

# KIC 005129031

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005129031-01	OBS	No	7.006429	137.037898	60.8	29.284	8.1	11.3	2.23	5947	2.46	995.74

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005129031-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV

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

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

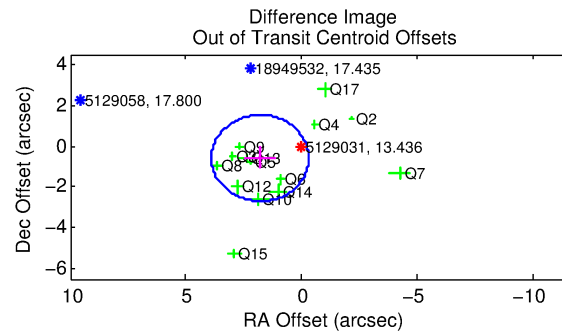
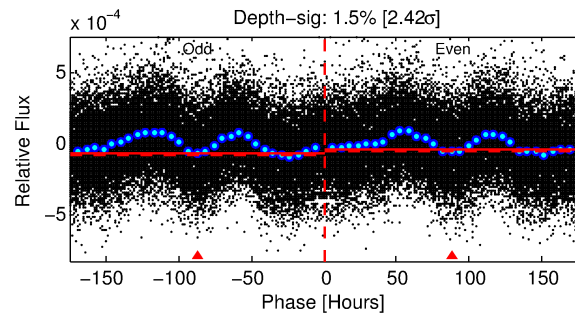
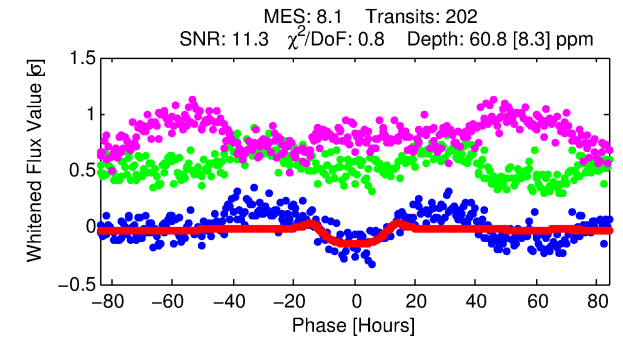
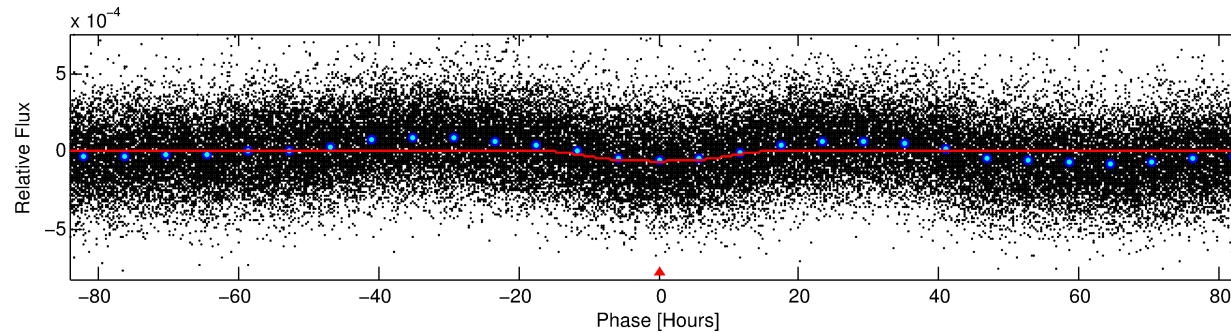
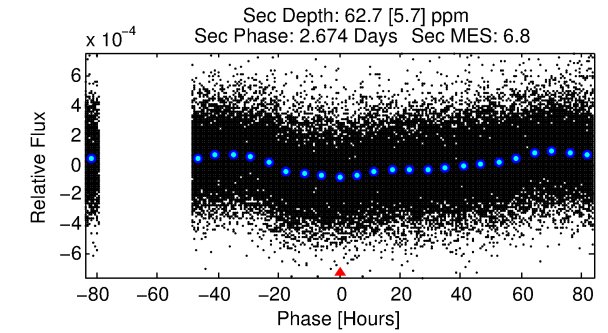
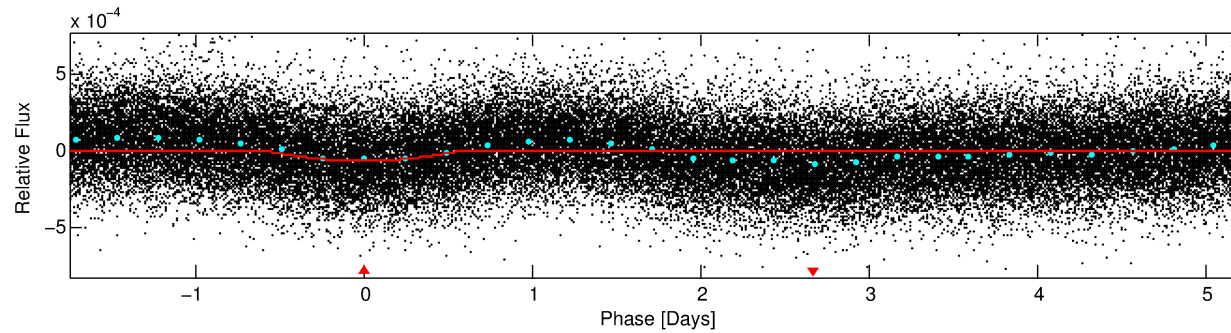
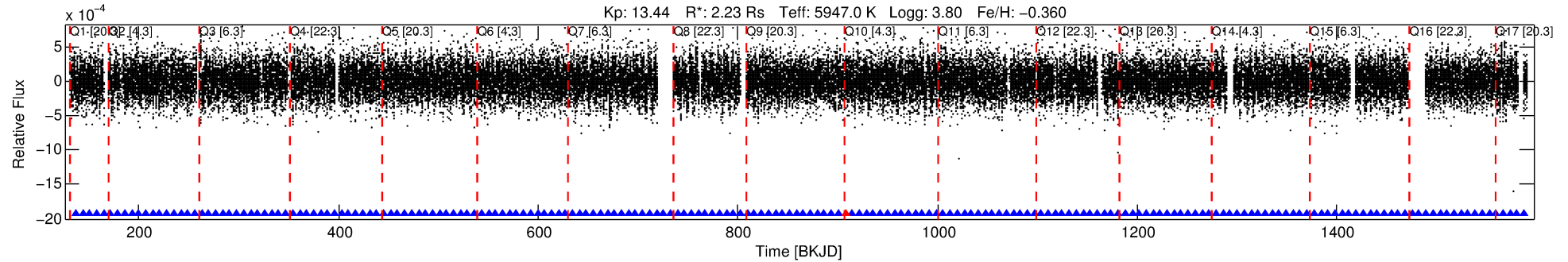
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005129031-01

No Significant Match Found

# DV One-Page Summary

KIC: 5129031 Candidate: 1 of 1 Period: 7.006 d



## DV Fit Results:

Period = 7.00643 [0.00040] d  
Epoch = 137.0379 [0.0474] BKJD  
Rp/R\* = 0.0101 [0.0006]  
a/R\* = 1.06 [0.01]  
b = 0.99 [0.00]  
Seff = 995.74 [986.27]  
Teq = 1432 [355] K  
Rp = 2.46 [1.38] Re  
a = 0.0749 [0.0440] AU  
Ag = 32.06 [31.86] [0.97σ]  
Teffp = 5270 [267] K [8.65σ]

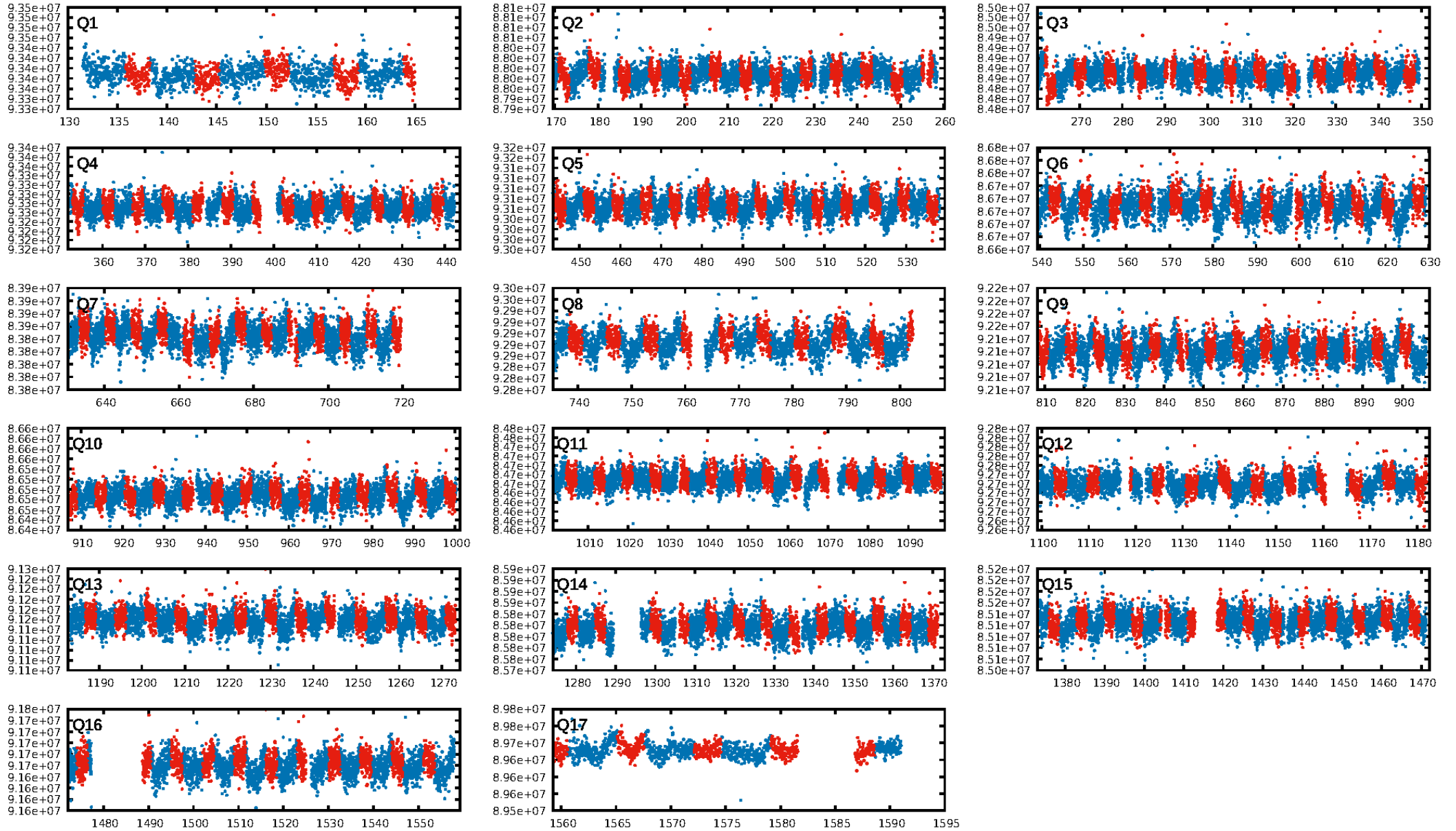
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.27e-13  
RollingBand-fgt: 0.99 [191/192]  
GhostDiagnostic-chr: 1.746  
Centroid-sig: 99.2%  
Centroid-so: 0.632 arcsec [0.88σ]  
OotOffset-rm: 1.892 arcsec [2.69σ]  
KicOffset-rm: 1.877 arcsec [2.71σ]  
OotOffset-st: 4/3/3/4 [14]  
KicOffset-st: 4/3/3/4 [14]  
DiffImageQuality-fgm: 0.57 [8/14]  
DiffImageOverlap-fno: 1.00 [17/17]

