

# KIC 006960487

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006960487-01	OBS	3386.01	34.525994	150.102129	65703.9	4.490	1830.7	1446.2	1.05	6123	38.15	32.19

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006960487-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED

**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.

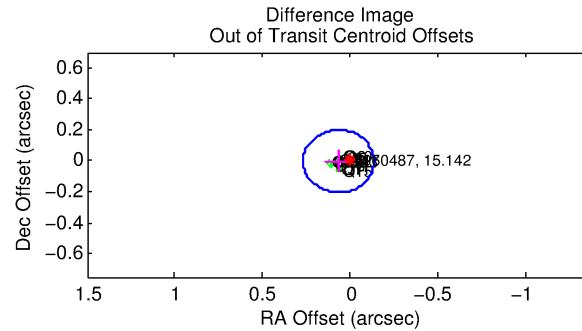
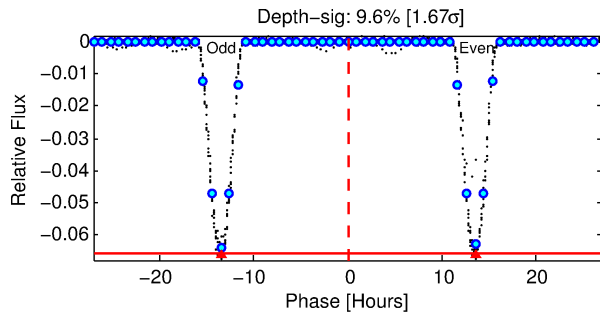
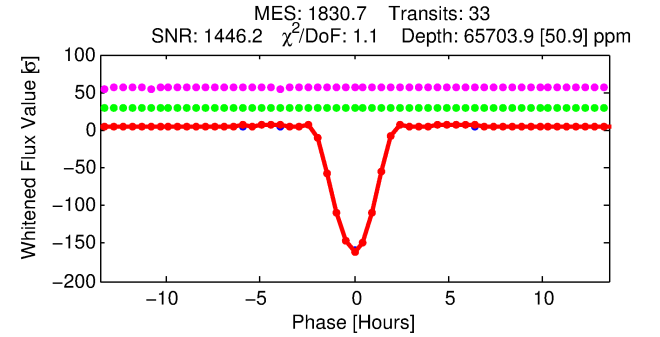
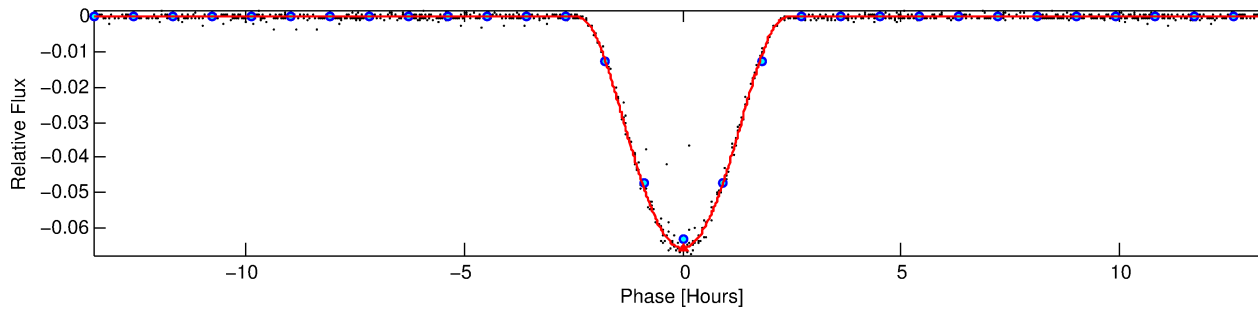
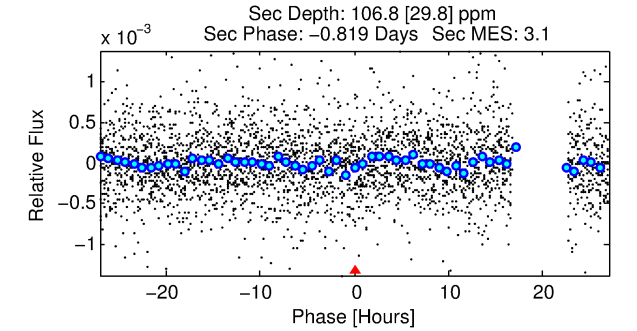
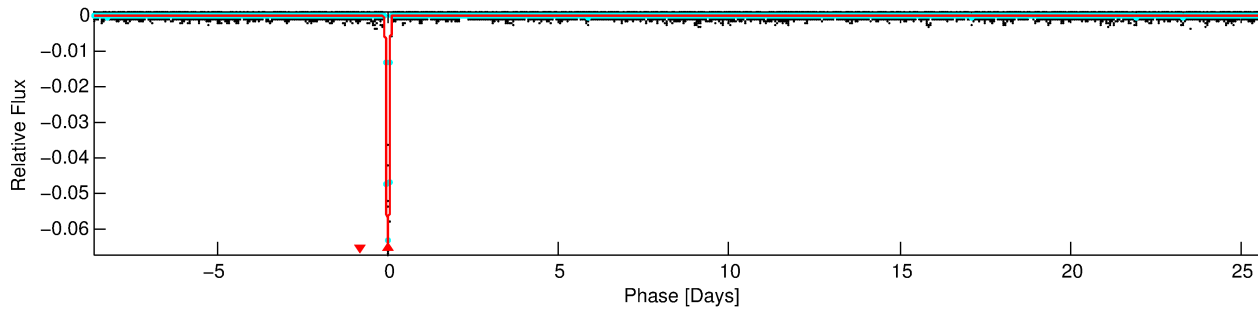
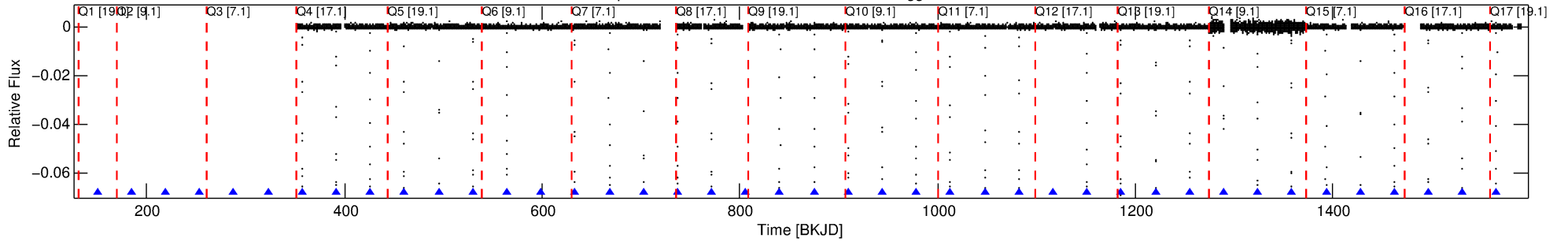
## Ephemeris Match Information For 006960487-01

No Significant Match Found

# DV One-Page Summary

KIC: 6960487 Candidate: 1 of 1 Period: 34.526 d  
KOI: K03386.01 Corr: 0.998

Kp: 15.14 R\*: 1.05 Rs Teff: 6123.0 K Logg: 4.40 Fe/H: -0.200



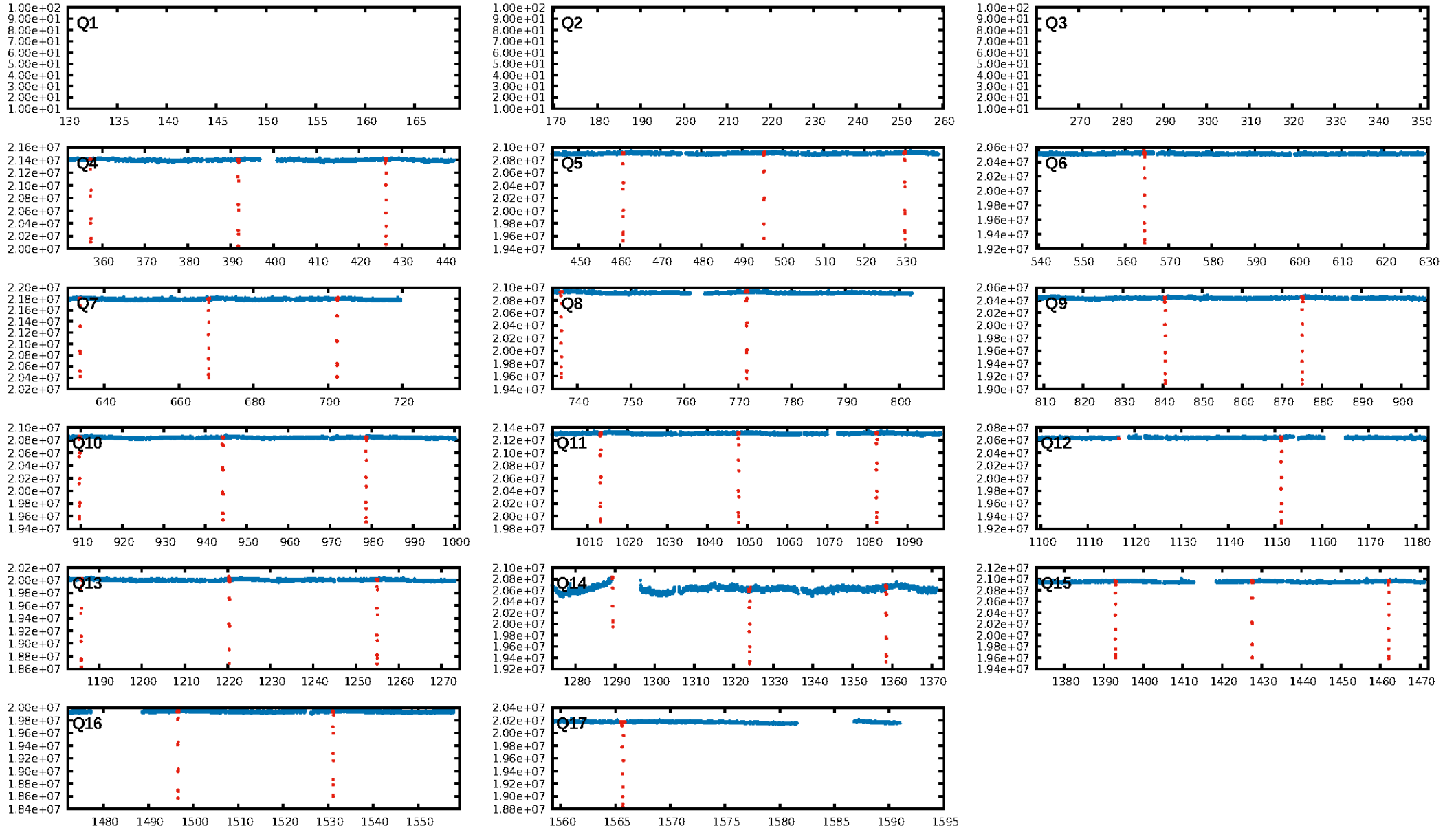
## DV Fit Results:

