

# KIC 008125229

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008125229-01	OBS	No	5.167629	136.508069	46.9	32.459	7.8	4.6	3.44	6683	2.37	4519.54

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008125229-01	OBS	FP	0.00	1	0	0	0	LPP_DV

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

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

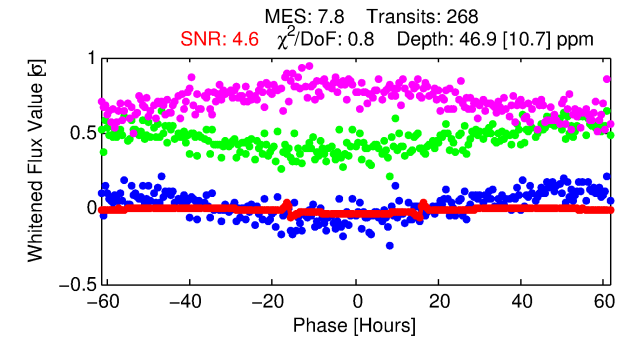
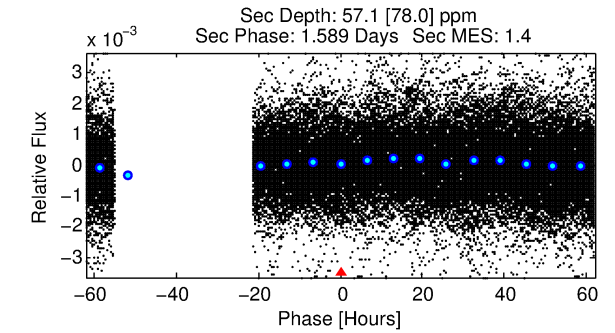
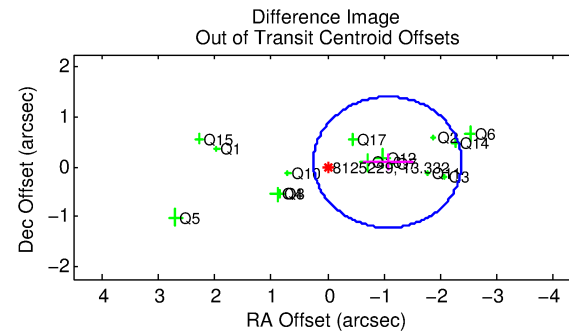
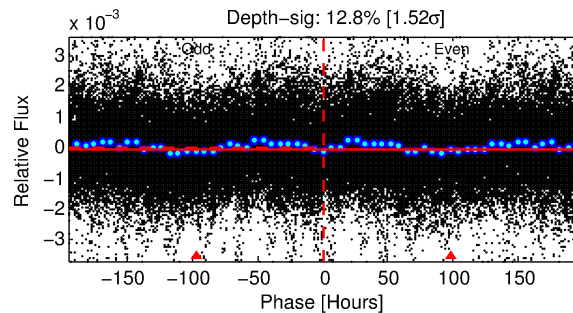
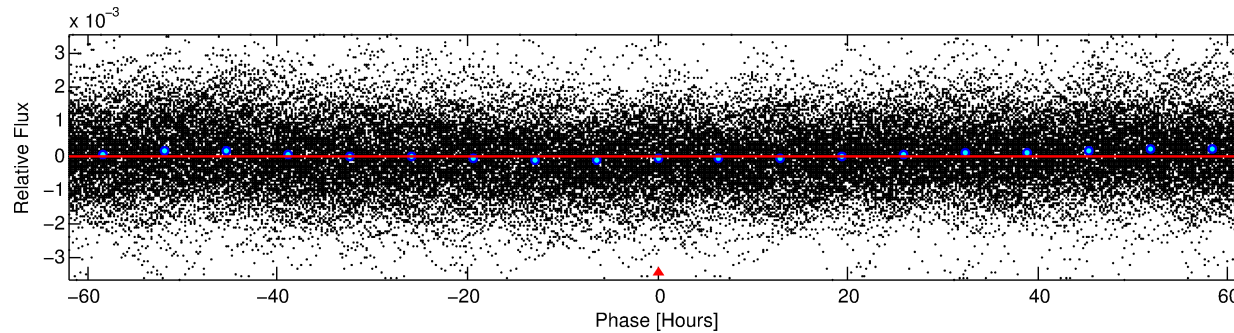
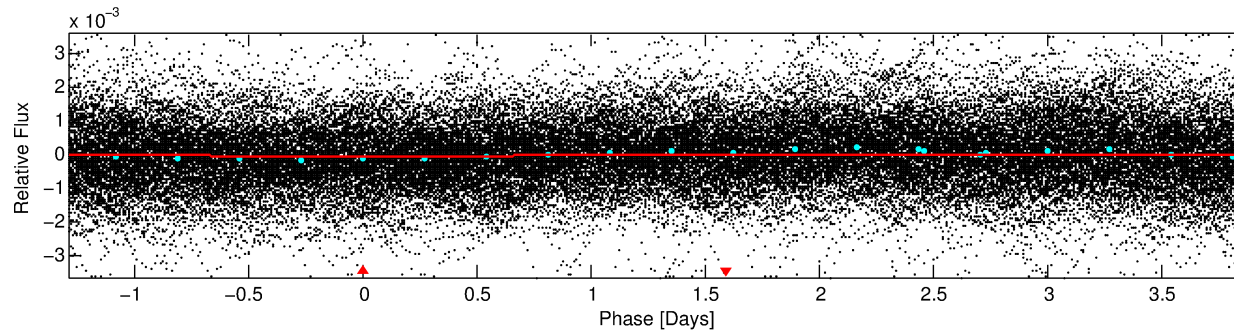
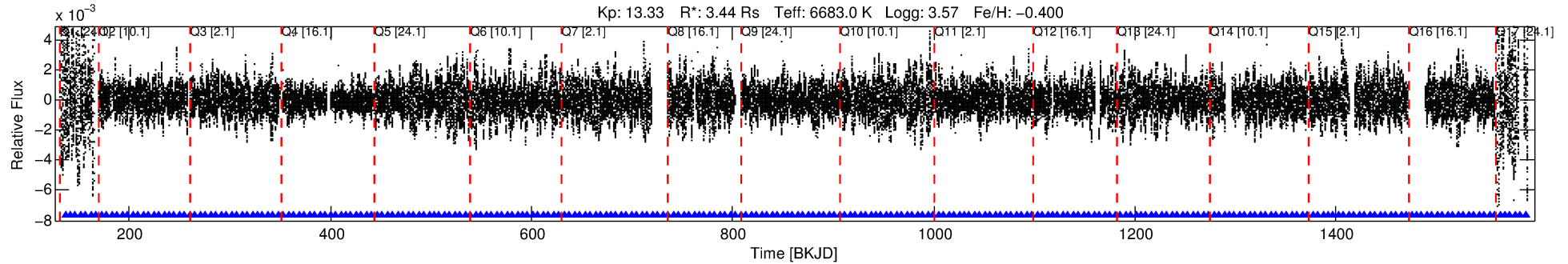
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008125229-01

No Significant Match Found

# DV One-Page Summary

KIC: 8125229 Candidate: 1 of 1 Period: 5.168 d



## DV Fit Results:

Period = 5.16763 [0.00008] d  
Epoch = 136.5081 [0.0103] BKJD  
Rp/R\* = 0.0063 [0.0042]  
a/R\* = 1.37 [2.38]  
b = 0.01 [250.40]  
Seff = 4519.54 [2660.52]  
Teq = 2091 [308] K  
Rp = 2.37 [1.80] Re  
a = 0.0683 [0.0245] AU  
Ag = 26.11 [51.95] [0.48 $\sigma$ ]  
Teffp = 7307 [3488] K [1.49 $\sigma$ ]

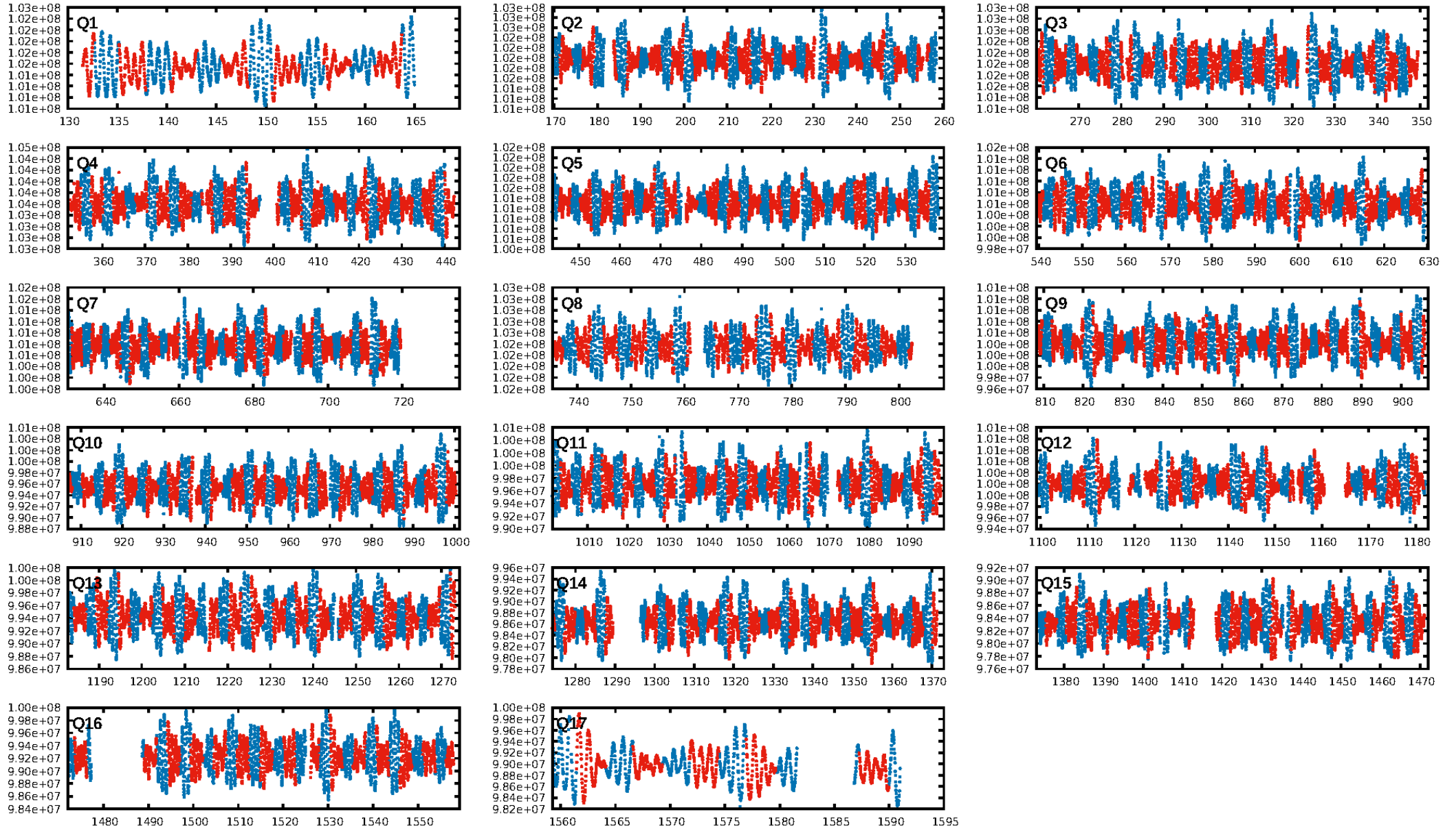
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 7.87e-15  
RollingBand-fgt: 1.00 [256/256]  
**GhostDiagnostic-chr: 0.9045**  
Centroid-sig: 5.9%  
Centroid-so: 1.208 arcsec [1.81 $\sigma$ ]  
OotOffset-rm: 1.066 arcsec [2.44 $\sigma$ ]  
KicOffset-rm: 1.179 arcsec [2.95 $\sigma$ ]  
OotOffset-st: 4/4/4/3 [15]  
KicOffset-st: 4/4/4/3 [15]  
DiffImageQuality-fgm: 0.80 [12/15]  
DiffImageOverlap-fno: 1.00 [17/17]

