

# KIC 007199351

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007199351-01	OBS	No	0.566789	131.620293	11.5	6.801	11.0	9.6	1.34	6261	0.46	12944.21

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007199351-01	OBS	FP	0.00	1	0	1	1	LPP_DV—LPP_ALT—HALO_GHOST—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.

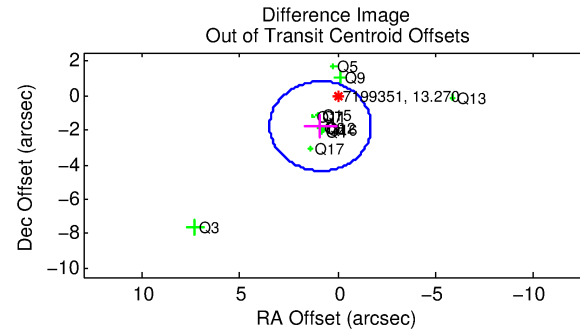
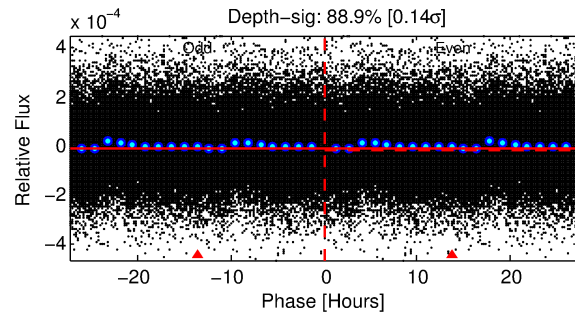
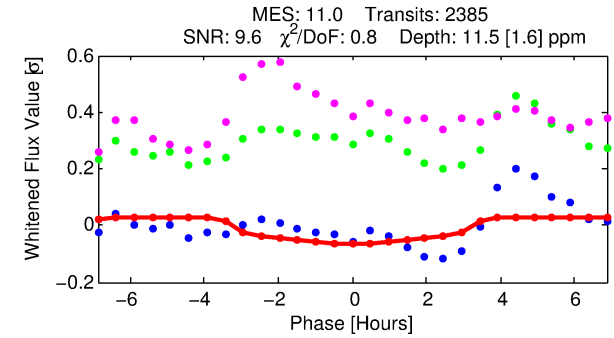
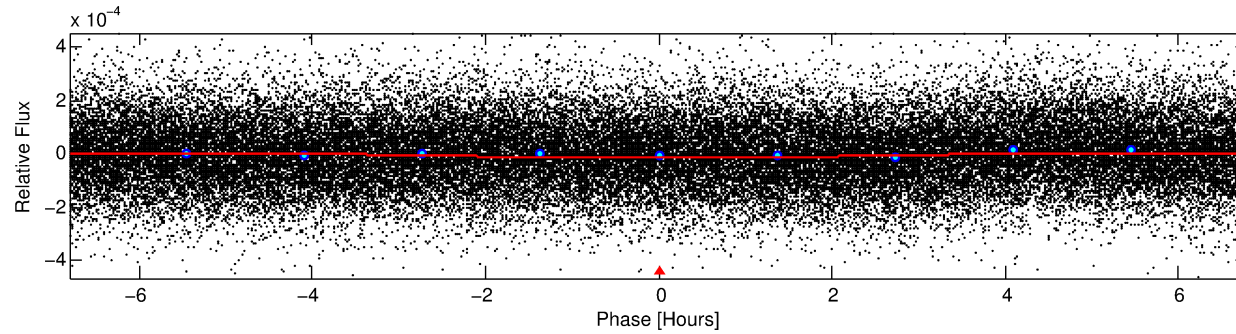
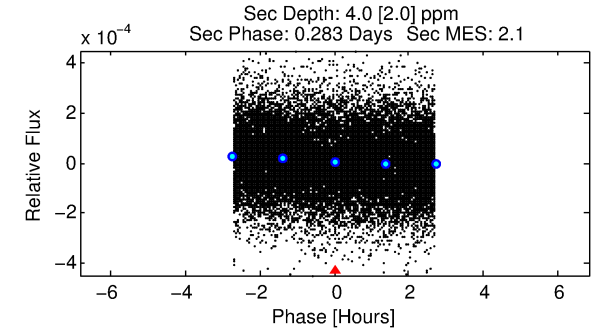
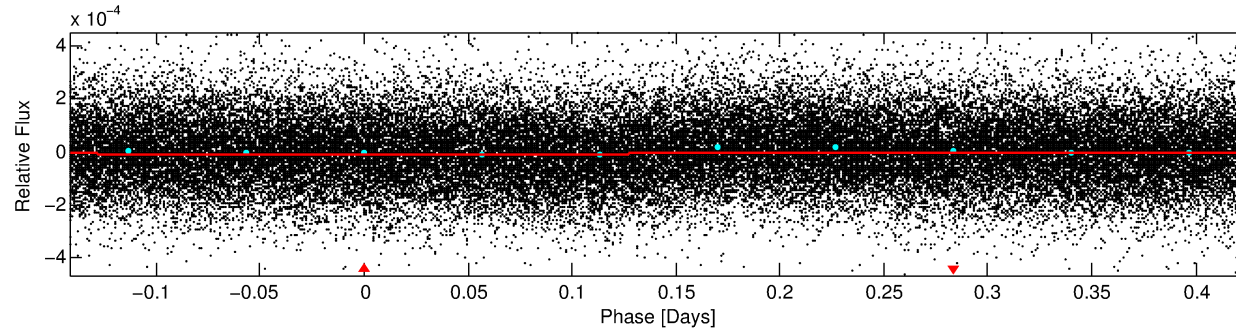
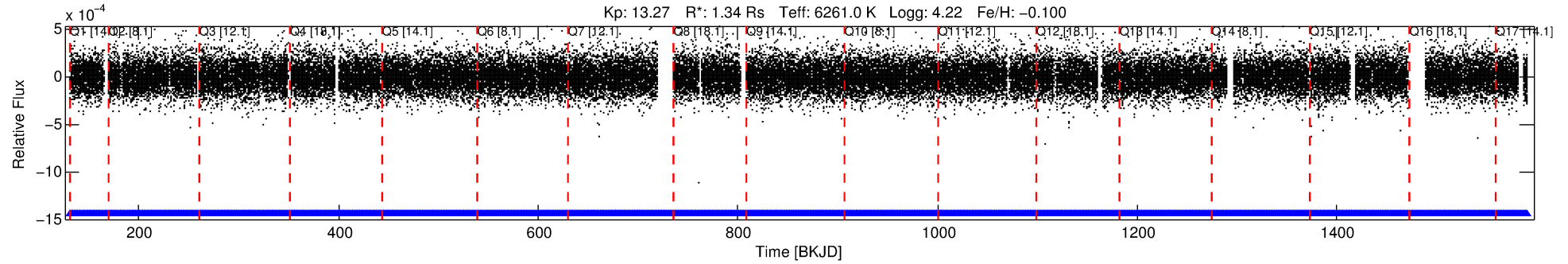
## Ephemeris Match Information For 007199351-01

TCE (1)	KIC	Parent (2)	Parent KIC	P <sub>1</sub> :P <sub>2</sub>	Dist ( $''$ )	$\Delta$ Row	$\Delta$ Col	m <sub>2</sub>	m <sub>1</sub>	D <sub>2</sub> /D <sub>1</sub>	Mechanism	Flag	$\sigma_P$	$\sigma_T$
007199351-01	7199351	RR-Lyr-pri	7198959	1:1	382.3	89	36	7.86	13.27	51941.00	Direct-PRF	0	1.77	13.39

**Notes:** P<sub>1</sub>:P<sub>2</sub> is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col 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.  $\sigma_P$  and  $\sigma_T$  are the significance of the match in period and epoch. For a match to be considered significant  $\sigma_P < 5.0$  and  $\sigma_T < 5.0$ . Matches which have  $\sigma_P$  and  $\sigma_T$  very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 7199351 Candidate: 1 of 1 Period: 0.567 d



## DV Fit Results:

Period = 0.56679 [0.00001] d  
Epoch = 131.6203 [0.0063] BKJD  
Rp/R\* = 0.0031 [0.0020]  
a/R\* = 1.00 [0.01]  
b = 0.06 [56.33]  
Seff = 12944.21 [4143.13]  
Teff = 2720 [218] K  
Rp = 0.45 [0.31] Re  
a = 0.0138 [0.0028] AU  
Ag = 2.04 [2.84] [0.37σ]  
Teffp = 5024 [1716] K [1.33σ]

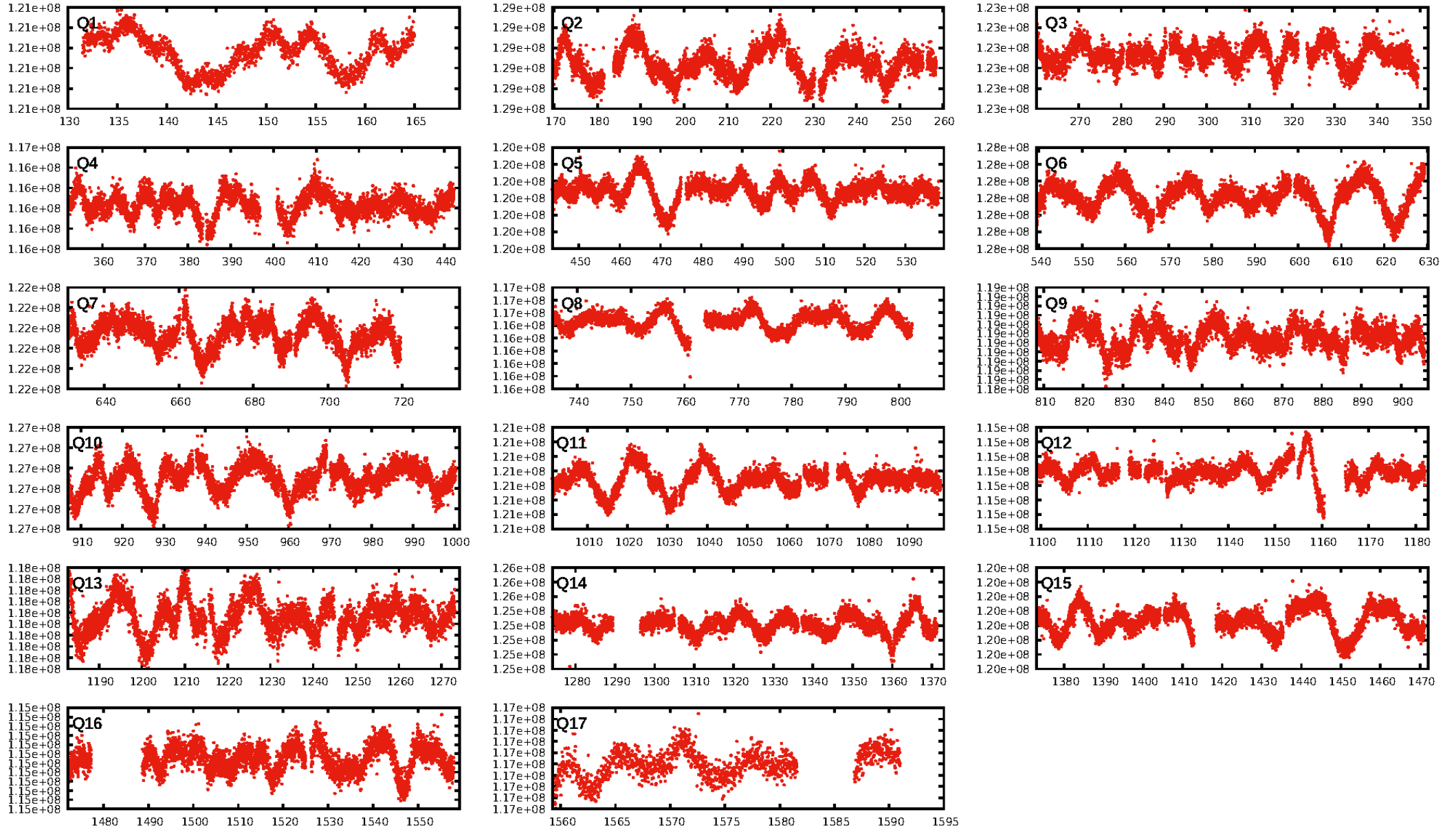
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [2277/2277]  
GhostDiagnostic-chr: -0.1063  
Centroid-sig: 0.0%  
Centroid-so: 5.409 arcsec [5.98σ]  
OotOffset-rm: 1.976 arcsec [2.29σ]  
OotOffset-st: 0/4/4 [12]  
KicOffset-rm: 2.167 arcsec [2.44σ]  
KicOffset-st: 0/4/4 [12]  
DiffImageQuality-fgm: 0.42 [5/12]  
DiffImageOverlap-fno: 1.00 [17/17]