Period = 34.52599 [0.00000] d  
Epoch = 150.1021 [0.0001] BKJD  
Rp/R\* = 0.3333 [0.0099]  
a/R\* = 57.66 [0.11]  
b = 0.90 [0.02]  
Seff = 32.19 [12.96]  
Teff = 607 [61] K  
Rp = 38.15 [12.20] Re  
a = 0.2075 [0.0539] AU  
Ag = 1.74 [0.81] [0.91σ]  
Teffp = 1078 [89] K [4.36σ]

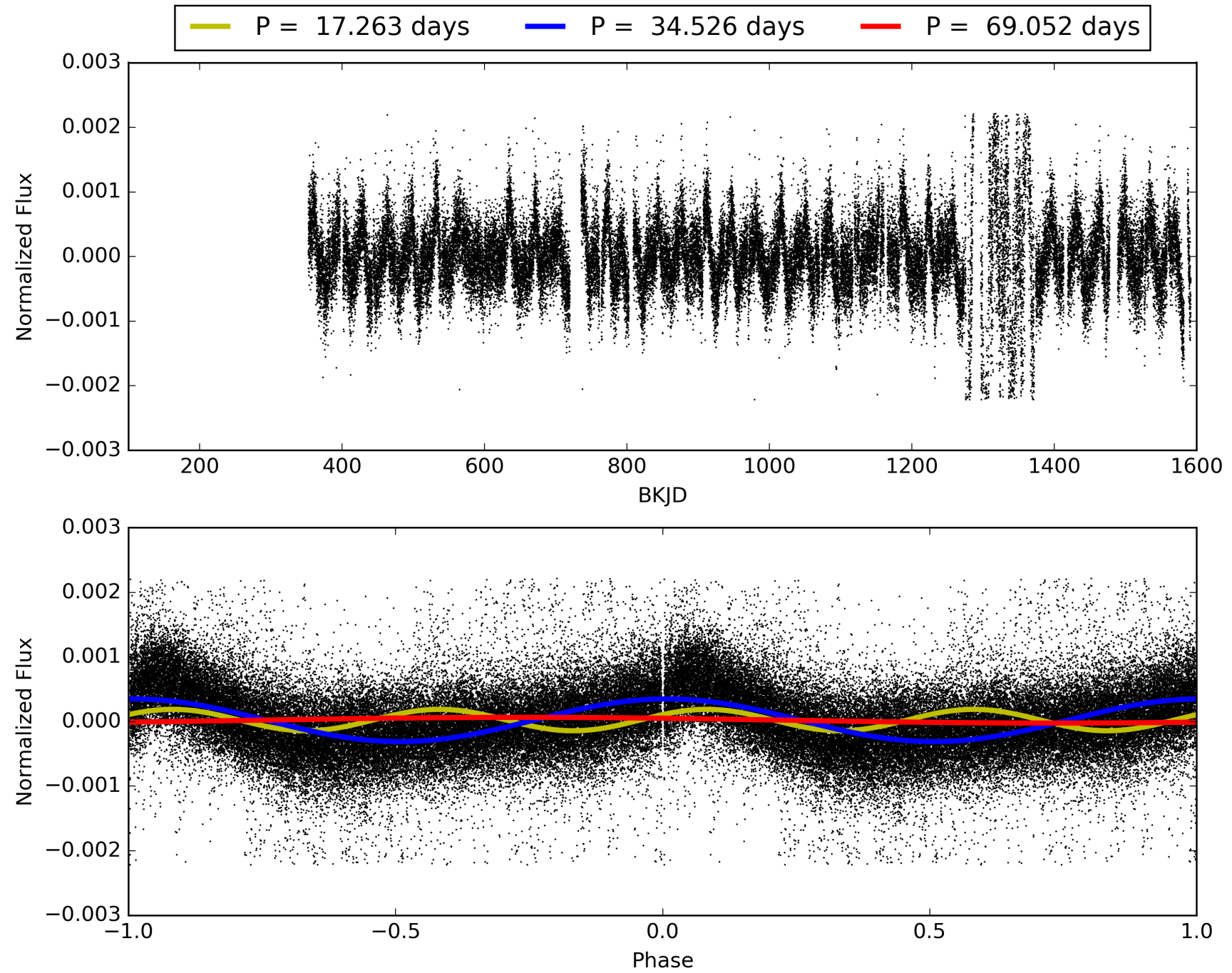
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [32/32]  
GhostDiagnostic-chr: 14.05  
Centroid-sig: 0.0%  
Centroid-so: 0.140 arcsec [21.08σ]  
OotOffset-rm: 0.068 arcsec [1.02σ]  
KicOffset-rm: 0.100 arcsec [1.35σ]  
OotOffset-st: 3/3/4/4 [14]  
KicOffset-st: 3/3/4/4 [14]  
DiffImageQuality-fgm: 1.00 [14/14]  
DiffImageOverlap-fno: 1.00 [14/14]

