

# KIC 004641519

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004641519-01	OBS	No	11.012792	137.713275	574.3	21.037	10.8	15.5	1.28	6287	5.90	232.42

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004641519-01	OBS	FP	0.00	1	0	0	0	LPP_DV

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

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

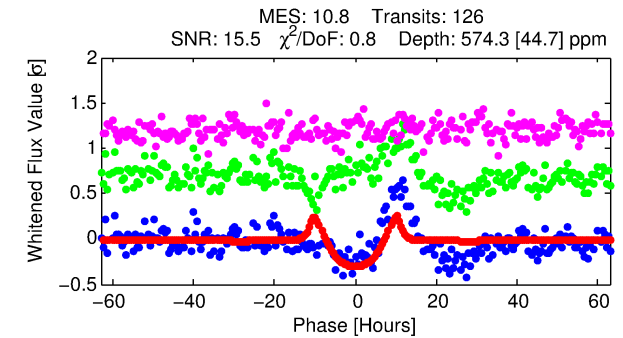
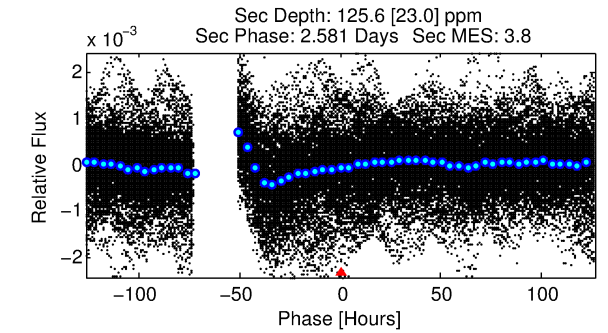
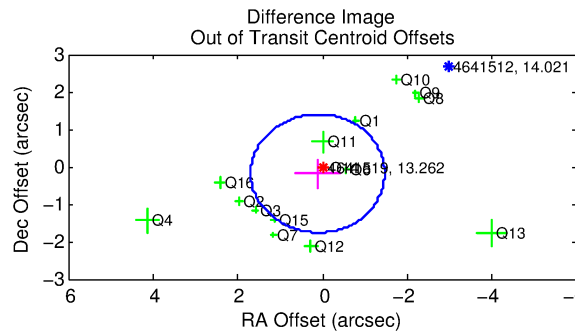
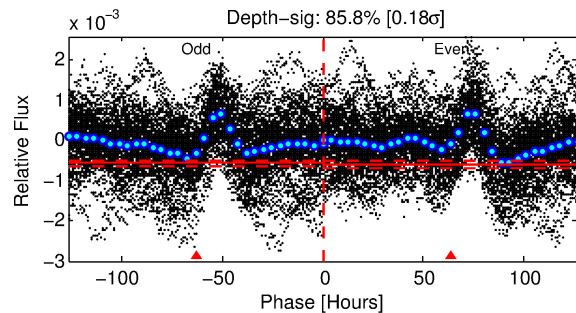
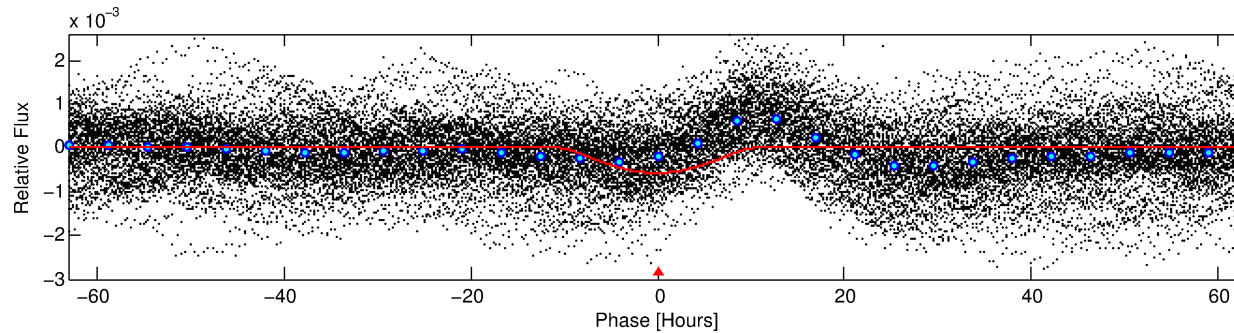
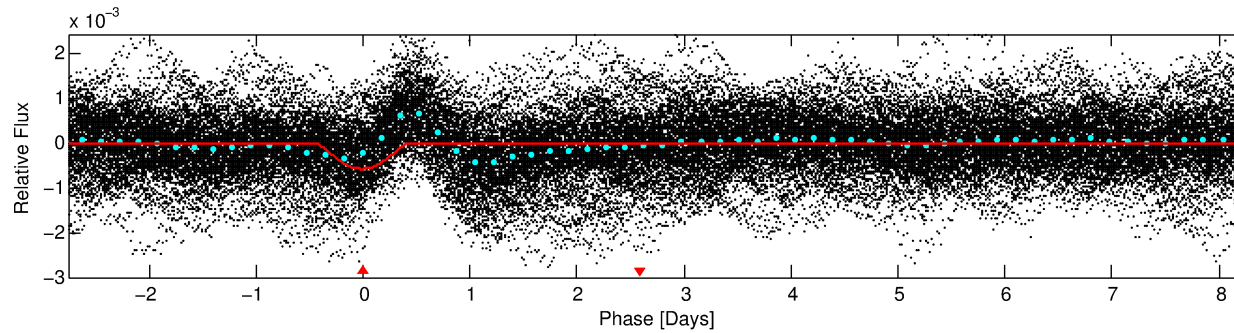
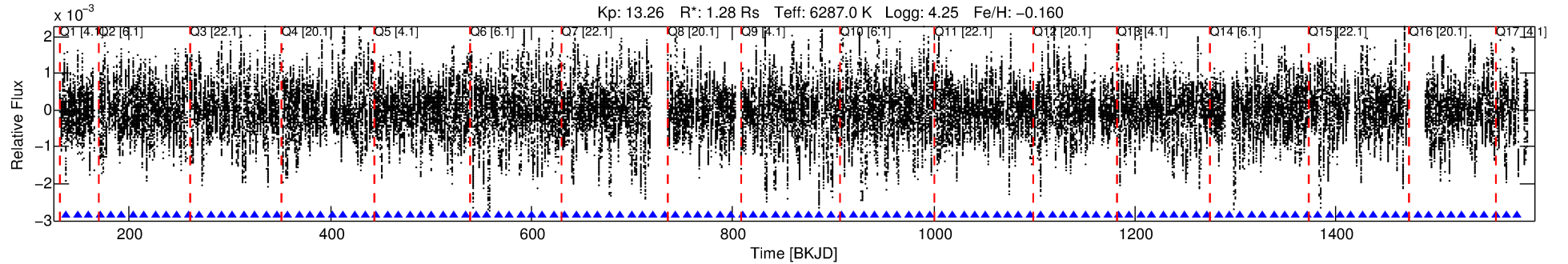
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 004641519-01

No Significant Match Found

# DV One-Page Summary

KIC: 4641519 Candidate: 1 of 1 Period: 11.013 d



## DV Fit Results:

Period = 11.01279 [0.00019] d  
Epoch = 137.7133 [0.0146] BKJD  
Rp/R\* = 0.0423 [0.0190]  
a/R\* = 1.55 [0.08]  
b = 1.00 [0.03]  
Seff = 232.42 [88.16]  
Teq = 996 [94] K  
Rp = 5.90 [3.21] Re  
a = 0.0991 [0.0250] AU  
Ag = 19.52 [19.26] [0.96 $\sigma$ ]  
Teffp = 3236 [749] K [2.97 $\sigma$ ]

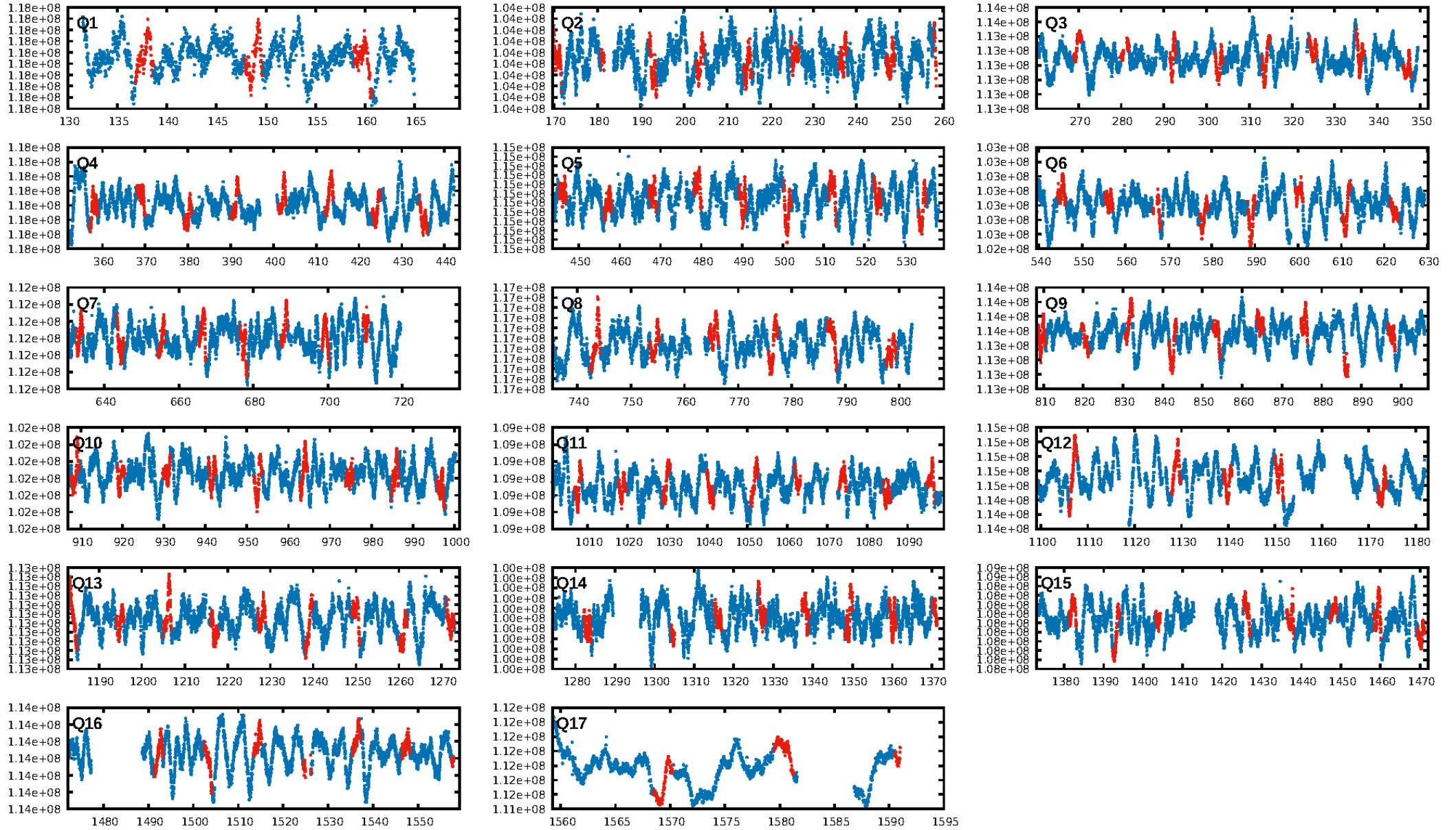
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 95.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 3.93e-25  
RollingBand-fgt: 1.00 [120/120]  
GhostDiagnostic-chr: -5.178  
Centroid-sig: 0.0%  
Centroid-so: 0.764 arcsec [3.77 $\sigma$ ]  
OotOffset-rm: 0.213 arcsec [0.40 $\sigma$ ]  
KicOffset-rm: 1.137 arcsec [2.22 $\sigma$ ]  
OotOffset-st: 4/4/4/3 [15]  
KicOffset-st: 4/4/4/3 [15]  
DiffImageQuality-fgm: 0.47 [7/15]  
DiffImageOverlap-fno: 1.00 [17/17]

