

# KIC 007511416

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007511416-01	OBS	No	5.590669	137.140094	232.9	25.348	19.6	26.4	1.54	6712	4.62	941.10

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007511416-01	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.

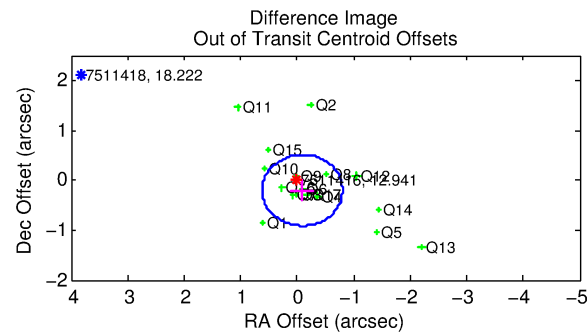
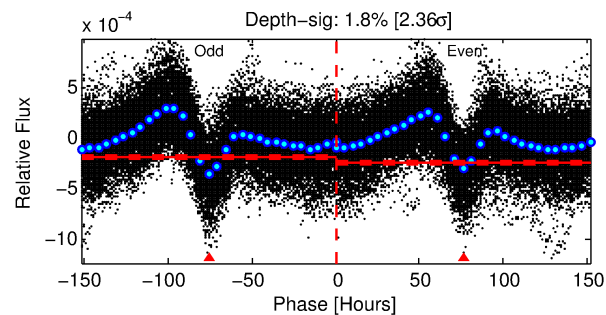
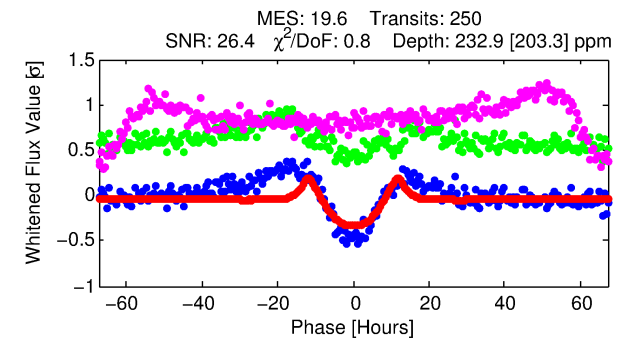
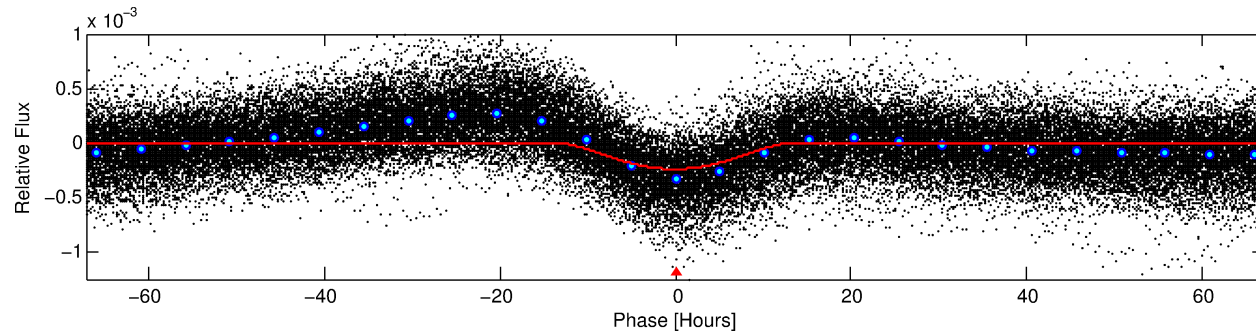
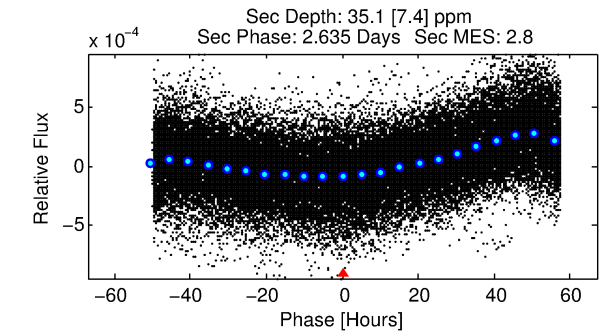
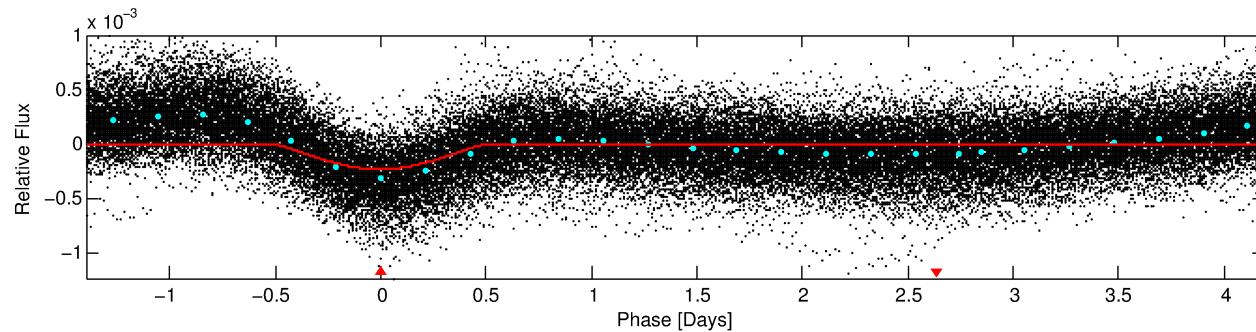
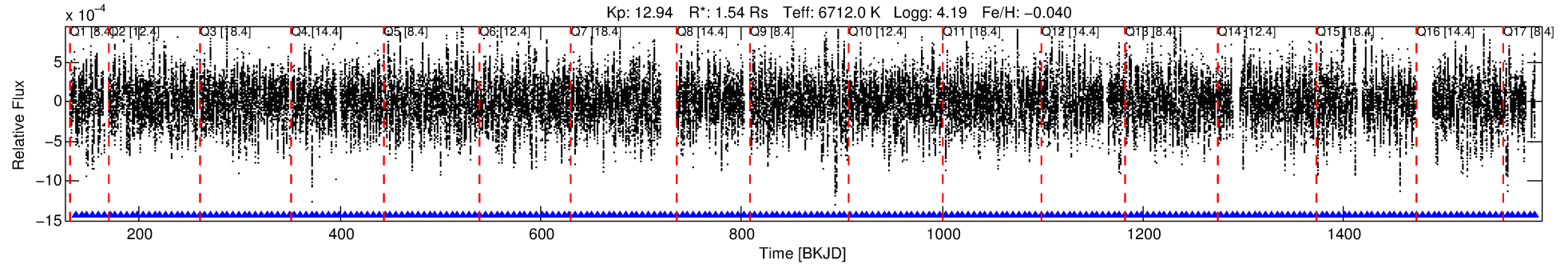
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007511416-01

No Significant Match Found

# DV One-Page Summary

KIC: 7511416 Candidate: 1 of 1 Period: 5.591 d



## DV Fit Results:

Period = 5.59067 [0.00009] d  
Epoch = 137.1401 [0.0133] BKJD  
Rp/R\* = 0.0274 [0.0088]  
a/R\* = 1.09 [0.00]  
b = 1.00 [0.00]  
Seff = 941.10 [263.21]  
Teq = 1412 [99] K  
Rp = 4.62 [1.80] Re  
a = 0.0679 [0.0119] AU  
Ag = 4.19 [3.03] [1.05σ]  
Teffp = 3123 [541] K [3.11σ]

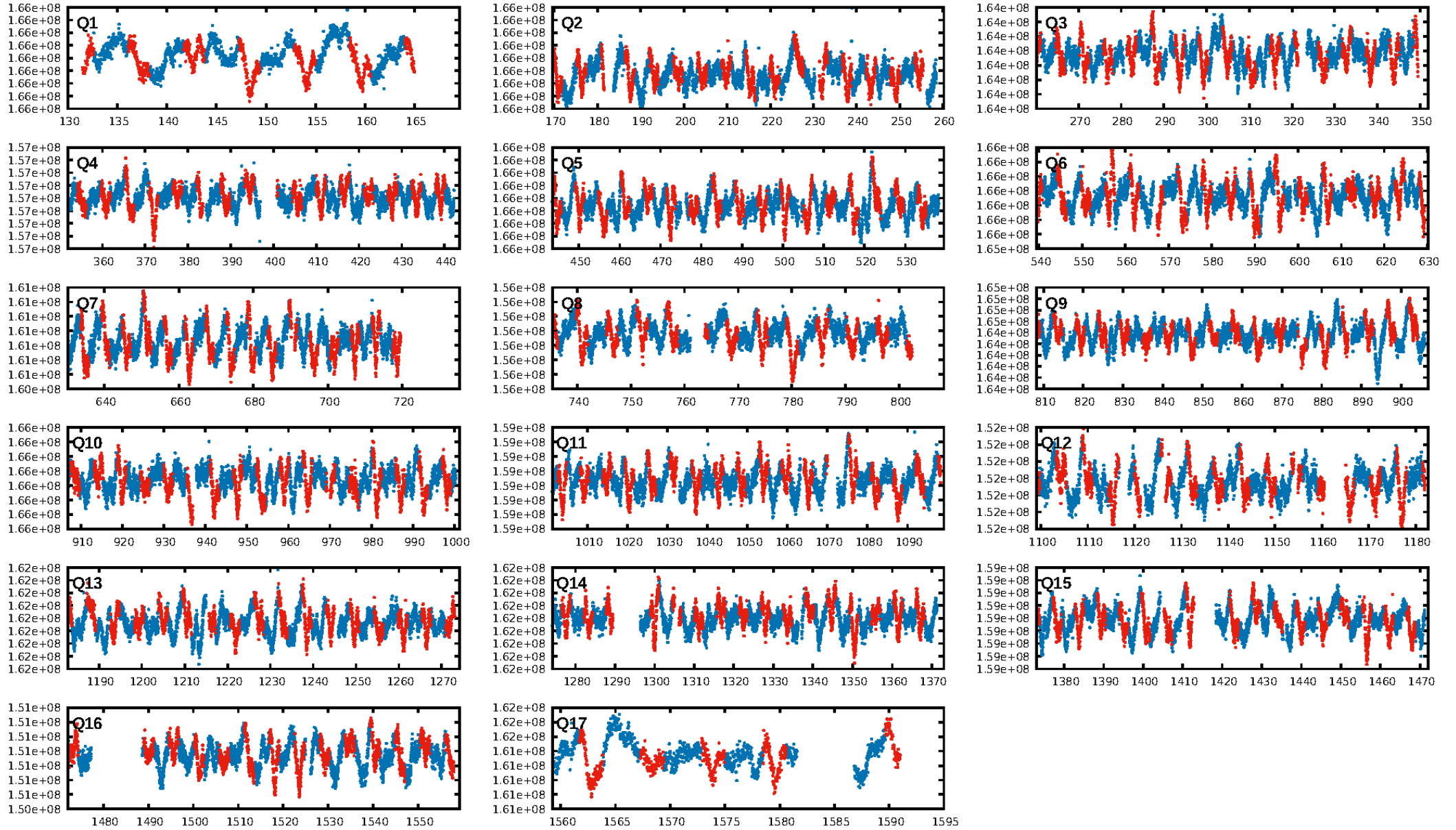
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 5.56e-80  
RollingBand-fgt: 1.00 [238/238]  
GhostDiagnostic-chr: 3.683  
Centroid-sig: 14.5%  
Centroid-so: 0.222 arcsec [2.49σ]  
OotOffset-rm: 0.222 arcsec [0.93σ]  
KicOffset-rm: 0.131 arcsec [0.56σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

