

# KIC 005613821

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005613821-01	OBS	2915.01	5.061015	134.457465	68.6	2.677	13.2	14.1	0.91	5637	0.89	235.03

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005613821-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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

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

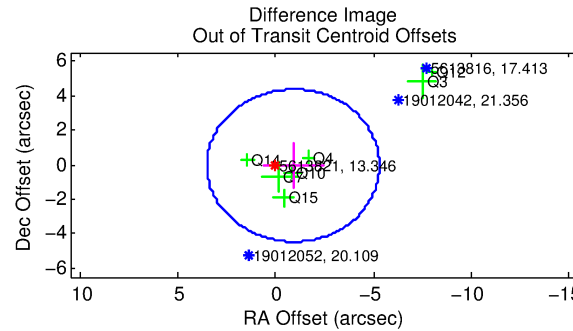
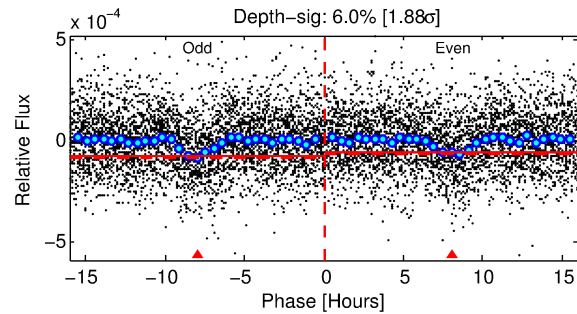
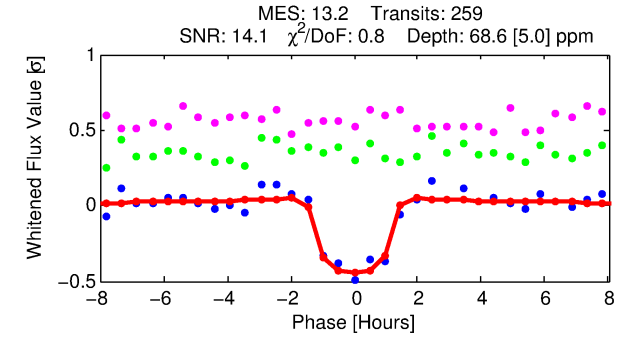
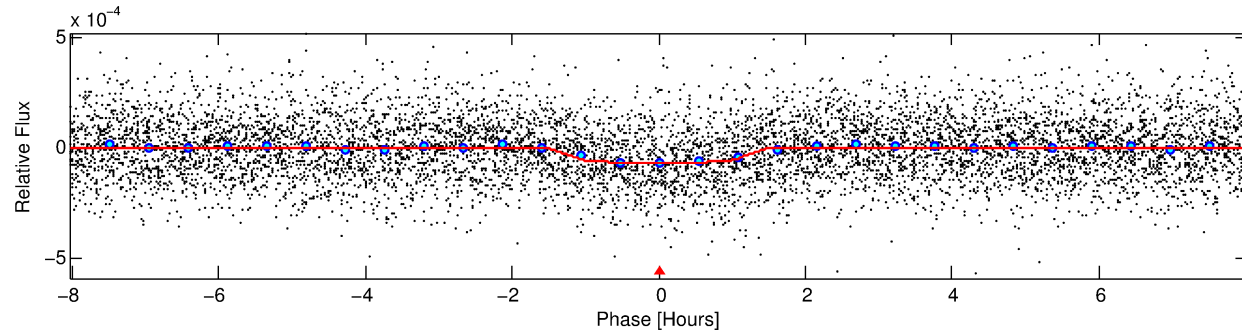
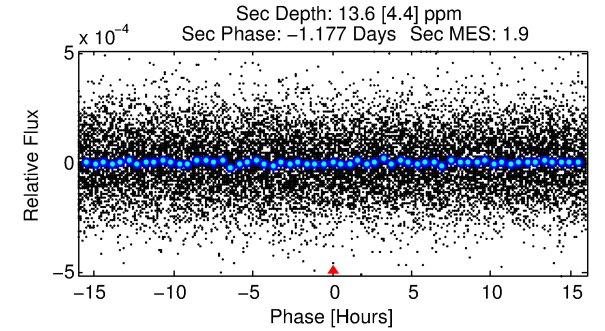
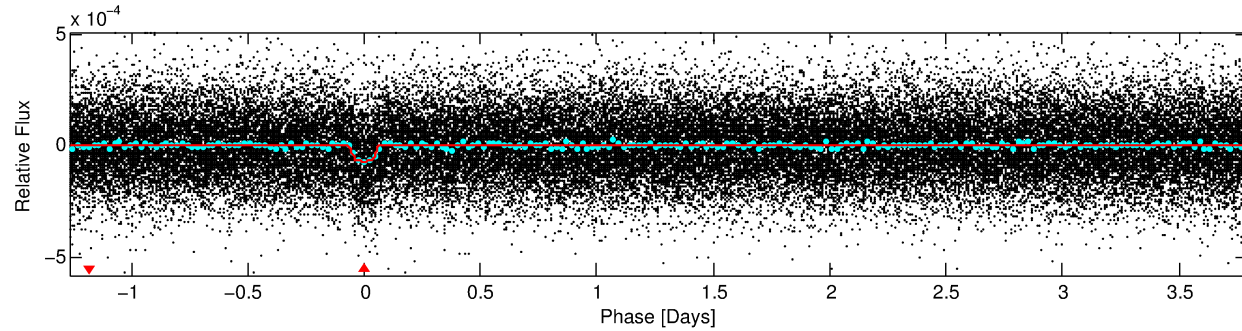
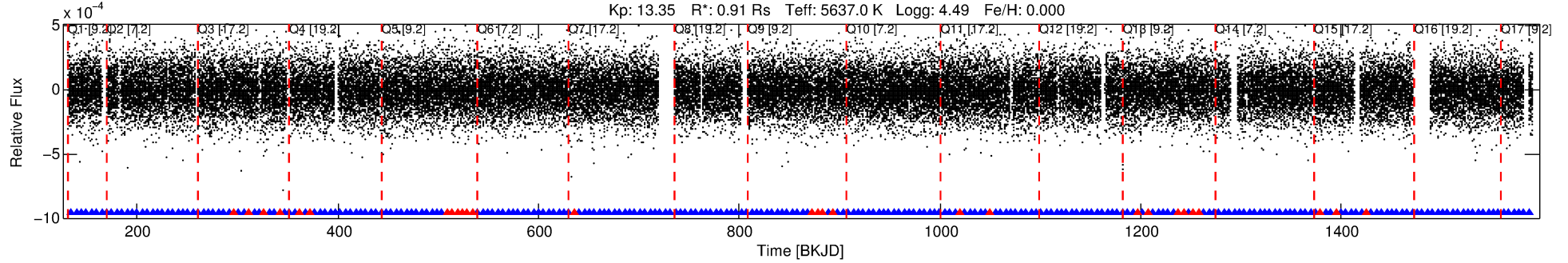
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005613821-01

No Significant Match Found

# DV One-Page Summary

KIC: 5613821 Candidate: 1 of 1 Period: 5.061 d  
KOI: K02915.01 Corr: 0.937



## DV Fit Results:

Period = 5.06102 [0.00002] d  
Epoch = 134.4575 [0.0032] BKJD  
Rp/R\* = 0.0090 [0.0040]  
a/R\* = 6.89 [13.89]  
b = 0.89 [0.48]  
Seff = 235.03 [49.14]  
Teff = 998 [52] K  
Rp = 0.89 [0.42] Re  
a = 0.0565 [0.0070] AU  
Ag = 29.82 [28.94] [1.00σ]  
Teffp = 3607 [861] K [3.03σ]

