

# KIC 007386391

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007386391-01	OBS	7837.01	48.507657	148.321246	296.4	7.319	9.5	9.7	0.97	6031	1.83	16.12

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007386391-01	OBS	FP	0.09	0	0	1	0	CENT_RESOLVED_OFFSET

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

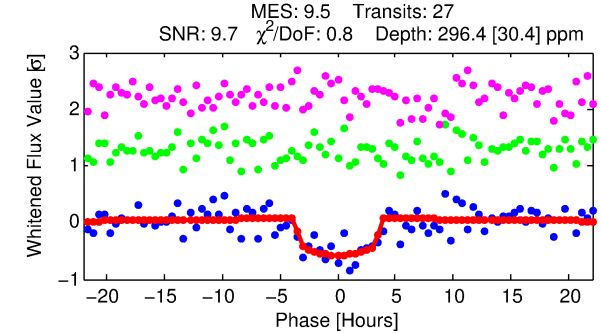
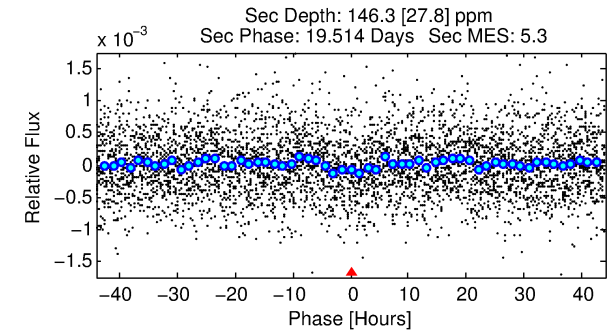
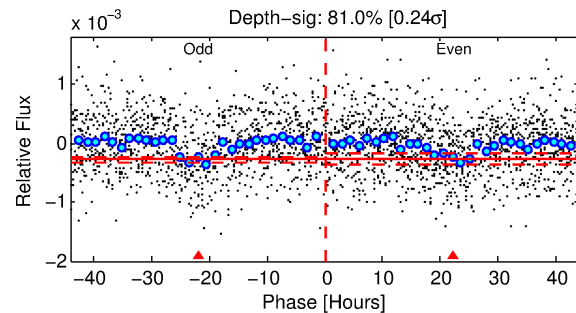
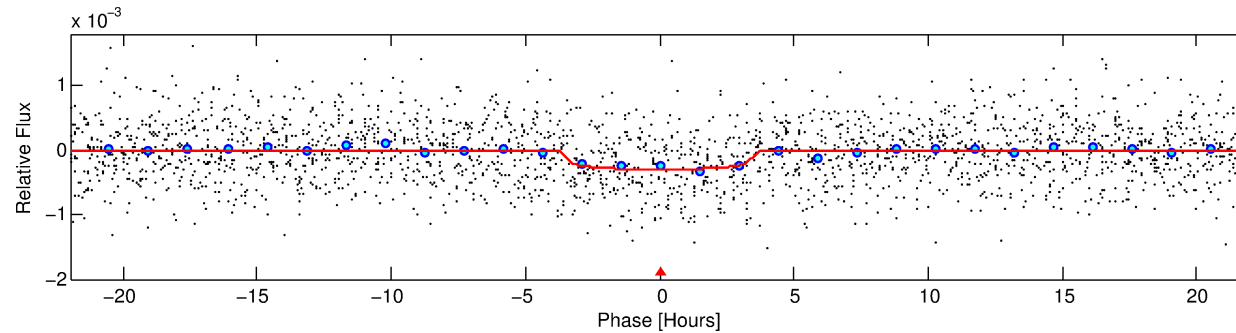
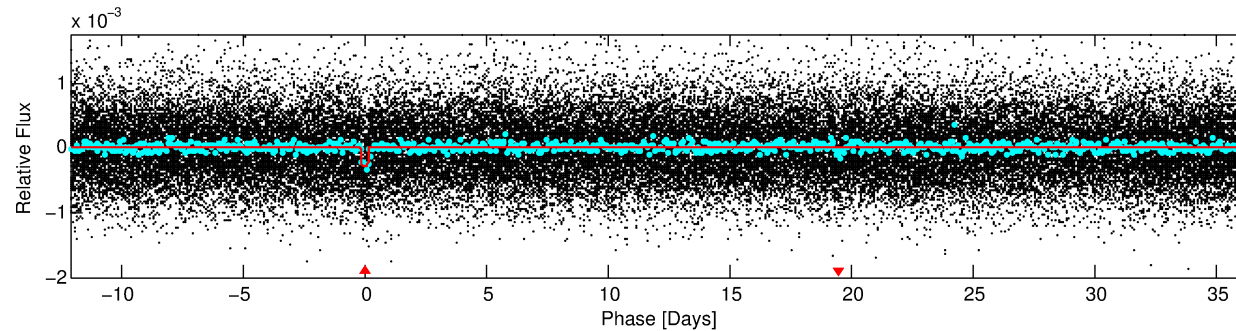
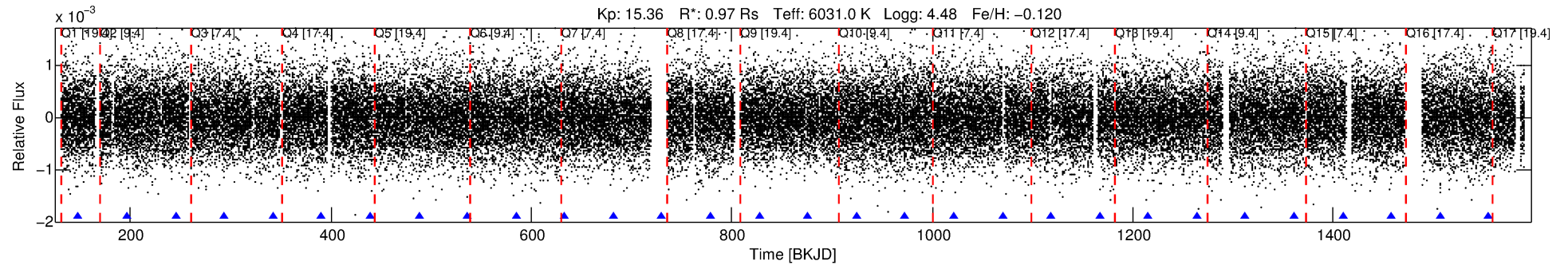
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007386391-01

No Significant Match Found

# DV One-Page Summary

KIC: 7386391 Candidate: 1 of 1 Period: 48.508 d



## DV Fit Results:

Period = 48.50766 [0.00082] d  
Epoch = 148.3212 [0.0133] BKJD  
Rp/R\* = 0.0174 [0.0077]  
a/R\* = 32.42 [70.09]  
b = 0.79 [1.04]  
Seff = 16.12 [7.01]  
Teq = 511 [56] K  
Rp = 1.83 [1.01] Re  
a = 0.2620 [0.0726] AU  
Ag = 1642.42 [1632.32] [1.01 $\sigma$ ]  
Teff = 5029 [1156] K [3.90 $\sigma$ ]

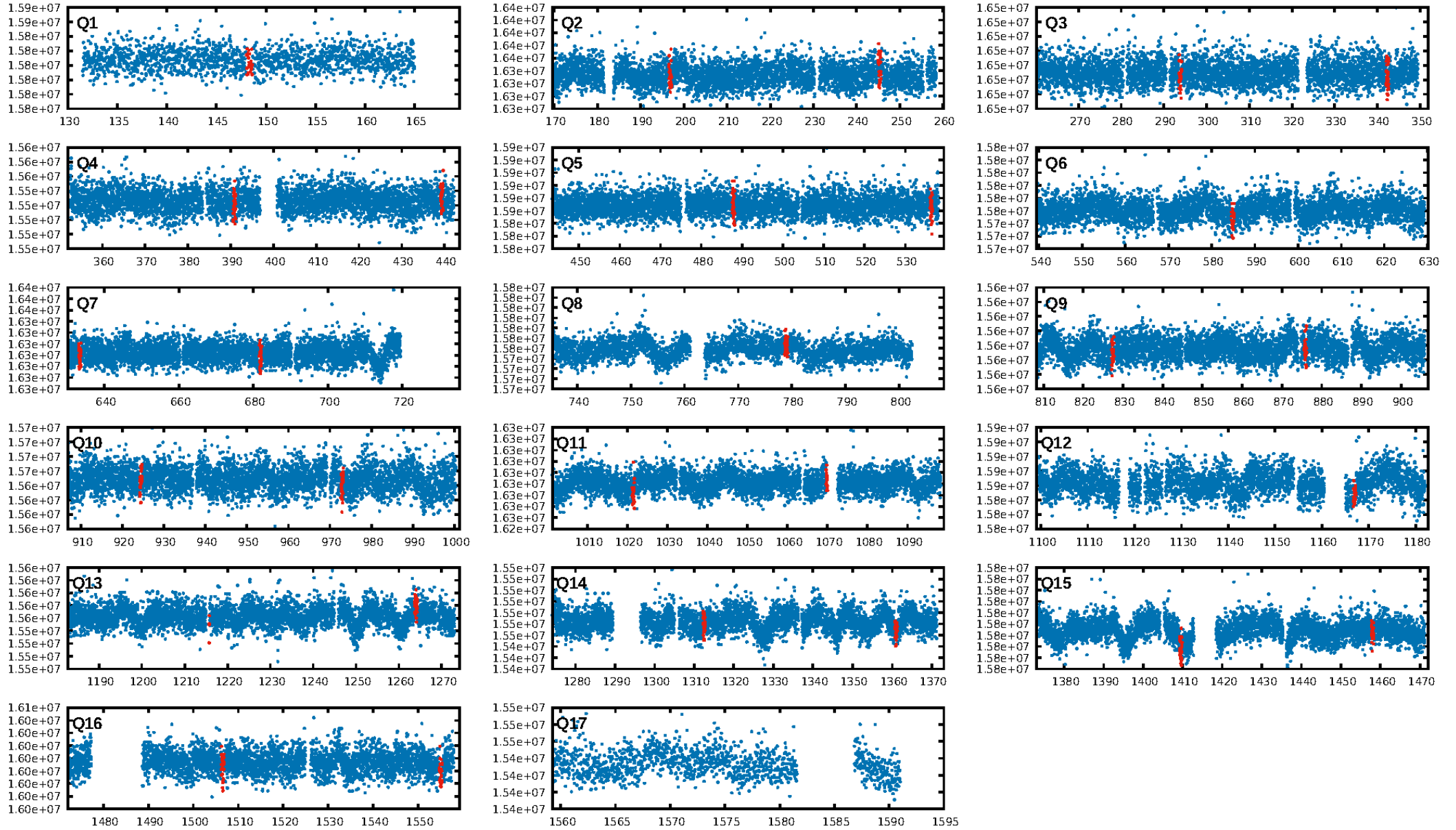
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 6.4%  
ModelChiSquareGoF-sig: 100.0%  
Bootstrap-pfa: 2.70e-21  
RollingBand-fgt: 1.00 [26/26]  
GhostDiagnostic-chr: -0.3678  
Centroid-sig: 0.0%  
Centroid-so: 83.981 arcsec [63.65 $\sigma$ ]  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0 [0]  
KicOffset-st: 0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: 1.00 [15/15]