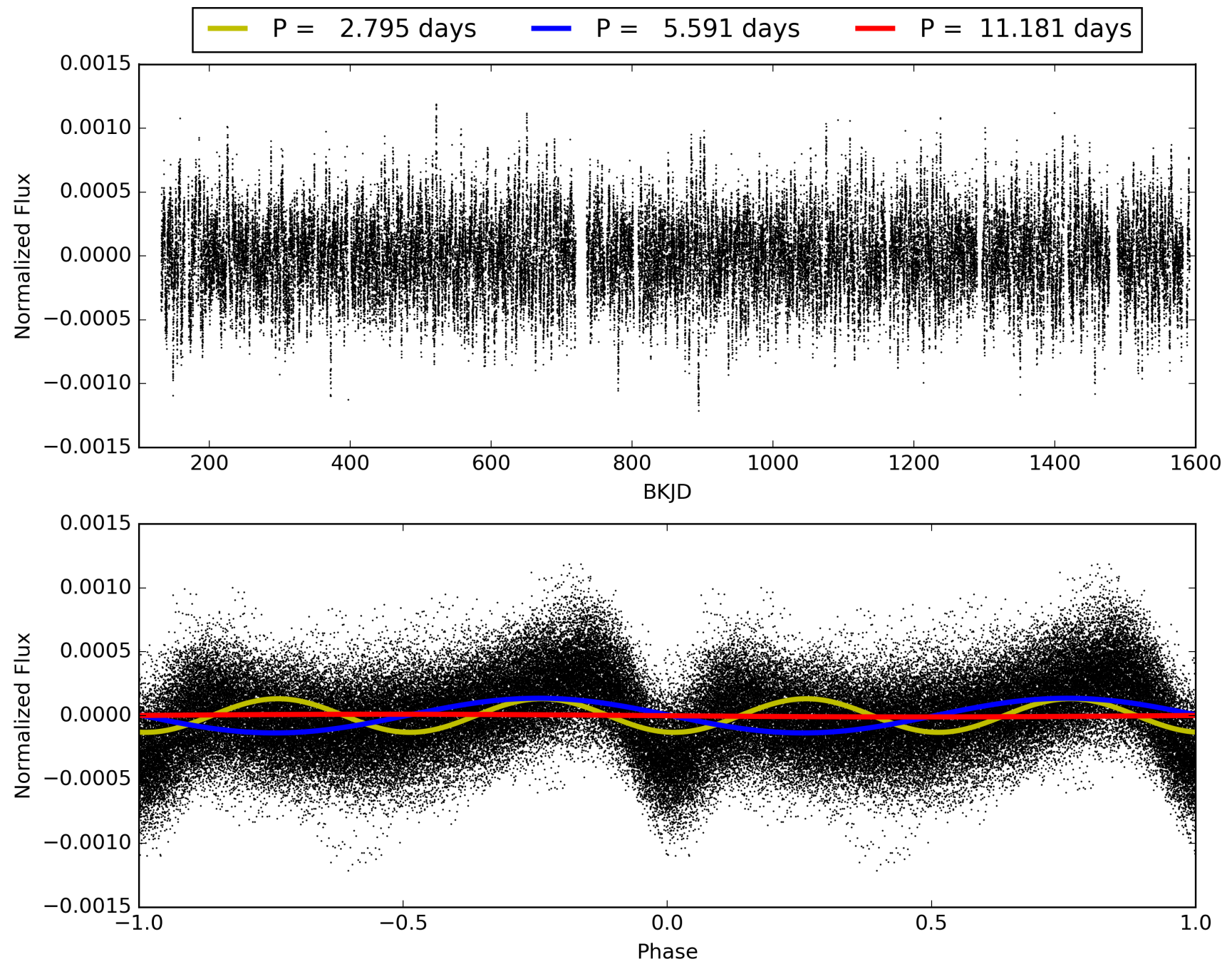
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 05:09:24 Z

