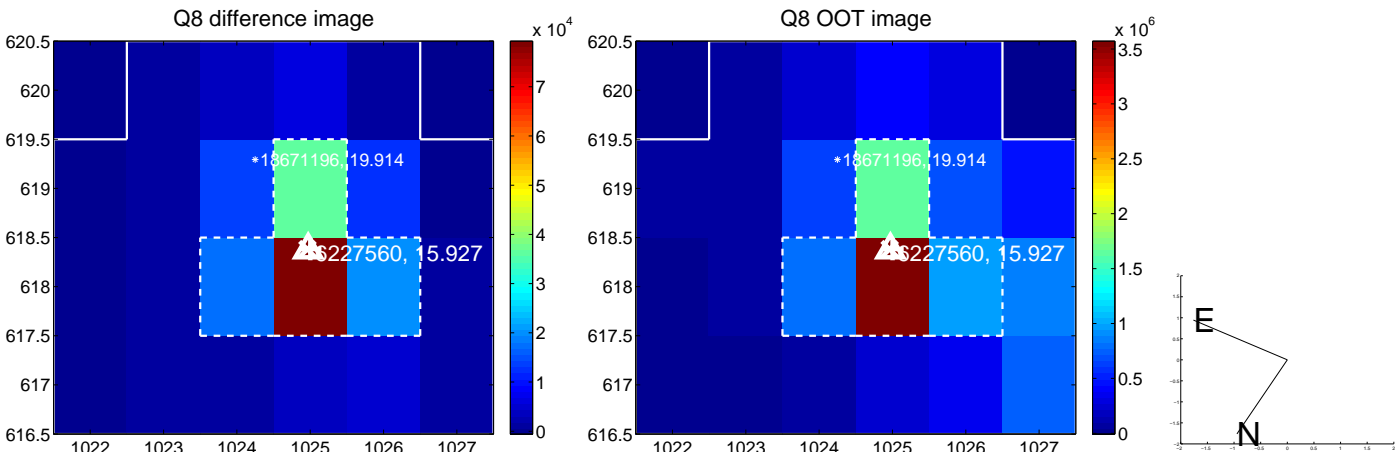
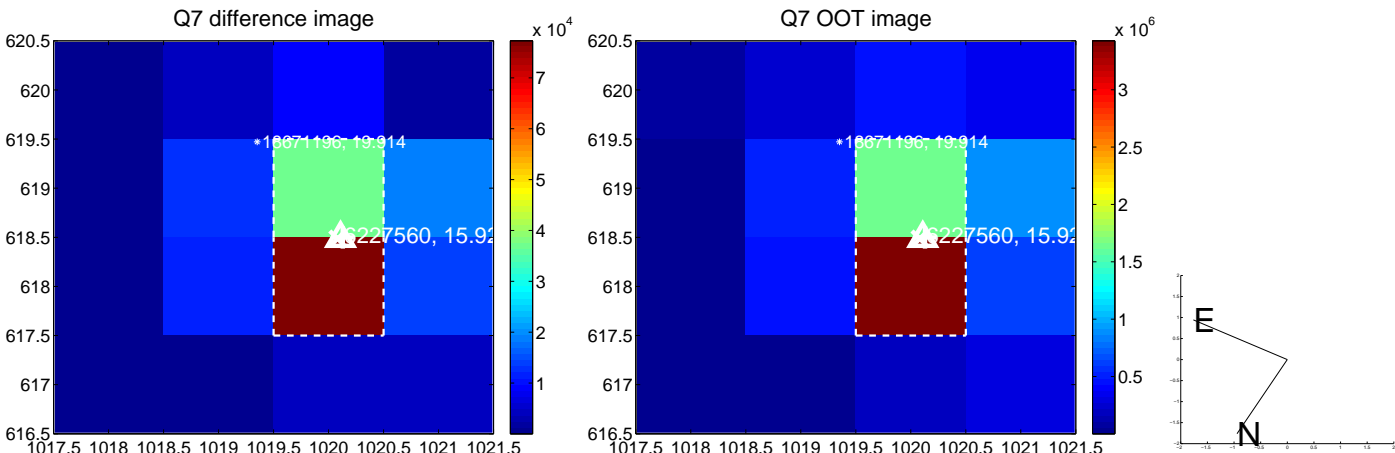
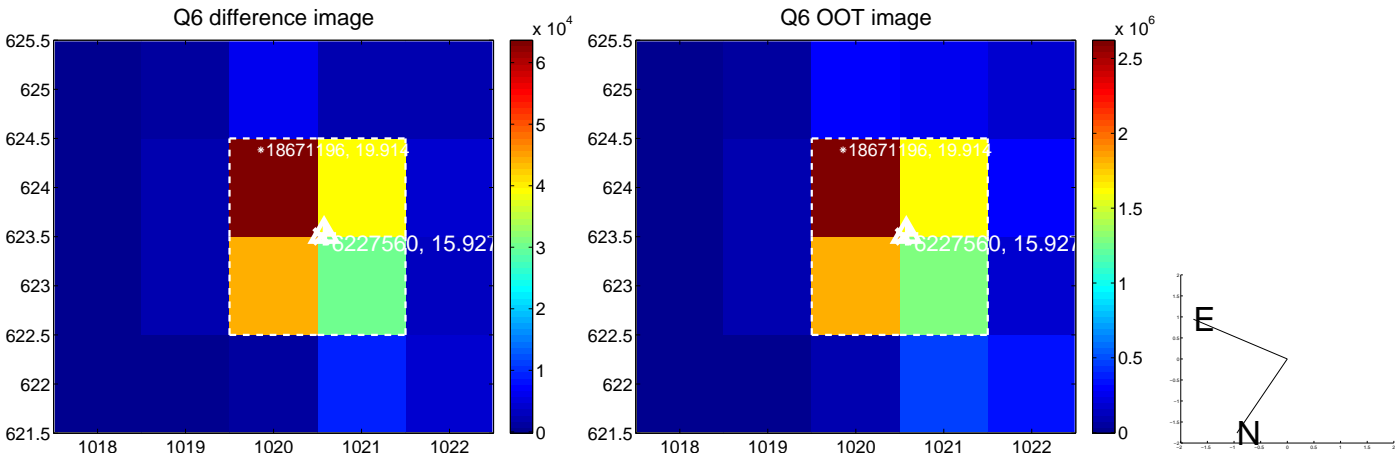
