

# KIC 011621897

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011621897-01	OBS	7618.01	21.680919	137.274581	91.4	24.382	8.3	11.1	1.03	6297	1.09	61.12

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011621897-01	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.

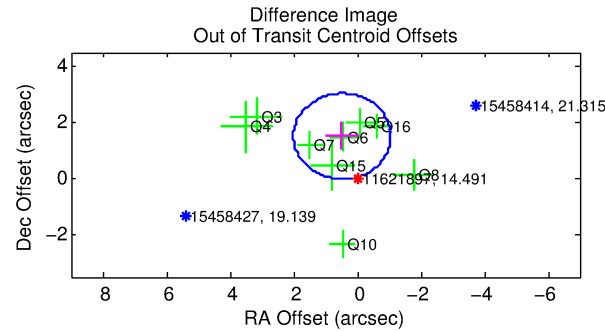
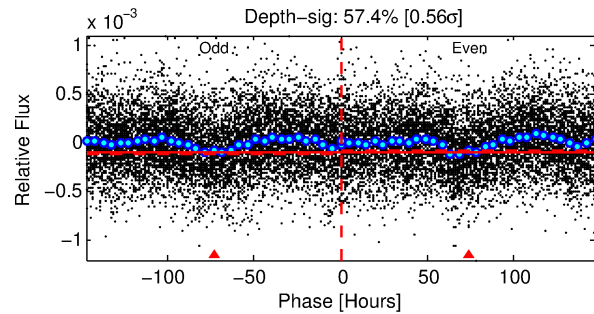
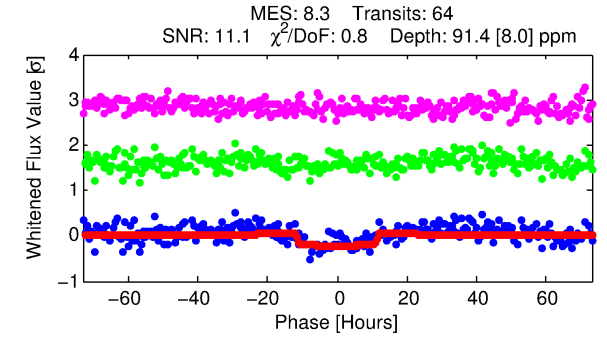
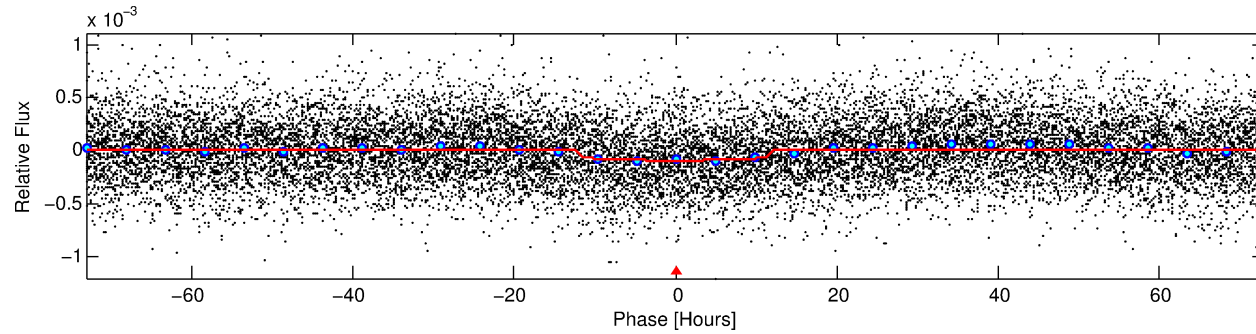
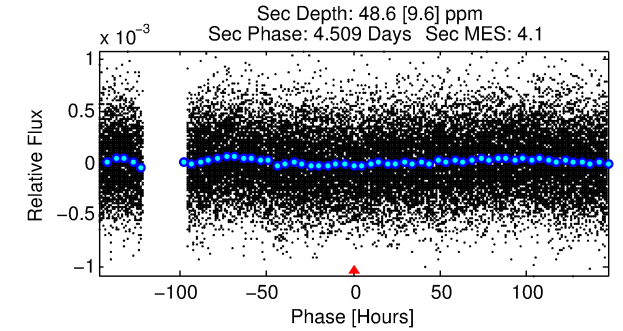
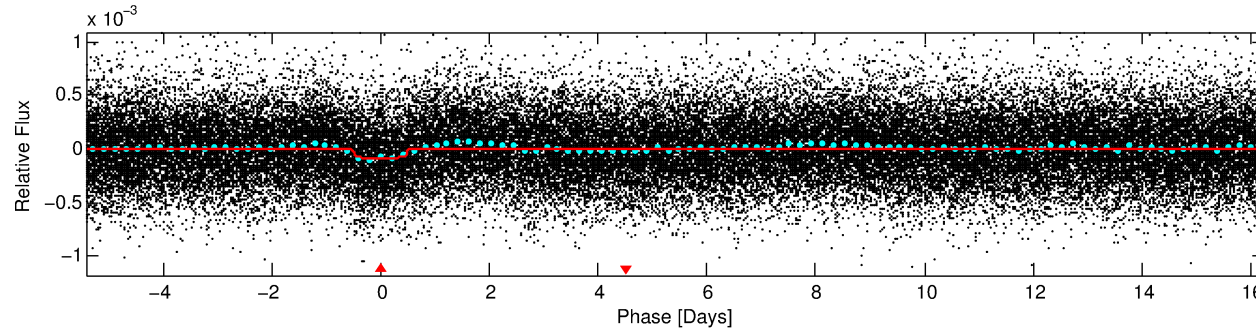
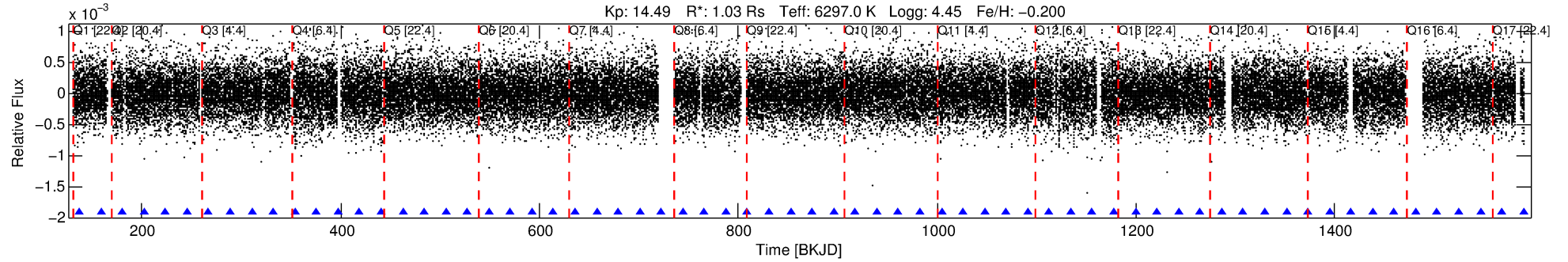
## Ephemeris Match Information For 011621897-01

No Significant Match Found

# DV One-Page Summary

KIC: 11621897 Candidate: 1 of 1 Period: 21.681 d

KOI: K07618.01 Corr: 0.802



## DV Fit Results:

Period = 21.68092 [0.00058] d  
Epoch = 137.2746 [0.0219] BKJD  
Rp/R\* = 0.0097 [0.0013]  
a/R\* = 4.18 [2.62]  
b = 0.81 [0.28]  
Seff = 61.12 [25.49]  
Teff = 713 [74] K  
Rp = 1.09 [0.38] Re  
a = 0.1565 [0.0427] AU  
Ag = 547.29 [282.44] [1.93σ]  
Teffp = 5332 [474] K [9.62σ]

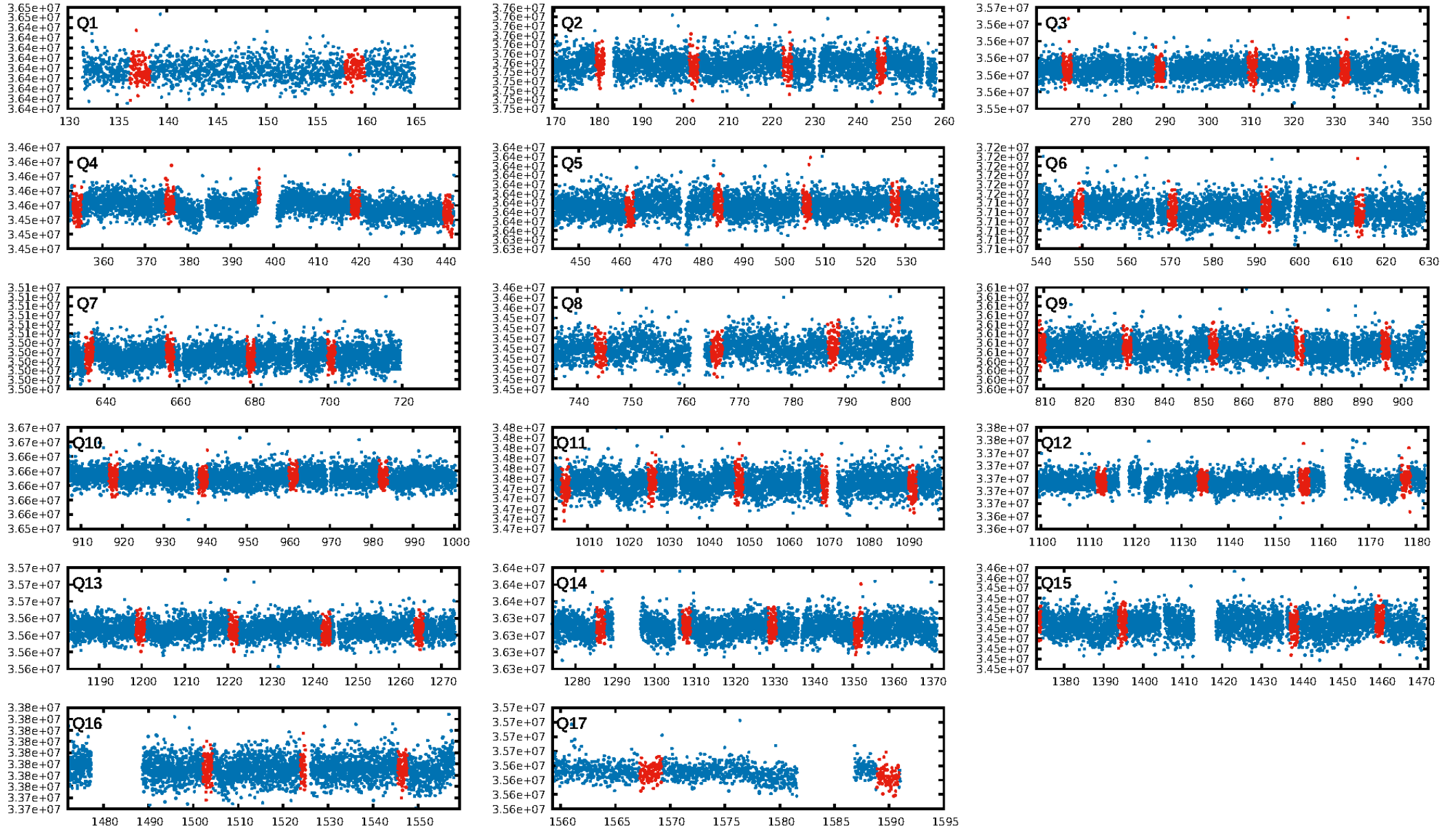
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 99.7%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 4.72e-16  
RollingBand-fgt: 1.00 [60/60]  
**GhostDiagnostic-chr: 0.6592**  
Centroid-sig: 52.2%  
Centroid-so: 0.709 arcsec [0.71σ]  
**OotOffset-rm: 1.586 arcsec [3.12σ]**  
KicOffset-rm: 1.423 arcsec [2.50σ]  
OotOffset-st: 2/3/3/1 [9]  
KicOffset-st: 2/3/3/1 [9]  
DiffImageQuality-fgm: 0.56 [5/9]  
DiffImageOverlap-fno: 1.00 [16/16]