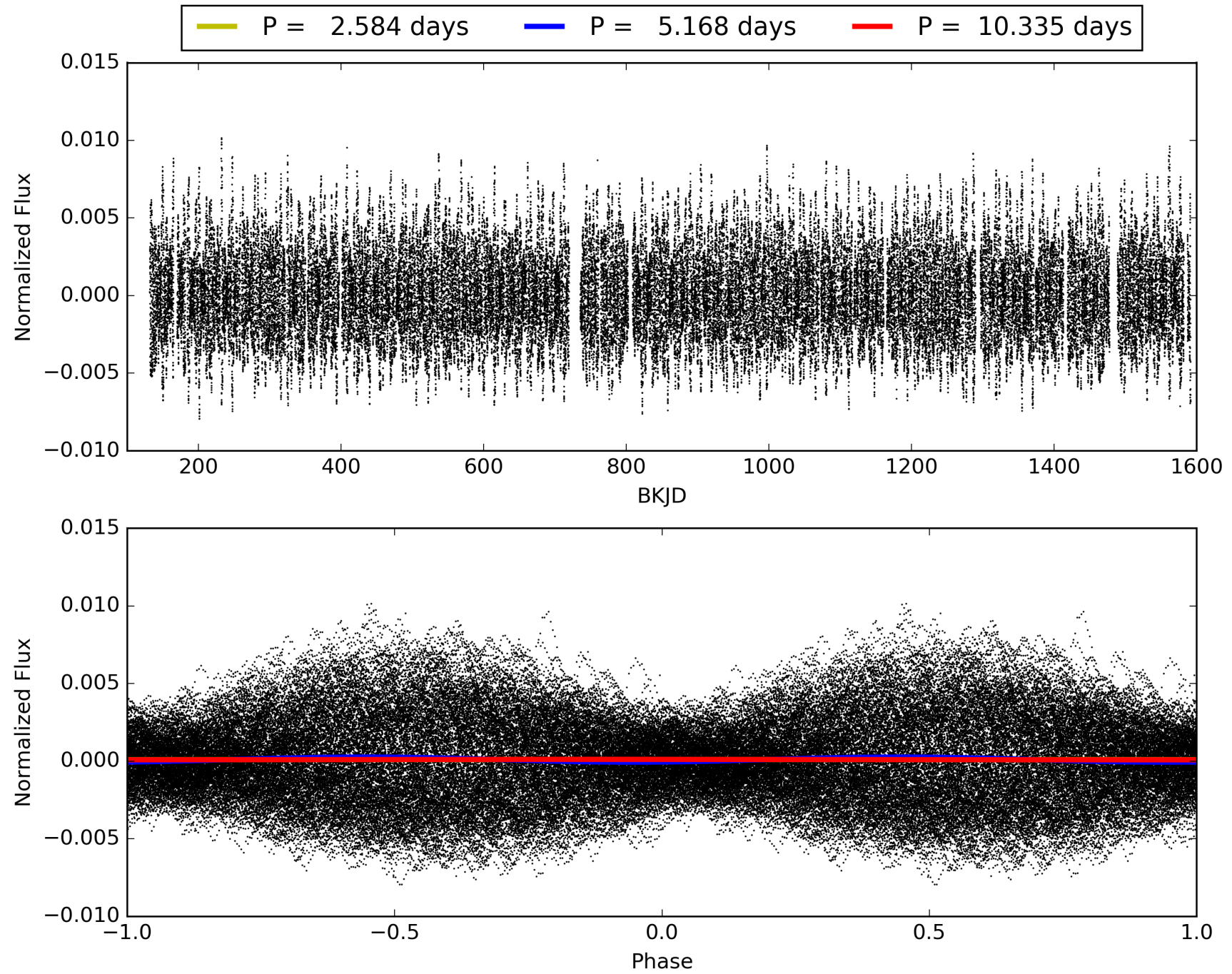
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:50:04 Z

