

# KIC 005385792

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005385792-01	OBS	No	12.425411	141.262074	761.9	10.747	17.4	24.4	1.25	6640	6.55	212.04
005385792-02	OBS	No	12.425362	134.278207	529.5	14.217	13.4	17.5	1.25	6640	5.52	212.04
005385792-03	OBS	No	12.425696	141.845503	1079.6	8.491	12.7	14.8	1.25	6640	7.72	212.04
005385792-04	OBS	No	12.428477	135.610217	420.2	31.695	8.6	12.9	1.25	6640	4.95	211.97

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005385792-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
005385792-02	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET—HALO_GHOST
005385792-03	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
005385792-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—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.

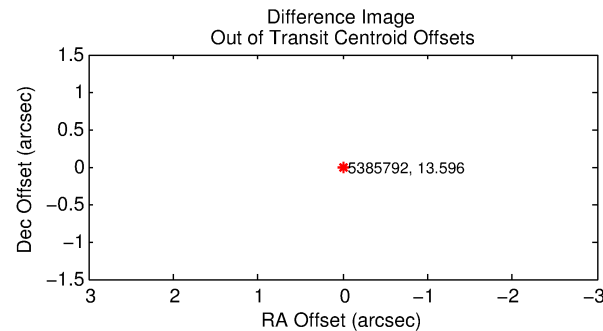
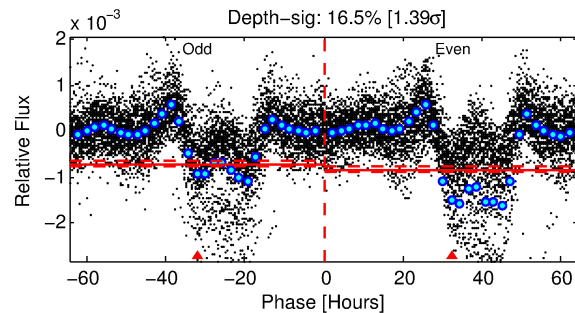
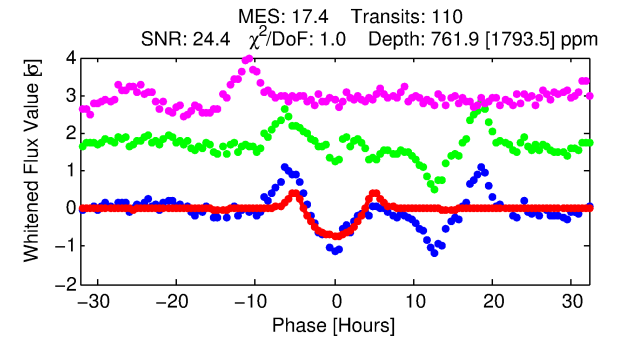
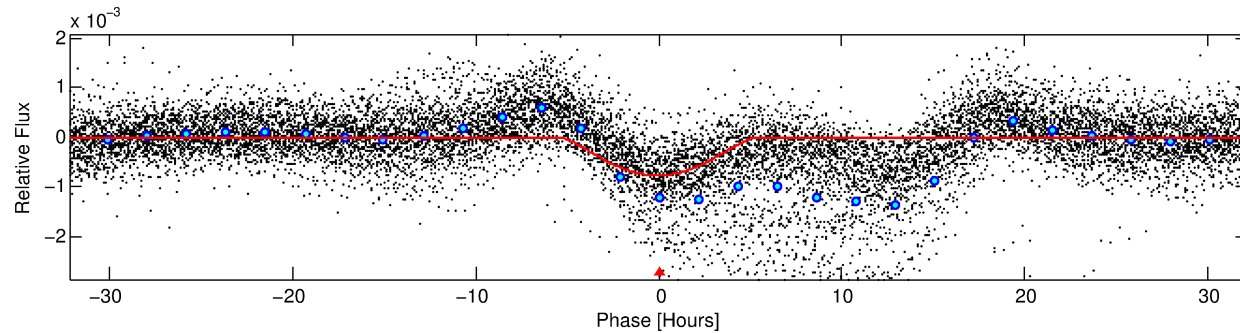
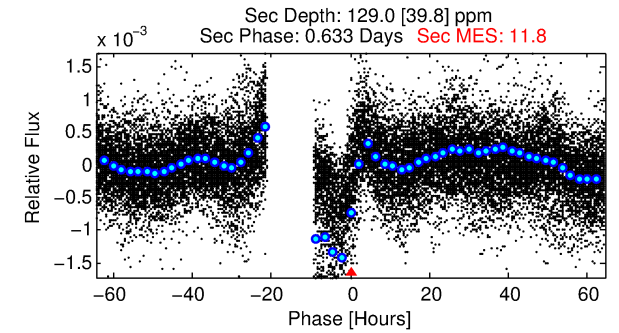
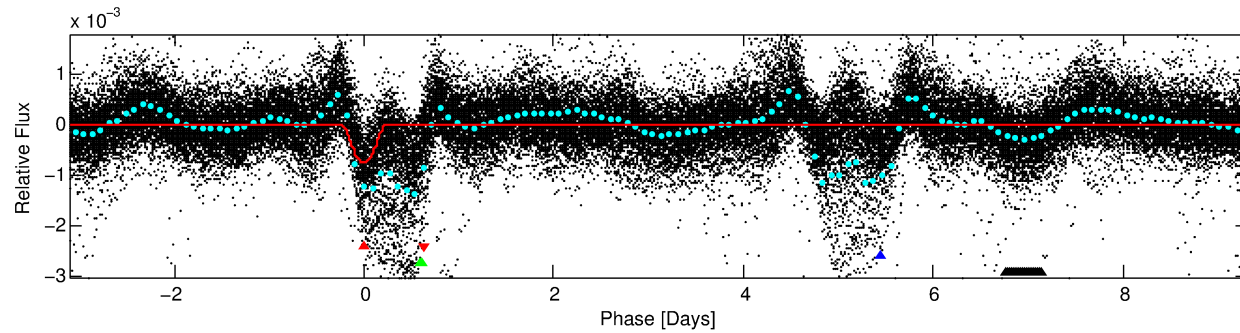
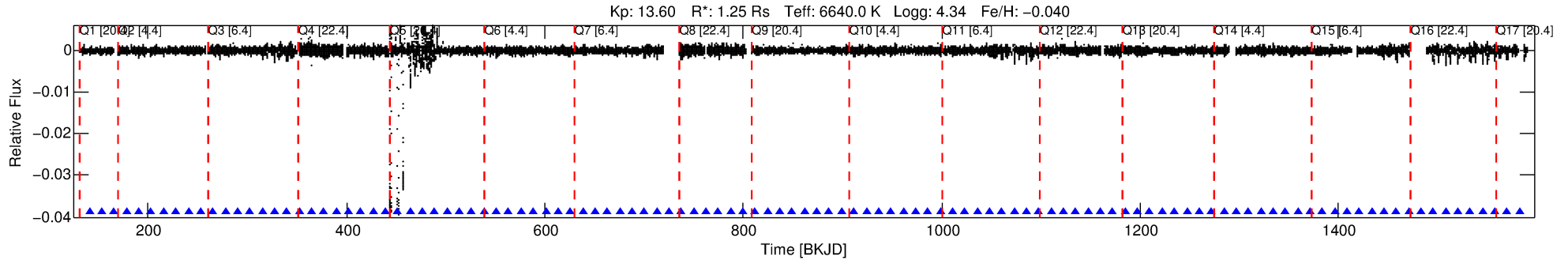
## Ephemeris Match Information For 005385792-01

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	$\sigma_P$	$\sigma_T$
005385792-01	5385792	6129.01	5385778	1:1	22.1	4	5	12.70	13.60	7.33	Direct-PRF	0	3.47	3.87

**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: 5385792 Candidate: 1 of 4 Period: 12.425 d



## DV Fit Results:

Period = 12.42541 [0.00009] d  
Epoch = 141.2621 [0.0063] BKJD  
Rp/R\* = 0.0480 [0.0203]  
a/R\* = 2.95 [0.26]  
b = 1.00 [0.05]  
Seff = 212.04 [91.78]  
Teq = 973 [105] K  
Rp = 6.55 [3.61] Re  
a = 0.1133 [0.0326] AU  
Ag = 21.23 [20.98] [0.96σ]  
Teffp = 3229 [736] K [3.03σ]

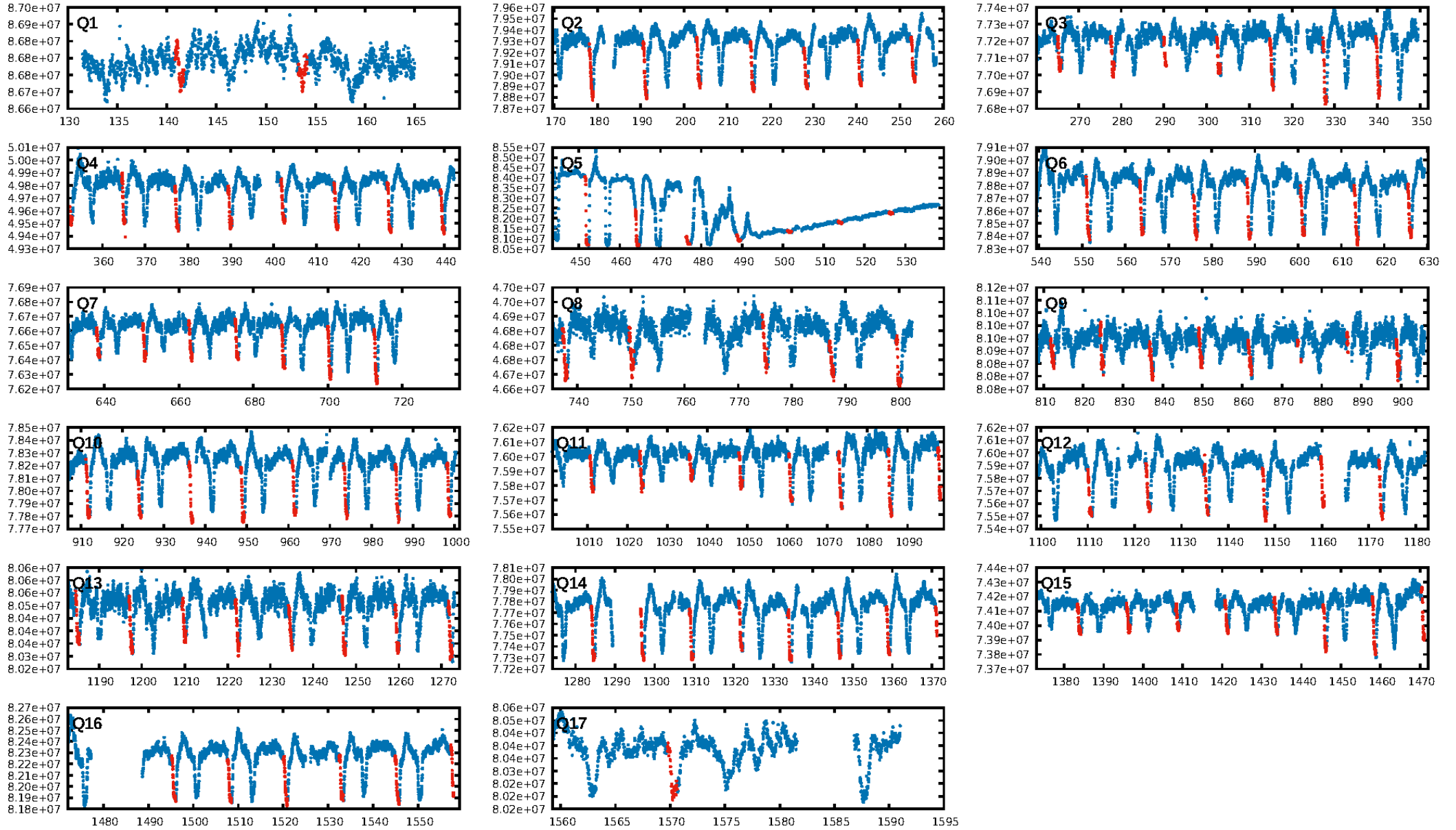
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: 1.4%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.61e-54  
RollingBand-fgt: 1.00 [107/107]  
GhostDiagnostic-chr: -0.09433  
Centroid-sig: 0.0%  
Centroid-so: 7.344 arcsec [18.31σ]  
OotOffset-rm: N/A  
OotOffset-st: 0/0/0 [0]  
KicOffset-rm: 10.923 arcsec [22.96σ]  
KicOffset-st: 4/0/2 [8]  
DiffImageQuality-fgm: 0.50 [4/8]  
DiffImageOverlap-fno: 0.00 [0/17]

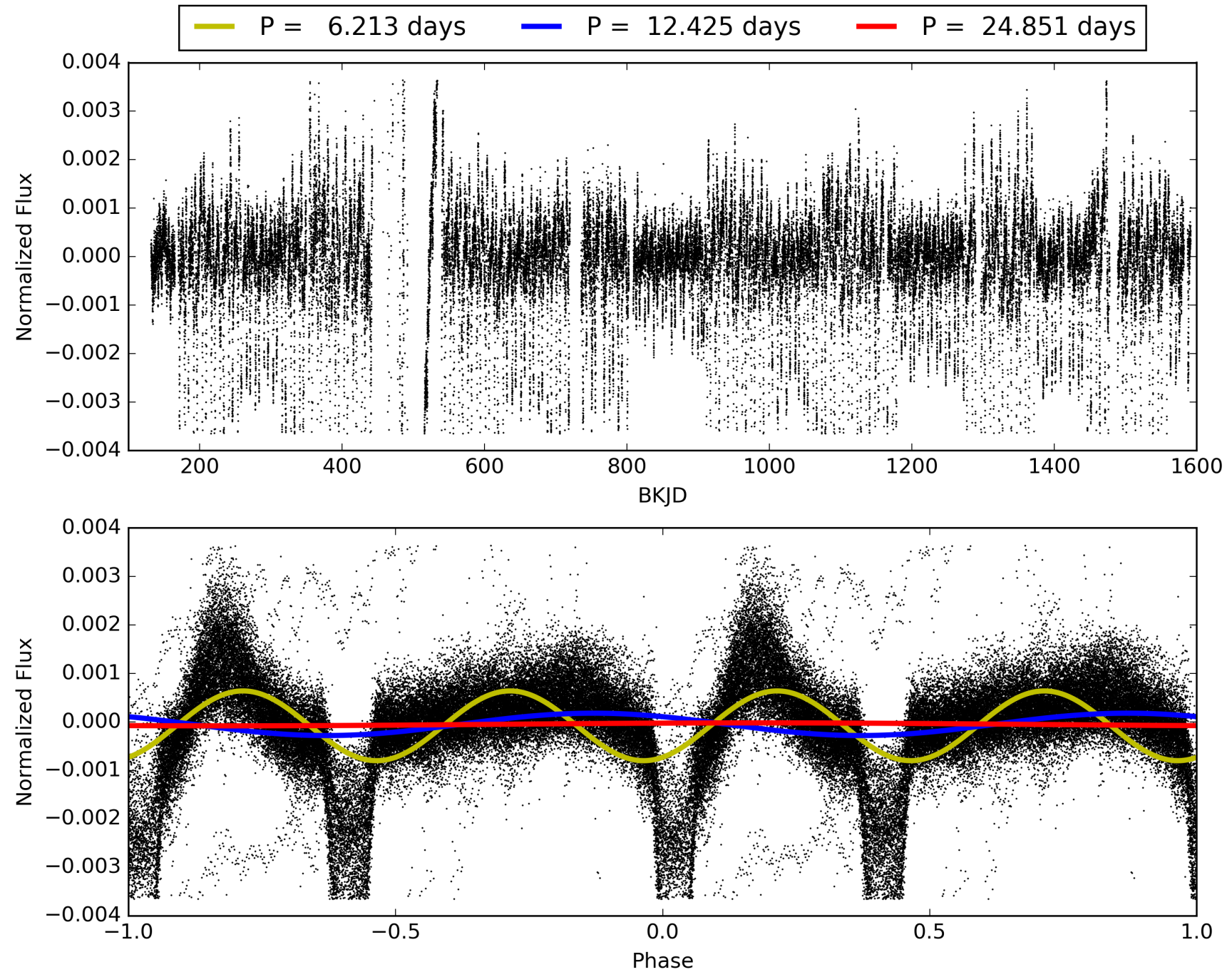
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:12:09 Z