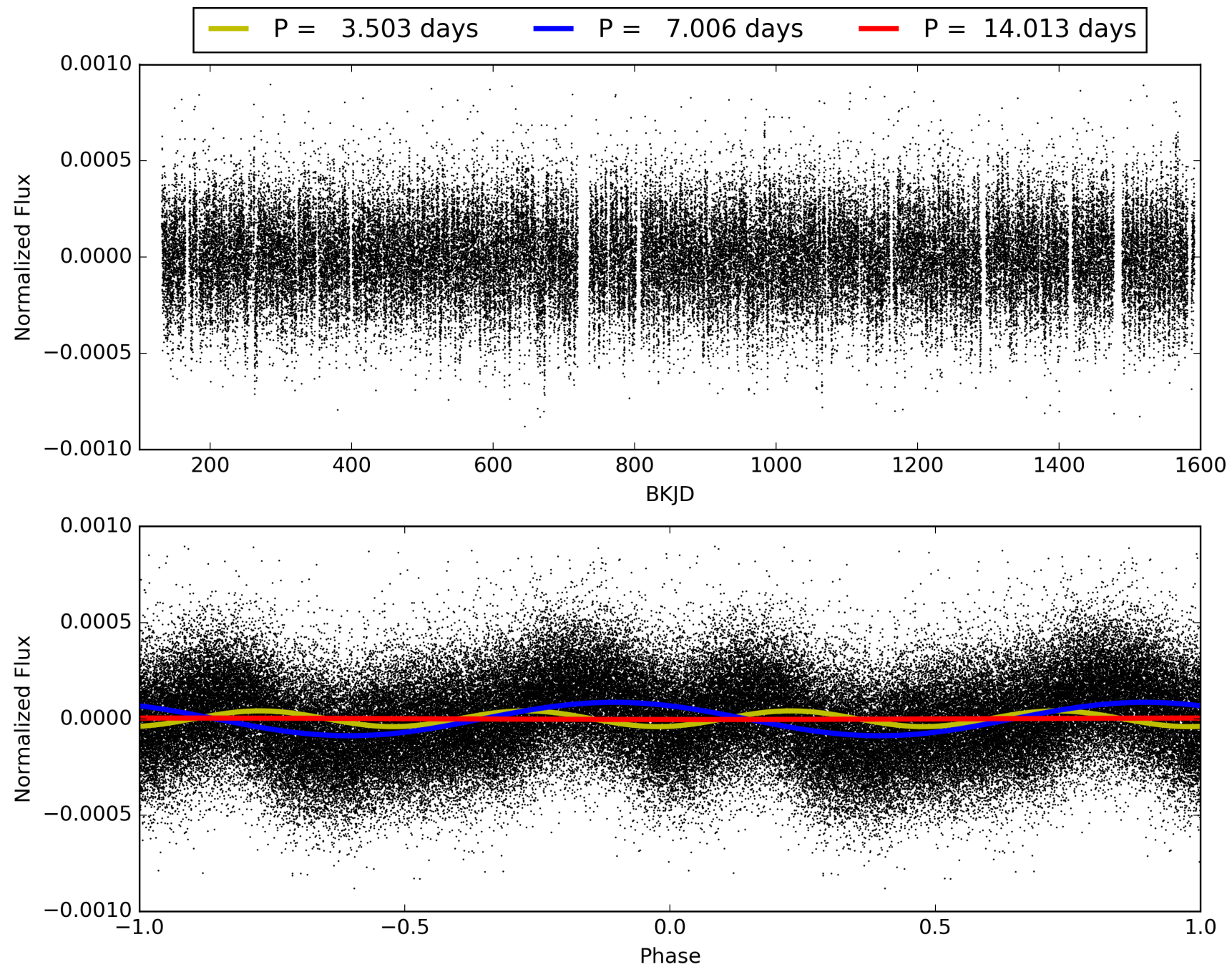
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 11:14:08 Z

