

# KIC 007285673

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007285673-01	OBS	4559.01	0.566822	131.798539	76.3	2.236	18.1	21.0	0.98	6106	1.01	7201.12
007285673-02	OBS	No	227.191850	150.206712	293.4	18.417	12.7	3.7	0.98	6106	1.97	2.44
007285673-03	OBS	No	309.930539	155.205905	416.1	8.817	7.7	5.6	0.98	6106	2.24	1.61

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007285673-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_UNRESOLVED_OFFSET—EPHEM_MATCH
007285673-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
007285673-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS

**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.

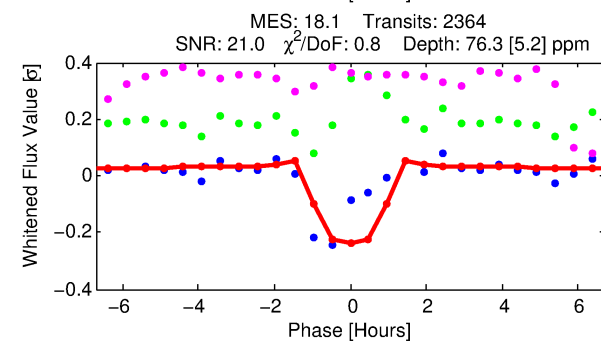
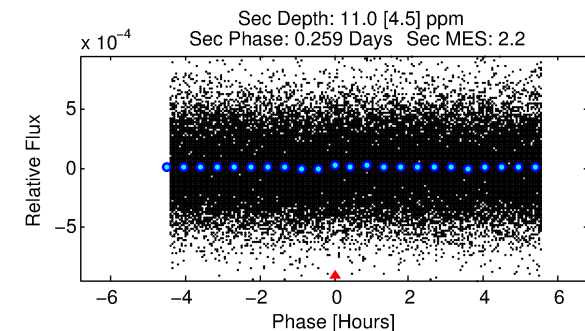
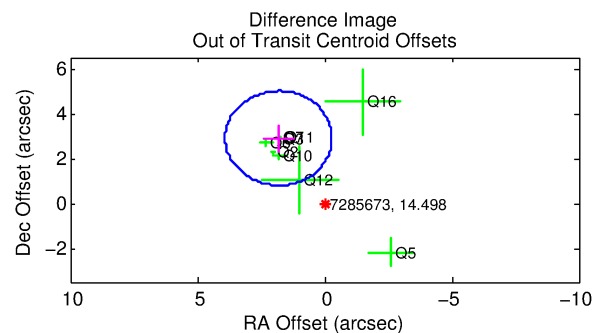
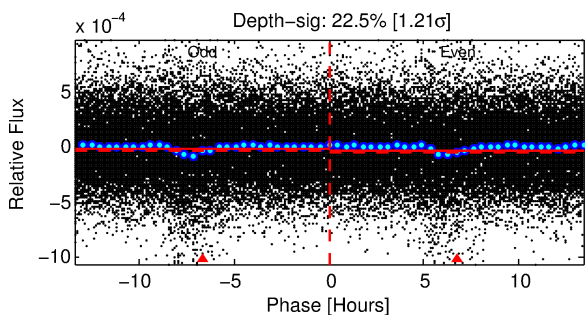
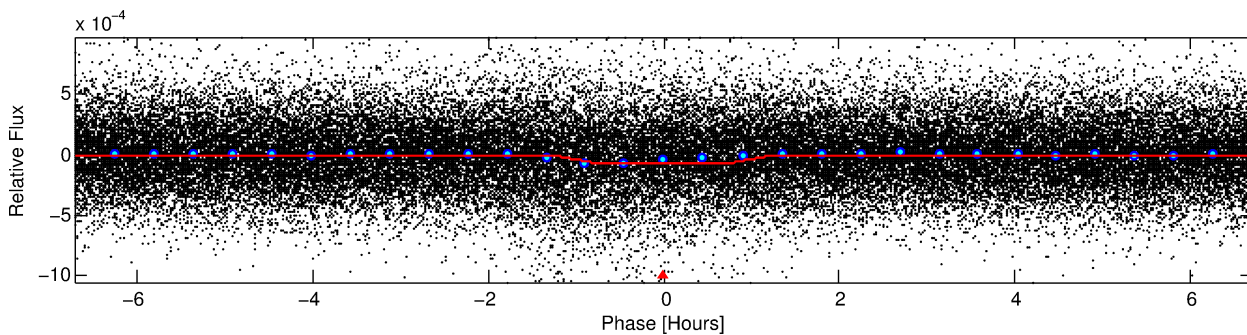
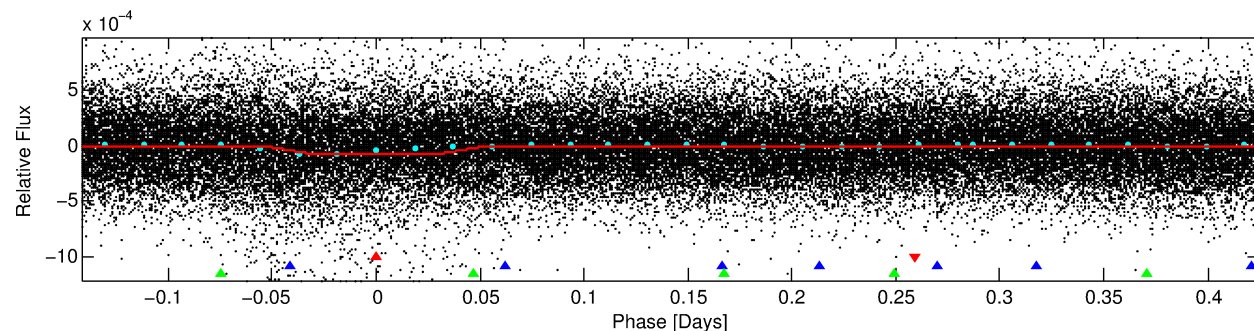
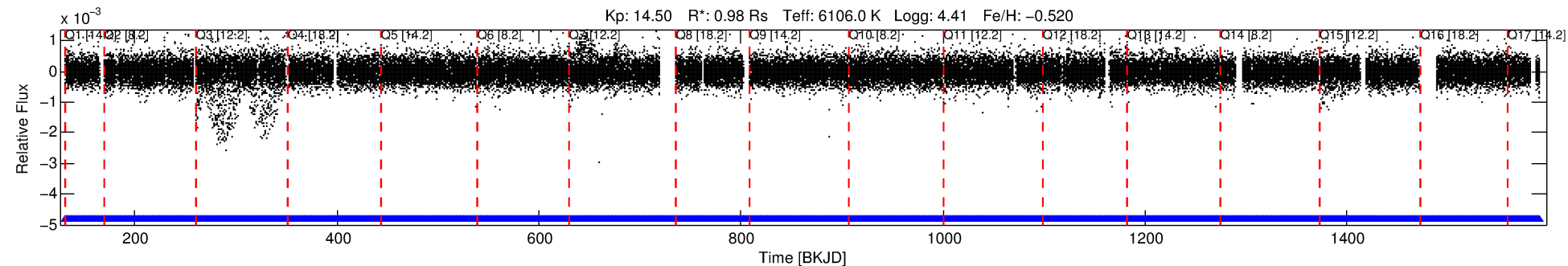
## Ephemeris Match Information For 007285673-01

TCE (1)	KIC	Parent (2)	Parent KIC	P <sub>1</sub> :P <sub>2</sub>	Dist ( $''$ )	$\Delta$ Row	$\Delta$ Col	m <sub>2</sub>	m <sub>1</sub>	D <sub>2</sub> /D <sub>1</sub>	Mechanism	Flag	$\sigma_P$	$\sigma_T$
007285673-01	7285673	RR-Lyr-pri	7198959	1:1	4147.3	521	0	7.86	14.50	8201.30	Col-Anomaly	0	1.13	23.01

**Notes:** P<sub>1</sub>:P<sub>2</sub> is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column. m<sub>2</sub> and m<sub>1</sub> are the magnitudes of the parent and child. D<sub>2</sub>/D<sub>1</sub> is the parent's transit depth divided by the child's.  $\sigma_P$  and  $\sigma_T$  are the significance of the match in period and epoch. For a match to be considered significant  $\sigma_P < 5.0$  and  $\sigma_T < 5.0$ . Matches which have  $\sigma_P$  and  $\sigma_T$  very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 7285673 Candidate: 1 of 3 Period: 0.567 d  
KOI: K04559 Corr: No Ephemeris Match



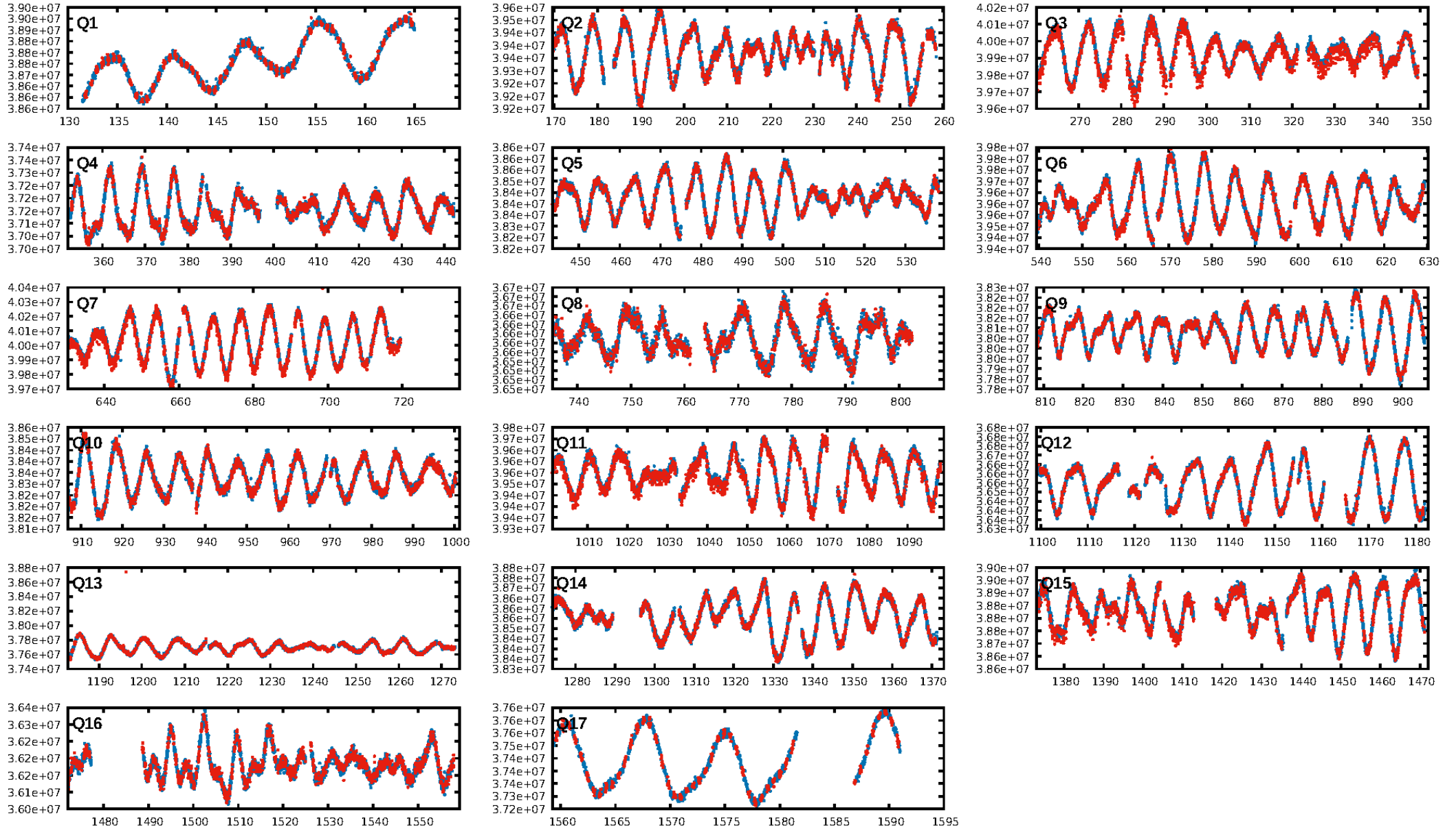
## DV Fit Results:

Period = 0.56682 [0.00000] d  
Epoch = 131.7985 [0.0012] BKJD  
Rp/R\* = 0.0094 [0.0029]  
a/R\* = 1.28 [0.84]  
b = 0.90 [0.35]  
Seff = 7201.12 [2621.60]  
Teq = 2349 [214] K  
Rp = 1.01 [0.41] Re  
a = 0.0129 [0.0030] AU  
Ag = 0.99 [0.80] [-0.01 $\sigma$ ]  
Teffp = 3627 [671] K [1.81 $\sigma$ ]

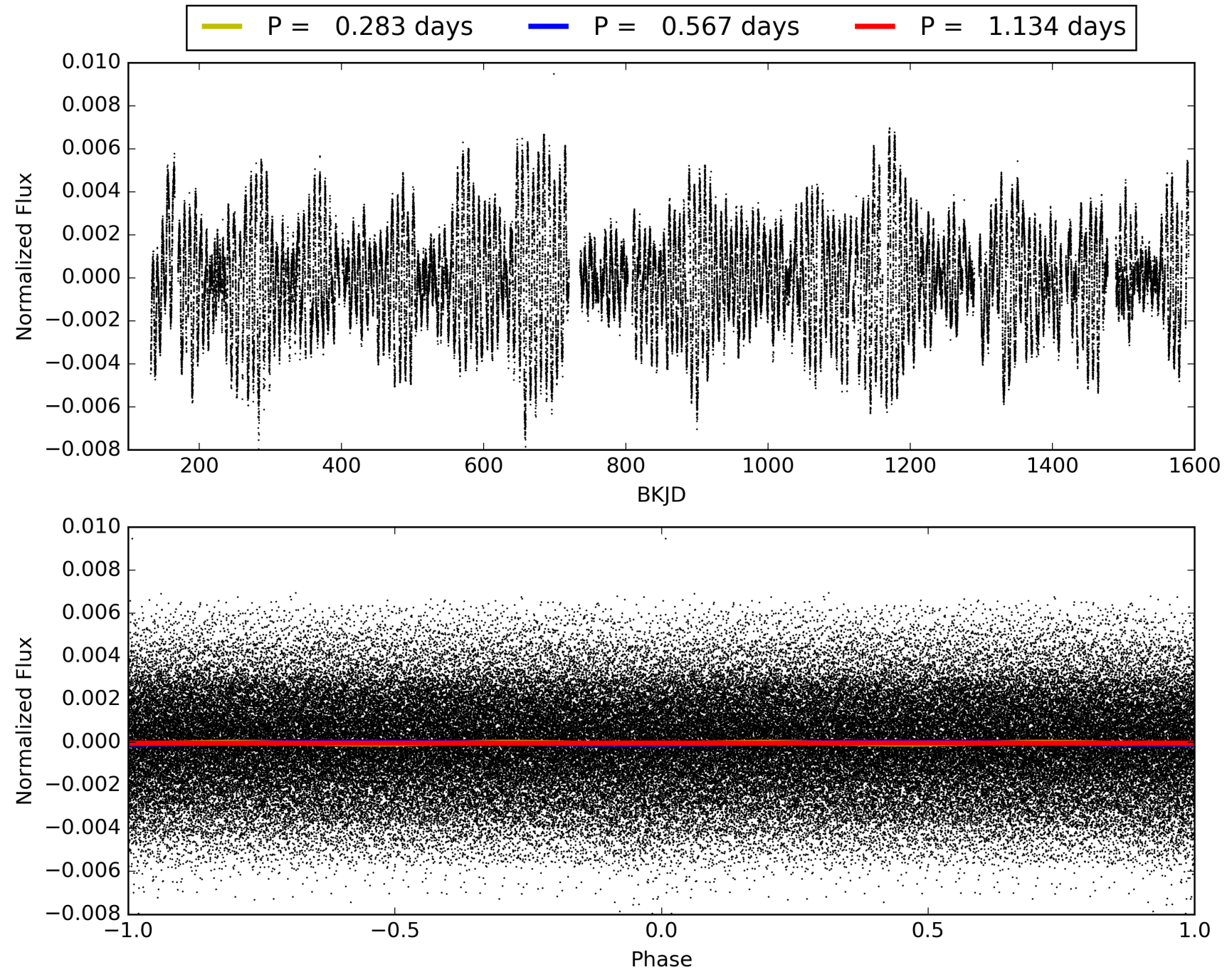
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [293.17 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.65e-63  
RollingBand-fgt: 1.00 [2258/2258]  
**GhostDiagnostic-chr: 0.4845**  
Centroid-sig: 0.0%  
Centroid-so: 1.919 arcsec [3.63 $\sigma$ ]  
OotOffset-rm: 3.419 arcsec [4.88 $\sigma$ ]  
KicOffset-rm: 3.520 arcsec [5.04 $\sigma$ ]  
OotOffset-st: 3/3/2/1 [9]  
KicOffset-st: 3/3/2/1 [9]  
DiffImageQuality-fgm: 0.11 [1/9]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 007285673-01, PDC Light Curves



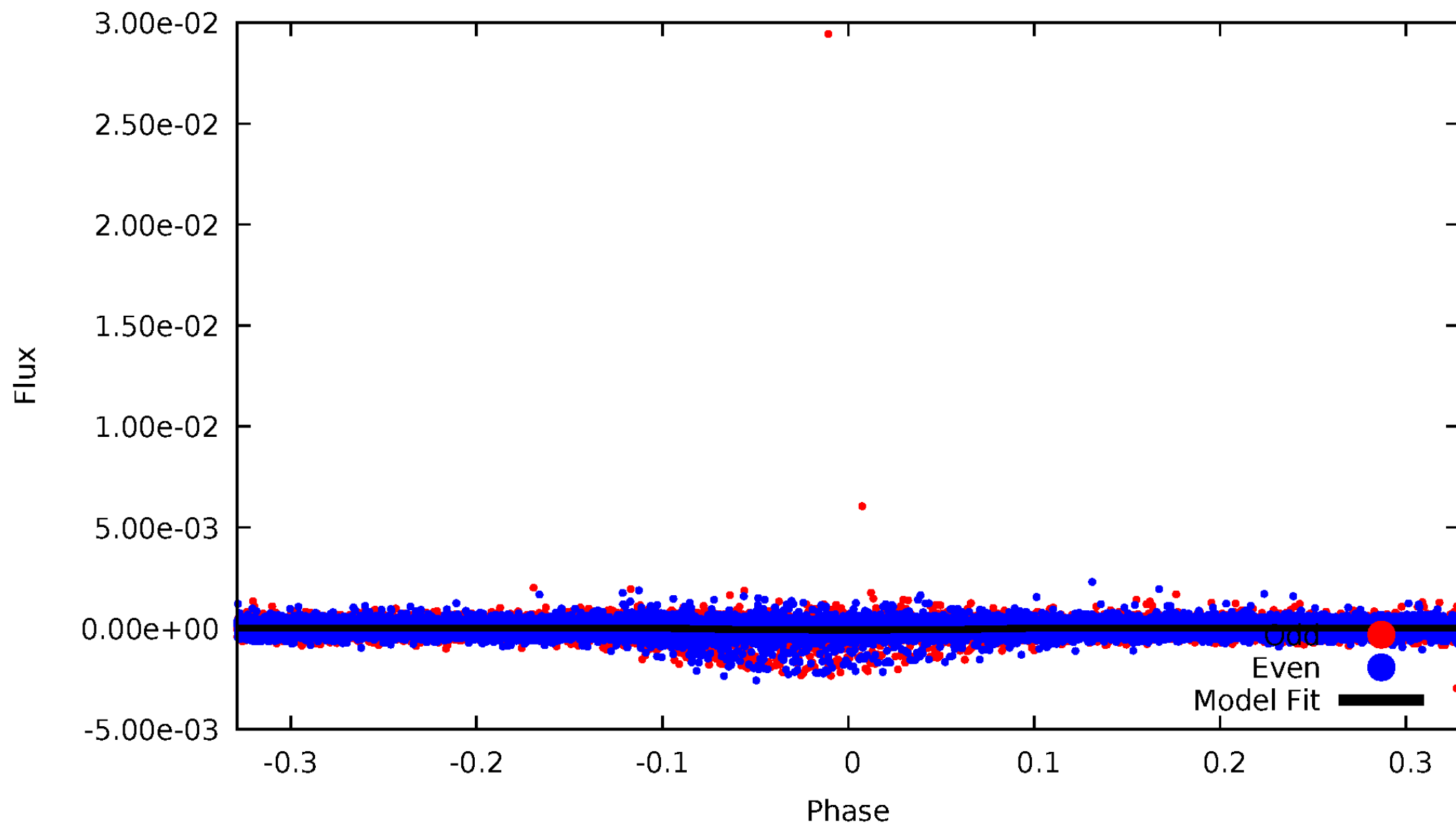
# TCE 007285673-01





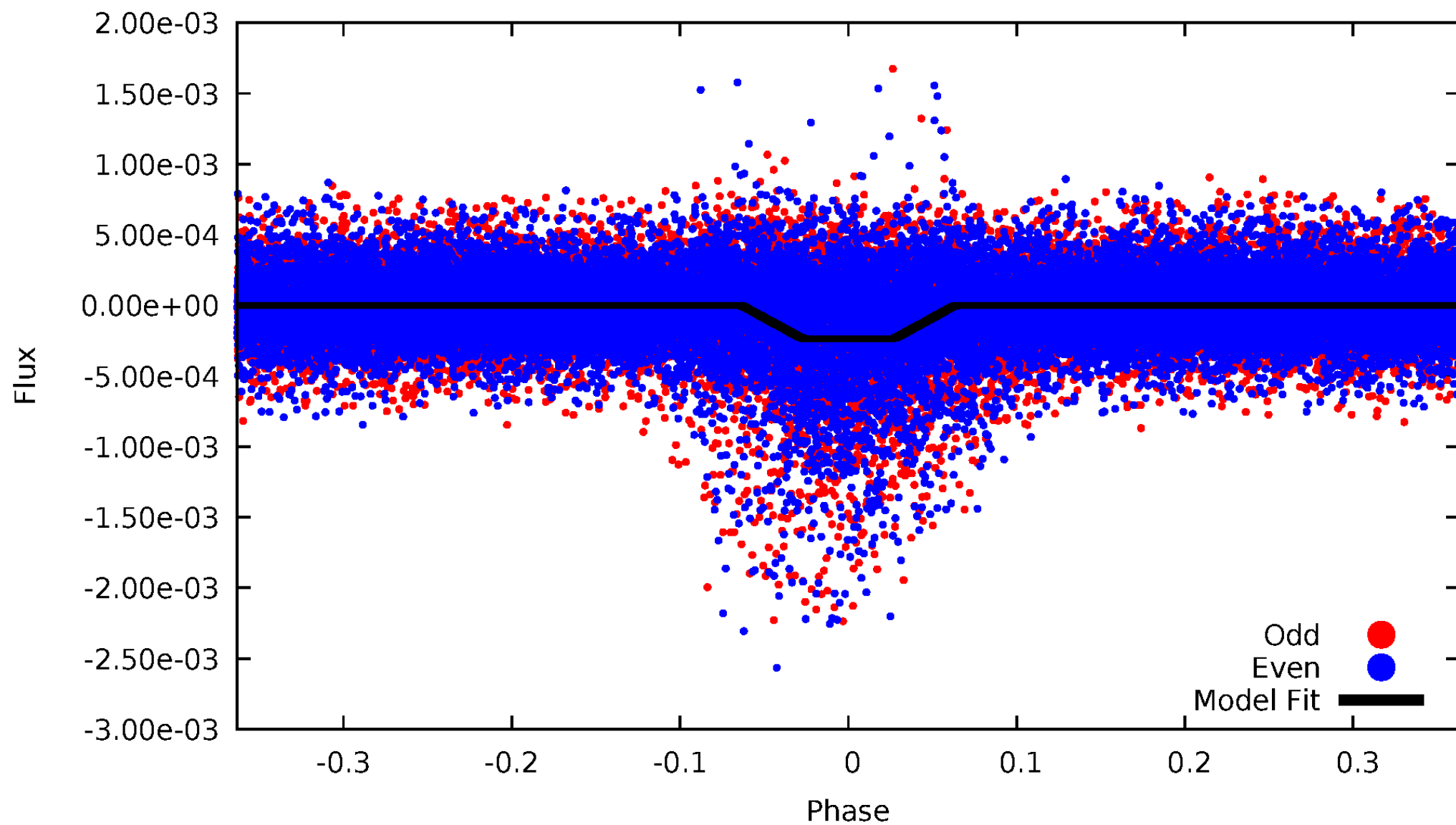
# DV Odd/Even

TCE 007285673-01

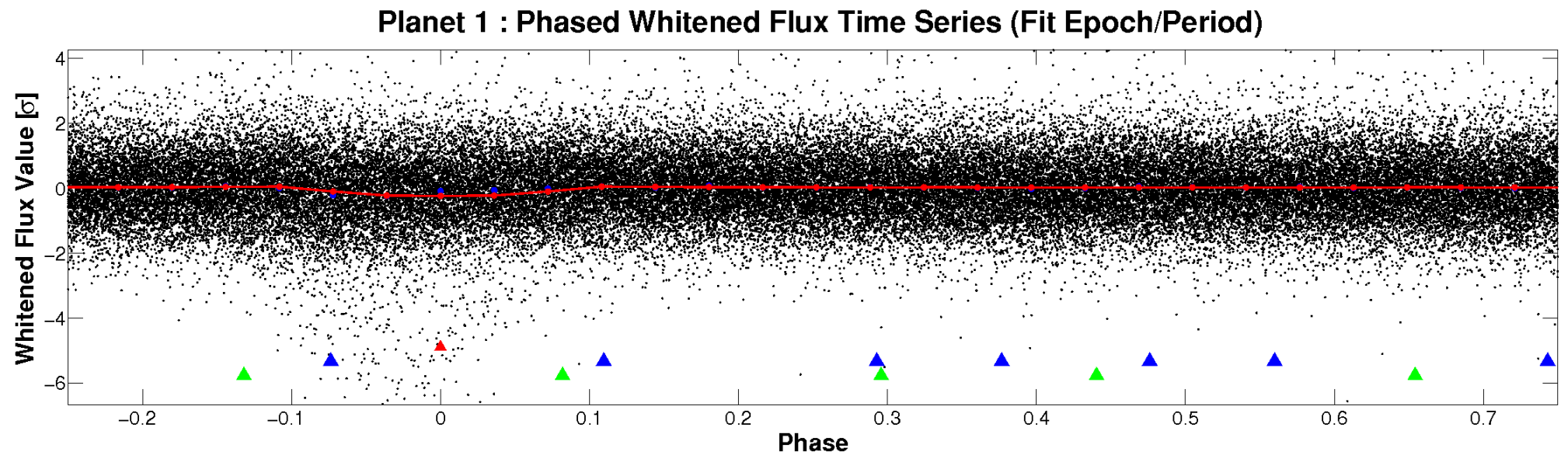
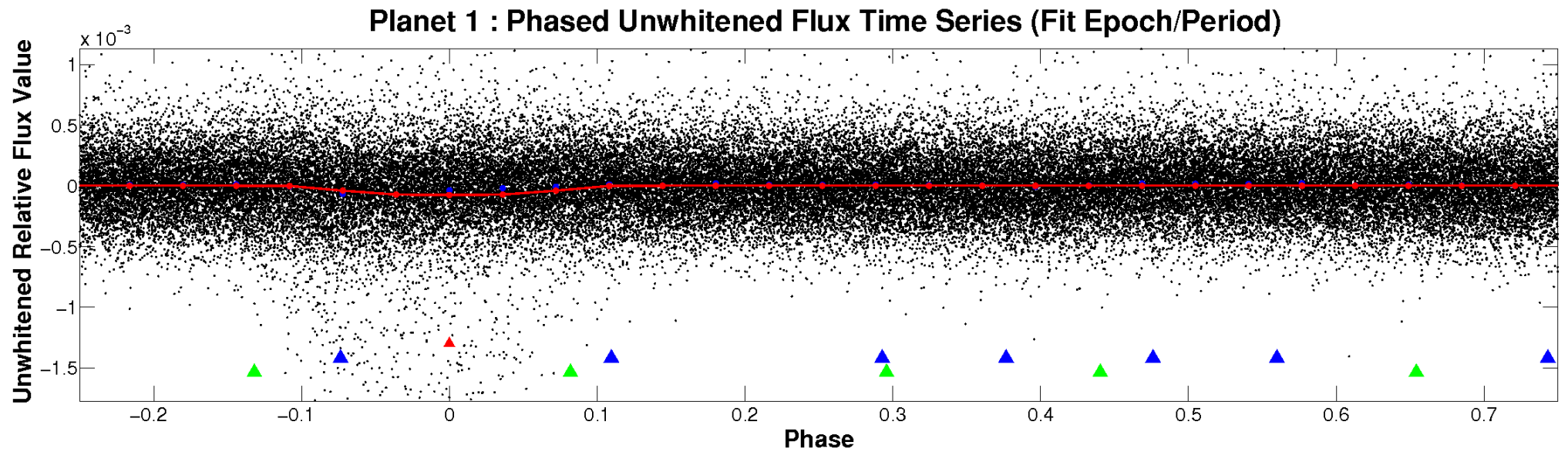