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

# TCE 005385792-01, PDC Light Curves



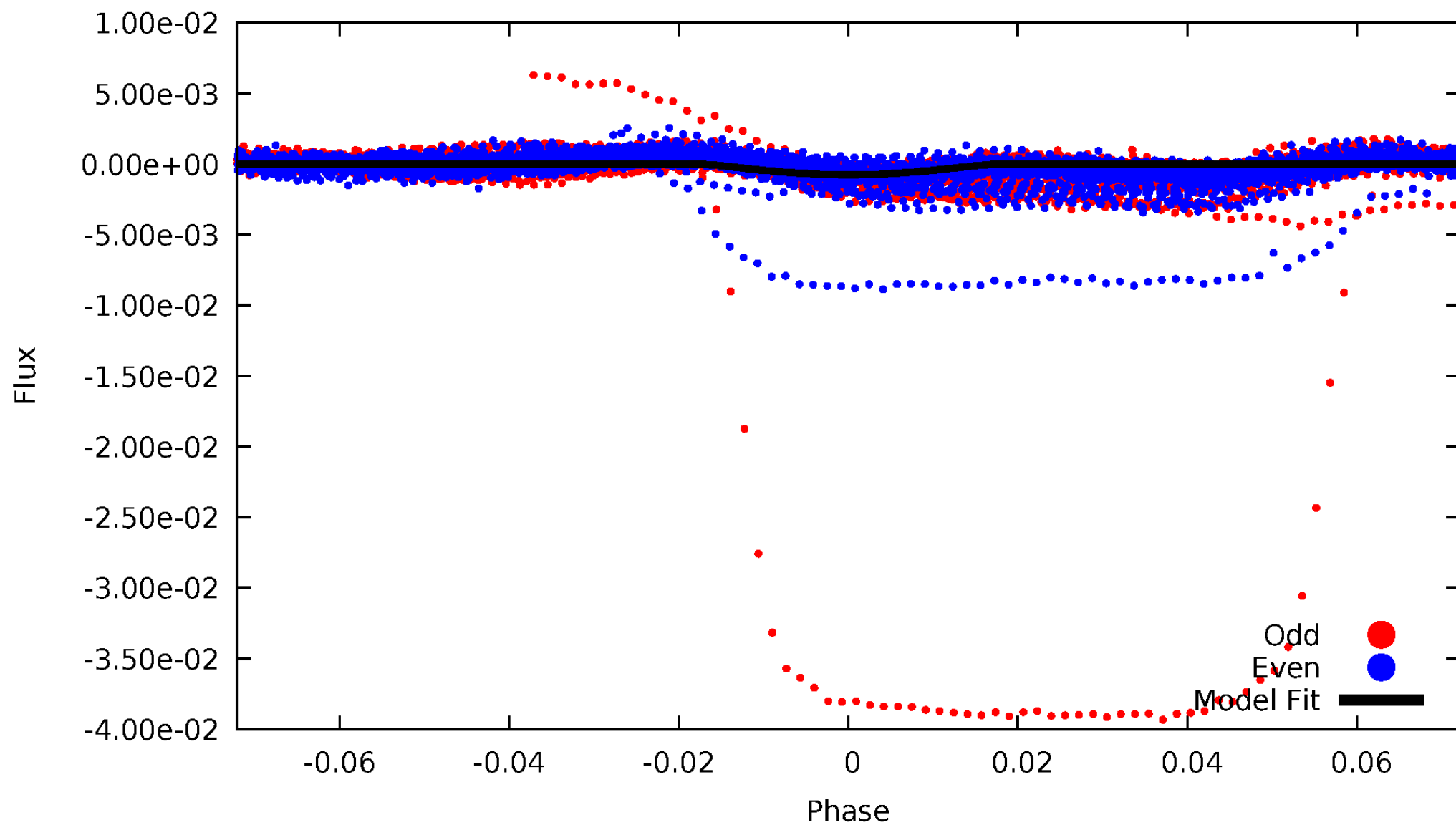
TCE 005385792-01





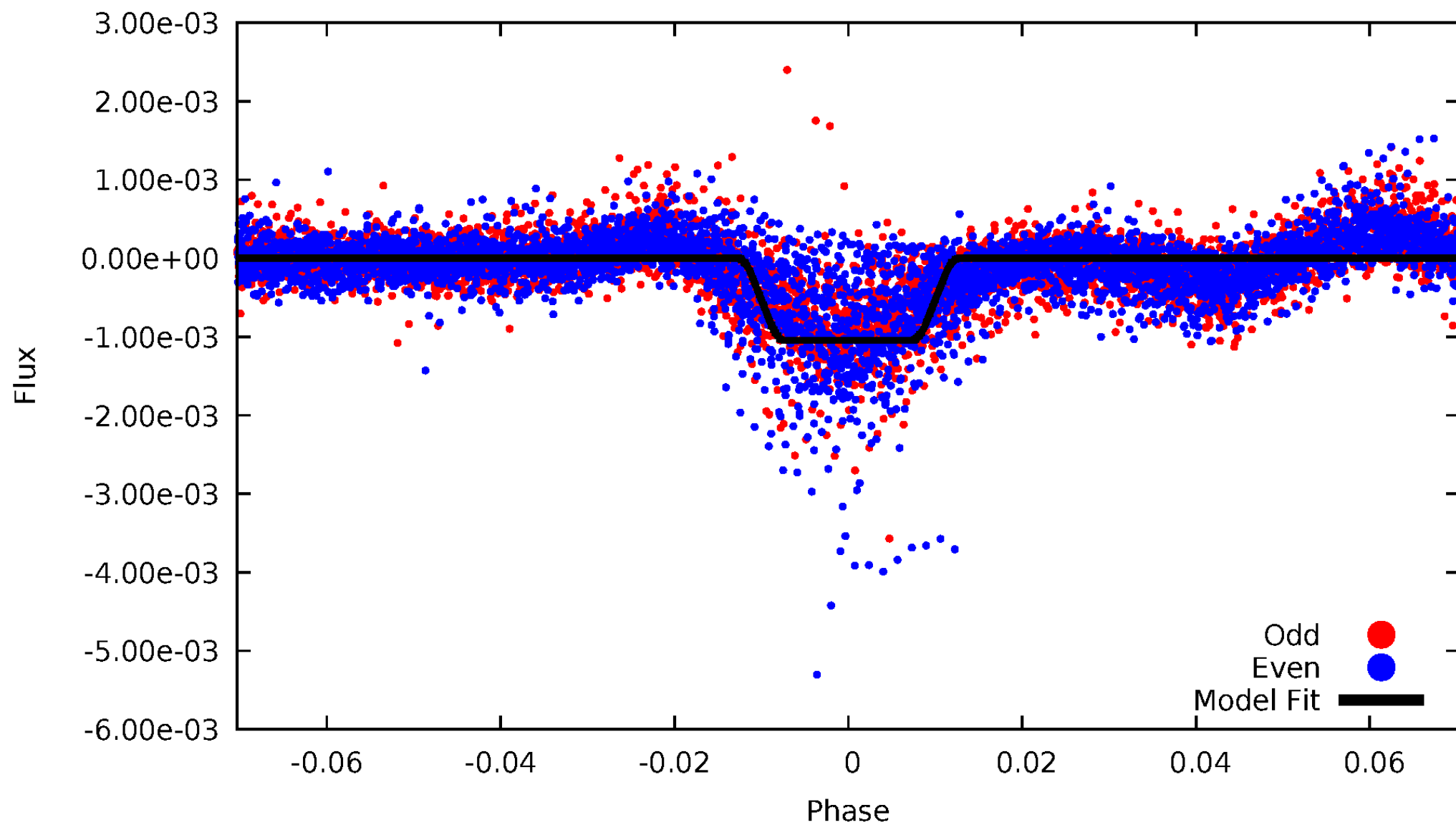
# DV Odd/Even

TCE 005385792-01



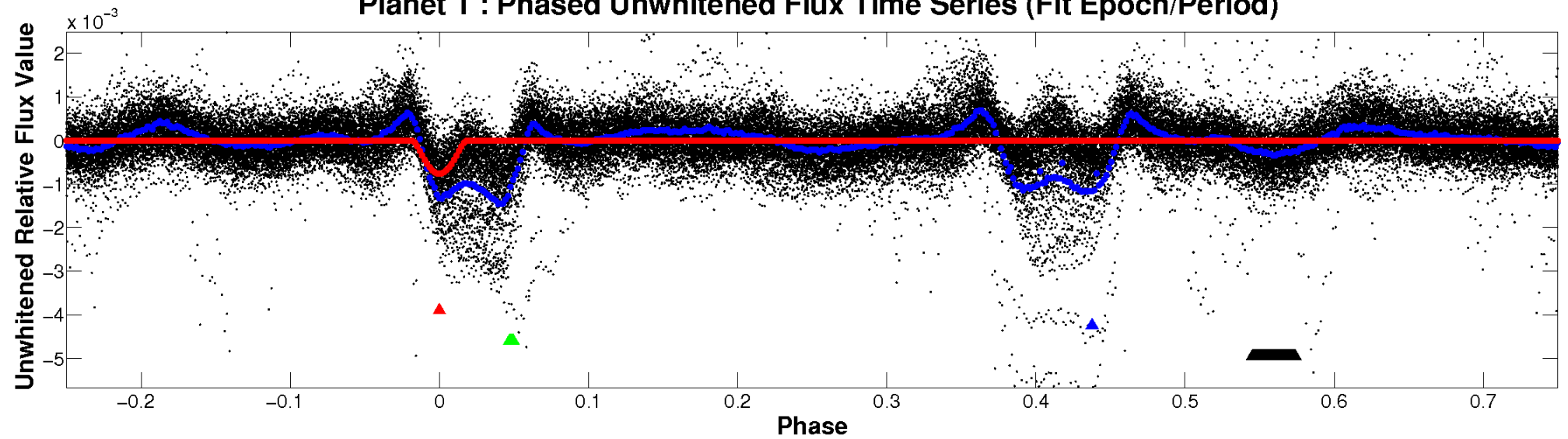
# ALT Odd/Even

TCE 005385792-01

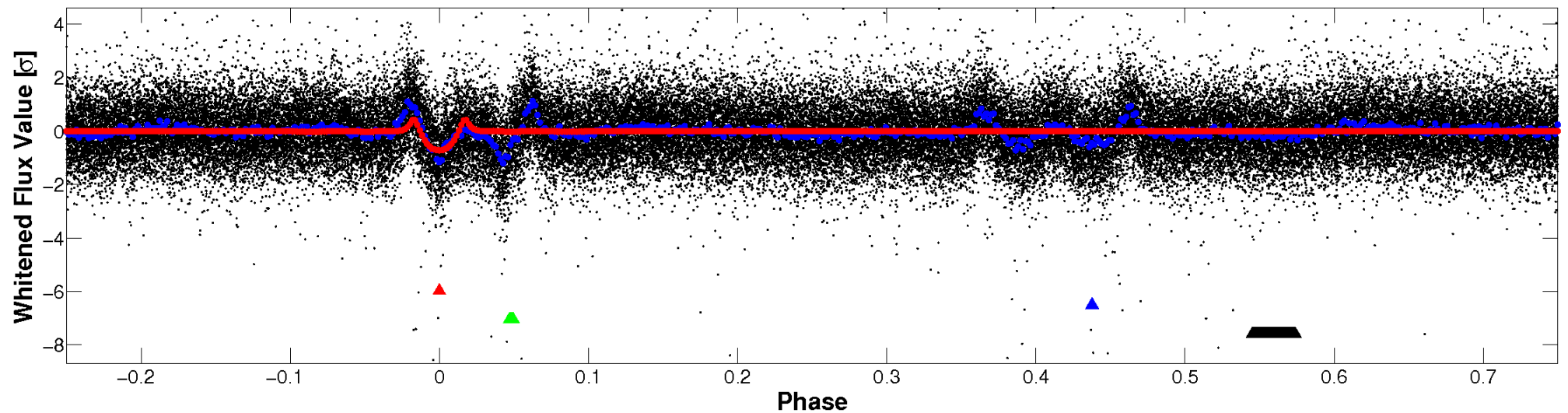


# Non-Whitened Vs. Whitened Light Curve

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

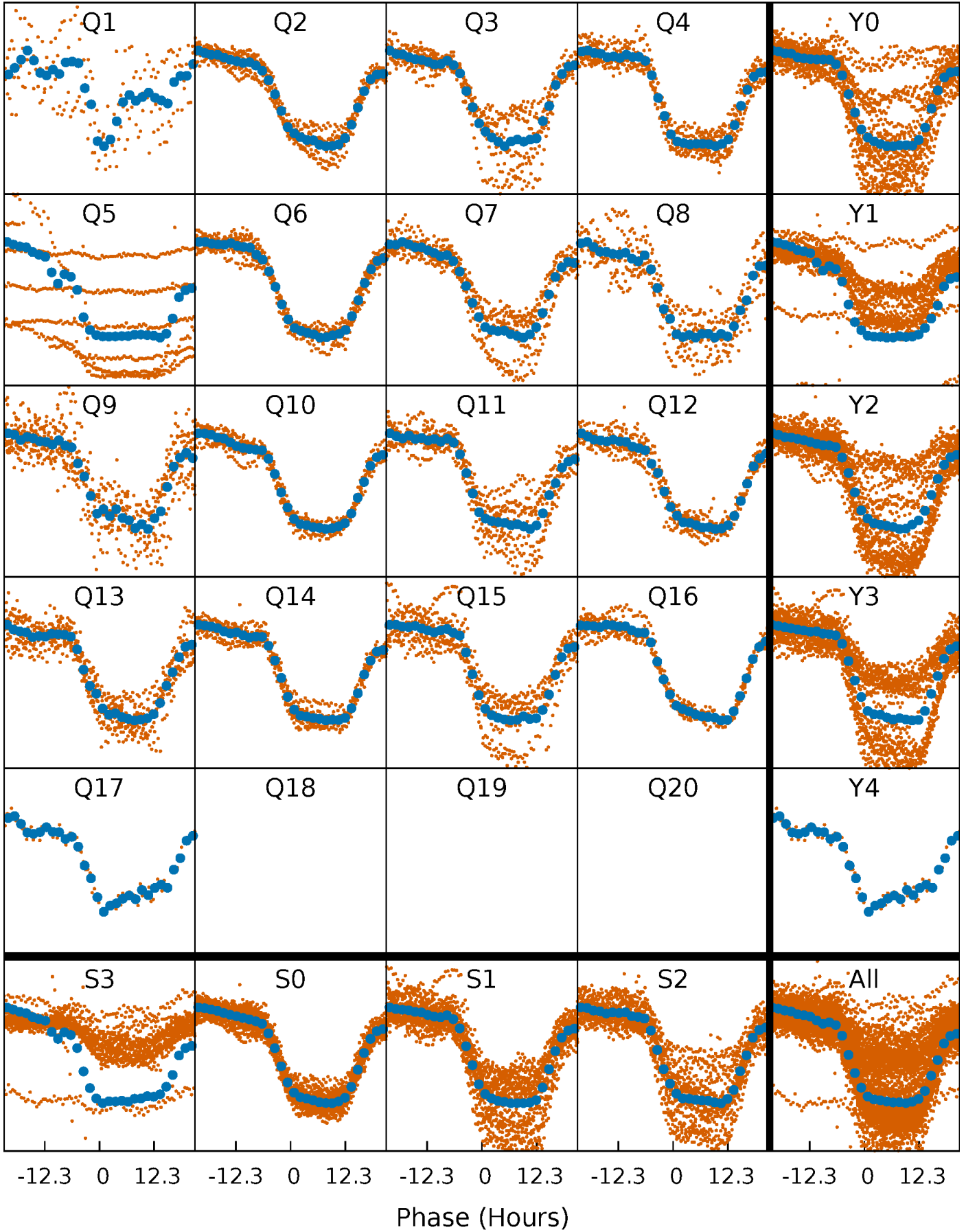


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

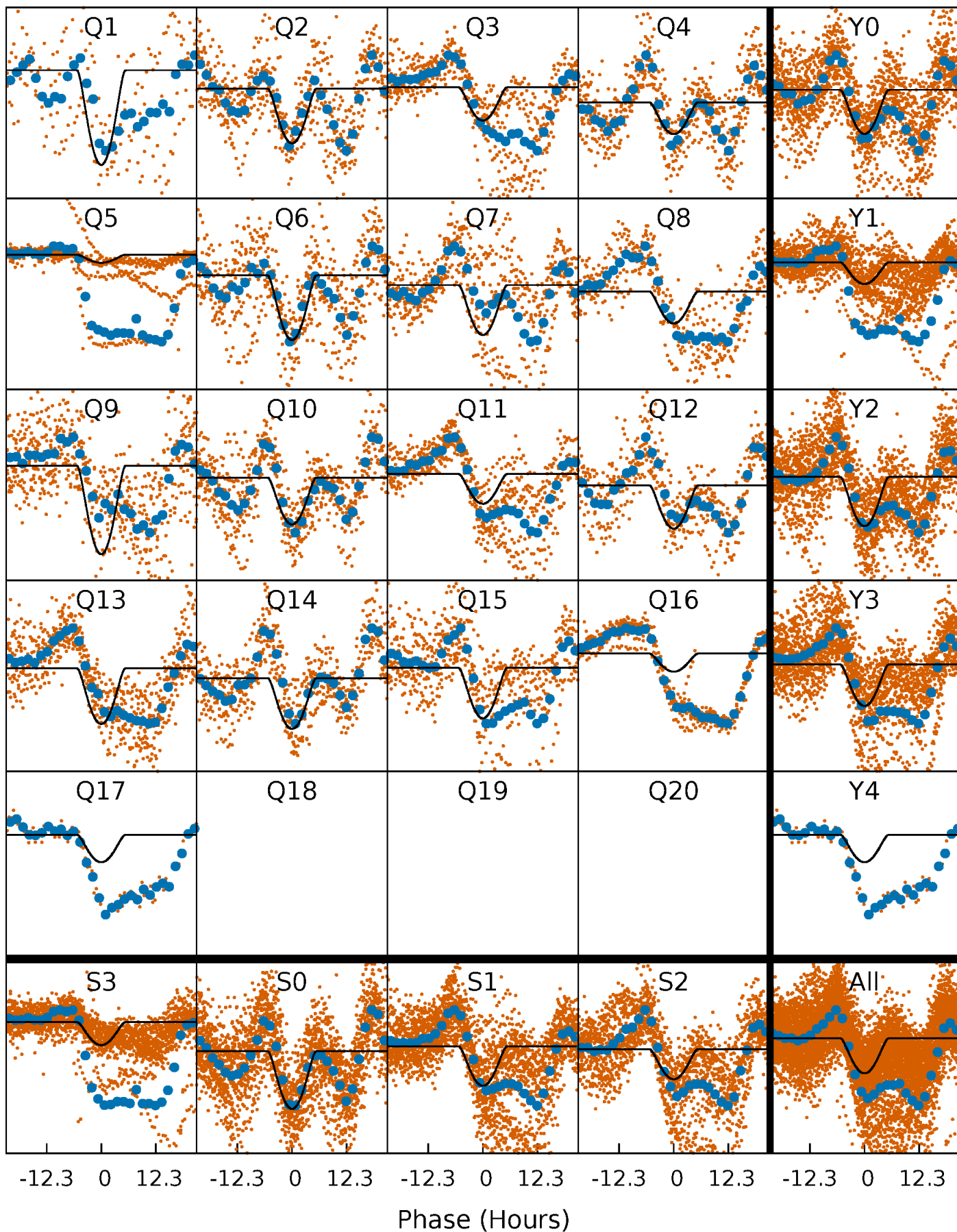
TCE 005385792-01 P= 12.425411 Days  $T_0=141.262074$  (BKJD)





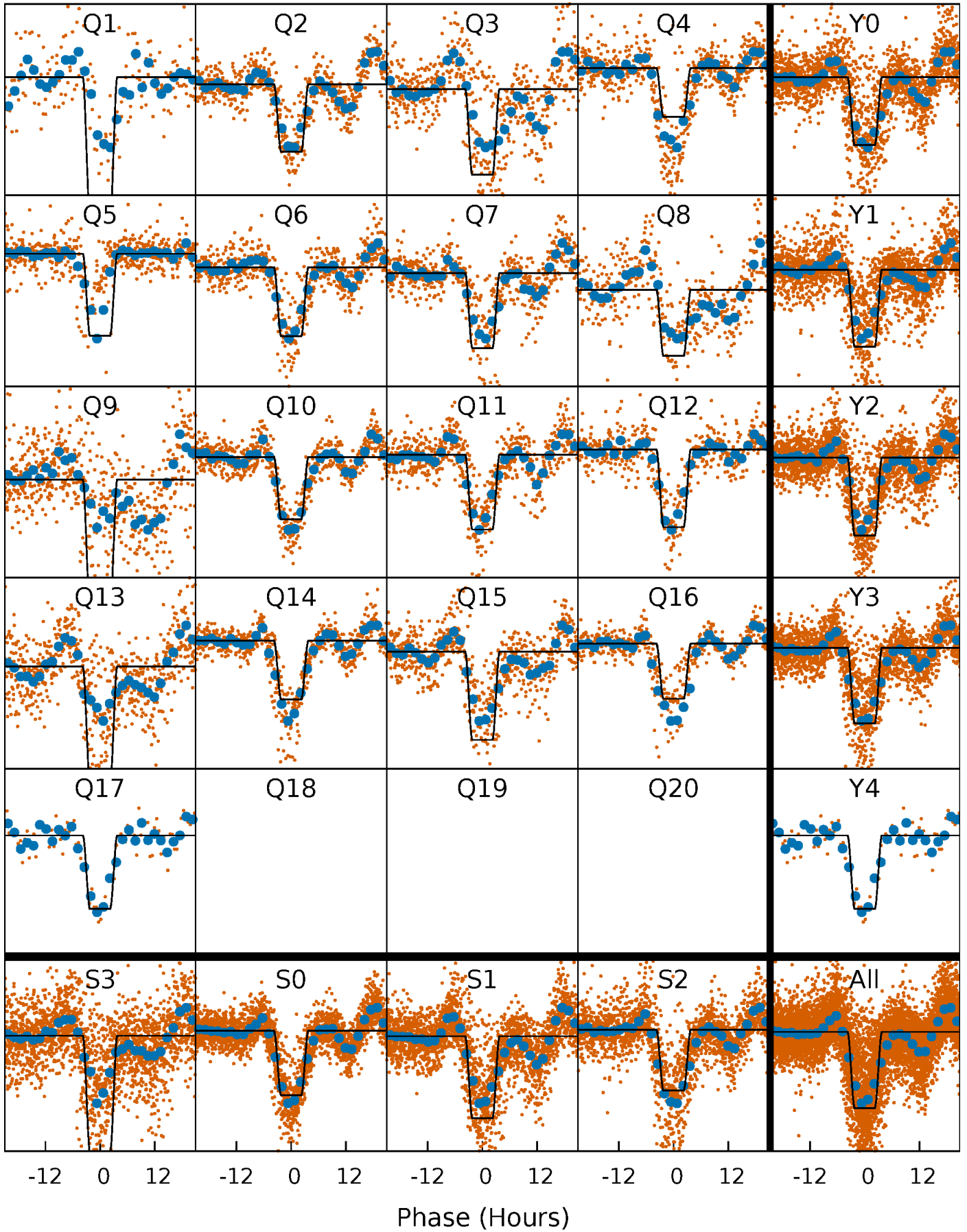
# DV Quarter-Phased Transit Curves

TCE 005385792-01 P= 12.425411 Days  $T_0=141.262074$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

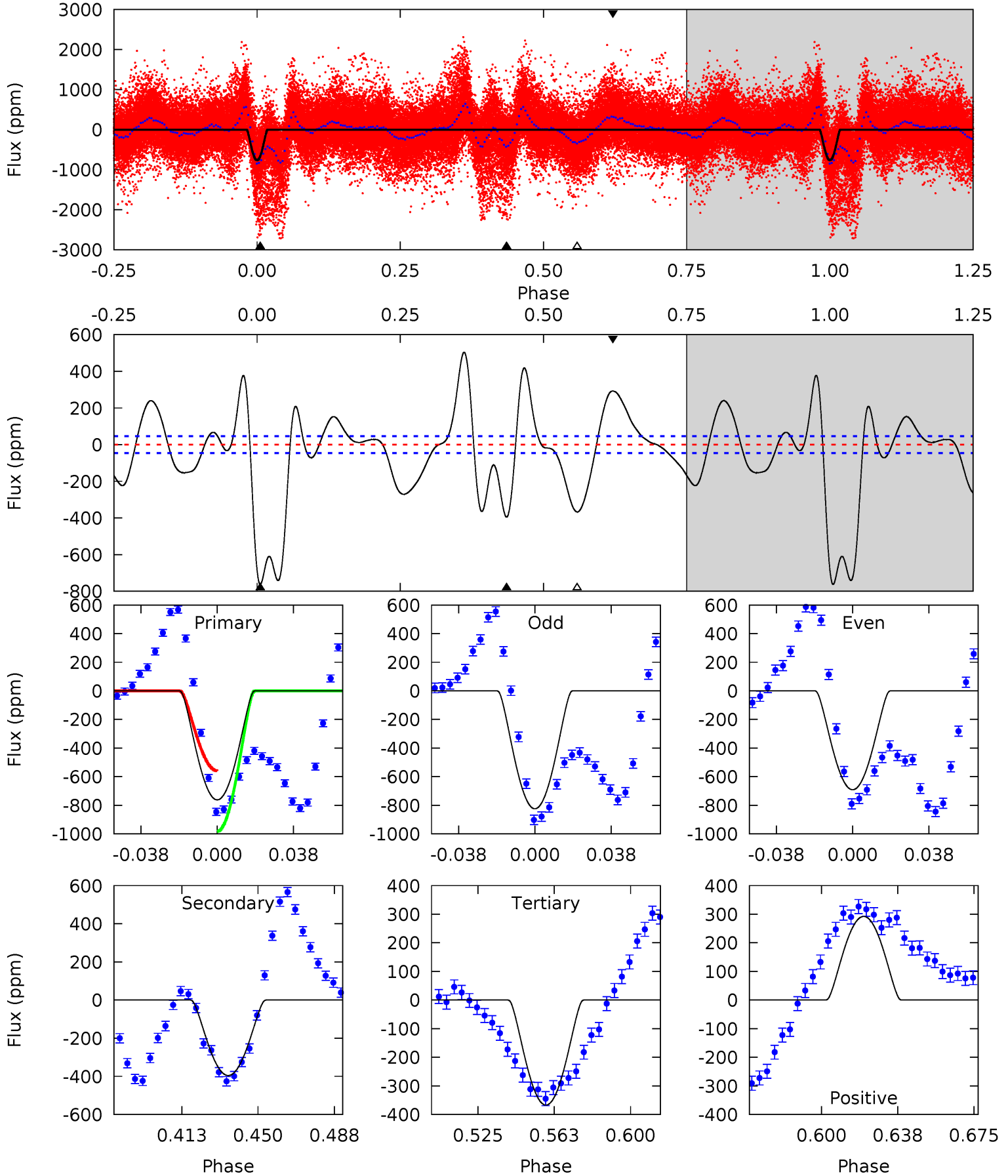
TCE 005385792-01 P= 12.425790 Days  $T_0=141.246069$  (BKJD)



# DV Model-Shift Uniqueness Test

005385792-01, P = 12.425411 Days, E = 128.836663 Days

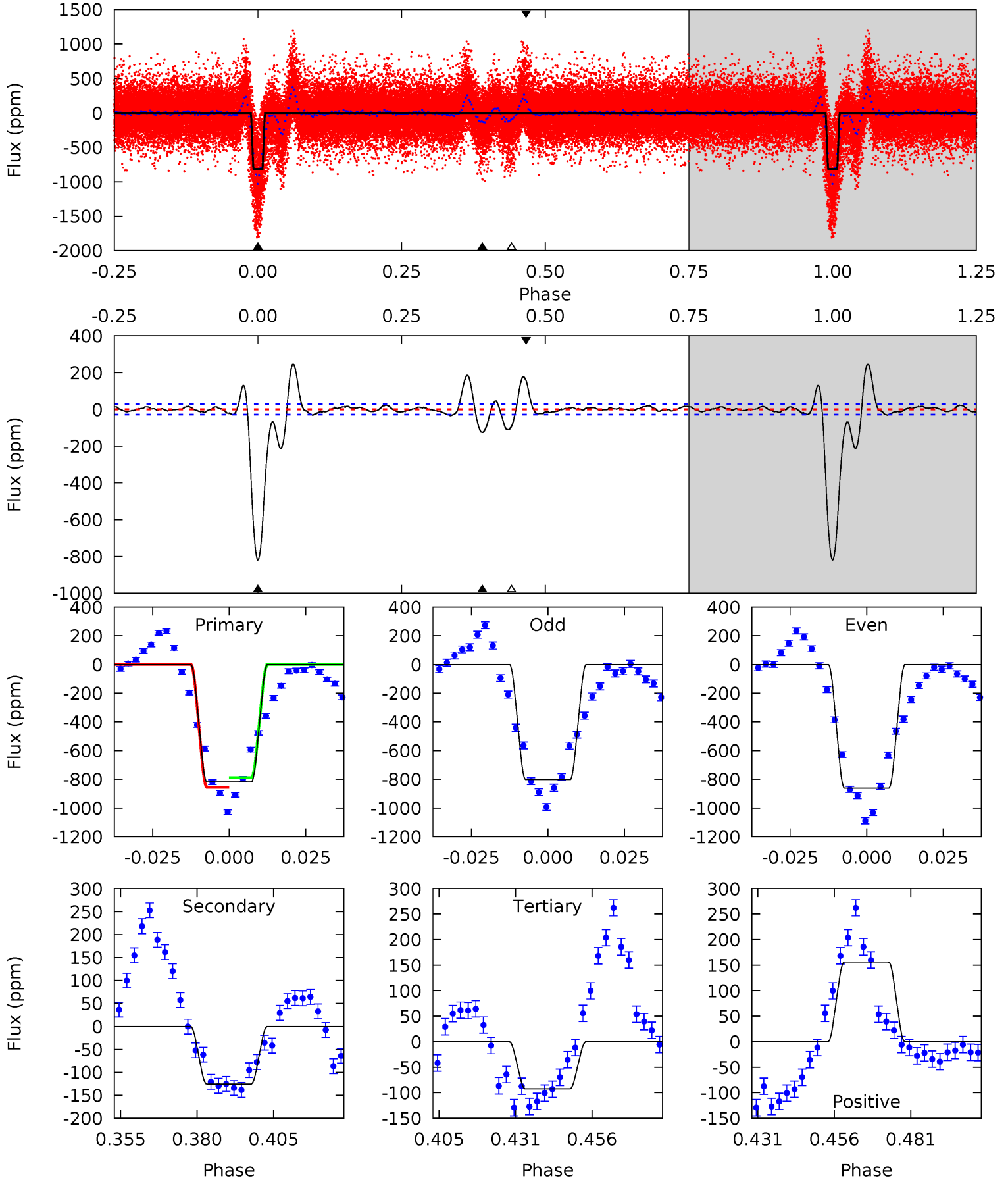
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
79.0	41.0	38.1	30.3	4.77	2.08	18.1	41.0	48.7	2.95	10.7	6.78	1.94	0.40	21.5