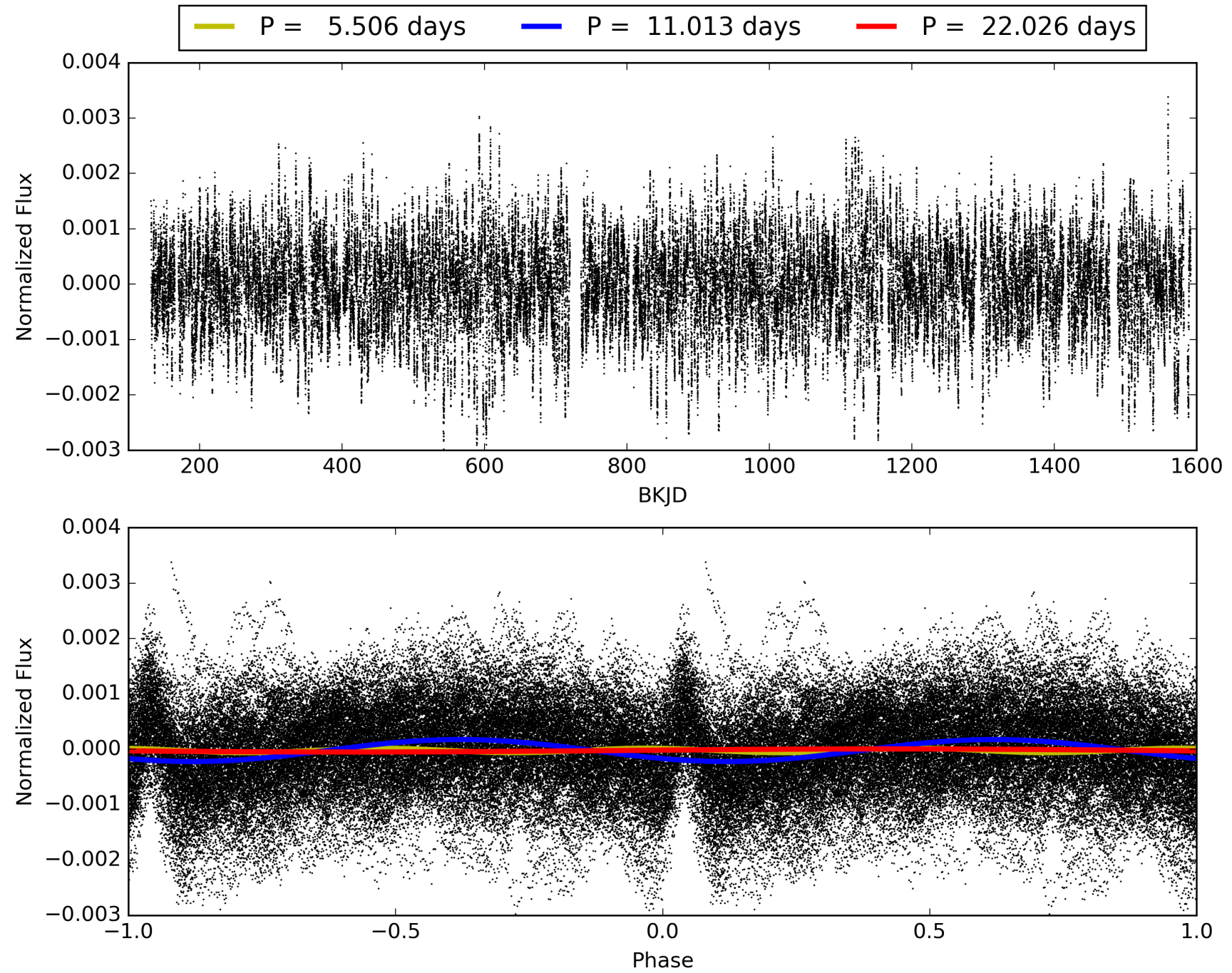
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 03:42:41 Z