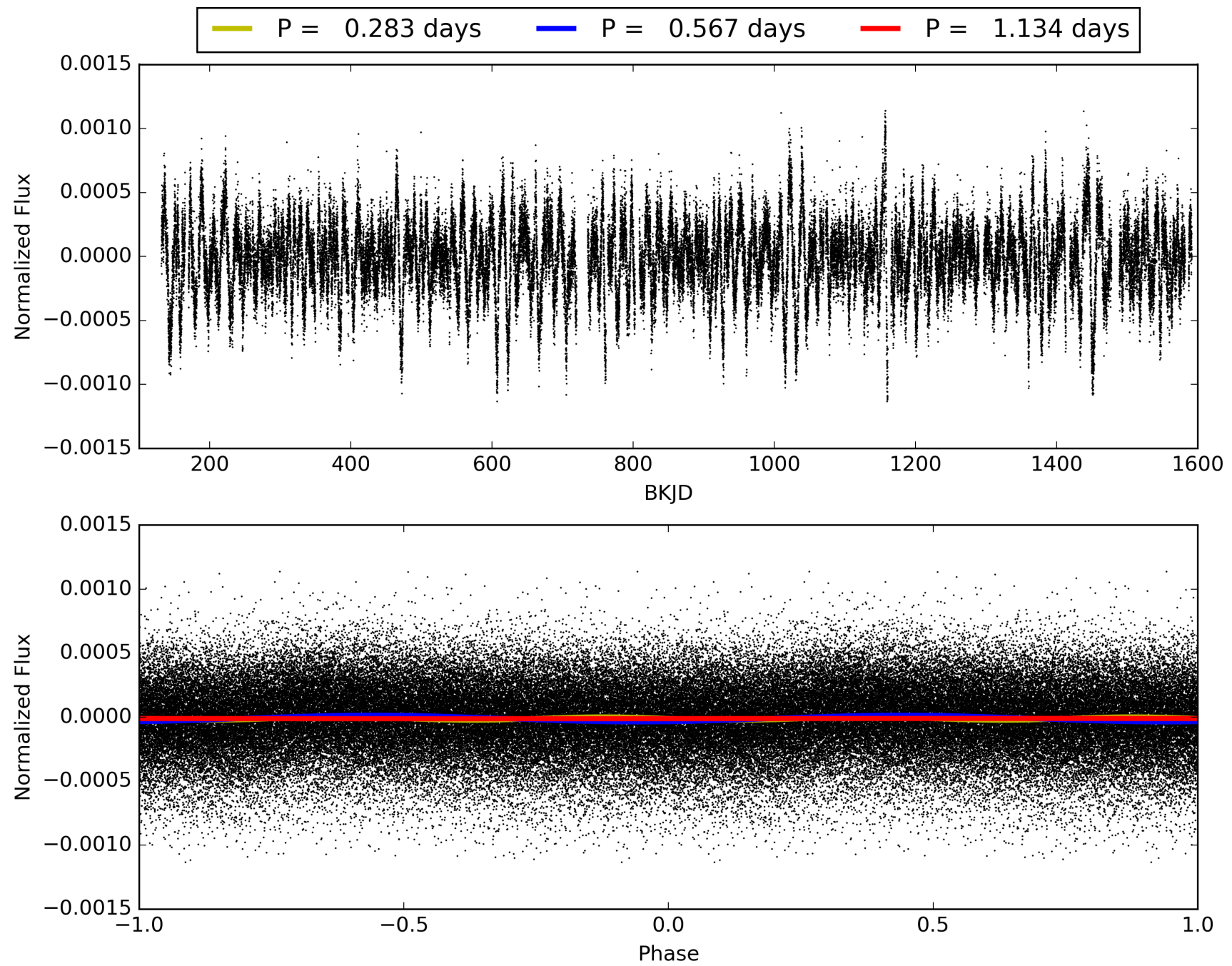
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:14:37 Z

