

# KIC 006636041

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006636041-02	OBS	No	0.529761	131.809732	8.8	3.544	7.7	6.7	1.91	8144	0.59	58537.41

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006636041-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—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.

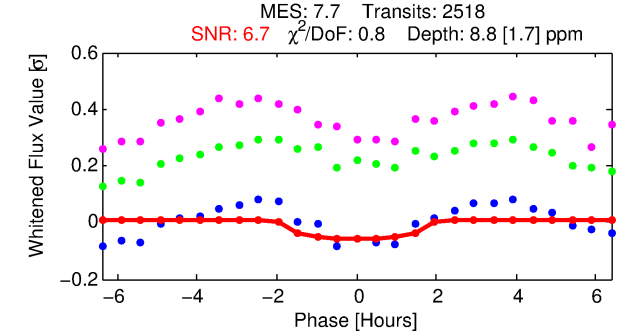
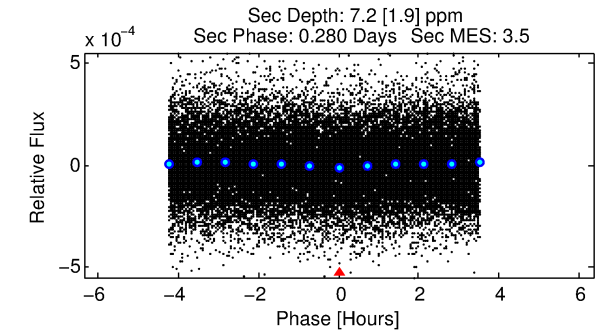
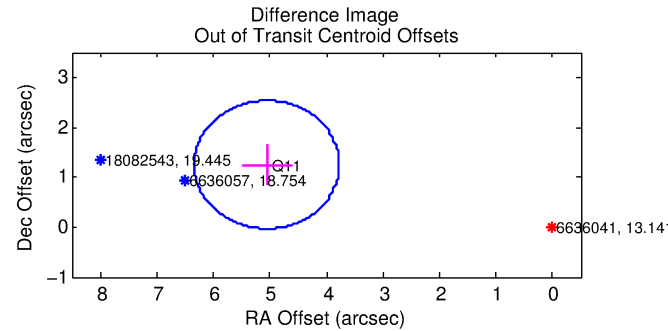
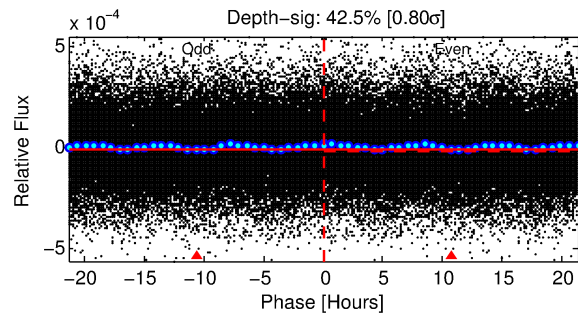
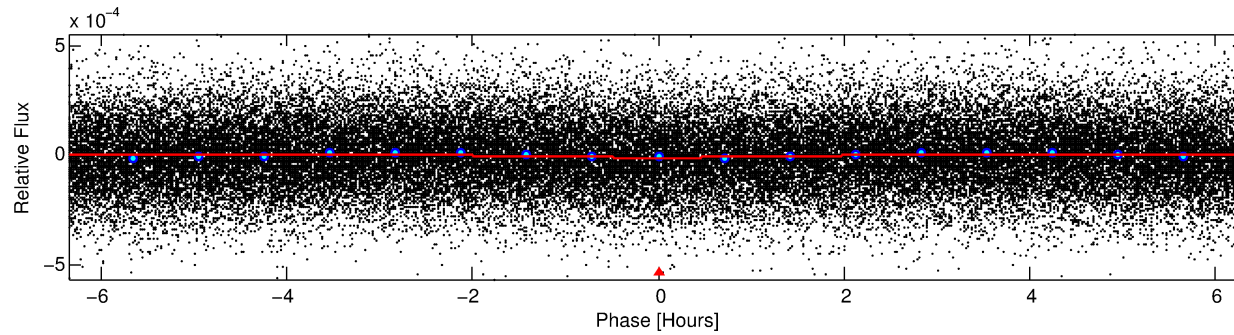
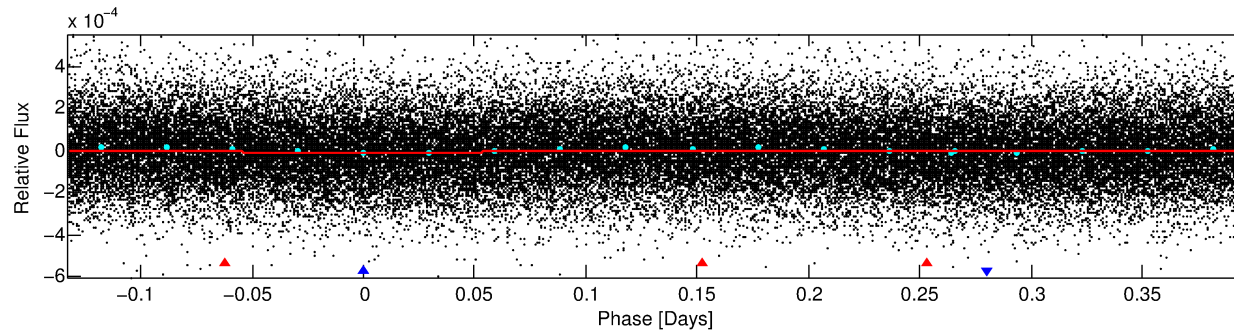
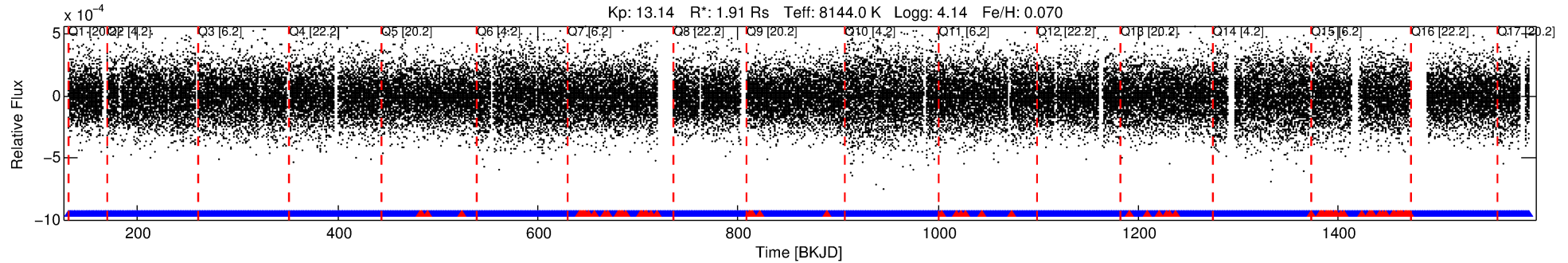
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006636041-02

No Significant Match Found

# DV One-Page Summary

KIC: 6636041 Candidate: 2 of 2 Period: 0.530 d



## DV Fit Results:

Period = 0.52976 [0.00001] d  
Epoch = 131.8097 [0.0061] BKJD  
Rp/R\* = 0.0028 [0.0018]  
a/R\* = 1.22 [1.51]  
b = 0.54 [4.85]  
Seff = 58537.41 [20628.30]  
Teff = 3966 [349] K  
Rp = 0.59 [0.40] Re  
a = 0.0157 [0.0032] AU  
Ag = 2.77 [3.64] [0.49 $\sigma$ ]  
Teffp = 7912 [2555] K [1.53 $\sigma$ ]

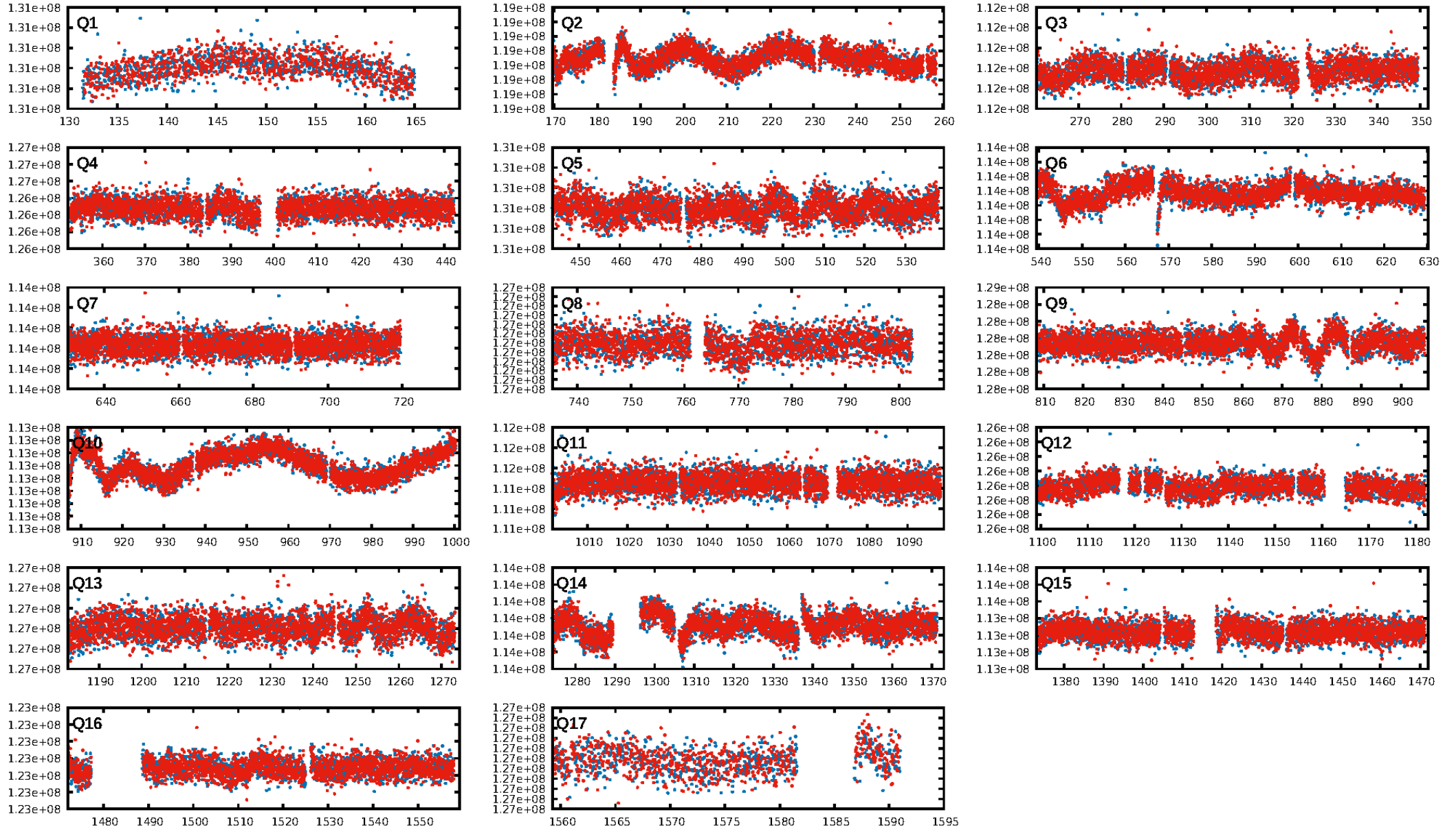
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [456.23 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 4.73e-11  
RollingBand-fgt: 0.97 [2324/2405]  
GhostDiagnostic-chr: 9.001  
Centroid-sig: 68.4%  
Centroid-so: 0.726 arcsec [0.39 $\sigma$ ]  
OotOffset-rm: 5.207 arcsec [12.18 $\sigma$ ]  
KicOffset-rm: 5.127 arcsec [11.98 $\sigma$ ]  
OotOffset-st: 0/1/0/0 [1]  
KicOffset-st: 0/1/0/0 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 11:44:09 Z

