

# KIC 005129989

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005129989-01	OBS	No	0.722420	132.224194	139.7	1.052	8.0	8.7	0.73	5166	1.09	1739.99

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005129989-01	OBS	FP	0.00	1	0	1	0	MOD_NONUNIQ_ALT—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.

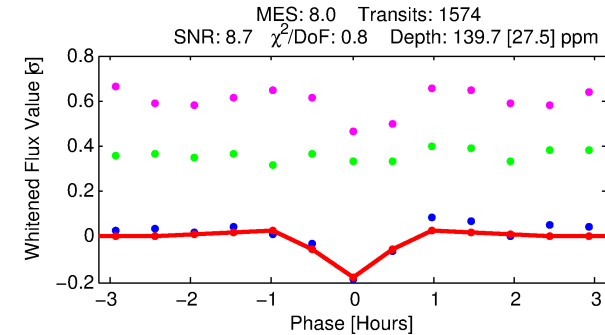
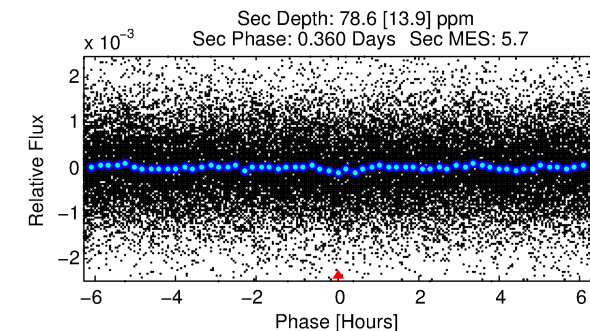
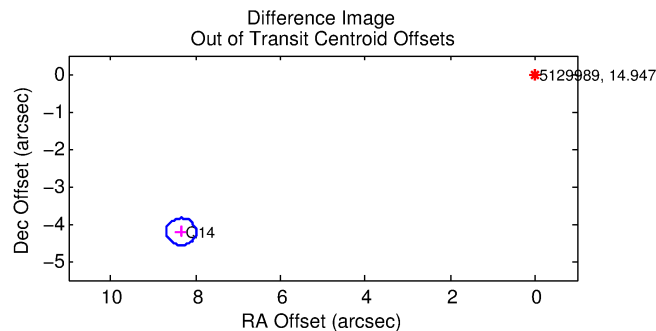
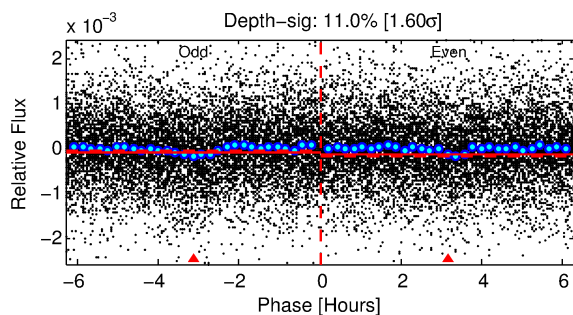
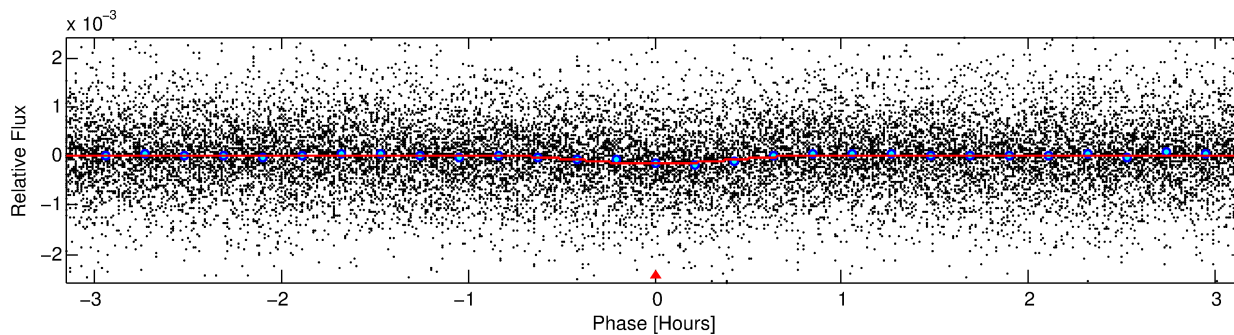
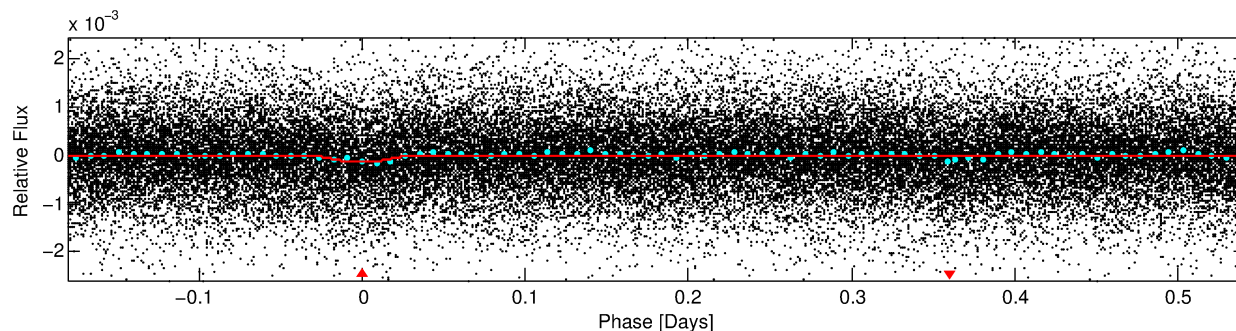
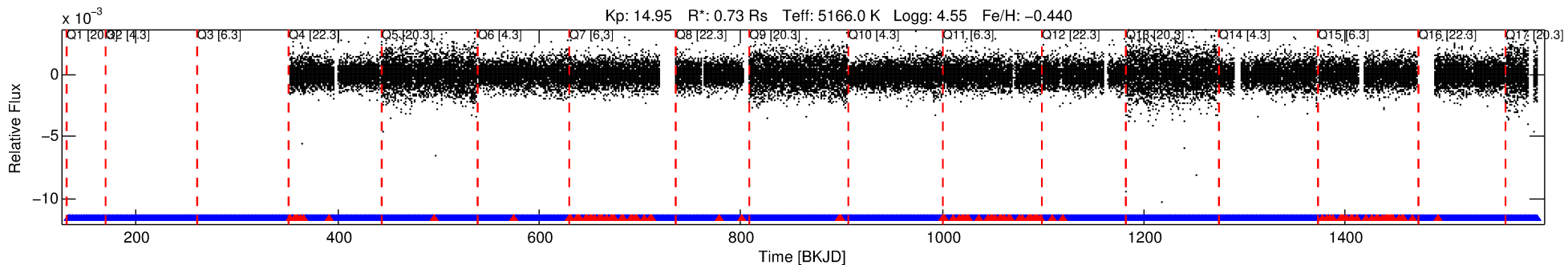
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005129989-01

No Significant Match Found

# DV One-Page Summary

KIC: 5129989 Candidate: 1 of 1 Period: 0.722 d



## DV Fit Results:

Period = 0.72242 [0.00001] d  
Epoch = 132.2242 [0.0018] BKJD  
Rp/R\* = 0.0137 [0.0113]  
a/R\* = 2.30 [6.84]  
b = 0.93 [0.53]  
Seff = 1739.99 [368.83]  
Teq = 1647 [87] K  
Rp = 1.09 [0.91] Re  
a = 0.0139 [0.0014] AU  
Ag = 7.07 [11.77] [0.52 $\sigma$ ]  
Teff = 4152 [1726] K [1.45 $\sigma$ ]

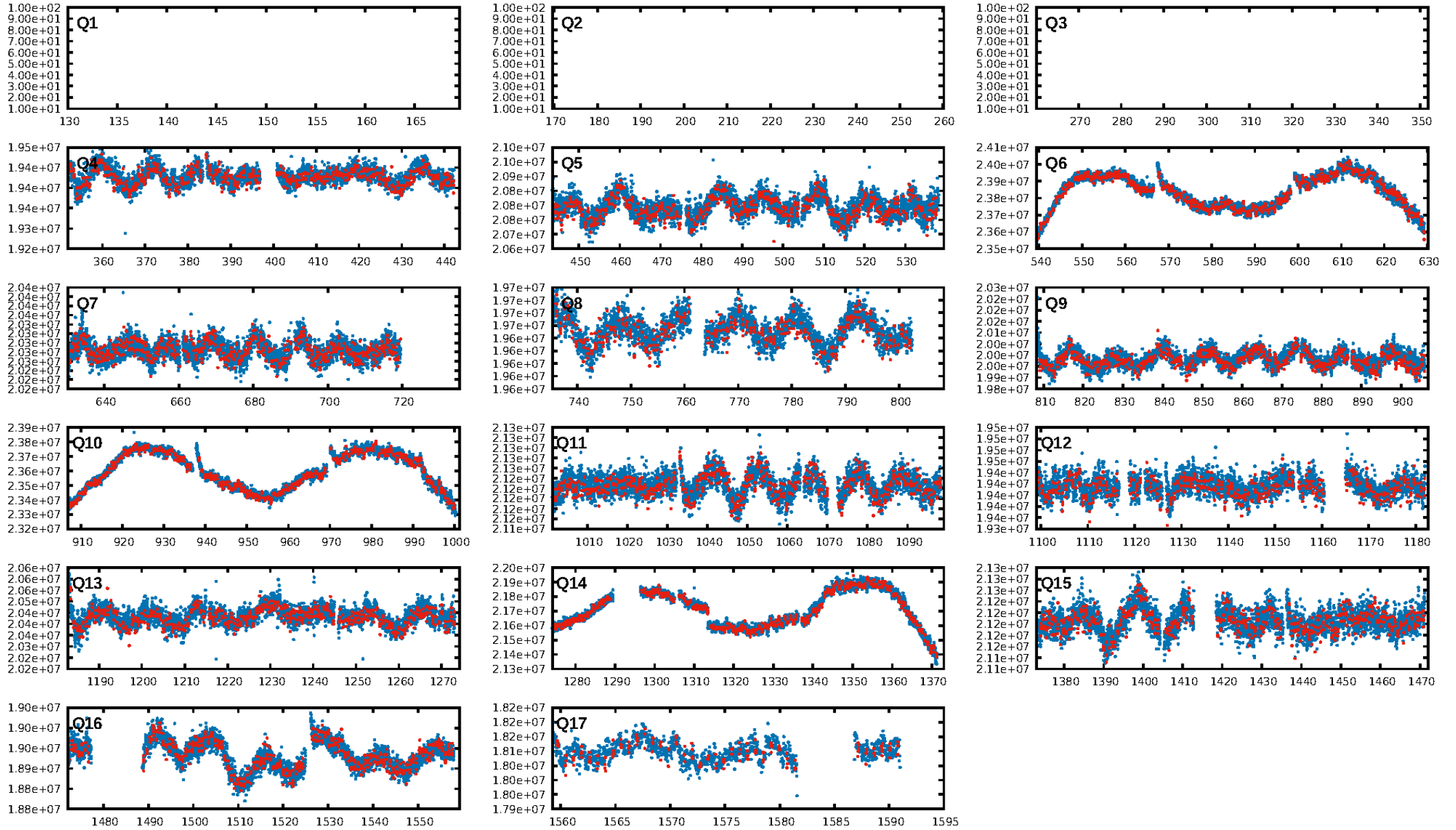
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.02e-15  
RollingBand-fgt: 0.93 [1432/1537]  
GhostDiagnostic-chr: 0.2766  
Centroid-sig: 0.0%  
Centroid-so: 1.732 arcsec [10.79 $\sigma$ ]  
OotOffset-rm: 9.343 arcsec [78.17 $\sigma$ ]  
KicOffset-rm: 10.509 arcsec [10.84 $\sigma$ ]  
OotOffset-st: 1/0/0/0 [1]  
KicOffset-st: 1/2/4/0 [7]  
DiffImageQuality-fgm: 0.86 [6/7]  
DiffImageOverlap-fno: 1.00 [14/14]

