

# KIC 008620402

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008620402-01	OBS	3267.01	14.195966	137.008779	198.4	3.713	11.4	12.3	1.08	6214	1.77	105.85

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008620402-01	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.

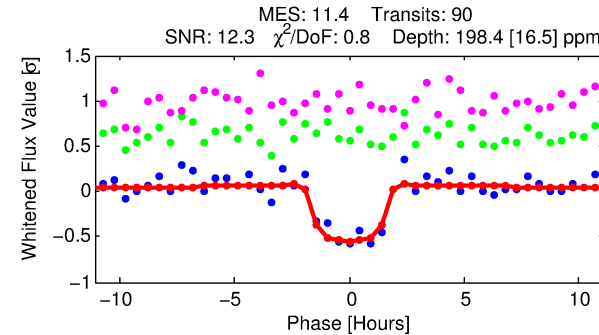
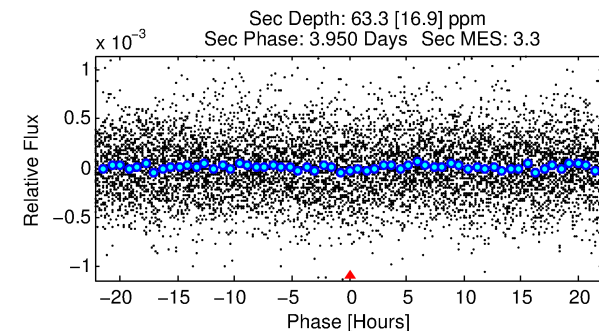
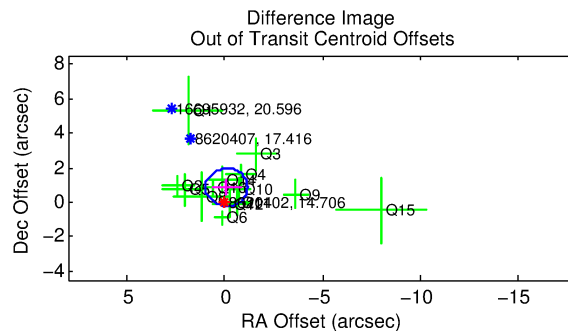
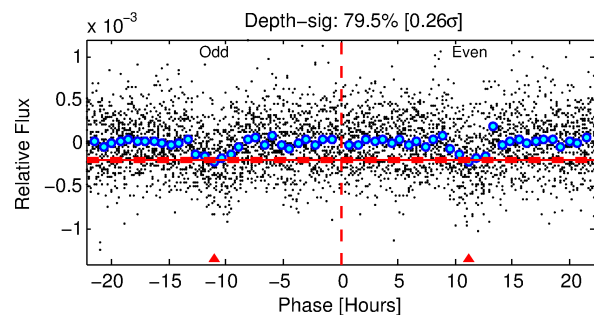
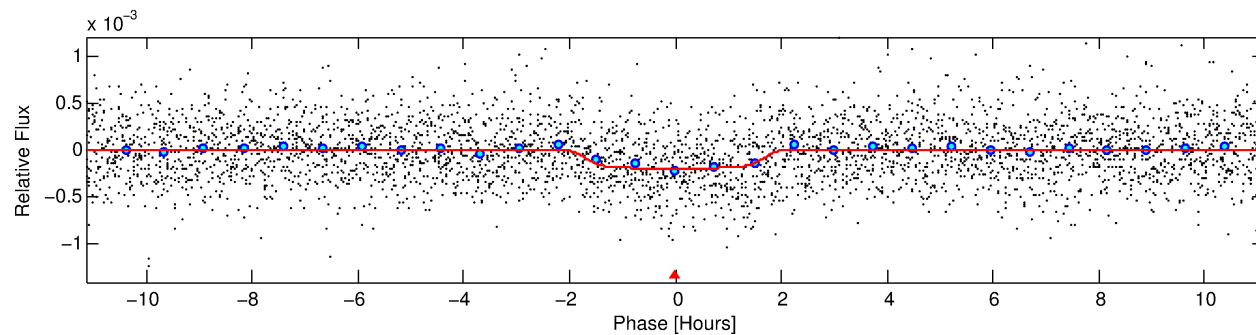
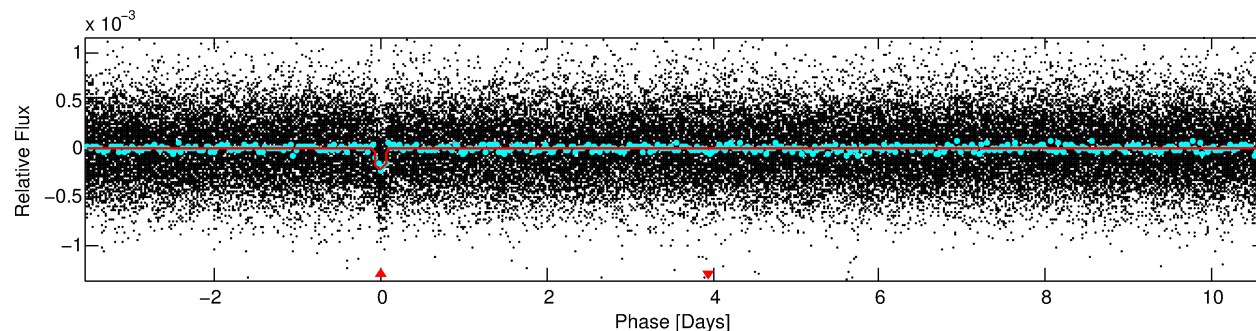
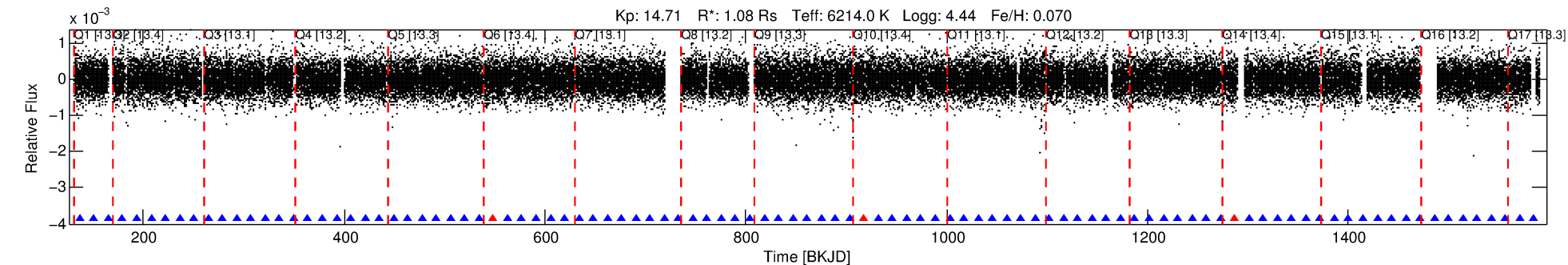
## Ephemeris Match Information For 008620402-01

No Significant Match Found

# DV One-Page Summary

KIC: 8620402 Candidate: 1 of 1 Period: 14.196 d

KOI: K03267.01 Corr: 0.974



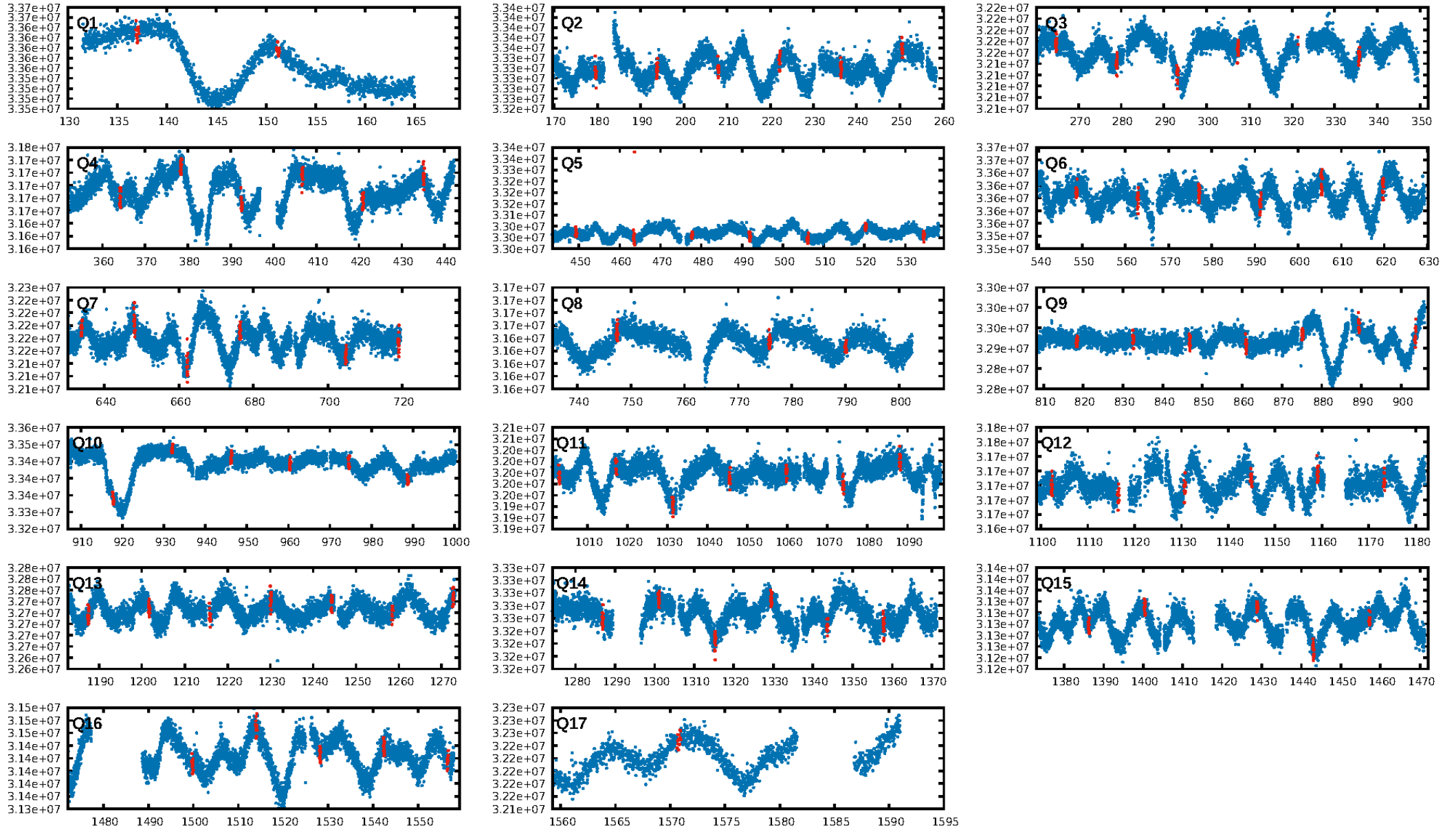
## DV Fit Results:

Period = 14.19597 [0.00011] d  
Epoch = 137.0088 [0.0061] BKJD  
Rp/R\* = 0.0151 [0.0047]  
a/R\* = 14.07 [22.56]  
b = 0.89 [0.37]  
Seff = 105.85 [44.73]  
Teff = 818 [86] K  
Rp = 1.78 [0.80] Re  
a = 0.1209 [0.0332] AU  
Ag = 161.35 [126.71] [1.27 $\sigma$ ]  
Teffp = 4507 [780] K [4.70 $\sigma$ ]

