

# KIC 007551589

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007551589-01	OBS	No	1.115380	131.677204	81.4	13.385	10.0	5.0	3.64	7334	3.99	53663.89

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007551589-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT

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

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

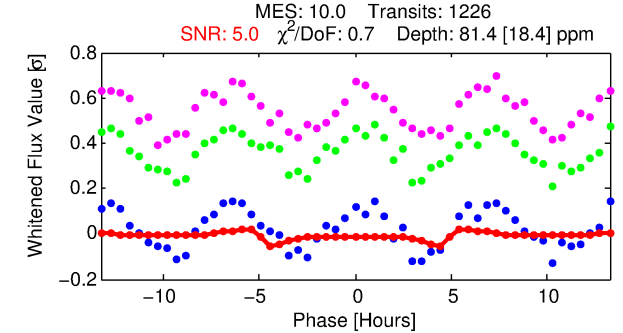
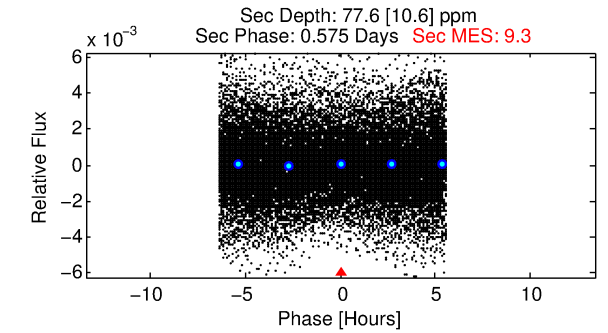
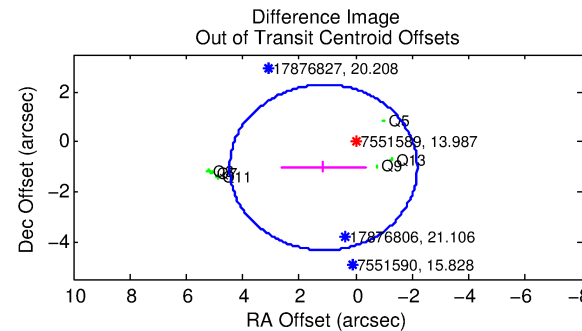
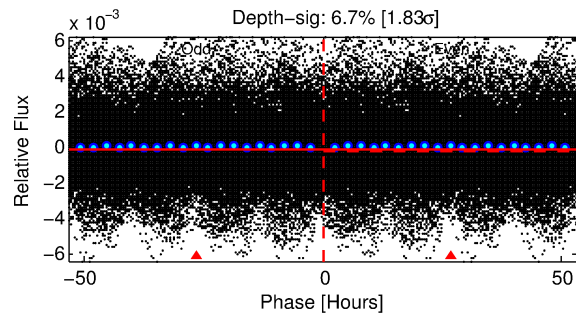
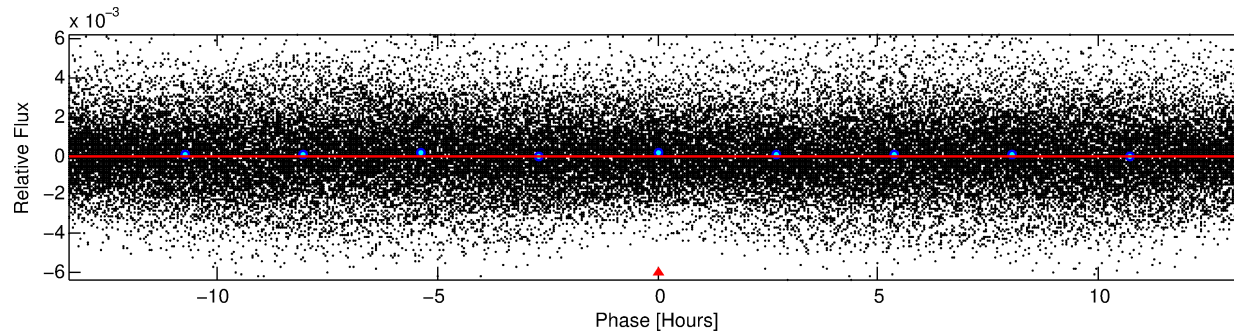
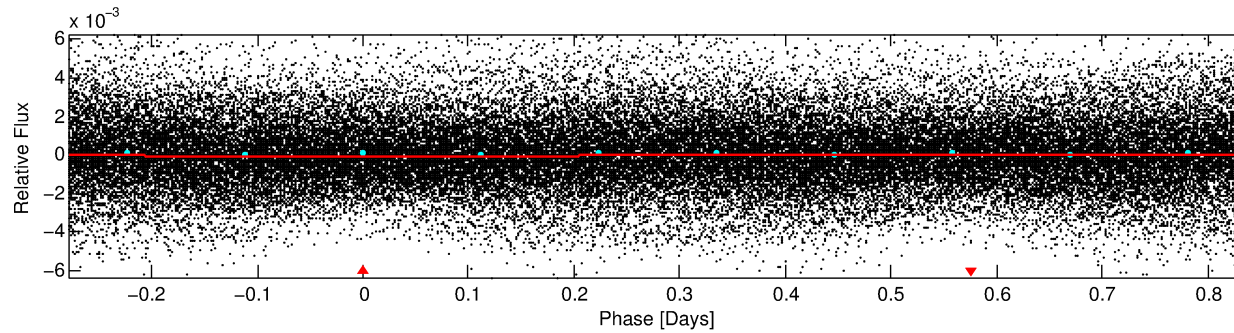
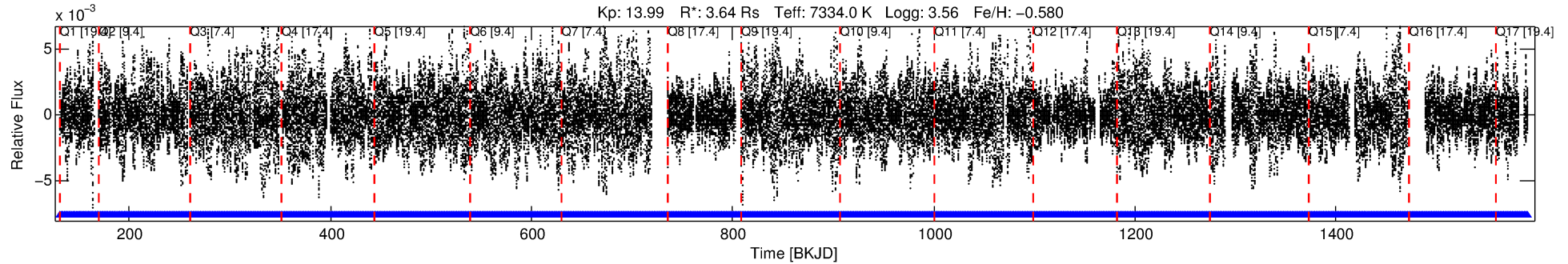
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007551589-01

No Significant Match Found

# DV One-Page Summary

KIC: 7551589 Candidate: 1 of 1 Period: 1.115 d



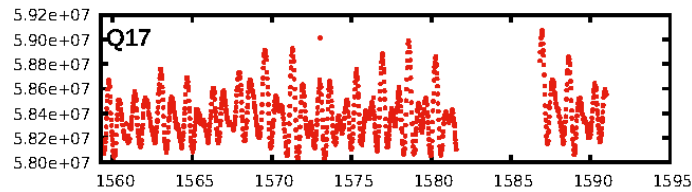
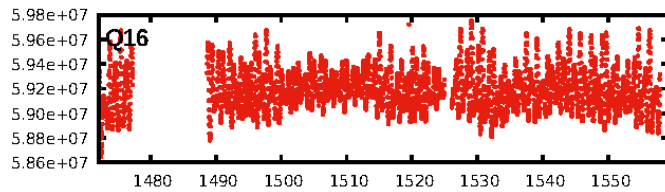
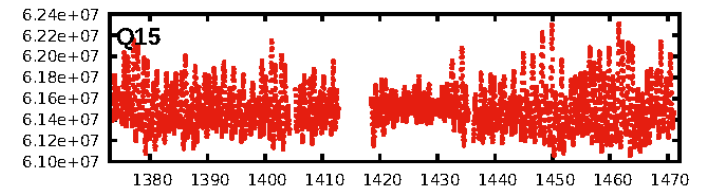
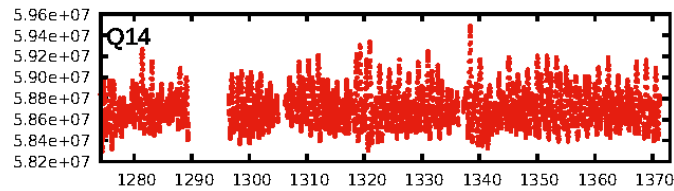
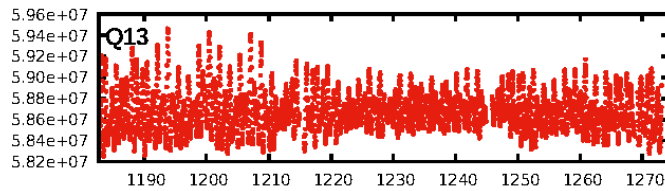
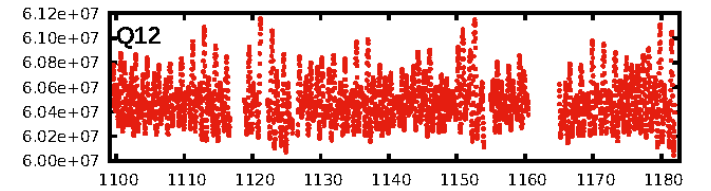
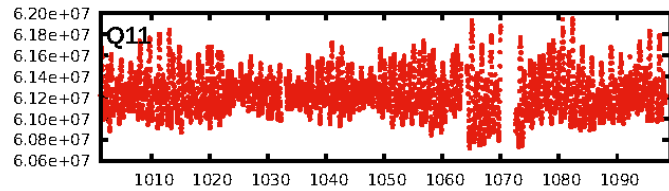
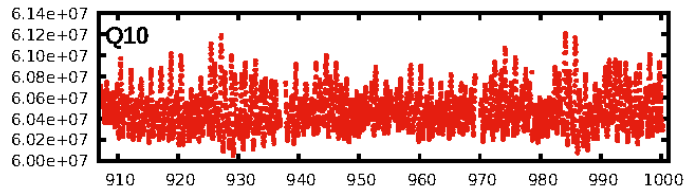
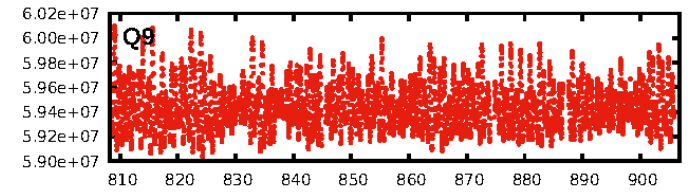
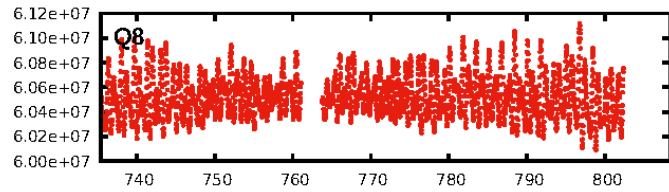
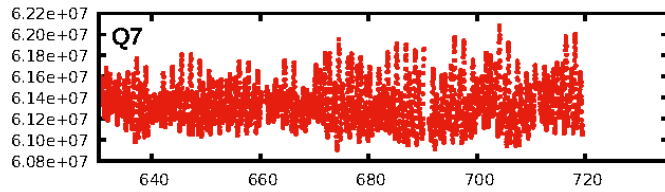
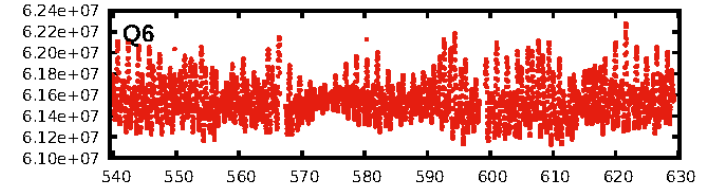
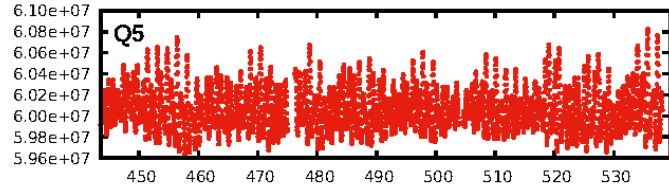
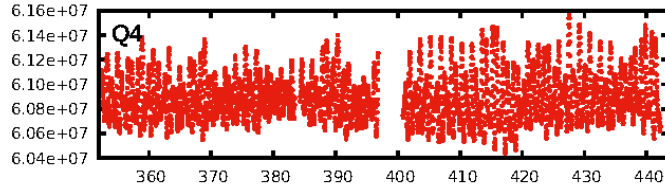
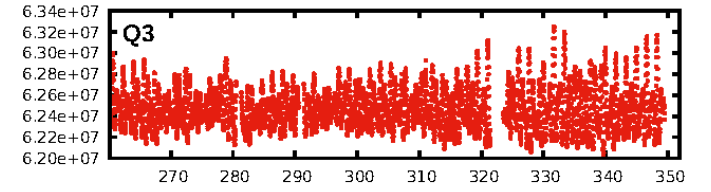
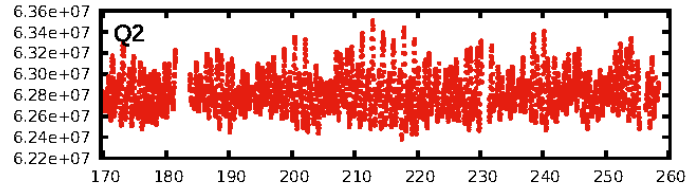
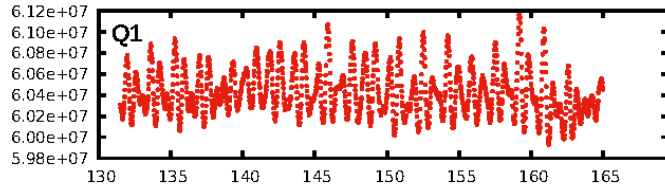
## DV Fit Results:

Period = 1.11538 [0.00002] d  
Epoch = 131.6772 [0.0065] BKJD  
Rp/R\* = 0.0100 [0.0011]  
a/R\* = 1.01 [0.00]  
b = 0.95 [0.01]  
Seff = 53663.89 [57849.84]  
Teq = 3881 [1046] K  
Rp = 3.99 [2.39] Re  
a = 0.0253 [0.0160] AU  
Ag = 1.72 [1.88] [0.38 $\sigma$ ]  
Teffp = 6868 [515] K [2.56 $\sigma$ ]

## DV Diagnostic Results:

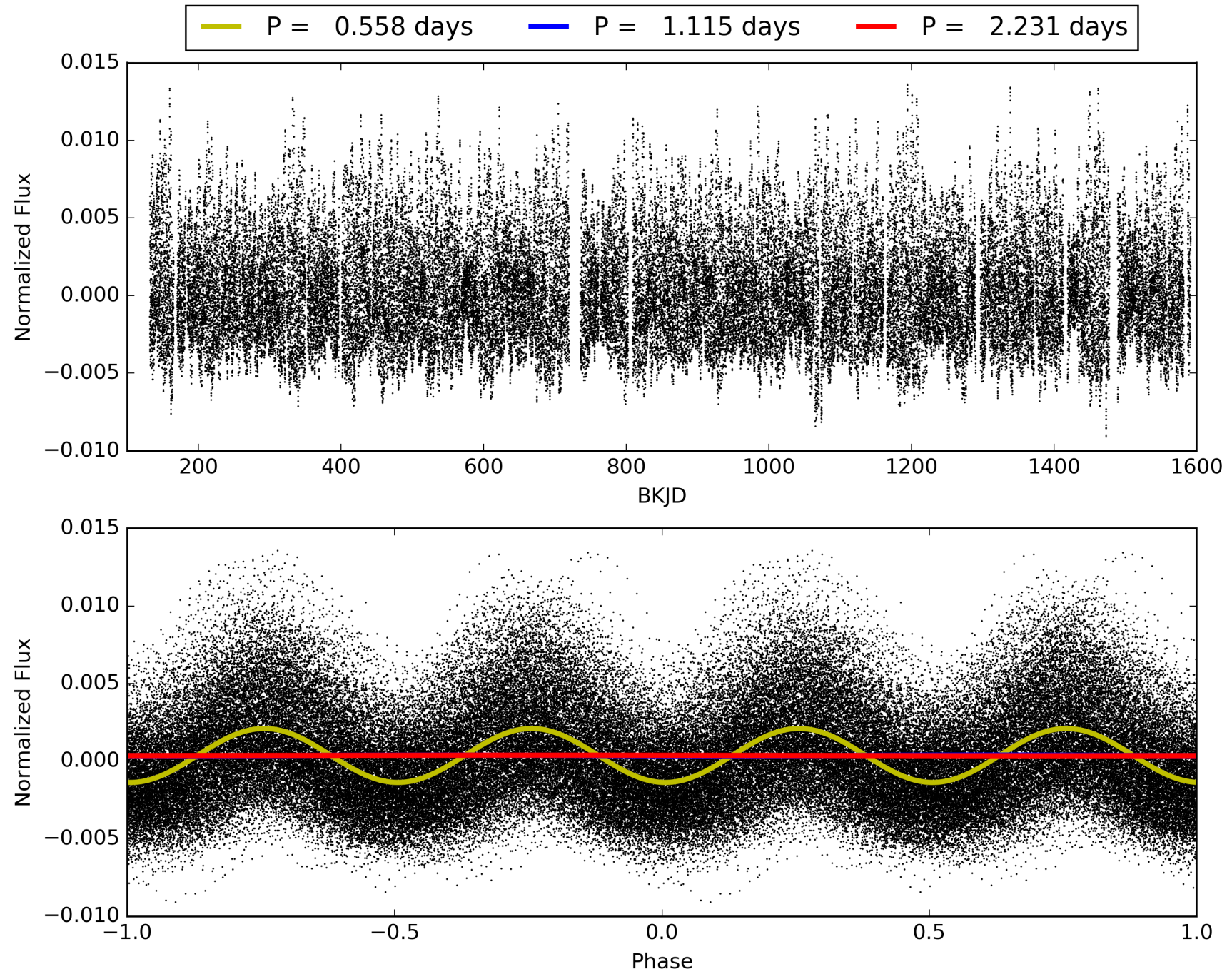
ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1170/1170]  
GhostDiagnostic-chr: 0.4524  
Centroid-sig: 0.1%  
Centroid-so: 0.912 arcsec [3.61 $\sigma$ ]  
OotOffset-rm: 1.536 arcsec [1.39 $\sigma$ ]  
KicOffset-rm: 1.561 arcsec [1.61 $\sigma$ ]  
OotOffset-st: 0/3/0/3 [6]  
KicOffset-st: 0/3/0/3 [6]  
DiffImageQuality-fgm: 0.50 [3/6]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 007551589-01, PDC Light Curves



