

# KIC 006137885

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006137885-01	OBS	No	12.793496	133.089378	104.2	41.577	8.3	13.3	1.82	6311	2.53	398.44

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006137885-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV

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

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

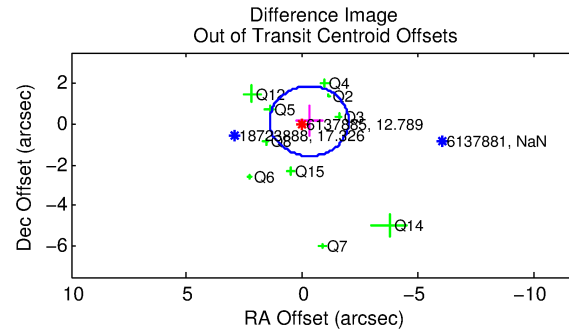
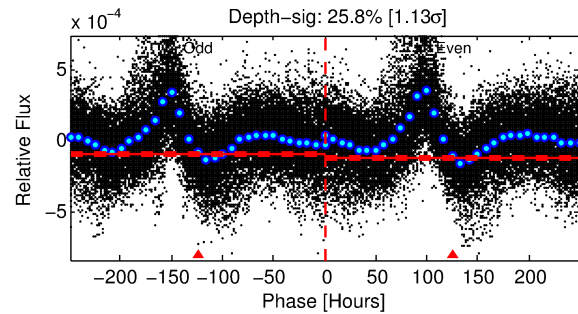
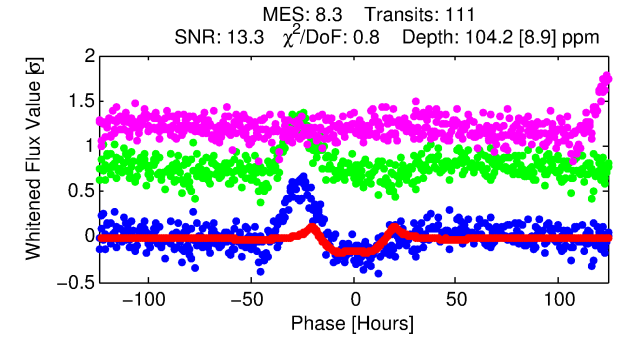
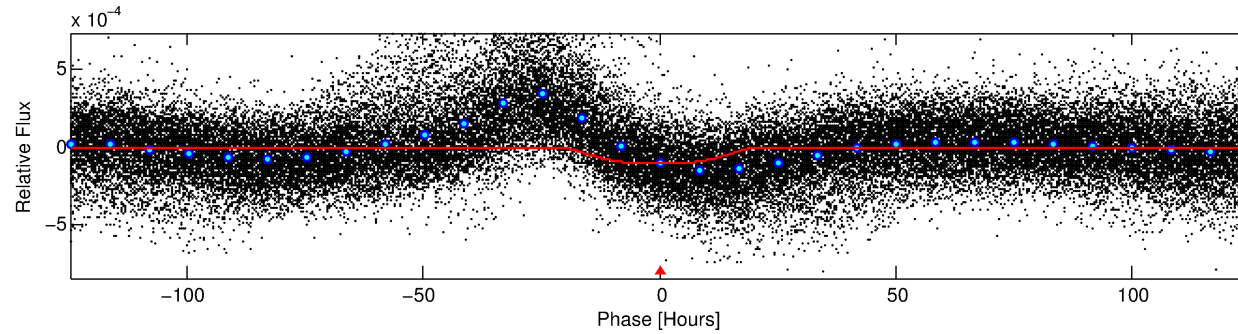
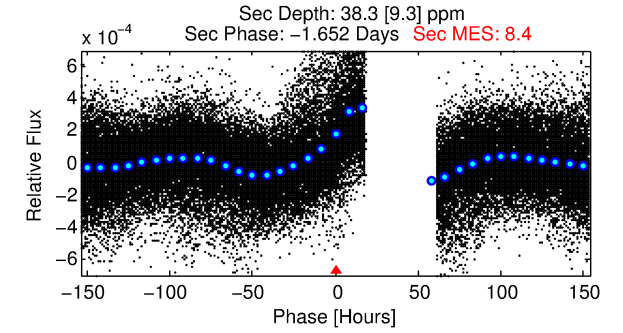
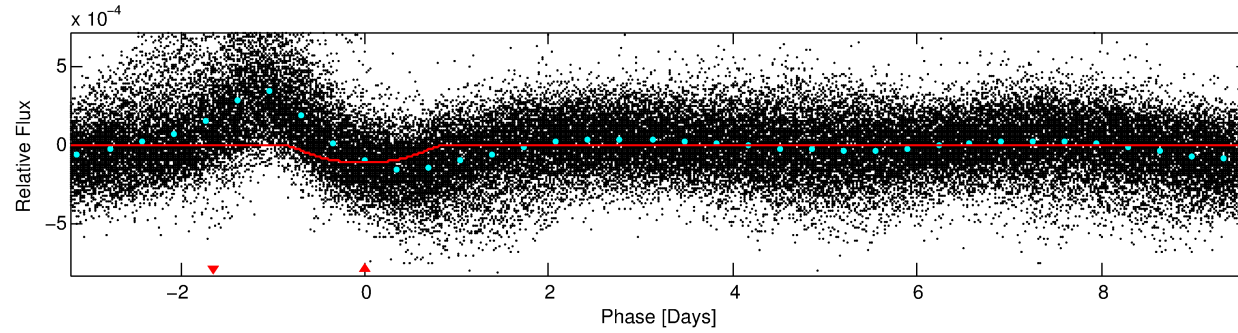
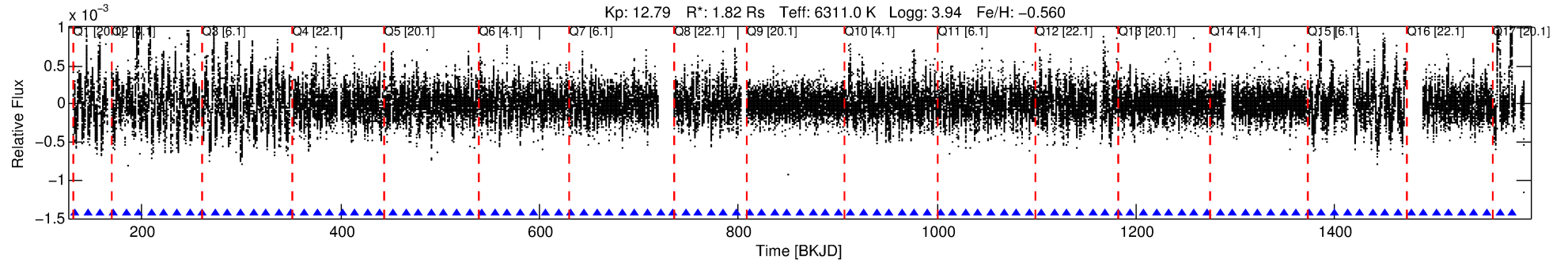
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006137885-01

No Significant Match Found

# DV One-Page Summary

KIC: 6137885 Candidate: 1 of 1 Period: 12.793 d



## DV Fit Results:

Period = 12.79350 [0.00070] d  
Epoch = 133.0894 [0.0466] BKJD  
Rp/R\* = 0.0127 [0.0006]  
a/R\* = 1.13 [0.01]  
b = 0.99 [0.00]  
Seff = 398.44 [204.63]  
Teq = 1139 [146] K  
Rp = 2.53 [0.84] Re  
a = 0.1086 [0.0341] AU  
Ag = 38.82 [21.94] [1.72σ]  
Teffp = 4397 [311] K [9.49σ]

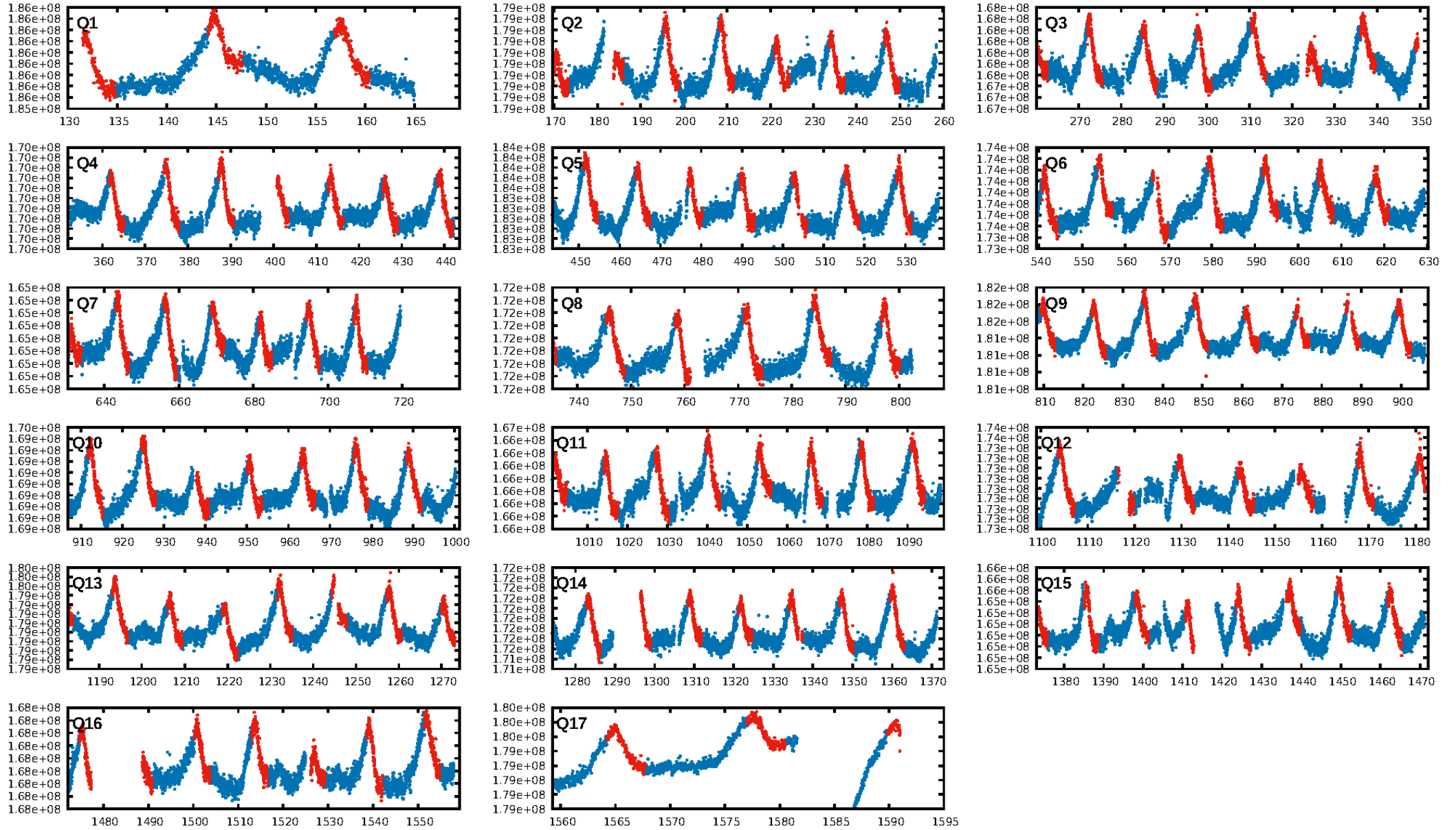
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 99.2%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.08e-16  
RollingBand-fgt: 1.00 [105/105]  
GhostDiagnostic-chr: -1.612  
Centroid-sig: 0.4%  
Centroid-so: 0.423 arcsec [1.65σ]  
OotOffset-rm: 0.321 arcsec [0.56σ]  
KicOffset-rm: 0.347 arcsec [0.62σ]  
OotOffset-st: 3/3/3/1 [10]  
KicOffset-st: 3/3/3/1 [10]  
DiffImageQuality-fgm: 0.60 [6/10]  
DiffImageOverlap-fno: 1.00 [17/17]

