

# KIC 007117549

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R <sub>★</sub> (R <sub>☉</sub> )	T <sub>★</sub> (K)	R <sub>p</sub> (R <sub>⊕</sub> )	S <sub>p</sub> (S <sub>⊕</sub> )
007117549-01	OBS	4874.01	0.566736	131.880913	5.0	4.477	9.1	1.9	1.09	6403	0.25	9130.06

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007117549-01	OBS	FP	0.00	1	0	0	1	LPP_DV—CENT_FEW_DIFFS—EPHEM_MATCH

**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.

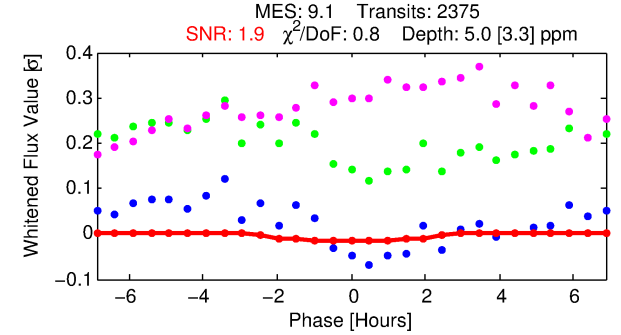
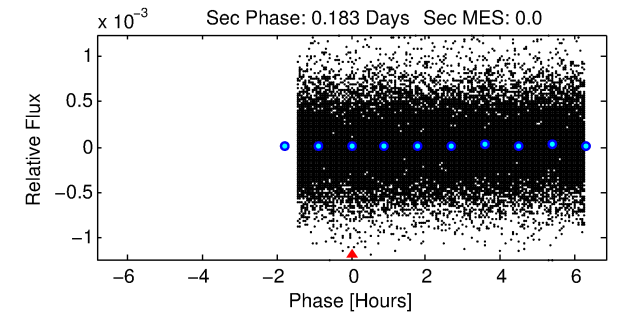
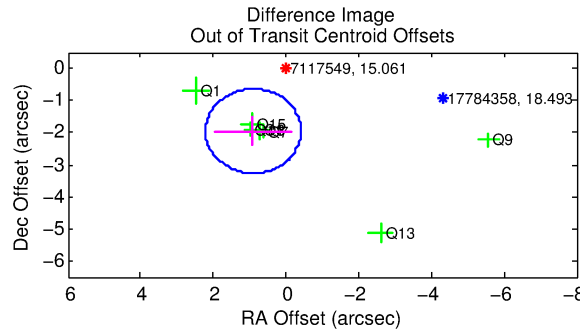
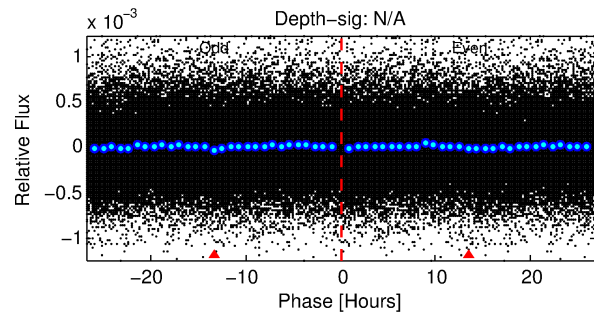
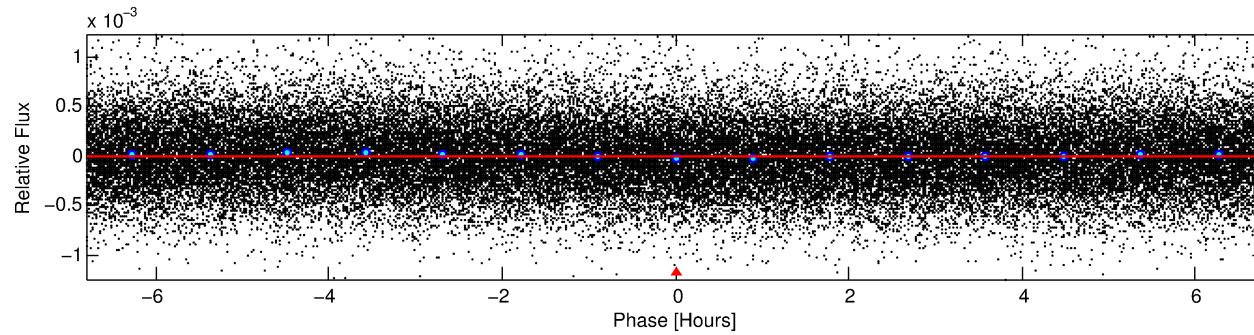
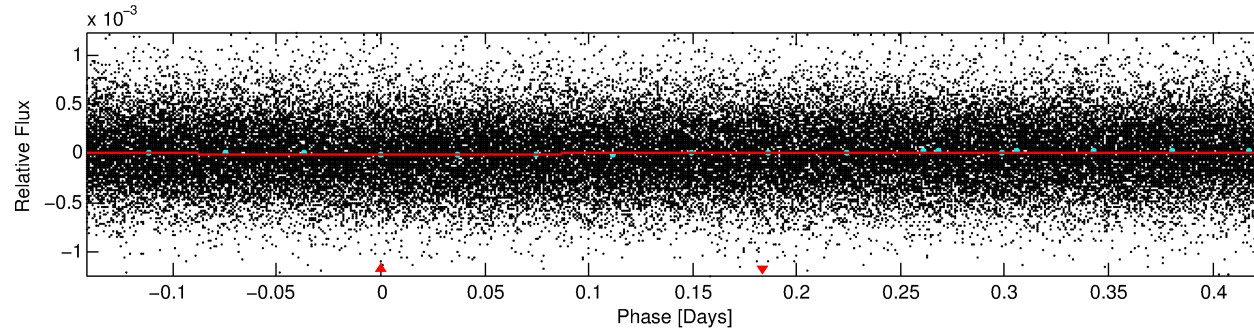
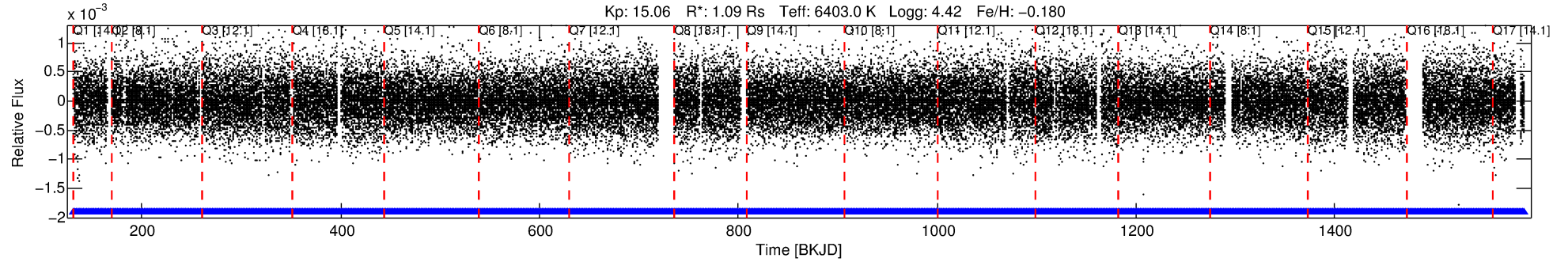
## Ephemeris Match Information For 007117549-01

TCE (1)	KIC	Parent (2)	Parent KIC	P <sub>1</sub> :P <sub>2</sub>	Dist (″)	ΔRow	ΔCol	m <sub>2</sub>	m <sub>1</sub>	D <sub>2</sub> /D <sub>1</sub>	Mechanism	Flag	σ <sub>P</sub>	σ <sub>T</sub>
007117549-01	7117549	RR-Lyr-pri	7198959	1:1	1027.3	208	152	7.86	15.06	124660.00	Direct-PRF	0	2.30	20.39

**Notes:** P<sub>1</sub>:P<sub>2</sub> is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m<sub>2</sub> and m<sub>1</sub> are the magnitudes of the parent and child. D<sub>2</sub>/D<sub>1</sub> is the parent's transit depth divided by the child's. σ<sub>P</sub> and σ<sub>T</sub> are the significance of the match in period and epoch. For a match to be considered significant σ<sub>P</sub> < 5.0 and σ<sub>T</sub> < 5.0. Matches which have σ<sub>P</sub> and σ<sub>T</sub> very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 7117549 Candidate: 1 of 1 Period: 0.567 d  
KOI: K04874 Corr: No Ephemeris Match



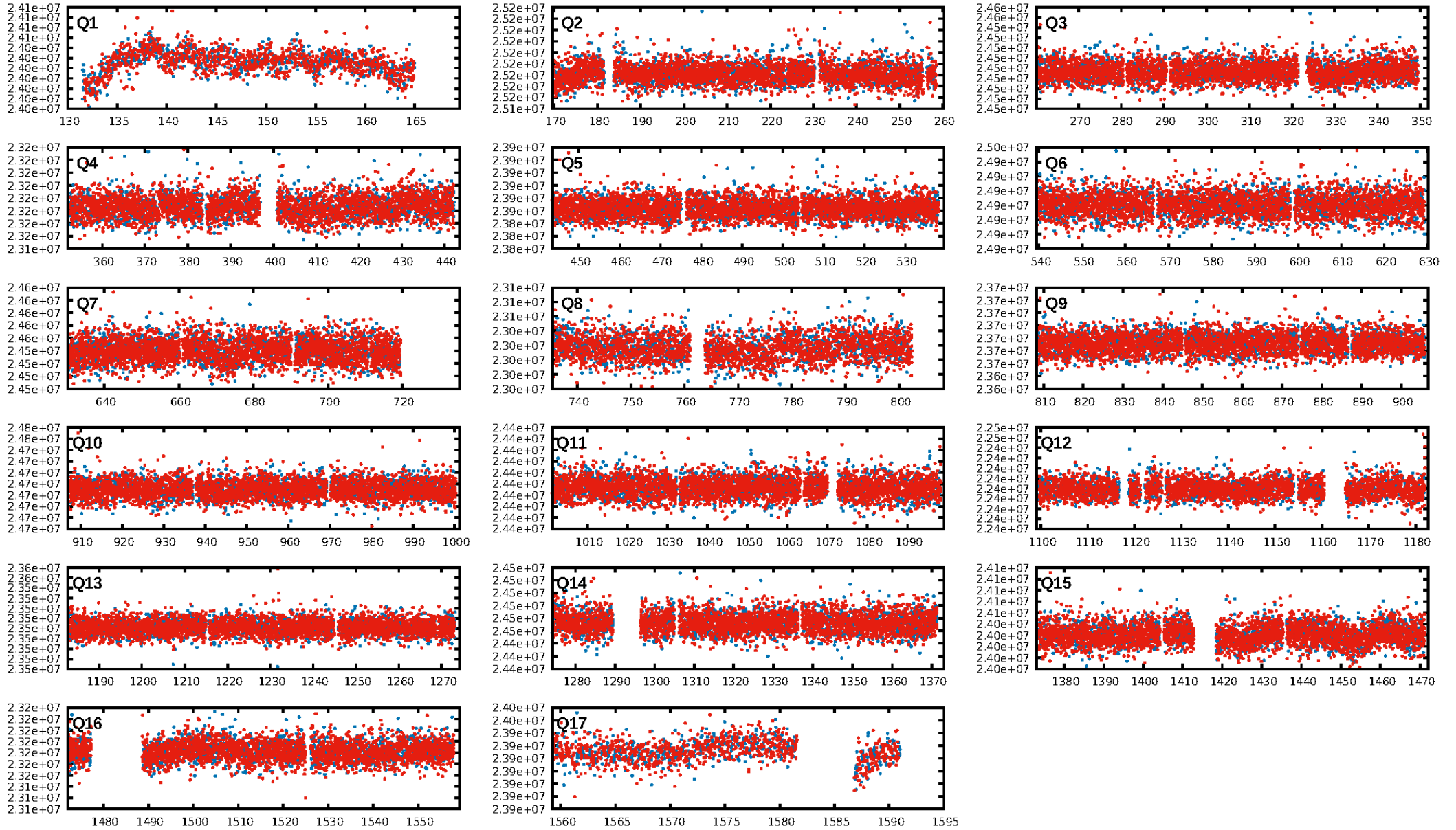
## DV Fit Results:

Period = 0.56674 [0.00006] d  
Epoch = 131.8809 [0.0271] BKJD  
Rp/R\* = 0.0021 [0.0081]  
a/R\* = 1.13 [4.85]  
b = 0.50 [30.53]  
Seff = 9130.06 [3814.34]  
Teff = 2493 [260] K  
Rp = 0.25 [0.96] Re  
a = 0.0139 [0.0038] AU  
Ag = N/A  
Teffp = N/A

## DV Diagnostic Results:

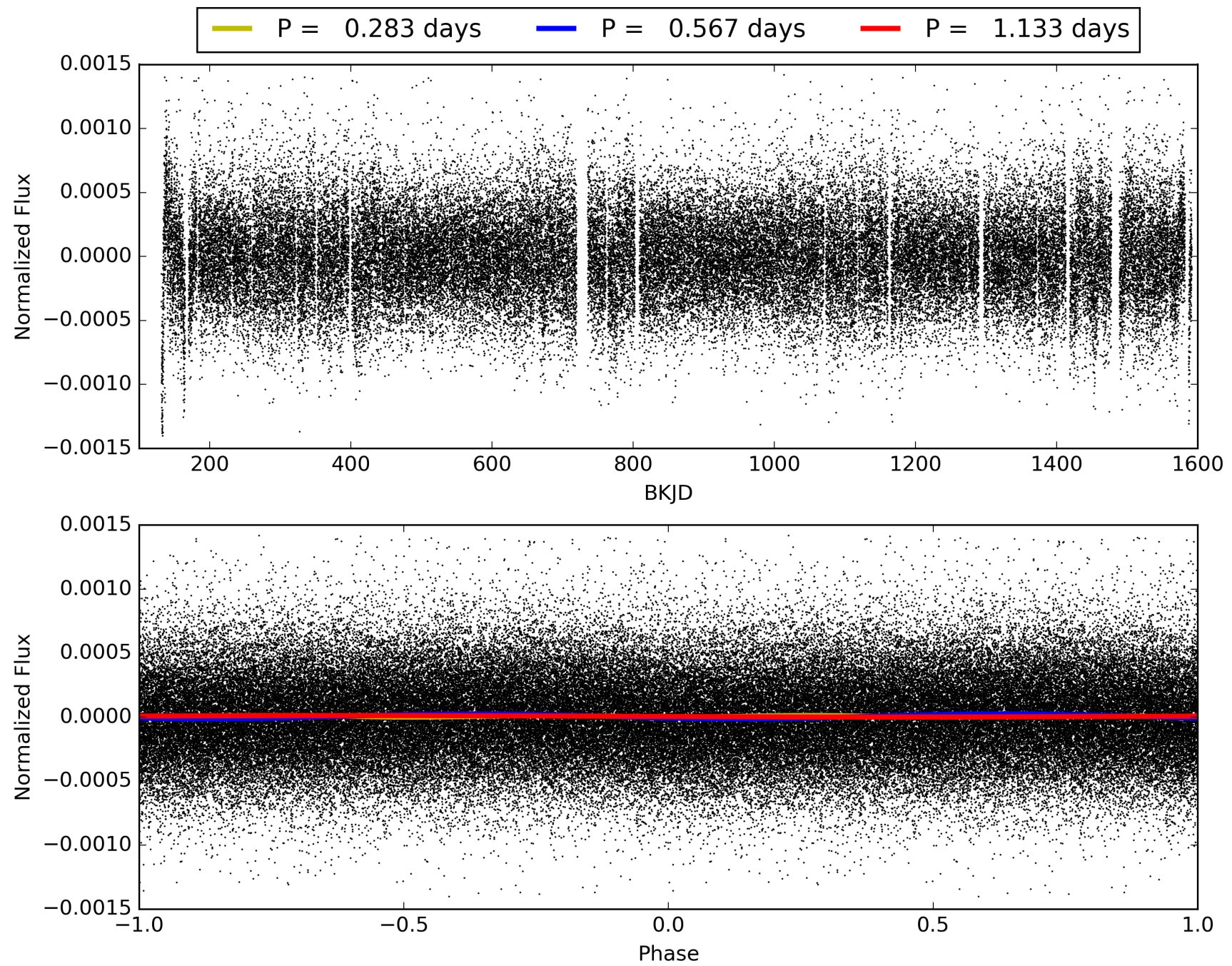
ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [2269/2269]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 2.156 arcsec [4.92 $\sigma$ ]  
KicOffset-rm: 2.184 arcsec [4.62 $\sigma$ ]  
OotOffset-st: 0/4/0/3 [7]  
KicOffset-st: 0/4/0/3 [7]  
DiffImageQuality-fgm: 0.57 [4/7]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 007117549-01, PDC Light Curves