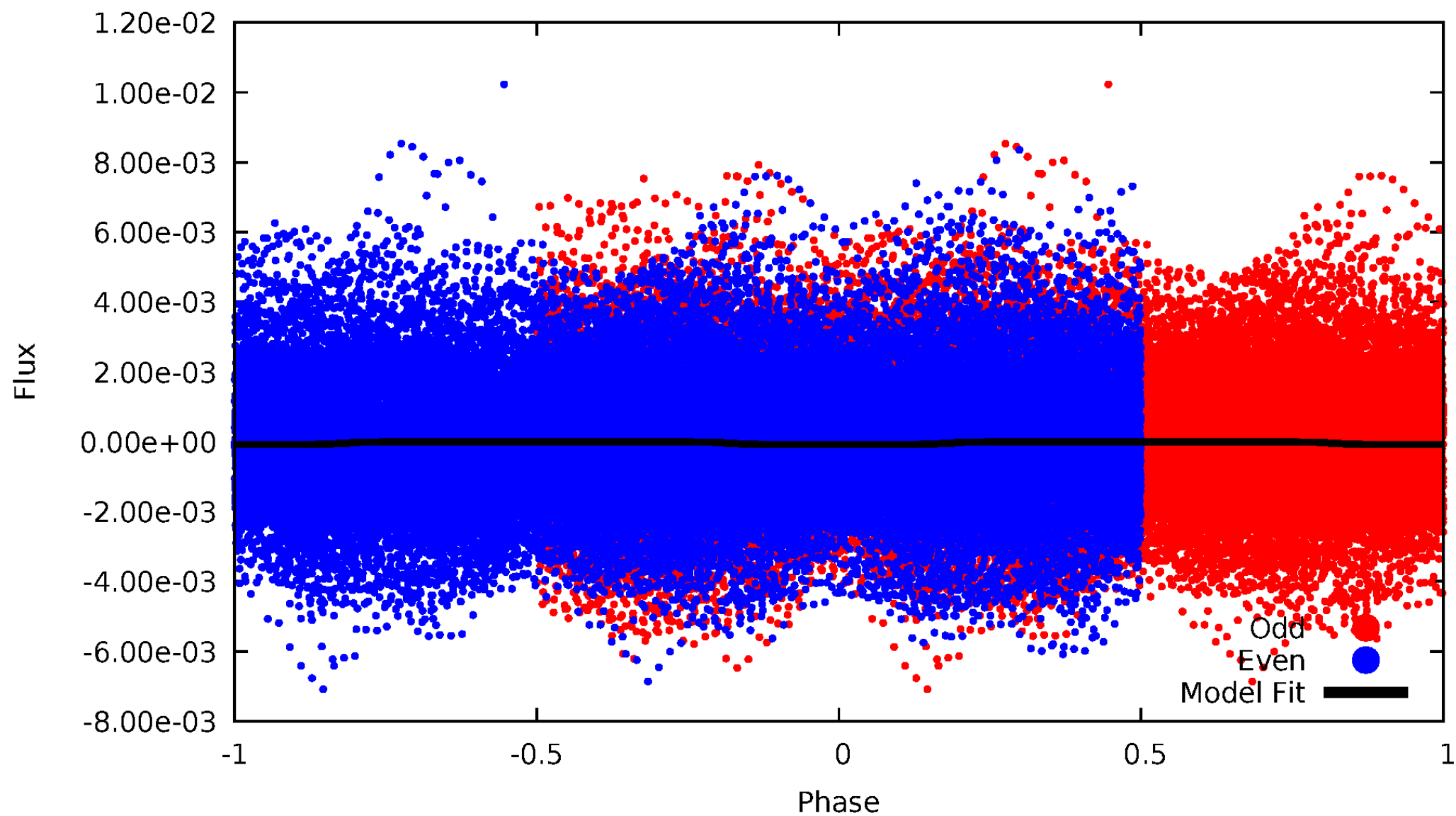


TCE 007551589-01



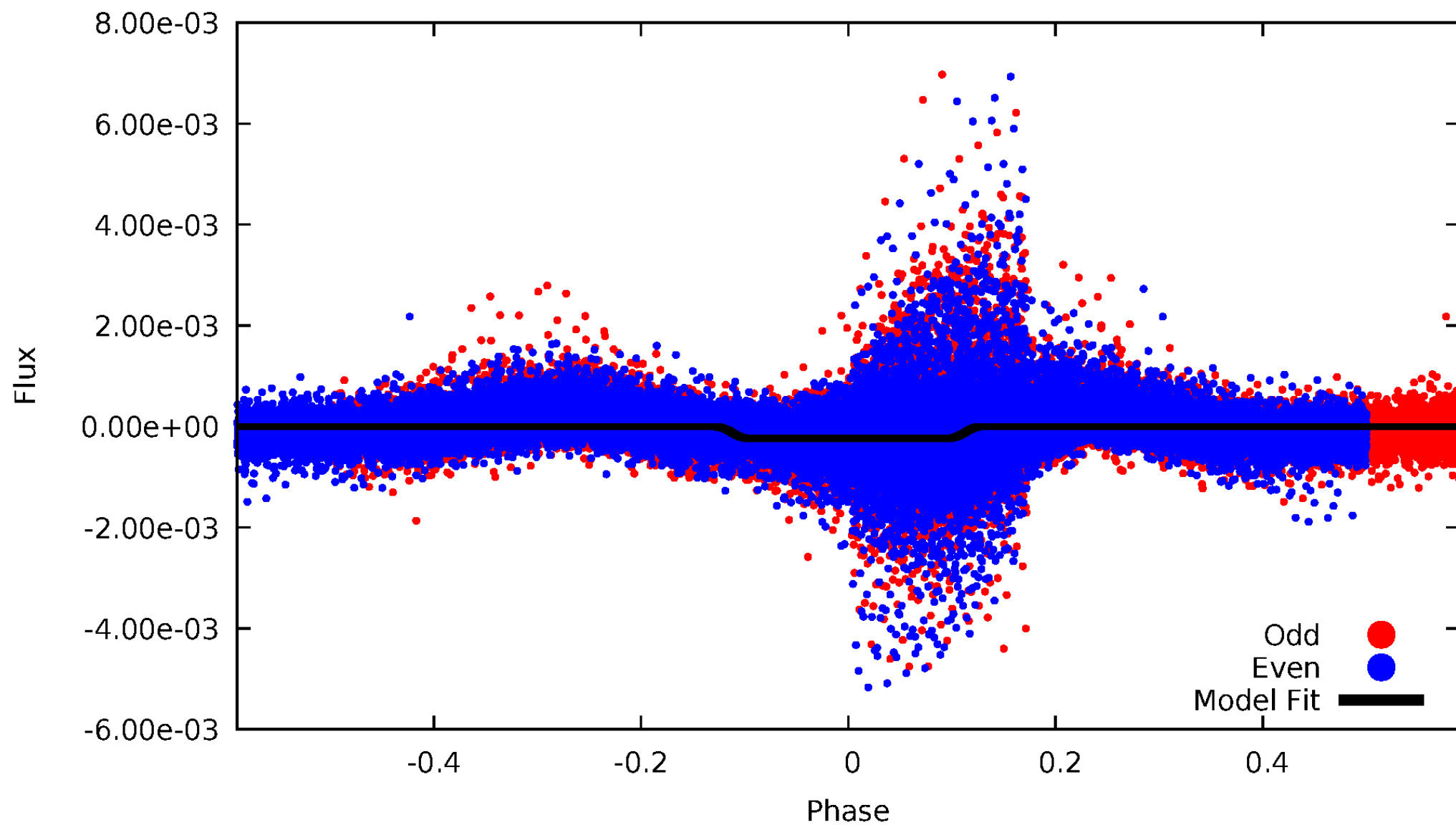
# DV Odd/Even

TCE 007551589-01

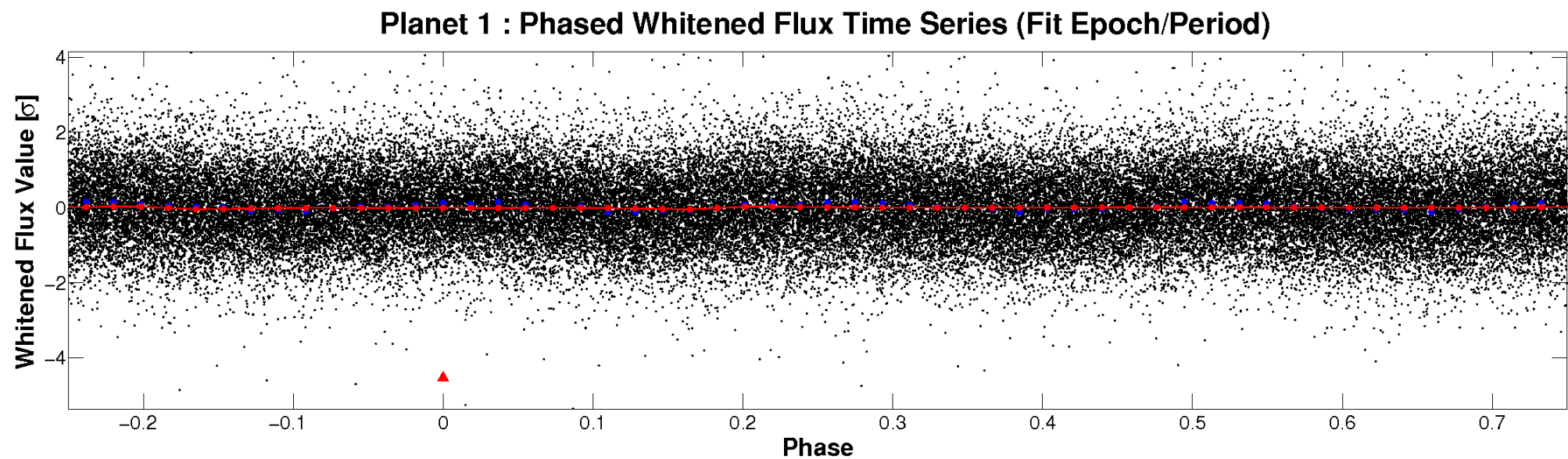
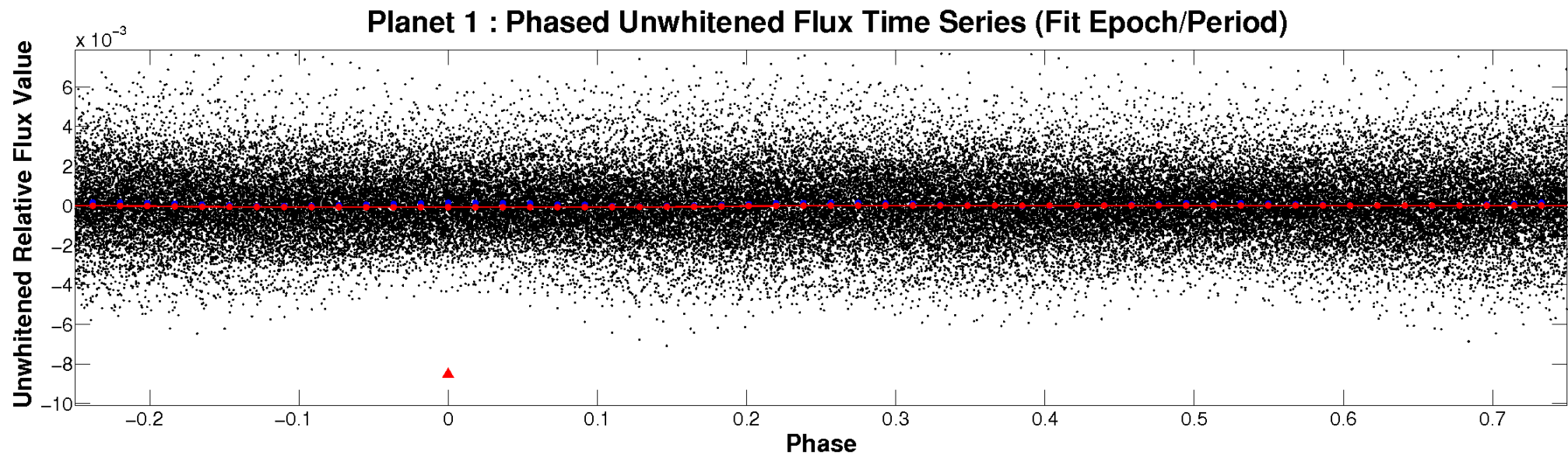