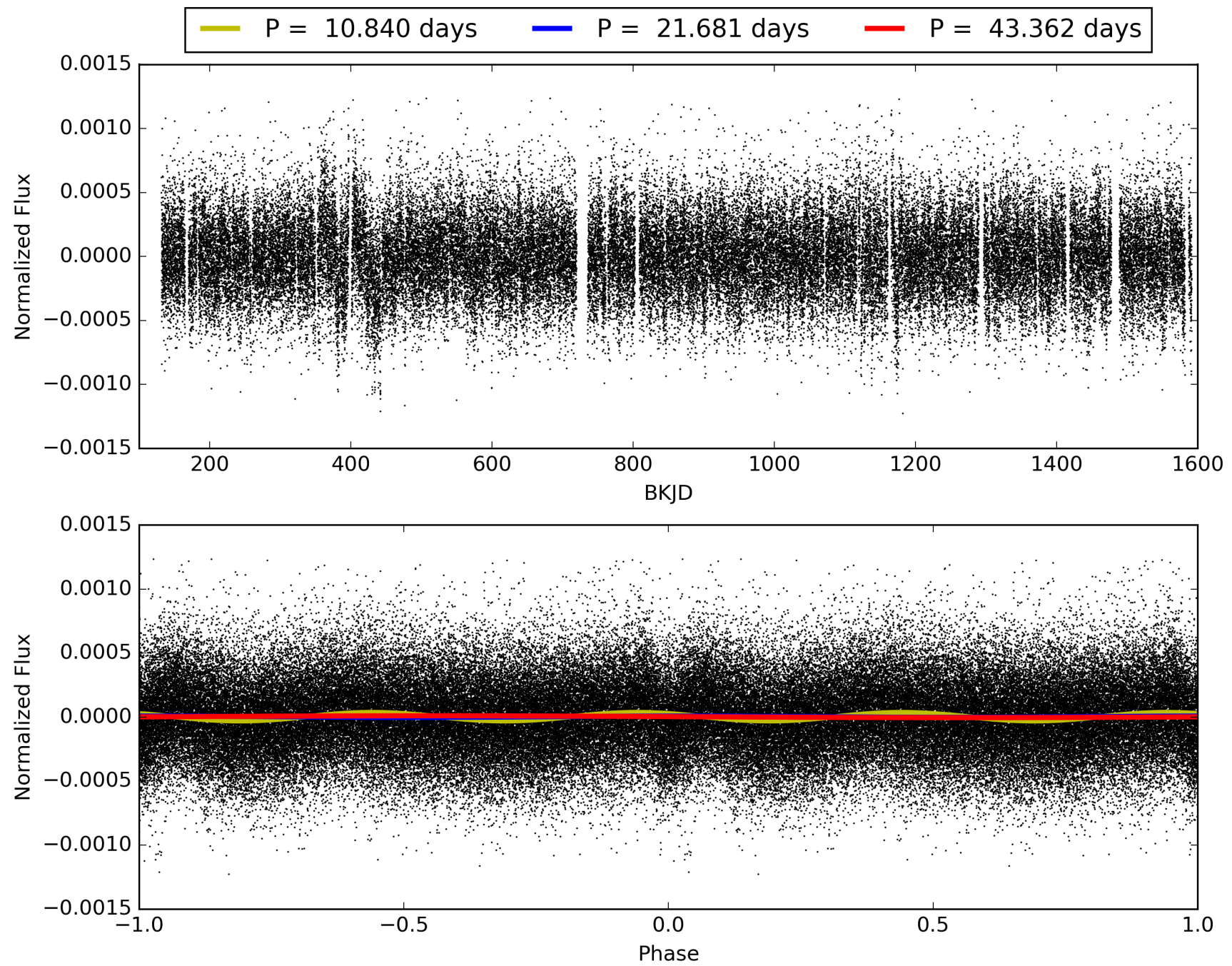
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 21:27:14 Z