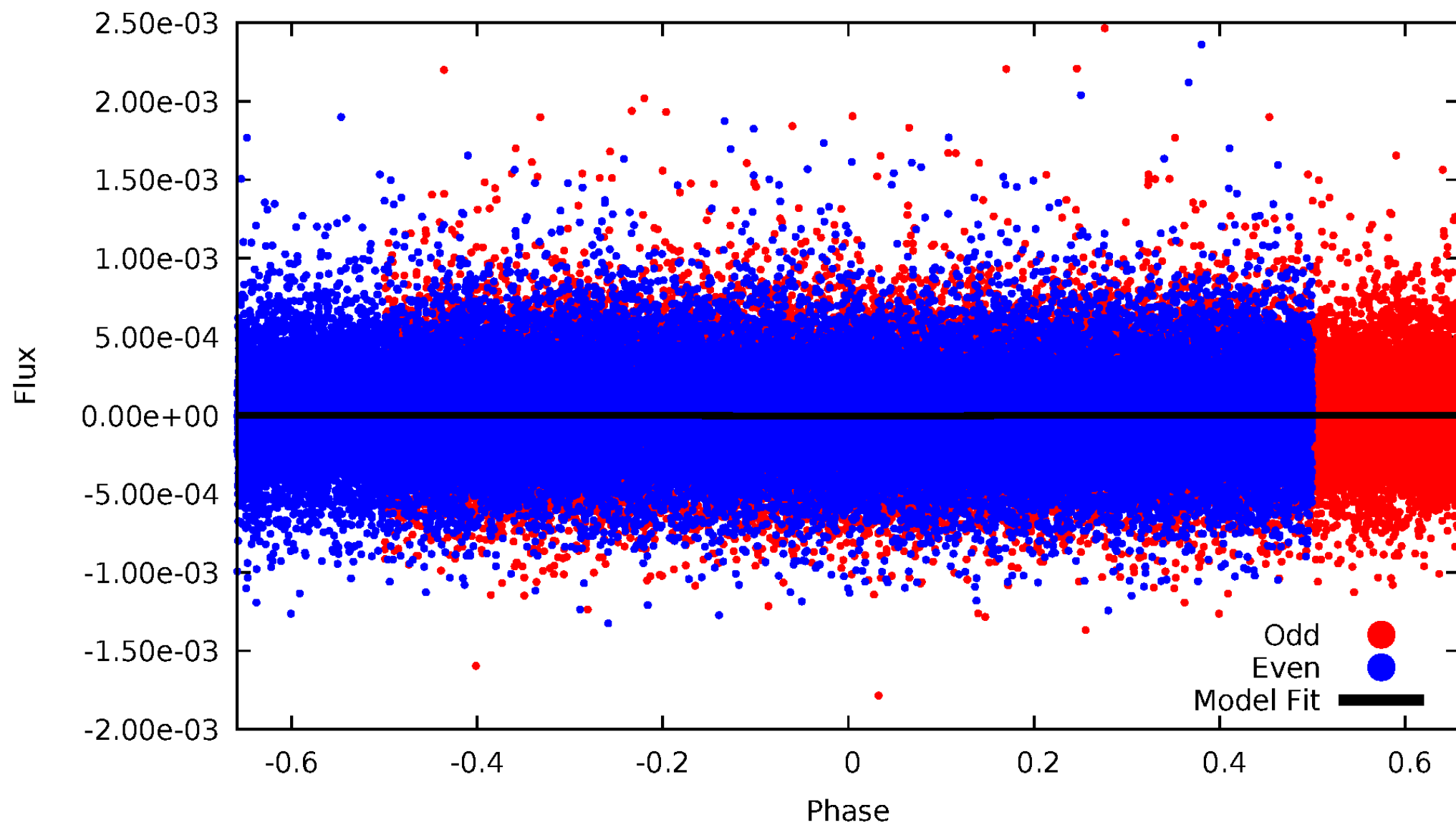


TCE 007117549-01



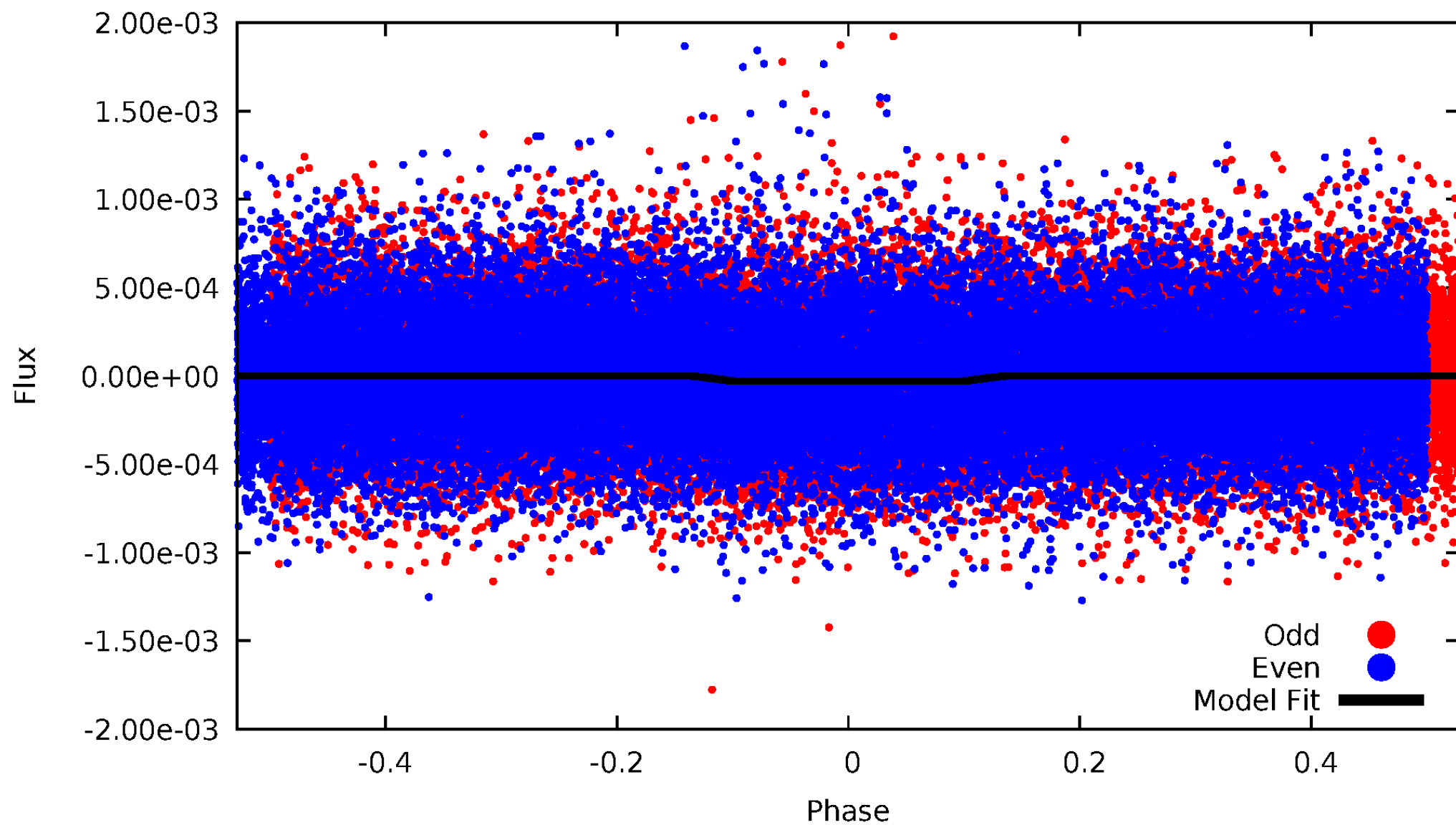
# DV Odd/Even

TCE 007117549-01

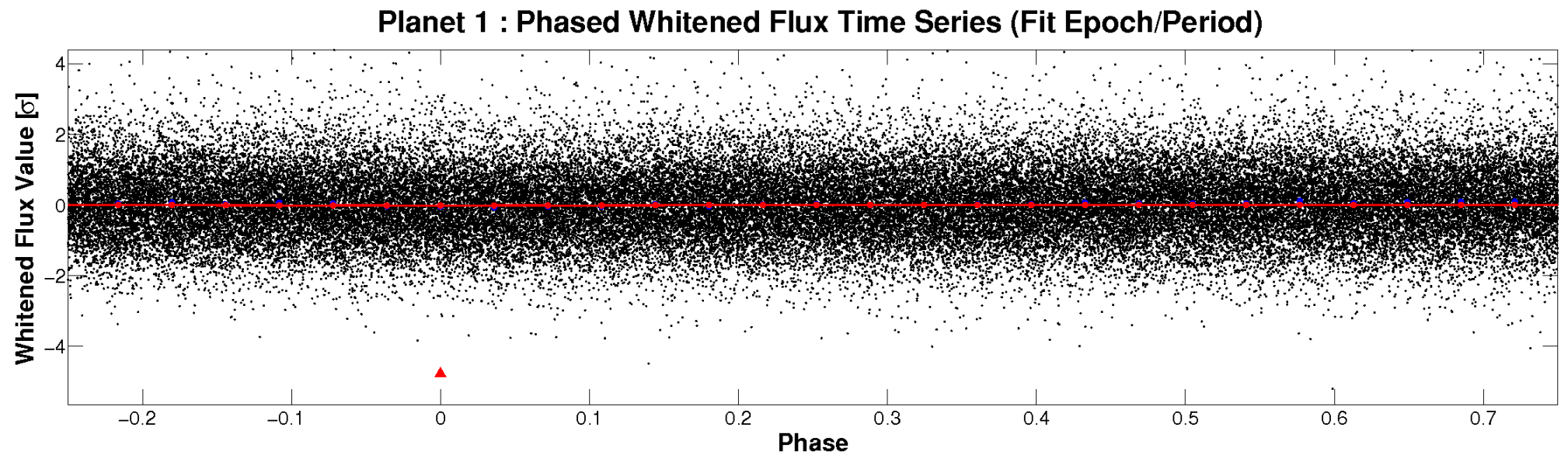
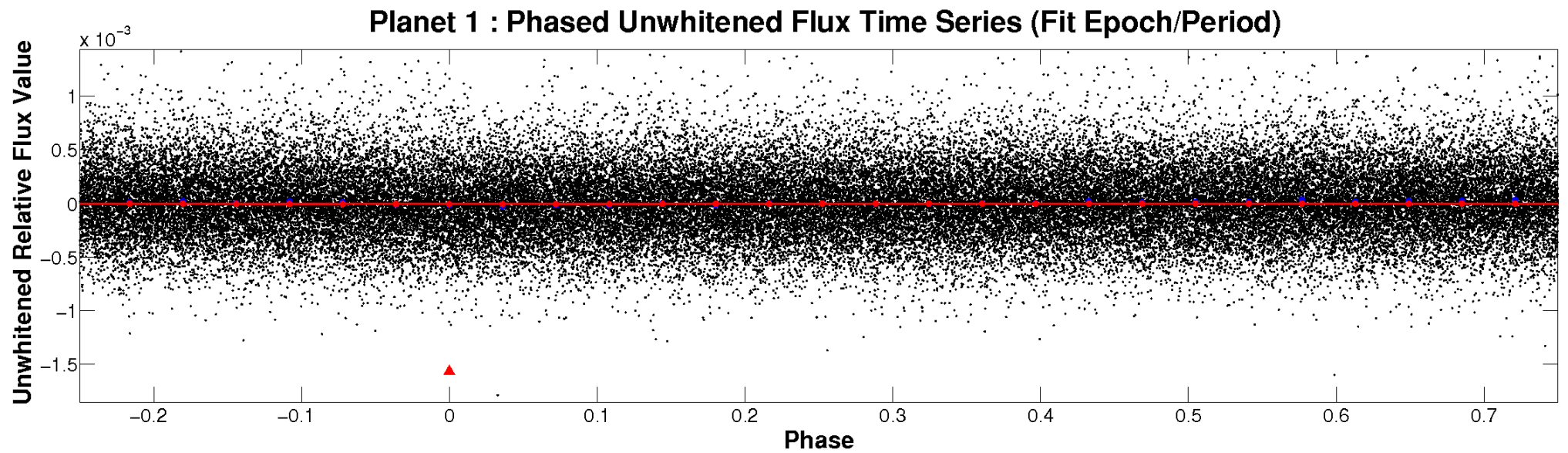


# ALT Odd/Even

TCE 007117549-01



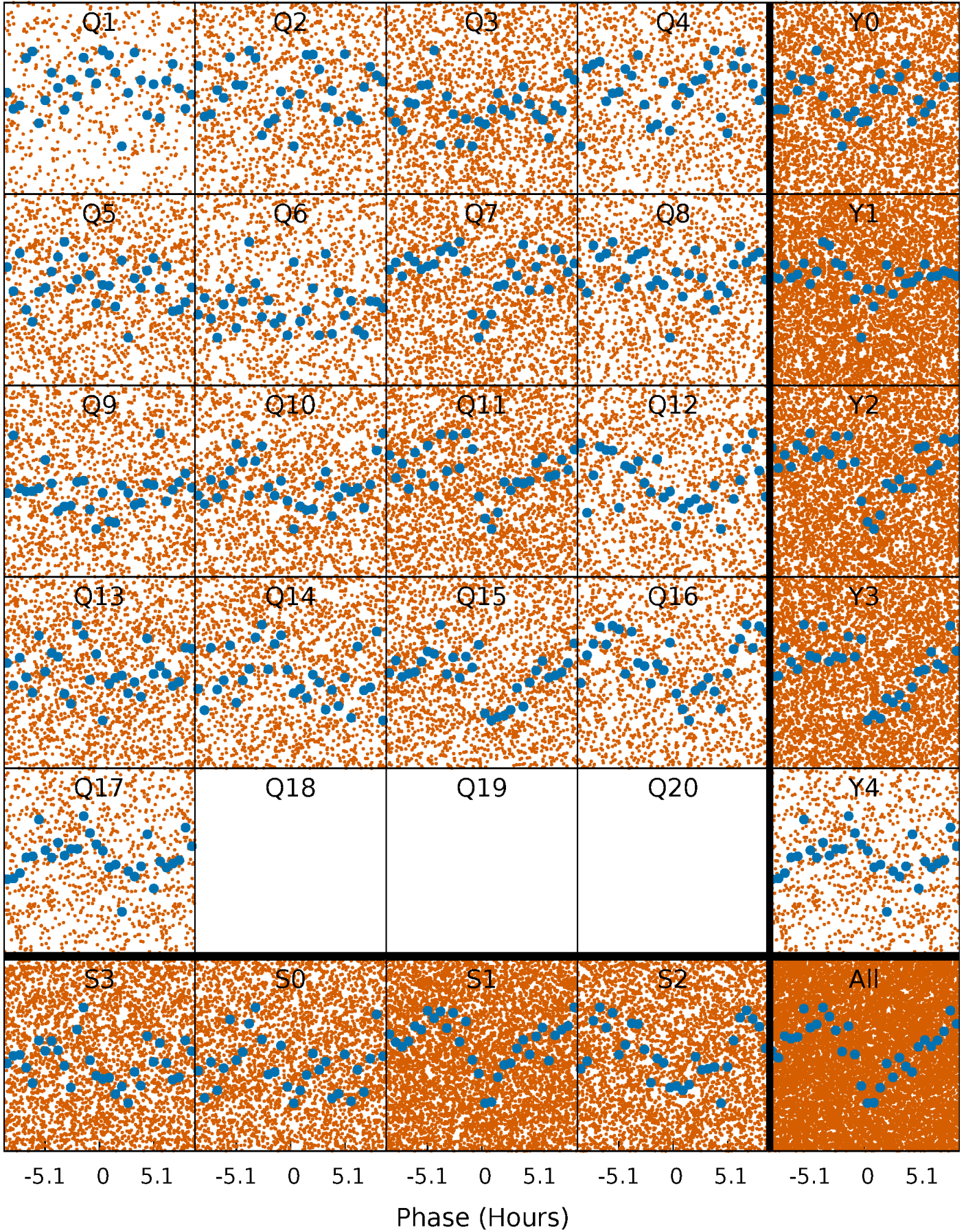
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