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

# TCE 007511416-01, PDC Light Curves

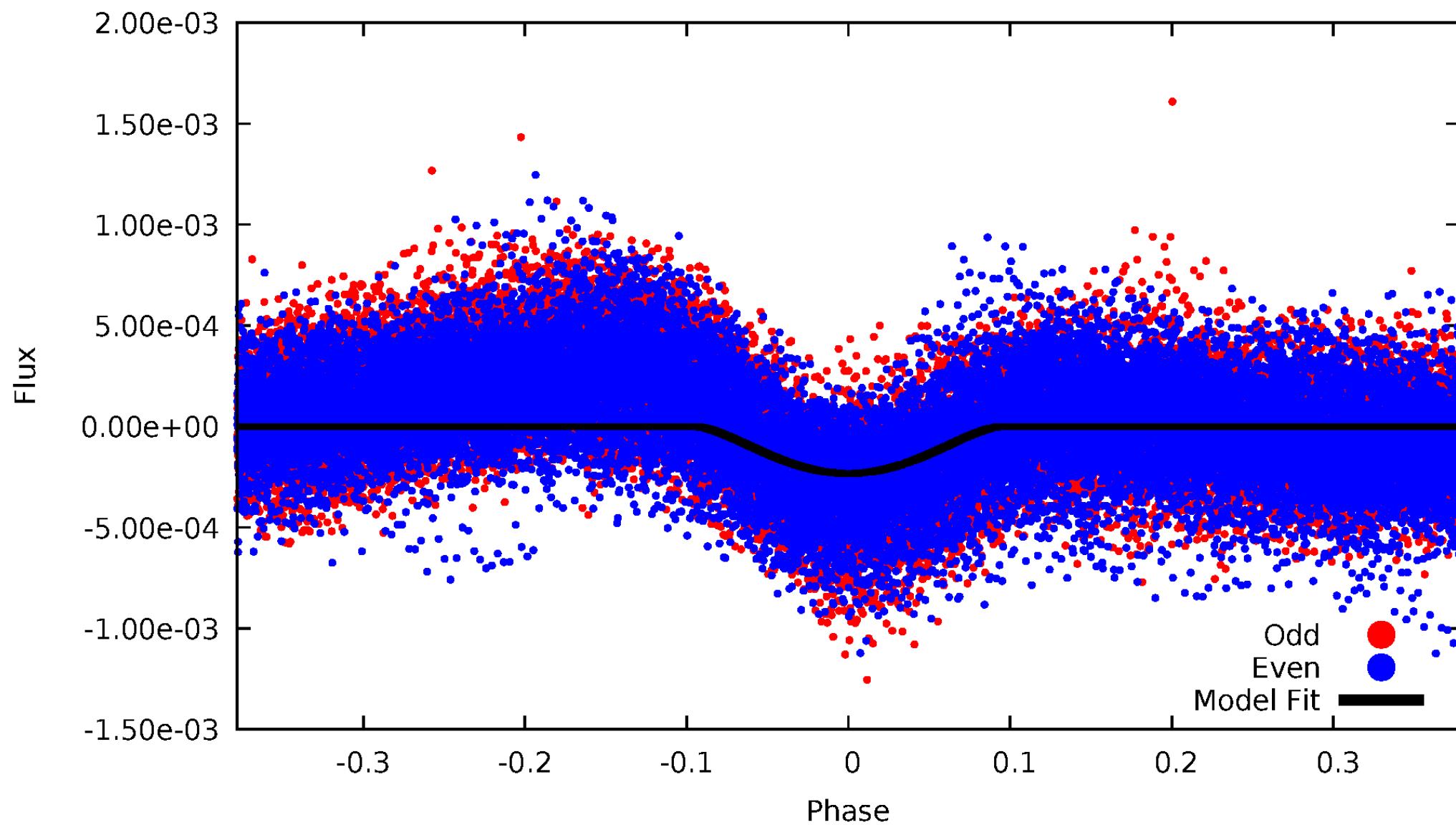


# TCE 007511416-01



# DV Odd/Even

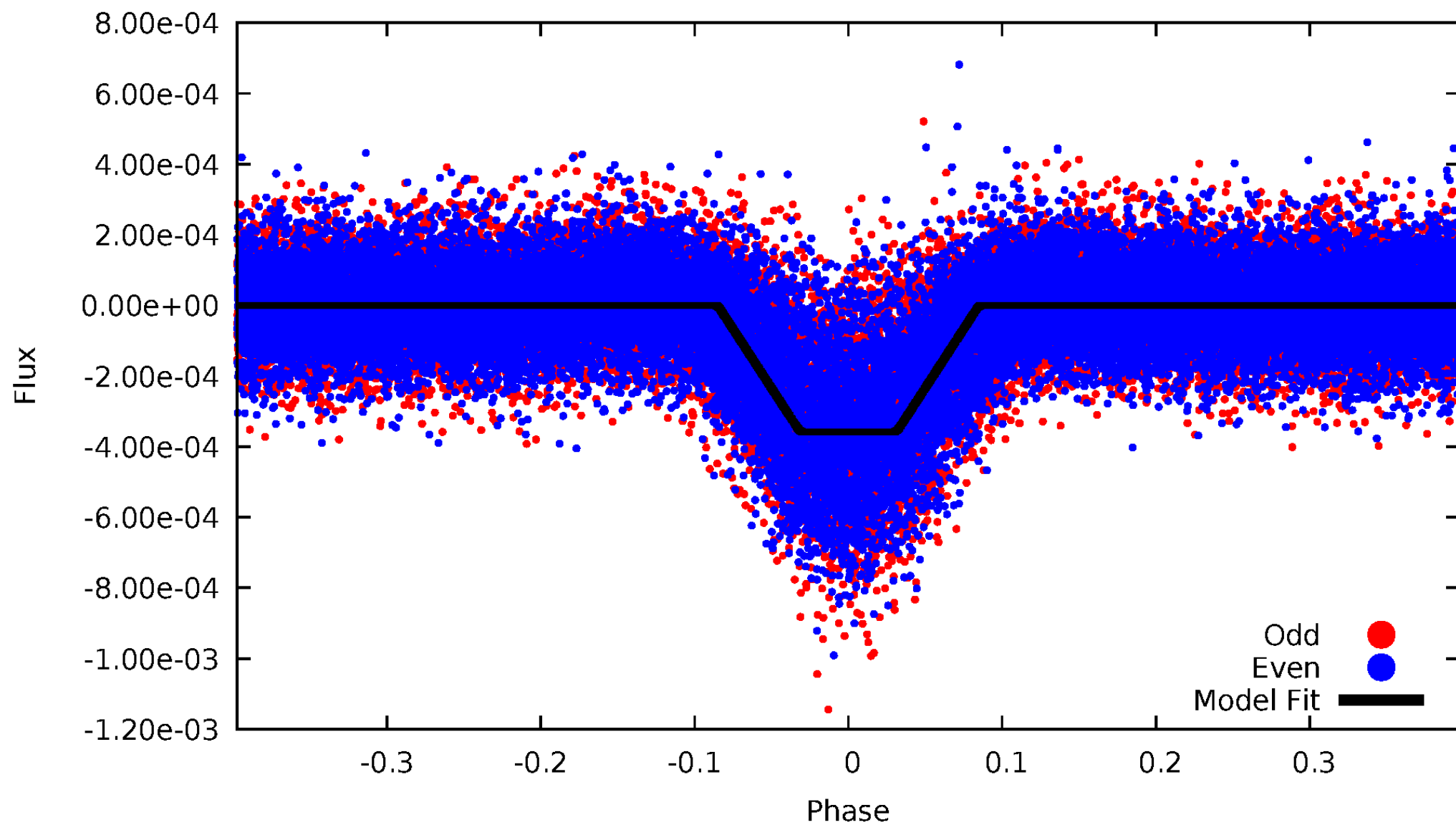
TCE 007511416-01



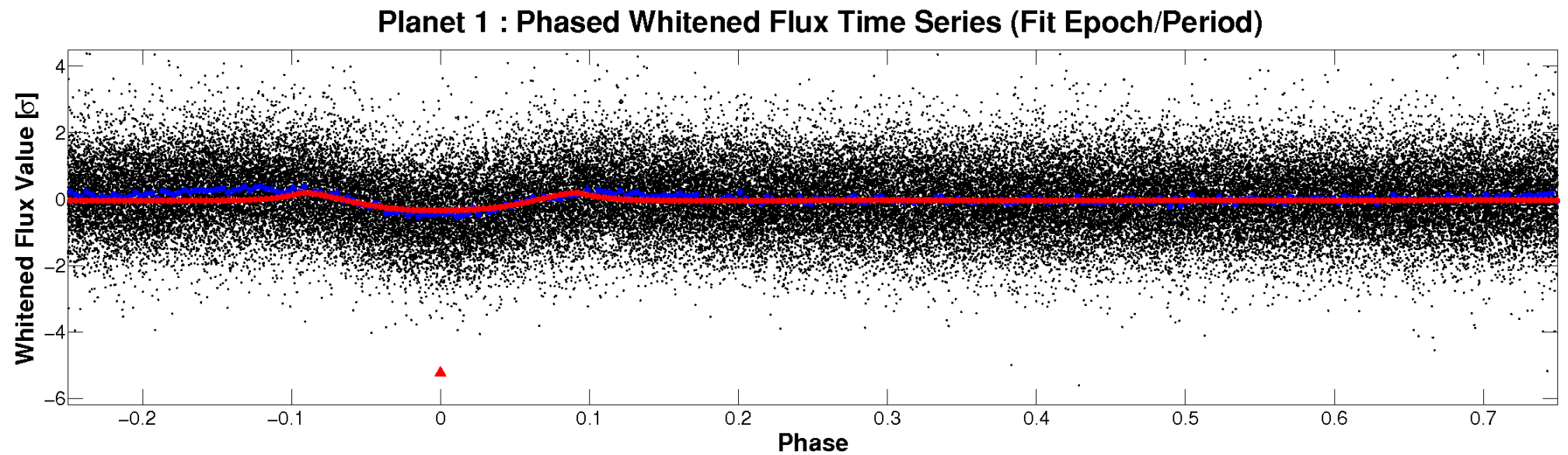
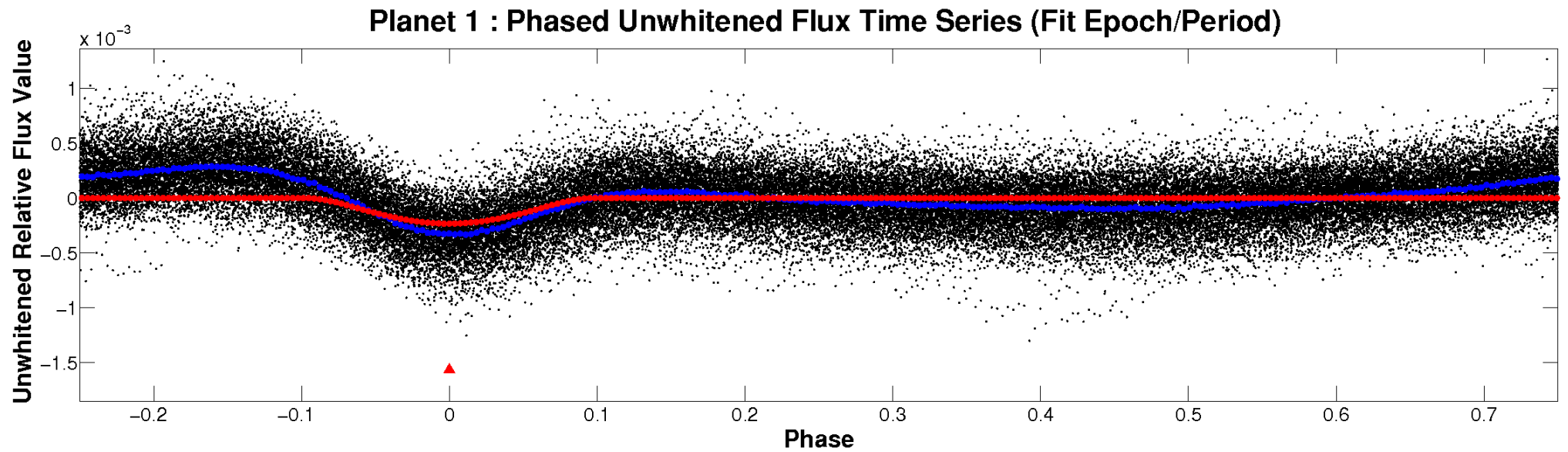