# ALT Odd/Even

TCE 007285673-01

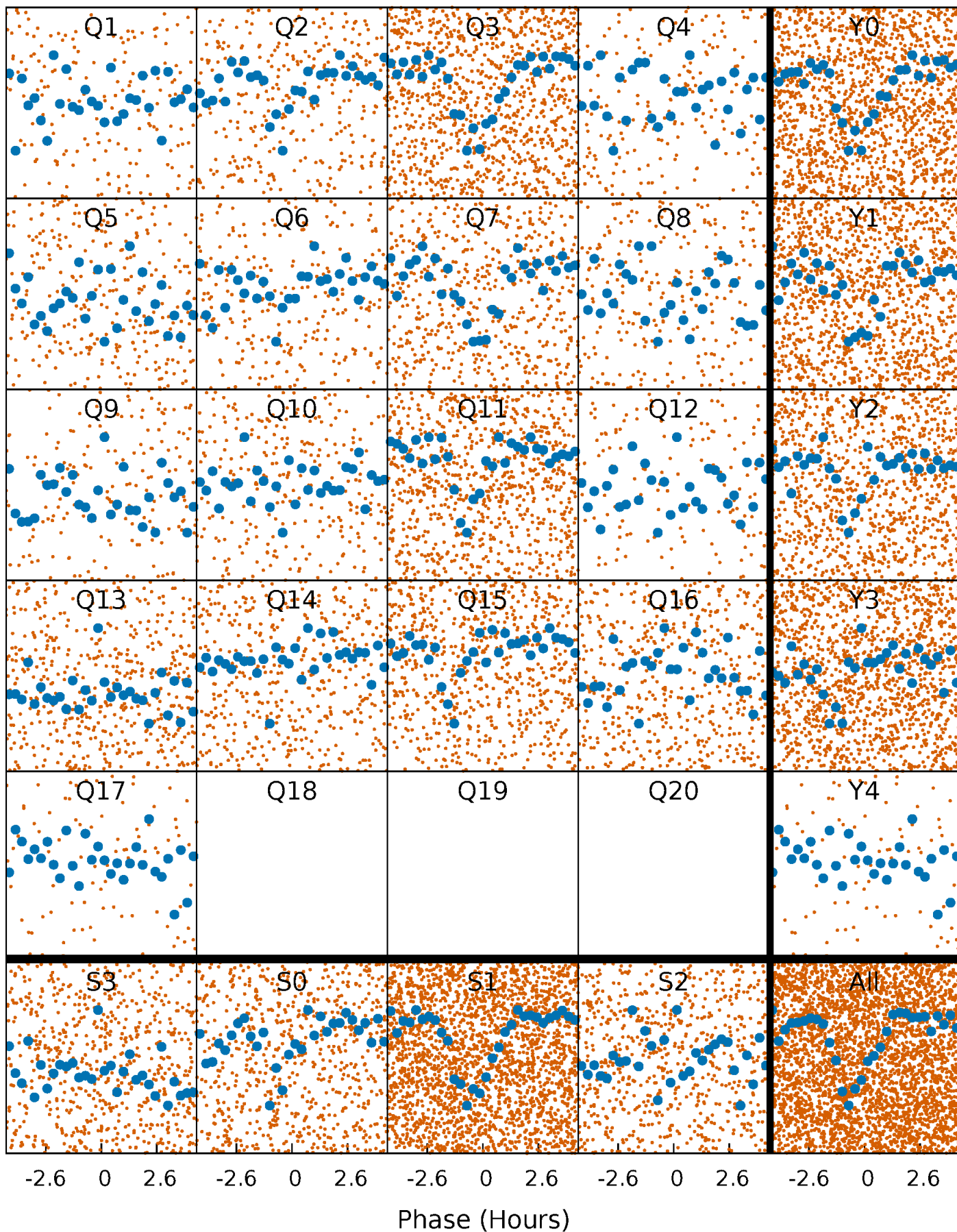


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

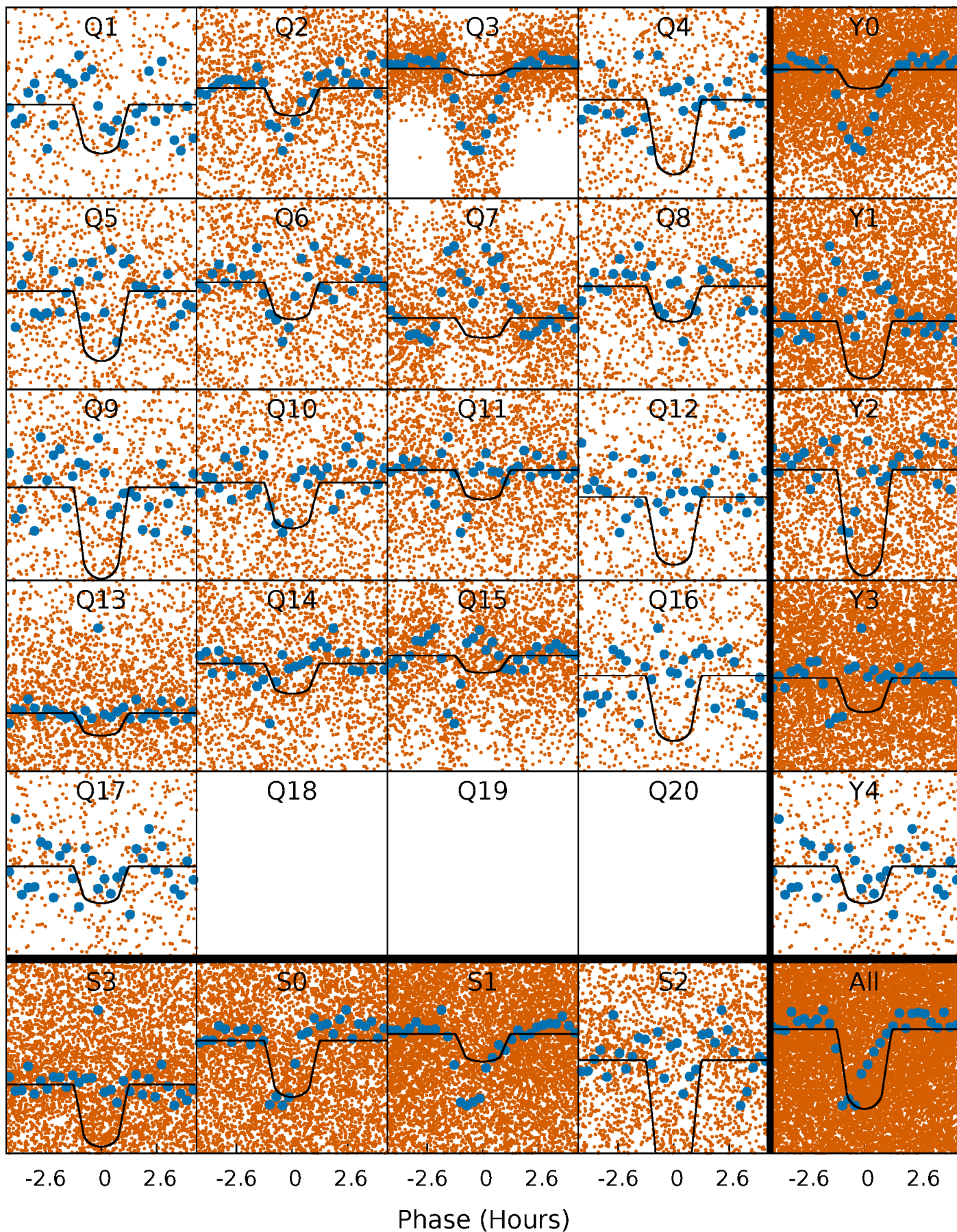
TCE 007285673-01 P= 0.566822 Days  $T_0=131.798539$  (BKJD)





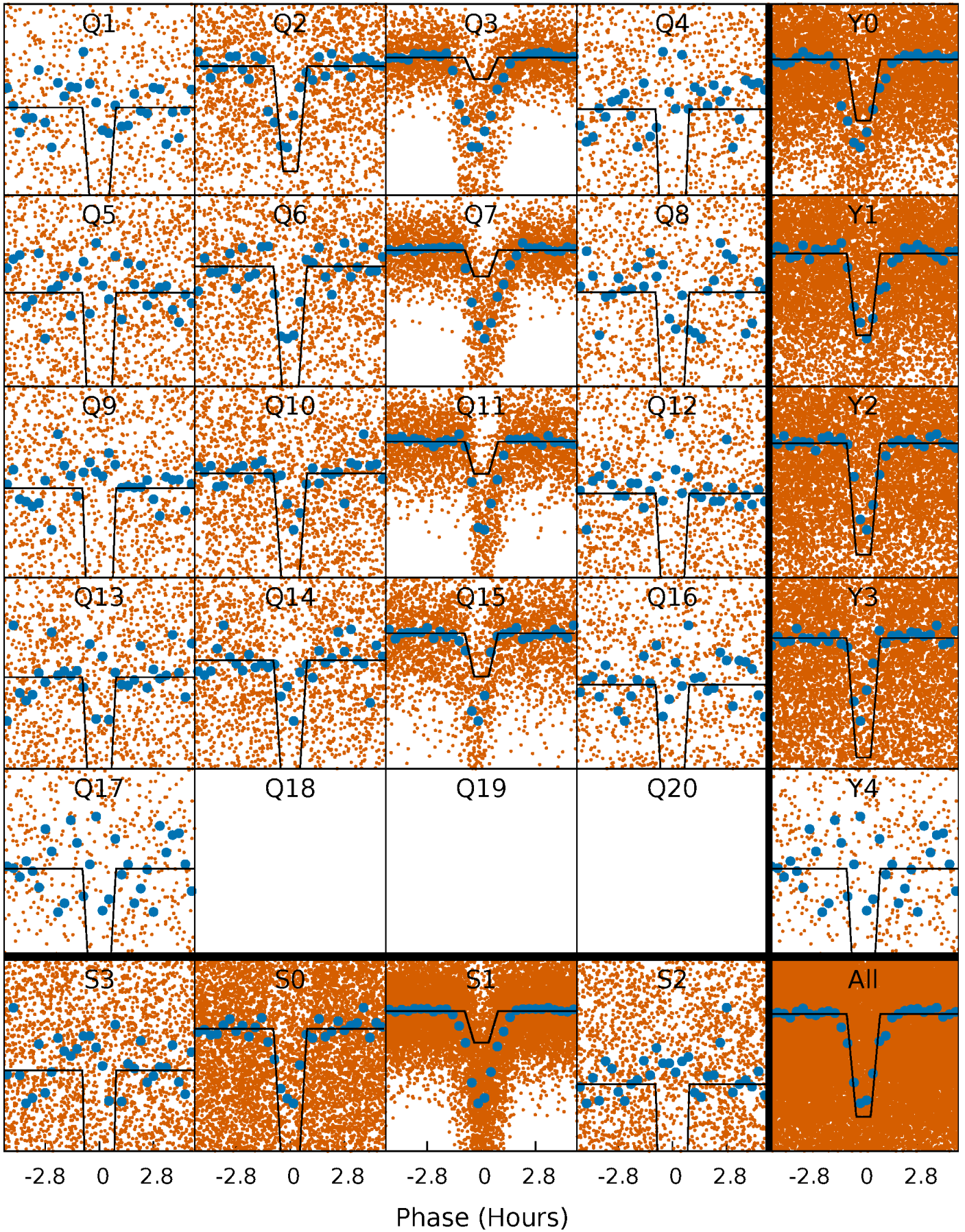
# DV Quarter-Phased Transit Curves

TCE 007285673-01 P= 0.566822 Days  $T_0=131.798539$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 007285673-01 P= 0.566798 Days  $T_0=131.801265$  (BKJD)

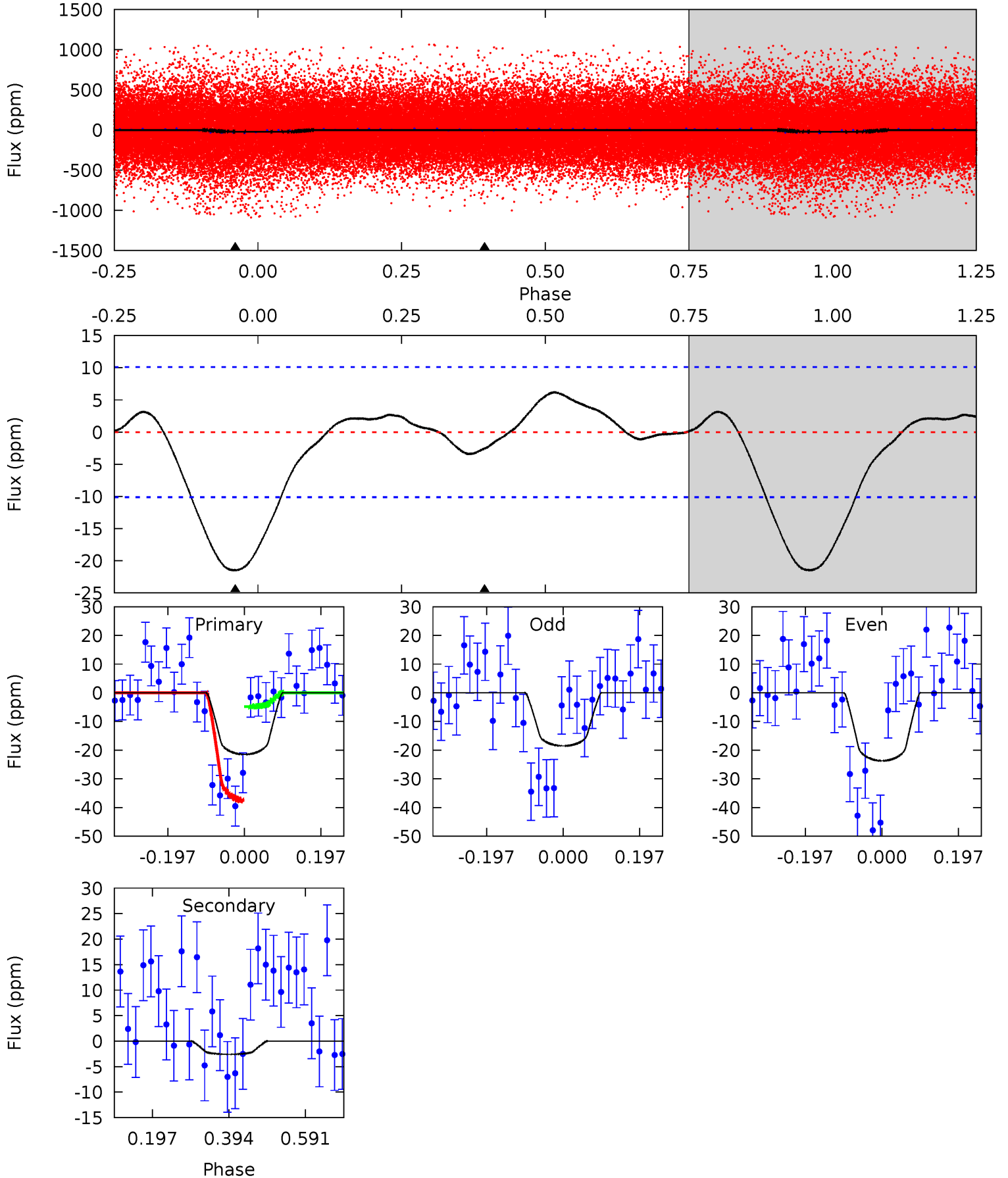




# DV Model-Shift Uniqueness Test

007285673-01, P = 0.566822 Days, E = 131.231717 Days

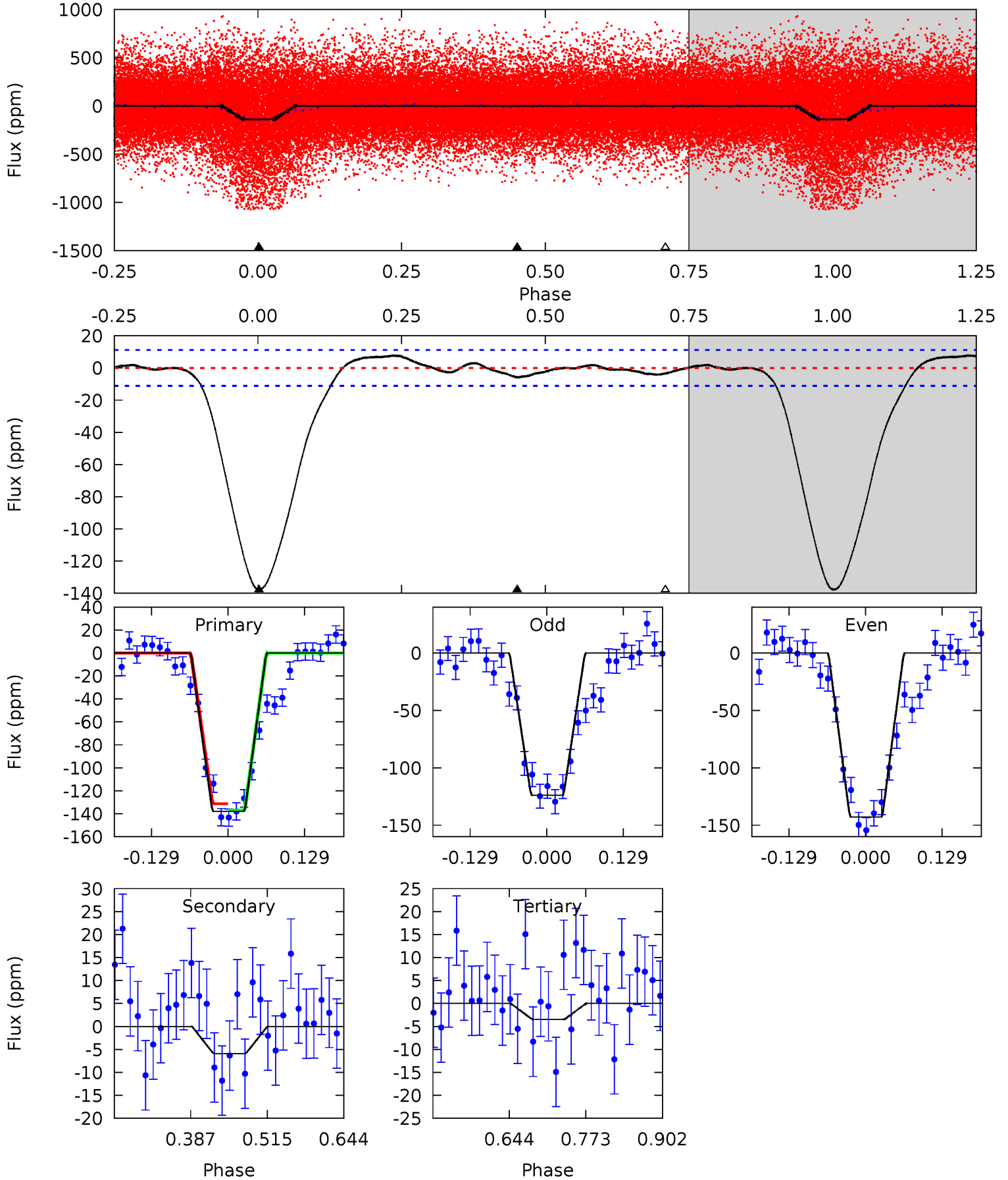
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.39	1.13	0	0	4.42	1.29	0.56	9.39	9.39	1.13	1.13	1.13	2.28	0.22	6.95



# Alt Model-Shift Uniqueness Test

007285673-01, P = 0.566798 Days, E = 131.234467 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
55.8	2.39	1.40	0	4.51	1.52	1.40	54.4	55.8	0.99	2.39	3.85	1.84	0.05	1.12





### Stellar Parameters For KIC 007285673

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6106^{+181}_{-200}$	$4.405^{+0.124}_{-0.186}$	$-0.520^{+0.300}_{-0.300}$	$0.982^{+0.271}_{-0.146}$	$0.893^{+0.109}_{-0.089}$	$1.329^{+0.737}_{-0.642}$
	+3%/-3%	+3%/-4%	+58%/-58%	+28%/-15%	+12%/-10%	+55%/-48%
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 007285673-01 / KOI 4559.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-3 \pm 2$	$1.01^{+0.35}_{-0.34}$	$3310^{+238}_{-200}$	$-2830^{+6053}_{-461}$	$0.196^{+0.398}_{-0.175}$
Alt.	$-6 \pm 2$	$1.65^{+0.42}_{-0.35}$	$3289^{+242}_{-172}$	$-2834^{+5397}_{-301}$	$0.190^{+0.163}_{-0.087}$

$T_{\text{max}}$  = 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

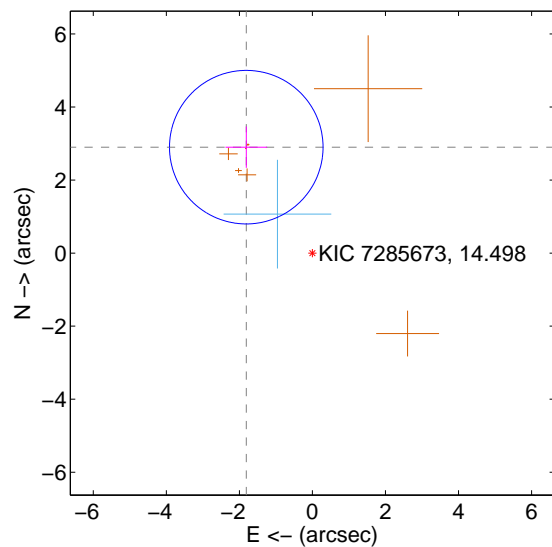
Supplemental centroid analysis for 007285673-01. Kepler magnitude: 14.50. Transit SNR 21.04

There are 1 quarters with good PRF difference image offsets

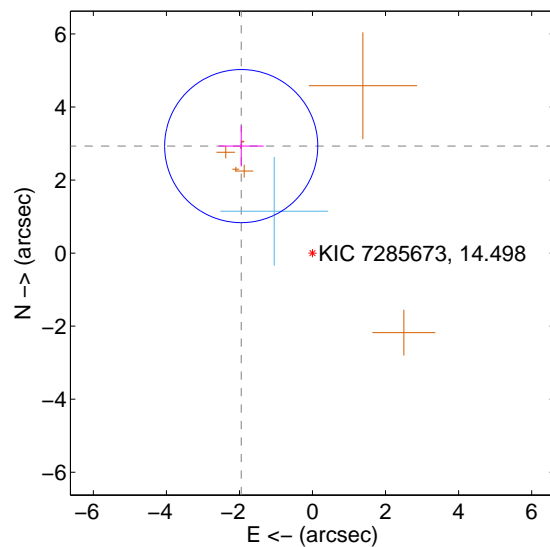
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.419 \pm 0.700$	4.88	$1.811 \pm 0.571$	$2.900 \pm 0.567$
PRF-fit source offset from KIC position	$3.520 \pm 0.698$	5.04	$1.952 \pm 0.614$	$2.929 \pm 0.559$
photometric centroid source offset	$1.92 \pm 0.53$	3.63	$1.36 \pm 0.52$	$-1.36 \pm 0.53$

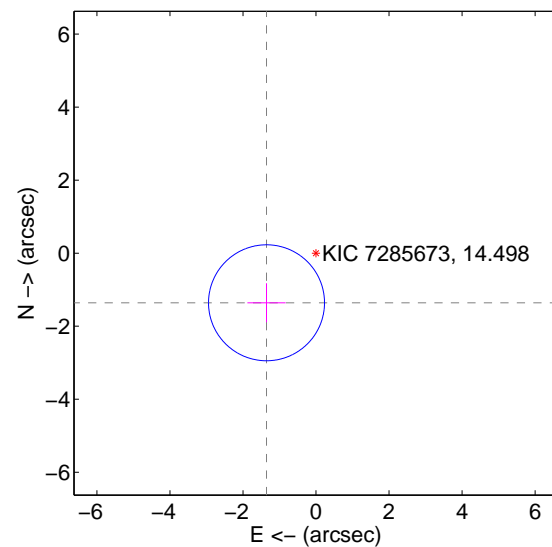
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

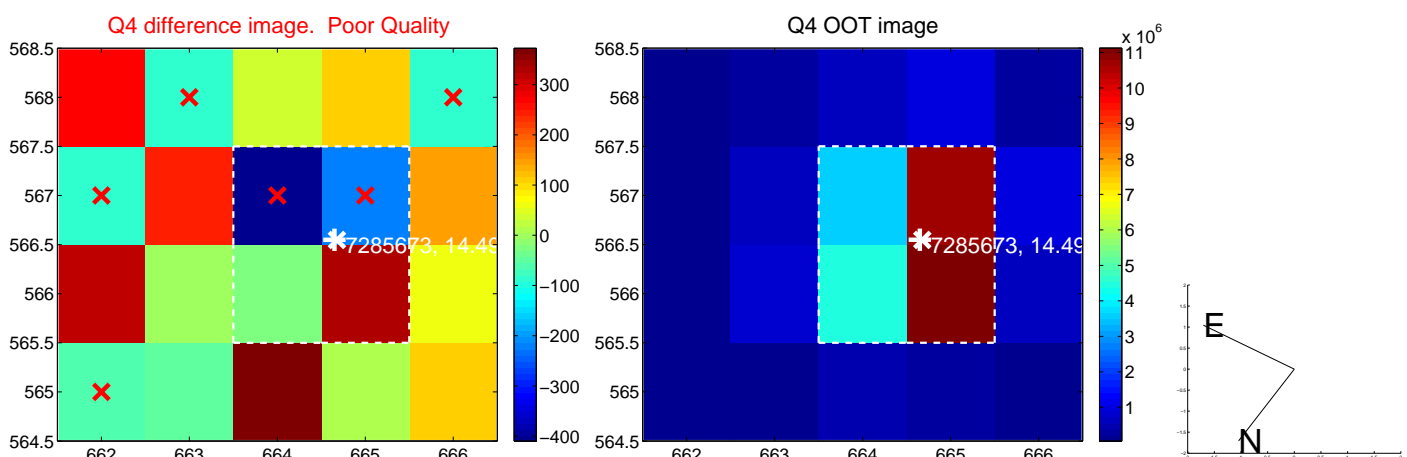
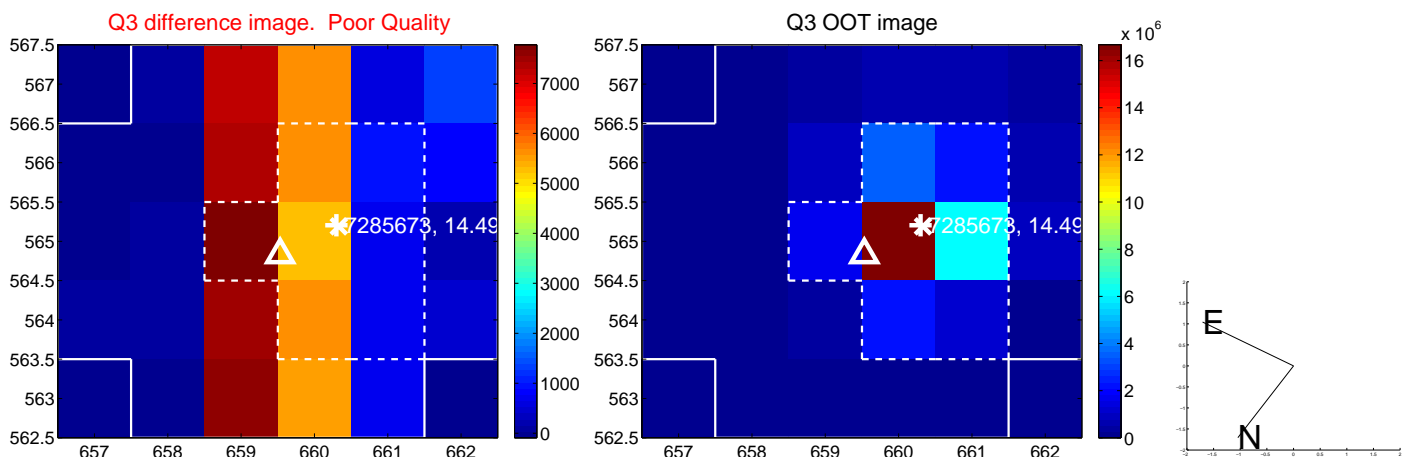
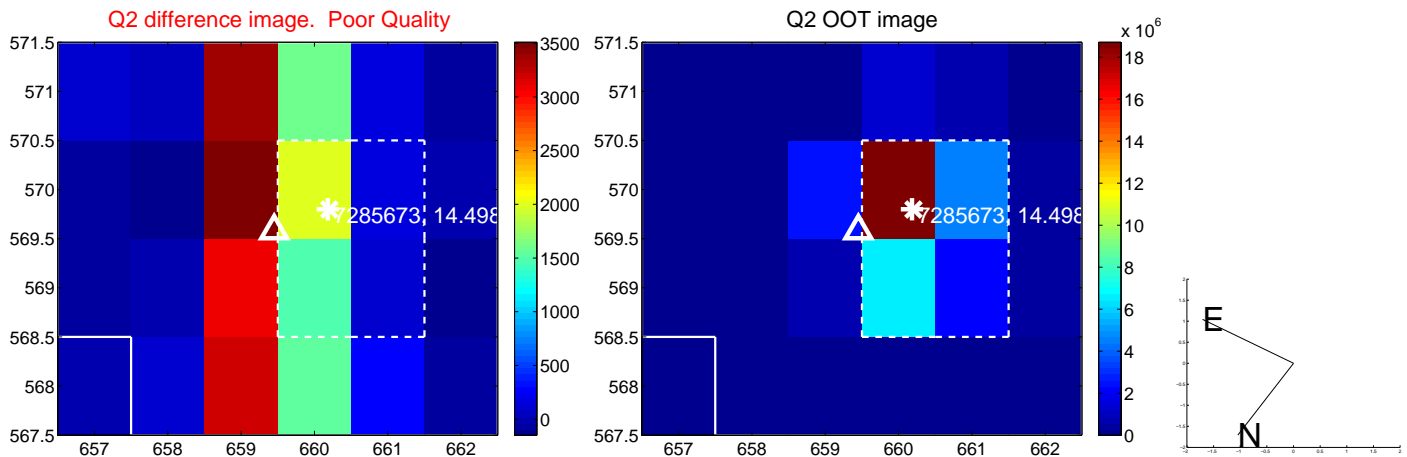
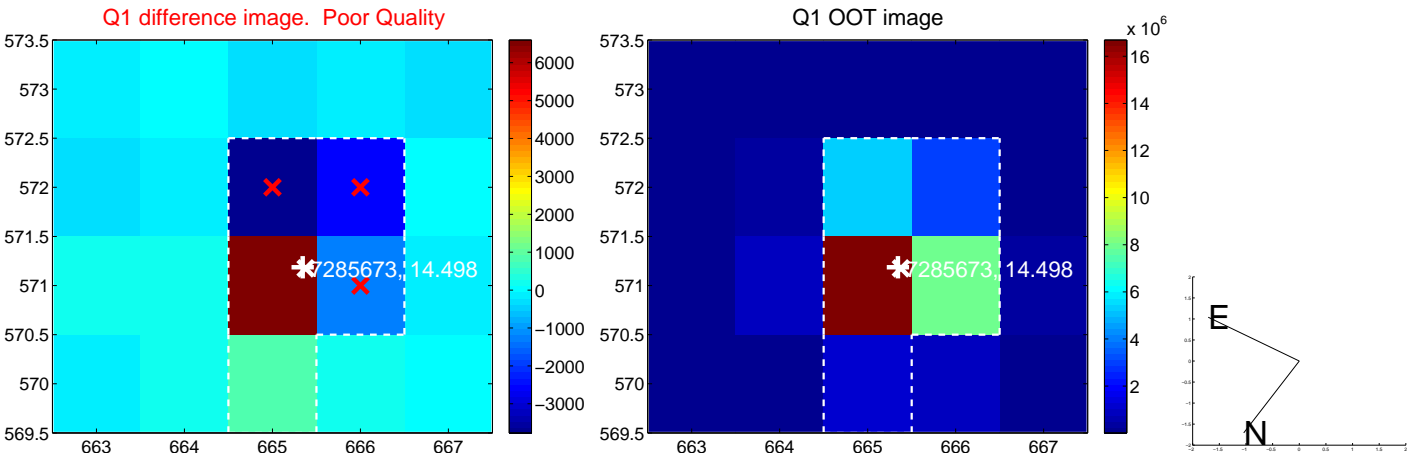


