

# KIC 005392451

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005392451-01	OBS	No	5.916086	131.862414	67.3	24.427	9.4	6.8	1.17	6418	0.97	440.03

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005392451-01	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.

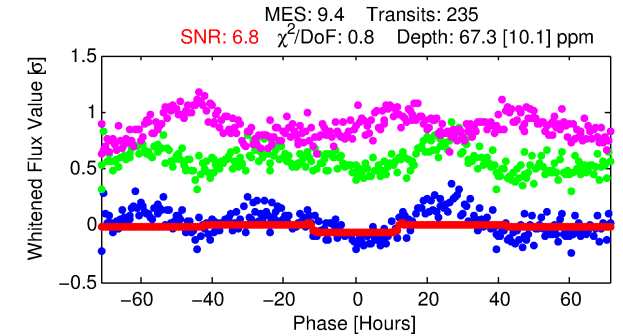
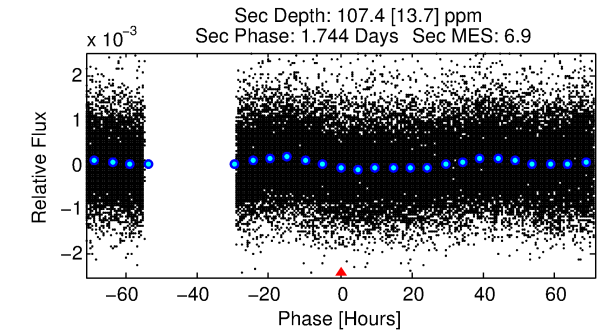
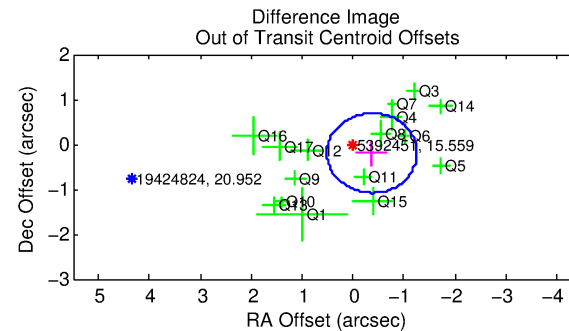
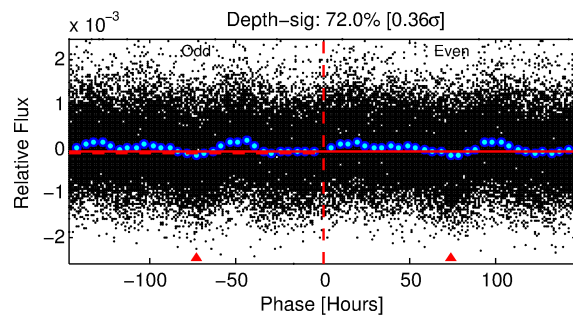
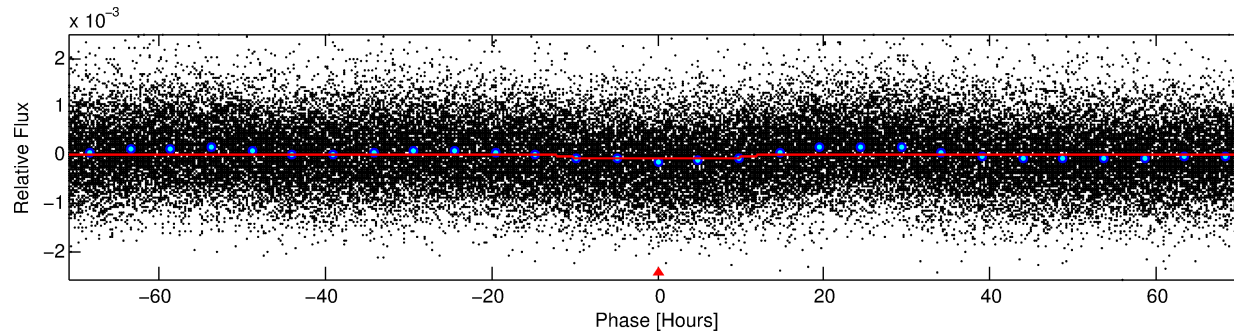
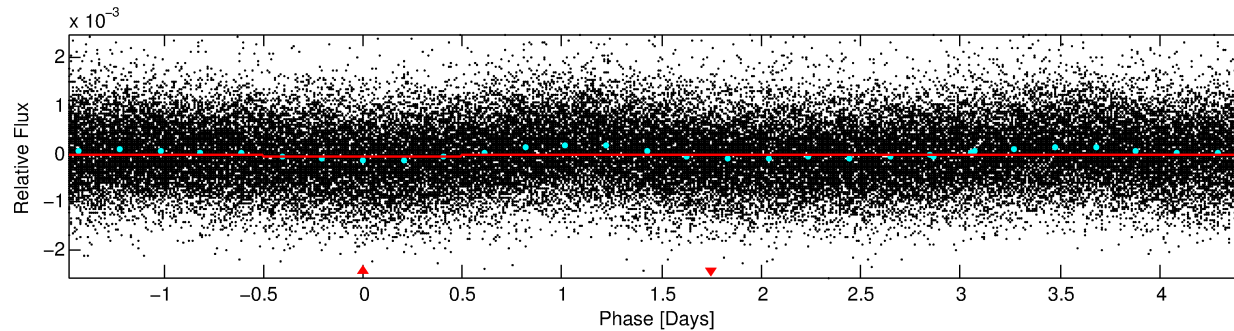
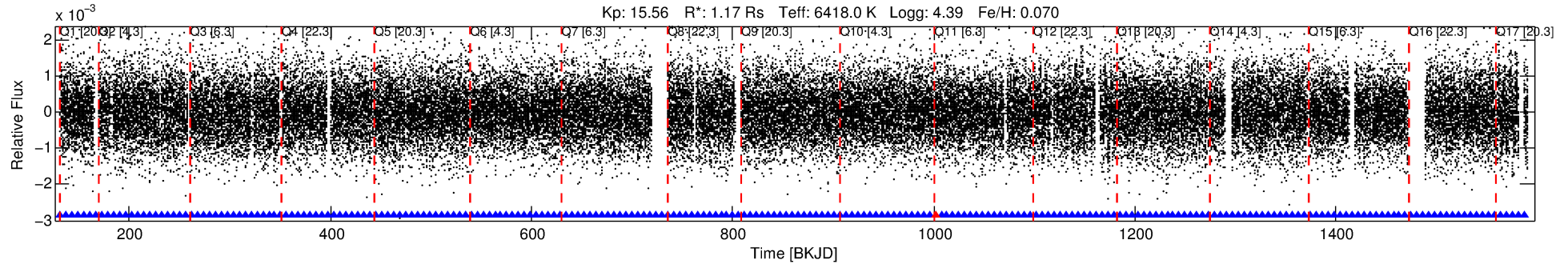
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005392451-01

No Significant Match Found

# DV One-Page Summary

KIC: 5392451 Candidate: 1 of 1 Period: 5.916 d



## DV Fit Results:

Period = 5.91609 [0.00021] d  
Epoch = 131.8624 [0.0272] BKJD  
Rp/R\* = 0.0076 [0.0093]  
a/R\* = 1.89 [8.57]  
b = 0.31 [18.25]  
Seff = 440.03 [163.26]  
Teq = 1168 [108] K  
Rp = 0.97 [1.21] Re  
a = 0.0688 [0.0159] AU  
Ag = 296.08 [728.53] [0.41 $\sigma$ ]  
Teffp = 7490 [4576] K [1.38 $\sigma$ ]

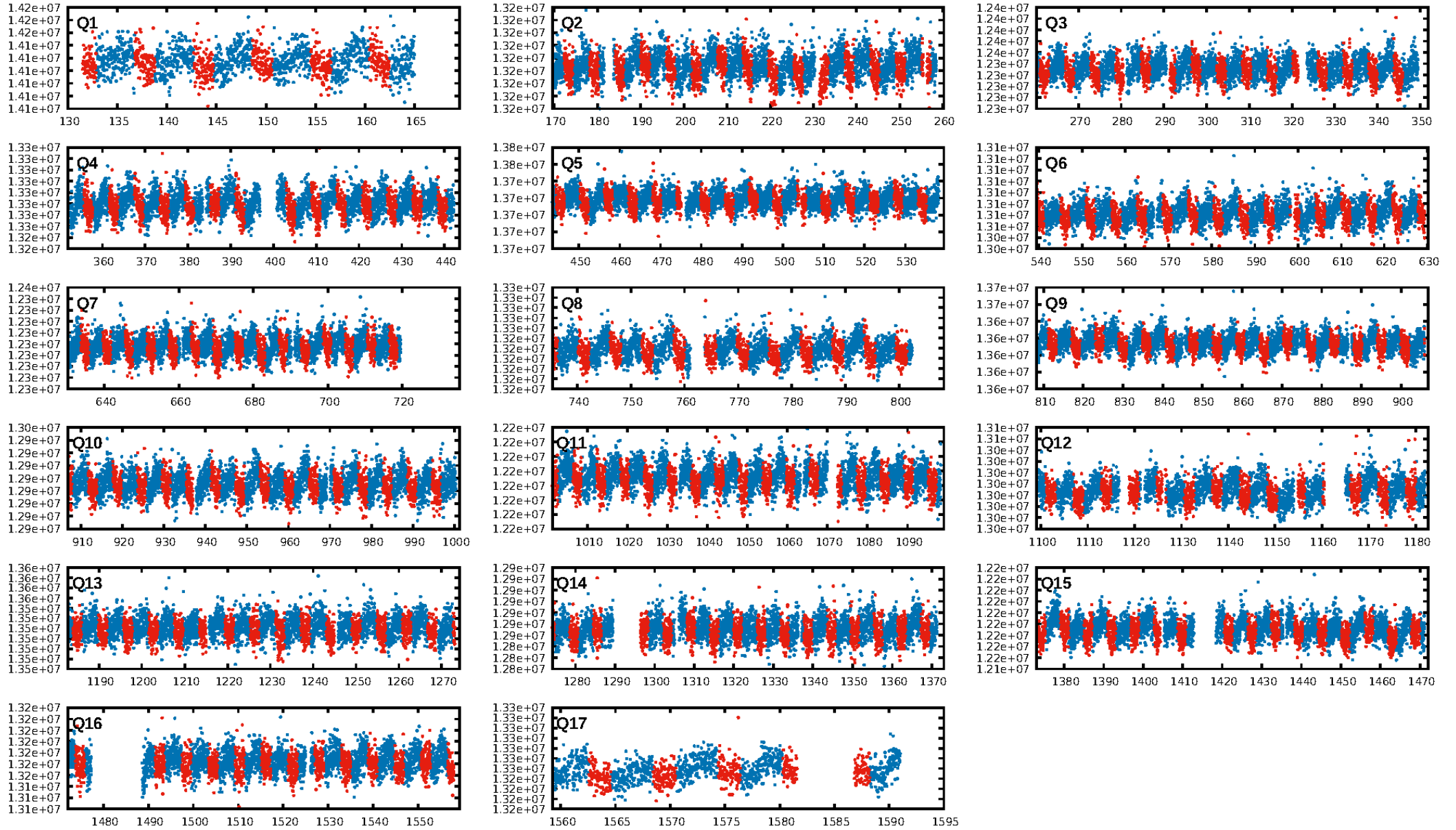
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 3.37e-22  
RollingBand-fgt: 1.00 [223/224]  
GhostDiagnostic-chr: 1.259  
Centroid-sig: 85.9%  
Centroid-so: 0.347 arcsec [0.20 $\sigma$ ]  
OotOffset-rm: 0.422 arcsec [1.43 $\sigma$ ]  
KicOffset-rm: 0.423 arcsec [1.46 $\sigma$ ]  
OotOffset-st: 3/4/4/5 [16]  
KicOffset-st: 3/4/4/5 [16]  
DiffImageQuality-fgm: 0.94 [15/16]  
DiffImageOverlap-fno: 1.00 [17/17]

