

# KIC 004351212

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004351212-01	OBS	No	3.040007	132.631285	39.3	20.595	7.7	4.3	0.56	4826	0.35	133.49

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004351212-01	OBS	FP	0.00	1	0	0	0	LPP_DV

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

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

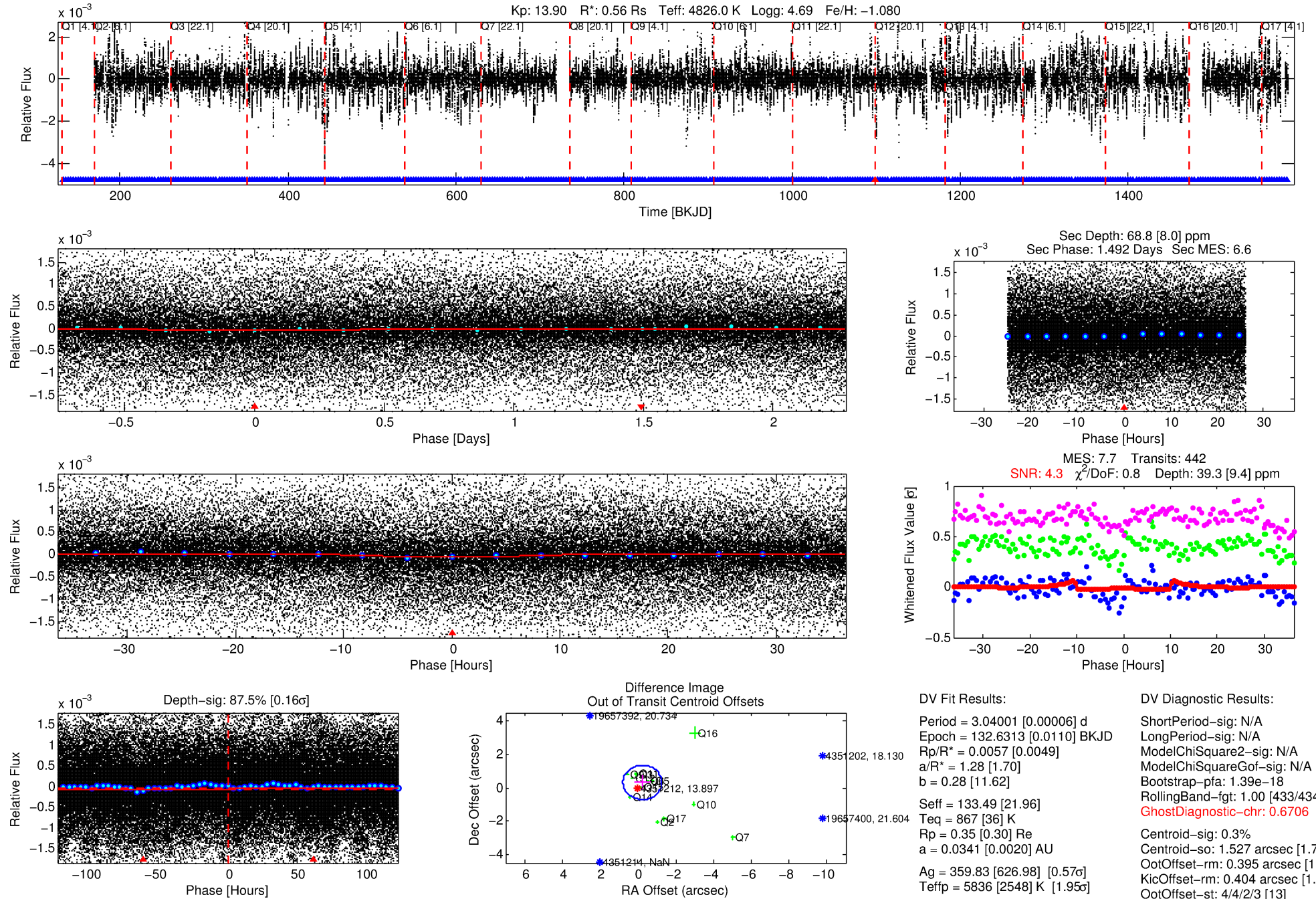
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 004351212-01

No Significant Match Found

# DV One-Page Summary

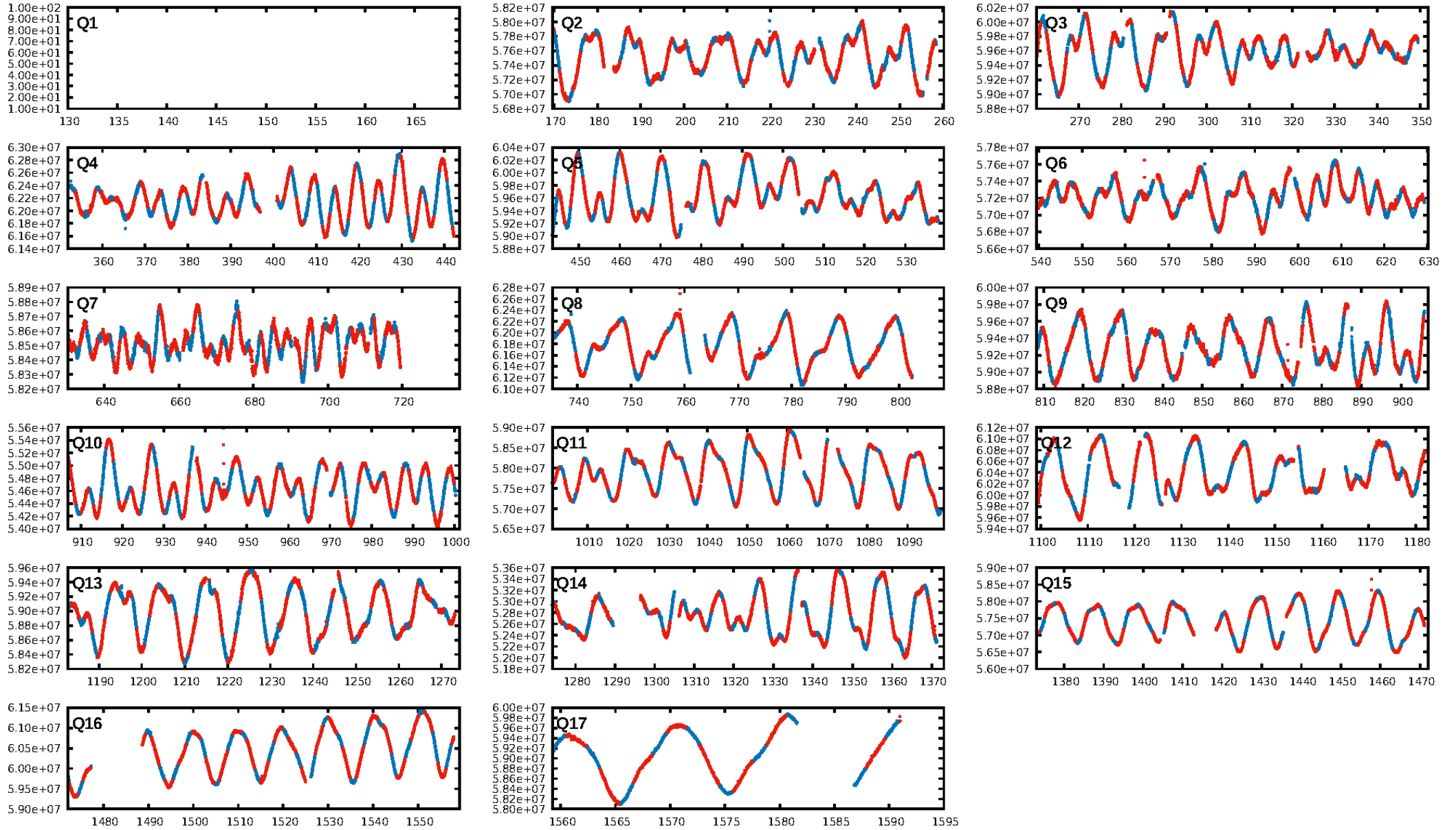
KIC: 4351212 Candidate: 1 of 1 Period: 3.040 d



