

# KIC 011922722

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R <sub>★</sub> (R <sub>☉</sub> )	T <sub>★</sub> (K)	R <sub>p</sub> (R <sub>⊕</sub> )	S <sub>p</sub> (S <sub>⊕</sub> )
011922722-01	OBS	2301.01	1.756453	132.039823	88.0	3.462	23.2	24.9	0.98	5523	1.10	1082.74

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011922722-01	OBS	FP	0.00	0	1	1	1	MOD_ODDEVEN_DV—CENT_UNRESOLVED_OFFSET—HALO_GHOST—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 011922722-01

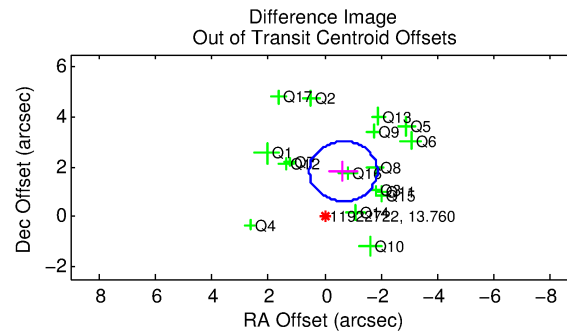
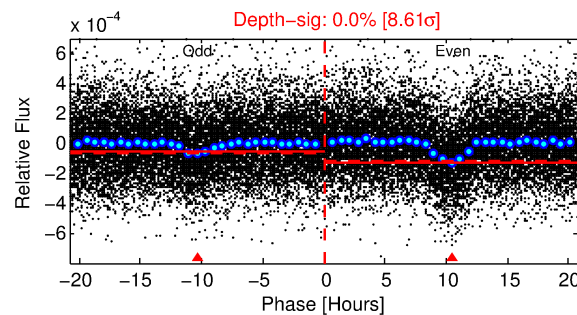
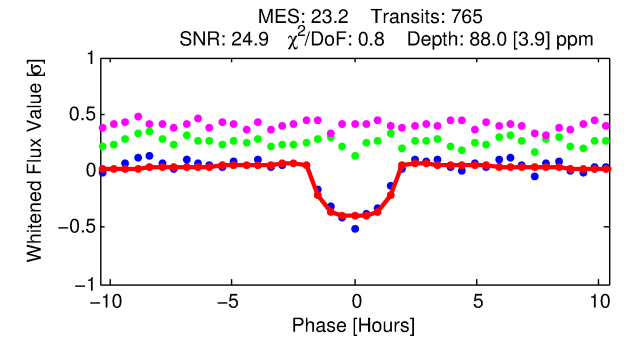
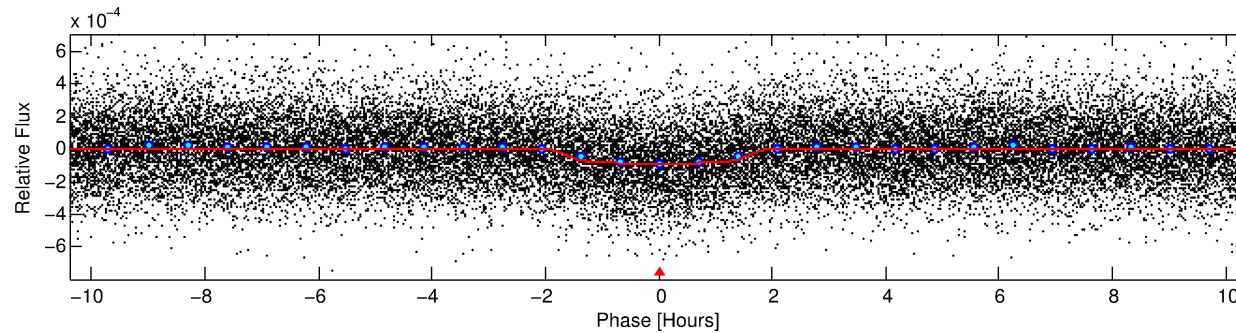
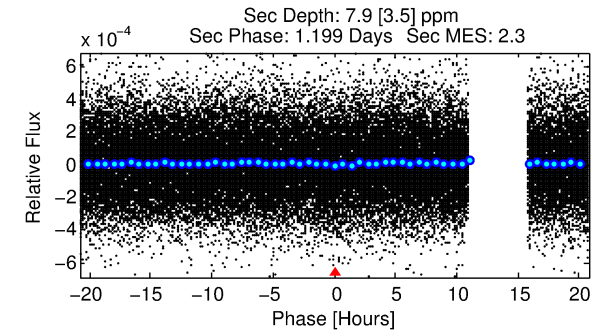
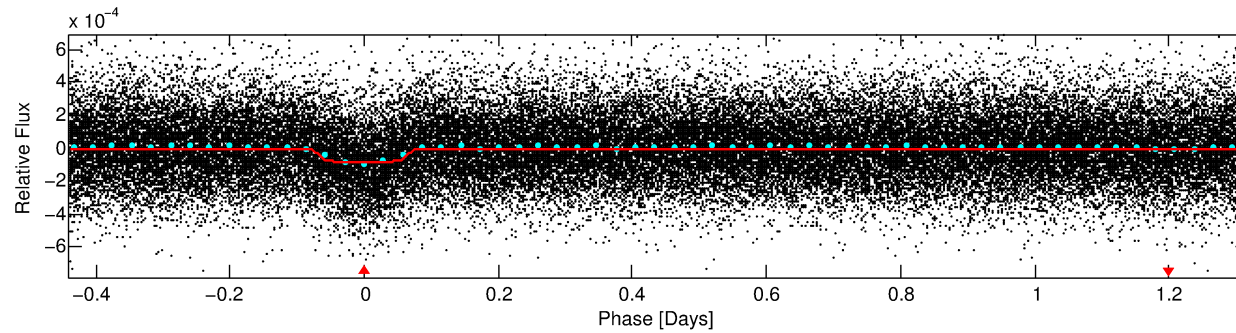
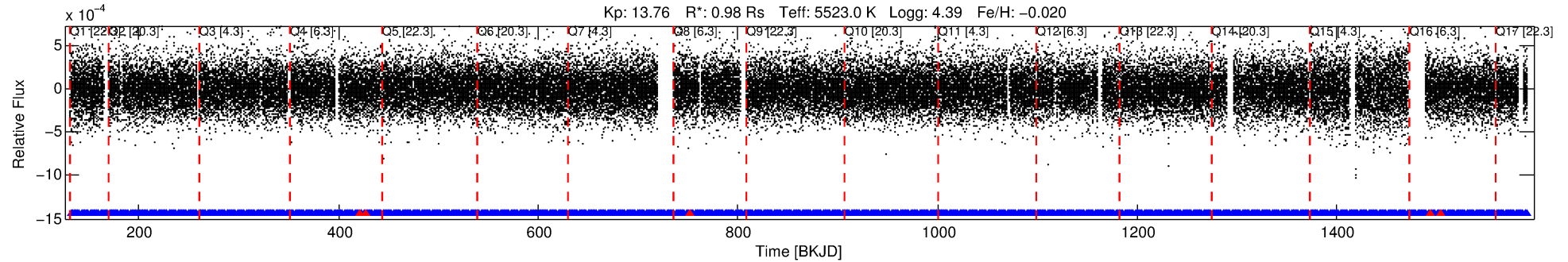
TCE (1)	KIC	Parent (2)	Parent KIC	P <sub>1</sub> :P <sub>2</sub>	Dist (″)	ΔRow	ΔCol	m <sub>2</sub>	m <sub>1</sub>	D <sub>2</sub> /D <sub>1</sub>	Mechanism	Flag	σ <sub>P</sub>	σ <sub>T</sub>
011922722-01	11922722	011922782-pri	11922782	1:2	76.8	5	-18	10.46	13.76	2621.60	Direct-PRF	0	1.18	0.62

**Notes:** P<sub>1</sub>:P<sub>2</sub> is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m<sub>2</sub> and m<sub>1</sub> are the magnitudes of the parent and child. D<sub>2</sub>/D<sub>1</sub> is the parent's transit depth divided by the child's. σ<sub>P</sub> and σ<sub>T</sub> are the significance of the match in period and epoch. For a match to be considered significant σ<sub>P</sub> < 5.0 and σ<sub>T</sub> < 5.0. Matches which have σ<sub>P</sub> and σ<sub>T</sub> very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 11922722 Candidate: 1 of 1 Period: 1.756 d

KOI: K02301 Corr: No Ephemeris Match



## DV Fit Results:

Period = 1.75645 [0.00001] d  
Epoch = 132.0398 [0.0017] BKJD  
Rp/R\* = 0.0102 [0.0025]  
a/R\* = 2.05 [1.69]  
b = 0.89 [0.25]  
Seff = 1082.74 [368.92]  
Teq = 1463 [125] K  
Rp = 1.10 [0.39] Re  
a = 0.0272 [0.0061] AU  
Ag = 2.67 [1.95] [0.86σ]  
Teffp = 2892 [479] K [2.89σ]

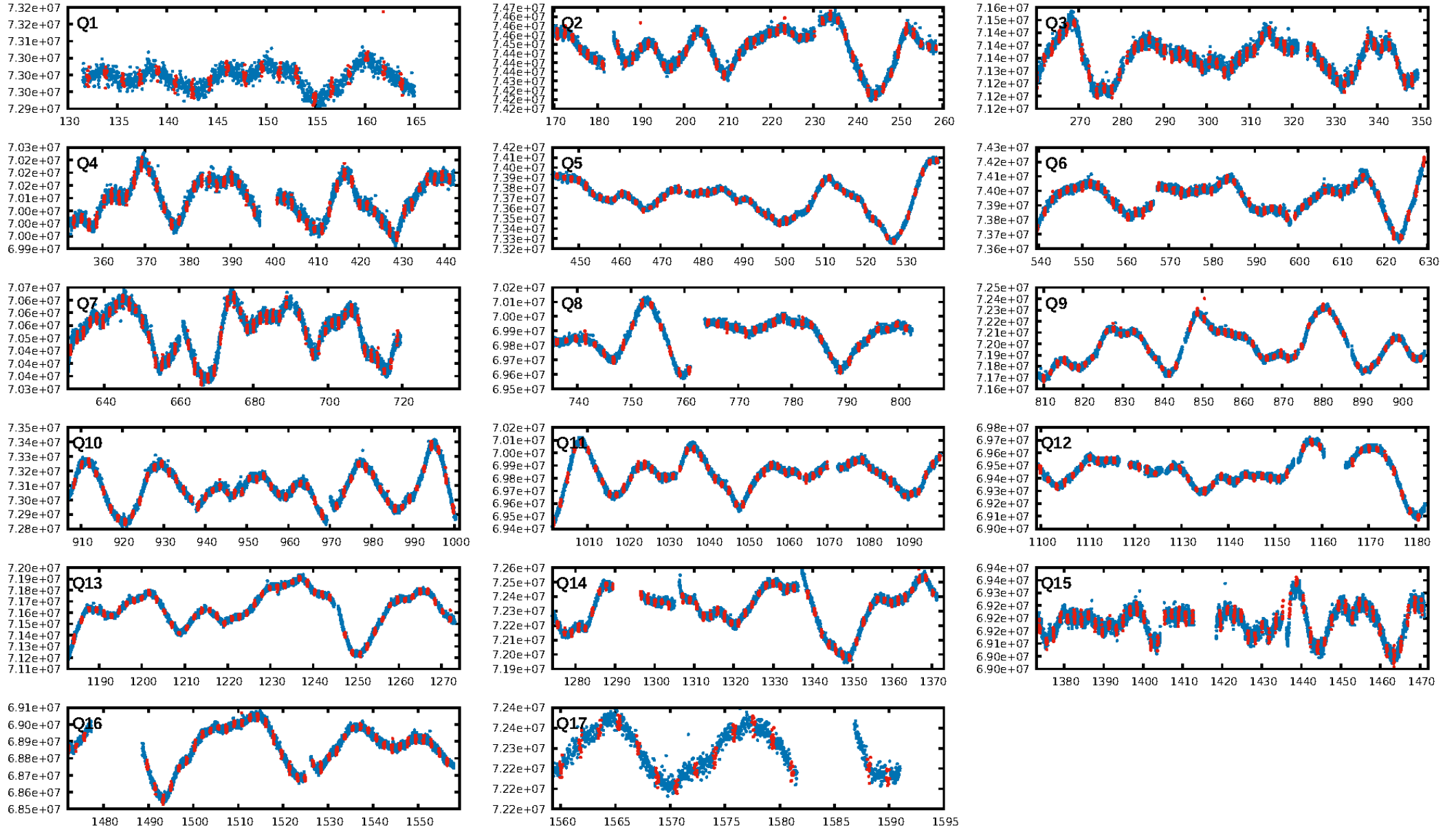
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 3.82e-112  
RollingBand-fgt: 0.99 [726/731]  
GhostDiagnostic-chr: 0.02464  
Centroid-sig: 0.0%  
Centroid-so: 2.388 arcsec [4.96σ]  
OotOffset-rm: 1.933 arcsec [4.83σ]  
KicOffset-rm: 2.023 arcsec [4.86σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.06 [1/17]  
DiffImageOverlap-fno: 1.00 [17/17]