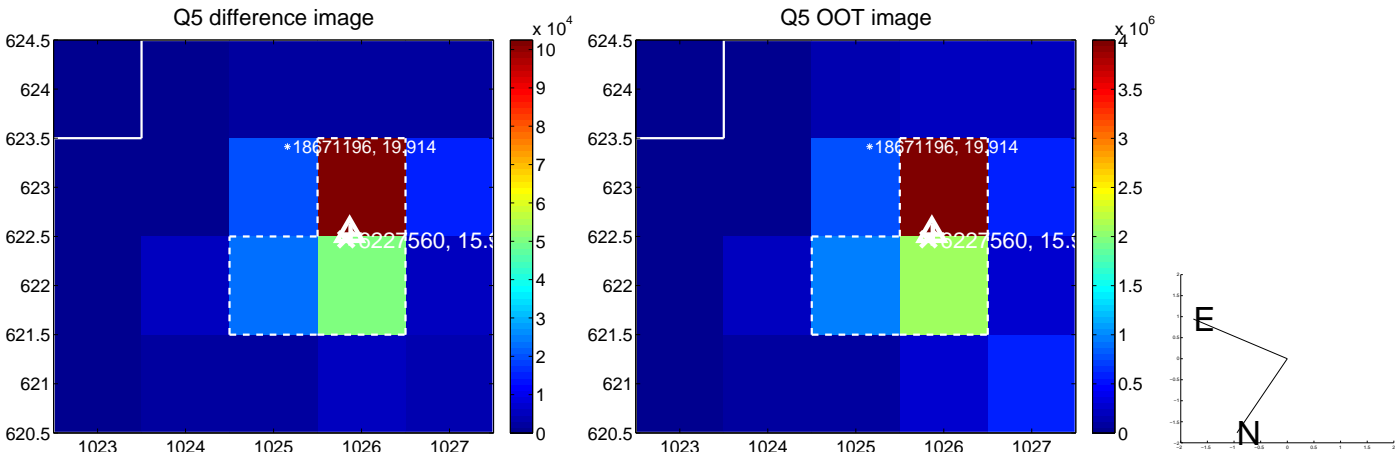
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