offset from photometric centroids

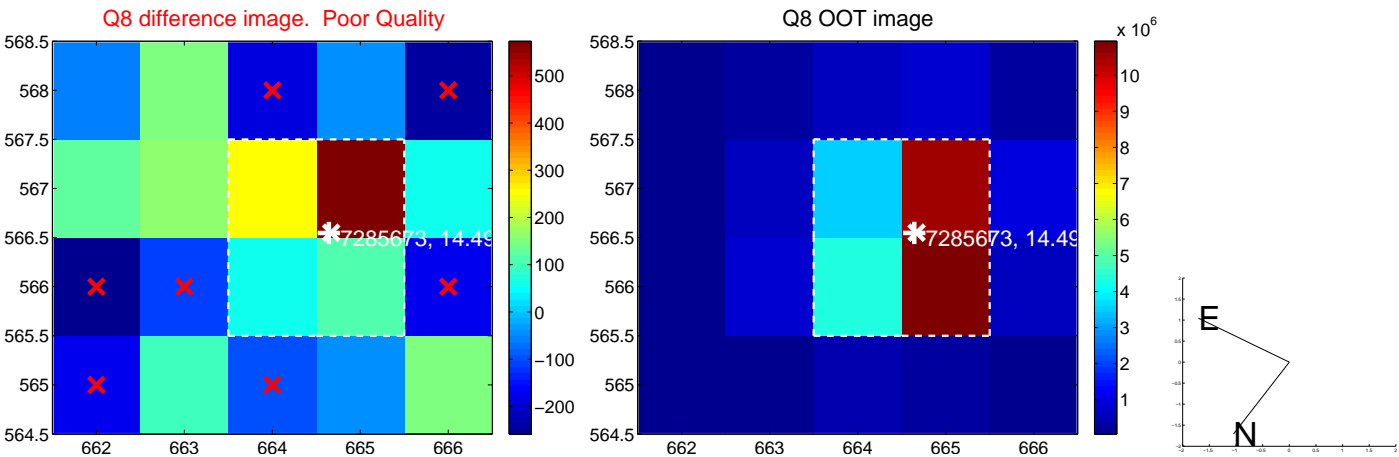
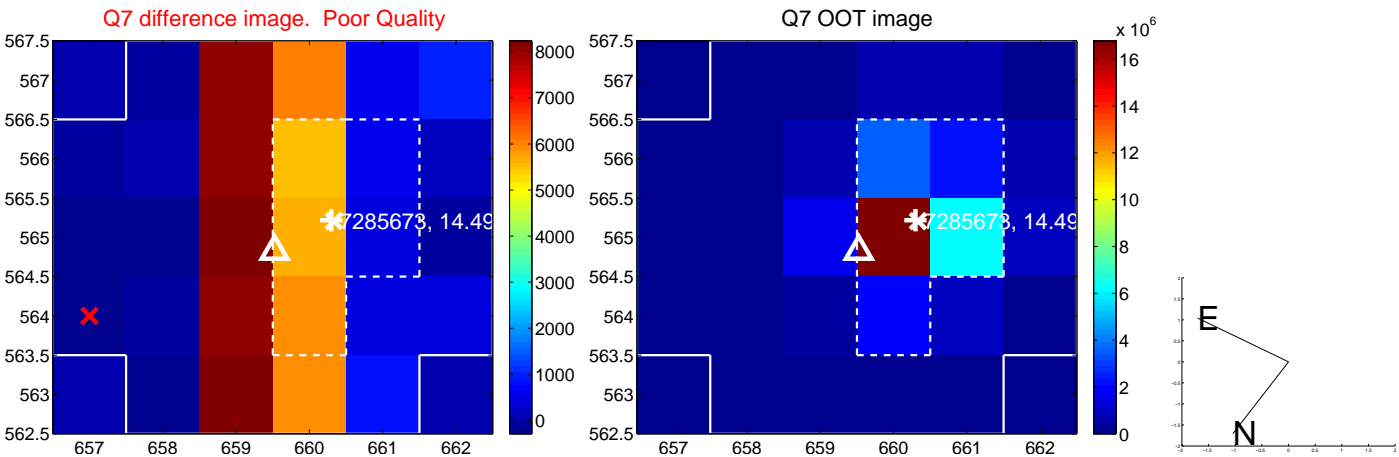
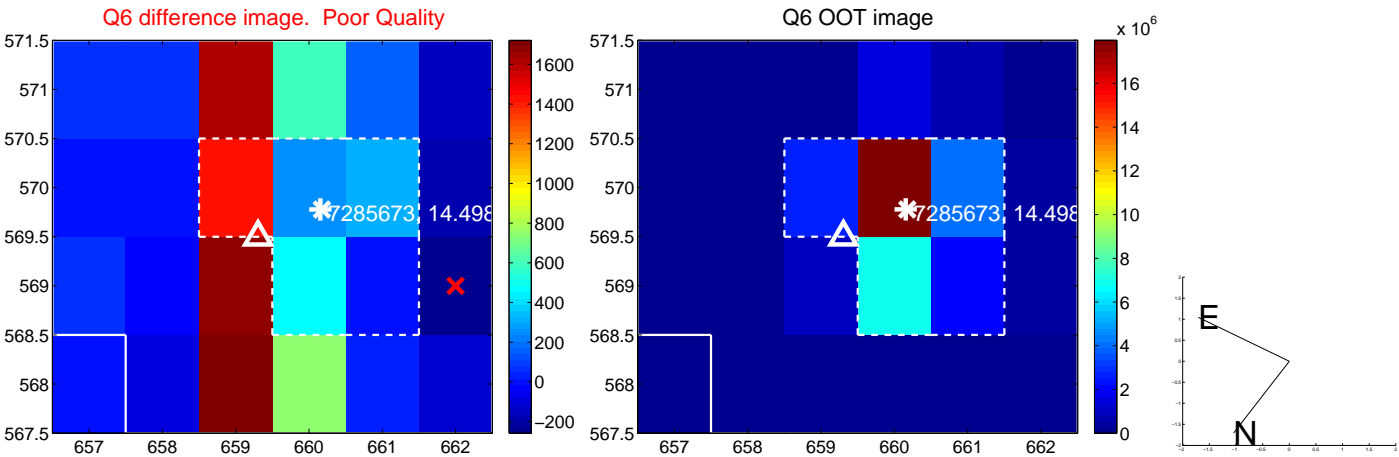
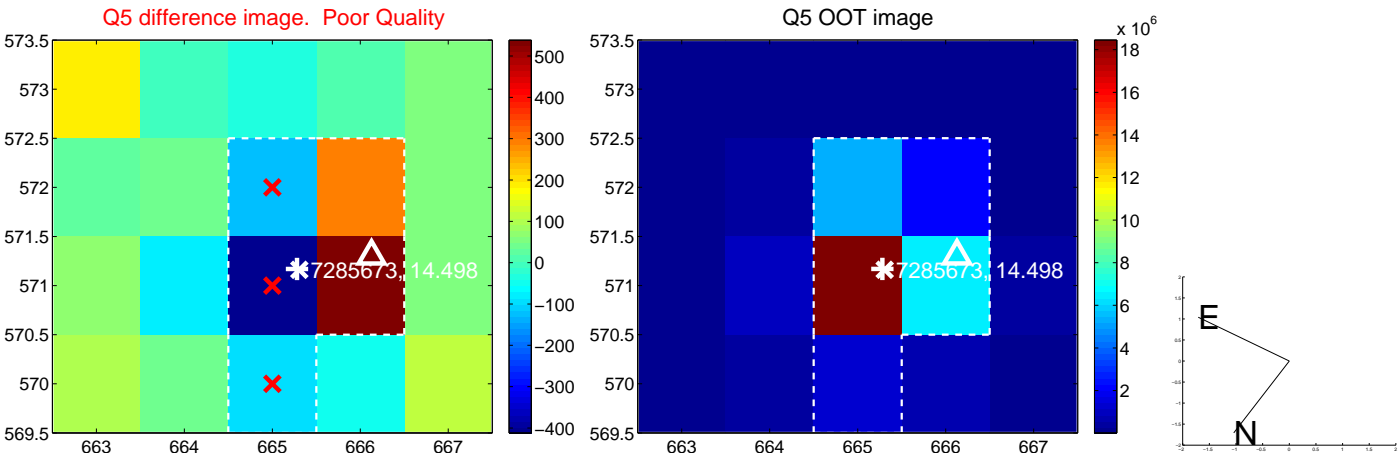


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

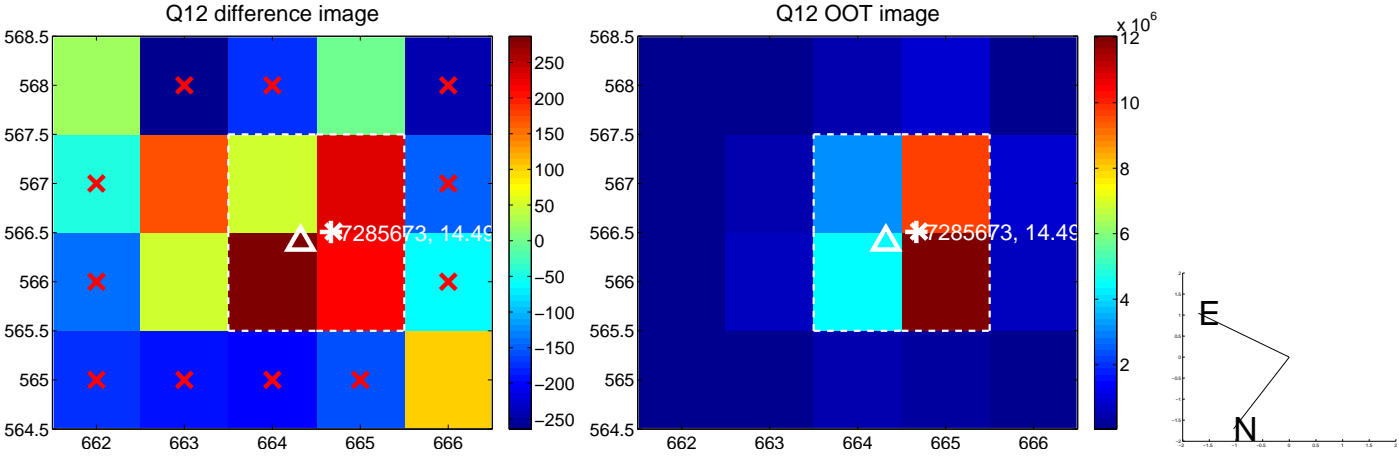
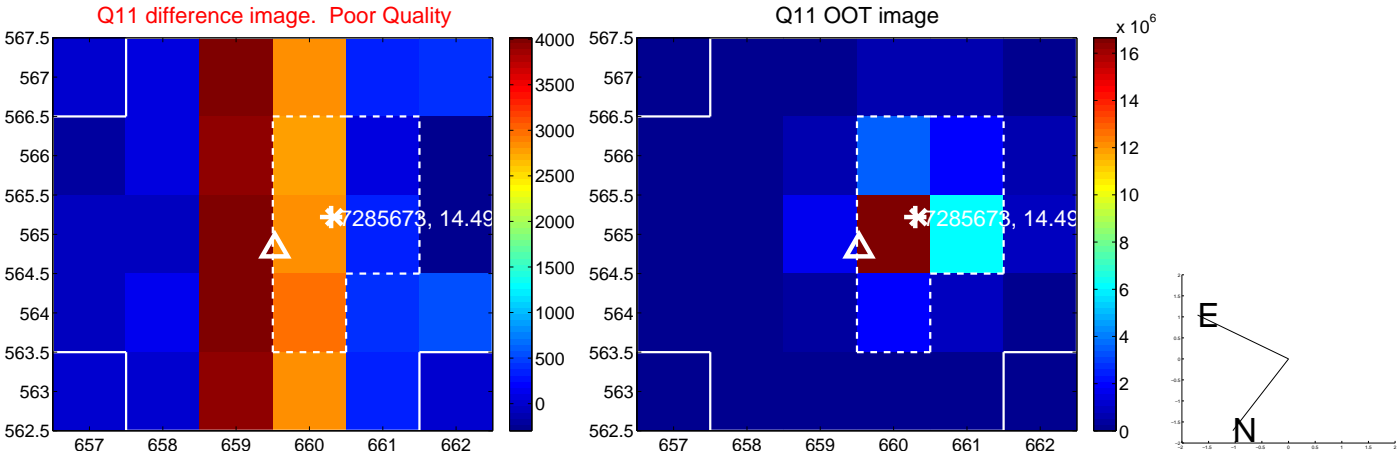
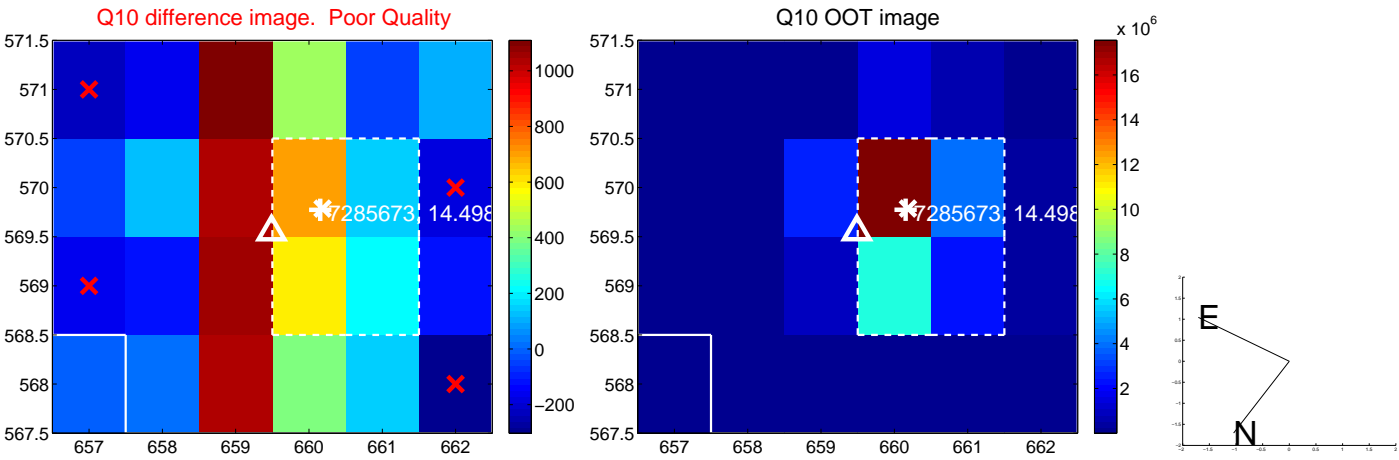
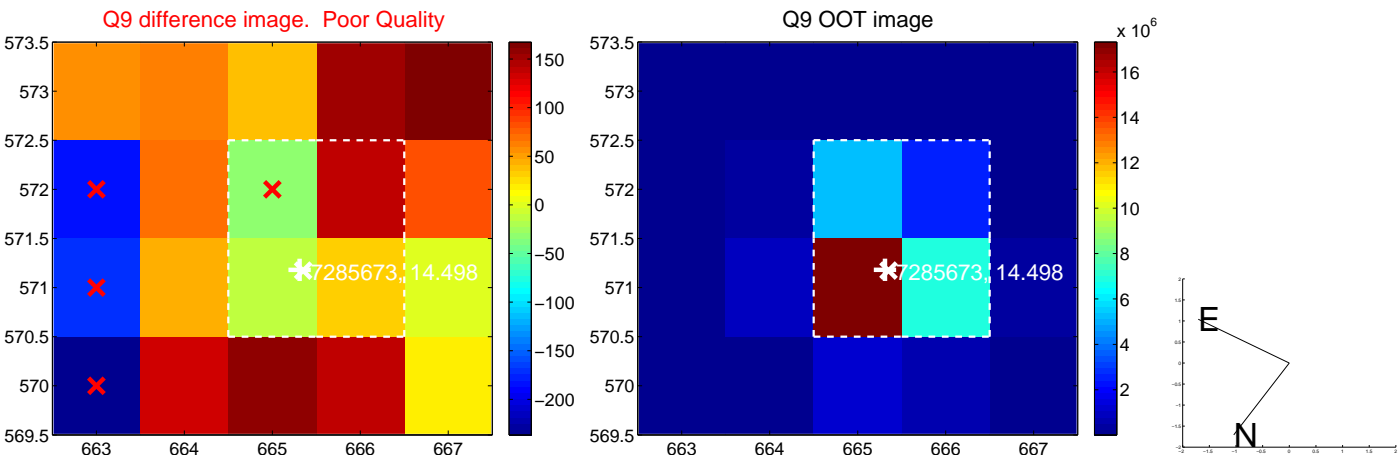


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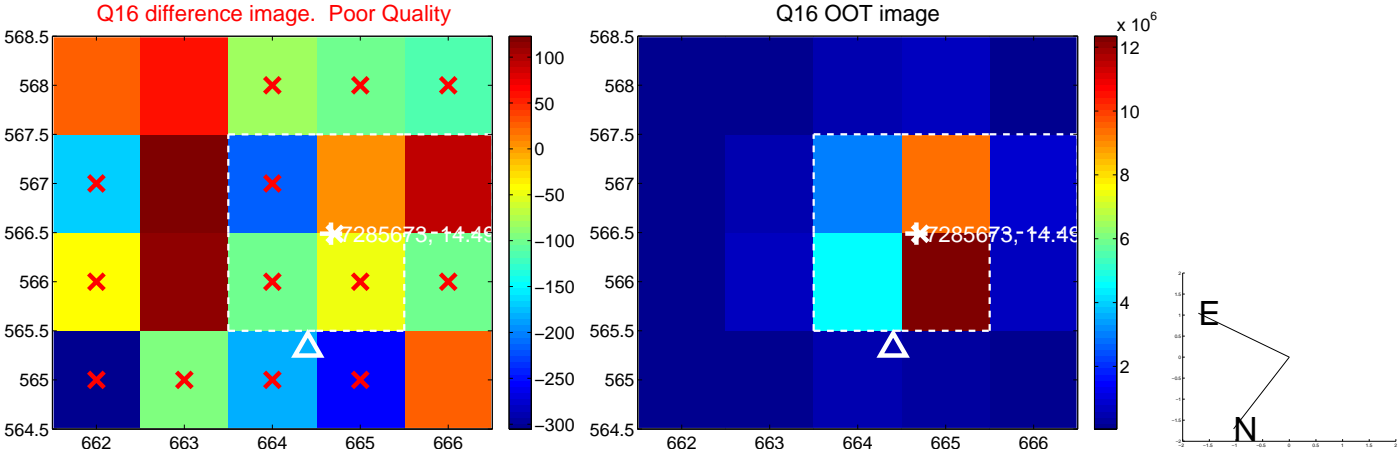
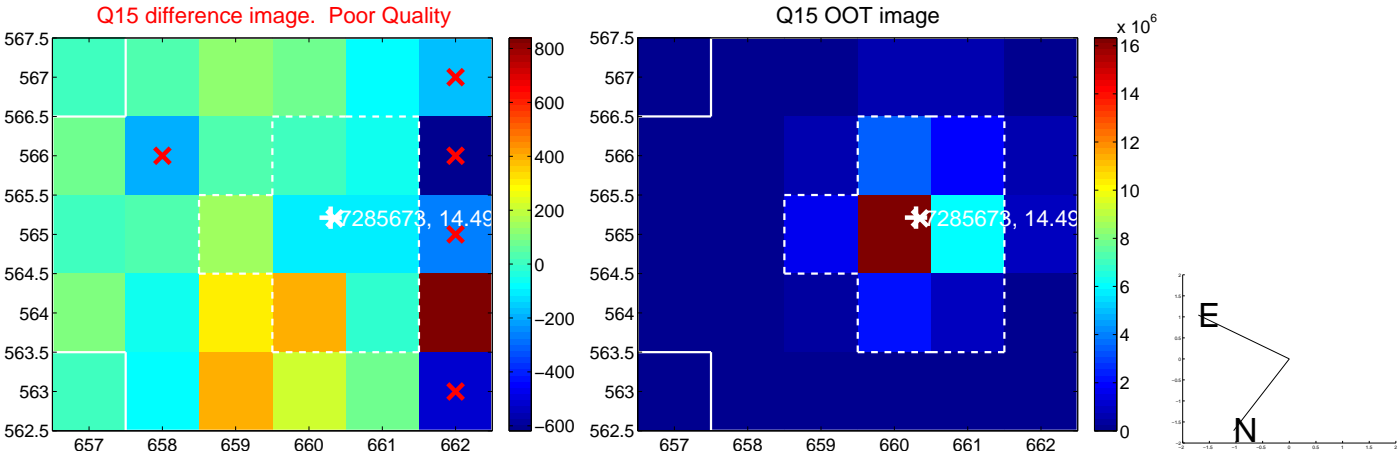
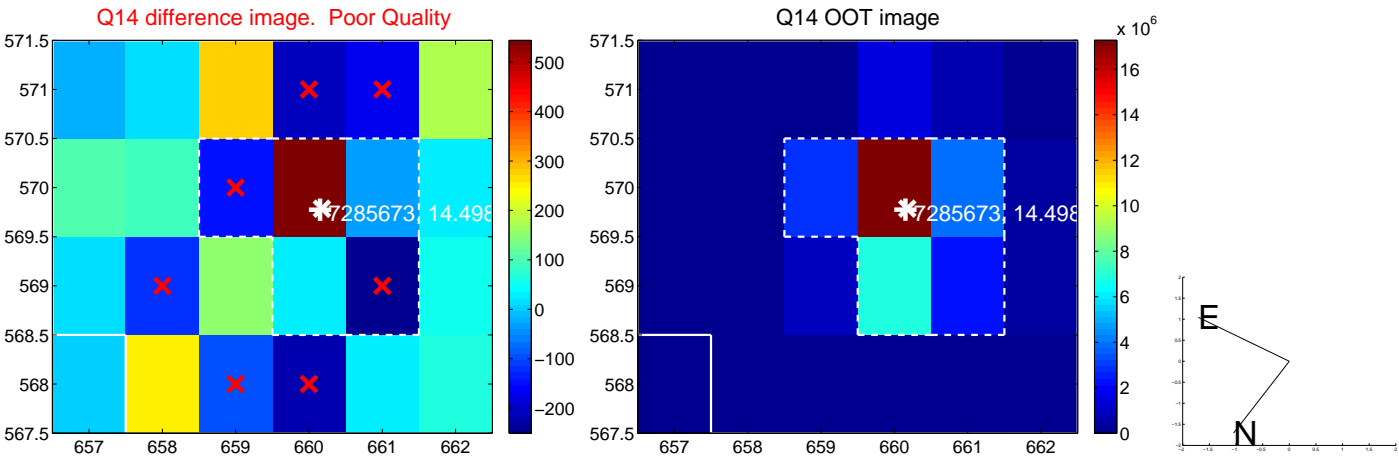
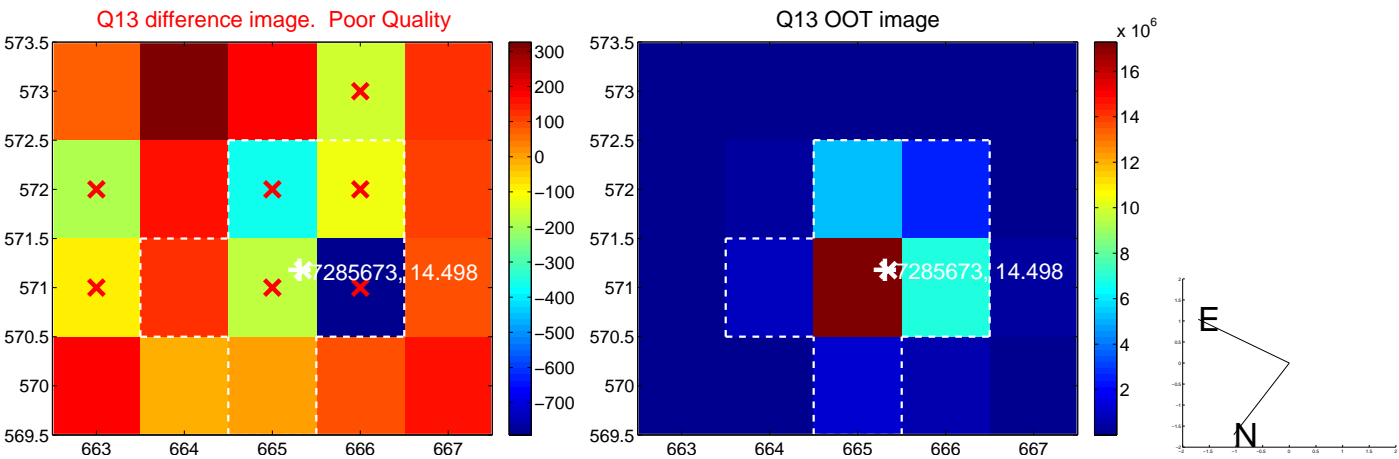




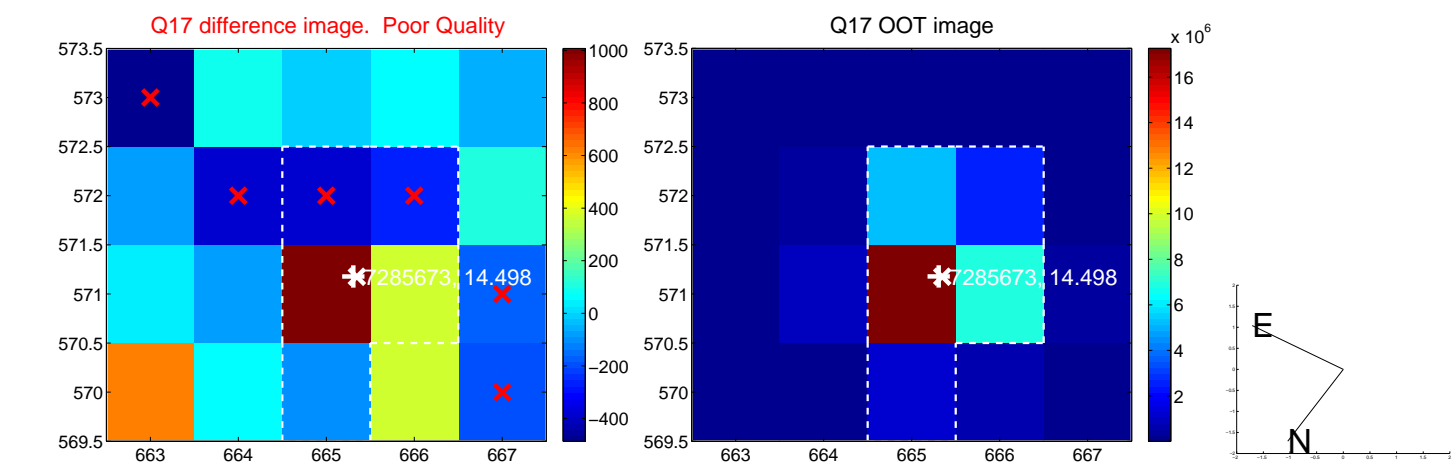
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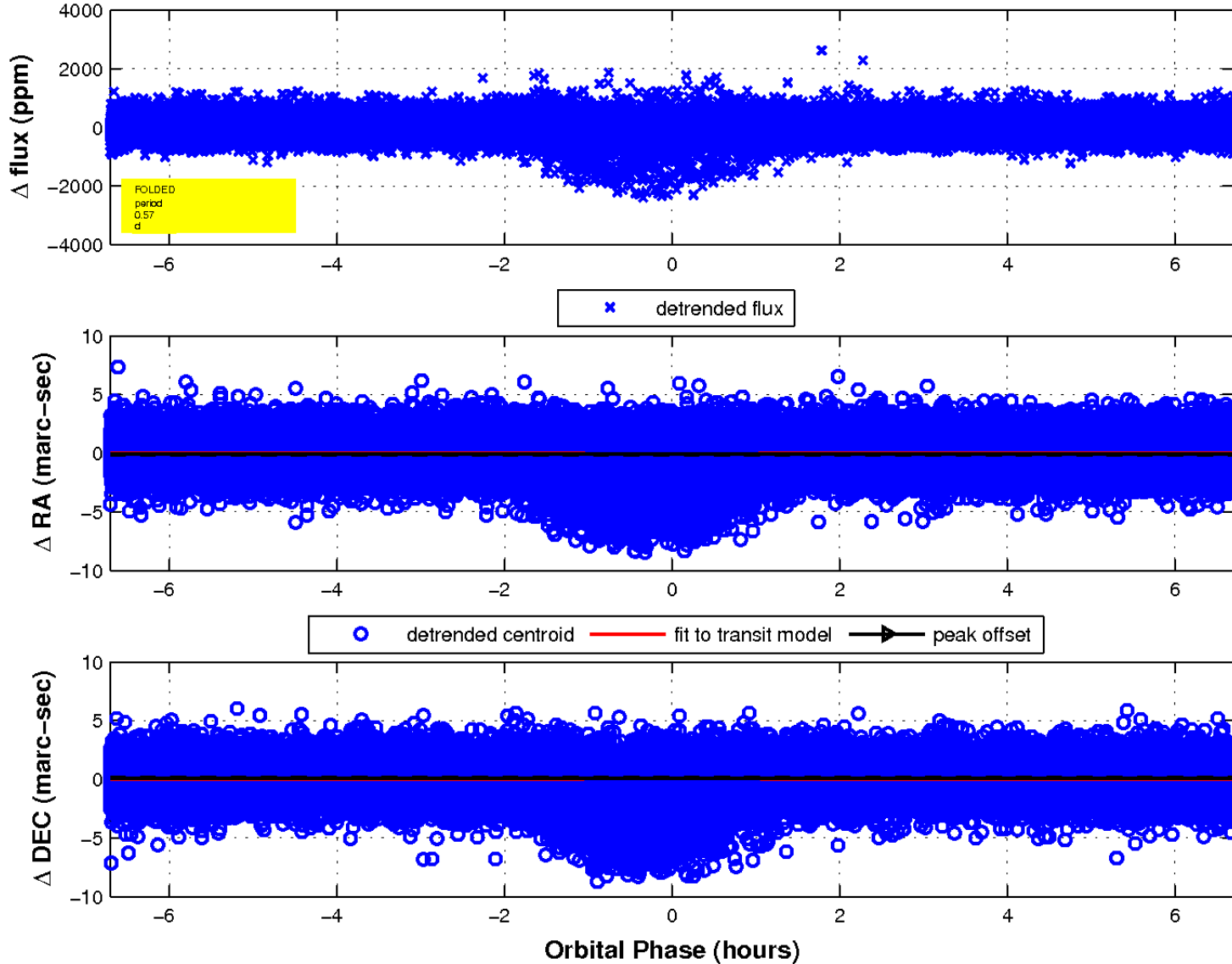
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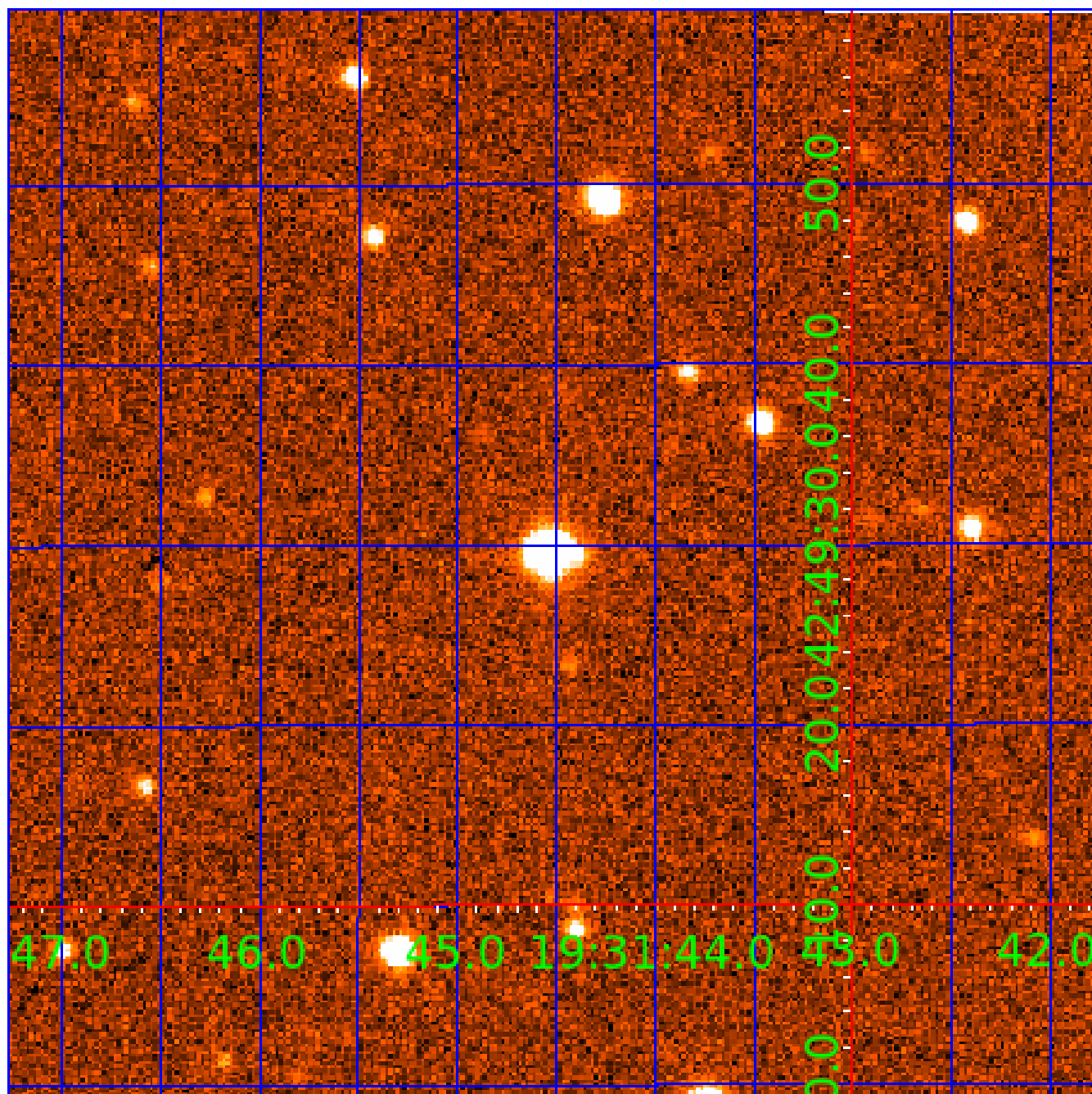