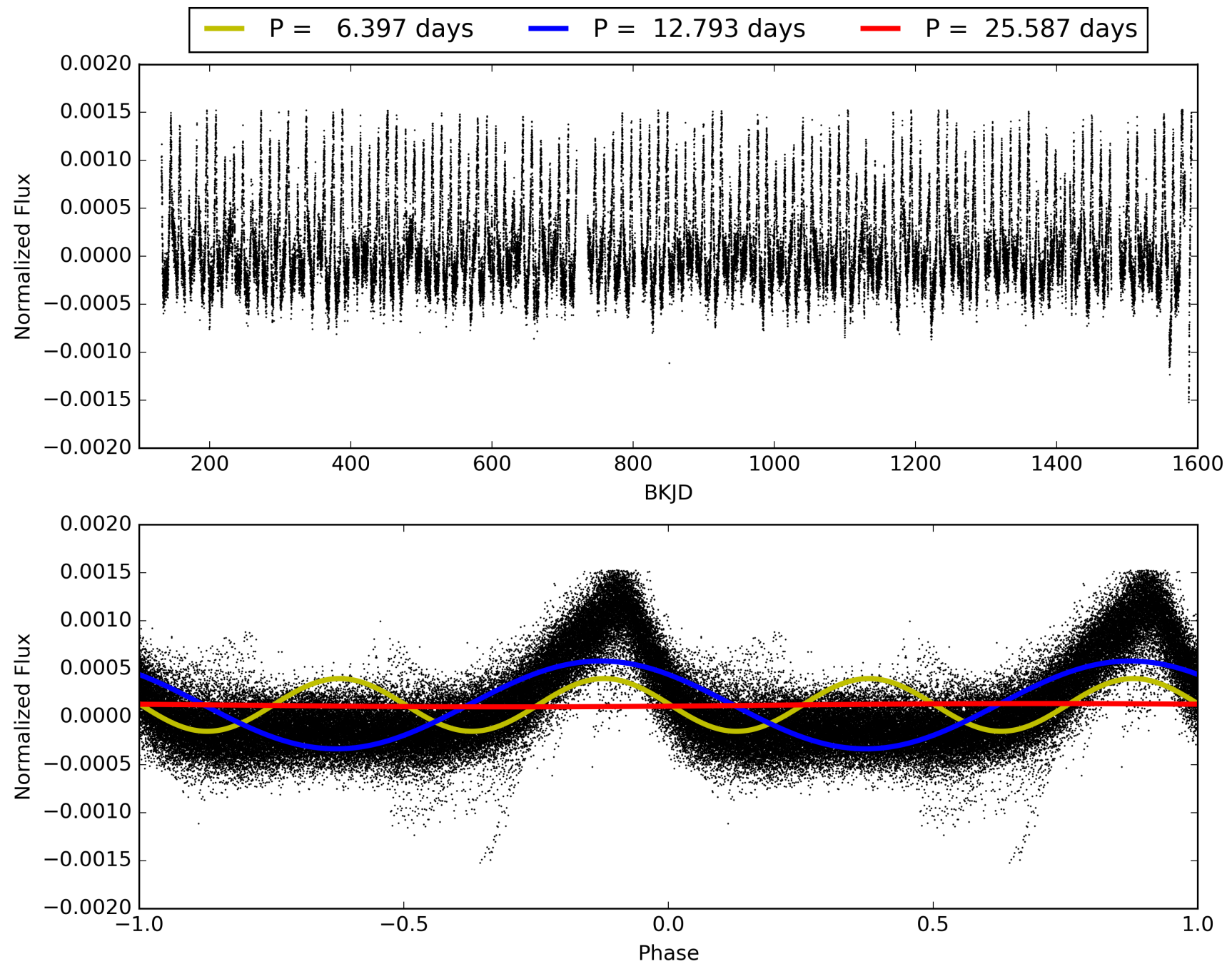
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:28:28 Z