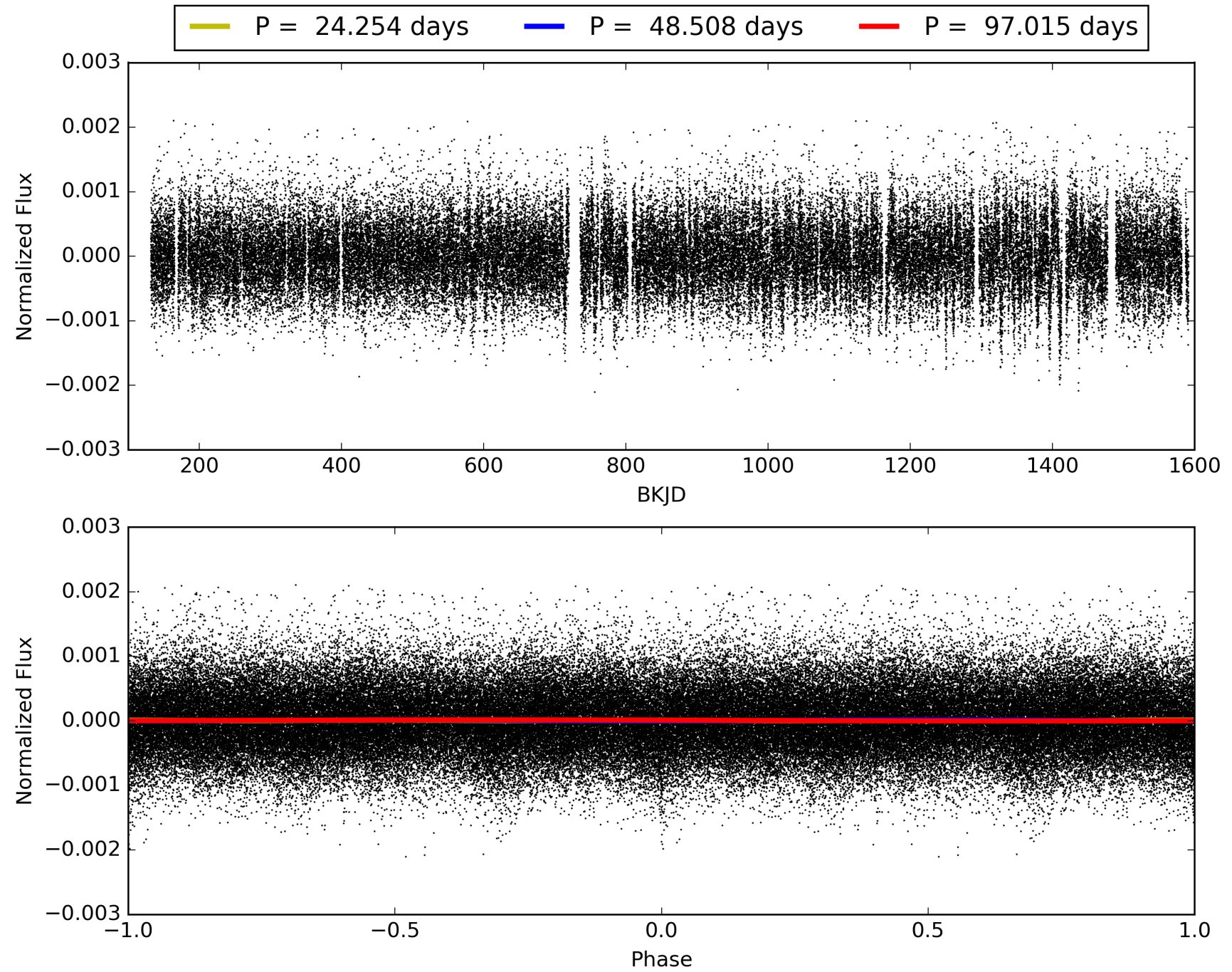
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 20:49:29 Z