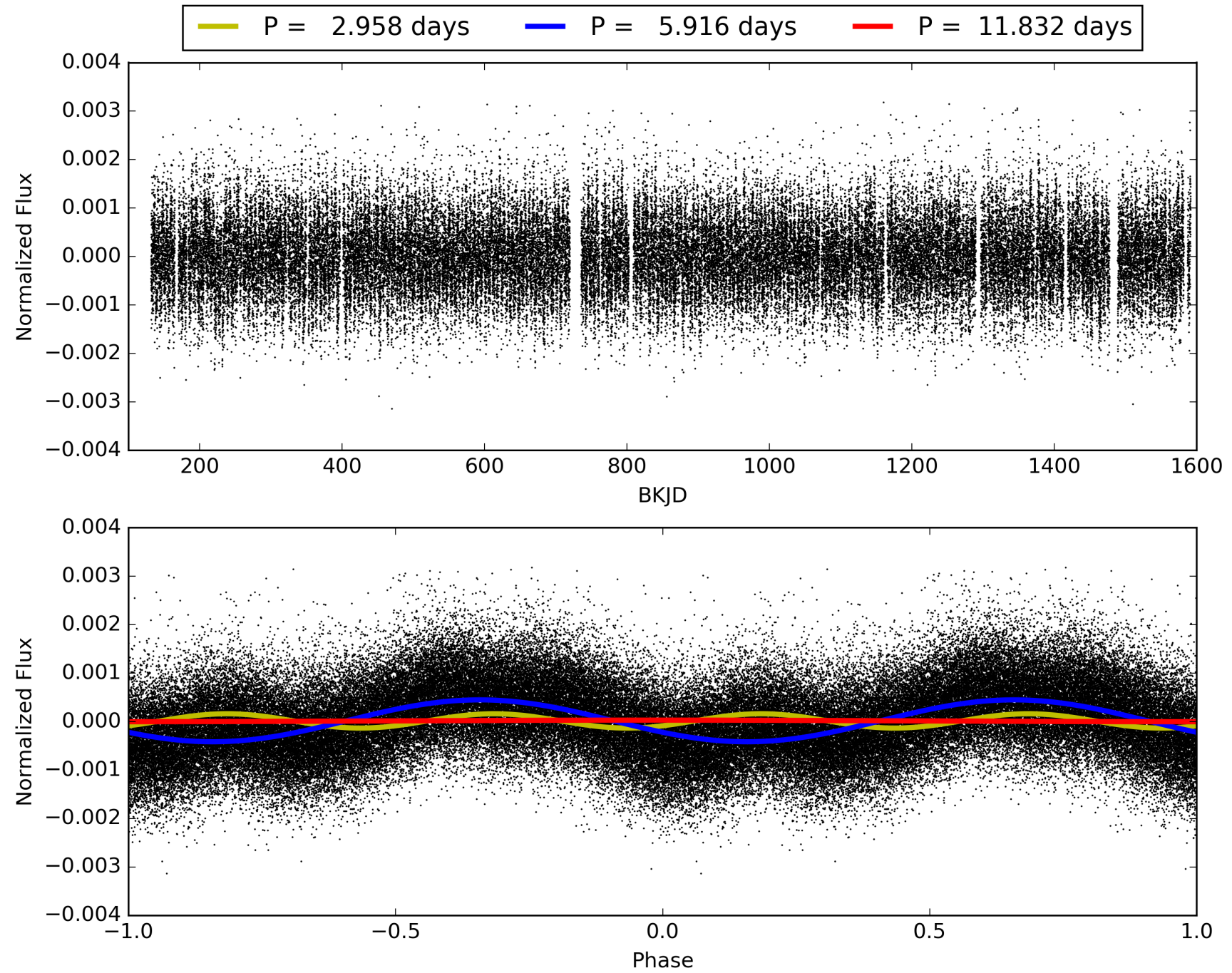
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 06:42:33 Z

