

# KIC 005879641

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005879641-01	OBS	No	1.270513	132.564587	75.5	4.009	9.8	8.9	1.71	7174	1.88	10306.65
005879641-02	OBS	No	1.270249	132.233812	1.9	13.763	7.8	0.1	1.71	7174	0.24	10309.50

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005879641-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
005879641-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—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.

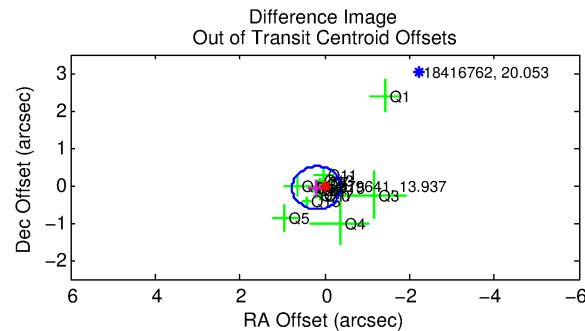
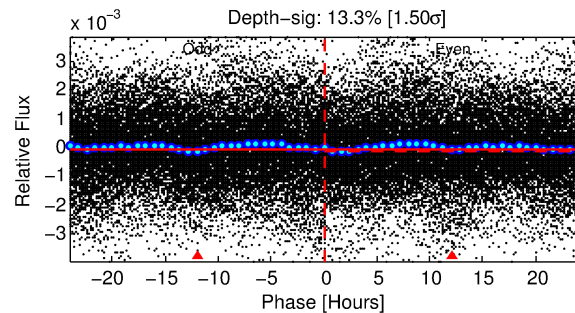
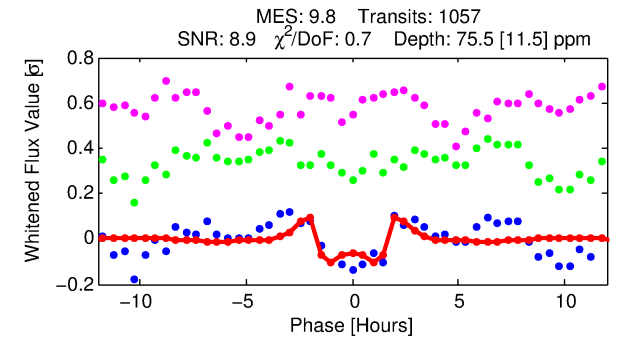
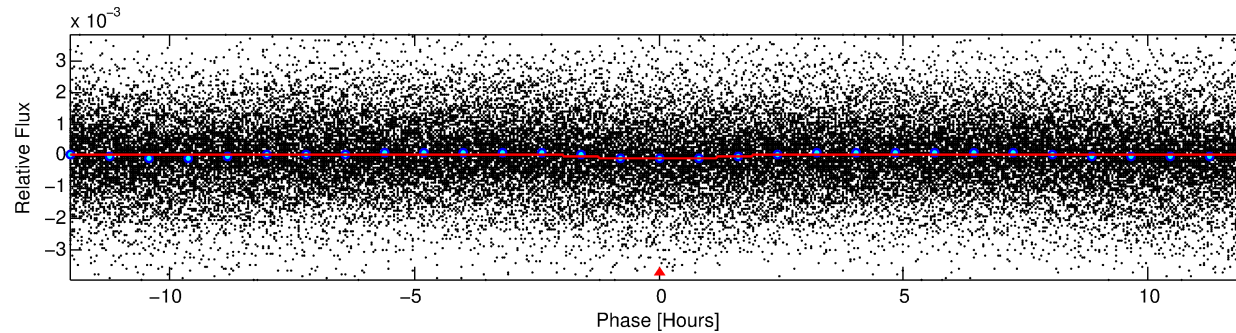
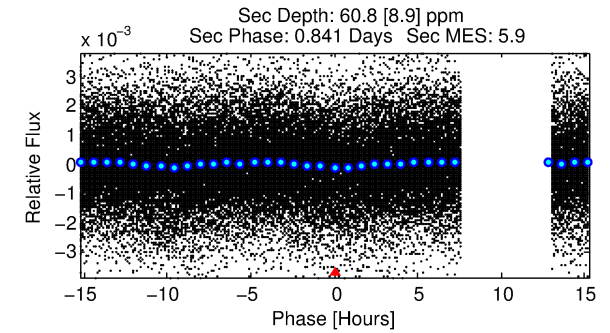
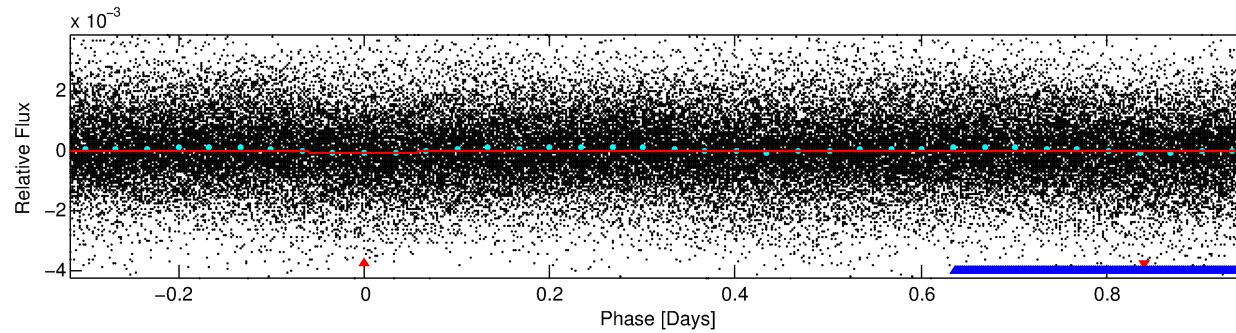
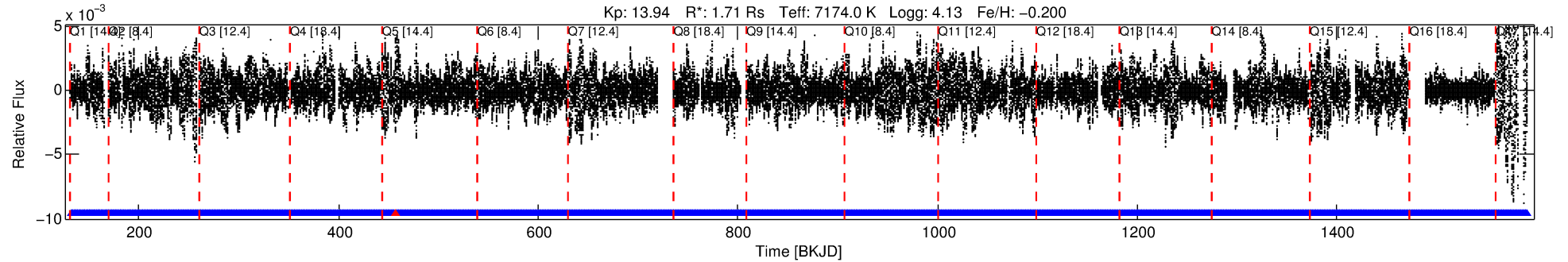
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005879641-01

No Significant Match Found

# DV One-Page Summary

KIC: 5879641 Candidate: 1 of 2 Period: 1.271 d



## DV Fit Results:

Period = 1.27051 [0.00001] d  
Epoch = 132.5646 [0.0021] BKJD  
Rp/R\* = 0.0101 [0.0009]  
a/R\* = 1.19 [0.07]  
b = 0.97 [0.01]  
Seff = 10306.65 [4137.58]  
Teq = 2569 [258] K  
Rp = 1.88 [0.60] Re  
a = 0.0259 [0.0065] AU  
Ag = 6.32 [2.69] [1.98σ]  
Teffp = 6299 [459] K [7.09σ]

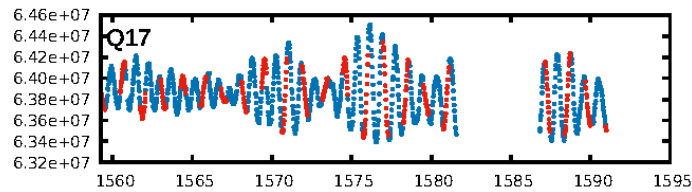
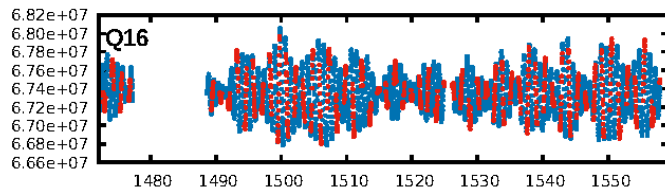
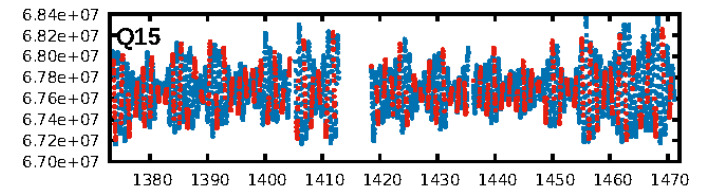
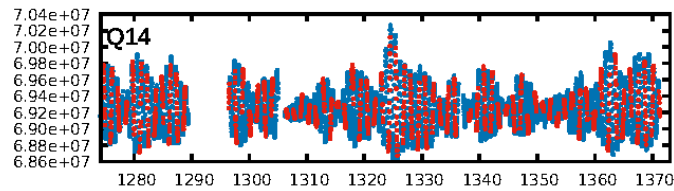
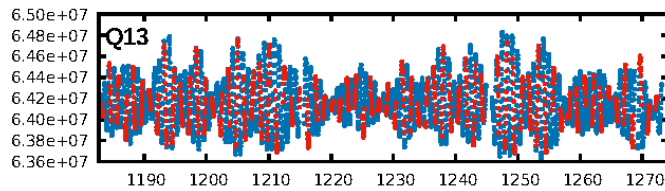
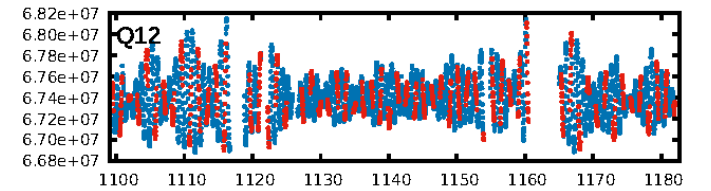
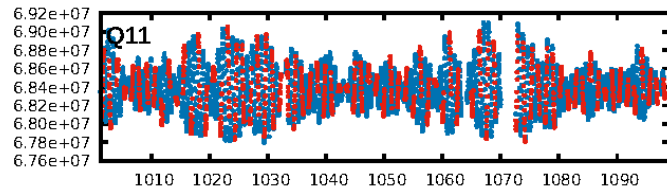
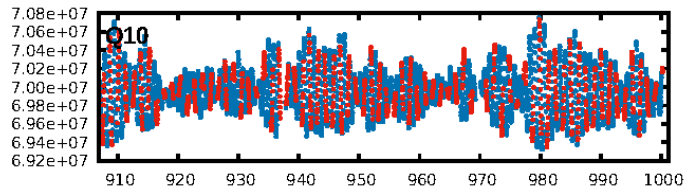
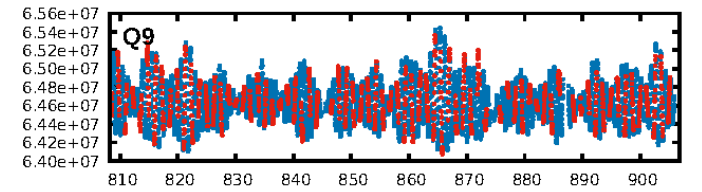
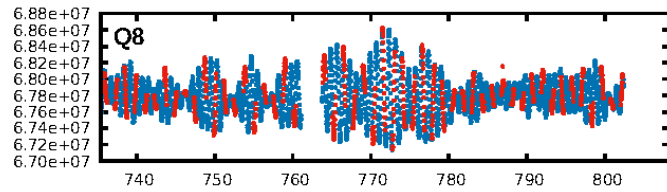
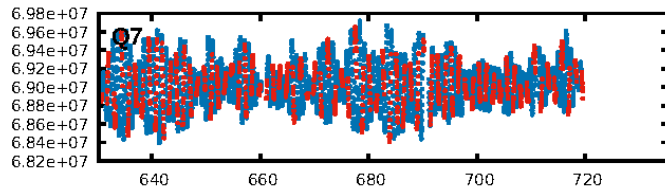
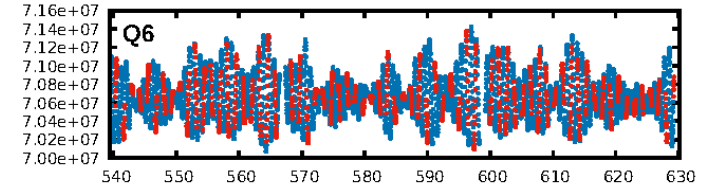
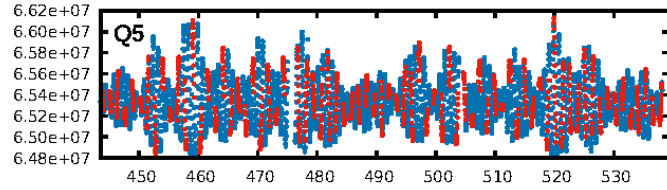
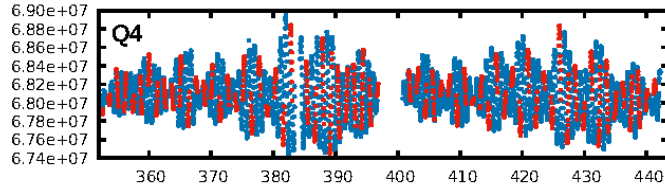
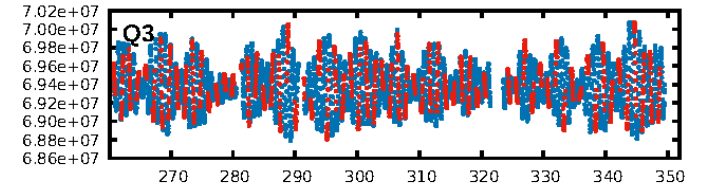
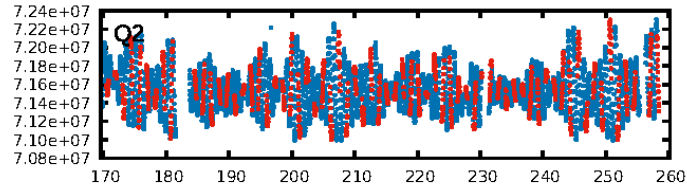
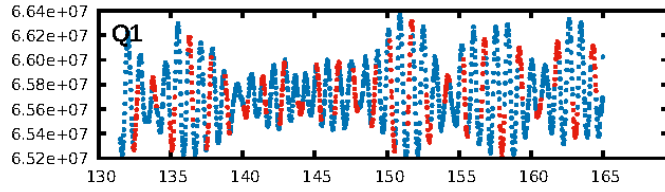
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGoF-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1009/1010]  
GhostDiagnostic-chr: 1.39  
Centroid-sig: 60.6%  
Centroid-so: 0.157 arcsec [0.35σ]  
OotOffset-rm: 0.205 arcsec [1.07σ]  
KicOffset-rm: 0.297 arcsec [1.41σ]  
OotOffset-st: 3/4/4/5 [16]  
KicOffset-st: 3/4/4/5 [16]  
DiffImageQuality-fgm: 0.88 [14/16]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:52:40 Z

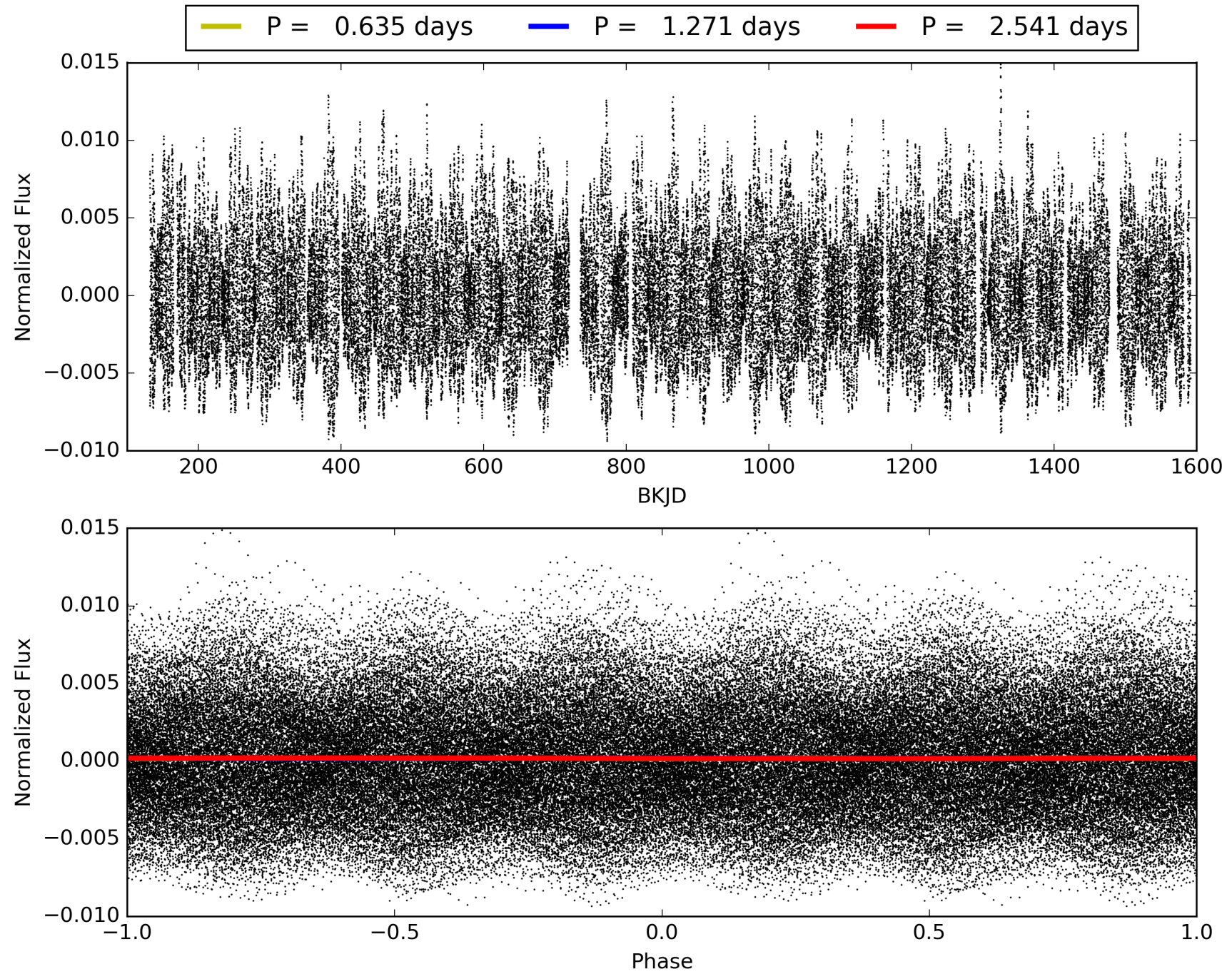
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 005879641-01, PDC Light Curves



