

# KIC 011567149

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011567149-01	OBS	No	0.684864	132.151756	19.1	3.117	9.2	8.3	1.03	6140	0.53	5459.36

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011567149-01	OBS	FP	0.00	1	0	0	1	LPP_DV—LPP_ALT—EPHEM_MATCH

**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.

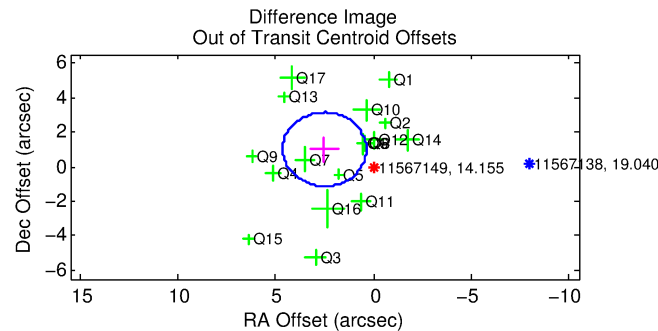
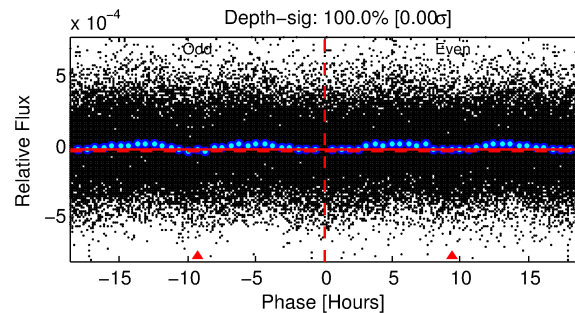
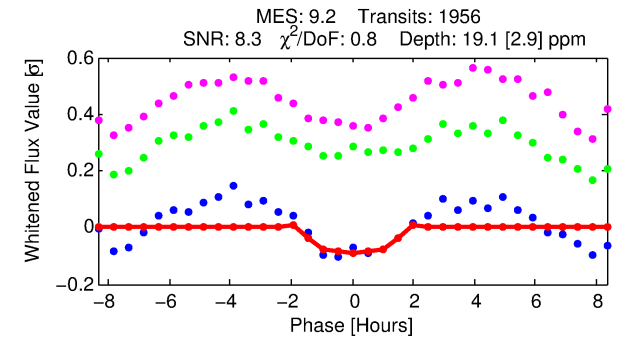
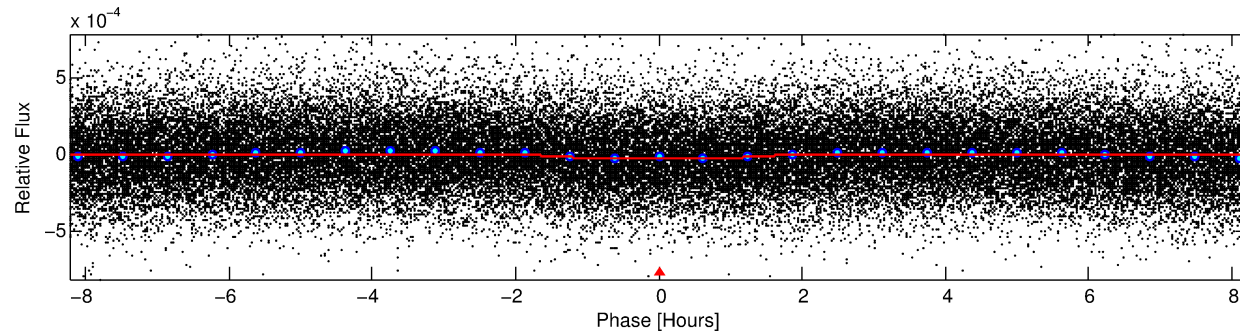
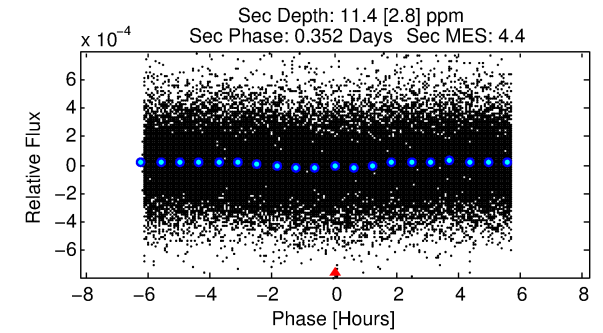
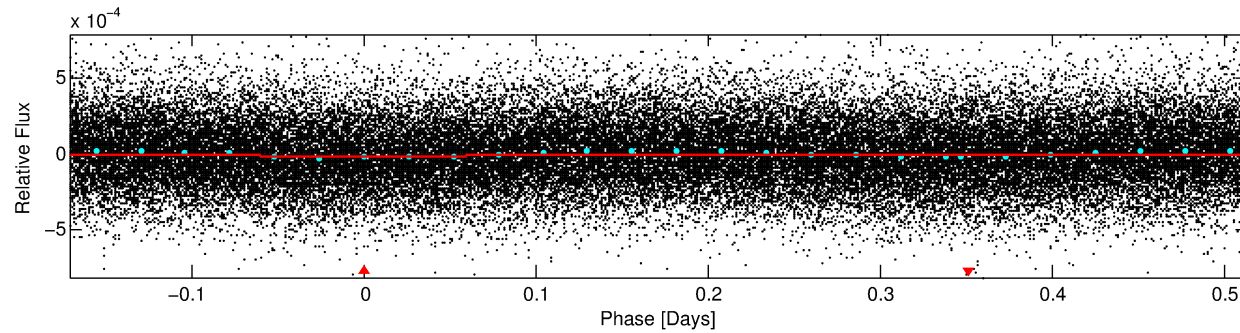
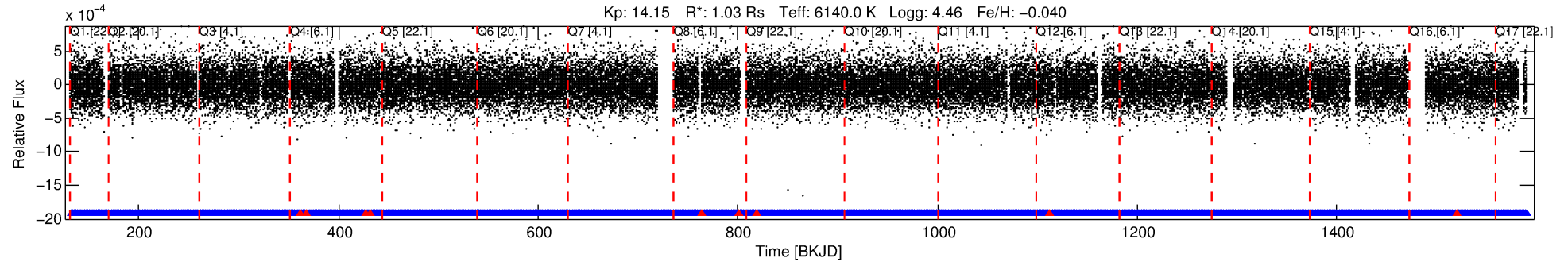
## Ephemeris Match Information For 011567149-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ( $''$ )	$\Delta$ Row	$\Delta$ Col	$m_2$	$m_1$	$D_2/D_1$	Mechanism	Flag	$\sigma_P$	$\sigma_T$
011567149-01	11567149	011618883-sec	11618883	1:1	72.8	-14	-11	13.38	14.16	9584.20	Direct-PRF	0	1.16	0.49

**Notes:**  $P_1:P_2$  is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column.  $m_2$  and  $m_1$  are the magnitudes of the parent and child.  $D_2/D_1$  is the parent's transit depth divided by the child's.  $\sigma_P$  and  $\sigma_T$  are the significance of the match in period and epoch. For a match to be considered significant  $\sigma_P < 5.0$  and  $\sigma_T < 5.0$ . Matches which have  $\sigma_P$  and  $\sigma_T$  very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 11567149 Candidate: 1 of 1 Period: 0.685 d



## DV Fit Results:

Period = 0.68486 [0.00001] d  
Epoch = 132.1518 [0.0045] BKJD  
Rp/R\* = 0.0047 [0.0026]  
a/R\* = 1.20 [1.07]  
b = 0.90 [0.62]  
Seff = 5459.36 [2308.22]  
Teq = 2192 [232] K  
Rp = 0.53 [0.33] Re  
a = 0.0157 [0.0042] AU  
Ag = 5.49 [6.49] [0.69σ]  
Teffp = 5188 [1453] K [2.04σ]

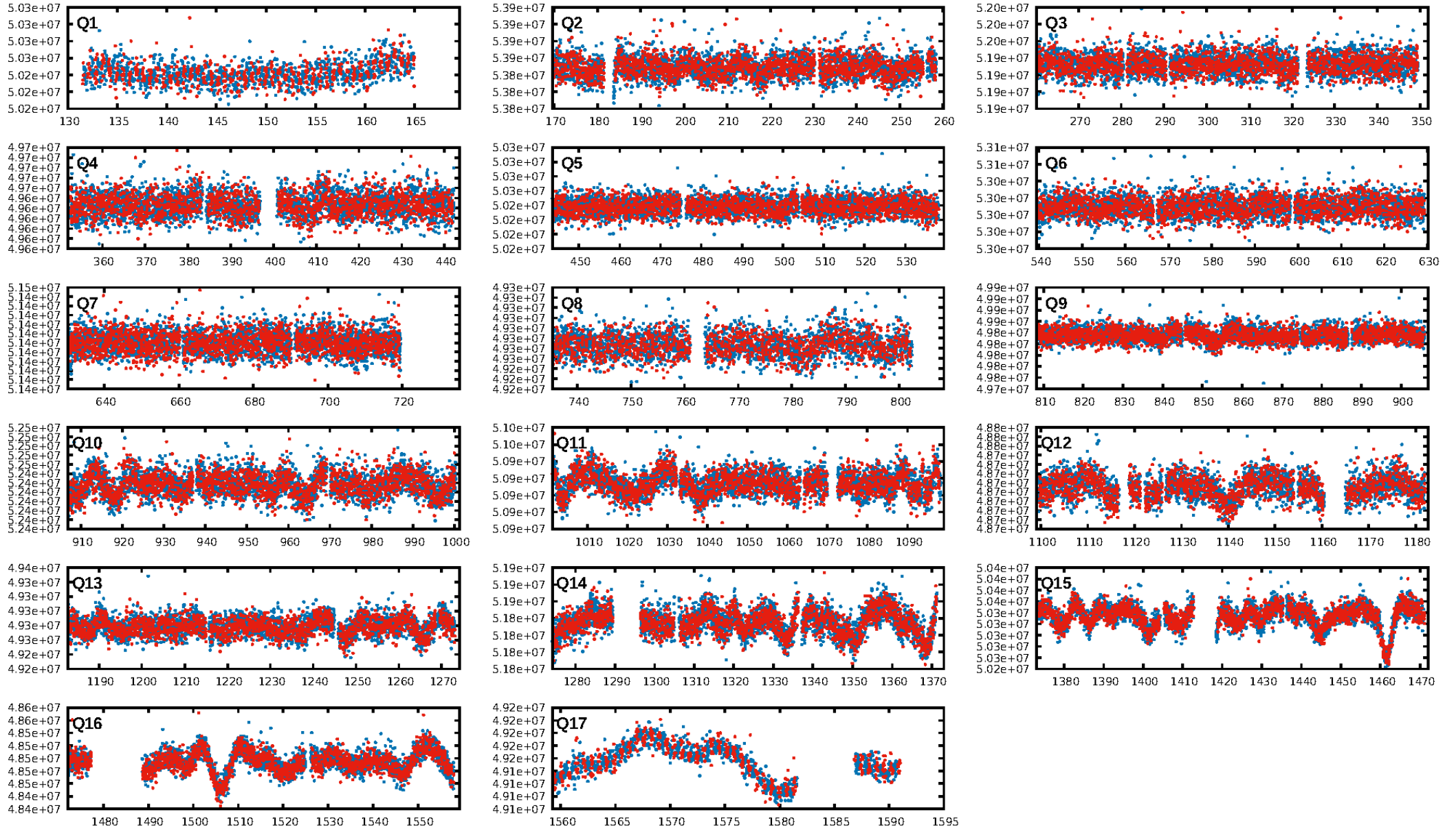
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 3.43e-16  
RollingBand-fgt: 1.00 [1857/1866]  
**GhostDiagnostic-chr: 0.294**  
Centroid-sig: 9.0%  
Centroid-so: 2.264 arcsec [1.44σ]  
**OotOffset-rm: 2.704 arcsec [3.79σ]**  
**KicOffset-rm: 2.783 arcsec [3.87σ]**  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.18 [3/17]  
DiffImageOverlap-fno: 1.00 [17/17]

