

# KIC 007137213

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007137213-01	OBS	3907.01	28.643424	141.228178	662.4	1.266	33.6	45.0	1.77	6507	6.95	136.52

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007137213-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

**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 007137213-01

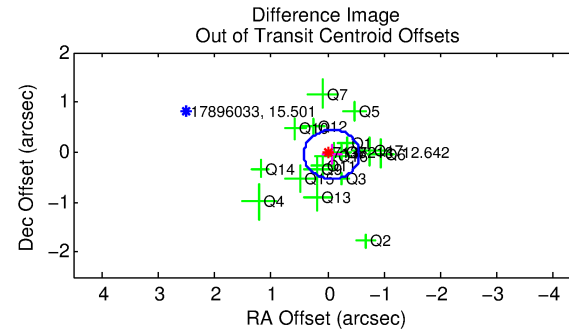
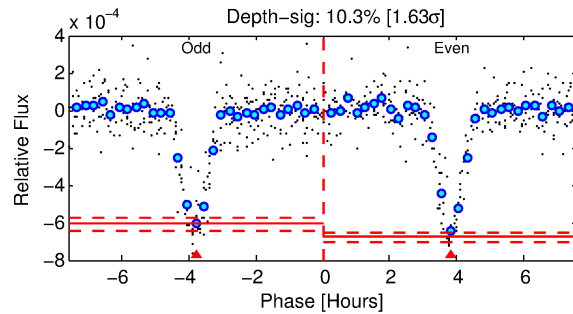
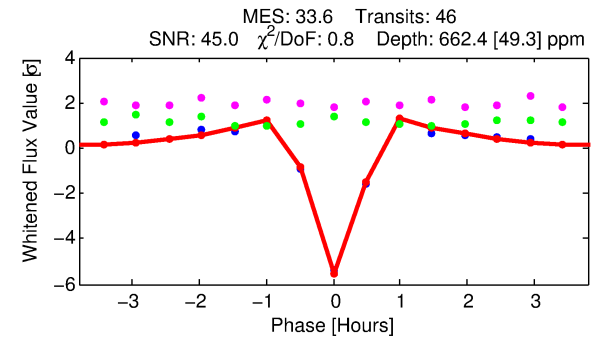
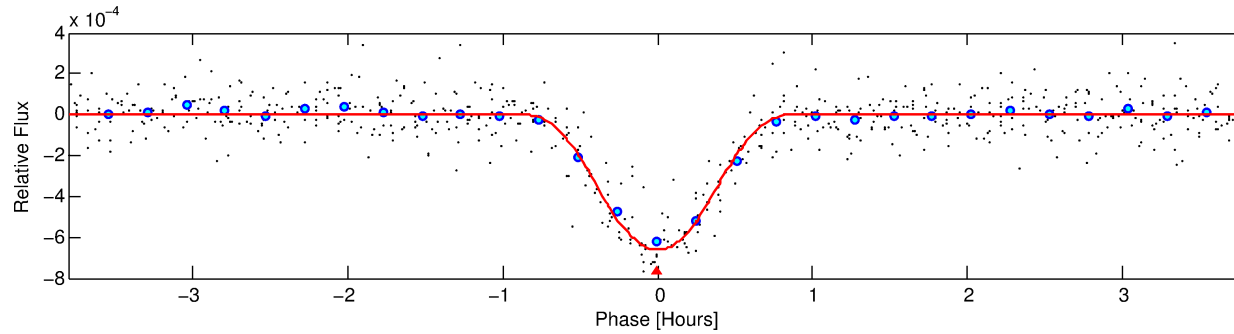
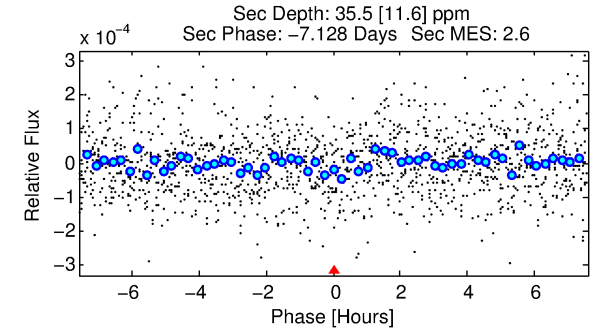
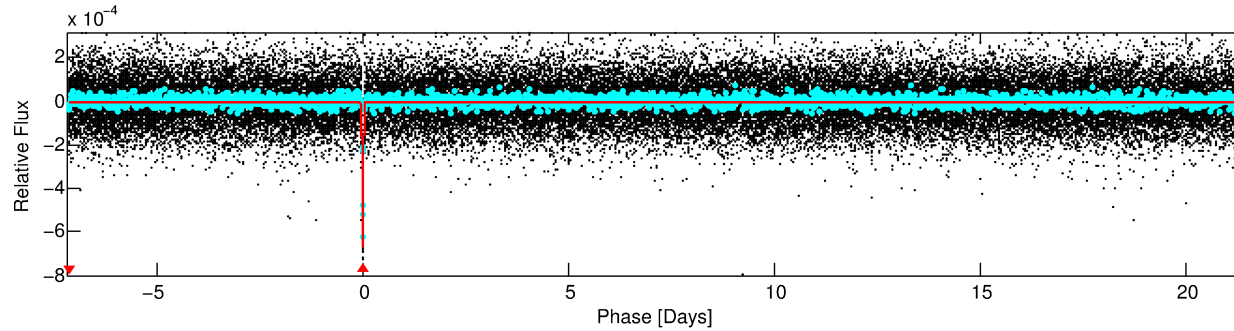
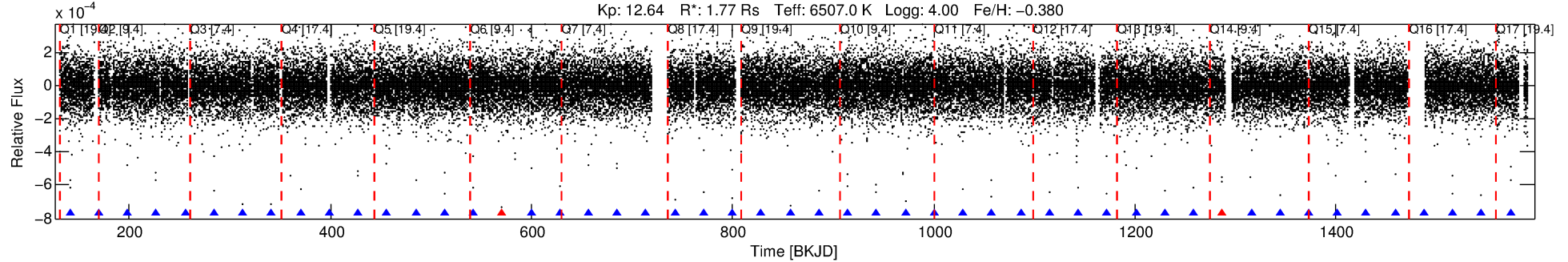
No Significant Match Found

# DV One-Page Summary

KIC: 7137213 Candidate: 1 of 1 Period: 28.643 d

KOI: K03907.01 Corr: 0.962

Kp: 12.64 R\*: 1.77 Rs Teff: 6507.0 K Logg: 4.00 Fe/H: -0.380



## DV Fit Results:

Period = 28.64342 [0.00002] d  
Epoch = 141.2282 [0.0006] BKJD  
Rp/R\* = 0.0360 [0.0263]  
a/R\* = 56.84 [18.02]  
b = 0.98 [0.05]  
Seff = 136.52 [61.75]  
Teq = 872 [99] K  
Rp = 6.95 [5.48] Re  
a = 0.1917 [0.0533] AU  
Ag = 14.86 [23.16] [0.60σ]  
Teffp = 2646 [993] K [1.78σ]

