

# KIC 007956461

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007956461-01	OBS	No	0.767103	131.952241	5.6	5.897	13.1	3.7	1.81	6966	0.45	19341.44

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007956461-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

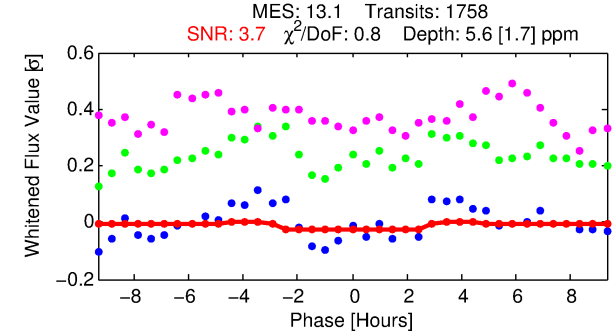
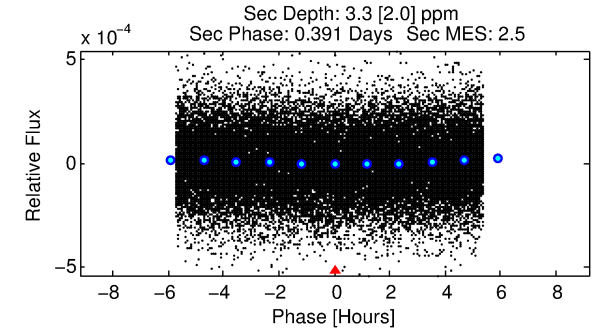
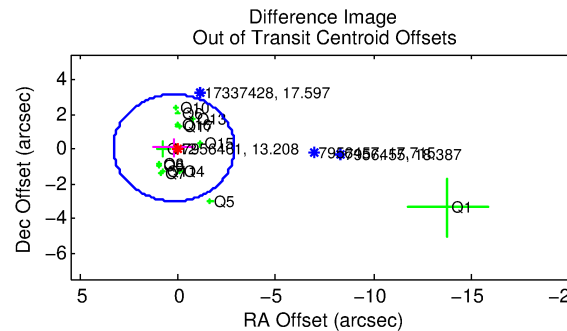
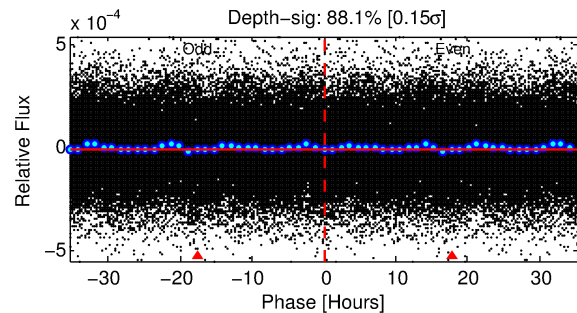
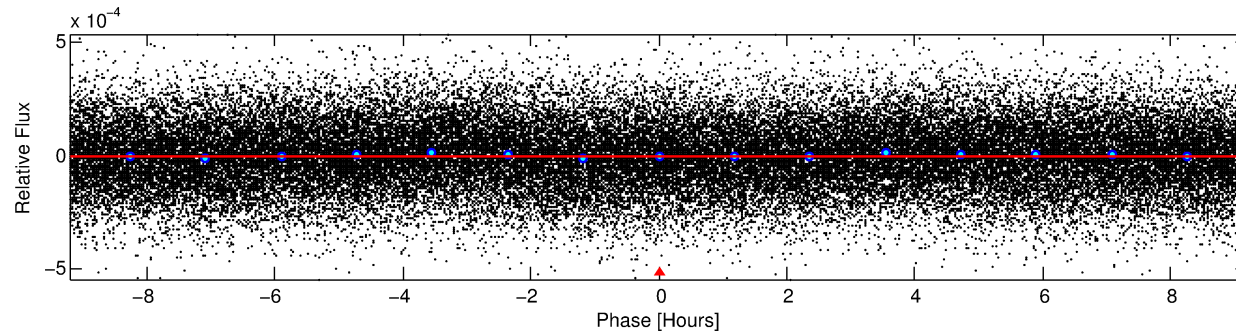
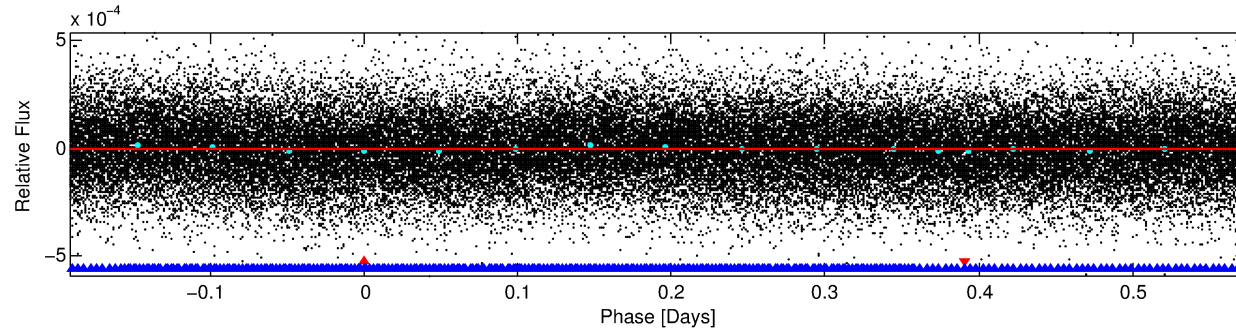
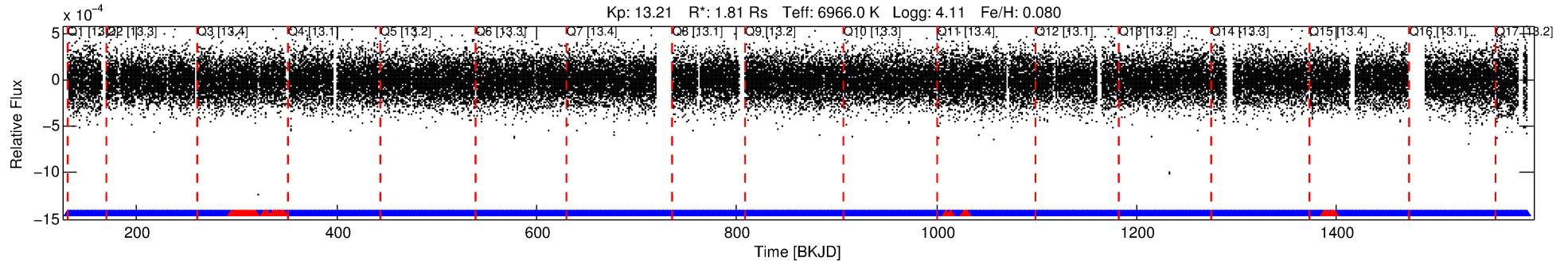
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007956461-01

No Significant Match Found

# DV One-Page Summary

KIC: 7956461 Candidate: 1 of 2 Period: 0.767 d



## DV Fit Results:

Period = 0.76710 [0.00004] d  
Epoch = 131.9522 [0.0122] BKJD  
Rp/R\* = 0.0023 [0.0027]  
a/R\* = 1.14 [1.82]  
b = 0.52 [9.76]  
Seff = 19341.44 [7872.06]  
Teq = 3007 [306] K  
Rp = 0.45 [0.55] Re  
a = 0.0189 [0.0049] AU  
Ag = 3.28 [8.22] [0.28 $\sigma$ ]  
Teffp = 6259 [3885] K [0.83 $\sigma$ ]

