

# KIC 008299955

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R <sub>★</sub> (R <sub>☉</sub> )	T <sub>★</sub> (K)	R <sub>p</sub> (R <sub>⊕</sub> )	S <sub>p</sub> (S <sub>⊕</sub> )
008299955-01	OBS	1147.01	2.682769	131.572627	85.7	2.908	22.6	26.1	1.22	6180	1.33	1370.95

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008299955-01	OBS	FP	0.00	0	0	1	1	CENT_RESOLVED_OFFSET—EPHEM_MATCH

**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.

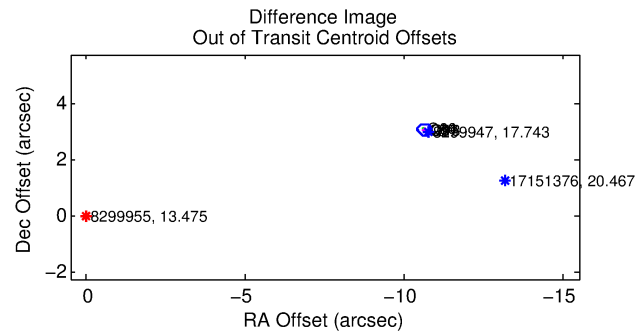
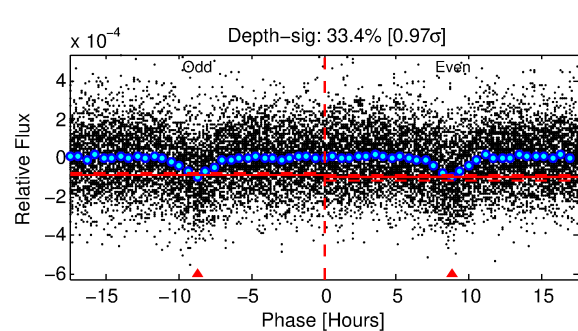
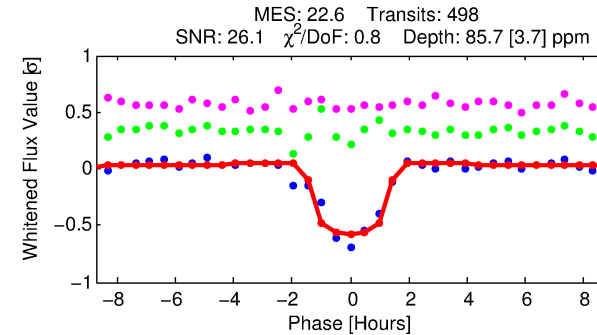
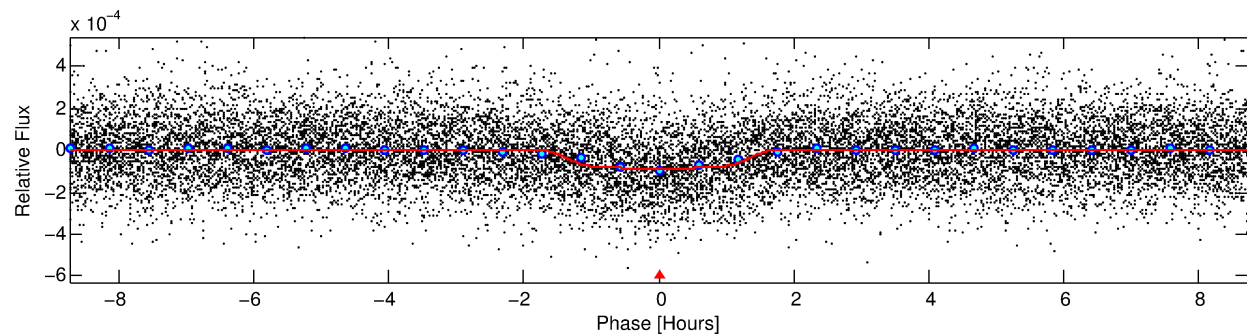
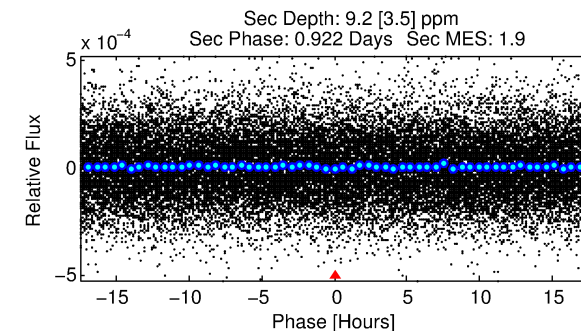
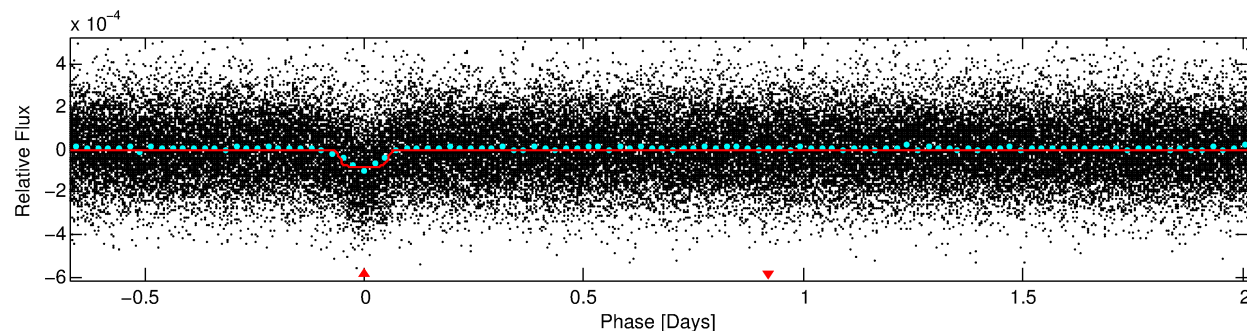
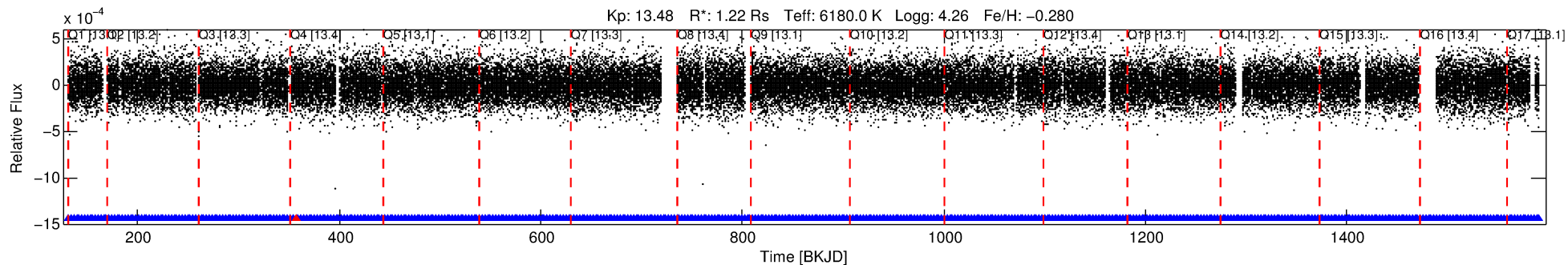
## Ephemeris Match Information For 008299955-01

TCE (1)	KIC	Parent (2)	Parent KIC	P <sub>1</sub> :P <sub>2</sub>	Dist (″)	ΔRow	ΔCol	m <sub>2</sub>	m <sub>1</sub>	D <sub>2</sub> /D <sub>1</sub>	Mechanism	Flag	σ <sub>P</sub>	σ <sub>T</sub>
008299955-01	8299955	3631.01	8299947	1:1	11.2	-2	-2	17.74	13.47	5749.80	Direct-PRF	0	0.08	0.07

**Notes:** P<sub>1</sub>:P<sub>2</sub> is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m<sub>2</sub> and m<sub>1</sub> are the magnitudes of the parent and child. D<sub>2</sub>/D<sub>1</sub> is the parent's transit depth divided by the child's. σ<sub>P</sub> and σ<sub>T</sub> are the significance of the match in period and epoch. For a match to be considered significant σ<sub>P</sub> < 5.0 and σ<sub>T</sub> < 5.0. Matches which have σ<sub>P</sub> and σ<sub>T</sub> very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 8299955 Candidate: 1 of 1 Period: 2.683 d  
KOI: K01147.01 Corr: 0.990



## DV Fit Results:

Period = 2.68277 [0.00001] d  
Epoch = 131.5726 [0.0016] BKJD  
Rp/R\* = 0.0100 [0.0022]  
a/R\* = 3.35 [3.78]  
b = 0.90 [0.26]  
Seff = 1370.95 [499.93]  
Teq = 1552 [141] K  
Rp = 1.33 [0.48] Re  
a = 0.0378 [0.0088] AU  
Ag = 4.06 [2.77] [1.11σ]  
Teffp = 3406 [516] K [3.46σ]