# ALT Odd/Even

TCE 007511416-01

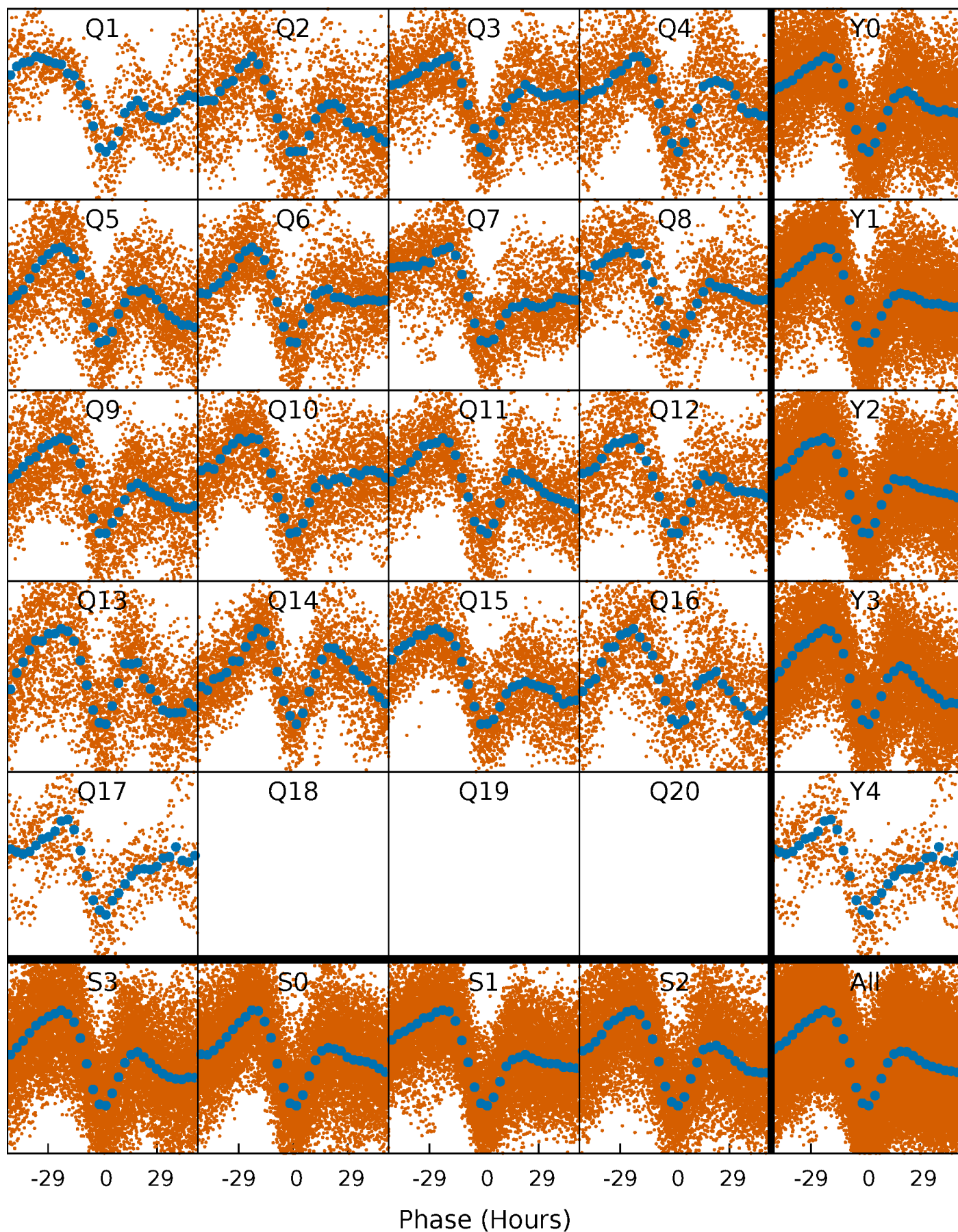


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

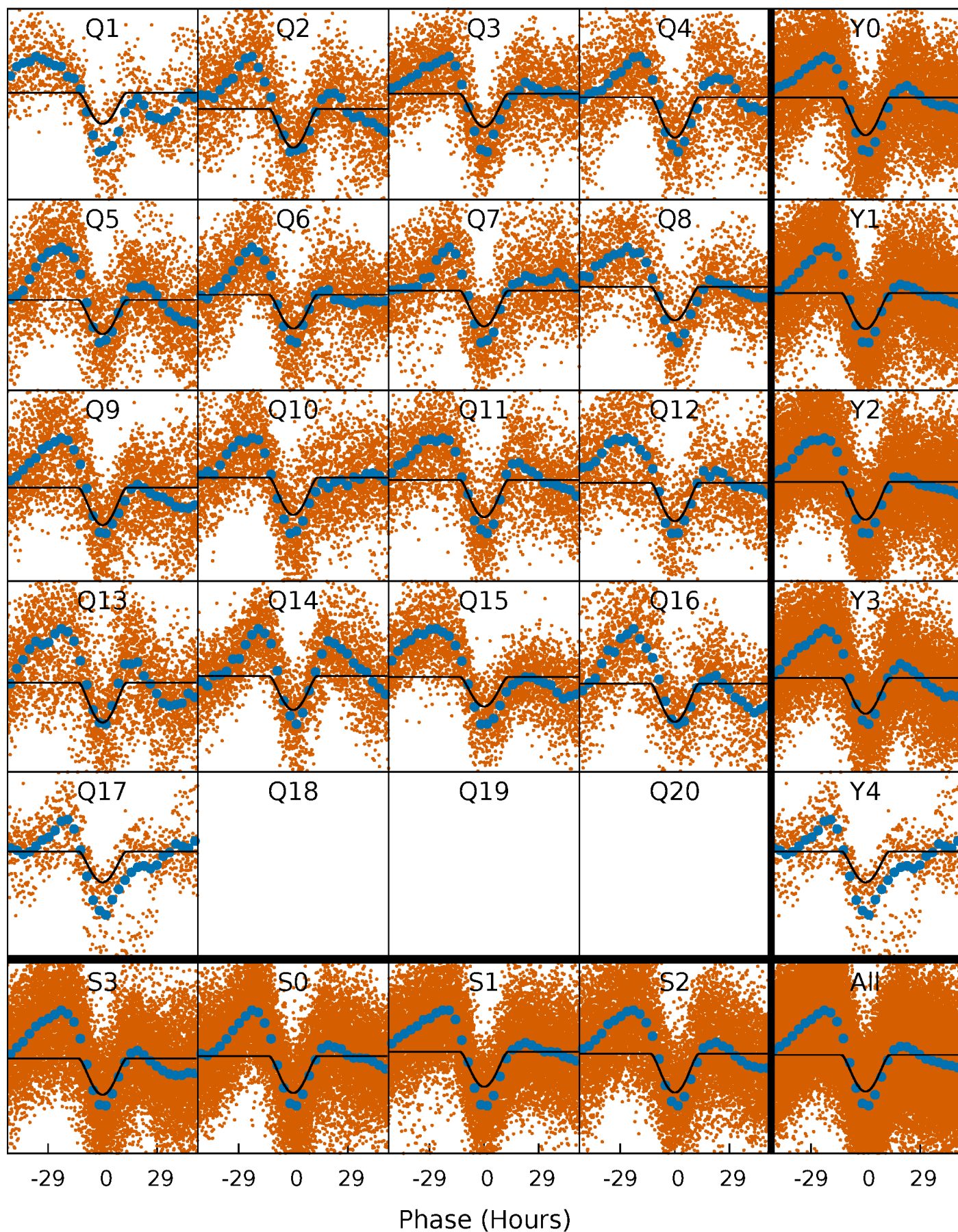
TCE 007511416-01 P= 5.590669 Days  $T_0=137.140094$  (BKJD)





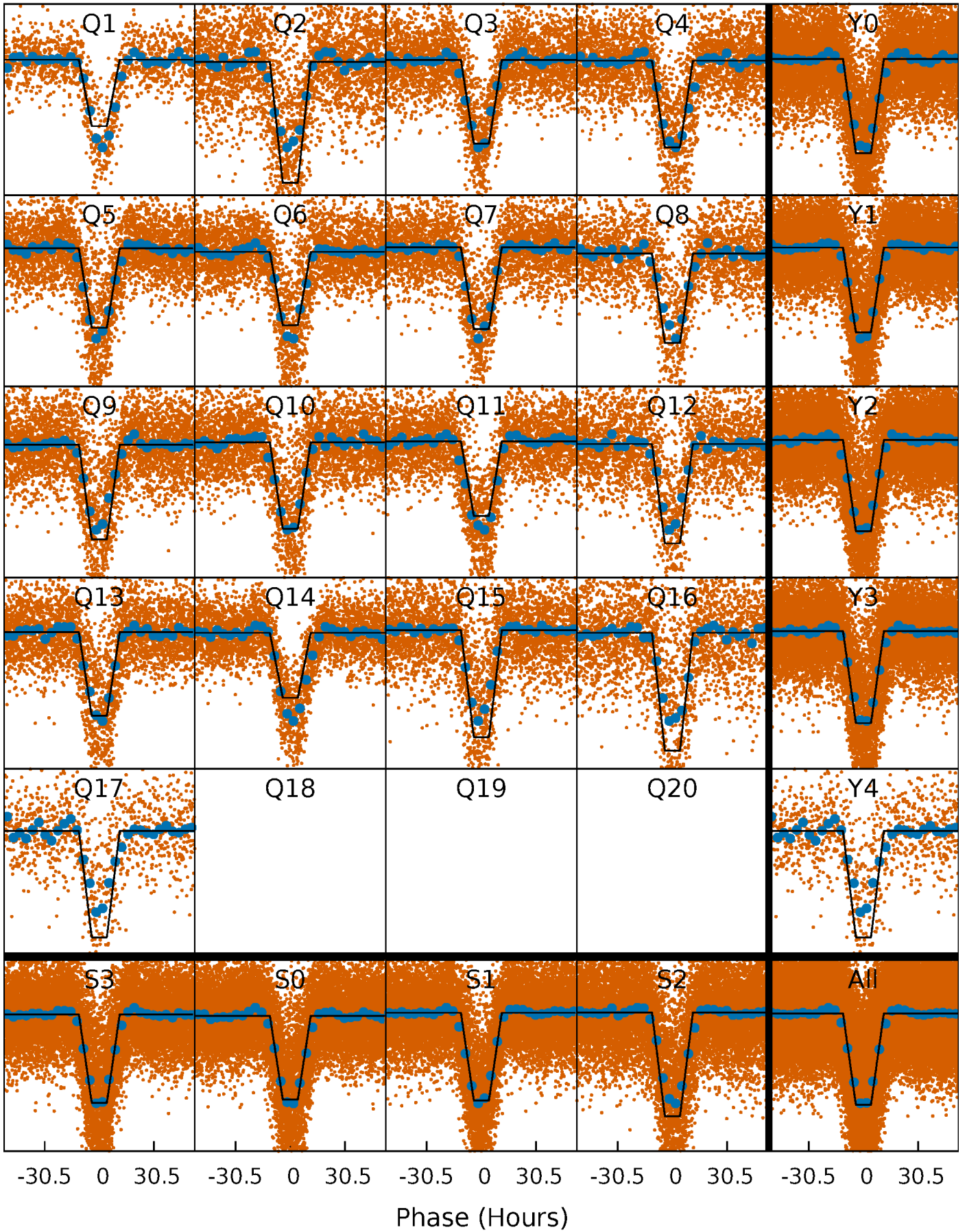
# DV Quarter-Phased Transit Curves

TCE 007511416-01 P= 5.590669 Days  $T_0=137.140094$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

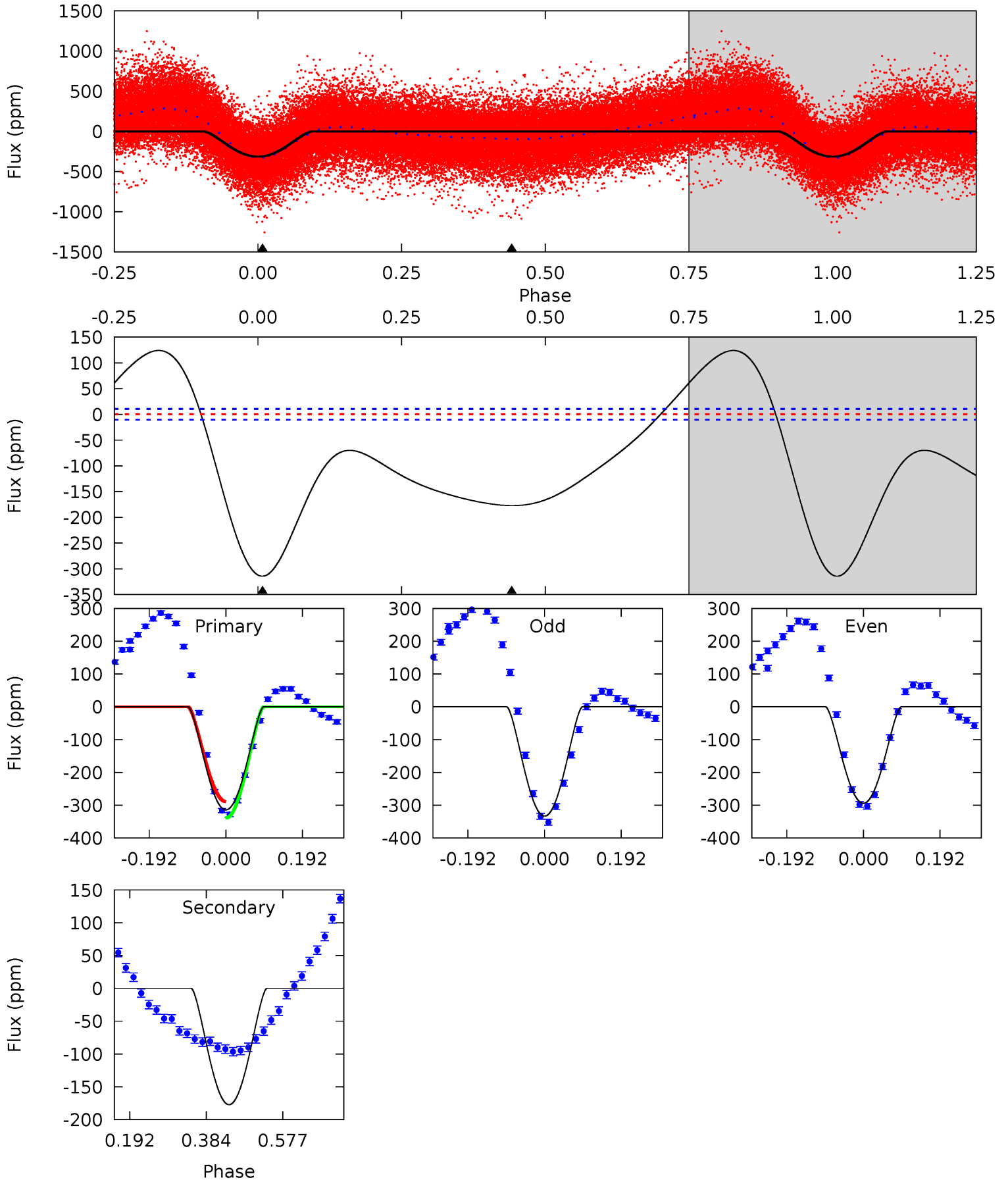
TCE 007511416-01 P= 5.590646 Days  $T_0=137.123150$  (BKJD)



