

# KIC 005976413

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005976413-01	OBS	No	3.305889	132.314222	19.6	25.533	7.4	5.3	1.31	6487	0.61	1258.87

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005976413-01	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.

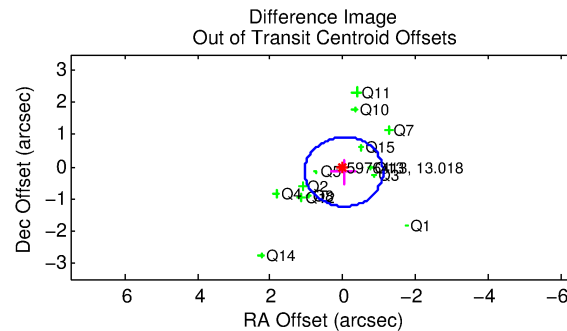
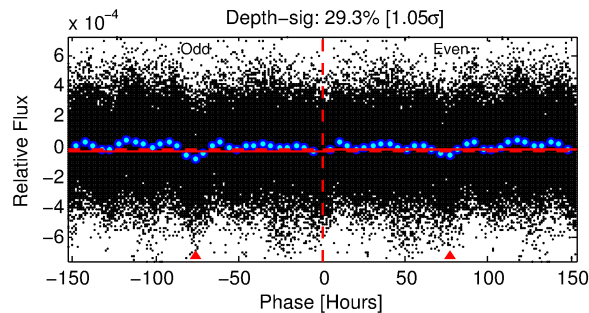
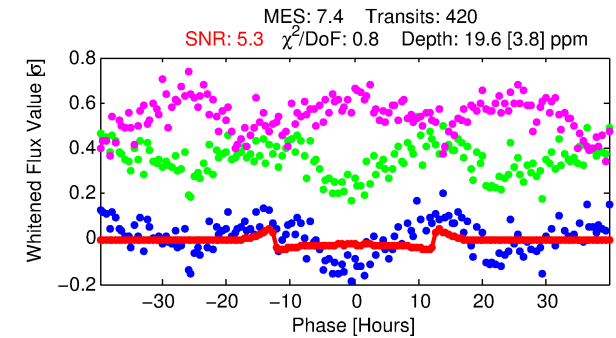
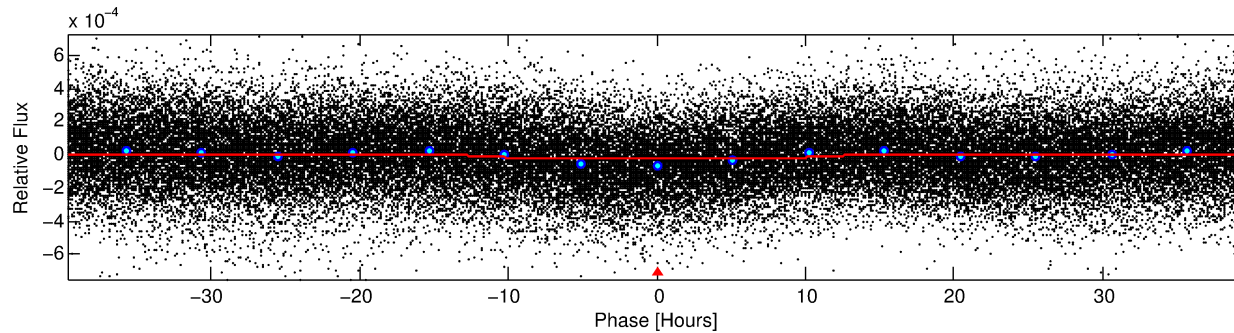
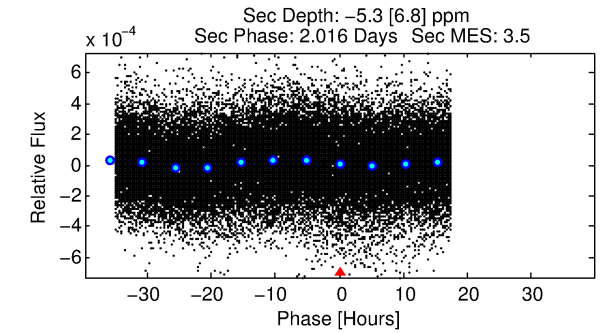
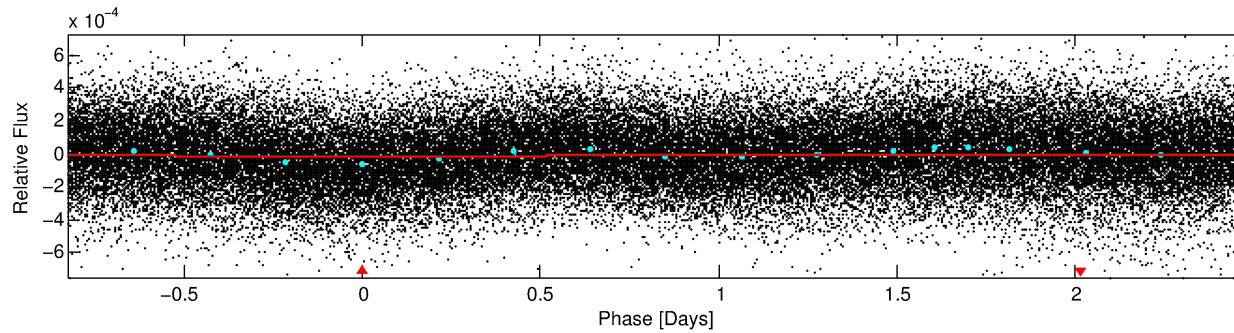
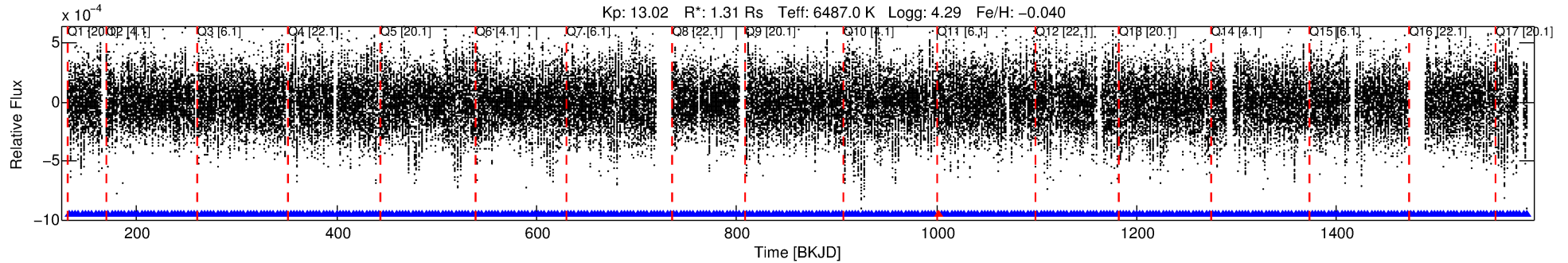
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005976413-01

No Significant Match Found

# DV One-Page Summary

KIC: 5976413 Candidate: 1 of 1 Period: 3.306 d



## DV Fit Results:

Period = 3.30589 [0.00006] d  
Epoch = 132.3142 [0.0105] BKJD  
Rp/R\* = 0.0043 [0.0019]  
a/R\* = 1.12 [0.56]  
b = 0.63 [2.40]  
Seff = 1258.87 [271.62]  
Teq = 1519 [82] K  
Rp = 0.61 [0.30] Re  
a = 0.0464 [0.0066] AU  
Ag = N/A  
Teffp = N/A

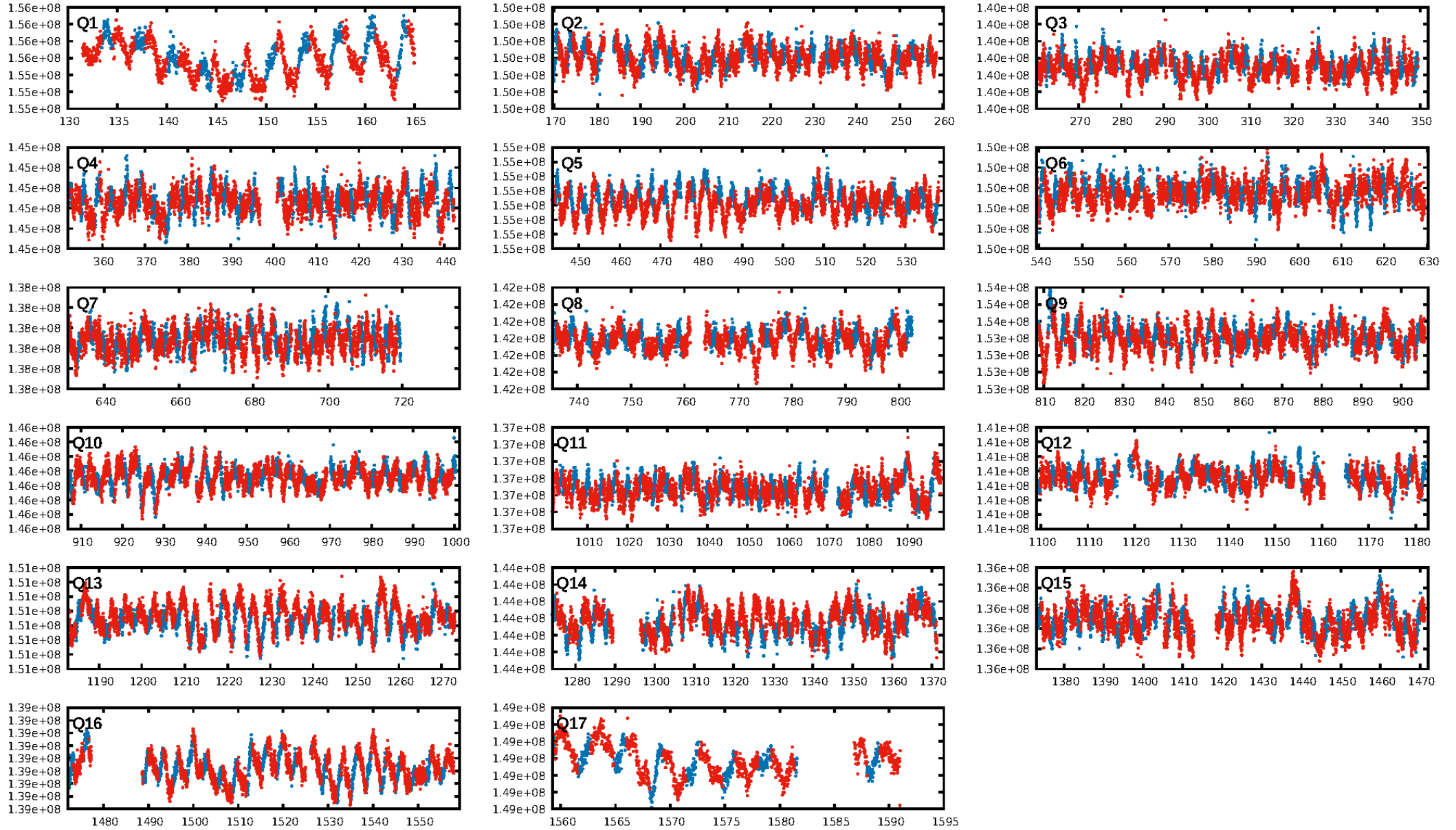
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [399/400]  
GhostDiagnostic-chr: 2.53  
Centroid-sig: 0.2%  
Centroid-so: 1.891 arcsec [2.38σ]  
OotOffset-rm: 0.160 arcsec [0.45σ]  
KicOffset-rm: 0.055 arcsec [0.19σ]  
OotOffset-st: 3/4/3/3 [13]  
KicOffset-st: 3/4/3/3 [13]  
DiffImageQuality-fgm: 0.77 [10/13]  
DiffImageOverlap-fno: 1.00 [17/17]