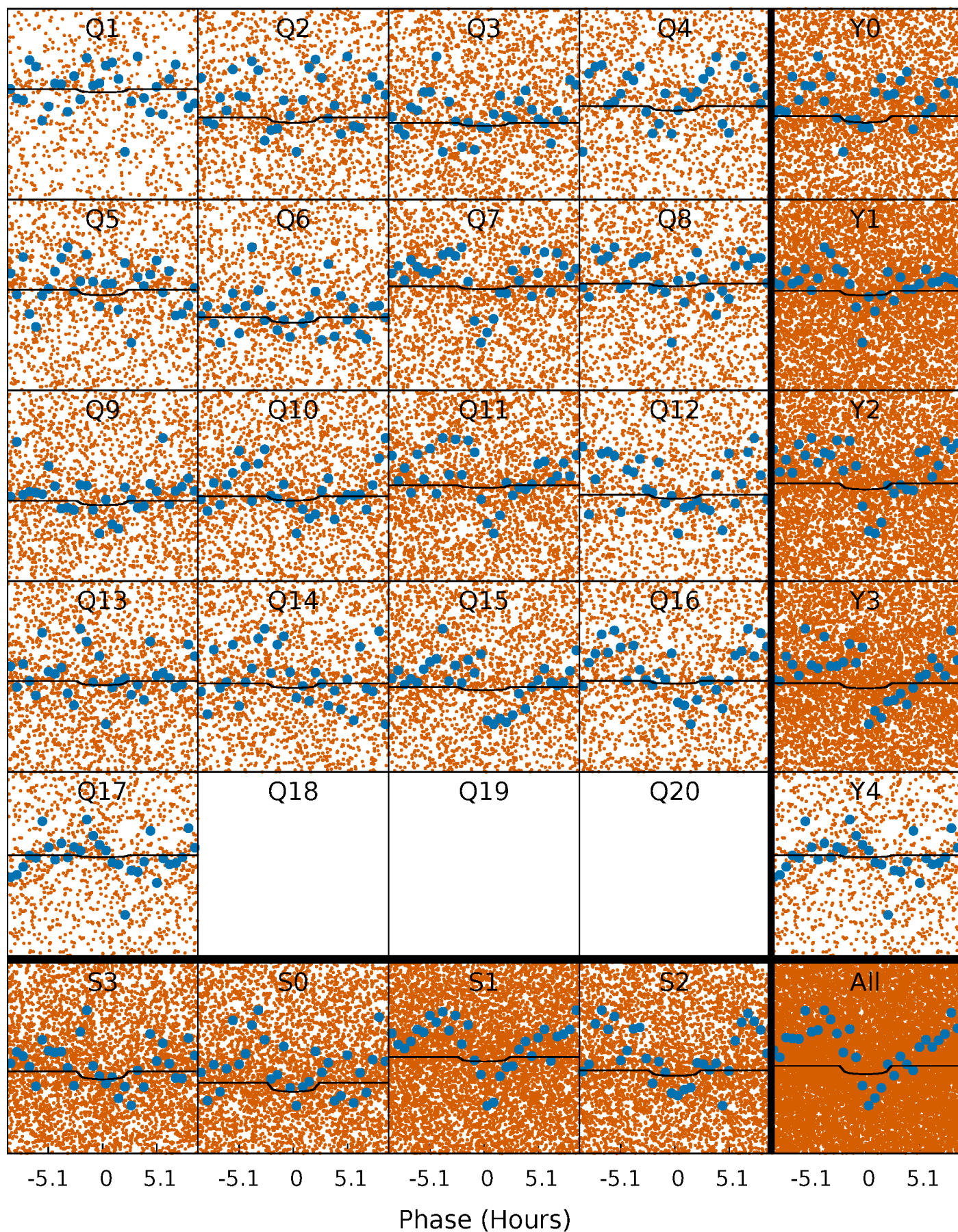
TCE 007117549-01 P= 0.566736 Days  $T_0=131.880913$  (BKJD)





# DV Quarter-Phased Transit Curves

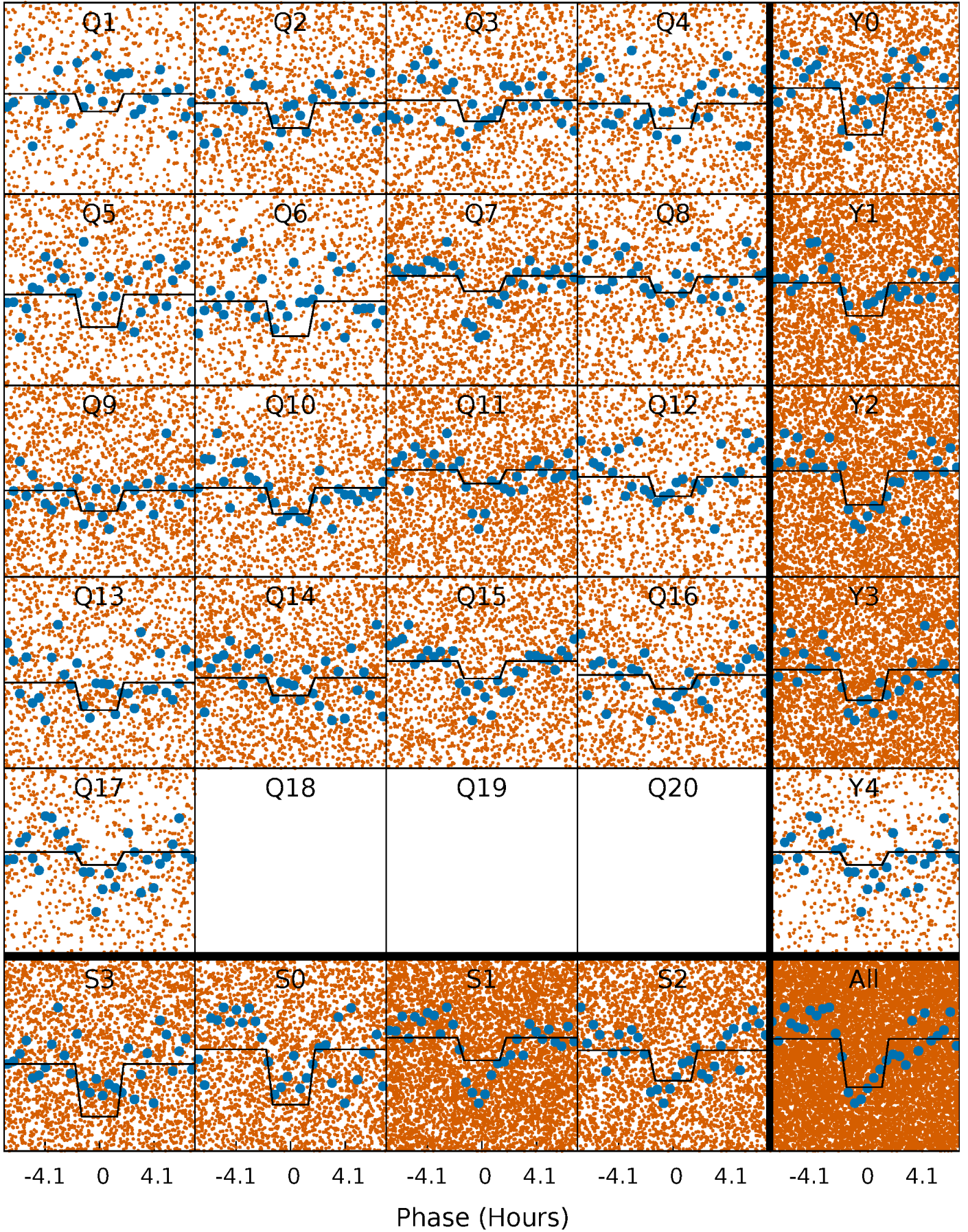
TCE 007117549-01 P= 0.566736 Days  $T_0=131.880913$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