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

## TCE 005129031-01, PDC Light Curves



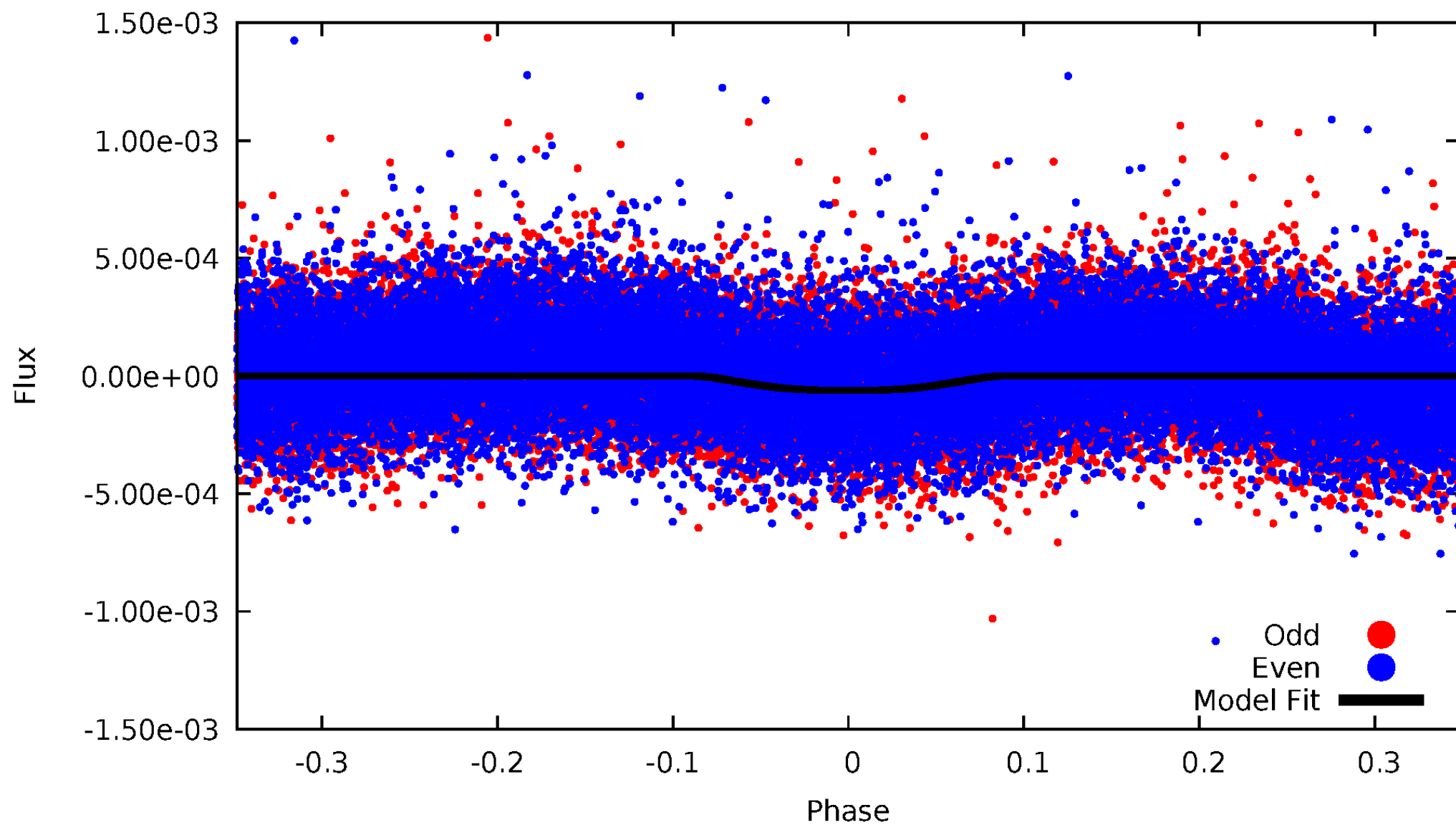
# TCE 005129031-01





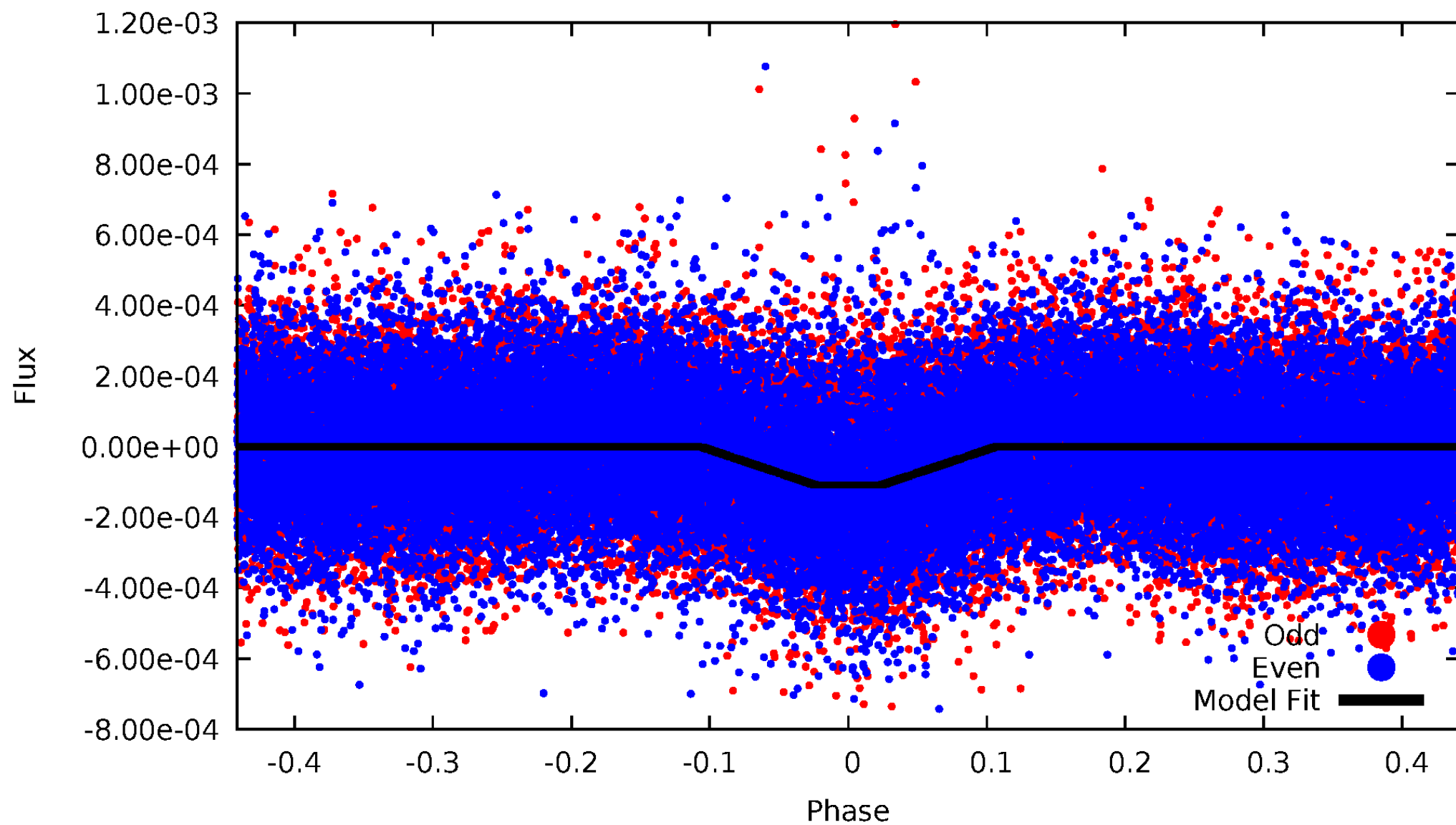
# DV Odd/Even

TCE 005129031-01

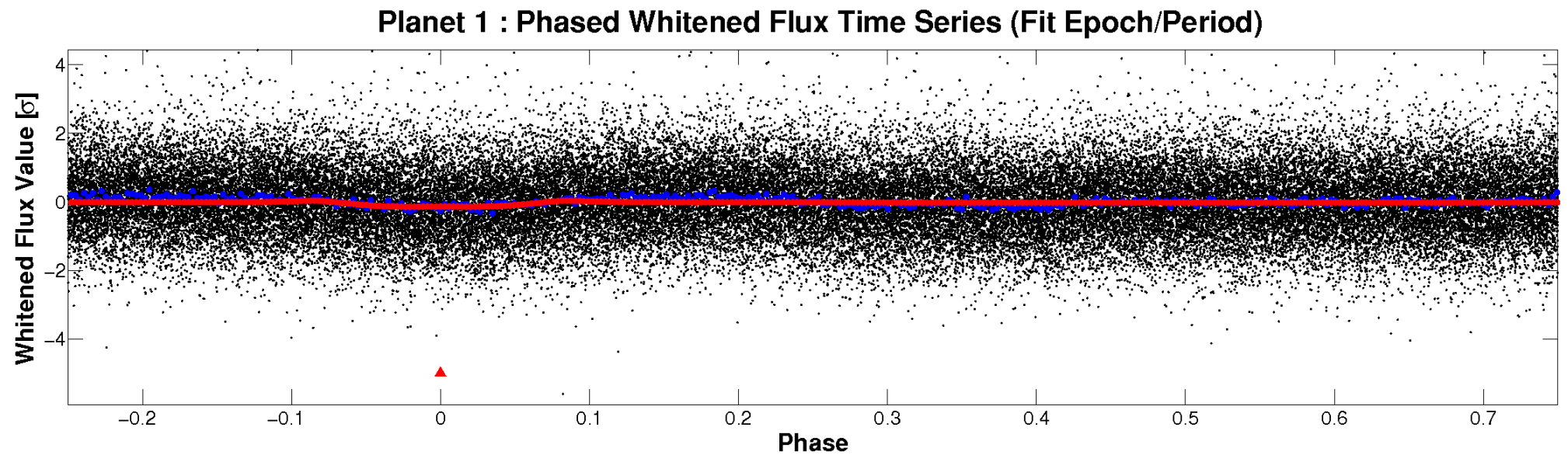
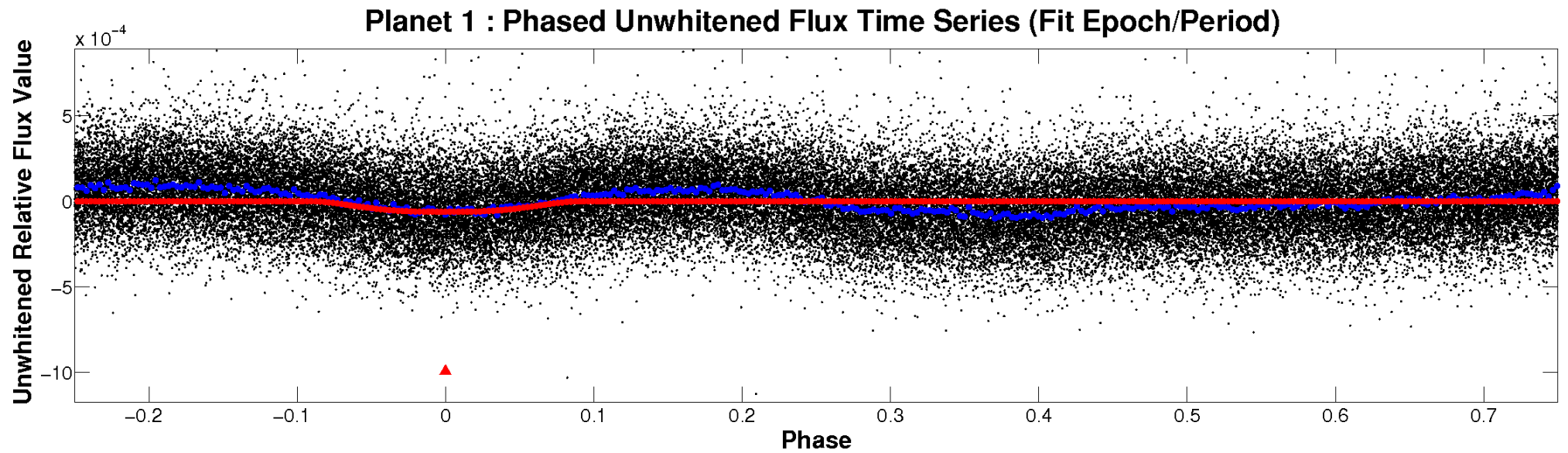


# ALT Odd/Even

TCE 005129031-01

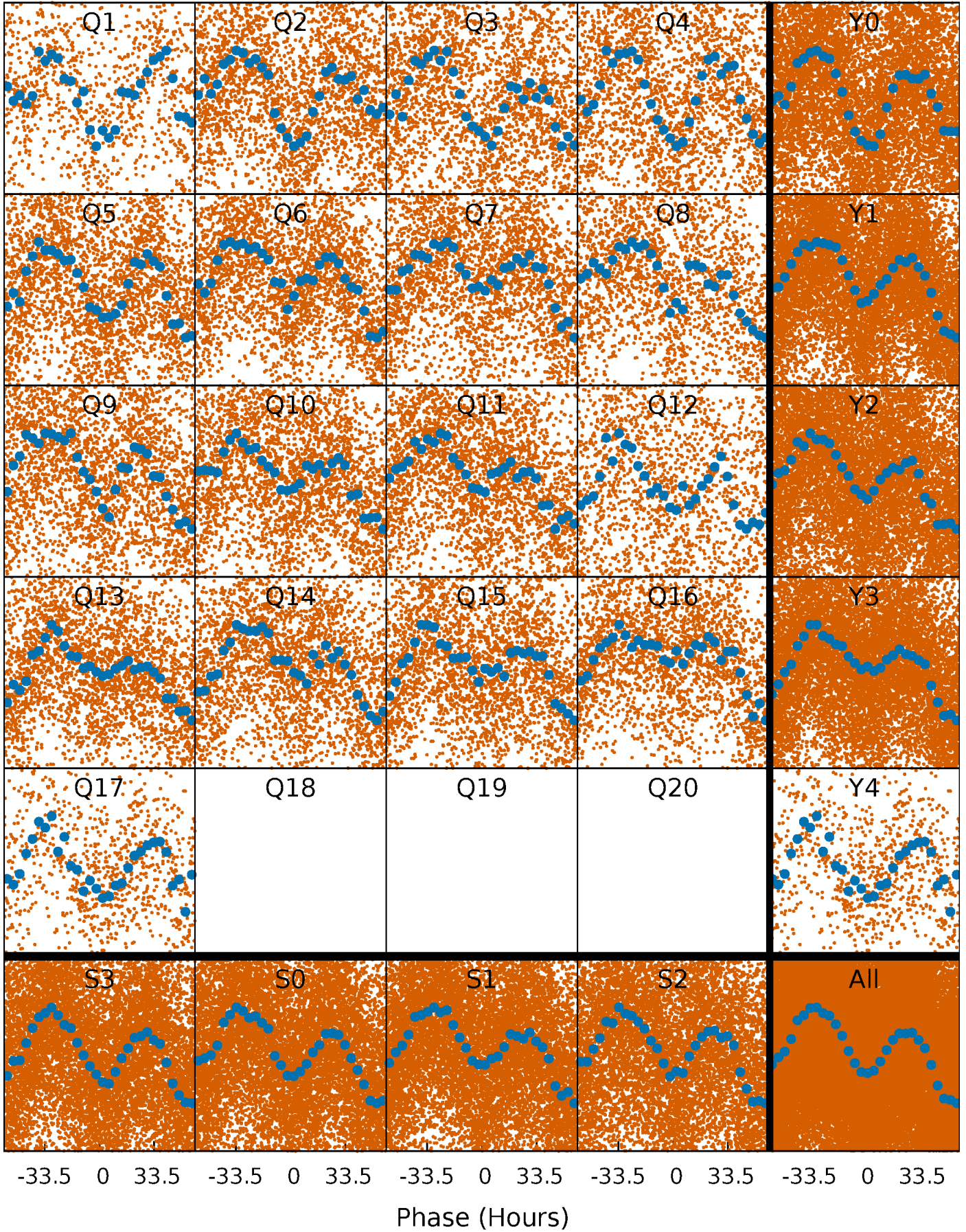


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

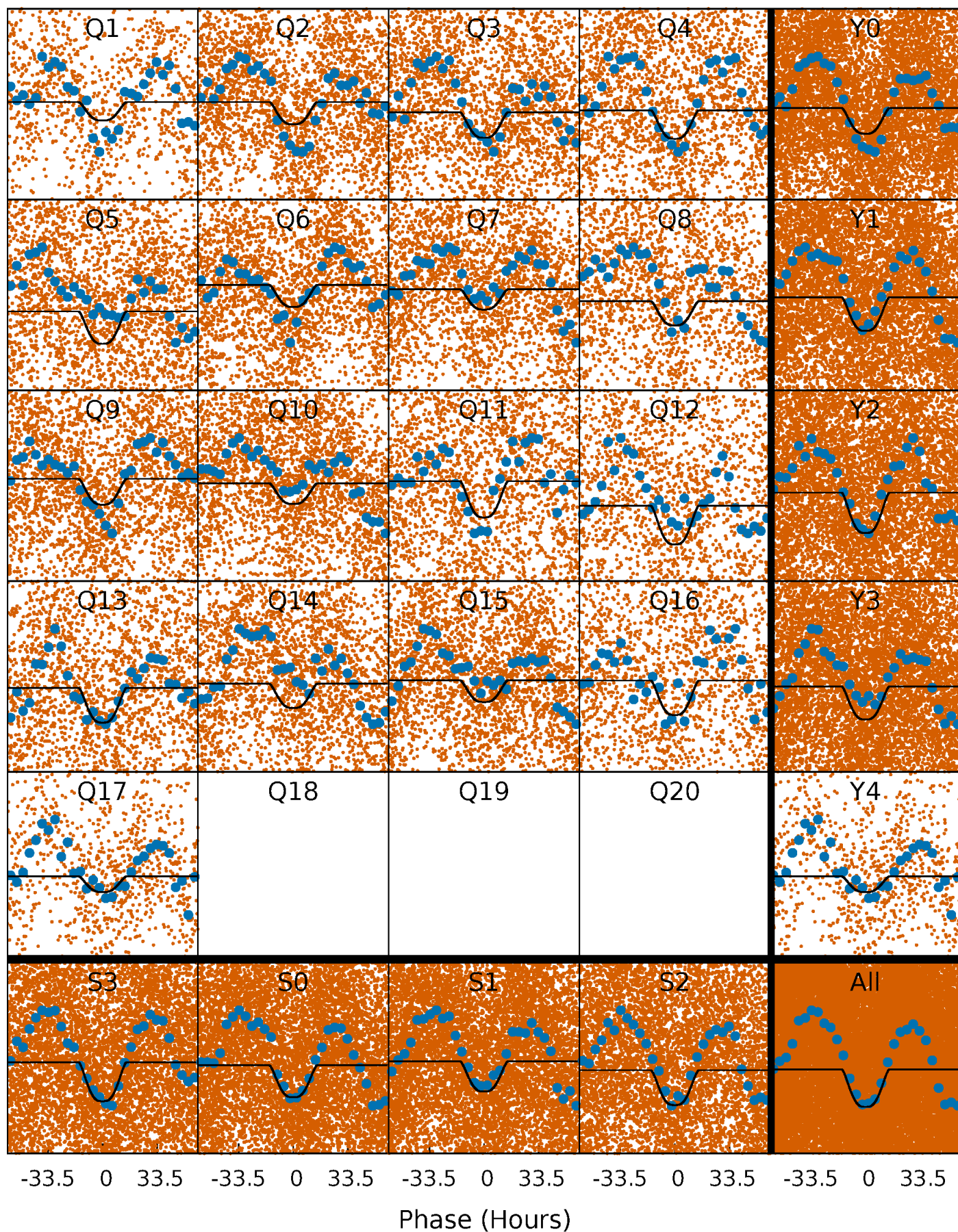
TCE 005129031-01 P= 7.006429 Days  $T_0=137.037898$  (BKJD)