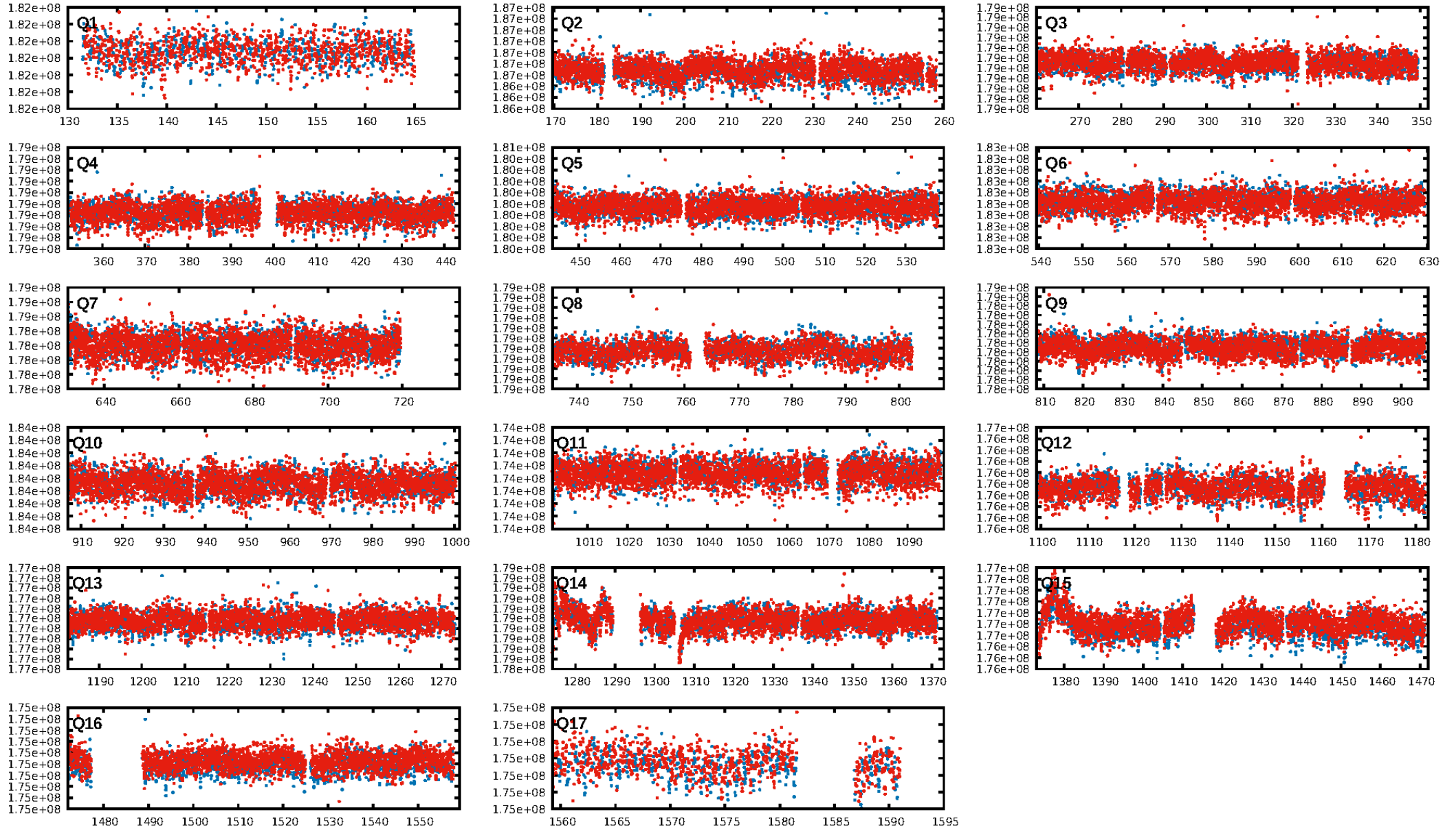
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [14.41 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 9.17e-31  
RollingBand-fgt: 0.97 [1627/1679]  
GhostDiagnostic-chr: -0.6552  
Centroid-sig: 84.2%  
Centroid-so: 0.919 arcsec [0.41 $\sigma$ ]  
OotOffset-rm: 0.223 arcsec [0.22 $\sigma$ ]  
KicOffset-rm: 0.222 arcsec [0.22 $\sigma$ ]  
OotOffset-st: 2/3/4/5 [14]  
KicOffset-st: 2/3/4/5 [14]  
DiffImageQuality-fgm: 0.57 [8/14]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 22:43:00 Z

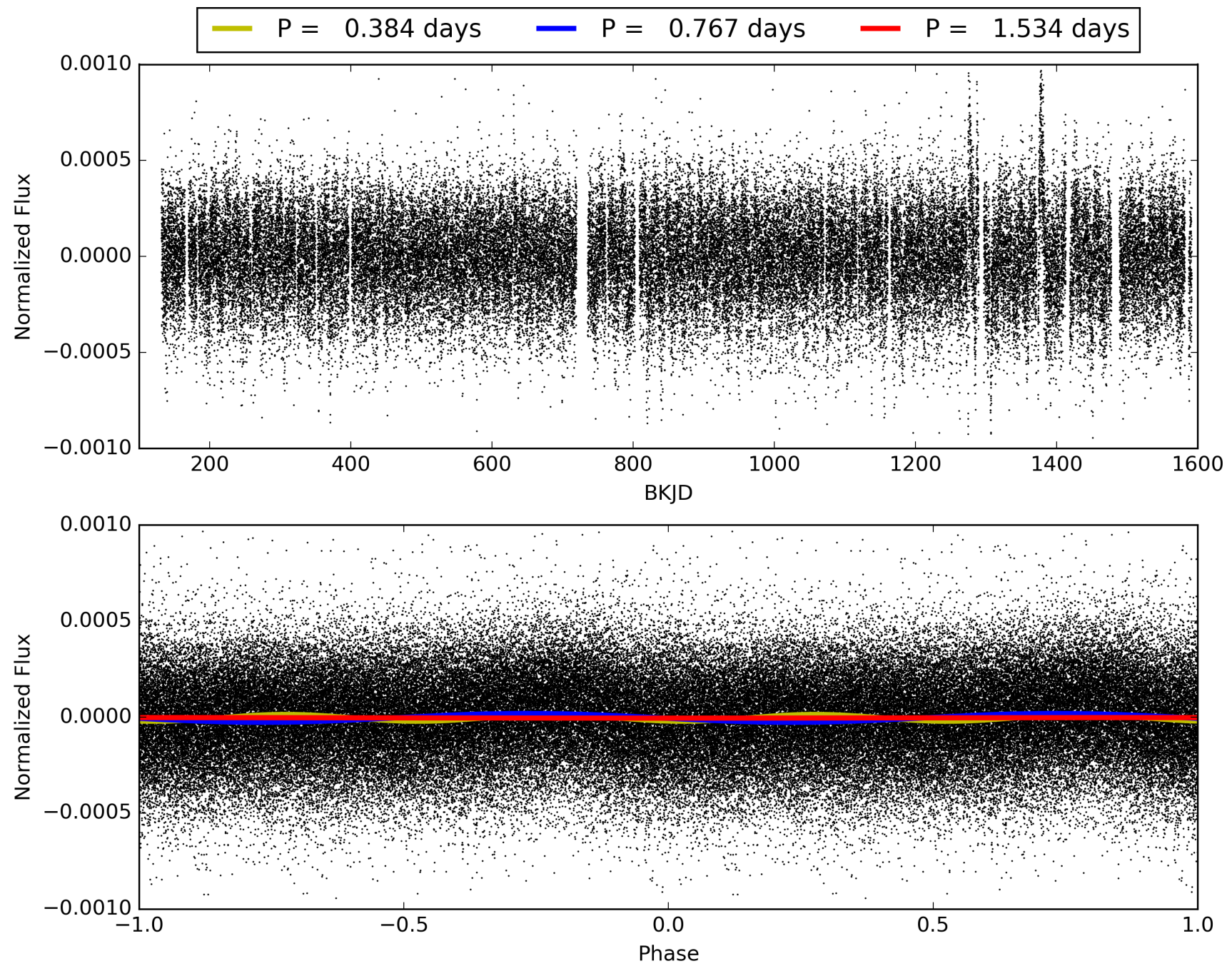
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 007956461-01, PDC Light Curves



