

# KIC 008375487

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008375487-01	OBS	No	501.769707	235.941092	196.4	17.020	7.5	7.0	3.38	7105	5.06	11.12

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008375487-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—CENT_SATURATED

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

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

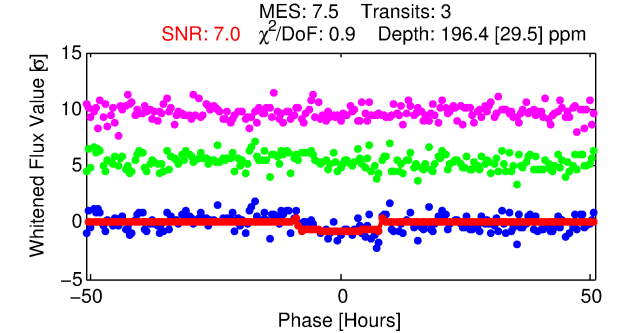
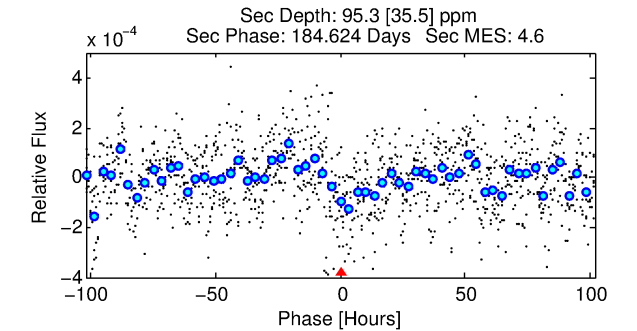
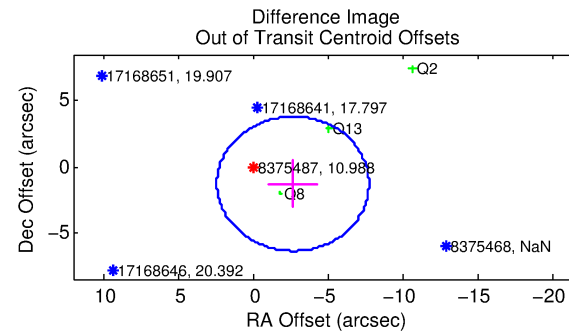
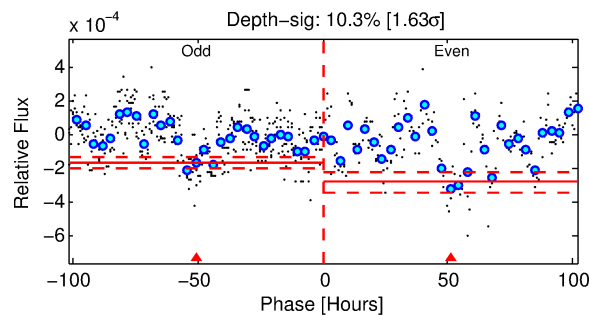
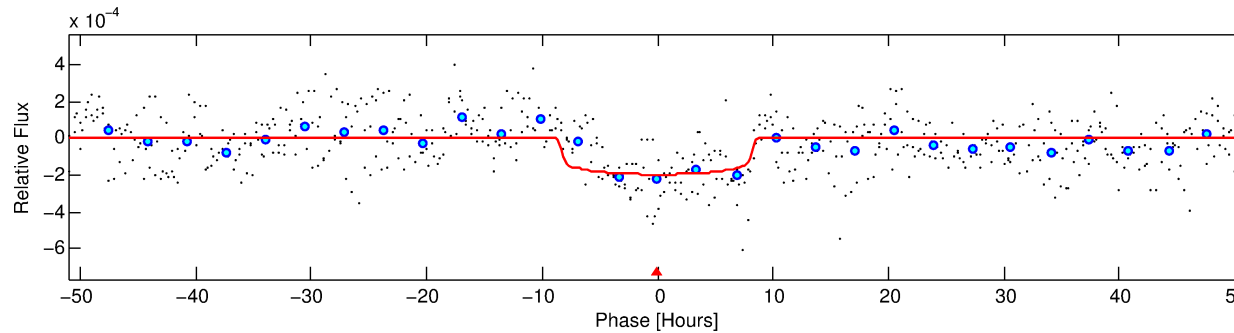
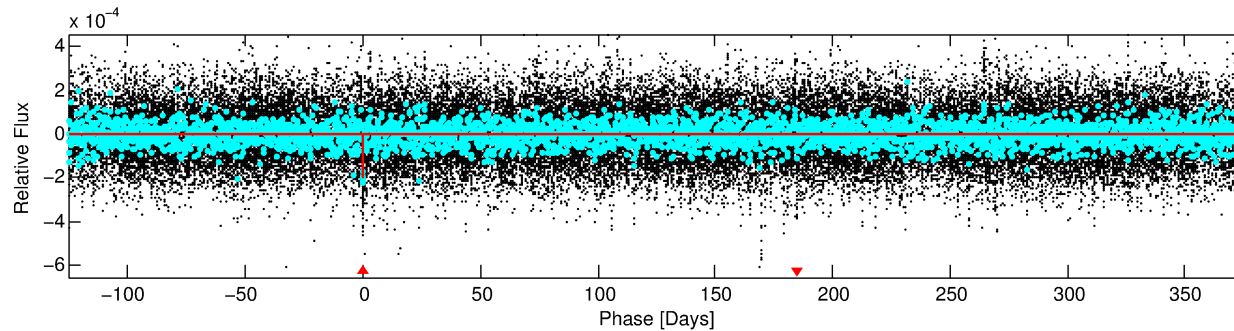
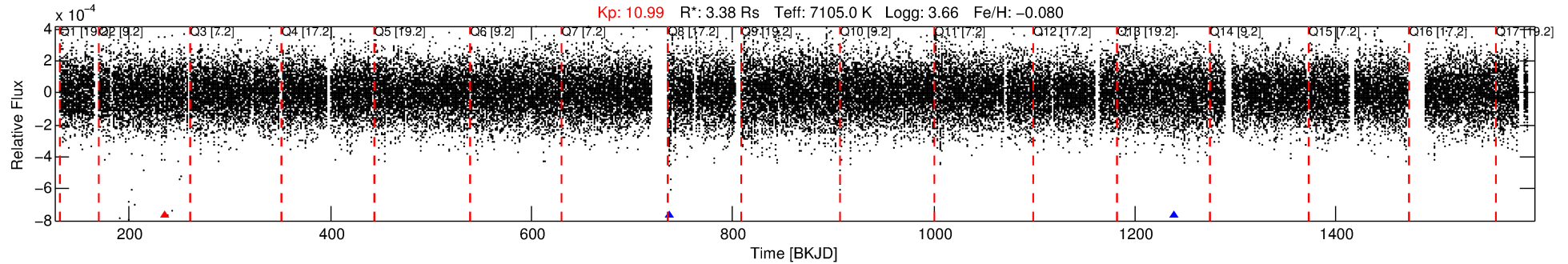
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008375487-01

No Significant Match Found

# DV One-Page Summary

KIC: 8375487 Candidate: 1 of 1 Period: 501.770 d



## DV Fit Results:

Period = 501.76971 [0.00908] d  
Epoch = 235.9411 [0.0130] BKJD  
Rp/R\* = 0.0137 [0.0023]  
a/R\* = 166.21 [138.21]  
b = 0.70 [0.62]  
Seff = 11.12 [5.84]  
Teq = 466 [61] K  
Rp = 5.06 [1.92] Re  
a = 1.5298 [0.4944] AU  
Ag = 4784.97 [3410.37] [1.40 $\sigma$ ]  
Teffp = 5988 [765] K [7.20 $\sigma$ ]