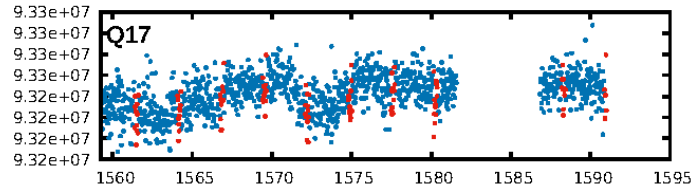
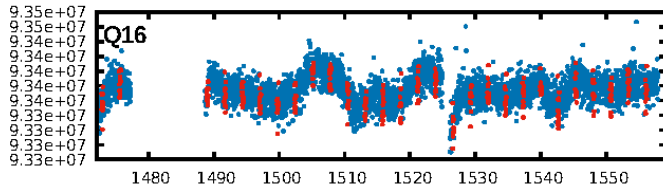
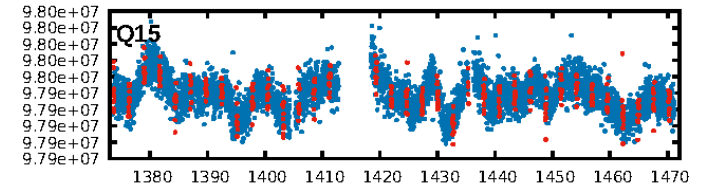
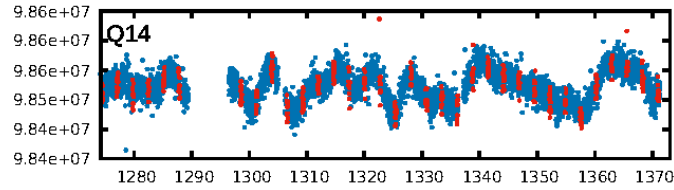
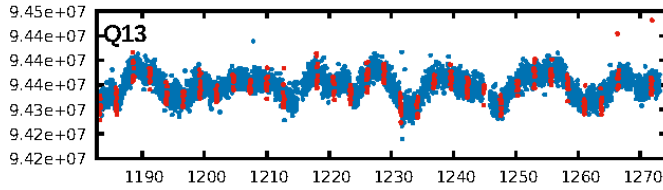
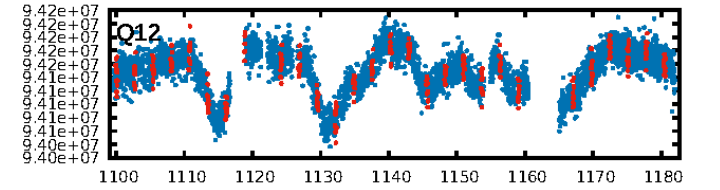
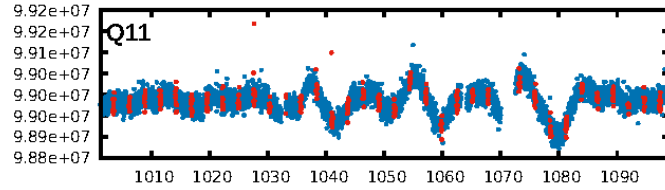
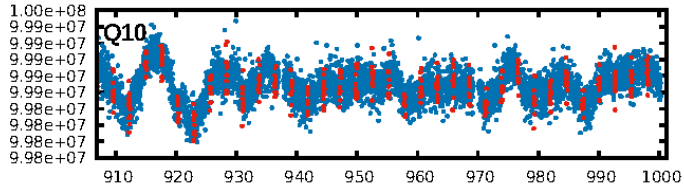
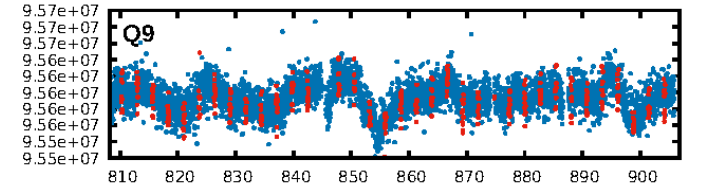
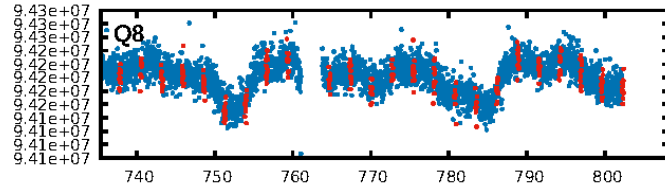
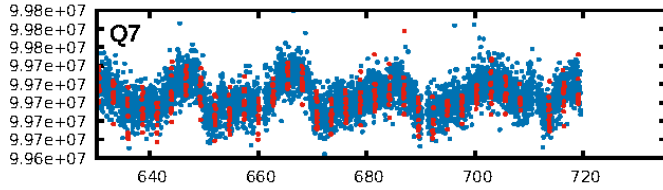
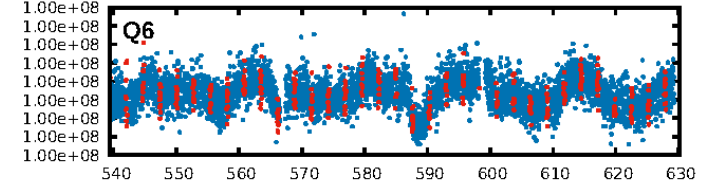
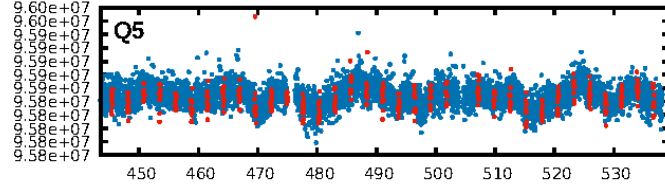
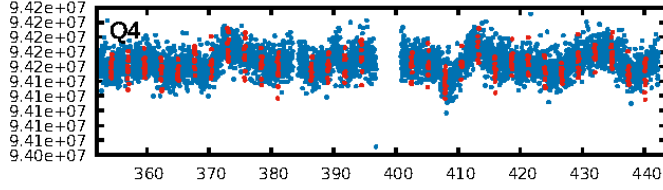
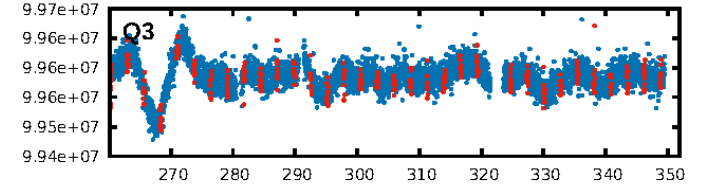
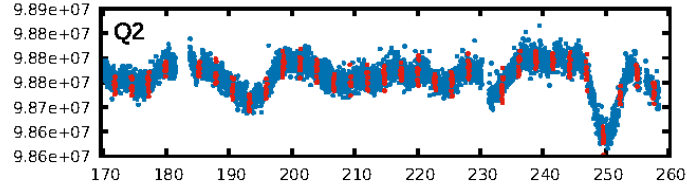
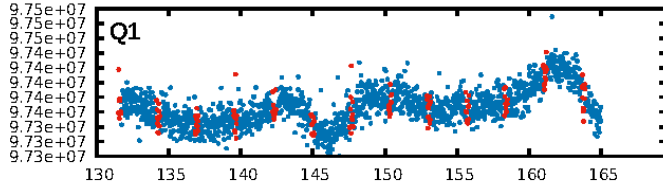
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.42e-109  
RollingBand-fgt: 1.00 [474/475]  
GhostDiagnostic-chr: -0.43  
Centroid-sig: 0.0%  
Centroid-so: 182.372 arcsec [366.41σ]  
OotOffset-rm: 11.074 arcsec [162.11σ]  
KicOffset-rm: 11.059 arcsec [161.75σ]  
OotOffset-st: 4/0/0/5 [9]  
KicOffset-st: 4/0/0/5 [9]  
DiffImageQuality-fgm: 1.00 [9/9]  
DiffImageOverlap-fno: 1.00 [17/17]

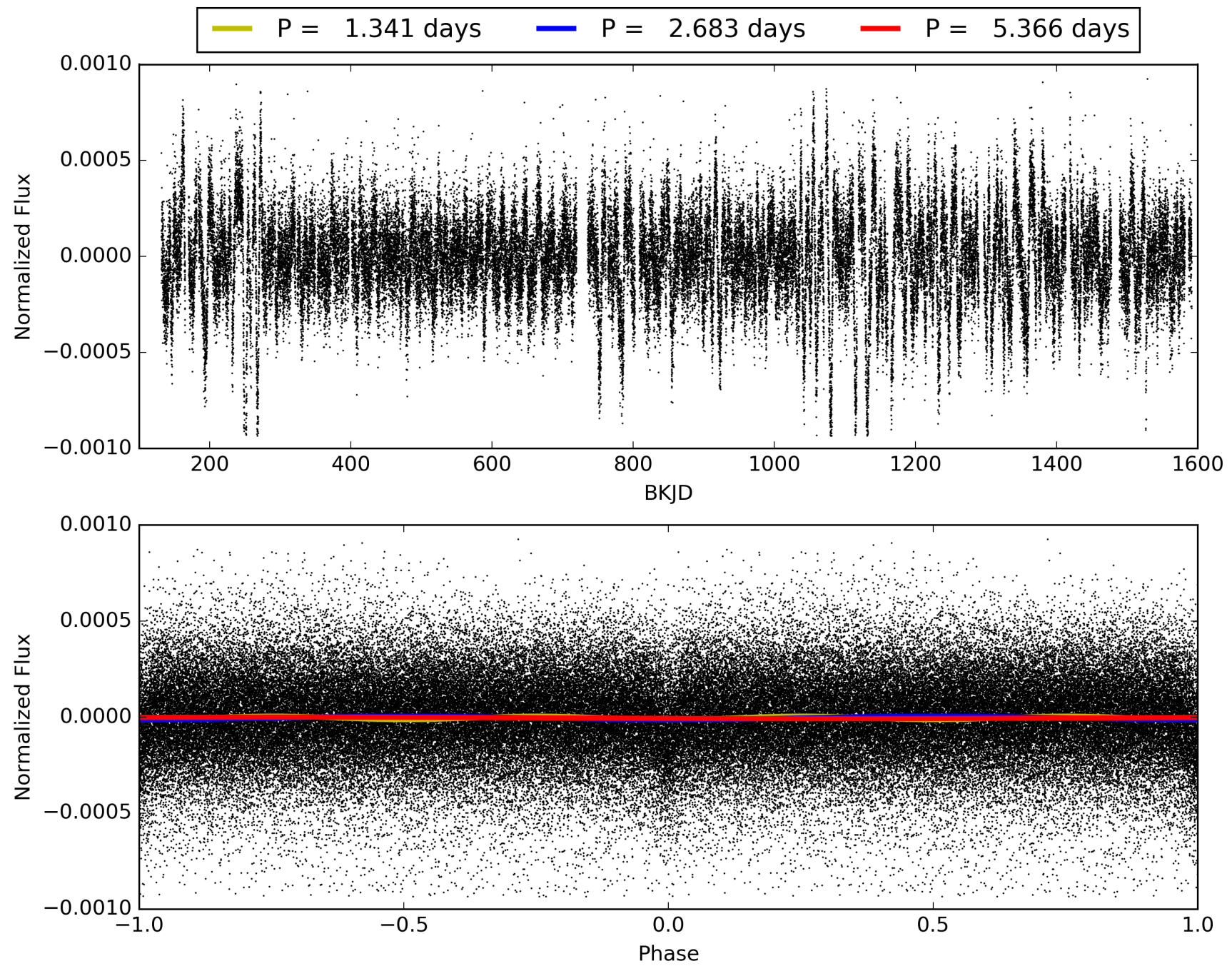
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008299955-01, PDC Light Curves