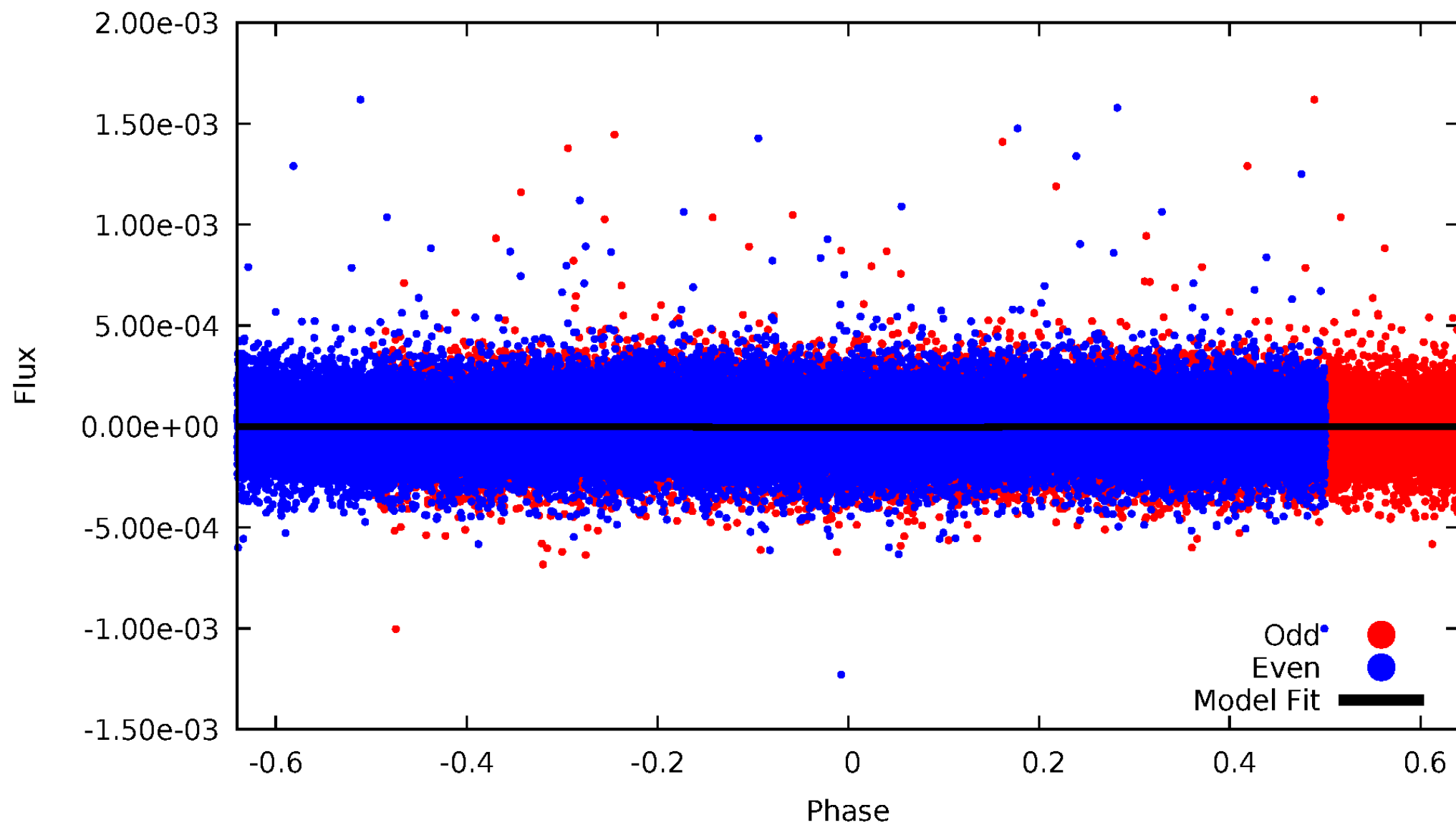


TCE 007956461-01



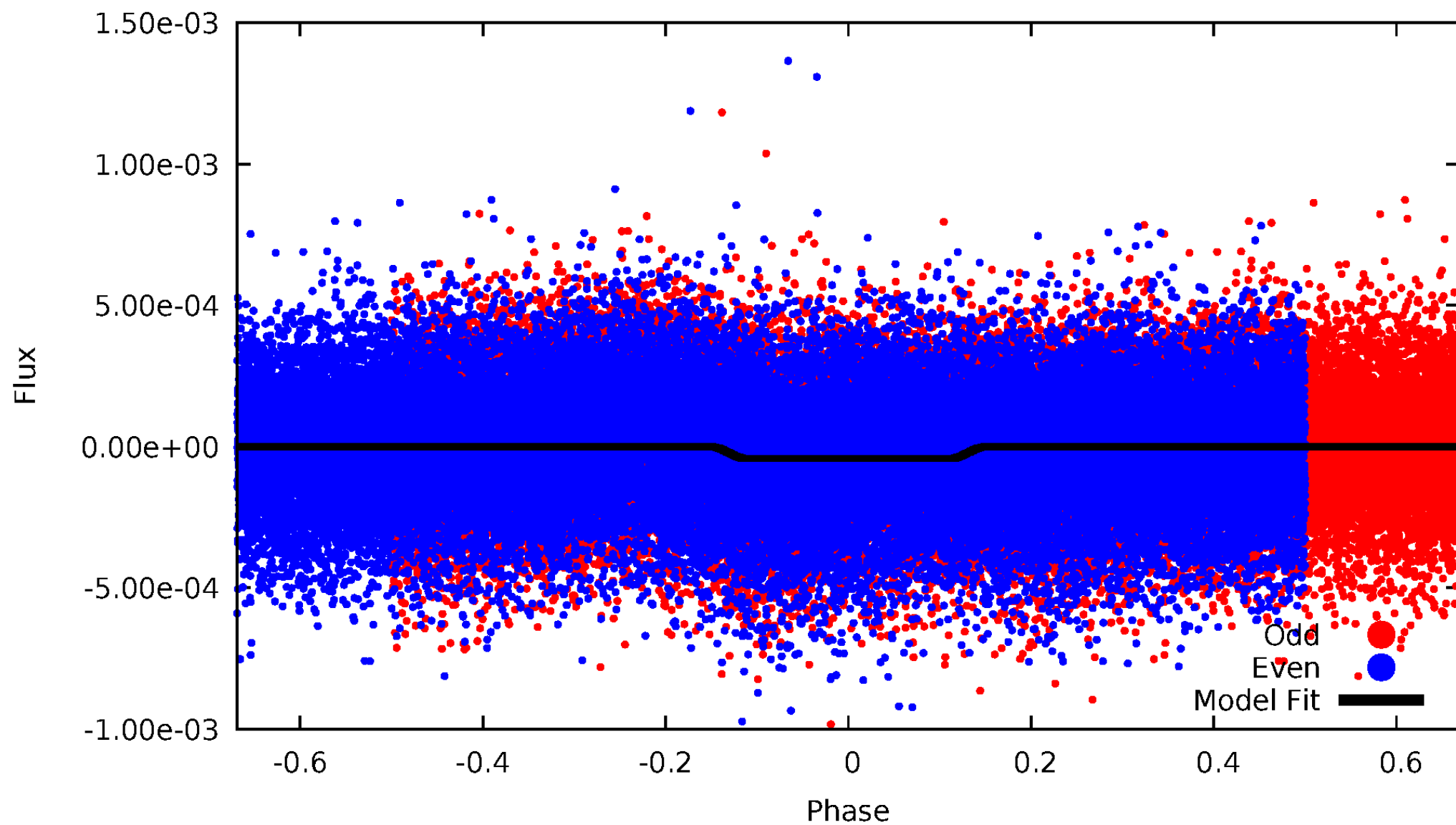
# DV Odd/Even

TCE 007956461-01



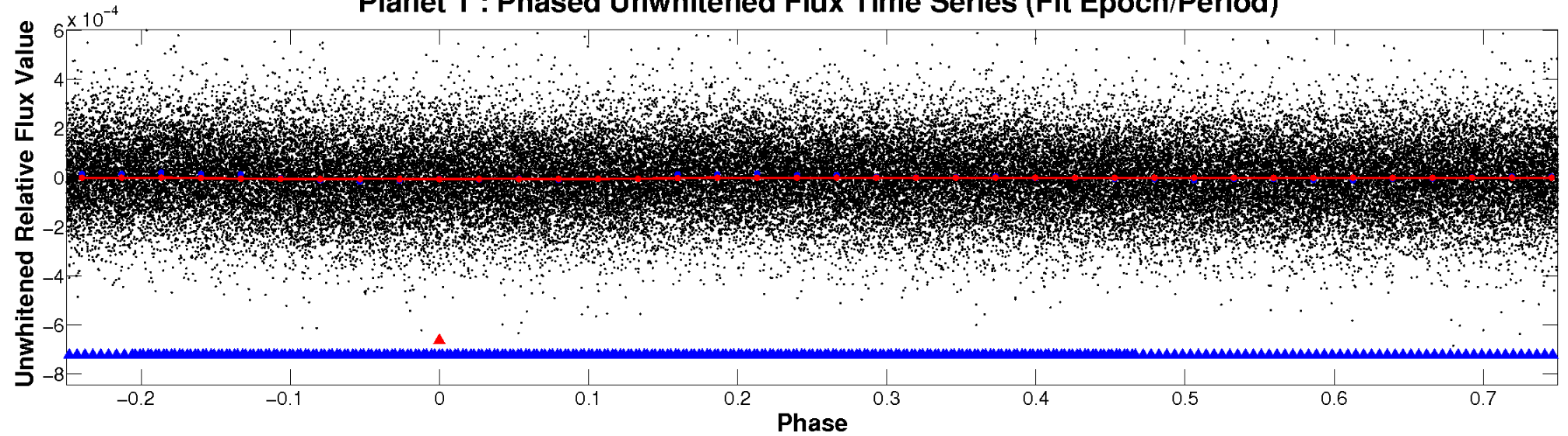
# ALT Odd/Even

TCE 007956461-01

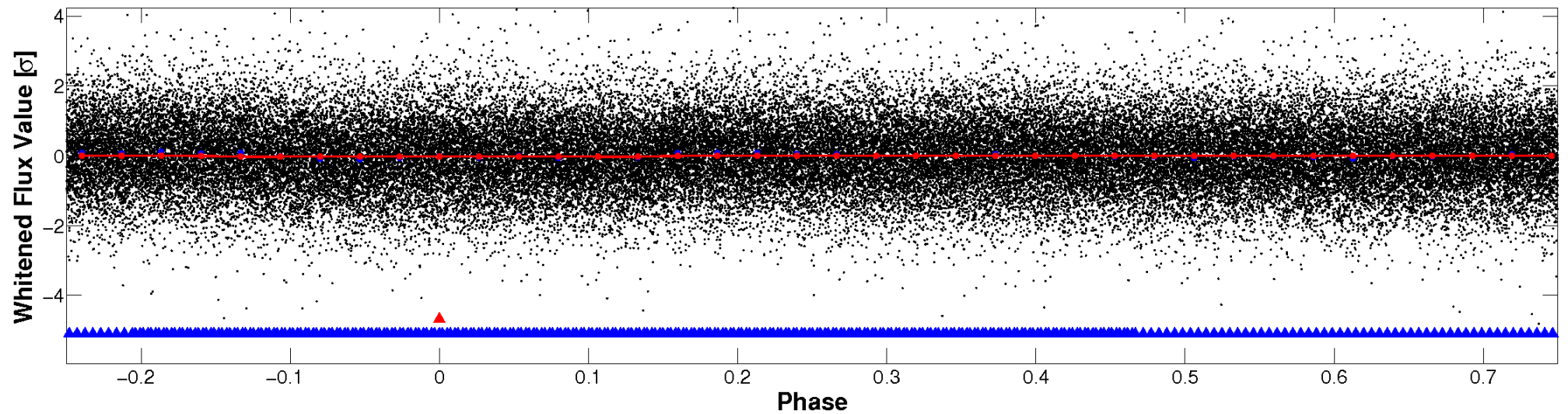


# Non-Whitened Vs. Whitened Light Curve

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