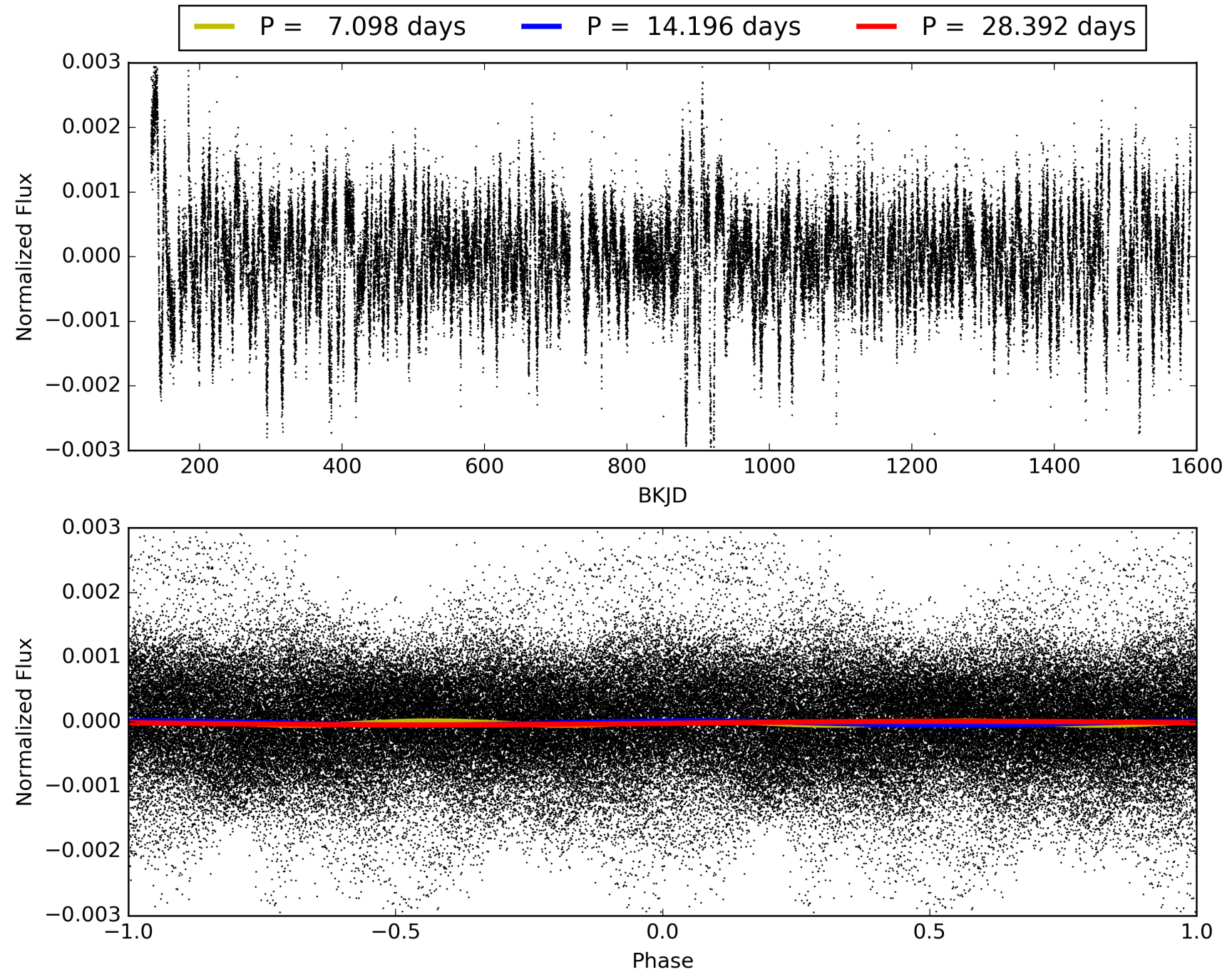
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 99.7%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 3.81e-29  
RollingBand-fgt: 0.97 [84/87]  
GhostDiagnostic-chr: 2.286  
Centroid-sig: 9.0%  
Centroid-so: 1.529 arcsec [1.47 $\sigma$ ]  
OotOffset-rm: 0.871 arcsec [2.42 $\sigma$ ]  
KicOffset-rm: 0.668 arcsec [1.75 $\sigma$ ]  
OotOffset-st: 4/3/4/3 [14]  
KicOffset-st: 4/3/4/3 [14]  
DiffImageQuality-fgm: 0.79 [11/14]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 008620402-01, PDC Light Curves