# DV Quarter-Phased Transit Curves

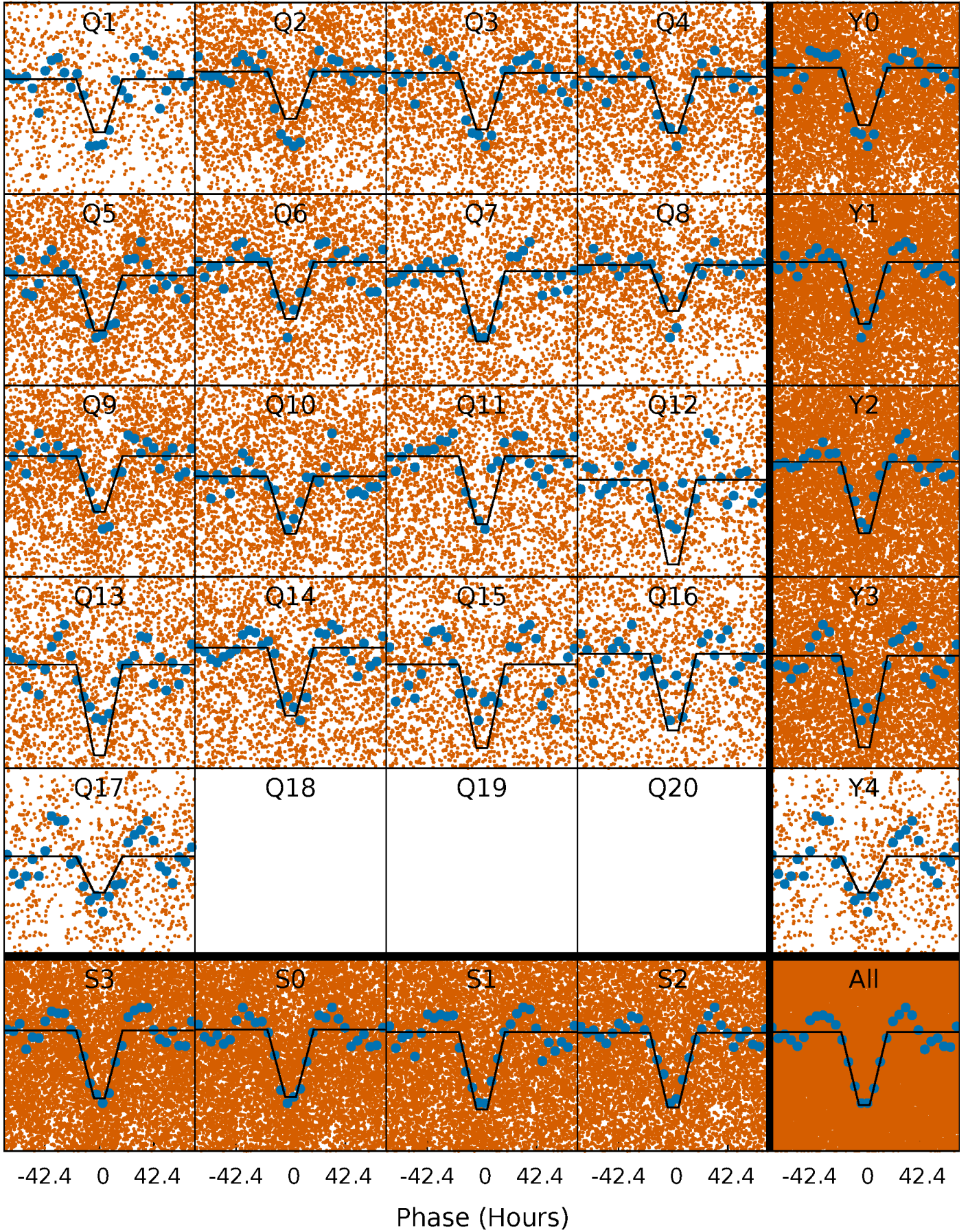
TCE 005129031-01 P= 7.006429 Days  $T_0=137.037898$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

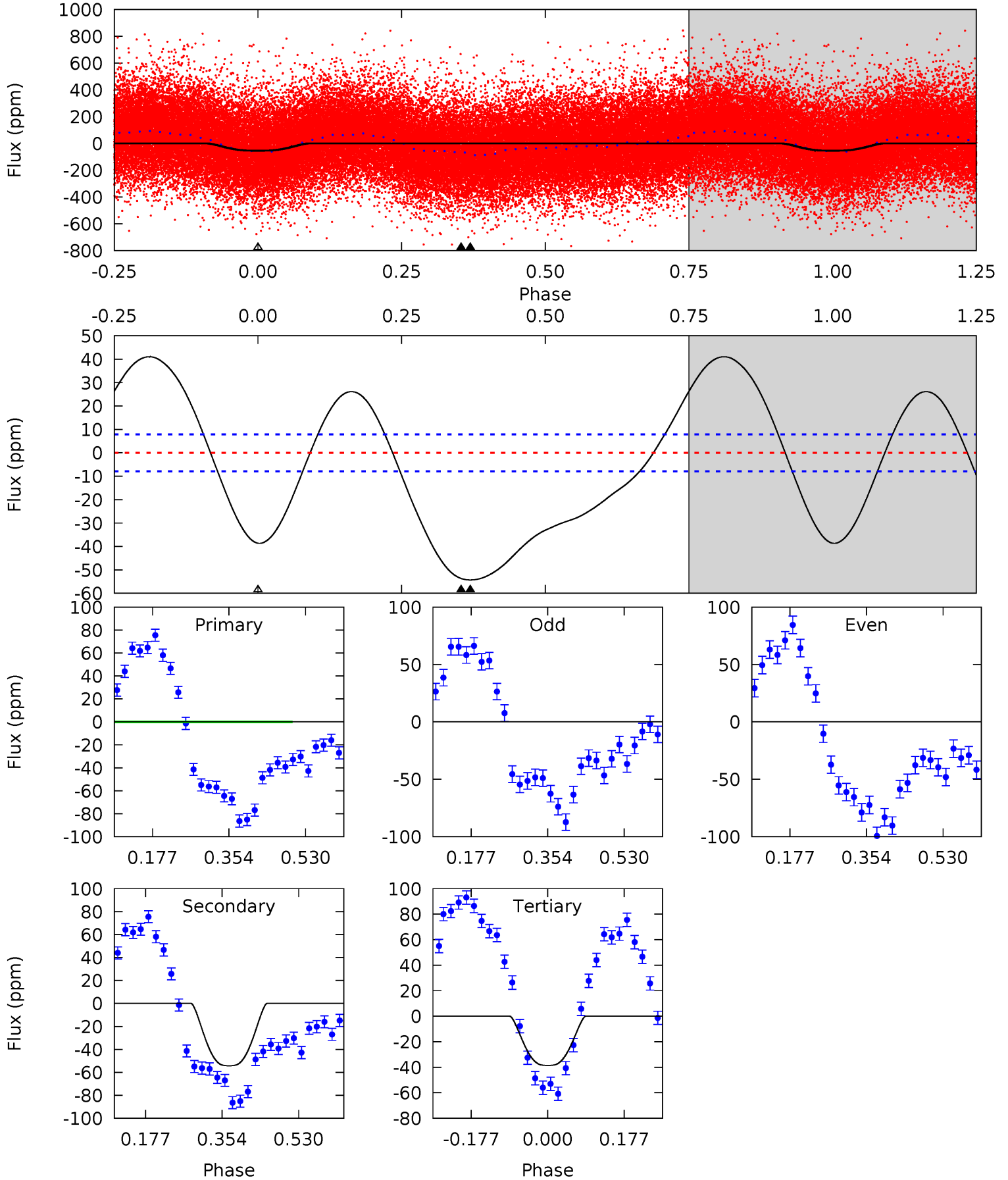
TCE 005129031-01 P= 7.005573 Days  $T_0=137.128880$  (BKJD)



# DV Model-Shift Uniqueness Test

005129031-01, P = 7.006429 Days, E = 130.031469 Days

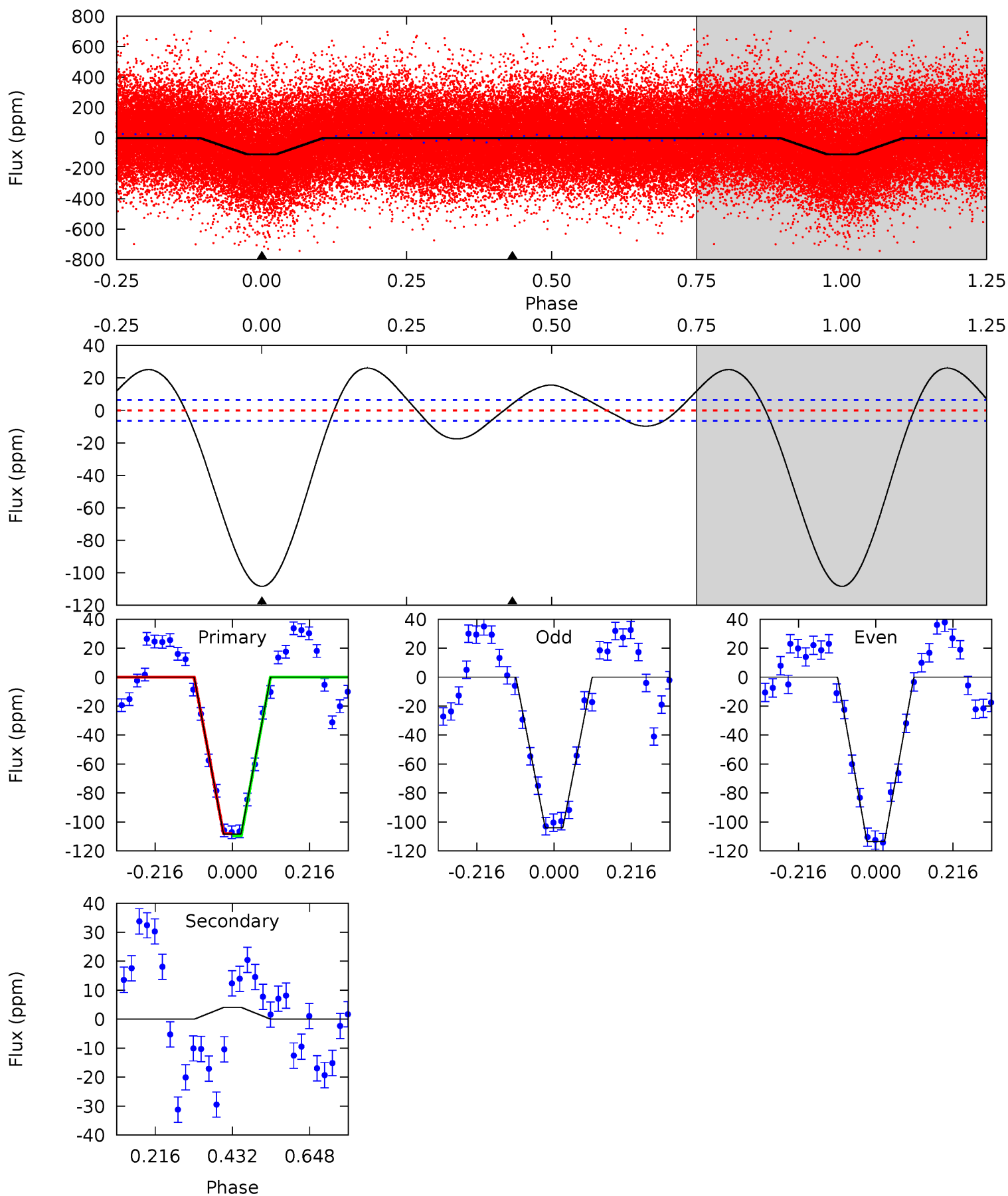
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.2	30.6	21.7	0	4.44	1.35	14.1	8.47	30.2	8.83	30.6	1.28	1.18	0.43	1.47