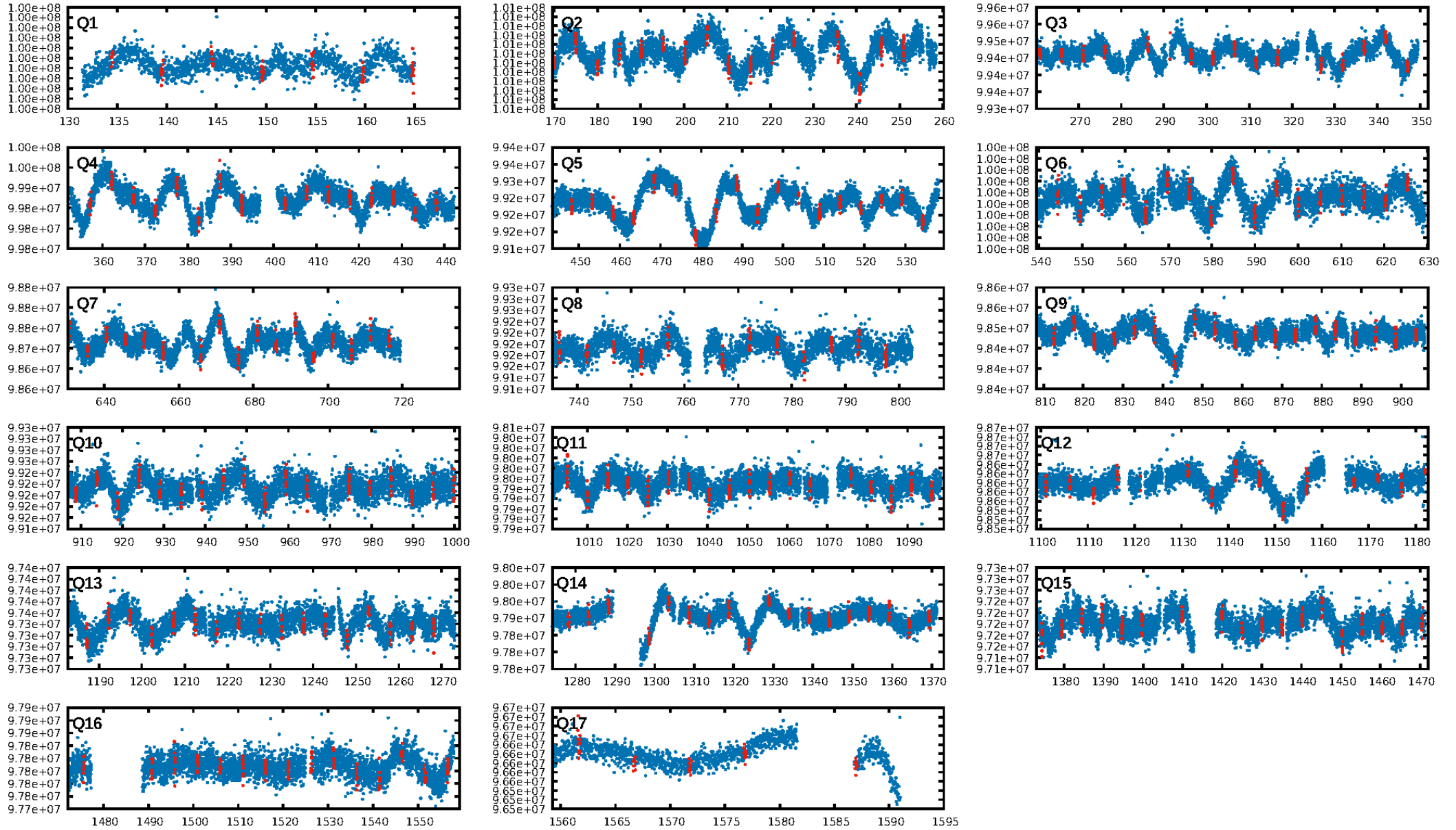
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.59e-38  
RollingBand-fgt: 0.89 [219/247]  
GhostDiagnostic-chr: -3.447  
Centroid-sig: 1.7%  
Centroid-so: 1.959 arcsec [1.91σ]  
OotOffset-rm: 0.895 arcsec [0.61σ]  
KicOffset-rm: 0.864 arcsec [0.89σ]  
OotOffset-st: 2/3/2/0 [7]  
KicOffset-st: 2/3/2/0 [7]  
DiffImageQuality-fgm: 0.86 [6/7]  
DiffImageOverlap-fno: 1.00 [17/17]

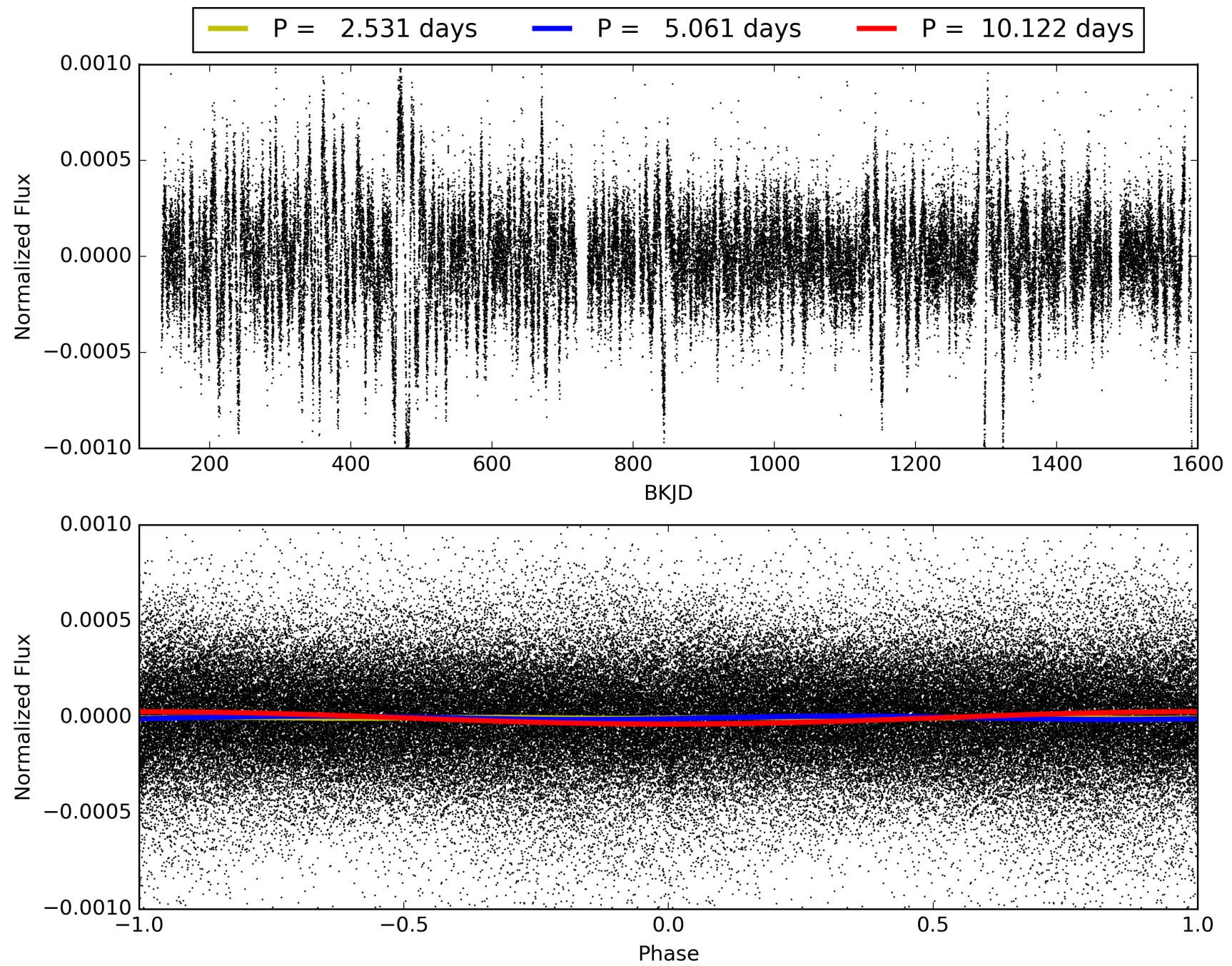
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 16:22:06 Z