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

# TCE 007386391-01, PDC Light Curves

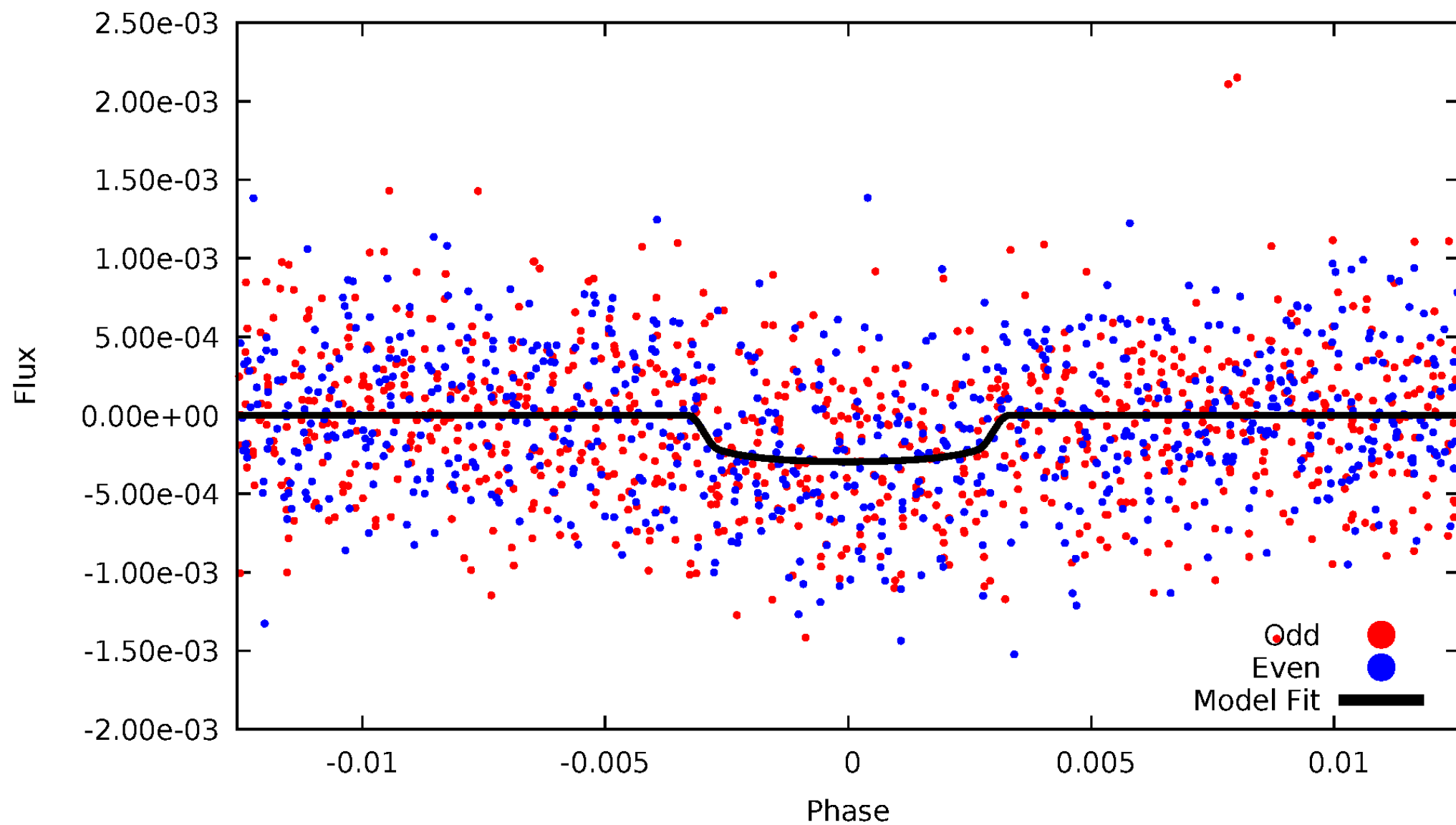


# TCE 007386391-01



# DV Odd/Even

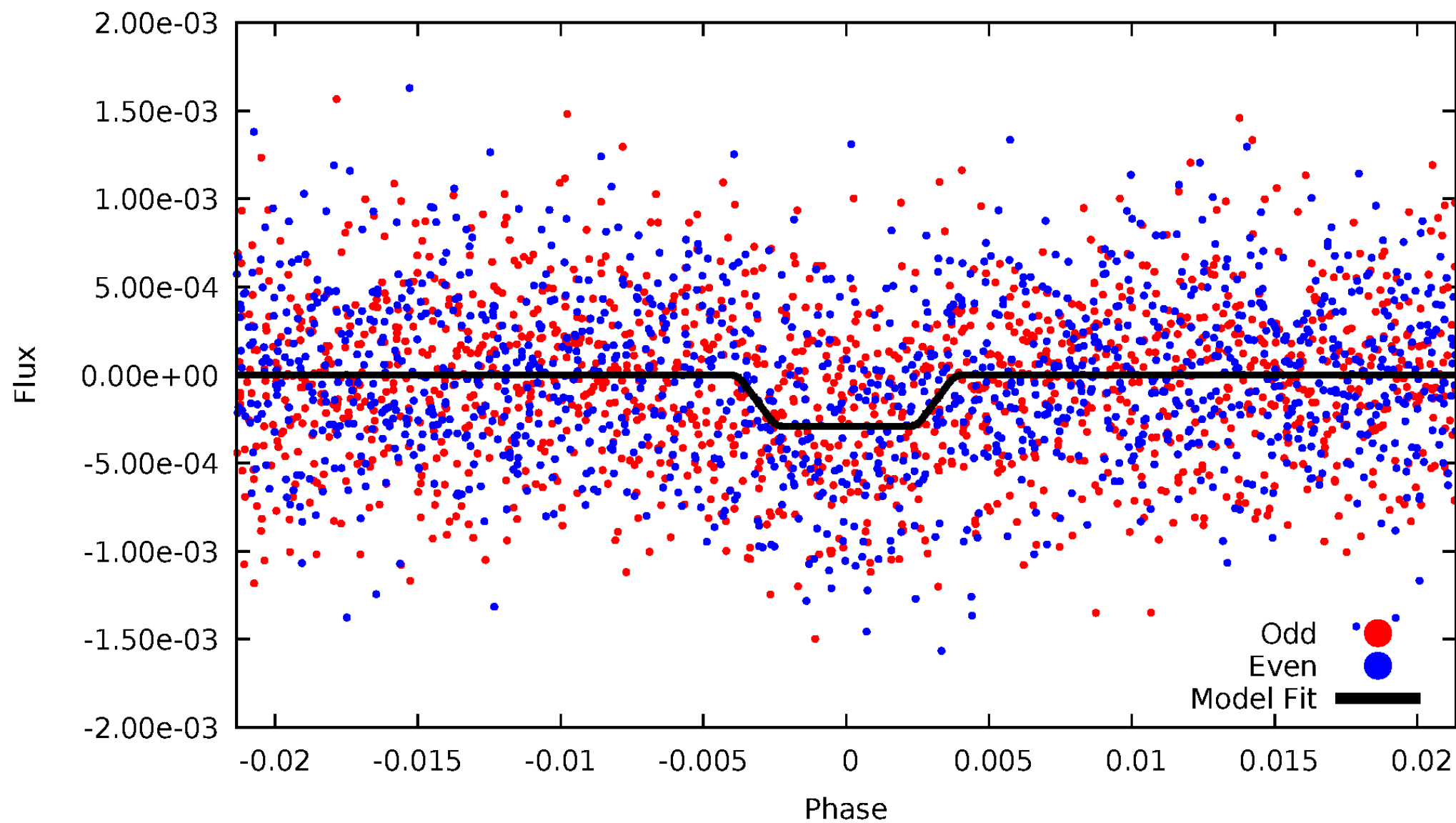
TCE 007386391-01



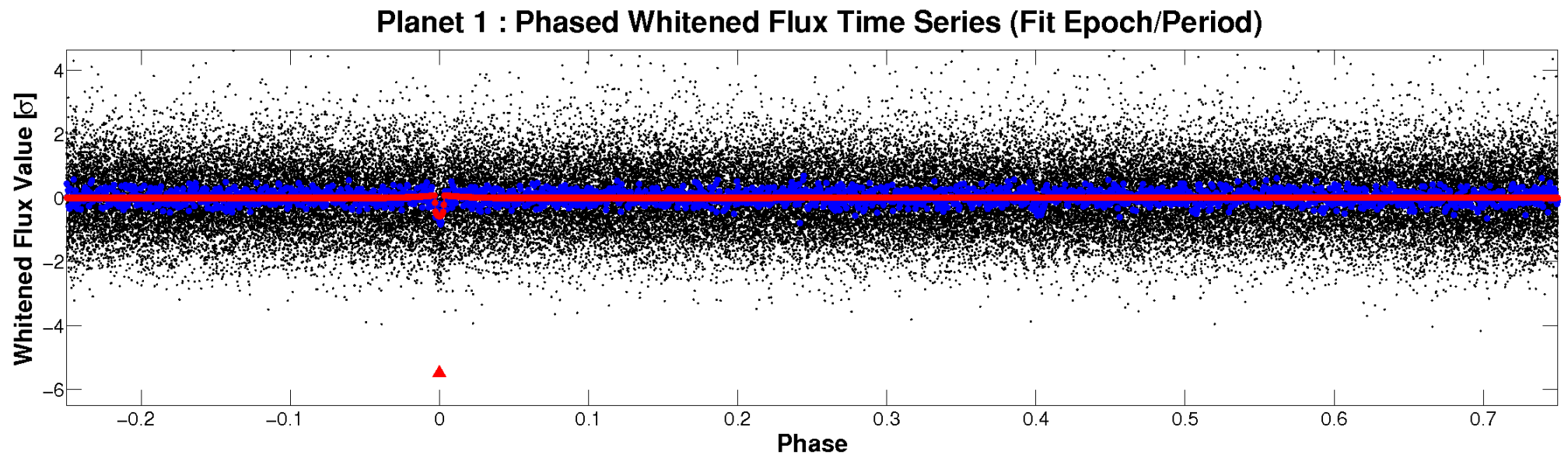
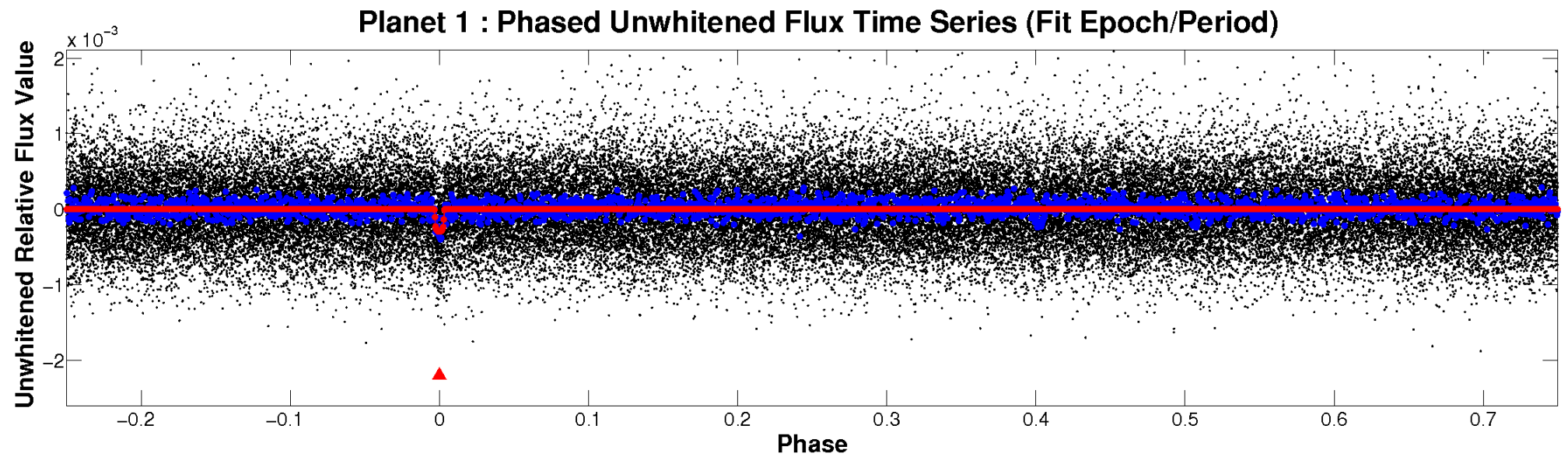