# Alt Model-Shift Uniqueness Test

005385792-01, P = 12.425790 Days, E = 128.820279 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
139.1	21.3	15.7	26.5	4.84	2.24	8.66	123.4	112.6	5.57	-5.26	5.04	1.05	0.23	5.67





### Stellar Parameters For KIC 005385792

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6640^{+161}_{-241}$	$4.343^{+0.058}_{-0.217}$	$-0.040^{+0.250}_{-0.350}$	$1.250^{+0.441}_{-0.147}$	$1.261^{+0.187}_{-0.187}$	$0.911^{+0.289}_{-0.517}$
	+2%/-4%	+1%/-5%	+625%/-875%	+35%/-12%	+15%/-15%	+32%/-57%
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 005385792-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-396 \pm 10$	$6.81^{+3.33}_{-3.07}$	$1391^{+99}_{-75}$	$4489^{+1194}_{-590}$	$58^{+128}_{-32}$
Alt.	$-125 \pm 6$	$4.96^{+3.02}_{-2.59}$	$1382^{+112}_{-72}$	$4030^{+1432}_{-588}$	$35^{+124}_{-21}$

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

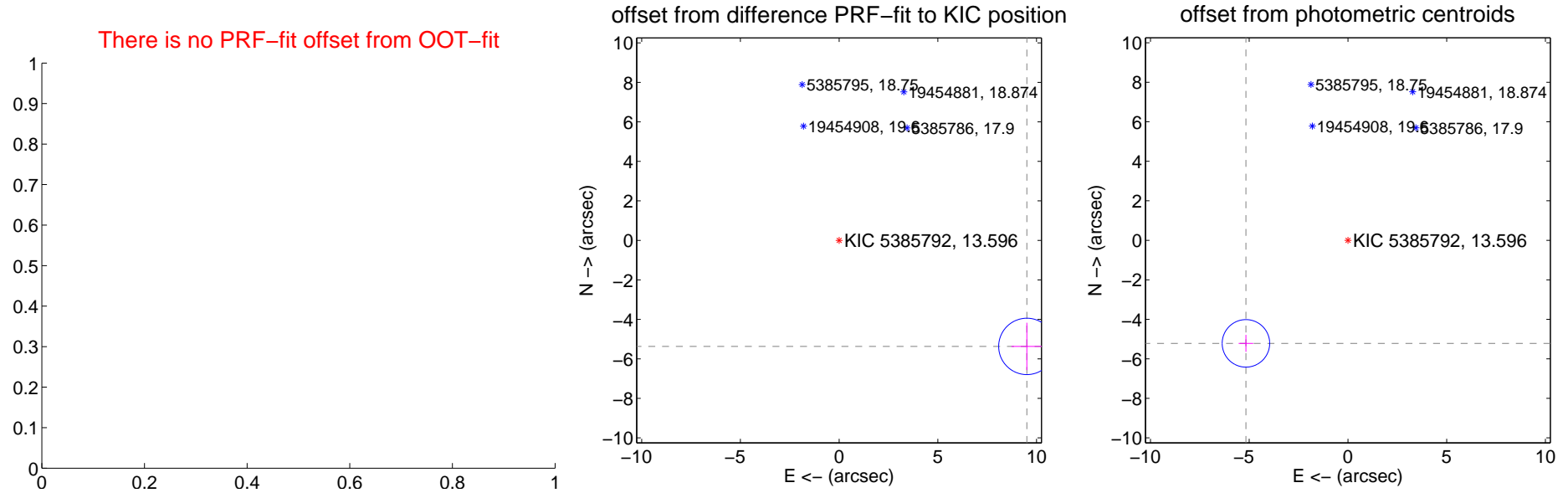
## DV Centroid Data

Supplemental centroid analysis for 005385792-01. Kepler magnitude: 13.60. Transit SNR 24.43

There are 4 quarters with good PRF difference image offsets

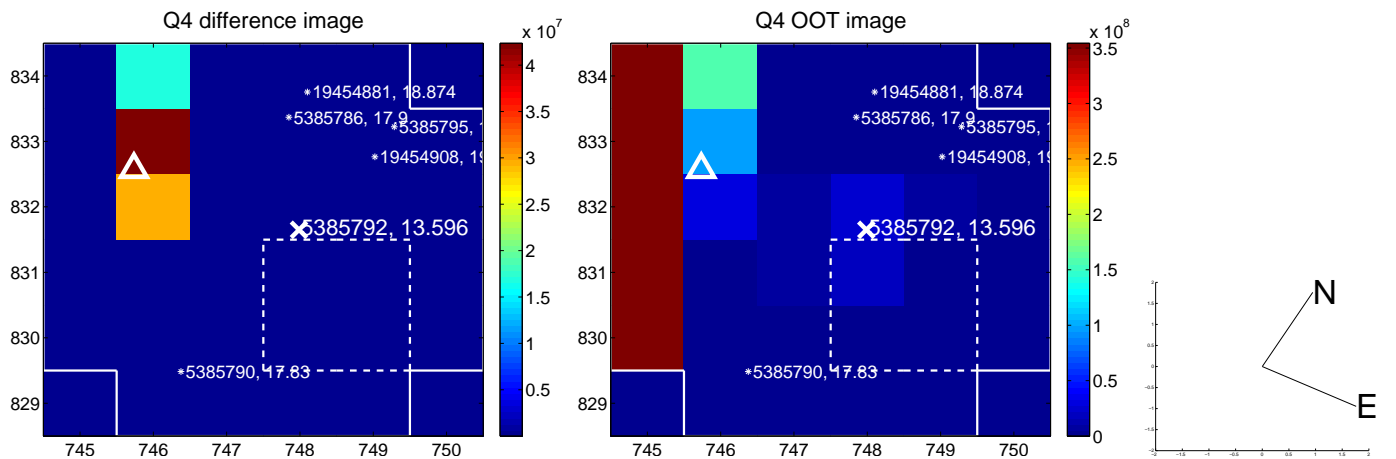
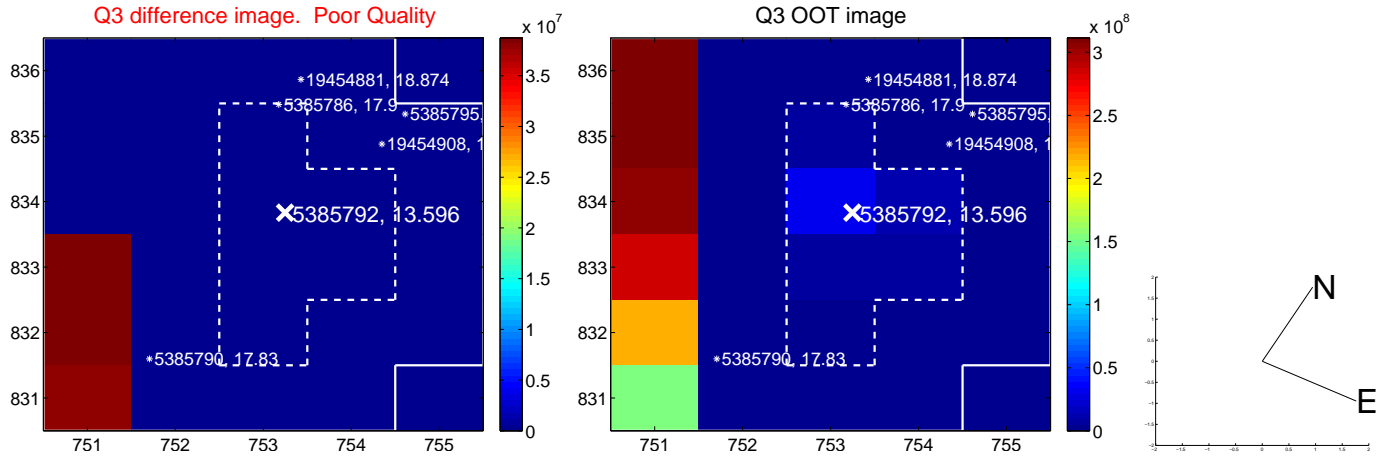
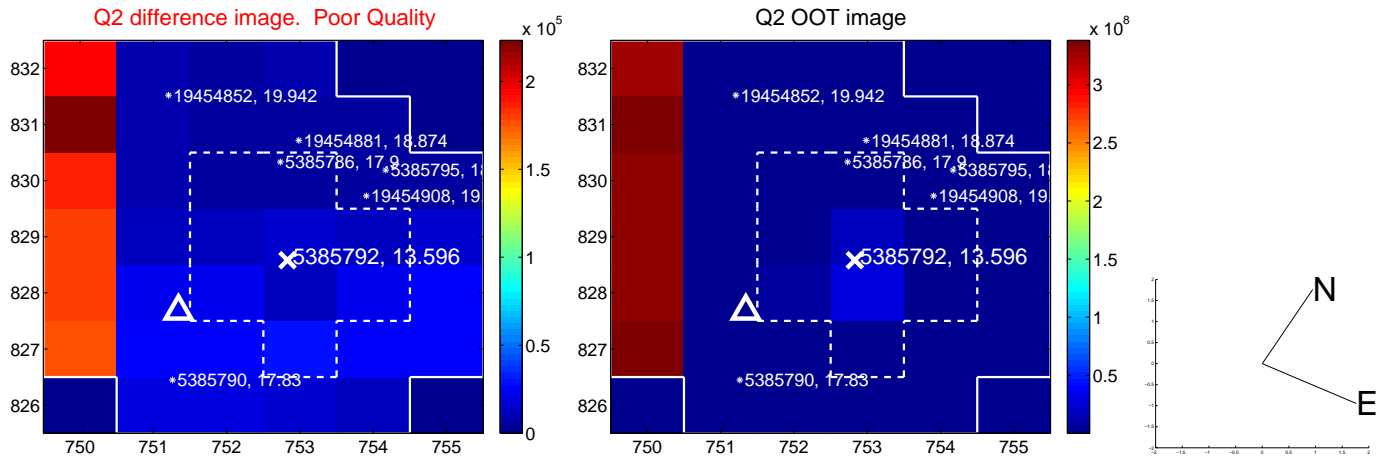
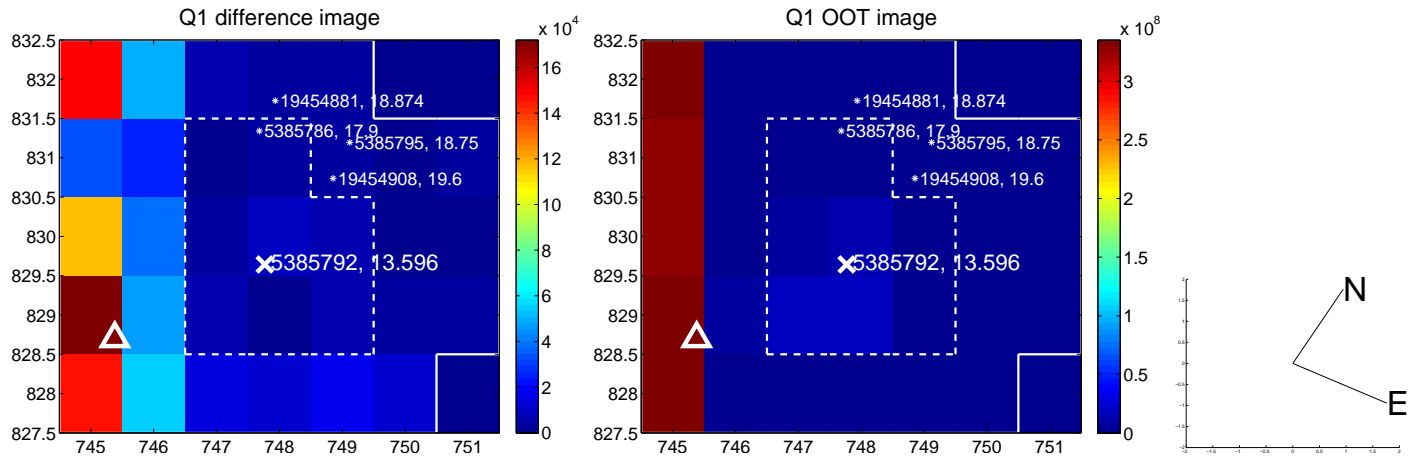
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	$10.923 \pm 0.476$	$22.96$	$-9.512 \pm 0.783$	$-5.370 \pm 1.198$
photometric centroid source offset	$7.34 \pm 0.40$	$18.31$	$5.17 \pm 0.37$	$-5.22 \pm 0.43$

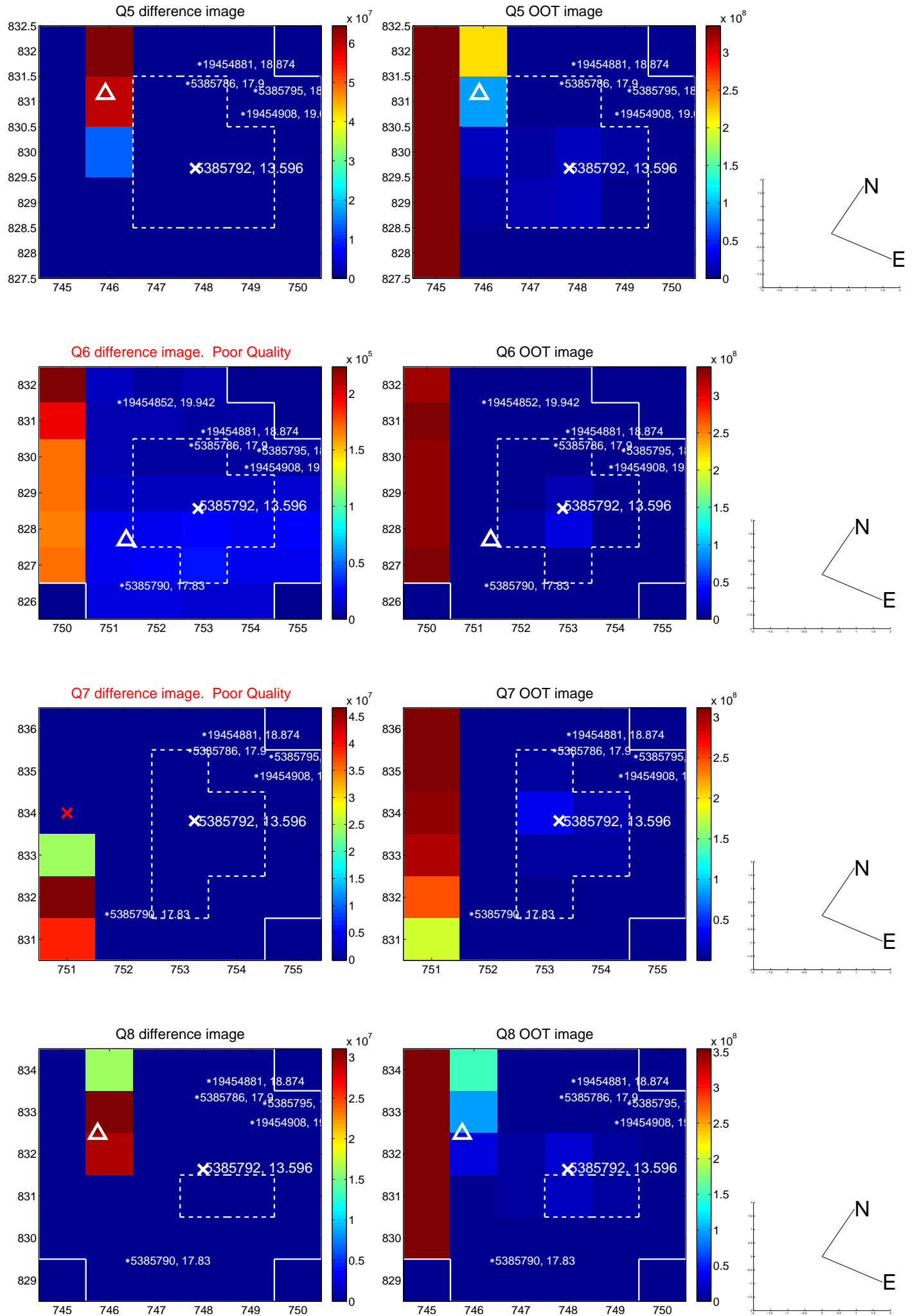


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

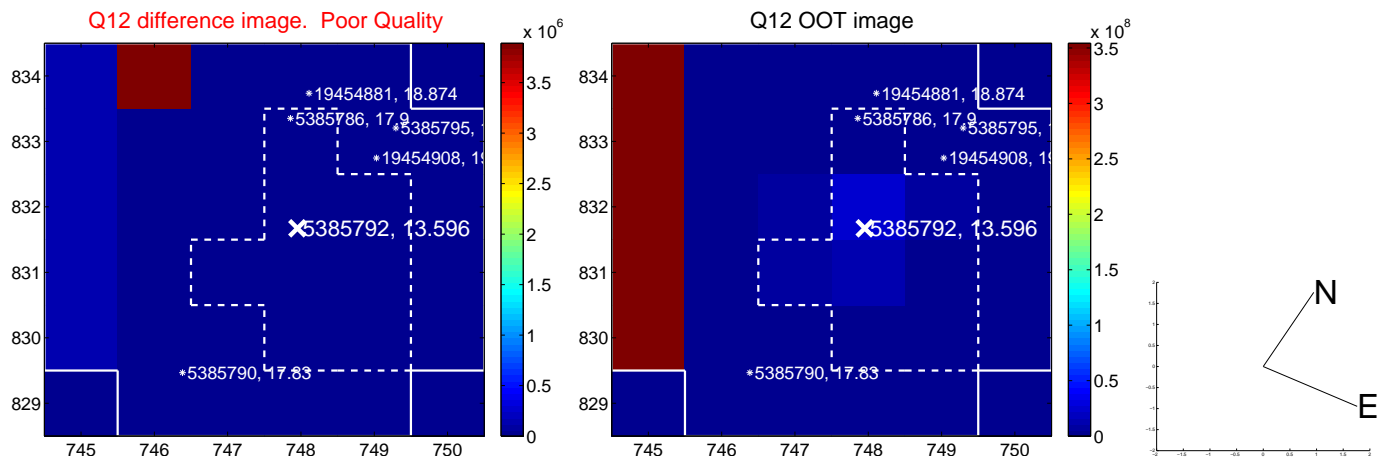
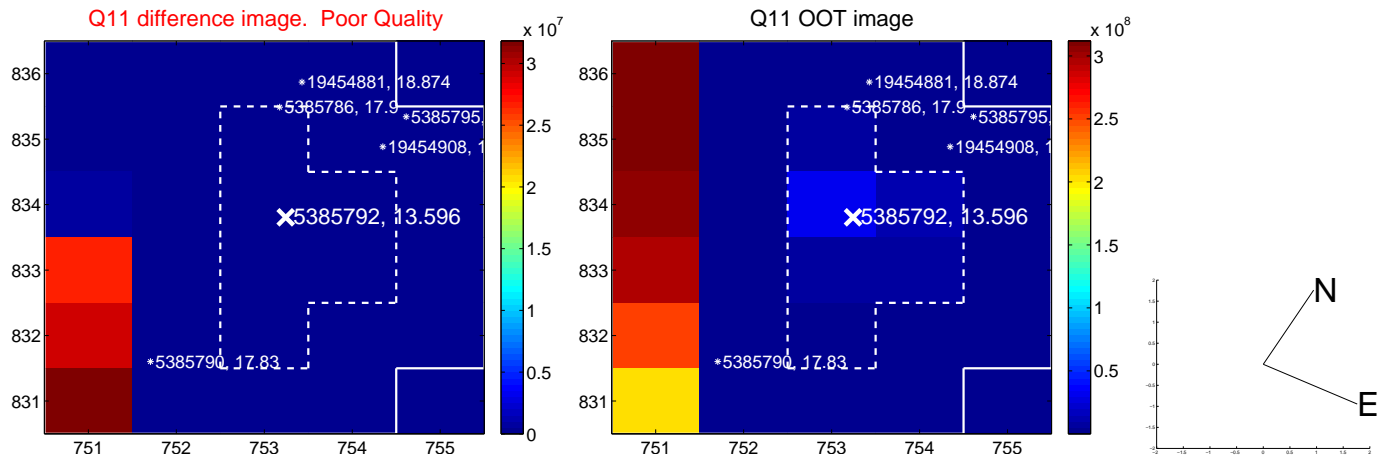
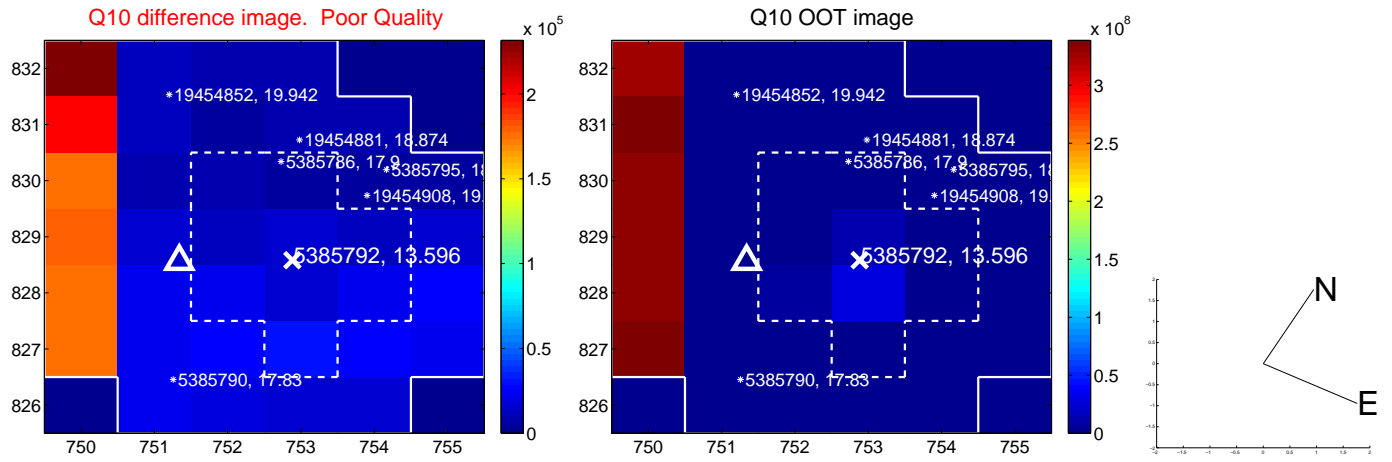
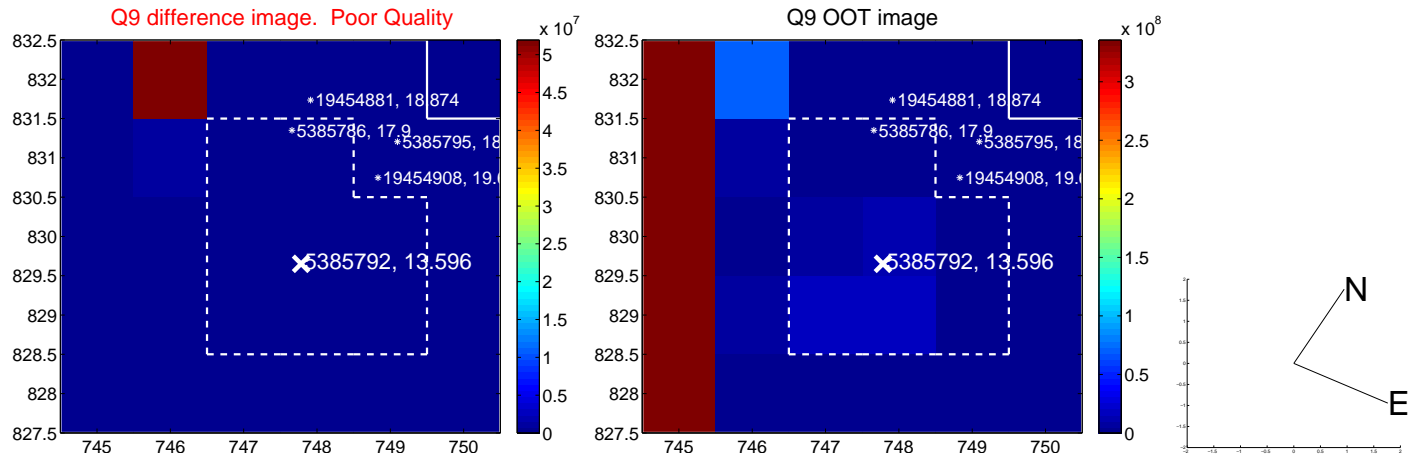