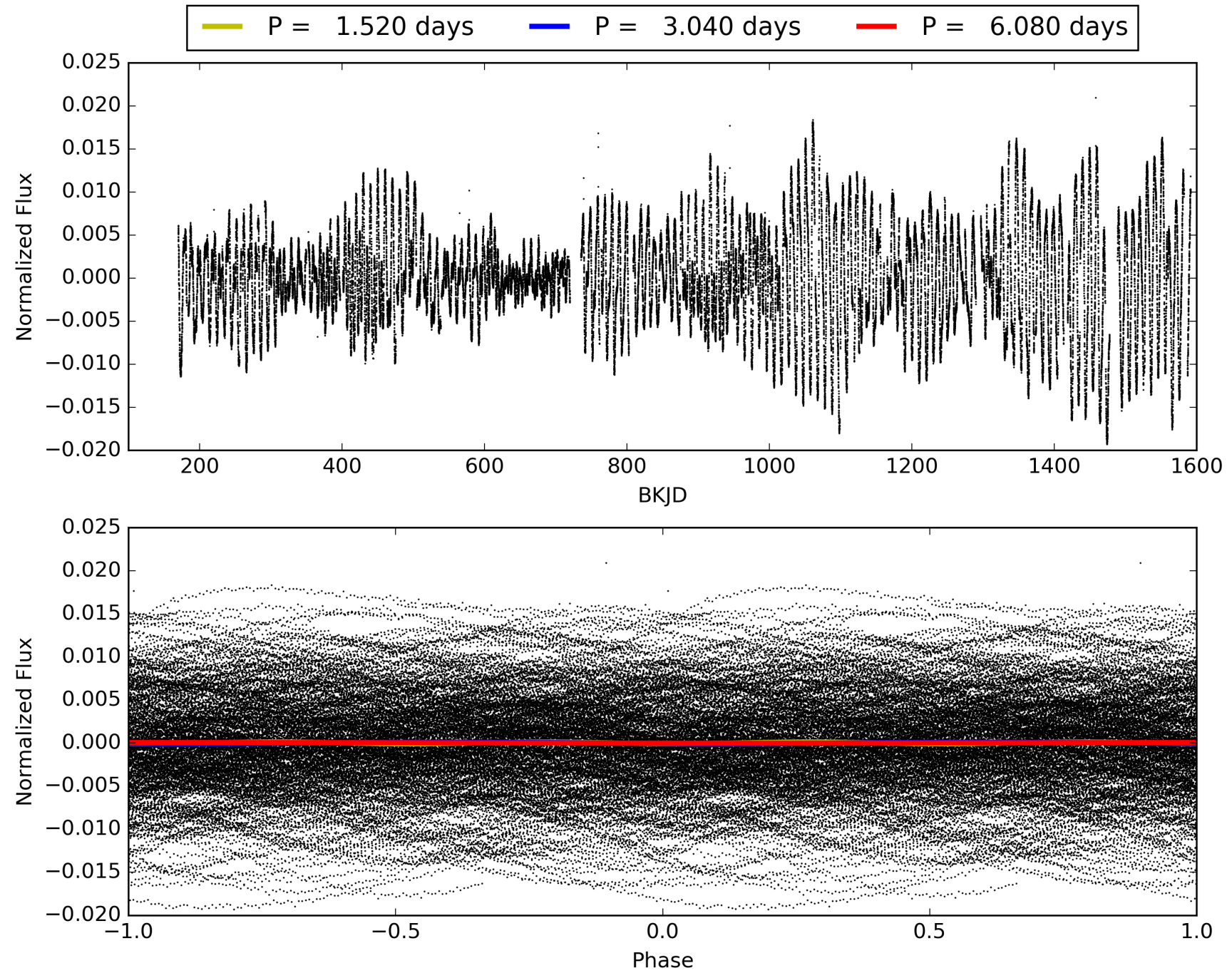
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 00:23:45 Z