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

# TCE 011621897-01, PDC Light Curves



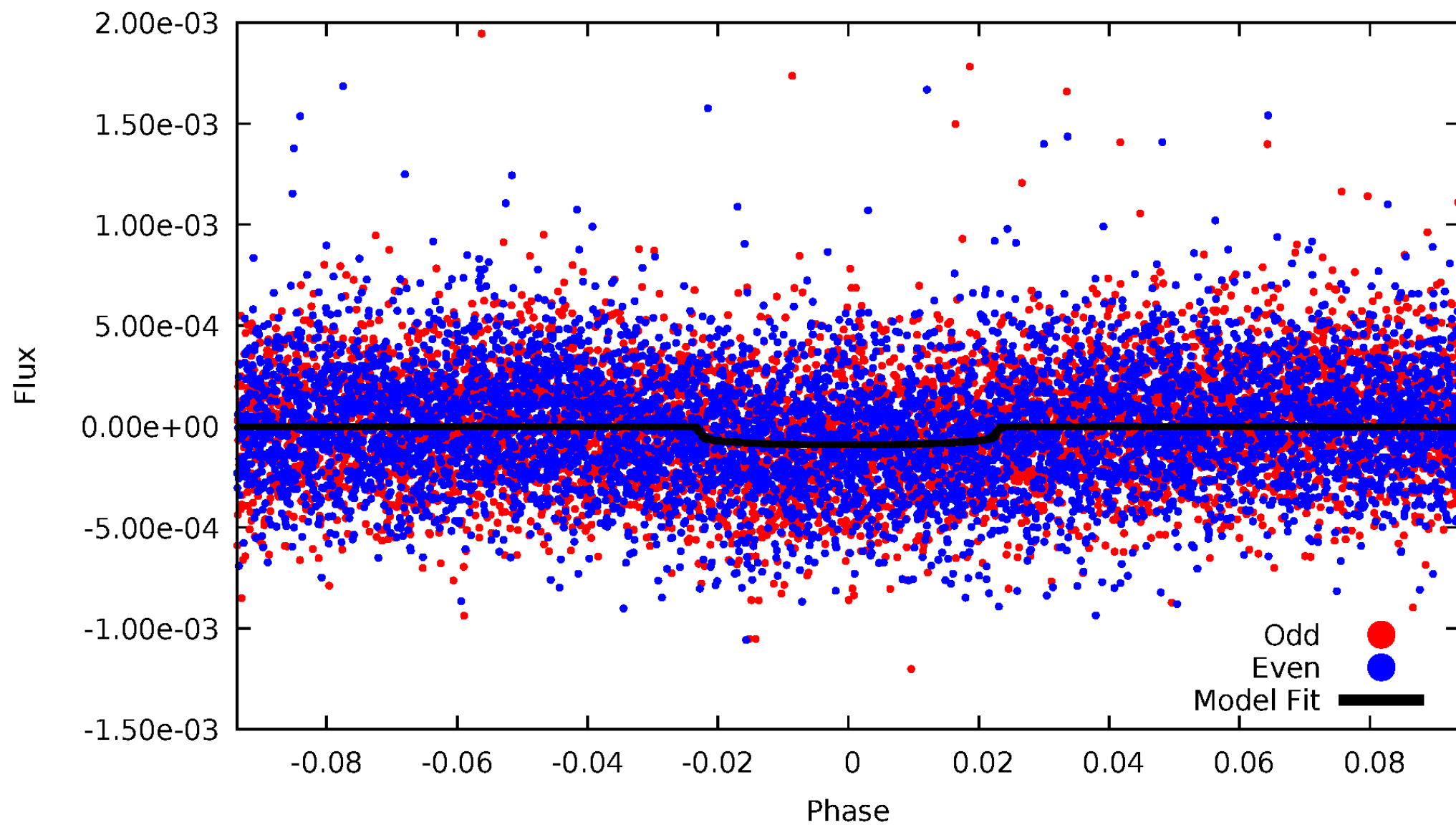
TCE 011621897-01





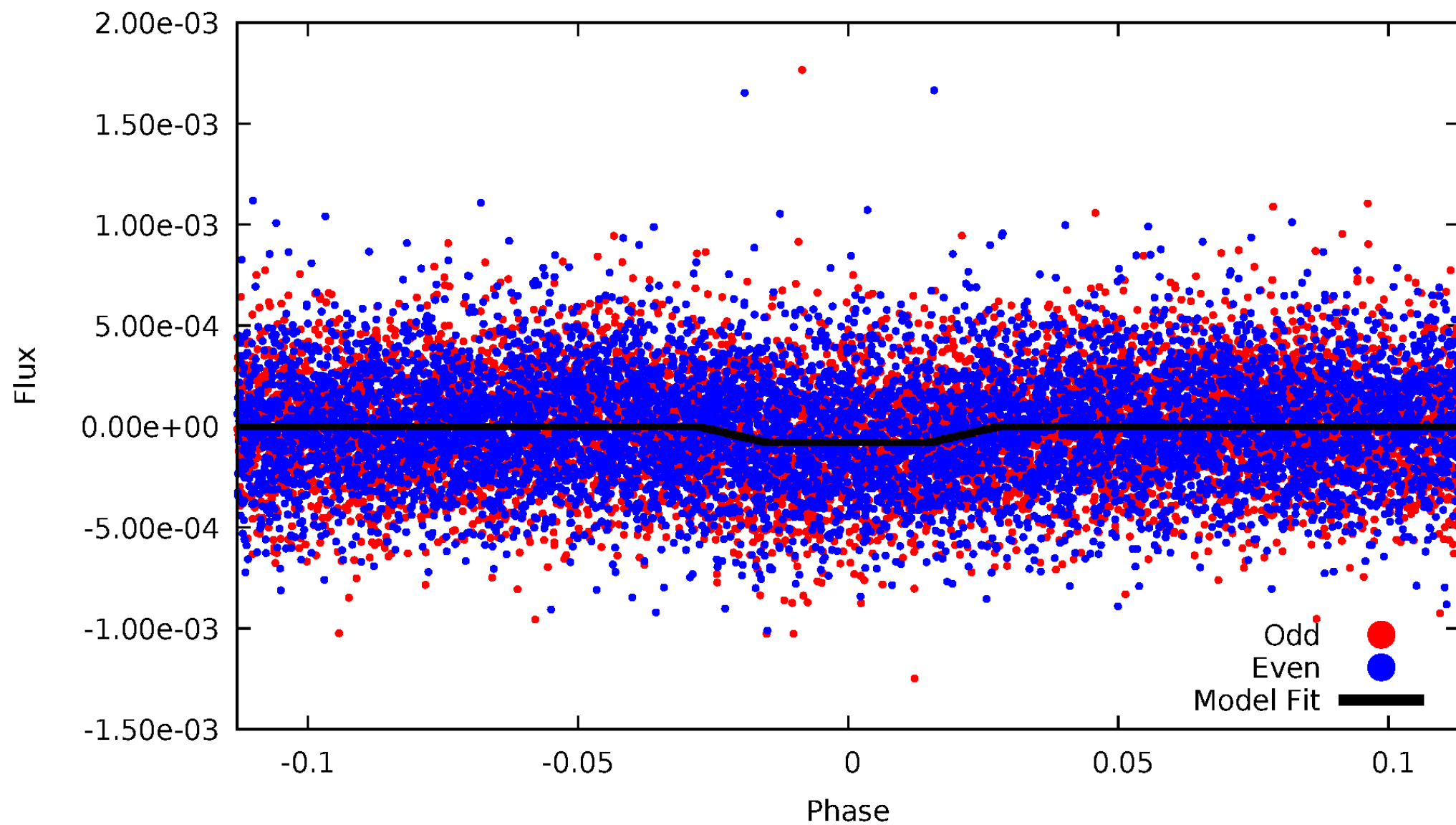
# DV Odd/Even

TCE 011621897-01

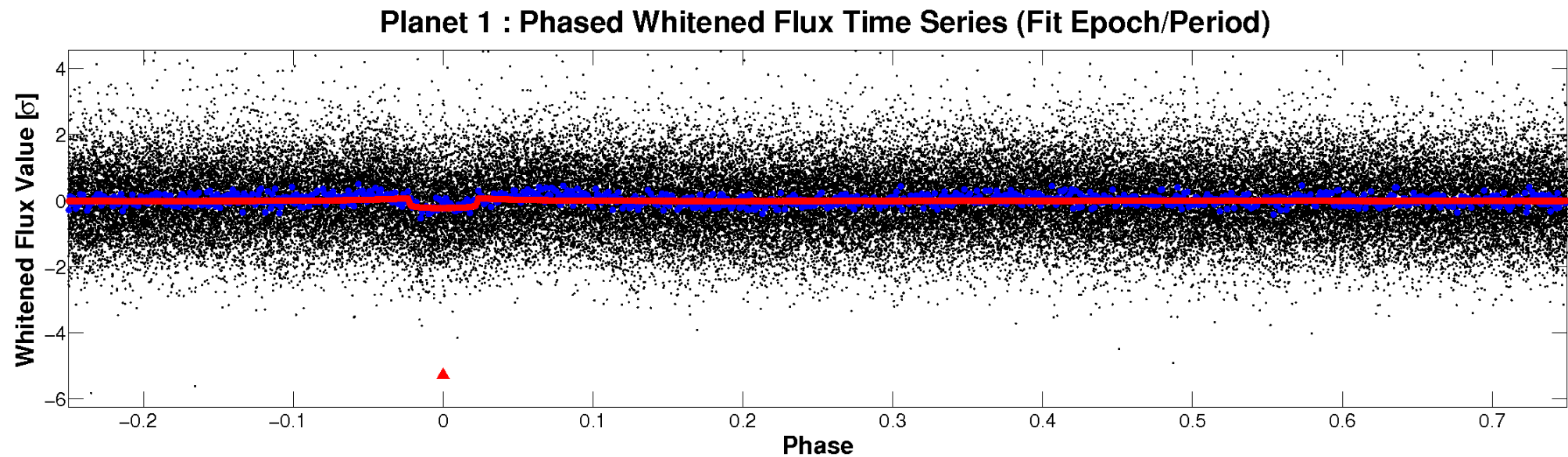
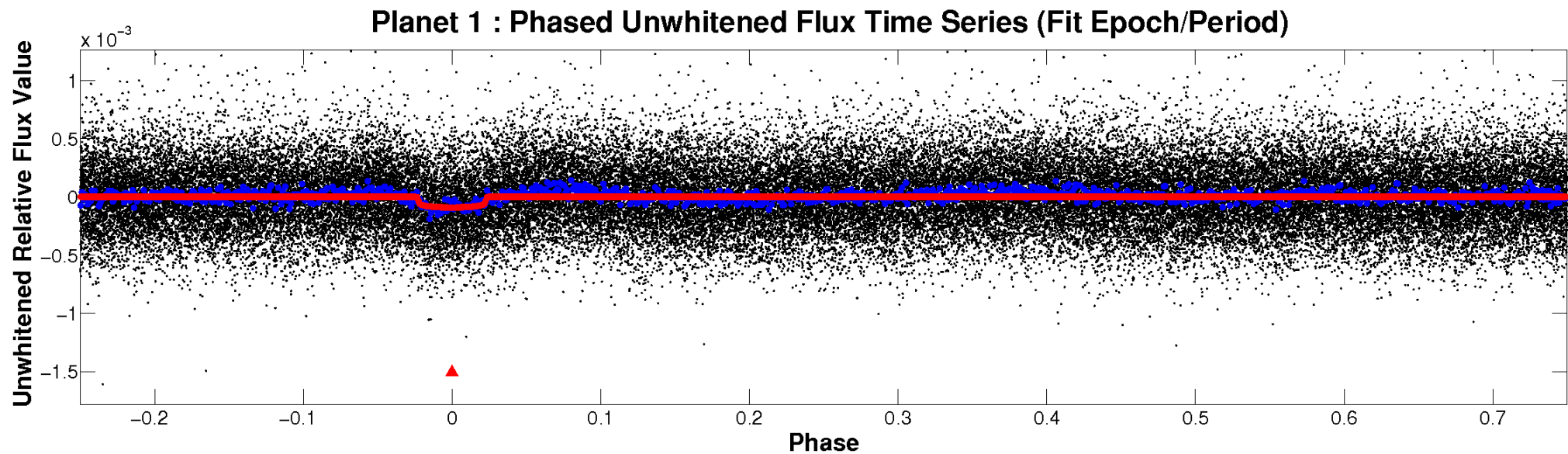


# ALT Odd/Even

TCE 011621897-01

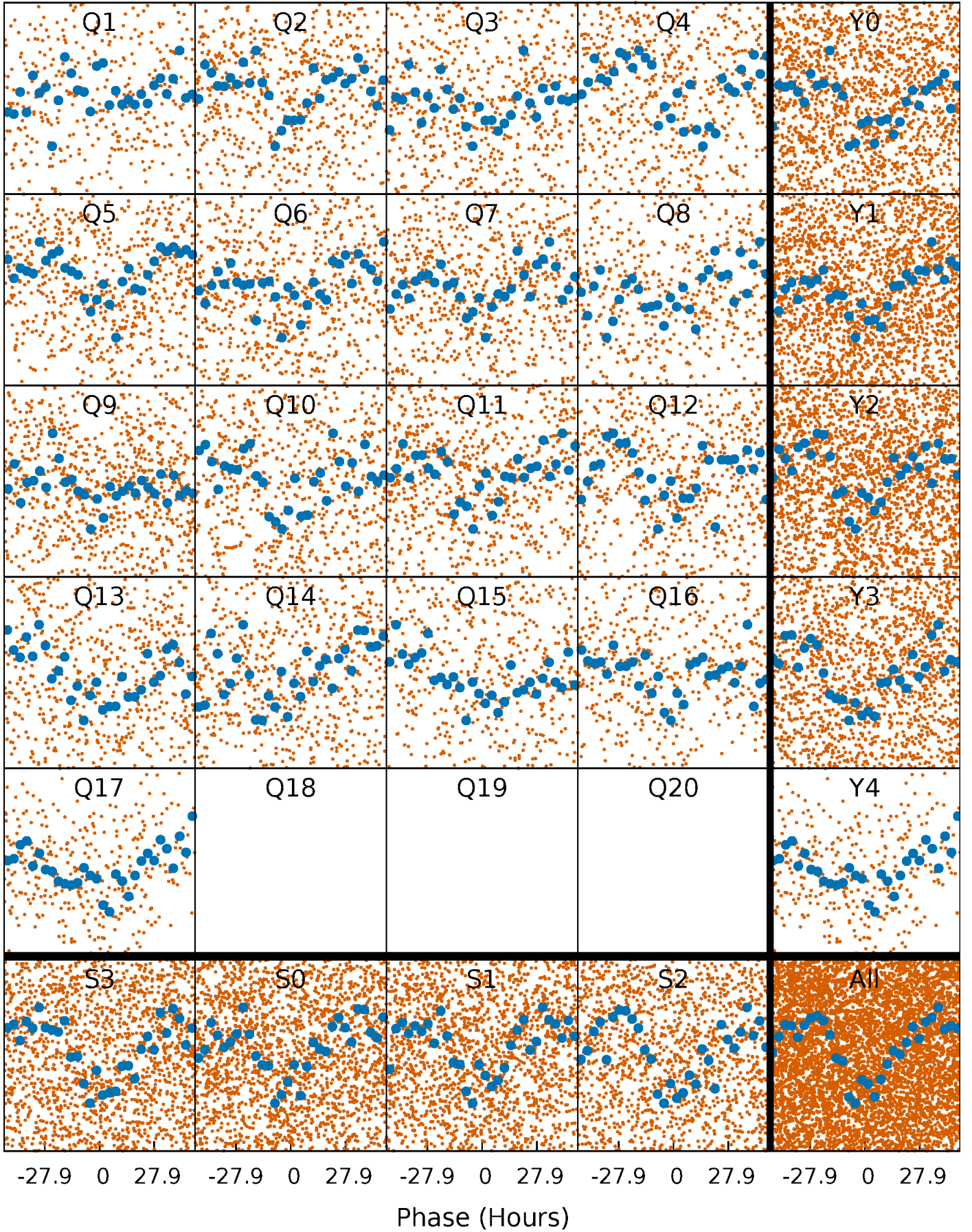


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

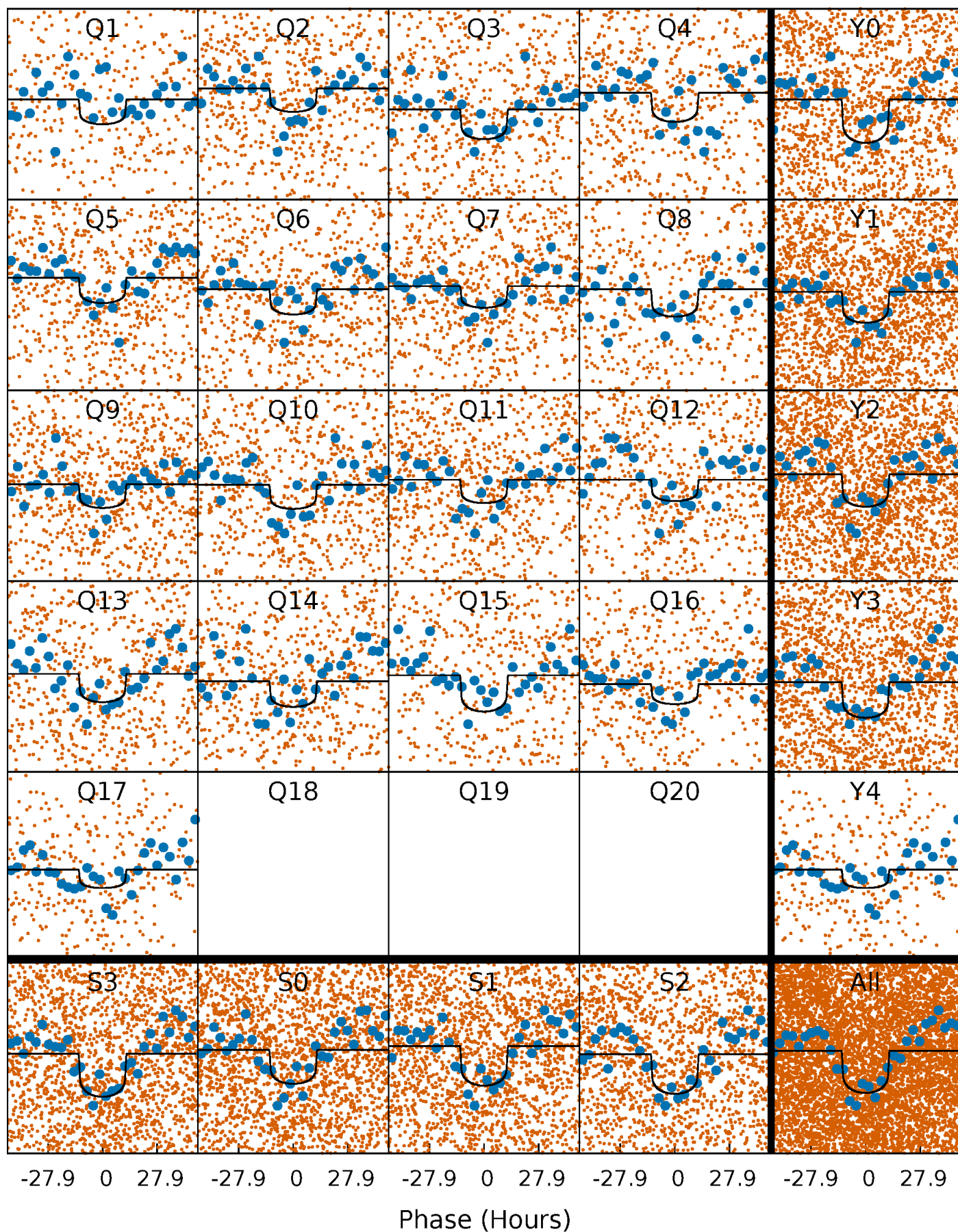
TCE 011621897-01   P= 21.680919 Days    $T_0=137.274581$  (BKJD)