# Alt Model-Shift Uniqueness Test

005129031-01, P = 7.005573 Days, E = 130.123307 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
74.3	-2.79	0	0	4.40	1.24	7.44	74.3	74.3	-2.79	-2.79	3.24	1.02	0.19	0.59





### Stellar Parameters For KIC 005129031

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5947^{+195}_{-177}$	$3.798^{+0.592}_{-0.148}$	$-0.360^{+0.350}_{-0.250}$	$2.234^{+0.533}_{-1.245}$	$1.144^{+0.152}_{-0.281}$	$0.145^{+1.178}_{-0.063}$
	+3%/-3%	+16%/-4%	+97%/-69%	+24%/-56%	+13%/-25%	+815%/-44%
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 005129031-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-54 \pm 2$	$2.33^{+0.45}_{-0.71}$	$1950^{+167}_{-299}$	$5139^{+200}_{-193}$	$31^{+28}_{-9}$
Alt.	$4 \pm 1$	$2.42^{+0.44}_{-0.70}$	$1947^{+174}_{-274}$	$-3278^{+199}_{-160}$	$-2.224^{+0.940}_{-2.076}$

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

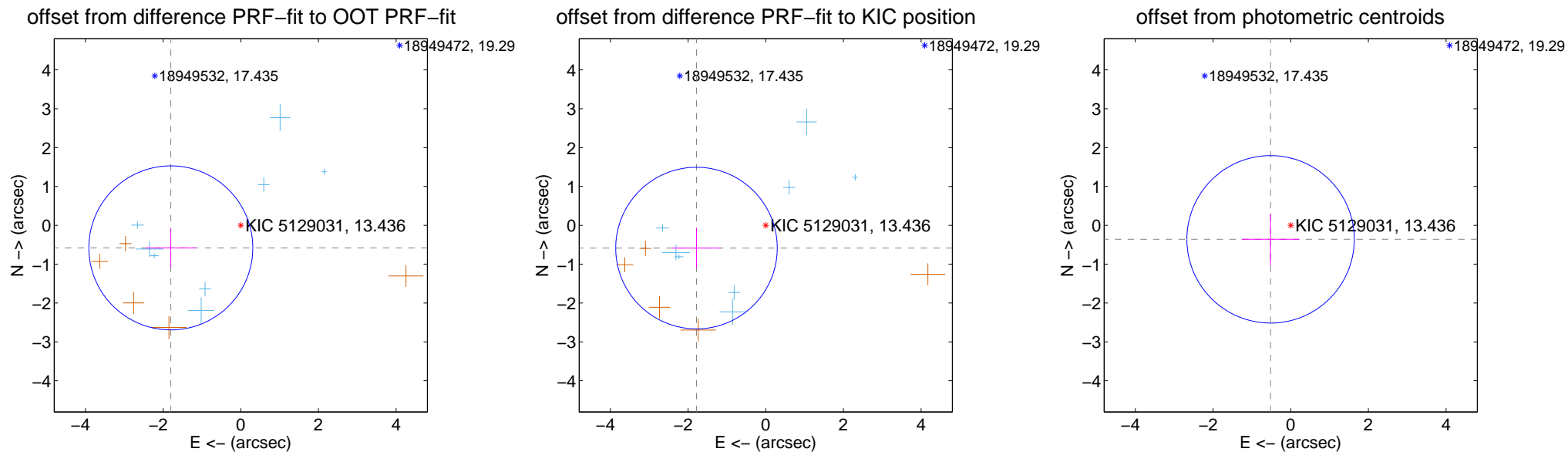
## DV Centroid Data

Supplemental centroid analysis for 005129031-01. Kepler magnitude: 13.44. Transit SNR 11.31

There are 8 quarters with good PRF difference image offsets

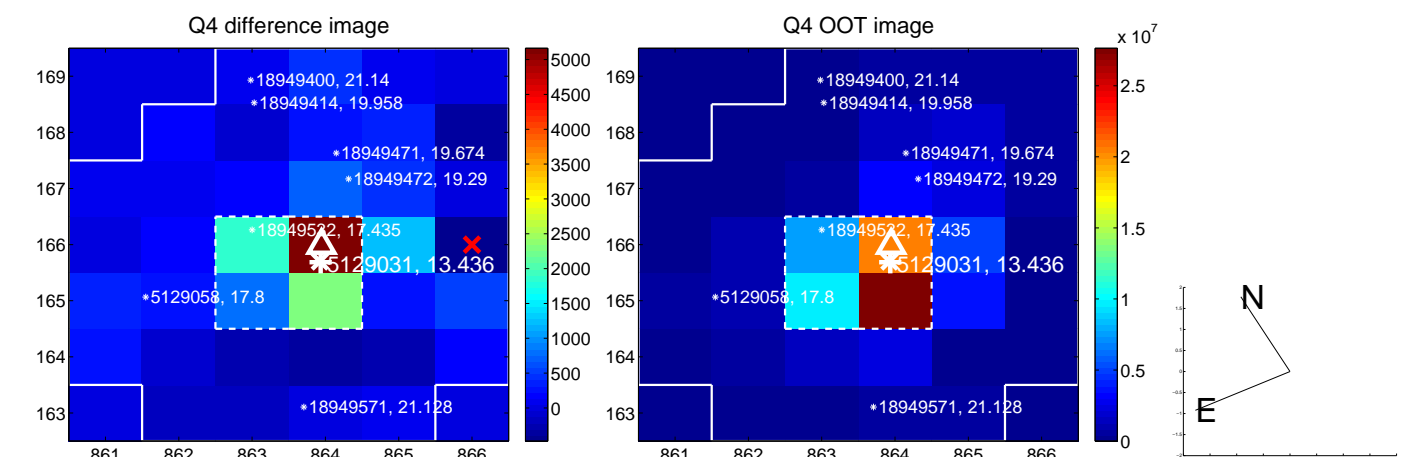
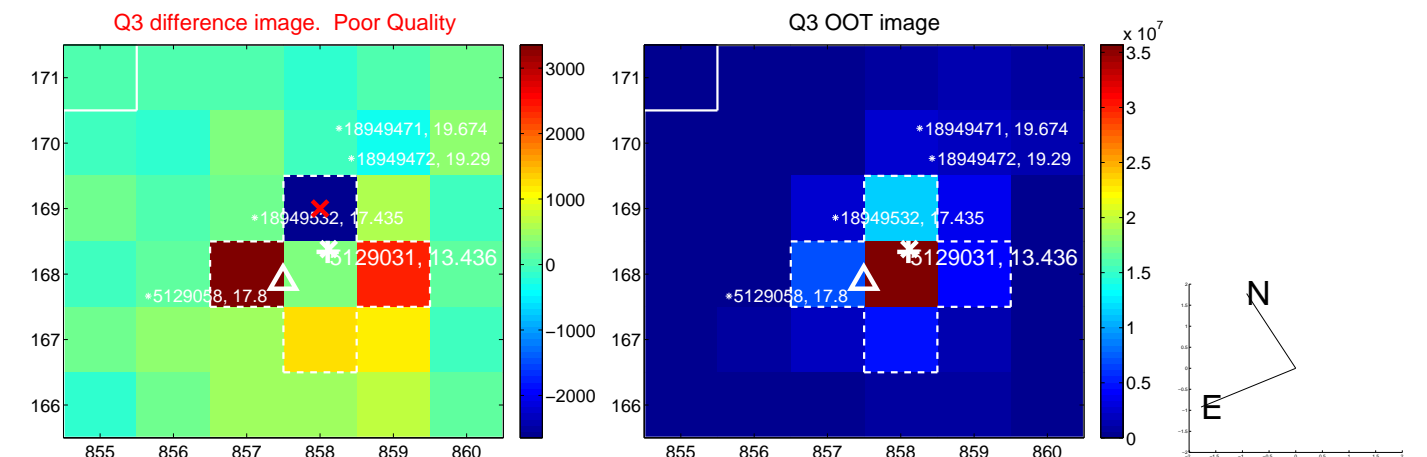
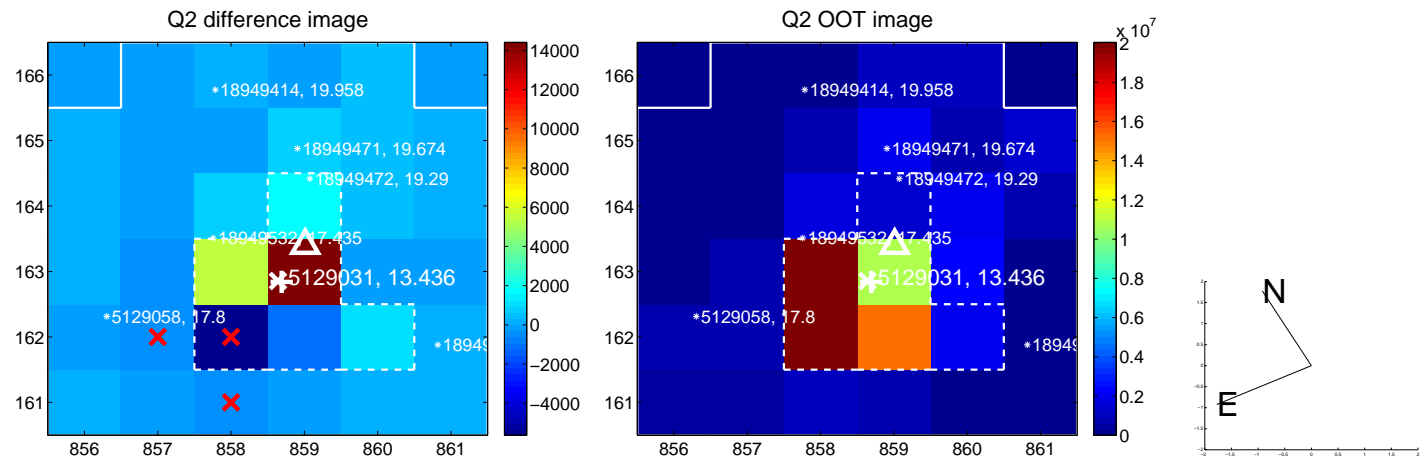
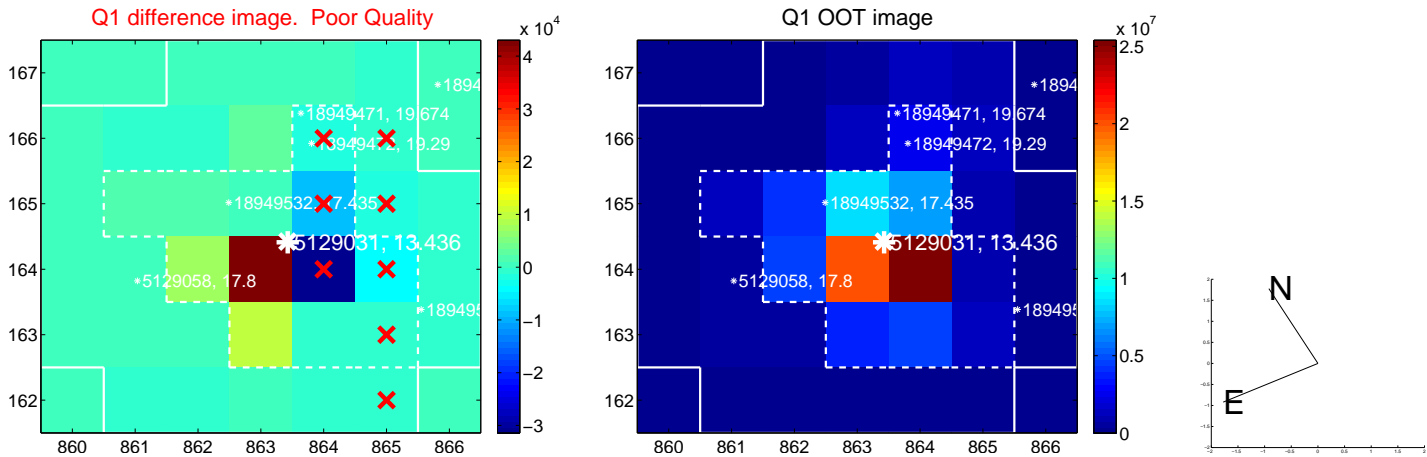
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.892 \pm 0.703$	2.69	$1.801 \pm 0.648$	$-0.581 \pm 0.500$
PRF-fit source offset from KIC position	$1.877 \pm 0.693$	2.71	$1.783 \pm 0.634$	$-0.586 \pm 0.516$
photometric centroid source offset	$0.63 \pm 0.72$	0.88	$0.52 \pm 0.74$	$-0.36 \pm 0.67$

