

# KIC 008619357

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008619357-01	OBS	No	390.641401	169.188580	722.0	27.489	8.6	10.2	0.94	5888	2.55	0.86

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008619357-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

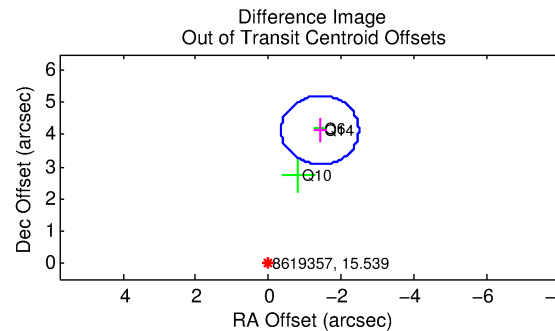
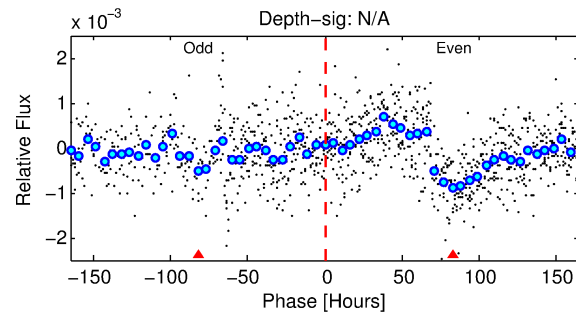
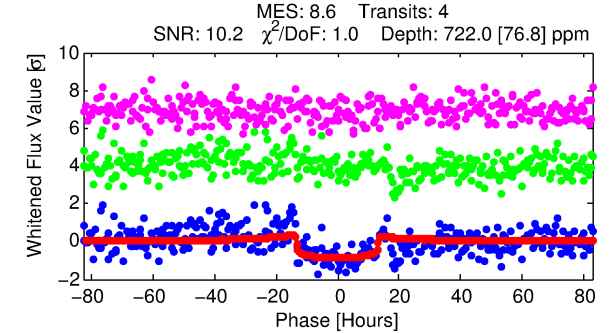
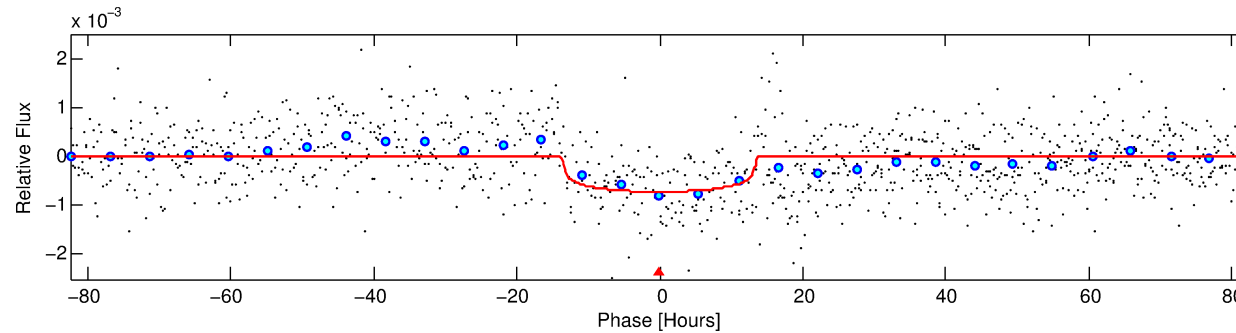
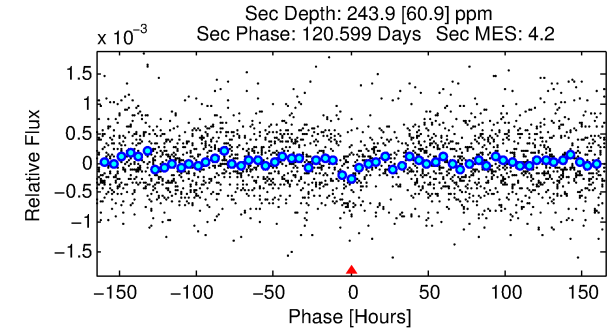
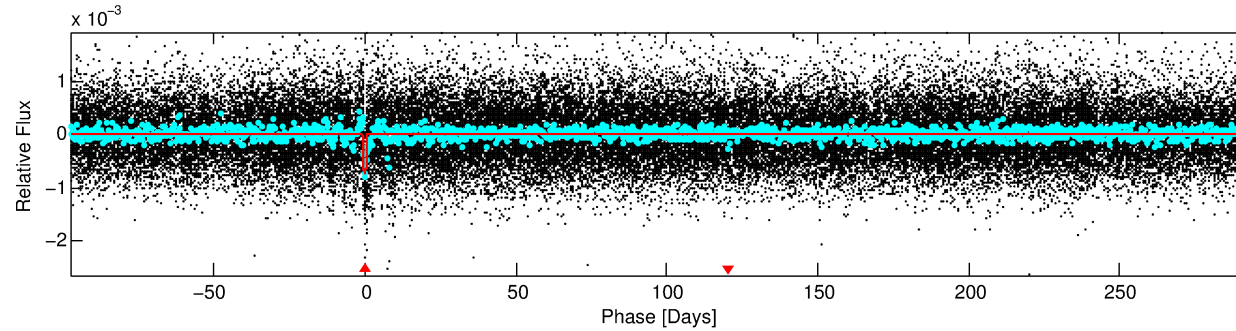
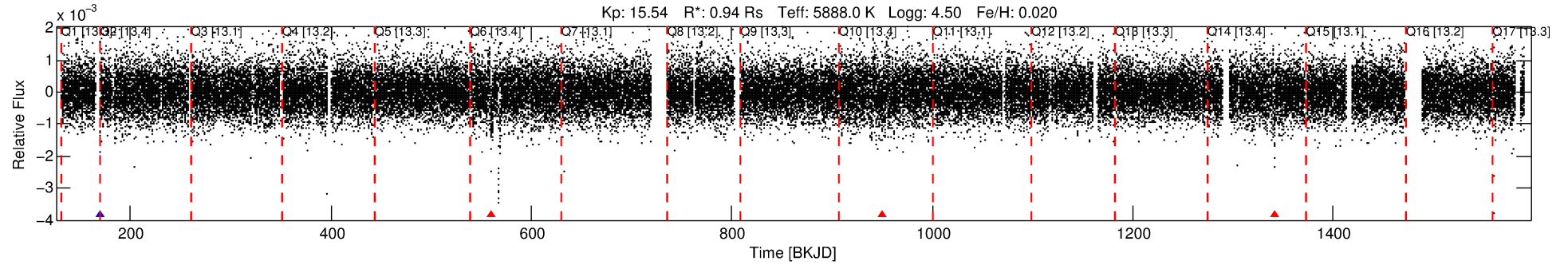
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008619357-01

No Significant Match Found

# DV One-Page Summary

KIC: 8619357 Candidate: 1 of 1 Period: 390.641 d



## DV Fit Results:

Period = 390.64140 [0.01802] d  
Epoch = 169.1886 [0.0399] BKJD  
Rp/R\* = 0.0248 [0.0091]  
a/R\* = 104.52 [170.44]  
b = 0.35 [4.10]  
Seff = 0.86 [0.33]  
Teq = 245 [24] K  
Rp = 2.55 [1.21] Re  
a = 1.0589 [0.2663] AU  
Ag = 23126.15 [19851.83] [1.16σ]  
Teff = 4676 [919] K [4.82σ]