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination





# KIC 007285673

## Q1-17 DR25 TCE Parameters

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007285673-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
007285673-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS

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

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

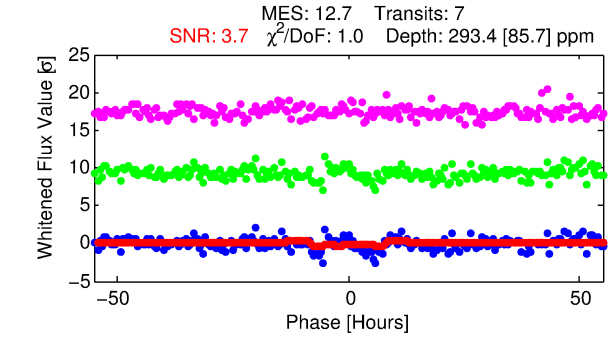
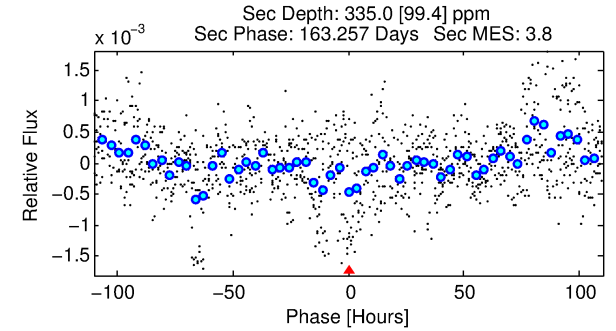
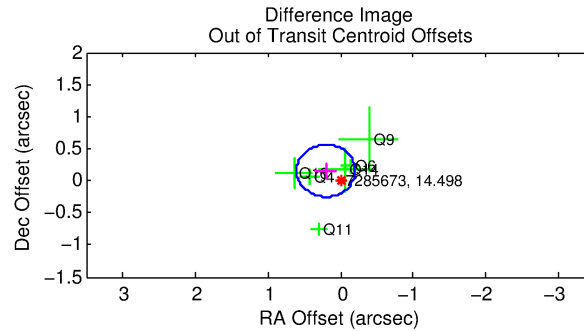
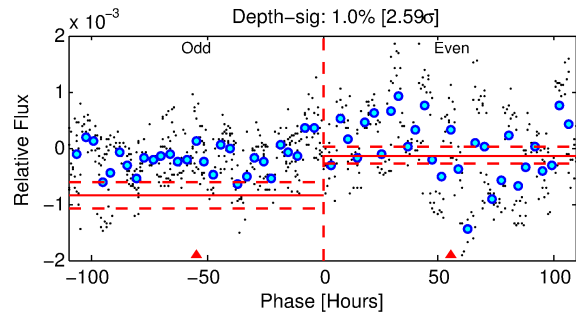
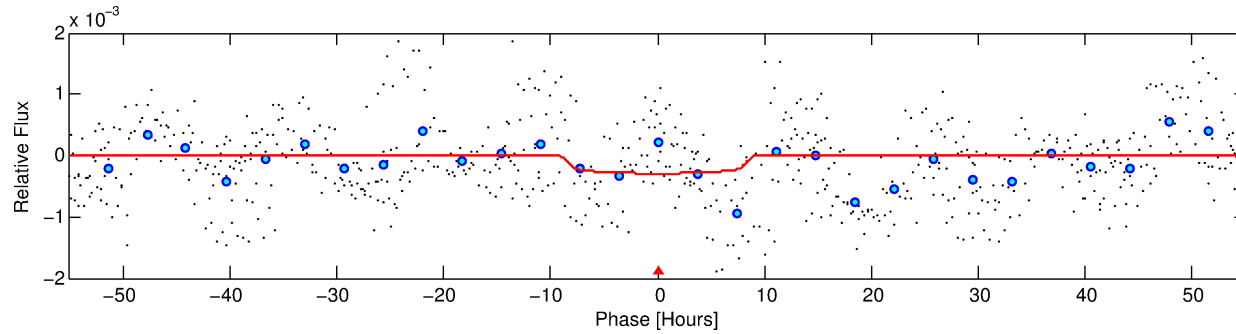
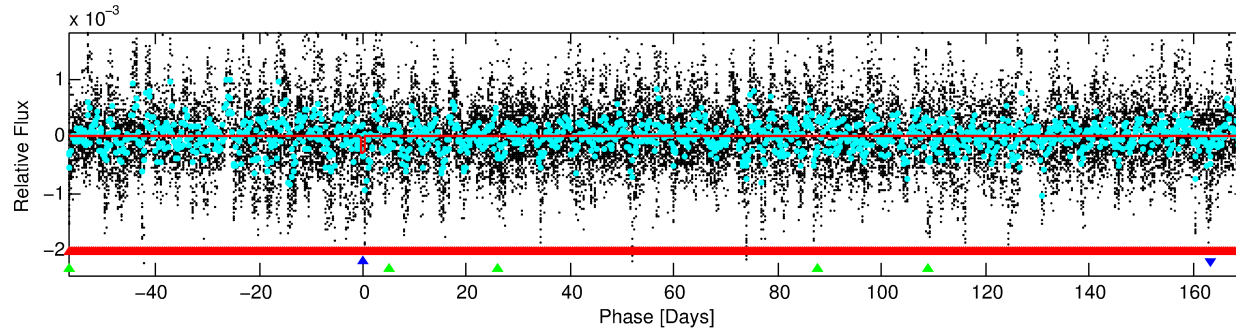
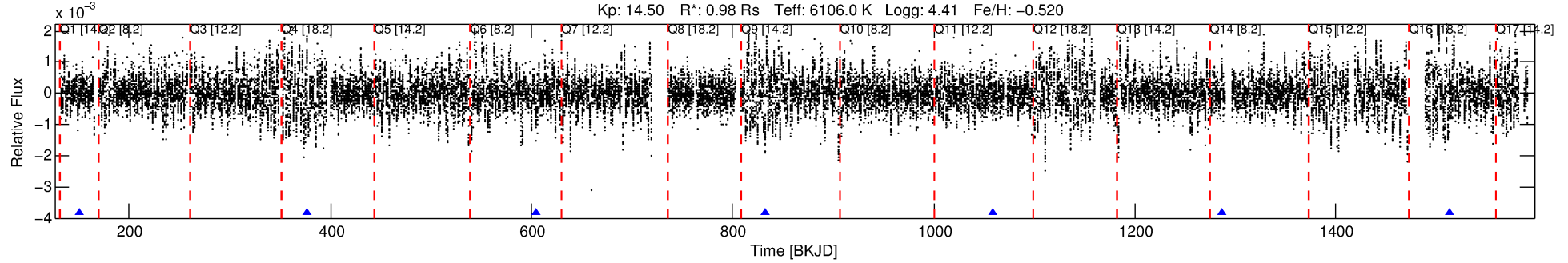
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007285673-02

No Significant Match Found

# DV One-Page Summary

KIC: 7285673 Candidate: 2 of 3 Period: 227.192 d  
KOI: K04559 Corr: No Ephemeris Match



## DV Fit Results:

Period = 227.19185 [0.01906] d  
Epoch = 150.2067 [0.0550] BKJD  
Rp/R\* = 0.0183 [0.0037]  
a/R\* = 45.54 [31.62]  
b = 0.90 [0.15]  
Seff = 2.44 [0.89]  
Teq = 319 [29] K  
Rp = 1.97 [0.67] Re  
a = 0.7020 [0.1635] AU  
Ag = 23518.28 [14303.65] [1.64 $\sigma$ ]  
Teffp = 6100 [795] K [7.27 $\sigma$ ]

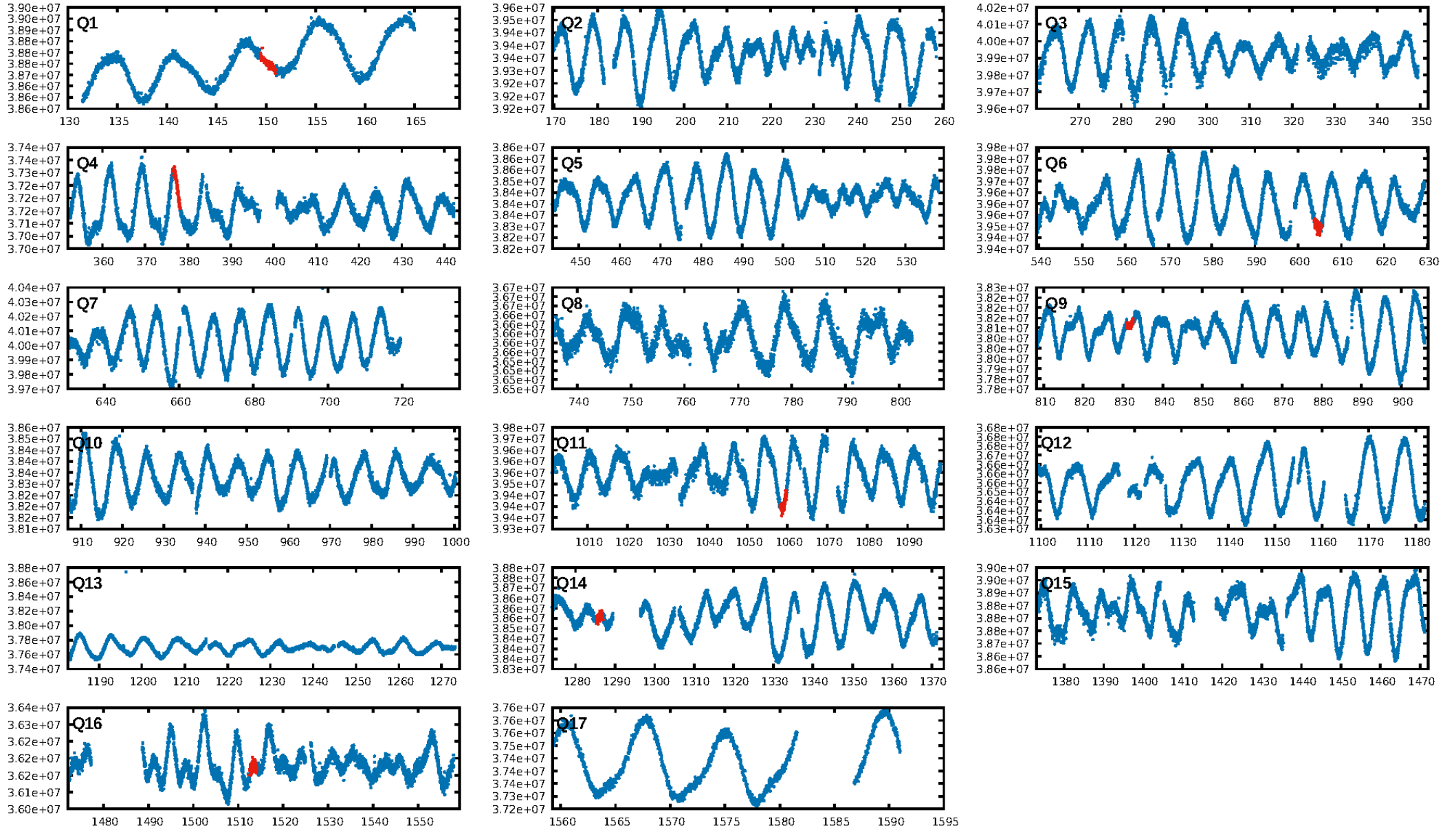
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [293.17 $\sigma$ ]  
LongPeriod-sig: 100.0% [97.25 $\sigma$ ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.24e-22  
RollingBand-fgt: 1.00 [6/6]  
GhostDiagnostic-chr: -0.3417  
Centroid-sig: 3.1%  
Centroid-so: 1.487 arcsec [1.71 $\sigma$ ]  
OotOffset-rm: 0.255 arcsec [1.90 $\sigma$ ]  
KicOffset-rm: 0.388 arcsec [2.68 $\sigma$ ]  
OotOffset-st: 2/1/2/1 [6]  
KicOffset-st: 2/1/2/1 [6]  
DiffImageQuality-fgm: 0.50 [3/6]  
DiffImageOverlap-fno: 0.00 [0/7]

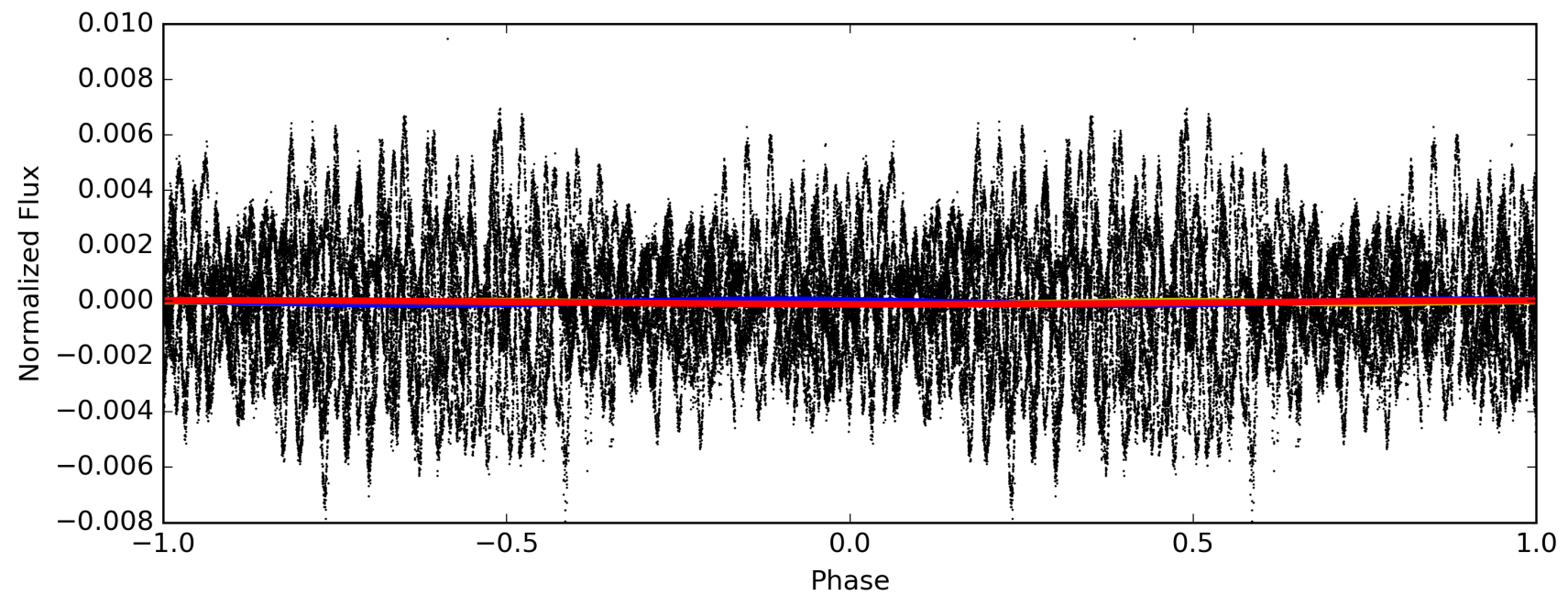
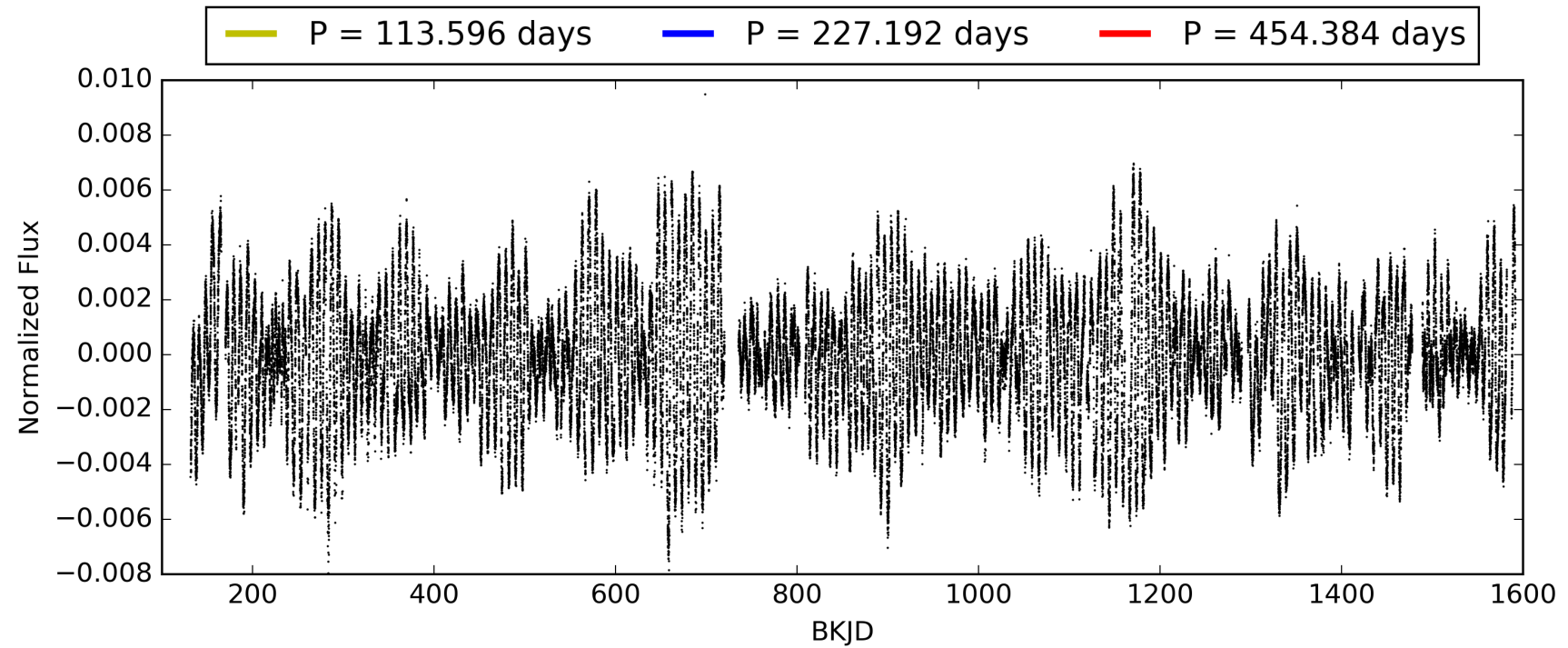
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 03:22:59 Z

