

# KIC 003848966

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003848966-01	OBS	3389.01	29.767695	155.516571	163.6	11.591	11.3	12.2	2.92	5640	5.09	167.83

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003848966-01	OBS	PC	0.99	0	0	0	0	NO_COMMENT

**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.

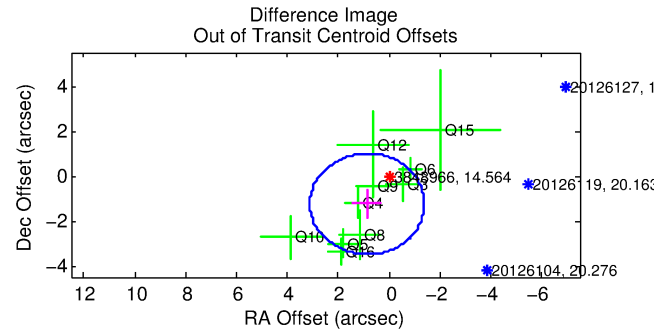
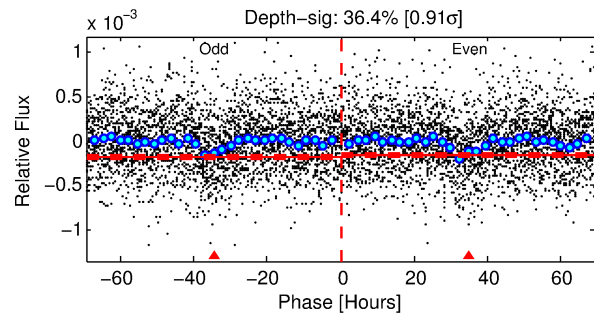
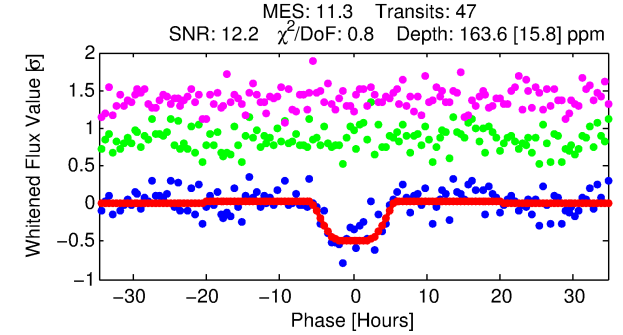
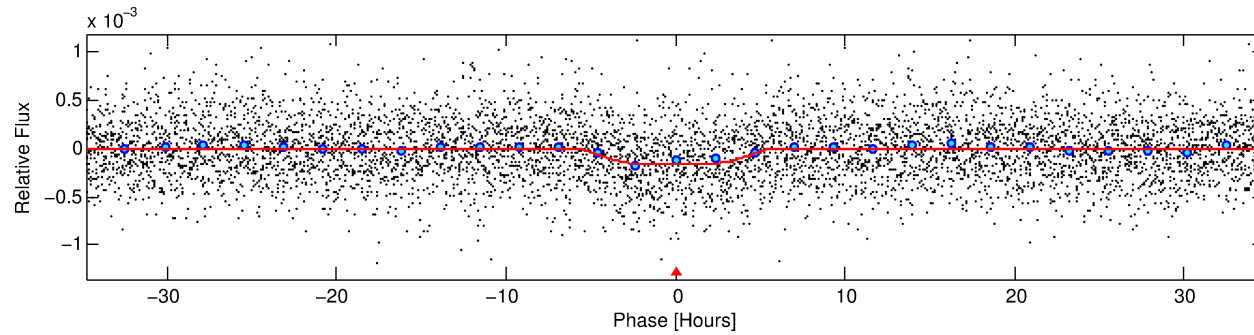
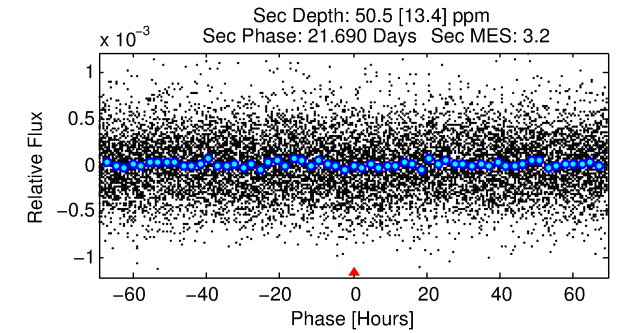
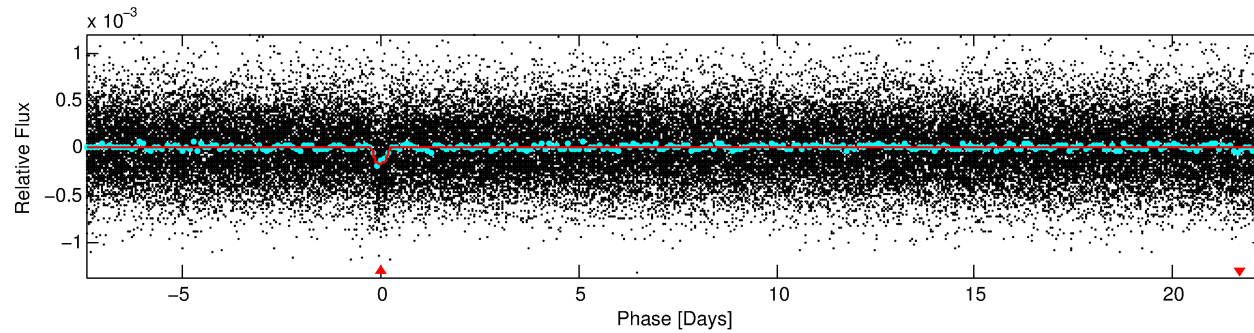
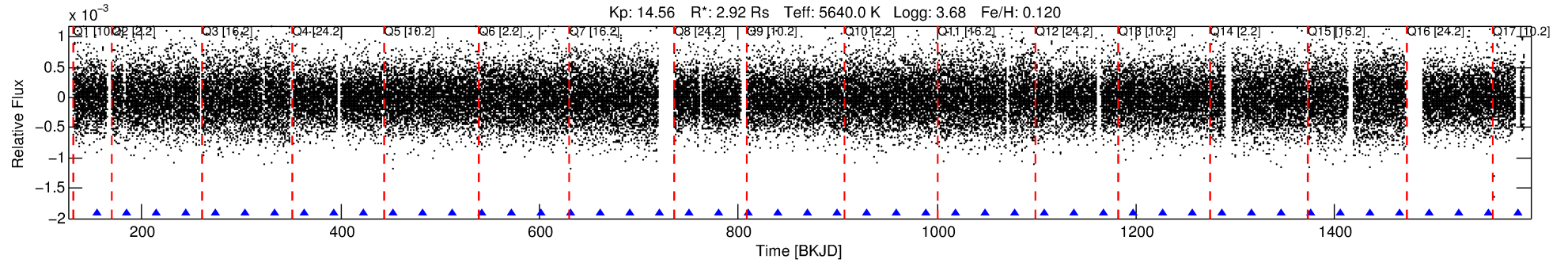
## Ephemeris Match Information For 003848966-01

No Significant Match Found

# DV One-Page Summary

KIC: 3848966 Candidate: 1 of 1 Period: 29.768 d

KOI: K03389.01 Corr: 0.913



## DV Fit Results:

Period = 29.76769 [0.00078] d  
Epoch = 155.5166 [0.0211] BKJD  
Rp/R\* = 0.0160 [0.0012]  
a/R\* = 5.65 [1.16]  
b = 0.98 [0.01]  
Seff = 167.83 [74.27]  
Teff = 918 [102] K  
Rp = 5.09 [1.76] Re  
a = 0.2143 [0.0629] AU  
Ag = 49.37 [26.32] [1.84σ]  
Teffp = 3761 [291] K [9.24σ]

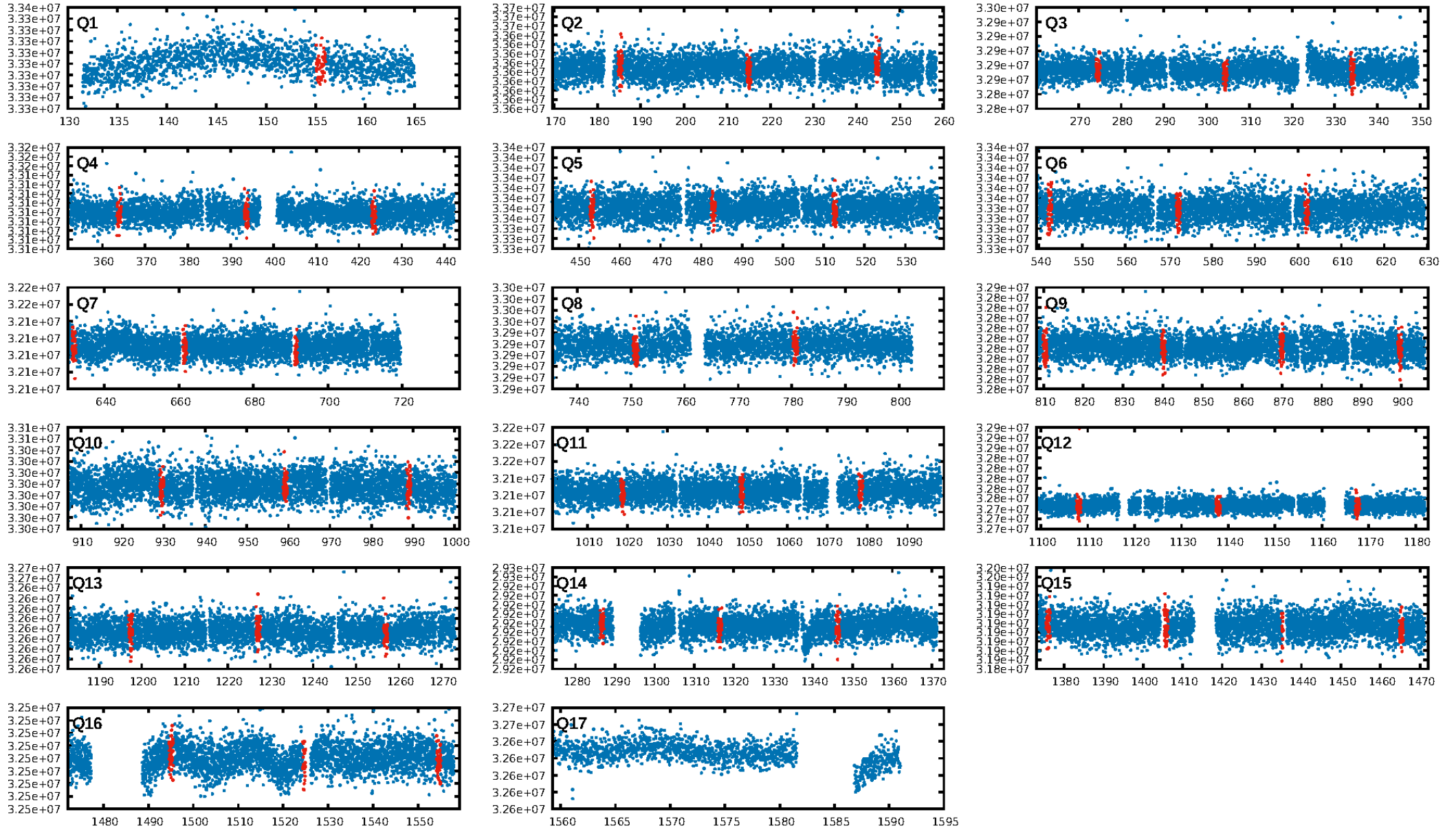
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 100.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.38e-28  
RollingBand-fgt: 1.00 [46/46]  
GhostDiagnostic-chr: -4.184  
Centroid-sig: 7.0%  
Centroid-so: 1.416 arcsec [1.16σ]  
OotOffset-rm: 1.519 arcsec [2.03σ]  
KicOffset-rm: 1.495 arcsec [2.20σ]  
OotOffset-st: 2/2/4/2 [10]  
KicOffset-st: 2/2/4/2 [10]  
DiffImageQuality-fgm: 0.50 [5/10]  
DiffImageOverlap-fno: 1.00 [15/15]