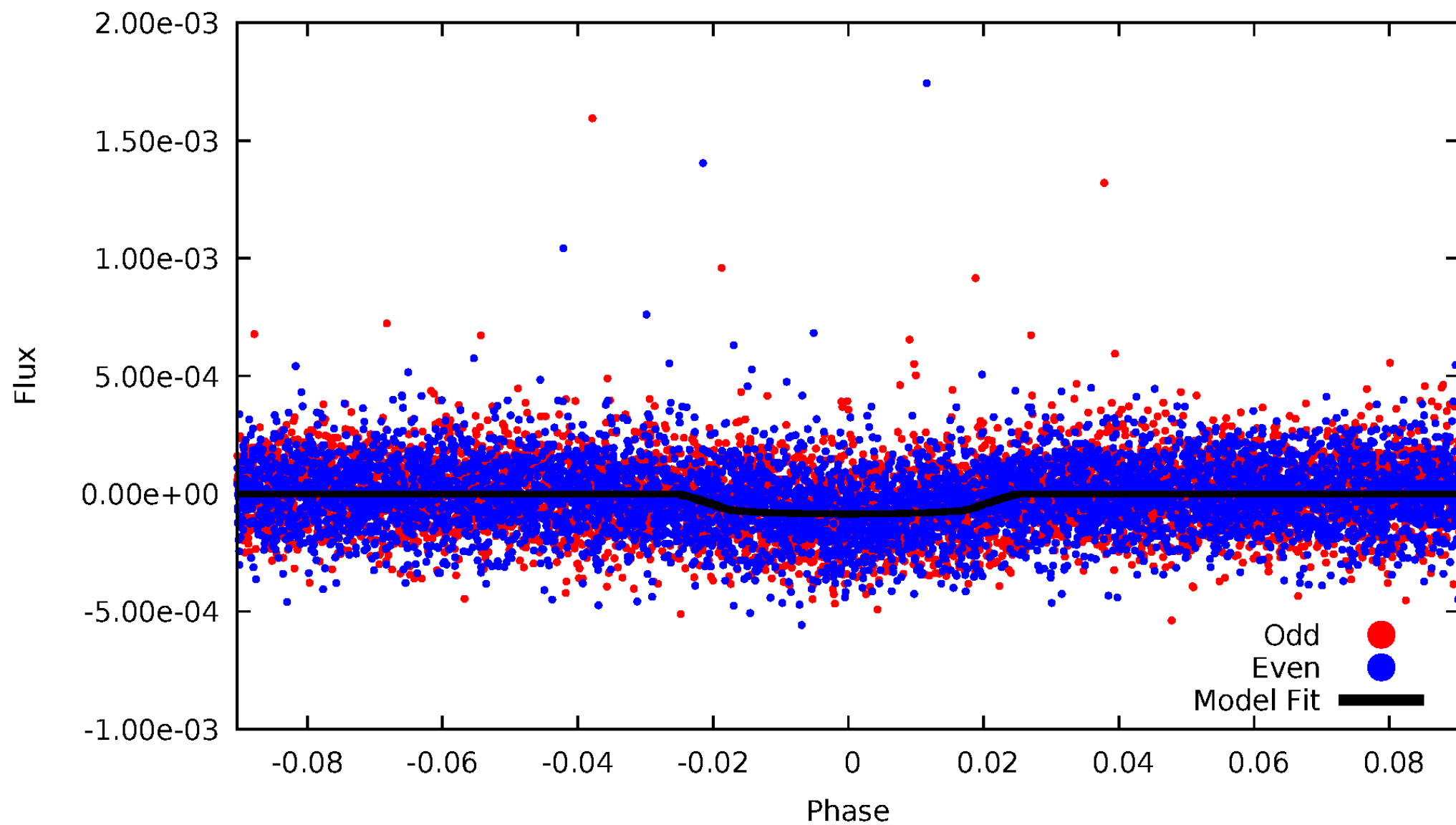
TCE 008299955-01





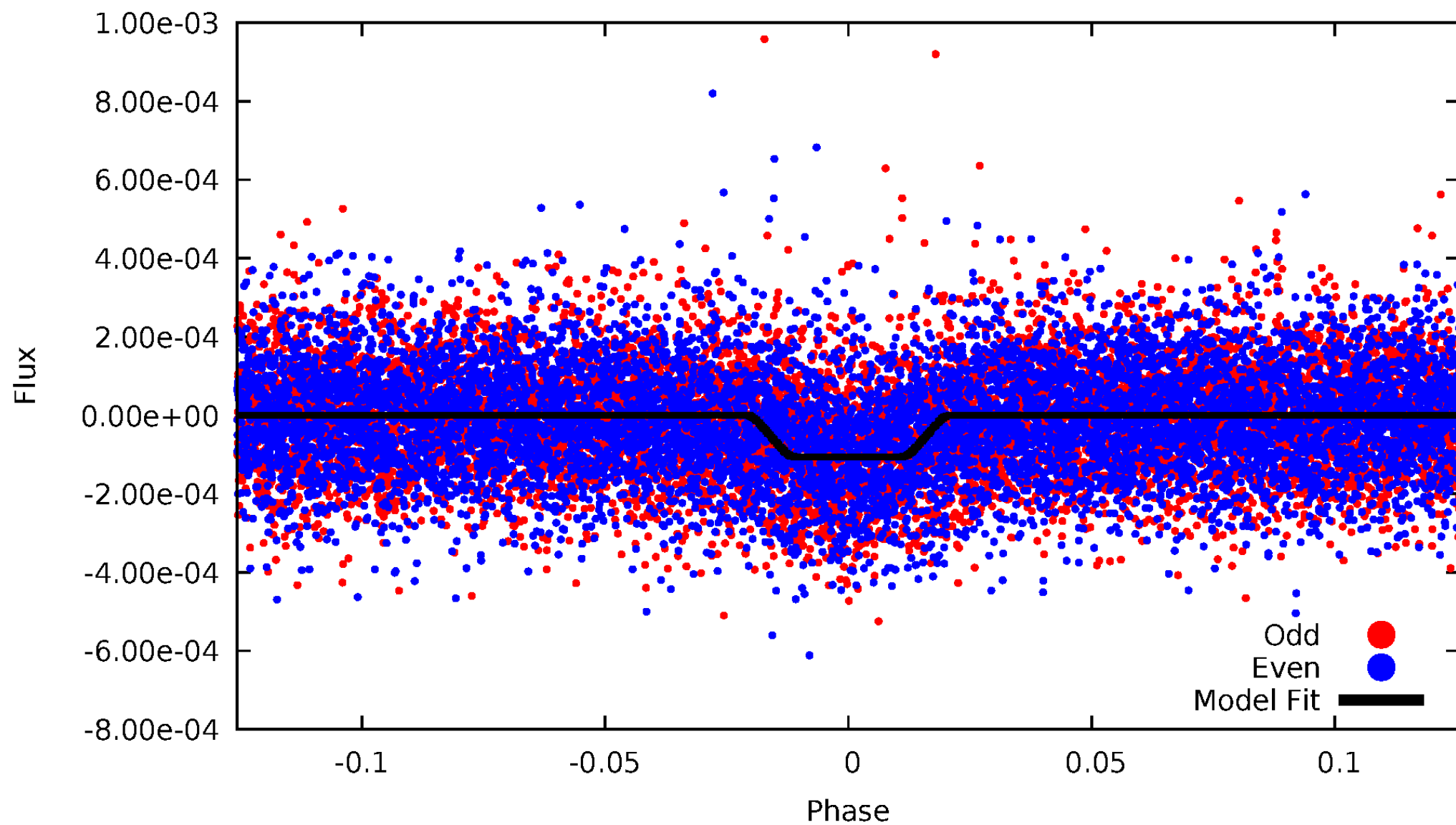
# DV Odd/Even

TCE 008299955-01



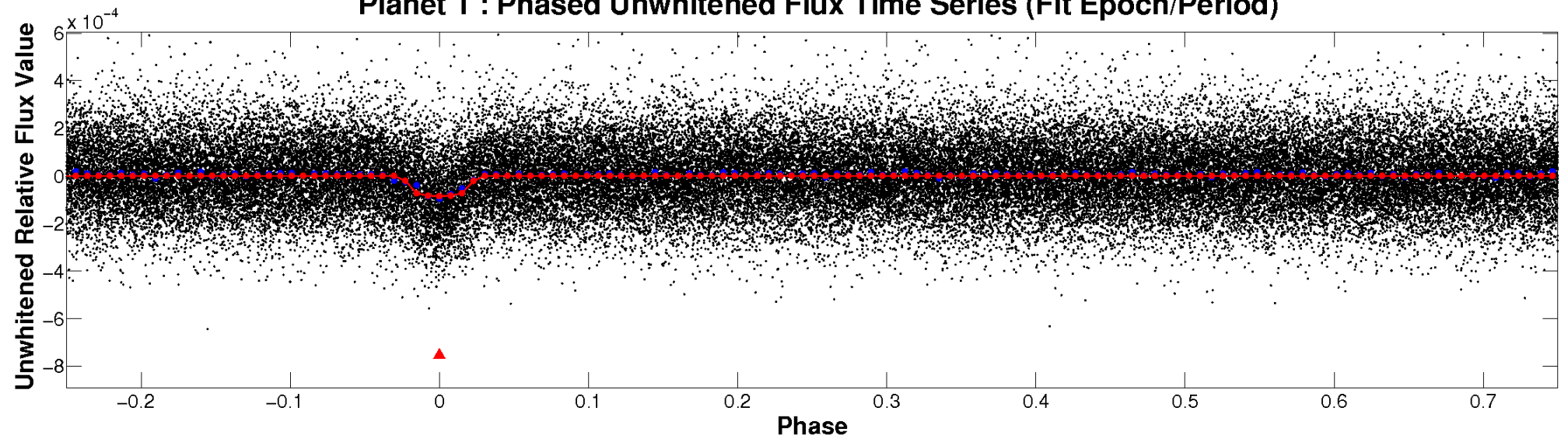
# ALT Odd/Even

TCE 008299955-01

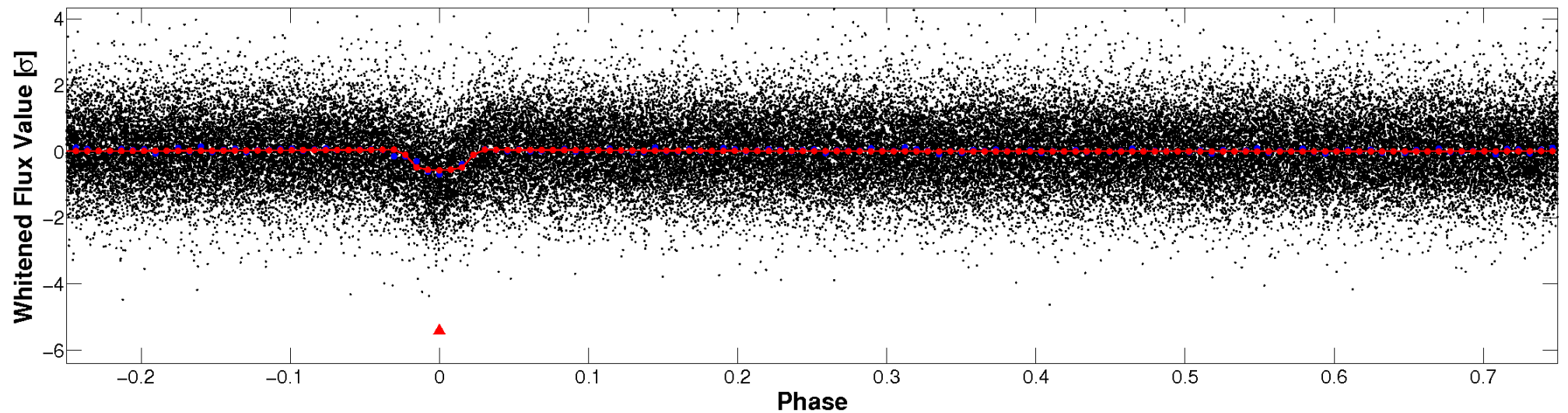


# Non-Whitened Vs. Whitened Light Curve

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