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

# TCE 007199351-01, PDC Light Curves

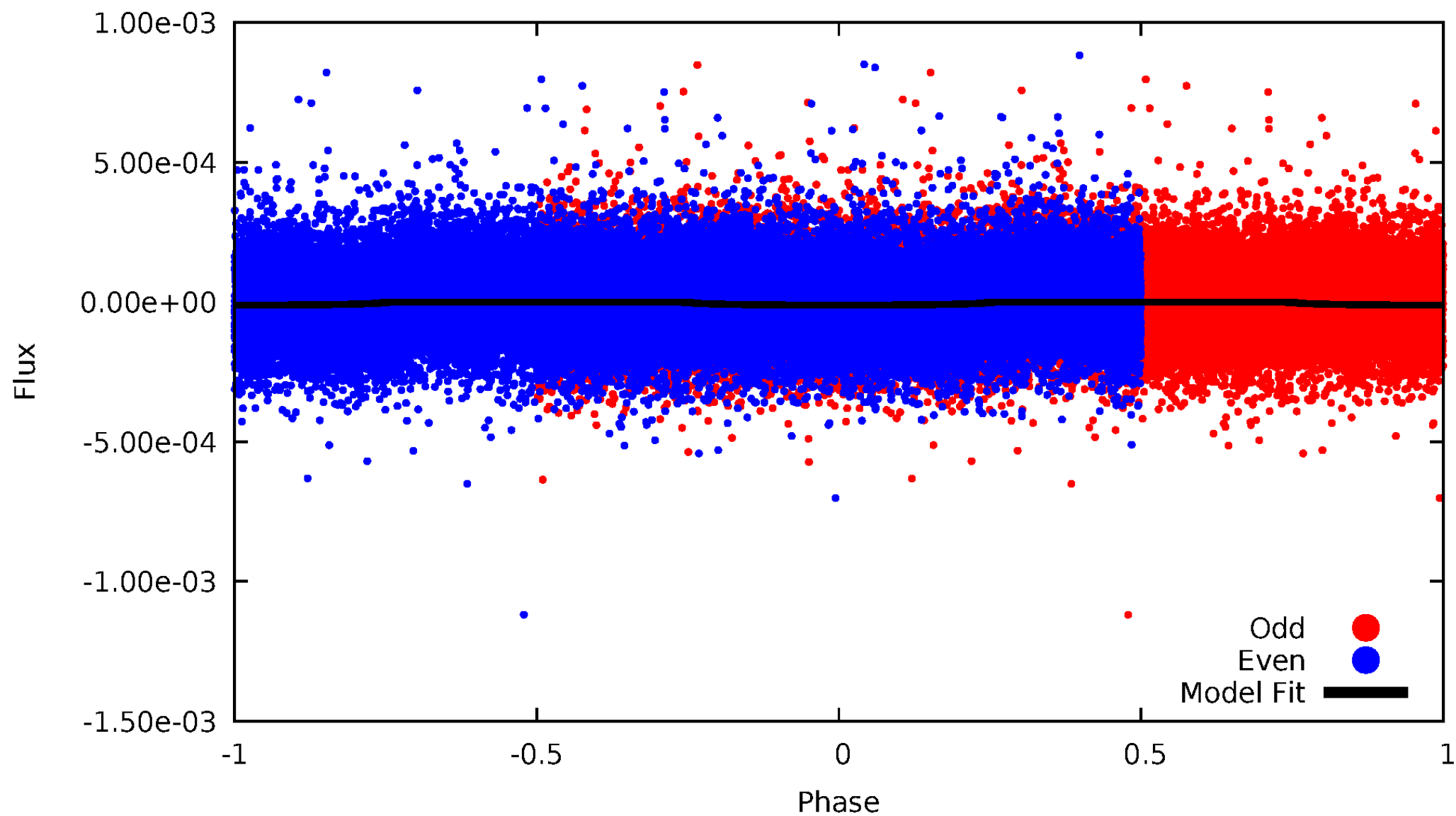


TCE 007199351-01



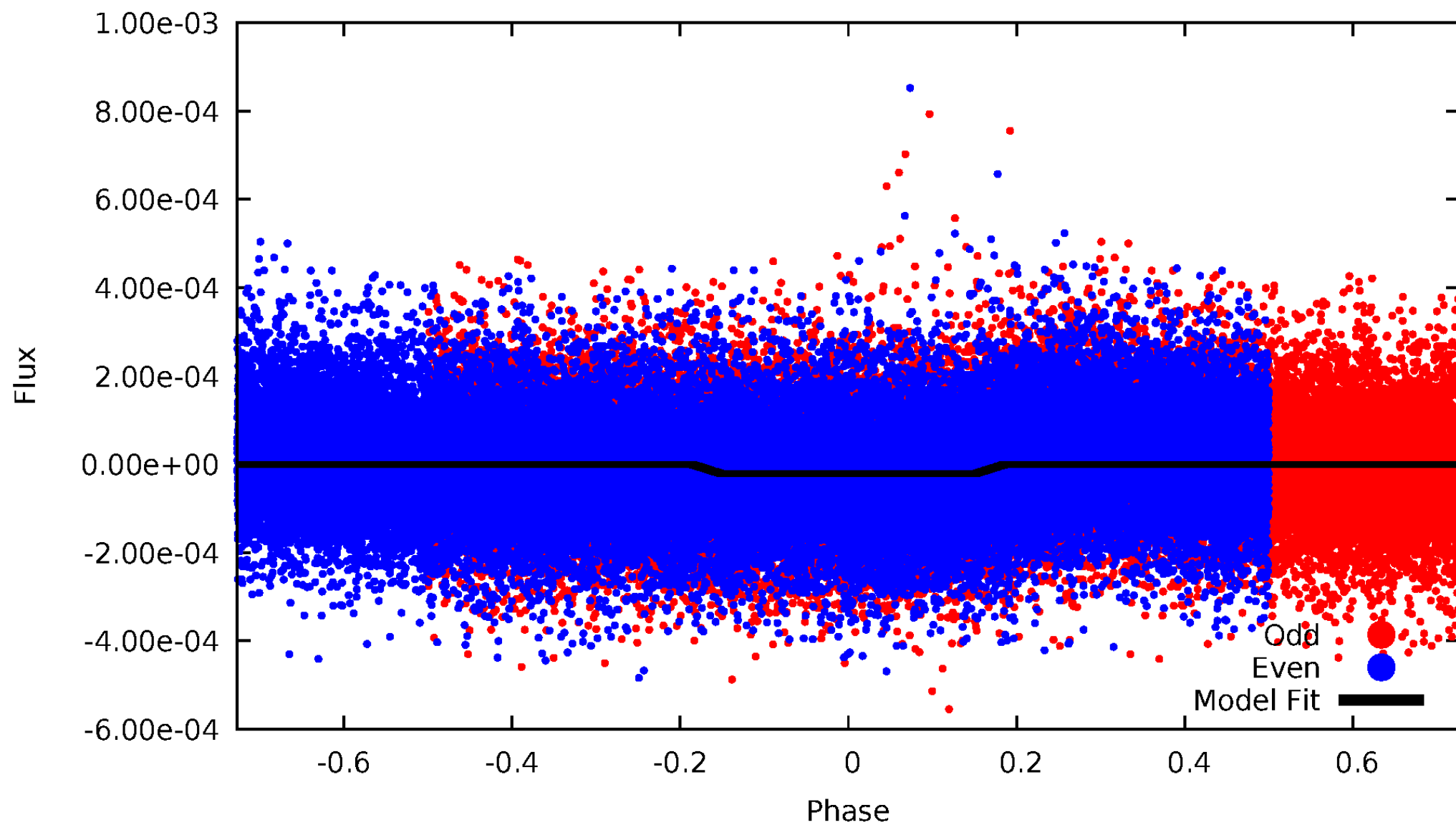
# DV Odd/Even

TCE 007199351-01



# ALT Odd/Even

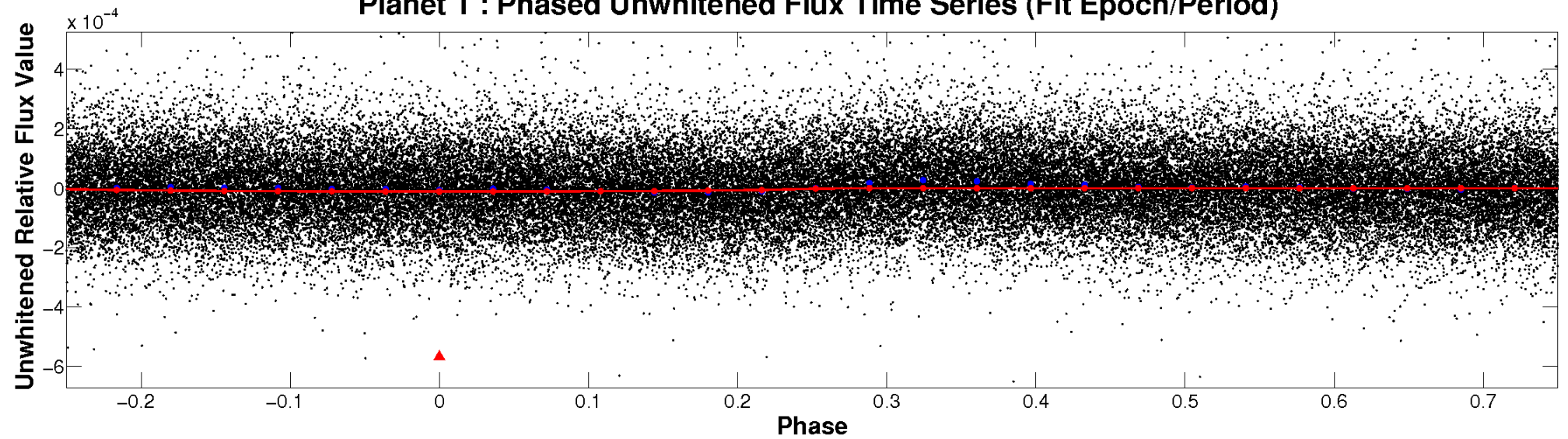
TCE 007199351-01



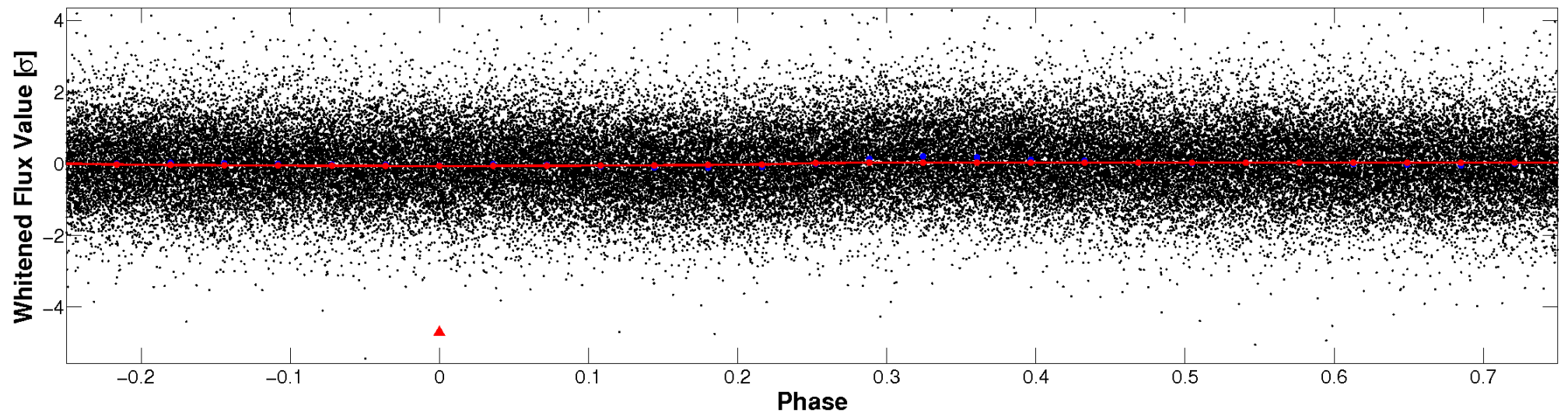


# Non-Whitened Vs. Whitened Light Curve

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

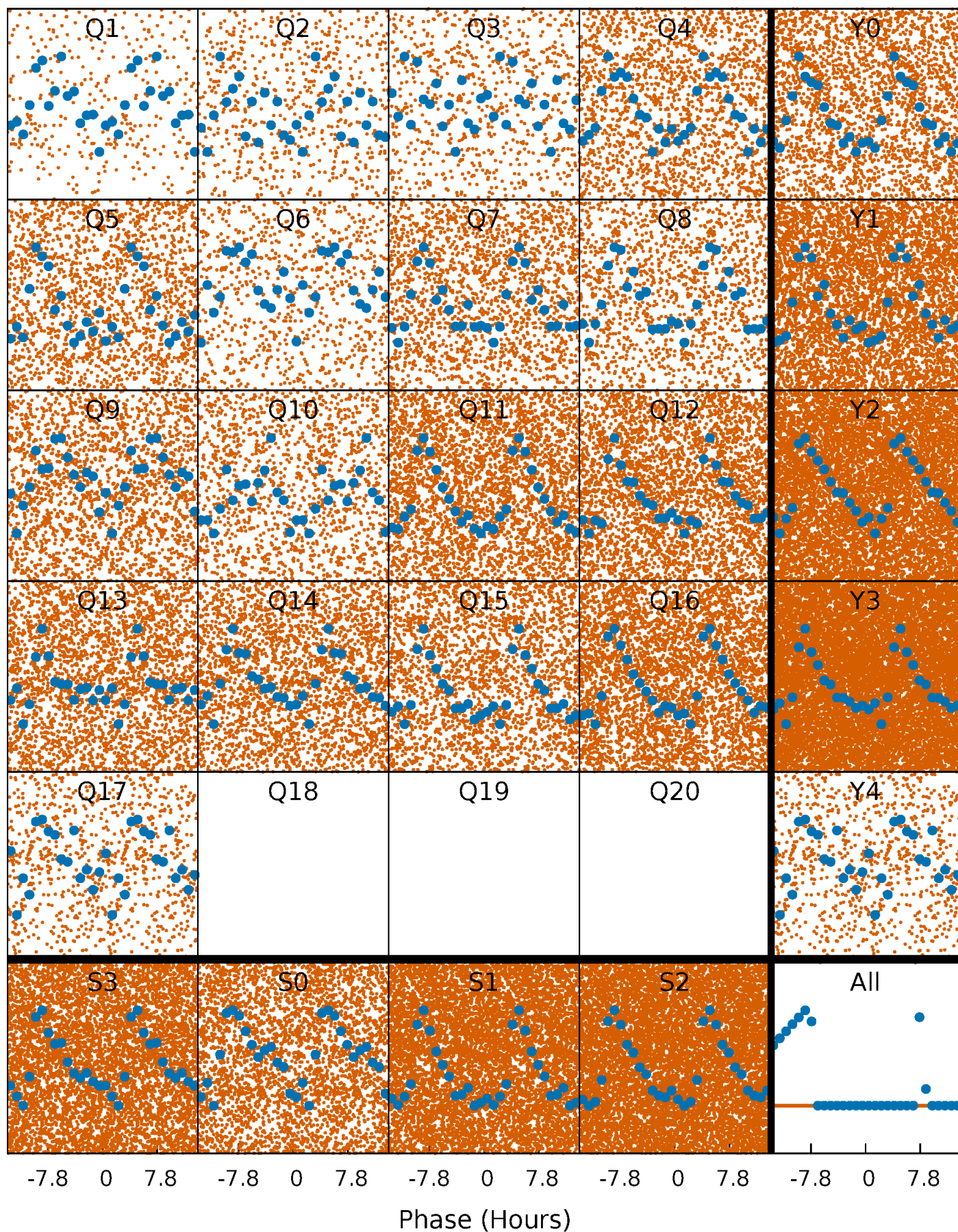


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

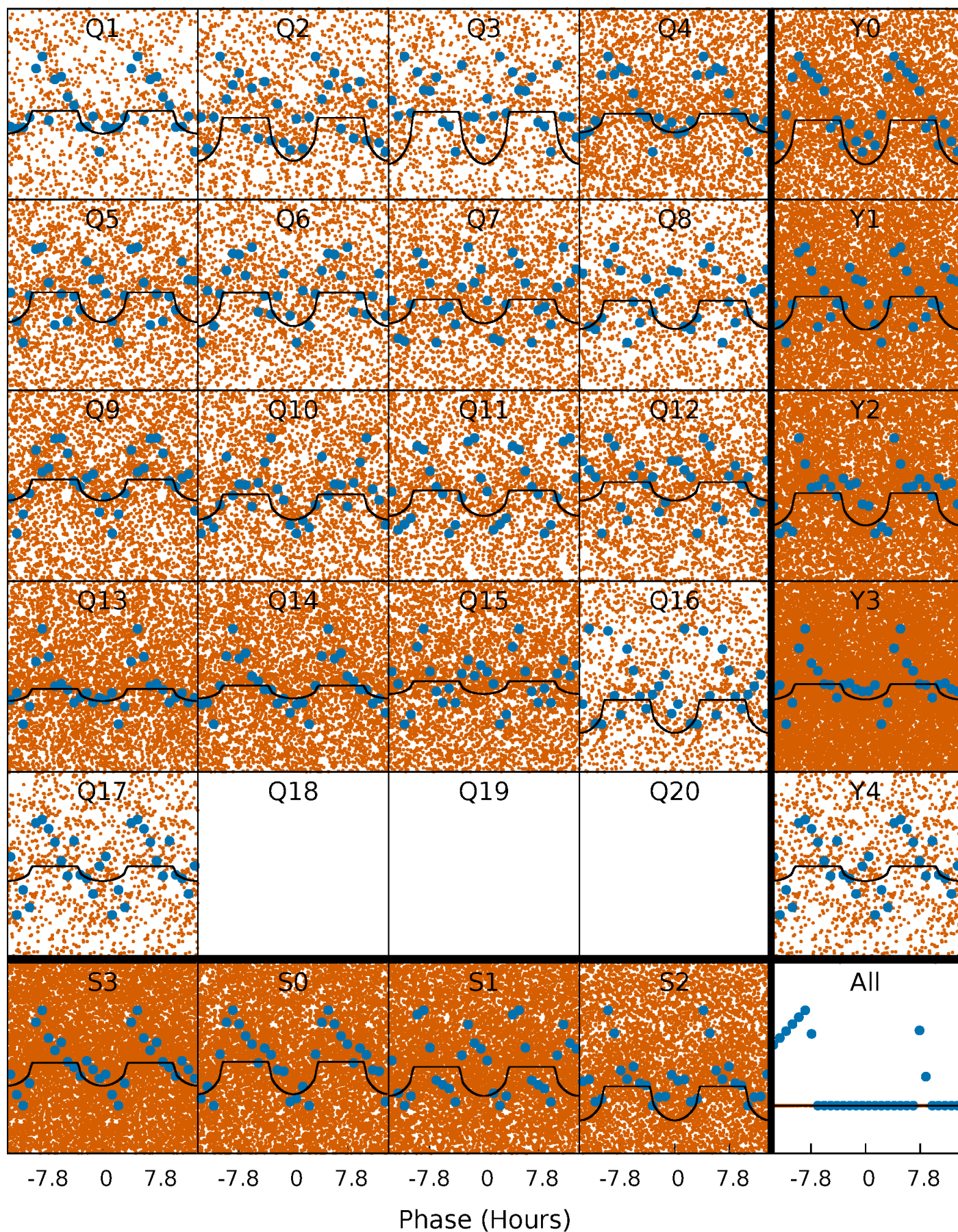
TCE 007199351-01 P= 0.566789 Days  $T_0=131.620293$  (BKJD)