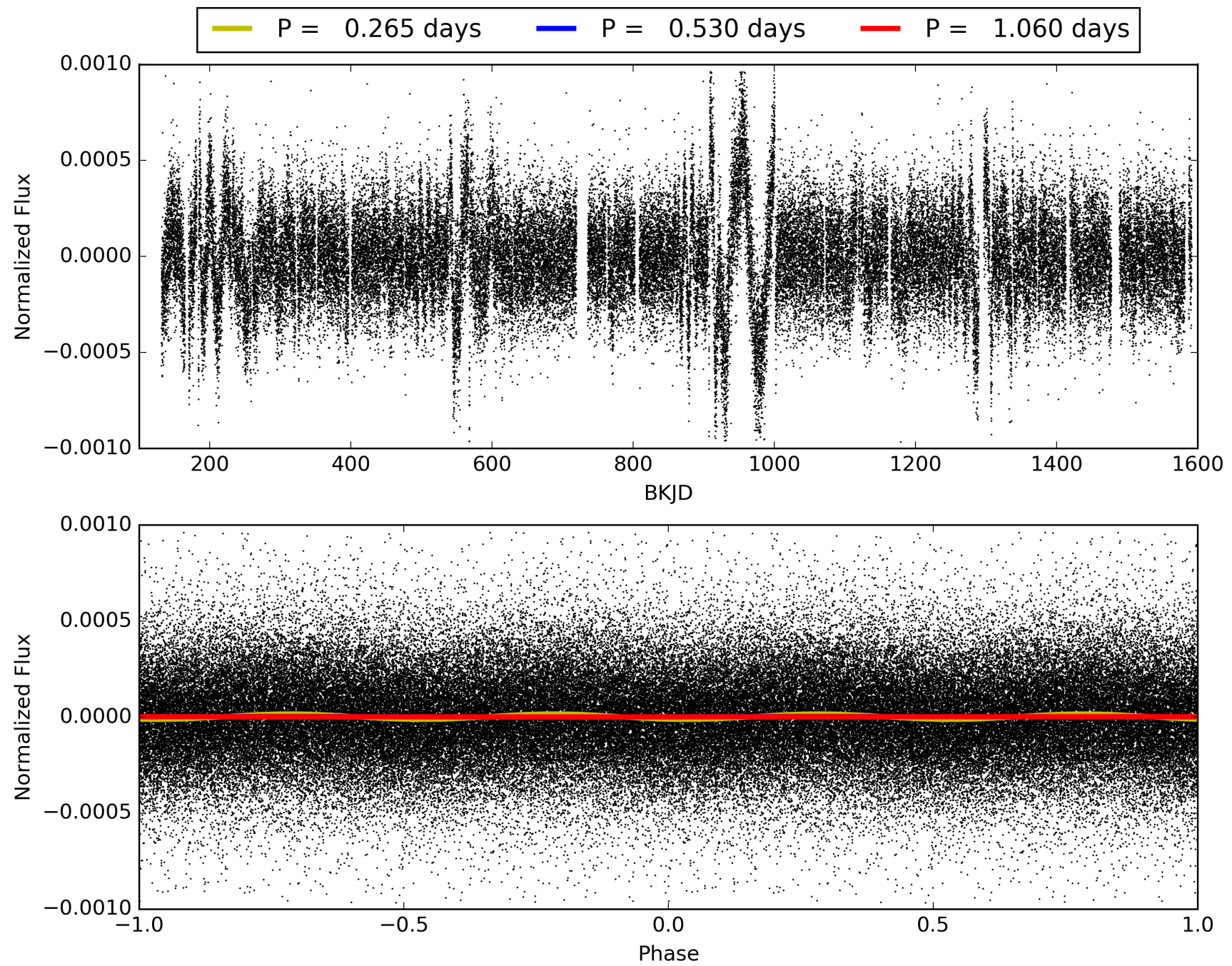
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 006636041-02, PDC Light Curves



