

# KIC 005185321

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005185321-01	OBS	No	6.204918	134.923291	22.1	27.829	10.5	7.3	1.77	6655	0.86	1001.15

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005185321-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV

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

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

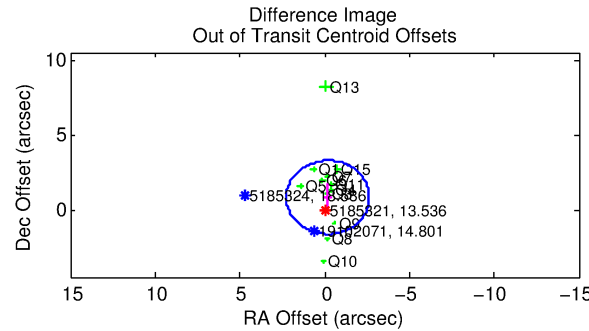
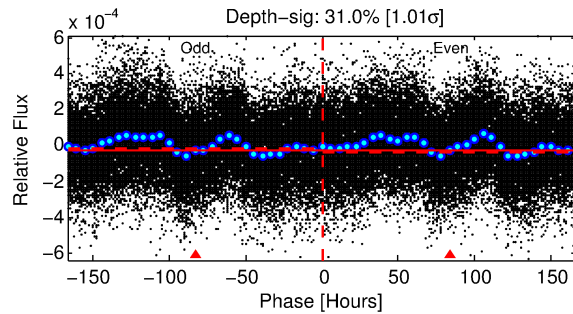
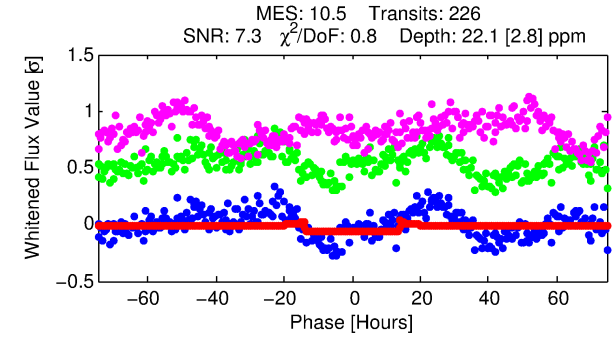
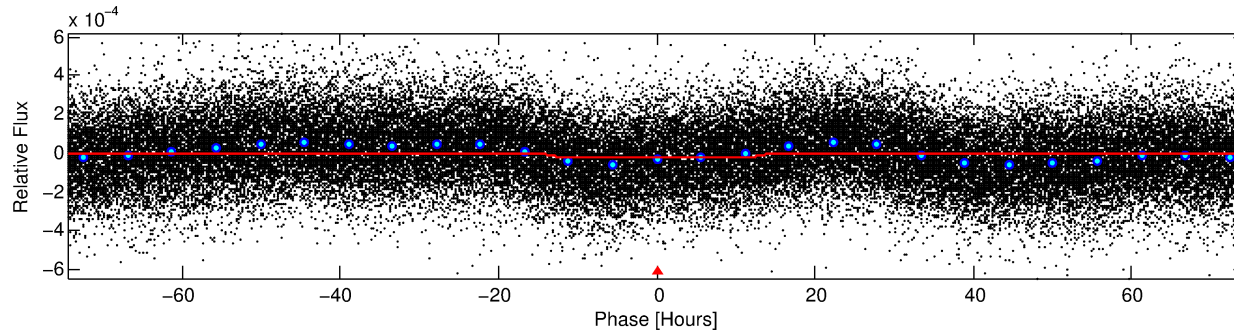
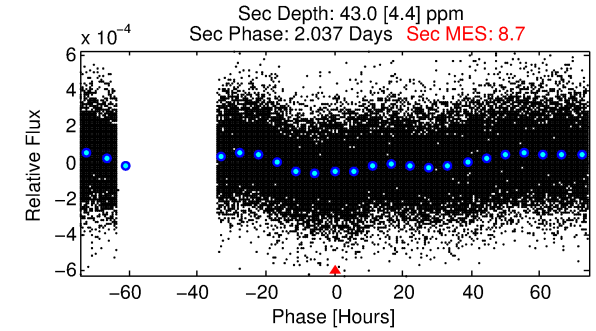
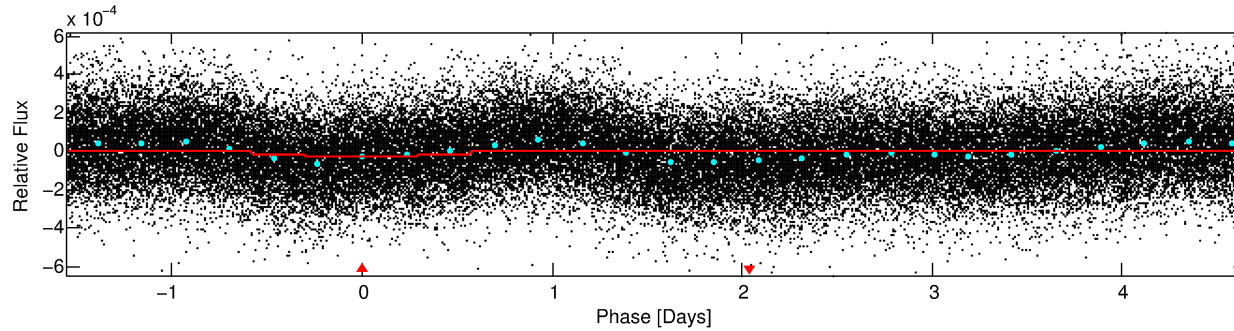
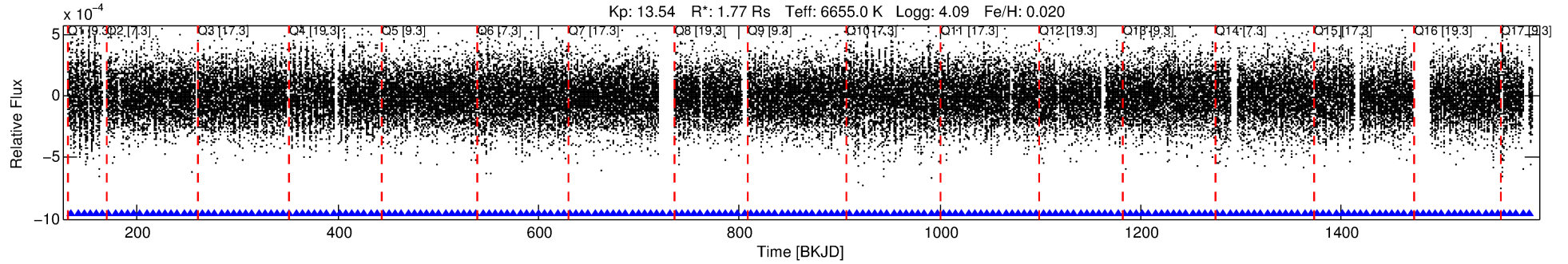
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005185321-01

No Significant Match Found

# DV One-Page Summary

KIC: 5185321 Candidate: 1 of 1 Period: 6.205 d



## DV Fit Results:

Period = 6.20492 [0.00015] d  
Epoch = 134.9233 [0.0175] BKJD  
Rp/R\* = 0.0045 [0.0017]  
a/R\* = 1.64 [2.16]  
b = 0.51 [3.05]  
Seff = 1001.15 [256.57]  
Teq = 1434 [92] K  
Rp = 0.86 [0.36] Re  
a = 0.0740 [0.0122] AU  
Ag = 175.86 [142.18] [1.23σ]  
Teffp = 8076 [1554] K [4.27σ]

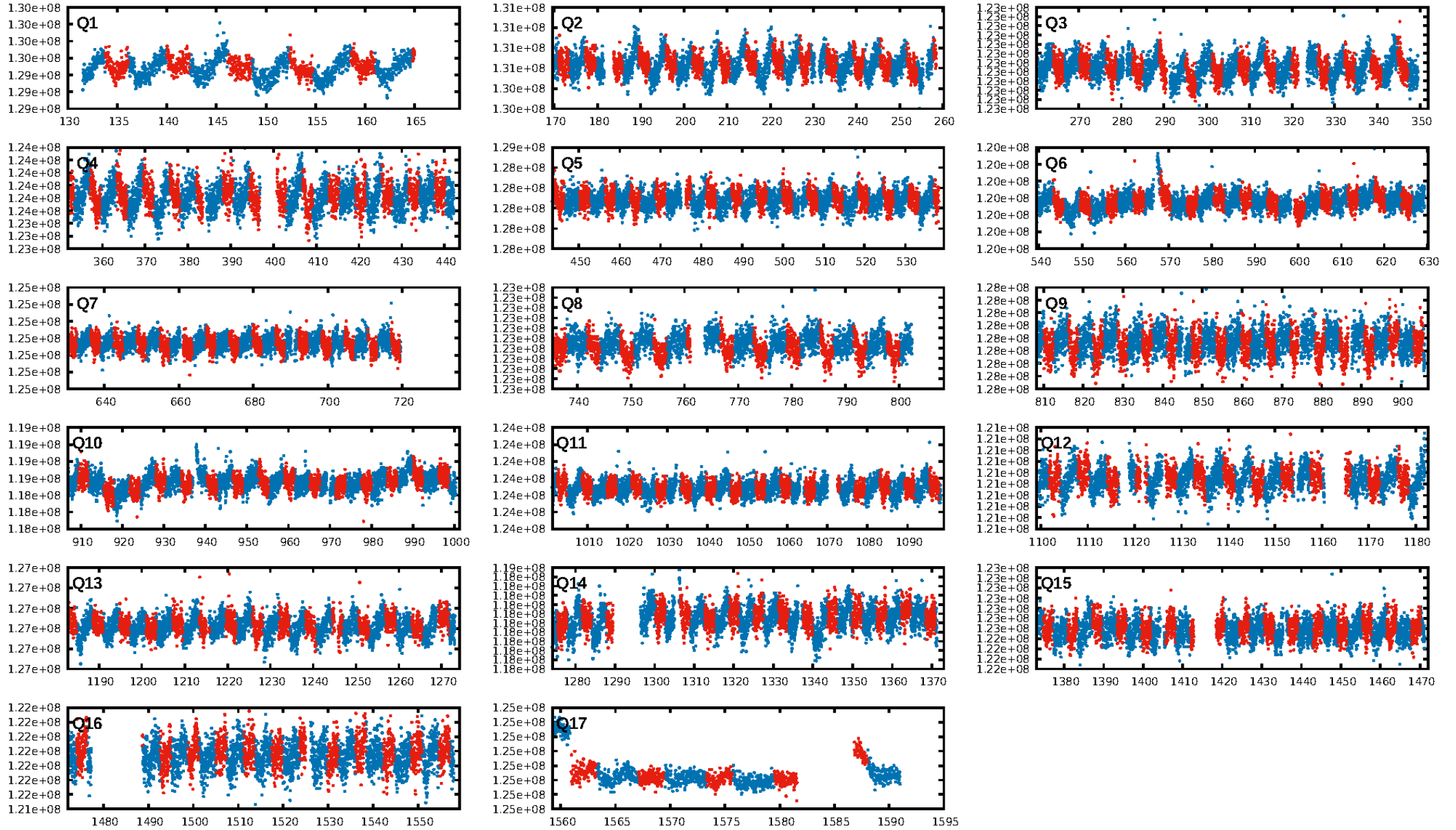
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.02e-24  
RollingBand-fgt: 1.00 [216/216]  
GhostDiagnostic-chr: 1.977  
Centroid-sig: 0.0%  
Centroid-so: 2.584 arcsec [3.09σ]  
OotOffset-rm: 0.835 arcsec [1.02σ]  
OotOffset-st: 2/4/2/4 [12]  
KicOffset-rm: 0.612 arcsec [0.84σ]  
KicOffset-st: 2/4/2/4 [12]  
DiffImageQuality-fgm: 0.75 [9/12]  
DiffImageOverlap-fno: 1.00 [17/17]

