

# KIC 006199716

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006199716-01	OBS	7771.01	0.805272	132.083139	94.2	1.277	8.4	7.8	1.10	6268	1.27	5204.93

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006199716-01	OBS	FP	0.00	0	0	1	1	CENT_RESOLVED_OFFSET—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.

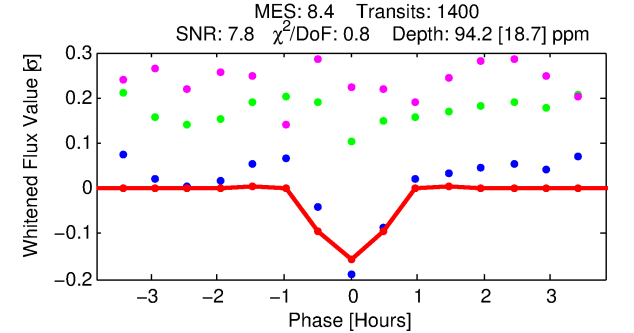
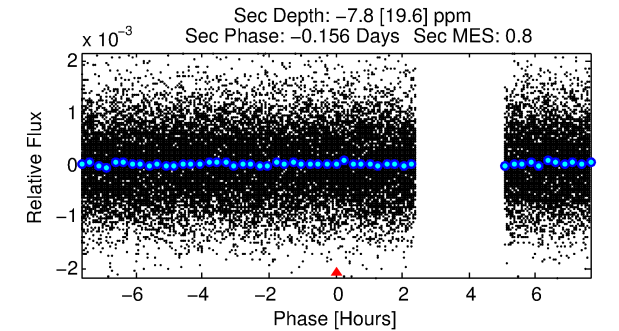
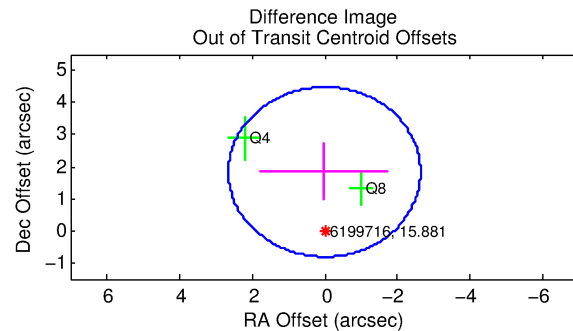
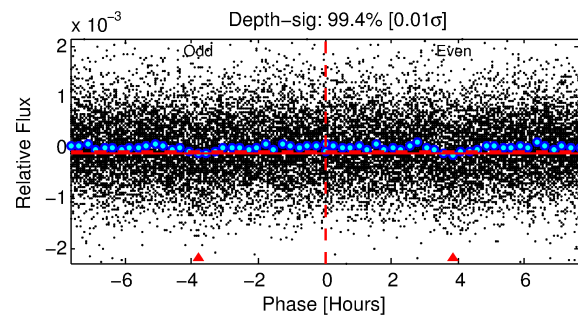
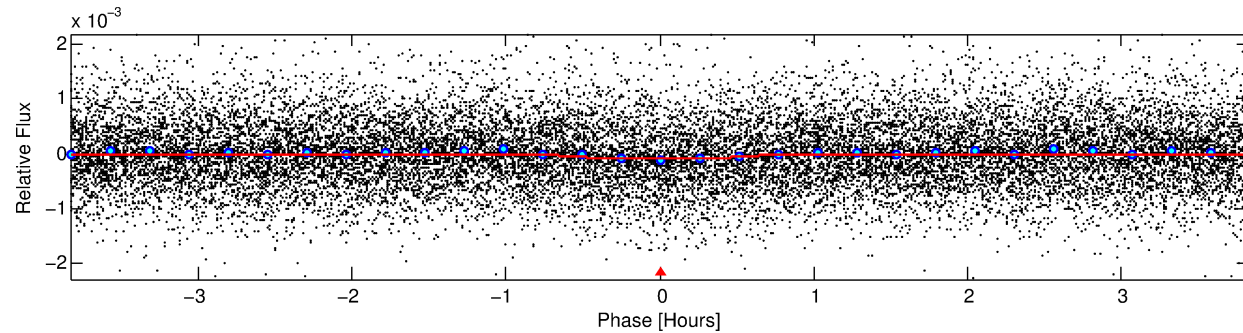
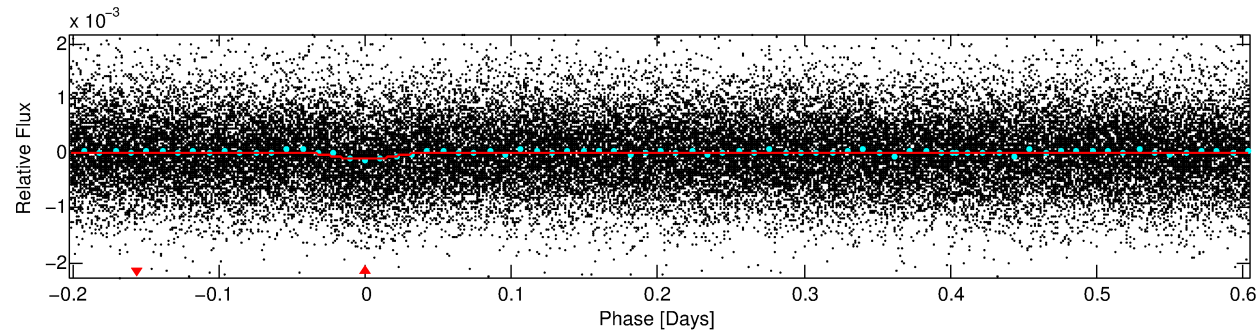
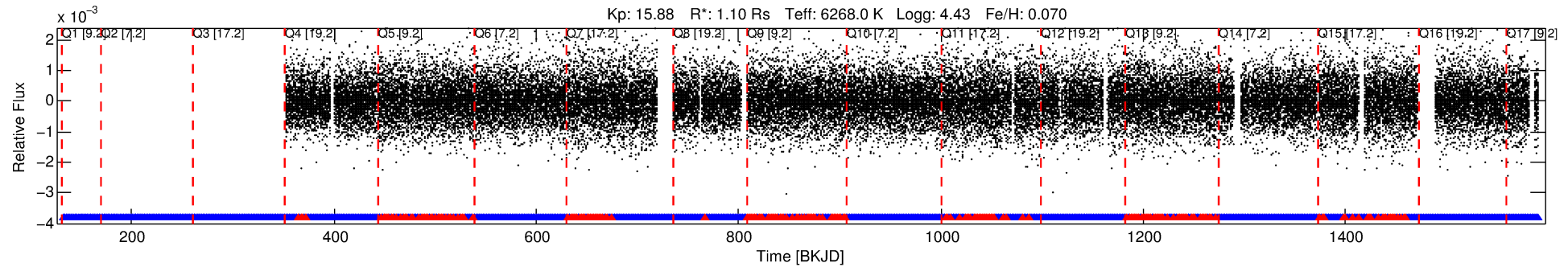
## Ephemeris Match Information For 006199716-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ( $''$ )	$\Delta$ Row	$\Delta$ Col	$m_2$	$m_1$	$D_2/D_1$	Mechanism	Flag	$\sigma_P$	$\sigma_T$
006199716-01	6199716	1812.01	6279974	1:1	10.6	3	-2	13.74	15.88	15.06	Direct-PRF	0	1.59	1.40

**Notes:**  $P_1:P_2$  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.  $m_2$  and  $m_1$  are the magnitudes of the parent and child.  $D_2/D_1$  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: 6199716 Candidate: 1 of 1 Period: 0.805 d



## DV Fit Results:

Period = 0.80527 [0.00001] d  
Epoch = 132.0831 [0.0026] BKJD  
Rp/R\* = 0.0105 [0.0101]  
a/R\* = 2.37 [10.04]  
b = 0.90 [1.06]  
Seff = 5204.93 [2072.62]  
Teq = 2166 [216] K  
Rp = 1.27 [1.27] Re  
a = 0.0179 [0.0045] AU  
Ag = N/A  
Teffp = N/A

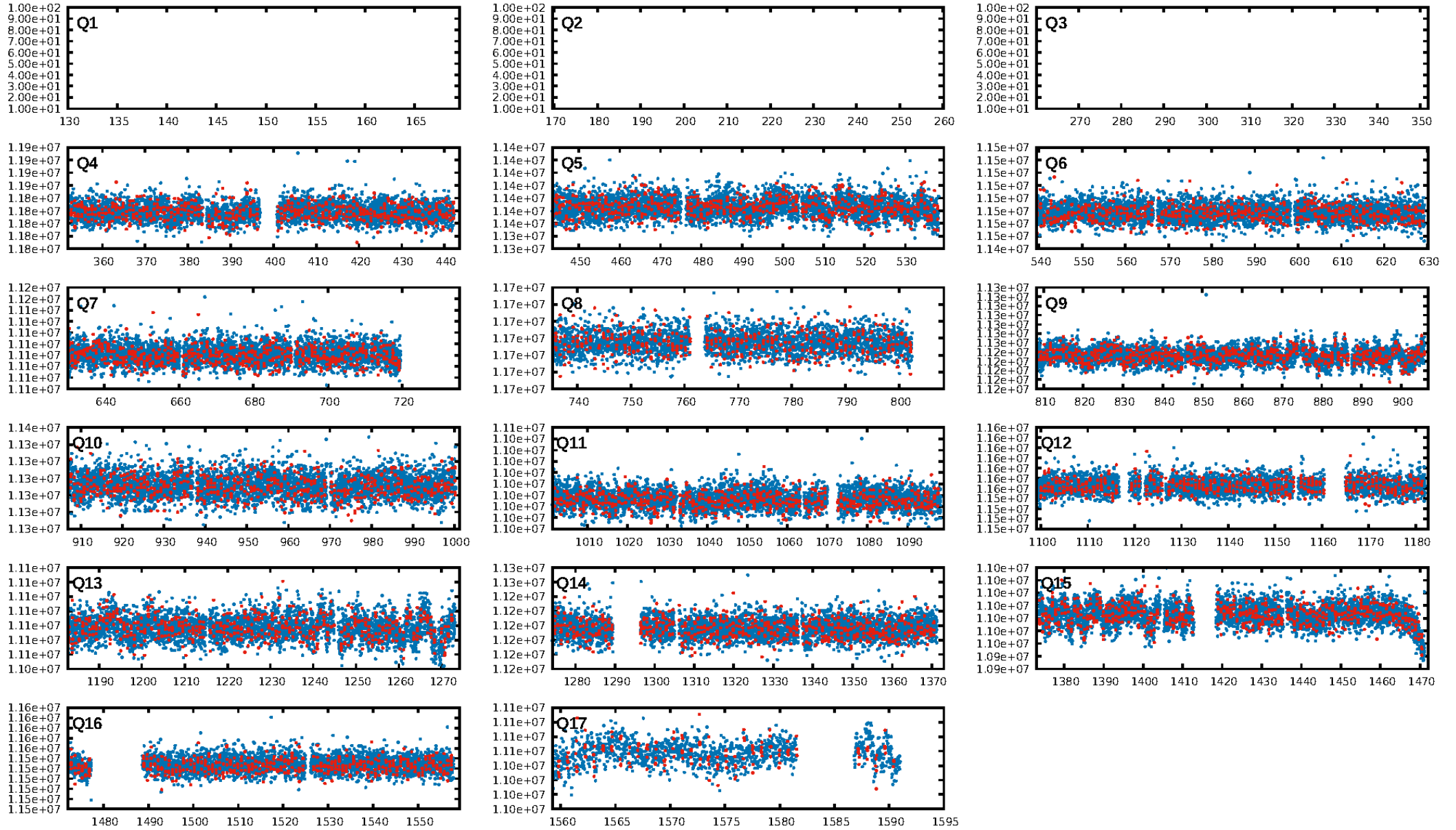
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGoF-sig: N/A  
Bootstrap-pfa: 6.24e-17  
RollingBand-fgt: 0.82 [1117/1367]  
GhostDiagnostic-chr: -0.4088  
Centroid-sig: 0.0%  
Centroid-so: 14.651 arcsec [16.35 $\sigma$ ]  
OotOffset-rm: 1.833 arcsec [2.08 $\sigma$ ]  
KicOffset-rm: 4.782 arcsec [2.84 $\sigma$ ]  
OotOffset-st: 0/0/2/0 [2]  
KicOffset-st: 0/0/2/0 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 1.00 [14/14]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:54:30 Z