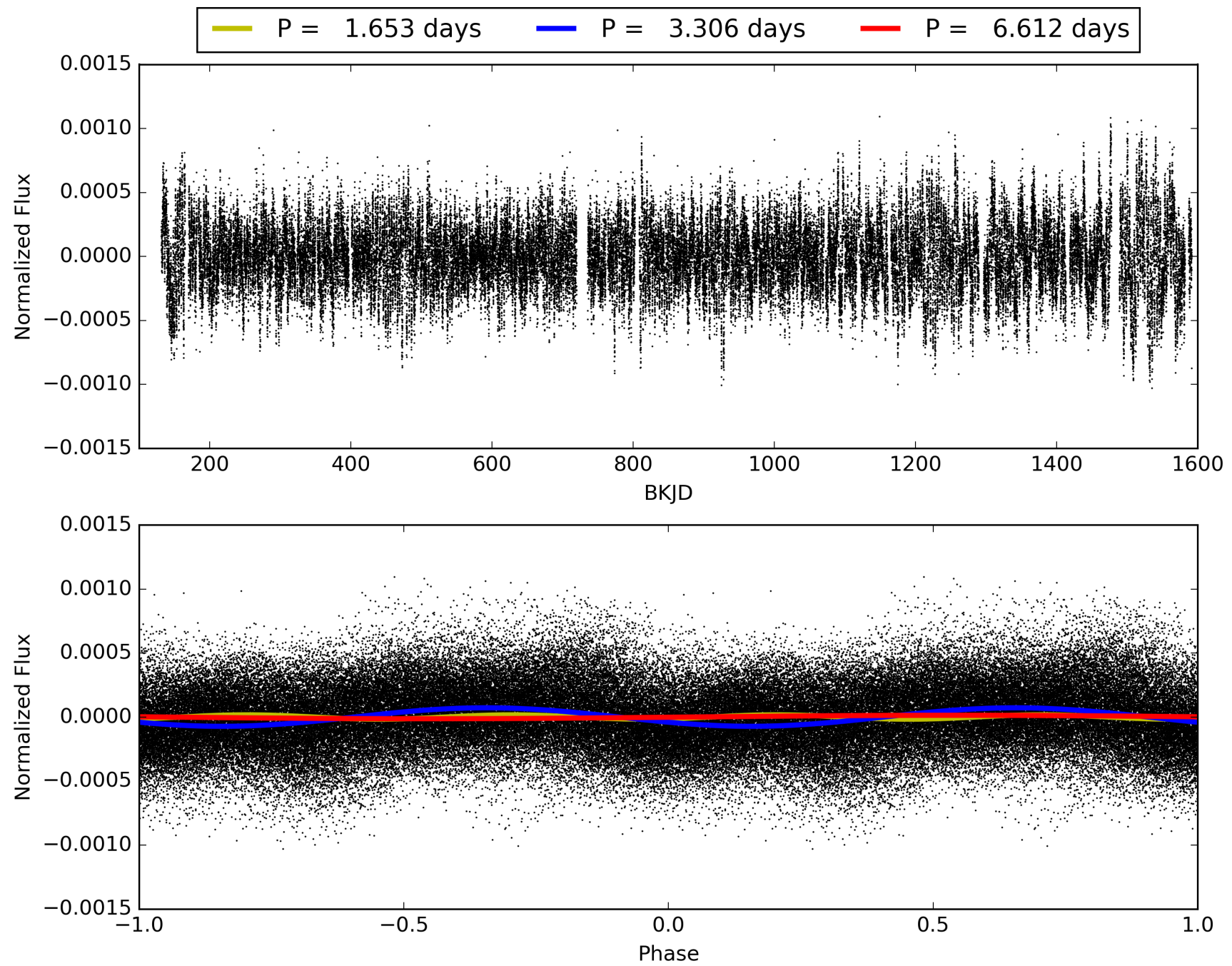
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 12:11:32 Z