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

# TCE 005392451-01, PDC Light Curves



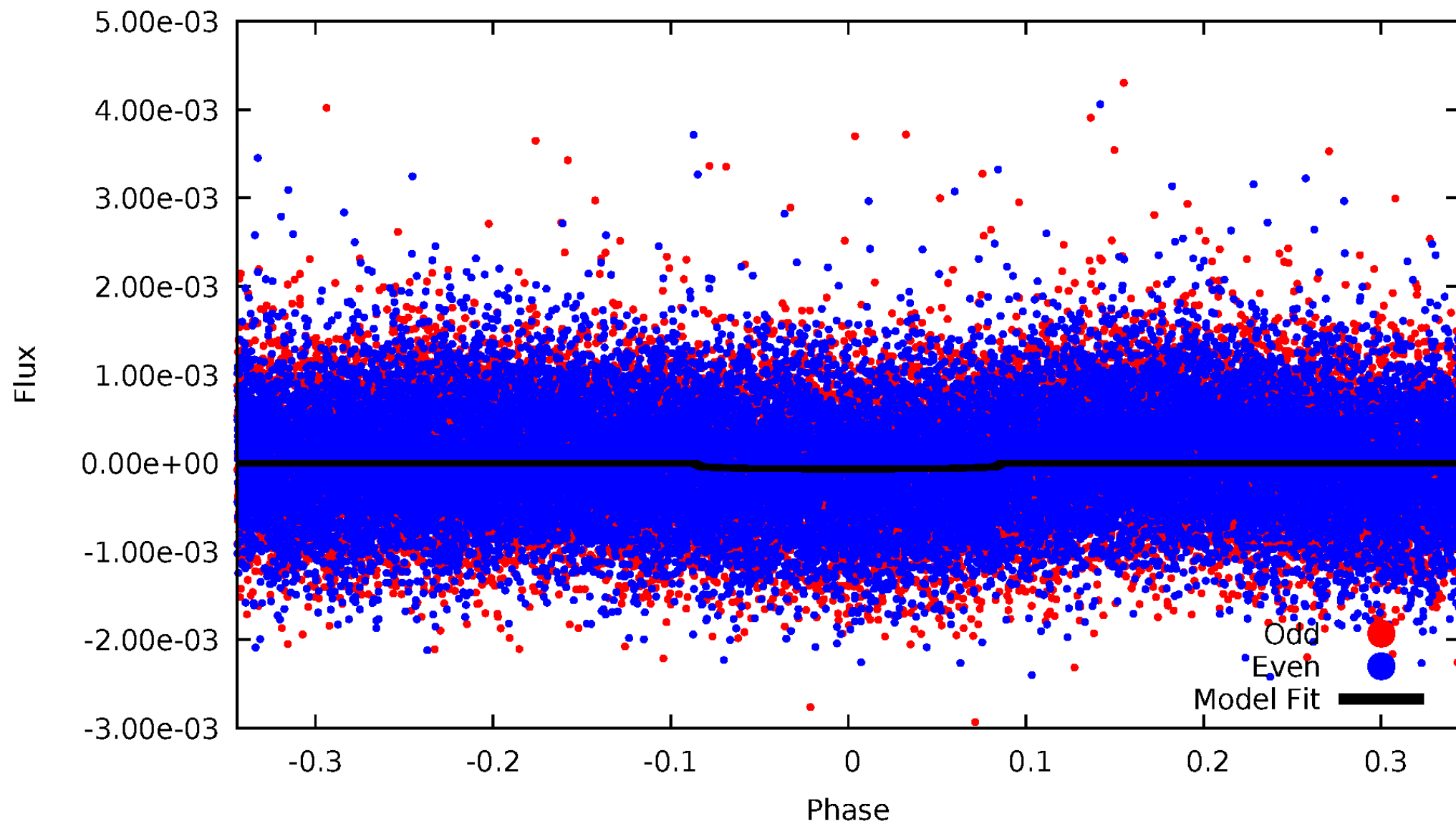
TCE 005392451-01





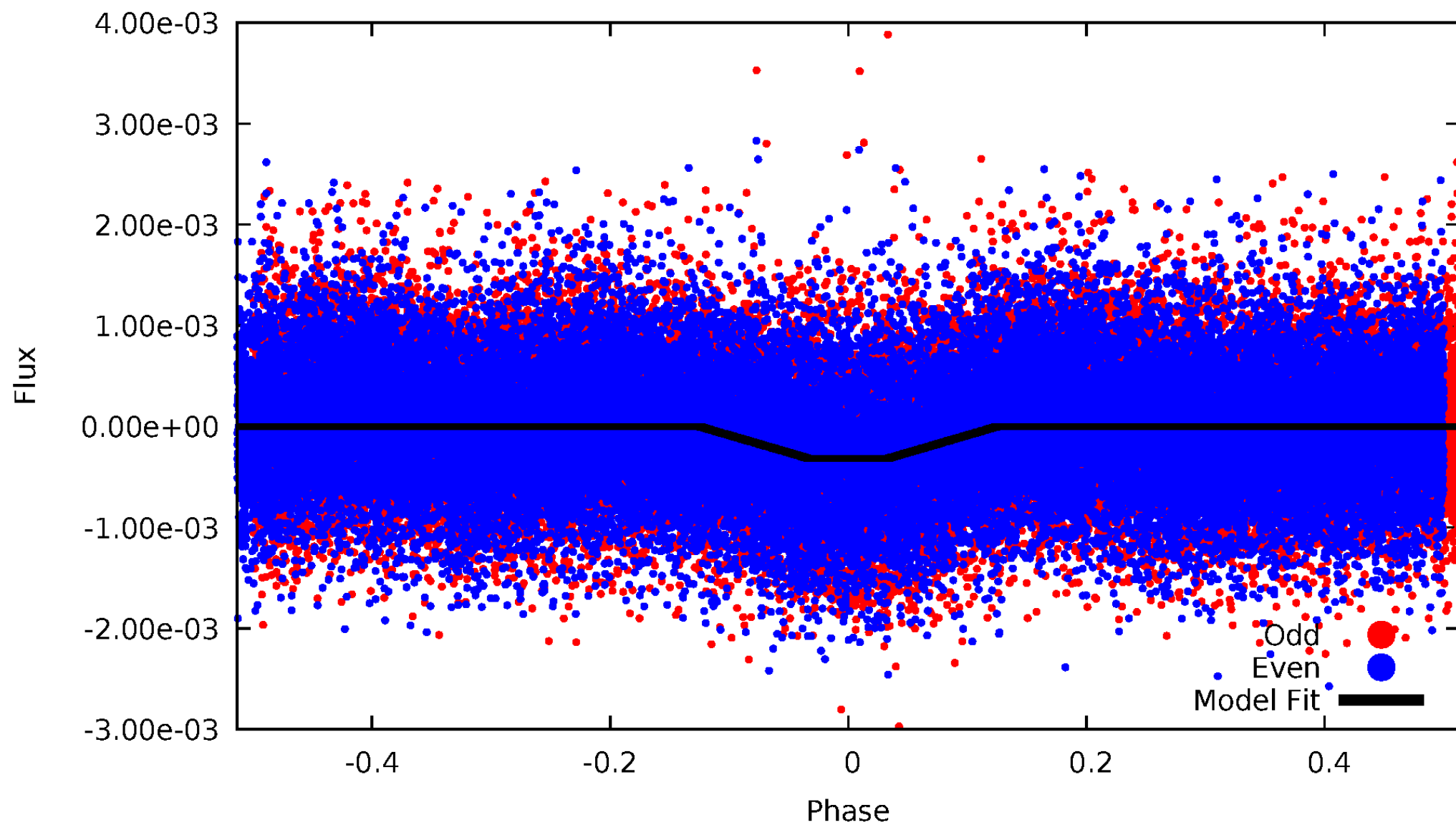
# DV Odd/Even

TCE 005392451-01



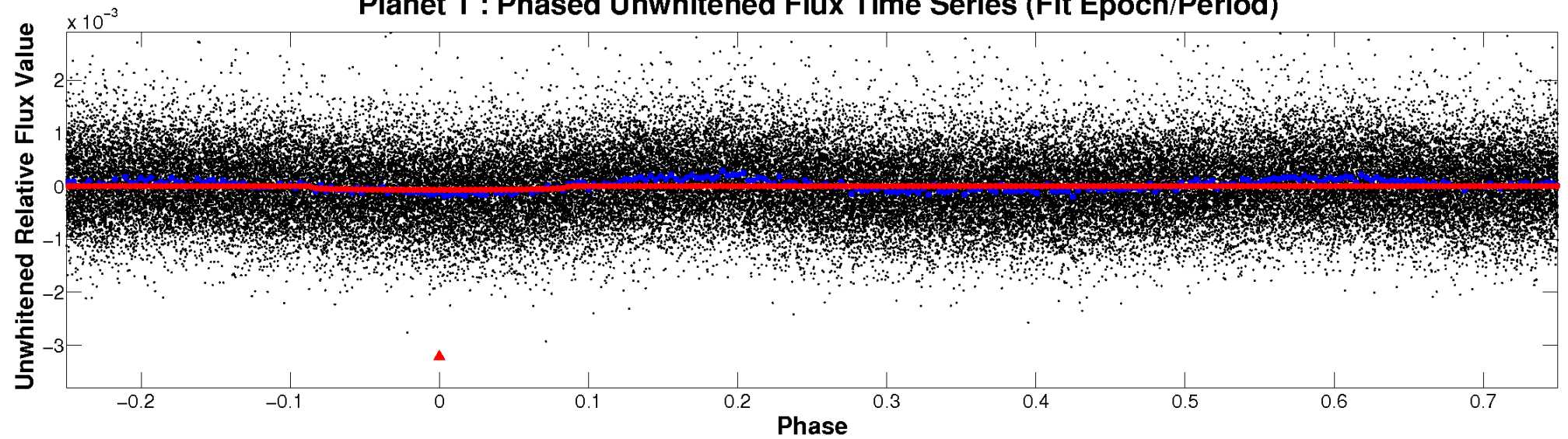
# ALT Odd/Even

TCE 005392451-01

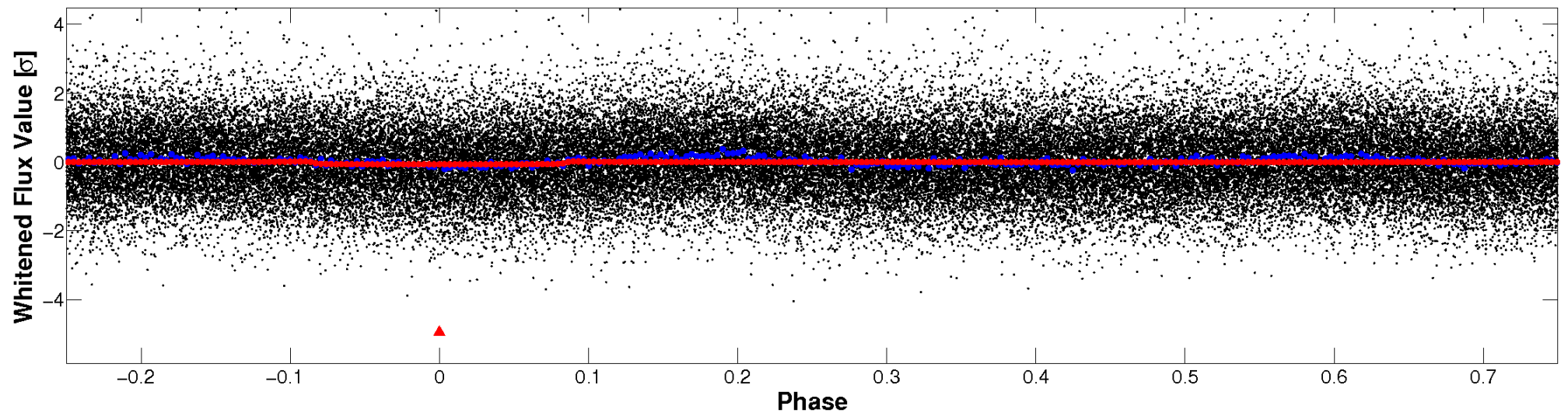


# Non-Whitened Vs. Whitened Light Curve

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

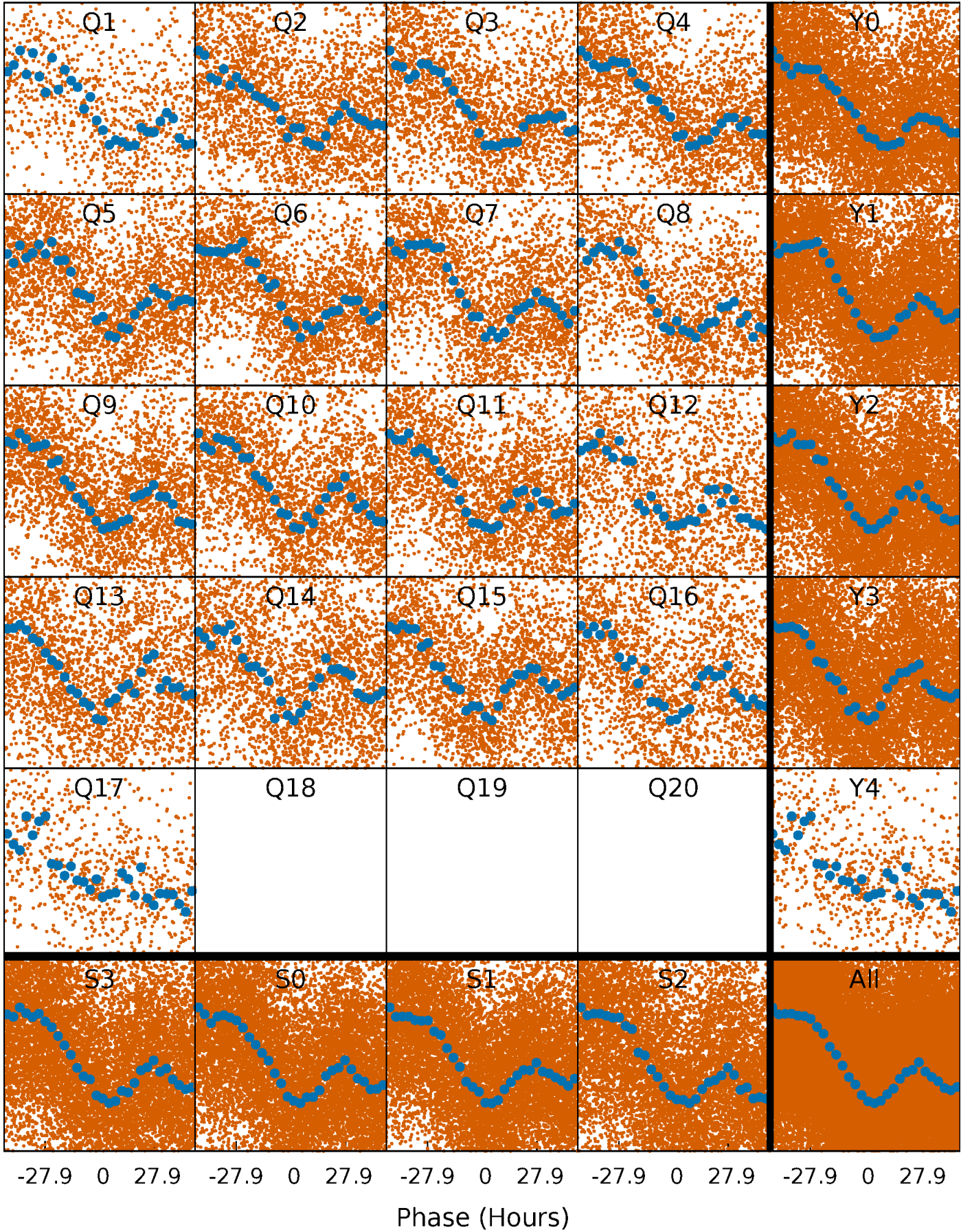


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

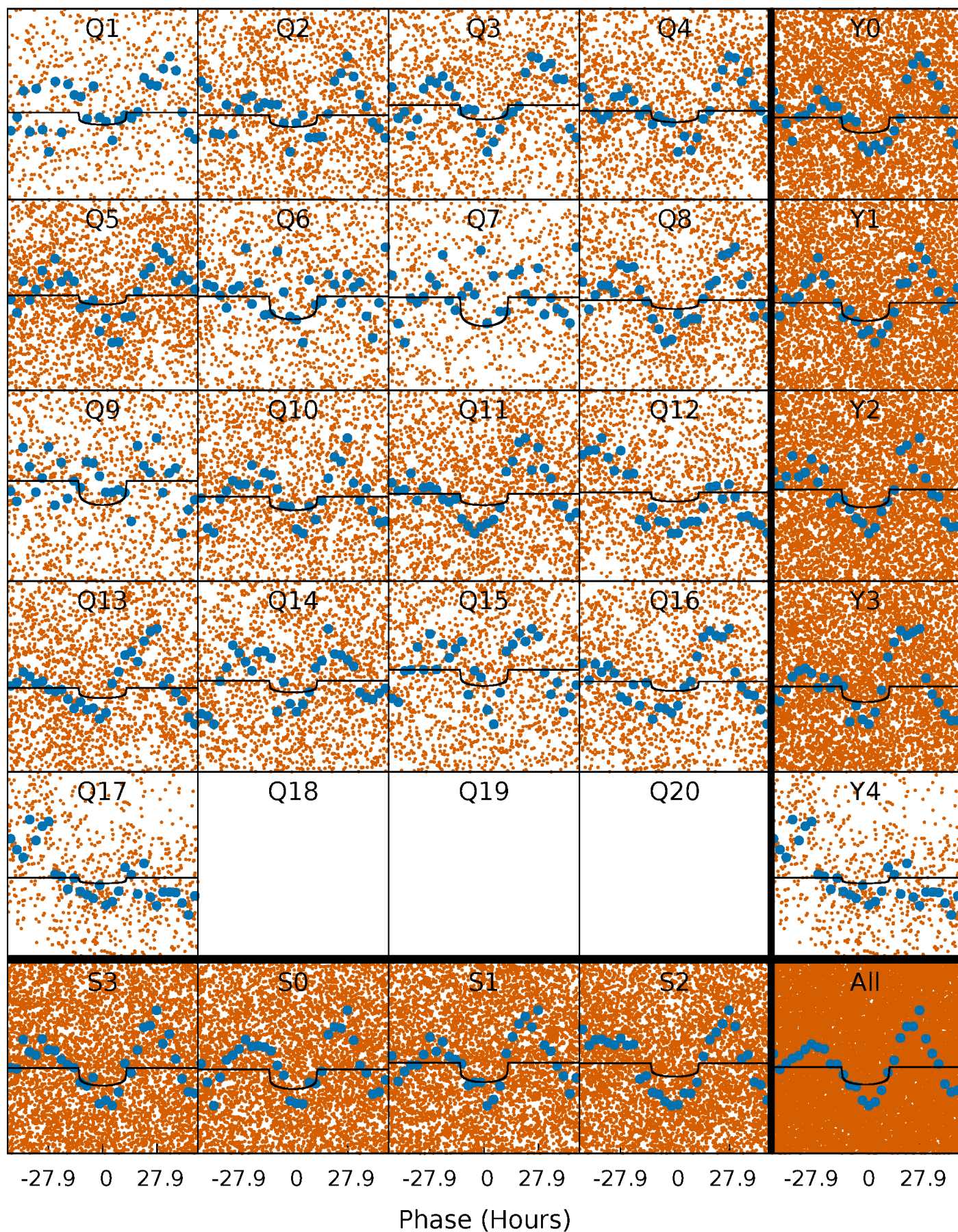
TCE 005392451-01 P= 5.916086 Days  $T_0=131.862414$  (BKJD)





