

# KIC 008429350

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008429350-01	OBS	No	21.311305	145.893348	60.9	31.819	7.4	9.9	1.06	6243	0.89	71.84

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008429350-01	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.

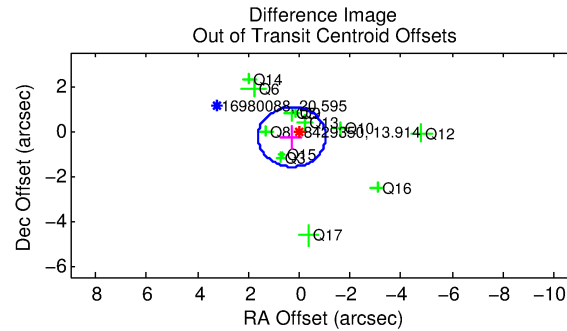
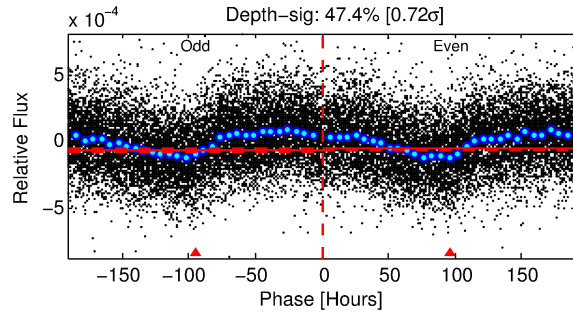
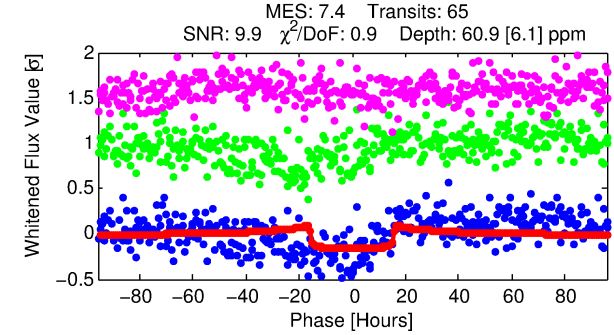
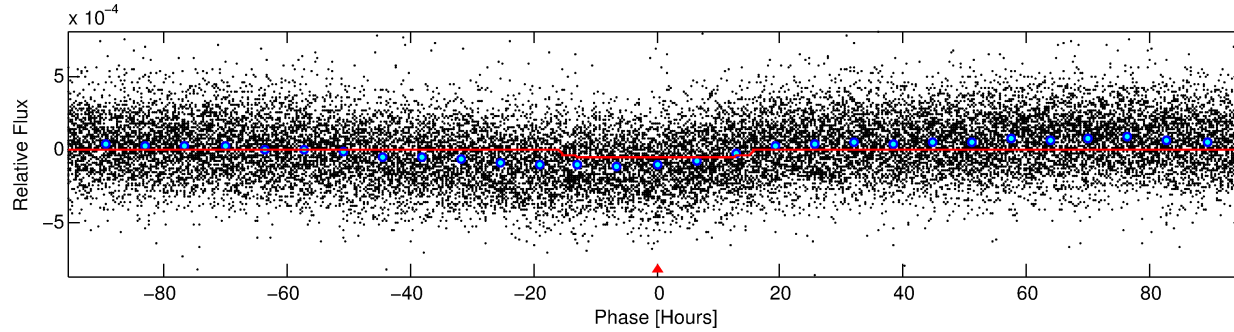
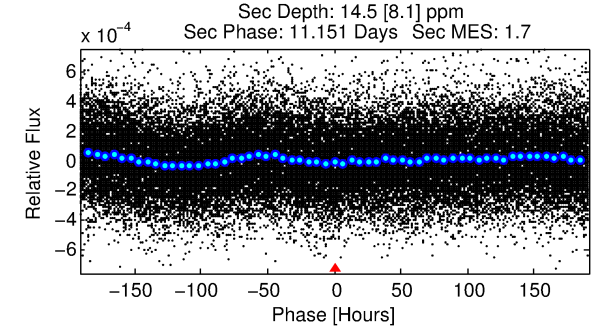
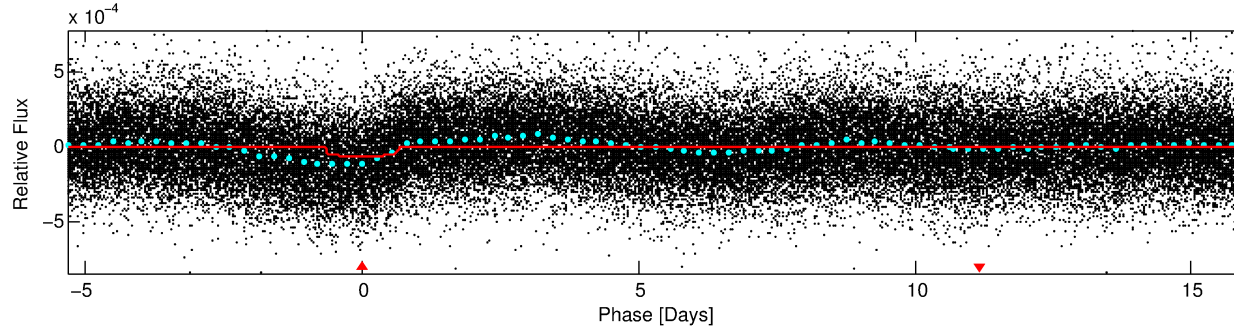
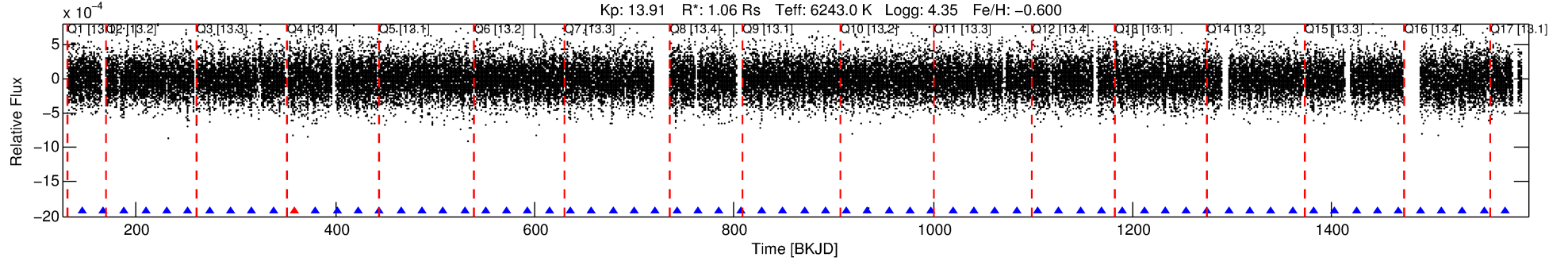
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008429350-01

No Significant Match Found

# DV One-Page Summary

KIC: 8429350 Candidate: 1 of 1 Period: 21.311 d



## DV Fit Results:

Period = 21.31131 [0.00061] d  
Epoch = 145.8933 [0.0241] BKJD  
Rp/R\* = 0.0077 [0.0010]  
a/R\* = 3.68 [2.25]  
b = 0.72 [0.43]  
Seff = 71.84 [25.56]  
Teq = 742 [66] K  
Rp = 0.89 [0.26] Re  
a = 0.1455 [0.0326] AU  
Ag = 213.87 [150.13] [1.42σ]  
Teffp = 4389 [690] K [5.26σ]

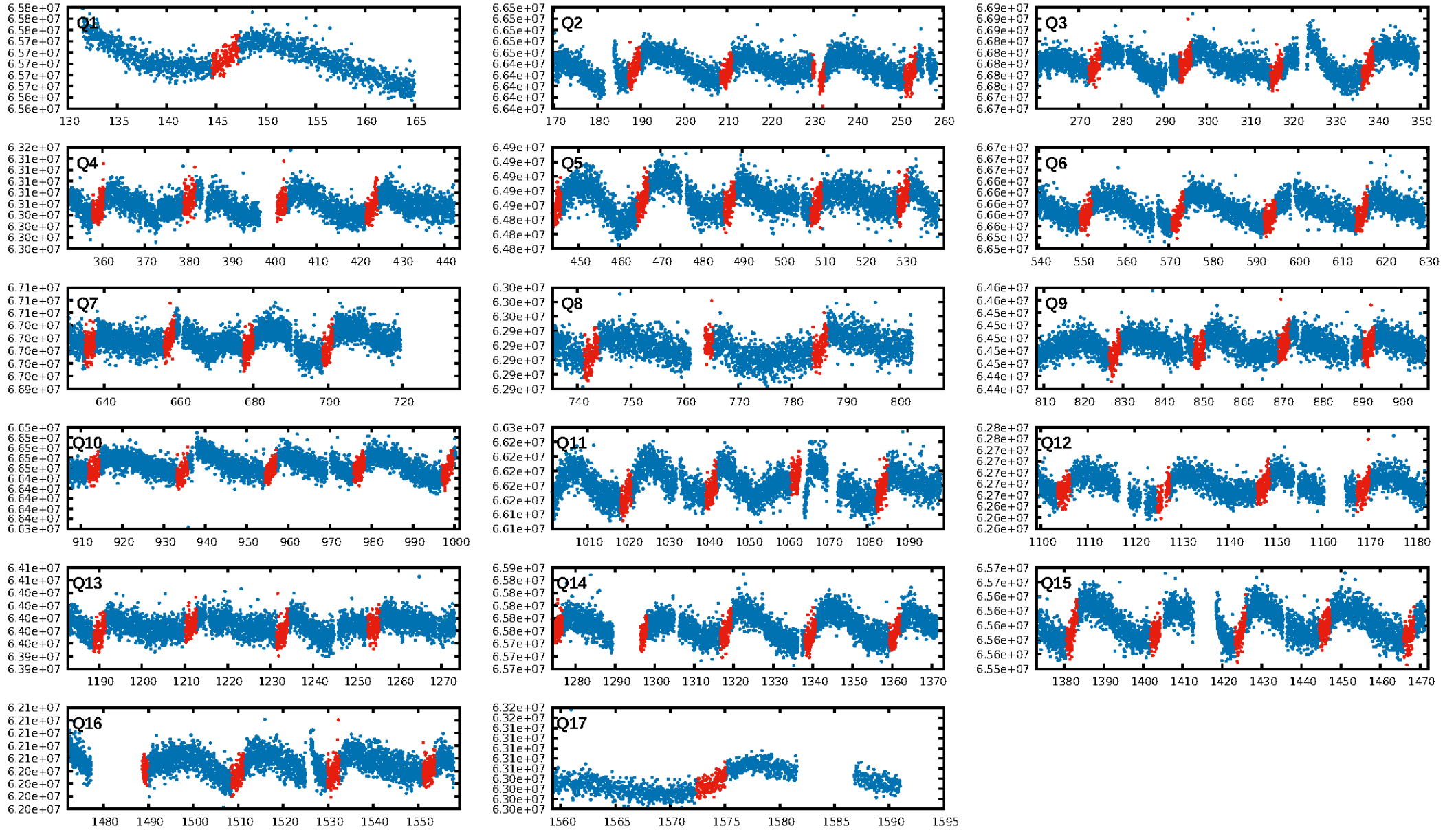
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 99.6%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.87e-13  
RollingBand-fgt: 0.98 [62/63]  
GhostDiagnostic-chr: 3.327  
Centroid-sig: 15.2%  
Centroid-so: 1.200 arcsec [1.27σ]  
OotOffset-rm: 0.397 arcsec [0.90σ]  
KicOffset-rm: 0.460 arcsec [1.05σ]  
OotOffset-st: 3/2/3/4 [12]  
KicOffset-st: 3/2/3/4 [12]  
DiffImageQuality-fgm: 0.67 [8/12]  
DiffImageOverlap-fno: 1.00 [16/16]