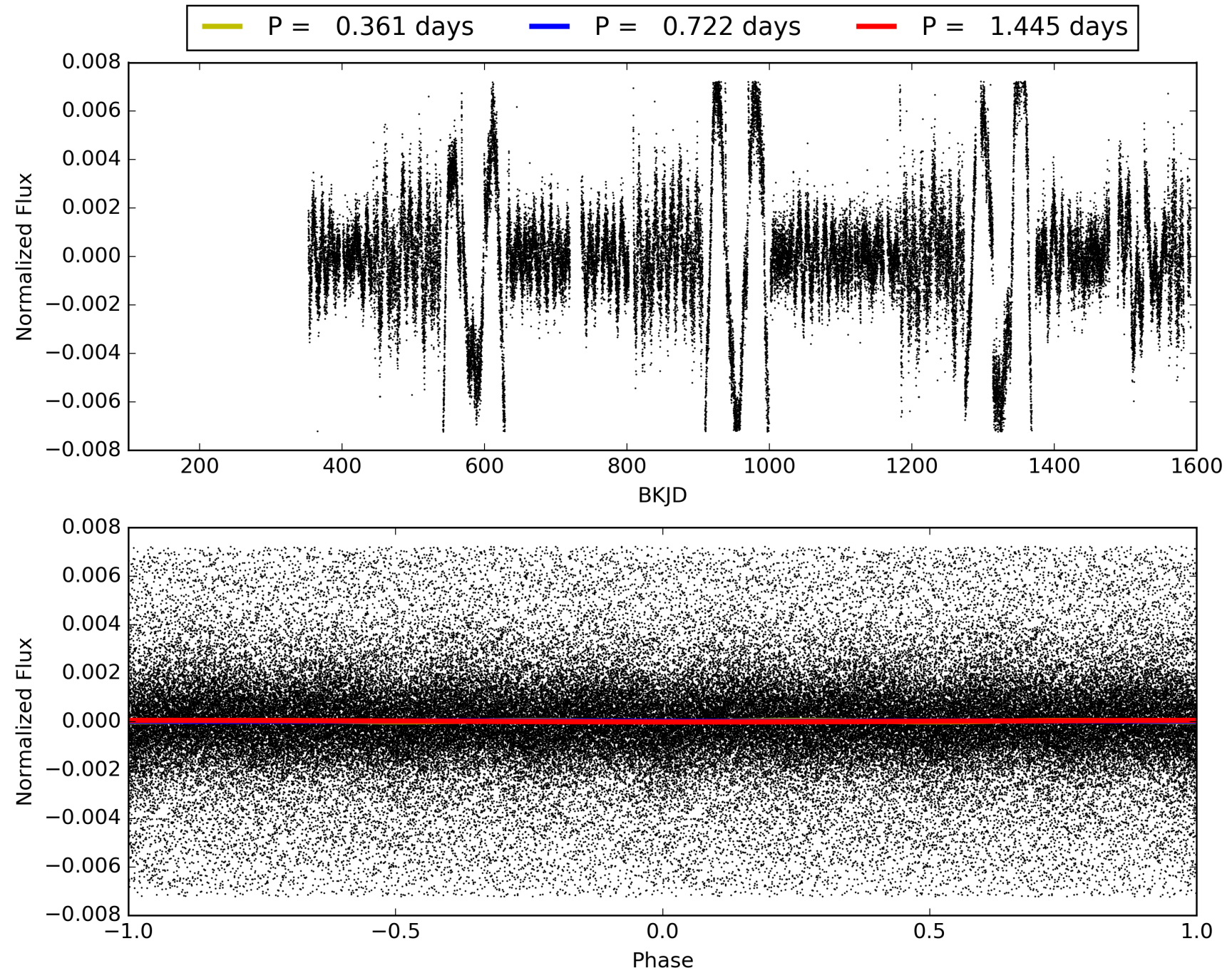
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 13:56:30 Z