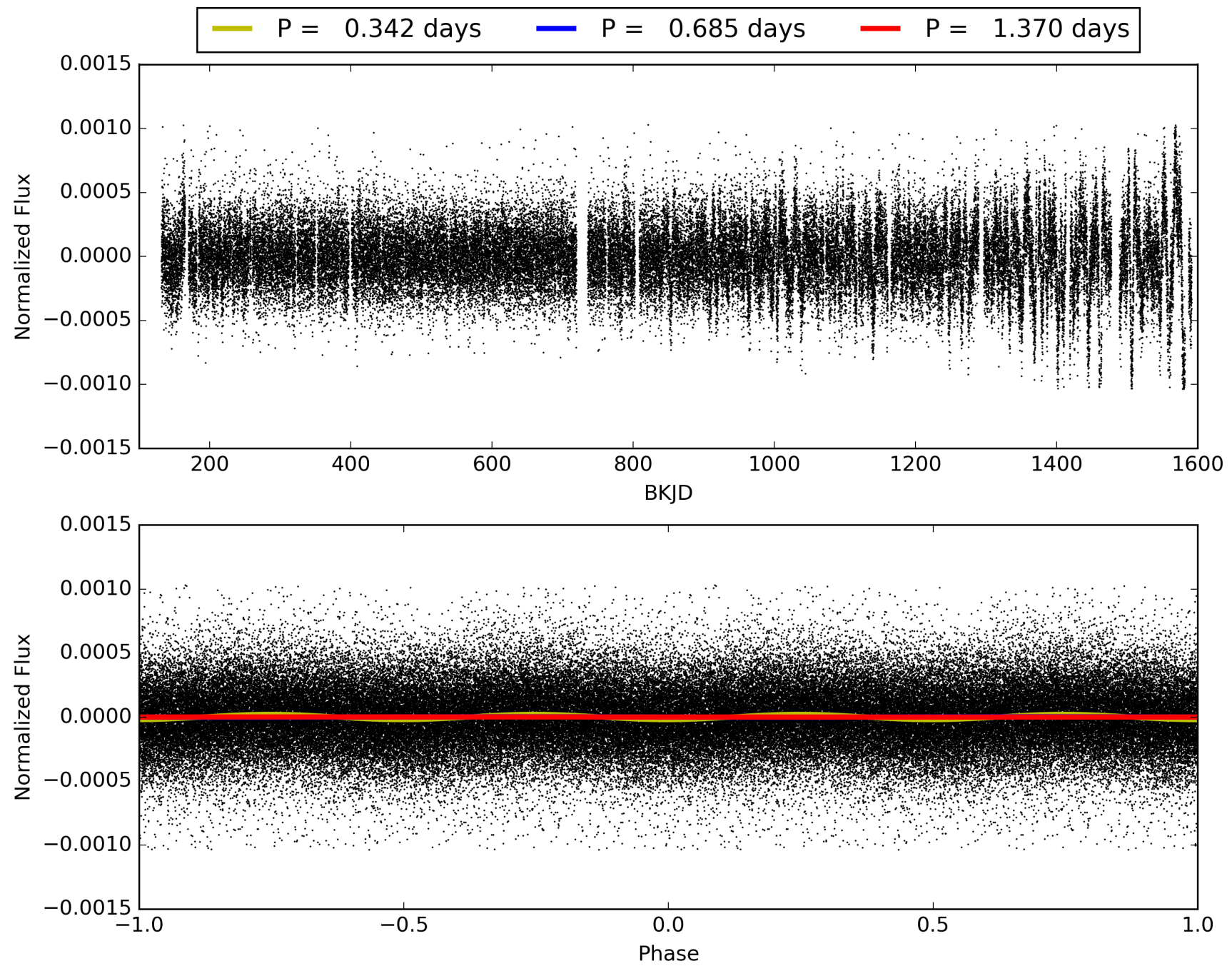
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 23:52:12 Z

