

# KIC 011231698

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011231698-01	OBS	No	453.883075	357.713014	762.6	17.654	8.5	10.1	0.70	4968	2.02	0.24

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011231698-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

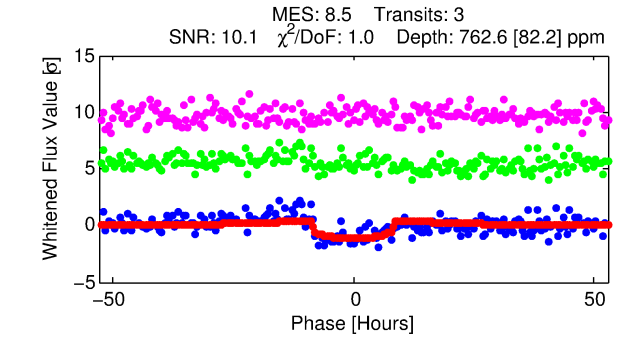
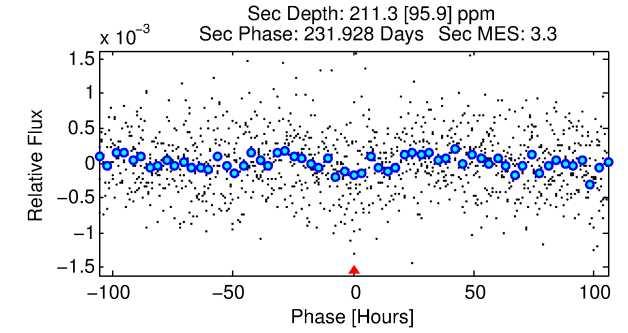
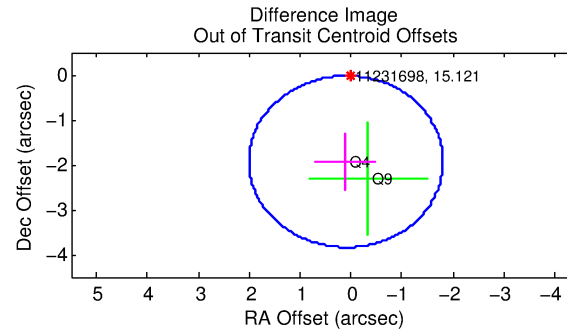
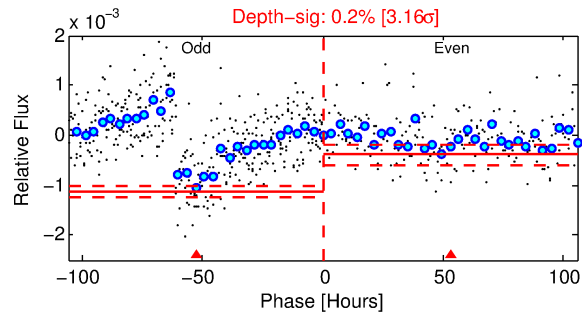
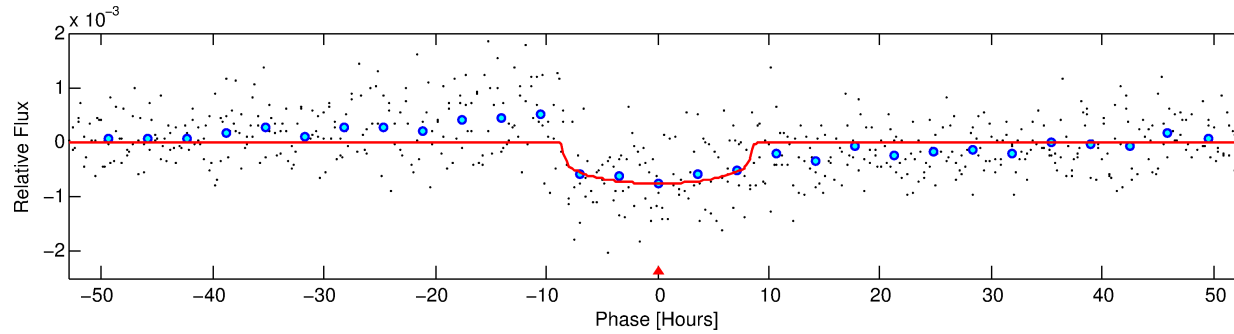
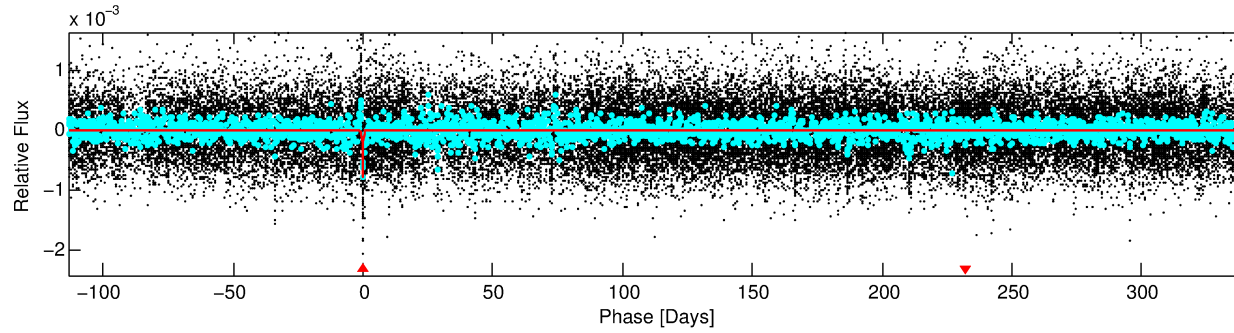
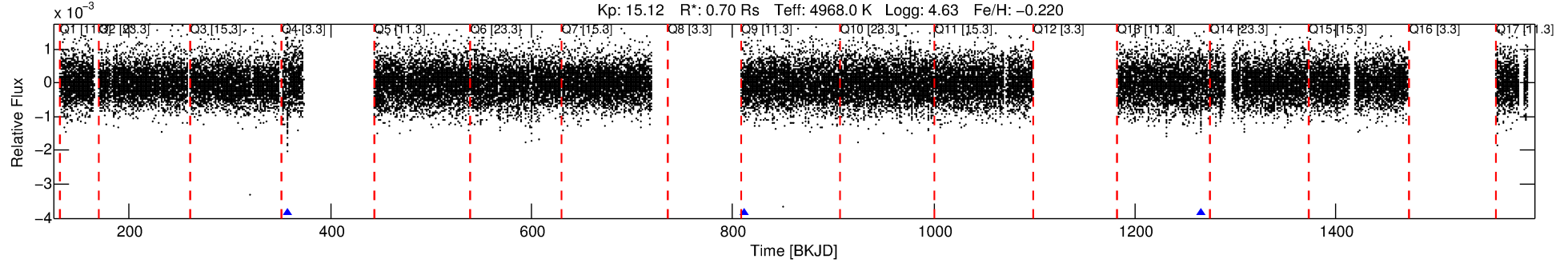
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011231698-01

No Significant Match Found

# DV One-Page Summary

KIC: 11231698 Candidate: 1 of 1 Period: 453.883 d



## DV Fit Results:

Period = 453.88307 [0.01633] d  
Epoch = 357.7130 [0.0213] BKJD  
Rp/R\* = 0.0265 [0.0102]  
a/R\* = 156.64 [209.51]  
b = 0.65 [1.22]  
Seff = 0.24 [0.04]  
Teq = 179 [8] K  
Rp = 2.02 [0.81] Re  
a = 1.0519 [0.0942] AU  
Ag = 31549.90 [28456.14] [1.11 $\sigma$ ]  
Teffp = 3681 [830] K [4.22 $\sigma$ ]