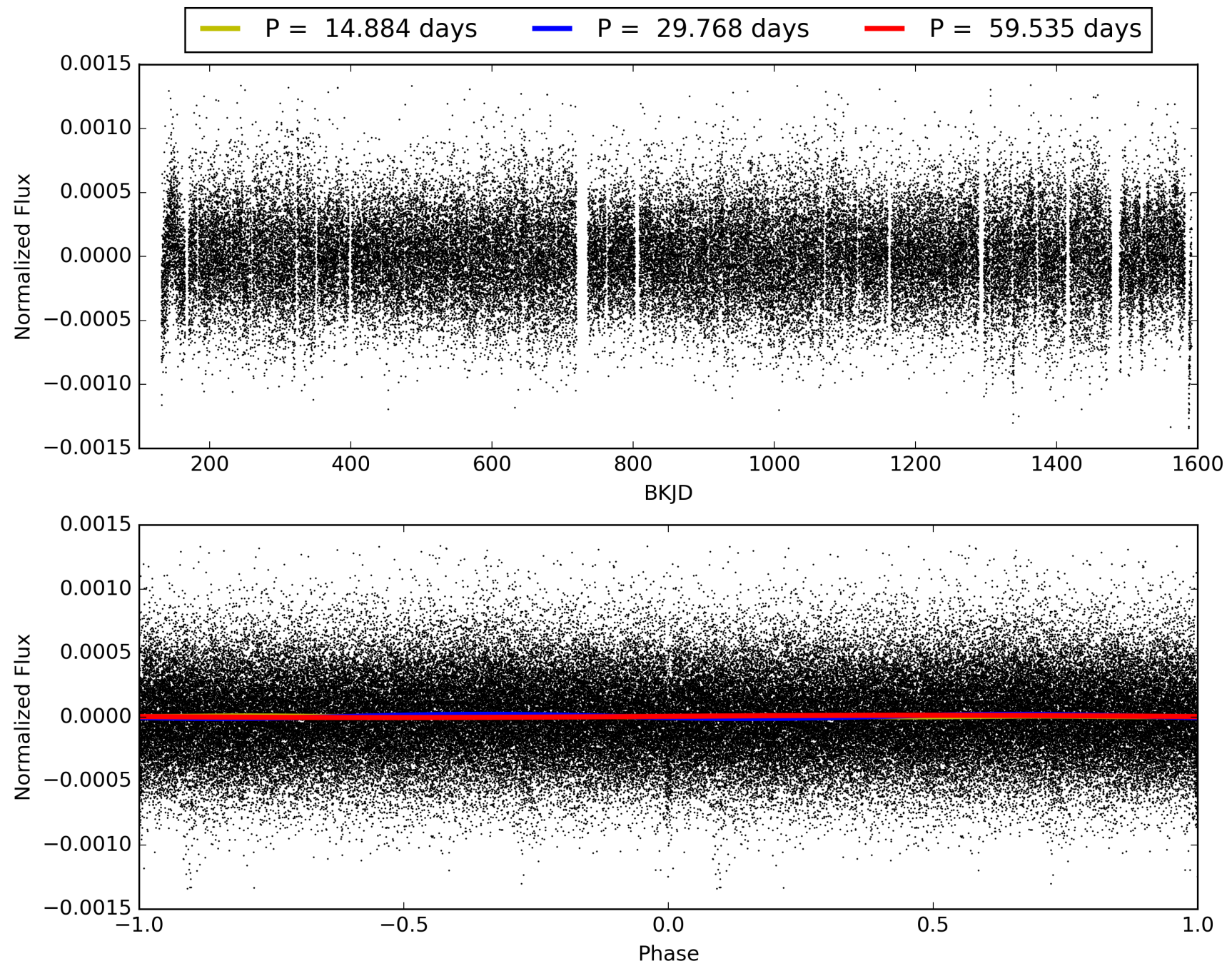
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 20:03:11 Z