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

# TCE 008125229-01, PDC Light Curves



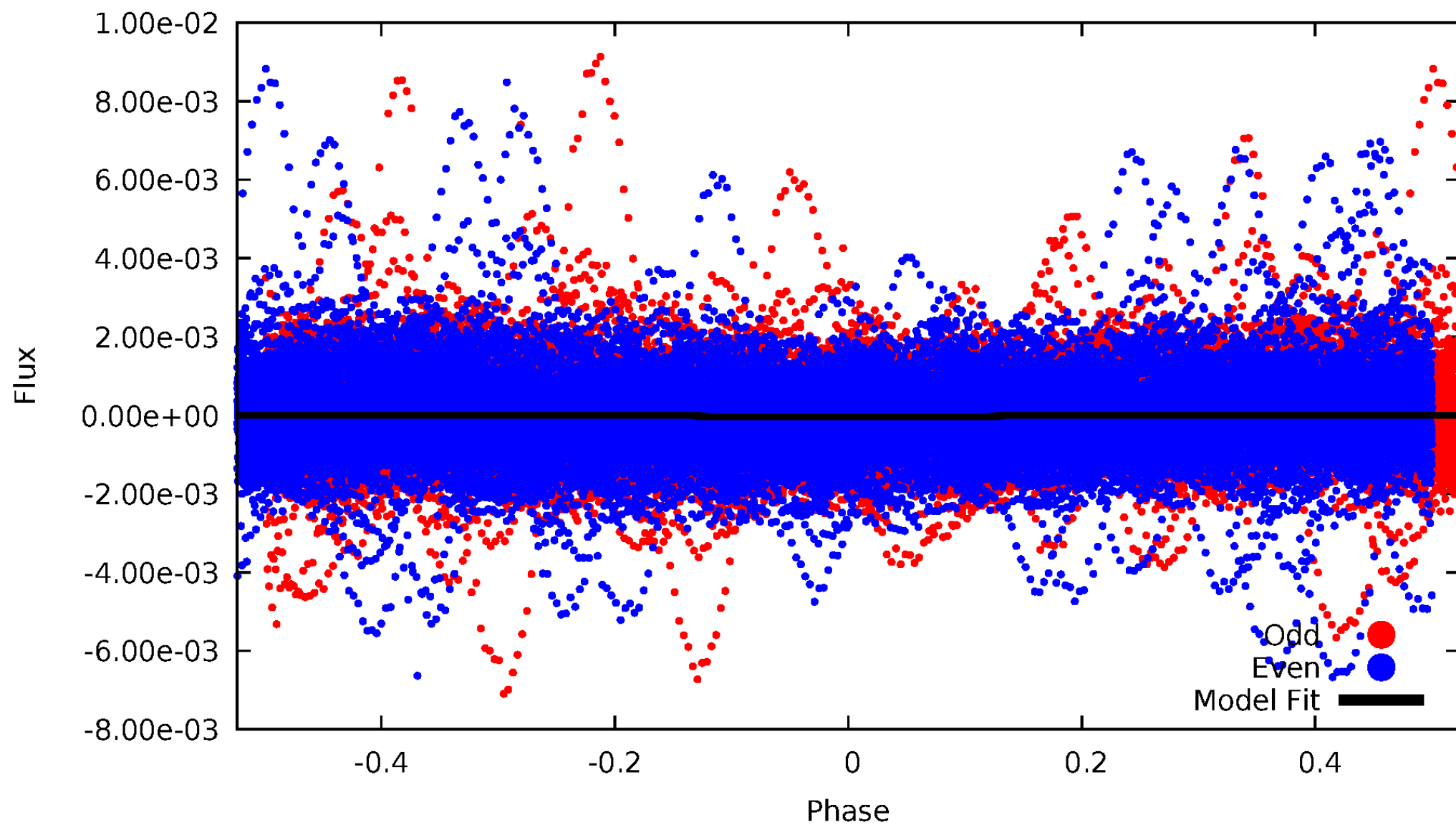
TCE 008125229-01





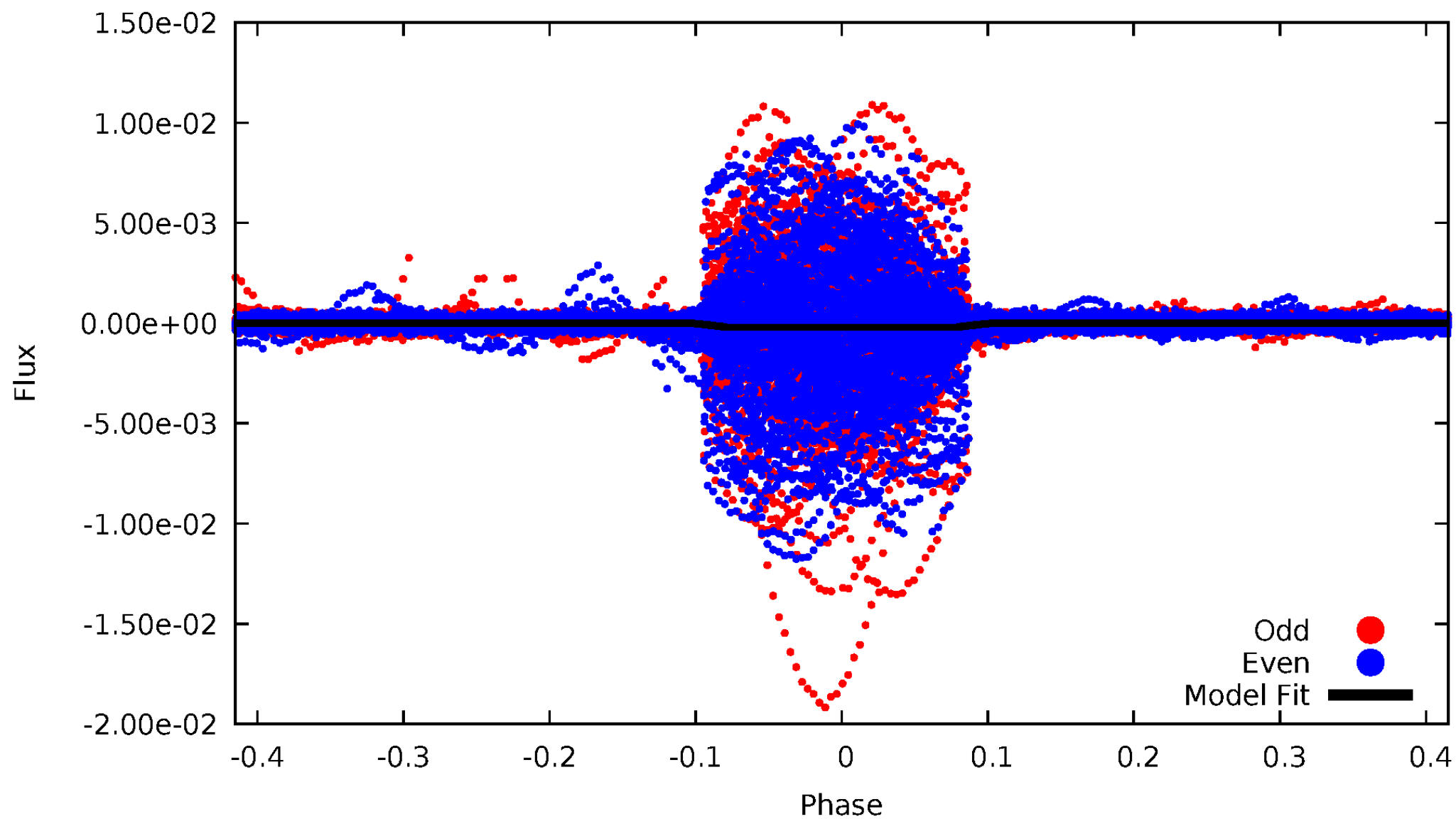
# DV Odd/Even

TCE 008125229-01



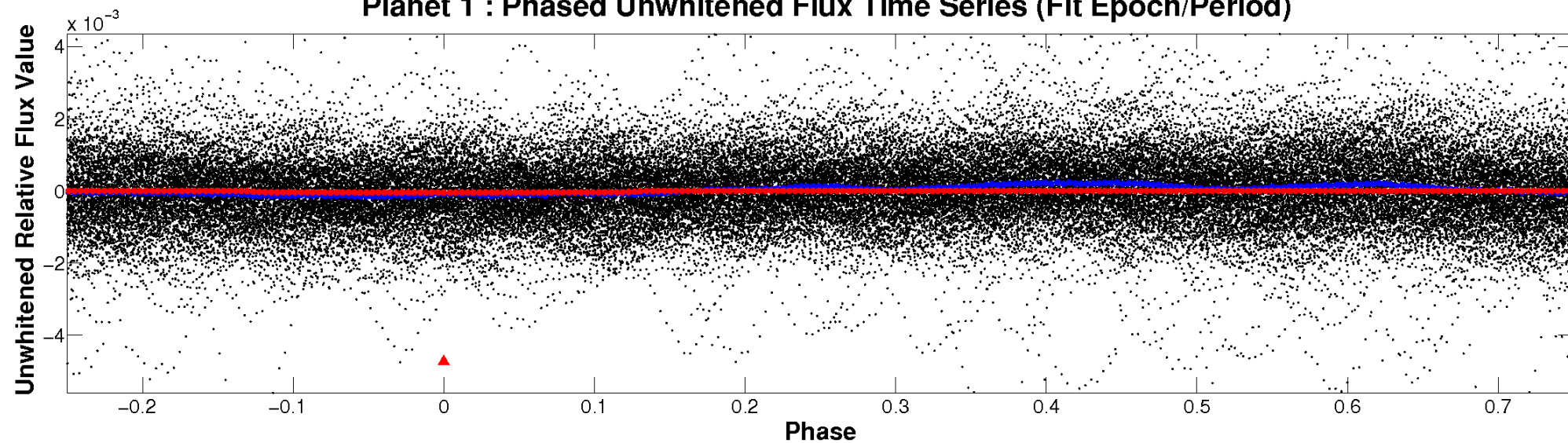
# ALT Odd/Even

TCE 008125229-01

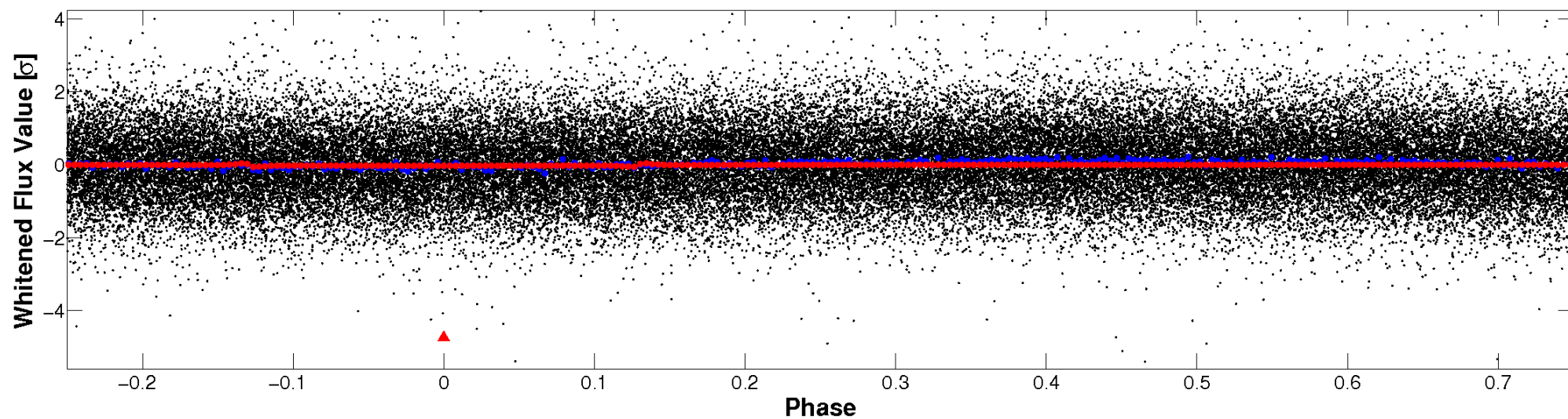


# Non-Whitened Vs. Whitened Light Curve

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

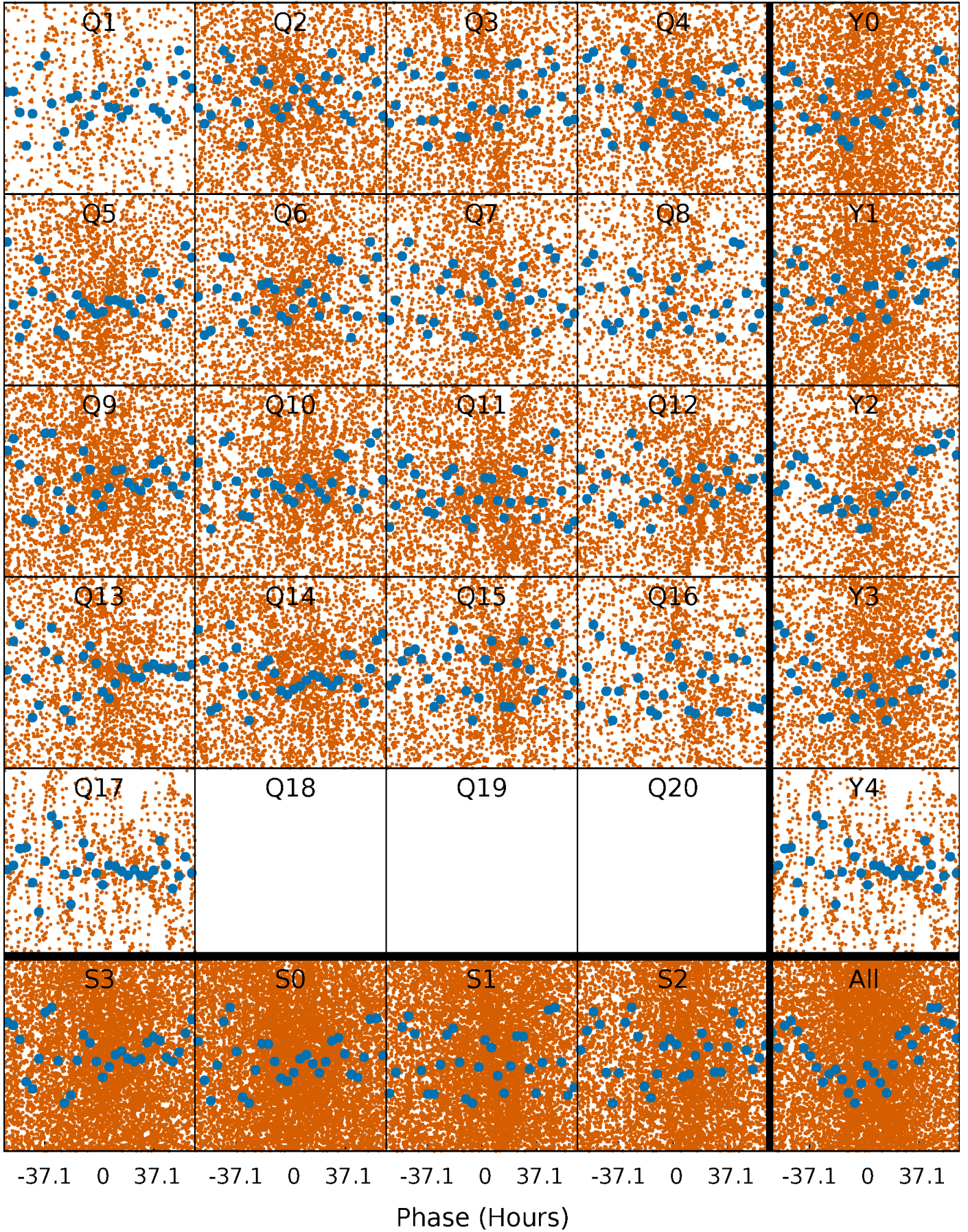


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

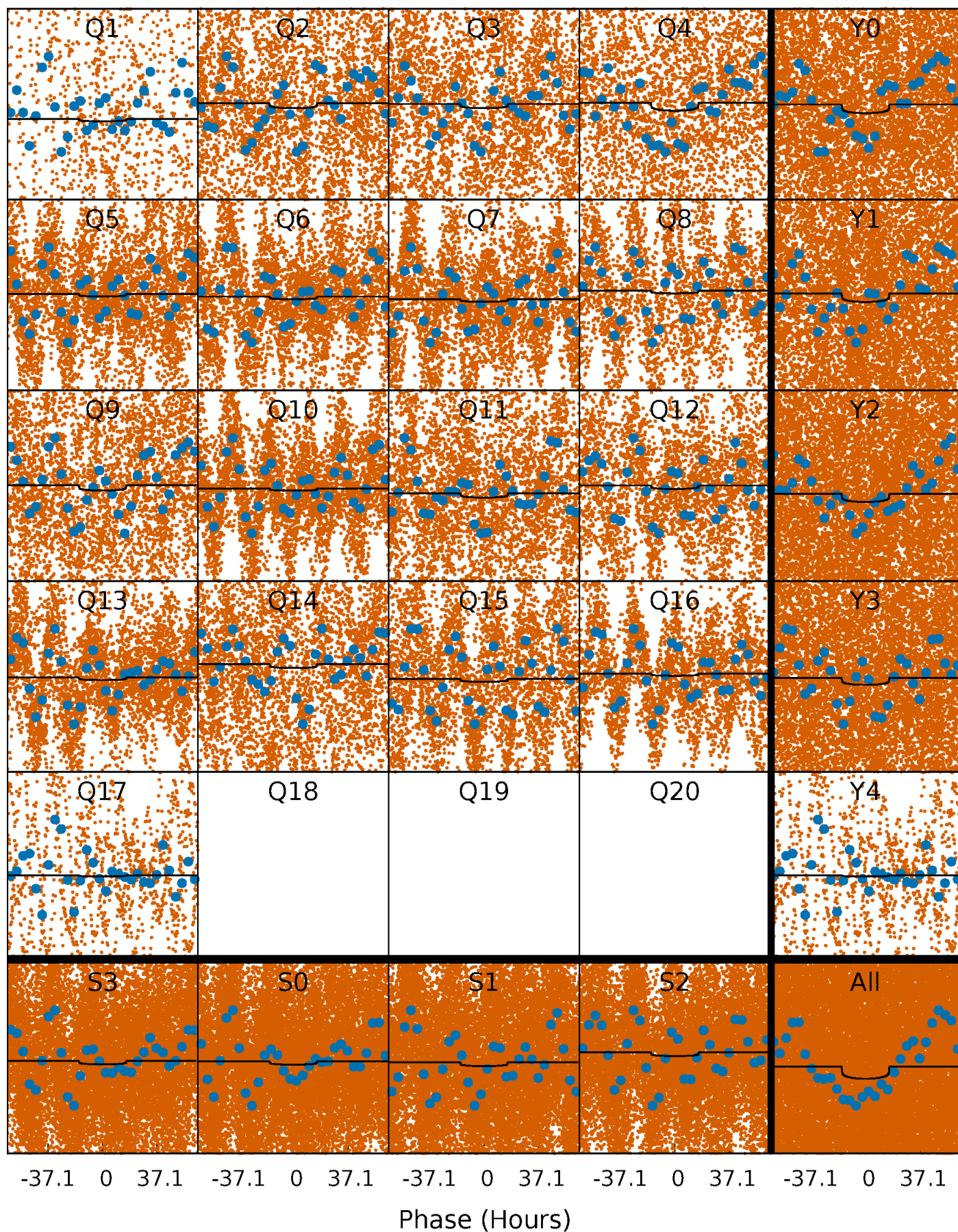
TCE 008125229-01 P= 5.167629 Days  $T_0=136.508069$  (BKJD)