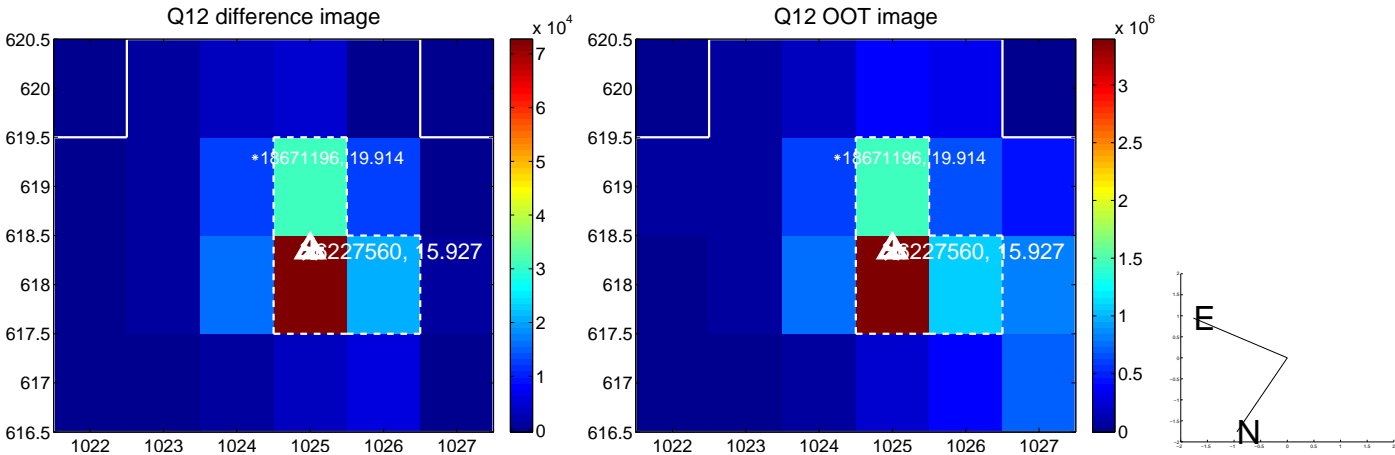
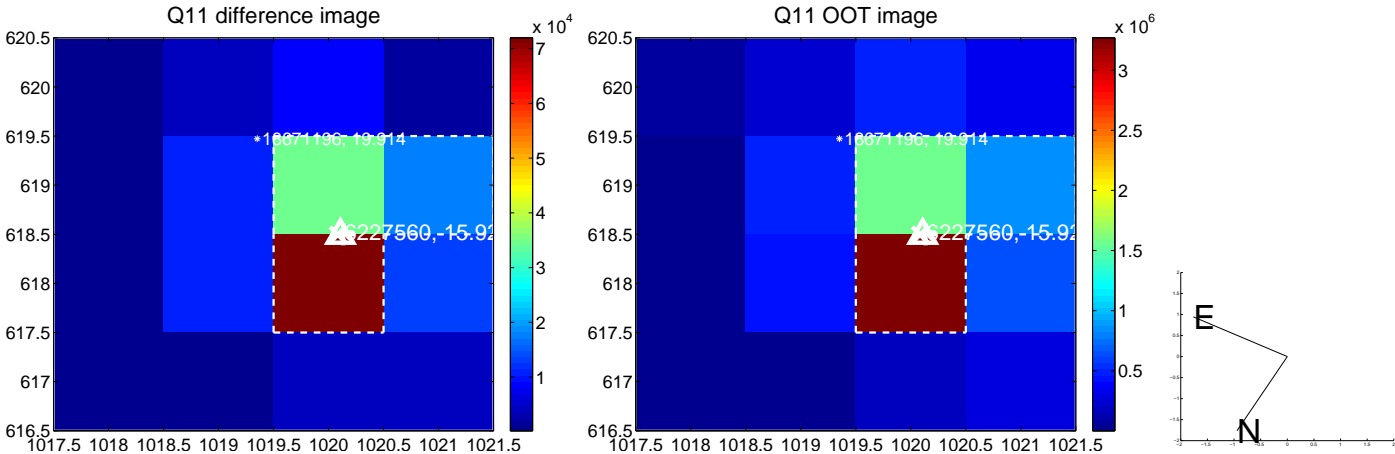