# DV Quarter-Phased Transit Curves

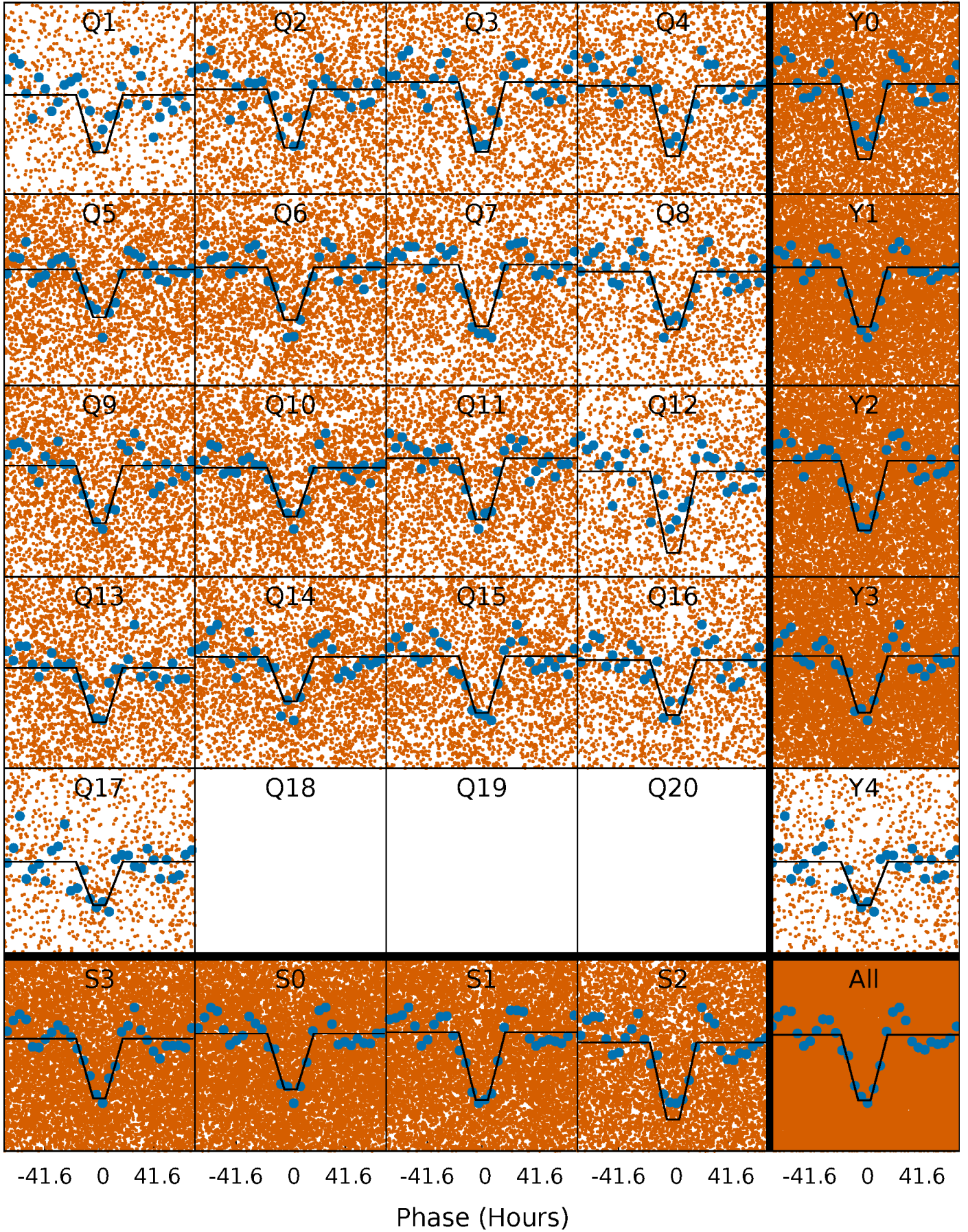
TCE 005392451-01 P= 5.916086 Days  $T_0=131.862414$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

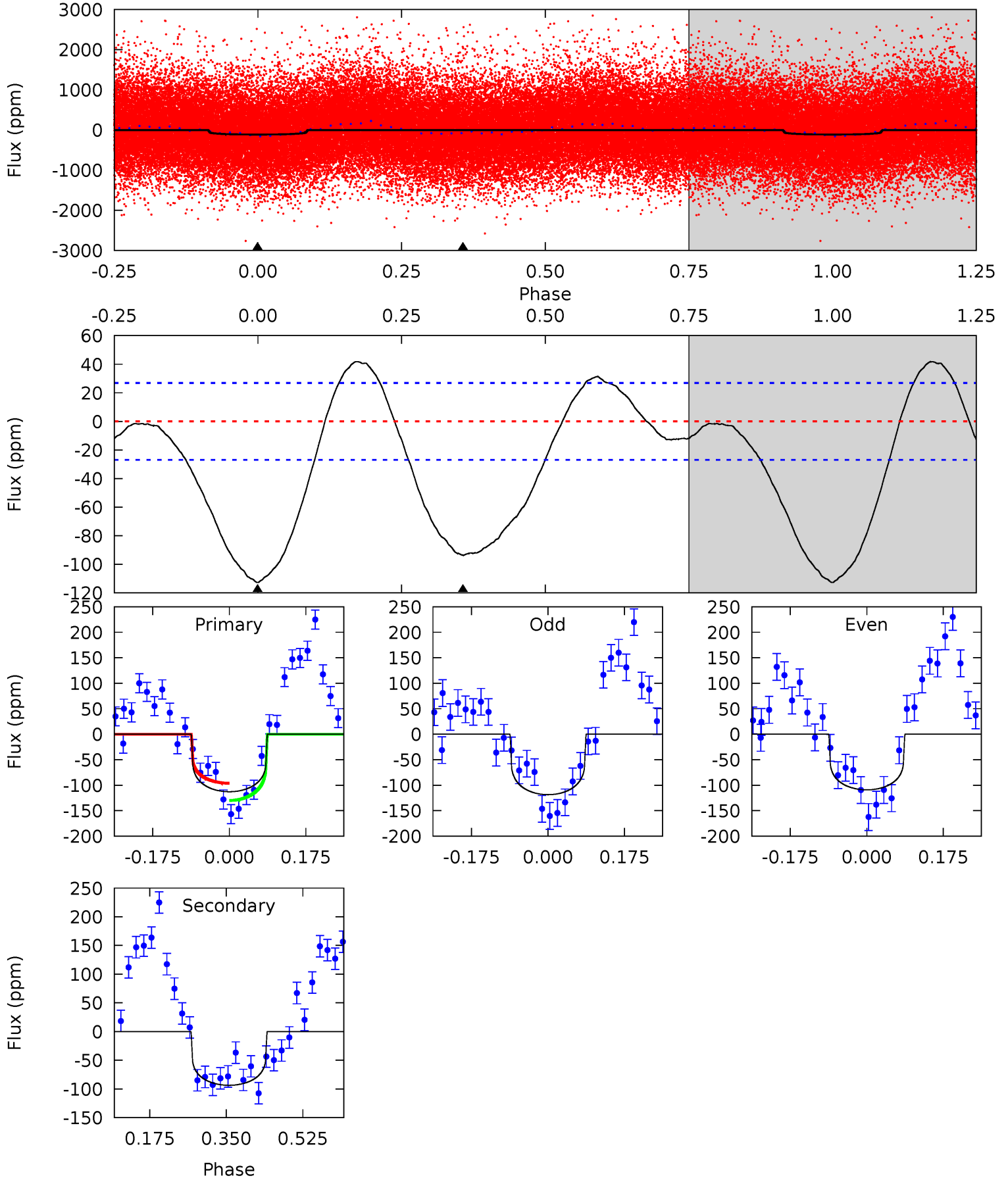
TCE 005392451-01 P= 5.914594 Days  $T_0=132.119057$  (BKJD)



# DV Model-Shift Uniqueness Test

005392451-01, P = 5.916086 Days, E = 125.946328 Days

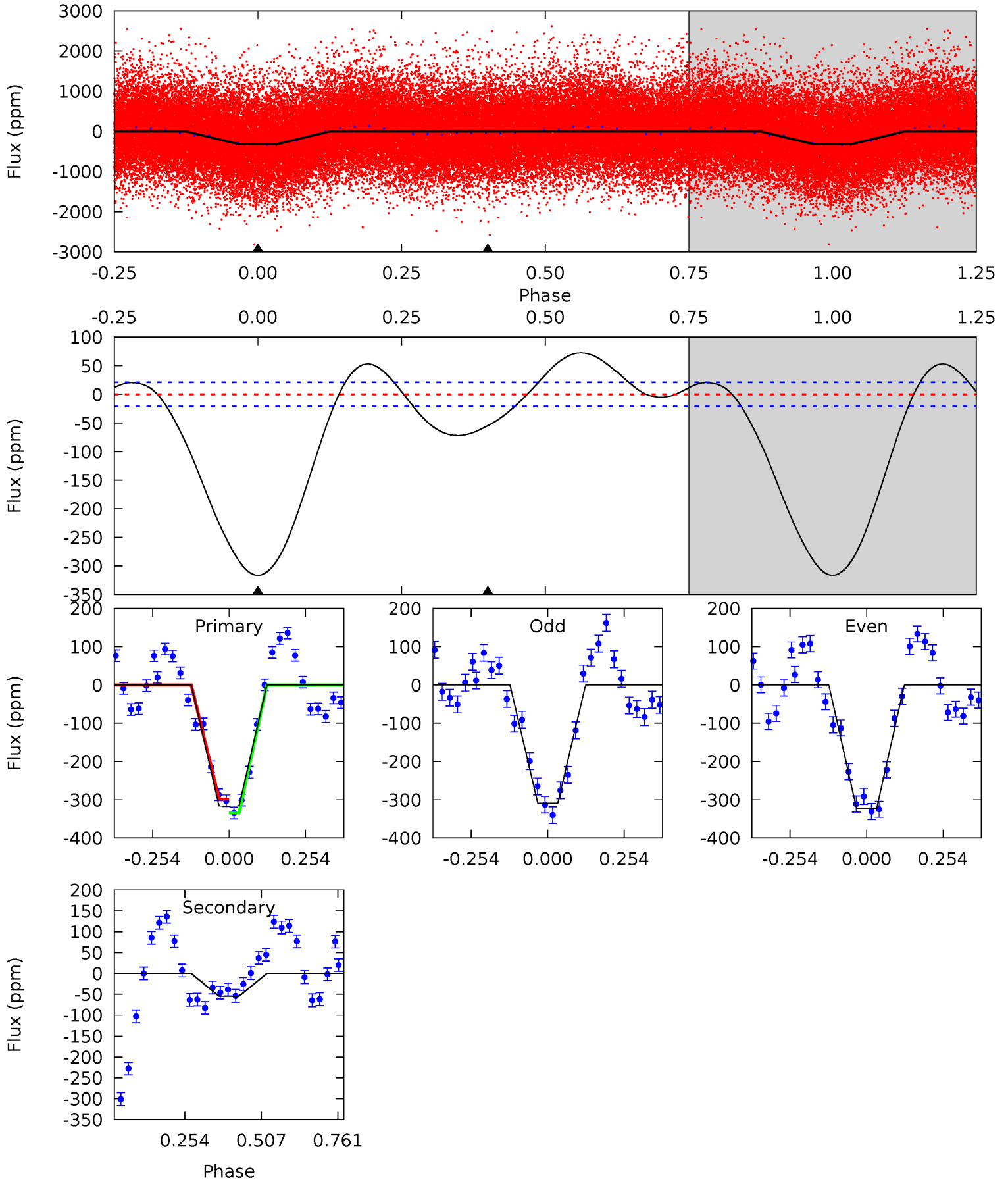
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.6	15.5	0	0	4.45	1.36	2.59	18.6	18.6	15.5	15.5	0.79	1.00	0.27	2.78