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

# TCE 004351212-01, PDC Light Curves

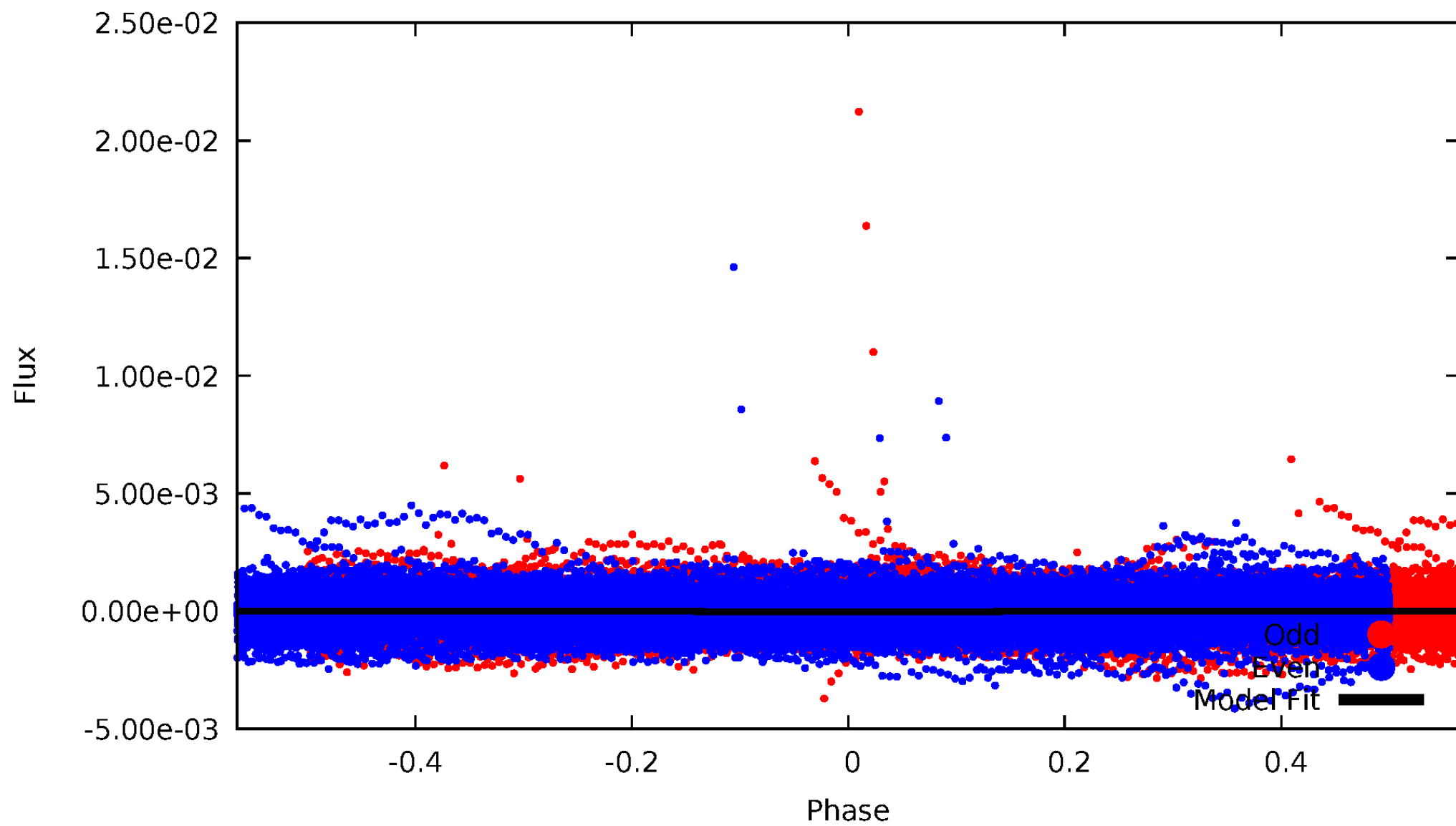


TCE 004351212-01



# DV Odd/Even

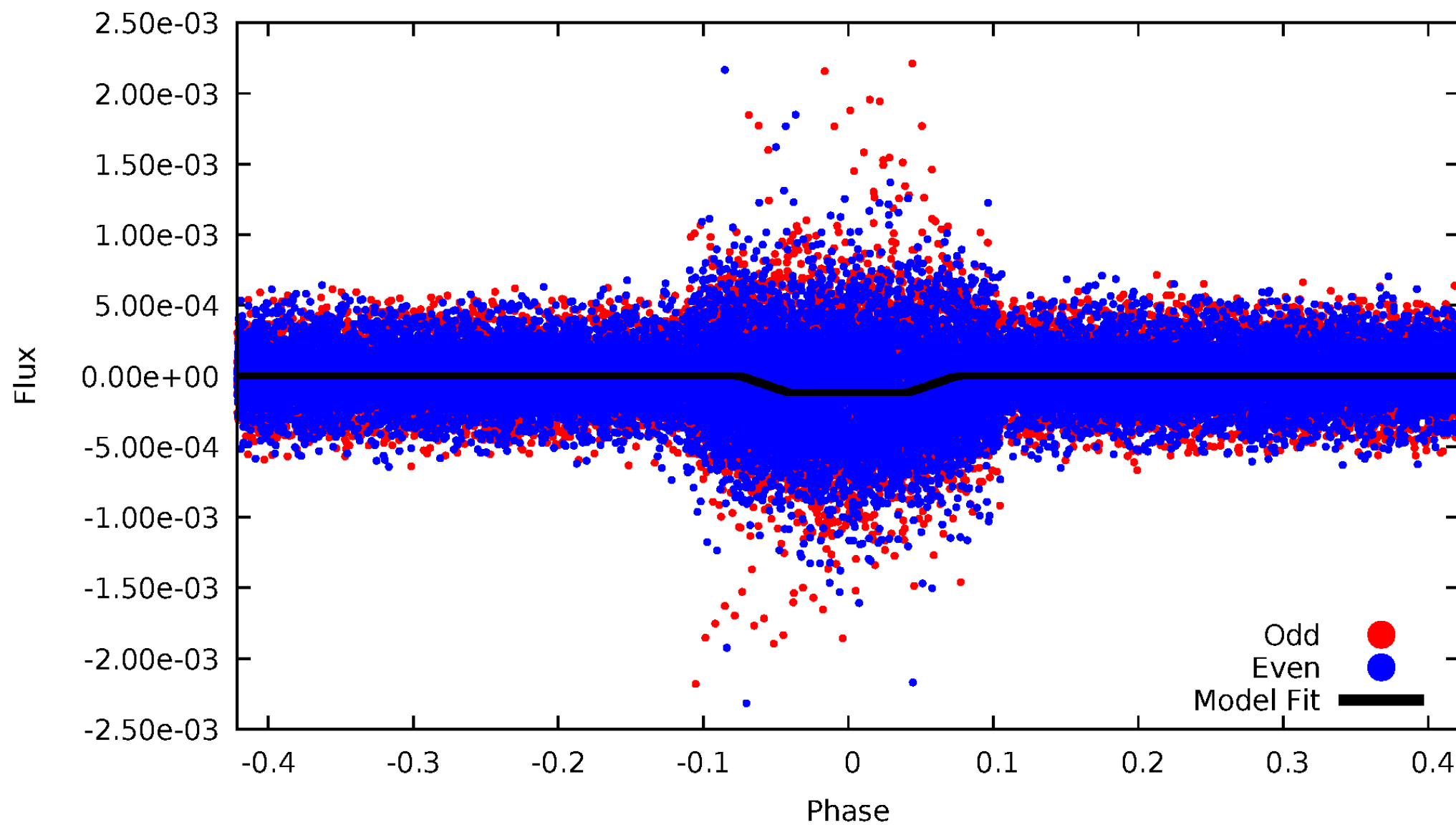
TCE 004351212-01





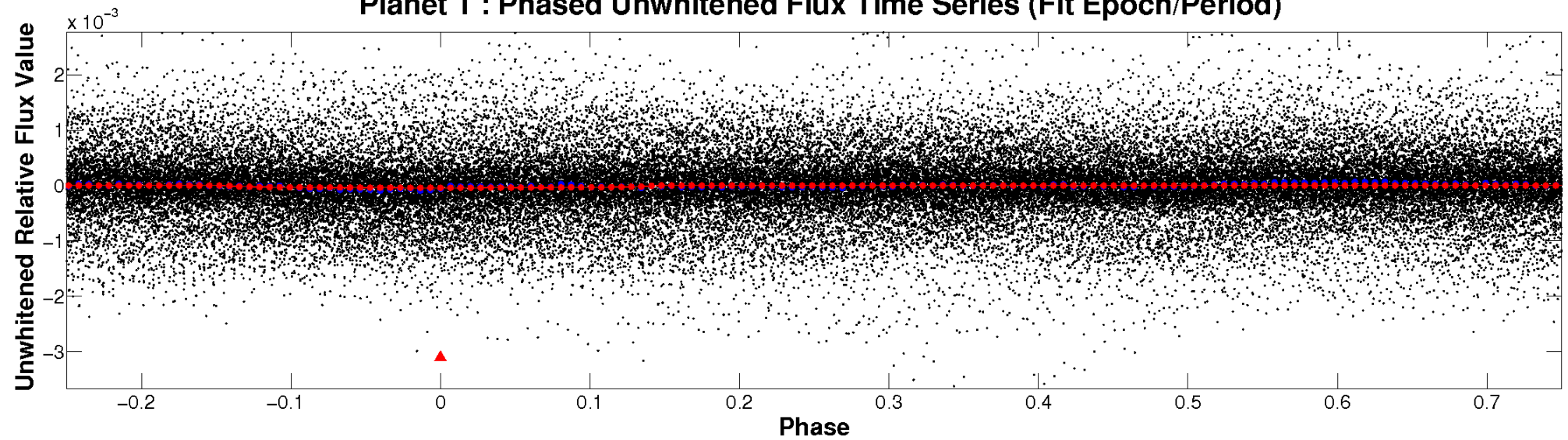
# ALT Odd/Even

TCE 004351212-01

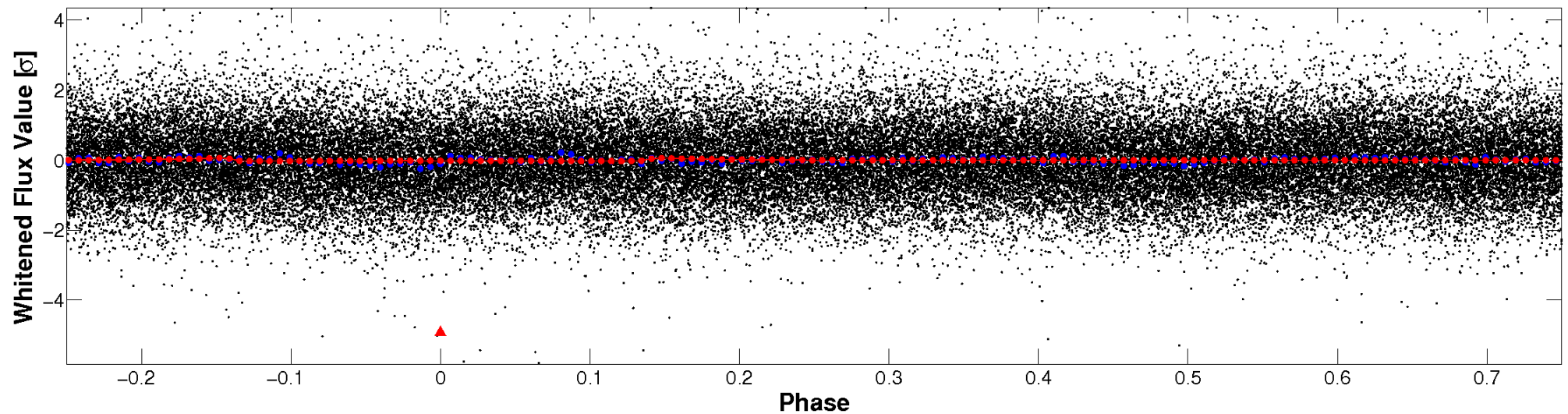


# Non-Whitened Vs. Whitened Light Curve

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