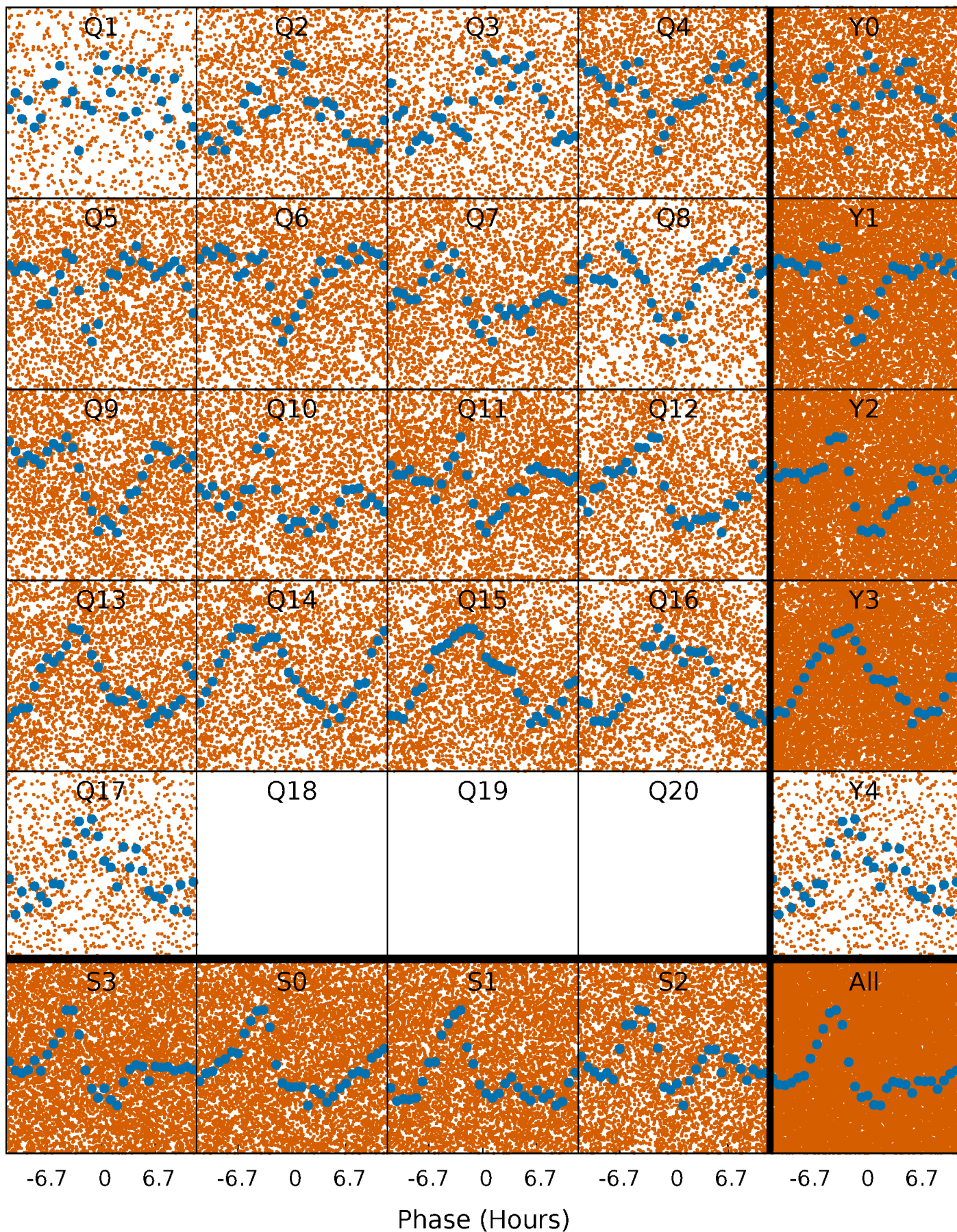
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

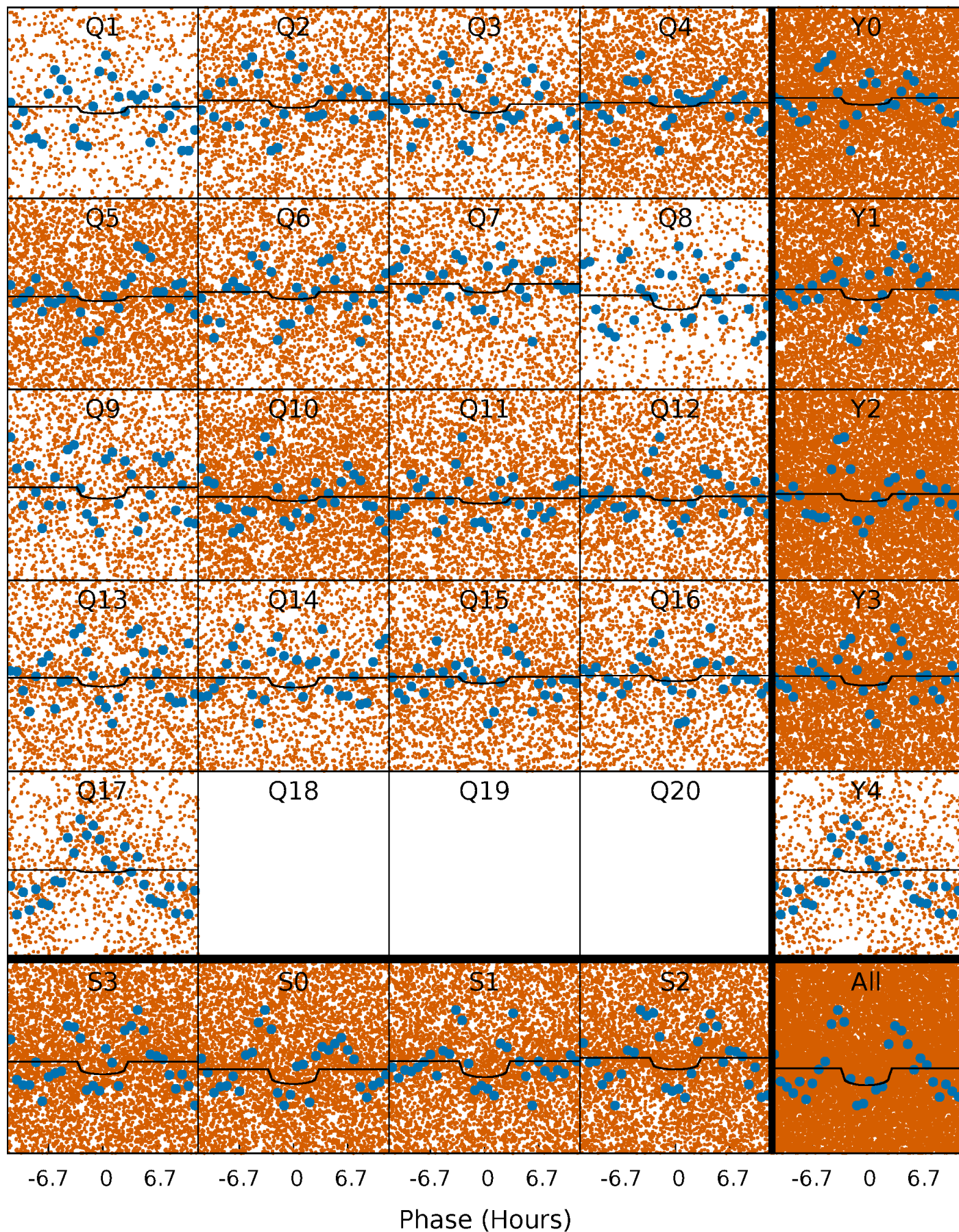
TCE 007956461-01 P= 0.767103 Days  $T_0=131.952242$  (BKJD)





# DV Quarter-Phased Transit Curves

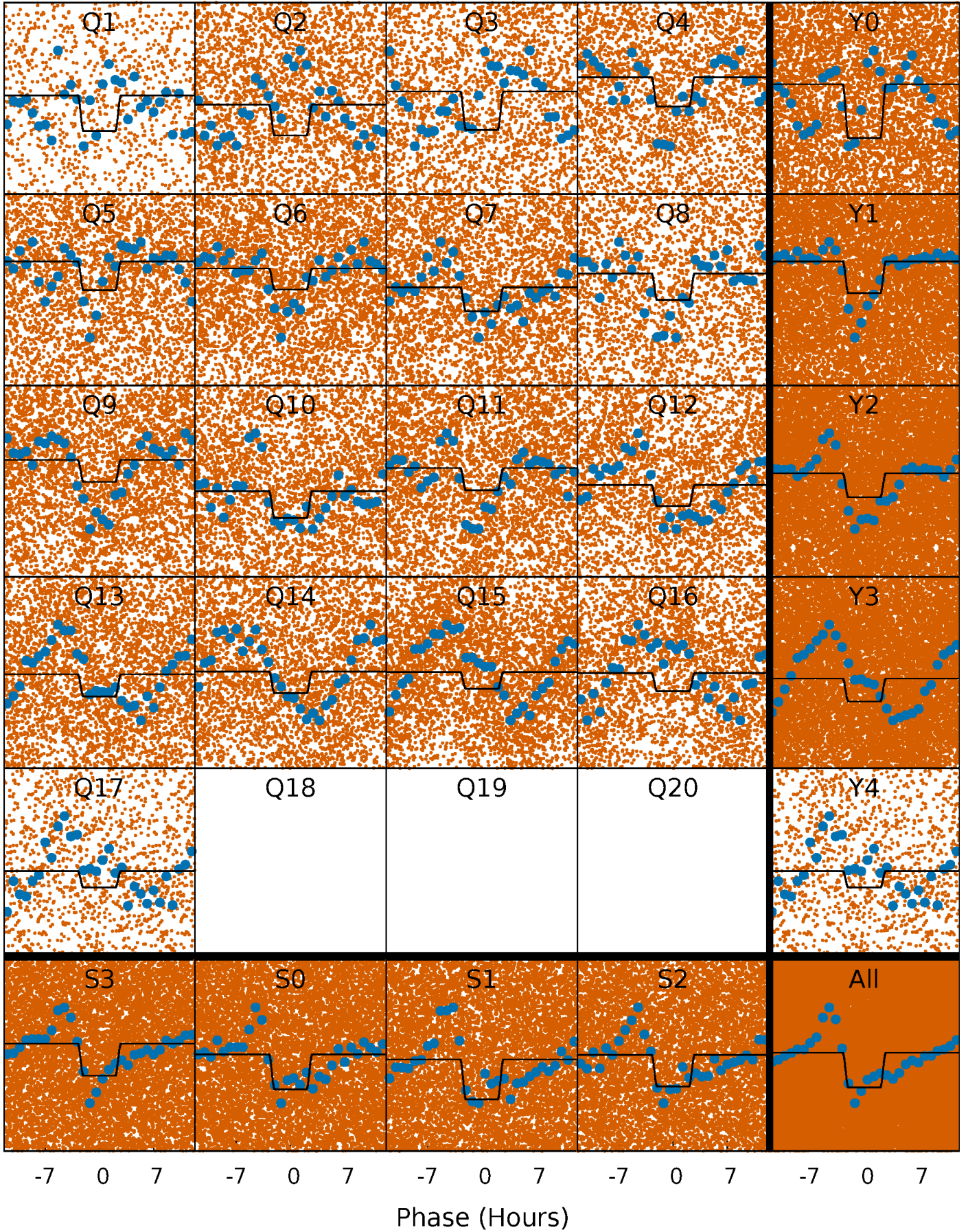
TCE 007956461-01 P= 0.767103 Days  $T_0=131.952242$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