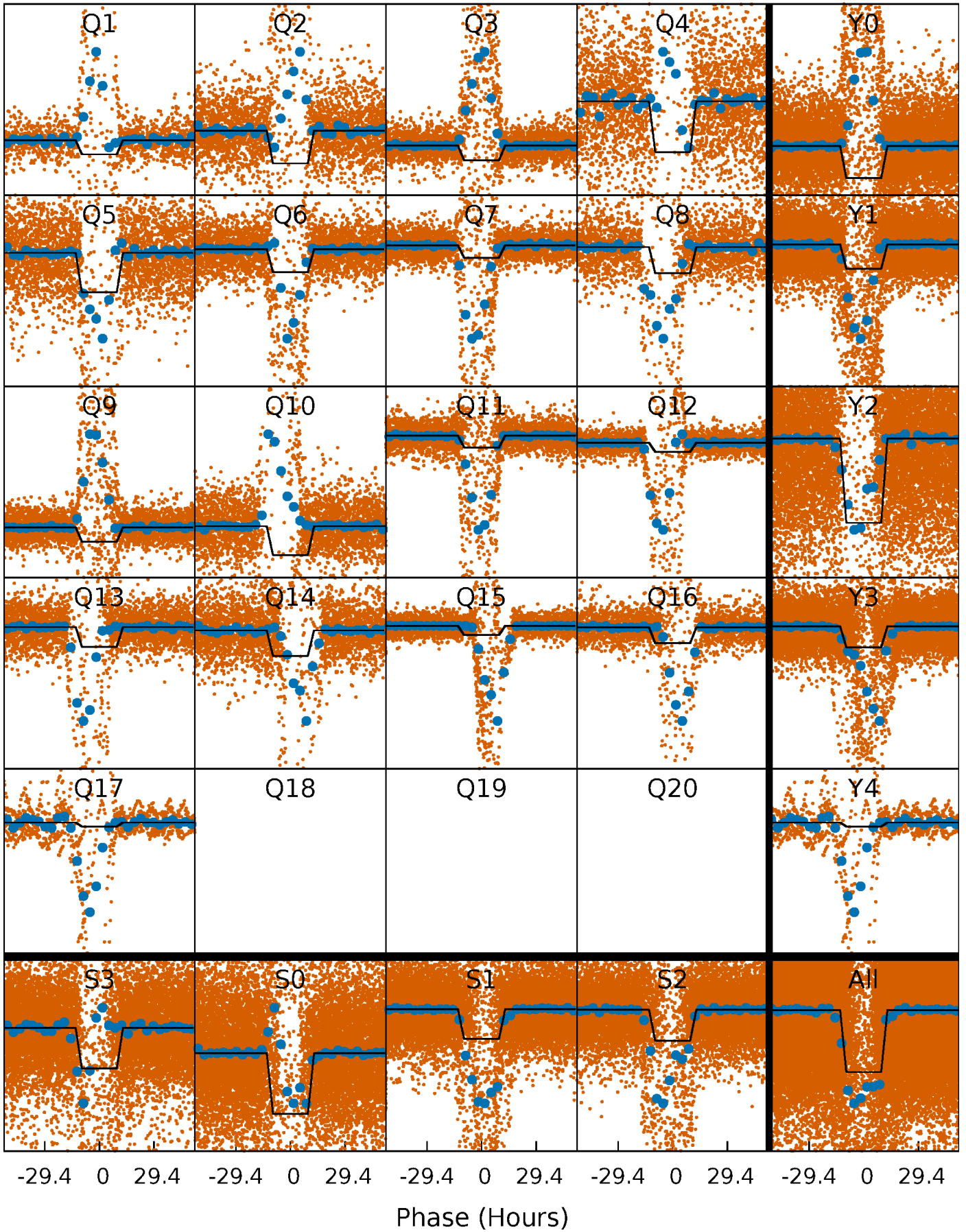
# DV Quarter-Phased Transit Curves

TCE 008125229-01 P= 5.167629 Days  $T_0=136.508069$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

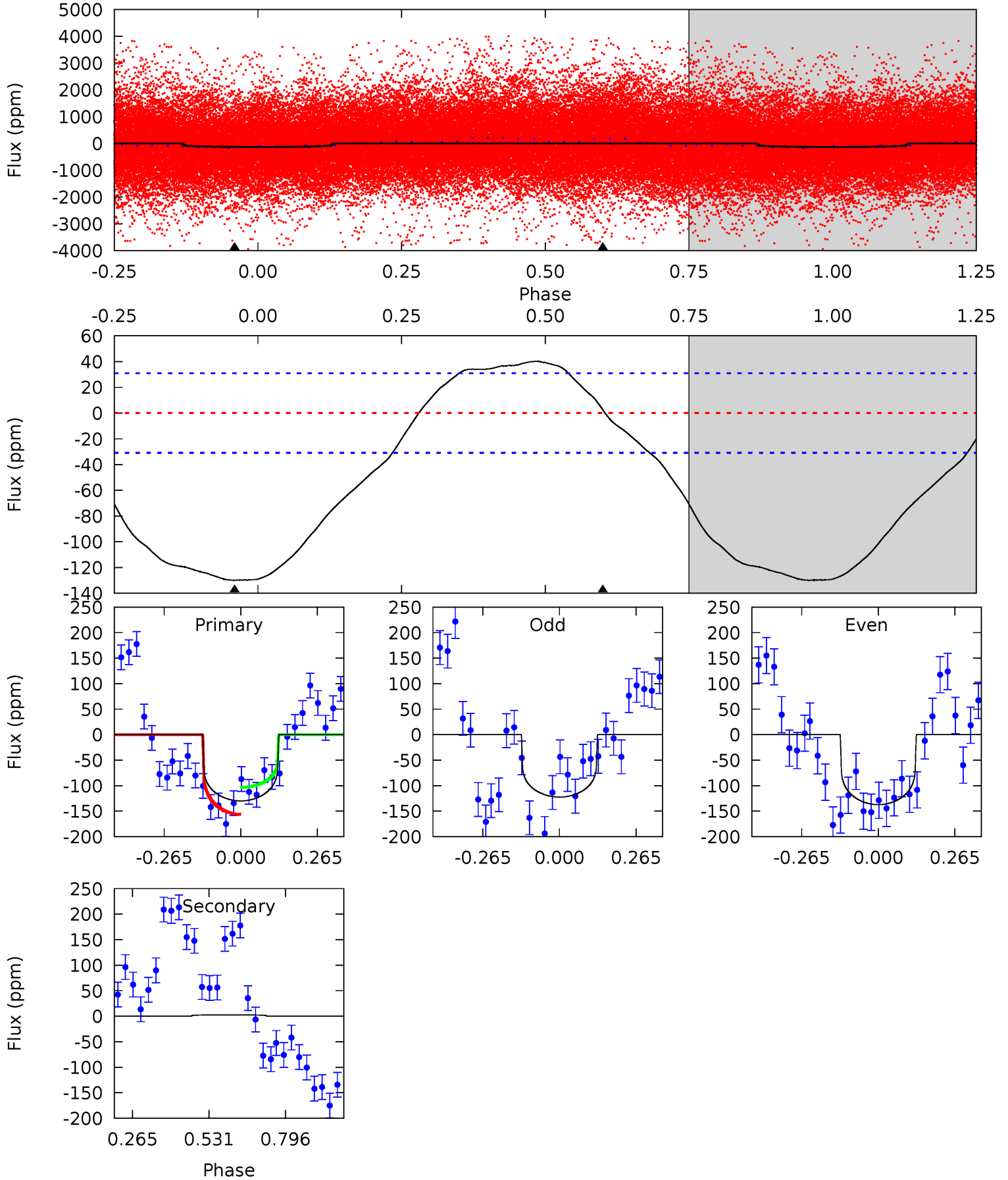
TCE 008125229-01 P= 5.165167 Days  $T_0=136.579140$  (BKJD)



# DV Model-Shift Uniqueness Test

008125229-01, P = 5.167629 Days, E = 131.340440 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
18.3	-0.37	0	0	4.36	1.11	2.64	18.3	18.3	-0.37	-0.37	1.05	1.01	0.24	3.53

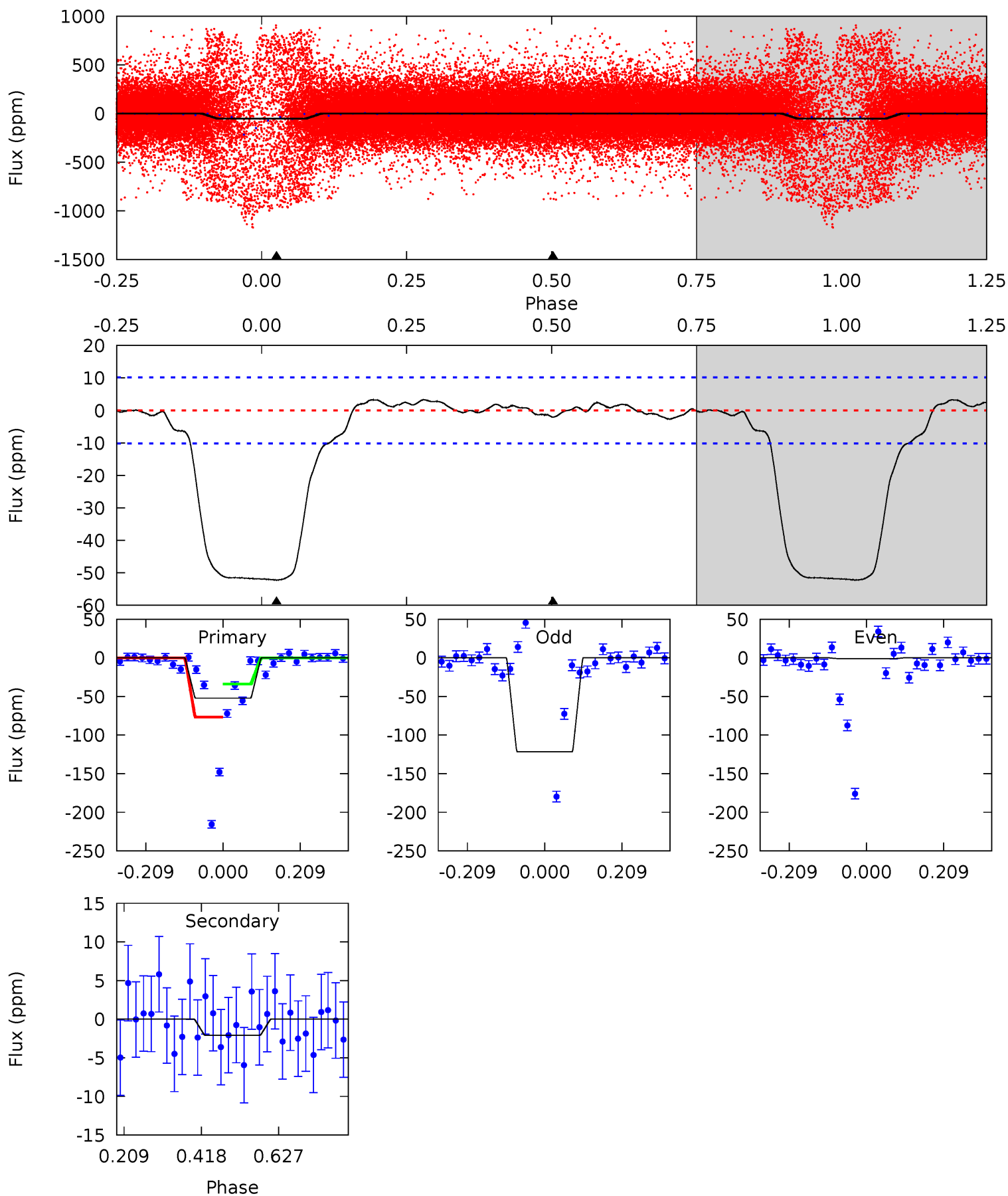




# Alt Model-Shift Uniqueness Test

008125229-01, P = 5.165167 Days, E = 131.413973 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
22.6	0.90	0	0	4.41	1.26	0.69	22.6	22.6	0.90	0.90	25.6	0.98	0.06	0