# TCE 006960487-01, PDC Light Curves

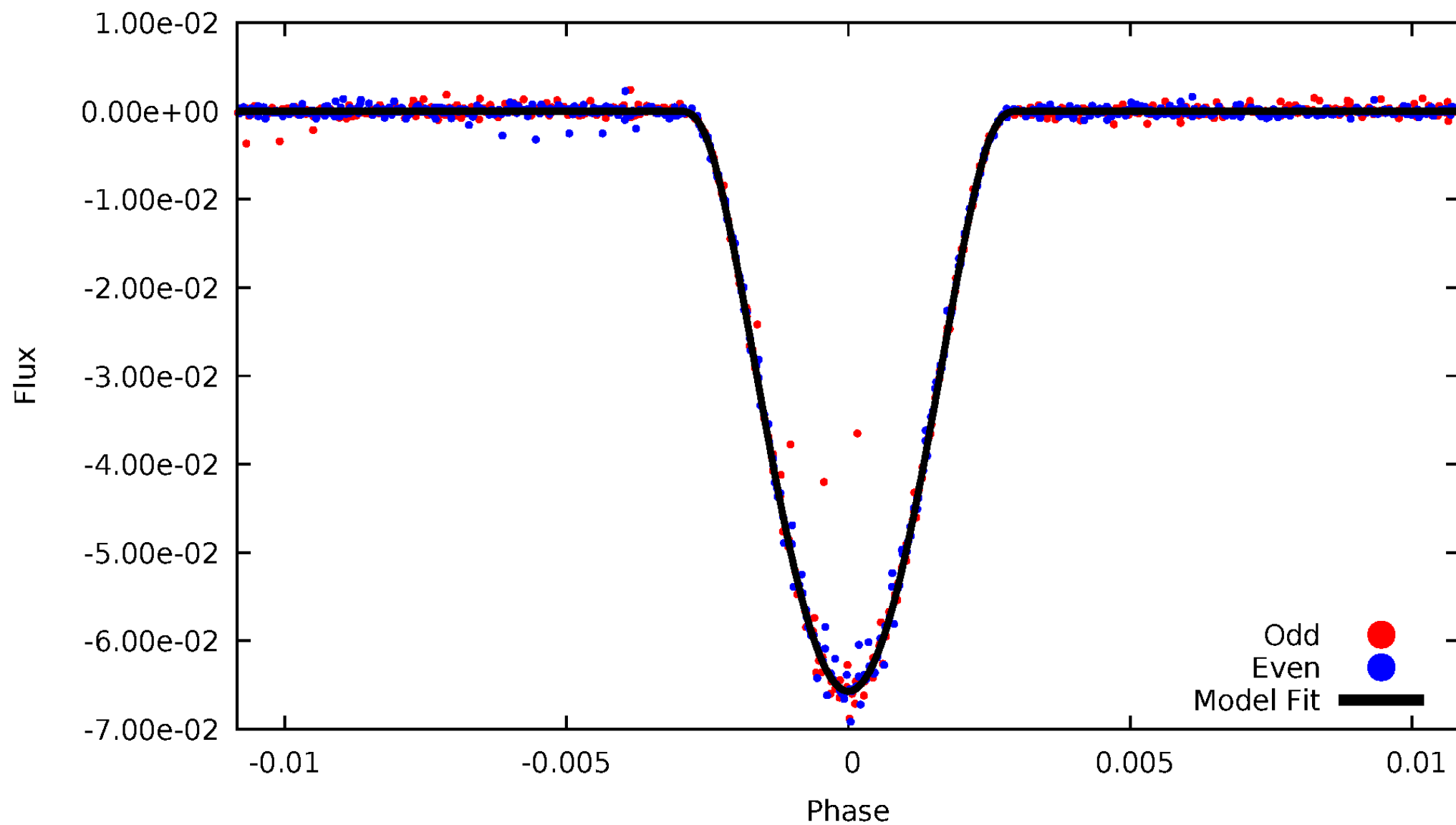


TCE 006960487-01



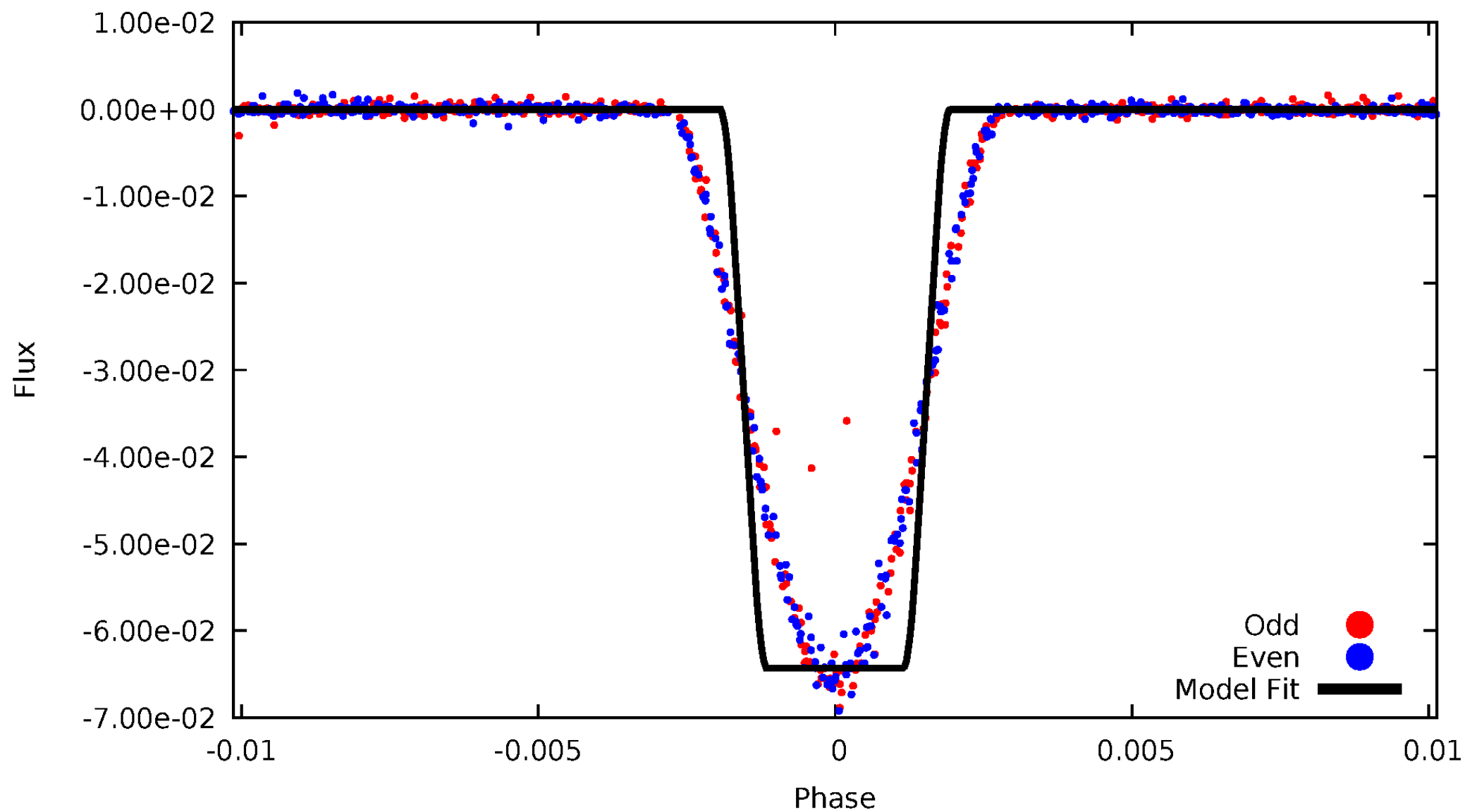
# DV Odd/Even

TCE 006960487-01



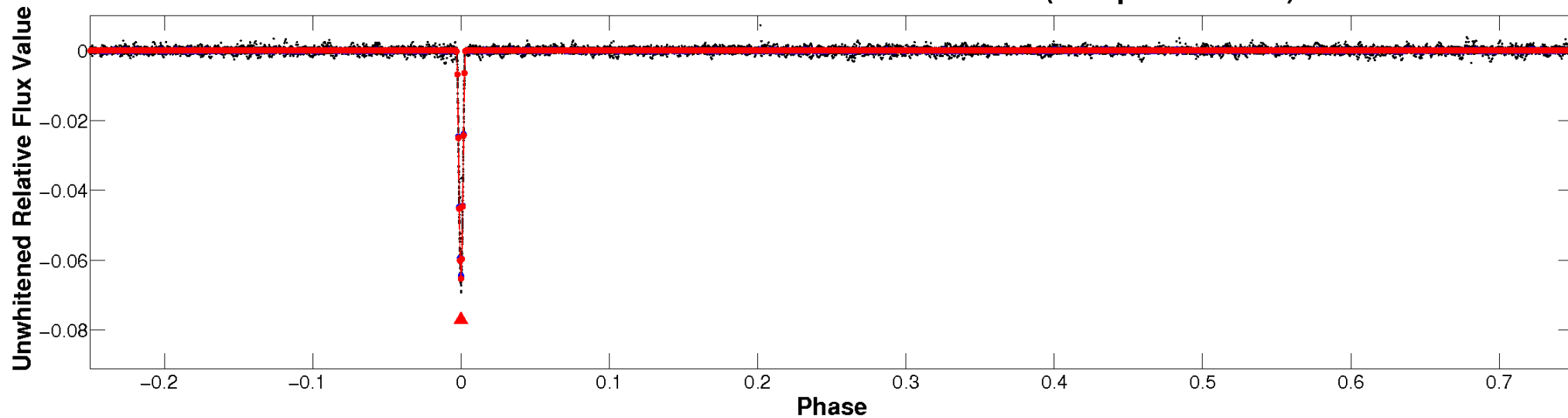
# ALT Odd/Even

TCE 006960487-01

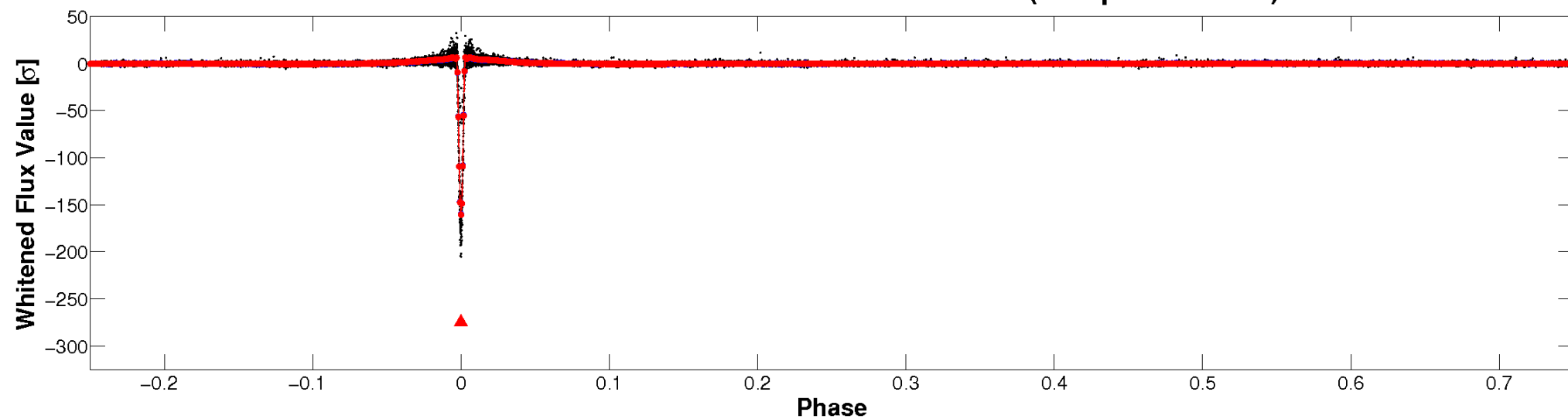


# Non-Whitened Vs. Whitened Light Curve

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

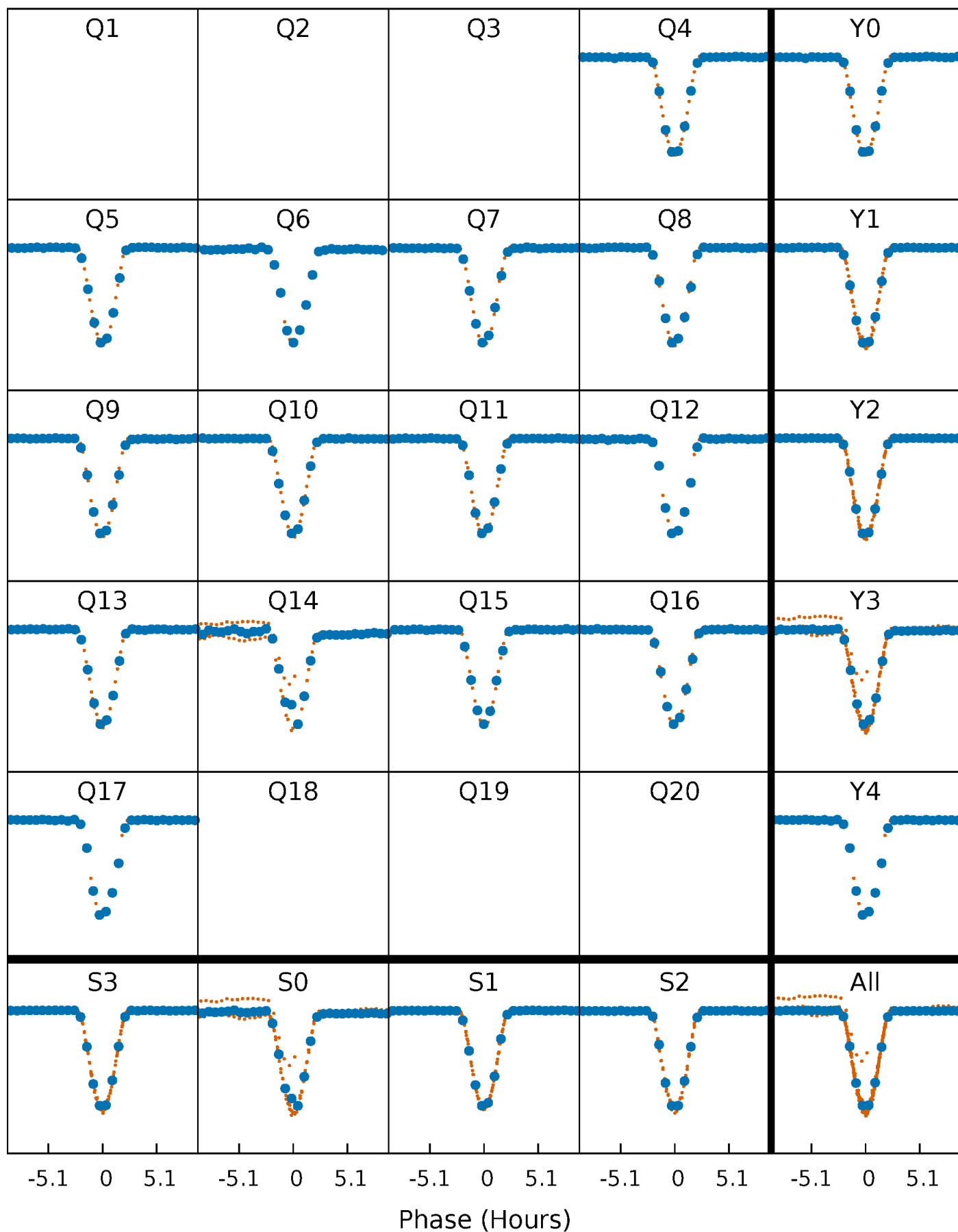