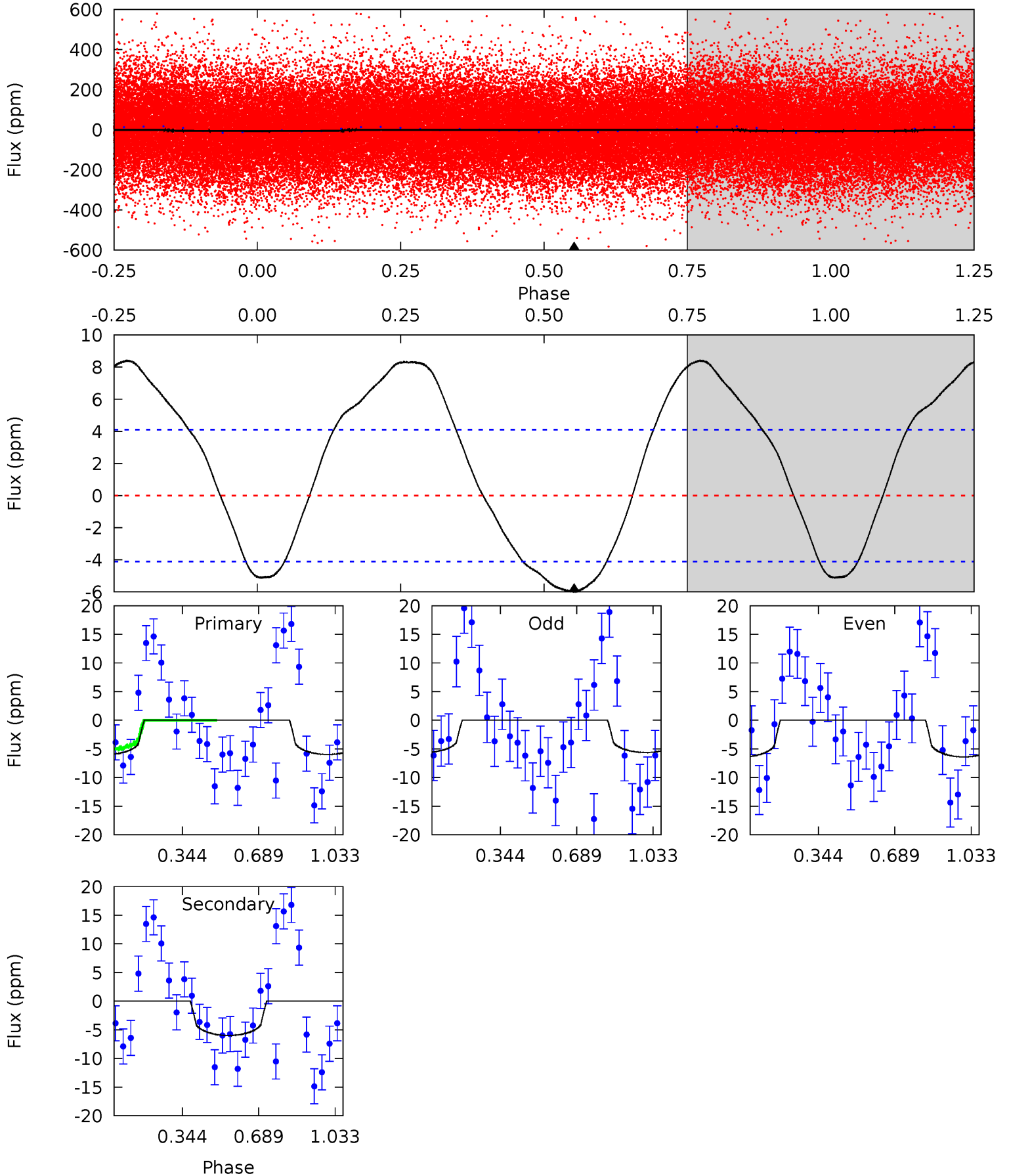
TCE 007956461-01 P= 0.767186 Days  $T_0=131.909540$  (BKJD)



# DV Model-Shift Uniqueness Test

007956461-01, P = 0.767103 Days, E = 131.185139 Days

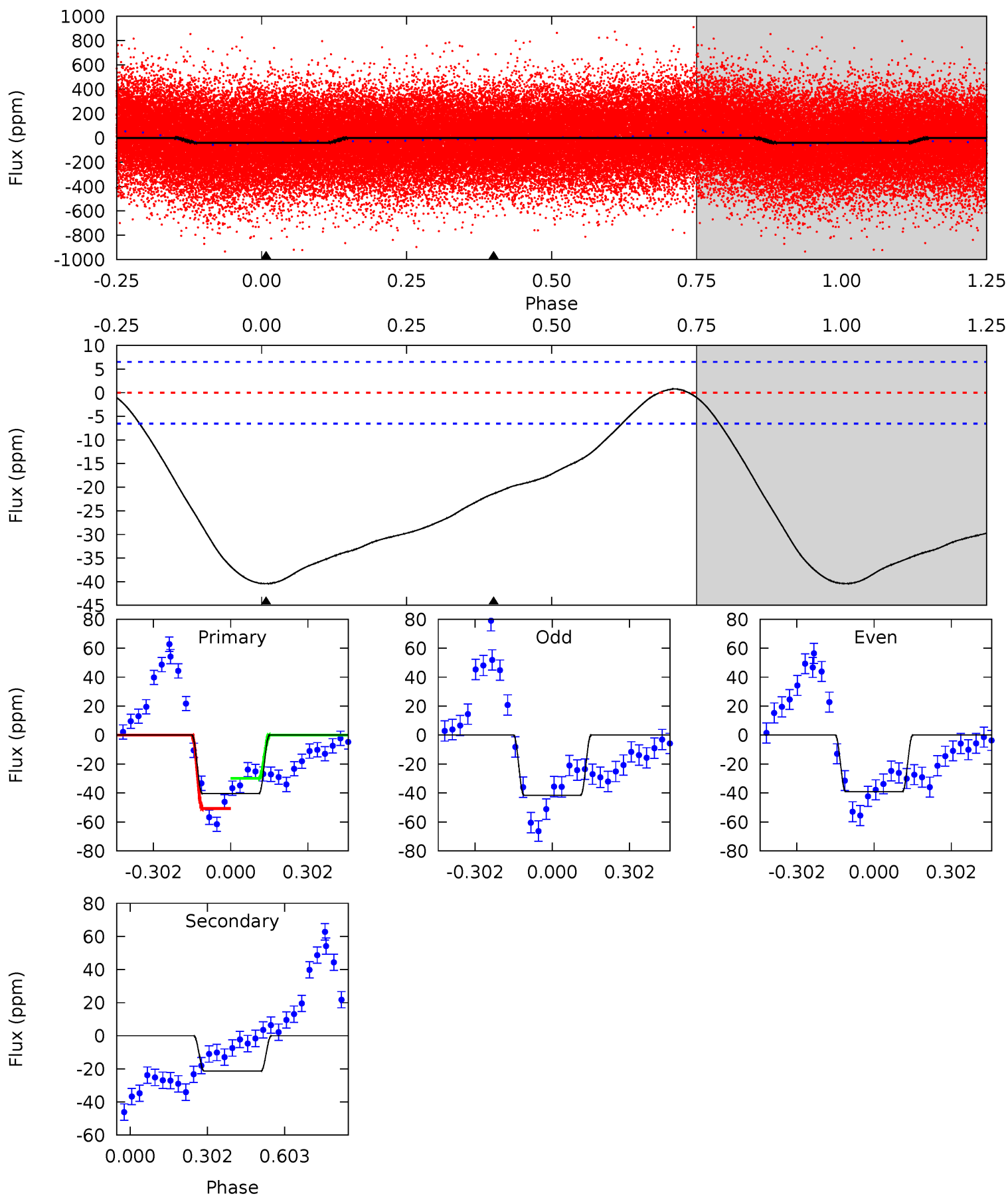
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.27	6.27	0	0	4.30	0.95	4.16	6.27	6.27	6.27	6.27	0.40	0.85	0.58	0.92



# Alt Model-Shift Uniqueness Test

007956461-01, P = 0.767186 Days, E = 131.142354 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
26.7	14.1	0	0	4.33	1.03	0.62	26.7	26.7	14.1	14.1	0.80	1.17	0.02	6.88





### Stellar Parameters For KIC 007956461

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6966^{+194}_{-333}$	$4.107^{+0.153}_{-0.187}$	$0.080^{+0.200}_{-0.350}$	$1.808^{+0.586}_{-0.440}$	$1.524^{+0.207}_{-0.254}$	$0.363^{+0.334}_{-0.171}$
	+3%/-5%	+4%/-5%	+250%/-438%	+32%/-24%	+14%/-17%	+92%/-47%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 007956461-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-6 \pm 1$	$0.56^{+0.51}_{-0.36}$	$4209^{+355}_{-311}$	$6254^{+6049}_{-1757}$	$3.564^{+24.803}_{-2.574}$
Alt.	$-21 \pm 2$	$1.29^{+0.59}_{-0.59}$	$4188^{+331}_{-311}$	$5614^{+2270}_{-966}$	$2.489^{+5.712}_{-1.319}$

