

# KIC 002557350

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
002557350-01	OBS	6276.01	3.098748	134.388816	246.2	1.771	7.9	9.0	0.41	3628	0.76	26.62

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002557350-01	OBS	PC	0.96	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.

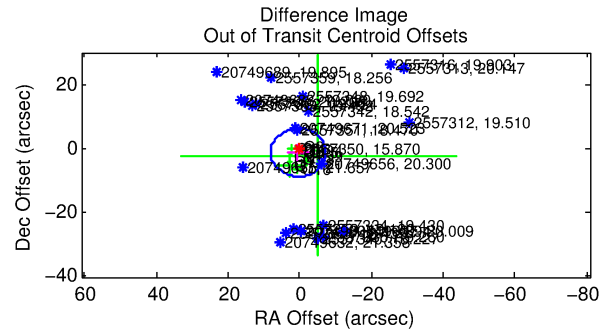
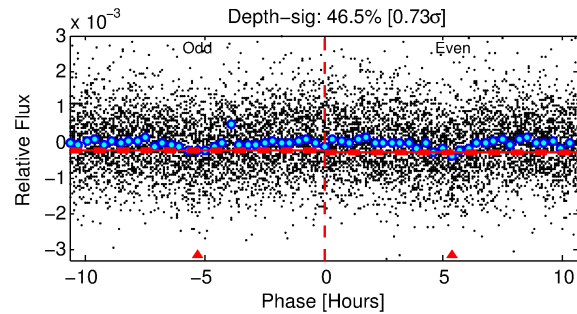
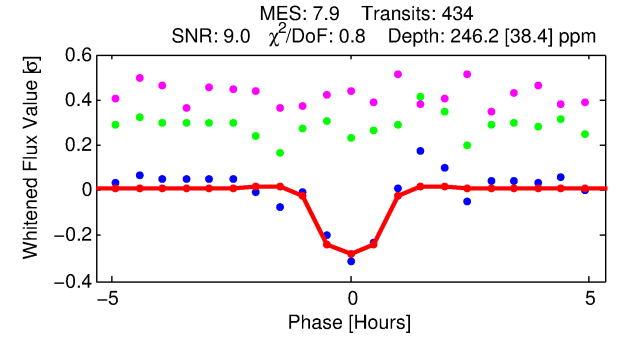
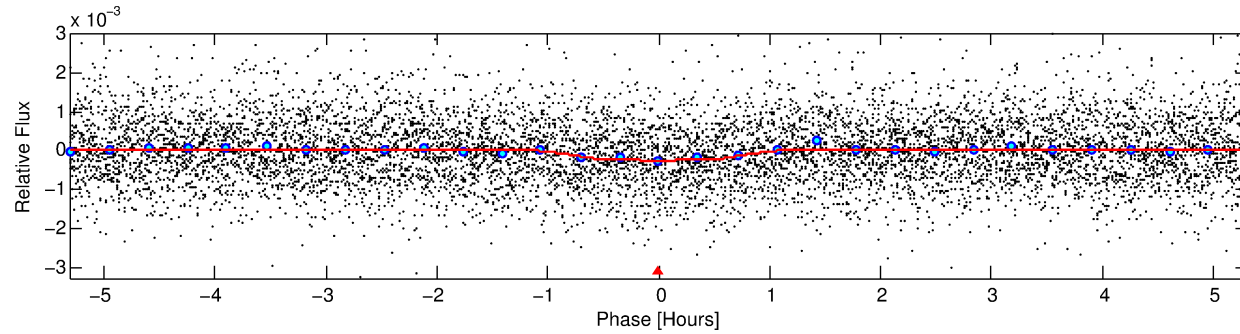
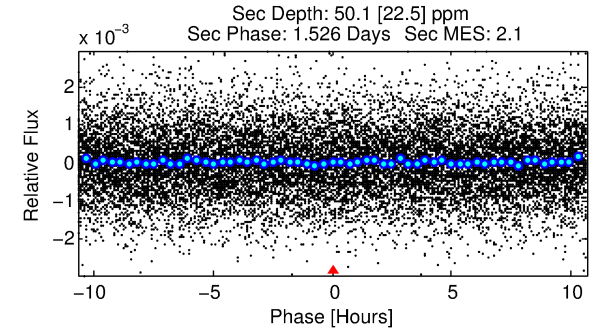
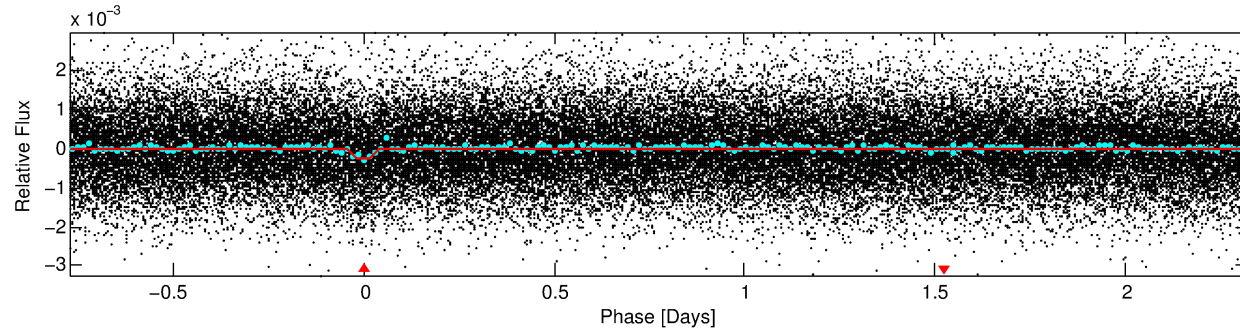
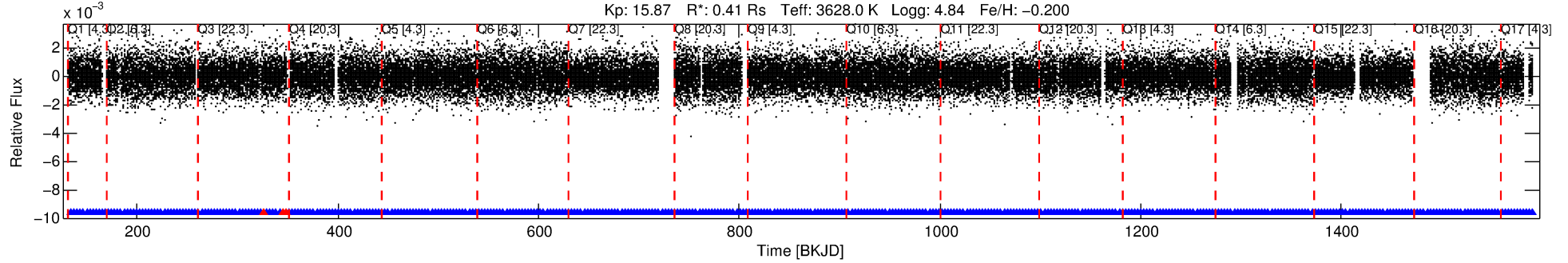
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 002557350-01

No Significant Match Found

# DV One-Page Summary

KIC: 2557350 Candidate: 1 of 1 Period: 3.099 d  
KOI: K06276.01 Corr: 0.956



## DV Fit Results:

Period = 3.09875 [0.00002] d  
Epoch = 134.3888 [0.0034] BKJD  
Rp/R\* = 0.0171 [0.0141]  
a/R\* = 6.41 [23.65]  
b = 0.90 [0.81]  
Seff = 26.62 [3.17]  
Teq = 579 [17] K  
Rp = 0.76 [0.63] Re  
a = 0.0313 [0.0023] AU  
Ag = 46.36 [79.24] [0.57σ]  
Teffp = 2337 [998] K [1.76σ]

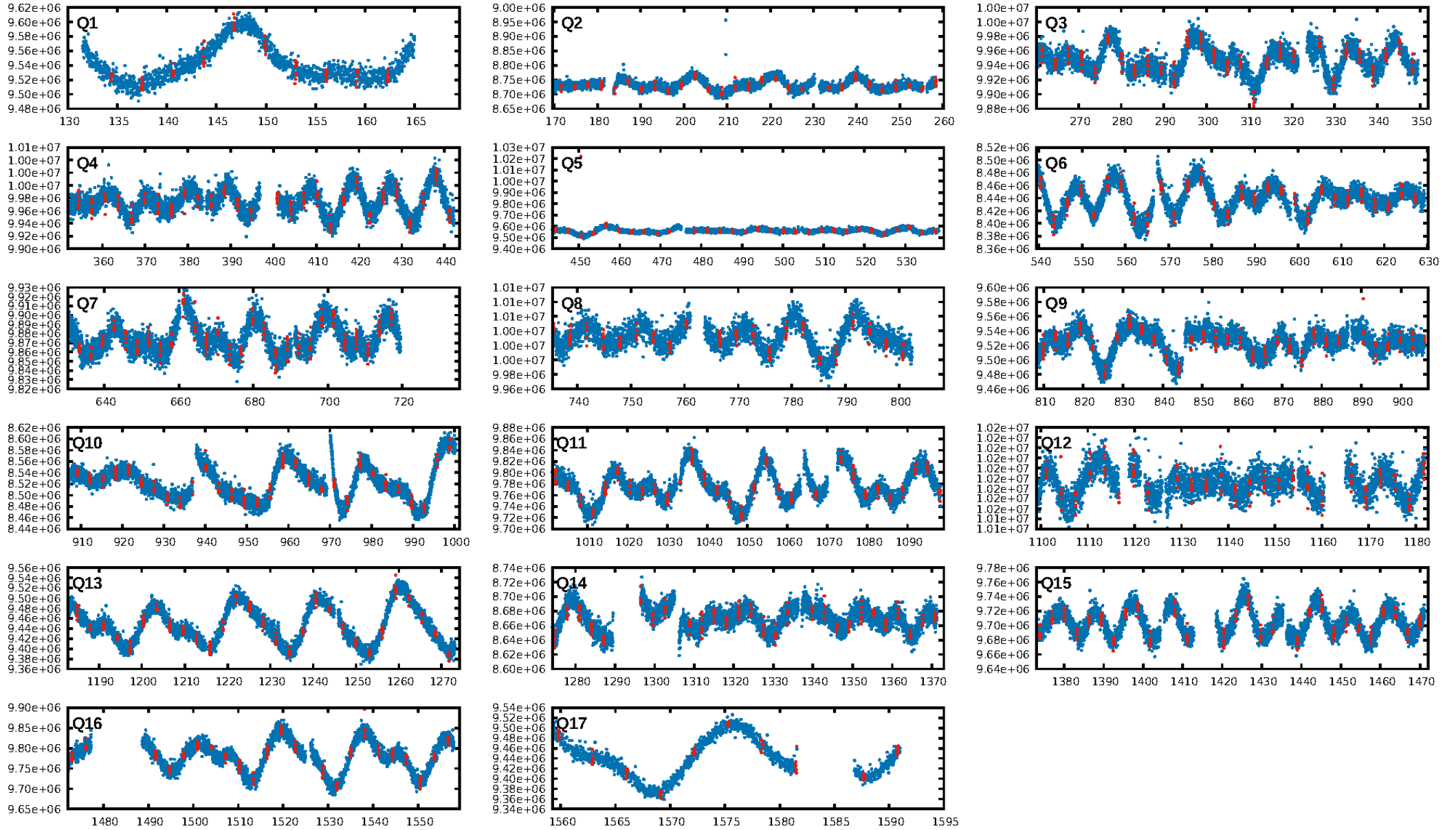
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 5.89e-15  
RollingBand-fgt: 0.99 [411/414]  
GhostDiagnostic-chr: 1.691  
Centroid-sig: 53.3%  
Centroid-so: 1.729 arcsec [1.20σ]  
OotOffset-rm: 1.264 arcsec [0.50σ]  
KicOffset-rm: 1.103 arcsec [0.44σ]  
OotOffset-st: 3/4/3/3 [13]  
KicOffset-st: 3/4/3/3 [13]  
DiffImageQuality-fgm: 0.31 [4/13]  
DiffImageOverlap-fno: 1.00 [17/17]