# DV Quarter-Phased Transit Curves

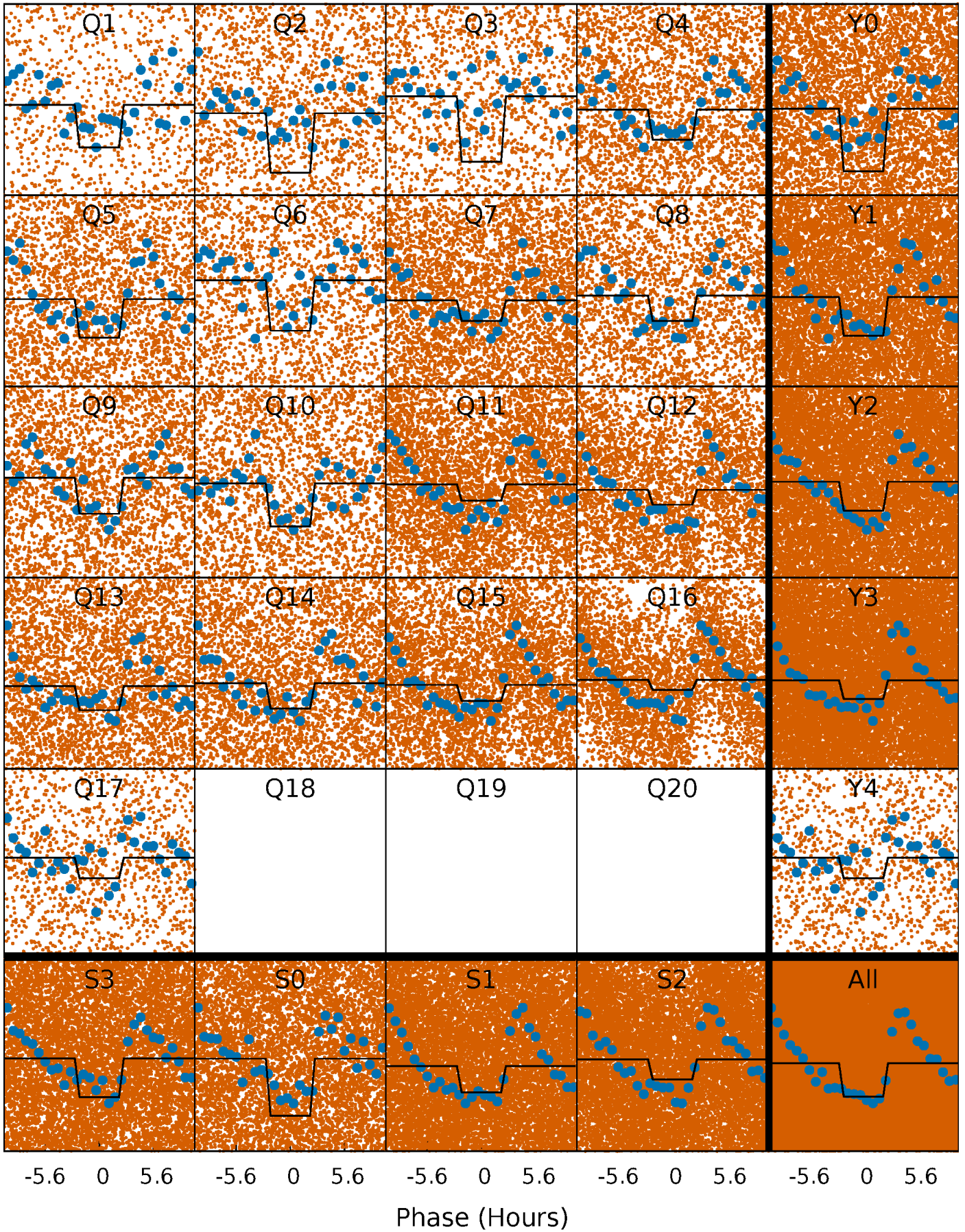
TCE 007199351-01 P= 0.566789 Days  $T_0=131.620293$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

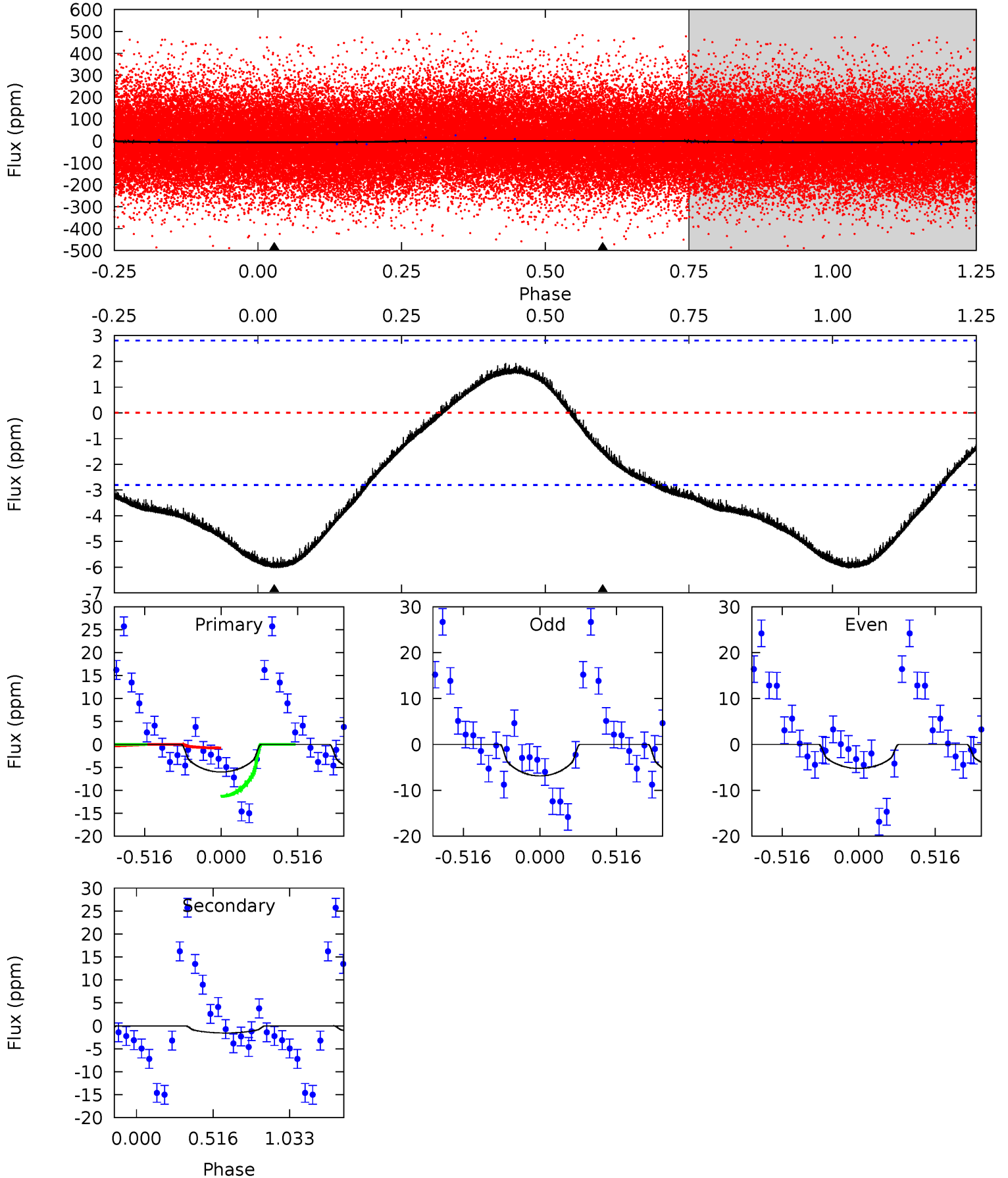
TCE 007199351-01 P= 0.566821 Days  $T_0=131.602572$  (BKJD)