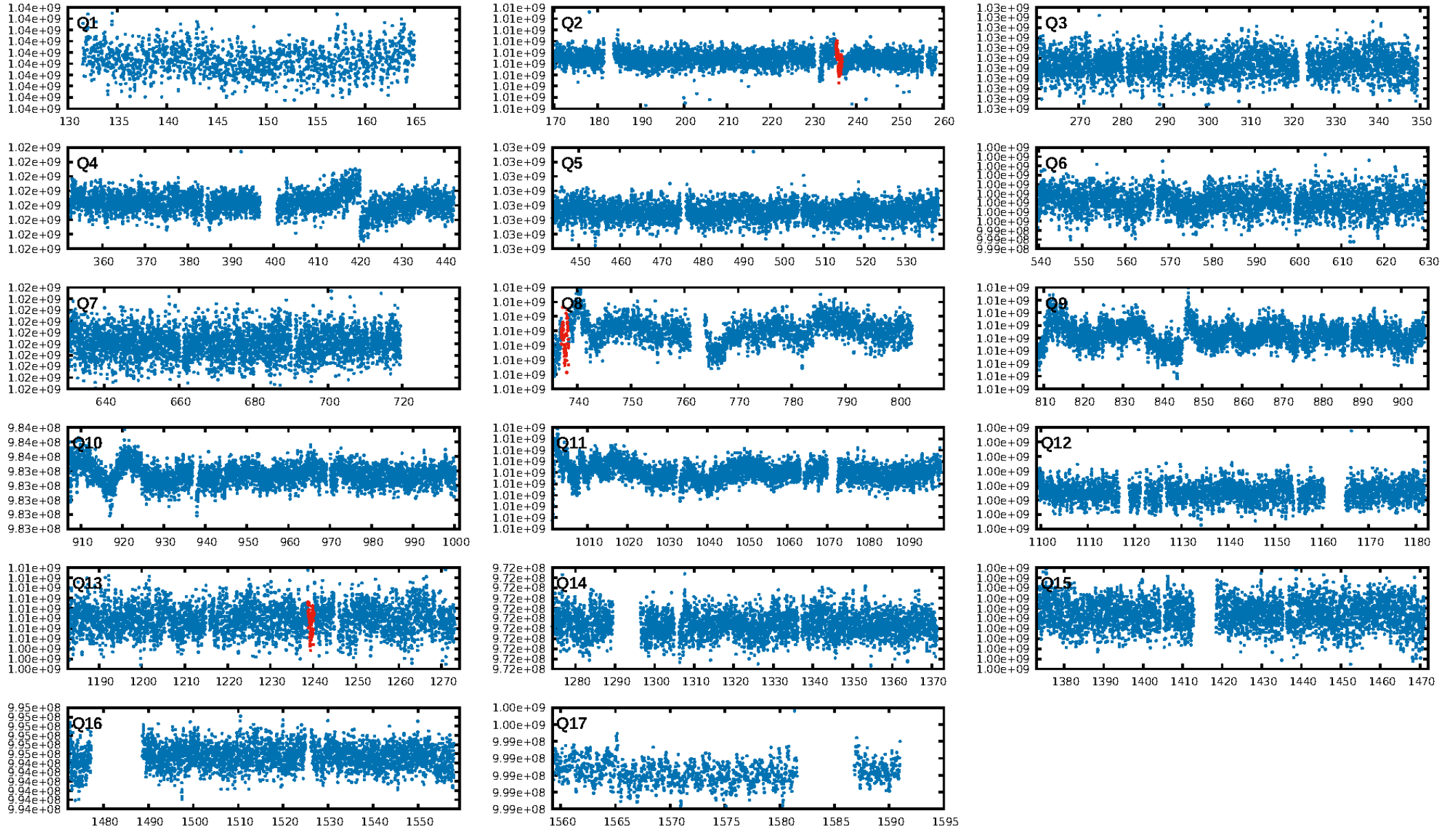
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 27.9%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.83e-11  
RollingBand-fgt: 0.67 [2/3]  
GhostDiagnostic-chr: -5.858  
Centroid-sig: 20.1%  
Centroid-so: 0.432 arcsec [0.66 $\sigma$ ]  
OotOffset-rm: 2.985 arcsec [1.76 $\sigma$ ]  
OotOffset-st: 1/0/1/1 [3]  
KicOffset-rm: 3.174 arcsec [1.91 $\sigma$ ]  
KicOffset-st: 1/0/1/1 [3]  
DiffImageQuality-fgm: 0.33 [1/3]  
DiffImageOverlap-fno: 1.00 [3/3]

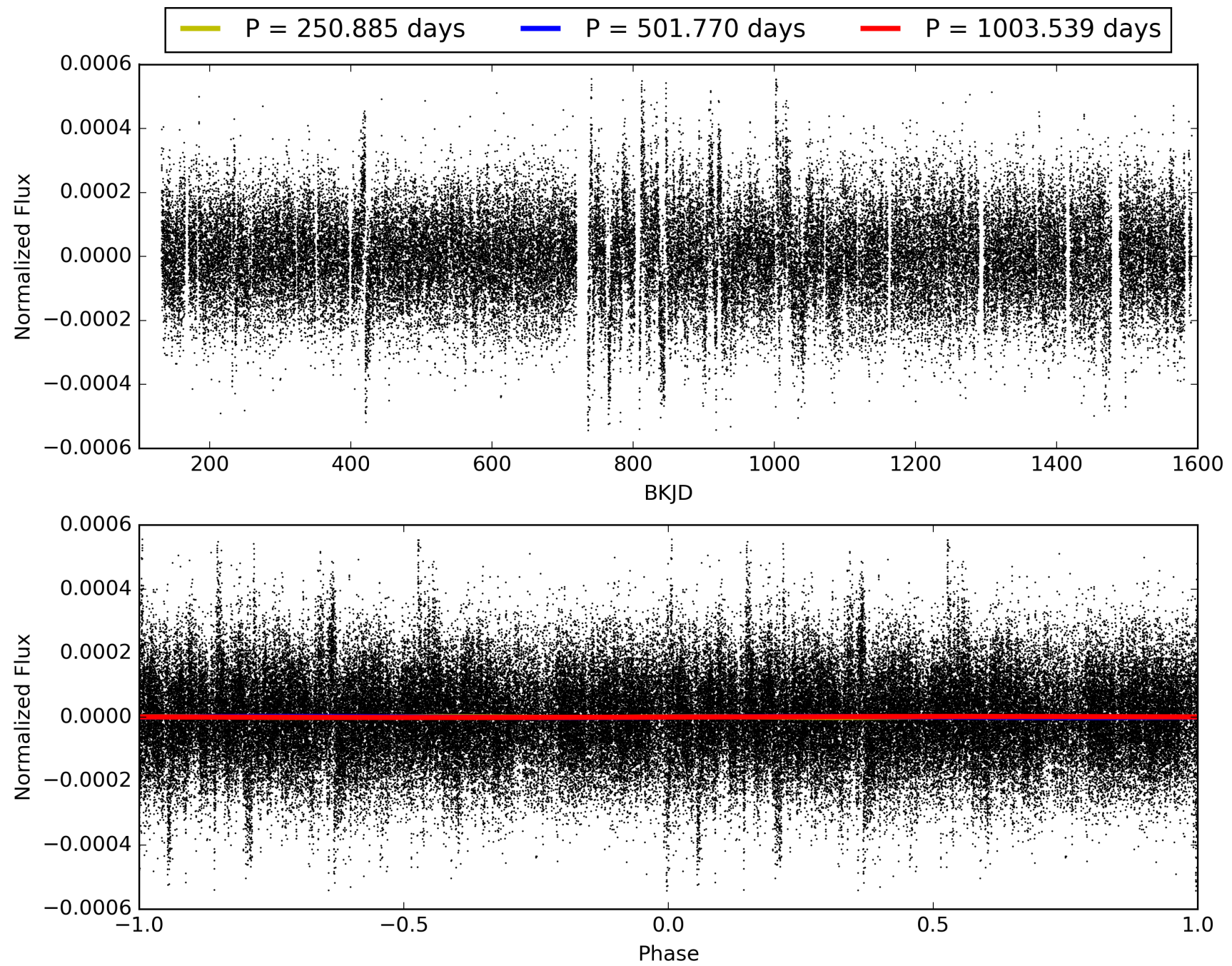
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 01:47:50 Z