# DV Model-Shift Uniqueness Test

007511416-01, P = 5.590669 Days, E = 125.958756 Days

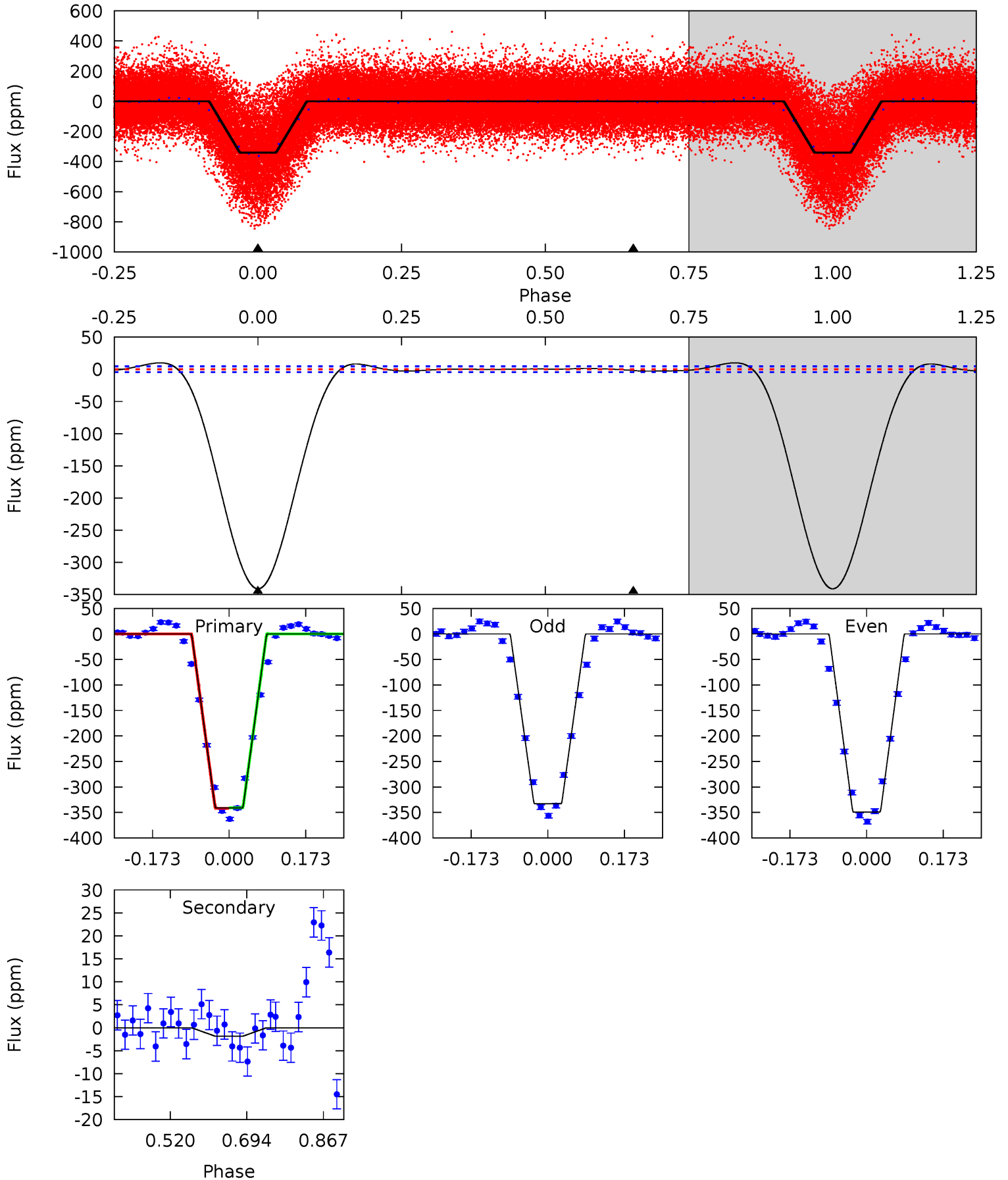
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
133.8	75.5	0	0	4.43	1.30	32.2	133.8	133.8	75.5	75.5	8.40	1.07	0.28	10.8



# Alt Model-Shift Uniqueness Test

007511416-01, P = 5.590646 Days, E = 125.941858 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
339.7	1.83	0	0	4.45	1.36	2.25	339.7	339.7	1.83	1.83	8.09	1.02	0.03	0.50





### Stellar Parameters For KIC 007511416

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6712^{+162}_{-222}$	$4.186^{+0.130}_{-0.130}$	$-0.040^{+0.250}_{-0.350}$	$1.545^{+0.335}_{-0.274}$	$1.342^{+0.152}_{-0.209}$	$0.512^{+0.327}_{-0.199}$
	+2%/-3%	+3%/-3%	+625%/-875%	+22%/-18%	+11%/-16%	+64%/-39%
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 007511416-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-177 \pm 2$	$4.58^{+1.60}_{-1.66}$	$1966^{+115}_{-110}$	$4771^{+999}_{-501}$	$21^{+30}_{-10}$
Alt.	$-2 \pm 1$	$3.07^{+1.68}_{-1.45}$	$1970^{+110}_{-106}$	$2214^{+789}_{-4527}$	$0.419^{+1.236}_{-0.282}$

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

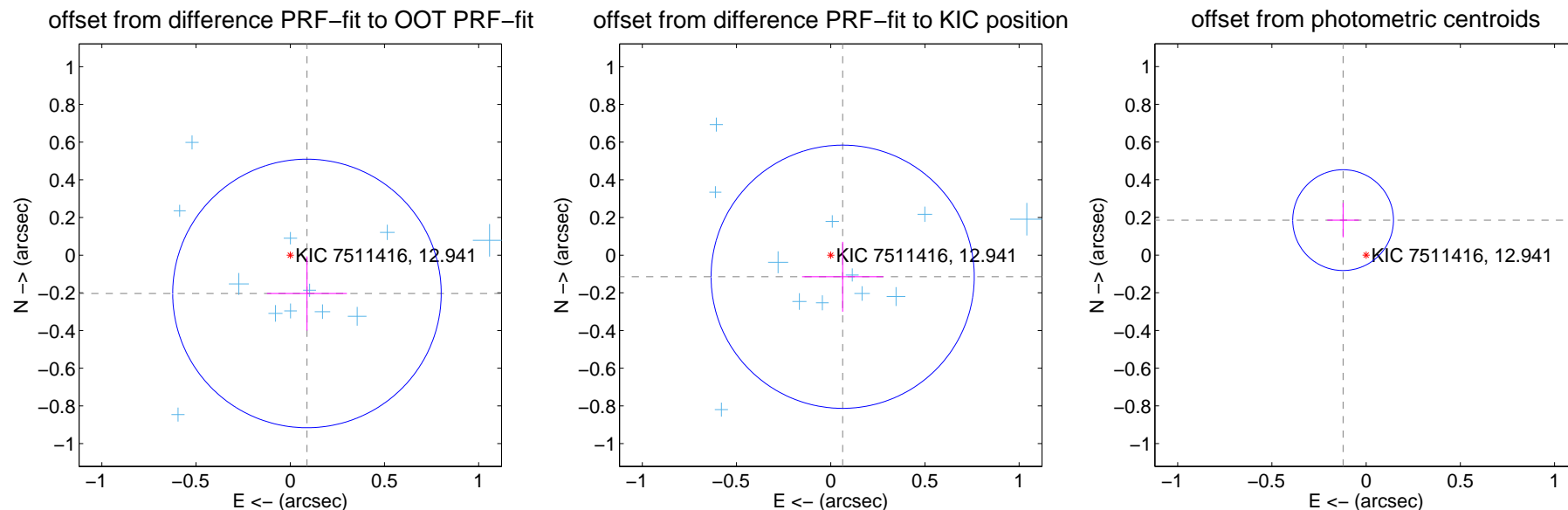
## DV Centroid Data

Supplemental centroid analysis for 007511416-01. Kepler magnitude: 12.94. Transit SNR 26.37