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

# TCE 007285673-02, PDC Light Curves



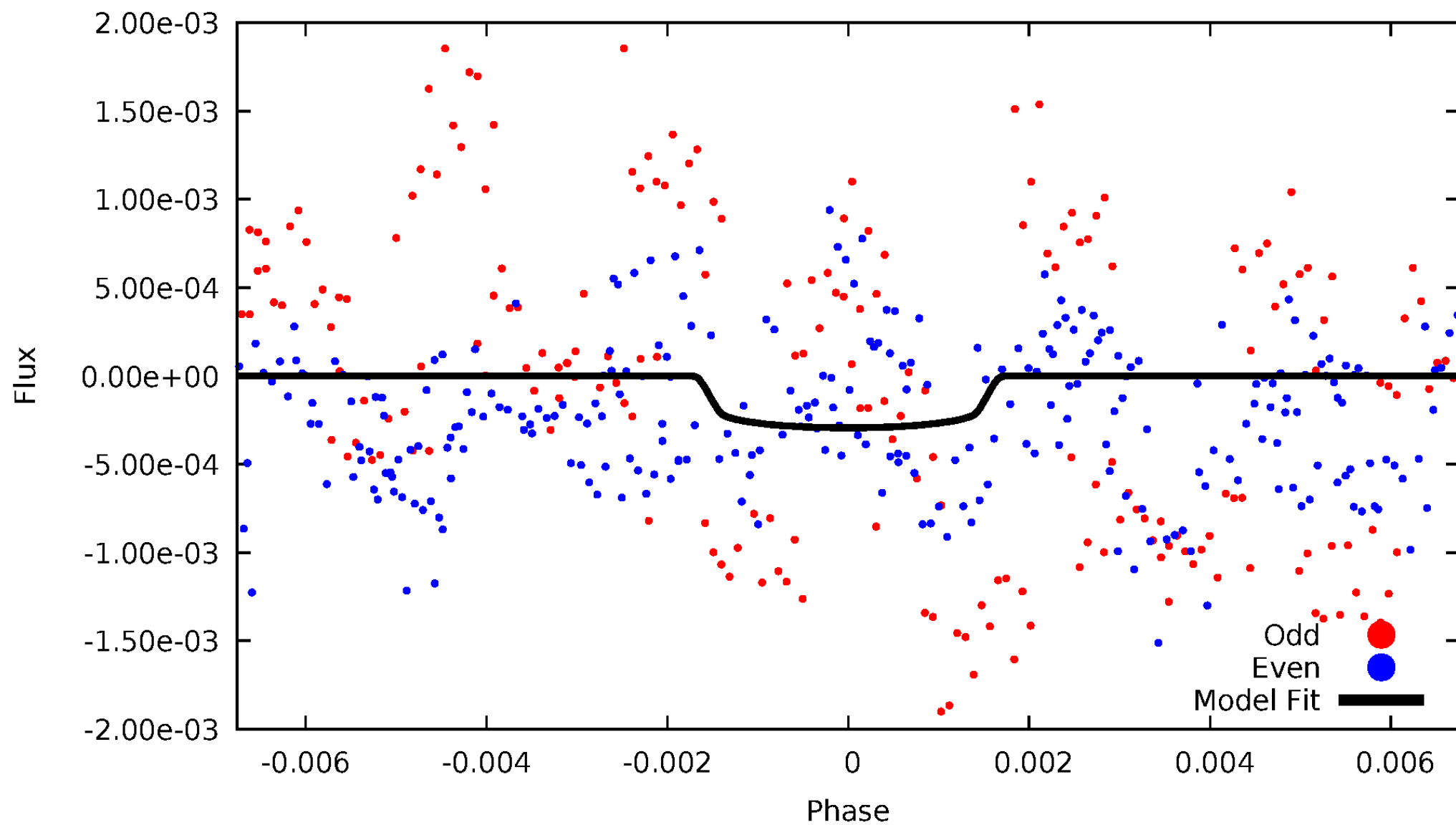
TCE 007285673-02





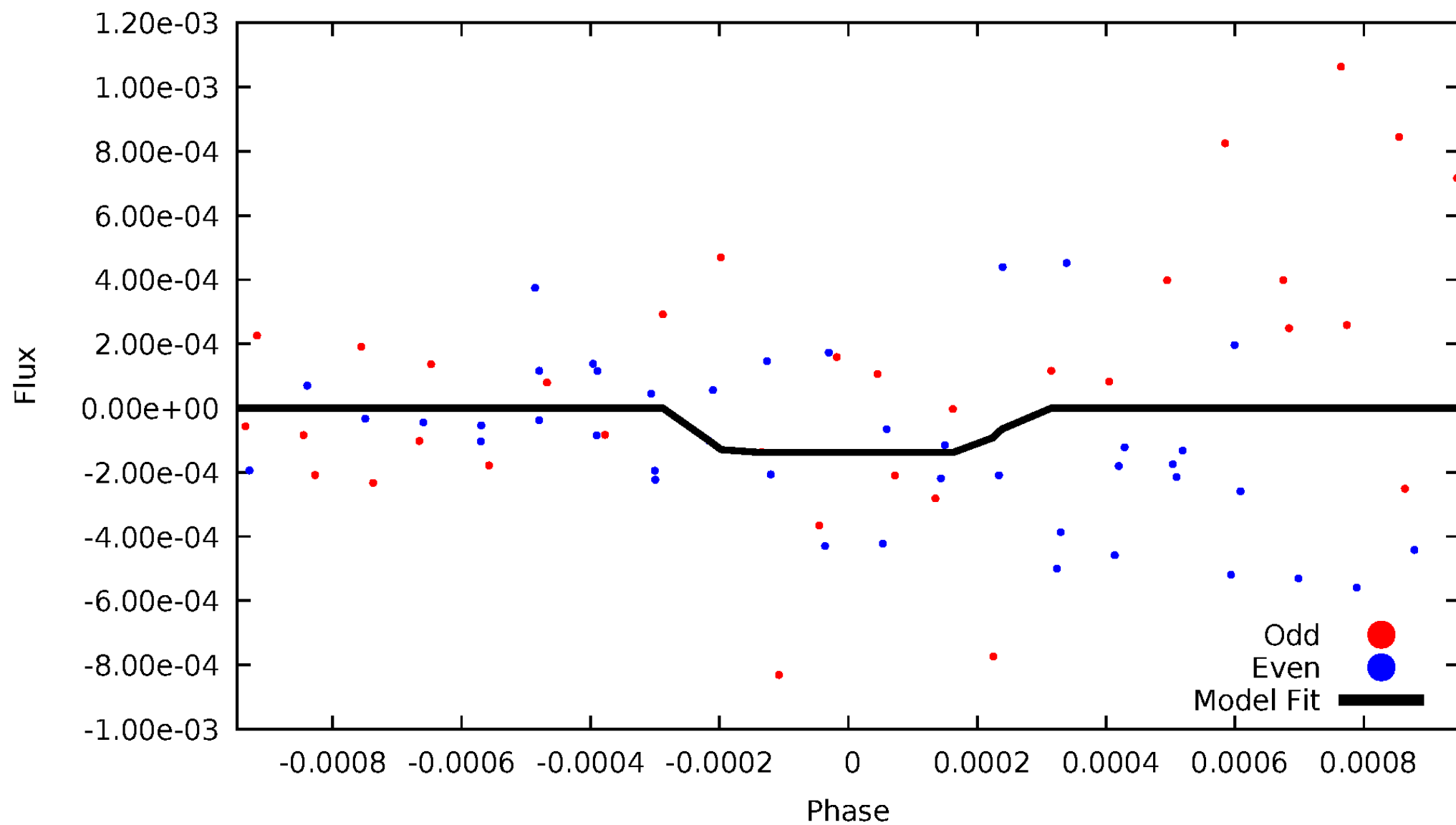
# DV Odd/Even

TCE 007285673-02



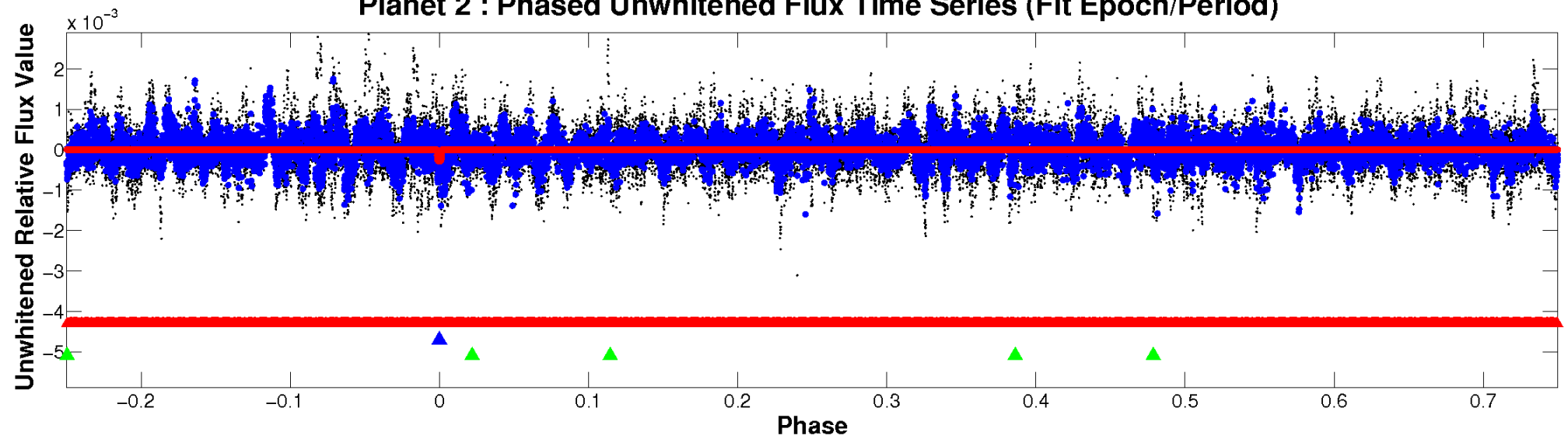
# ALT Odd/Even

TCE 007285673-02

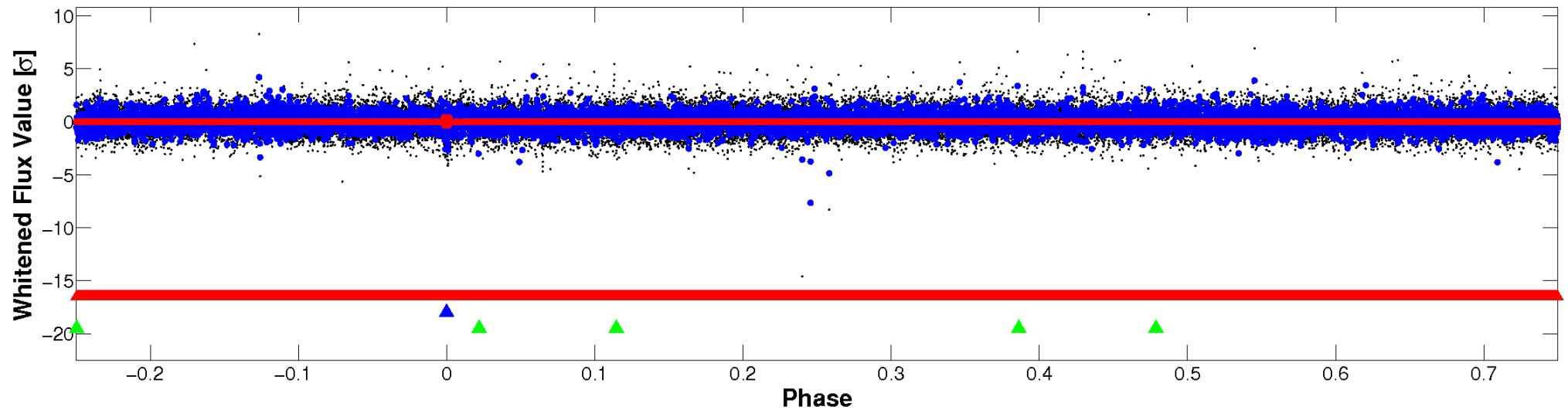


# Non-Whitened Vs. Whitened Light Curve

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

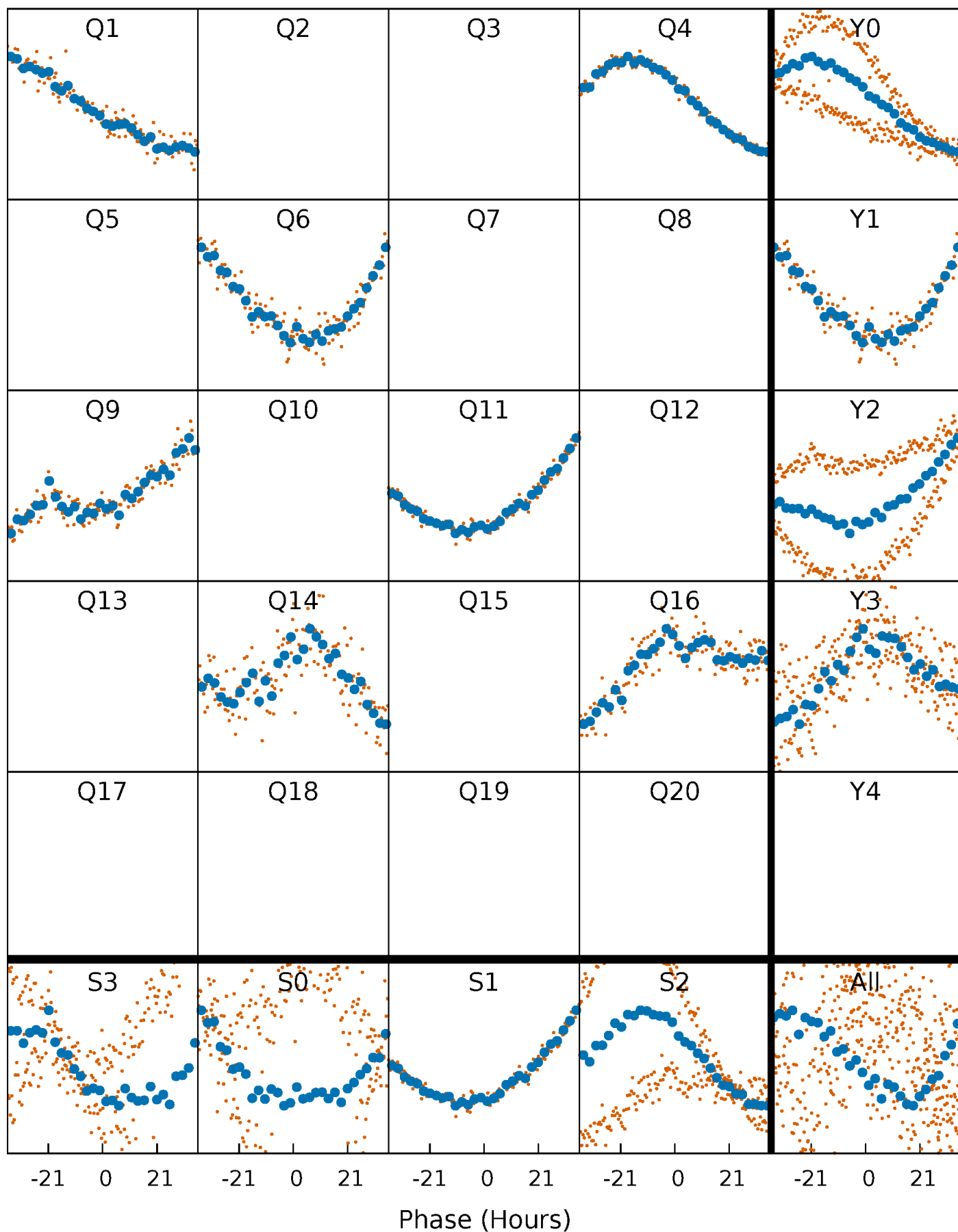


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



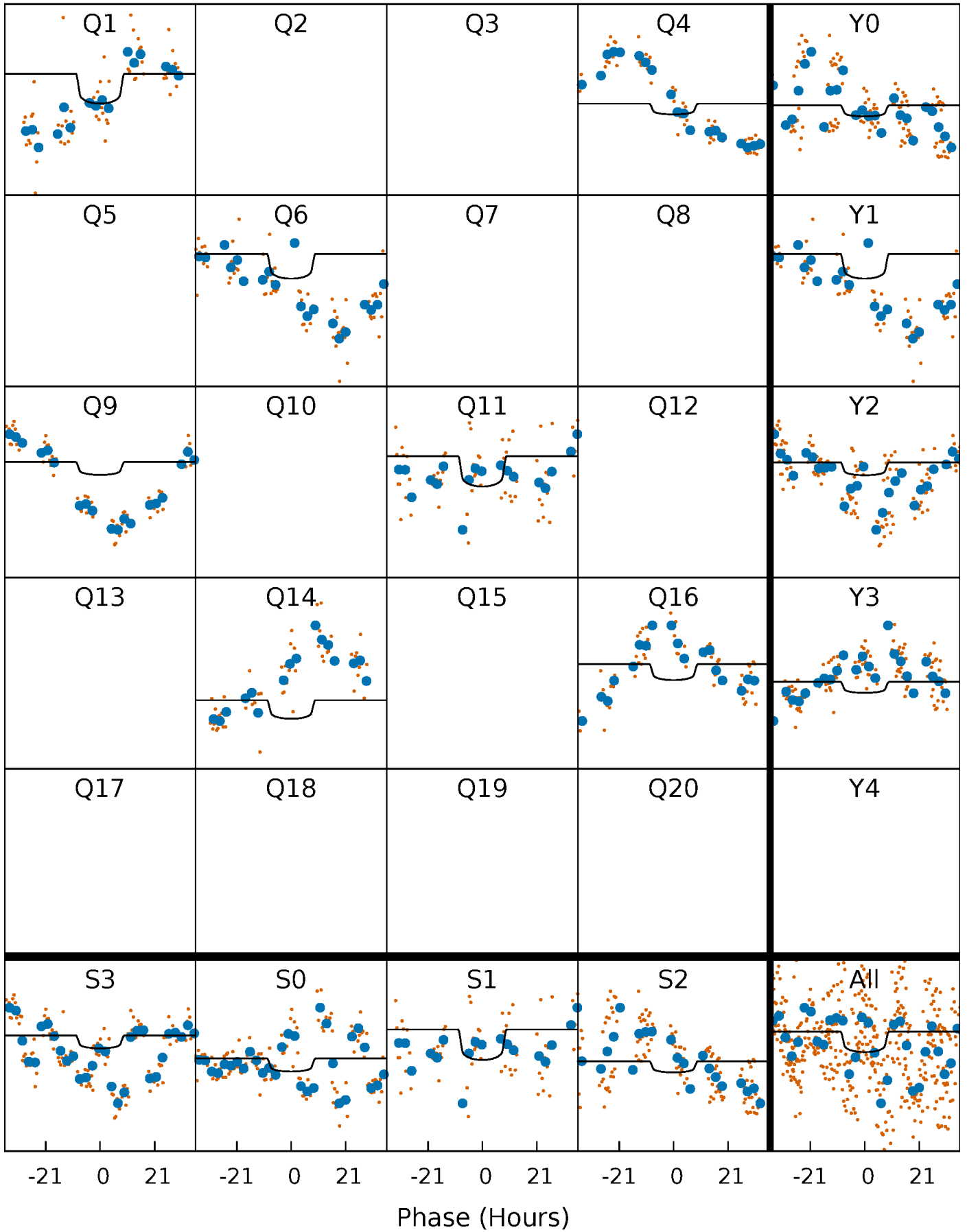
# PDC Quarter-Phased Transit Curves

TCE 007285673-02 P=227.191850 Days  $T_0=150.206712$  (BKJD)



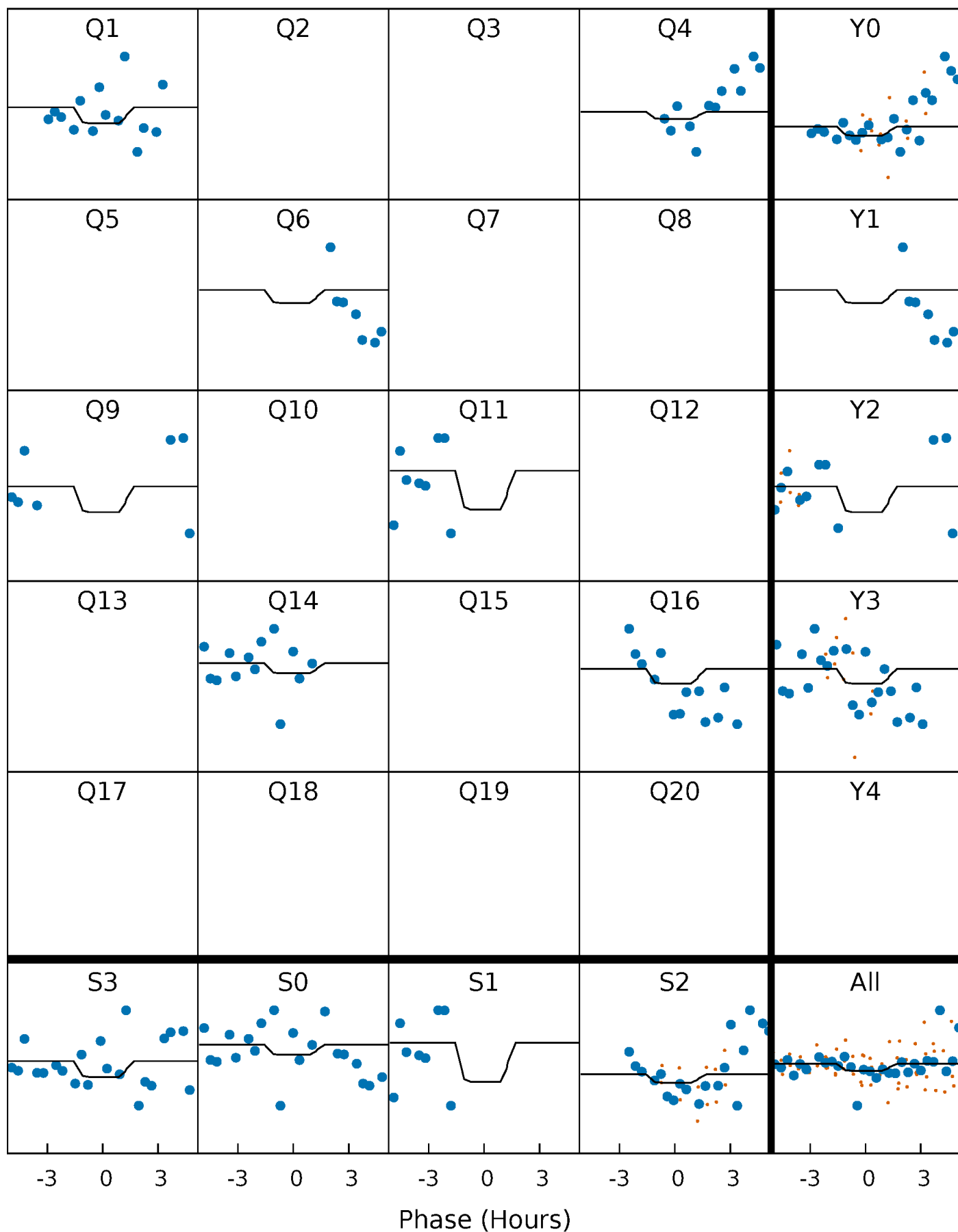
# DV Quarter-Phased Transit Curves

TCE 007285673-02     $P=227.191850$  Days     $T_0=150.206712$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

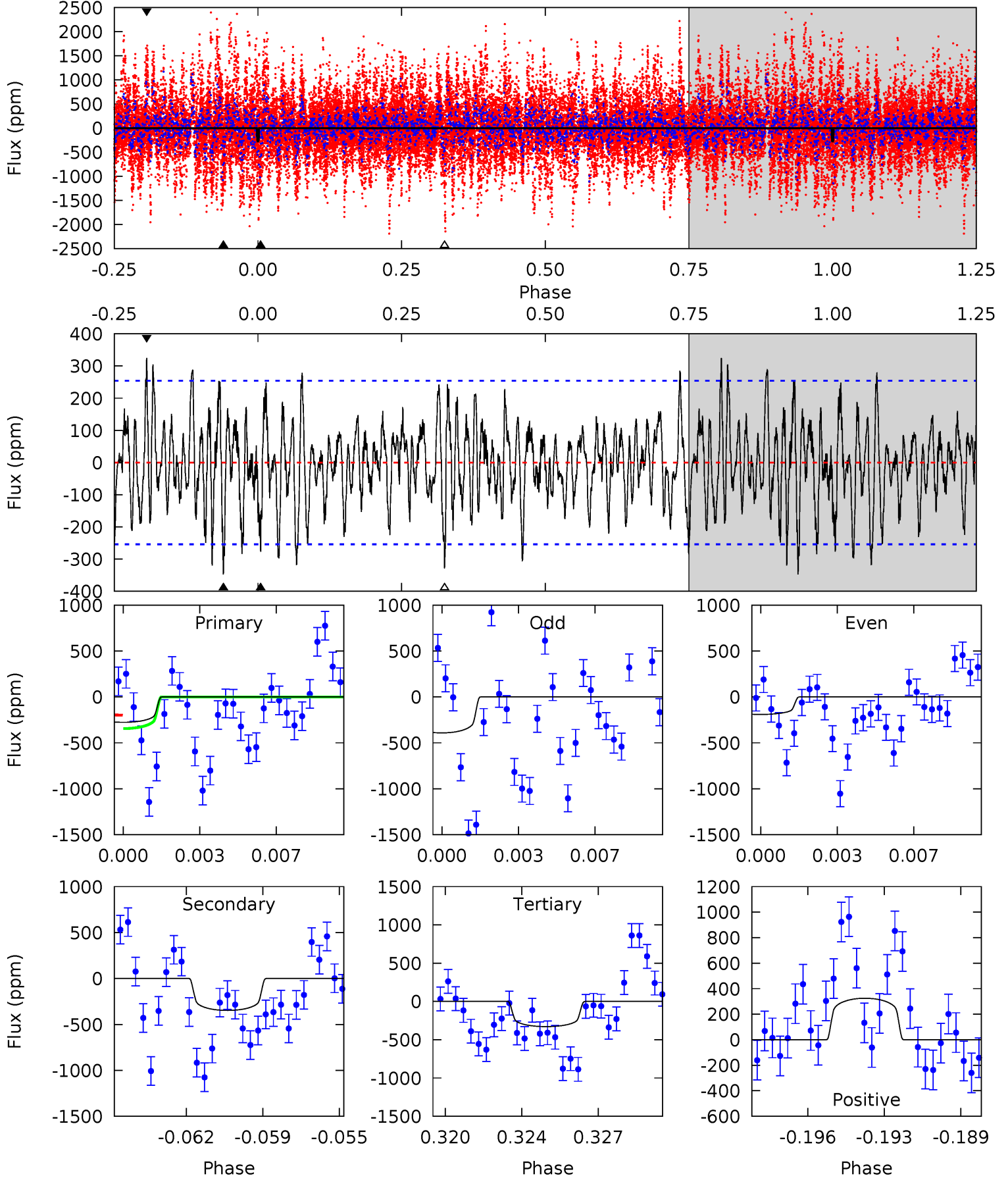
TCE 007285673-02 P=227.200754 Days  $T_0=150.216689$  (BKJD)



# DV Model-Shift Uniqueness Test

007285673-02, P = 227.191850 Days, E = 150.206712 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
5.69	7.15	6.76	6.69	5.23	2.93	2.20	-1.07	-0.99	0.39	0.47	2.05	1.19	0.48	1.51

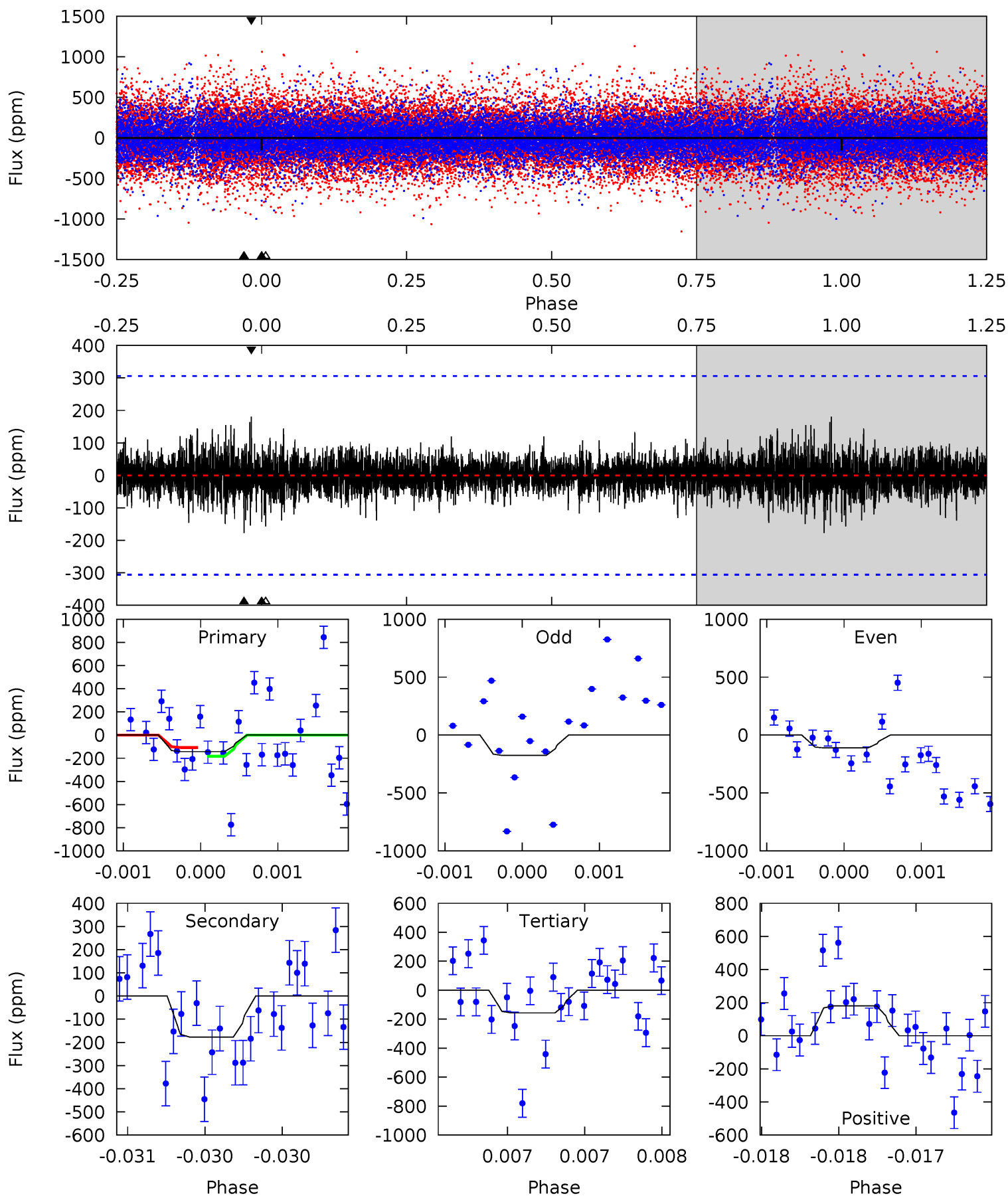




# Alt Model-Shift Uniqueness Test

007285673-02, P = 227.200754 Days, E = 150.216689 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
2.60	3.22	2.85	3.28	5.56	3.47	0.70	-0.25	-0.68	0.37	-0.06	0.59	0.91	0.50	0.68



### Stellar Parameters For KIC 007285673

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6106^{+181}_{-200}$	$4.405^{+0.124}_{-0.186}$	$-0.520^{+0.300}_{-0.300}$	$0.982^{+0.271}_{-0.146}$	$0.893^{+0.109}_{-0.089}$	$1.329^{+0.737}_{-0.642}$
	+3%/-3%	+3%/-4%	+58%/-58%	+28%/-15%	+12%/-10%	+55%/-48%
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 007285673-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-348 \pm 49$	$2.01^{+0.49}_{-0.46}$	$449^{+31}_{-28}$	$6125^{+850}_{-559}$	$22874^{+16434}_{-7988}$
Alt.	$-177 \pm 55$	$1.27^{+0.43}_{-0.42}$	$449^{+30}_{-26}$	$6475^{+1707}_{-981}$	$28366^{+40175}_{-14243}$

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

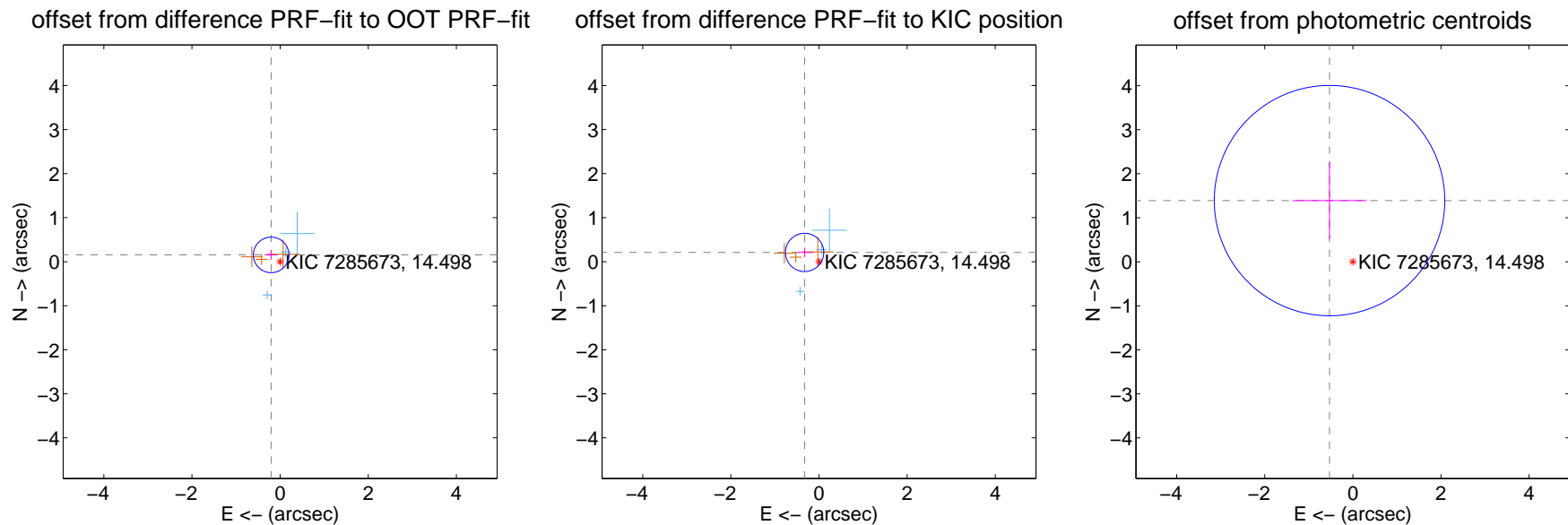
## DV Centroid Data

Supplemental centroid analysis for 007285673-02. Kepler magnitude: 14.50. Transit SNR 3.72

There are 3 quarters with good PRF difference image offsets

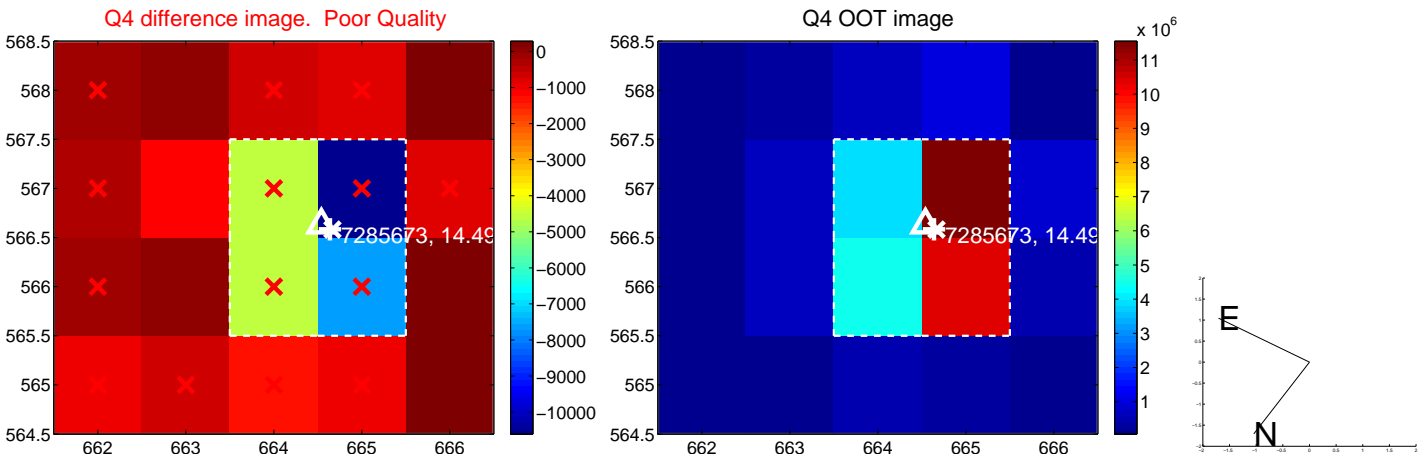
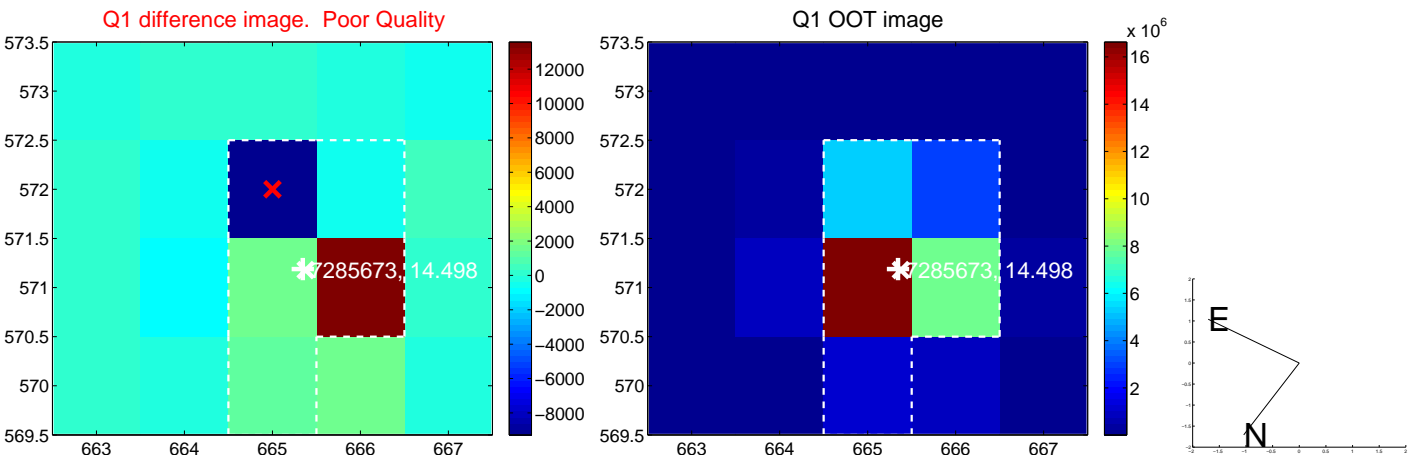
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.255 \pm 0.135$	1.90	$0.204 \pm 0.146$	$0.154 \pm 0.111$
PRF-fit source offset from KIC position	$0.388 \pm 0.145$	2.68	$0.326 \pm 0.157$	$0.211 \pm 0.110$
photometric centroid source offset	$1.49 \pm 0.87$	1.71	$0.53 \pm 0.84$	$1.39 \pm 0.88$



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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