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

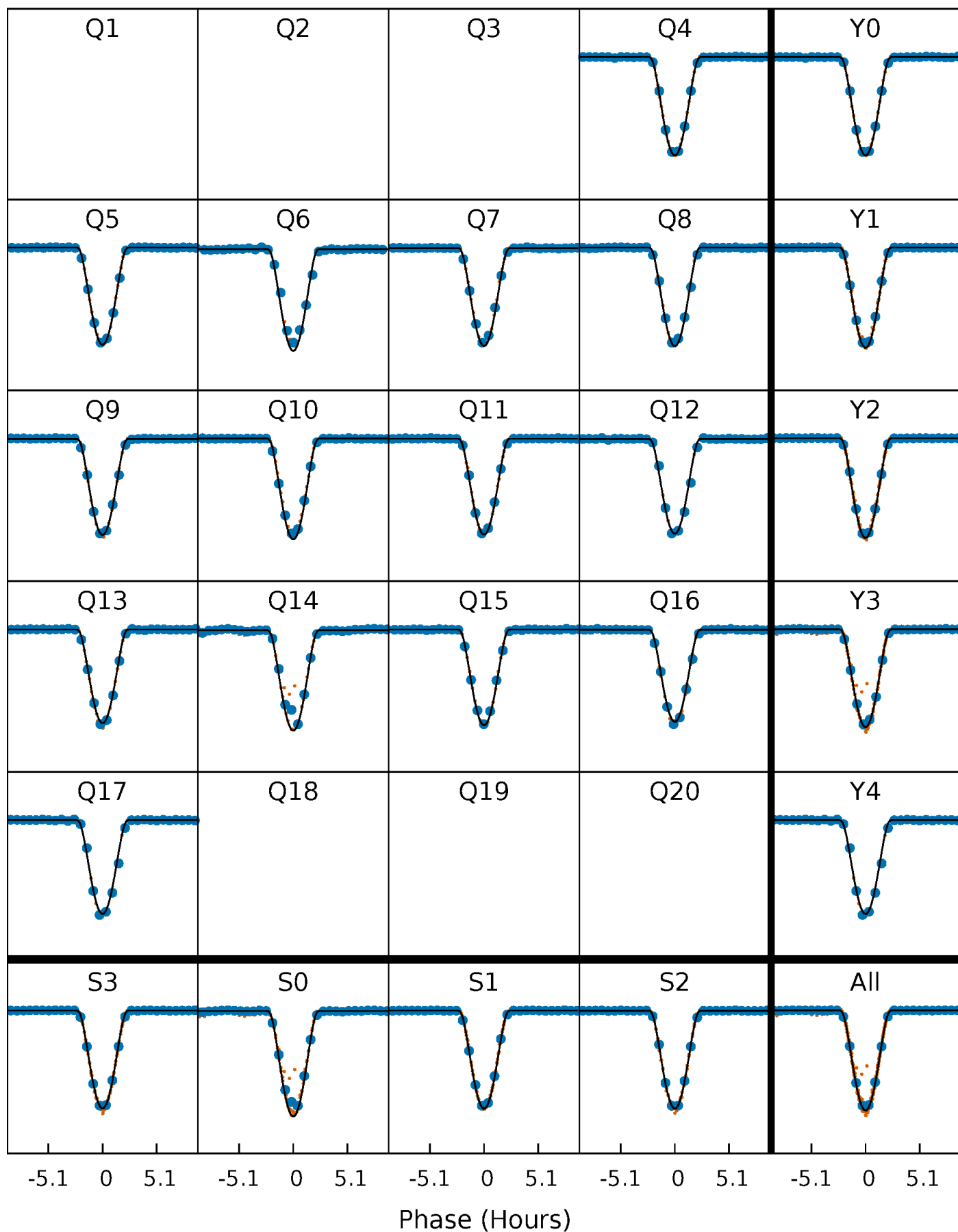
TCE 006960487-01 P= 34.525994 Days  $T_0=150.102129$  (BKJD)





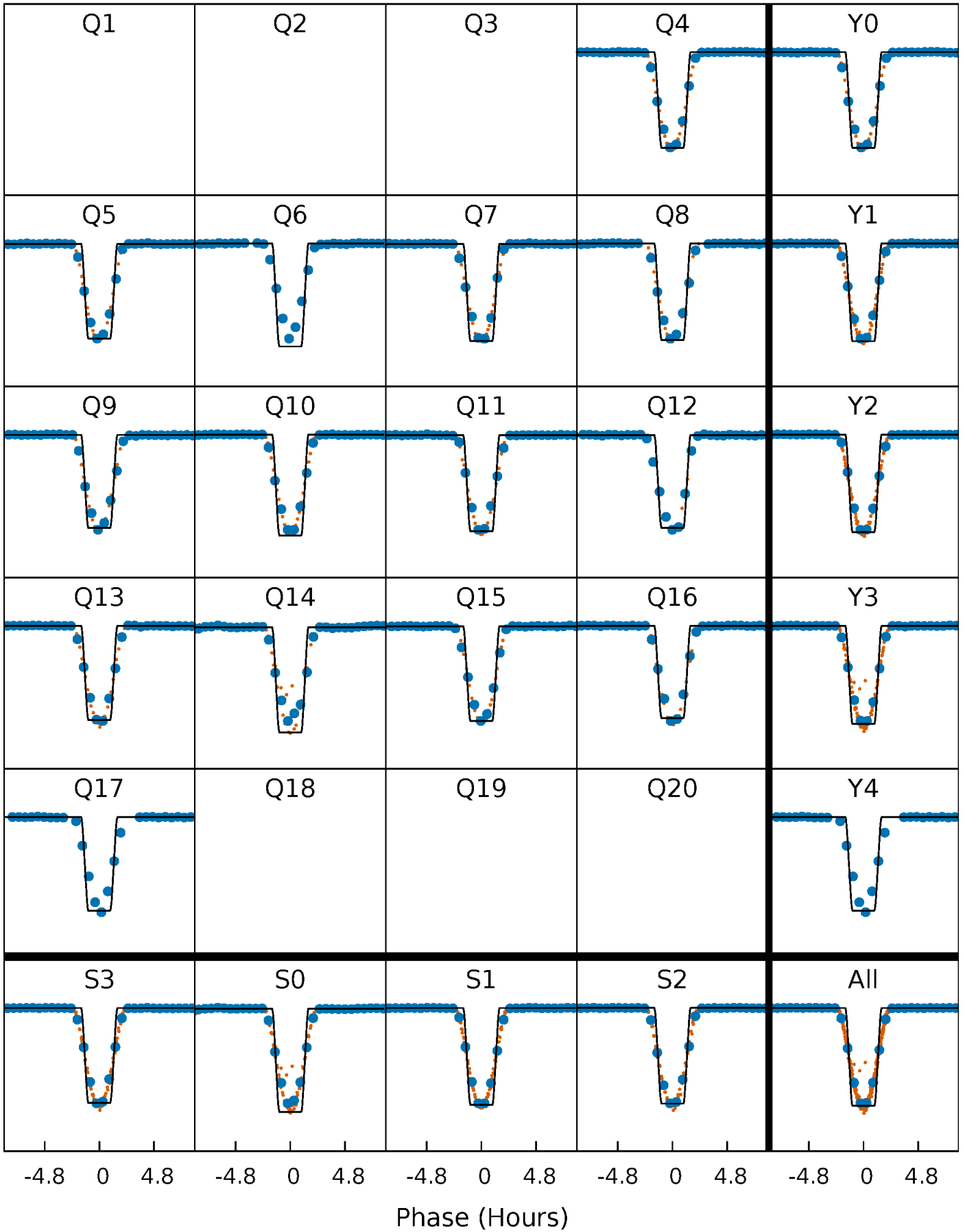
# DV Quarter-Phased Transit Curves

TCE 006960487-01 P= 34.525994 Days  $T_0=150.102129$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

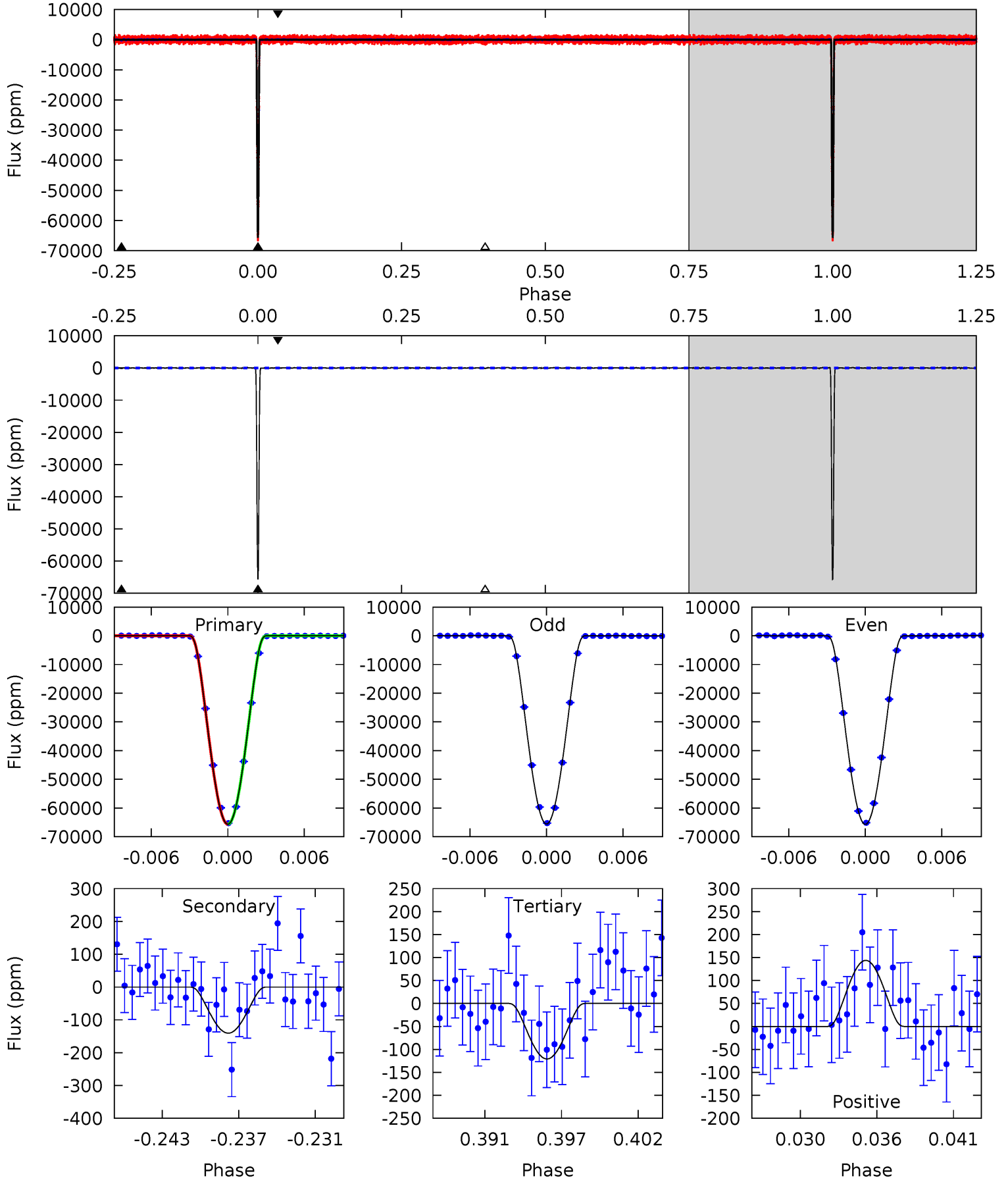
TCE 006960487-01 P= 34.525868 Days  $T_0=150.105076$  (BKJD)