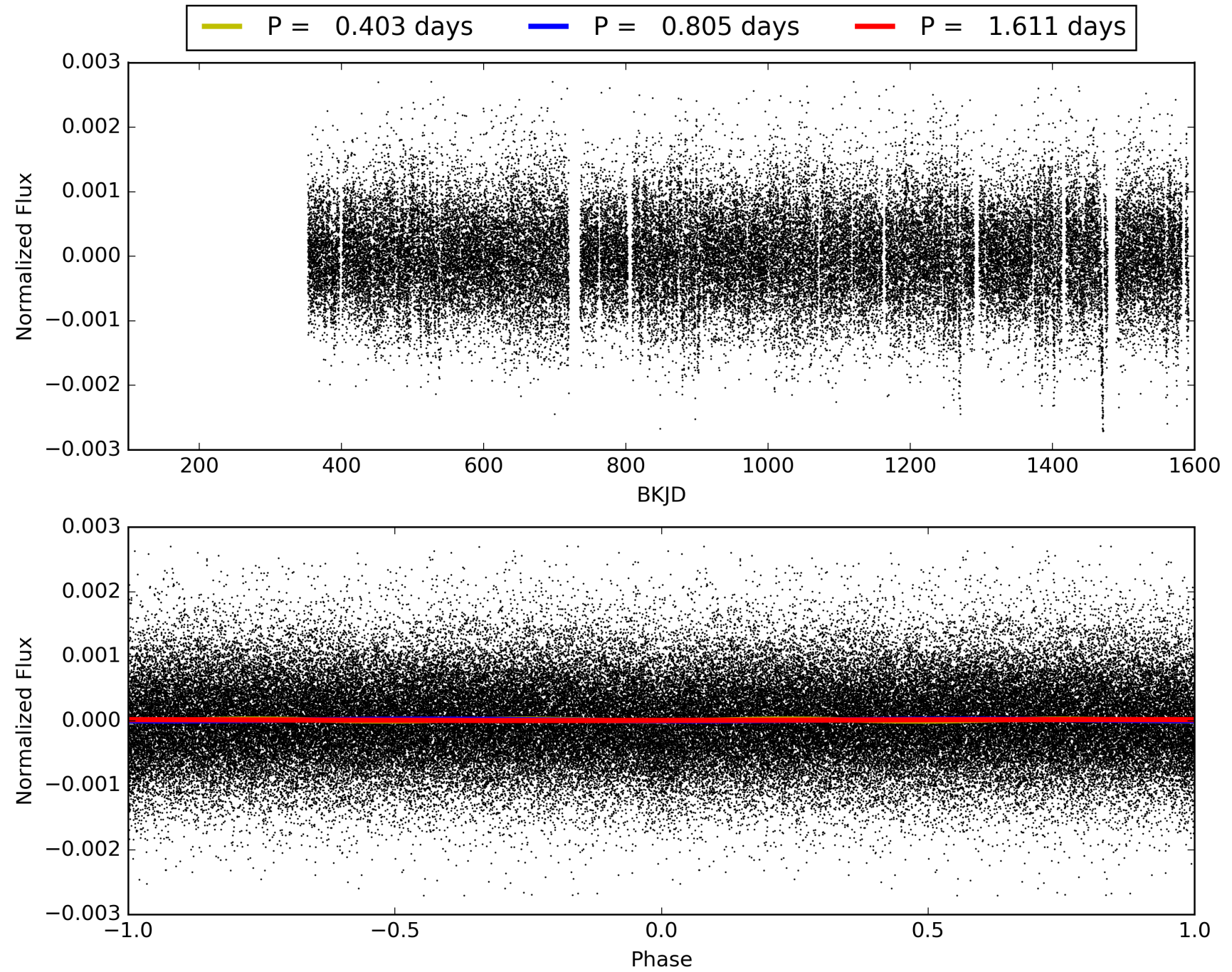
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 006199716-01, PDC Light Curves