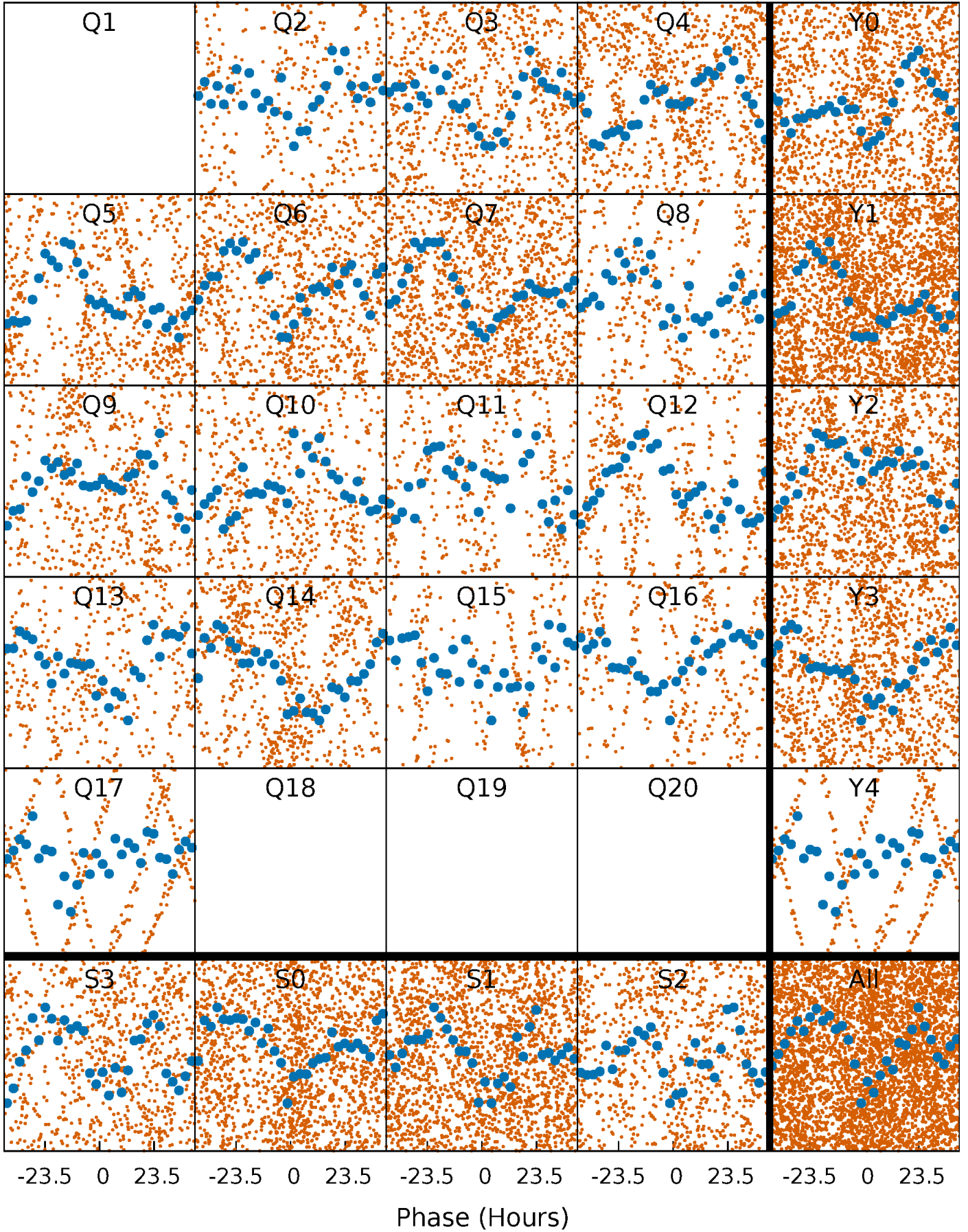


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

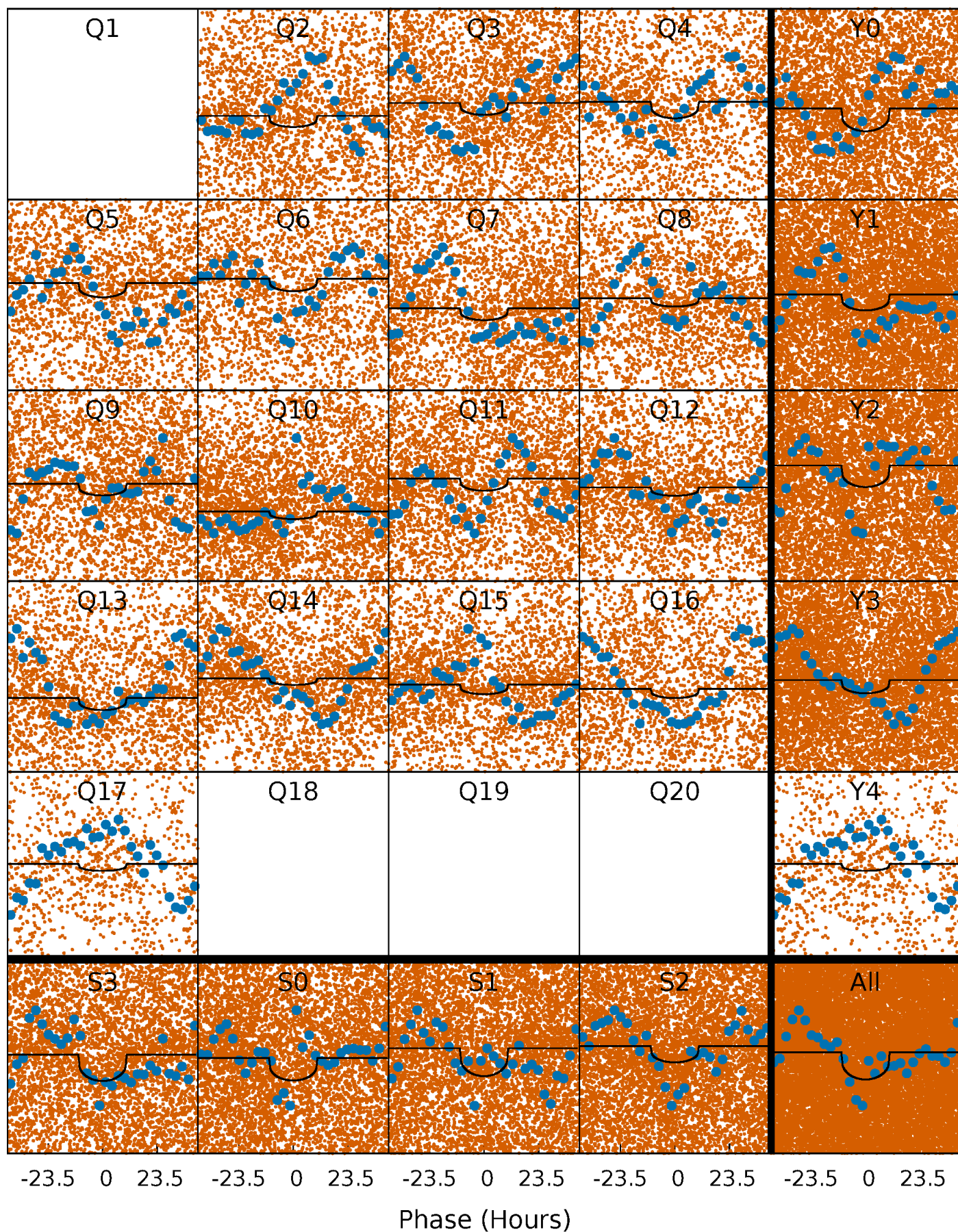
TCE 004351212-01 P= 3.040007 Days  $T_0=132.631284$  (BKJD)





# DV Quarter-Phased Transit Curves

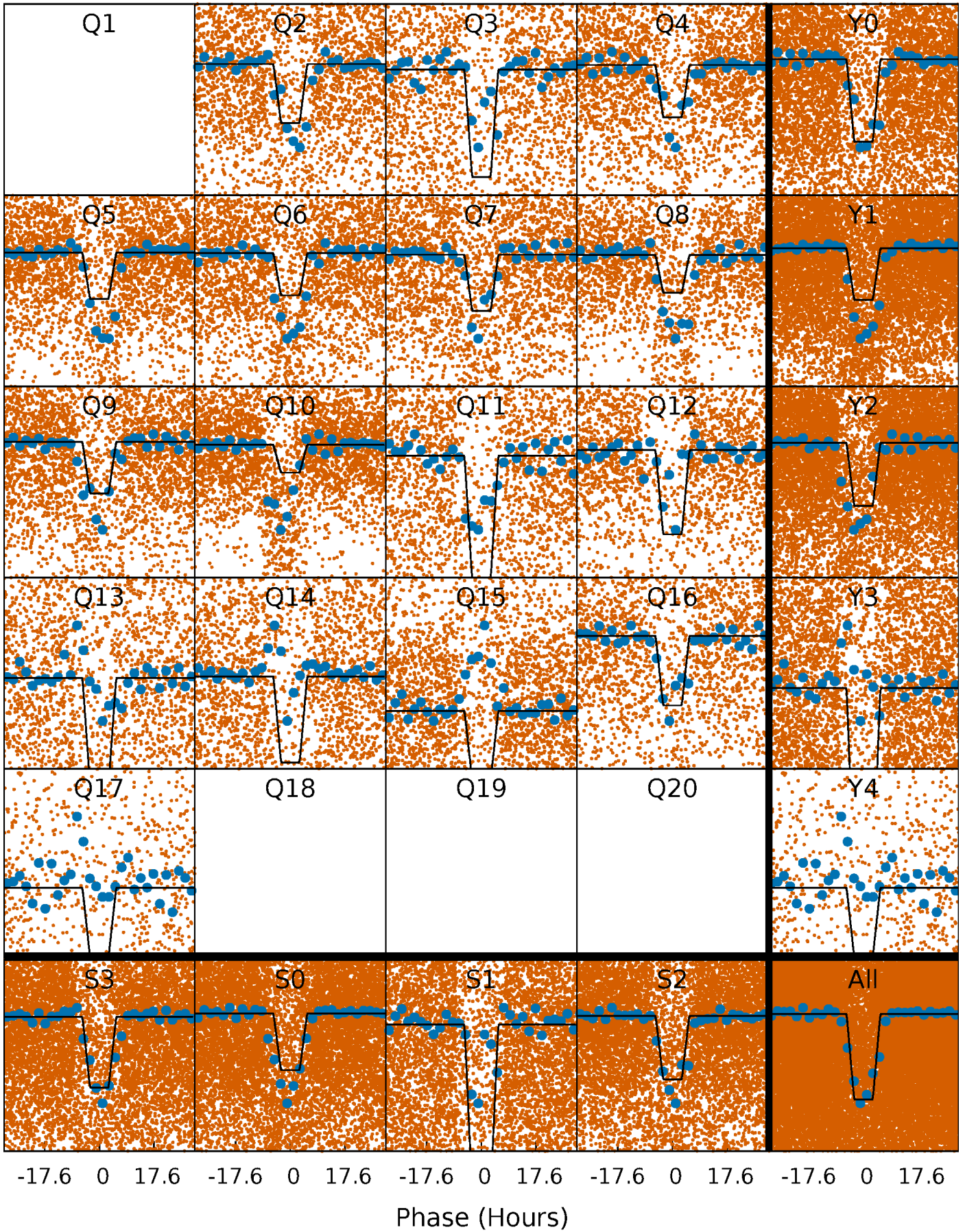
TCE 004351212-01 P= 3.040007 Days  $T_0=132.631284$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

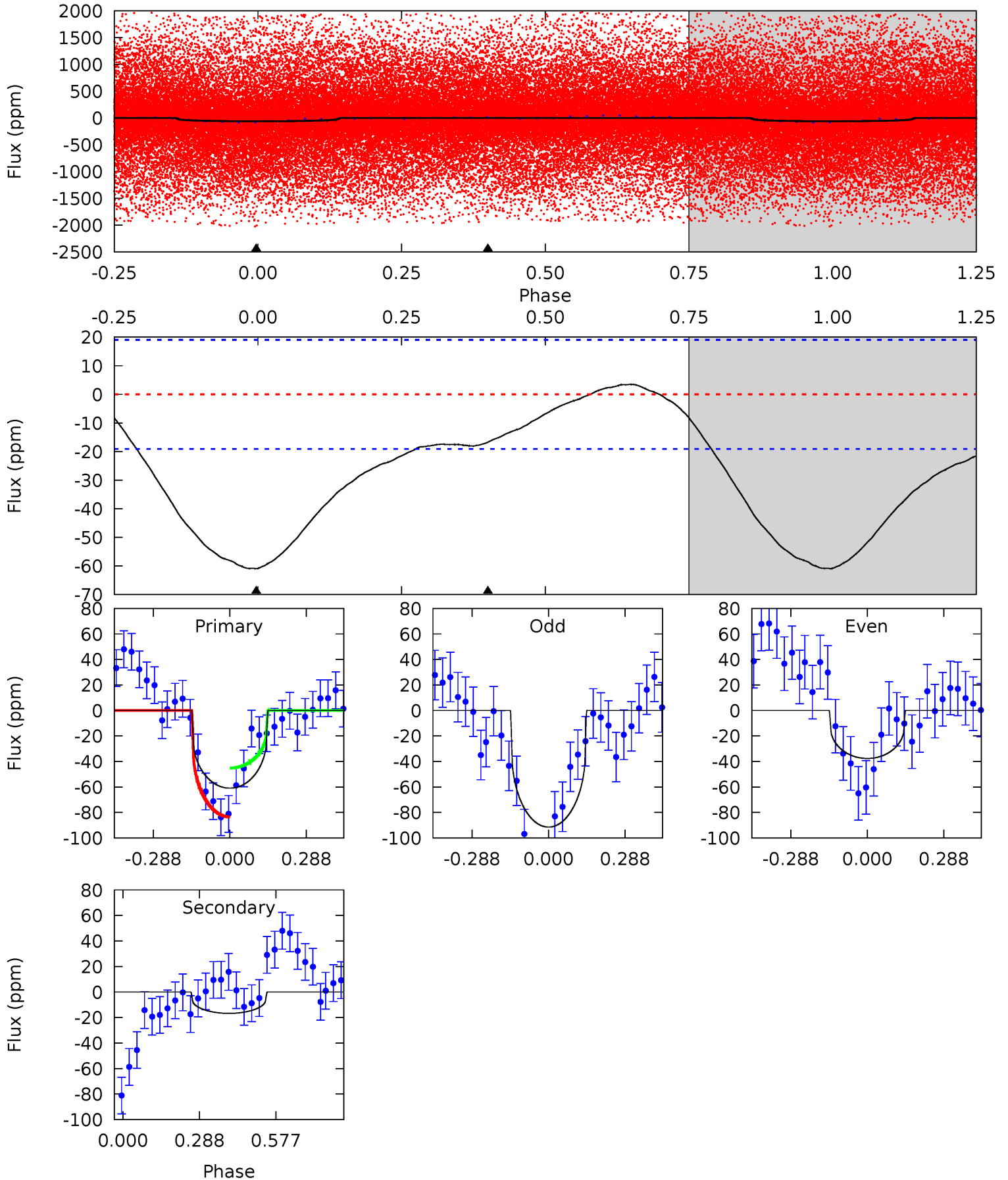
TCE 004351212-01 P= 3.040157 Days  $T_0=132.543635$  (BKJD)