# DV Model-Shift Uniqueness Test

006960487-01, P = 34.525994 Days, E = 150.102129 Days

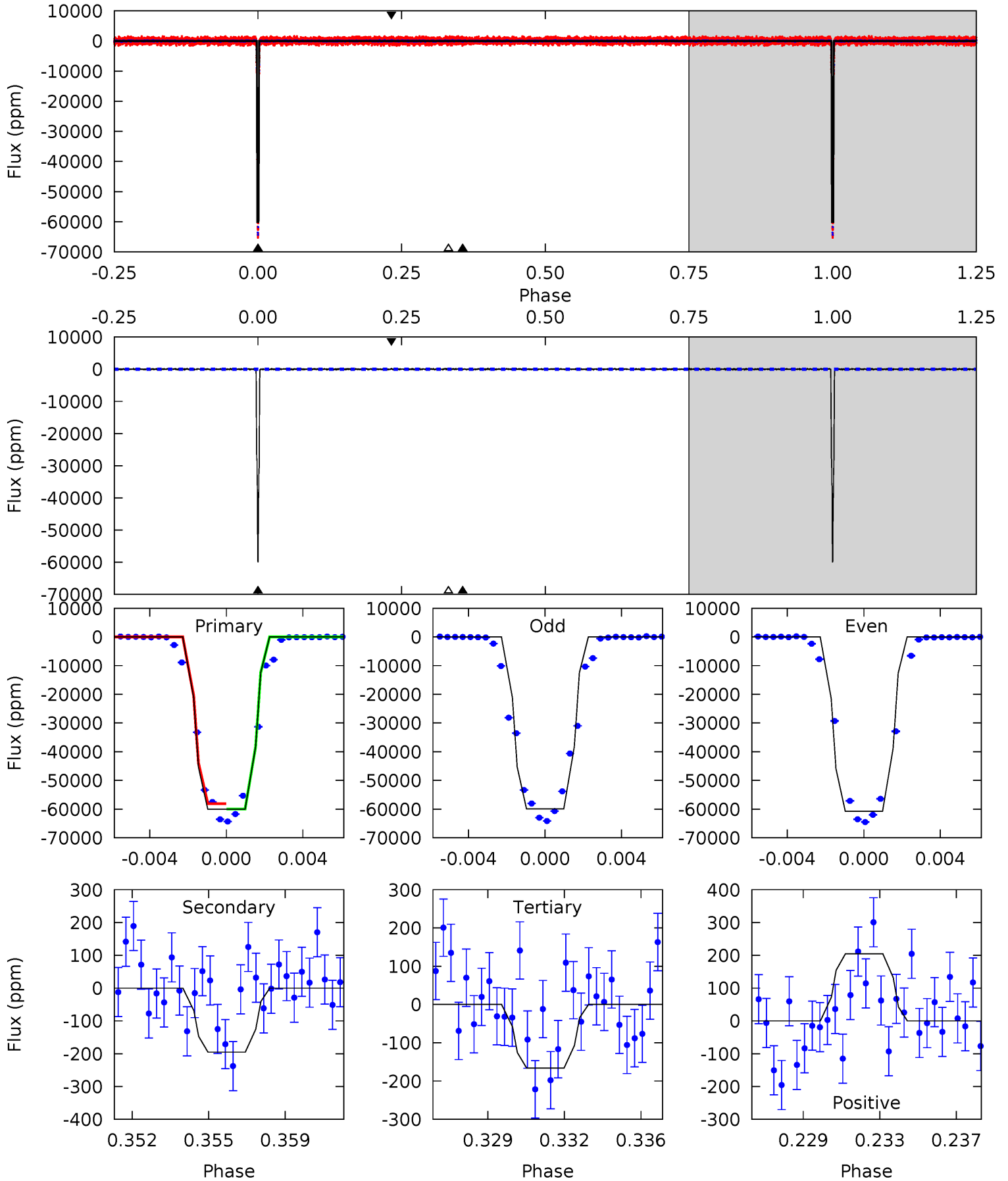
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2816	6.03	5.18	6.17	5.13	2.75	1.90	2811	2810	0.85	-0.14	2.55	0.99	0.00	0



# Alt Model-Shift Uniqueness Test

006960487-01, P = 34.525868 Days, E = 150.105076 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
1369	4.45	3.79	4.67	5.21	2.89	1.18	1365	1364	0.65	-0.22	9.89	0.99	0.00	0



### Stellar Parameters For KIC 006960487

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6123^{+190}_{-254}$	$4.396^{+0.105}_{-0.195}$	$-0.200^{+0.300}_{-0.300}$	$1.049^{+0.334}_{-0.143}$	$0.999^{+0.153}_{-0.125}$	$1.218^{+0.560}_{-0.608}$
	+3%/-4%	+2%/-4%	+150%/-150%	+32%/-14%	+15%/-13%	+46%/-50%
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 006960487-01 / KOI 3386.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-141 \pm 23$	$38.62^{+6.65}_{-3.86}$	$855^{+60}_{-50}$	$2086^{+57}_{-60}$	$2.149^{+0.645}_{-0.635}$
Alt.	$-195 \pm 44$	$29.47^{+4.88}_{-2.82}$	$855^{+62}_{-51}$	$2325^{+73}_{-82}$	$5.171^{+1.770}_{-1.503}$

$T_{max}$  = 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

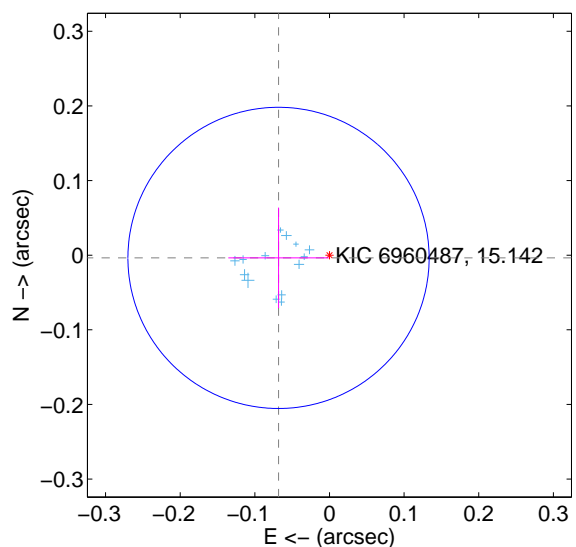
Supplemental centroid analysis for 006960487-01. Kepler magnitude: 15.14. Transit SNR 1446.20

There are 14 quarters with good PRF difference image offsets

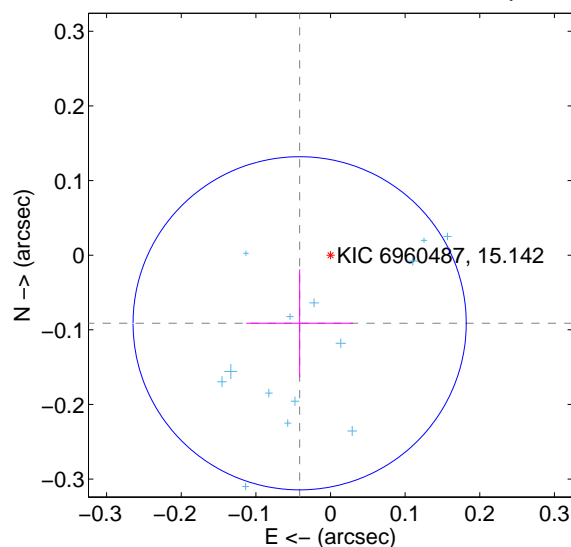
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.068 \pm 0.067$	1.02	$0.068 \pm 0.067$	$-0.004 \pm 0.067$
PRF-fit source offset from KIC position	$0.100 \pm 0.074$	1.35	$0.041 \pm 0.071$	$-0.091 \pm 0.072$
photometric centroid source offset	$0.14 \pm 0.01$	21.08	$-0.05 \pm 0.01$	$-0.13 \pm 0.01$

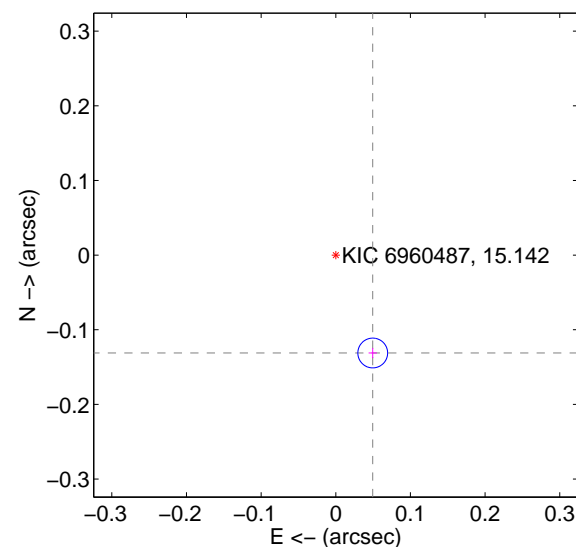
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