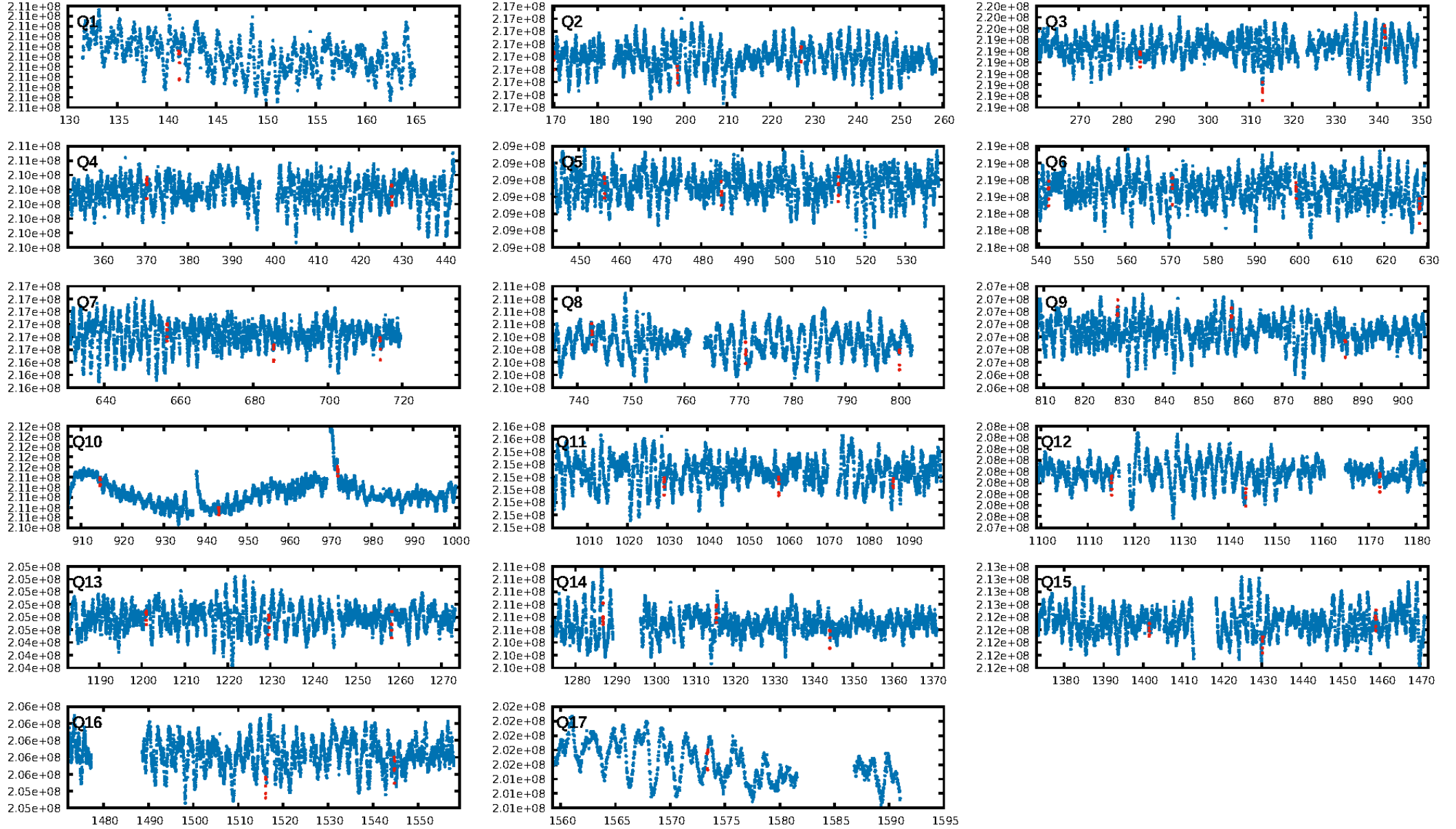
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 92.1%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 4.99e-222  
RollingBand-fgt: 0.95 [42/44]  
GhostDiagnostic-chr: 7.502  
Centroid-sig: 27.2%  
Centroid-so: 0.160 arcsec [0.79σ]  
OotOffset-rm: 0.083 arcsec [0.51σ]  
KicOffset-rm: 0.131 arcsec [0.83σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

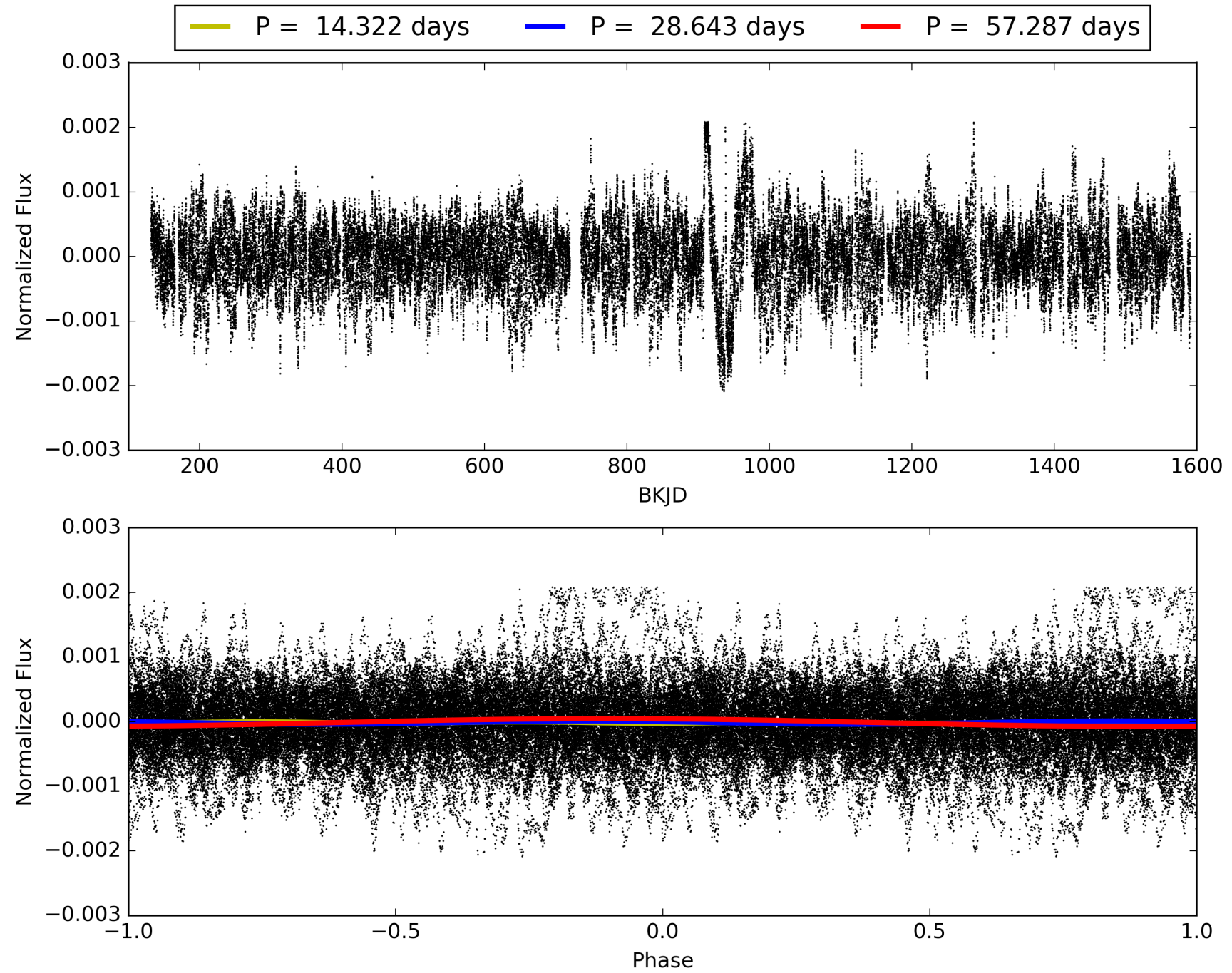
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 22:26:05 Z