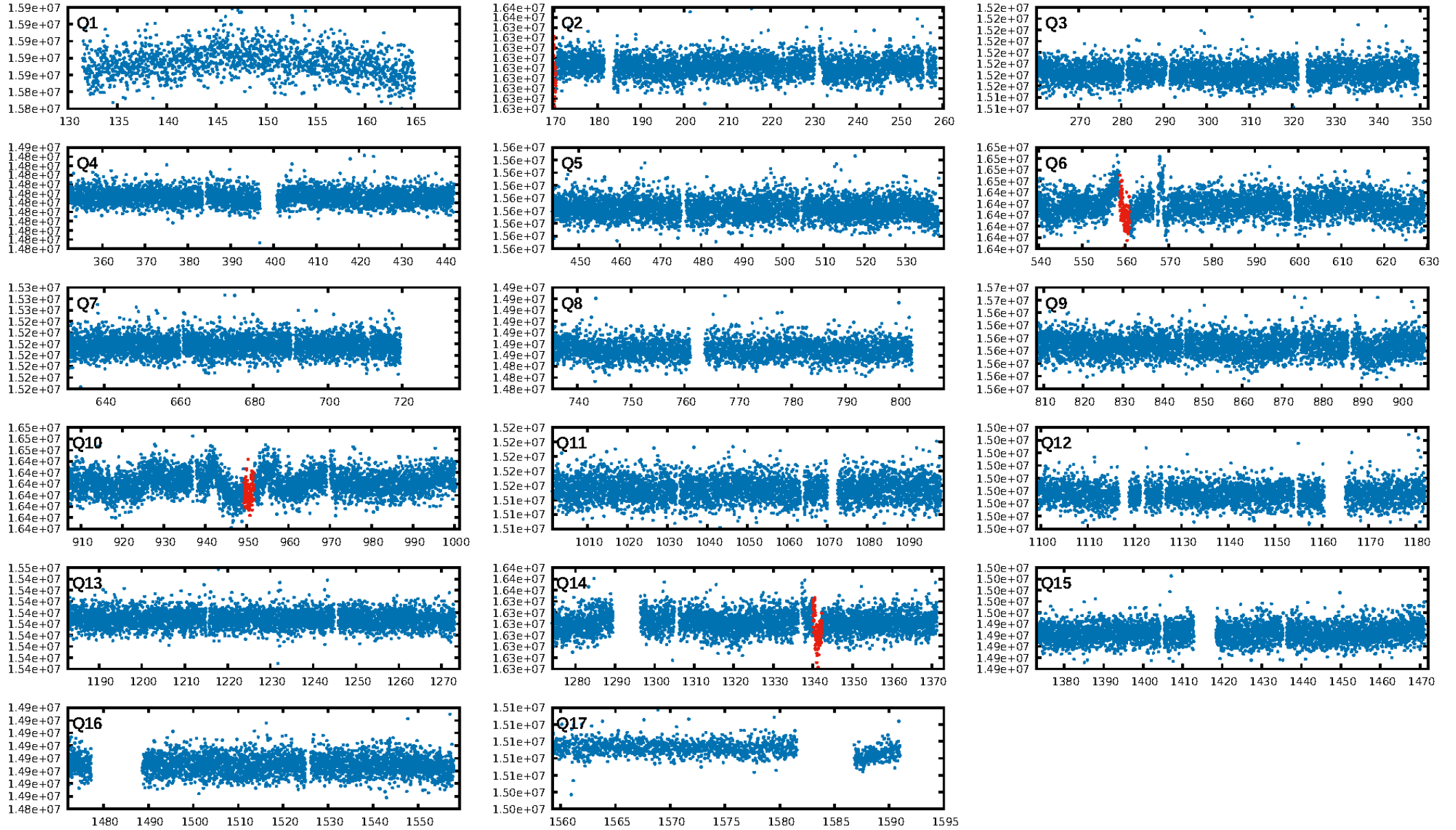
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 2.2%  
ModelChiSquareGoF-sig: 100.0%  
**Bootstrap-pfa: 1.22e-12**  
**RollingBand-fgt: 0.25 [1/4]**  
GhostDiagnostic-chr: 1.339  
Centroid-sig: 39.7%  
Centroid-so: 0.806 arcsec [0.67σ]  
**OotOffset-rm: 4.378 arcsec [12.29σ]**  
**KicOffset-rm: 4.360 arcsec [10.79σ]**  
OotOffset-st: 3/0/0/0 [3]  
KicOffset-st: 3/0/0/0 [3]  
DiffImageQuality-fgm: 0.33 [1/3]  
DiffImageOverlap-fno: 1.00 [3/3]

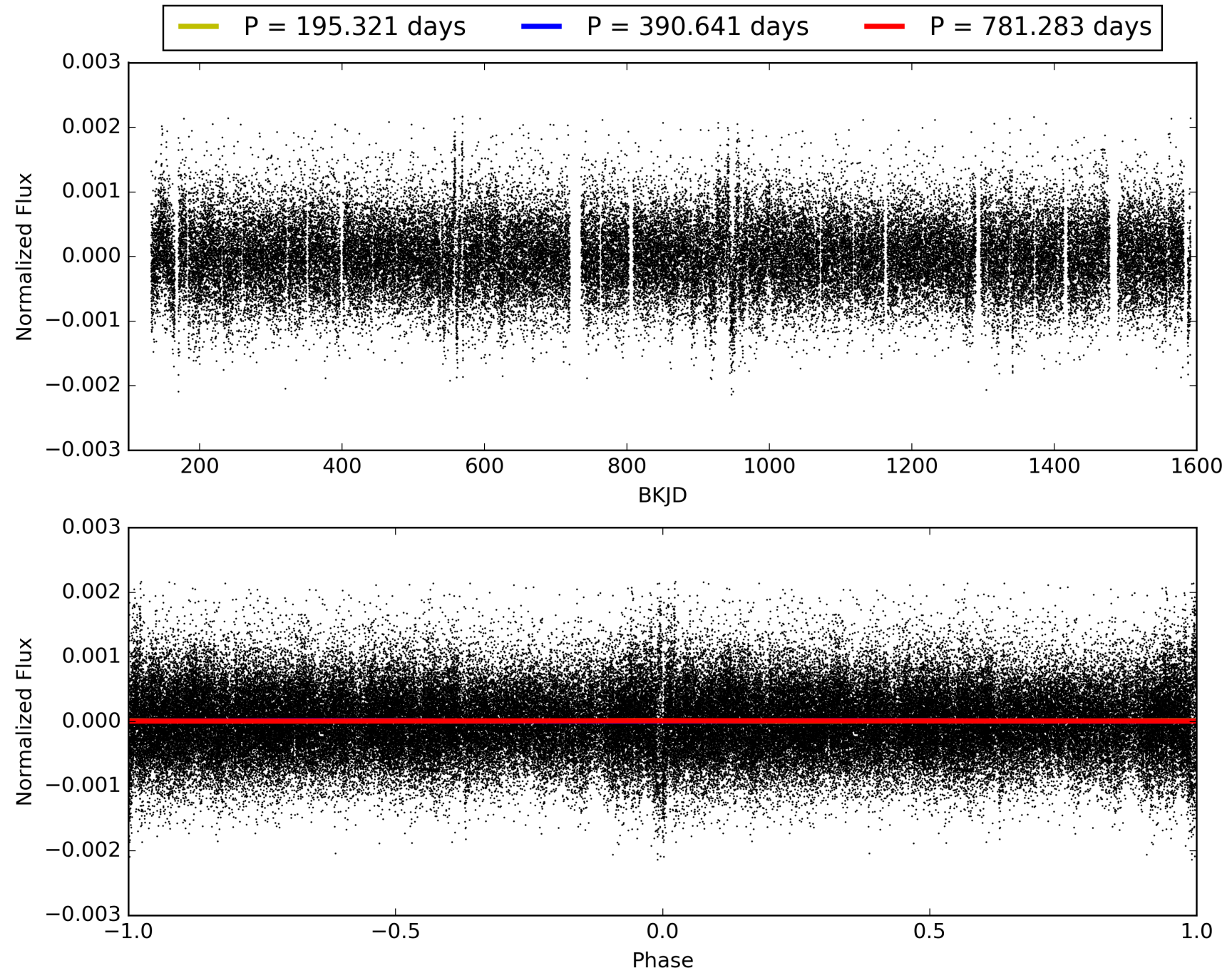
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:28:57 Z