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

# TCE 003848966-01, PDC Light Curves



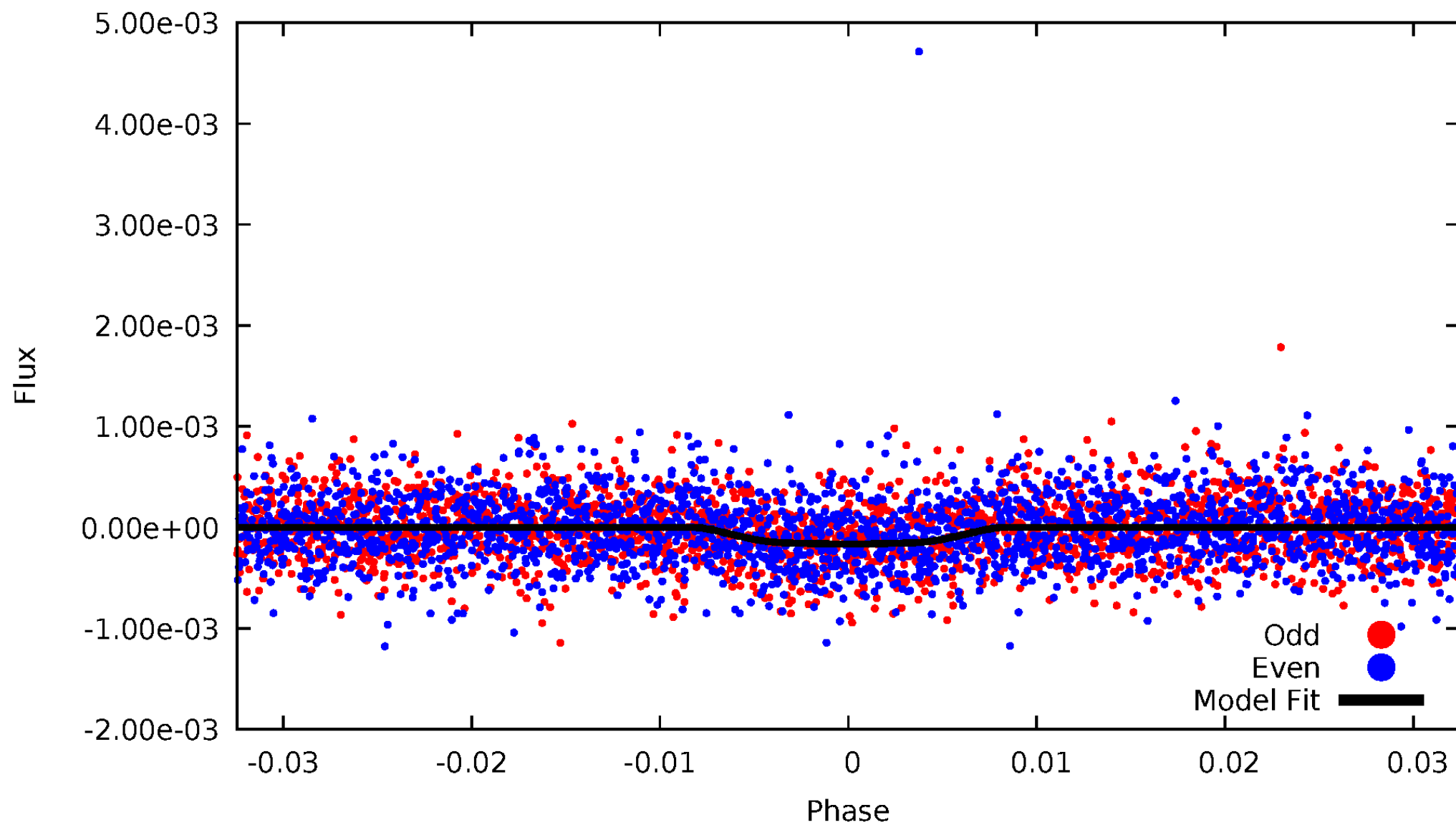
TCE 003848966-01





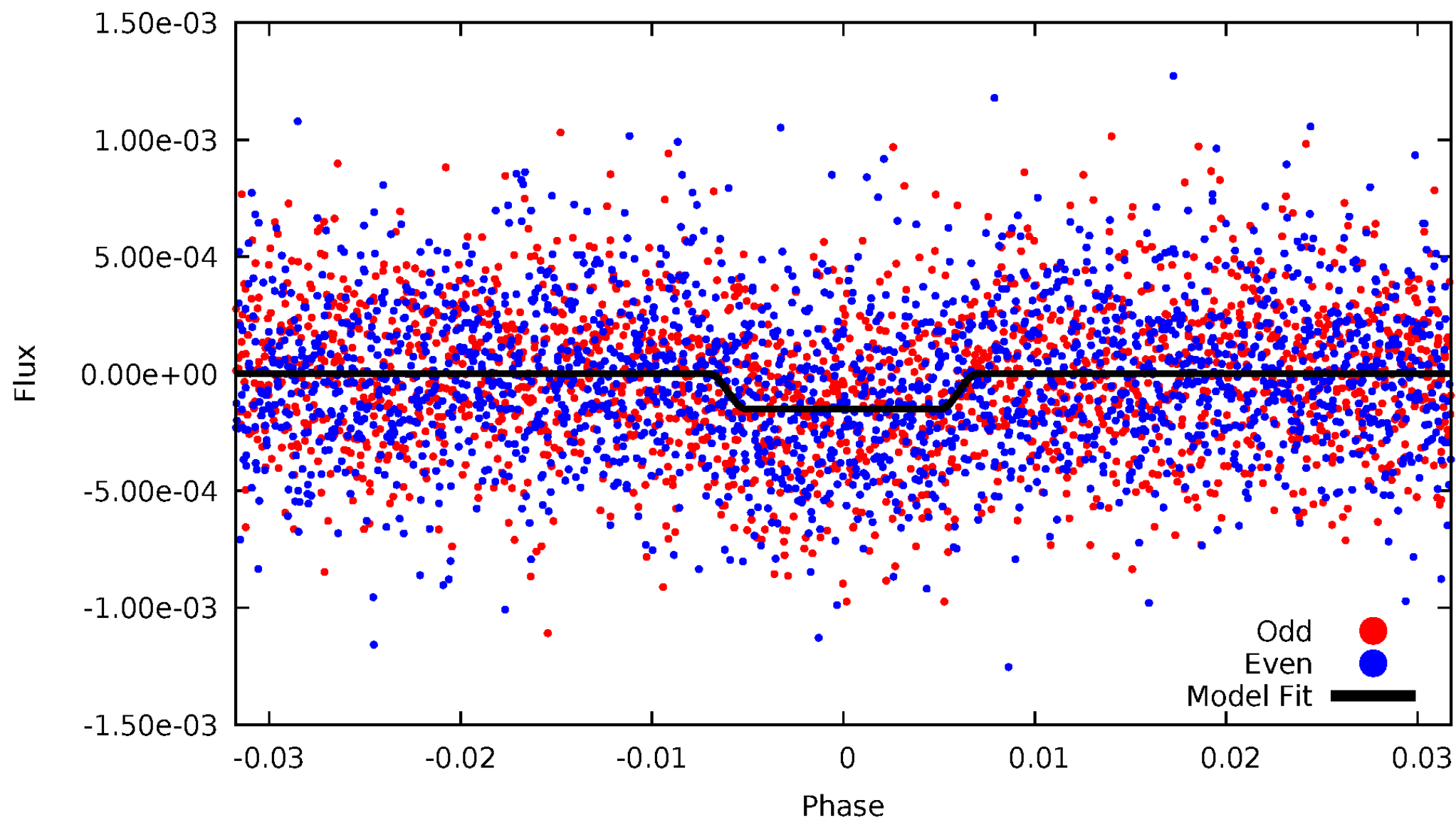
DV Odd/Even

TCE 003848966-01



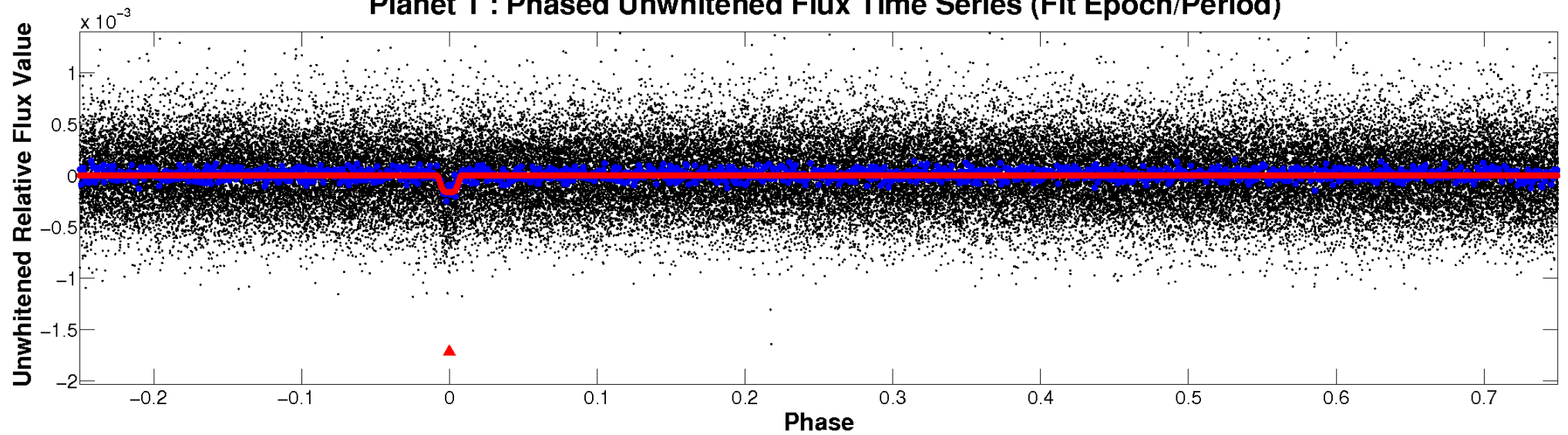
# ALT Odd/Even

TCE 003848966-01

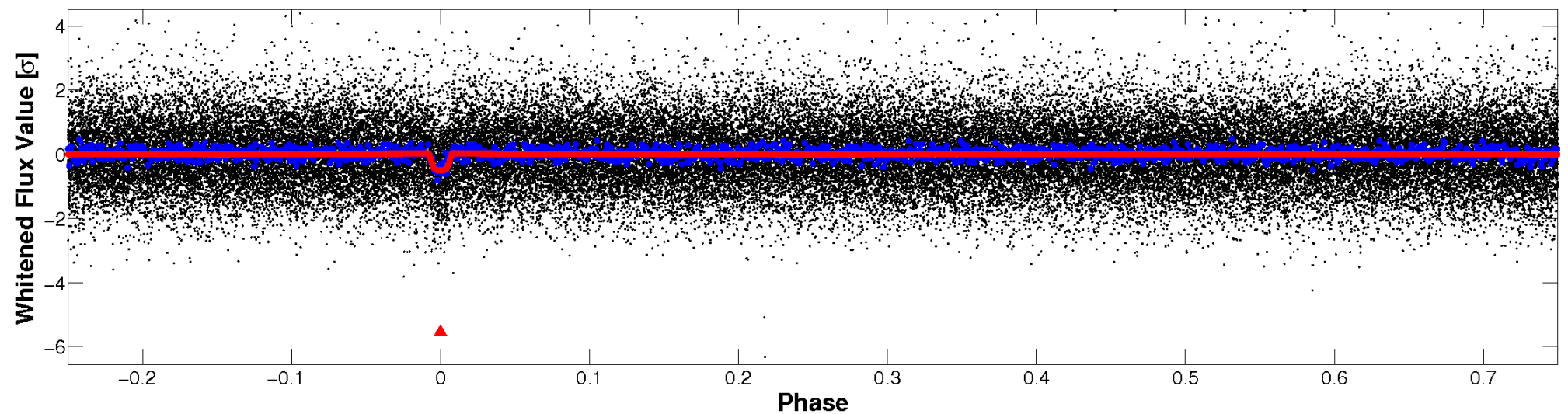


# Non-Whitened Vs. Whitened Light Curve

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