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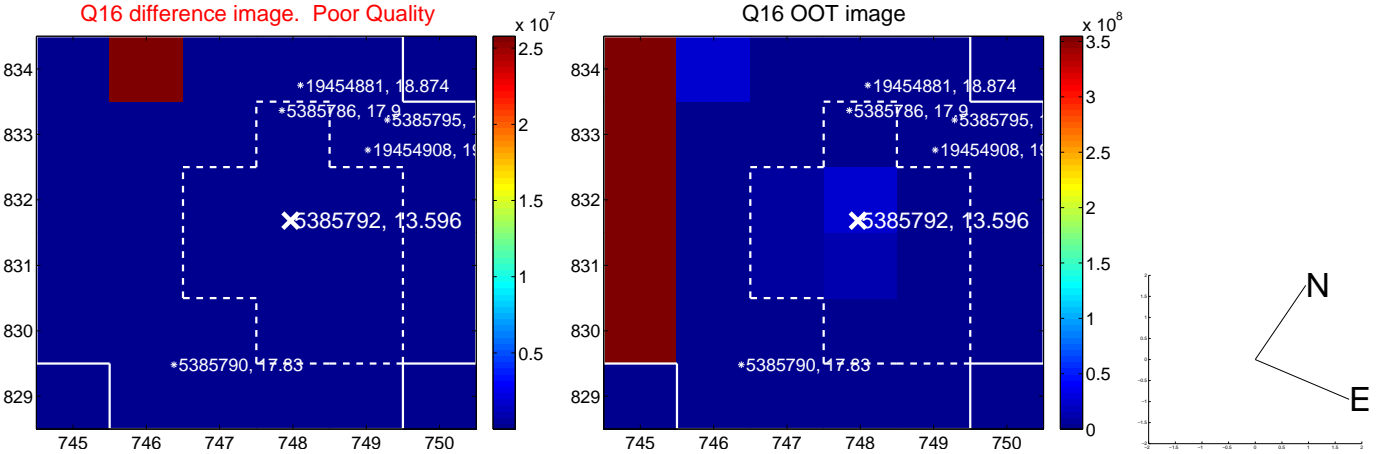
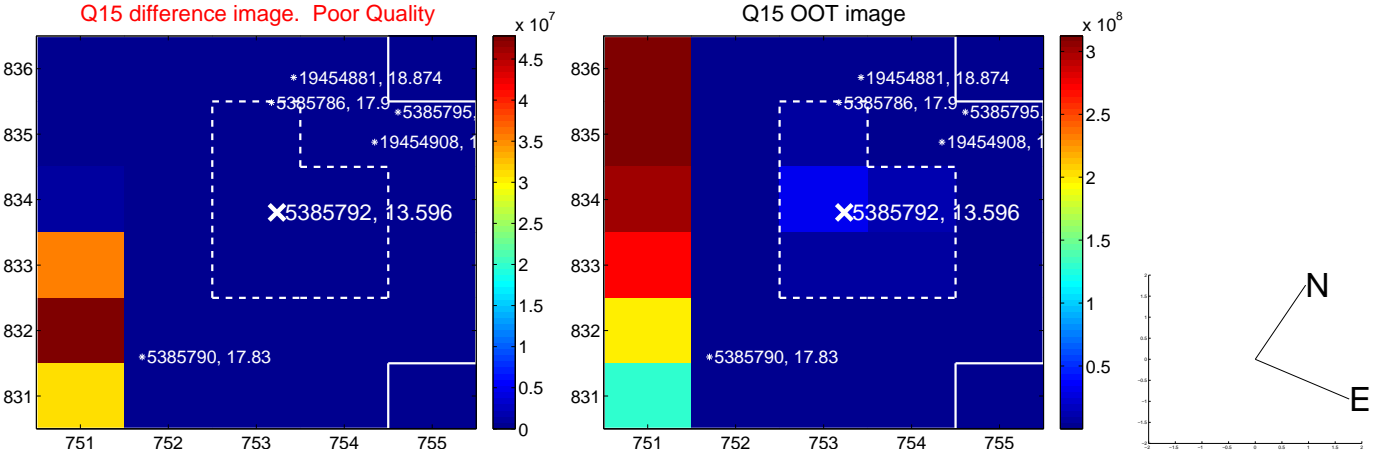
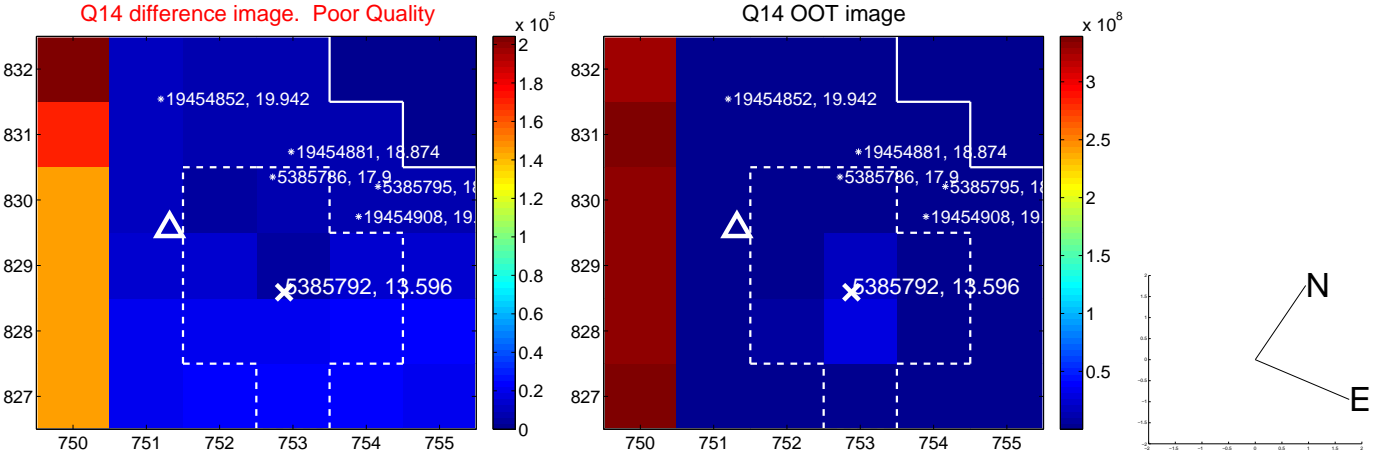
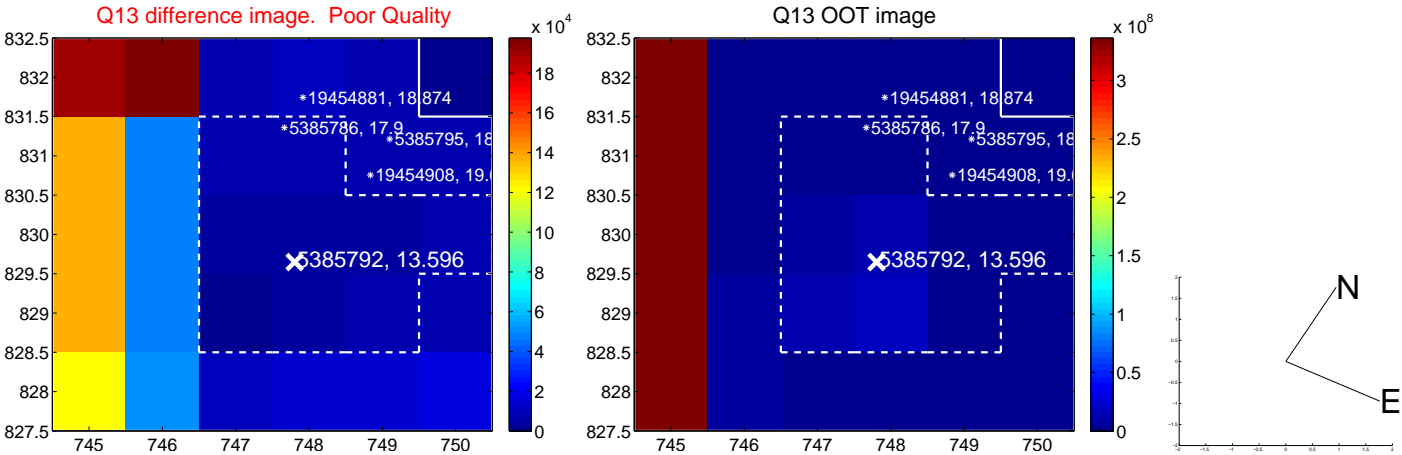




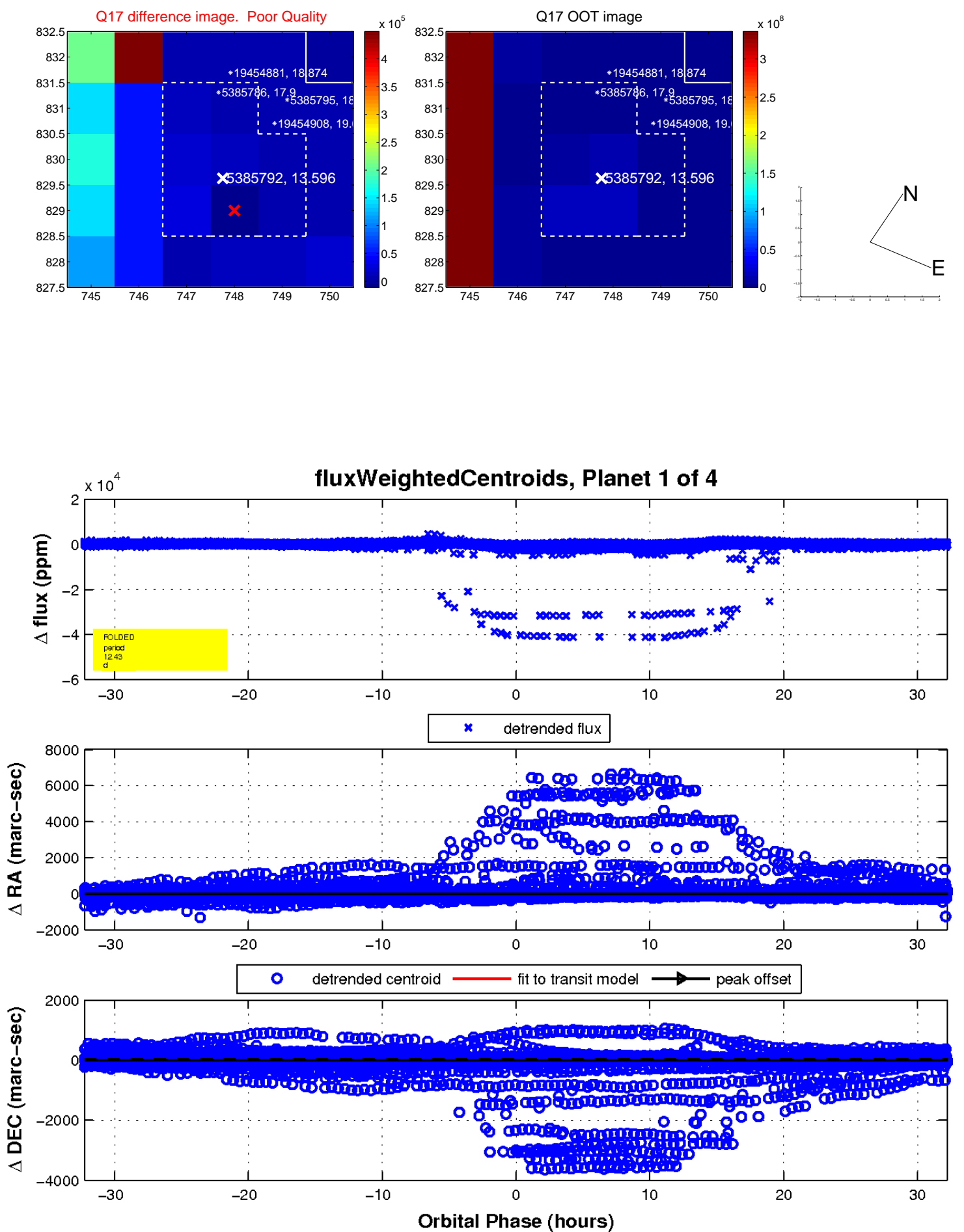
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

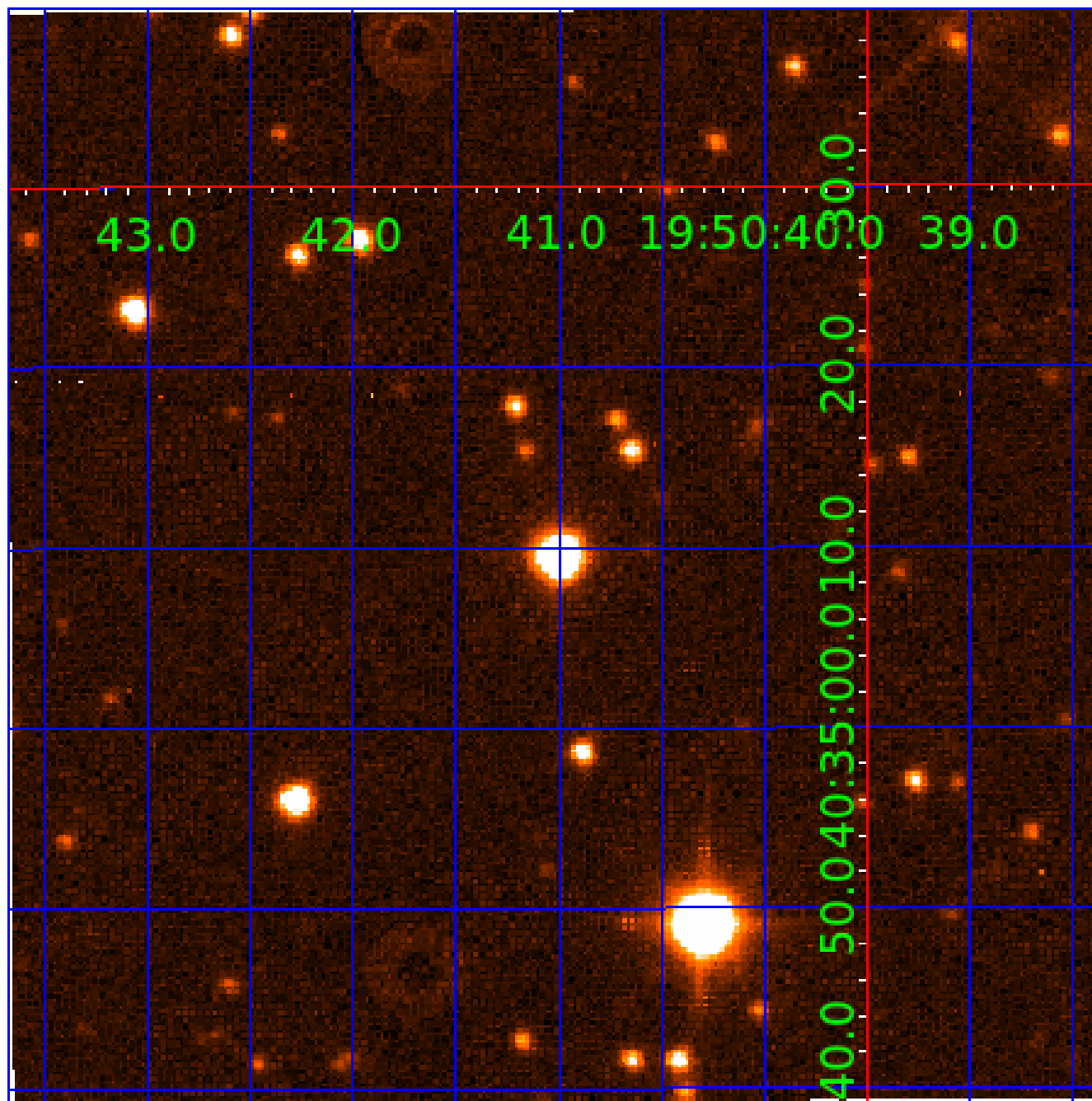


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 005385792

## 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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## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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005385792-02	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET—HALO_GHOST
005385792-03	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
005385792-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—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.

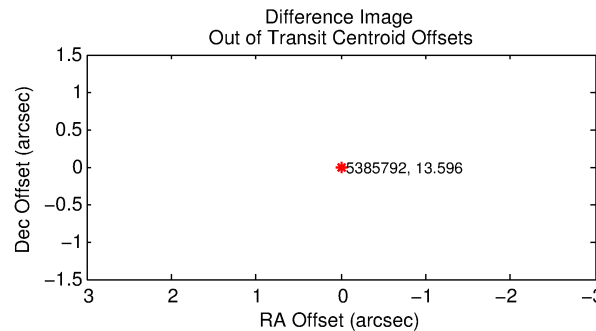
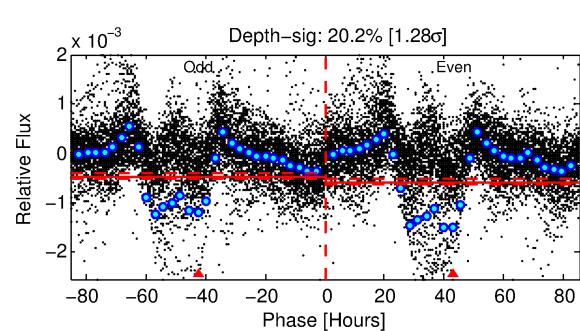
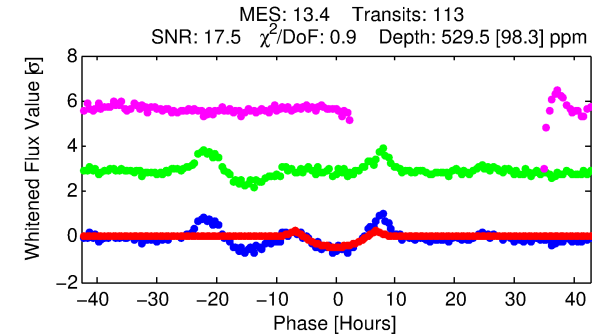
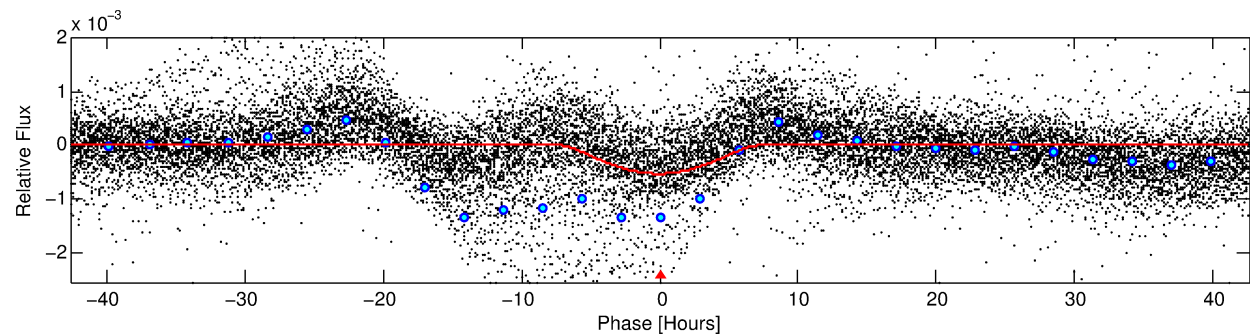
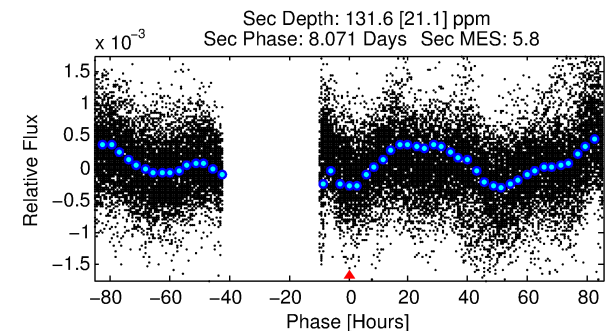
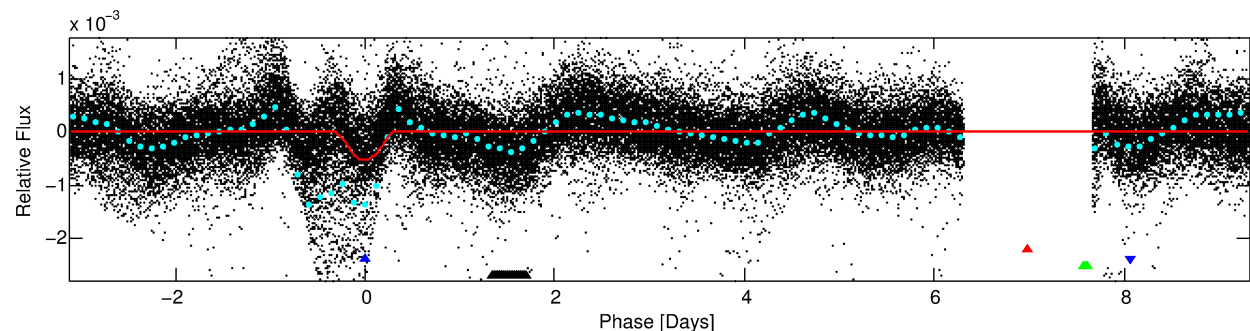
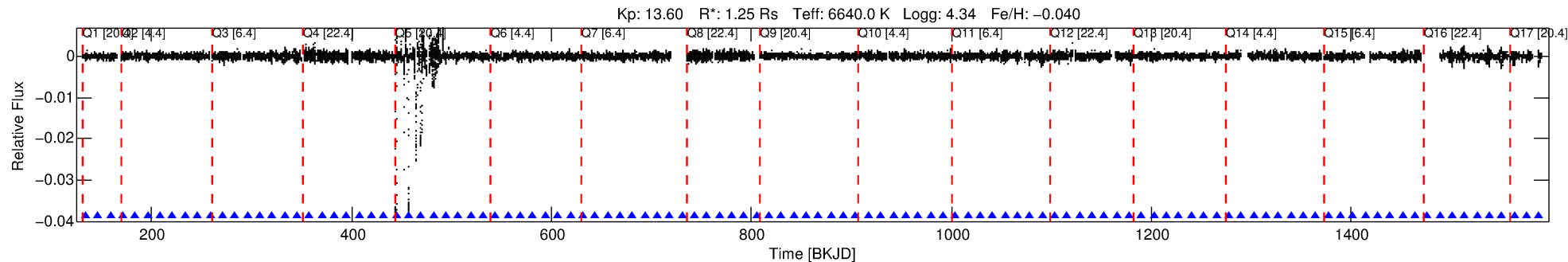
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 005385792-02