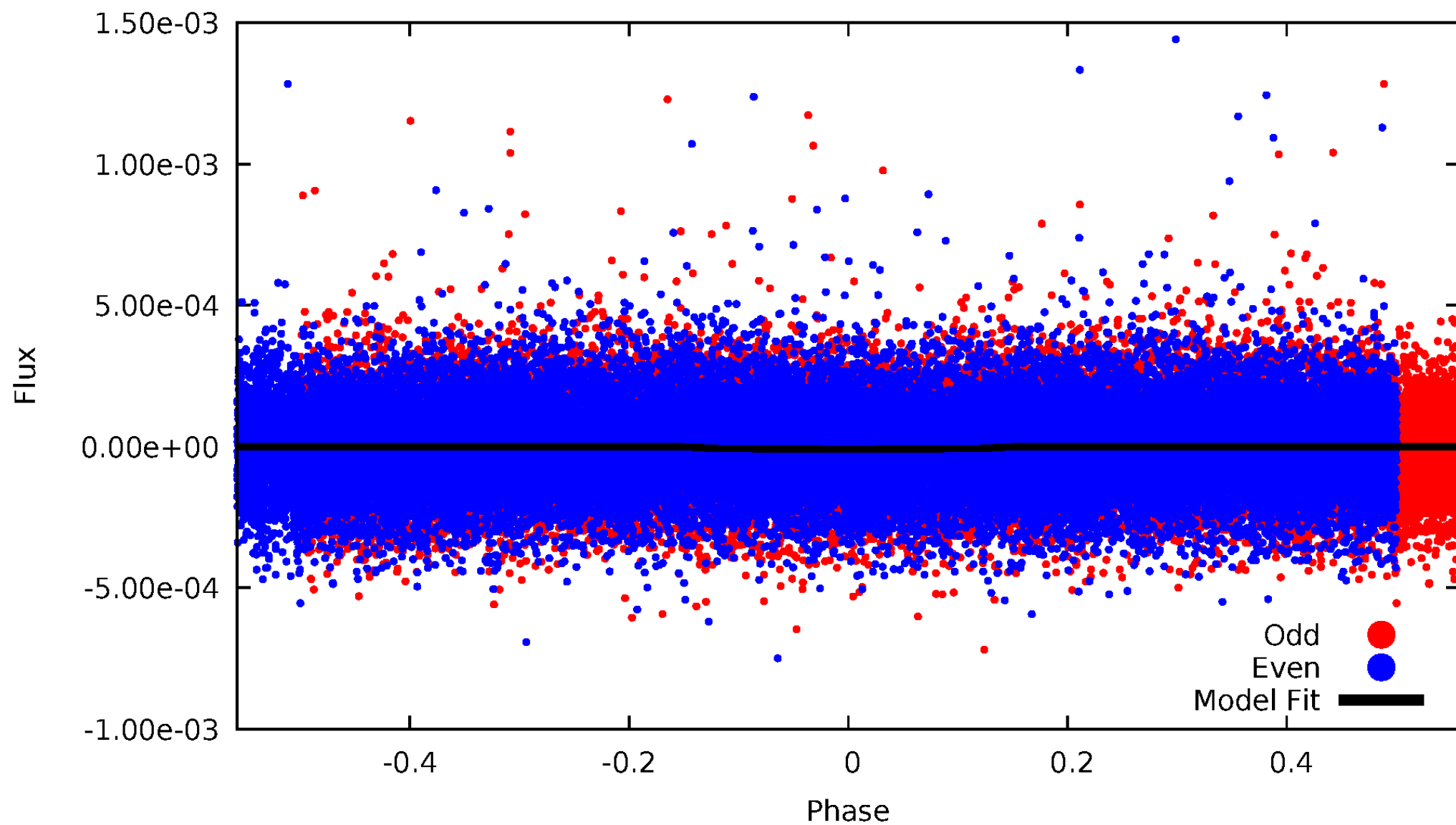


TCE 006636041-02



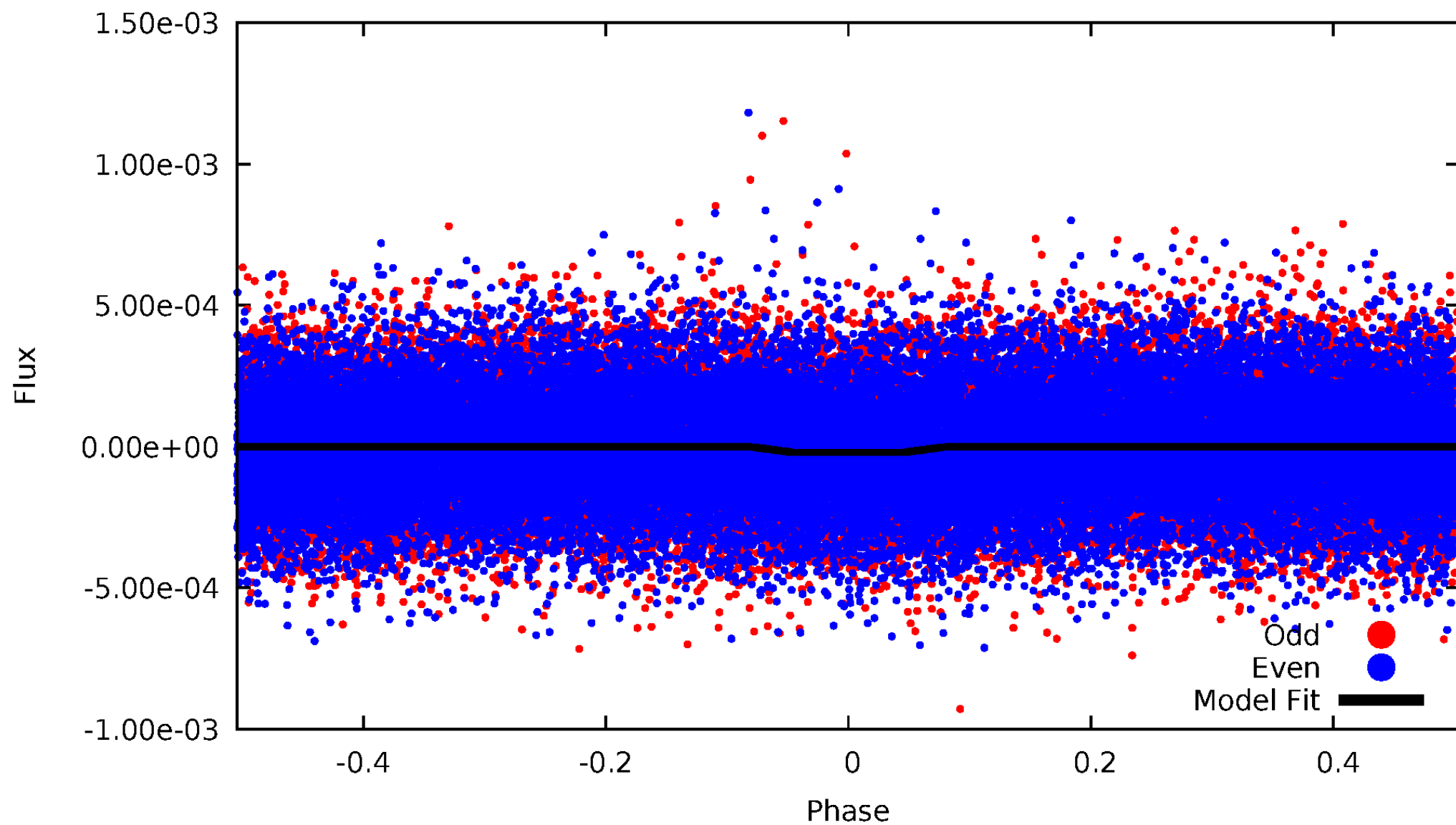
# DV Odd/Even

TCE 006636041-02



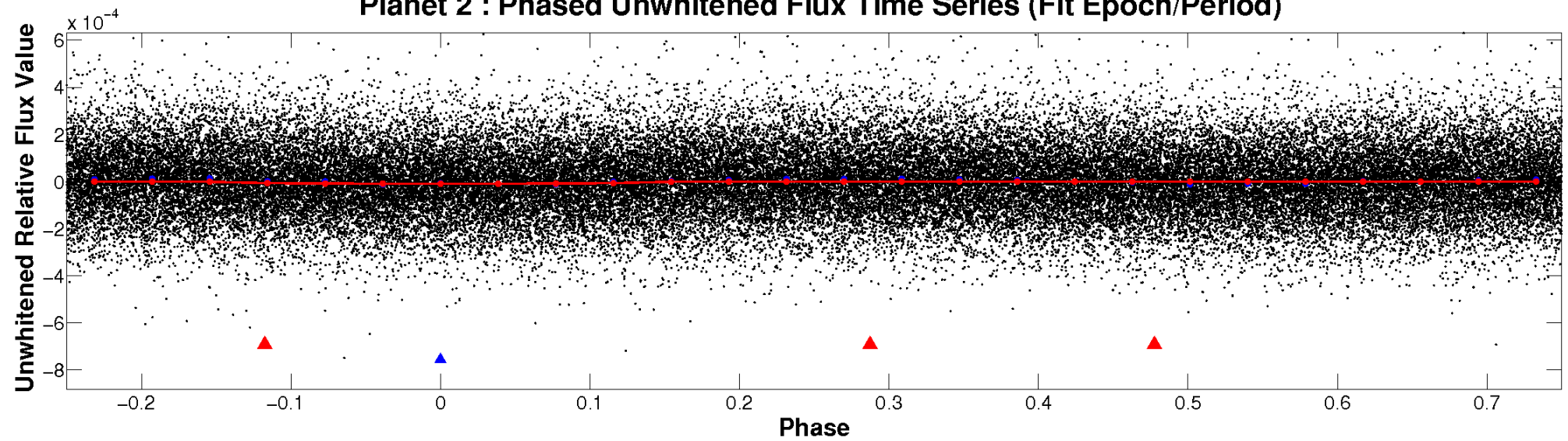
# ALT Odd/Even

TCE 006636041-02

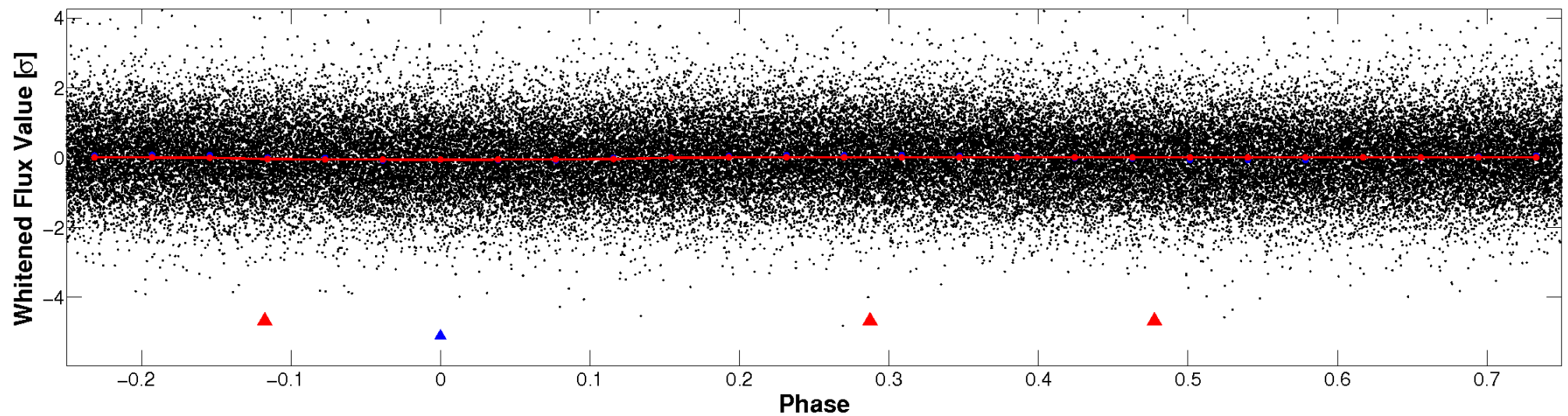


# Non-Whitened Vs. Whitened Light Curve

## Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)



