

# KIC 008211605

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008211605-01	OBS	3405.01	20.979318	147.733680	781.2	4.245	46.4	13.3	0.67	5182	3.73	17.30

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008211605-01	OBS	FP	0.00	0	1	1	0	DEEP_V_SHAPED—SEASONAL_DEPTH_DV—SEASONAL_DEPTH_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST

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

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

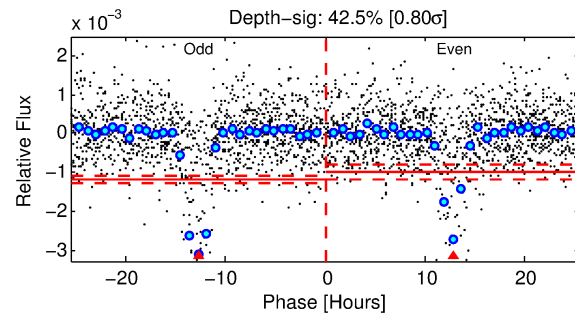
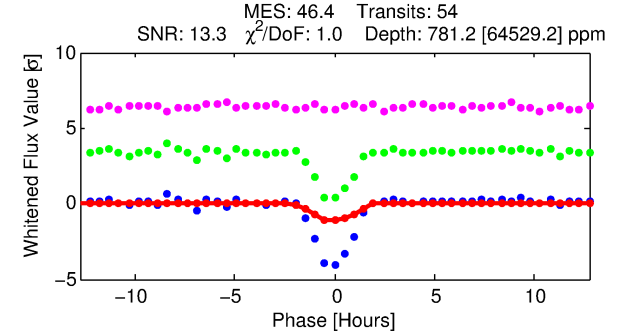
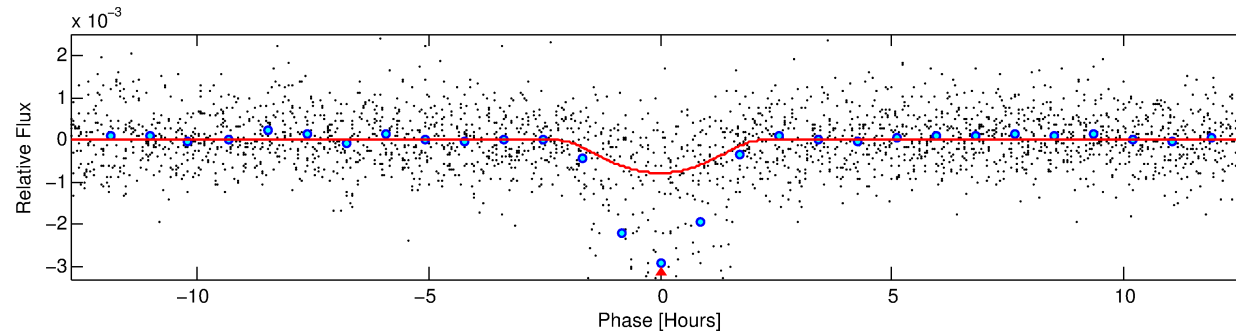
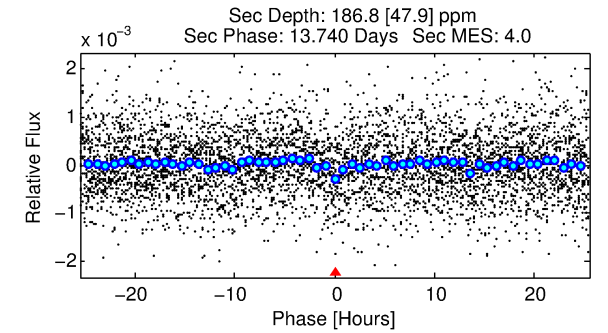
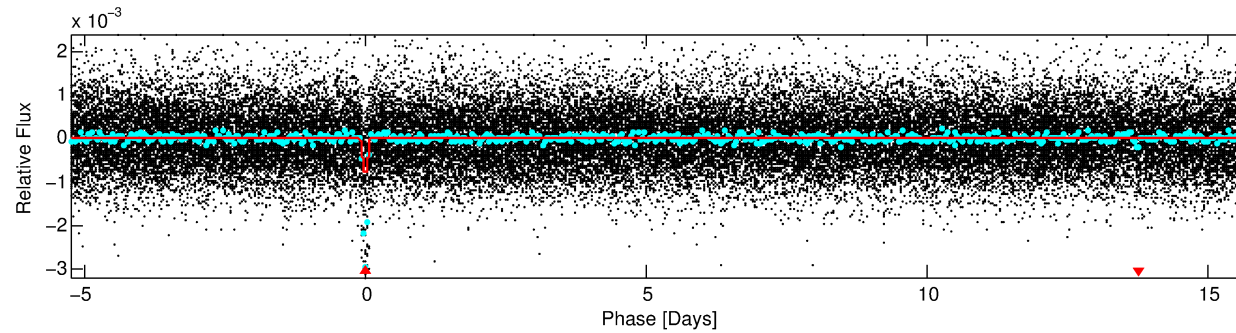
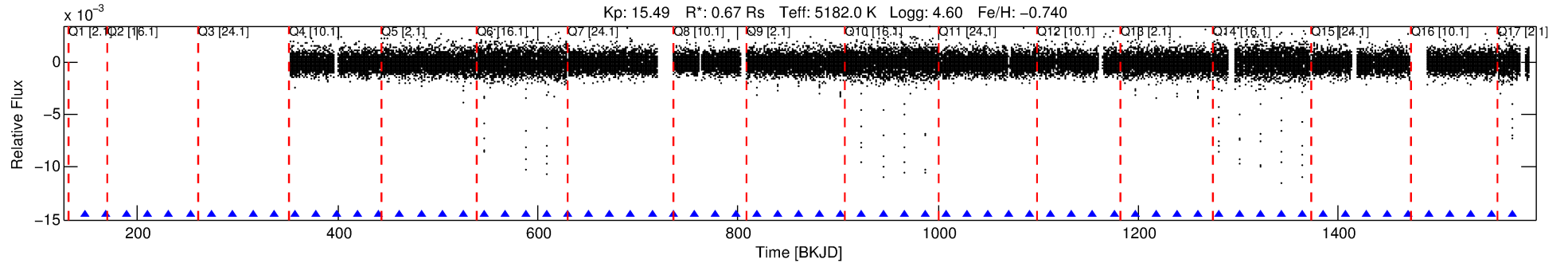
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008211605-01

No Significant Match Found

# DV One-Page Summary

KIC: 8211605 Candidate: 1 of 1 Period: 20.979 d  
KOI: K03405.01 Corr: 0.921



## DV Fit Results:

Period = 20.97932 [0.00022] d  
Epoch = 147.7337 [0.0095] BKJD  
Rp/R\* = 0.0513 [0.1587]  
a/R\* = 12.29 [9.02]  
b = 1.00 [2.59]  
Seff = 17.30 [3.51]  
Teq = 520 [26] K  
Rp = 3.73 [11.54] Re  
a = 0.1287 [0.0115] AU  
Ag = 122.51 [758.89] [0.16σ]  
Teffp = 2675 [4143] K [0.52σ]

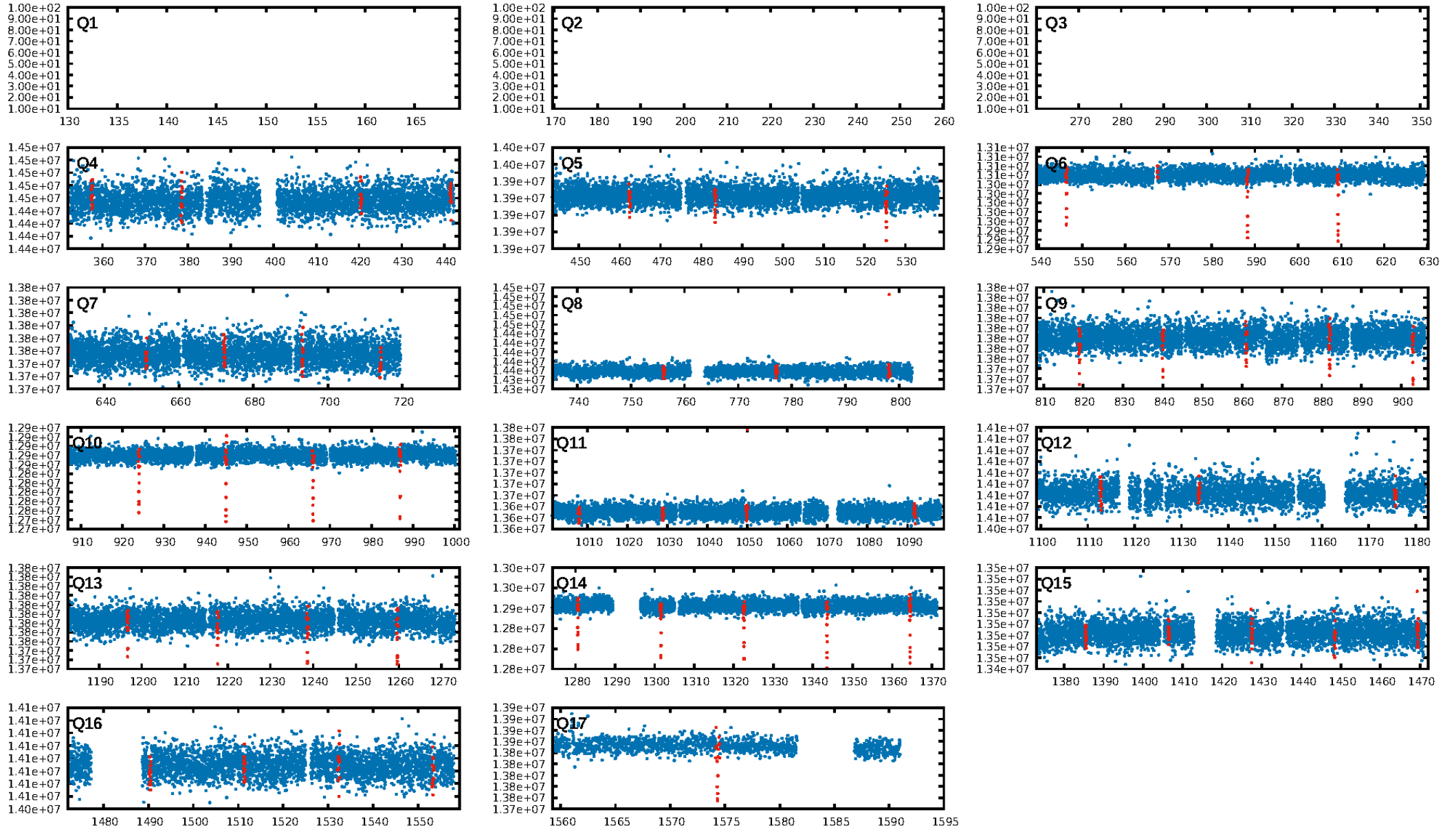
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [53/53]  
GhostDiagnostic-chr: -0.1718  
Centroid-sig: 0.0%  
Centroid-so: 46.393 arcsec [60.63σ]  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0/0 [0]  
KicOffset-st: 0/0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: 1.00 [14/14]