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

# TCE 007137213-01, PDC Light Curves

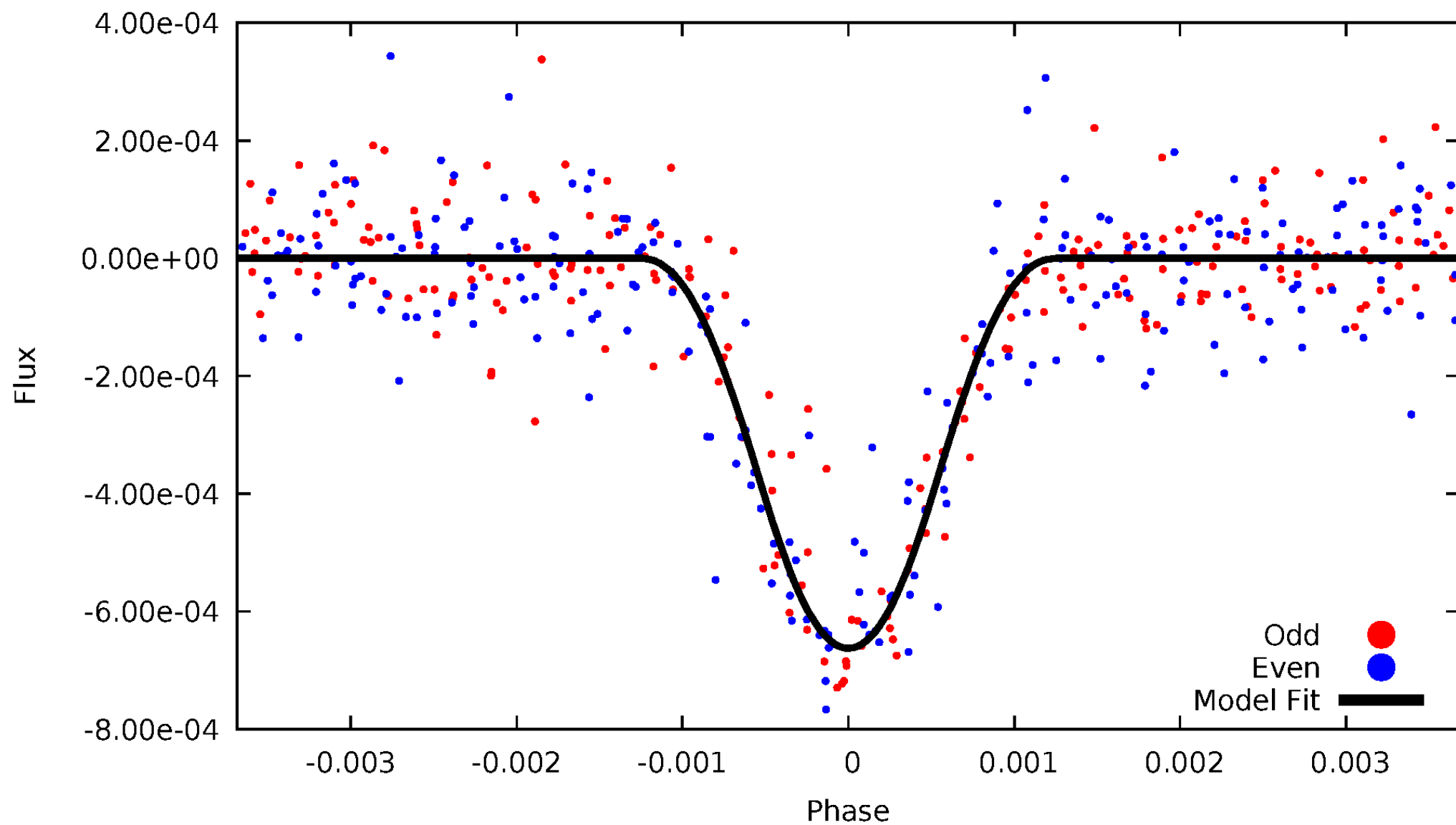


# TCE 007137213-01



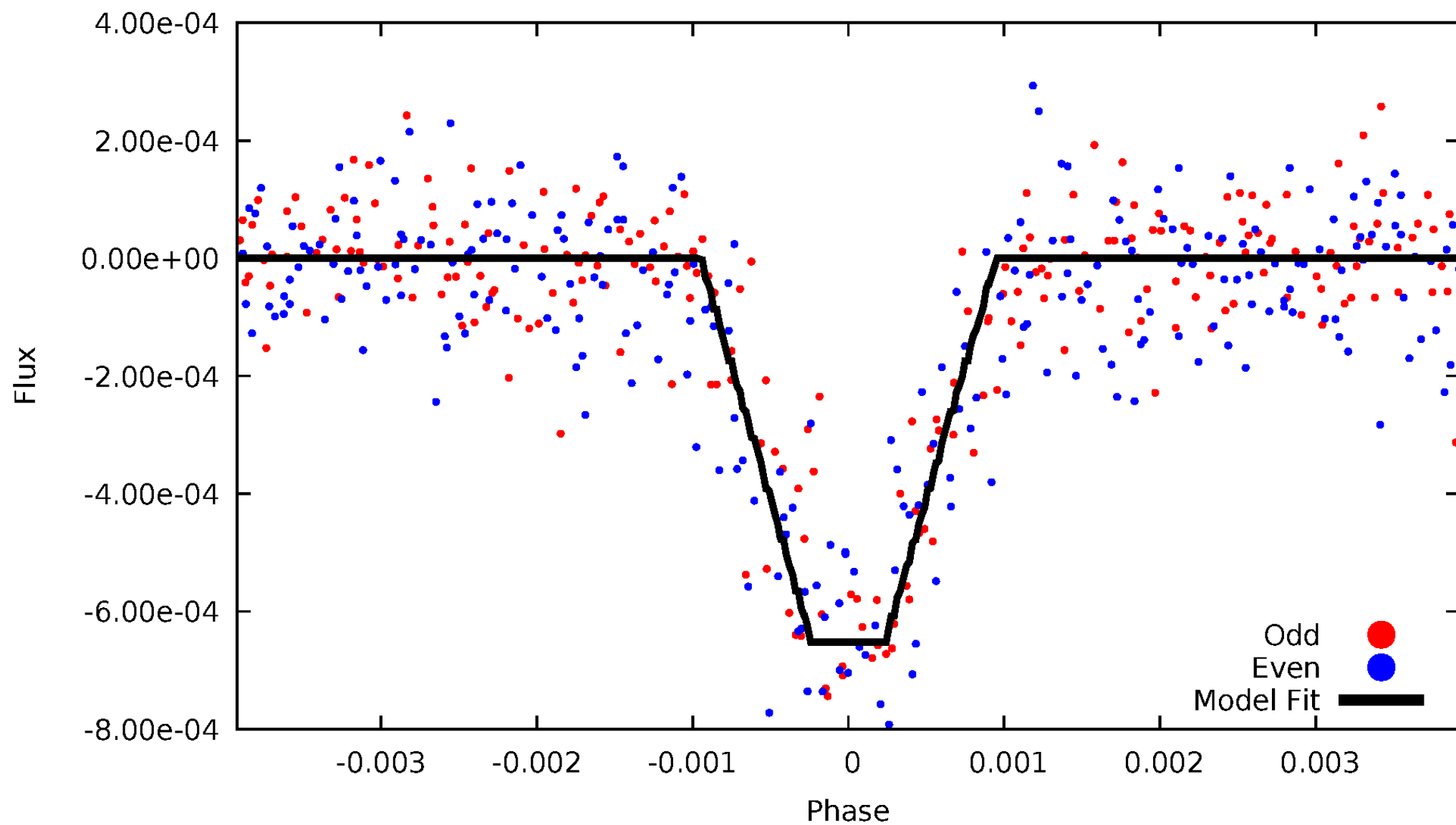
# DV Odd/Even

TCE 007137213-01



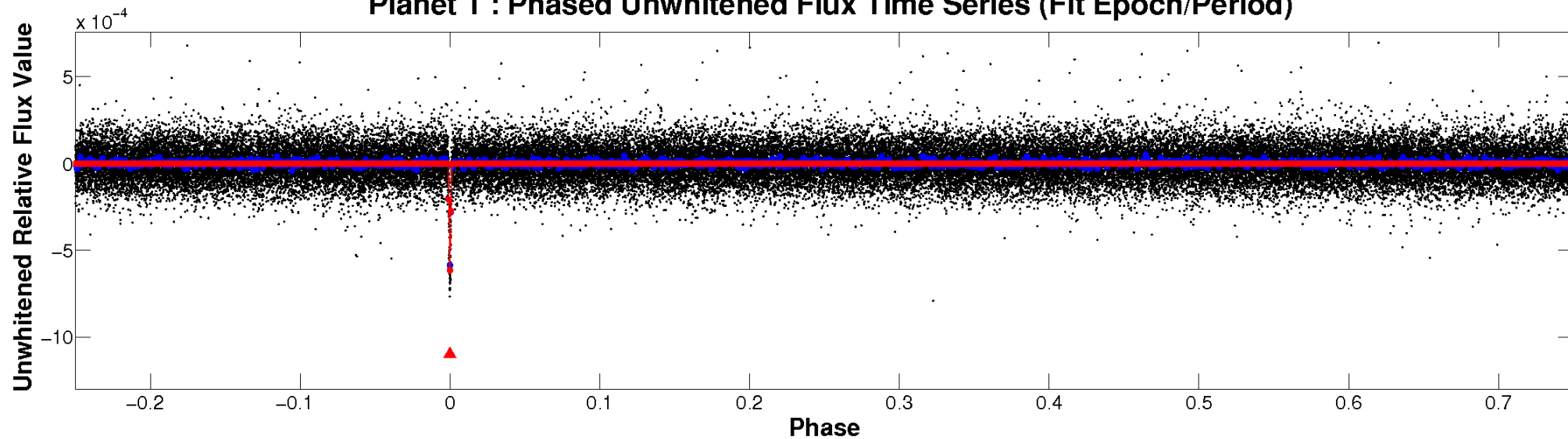
# ALT Odd/Even

TCE 007137213-01