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

# TCE 008619357-01, PDC Light Curves

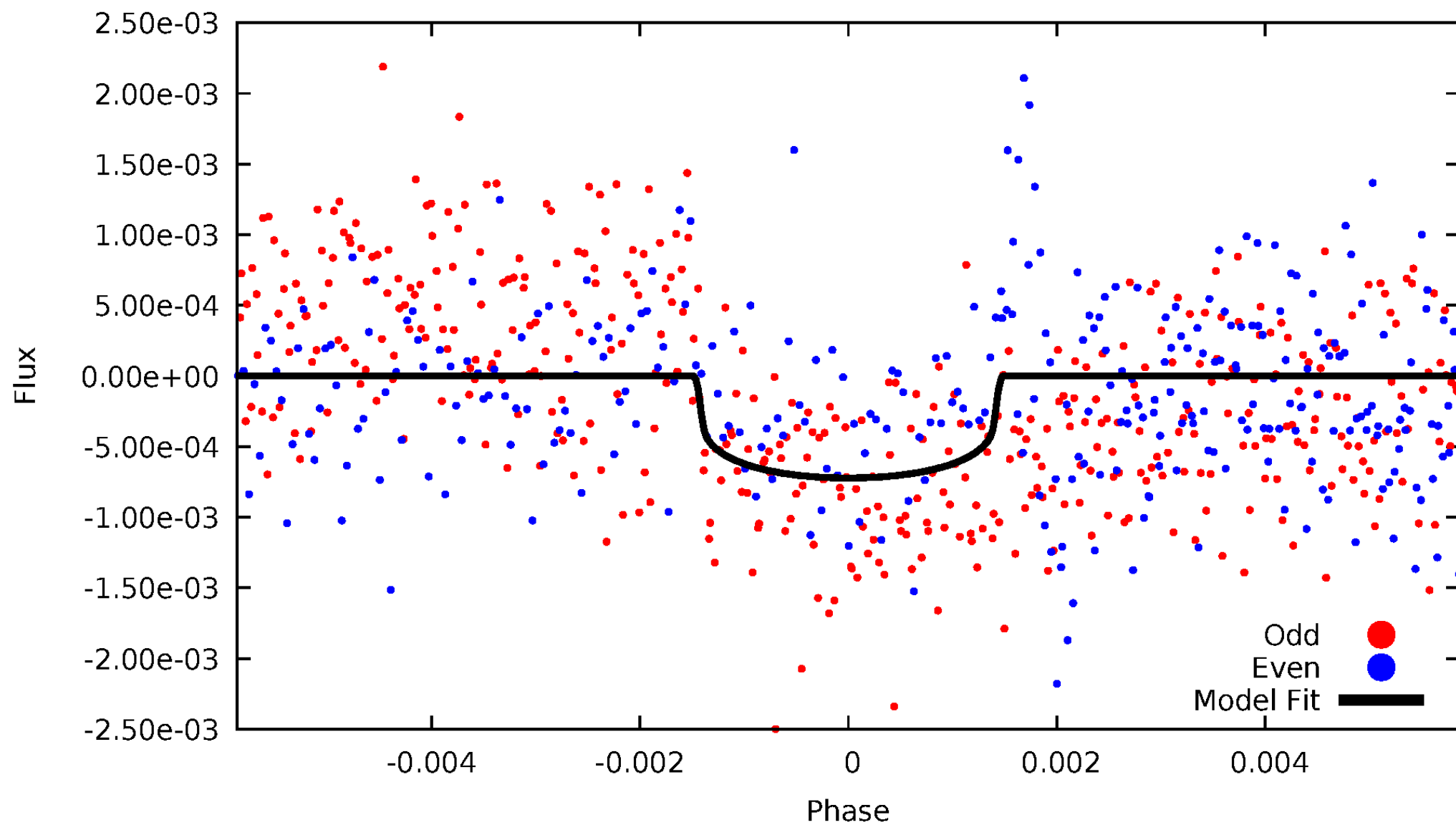


TCE 008619357-01



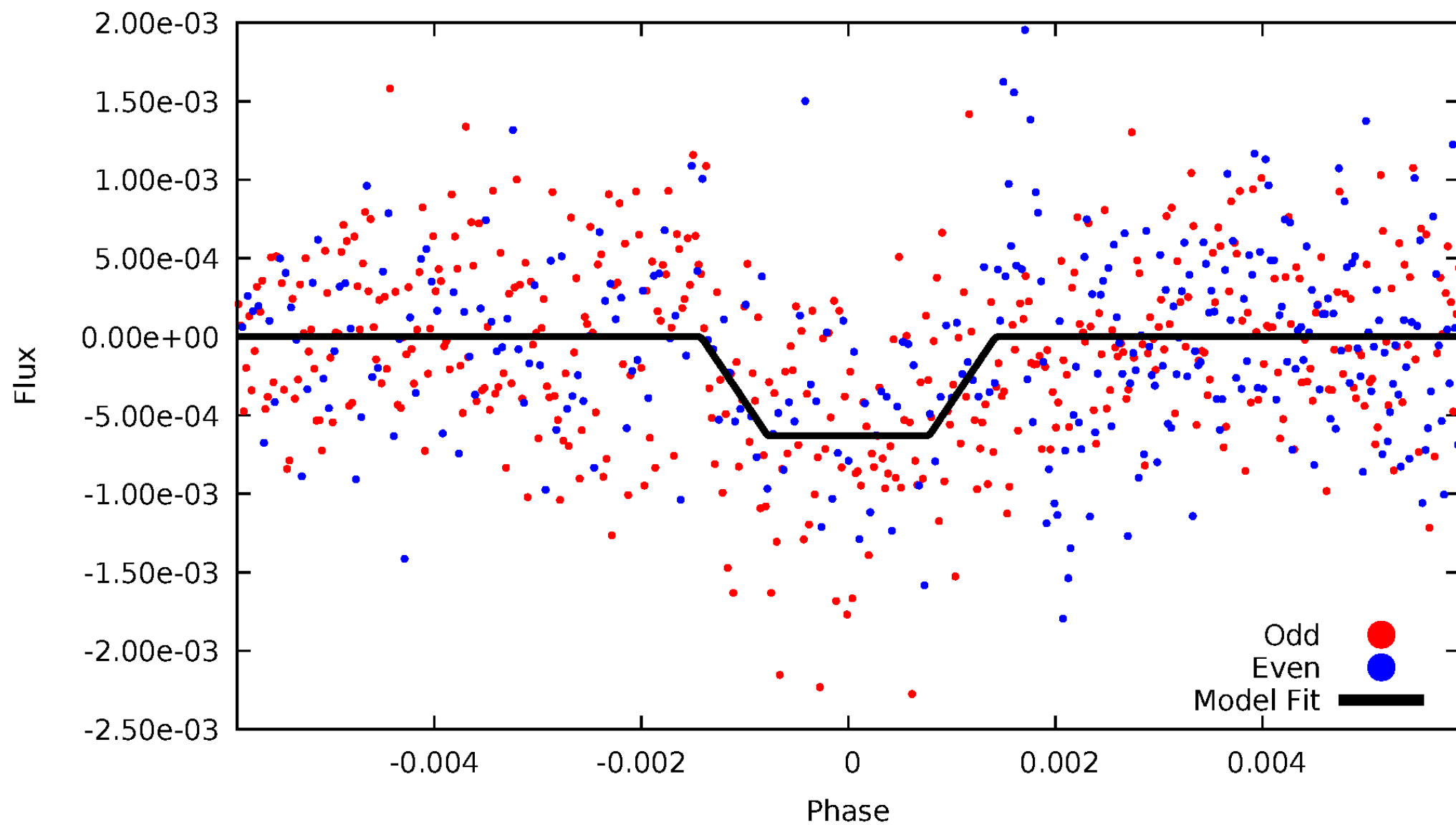
# DV Odd/Even

TCE 008619357-01



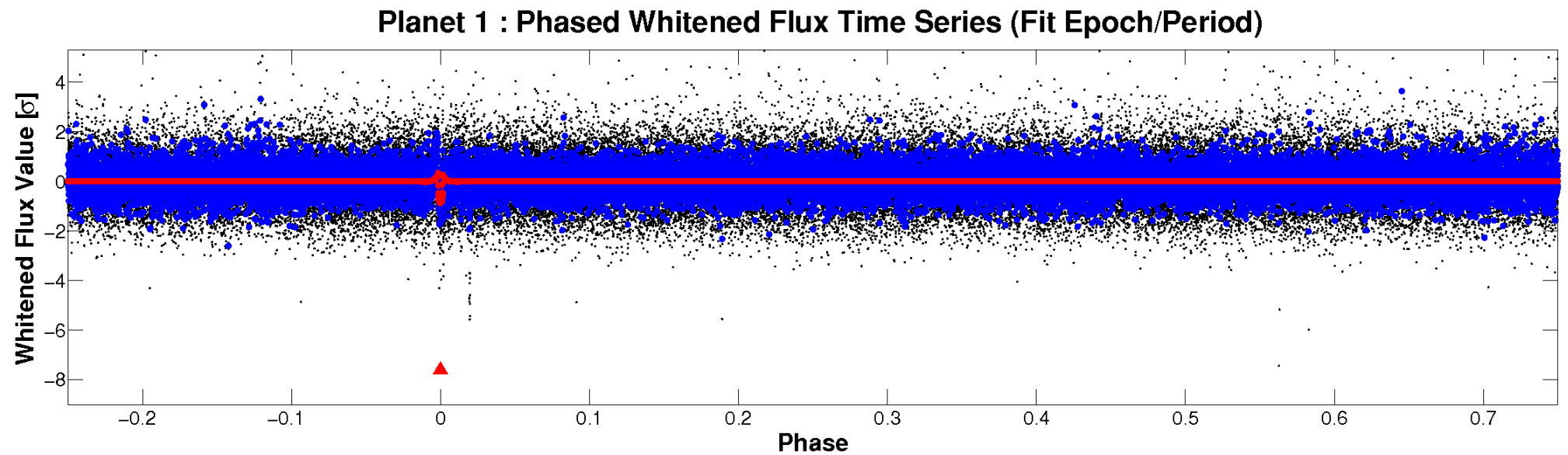
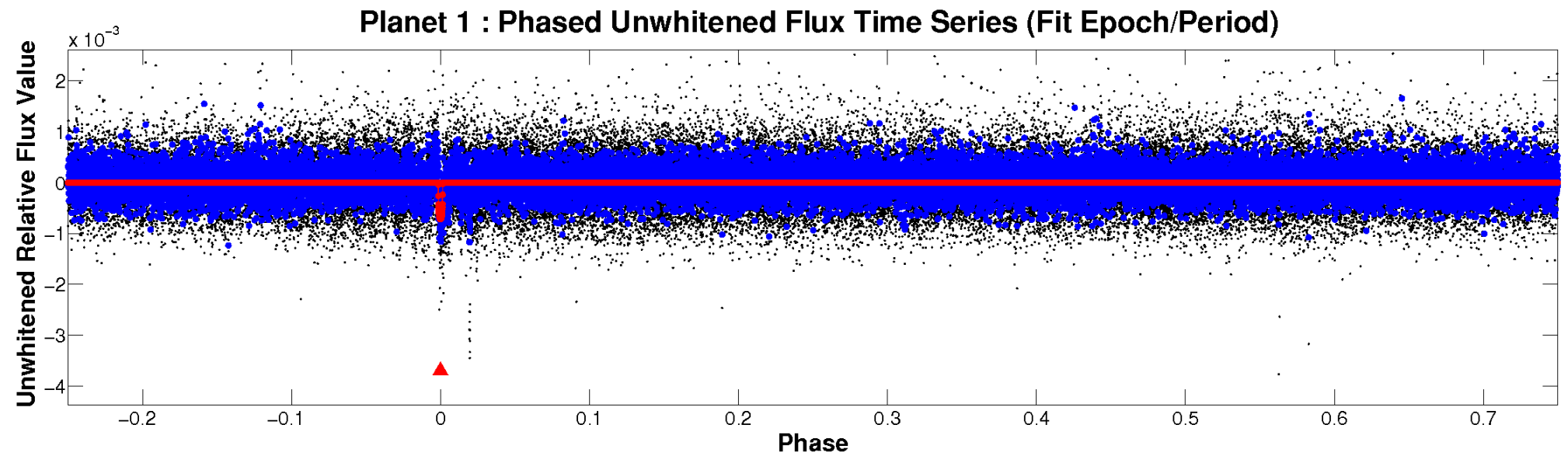
# ALT Odd/Even