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

# TCE 005613821-01, PDC Light Curves



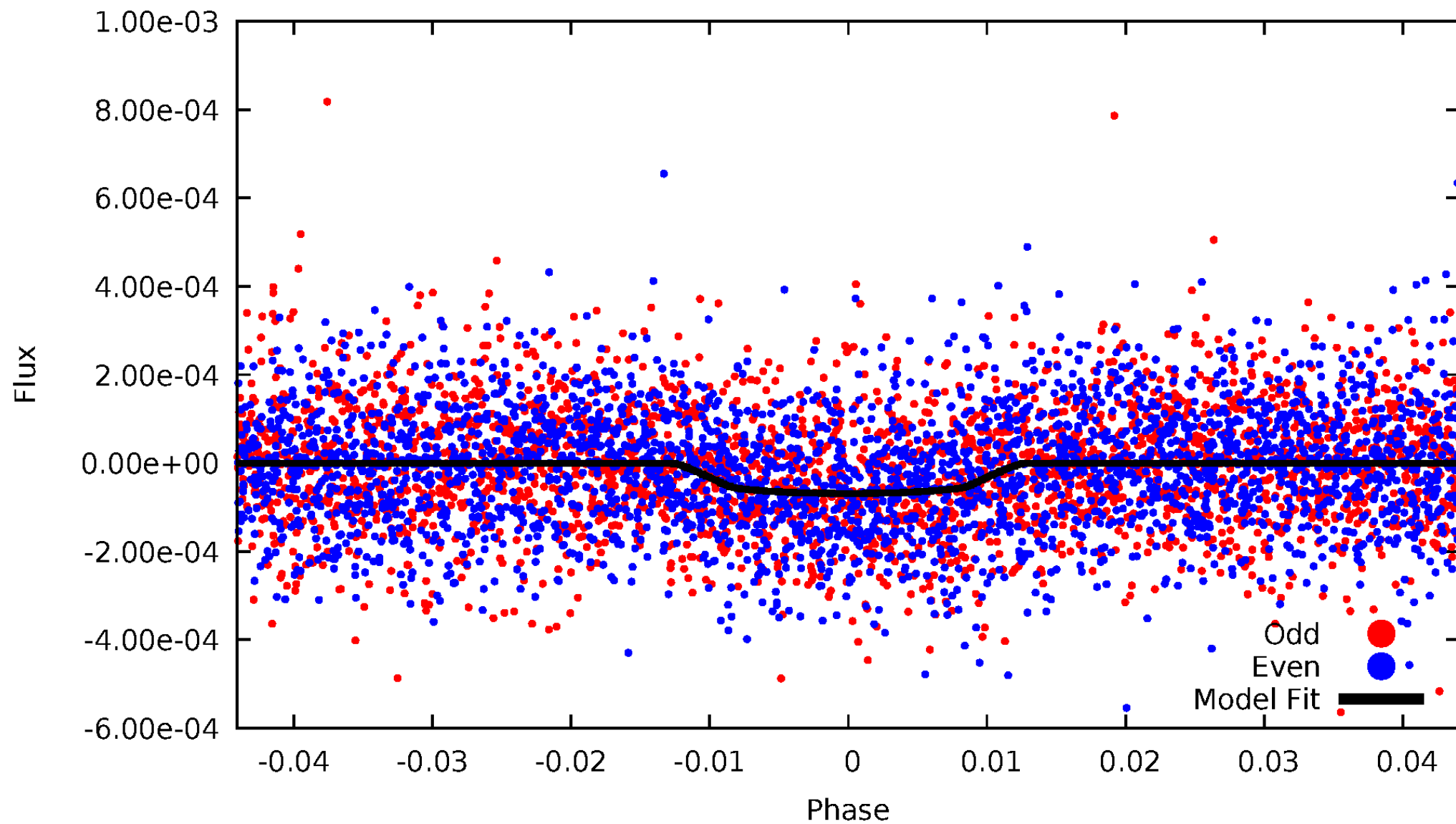
TCE 005613821-01





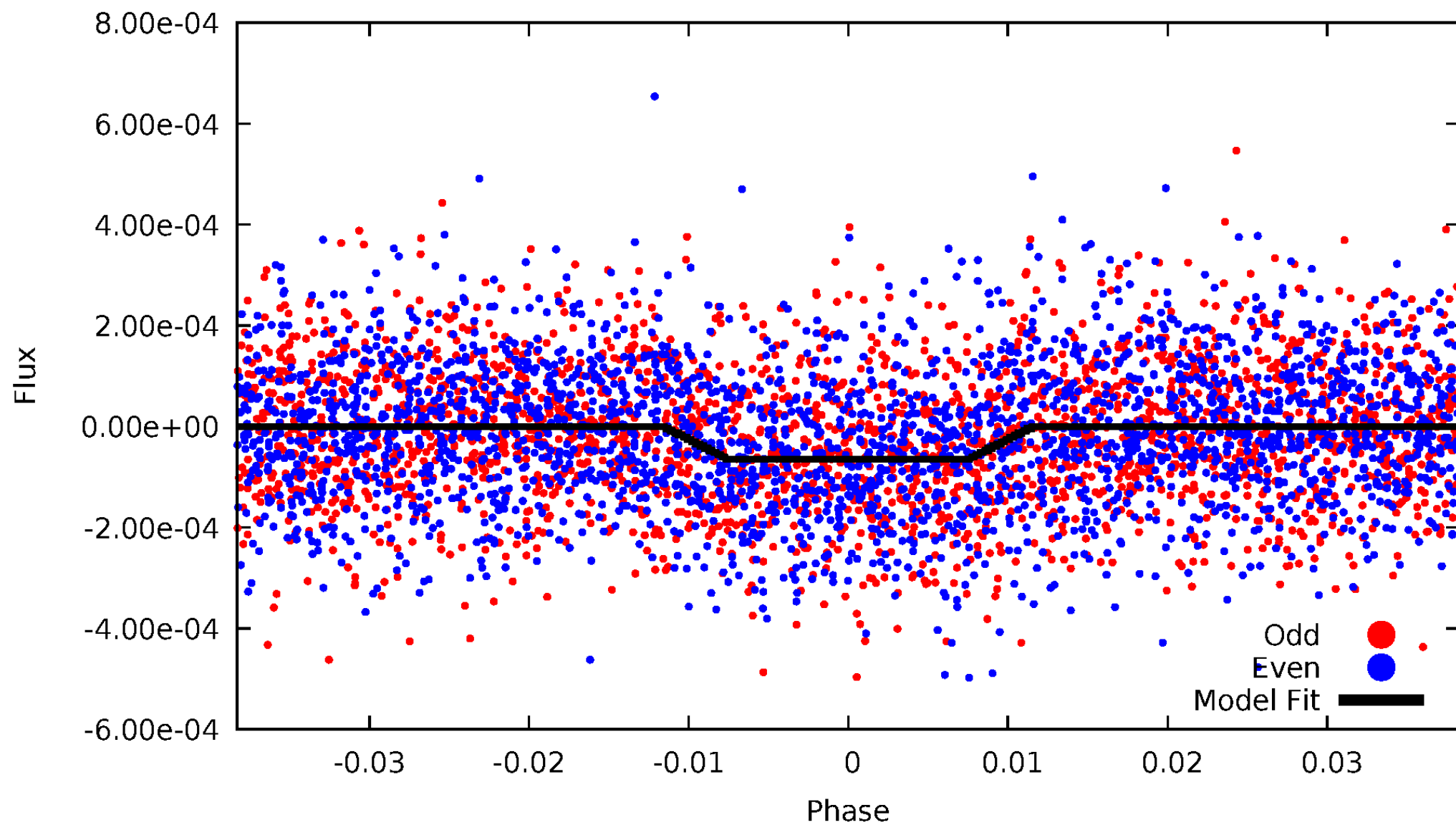
# DV Odd/Even

TCE 005613821-01

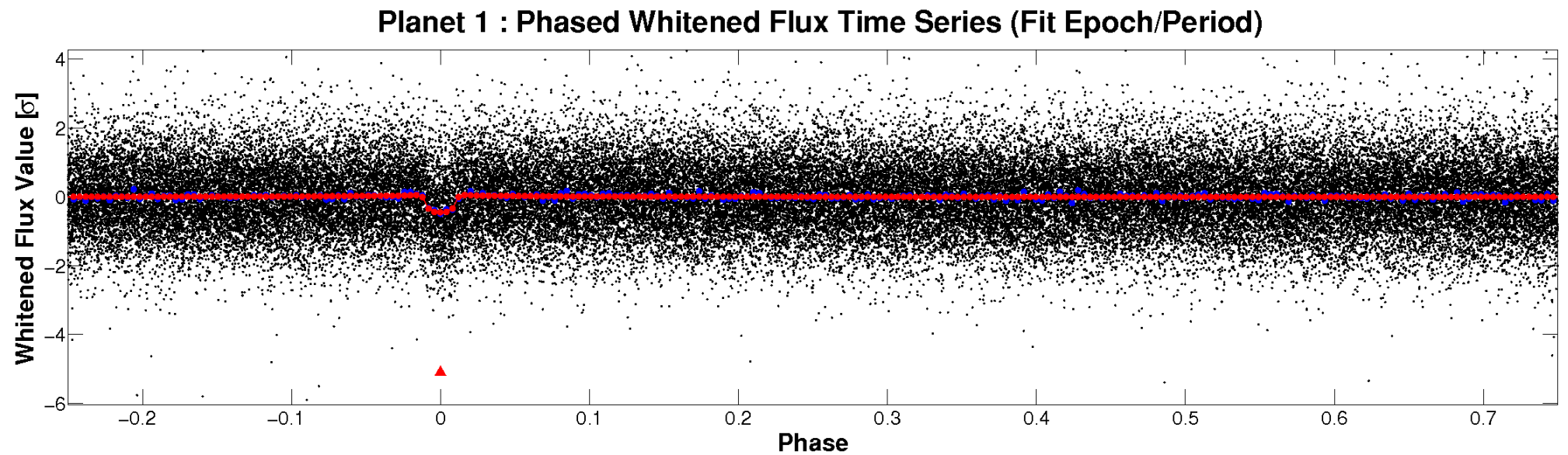
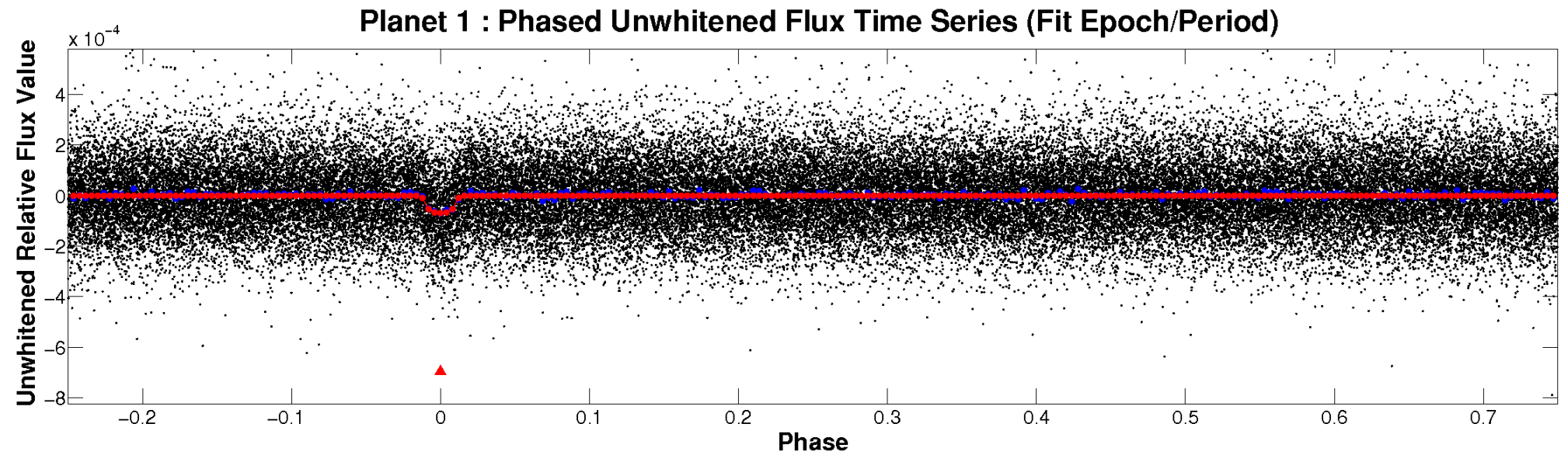