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

# TCE 005129989-01, PDC Light Curves



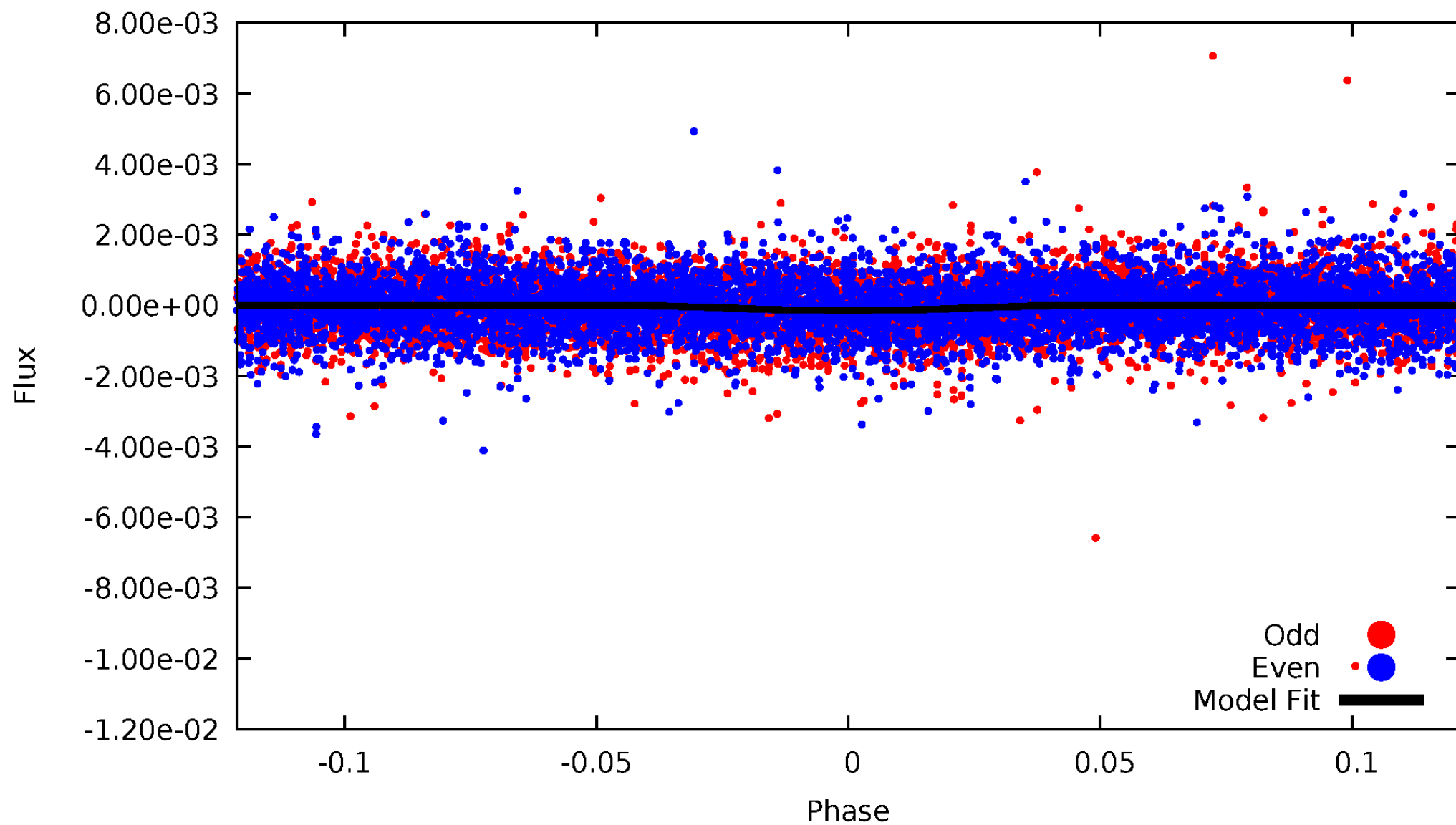
TCE 005129989-01





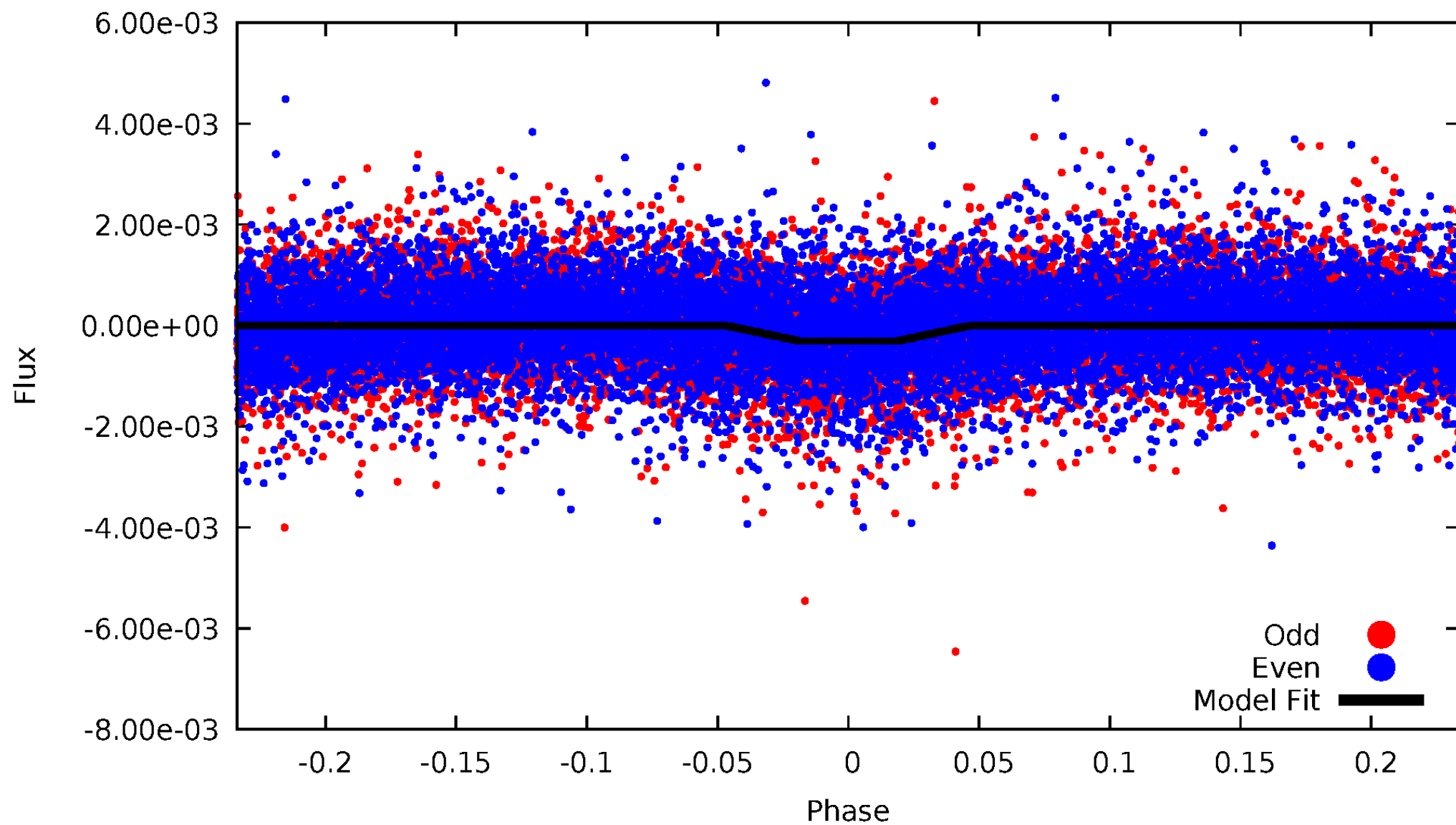
# DV Odd/Even

TCE 005129989-01



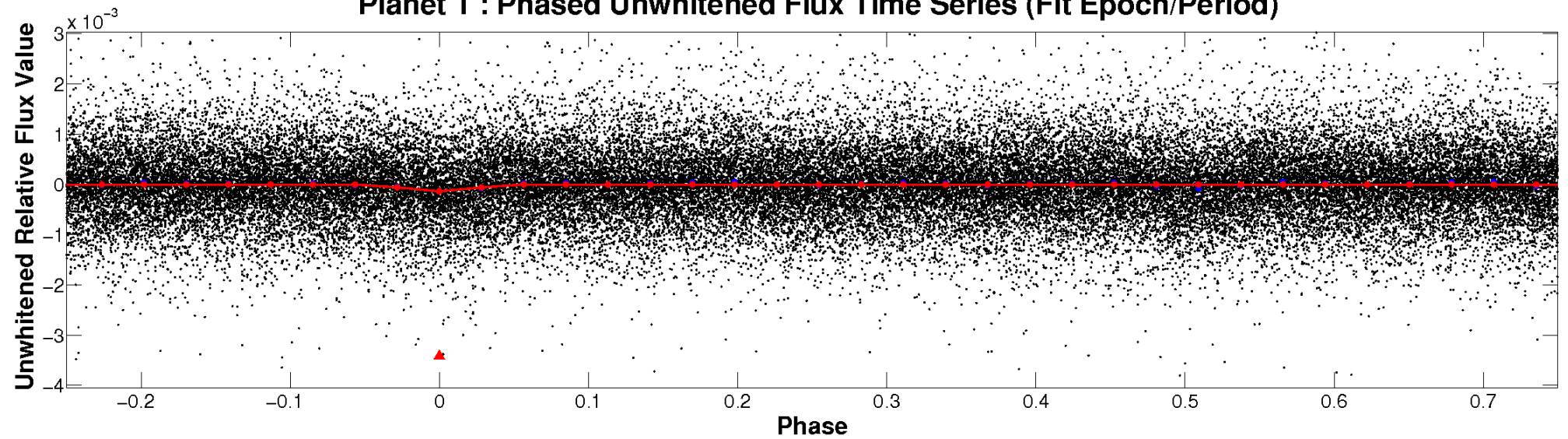
# ALT Odd/Even

TCE 005129989-01

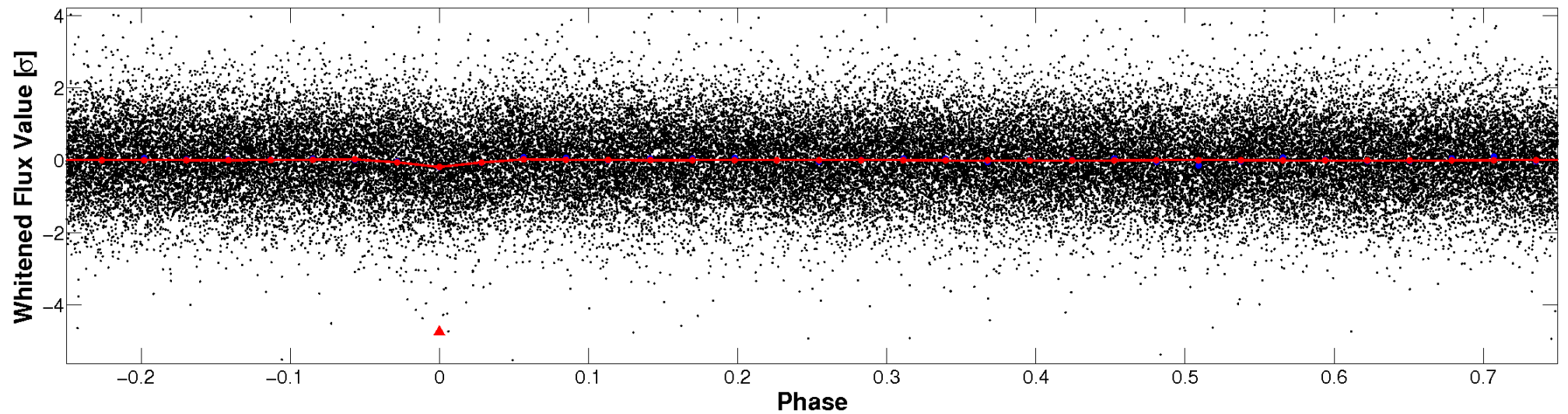


# Non-Whitened Vs. Whitened Light Curve

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

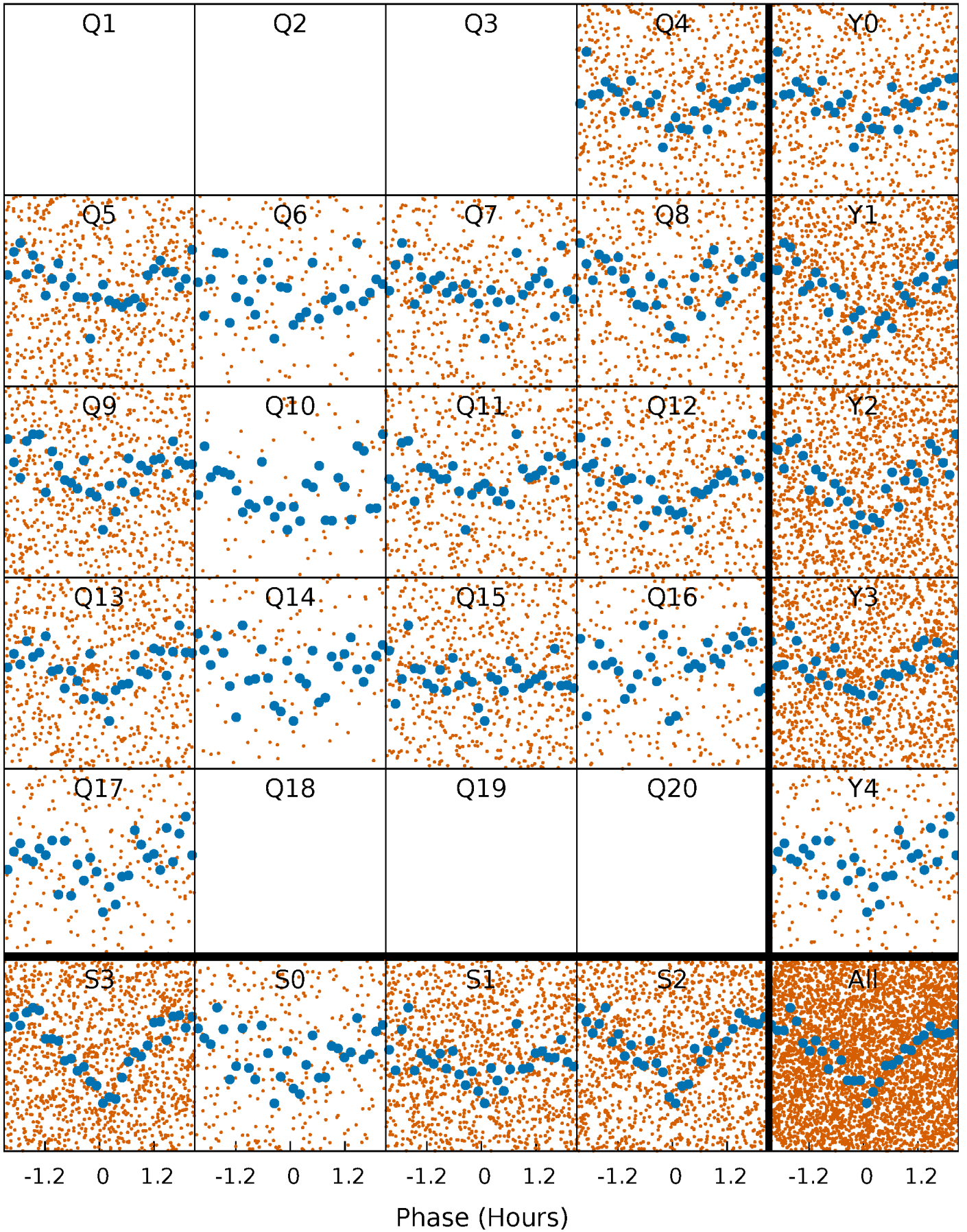