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

# TCE 011567149-01, PDC Light Curves



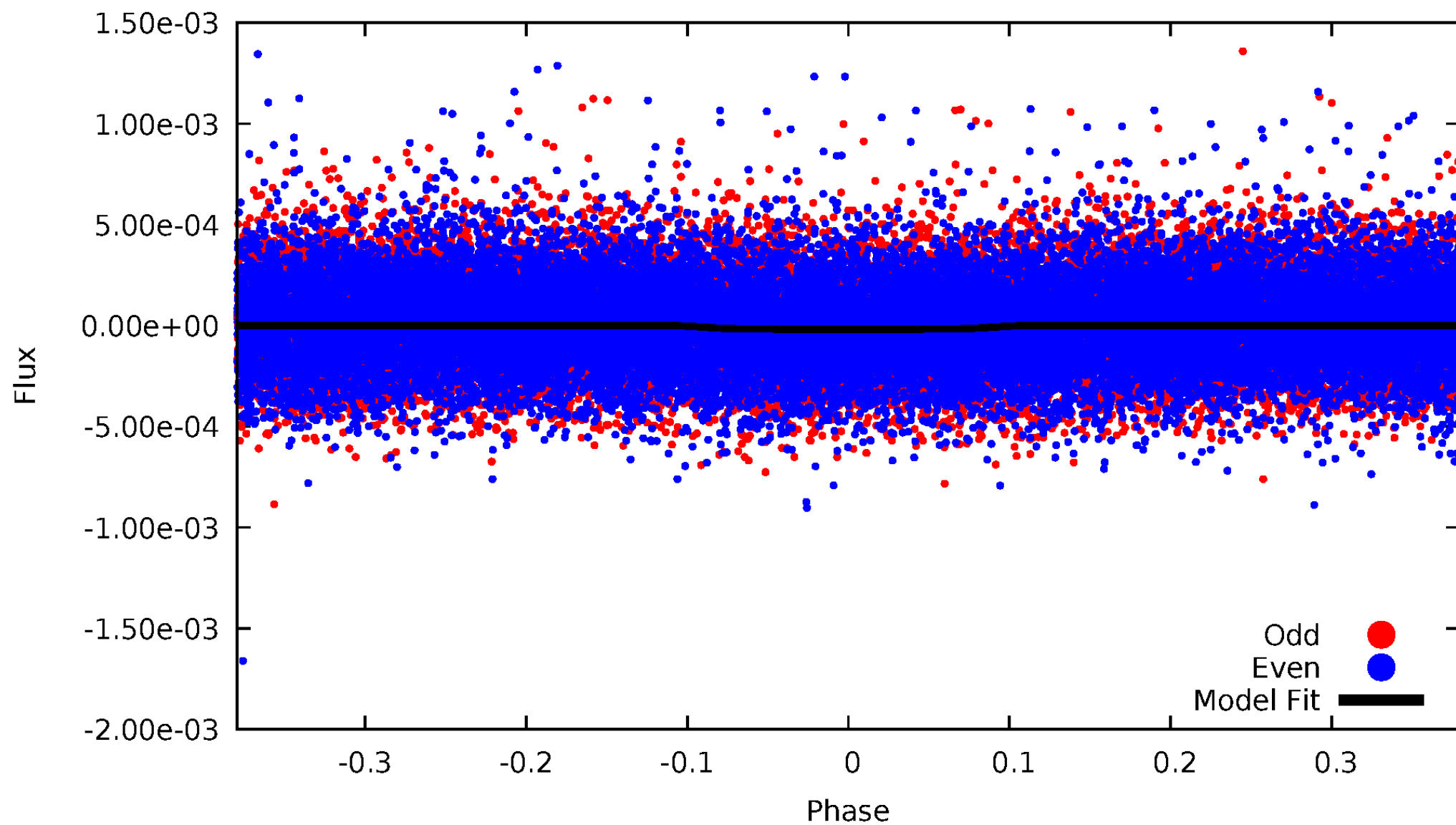
# TCE 011567149-01





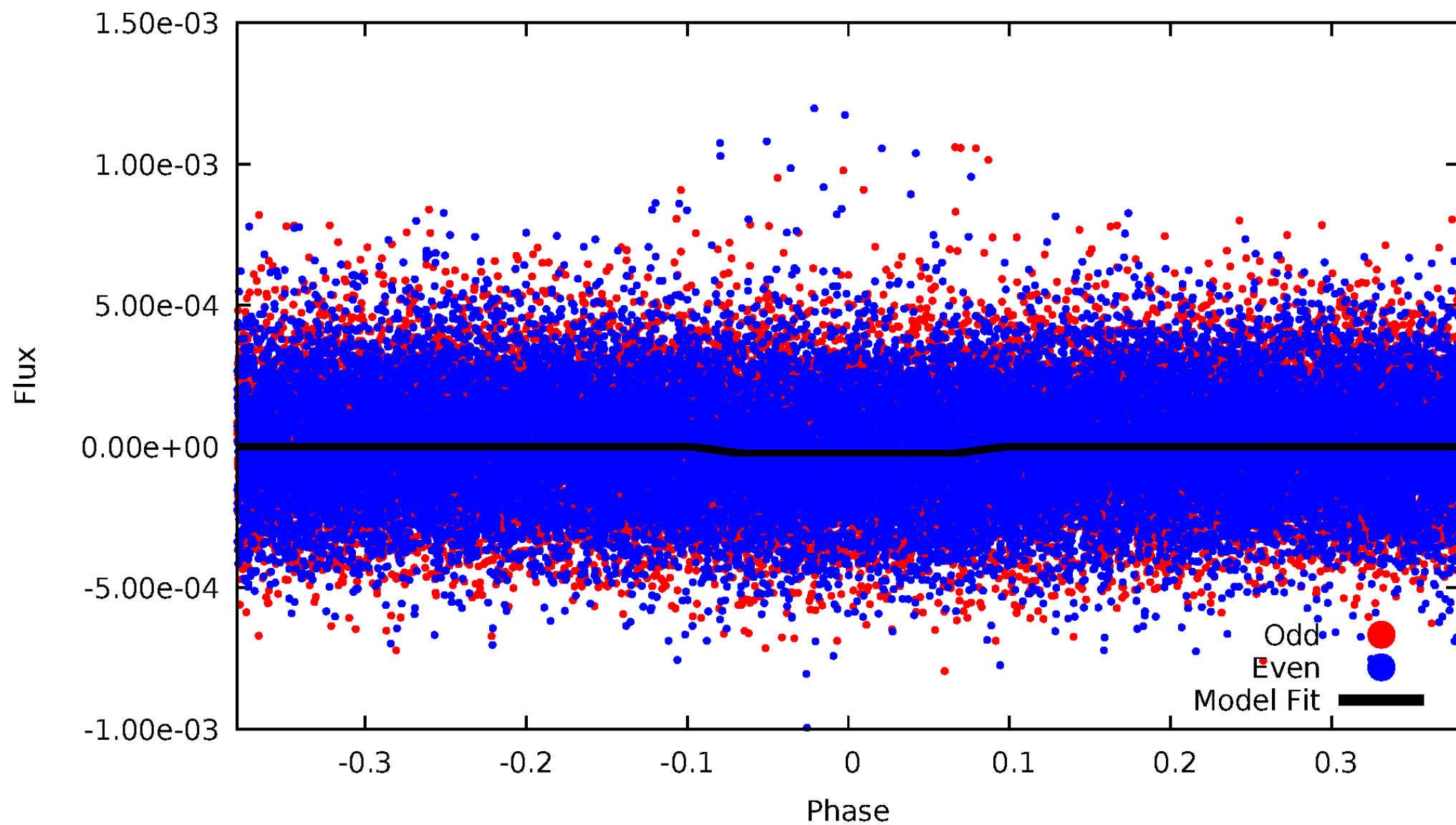
# DV Odd/Even

TCE 011567149-01



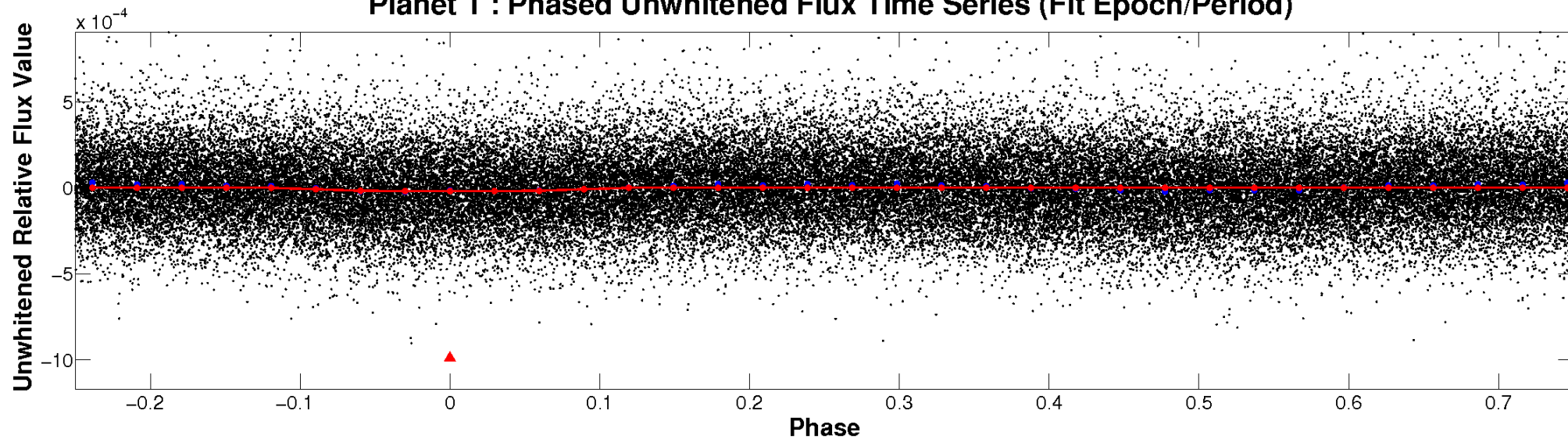
# ALT Odd/Even

TCE 011567149-01

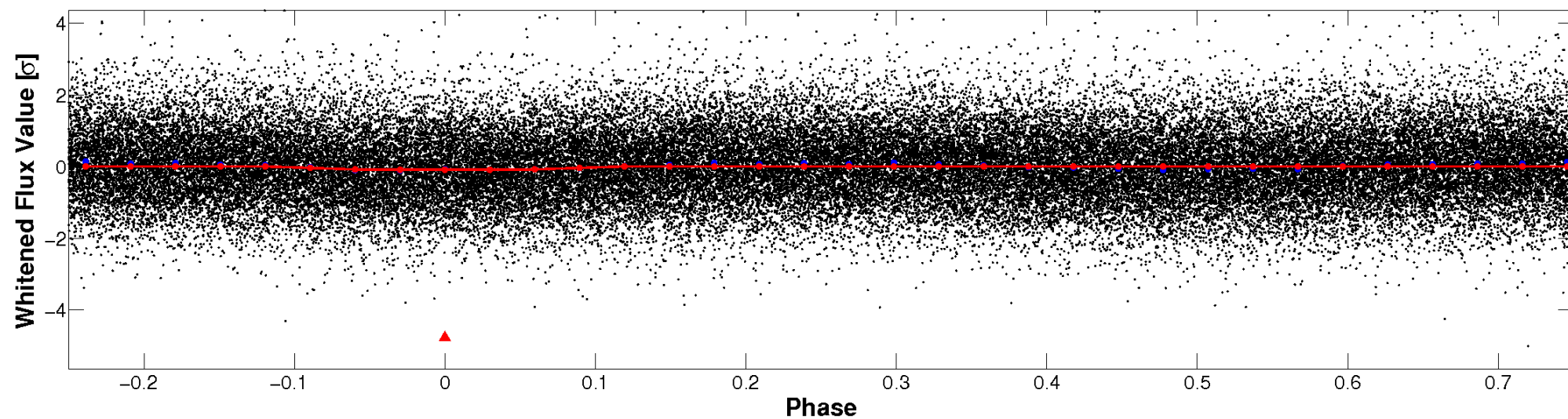


# Non-Whitened Vs. Whitened Light Curve

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

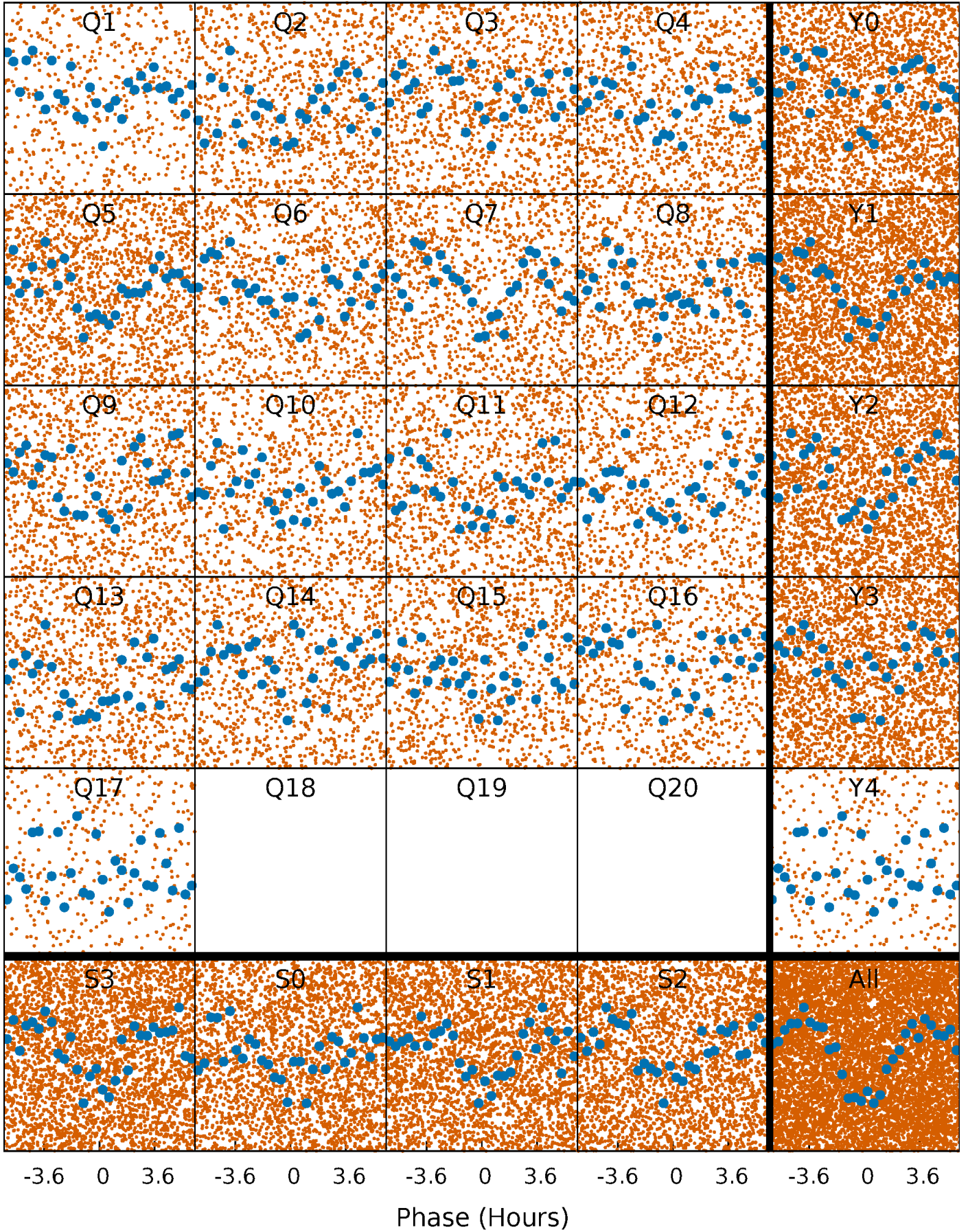


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

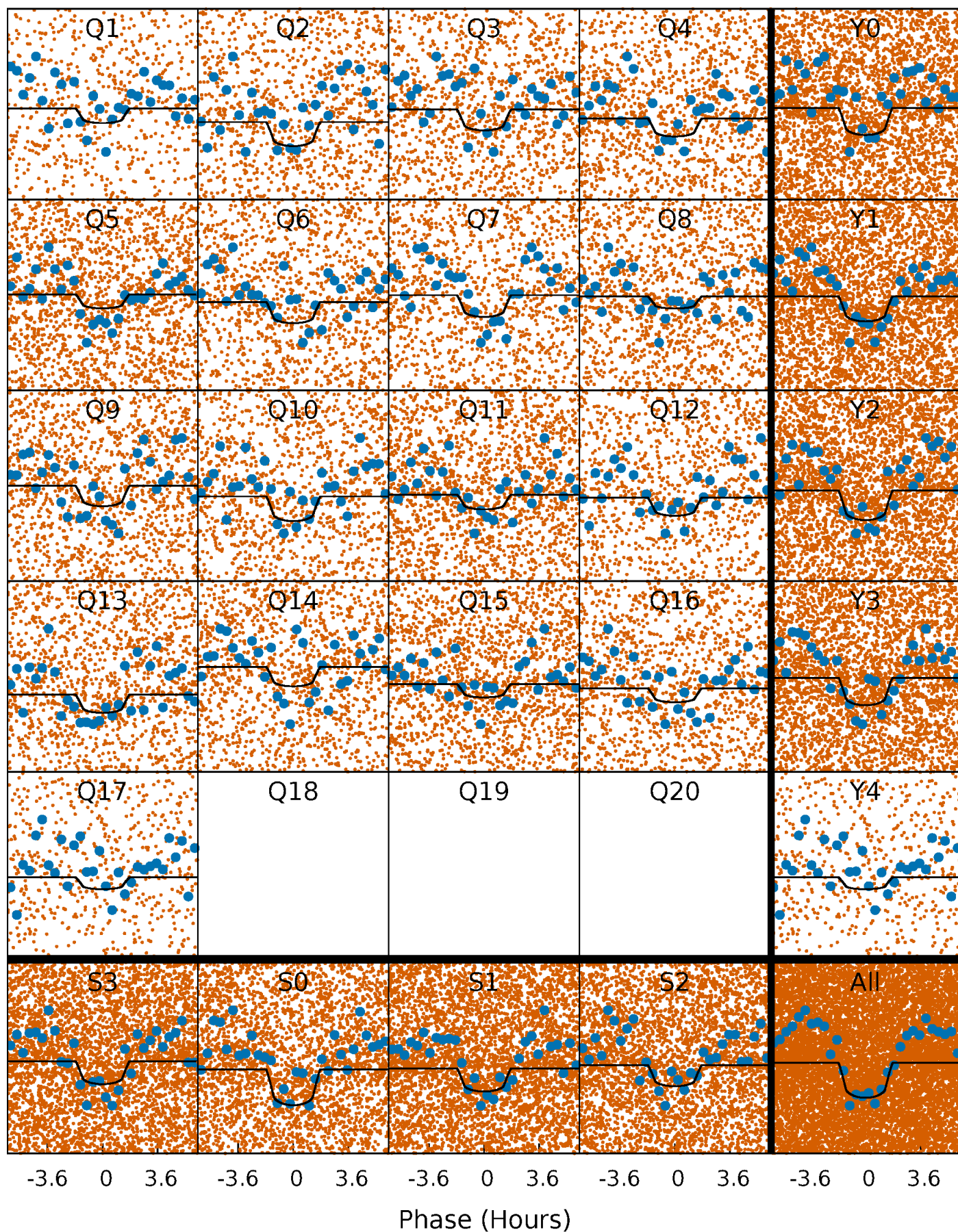
TCE 011567149-01 P= 0.684864 Days  $T_0=132.151756$  (BKJD)