# DV Model-Shift Uniqueness Test

004351212-01, P = 3.040007 Days, E = 132.631284 Days

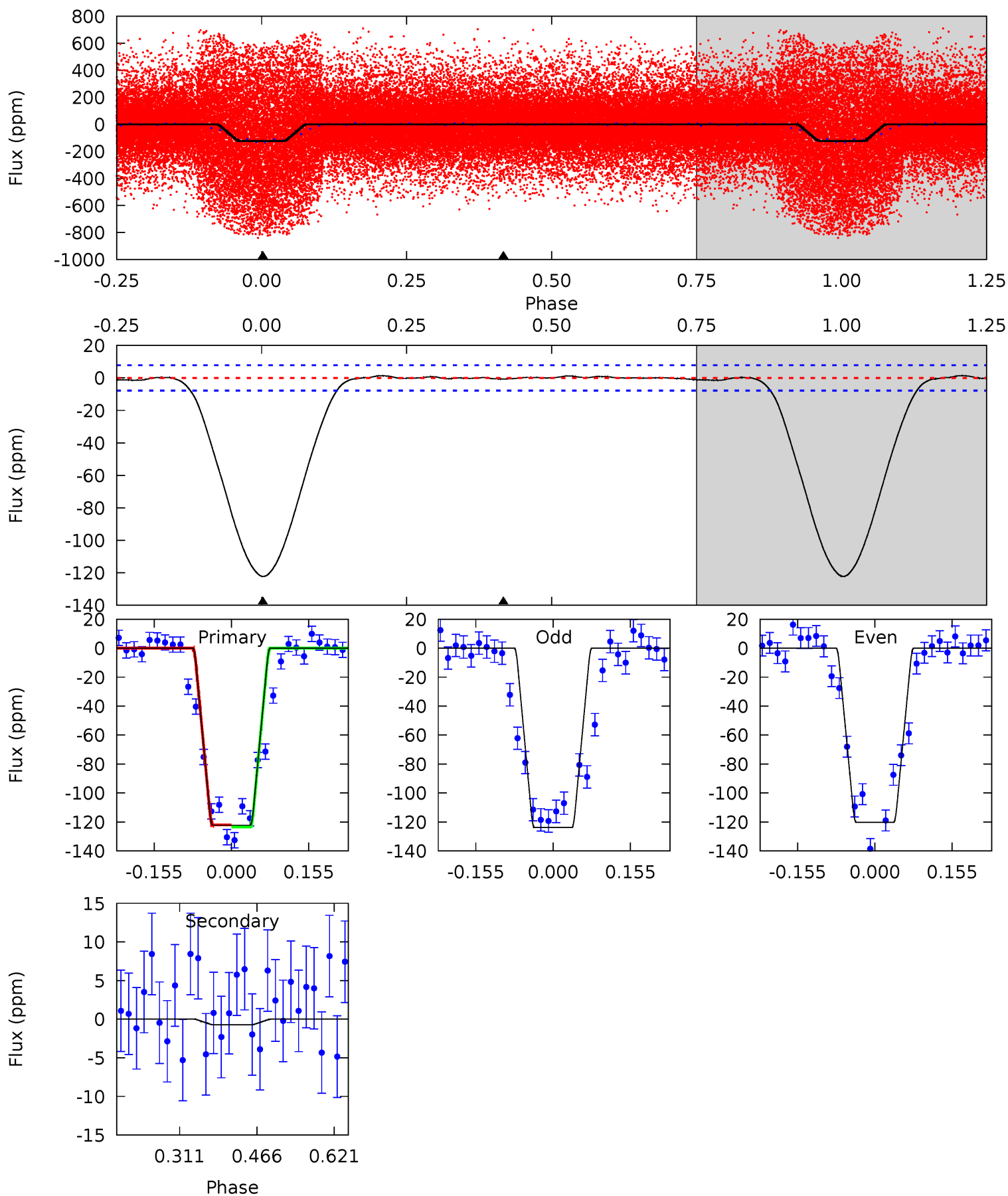
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.9	3.81	0	0	4.34	1.06	0.74	13.9	13.9	3.81	3.81	6.17	0.99	0.05	4.21



# Alt Model-Shift Uniqueness Test

004351212-01, P = 3.040157 Days, E = 132.543635 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
70.0	0.42	0	0	4.47	1.42	0.39	70.0	70.0	0.42	0.42	1.05	0.98	0.01	0





### Stellar Parameters For KIC 004351212

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$4826^{+169}_{-169}$	$4.691^{+0.048}_{-0.032}$	$-1.080^{+0.300}_{-0.300}$	$0.565^{+0.038}_{-0.038}$	$0.570^{+0.046}_{-0.025}$	$4.462^{+0.872}_{-0.607}$
	+4%/-4%	+1%/-1%	+28%/-28%	+7%/-7%	+8%/-4%	+20%/-14%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 004351212-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-17 \pm 4$	$0.39^{+0.29}_{-0.25}$	$1206^{+46}_{-48}$	$4070^{+2139}_{-736}$	$70^{+451}_{-48}$
Alt.	$-1 \pm 2$	$0.66^{+0.30}_{-0.30}$	$1208^{+48}_{-49}$	$2150^{+577}_{-4548}$	$0.988^{+4.212}_{-2.418}$

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

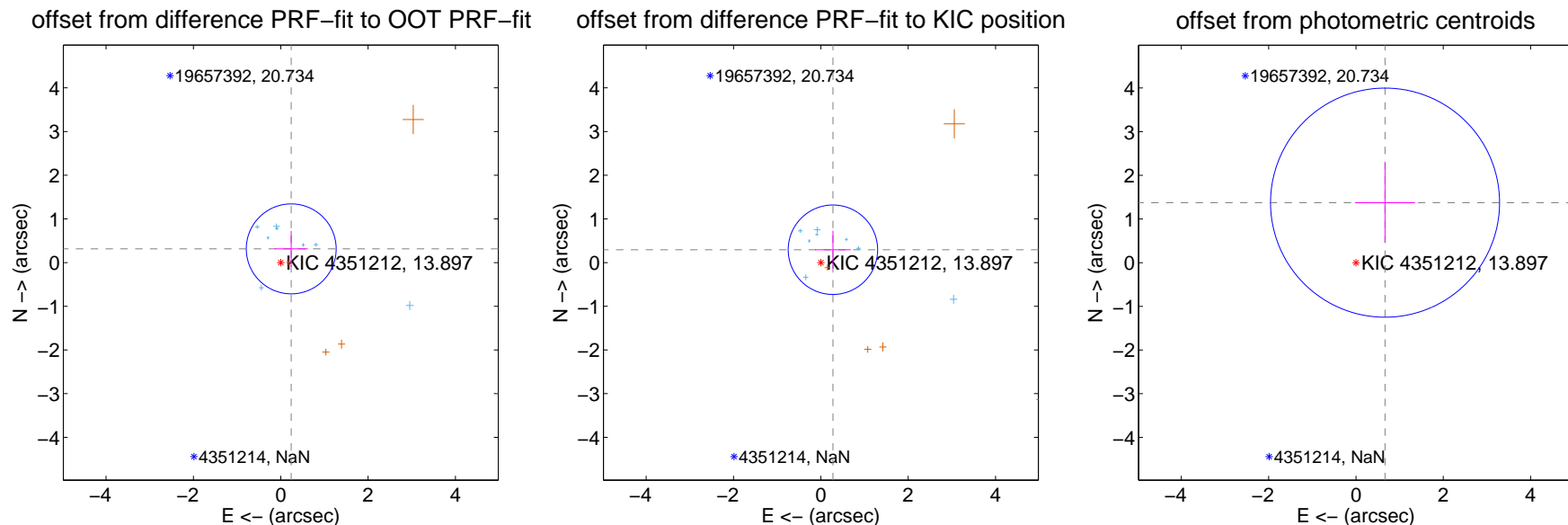
## DV Centroid Data

Supplemental centroid analysis for 004351212-01. Kepler magnitude: 13.90. Transit SNR 4.29