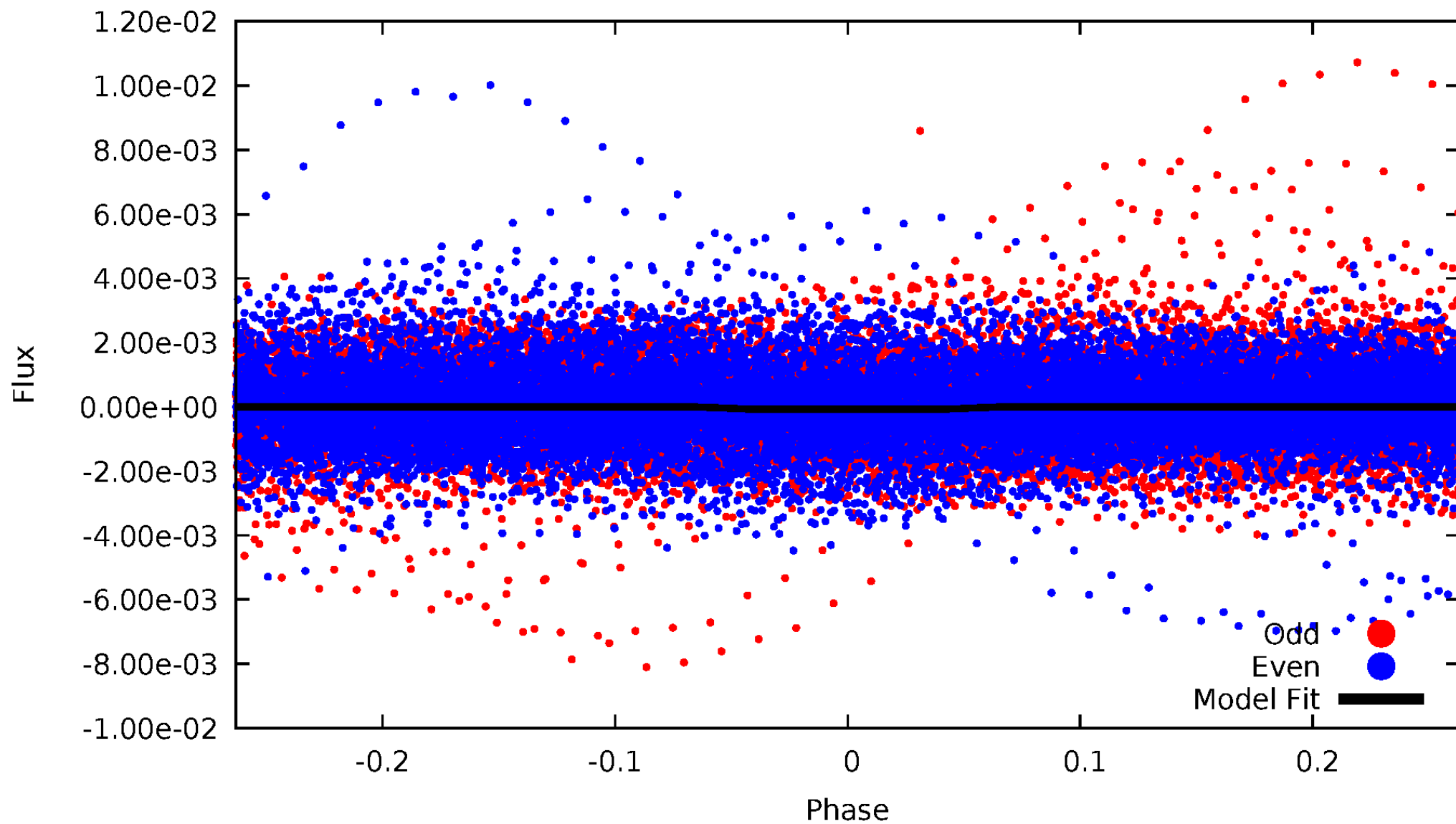


TCE 005879641-01



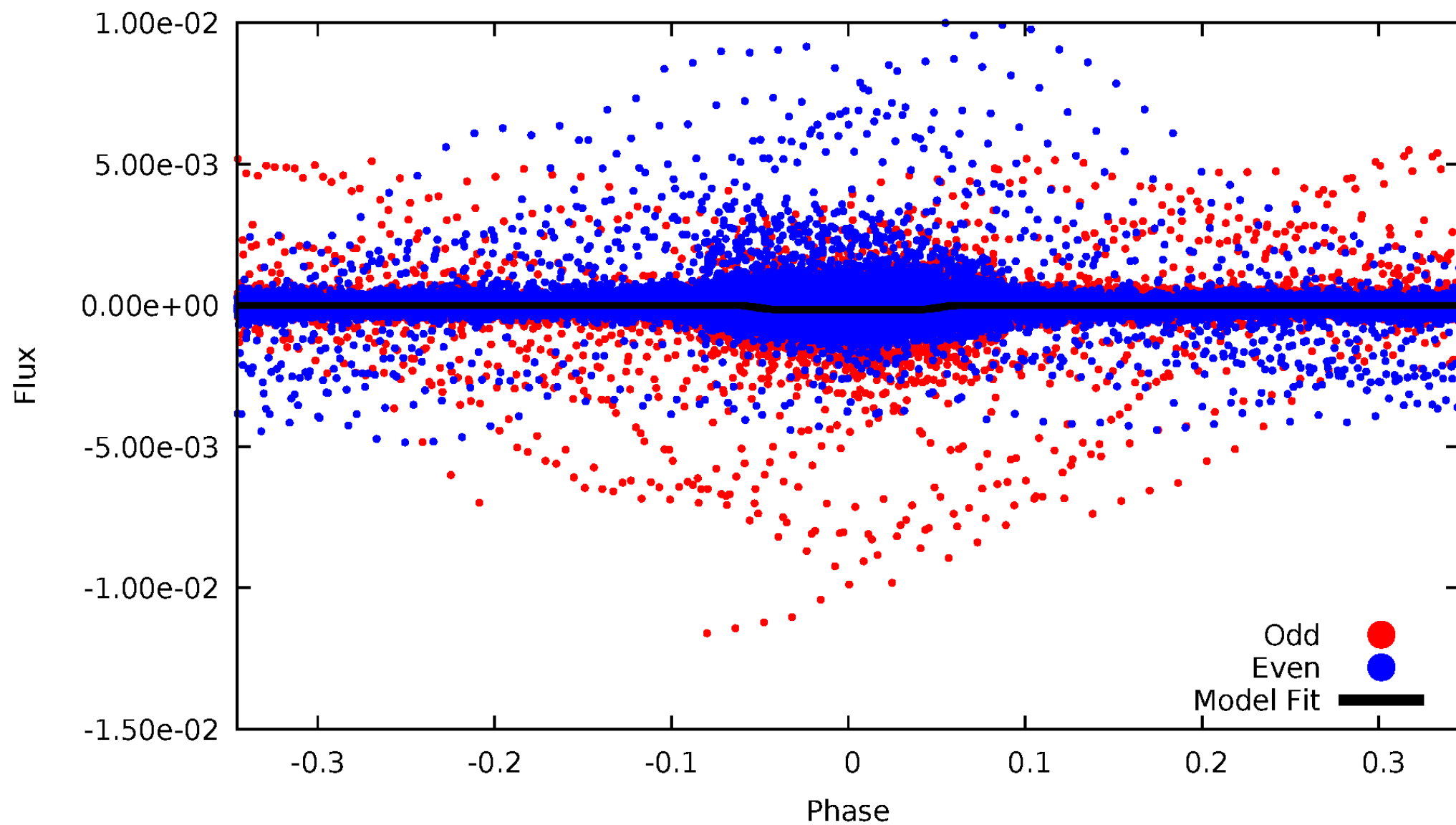
# DV Odd/Even

TCE 005879641-01

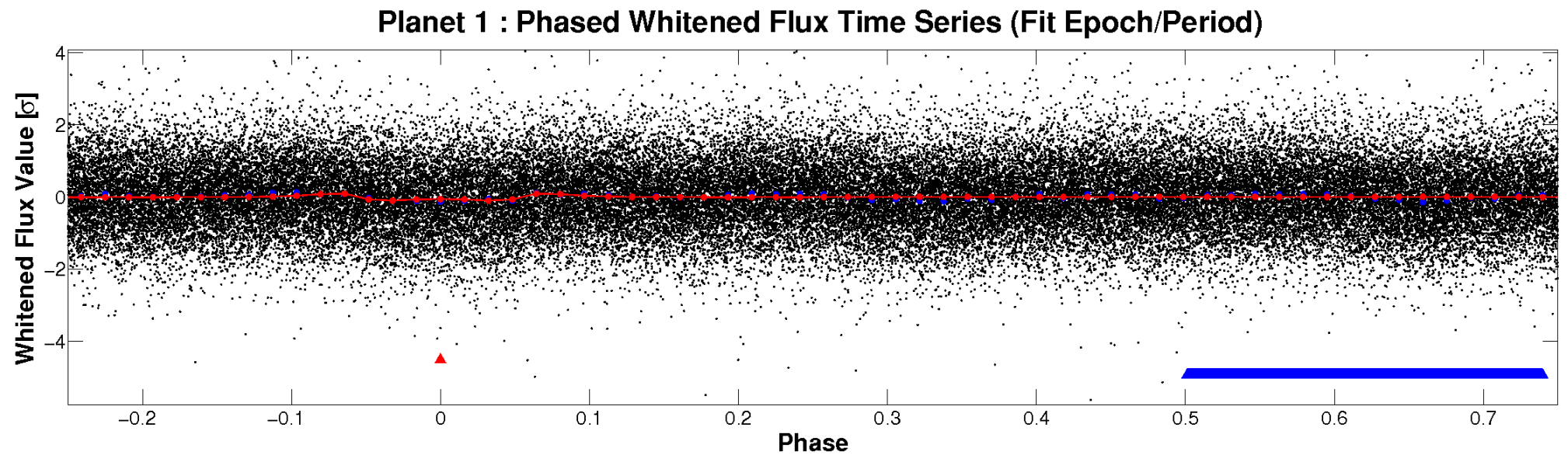
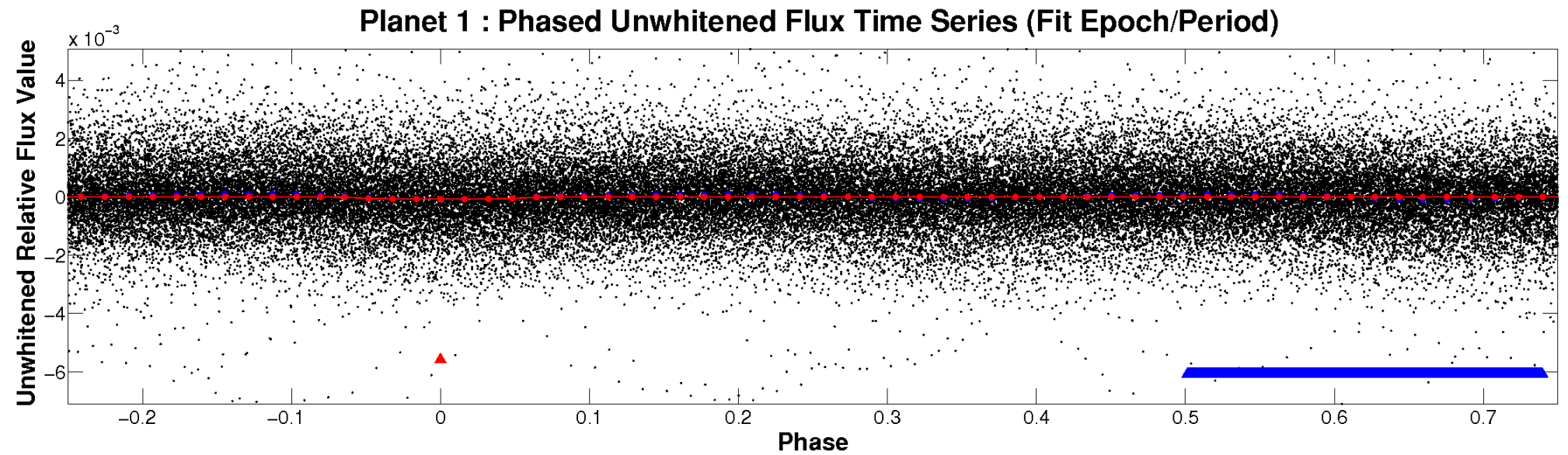


# ALT Odd/Even

TCE 005879641-01



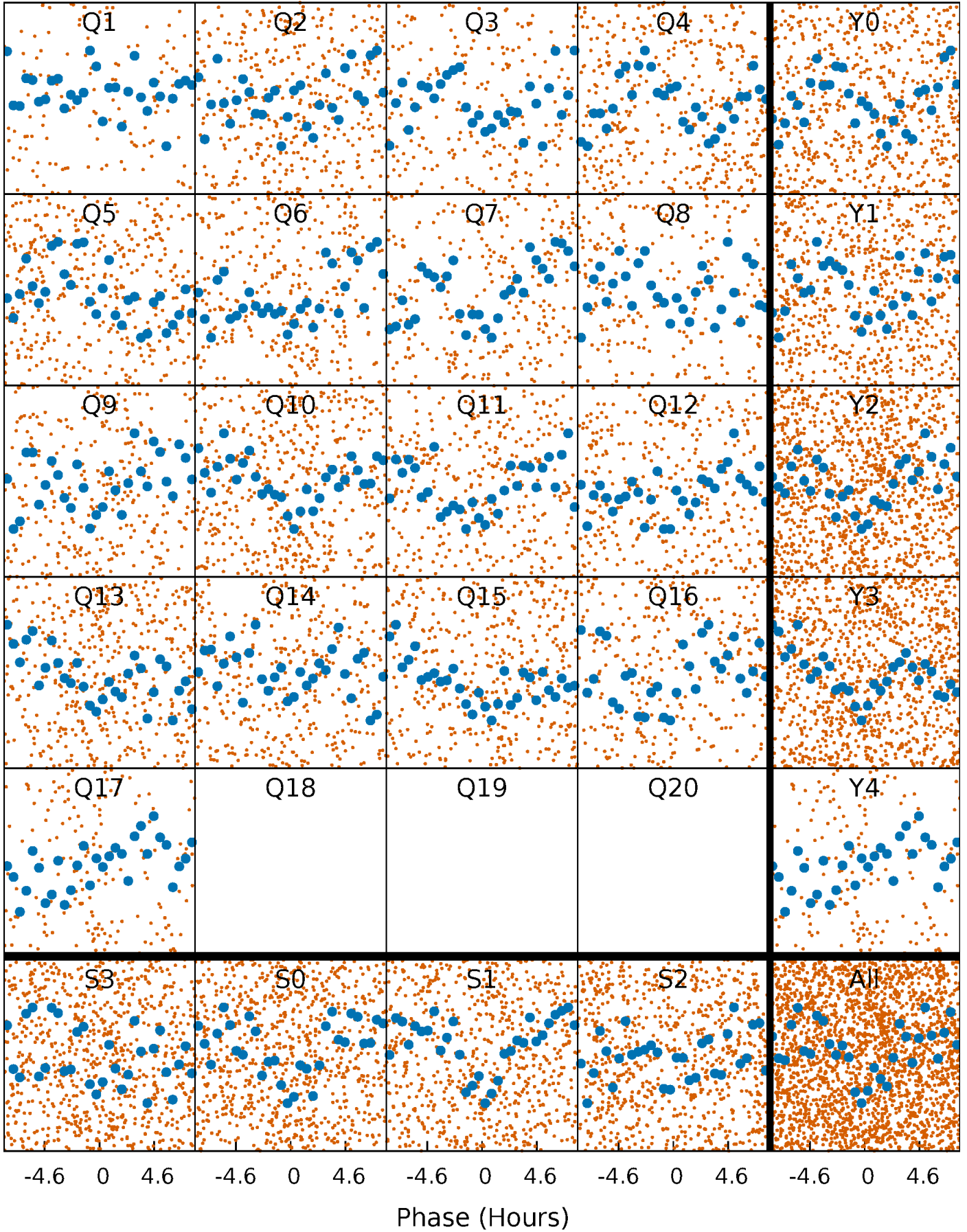
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

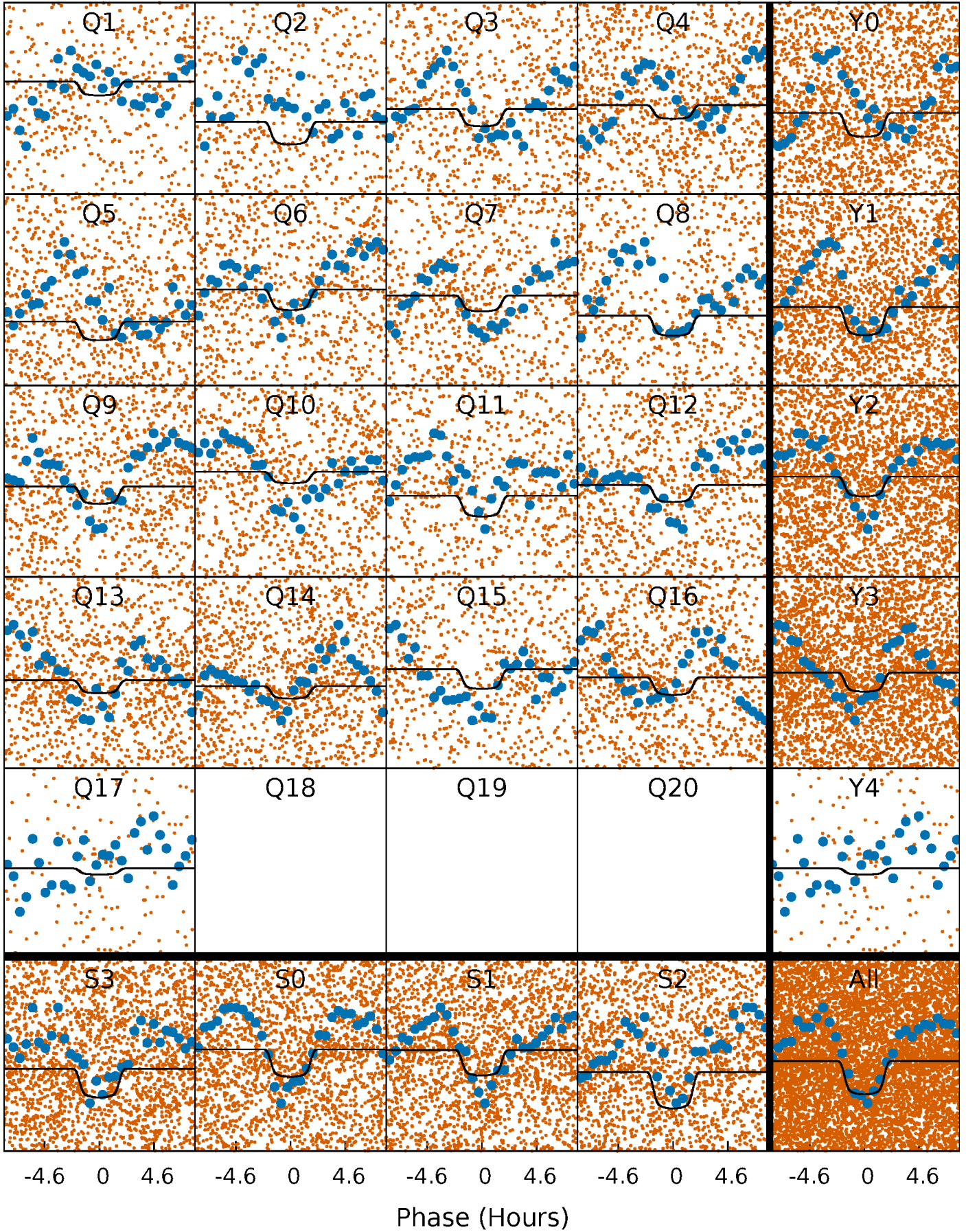
TCE 005879641-01 P= 1.270513 Days  $T_0=132.564587$  (BKJD)





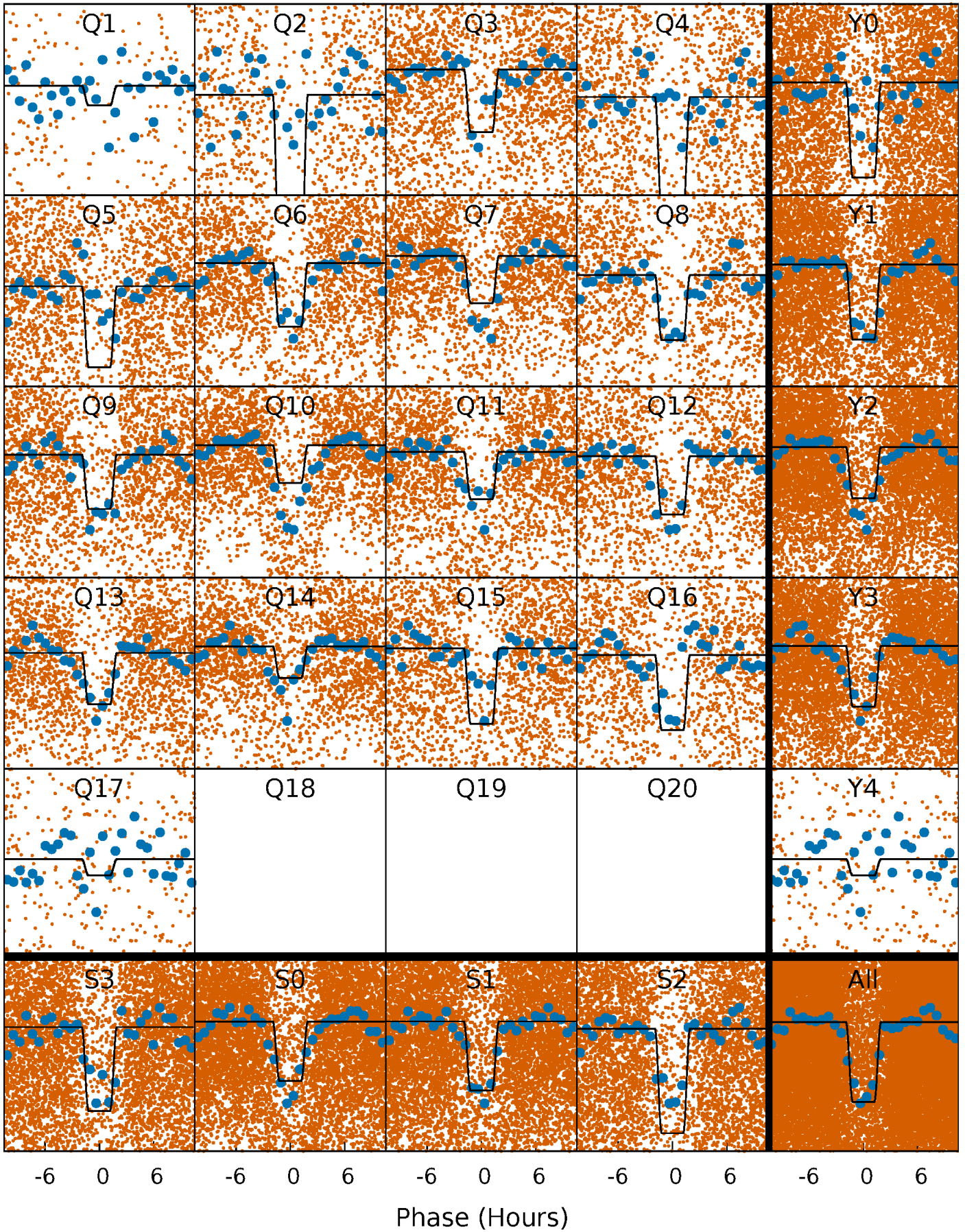
# DV Quarter-Phased Transit Curves

TCE 005879641-01 P= 1.270513 Days  $T_0=132.564587$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 005879641-01 P= 1.270533 Days  $T_0=132.553370$  (BKJD)