# DV Quarter-Phased Transit Curves

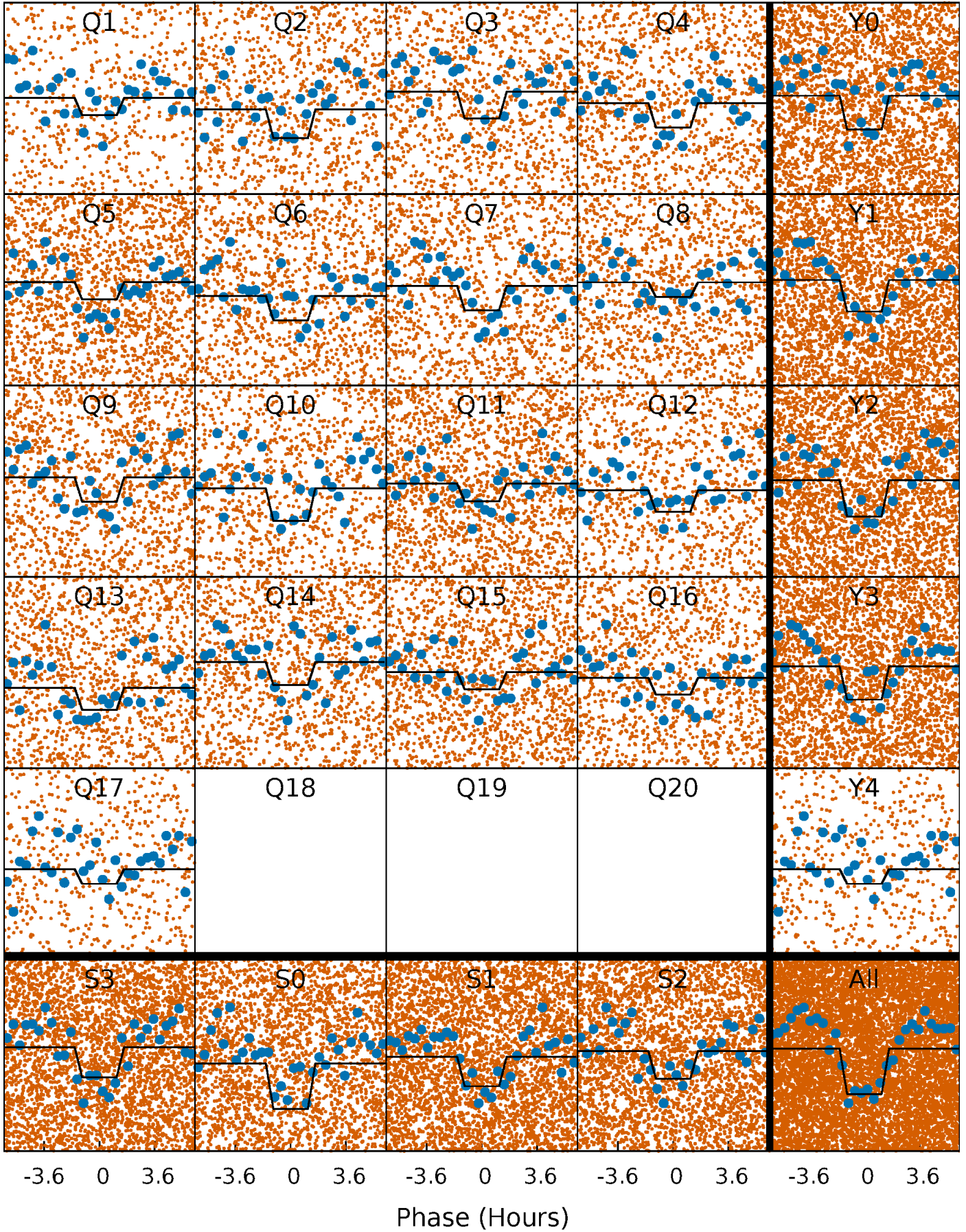
TCE 011567149-01   P= 0.684864 Days    $T_0=132.151756$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

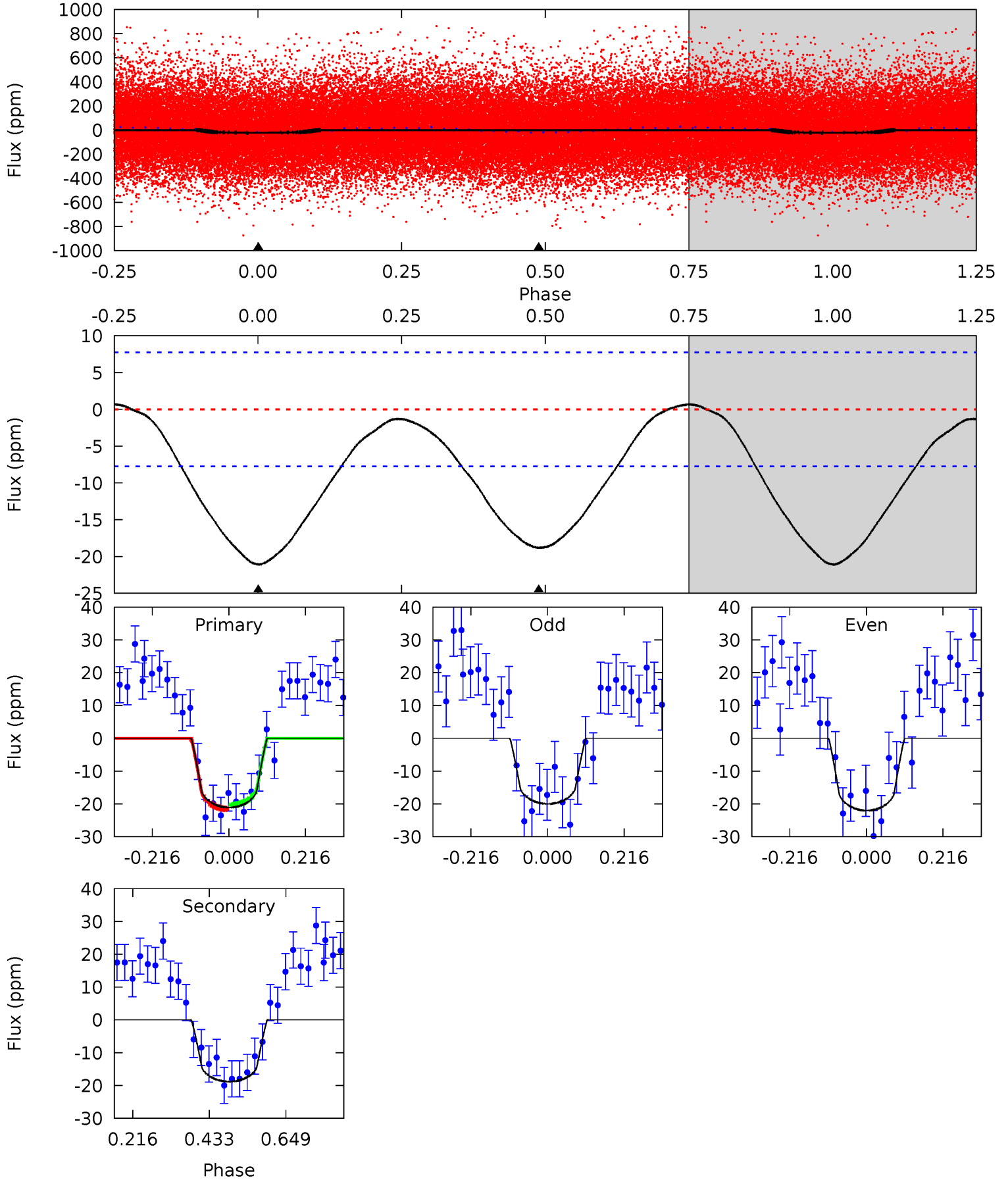
TCE 011567149-01 P= 0.684864 Days  $T_0=132.151756$  (BKJD)