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

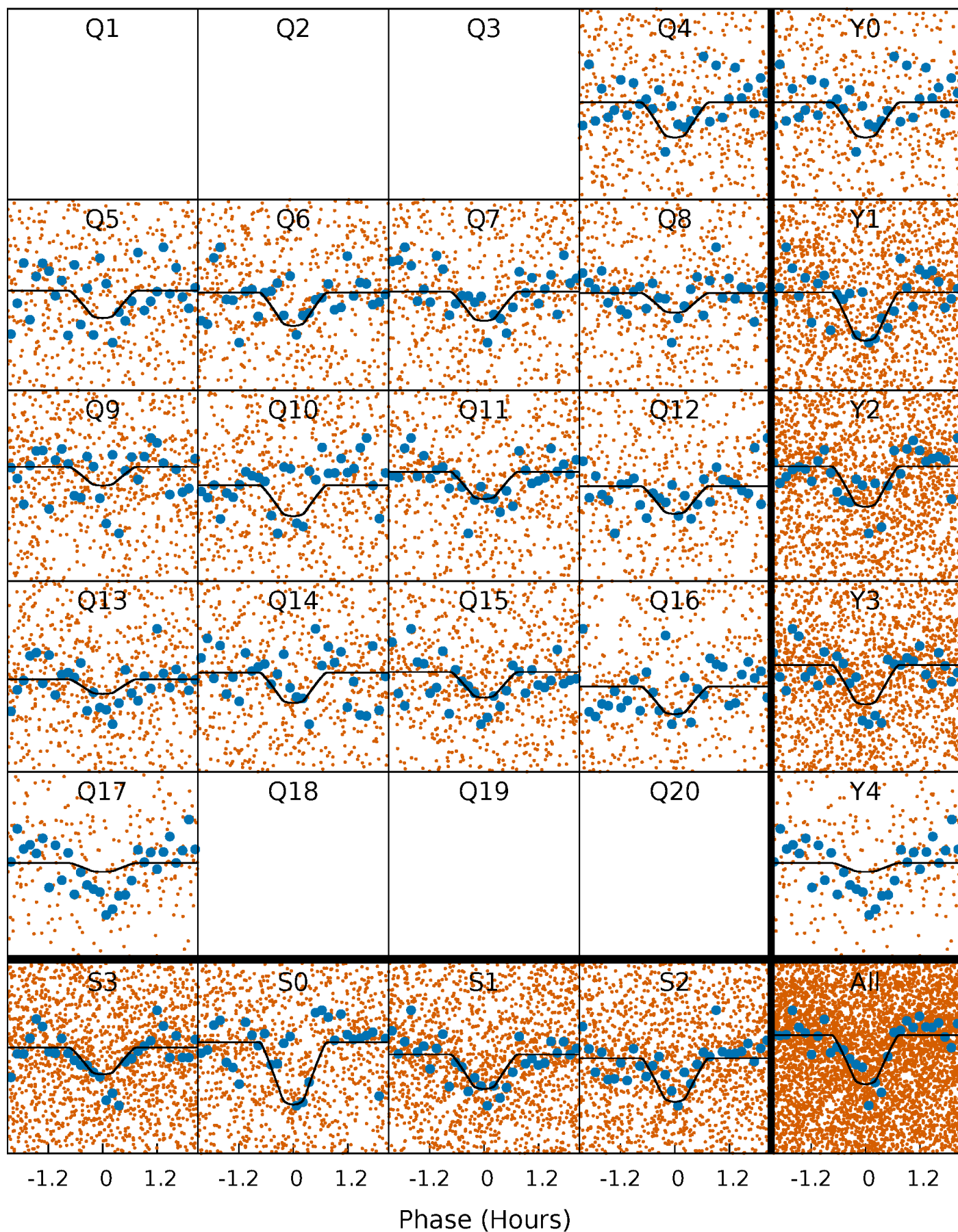
TCE 005129989-01   P= 0.722420 Days    $T_0=132.224194$  (BKJD)





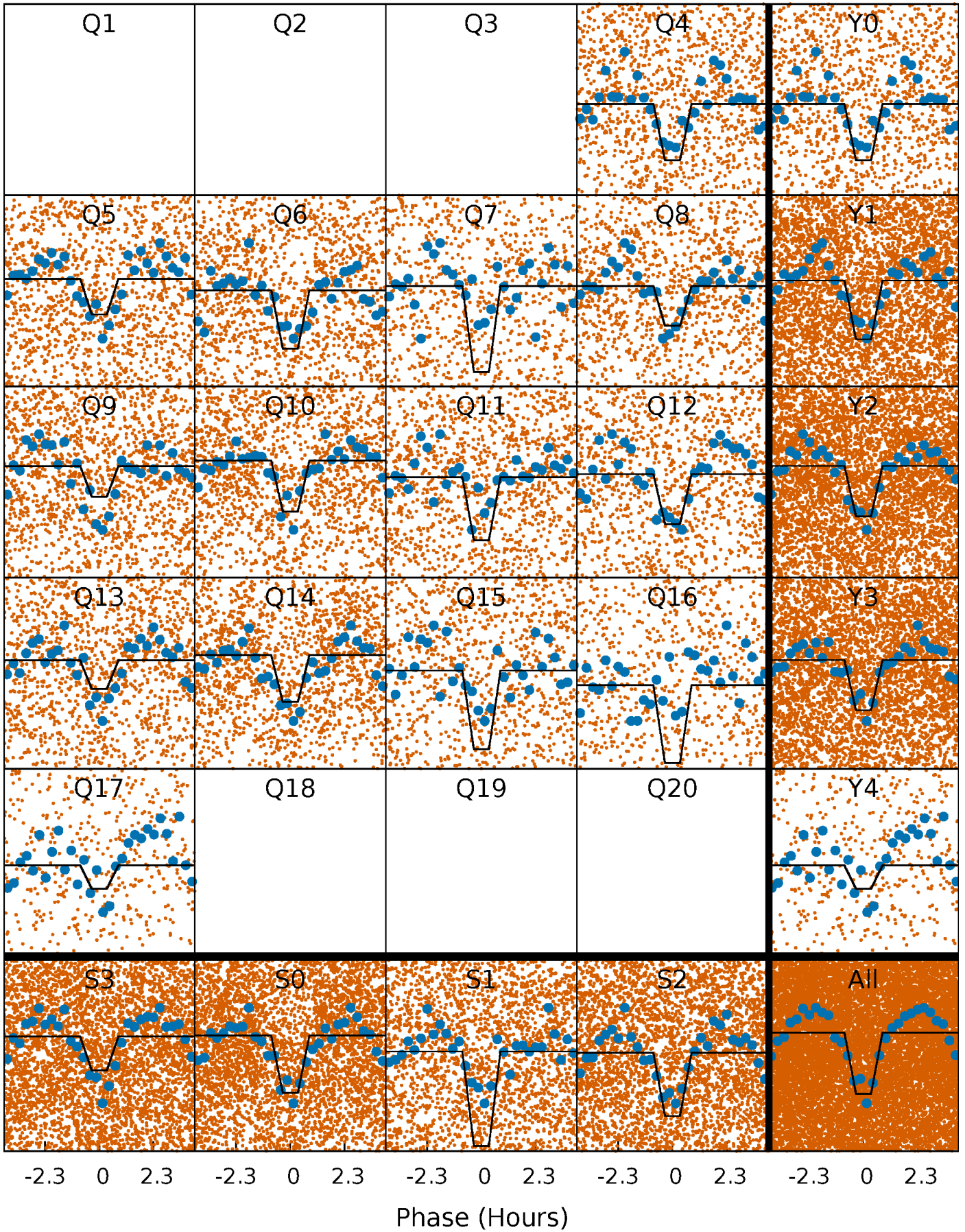
# DV Quarter-Phased Transit Curves

TCE 005129989-01   P= 0.722420 Days    $T_0=132.224194$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

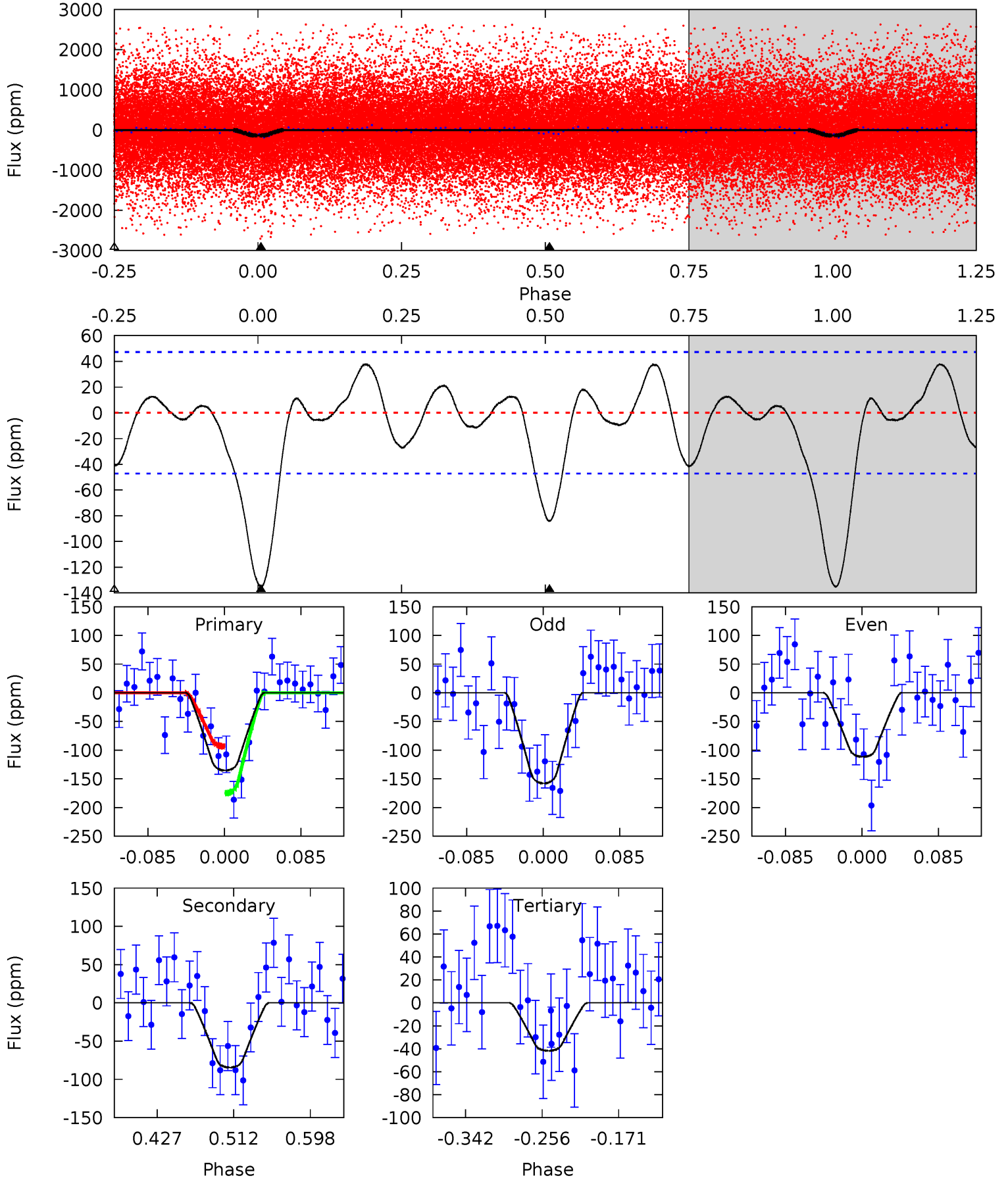
TCE 005129989-01 P= 0.722415 Days  $T_0=132.232872$  (BKJD)