# ALT Odd/Even

TCE 007386391-01

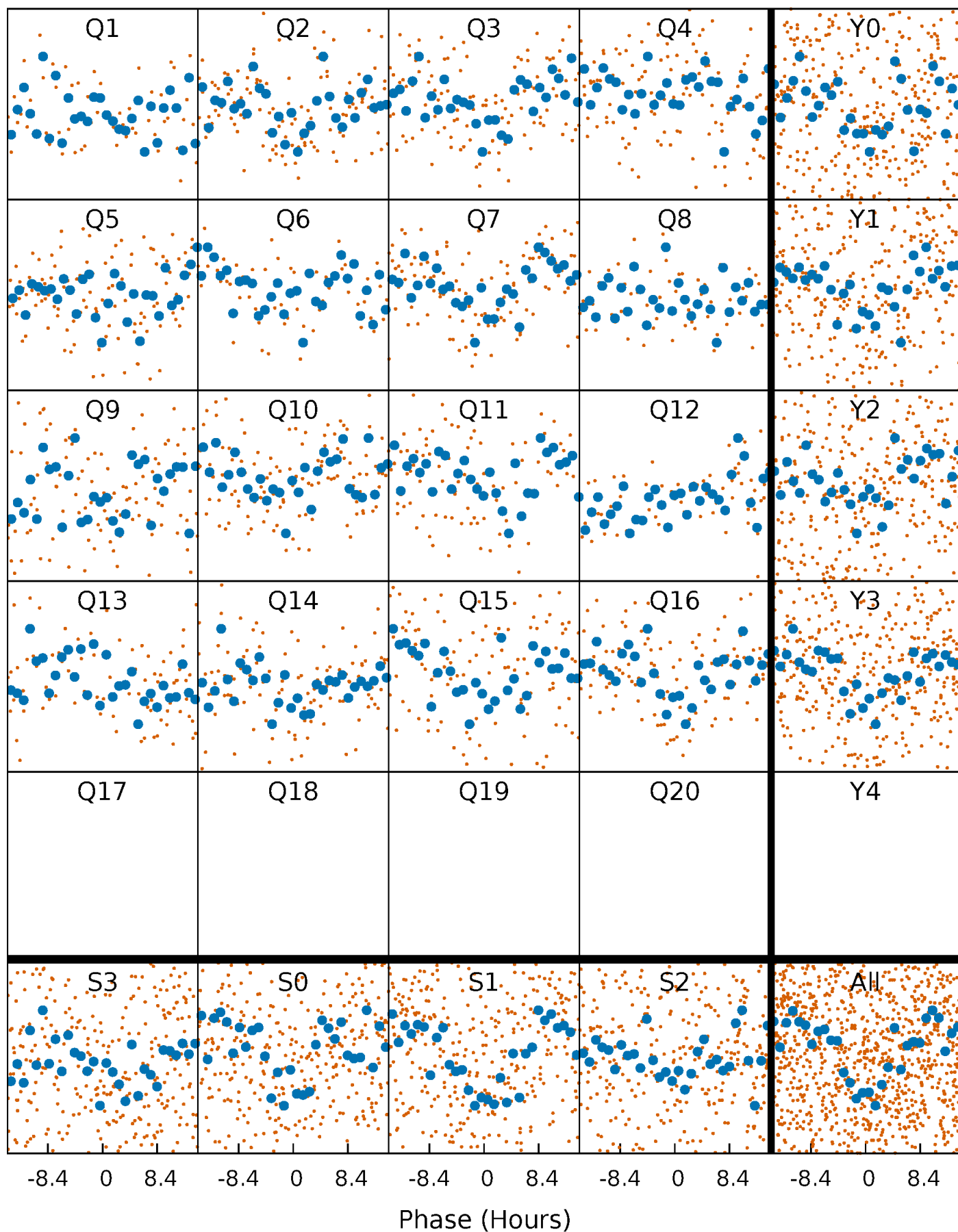


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

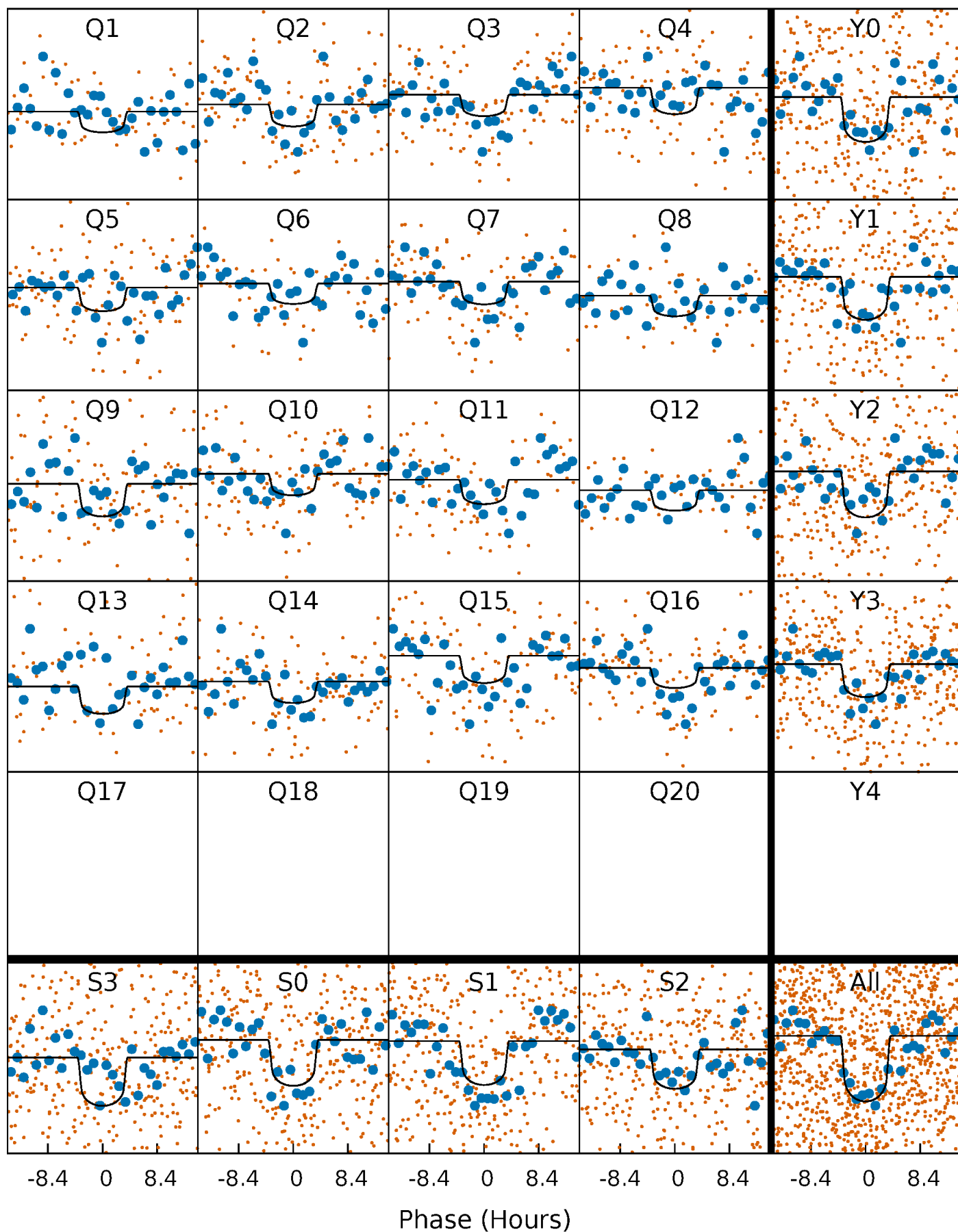
TCE 007386391-01 P= 48.507657 Days  $T_0=148.321246$  (BKJD)





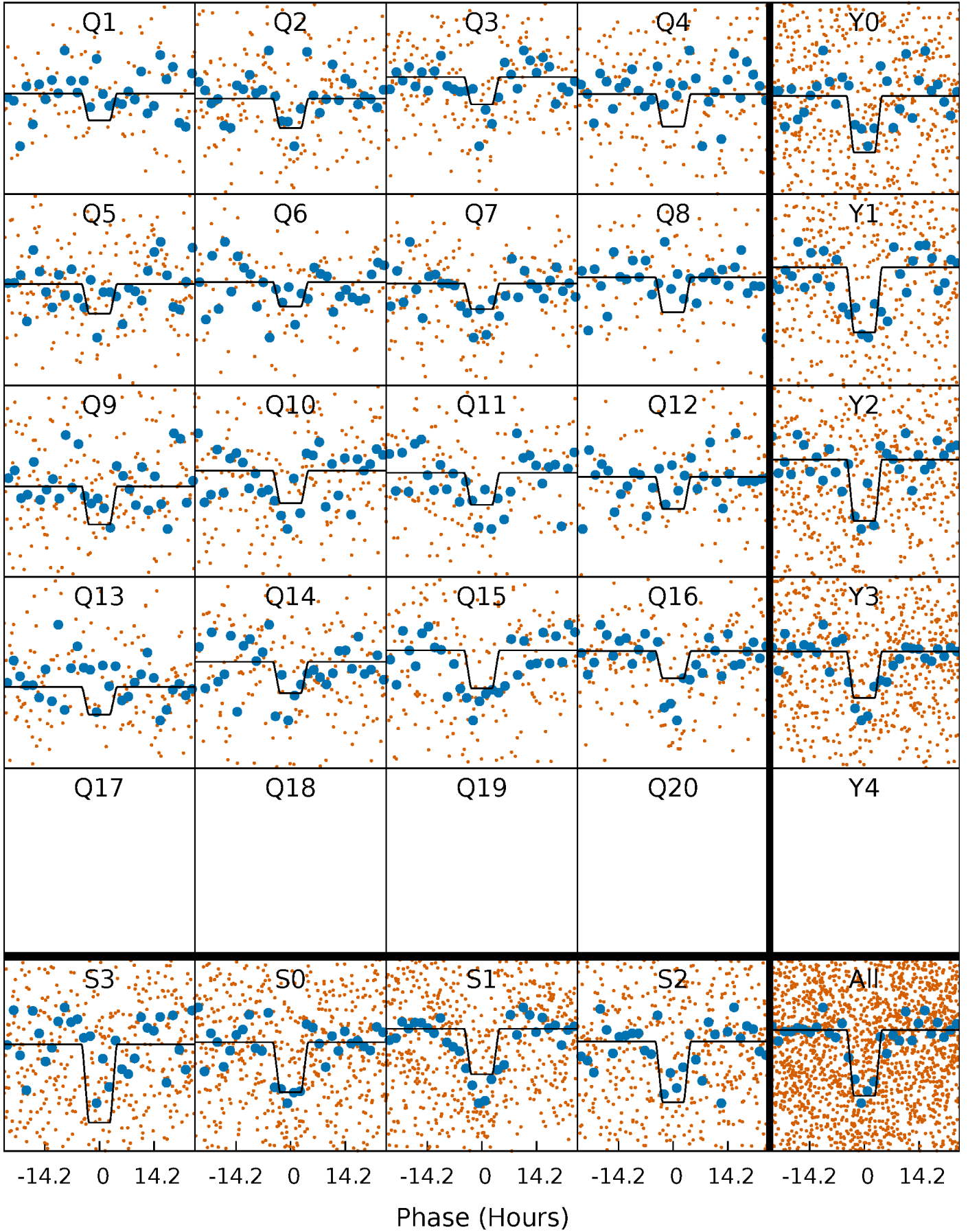
# DV Quarter-Phased Transit Curves

TCE 007386391-01 P= 48.507657 Days  $T_0=148.321246$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

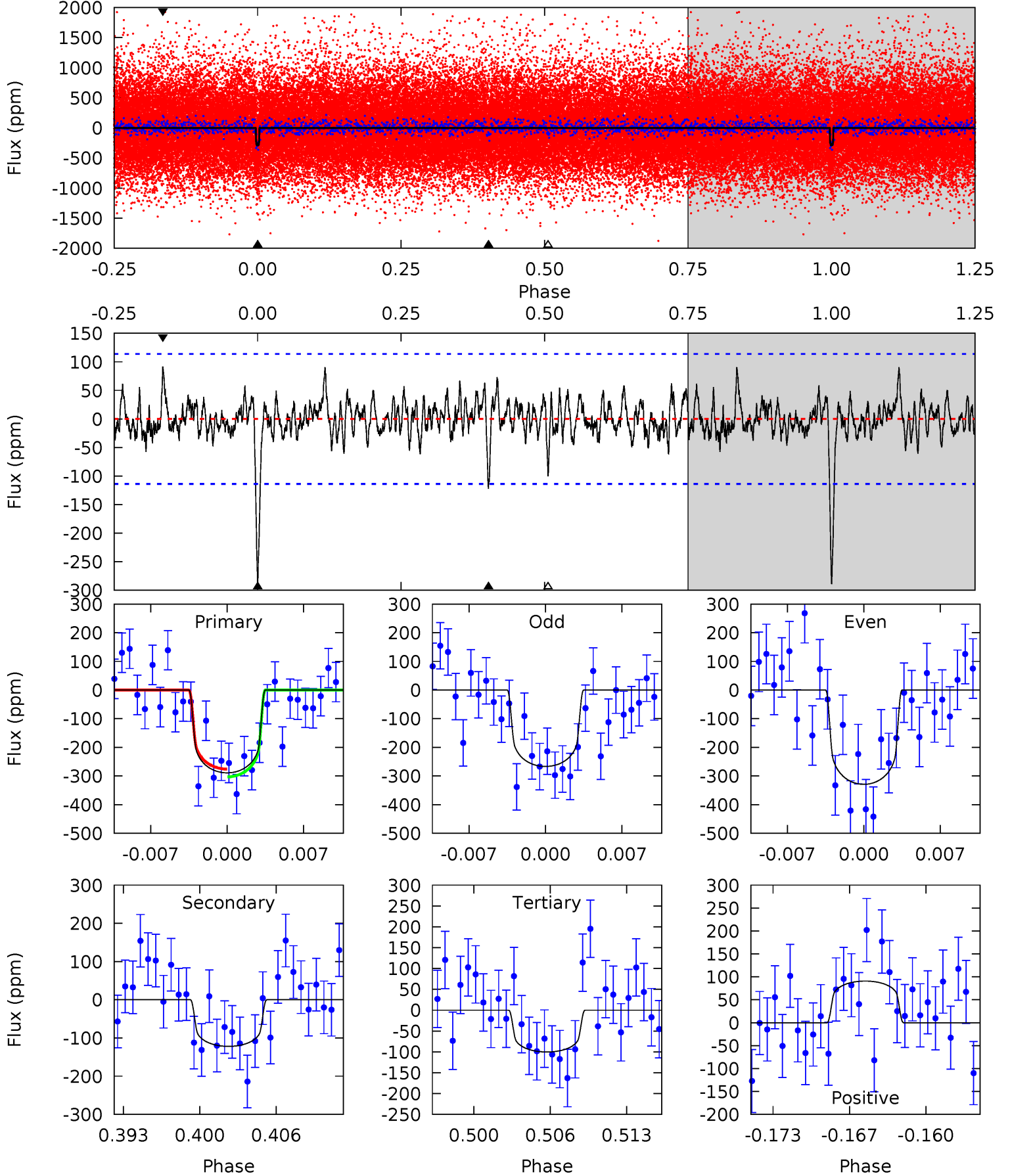
TCE 007386391-01 P= 48.508360 Days  $T_0=148.319641$  (BKJD)