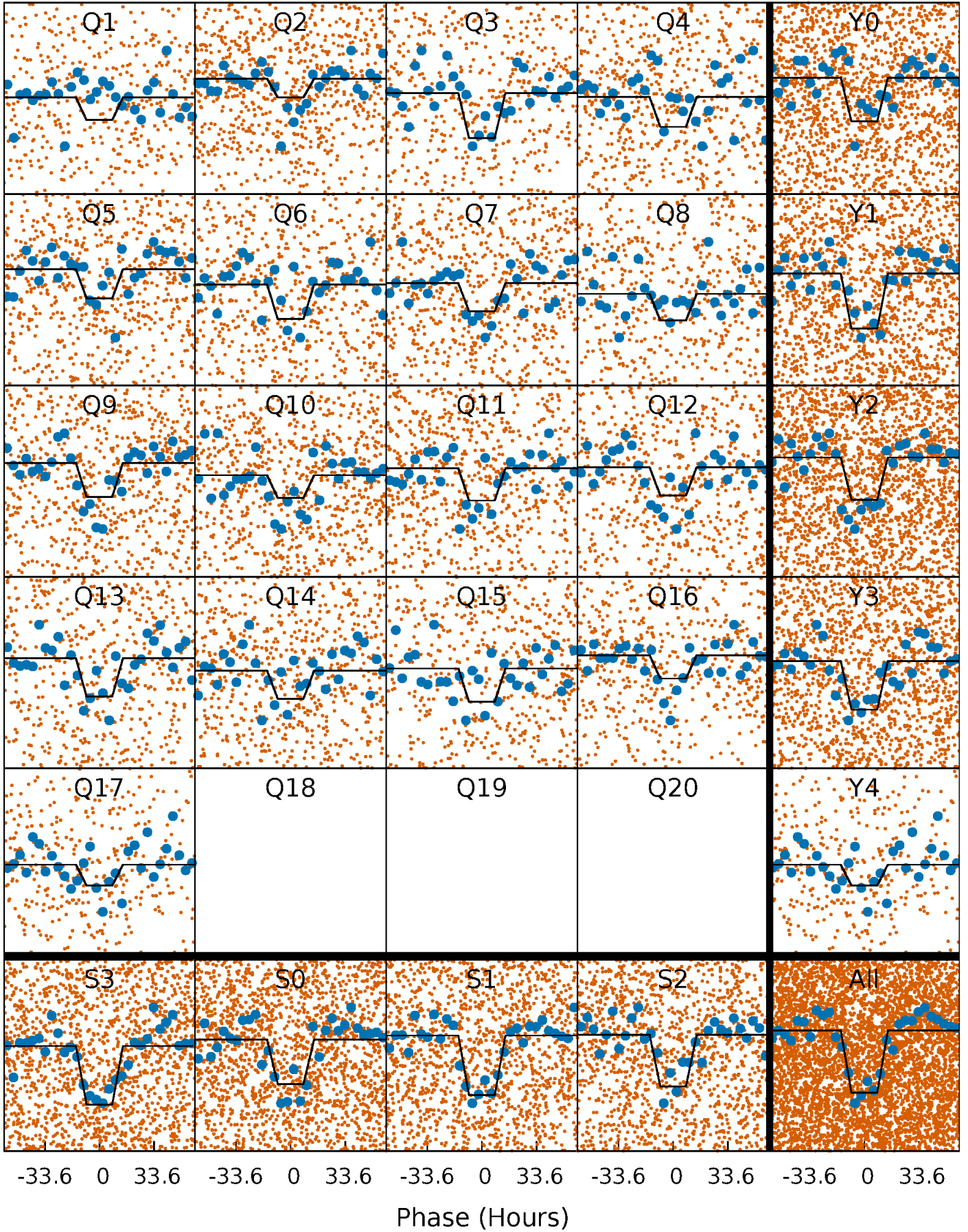
# DV Quarter-Phased Transit Curves

TCE 011621897-01 P= 21.680919 Days  $T_0=137.274581$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

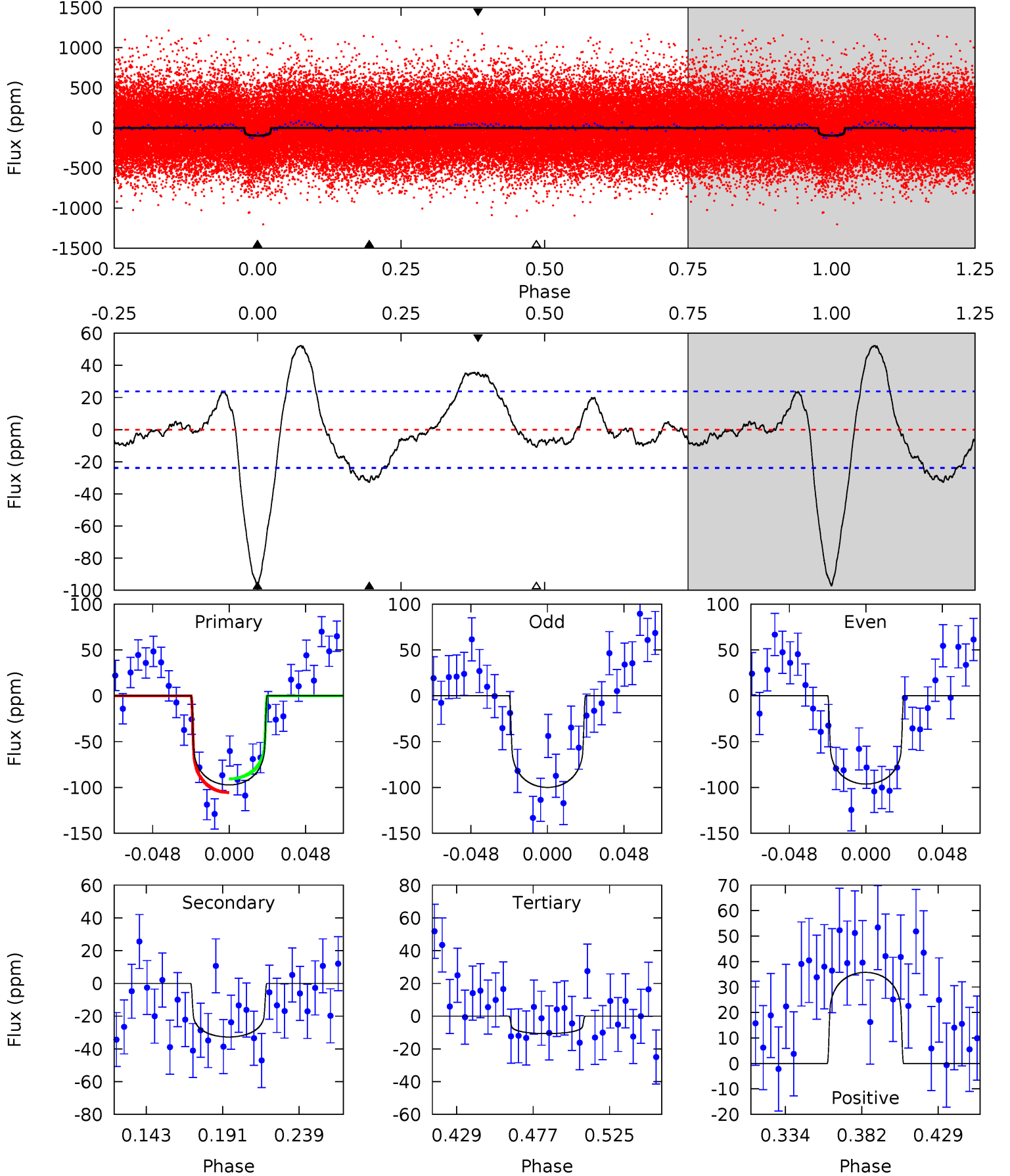
TCE 011621897-01 P= 21.682897 Days  $T_0=137.180303$  (BKJD)



# DV Model-Shift Uniqueness Test

011621897-01,  $P = 21.680919$  Days,  $E = 115.593662$  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
19.3	6.50	2.12	7.09	4.72	1.98	3.07	17.2	12.2	4.38	-0.59	0.36	1.03	0.35	1.47

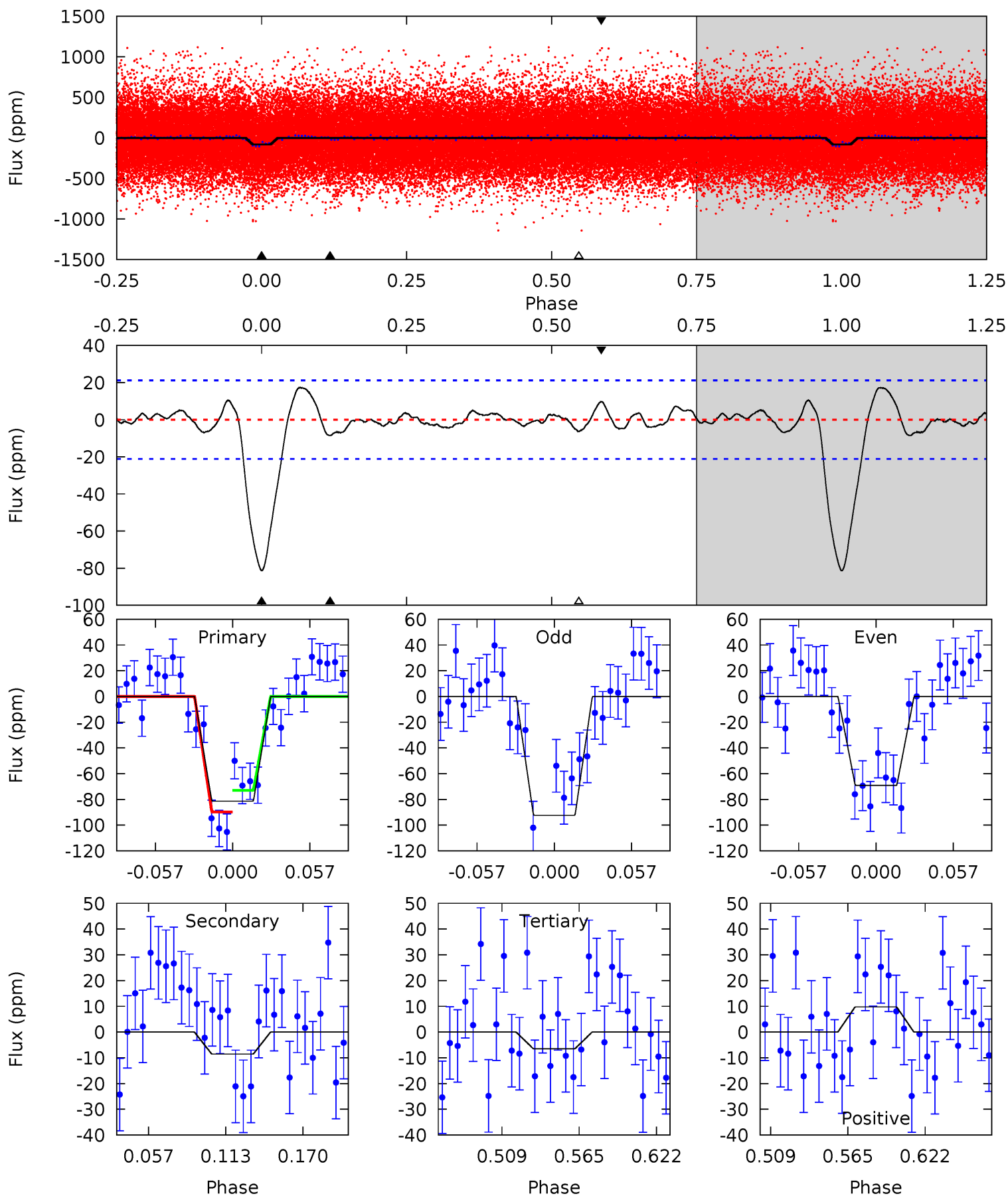




# Alt Model-Shift Uniqueness Test

011621897-01,  $P = 21.682897$  Days,  $E = 115.497406$  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
18.0	1.89	1.44	2.16	4.68	1.91	0.80	16.6	15.8	0.46	-0.27	2.57	1.00	0.18	1.86