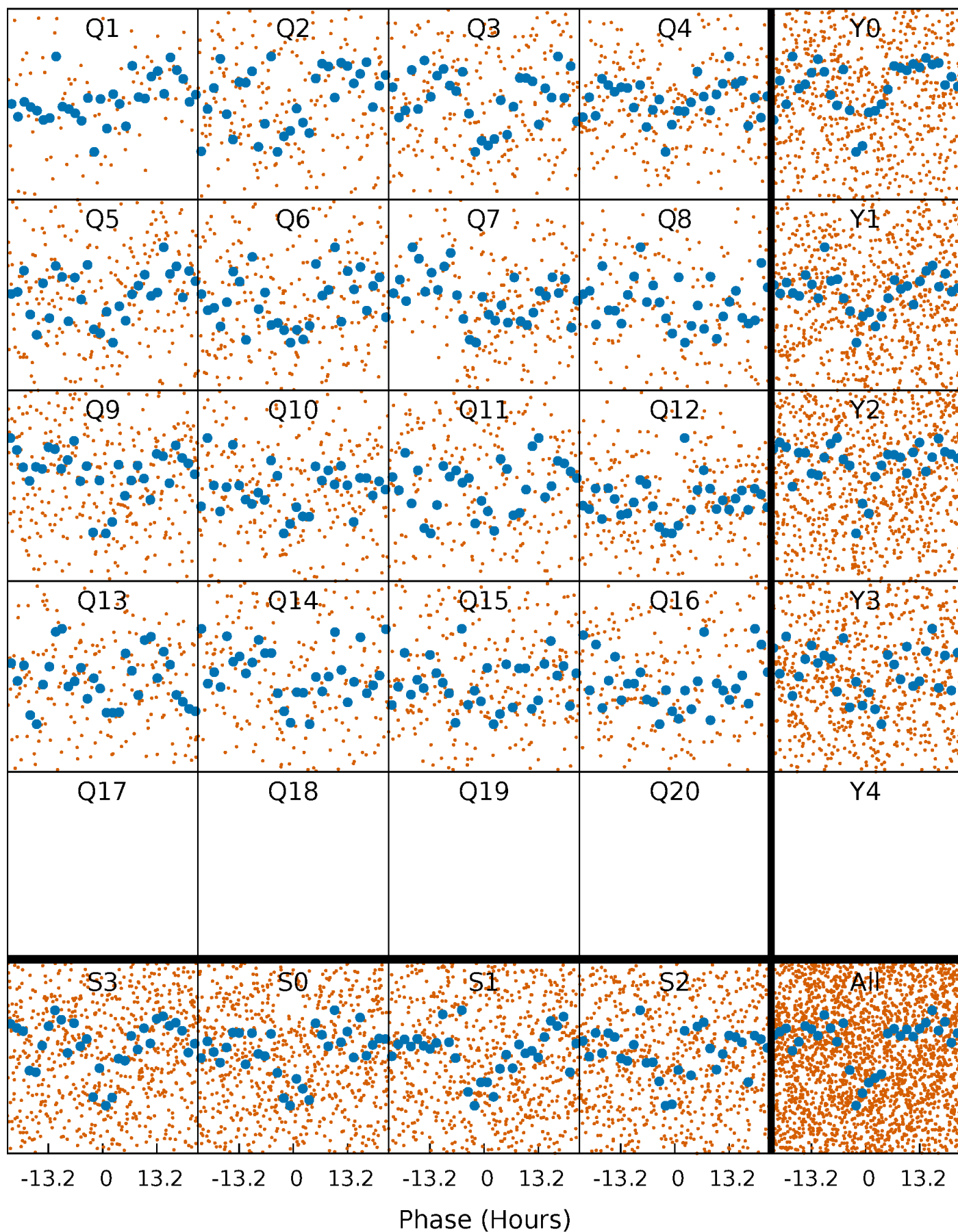


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

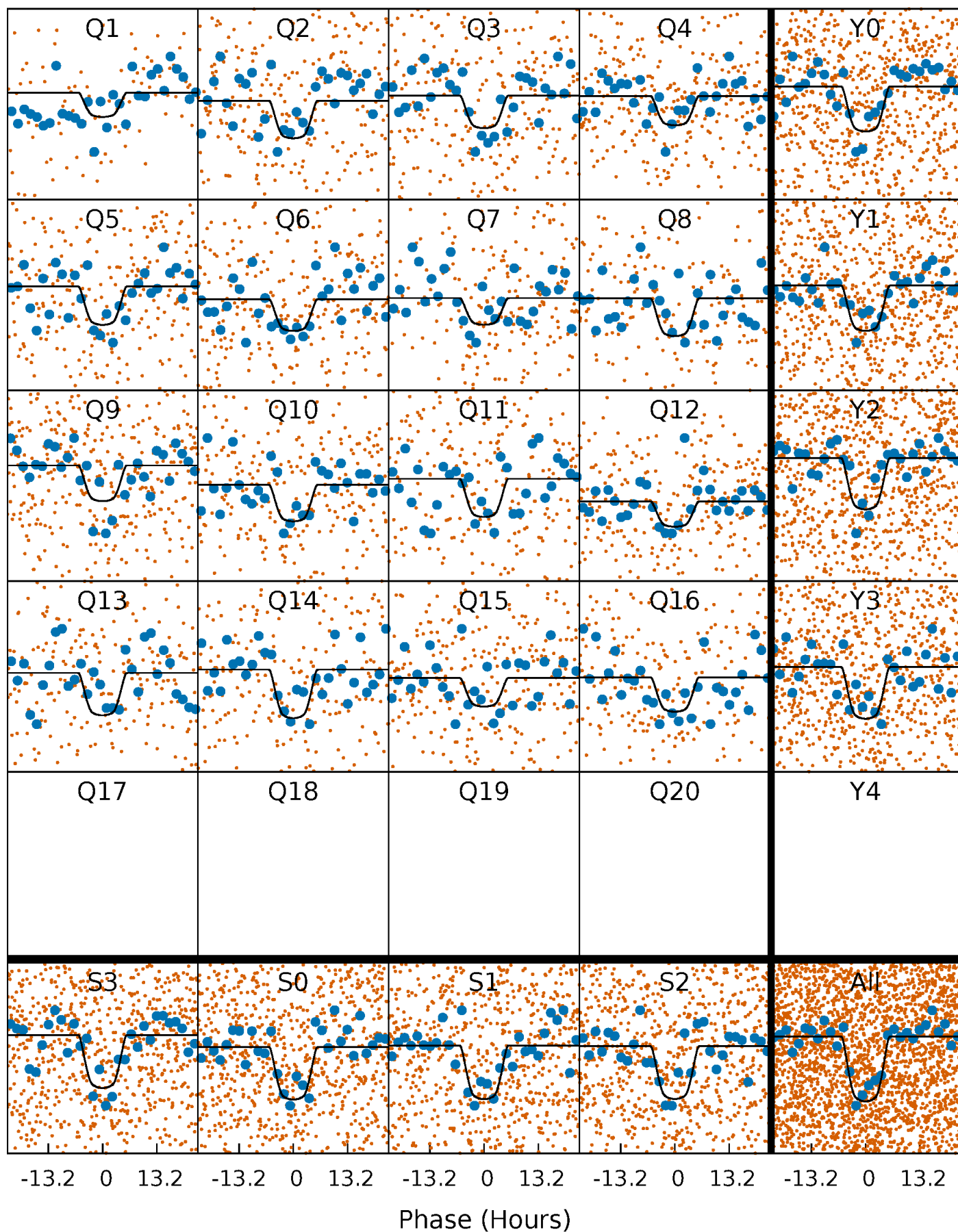
TCE 003848966-01 P= 29.767695 Days  $T_0=155.516571$  (BKJD)





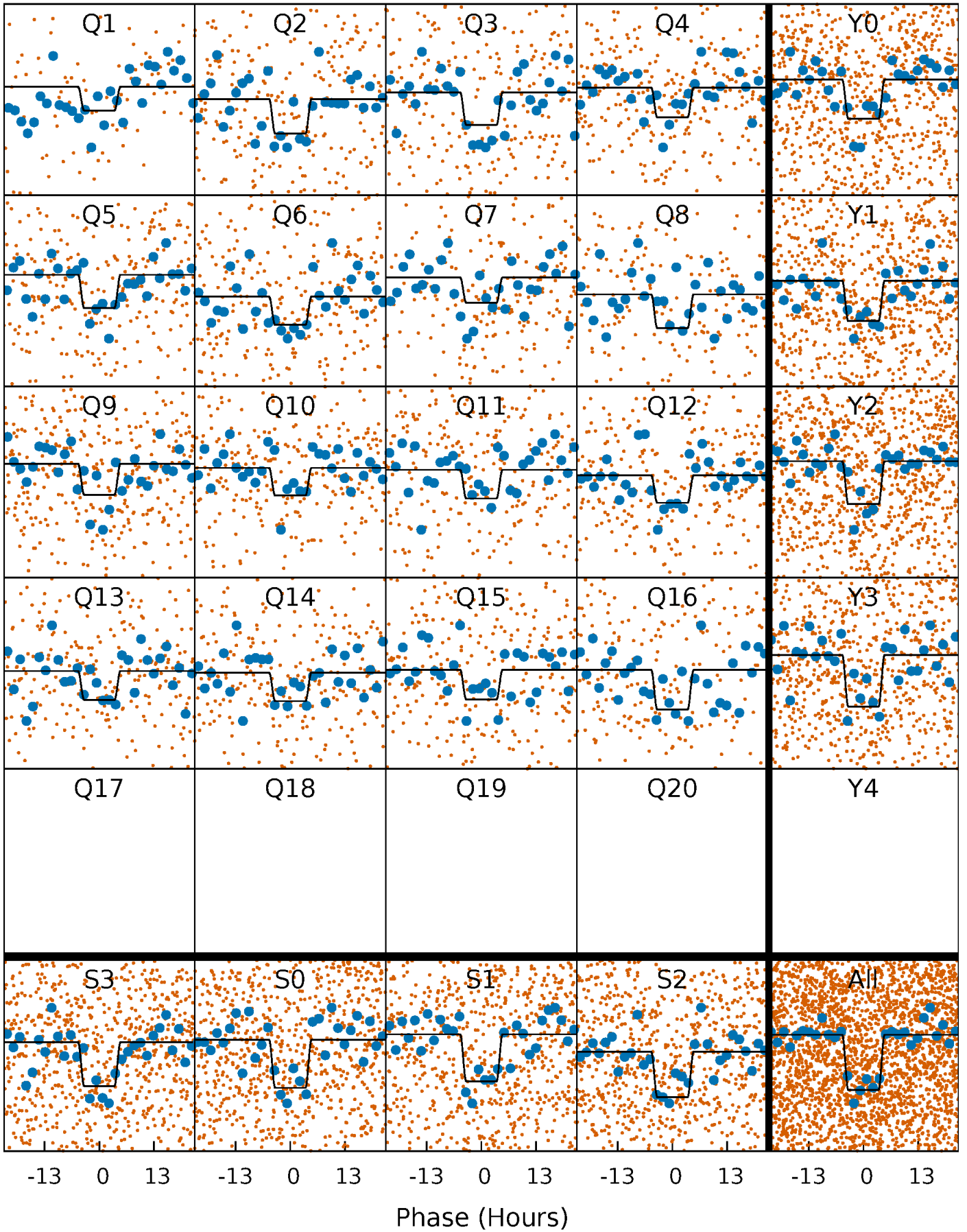
# DV Quarter-Phased Transit Curves

TCE 003848966-01 P= 29.767695 Days  $T_0=155.516571$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