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

# TCE 004641519-01, PDC Light Curves



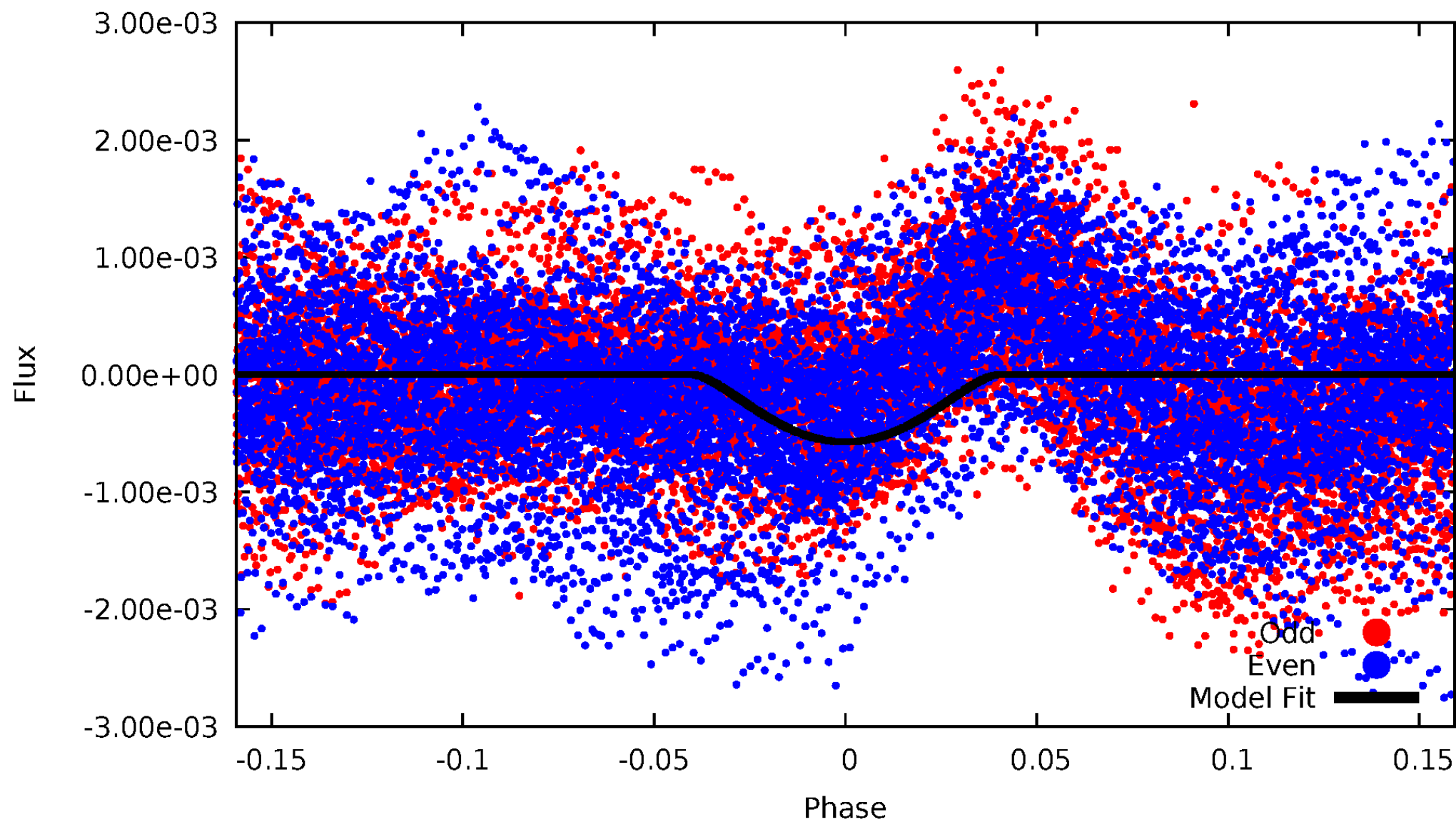
TCE 004641519-01





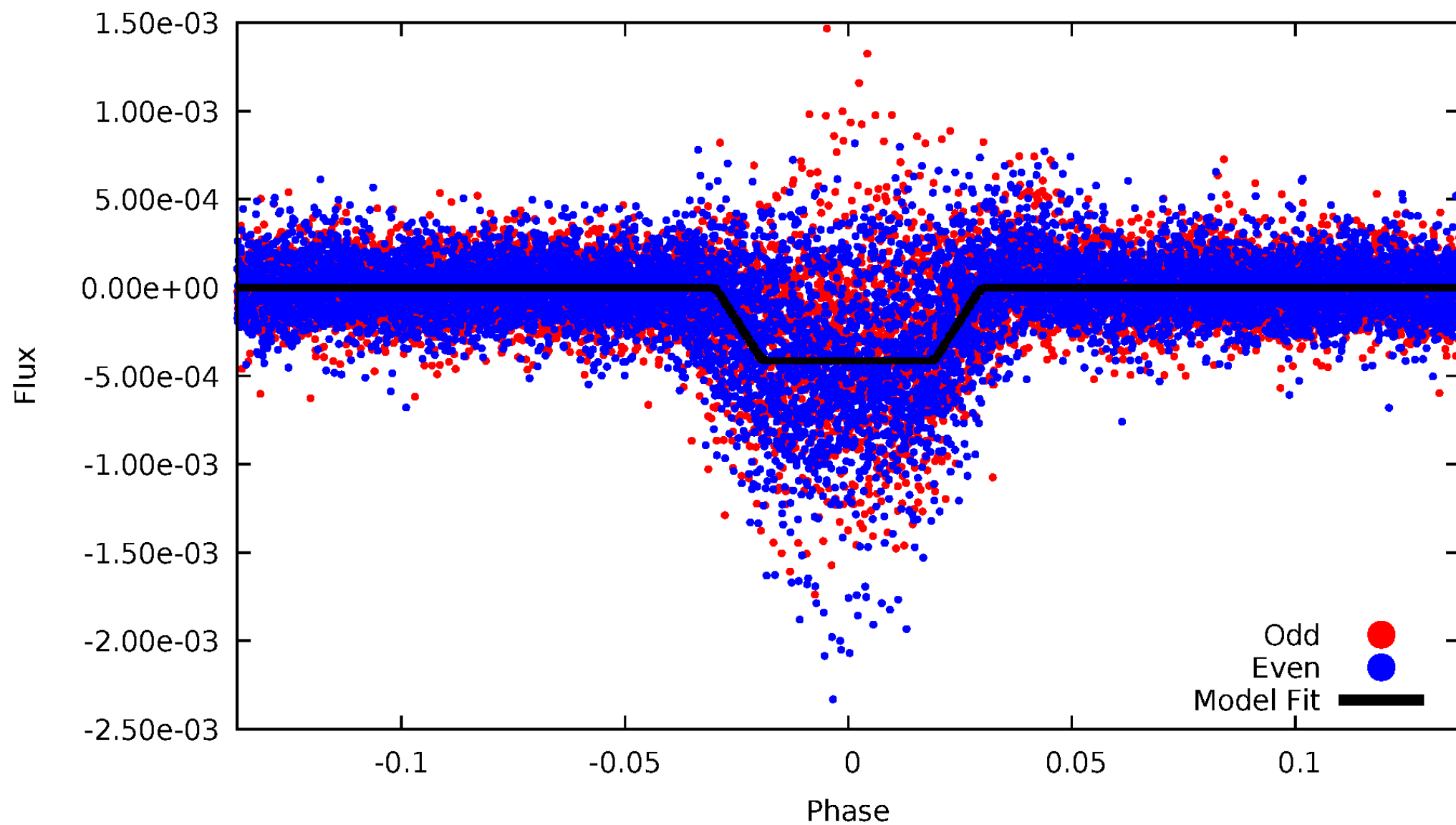
# DV Odd/Even

TCE 004641519-01



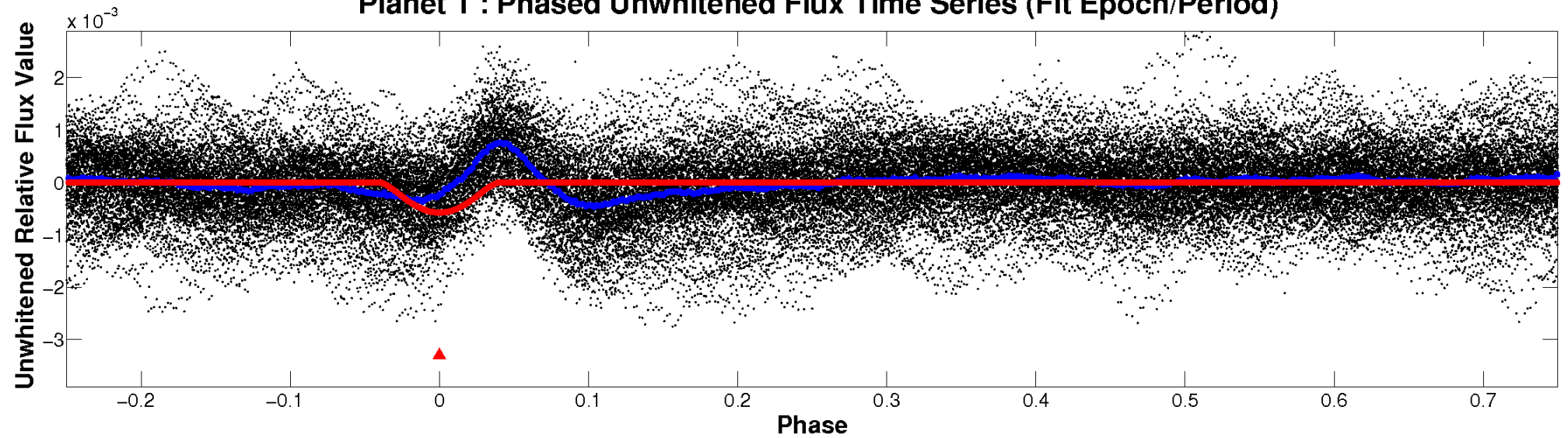
# ALT Odd/Even

TCE 004641519-01

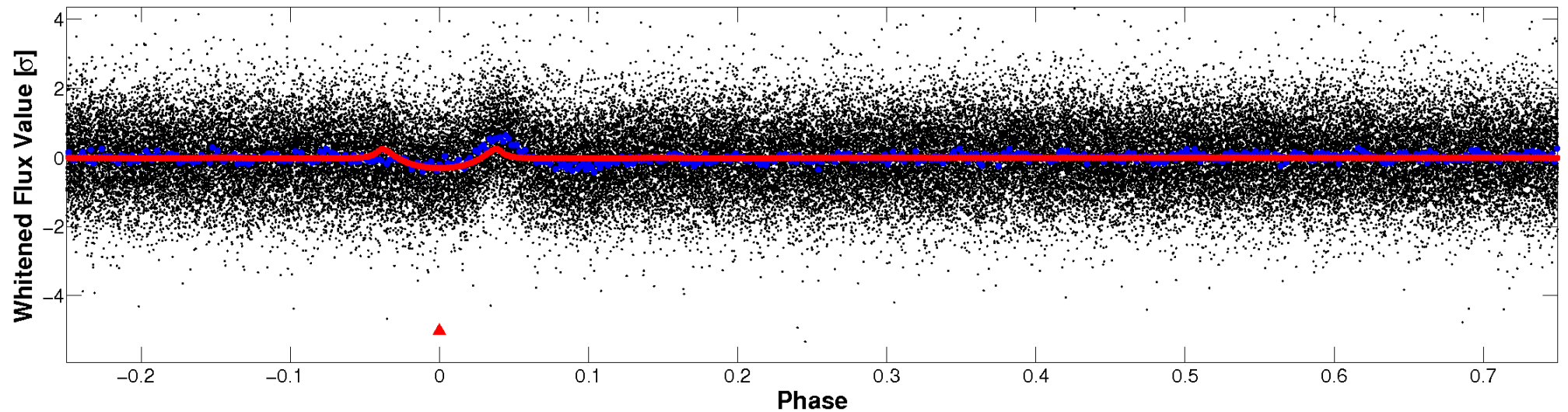


# Non-Whitened Vs. Whitened Light Curve

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