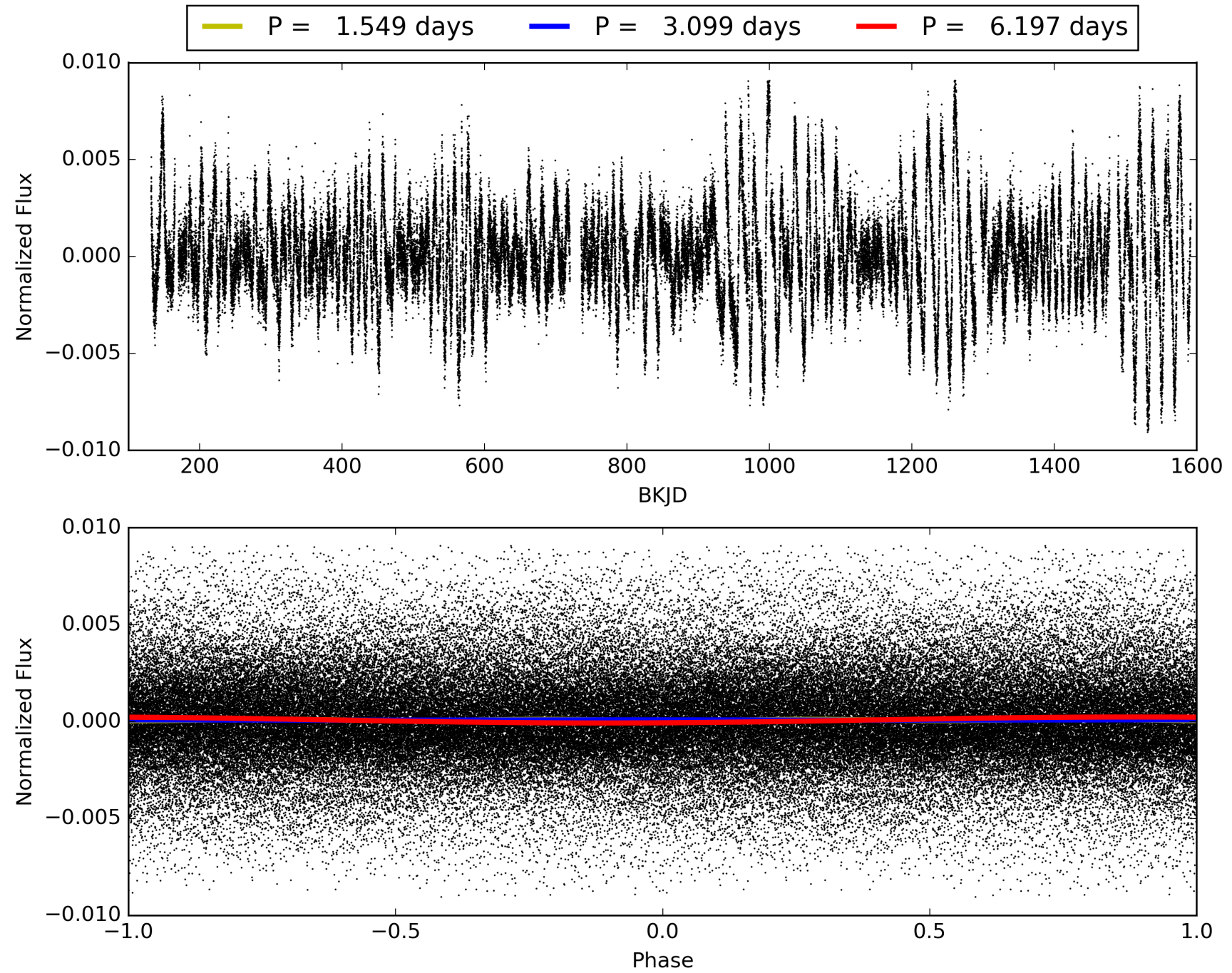
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 18:24:25 Z