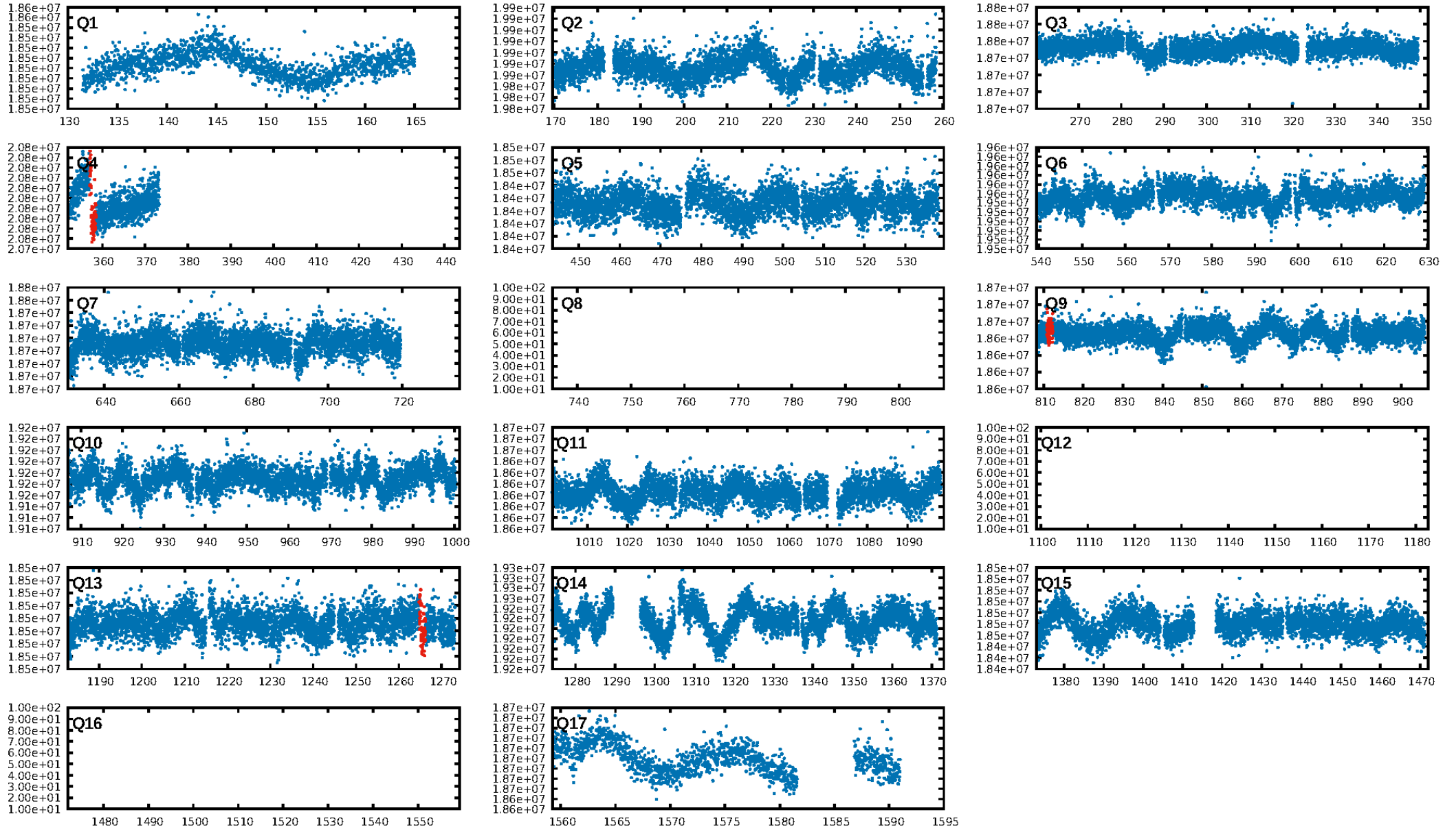
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 89.4%  
Bootstrap-pfa: 7.36e-15  
RollingBand-fgt: 1.00 [2/2]  
GhostDiagnostic-chr: -6.184  
Centroid-sig: 0.0%  
Centroid-so: 4.519 arcsec [3.63 $\sigma$ ]  
OotOffset-rm: 1.935 arcsec [3.04 $\sigma$ ]  
KicOffset-rm: 2.267 arcsec [3.56 $\sigma$ ]  
OotOffset-st: 0/0/1/1 [2]  
KicOffset-st: 0/0/1/1 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 1.00 [3/3]

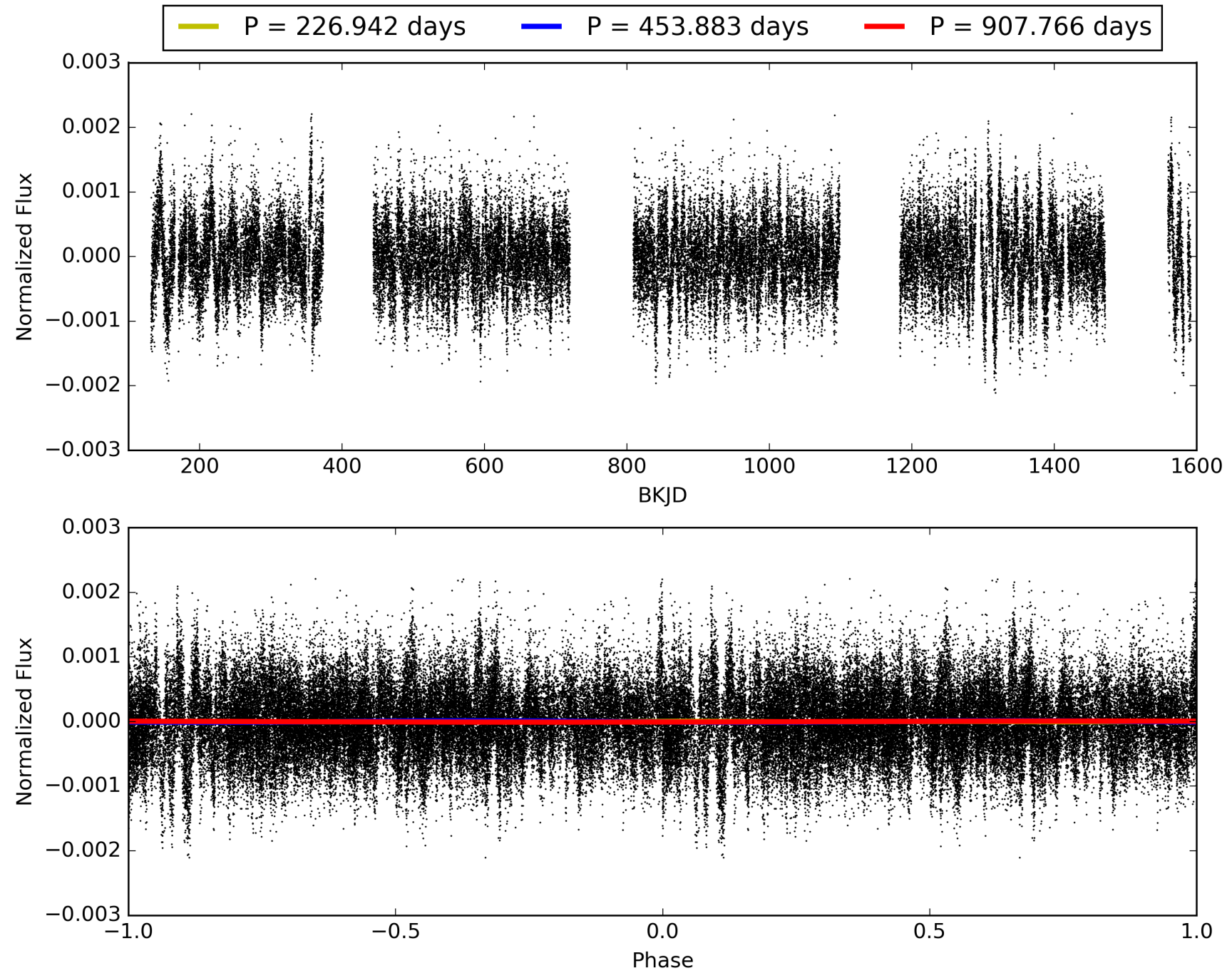
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 19:54:47 Z