# ALT Odd/Even

TCE 007551589-01



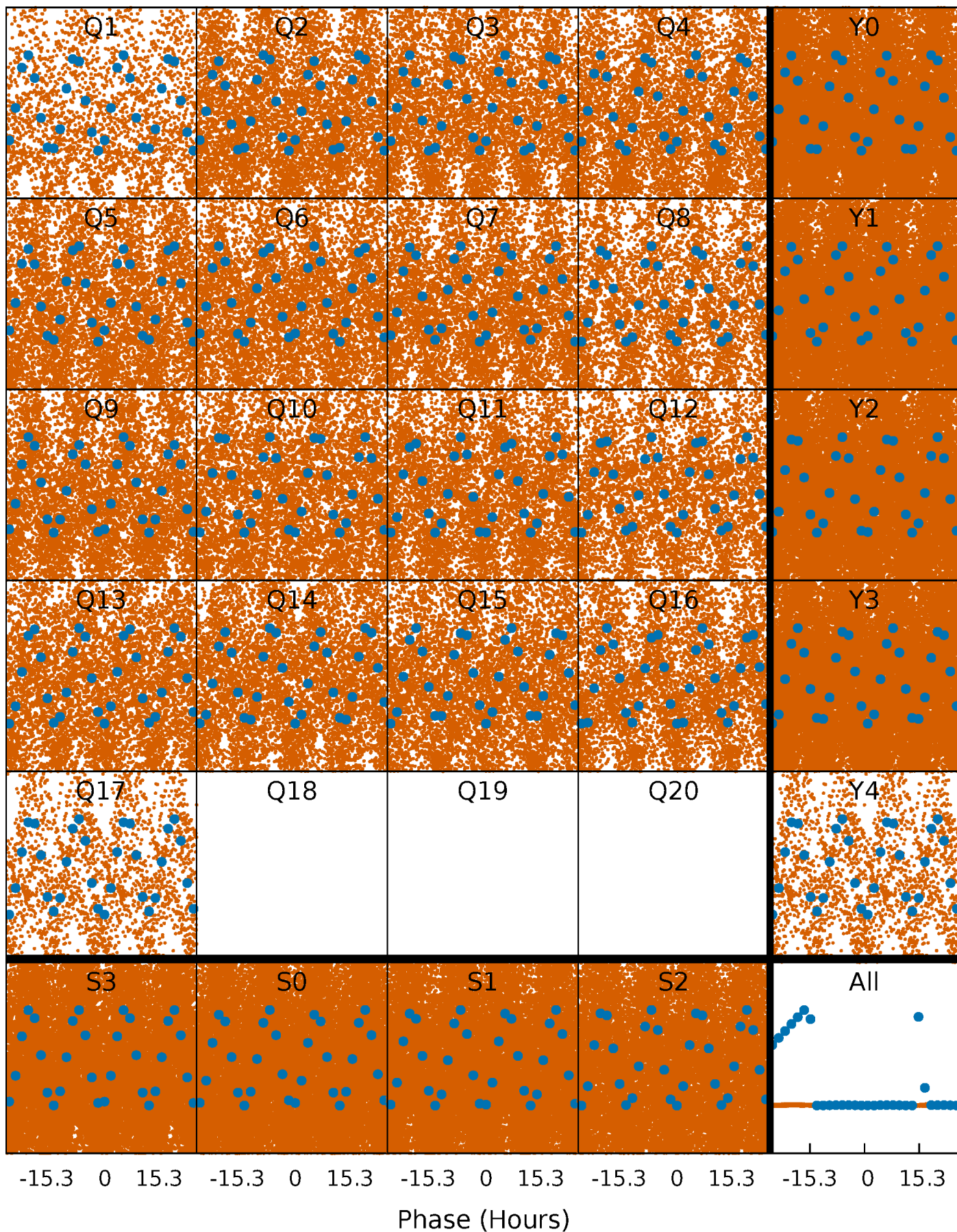
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

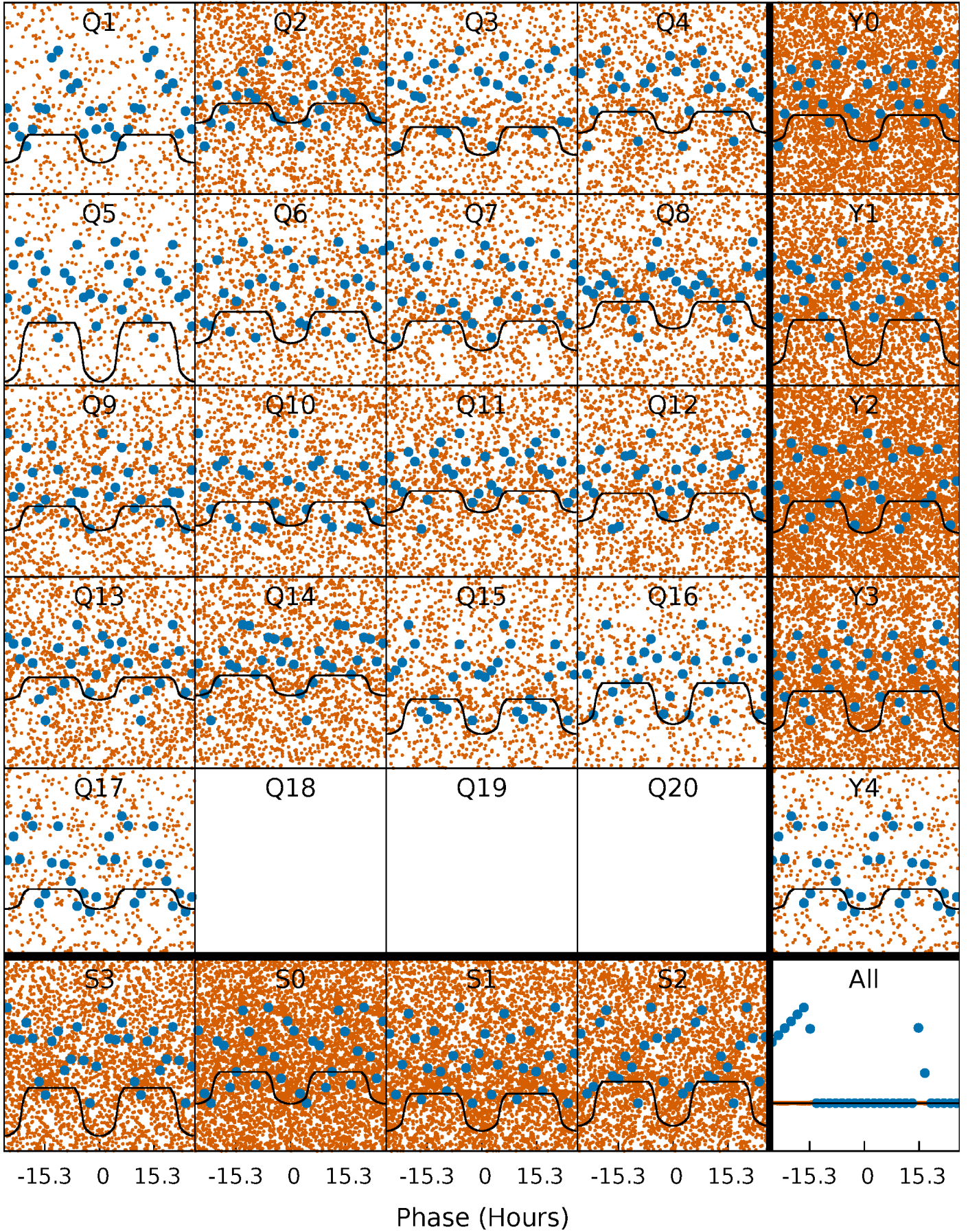
TCE 007551589-01 P= 1.115380 Days  $T_0=131.677204$  (BKJD)





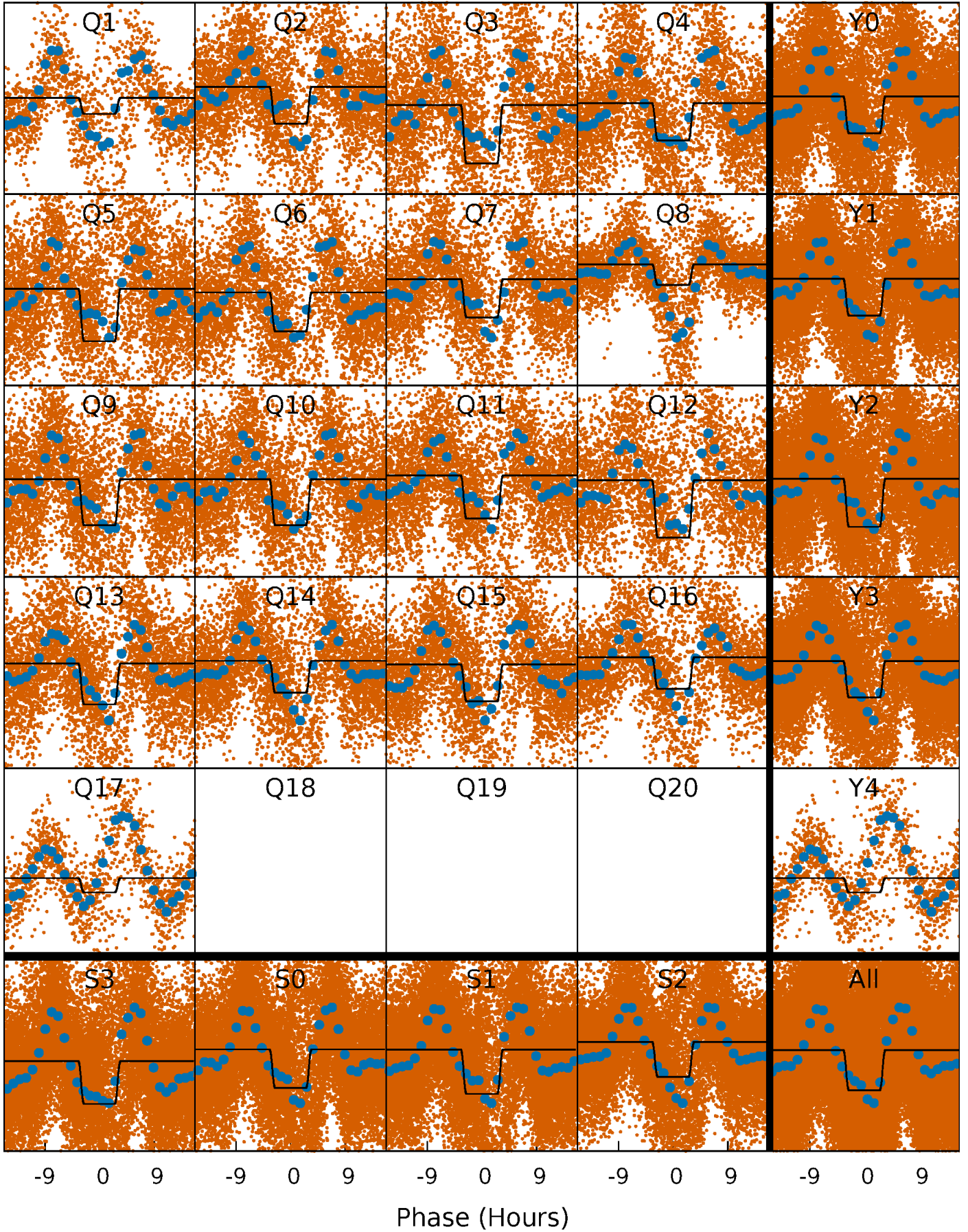
# DV Quarter-Phased Transit Curves

TCE 007551589-01 P= 1.115380 Days  $T_0=131.677204$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 007551589-01 P= 1.115447 Days  $T_0=131.679391$  (BKJD)