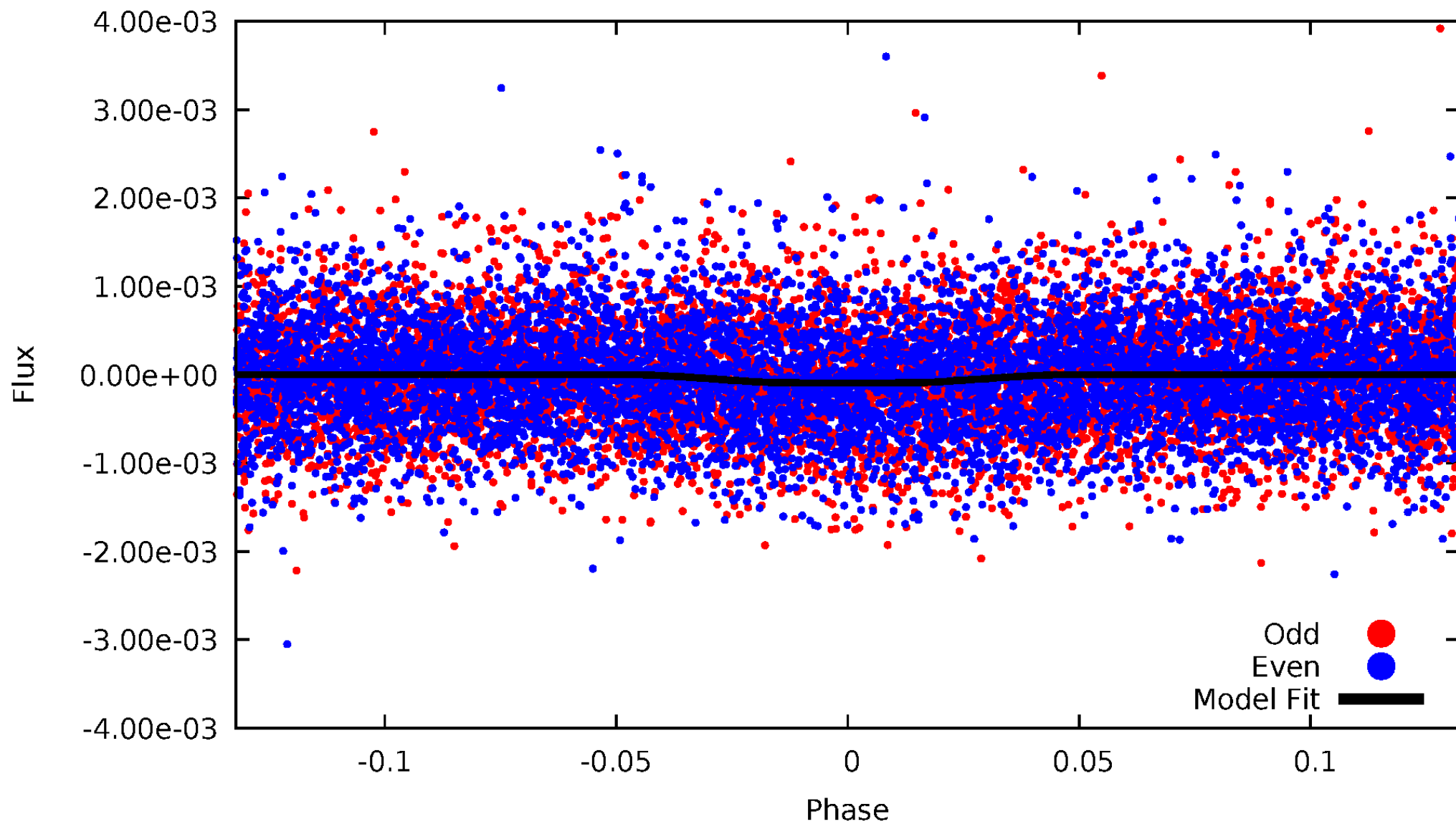


# TCE 006199716-01



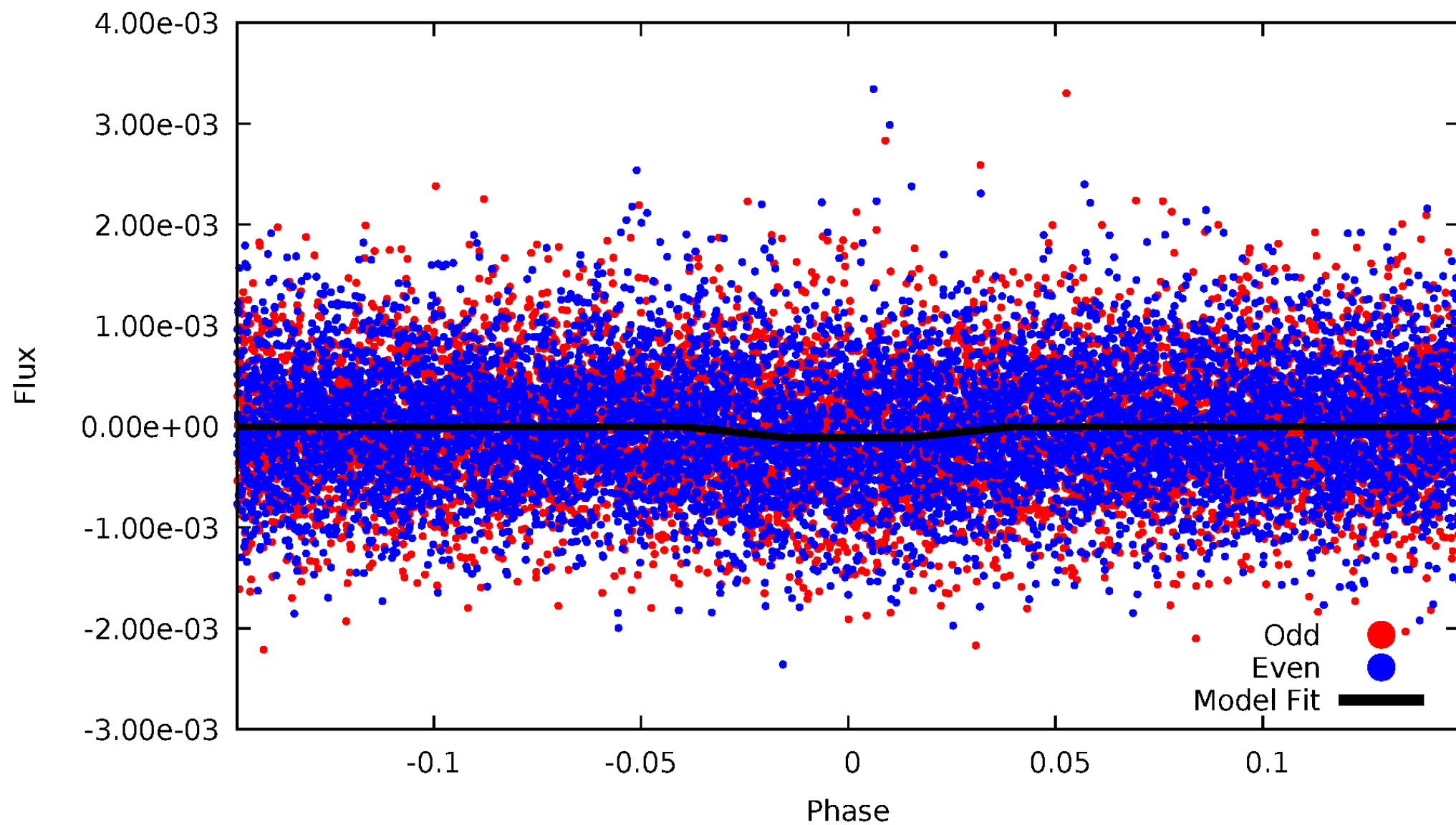
# DV Odd/Even

TCE 006199716-01

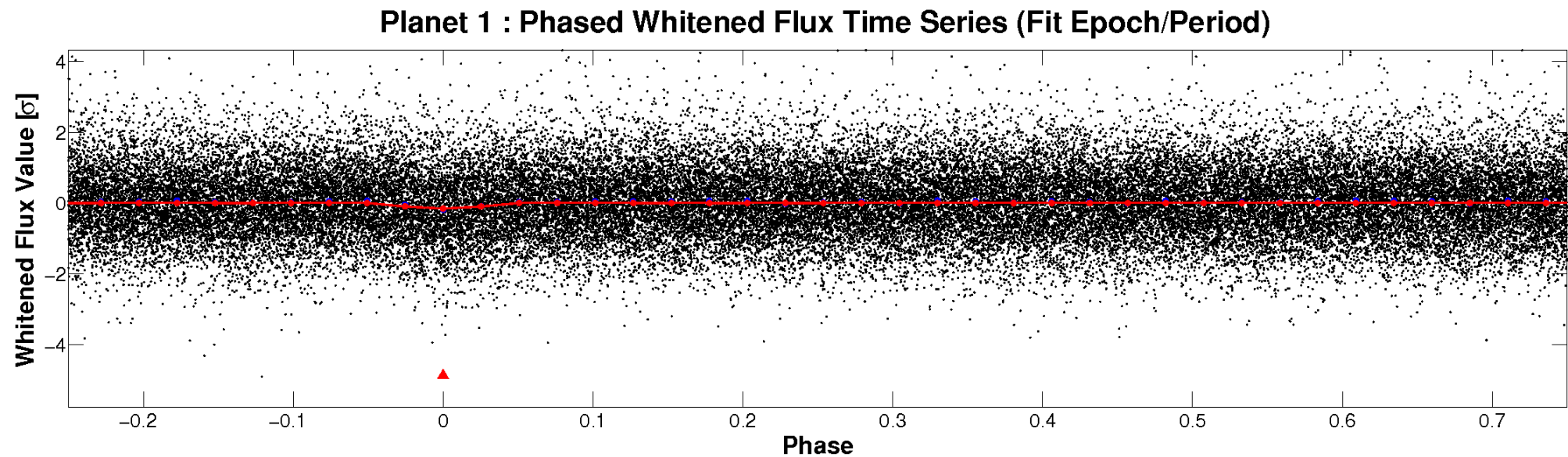
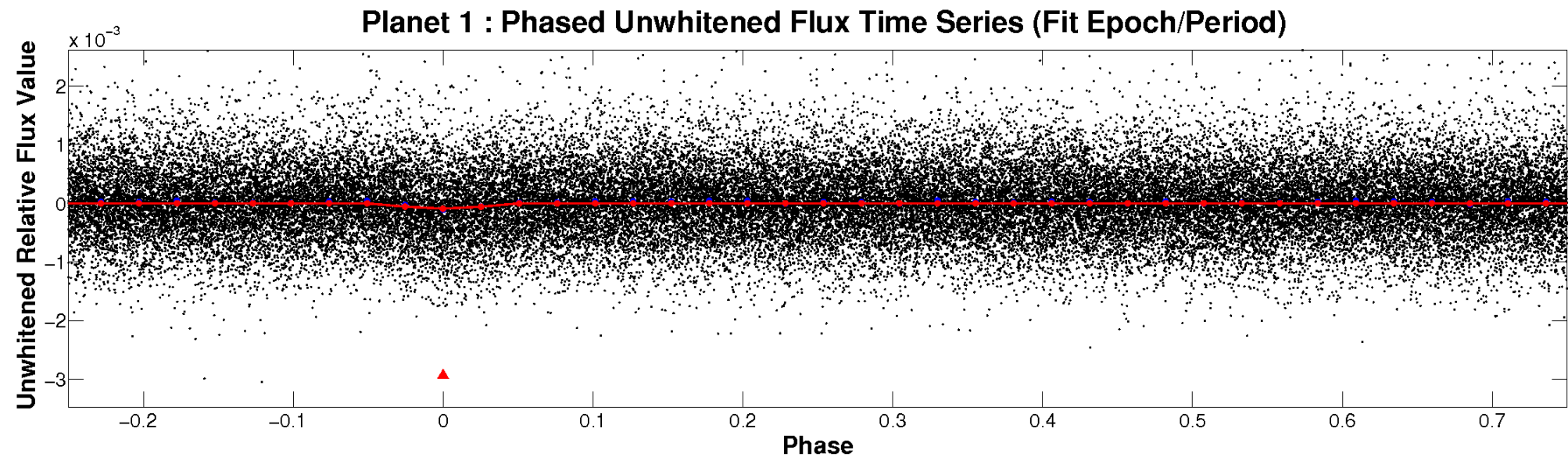


# ALT Odd/Even

TCE 006199716-01



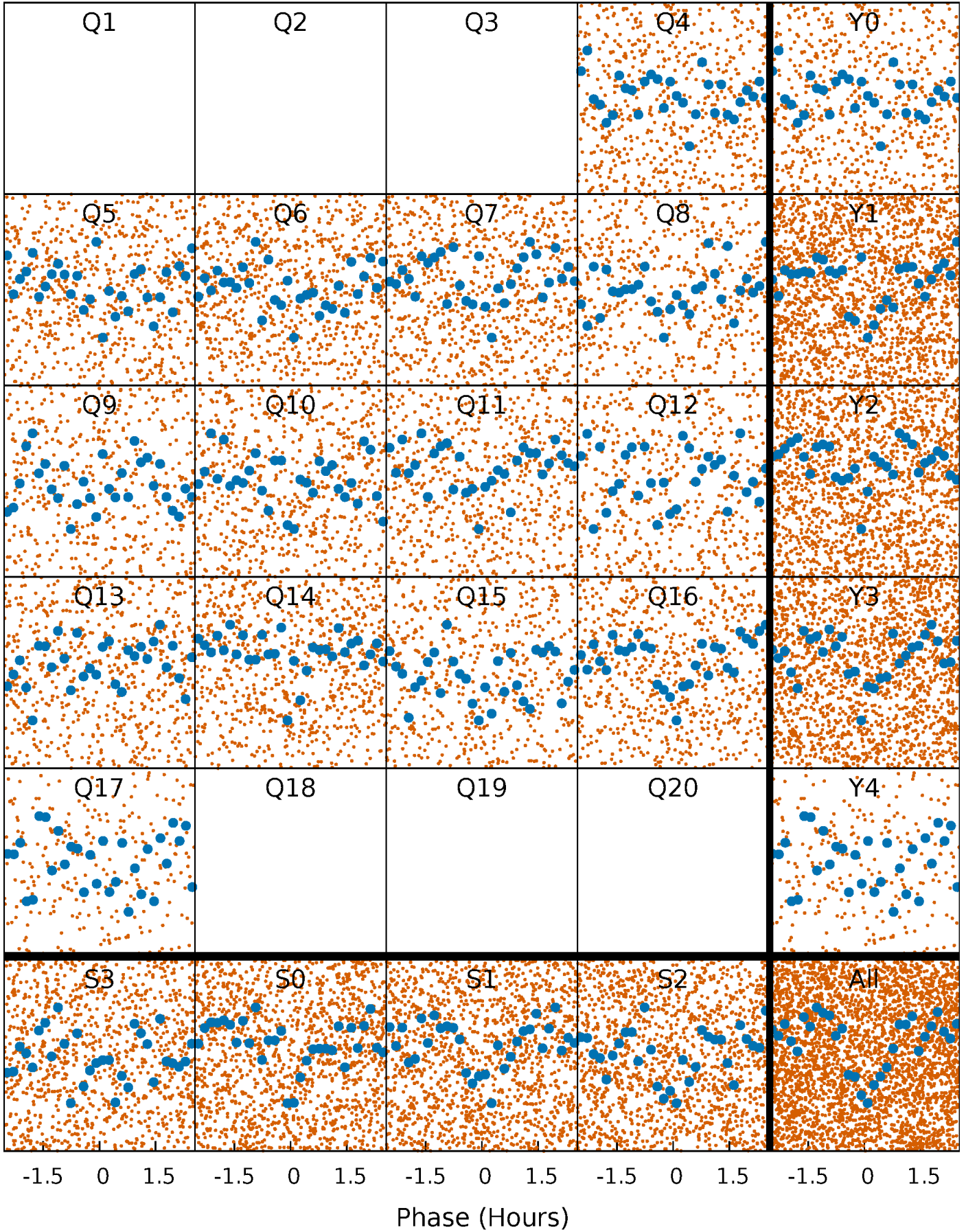
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