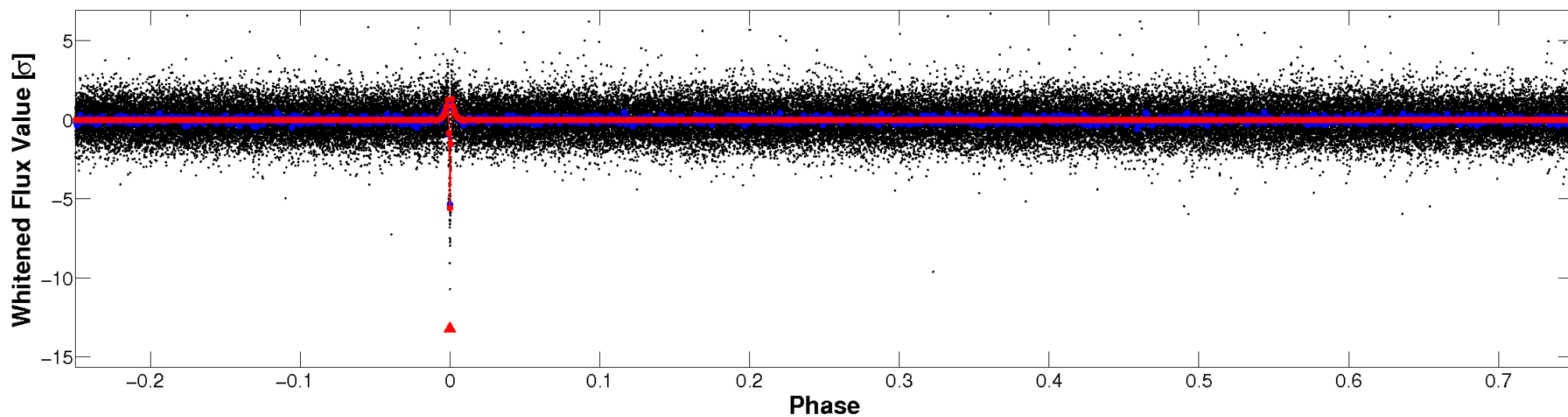


# Non-Whitened Vs. Whitened Light Curve

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



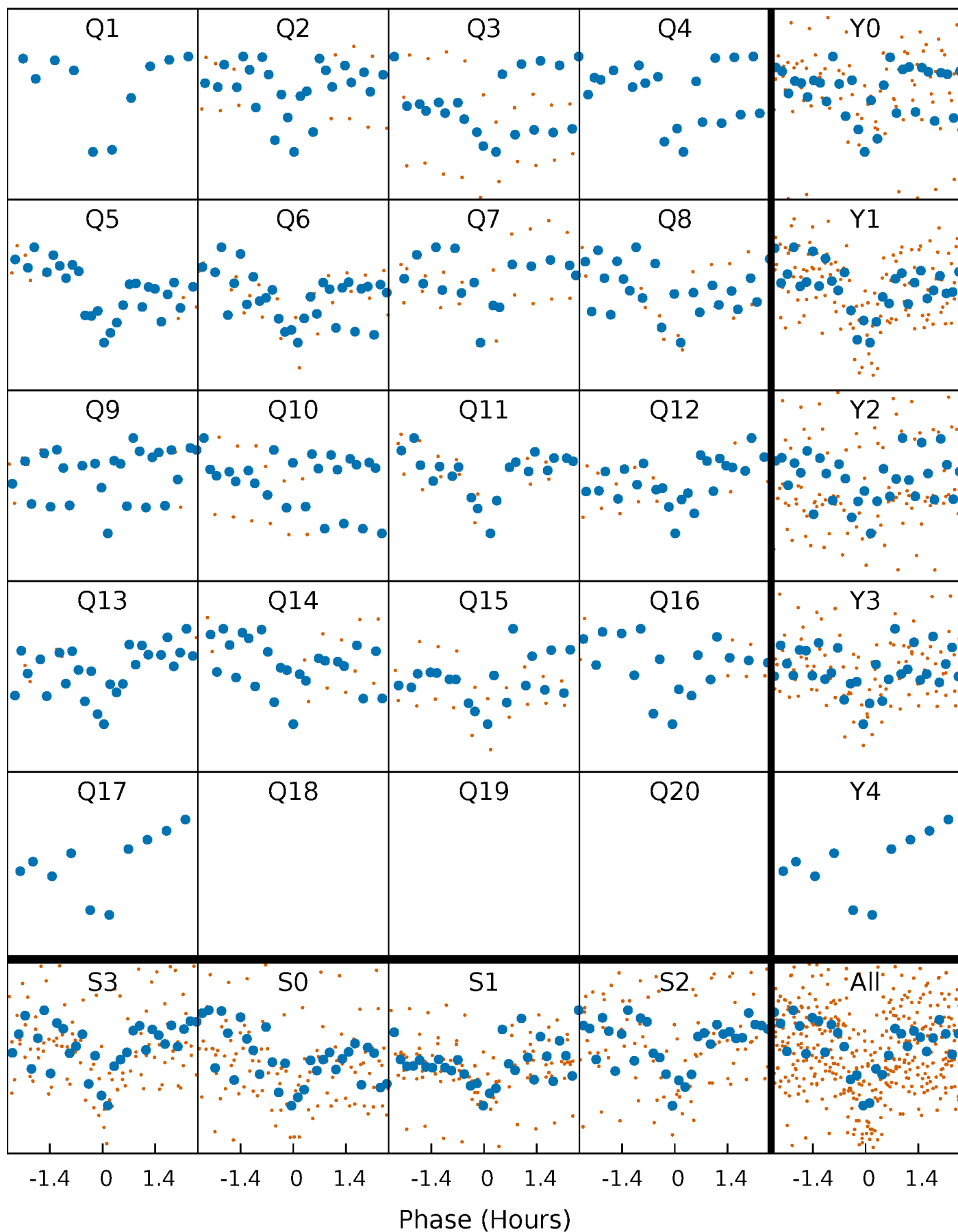
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

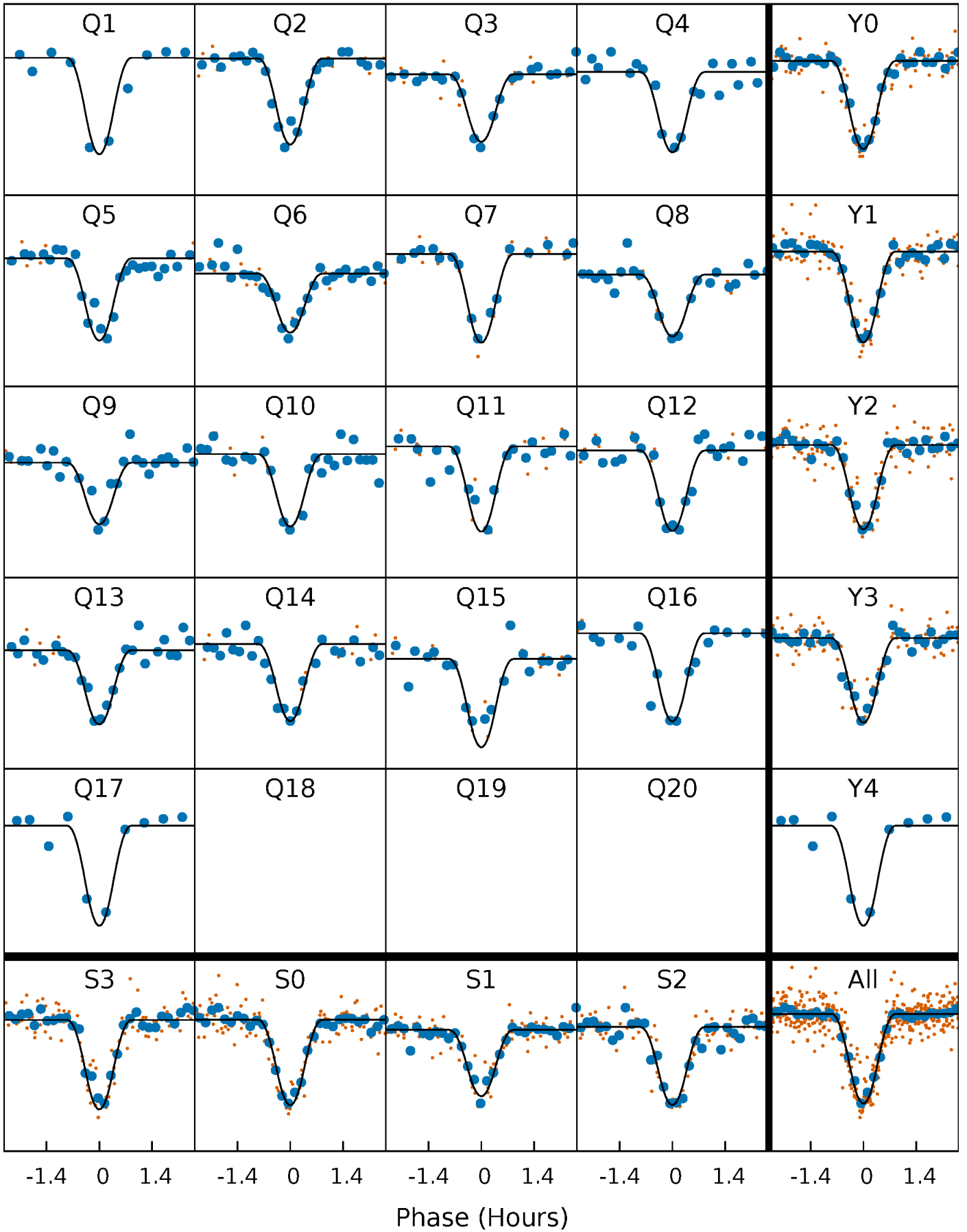
TCE 007137213-01 P= 28.643424 Days  $T_0=141.228178$  (BKJD)