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

# TCE 005976413-01, PDC Light Curves

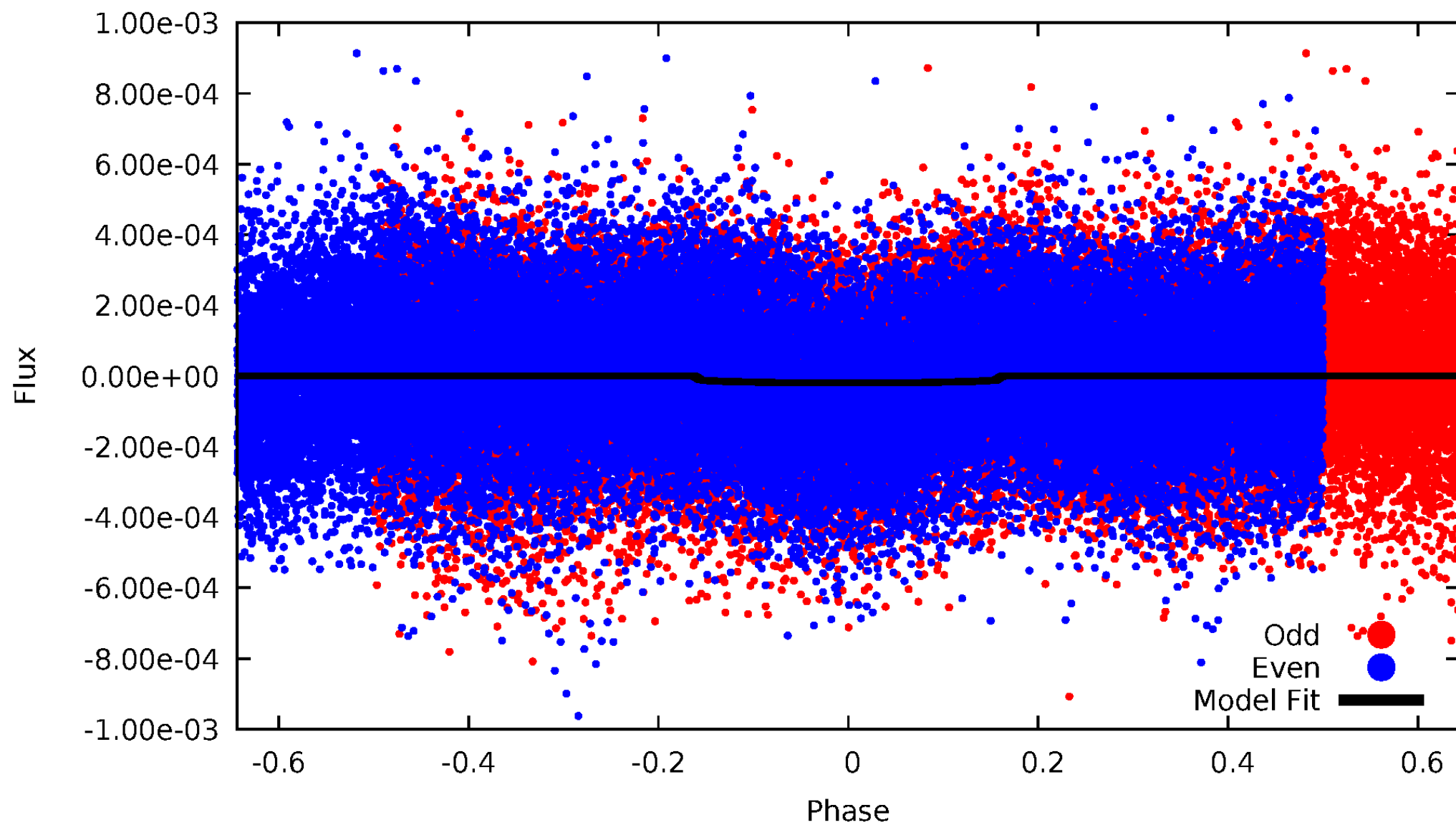


TCE 005976413-01



# DV Odd/Even

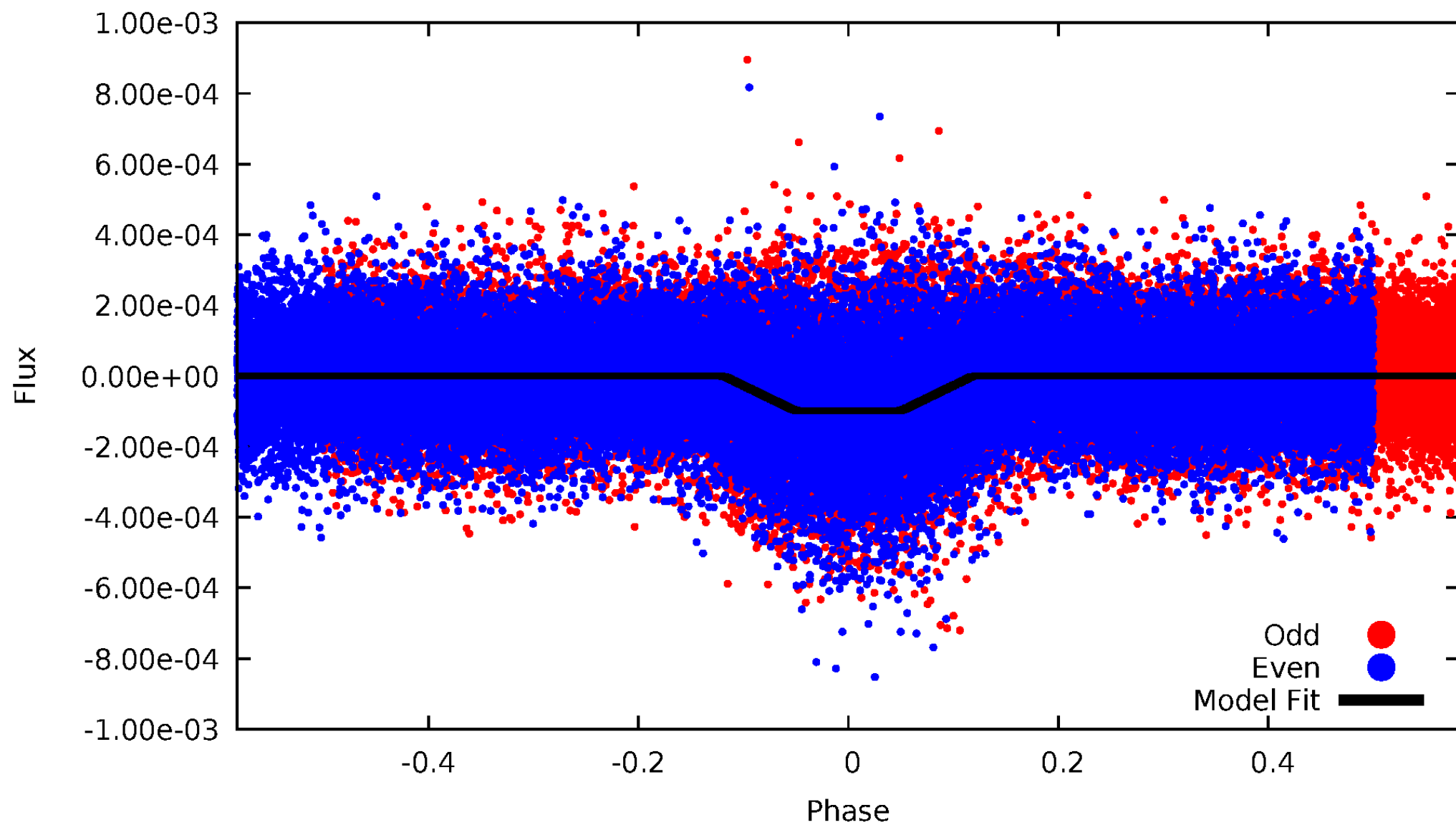
TCE 005976413-01





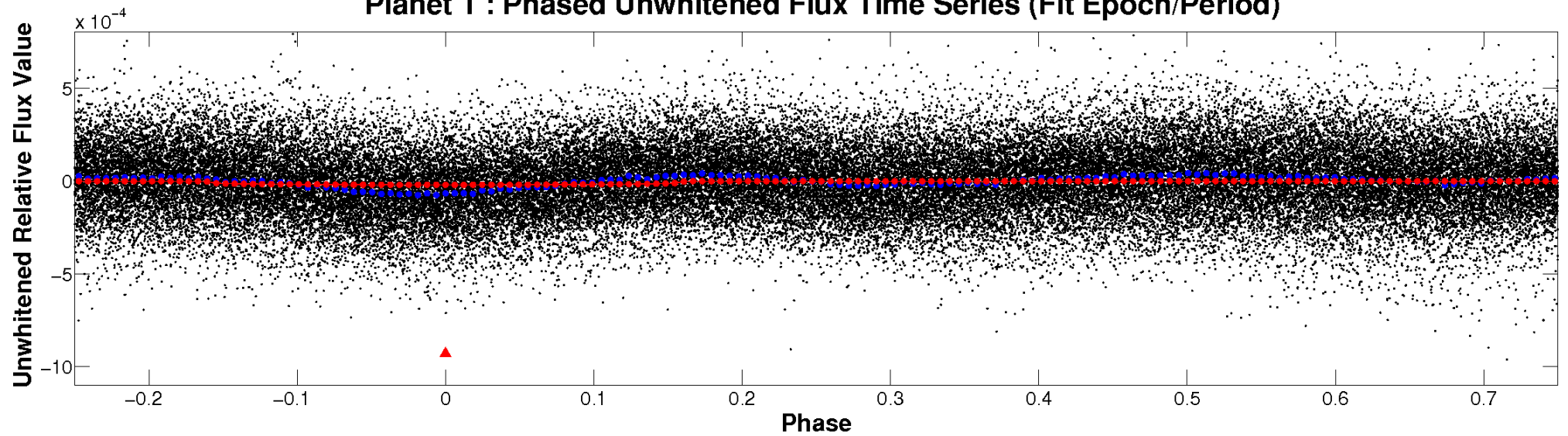
# ALT Odd/Even

TCE 005976413-01

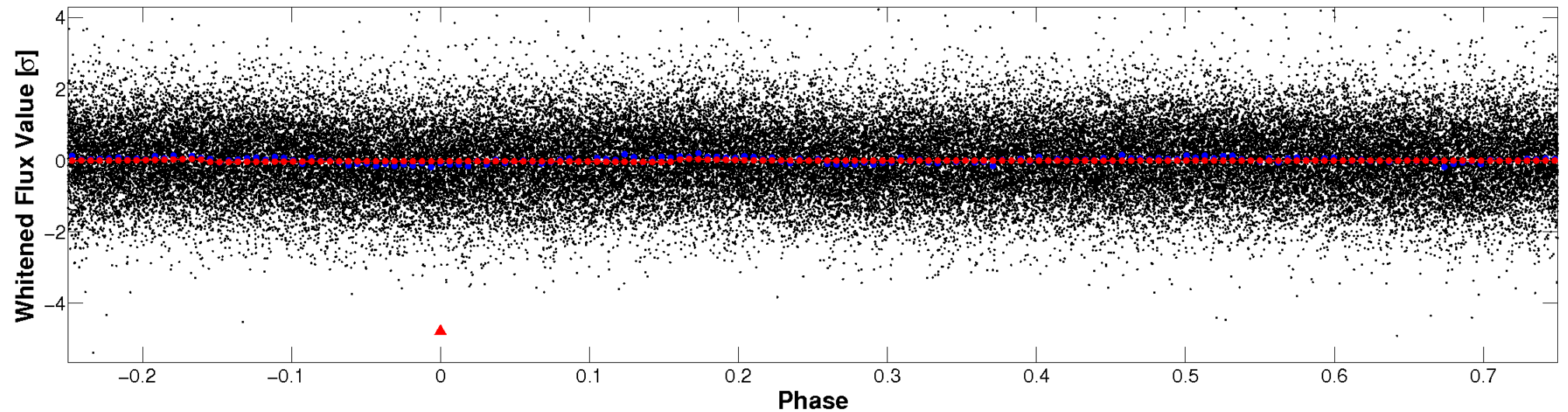


# Non-Whitened Vs. Whitened Light Curve

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