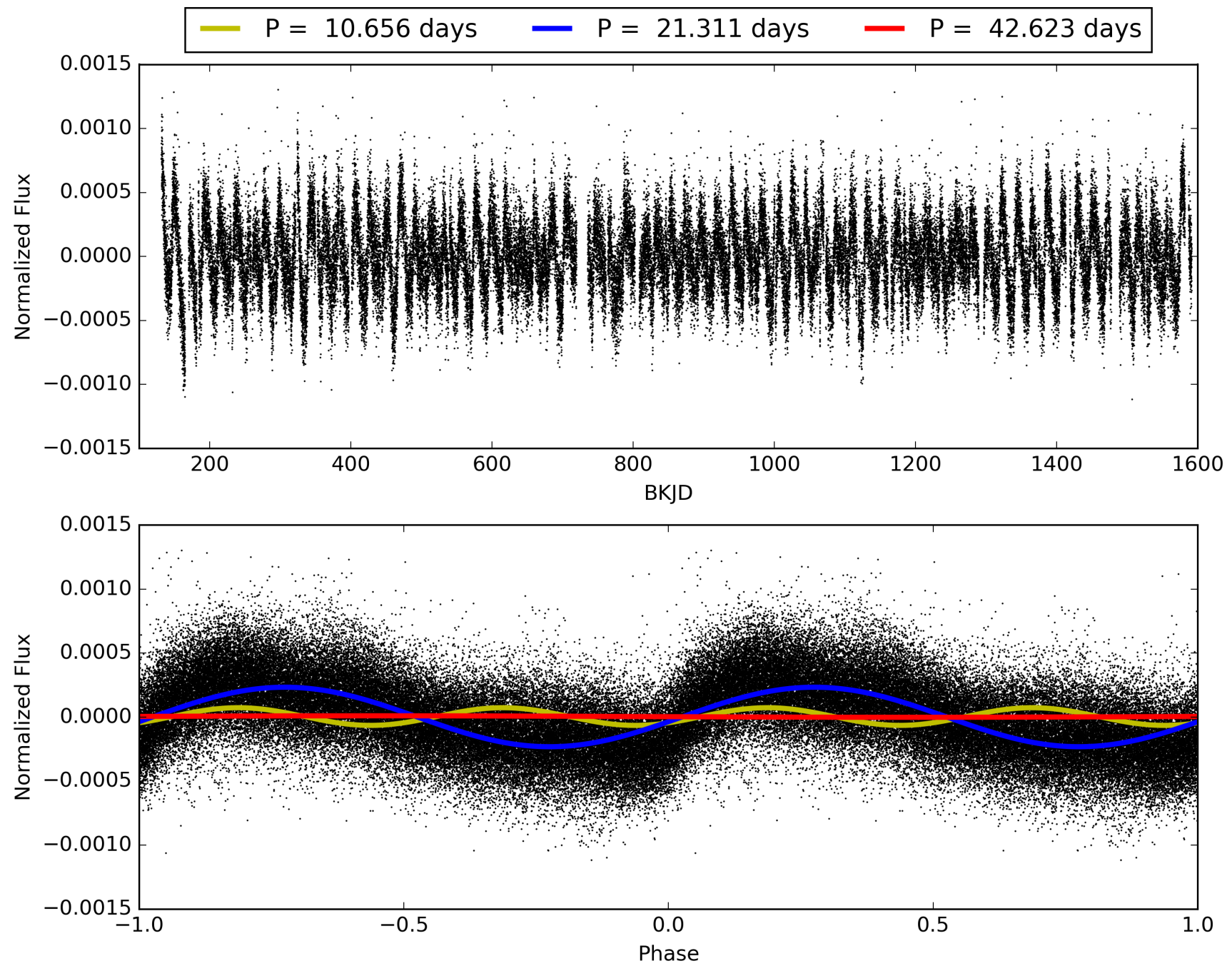
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 08:55:38 Z