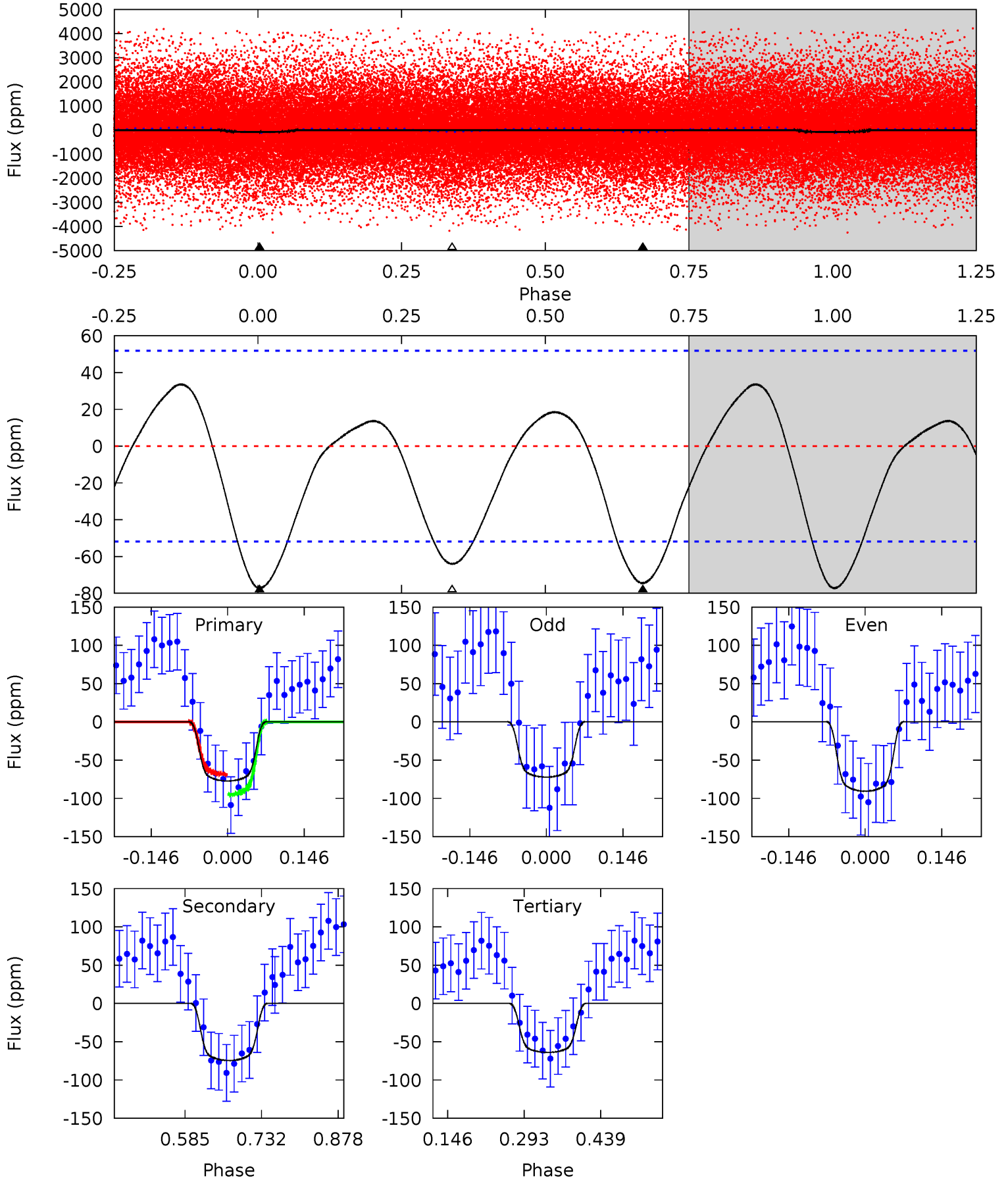




# DV Model-Shift Uniqueness Test

005879641-01, P = 1.270513 Days, E = 131.294074 Days

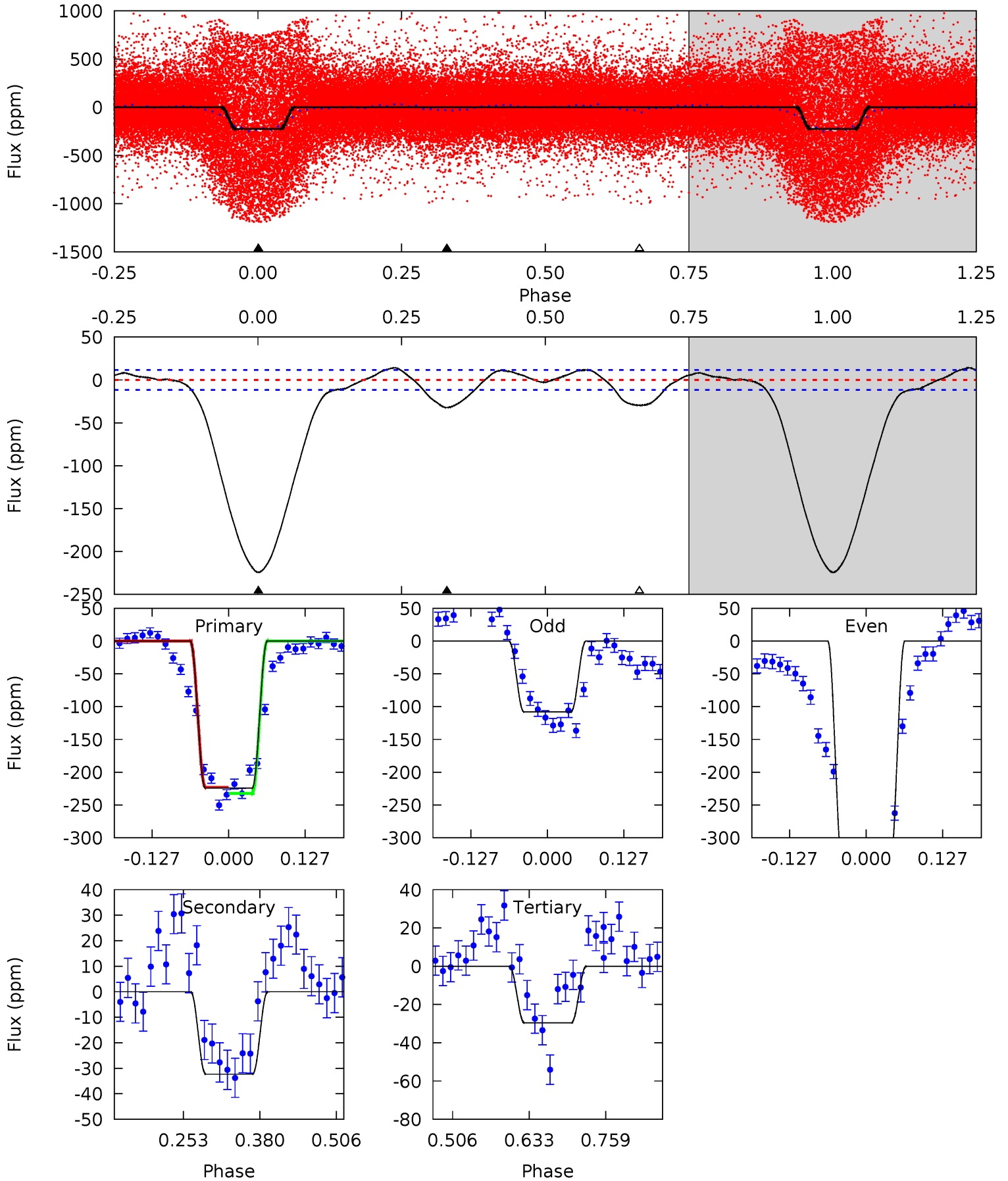
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.68	6.44	5.53	0	4.48	1.45	2.58	1.14	6.68	0.91	6.44	0.79	0.96	0.30	1.13



# Alt Model-Shift Uniqueness Test

005879641-01, P = 1.270533 Days, E = 131.282837 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
87.5	12.6	11.6	0	4.52	1.53	4.39	76.0	87.5	1.05	12.6	46.6	0.66	0.06	1.81





### Stellar Parameters For KIC 005879641

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7174^{+199}_{-324}$	$4.130^{+0.157}_{-0.192}$	$-0.200^{+0.250}_{-0.350}$	$1.705^{+0.522}_{-0.380}$	$1.430^{+0.218}_{-0.243}$	$0.406^{+0.334}_{-0.211}$
	+3%/-5%	+4%/-5%	+125%/-175%	+31%/-22%	+15%/-17%	+82%/-52%
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 005879641-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-74 \pm 12$	$1.89^{+0.36}_{-0.29}$	$3580^{+274}_{-267}$	$6441^{+534}_{-472}$	$7.593^{+3.136}_{-2.370}$
Alt.	$-32 \pm 3$	$2.33^{+0.43}_{-0.31}$	$3589^{+279}_{-244}$	$4716^{+225}_{-225}$	$2.149^{+0.707}_{-0.599}$

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

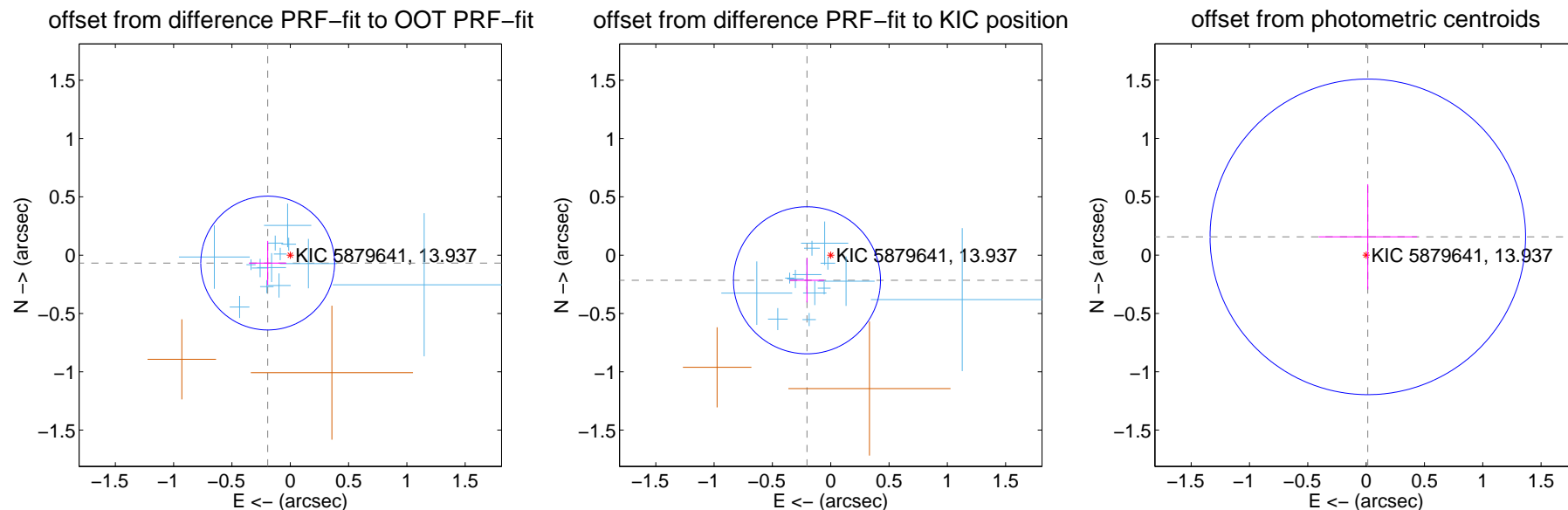
## DV Centroid Data

Supplemental centroid analysis for 005879641-01. Kepler magnitude: 13.94. Transit SNR 8.91

There are 14 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

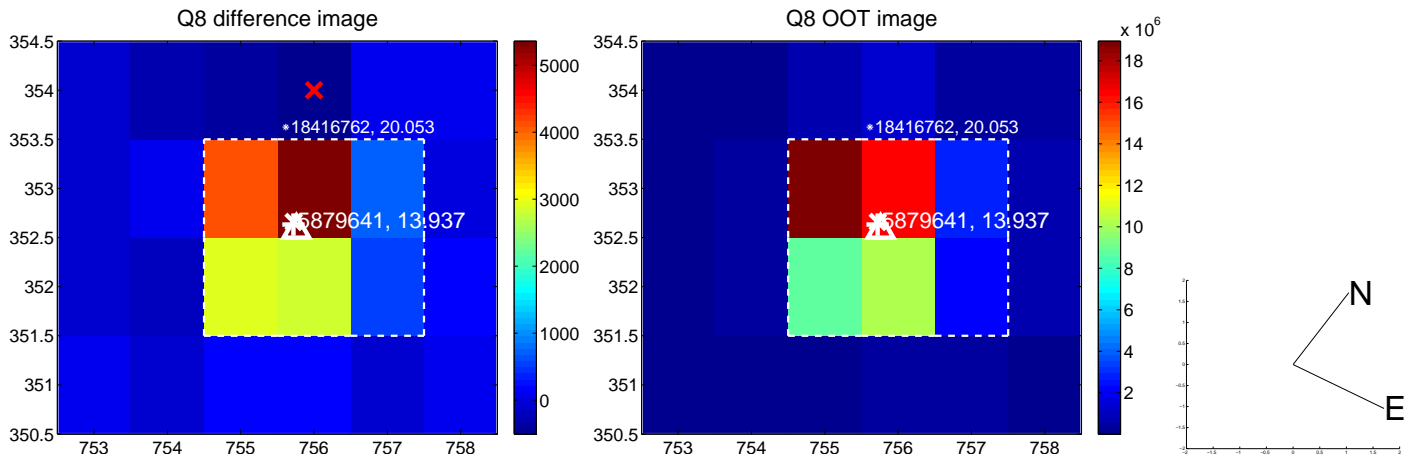
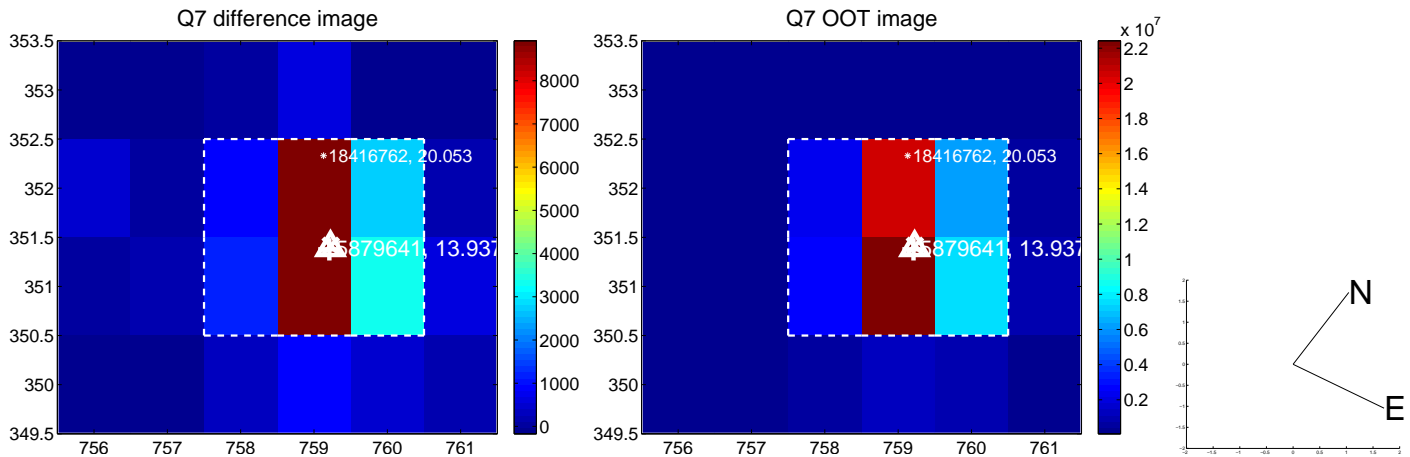
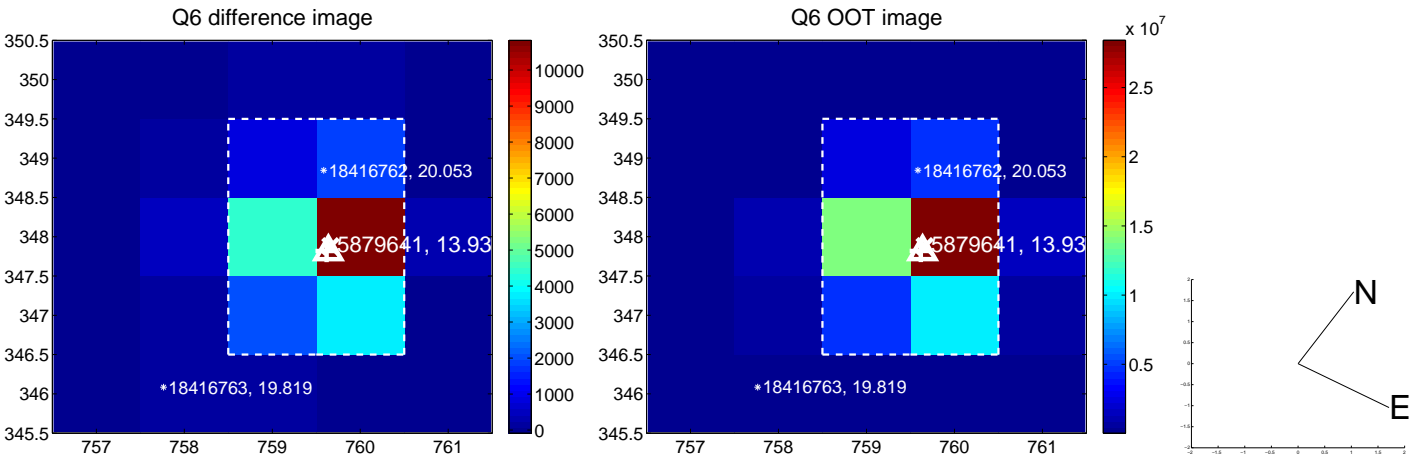
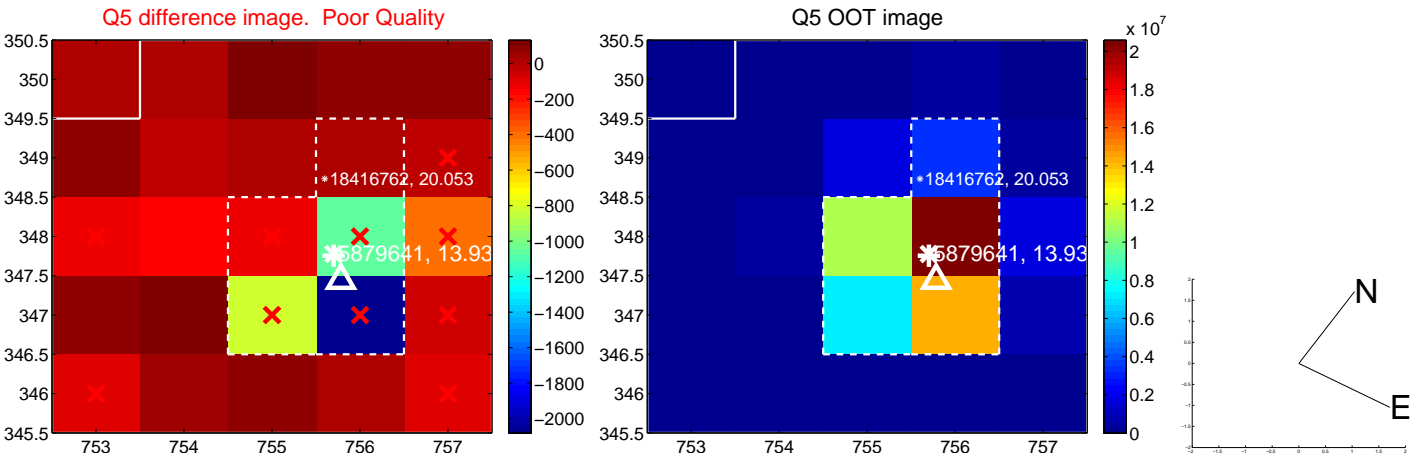
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.205 \pm 0.191$	1.07	$0.194 \pm 0.161$	$-0.068 \pm 0.190$
PRF-fit source offset from KIC position	$0.297 \pm 0.210$	1.41	$0.204 \pm 0.148$	$-0.216 \pm 0.189$
photometric centroid source offset	$0.16 \pm 0.45$	0.35	$-0.01 \pm 0.42$	$0.16 \pm 0.45$



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.