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

# TCE 008375487-01, PDC Light Curves

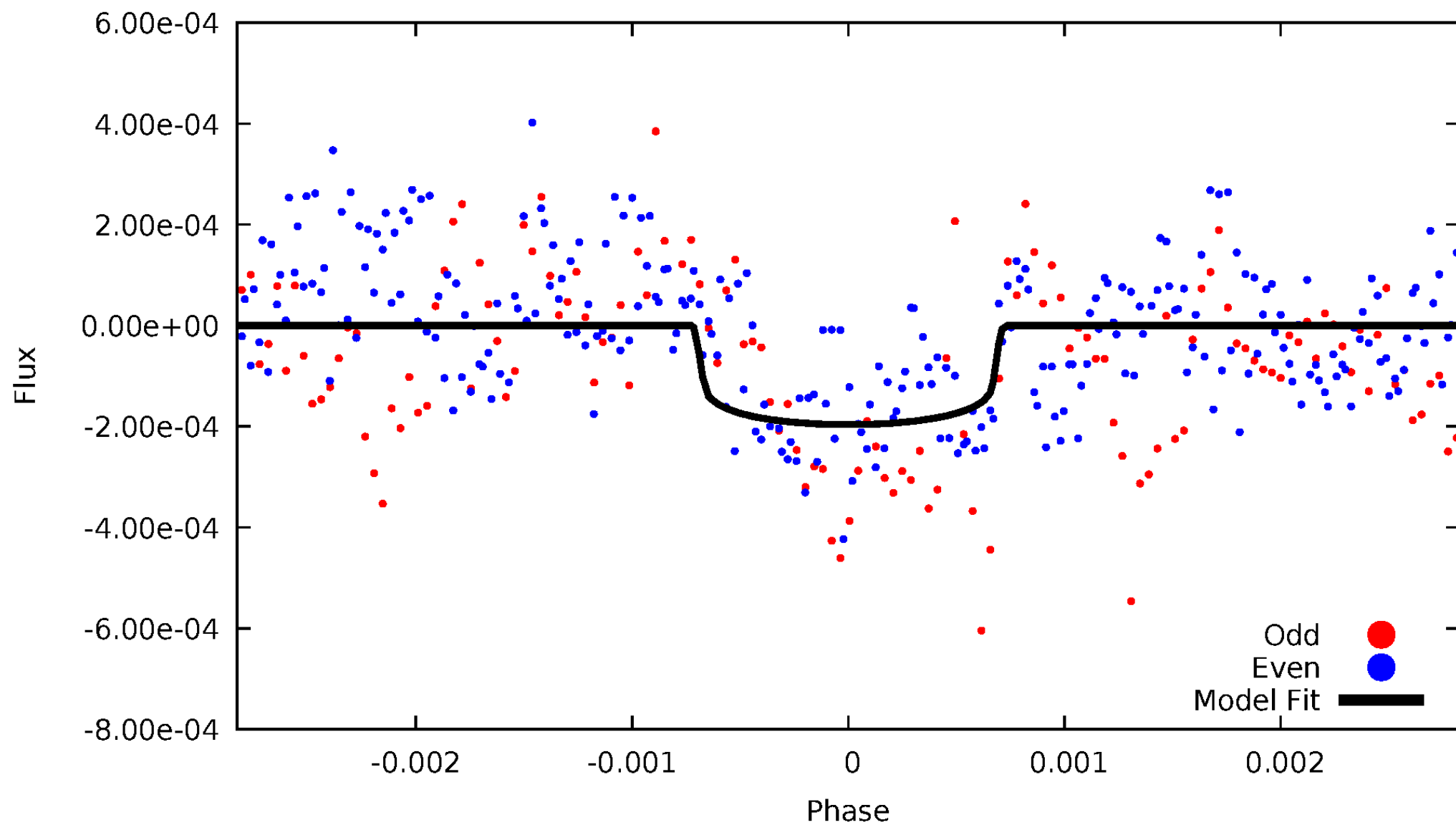


TCE 008375487-01



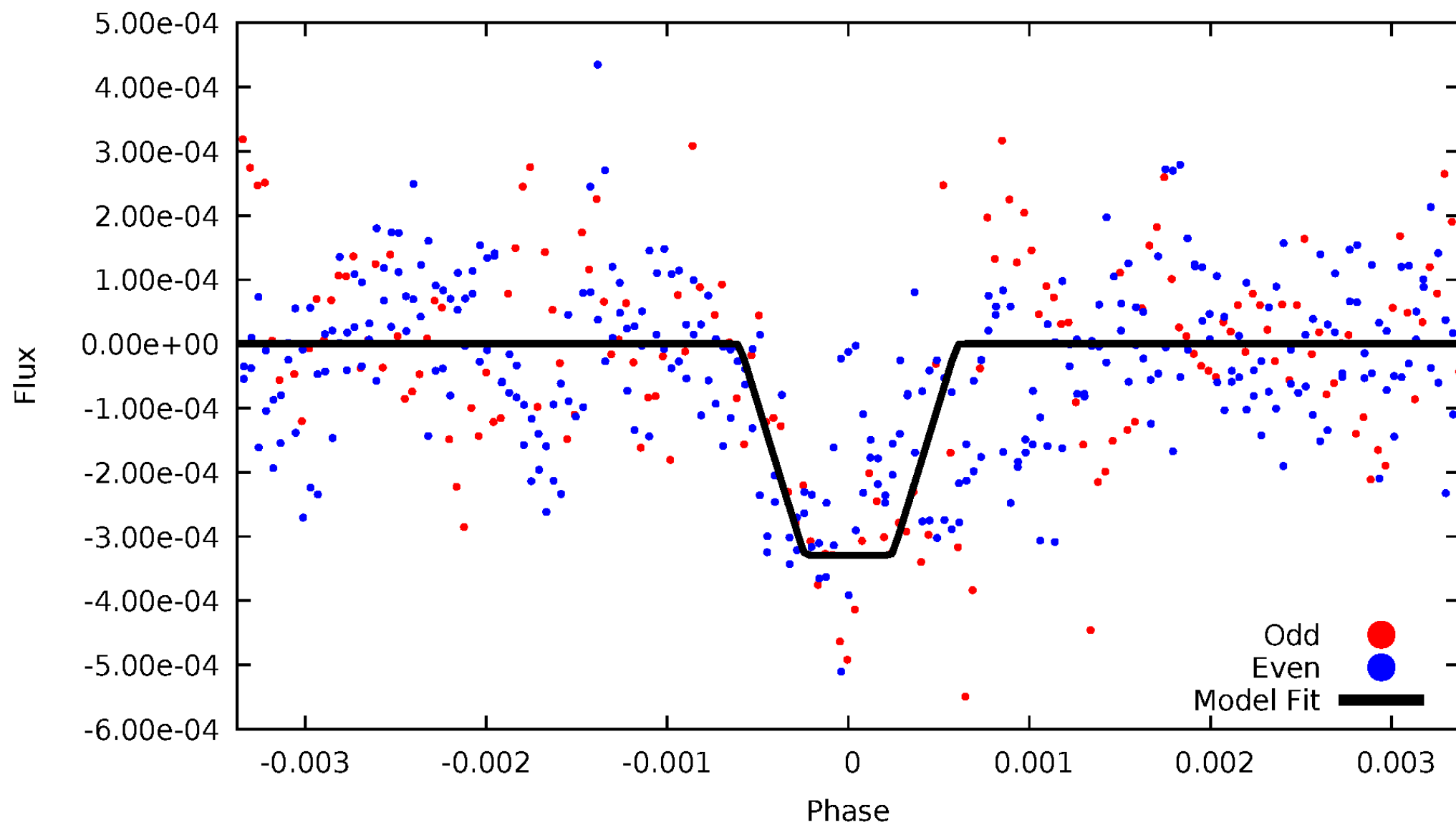
# DV Odd/Even

TCE 008375487-01



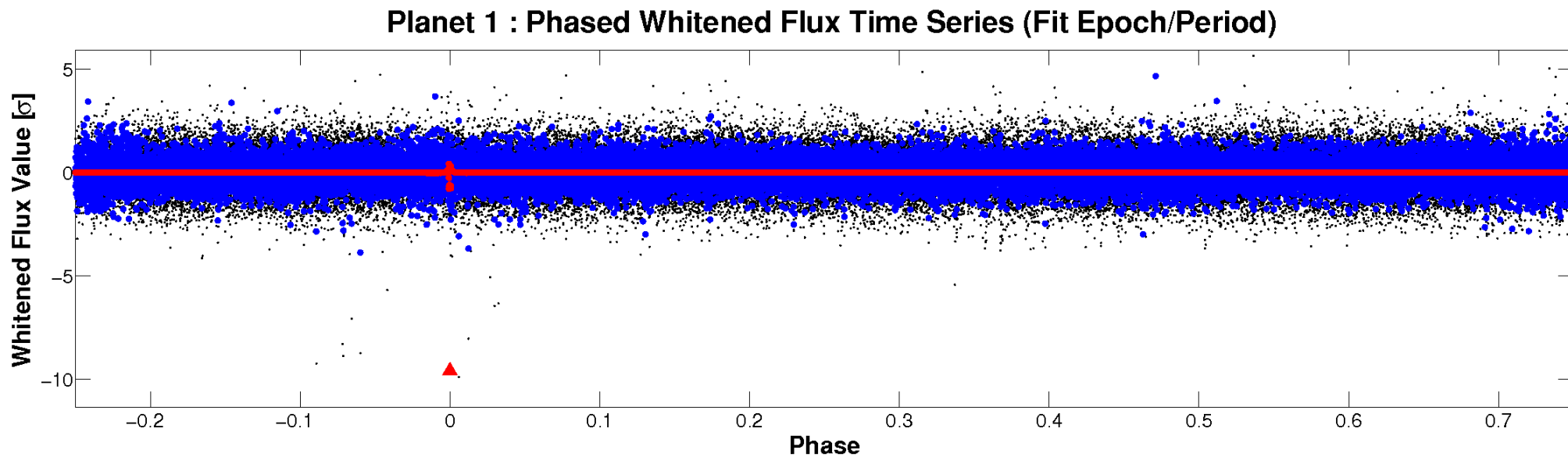