# ALT Odd/Even

TCE 005613821-01

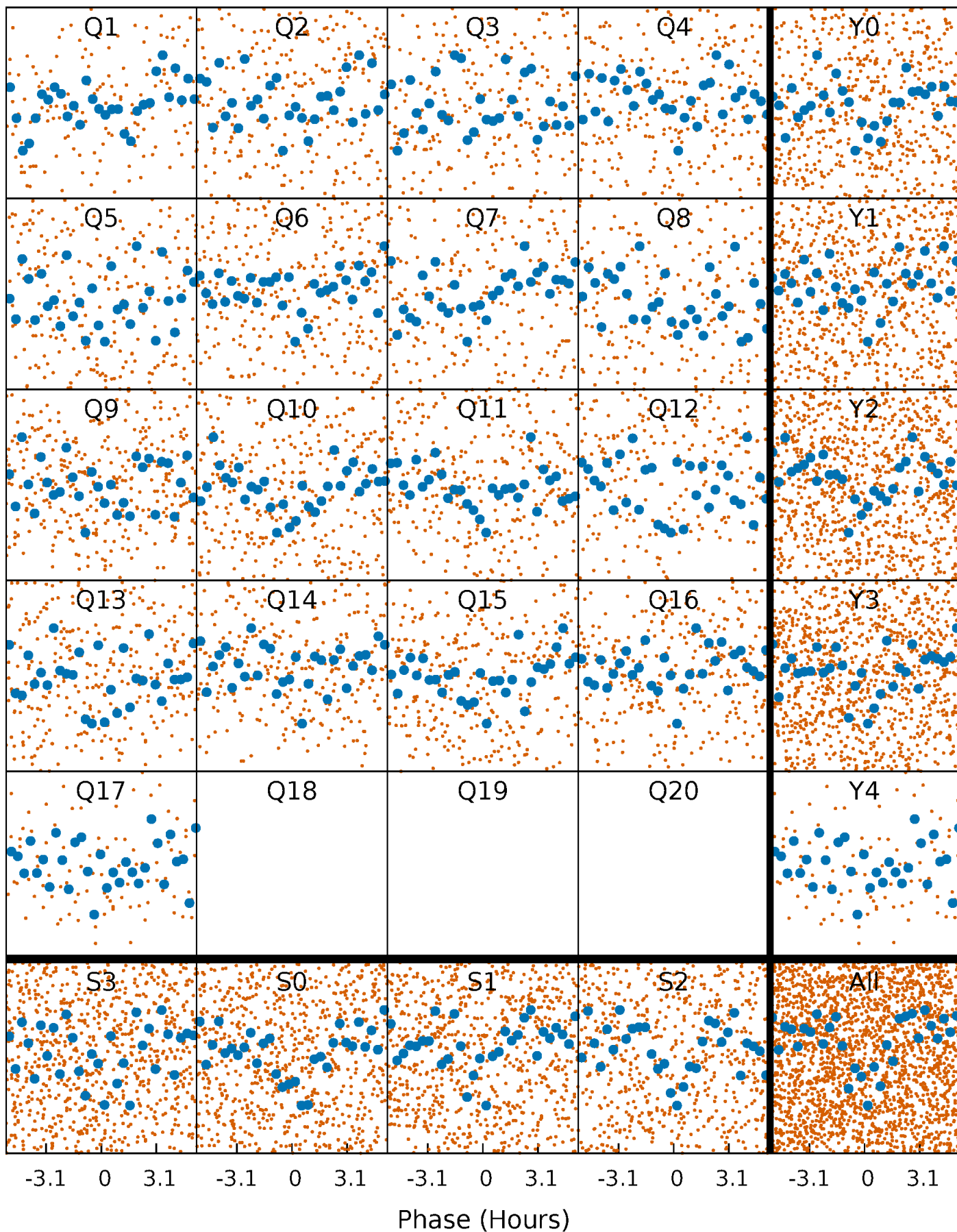


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

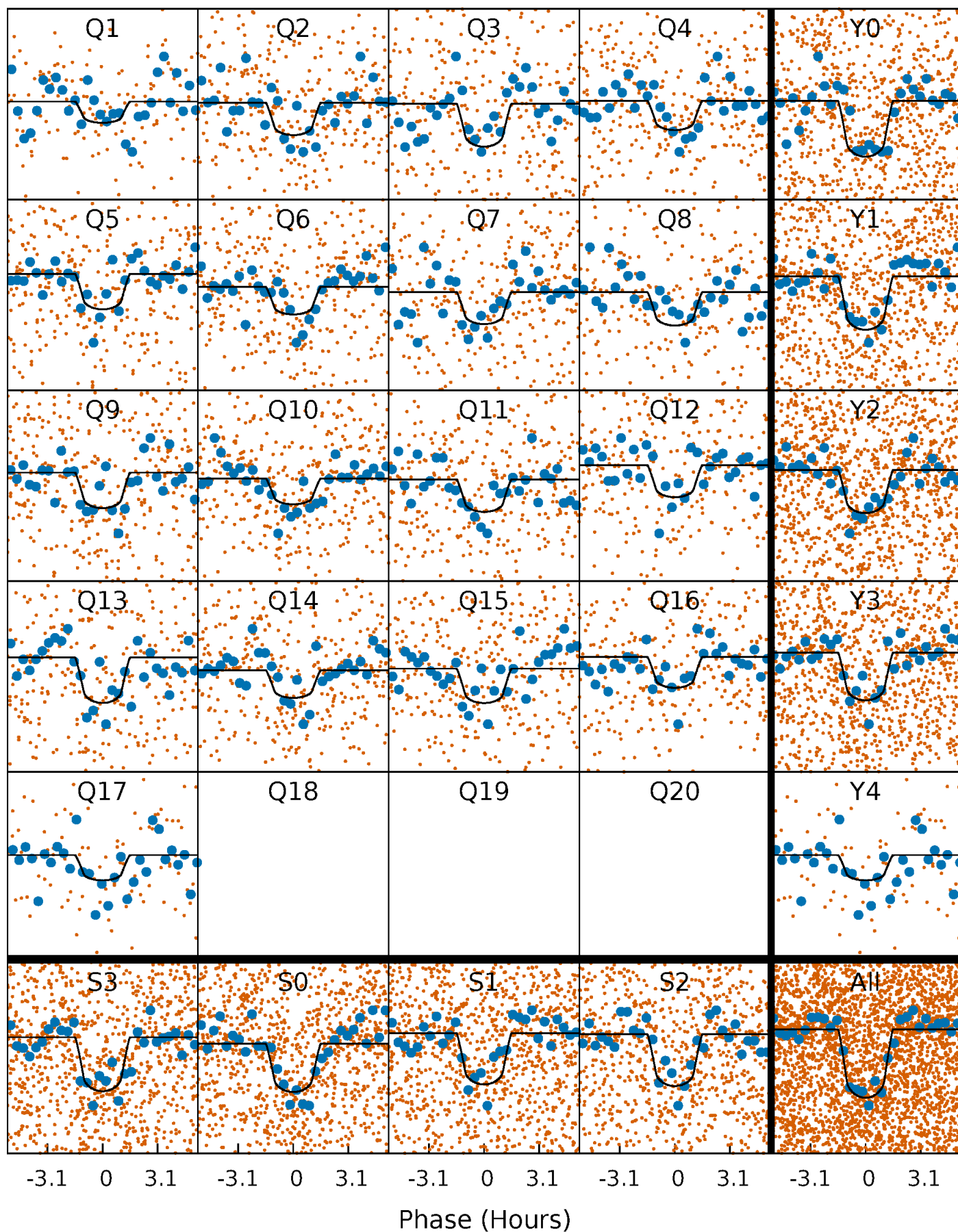
TCE 005613821-01 P= 5.061015 Days  $T_0=134.457465$  (BKJD)