TCE 008619357-01



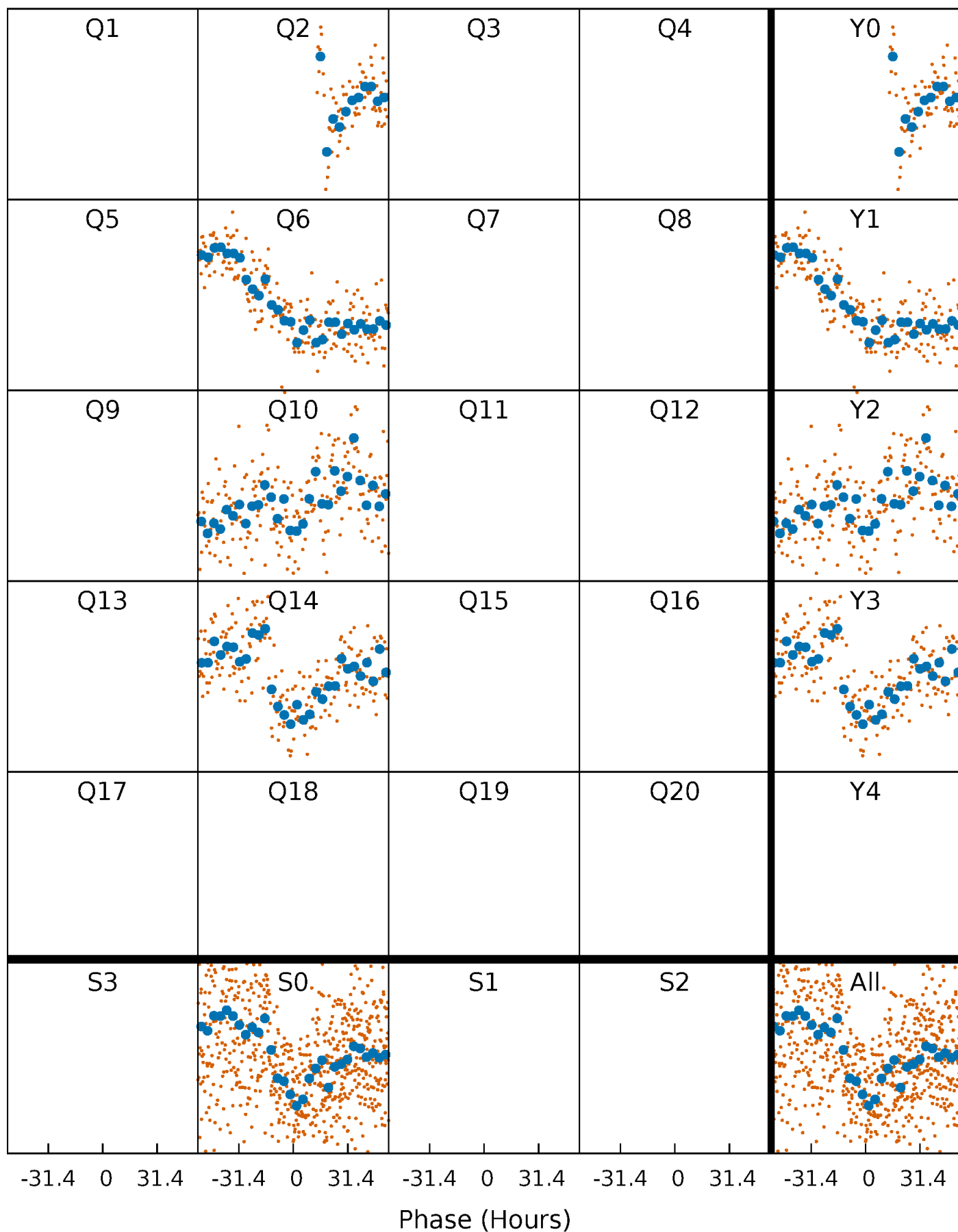


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

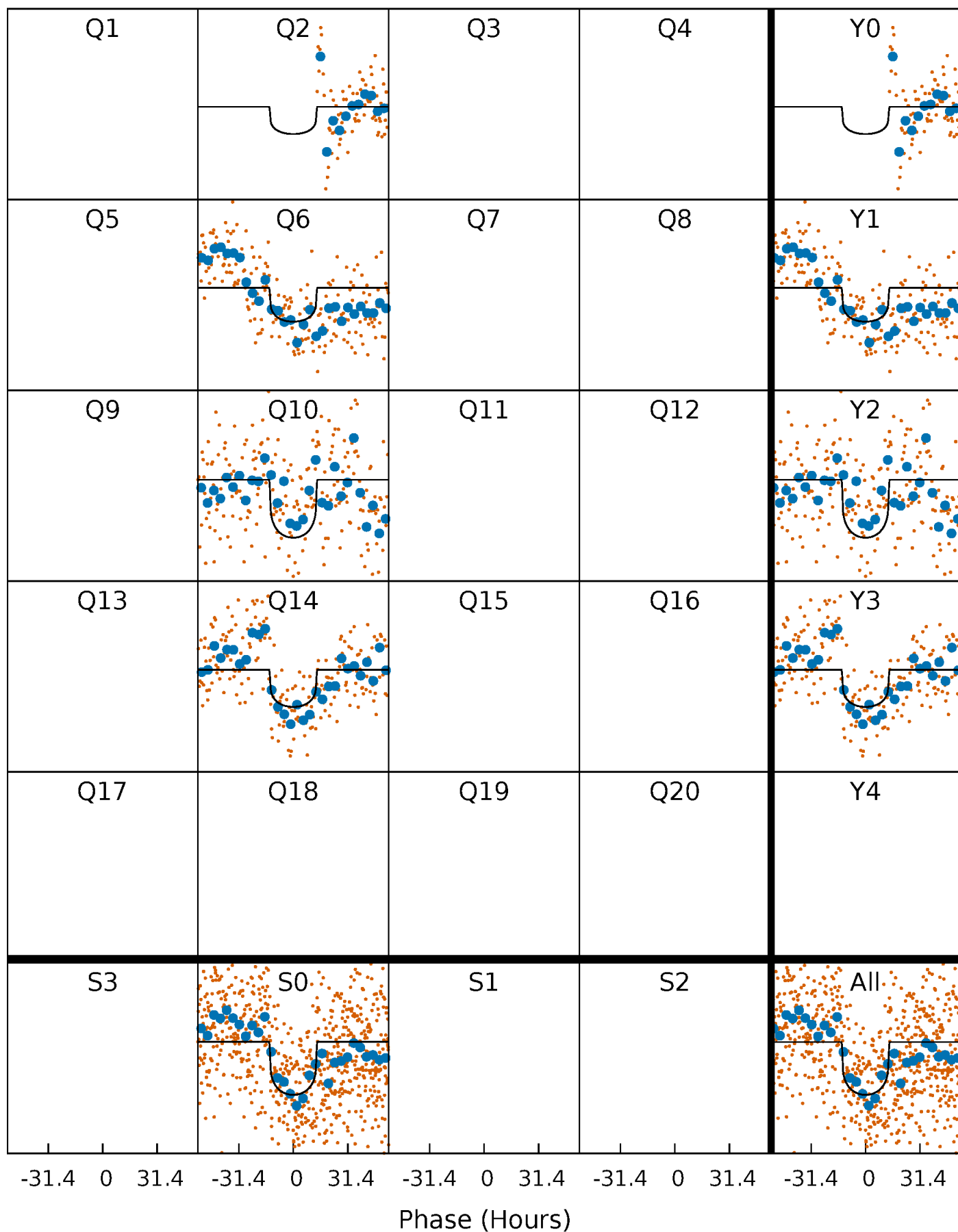
TCE 008619357-01 P=390.641401 Days  $T_0=169.188580$  (BKJD)





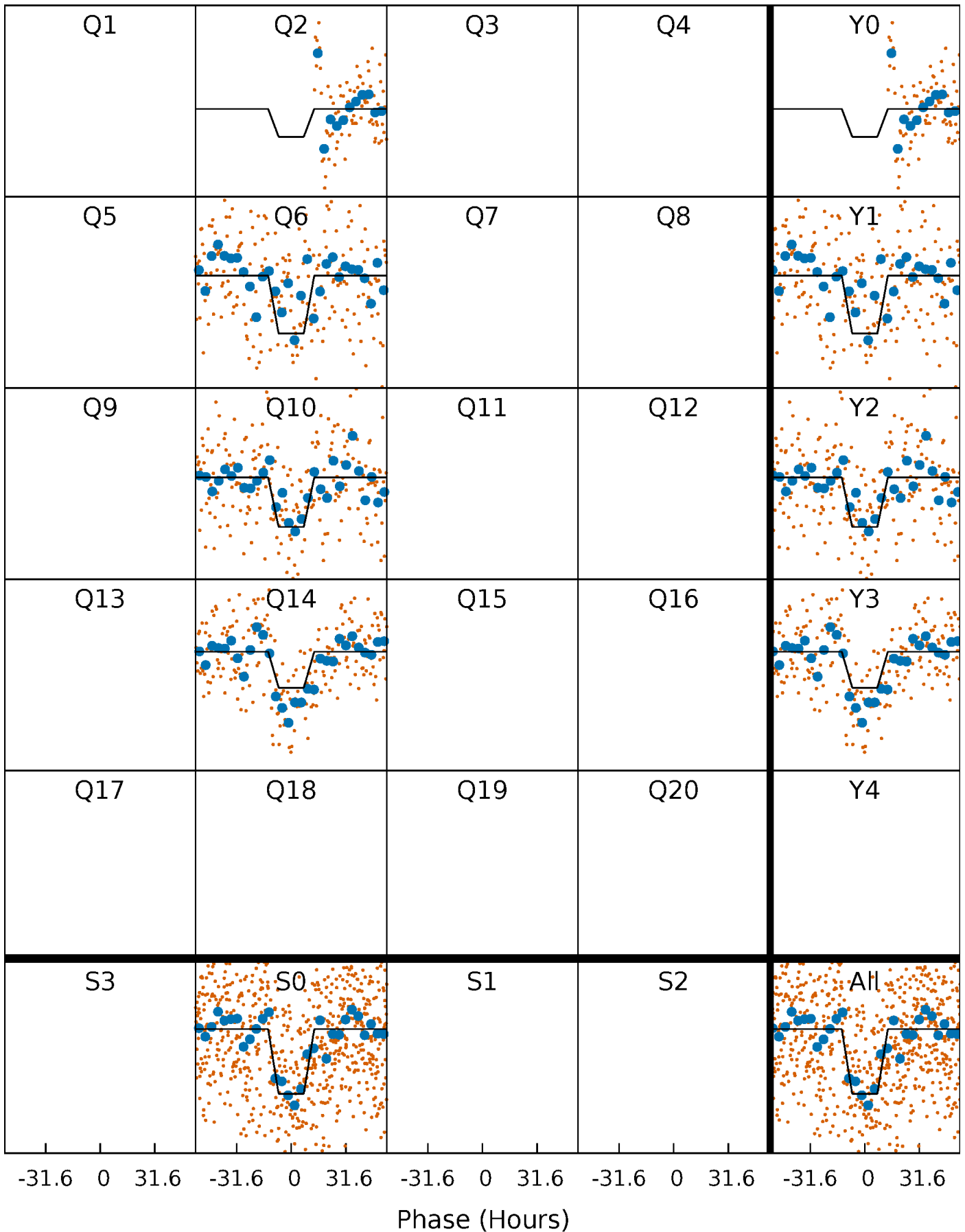