# DV Model-Shift Uniqueness Test

007199351-01, P = 0.566789 Days, E = 131.053504 Days

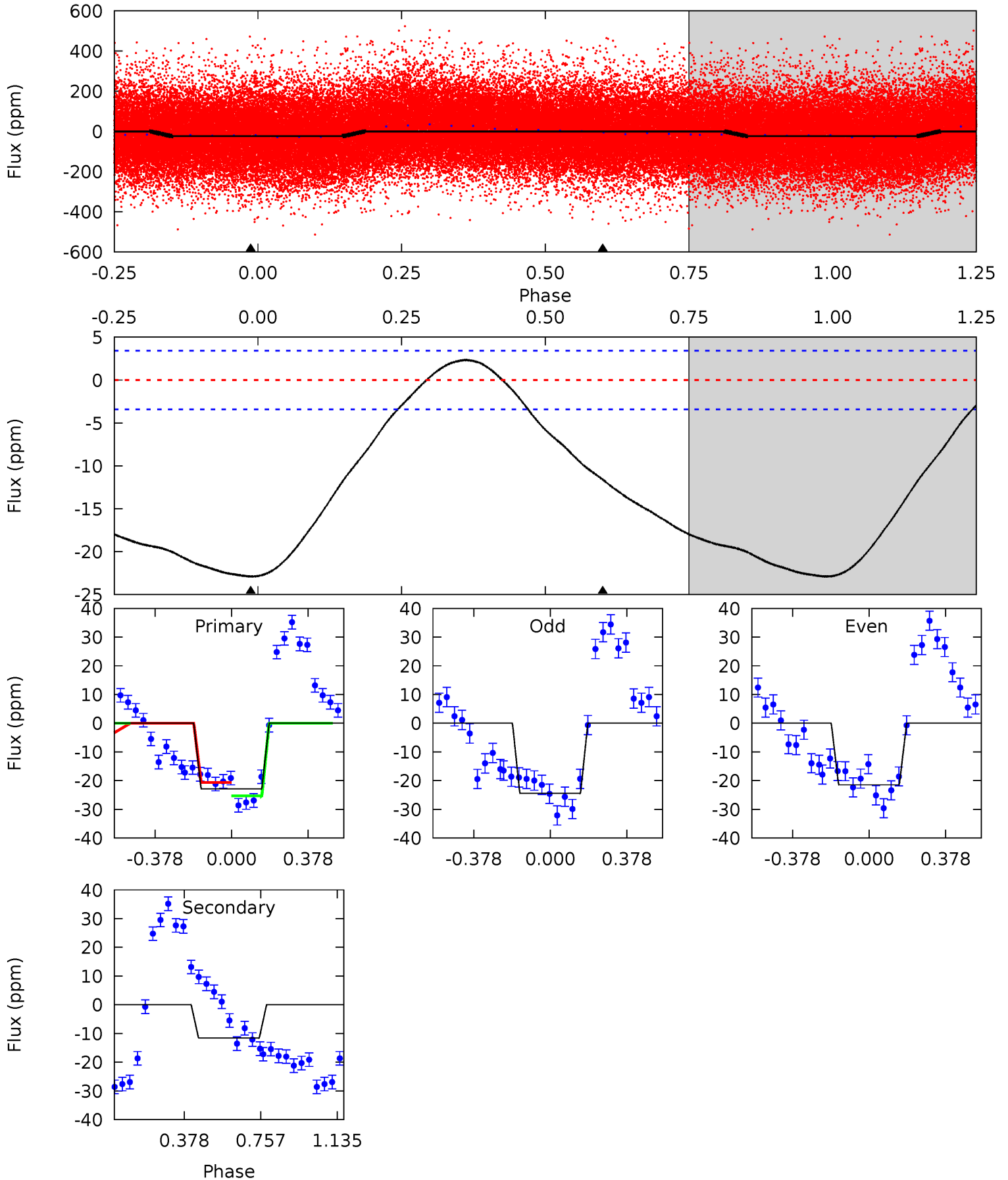
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.01	2.35	0	0	4.21	0.65	0.82	9.01	9.01	2.35	2.35	1.23	1.07	0.24	8.14



# Alt Model-Shift Uniqueness Test

007199351-01, P = 0.566821 Days, E = 131.035751 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
28.7	14.5	0	0	4.28	0.88	2.14	28.7	28.7	14.5	14.5	1.85	1.03	0.09	2.99





### Stellar Parameters For KIC 007199351

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6261^{+151}_{-189}$	$4.224^{+0.165}_{-0.135}$	$-0.100^{+0.250}_{-0.300}$	$1.342^{+0.310}_{-0.253}$	$1.097^{+0.167}_{-0.136}$	$0.640^{+0.472}_{-0.251}$
	+2%/-3%	+4%/-3%	+250%/-300%	+23%/-19%	+15%/-12%	+74%/-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 007199351-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-2 \pm 1$	$0.46^{+0.29}_{-0.25}$	$3784^{+226}_{-210}$	$3775^{+1860}_{-6534}$	$0.742^{+2.801}_{-0.489}$
Alt.	$-12 \pm 1$	$0.68^{+0.30}_{-0.29}$	$3783^{+241}_{-236}$	$5241^{+1780}_{-779}$	$2.650^{+5.497}_{-1.350}$

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

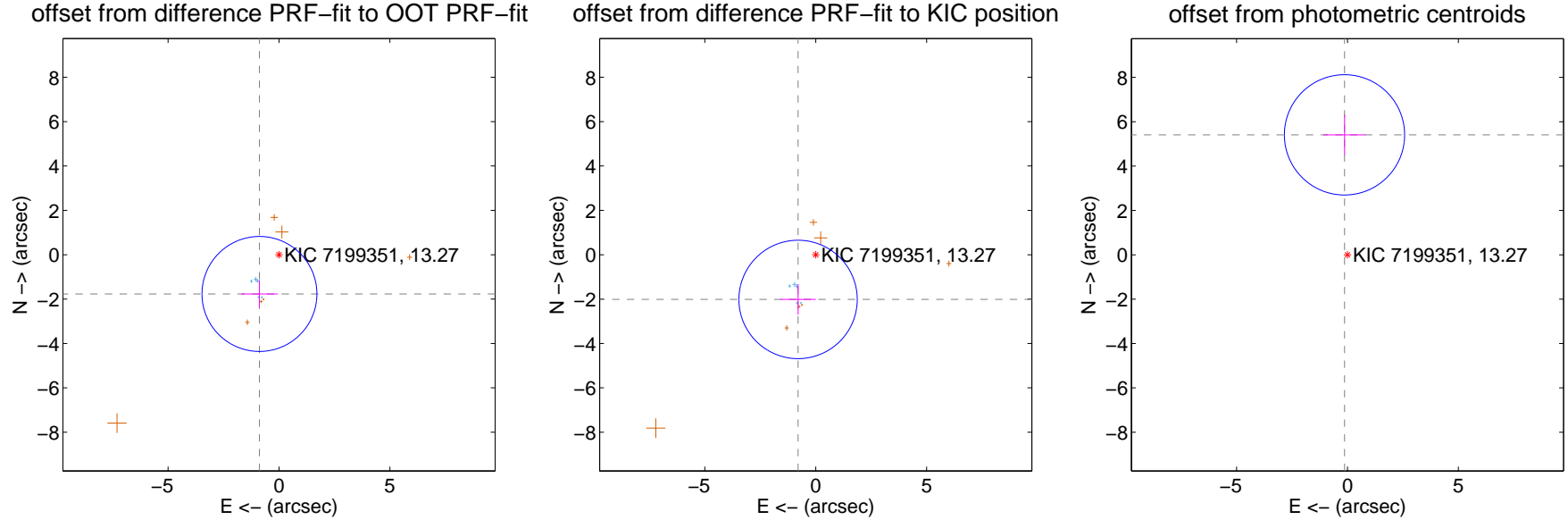
## DV Centroid Data

Supplemental centroid analysis for 007199351-01. Kepler magnitude: 13.27. Transit SNR 9.64

There are 5 quarters with good PRF difference image offsets

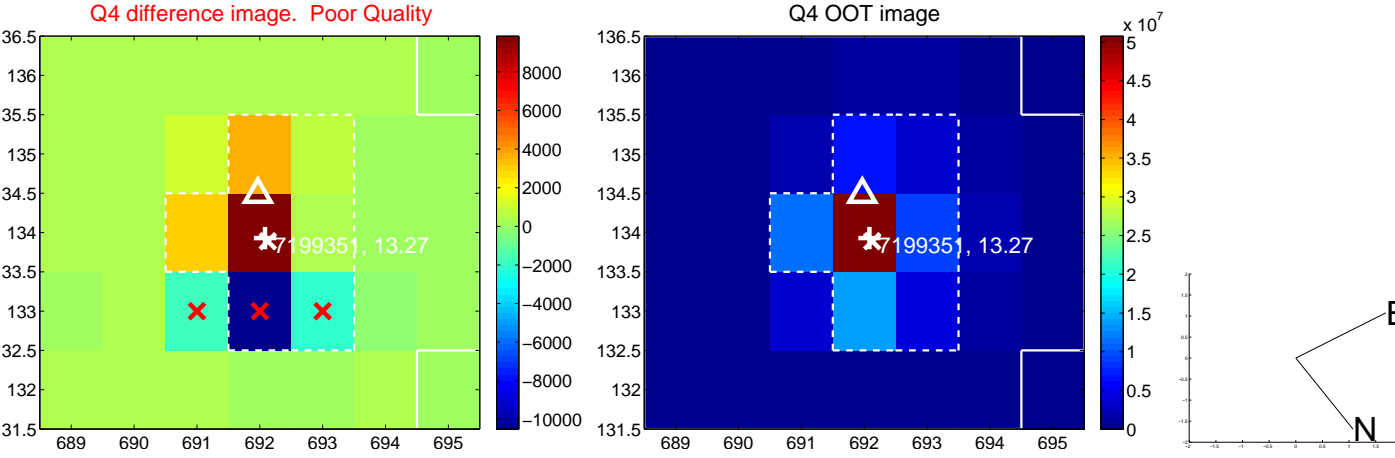
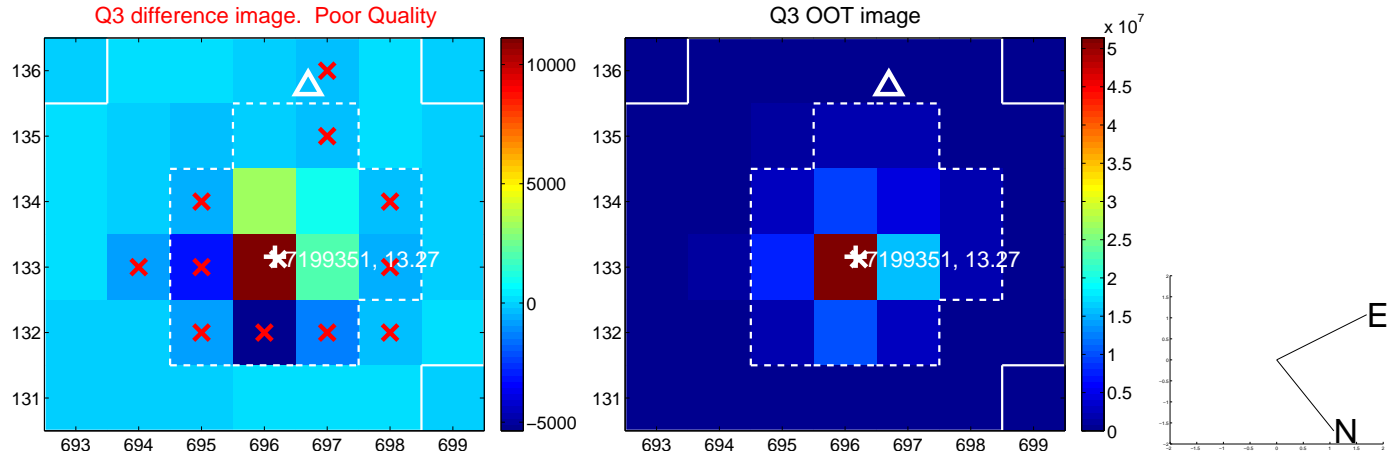
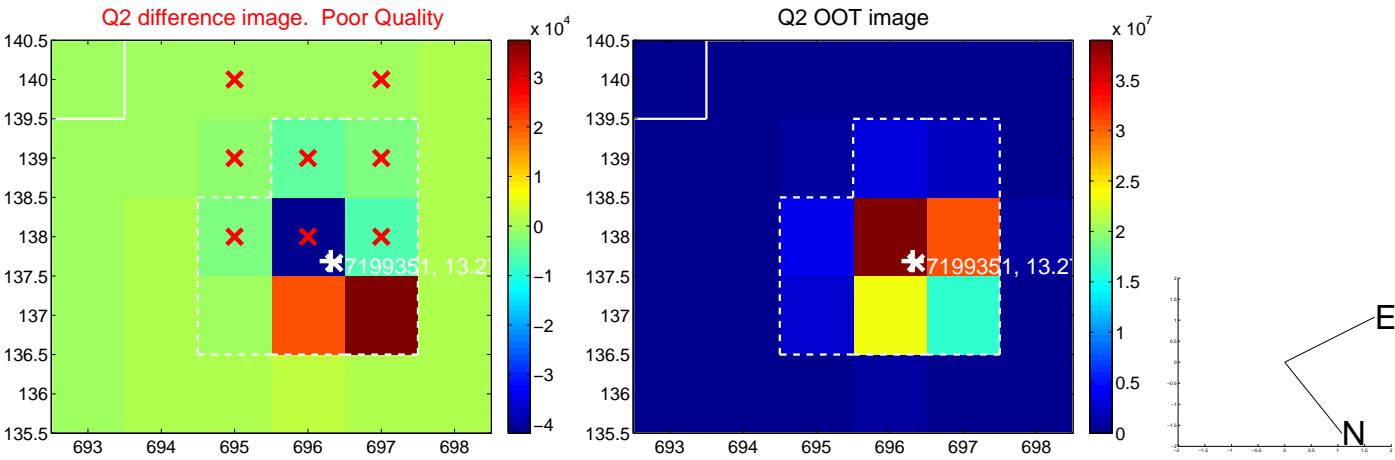
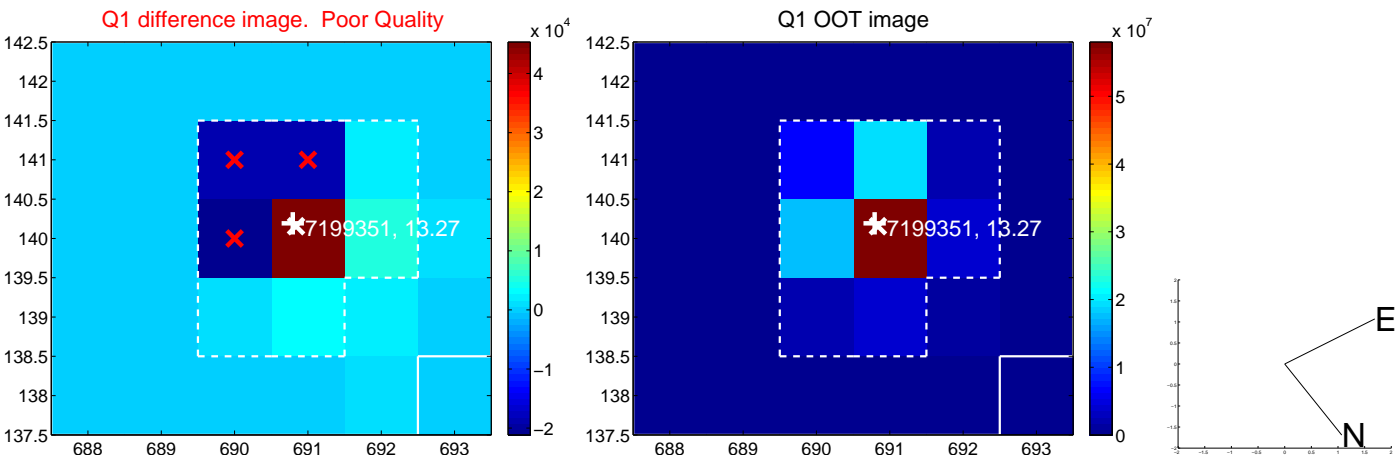
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.976 \pm 0.864$	2.29	$0.882 \pm 0.822$	$-1.768 \pm 0.623$
PRF-fit source offset from KIC position	$2.167 \pm 0.889$	2.44	$0.796 \pm 0.804$	$-2.015 \pm 0.689$
photometric centroid source offset	$5.41 \pm 0.90$	<b>5.98</b>	$0.13 \pm 0.95$	$5.41 \pm 0.90$