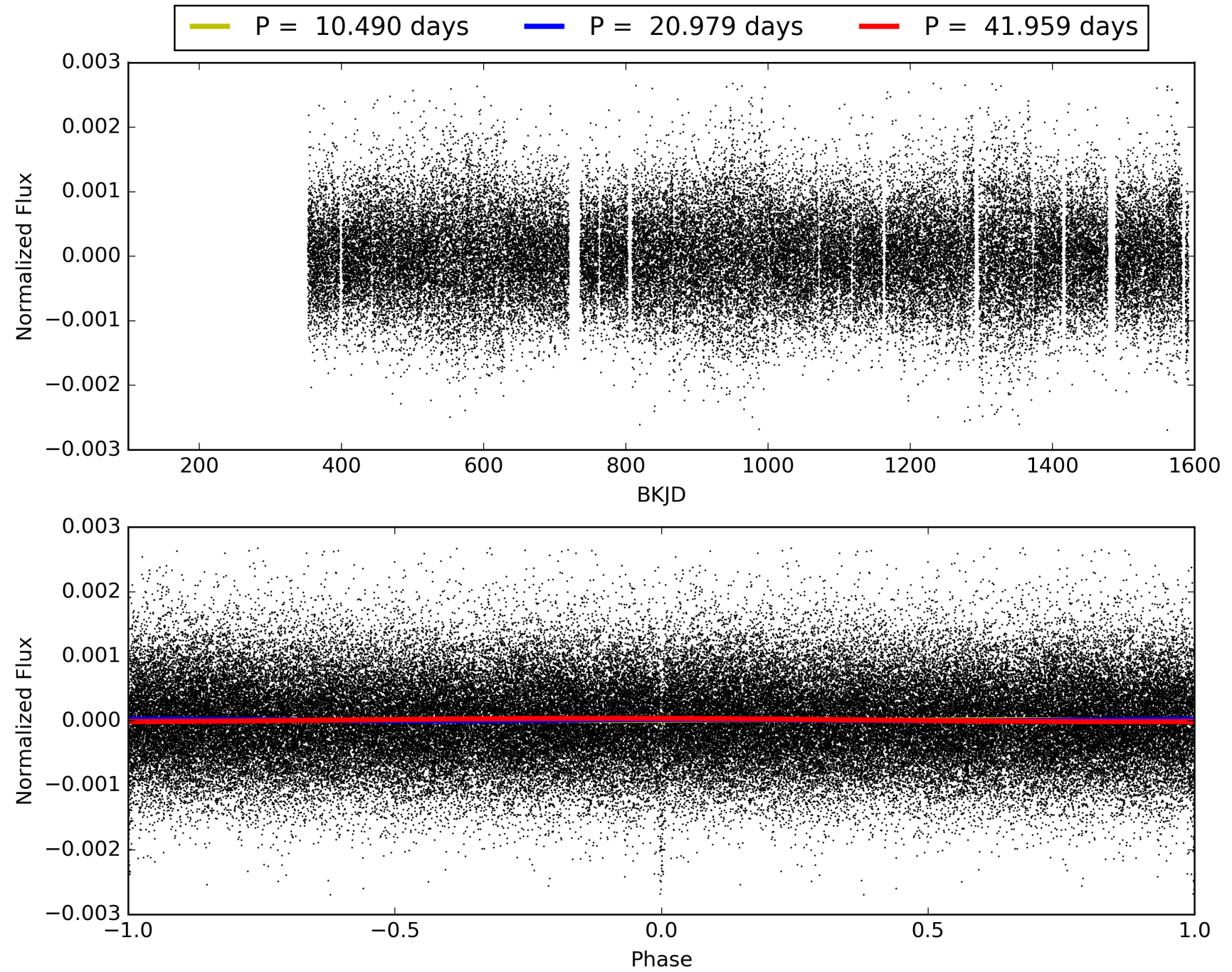
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:24:07 Z