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

# TCE 008429350-01, PDC Light Curves

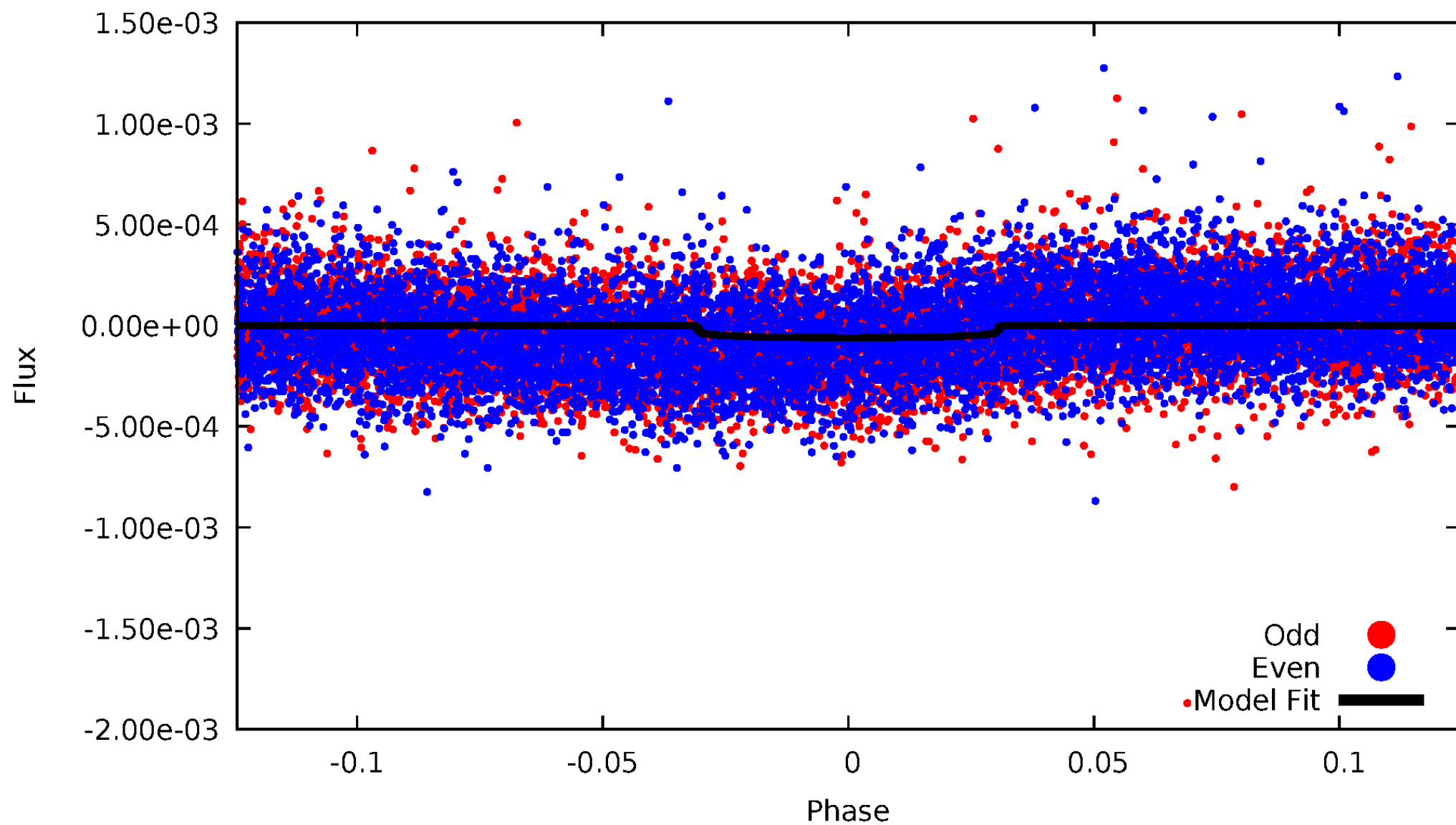


TCE 008429350-01



# DV Odd/Even

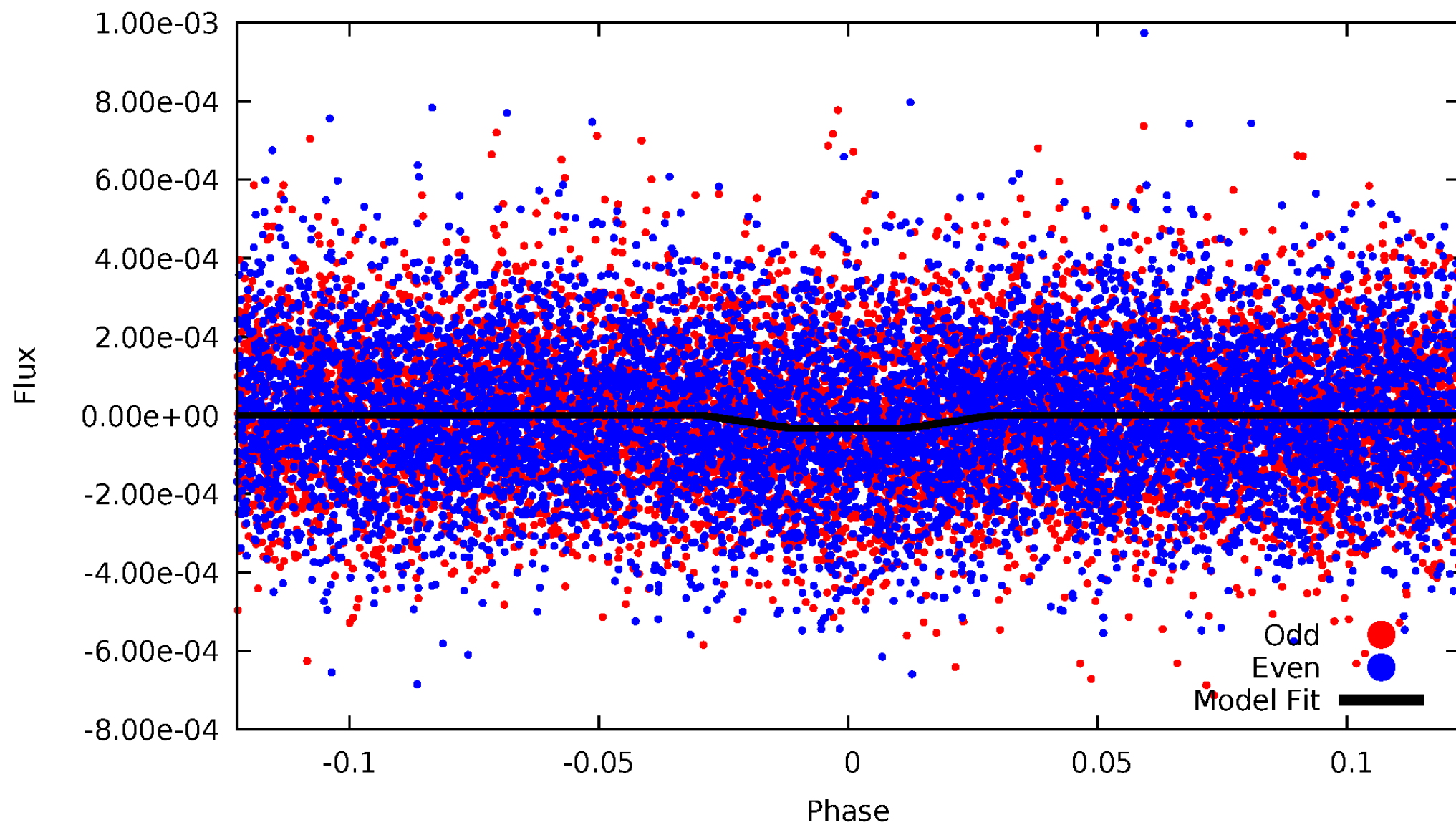
TCE 008429350-01





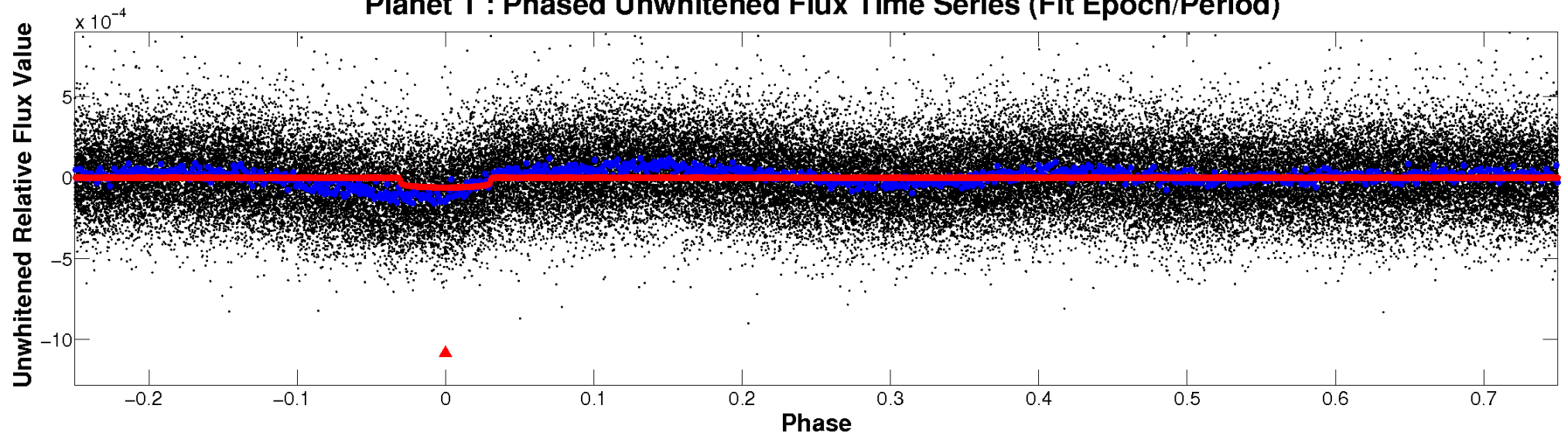
# ALT Odd/Even

TCE 008429350-01

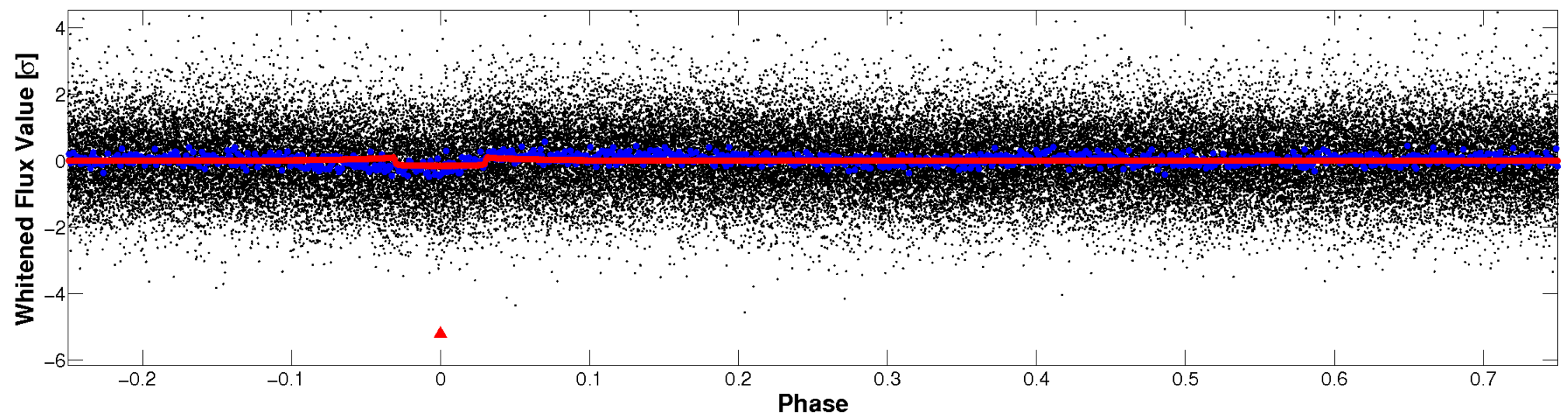


# Non-Whitened Vs. Whitened Light Curve

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