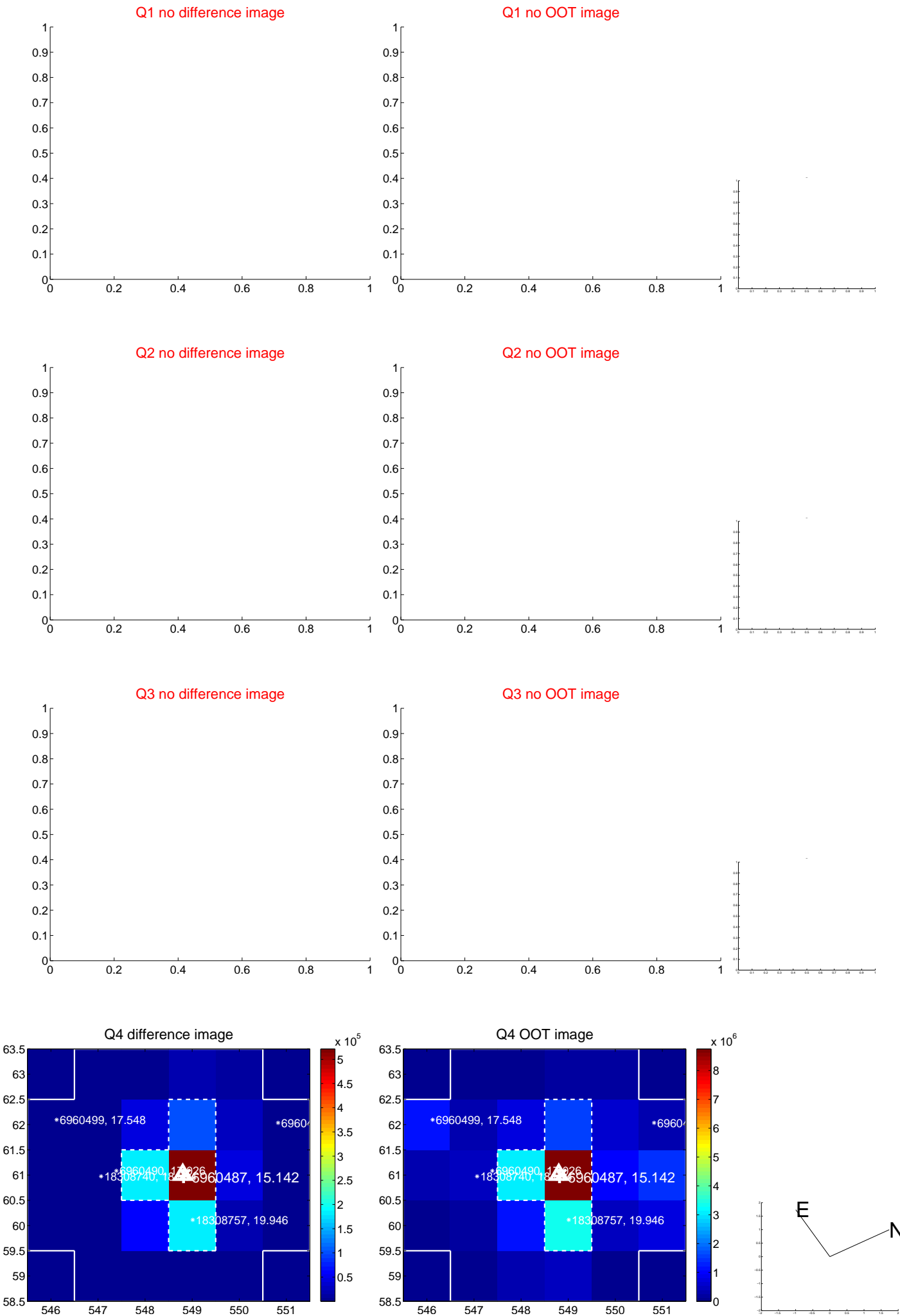


offset from photometric centroids

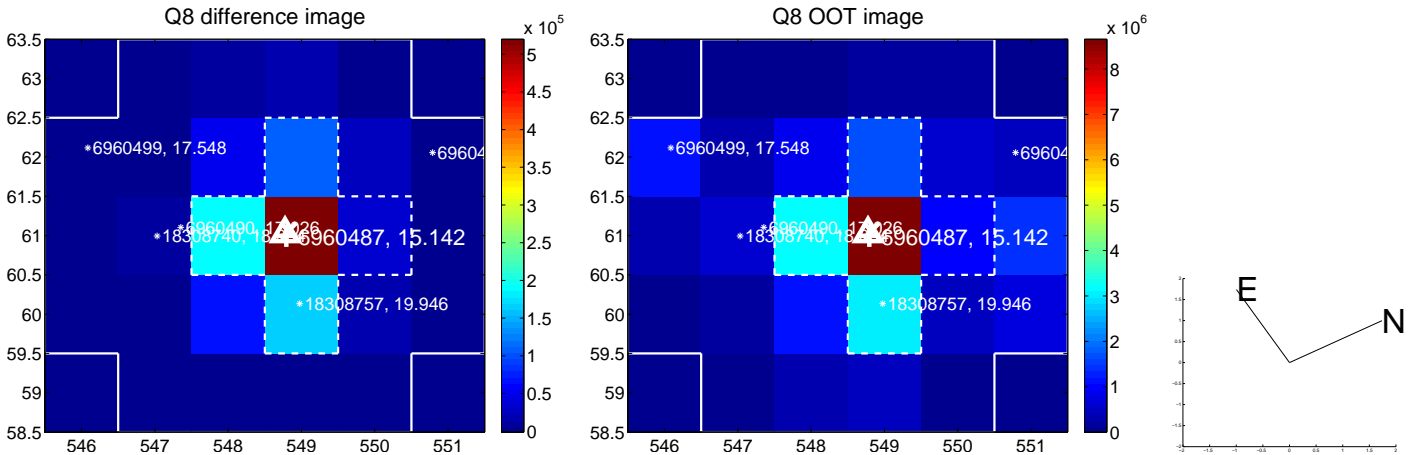
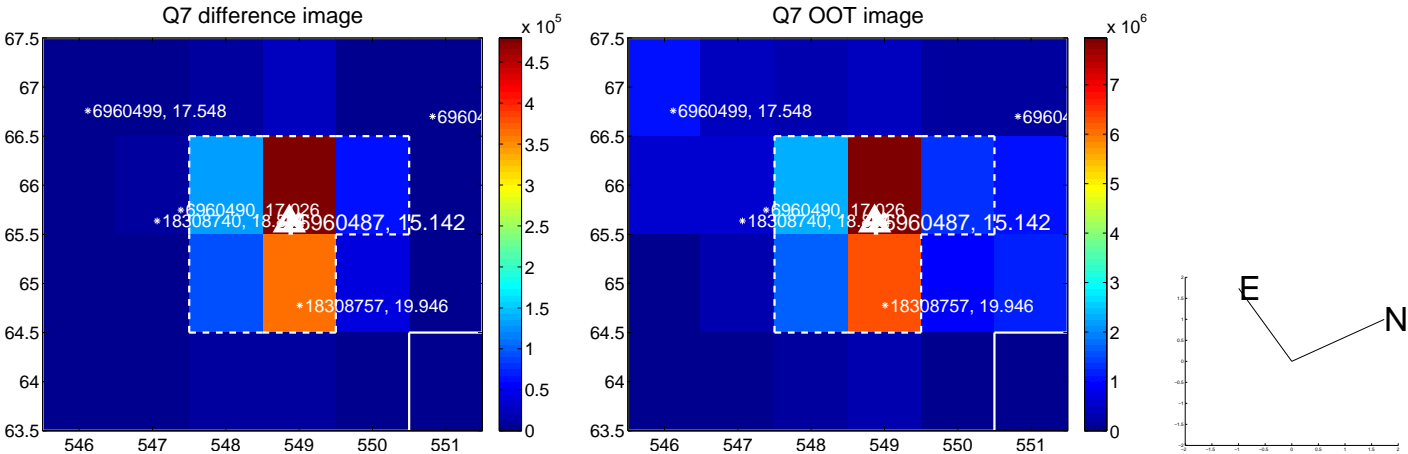
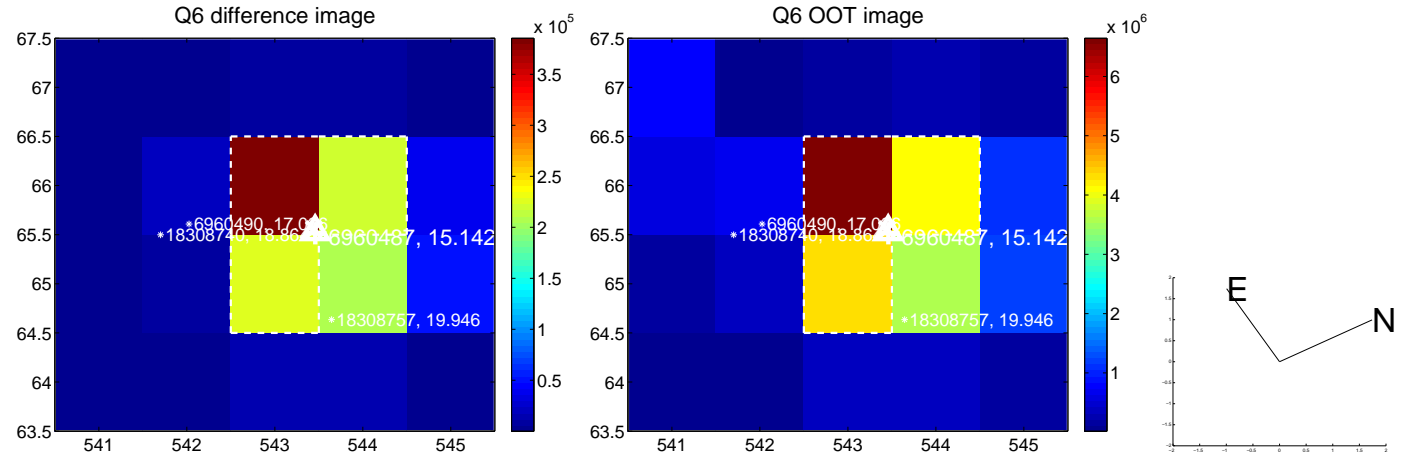
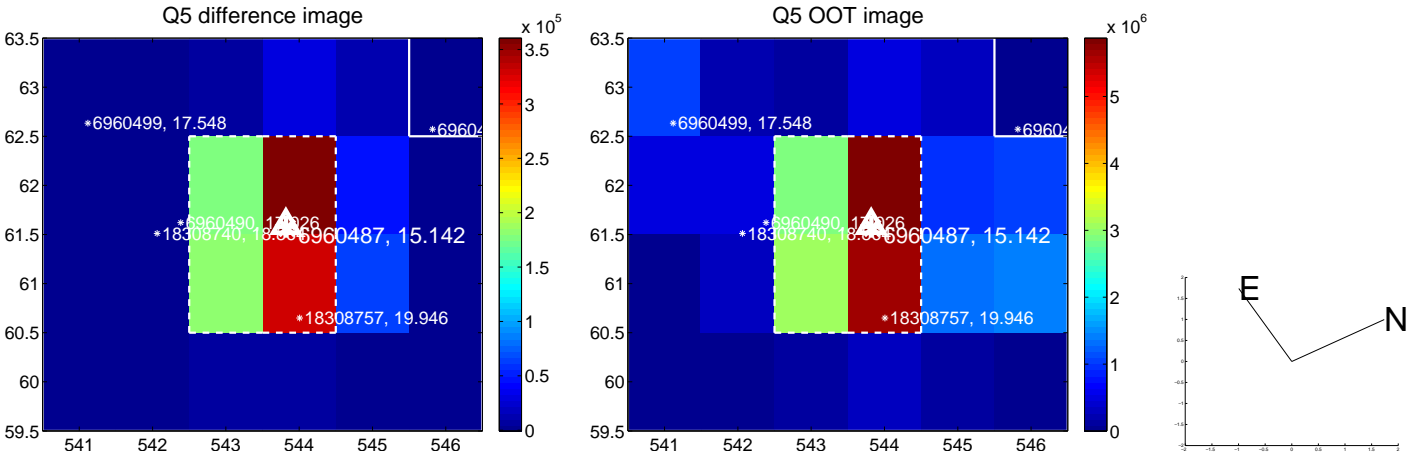