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

# TCE 008211605-01, PDC Light Curves

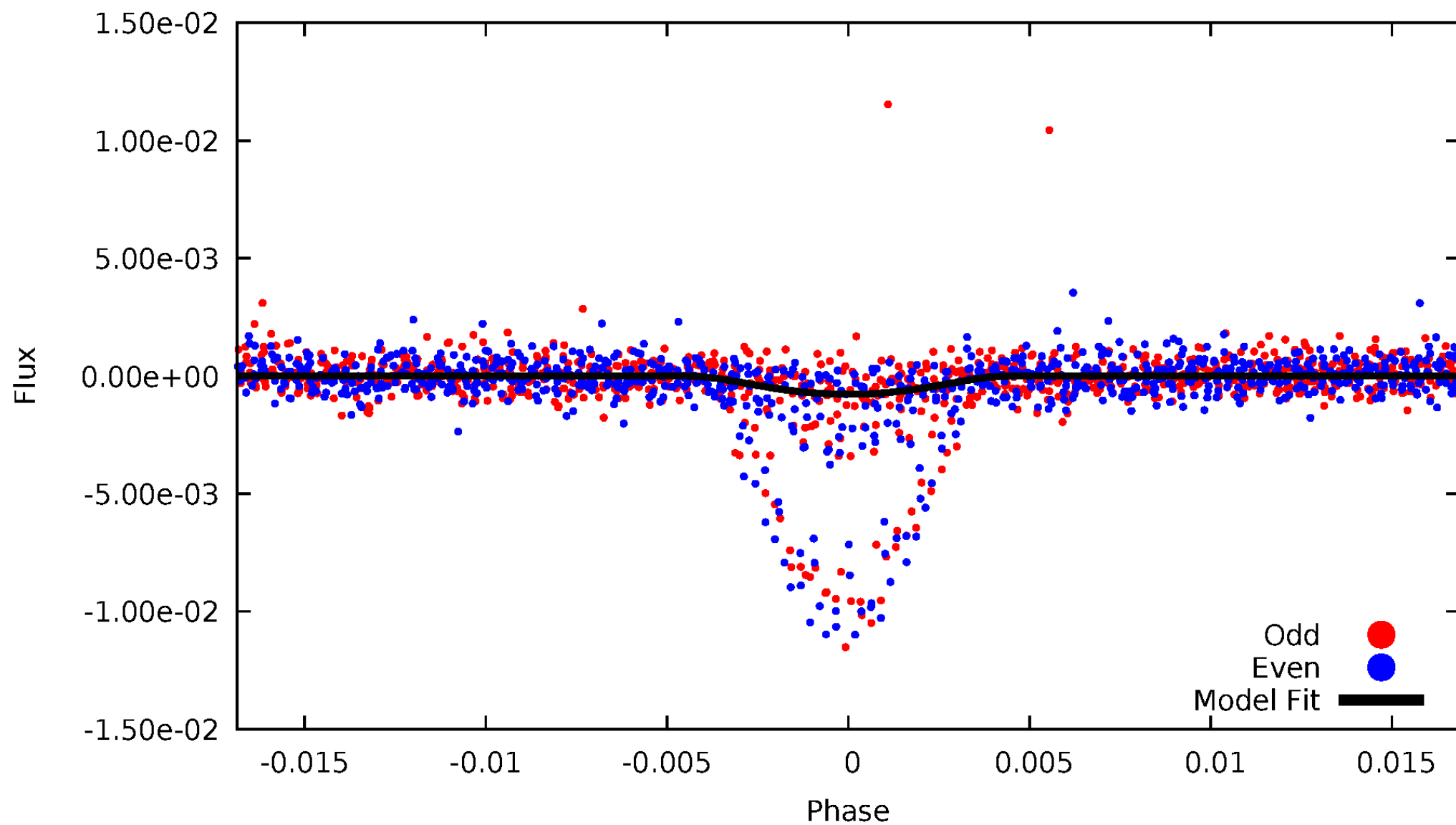


# TCE 008211605-01



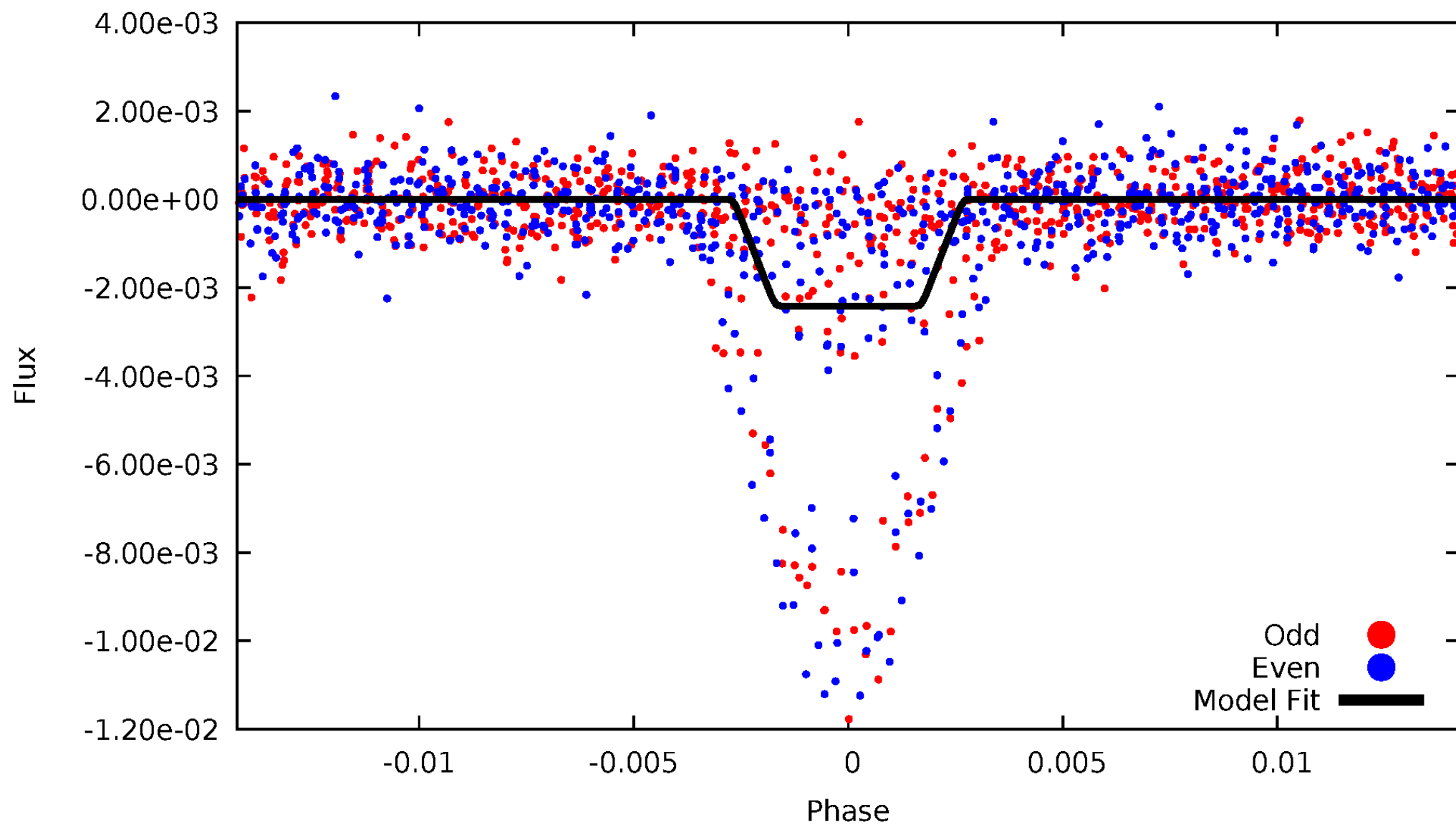
# DV Odd/Even

TCE 008211605-01



# ALT Odd/Even

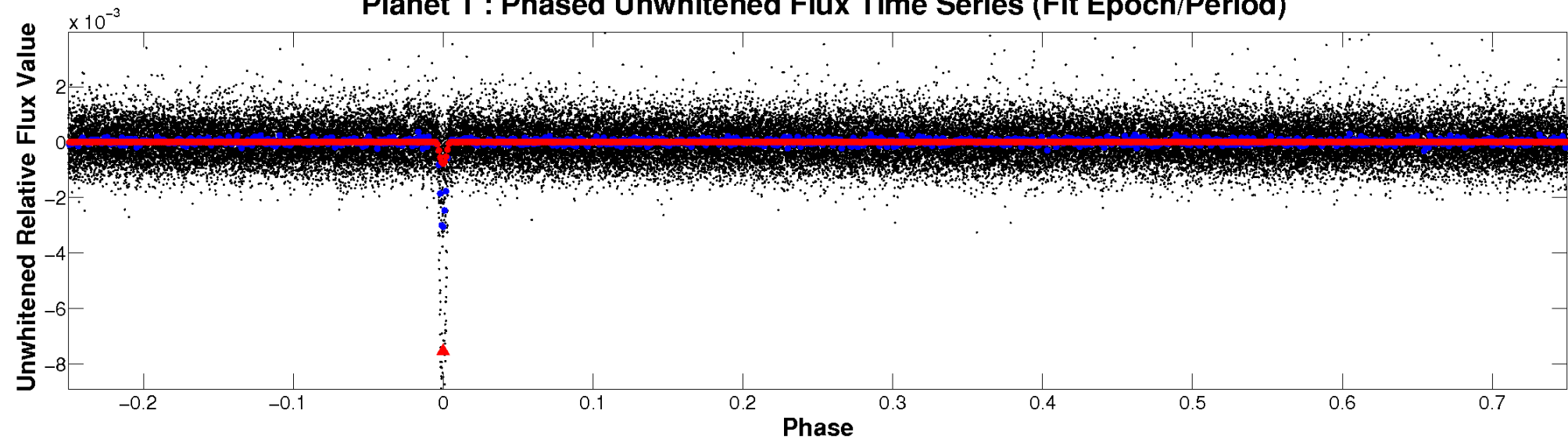
TCE 008211605-01



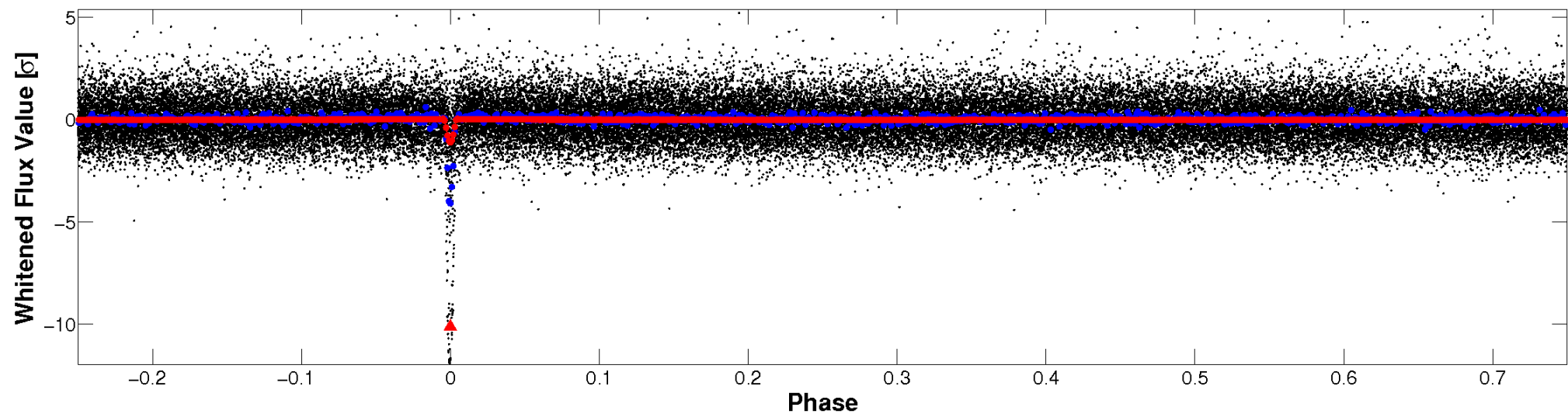


# Non-Whitened Vs. Whitened Light Curve

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

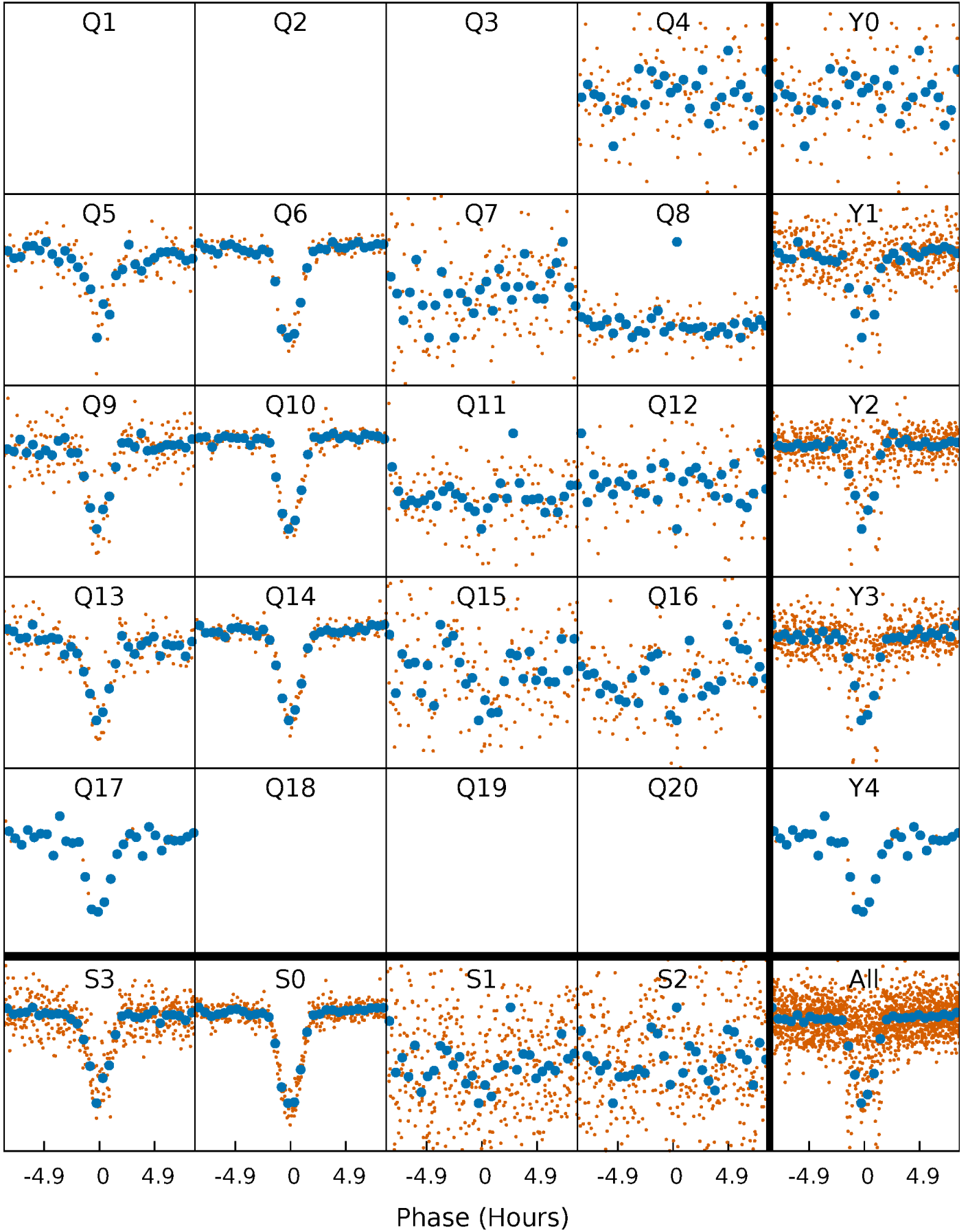