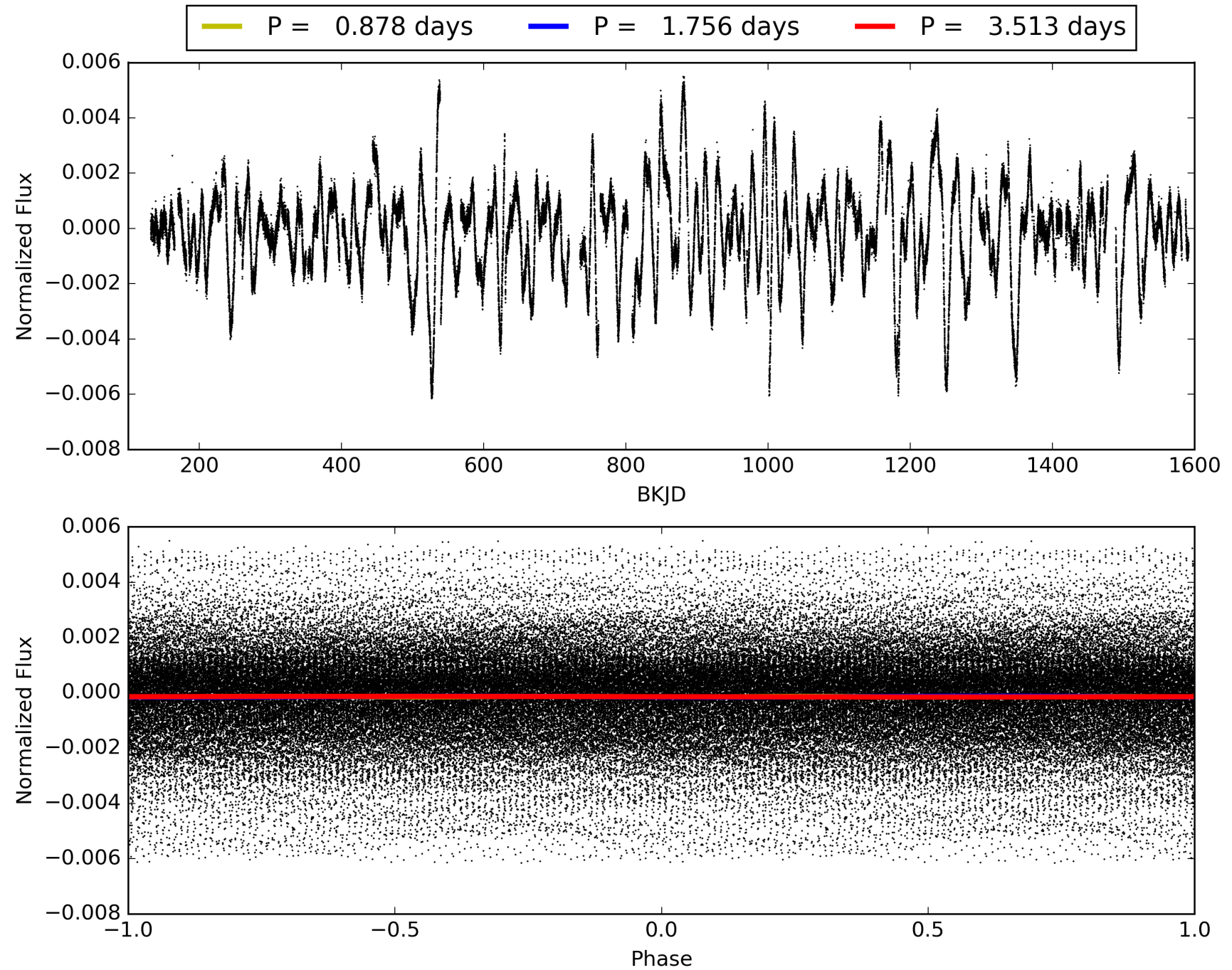
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 00:25:47 Z