No Significant Match Found

# DV One-Page Summary

KIC: 5385792 Candidate: 2 of 4 Period: 12.425 d



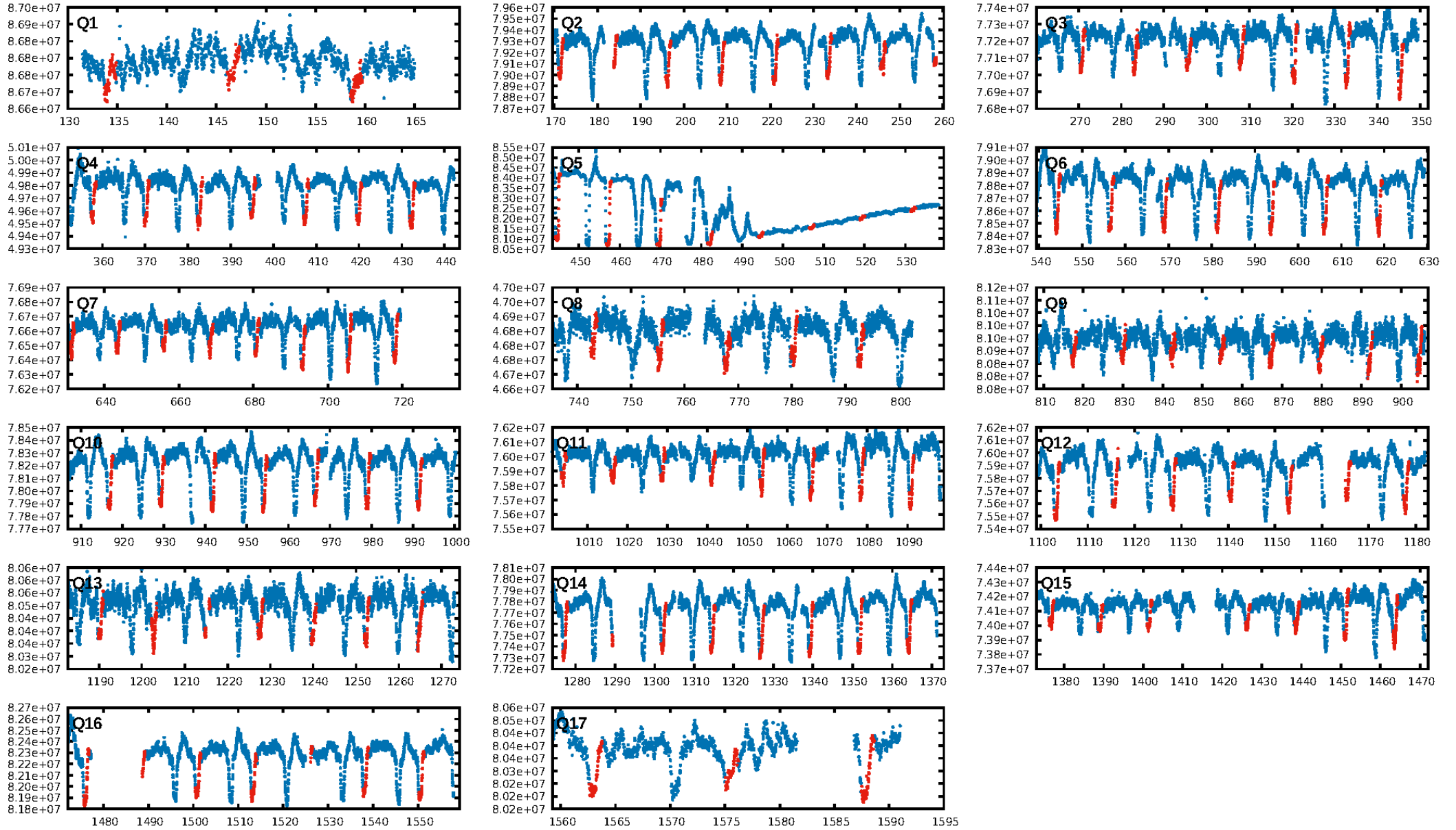
## DV Fit Results:

Period = 12.42536 [0.00017] d  
Epoch = 134.2782 [0.0116] BKJD  
Rp/R\* = 0.0404 [0.0239]  
a/R\* = 2.17 [0.23]  
b = 1.00 [0.03]  
Seff = 212.04 [91.78]  
Teq = 973 [105] K  
Rp = 5.52 [3.80] Re  
a = 0.1133 [0.0326] AU  
Ag = 30.53 [38.51] [0.77σ]  
Teffp = 3536 [1063] K [2.40σ]

## DV Diagnostic Results:

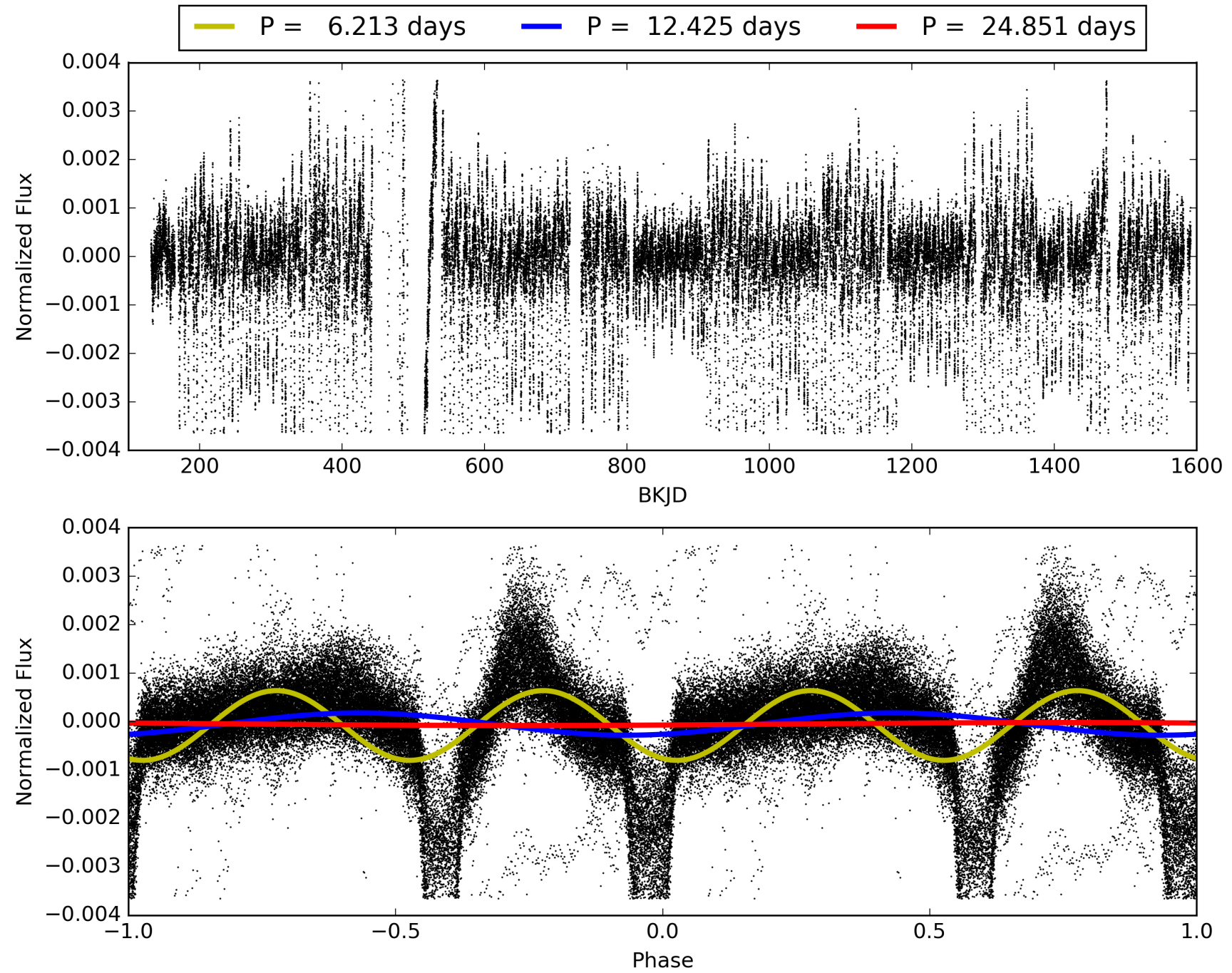
ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGoF-sig: 100.0%  
Bootstrap-pfa: 8.55e-32  
RollingBand-fgt: 1.00 [107/107]  
GhostDiagnostic-chr: 0.06377  
Centroid-sig: 0.0%  
Centroid-so: 7.846 arcsec [11.31σ]  
OotOffset-rm: N/A  
KicOffset-rm: 6.794 arcsec [14.06σ]  
OotOffset-st: 0/0/0 [0]  
KicOffset-st: 4/0/3/2 [9]  
DiffImageQuality-fgm: 0.11 [1/9]  
DiffImageOverlap-fno: 0.12 [2/17]