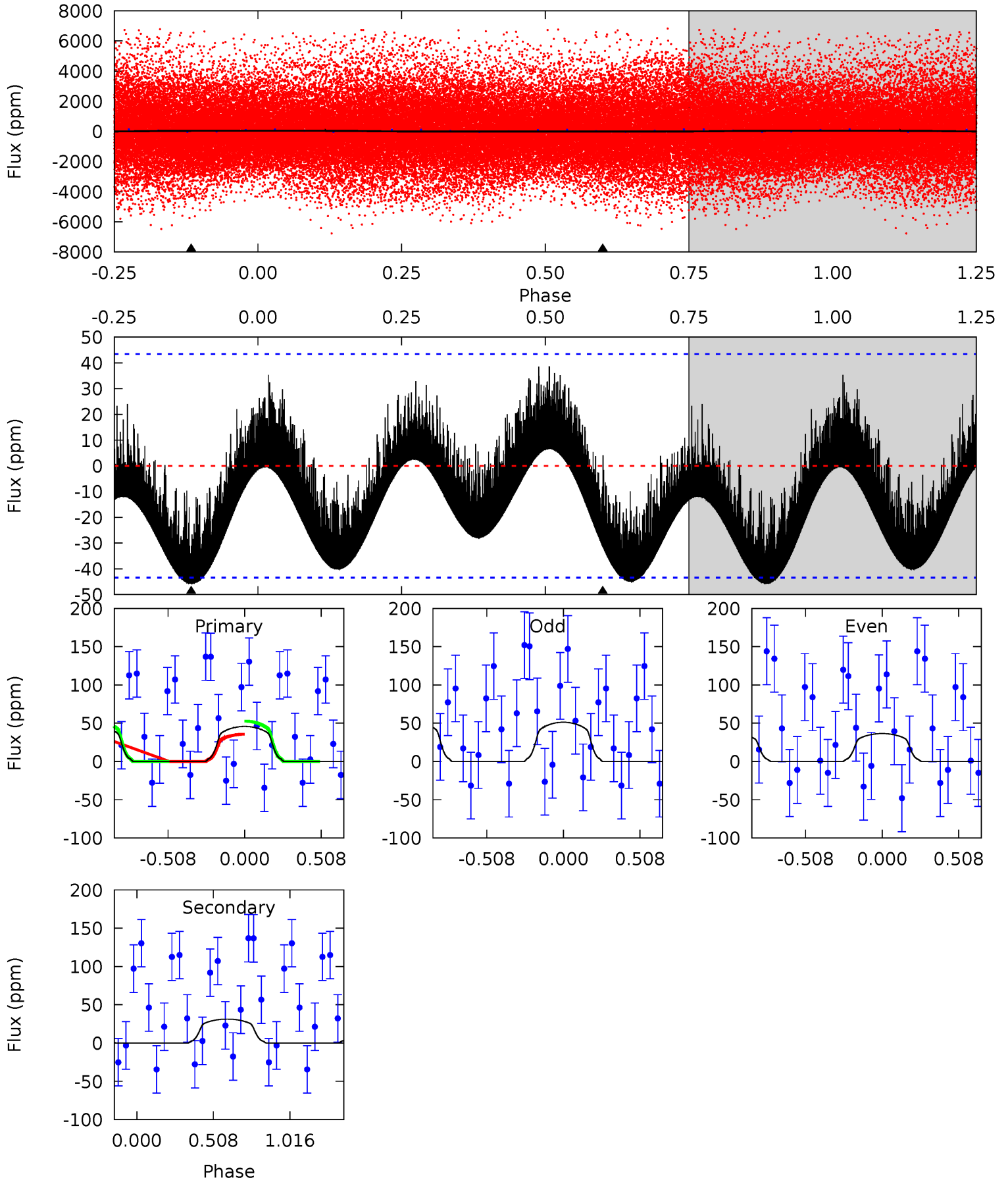




# DV Model-Shift Uniqueness Test

007551589-01, P = 1.115380 Days, E = 130.561824 Days

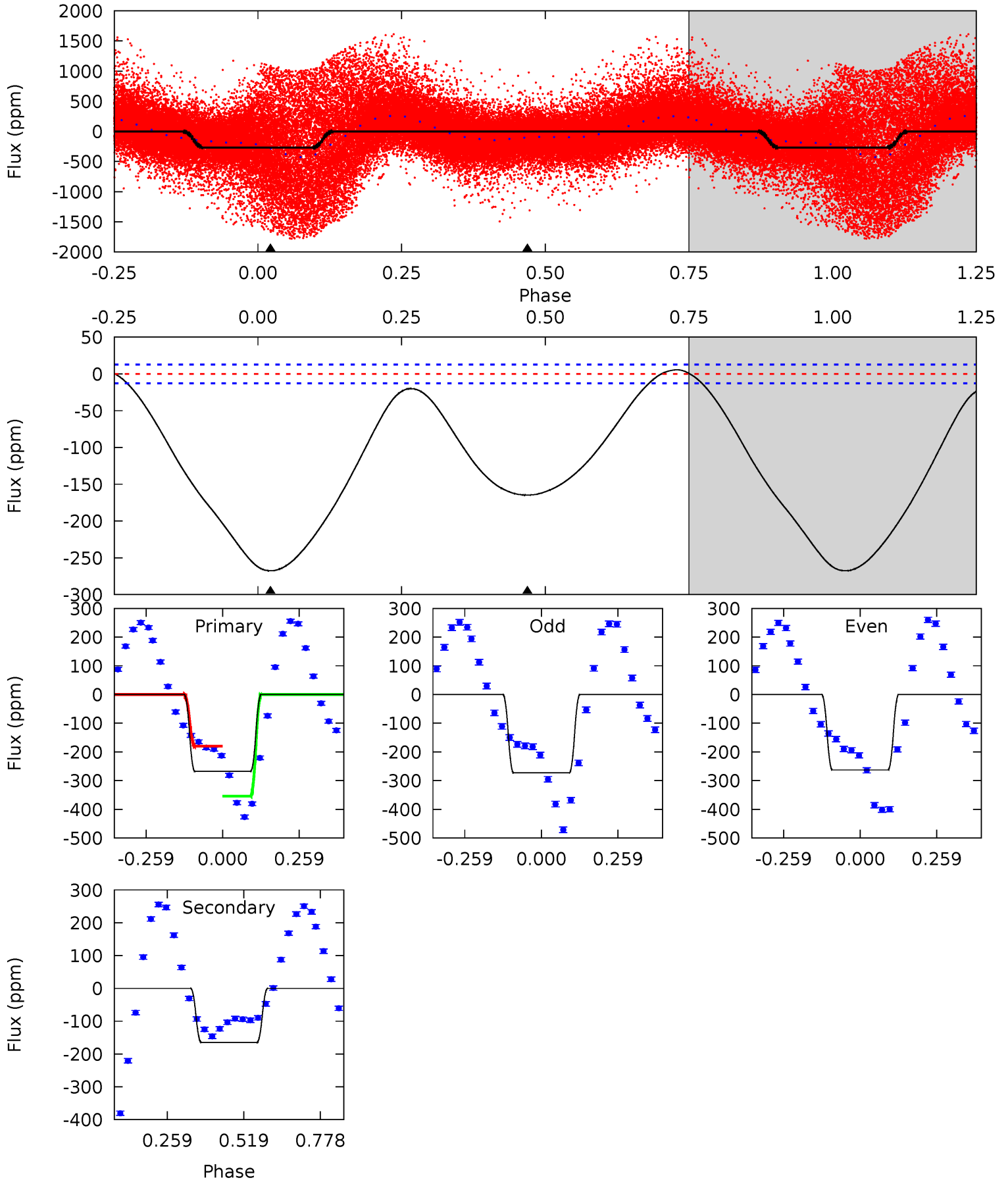
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.43	3.03	0	0	4.21	0.66	0.82	4.43	4.43	3.03	3.03	0.73	-17.3	0.46	0.94



# Alt Model-Shift Uniqueness Test

007551589-01, P = 1.115447 Days, E = 130.563944 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
91.7	56.4	0	0	4.36	1.13	3.77	91.7	91.7	56.4	56.4	1.71	1.01	0.02	0





### Stellar Parameters For KIC 007551589

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$7334^{+233}_{-285}$	$3.555^{+0.646}_{-0.076}$	$-0.580^{+0.300}_{-0.250}$	$3.639^{+0.402}_{-2.146}$	$1.734^{+0.132}_{-0.560}$	$0.051^{+0.513}_{-0.013}$
	+3%/-4%	+18%/-2%	+52%/-43%	+11%/-59%	+8%/-32%	+1012%/-25%
Source	KIC0	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 007551589-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-31 \pm 10$	$3.63^{+0.81}_{-1.10}$	$5211^{+375}_{-784}$	$4922^{+653}_{-811}$	$0.836^{+0.851}_{-0.352}$
Alt.	$-165 \pm 3$	$5.69^{+0.92}_{-1.80}$	$5232^{+366}_{-840}$	$6304^{+387}_{-313}$	$1.768^{+1.836}_{-0.414}$

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

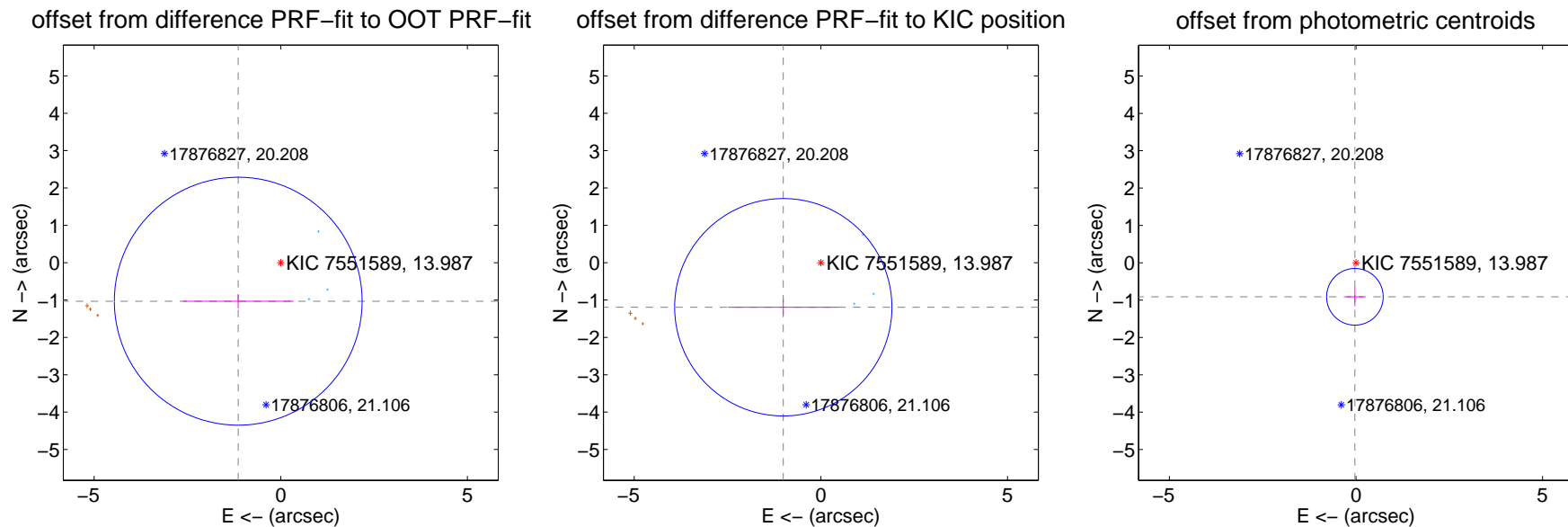
## DV Centroid Data

Supplemental centroid analysis for 007551589-01. Kepler magnitude: 13.99. Transit SNR 4.97