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

# TCE 006137885-01, PDC Light Curves

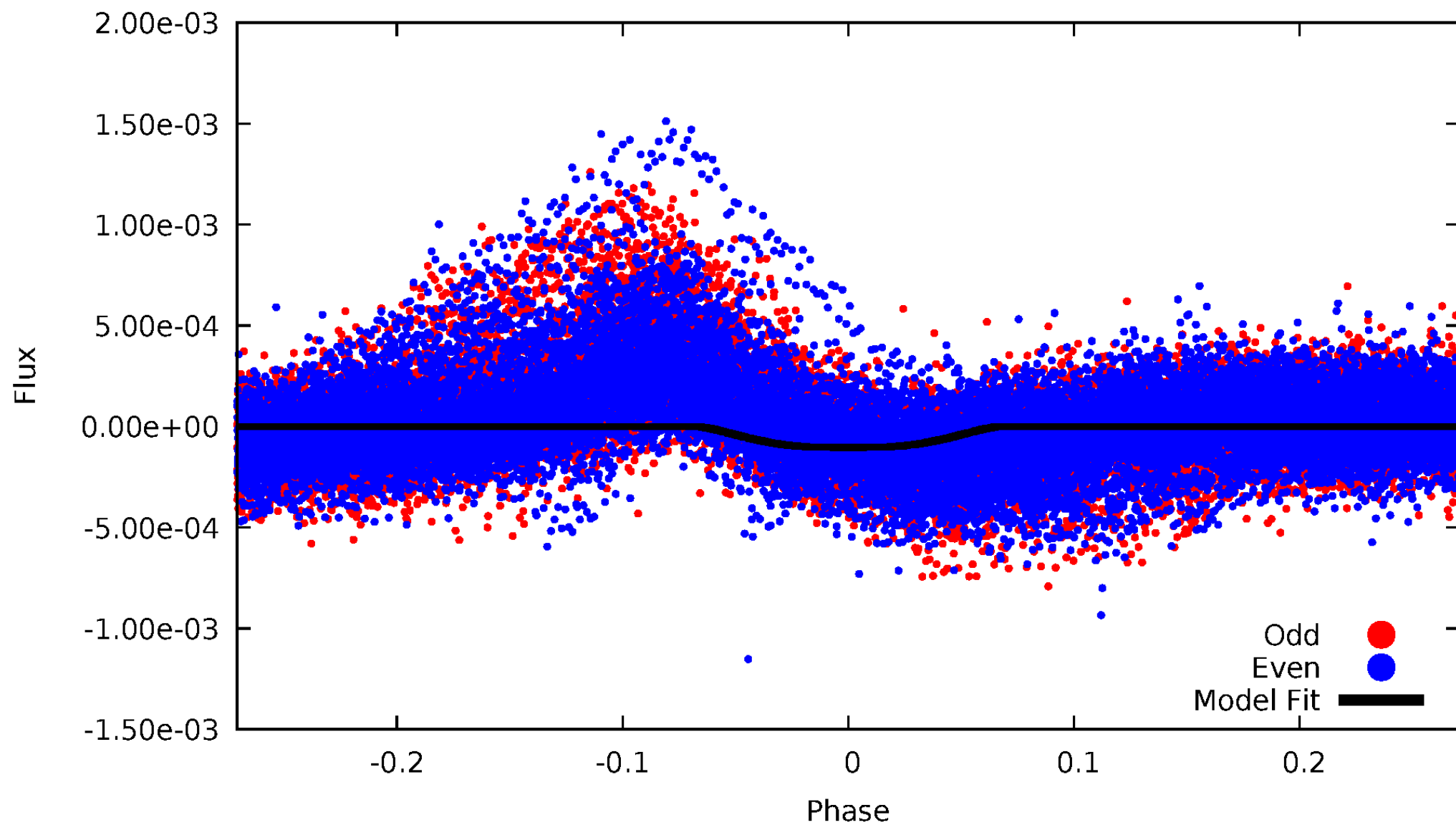


TCE 006137885-01



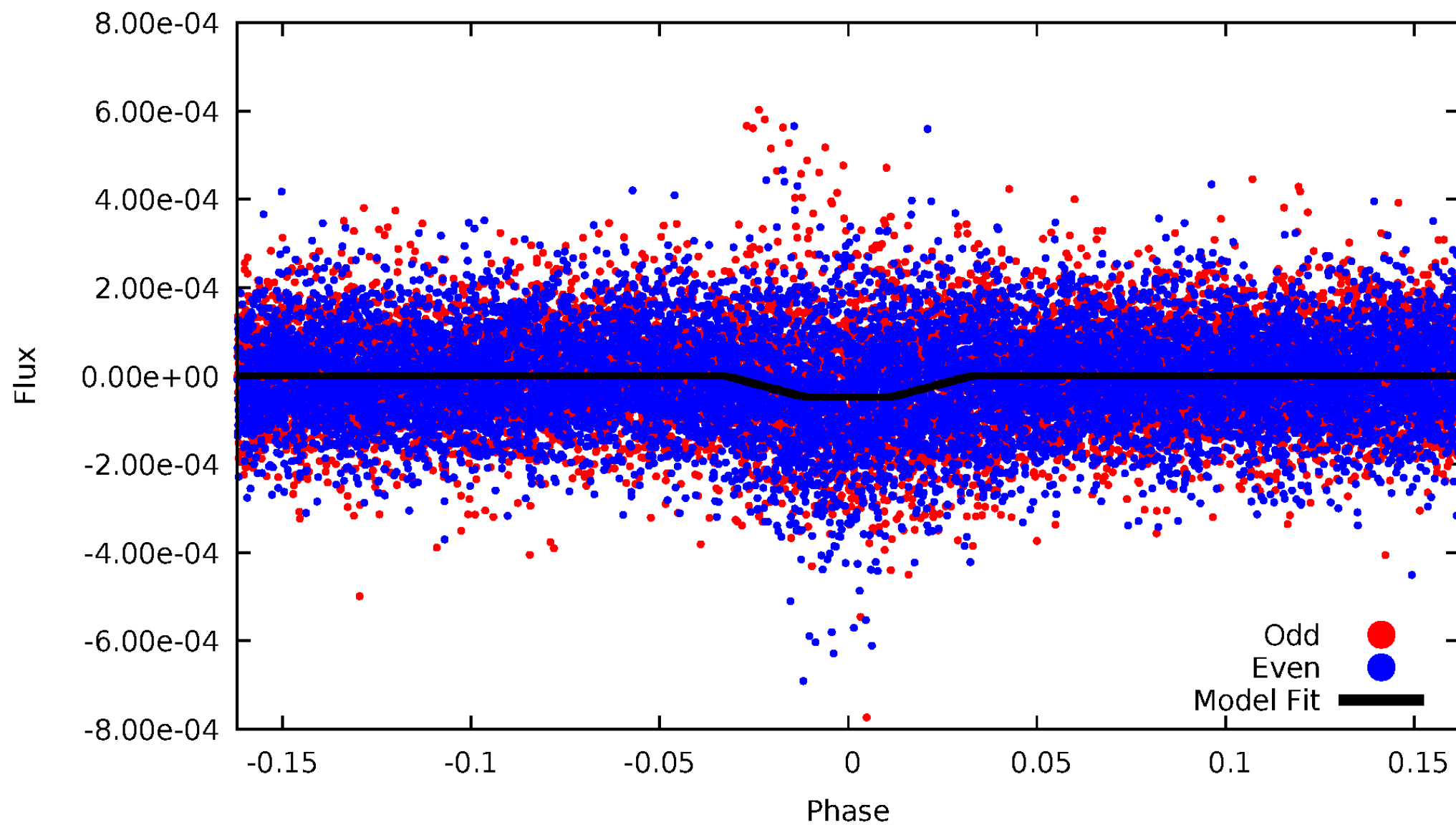
# DV Odd/Even

TCE 006137885-01



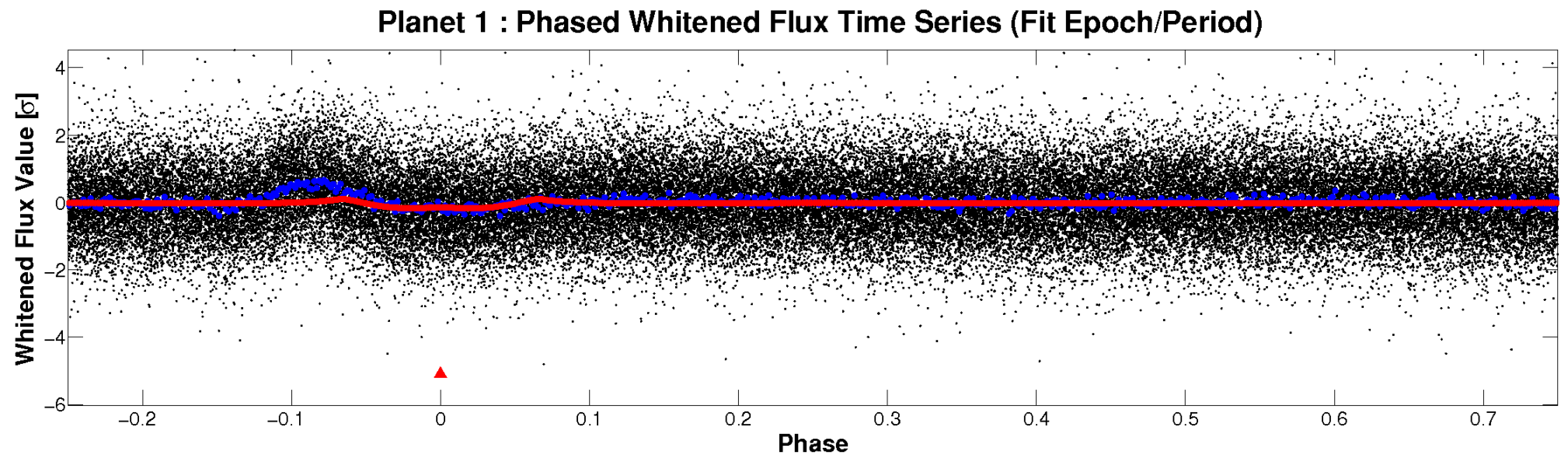
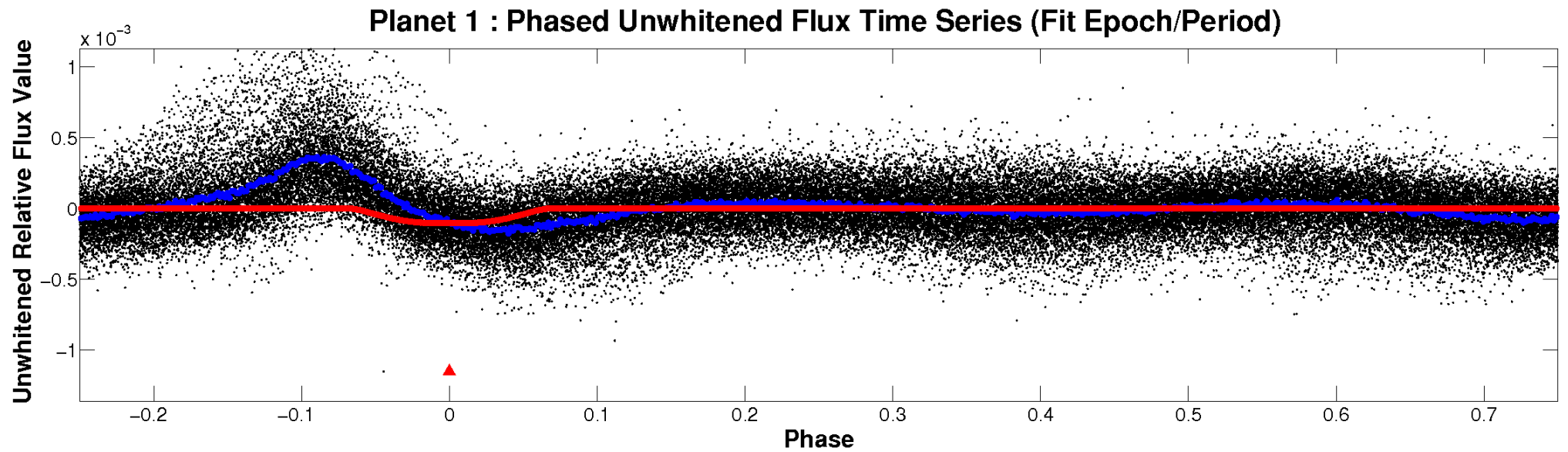
# ALT Odd/Even

TCE 006137885-01



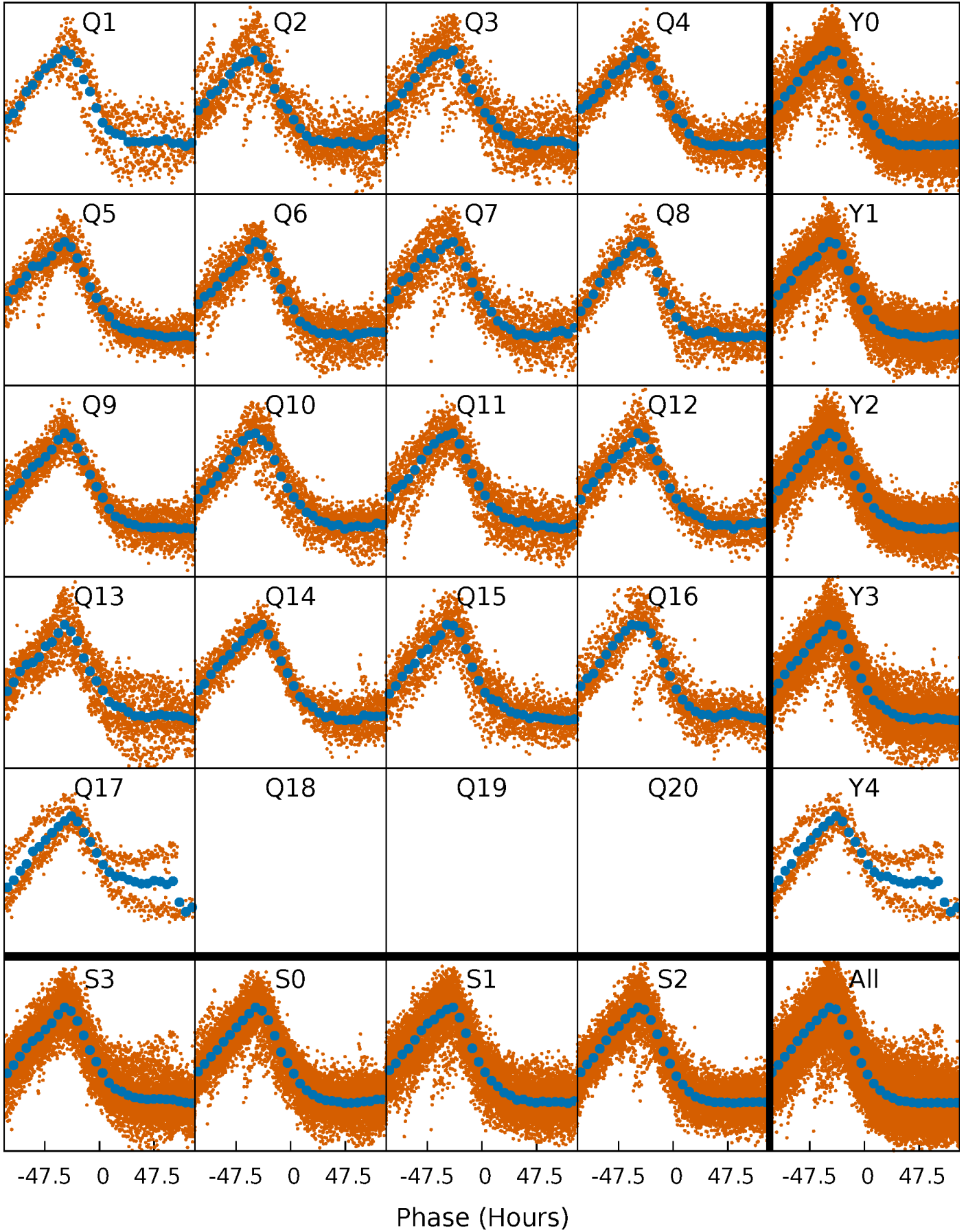


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

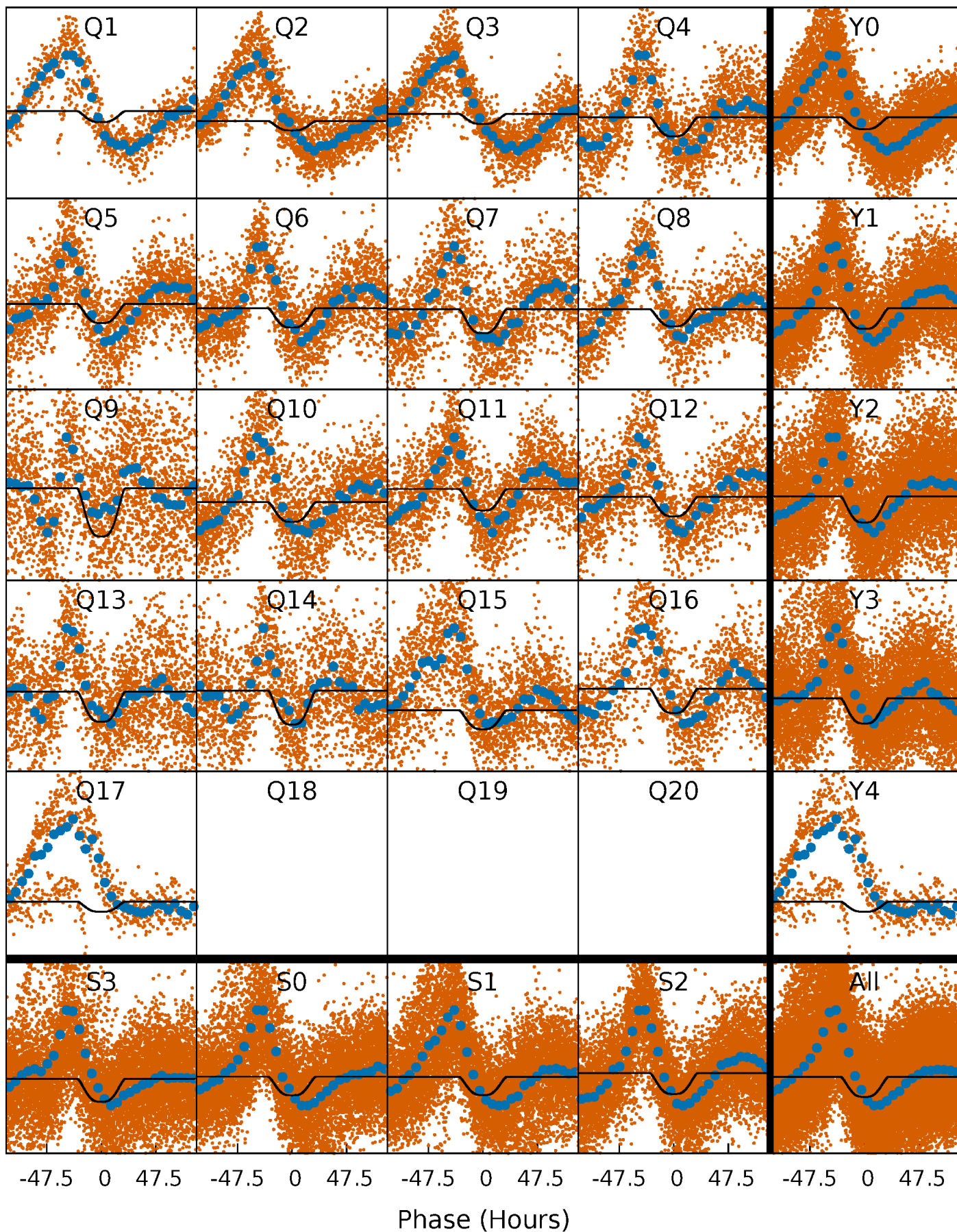
TCE 006137885-01   P= 12.793496 Days    $T_0=133.089378$  (BKJD)