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

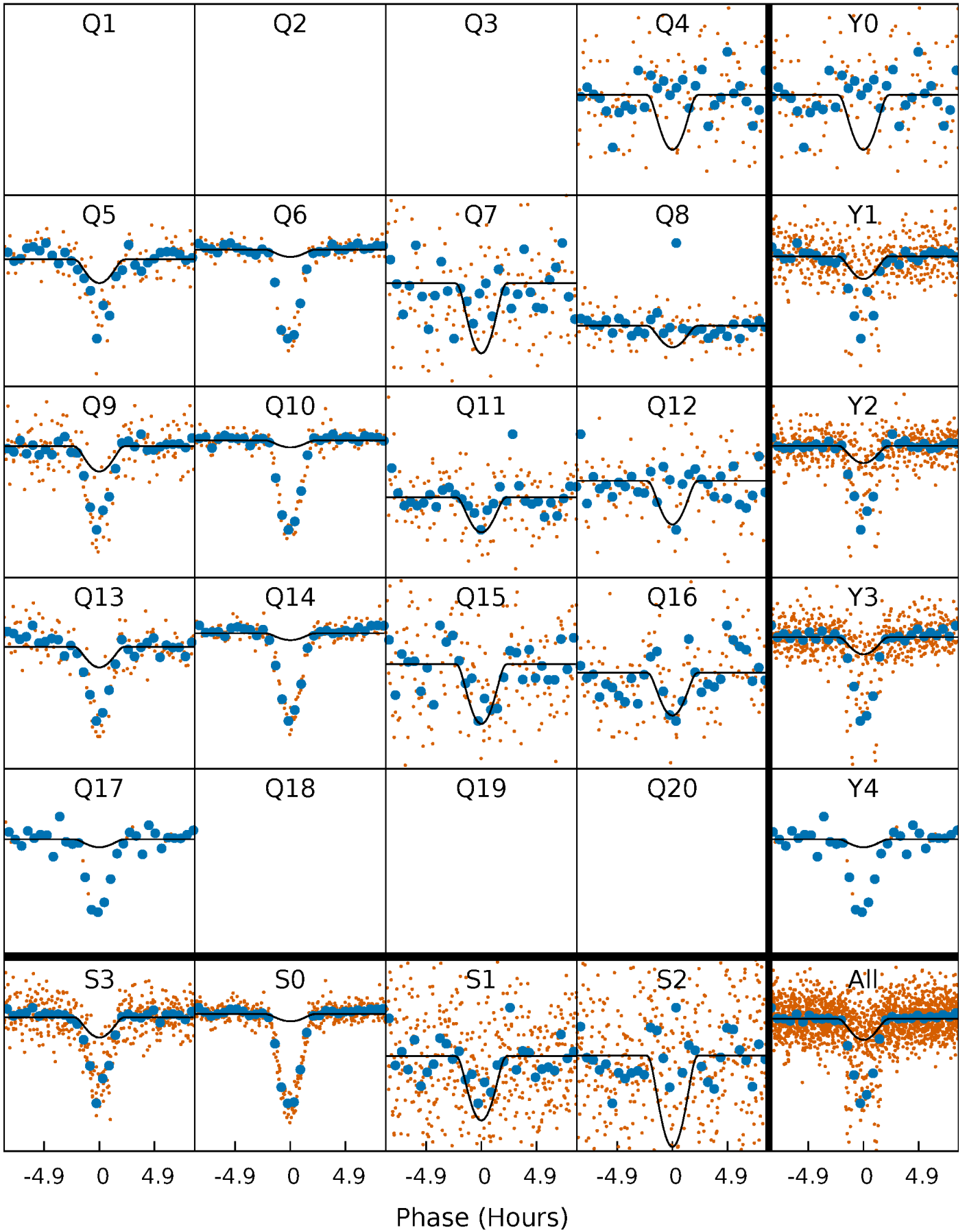
TCE 008211605-01 P= 20.979318 Days  $T_0=147.733680$  (BKJD)





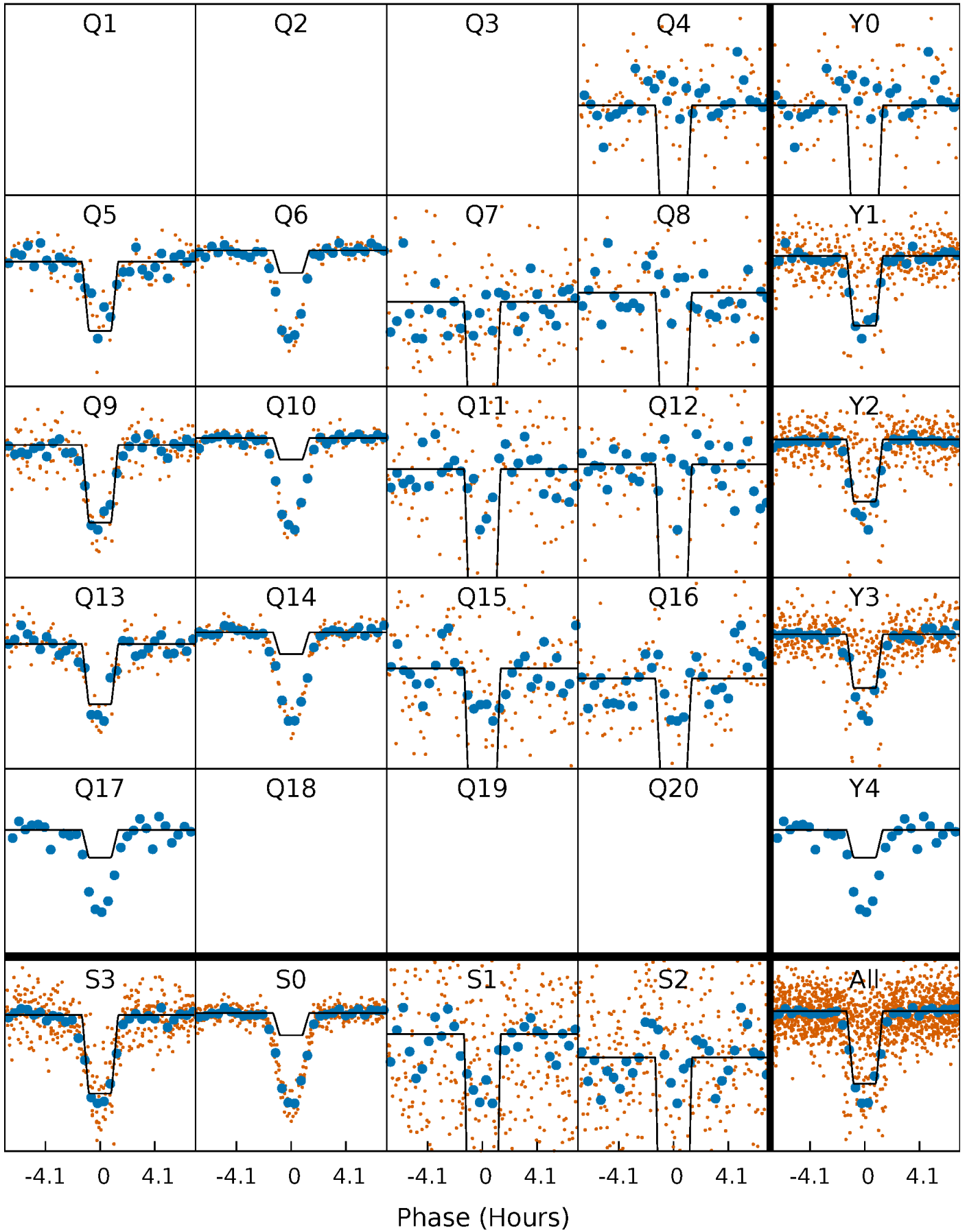
# DV Quarter-Phased Transit Curves

TCE 008211605-01 P= 20.979318 Days  $T_0=147.733680$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

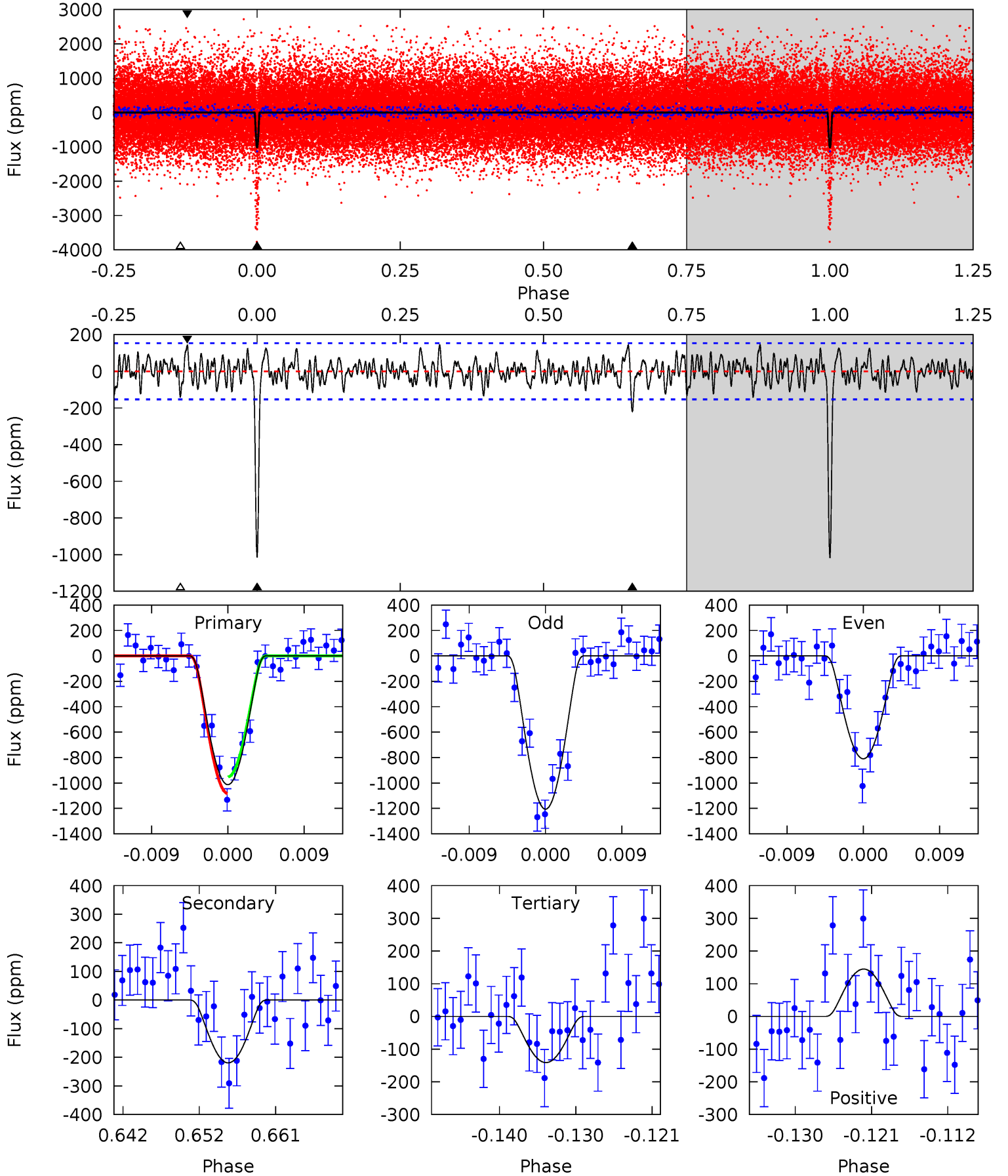
TCE 008211605-01 P= 20.979288 Days  $T_0=147.733483$  (BKJD)