# DV Model-Shift Uniqueness Test

007386391-01, P = 48.507657 Days, E = 99.813589 Days

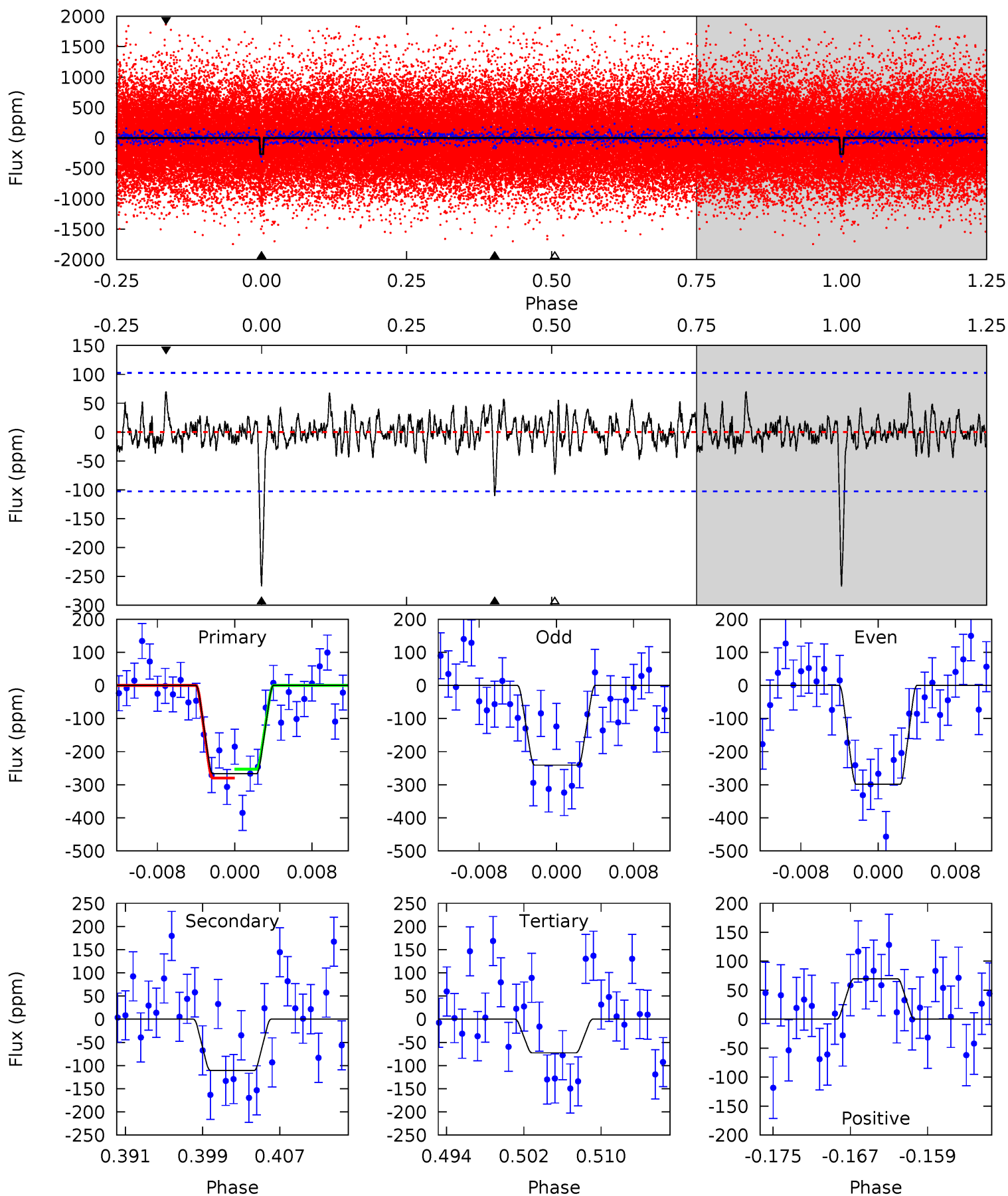
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.0	5.47	4.50	4.07	5.10	2.71	1.12	8.47	8.90	0.97	1.40	1.39	0.95	0.24	0.61



# Alt Model-Shift Uniqueness Test

007386391-01, P = 48.508360 Days, E = 99.811281 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
13.2	5.47	3.59	3.44	5.07	2.65	0.99	9.59	9.74	1.87	2.03	1.42	1.00	0.21	0.66



### Stellar Parameters For KIC 007386391

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6031^{+189}_{-232}$	$4.476^{+0.056}_{-0.224}$	$-0.120^{+0.250}_{-0.300}$	$0.966^{+0.315}_{-0.105}$	$1.013^{+0.139}_{-0.126}$	$1.580^{+0.477}_{-0.872}$
	+3%/-4%	+1%/-5%	+208%/-250%	+33%/-11%	+14%/-12%	+30%/-55%
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 007386391-01 / KOI 7837.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-122 \pm 22$	$1.99^{+0.86}_{-0.89}$	$727^{+55}_{-35}$	$4804^{+1443}_{-610}$	$1119^{+2510}_{-583}$
Alt.	$-111 \pm 20$	$1.91^{+0.94}_{-0.86}$	$730^{+53}_{-40}$	$4819^{+1469}_{-656}$	$1124^{+2672}_{-631}$

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



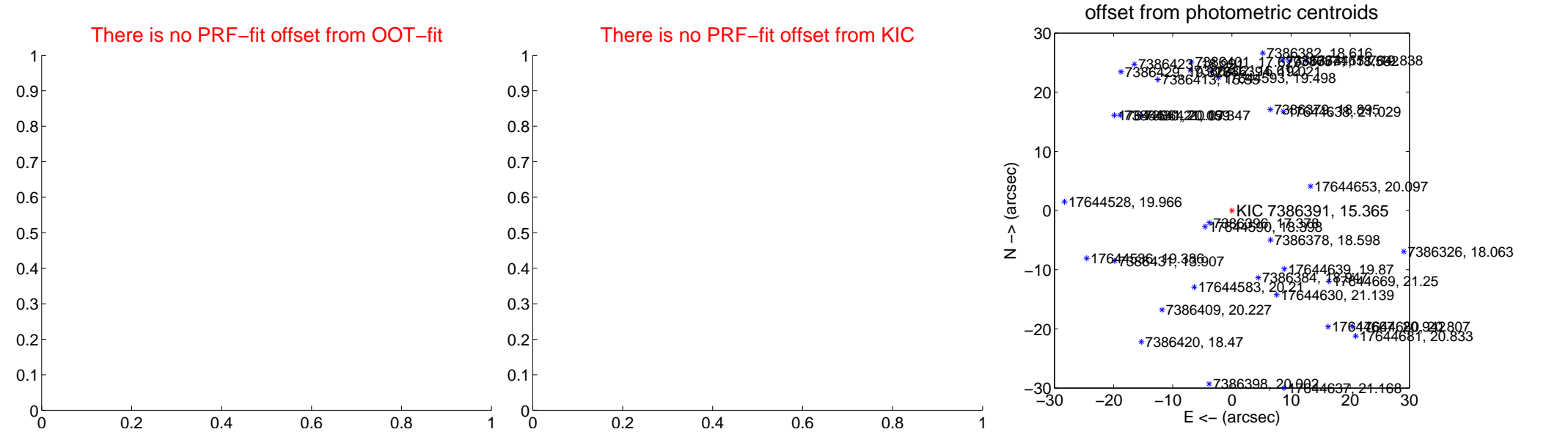
## DV Centroid Data

Supplemental centroid analysis for 007386391-01. Kepler magnitude: 15.37. Transit SNR 9.74