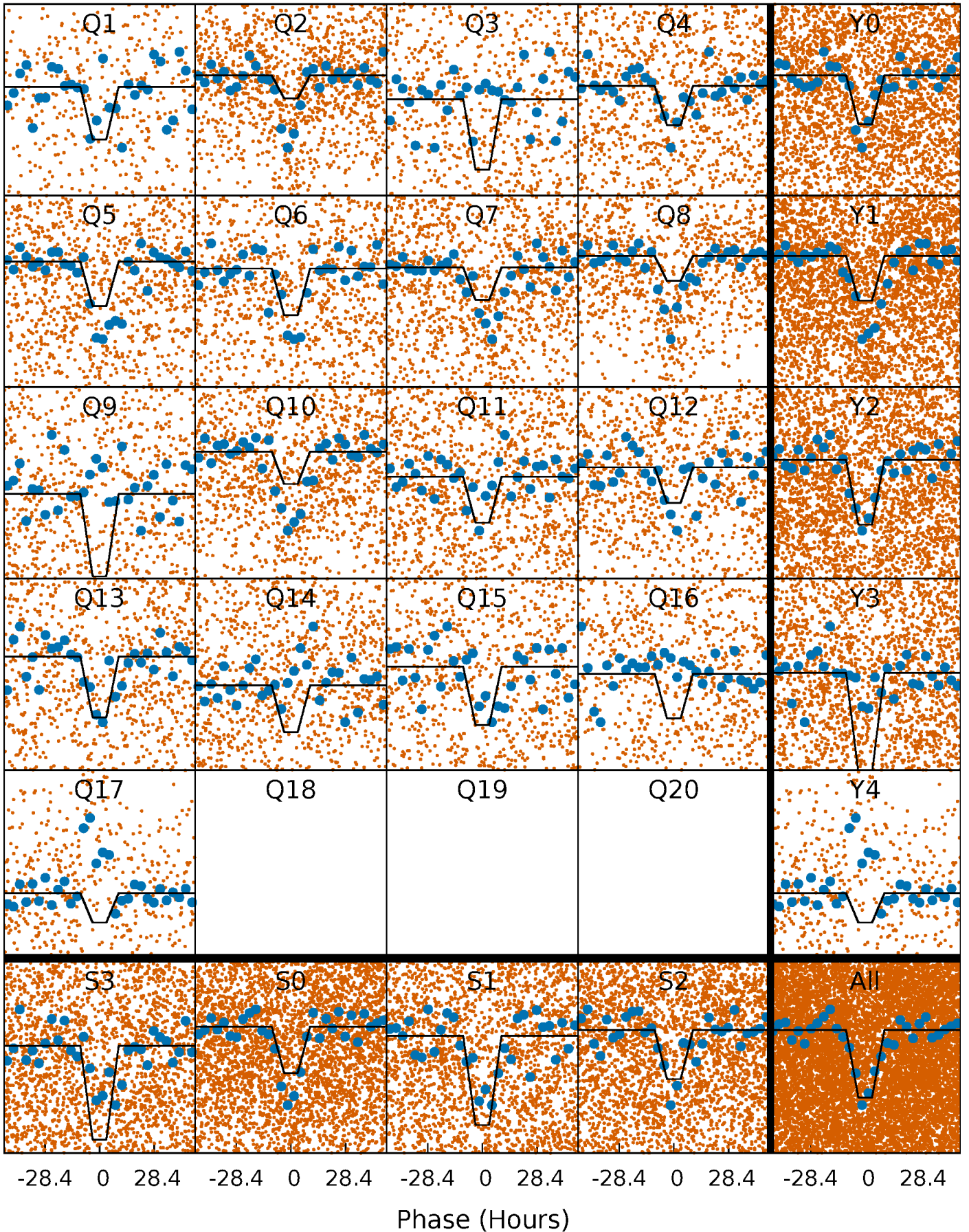
# DV Quarter-Phased Transit Curves

TCE 006137885-01 P= 12.793496 Days  $T_0=133.089378$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

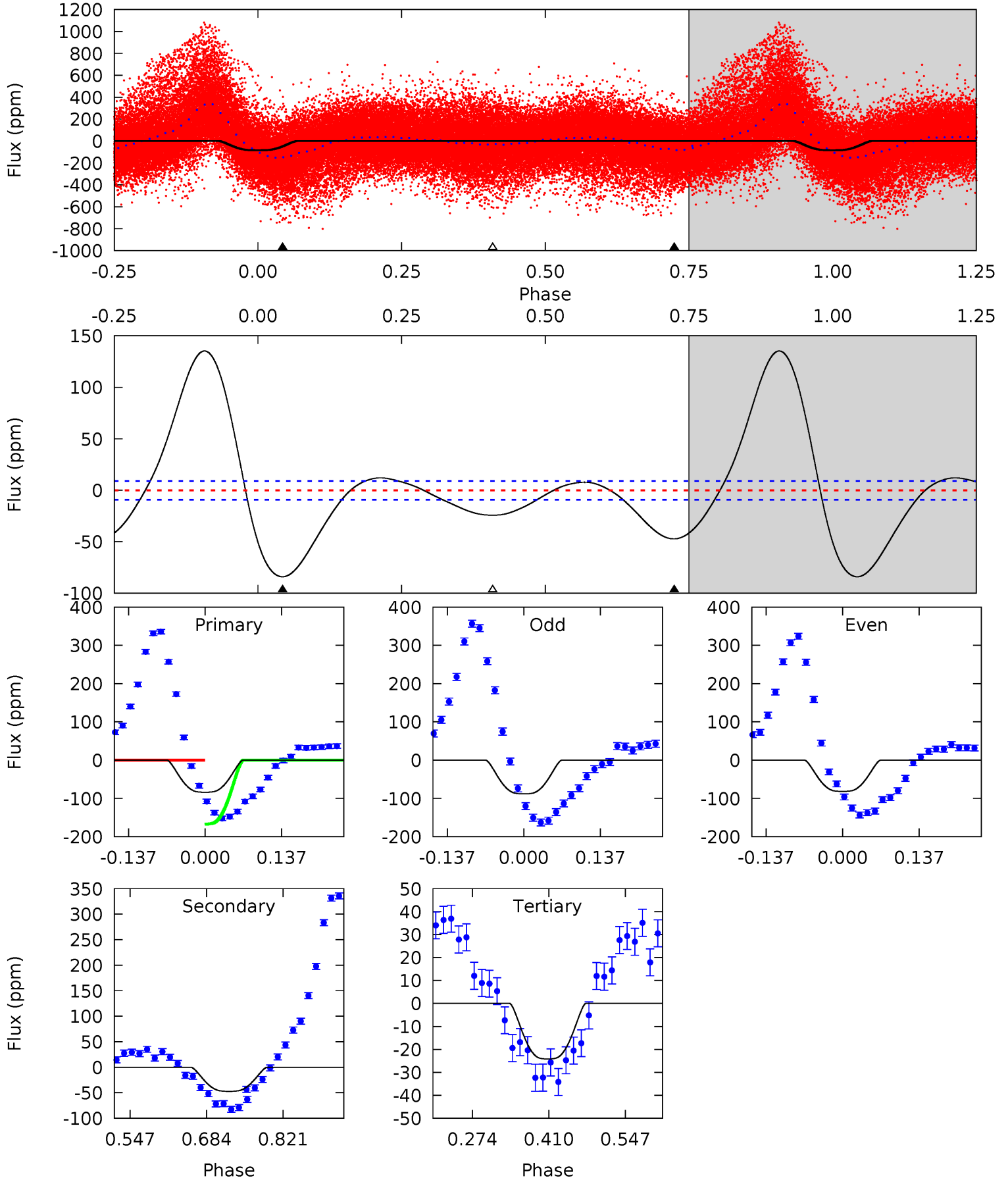
TCE 006137885-01 P= 12.795473 Days  $T_0=132.692497$  (BKJD)



# DV Model-Shift Uniqueness Test

006137885-01, P = 12.793496 Days, E = 120.295882 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
41.6	23.4	12.0	0	4.50	1.49	18.7	29.6	41.6	11.4	23.4	1.57	0.94	0.62	47.1