# Alt Model-Shift Uniqueness Test

005392451-01, P = 5.914594 Days, E = 126.204463 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
65.6	11.3	0	0	4.37	1.14	1.26	65.6	65.6	11.3	11.3	1.49	1.04	0.19	3.66





### Stellar Parameters For KIC 005392451

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6418^{+176}_{-265}$	$4.395^{+0.060}_{-0.180}$	$0.070^{+0.250}_{-0.300}$	$1.171^{+0.324}_{-0.139}$	$1.241^{+0.150}_{-0.183}$	$1.090^{+0.345}_{-0.515}$
	+3%/-4%	+1%/-4%	+357%/-429%	+28%/-12%	+12%/-15%	+32%/-47%
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 005392451-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-94 \pm 6$	$1.36^{+1.05}_{-0.86}$	$1654^{+114}_{-84}$	$6245^{+5789}_{-1504}$	$132^{+852}_{-92}$
Alt.	$-55 \pm 5$	$2.45^{+1.21}_{-1.19}$	$1659^{+110}_{-85}$	$4260^{+1339}_{-556}$	$23^{+65}_{-13}$

$T_{\text{max}}$  = 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

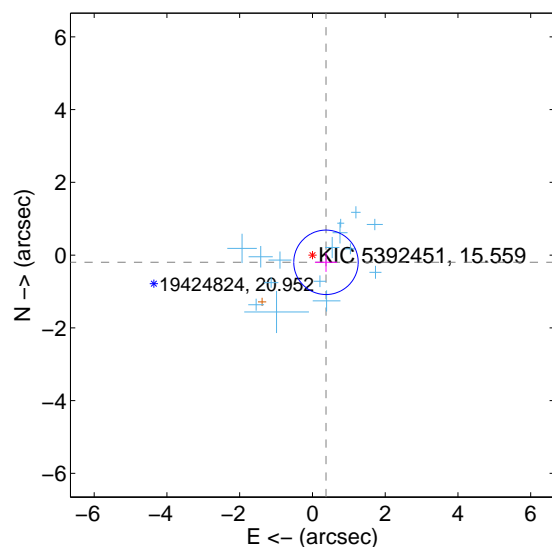
Supplemental centroid analysis for 005392451-01. Kepler magnitude: 15.56. Transit SNR 6.78

There are 15 quarters with good PRF difference image offsets

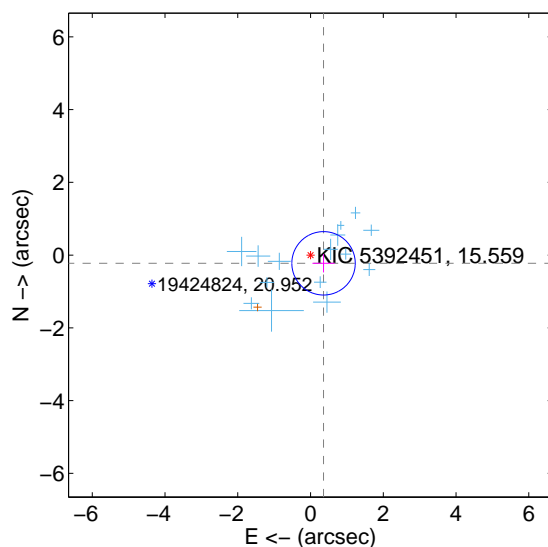
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.422 \pm 0.295$	1.43	$-0.372 \pm 0.304$	$-0.198 \pm 0.264$
PRF-fit source offset from KIC position	$0.423 \pm 0.291$	1.46	$-0.358 \pm 0.305$	$-0.226 \pm 0.252$
photometric centroid source offset	$0.35 \pm 1.73$	0.20	$0.35 \pm 1.73$	$0.03 \pm 1.61$

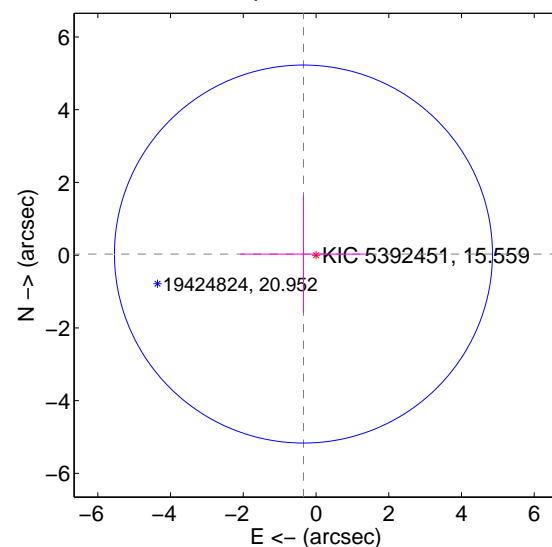
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

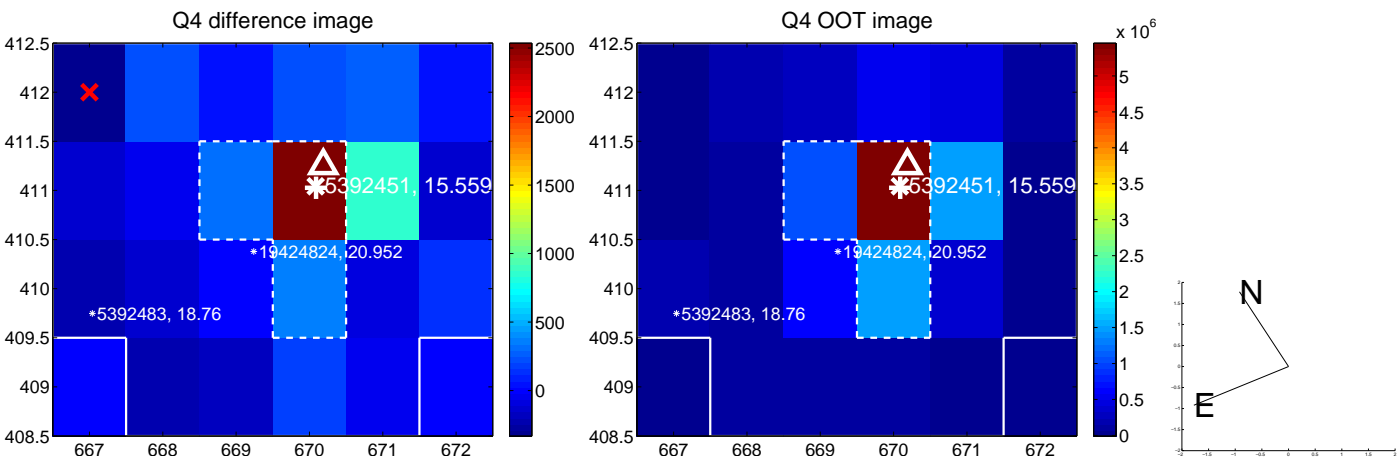
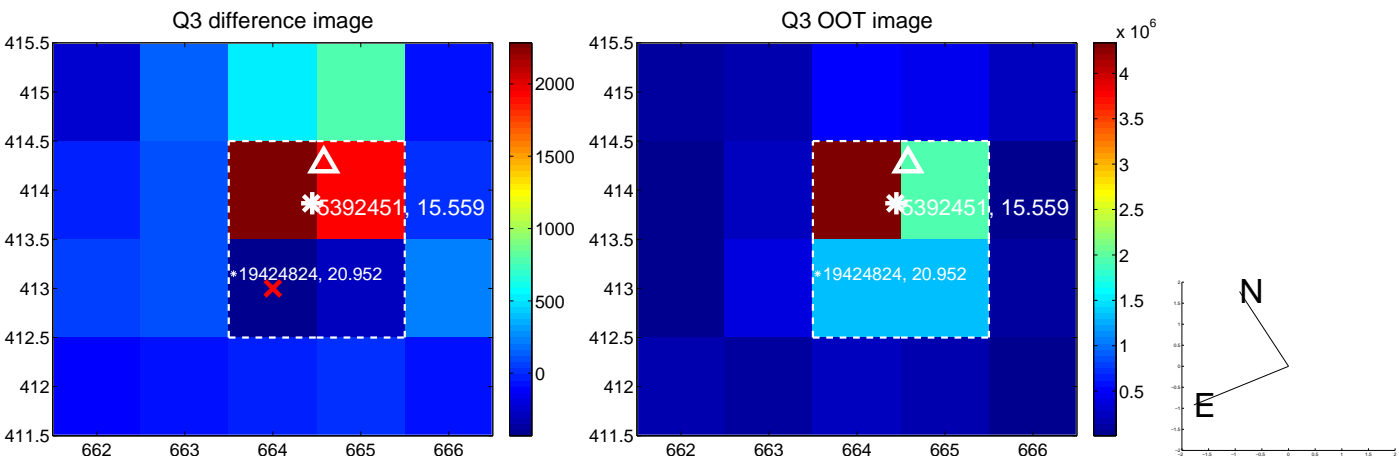
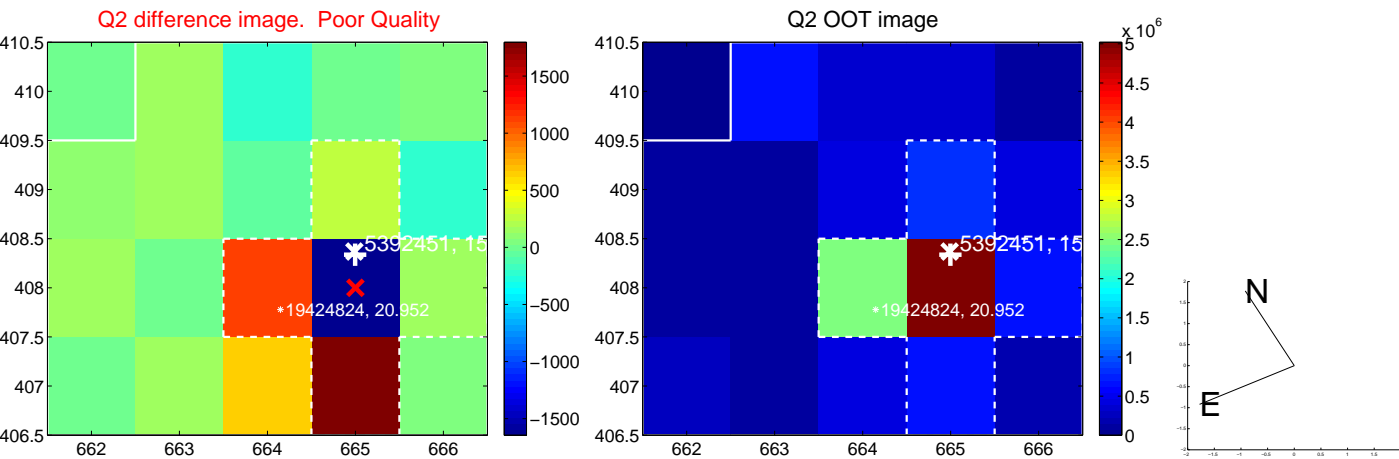
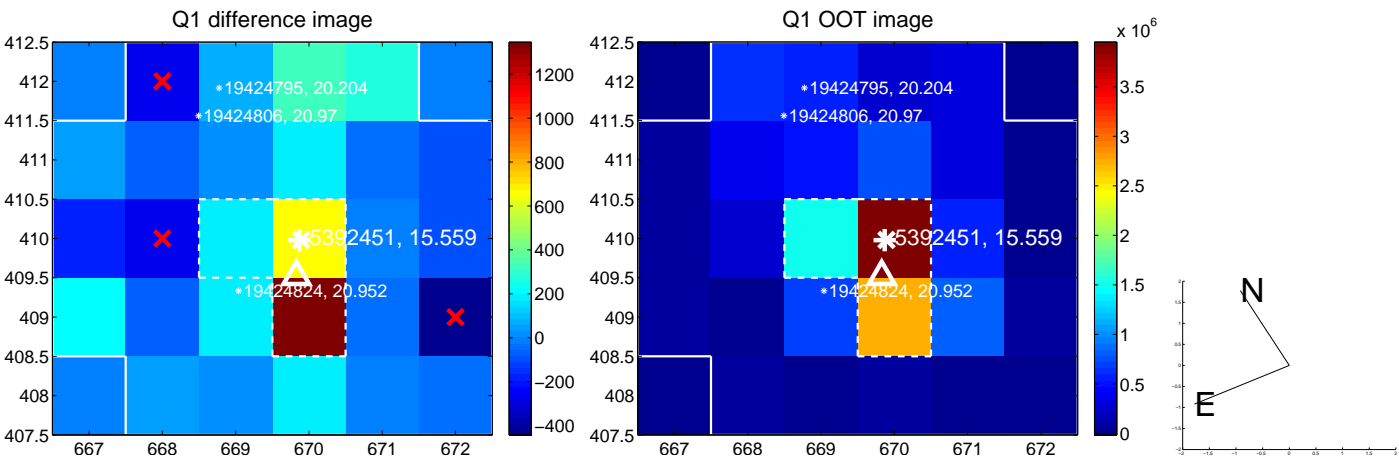