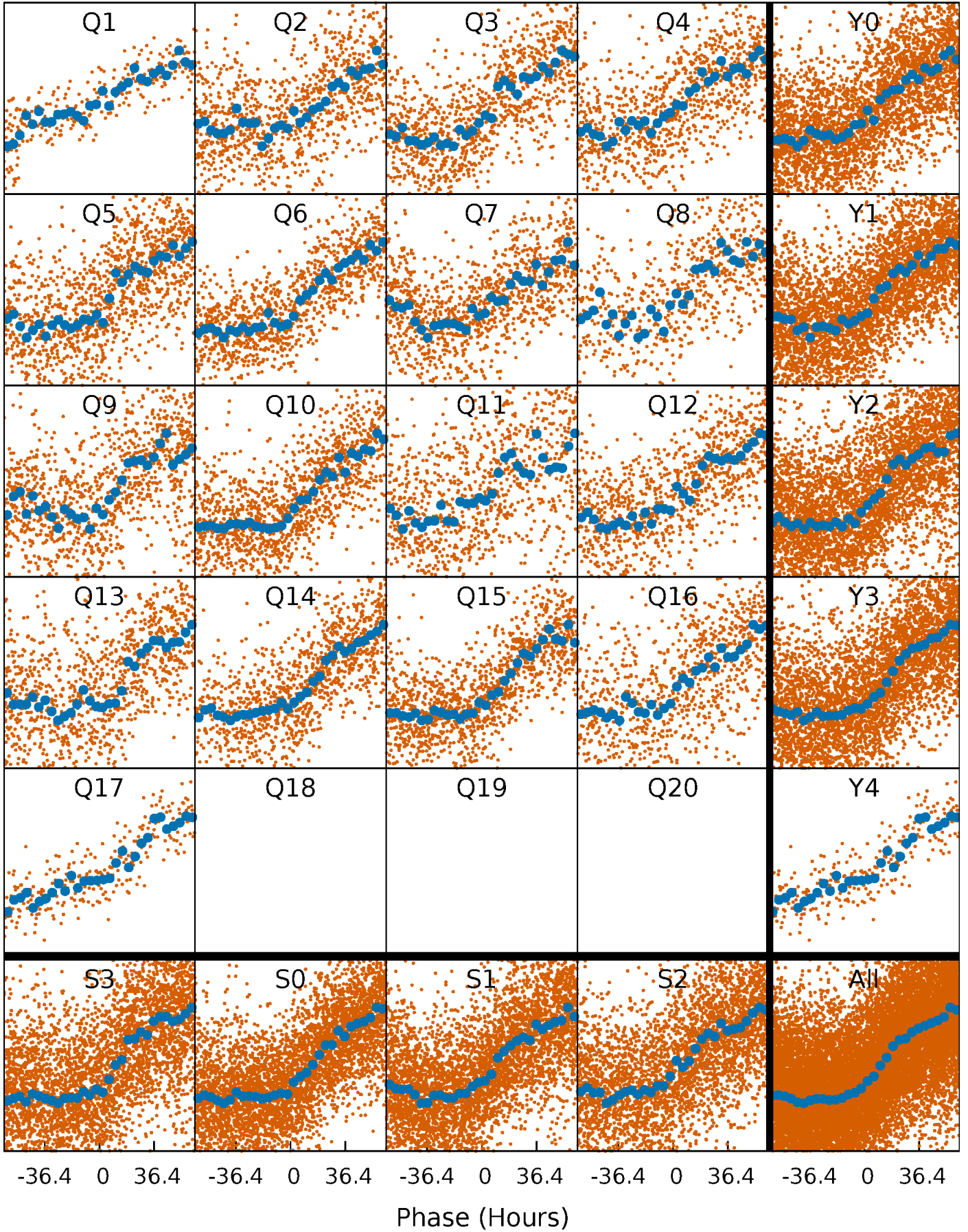


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

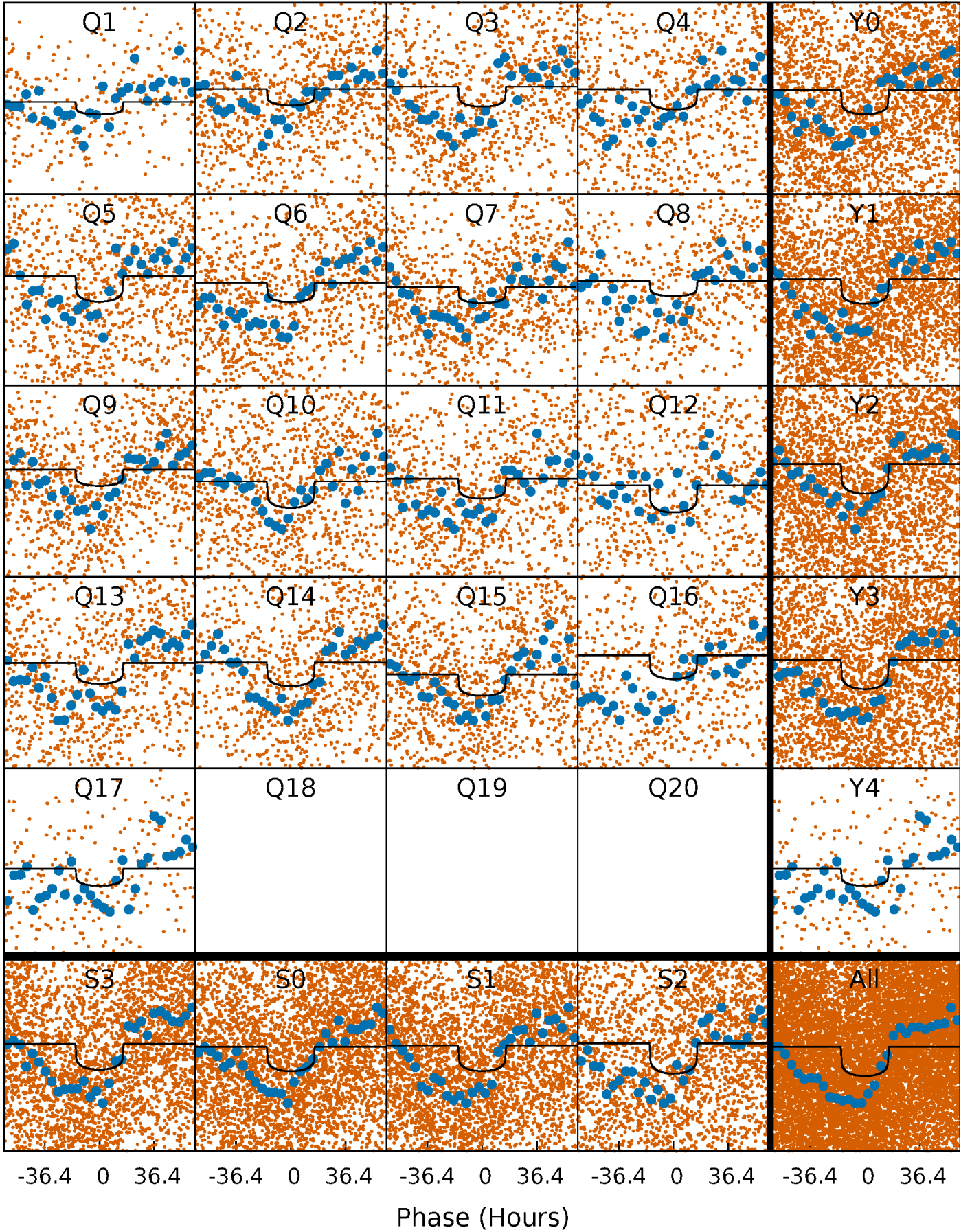
TCE 008429350-01 P= 21.311305 Days  $T_0=145.893348$  (BKJD)





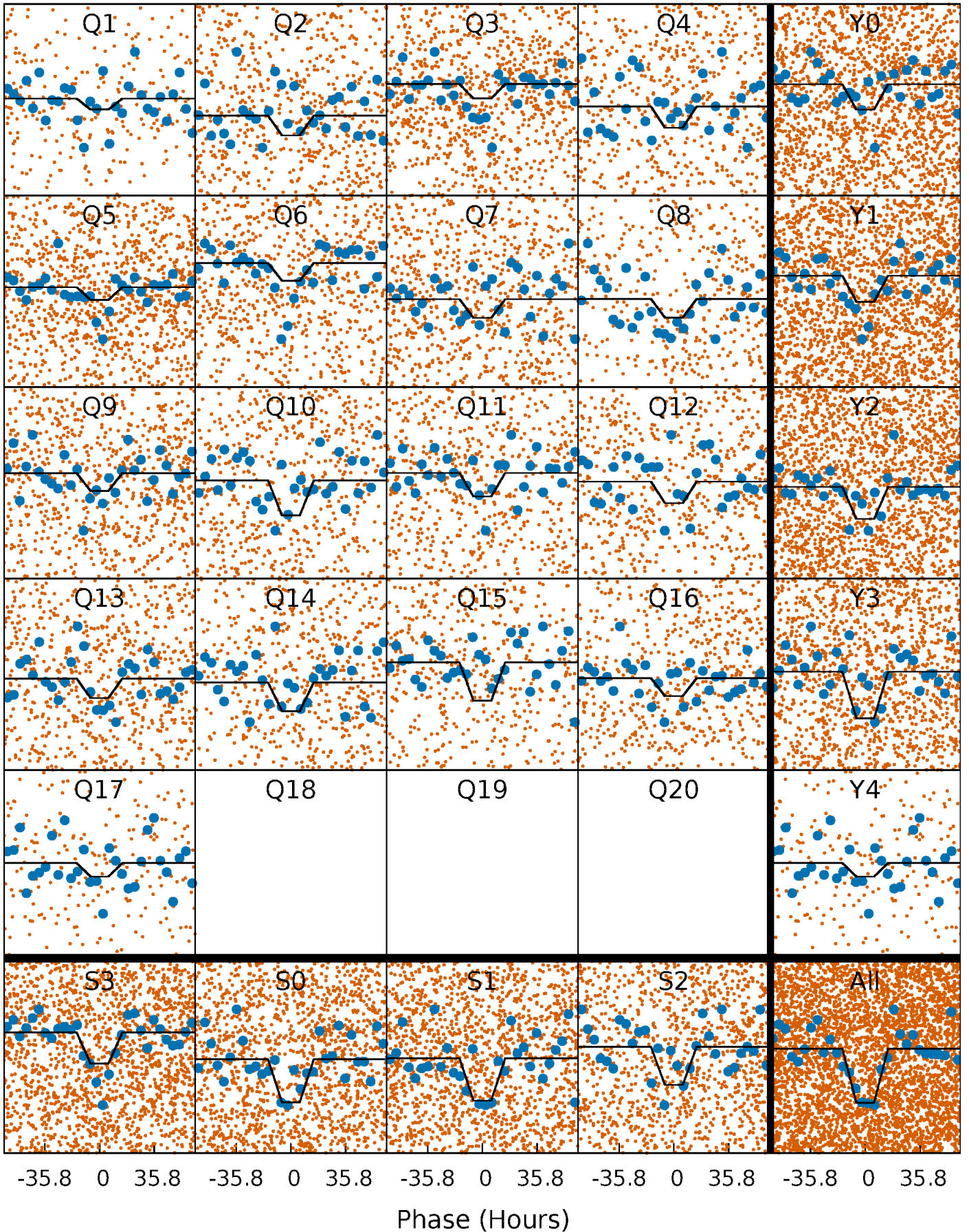
# DV Quarter-Phased Transit Curves

TCE 008429350-01   P= 21.311305 Days    $T_0=145.893348$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