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

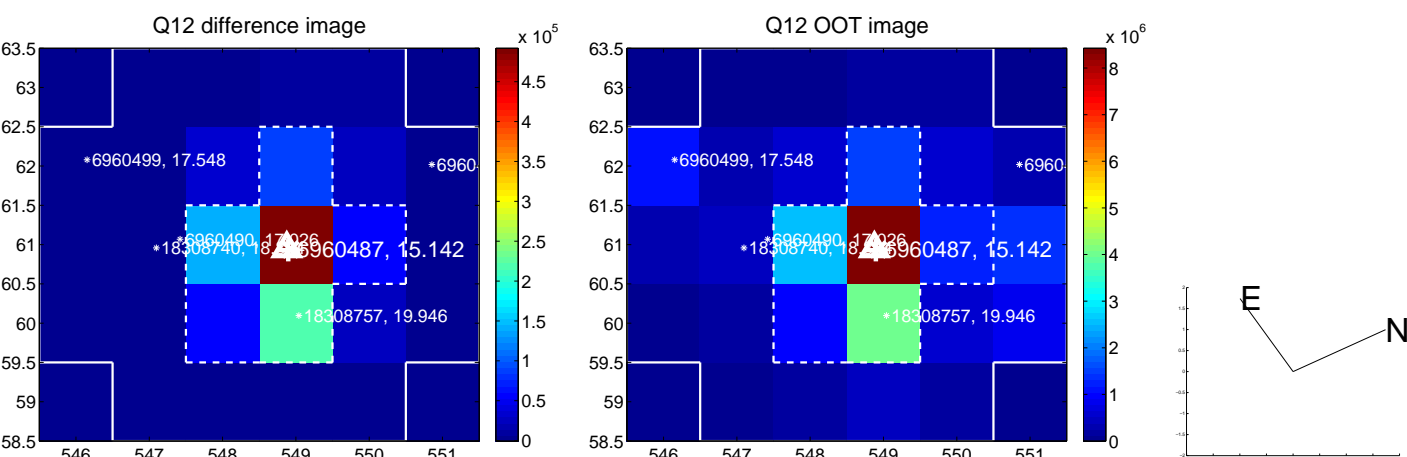
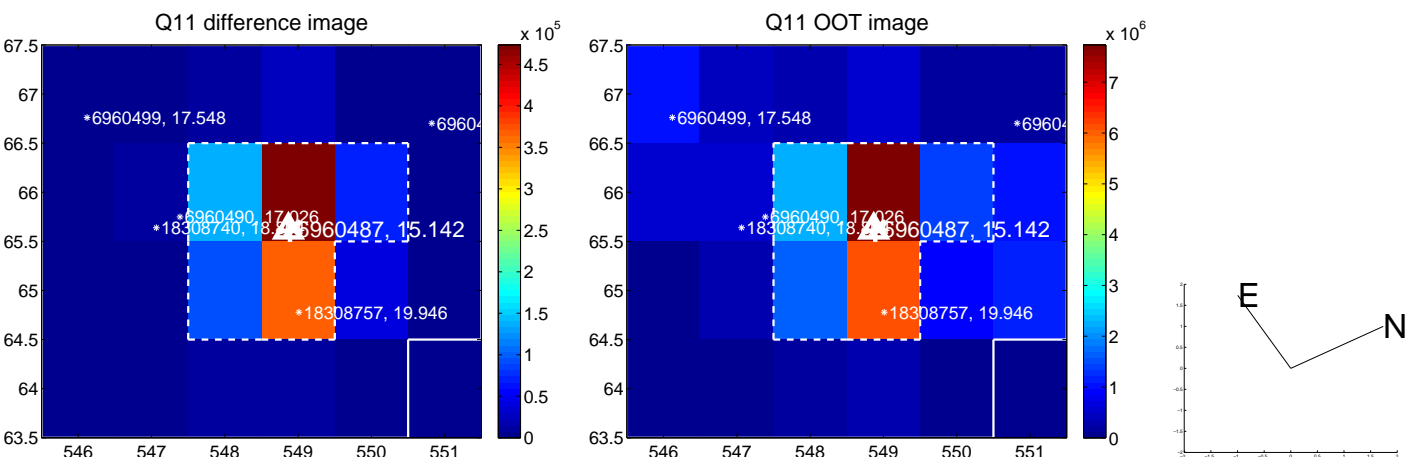
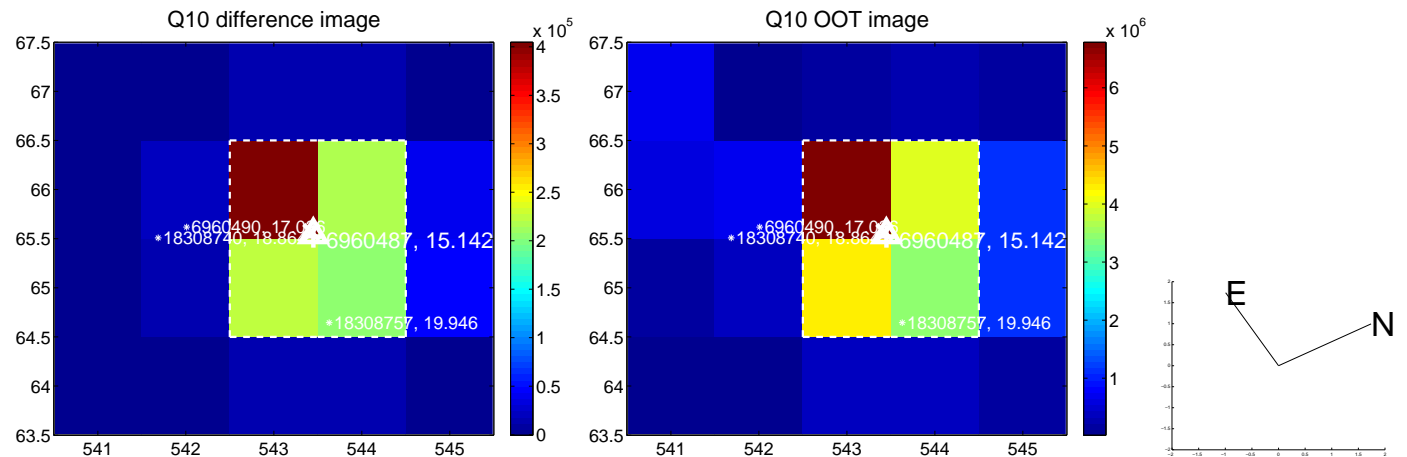
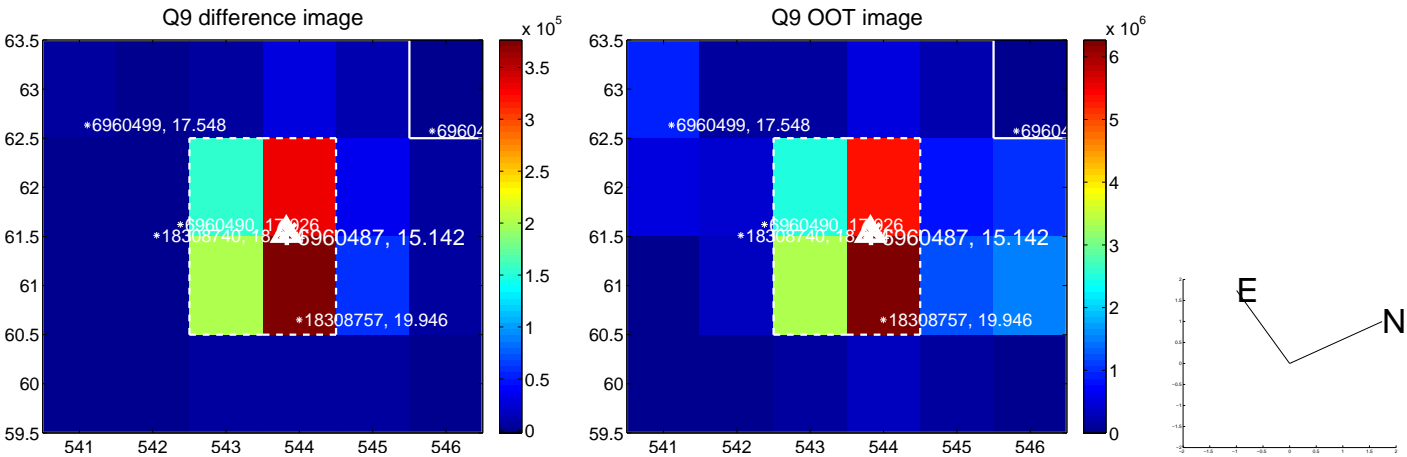