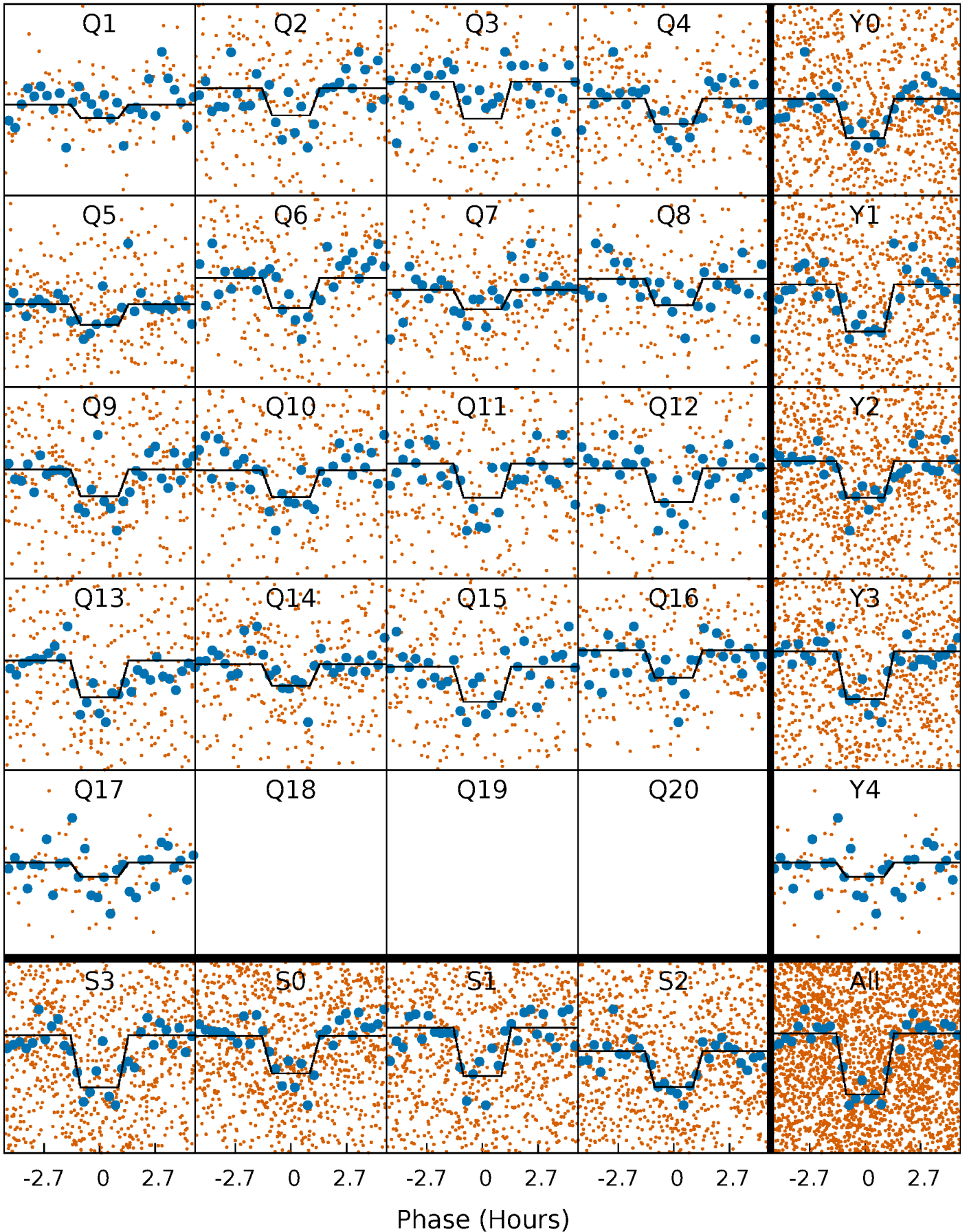
# DV Quarter-Phased Transit Curves

TCE 005613821-01 P= 5.061015 Days  $T_0=134.457465$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

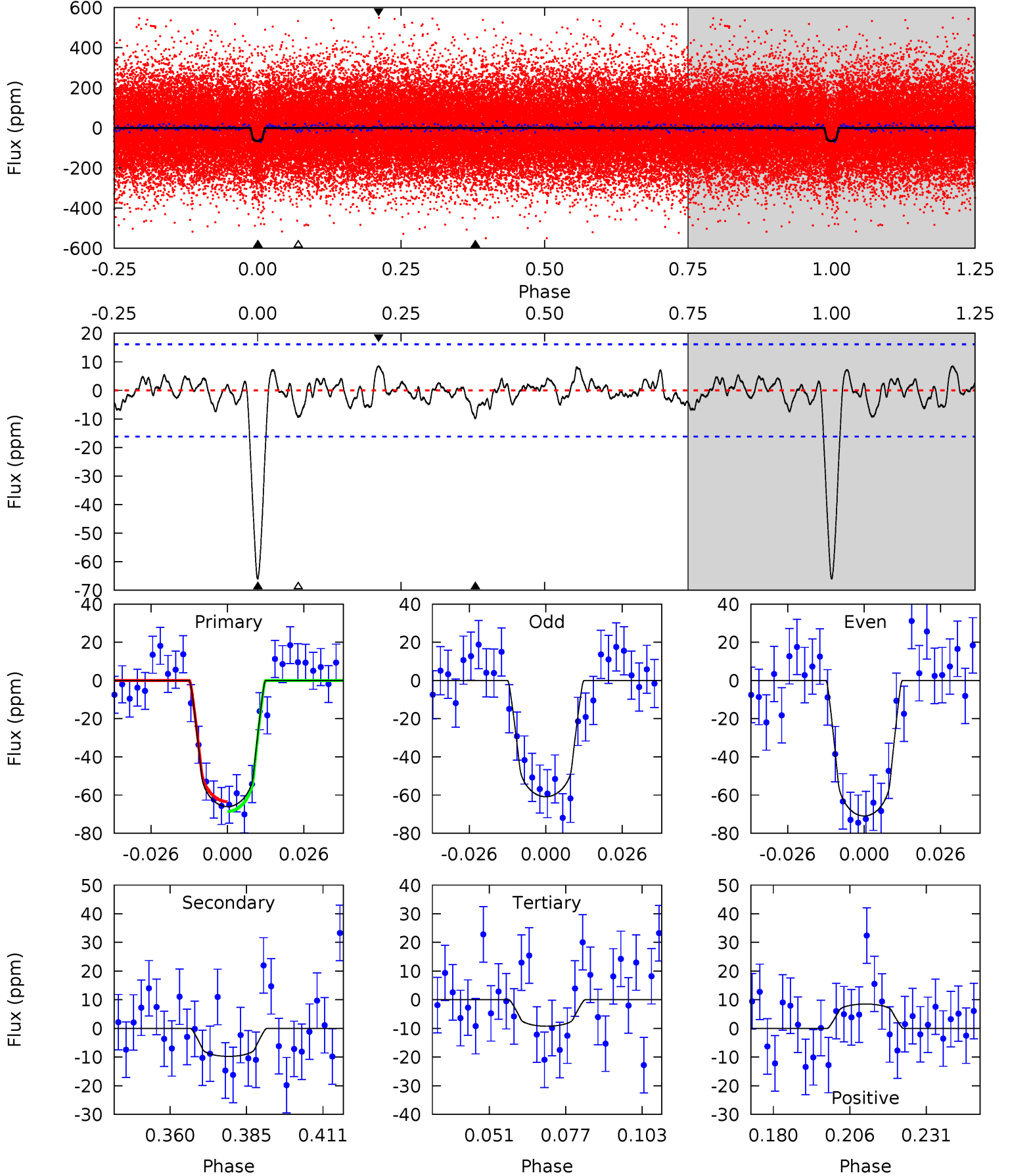
TCE 005613821-01 P= 5.060956 Days  $T_0=134.468181$  (BKJD)