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

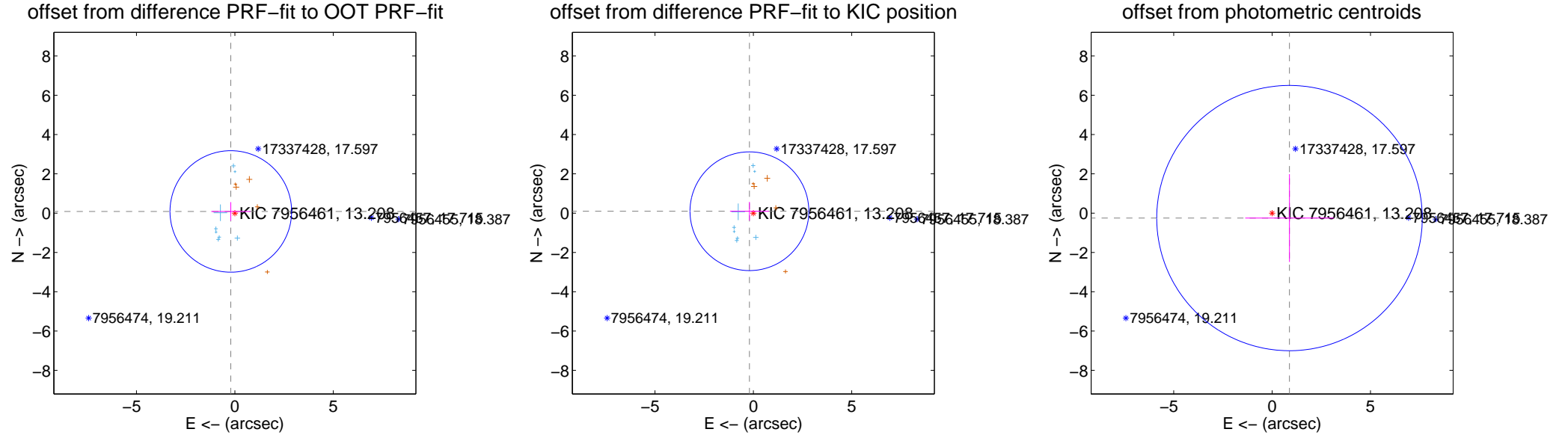
## DV Centroid Data

Supplemental centroid analysis for 007956461-01. Kepler magnitude: 13.21. Transit SNR 3.68

There are 8 quarters with good PRF difference image offsets

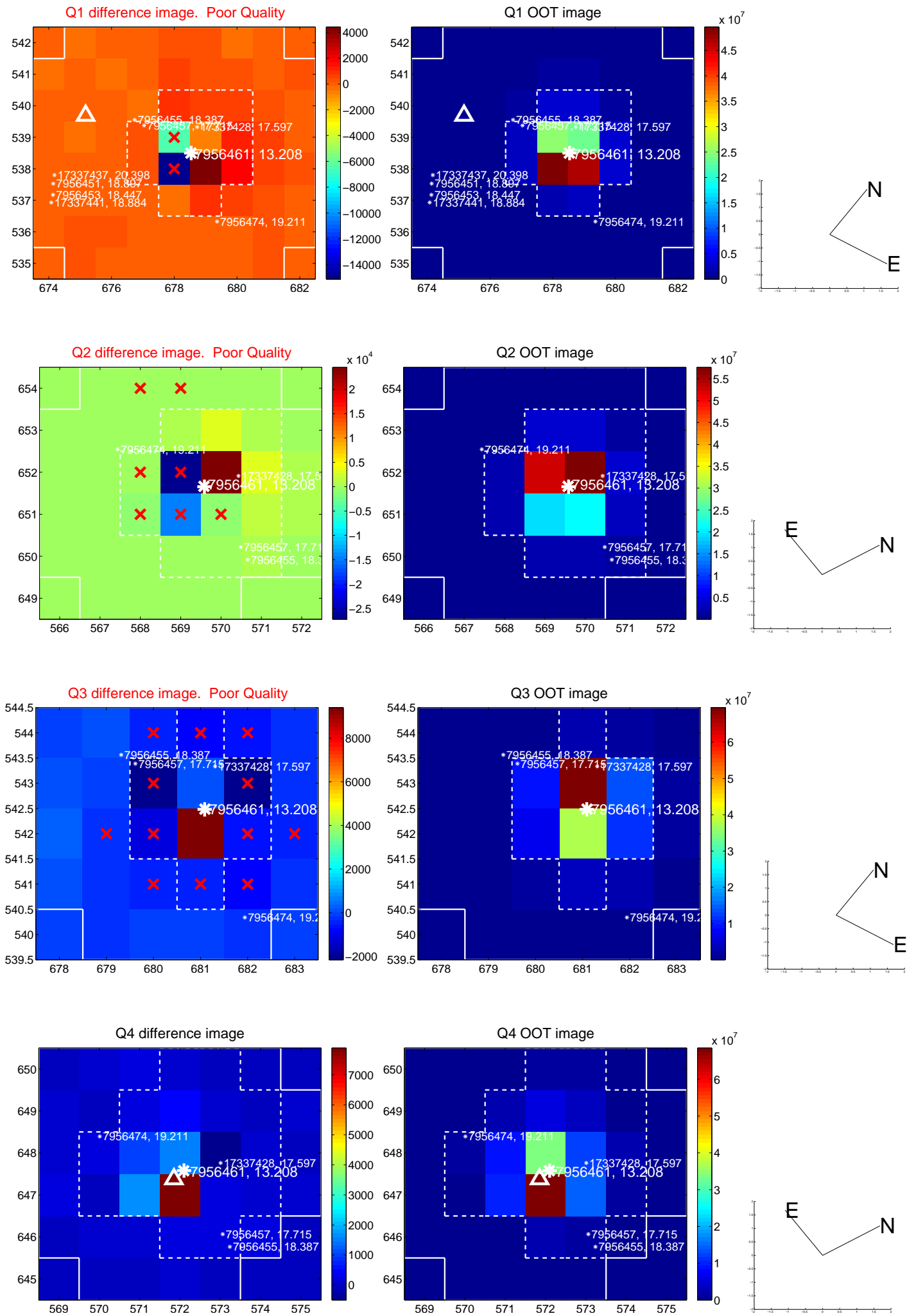
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.223 \pm 1.030$	0.22	$0.206 \pm 0.996$	$0.086 \pm 0.472$
PRF-fit source offset from KIC position	$0.222 \pm 1.007$	0.22	$0.199 \pm 0.989$	$0.097 \pm 0.474$
photometric centroid source offset	$0.92 \pm 2.25$	0.41	$-0.88 \pm 2.25$	$-0.25 \pm 2.24$