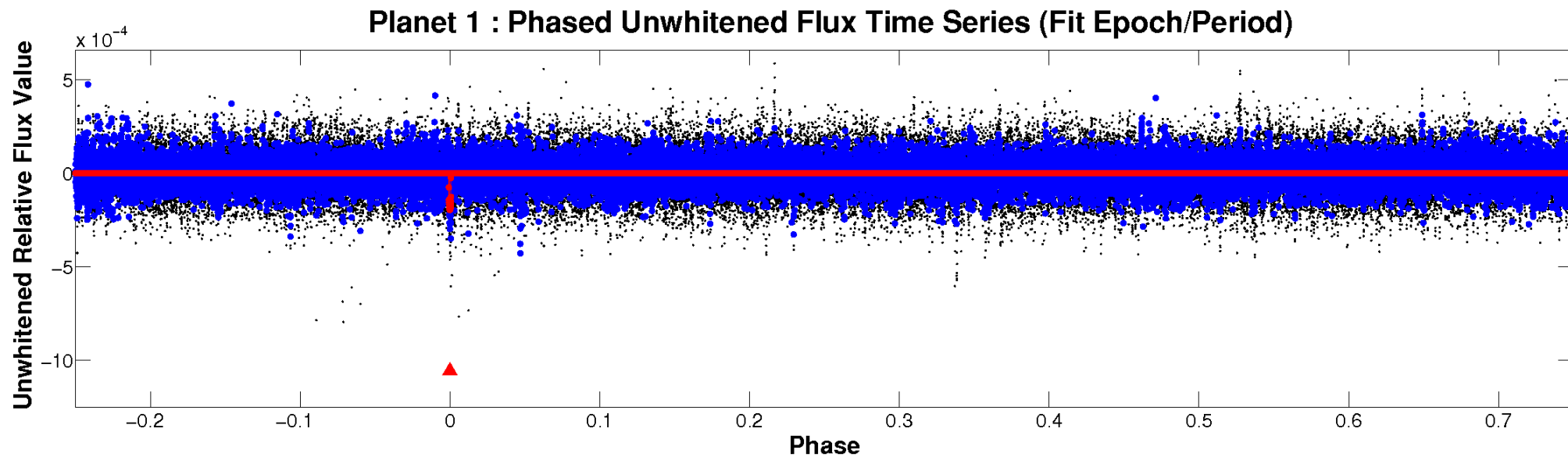
# ALT Odd/Even

TCE 008375487-01





# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

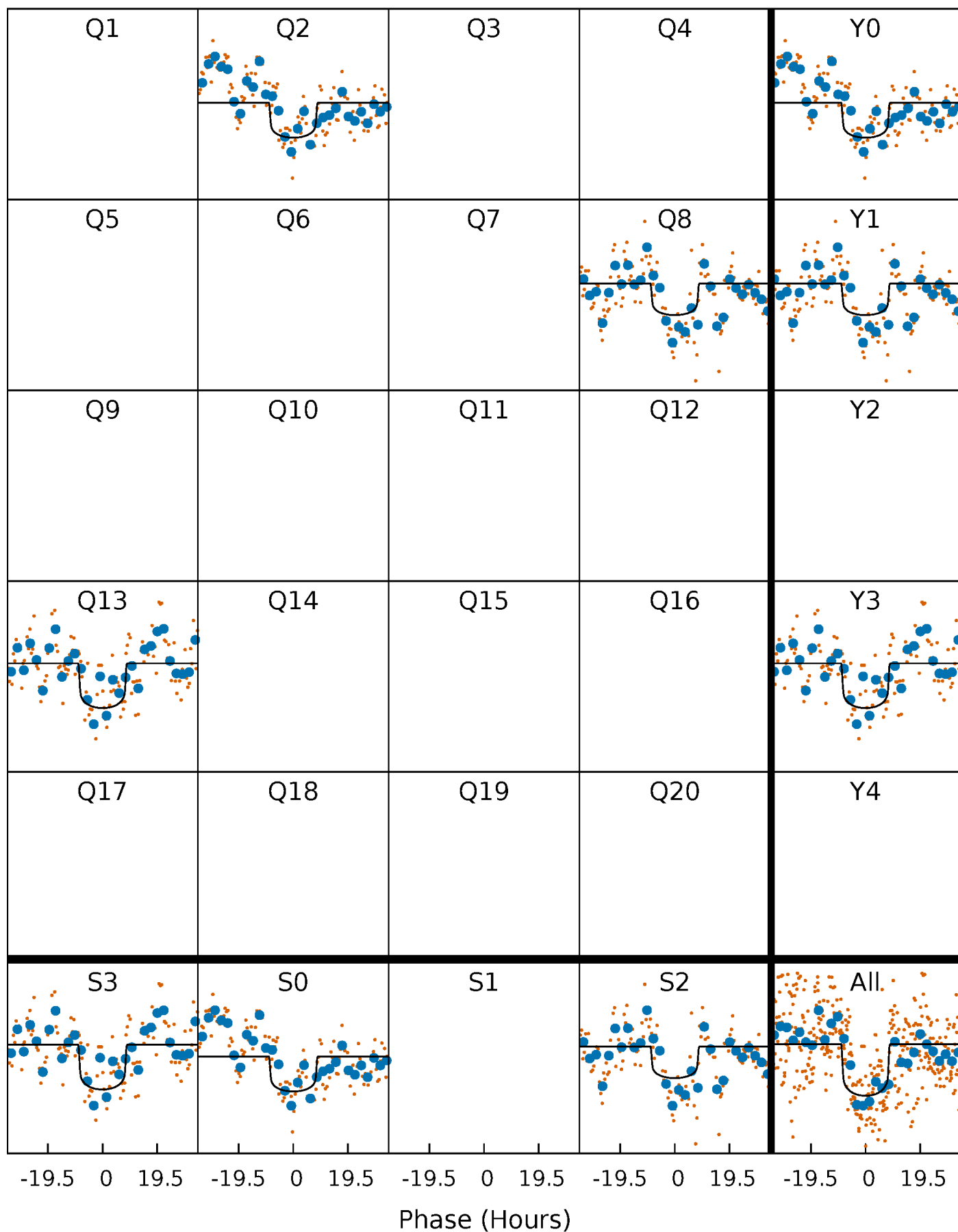
TCE 008375487-01 P=501.769707 Days  $T_0=235.941092$  (BKJD)