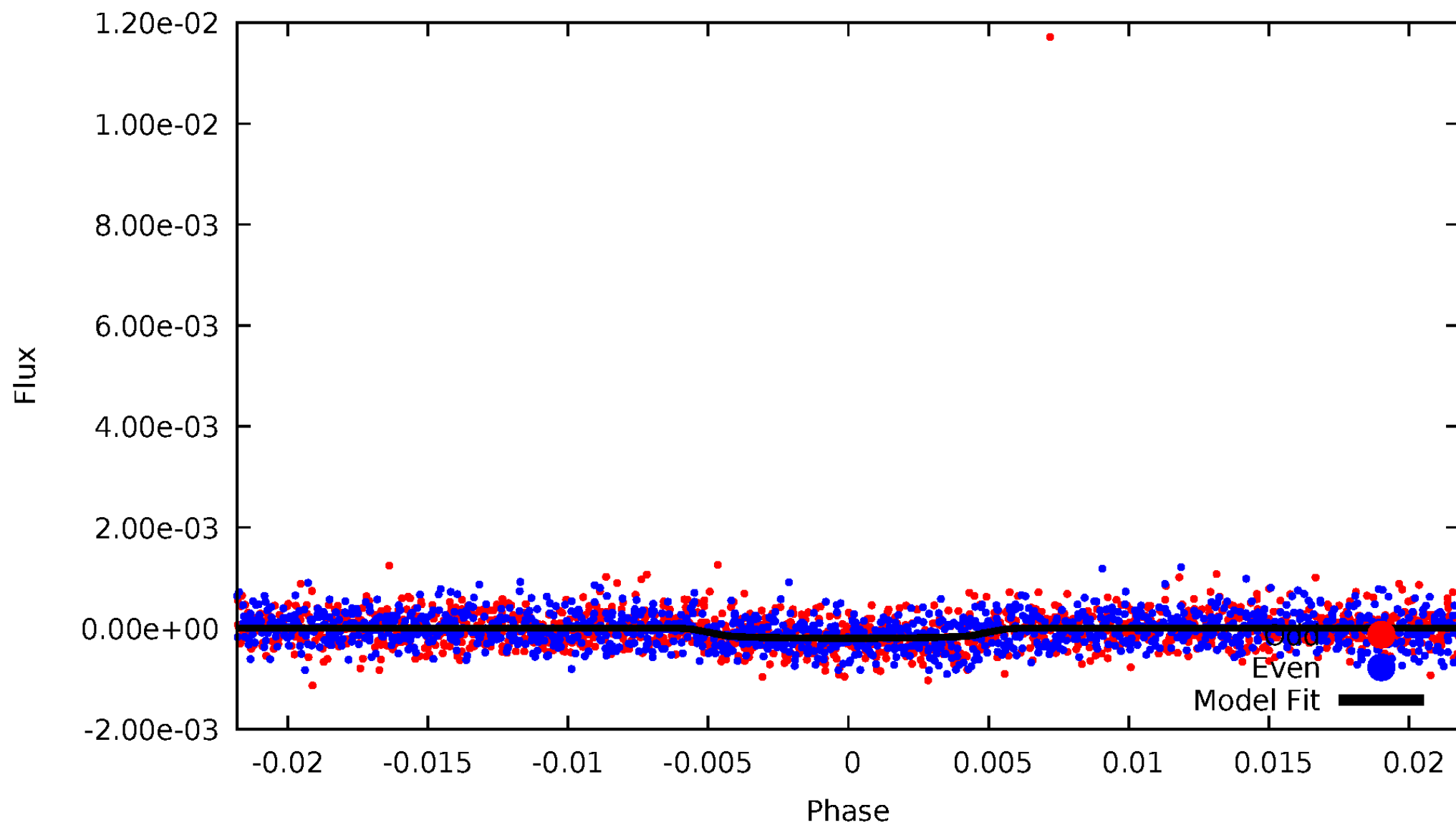


TCE 008620402-01



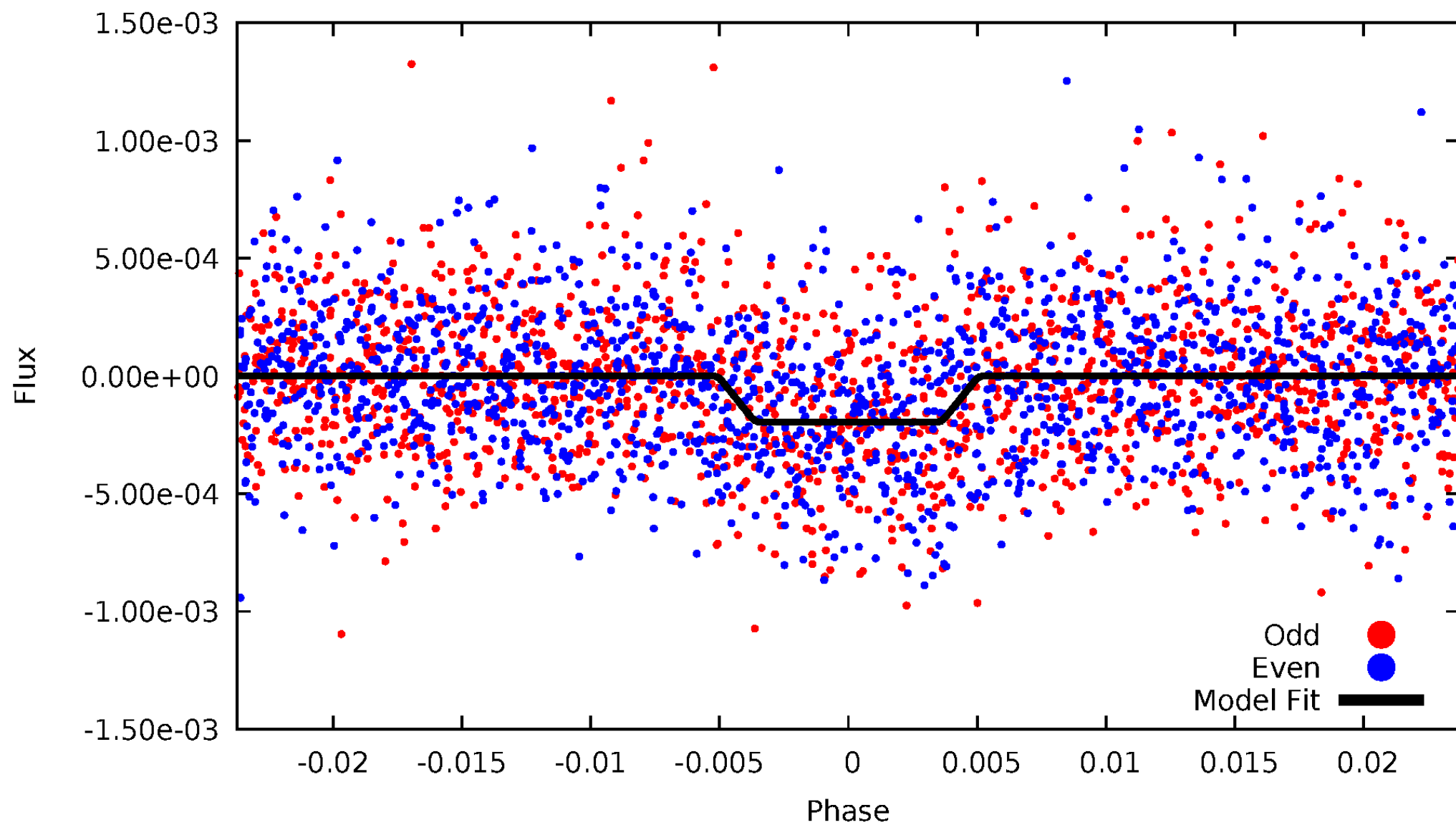
# DV Odd/Even

TCE 008620402-01



# ALT Odd/Even

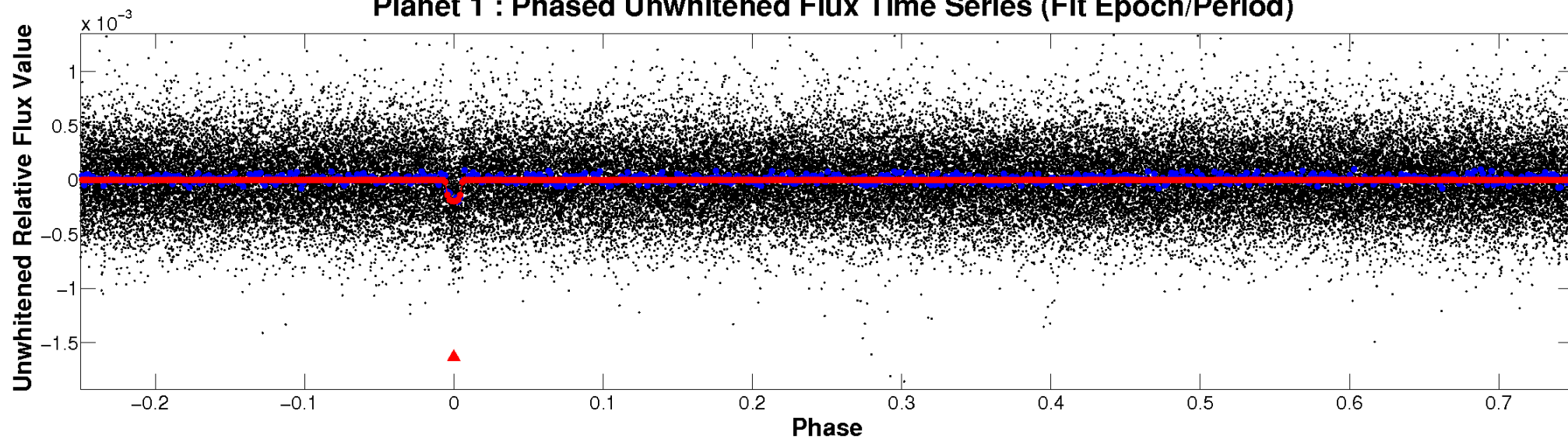
TCE 008620402-01



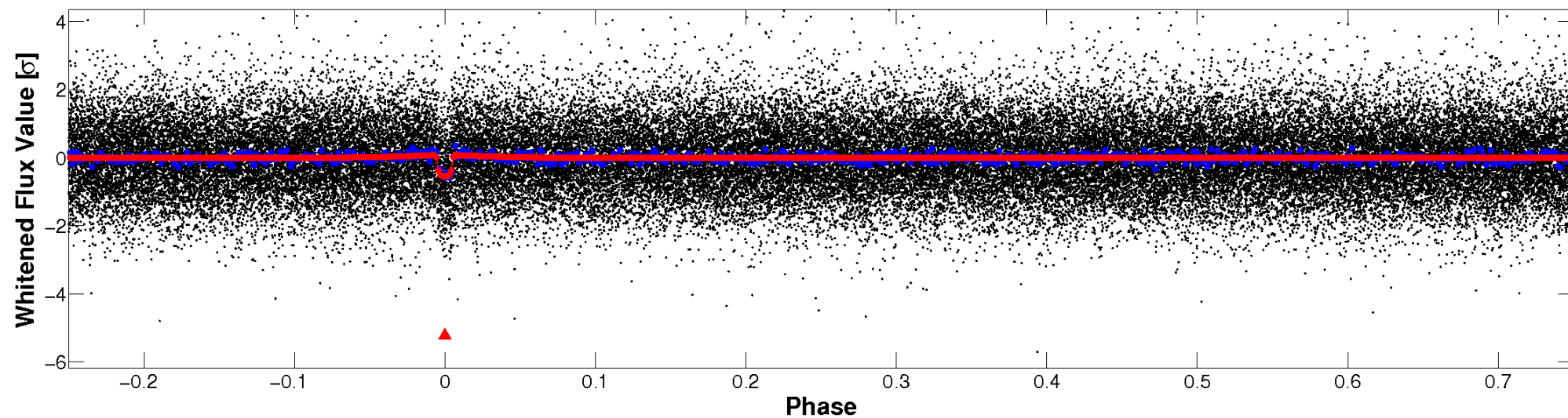


# Non-Whitened Vs. Whitened Light Curve

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

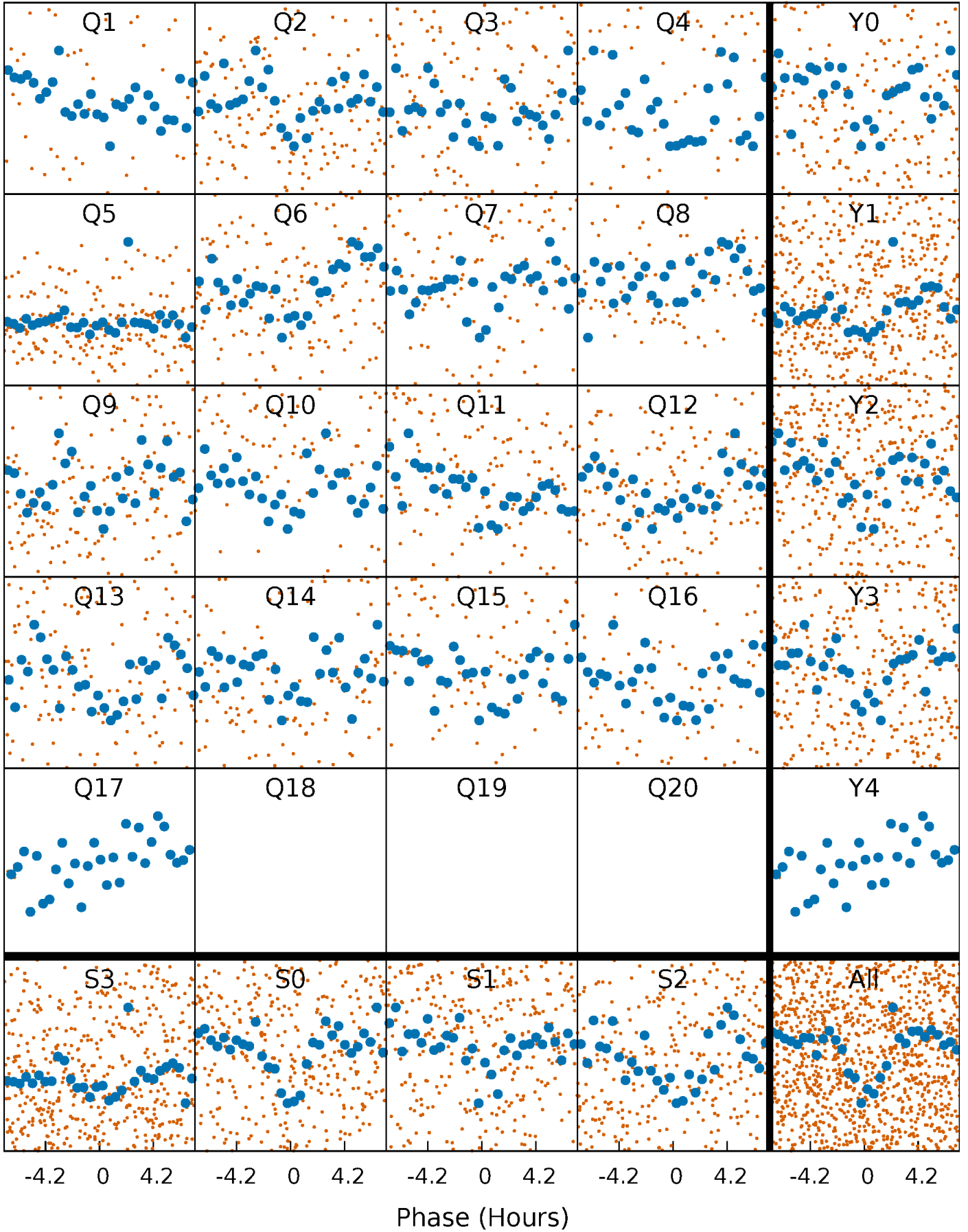


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

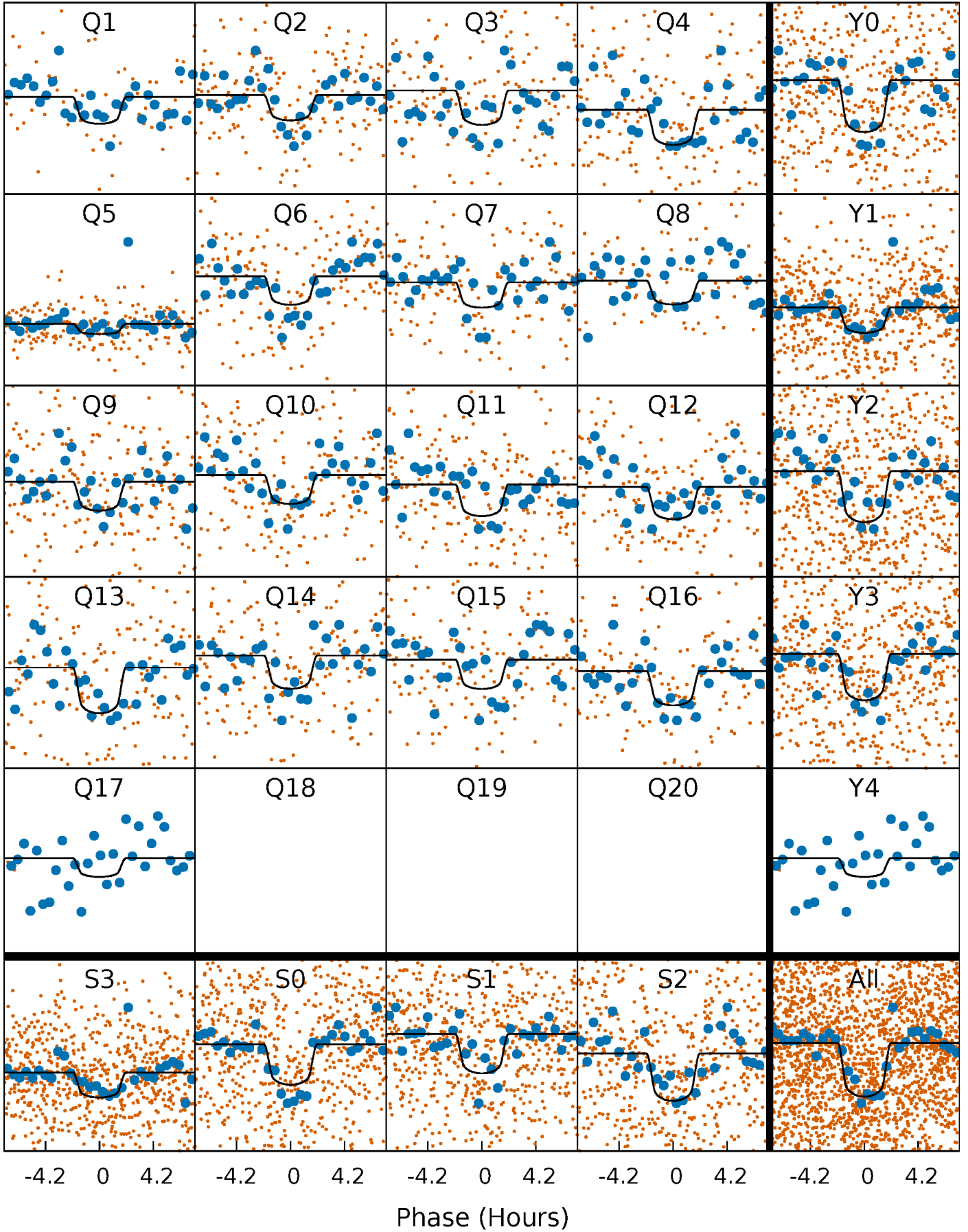
TCE 008620402-01 P= 14.195966 Days  $T_0=137.008779$  (BKJD)