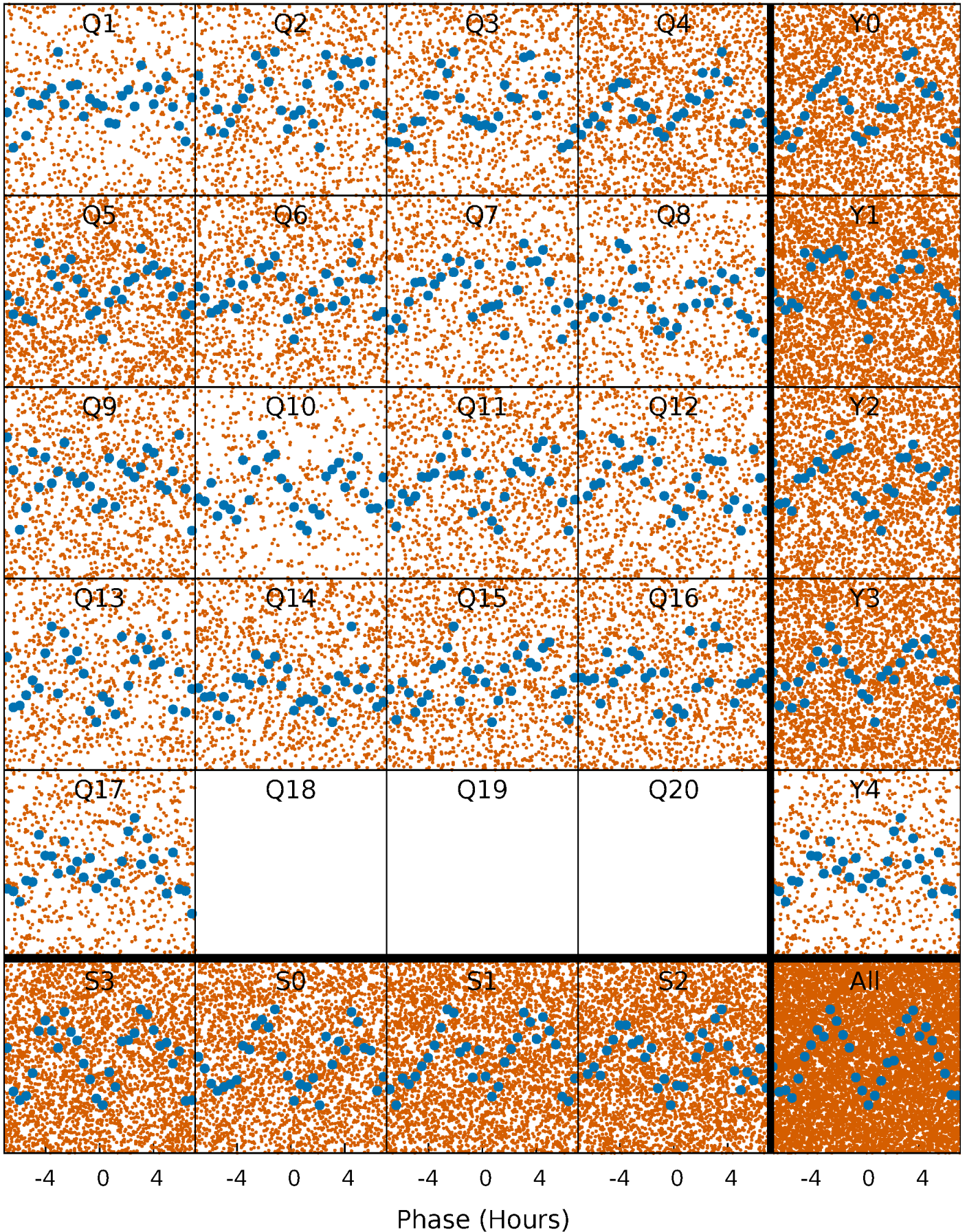
## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)





# PDC Quarter-Phased Transit Curves

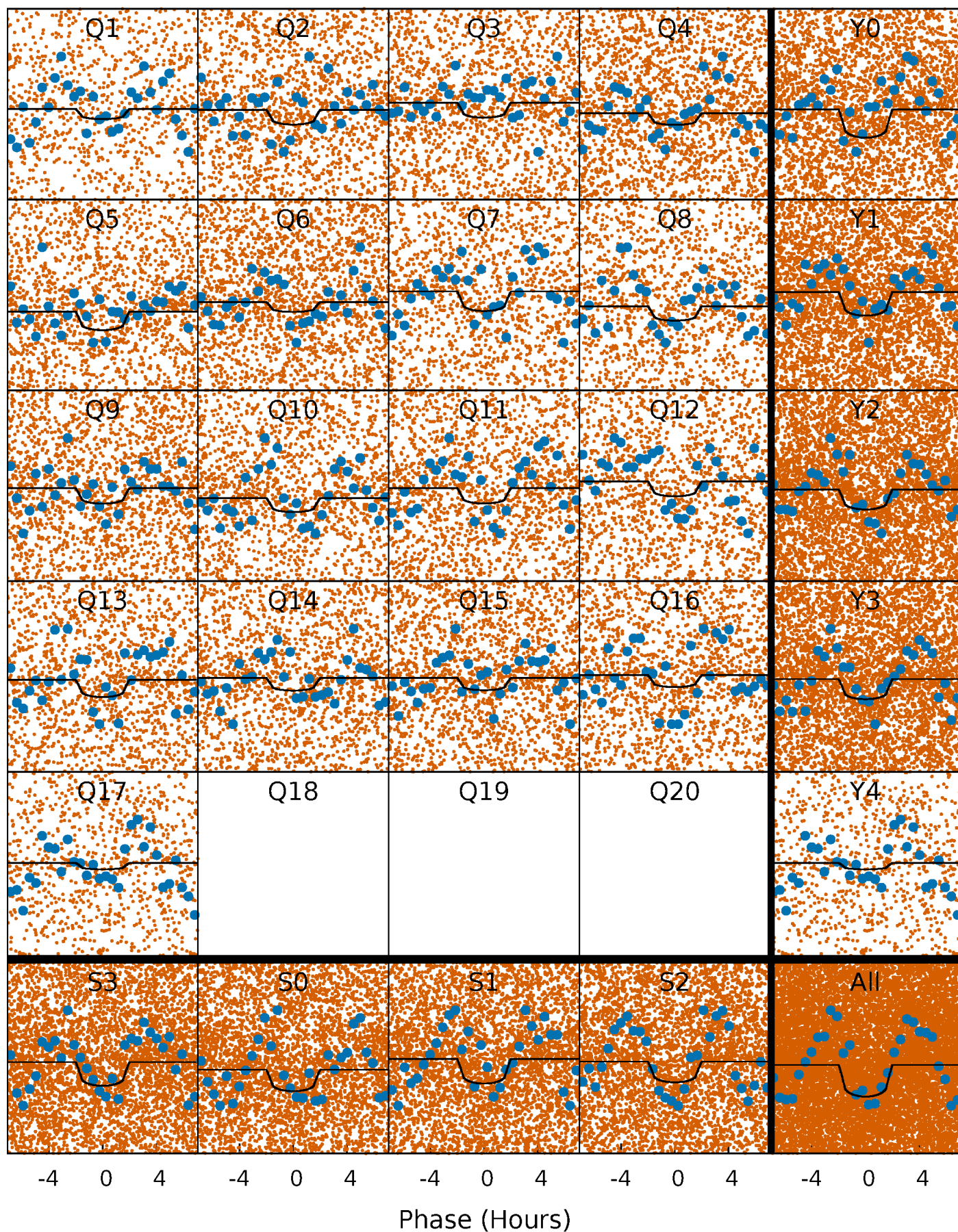
TCE 006636041-02   P= 0.529761 Days    $T_0=131.809732$  (BKJD)





# DV Quarter-Phased Transit Curves

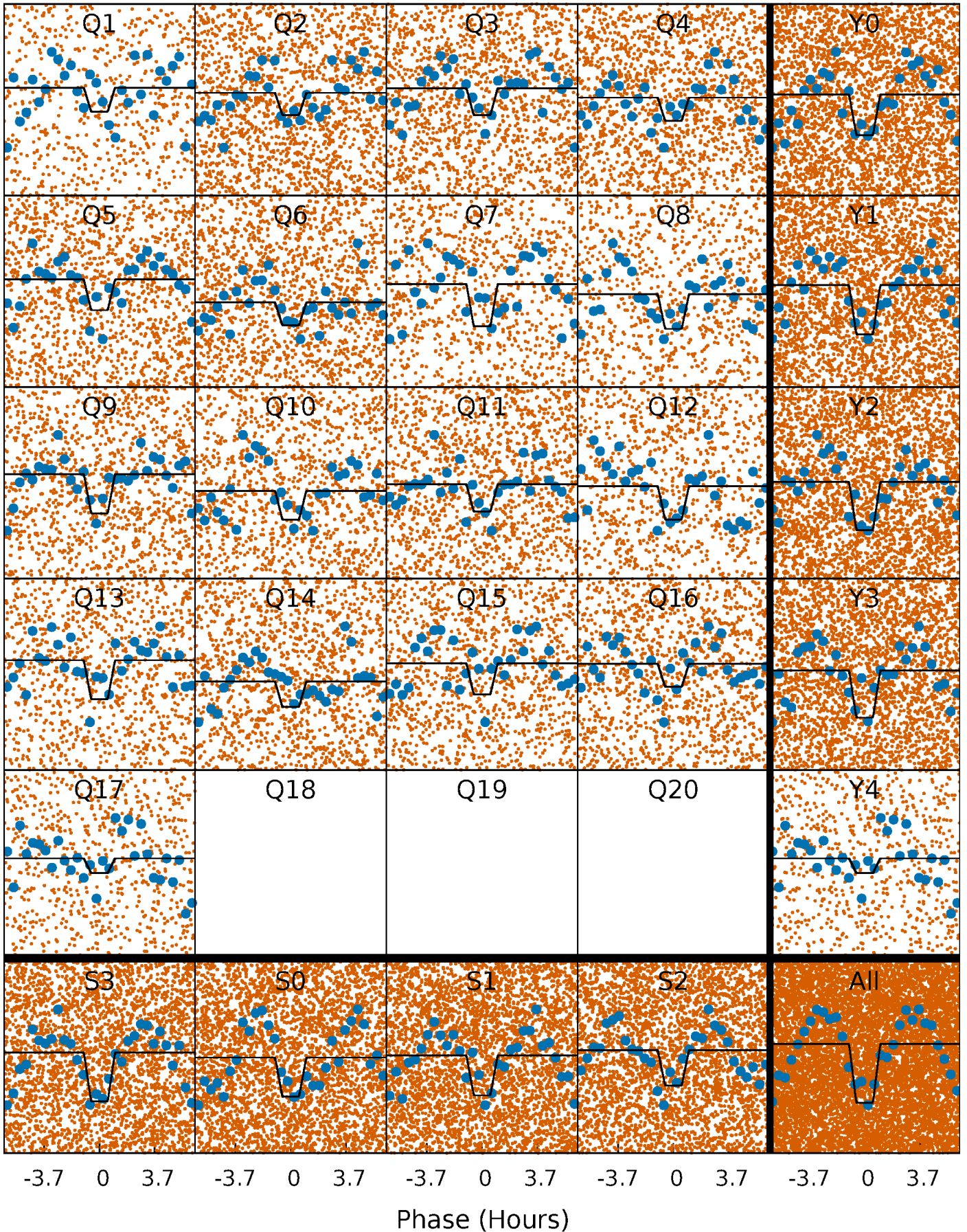
TCE 006636041-02   P= 0.529761 Days    $T_0=131.809732$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