There are 17 quarters with good PRF difference image offsets

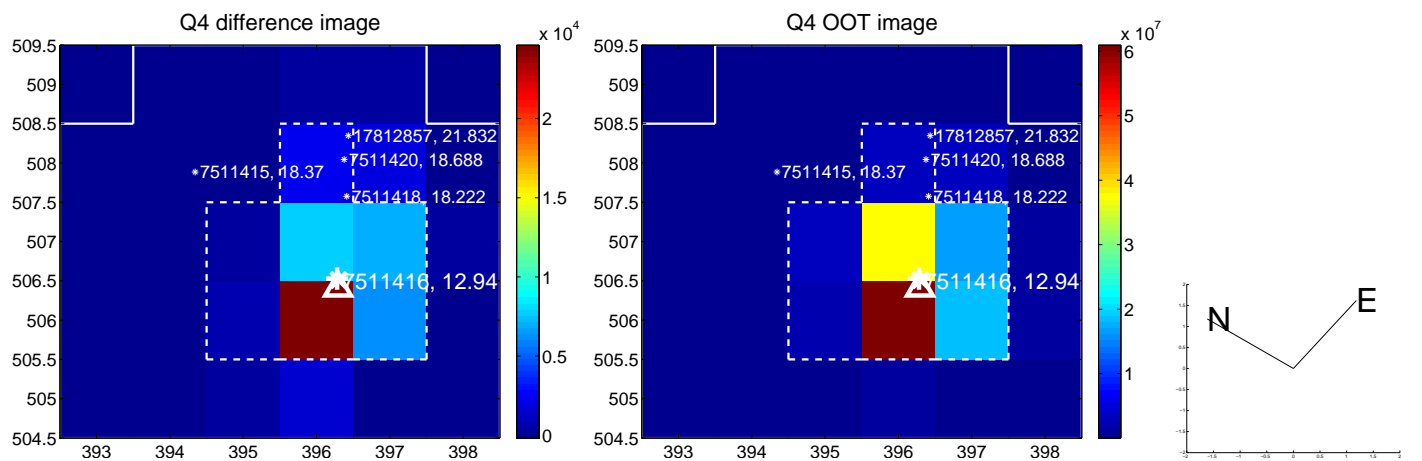
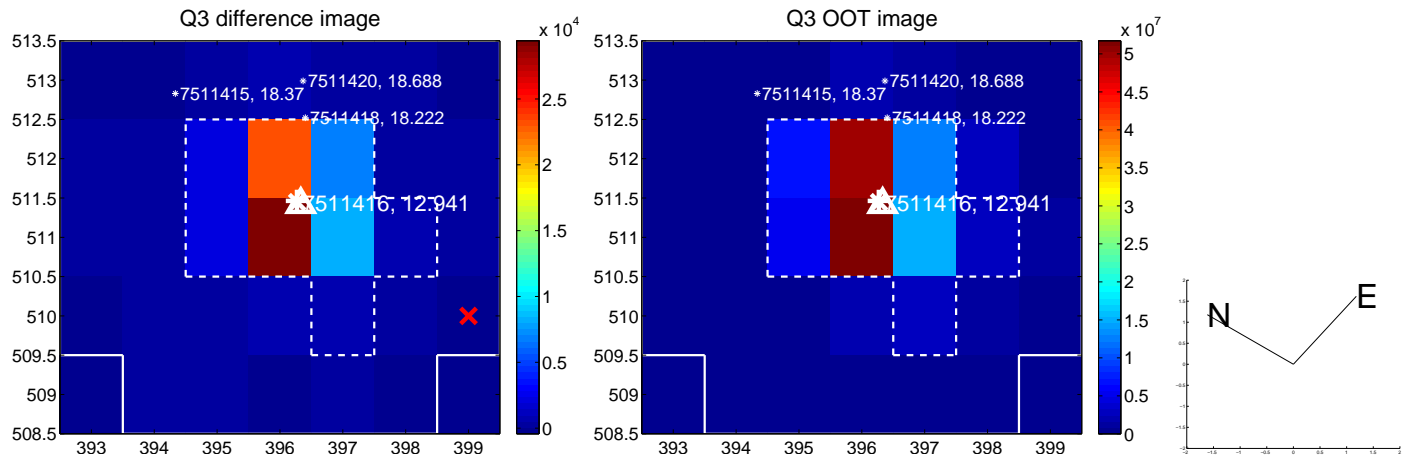
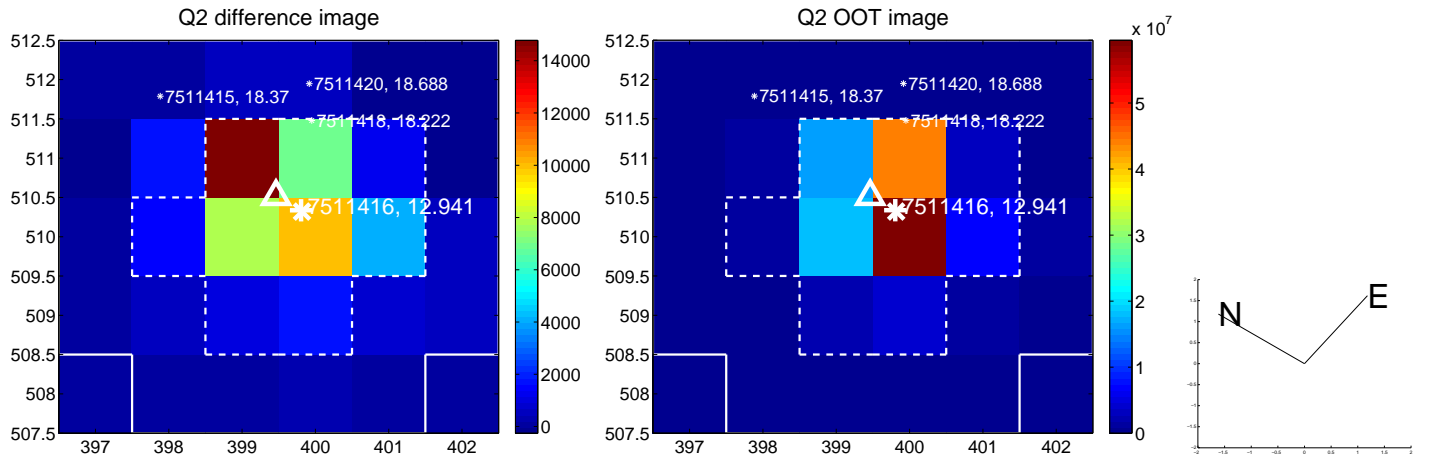
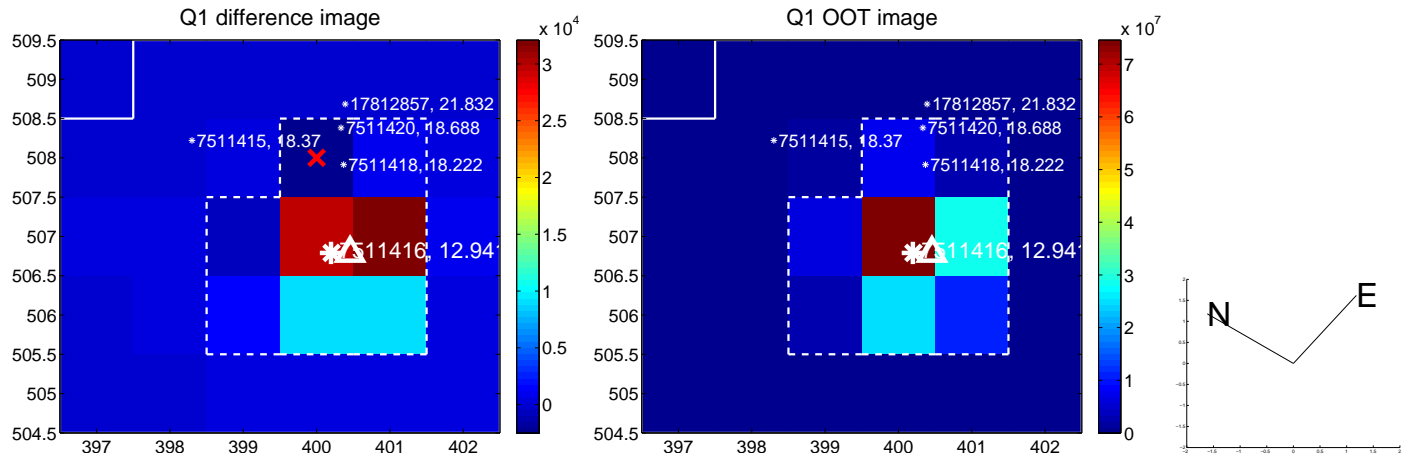
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.222 \pm 0.238$	0.93	$-0.089 \pm 0.212$	$-0.203 \pm 0.197$
PRF-fit source offset from KIC position	$0.131 \pm 0.233$	0.56	$-0.063 \pm 0.215$	$-0.115 \pm 0.185$
photometric centroid source offset	$0.22 \pm 0.09$	2.49	$0.12 \pm 0.08$	$0.19 \pm 0.09$

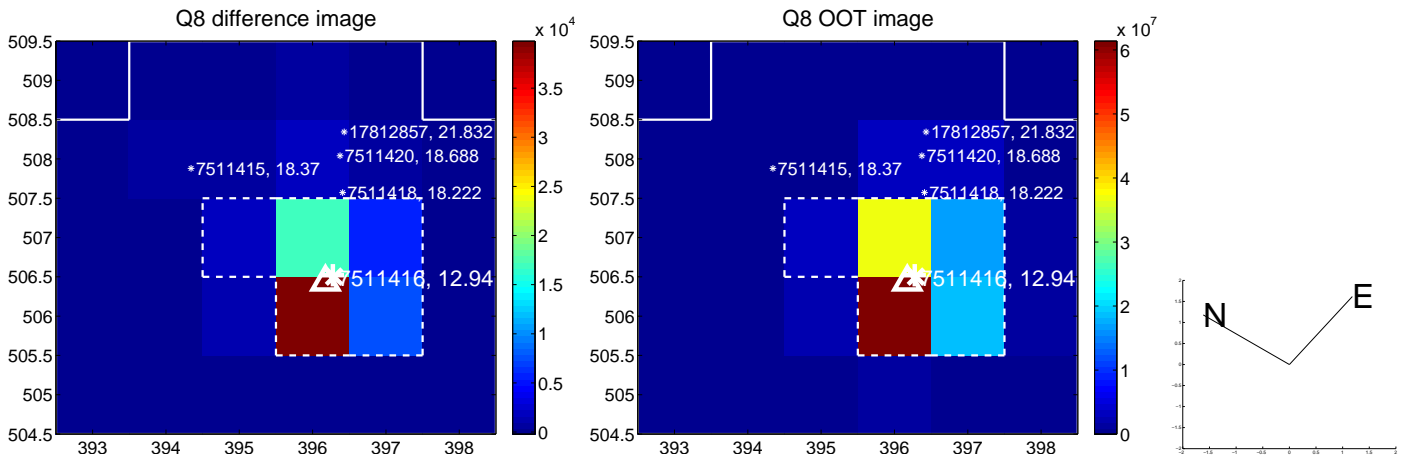
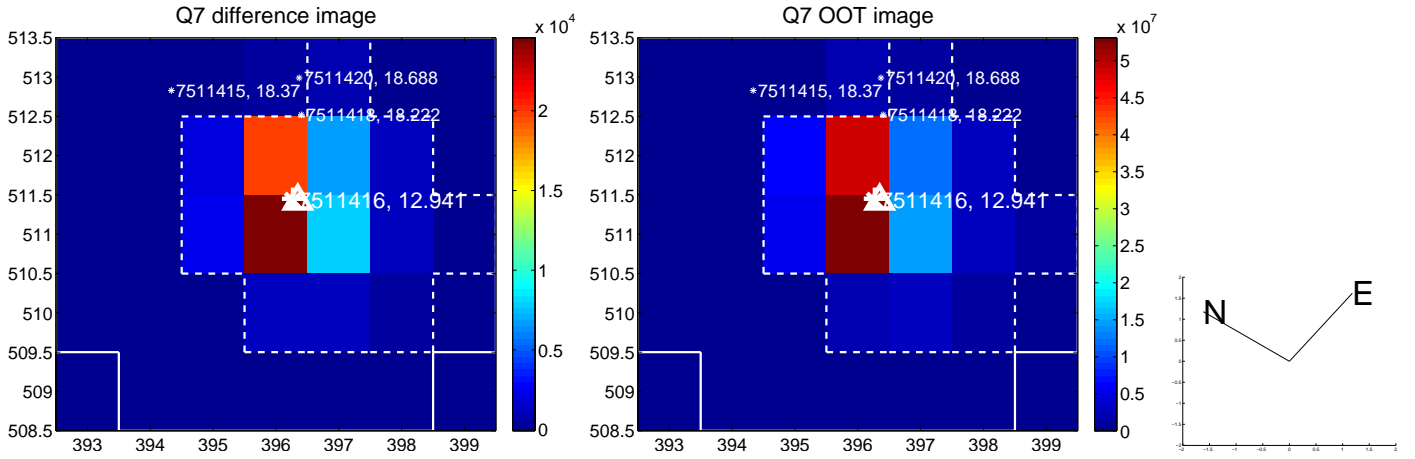
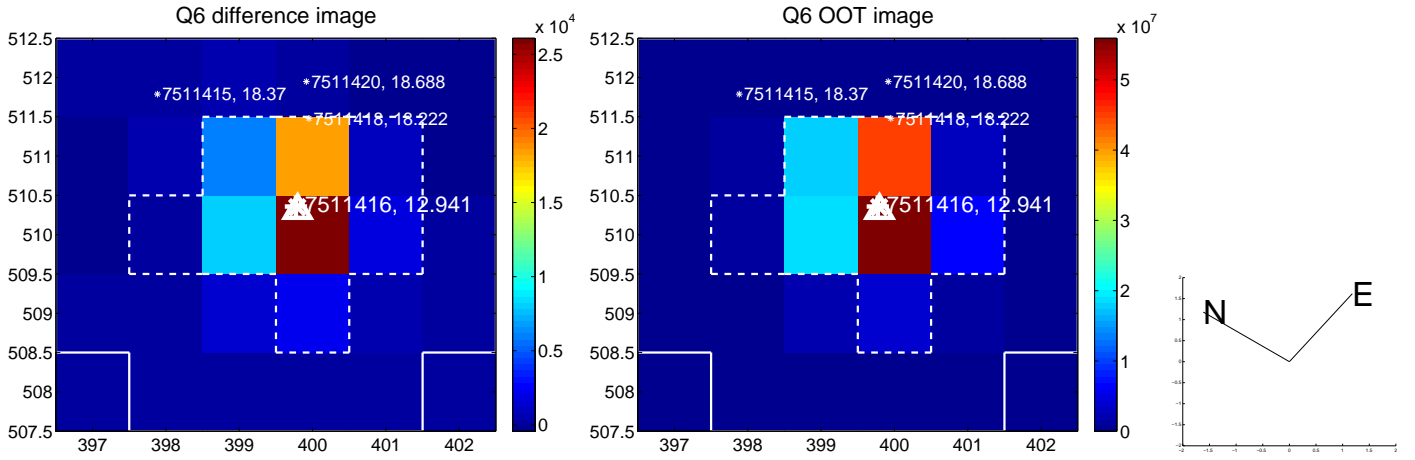
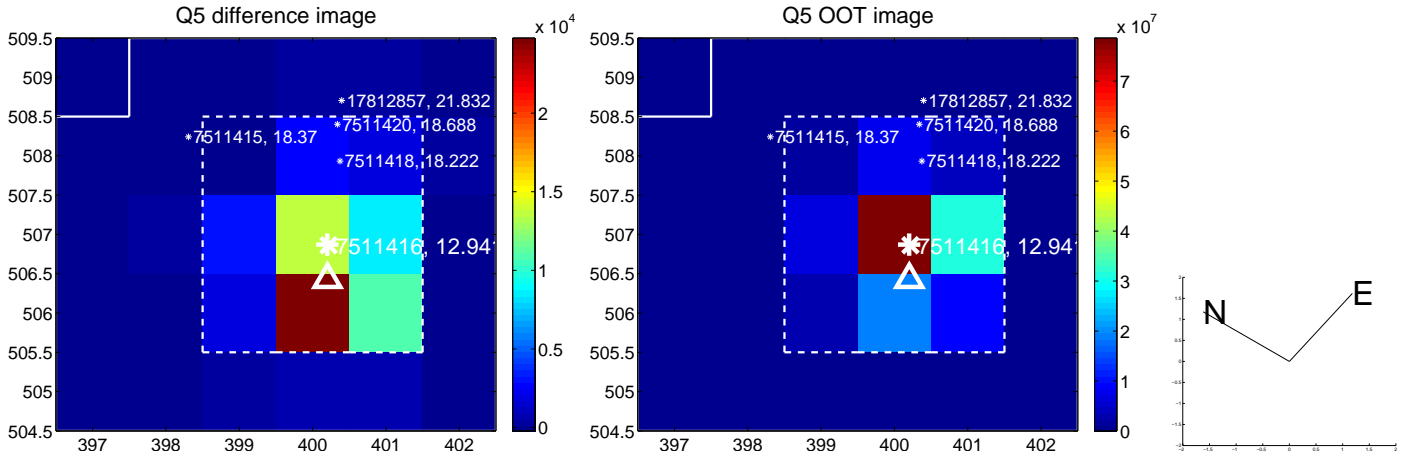