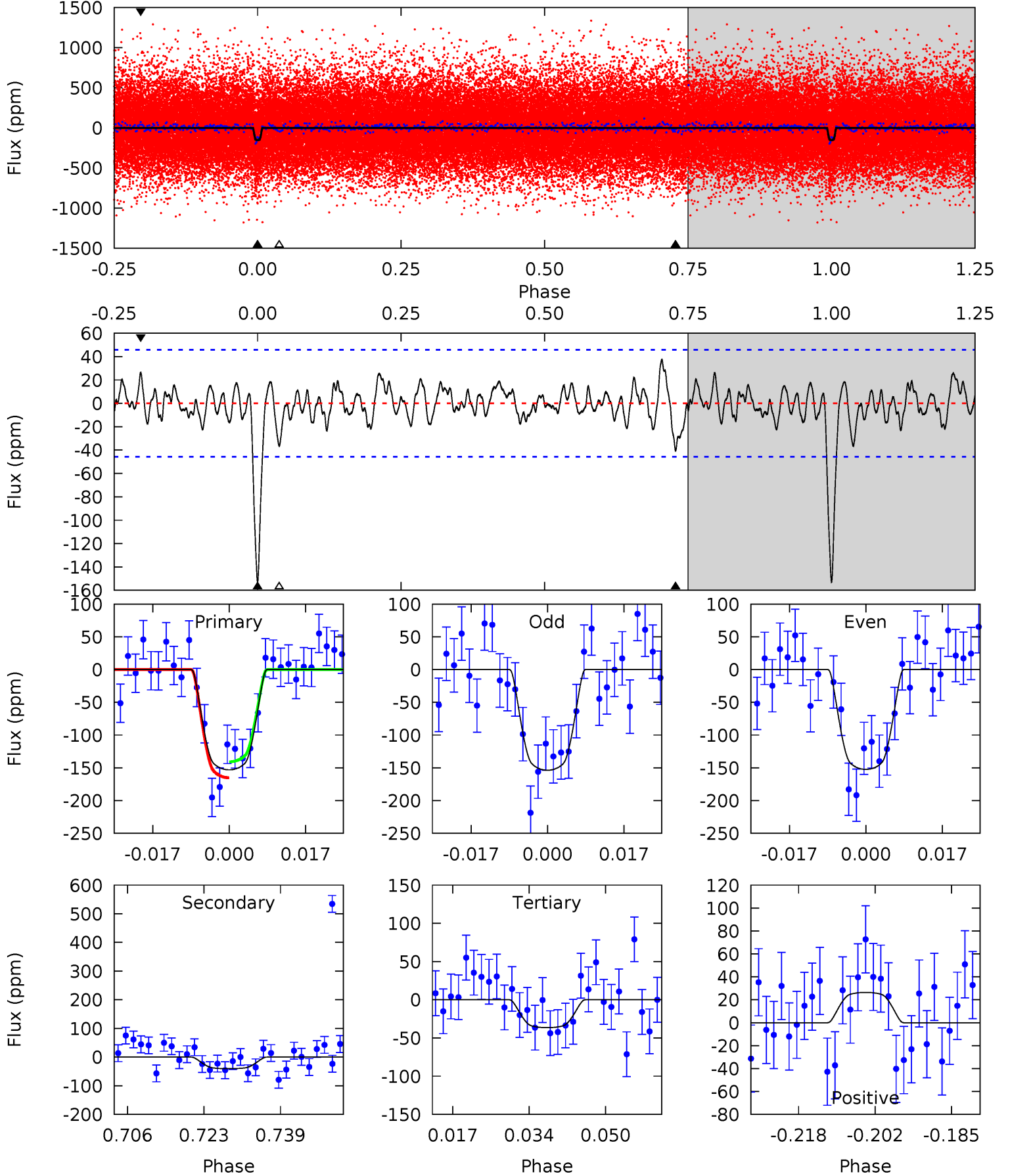
TCE 003848966-01 P= 29.767909 Days  $T_0=155.511914$  (BKJD)



# DV Model-Shift Uniqueness Test

003848966-01,  $P = 29.767695$  Days,  $E = 125.748876$  Days

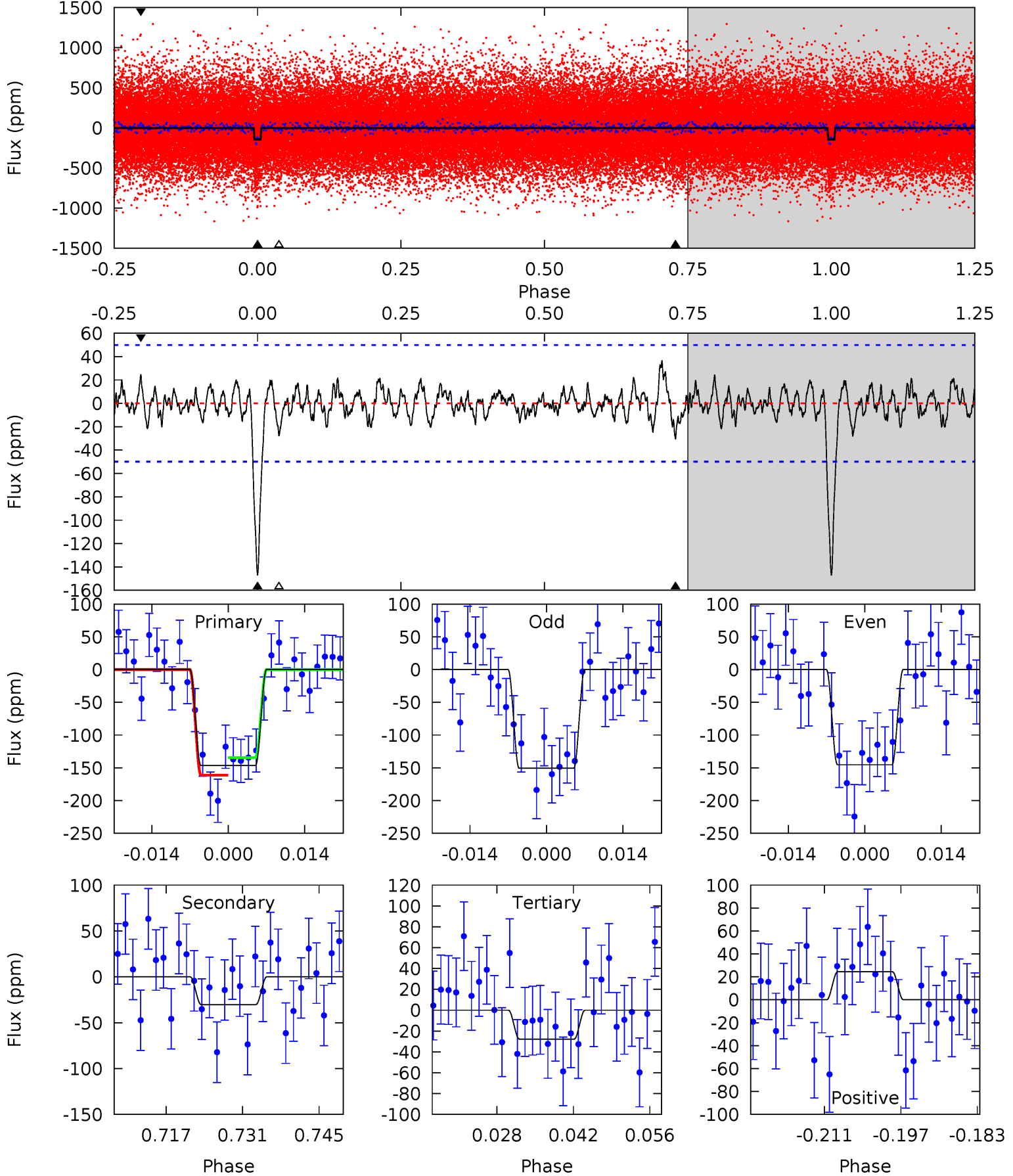
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.5	4.35	3.93	2.84	4.93	2.39	1.20	12.5	13.6	0.43	1.51	0.07	0.95	0.20	1.32



# Alt Model-Shift Uniqueness Test

003848966-01,  $P = 29.767909$  Days,  $E = 125.744005$  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
14.6	3.01	2.77	2.43	4.96	2.46	0.95	11.8	12.1	0.24	0.58	0.27	0.99	0.20	1.32





### Stellar Parameters For KIC 003848966

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5640^{+76}_{-84}$	$3.679^{+0.245}_{-0.105}$	$0.120^{+0.150}_{-0.150}$	$2.916^{+0.531}_{-0.986}$	$1.479^{+0.153}_{-0.358}$	$0.084^{+0.151}_{-0.028}$
	+1%/-1%	+7%/-3%	+125%/-125%	+18%/-34%	+10%/-24%	+180%/-34%
Source	SPE90	SPE90	SPE90	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 003848966-01 / KOI 3389.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-40 \pm 9$	$4.90^{+0.78}_{-0.90}$	$1266^{+67}_{-99}$	$3887^{+191}_{-178}$	$42^{+20}_{-12}$
Alt.	$-30 \pm 10$	$3.85^{+0.57}_{-0.72}$	$1272^{+67}_{-95}$	$4042^{+263}_{-268}$	$51^{+29}_{-19}$