# DV Model-Shift Uniqueness Test

008211605-01,  $P = 20.979318$  Days,  $E = 147.733680$  Days

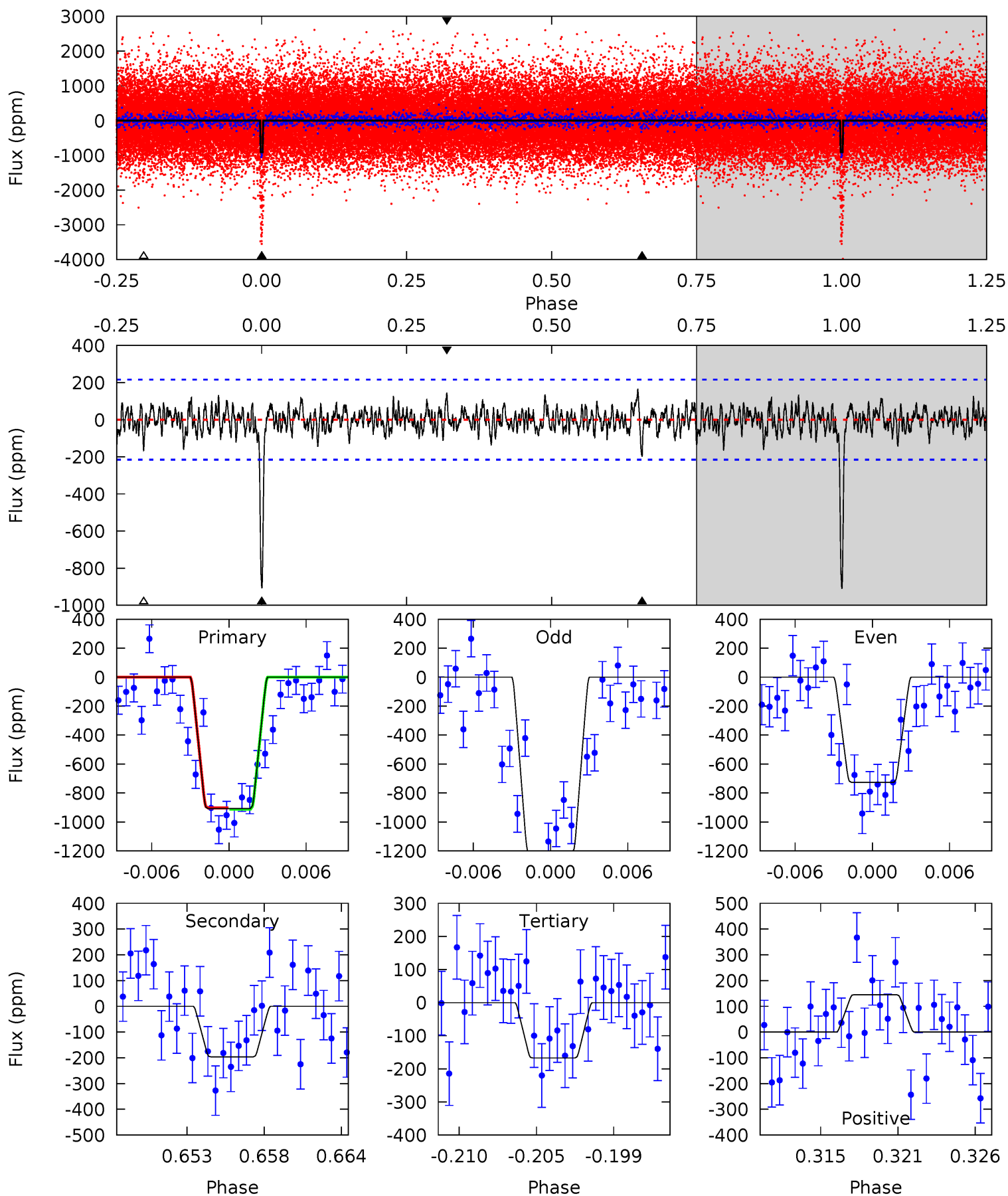
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.3	7.21	4.64	4.75	5.04	2.60	1.68	28.6	28.5	2.57	2.46	6.49	2.68	0.13	2.14



# Alt Model-Shift Uniqueness Test

008211605-01, P = 20.979288 Days, E = 147.733483 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
21.6	4.68	3.98	3.46	5.14	2.77	1.18	17.7	18.2	0.70	1.22	5.72	2.58	0.15	0.11



### Stellar Parameters For KIC 008211605

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5182^{+201}_{-164}$	$4.601^{+0.072}_{-0.048}$	$-0.740^{+0.300}_{-0.300}$	$0.666^{+0.070}_{-0.057}$	$0.646^{+0.075}_{-0.032}$	$3.077^{+0.883}_{-0.573}$
	+4%/-3%	+2%/-1%	+41%/-41%	+11%/-9%	+12%/-5%	+29%/-19%
Source	KIC0	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 008211605-01 / KOI 3405.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-220 \pm 30$	$9.28^{+8.86}_{-6.31}$	$725^{+30}_{-30}$	$2576^{+1031}_{-394}$	$24^{+212}_{-18}$
Alt.	$-197 \pm 42$	$9.54^{+9.44}_{-6.86}$	$723^{+33}_{-28}$	$2525^{+1069}_{-381}$	$20^{+235}_{-15}$

$T_{max}$  = 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

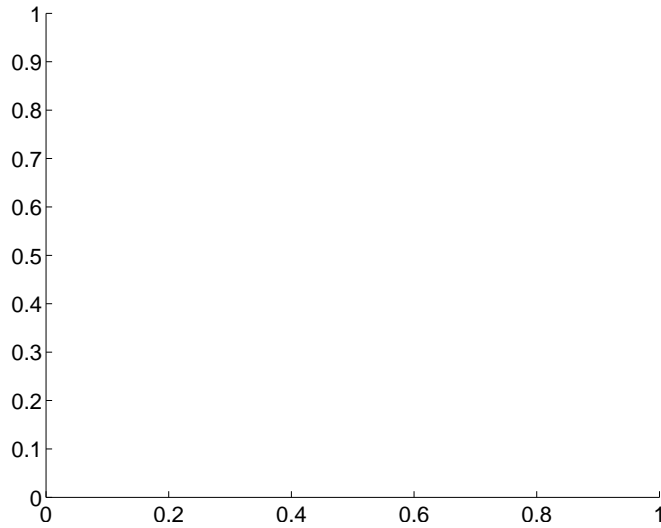
Supplemental centroid analysis for 008211605-01. Kepler magnitude: 15.49. Transit SNR 13.29

There are 0 quarters with good PRF difference image offsets

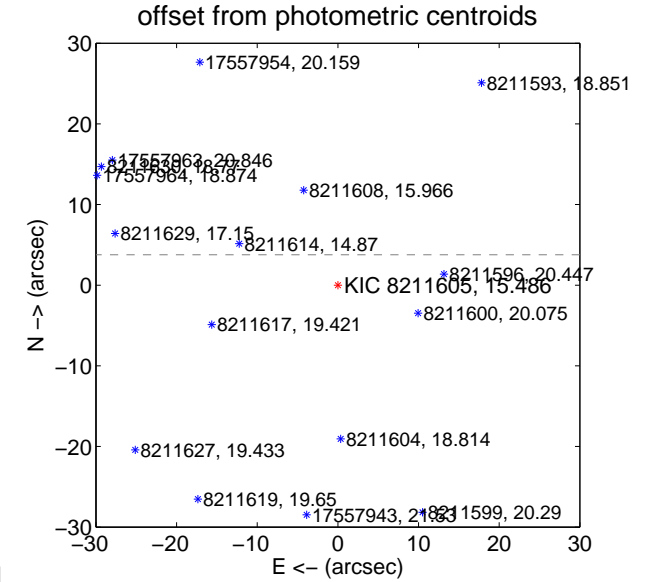
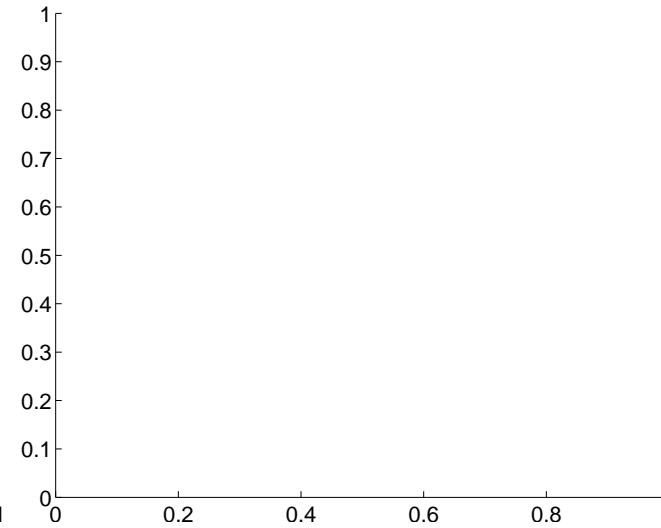
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	$46.39 \pm 0.77$	$60.63$	$46.24 \pm 0.77$	$3.77 \pm 0.73$