### Stellar Parameters For KIC 011621897

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6297^{+169}_{-206}$	$4.448^{+0.054}_{-0.216}$	$-0.200^{+0.250}_{-0.300}$	$1.031^{+0.335}_{-0.112}$	$1.084^{+0.158}_{-0.144}$	$1.393^{+0.394}_{-0.727}$
	+3%/-3%	+1%/-5%	+125%/-150%	+32%/-11%	+15%/-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 011621897-01 / KOI 7618.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-33 \pm 5$	$1.14^{+0.24}_{-0.19}$	$1021^{+79}_{-51}$	$4915^{+373}_{-311}$	$324^{+147}_{-101}$
Alt.	$-9 \pm 5$	$1.06^{+0.22}_{-0.18}$	$1014^{+73}_{-43}$	$3898^{+414}_{-477}$	$96^{+80}_{-54}$

$T_{max}$  = 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

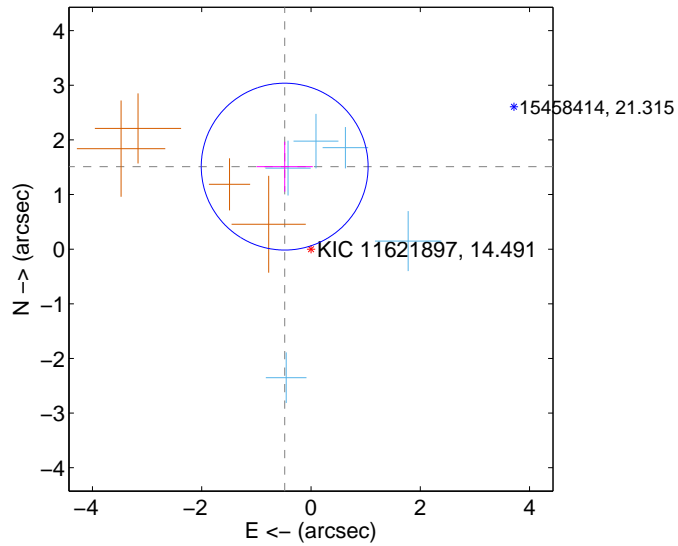
Supplemental centroid analysis for 011621897-01. Kepler magnitude: 14.49. Transit SNR 11.14

There are 5 quarters with good PRF difference image offsets

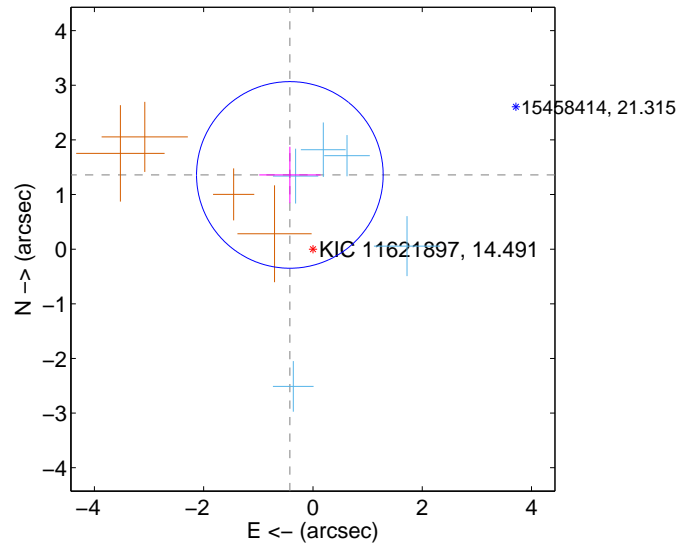
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b>1.586 <math>\pm</math> 0.509</b>	<b>3.12</b>	0.482 $\pm$ 0.515	1.511 $\pm$ 0.456
PRF-fit source offset from KIC position	1.423 $\pm$ 0.569	2.50	0.423 $\pm$ 0.562	1.359 $\pm$ 0.516
photometric centroid source offset	0.71 $\pm$ 0.99	0.71	0.46 $\pm$ 0.98	-0.54 $\pm$ 1.01

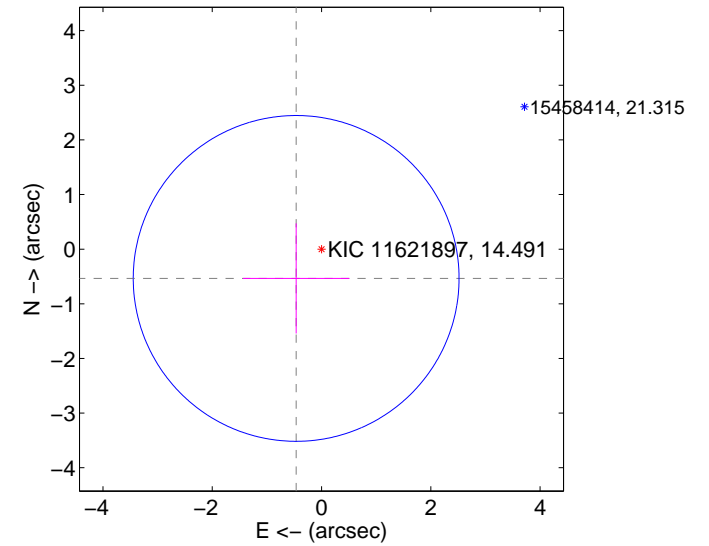
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

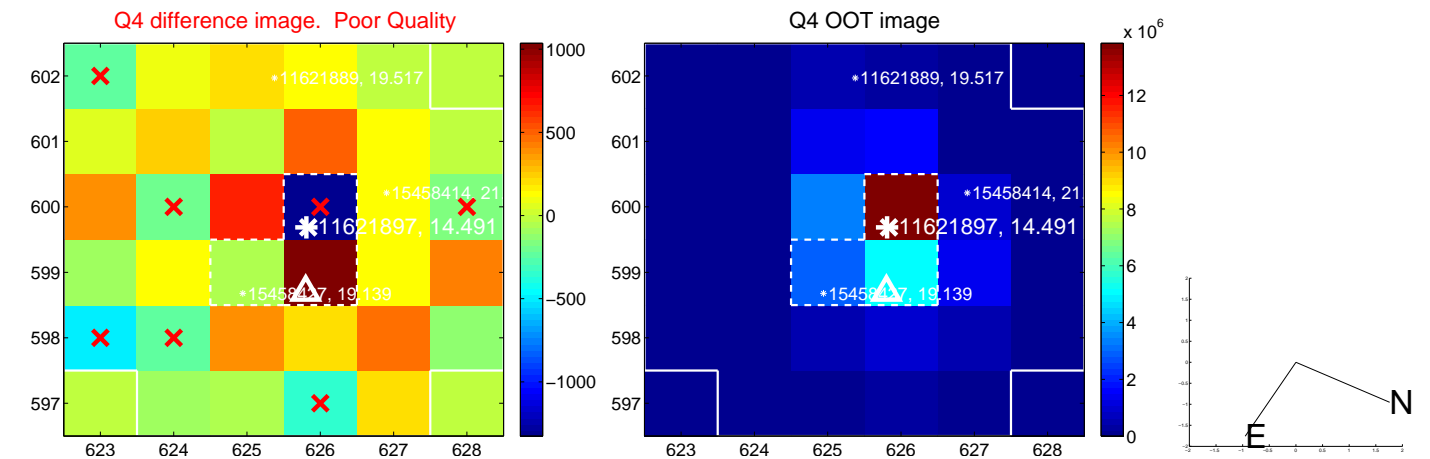
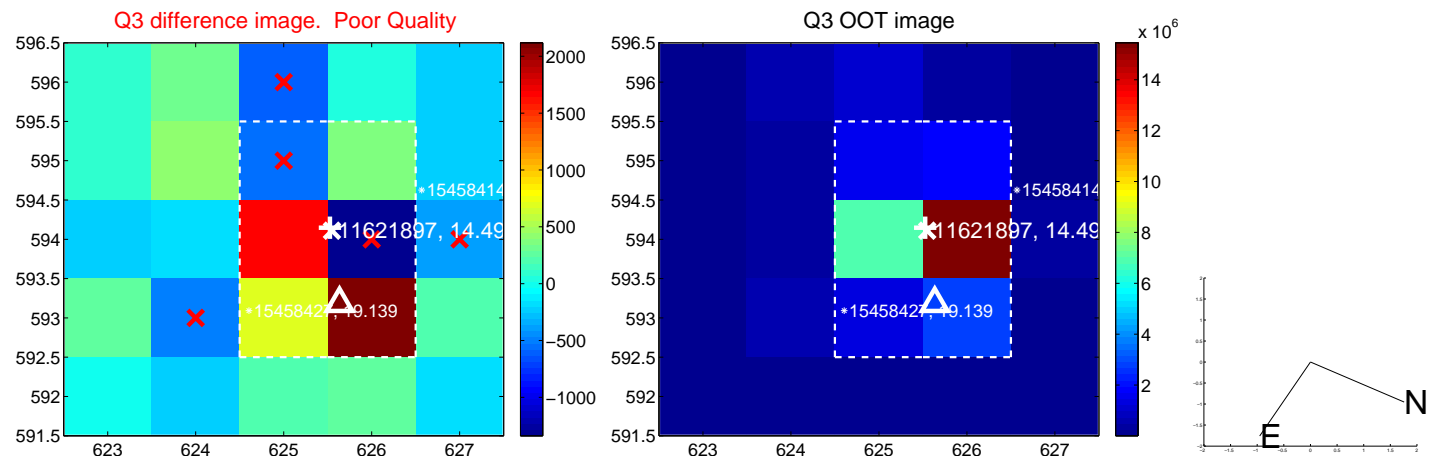
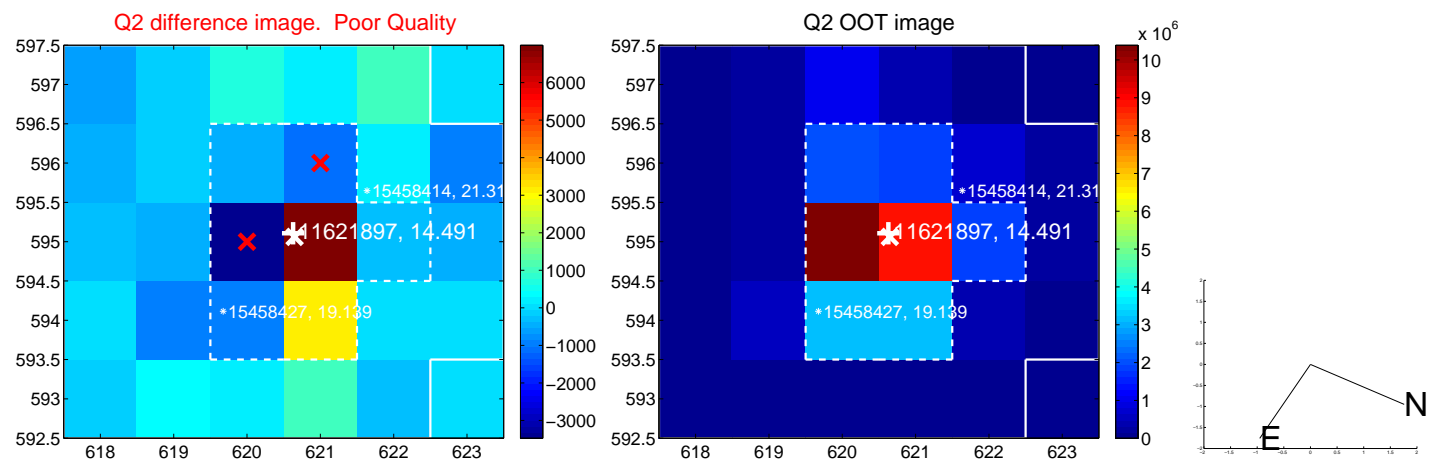
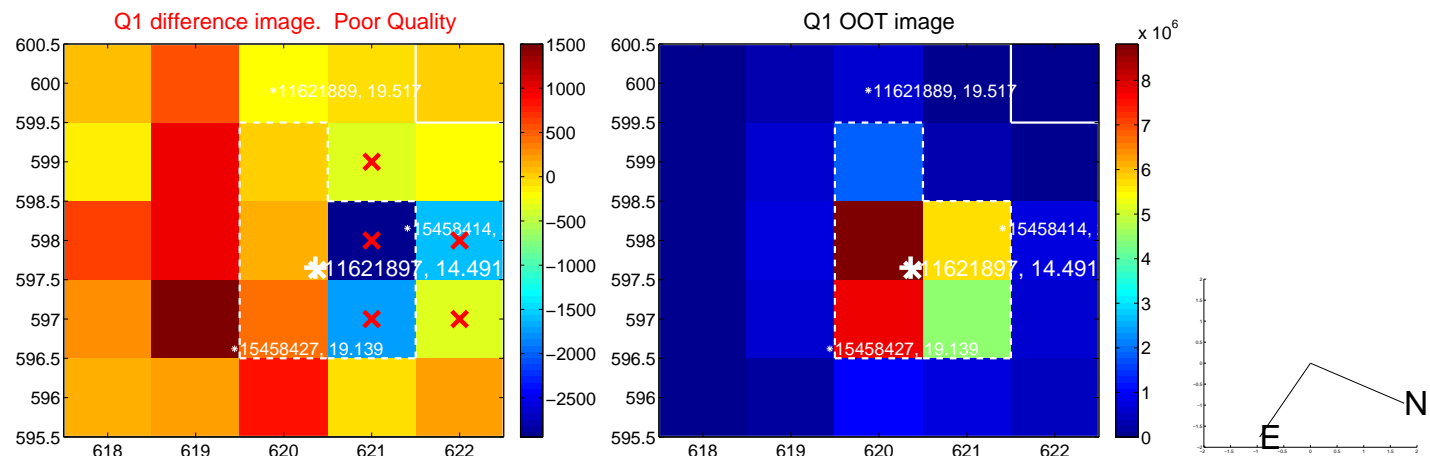