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

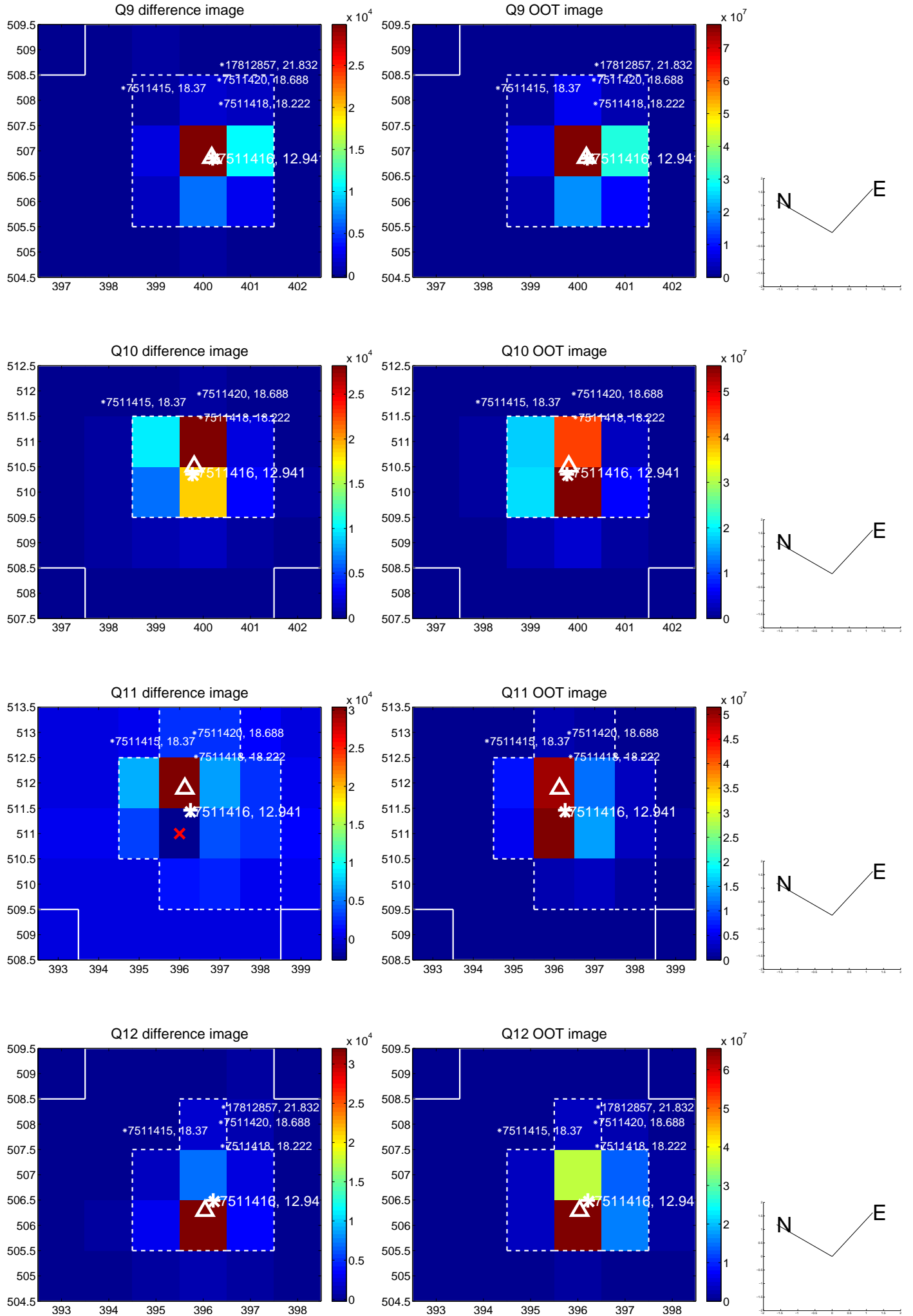


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

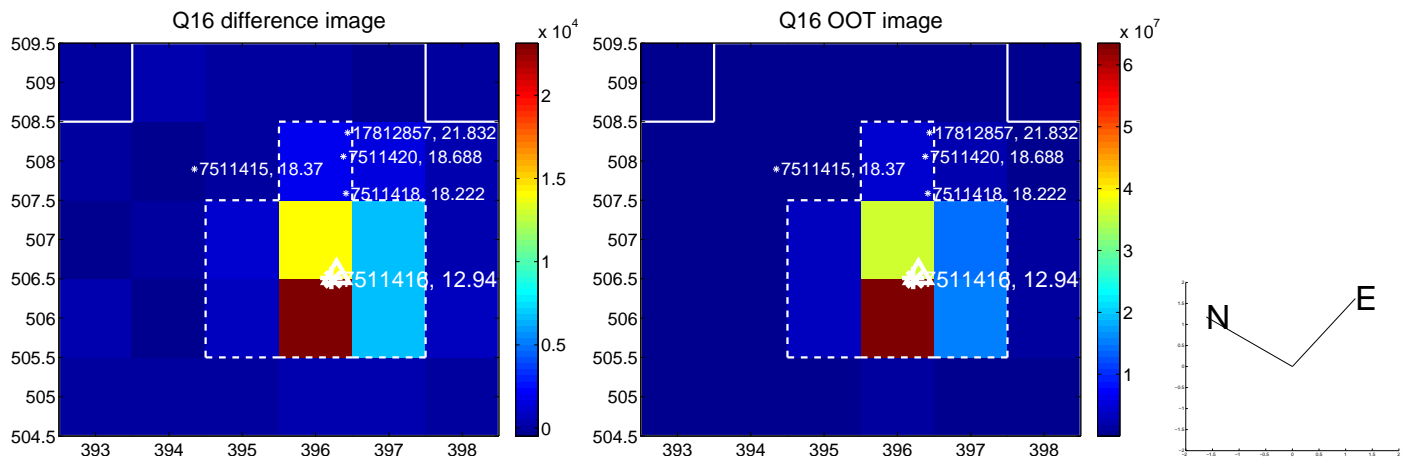
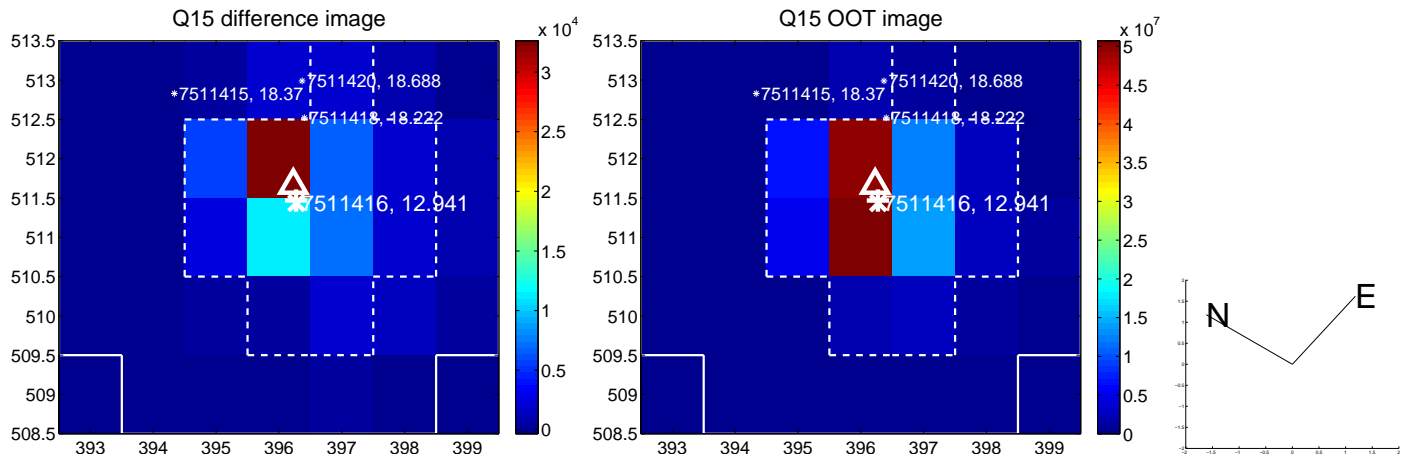