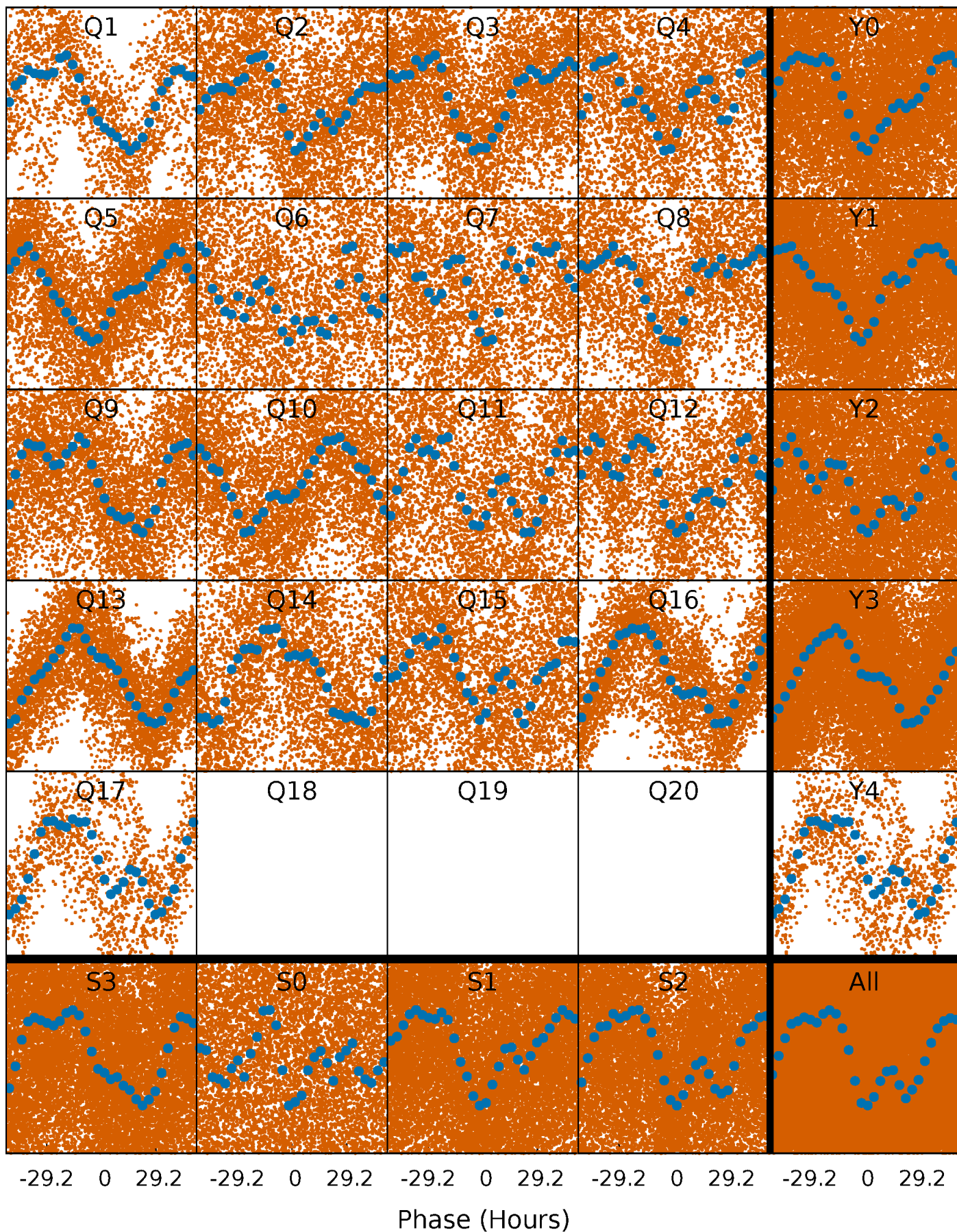


## Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

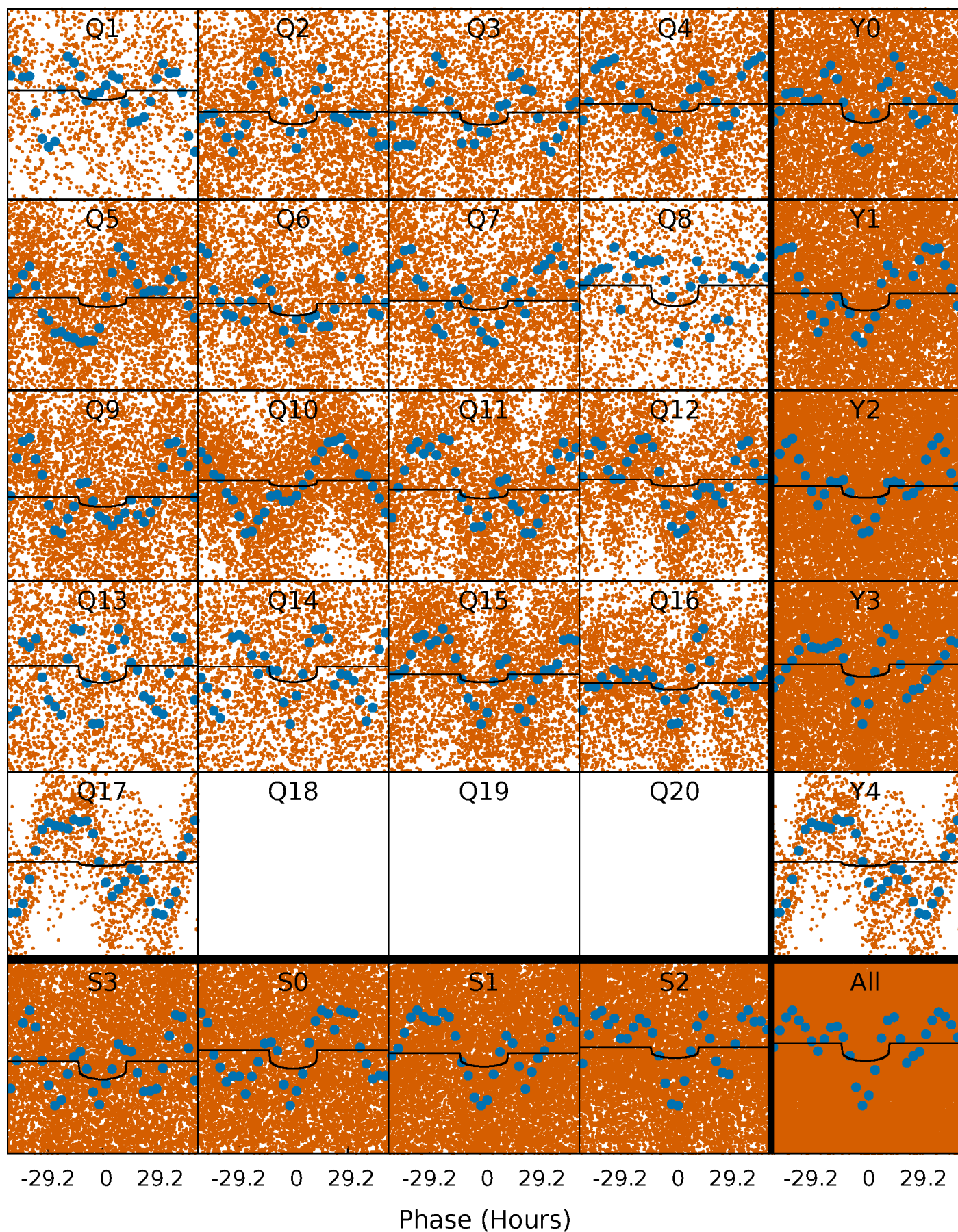
TCE 005976413-01 P= 3.305889 Days  $T_0=132.314222$  (BKJD)





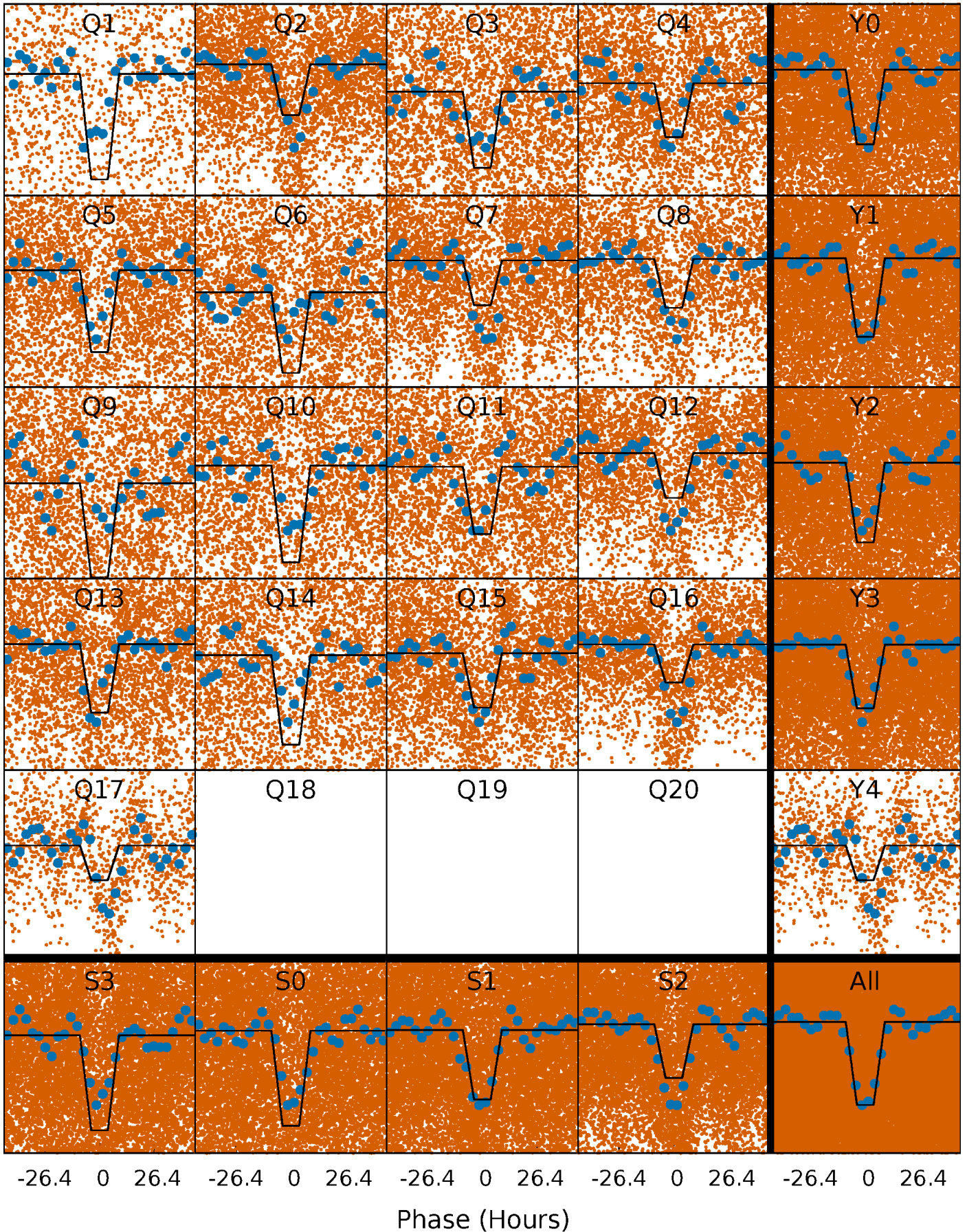
# DV Quarter-Phased Transit Curves

TCE 005976413-01 P= 3.305889 Days  $T_0=132.314222$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 005976413-01 P= 3.305956 Days  $T_0=132.283063$  (BKJD)