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

# TCE 011231698-01, PDC Light Curves

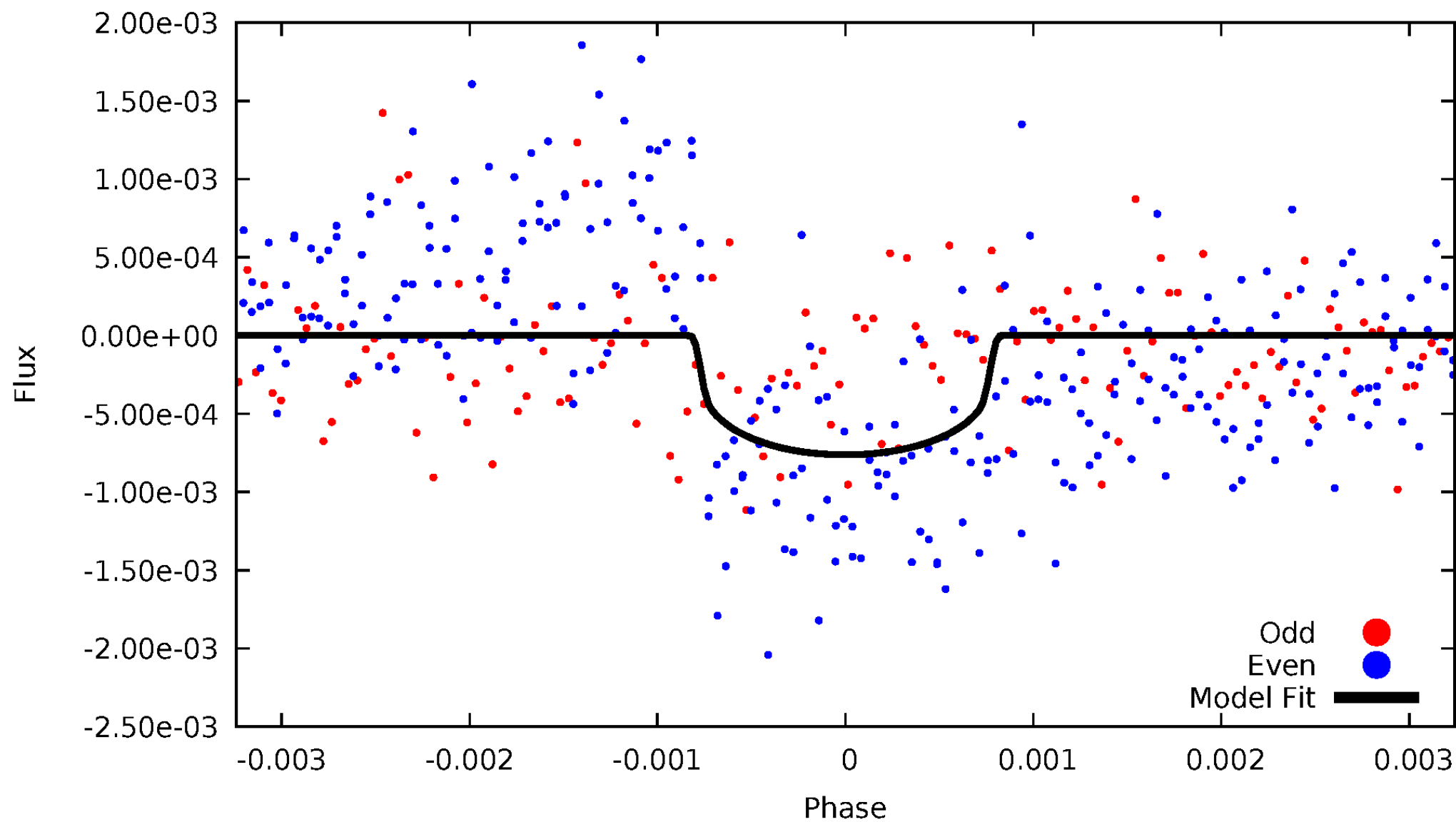


TCE 011231698-01



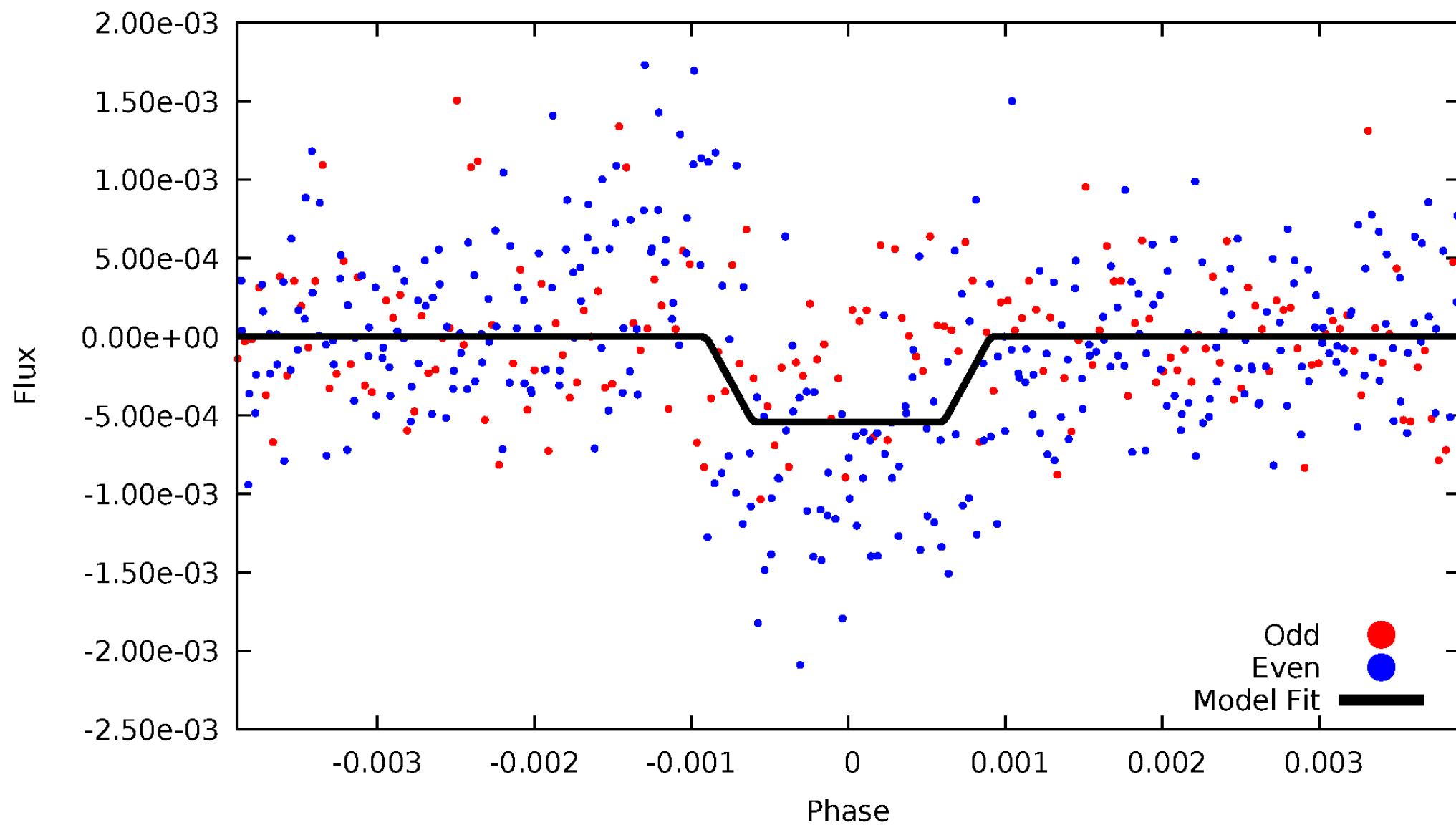
# DV Odd/Even

TCE 011231698-01



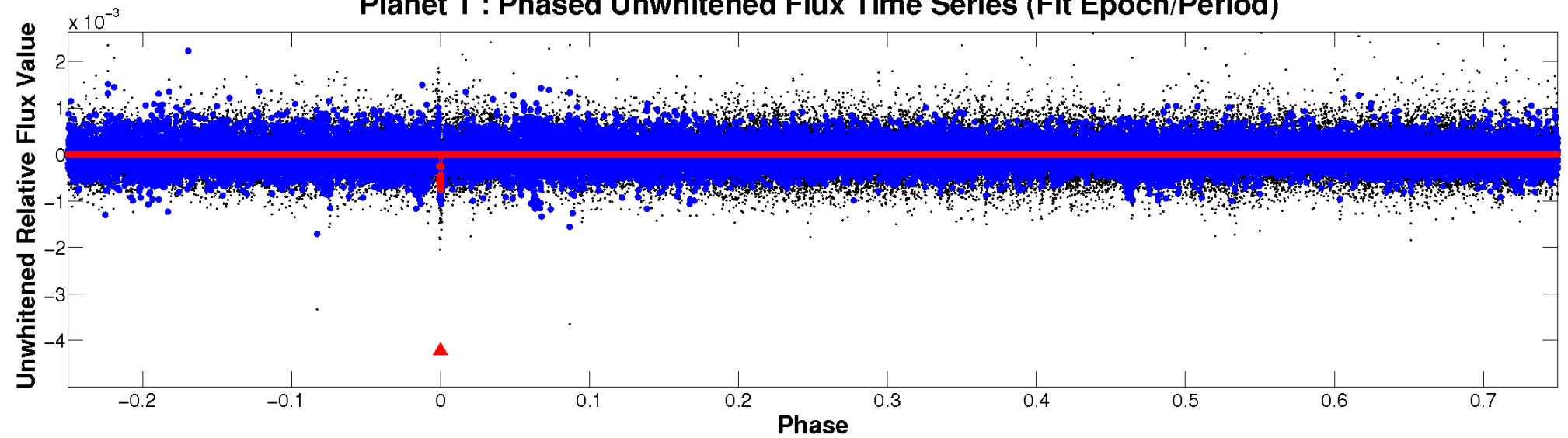
# ALT Odd/Even

TCE 011231698-01

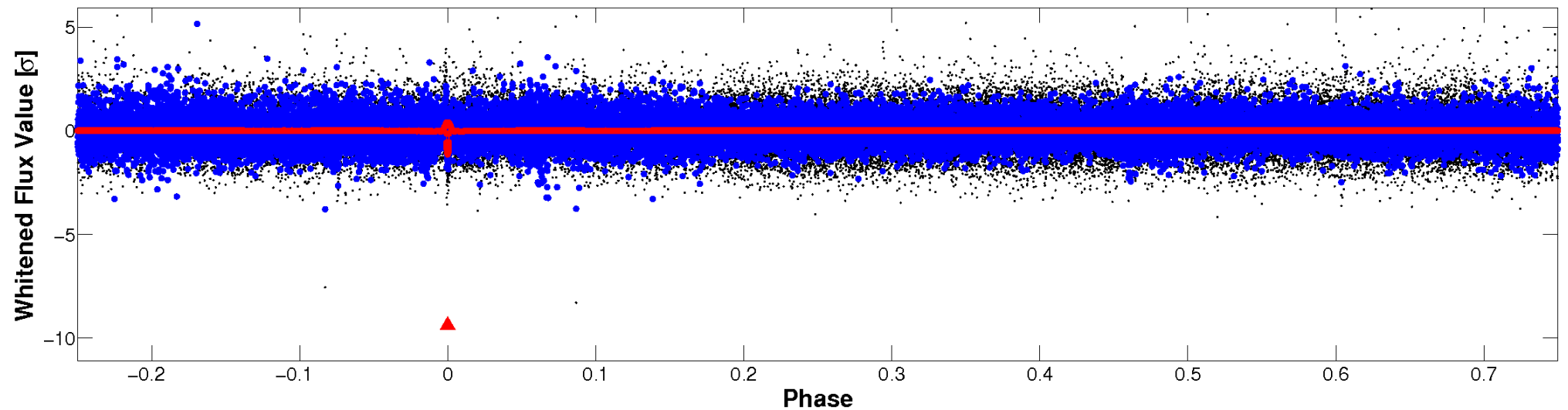


# Non-Whitened Vs. Whitened Light Curve

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