### Stellar Parameters For KIC 008125229

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6683^{+200}_{-220}$	$3.568^{+0.337}_{-0.090}$	$-0.400^{+0.350}_{-0.250}$	$3.436^{+0.457}_{-1.279}$	$1.595^{+0.232}_{-0.349}$	$0.055^{+0.144}_{-0.015}$
	+3%/-3%	+9%/-3%	+87%/-62%	+13%/-37%	+15%/-22%	+260%/-27%
Source	PHO1	FLK73	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 008125229-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$3\pm7$	$2.40^{+1.50}_{-1.48}$	$2868^{+178}_{-266}$	$-3704^{+7836}_{-1622}$	$-0.939^{+3.642}_{-8.056}$
Alt.	$-2\pm2$	$5.12^{+1.75}_{-1.63}$	$2857^{+181}_{-253}$	$-2641^{+5496}_{-390}$	$0.177^{+0.382}_{-0.190}$

$T_{max}$  = 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

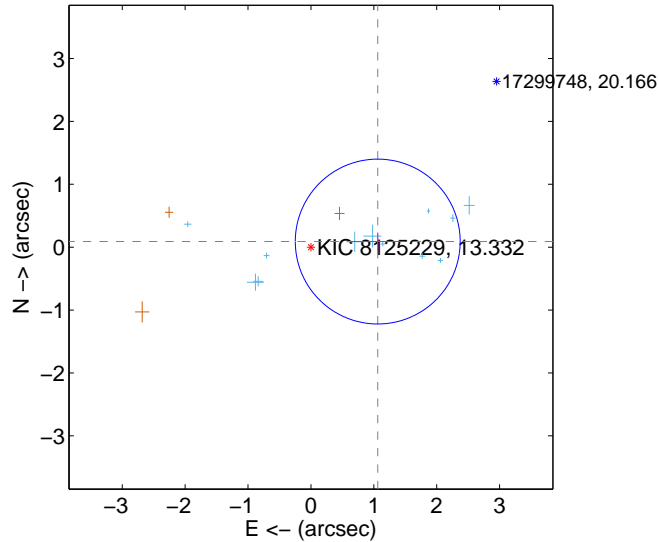
Supplemental centroid analysis for 008125229-01. Kepler magnitude: 13.33. Transit SNR 4.58

There are 12 quarters with good PRF difference image offsets

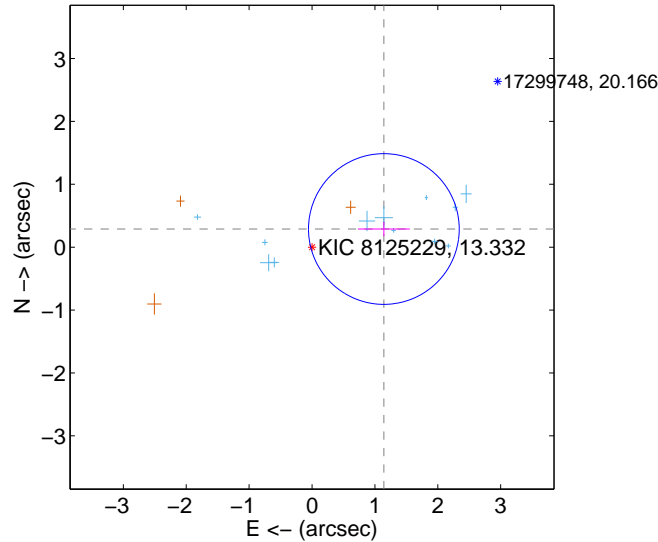
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.066 \pm 0.437$	2.44	$-1.063 \pm 0.434$	$0.089 \pm 0.144$
PRF-fit source offset from KIC position	$1.179 \pm 0.399$	2.95	$-1.143 \pm 0.411$	$0.289 \pm 0.114$
photometric centroid source offset	$1.21 \pm 0.67$	1.81	$0.19 \pm 0.61$	$1.19 \pm 0.67$

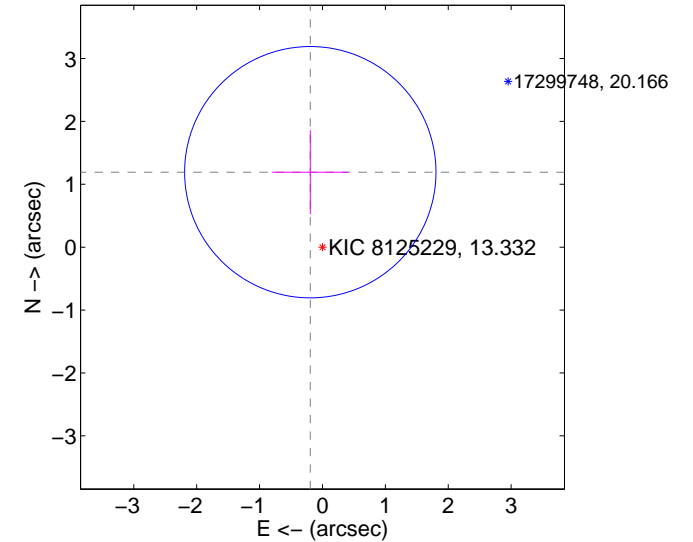
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

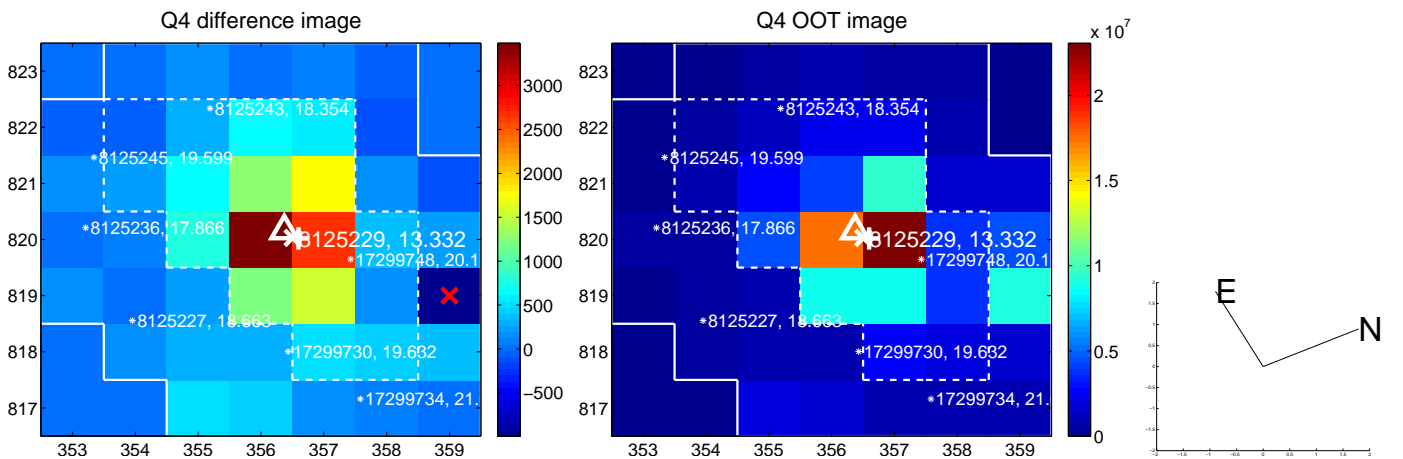
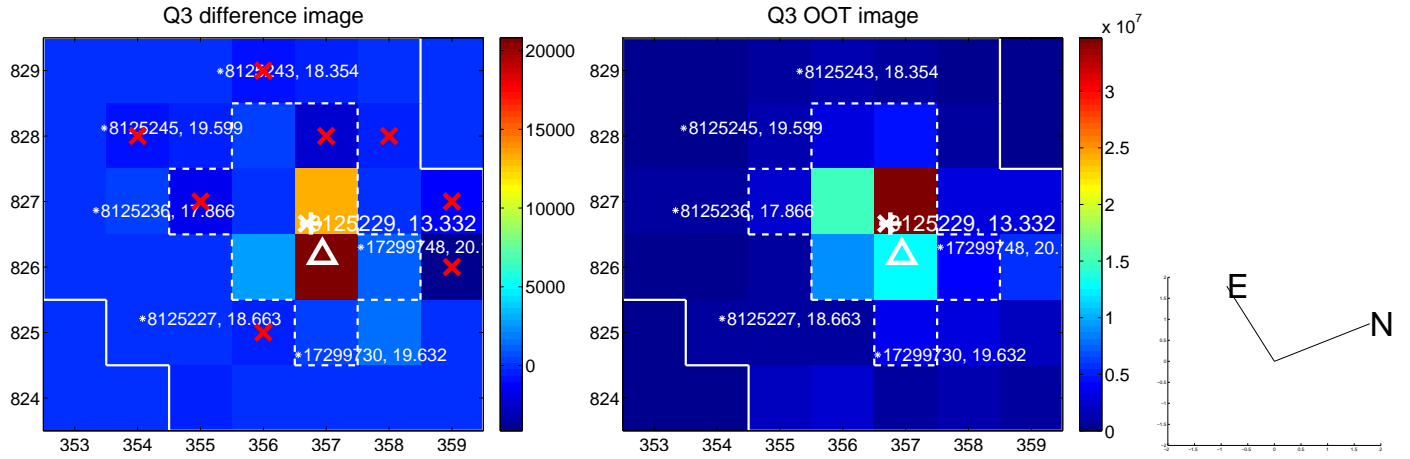
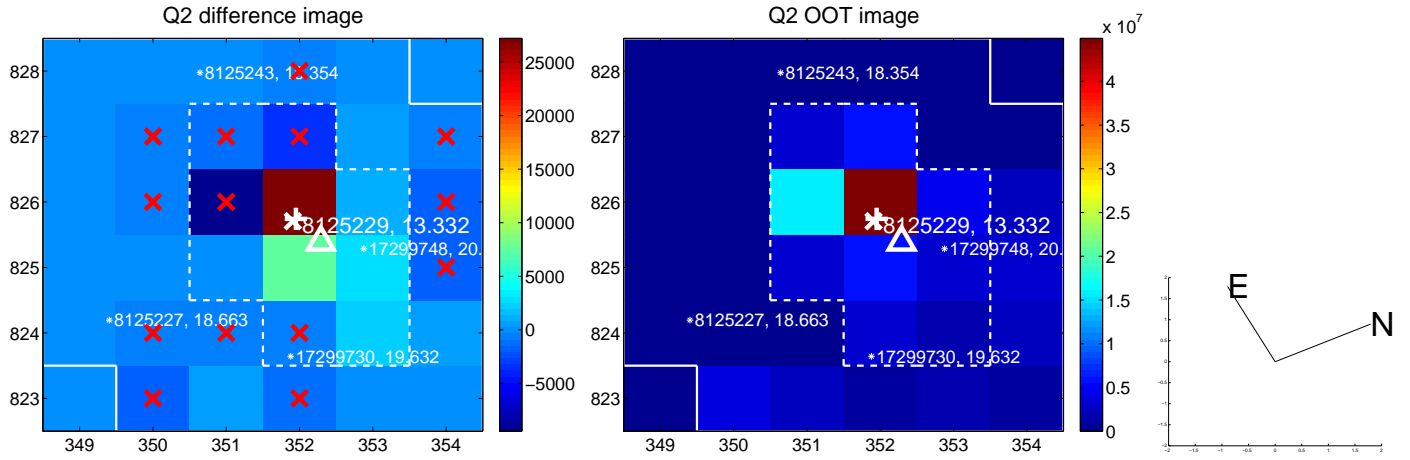
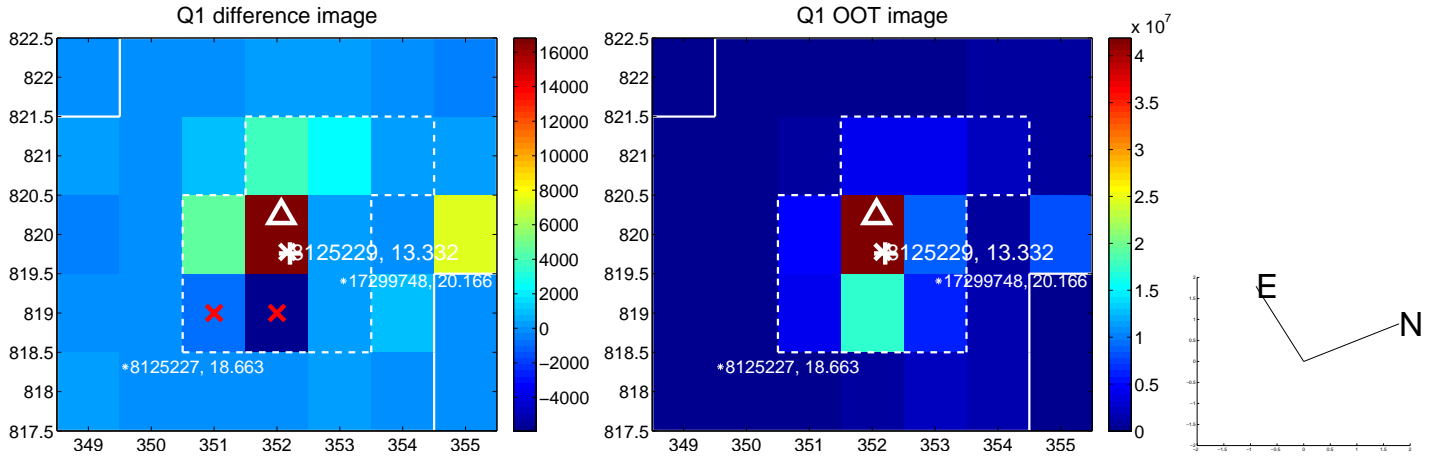