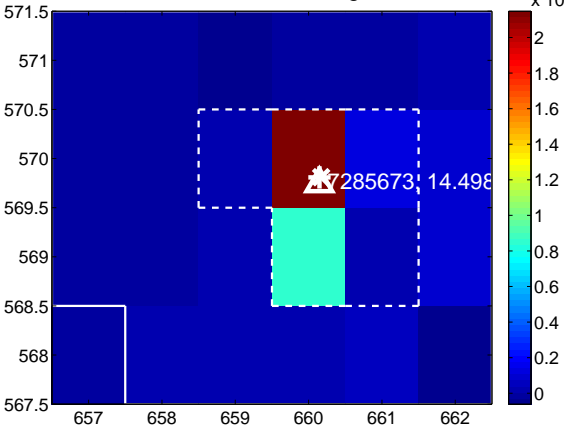
Q5 no difference image



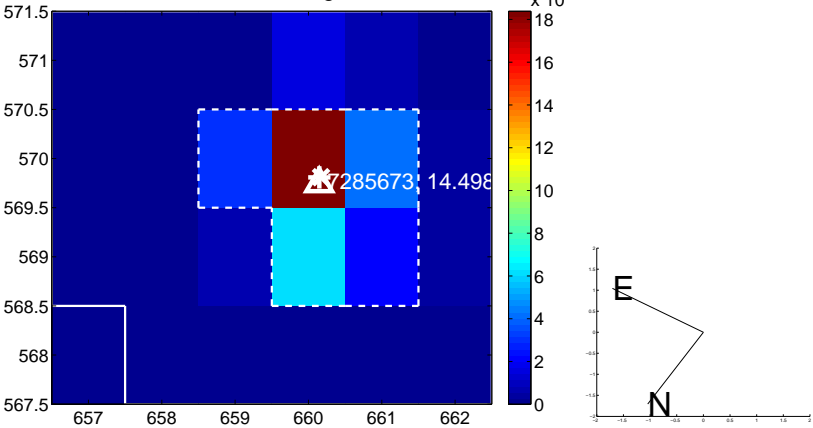
Q5 no OOT image



Q6 difference image



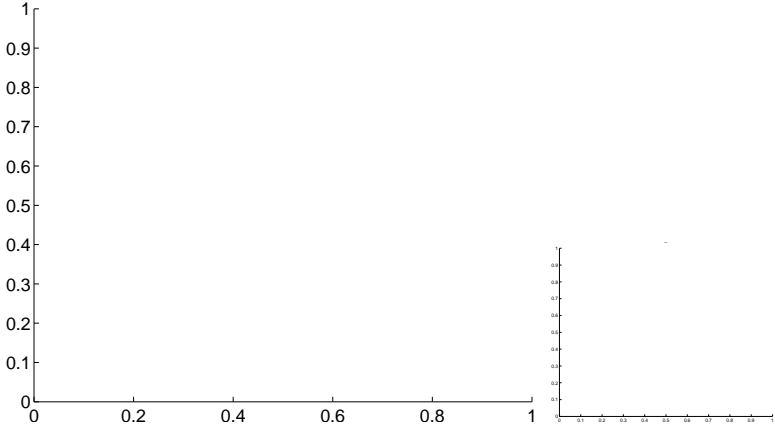
Q6 OOT image



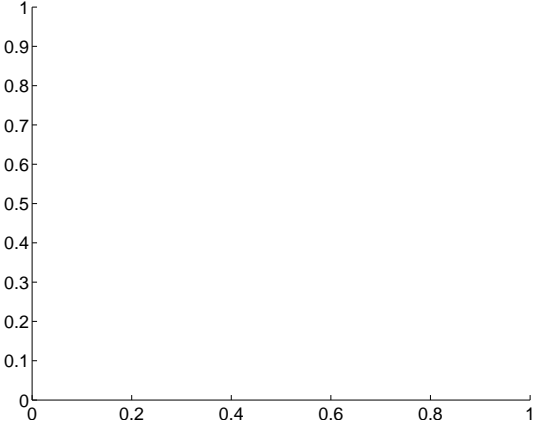
Q7 no difference image



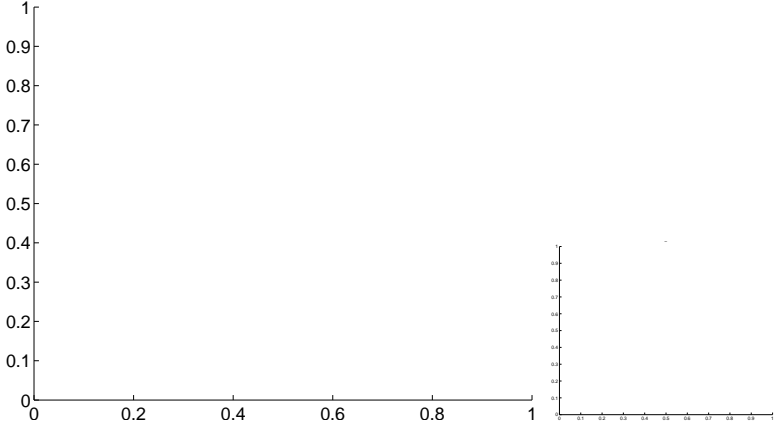
Q7 no OOT image



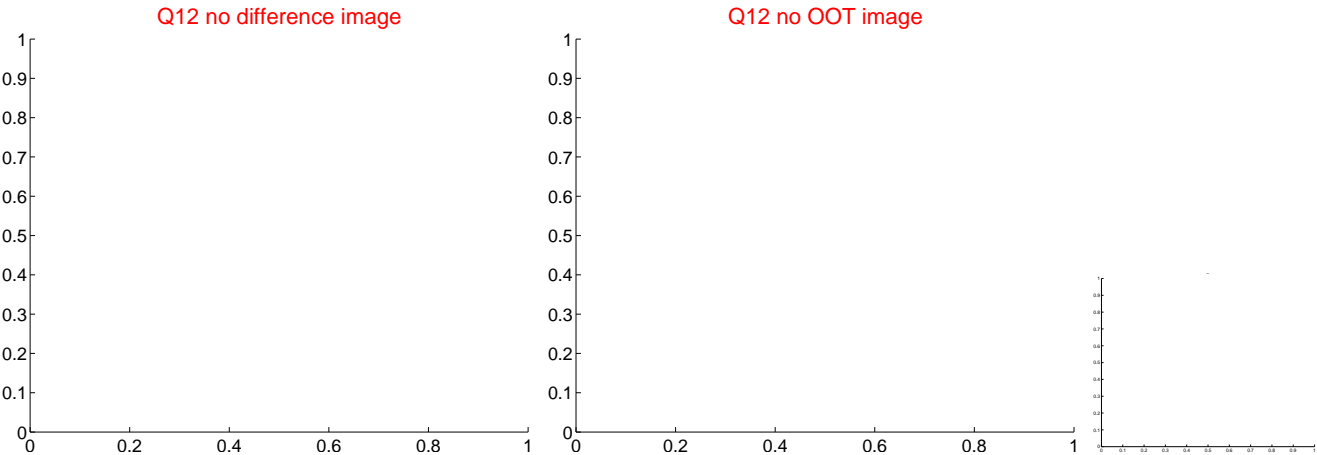
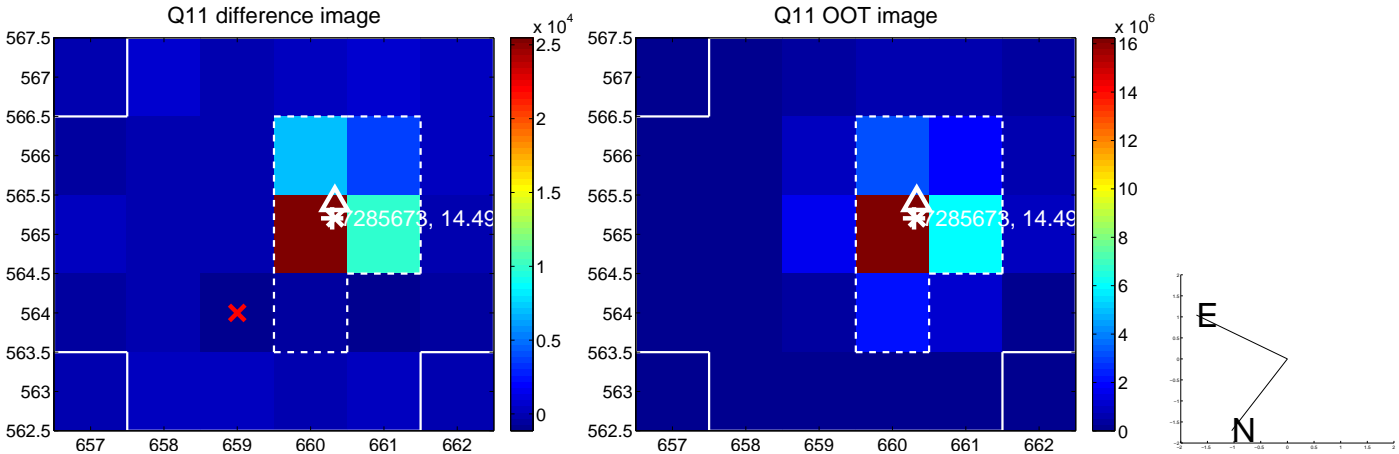
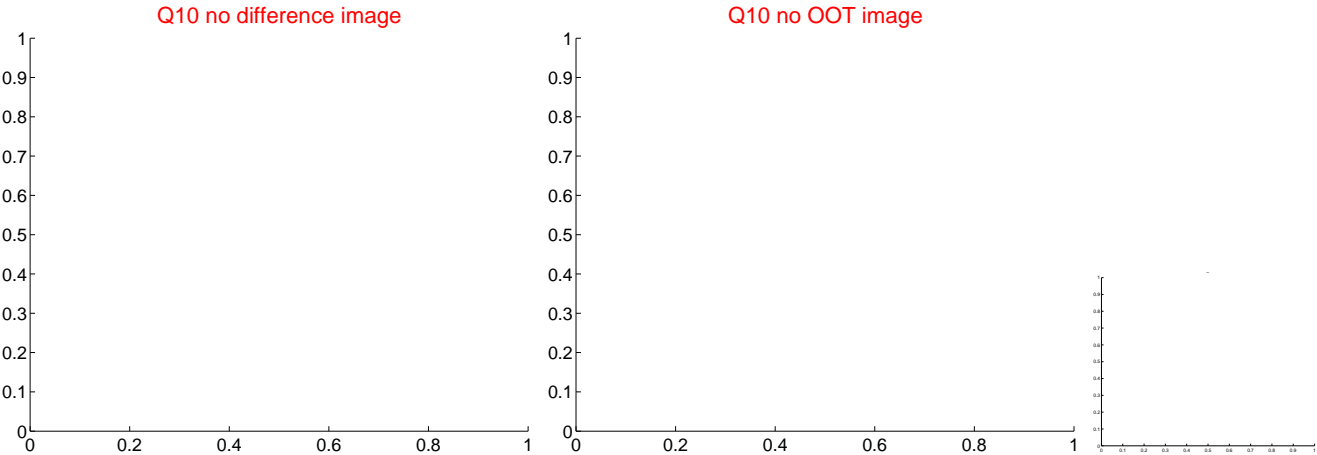
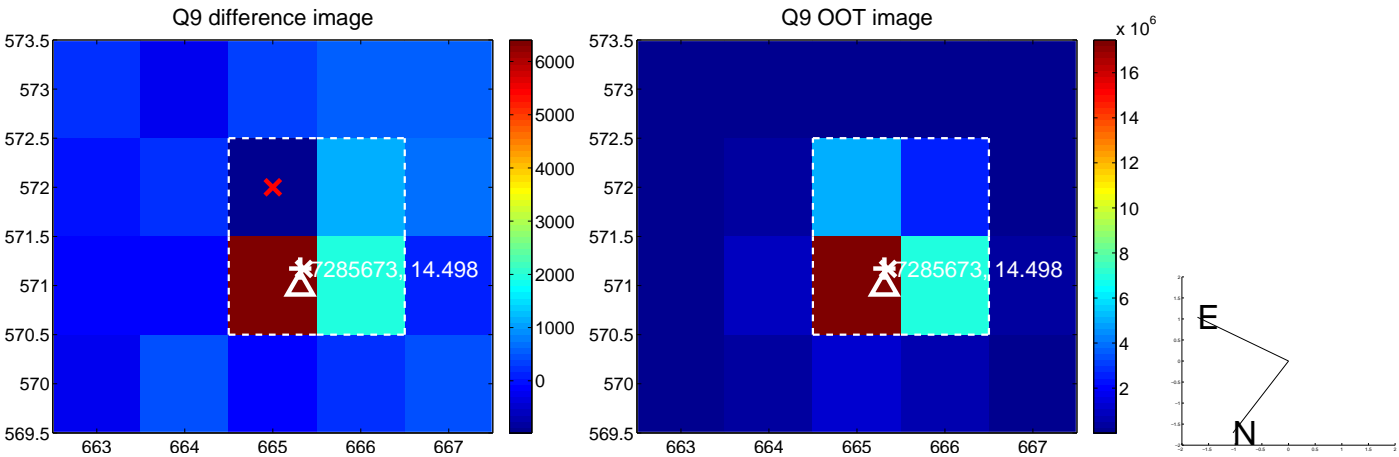
Q8 no difference image



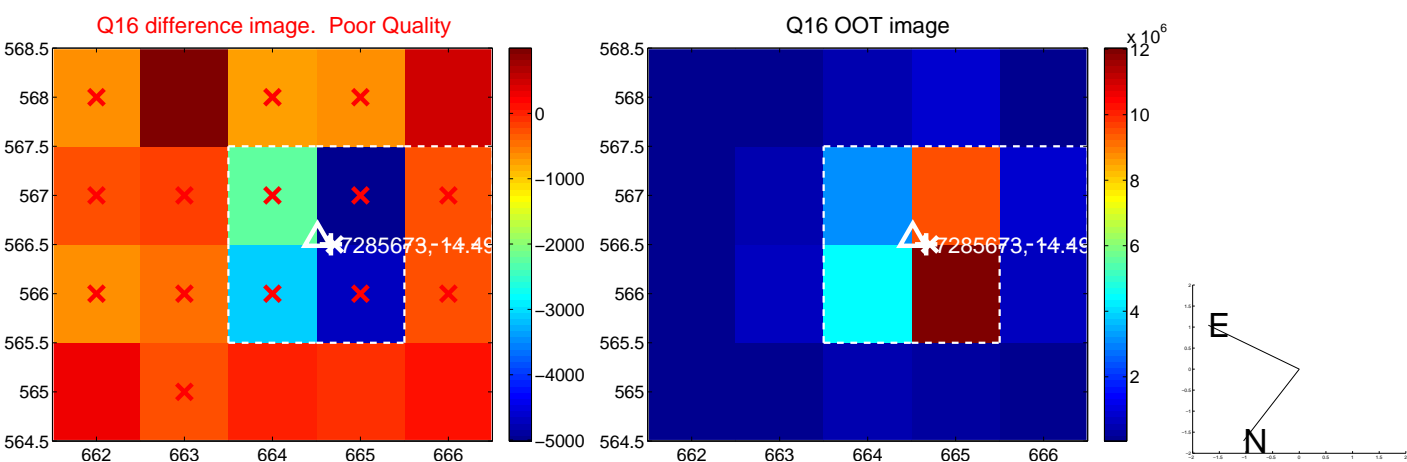
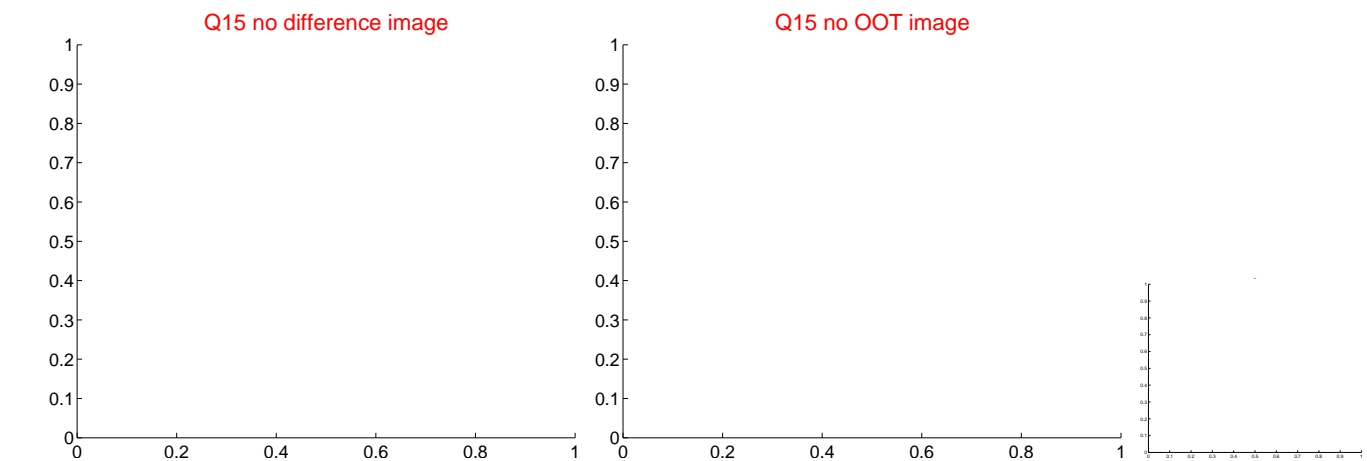
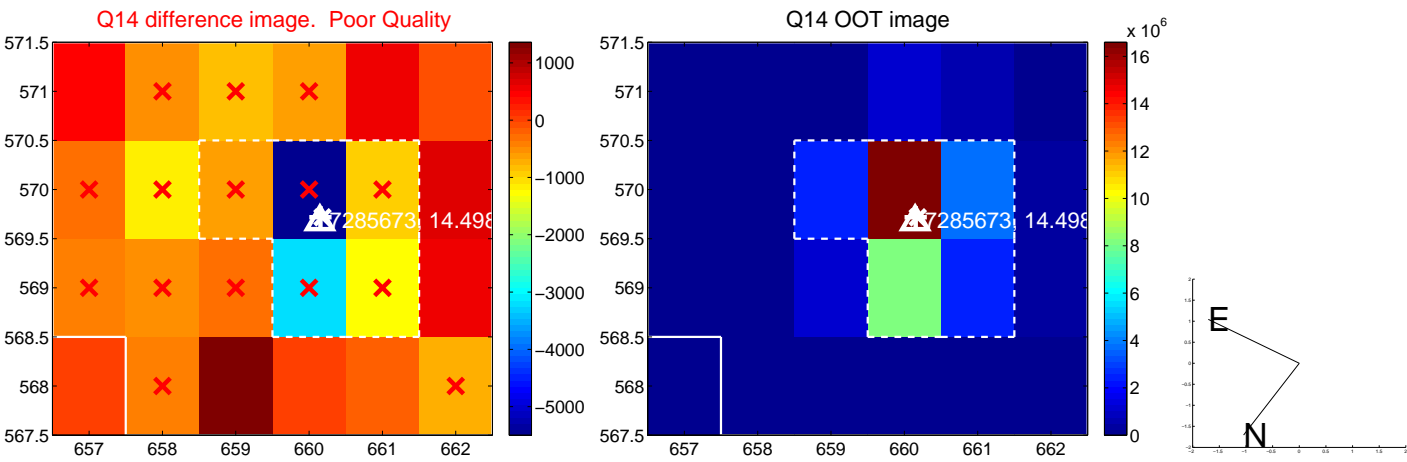
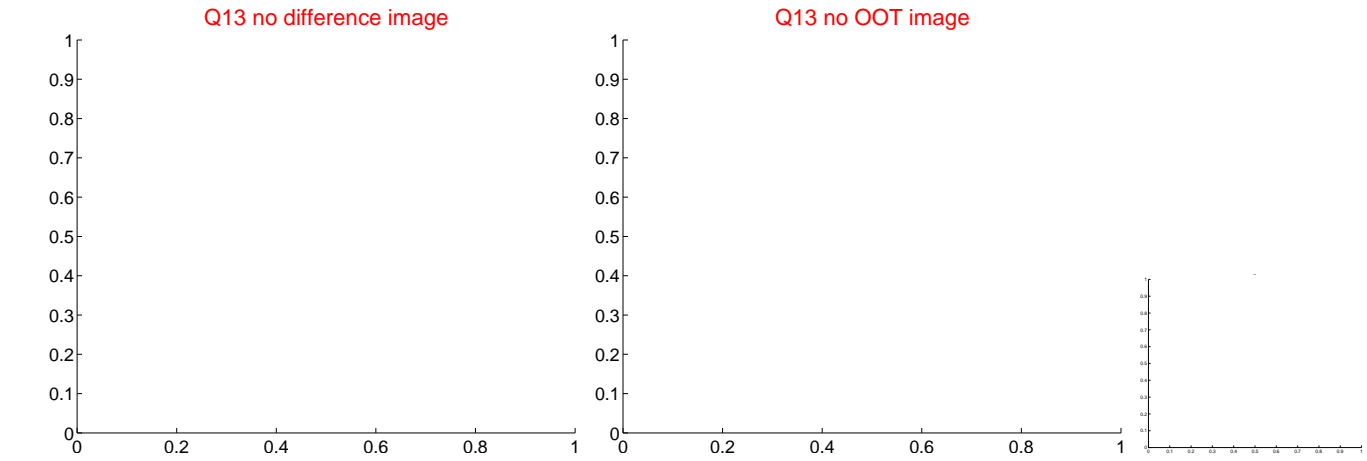
Q8 no OOT image



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

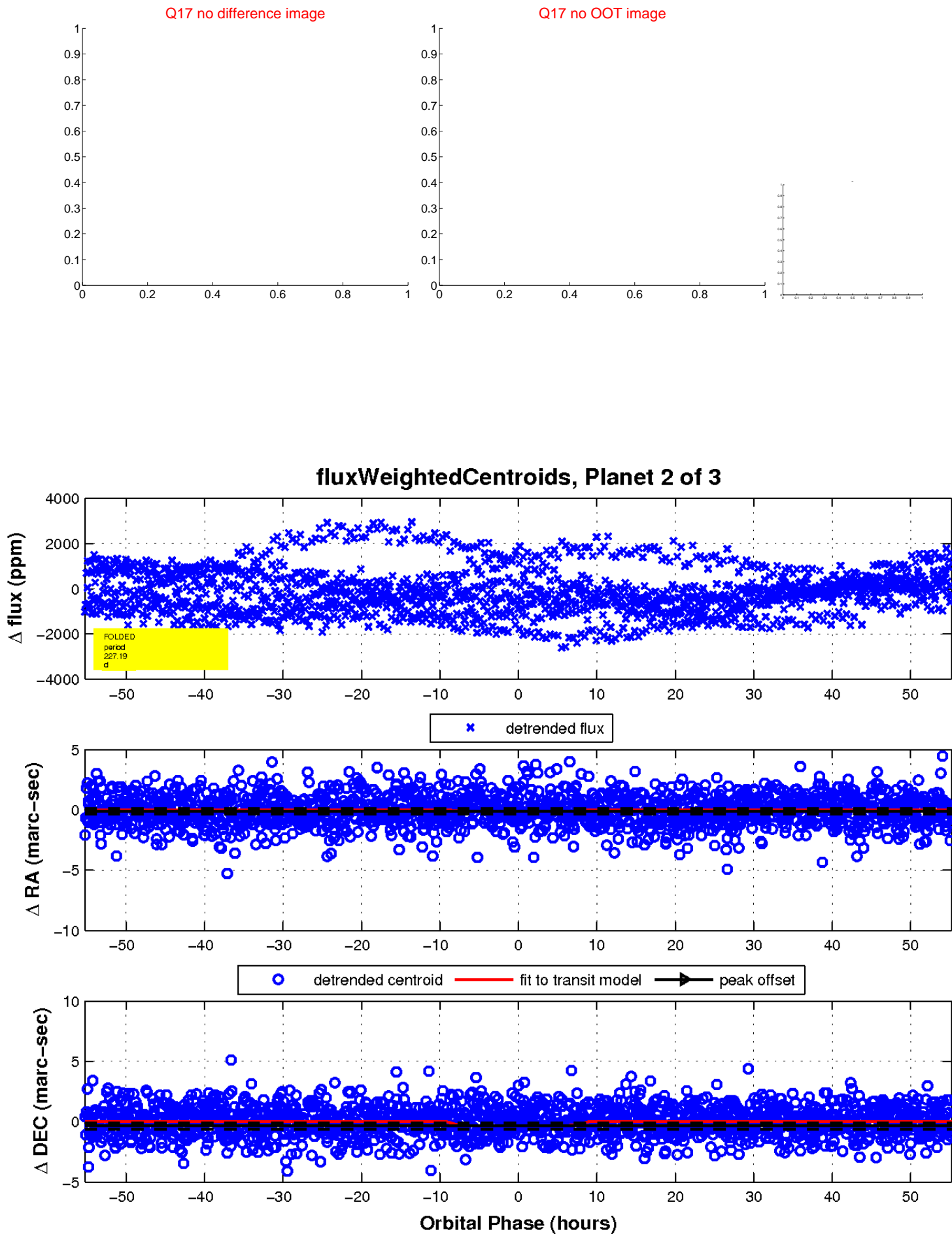


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



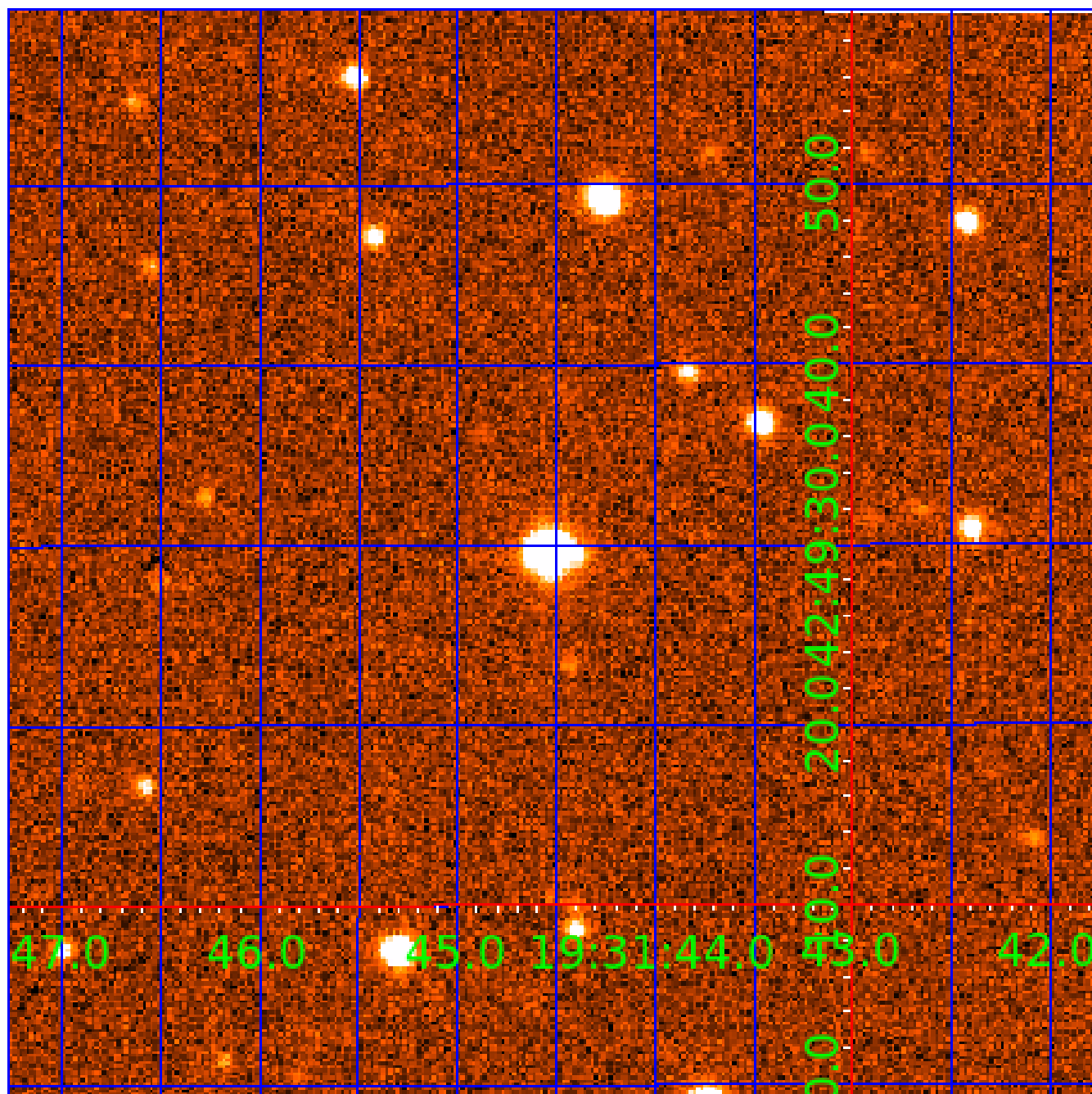


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 007285673

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007285673-01	OBS	4559.01	0.566822	131.798539	76.3	2.236	18.1	21.0	0.98	6106	1.01	7201.12
007285673-02	OBS	No	227.191850	150.206712	293.4	18.417	12.7	3.7	0.98	6106	1.97	2.44
007285673-03	OBS	No	309.930539	155.205905	416.1	8.817	7.7	5.6	0.98	6106	2.24	1.61

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007285673-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_UNRESOLVED_OFFSET—EPHEM_MATCH
007285673-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
007285673-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS

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

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

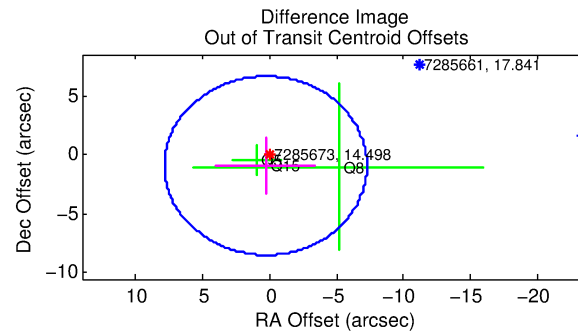
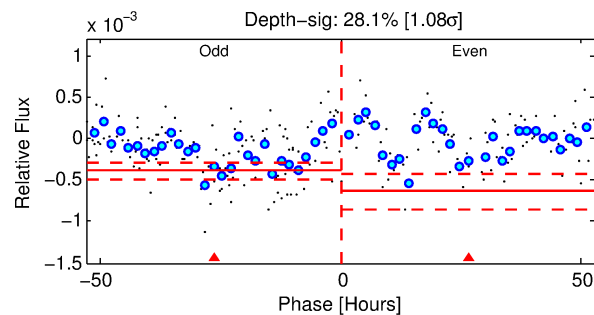
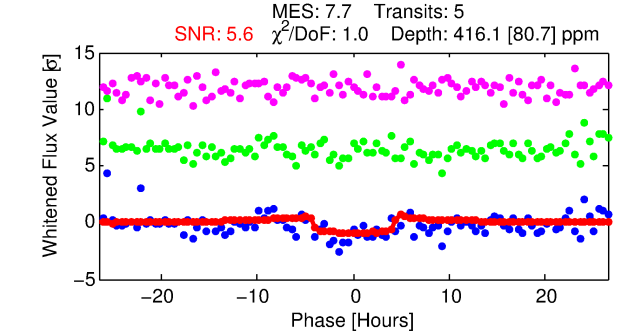
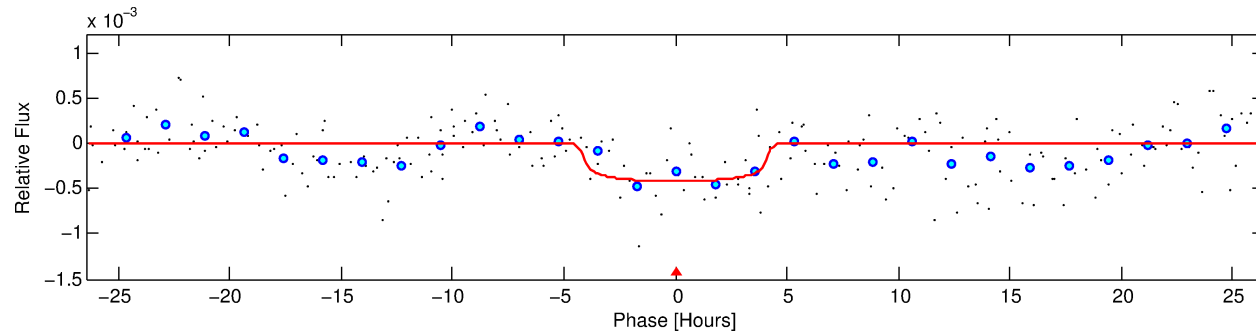
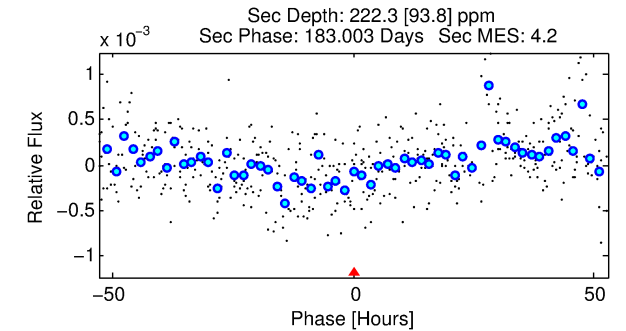
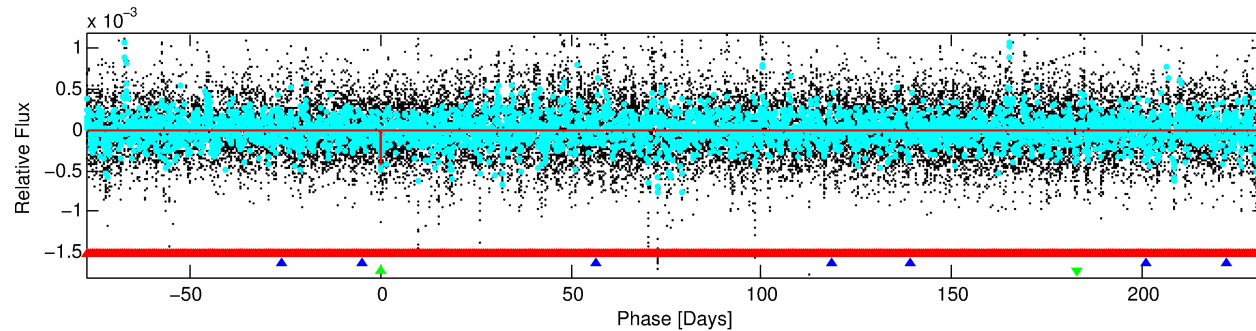
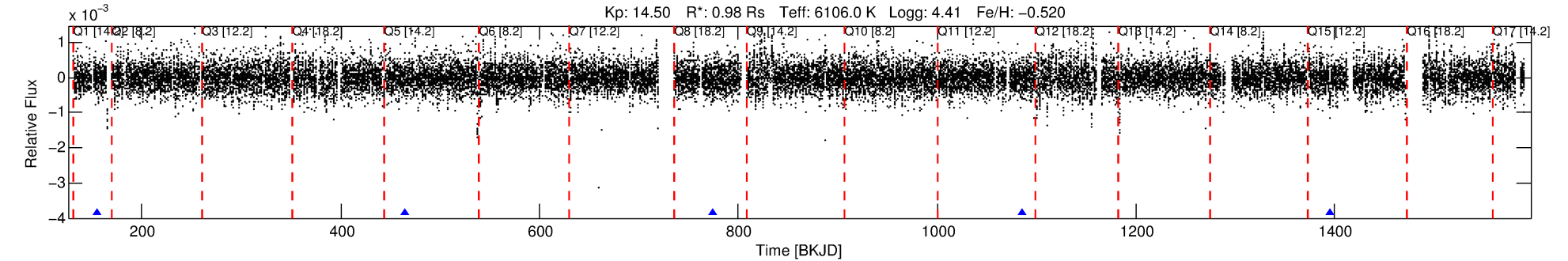
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007285673-03

No Significant Match Found

# DV One-Page Summary

KIC: 7285673 Candidate: 3 of 3 Period: 309.931 d  
KOI: K04559 Corr: No Ephemeris Match