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

# TCE 011922722-01, PDC Light Curves

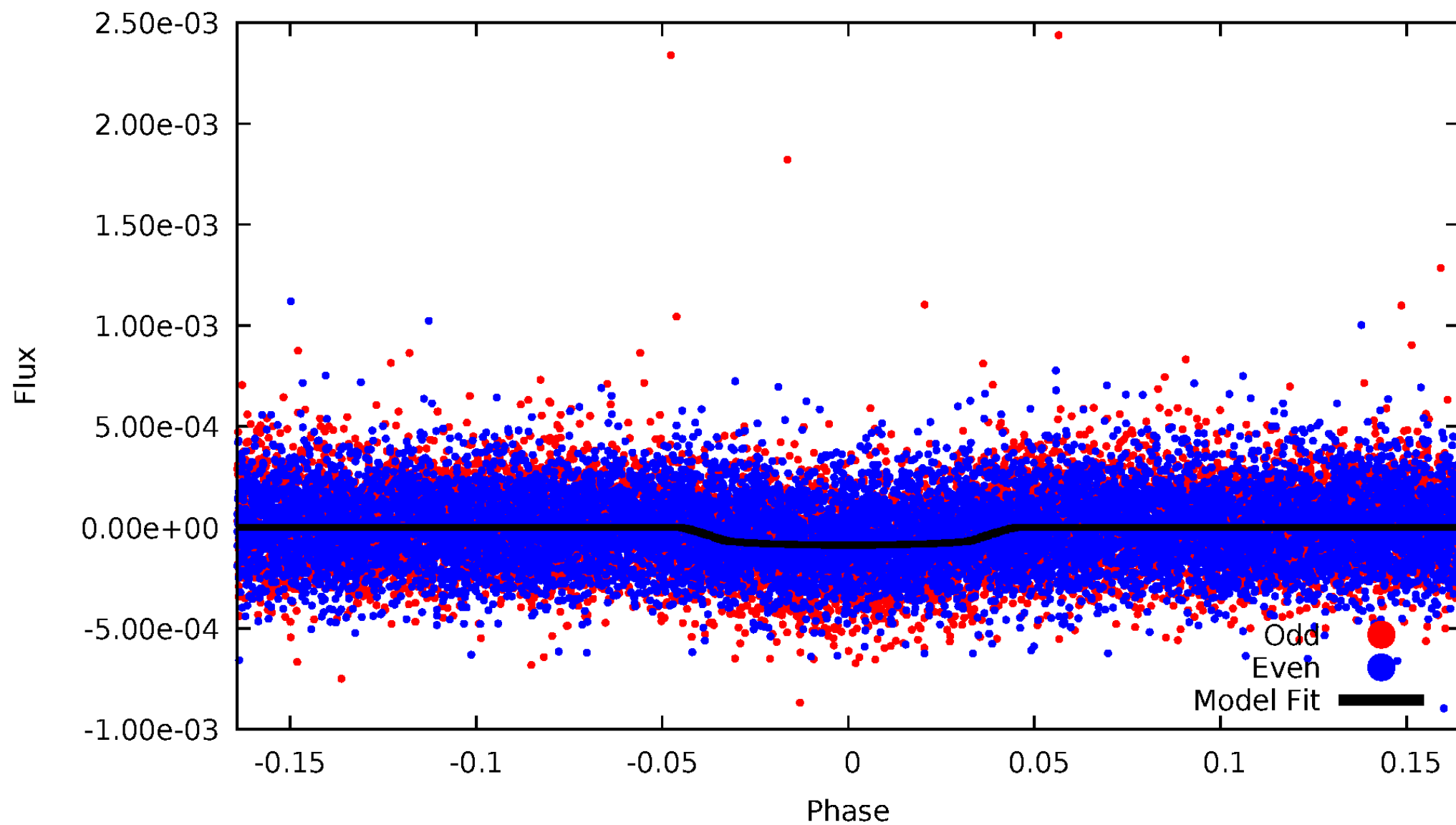


# TCE 011922722-01



# DV Odd/Even

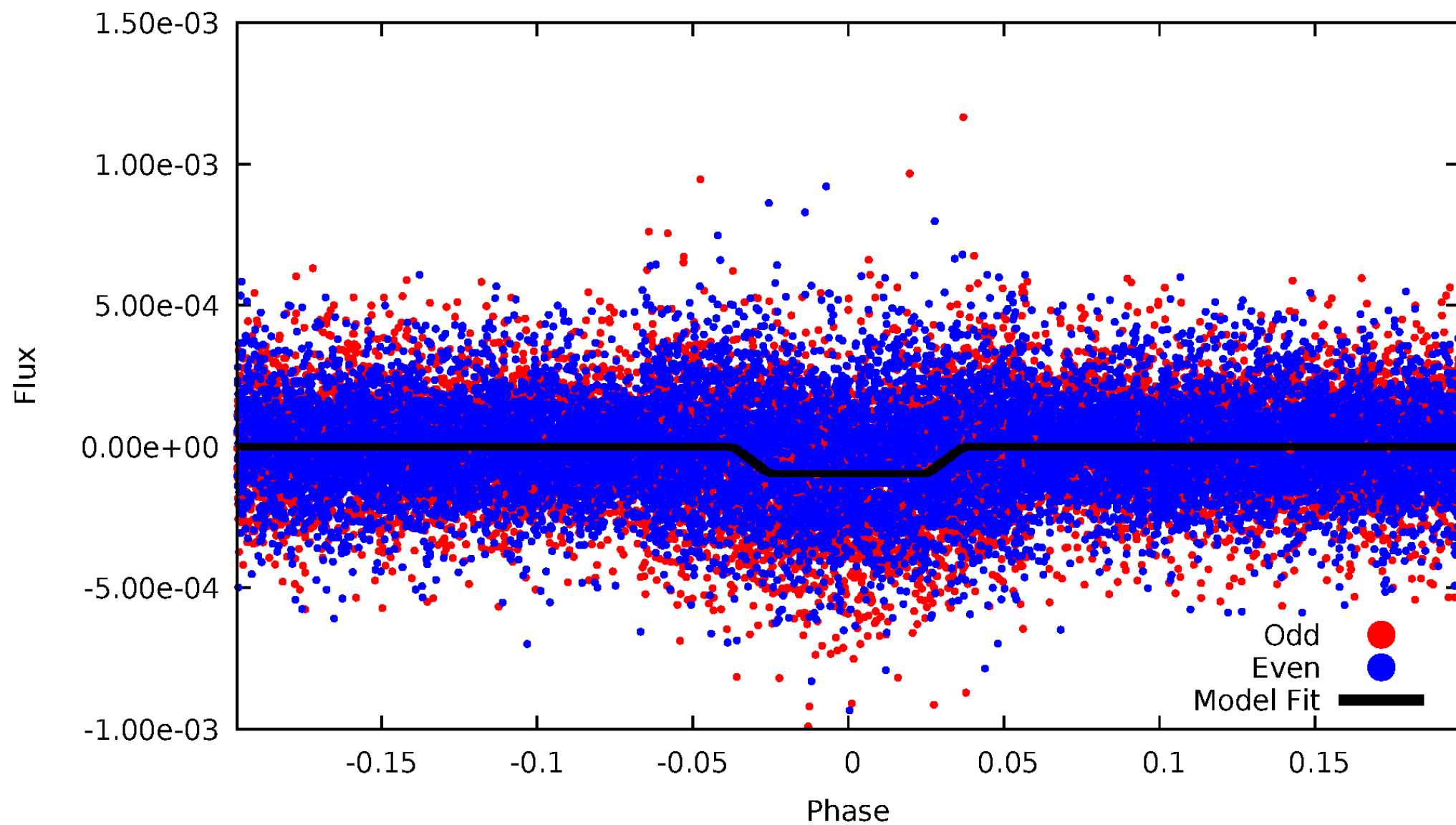
TCE 011922722-01



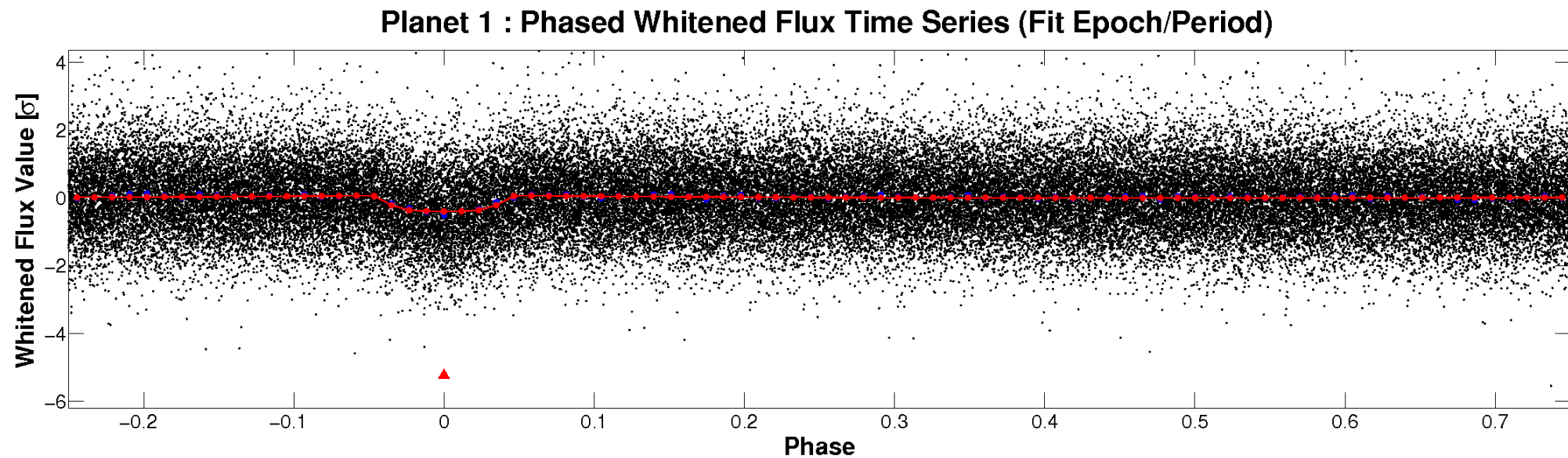
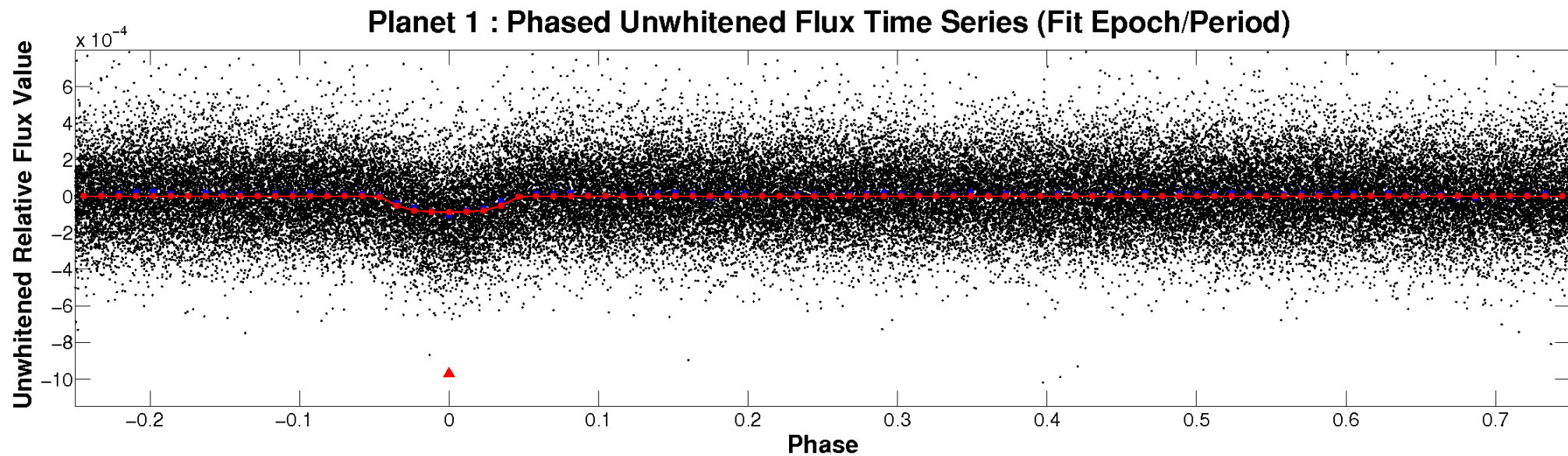