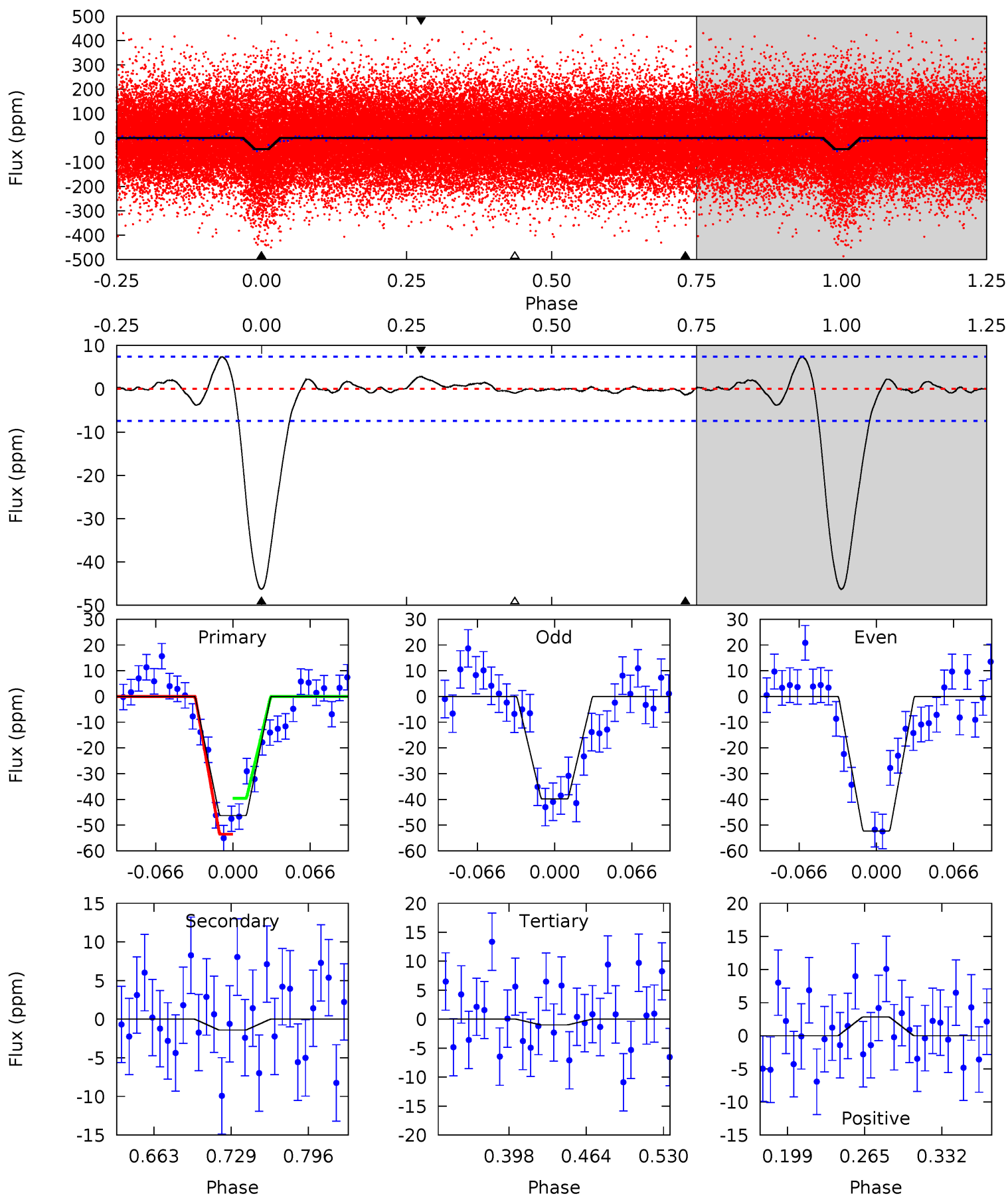




# Alt Model-Shift Uniqueness Test

006137885-01,  $P = 12.795473$  Days,  $E = 119.897024$  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
29.0	0.88	0.62	1.78	4.65	1.84	0.89	28.4	27.3	0.26	-0.89	3.92	0.88	0.14	4.38



### Stellar Parameters For KIC 006137885

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6311^{+174}_{-174}$	$3.937^{+0.294}_{-0.126}$	$-0.560^{+0.350}_{-0.250}$	$1.818^{+0.348}_{-0.597}$	$1.044^{+0.176}_{-0.160}$	$0.244^{+0.468}_{-0.089}$
	+3%/-3%	+7%/-3%	+62%/-45%	+19%/-33%	+17%/-15%	+191%/-36%
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 006137885-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-47 \pm 2$	$2.51^{+0.36}_{-0.46}$	$1574^{+106}_{-136}$	$4748^{+140}_{-150}$	$50^{+20}_{-12}$
Alt.	$-1 \pm 2$	$1.34^{+0.23}_{-0.23}$	$1583^{+96}_{-144}$	$3178^{+415}_{-5803}$	$5.088^{+6.668}_{-5.985}$

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



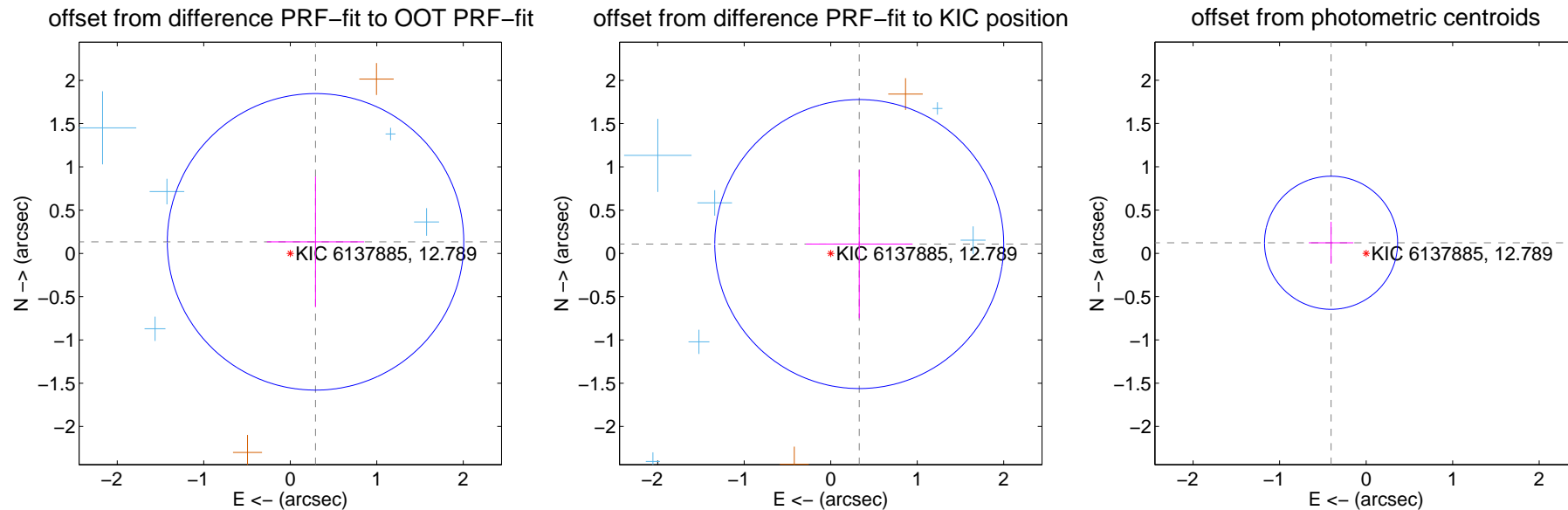
## DV Centroid Data

Supplemental centroid analysis for 006137885-01. Kepler magnitude: 12.79. Transit SNR 13.30

There are 6 quarters with good PRF difference image offsets

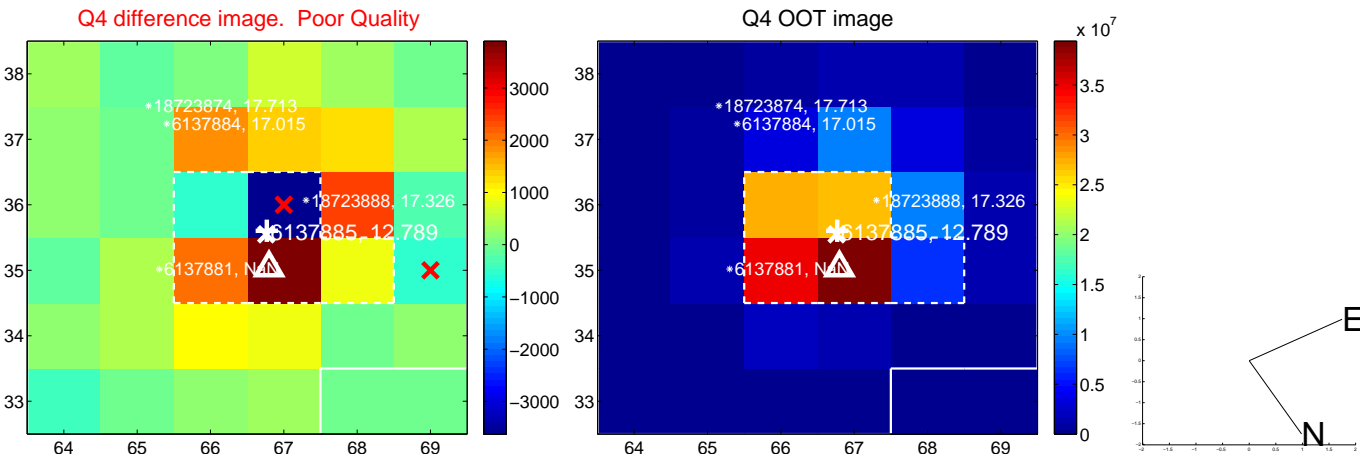
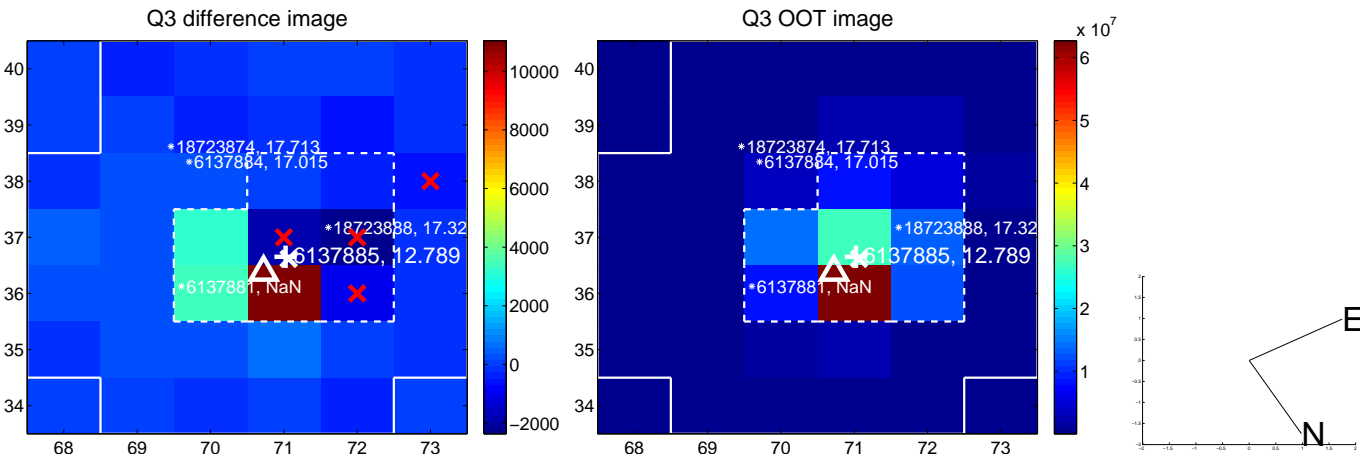
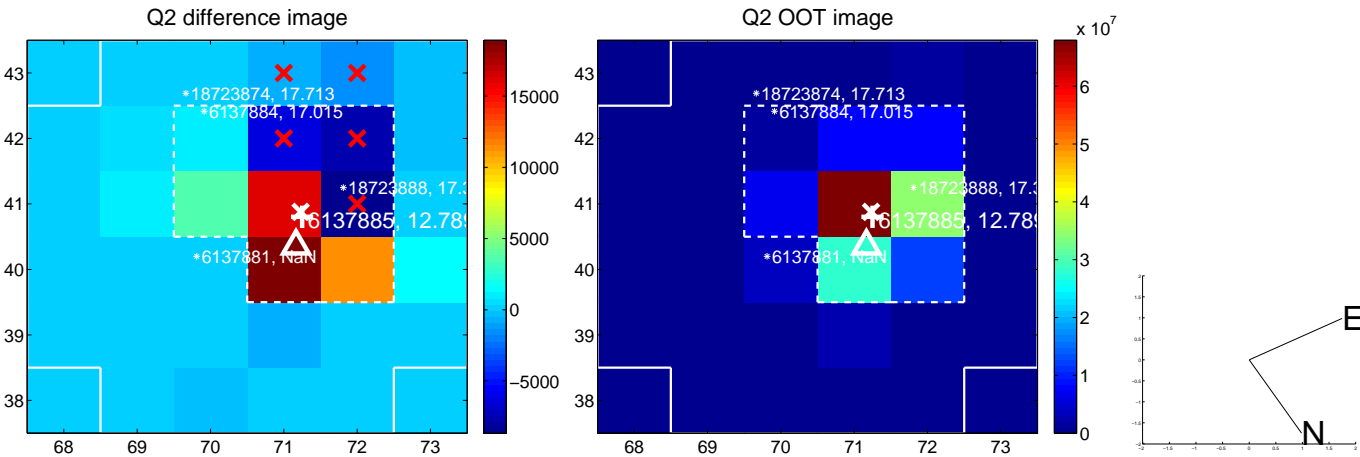
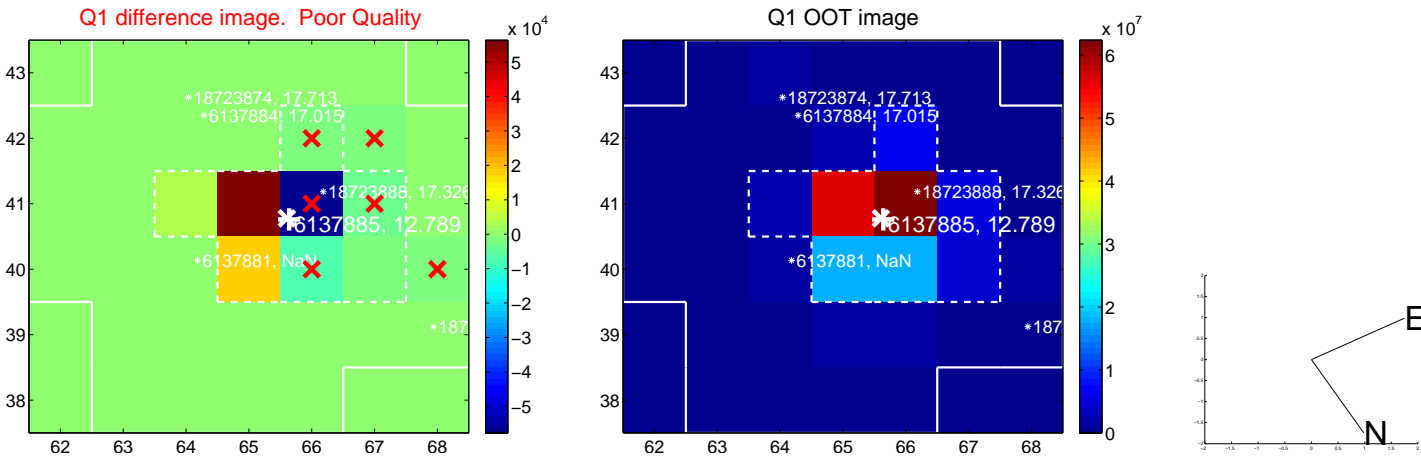
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.321 \pm 0.571$	0.56	$-0.292 \pm 0.562$	$0.134 \pm 0.754$
PRF-fit source offset from KIC position	$0.347 \pm 0.557$	0.62	$-0.330 \pm 0.616$	$0.108 \pm 0.857$
photometric centroid source offset	$0.42 \pm 0.26$	1.65	$0.41 \pm 0.26$	$0.12 \pm 0.24$