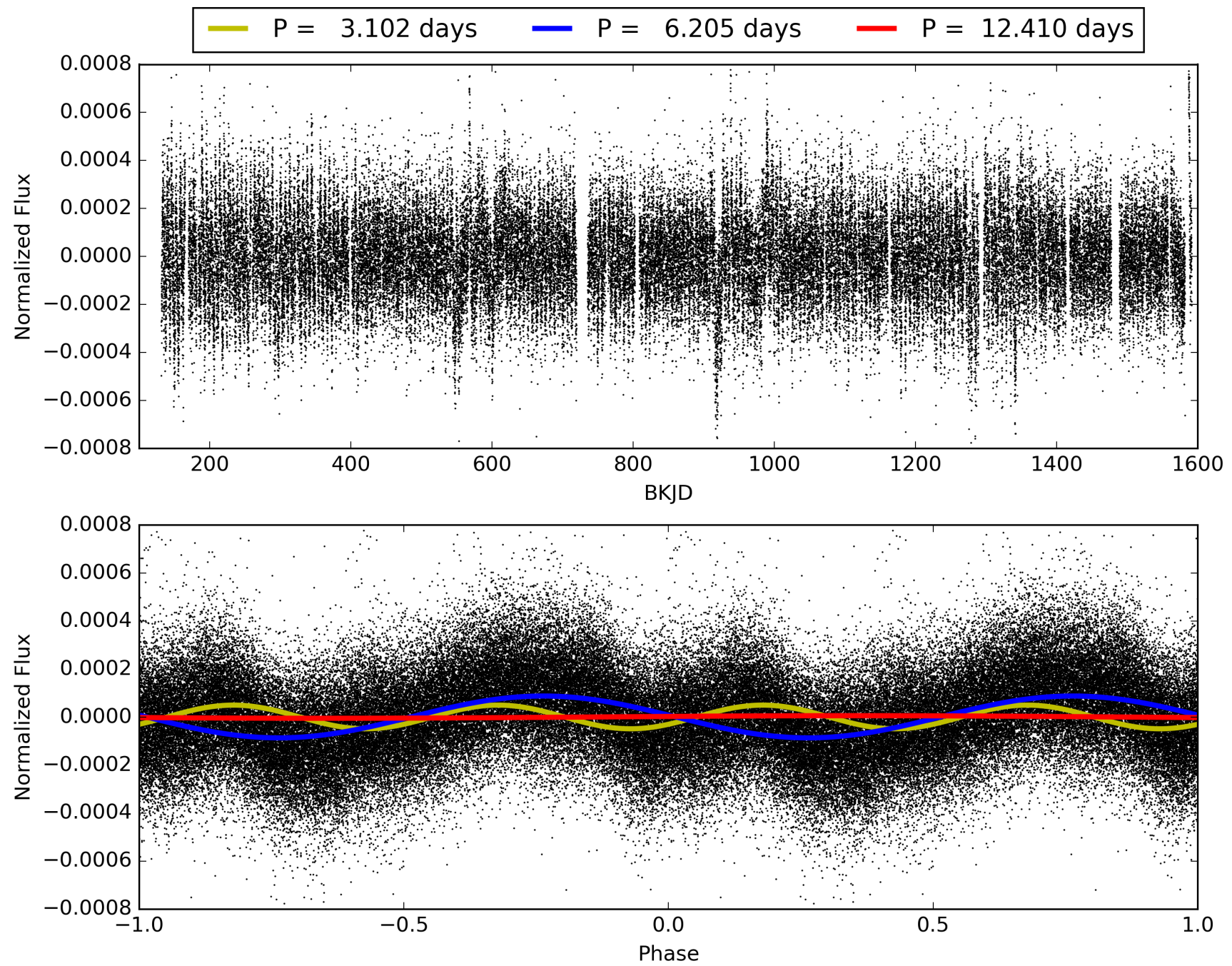
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 03:54:33 Z

