

# KIC 006307000

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006307000-01	OBS	6687.01	1.002593	131.658777	115.3	1.436	8.4	9.6	0.74	4893	0.96	886.05

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006307000-01	OBS	PC	0.97	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.

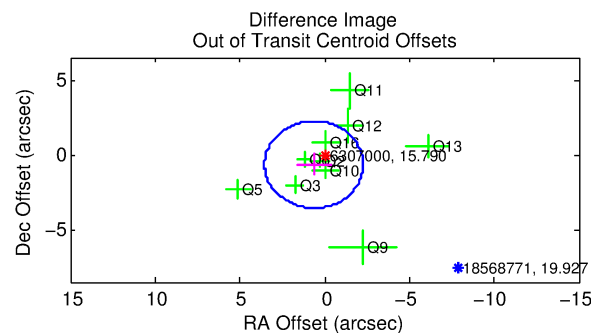
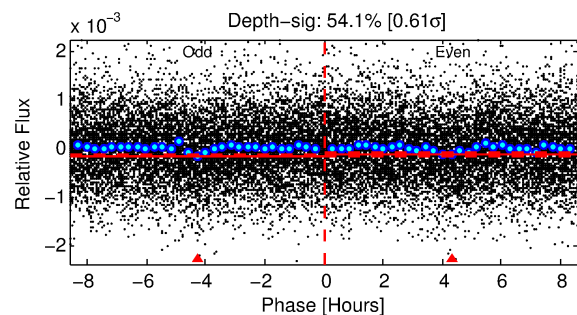
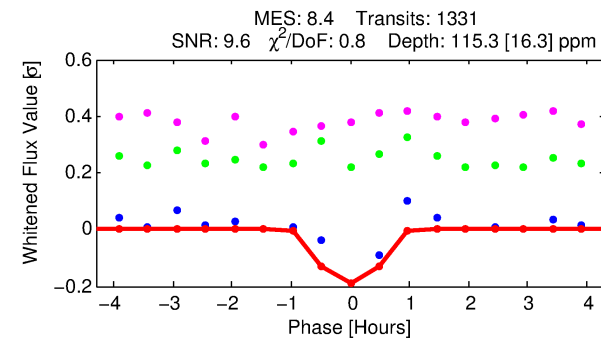
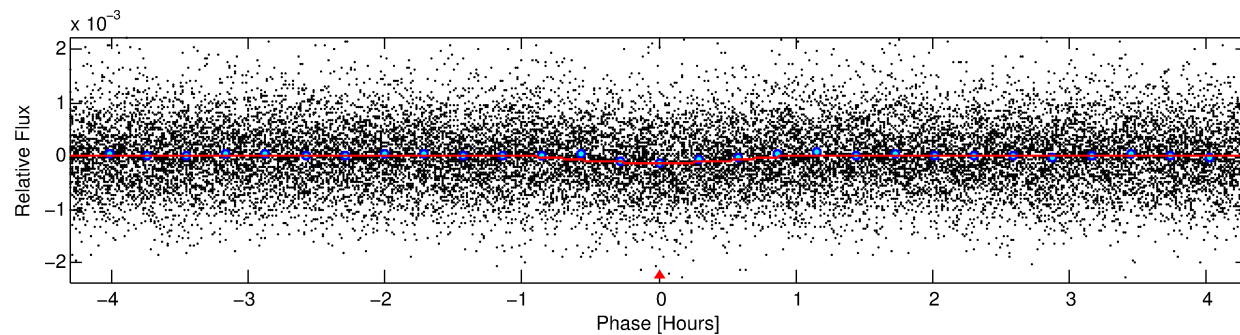
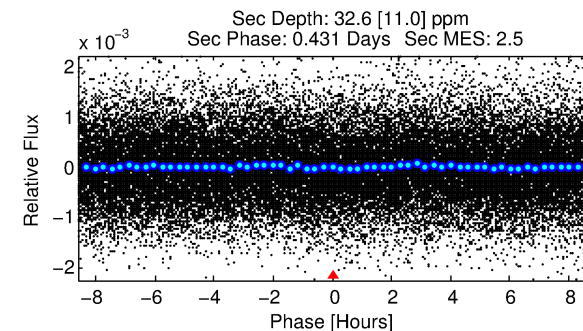
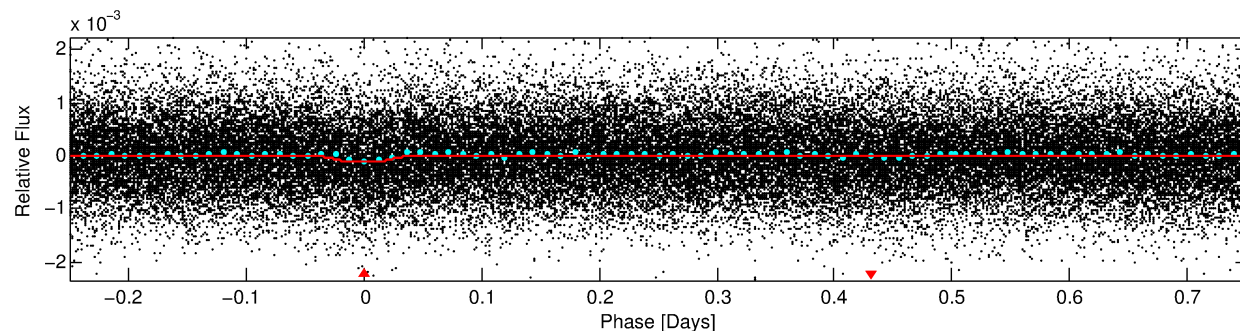
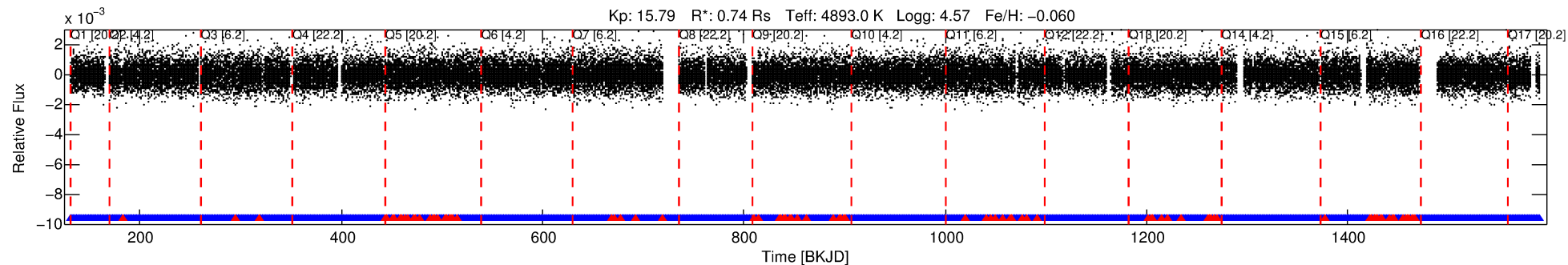
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006307000-01

No Significant Match Found

# DV One-Page Summary

KIC: 6307000 Candidate: 1 of 1 Period: 1.003 d  
KOI: K06687.01 Corr: 0.965



## DV Fit Results:

Period = 1.00259 [0.00001] d  
Epoch = 131.6588 [0.0023] BKJD  
Rp/R\* = 0.0119 [0.0125]  
a/R\* = 2.75 [9.58]  
b = 0.89 [0.99]  
Seff = 886.05 [145.83]  
Teq = 1391 [57] K  
Rp = 0.96 [1.01] Re  
a = 0.0178 [0.0013] AU  
Ag = 6.15 [13.03] [0.40σ]  
Teffp = 3387 [1796] K [1.11σ]

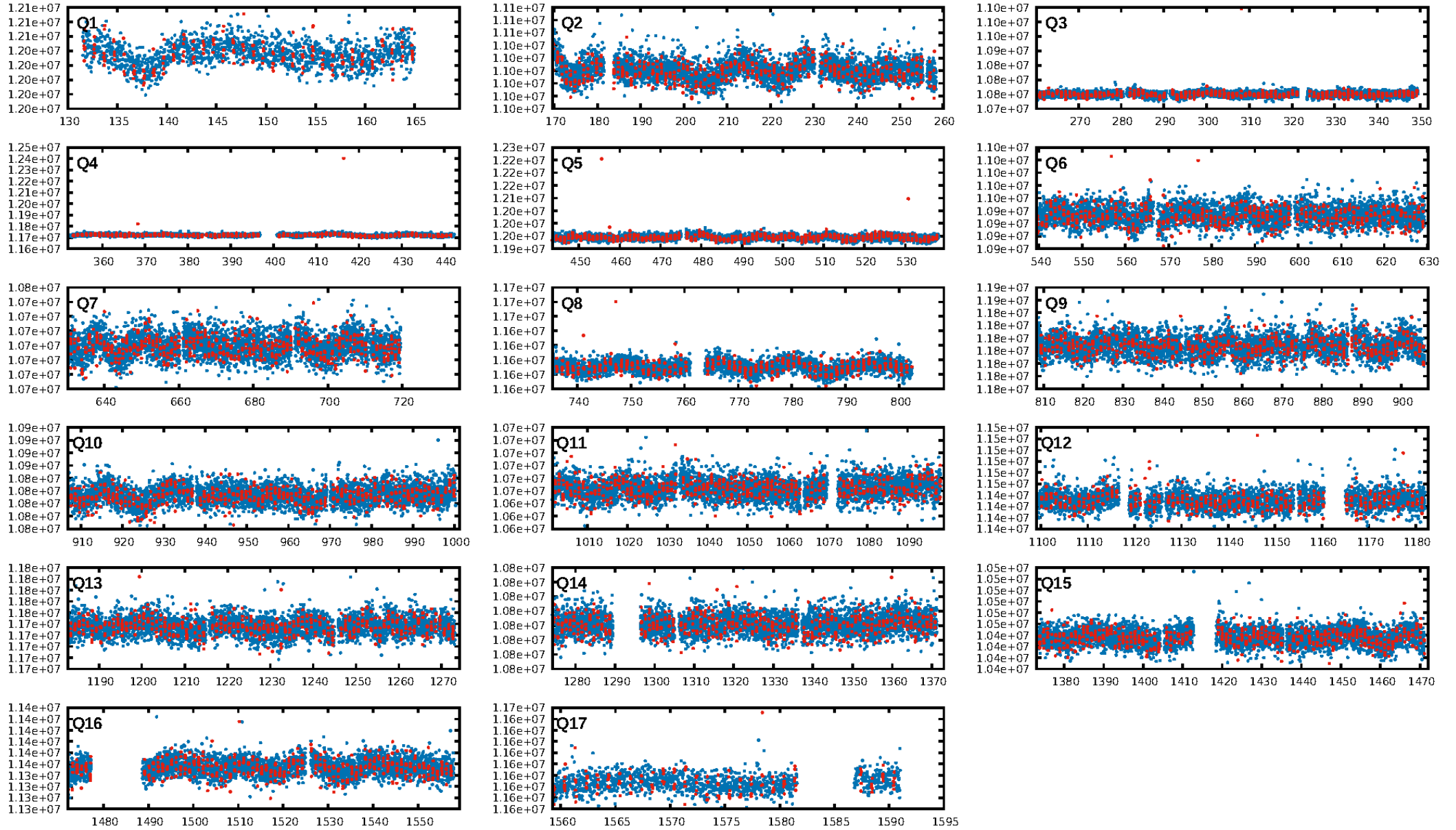
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.61e-17  
RollingBand-fgt: 0.93 [1181/1270]  
GhostDiagnostic-chr: 1.461  
Centroid-sig: 0.3%  
Centroid-so: 3.729 arcsec [2.18σ]  
OotOffset-rm: 0.924 arcsec [0.95σ]  
KicOffset-rm: 0.988 arcsec [1.16σ]  
OotOffset-st: 3/2/2/3 [10]  
KicOffset-st: 3/2/2/3 [10]  
DiffImageQuality-fgm: 0.40 [4/10]  
DiffImageOverlap-fno: 1.00 [17/17]