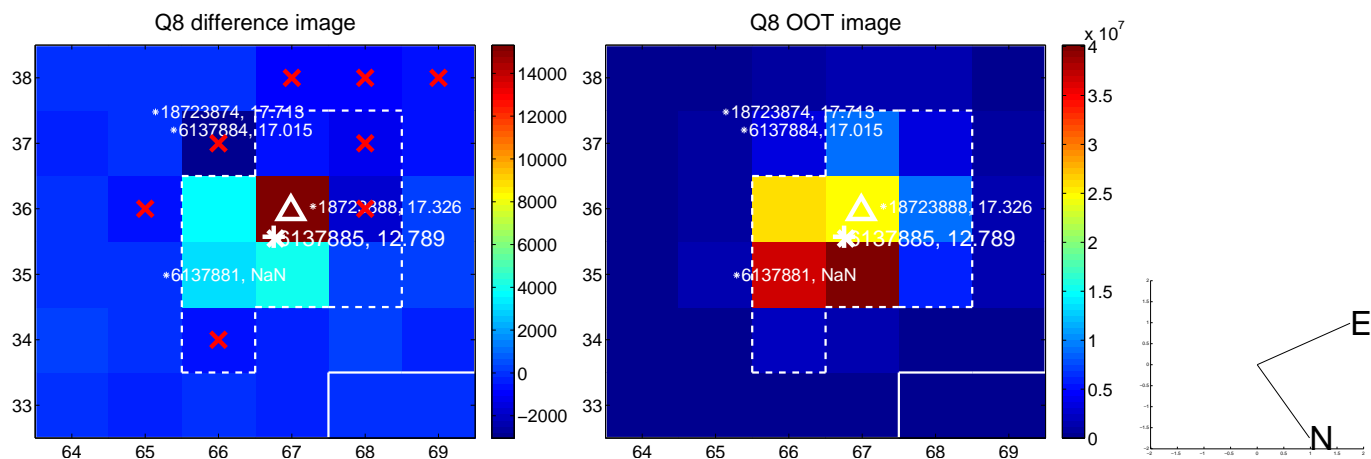
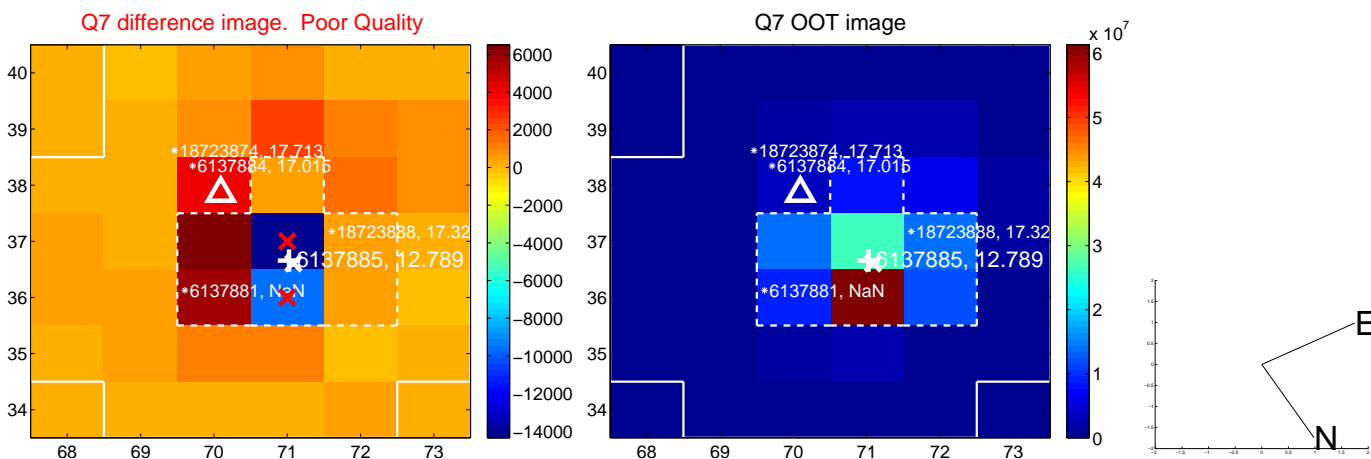
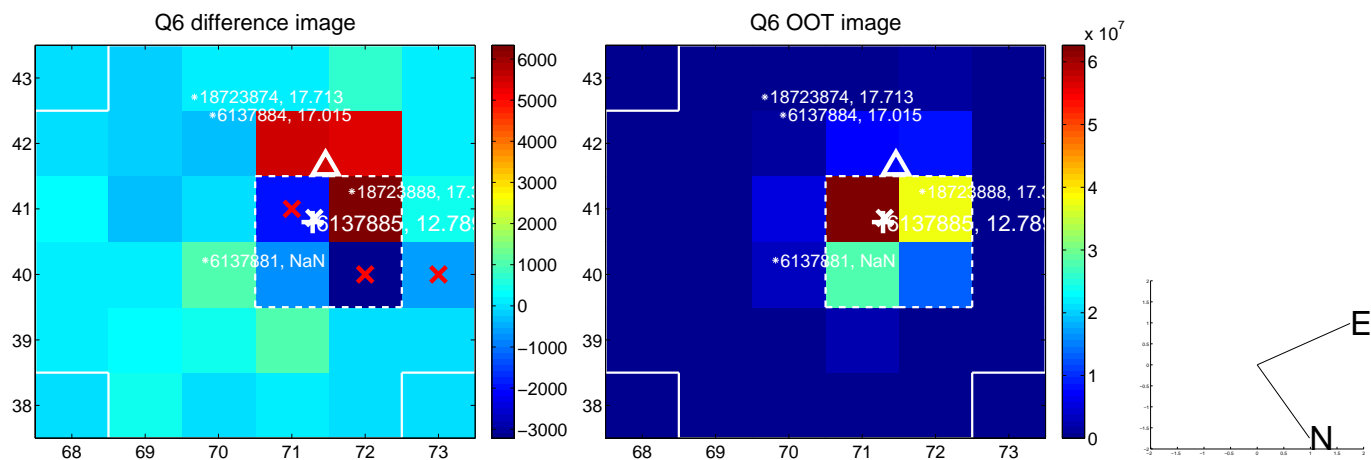
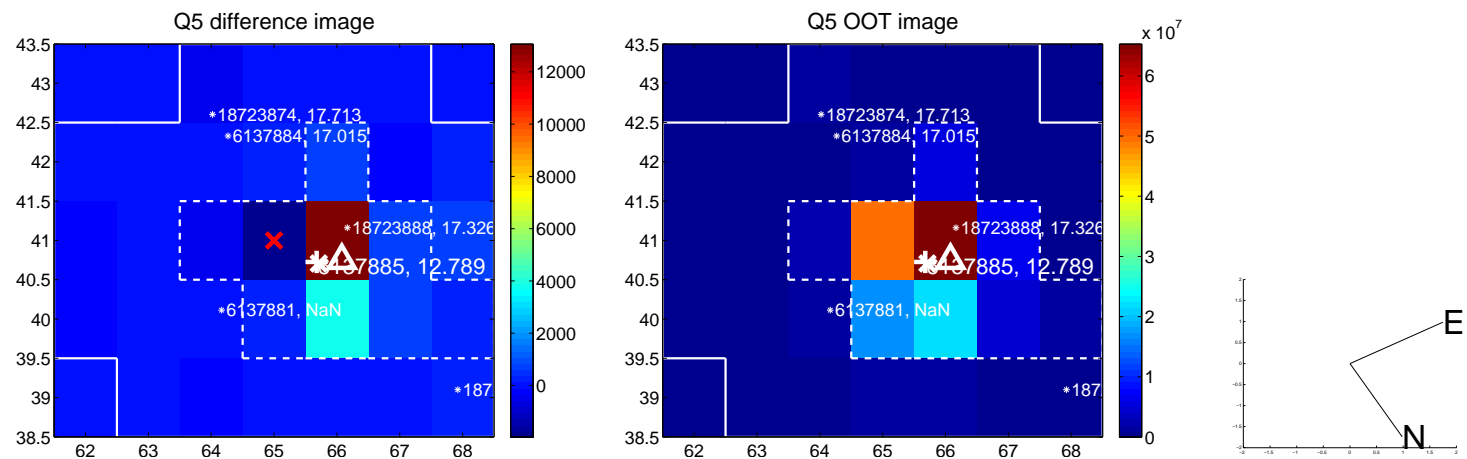