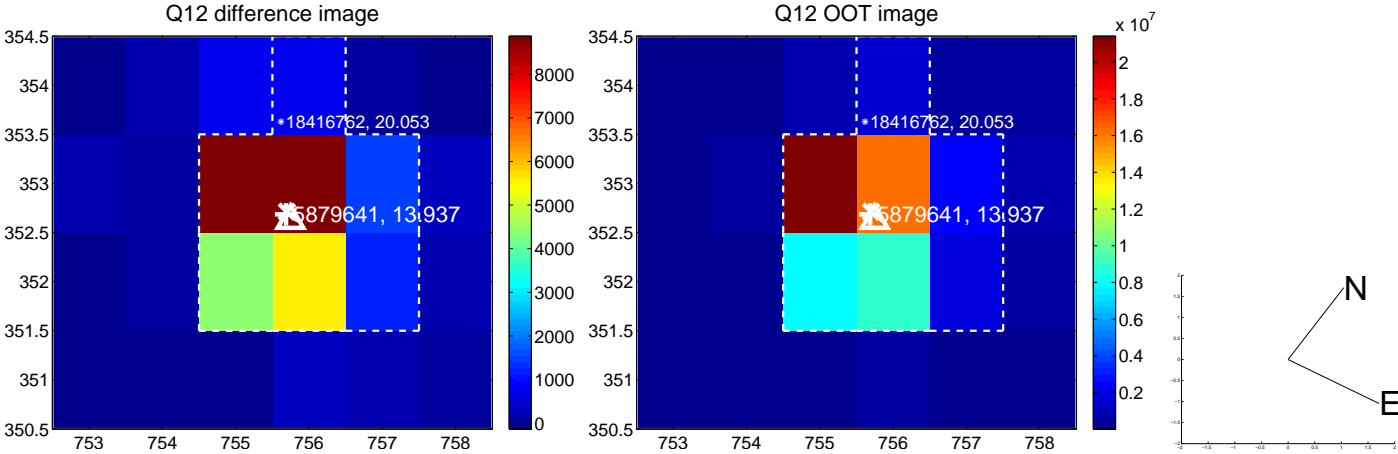
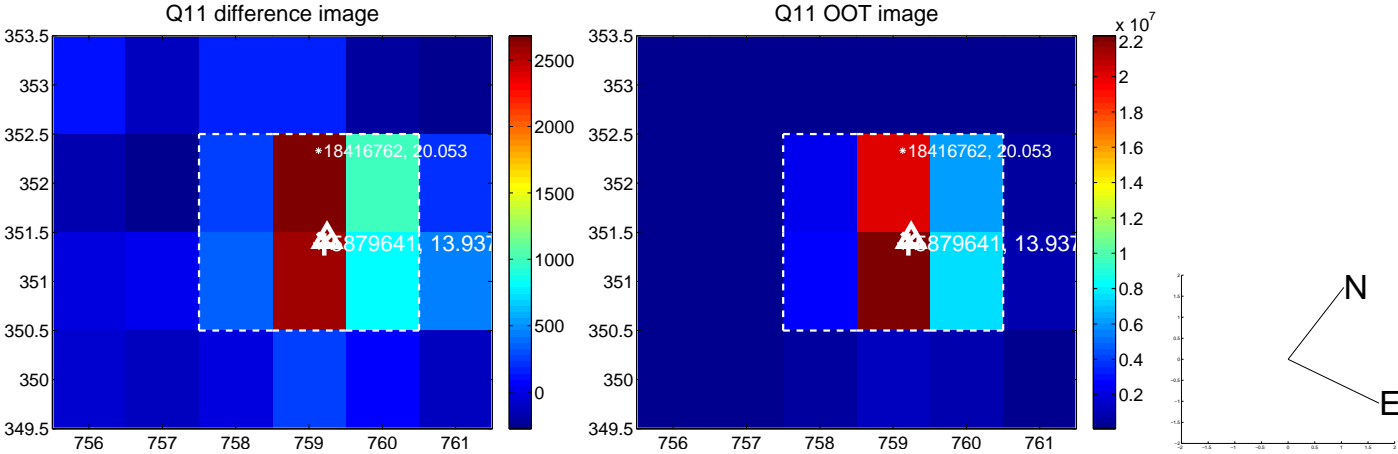
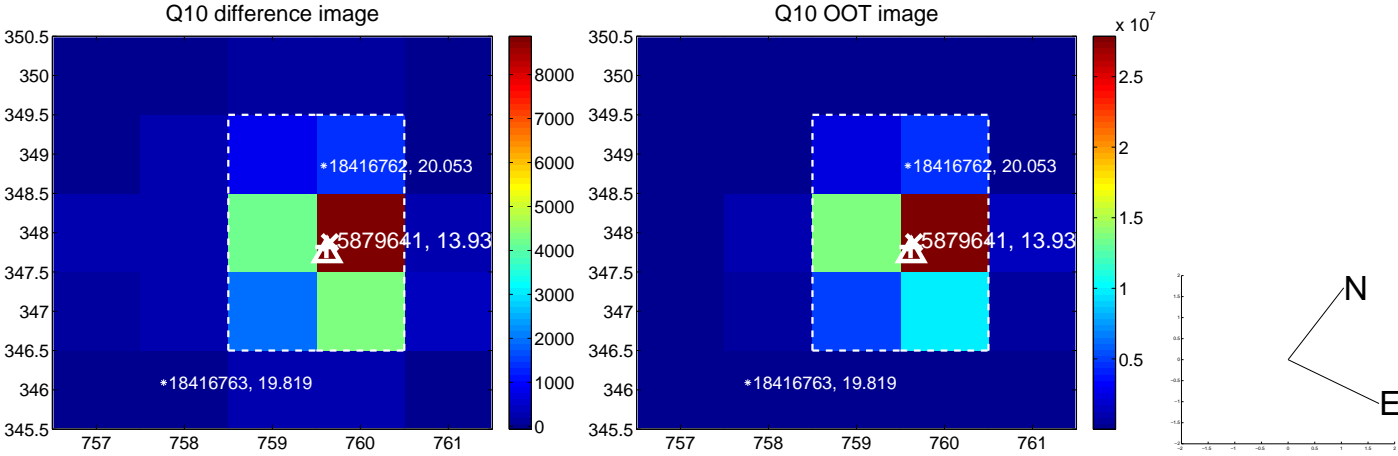
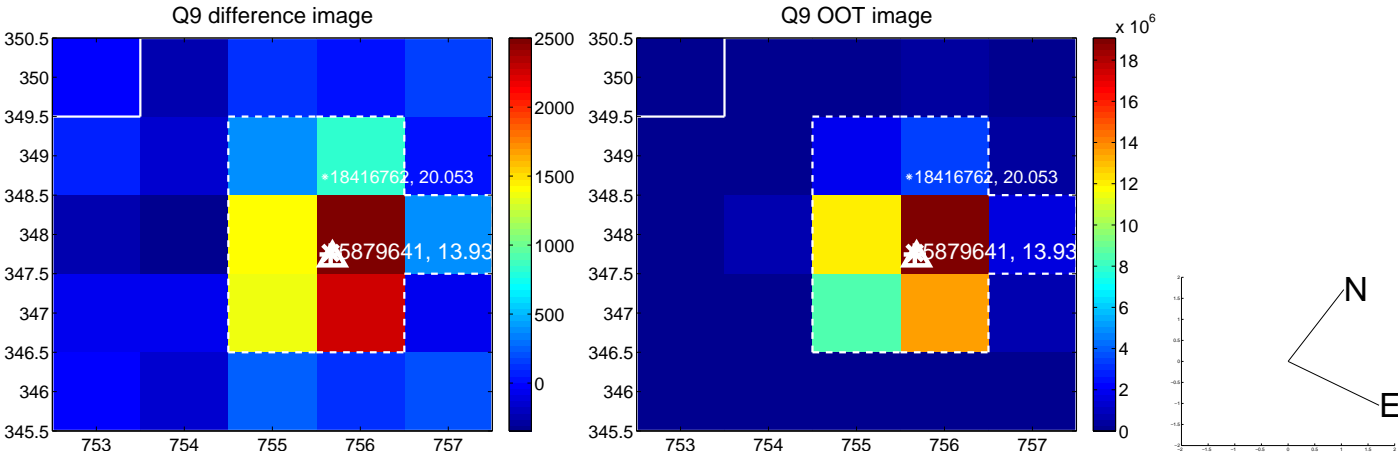


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

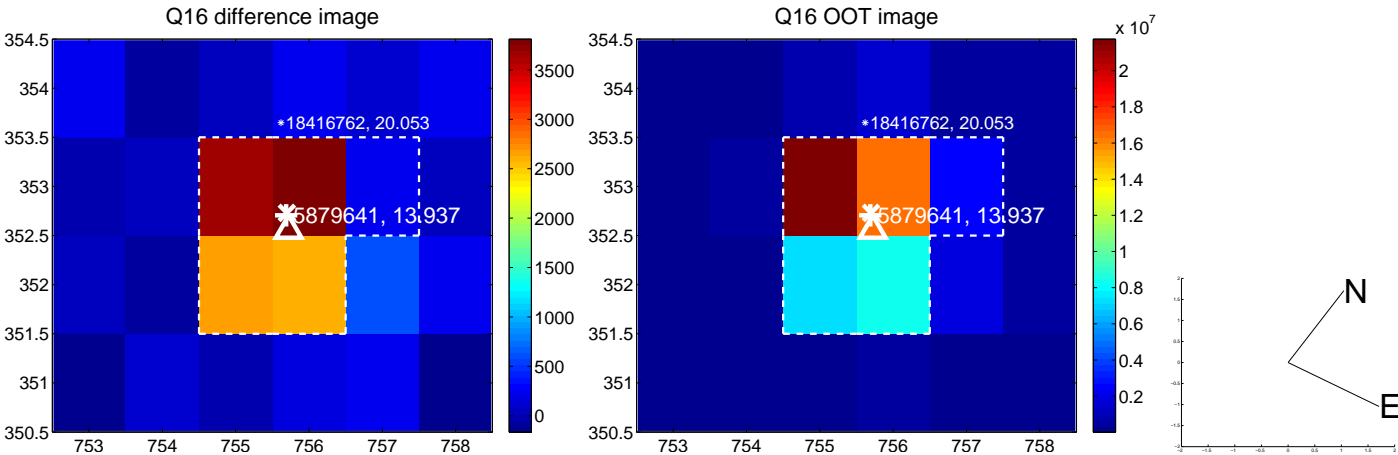
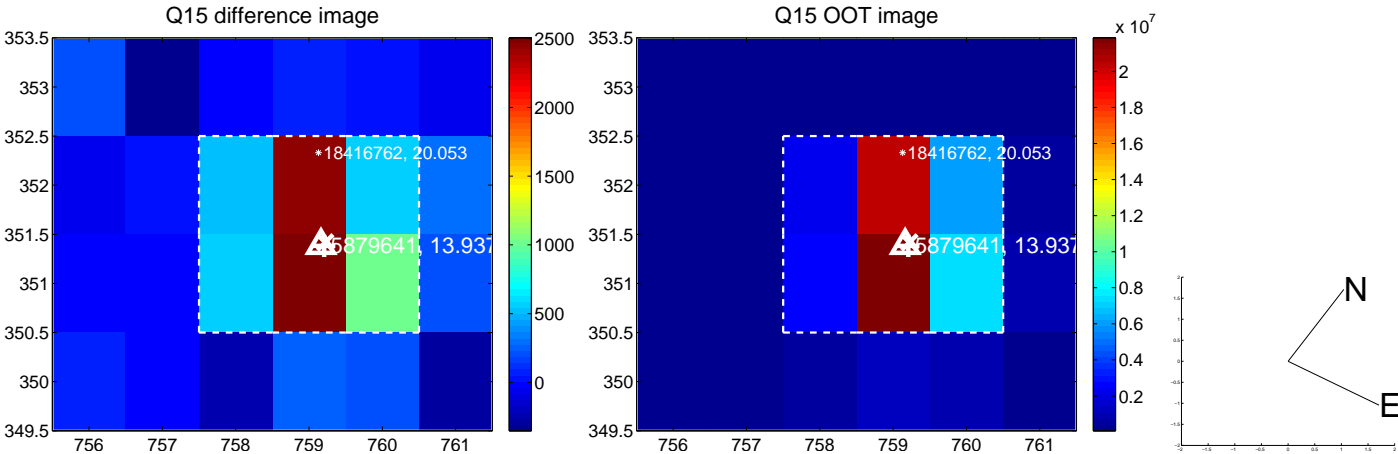
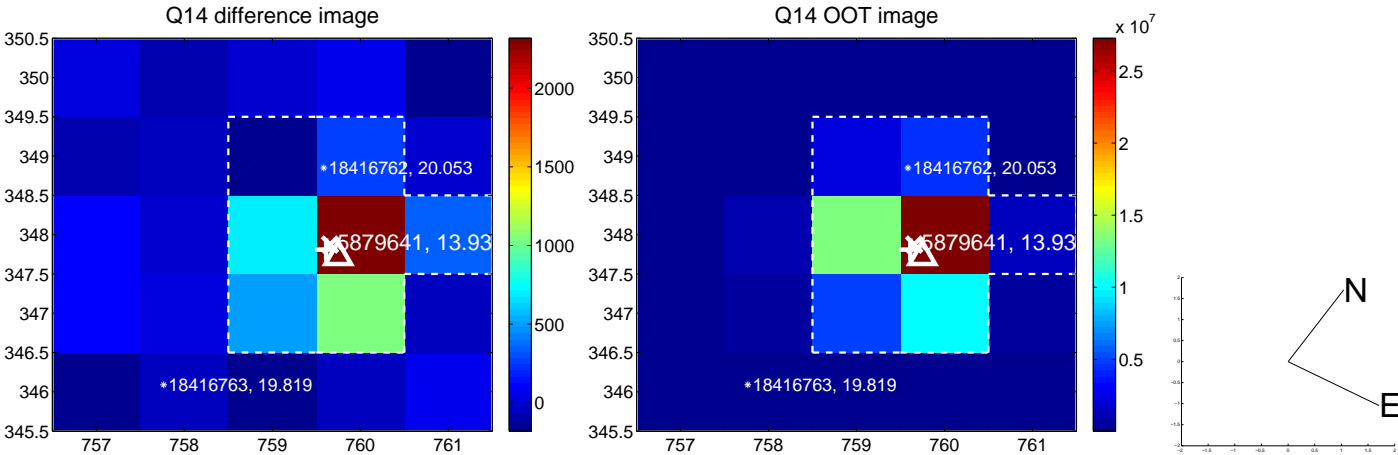
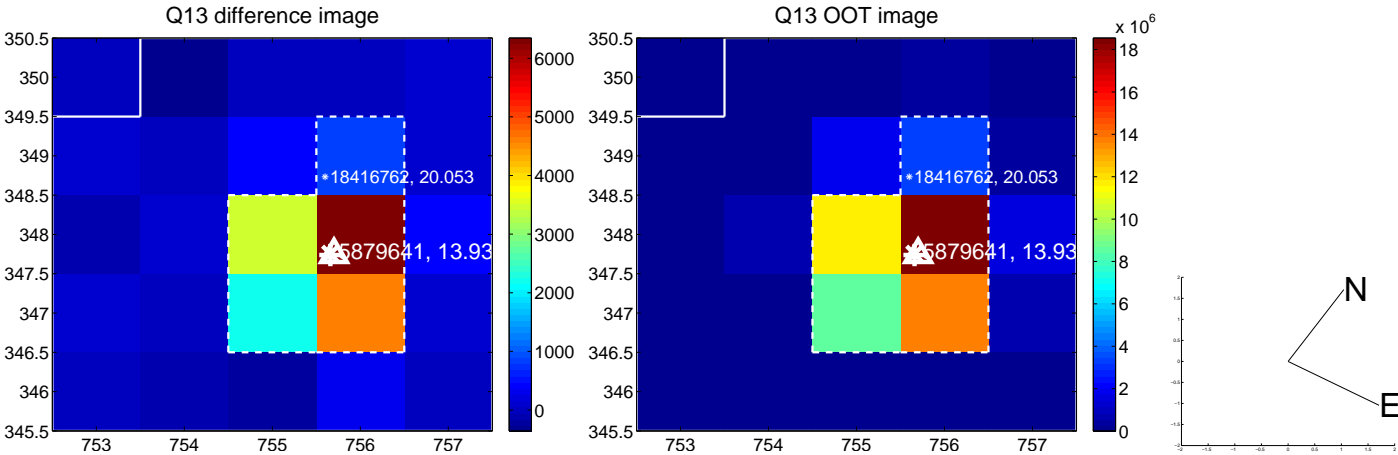




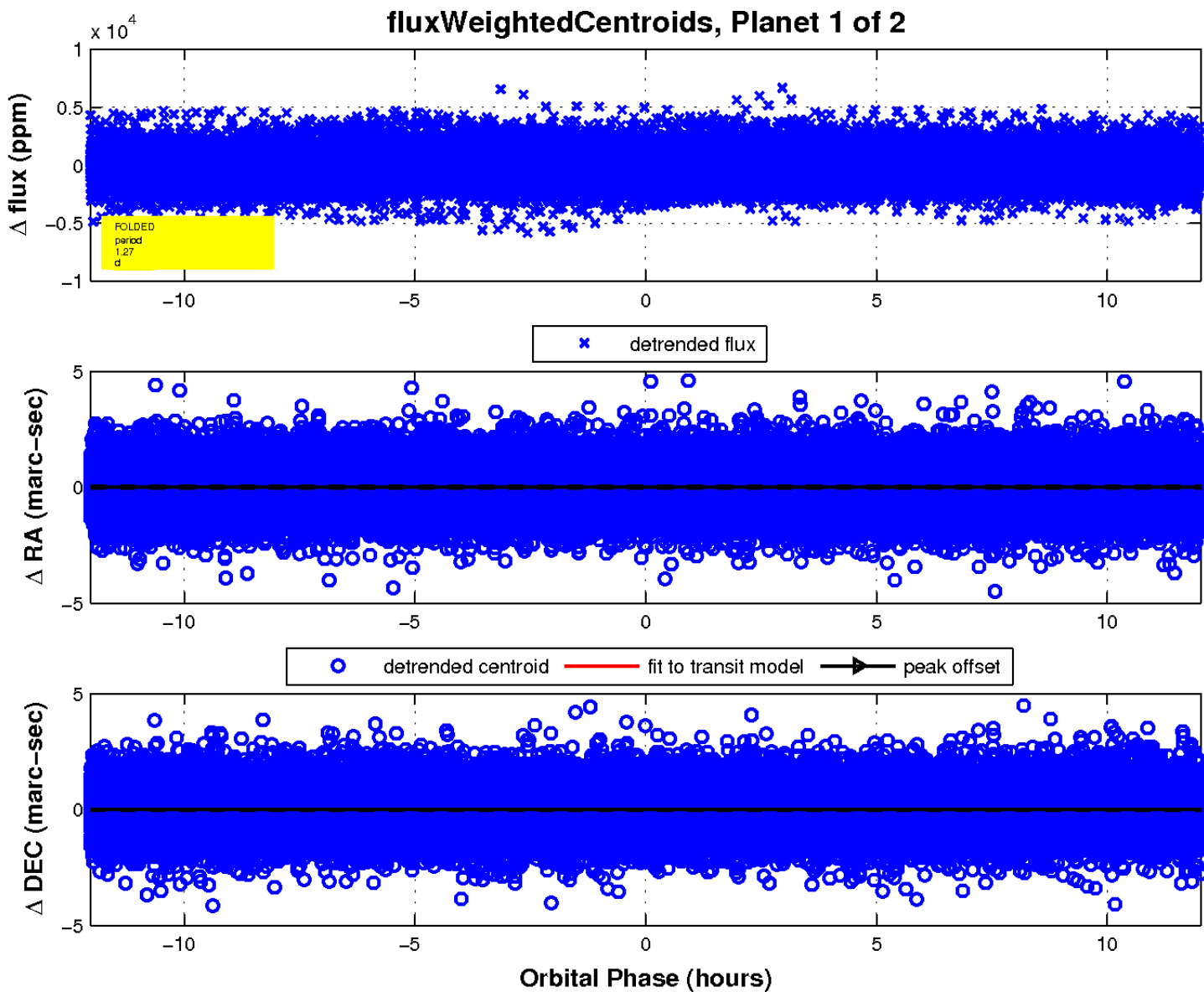
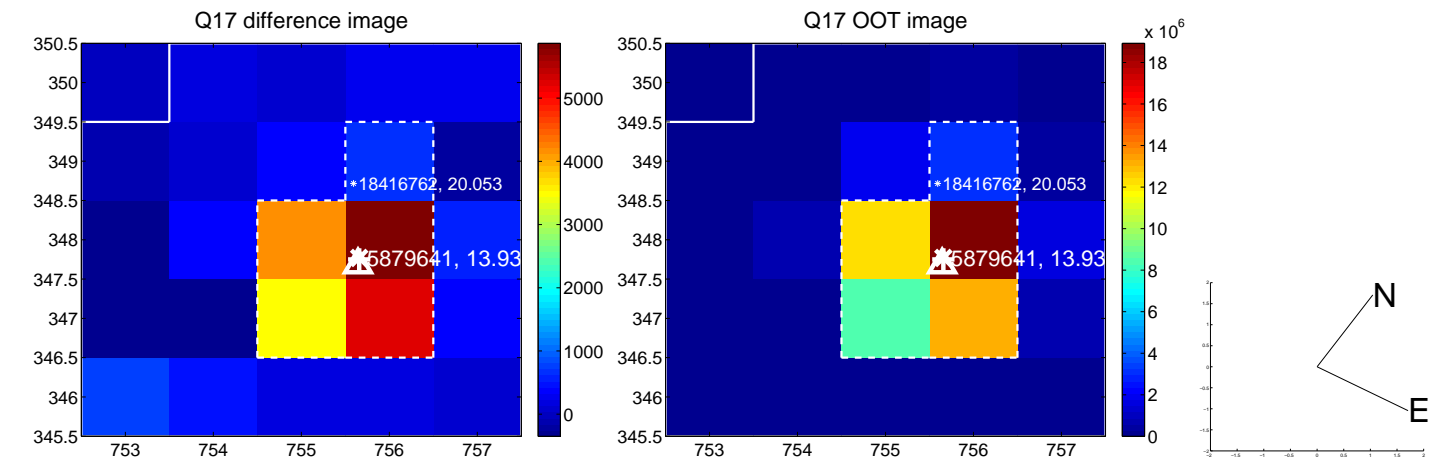
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

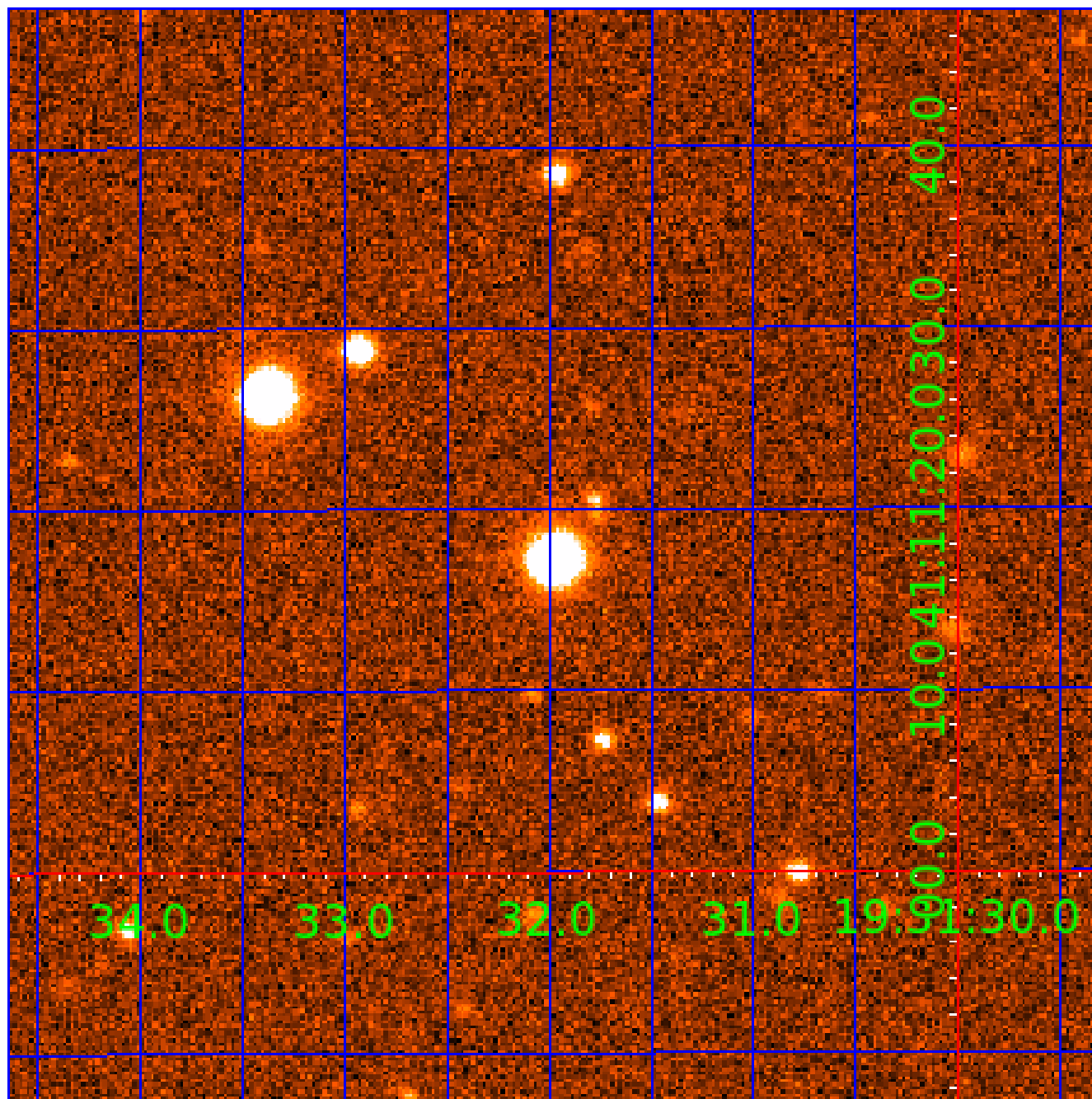


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 005879641

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
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005879641-02	OBS	No	1.270249	132.233812	1.9	13.763	7.8	0.1	1.71	7174	0.24	10309.50

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005879641-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
005879641-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—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.