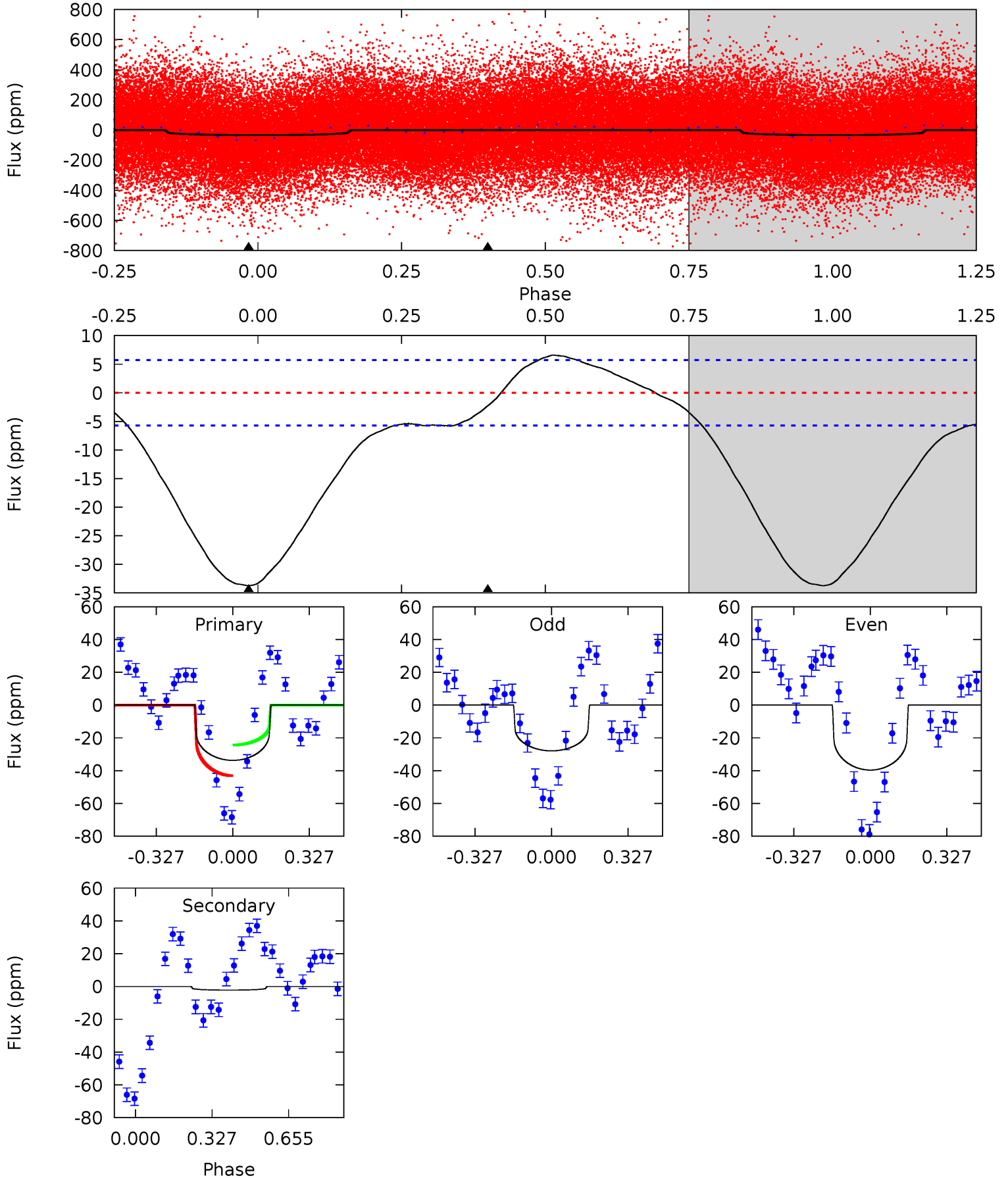




# DV Model-Shift Uniqueness Test

005976413-01, P = 3.305889 Days, E = 129.008333 Days

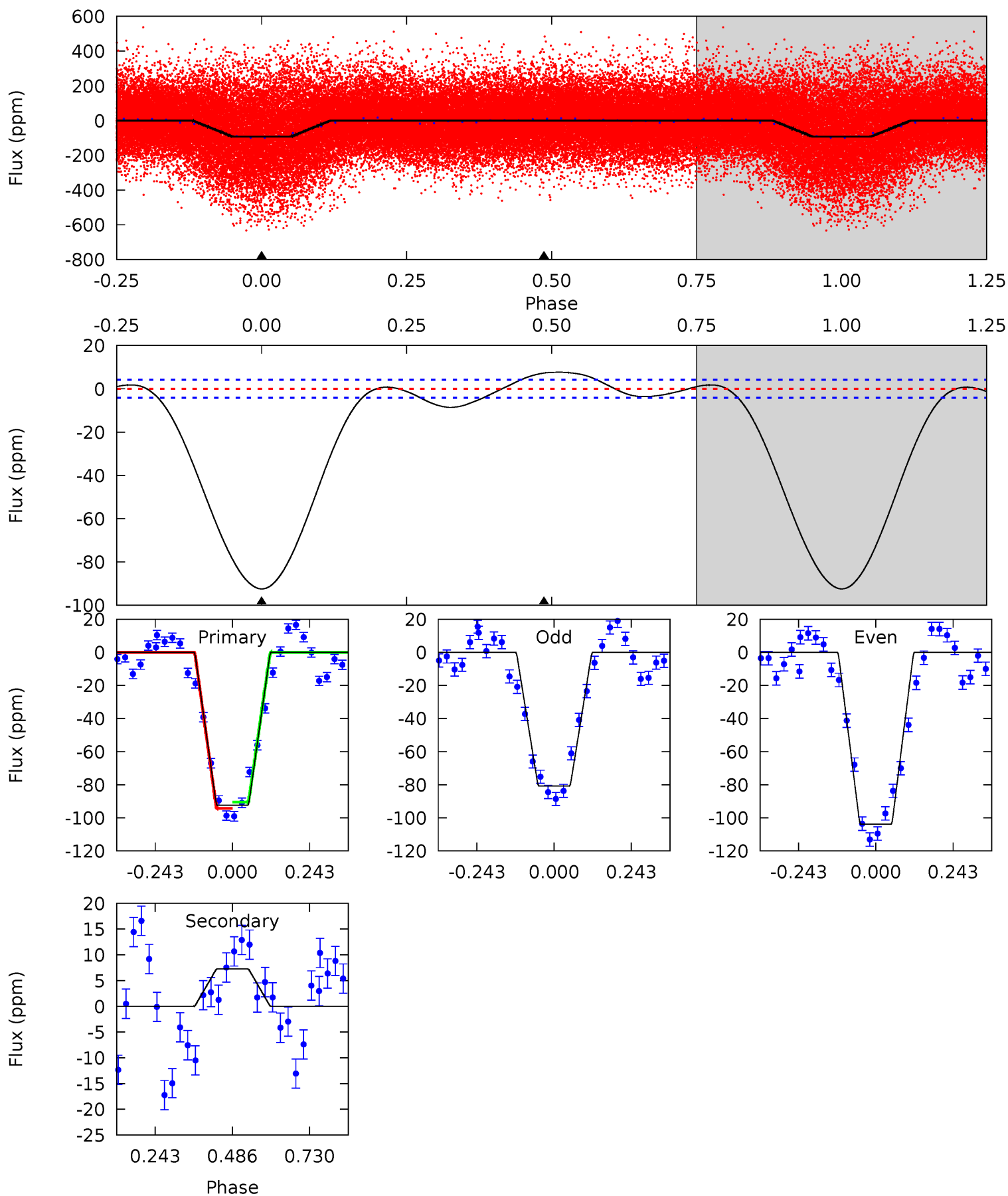
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.4	1.70	0	0	4.31	0.98	1.10	25.4	25.4	1.70	1.70	4.41	1.16	0.16	7.39



# Alt Model-Shift Uniqueness Test

005976413-01, P = 3.305956 Days, E = 128.977107 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
97.3	-7.63	0	0	4.37	1.17	1.28	97.3	97.3	-7.63	-7.63	12.1	1.01	0.08	1.96





### Stellar Parameters For KIC 005976413

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6487^{+77}_{-77}$	$4.291^{+0.063}_{-0.117}$	$-0.040^{+0.150}_{-0.200}$	$1.306^{+0.215}_{-0.126}$	$1.215^{+0.089}_{-0.089}$	$0.769^{+0.205}_{-0.275}$
	+1%/-1%	+1%/-3%	+375%/-500%	+16%/-10%	+7%/-7%	+27%/-36%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 005976413-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-2\pm 1$	$0.64^{+0.28}_{-0.29}$	$2141^{+86}_{-67}$	$4058^{+1080}_{-729}$	$6.504^{+15.036}_{-4.381}$
Alt.	$7\pm 1$	$1.43^{+0.30}_{-0.29}$	$2135^{+102}_{-62}$	$-3819^{+206}_{-300}$	$-4.171^{+1.375}_{-2.572}$

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

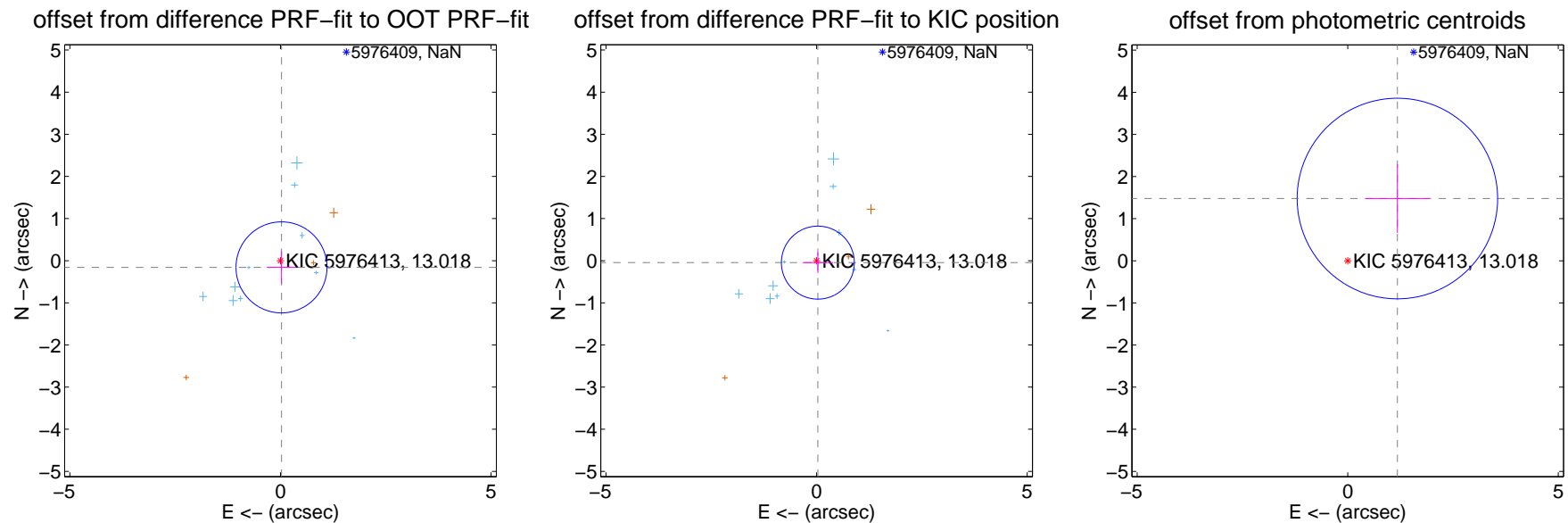
## DV Centroid Data

Supplemental centroid analysis for 005976413-01. Kepler magnitude: 13.02. Transit SNR 5.26