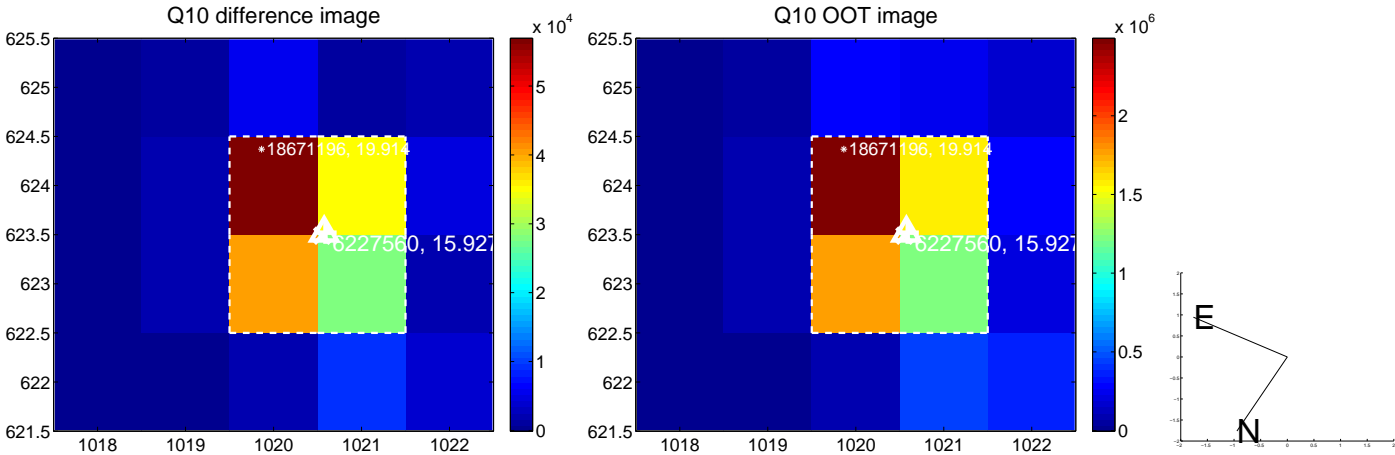
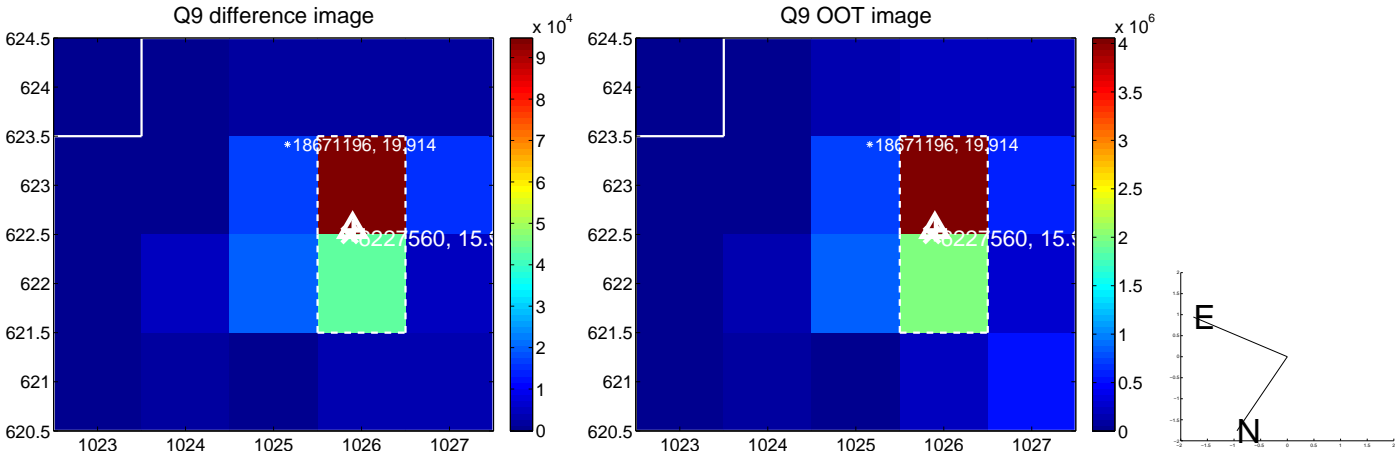
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