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

# TCE 005185321-01, PDC Light Curves



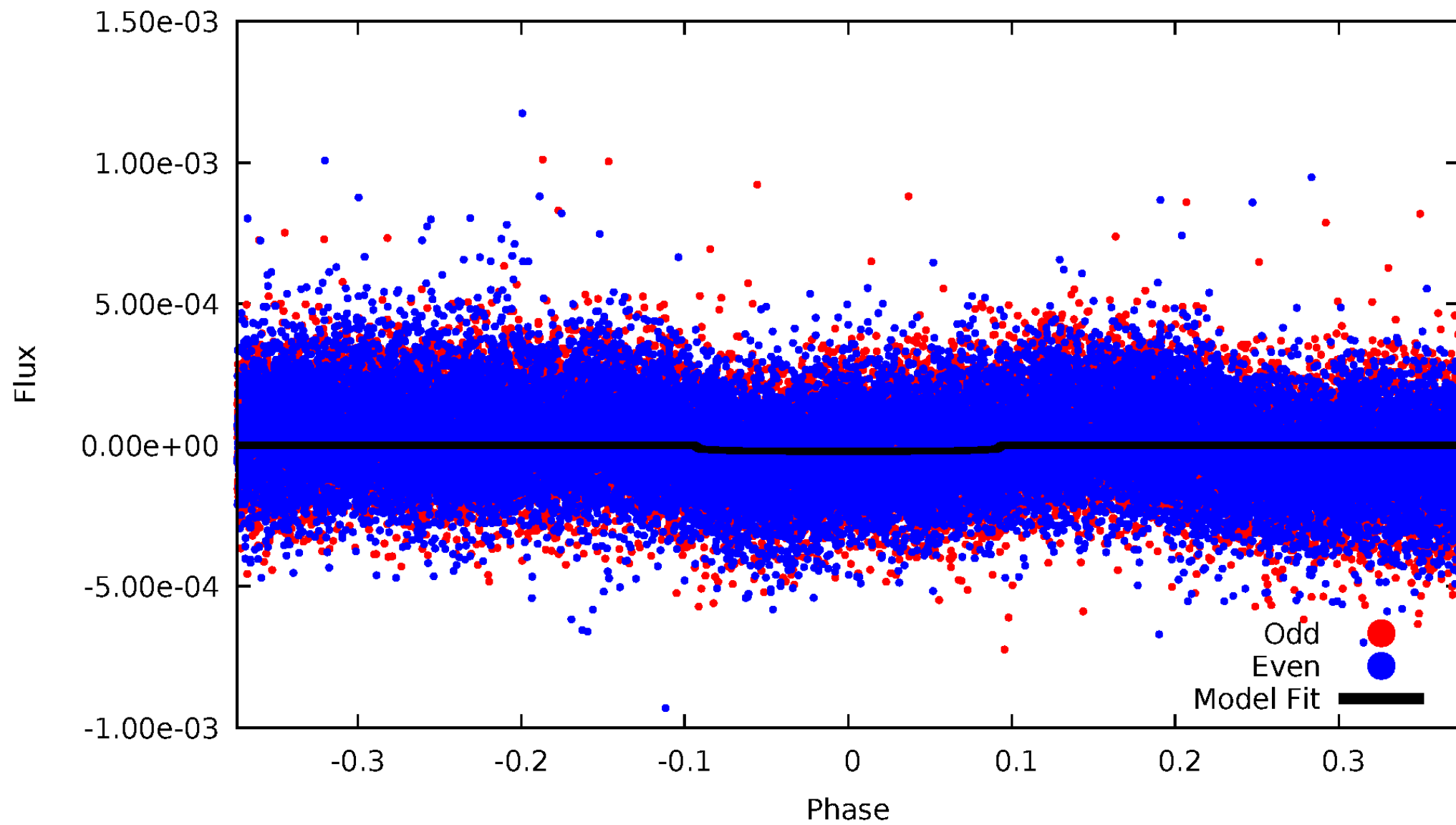
TCE 005185321-01





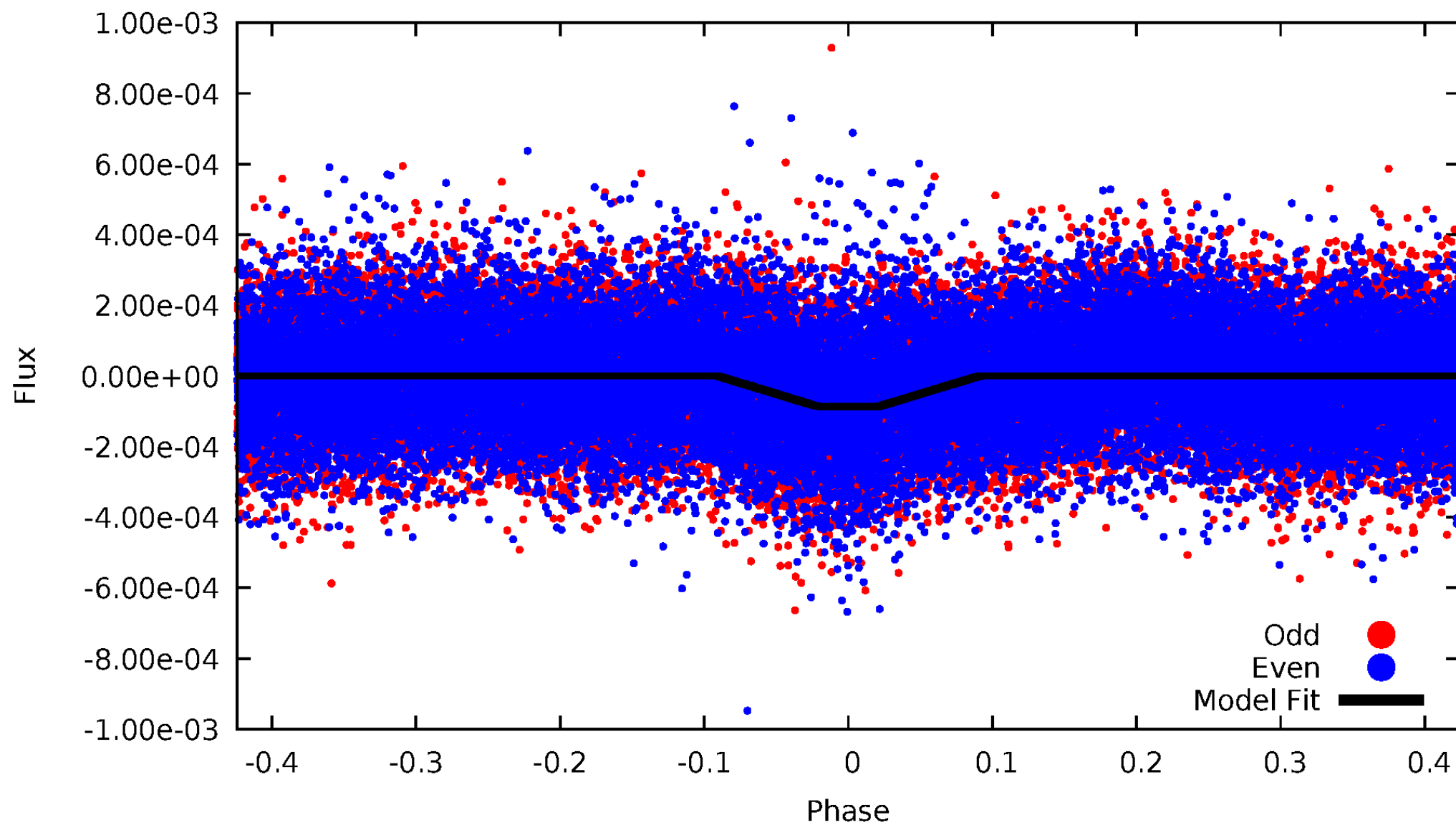
# DV Odd/Even

TCE 005185321-01



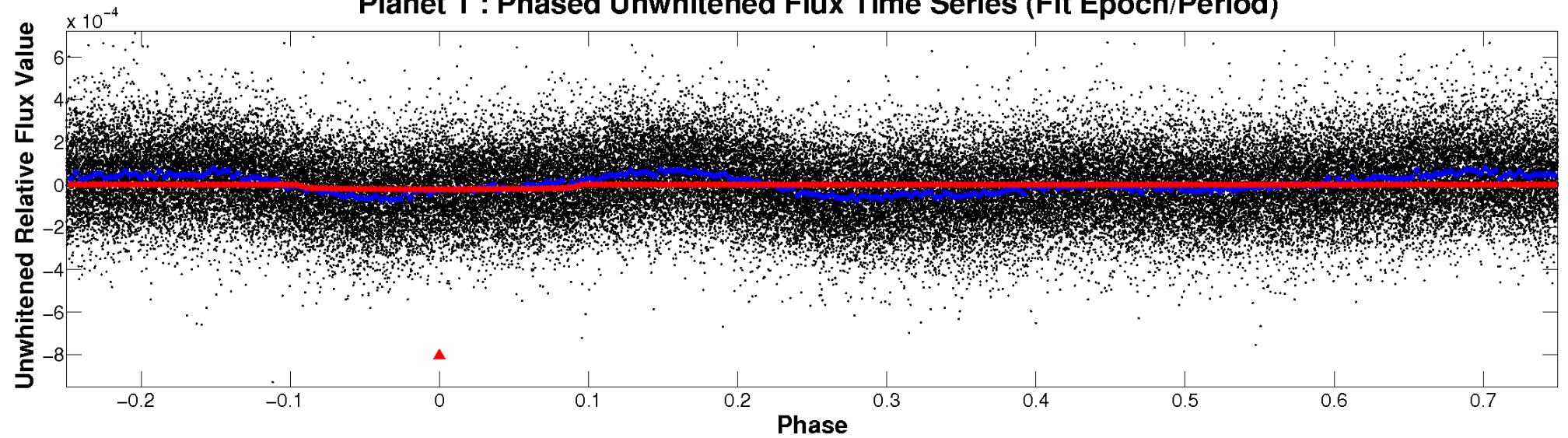
# ALT Odd/Even

TCE 005185321-01

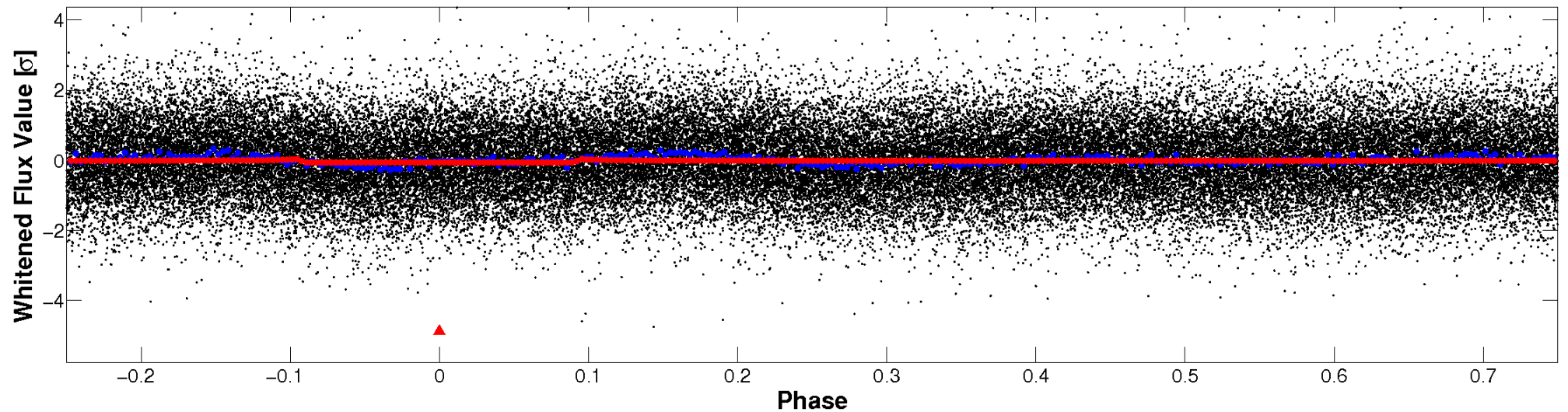


# Non-Whitened Vs. Whitened Light Curve

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

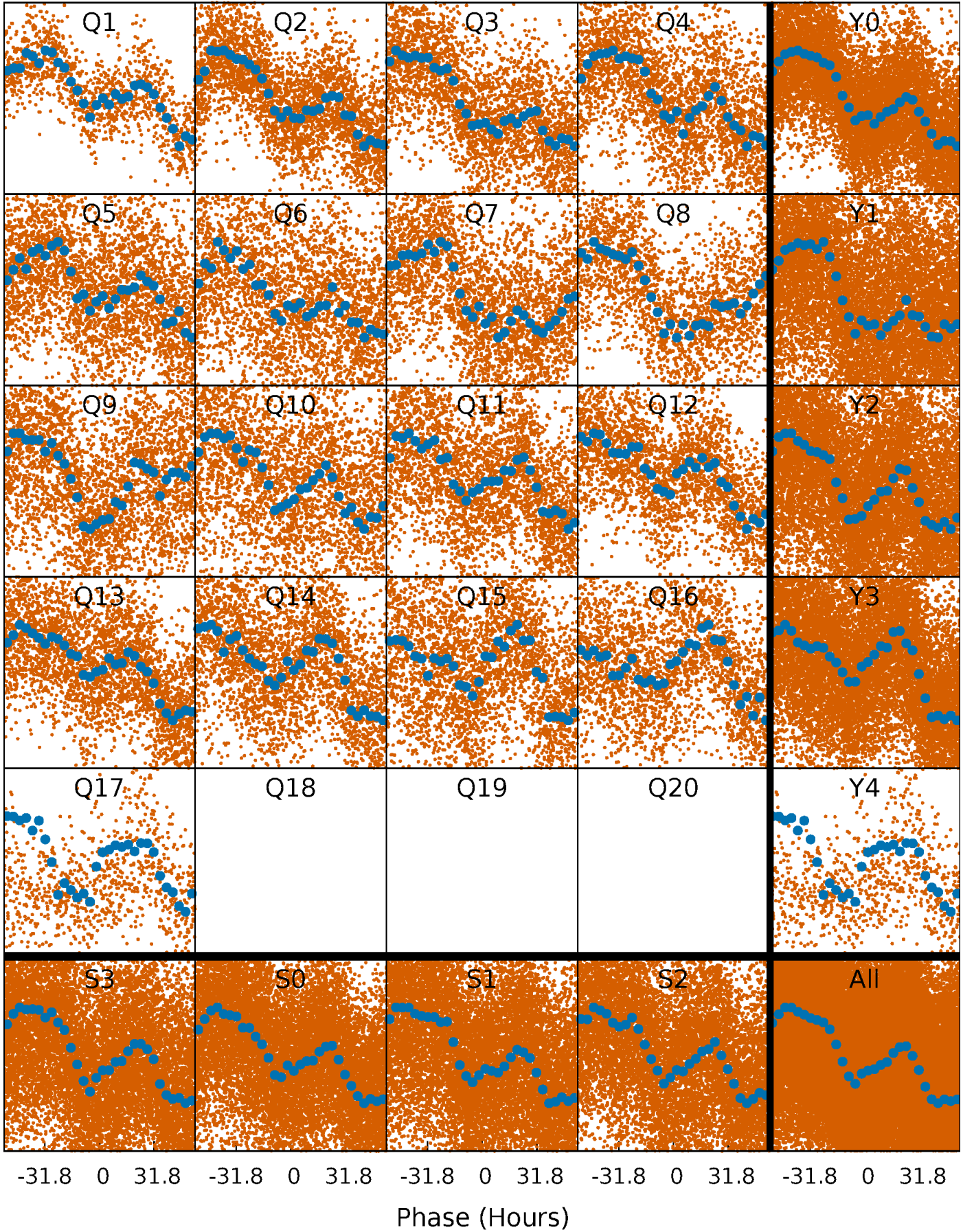


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

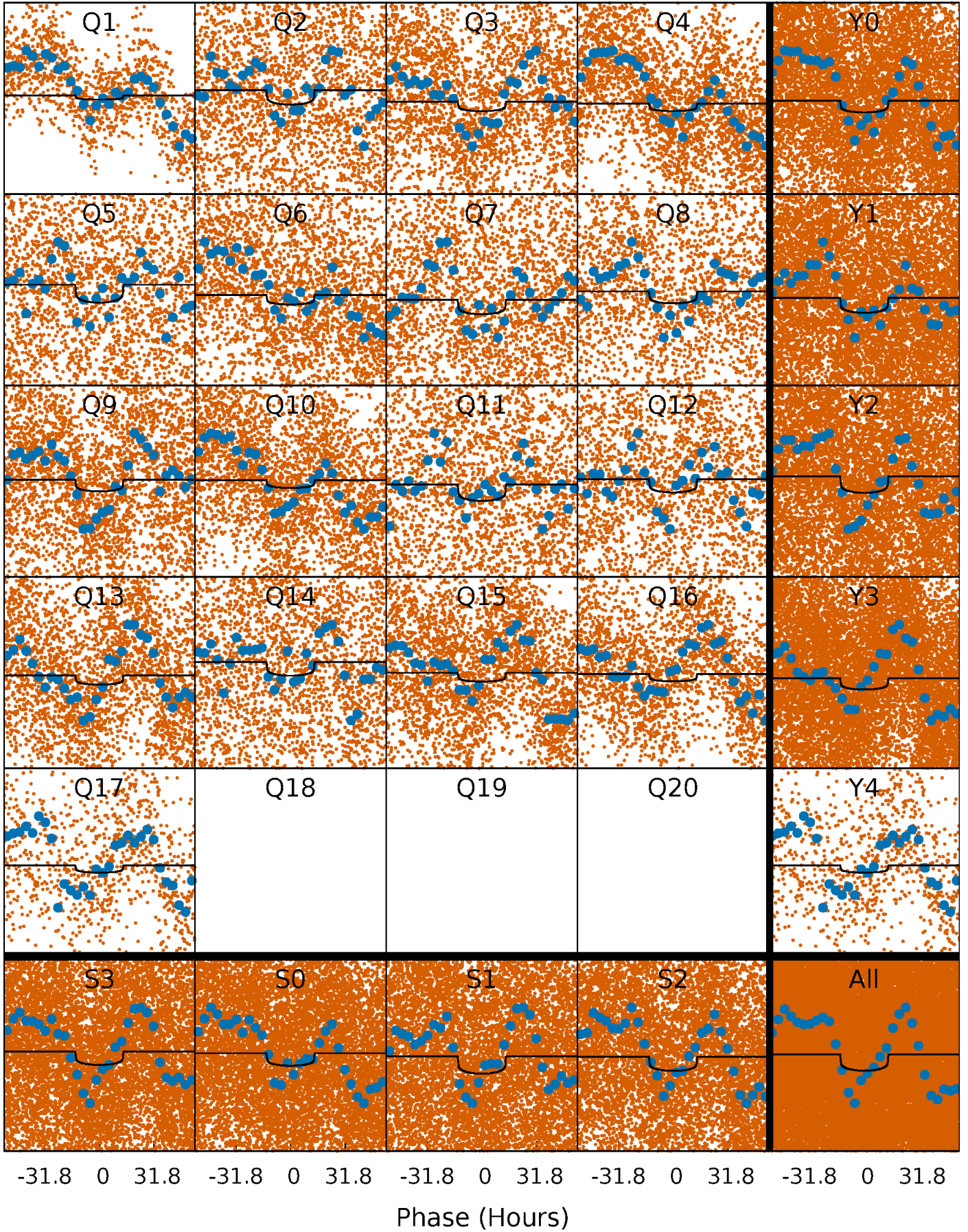
TCE 005185321-01 P= 6.204918 Days  $T_0=134.923291$  (BKJD)