# DV Quarter-Phased Transit Curves

TCE 008619357-01 P=390.641401 Days  $T_0=169.188580$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

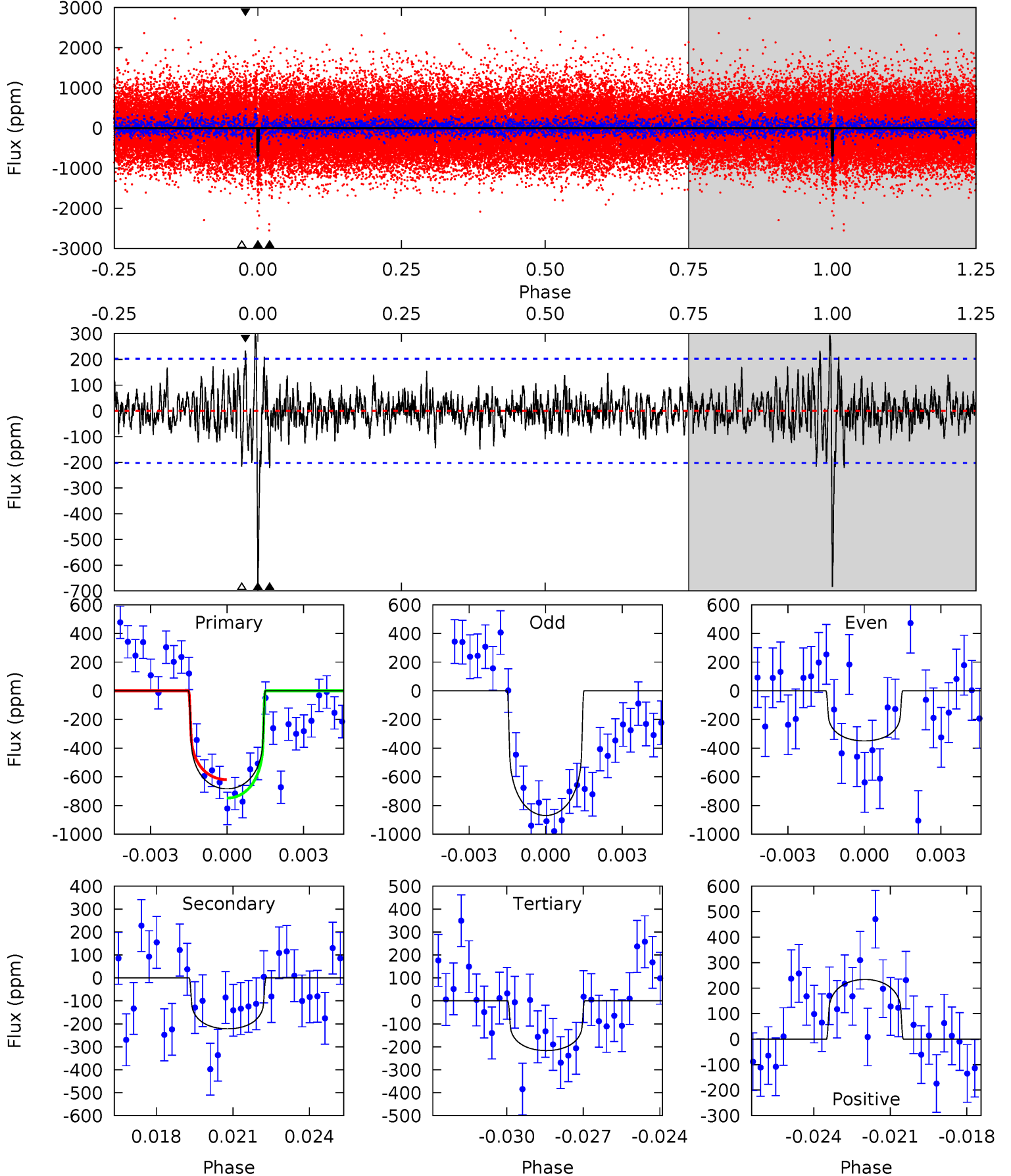
TCE 008619357-01 P=390.614744 Days  $T_0=169.200967$  (BKJD)