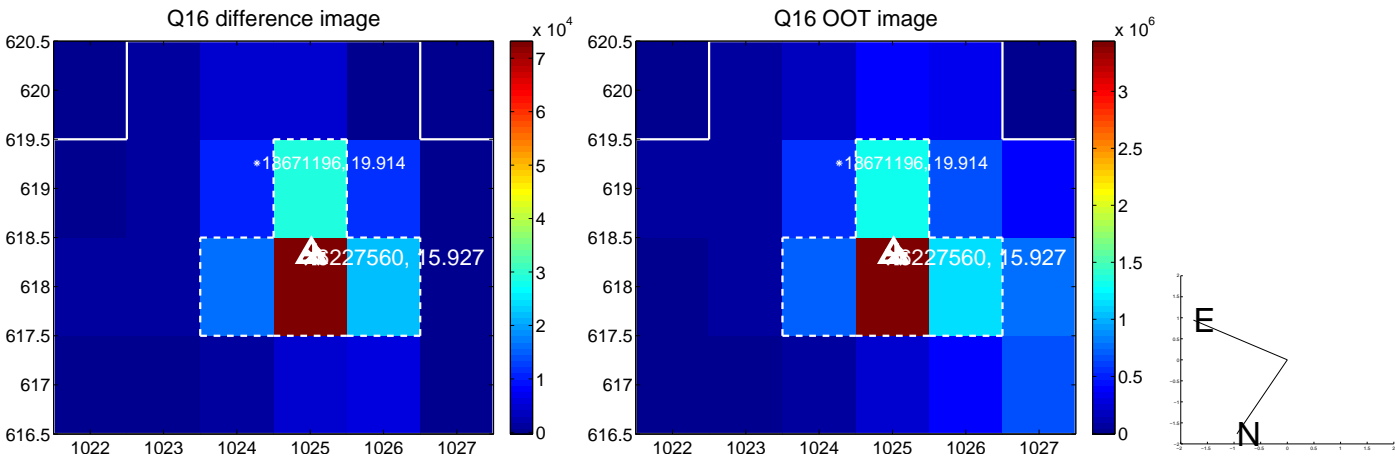
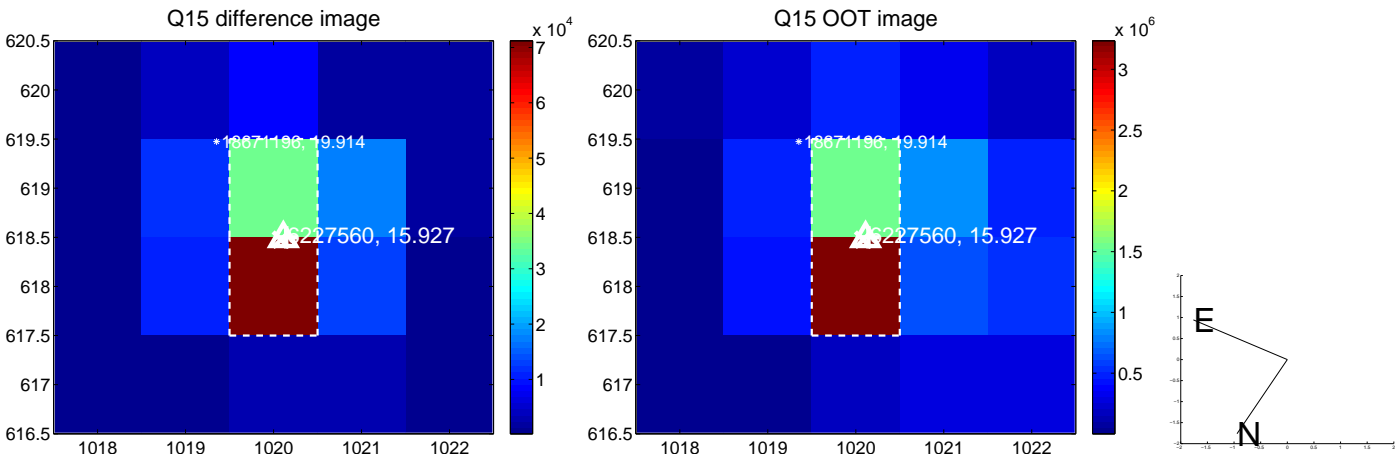