# DV Model-Shift Uniqueness Test

005129989-01, P = 0.722420 Days, E = 132.224194 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	8.22	4.06	0	4.60	1.72	1.71	9.13	13.2	4.16	8.22	2.27	1.08	0.22	3.98

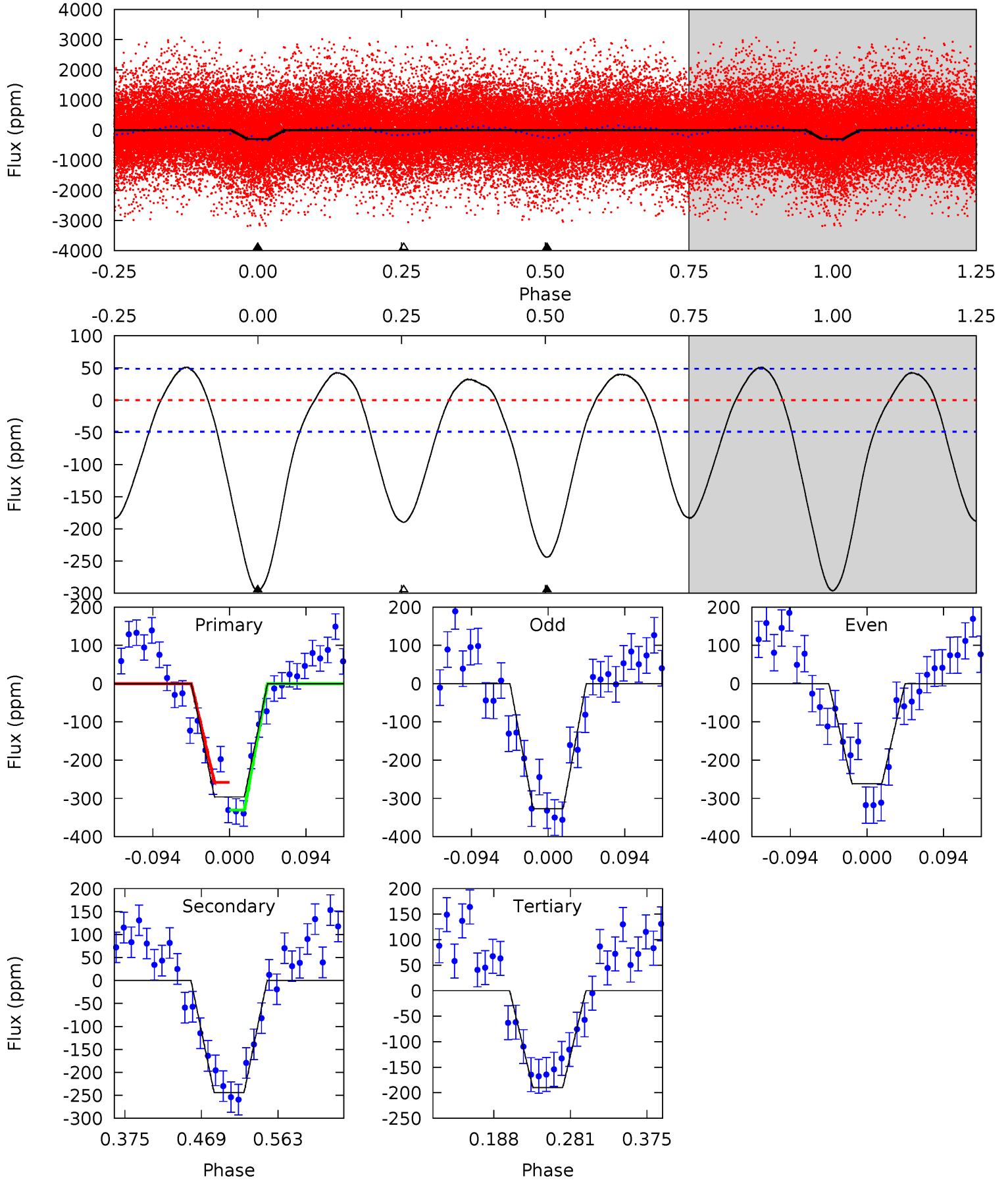




# Alt Model-Shift Uniqueness Test

005129989-01, P = 0.722415 Days, E = 132.232872 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
27.8	22.9	17.8	0	4.58	1.68	7.47	9.97	27.8	5.08	22.9	3.08	1.17	0.15	3.41





### Stellar Parameters For KIC 005129989

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5166^{+181}_{-181}$	$4.554^{+0.091}_{-0.056}$	$-0.440^{+0.300}_{-0.300}$	$0.728^{+0.083}_{-0.075}$	$0.692^{+0.094}_{-0.043}$	$2.523^{+0.863}_{-0.541}$
	+4%/-4%	+2%/-1%	+68%/-68%	+11%/-10%	+14%/-6%	+34%/-21%
Source	KIC0	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 005129989-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-84 \pm 10$	$1.22^{+0.77}_{-0.69}$	$2284^{+106}_{-102}$	$4190^{+1680}_{-734}$	$6.250^{+27.052}_{-3.953}$
Alt.	$-244 \pm 11$	$1.48^{+0.87}_{-0.81}$	$2289^{+102}_{-101}$	$4782^{+2138}_{-803}$	$12^{+46}_{-8}$

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

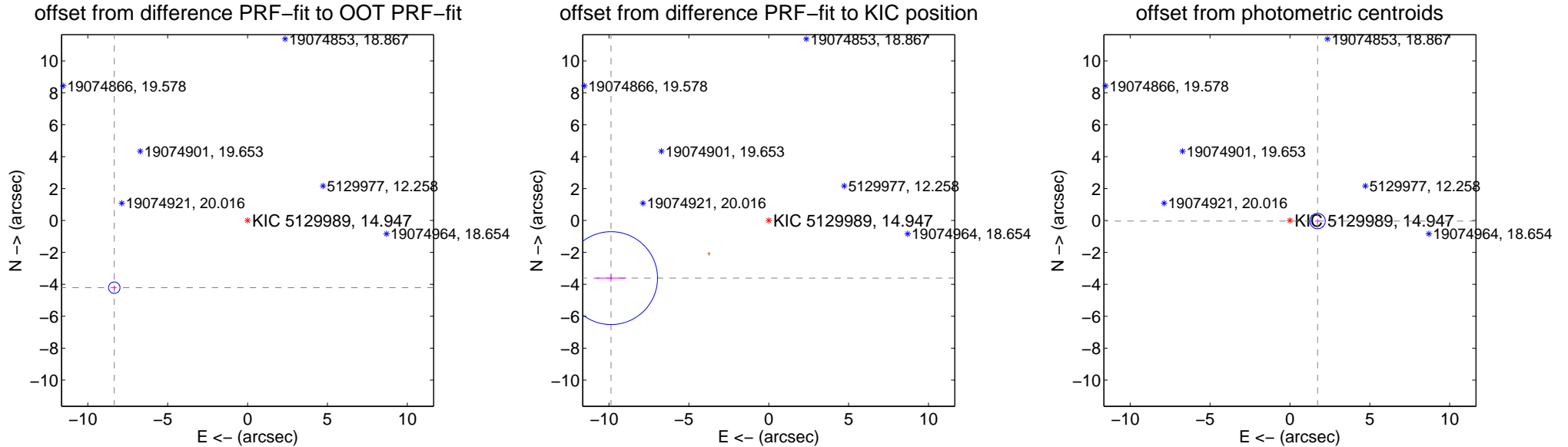
## DV Centroid Data

Supplemental centroid analysis for 005129989-01. Kepler magnitude: 14.95. Transit SNR 8.70

There are 6 quarters with good PRF difference image offsets

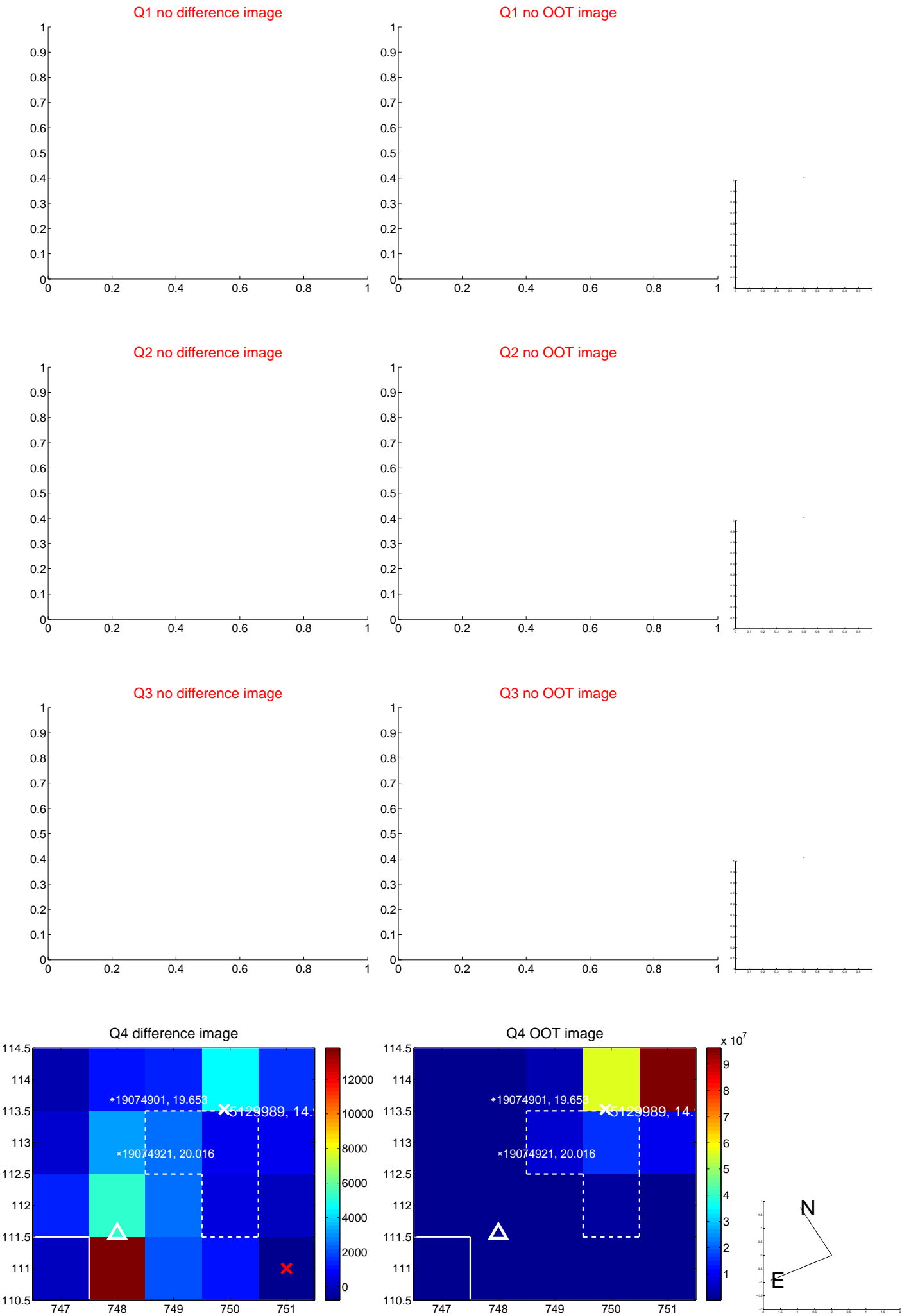
The OOT PRF centroid is offset from the target star catalog position by about 5.07 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	9.343 $\pm$ 0.120	78.17	8.342 $\pm$ 0.115	-4.208 $\pm$ 0.134
PRF-fit source offset from KIC position	10.509 $\pm$ 0.970	10.84	9.869 $\pm$ 0.953	-3.609 $\pm$ 0.229
photometric centroid source offset	1.73 $\pm$ 0.16	10.79	-1.73 $\pm$ 0.16	-0.03 $\pm$ 0.14