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

# TCE 002557350-01, PDC Light Curves

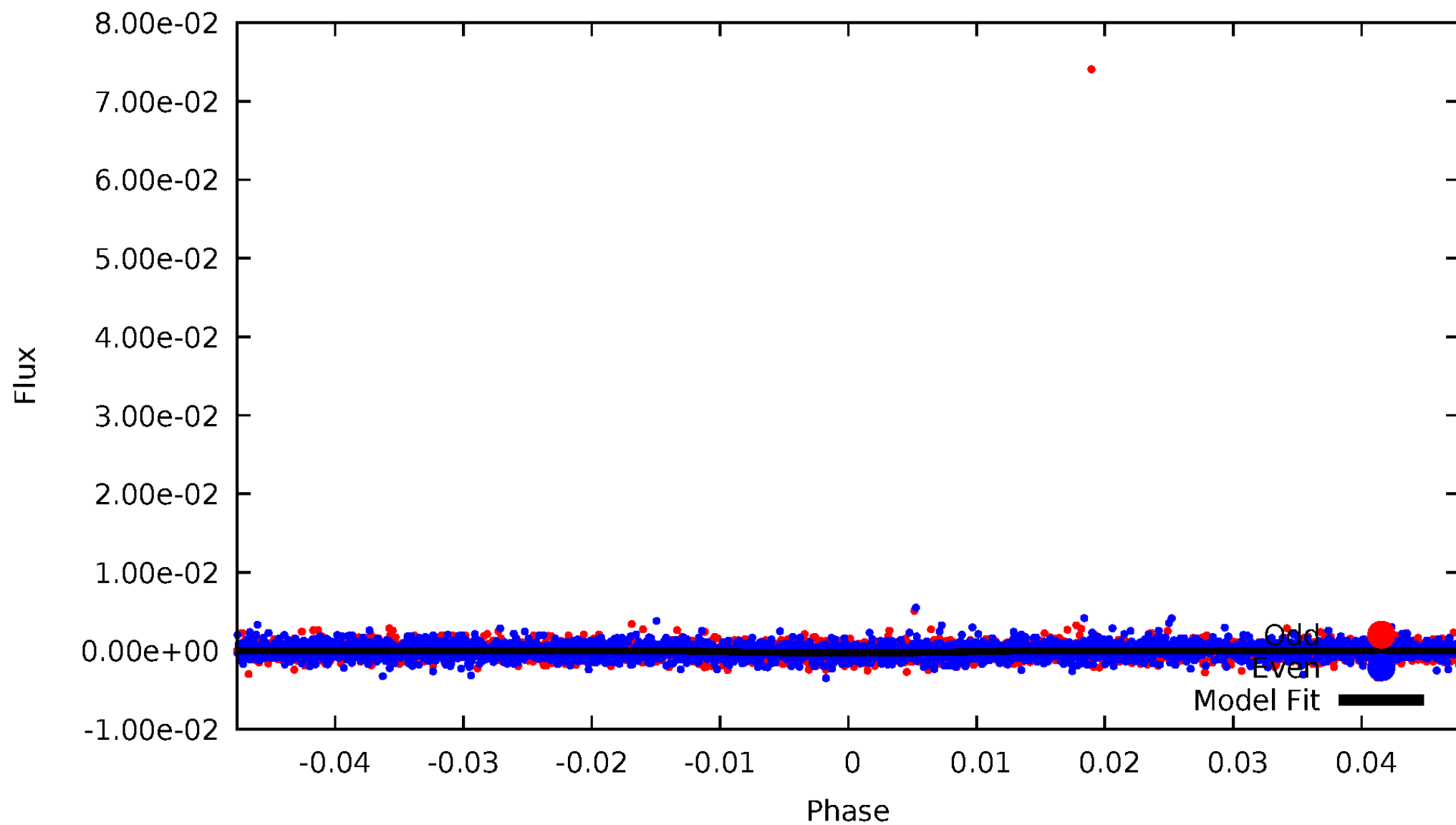


TCE 002557350-01



# DV Odd/Even

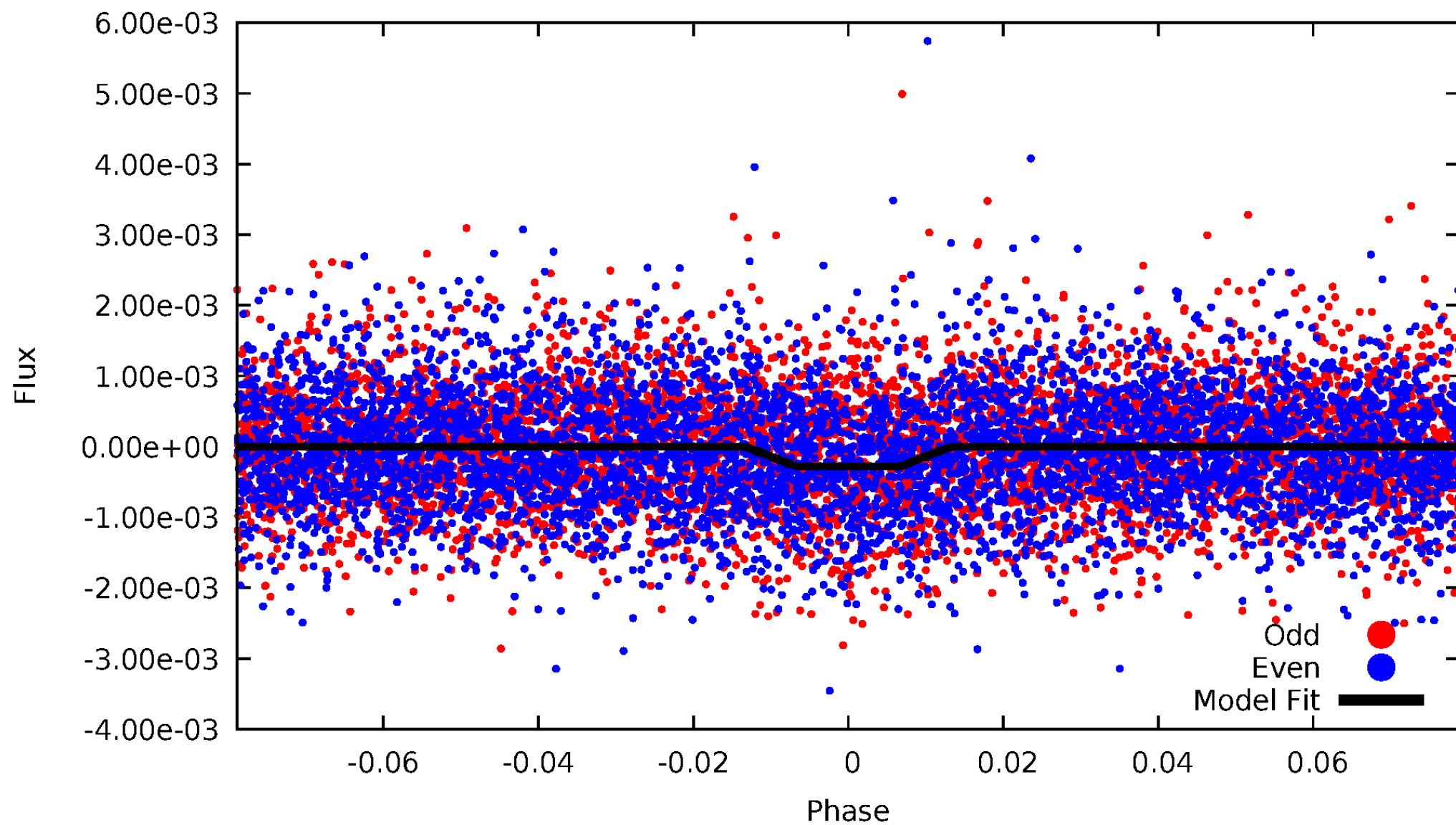
TCE 002557350-01





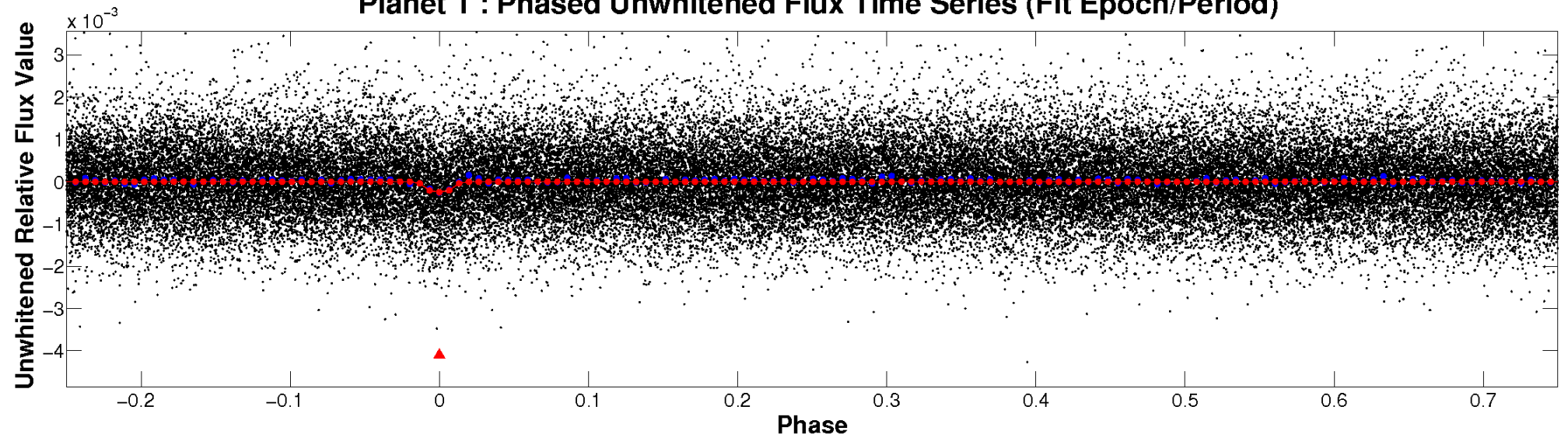
# ALT Odd/Even

TCE 002557350-01

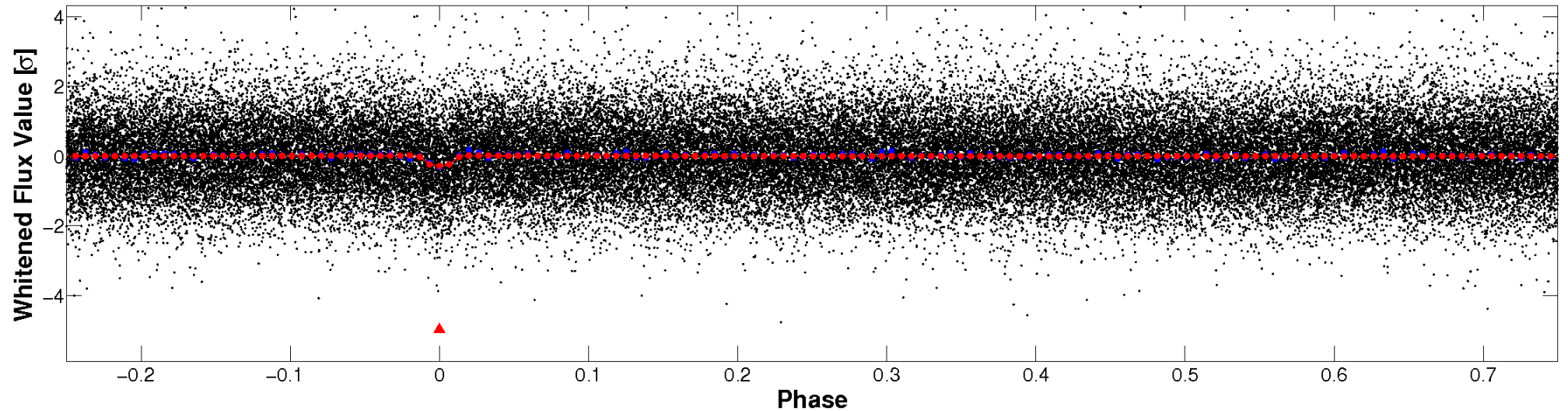


# Non-Whitened Vs. Whitened Light Curve

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

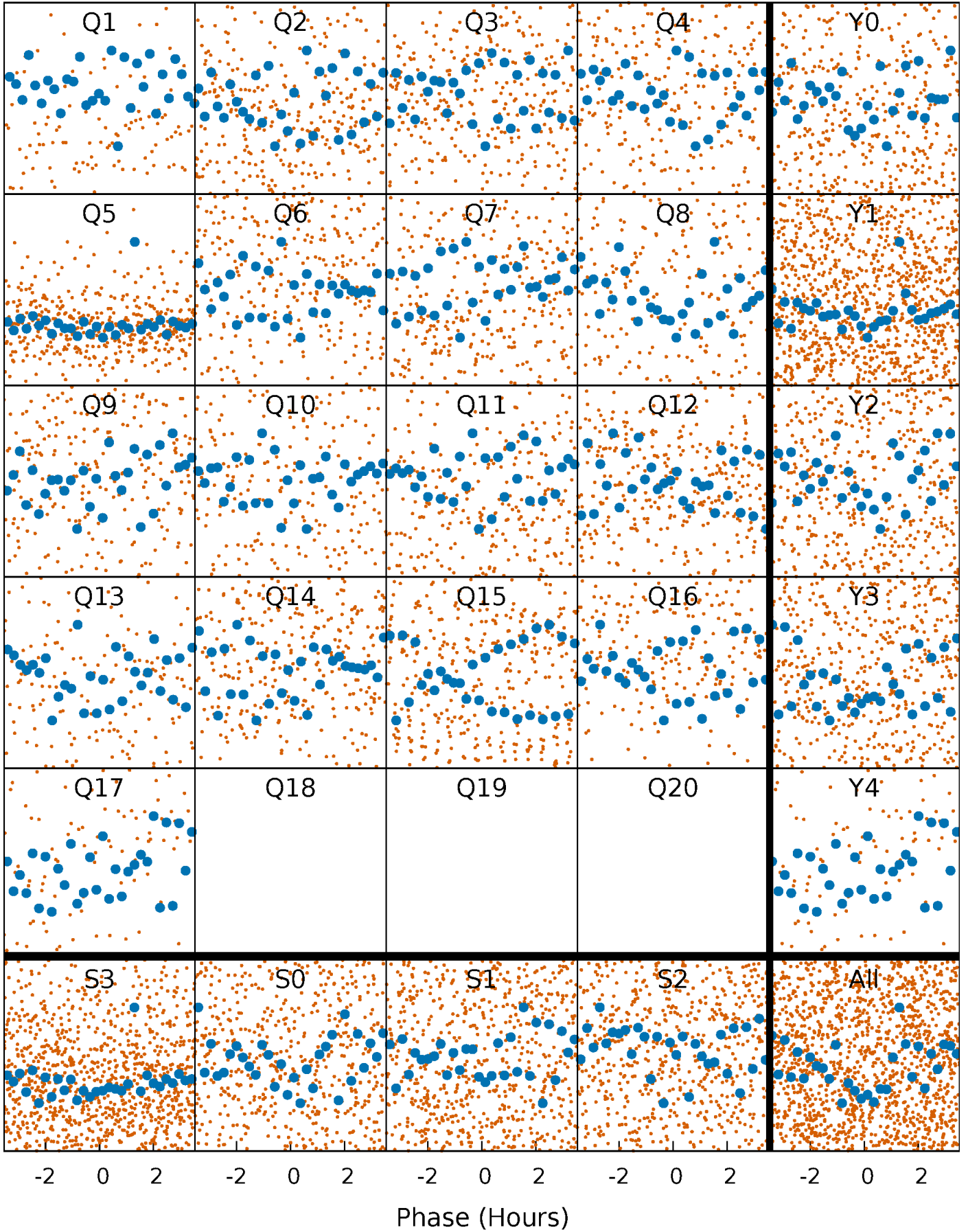


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

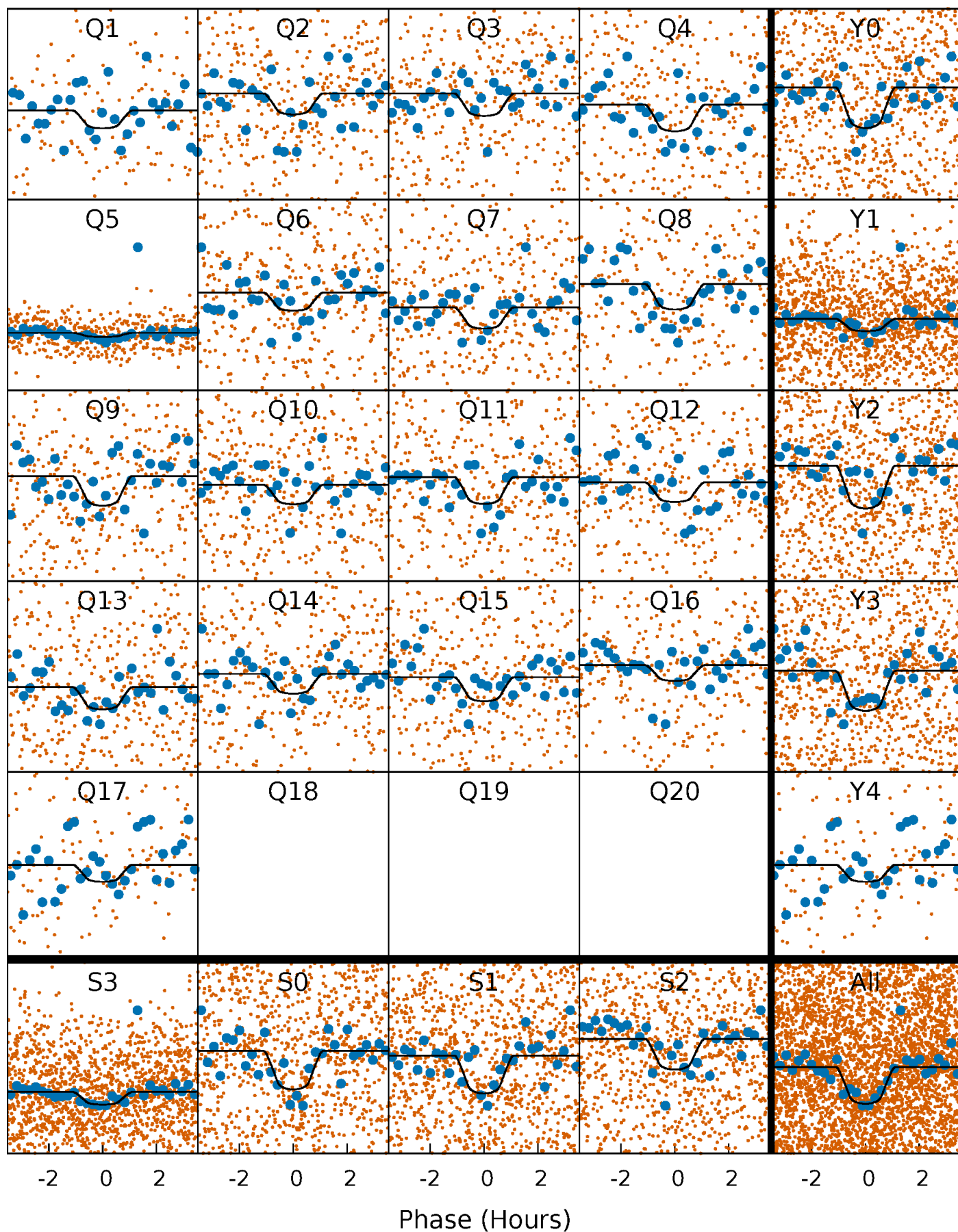
TCE 002557350-01 P= 3.098748 Days  $T_0=134.388816$  (BKJD)