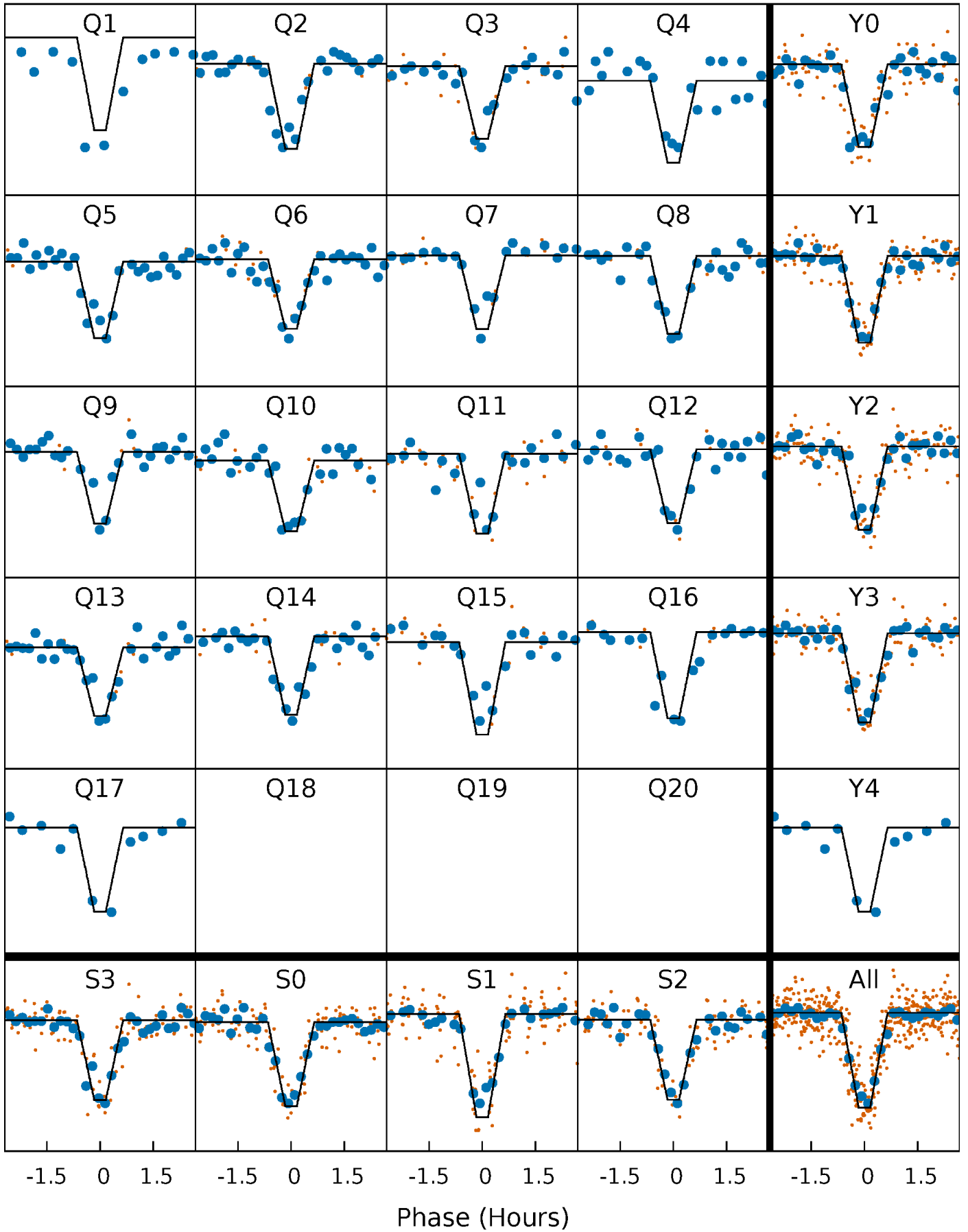
# DV Quarter-Phased Transit Curves

TCE 007137213-01 P= 28.643424 Days  $T_0=141.228178$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

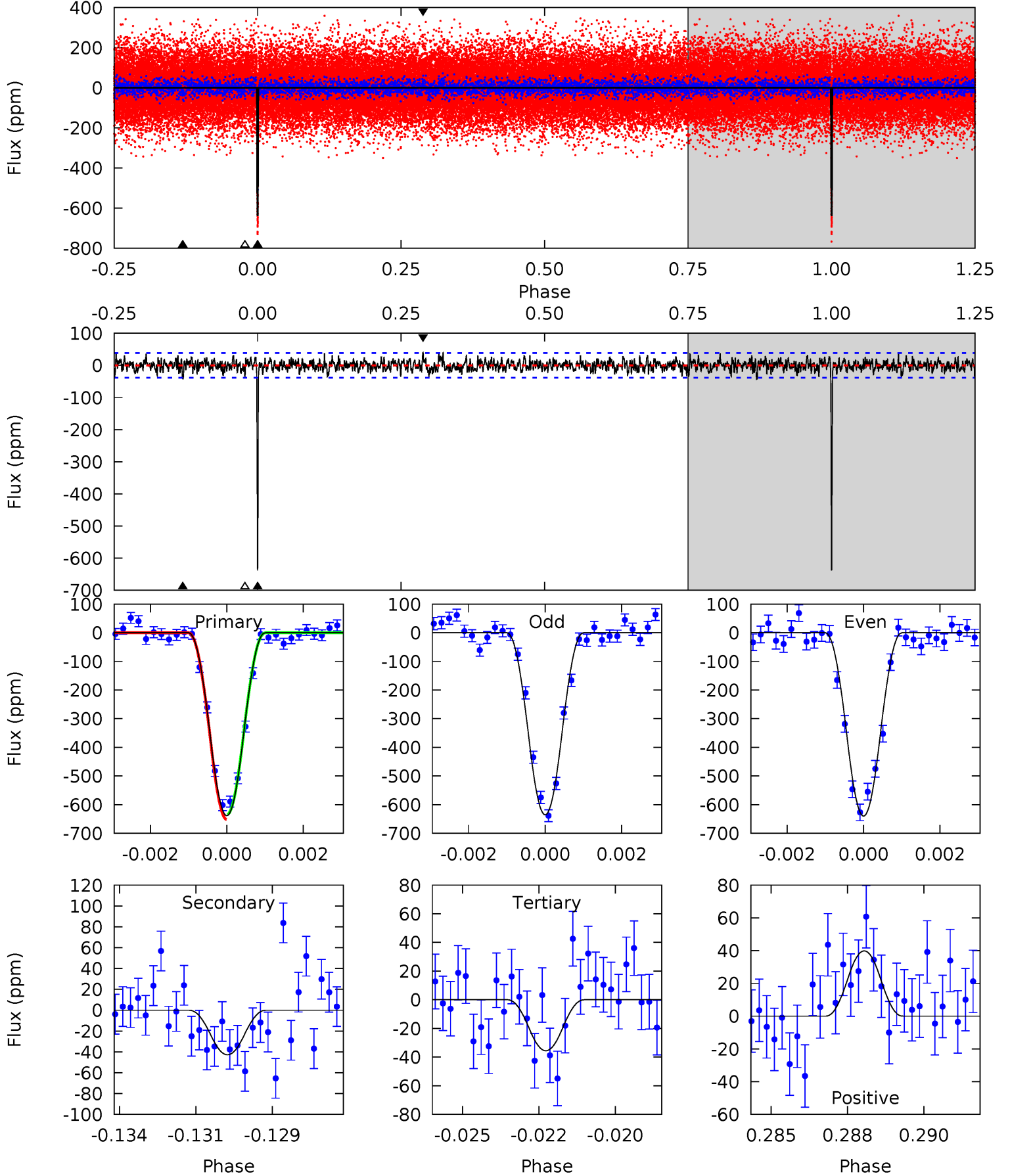
TCE 007137213-01 P= 28.643232 Days  $T_0=141.232924$  (BKJD)



# DV Model-Shift Uniqueness Test

007137213-01, P = 28.643424 Days, E = 112.584754 Days

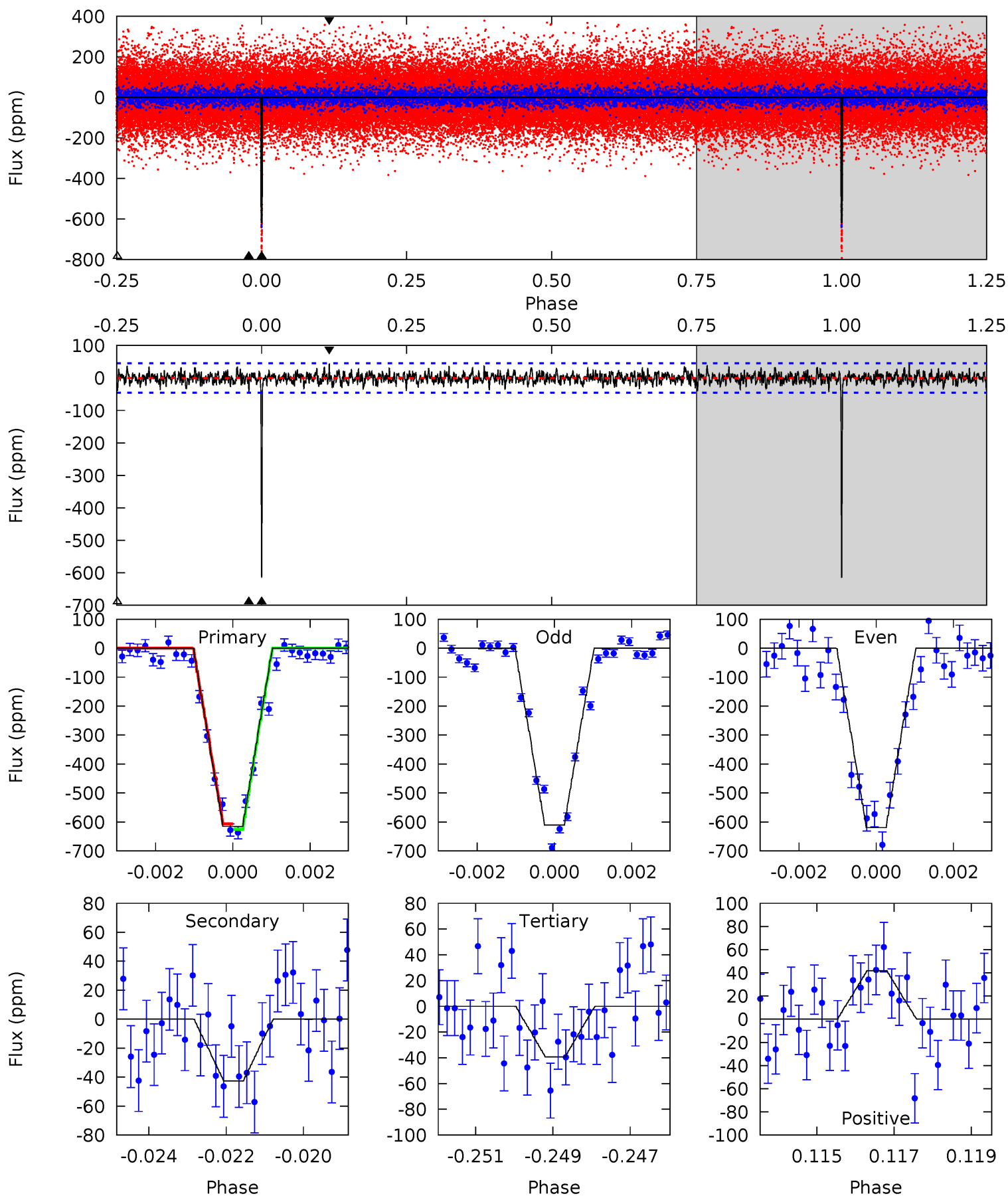
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
88.0	5.90	4.90	5.49	5.29	3.03	1.67	83.1	82.5	1.00	0.41	0.32	0.96	0.06	1.18