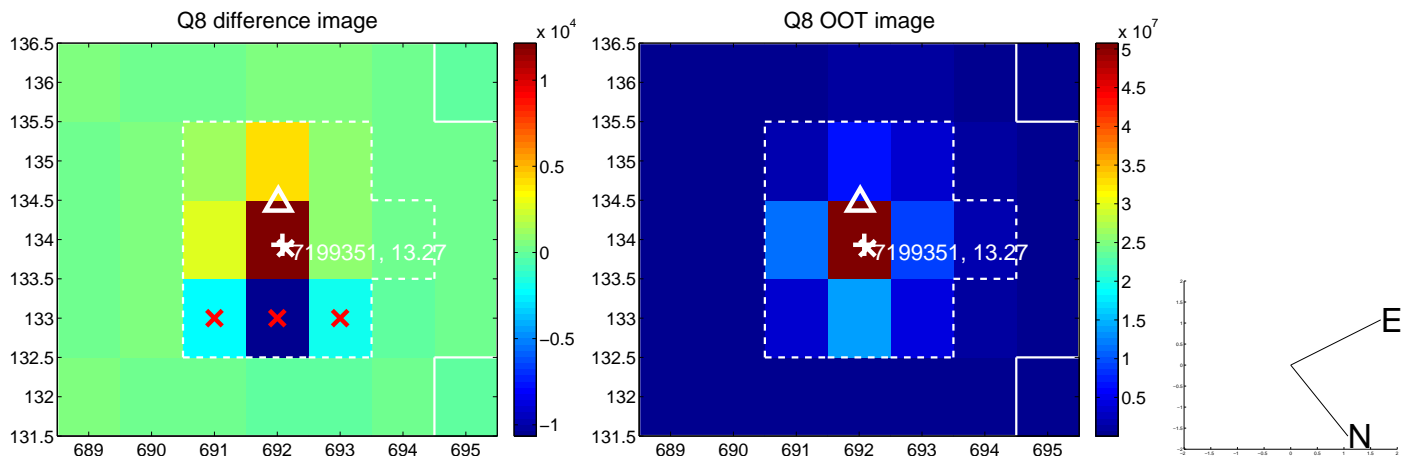
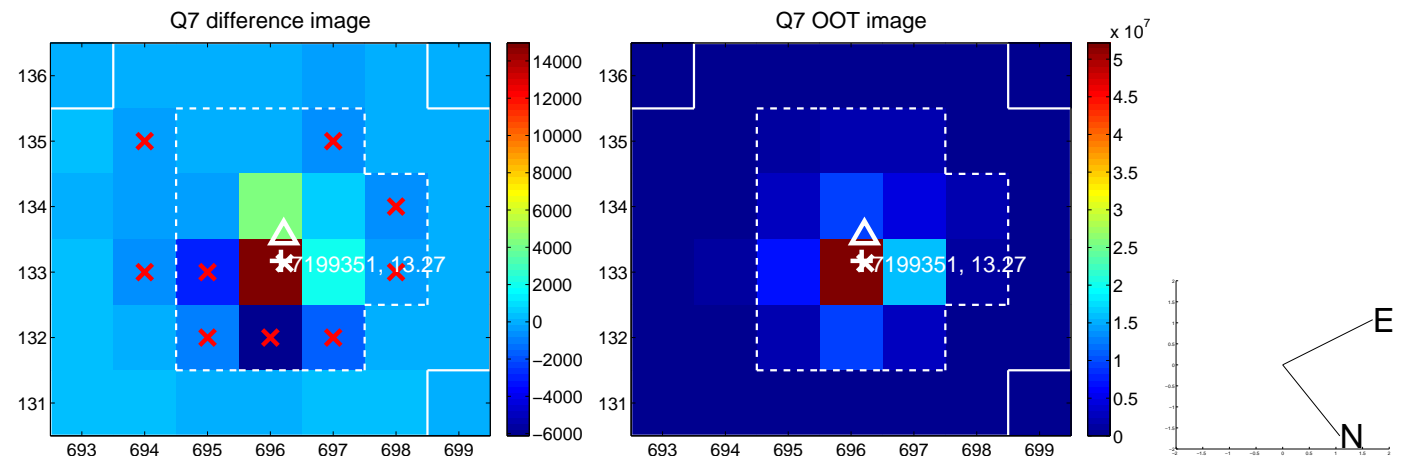
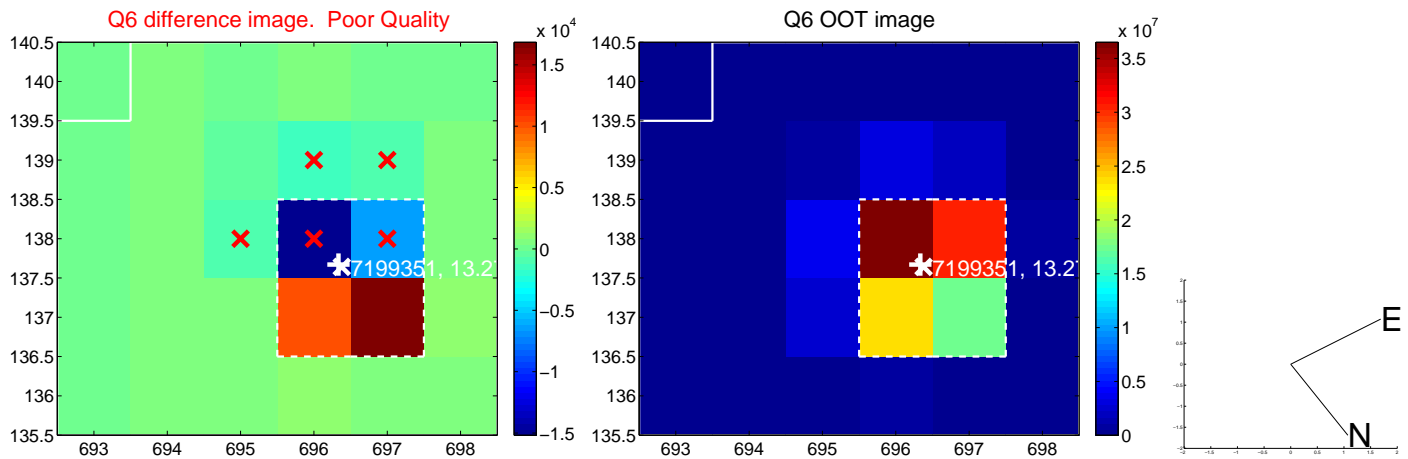
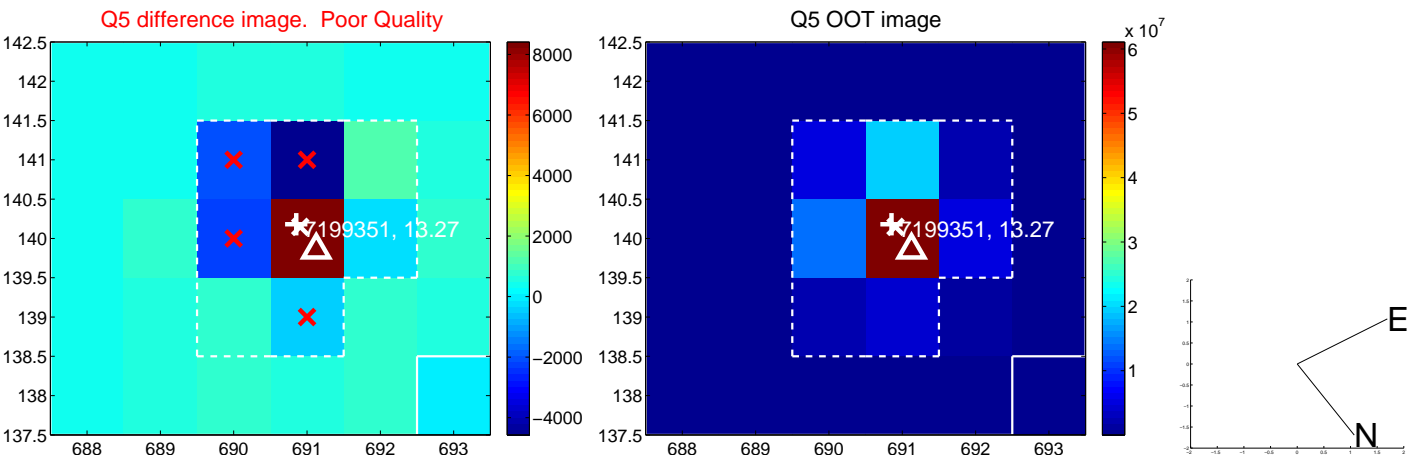