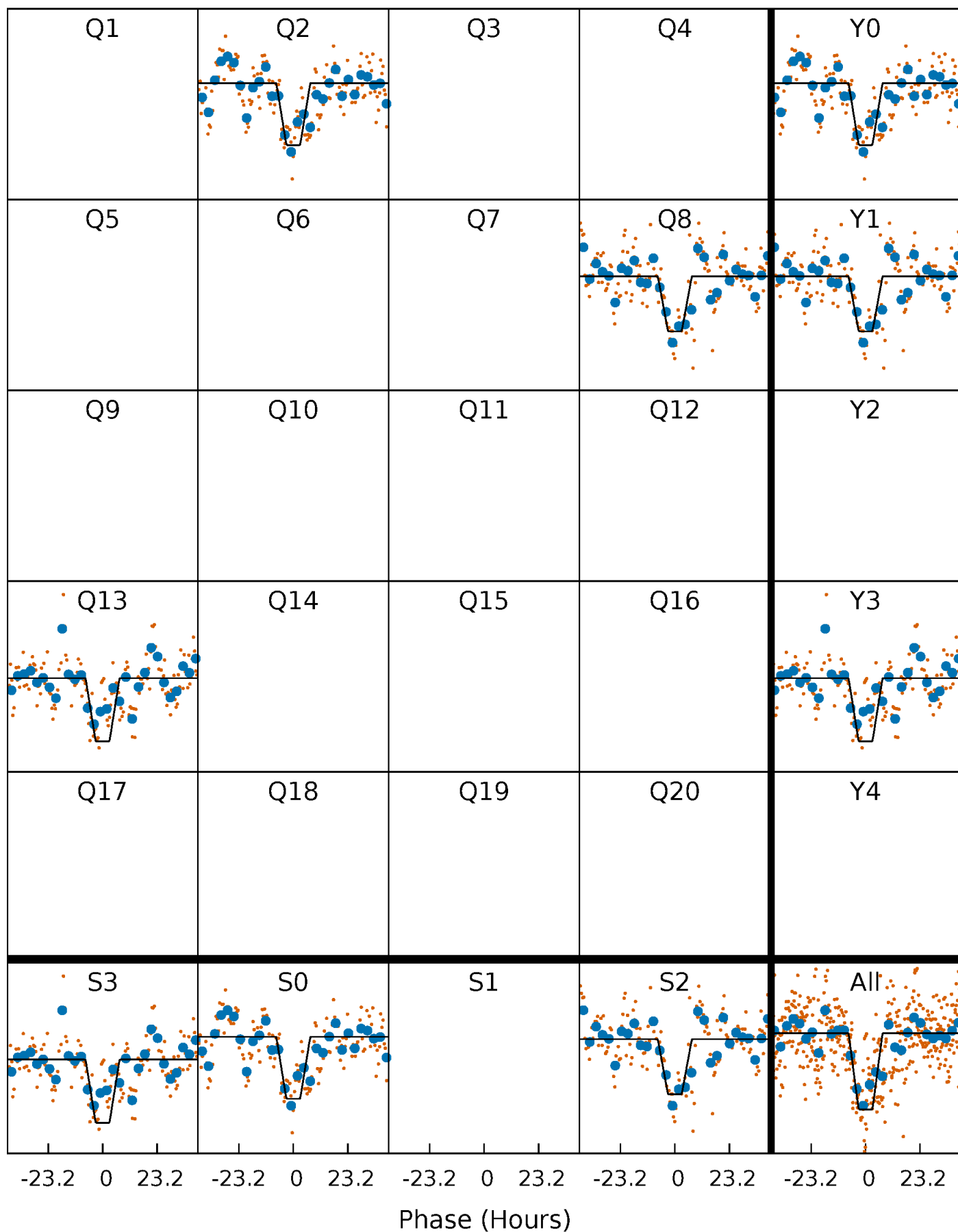
# DV Quarter-Phased Transit Curves

TCE 008375487-01 P=501.769707 Days  $T_0=235.941092$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

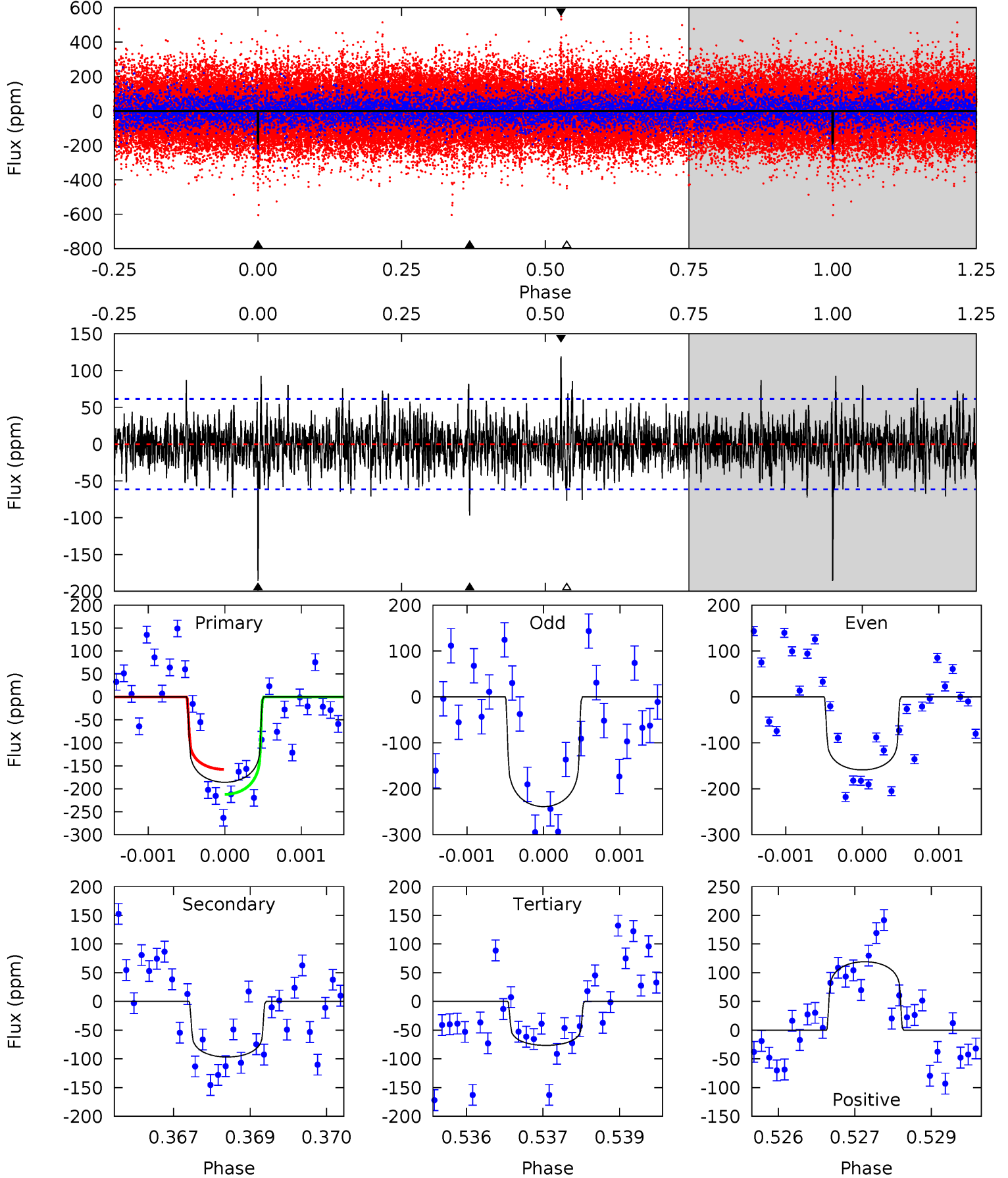
TCE 008375487-01 P=501.746066 Days  $T_0=235.949745$  (BKJD)