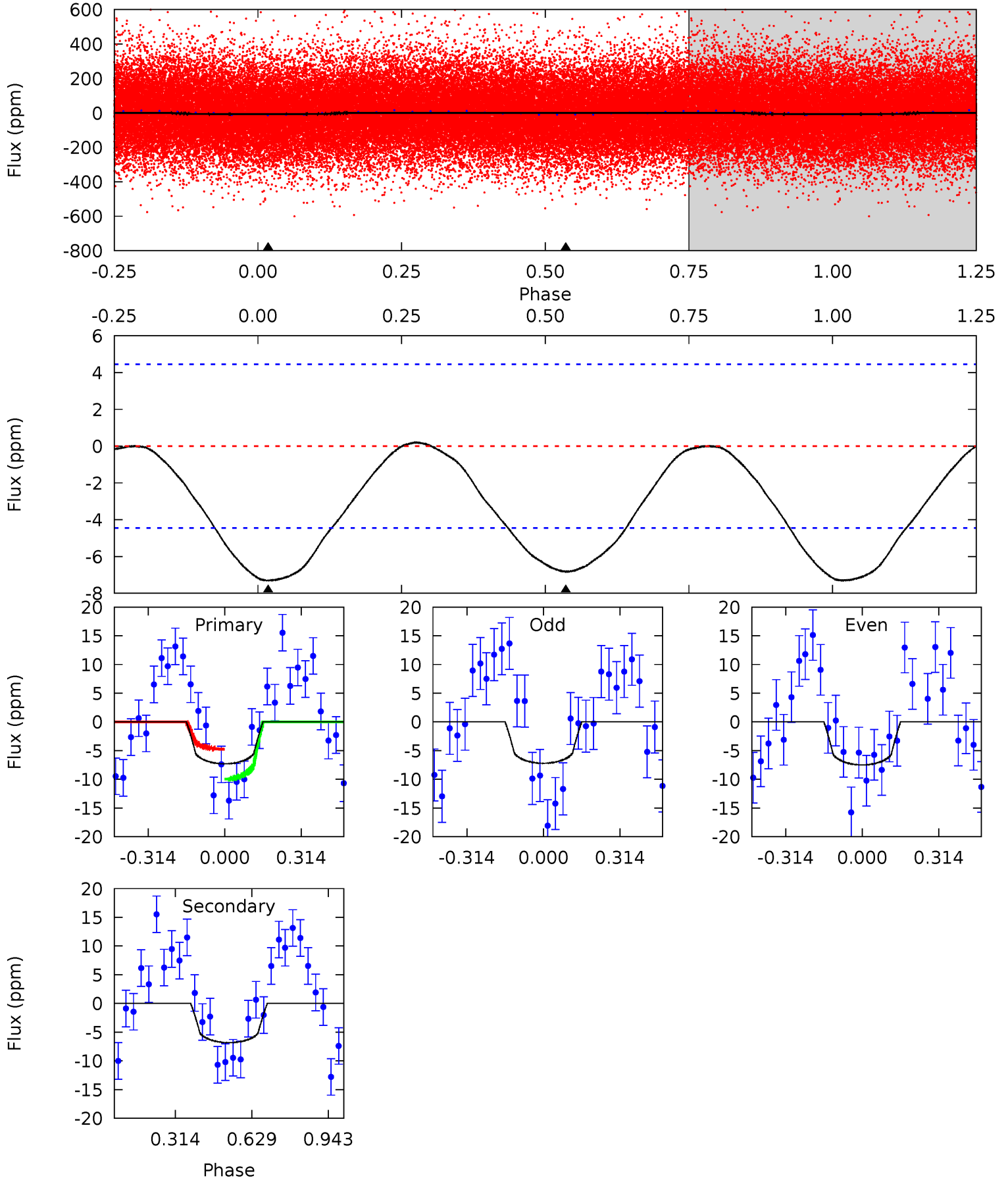
TCE 006636041-02   P= 0.529775 Days    $T_0=131.804402$  (BKJD)



# DV Model-Shift Uniqueness Test

006636041-02, P = 0.529761 Days, E = 131.279971 Days

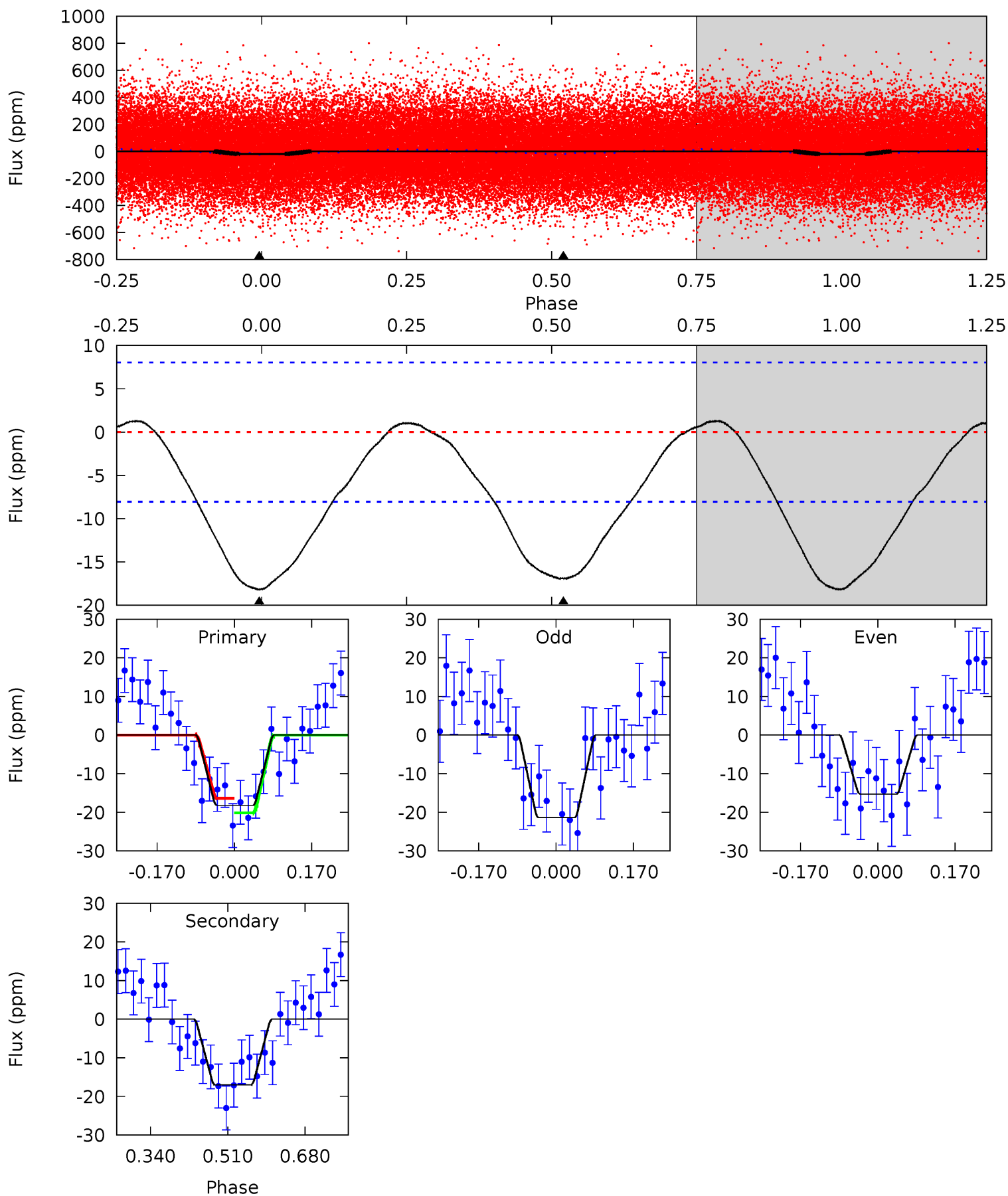
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.09	6.62	0	0	4.32	1.01	0.10	7.09	7.09	6.62	6.62	0.14	0.93	0.03	2.54



# Alt Model-Shift Uniqueness Test

006636041-02, P = 0.529775 Days, E = 131.274627 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
10.1	9.40	0	0	4.45	1.37	0.74	10.1	10.1	9.40	9.40	1.69	0.90	0.07	1.05





### Stellar Parameters For KIC 006636041

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$8144^{+198}_{-368}$	$4.139^{+0.112}_{-0.168}$	$0.070^{+0.250}_{-0.450}$	$1.914^{+0.454}_{-0.372}$	$1.841^{+0.205}_{-0.333}$	$0.370^{+0.226}_{-0.163}$
	+2%/-5%	+3%/-4%	+357%/-643%	+24%/-19%	+11%/-18%	+61%/-44%
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 006636041-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-7 \pm 1$	$0.63^{+0.36}_{-0.33}$	$5568^{+369}_{-367}$	$7093^{+4745}_{-1761}$	$2.173^{+7.341}_{-1.273}$
Alt.	$-17 \pm 2$	$0.99^{+0.40}_{-0.39}$	$5553^{+350}_{-325}$	$7171^{+3006}_{-1364}$	$2.268^{+4.006}_{-1.110}$

$T_{max}$  = 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

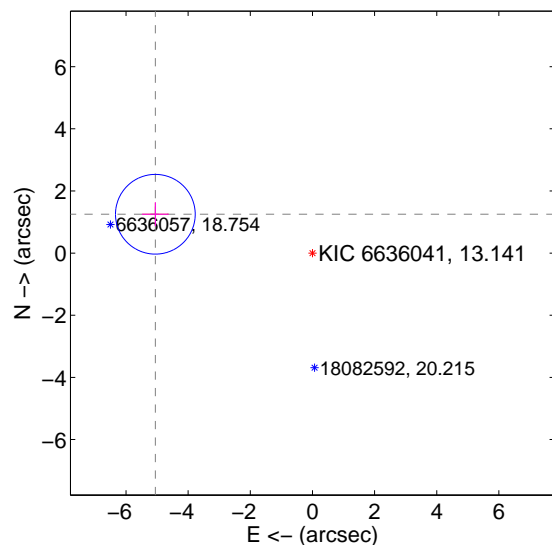
Supplemental centroid analysis for 006636041-02. Kepler magnitude: 13.14. Transit SNR 6.71