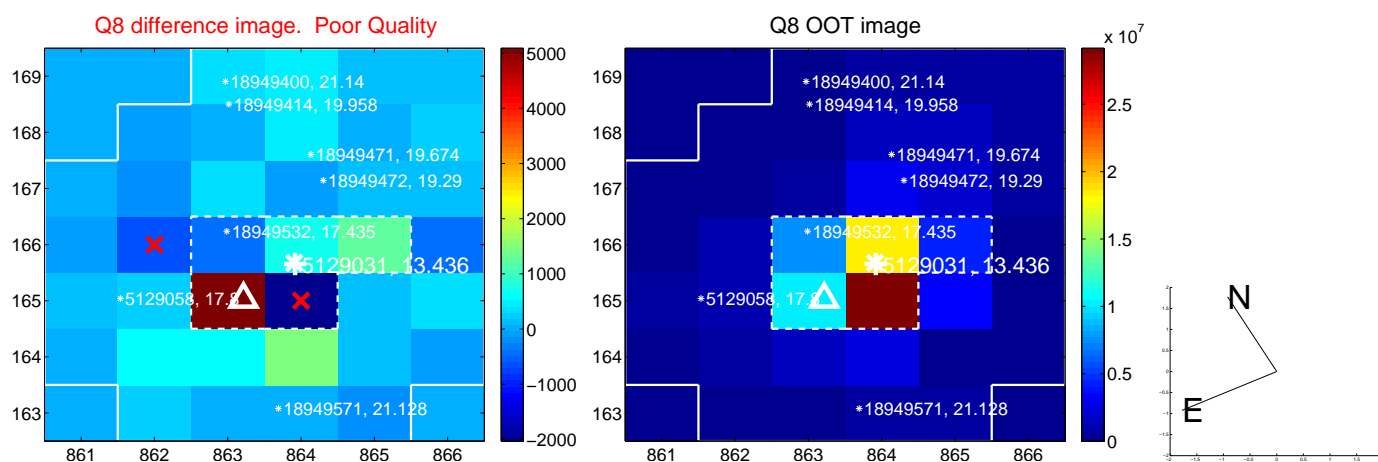
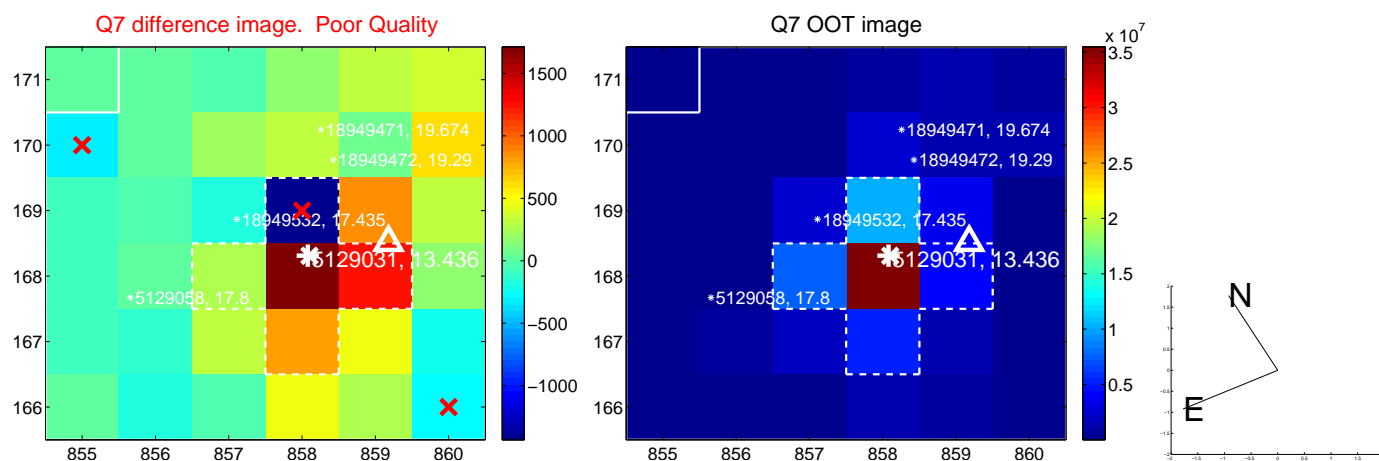
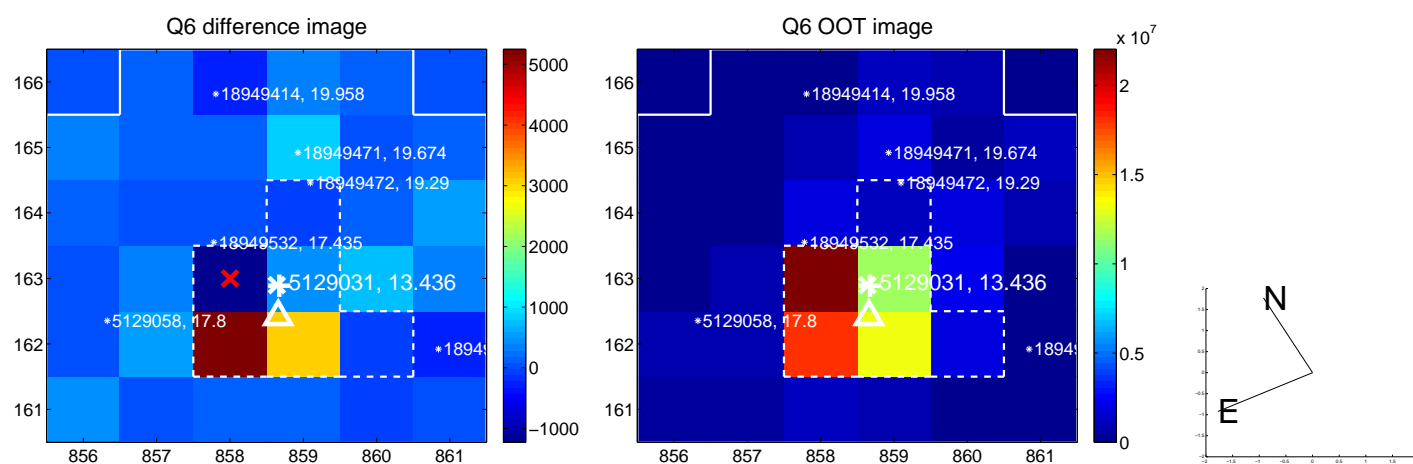
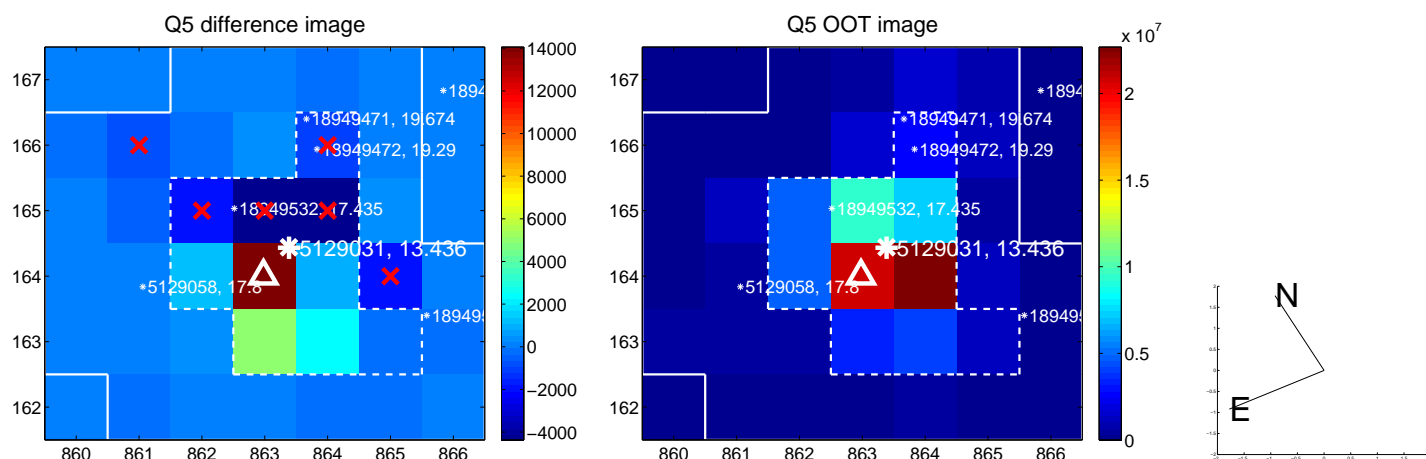