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

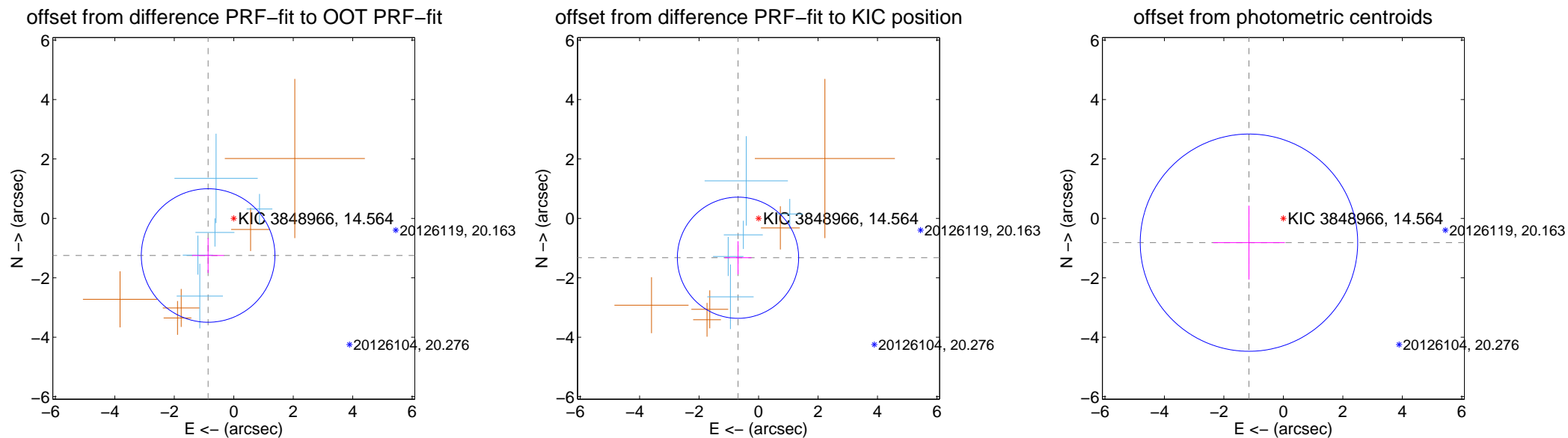
## DV Centroid Data

Supplemental centroid analysis for 003848966-01. Kepler magnitude: 14.56. Transit SNR 12.24

There are 5 quarters with good PRF difference image offsets

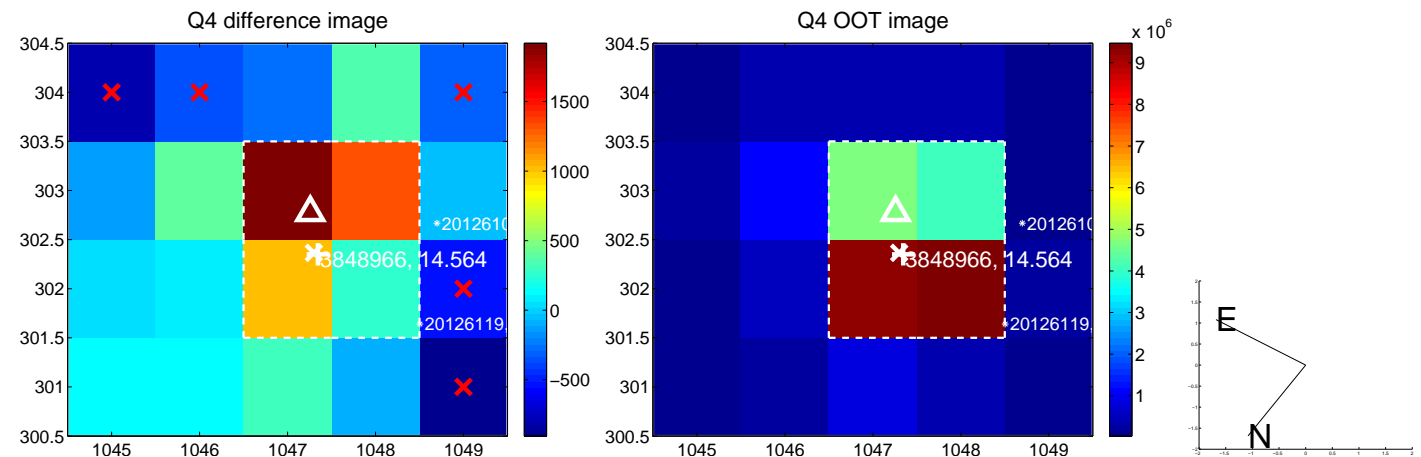
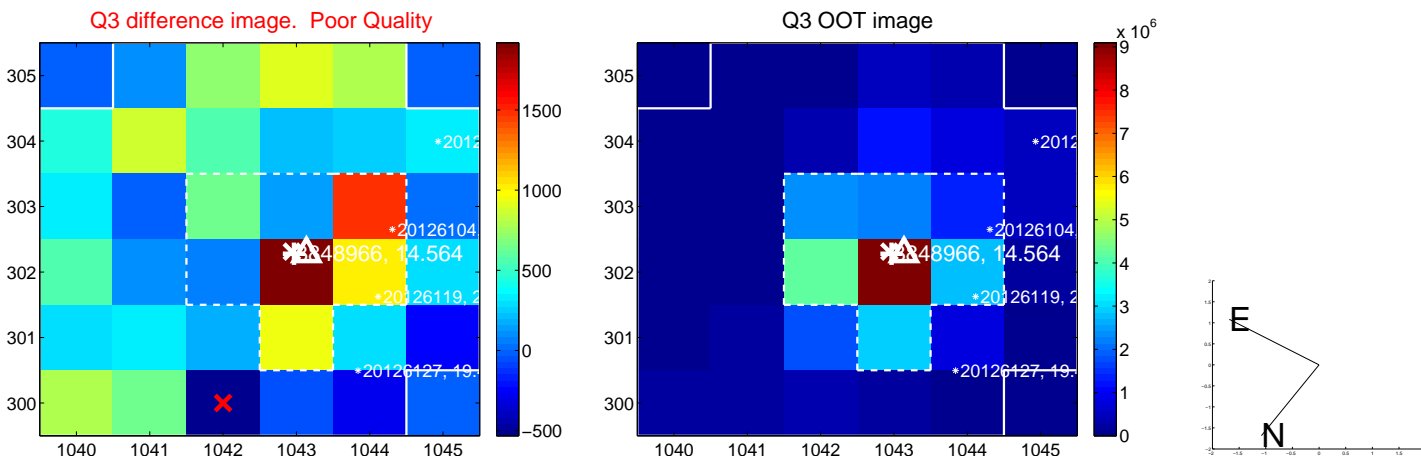
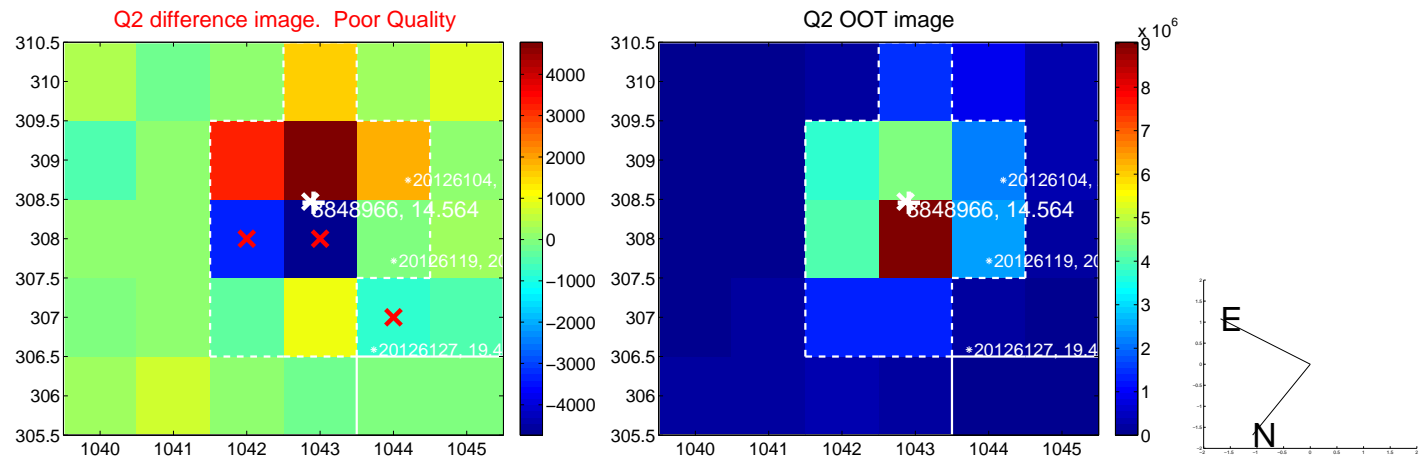
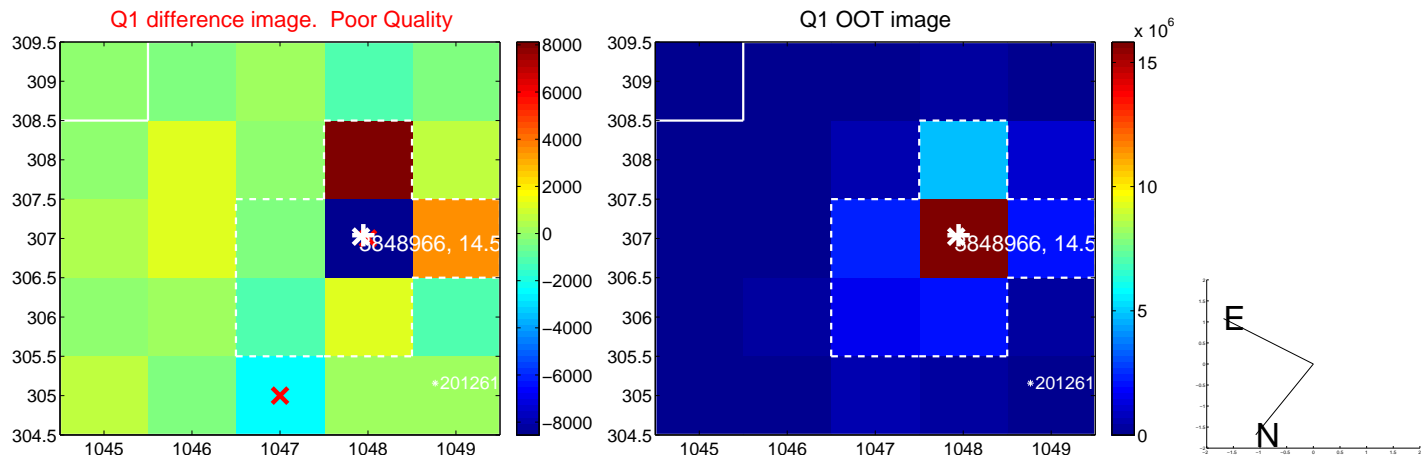
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.519 \pm 0.749$	2.03	$0.863 \pm 0.535$	$-1.250 \pm 0.586$
PRF-fit source offset from KIC position	$1.495 \pm 0.680$	2.20	$0.691 \pm 0.454$	$-1.325 \pm 0.559$
photometric centroid source offset	$1.42 \pm 1.22$	1.16	$1.16 \pm 1.21$	$-0.82 \pm 1.24$