# DV Model-Shift Uniqueness Test

008619357-01, P = 390.641401 Days, E = 169.188580 Days

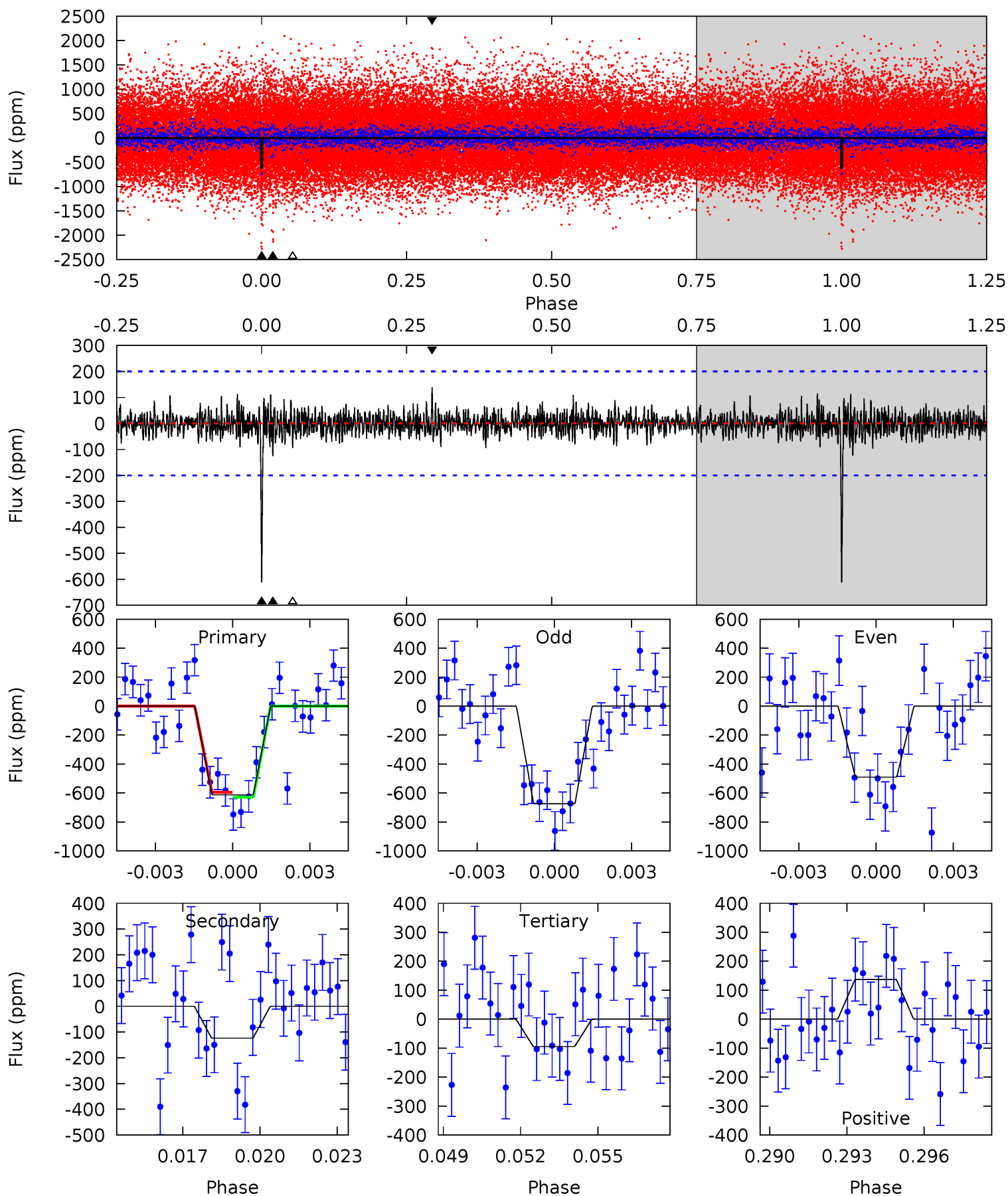
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.8	5.76	5.62	6.08	5.26	2.97	1.42	12.1	11.7	0.14	-0.31	6.37	0.86	0.30	1.67



# Alt Model-Shift Uniqueness Test

008619357-01, P = 390.614744 Days, E = 169.200967 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
16.1	3.25	2.48	3.60	5.26	2.98	0.82	13.6	12.5	0.77	-0.36	2.27	1.25	0.18	0.45



### Stellar Parameters For KIC 008619357

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5888^{+164}_{-184}$	$4.504^{+0.050}_{-0.200}$	$0.020^{+0.250}_{-0.300}$	$0.944^{+0.282}_{-0.094}$	$1.037^{+0.115}_{-0.140}$	$1.736^{+0.456}_{-0.869}$
	+3%/-3%	+1%/-4%	+1250%/-1500%	+30%/-10%	+11%/-14%	+26%/-50%
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 008619357-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-222 \pm 39$	$2.61^{+1.08}_{-0.99}$	$349^{+23}_{-15}$	$4733^{+1079}_{-588}$	$19467^{+32841}_{-9757}$
Alt.	$-124 \pm 38$	$2.68^{+1.10}_{-0.97}$	$351^{+23}_{-17}$	$4164^{+875}_{-495}$	$10067^{+16111}_{-5470}$

$T_{max}$  = 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

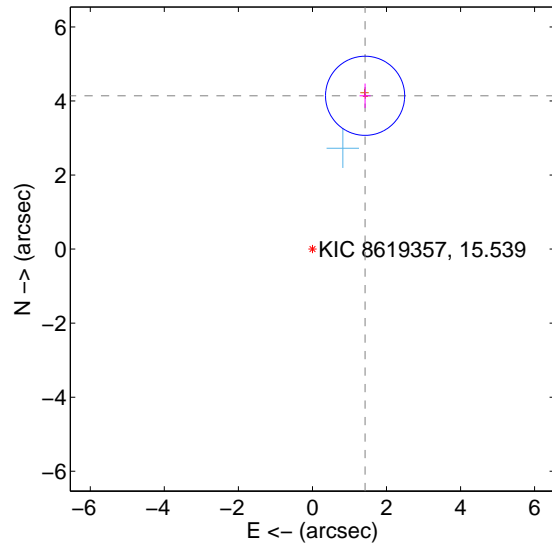
Supplemental centroid analysis for 008619357-01. Kepler magnitude: 15.54. Transit SNR 10.20

There are 1 quarters with good PRF difference image offsets

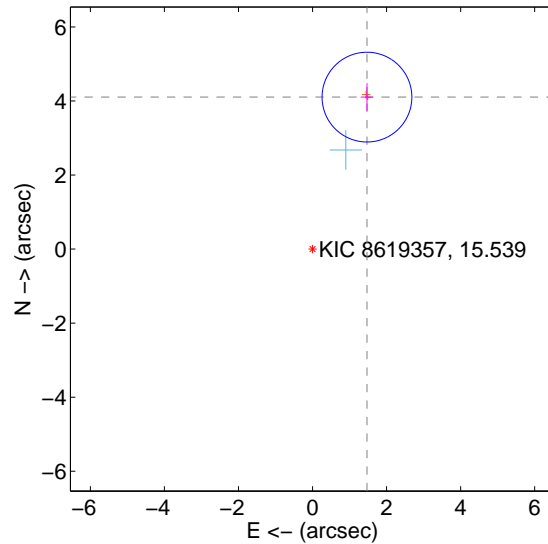
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$4.378 \pm 0.356$	12.29	$-1.422 \pm 0.148$	$4.140 \pm 0.332$
PRF-fit source offset from KIC position	$4.360 \pm 0.404$	10.79	$-1.470 \pm 0.168$	$4.105 \pm 0.374$
photometric centroid source offset	$0.81 \pm 1.21$	0.67	$-0.27 \pm 1.24$	$0.76 \pm 1.21$