There is no PRF-fit offset from OOT-fit



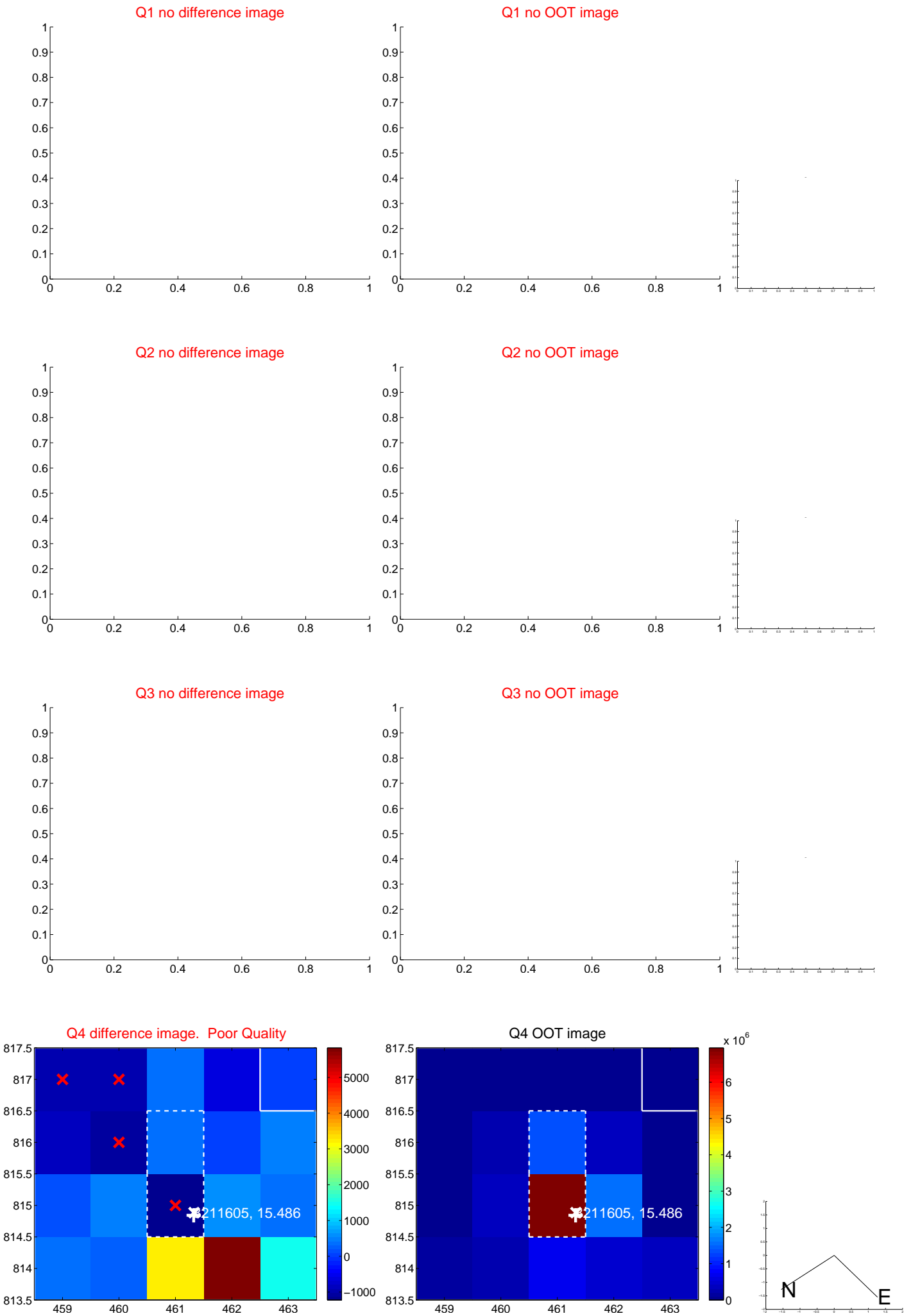
There is no PRF-fit offset from KIC



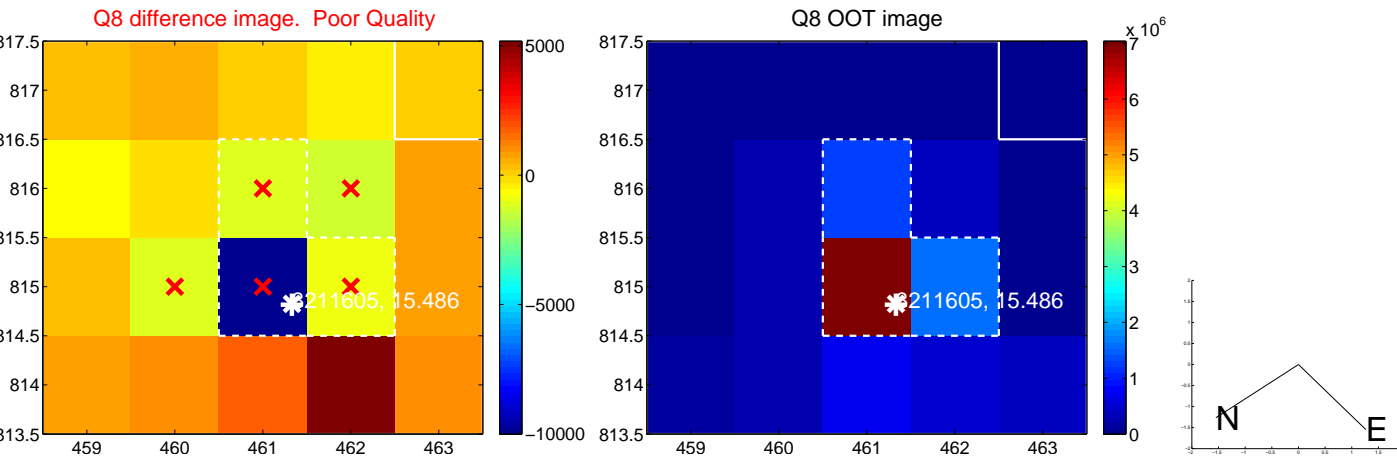
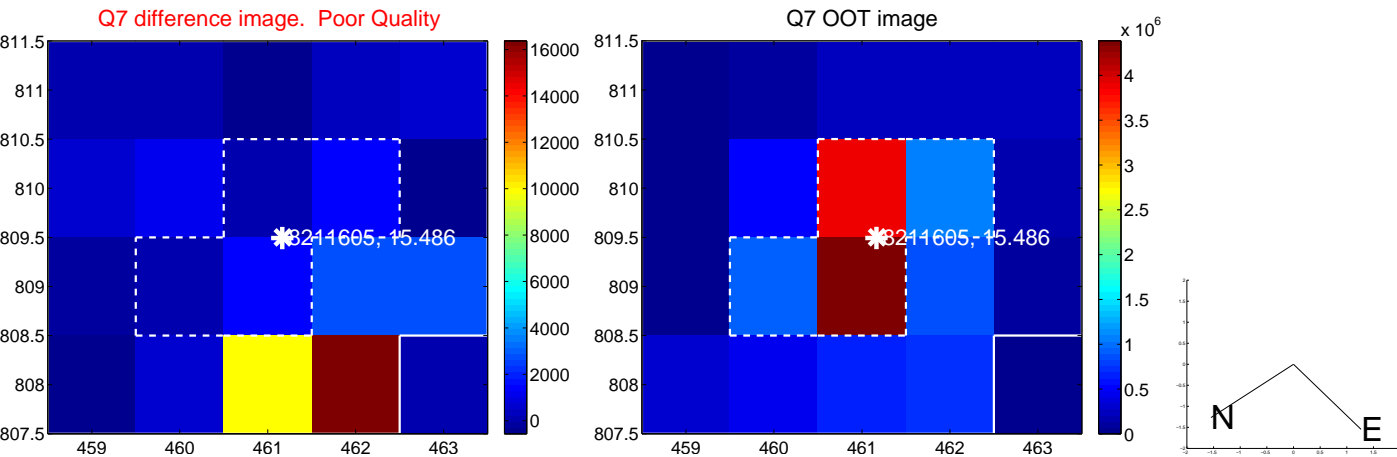
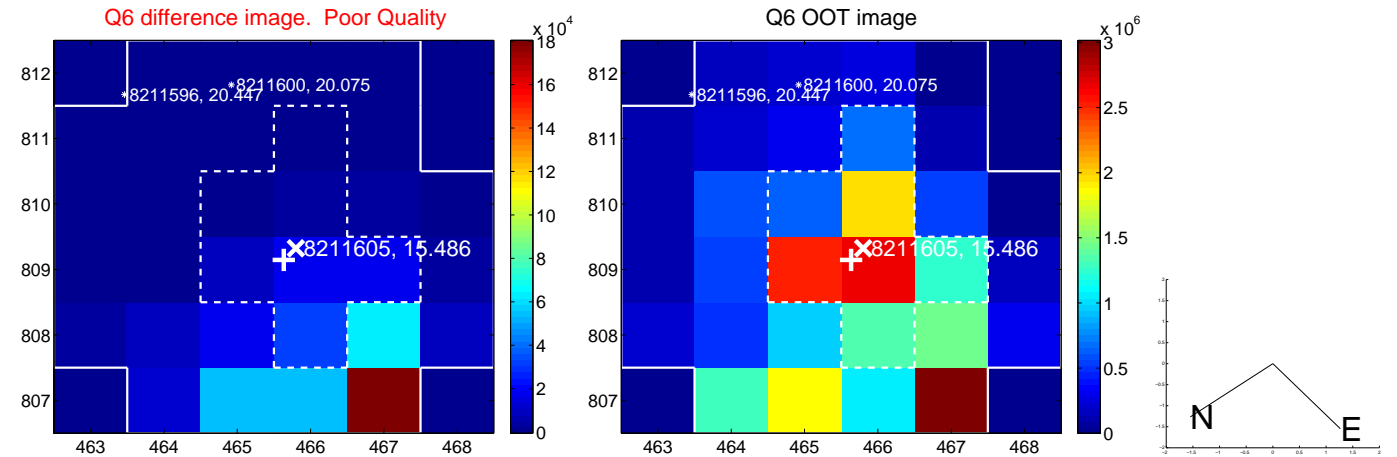
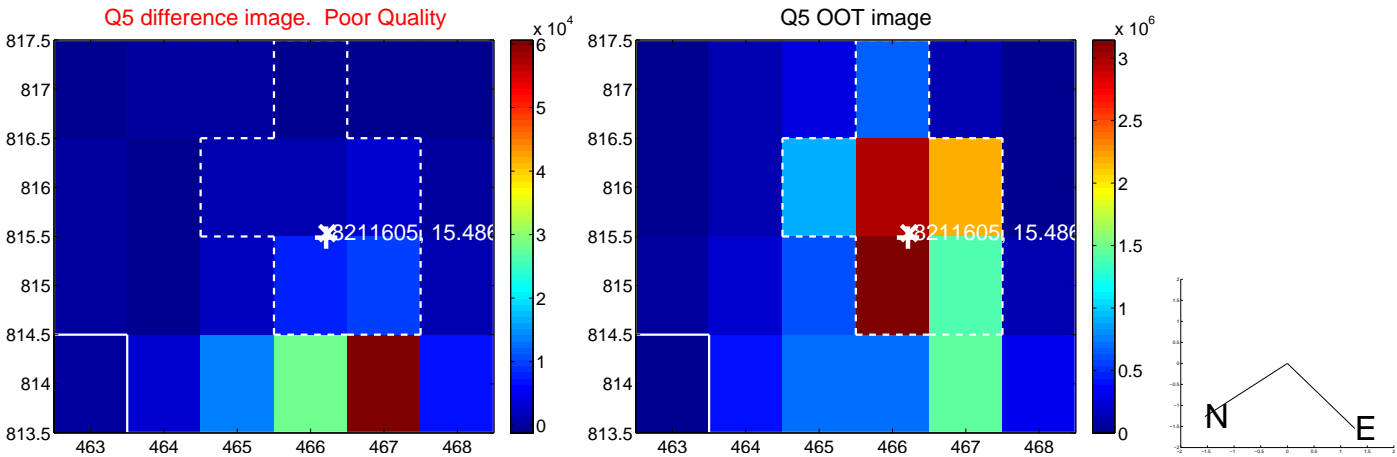
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