# Alt Model-Shift Uniqueness Test

007137213-01,  $P = 28.643232$  Days,  $E = 112.589692$  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
72.5	5.02	4.64	4.94	5.34	3.11	1.44	67.9	67.6	0.39	0.08	0.56	0.99	0.06	1.10



### Stellar Parameters For KIC 007137213

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6507^{+155}_{-194}$	$4.002^{+0.253}_{-0.117}$	$-0.380^{+0.300}_{-0.300}$	$1.767^{+0.351}_{-0.527}$	$1.145^{+0.192}_{-0.157}$	$0.292^{+0.495}_{-0.115}$
	+2%/-3%	+6%/-3%	+79%/-79%	+20%/-30%	+17%/-14%	+169%/-39%
Source	PHO1	FLK73	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 007137213-01 / KOI 3907.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-43 \pm 7$	$6.93^{+5.25}_{-3.79}$	$1204^{+79}_{-93}$	$3277^{+952}_{-474}$	$18^{+71}_{-12}$
Alt.	$-43 \pm 8$	$6.09^{+4.57}_{-3.68}$	$1203^{+71}_{-87}$	$3382^{+1338}_{-473}$	$23^{+121}_{-15}$

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

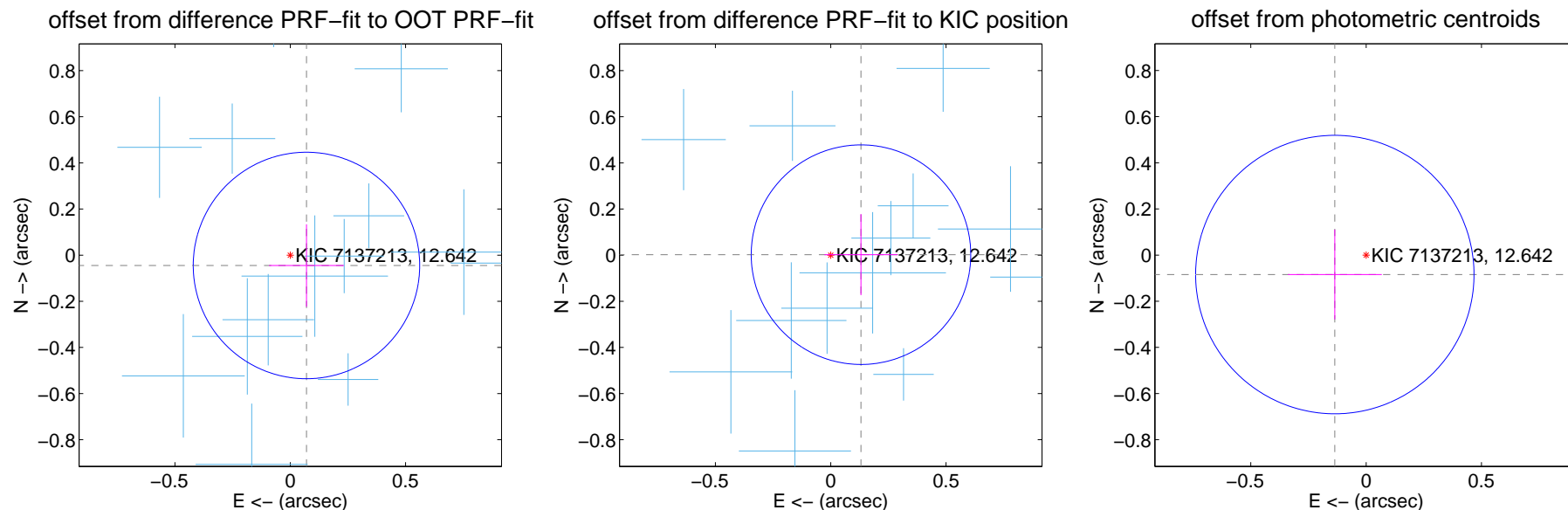
## DV Centroid Data

Supplemental centroid analysis for 007137213-01. Kepler magnitude: 12.64. Transit SNR 45.04

There are 17 quarters with good PRF difference image offsets

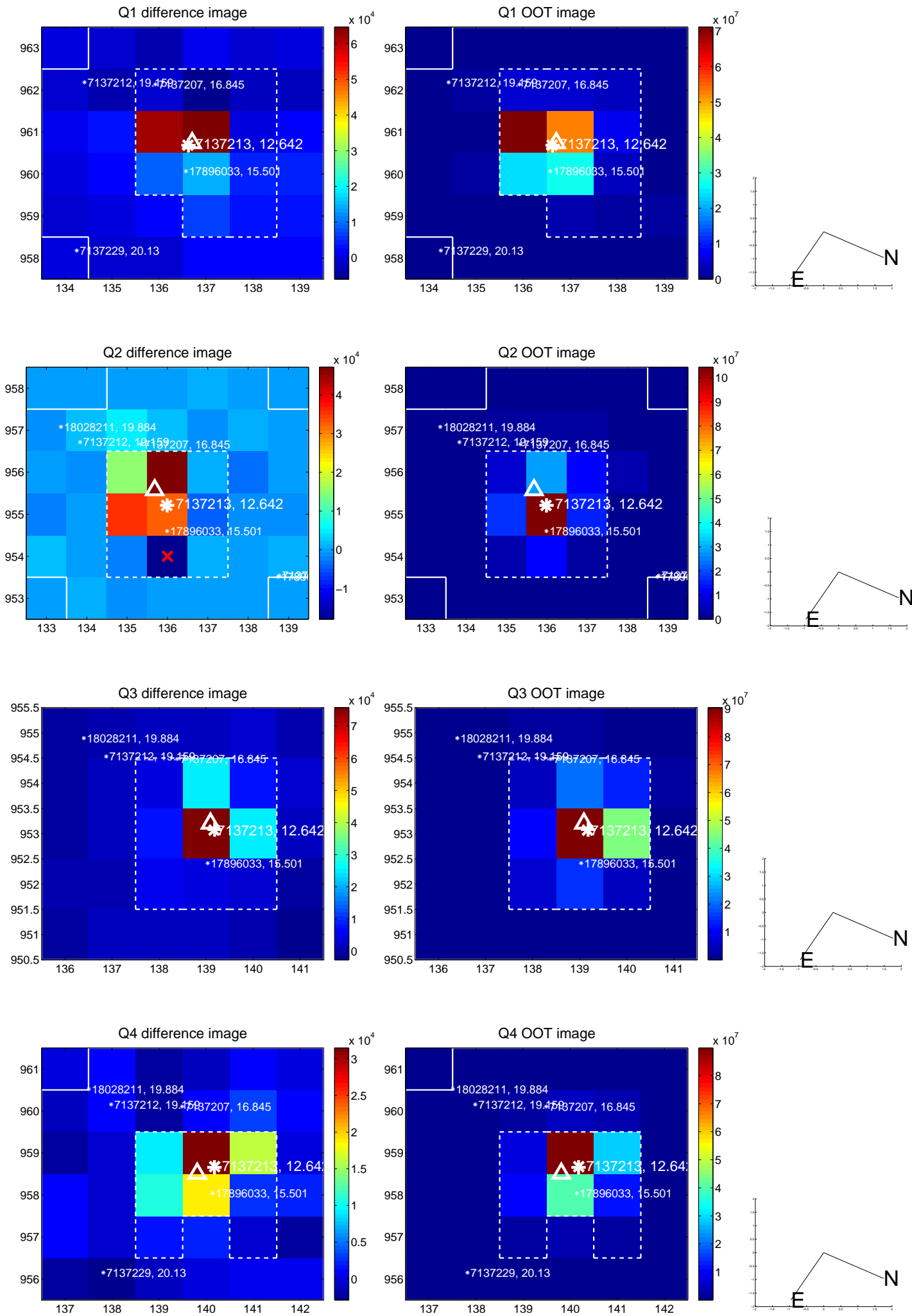
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.083 \pm 0.164$	0.51	$-0.070 \pm 0.162$	$-0.045 \pm 0.178$
PRF-fit source offset from KIC position	$0.131 \pm 0.159$	0.83	$-0.131 \pm 0.158$	$0.002 \pm 0.176$
photometric centroid source offset	$0.16 \pm 0.20$	0.79	$0.14 \pm 0.20$	$-0.08 \pm 0.19$