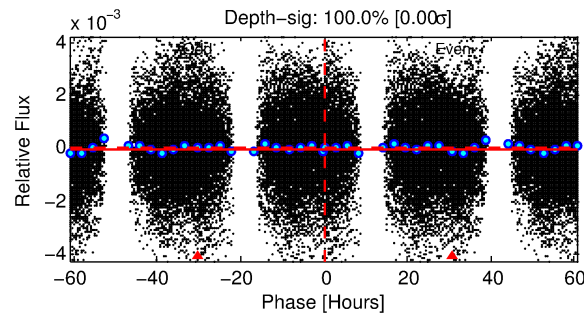
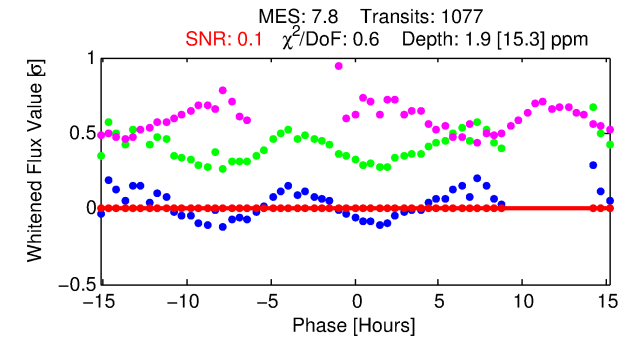
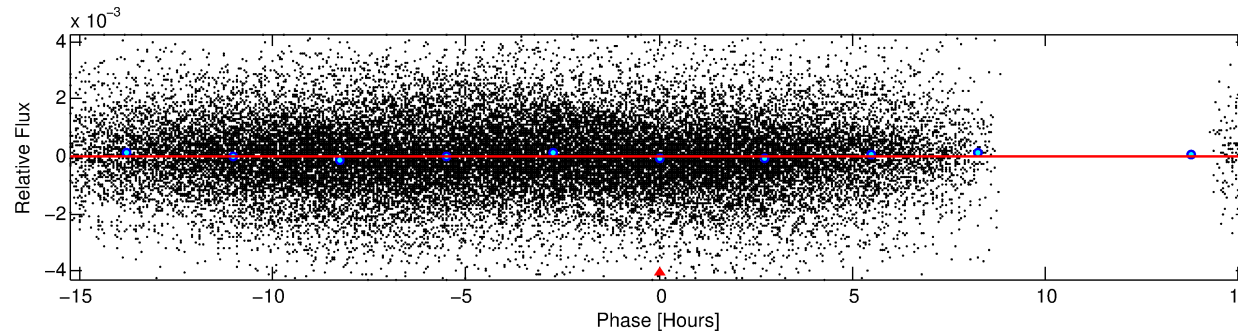
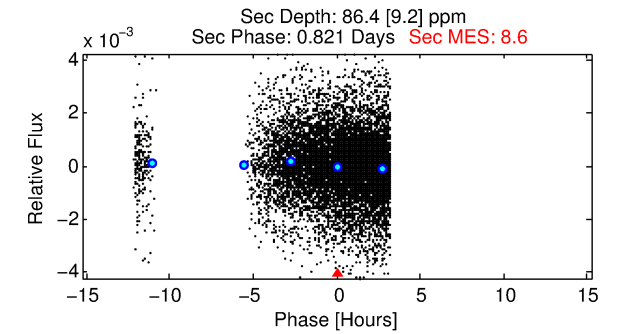
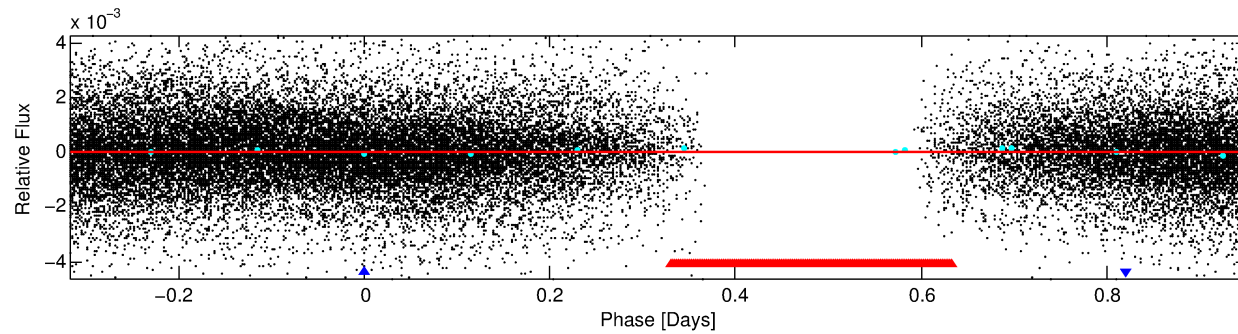
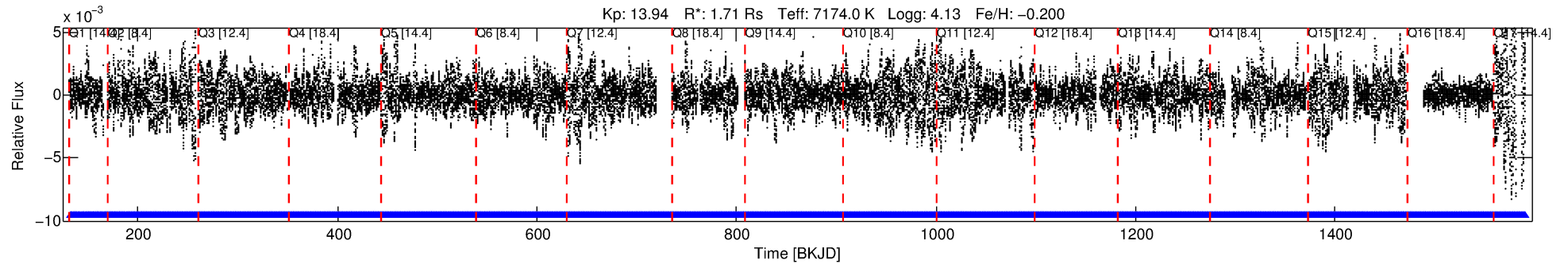
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005879641-02

No Significant Match Found

# DV One-Page Summary

KIC: 5879641 Candidate: 2 of 2 Period: 1.270 d



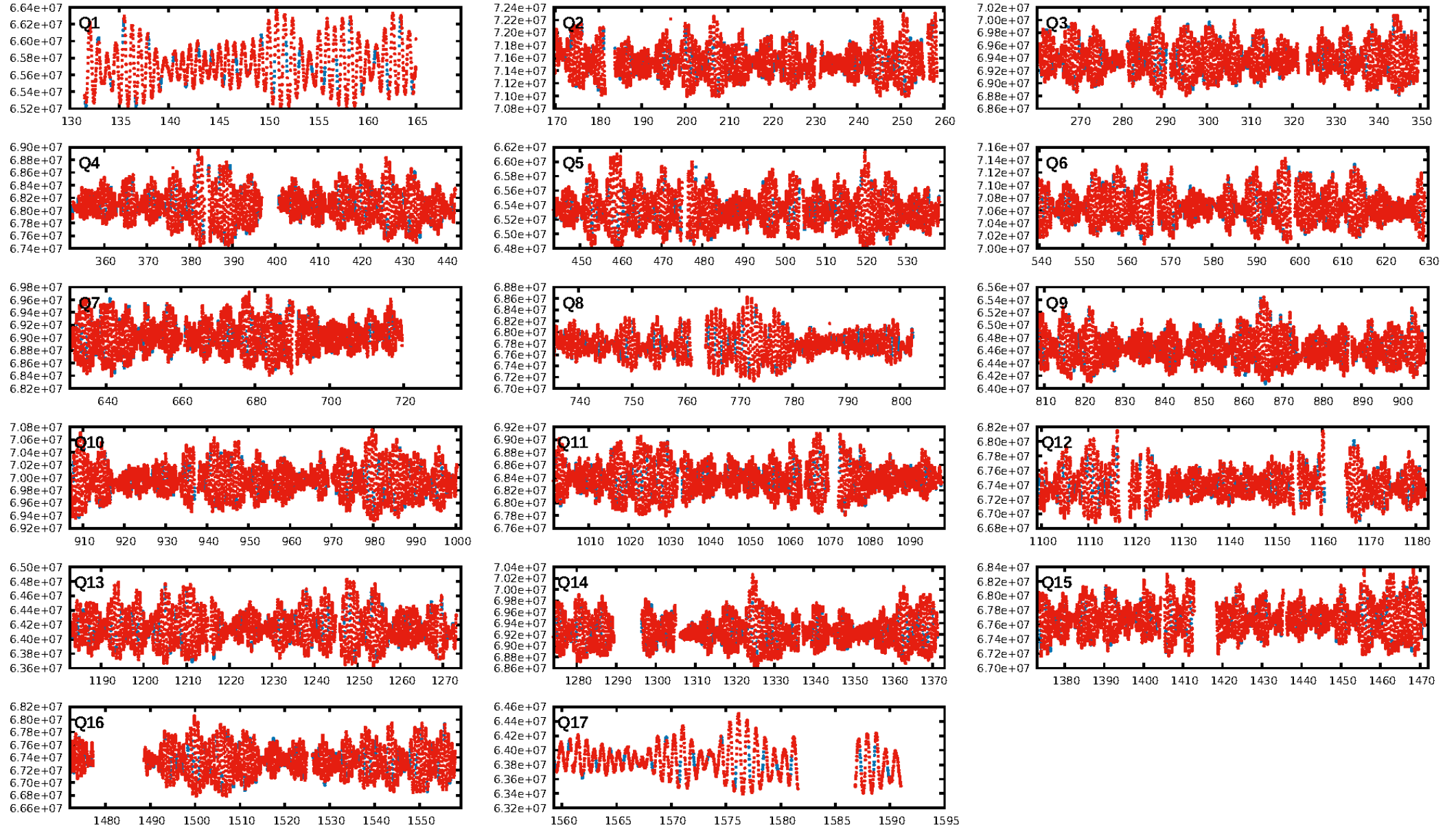
## DV Fit Results:

Period = 1.27025 [0.00085] d  
Epoch = 132.2338 [0.1627] BKJD  
Rp/R\* = 0.0013 [0.0268]  
a/R\* = 1.01 [3.27]  
b = 0.04 [3219.04]  
Seff = 10309.50 [4138.74]  
Teq = 2569 [258] K  
Rp = 0.24 [4.98] Re  
a = 0.0259 [0.0065] AU  
Ag = 565.57 [23759.36] [0.02 $\sigma$ ]  
Teffp = 19373 [203461] K [0.08 $\sigma$ ]

## DV Diagnostic Results:

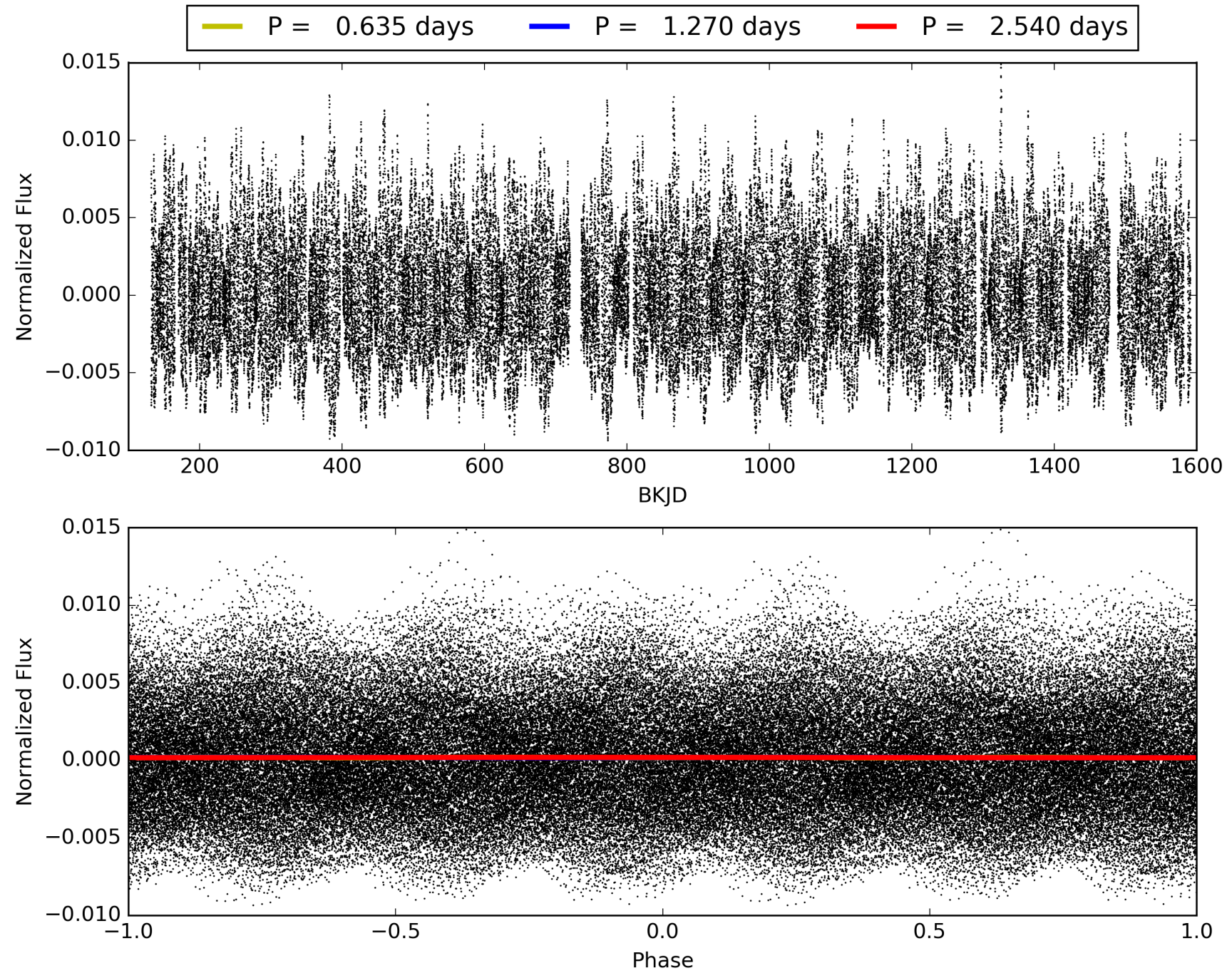
ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1028/1028]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0 [0]  
KicOffset-st: 0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: 0.00 [0/17]