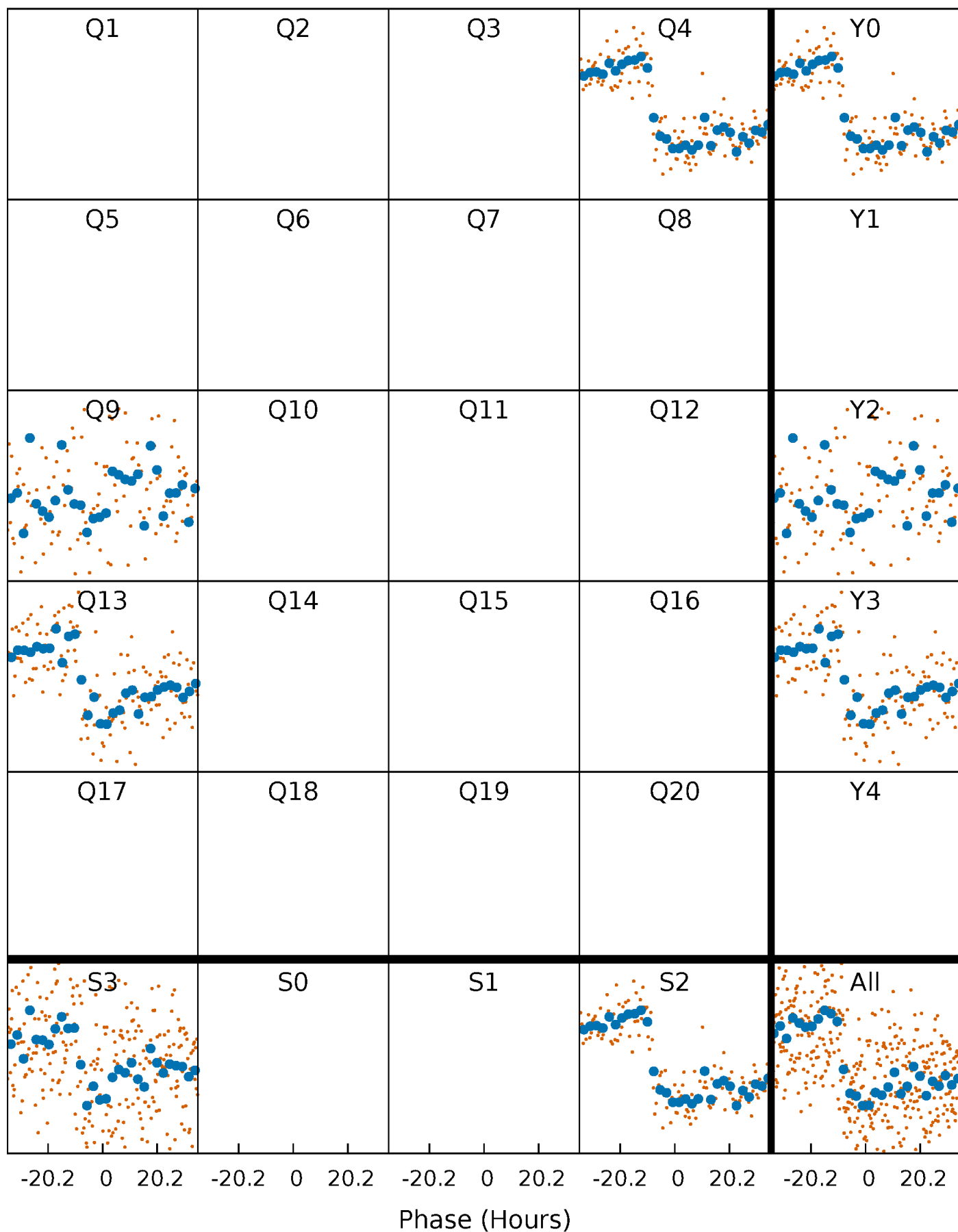


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

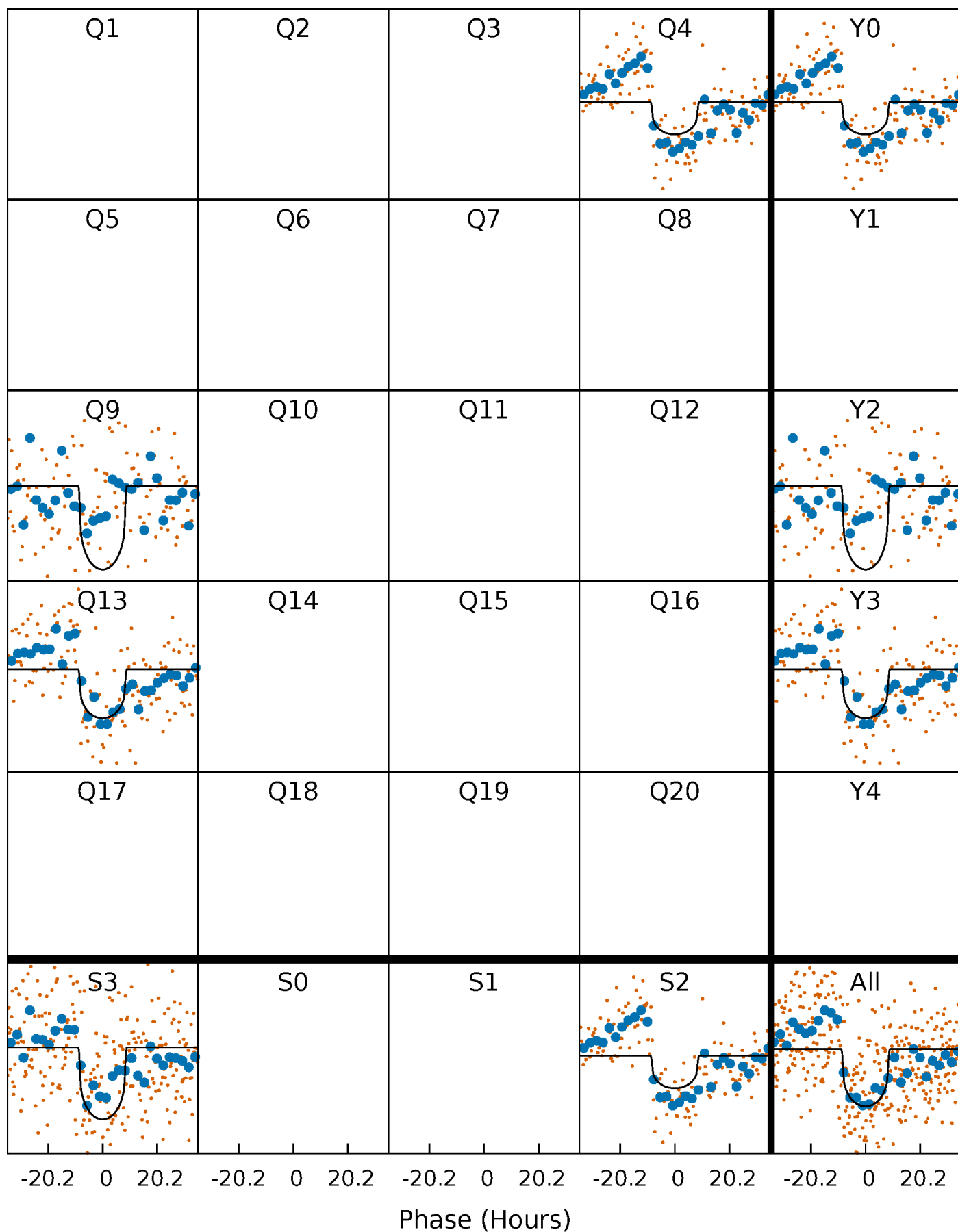
TCE 011231698-01 P=453.883075 Days  $T_0=357.713014$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 011231698-01     $P=453.883075$  Days     $T_0=357.713014$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