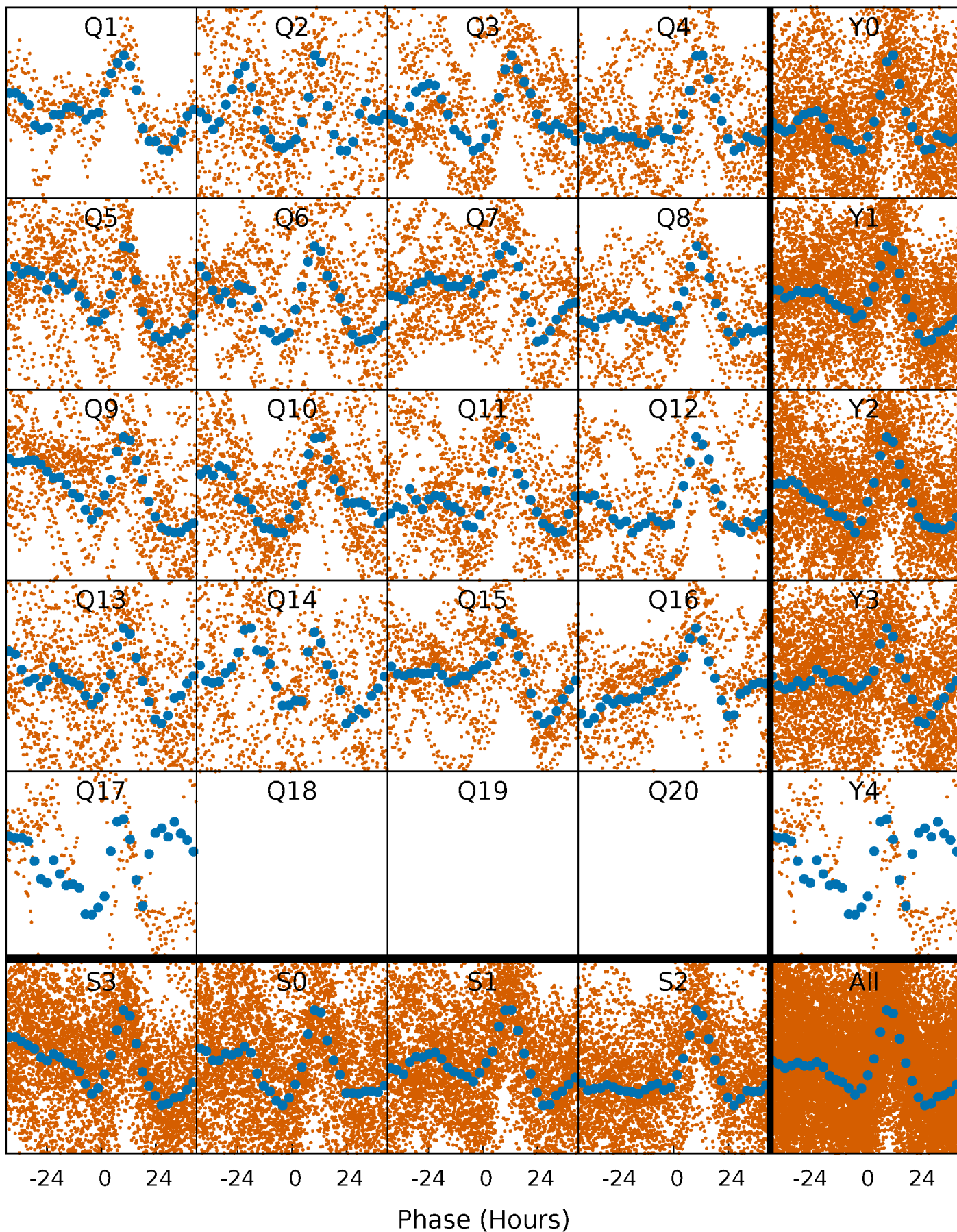


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

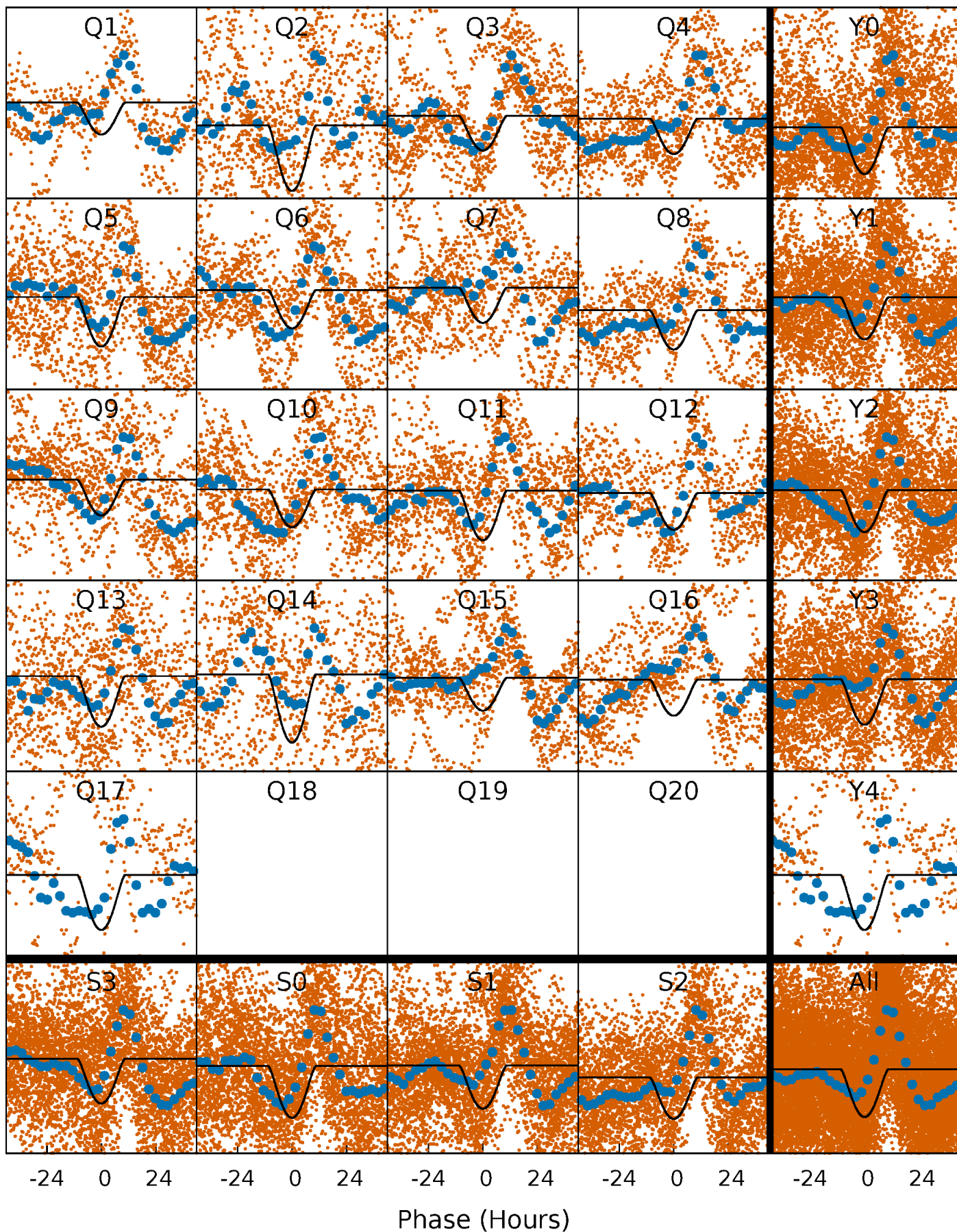
TCE 004641519-01 P= 11.012792 Days  $T_0=137.713275$  (BKJD)





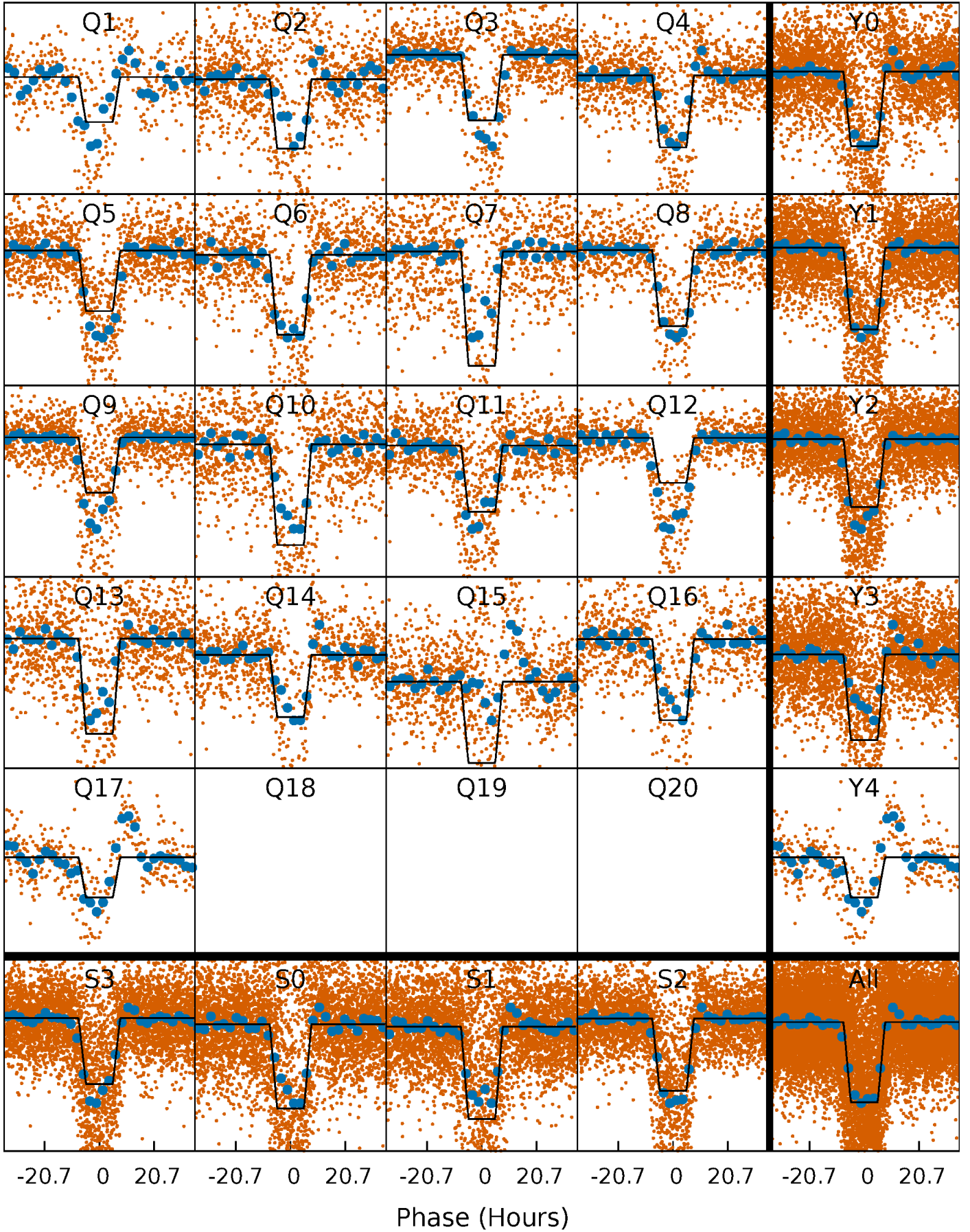
# DV Quarter-Phased Transit Curves

TCE 004641519-01 P= 11.012792 Days  $T_0=137.713275$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