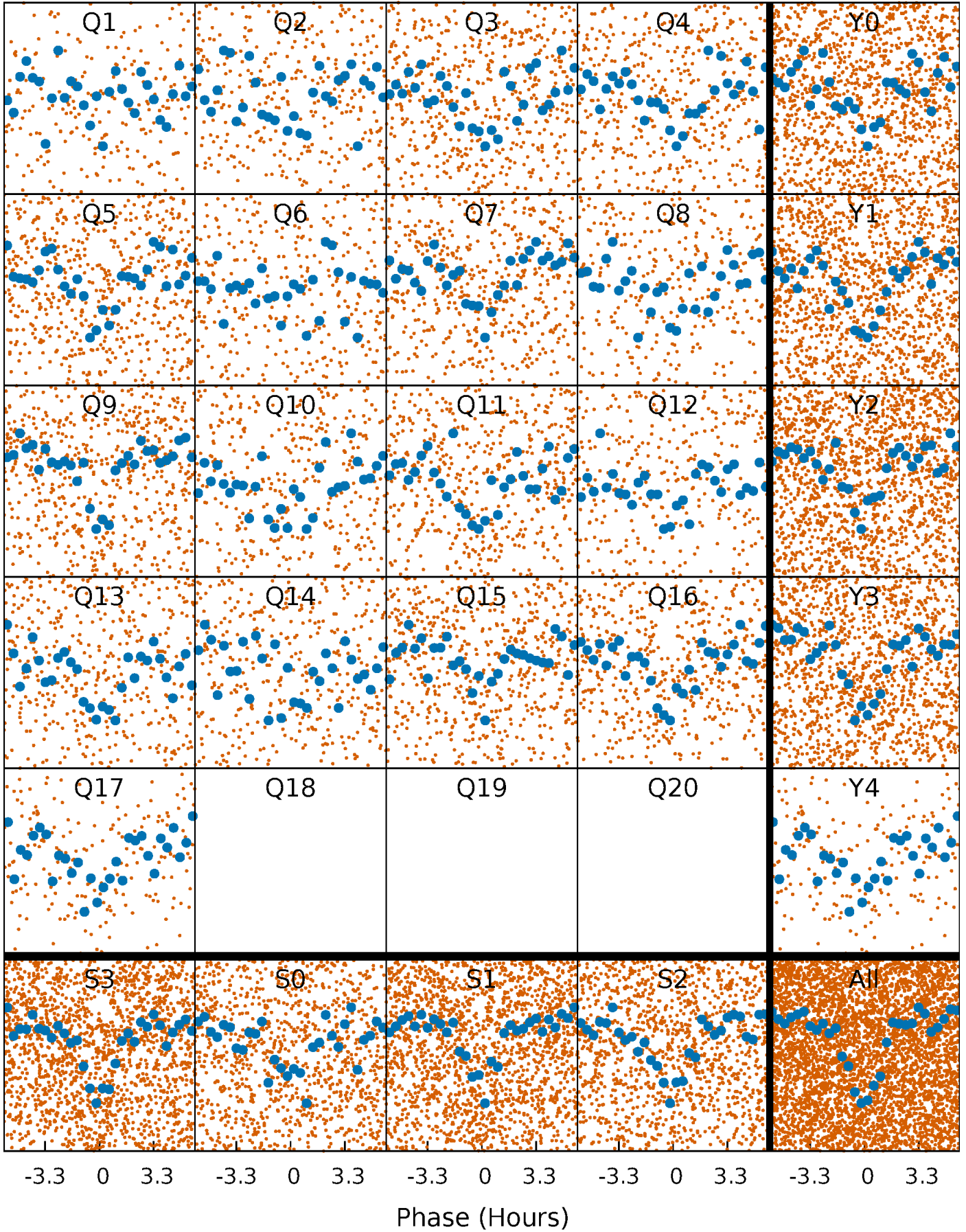


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

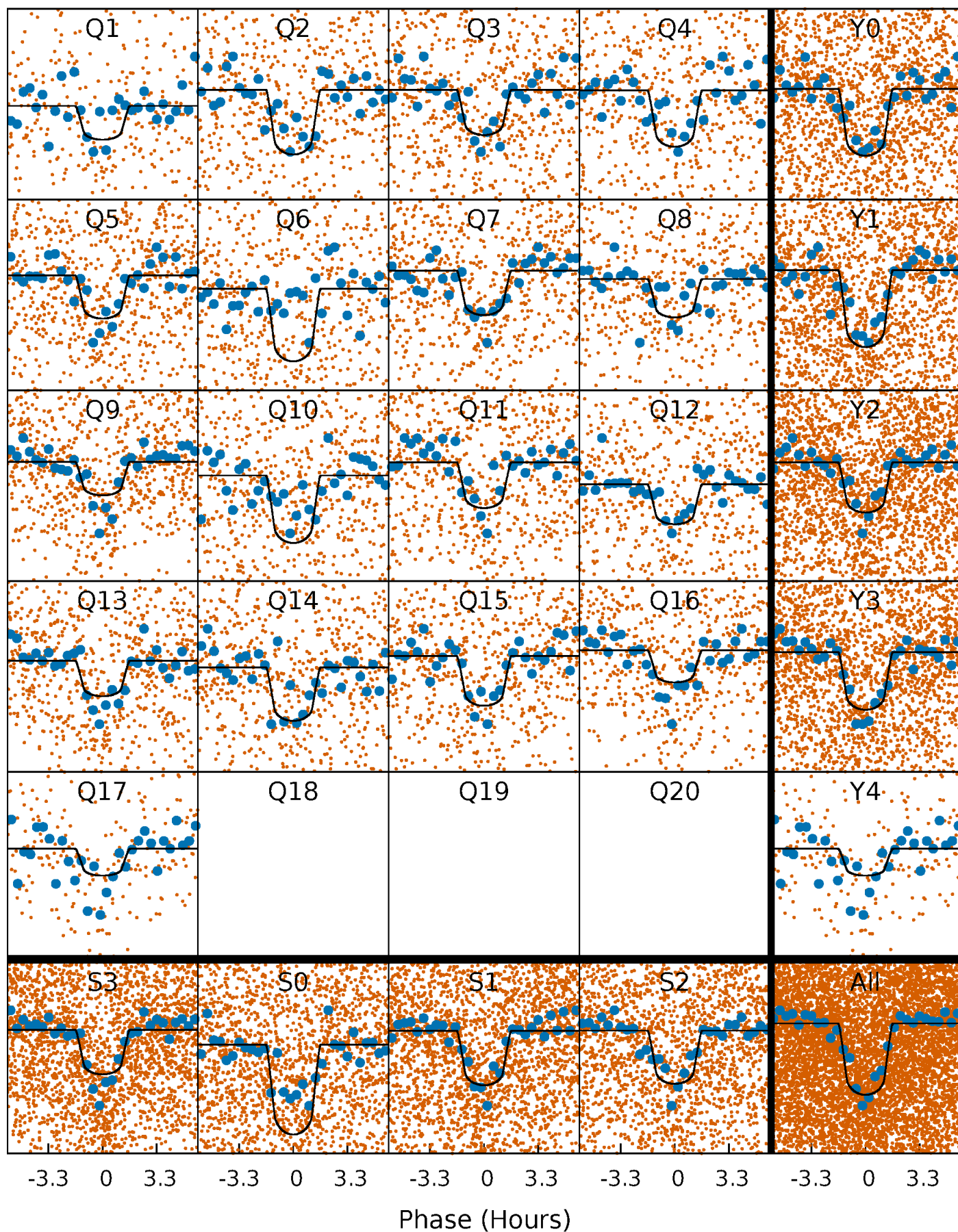
TCE 008299955-01   P= 2.682769 Days    $T_0=131.572627$  (BKJD)





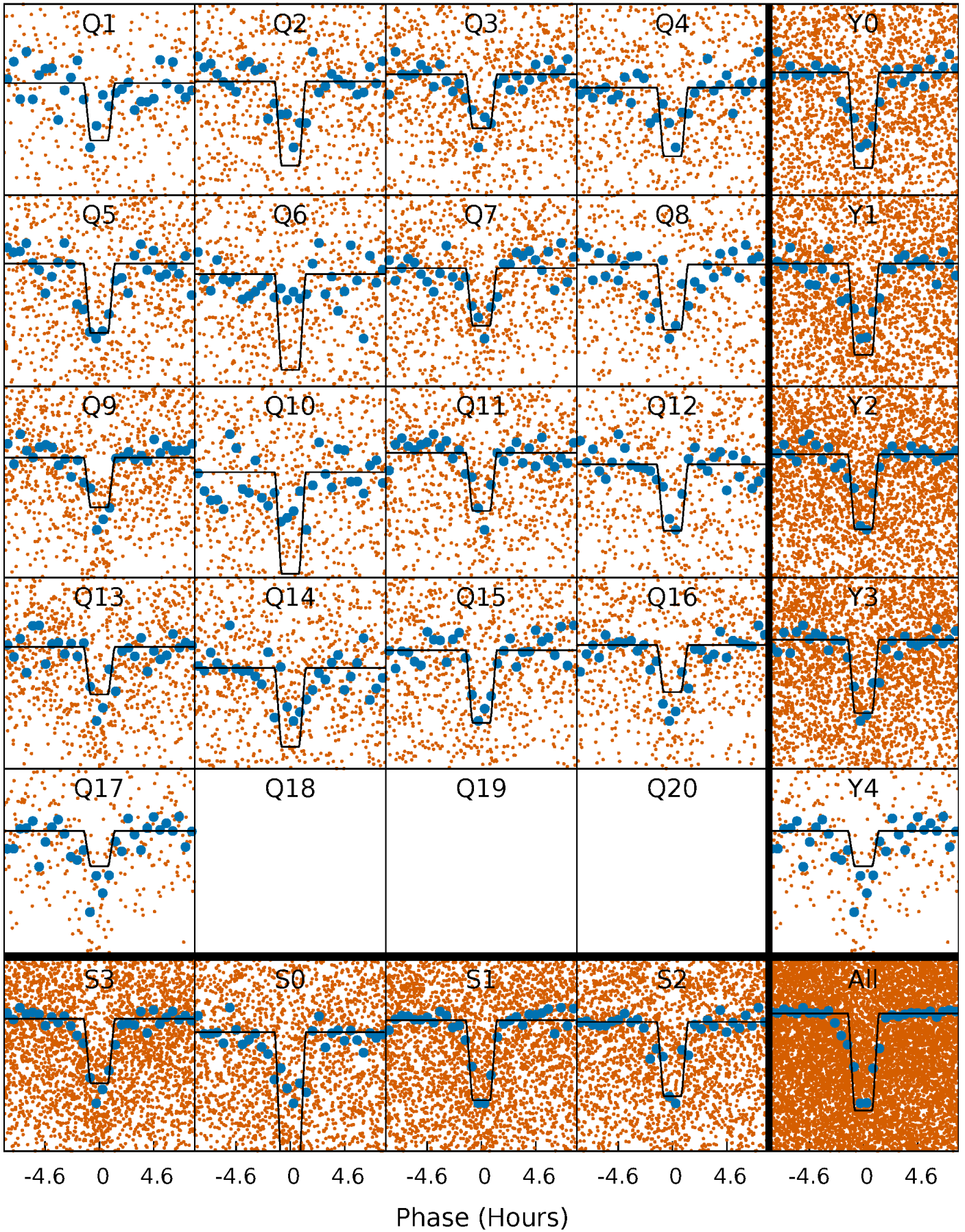
# DV Quarter-Phased Transit Curves

TCE 008299955-01 P= 2.682769 Days  $T_0=131.572627$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