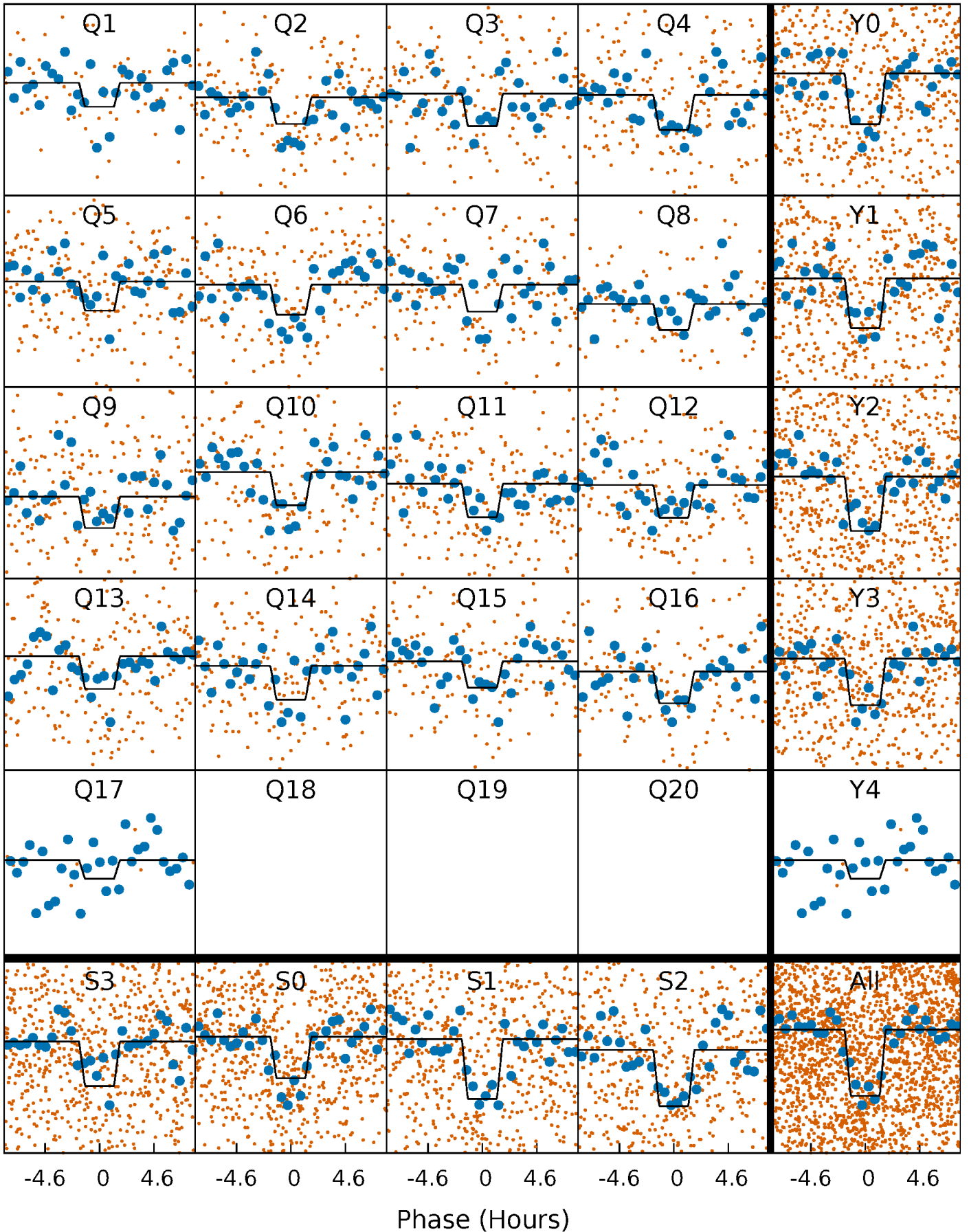
# DV Quarter-Phased Transit Curves

TCE 008620402-01 P= 14.195966 Days  $T_0=137.008779$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

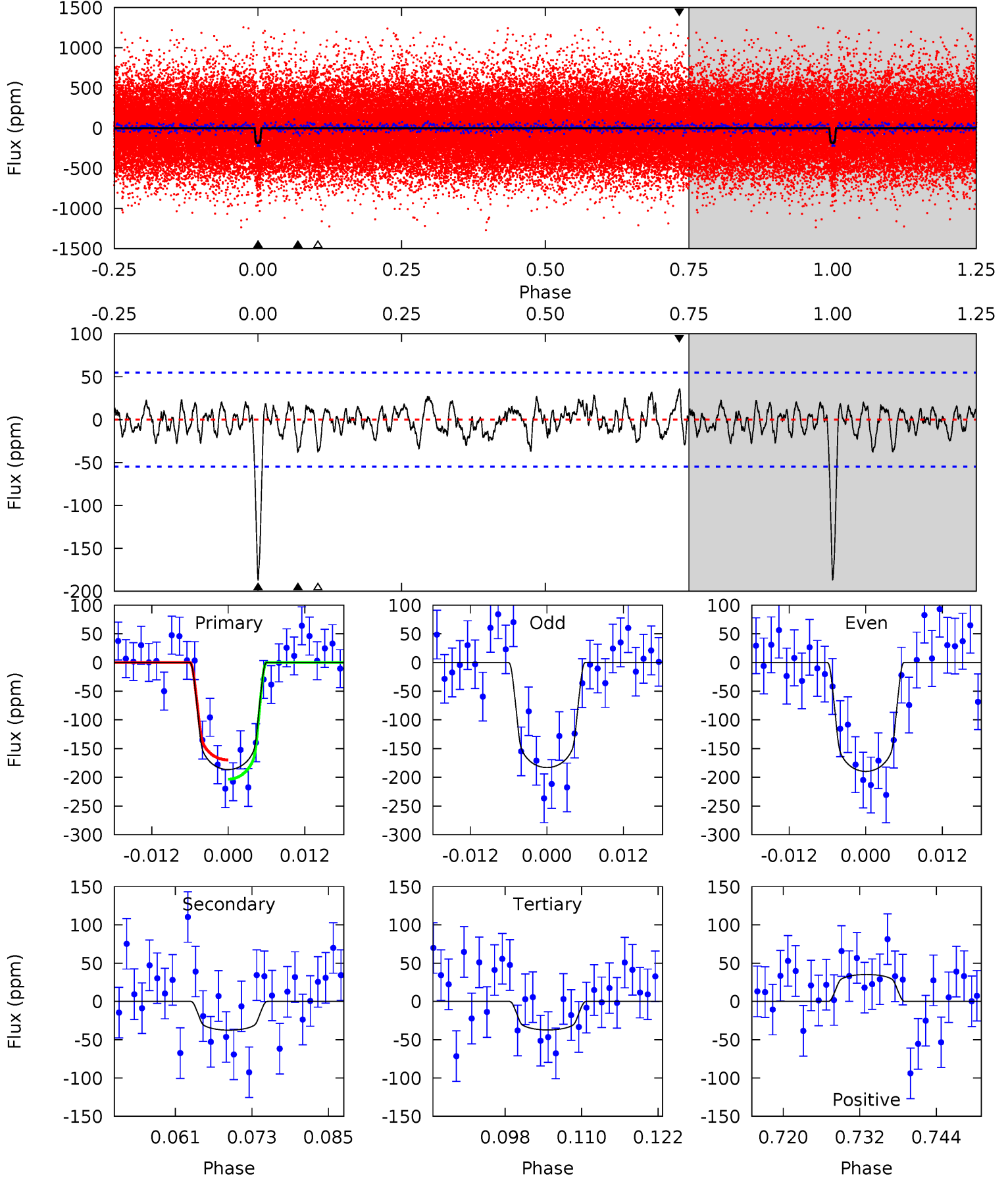
TCE 008620402-01 P= 14.195968 Days  $T_0=137.016831$  (BKJD)



# DV Model-Shift Uniqueness Test

008620402-01, P = 14.195966 Days, E = 122.812813 Days

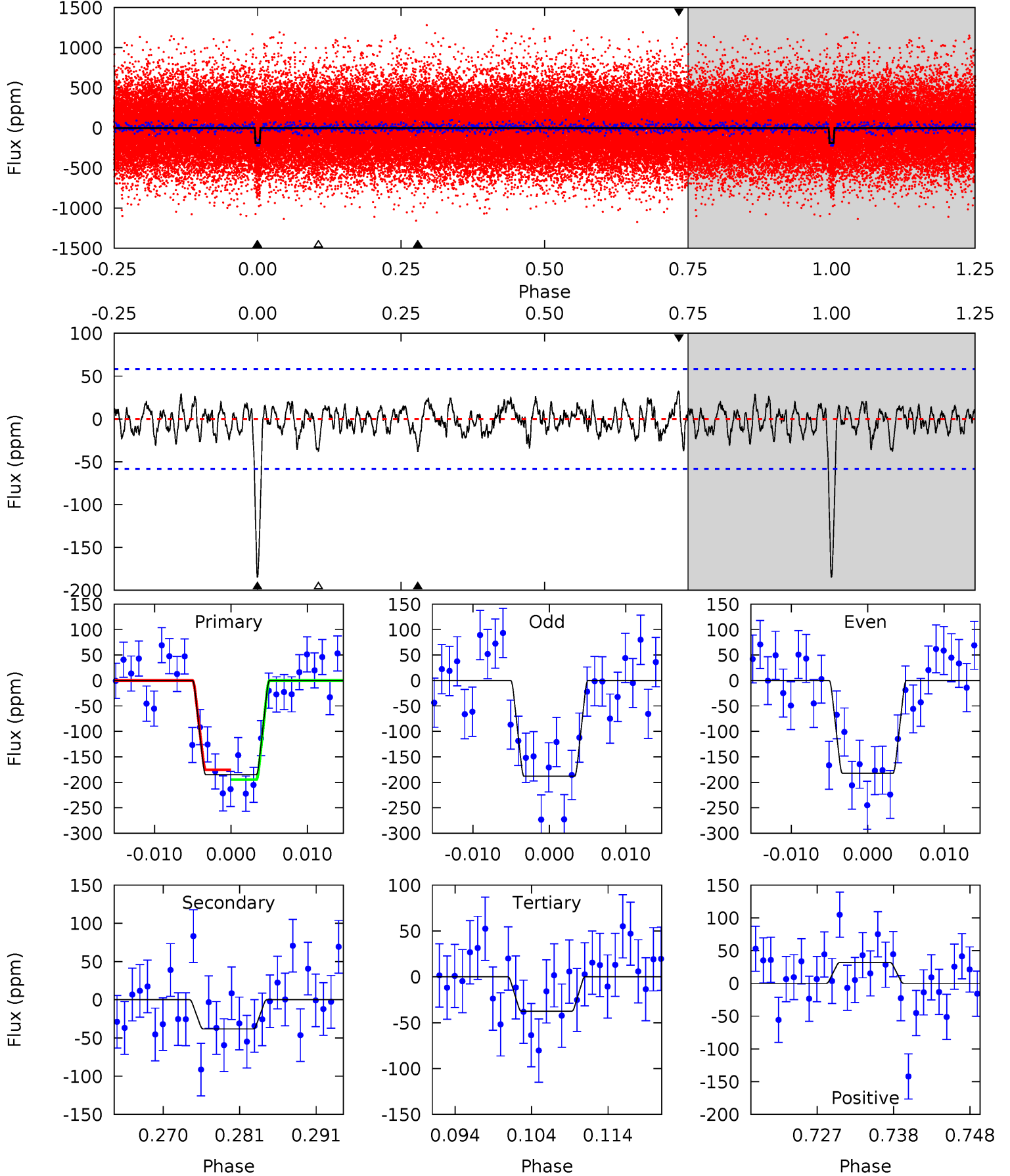
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.0	3.41	3.38	3.21	4.99	2.51	1.19	13.6	13.7	0.03	0.20	0.31	1.02	0.16	1.53