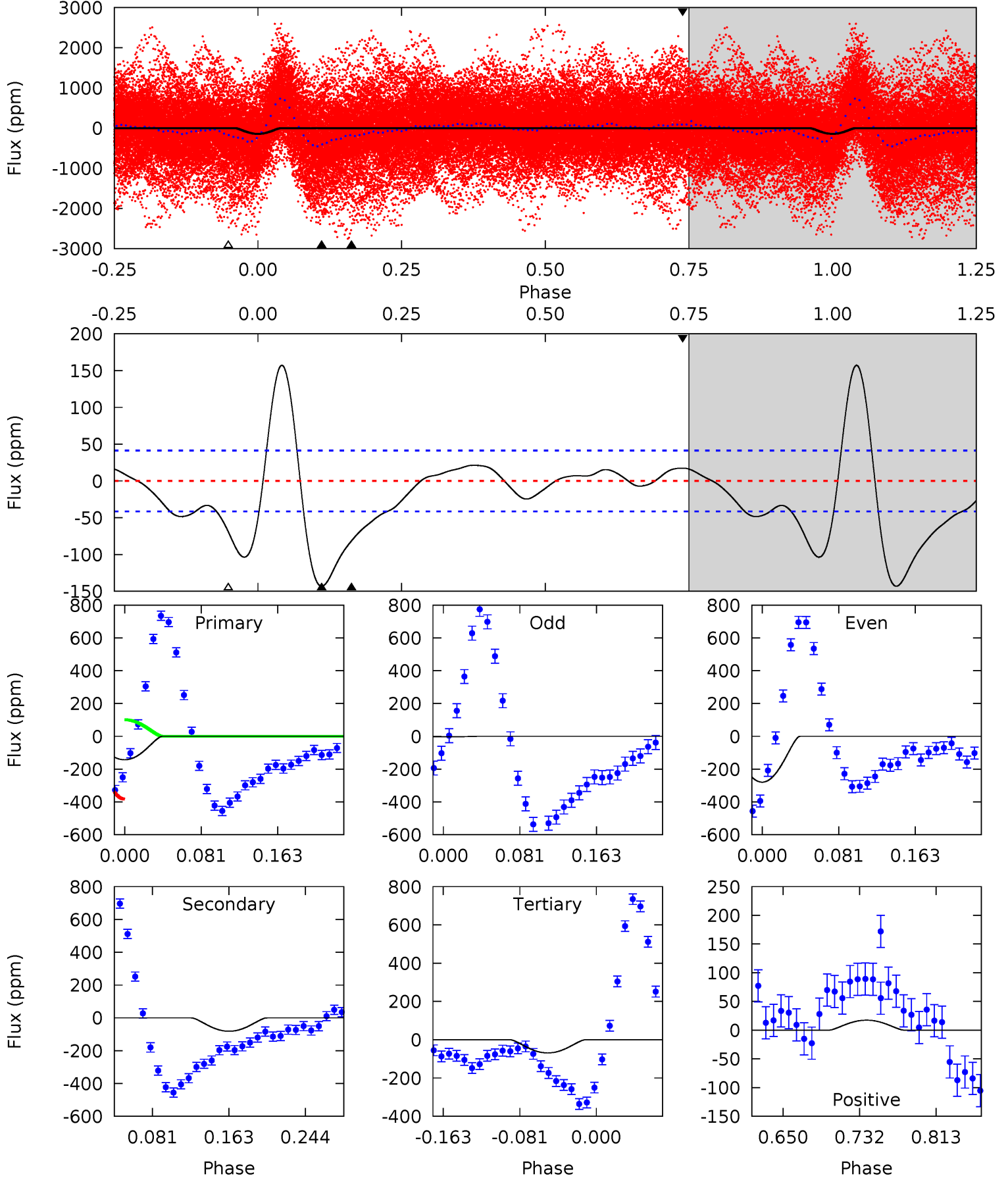
TCE 004641519-01 P= 11.012173 Days  $T_0=137.765404$  (BKJD)



# DV Model-Shift Uniqueness Test

004641519-01, P = 11.012792 Days, E = 126.700483 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
15.9	9.09	7.68	1.94	4.61	1.74	3.57	8.25	14.0	1.41	7.15	15.6	1.66	0.52	14.7

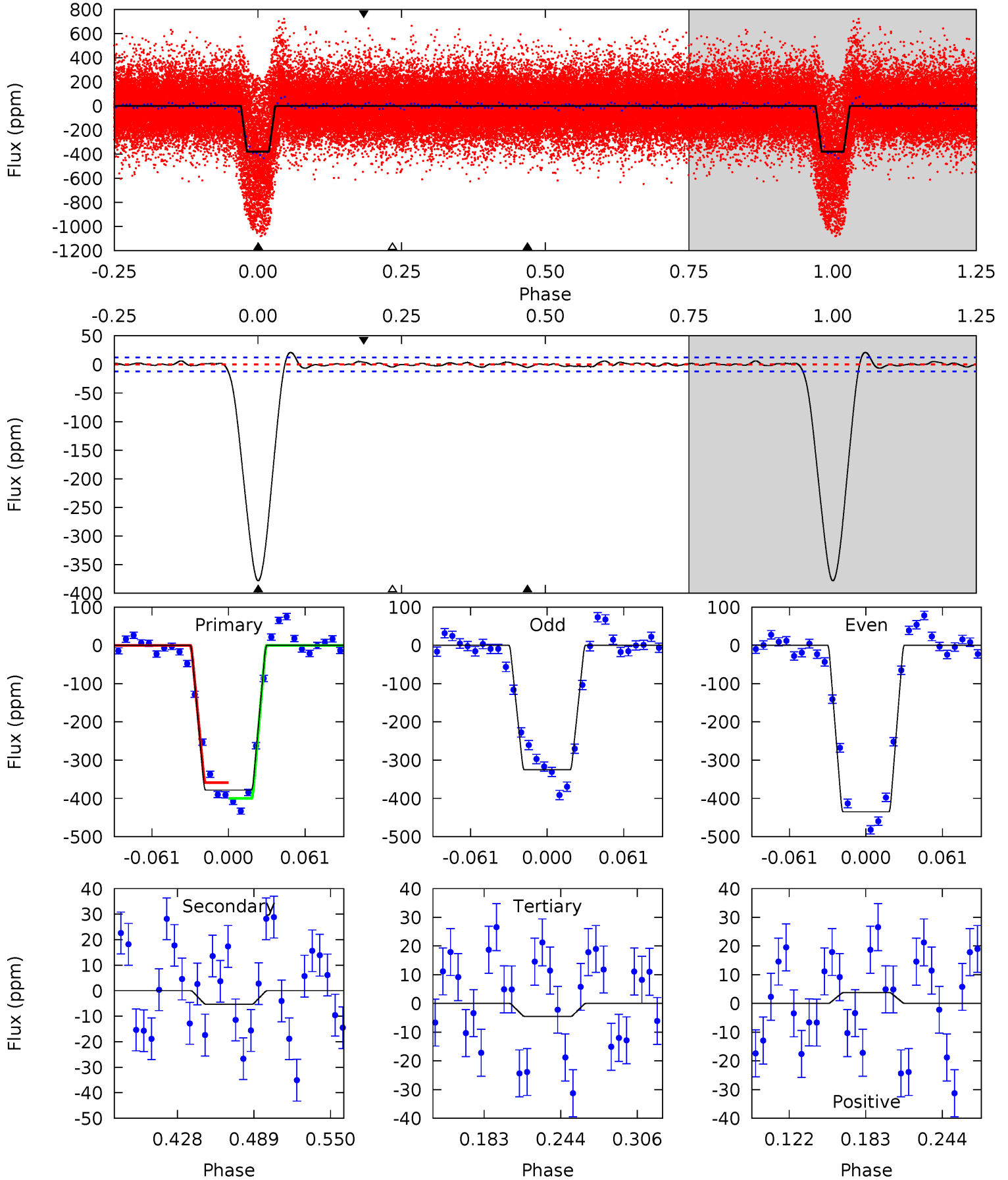




# Alt Model-Shift Uniqueness Test

004641519-01, P = 11.012173 Days, E = 126.753231 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
144.1	2.02	1.72	1.43	4.67	1.87	1.01	142.3	142.6	0.30	0.59	20.8	0.98	0.05	7.72





### Stellar Parameters For KIC 004641519

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6287^{+170}_{-189}$	$4.255^{+0.158}_{-0.193}$	$-0.160^{+0.250}_{-0.300}$	$1.277^{+0.391}_{-0.261}$	$1.068^{+0.182}_{-0.121}$	$0.722^{+0.575}_{-0.371}$
	+3%/-3%	+4%/-5%	+156%/-188%	+31%/-20%	+17%/-11%	+80%/-51%
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 004641519-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-82 \pm 9$	$5.82^{+3.01}_{-2.58}$	$1393^{+114}_{-86}$	$3422^{+750}_{-388}$	$13^{+29}_{-7}$
Alt.	$-5 \pm 3$	$3.45^{+2.63}_{-2.19}$	$1395^{+104}_{-93}$	$2645^{+922}_{-486}$	$2.321^{+14.606}_{-1.670}$

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

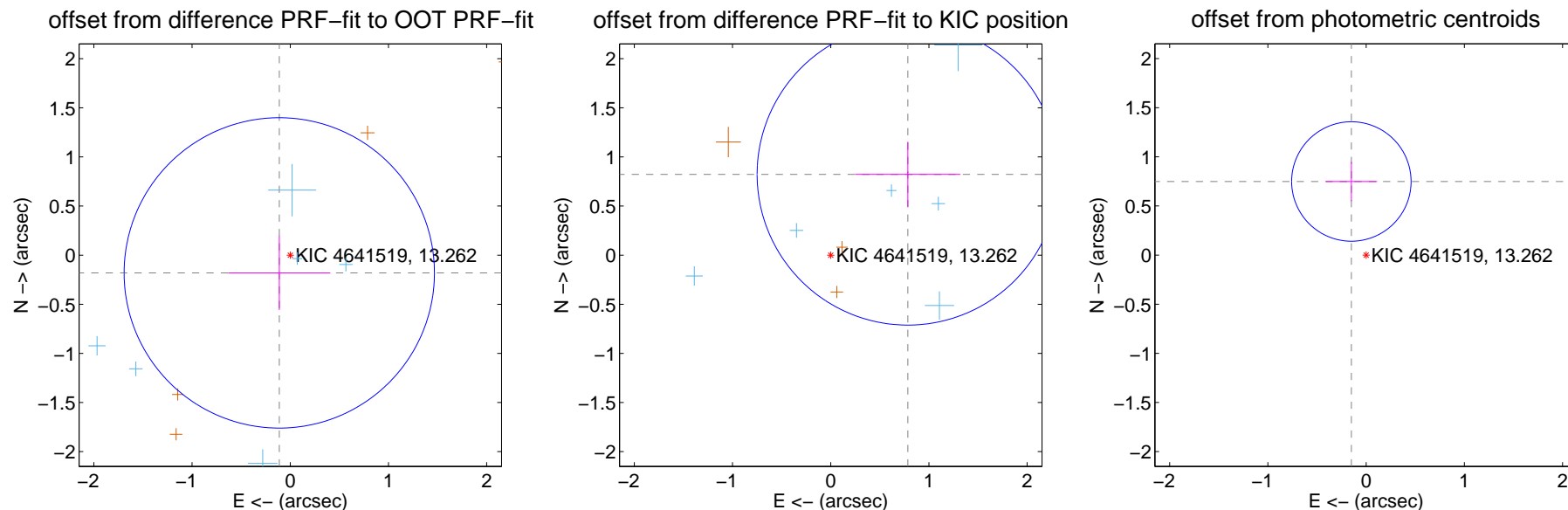
## DV Centroid Data

Supplemental centroid analysis for 004641519-01. Kepler magnitude: 13.26. Transit SNR 15.54