offset from photometric centroids

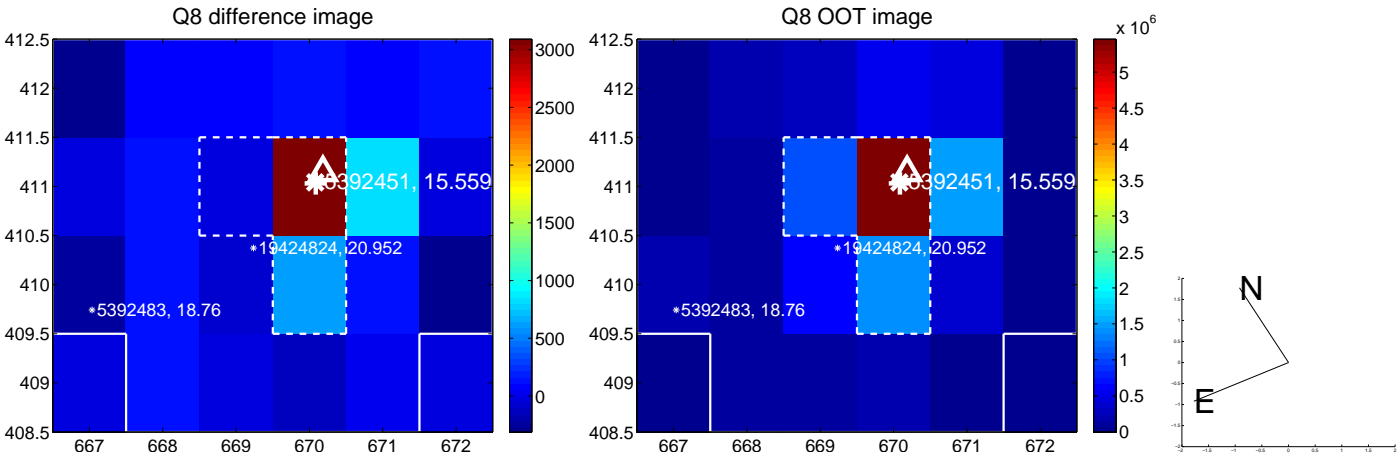
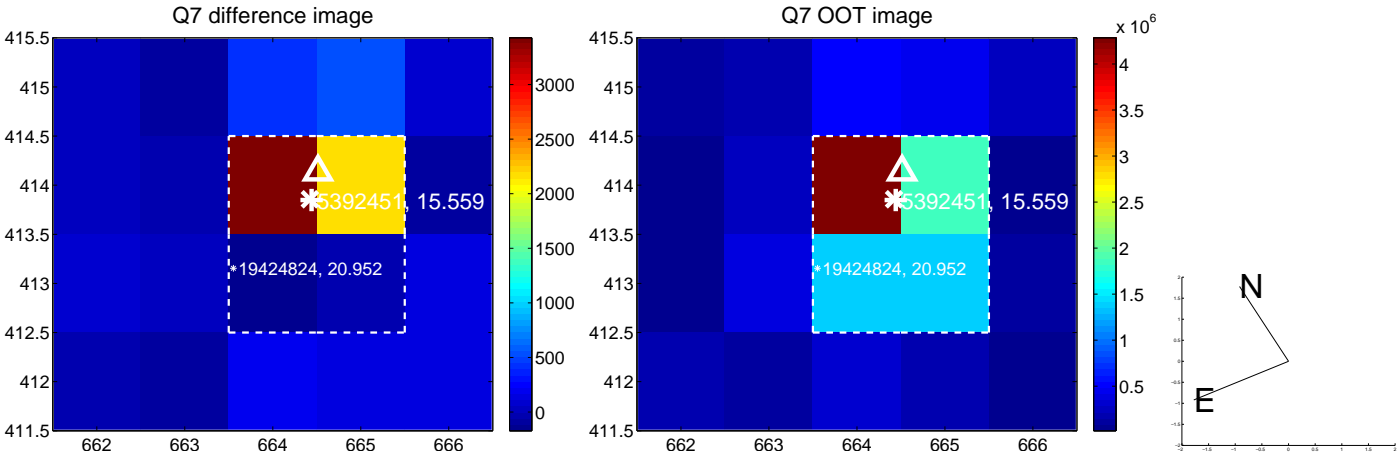
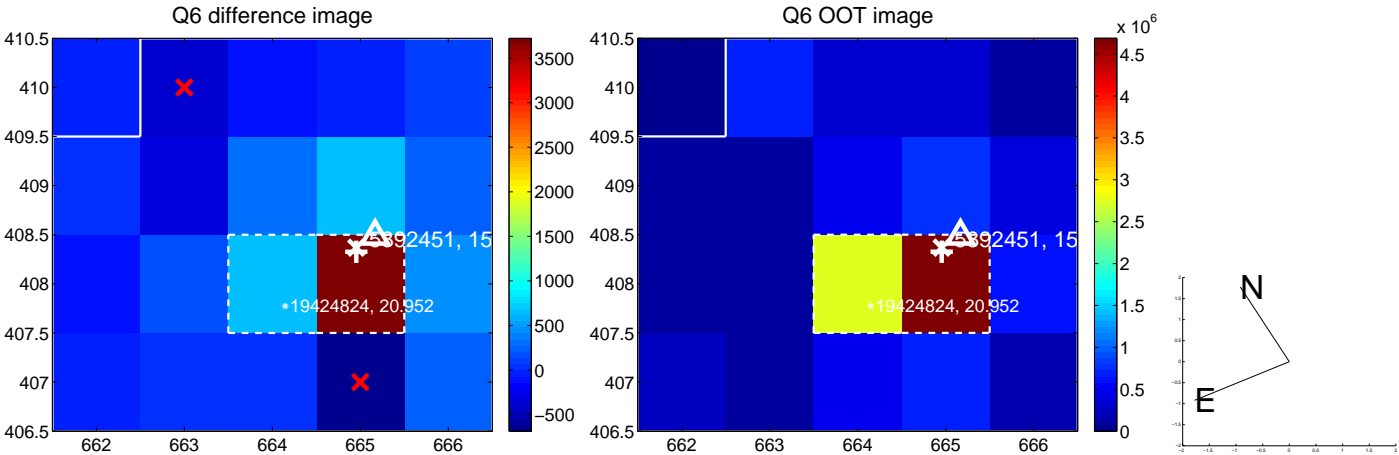
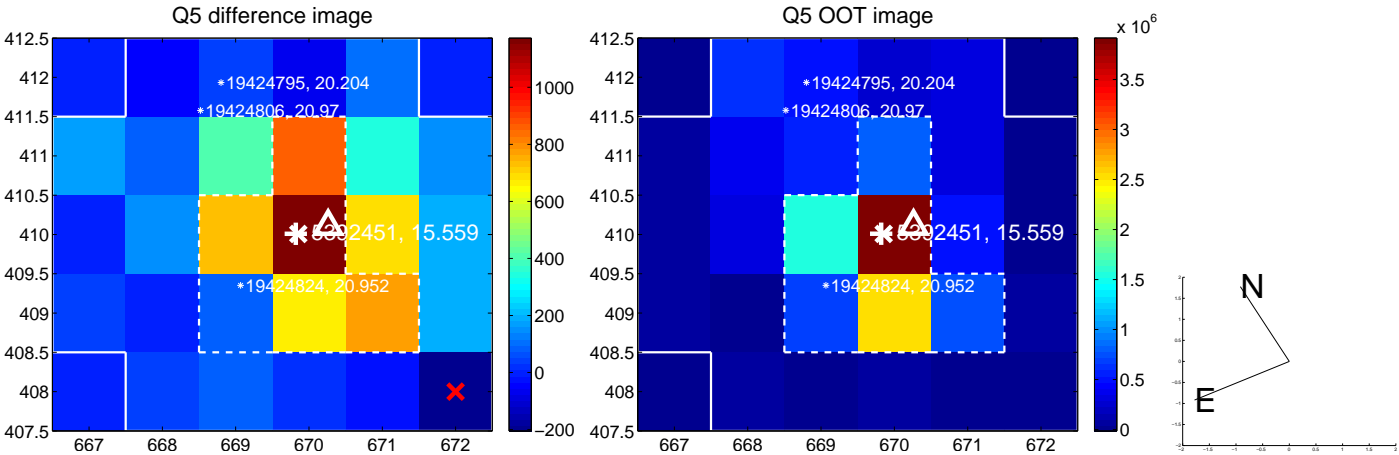