There are 0 quarters with good PRF difference image offsets

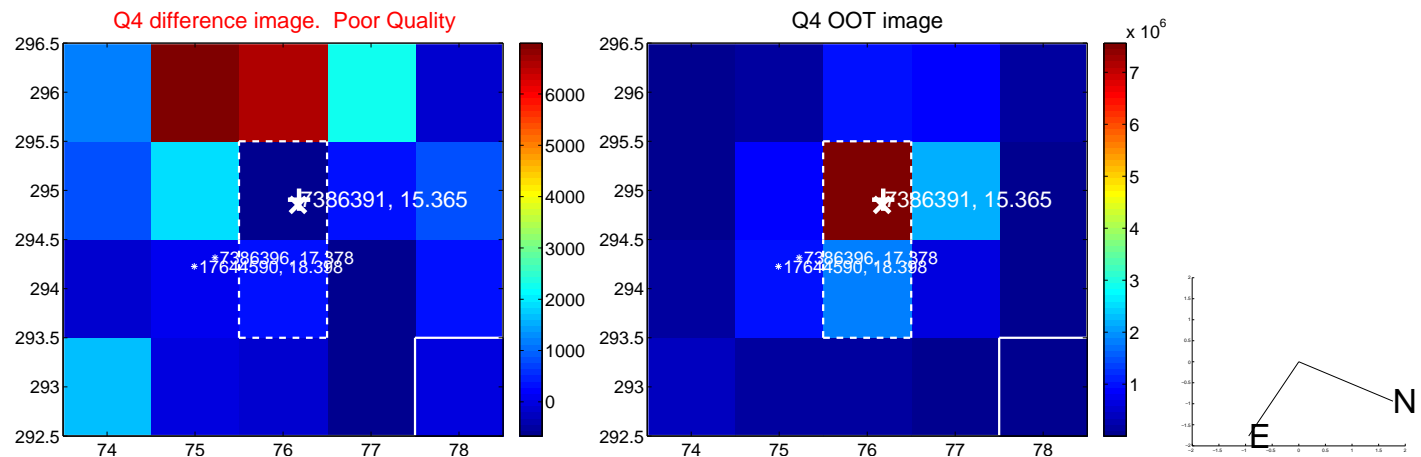
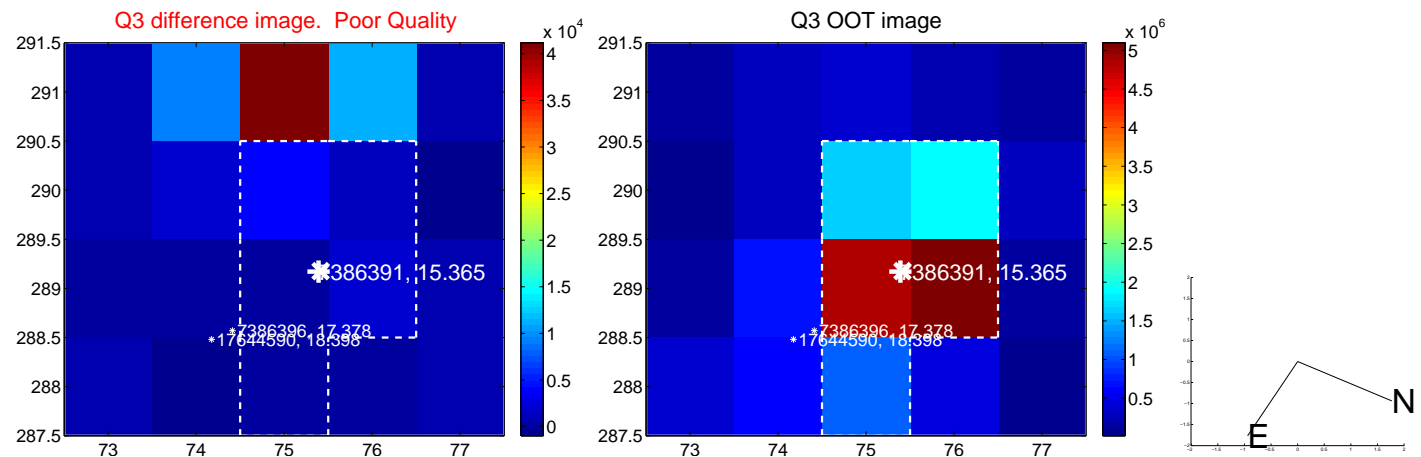
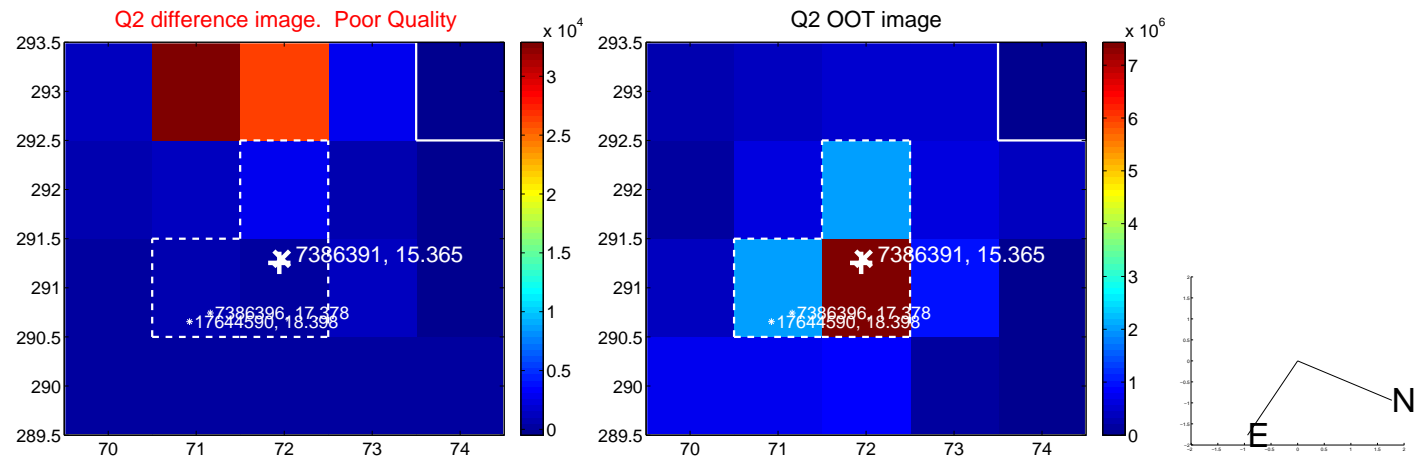
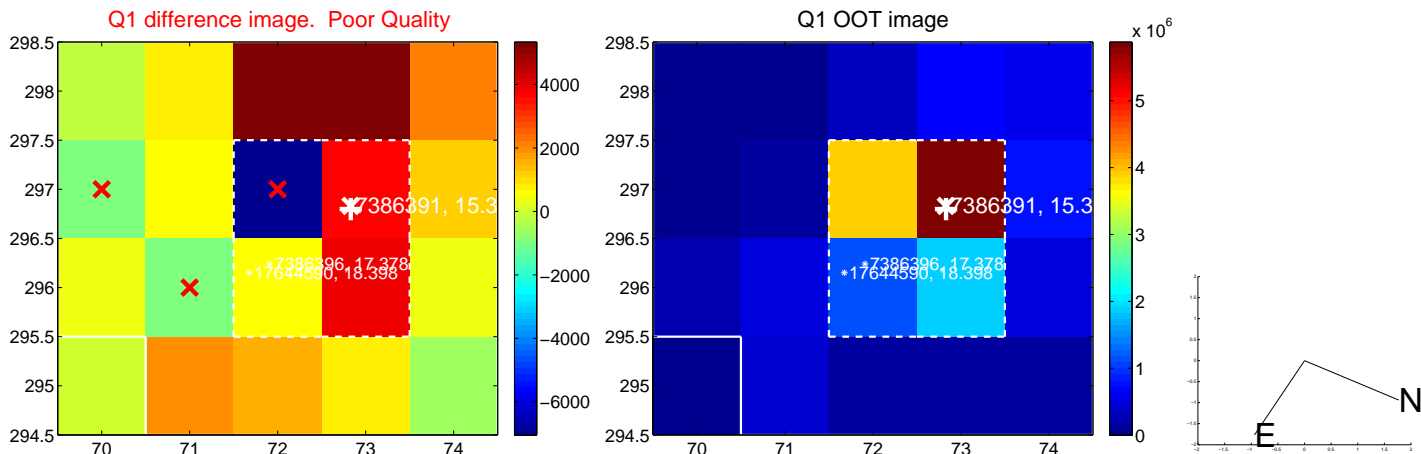
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	$83.99 \pm 1.32$	$63.65$	$-65.34 \pm 1.37$	$-52.77 \pm 1.25$

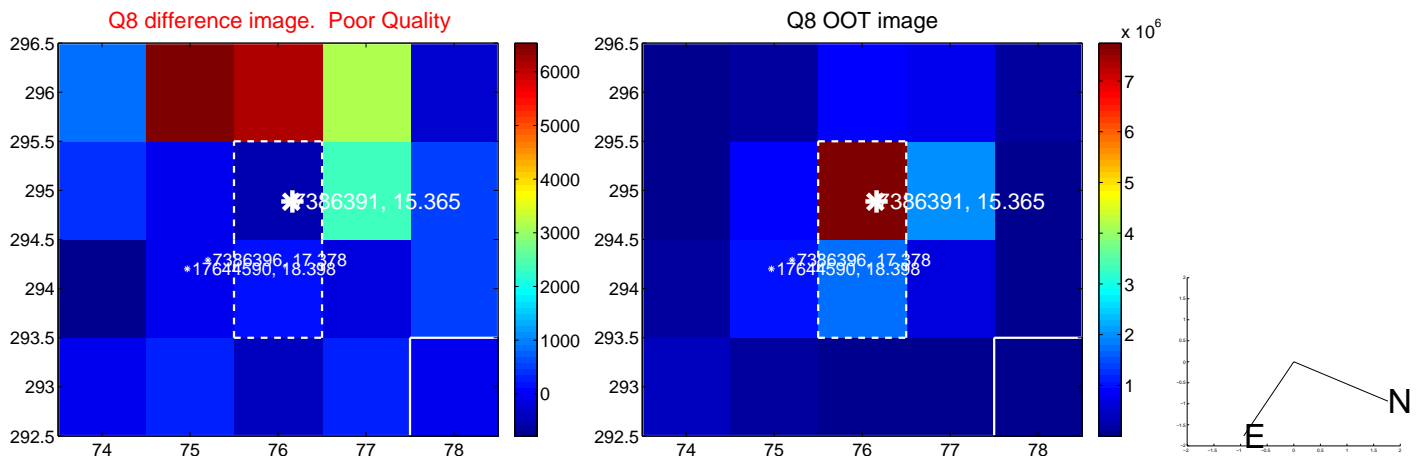
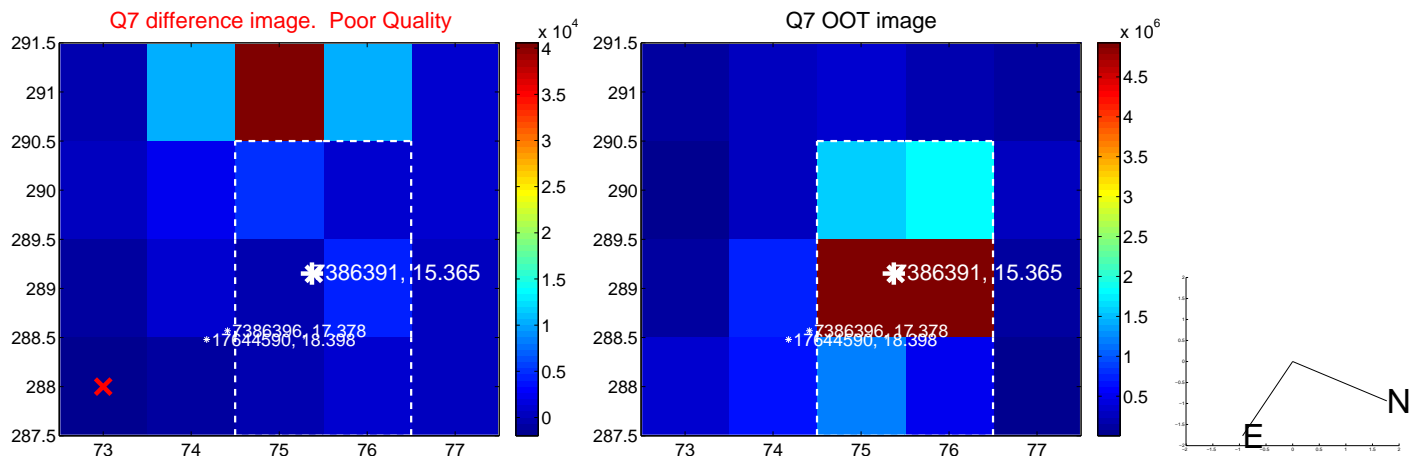
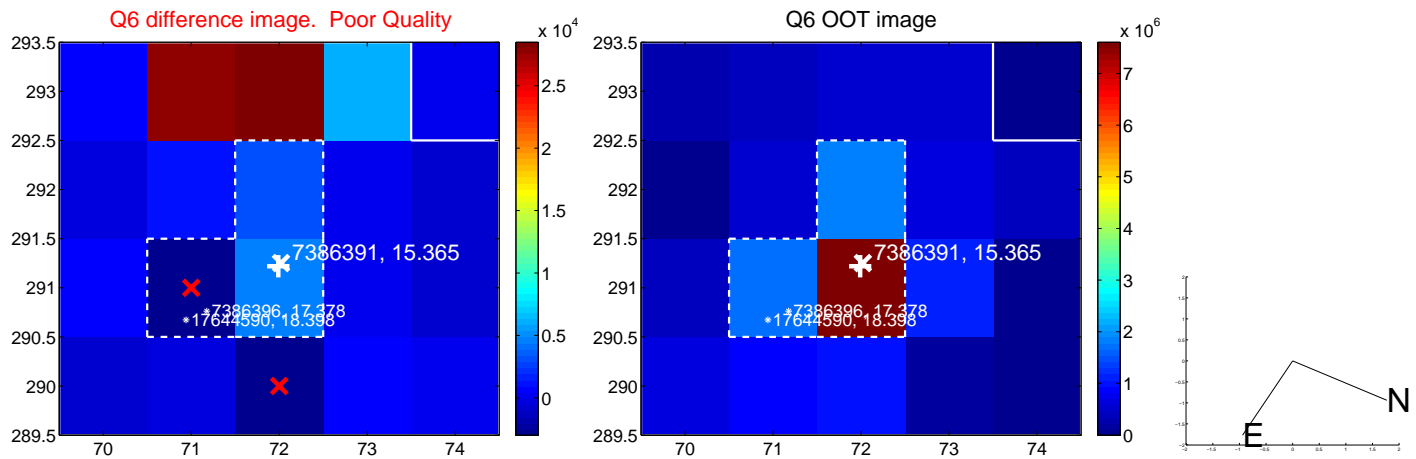
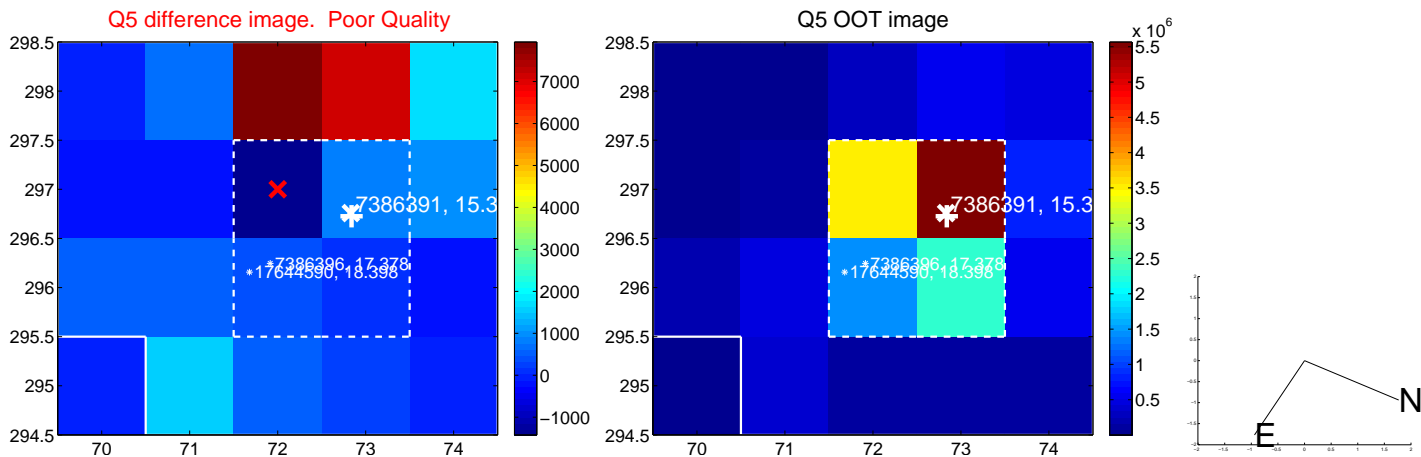