# DV Model-Shift Uniqueness Test

011567149-01,  $P = 0.684864$  Days,  $E = 131.466892$  Days

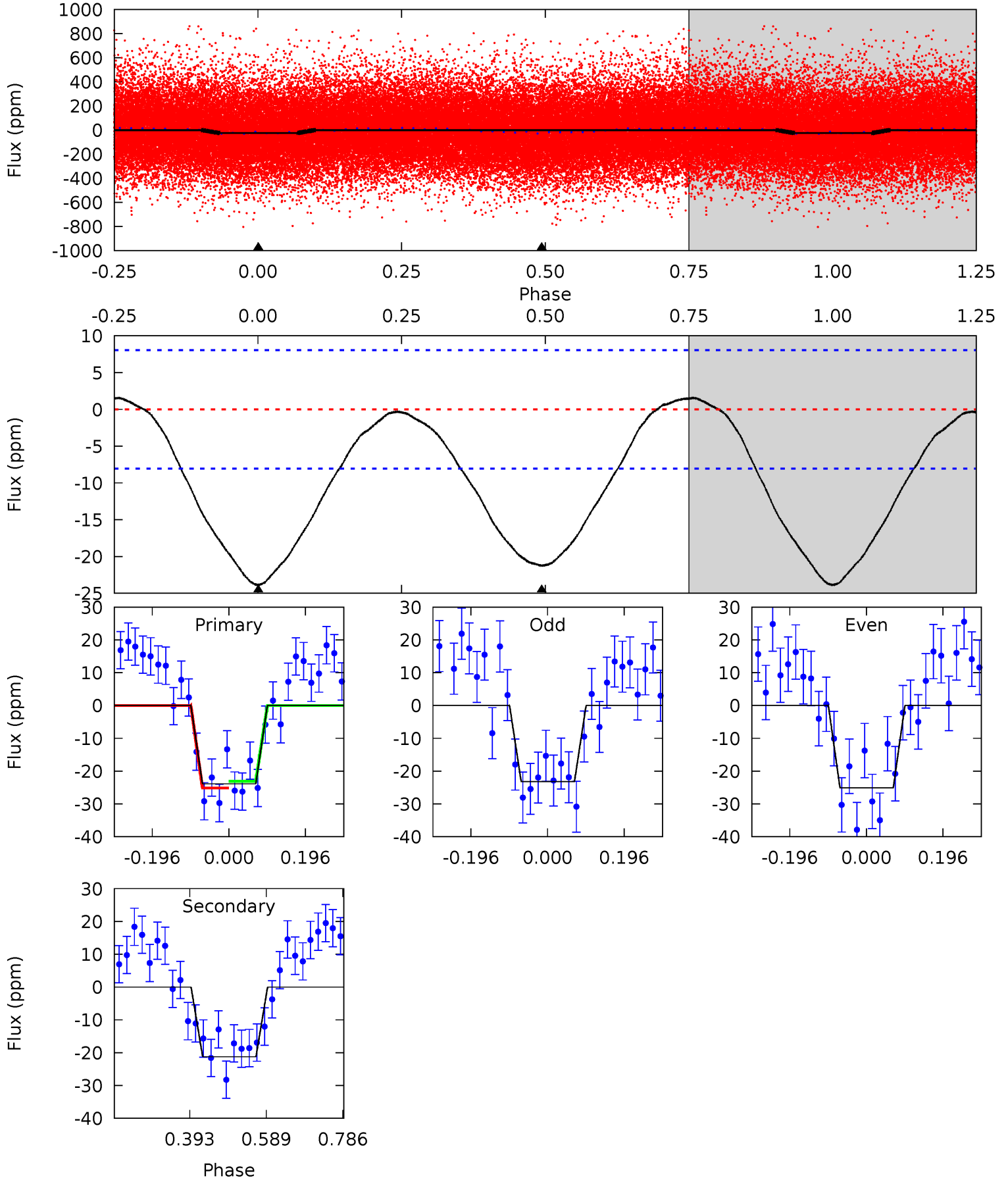
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.0	10.7	0	0	4.40	1.24	0.54	12.0	12.0	10.7	10.7	0.58	0.88	0.03	0.33



# Alt Model-Shift Uniqueness Test

011567149-01, P = 0.684864 Days, E = 131.466892 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
13.1	11.7	0	0	4.42	1.29	0.64	13.1	13.1	11.7	11.7	0.53	0.90	0.06	0.57





### Stellar Parameters For KIC 011567149

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6140^{+171}_{-214}$	$4.455^{+0.052}_{-0.221}$	$-0.040^{+0.250}_{-0.300}$	$1.027^{+0.324}_{-0.108}$	$1.094^{+0.153}_{-0.139}$	$1.422^{+0.393}_{-0.734}$
	+3%/-3%	+1%/-5%	+625%/-750%	+32%/-11%	+14%/-13%	+28%/-52%
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 011567149-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-19 \pm 2$	$0.57^{+0.32}_{-0.28}$	$3133^{+269}_{-169}$	$5713^{+2776}_{-1037}$	$7.542^{+20.995}_{-4.446}$
Alt.	$-21 \pm 2$	$0.57^{+0.32}_{-0.28}$	$3125^{+230}_{-158}$	$5945^{+2747}_{-1097}$	$8.714^{+23.991}_{-5.110}$

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

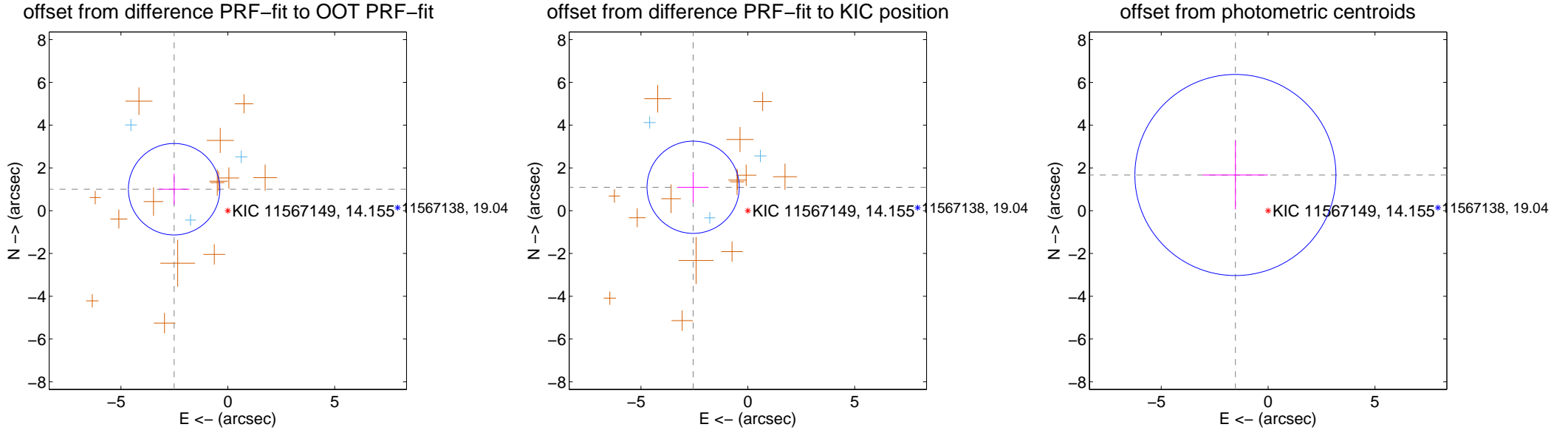
## DV Centroid Data

Supplemental centroid analysis for 011567149-01. Kepler magnitude: 14.15. Transit SNR 8.31

There are 3 quarters with good PRF difference image offsets

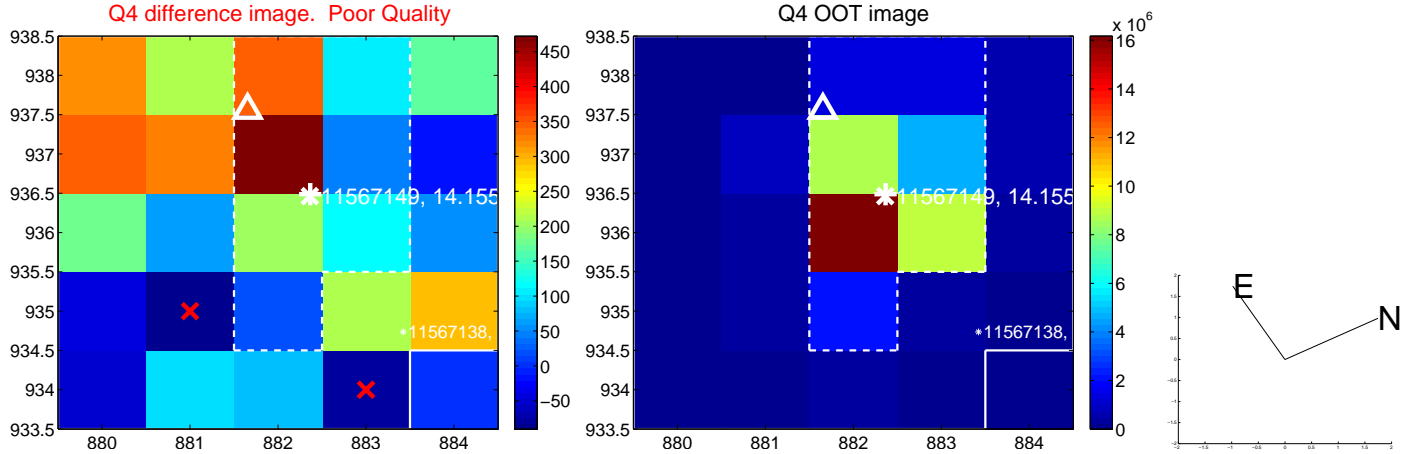
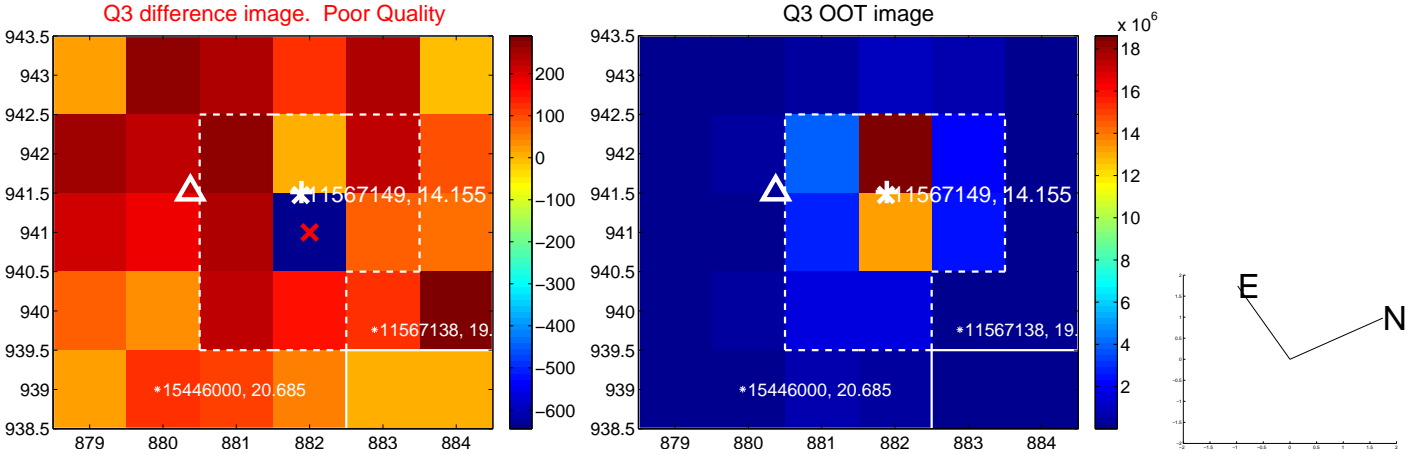
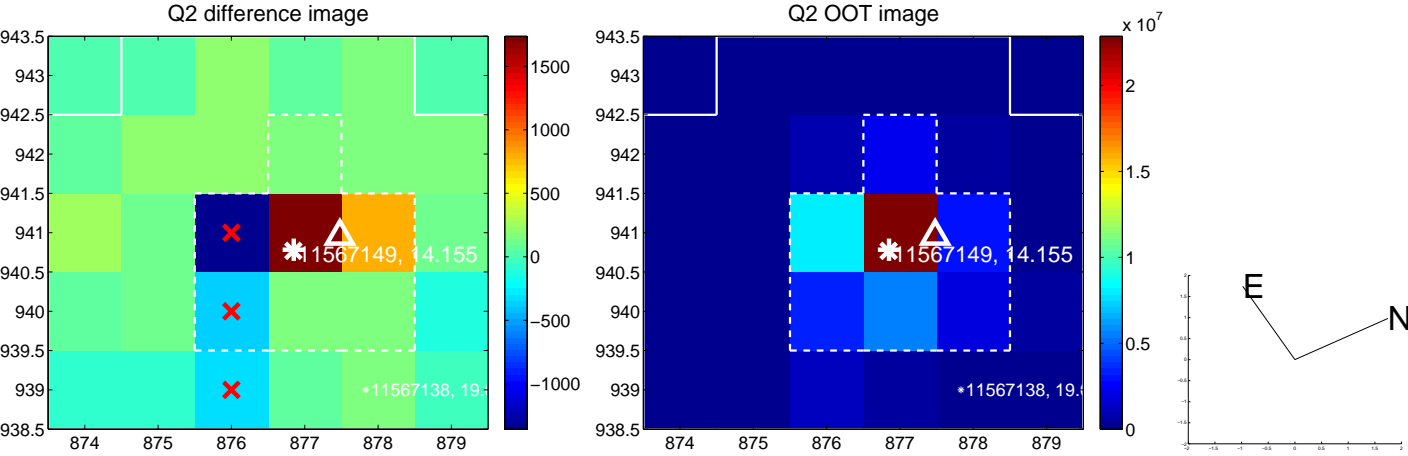
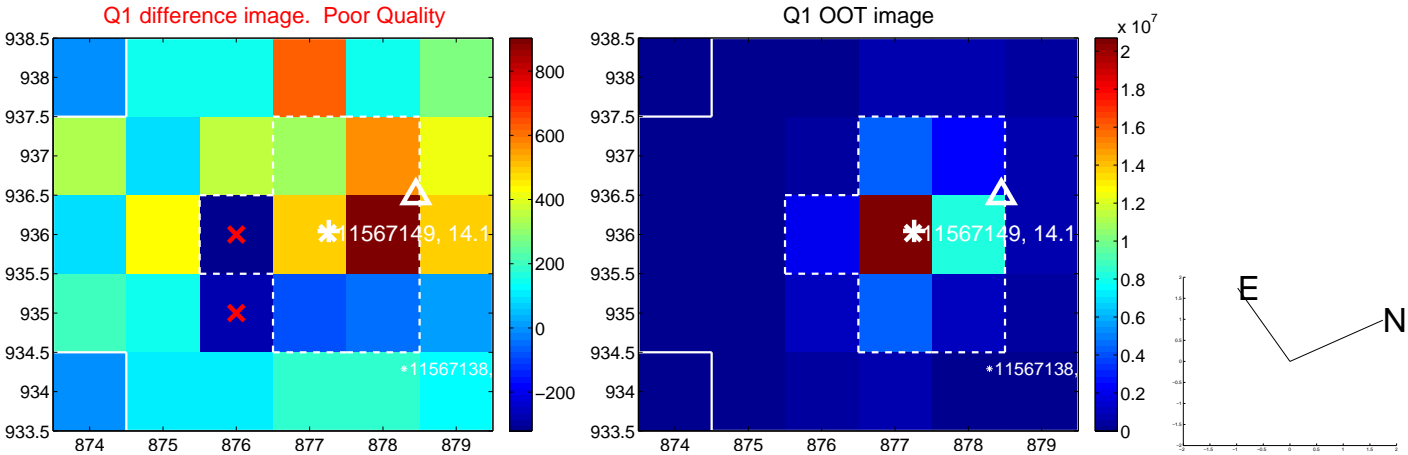
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	2.704 $\pm$ 0.713	3.79	2.511 $\pm$ 0.712	1.004 $\pm$ 0.722
PRF-fit source offset from KIC position	2.783 $\pm$ 0.719	3.87	2.558 $\pm$ 0.719	1.095 $\pm$ 0.720
photometric centroid source offset	2.26 $\pm$ 1.57	1.44	1.53 $\pm$ 1.52	1.67 $\pm$ 1.61