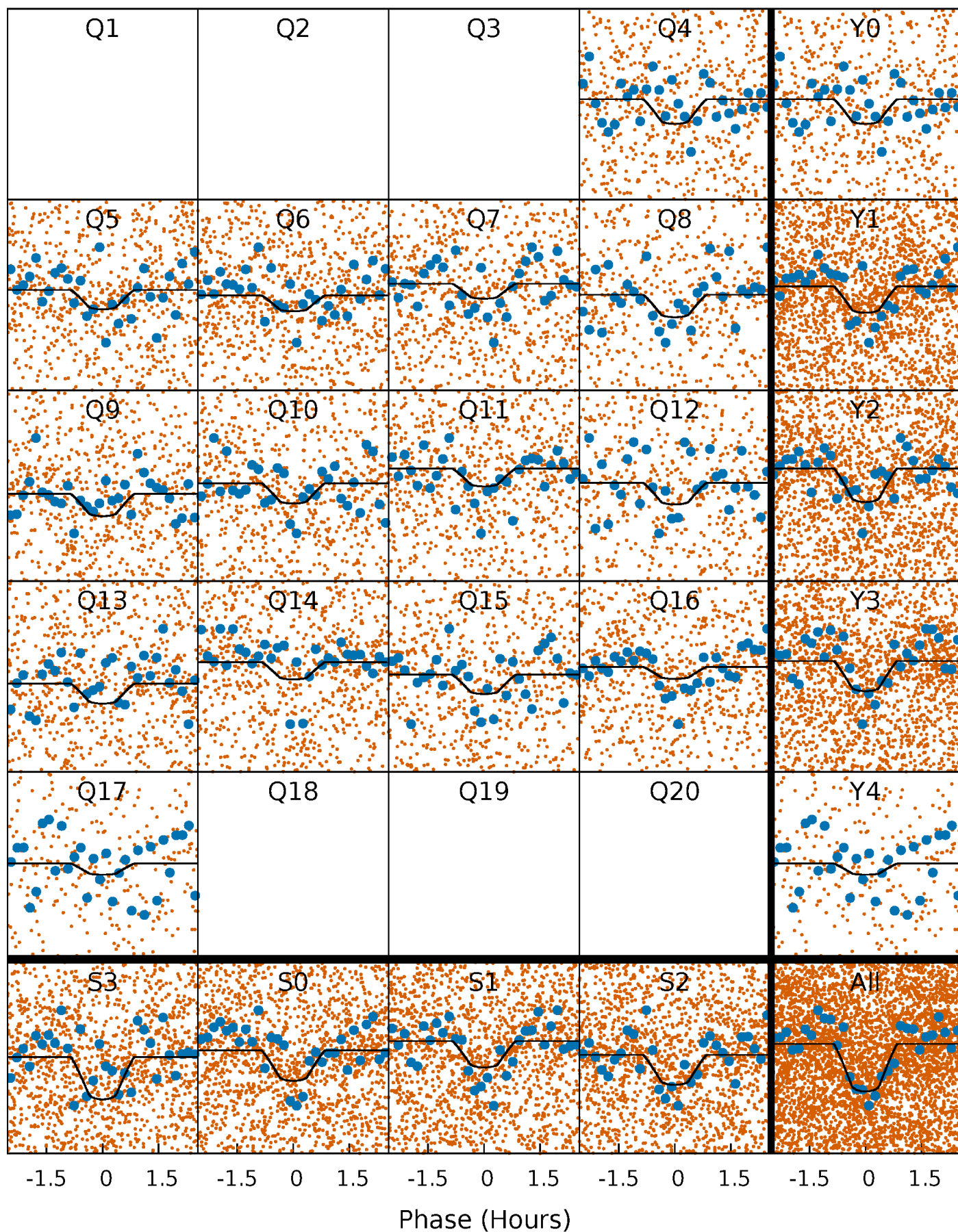
TCE 006199716-01 P= 0.805272 Days  $T_0=132.083139$  (BKJD)





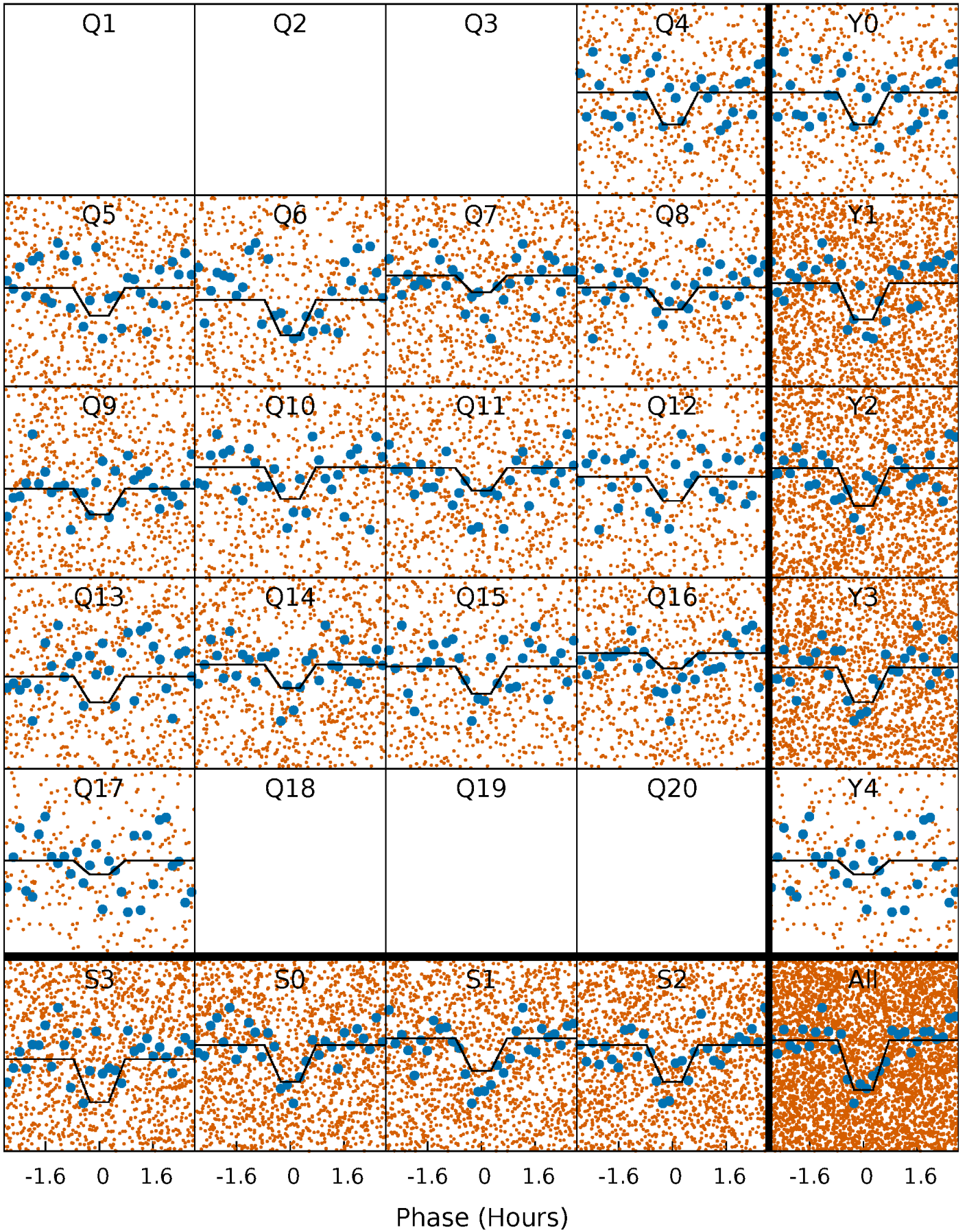
# DV Quarter-Phased Transit Curves

TCE 006199716-01 P= 0.805272 Days  $T_0=132.083139$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

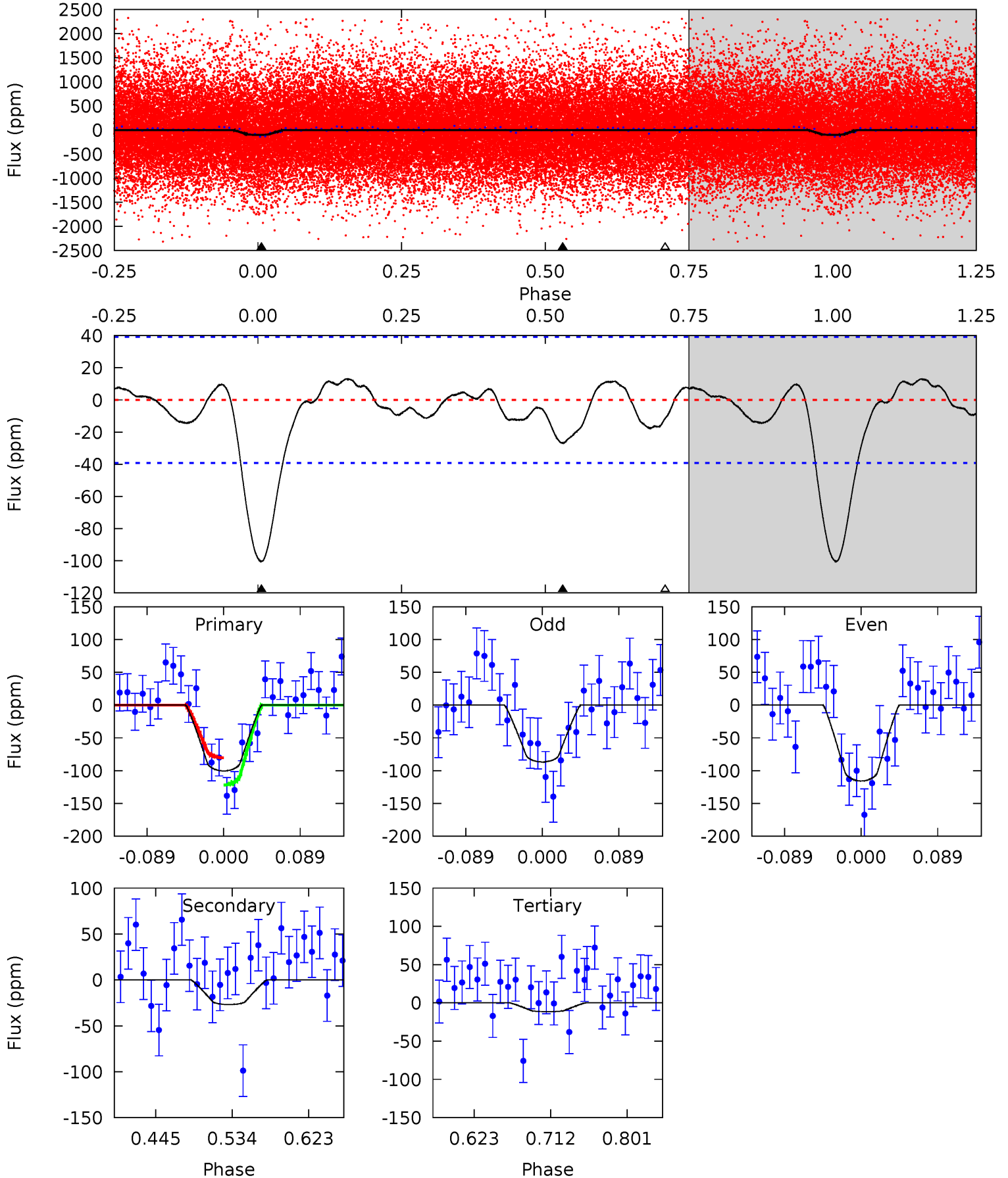
TCE 006199716-01 P= 0.805277 Days  $T_0=132.081664$  (BKJD)