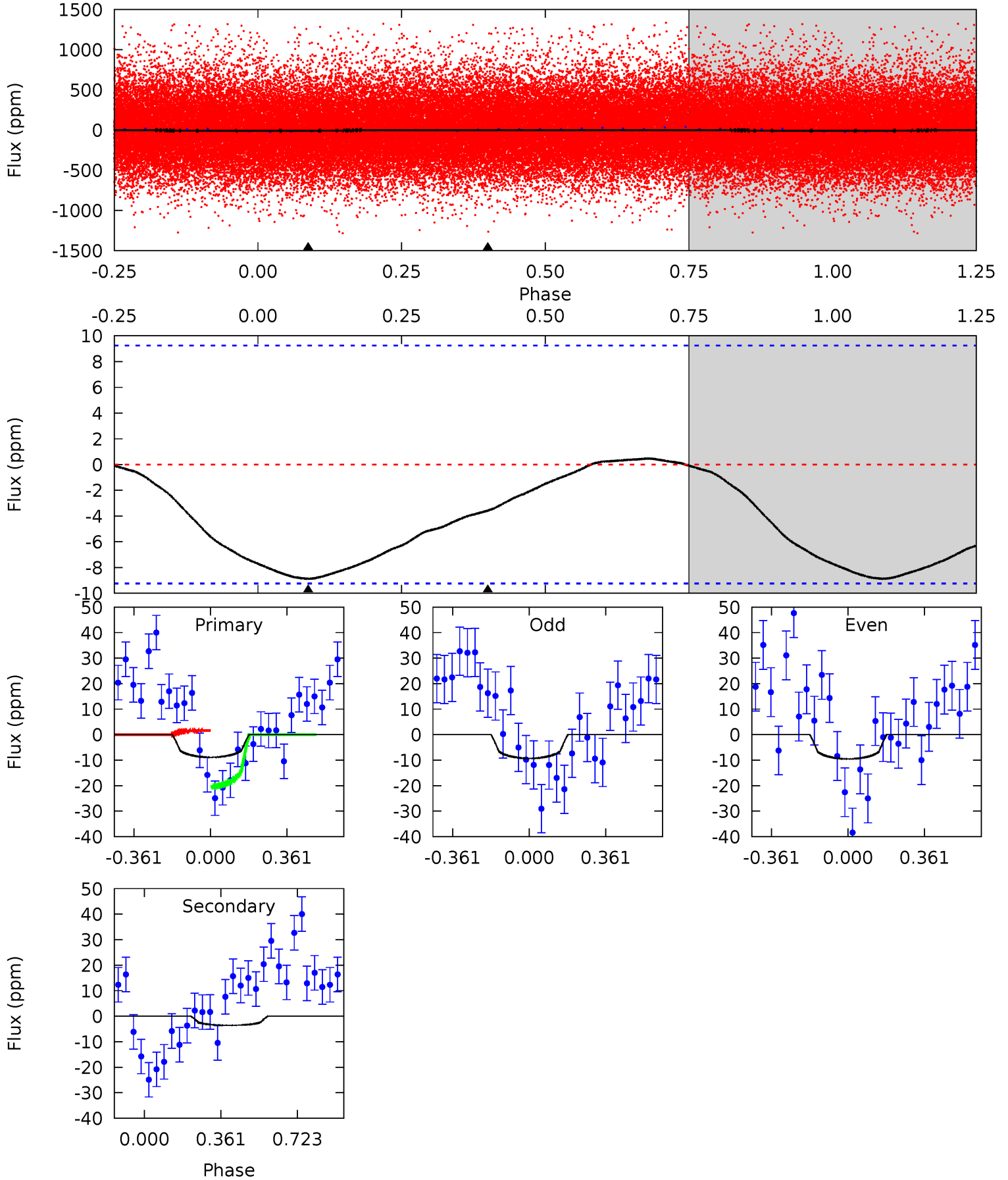
TCE 007117549-01 P= 0.566788 Days  $T_0=131.838824$  (BKJD)



# DV Model-Shift Uniqueness Test

007117549-01, P = 0.566736 Days, E = 131.314177 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
4.12	1.66	0	0	4.29	0.91	0.15	4.12	4.12	1.66	1.66	0.05	0.76	0.05	4.41

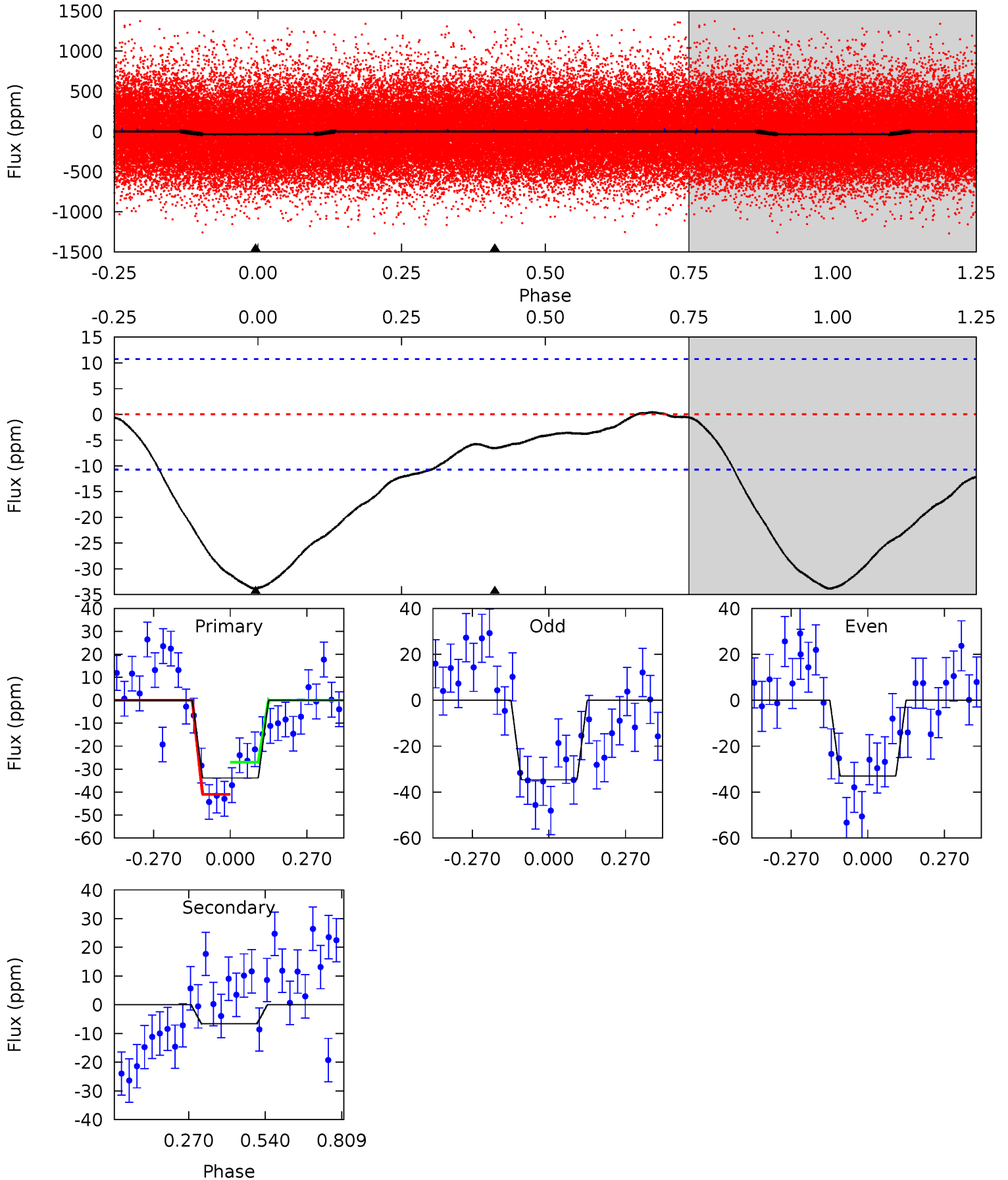




# Alt Model-Shift Uniqueness Test

007117549-01, P = 0.566788 Days, E = 131.272036 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
13.7	2.67	0	0	4.35	1.10	0.14	13.7	13.7	2.67	2.67	0.32	1.06	0.01	2.80



### Stellar Parameters For KIC 007117549

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6403^{+153}_{-211}$	$4.418^{+0.067}_{-0.216}$	$-0.180^{+0.250}_{-0.300}$	$1.086^{+0.354}_{-0.118}$	$1.127^{+0.162}_{-0.146}$	$1.239^{+0.358}_{-0.654}$
	+2%/-3%	+2%/-5%	+139%/-167%	+33%/-11%	+14%/-13%	+29%/-53%
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 007117549-01 / KOI 4874.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-4 \pm 2$	$0.79^{+0.80}_{-0.55}$	$3529^{+263}_{-173}$	$3258^{+2887}_{-6517}$	$0.524^{+5.827}_{-0.436}$
Alt.	$-7 \pm 2$	$1.00^{+0.91}_{-0.69}$	$3536^{+255}_{-170}$	$3482^{+2864}_{-6505}$	$0.625^{+6.249}_{-0.460}$

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

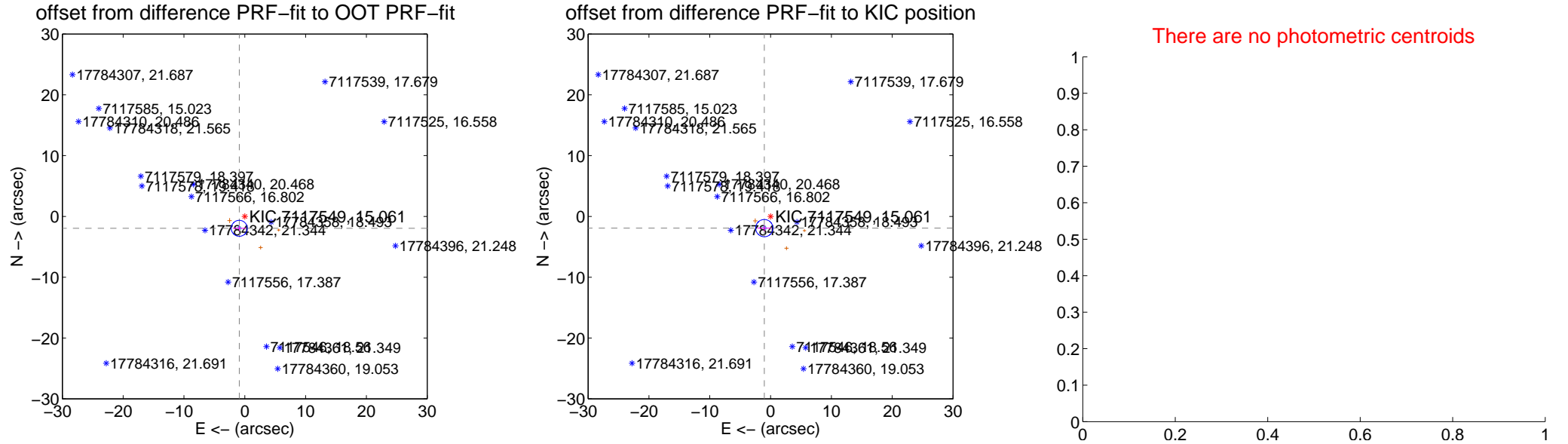
## DV Centroid Data

Supplemental centroid analysis for 007117549-01. Kepler magnitude: 15.06. Transit SNR 1.91