# Alt Model-Shift Uniqueness Test

008620402-01, P = 14.195968 Days, E = 122.820863 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
15.9	3.28	3.23	2.74	5.02	2.56	1.07	12.7	13.2	0.06	0.54	0.25	1.04	0.15	0.82



### Stellar Parameters For KIC 008620402

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6214^{+186}_{-224}$	$4.442^{+0.054}_{-0.216}$	$0.070^{+0.250}_{-0.350}$	$1.076^{+0.353}_{-0.118}$	$1.169^{+0.141}_{-0.173}$	$1.321^{+0.388}_{-0.747}$
	+3%/-4%	+1%/-5%	+357%/-500%	+33%/-11%	+12%/-15%	+29%/-57%
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 008620402-01 / KOI 3267.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-37 \pm 11$	$1.82^{+0.62}_{-0.61}$	$1167^{+90}_{-57}$	$4243^{+660}_{-484}$	$88^{+101}_{-44}$
Alt.	$-38 \pm 12$	$1.74^{+0.63}_{-0.58}$	$1172^{+87}_{-60}$	$4313^{+807}_{-482}$	$95^{+132}_{-47}$

$T_{\text{max}}$  = 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

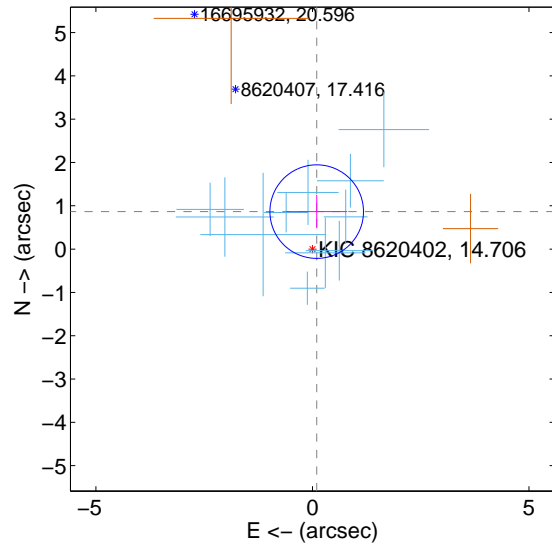
Supplemental centroid analysis for 008620402-01. Kepler magnitude: 14.71. Transit SNR 12.27

There are 11 quarters with good PRF difference image offsets

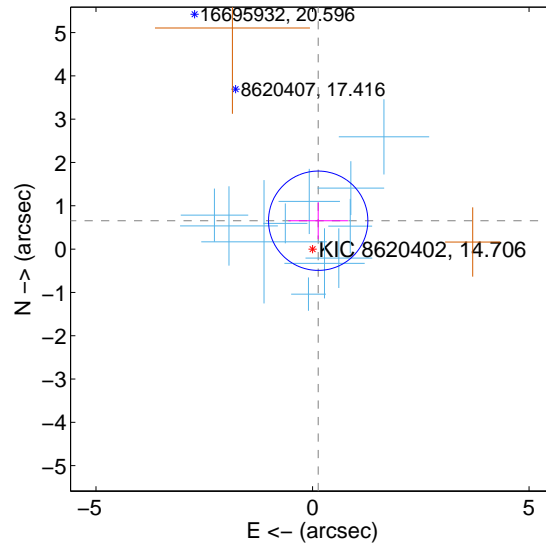
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.871 \pm 0.360$	2.42	$-0.099 \pm 0.704$	$0.866 \pm 0.383$
PRF-fit source offset from KIC position	$0.668 \pm 0.382$	1.75	$-0.131 \pm 0.688$	$0.655 \pm 0.425$
photometric centroid source offset	$1.53 \pm 1.04$	1.47	$1.48 \pm 1.04$	$-0.38 \pm 1.06$

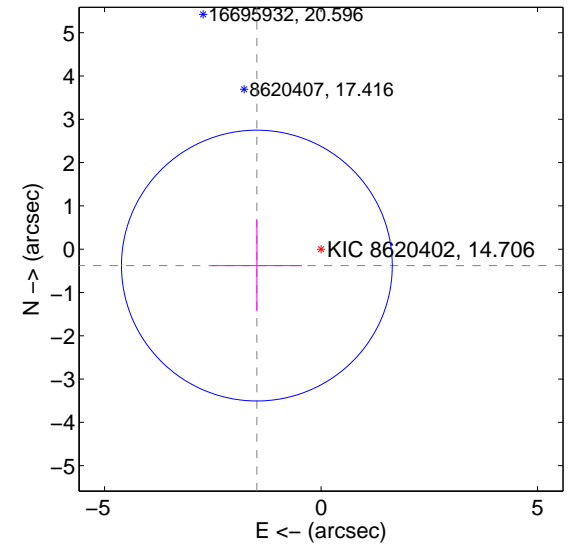
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

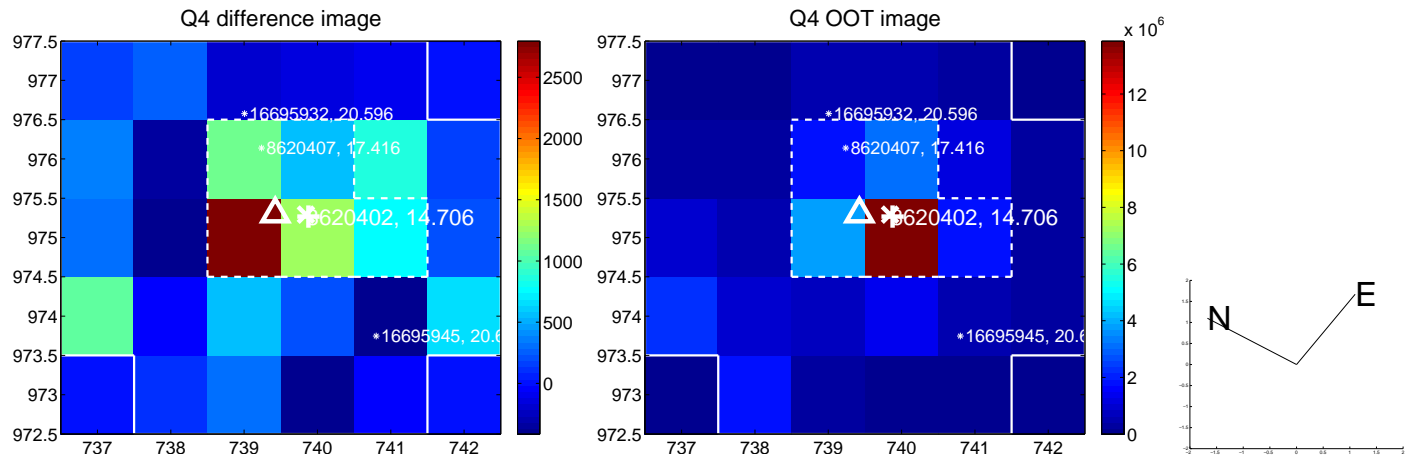
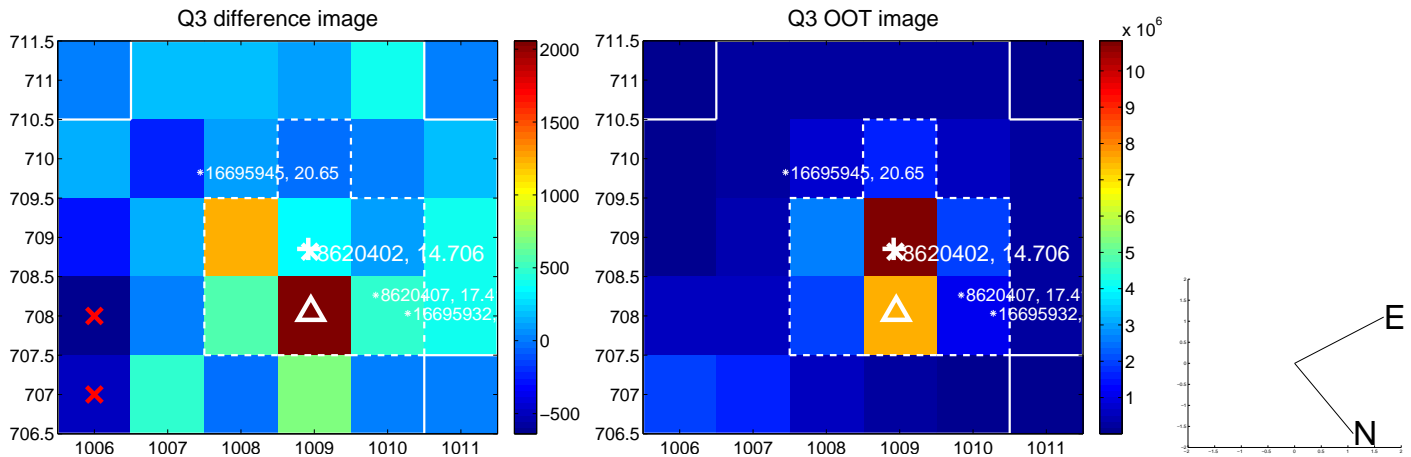
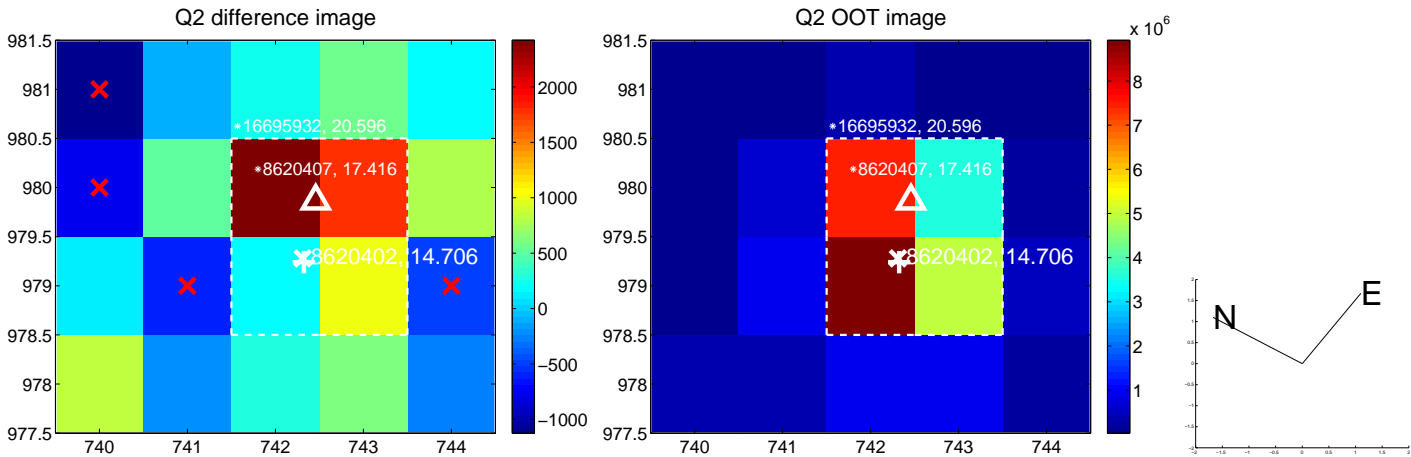
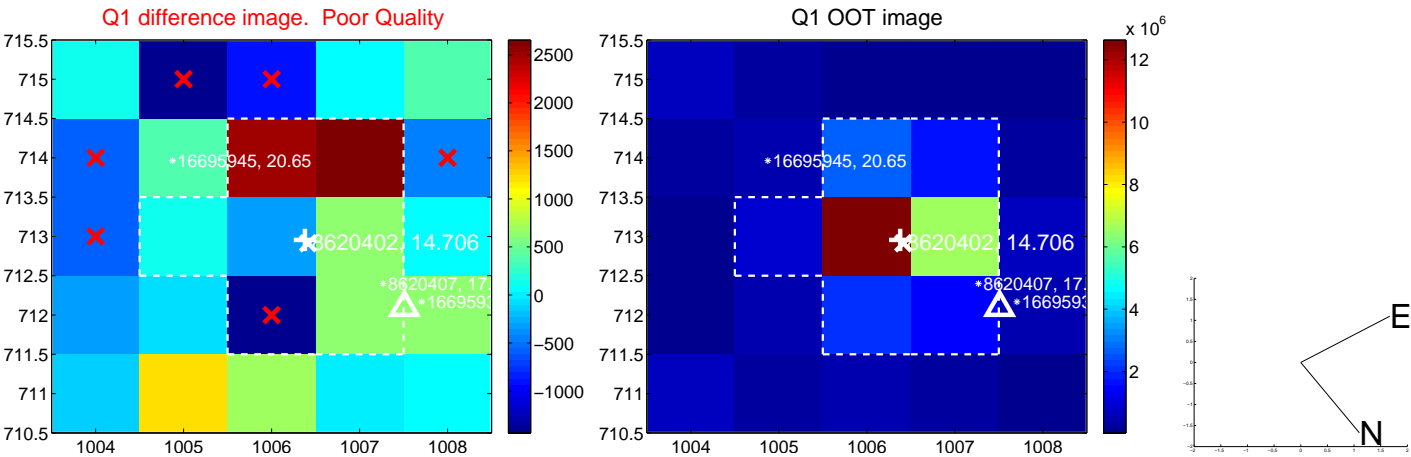