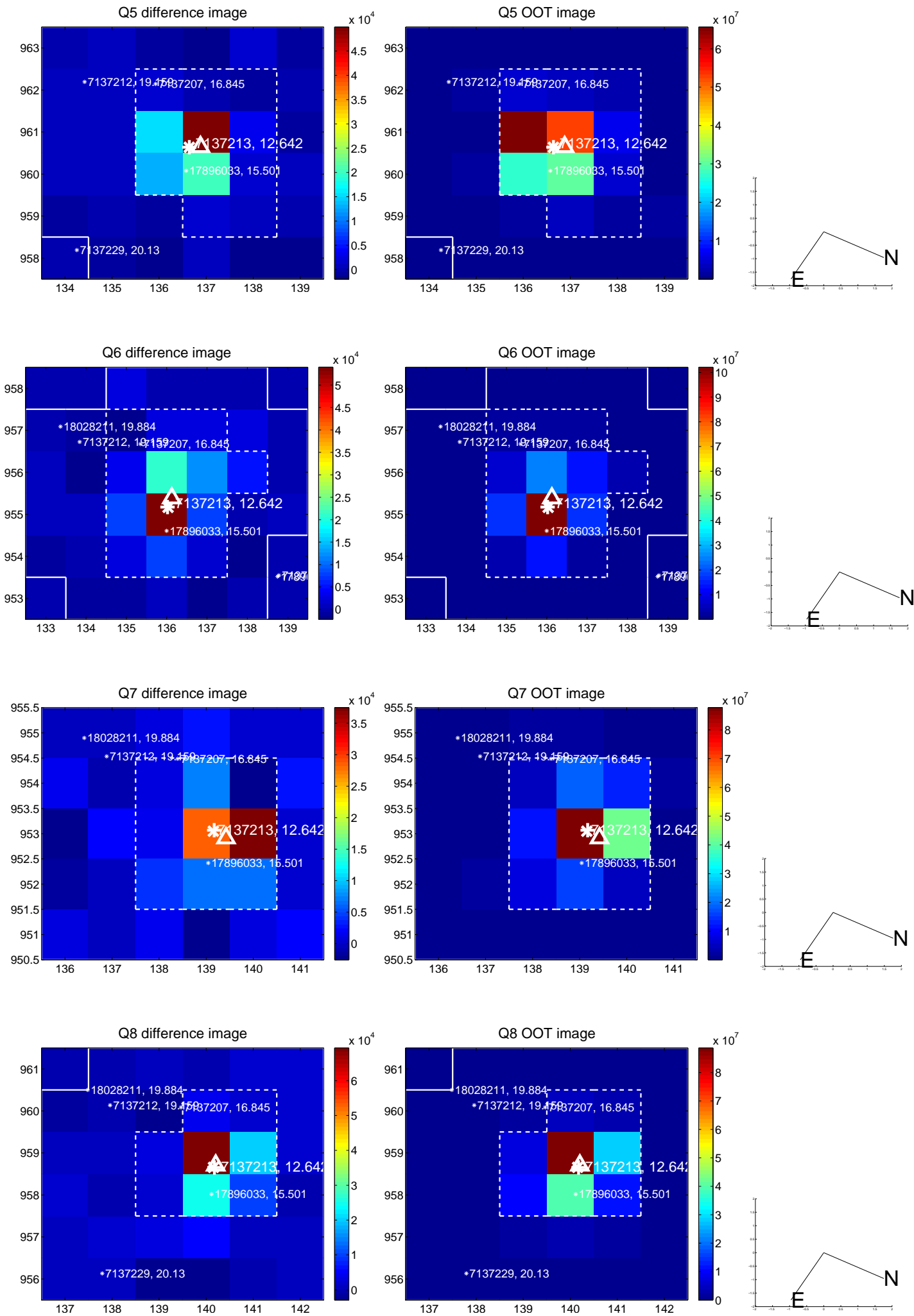
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