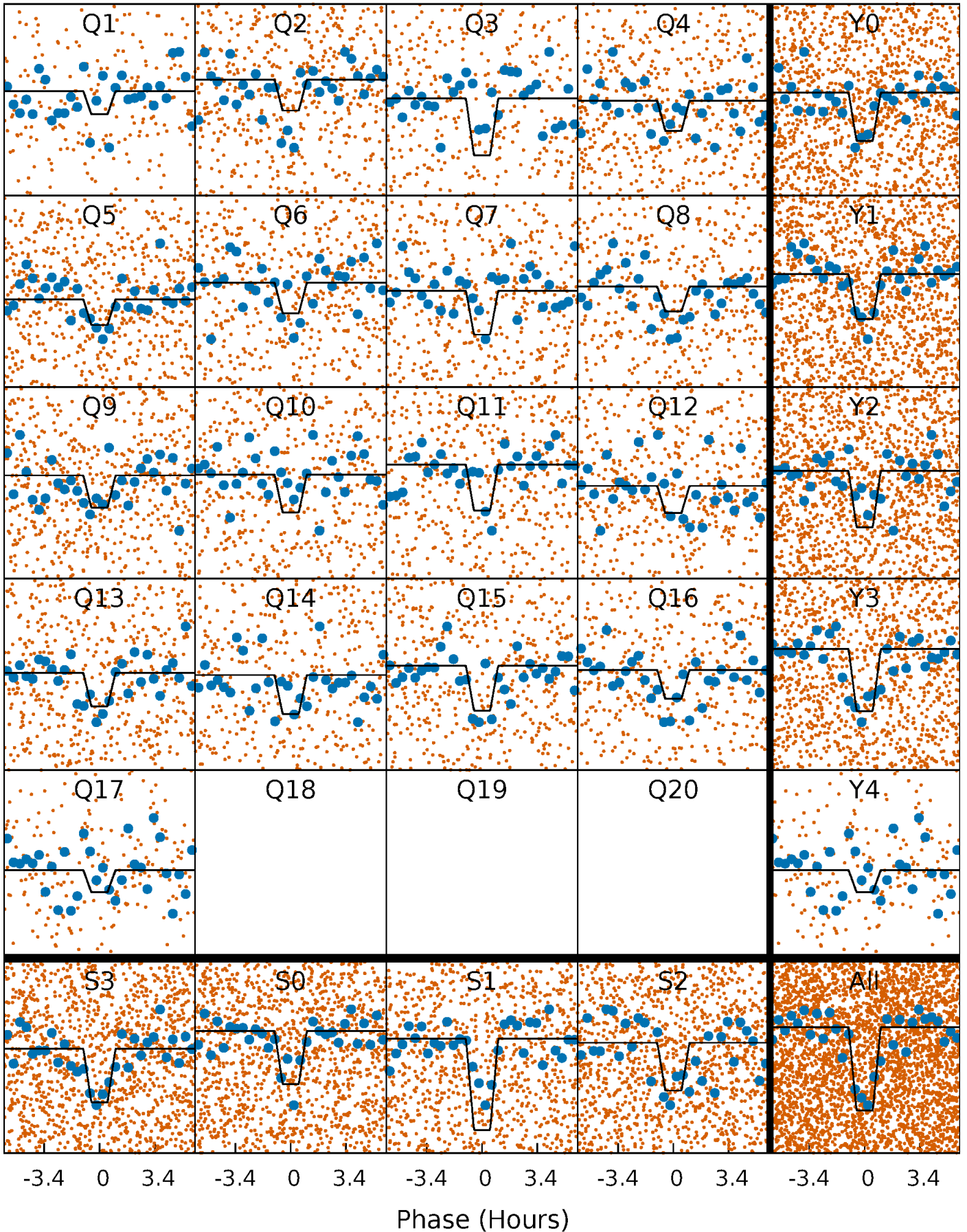
# DV Quarter-Phased Transit Curves

TCE 002557350-01 P= 3.098748 Days  $T_0=134.388816$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

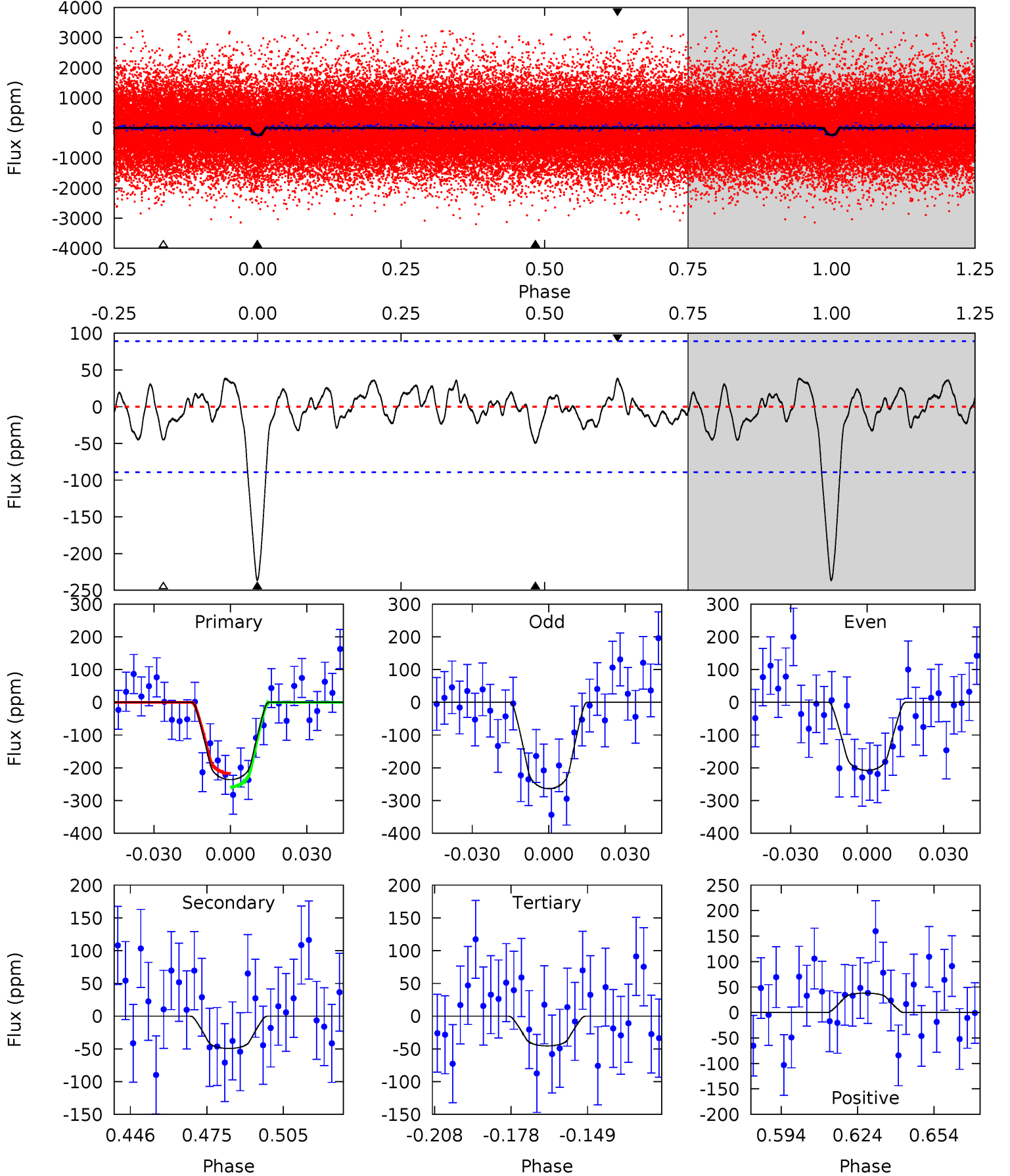
TCE 002557350-01 P= 3.098701 Days  $T_0=134.394638$  (BKJD)



# DV Model-Shift Uniqueness Test

002557350-01, P = 3.098748 Days, E = 131.290068 Days

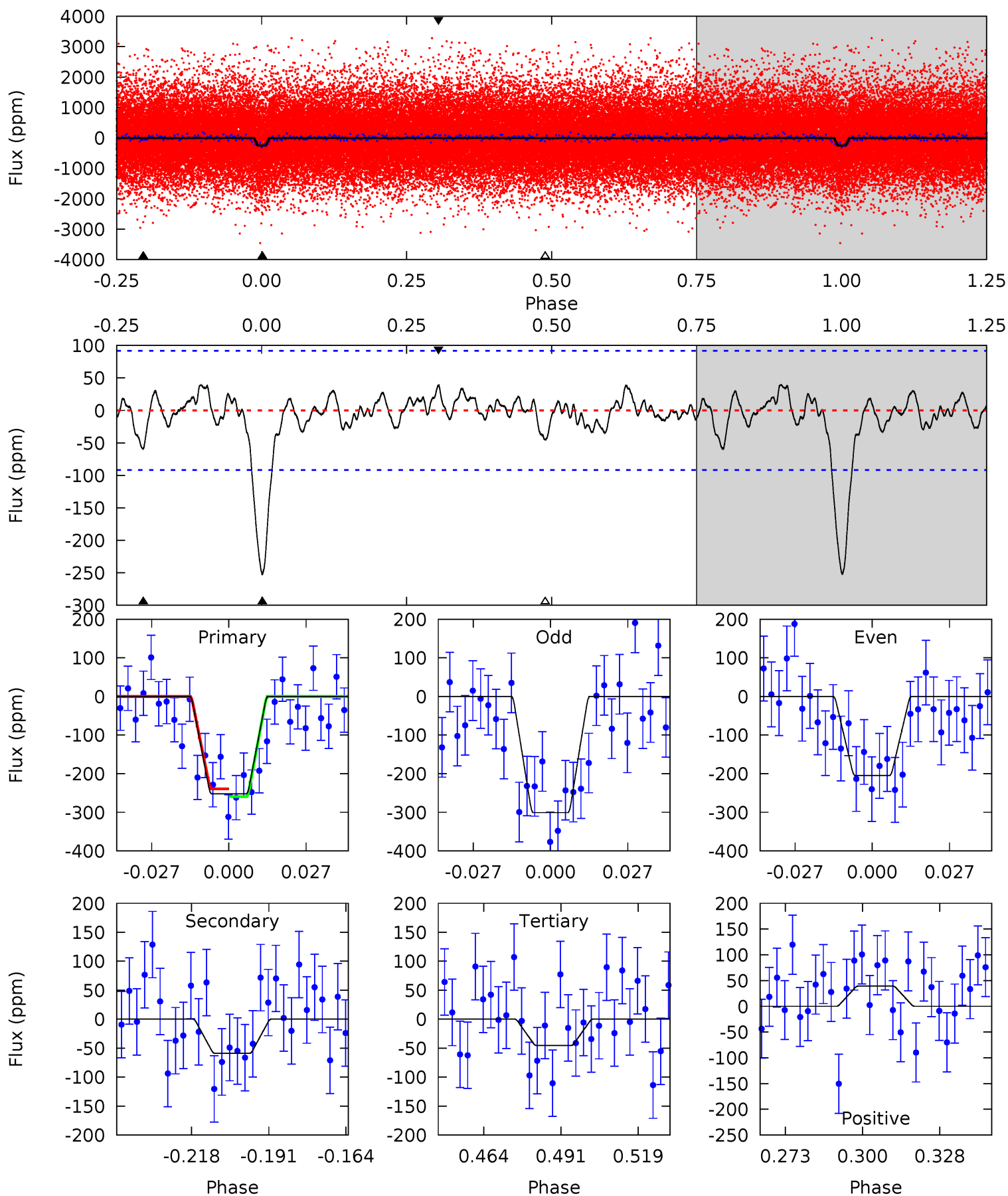
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.8	2.67	2.45	2.05	4.81	2.17	0.98	10.3	10.7	0.22	0.61	1.50	0.84	0.14	1.11