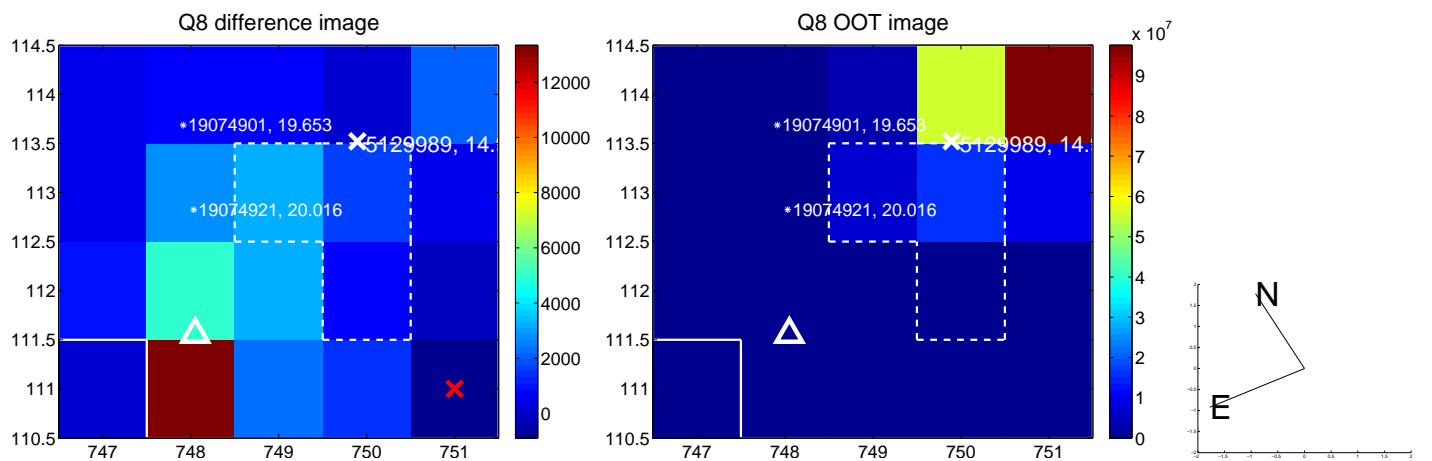
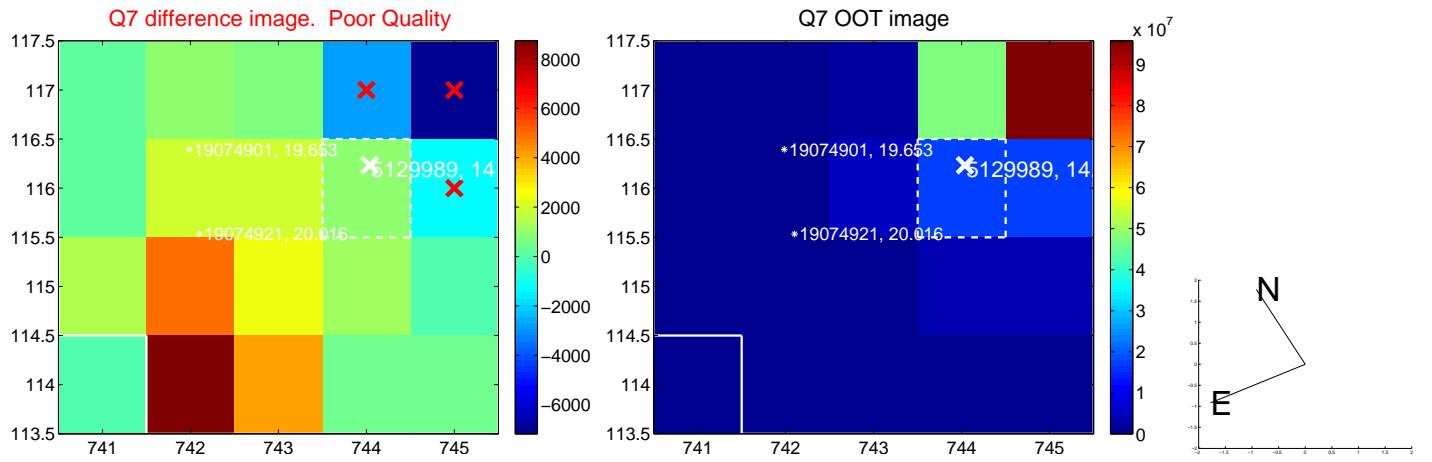
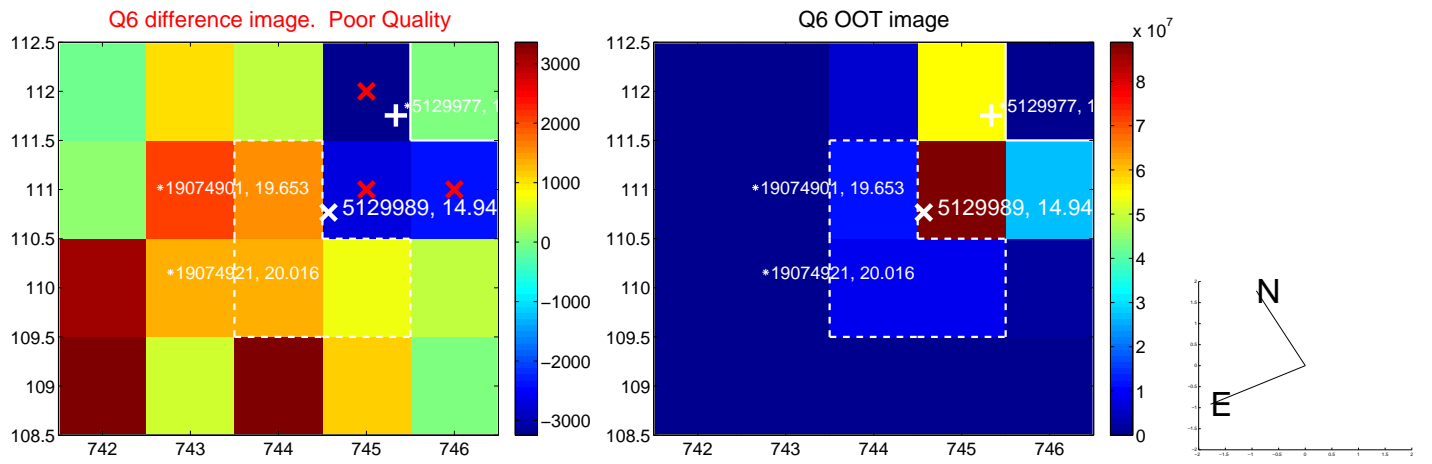
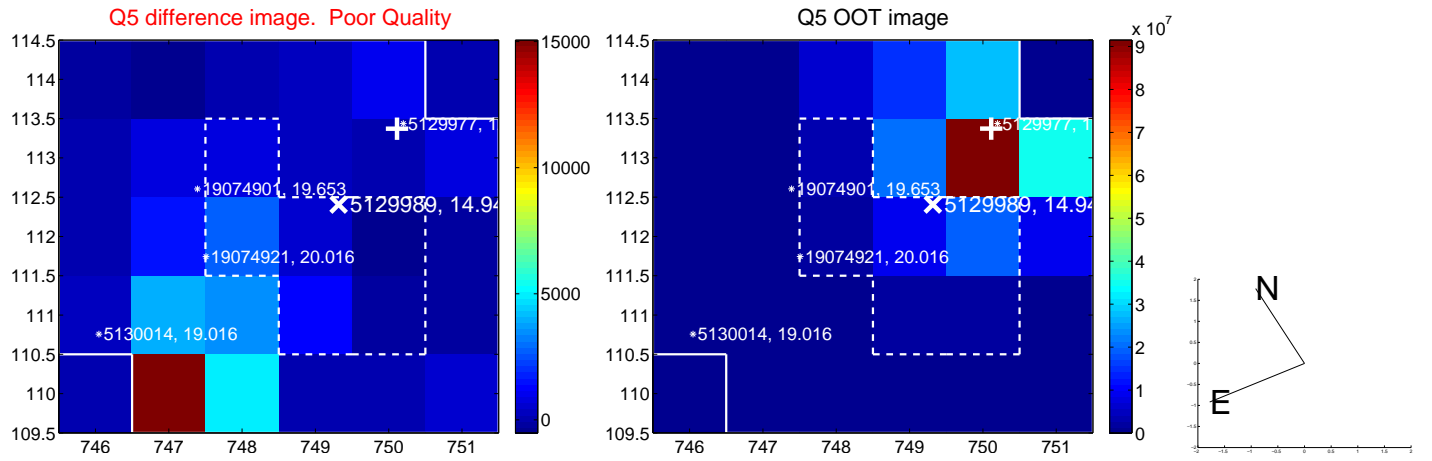