There are 4 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

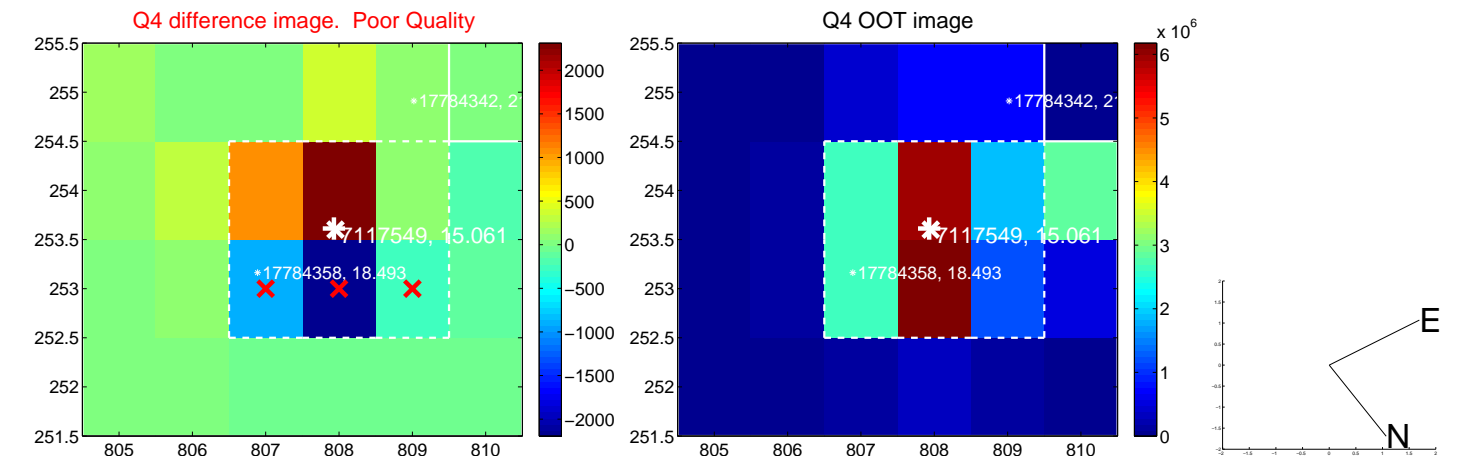
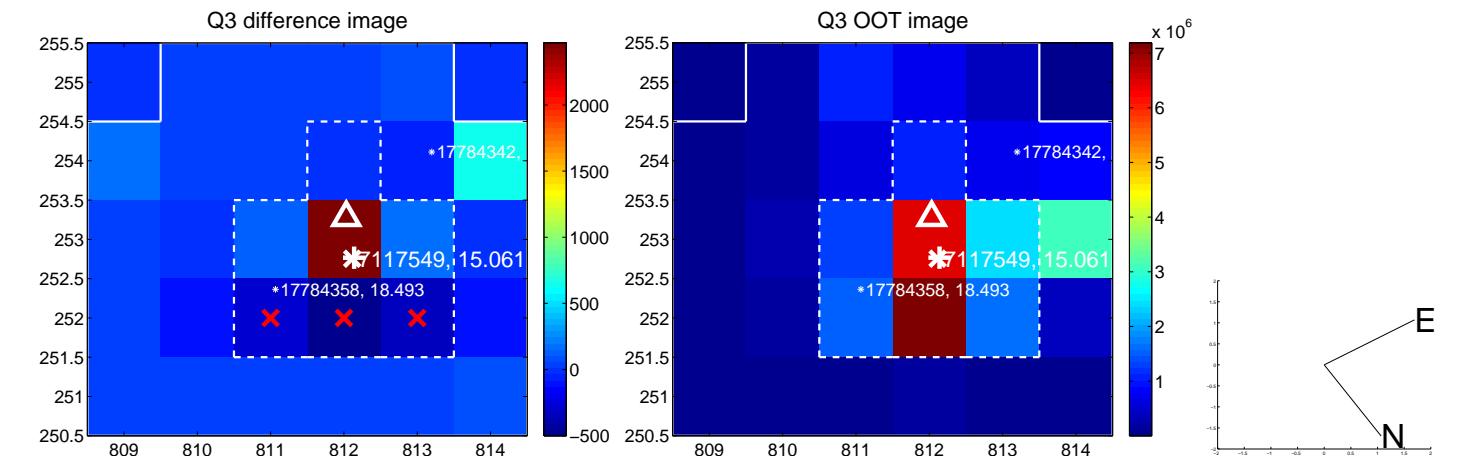
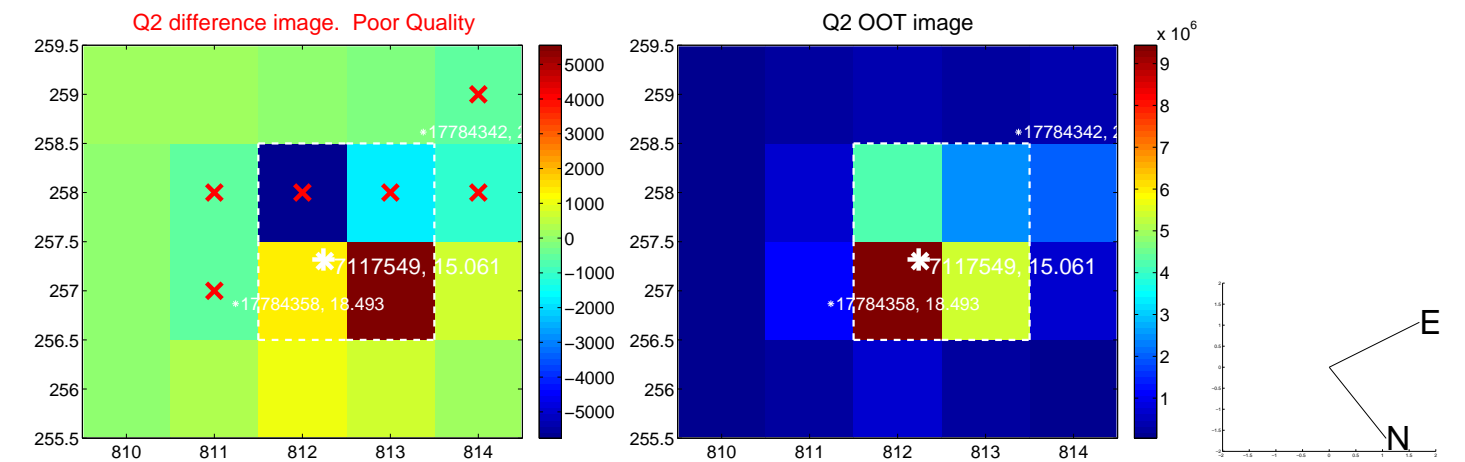
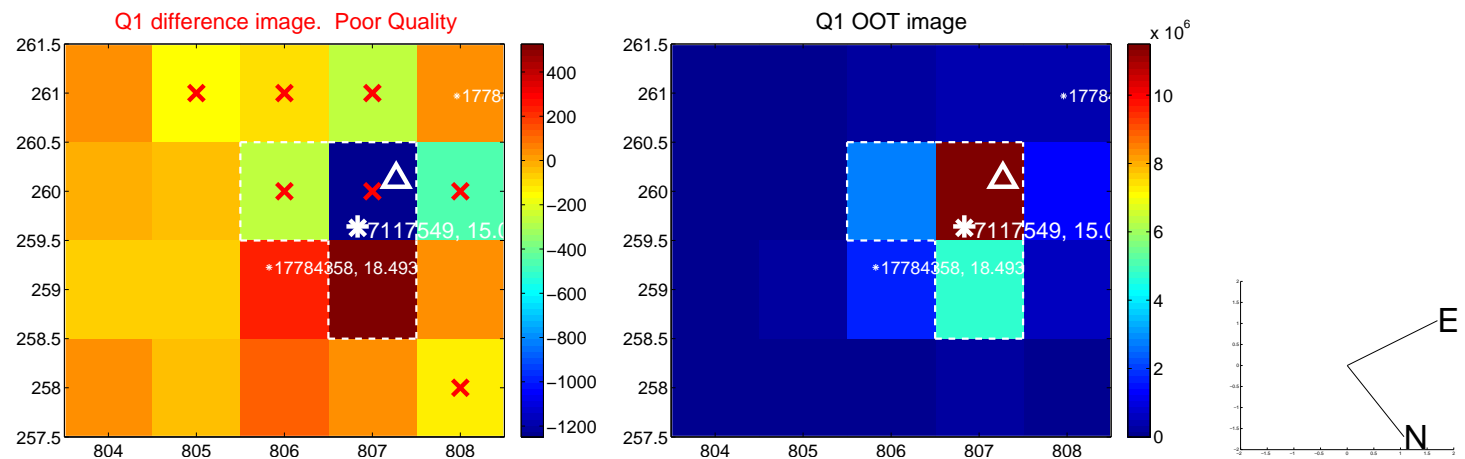
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.156 \pm 0.438$	4.92	$0.908 \pm 1.051$	$-1.955 \pm 0.443$
PRF-fit source offset from KIC position	$2.184 \pm 0.473$	4.62	$1.031 \pm 1.117$	$-1.925 \pm 0.488$
photometric centroid source offset	—	—	—	—