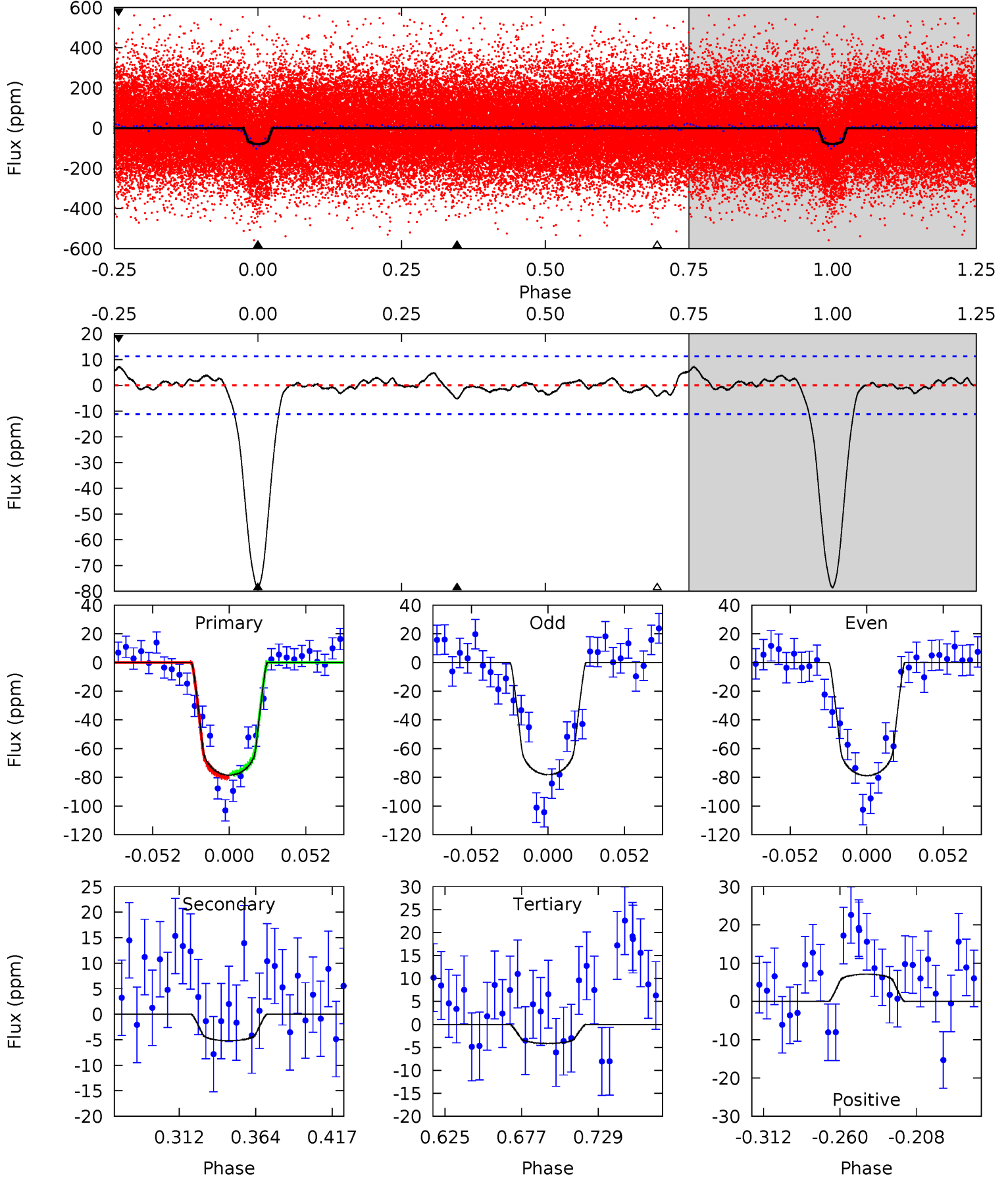
TCE 008299955-01 P= 2.682751 Days  $T_0=131.576421$  (BKJD)



# DV Model-Shift Uniqueness Test

008299955-01, P = 2.682769 Days, E = 128.889858 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
32.9	2.18	1.73	2.99	4.70	1.94	0.87	31.1	29.9	0.45	-0.81	0.14	1.02	0.08	0.54

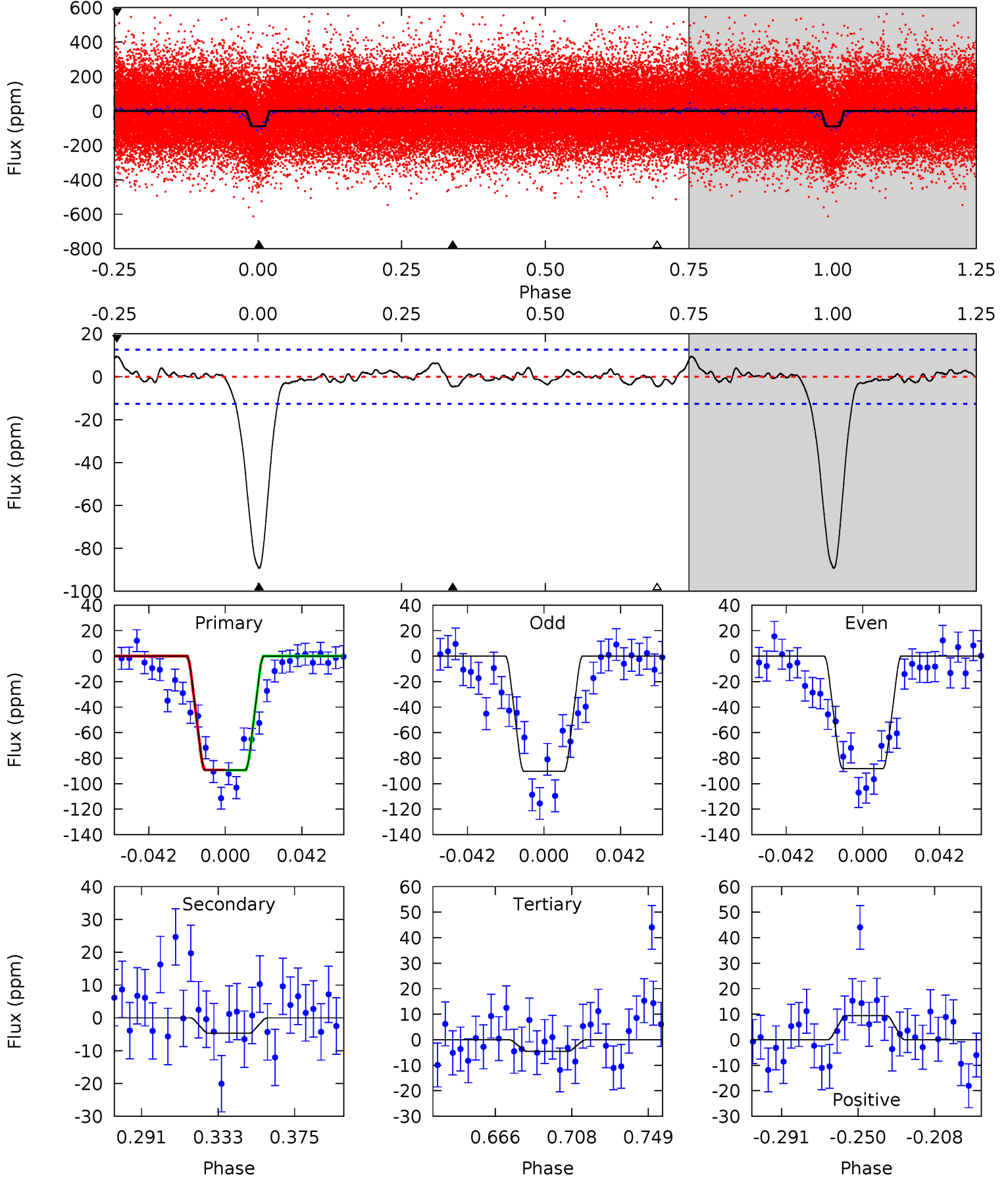




# Alt Model-Shift Uniqueness Test

008299955-01, P = 2.682751 Days, E = 128.893670 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
33.7	1.77	1.72	3.56	4.75	2.04	0.91	32.0	30.1	0.06	-1.78	0.41	1.00	0.10	0.02





### Stellar Parameters For KIC 008299955

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6180^{+169}_{-206}$	$4.262^{+0.185}_{-0.185}$	$-0.280^{+0.300}_{-0.300}$	$1.223^{+0.341}_{-0.279}$	$0.997^{+0.158}_{-0.115}$	$0.768^{+0.725}_{-0.372}$
	+3%/-3%	+4%/-4%	+107%/-107%	+28%/-23%	+16%/-12%	+94%/-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 008299955-01 / KOI 1147.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-5 \pm 2$	$1.35^{+0.40}_{-0.36}$	$2178^{+161}_{-158}$	$3343^{+430}_{-456}$	$2.065^{+2.263}_{-1.121}$
Alt.	$-5 \pm 3$	$1.36^{+0.34}_{-0.34}$	$2168^{+152}_{-148}$	$3265^{+441}_{-502}$	$1.947^{+2.005}_{-1.221}$

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

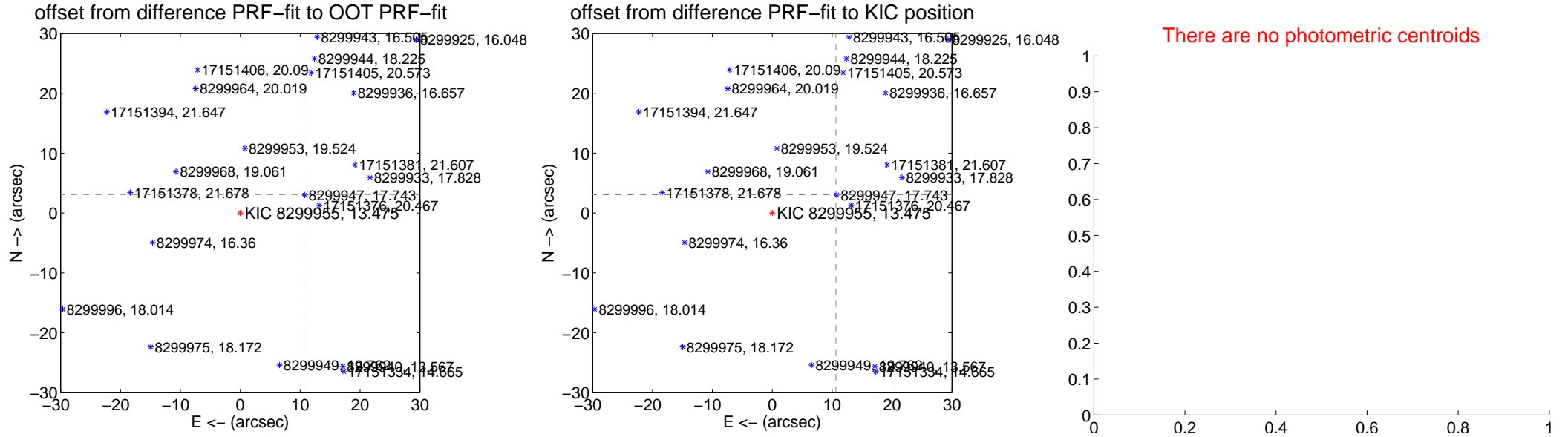
## DV Centroid Data

Supplemental centroid analysis for 008299955-01. Kepler magnitude: 13.47. Transit SNR 26.07