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

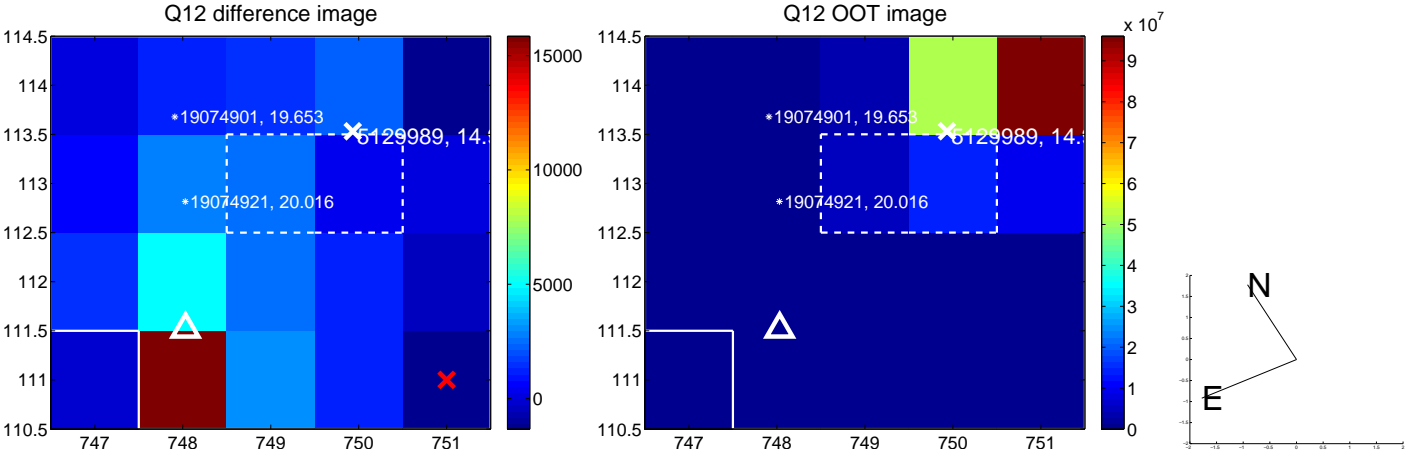
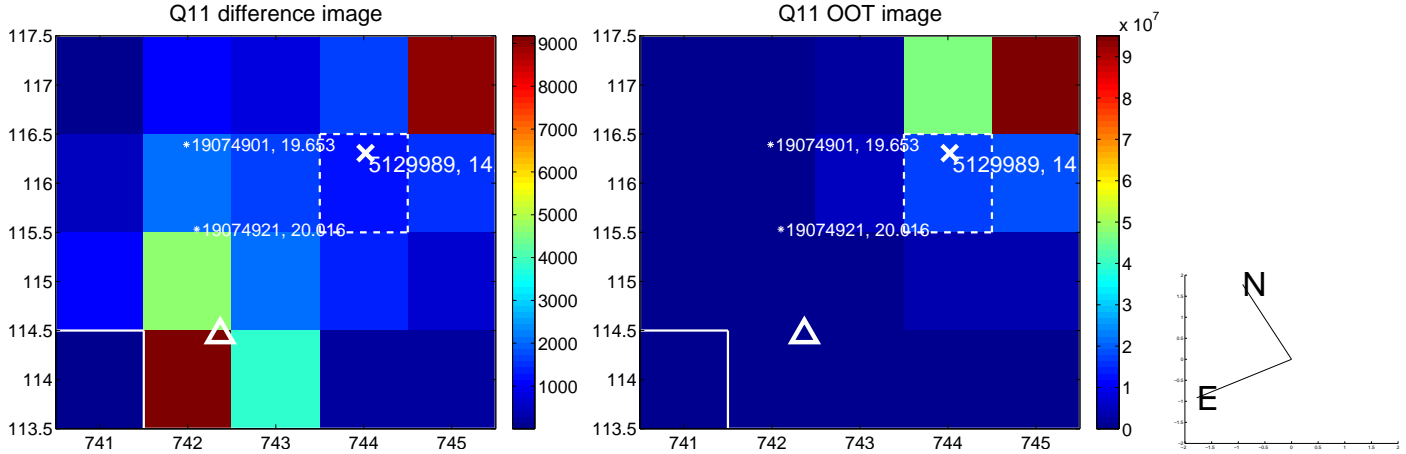
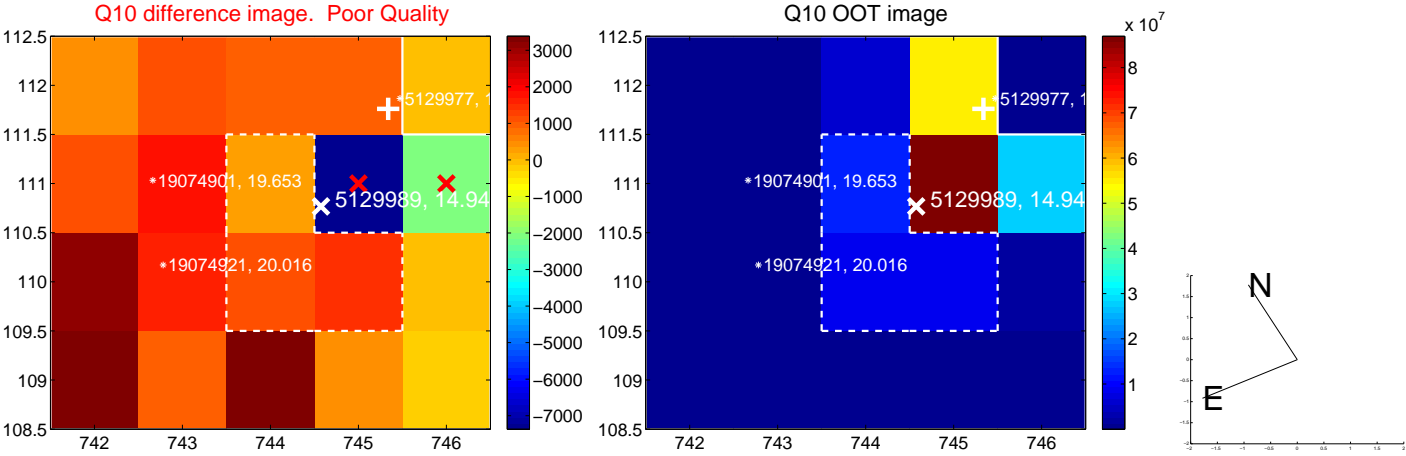
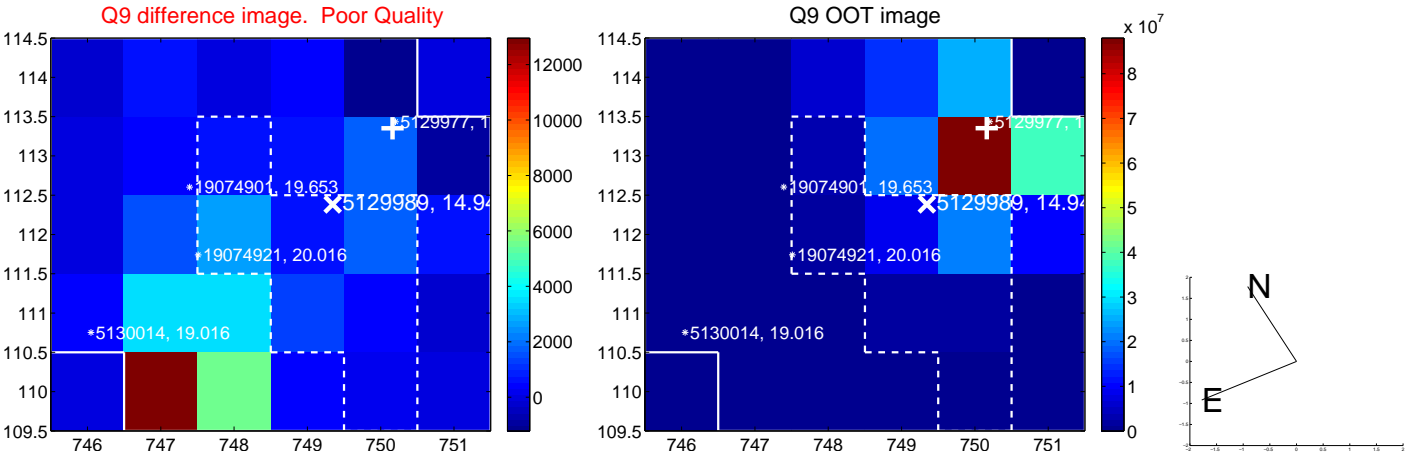