# ALT Odd/Even

TCE 011922722-01

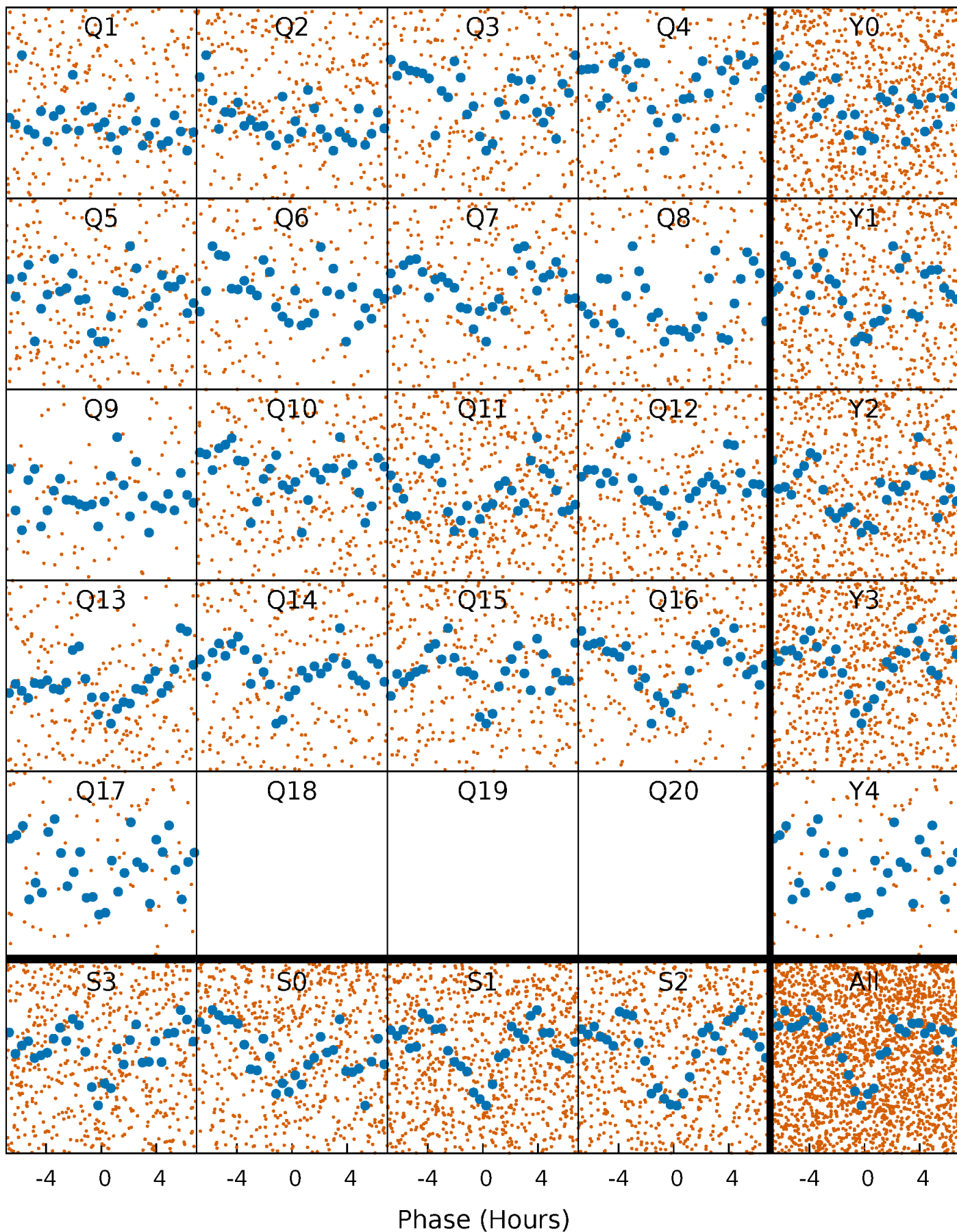


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

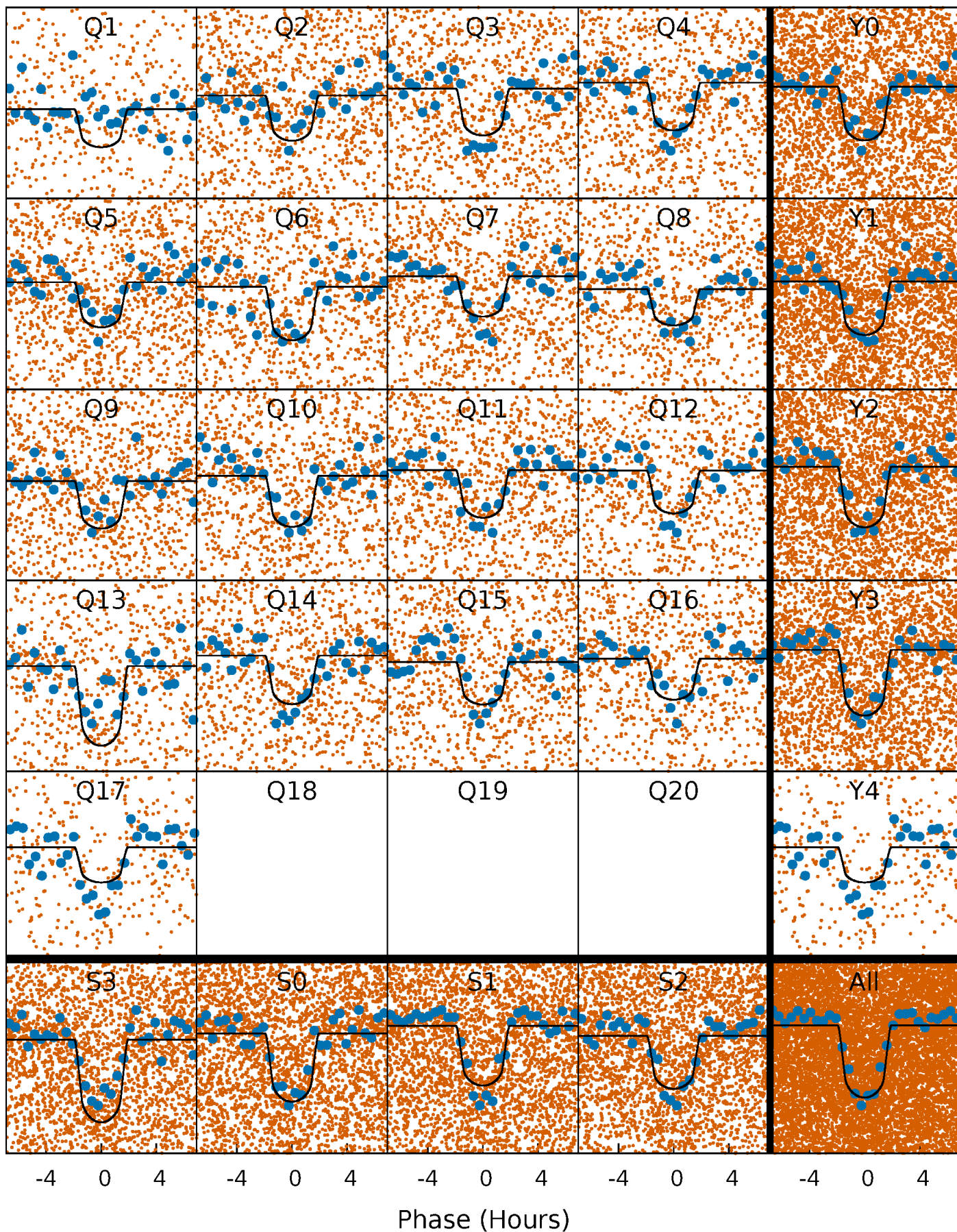
TCE 011922722-01 P= 1.756453 Days  $T_0=132.039823$  (BKJD)





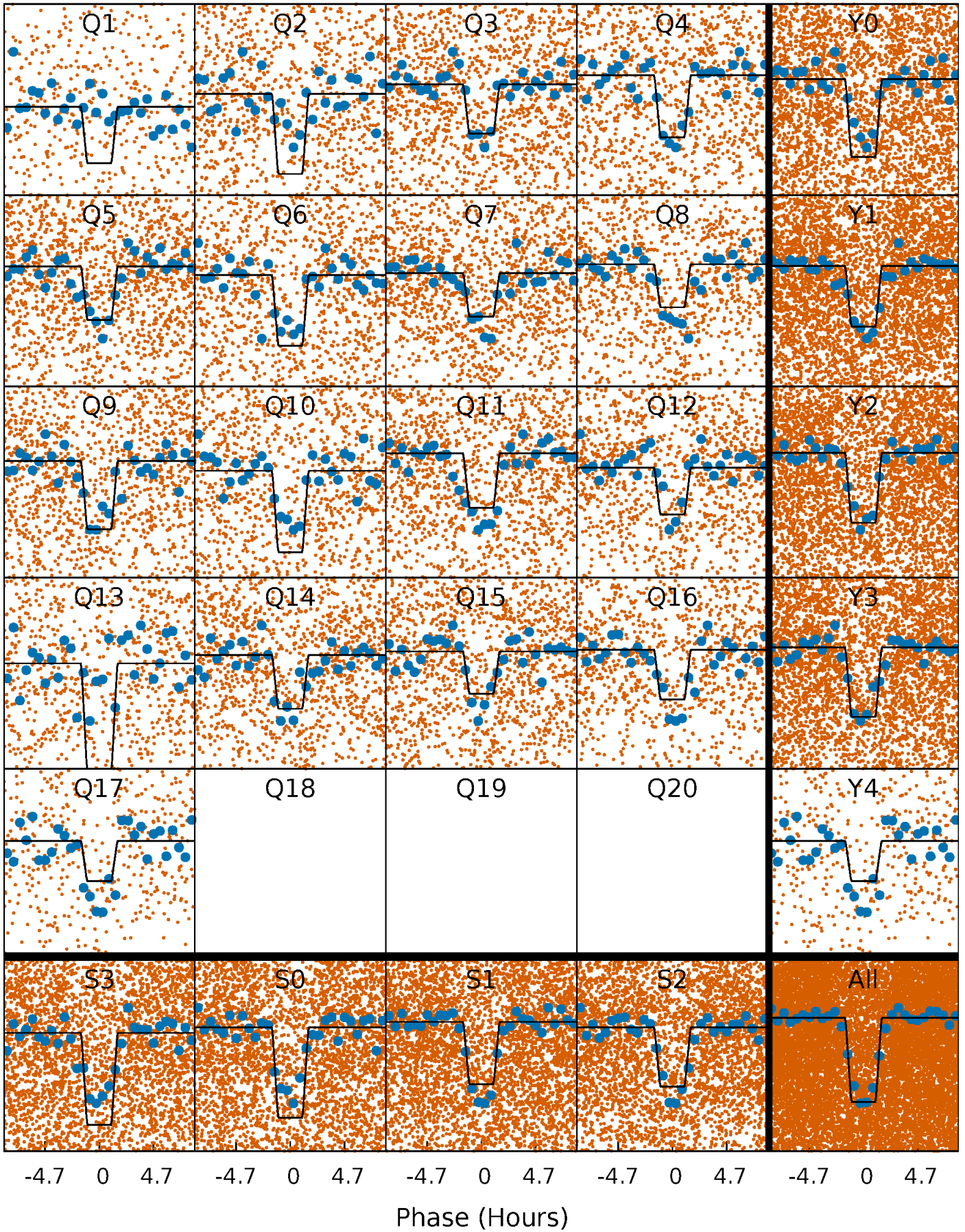
# DV Quarter-Phased Transit Curves

TCE 011922722-01 P= 1.756453 Days  $T_0=132.039823$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 011922722-01 P= 1.756470 Days  $T_0=132.030480$  (BKJD)