There are 9 quarters with good PRF difference image offsets

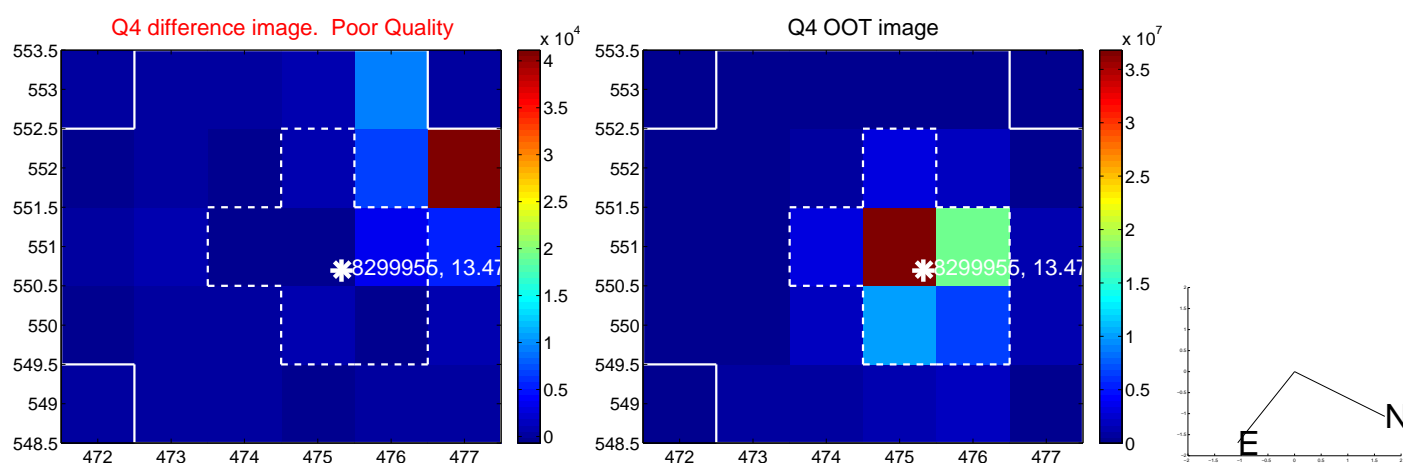
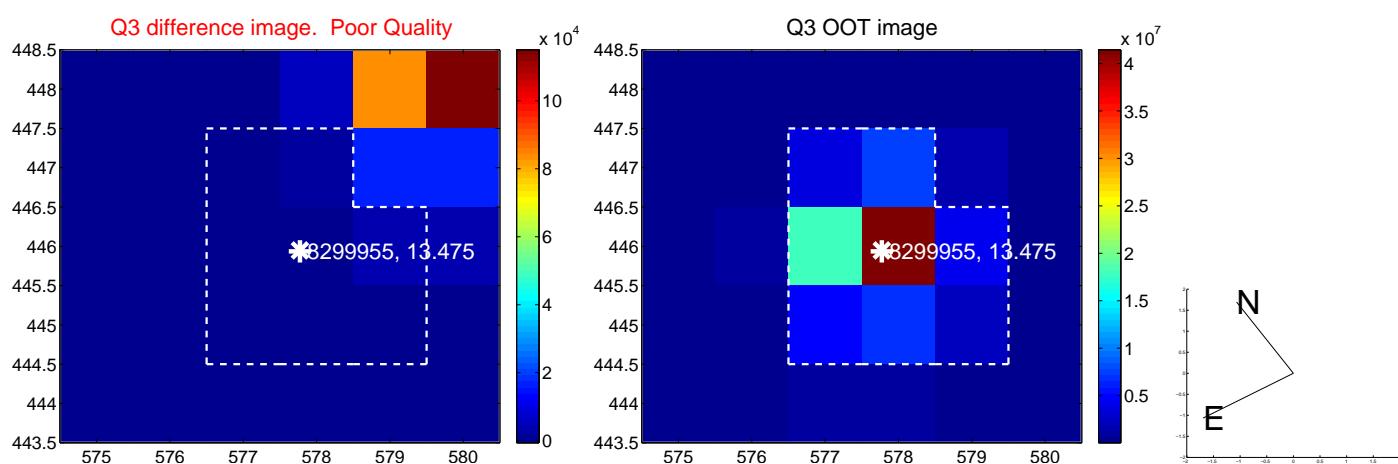
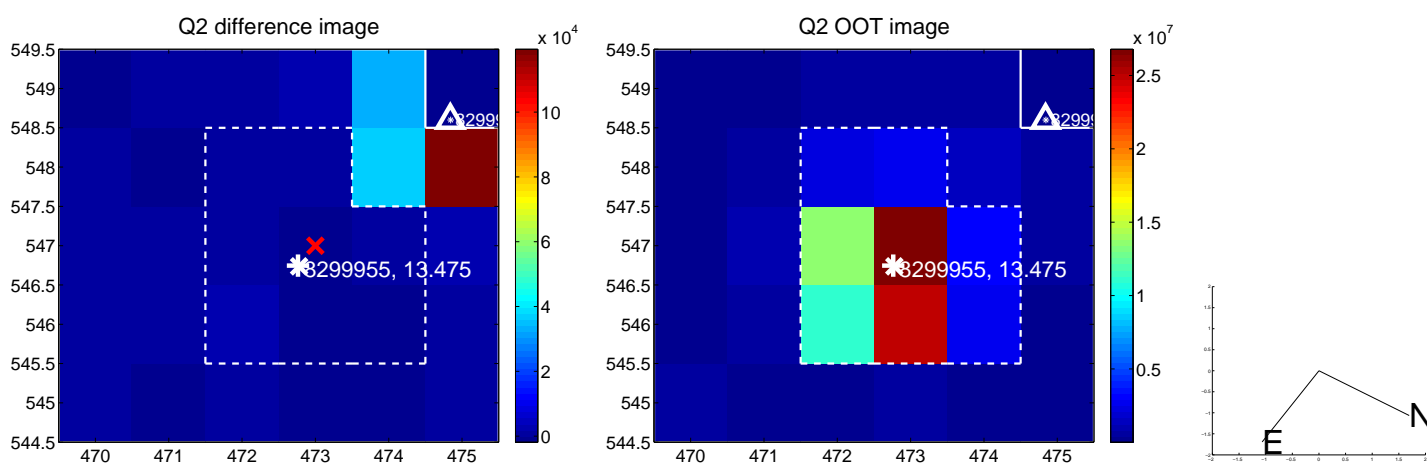
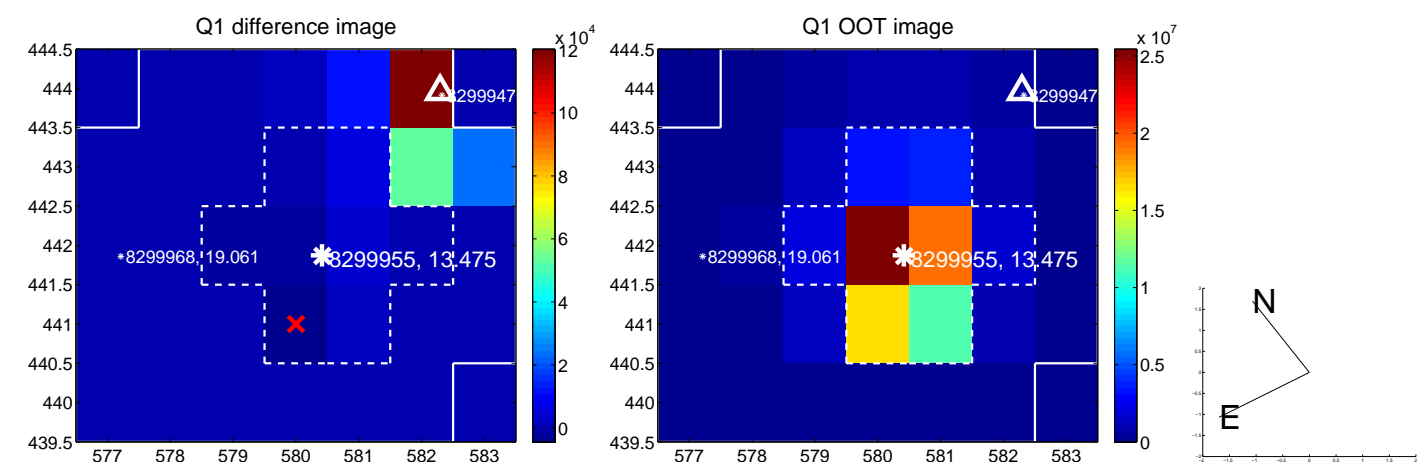
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b>11.074 <math>\pm</math> 0.068</b>	<b>162.11</b>	-10.640 $\pm$ 0.068	3.068 $\pm$ 0.068
PRF-fit source offset from KIC position	<b>11.059 <math>\pm</math> 0.068</b>	<b>161.75</b>	-10.632 $\pm$ 0.068	3.045 $\pm$ 0.067
photometric centroid source offset	—	—	—	—