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

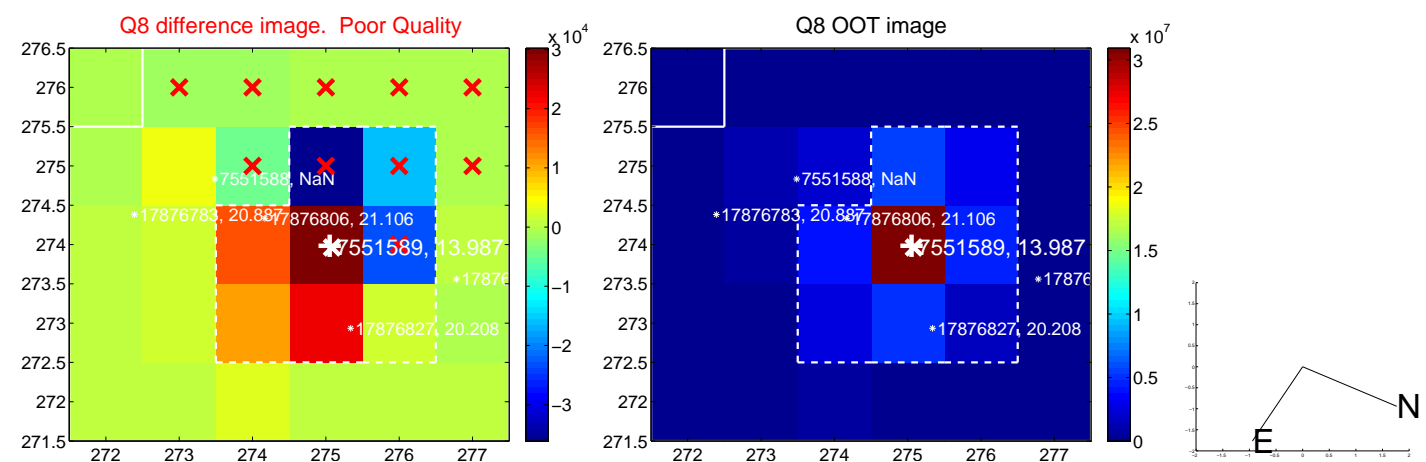
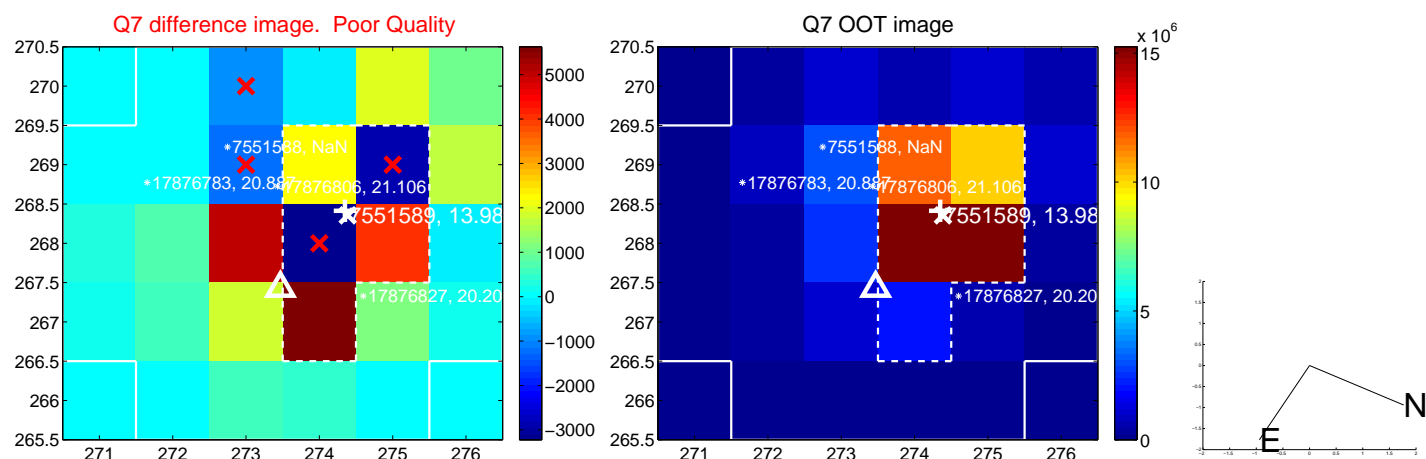
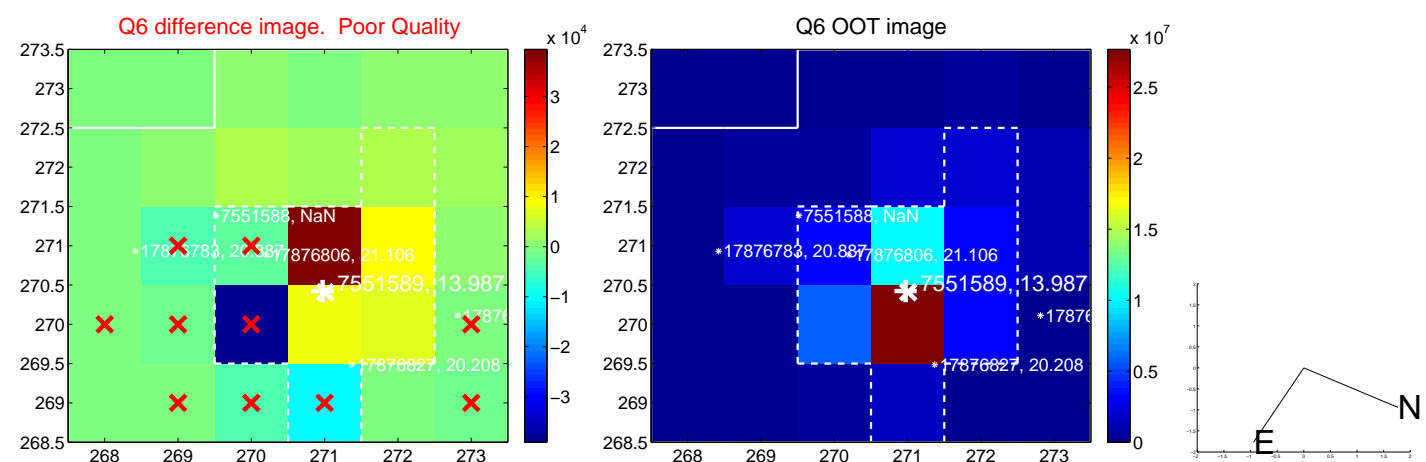
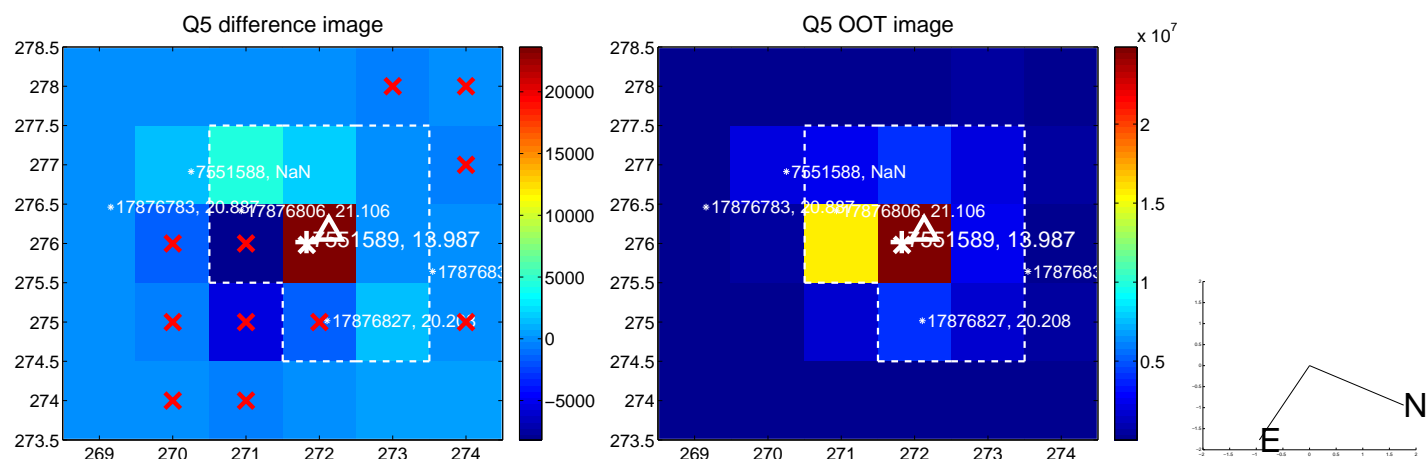
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.536 \pm 1.106$	1.39	$1.139 \pm 1.482$	$-1.031 \pm 0.192$
PRF-fit source offset from KIC position	$1.561 \pm 0.970$	1.61	$1.006 \pm 1.482$	$-1.193 \pm 0.213$
photometric centroid source offset	$0.91 \pm 0.25$	3.61	$0.03 \pm 0.23$	$-0.91 \pm 0.25$



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.