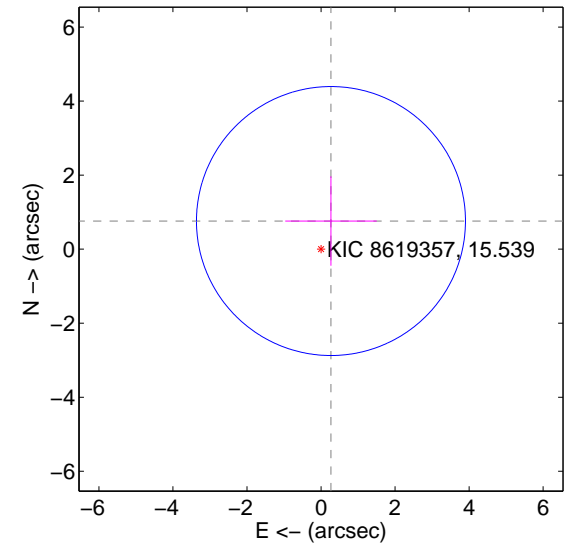
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



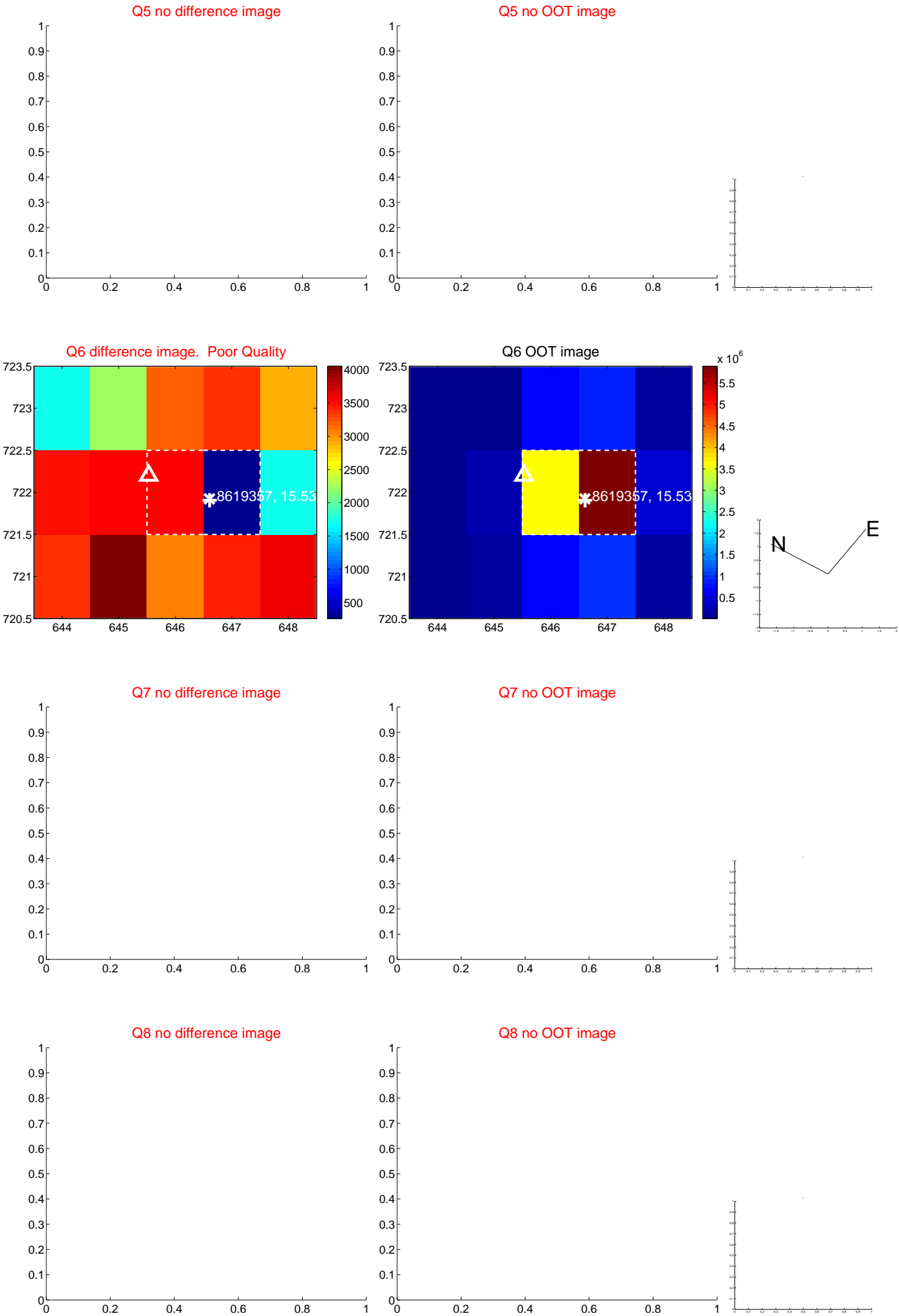
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



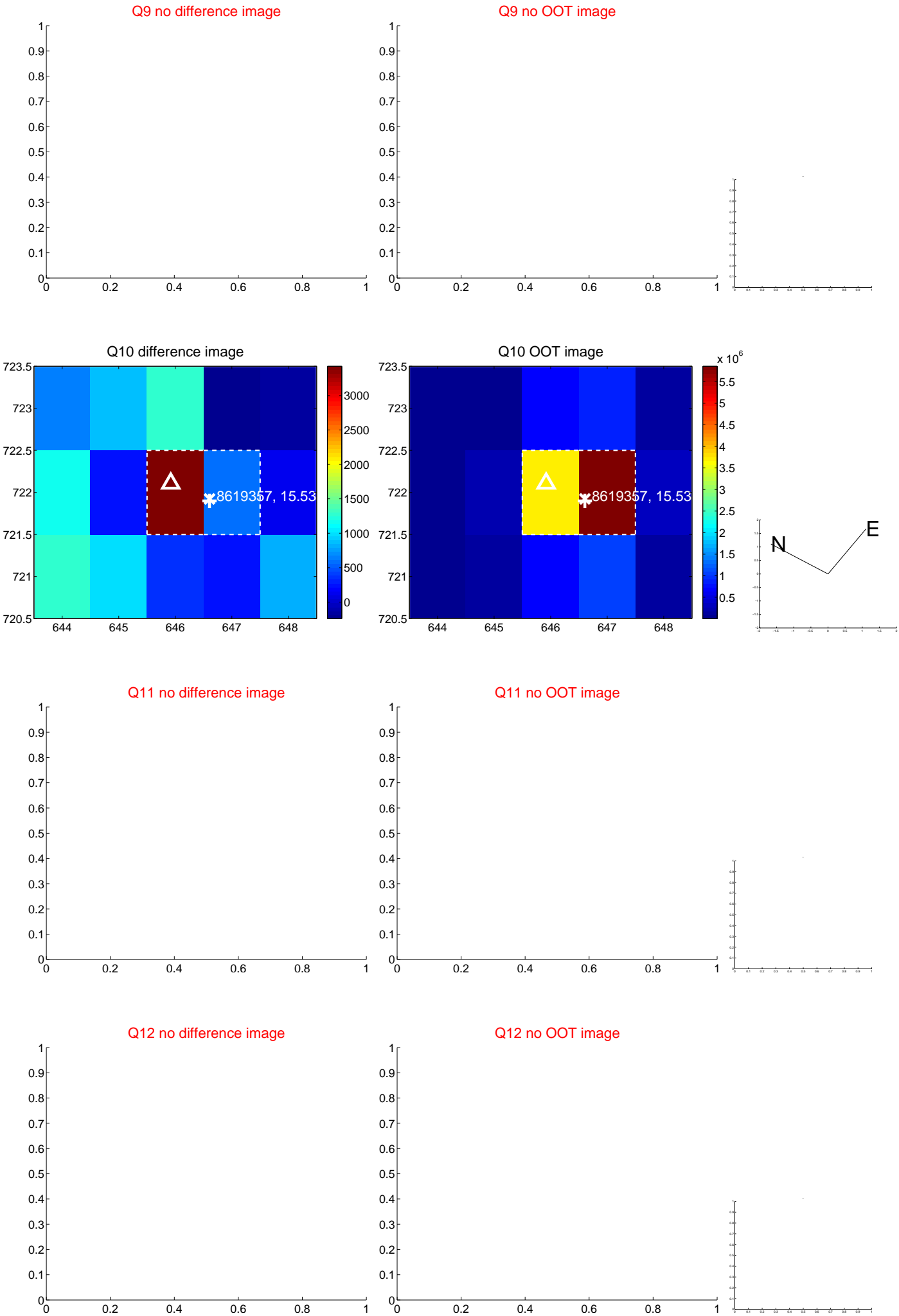
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