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

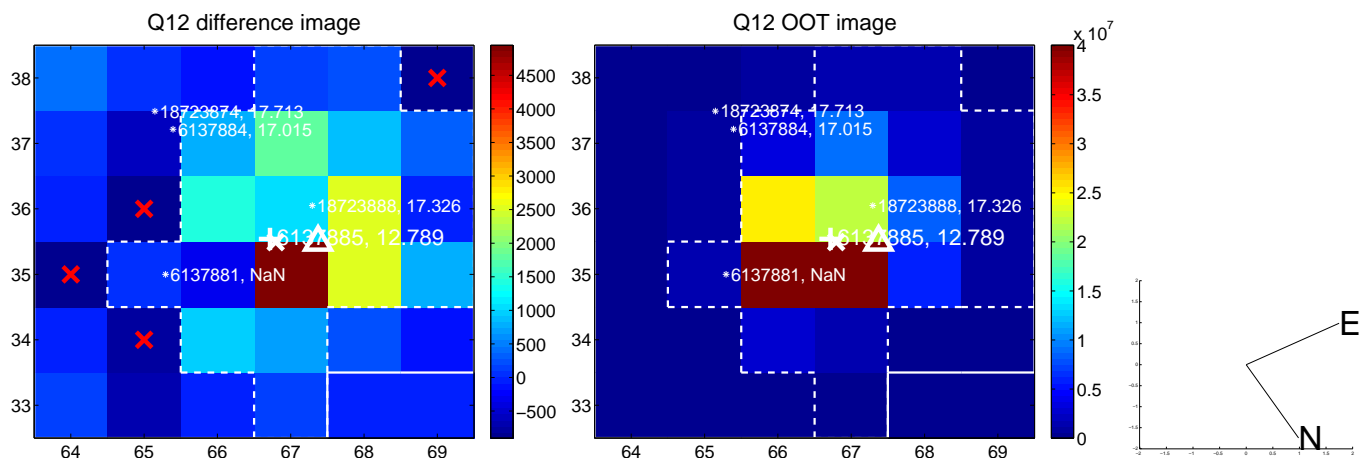
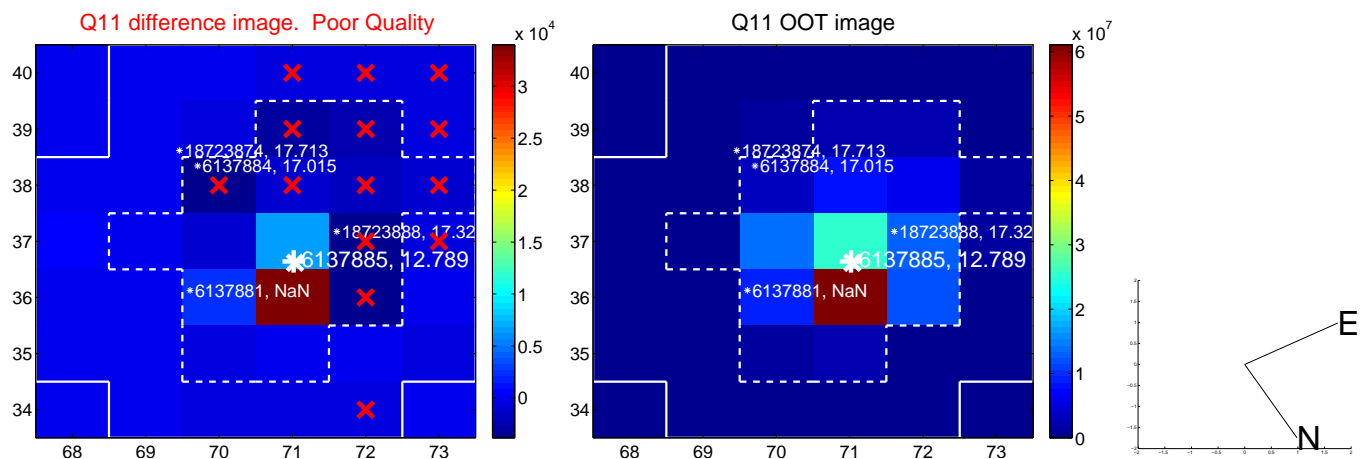
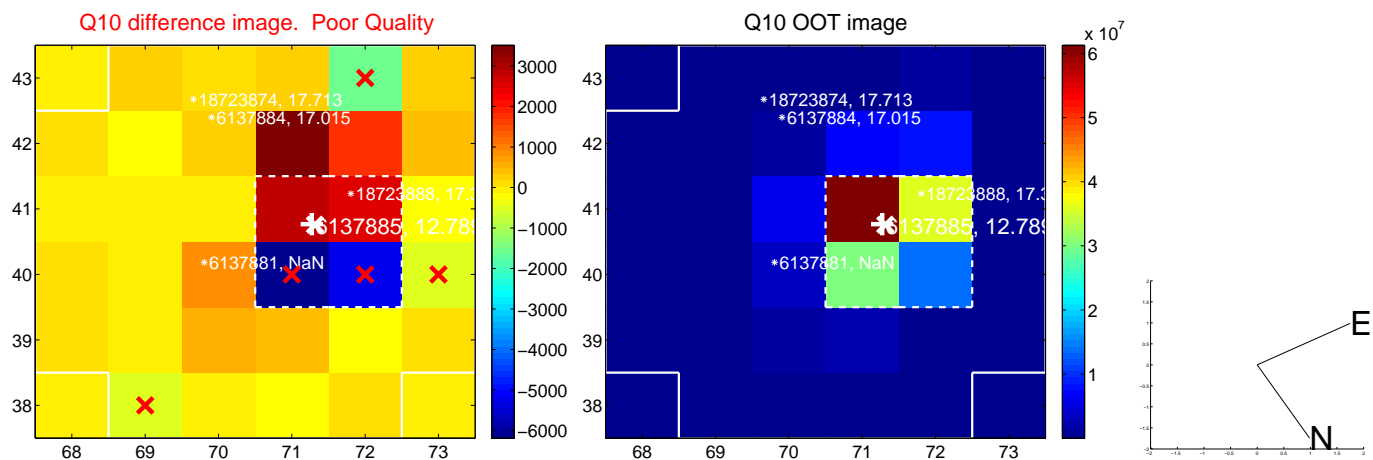
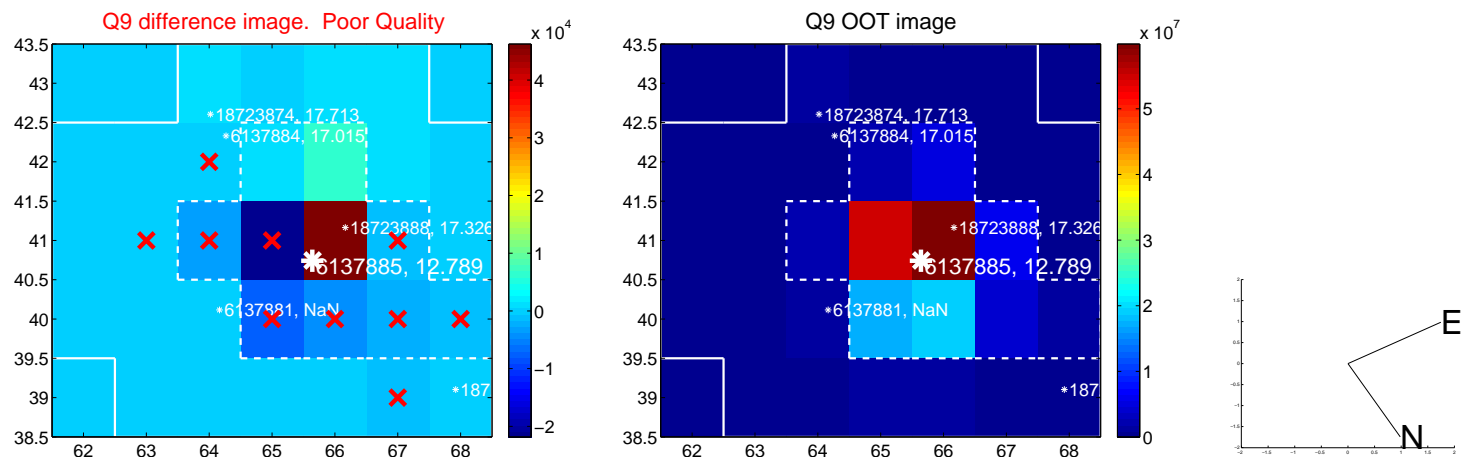
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