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

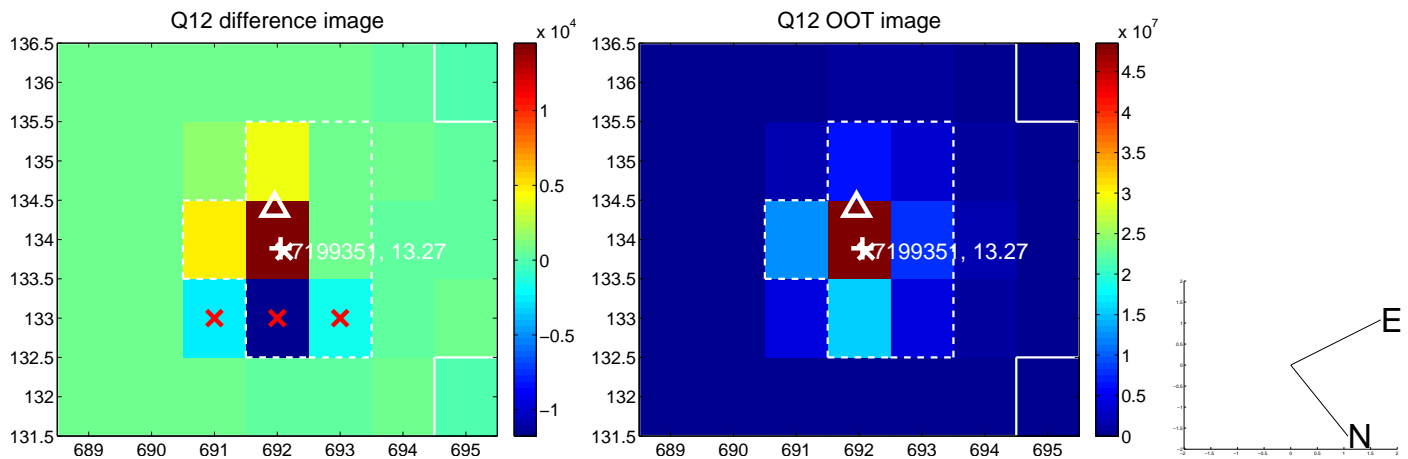
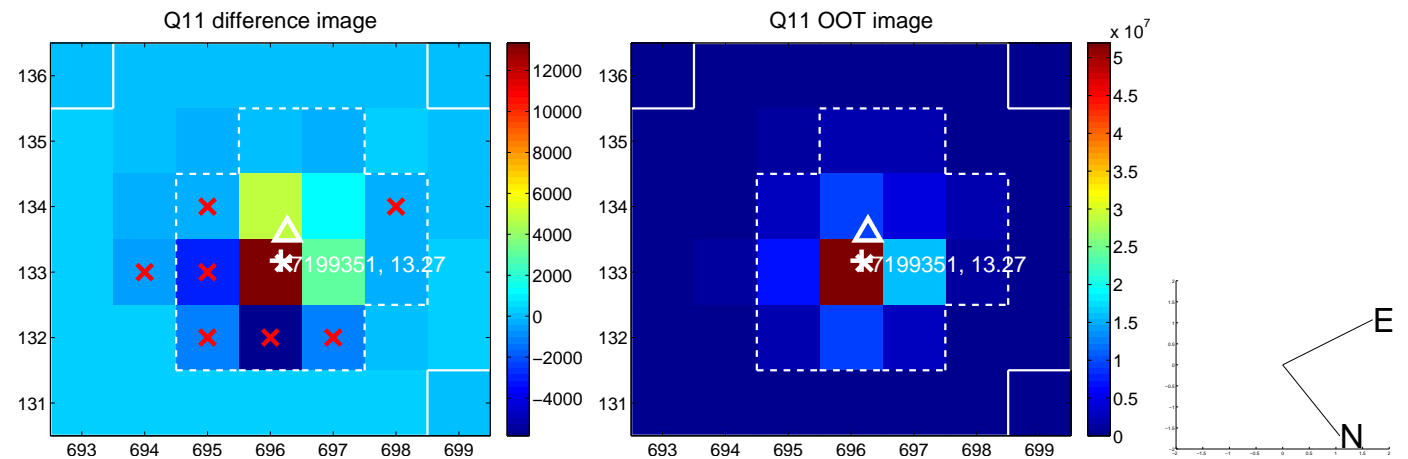
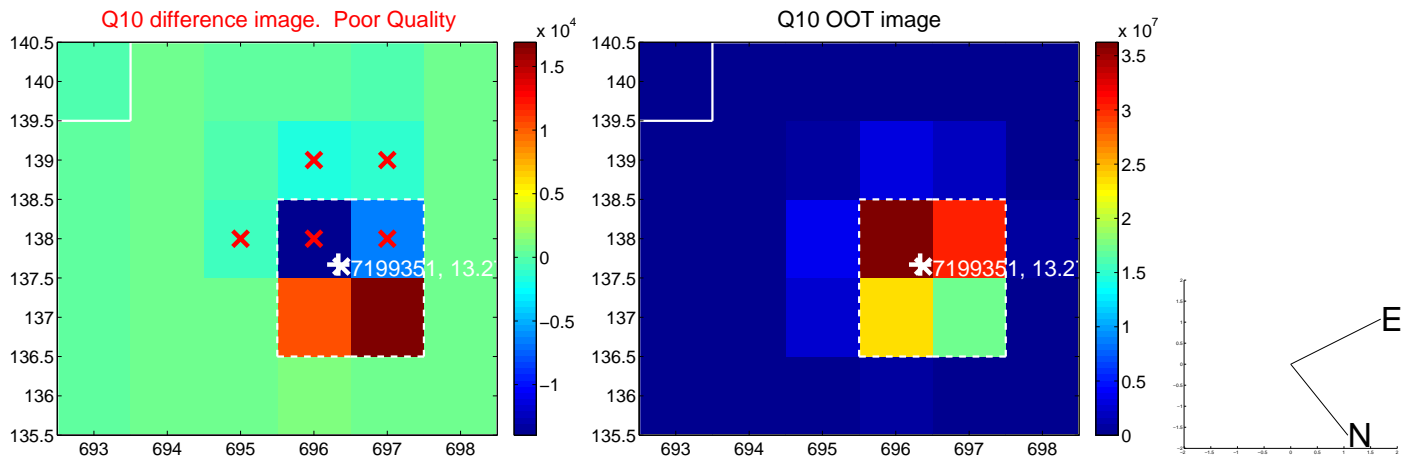
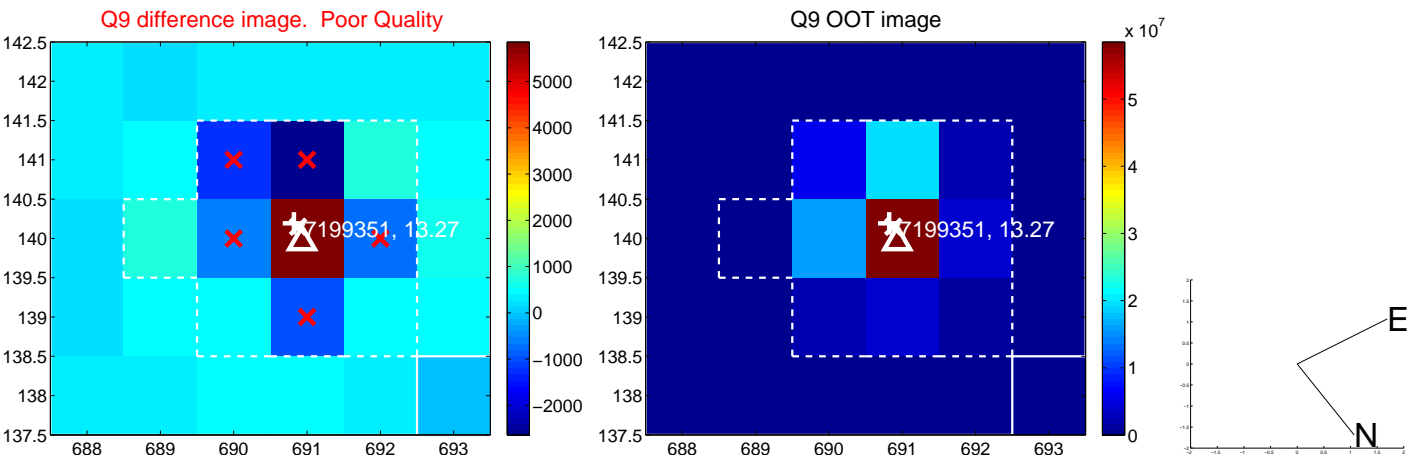