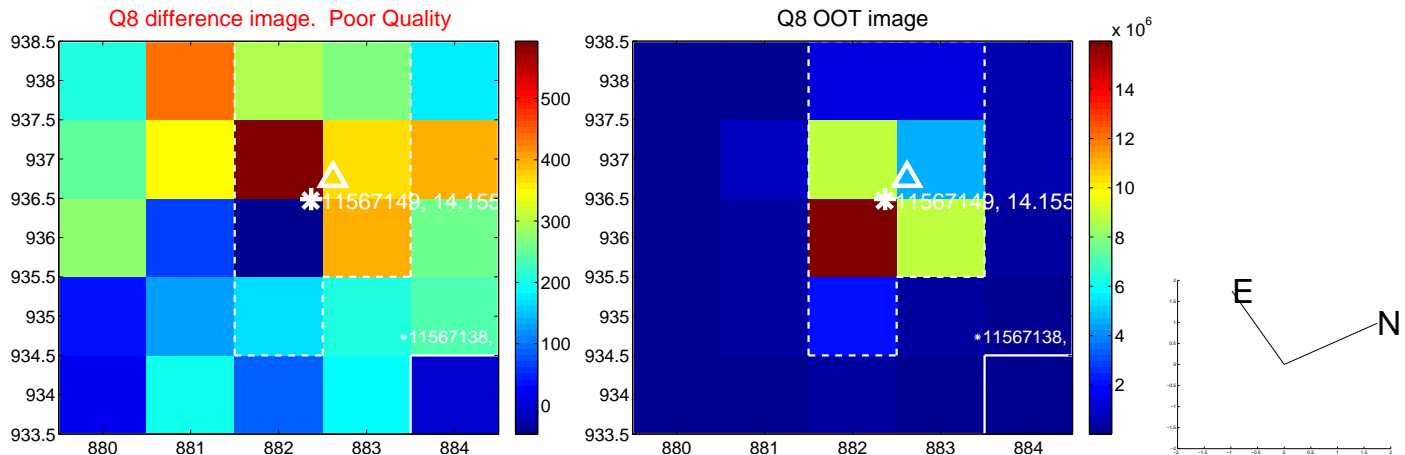
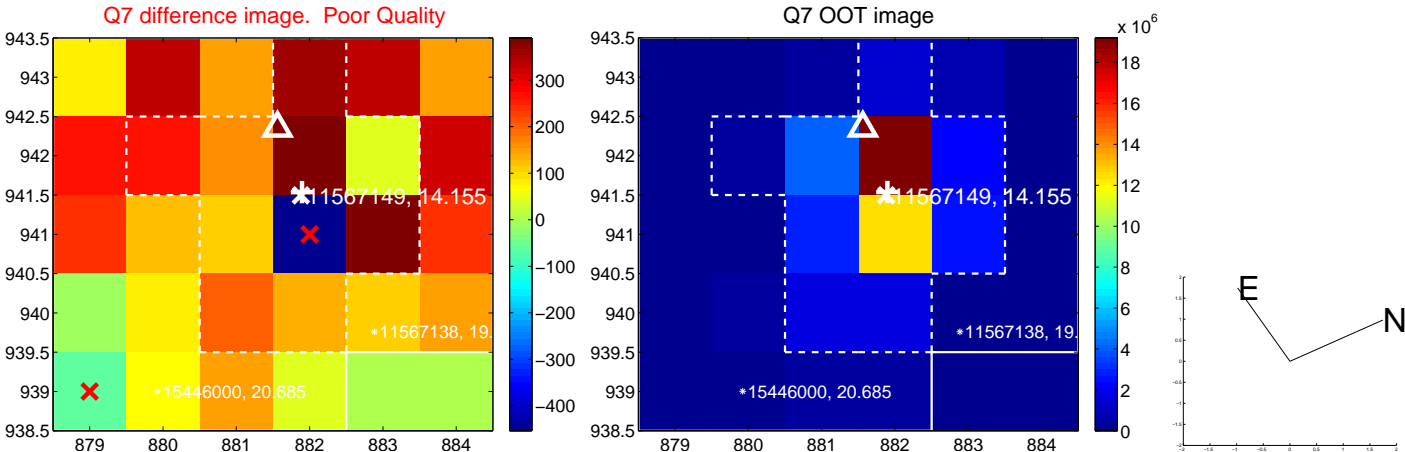
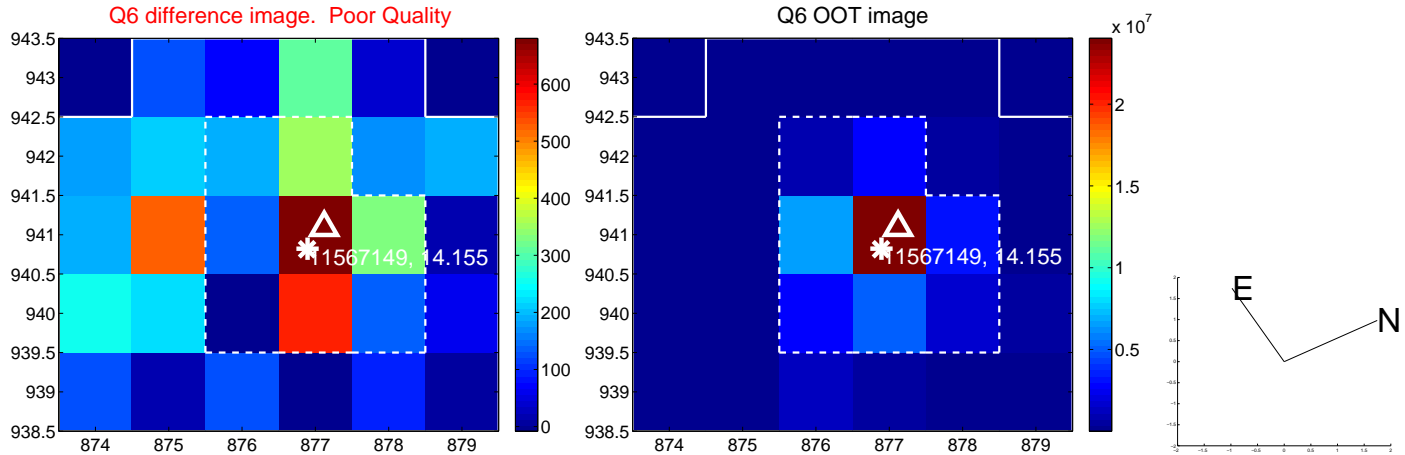
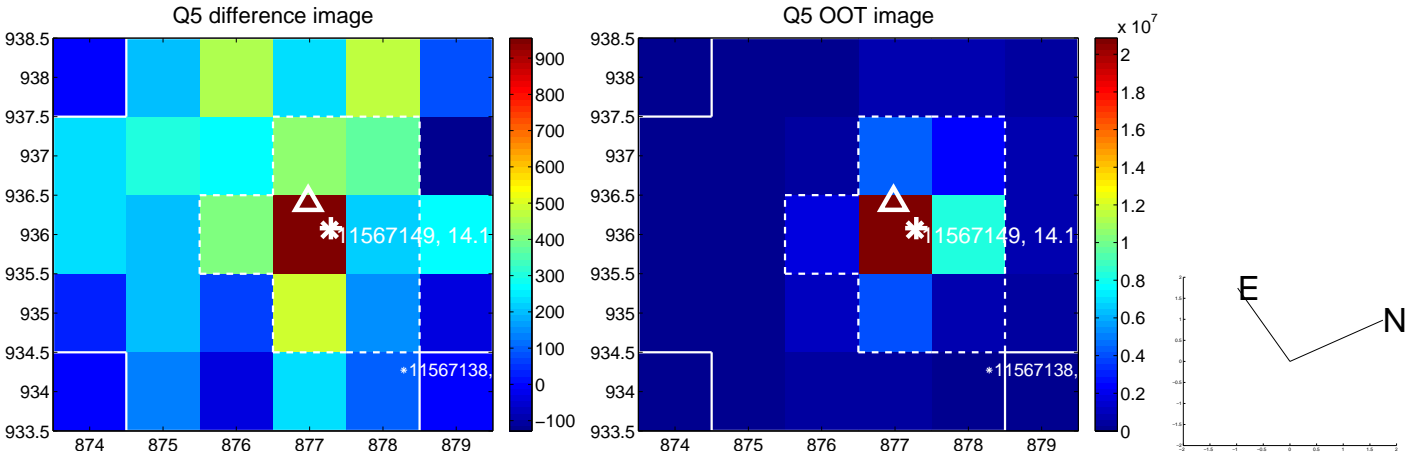