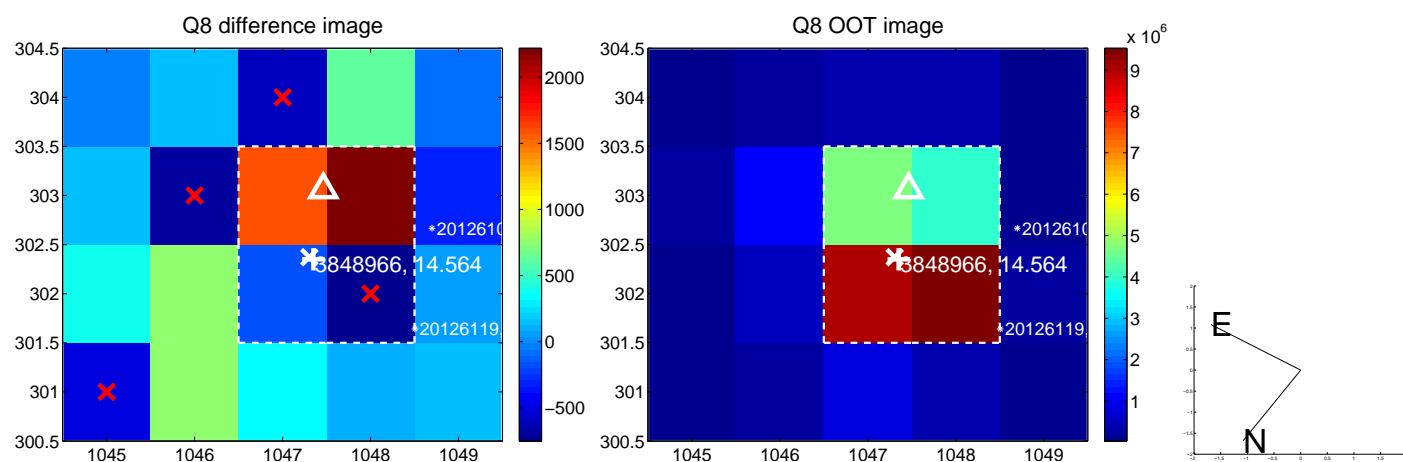
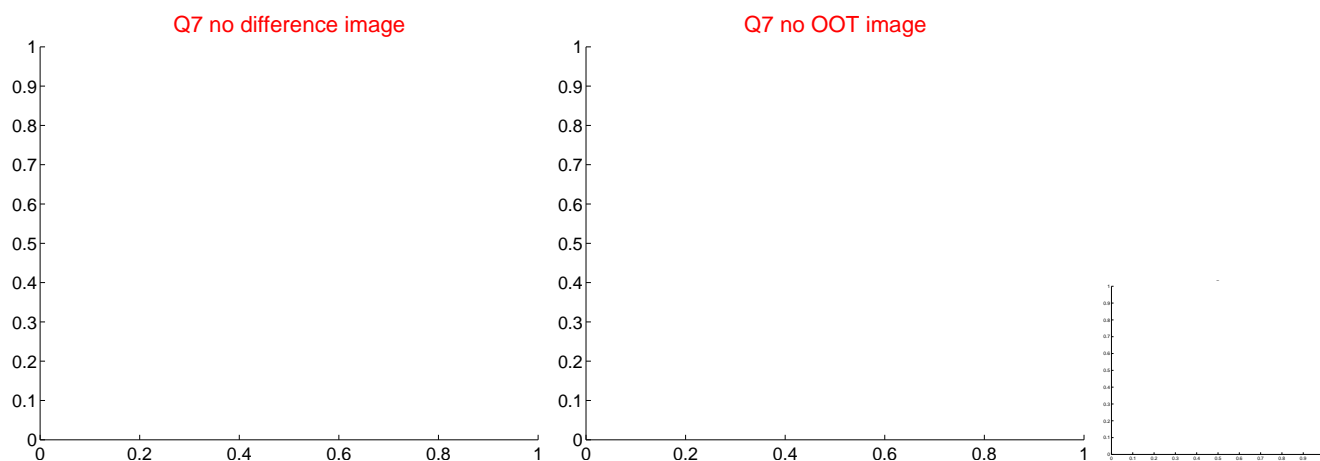
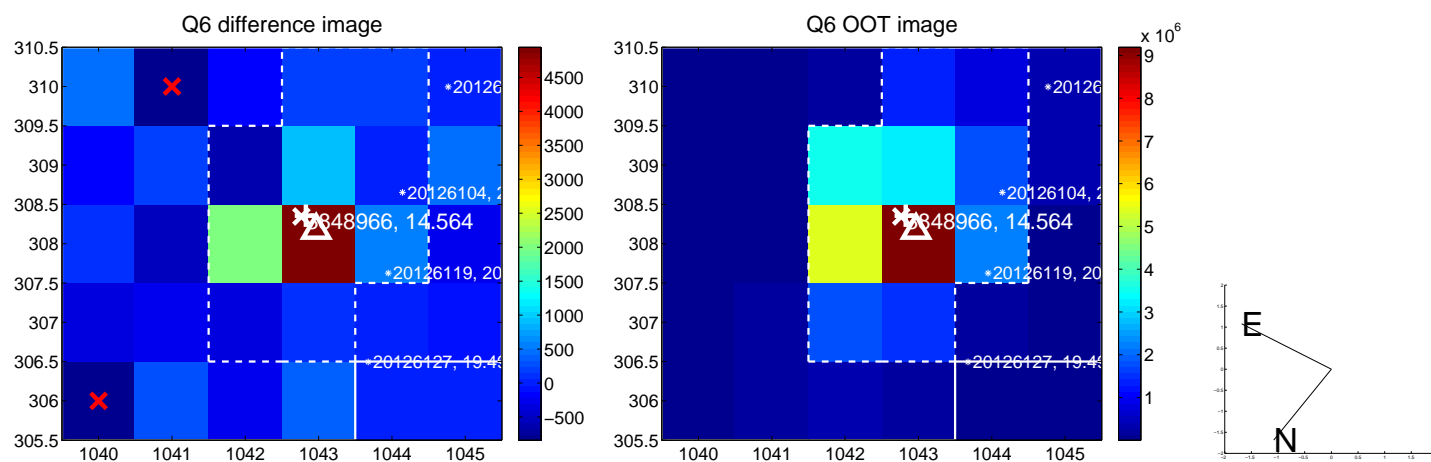
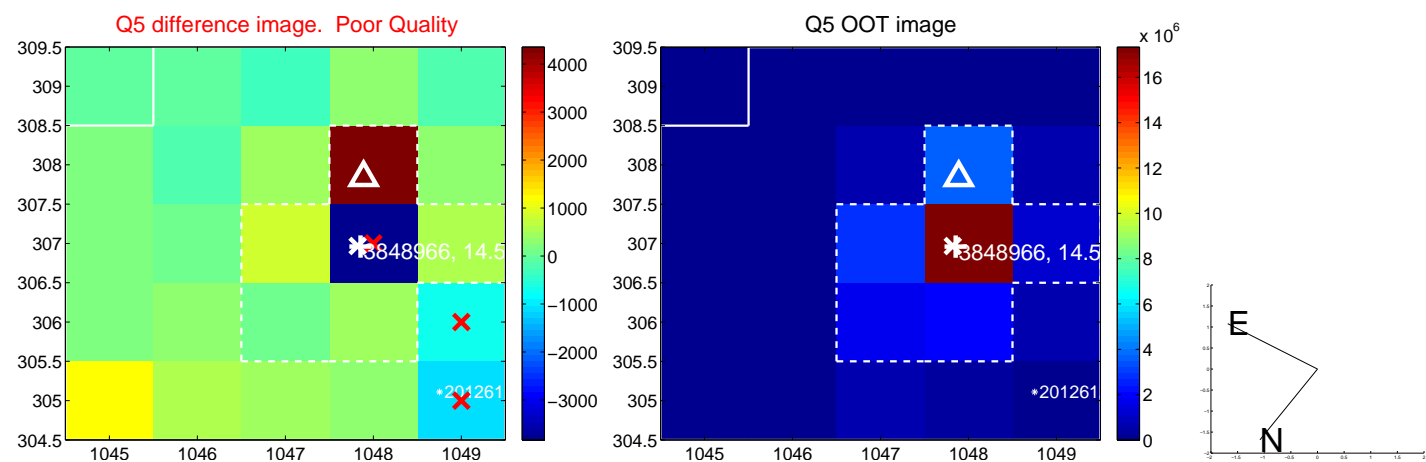