# DV Model-Shift Uniqueness Test

008375487-01, P = 501.769707 Days, E = 235.941092 Days

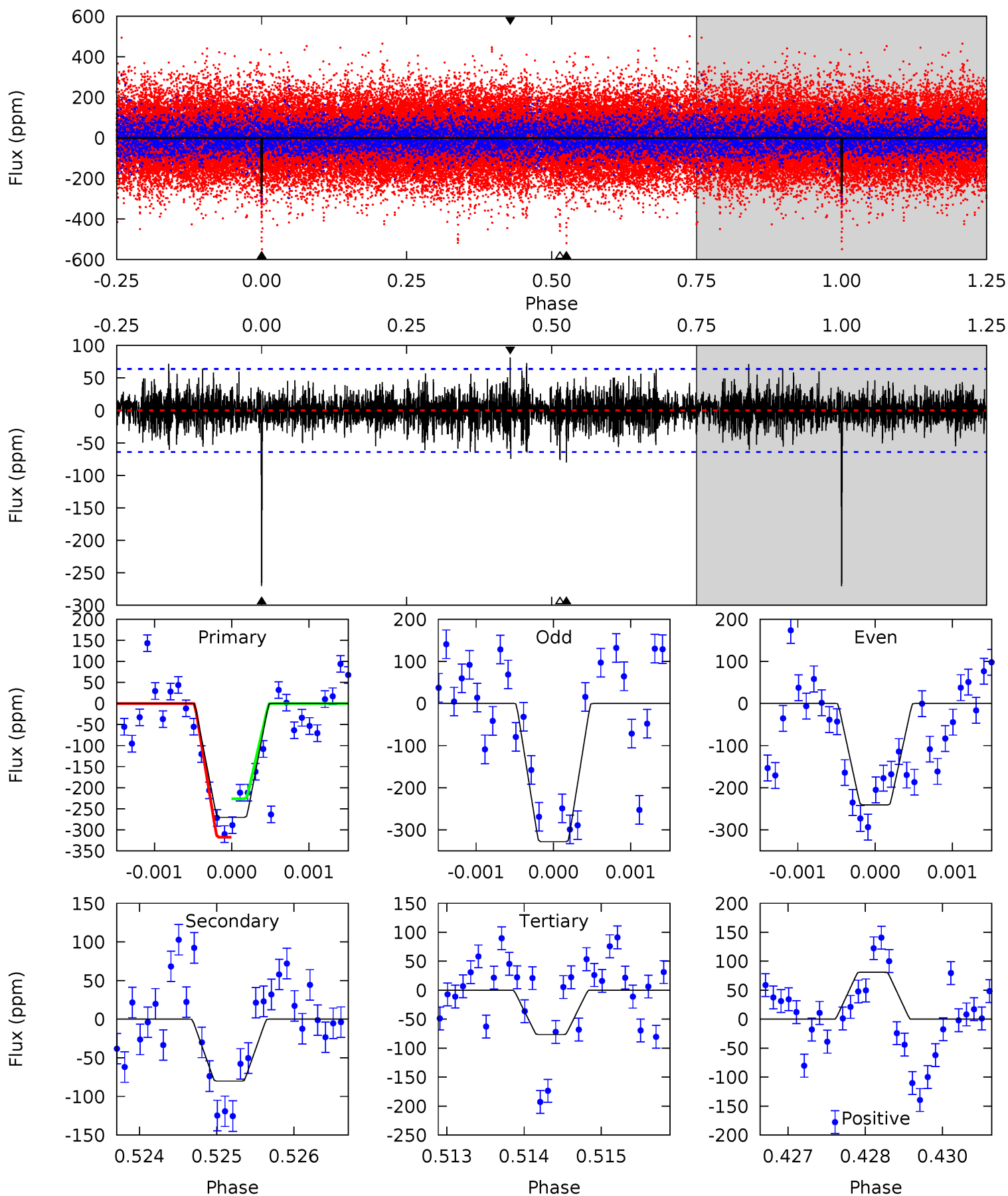
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.3	8.48	6.71	10.4	5.38	3.18	2.04	9.58	5.84	1.78	-1.96	3.29	1.15	0.39	2.38



# Alt Model-Shift Uniqueness Test

008375487-01, P = 501.746066 Days, E = 235.949745 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
22.9	6.79	6.48	6.88	5.41	3.23	1.59	16.4	16.0	0.31	-0.10	3.50	0.94	0.23	3.87



### Stellar Parameters For KIC 008375487

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7105^{+170}_{-213}$	$3.659^{+0.298}_{-0.053}$	$-0.080^{+0.250}_{-0.250}$	$3.376^{+0.385}_{-1.156}$	$1.896^{+0.180}_{-0.334}$	$0.069^{+0.142}_{-0.012}$
	+2%/-3%	+8%/-1%	+312%/-312%	+11%/-34%	+9%/-18%	+205%/-18%
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 008375487-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-97 \pm 11$	$4.72^{+1.03}_{-1.06}$	$632^{+32}_{-47}$	$5956^{+615}_{-482}$	$5645^{+3626}_{-1875}$
Alt.	$-80 \pm 12$	$6.21^{+1.31}_{-1.24}$	$633^{+33}_{-57}$	$5011^{+381}_{-309}$	$2617^{+1592}_{-807}$

$T_{max}$  = 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

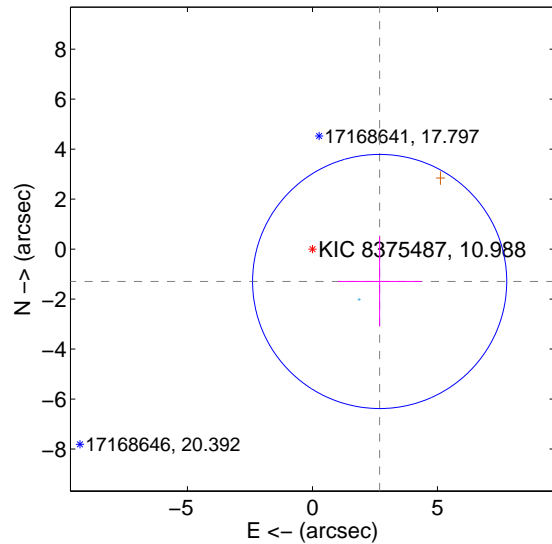
Supplemental centroid analysis for 008375487-01. **Kepler magnitude: 10.99.** Transit SNR 6.98

**There are 1 quarters with good PRF difference image offsets**

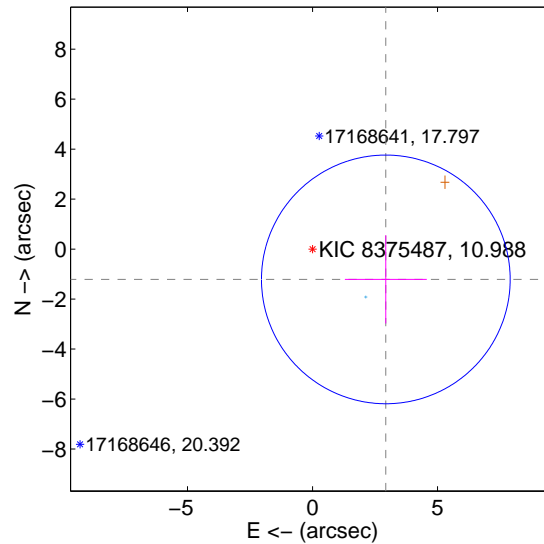
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.985 \pm 1.695$	1.76	$-2.689 \pm 1.669$	$-1.296 \pm 1.802$
PRF-fit source offset from KIC position	$3.174 \pm 1.658$	1.91	$-2.933 \pm 1.640$	$-1.213 \pm 1.763$
photometric centroid source offset	$0.43 \pm 0.66$	0.66	$-0.01 \pm 0.70$	$-0.43 \pm 0.66$