# Alt Model-Shift Uniqueness Test

002557350-01, P = 3.098701 Days, E = 131.295937 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
13.3	3.11	2.39	2.07	4.83	2.21	0.89	10.9	11.2	0.72	1.04	2.54	0.97	0.13	0.53



### Stellar Parameters For KIC 002557350

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$3628^{+58}_{-65}$	$4.842^{+0.044}_{-0.036}$	$-0.200^{+0.100}_{-0.100}$	$0.410^{+0.034}_{-0.041}$	$0.427^{+0.036}_{-0.044}$	$8.708^{+2.151}_{-1.328}$
	+2%/-2%	+1%/-1%	+50%/-50%	+8%/-10%	+8%/-10%	+25%/-15%
Source	PHO2	PHO2	PHO2	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 002557350-01 / KOI 6276.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-49 \pm 19$	$0.83^{+0.60}_{-0.47}$	$808^{+18}_{-20}$	$2708^{+780}_{-367}$	$37^{+168}_{-26}$
Alt.	$-59 \pm 19$	$0.84^{+0.58}_{-0.50}$	$809^{+18}_{-21}$	$2769^{+883}_{-365}$	$43^{+251}_{-29}$

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



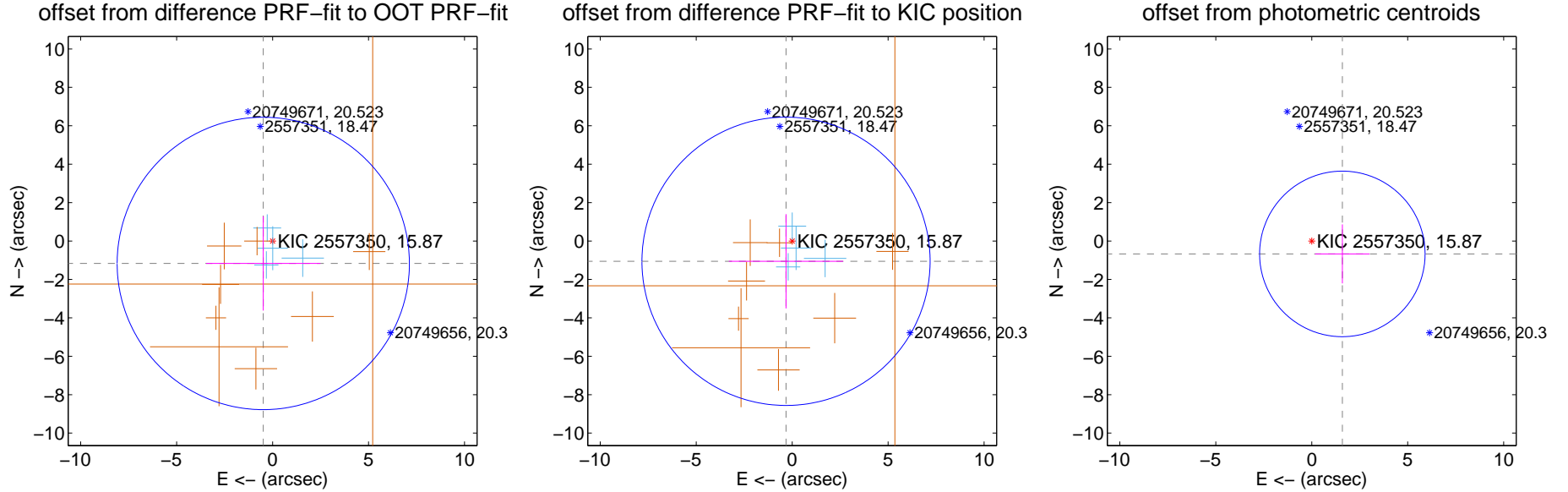
## DV Centroid Data

Supplemental centroid analysis for 002557350-01. Kepler magnitude: 15.87. Transit SNR 8.98

There are 4 quarters with good PRF difference image offsets

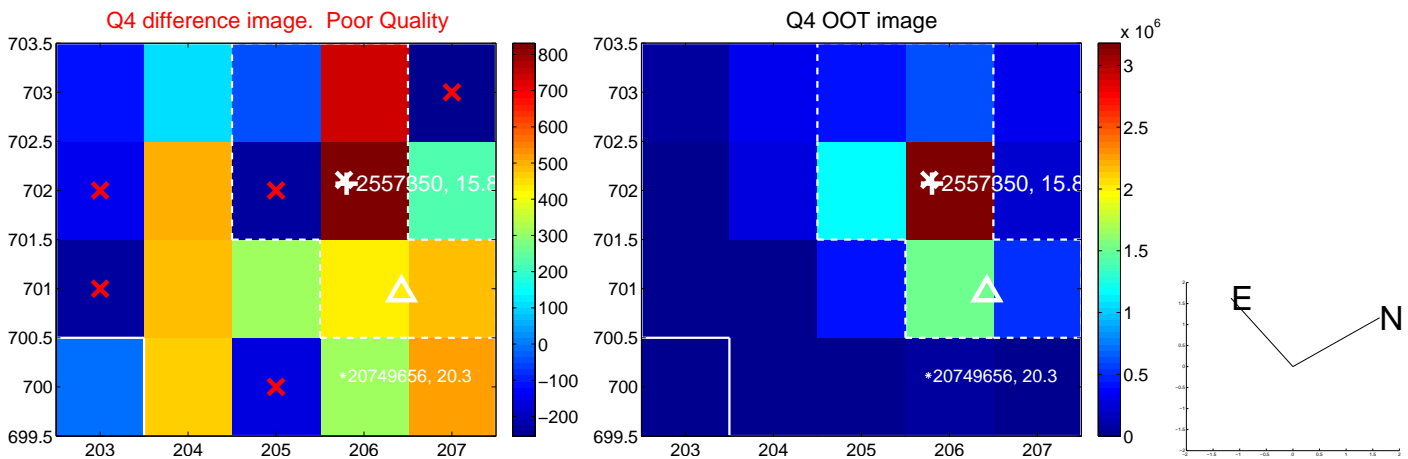
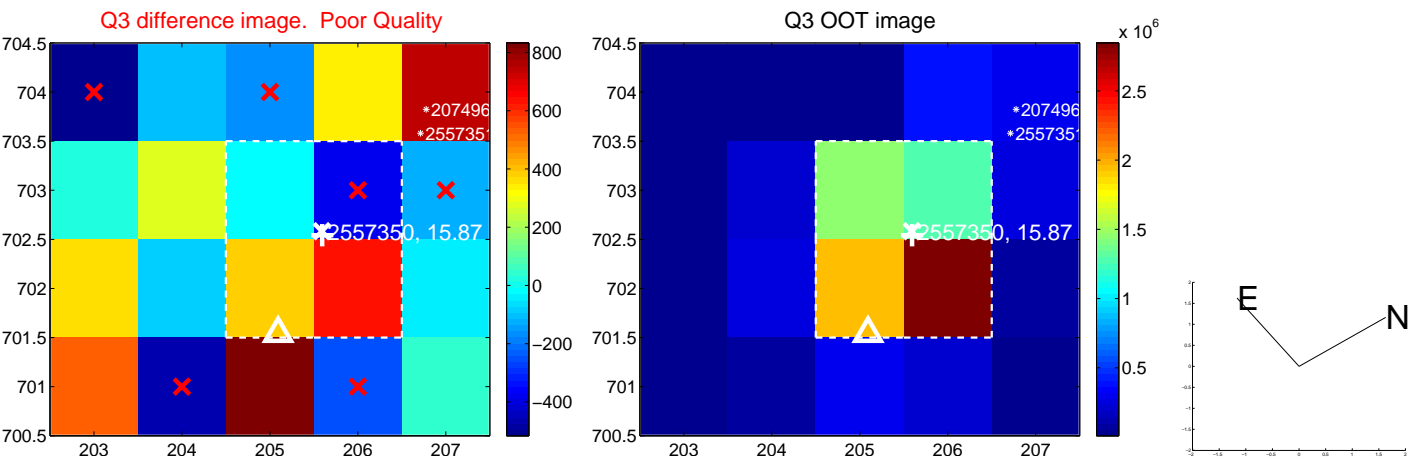
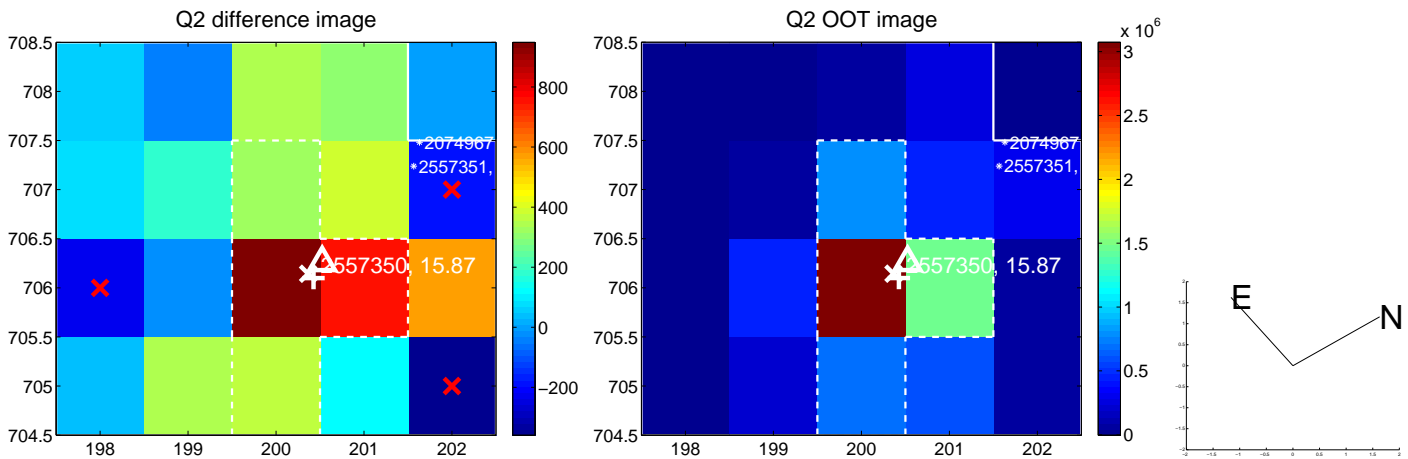
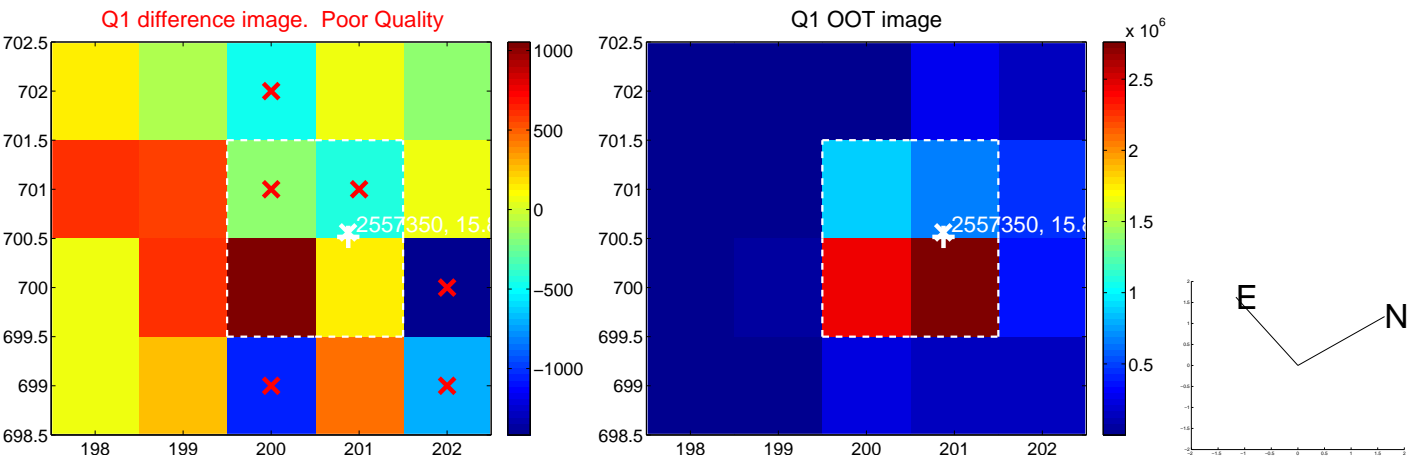
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.264 \pm 2.537$	0.50	$0.485 \pm 2.976$	$-1.168 \pm 2.453$
PRF-fit source offset from KIC position	$1.103 \pm 2.502$	0.44	$0.320 \pm 2.976$	$-1.055 \pm 2.453$
photometric centroid source offset	$1.73 \pm 1.44$	1.20	$-1.59 \pm 1.42$	$-0.67 \pm 1.53$