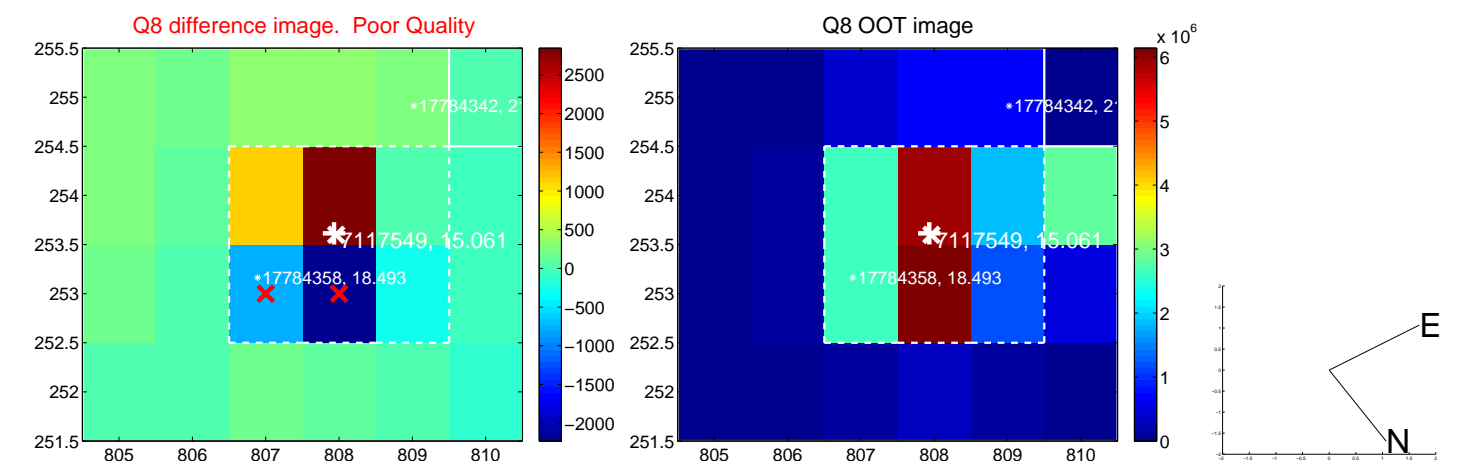
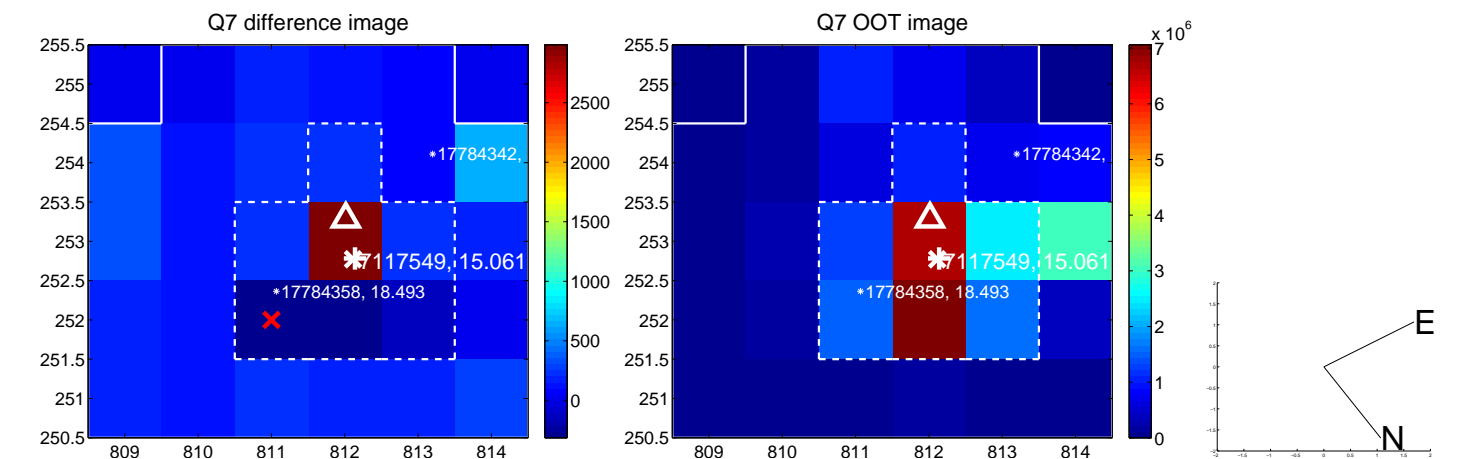
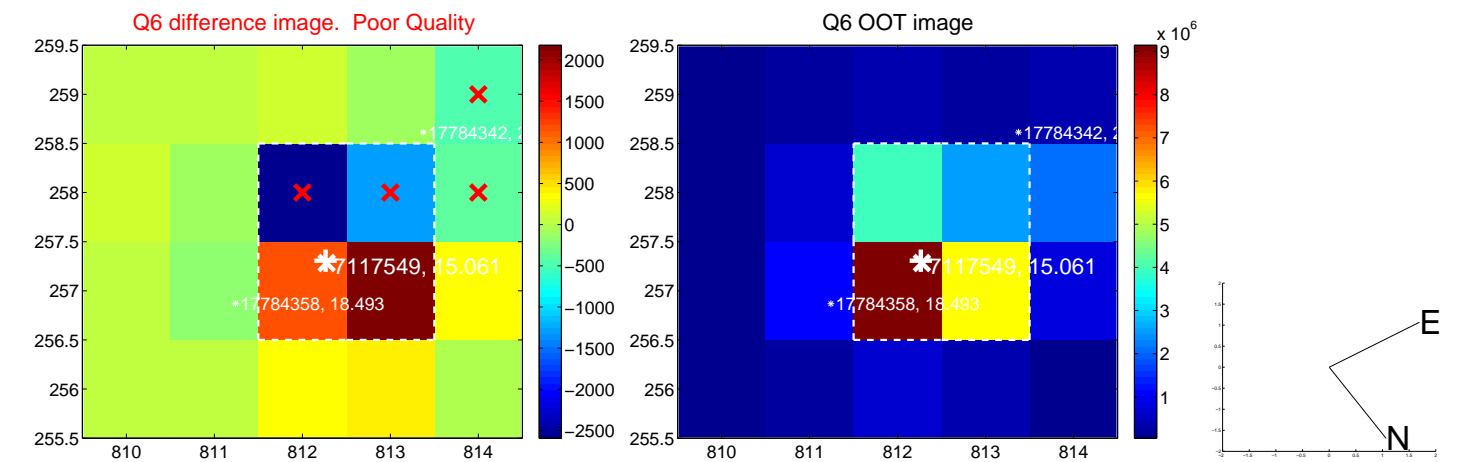
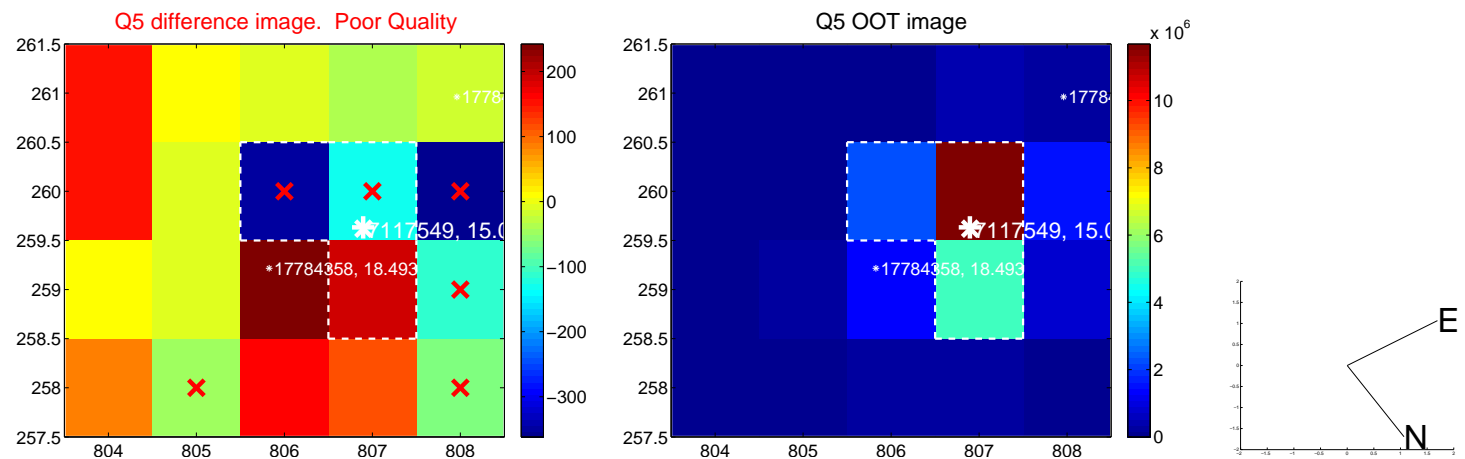
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