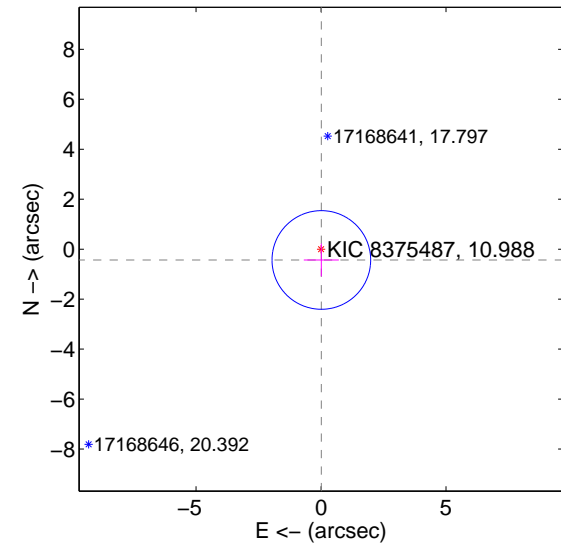
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



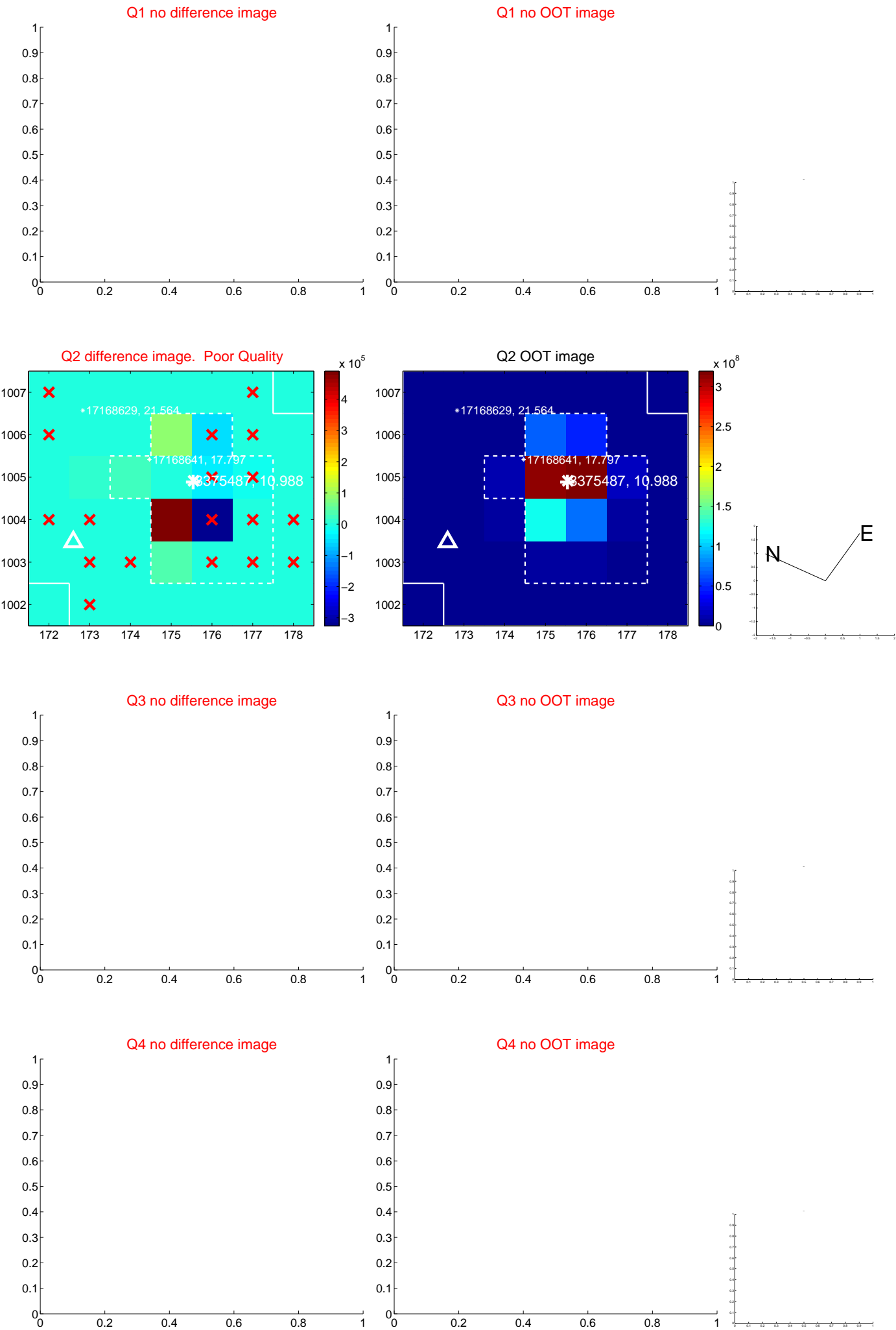
offset from photometric centroids



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.