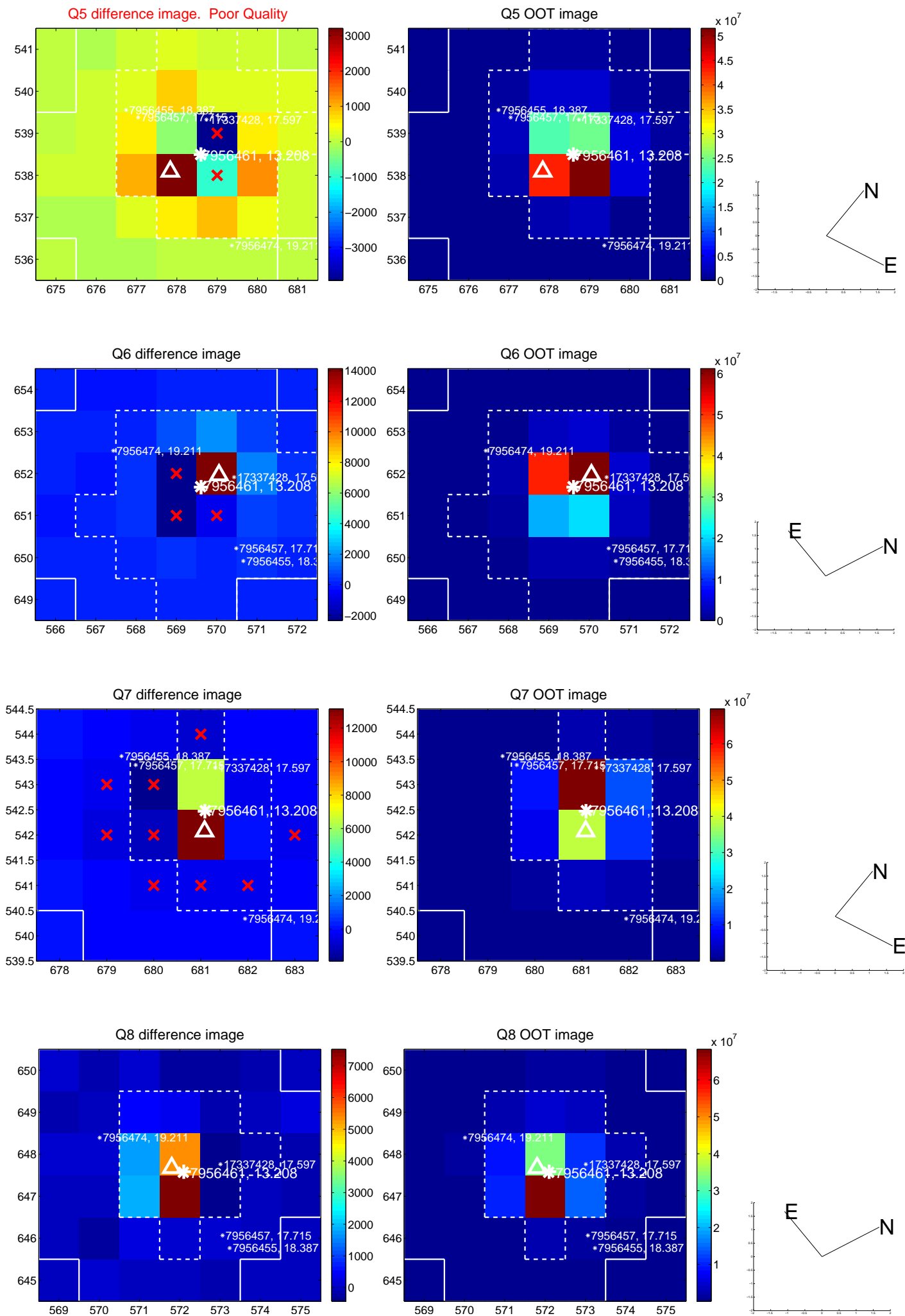


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

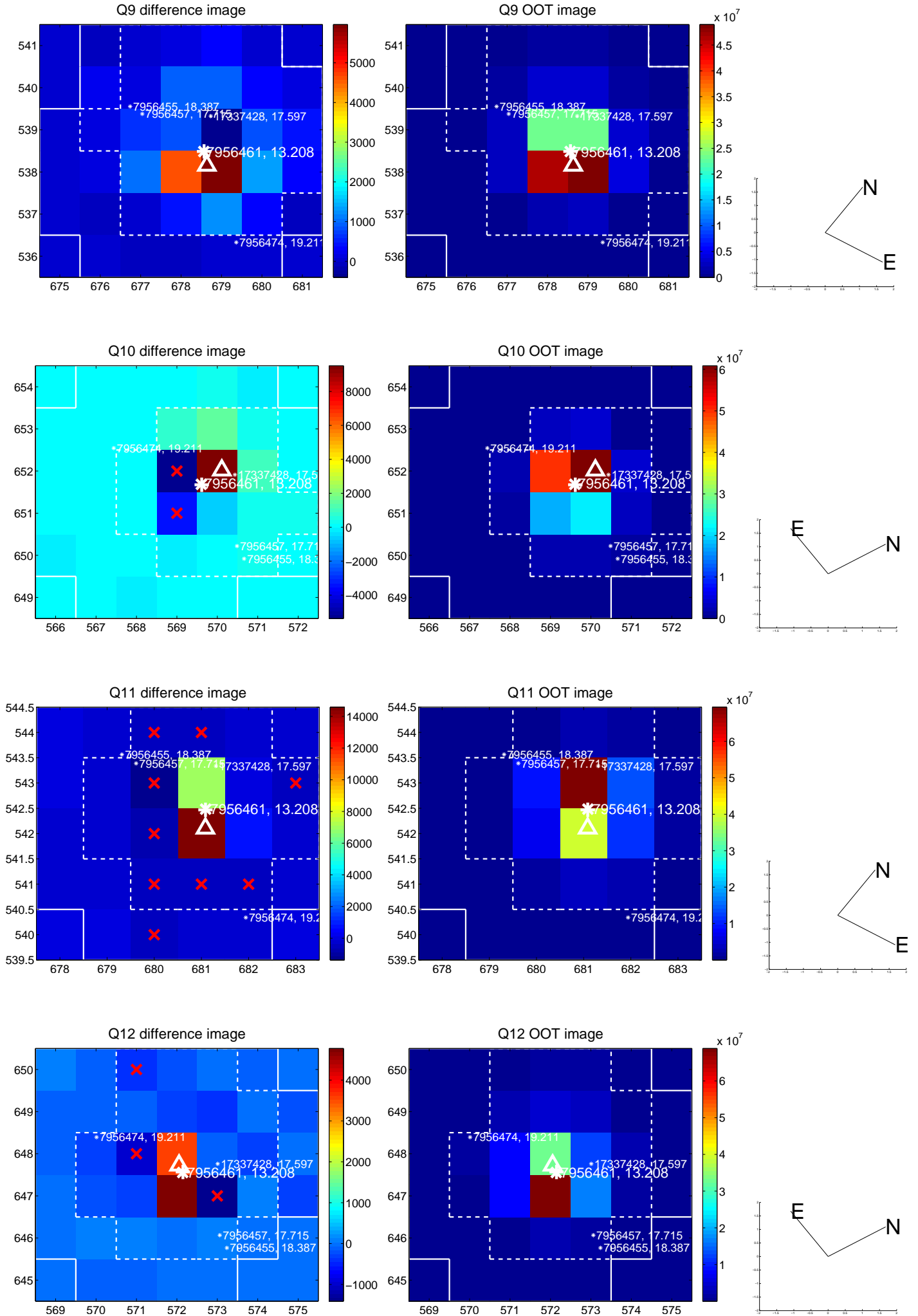


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

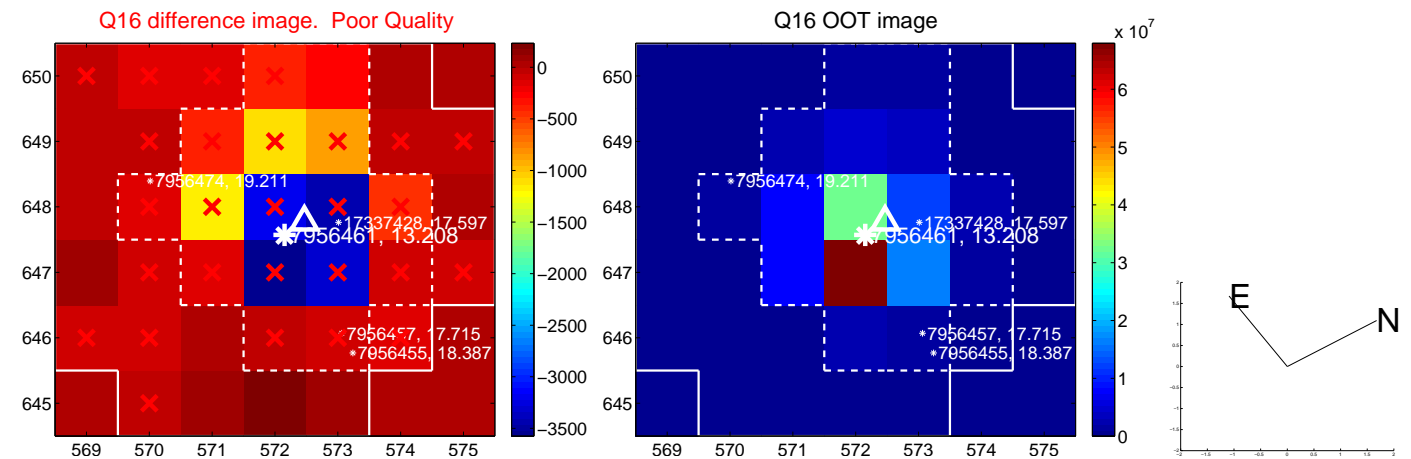
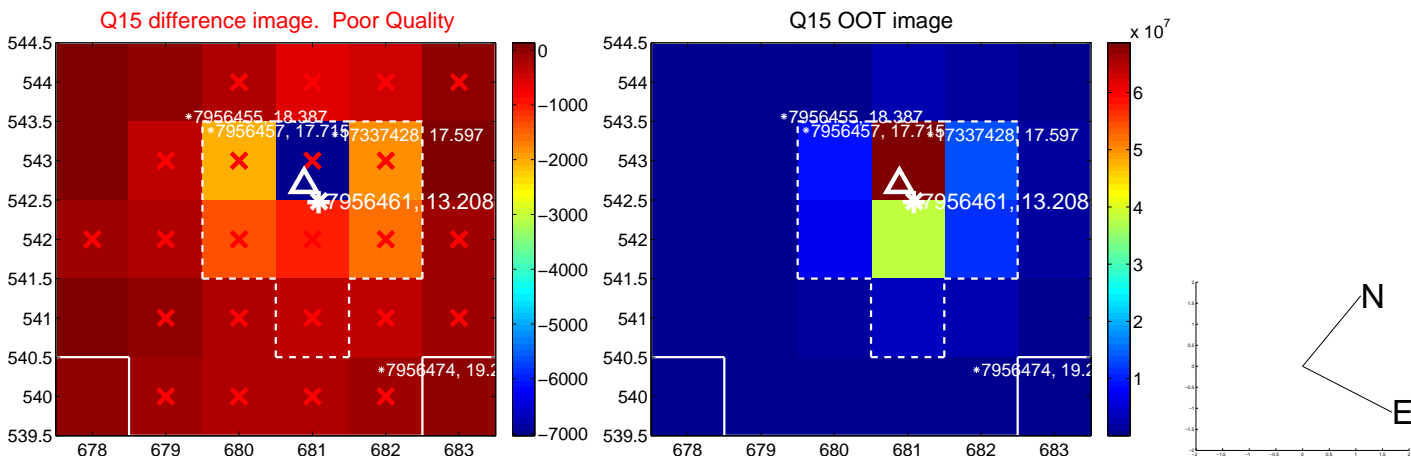
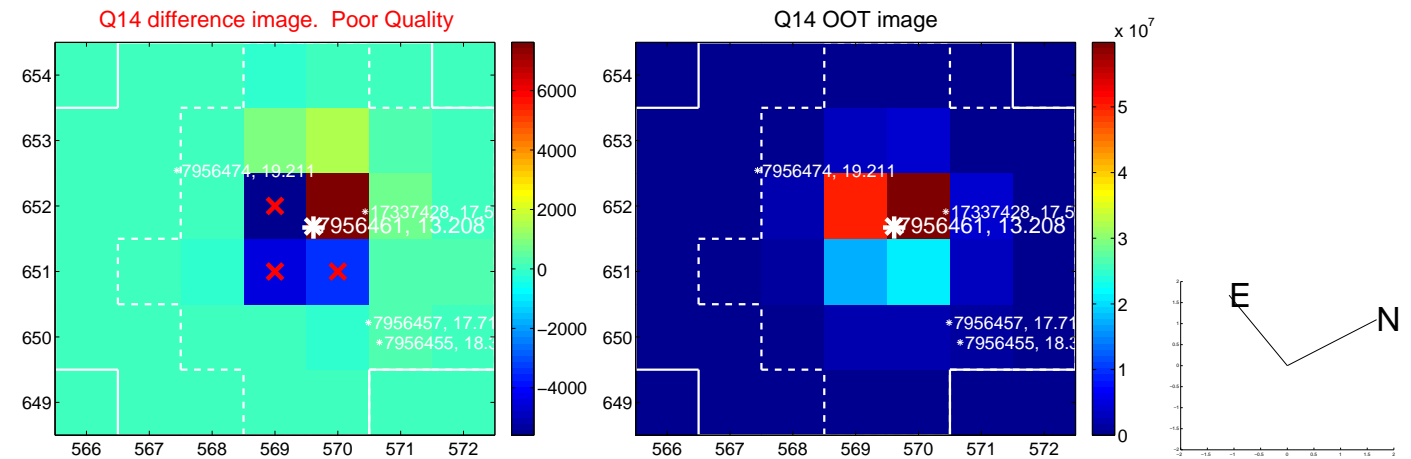
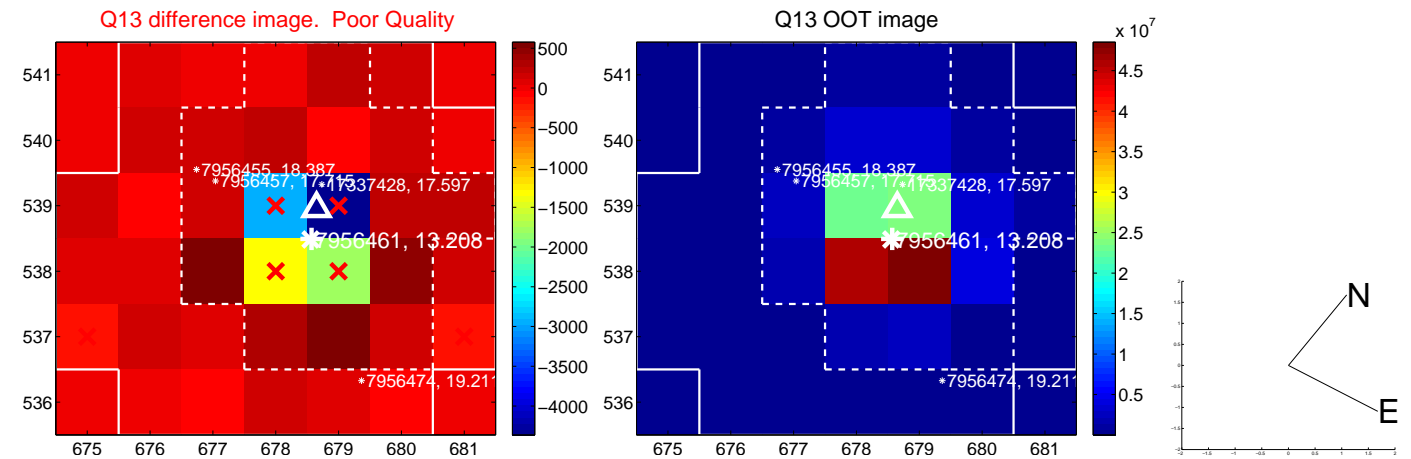