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

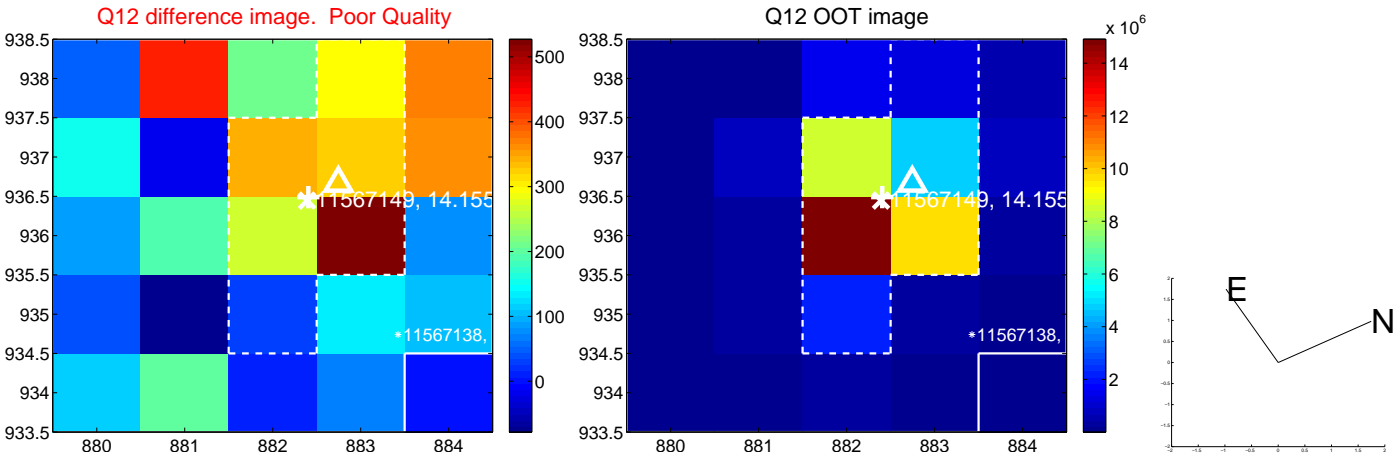
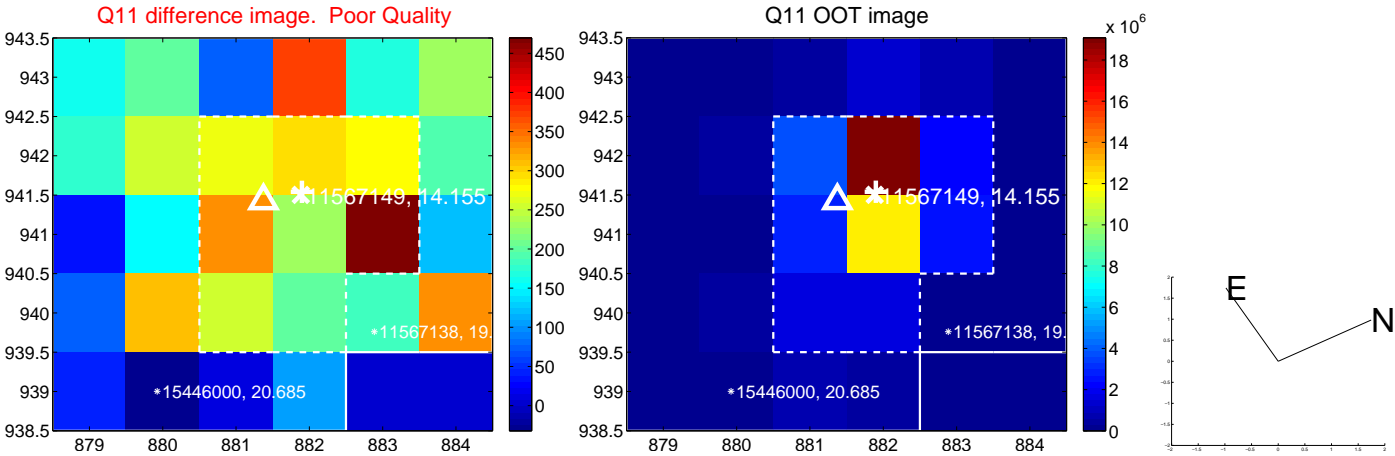
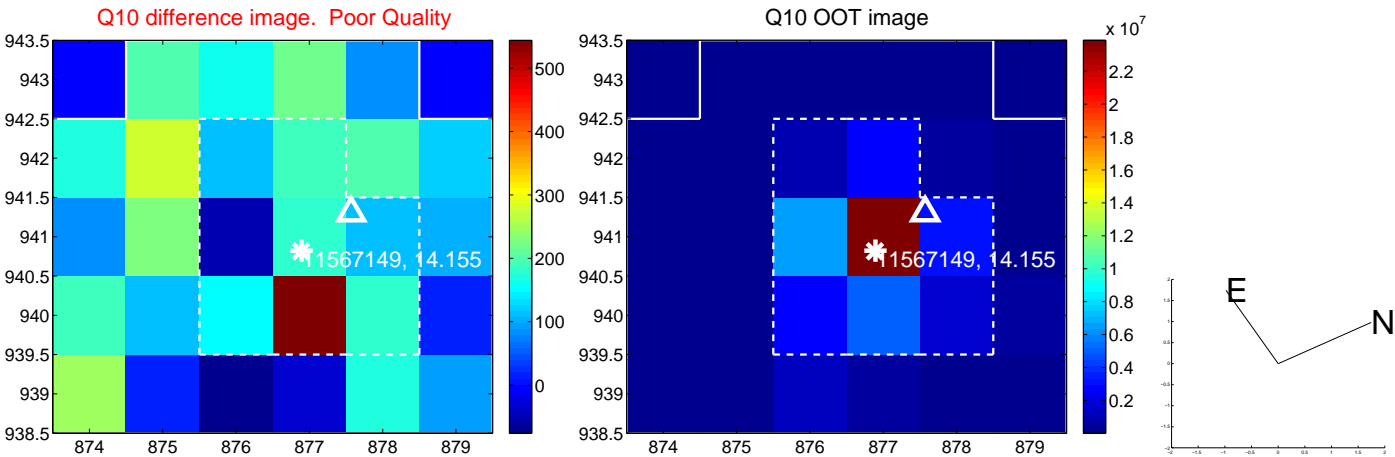
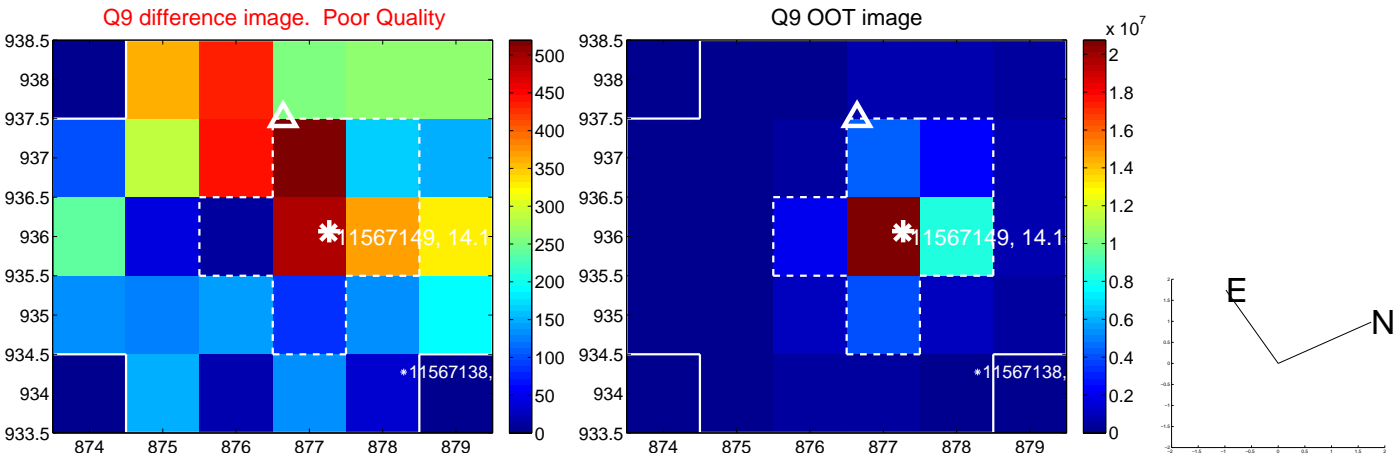