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

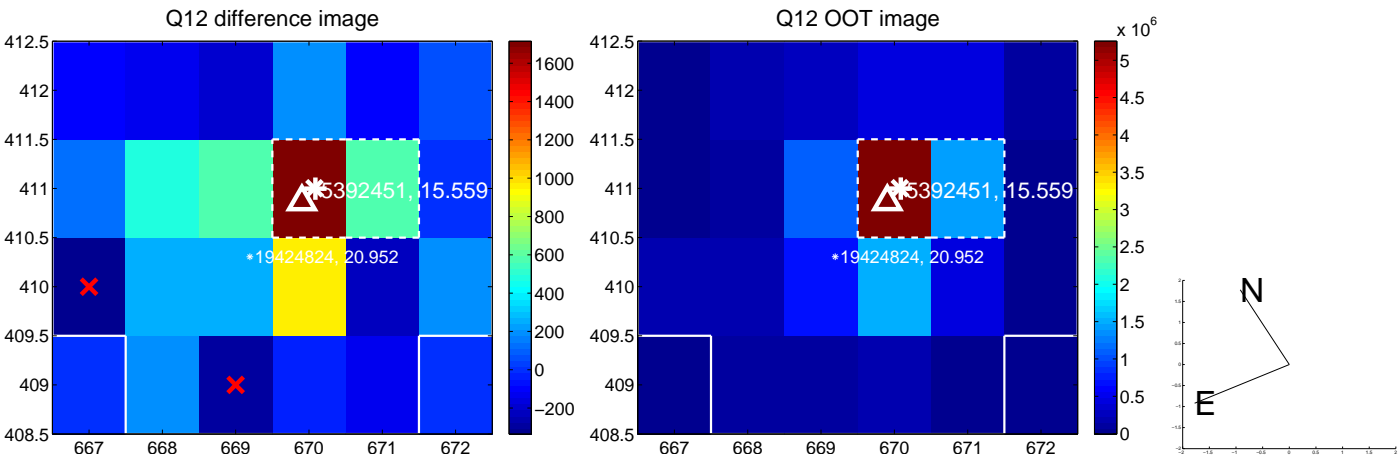
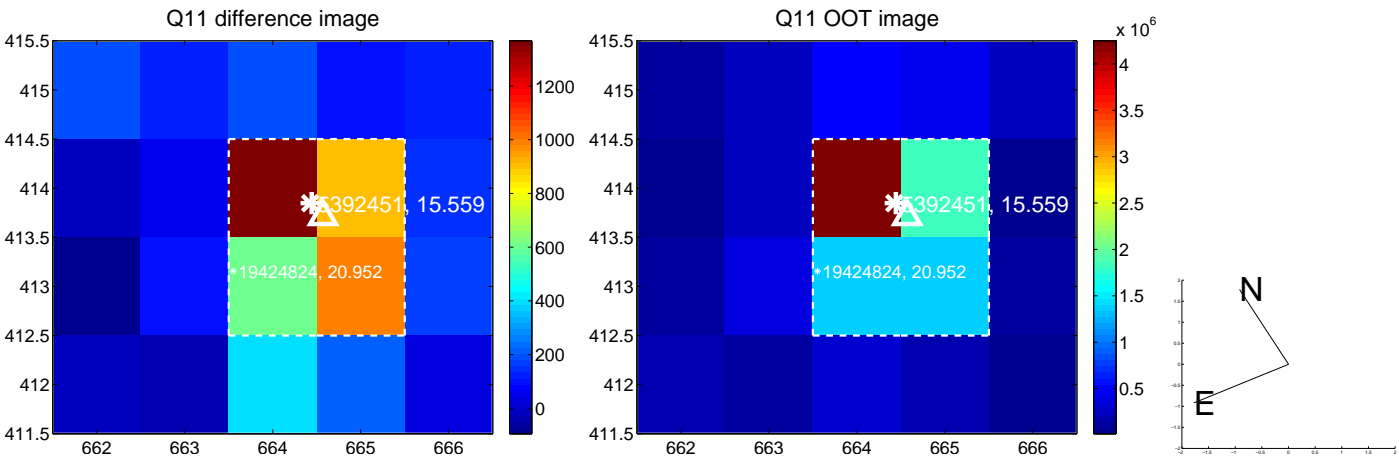
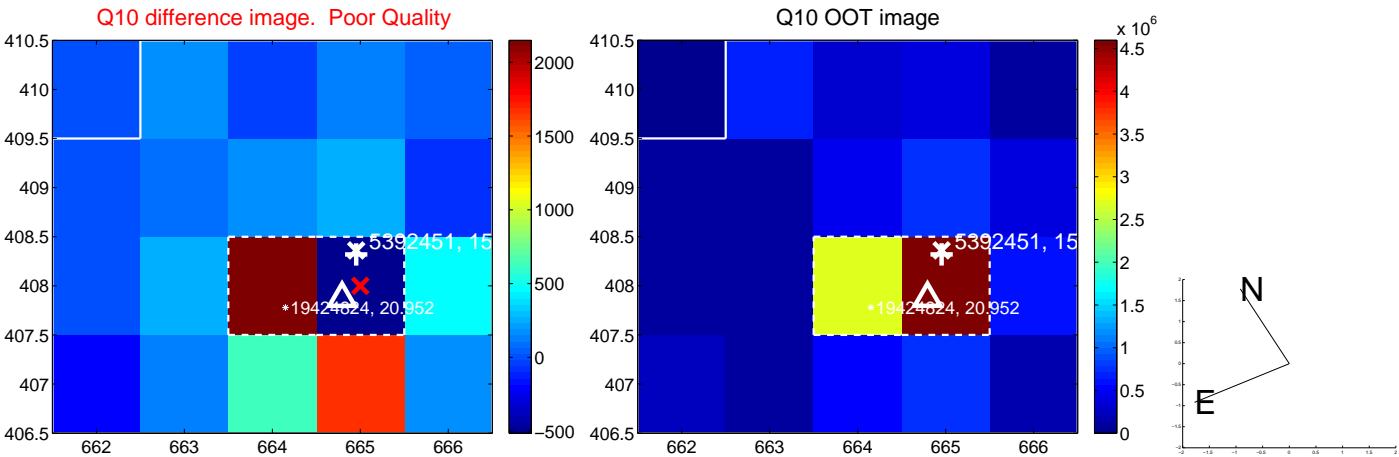
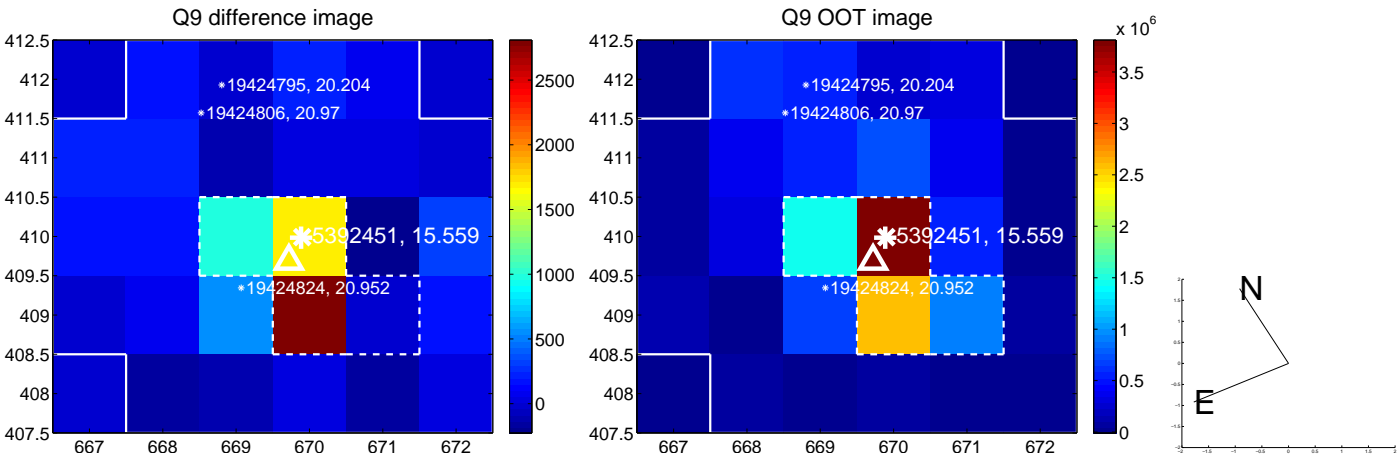