# DV Model-Shift Uniqueness Test

006199716-01, P = 0.805272 Days, E = 132.083139 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
11.7	3.14	1.34	0	4.59	1.70	0.97	10.4	11.7	1.79	3.14	1.70	1.08	0.11	2.44

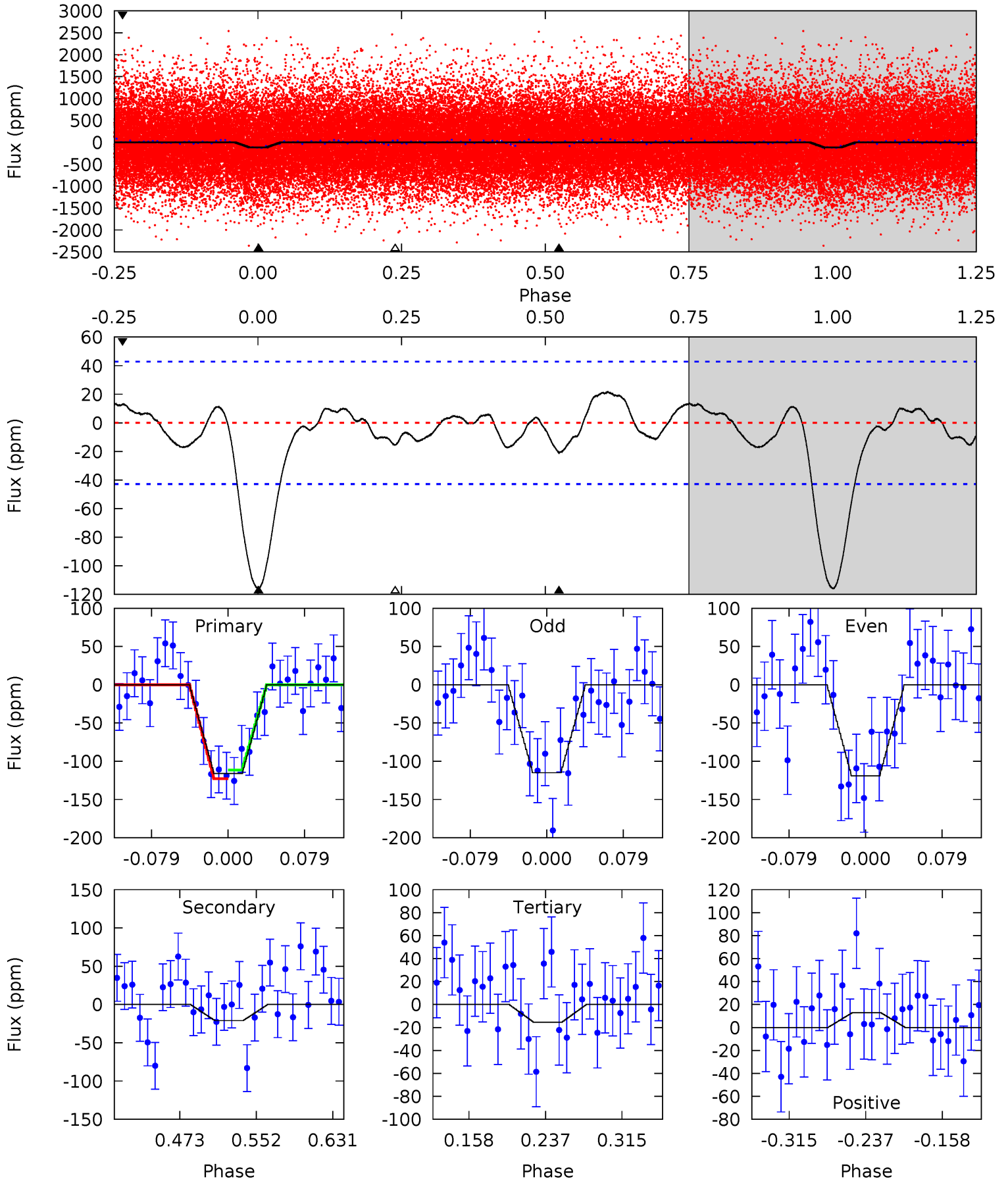




# Alt Model-Shift Uniqueness Test

006199716-01, P = 0.805277 Days, E = 132.081664 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
12.5	2.27	1.67	1.40	4.61	1.76	1.05	10.9	11.1	0.60	0.88	0.23	0.97	0.16	0.61





### Stellar Parameters For KIC 006199716

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6268^{+174}_{-261}$	$4.429^{+0.052}_{-0.195}$	$0.070^{+0.250}_{-0.350}$	$1.100^{+0.335}_{-0.134}$	$1.188^{+0.141}_{-0.173}$	$1.257^{+0.339}_{-0.639}$
	+3%/-4%	+1%/-4%	+357%/-500%	+30%/-12%	+12%/-15%	+27%/-51%
Source	KIC0	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 006199716-01 / KOI 7771.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-27 \pm 9$	$1.54^{+1.19}_{-0.97}$	$3076^{+198}_{-155}$	$4088^{+2272}_{-974}$	$1.844^{+11.220}_{-1.267}$
Alt.	$-21 \pm 9$	$1.56^{+1.18}_{-1.01}$	$3086^{+214}_{-165}$	$3845^{+2279}_{-1126}$	$1.308^{+9.285}_{-0.907}$

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

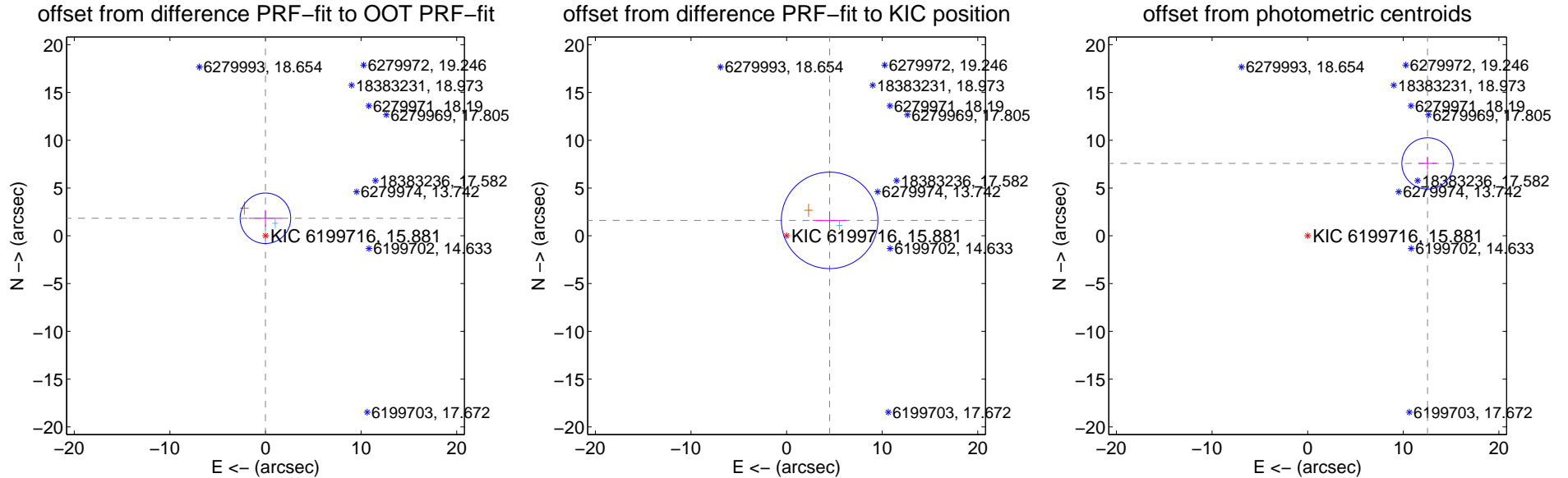
## DV Centroid Data

Supplemental centroid analysis for 006199716-01. Kepler magnitude: 15.88. Transit SNR 7.76

There are 1 quarters with good PRF difference image offsets

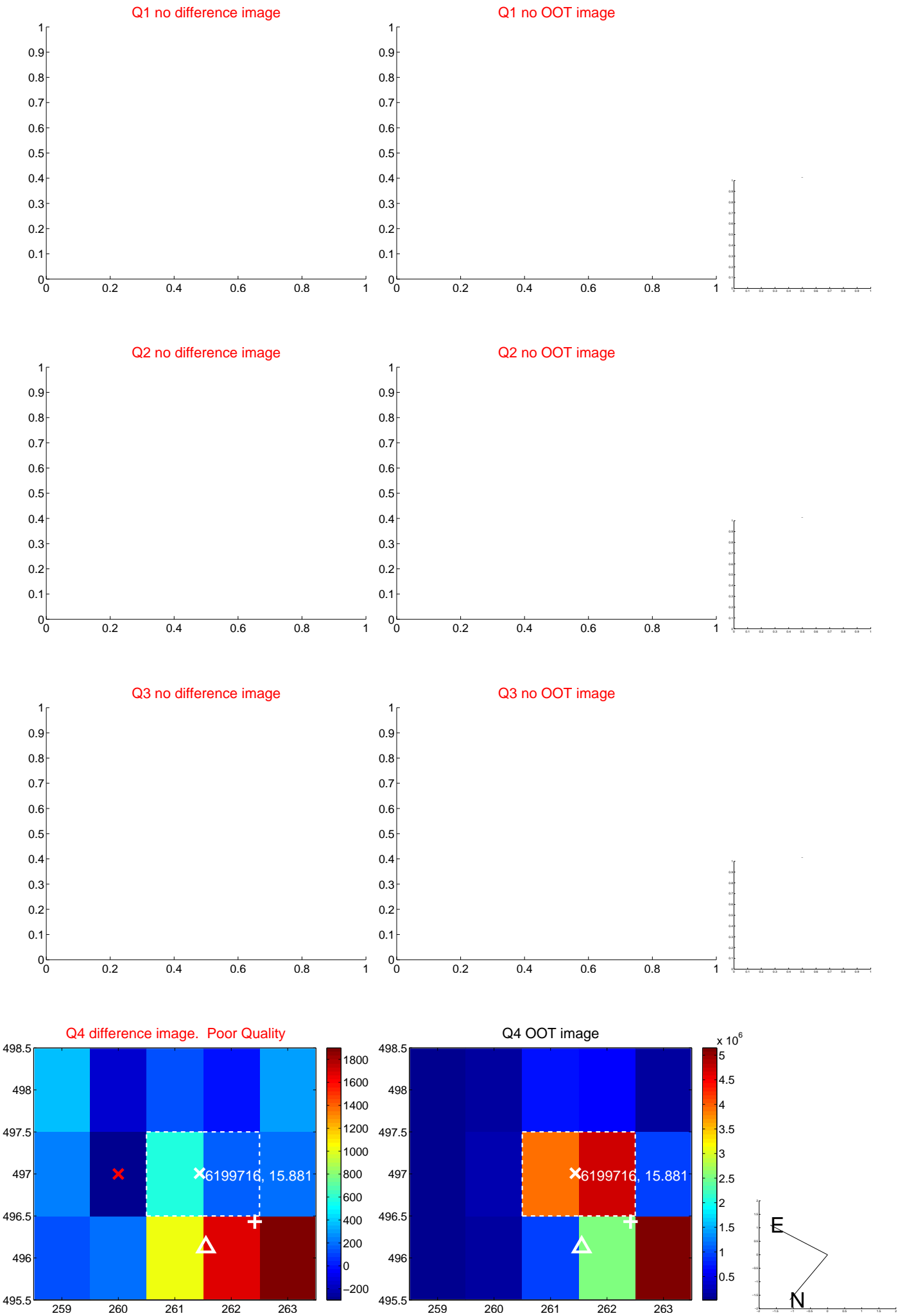
The OOT PRF centroid is offset from the target star catalog position by about 4.52 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.833 \pm 0.881$	2.08	$0.009 \pm 1.755$	$1.833 \pm 0.881$
PRF-fit source offset from KIC position	$4.782 \pm 1.683$	2.84	$-4.501 \pm 1.760$	$1.614 \pm 0.877$
photometric centroid source offset	$14.65 \pm 0.90$	16.35	$-12.54 \pm 0.97$	$7.57 \pm 0.66$