offset from photometric centroids

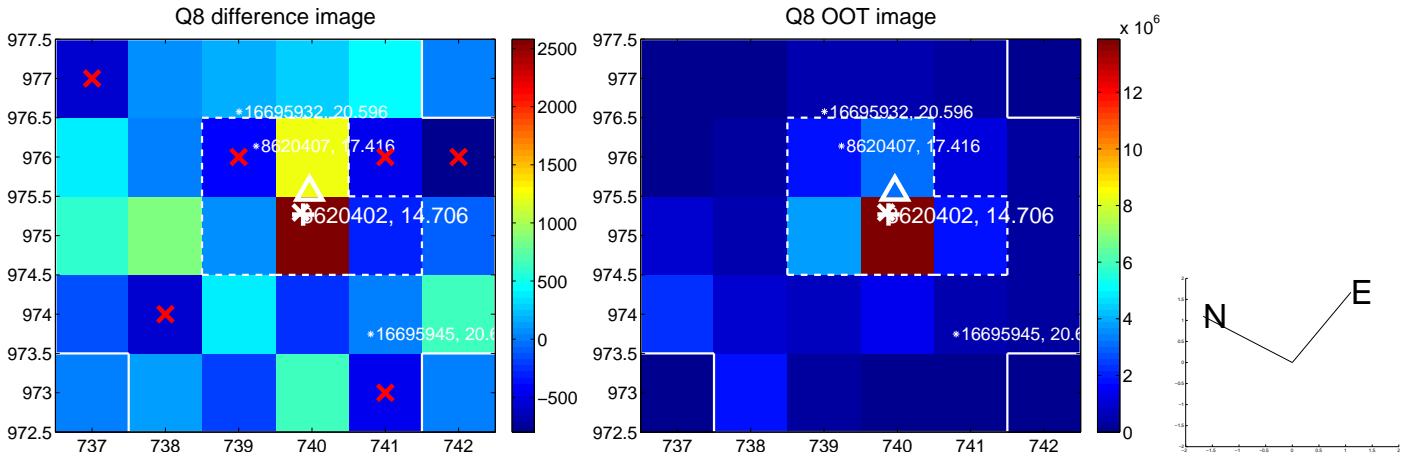
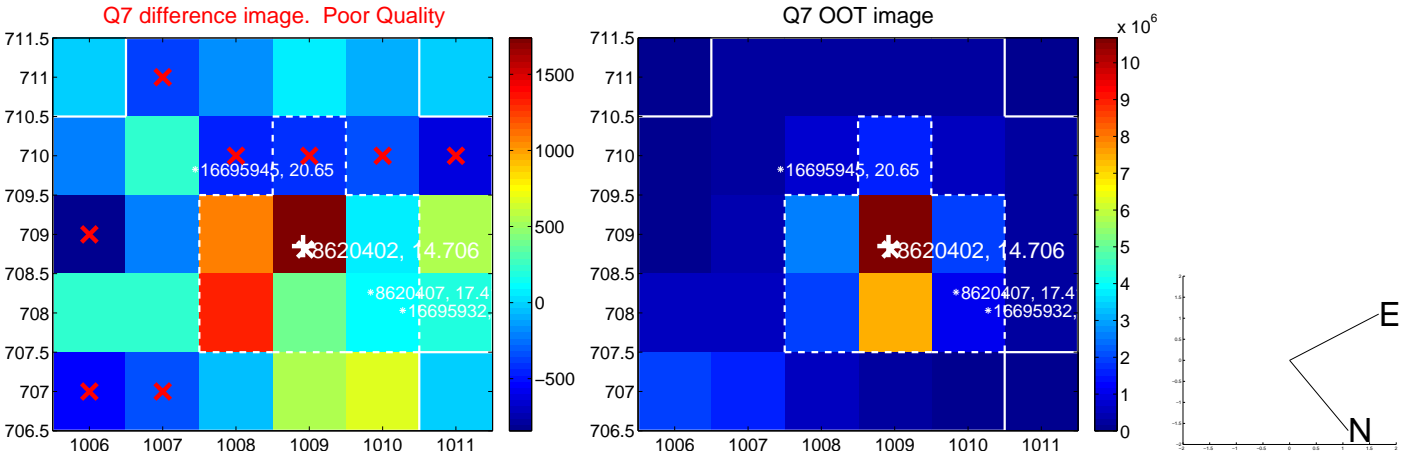
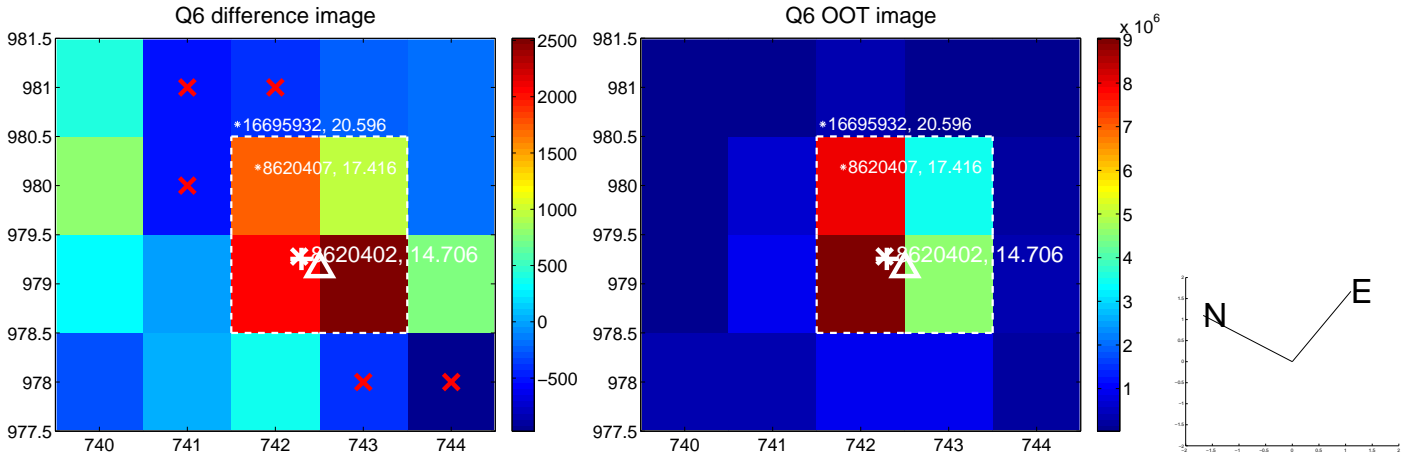
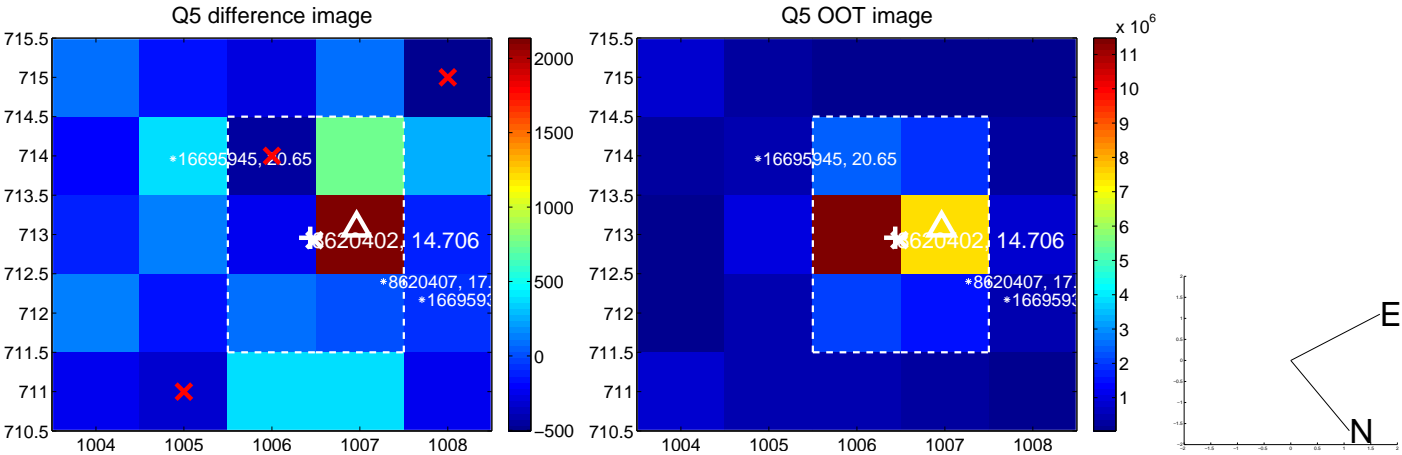