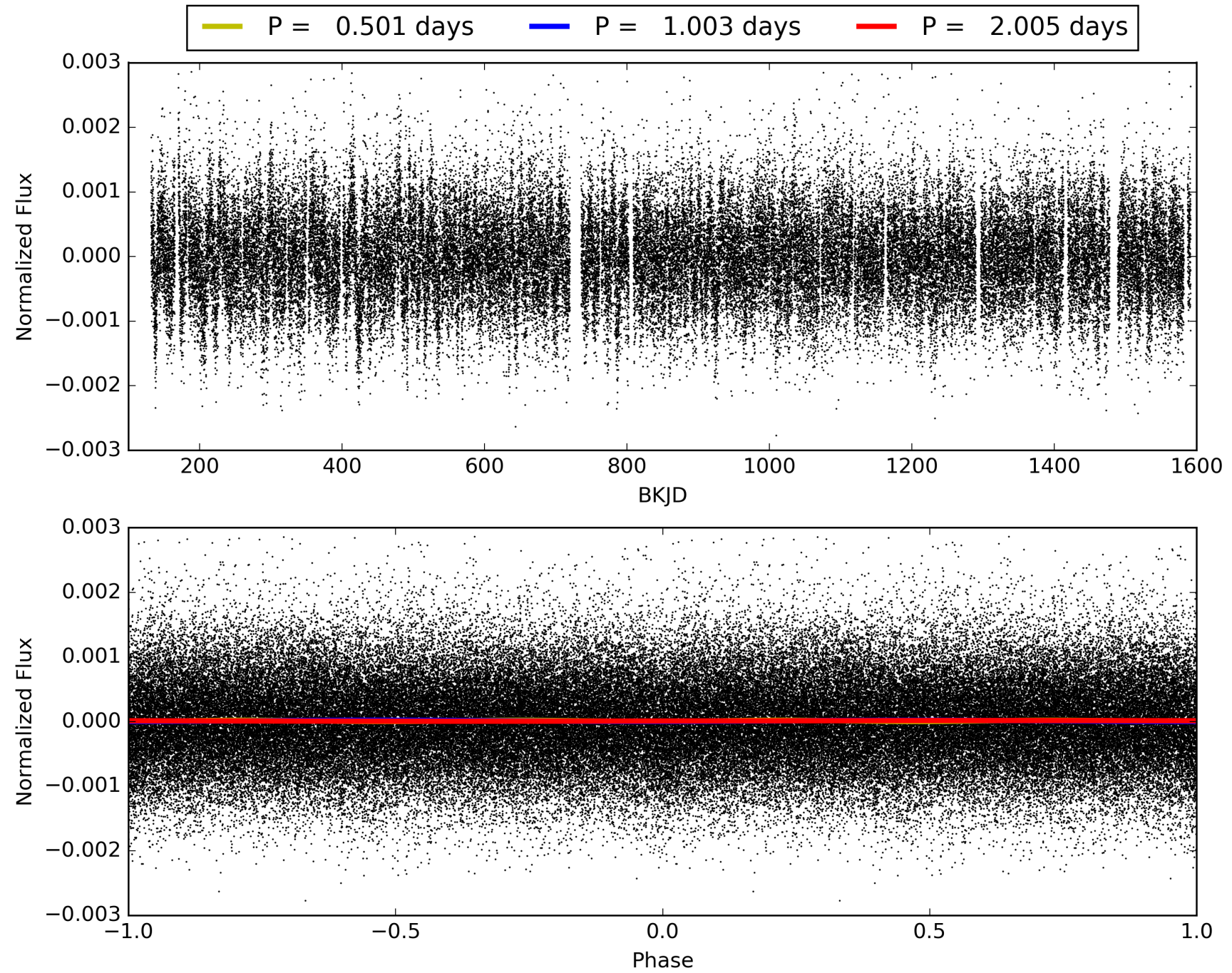
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 02:29:04 Z