# TCE 005879641-02, PDC Light Curves



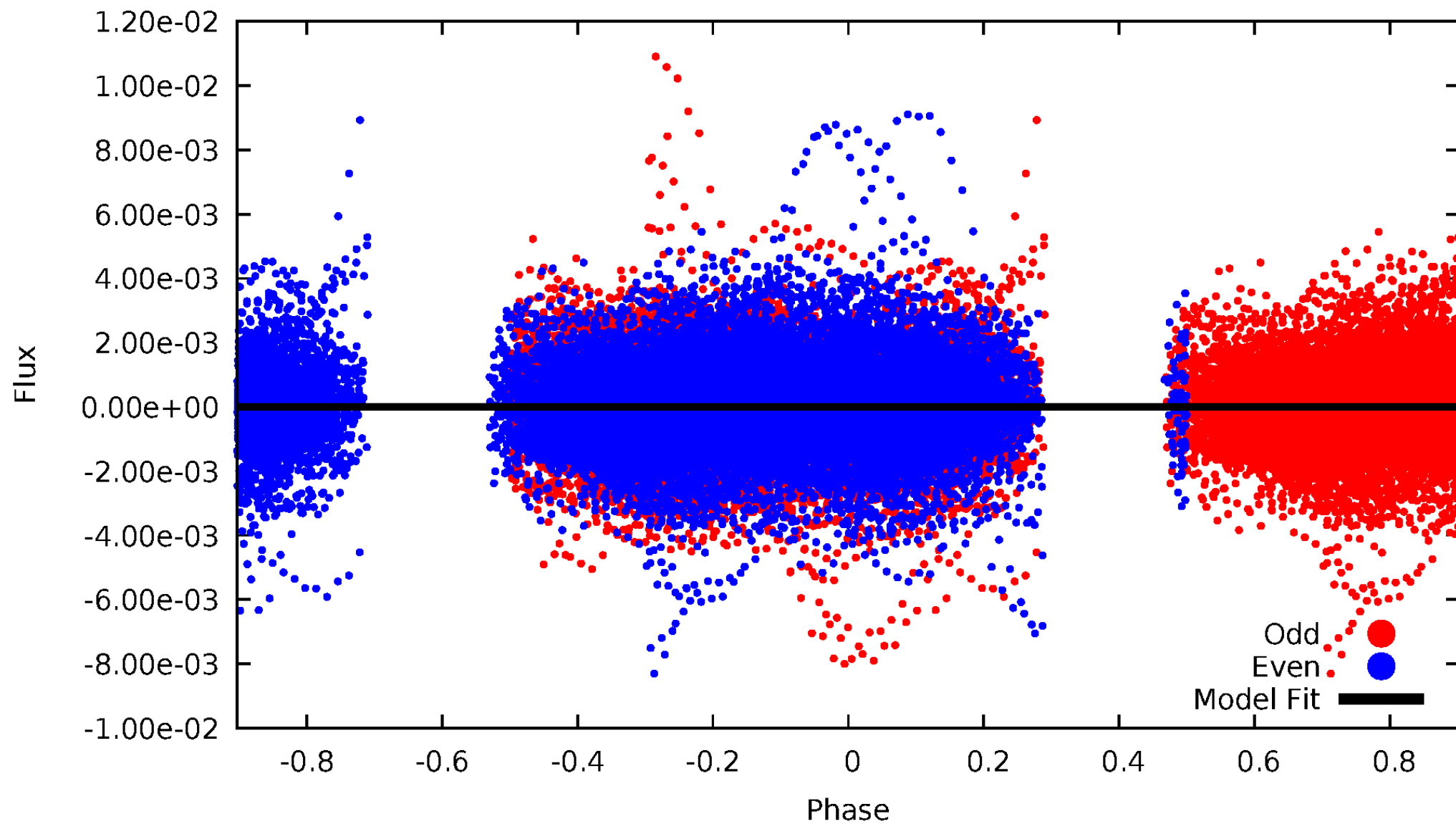


# TCE 005879641-02



# DV Odd/Even

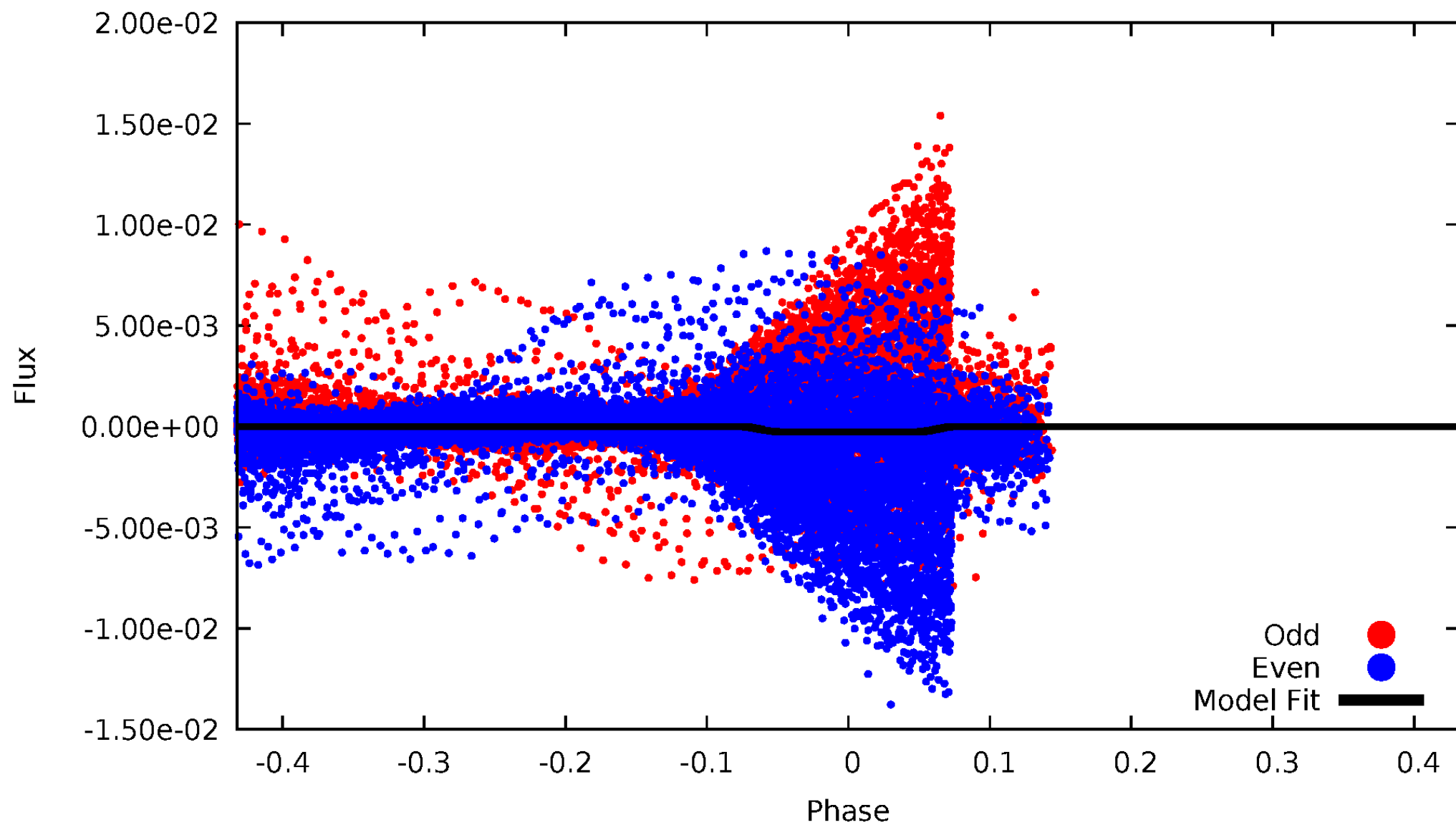
TCE 005879641-02





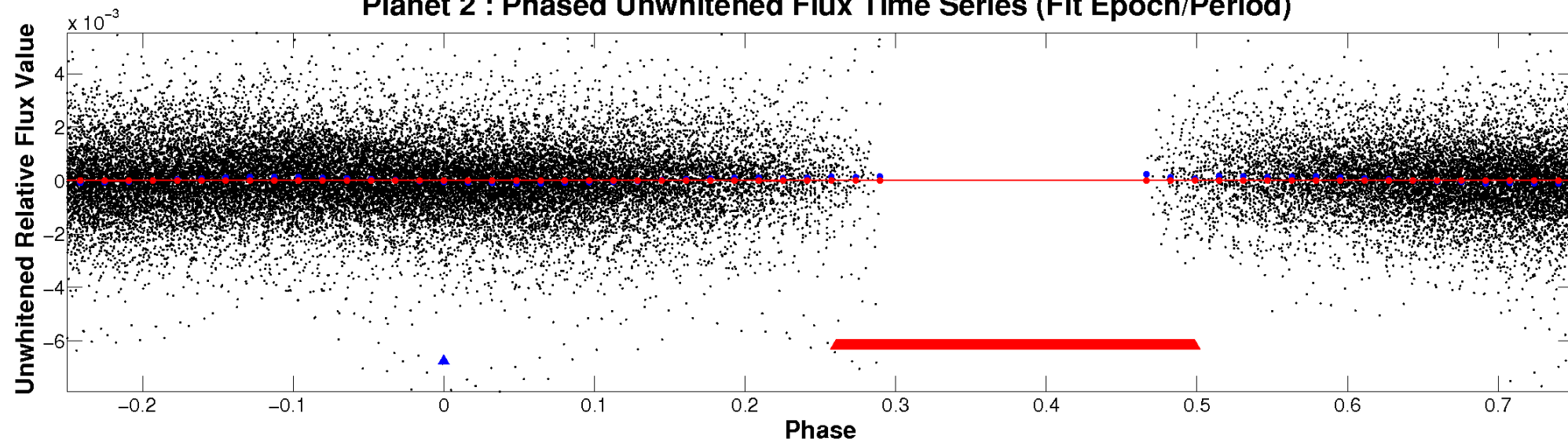
# ALT Odd/Even

TCE 005879641-02

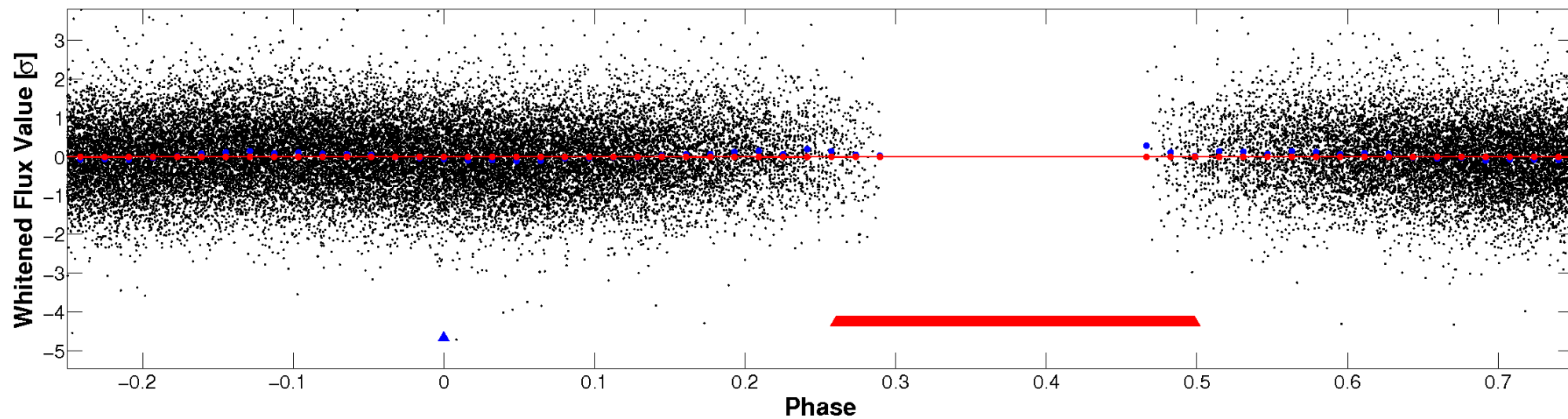


# Non-Whitened Vs. Whitened Light Curve

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

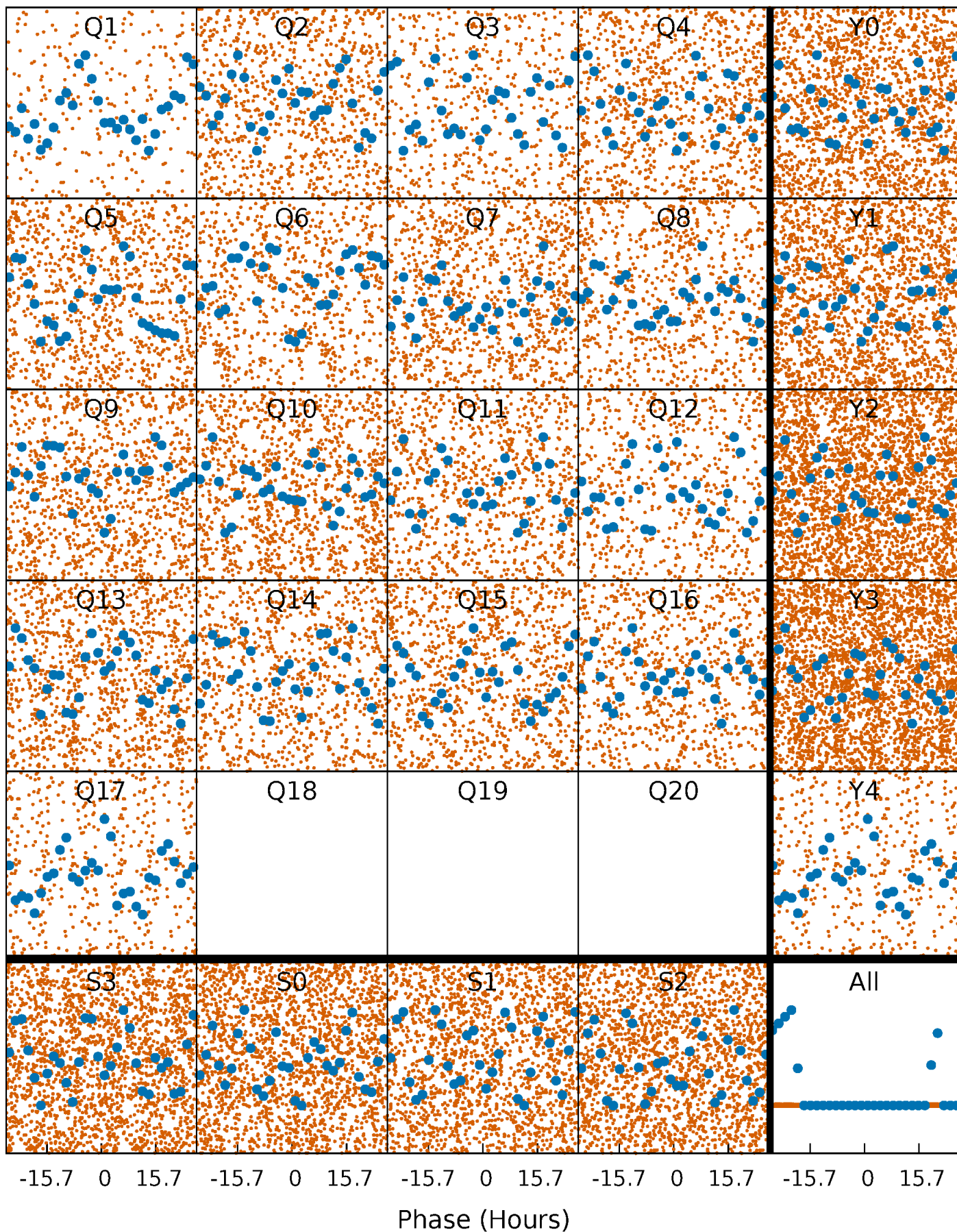


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



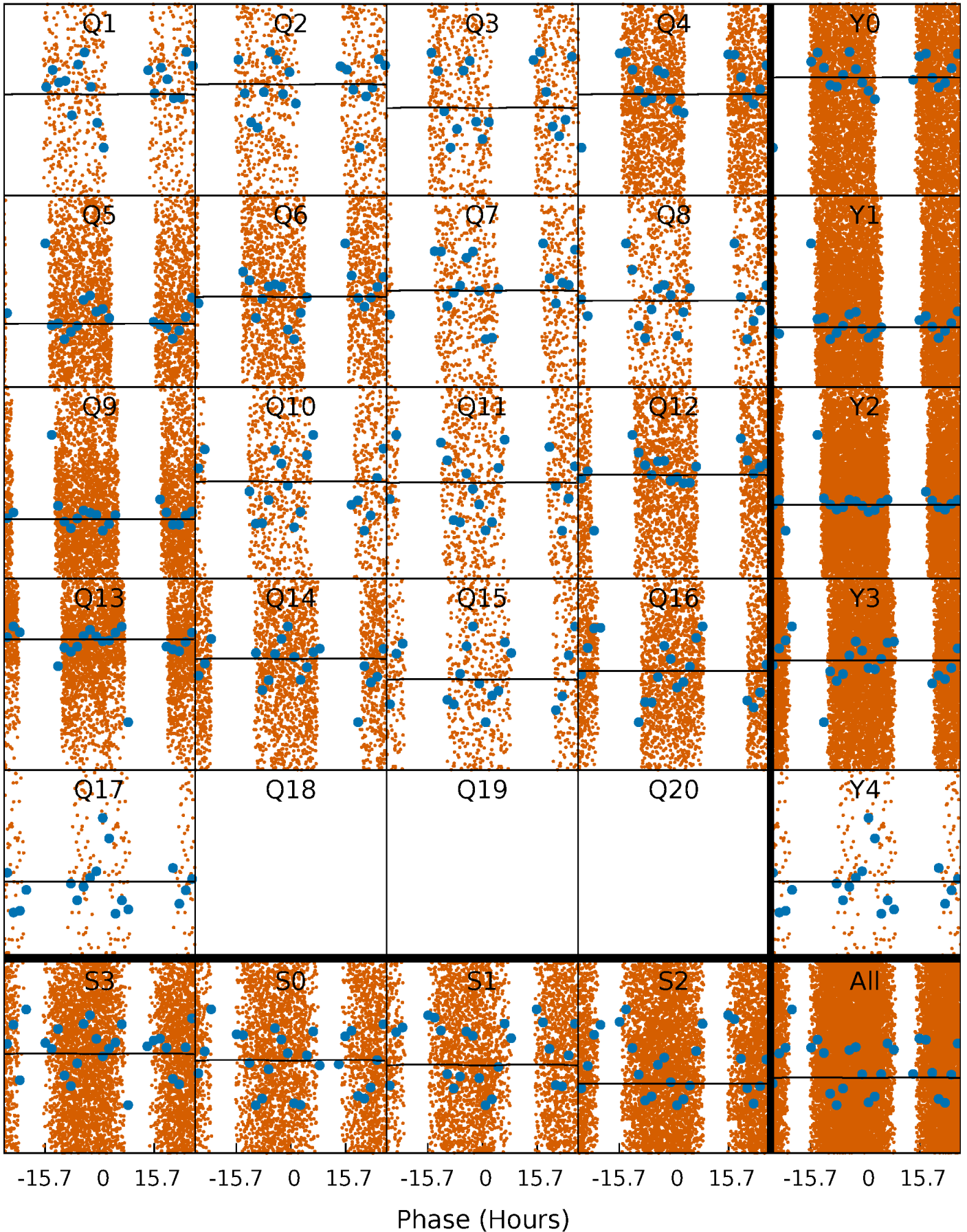
# PDC Quarter-Phased Transit Curves

TCE 005879641-02   P= 1.270249 Days    $T_0=132.233812$  (BKJD)



# DV Quarter-Phased Transit Curves

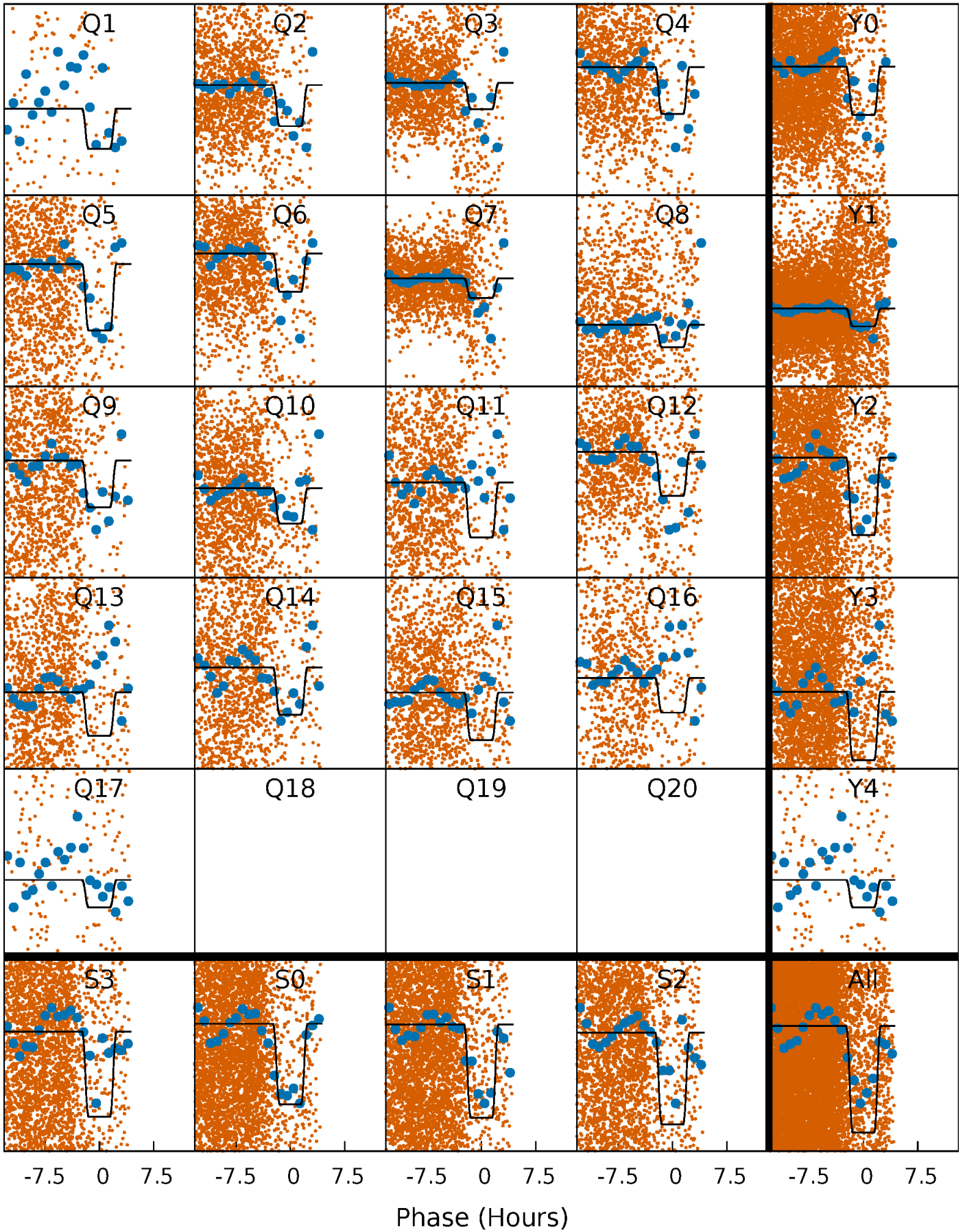
TCE 005879641-02   P= 1.270249 Days    $T_0=132.233812$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

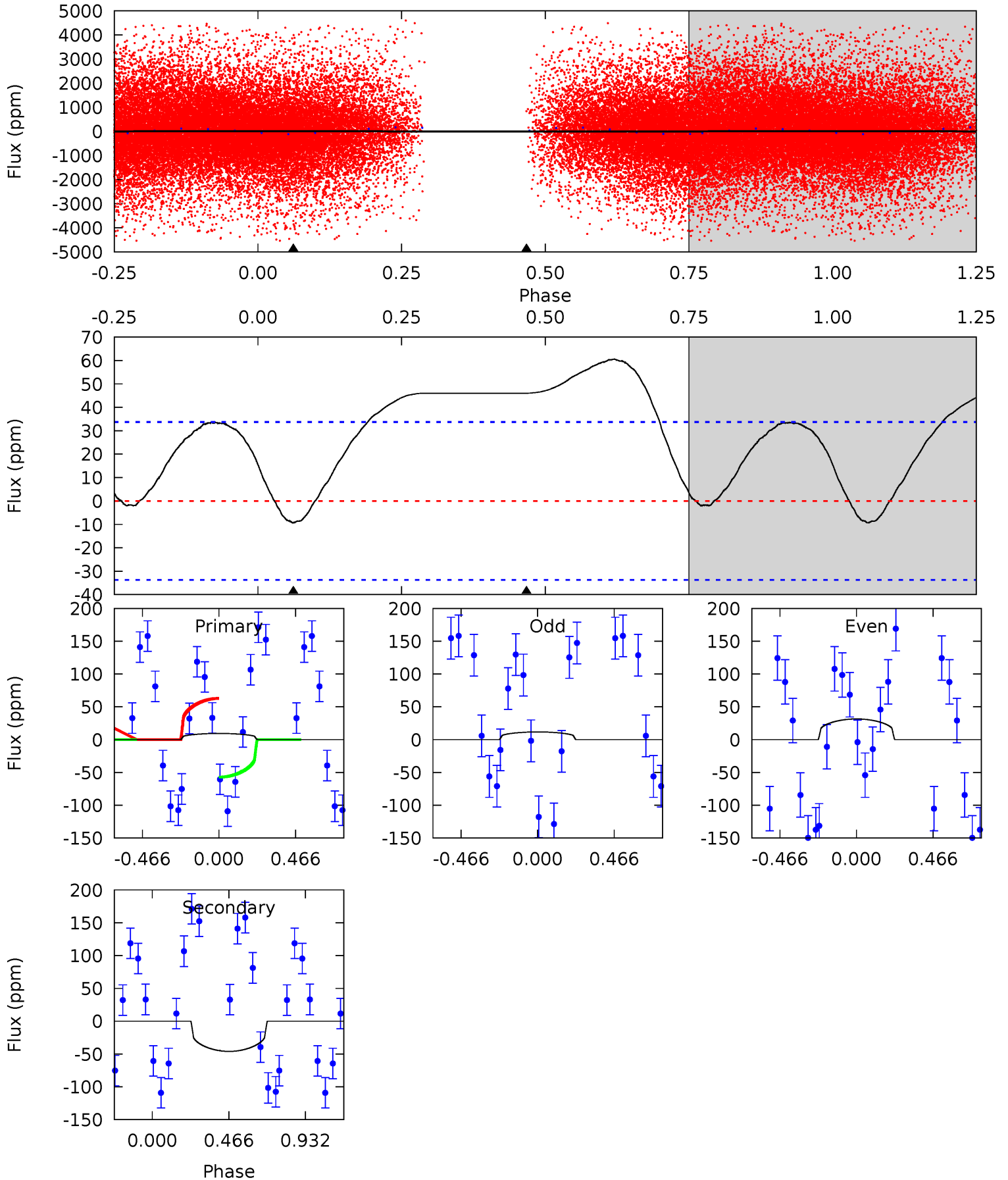
TCE 005879641-02   P= 1.270457 Days    $T_0=132.182882$  (BKJD)