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

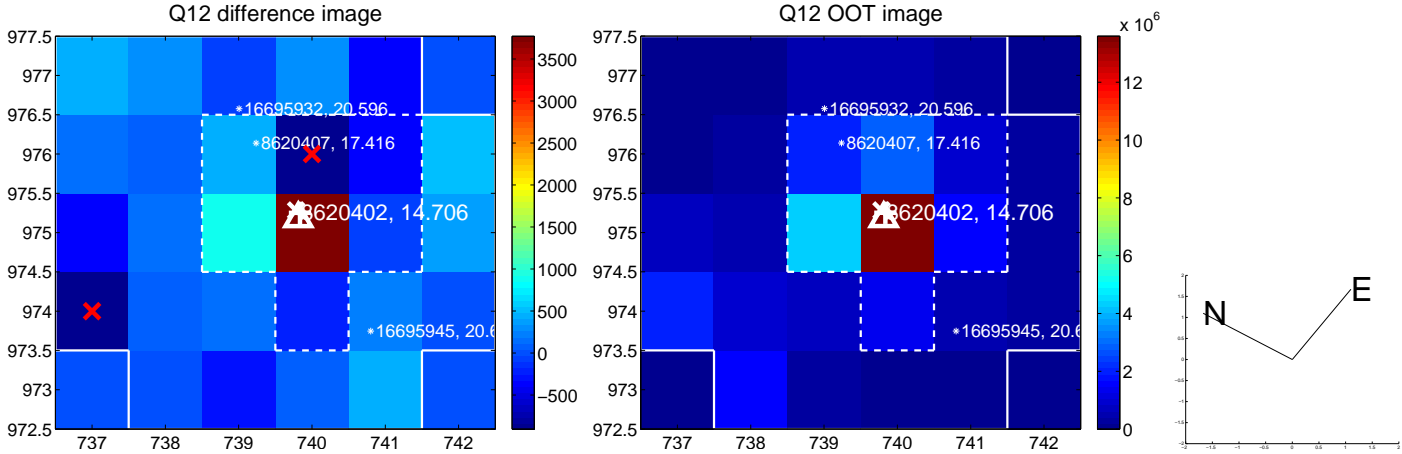
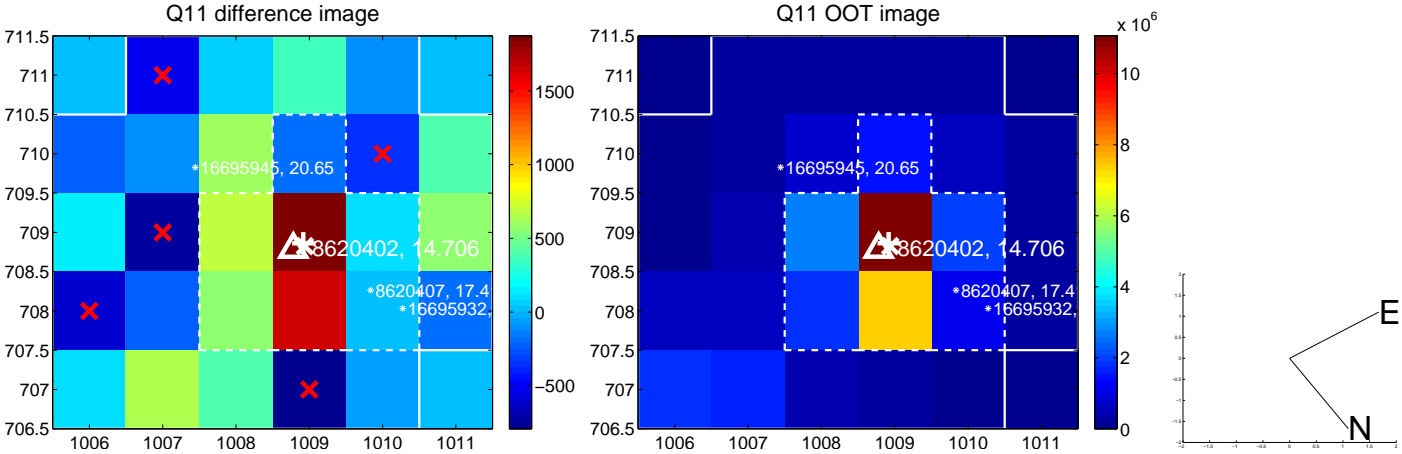
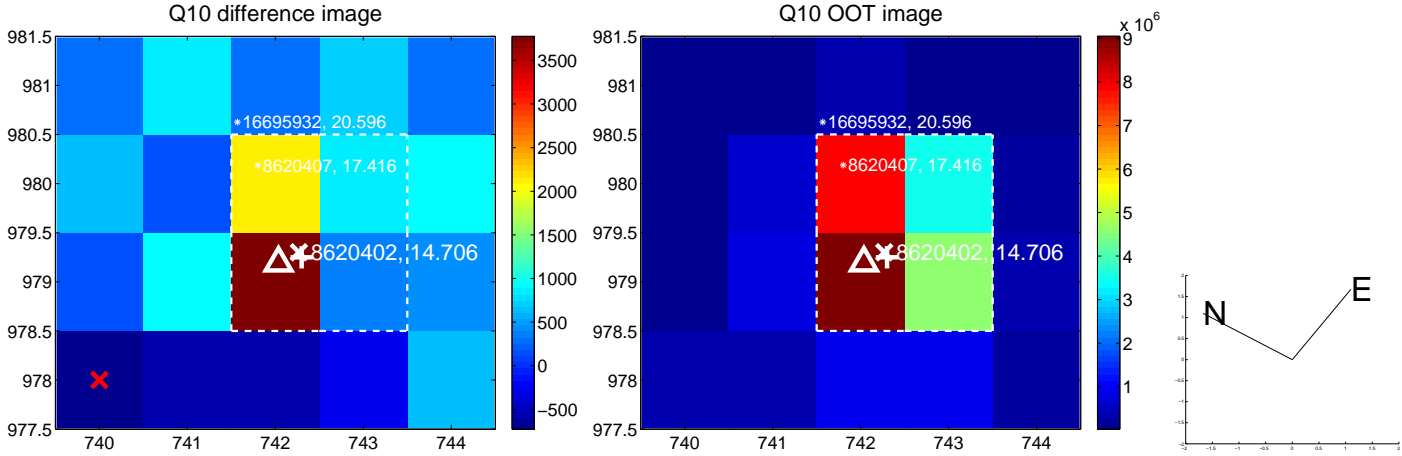
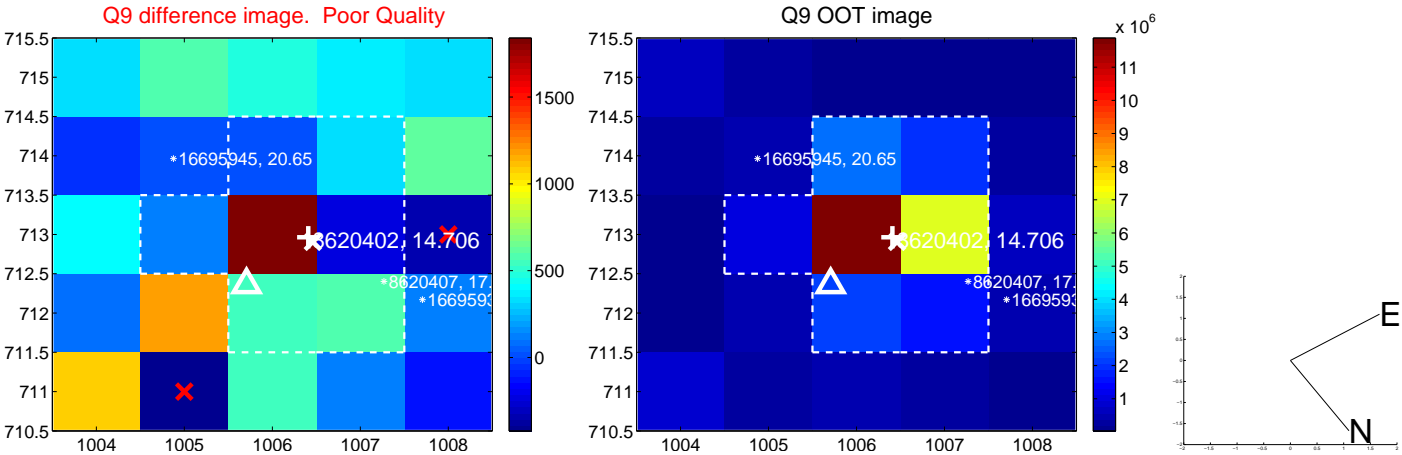
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