offset from photometric centroids

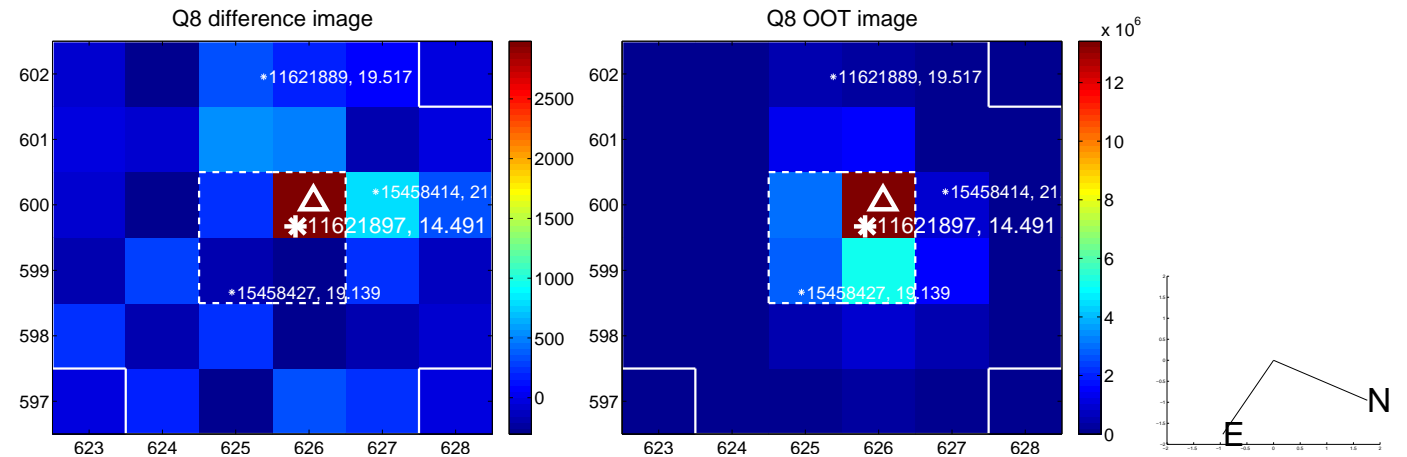
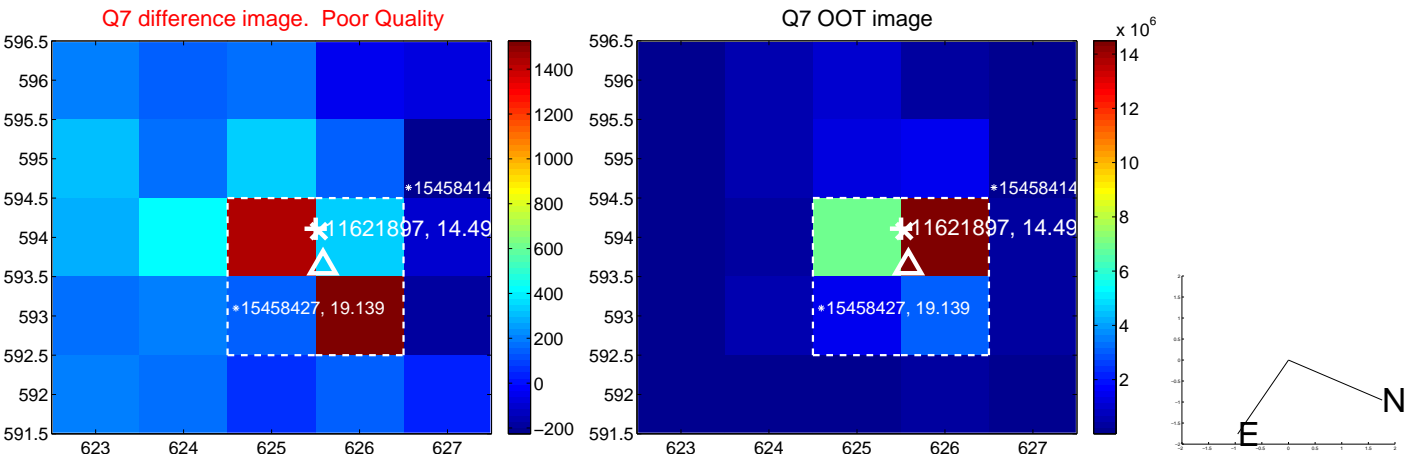
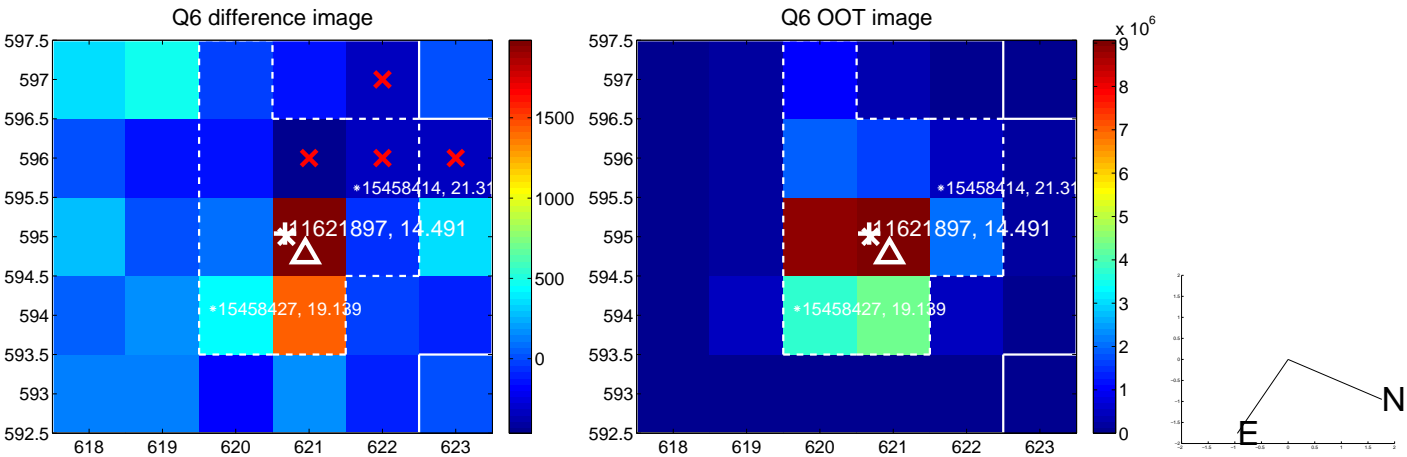
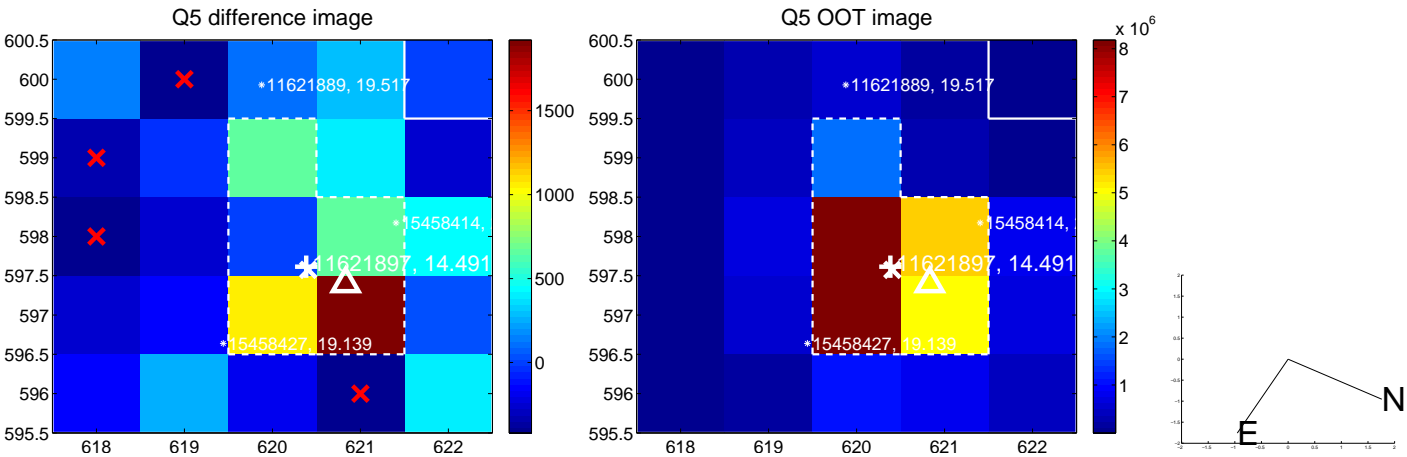