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

# TCE 006307000-01, PDC Light Curves

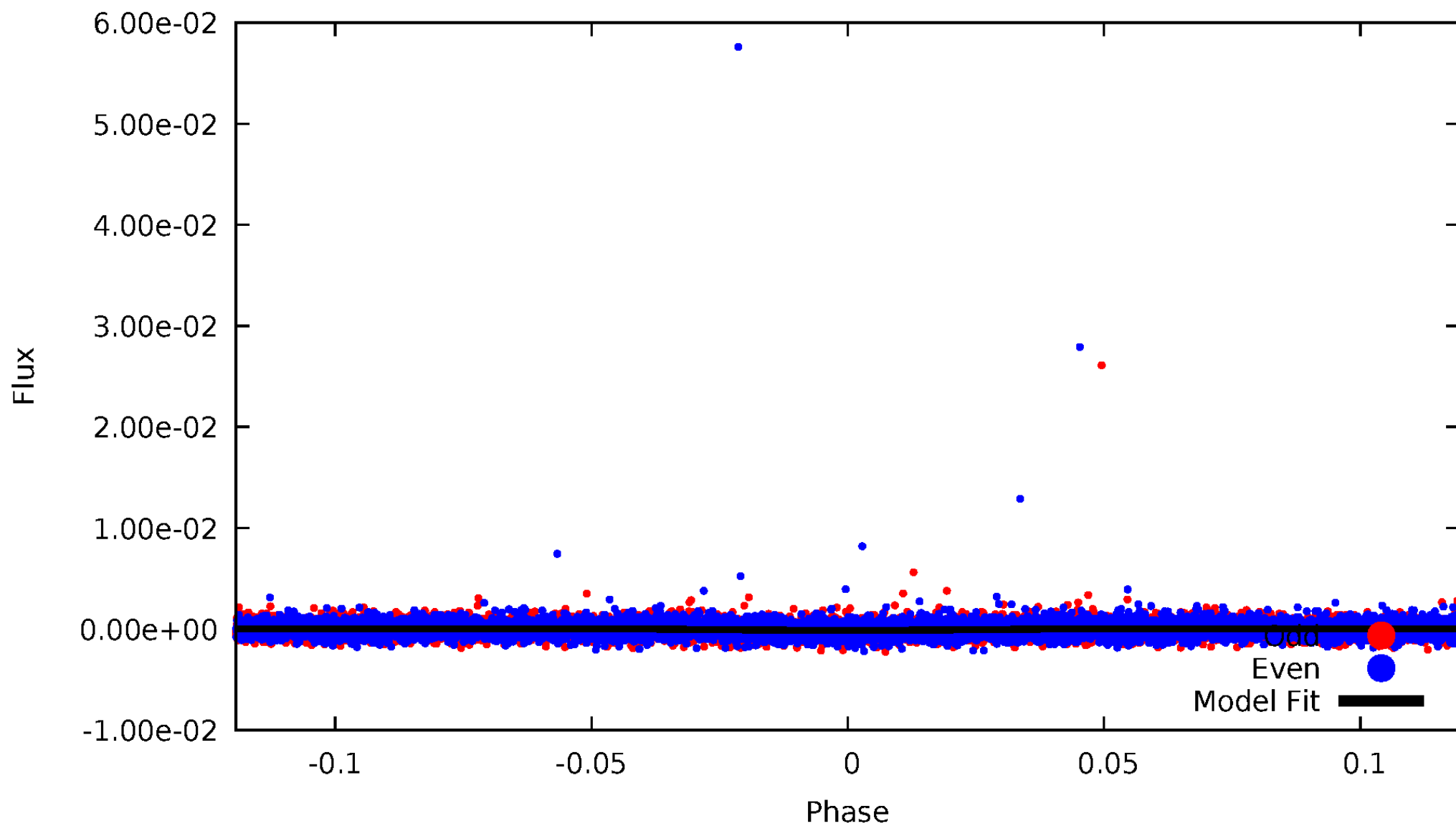


TCE 006307000-01



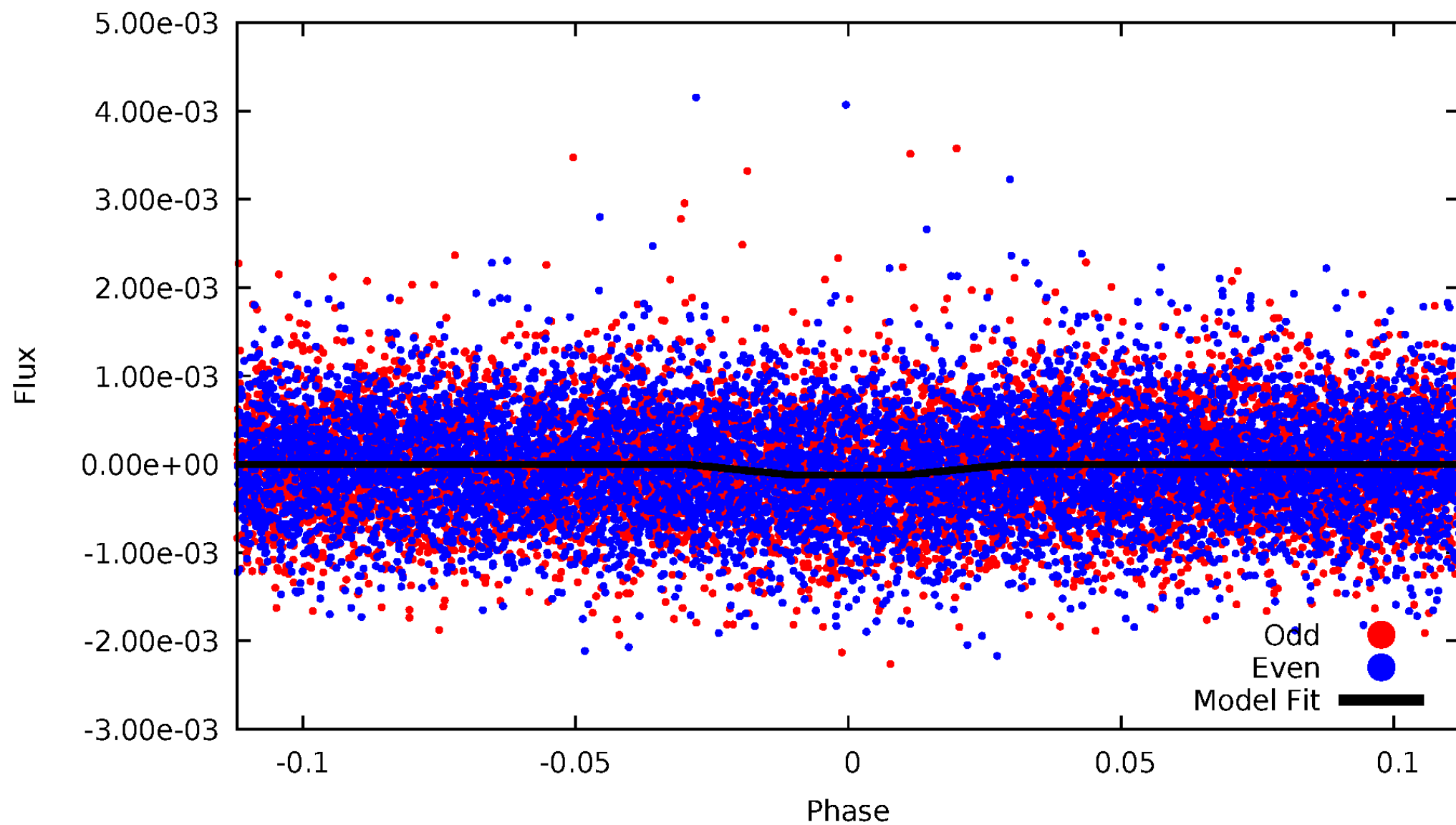
# DV Odd/Even

TCE 006307000-01



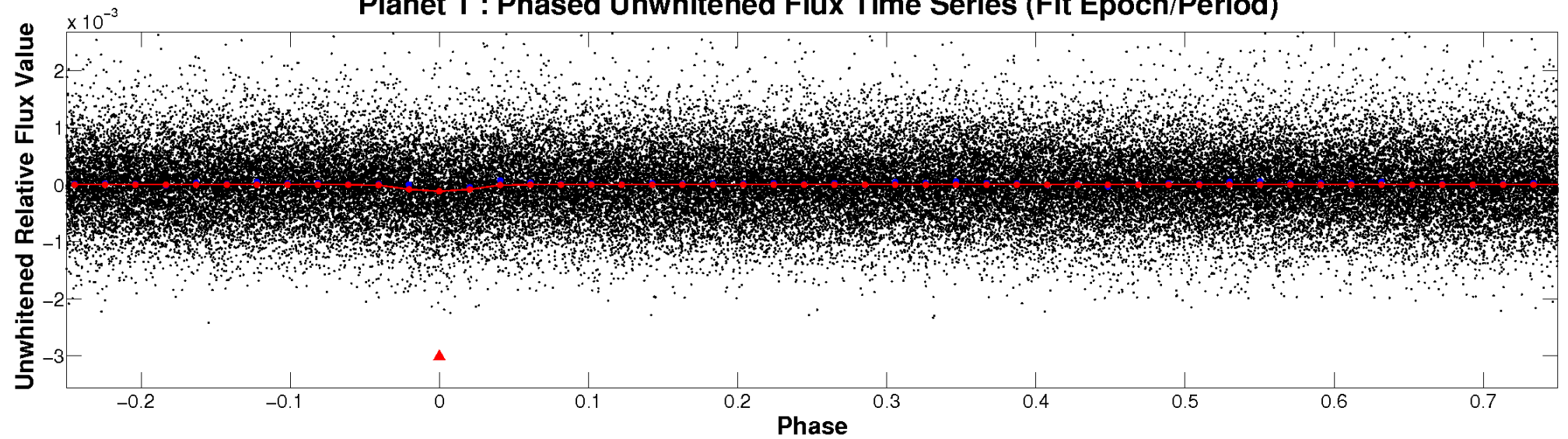
# ALT Odd/Even

TCE 006307000-01

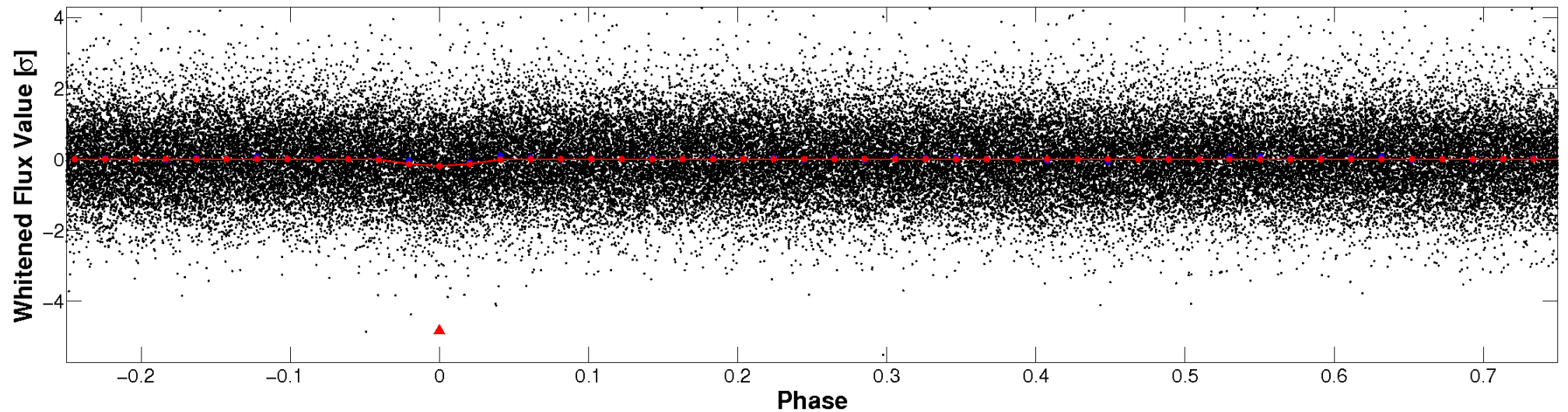


# Non-Whitened Vs. Whitened Light Curve

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

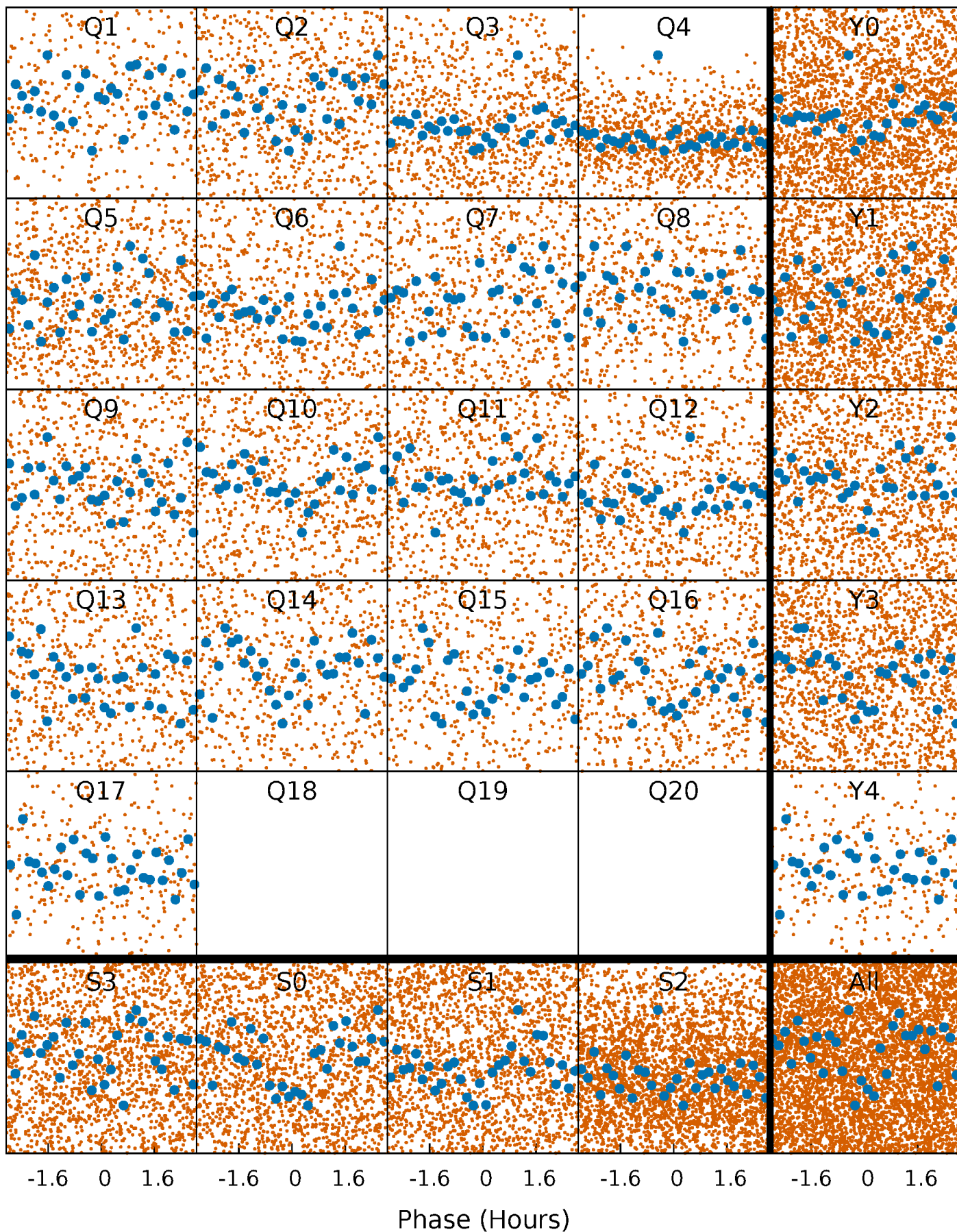


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



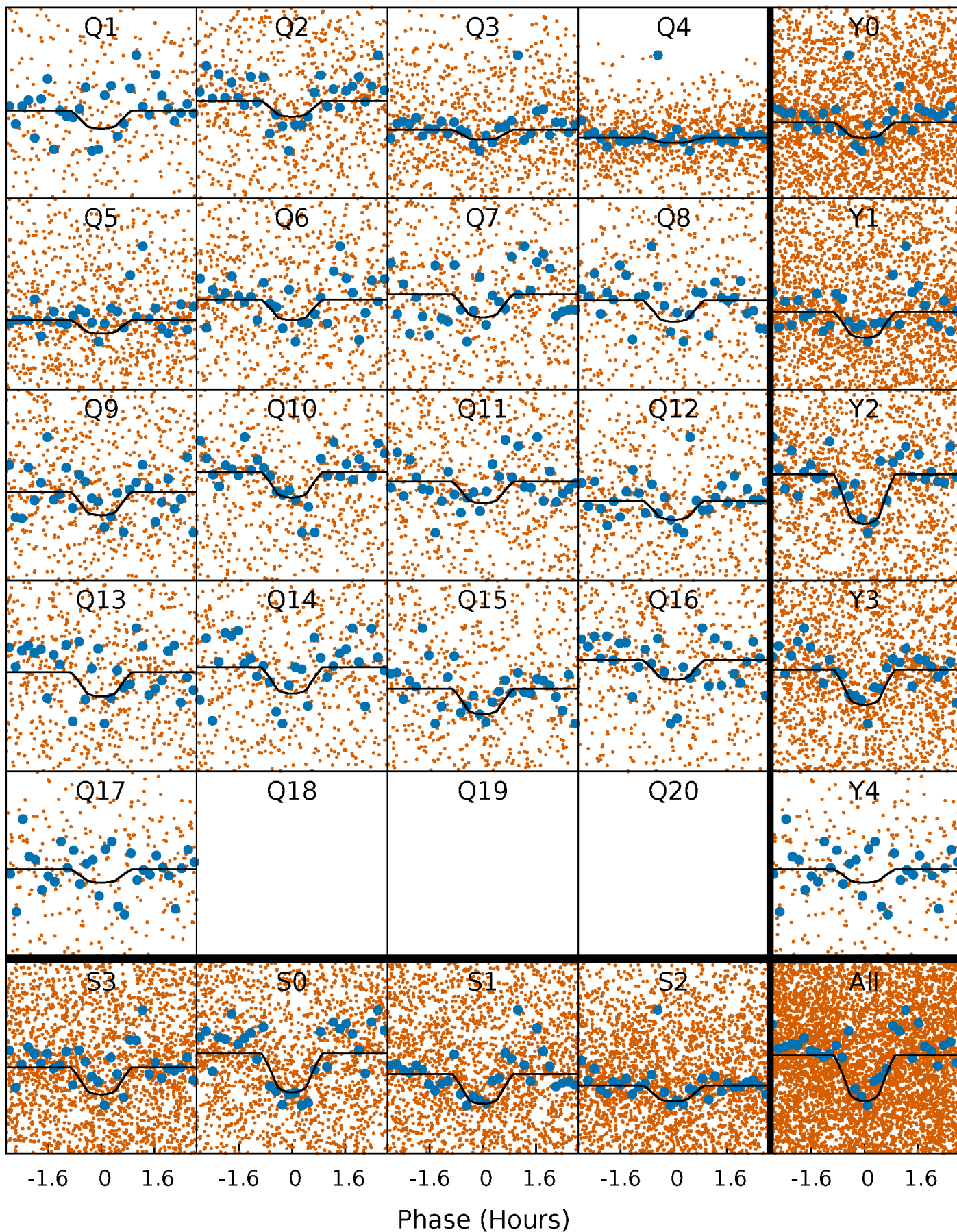
# PDC Quarter-Phased Transit Curves

TCE 006307000-01   P= 1.002593 Days    $T_0=131.658777$  (BKJD)