# DV Model-Shift Uniqueness Test

005613821-01, P = 5.061015 Days, E = 129.396450 Days

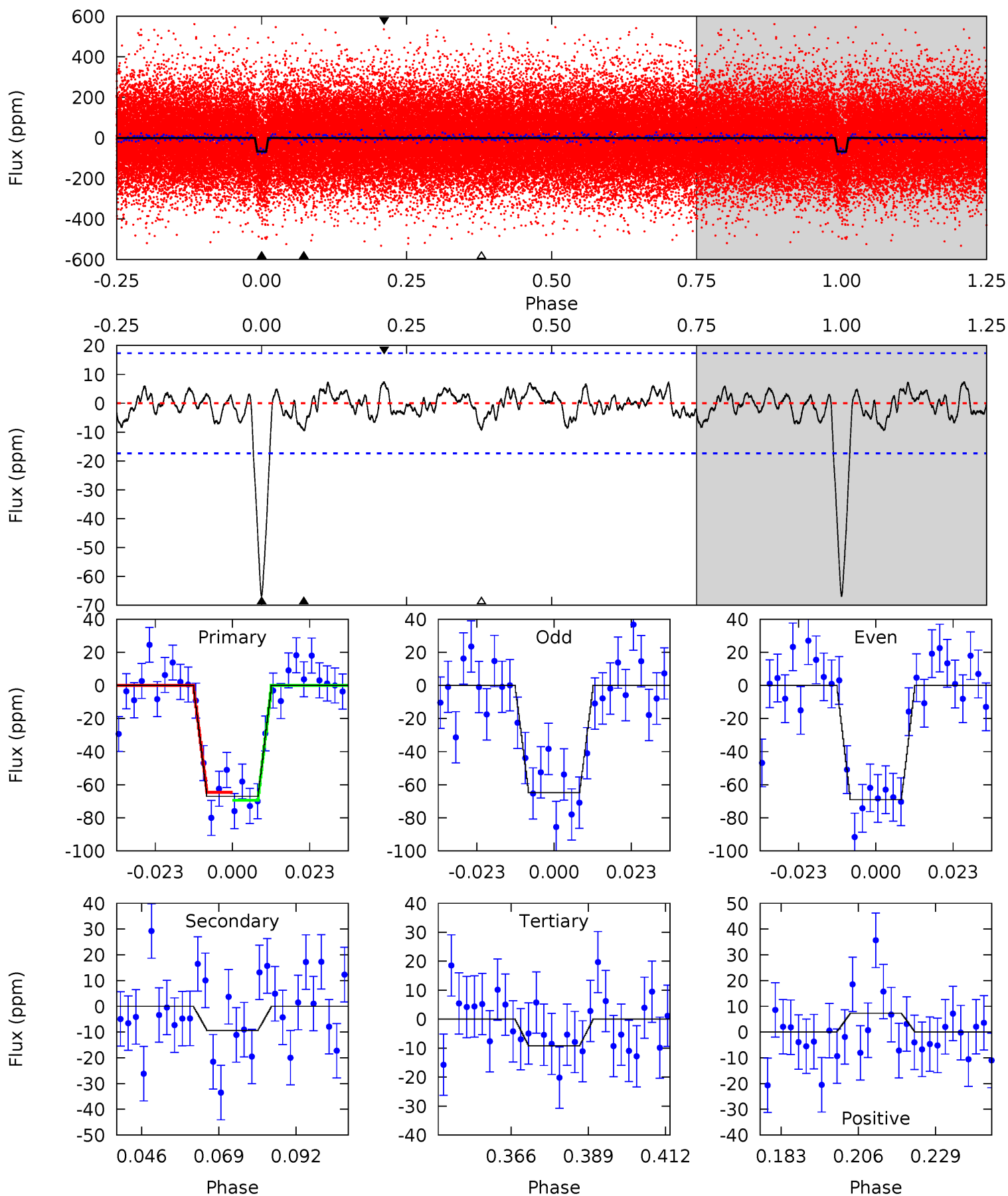
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.8	2.92	2.77	2.55	4.84	2.23	0.95	17.0	17.2	0.16	0.37	1.51	1.04	0.11	0.78



# Alt Model-Shift Uniqueness Test

005613821-01, P = 5.060956 Days, E = 129.407225 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
18.8	2.63	2.59	2.05	4.87	2.28	0.98	16.2	16.8	0.05	0.58	0.60	0.99	0.10	0.67





### Stellar Parameters For KIC 005613821

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5637^{+101}_{-112}$	$4.492^{+0.048}_{-0.112}$	$0.000^{+0.150}_{-0.150}$	$0.911^{+0.121}_{-0.060}$	$0.939^{+0.057}_{-0.063}$	$1.751^{+0.352}_{-0.536}$
	+2%/-2%	+1%/-2%	+inf%/-inf%	+13%/-7%	+6%/-7%	+20%/-31%
Source	SPE59	SPE59	SPE59	DSEP		

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

### Secondary Eclipse Parameters for KIC 005613821-01 / KOI 2915.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-10 \pm 3$	$0.90^{+0.39}_{-0.39}$	$1405^{+54}_{-43}$	$3722^{+909}_{-499}$	$20^{+47}_{-12}$
Alt.	$-9 \pm 4$	$0.82^{+0.41}_{-0.40}$	$1403^{+55}_{-38}$	$3807^{+1148}_{-580}$	$24^{+76}_{-16}$

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

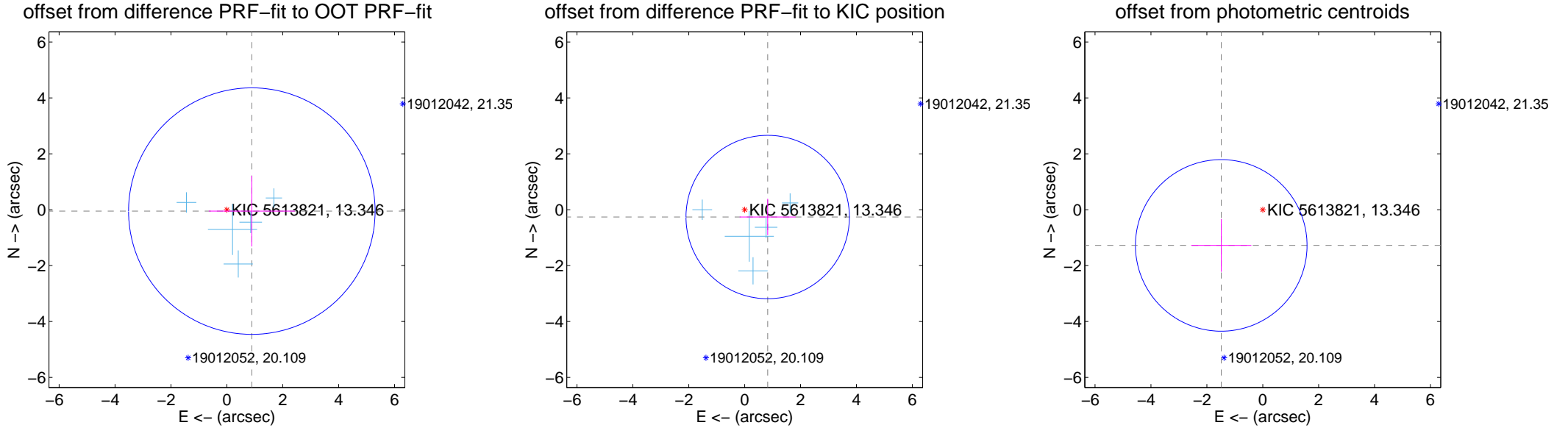
## DV Centroid Data

Supplemental centroid analysis for 005613821-01. Kepler magnitude: 13.35. Transit SNR 14.14