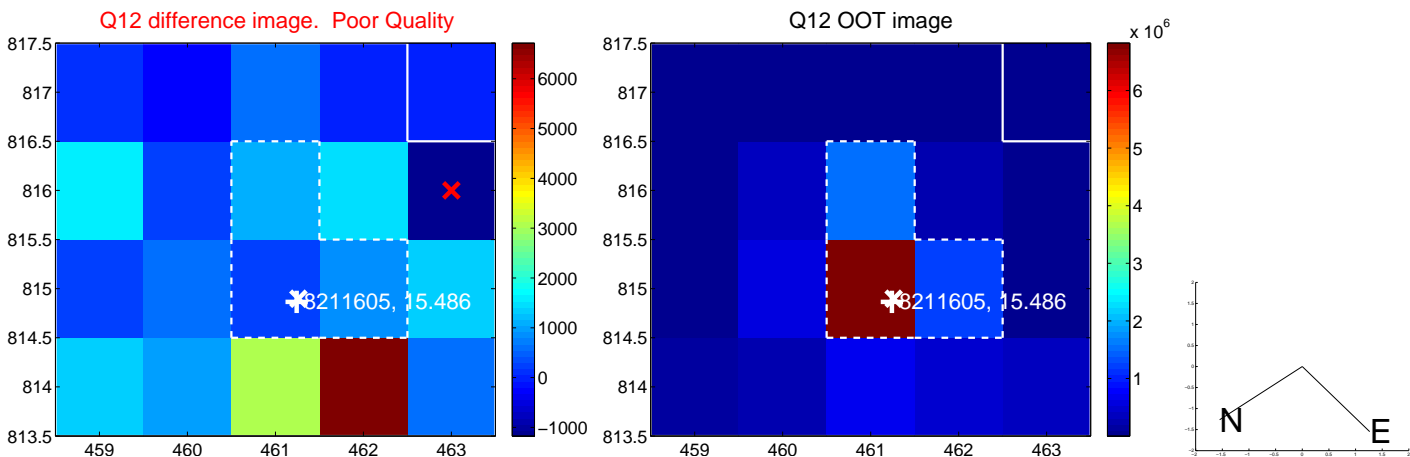
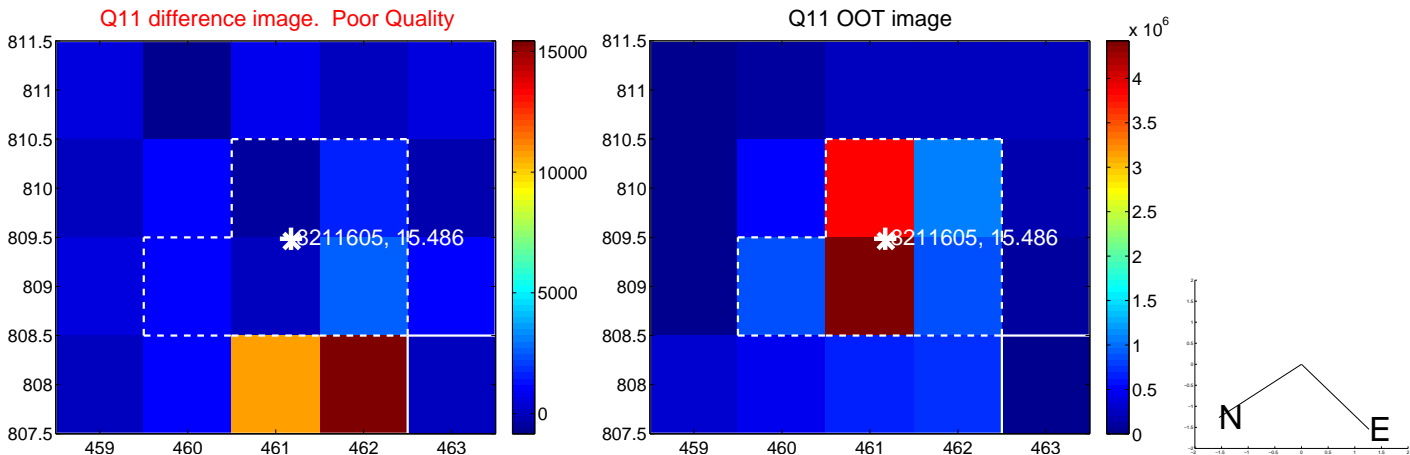
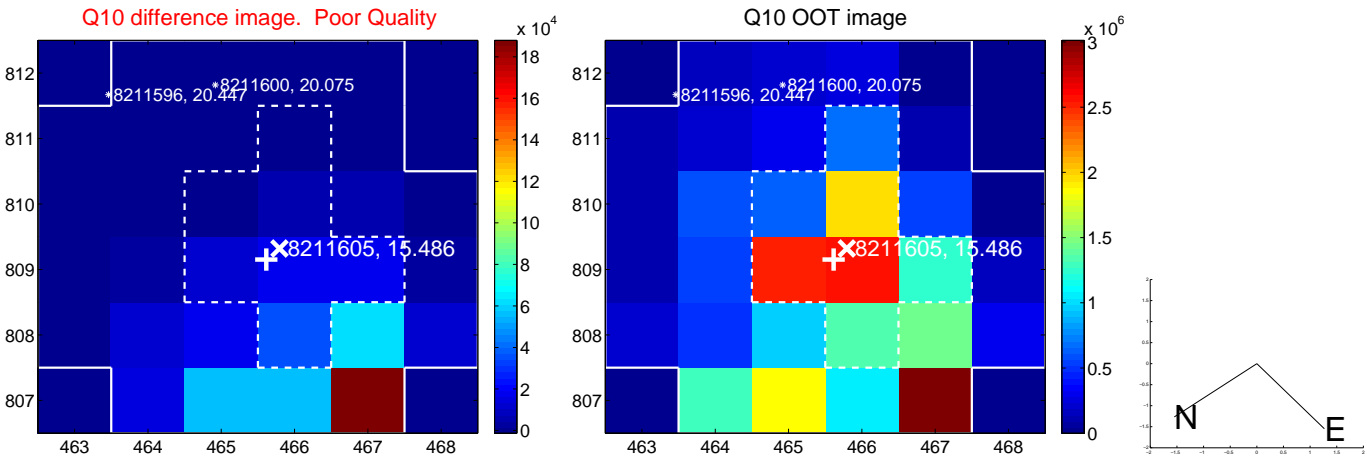
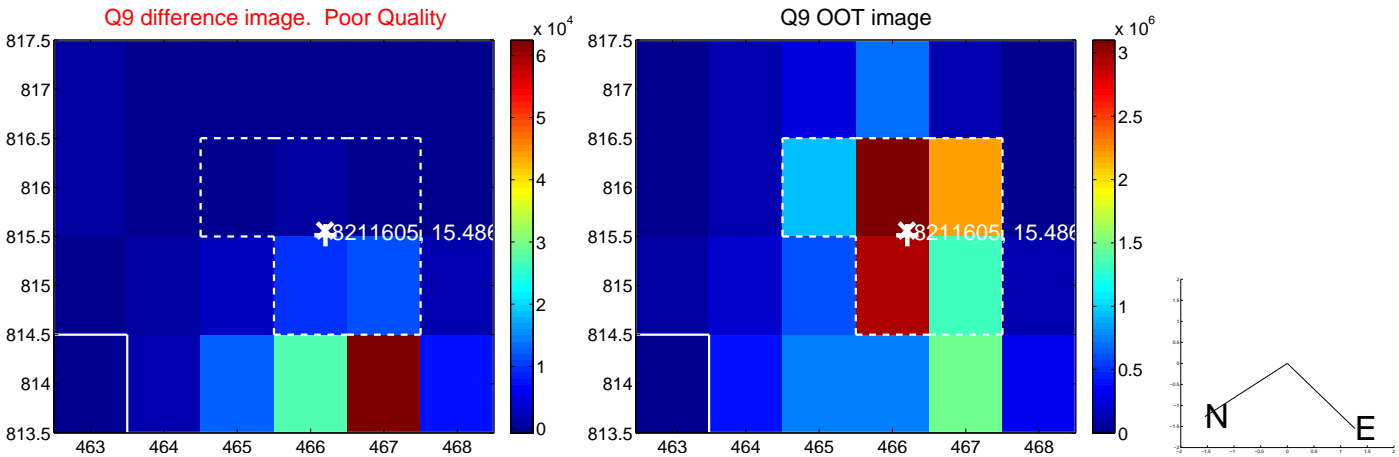
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