There are 10 quarters with good PRF difference image offsets

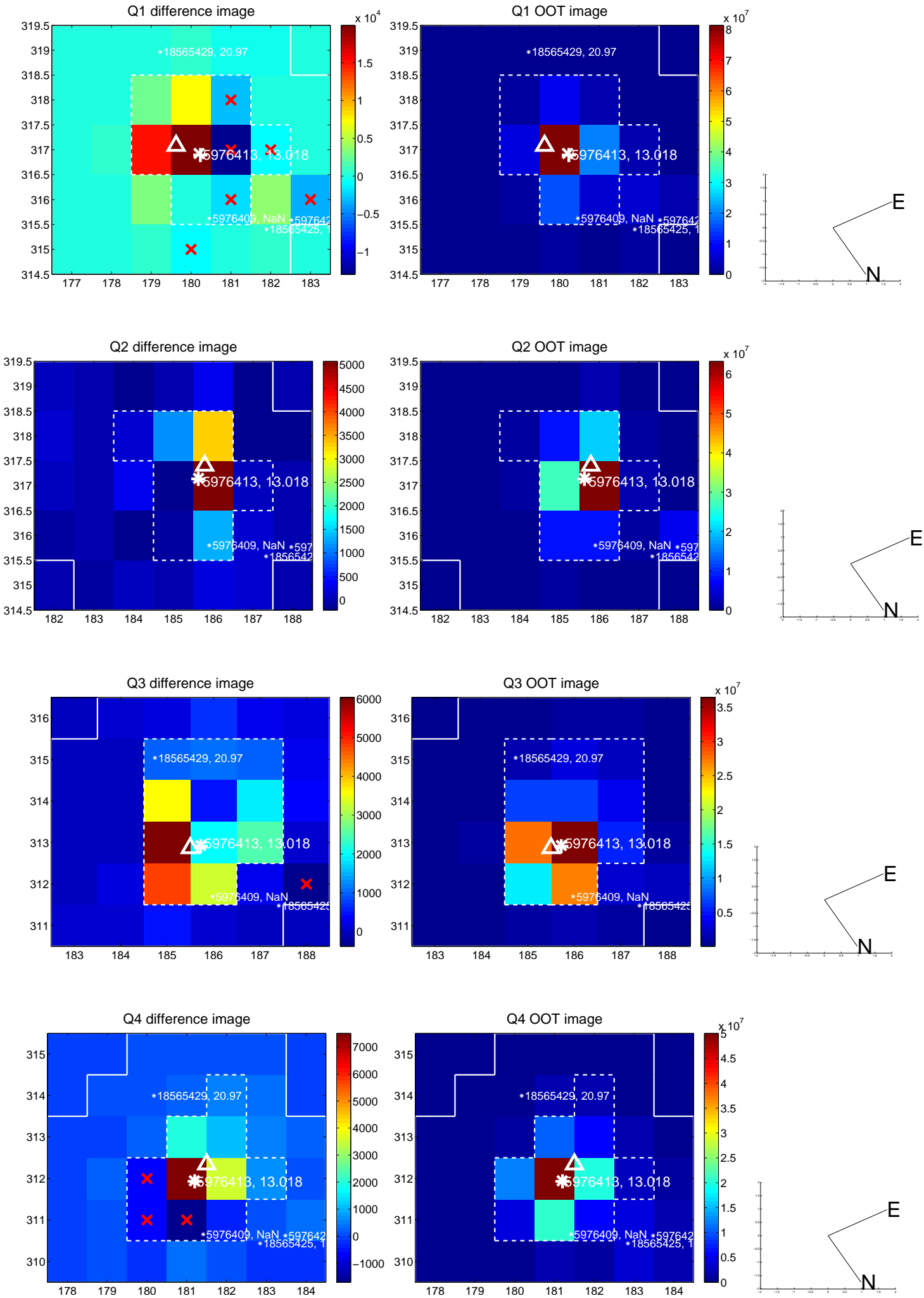
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.160 \pm 0.360$	0.45	$-0.025 \pm 0.347$	$-0.158 \pm 0.386$
PRF-fit source offset from KIC position	$0.055 \pm 0.289$	0.19	$-0.031 \pm 0.365$	$-0.046 \pm 0.247$
photometric centroid source offset	$1.89 \pm 0.79$	2.38	$-1.18 \pm 0.76$	$1.48 \pm 0.82$

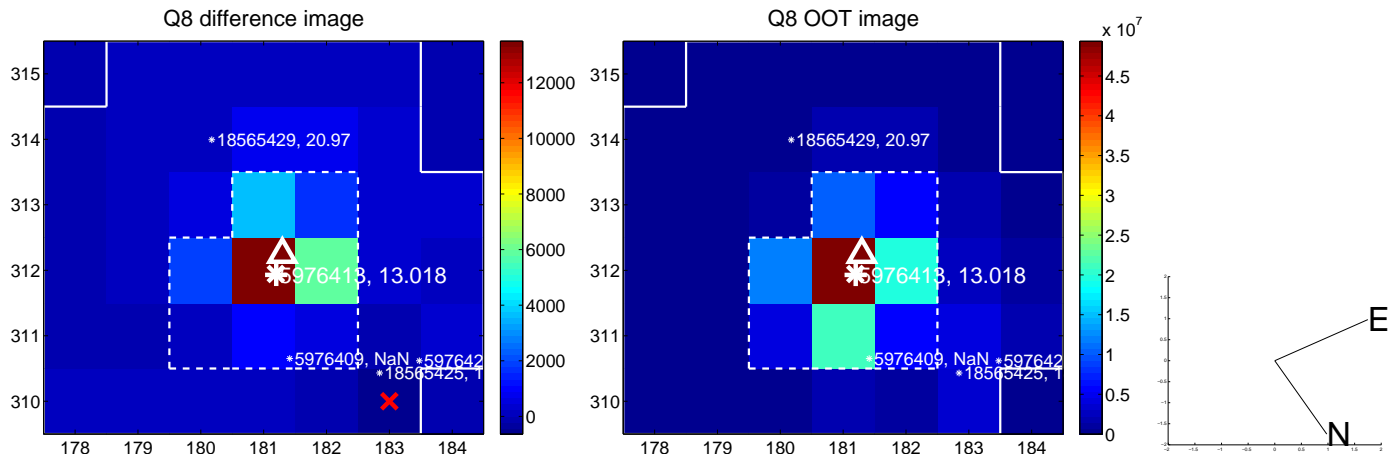
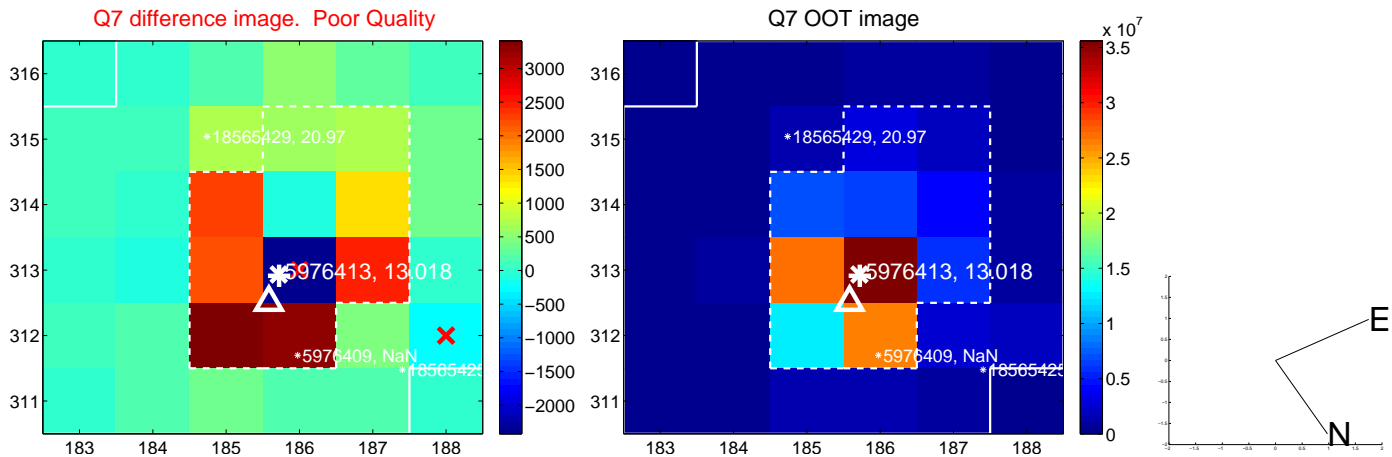
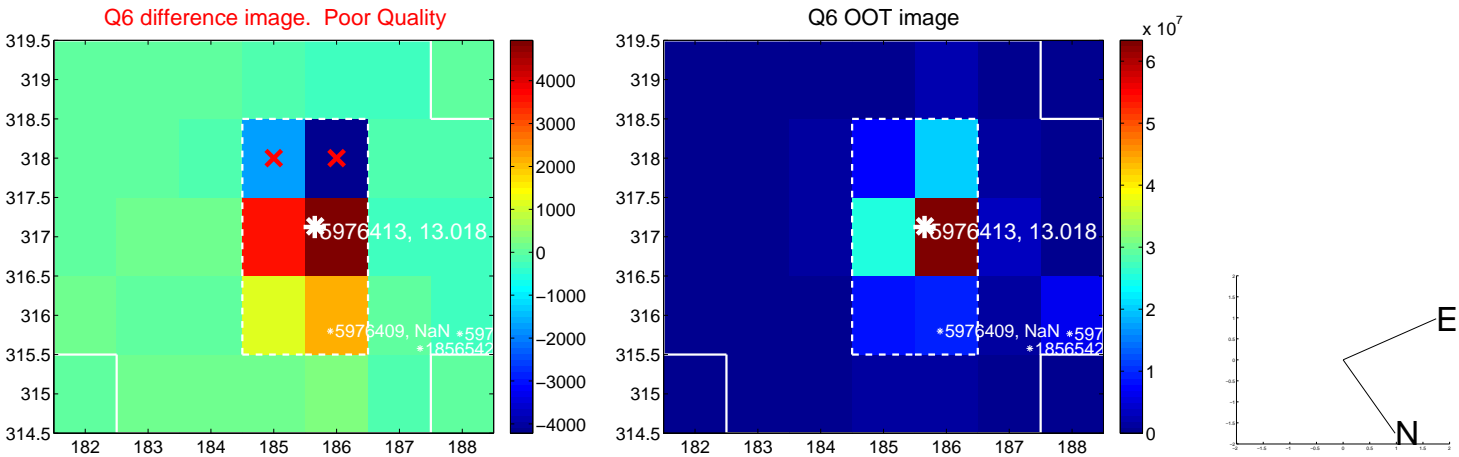
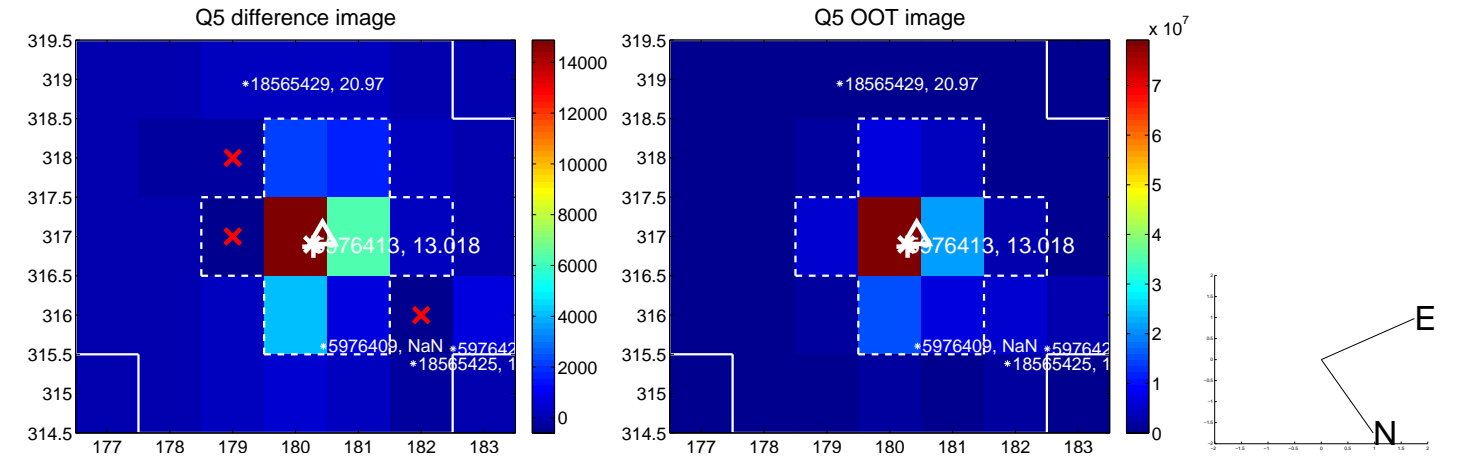