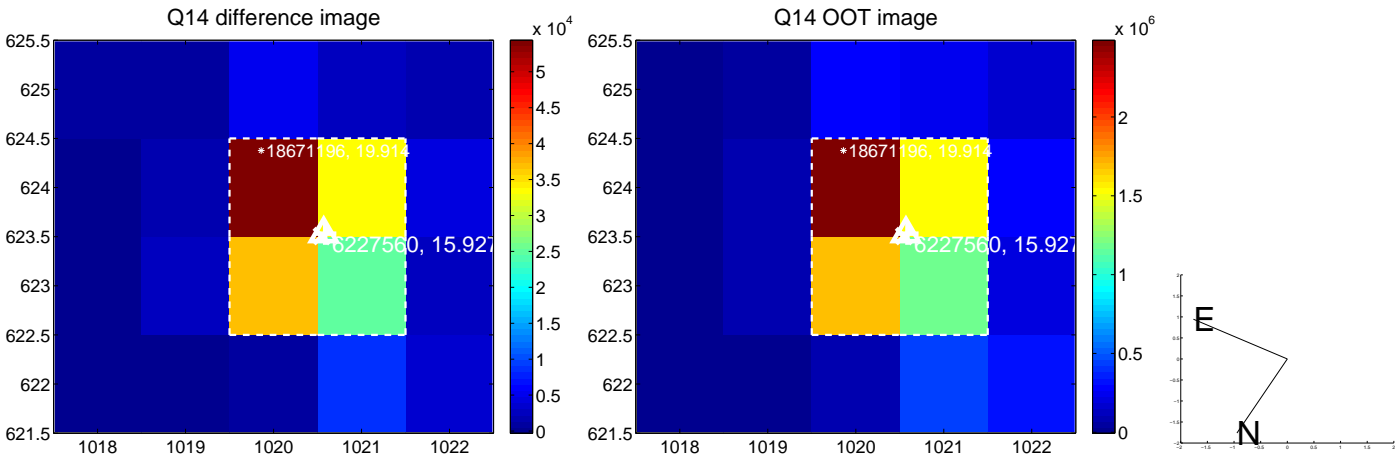
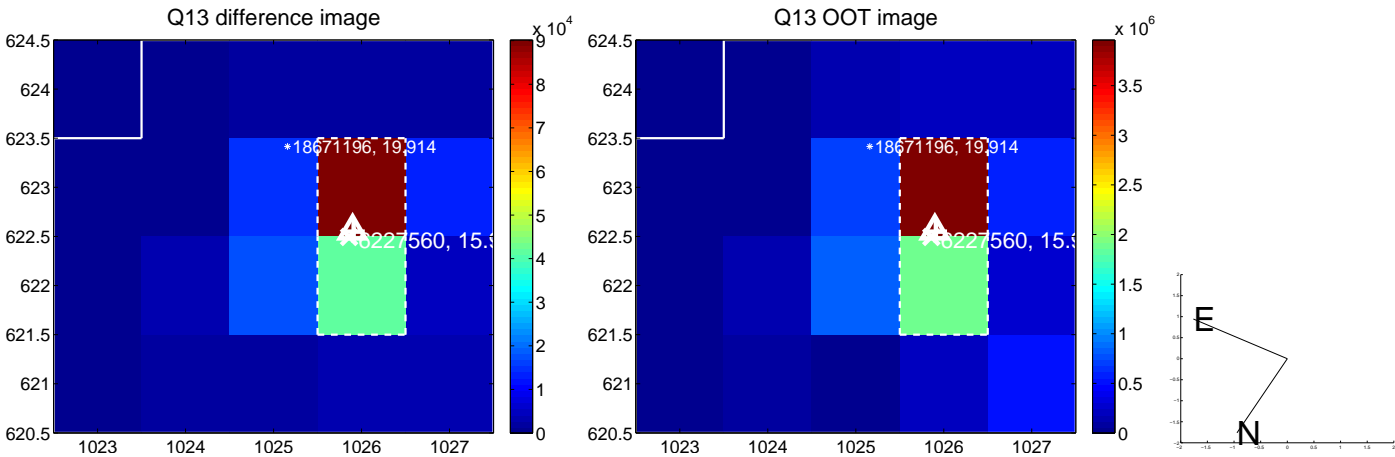