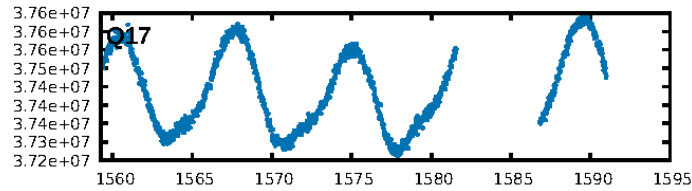
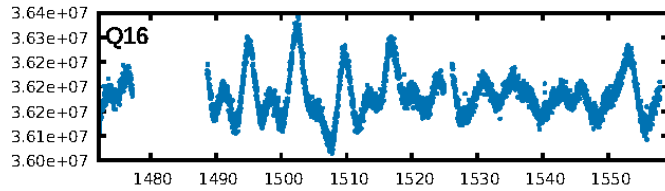
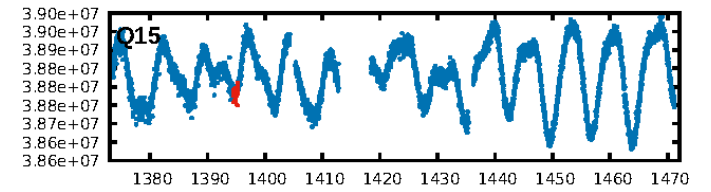
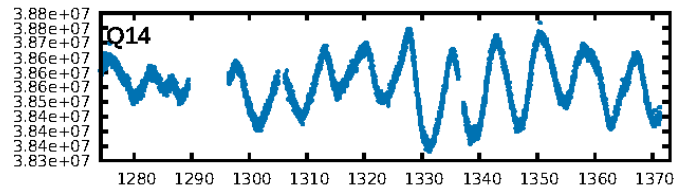
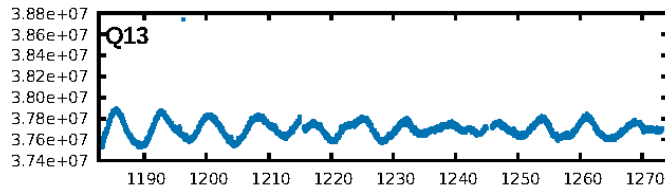
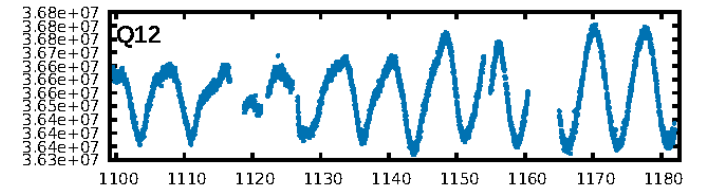
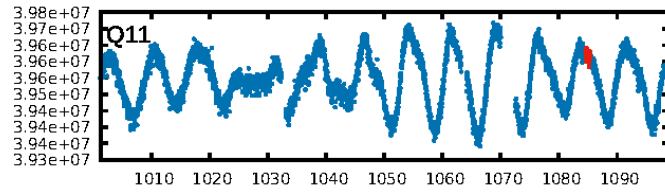
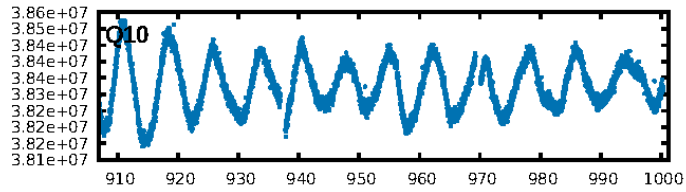
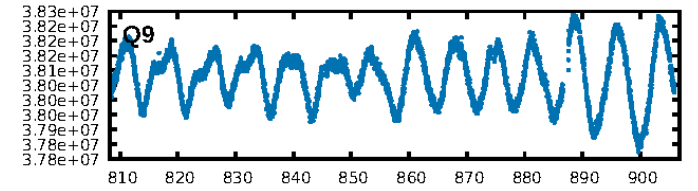
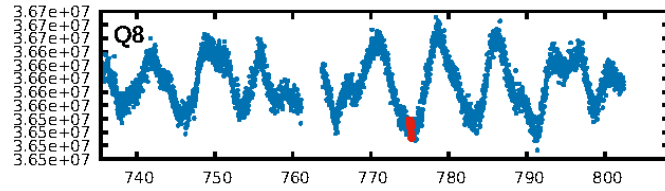
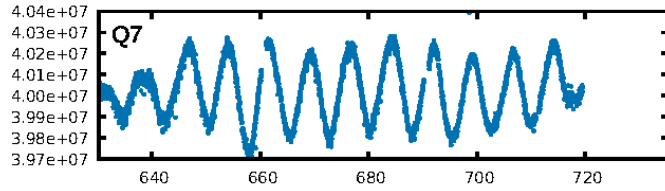
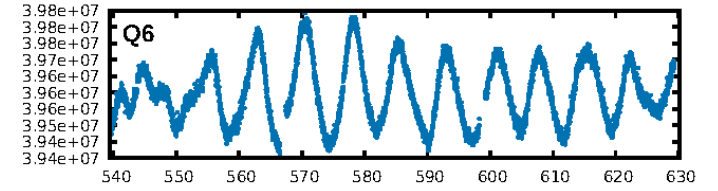
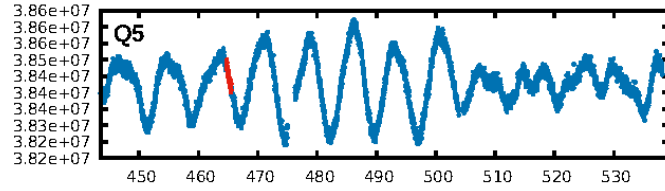
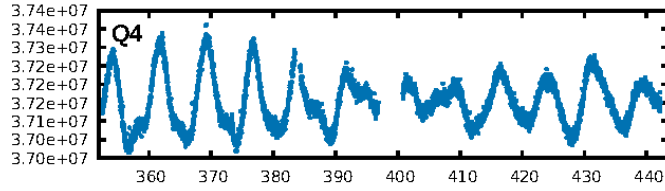
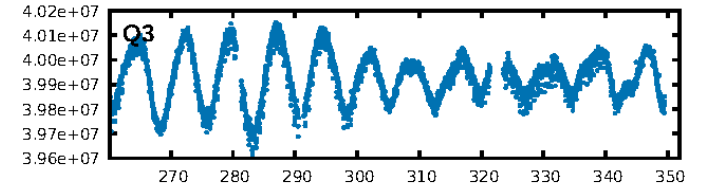
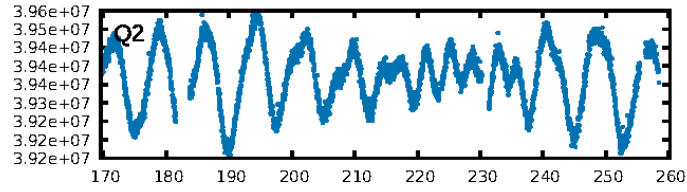
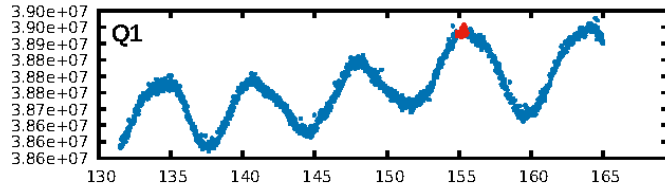
## DV Fit Results:

Period = 309.93054 [0.01210] d  
Epoch = 155.2059 [0.0241] BKJD  
Rp/R\* = 0.0209 [0.0079]  
ModelChiSquareGof-sig: 100.0%  
b = 0.82 [0.73]  
Seff = 1.61 [0.59]  
Teq = 287 [26] K  
Rp = 2.24 [1.05] Re  
a = 0.8635 [0.2011] AU  
Ag = 18198.67 [16890.83] [1.08 $\sigma$ ]  
Teff = 5158 [1127] K [4.32 $\sigma$ ]

## DV Diagnostic Results:

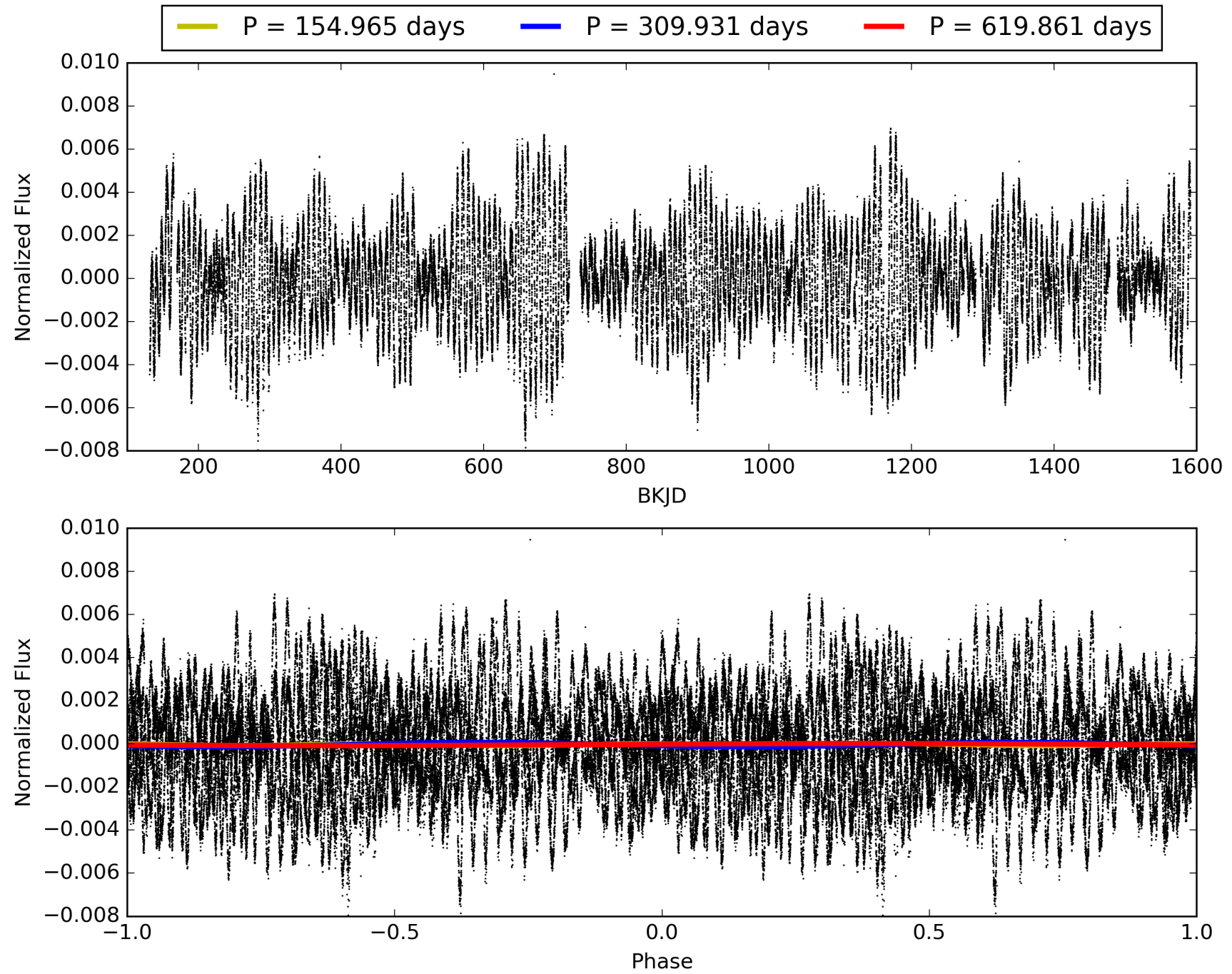
ShortPeriod-sig: 100.0% [97.25 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 17.3%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 7.60e-10**  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 5.418  
Centroid-sig: 81.4%  
Centroid-so: 0.495 arcsec [0.53 $\sigma$ ]  
OotOffset-rm: 0.961 arcsec [0.38 $\sigma$ ]  
KicOffset-rm: 0.971 arcsec [0.35 $\sigma$ ]  
OotOffset-st: 0/1/1/1 [3]  
KicOffset-st: 0/1/1/1 [3]  
DiffImageQuality-fgm: 0.33 [1/3]  
DiffImageOverlap-fno: 0.00 [0/5]

# TCE 007285673-03, PDC Light Curves



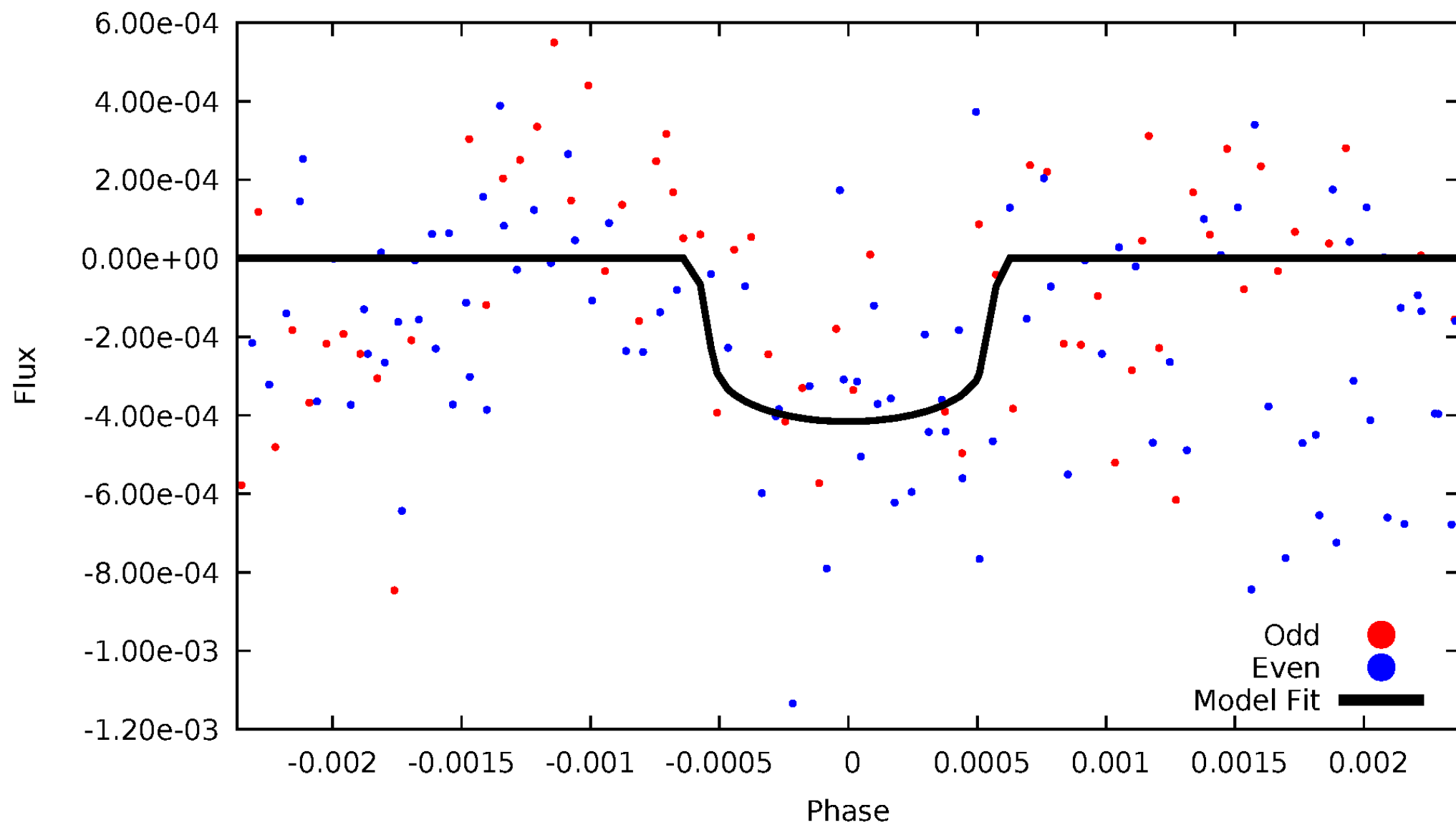


# TCE 007285673-03



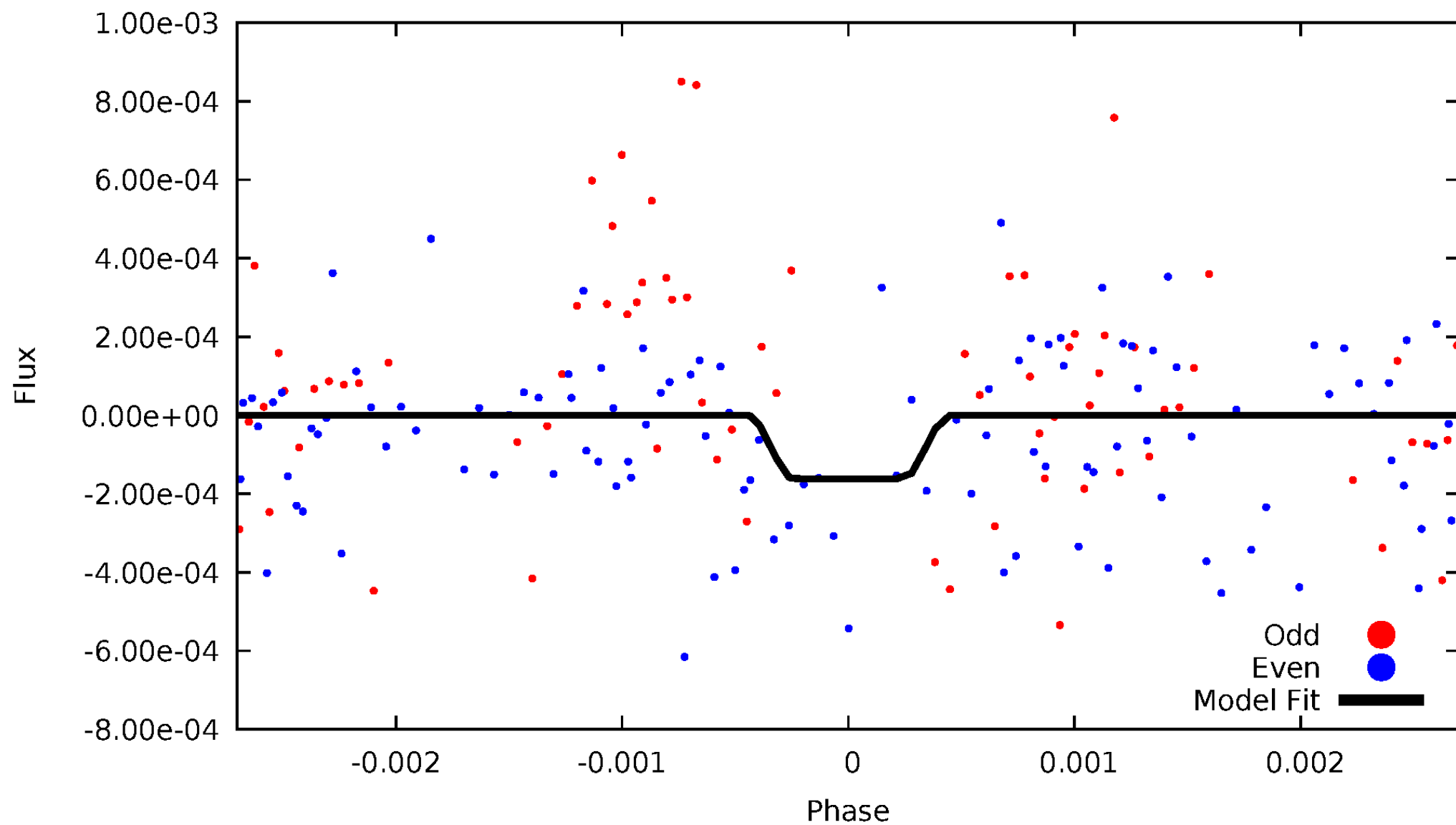
# DV Odd/Even

TCE 007285673-03



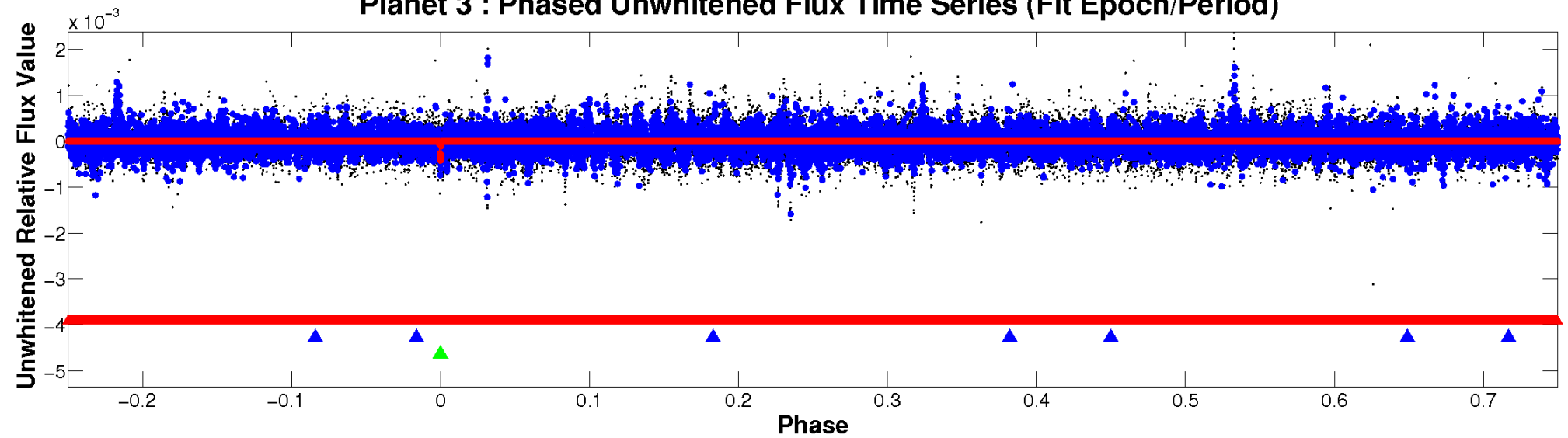
# ALT Odd/Even

TCE 007285673-03

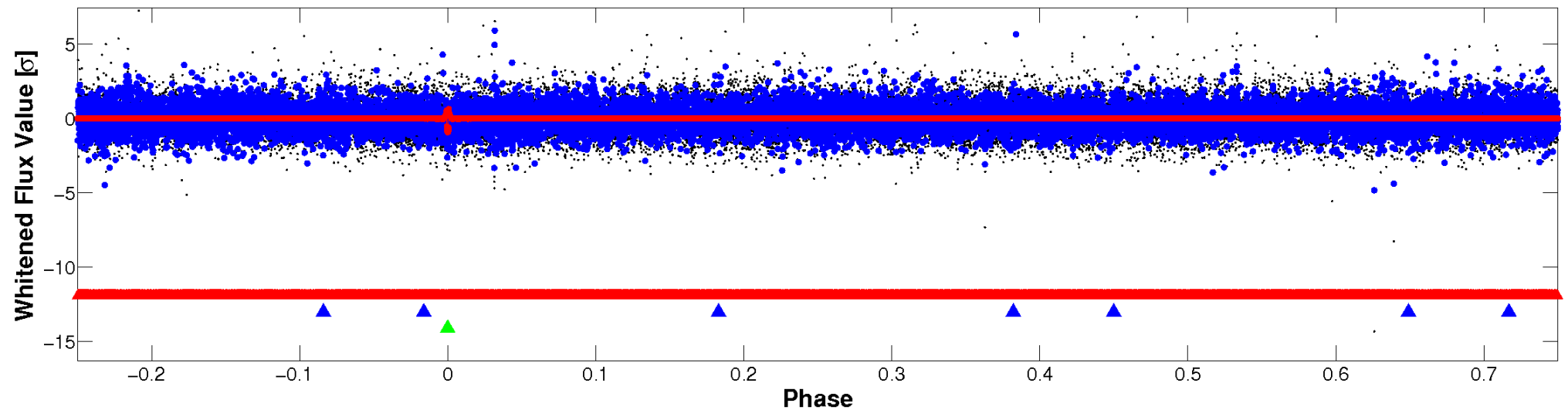


# Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

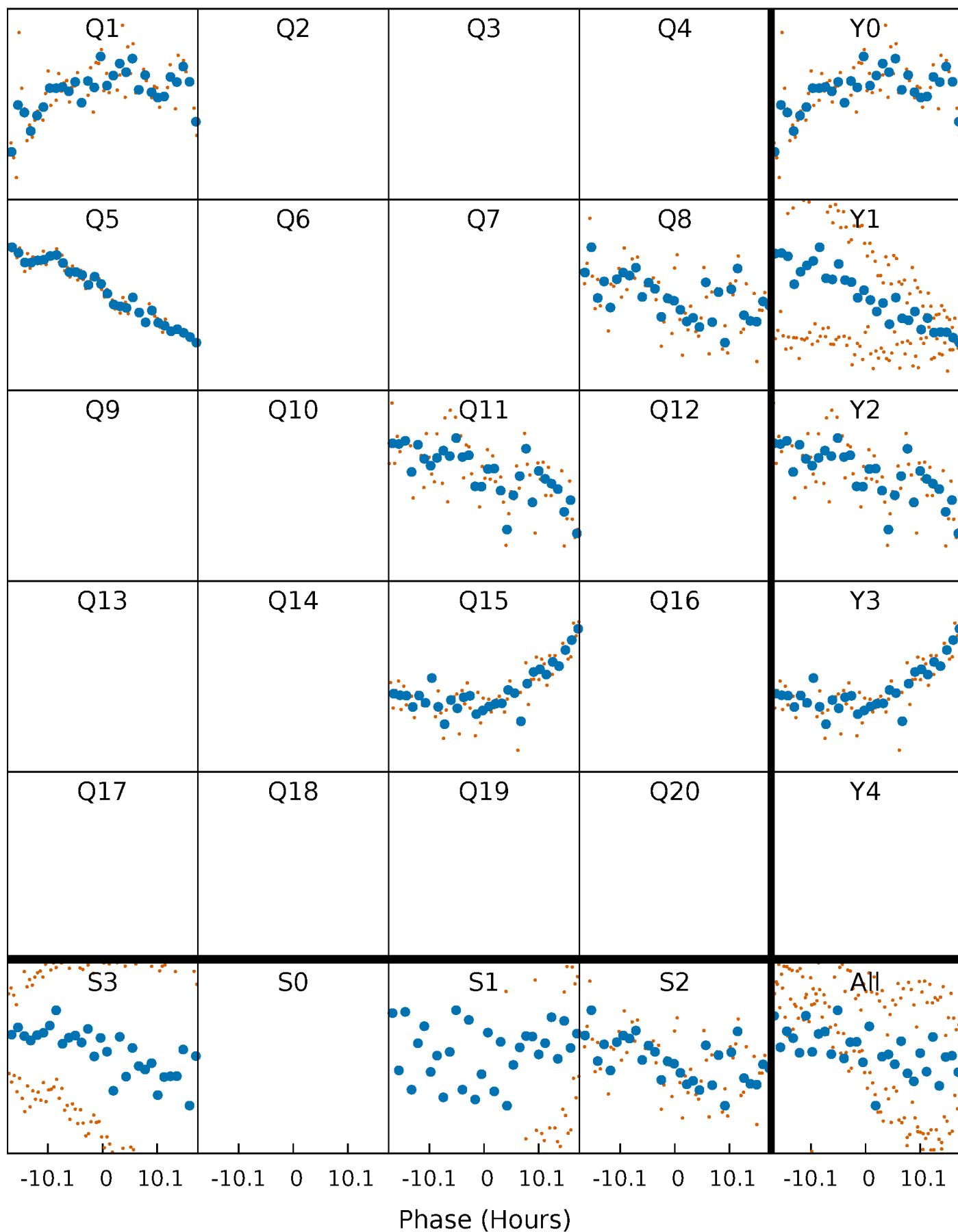


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

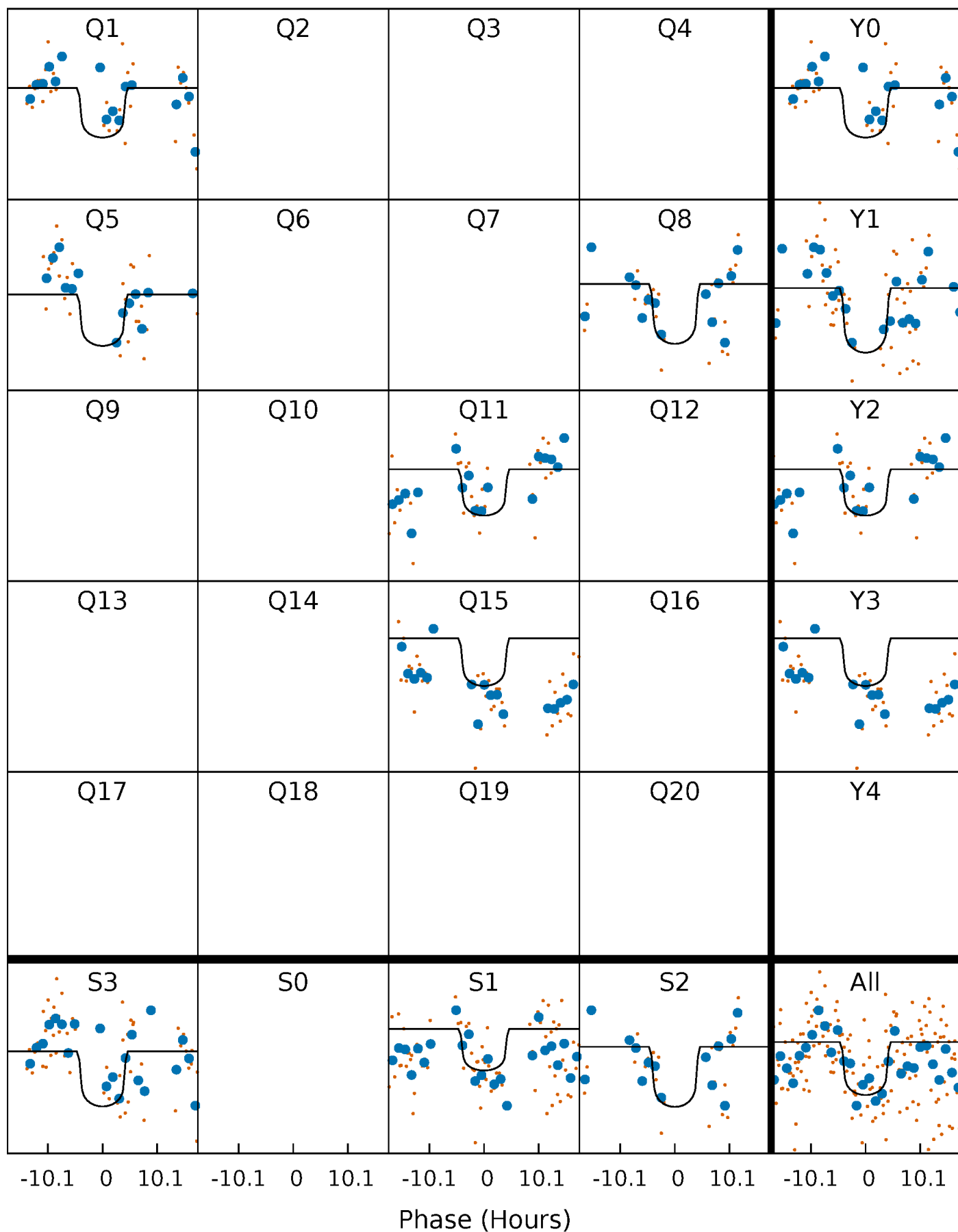
TCE 007285673-03     $P=309.930539$  Days     $T_0=155.205905$  (BKJD)