There are 7 quarters with good PRF difference image offsets

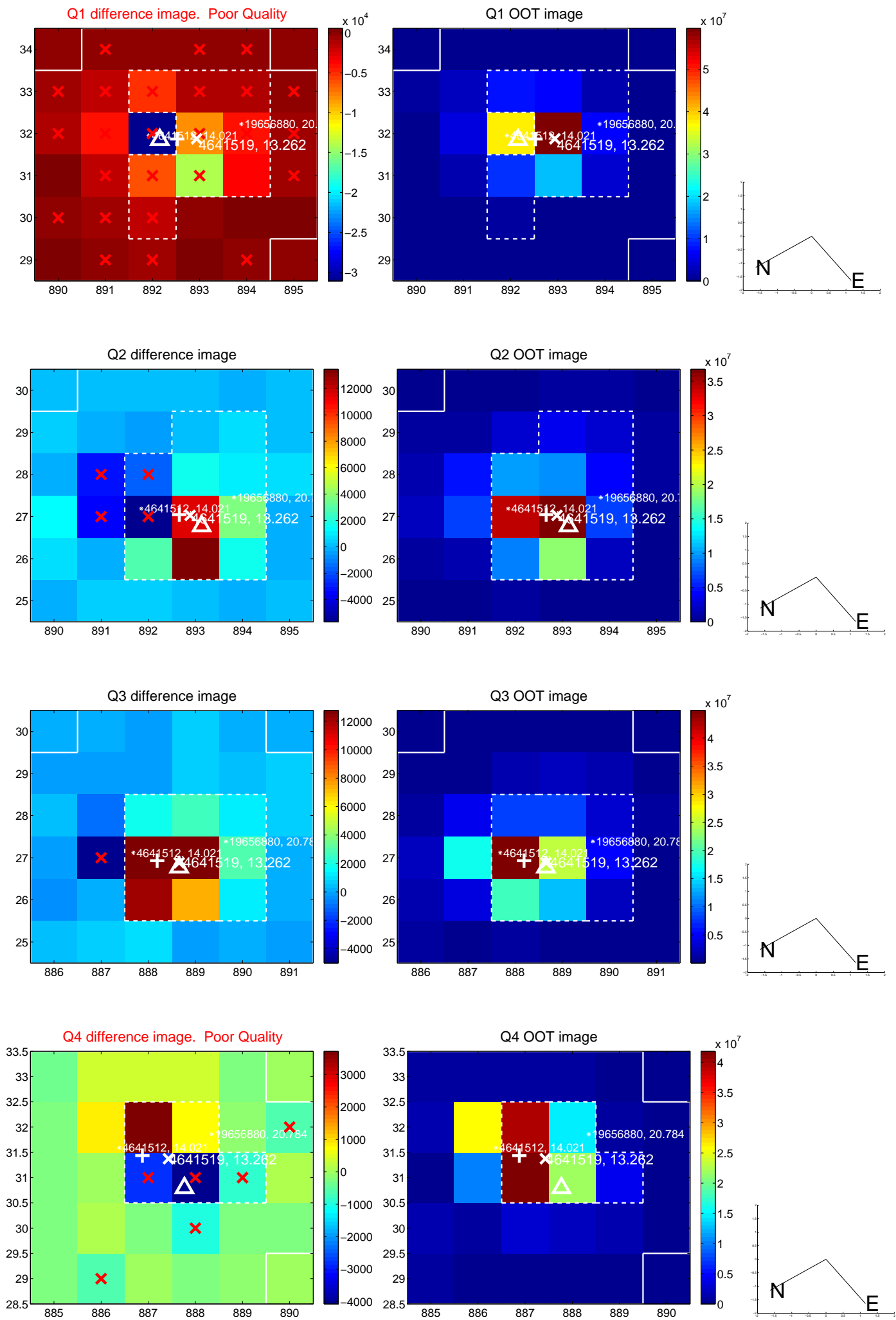
The OOT PRF centroid is offset from the target star catalog position by about 2.09 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.213 \pm 0.527$	0.40	$0.112 \pm 0.520$	$-0.181 \pm 0.378$
PRF-fit source offset from KIC position	$1.137 \pm 0.511$	2.22	$-0.785 \pm 0.536$	$0.822 \pm 0.332$
photometric centroid source offset	$0.76 \pm 0.20$	3.77	$0.15 \pm 0.26$	$0.75 \pm 0.20$