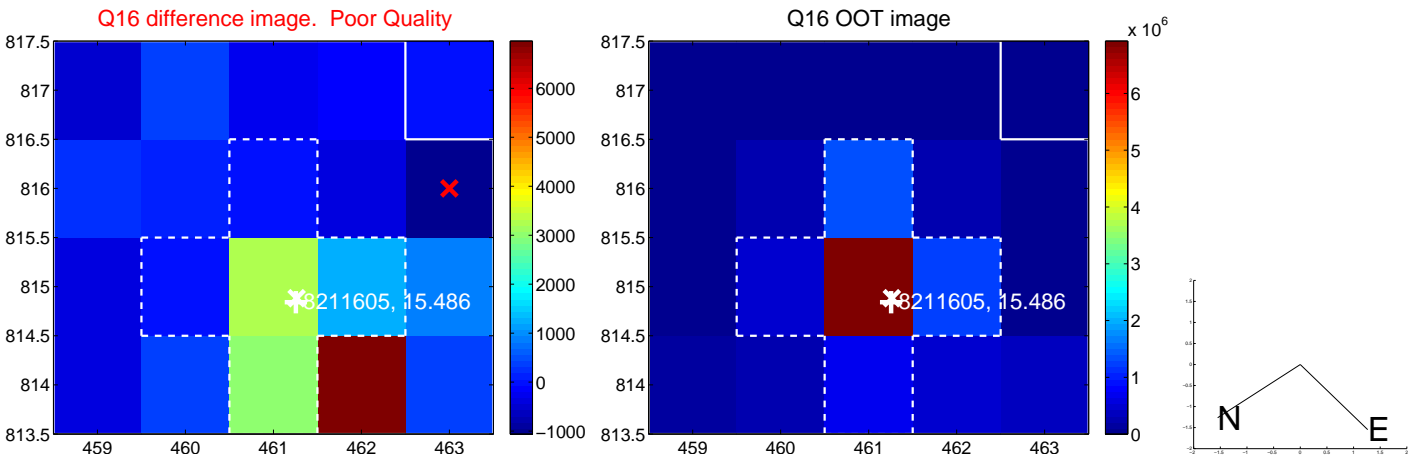
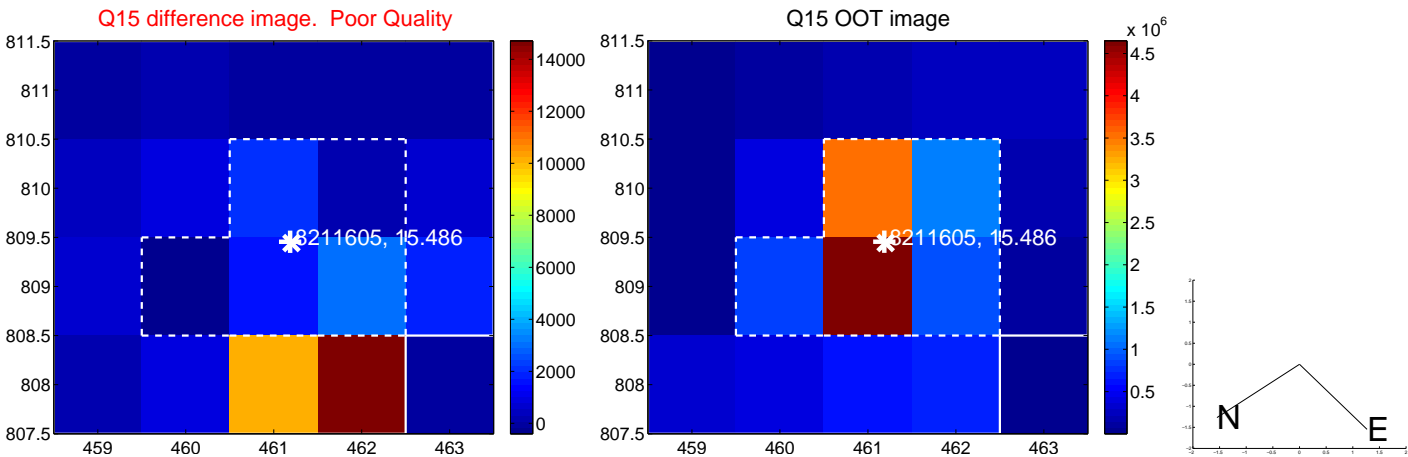
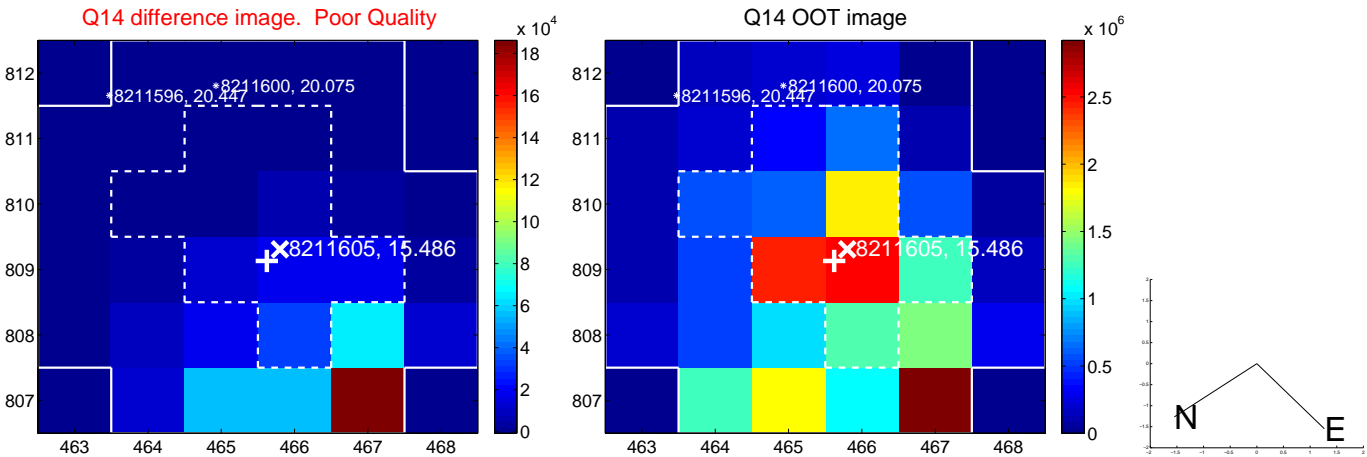
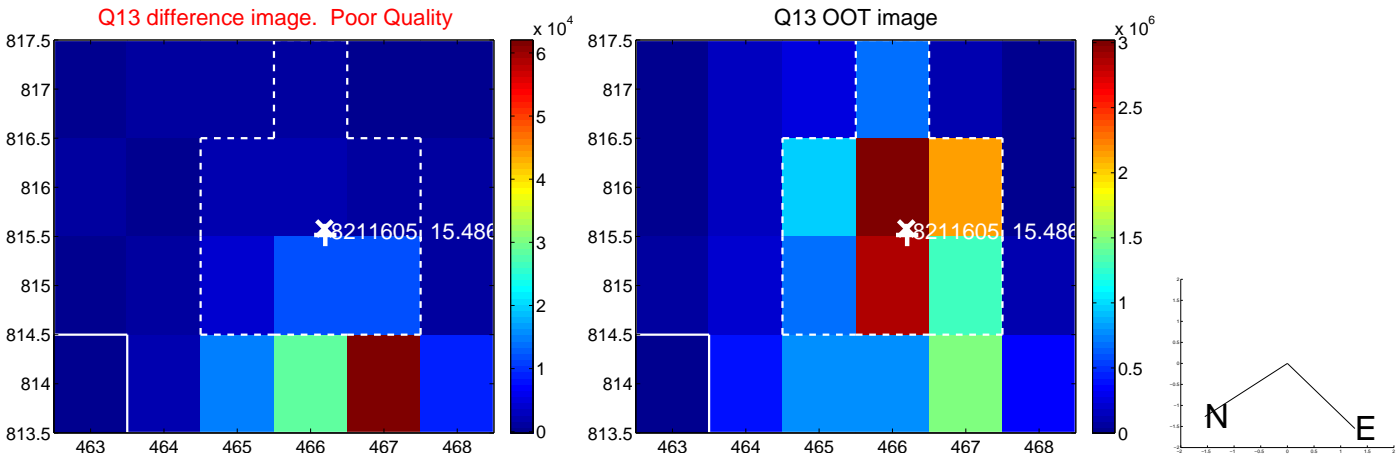
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



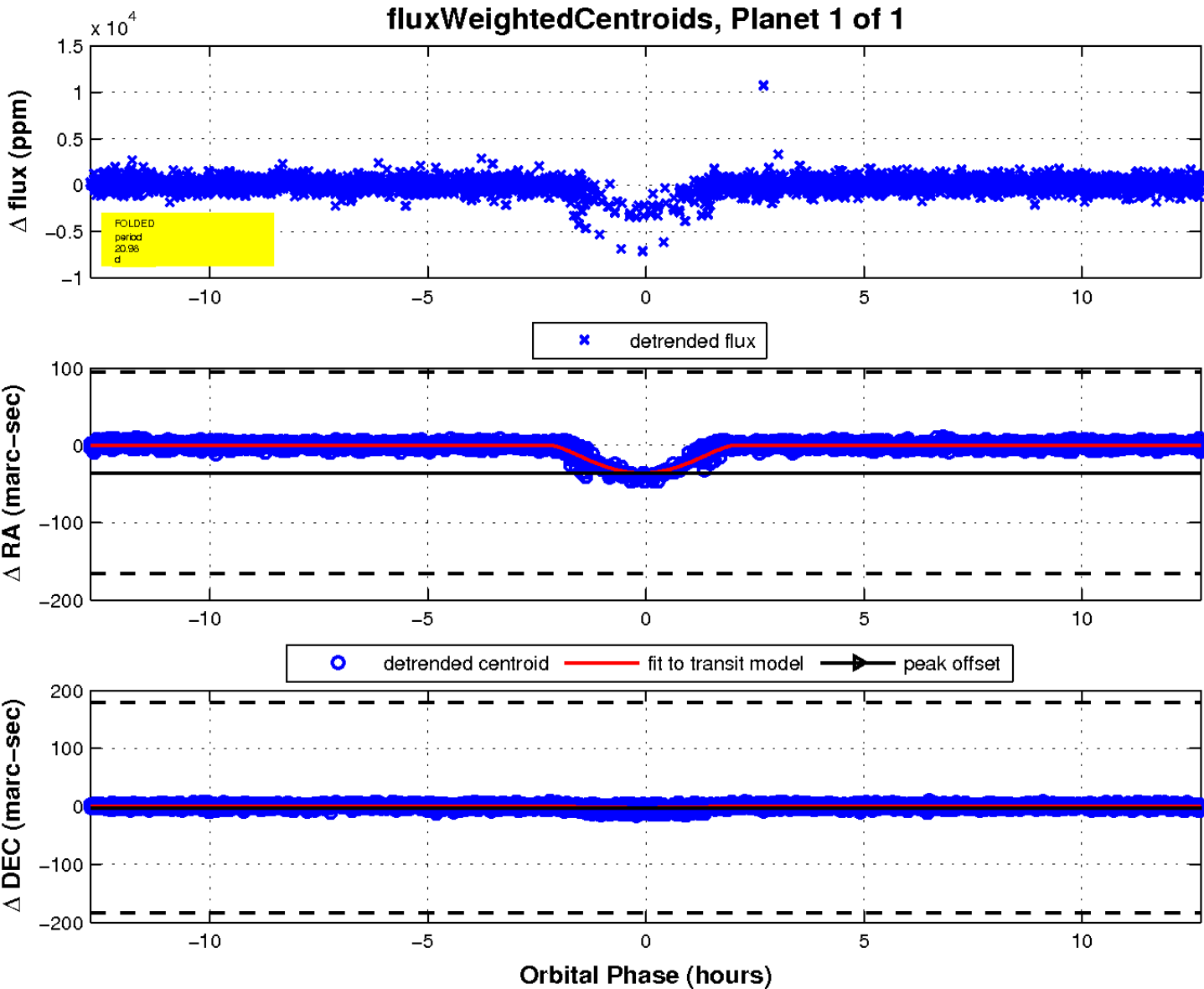
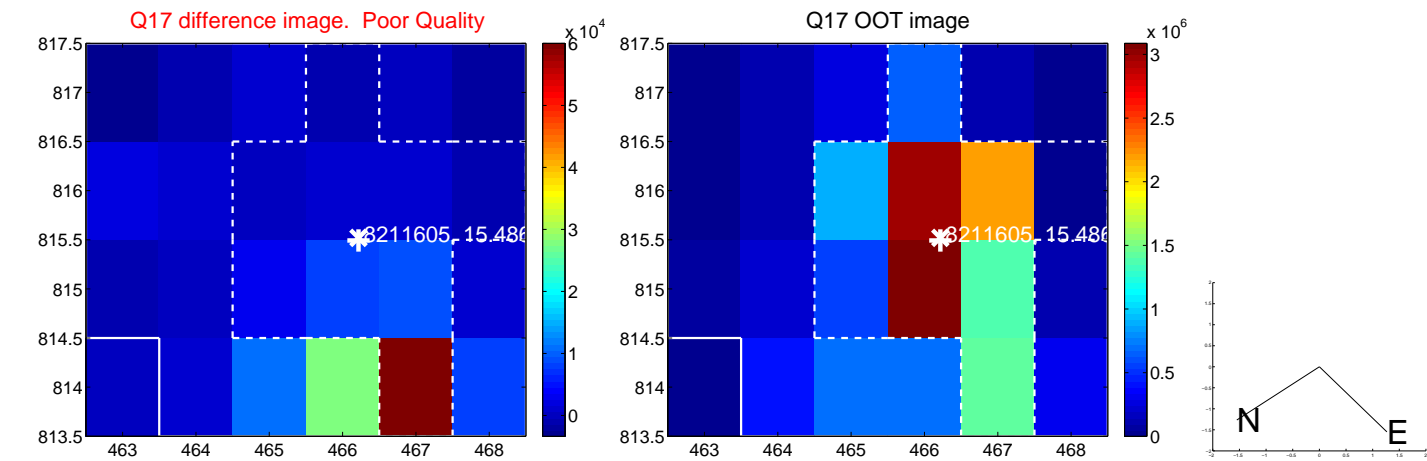
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