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

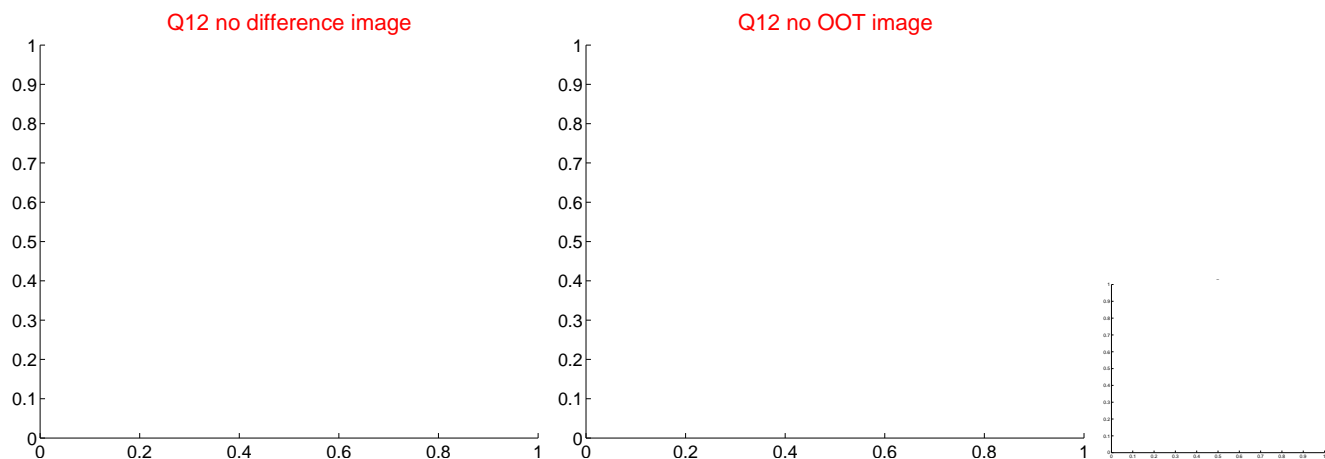
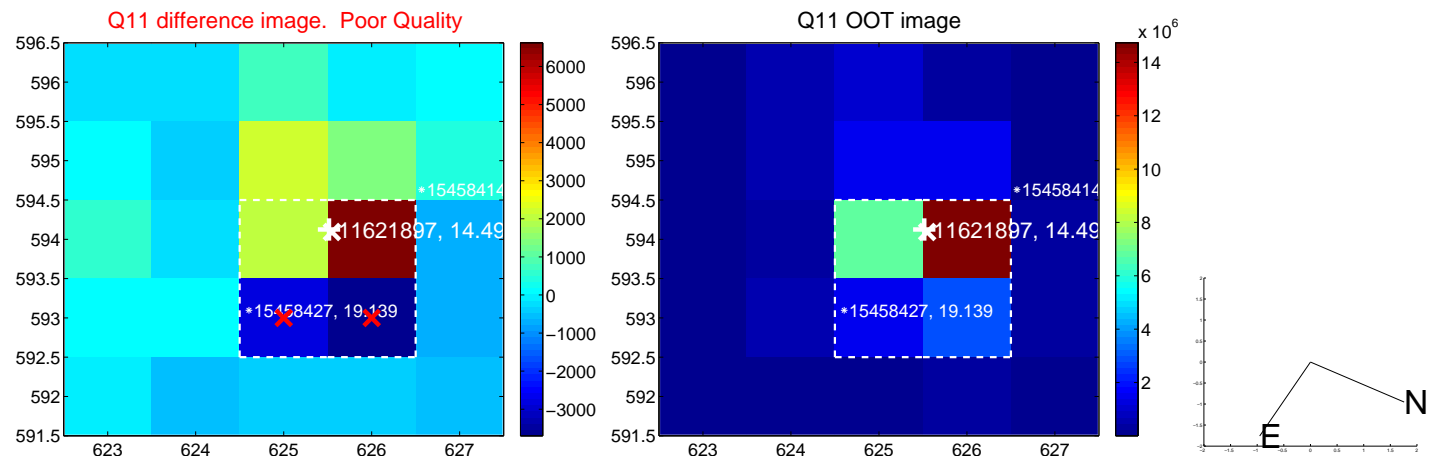
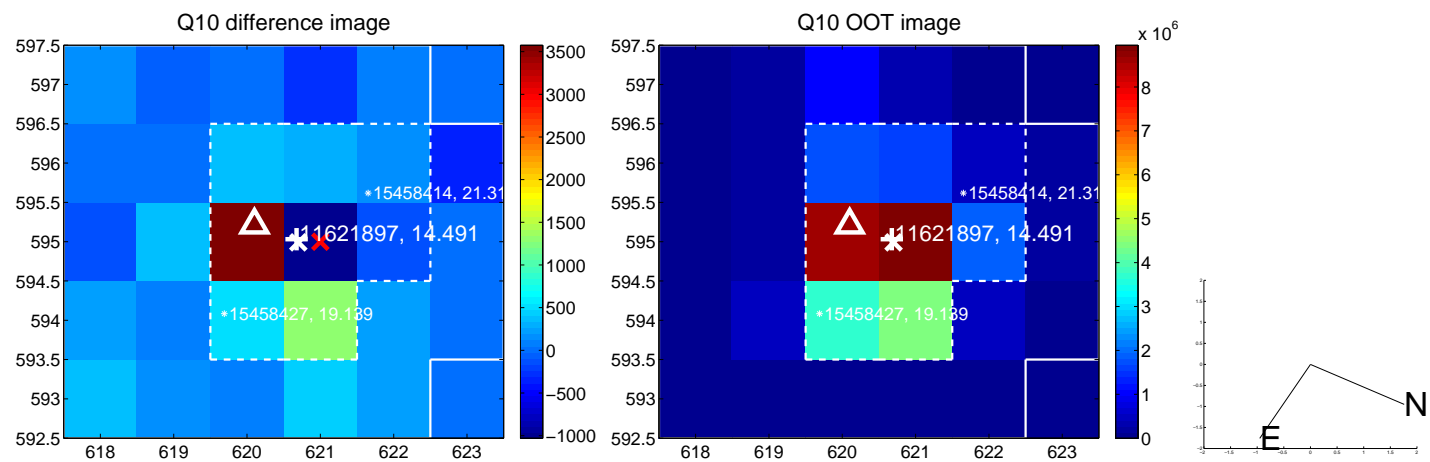
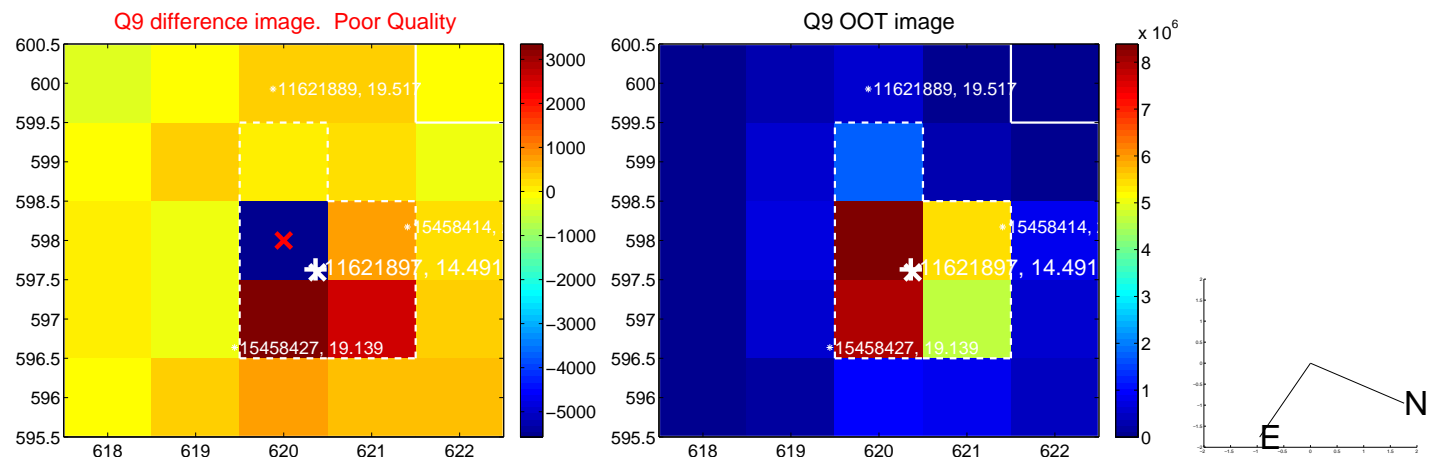