# DV Quarter-Phased Transit Curves

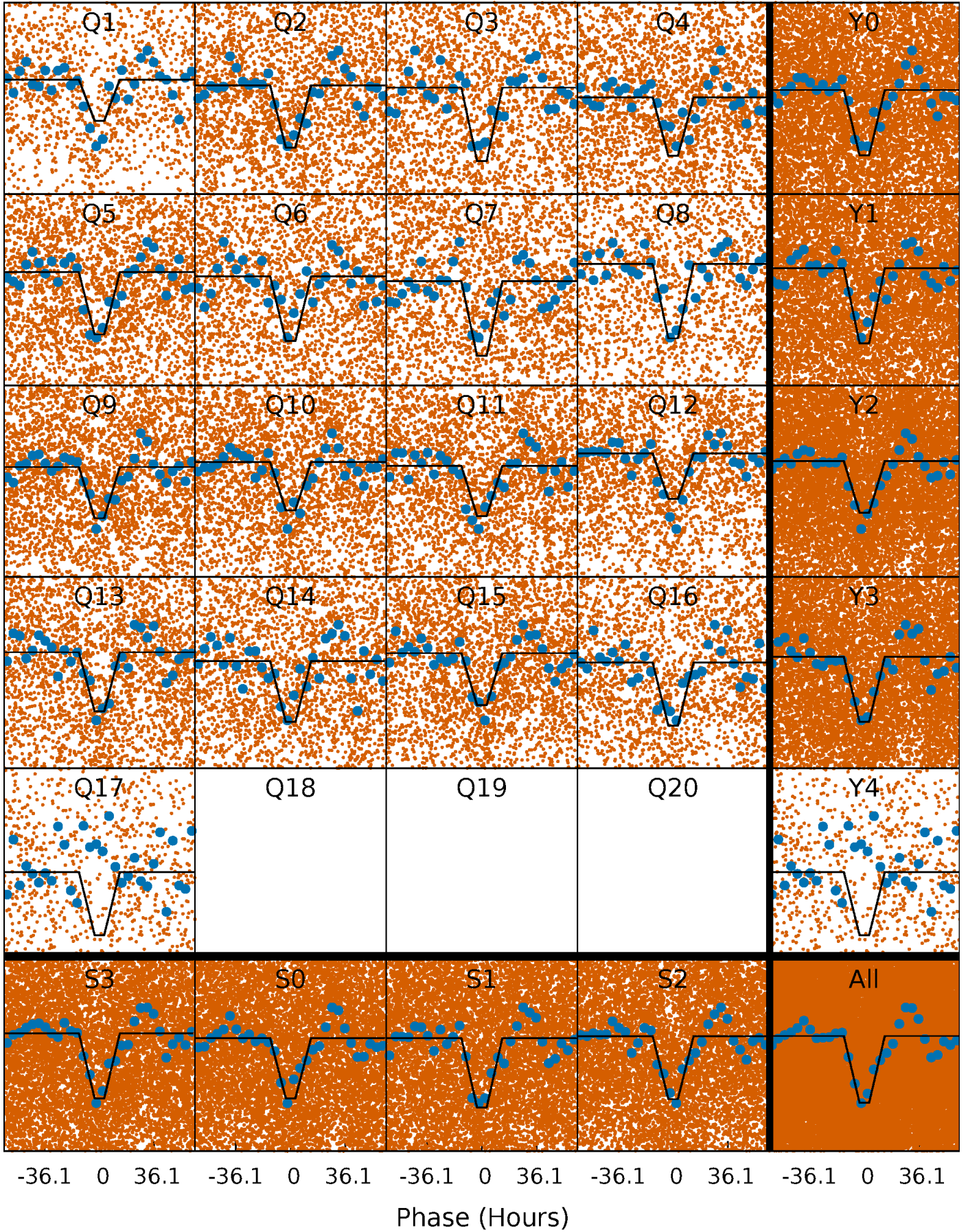
TCE 005185321-01 P= 6.204918 Days  $T_0=134.923291$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

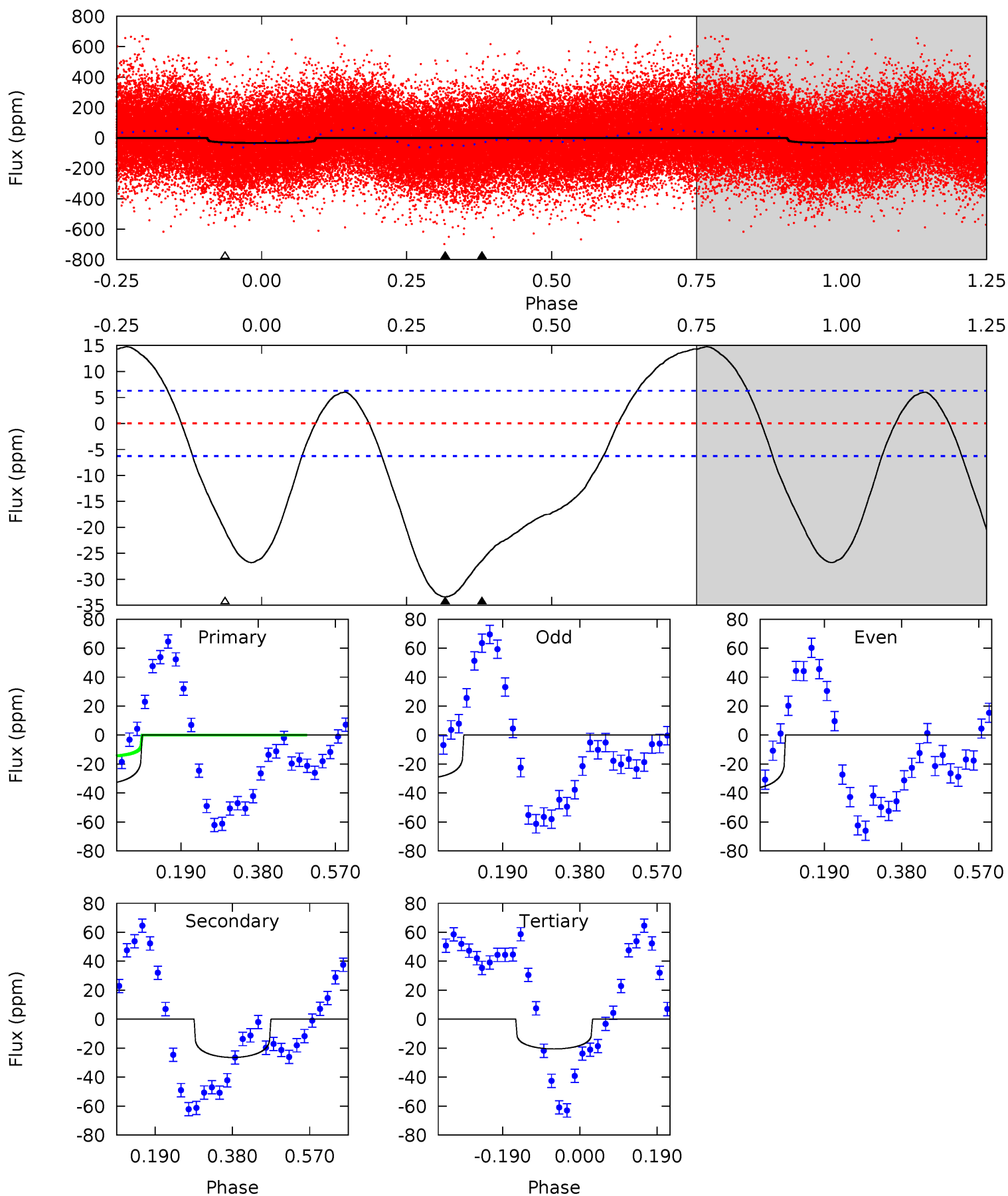
TCE 005185321-01 P= 6.204550 Days  $T_0=134.714345$  (BKJD)



# DV Model-Shift Uniqueness Test

005185321-01, P = 6.204918 Days, E = 128.718373 Days

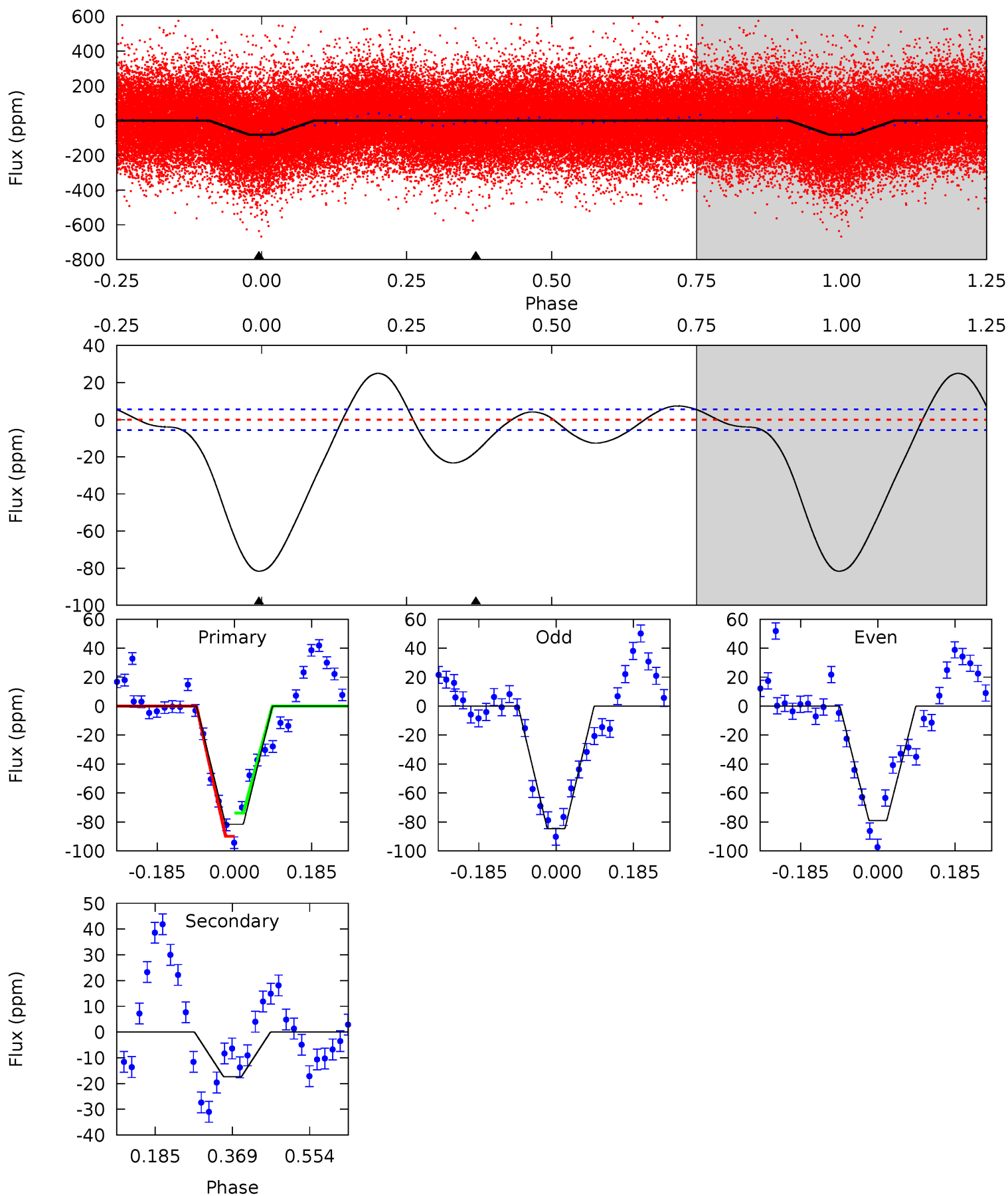
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.5	18.6	14.5	0	4.43	1.31	9.63	9.06	23.5	4.15	18.6	2.63	1.11	0.31	13.2