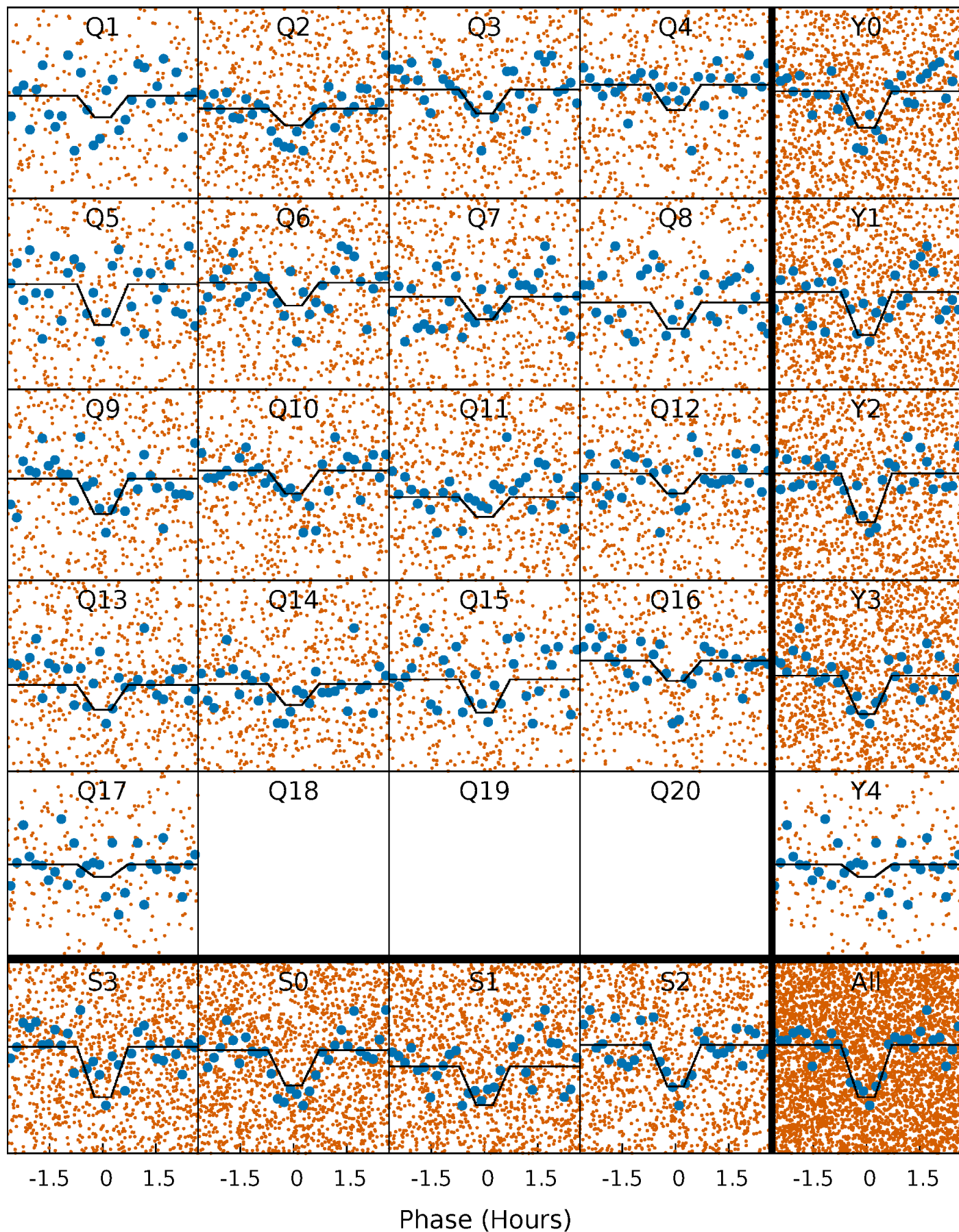
# DV Quarter-Phased Transit Curves

TCE 006307000-01 P= 1.002593 Days  $T_0=131.658777$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

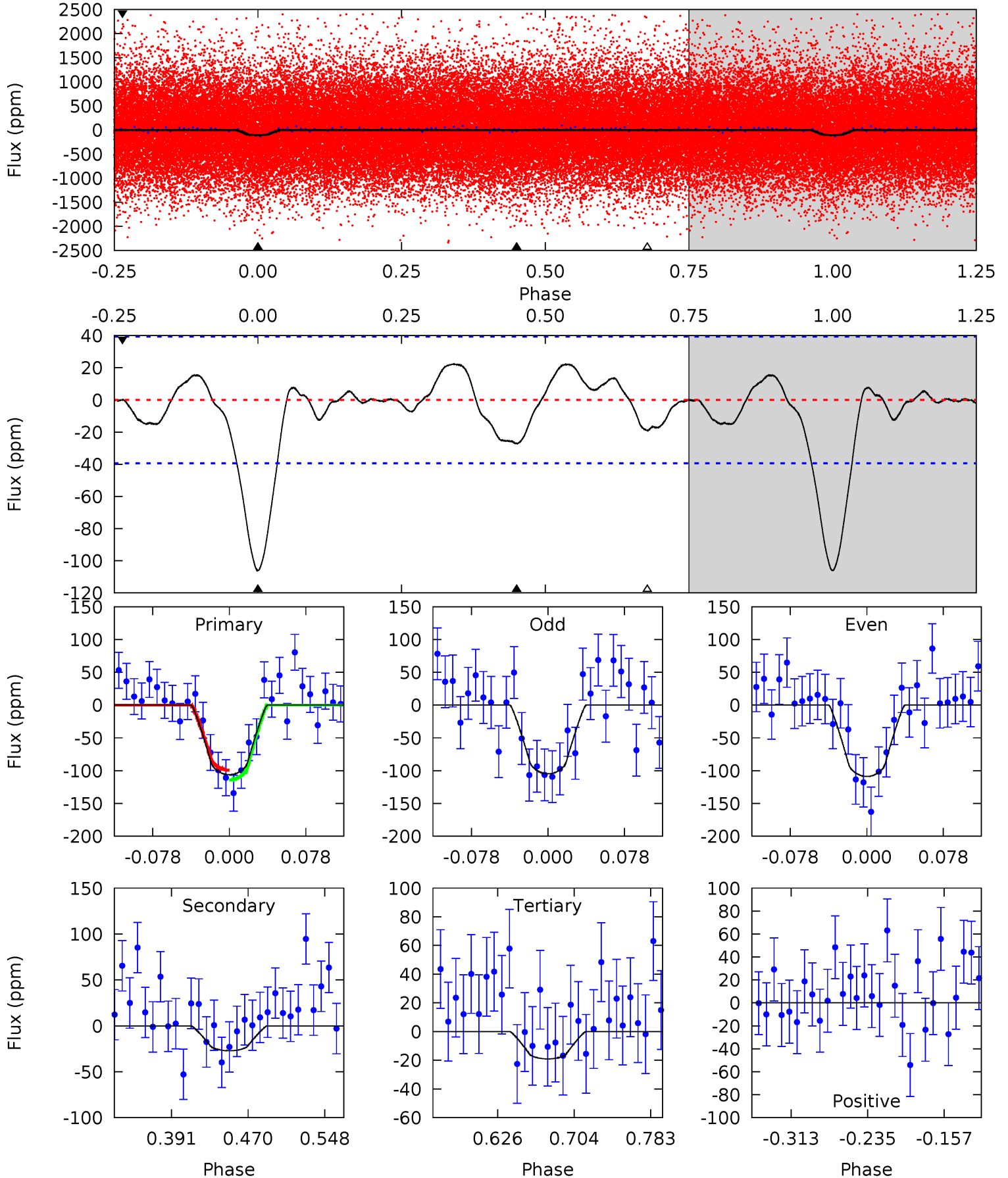
TCE 006307000-01 P= 1.002592 Days  $T_0=131.659122$  (BKJD)