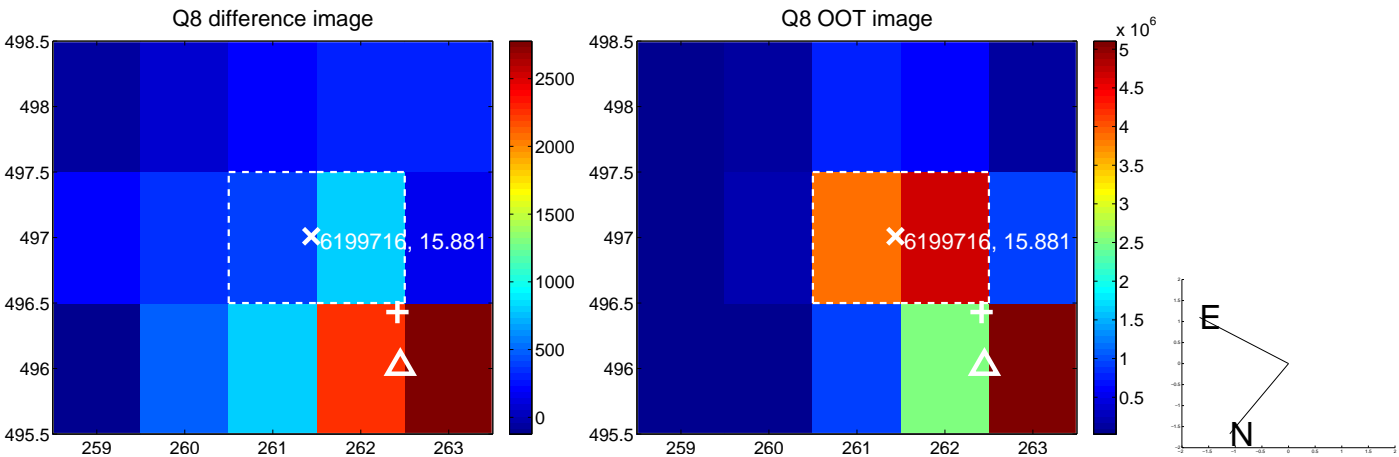
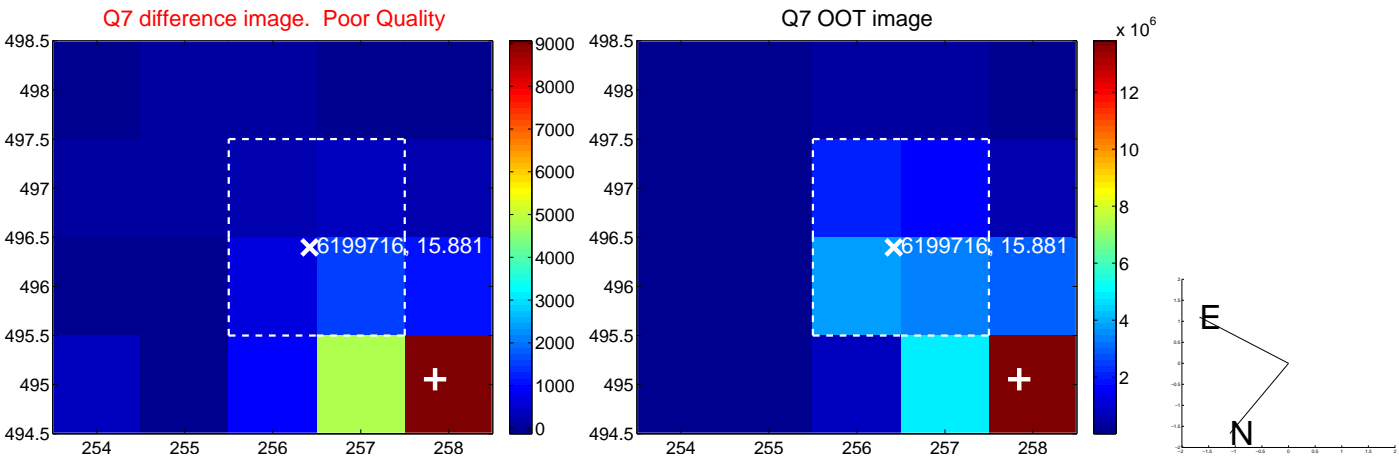
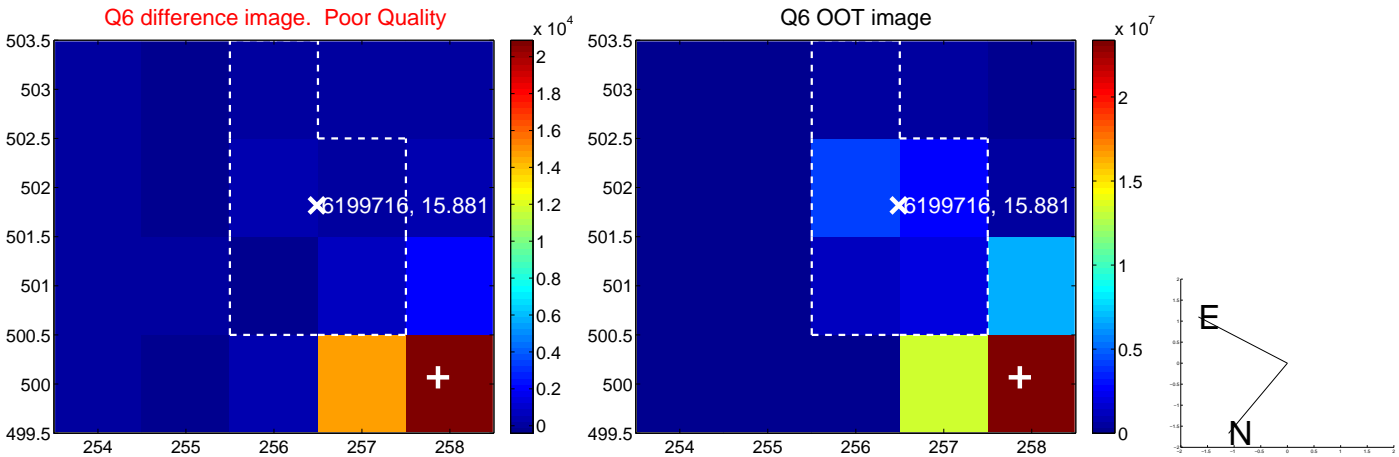
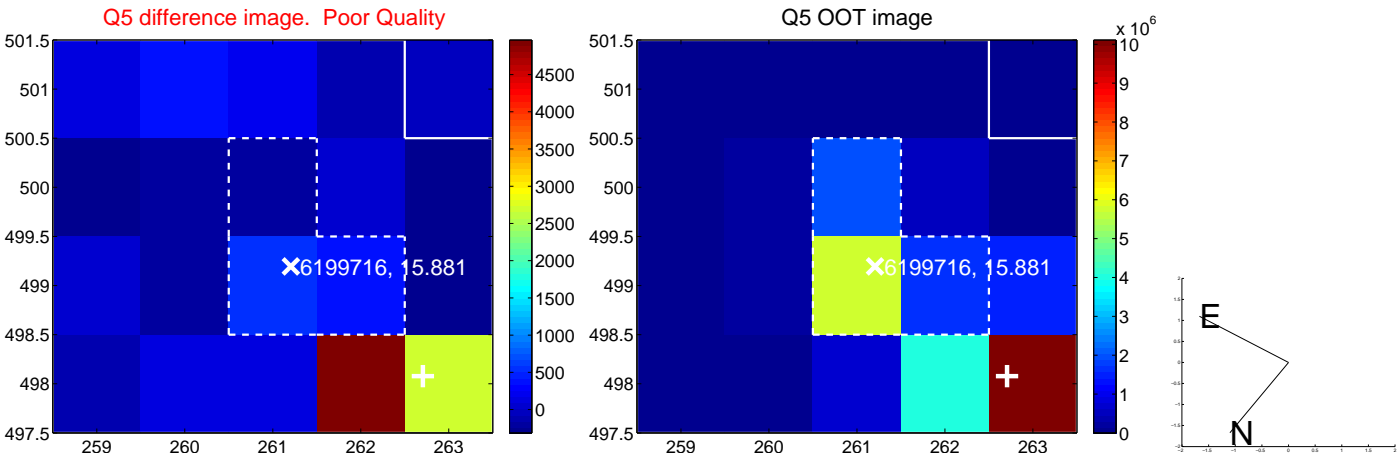