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

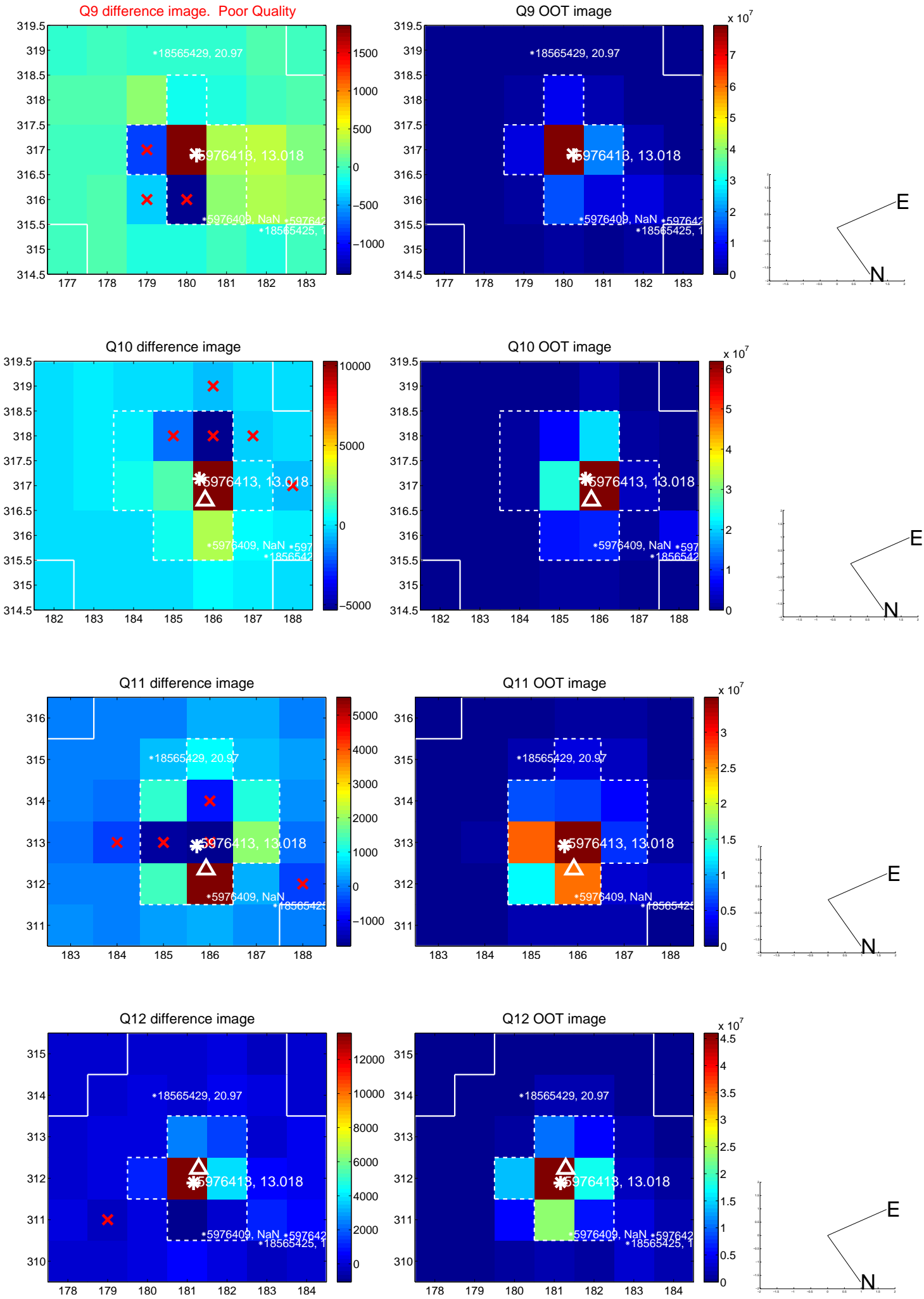


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

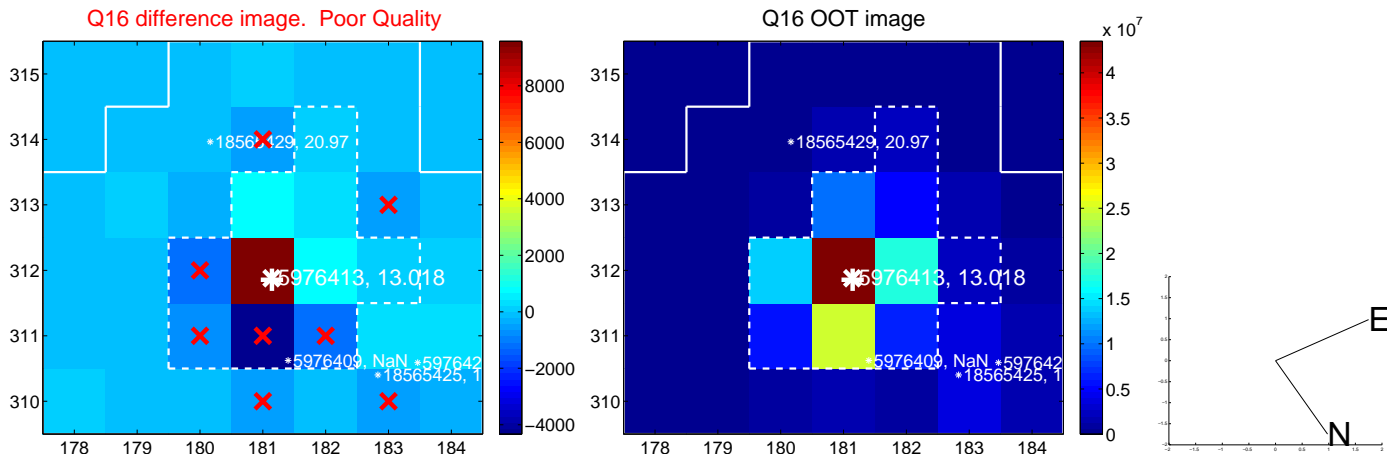
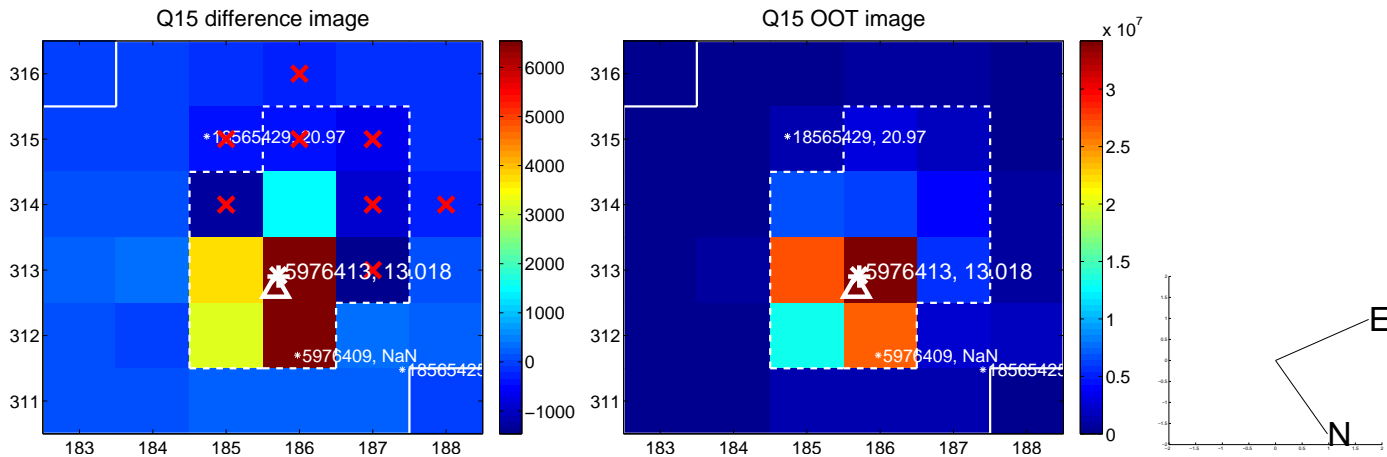