offset from photometric centroids

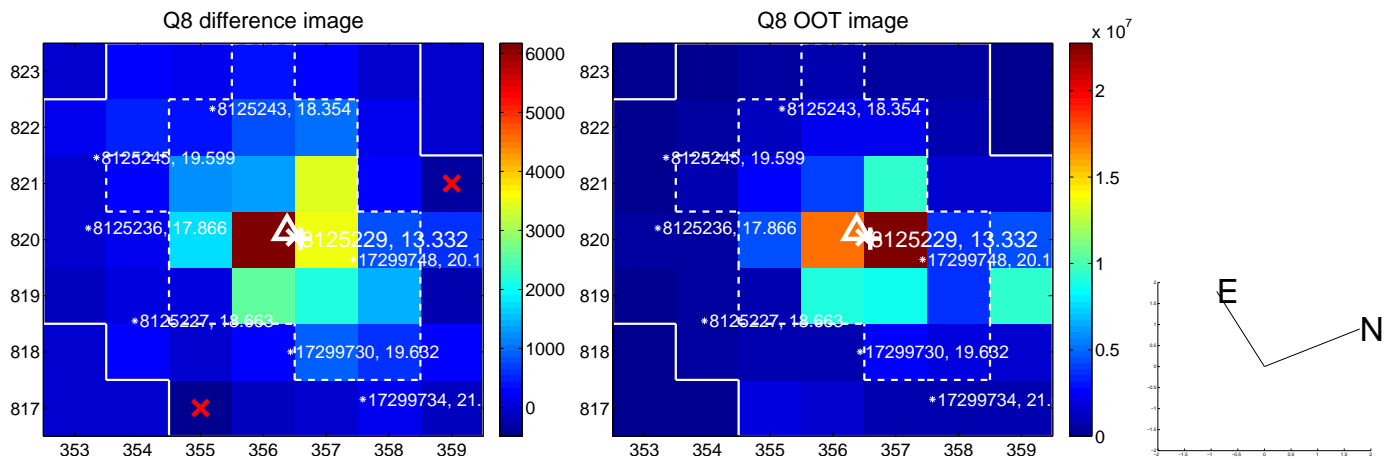
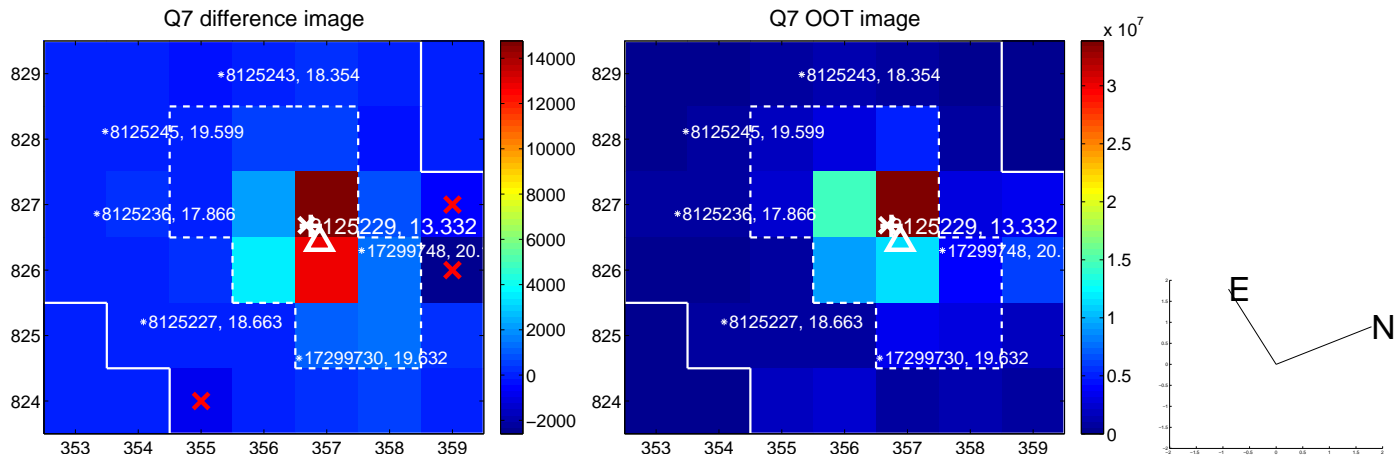
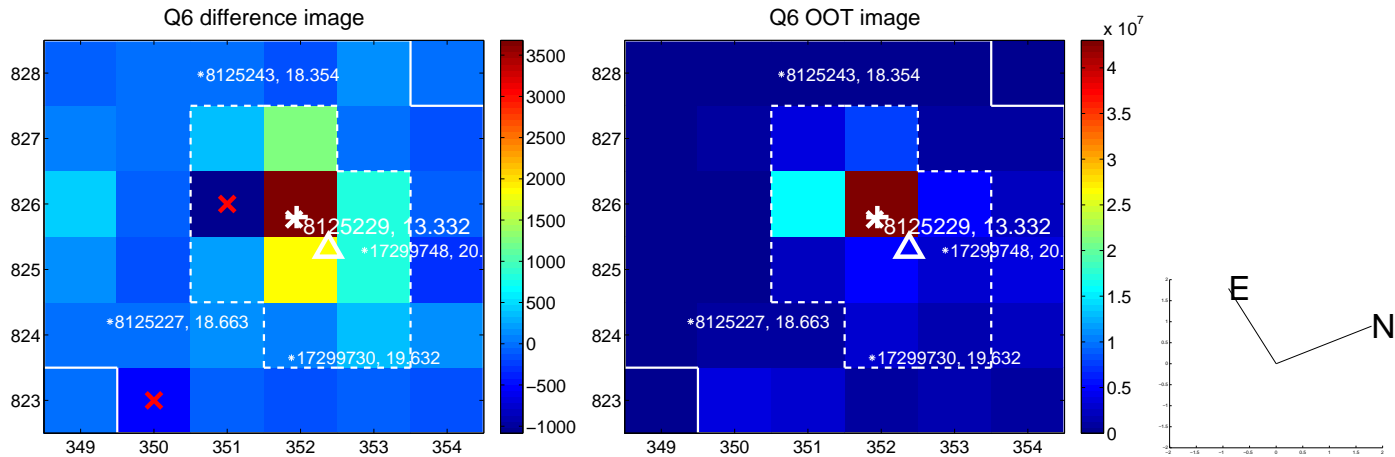
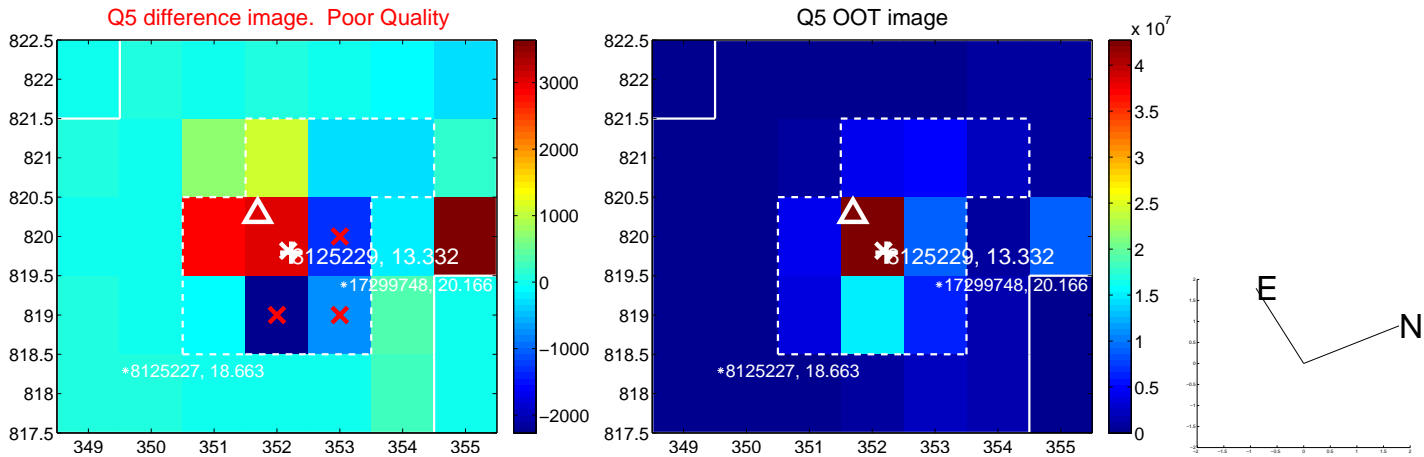