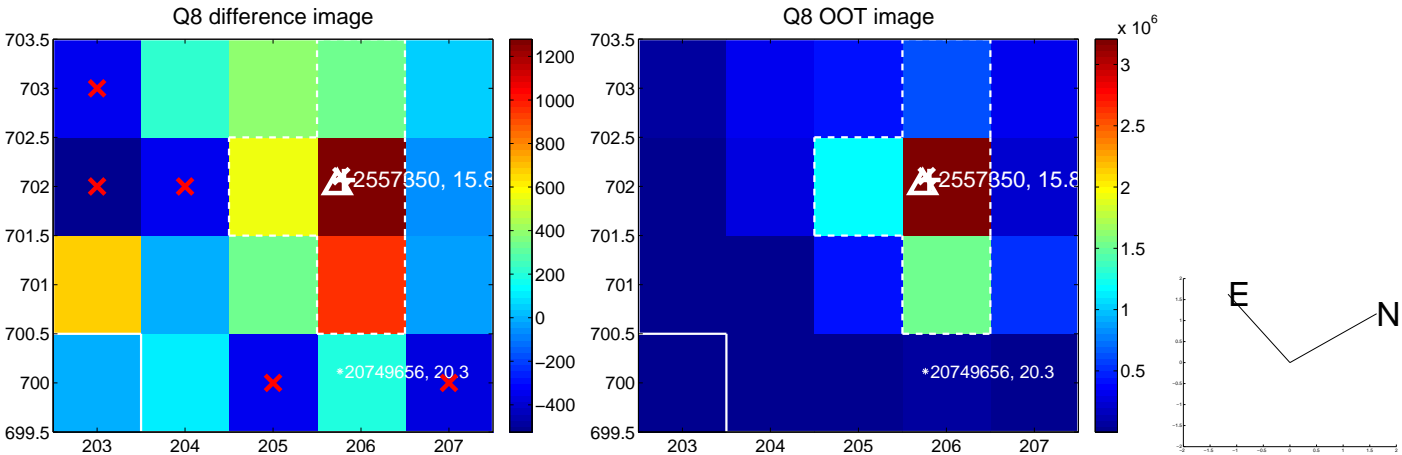
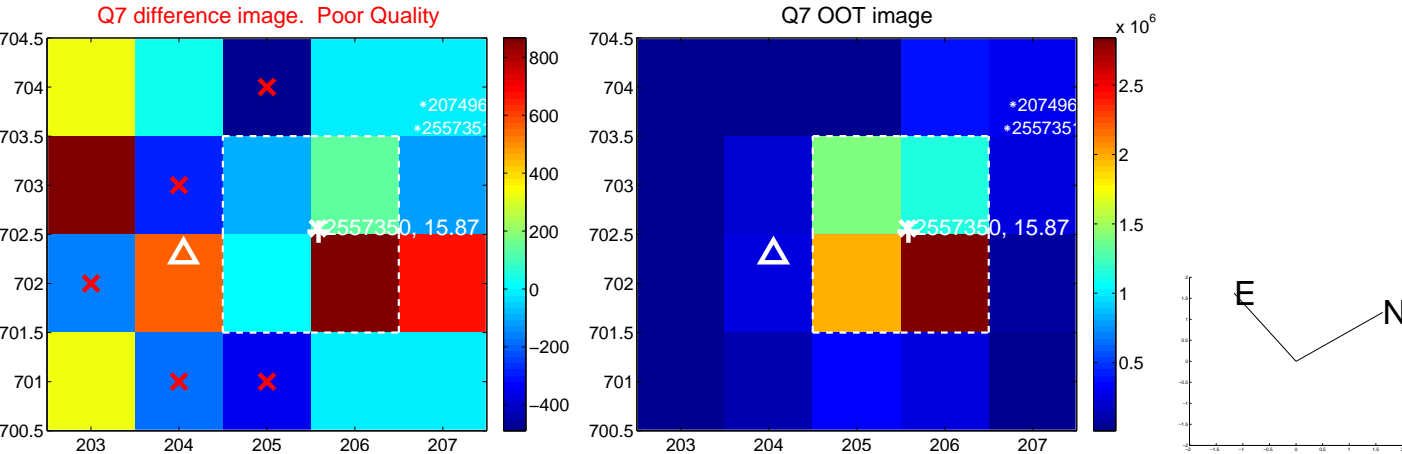
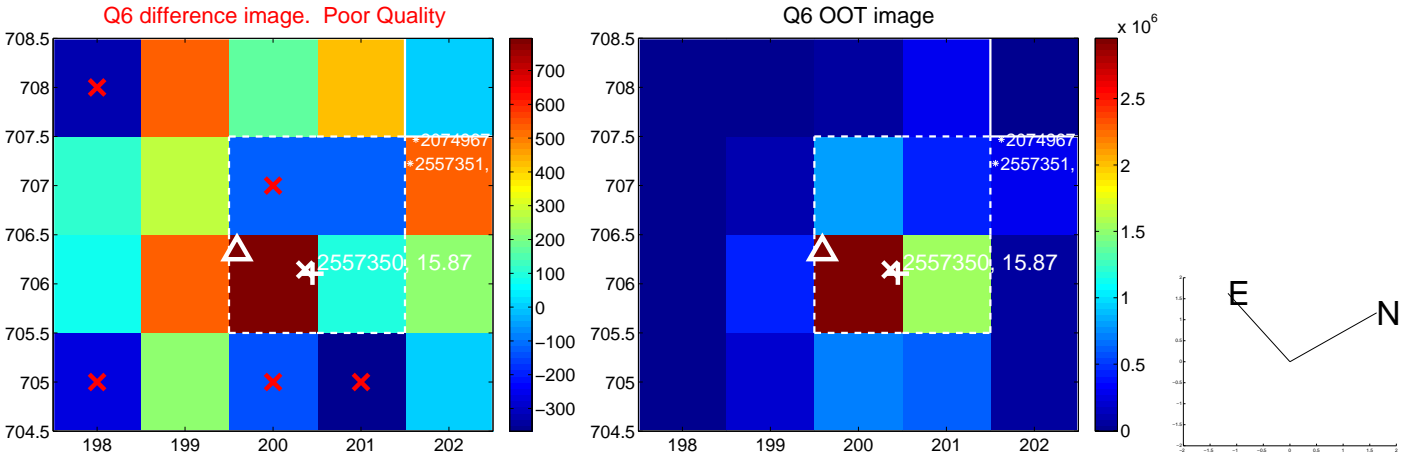
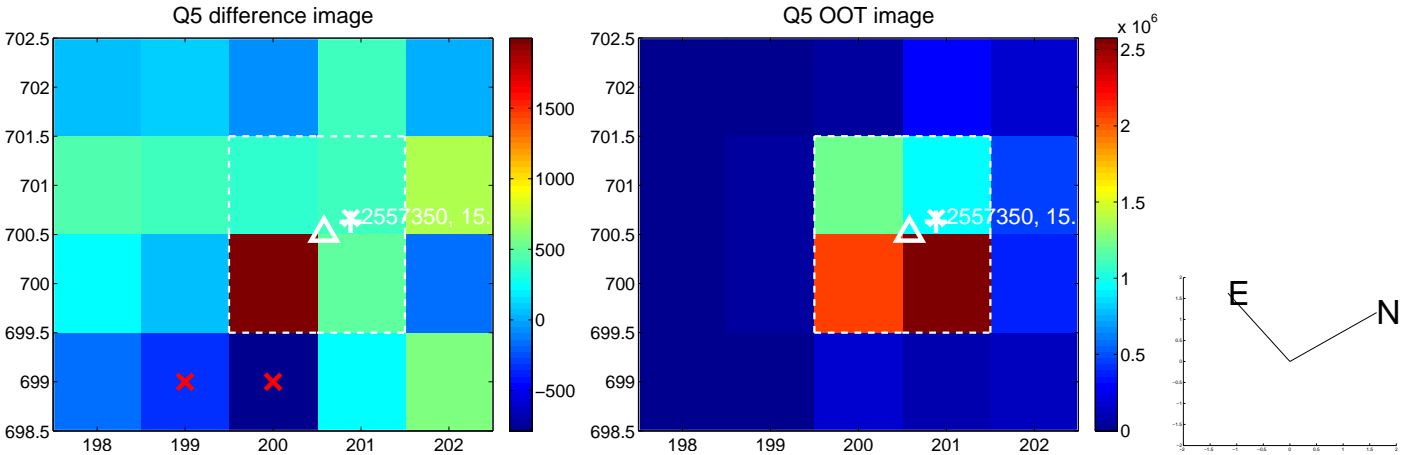