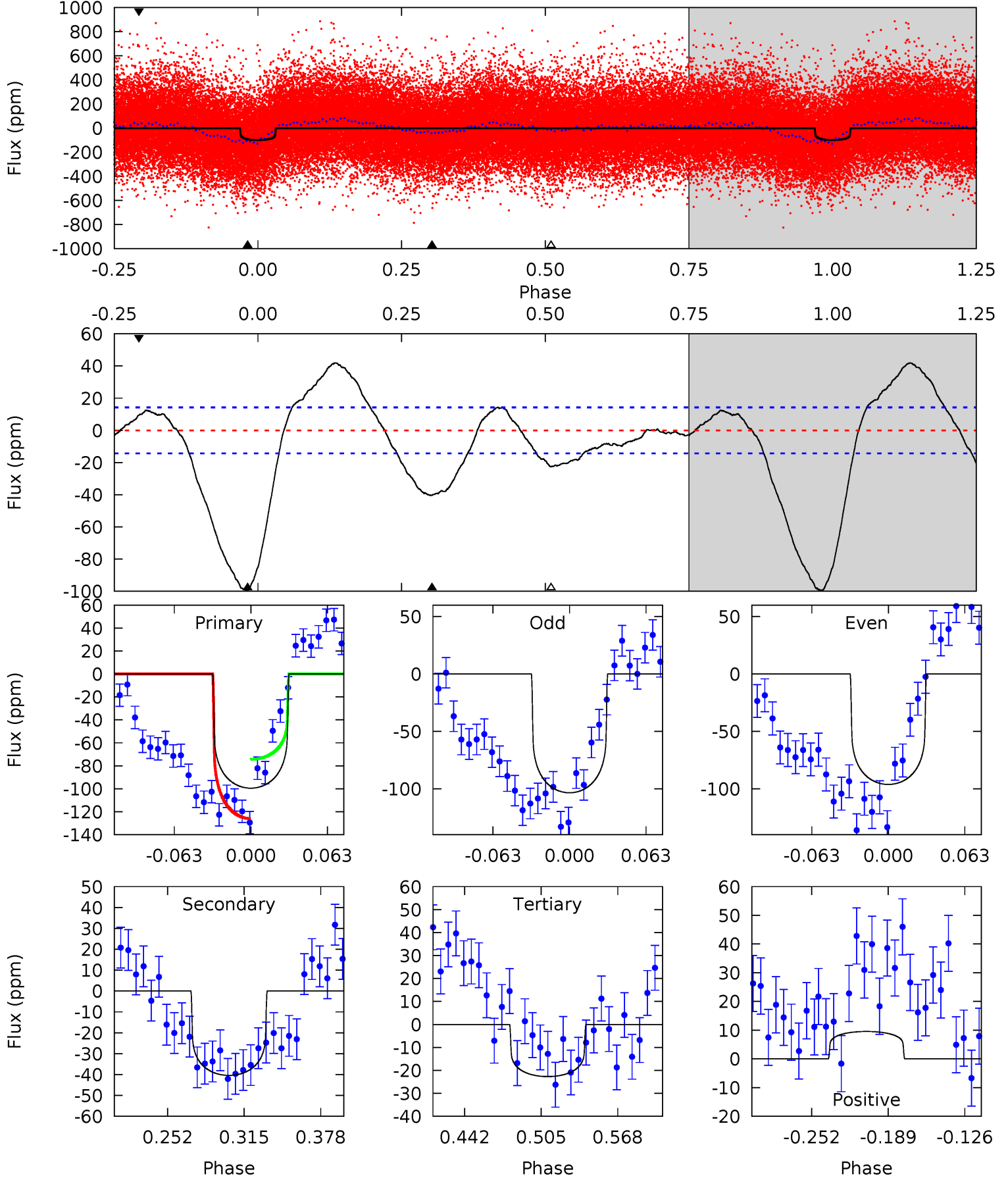
TCE 008429350-01 P= 21.313785 Days  $T_0=145.882309$  (BKJD)



# DV Model-Shift Uniqueness Test

008429350-01, P = 21.311305 Days, E = 124.582043 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
32.5	13.2	7.42	3.12	4.66	1.86	5.87	25.1	29.4	5.78	10.1	1.19	0.88	0.30	8.47

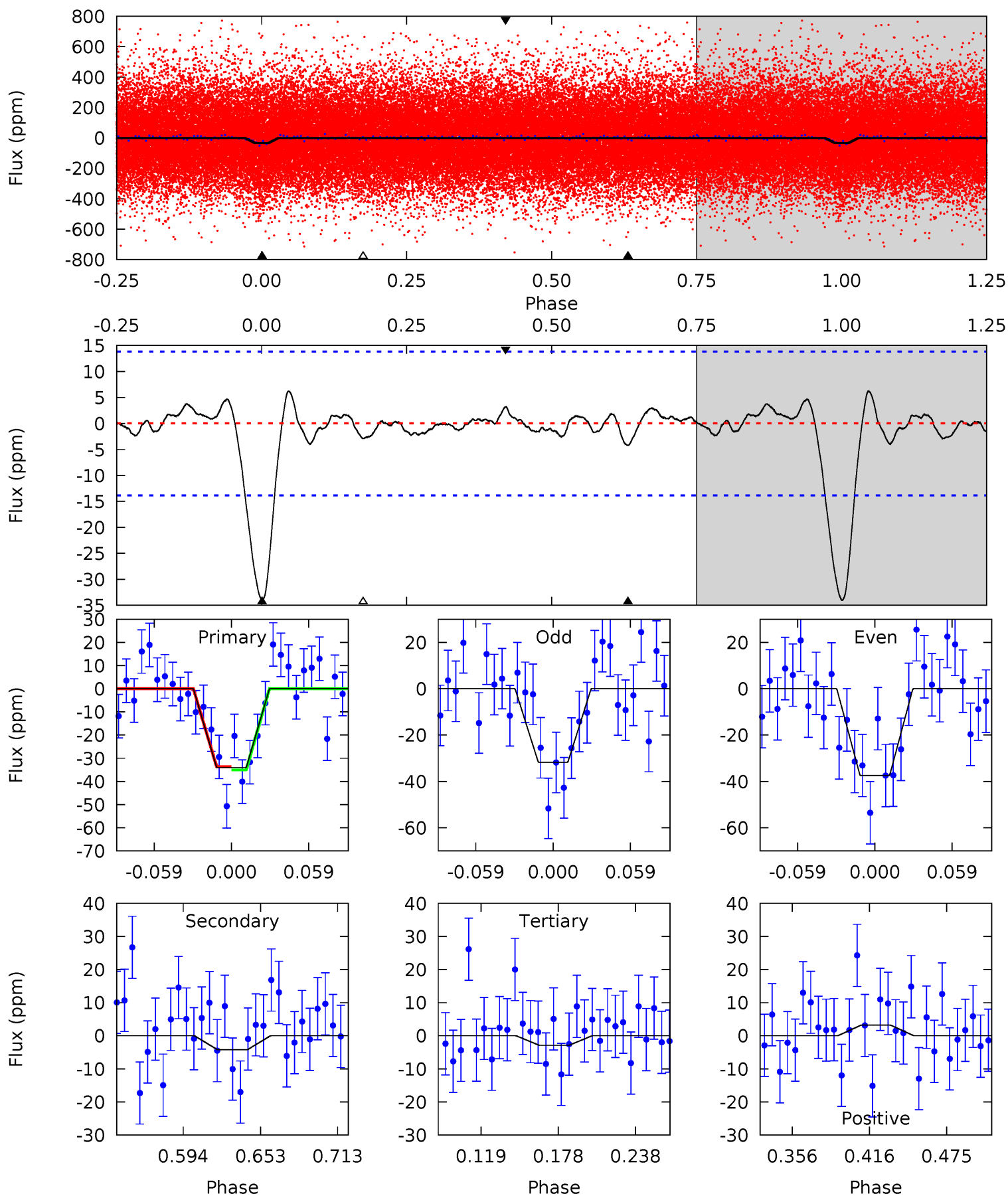




# Alt Model-Shift Uniqueness Test

008429350-01,  $P = 21.313785$  Days,  $E = 124.568524$  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
11.5	1.44	0.98	1.08	4.67	1.89	0.52	10.5	10.4	0.46	0.36	0.97	0.87	0.15	0.23





### Stellar Parameters For KIC 008429350

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6243^{+169}_{-188}$	$4.346^{+0.153}_{-0.187}$	$-0.600^{+0.300}_{-0.300}$	$1.057^{+0.273}_{-0.182}$	$0.903^{+0.117}_{-0.085}$	$1.077^{+0.762}_{-0.521}$
	+3%/-3%	+4%/-4%	+50%/-50%	+26%/-17%	+13%/-9%	+71%/-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 008429350-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-40 \pm 3$	$0.89^{+0.19}_{-0.16}$	$1040^{+79}_{-63}$	$5689^{+477}_{-364}$	$591^{+282}_{-193}$
Alt.	$-4 \pm 3$	$0.68^{+0.16}_{-0.14}$	$1038^{+76}_{-57}$	$4016^{+515}_{-731}$	$106^{+104}_{-76}$

$T_{max}$  = 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

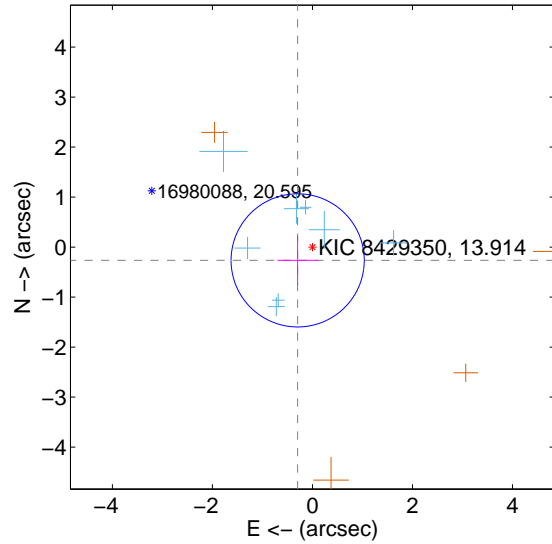
Supplemental centroid analysis for 008429350-01. Kepler magnitude: 13.91. Transit SNR 9.89

There are 8 quarters with good PRF difference image offsets

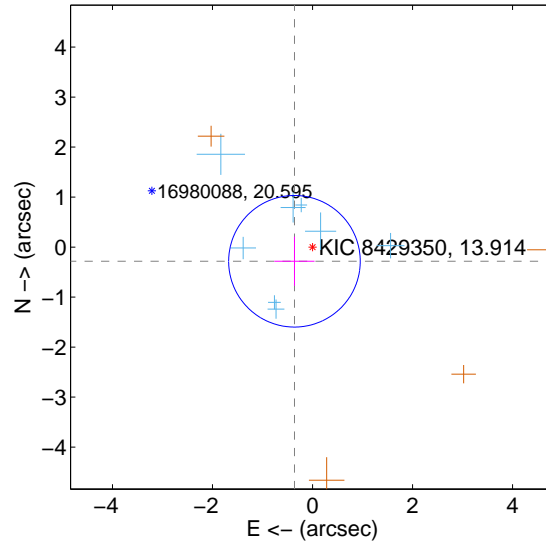
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.397 \pm 0.444$	0.90	$0.296 \pm 0.404$	$-0.266 \pm 0.489$
PRF-fit source offset from KIC position	$0.460 \pm 0.439$	1.05	$0.362 \pm 0.402$	$-0.284 \pm 0.493$
photometric centroid source offset	$1.20 \pm 0.94$	1.27	$-1.13 \pm 0.96$	$0.39 \pm 0.78$

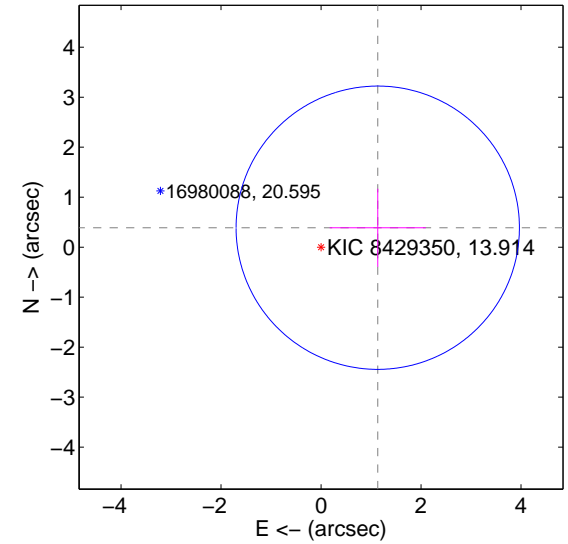
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