There are 0 quarters with good PRF difference image offsets

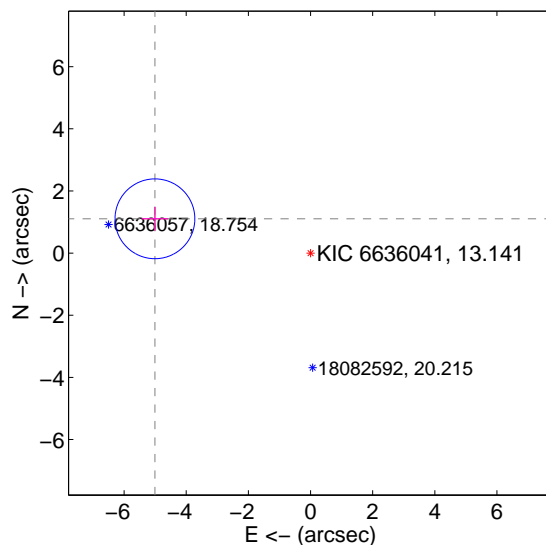
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$5.207 \pm 0.428$	12.18	$5.055 \pm 0.430$	$1.250 \pm 0.384$
PRF-fit source offset from KIC position	$5.127 \pm 0.428$	11.98	$5.007 \pm 0.430$	$1.104 \pm 0.384$
photometric centroid source offset	$0.73 \pm 1.84$	0.39	$0.03 \pm 2.18$	$0.73 \pm 1.84$

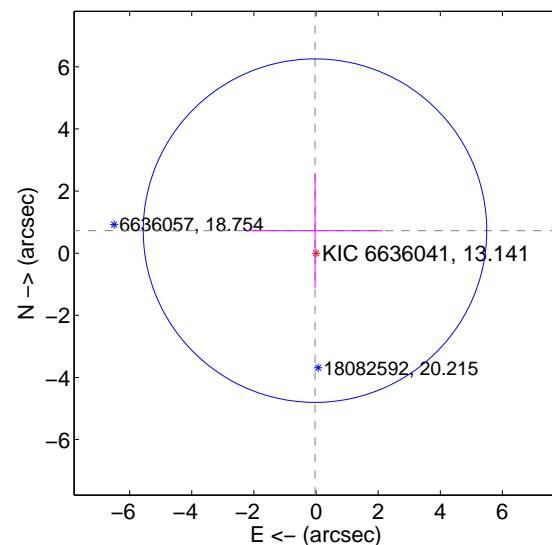
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

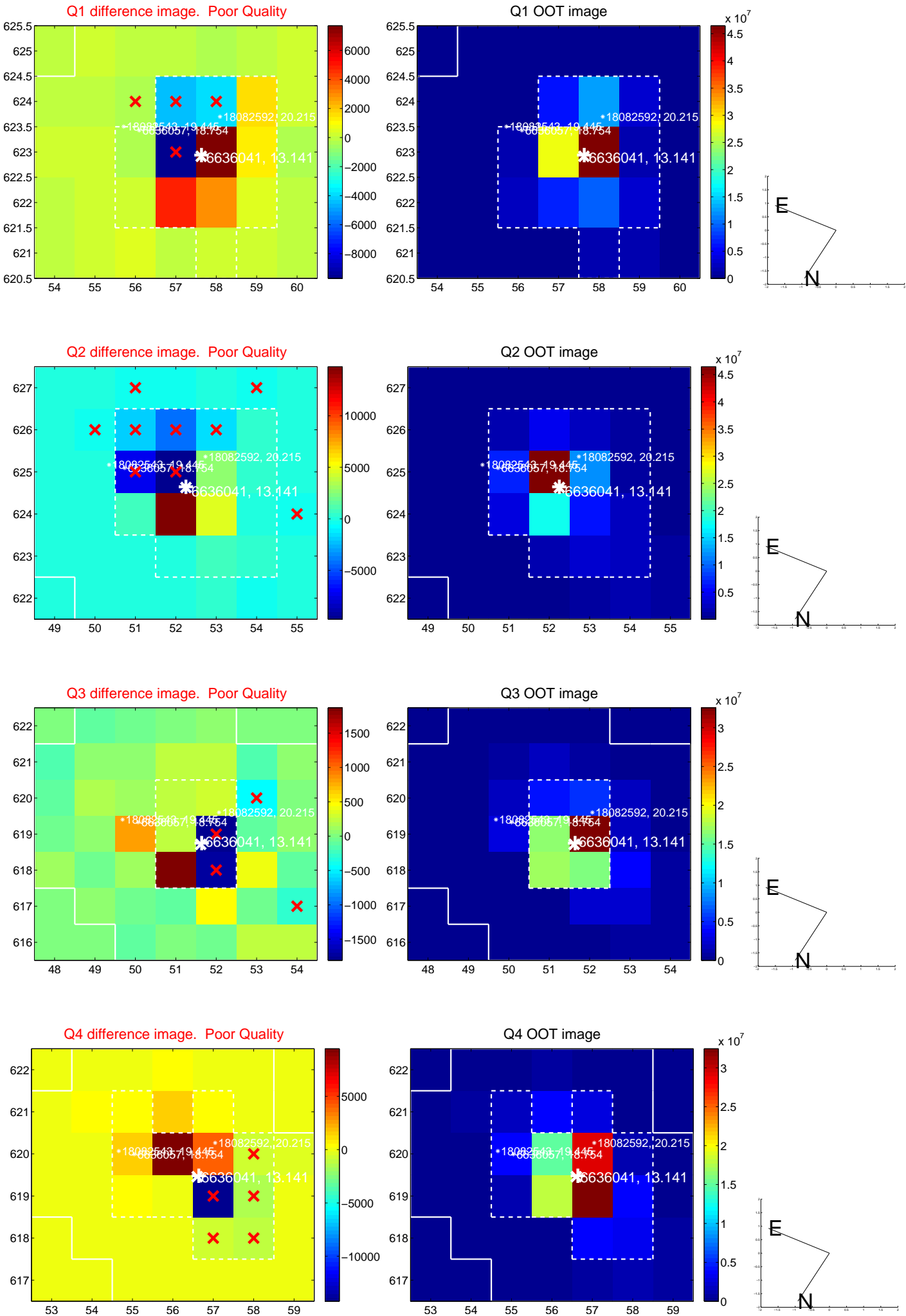


offset from photometric centroids



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.