# TCE 005385792-02, PDC Light Curves



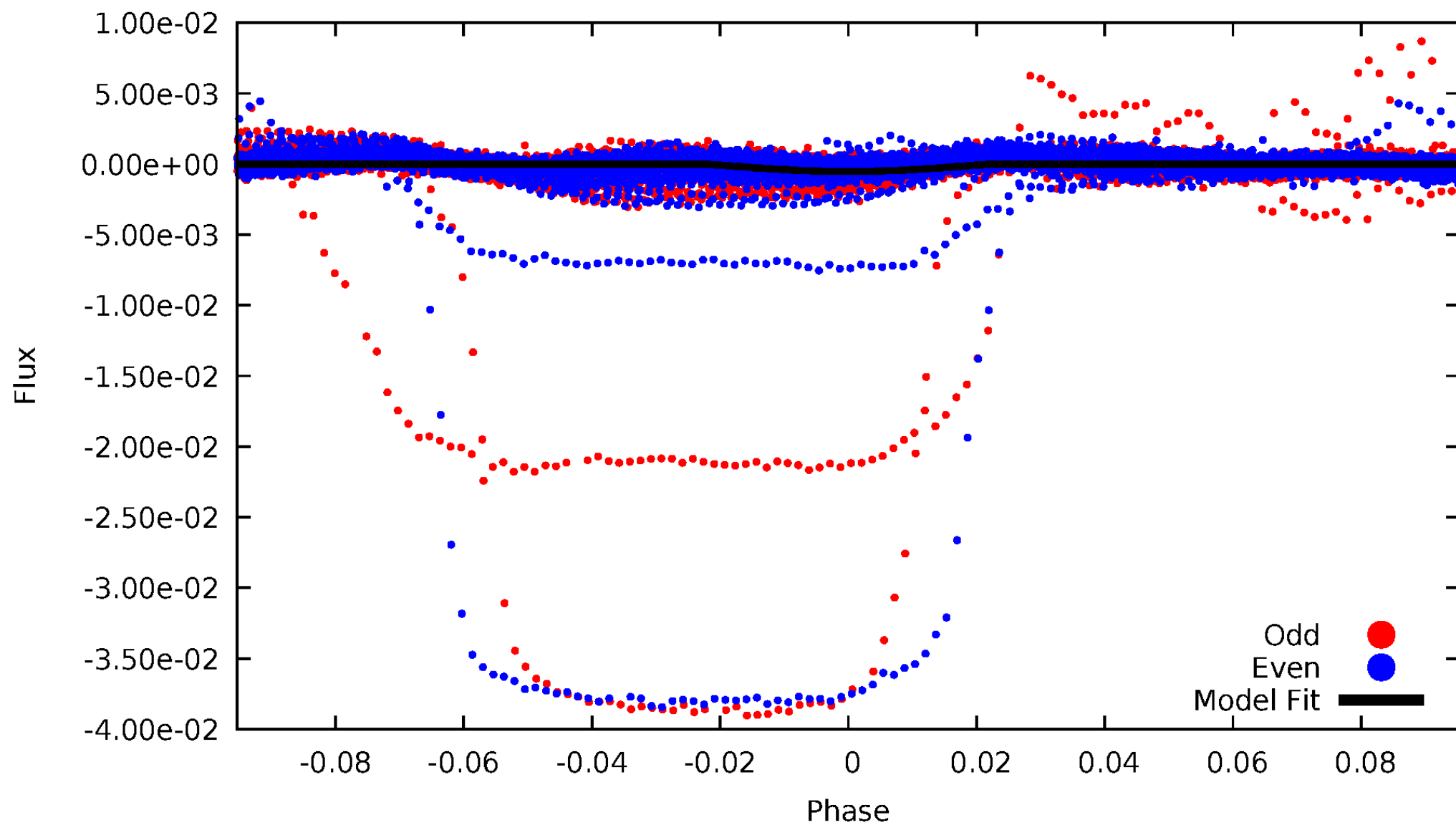


TCE 005385792-02



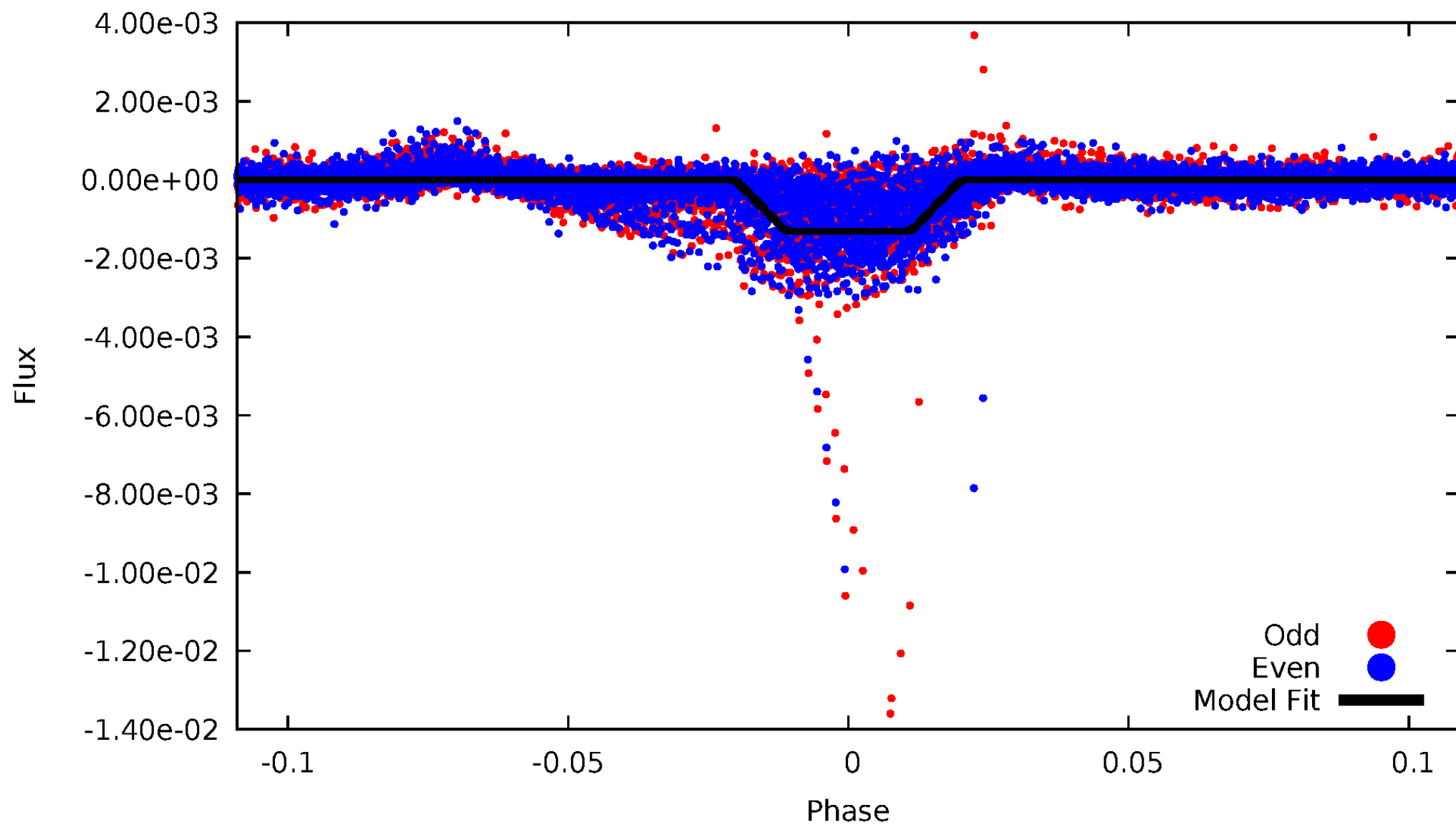
DV Odd/Even

TCE 005385792-02



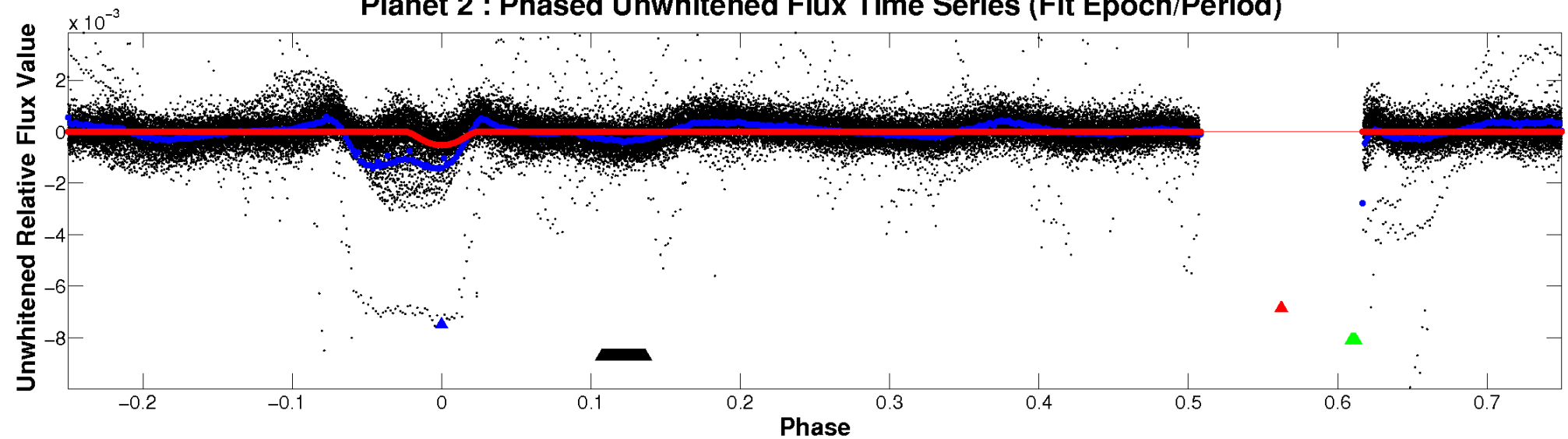
# ALT Odd/Even

TCE 005385792-02

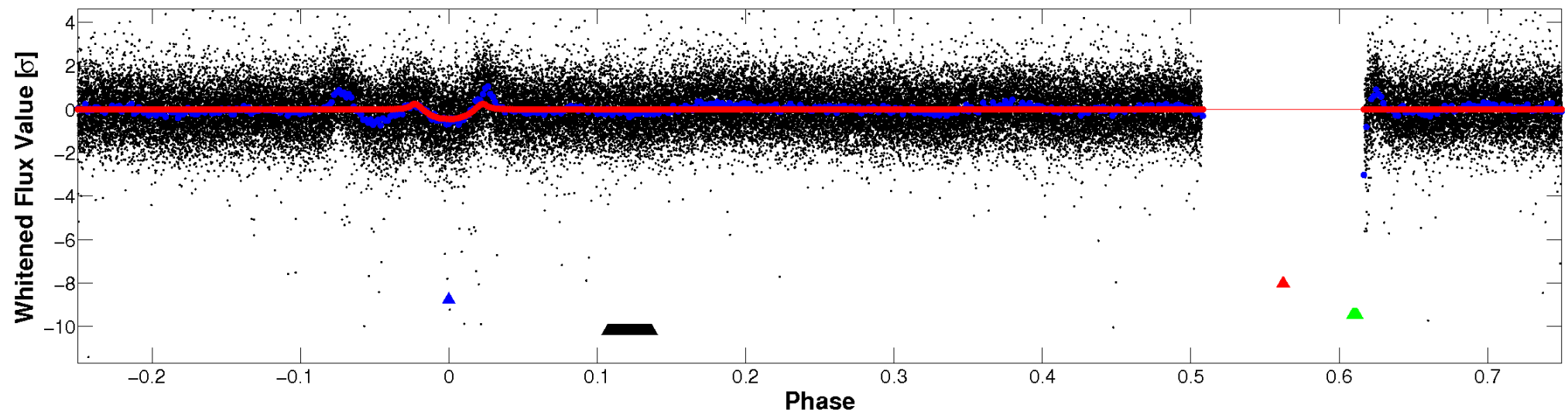


# Non-Whitened Vs. Whitened Light Curve

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

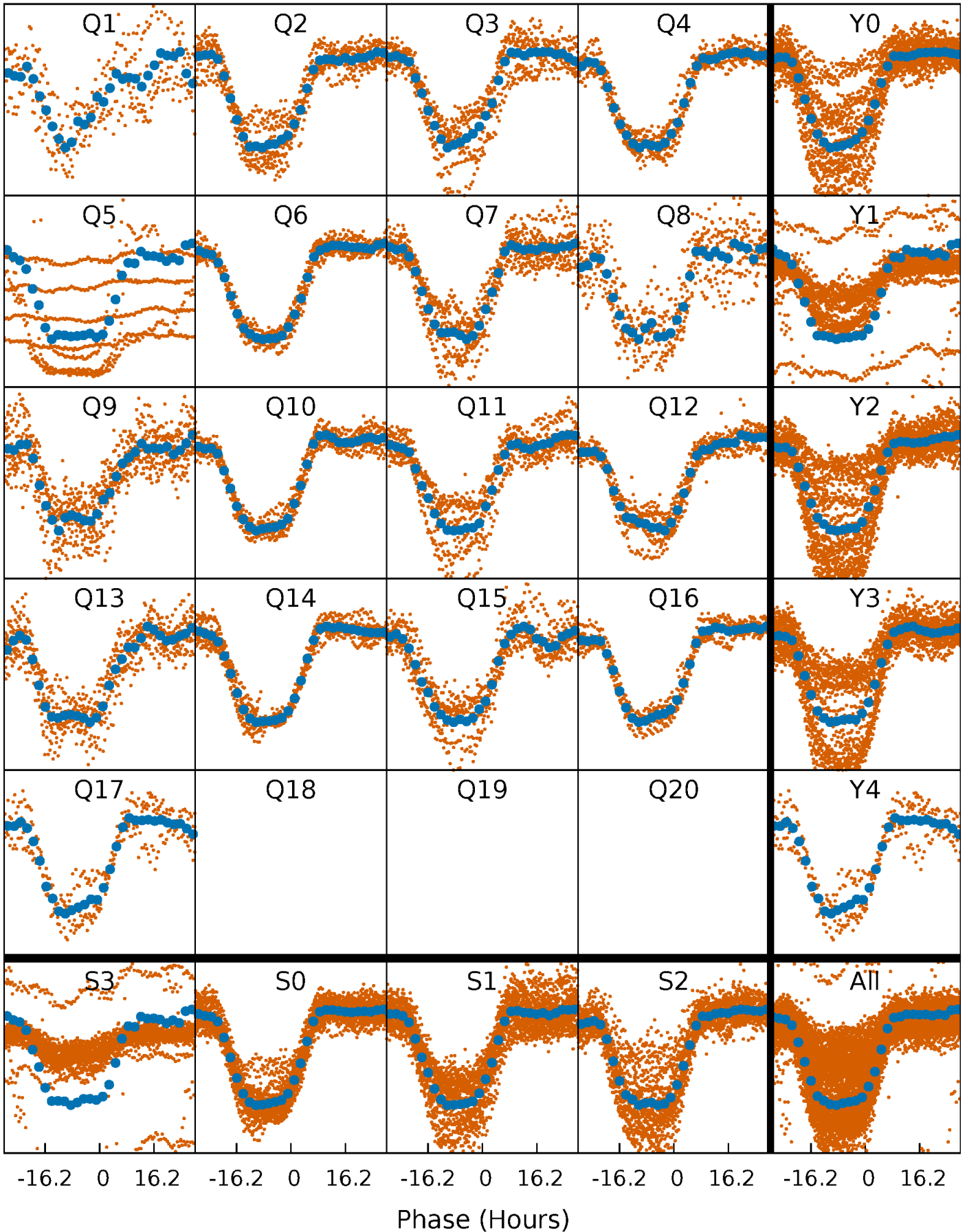


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

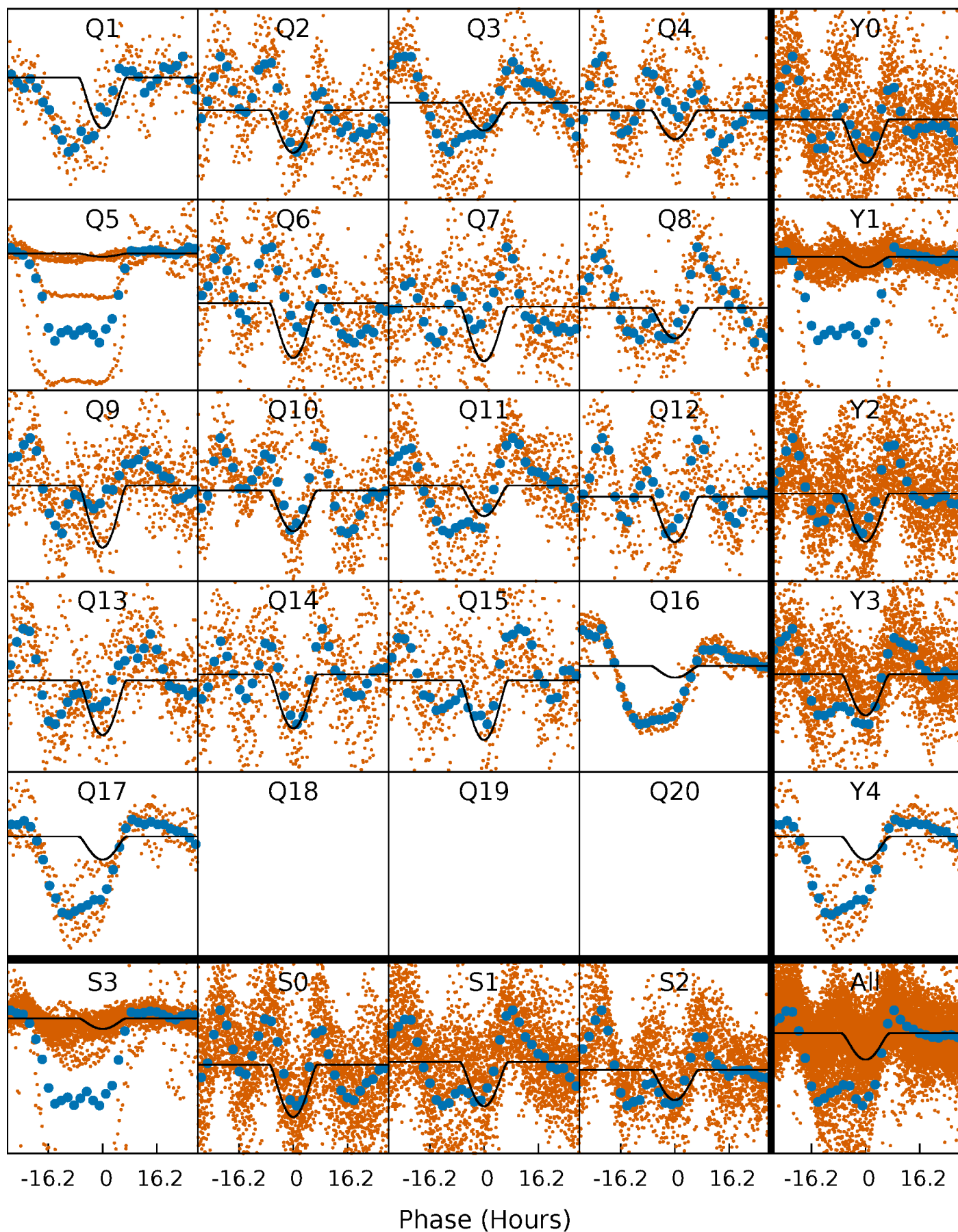
TCE 005385792-02   P= 12.425362 Days    $T_0=134.278207$  (BKJD)





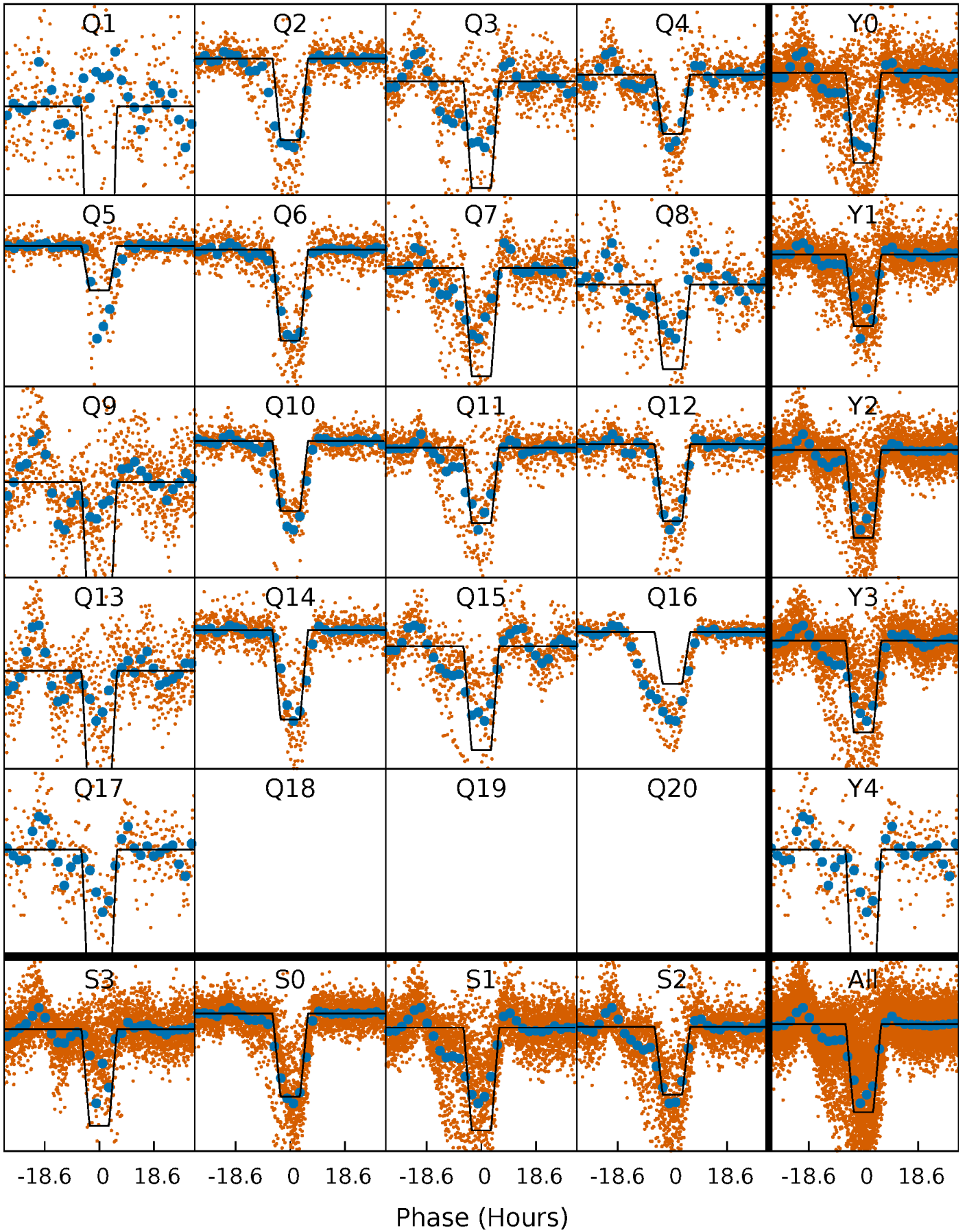
# DV Quarter-Phased Transit Curves

TCE 005385792-02 P= 12.425362 Days  $T_0=134.278207$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 005385792-02     $P = 12.425206$  Days     $T_0 = 134.255689$  (BKJD)

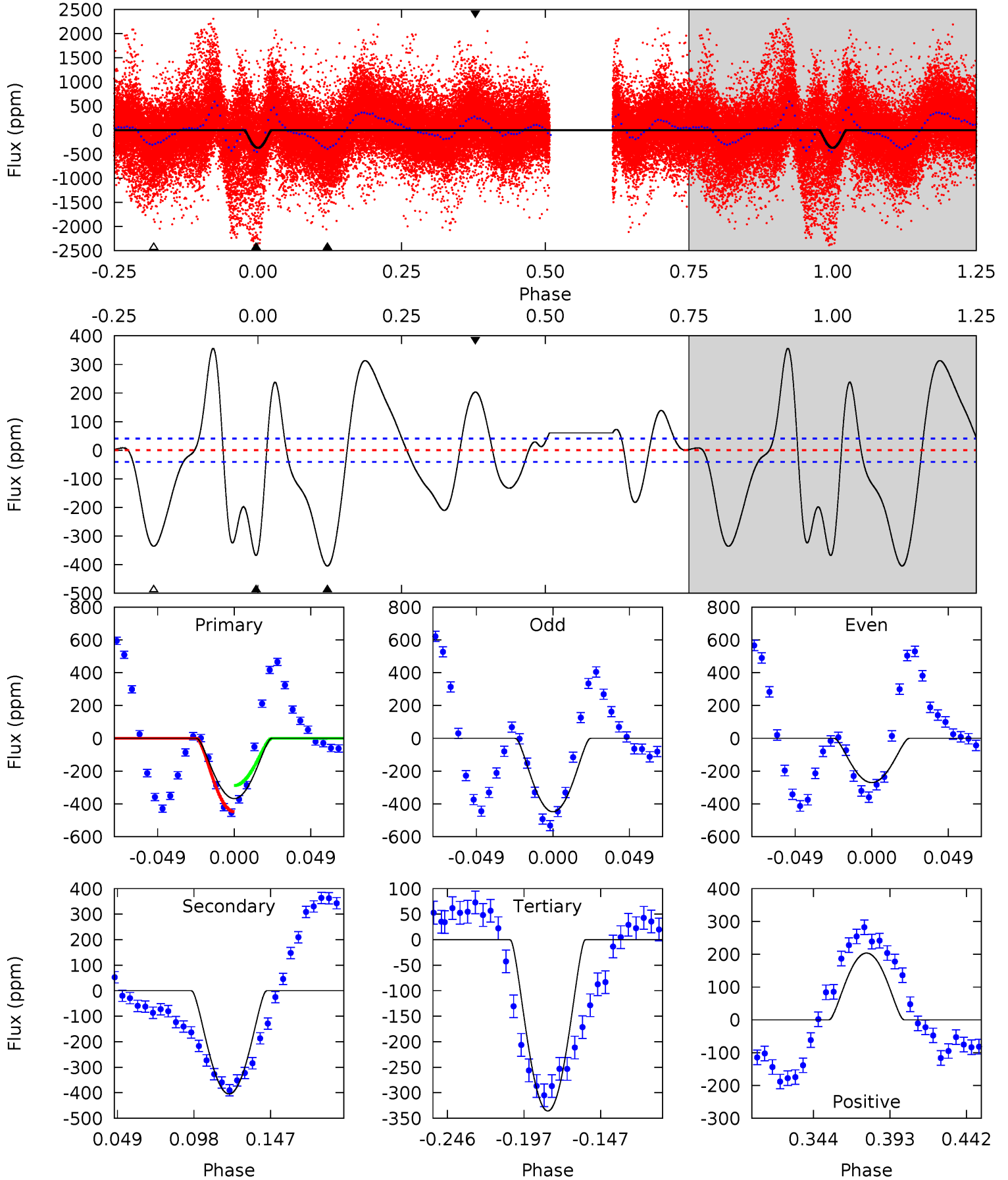




# DV Model-Shift Uniqueness Test

005385792-02, P = 12.425362 Days, E = 121.852845 Days

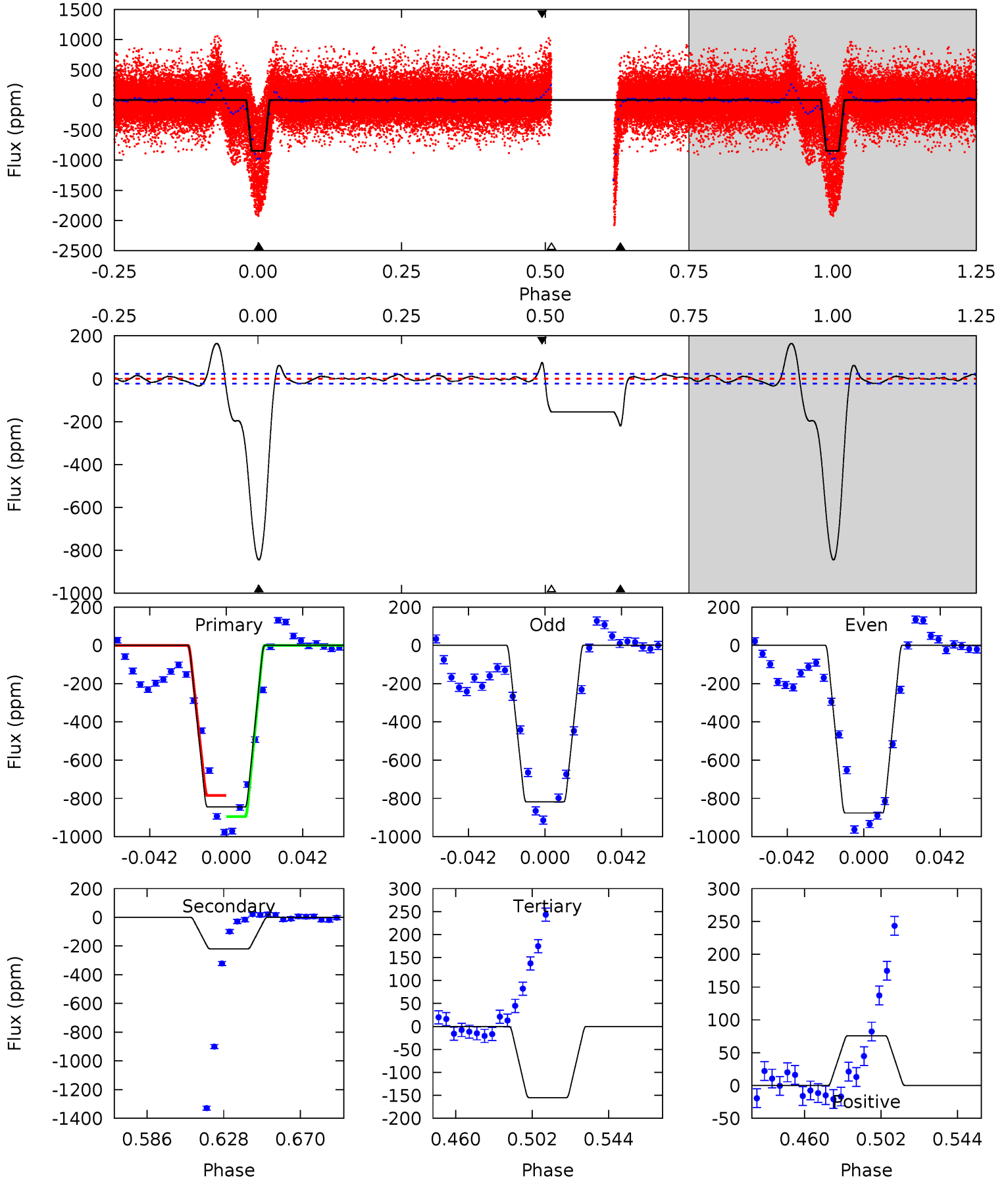
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
42.5	46.7	38.8	23.5	4.71	1.97	17.7	3.70	19.0	7.97	23.2	10.3	4.92	0.47	9.19



# Alt Model-Shift Uniqueness Test

005385792-02, P = 12.425206 Days, E = 121.830483 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
176.3	45.9	32.3	15.8	4.74	2.03	7.70	143.9	160.5	13.6	30.1	6.05	1.14	0.16	0



### Stellar Parameters For KIC 005385792

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6640^{+161}_{-241}$	$4.343^{+0.058}_{-0.217}$	$-0.040^{+0.250}_{-0.350}$	$1.250^{+0.441}_{-0.147}$	$1.261^{+0.187}_{-0.187}$	$0.911^{+0.289}_{-0.517}$
	+2%/-4%	+1%/-5%	+625%/-875%	+35%/-12%	+15%/-15%	+32%/-57%
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 005385792-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-405 \pm 9$	$5.92^{+3.51}_{-3.27}$	$1384^{+98}_{-75}$	$4698^{+2221}_{-728}$	$79^{+328}_{-47}$
Alt.	$-220 \pm 5$	$5.50^{+3.43}_{-3.30}$	$1384^{+113}_{-70}$	$4346^{+2092}_{-661}$	$50^{+248}_{-31}$

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

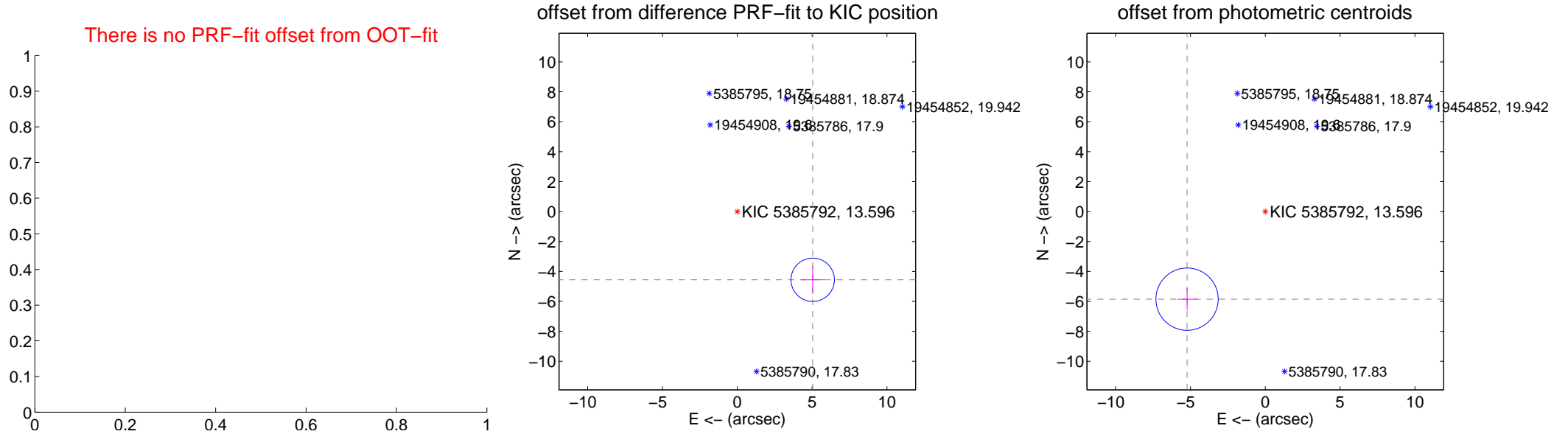
## DV Centroid Data

Supplemental centroid analysis for 005385792-02. Kepler magnitude: 13.60. Transit SNR 17.51