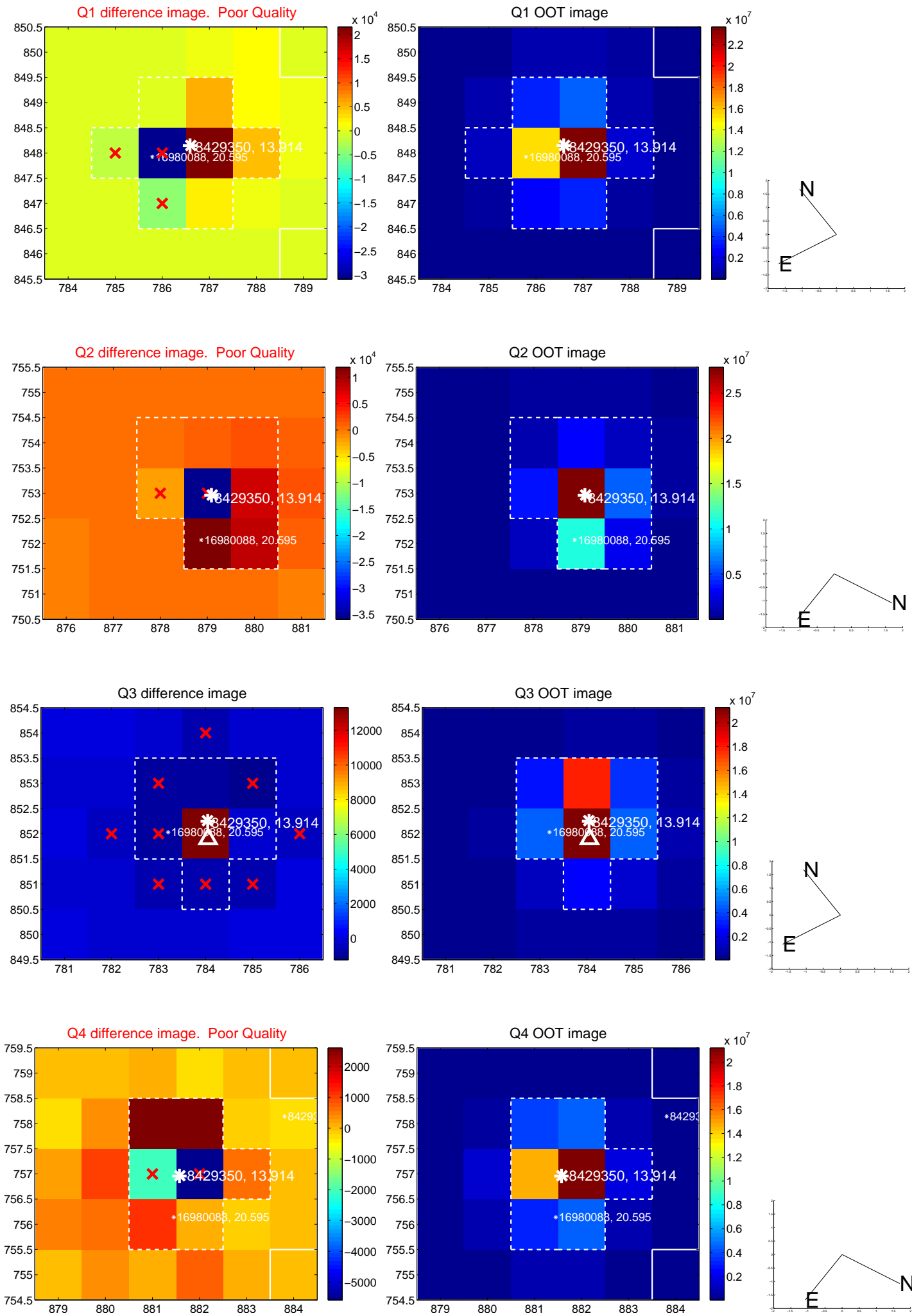


offset from photometric centroids

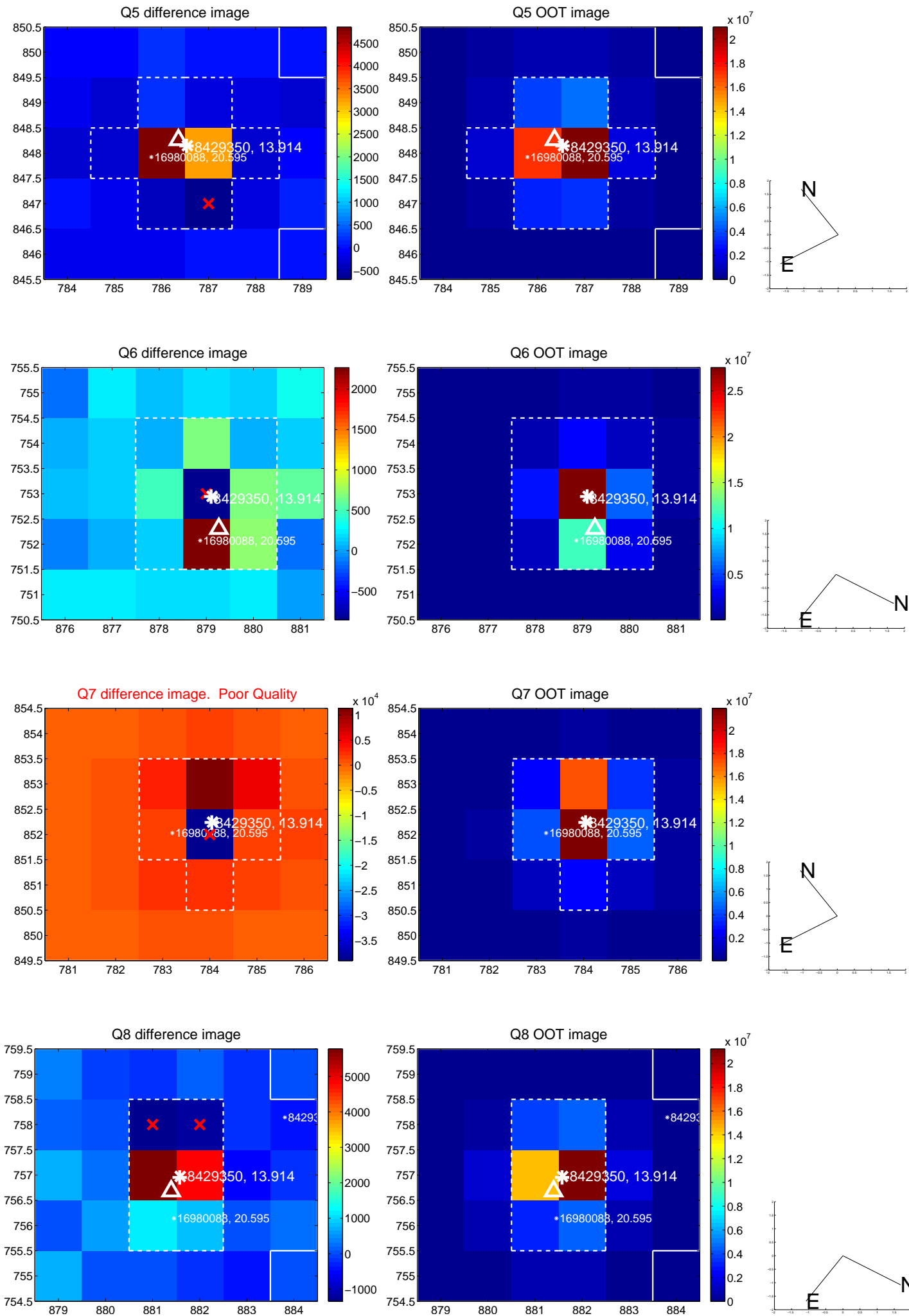


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