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

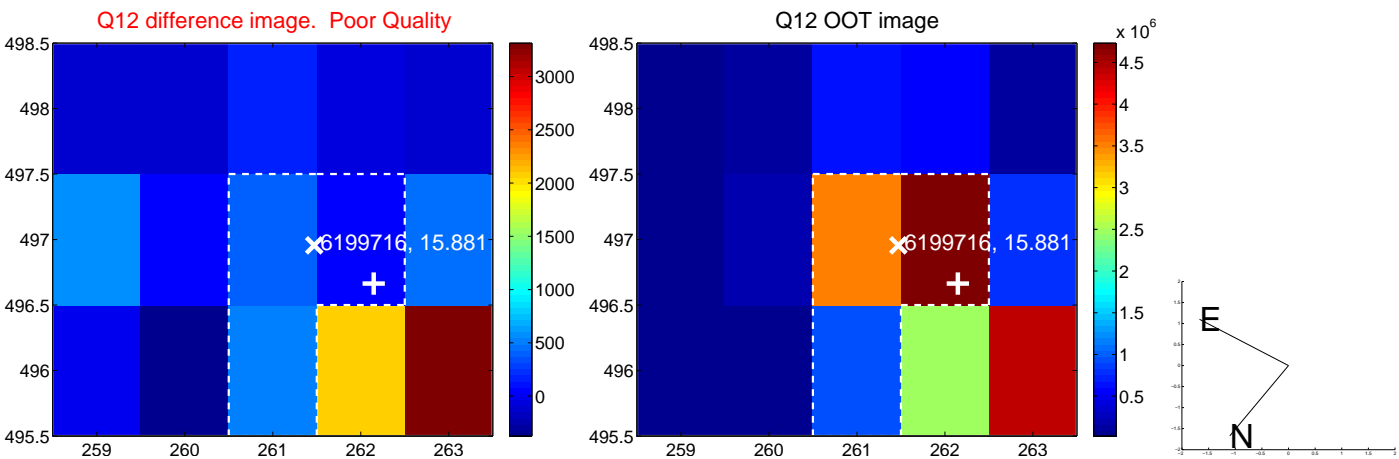
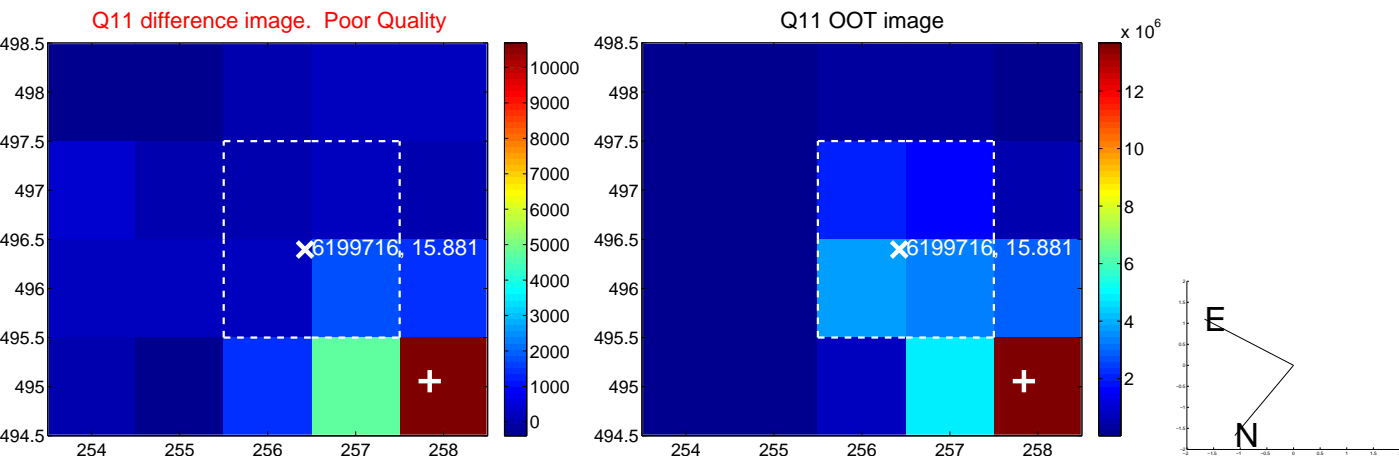
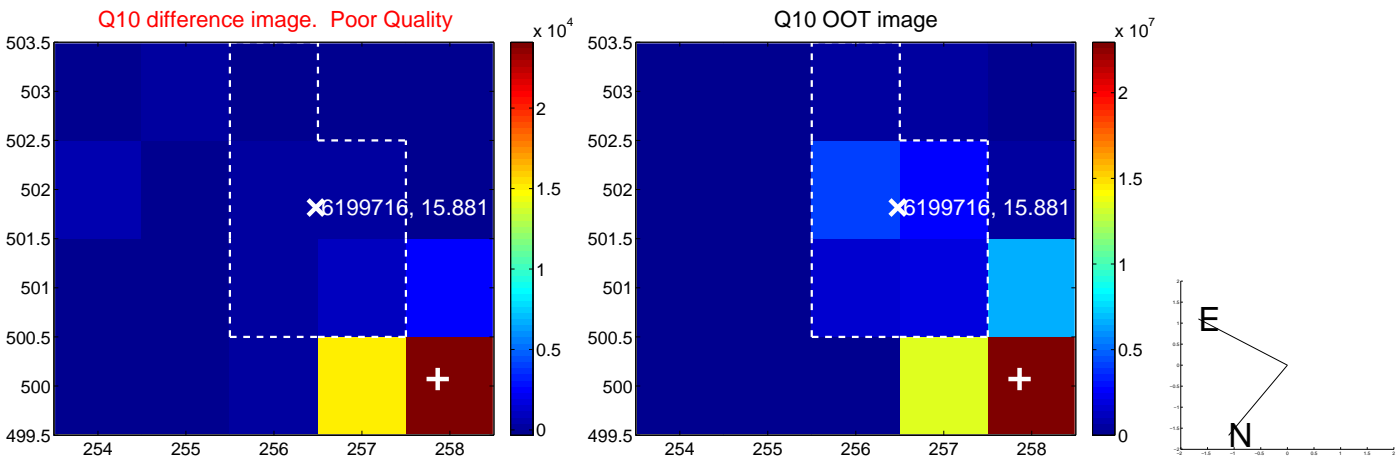
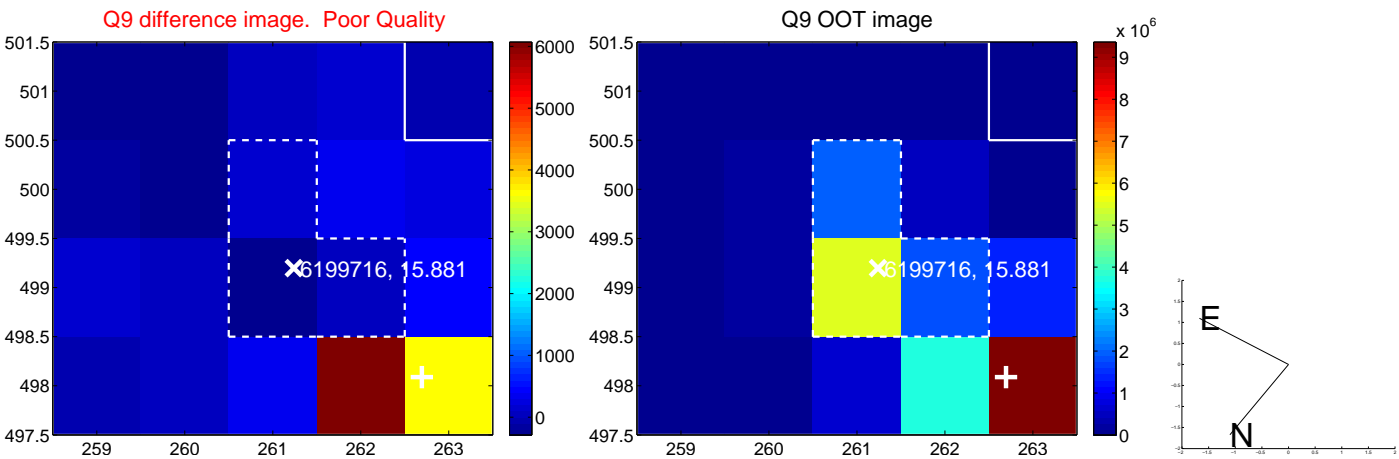