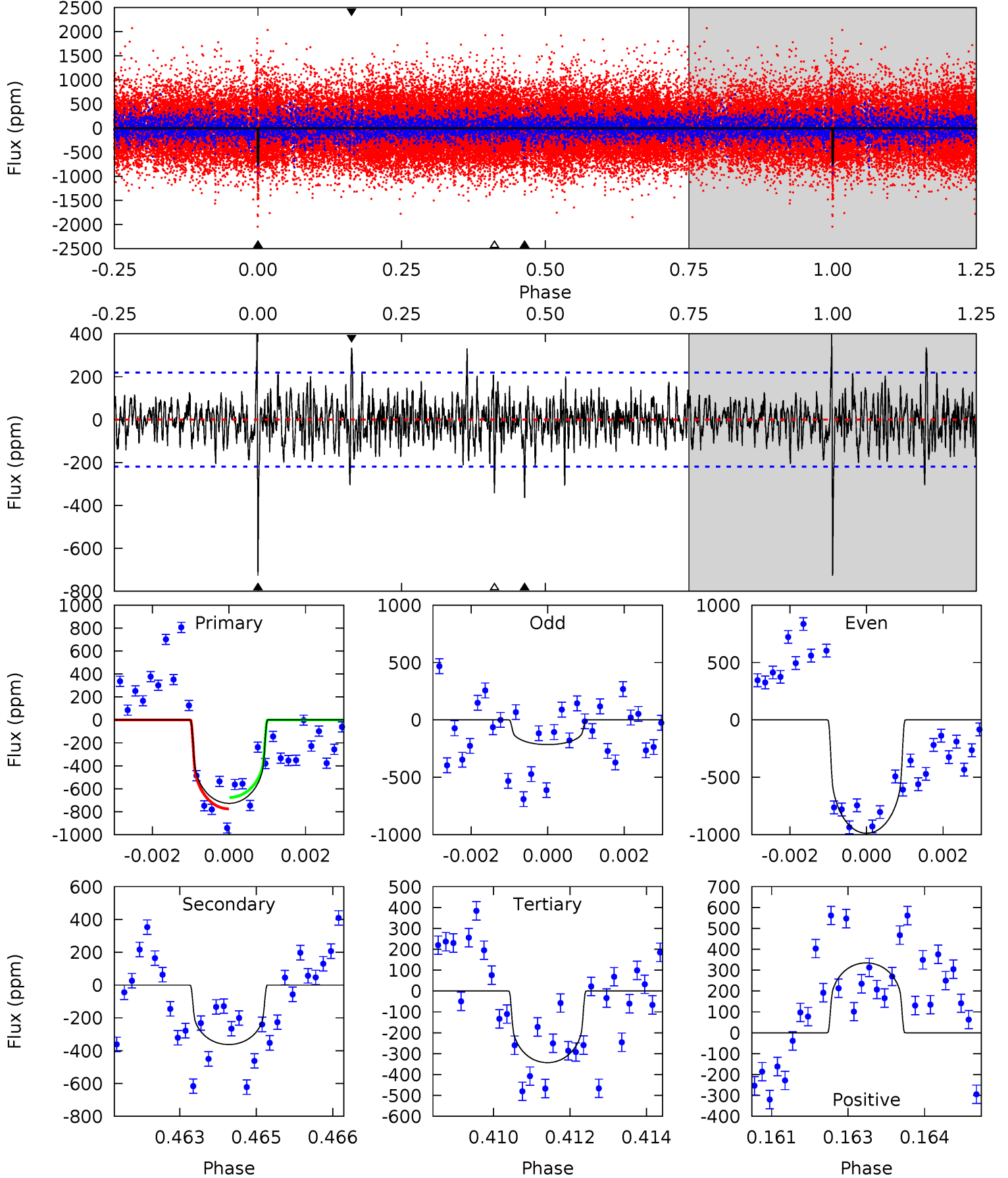
TCE 011231698-01     $P=453.945158$  Days     $T_0=357.665507$  (BKJD)



# DV Model-Shift Uniqueness Test

011231698-01, P = 453.883075 Days, E = 357.713014 Days

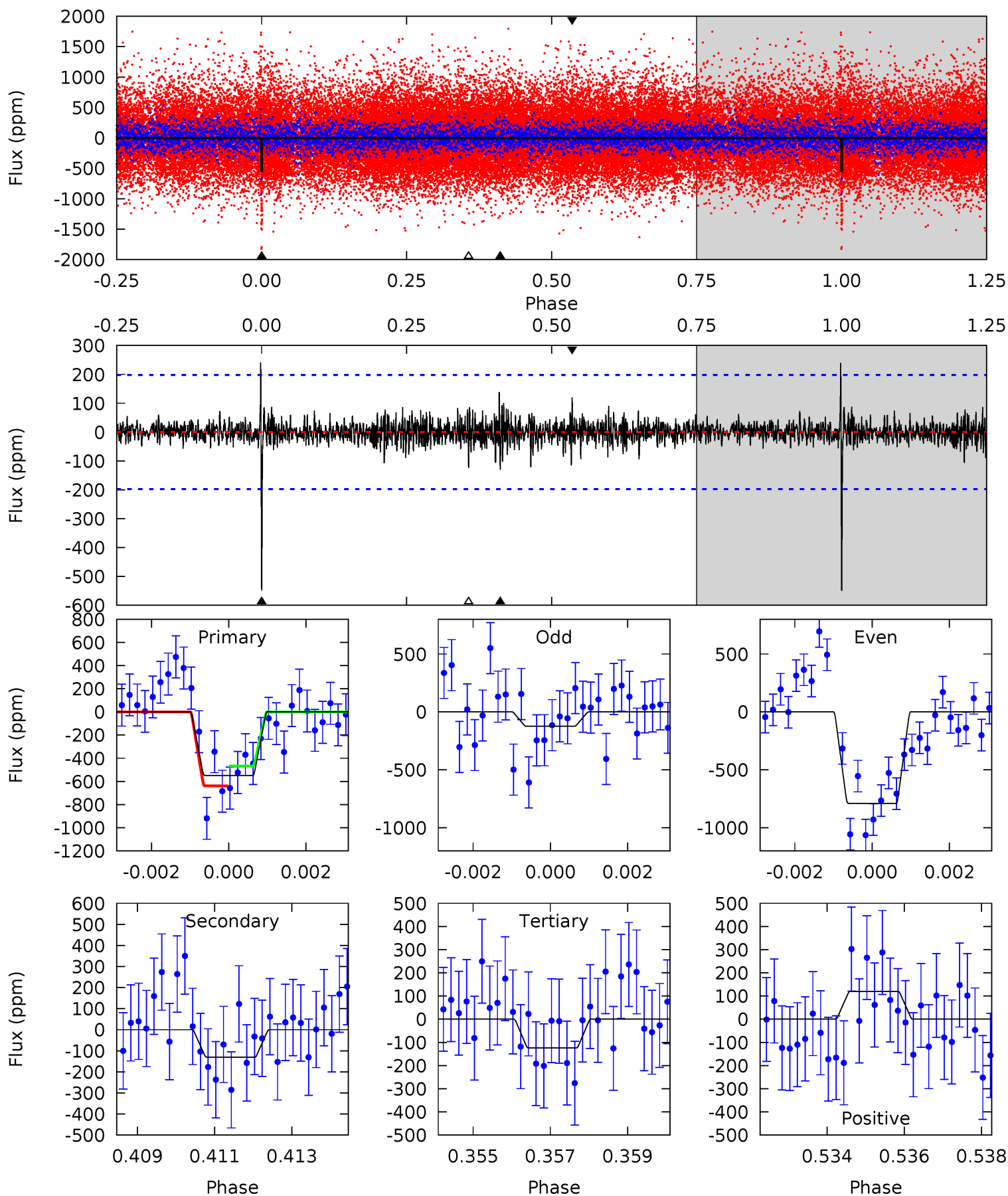
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.8	8.86	8.38	8.18	5.36	3.15	1.85	9.38	9.58	0.48	0.68	8.89	0.93	0.35	1.21



# Alt Model-Shift Uniqueness Test

011231698-01, P = 453.945158 Days, E = 357.665507 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
14.8	3.51	3.35	3.23	5.34	3.11	0.76	11.5	11.6	0.17	0.29	8.52	0.98	0.30	2.29



### Stellar Parameters For KIC 011231698

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4968^{+151}_{-136}$	$4.626^{+0.031}_{-0.063}$	$-0.220^{+0.300}_{-0.300}$	$0.699^{+0.079}_{-0.058}$	$0.760^{+0.064}_{-0.085}$	$3.133^{+0.564}_{-0.689}$
	+3%/-3%	+1%/-1%	+136%/-136%	+11%/-8%	+8%/-11%	+18%/-22%
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 011231698-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-363 \pm 41$	$2.04^{+0.76}_{-0.76}$	$252^{+10}_{-8}$	$4383^{+946}_{-519}$	$53074^{+78773}_{-25849}$
Alt.	$-130 \pm 37$	$1.83^{+0.85}_{-0.73}$	$252^{+9}_{-9}$	$3749^{+851}_{-454}$	$22981^{+45325}_{-12876}$