# Alt Model-Shift Uniqueness Test

005185321-01, P = 6.204550 Days, E = 128.509795 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
64.9	13.8	0	0	4.43	1.33	6.11	64.9	64.9	13.8	13.8	2.20	1.09	0.23	6.38





### Stellar Parameters For KIC 005185321

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6655^{+79}_{-79}$	$4.091^{+0.143}_{-0.117}$	$0.020^{+0.150}_{-0.150}$	$1.766^{+0.327}_{-0.327}$	$1.404^{+0.120}_{-0.109}$	$0.359^{+0.256}_{-0.129}$
	+1%/-1%	+3%/-3%	+750%/-750%	+19%/-19%	+9%/-8%	+71%/-36%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 005185321-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-26 \pm 1$	$0.86^{+0.36}_{-0.33}$	$2002^{+89}_{-105}$	$7139^{+2347}_{-1125}$	$107^{+168}_{-52}$
Alt.	$-17 \pm 1$	$1.80^{+0.37}_{-0.39}$	$2001^{+90}_{-104}$	$4581^{+429}_{-310}$	$16^{+10}_{-5}$

$T_{\text{max}}$  = 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

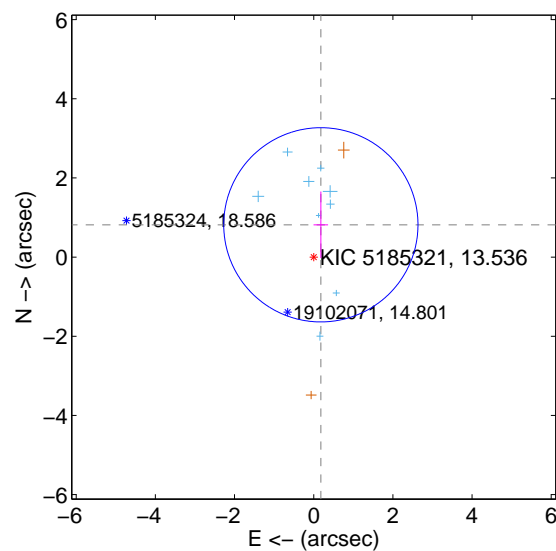
Supplemental centroid analysis for 005185321-01. Kepler magnitude: 13.54. Transit SNR 7.28

There are 9 quarters with good PRF difference image offsets

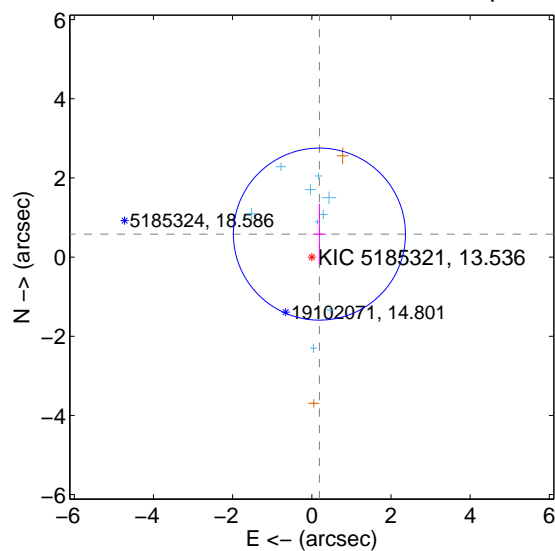
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.835 \pm 0.818$	1.02	$-0.181 \pm 0.184$	$0.816 \pm 0.839$
PRF-fit source offset from KIC position	$0.612 \pm 0.724$	0.84	$-0.193 \pm 0.167$	$0.581 \pm 0.768$
photometric centroid source offset	$2.58 \pm 0.84$	3.09	$-1.52 \pm 0.80$	$2.09 \pm 0.85$

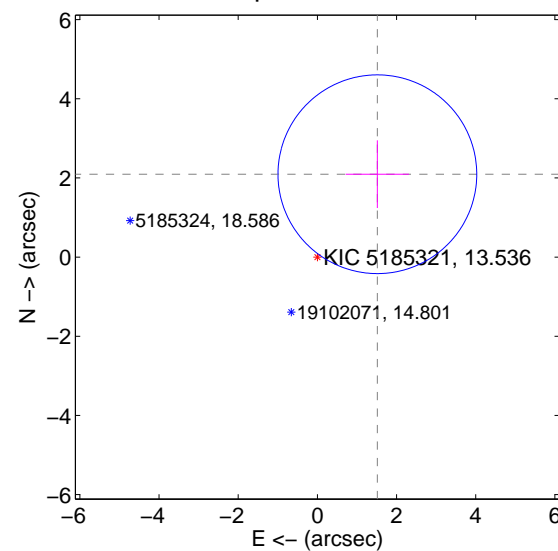
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

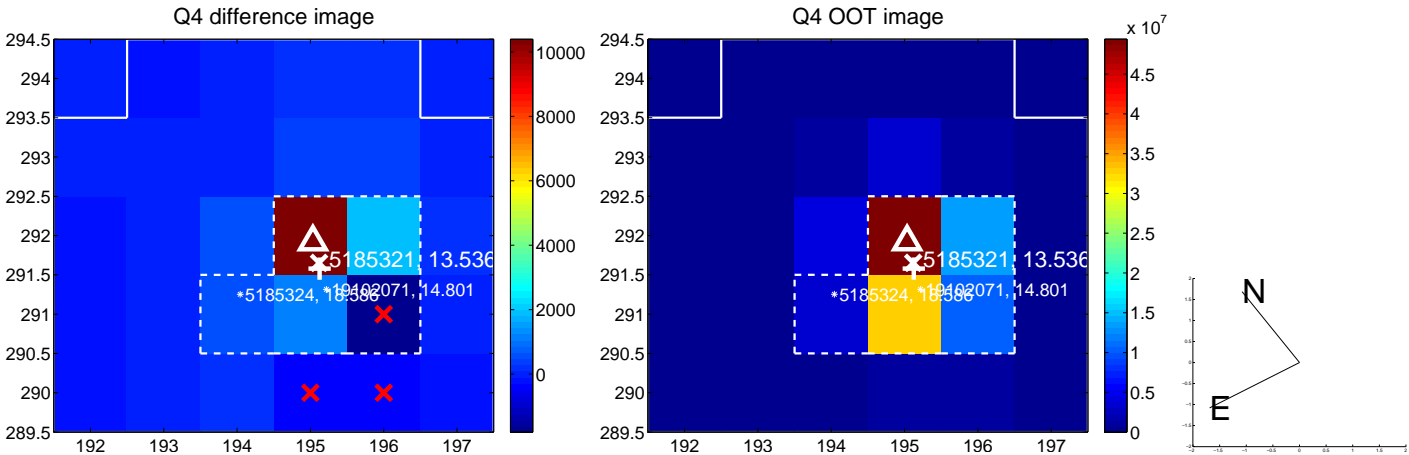
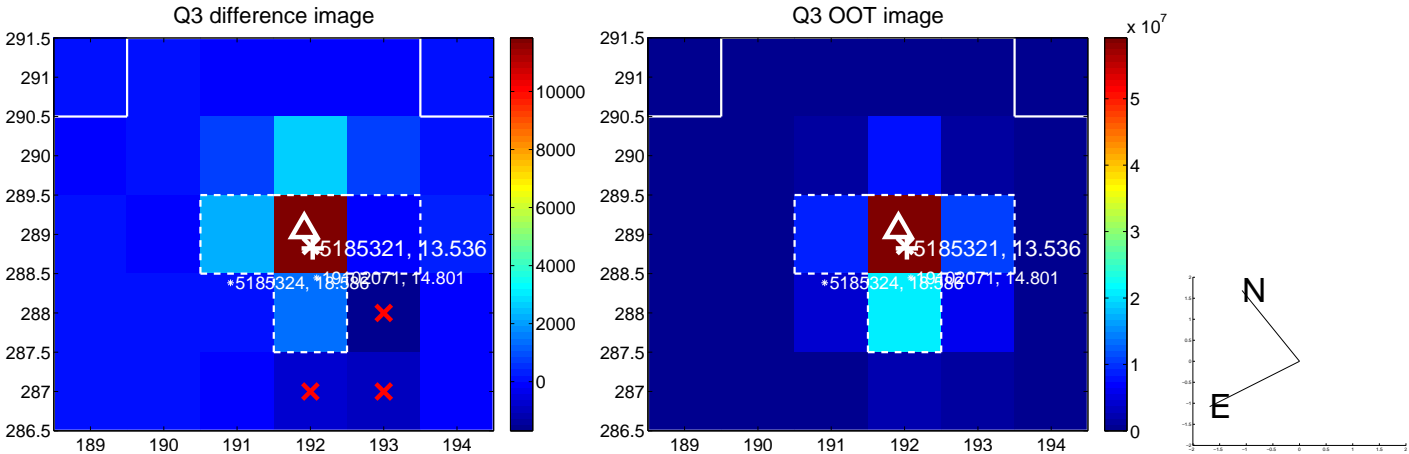
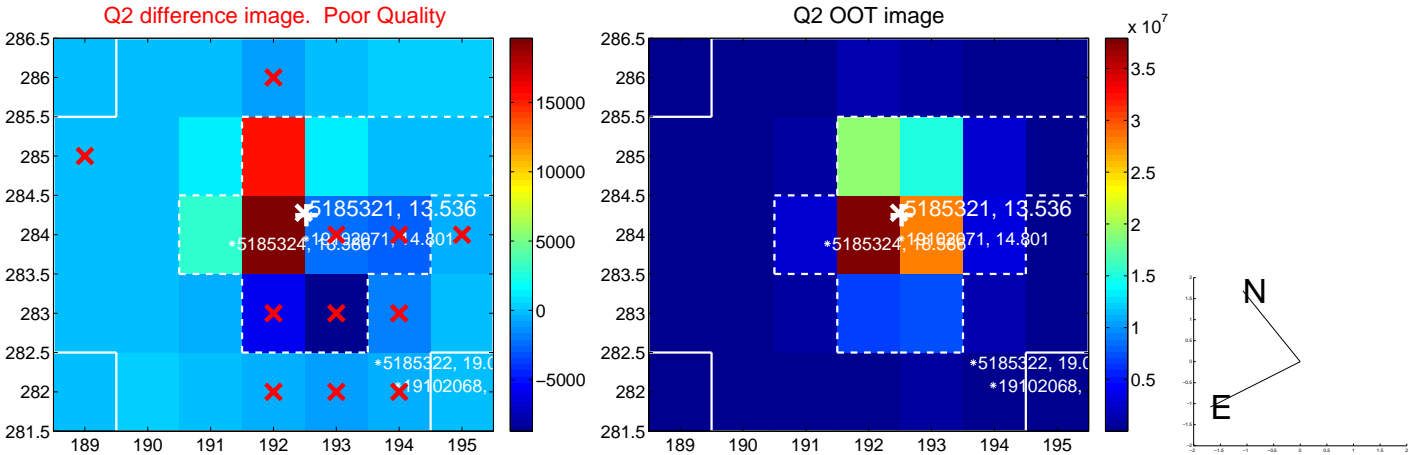
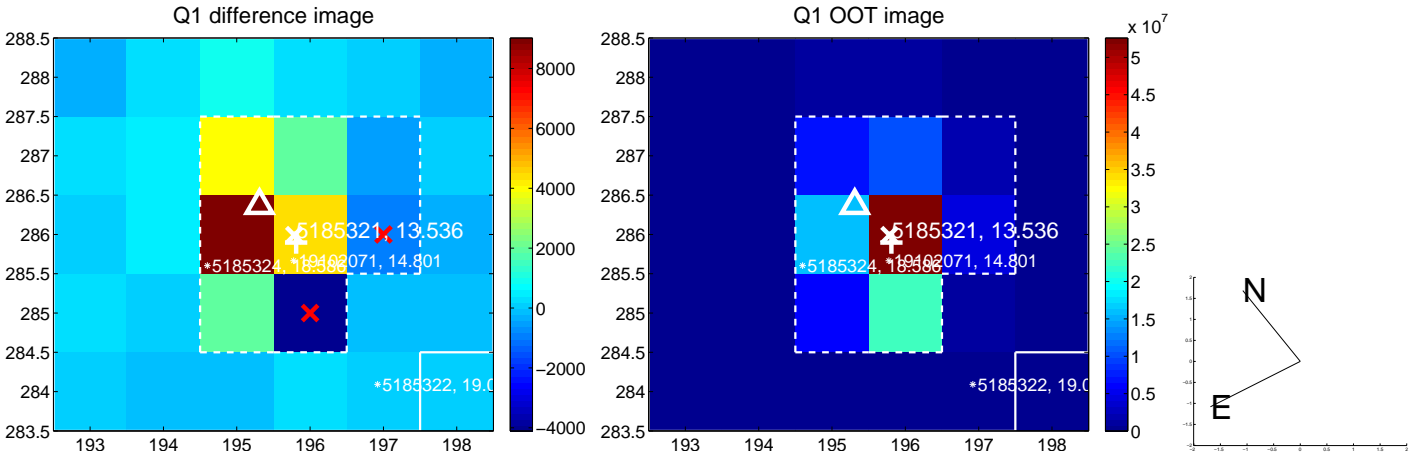