There are 8 quarters with good PRF difference image offsets

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

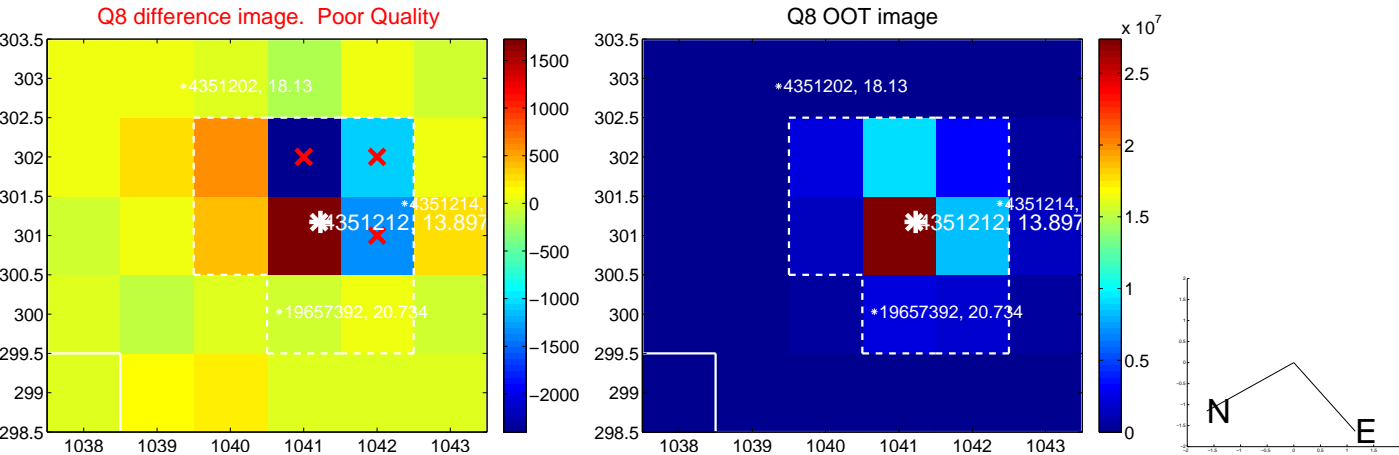
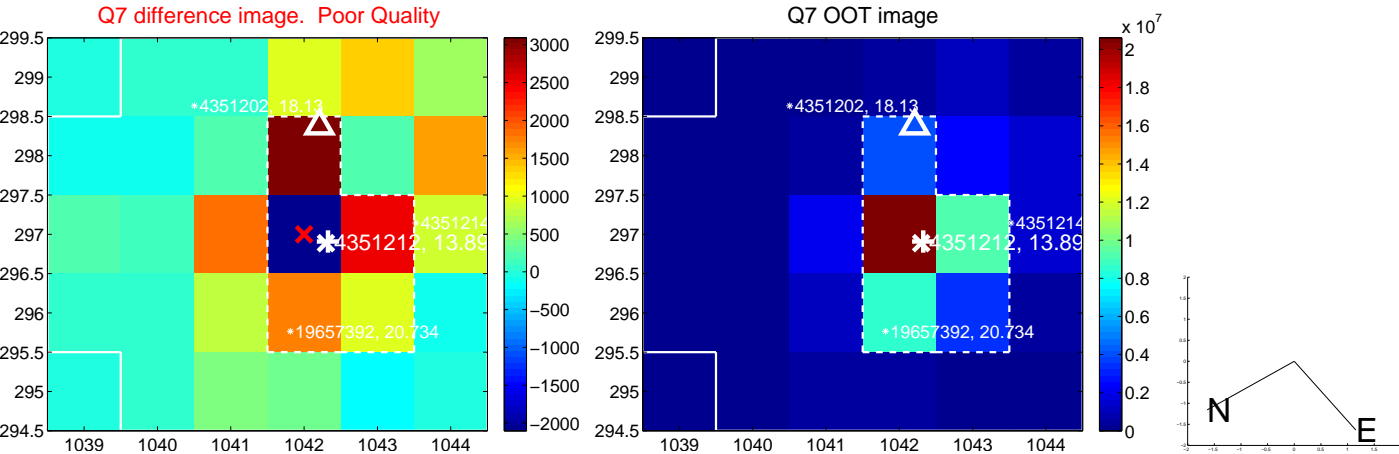
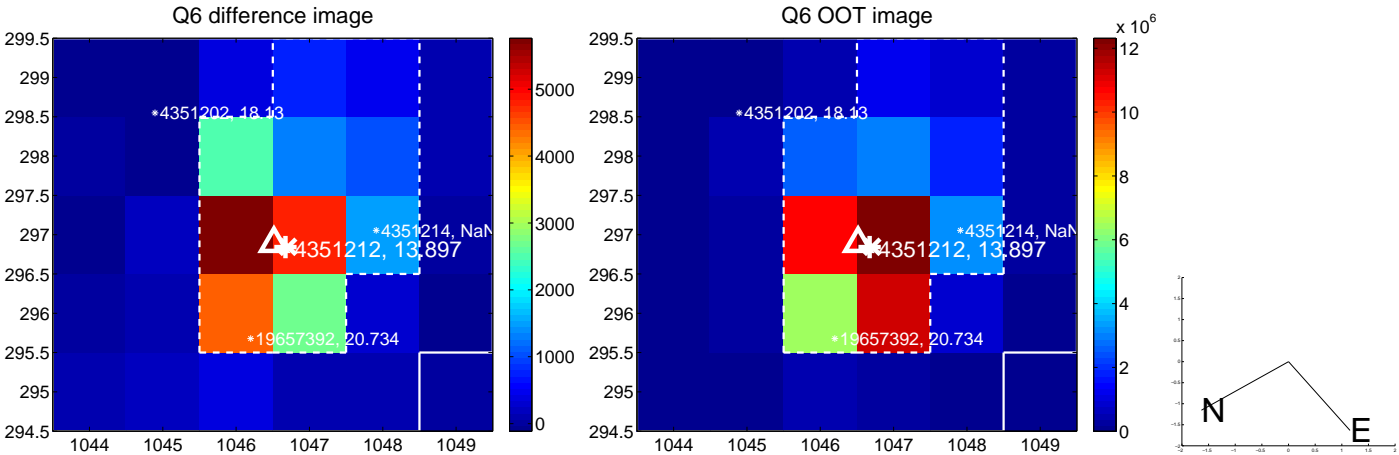
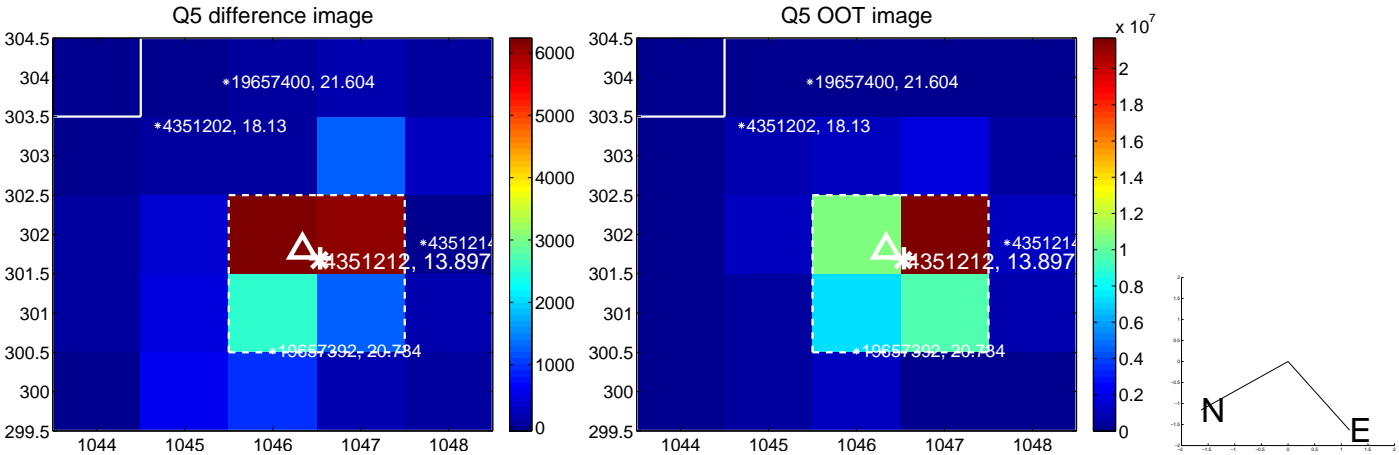
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.395 \pm 0.343$	1.15	$-0.240 \pm 0.382$	$0.314 \pm 0.409$
PRF-fit source offset from KIC position	$0.404 \pm 0.341$	1.18	$-0.276 \pm 0.410$	$0.295 \pm 0.433$
photometric centroid source offset	$1.53 \pm 0.87$	1.75	$-0.67 \pm 0.69$	$1.37 \pm 0.91$



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.