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

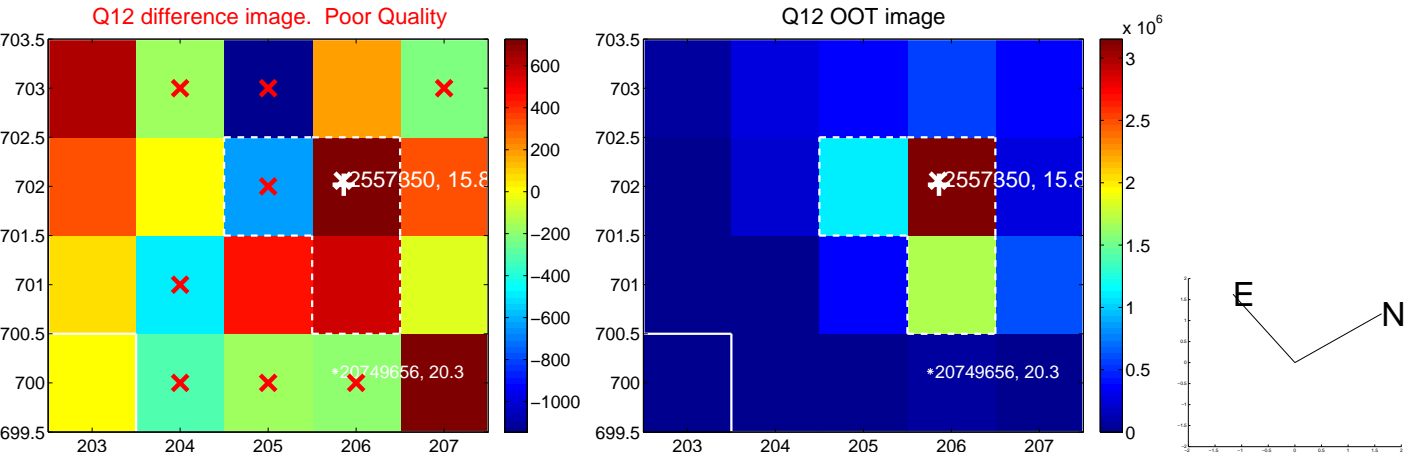
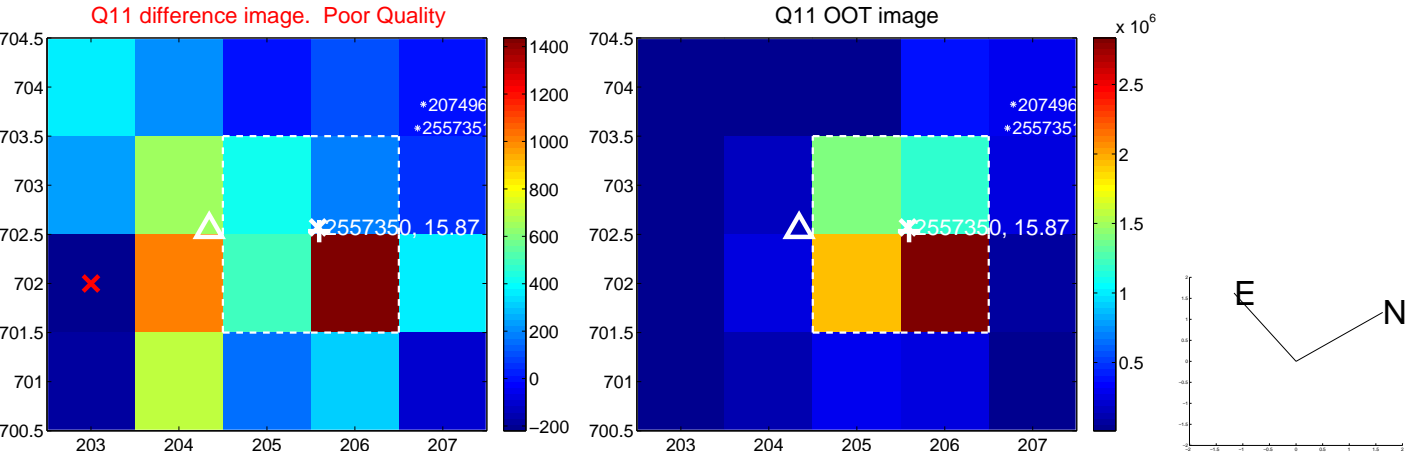
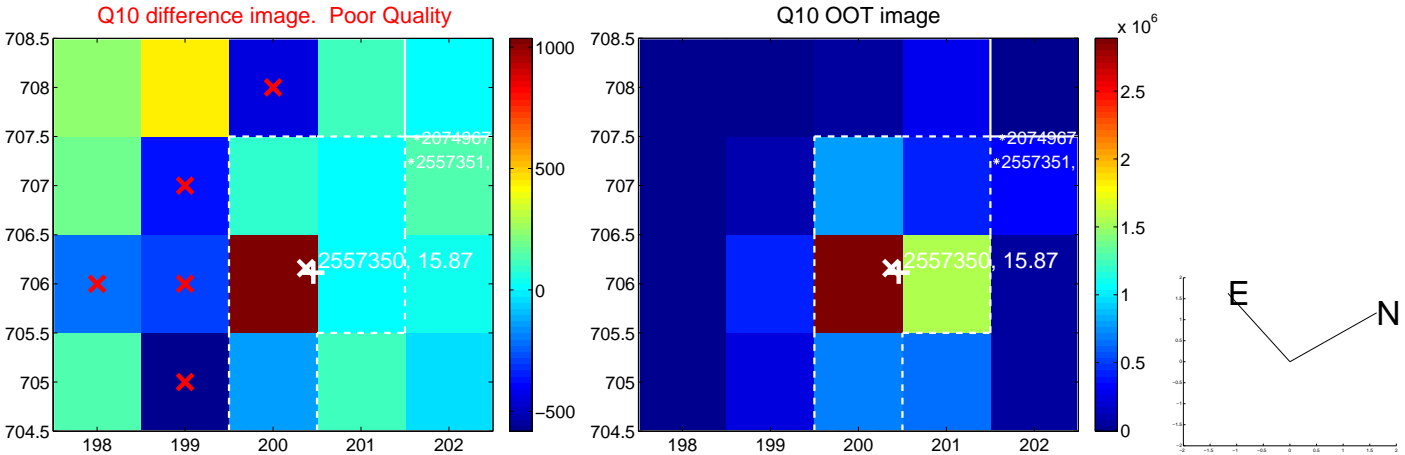
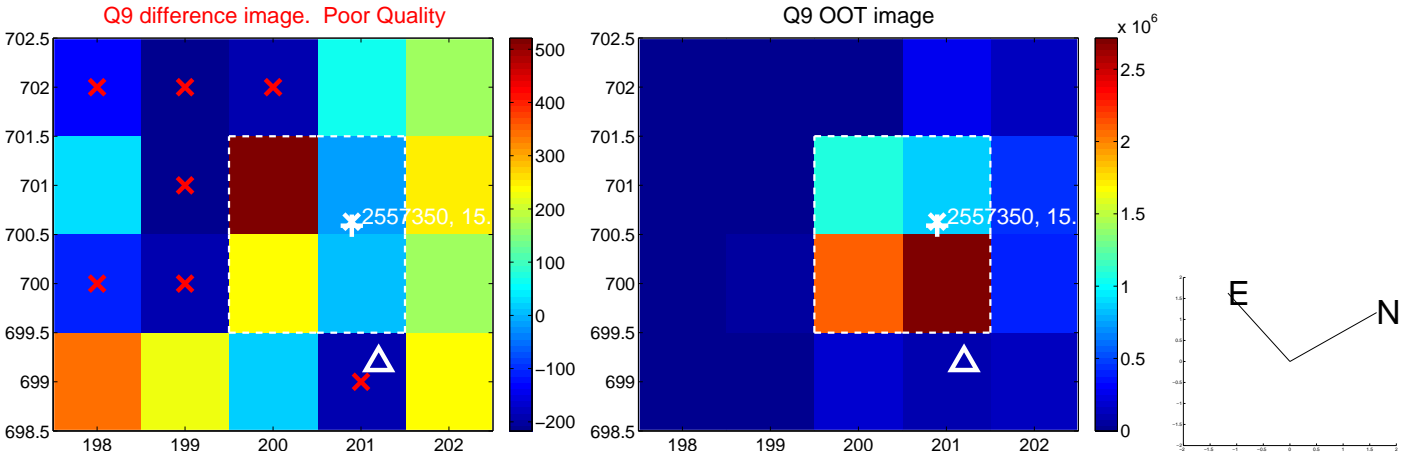
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