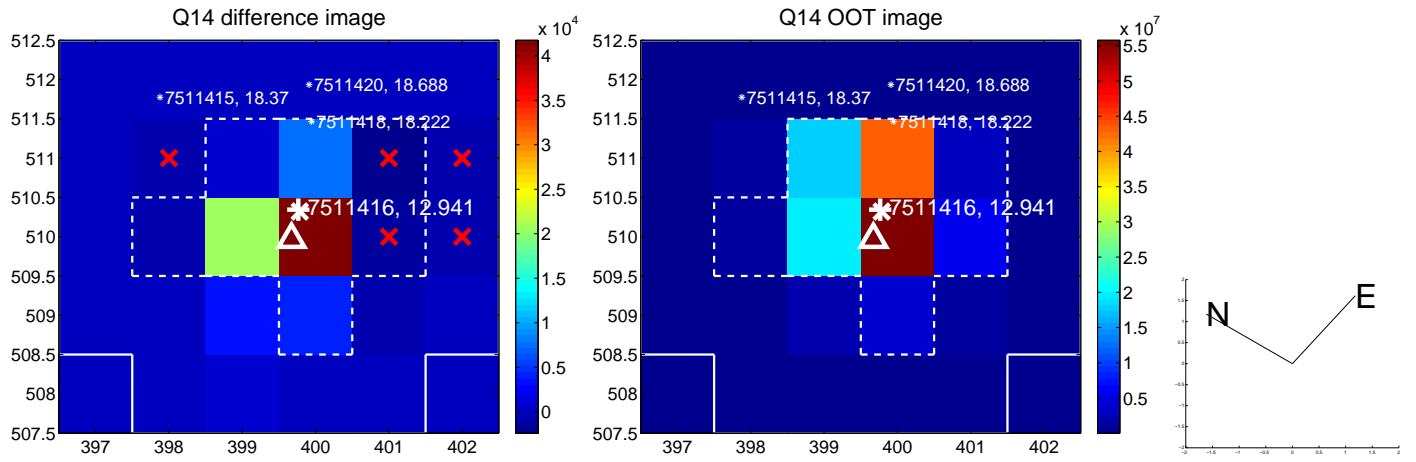
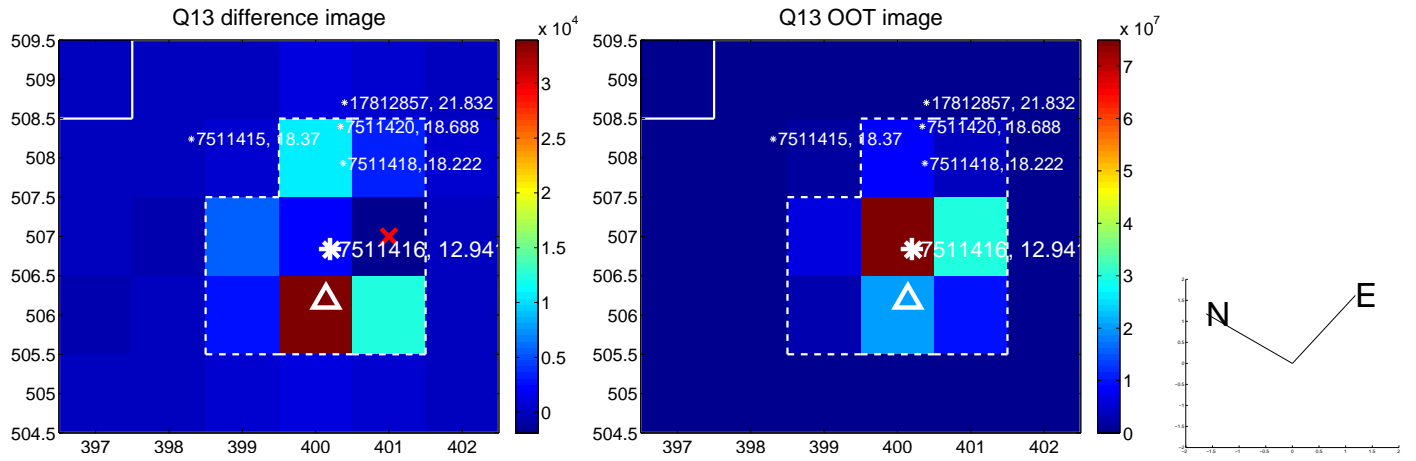




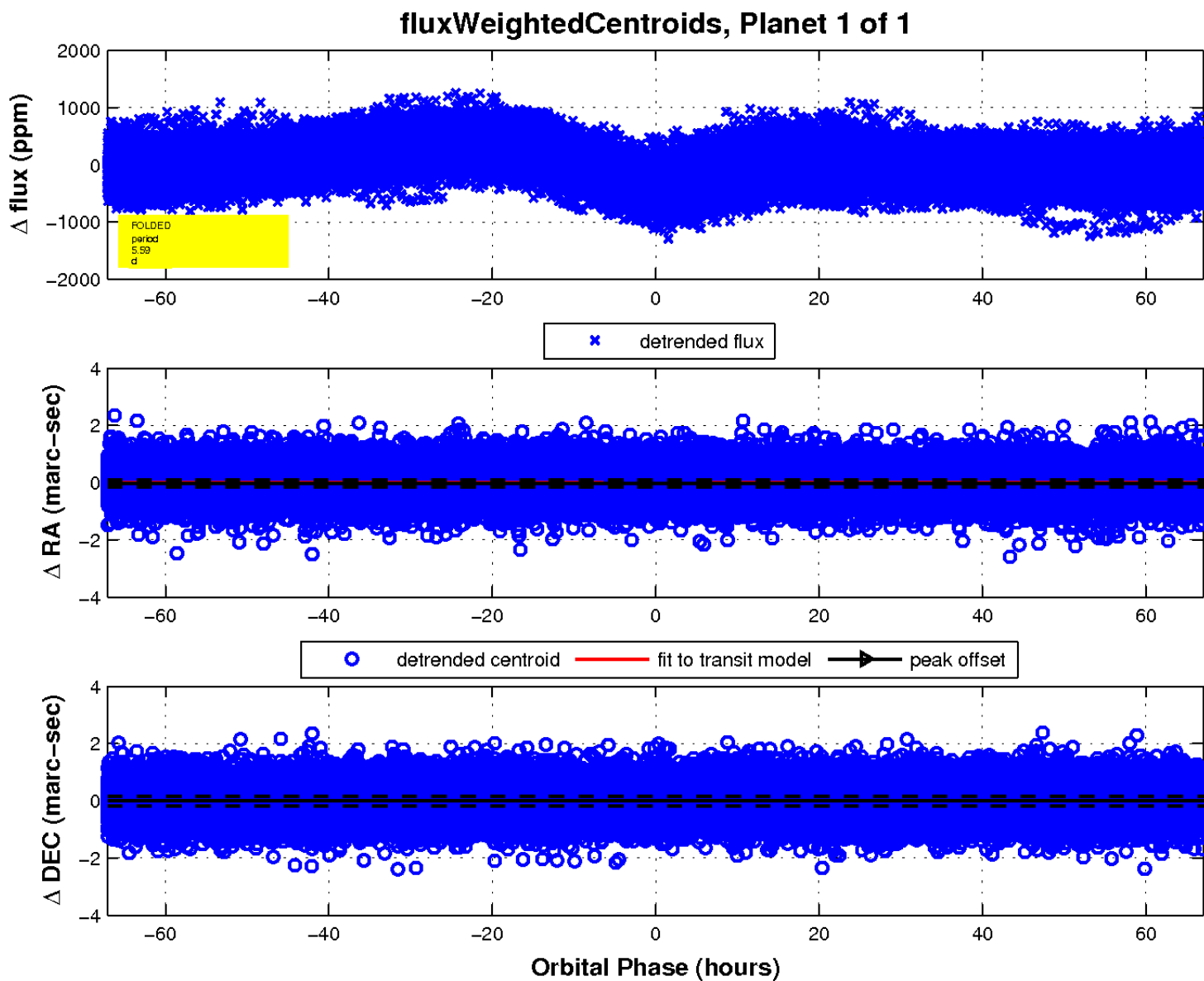
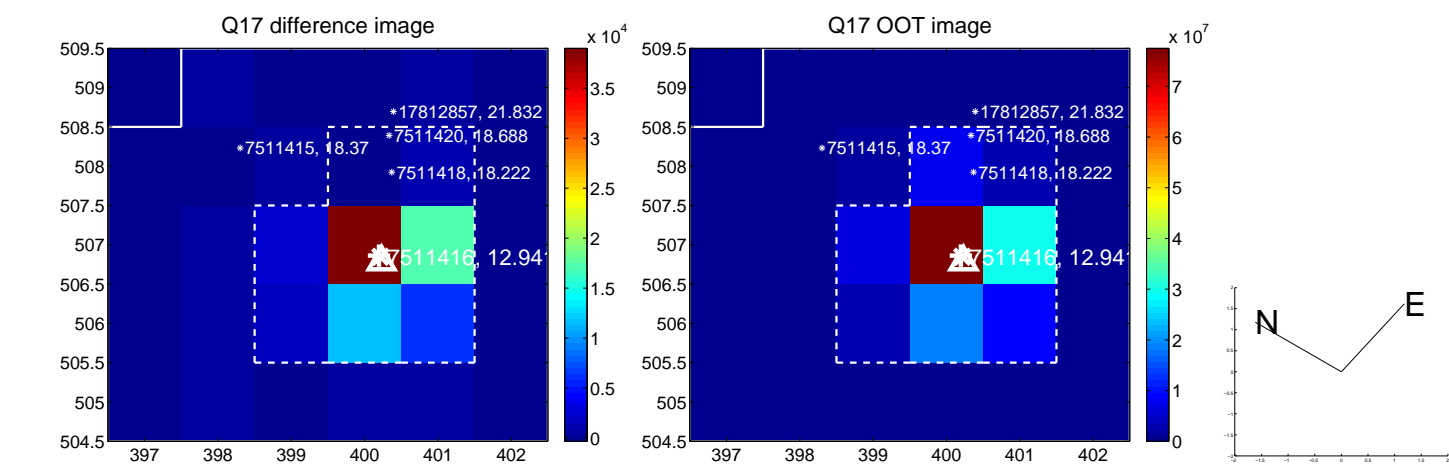
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