# DV Model-Shift Uniqueness Test

006307000-01, P = 1.002593 Days, E = 130.656184 Days

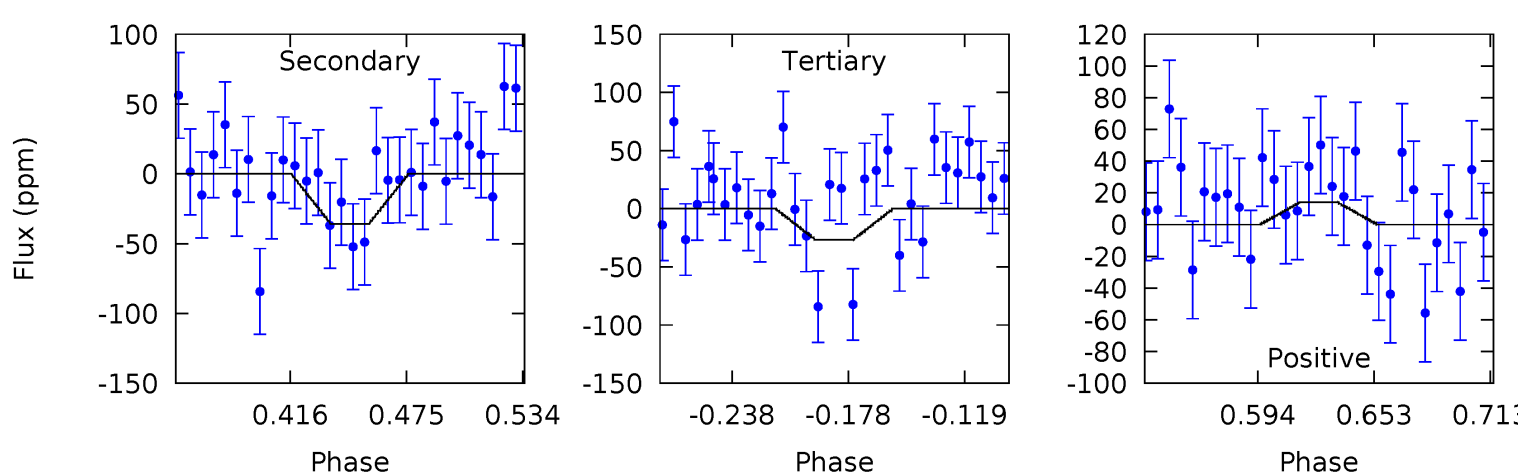
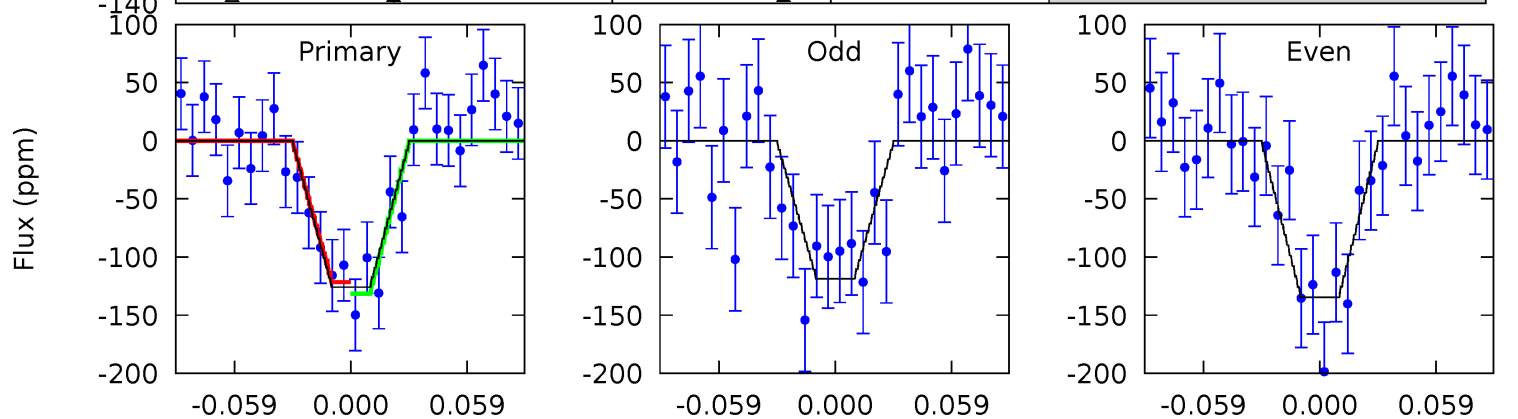
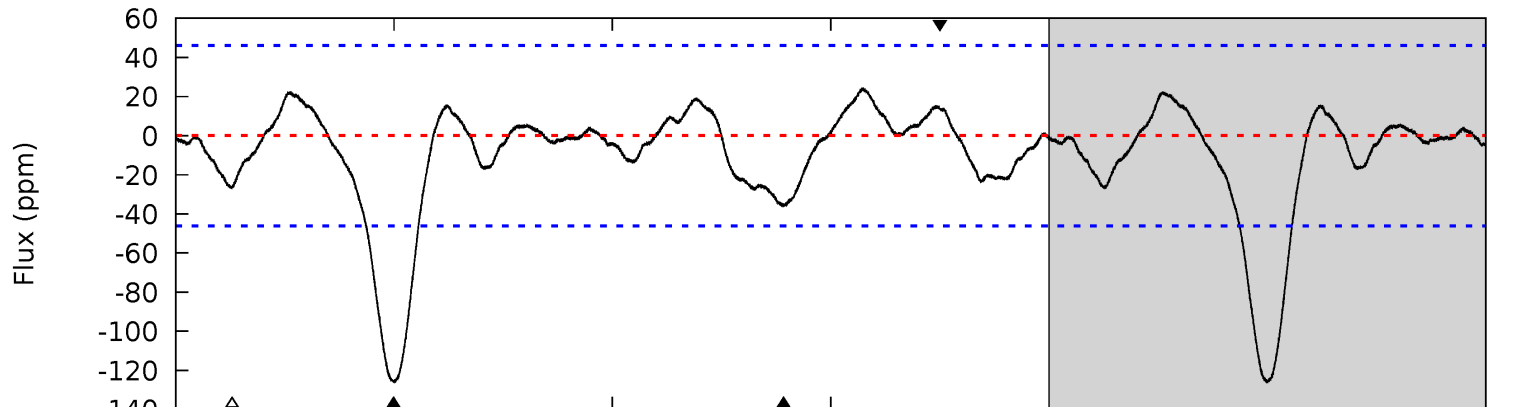
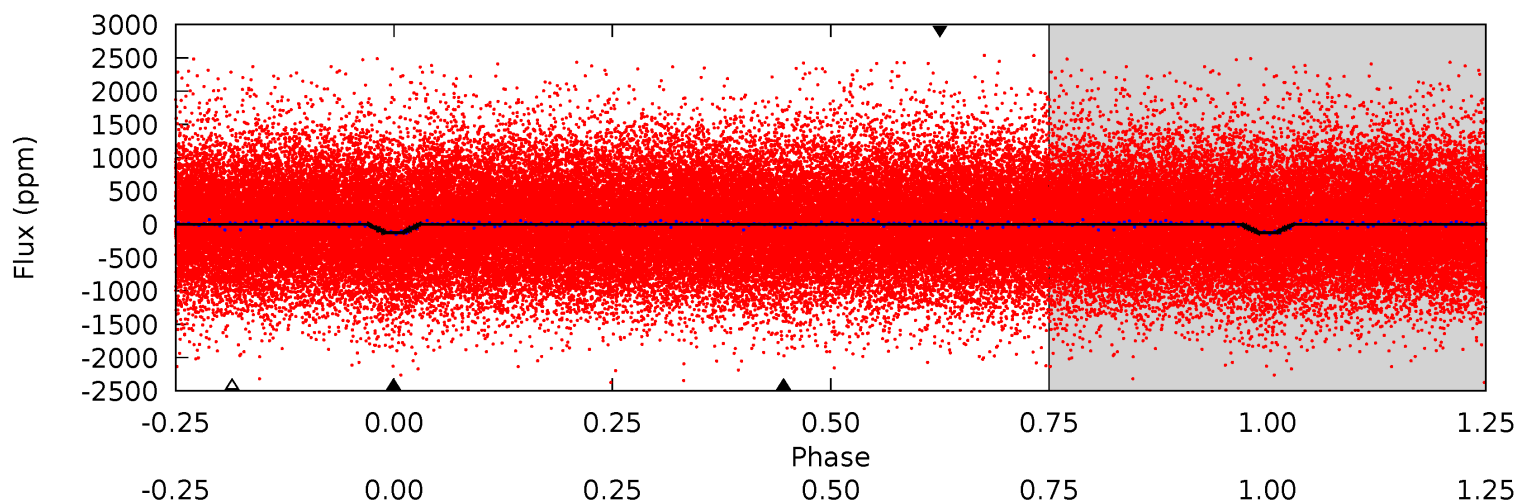
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.4	3.18	2.24	0.01	4.62	1.76	1.27	10.2	12.4	0.95	3.17	0.24	0.76	0.17	0.88



# Alt Model-Shift Uniqueness Test

006307000-01, P = 1.002592 Days, E = 130.656530 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
12.7	3.64	2.70	1.42	4.67	1.89	1.18	10.0	11.3	0.94	2.22	0.81	0.99	0.16	0.51



### Stellar Parameters For KIC 006307000

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$4893^{+161}_{-161}$	$4.574^{+0.050}_{-0.045}$	$-0.060^{+0.300}_{-0.300}$	$0.739^{+0.062}_{-0.069}$	$0.746^{+0.075}_{-0.061}$	$2.602^{+0.626}_{-0.421}$
	+3%/-3%	+1%/-1%	+500%/-500%	+8%/-9%	+10%/-8%	+24%/-16%
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 006307000-01 / KOI 6687.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-27 \pm 9$	$1.18^{+0.95}_{-0.80}$	$1945^{+79}_{-76}$	$3340^{+1690}_{-617}$	$3.422^{+29.852}_{-2.387}$
Alt.	$-36 \pm 10$	$1.15^{+0.89}_{-0.74}$	$1943^{+79}_{-72}$	$3539^{+1601}_{-634}$	$4.876^{+30.859}_{-3.439}$

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

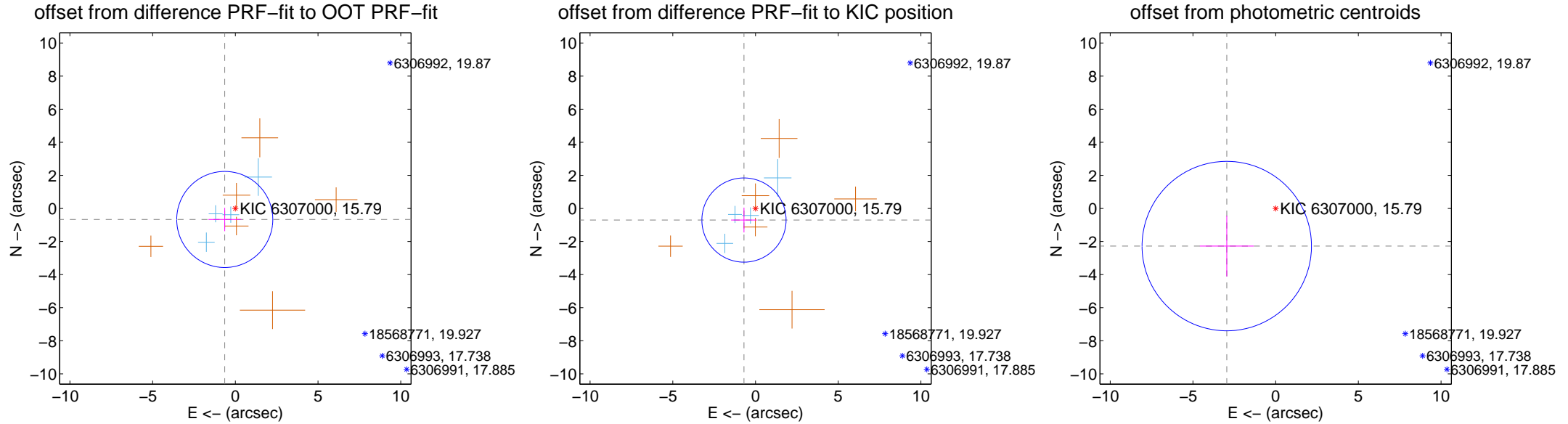
## DV Centroid Data

Supplemental centroid analysis for 006307000-01. Kepler magnitude: 15.79. Transit SNR 9.63