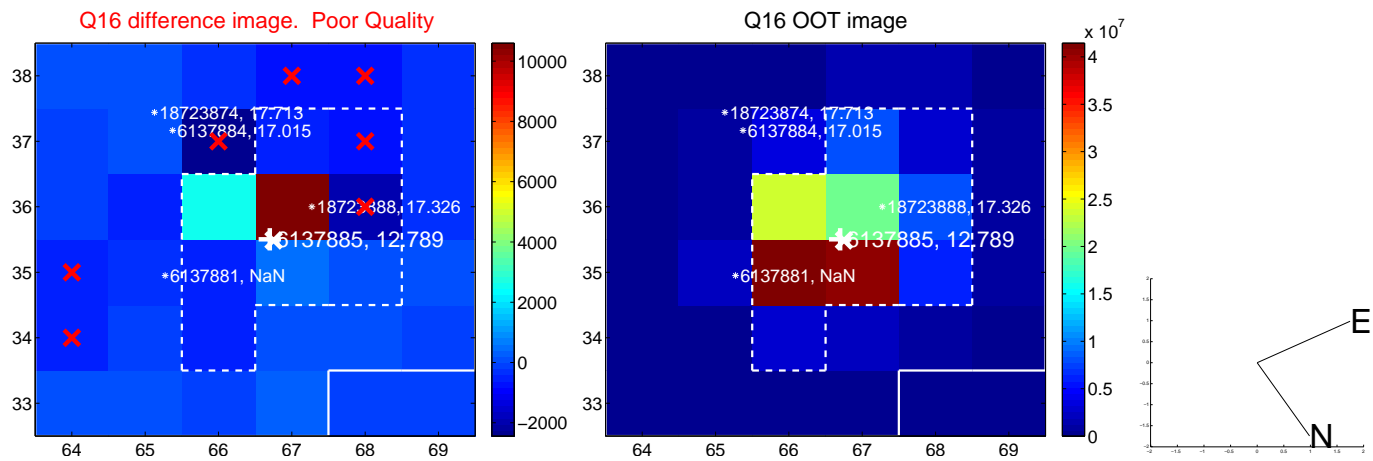
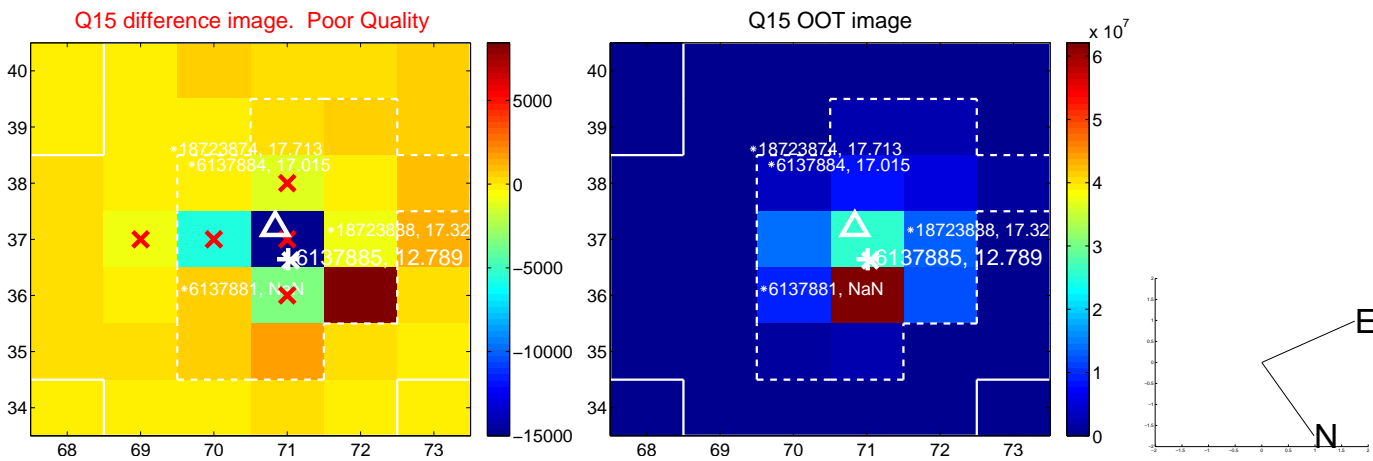
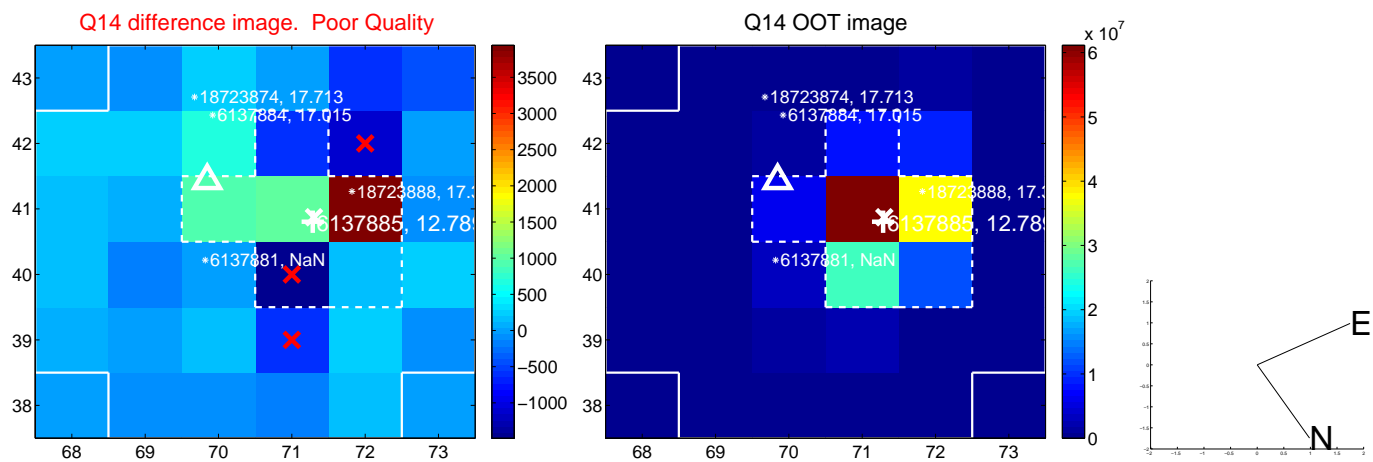
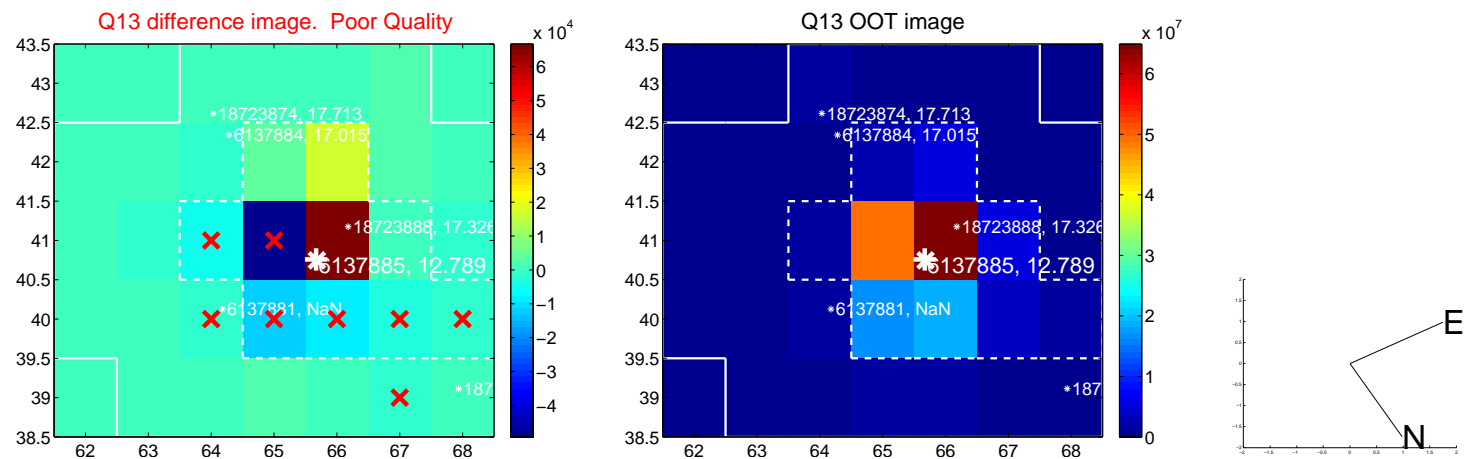
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

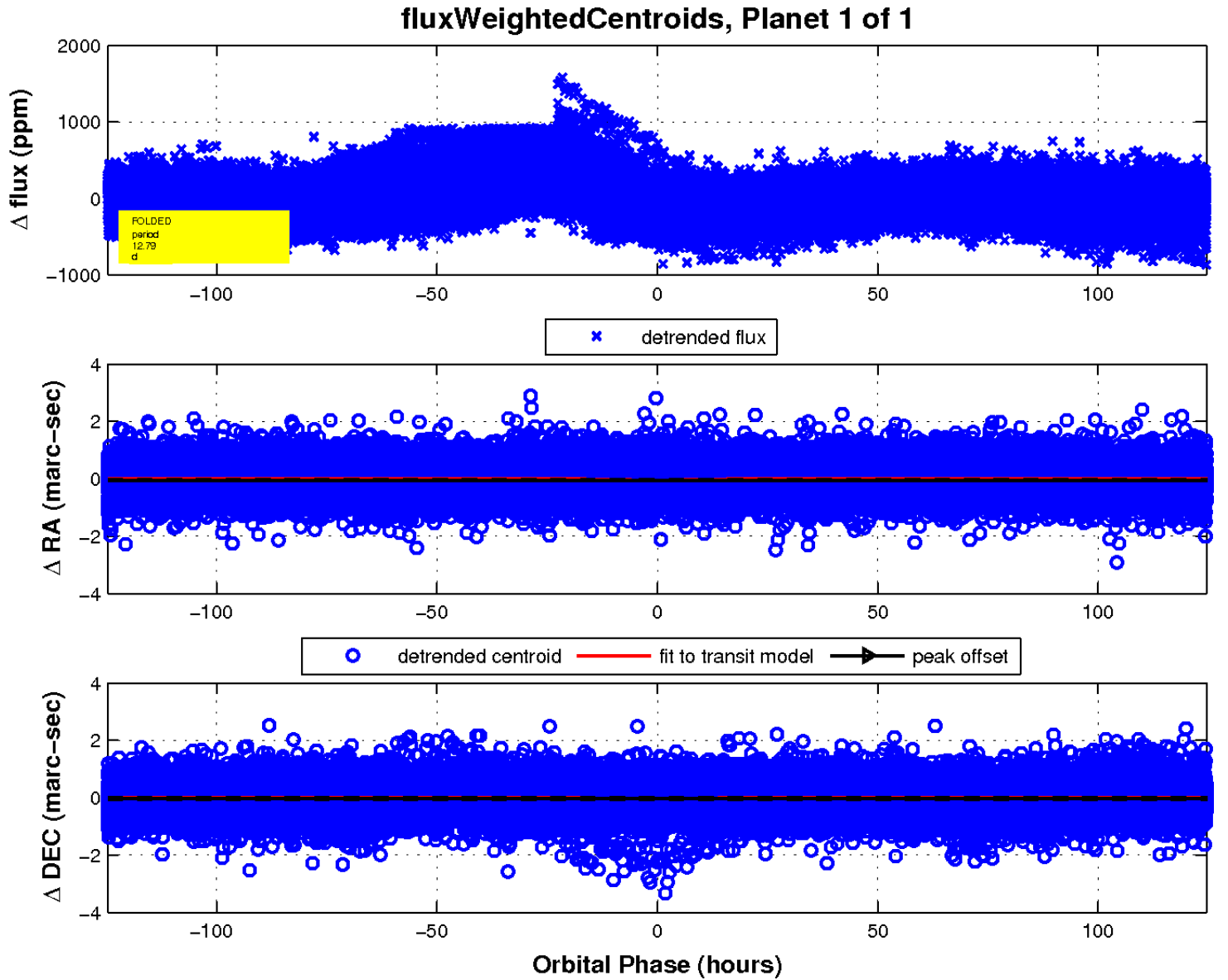
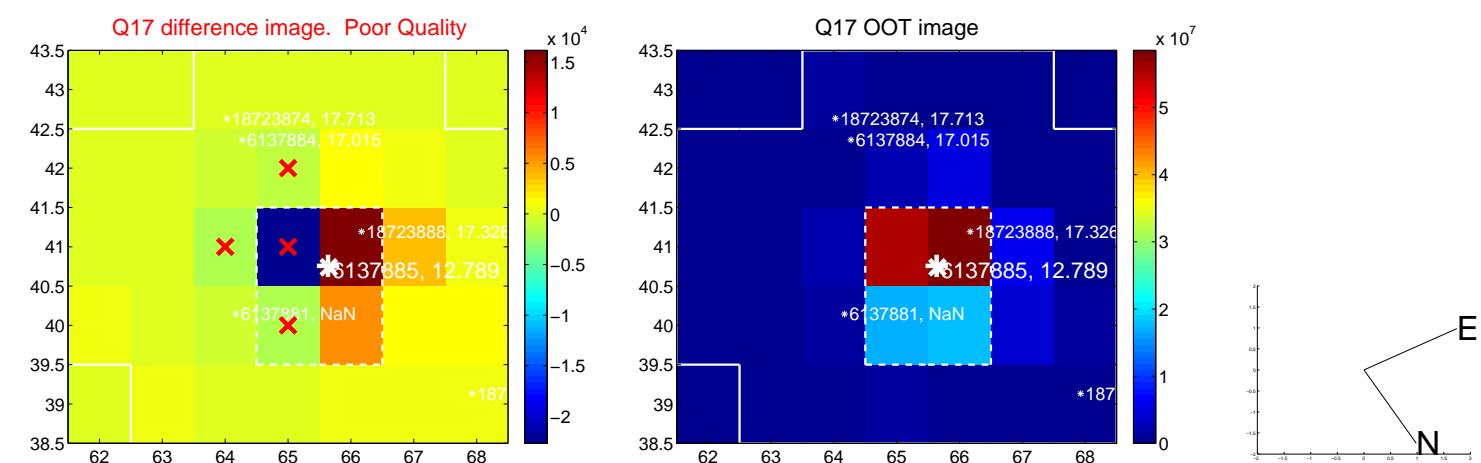


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