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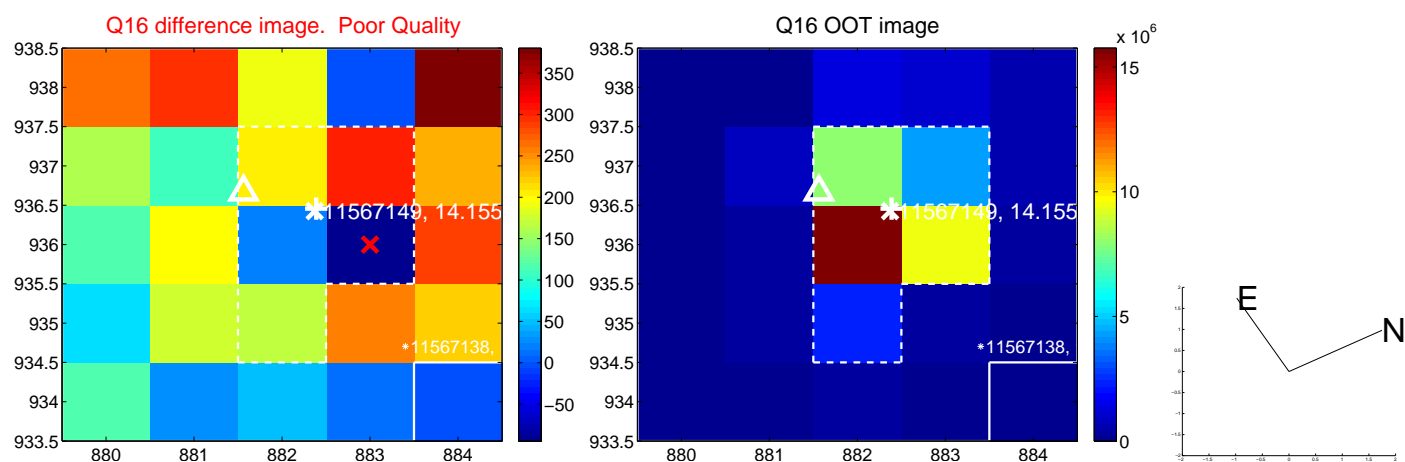
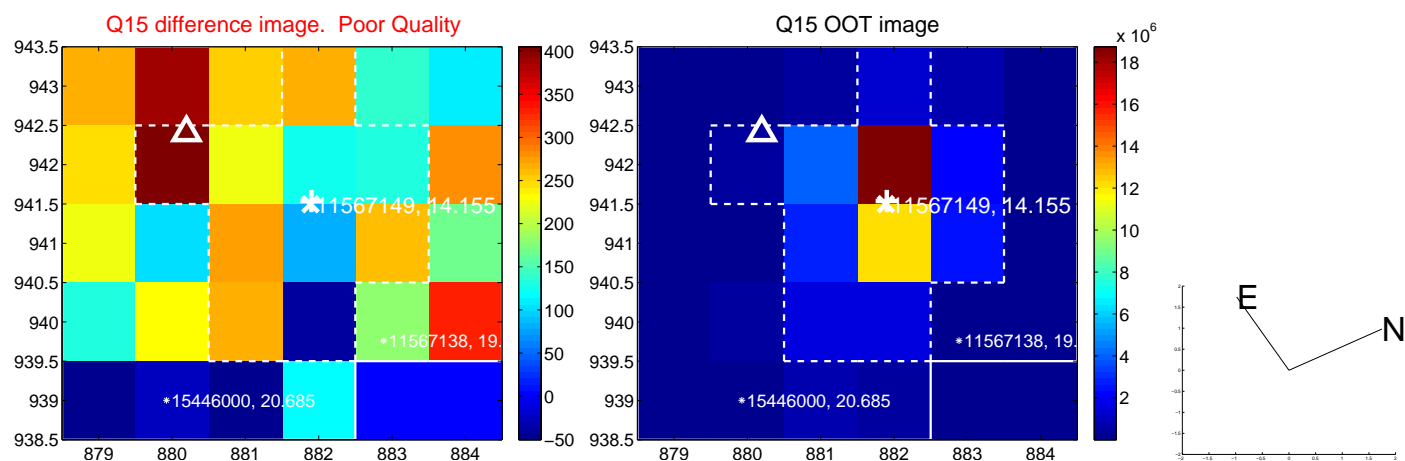
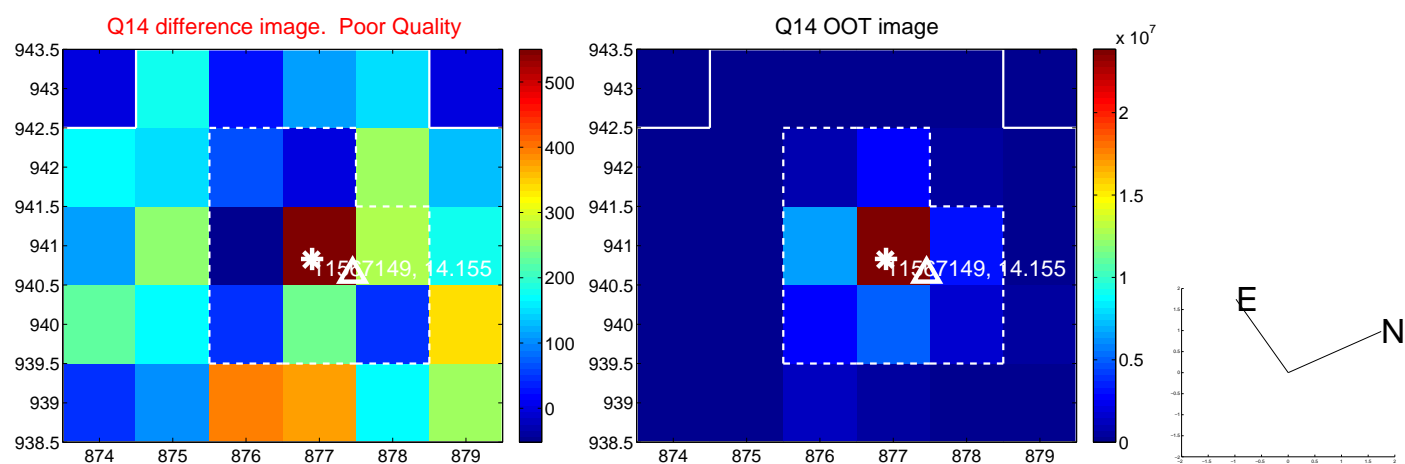
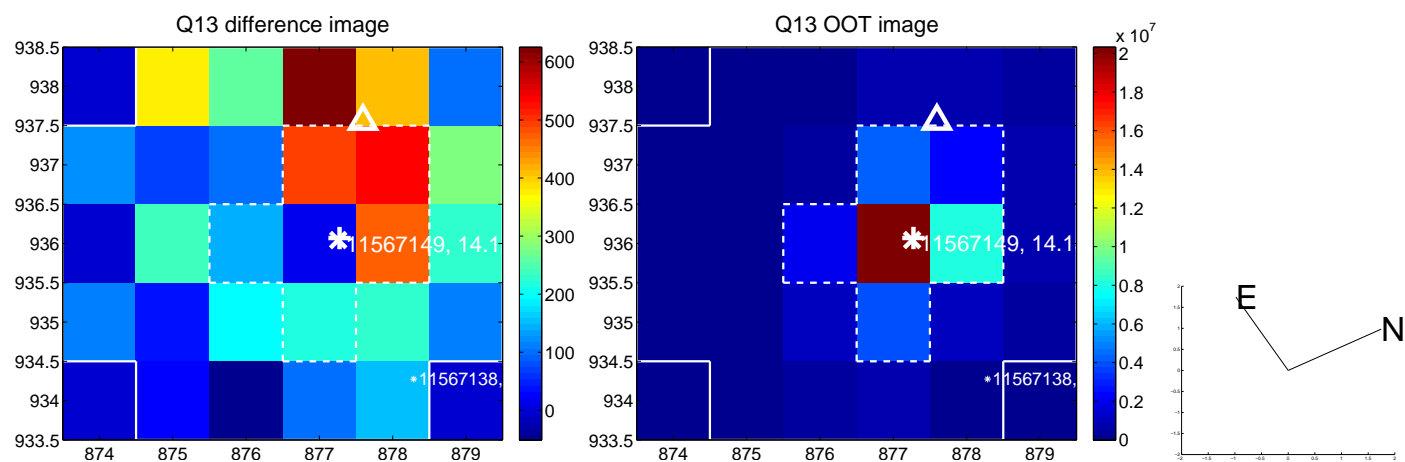




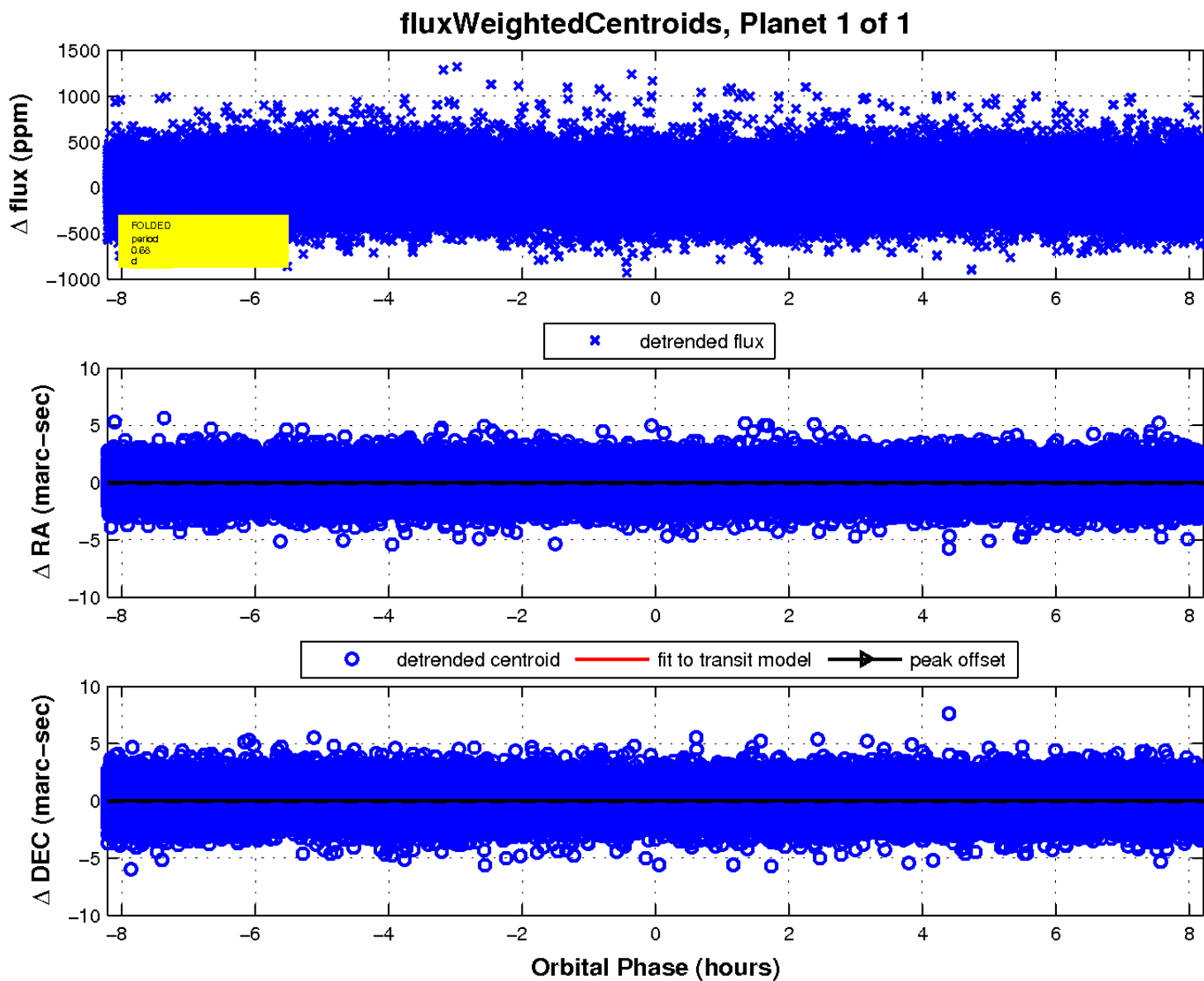
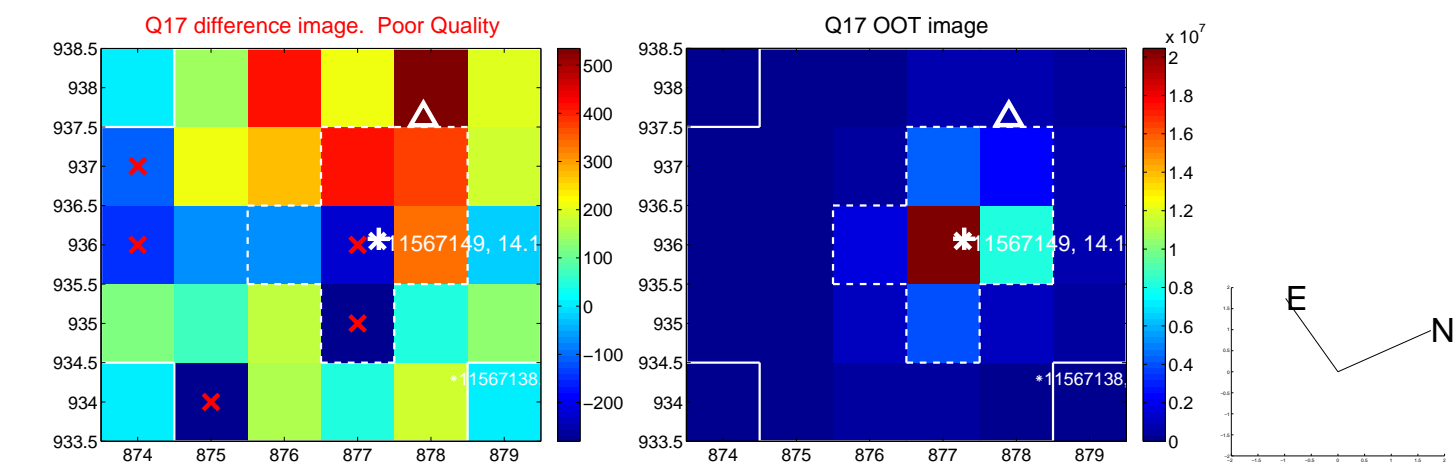
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