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

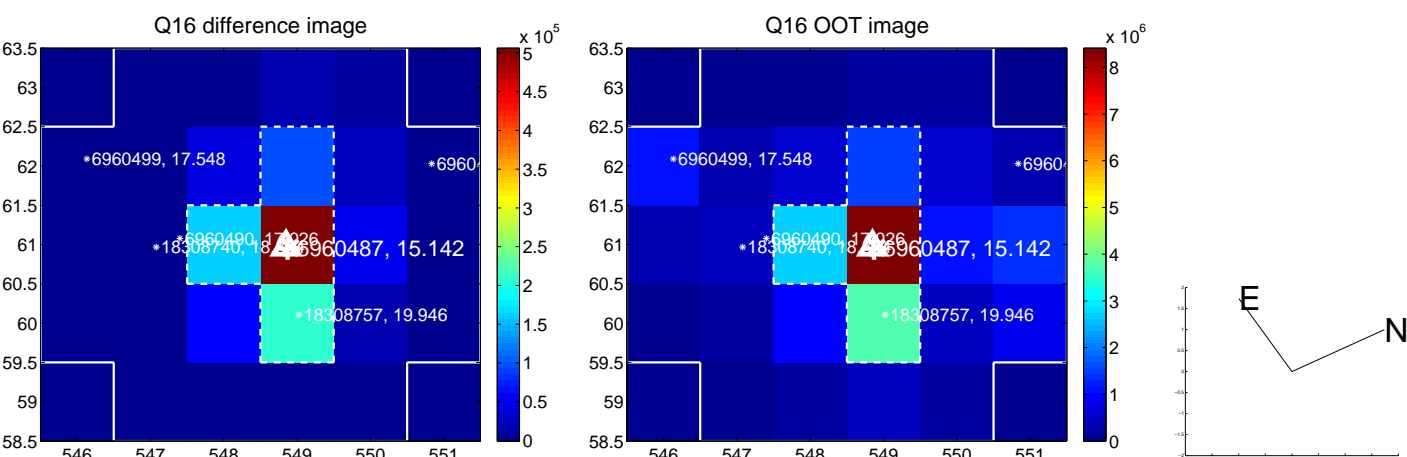
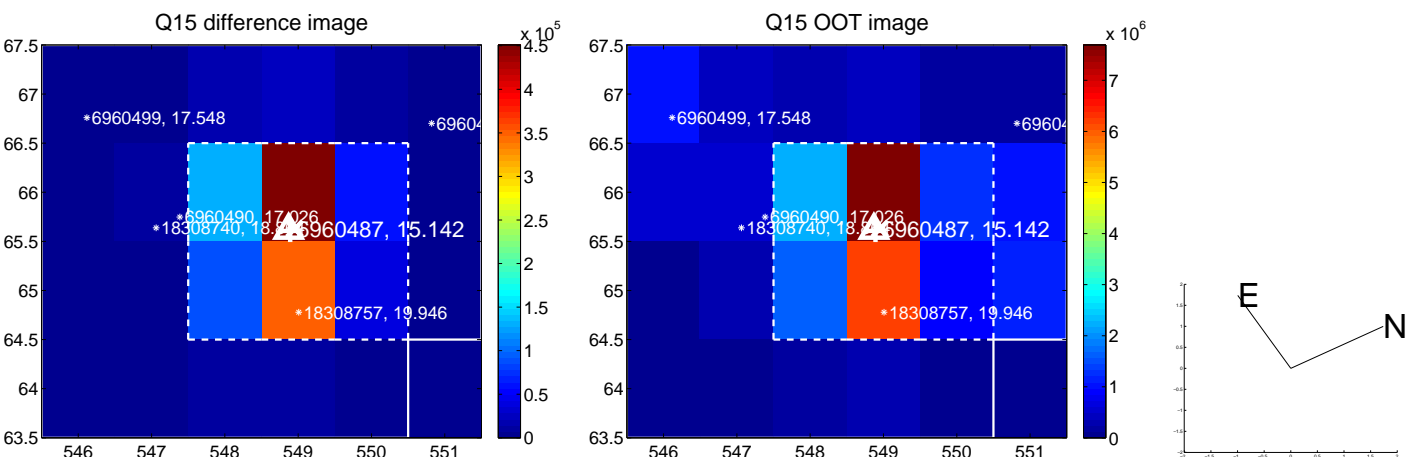
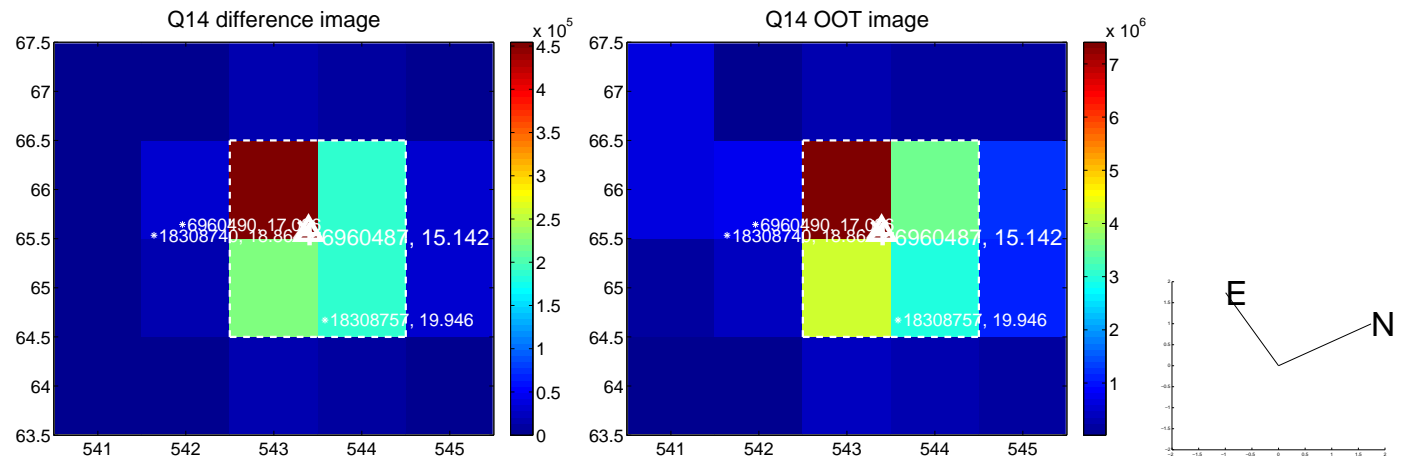
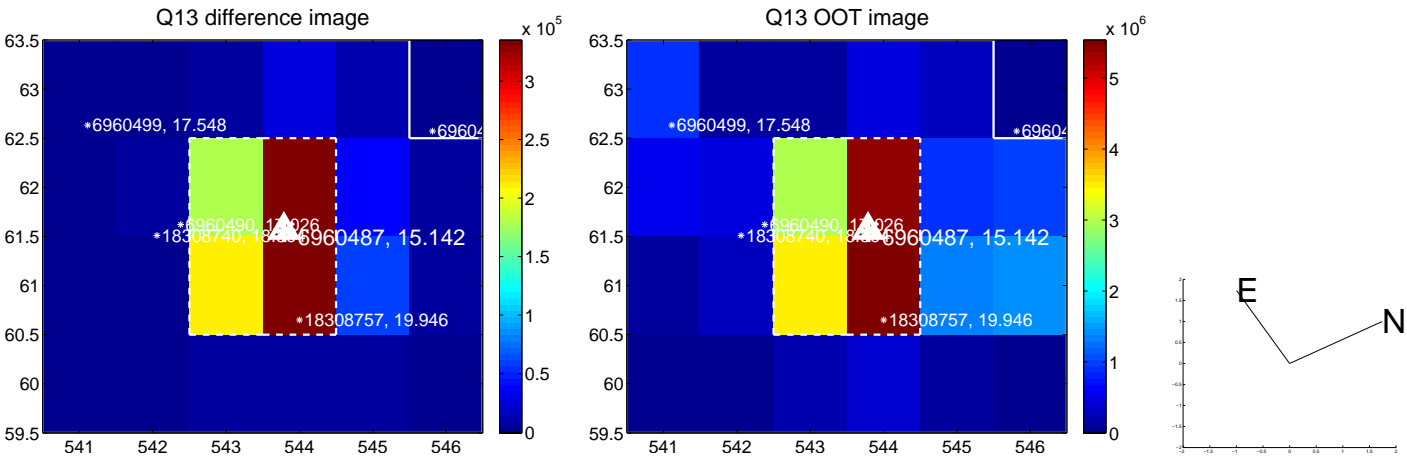




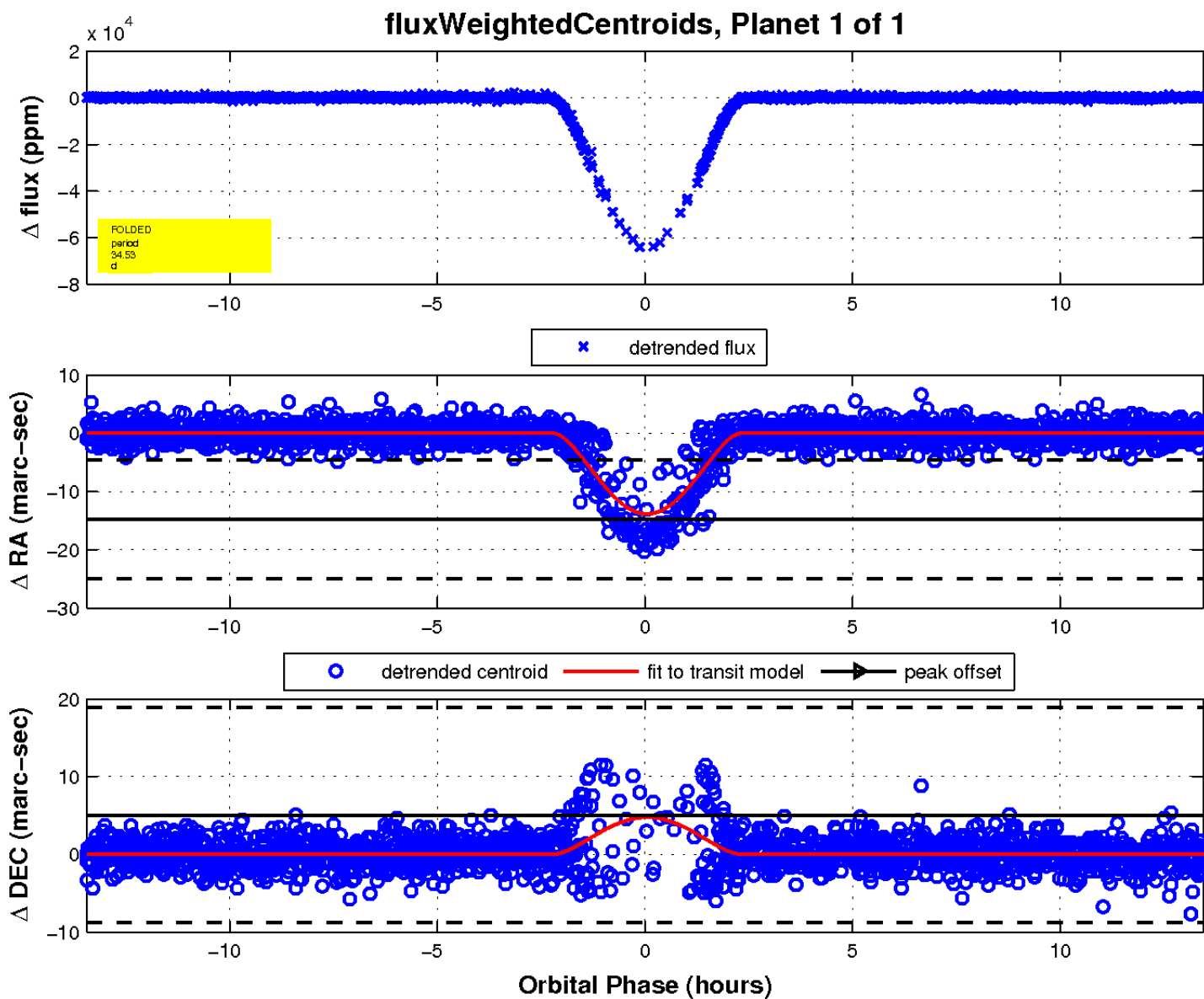
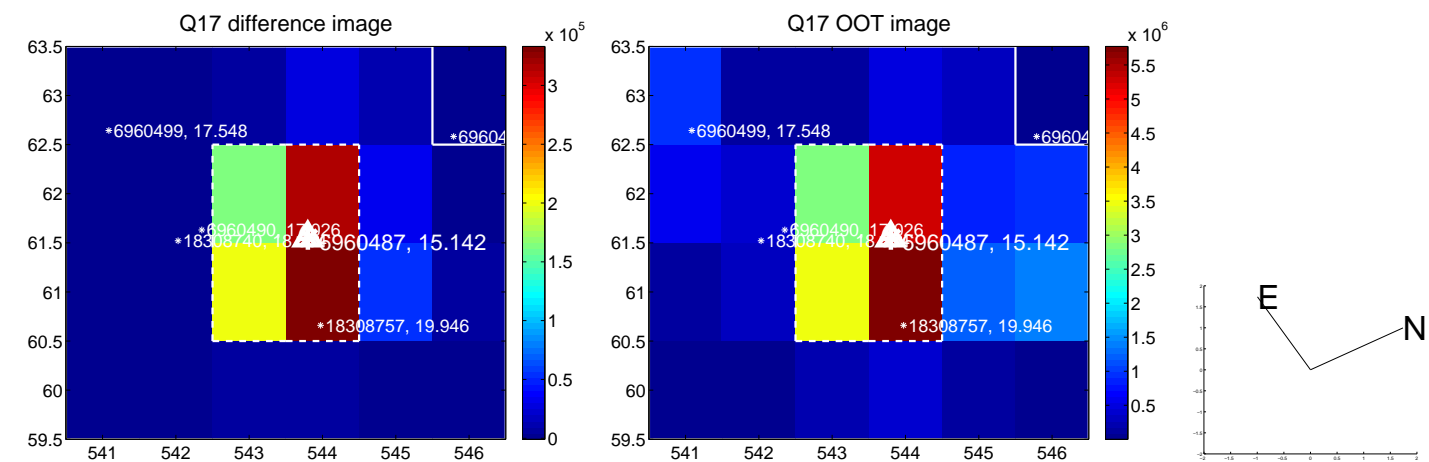
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



UKIRT Image

Declination