There are 6 quarters with good PRF difference image offsets

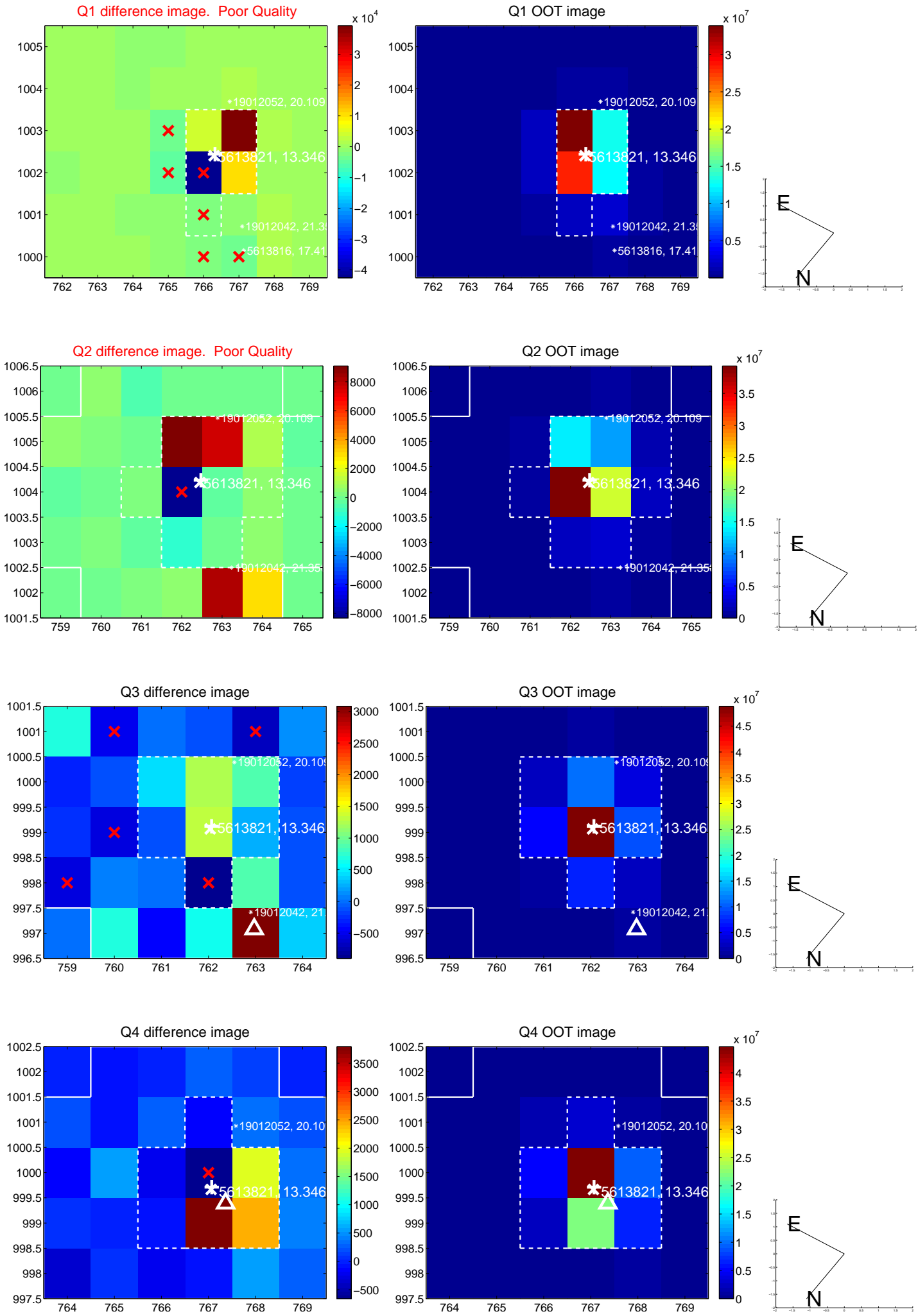
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.895 \pm 1.470$	0.61	$-0.894 \pm 1.540$	$-0.050 \pm 1.265$
PRF-fit source offset from KIC position	$0.864 \pm 0.974$	0.89	$-0.823 \pm 1.001$	$-0.262 \pm 0.650$
photometric centroid source offset	$1.96 \pm 1.02$	1.91	$1.49 \pm 1.08$	$-1.28 \pm 0.95$



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.

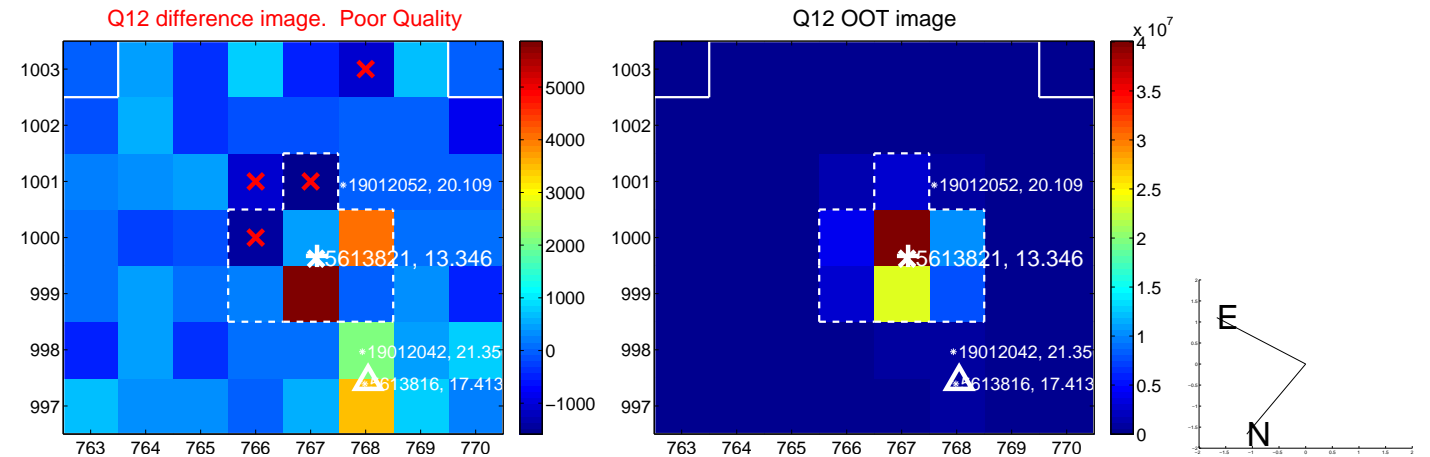
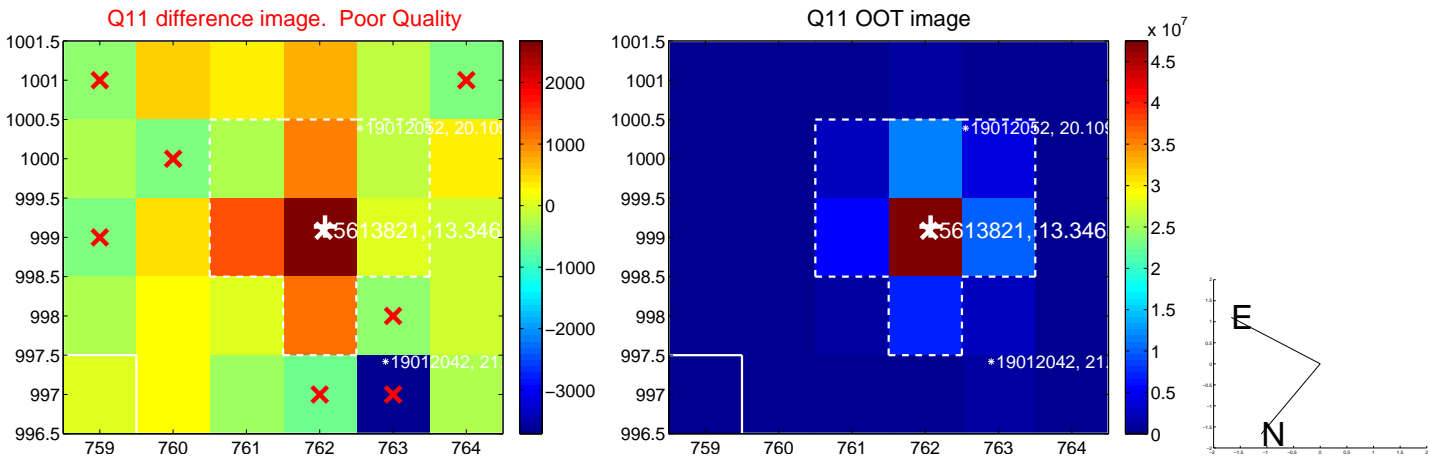
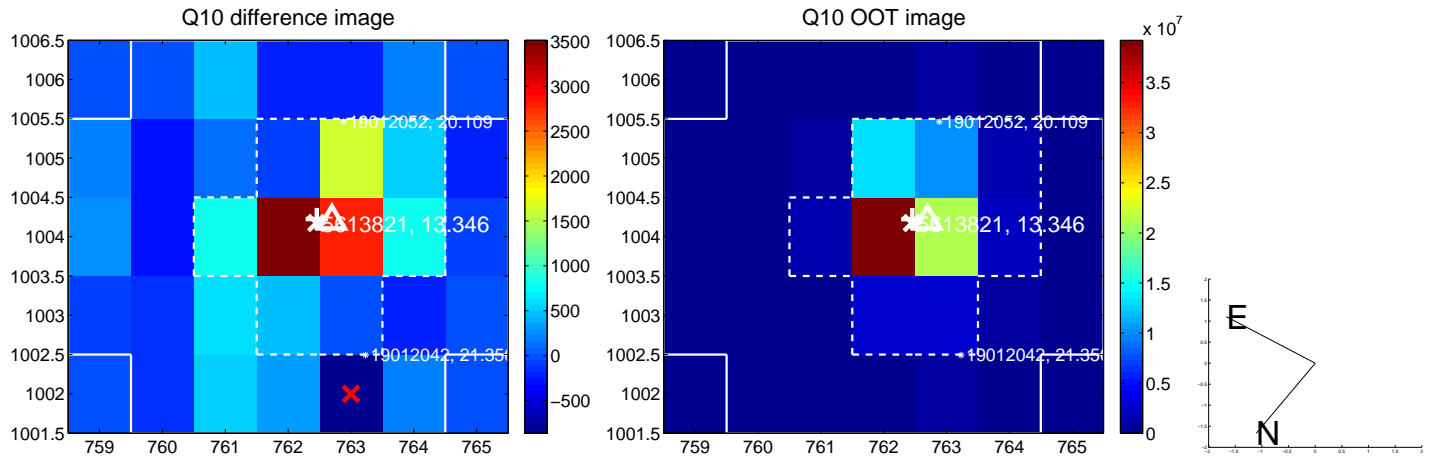
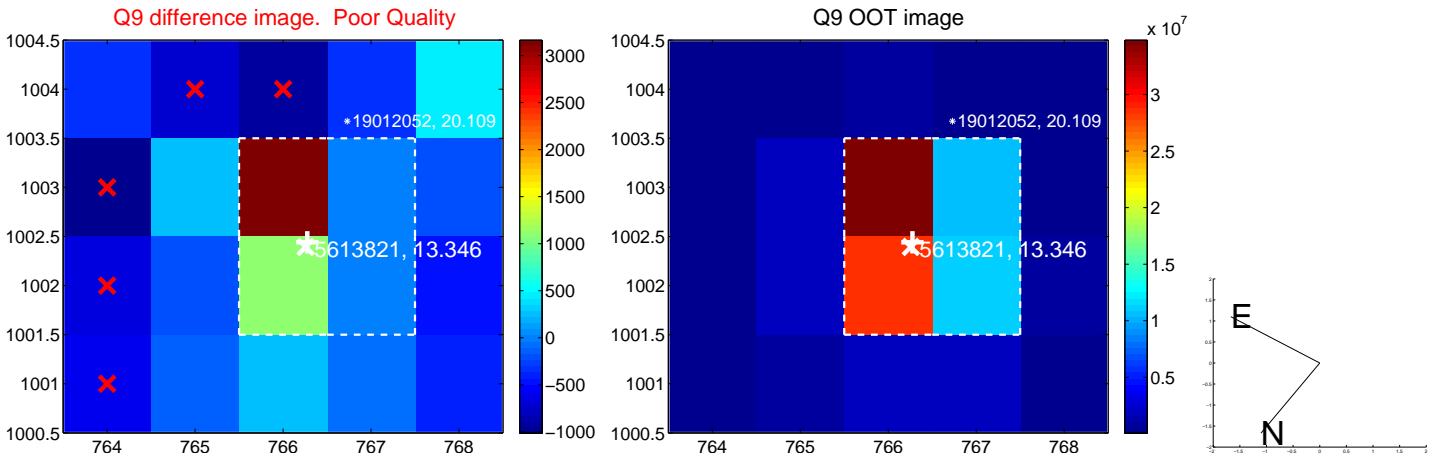
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