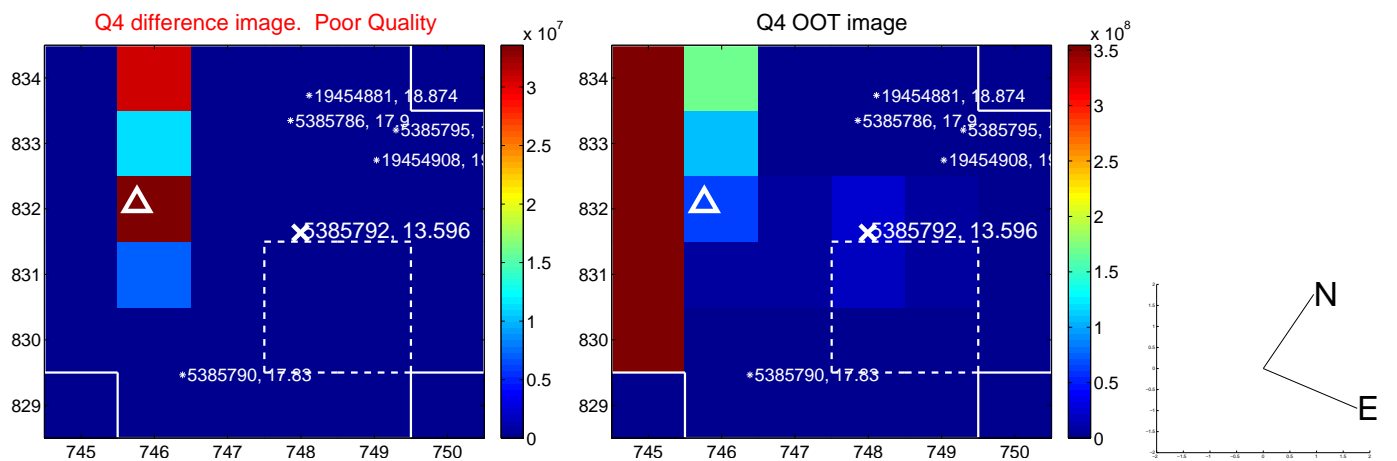
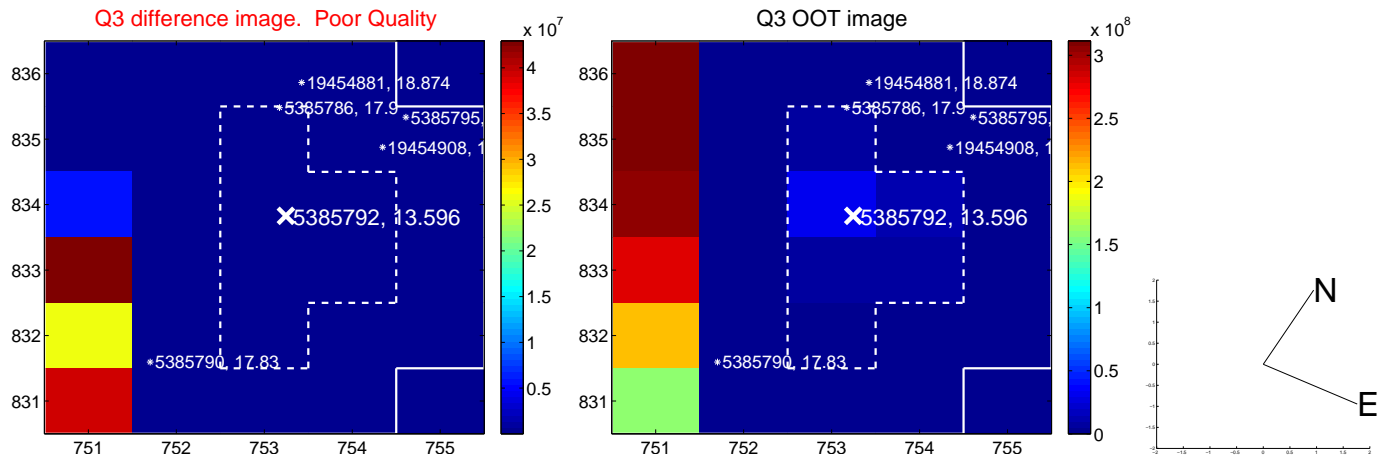
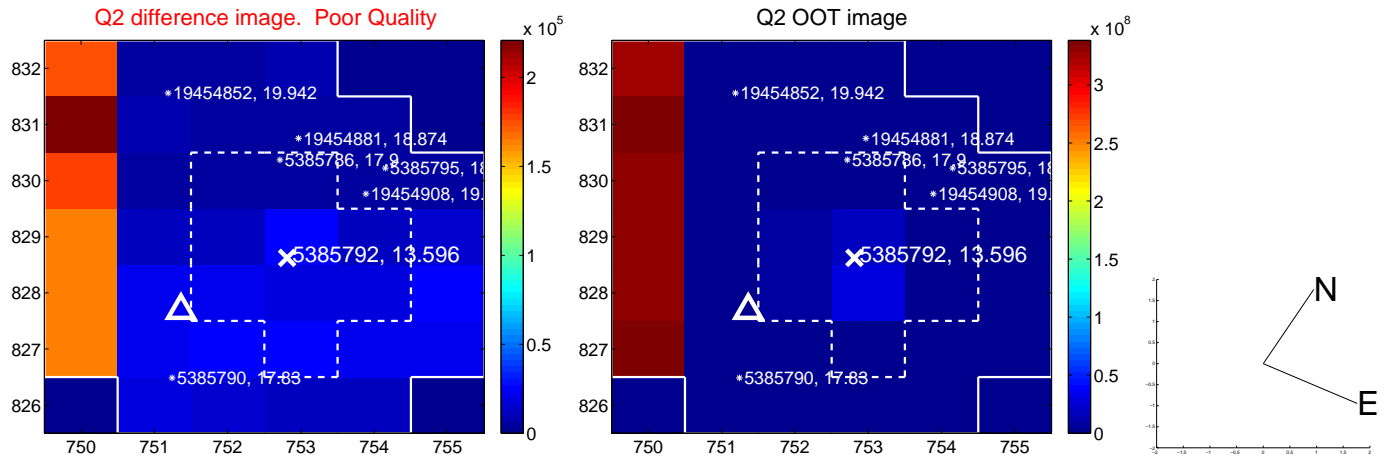
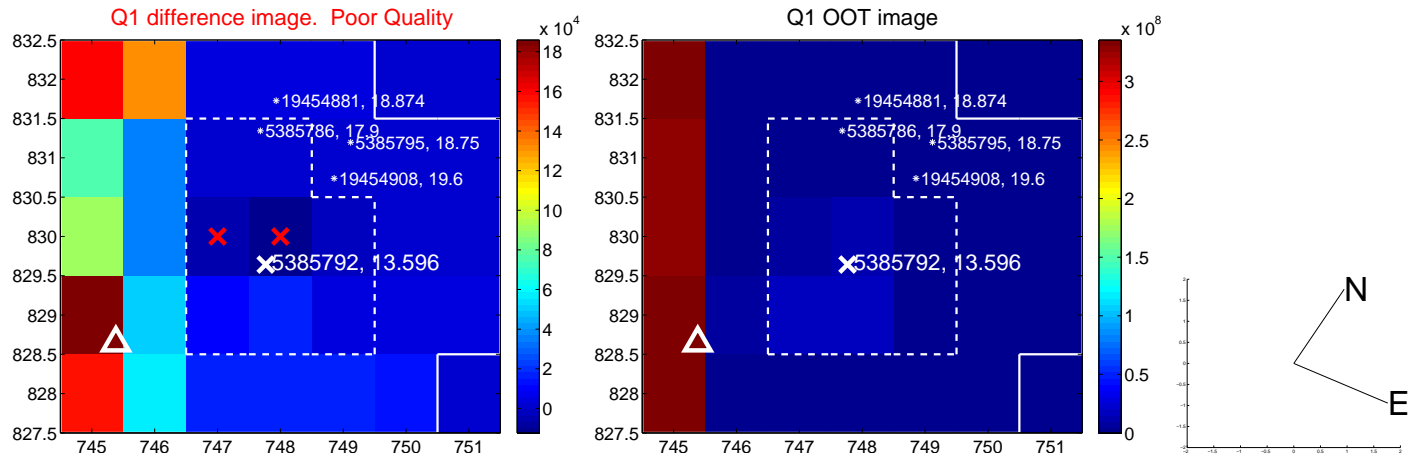
There are 1 quarters with good PRF difference image offsets

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

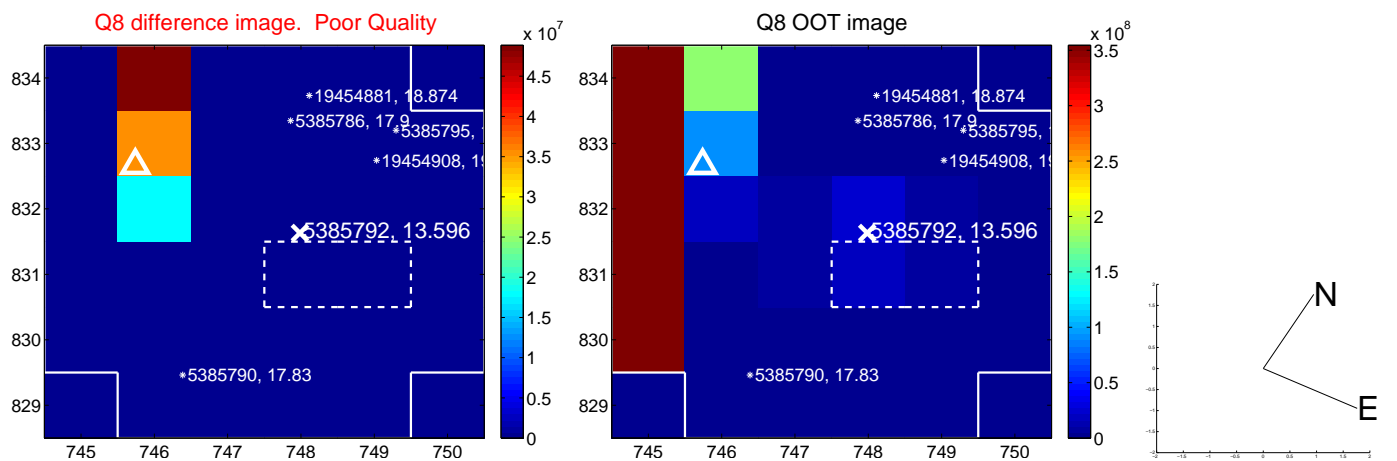
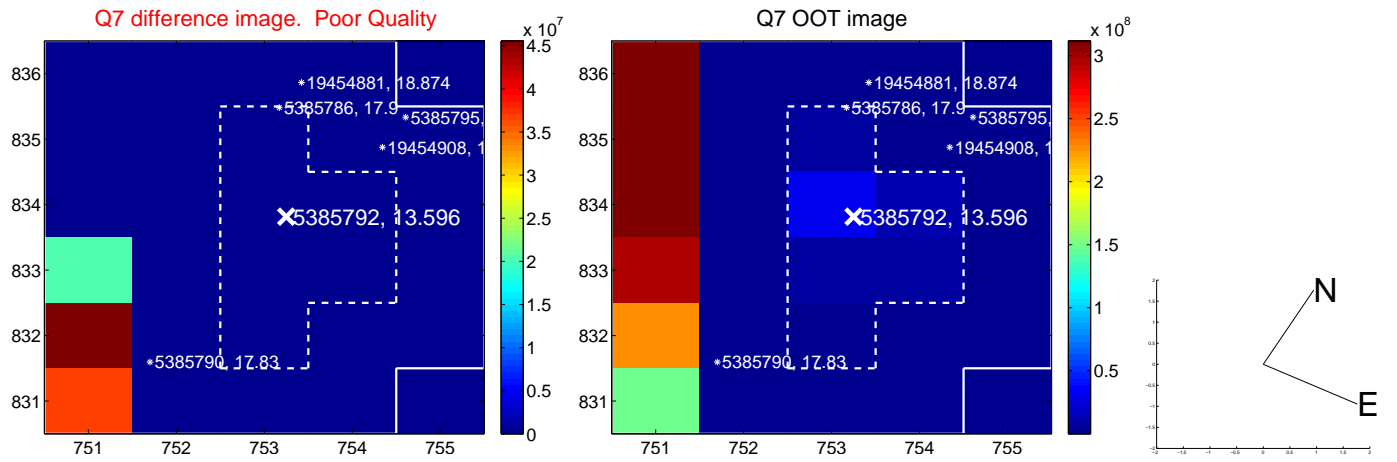
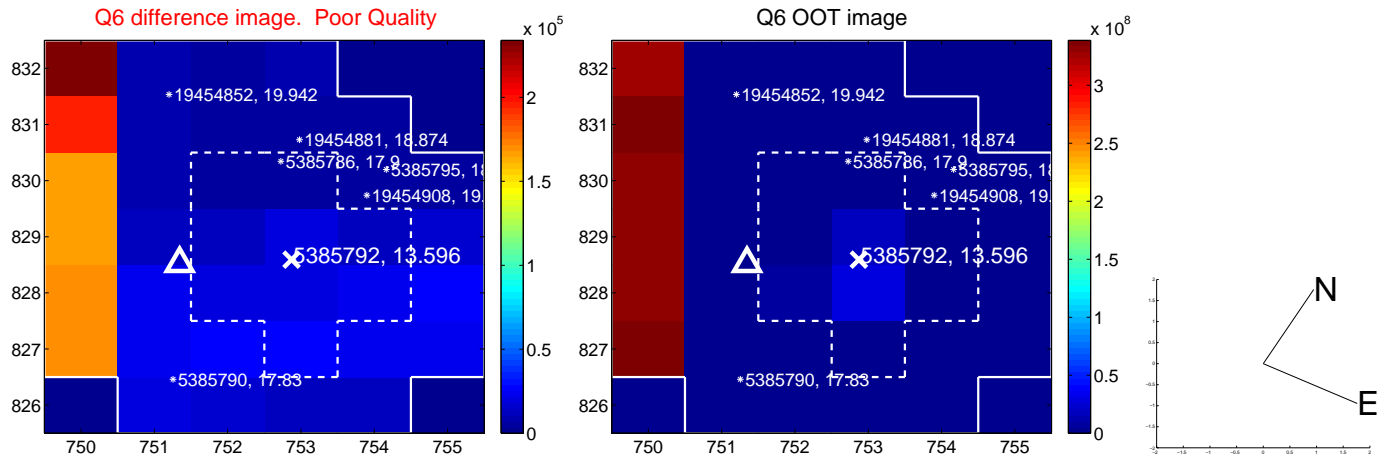
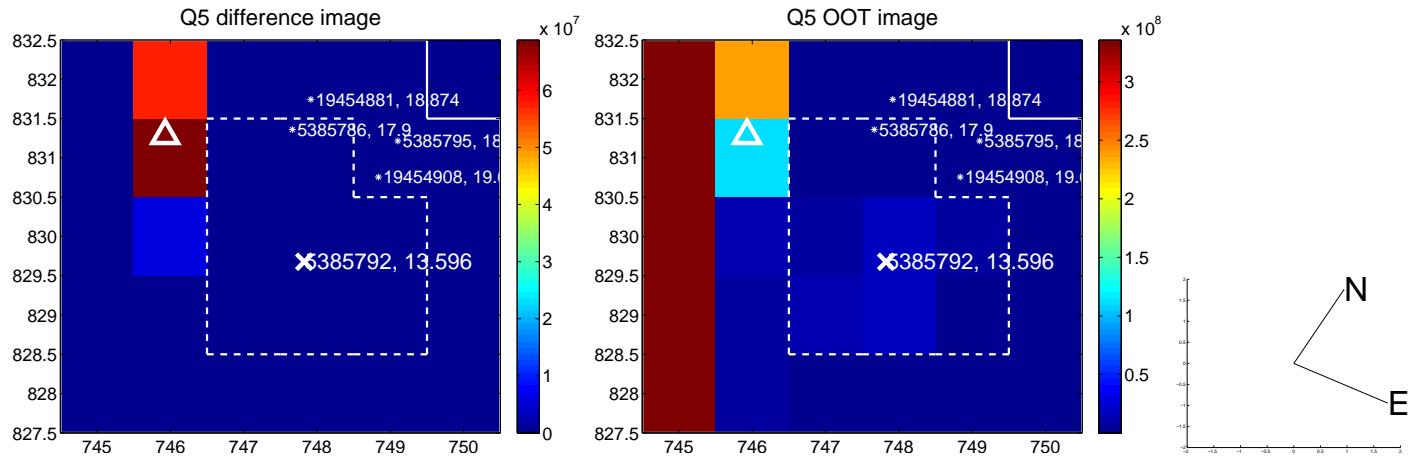
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	$6.794 \pm 0.483$	14.06	$-5.036 \pm 0.784$	$-4.560 \pm 0.944$
photometric centroid source offset	$7.85 \pm 0.69$	11.31	$5.23 \pm 0.64$	$-5.85 \pm 0.73$



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

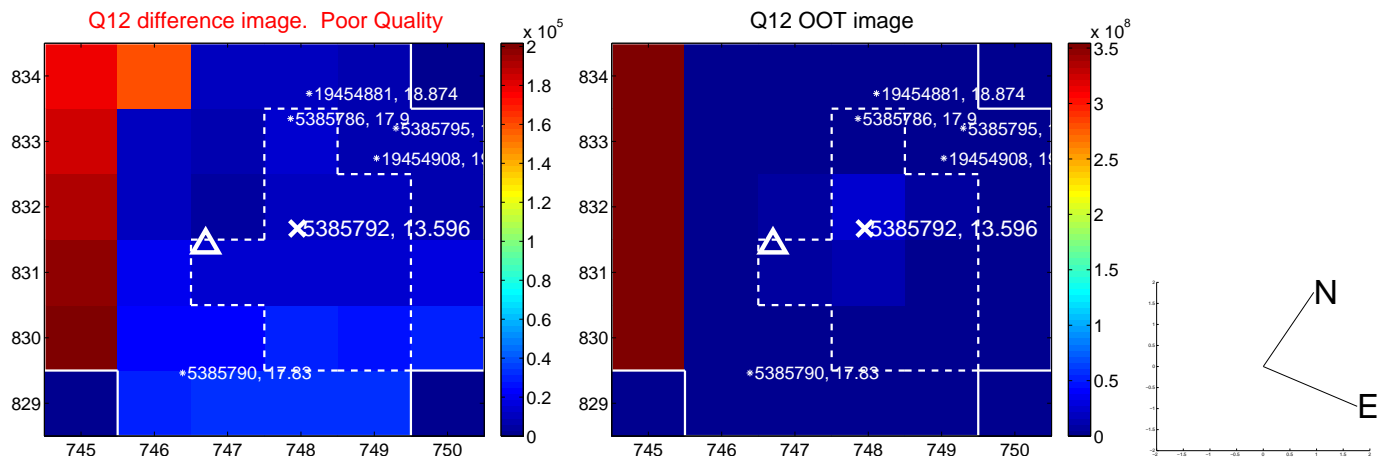
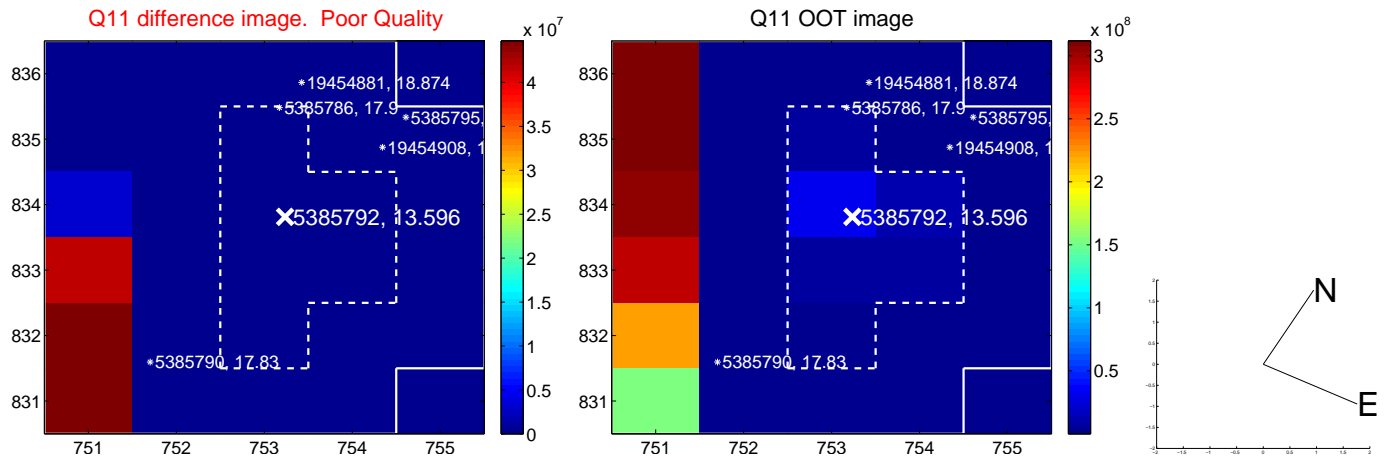
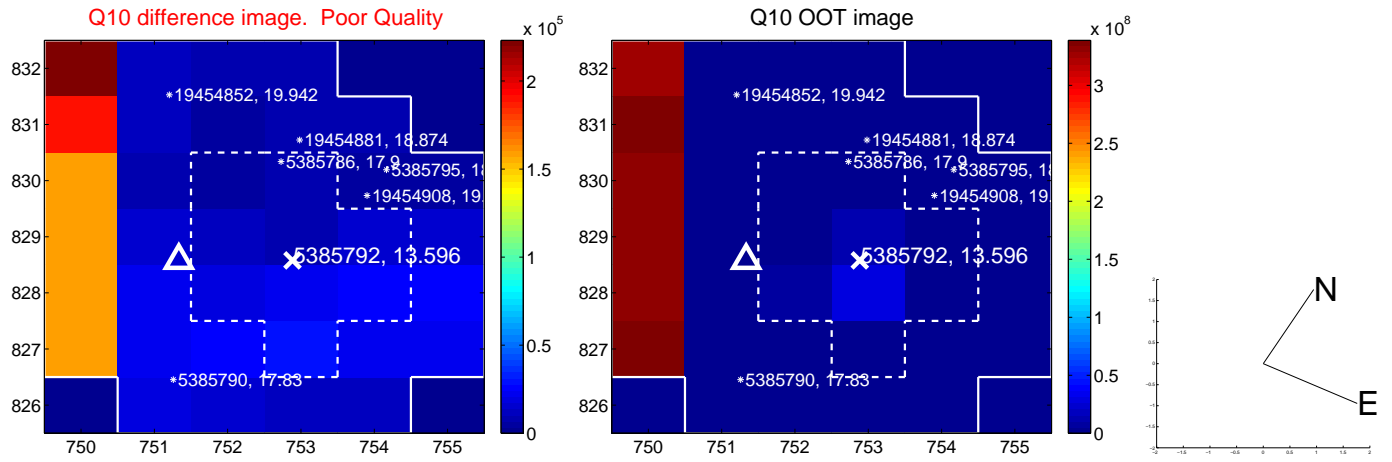
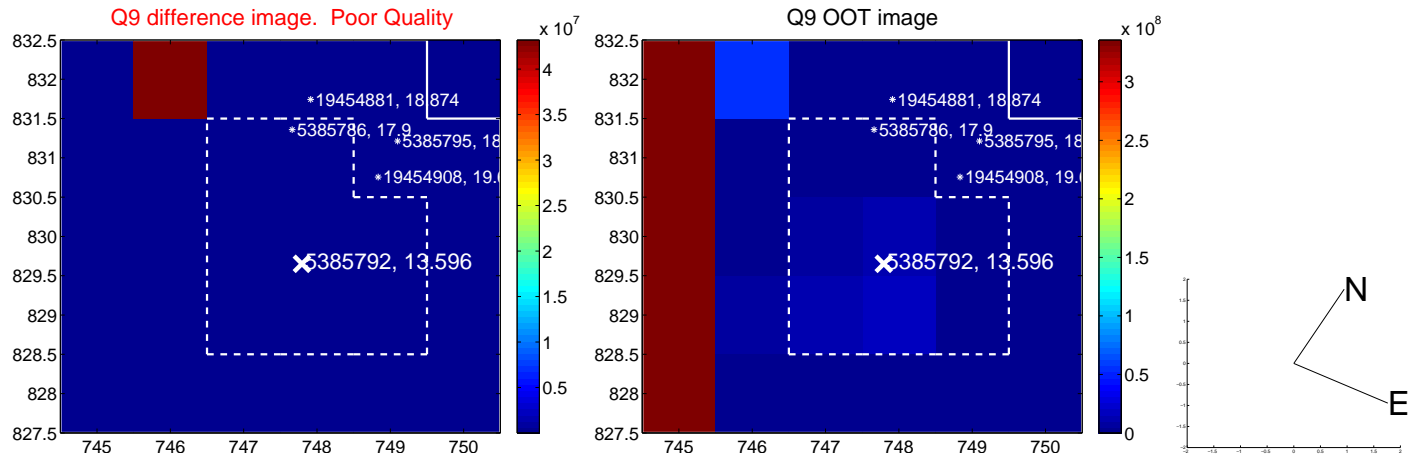