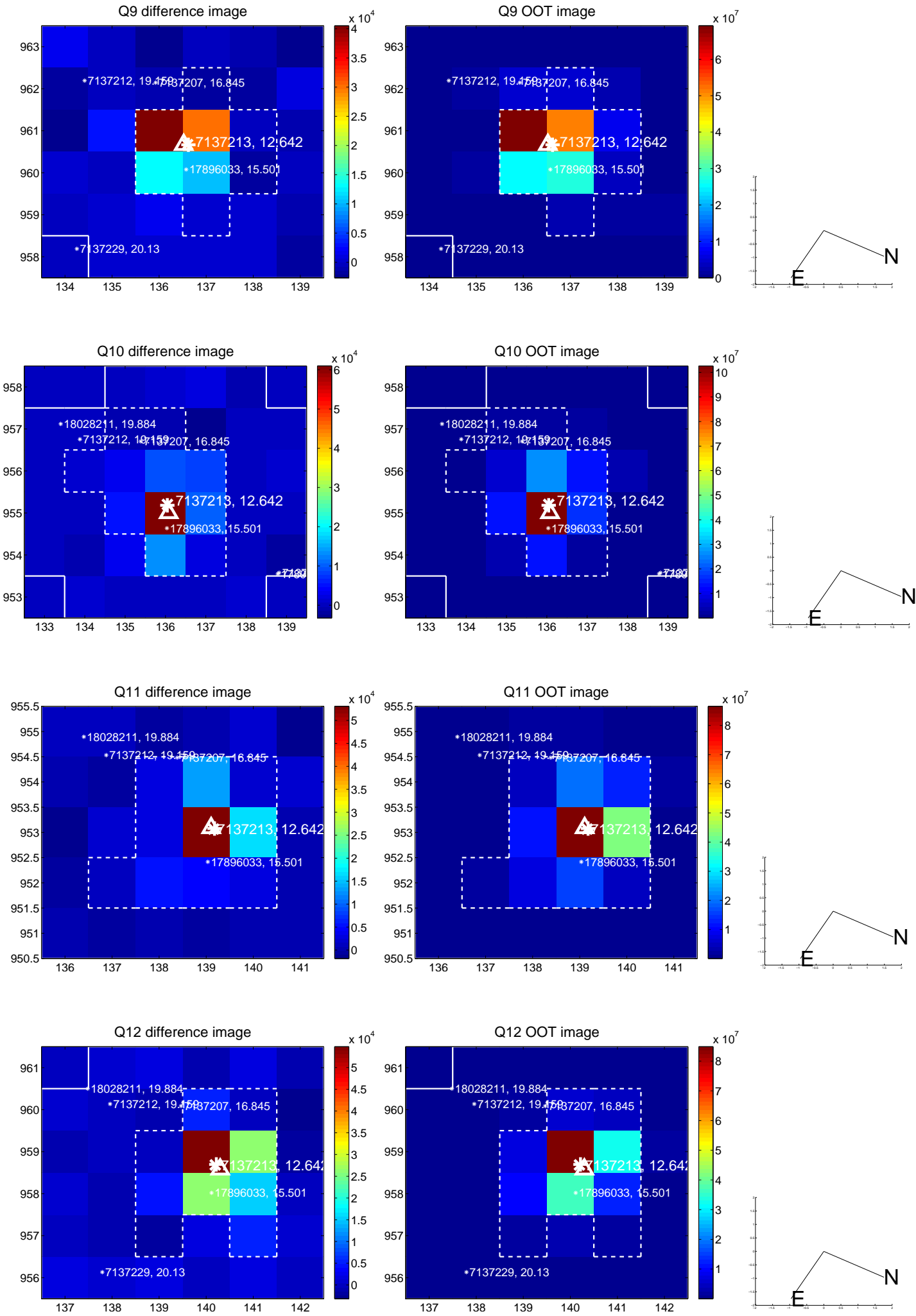




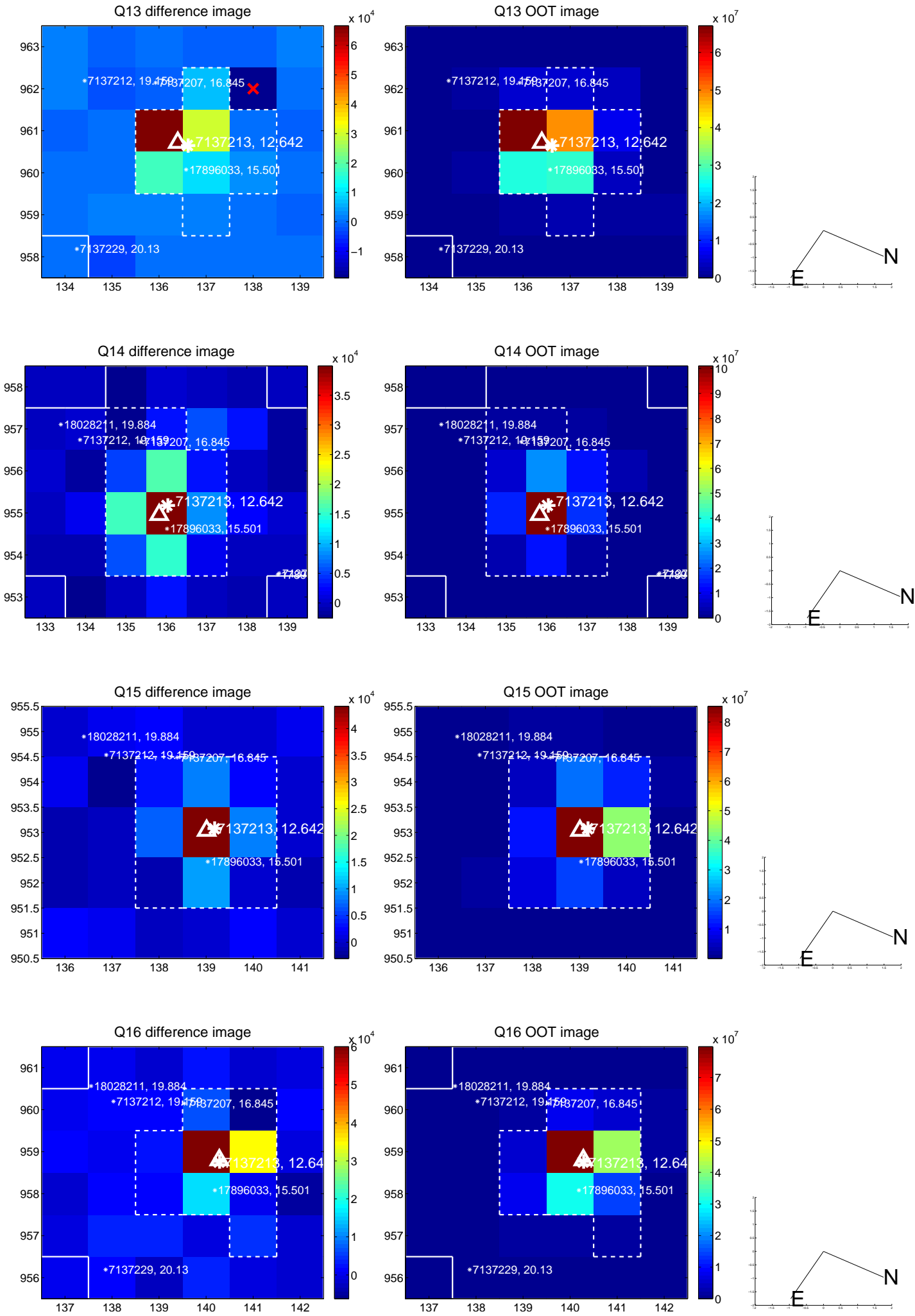
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



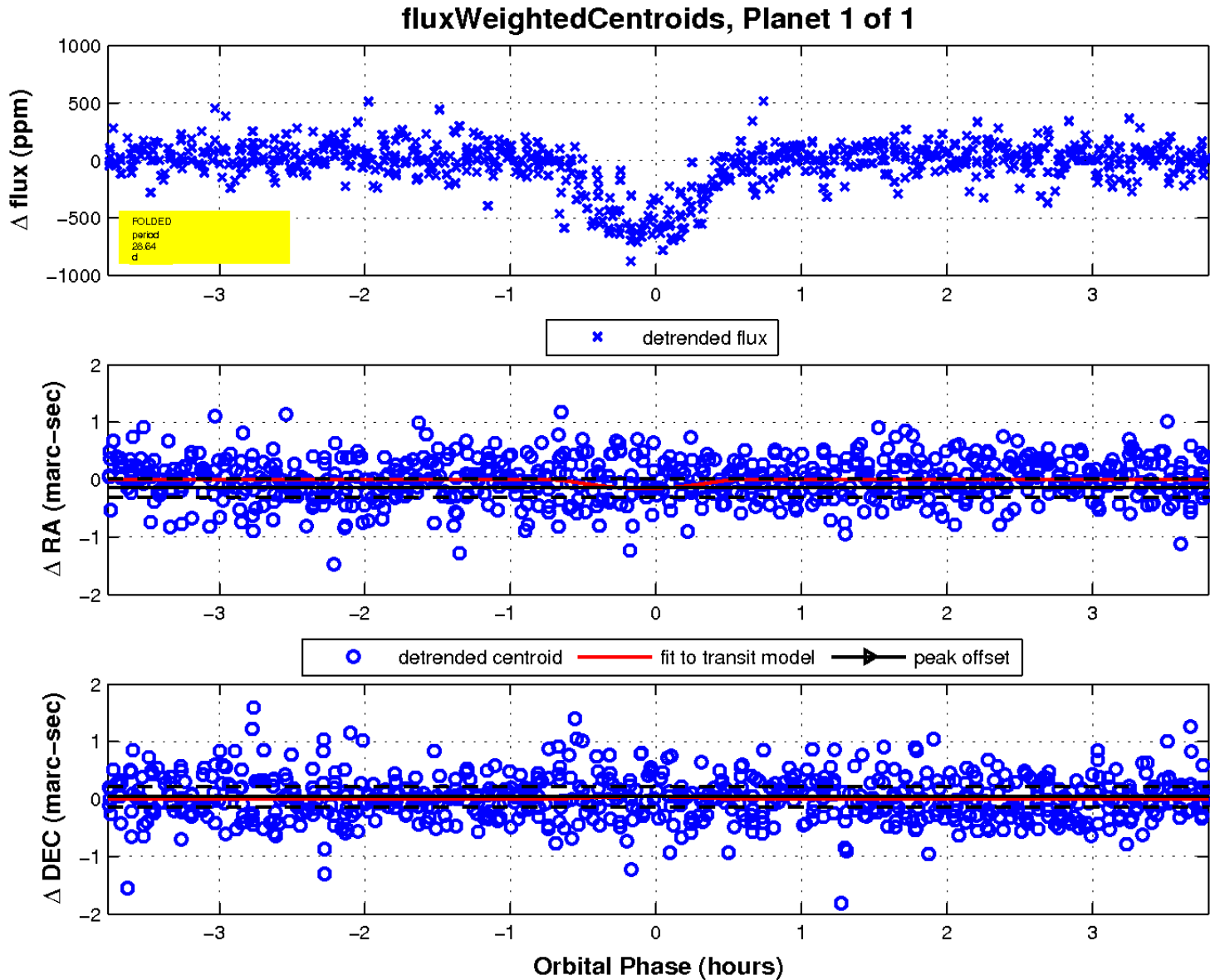
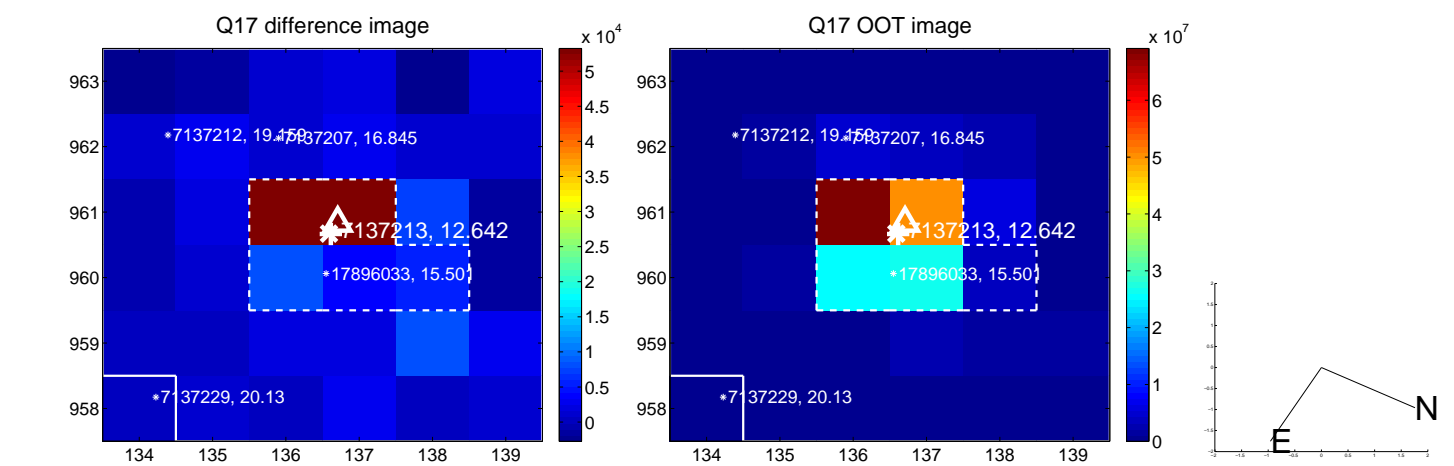
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white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