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

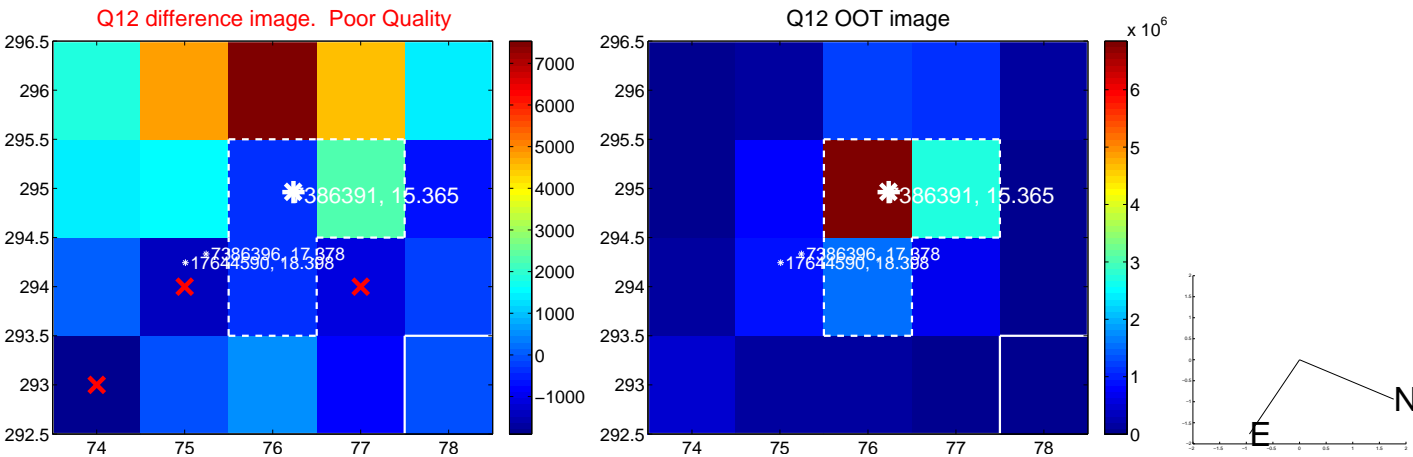
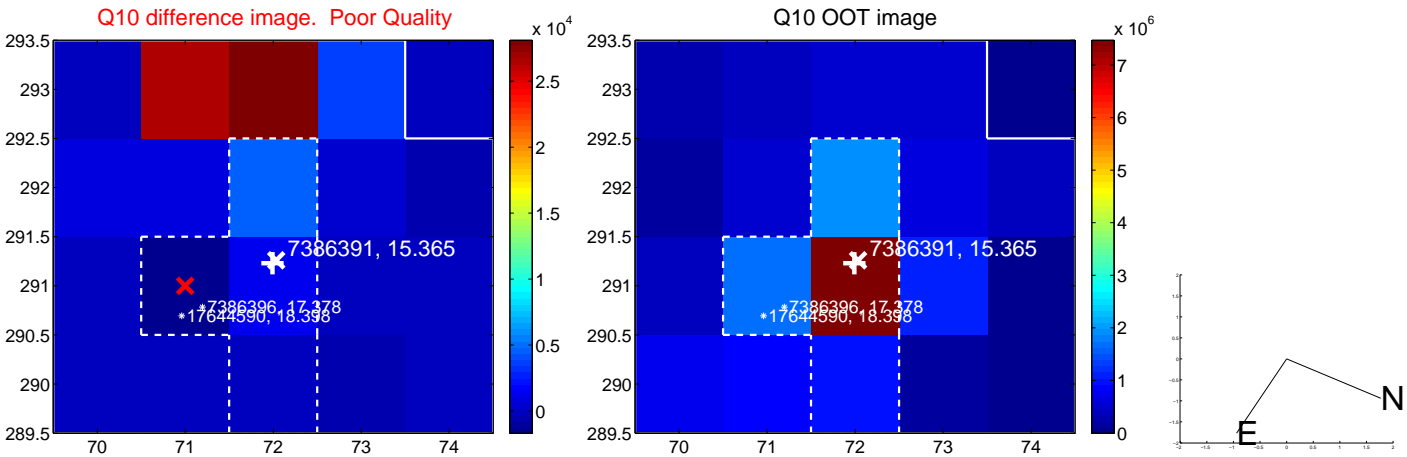
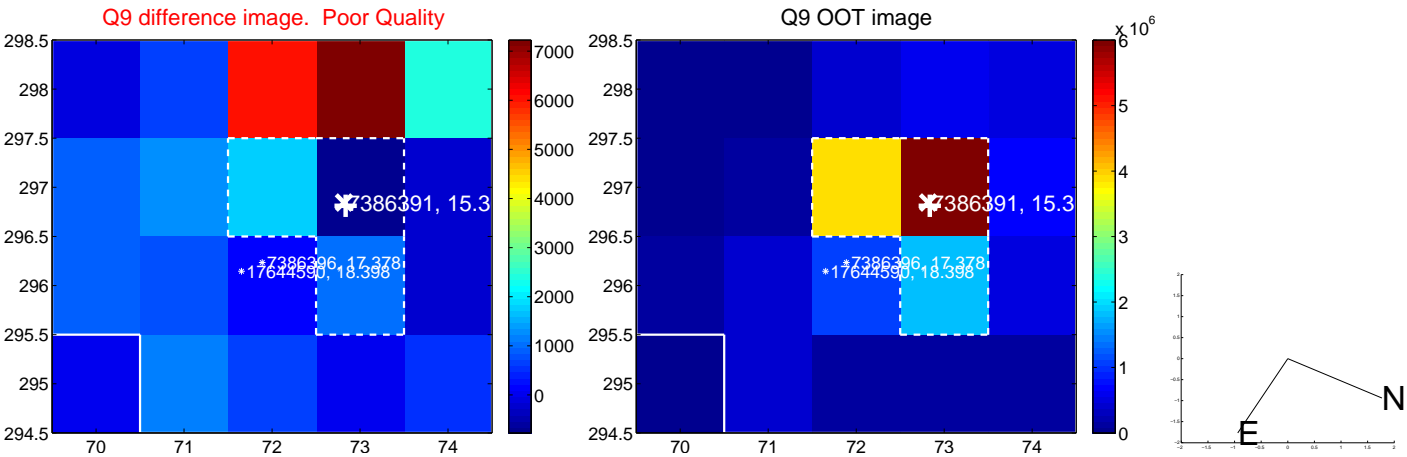
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