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

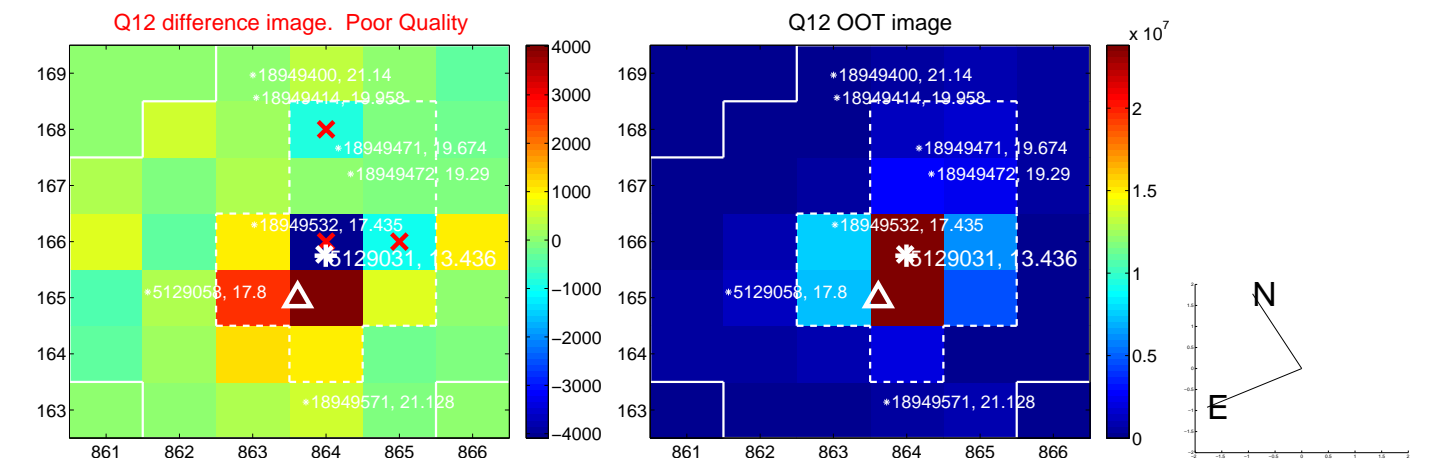
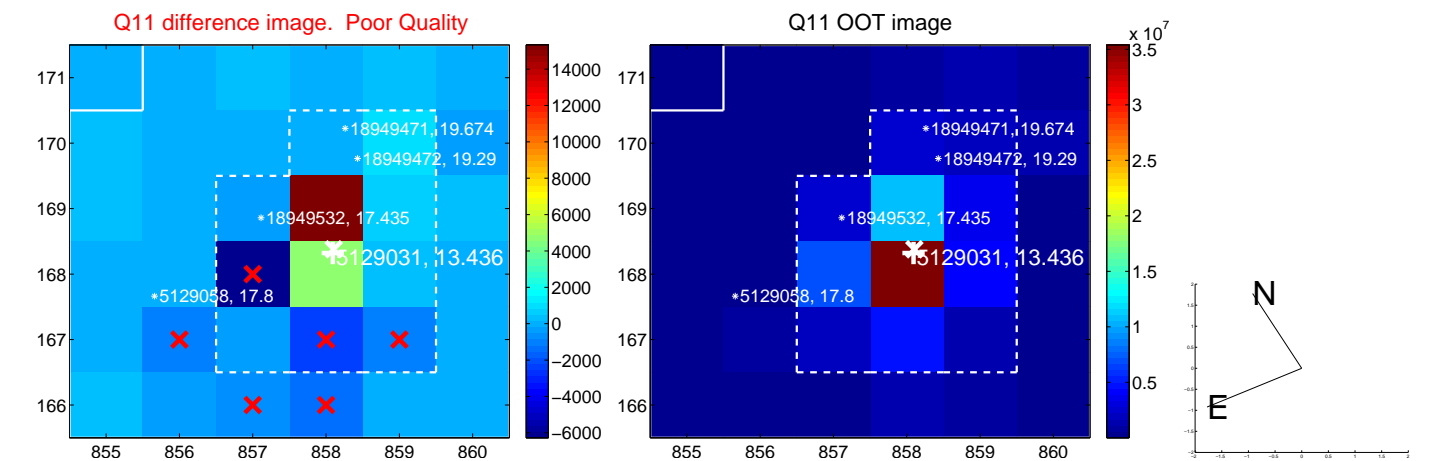
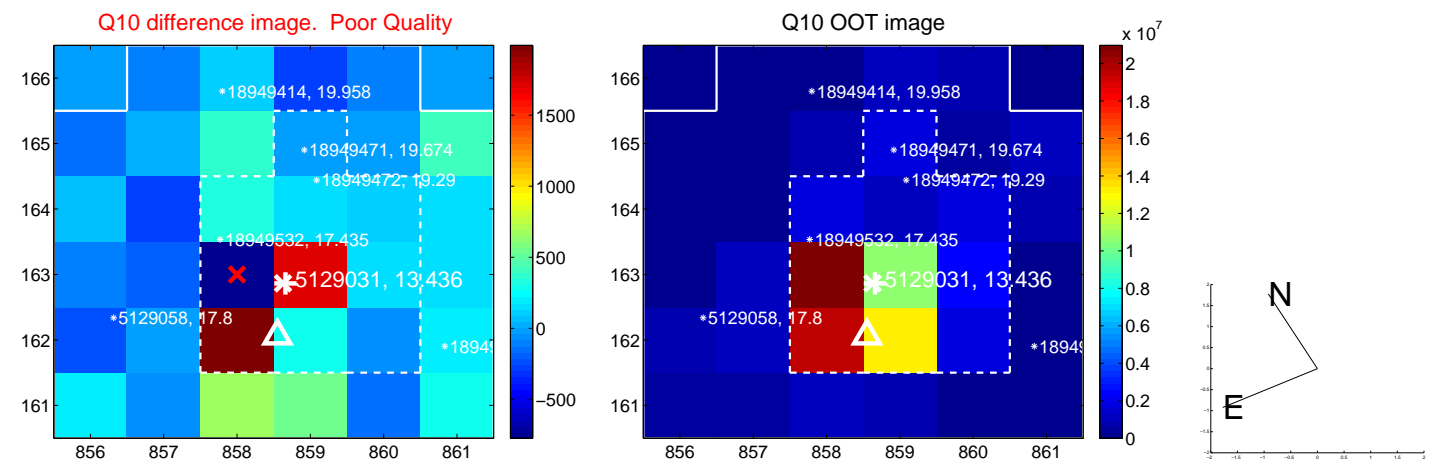
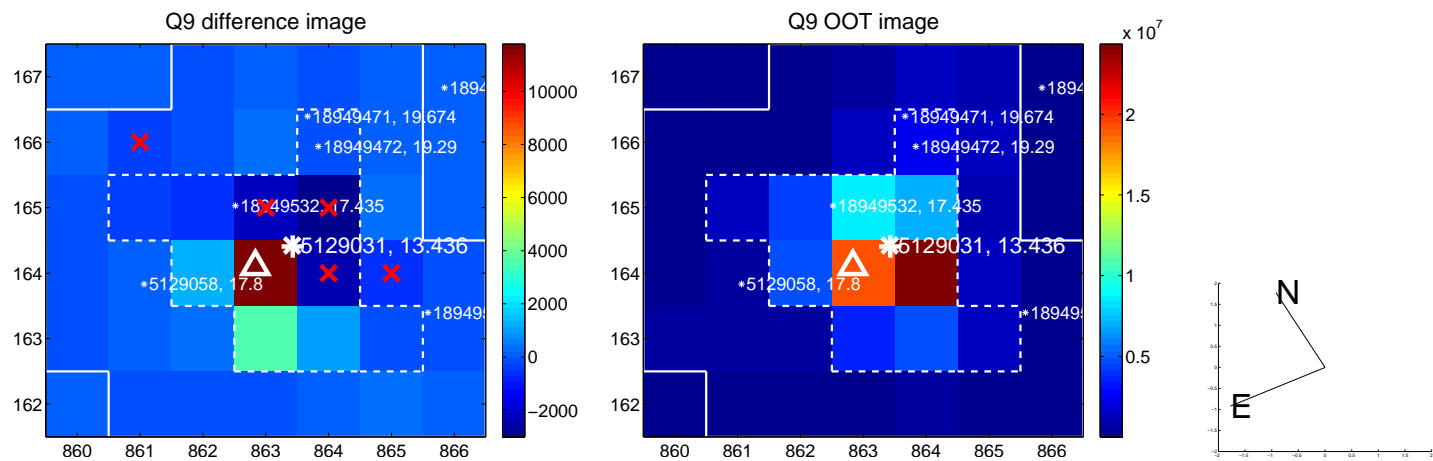