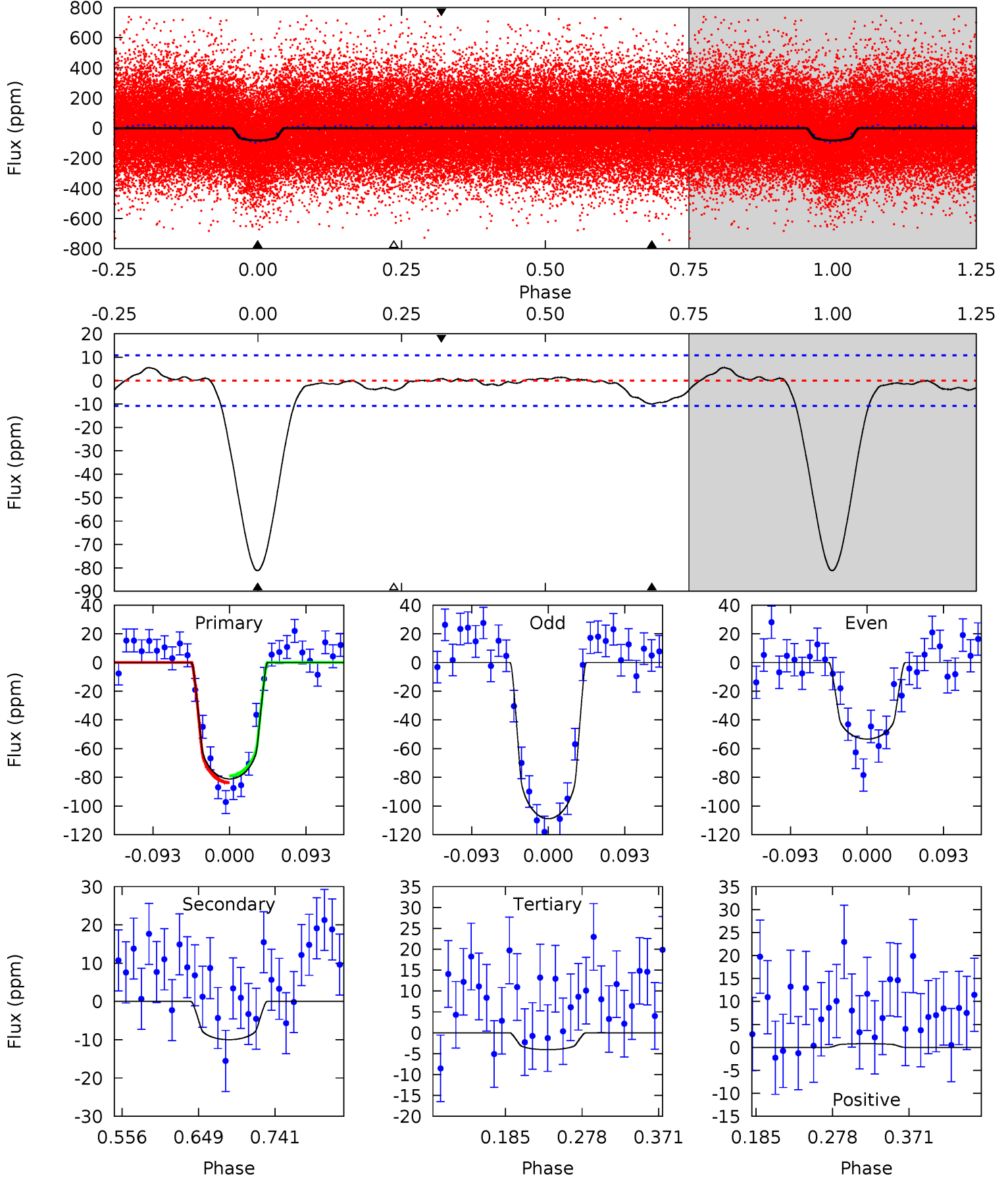




# DV Model-Shift Uniqueness Test

011922722-01, P = 1.756453 Days, E = 130.283370 Days

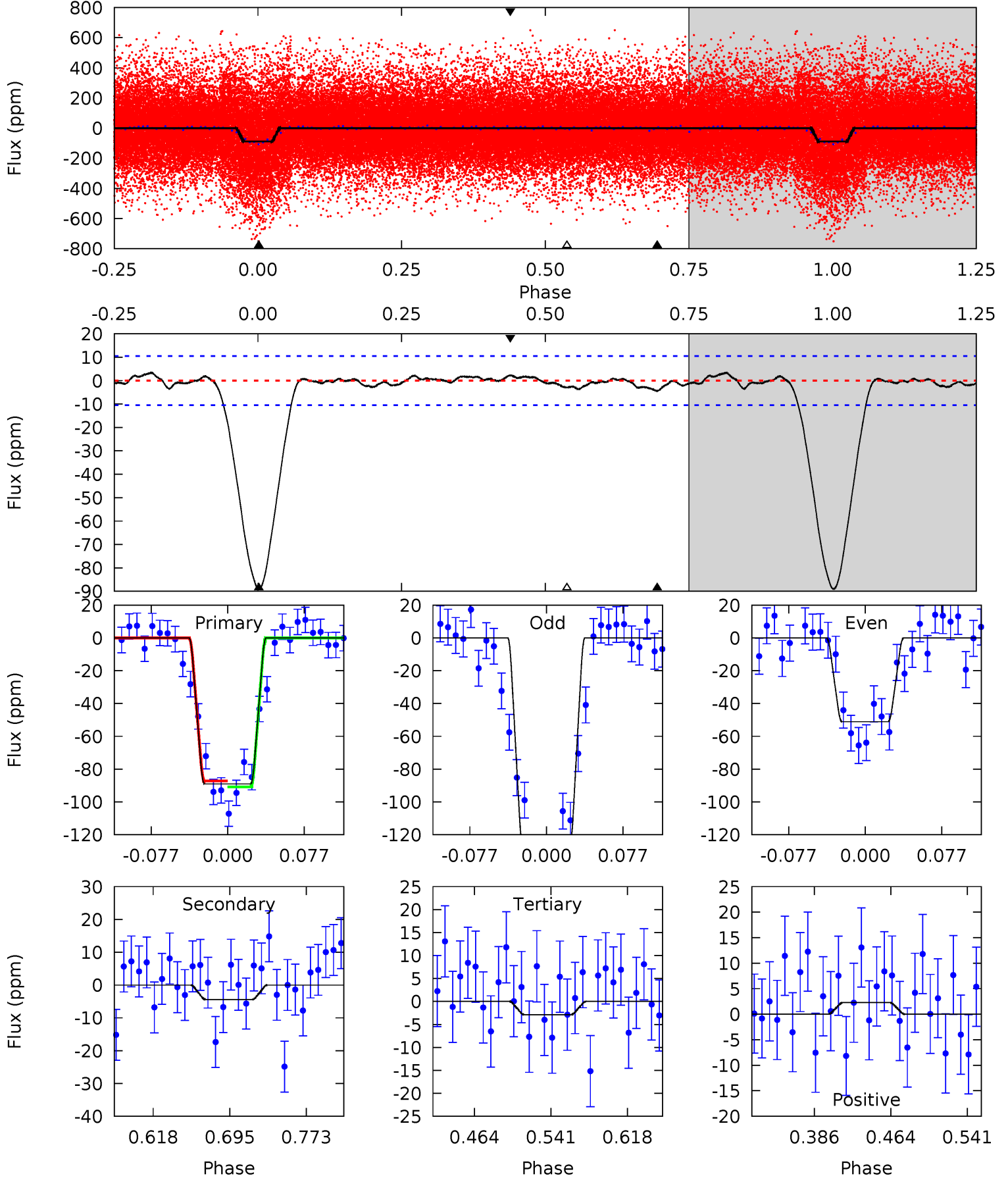
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.4	4.23	1.72	0.34	4.58	1.68	0.79	32.7	34.1	2.52	3.89	11.8	0.96	0.06	1.00



# Alt Model-Shift Uniqueness Test

011922722-01, P = 1.756470 Days, E = 130.274010 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
39.2	1.94	1.27	1.00	4.62	1.77	0.65	37.9	38.2	0.67	0.94	16.8	0.93	0.04	0.82



### Stellar Parameters For KIC 011922722

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5523^{+149}_{-149}$	$4.395^{+0.128}_{-0.176}$	$-0.020^{+0.250}_{-0.300}$	$0.981^{+0.261}_{-0.161}$	$0.871^{+0.111}_{-0.074}$	$1.301^{+0.771}_{-0.618}$
	+3%/-3%	+3%/-4%	+1250%/-1500%	+27%/-16%	+13%/-8%	+59%/-48%
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 011922722-01 / KOI 2301.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-10 \pm 2$	$1.11^{+0.29}_{-0.29}$	$2055^{+144}_{-120}$	$3467^{+402}_{-291}$	$3.252^{+2.839}_{-1.397}$
Alt.	$-4 \pm 2$	$1.08^{+0.29}_{-0.29}$	$2049^{+139}_{-107}$	$3001^{+422}_{-451}$	$1.450^{+1.571}_{-0.845}$

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



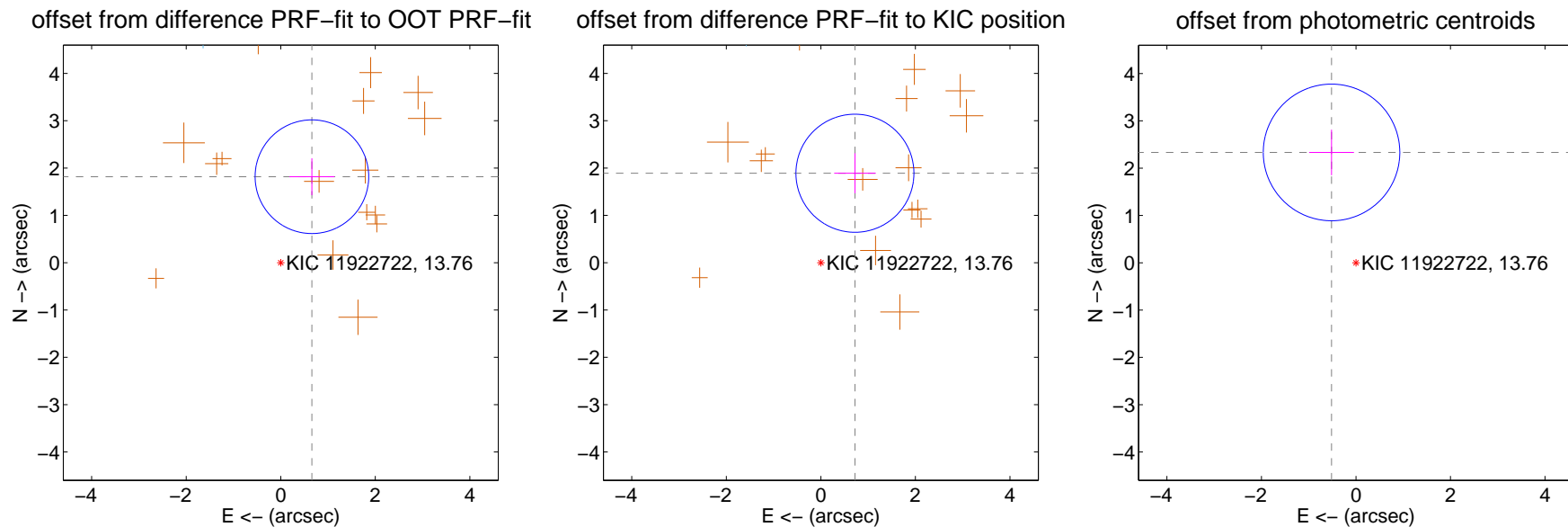
## DV Centroid Data

Supplemental centroid analysis for 011922722-01. Kepler magnitude: 13.76. Transit SNR 24.92