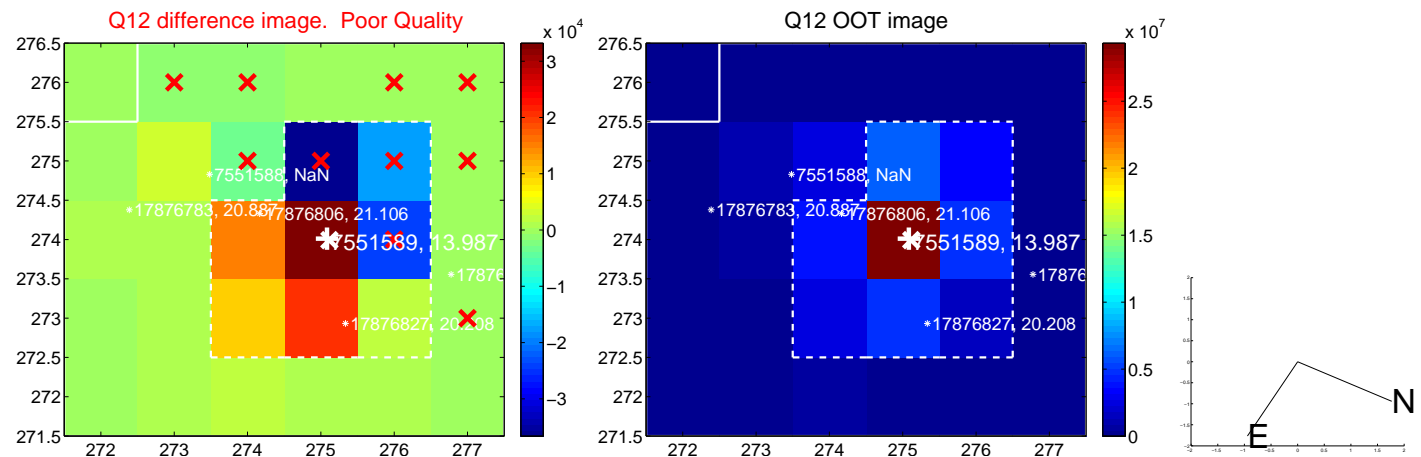
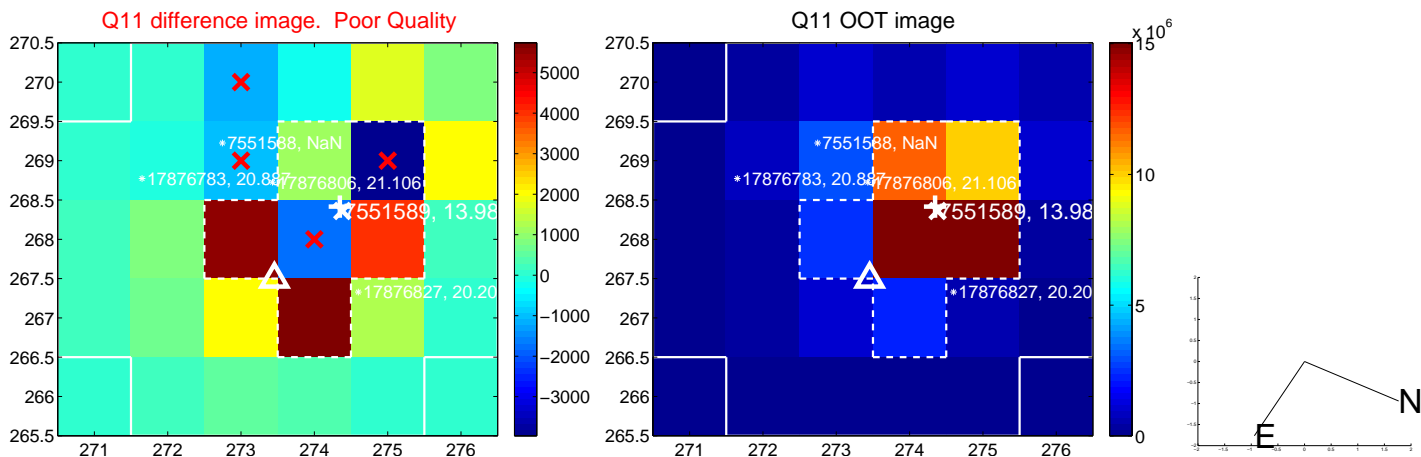
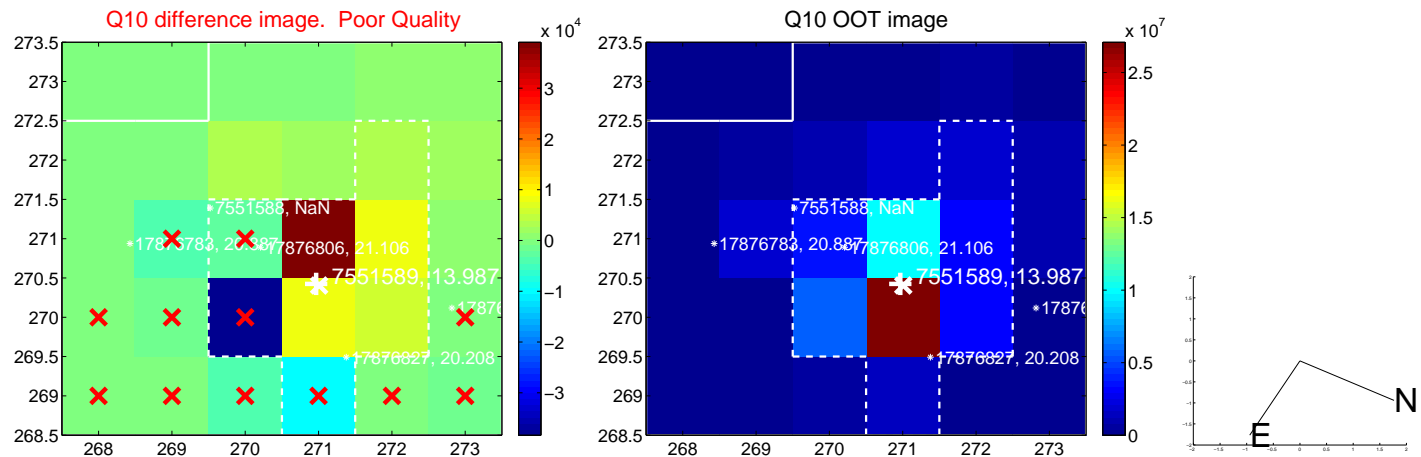
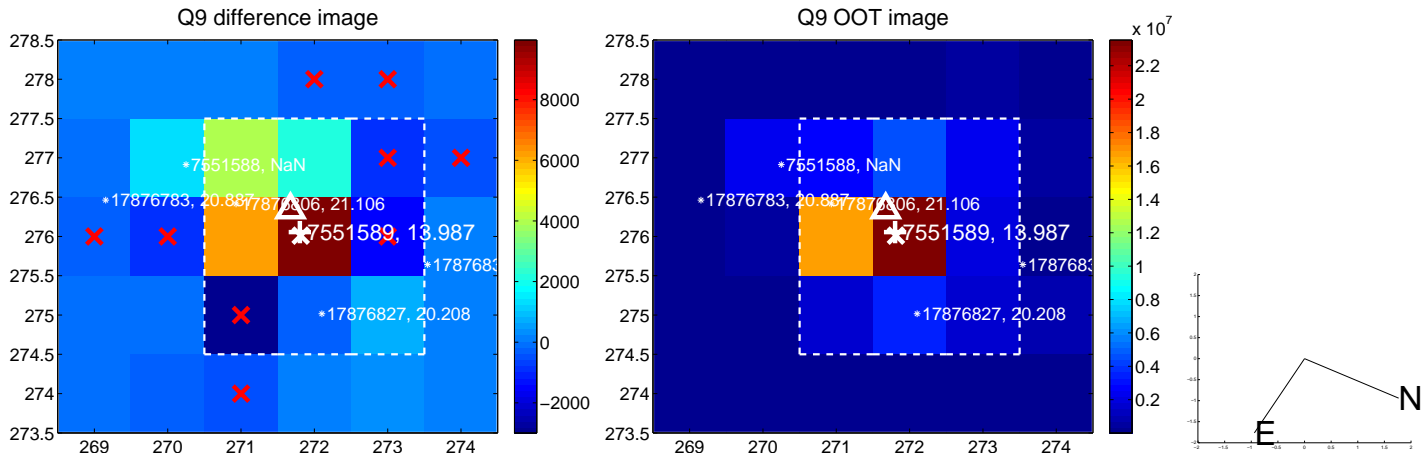