# DV Model-Shift Uniqueness Test

005879641-02, P = 1.270249 Days, E = 130.963563 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
1.17	-5.78	0	0	4.23	0.73	0.50	1.17	1.17	-5.78	-5.78	1.24	4.57	0.87	0.37

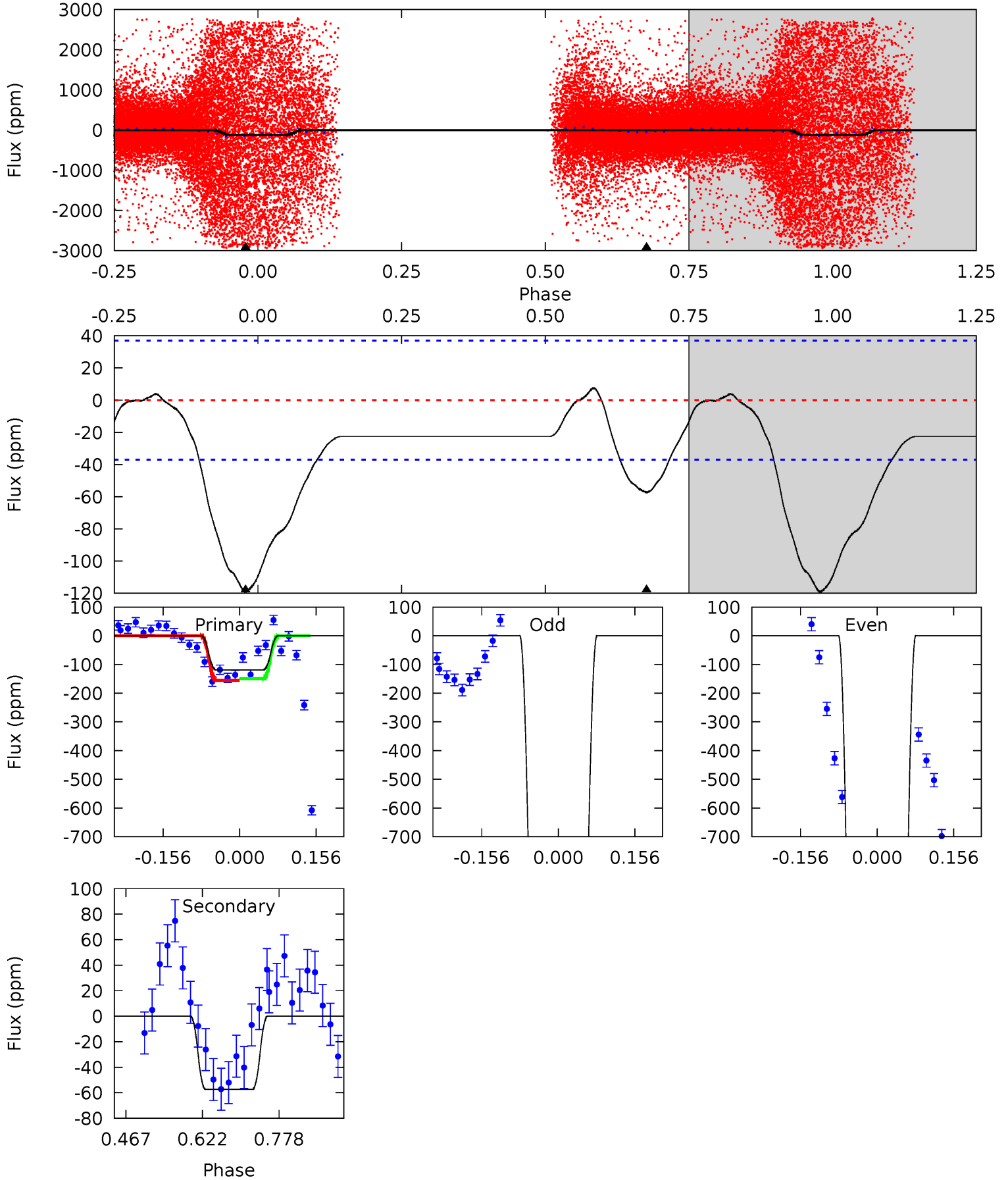




# Alt Model-Shift Uniqueness Test

005879641-02, P = 1.270457 Days, E = 130.912425 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
14.4	6.92	0	0	4.47	1.42	1.17	14.4	14.4	6.92	6.92	24.6	2.18	0.06	0



### Stellar Parameters For KIC 005879641

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7174^{+199}_{-324}$	$4.130^{+0.157}_{-0.192}$	$-0.200^{+0.250}_{-0.350}$	$1.705^{+0.522}_{-0.380}$	$1.430^{+0.218}_{-0.243}$	$0.406^{+0.334}_{-0.211}$
	+3%/-5%	+4%/-5%	+125%/-175%	+31%/-22%	+15%/-17%	+82%/-52%
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 005879641-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$46 \pm 8$	$3.30^{+3.43}_{-2.24}$	$3587^{+302}_{-252}$	$-4735^{+816}_{-3259}$	$-1.528^{+1.175}_{-13.722}$
Alt.	$-57 \pm 8$	$4.83^{+4.17}_{-3.27}$	$3596^{+275}_{-247}$	$3855^{+2741}_{-6538}$	$0.909^{+6.750}_{-0.662}$

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

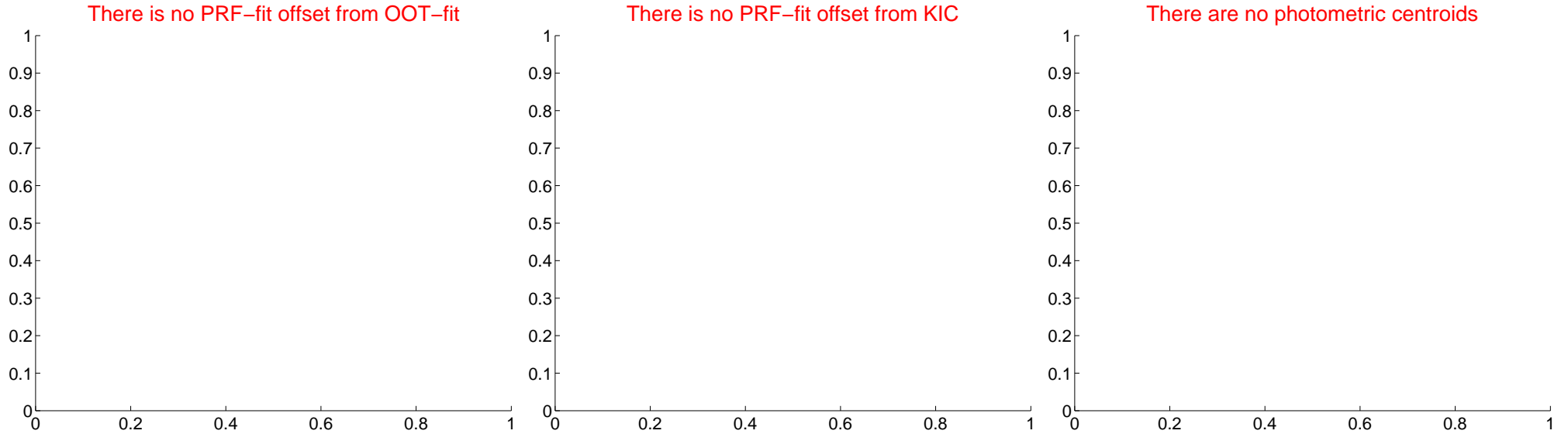
## DV Centroid Data

Supplemental centroid analysis for 005879641-02. Kepler magnitude: 13.94. Transit SNR 0.15

There are 0 quarters with good PRF difference image offsets

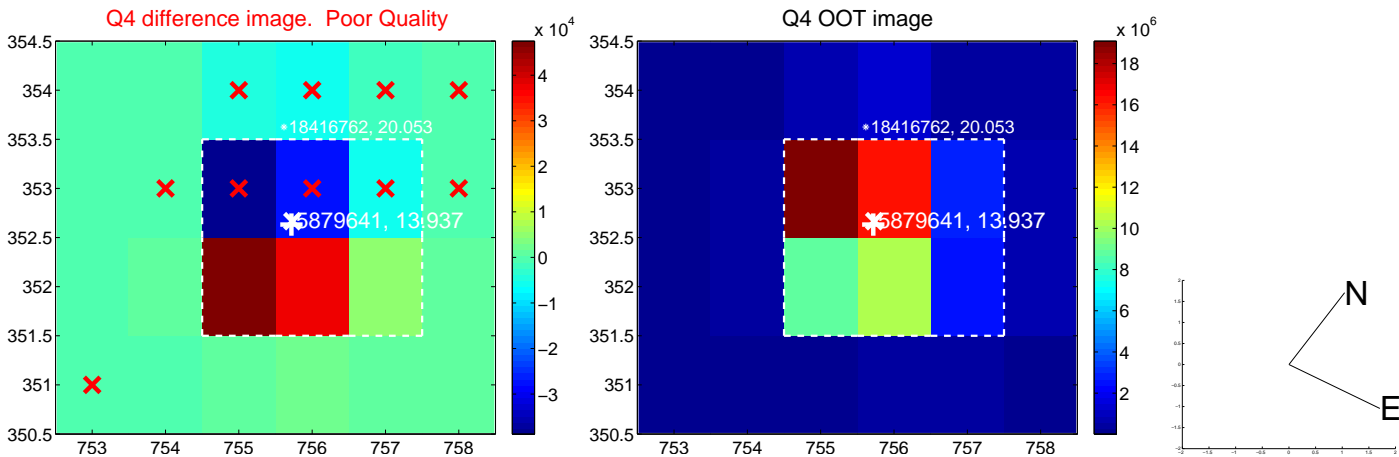
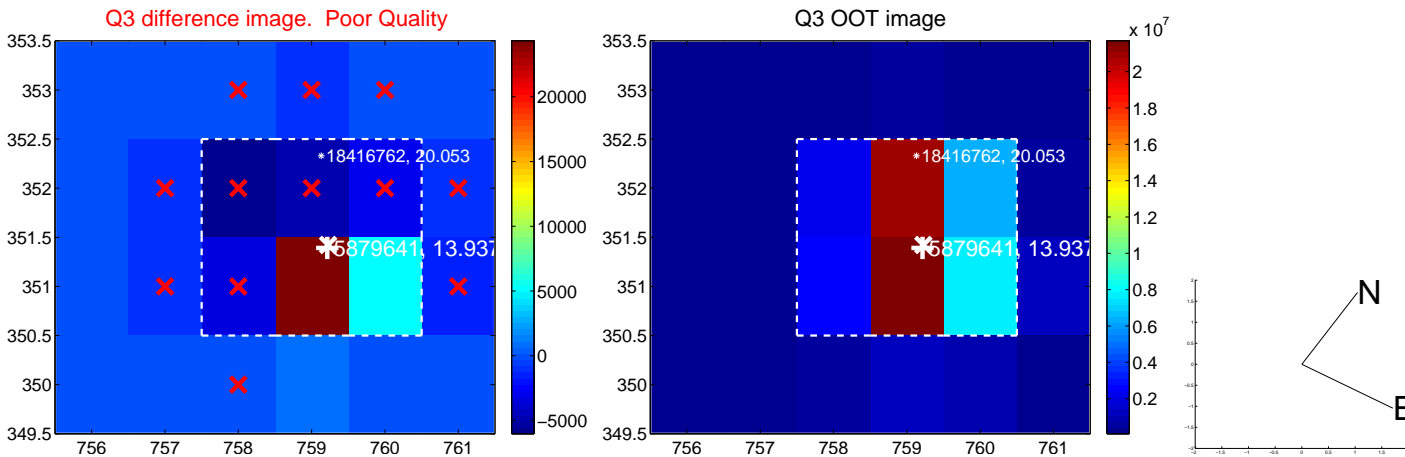
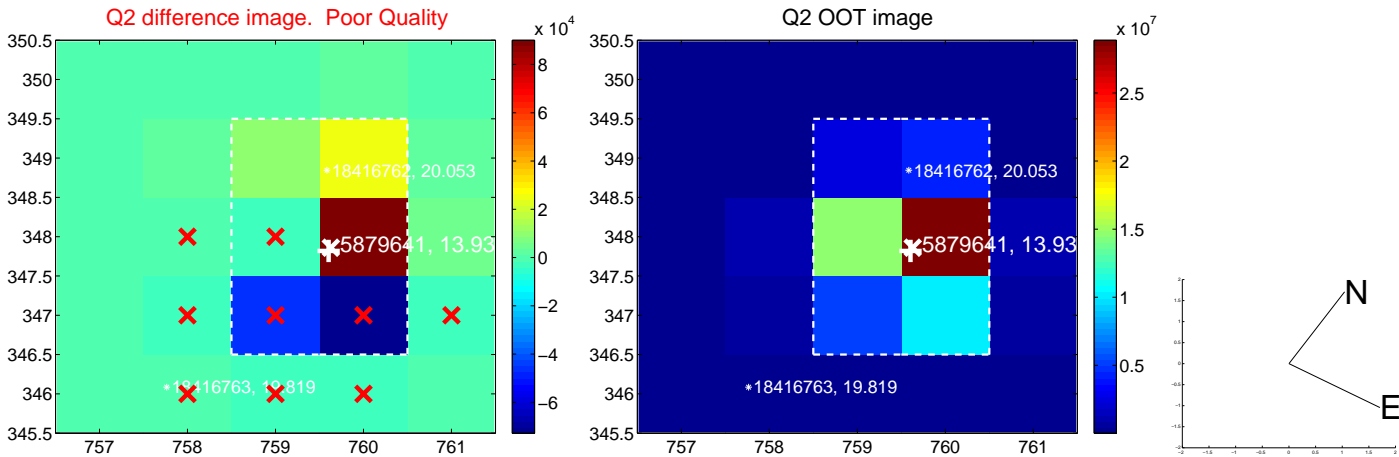
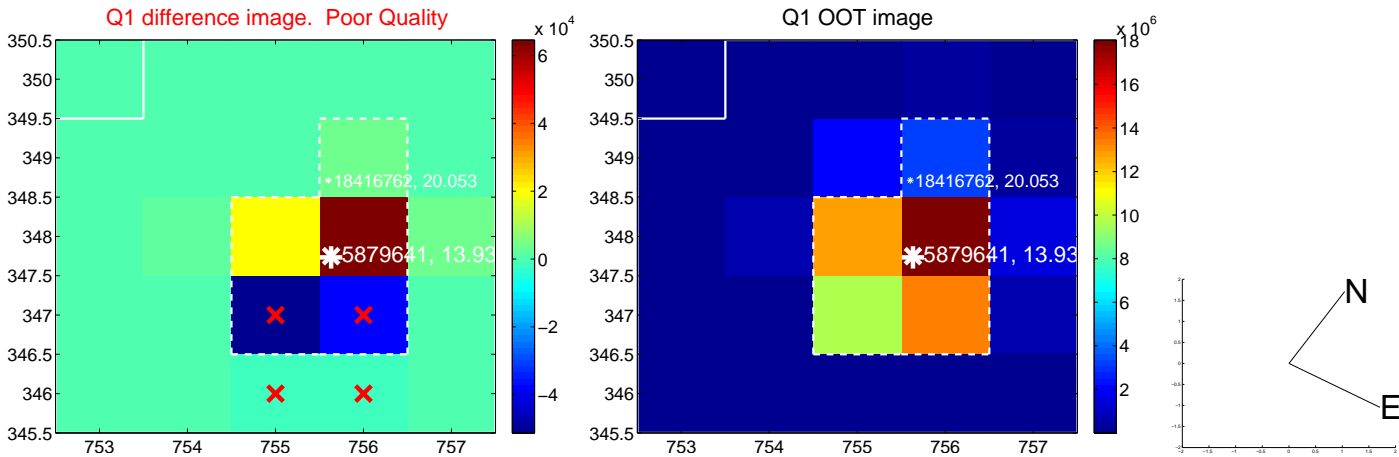
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	—	—	—	—

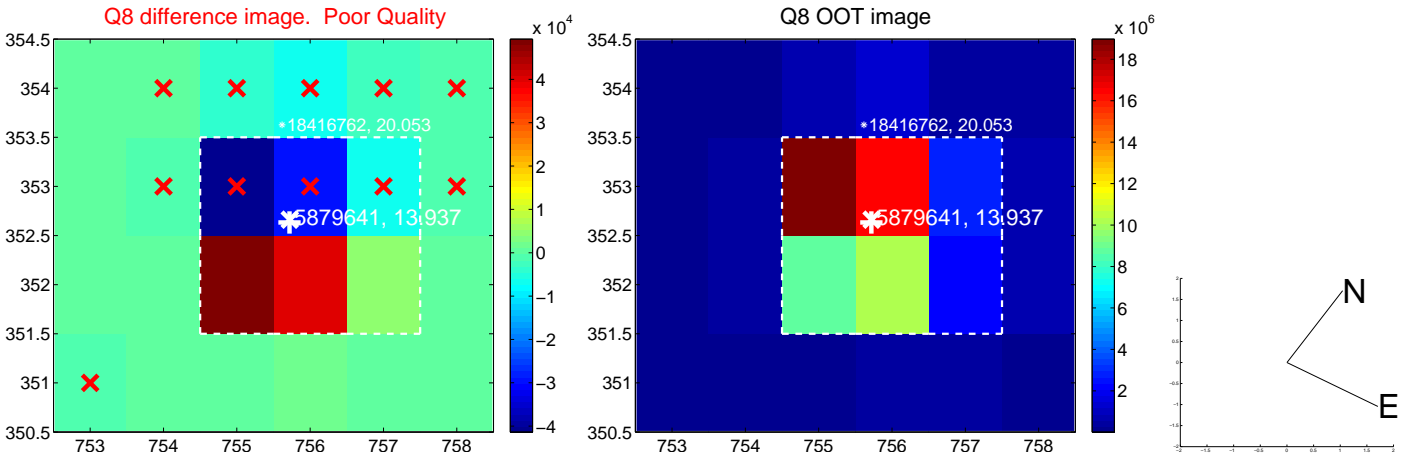
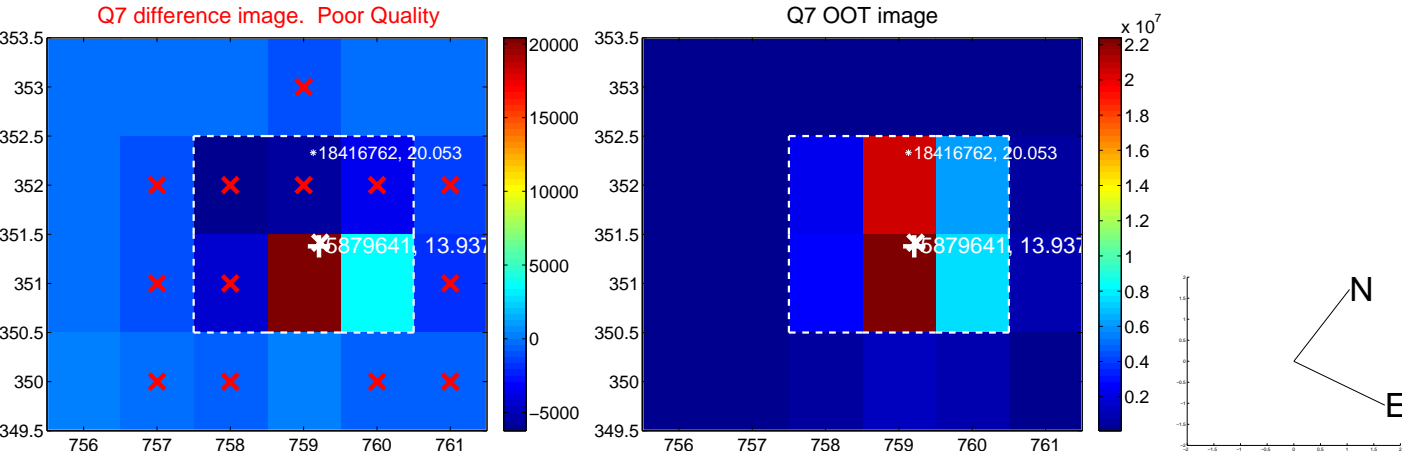
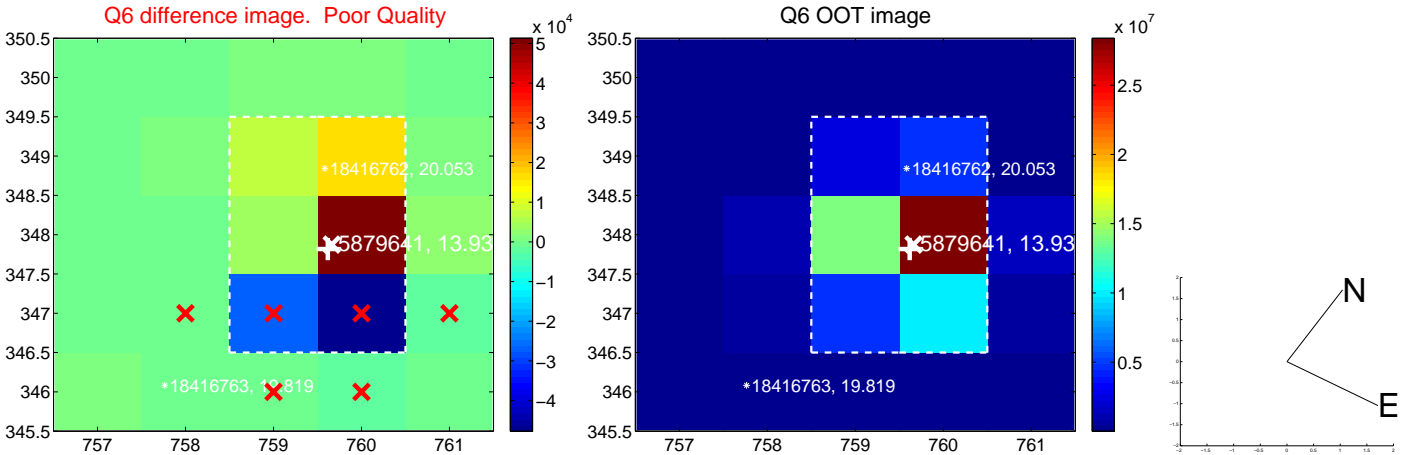
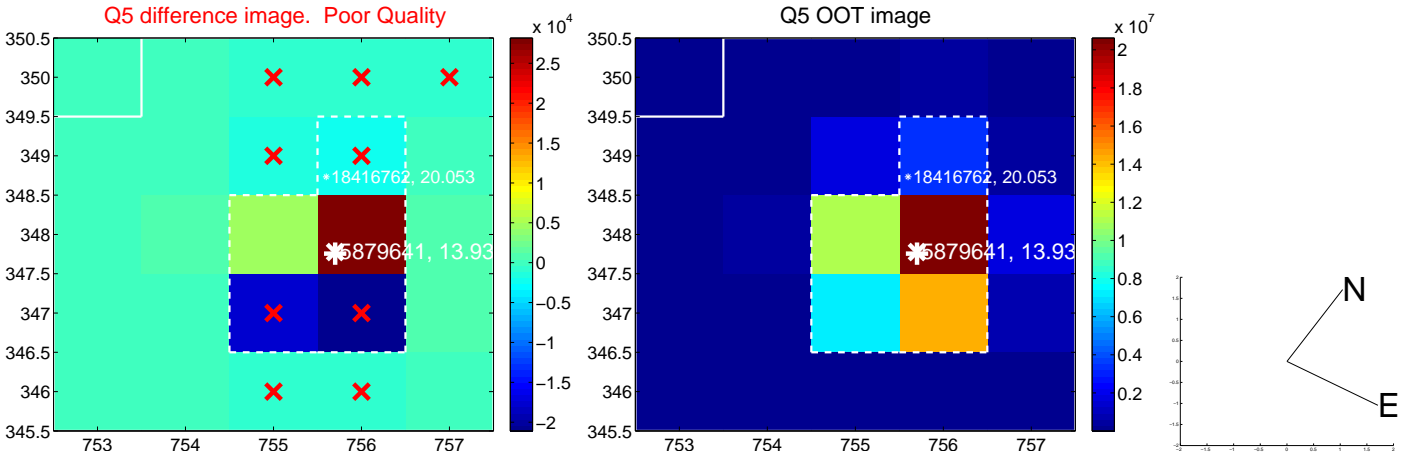