There are 1 quarters with good PRF difference image offsets

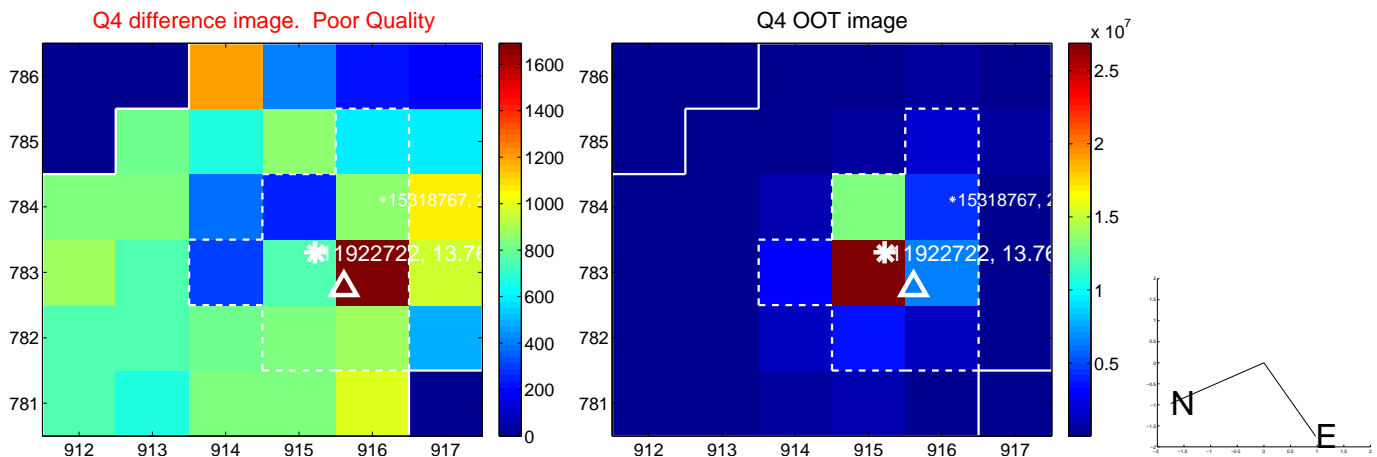
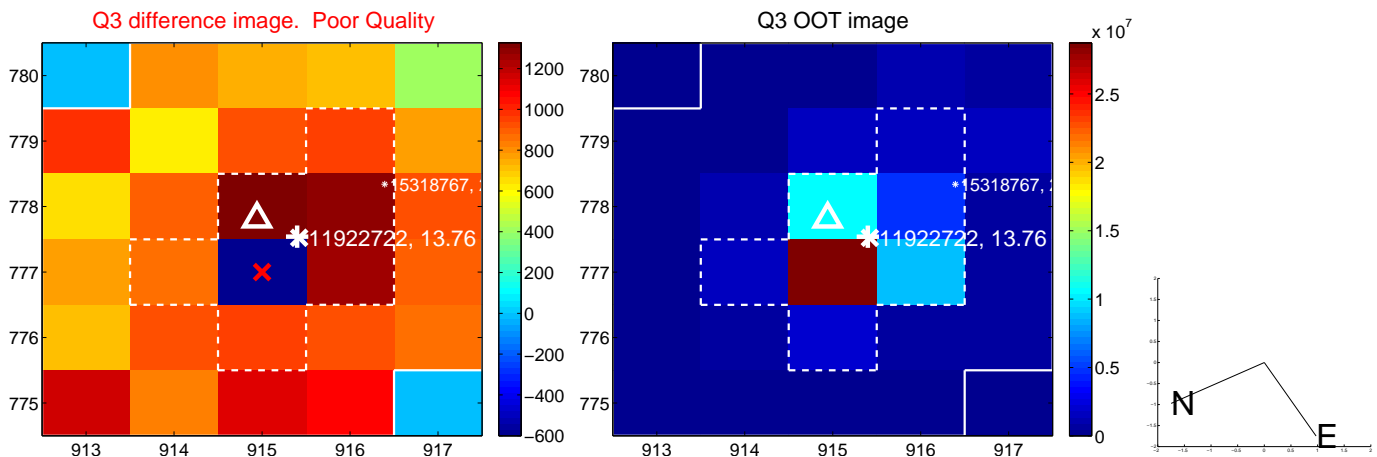
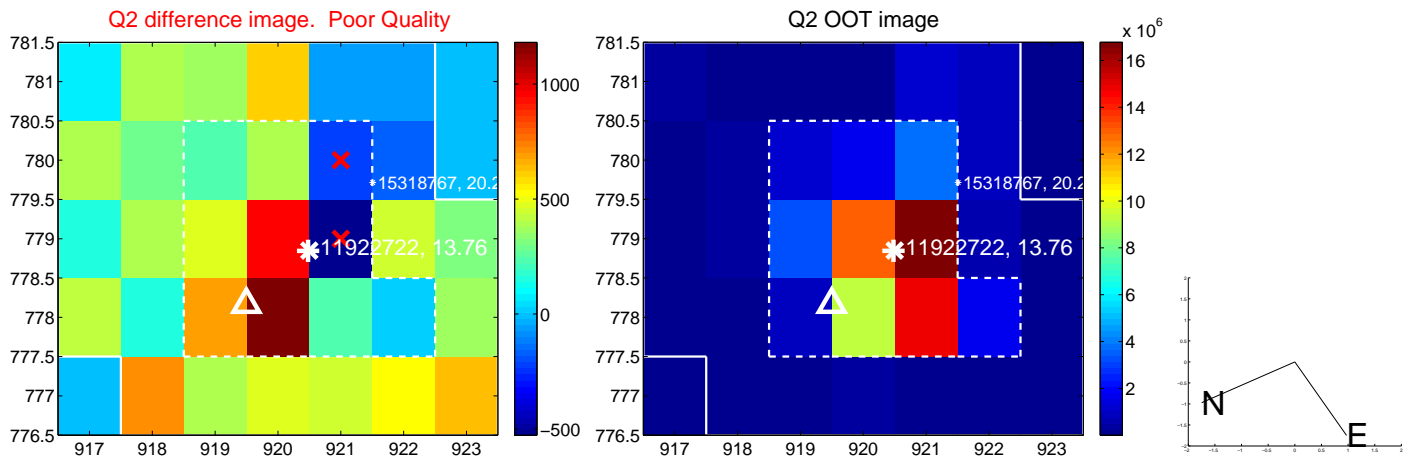
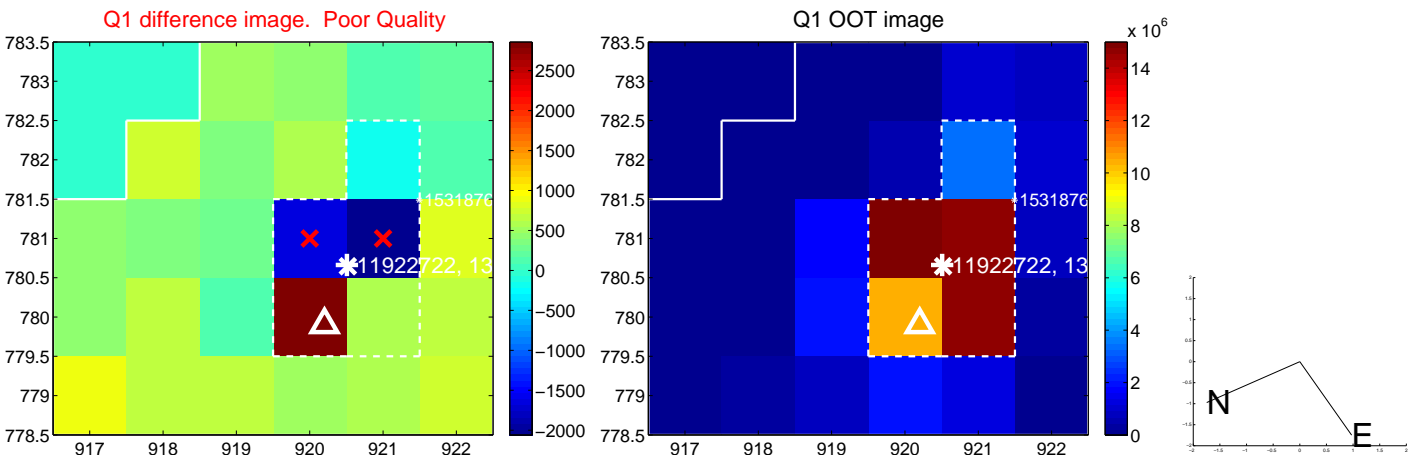
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.933 \pm 0.400$	4.83	$-0.659 \pm 0.474$	$1.817 \pm 0.390$
PRF-fit source offset from KIC position	$2.023 \pm 0.416$	4.86	$-0.720 \pm 0.439$	$1.890 \pm 0.422$
photometric centroid source offset	$2.39 \pm 0.48$	4.96	$0.52 \pm 0.48$	$2.33 \pm 0.48$

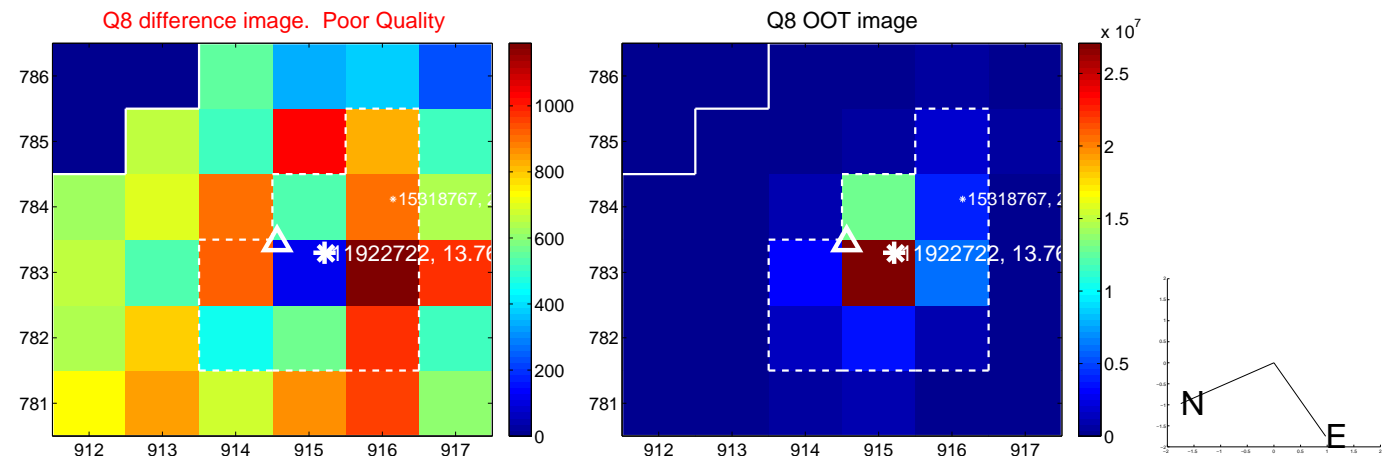
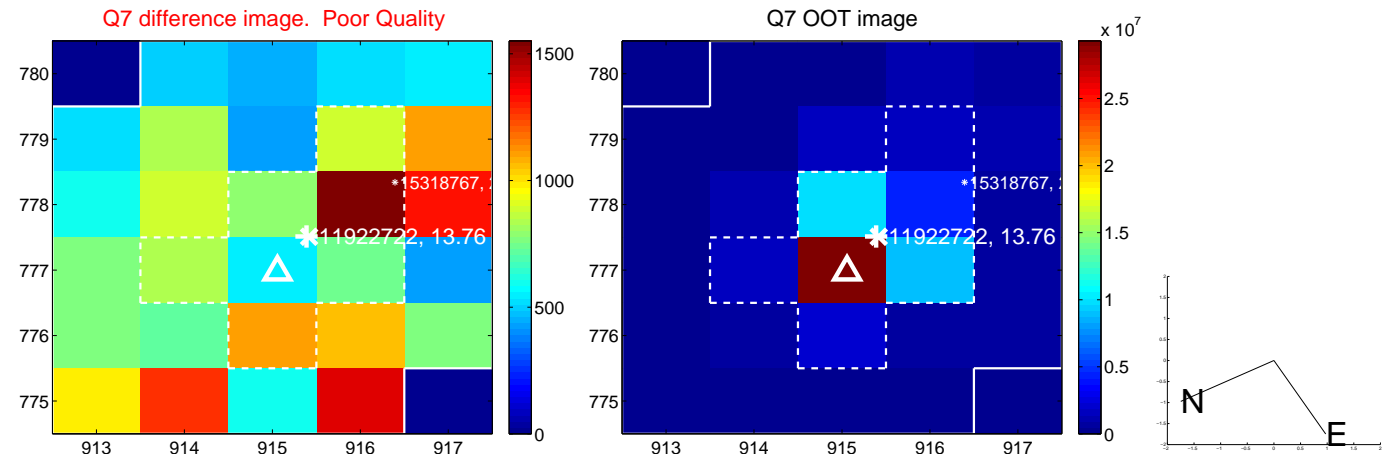
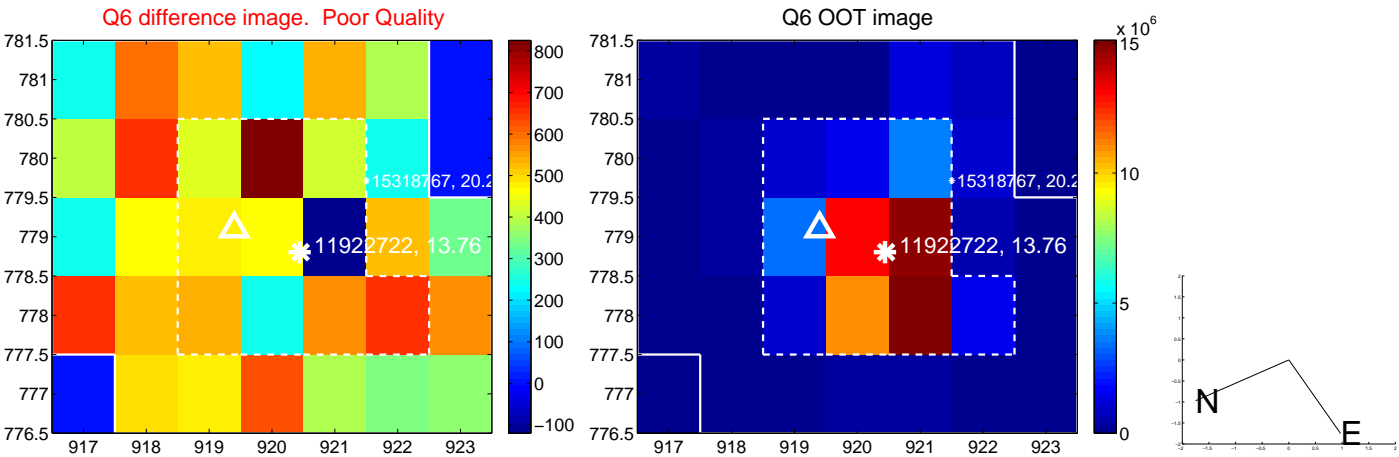
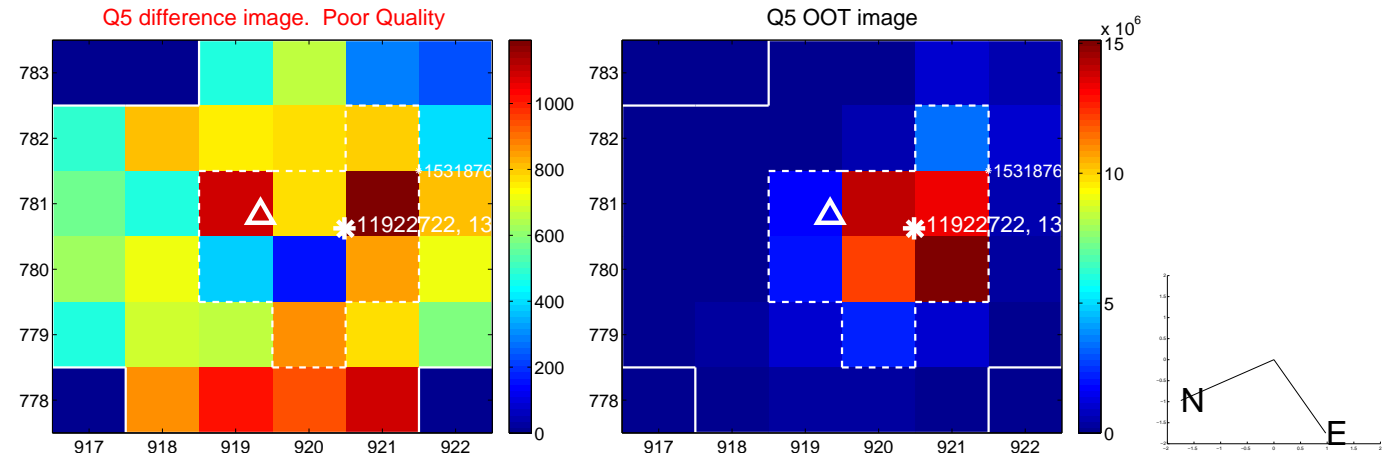