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

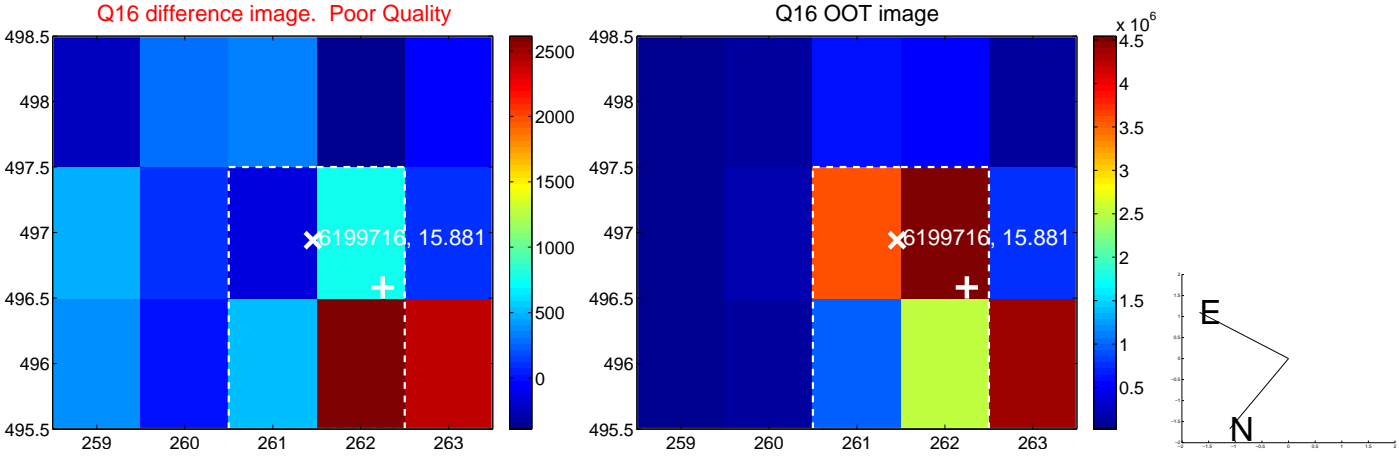
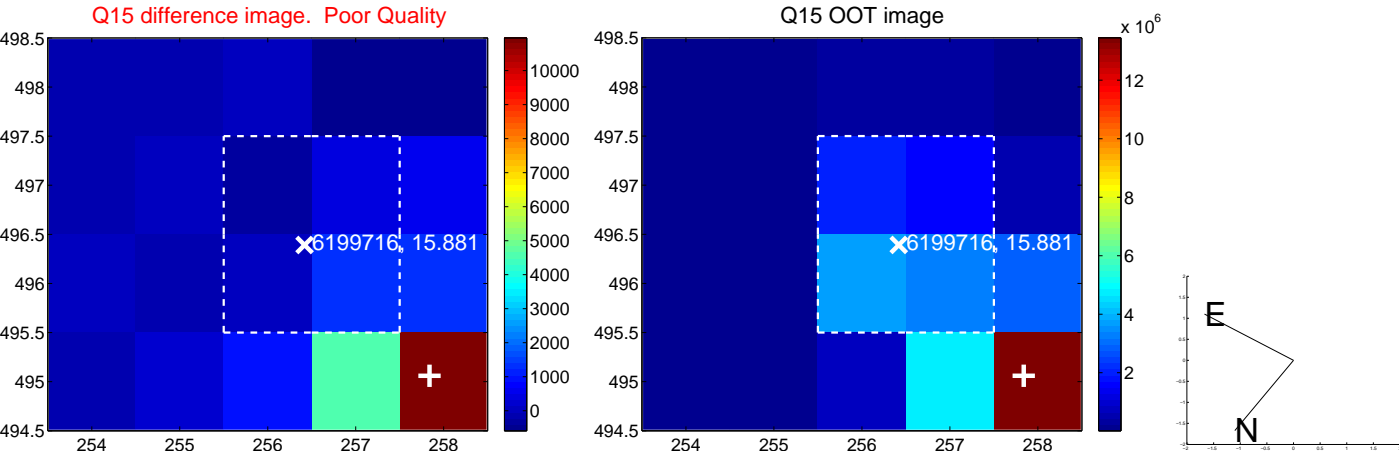
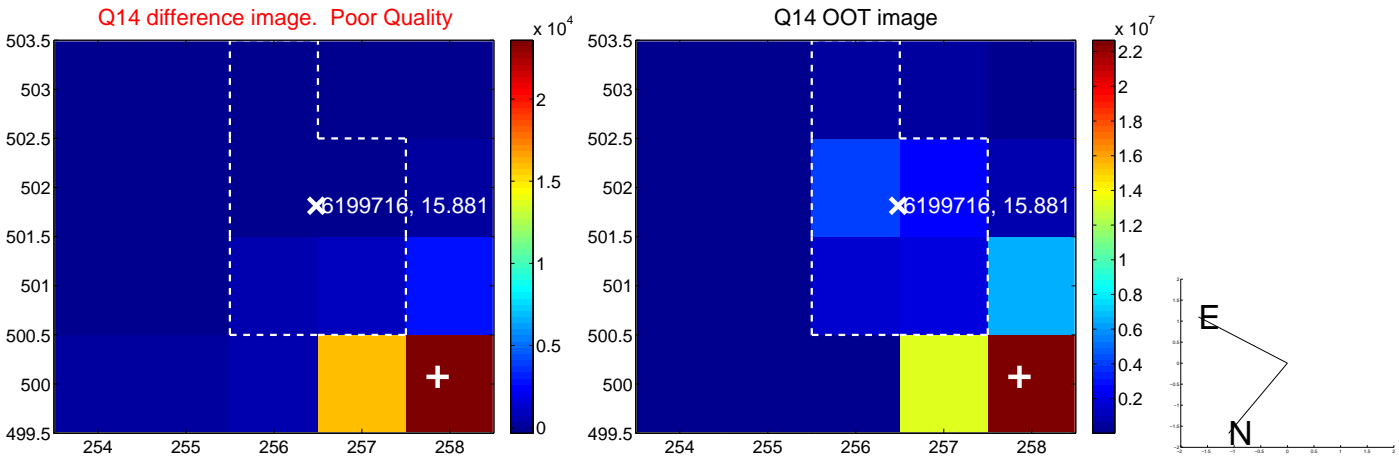
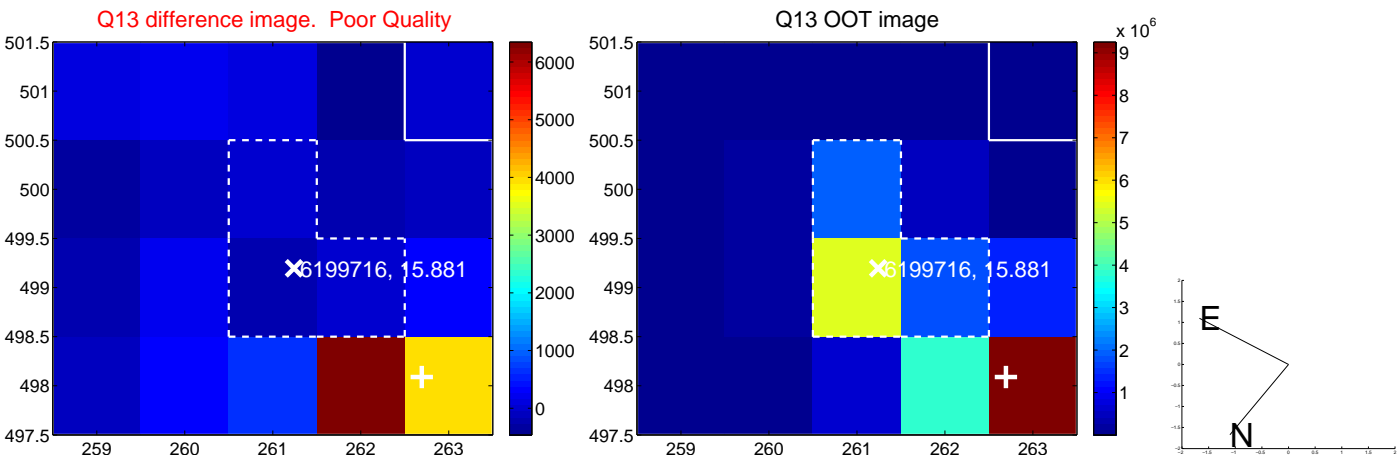




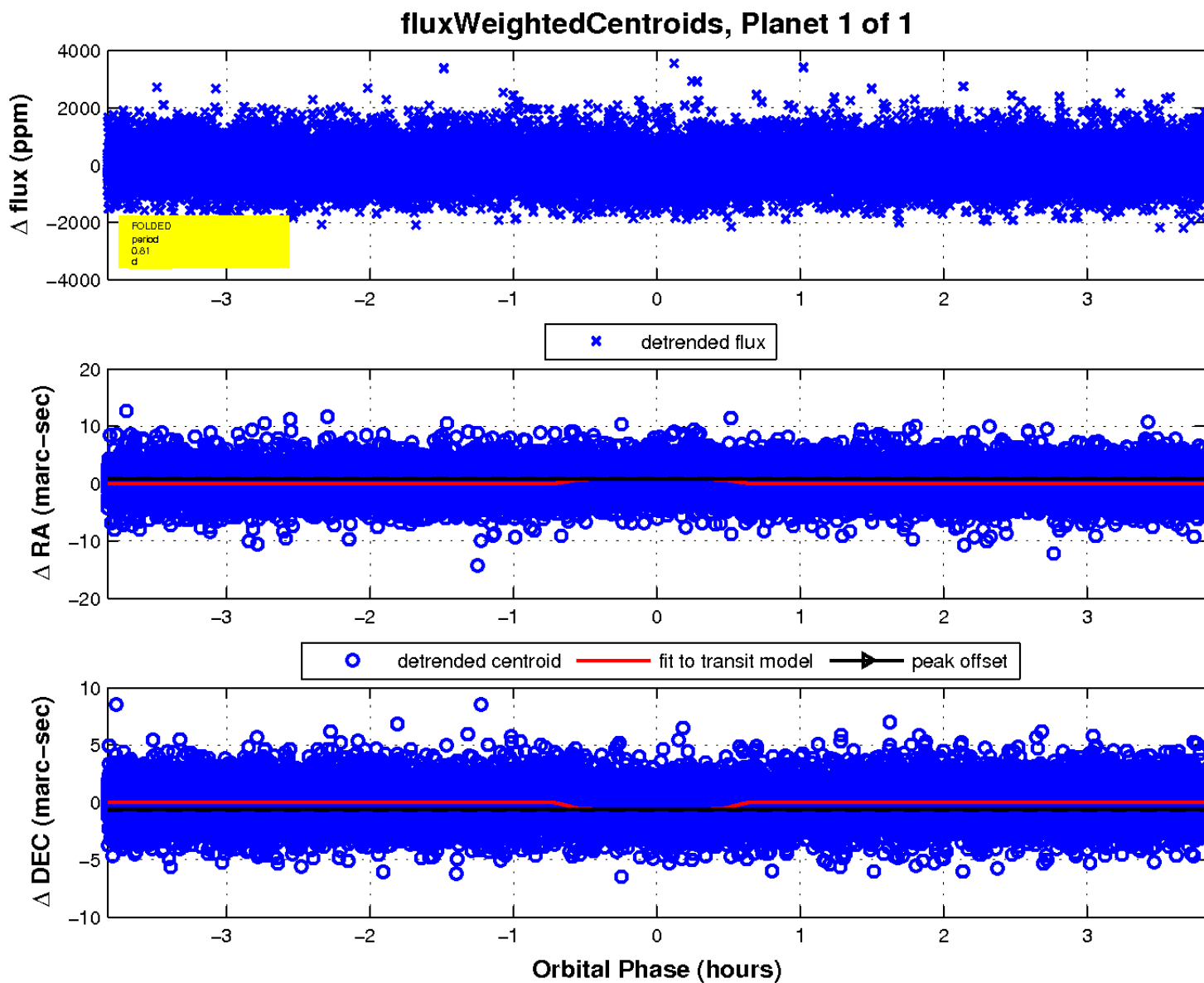
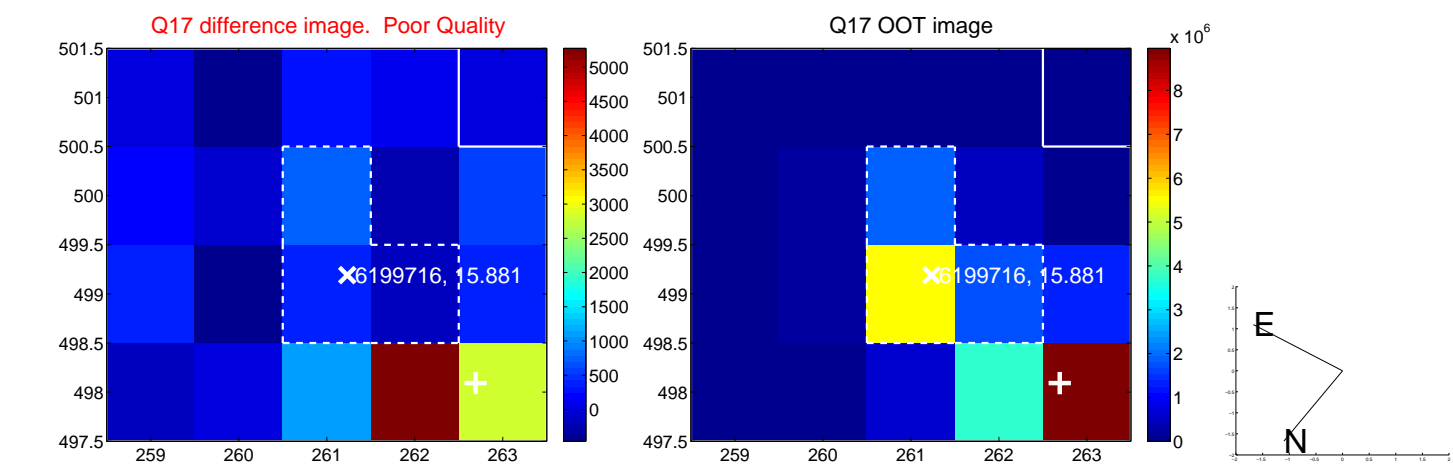
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