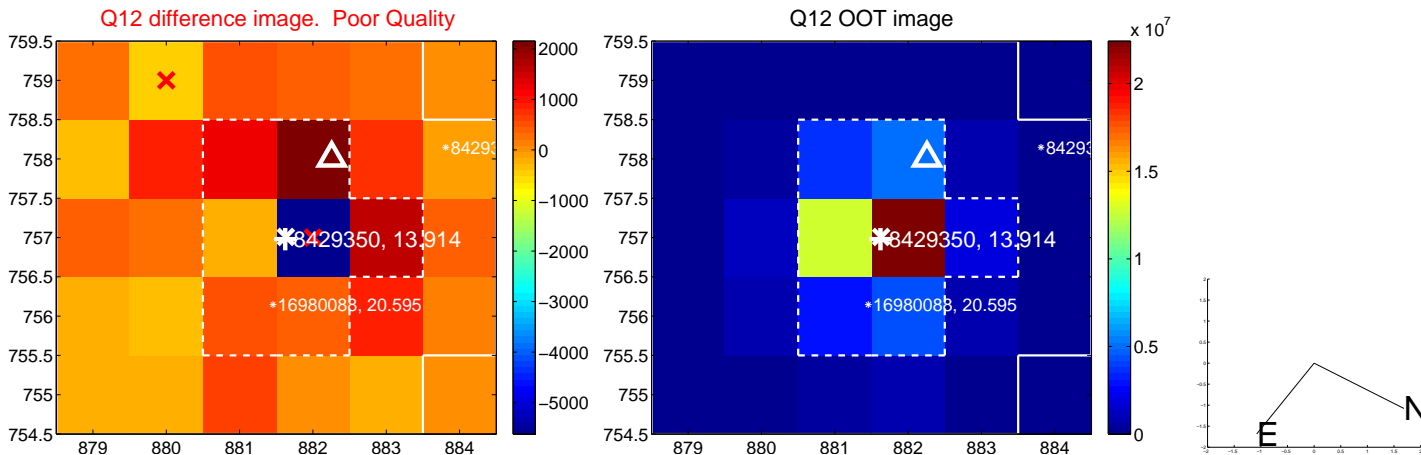
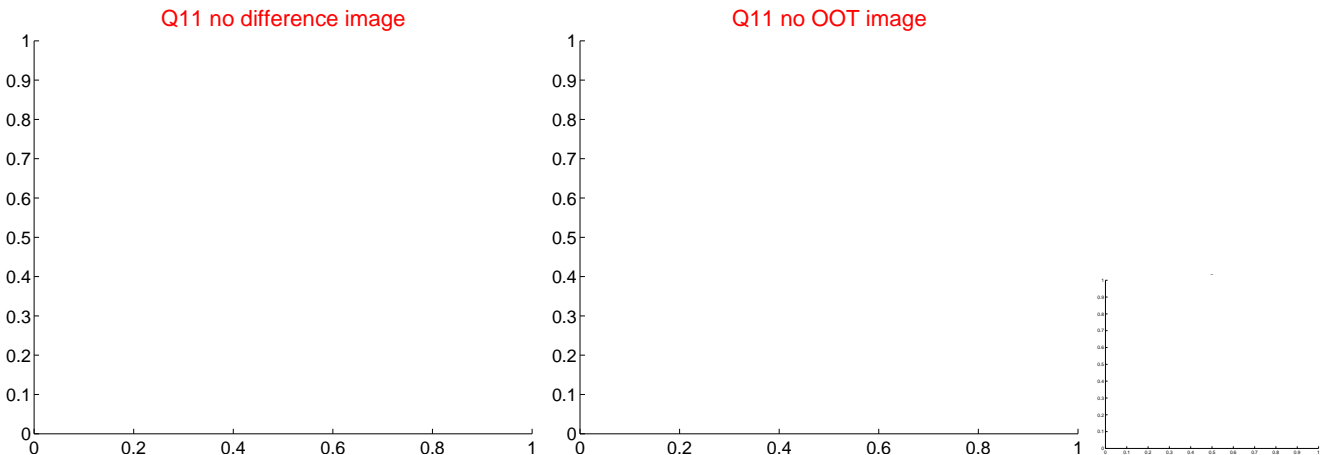
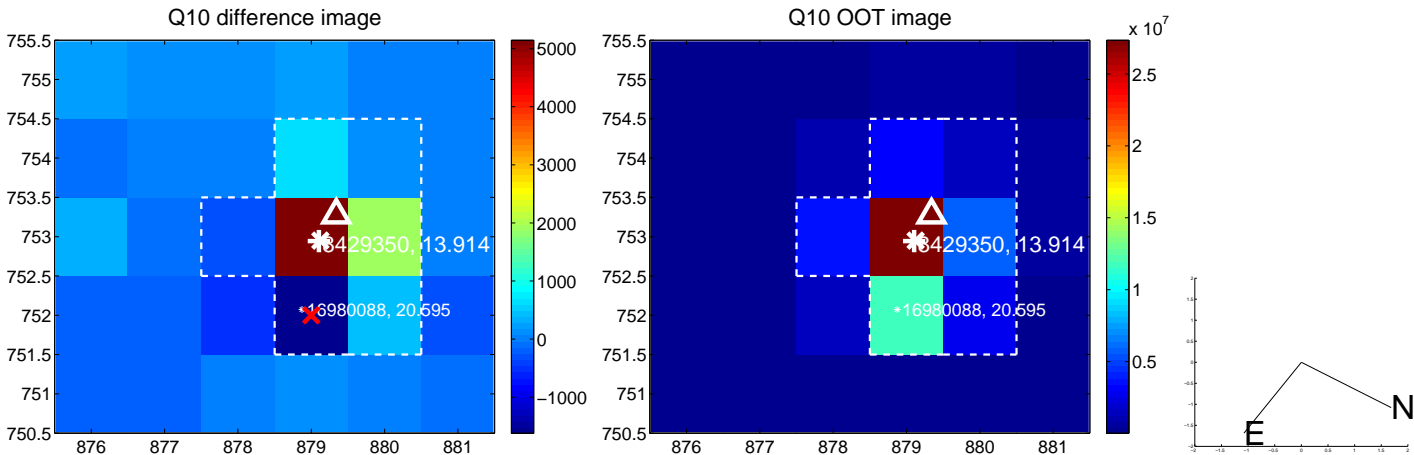
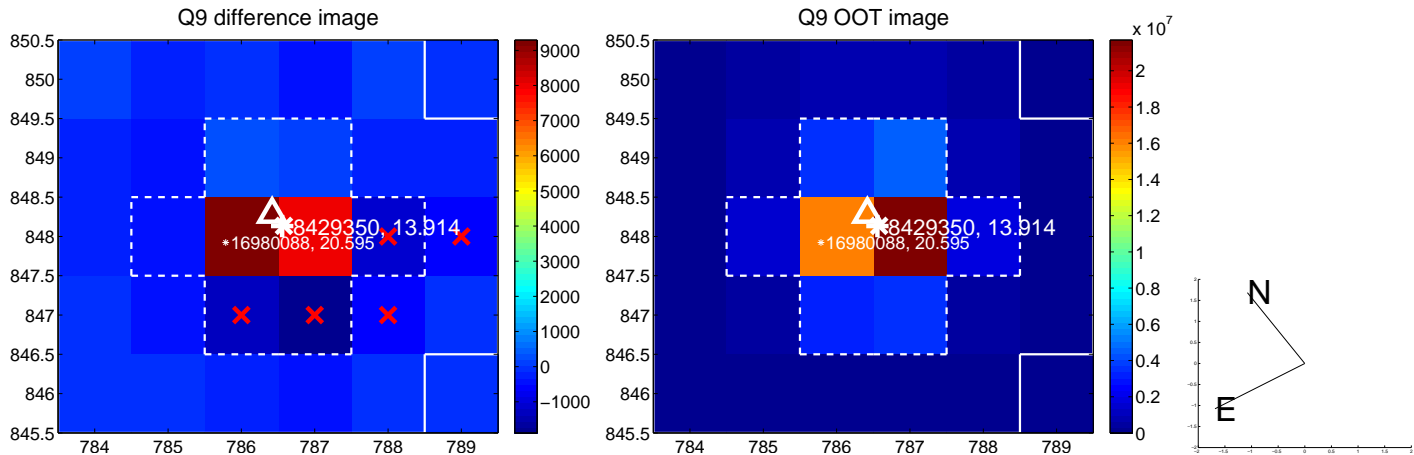