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

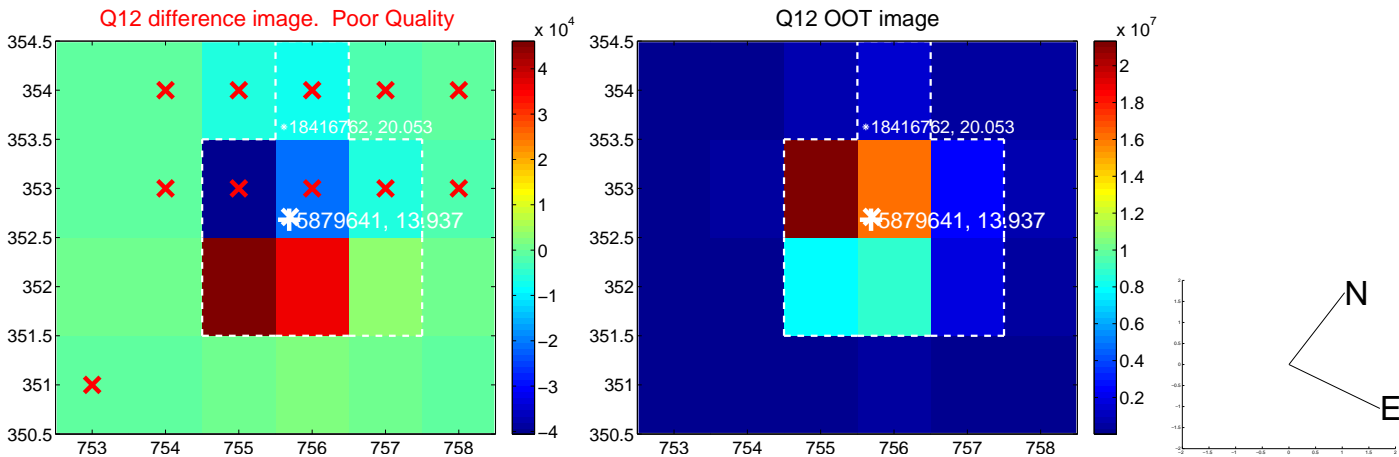
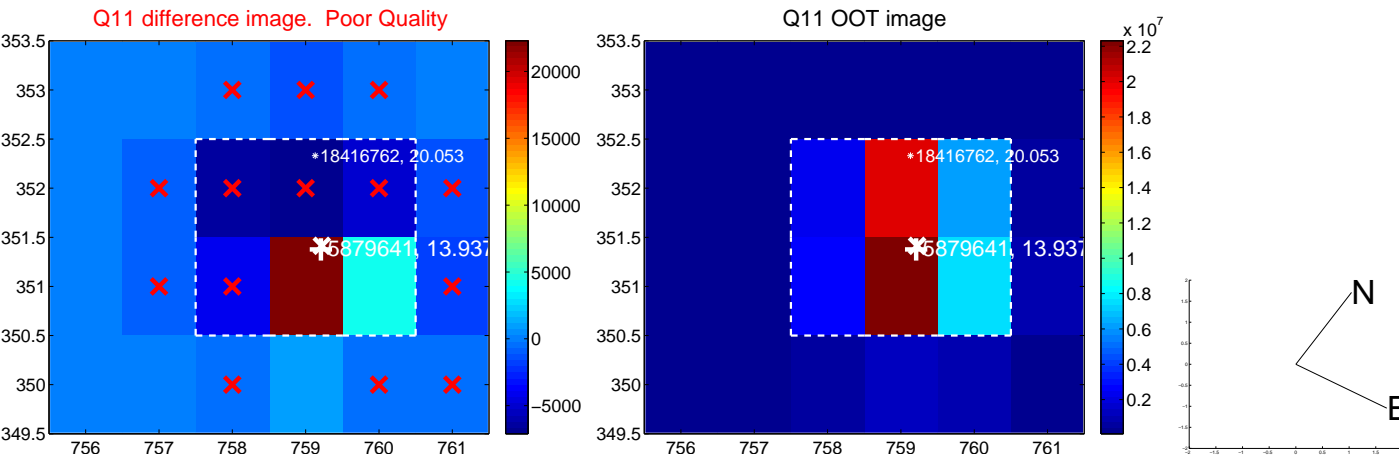
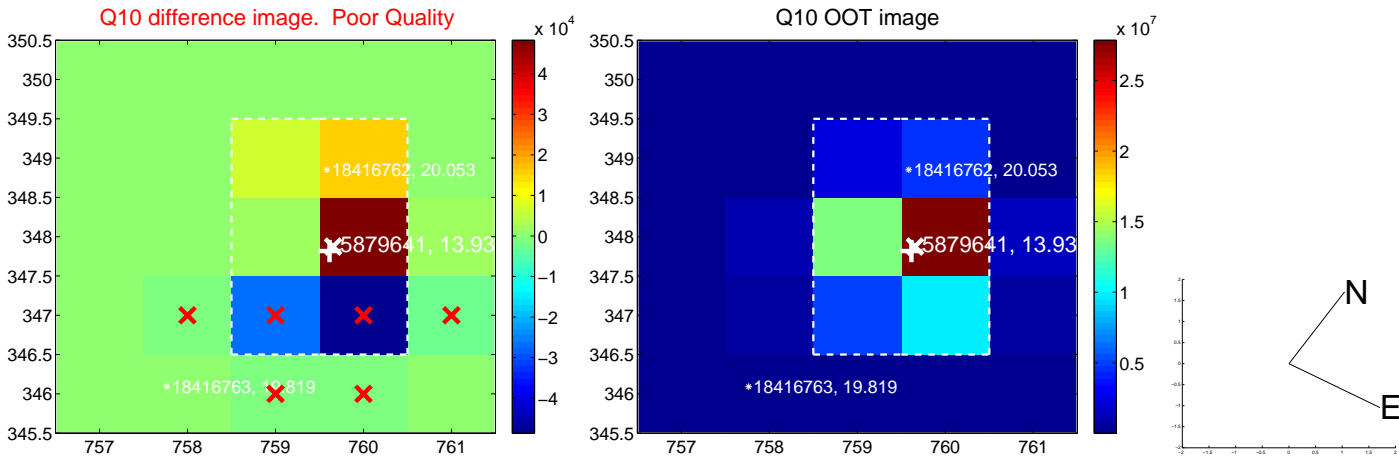
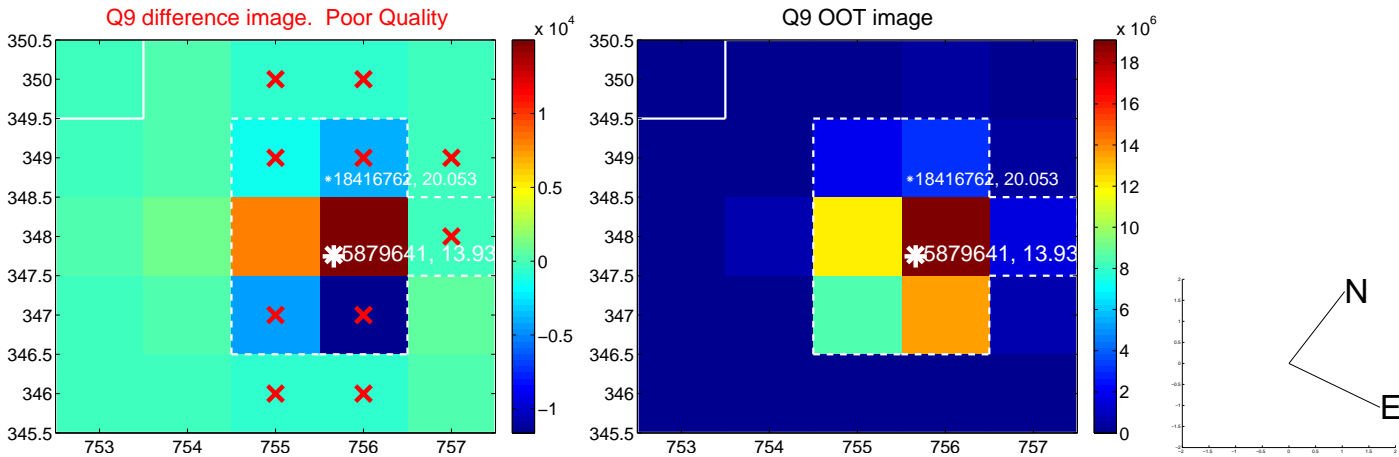
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

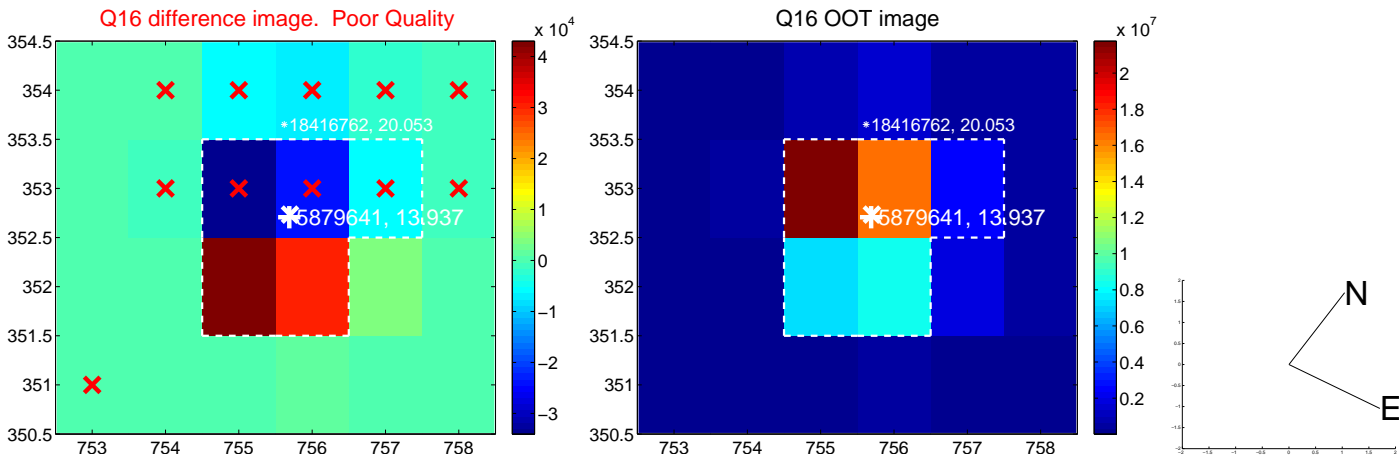
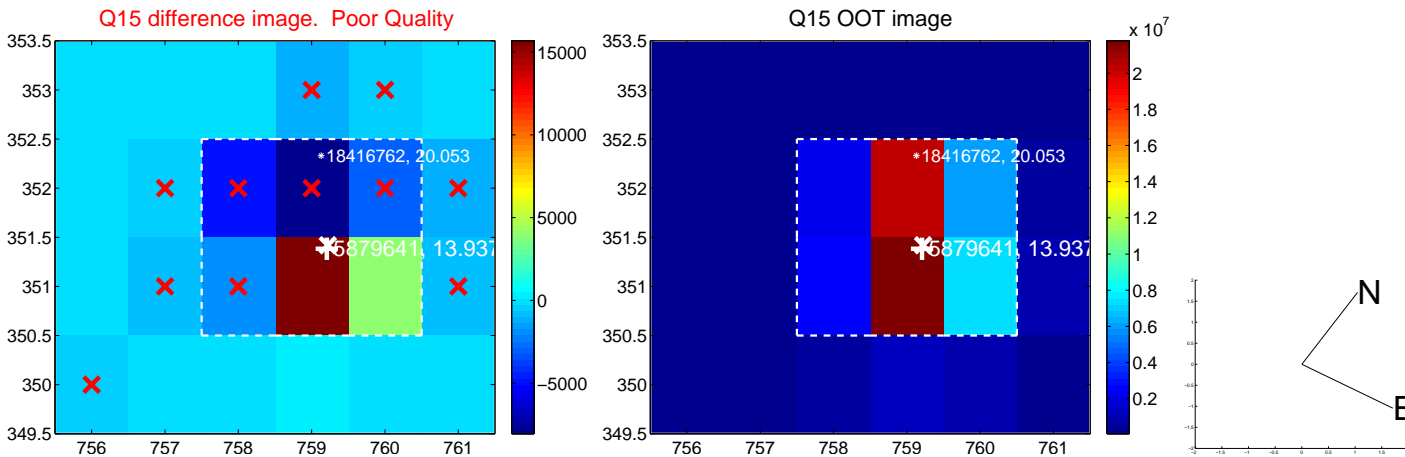
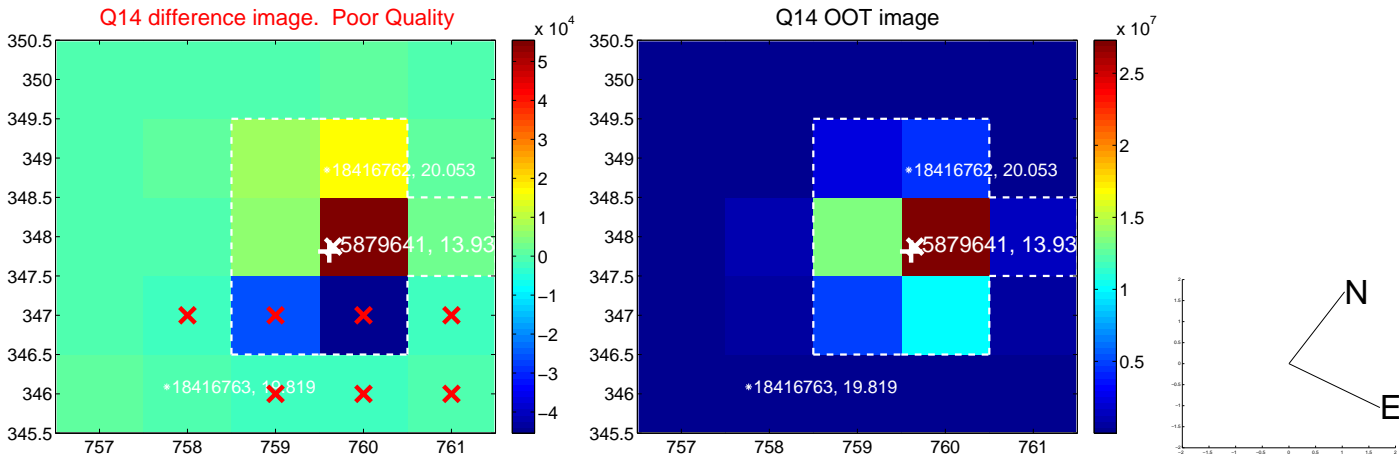
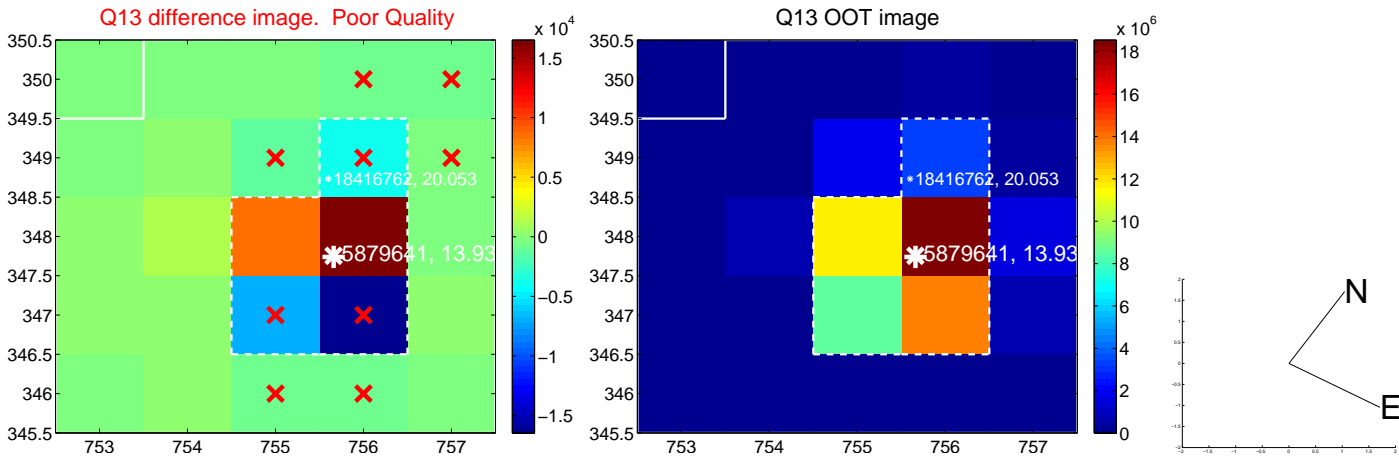


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

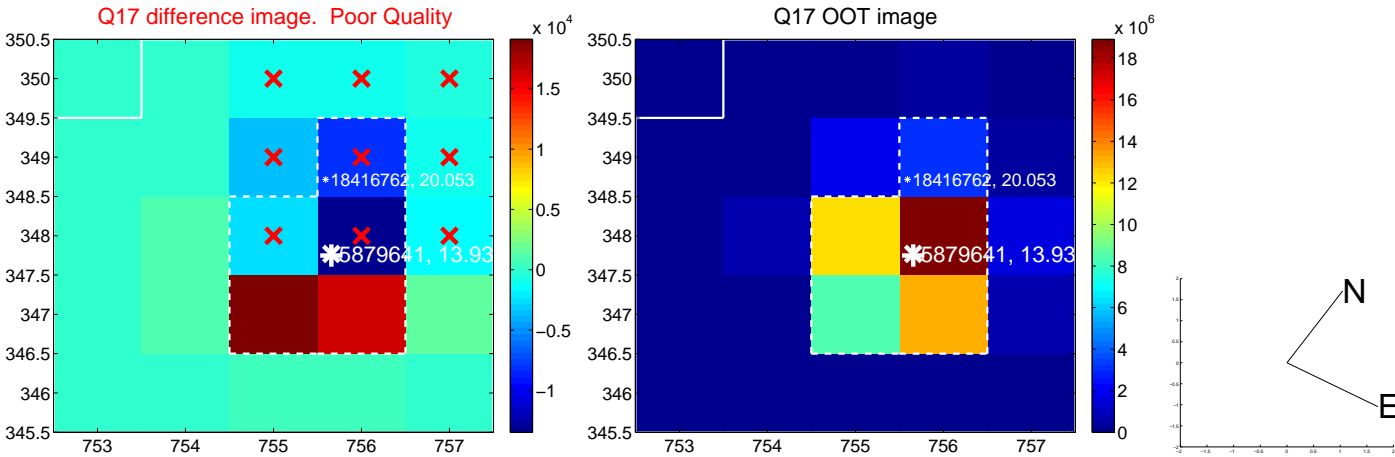




white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



folded centroid time series figure for this object.

UKIRT Image

Declination