There are 4 quarters with good PRF difference image offsets

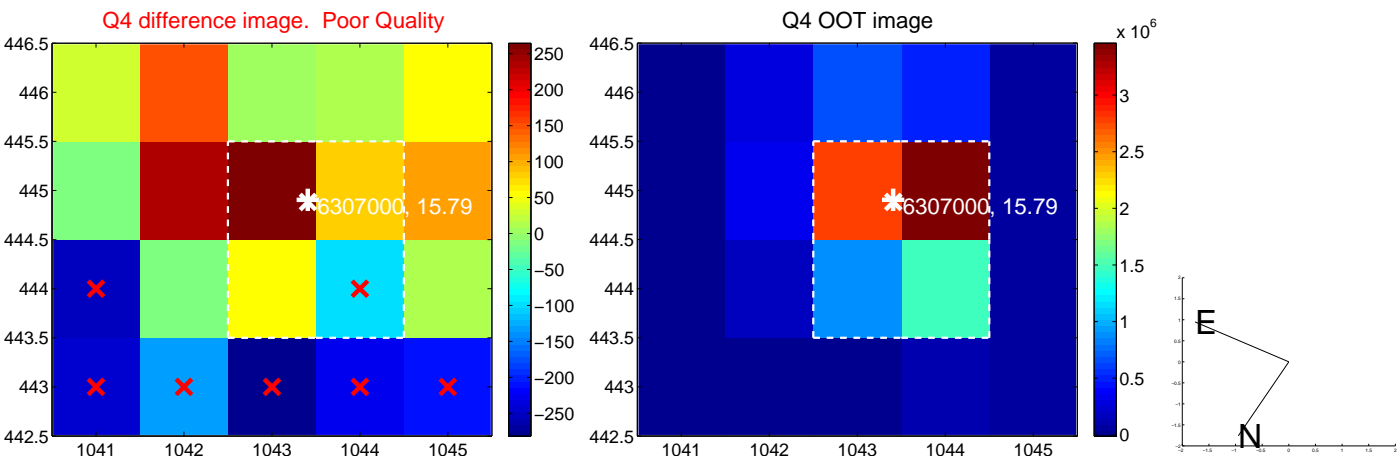
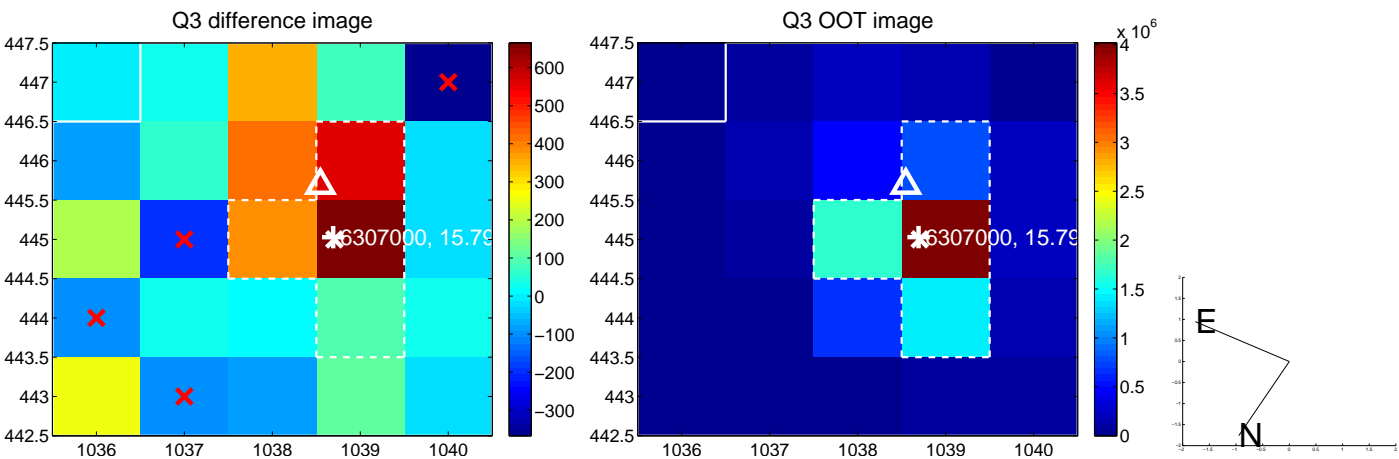
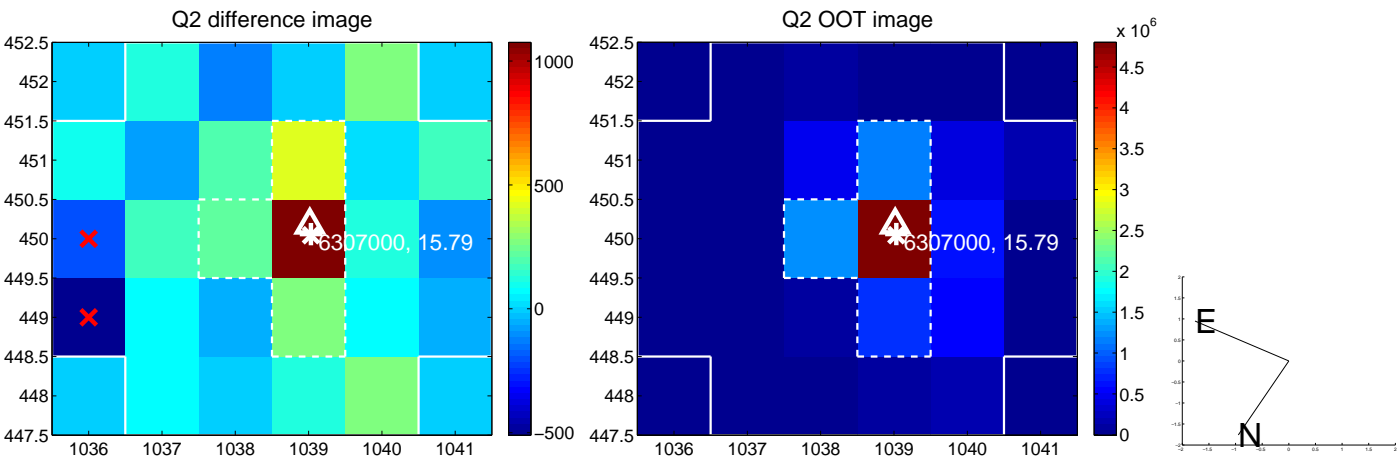
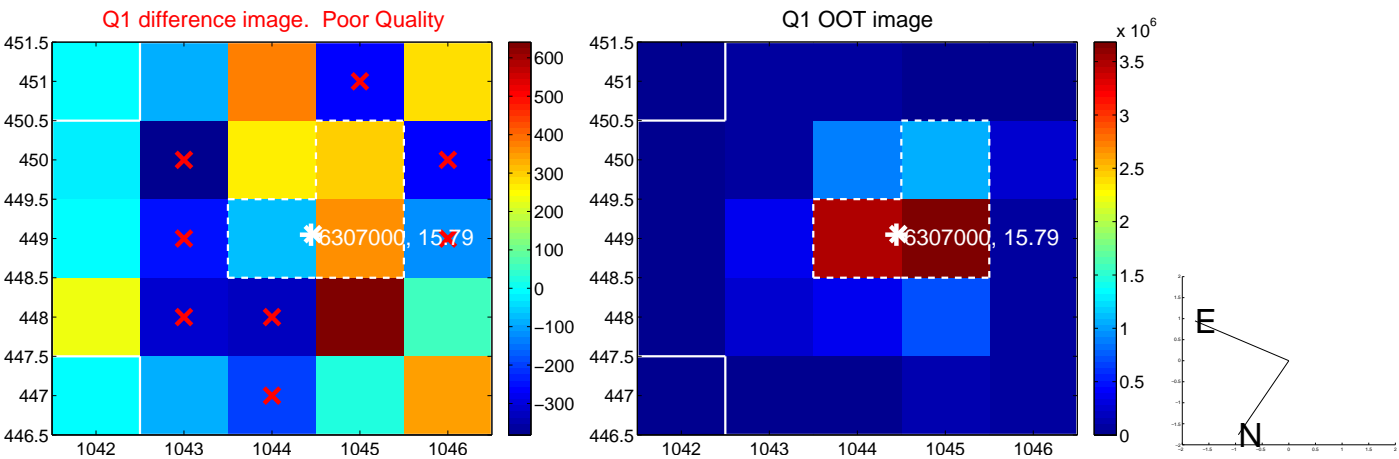
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.924 \pm 0.968$	0.95	$0.639 \pm 0.987$	$-0.667 \pm 0.706$
PRF-fit source offset from KIC position	$0.988 \pm 0.848$	1.16	$0.696 \pm 0.781$	$-0.702 \pm 0.747$
photometric centroid source offset	$3.73 \pm 1.71$	2.18	$2.95 \pm 1.62$	$-2.28 \pm 1.84$