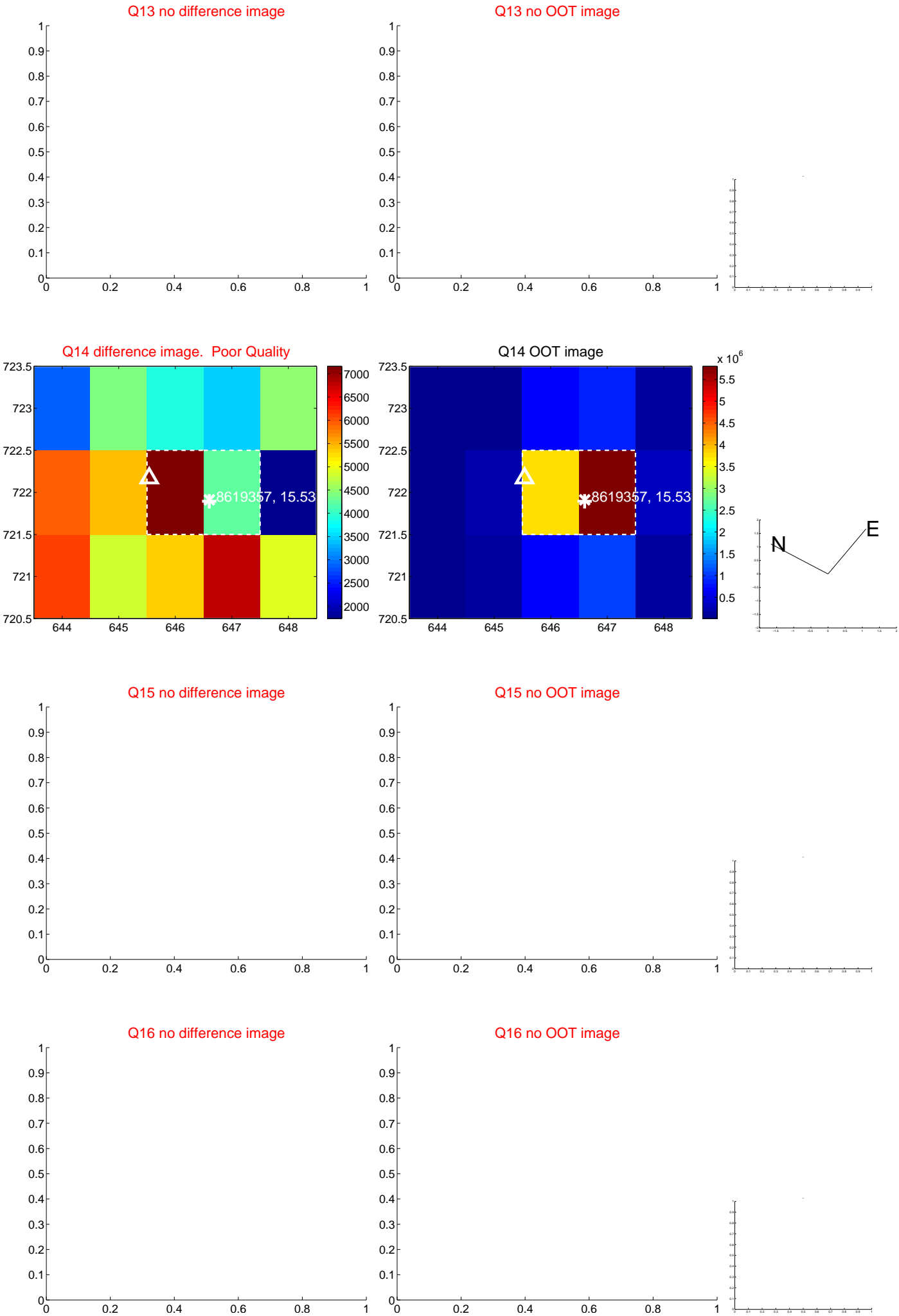
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



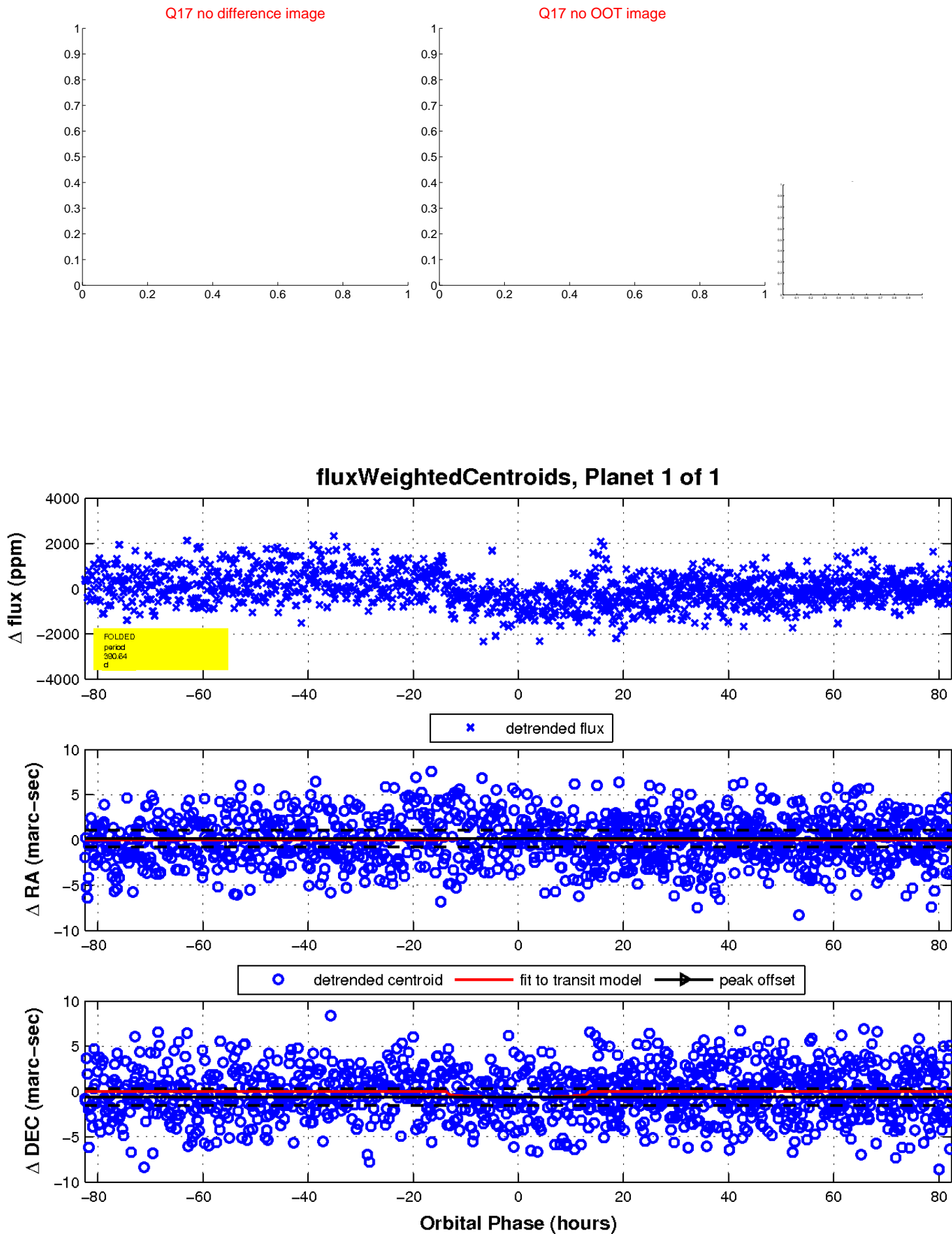
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white ×: 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.



UKIRT Image

Declination