$T_{\text{max}}$  = 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

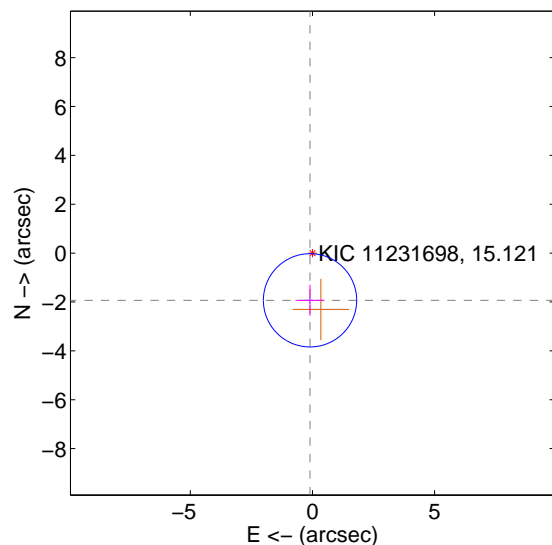
Supplemental centroid analysis for 011231698-01. Kepler magnitude: 15.12. Transit SNR 10.13

There are 1 quarters with good PRF difference image offsets

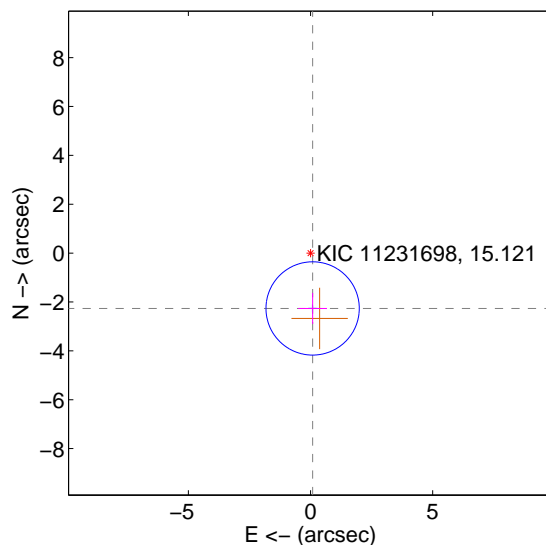
The direct PRF centroid is offset from the target star catalog position by about 0.37 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.935 \pm 0.636$	3.04	$0.099 \pm 0.586$	$-1.932 \pm 0.636$
PRF-fit source offset from KIC position	$2.267 \pm 0.636$	3.56	$-0.086 \pm 0.586$	$-2.265 \pm 0.636$
photometric centroid source offset	$4.52 \pm 1.24$	3.63	$-0.34 \pm 0.95$	$-4.51 \pm 1.25$

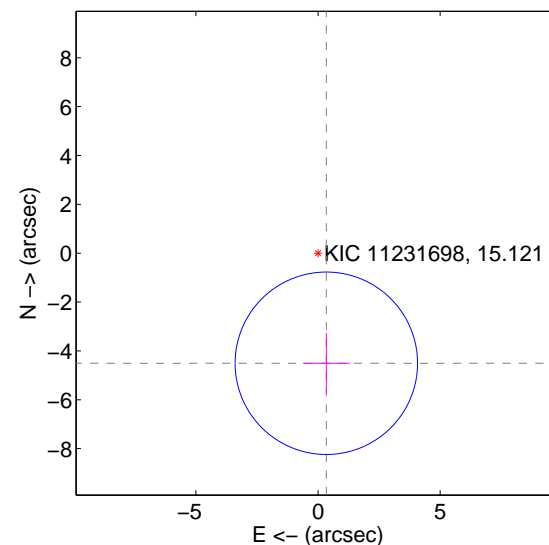
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

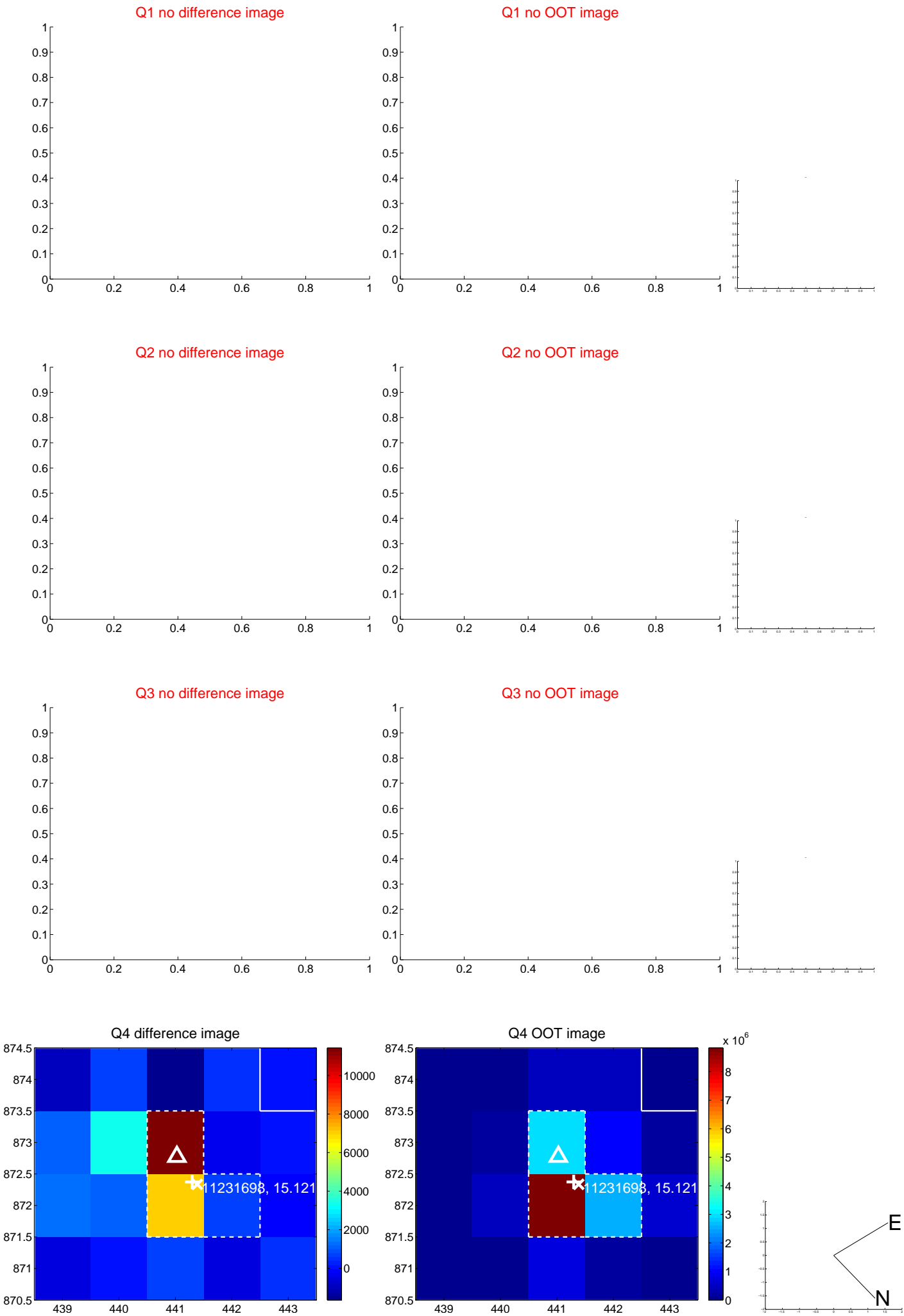


offset from photometric centroids



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.