offset from photometric centroids

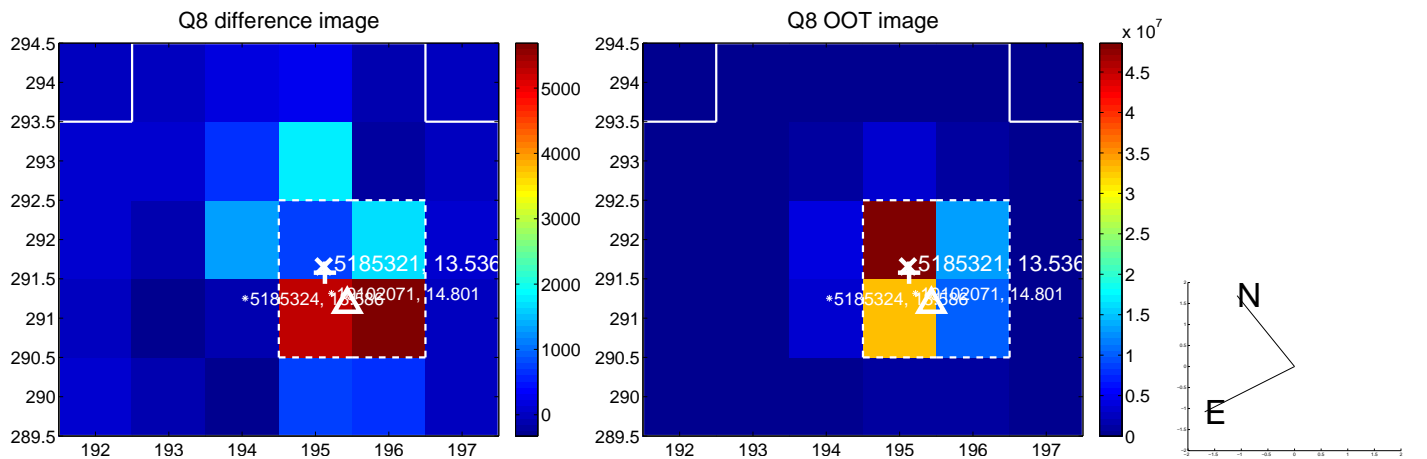
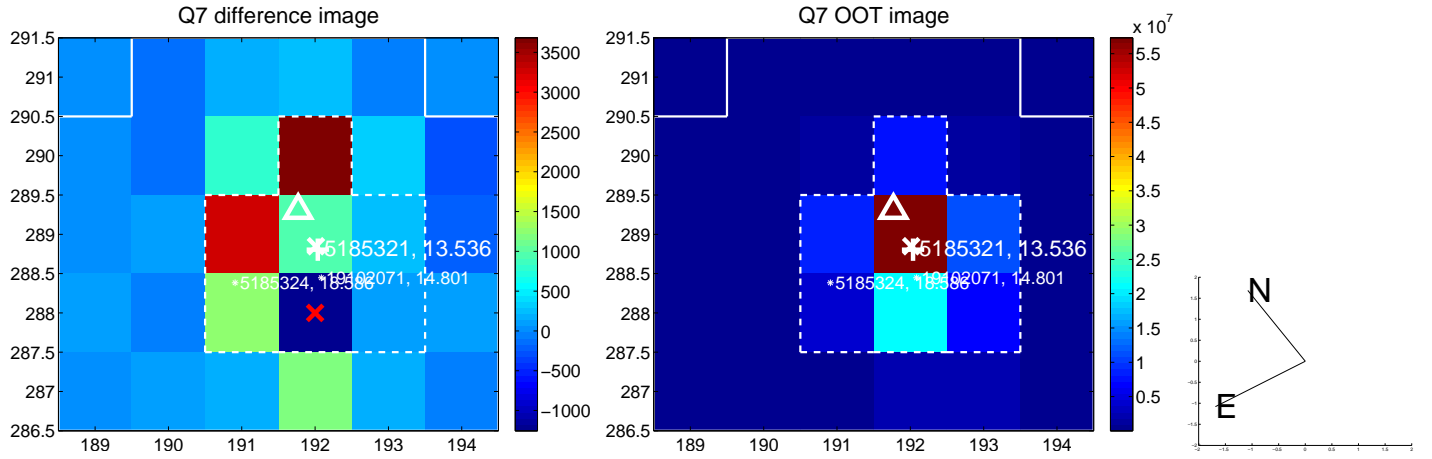
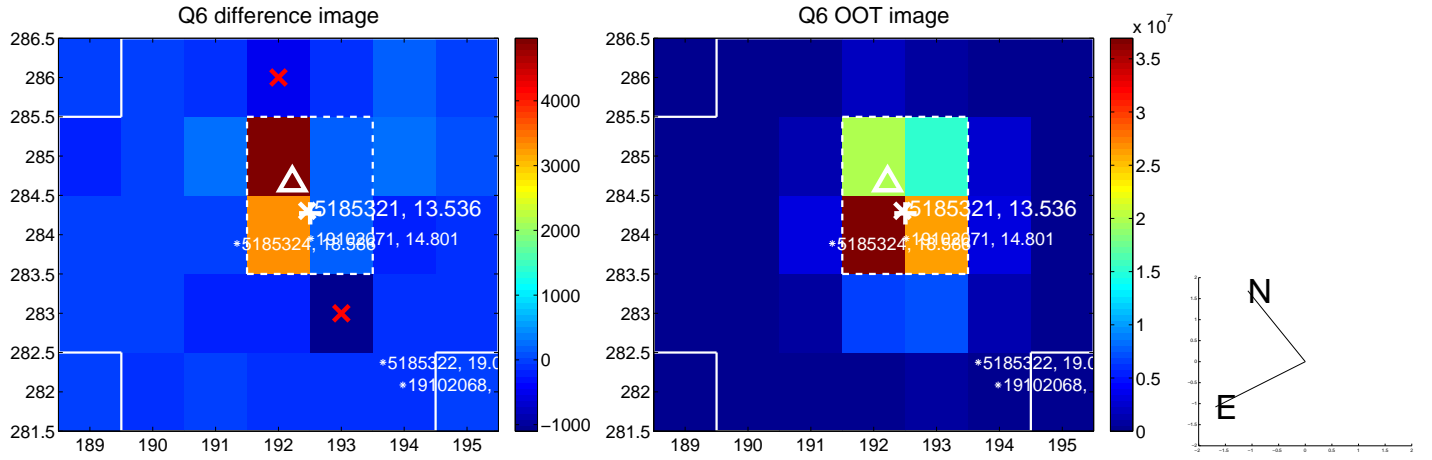
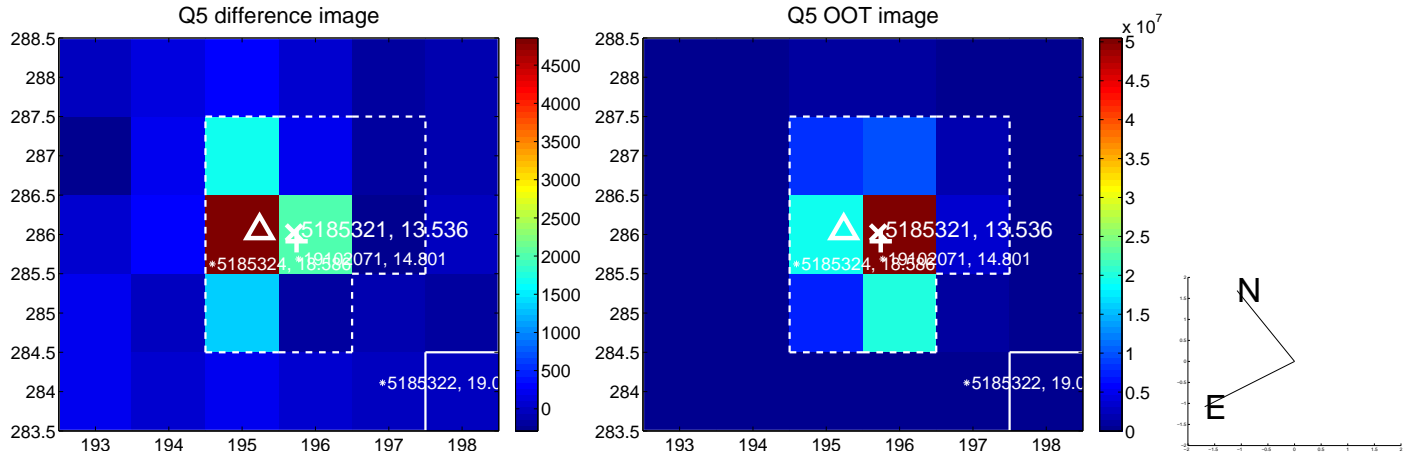