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

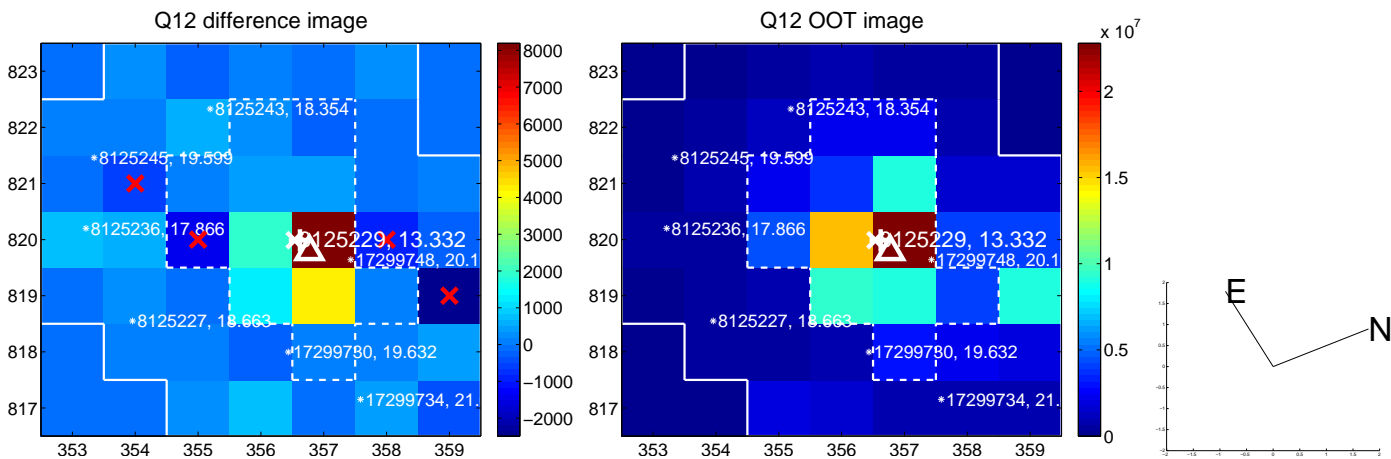
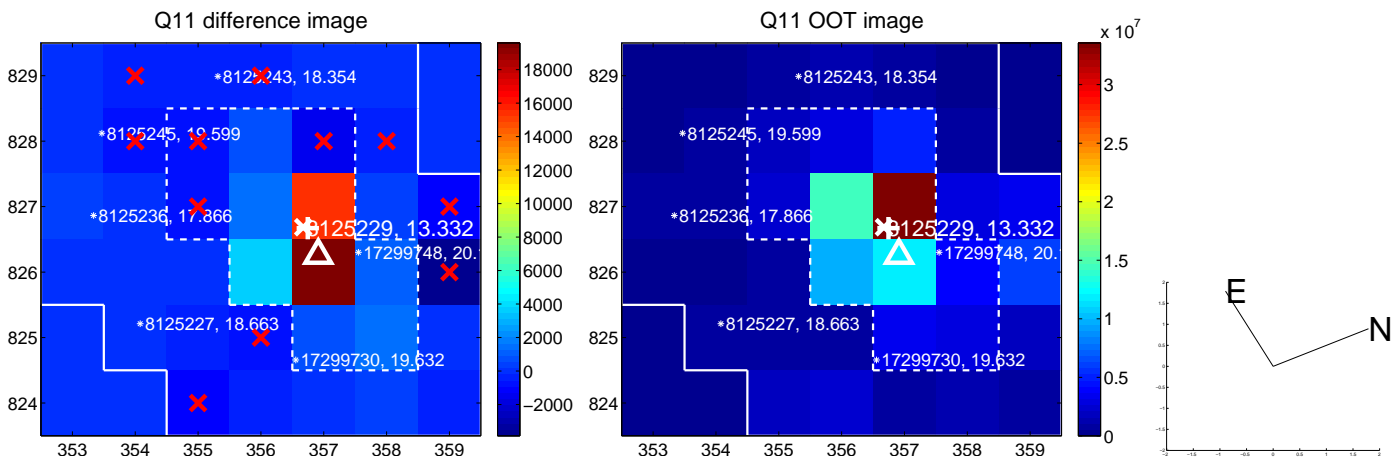
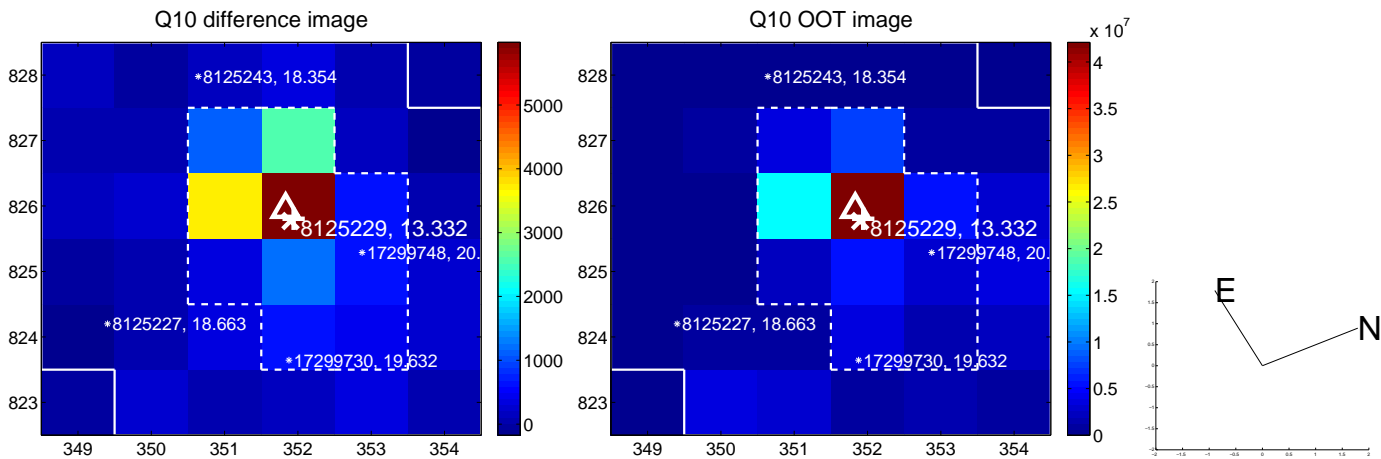
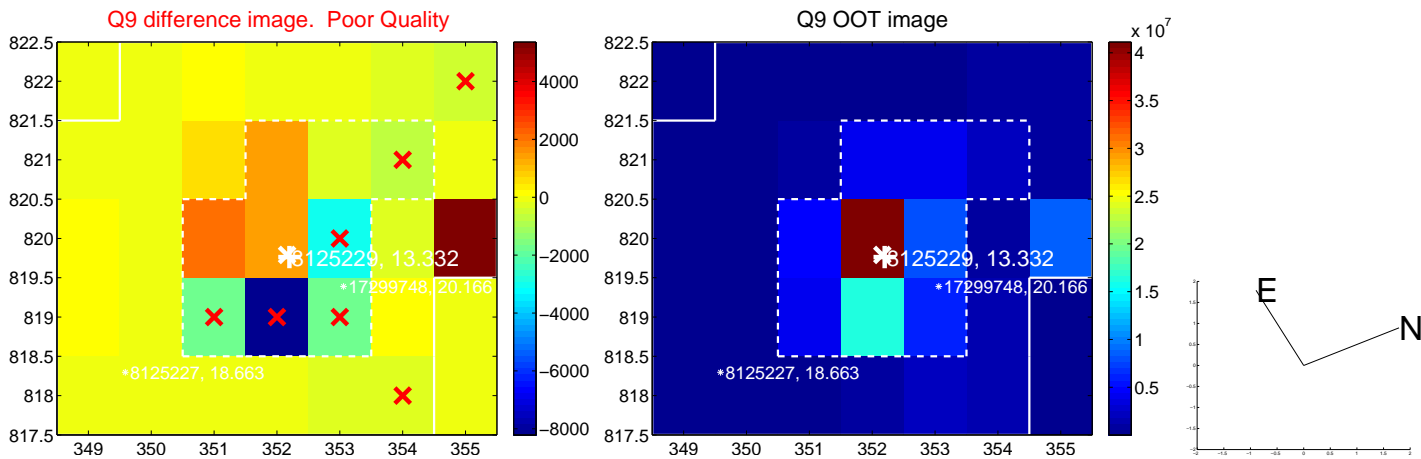