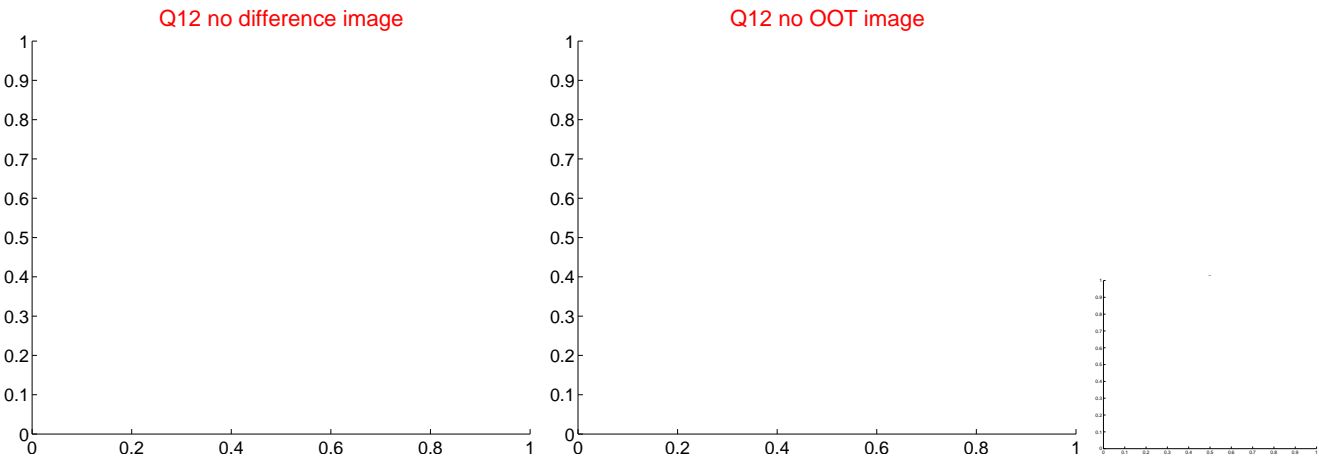
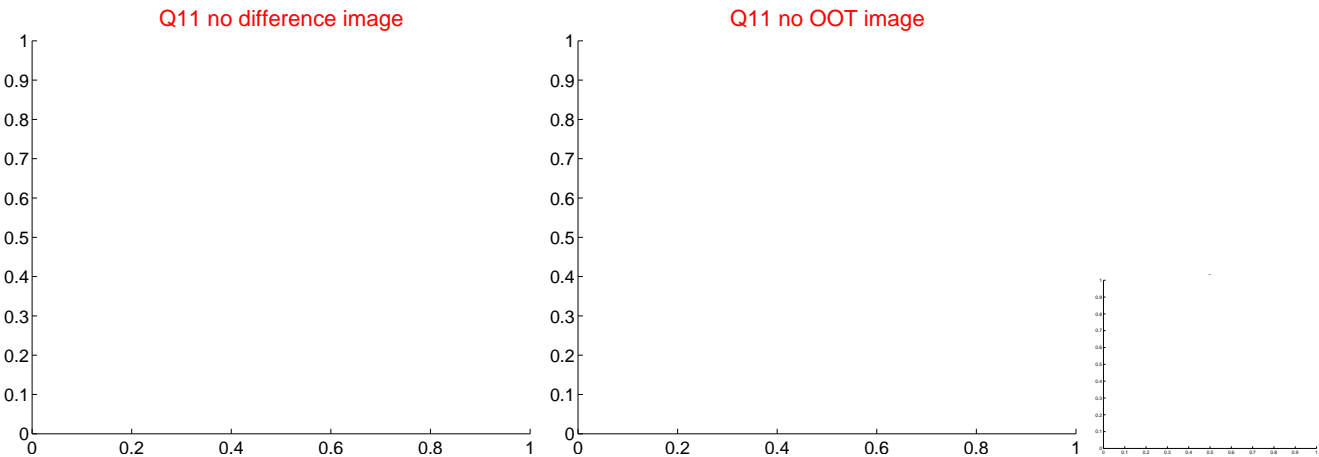
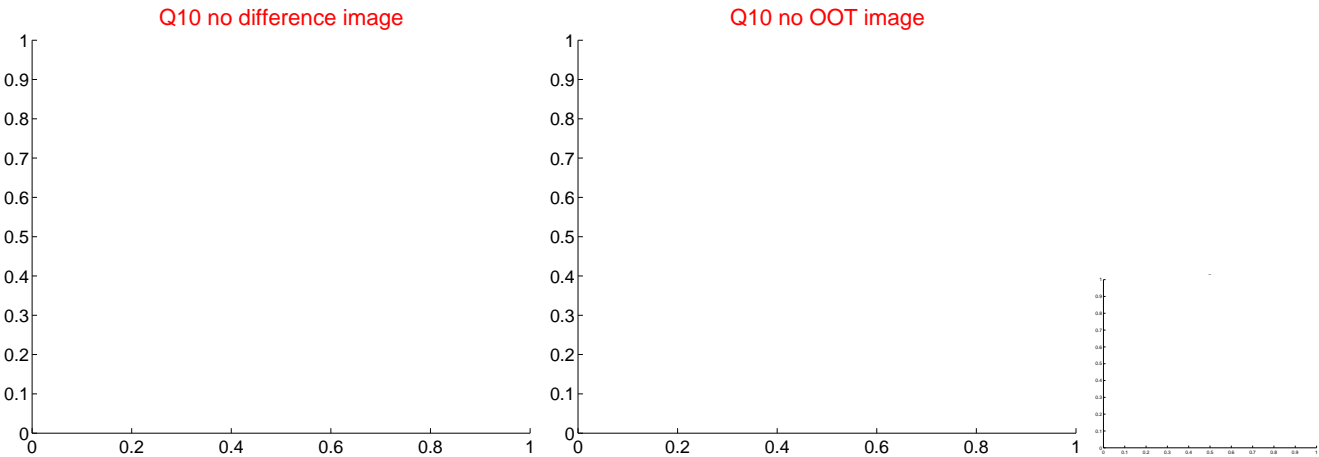
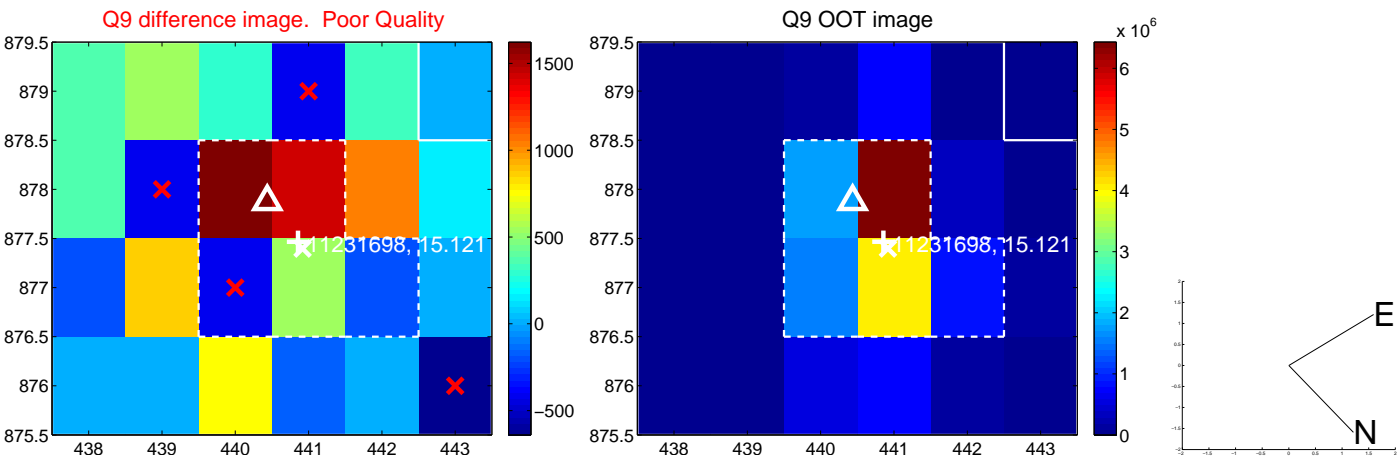