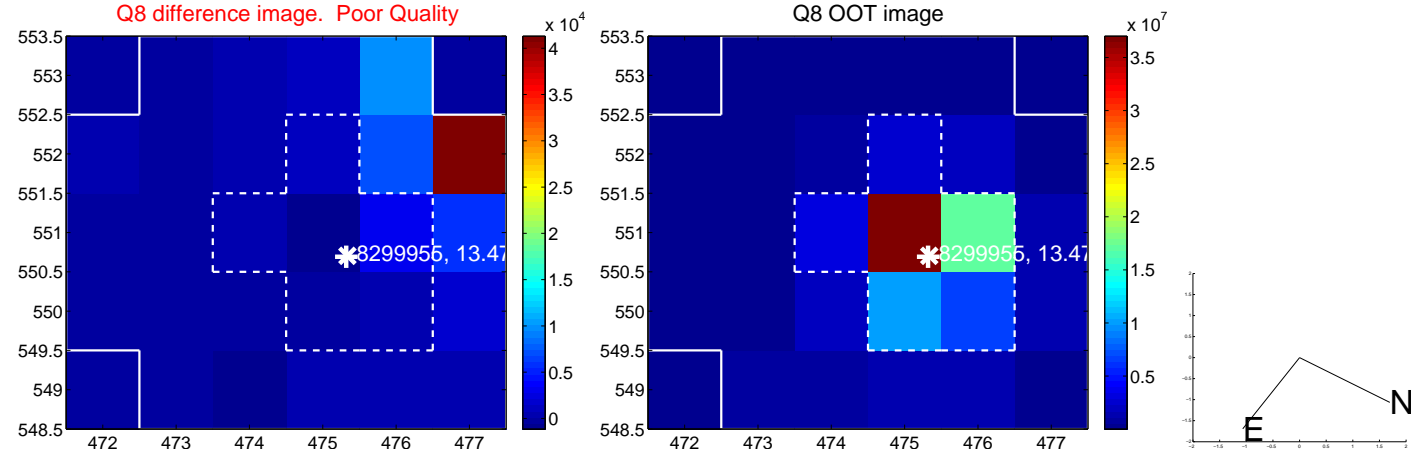
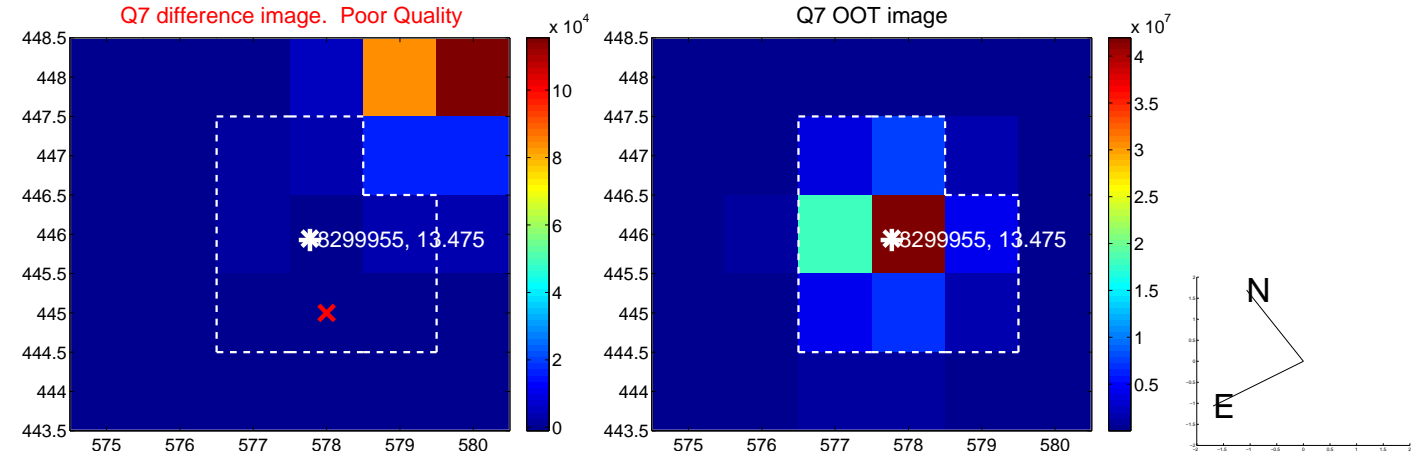
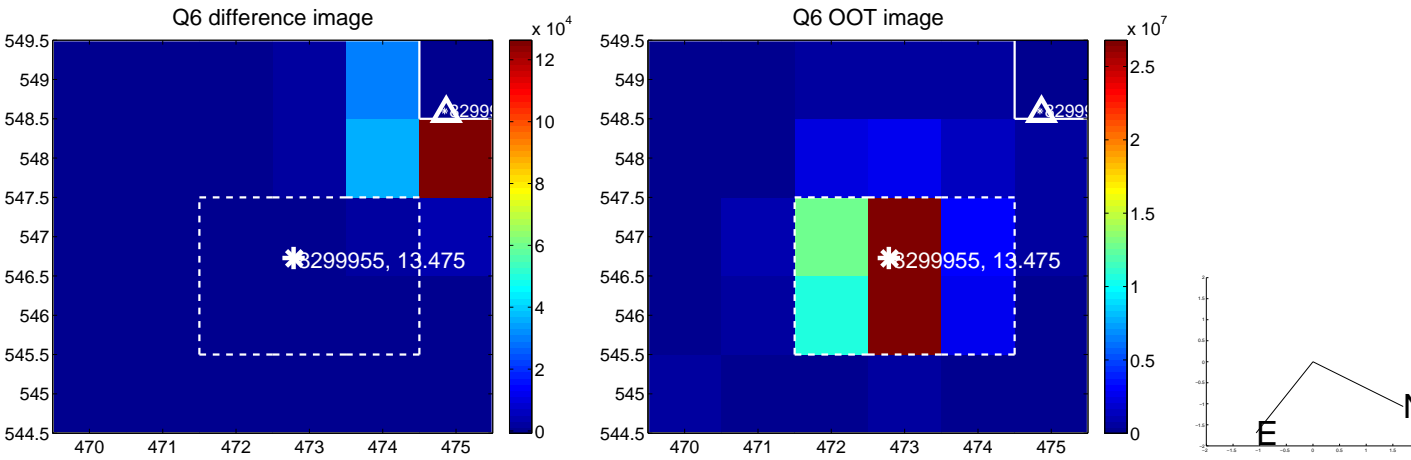
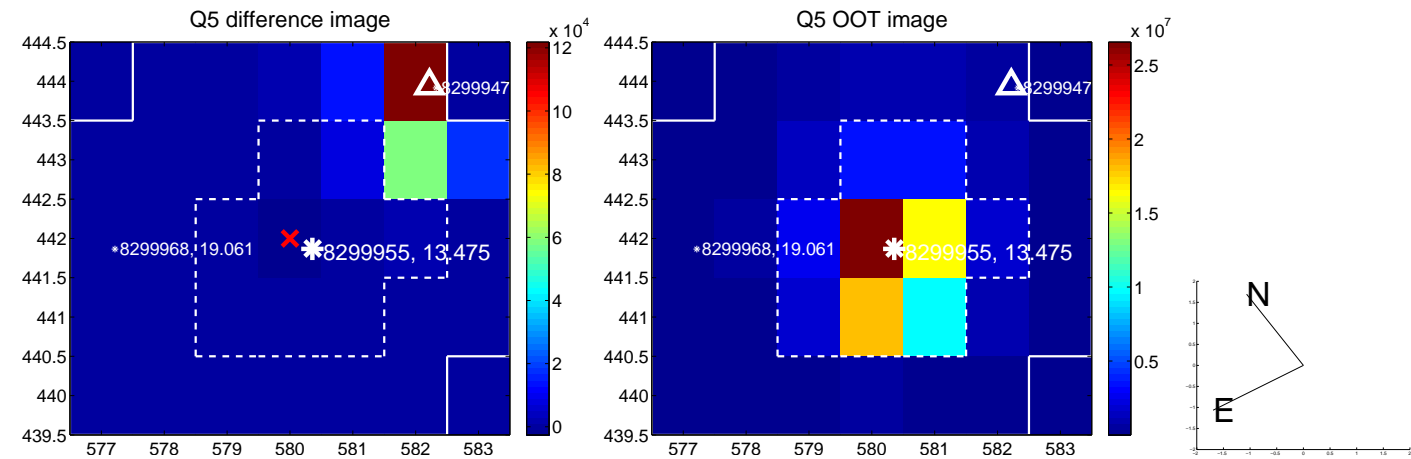