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

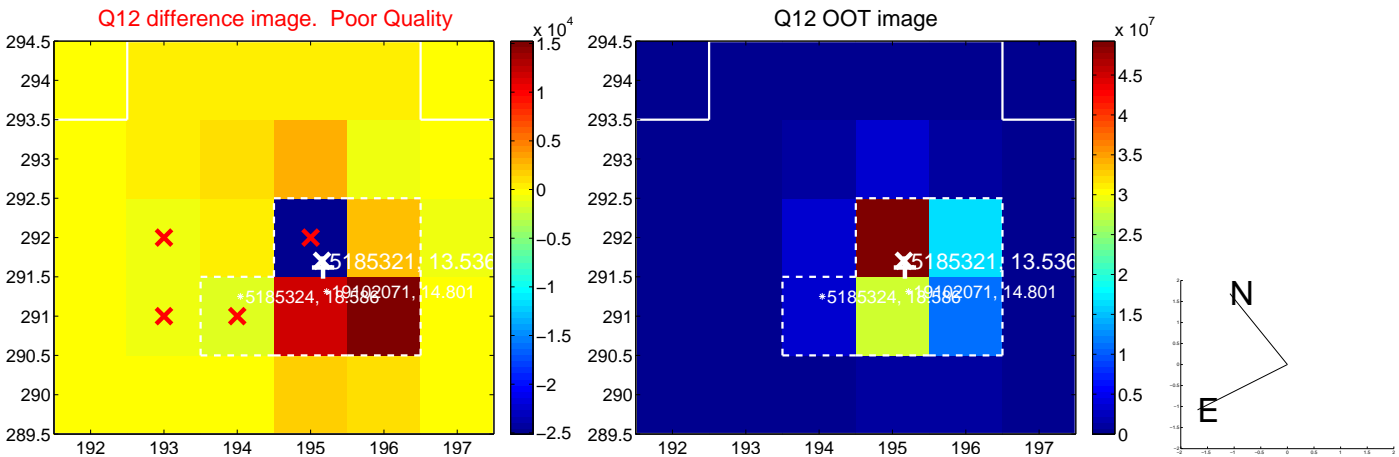
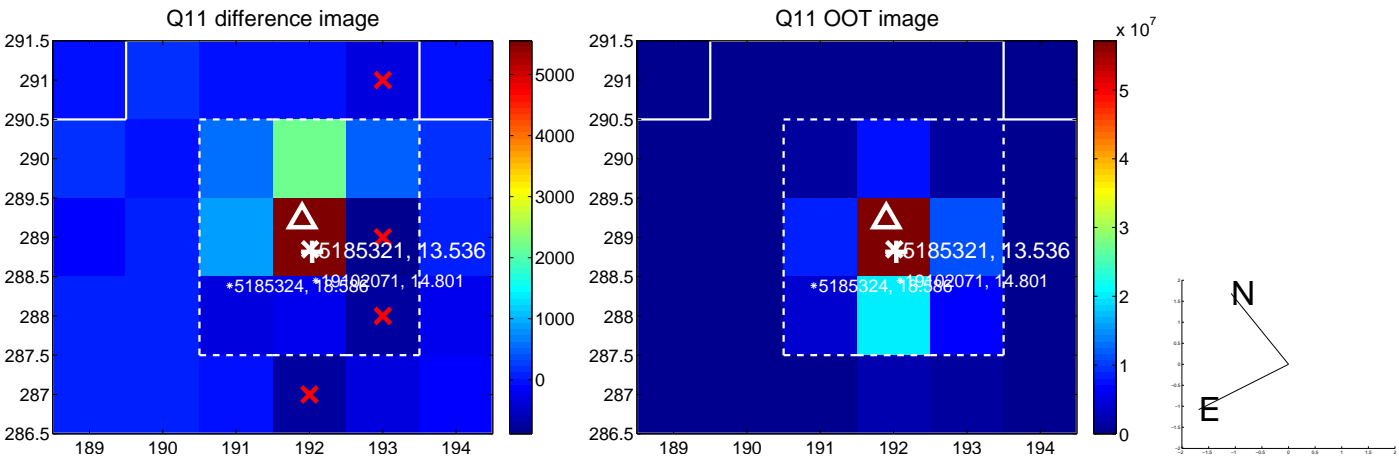
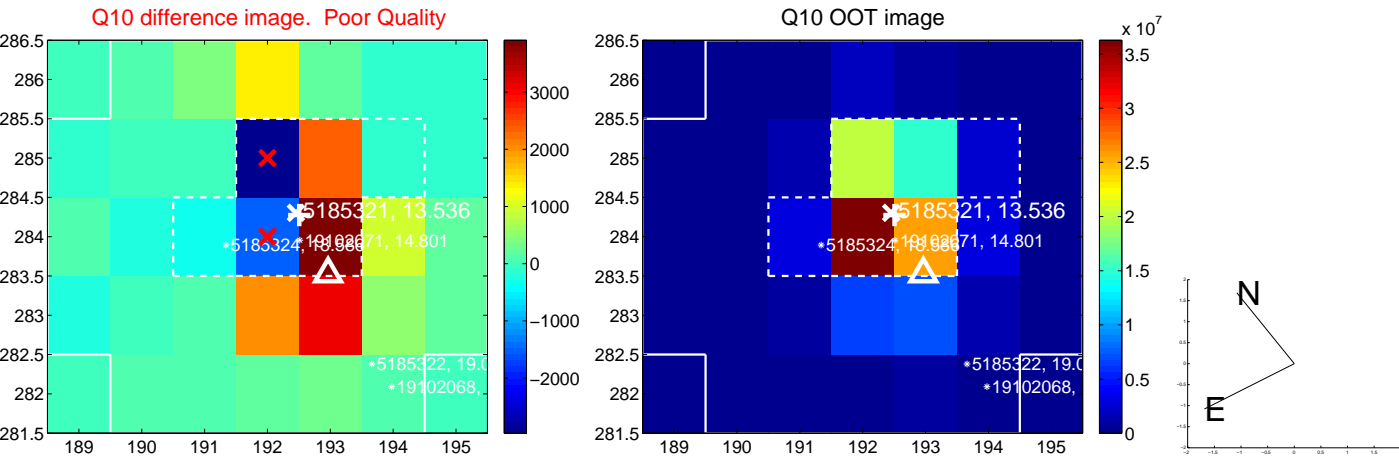
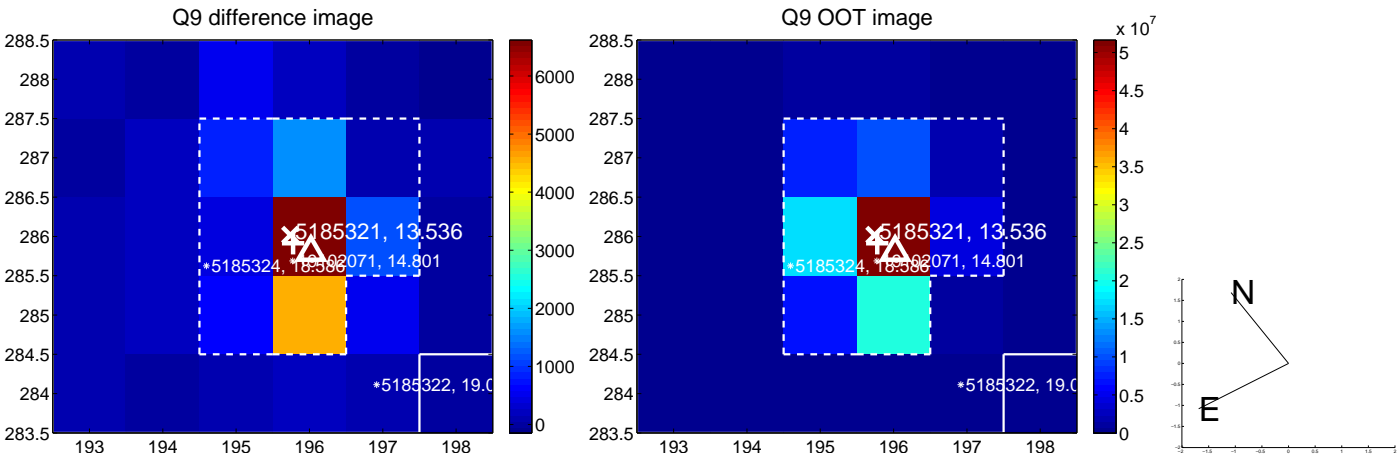