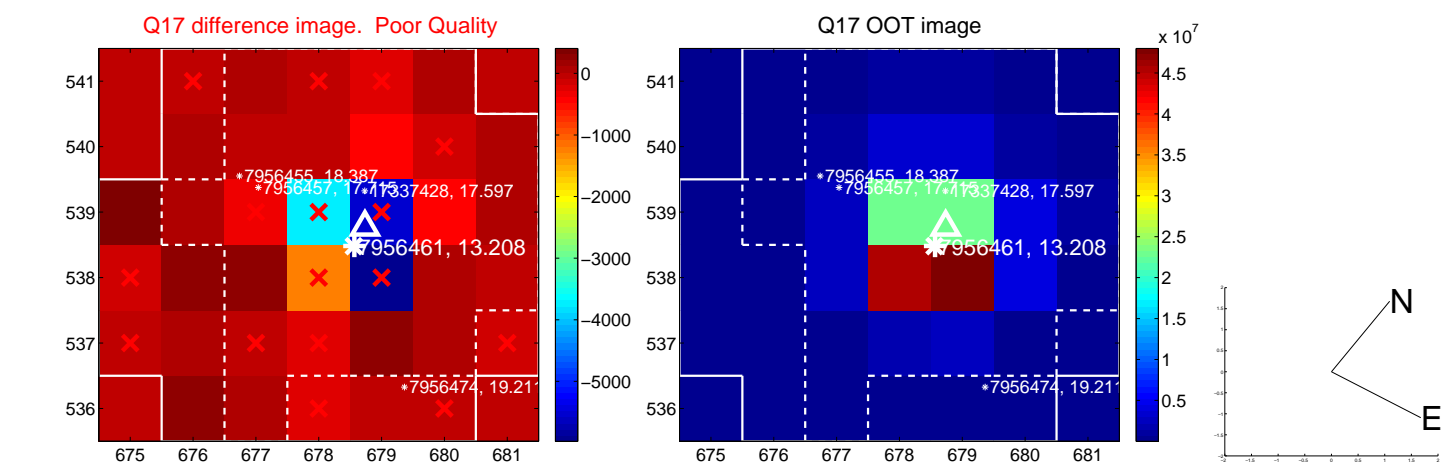
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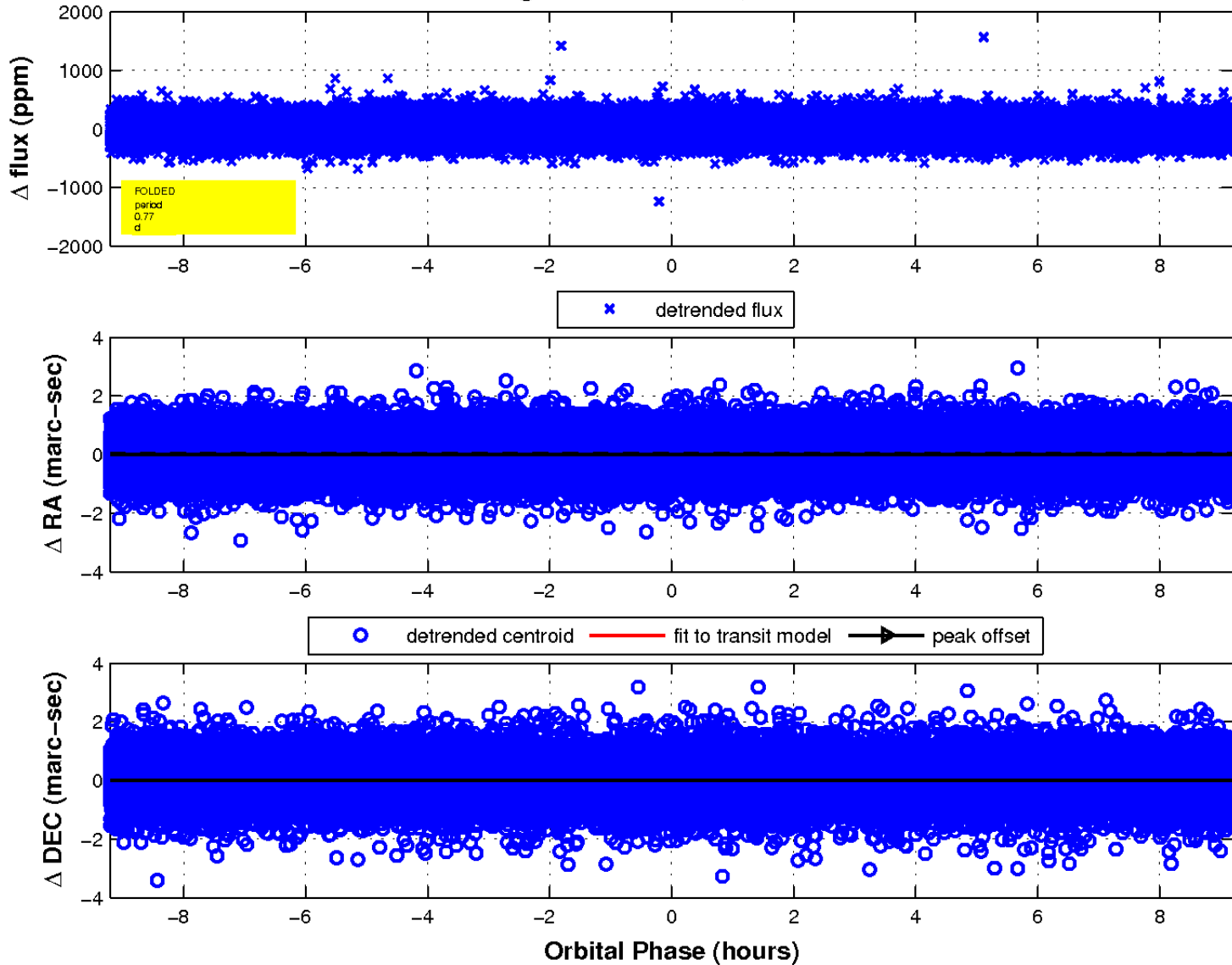
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white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination