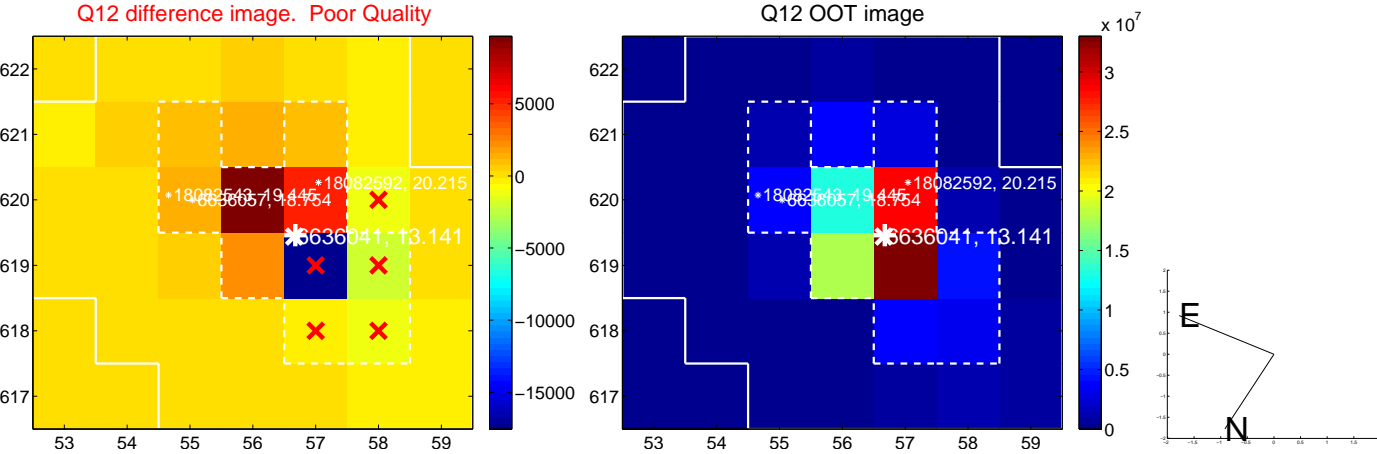
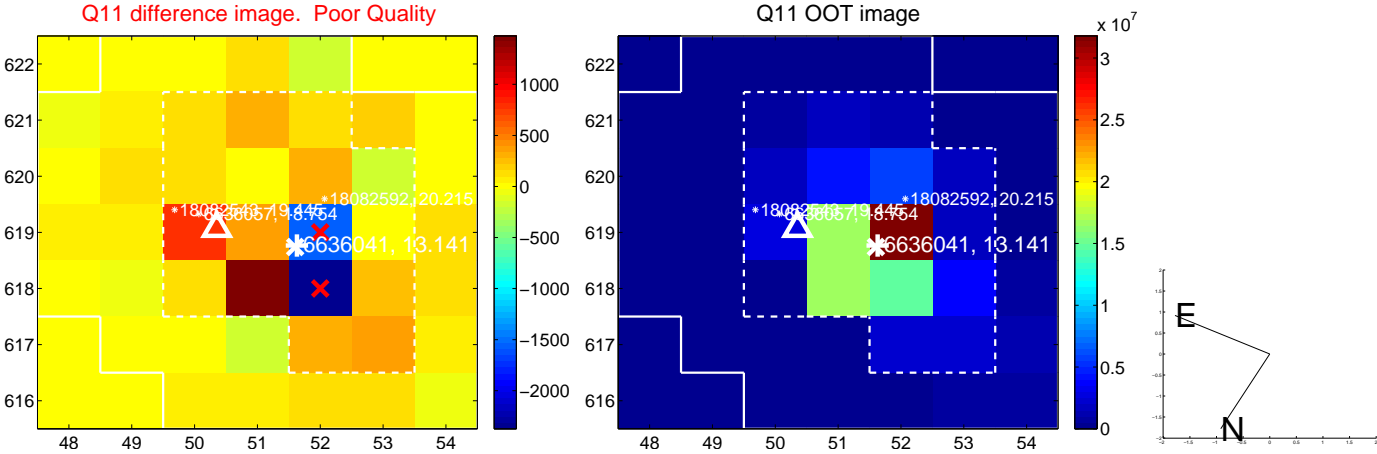
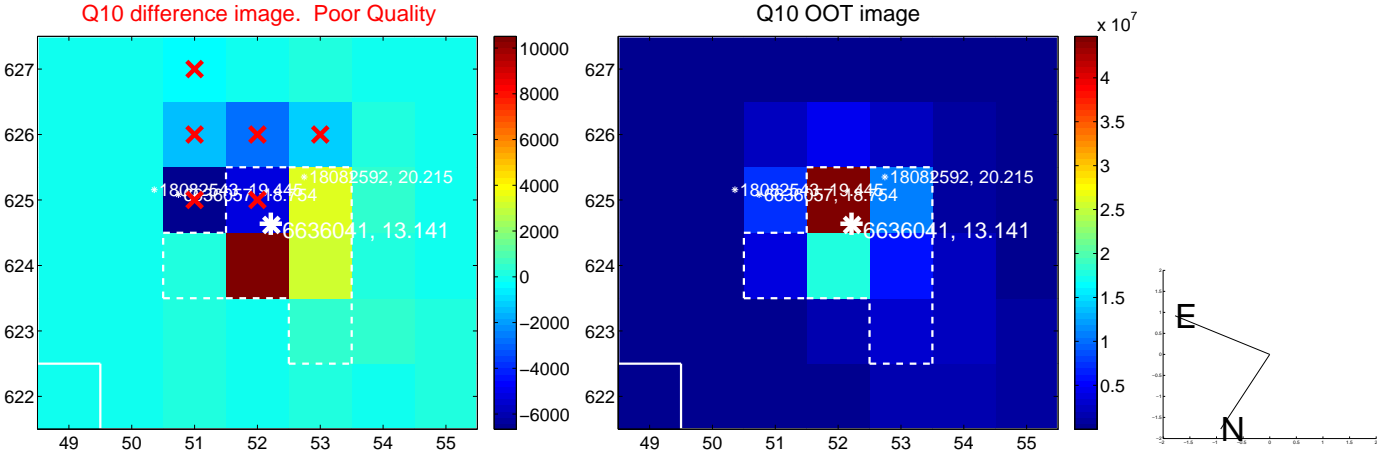
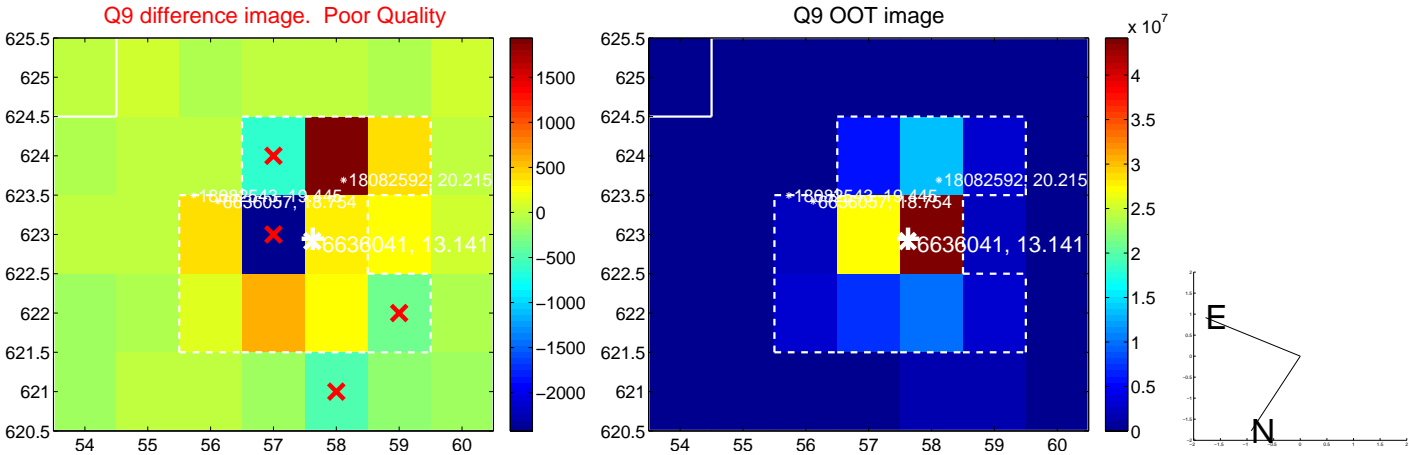
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



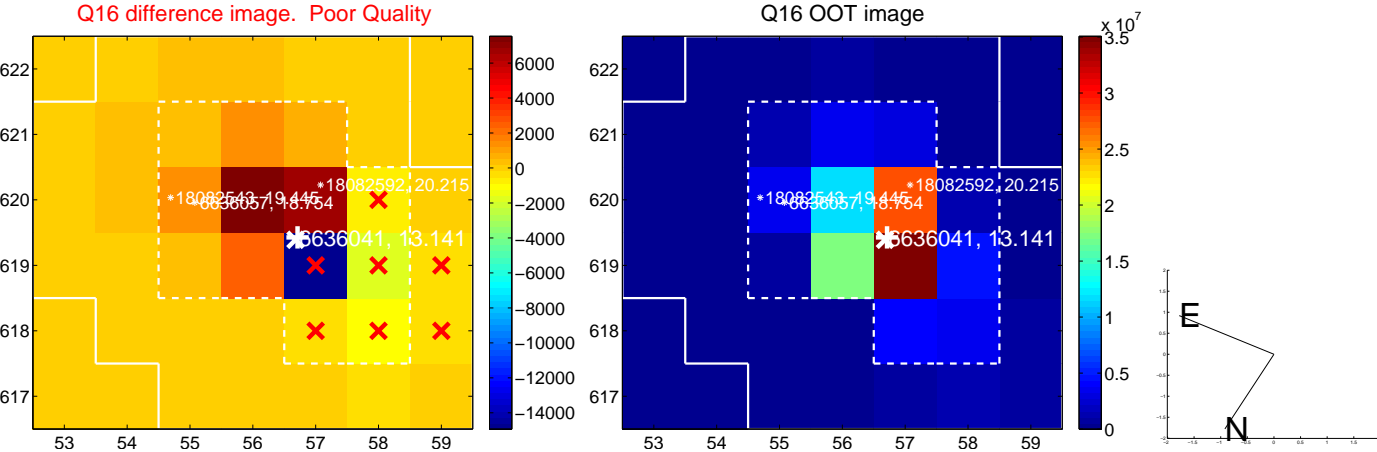
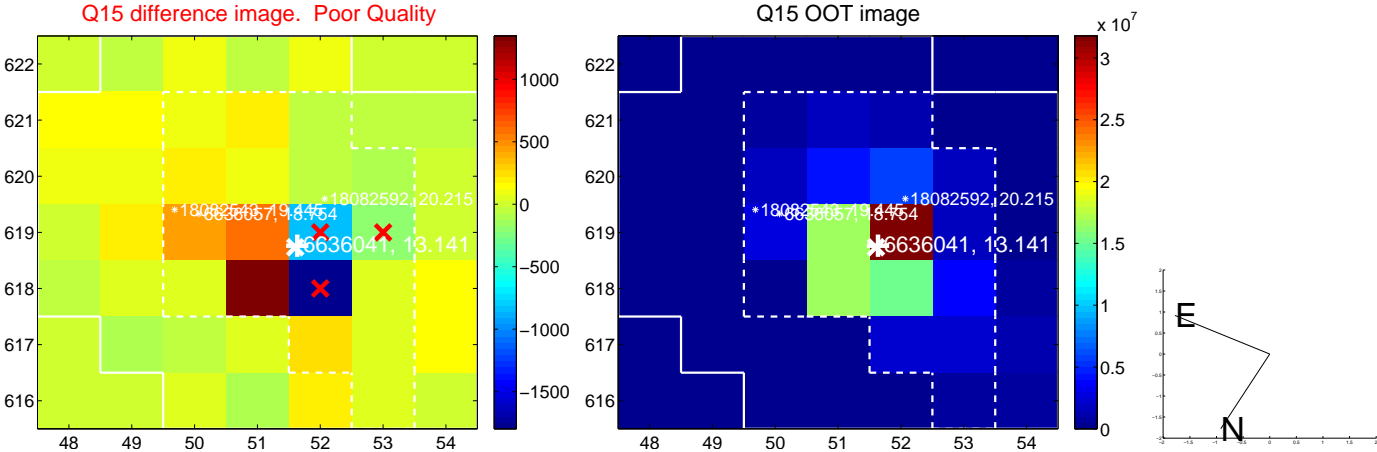
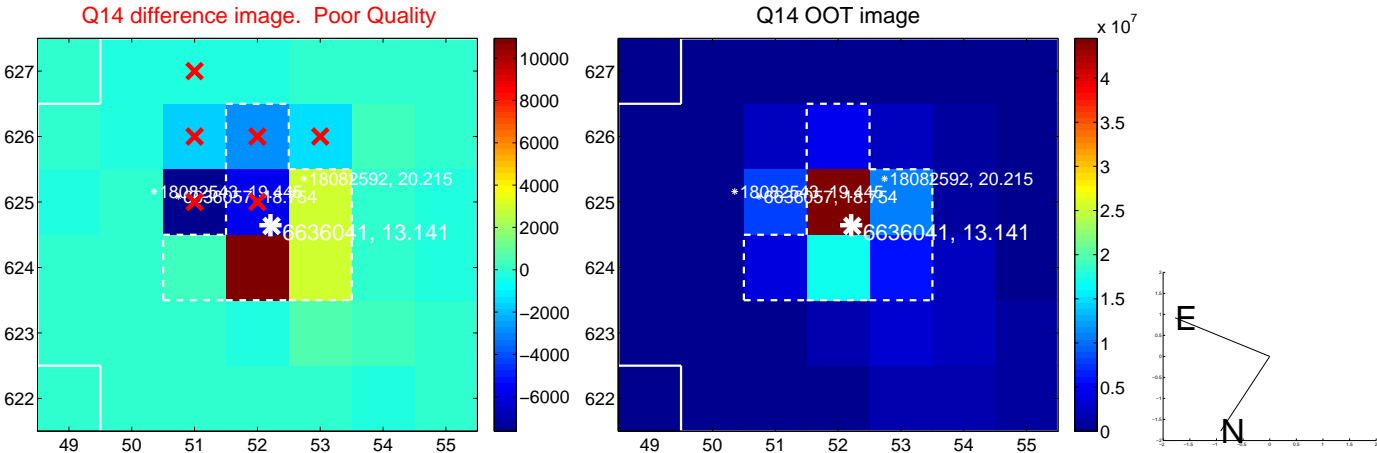
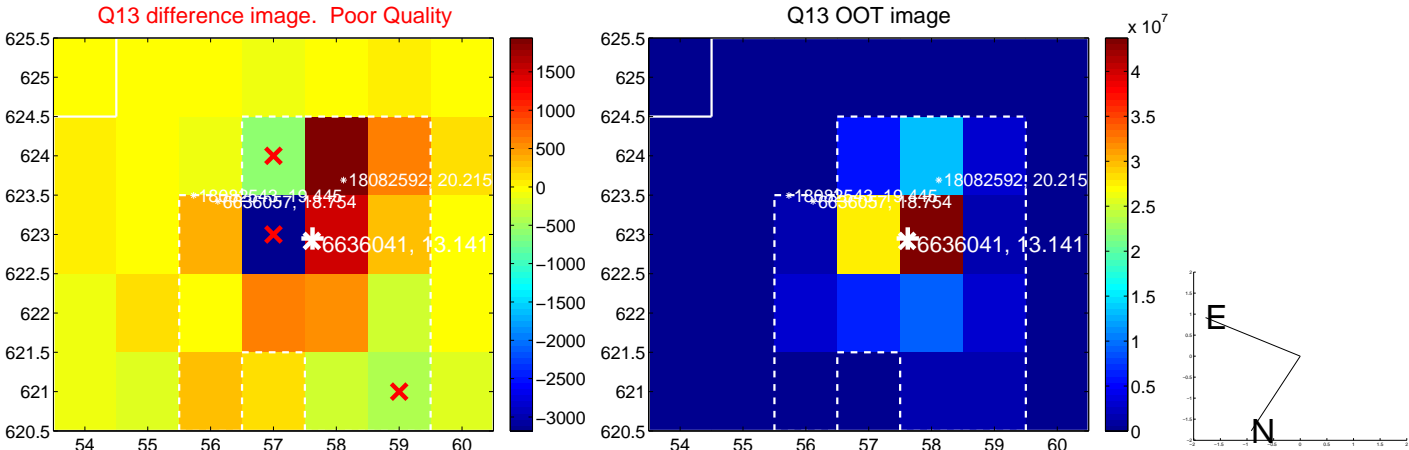