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

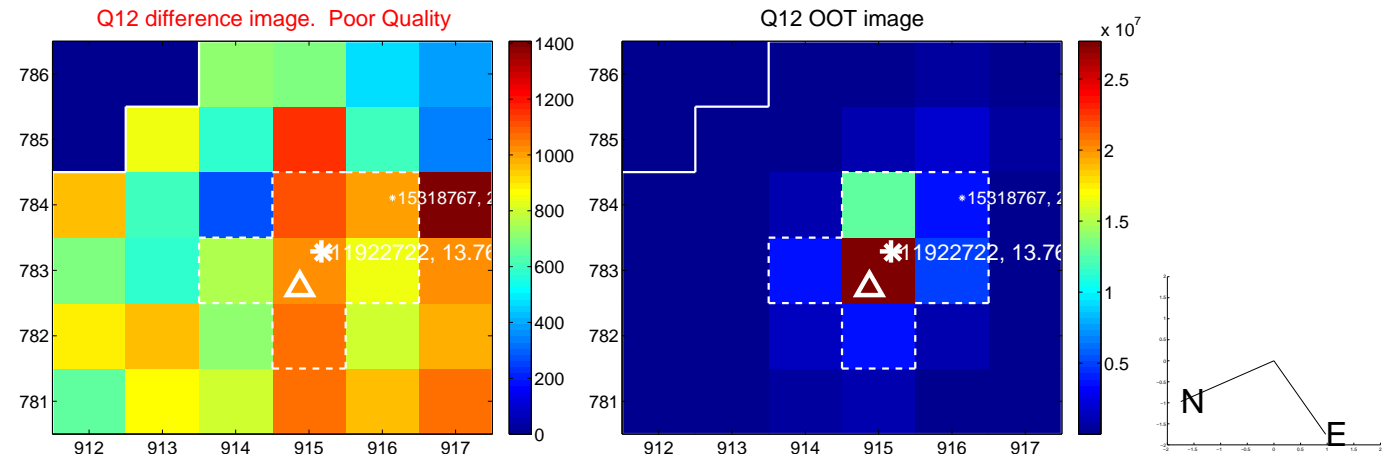
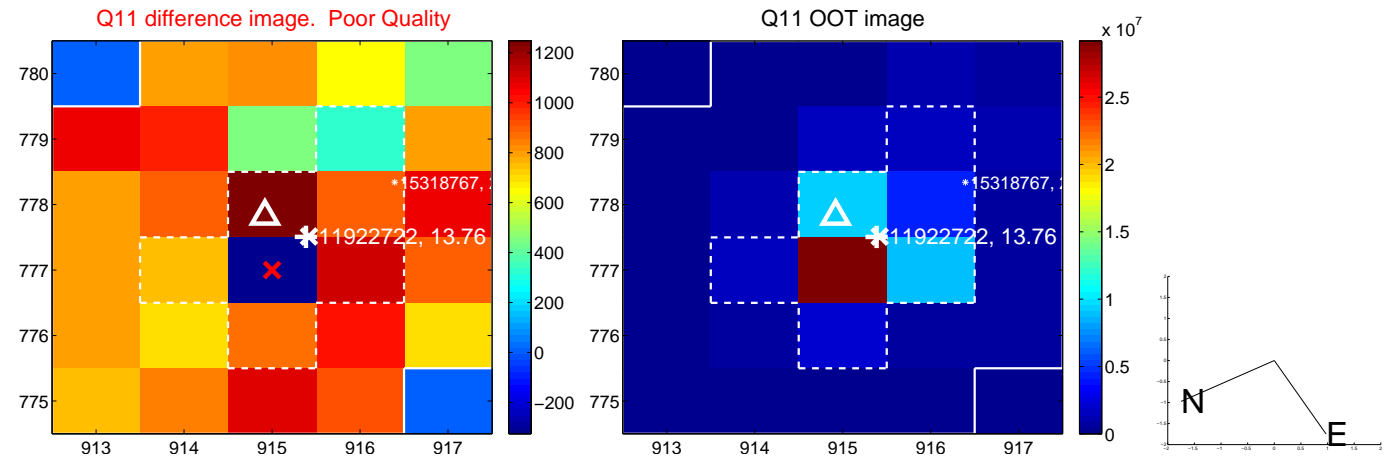
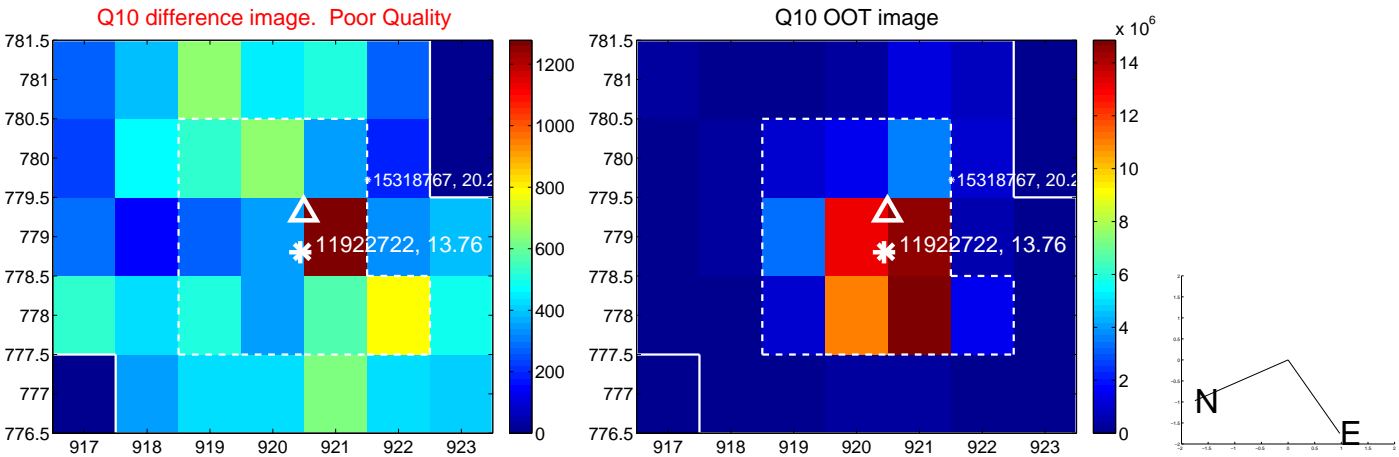
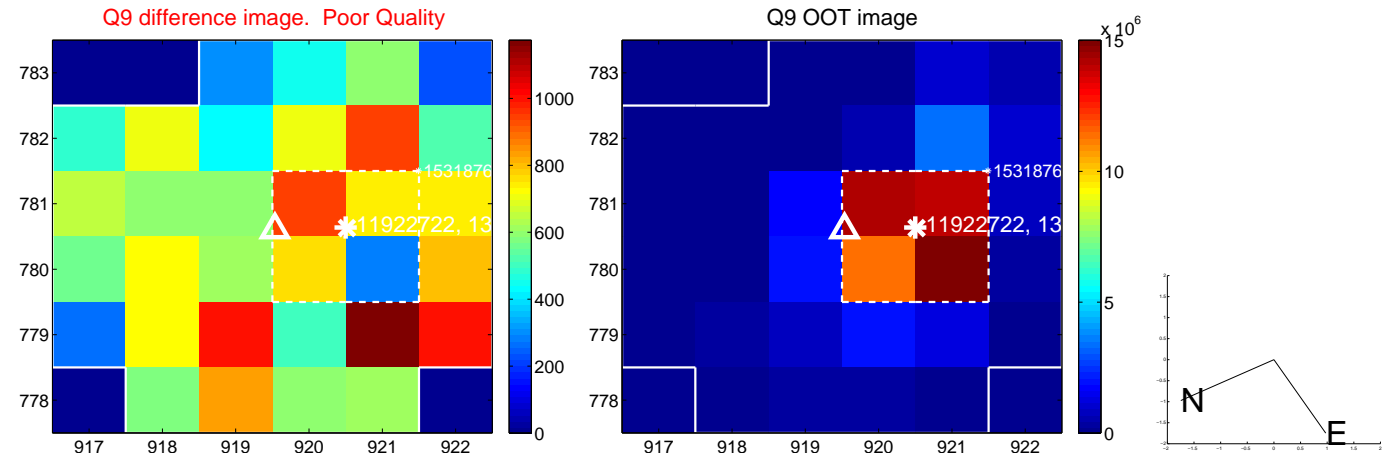
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