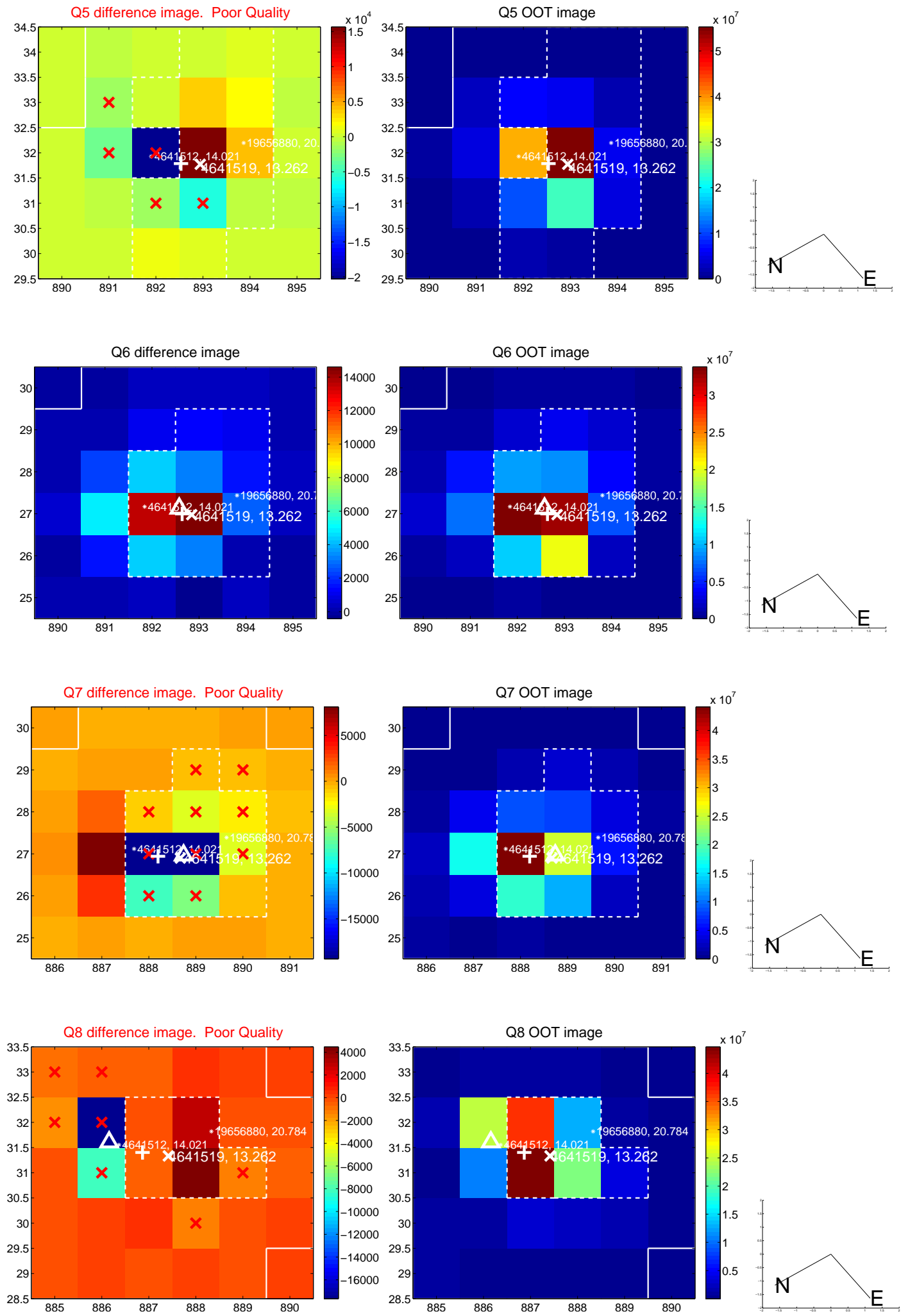


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

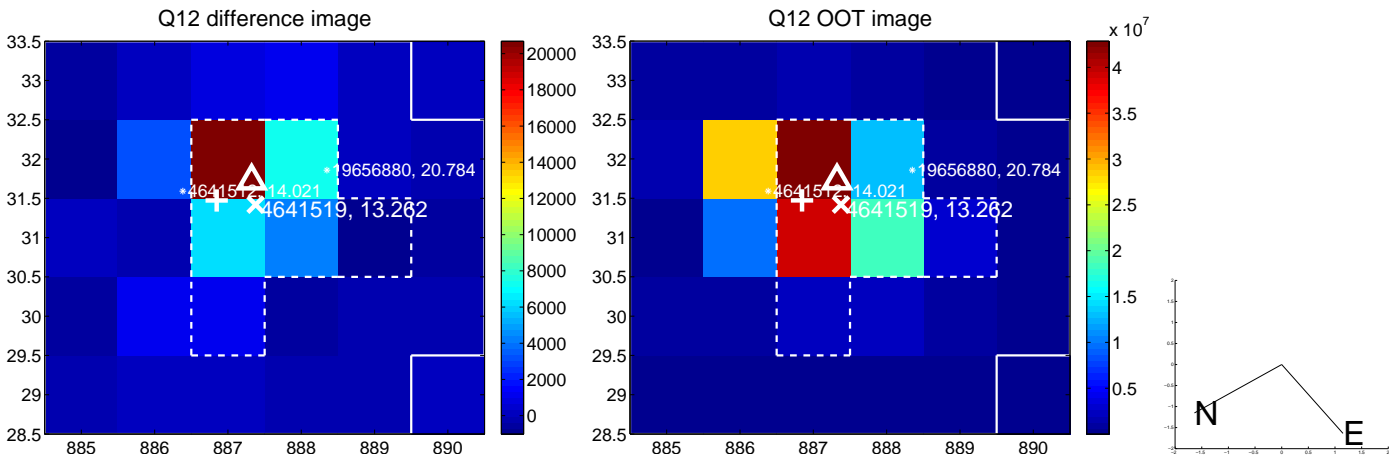
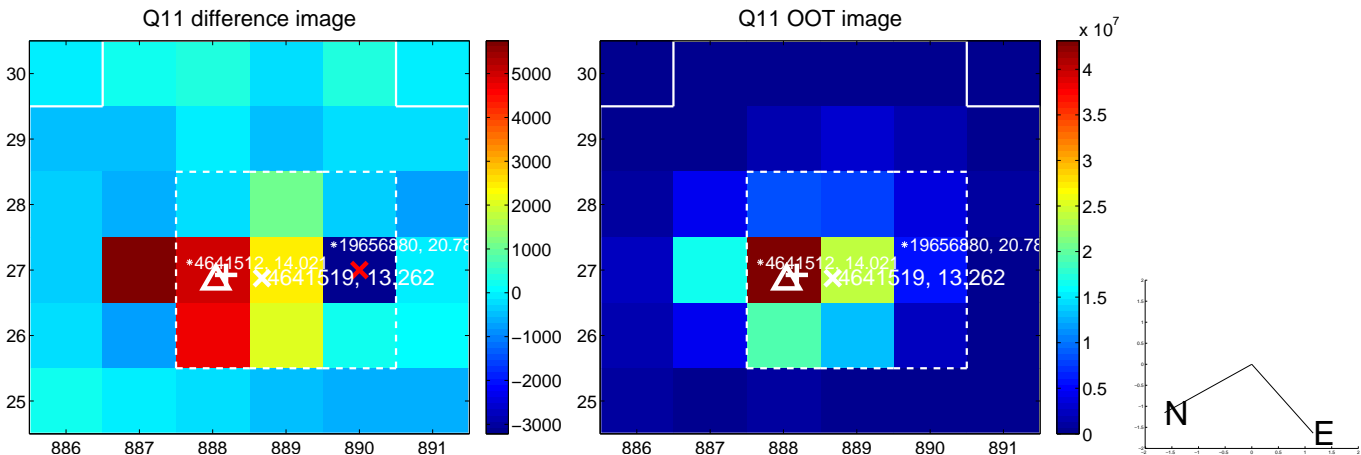
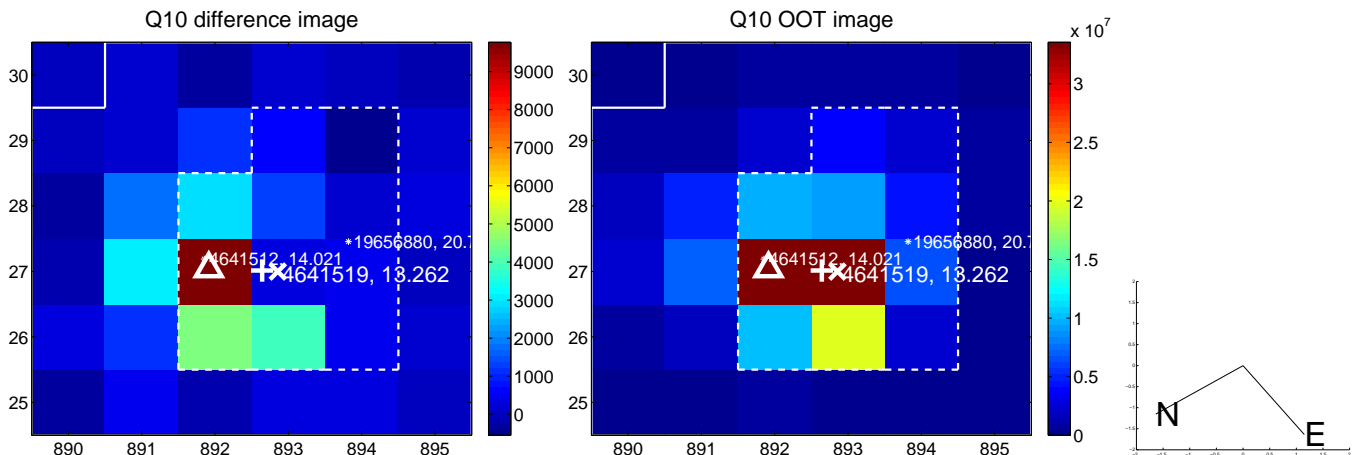
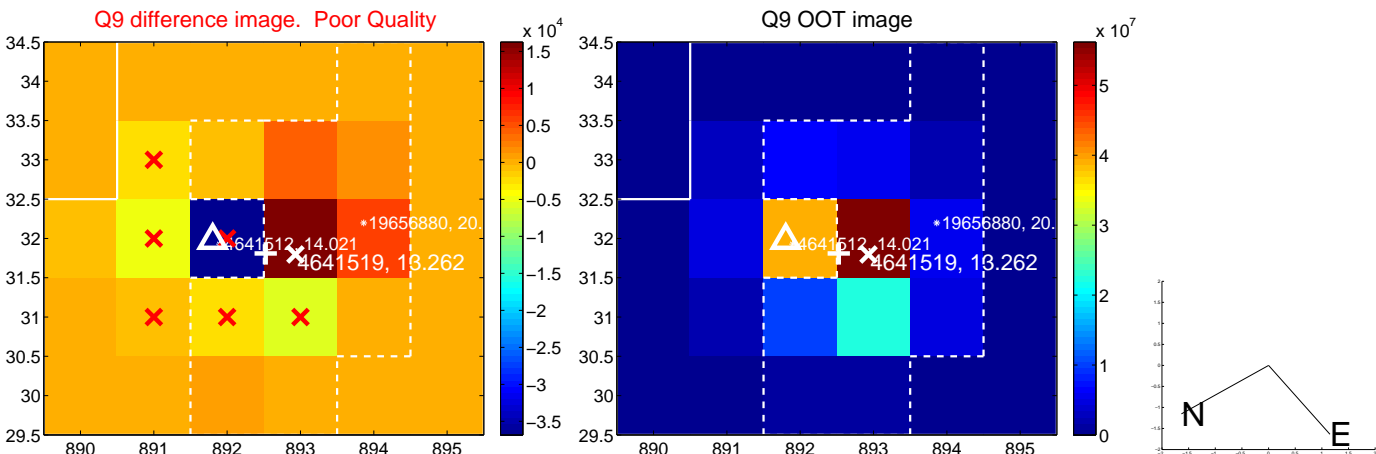