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

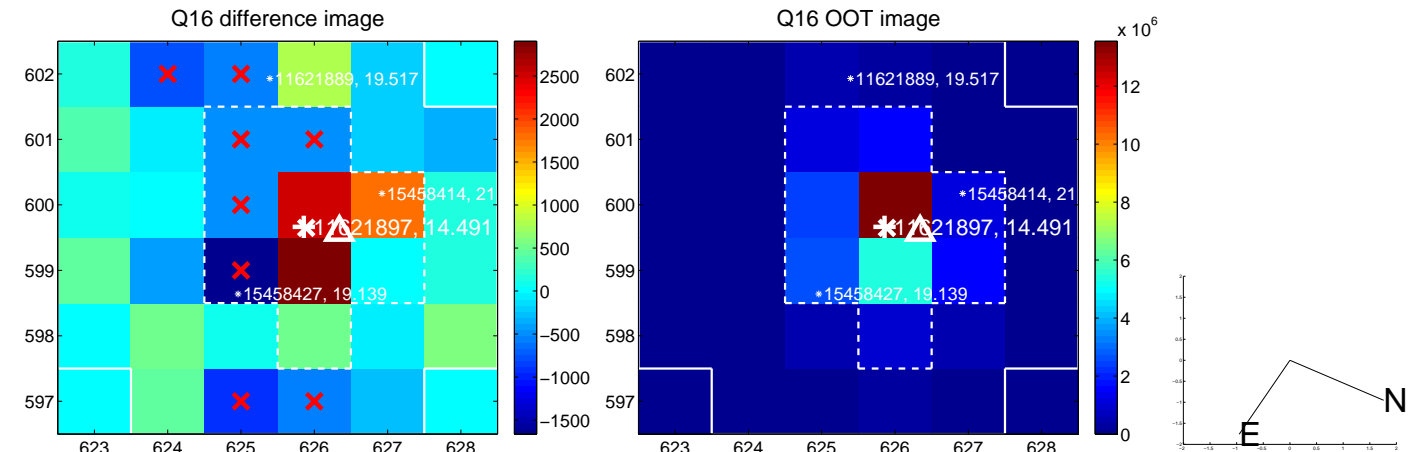
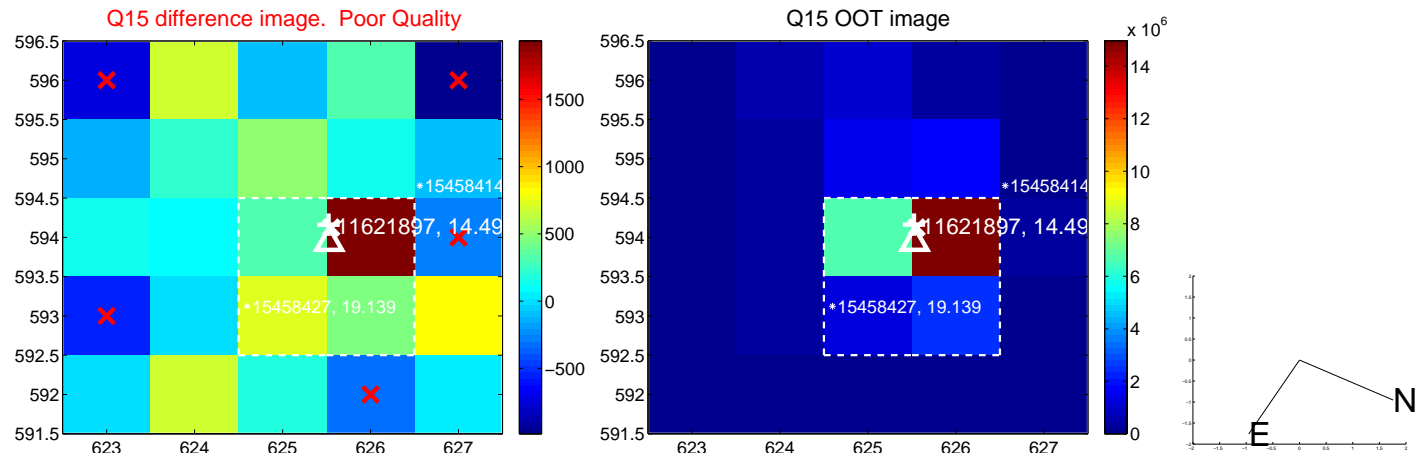
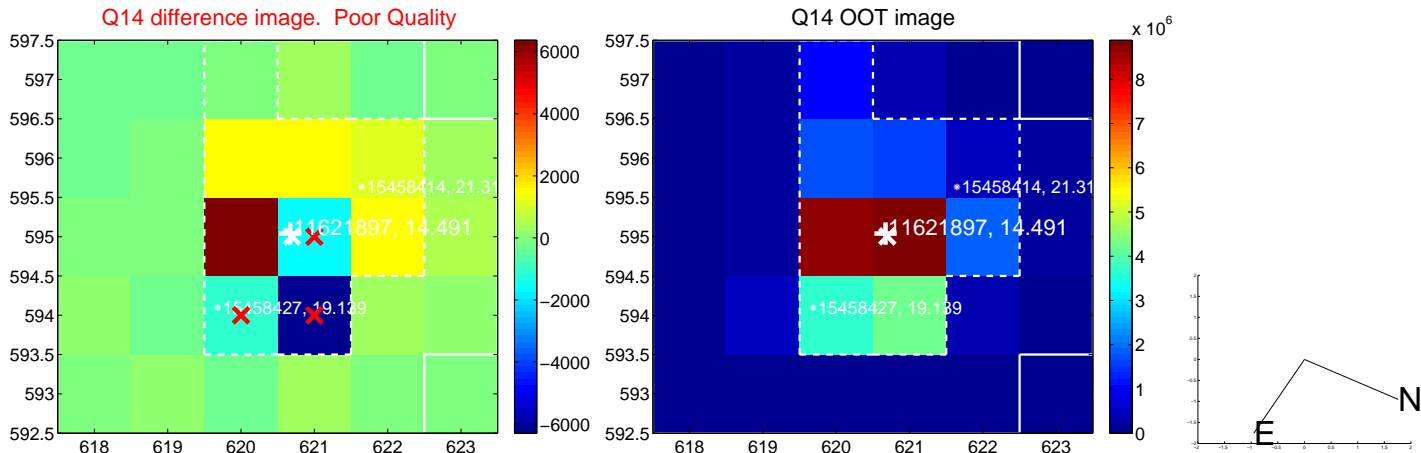
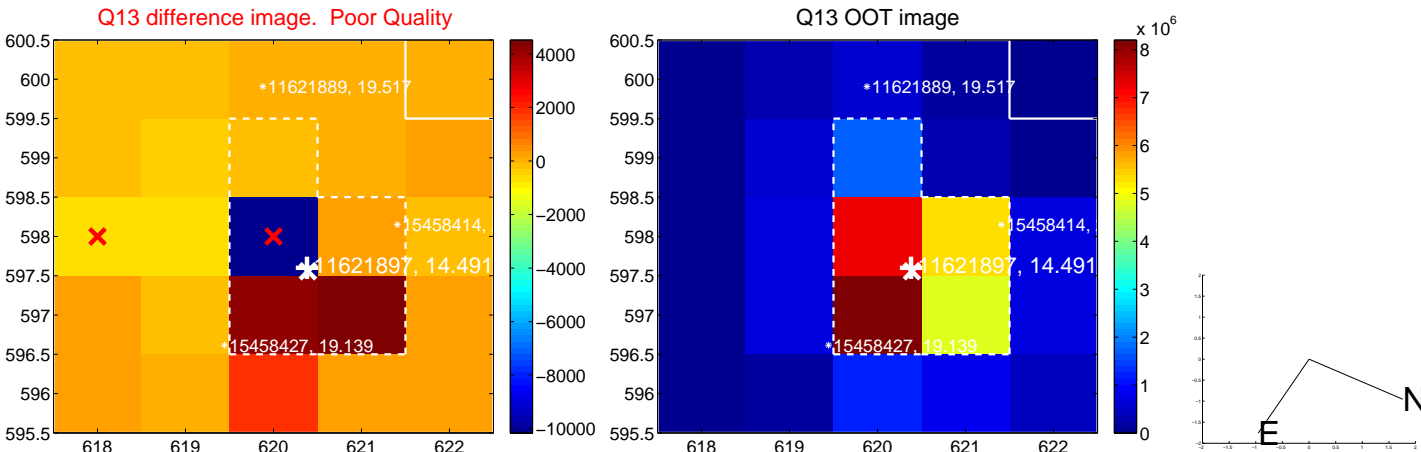




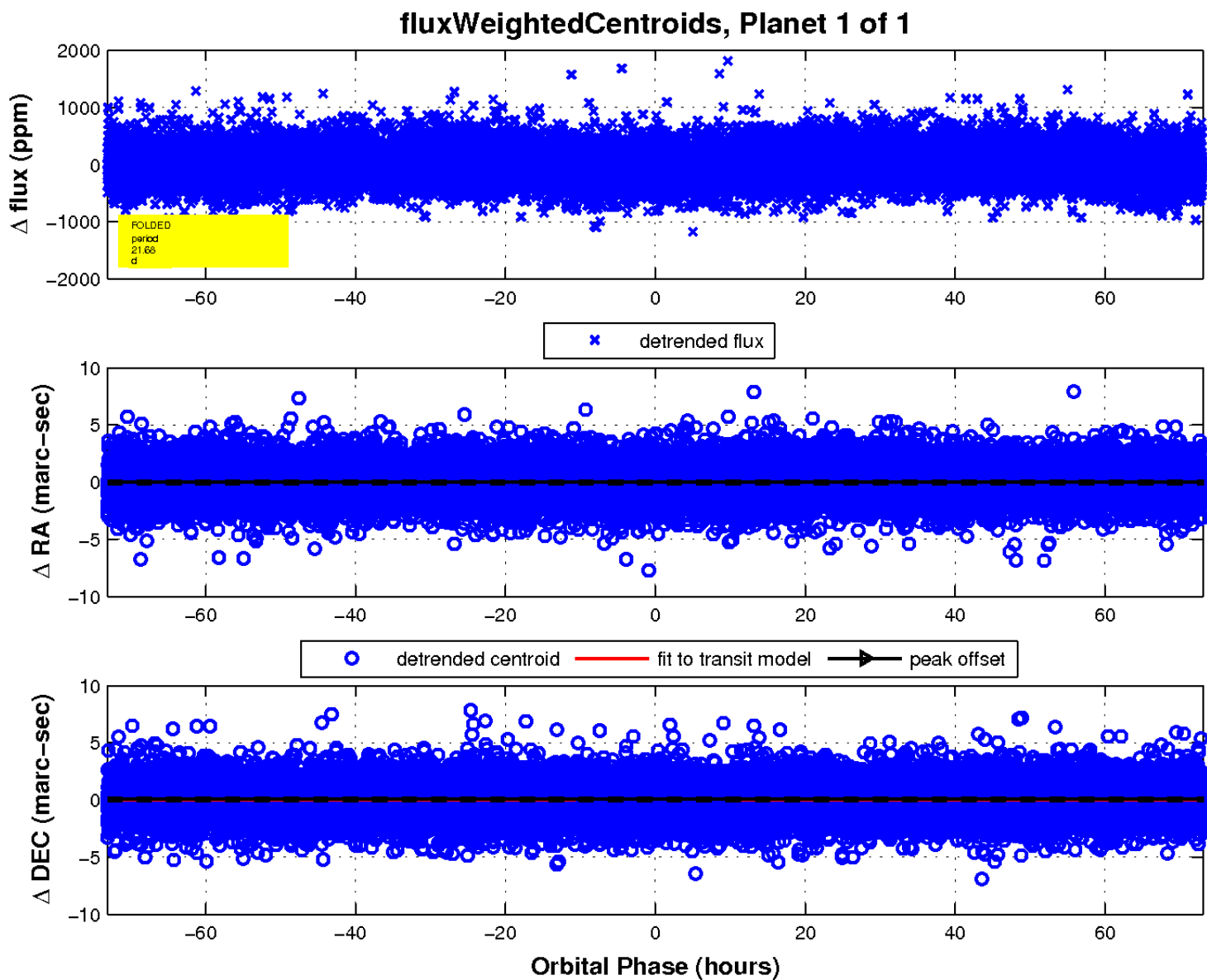
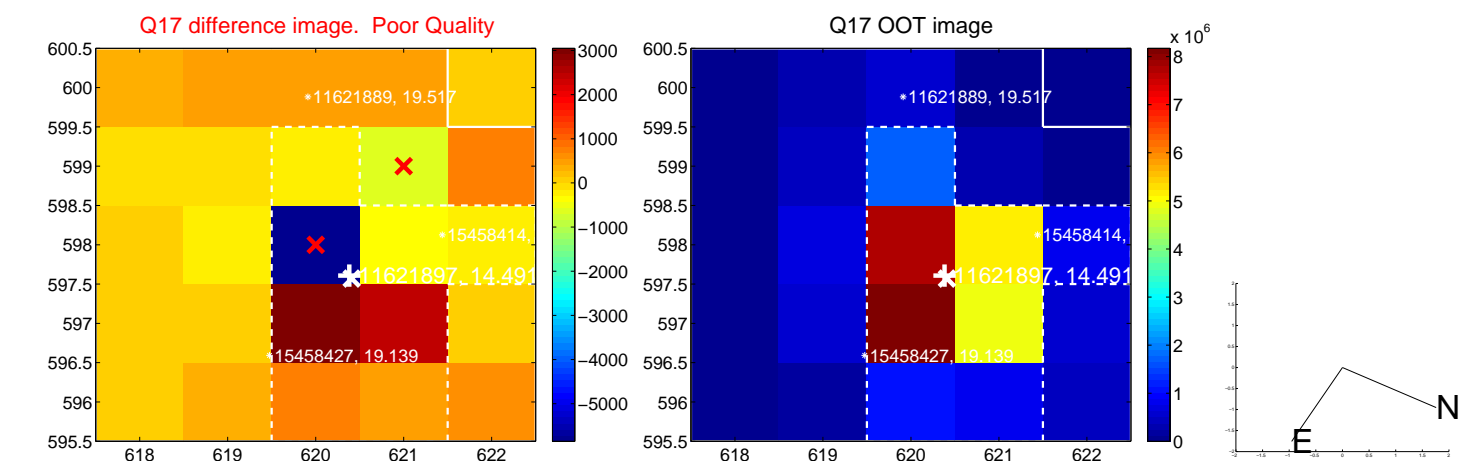
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