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

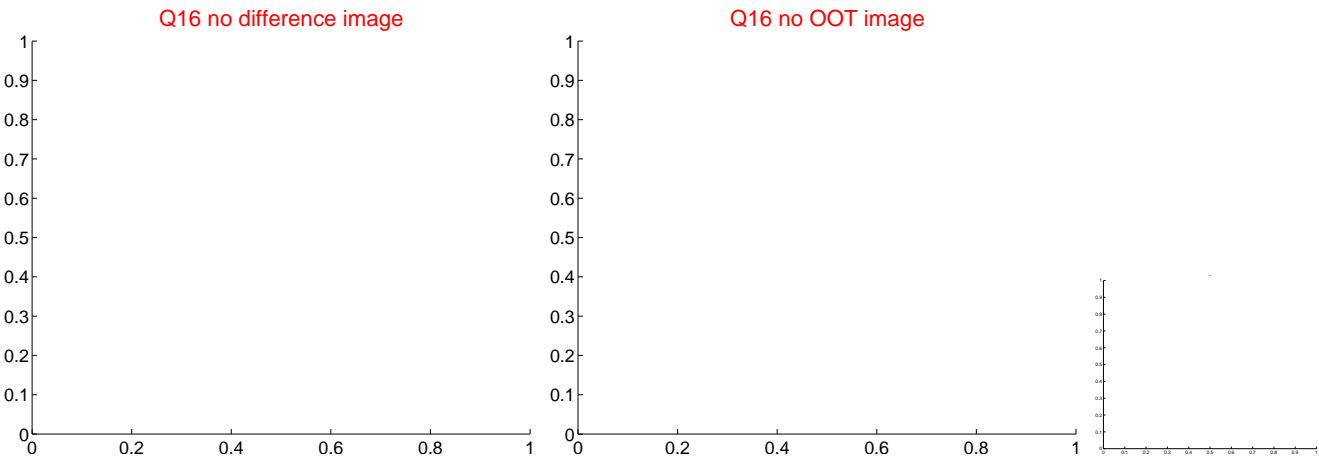
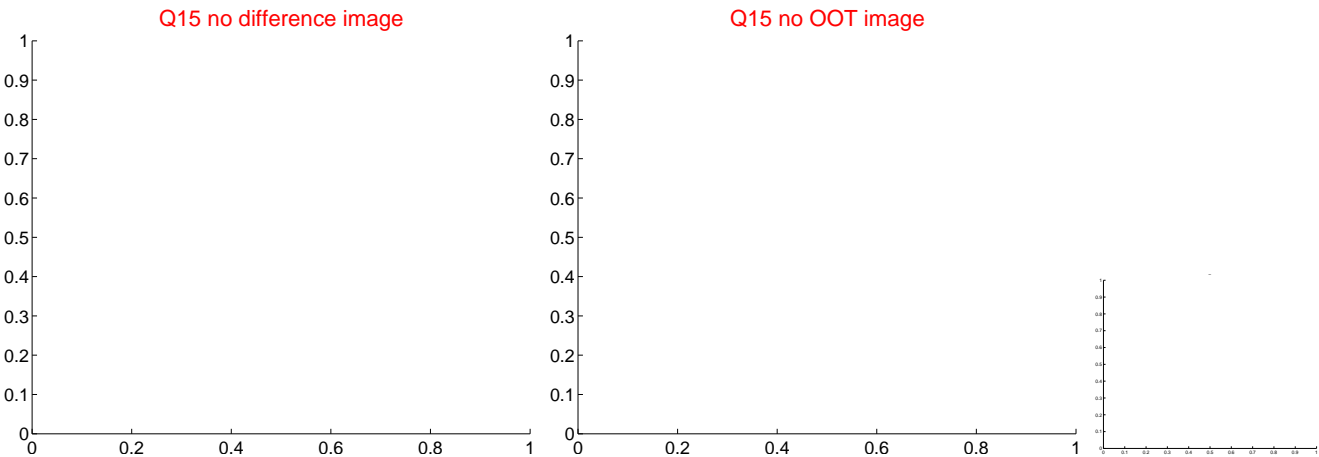
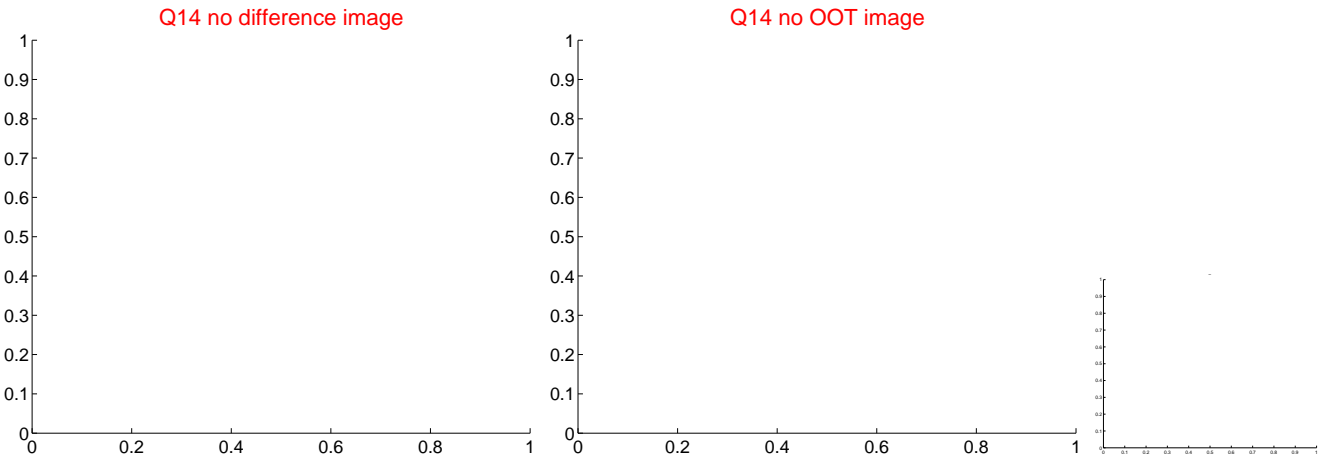
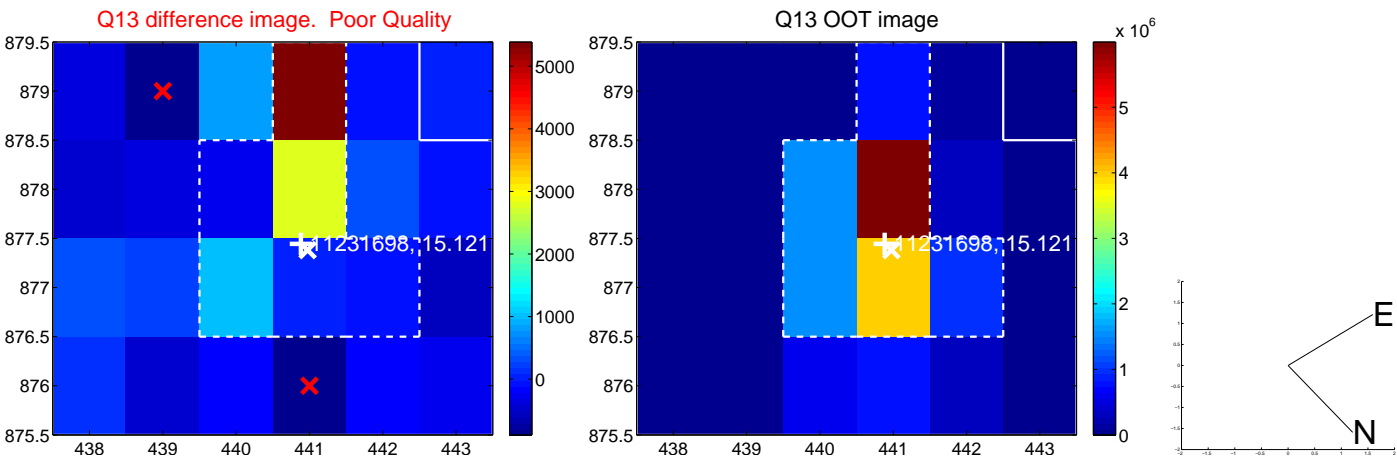




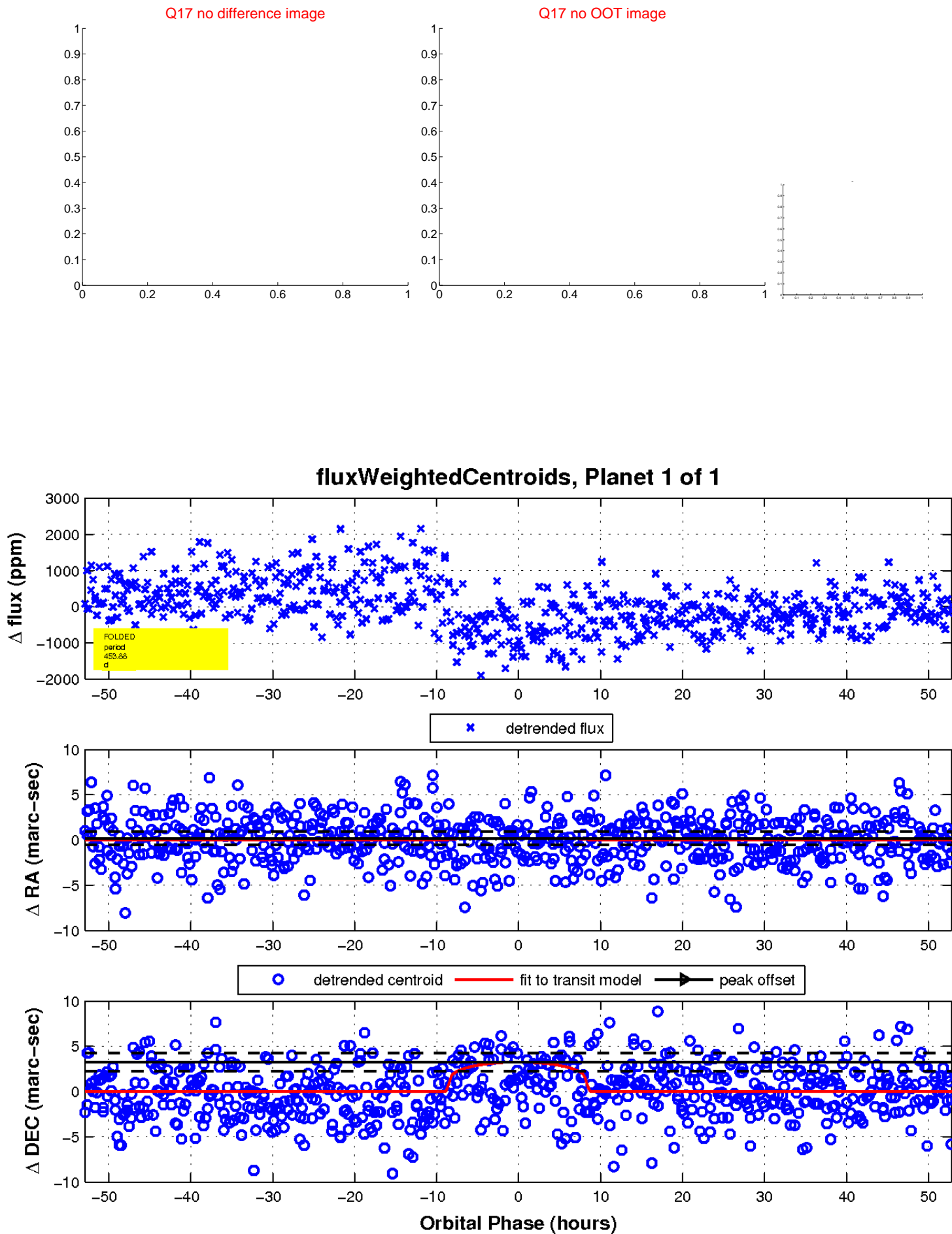
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UKIRT Image