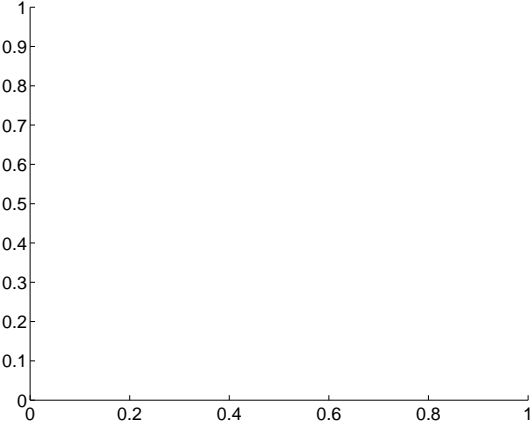
Q5 no difference image



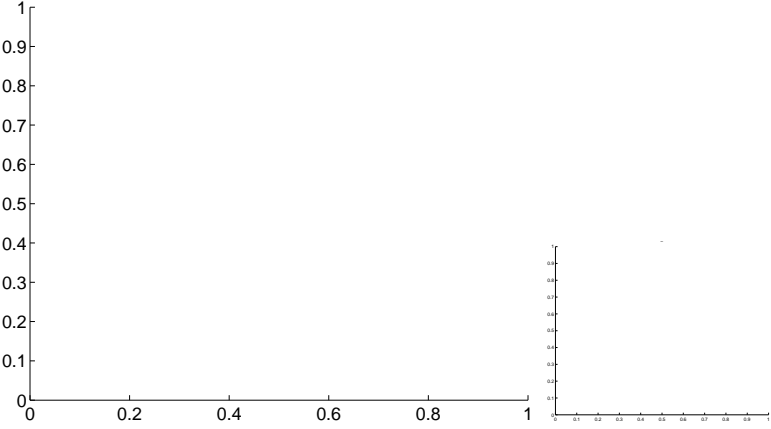
Q5 no OOT image



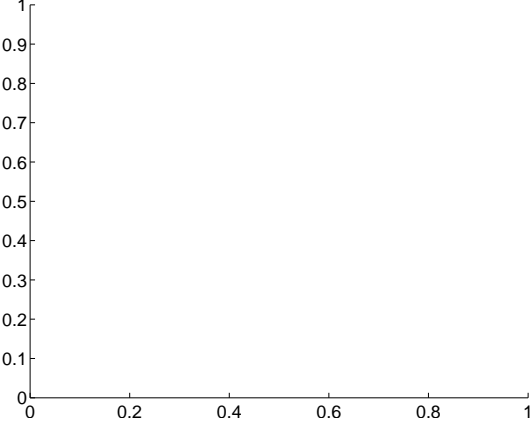
Q6 no difference image



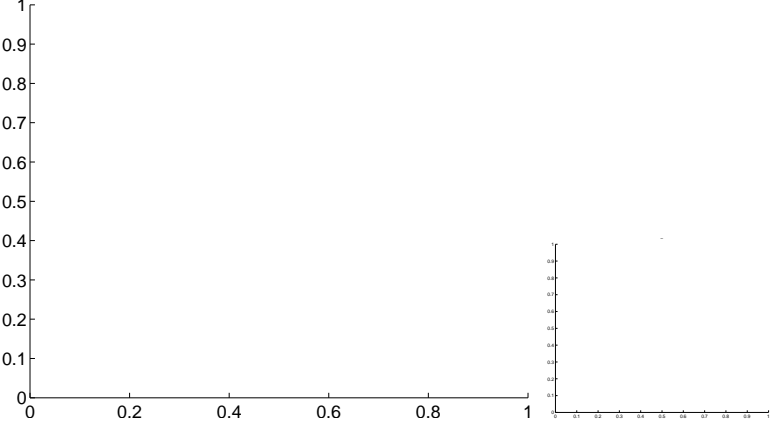
Q6 no OOT image



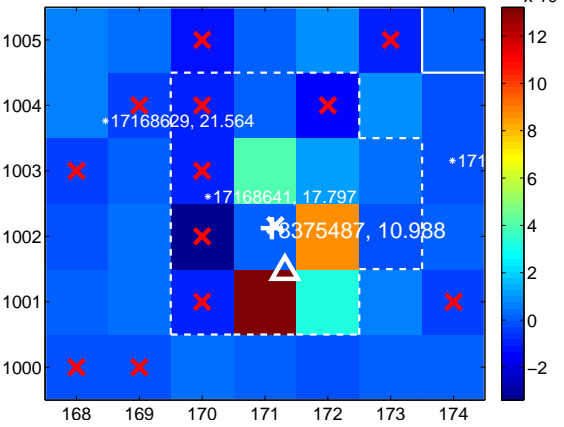
Q7 no difference image



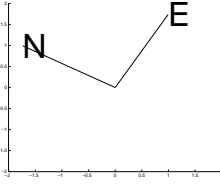
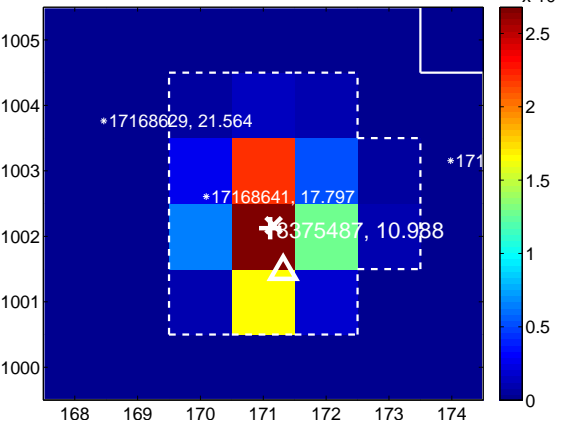
Q7 no OOT image



Q8 difference image



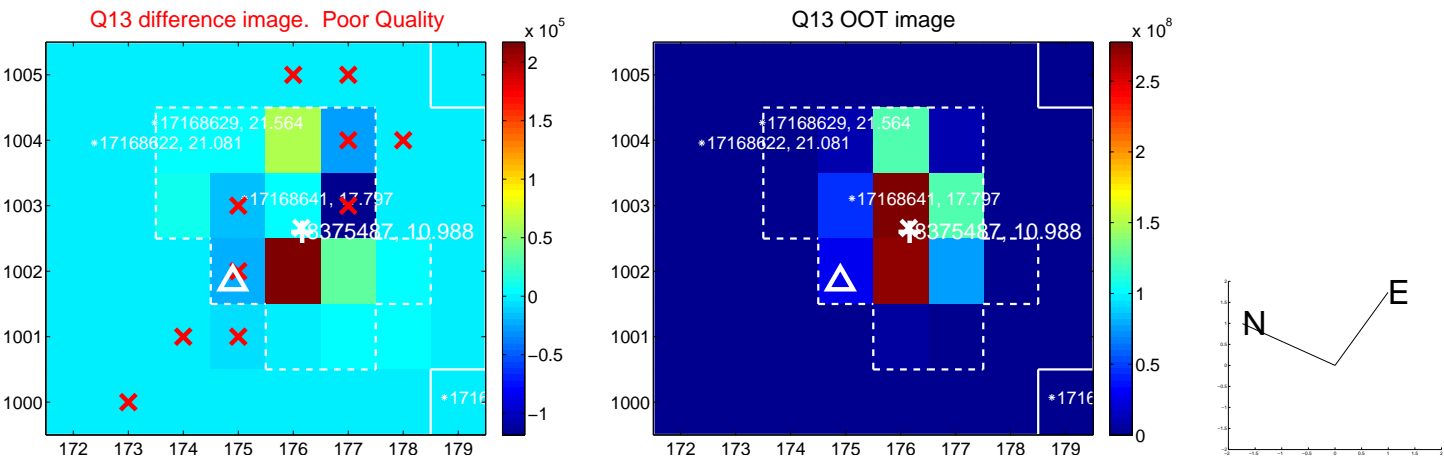
Q8 OOT image



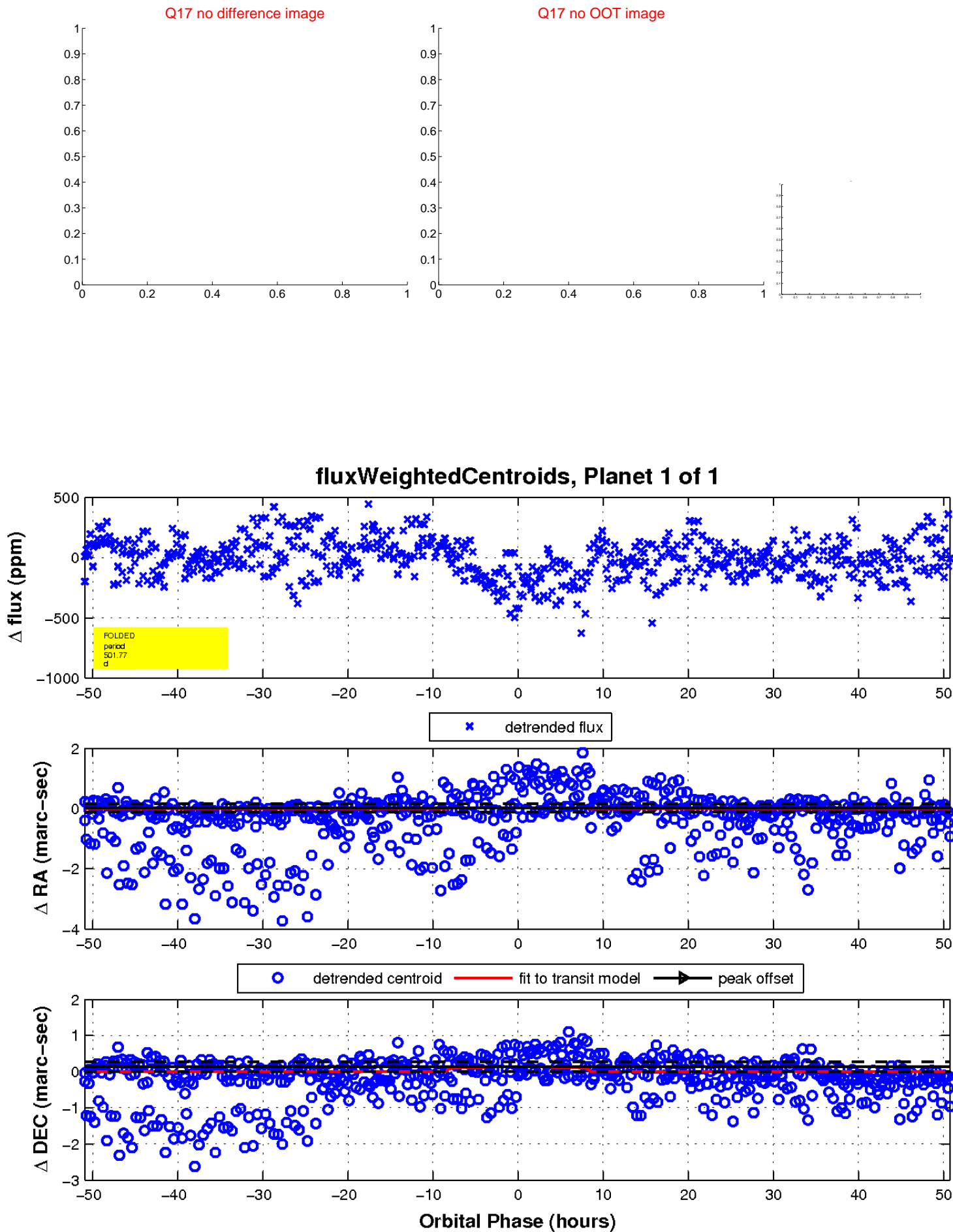
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