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

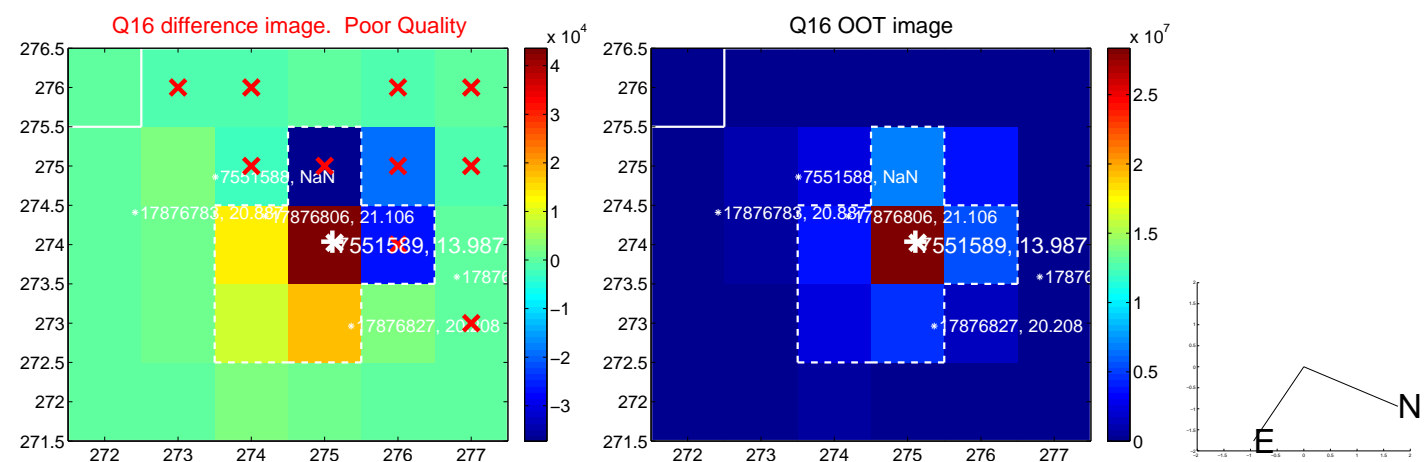
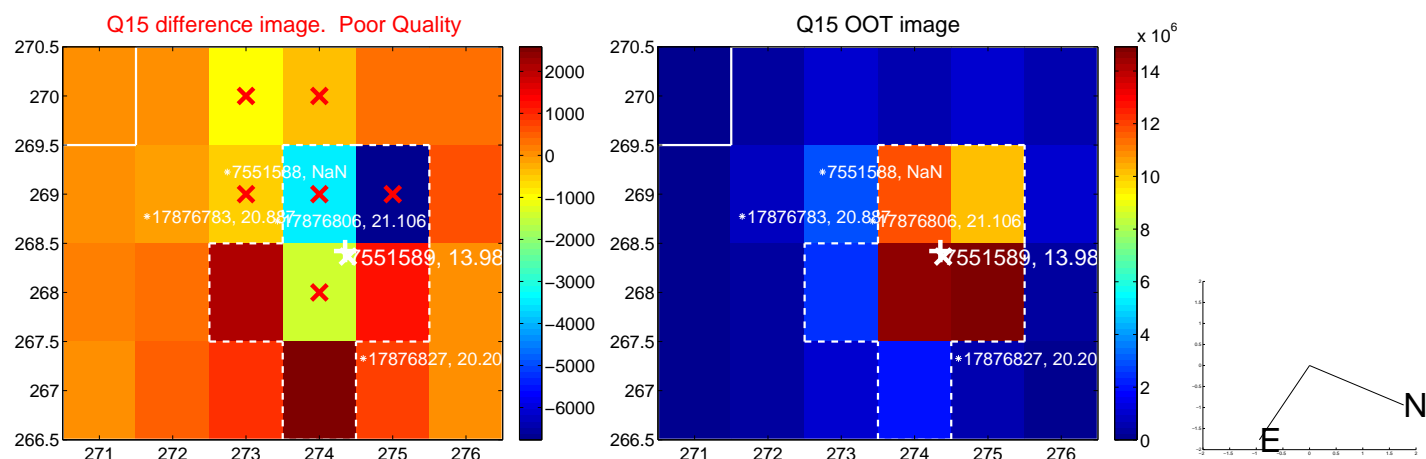
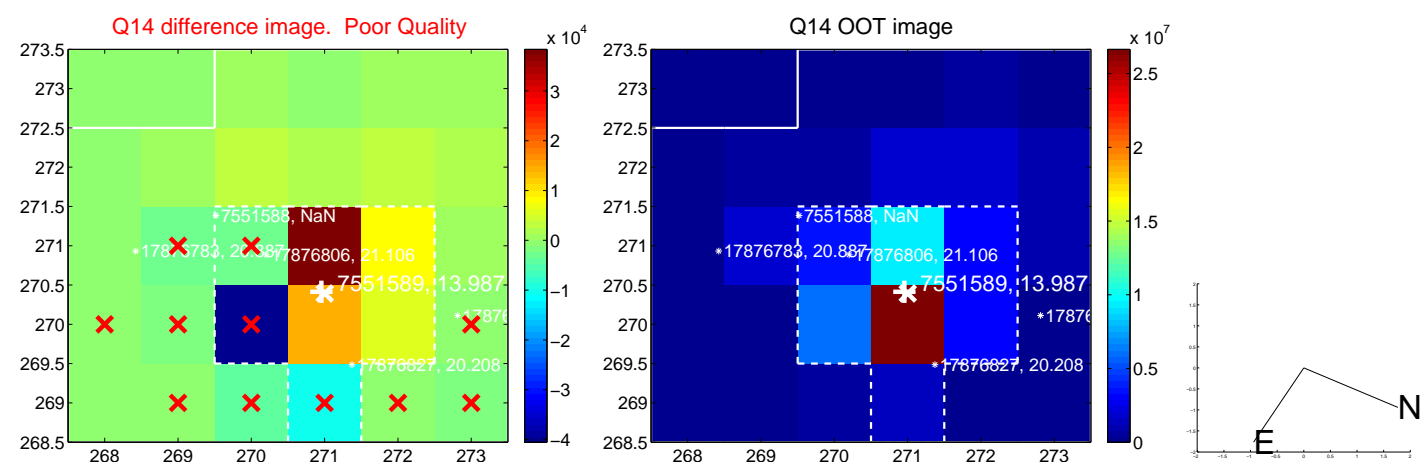
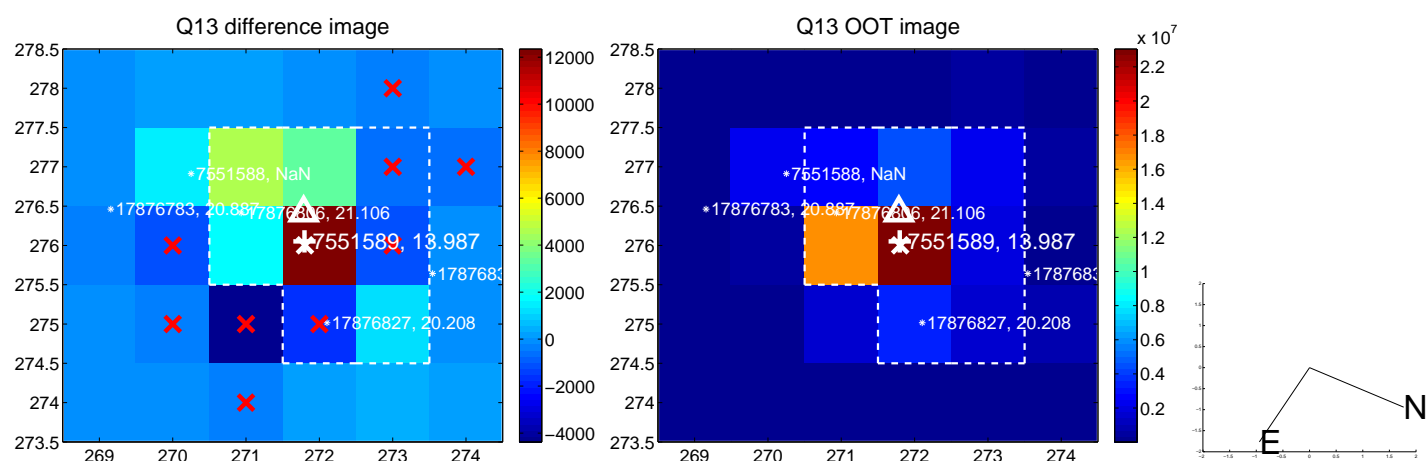




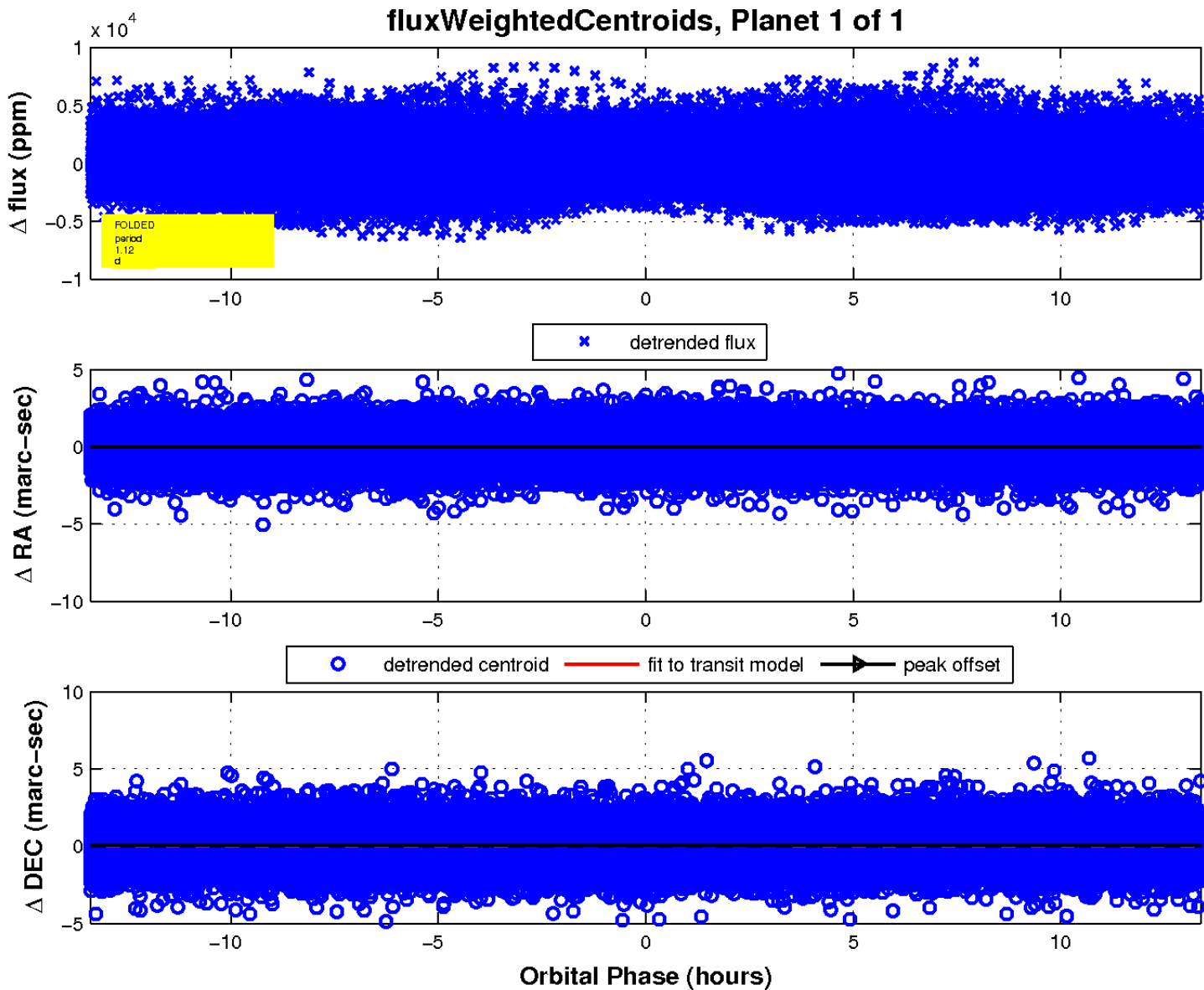
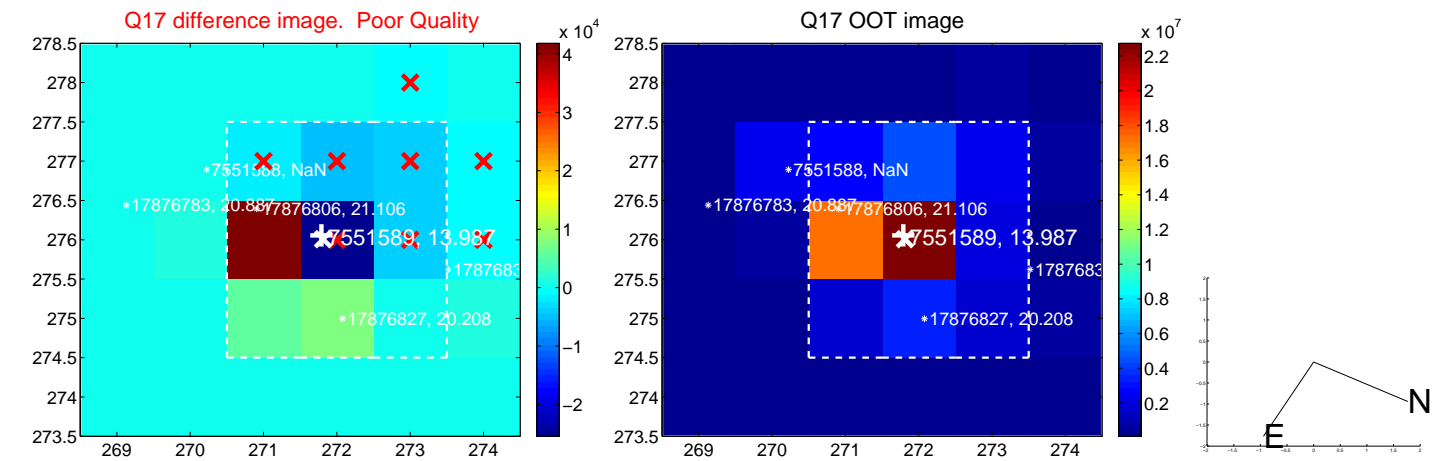
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white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination