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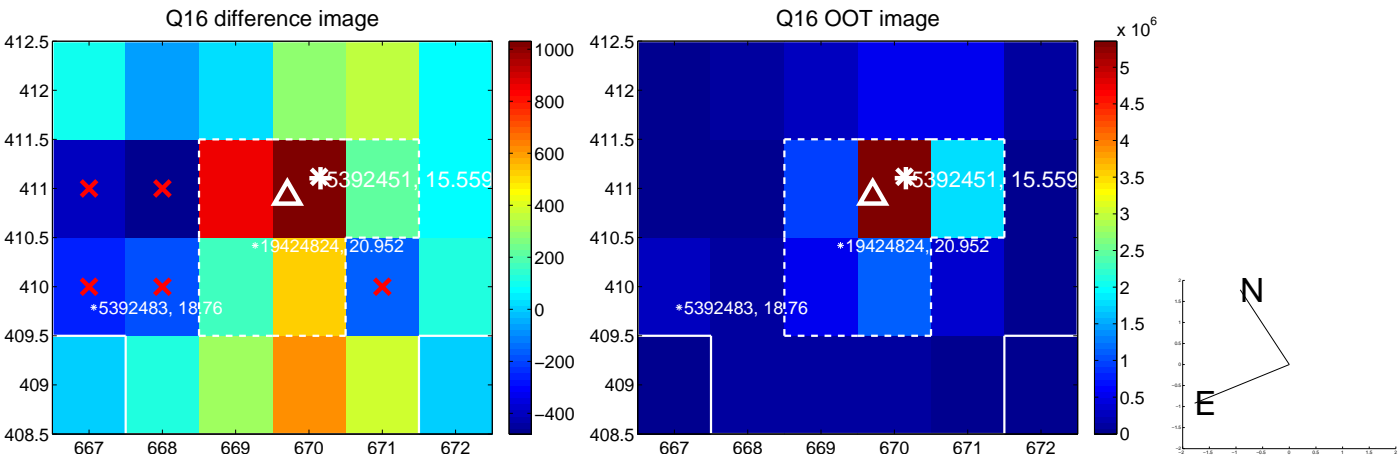
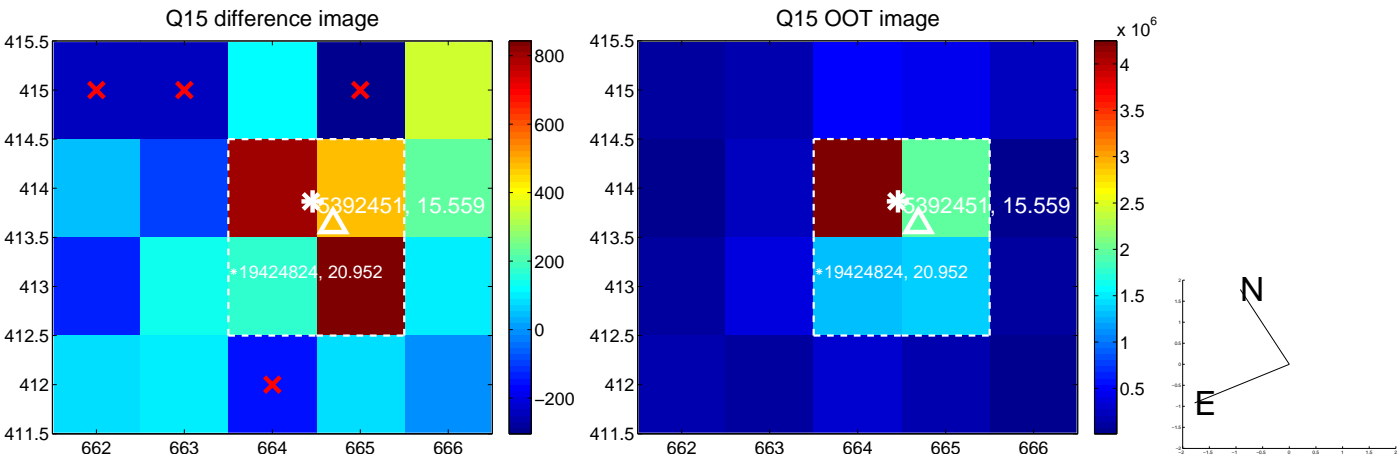
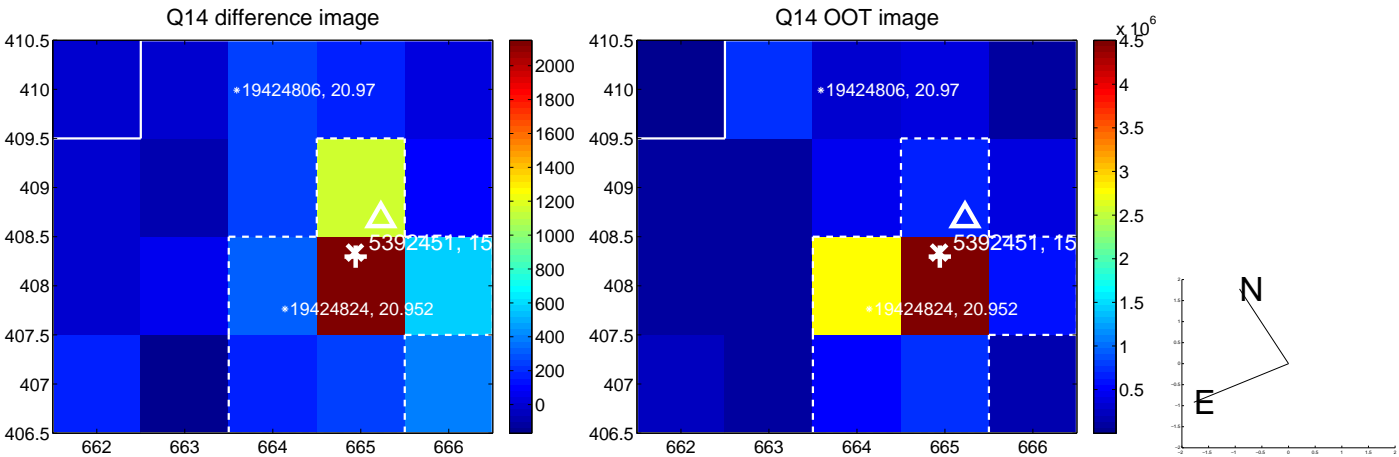
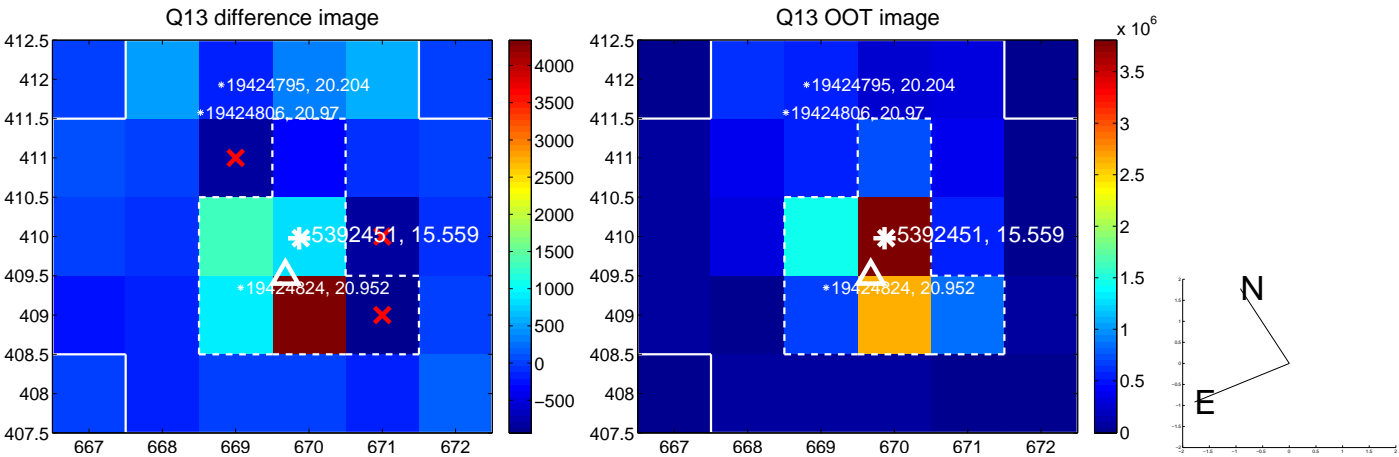




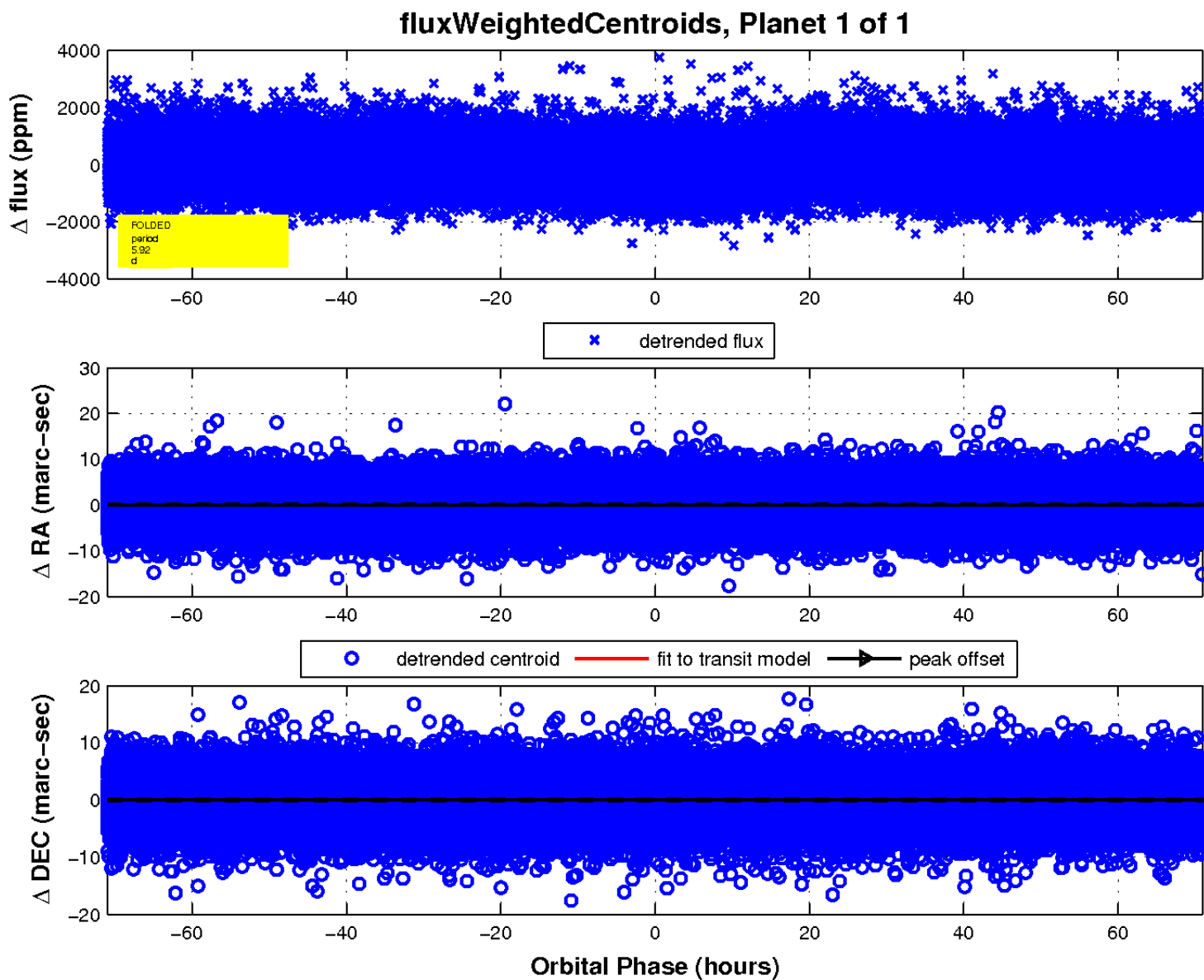
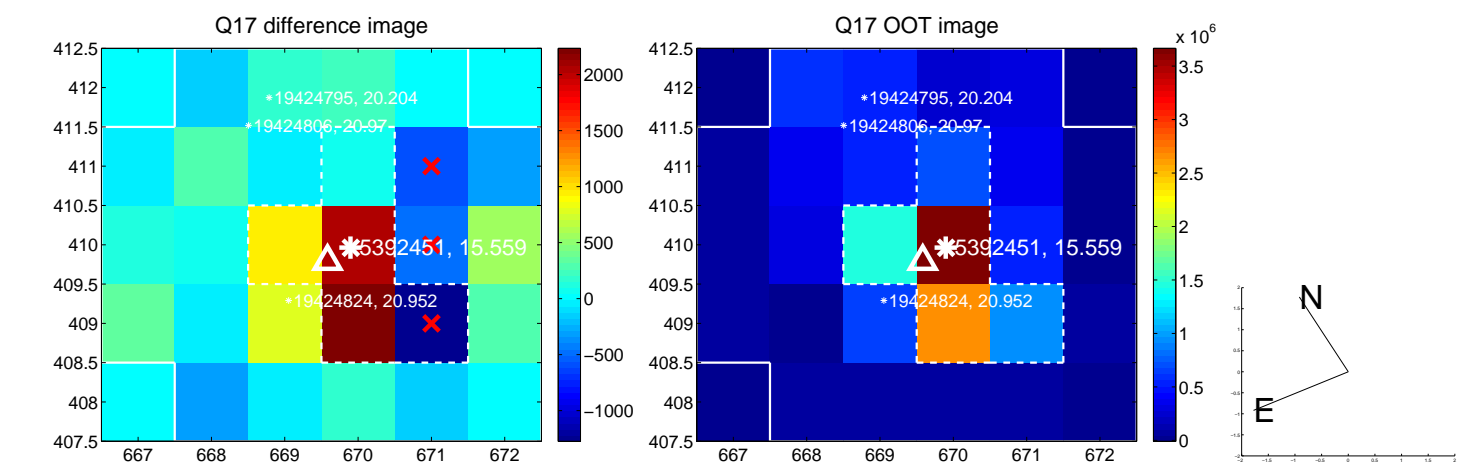
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



UKIRT Image

Declination