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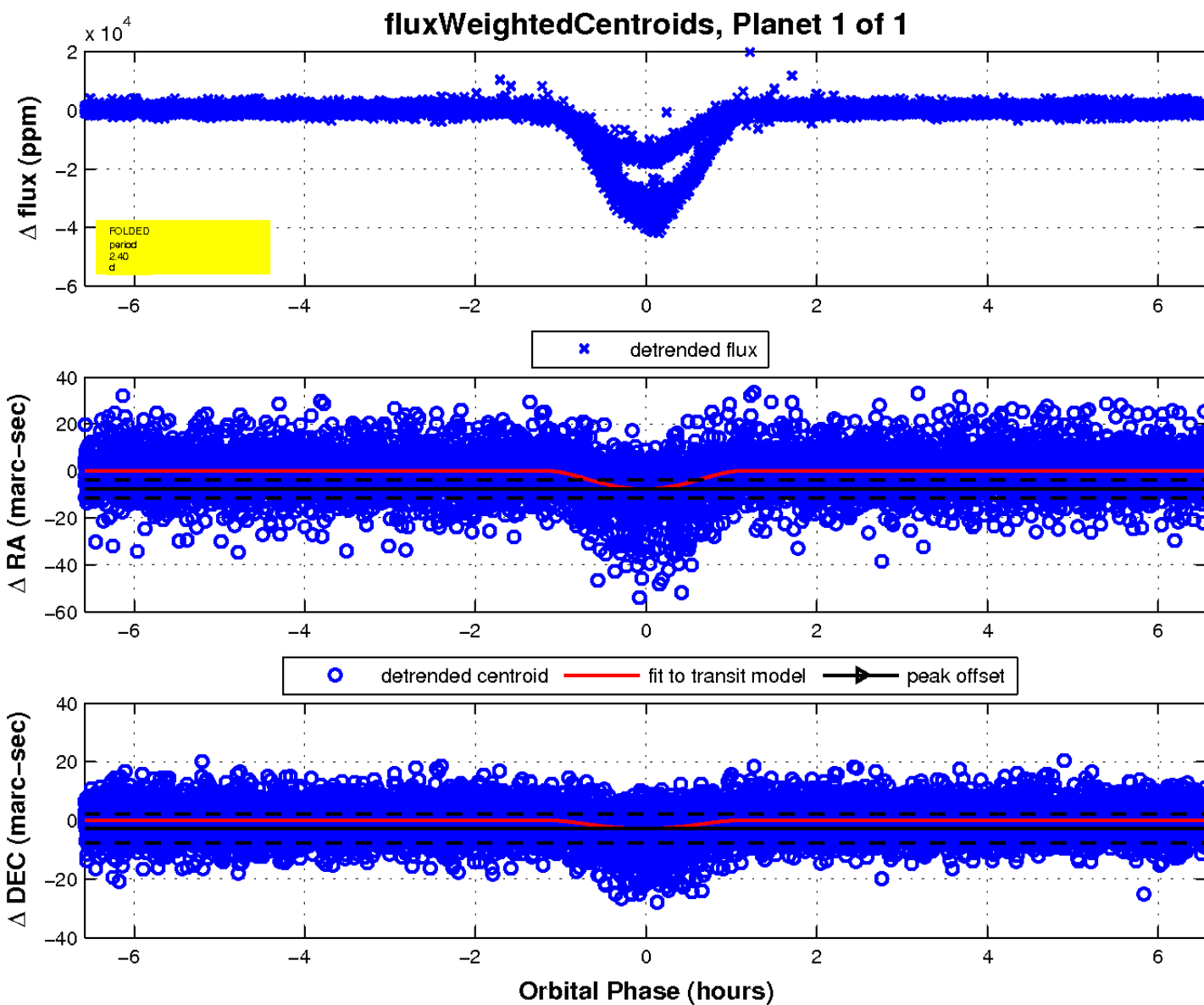
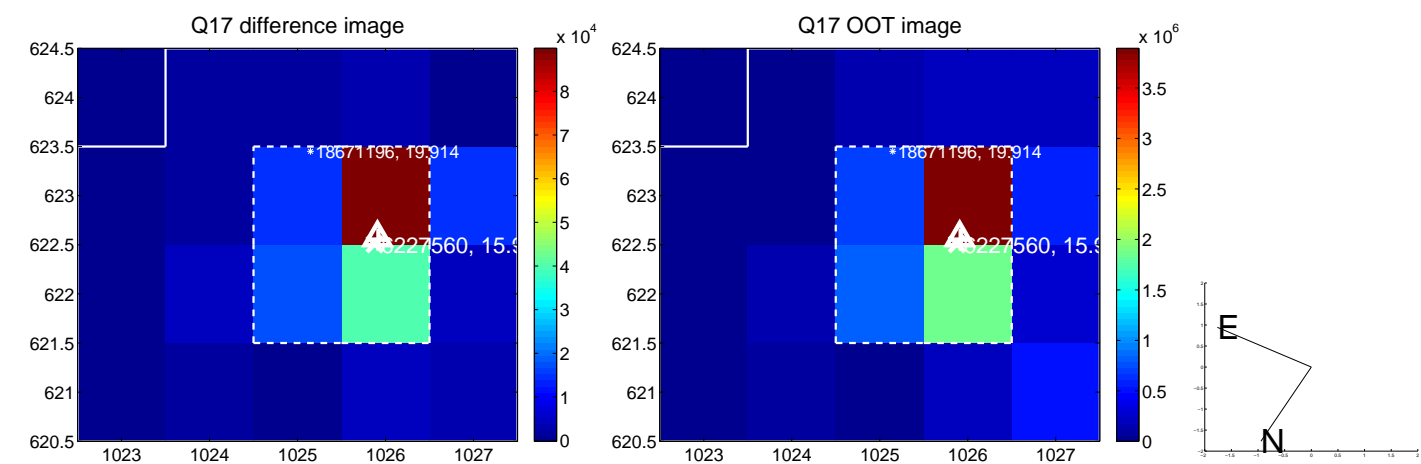
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



UKIRT Image

Declination