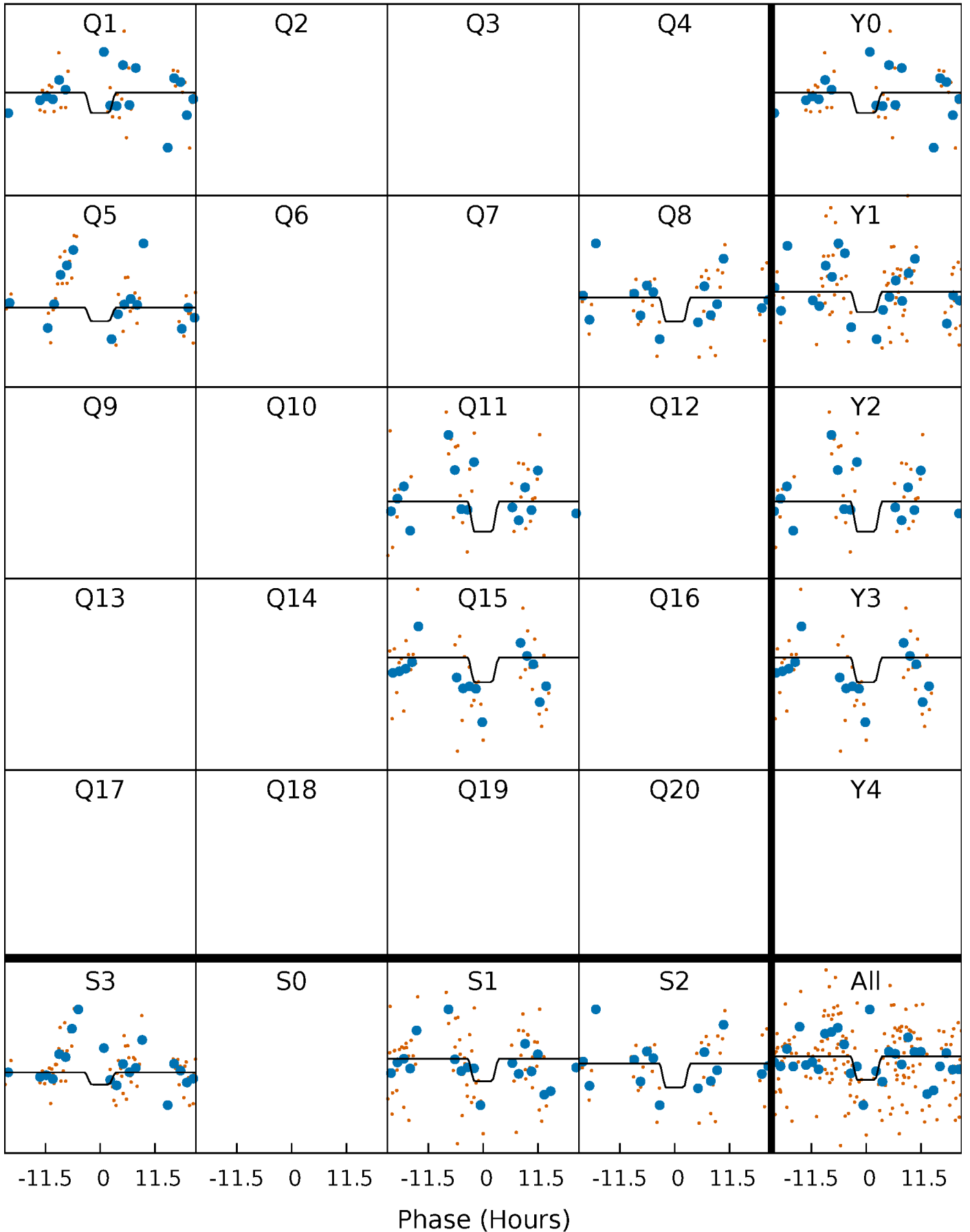
# DV Quarter-Phased Transit Curves

TCE 007285673-03     $P=309.930539$  Days     $T_0=155.205905$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

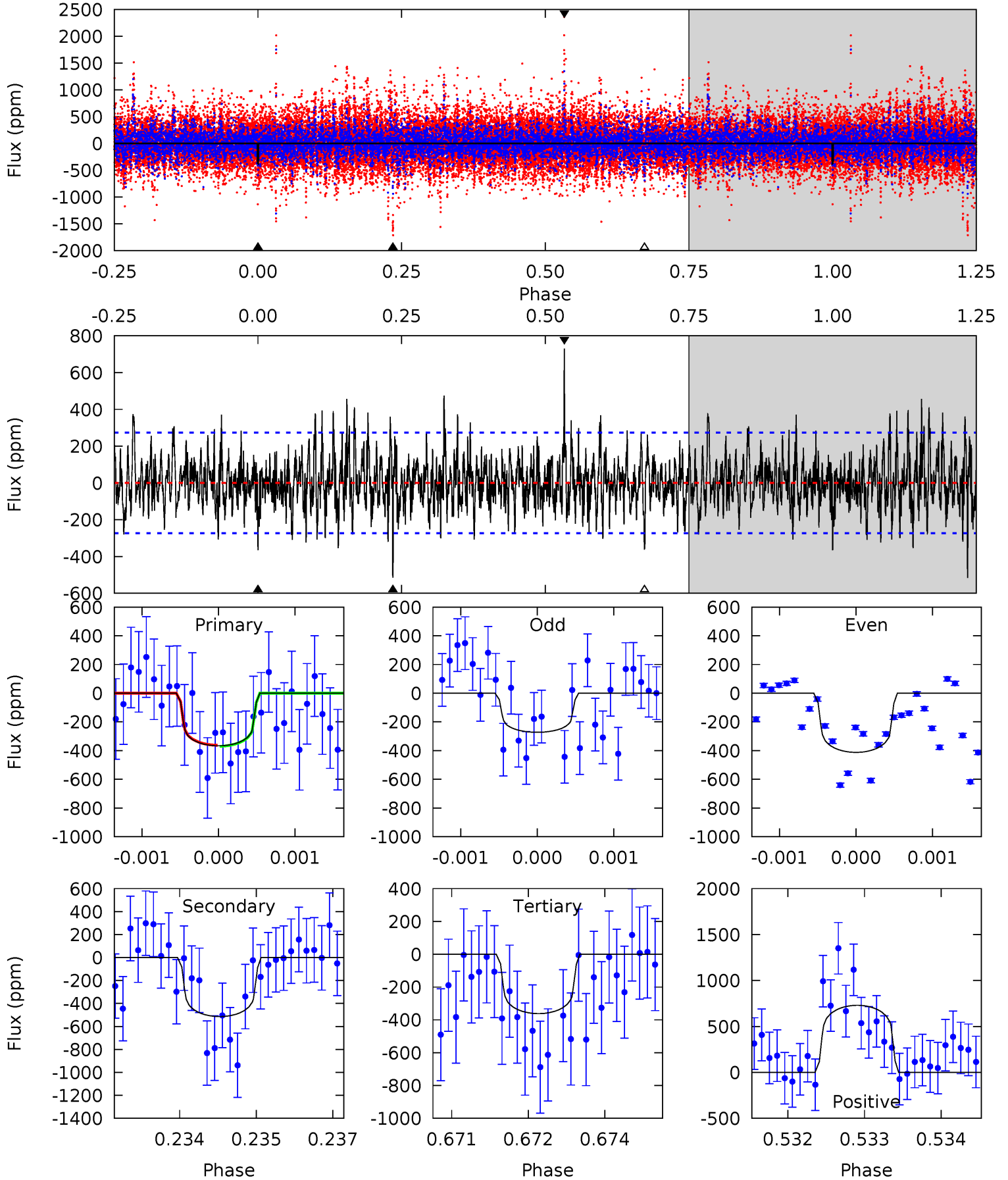
TCE 007285673-03     $P=309.983916$  Days     $T_0=155.149986$  (BKJD)



# DV Model-Shift Uniqueness Test

007285673-03, P = 309.930539 Days, E = 155.205905 Days

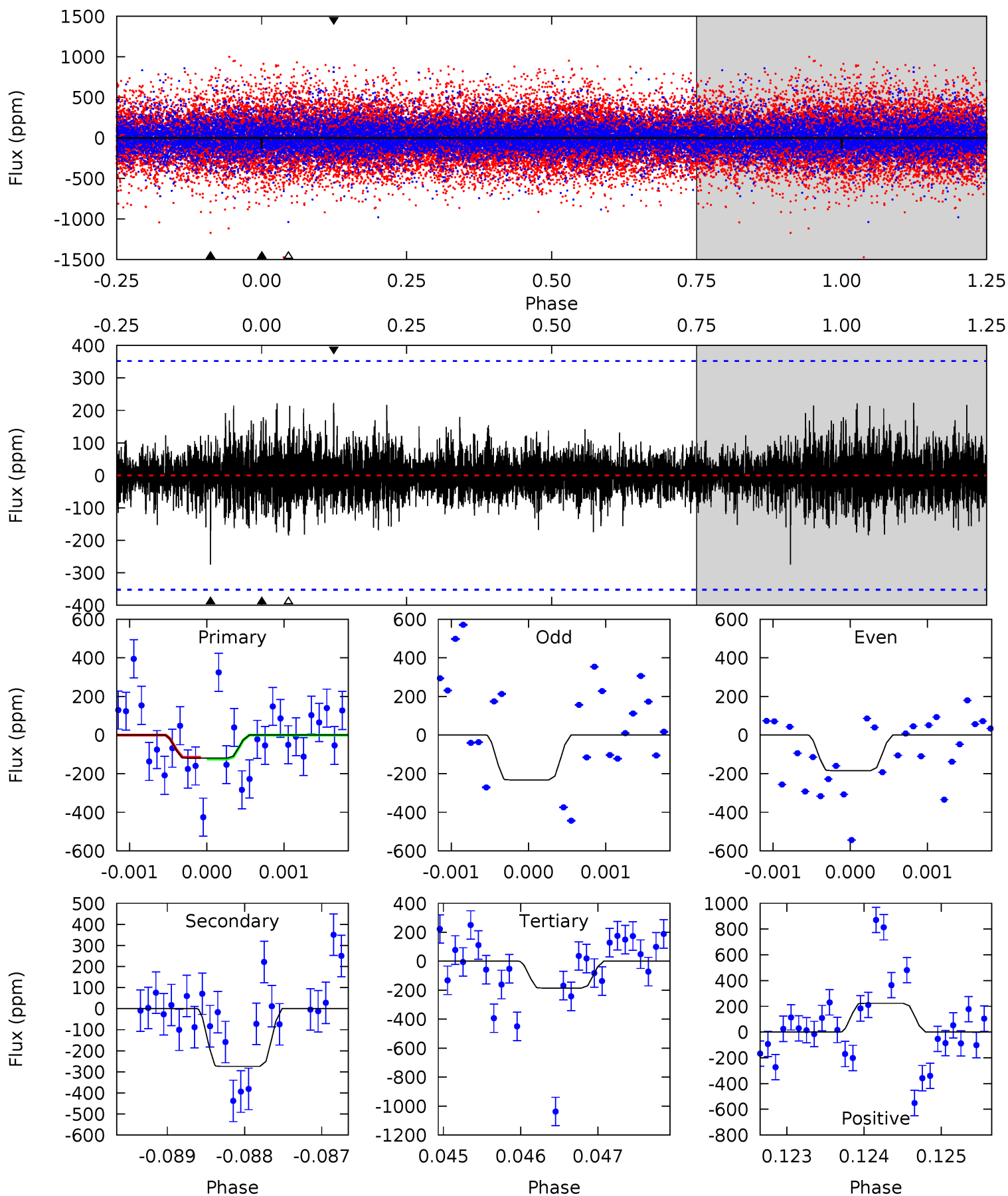
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.26	10.2	7.17	14.5	5.42	3.25	2.33	0.09	-7.20	3.02	-4.28	1.32	0.99	0.59	0.07



# Alt Model-Shift Uniqueness Test

007285673-03, P = 309.983916 Days, E = 155.149986 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
1.86	4.27	2.88	3.47	5.49	3.35	0.74	-1.03	-1.62	1.39	0.80	0.31	0.19	0.45	0.06



### Stellar Parameters For KIC 007285673

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6106^{+181}_{-200}$	$4.405^{+0.124}_{-0.186}$	$-0.520^{+0.300}_{-0.300}$	$0.982^{+0.271}_{-0.146}$	$0.893^{+0.109}_{-0.089}$	$1.329^{+0.737}_{-0.642}$
	+3%/-3%	+3%/-4%	+58%/-58%	+28%/-15%	+12%/-10%	+55%/-48%
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 007285673-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-514 \pm 50$	$2.23^{+1.02}_{-0.85}$	$403^{+27}_{-24}$	$6425^{+1845}_{-995}$	$43056^{+66623}_{-23329}$
Alt.	$-274 \pm 64$	$1.48^{+0.91}_{-0.80}$	$404^{+28}_{-24}$	$6770^{+4392}_{-1449}$	$51184^{+187053}_{-32017}$

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

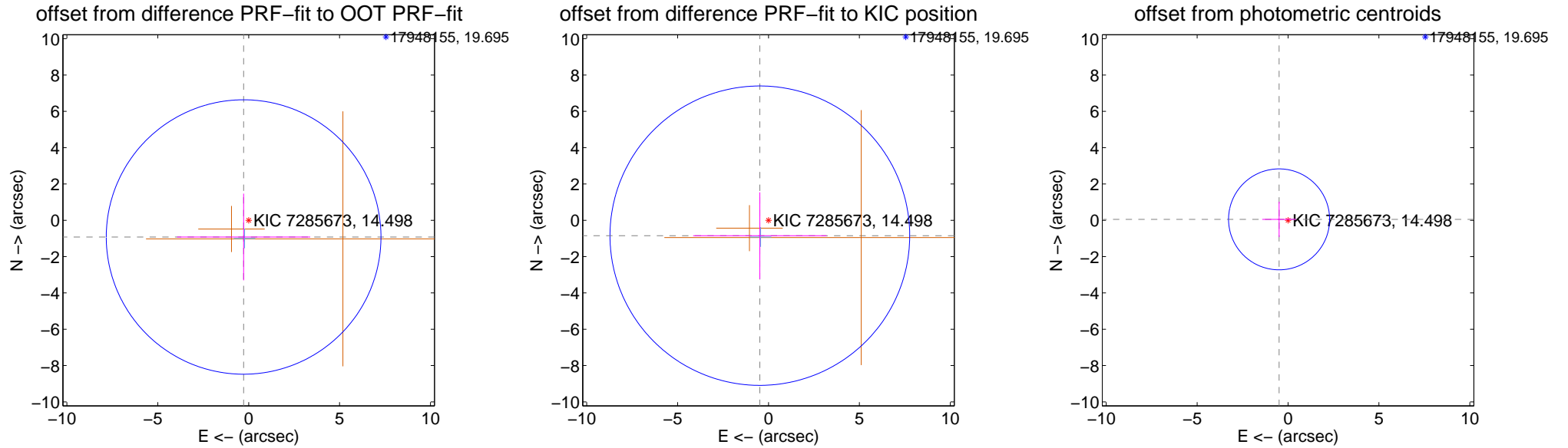
## DV Centroid Data

Supplemental centroid analysis for 007285673-03. Kepler magnitude: 14.50. Transit SNR 5.61

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

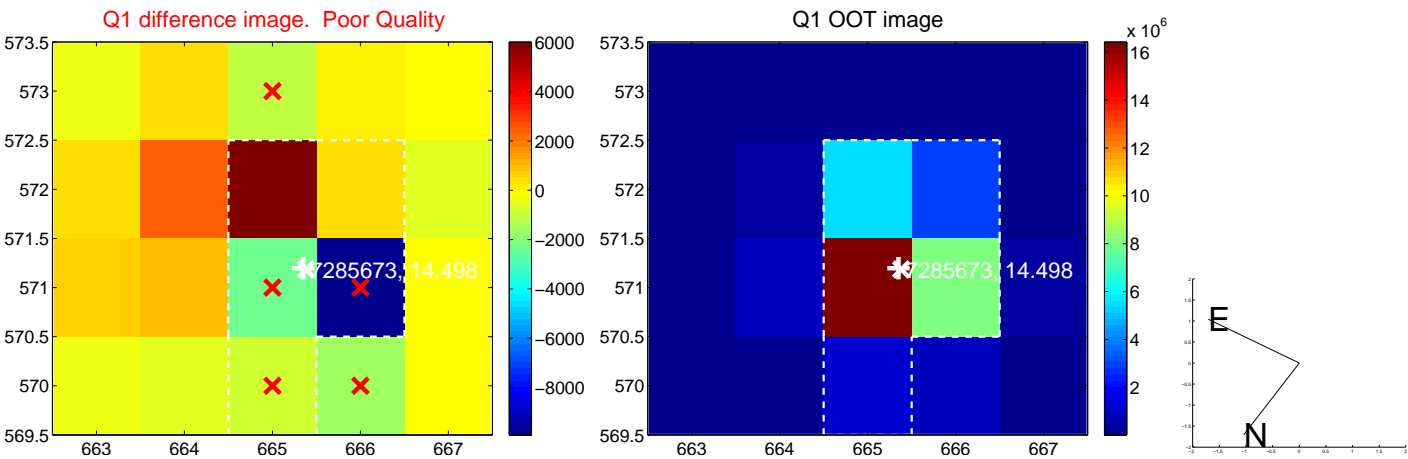
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.961 \pm 2.519$	0.38	$0.279 \pm 3.667$	$-0.920 \pm 2.386$
PRF-fit source offset from KIC position	$0.971 \pm 2.748$	0.35	$0.476 \pm 3.667$	$-0.847 \pm 2.386$
photometric centroid source offset	$0.50 \pm 0.93$	0.53	$0.49 \pm 0.93$	$0.05 \pm 0.97$



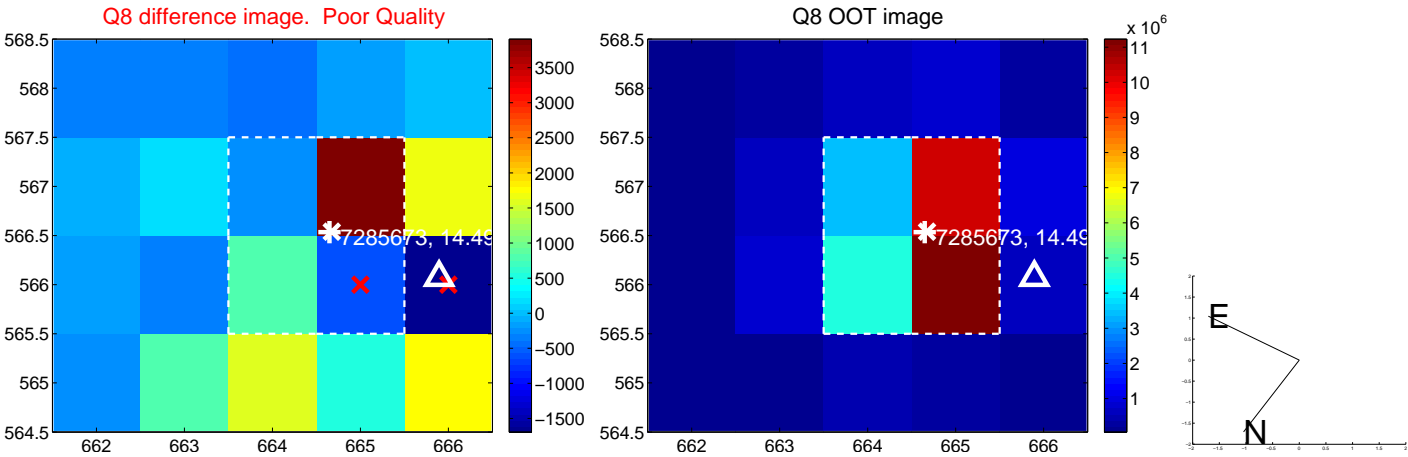
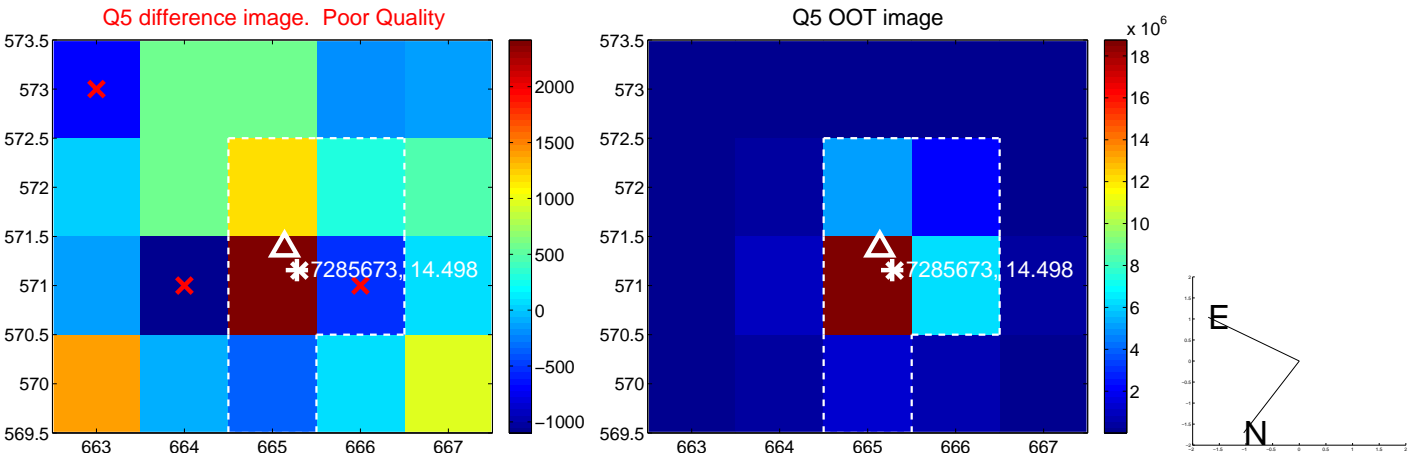
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



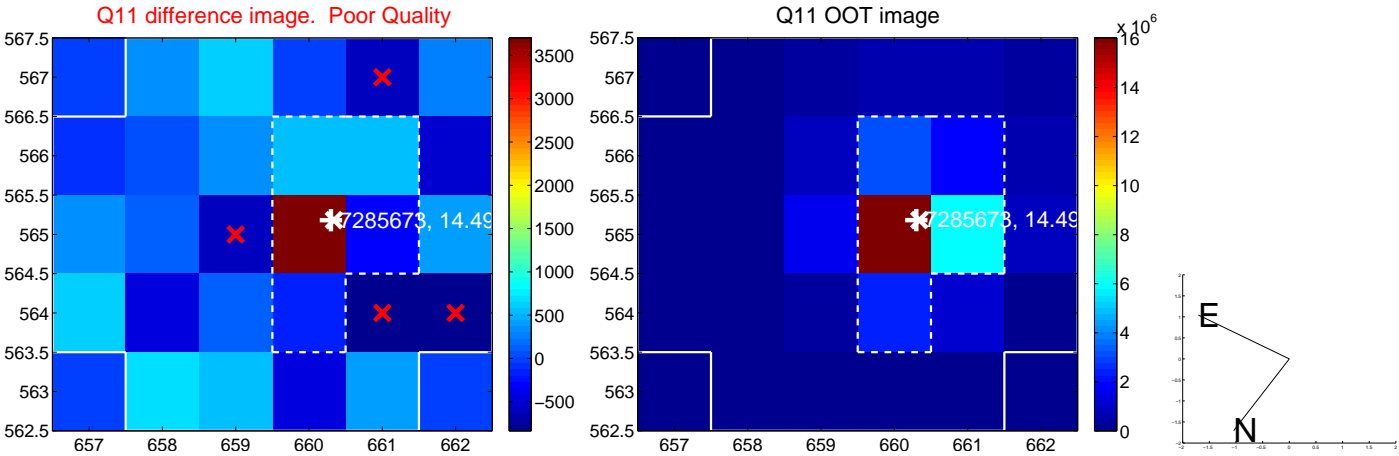
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



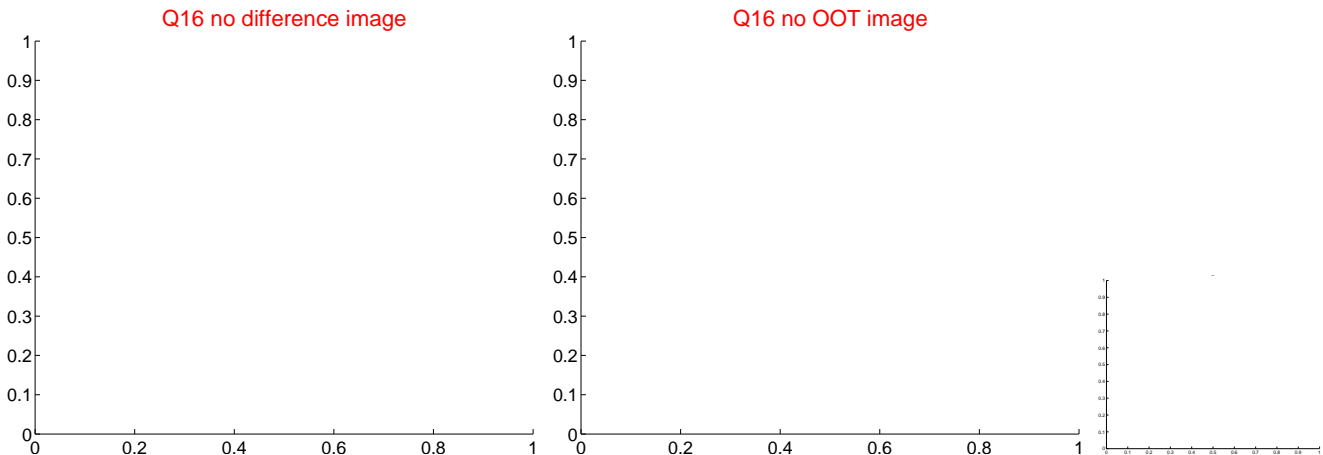
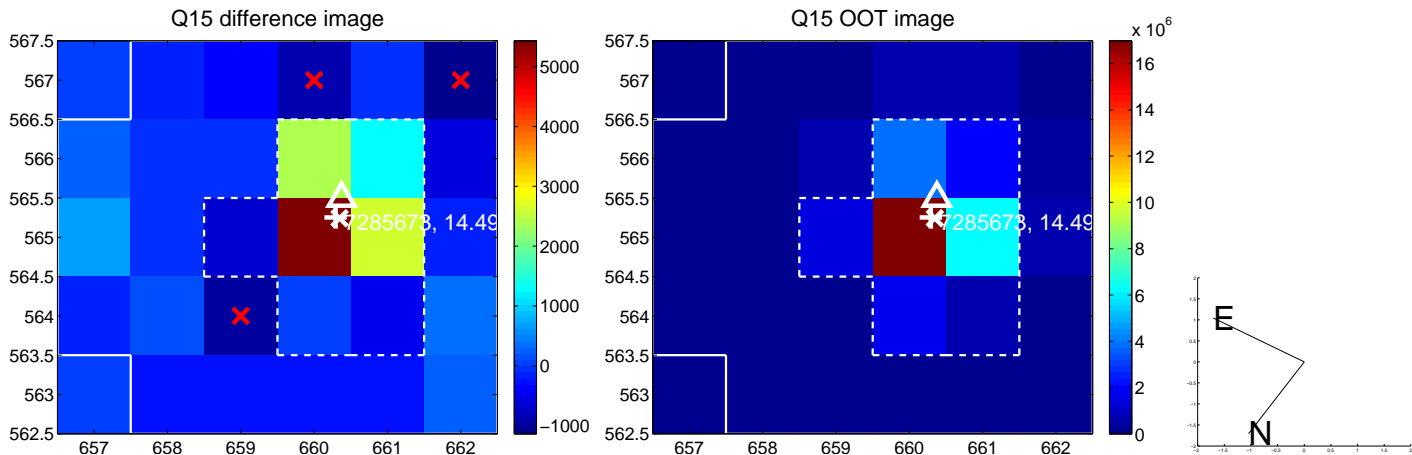
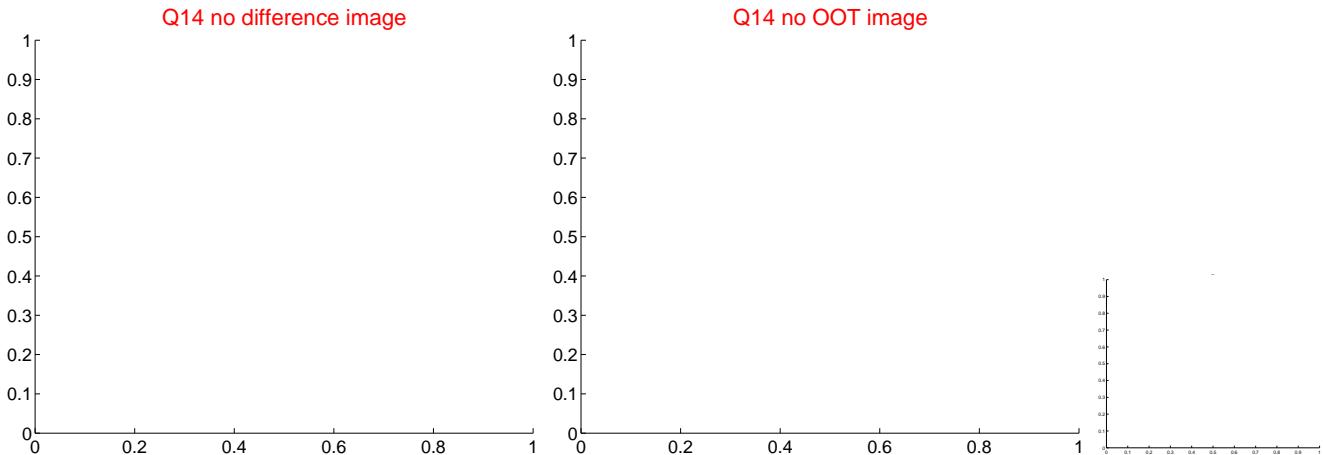
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



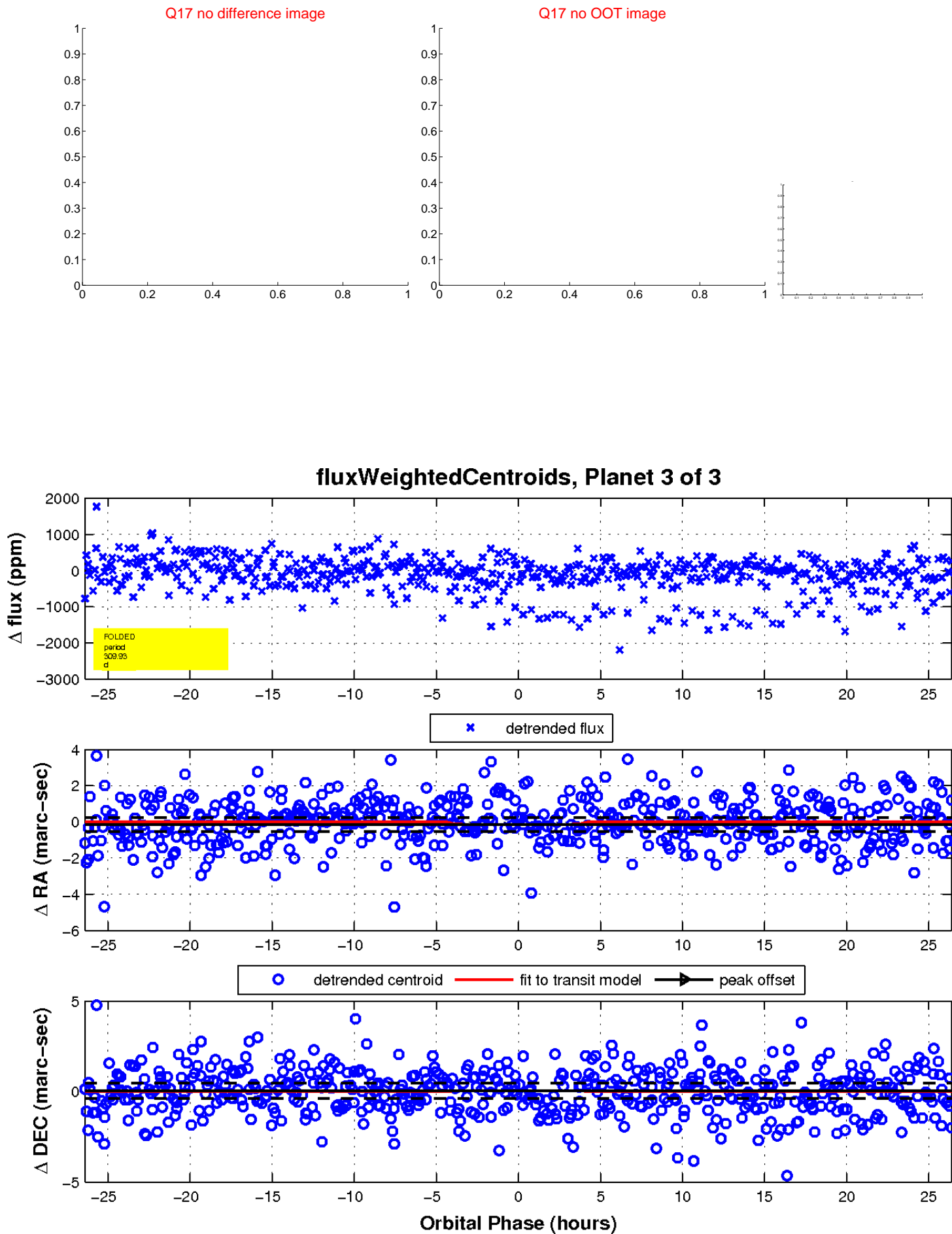
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



UKIRT Image

Declination