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

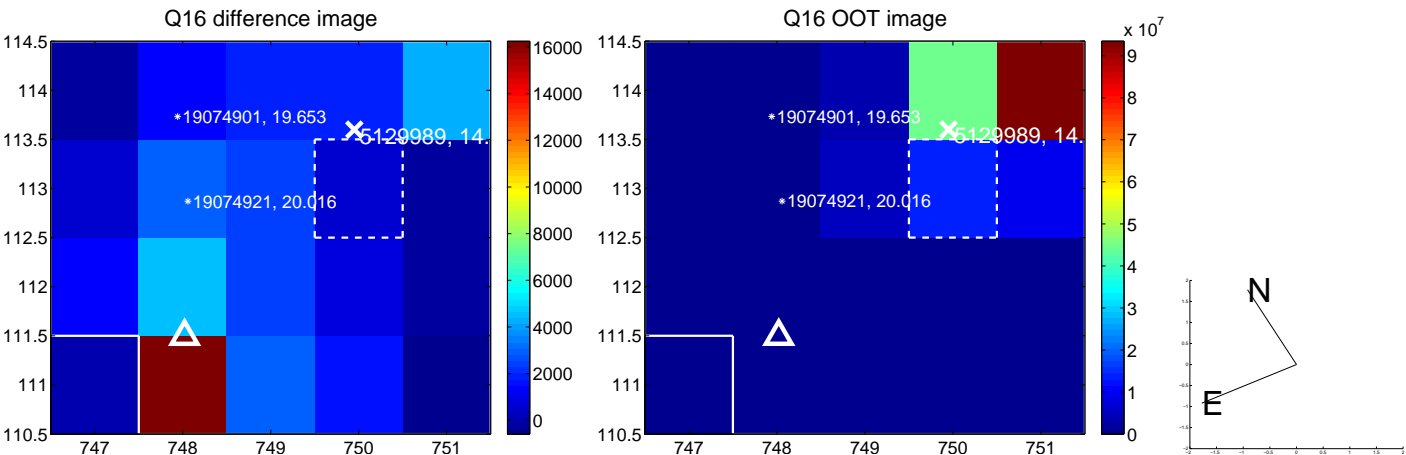
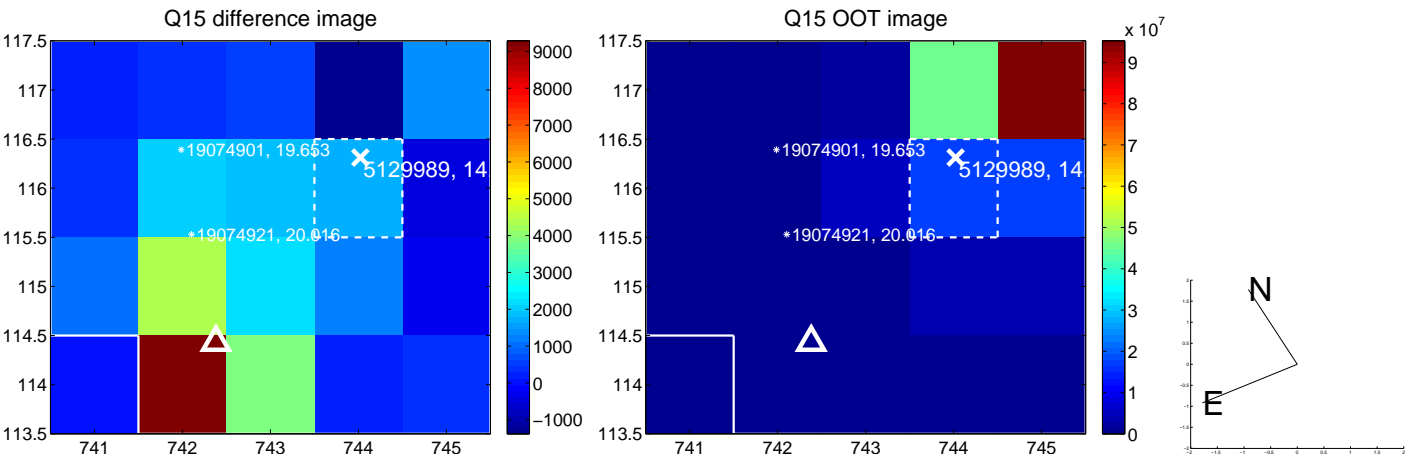
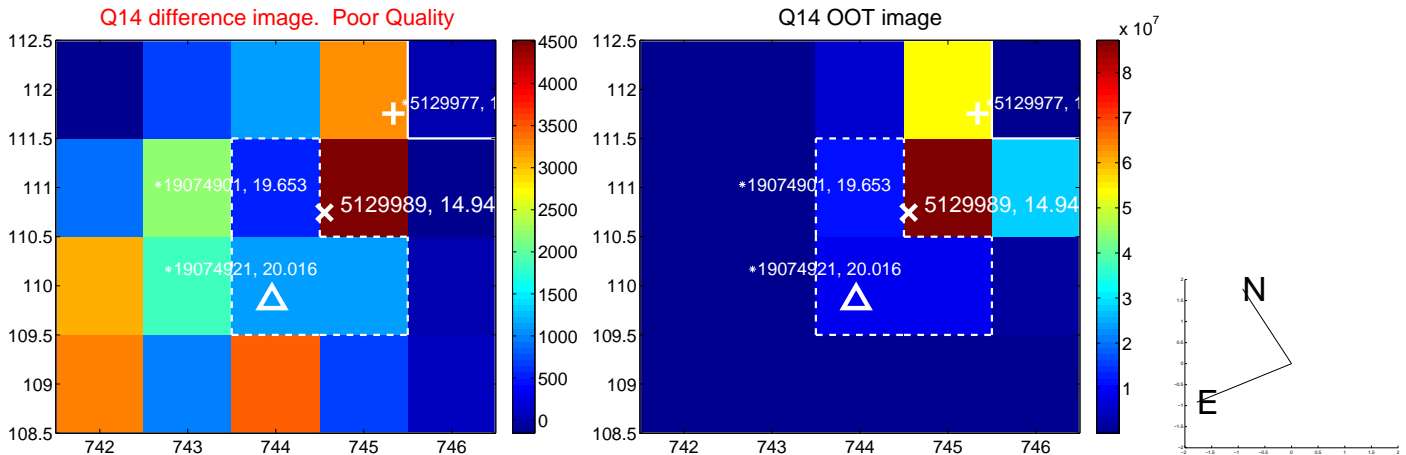
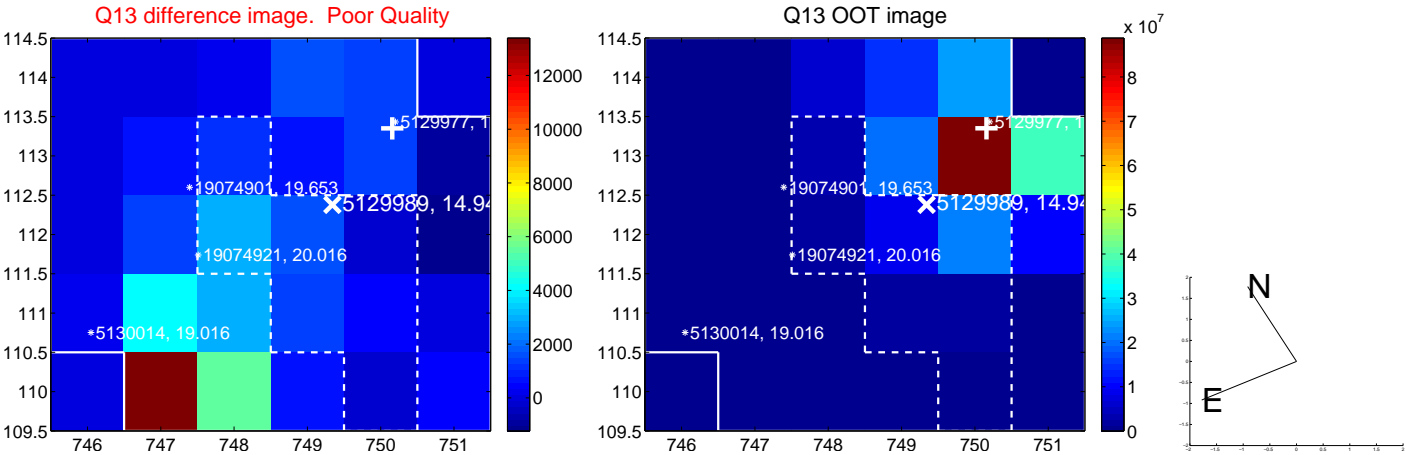




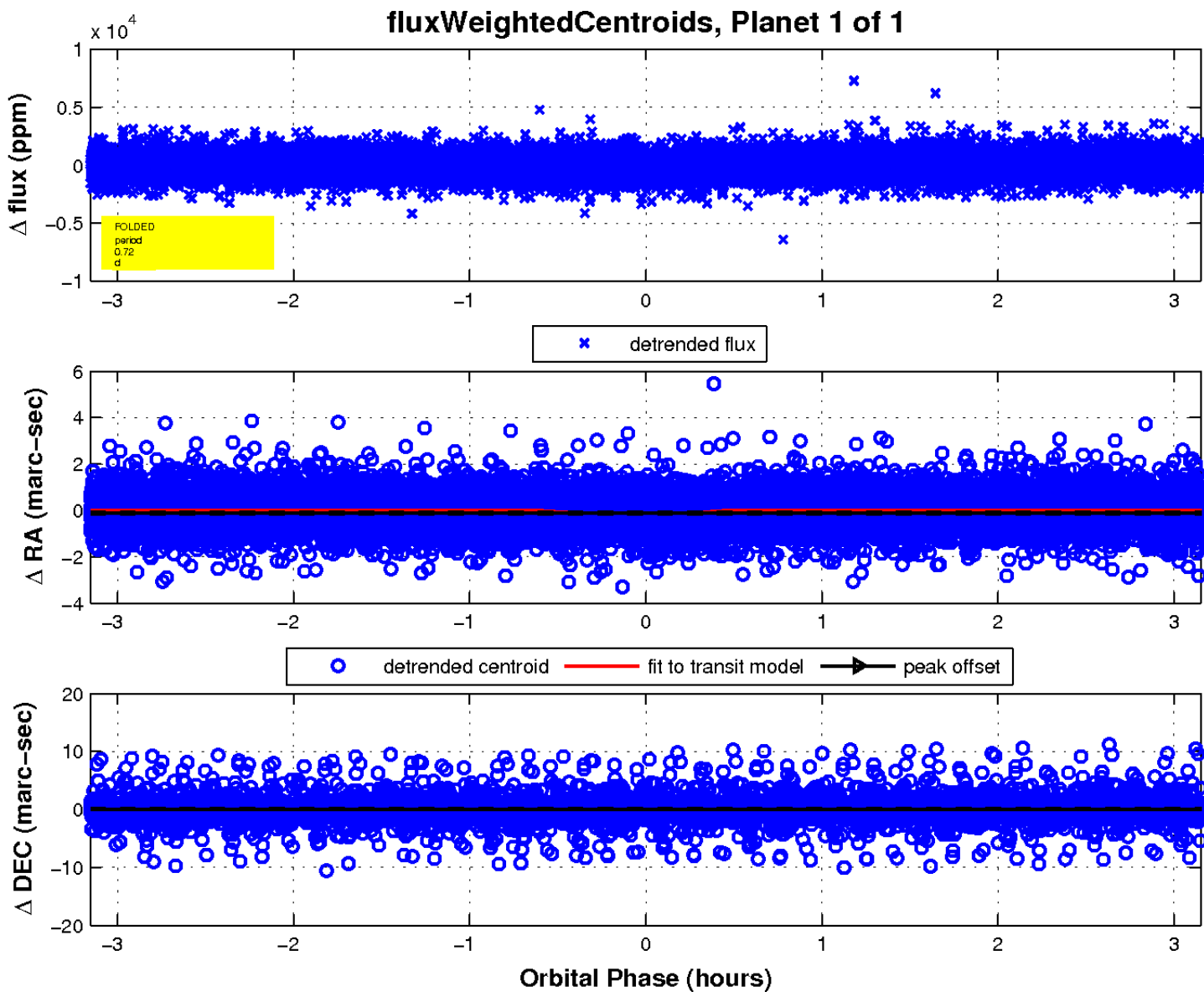
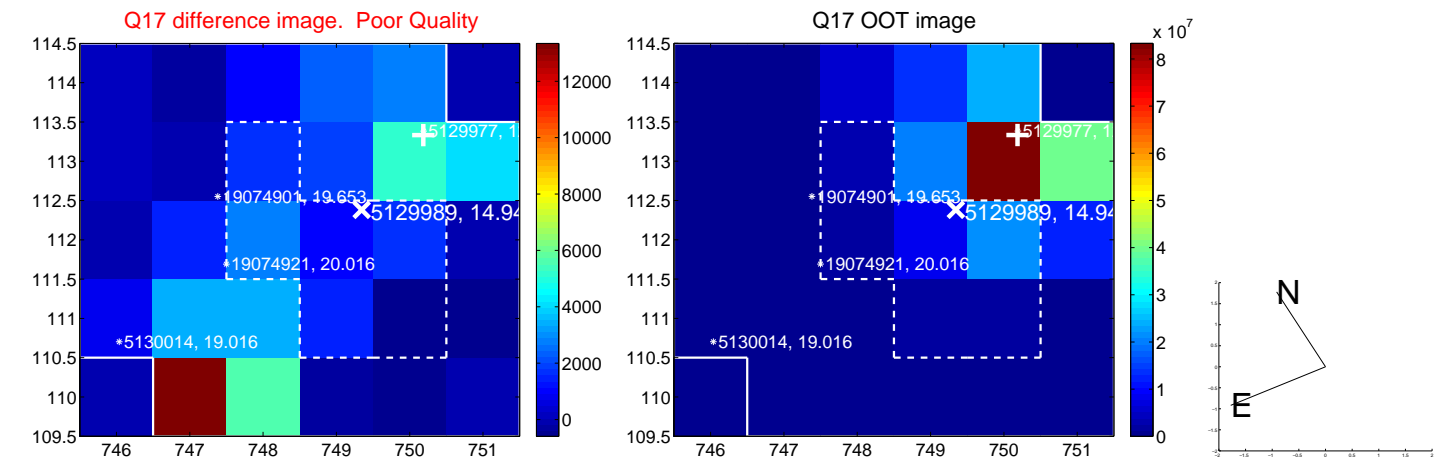
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