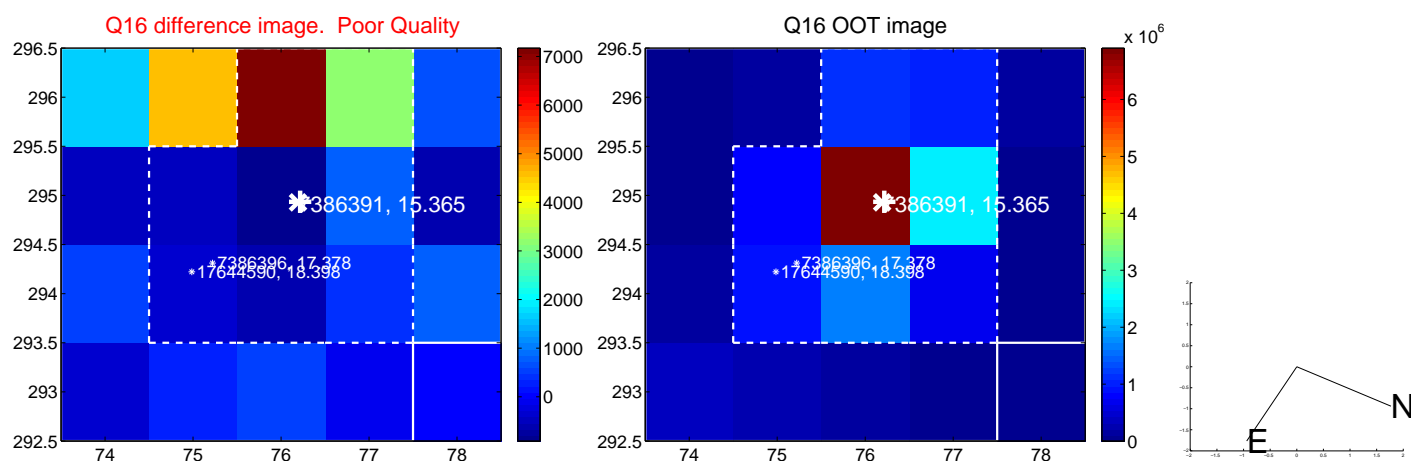
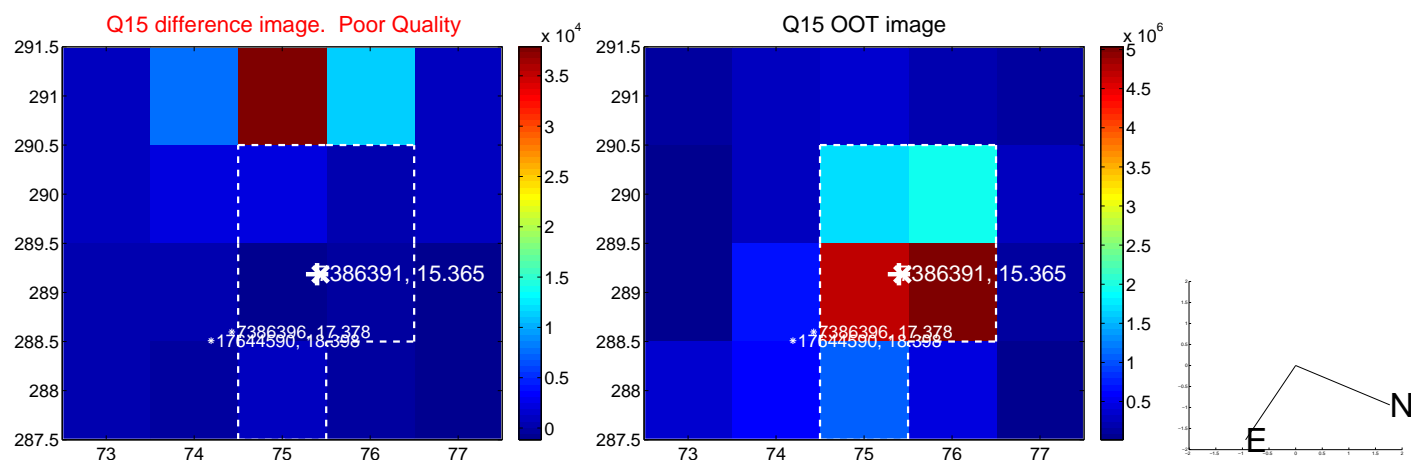
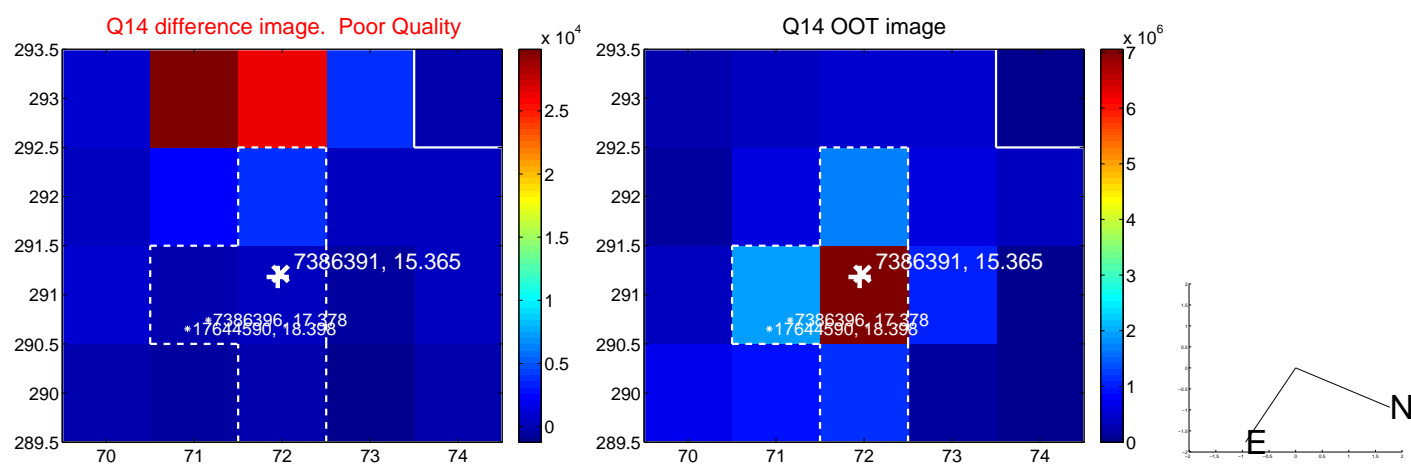
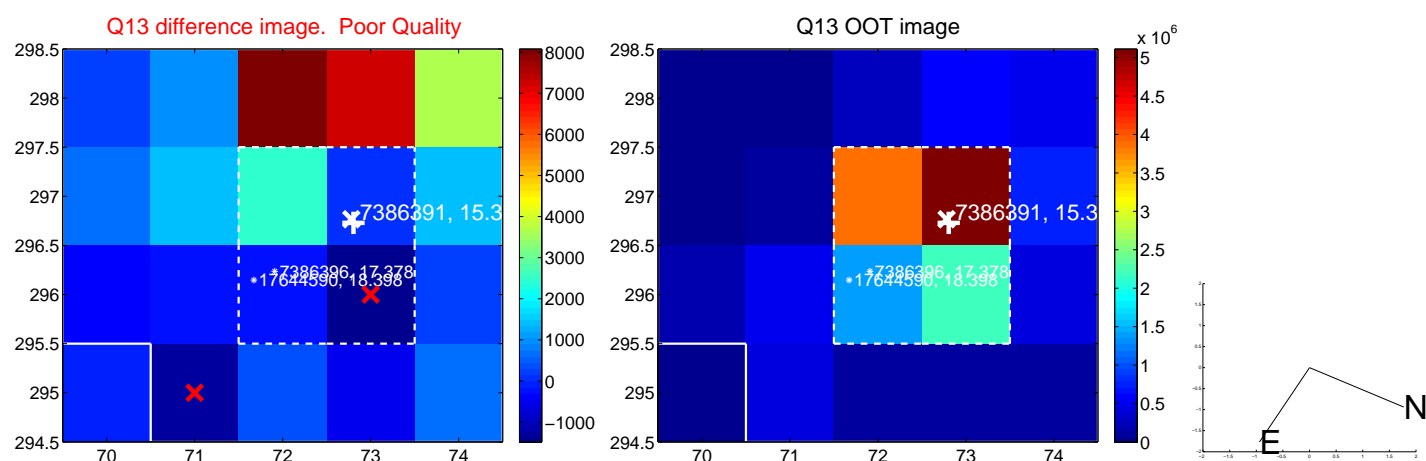
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

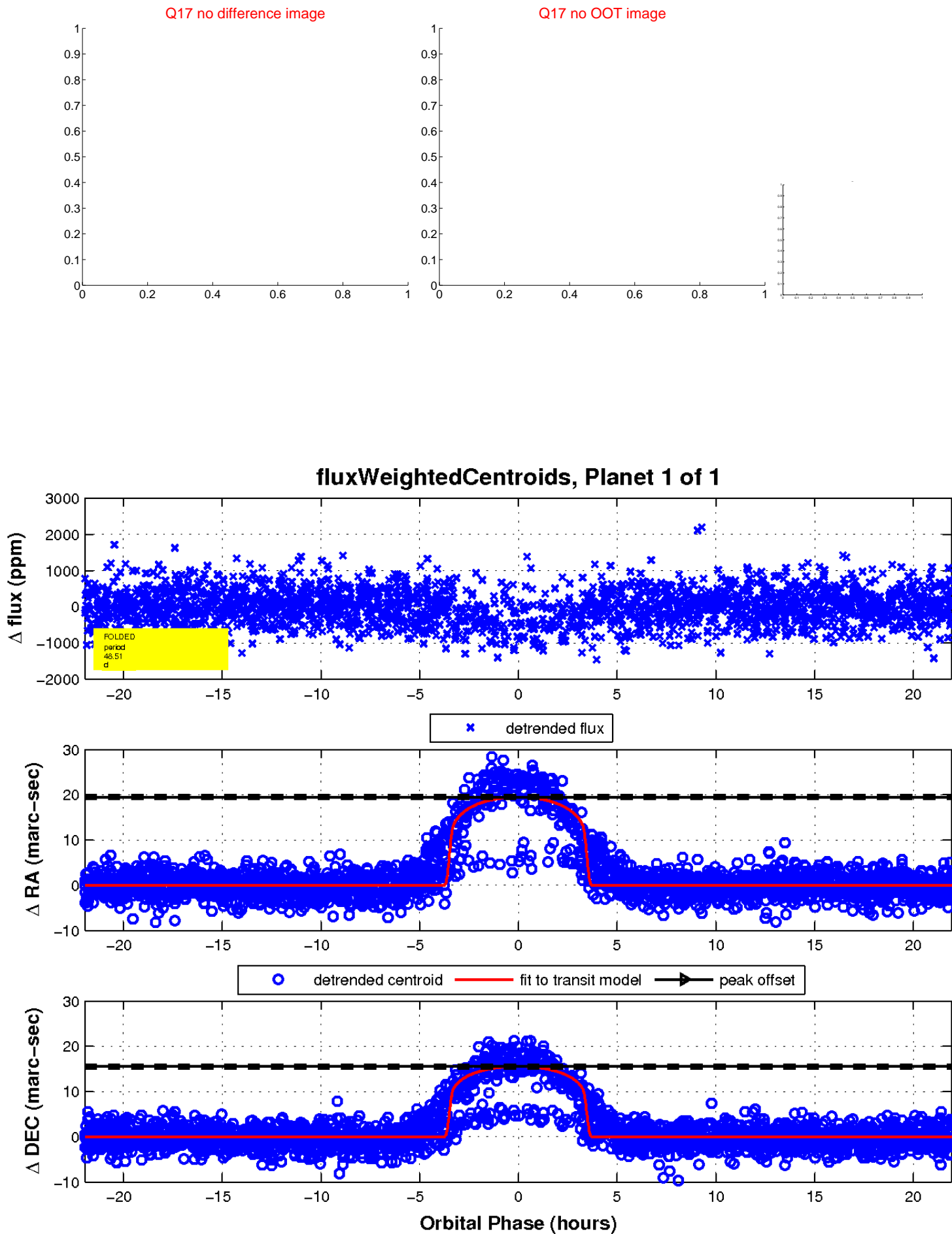


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