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

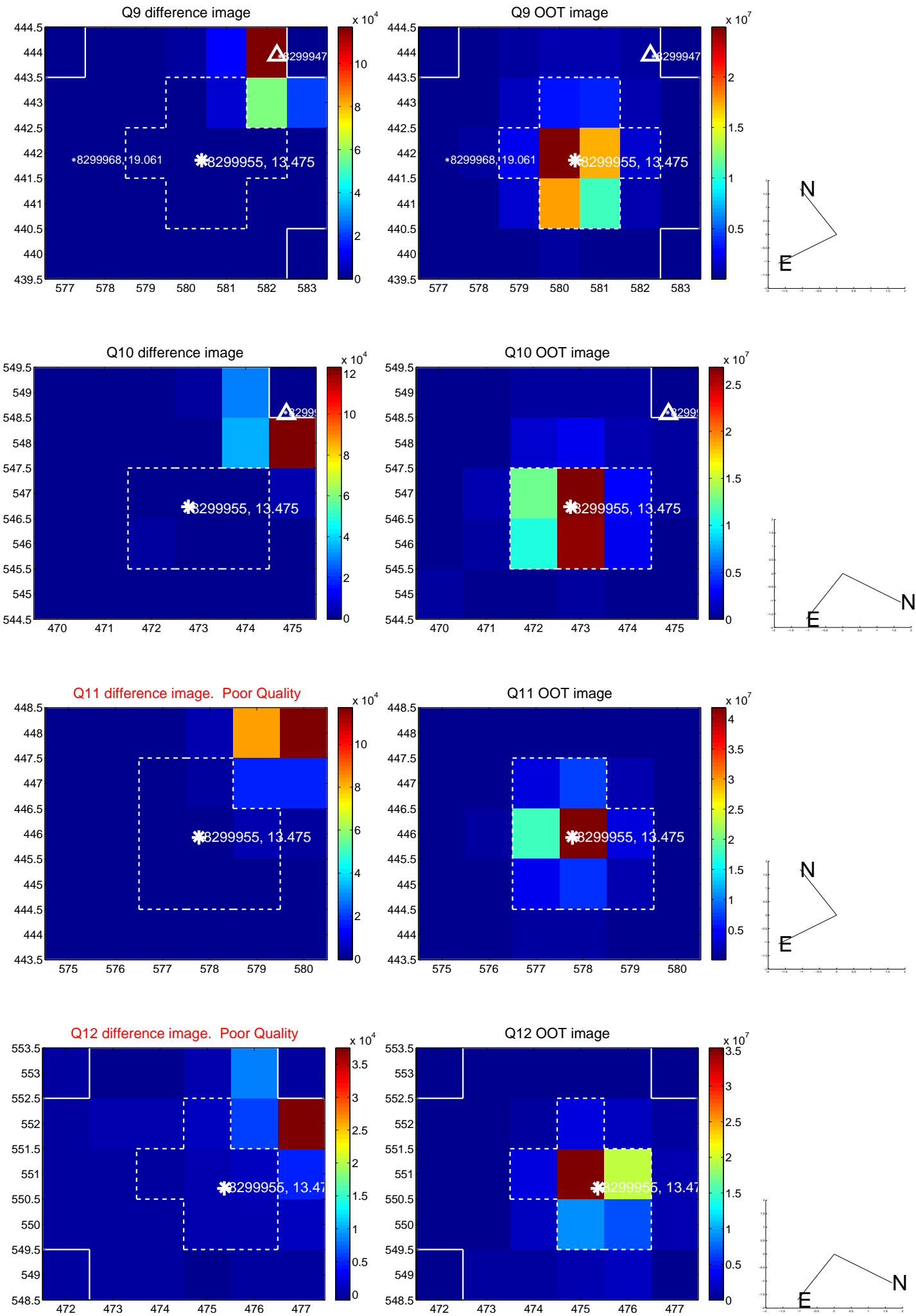


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

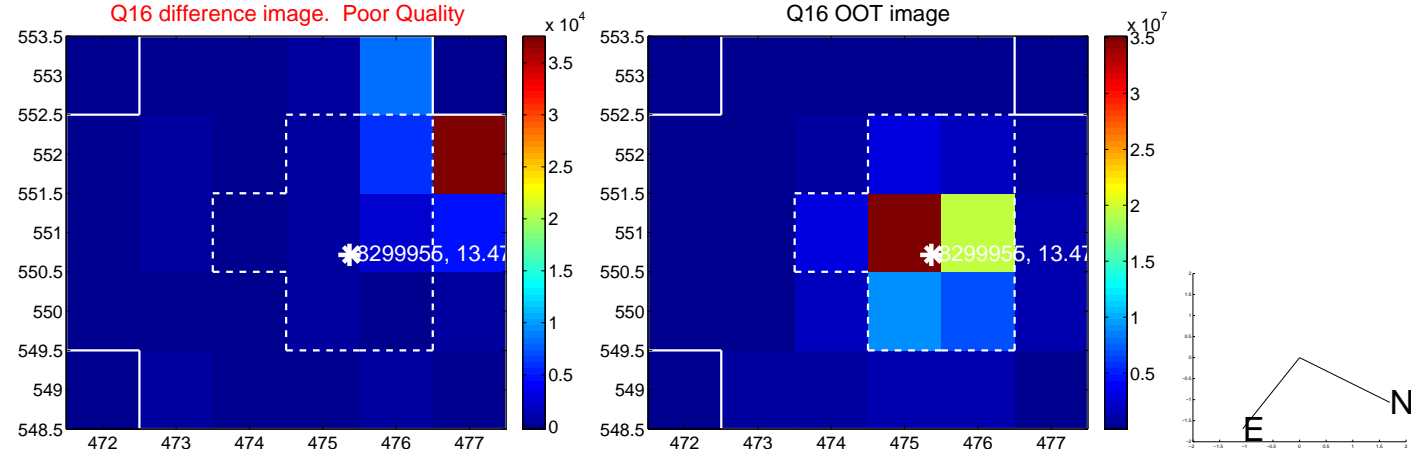
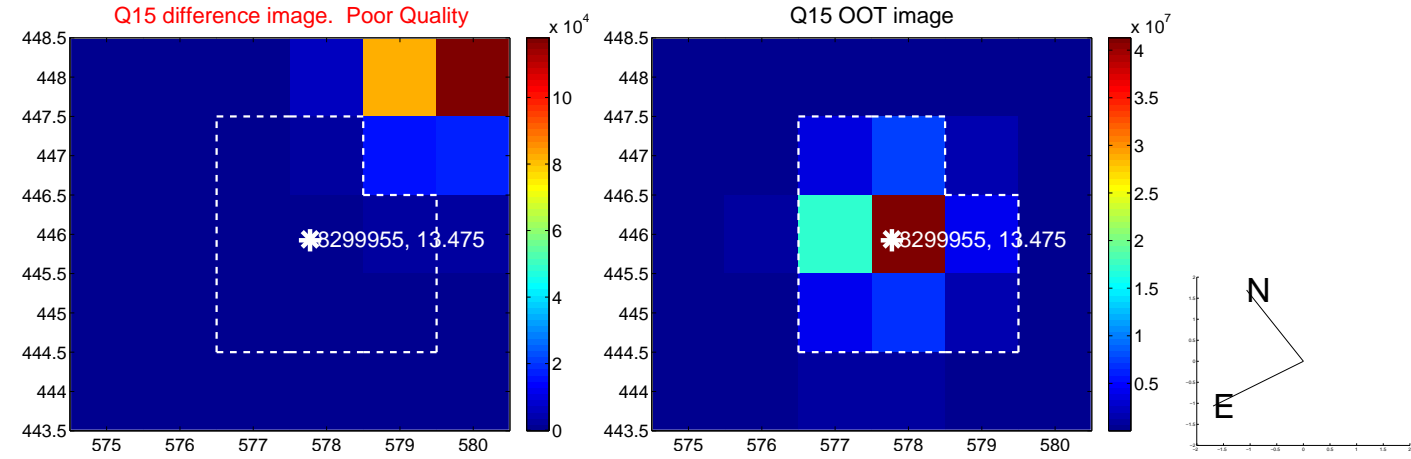
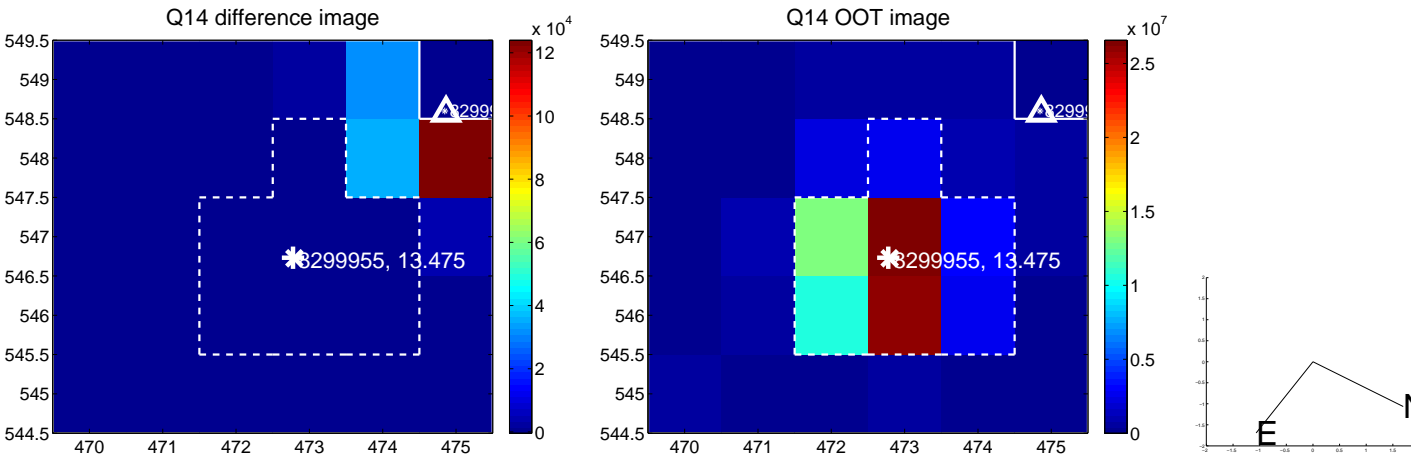
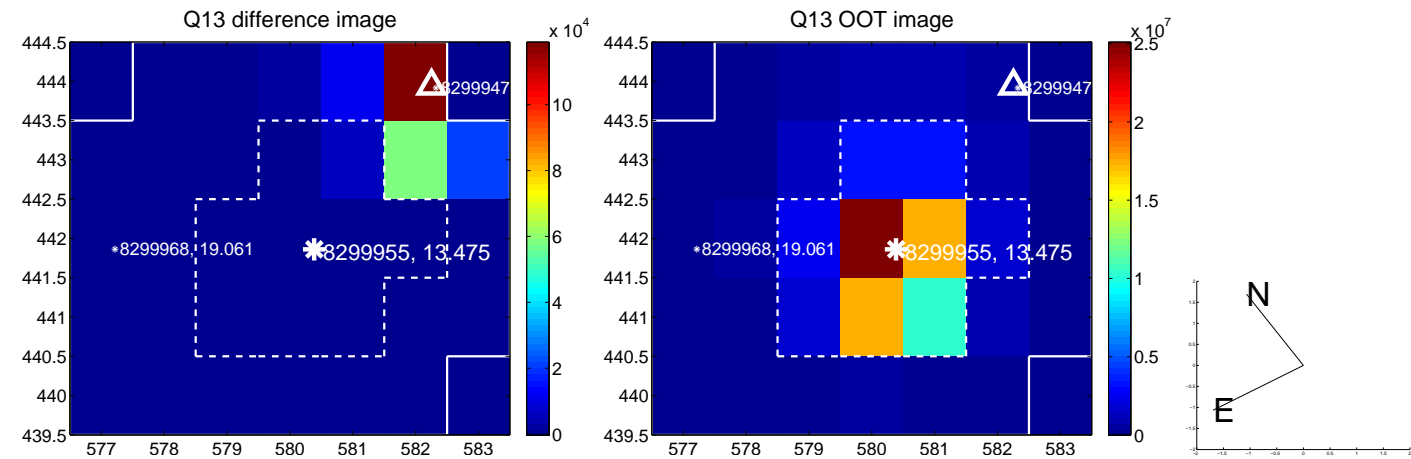




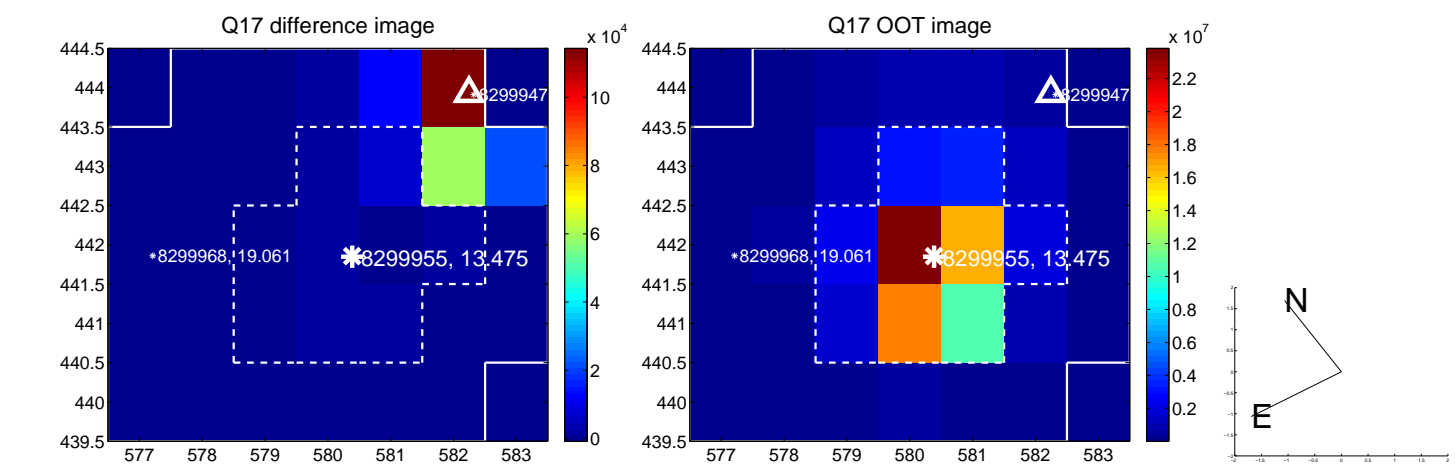
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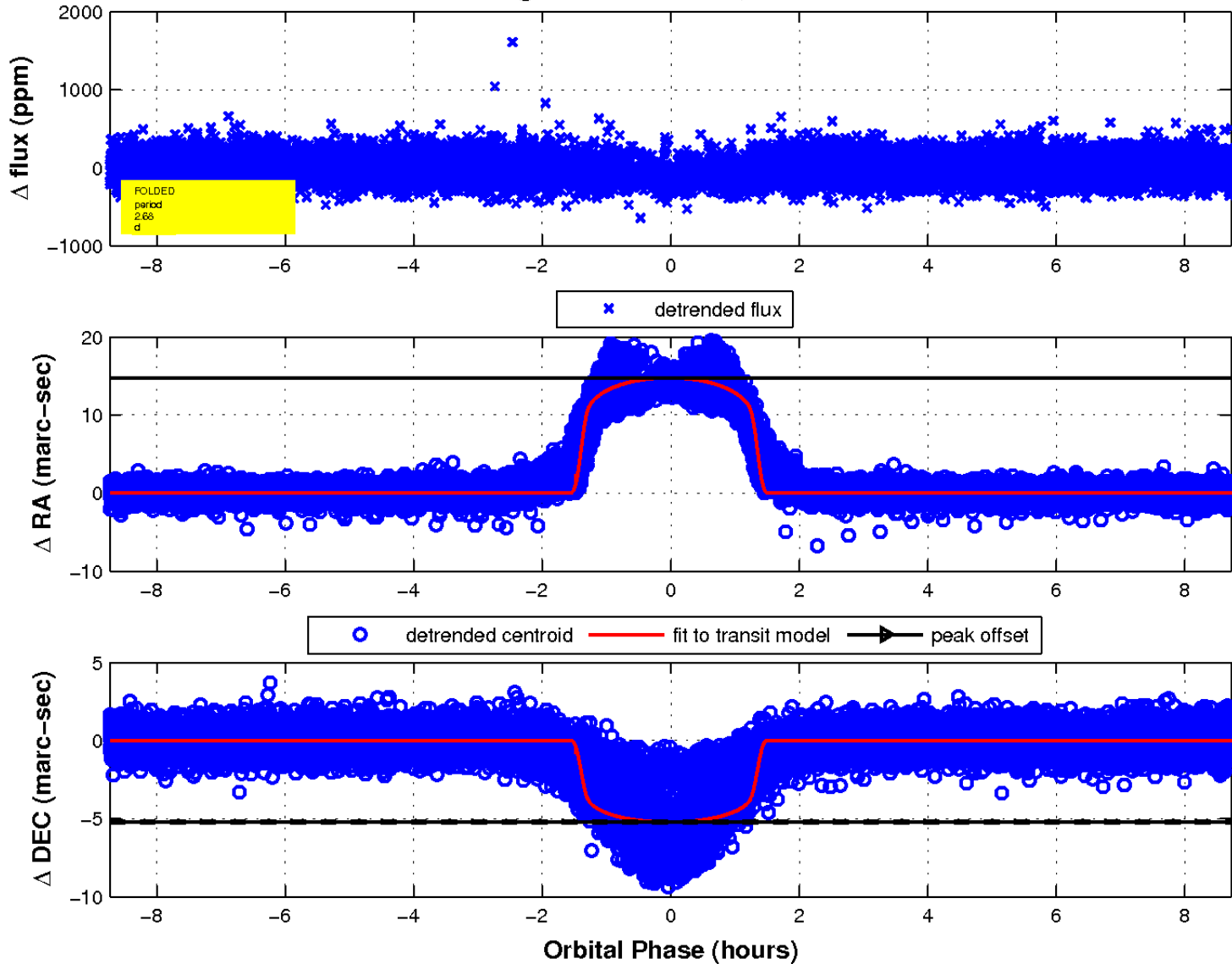
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