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

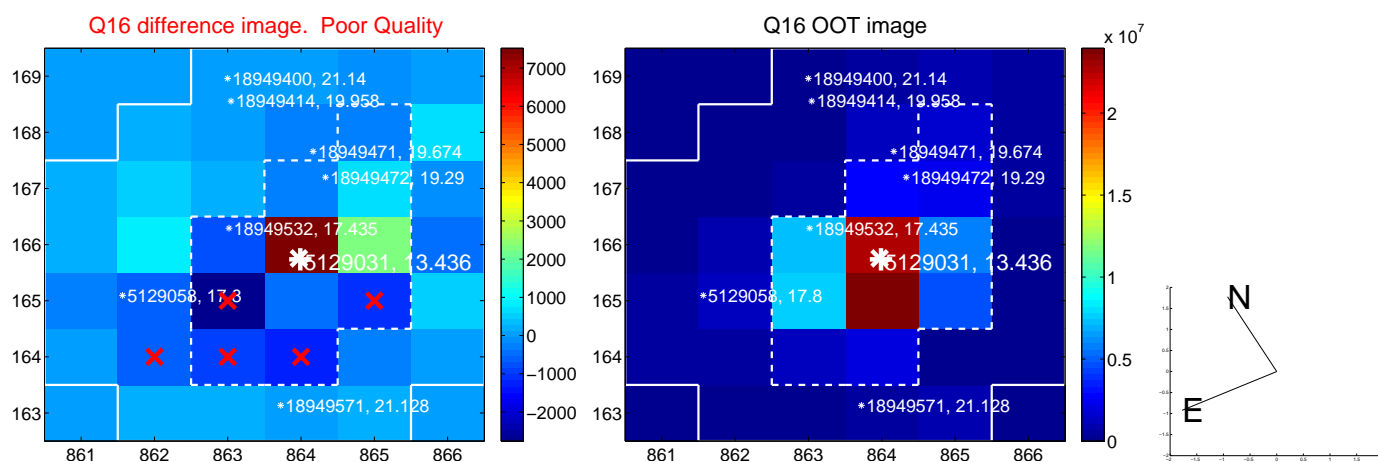
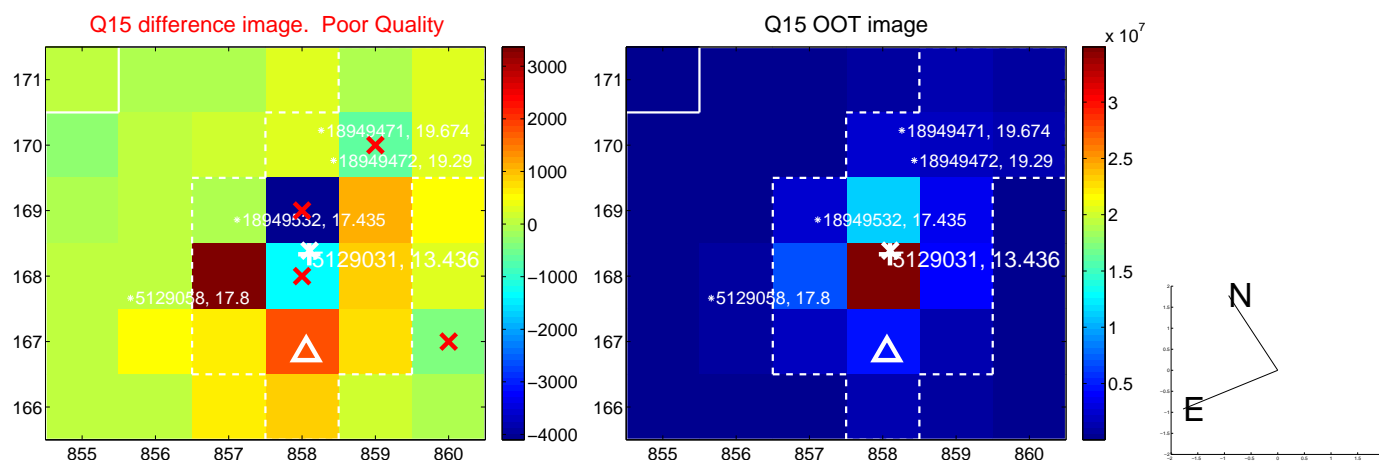
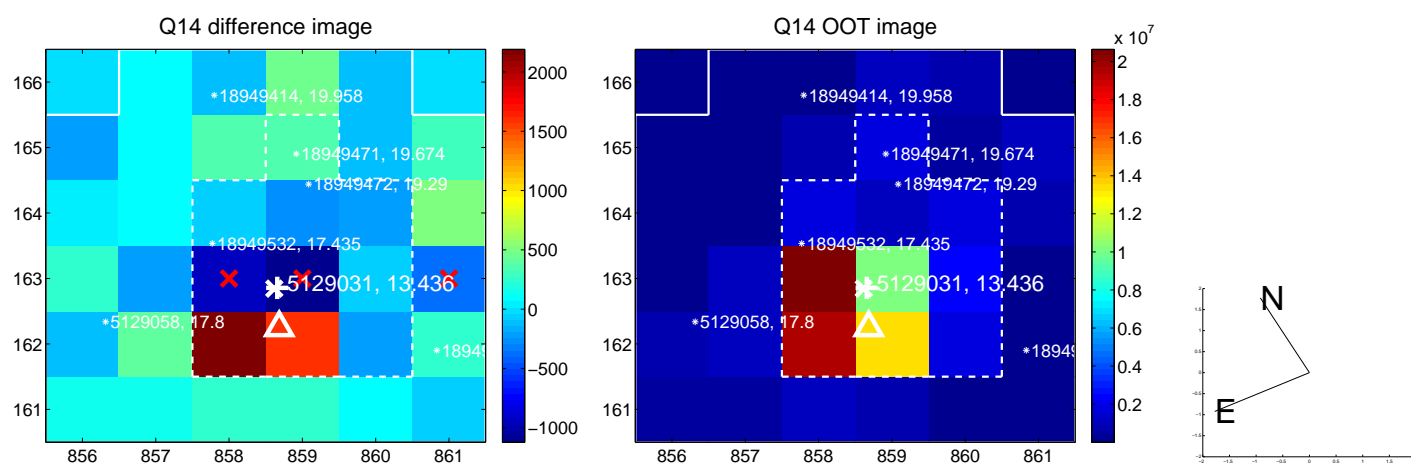
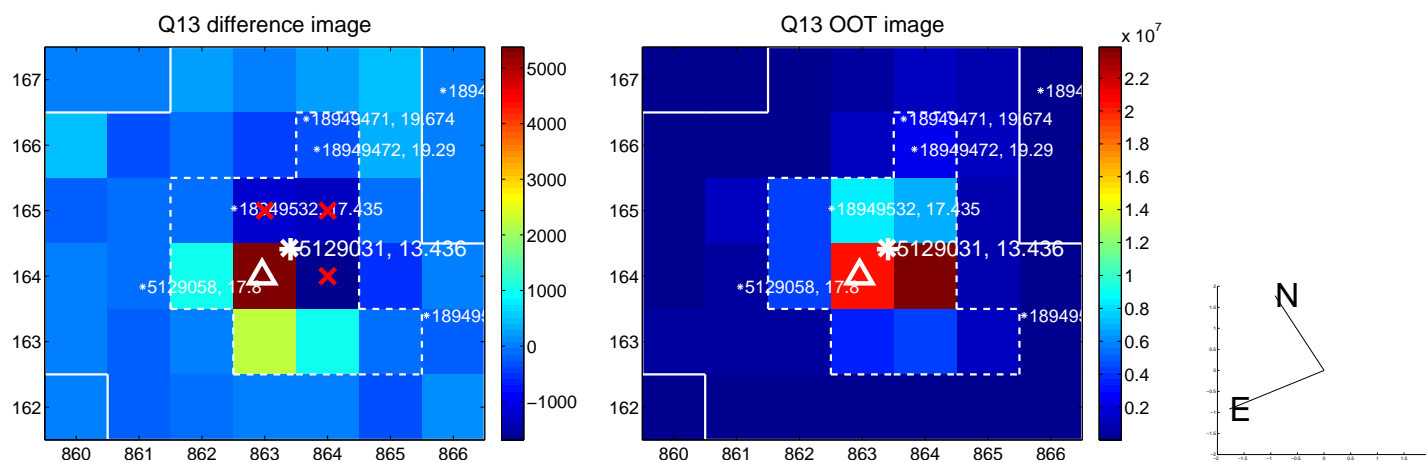




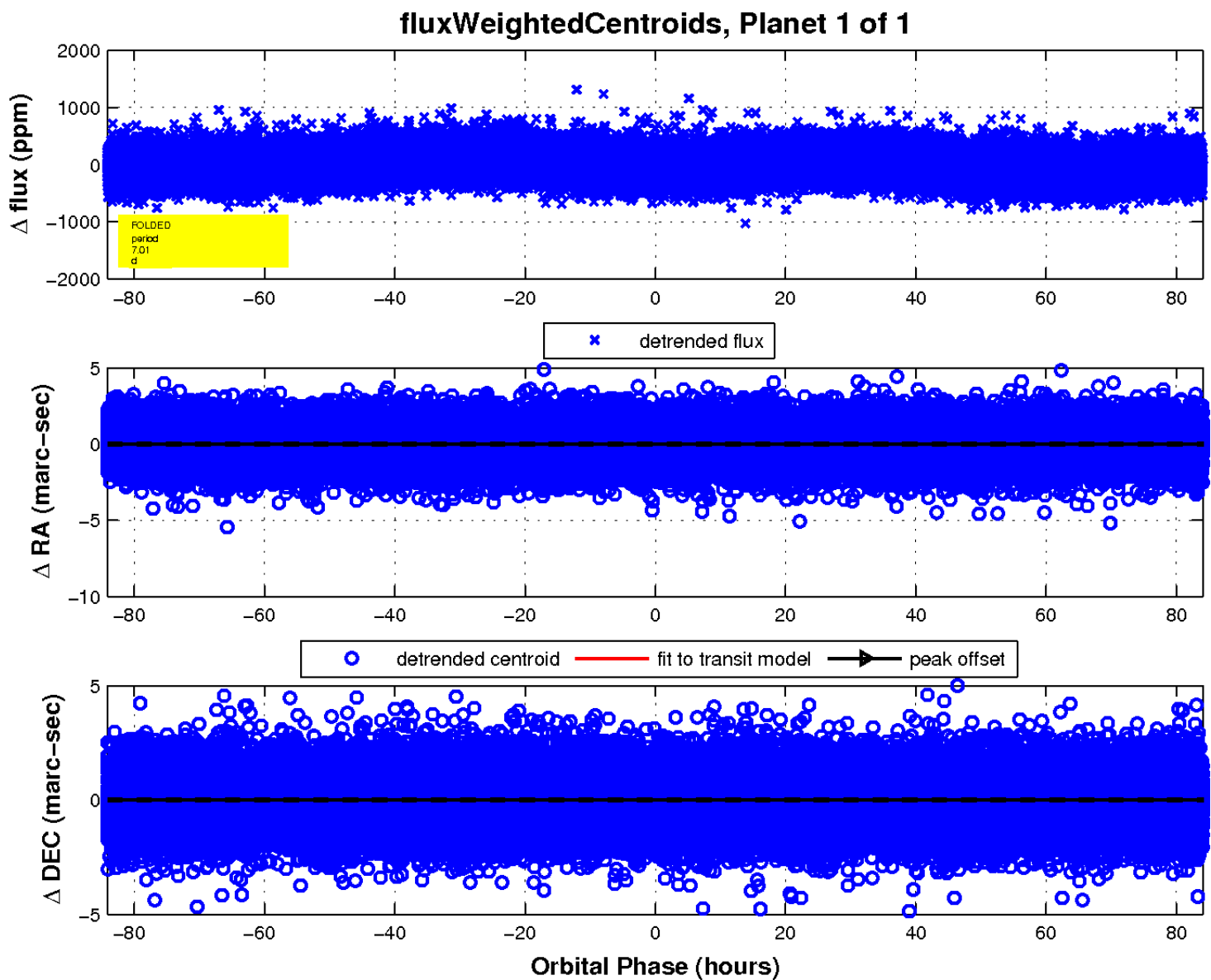
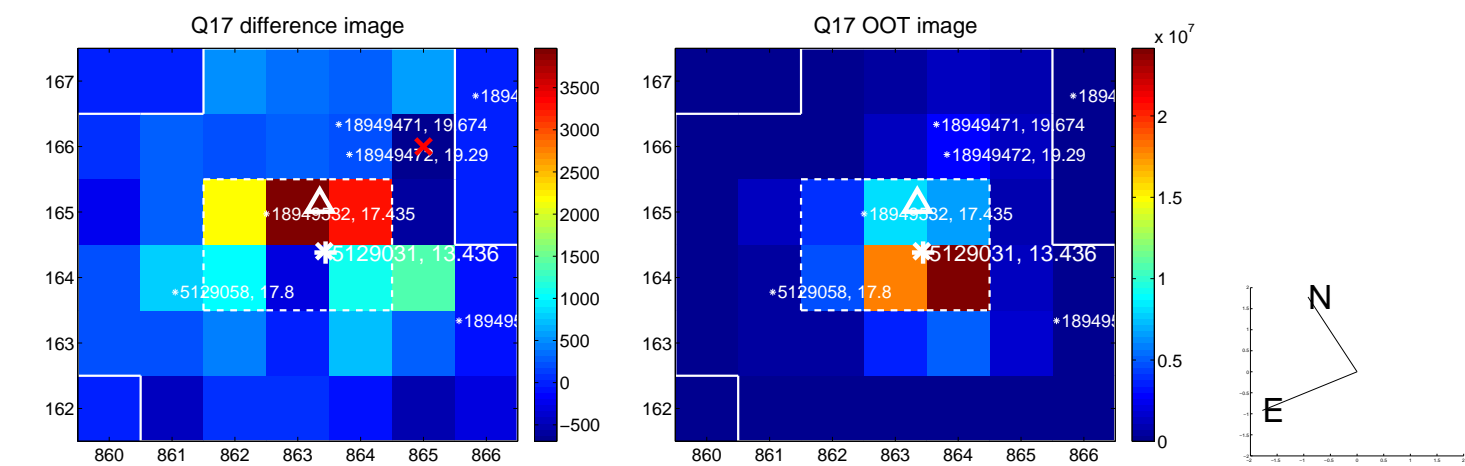
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