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

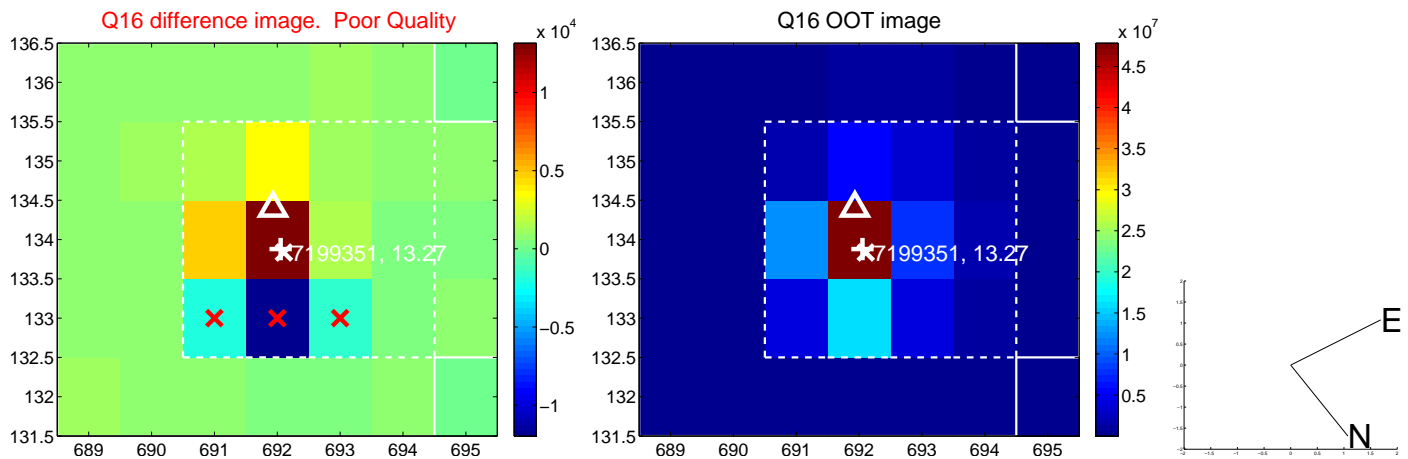
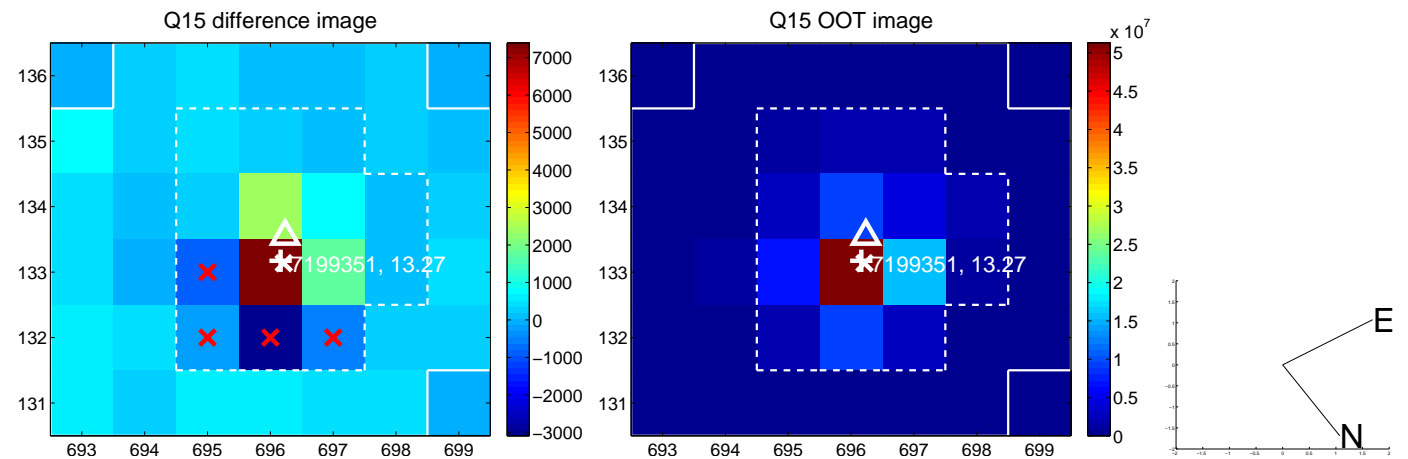
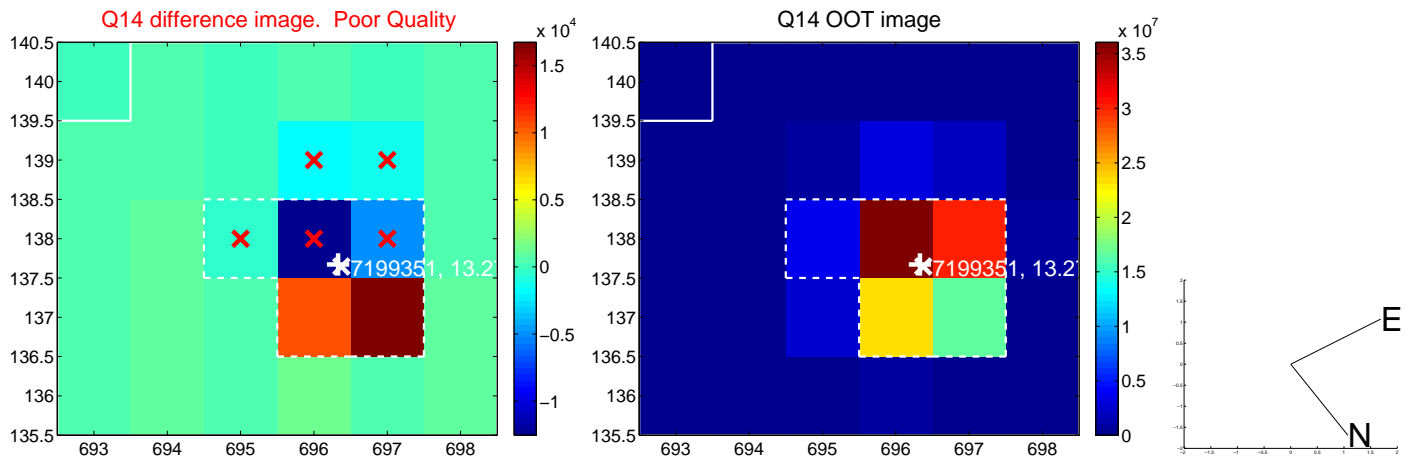
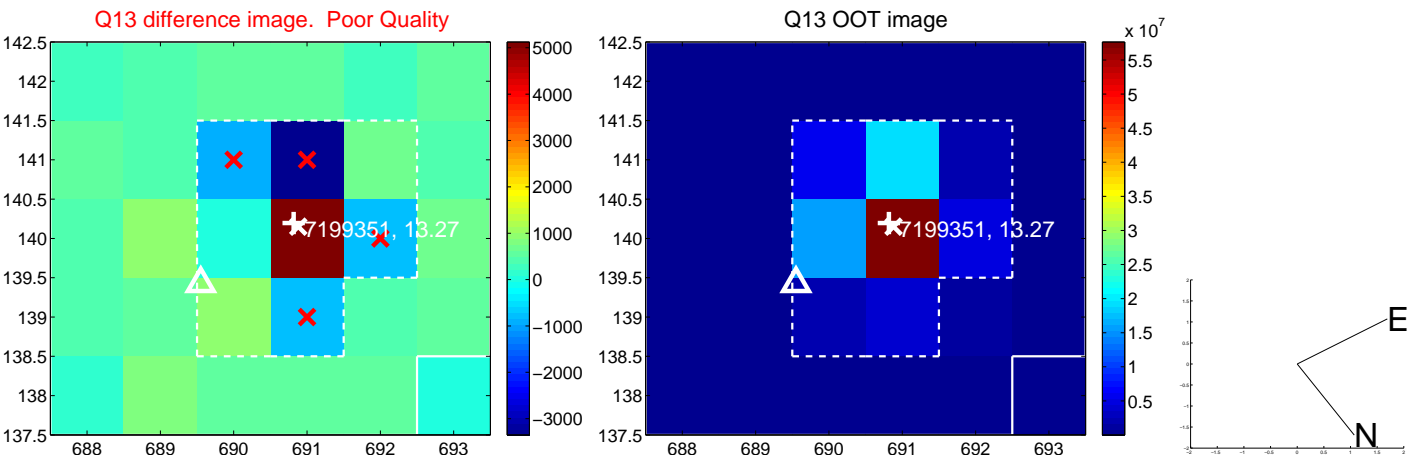




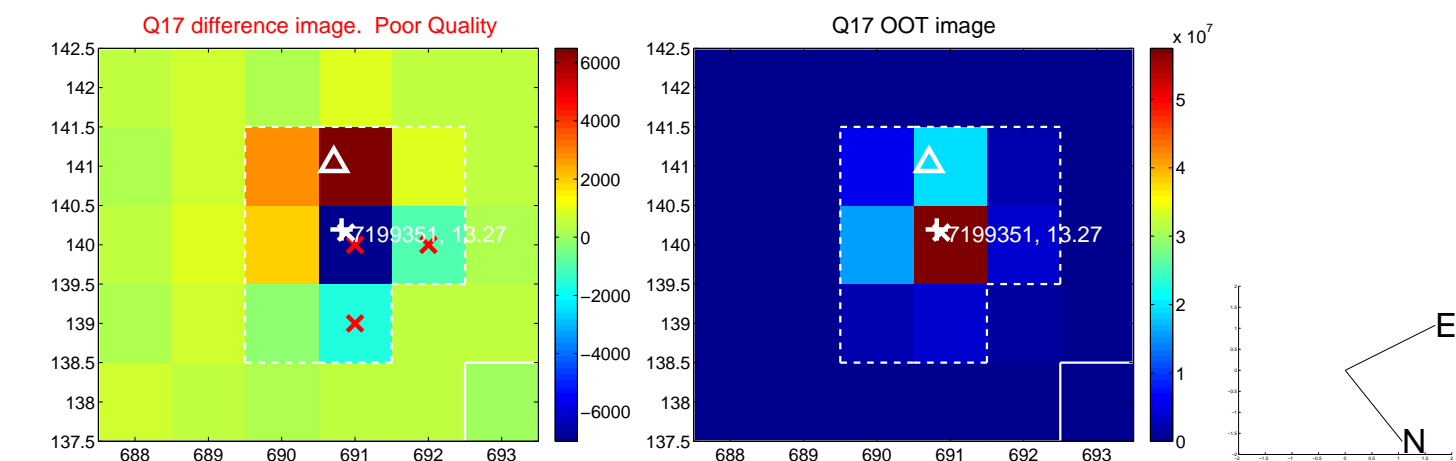
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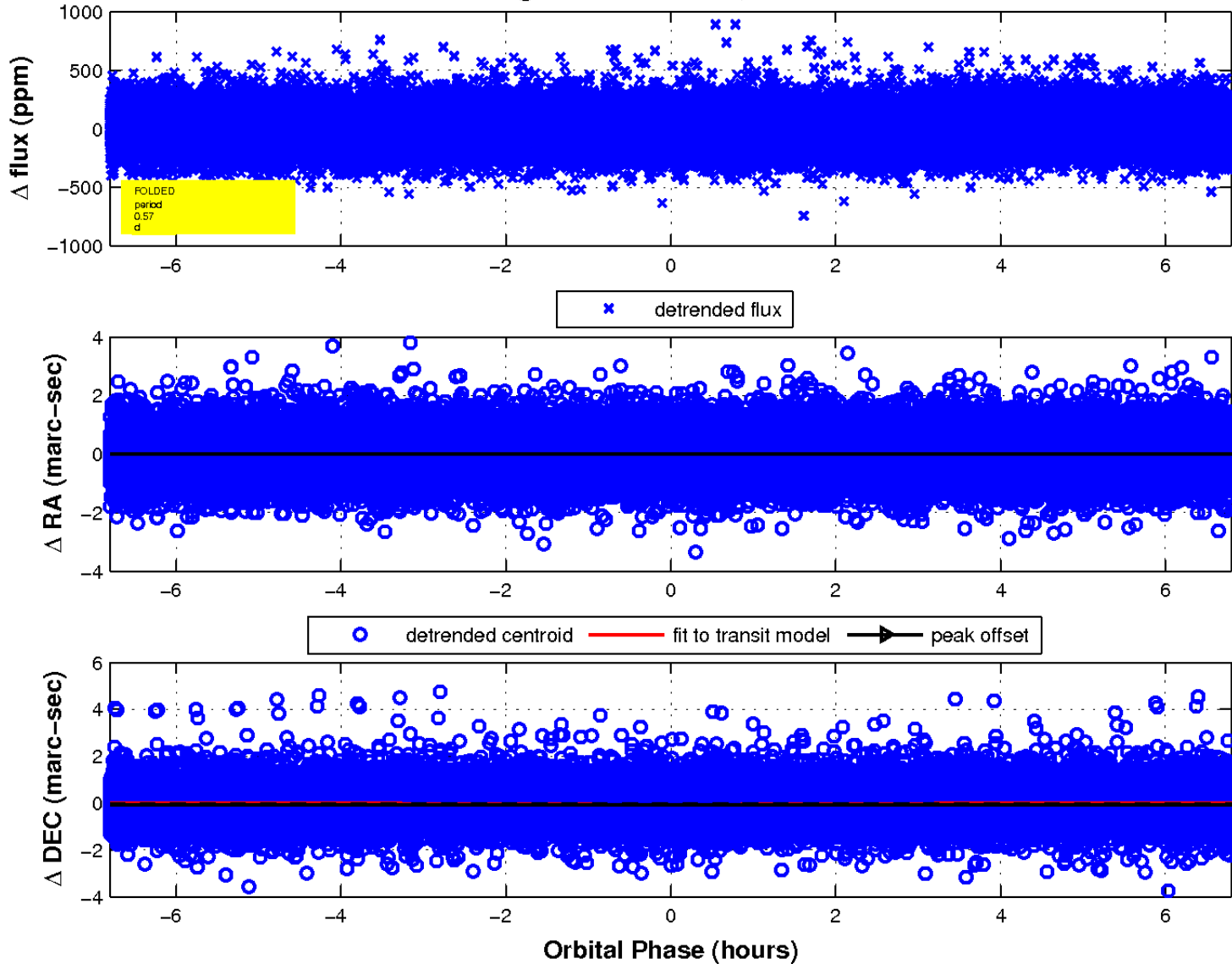
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