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

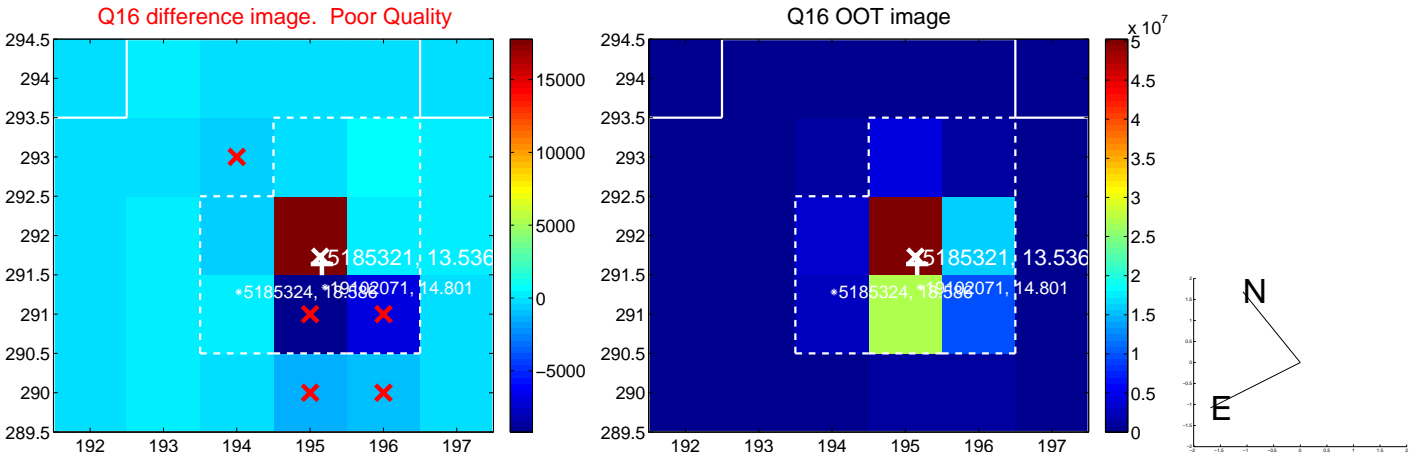
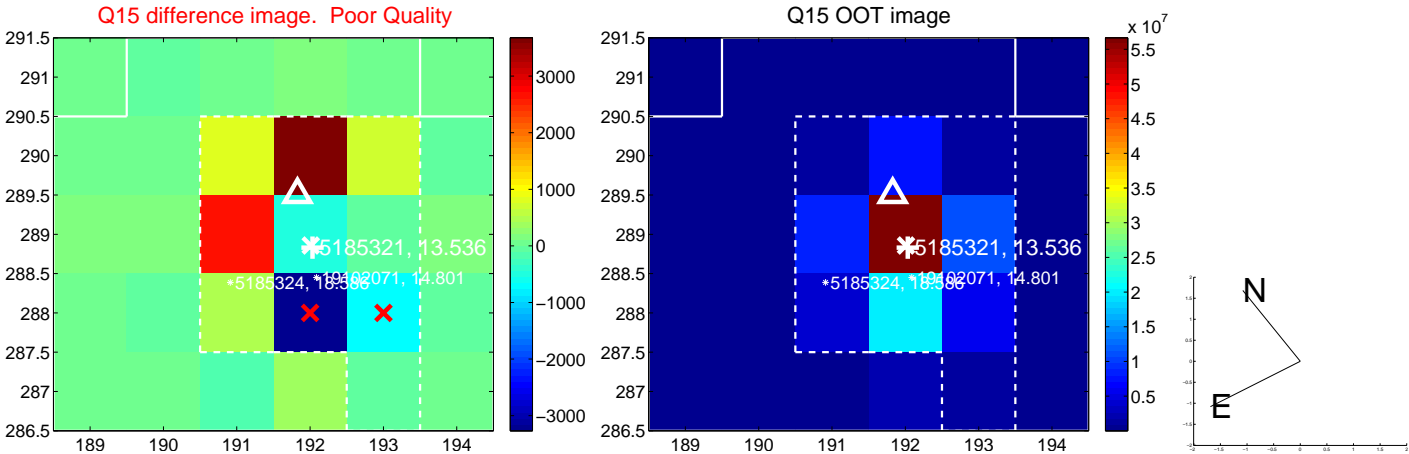
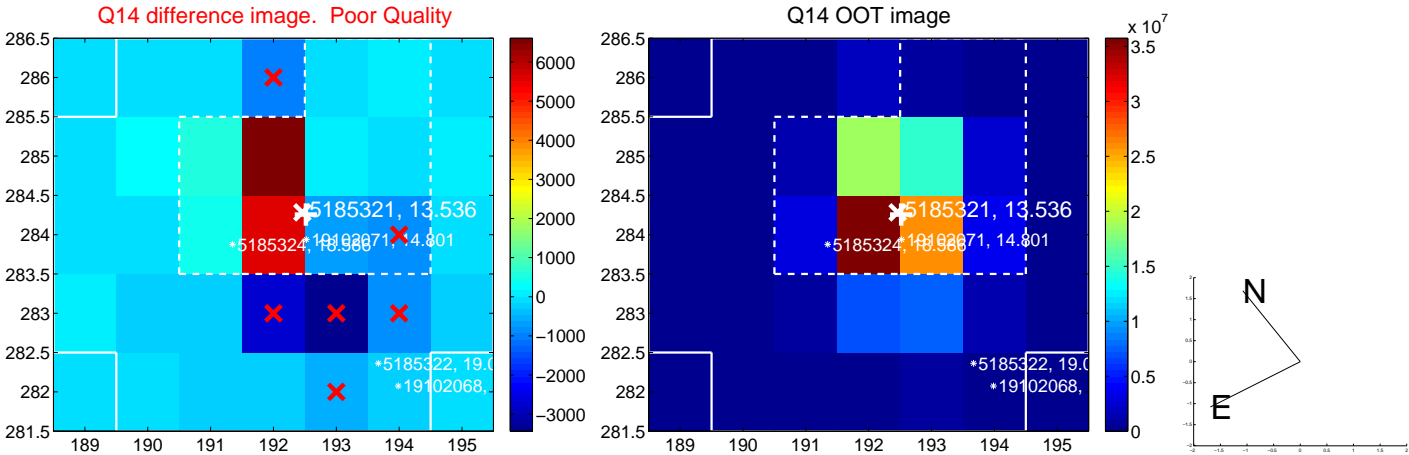
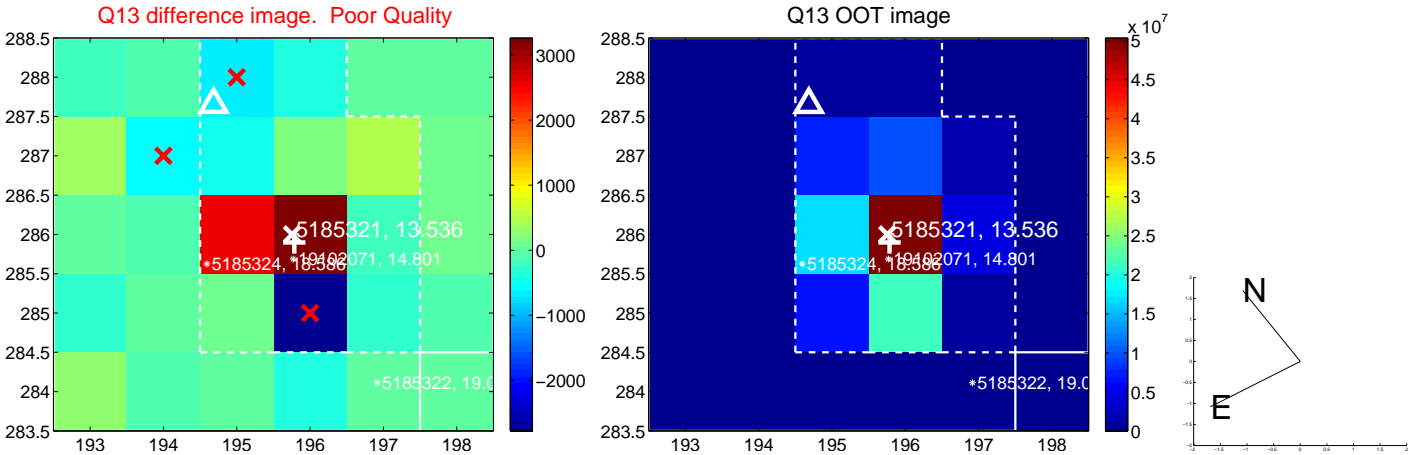




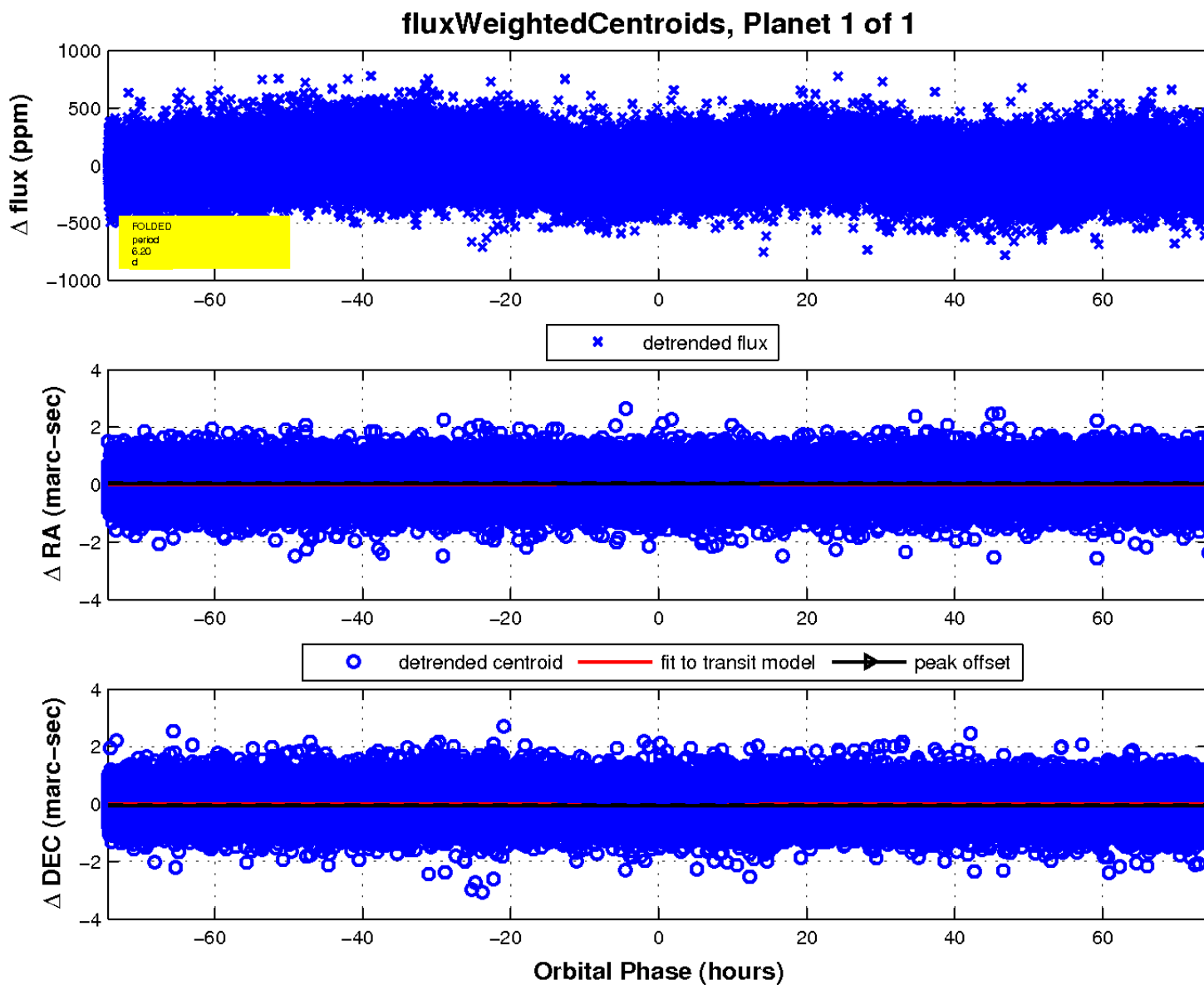
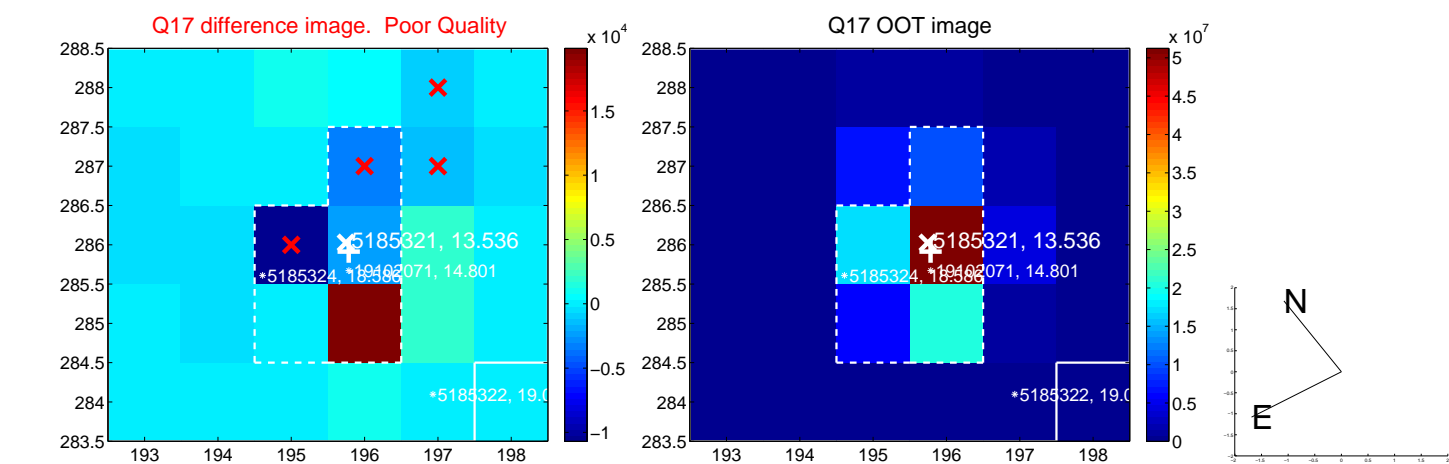
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