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

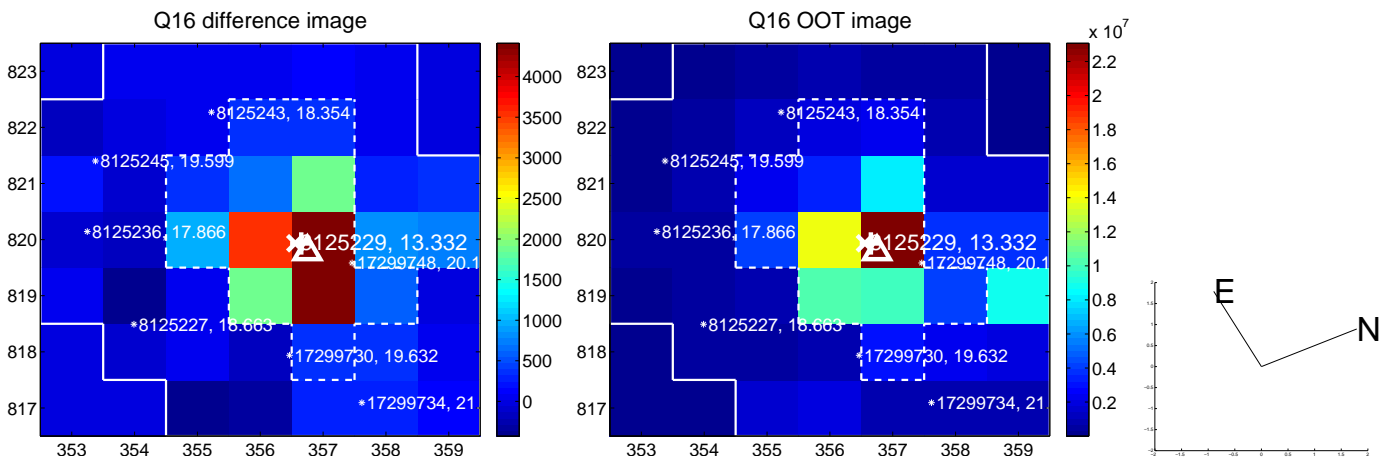
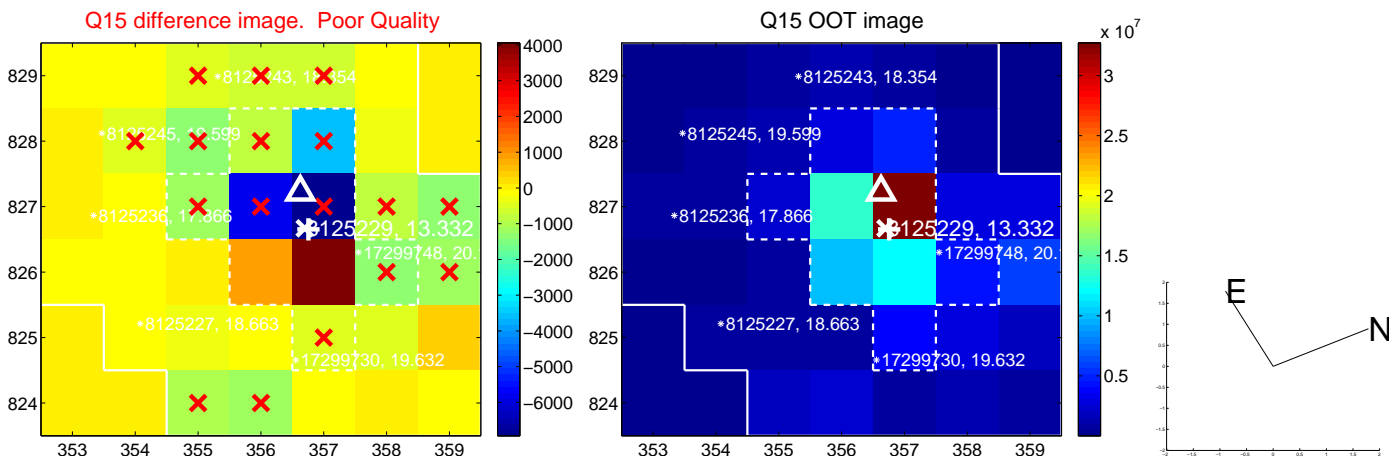
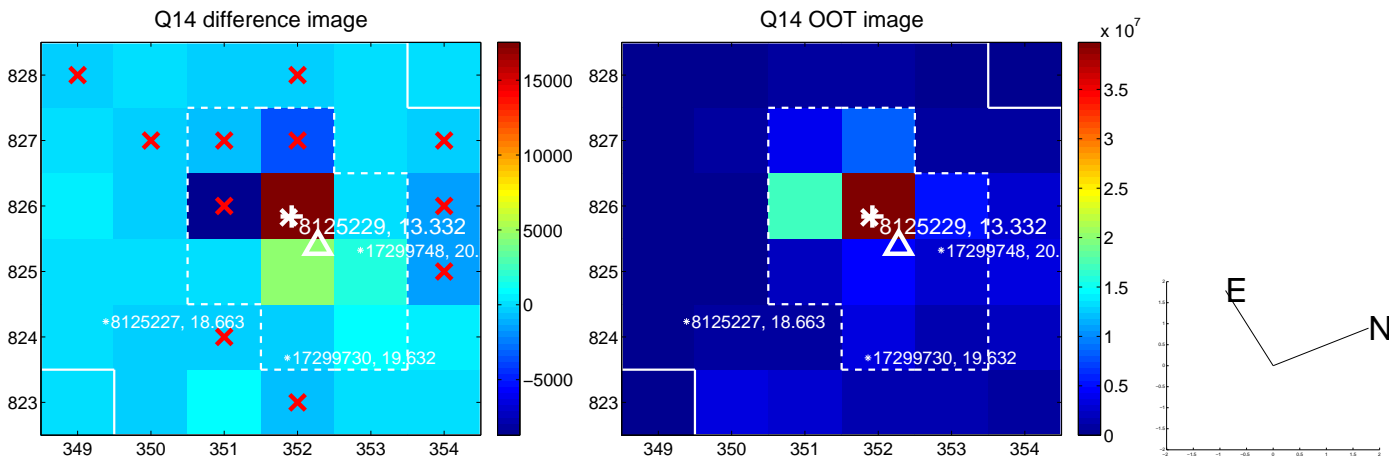
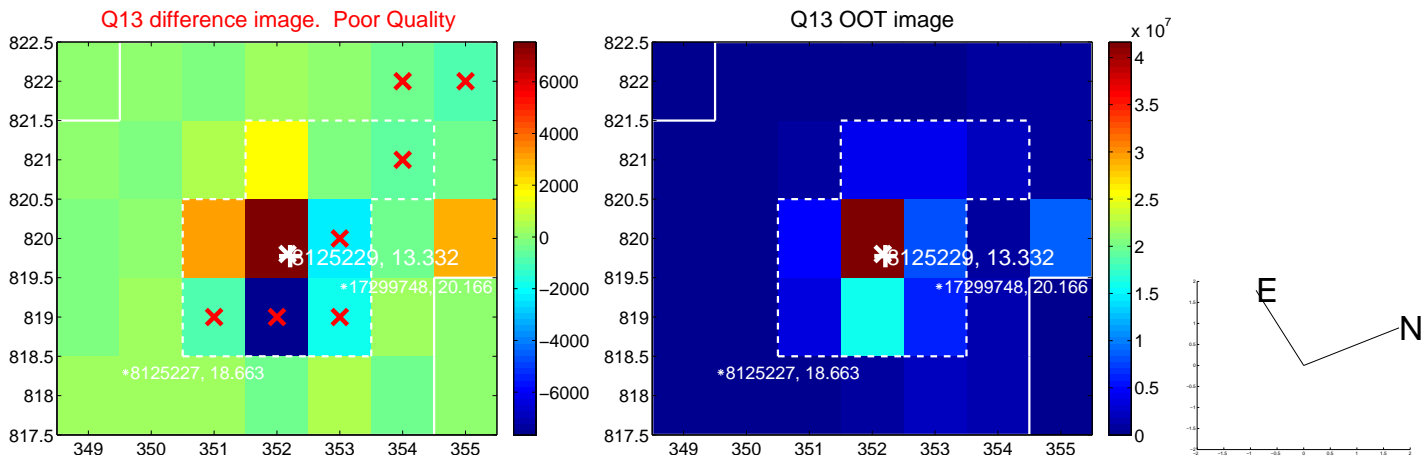




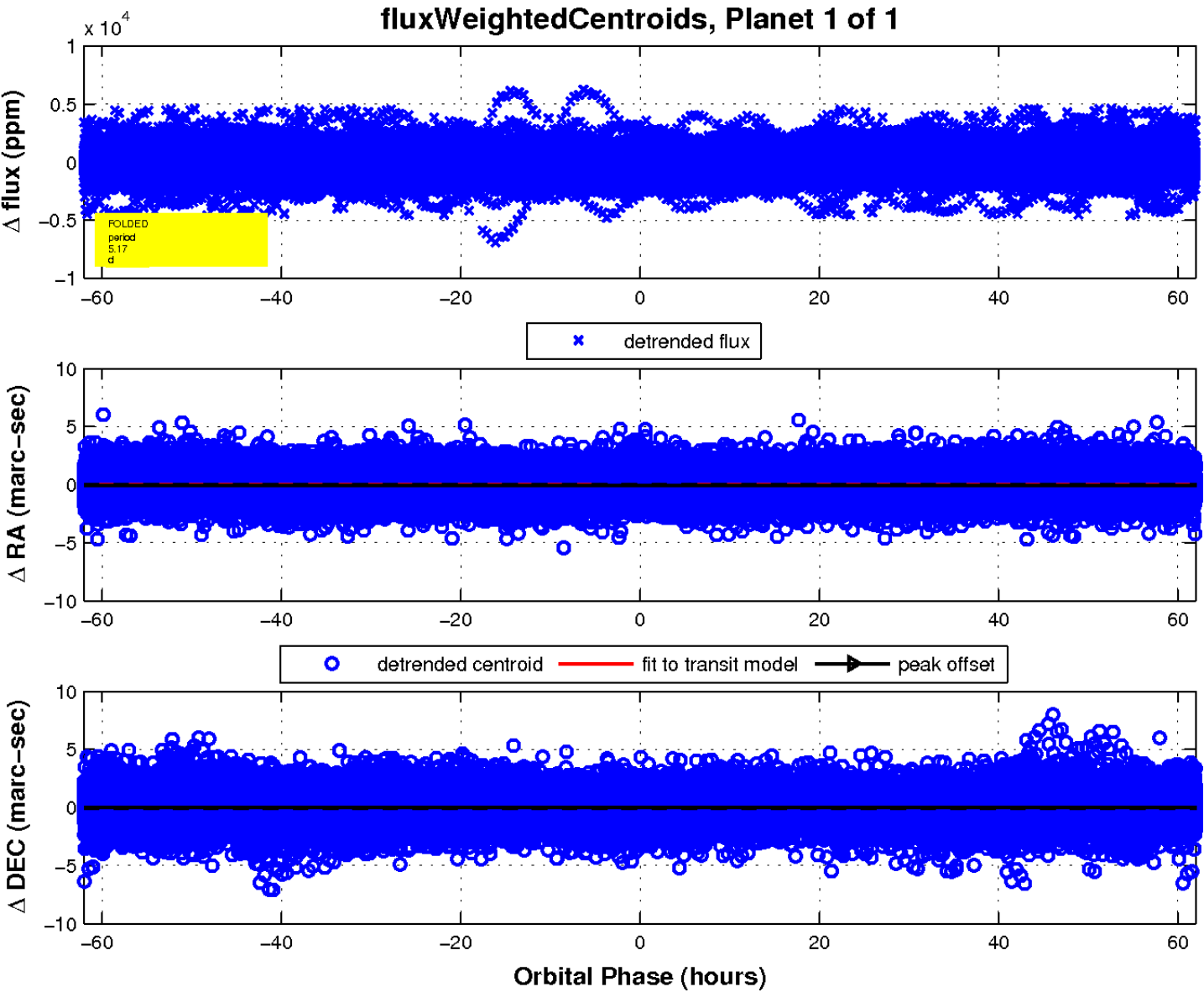
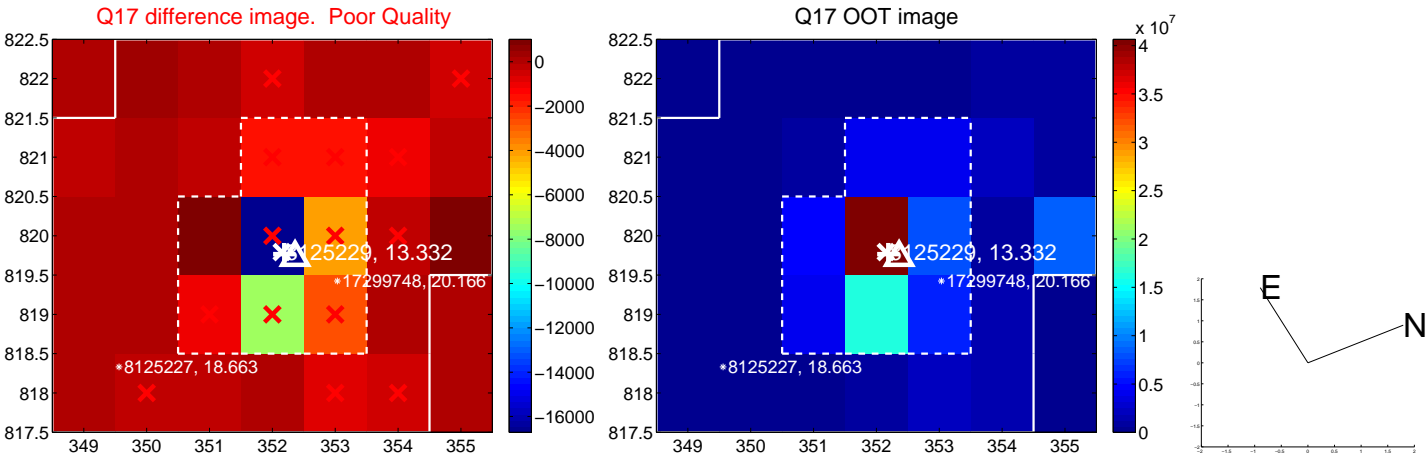
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