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

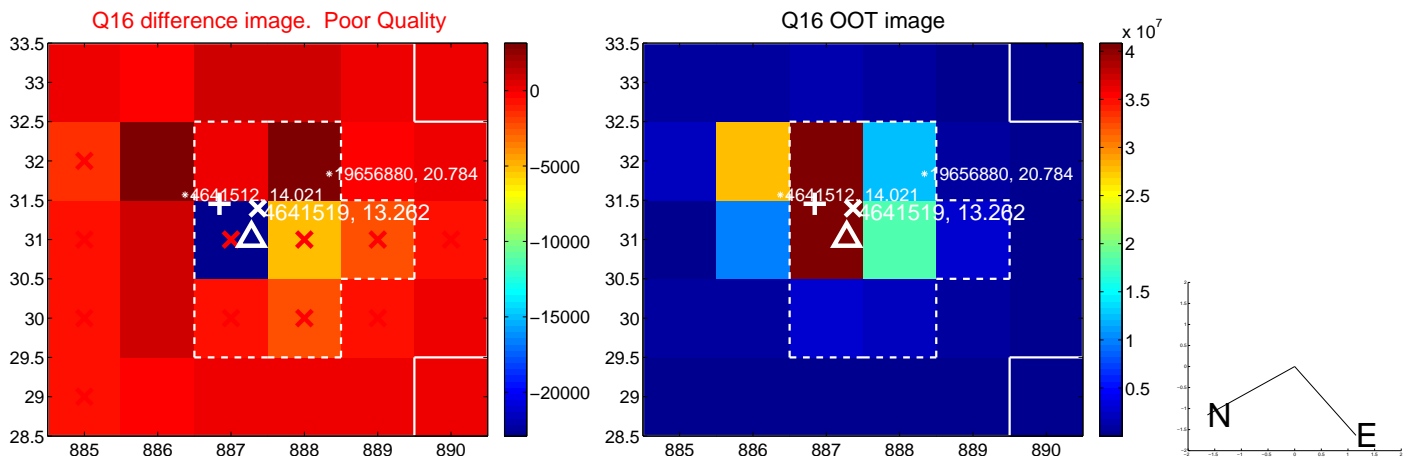
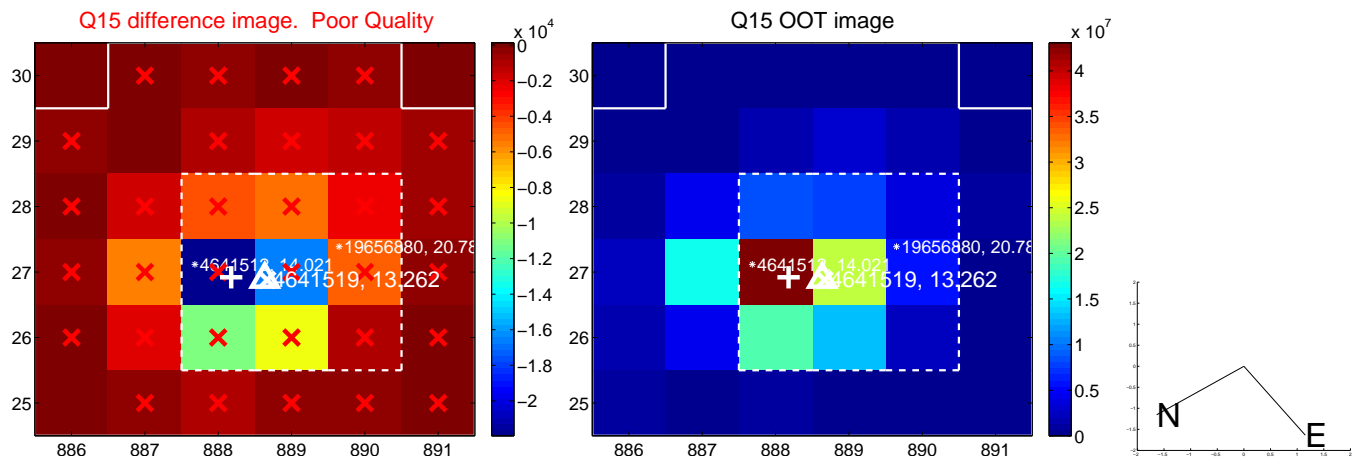
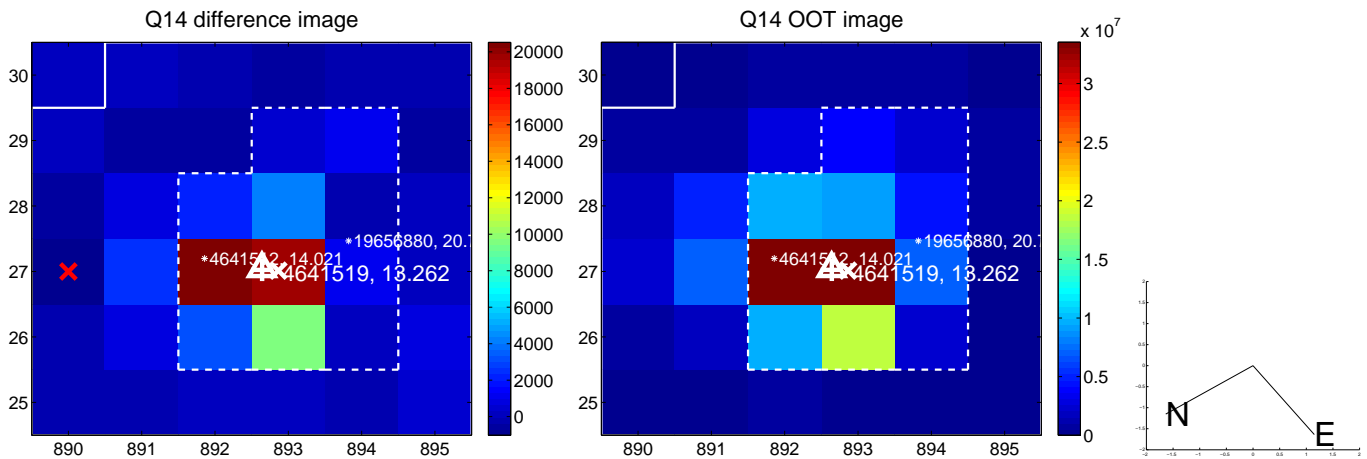
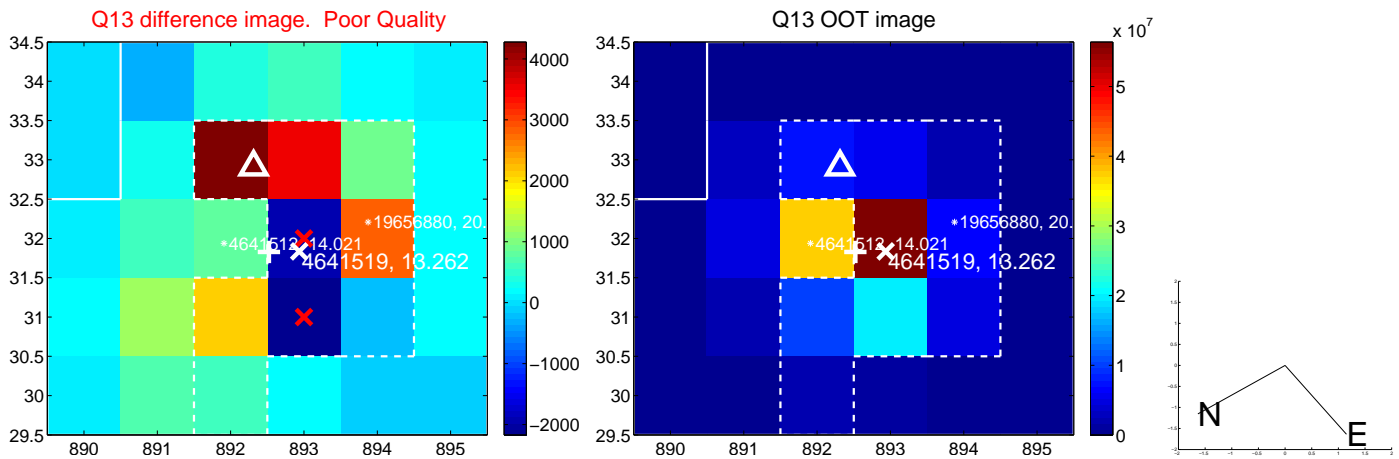




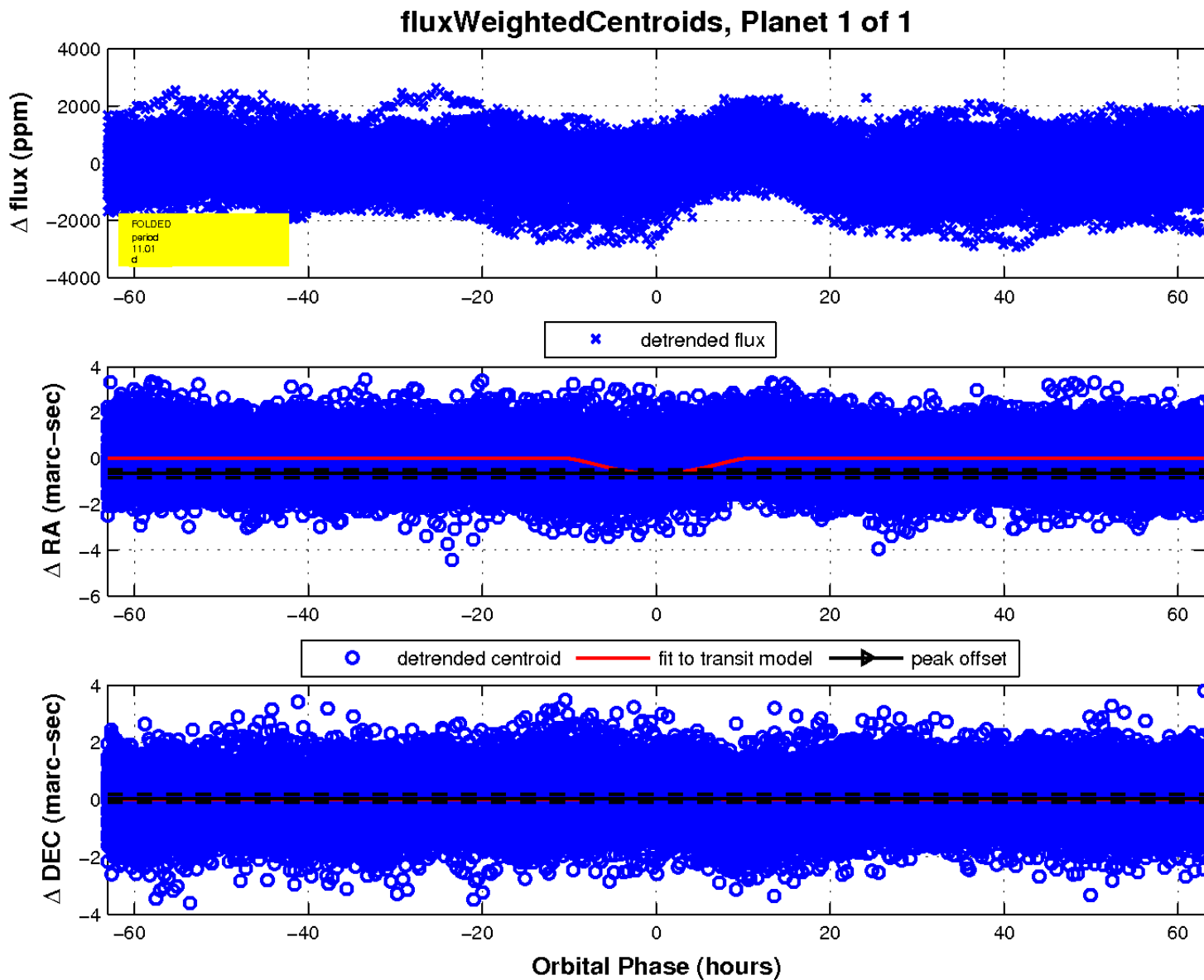
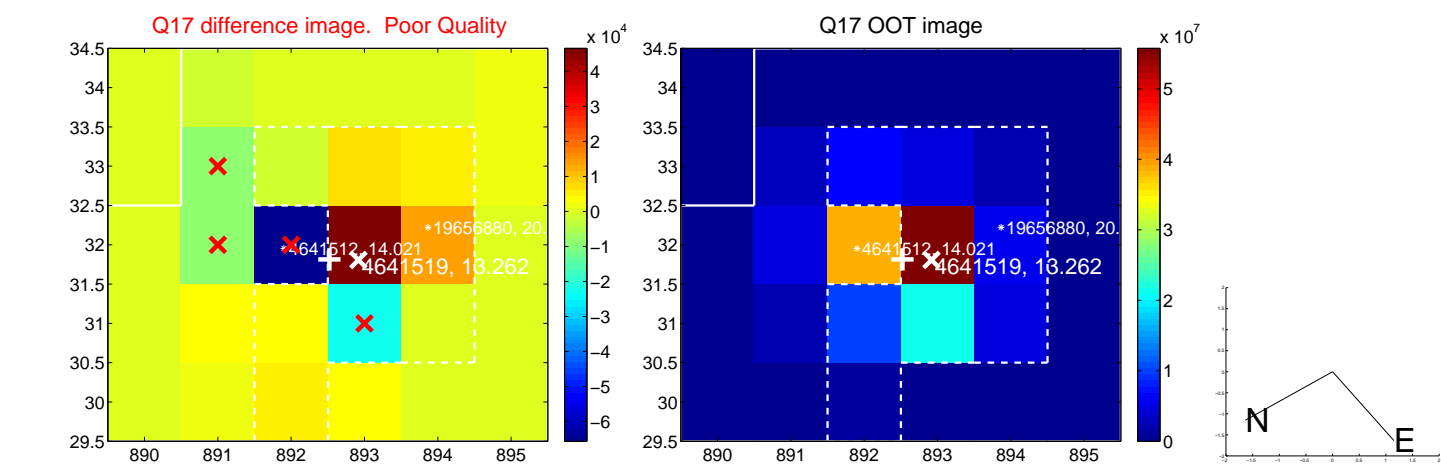
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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UKIRT Image