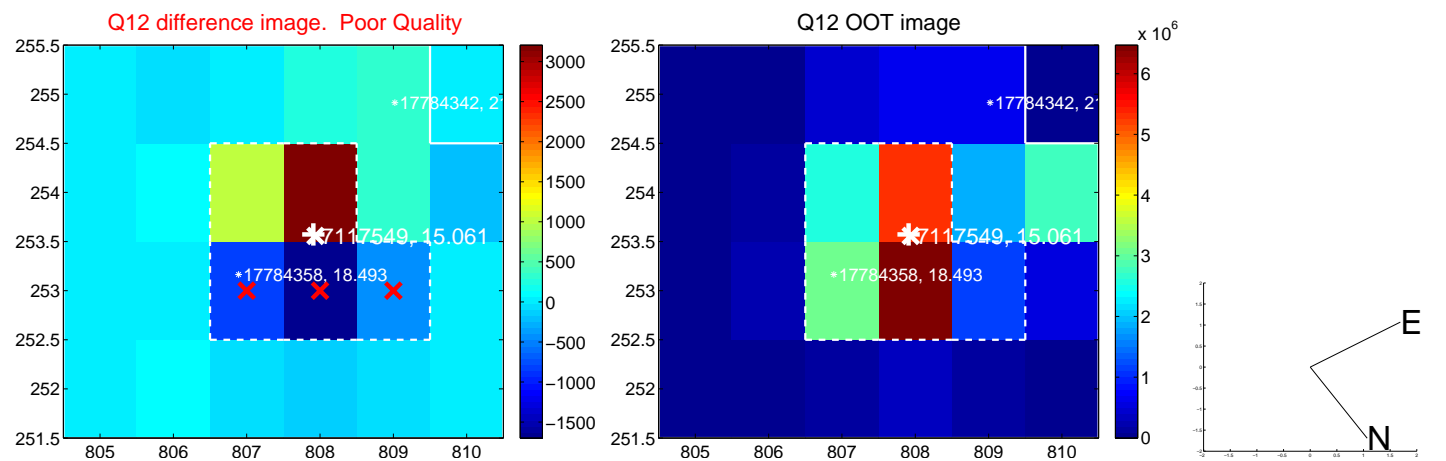
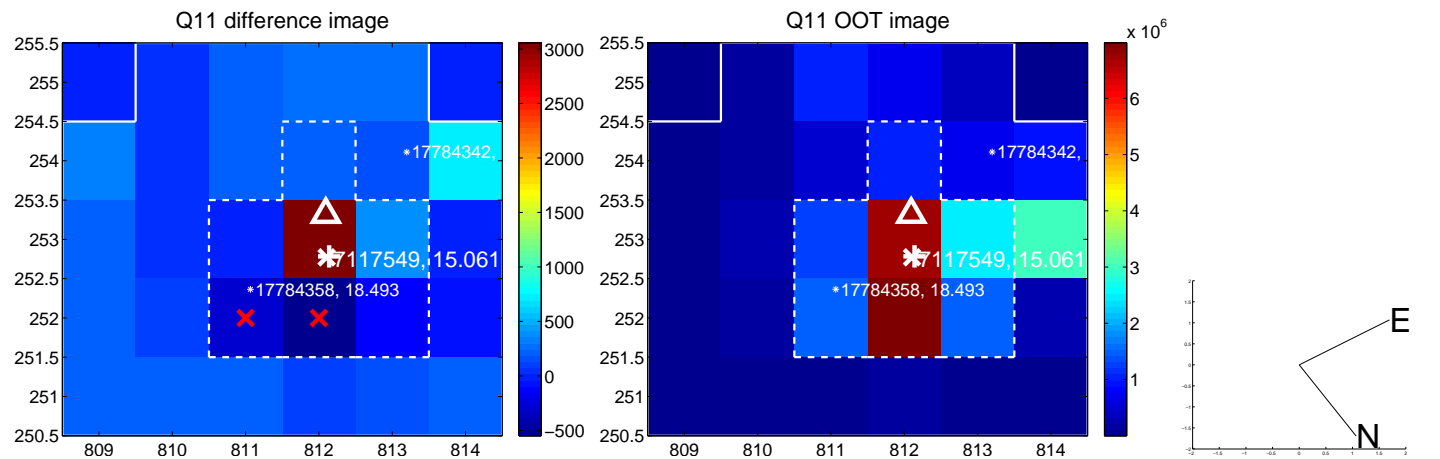
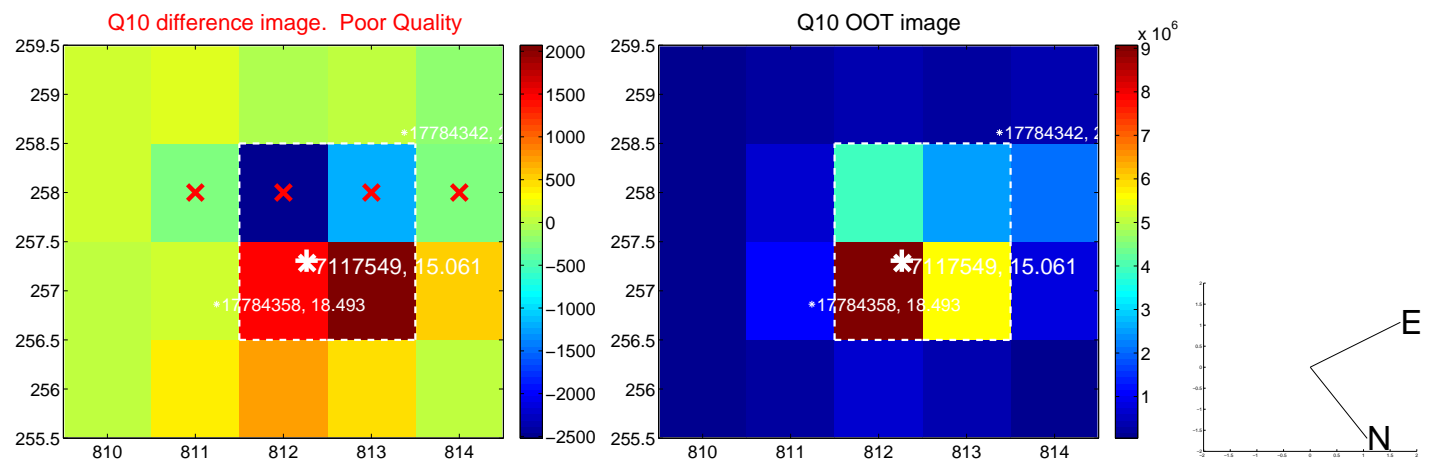
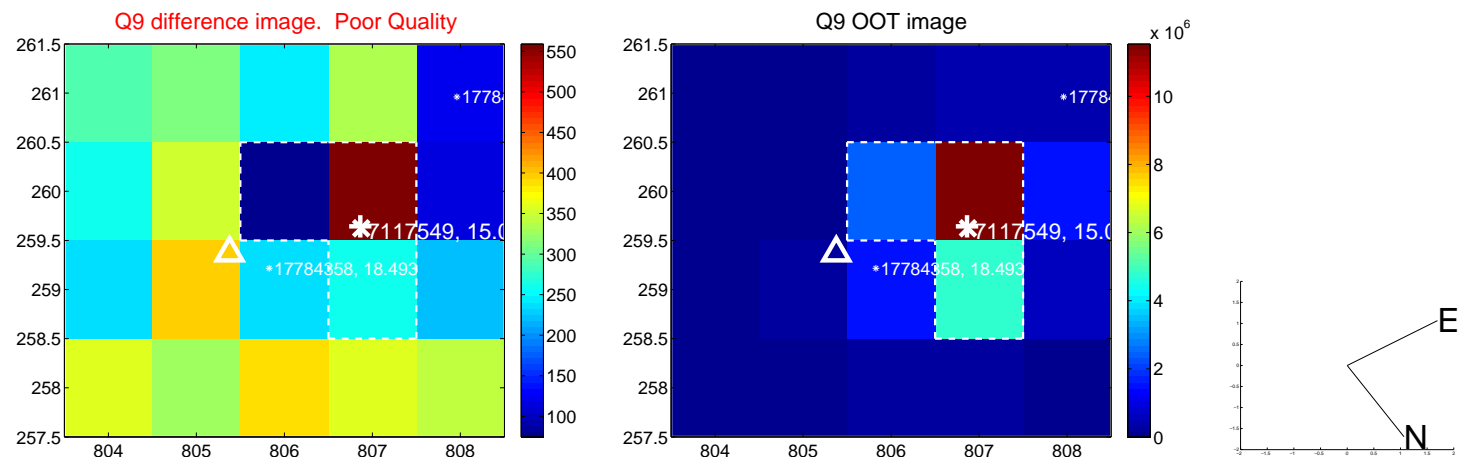
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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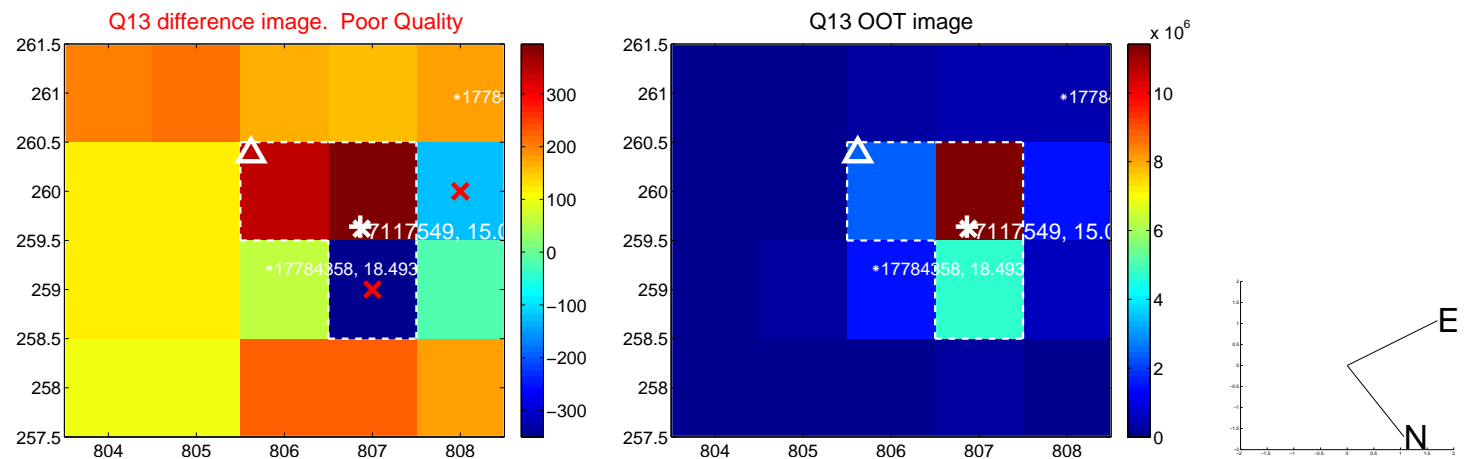


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

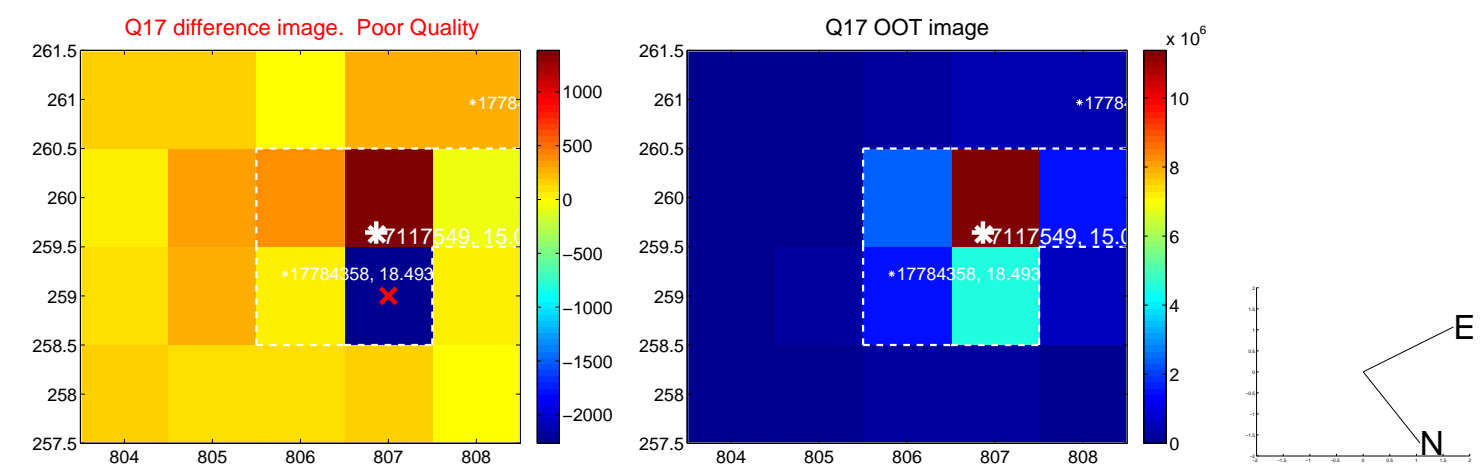




white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination