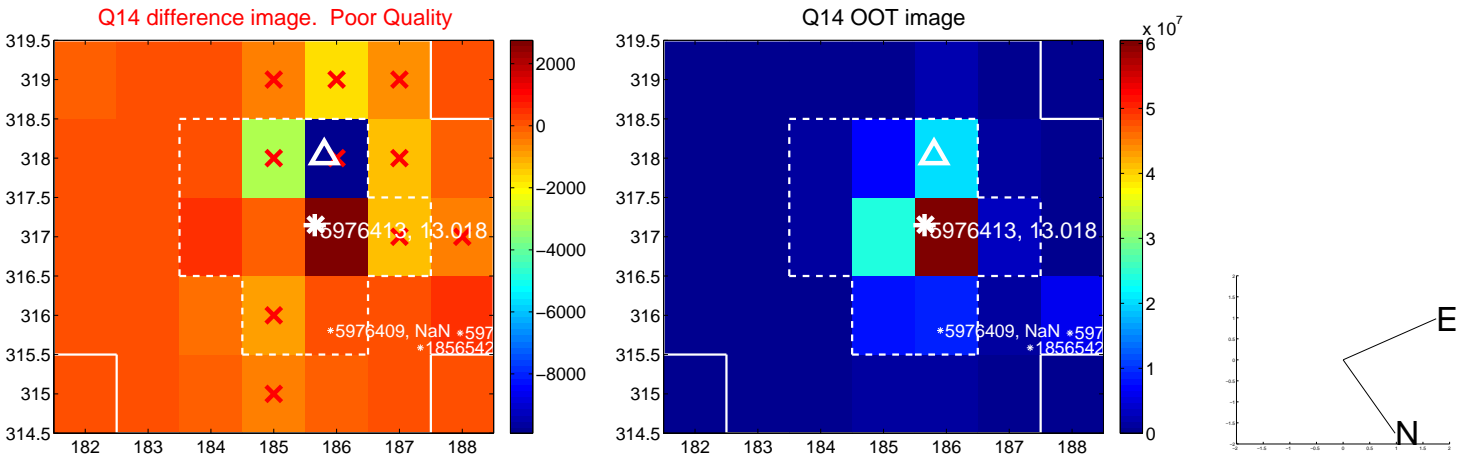
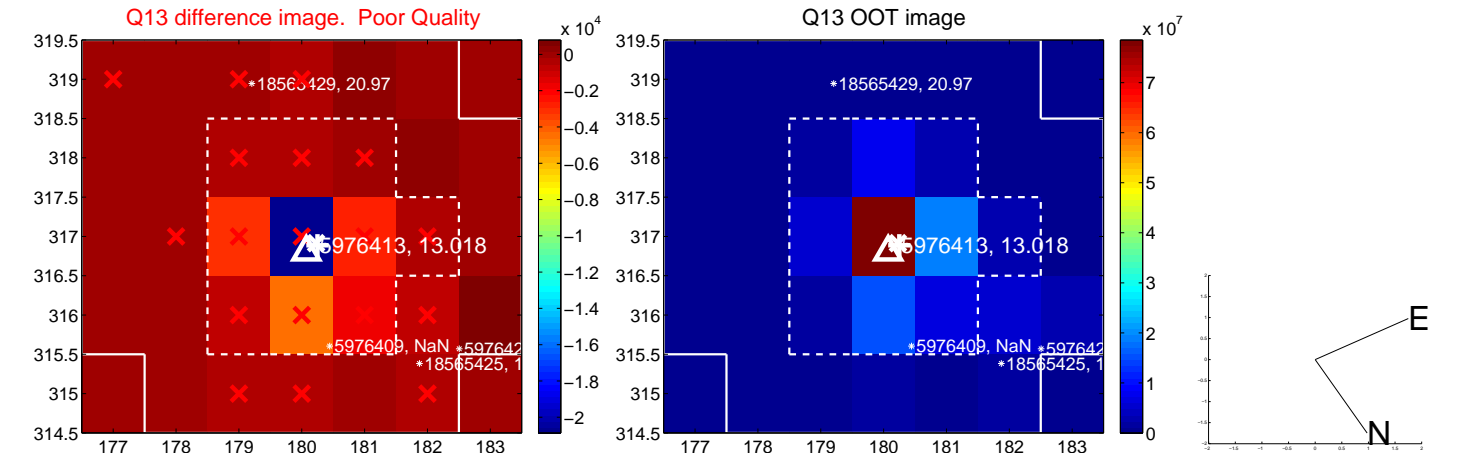




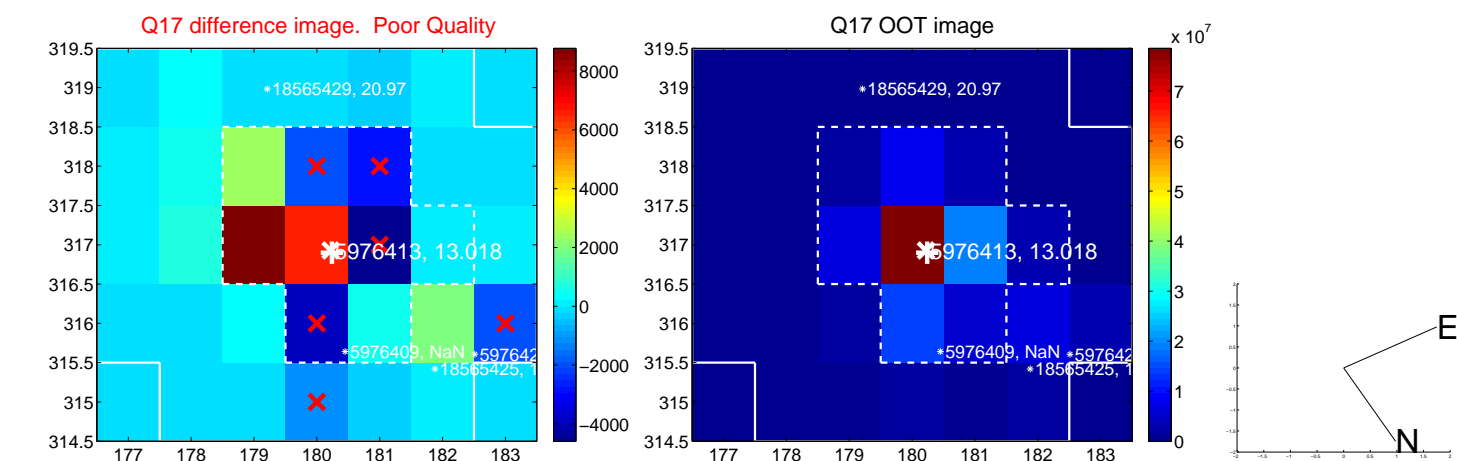
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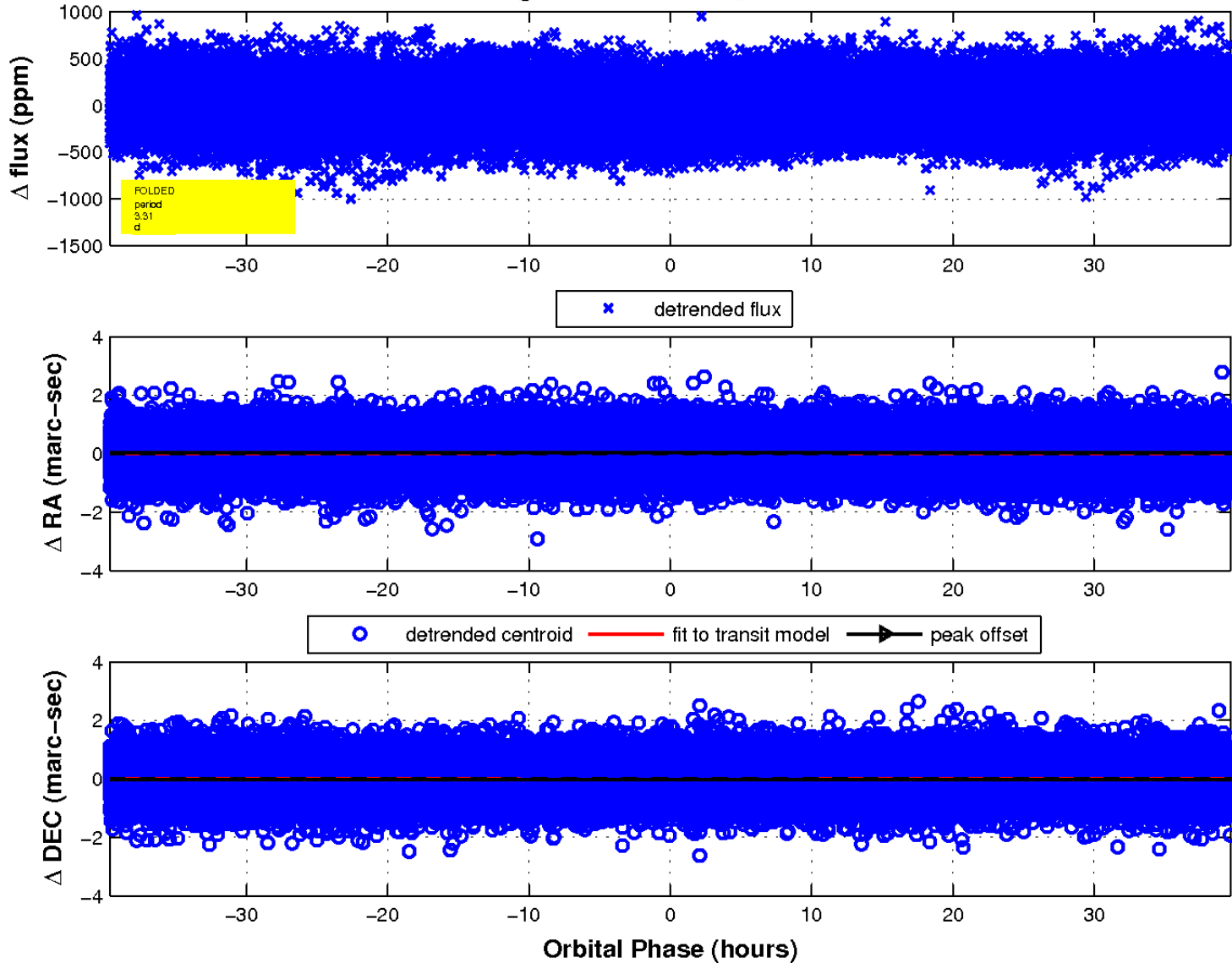
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