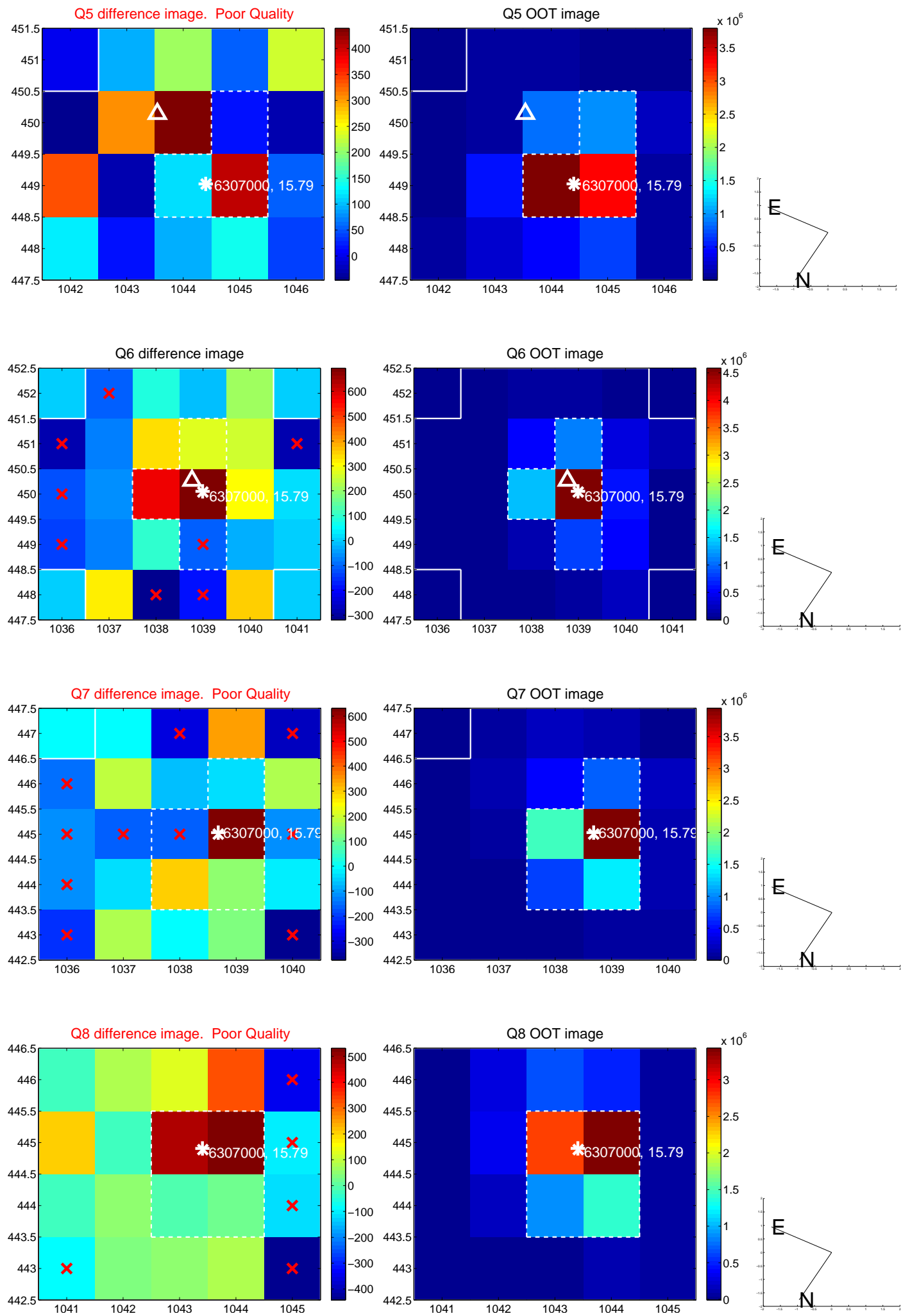


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

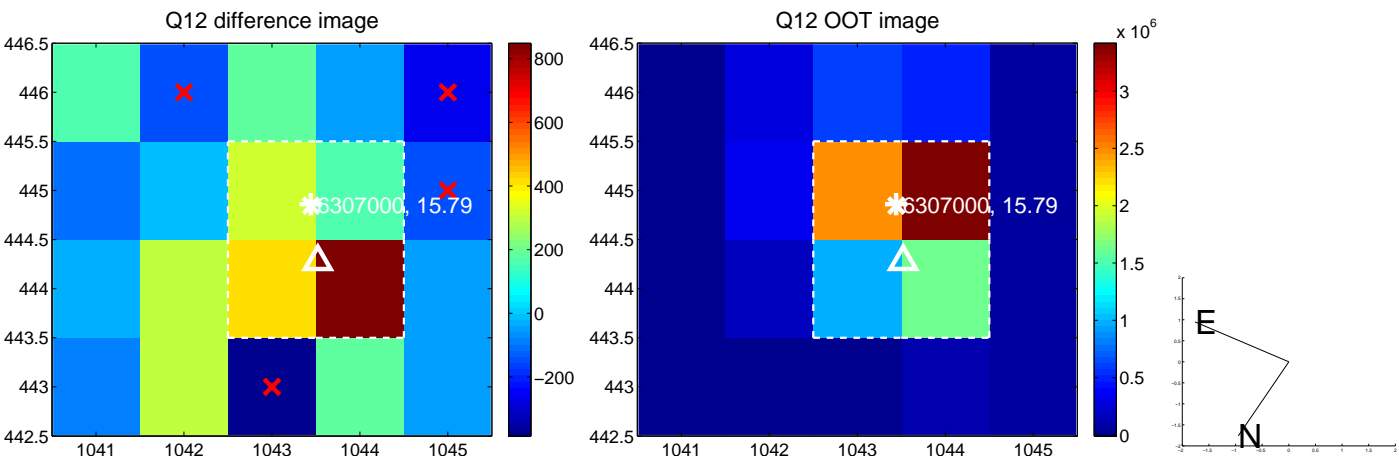
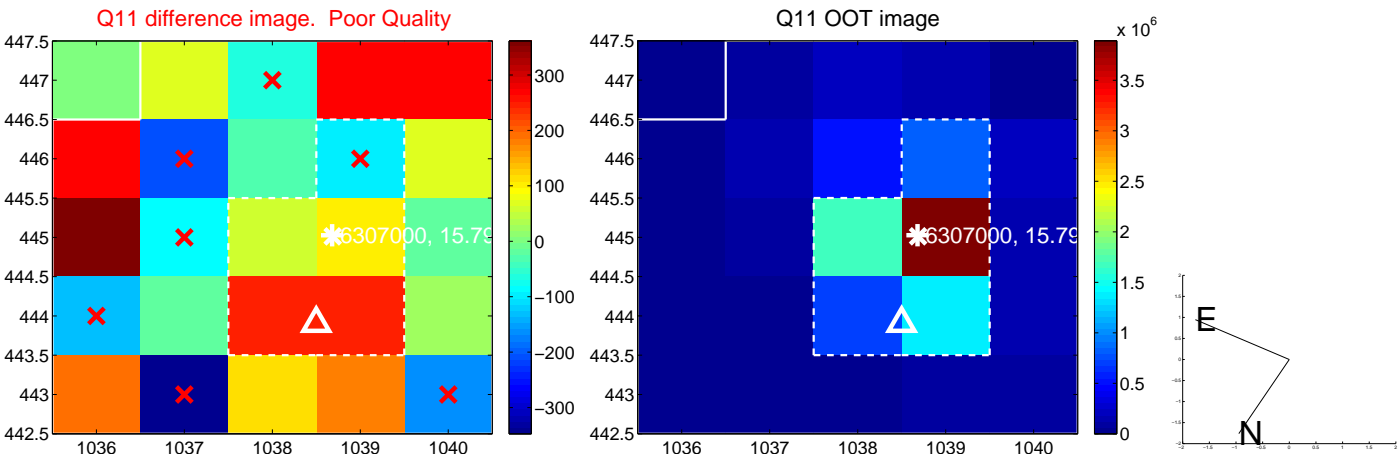
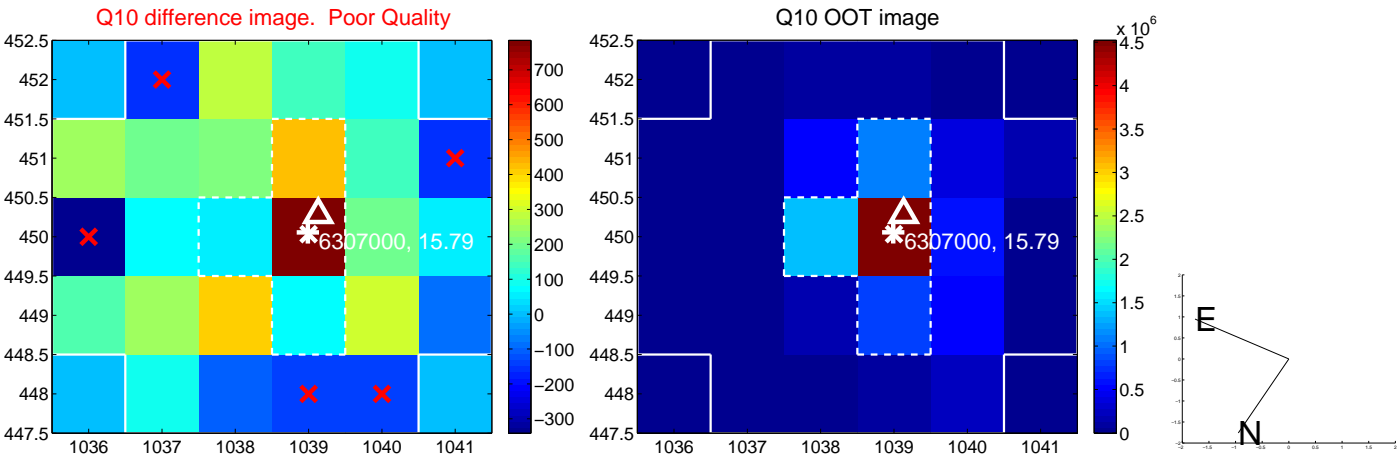
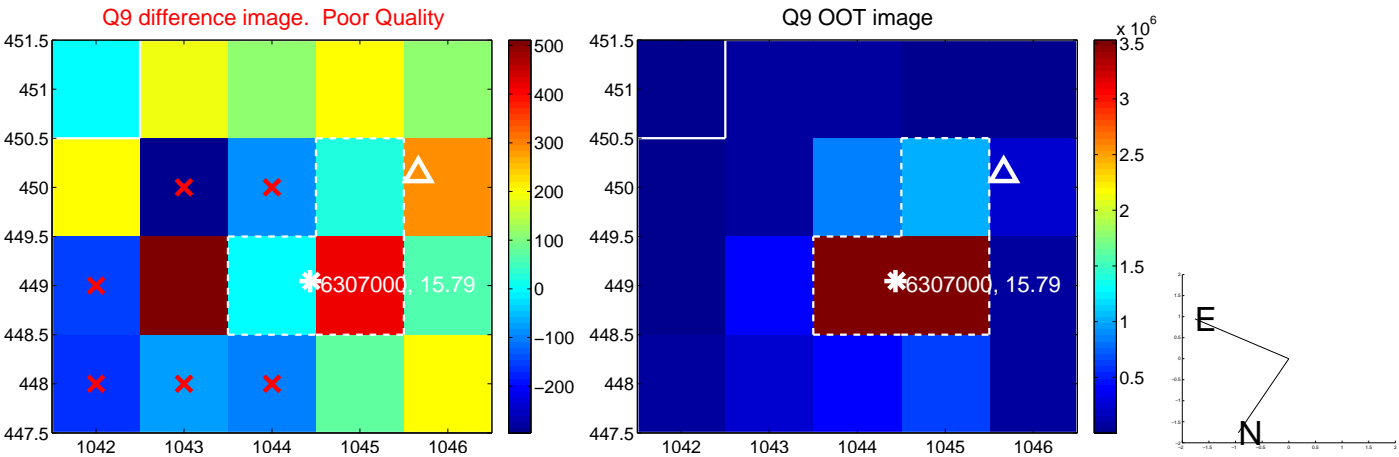
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