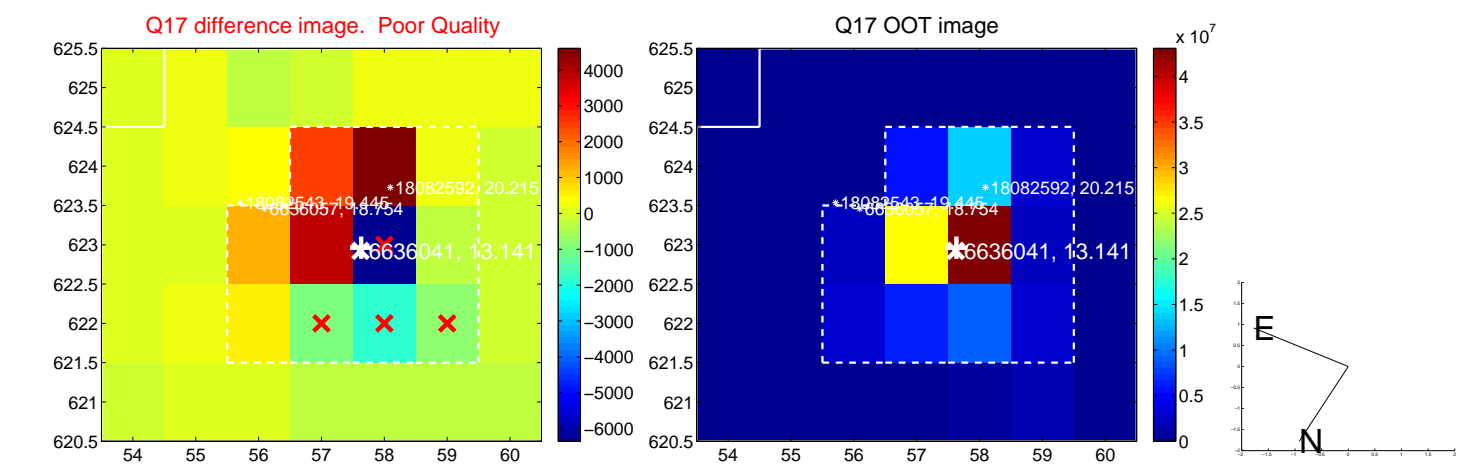
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



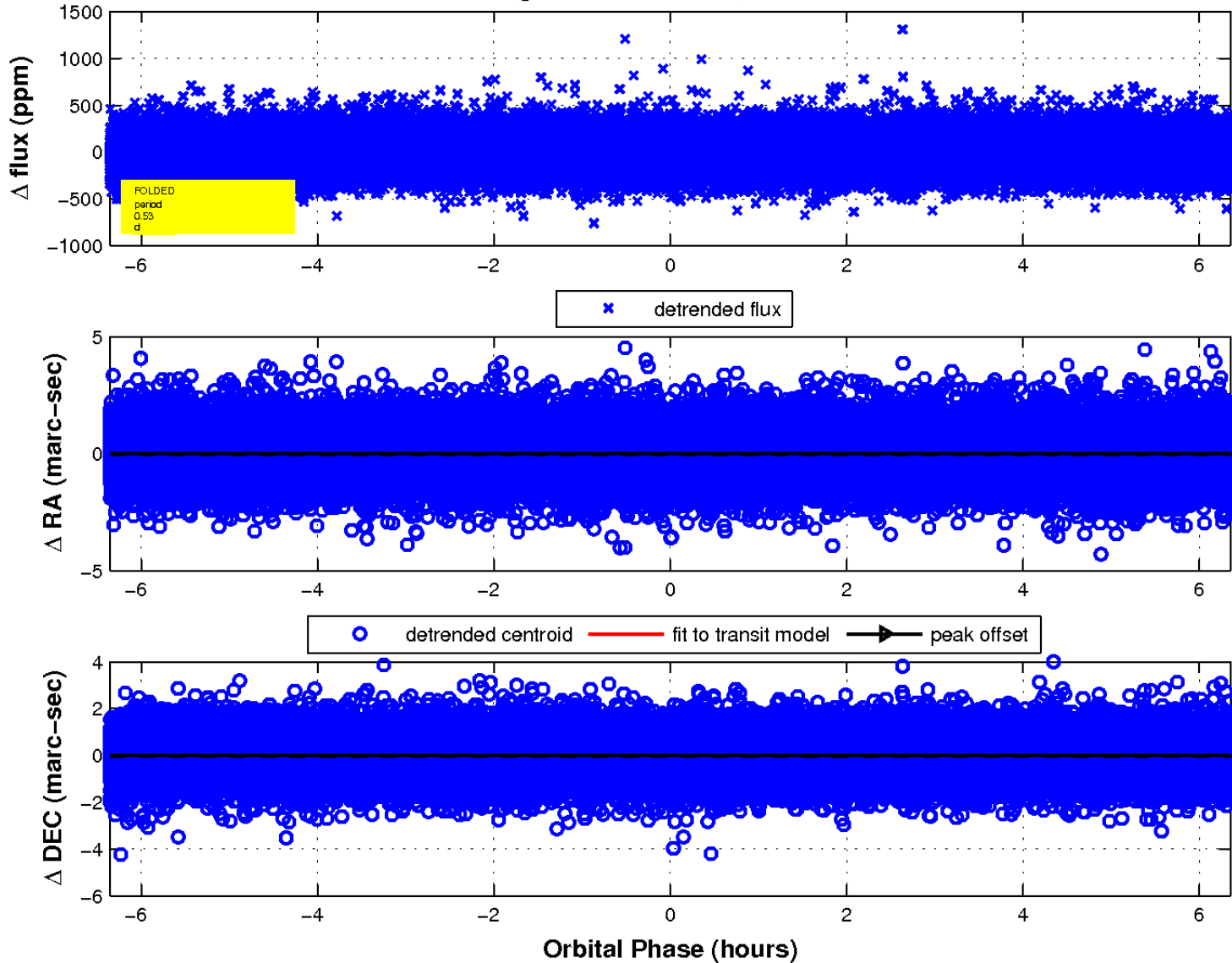
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