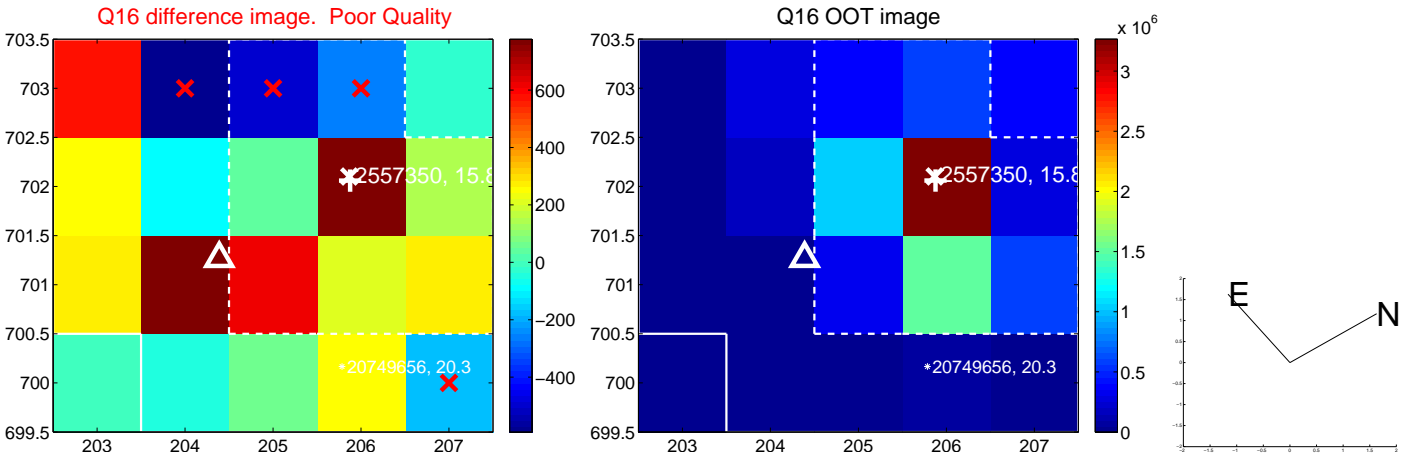
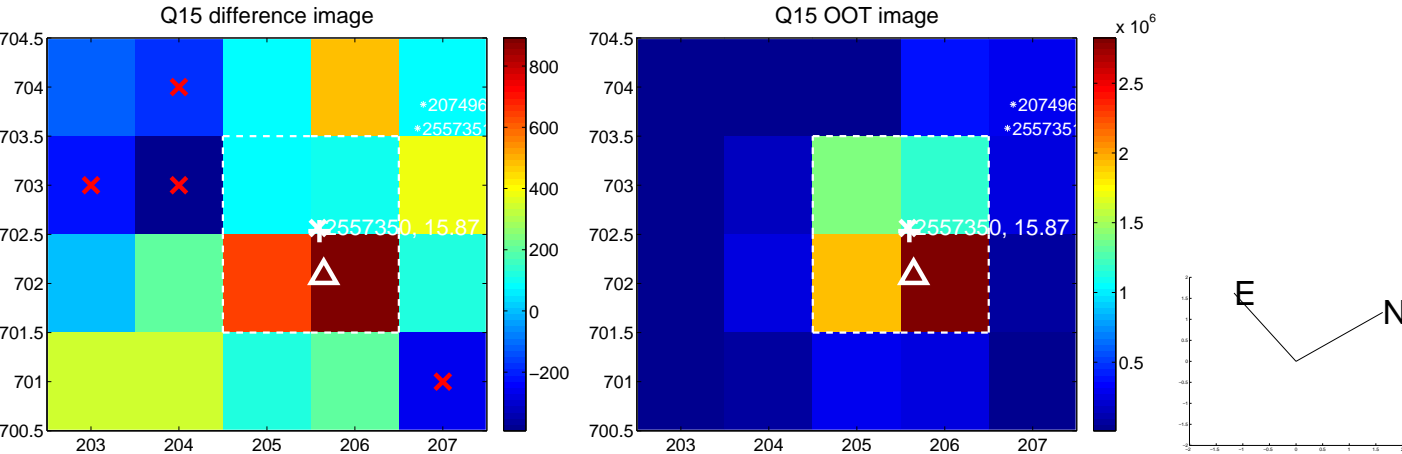
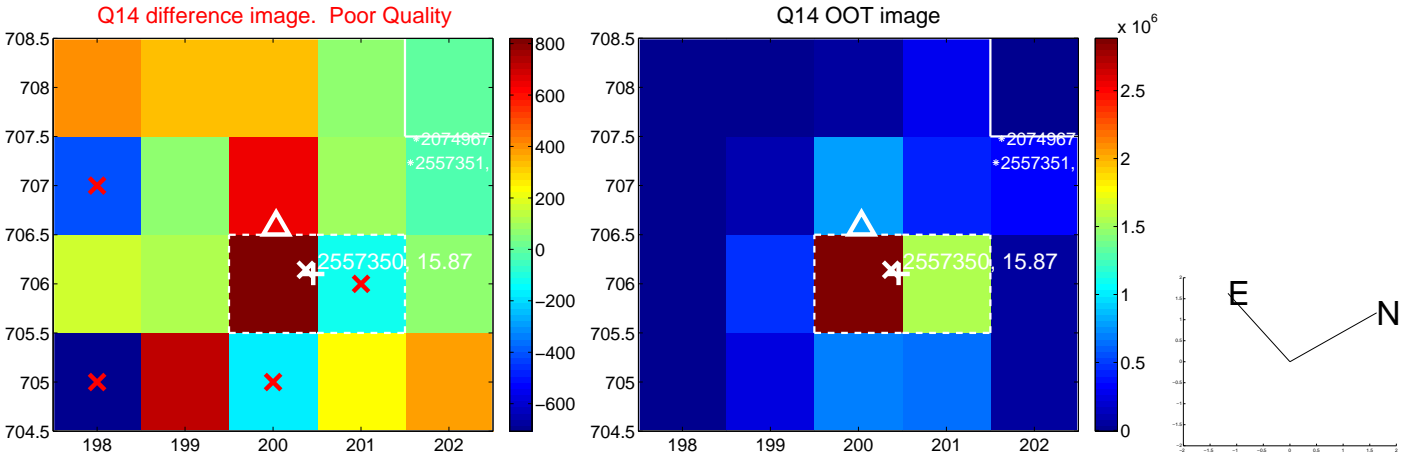
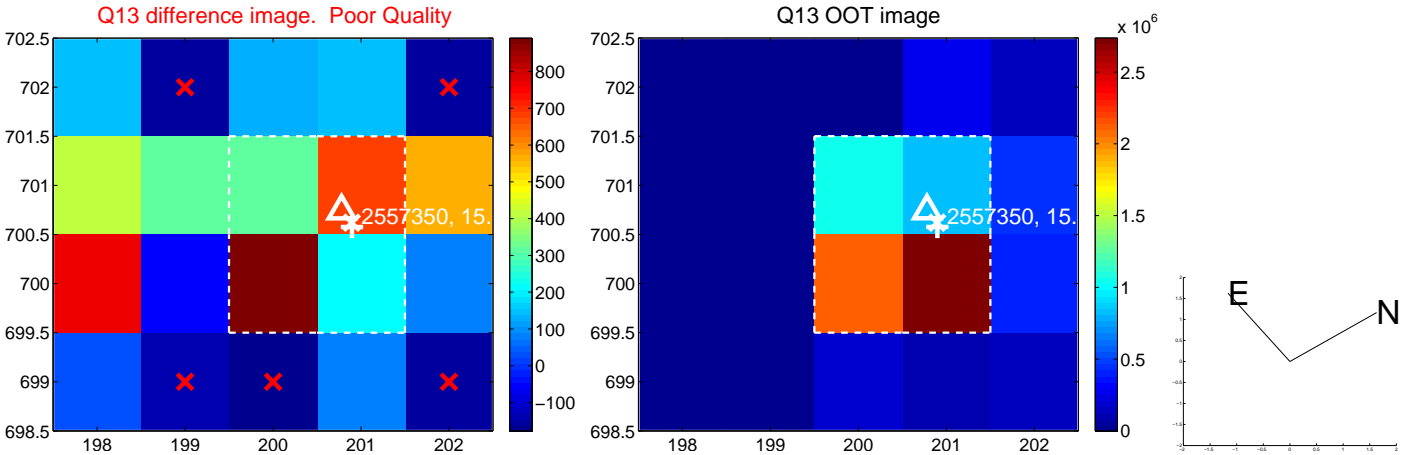
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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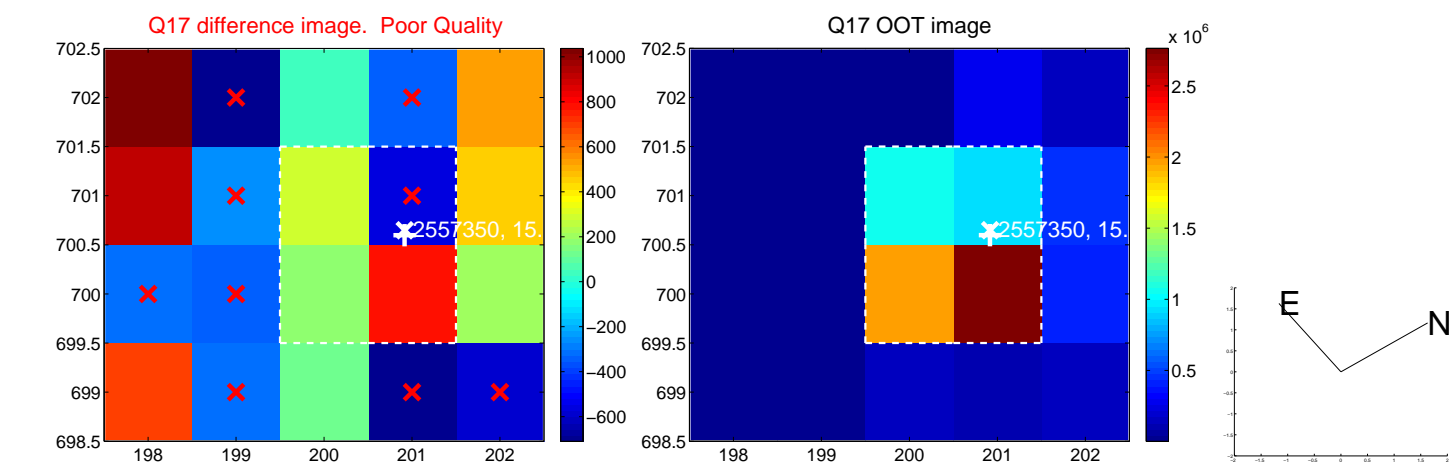


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

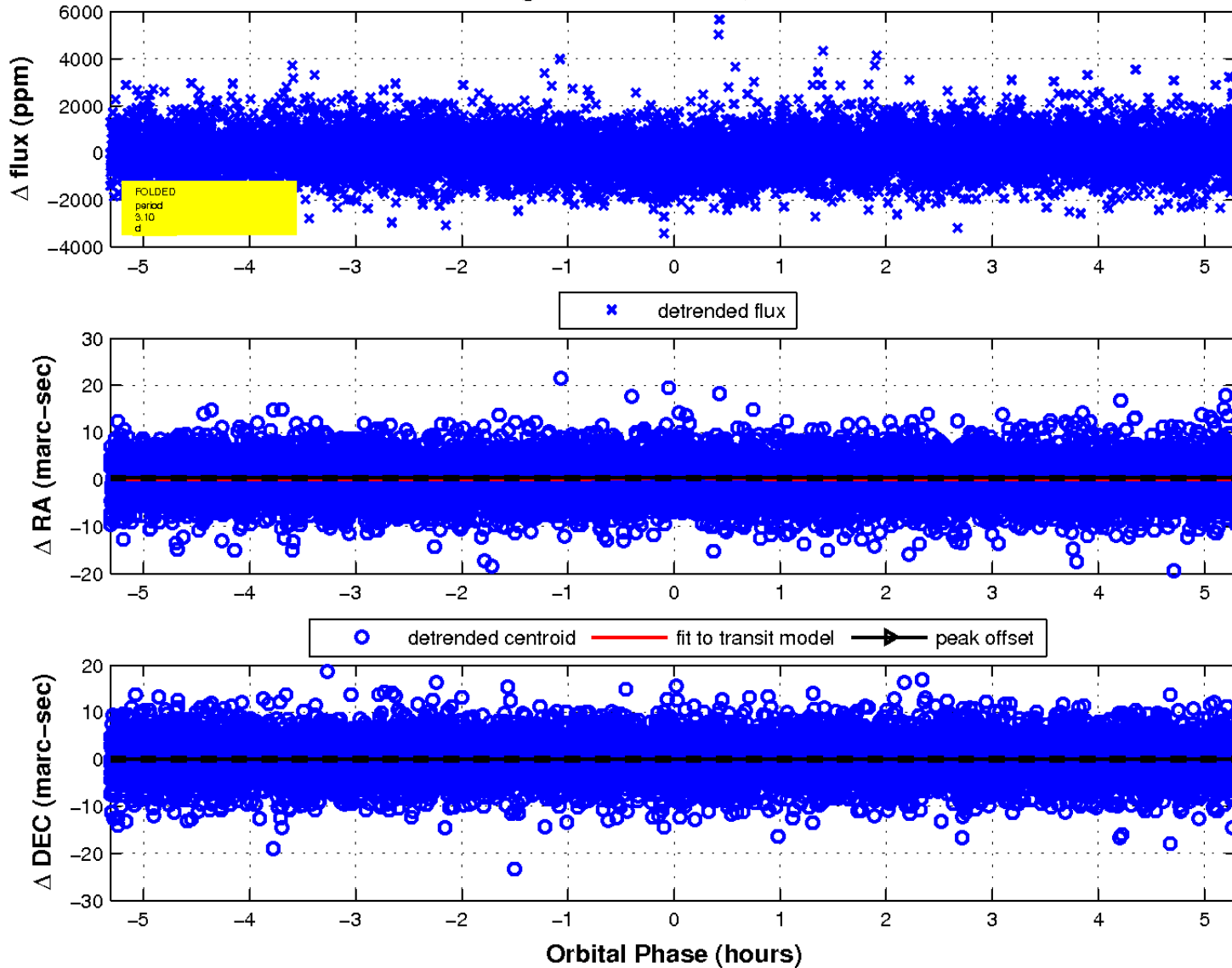




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



# UKIRT Image

Declination