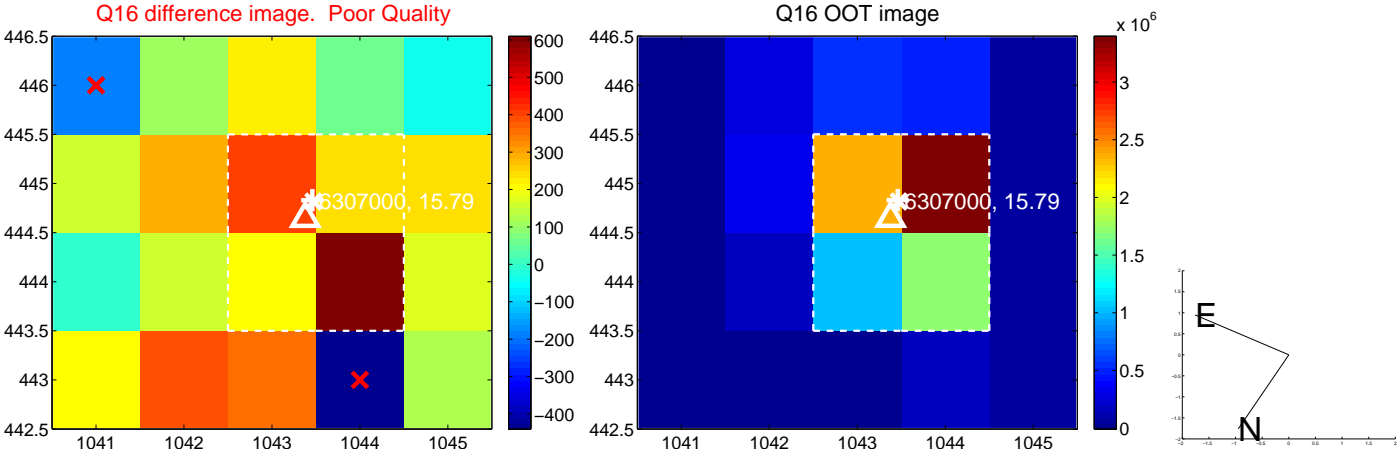
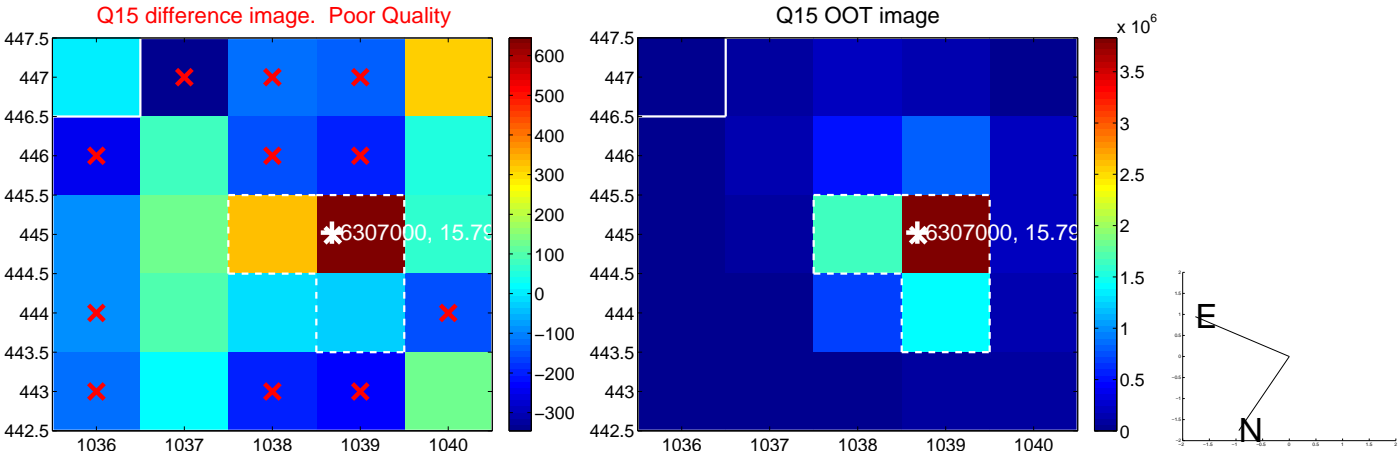
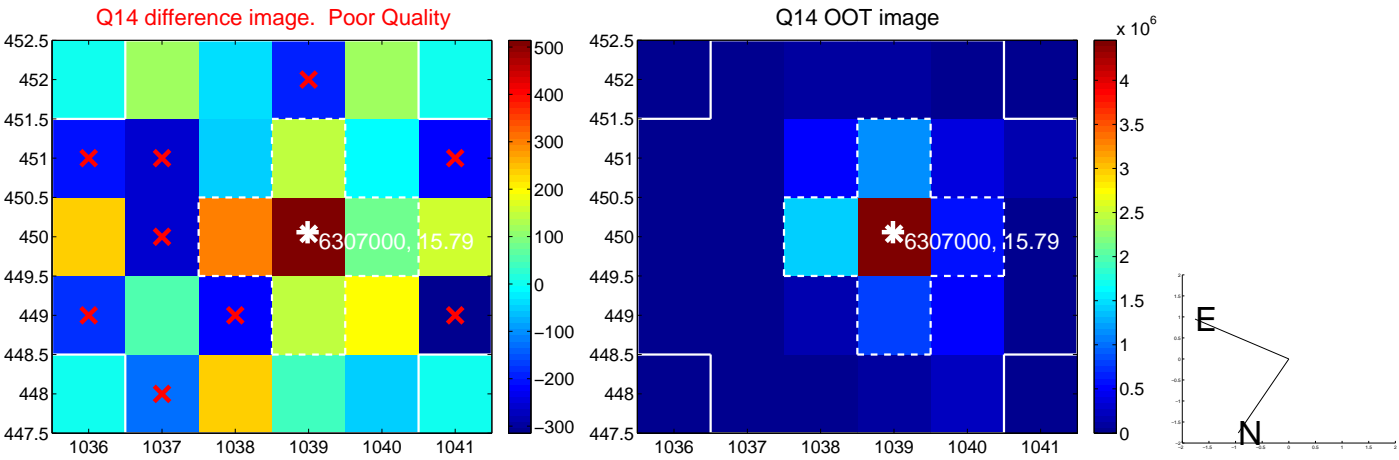
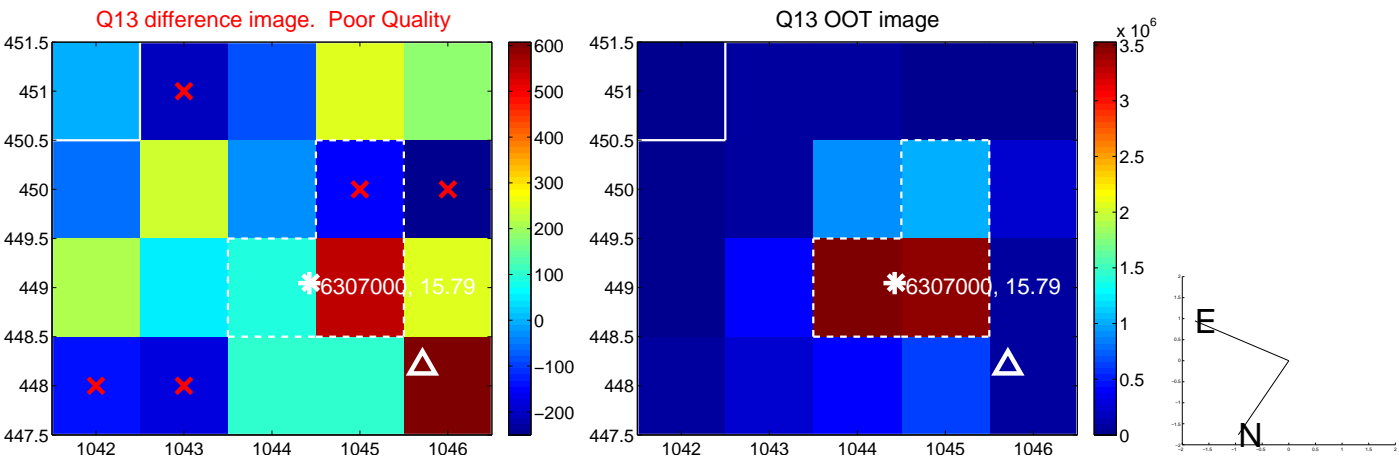
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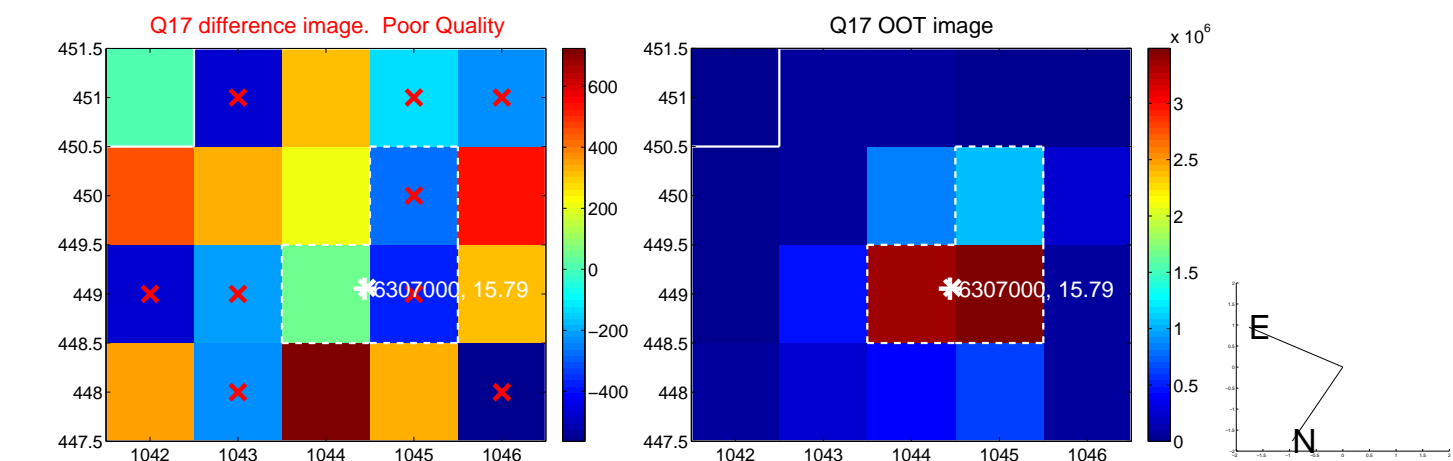
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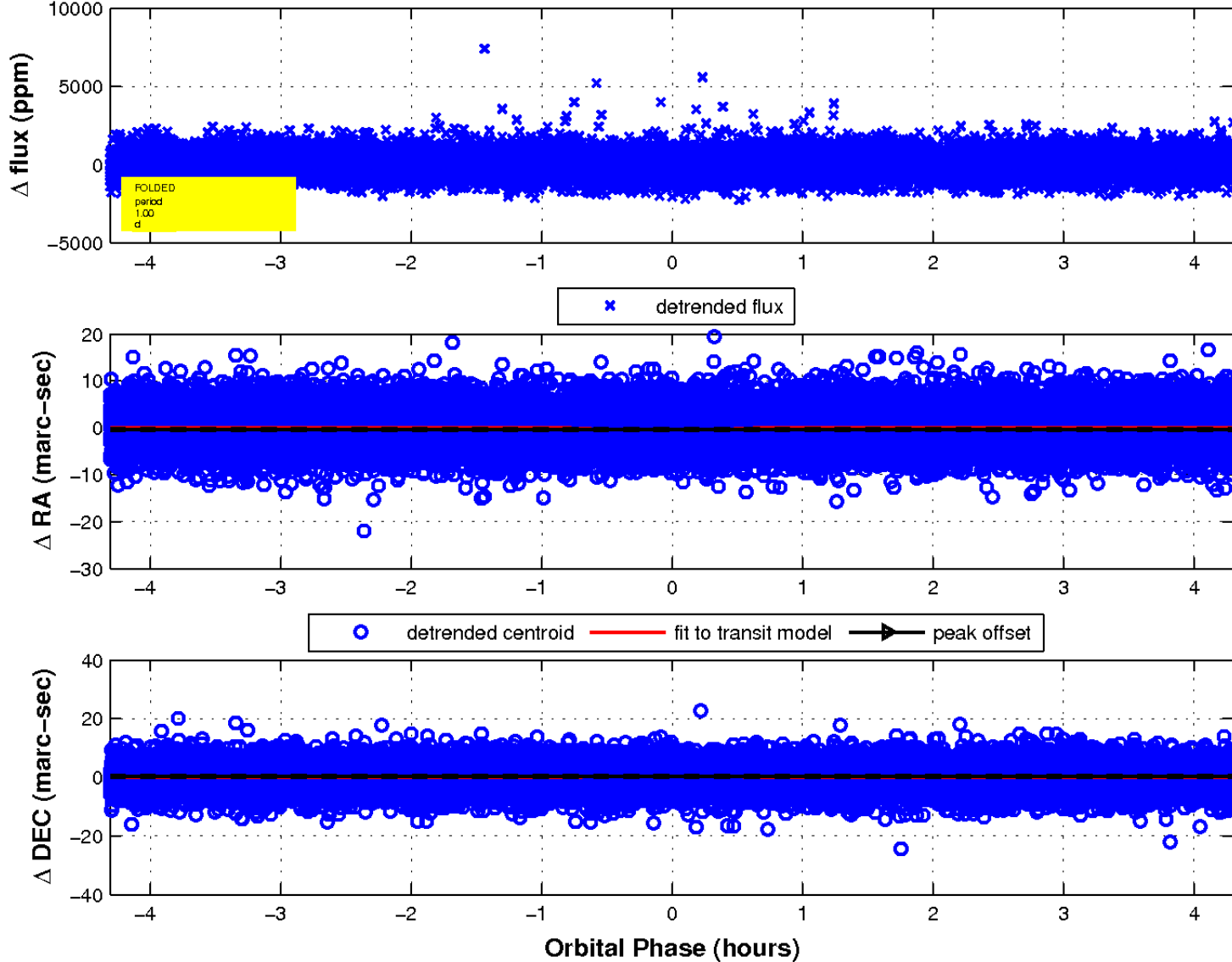
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