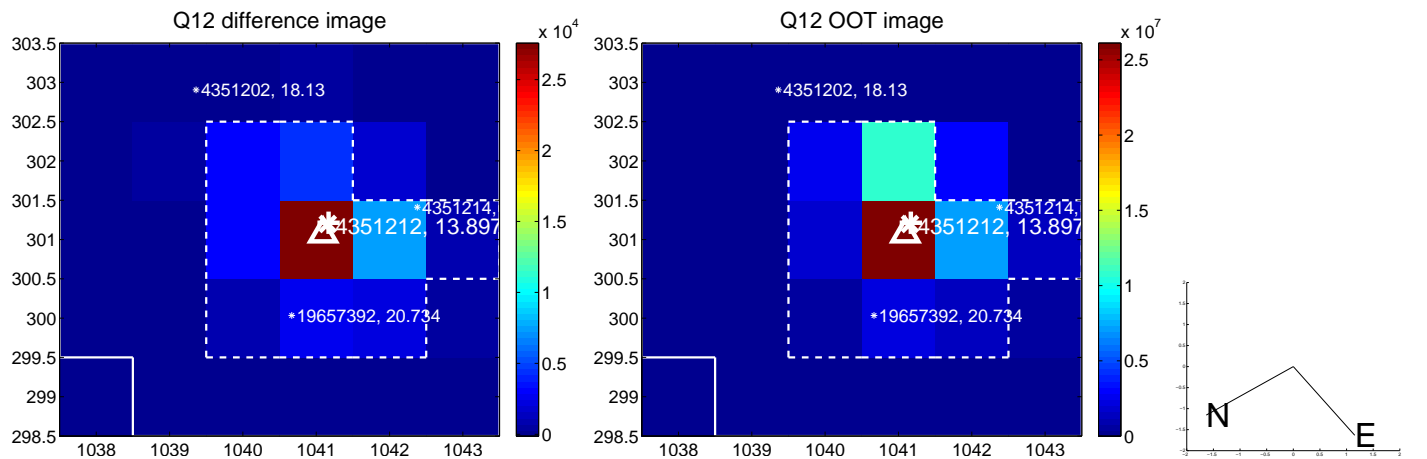
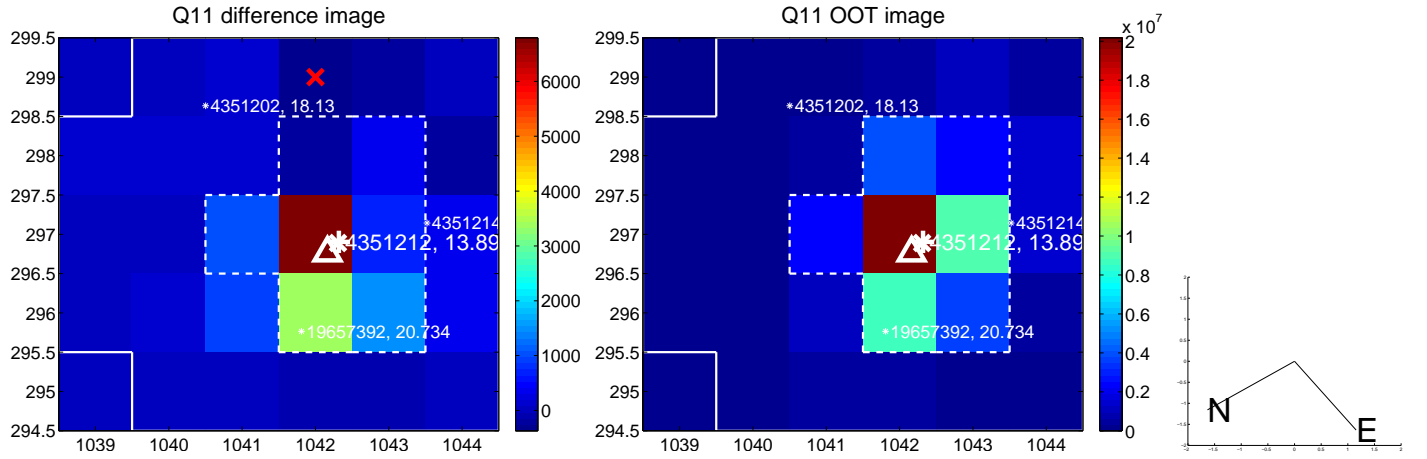
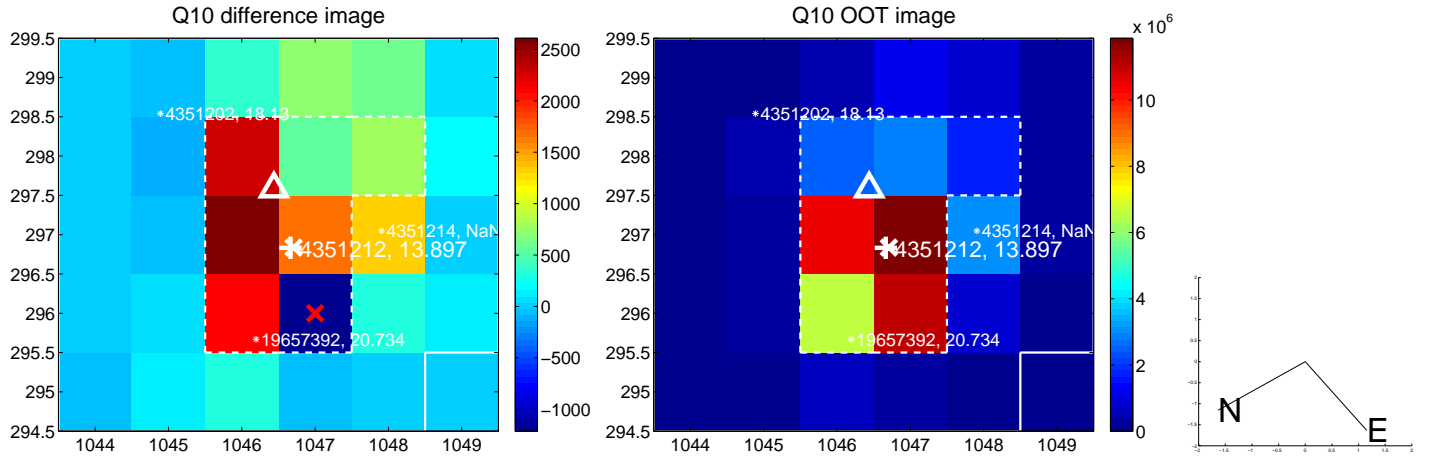
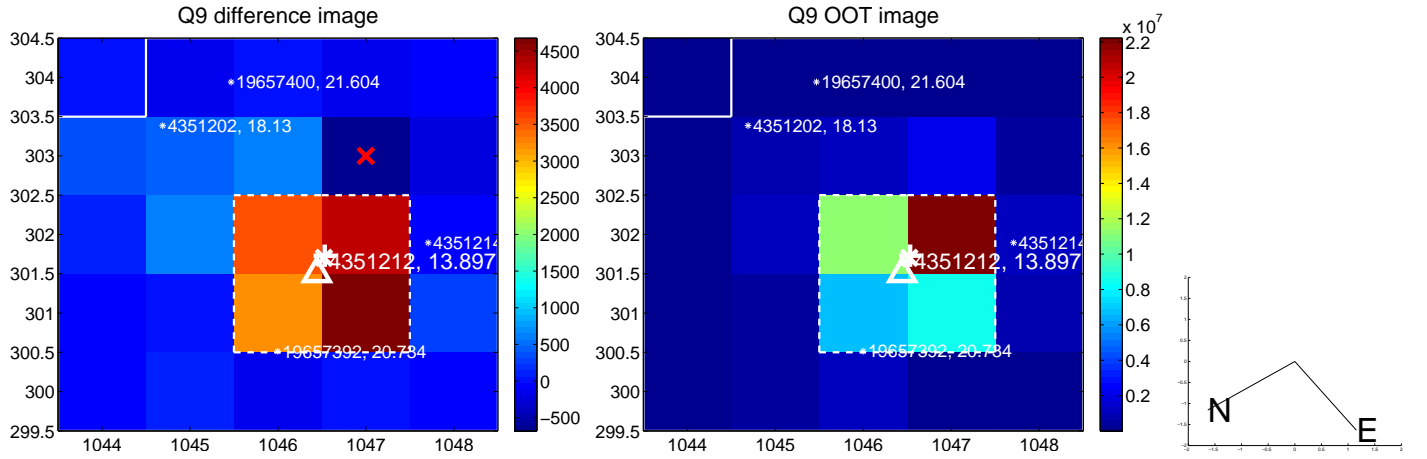


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

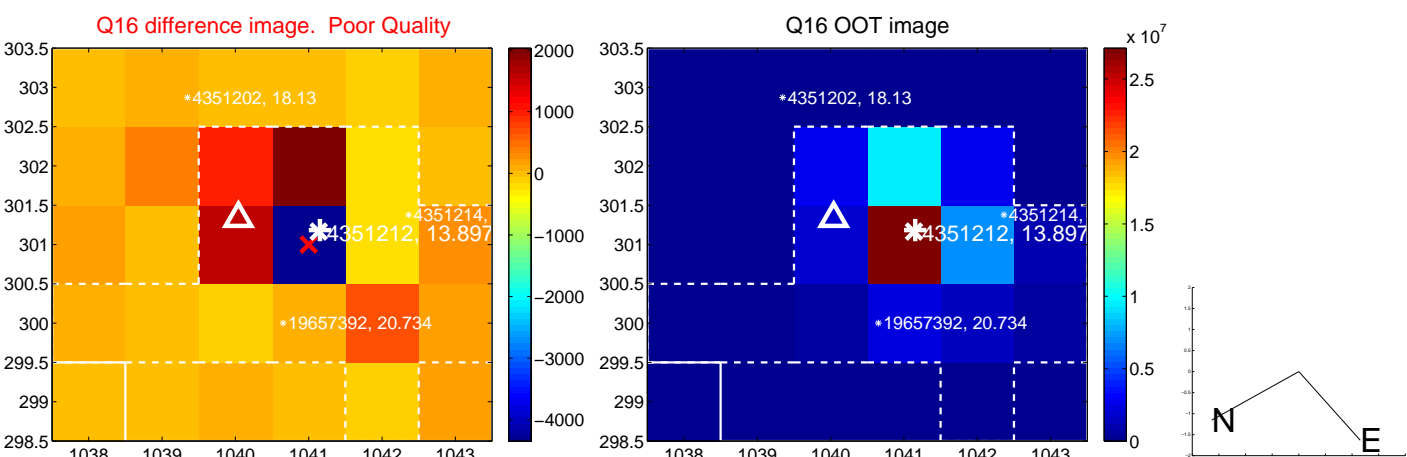
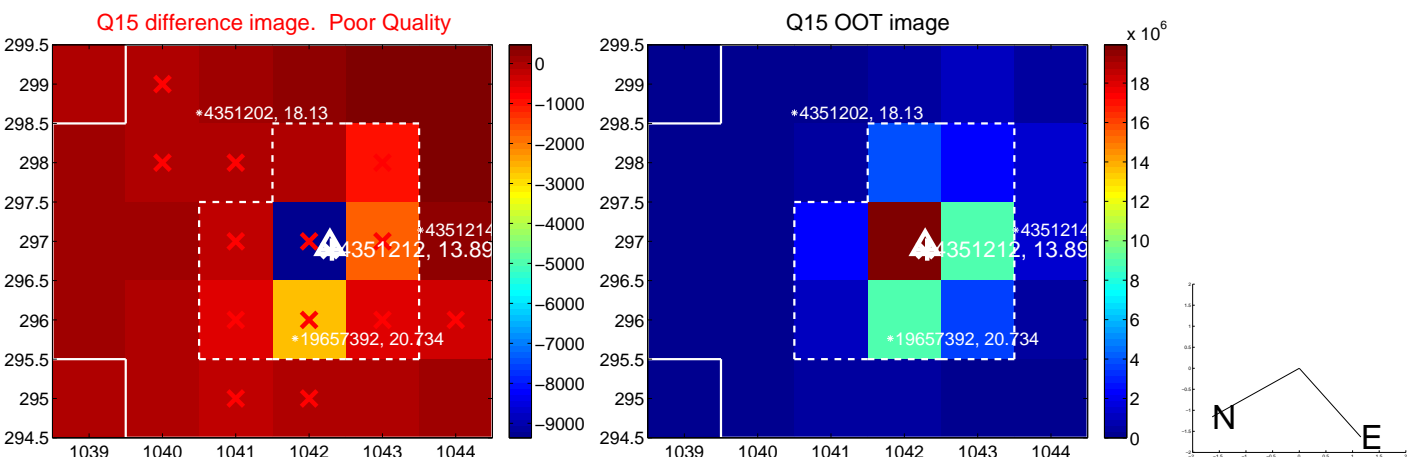
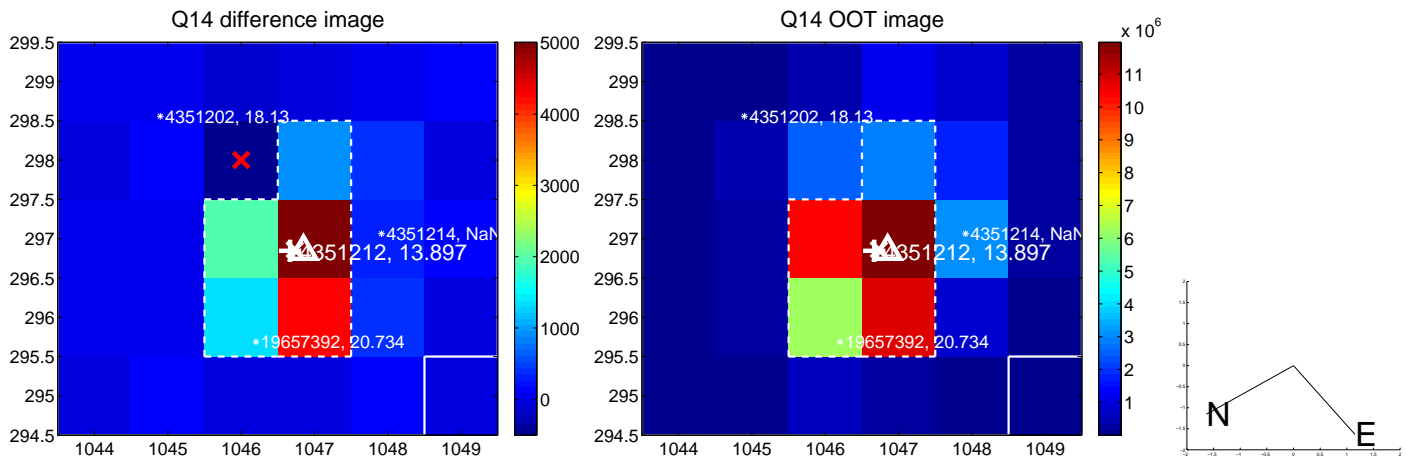
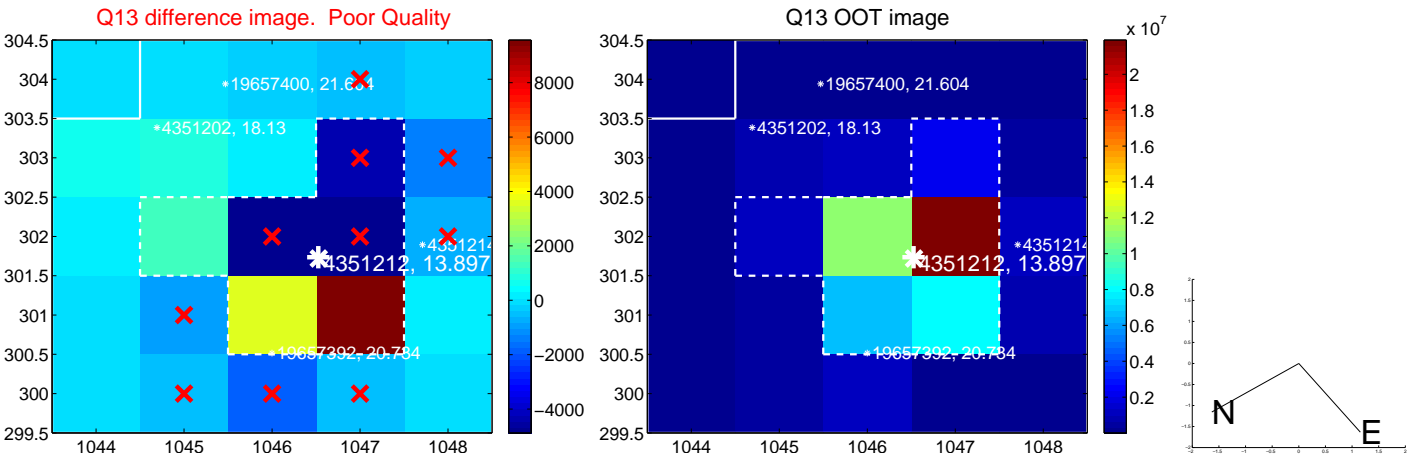