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

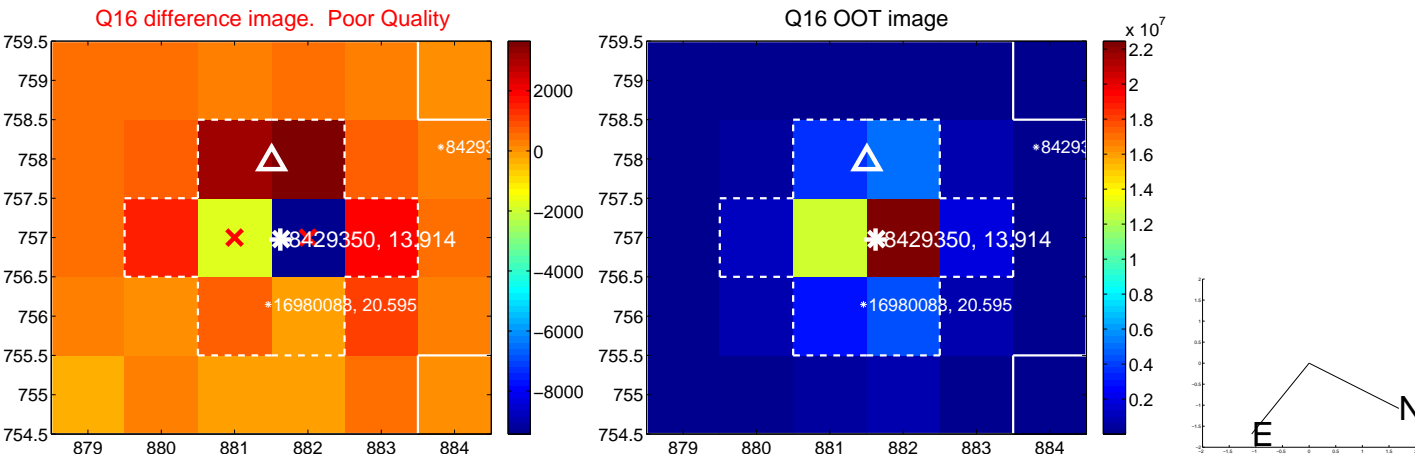
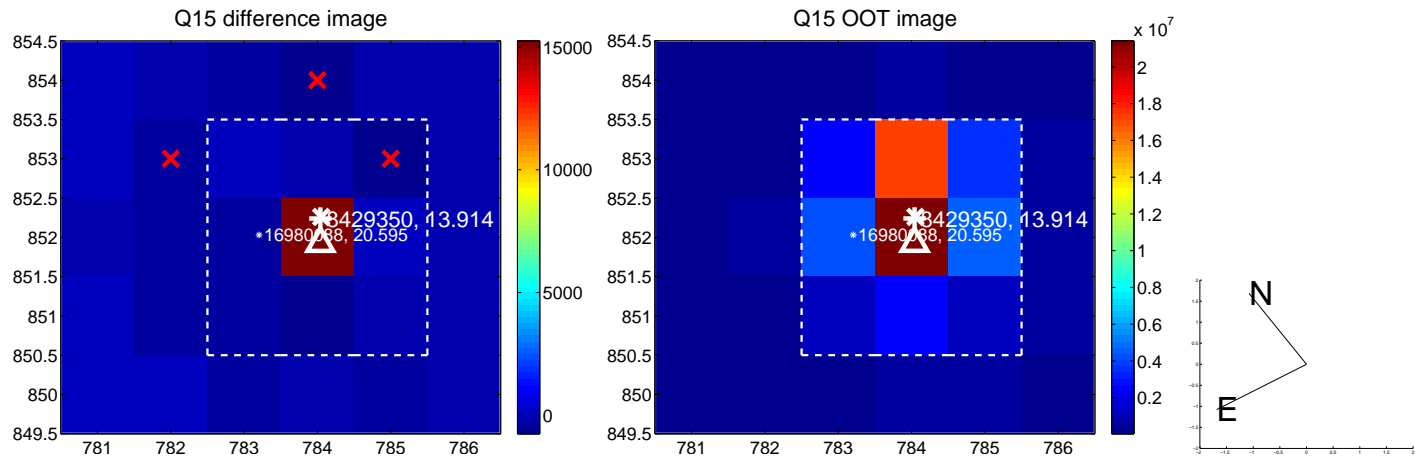
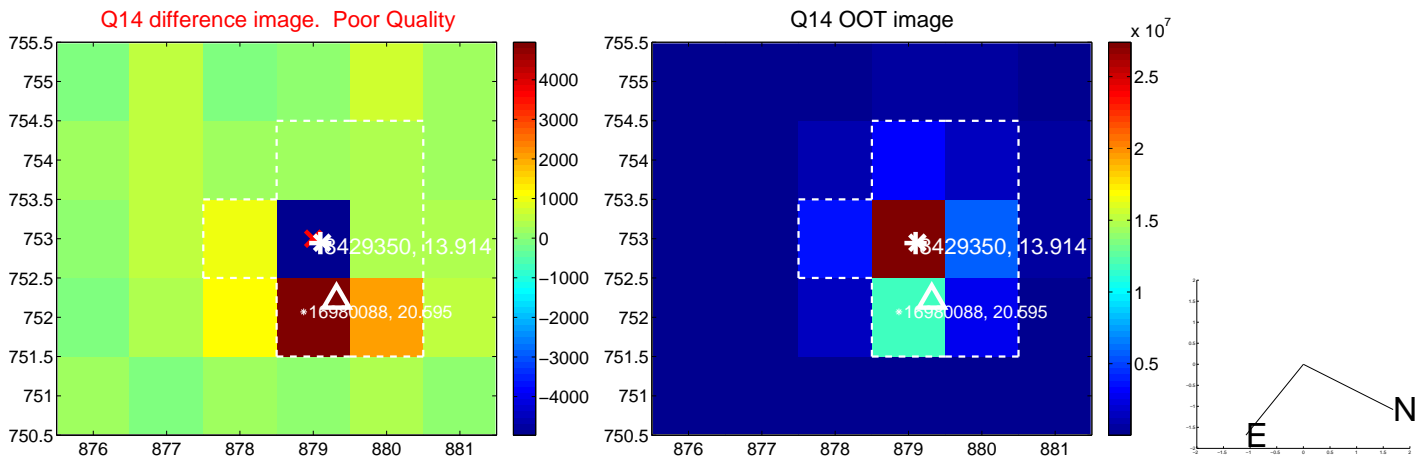
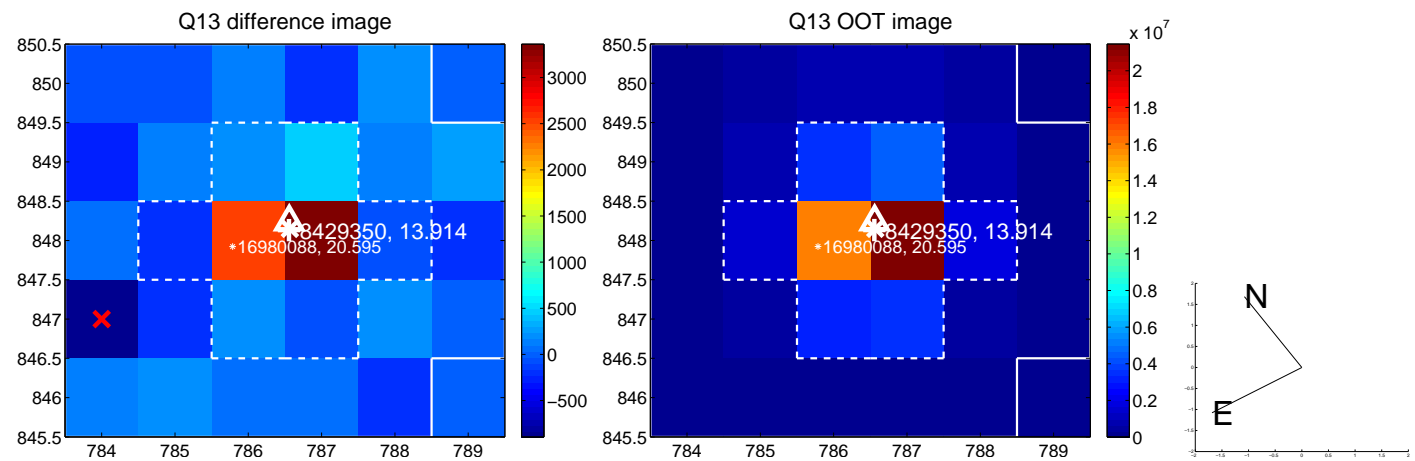




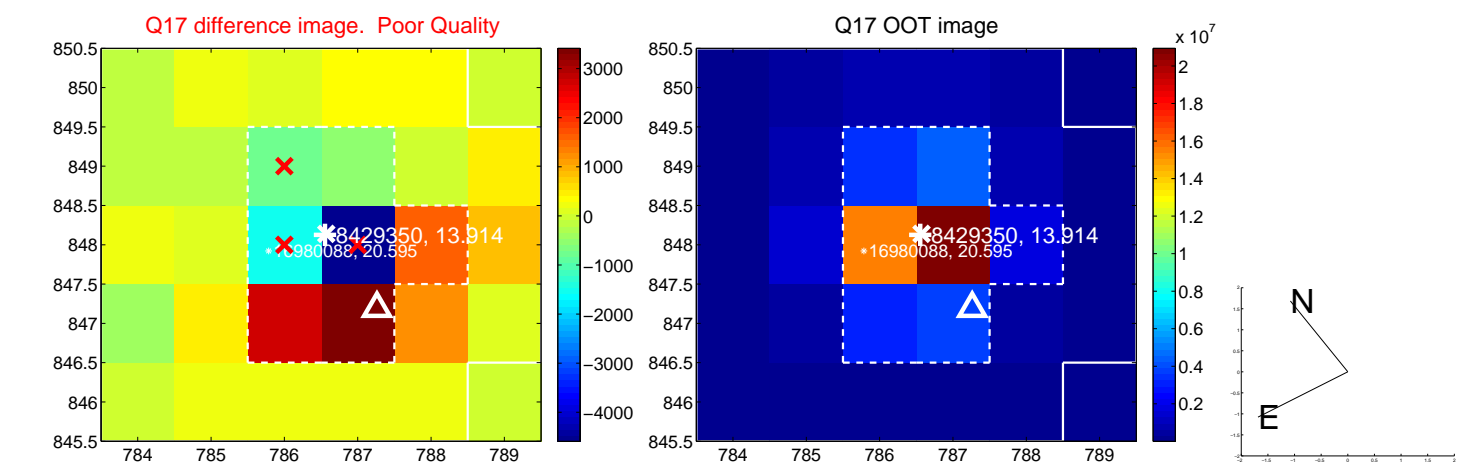
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



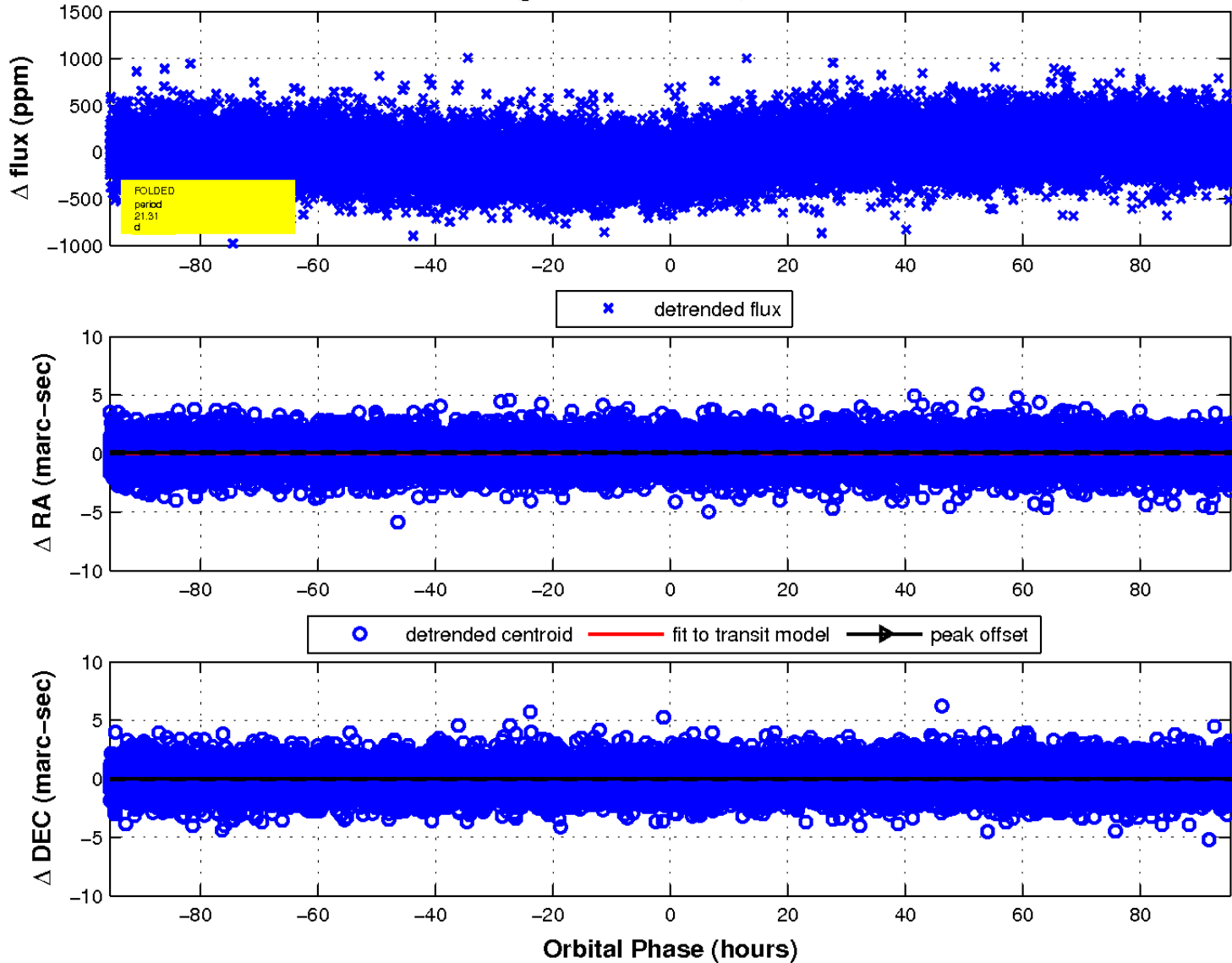
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



# UKIRT Image

Declination