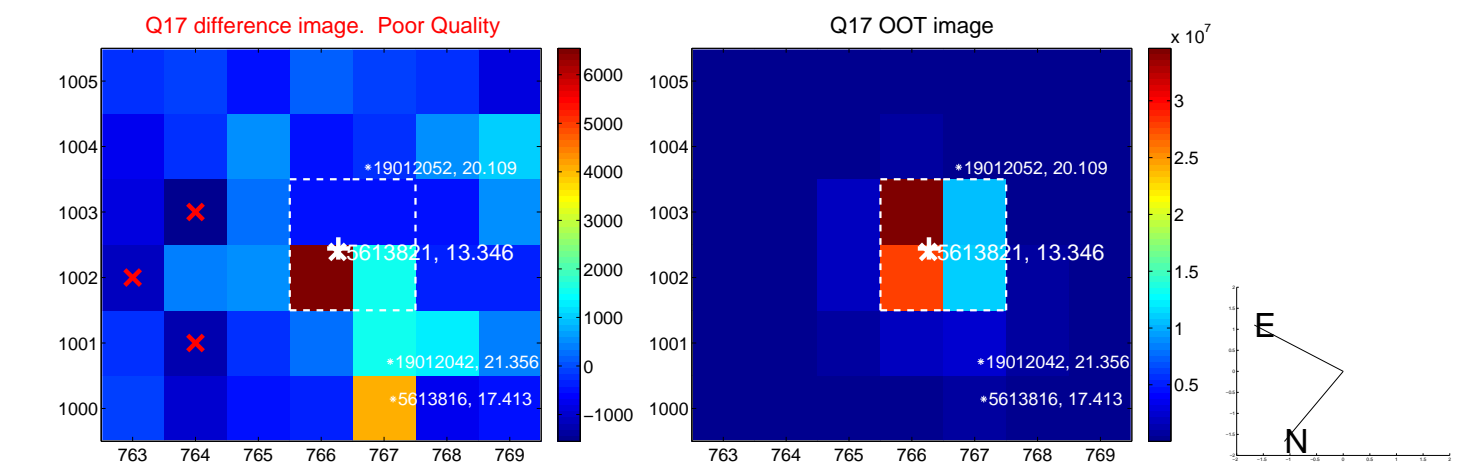


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

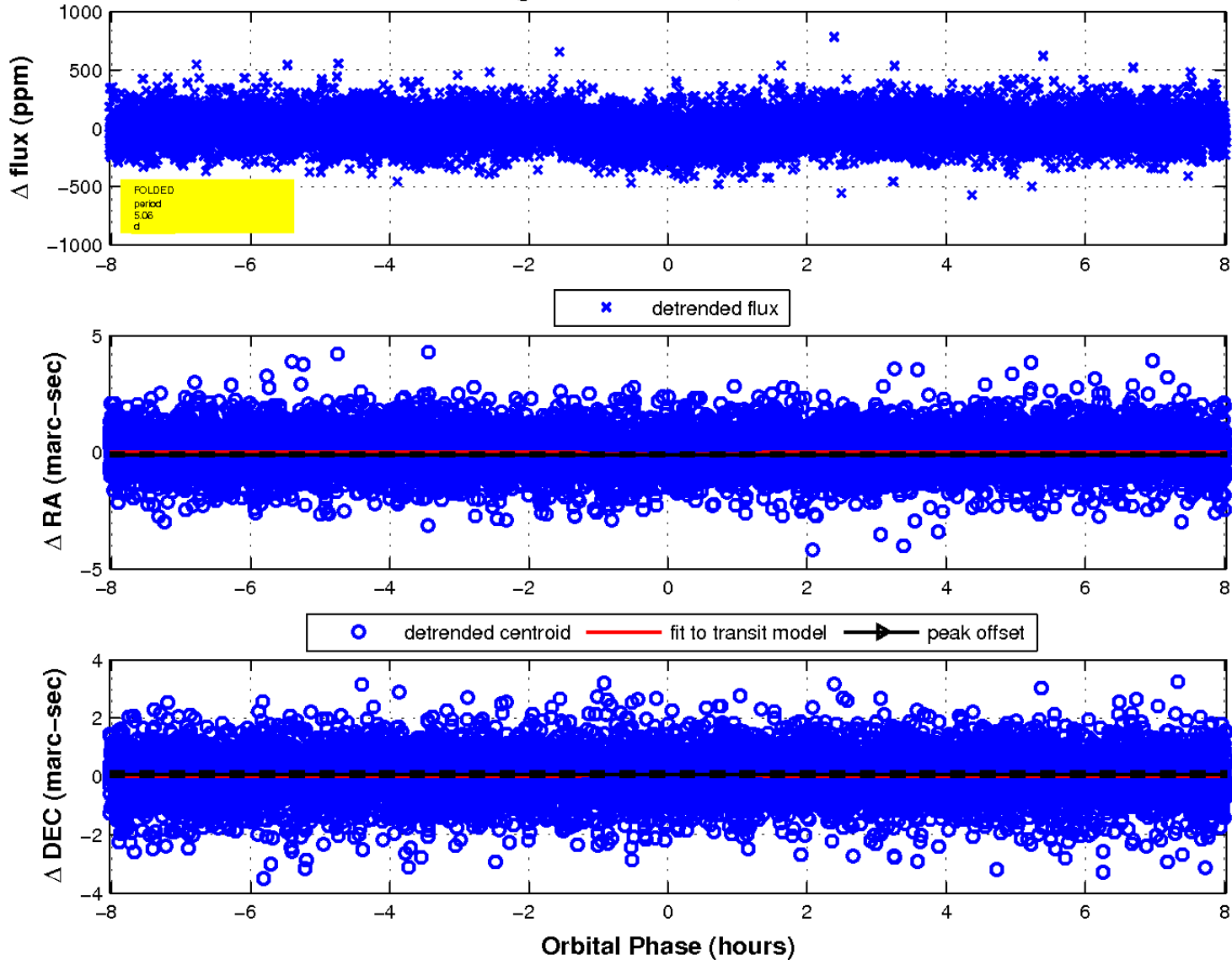




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