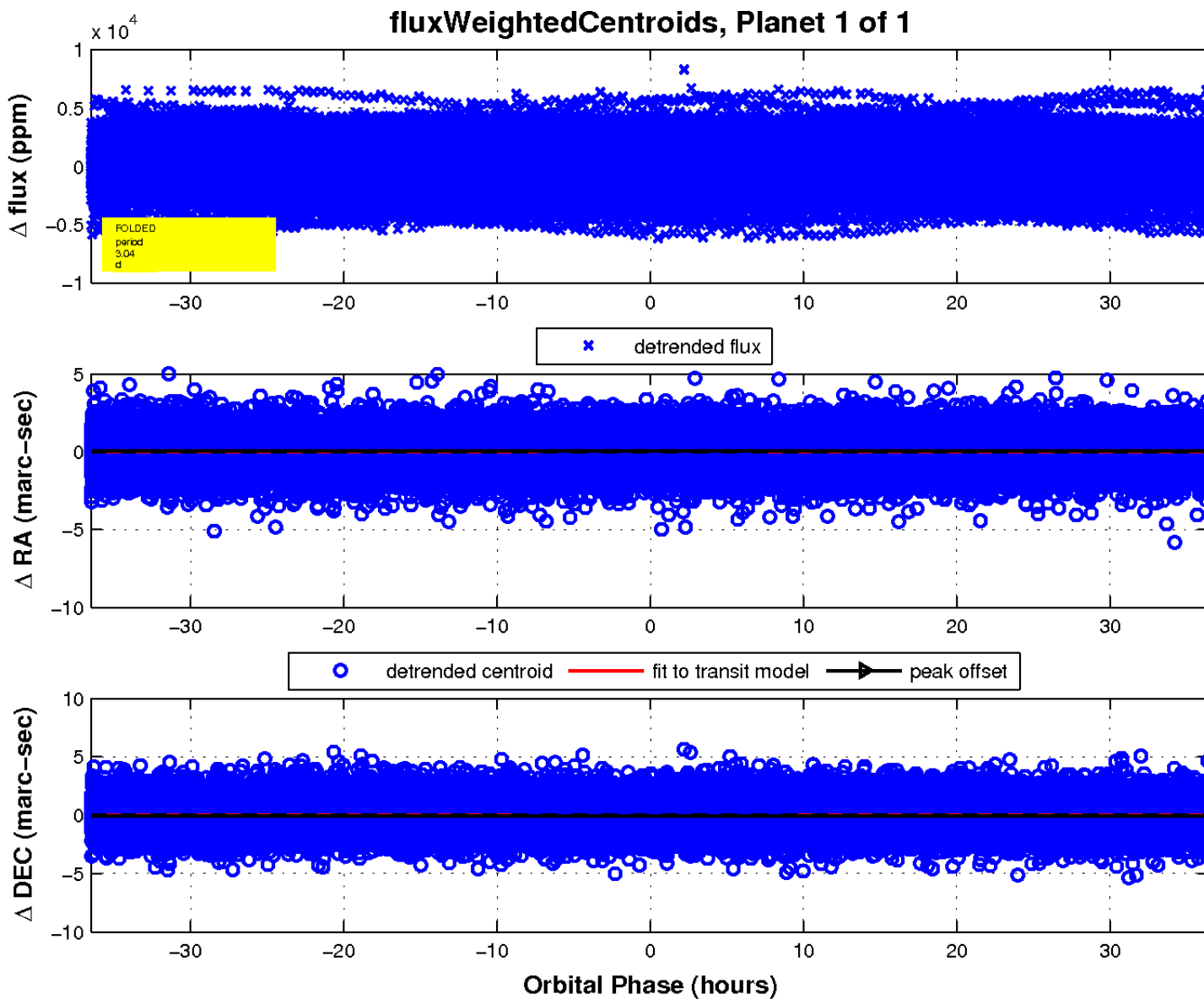
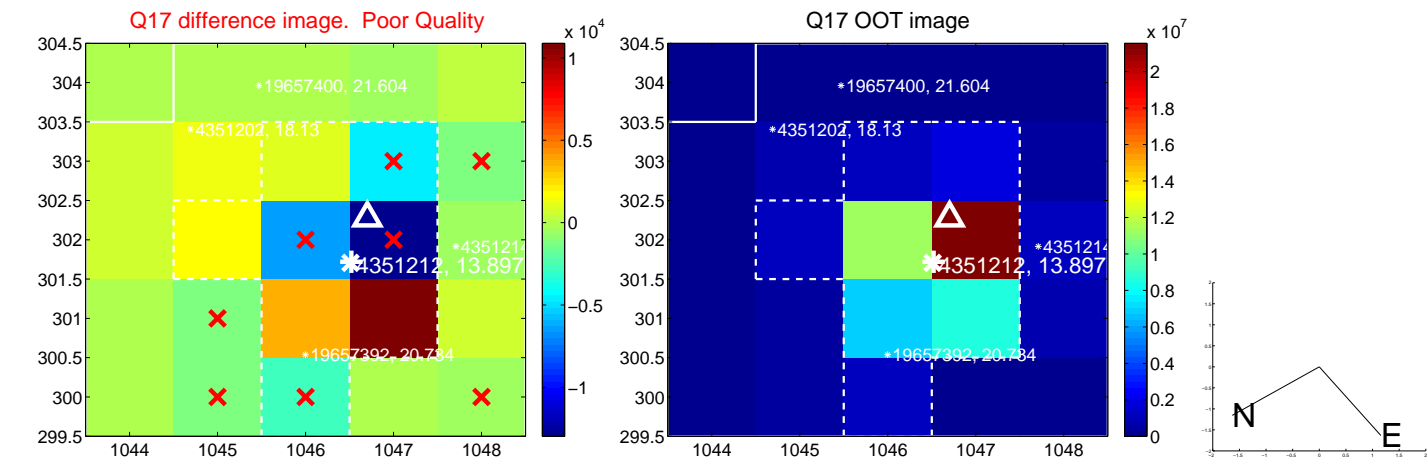
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