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

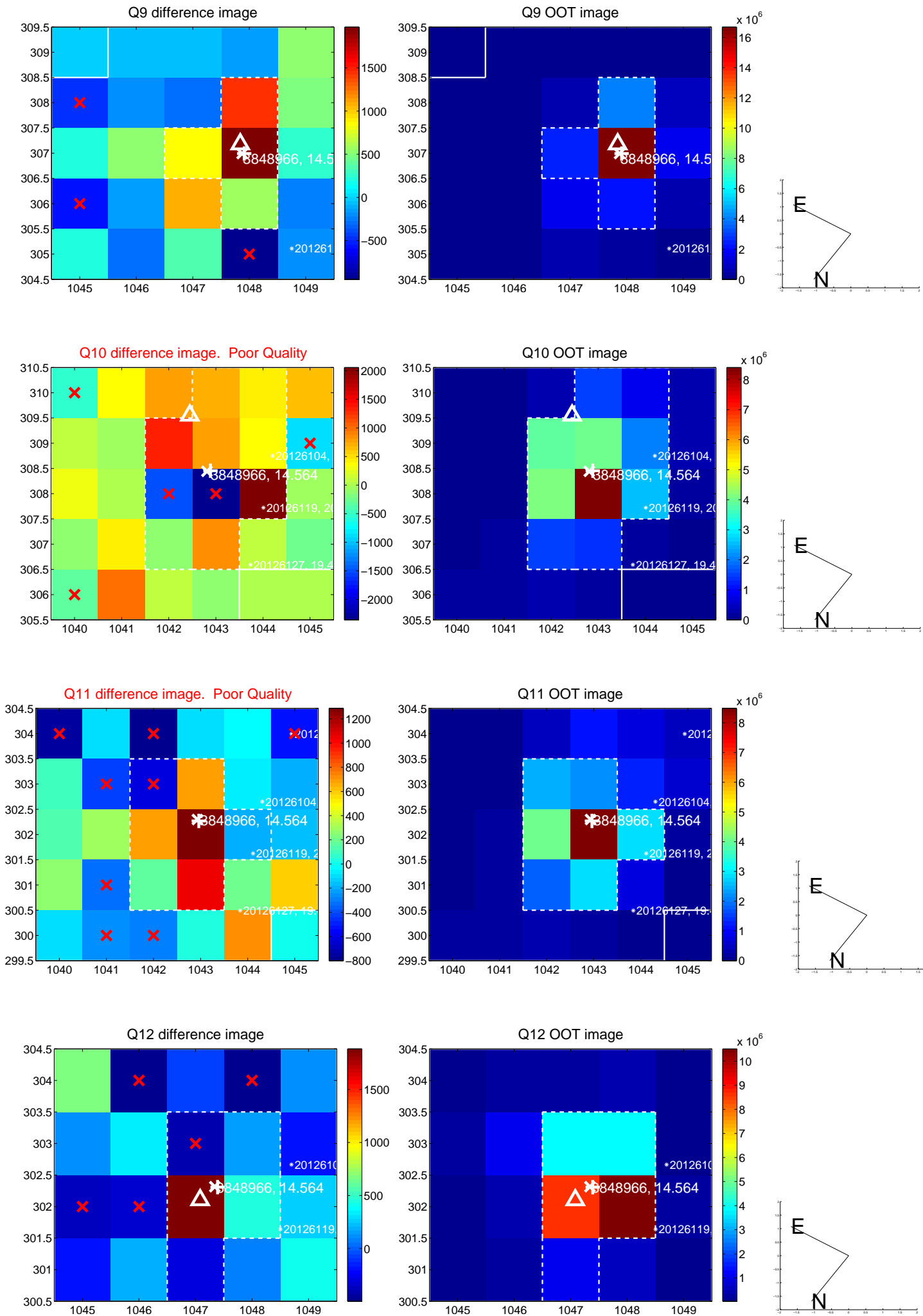


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

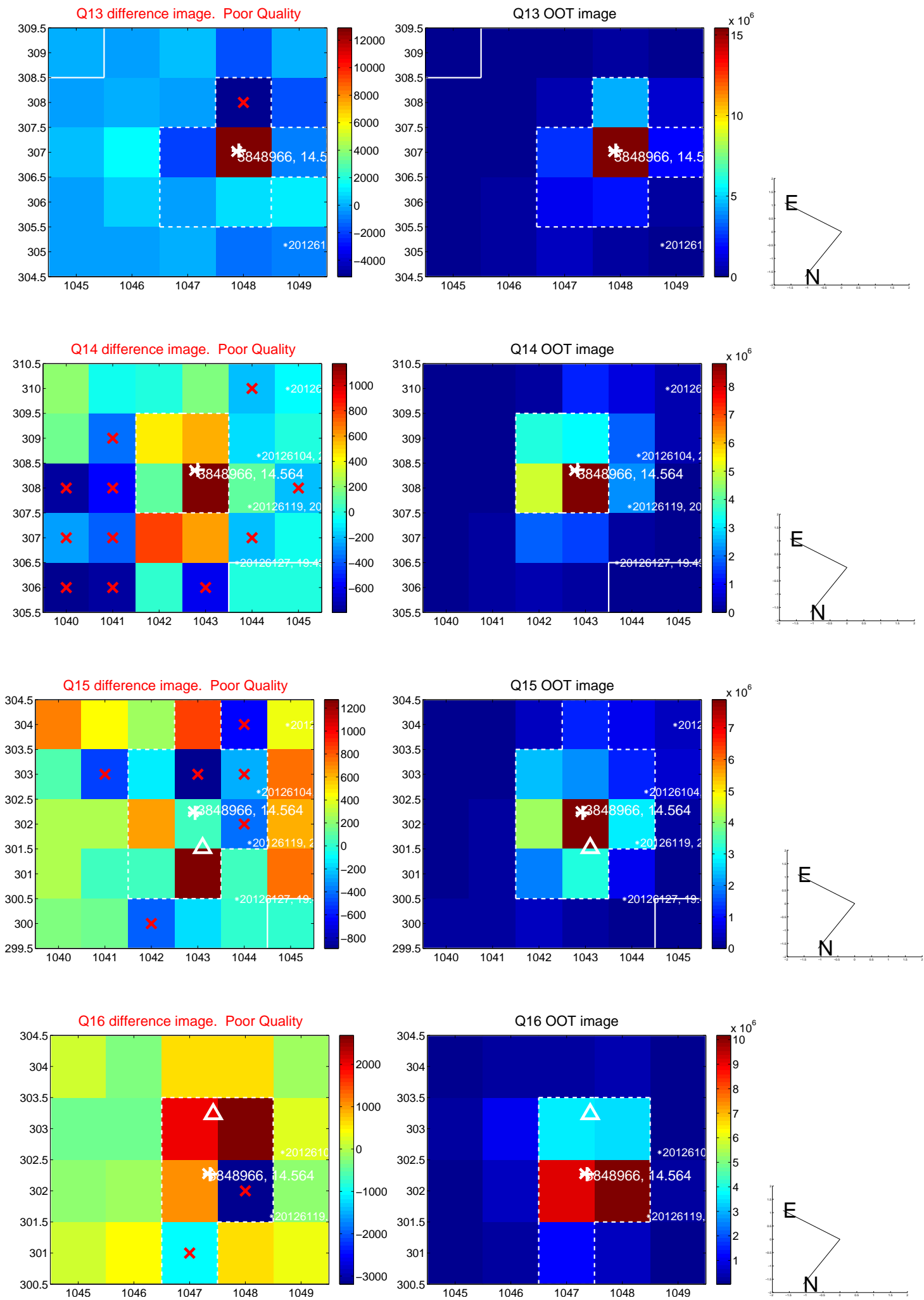




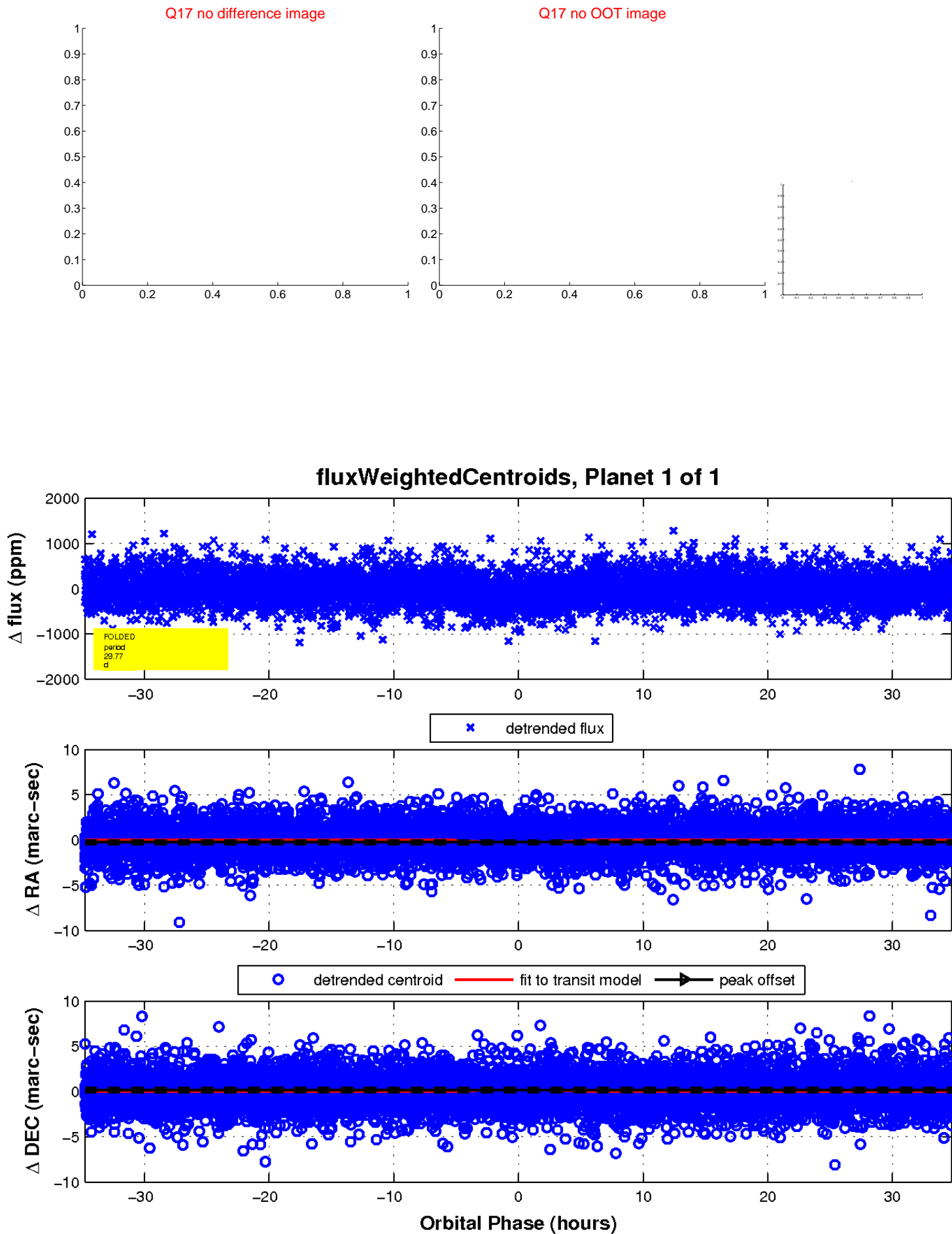
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UKIRT Image

Declination