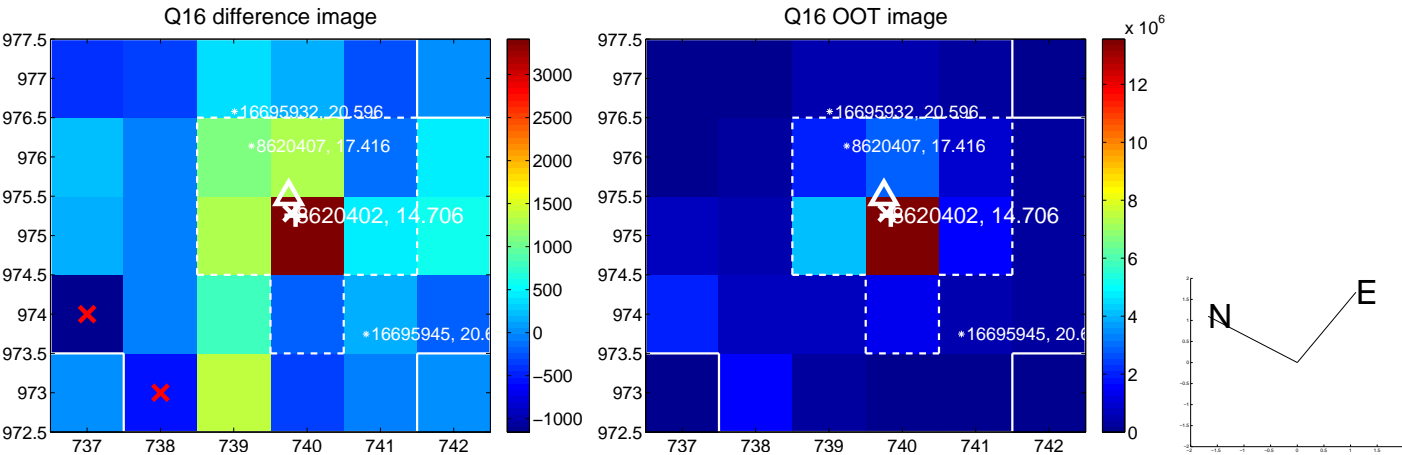
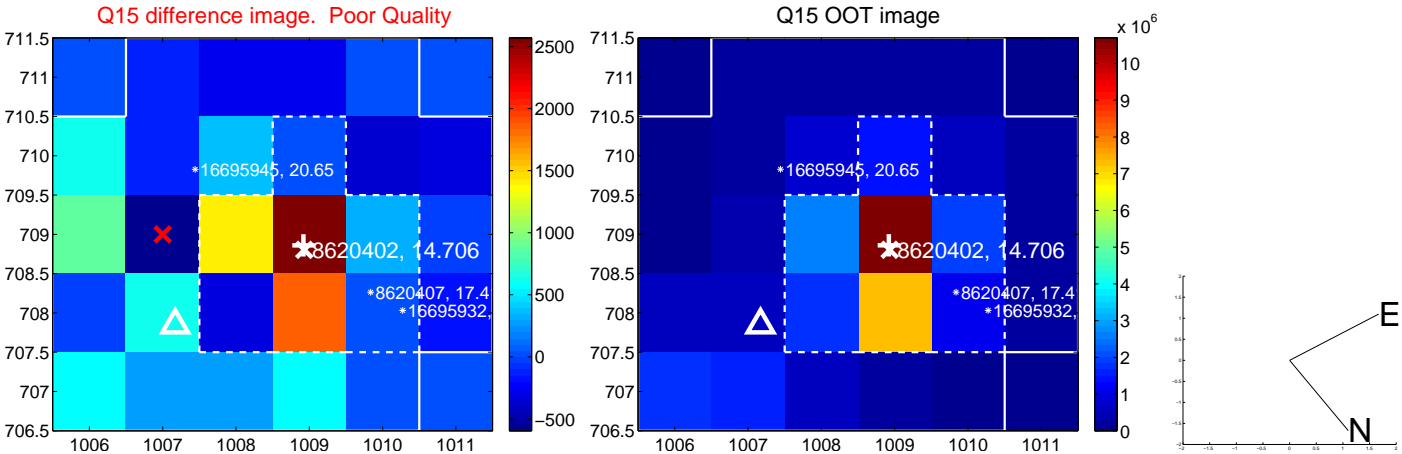
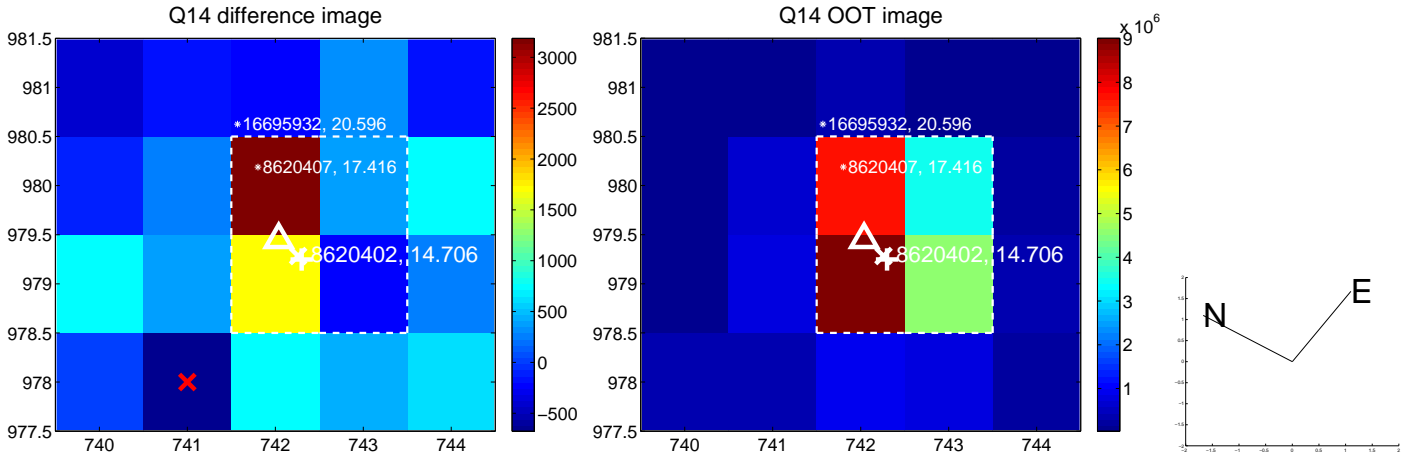
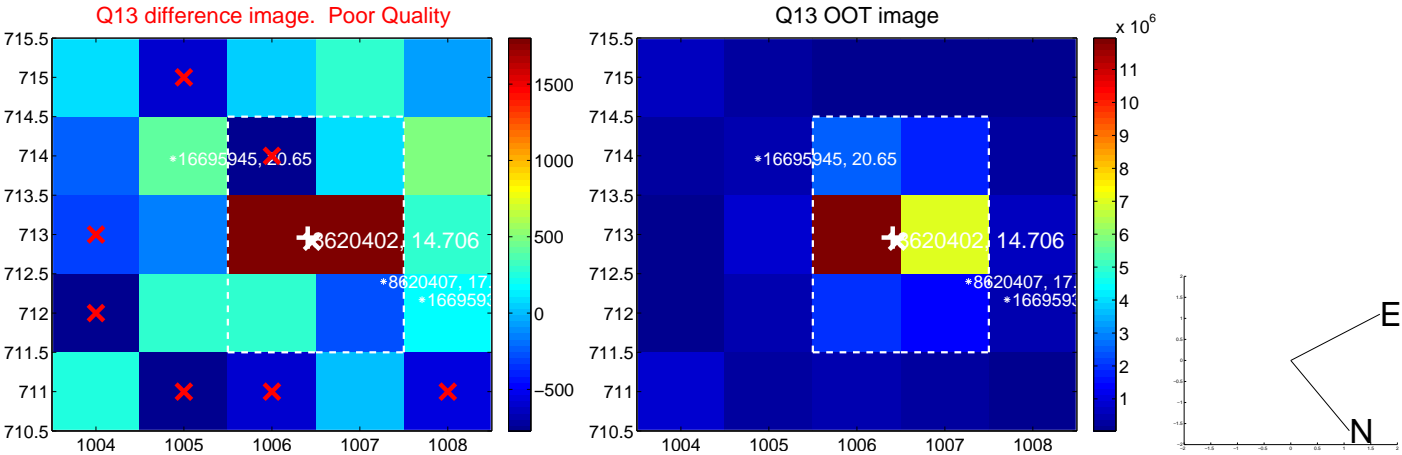
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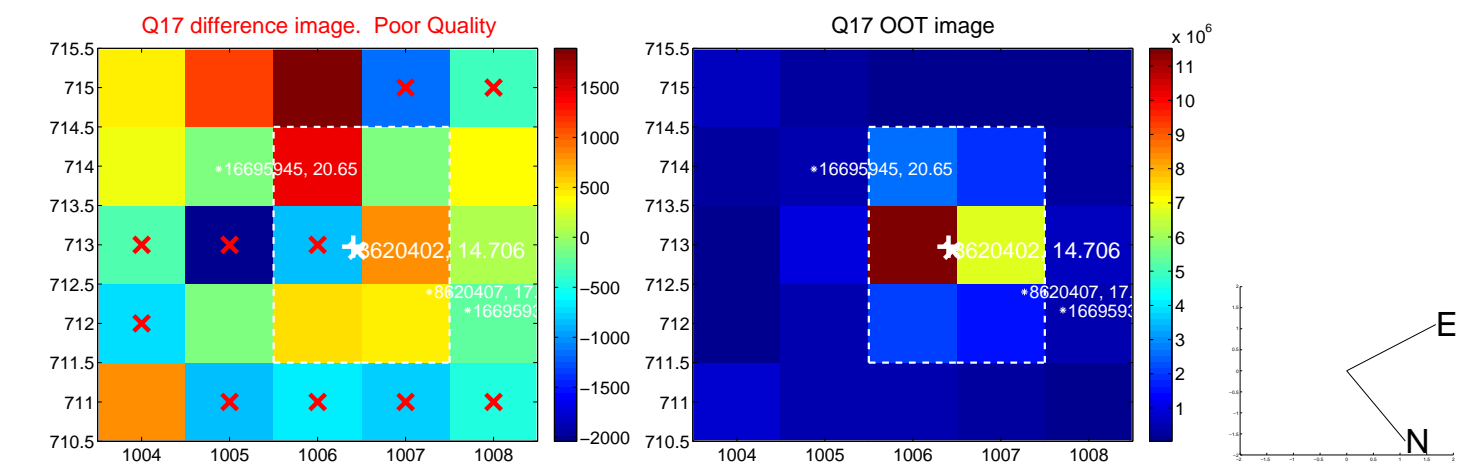


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

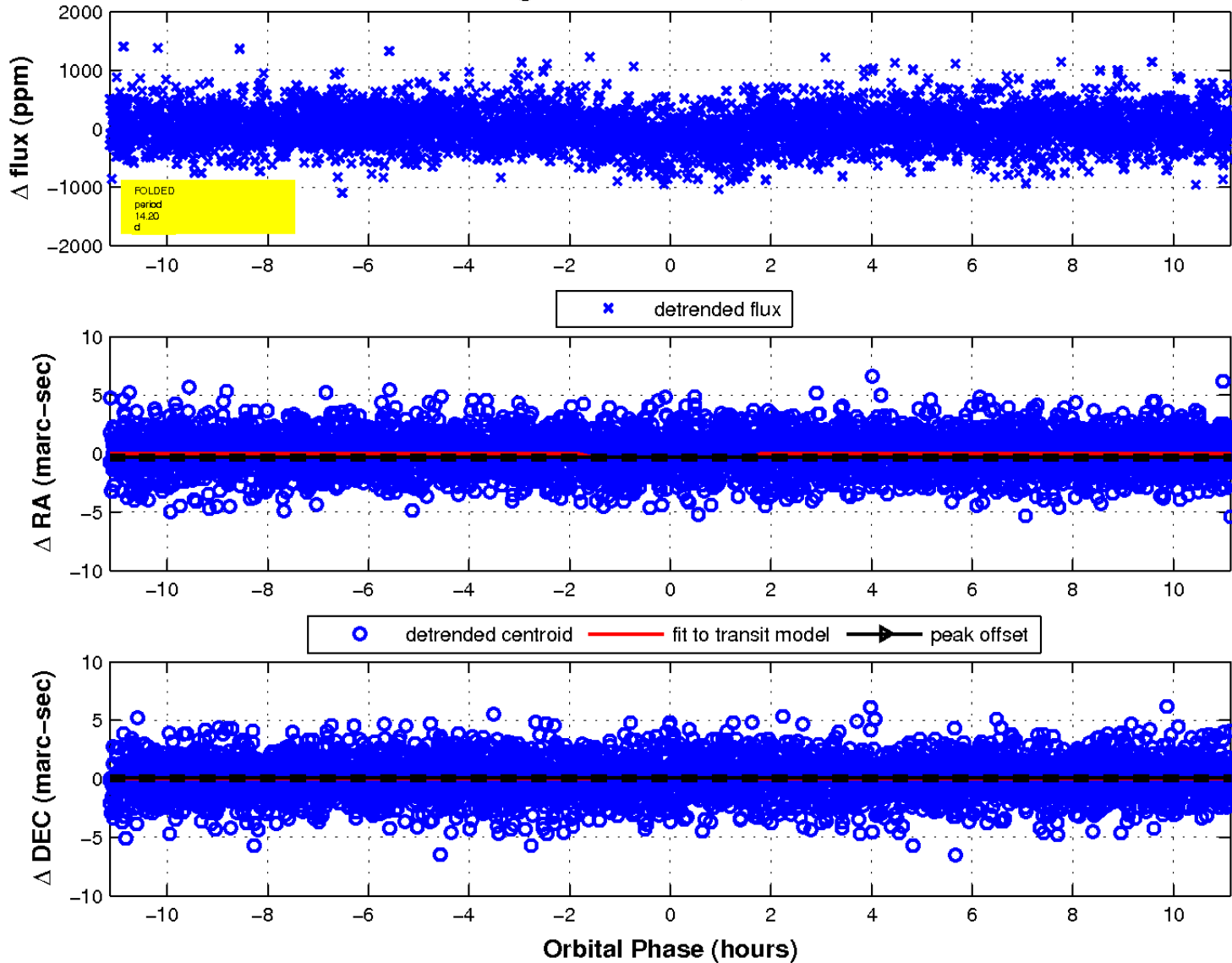




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