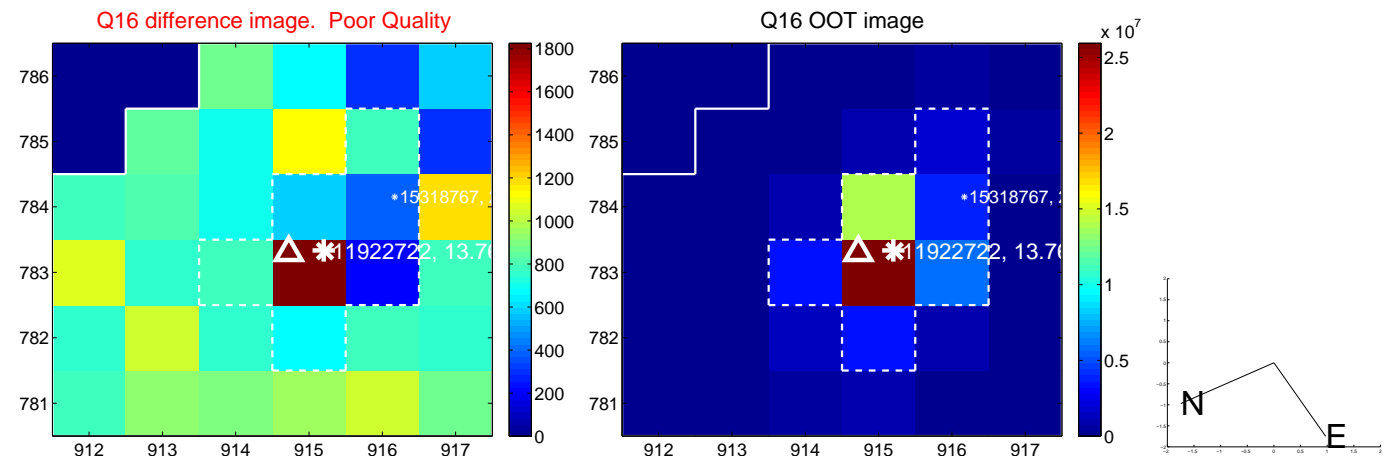
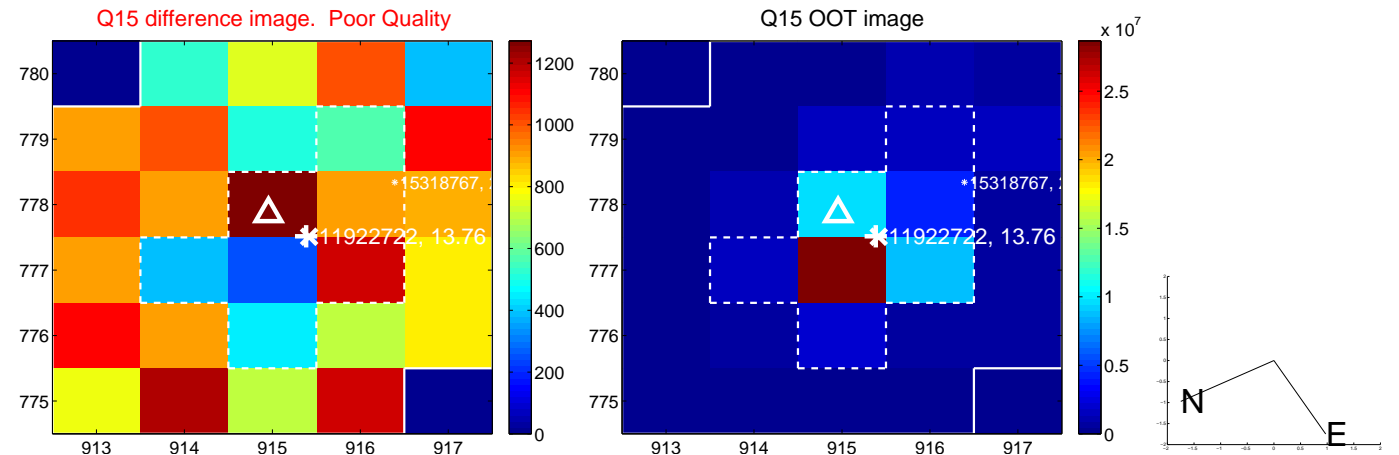
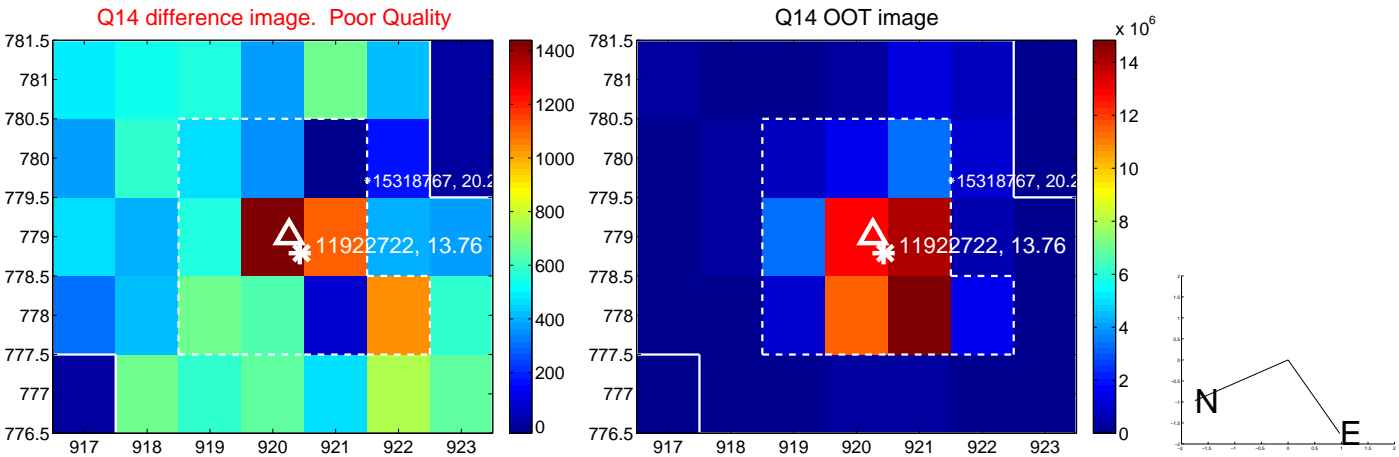
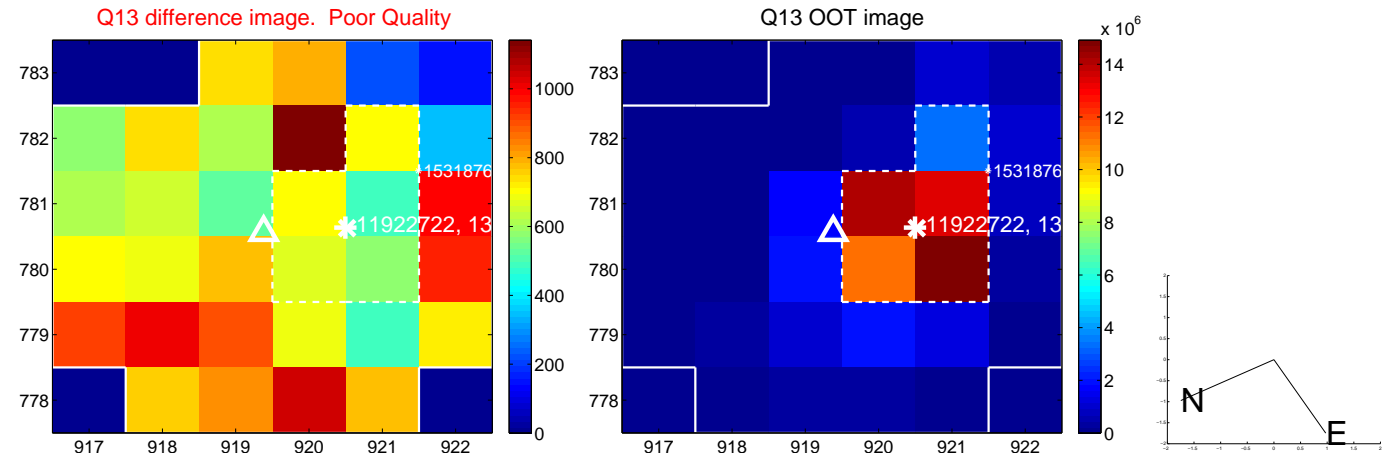
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white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

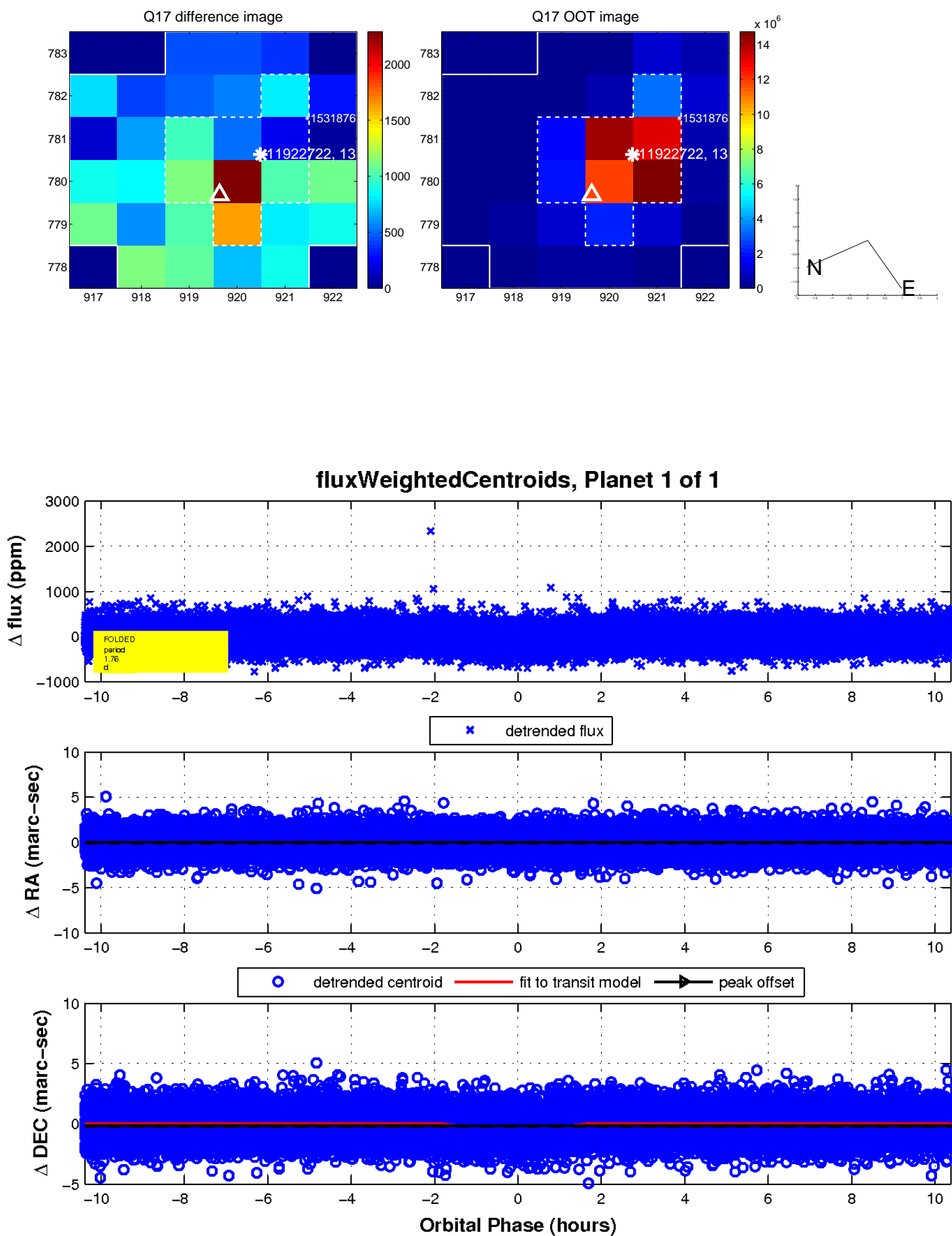


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