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

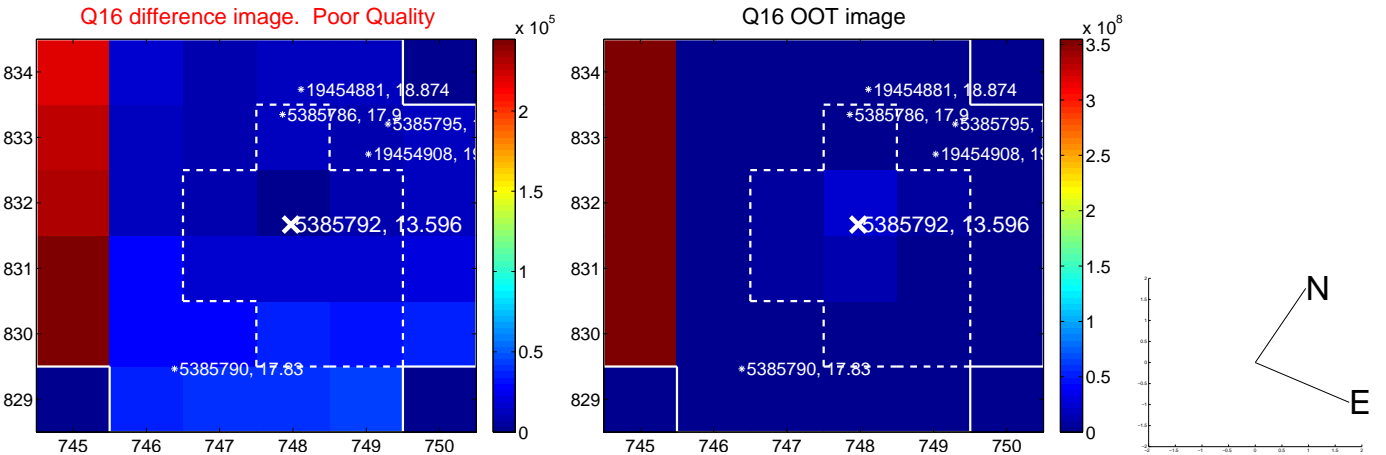
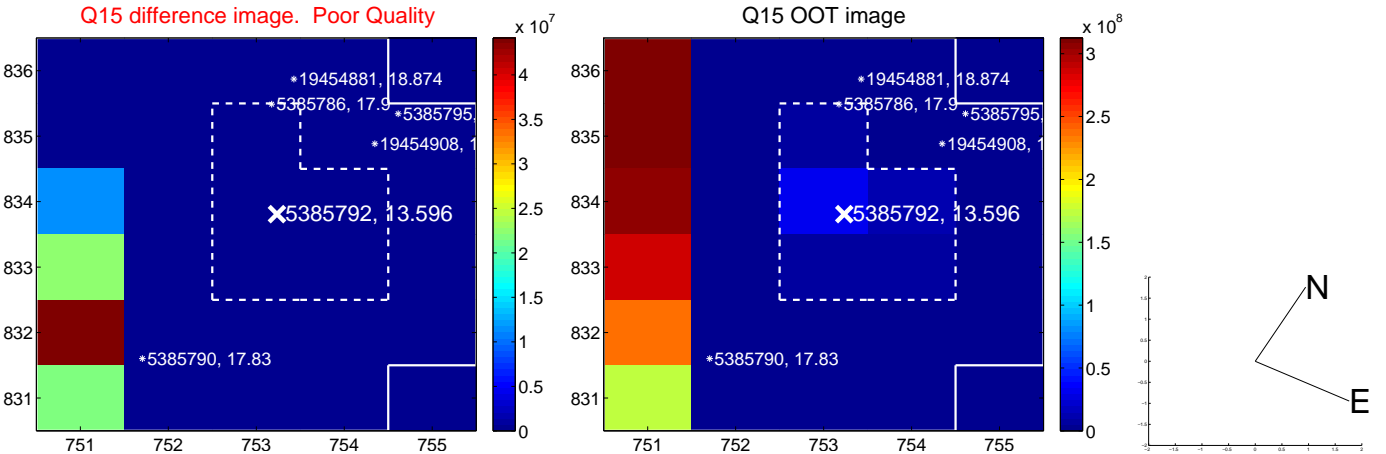
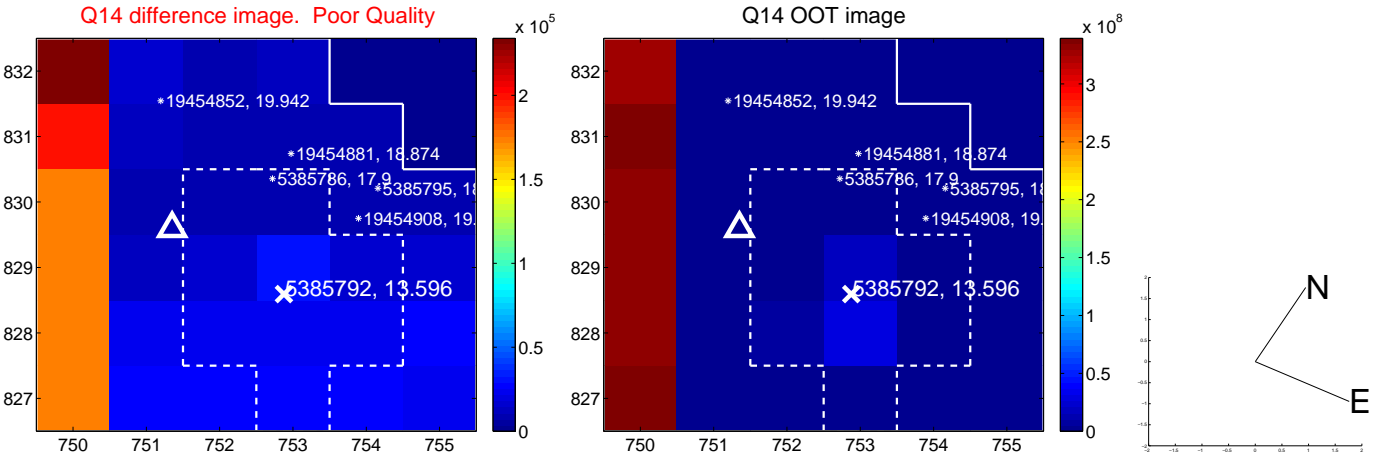
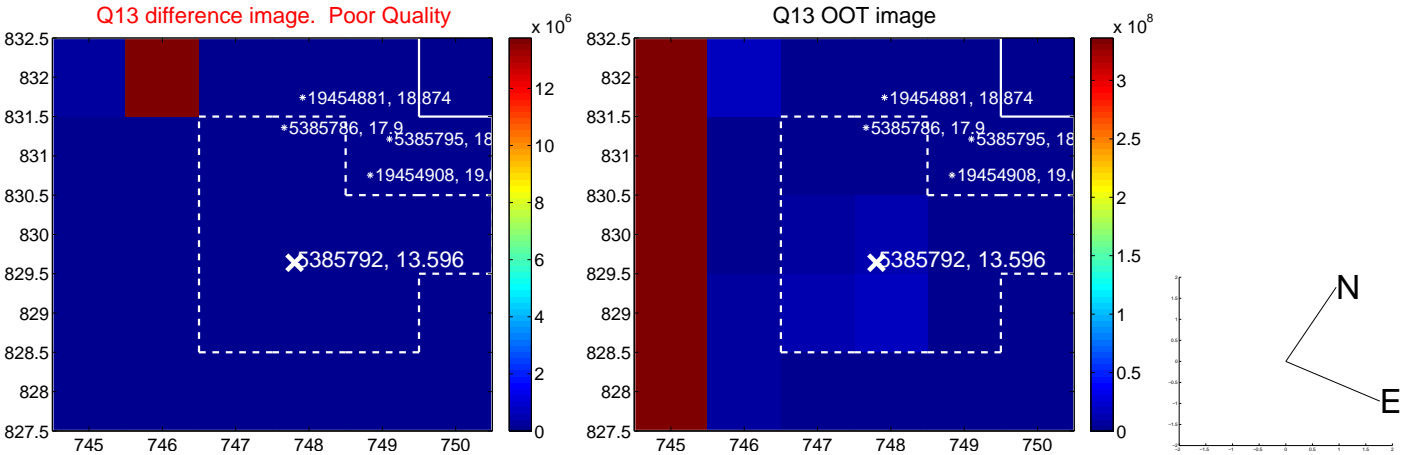




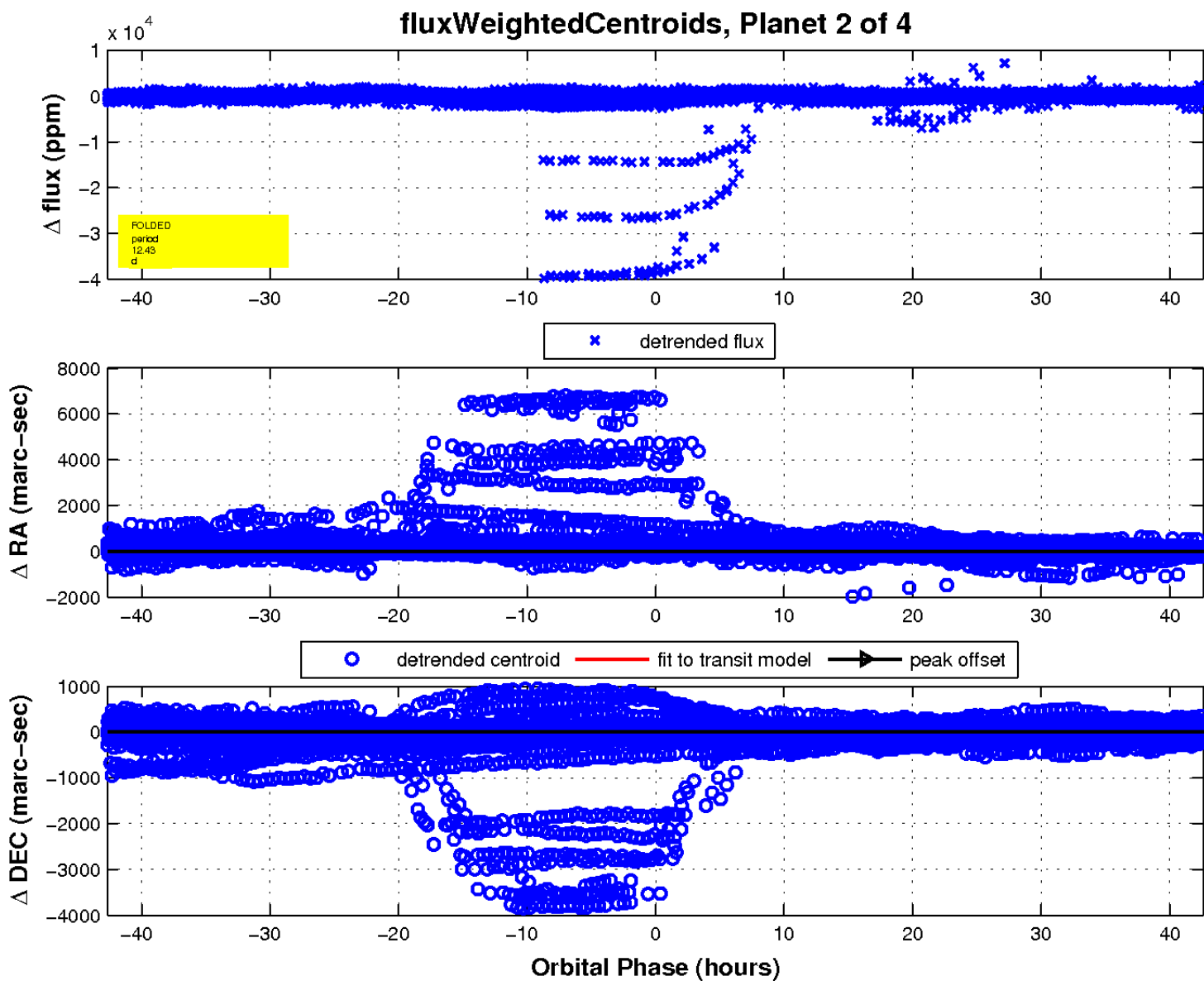
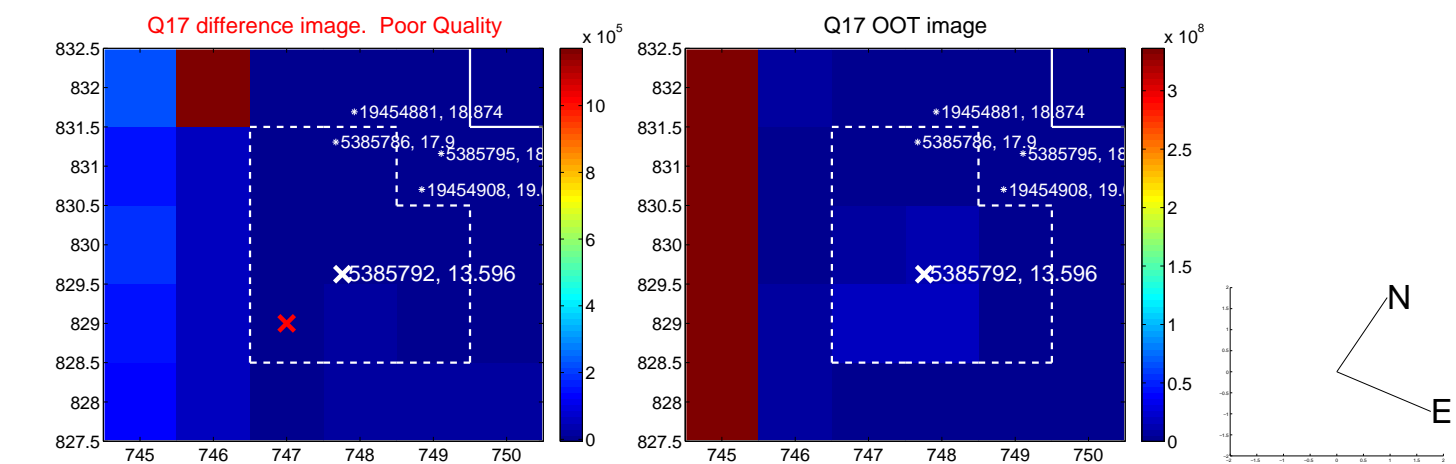
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

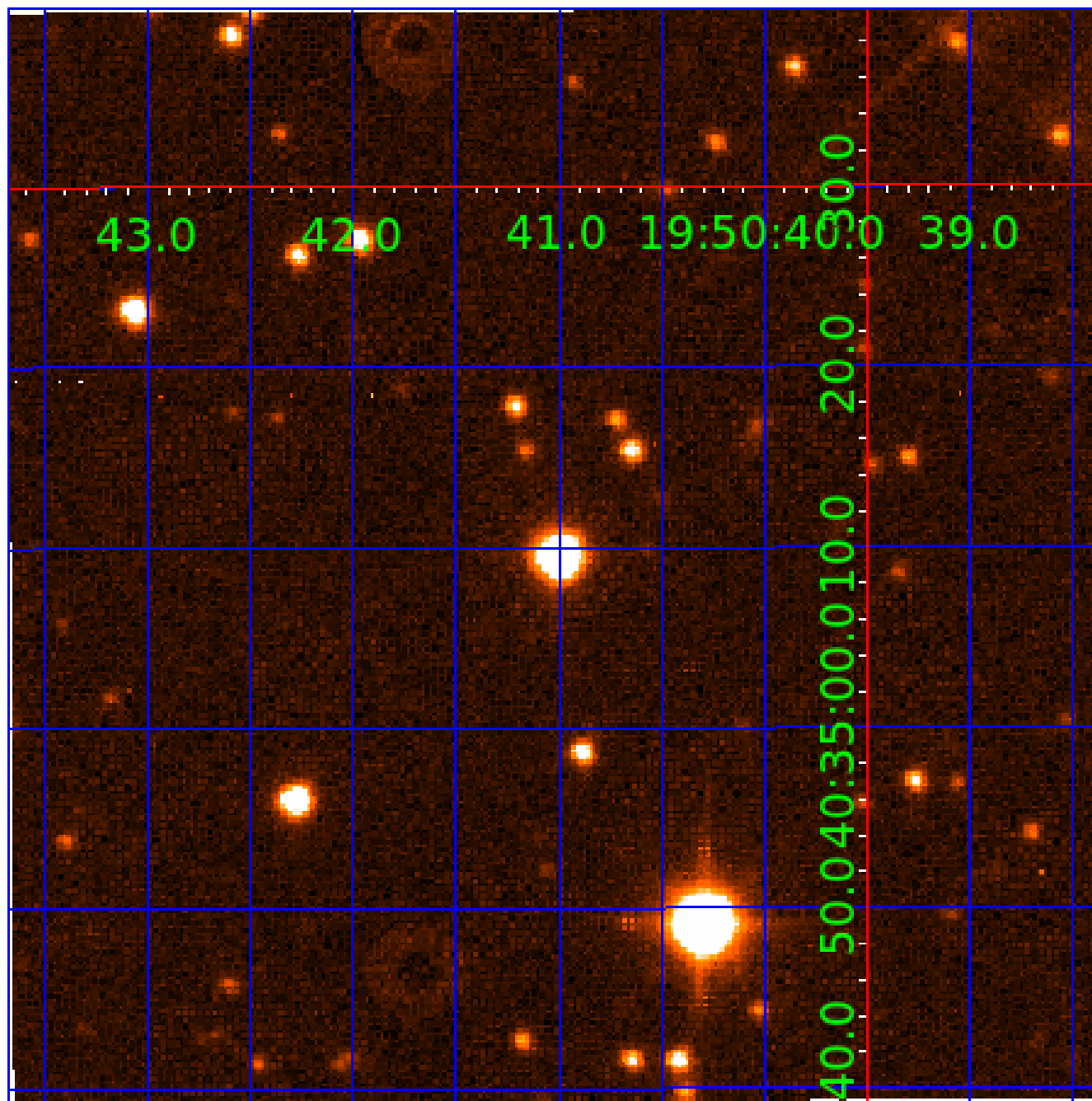


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 005385792

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005385792-01	OBS	No	12.425411	141.262074	761.9	10.747	17.4	24.4	1.25	6640	6.55	212.04
005385792-02	OBS	No	12.425362	134.278207	529.5	14.217	13.4	17.5	1.25	6640	5.52	212.04
005385792-03	OBS	No	12.425696	141.845503	1079.6	8.491	12.7	14.8	1.25	6640	7.72	212.04
005385792-04	OBS	No	12.428477	135.610217	420.2	31.695	8.6	12.9	1.25	6640	4.95	211.97

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005385792-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
005385792-02	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET—HALO_GHOST
005385792-03	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
005385792-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—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.

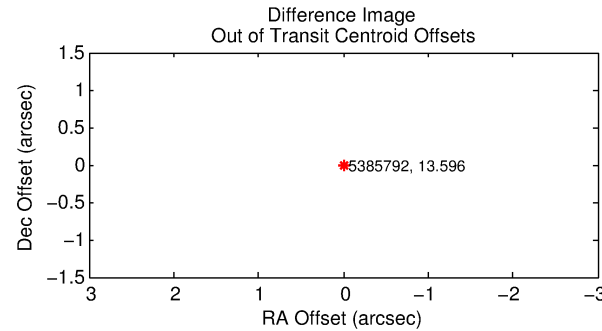
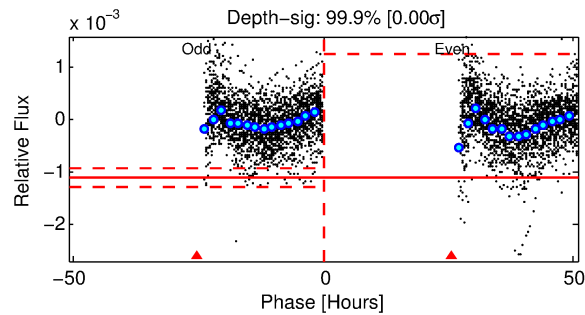
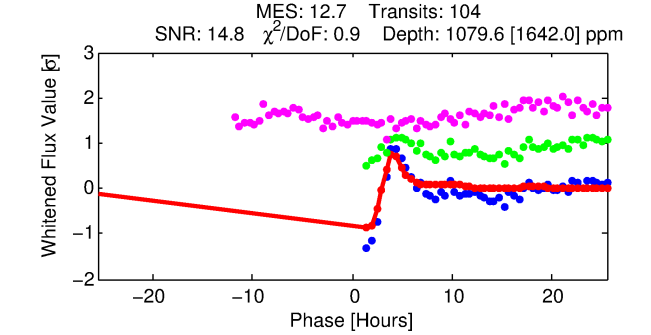
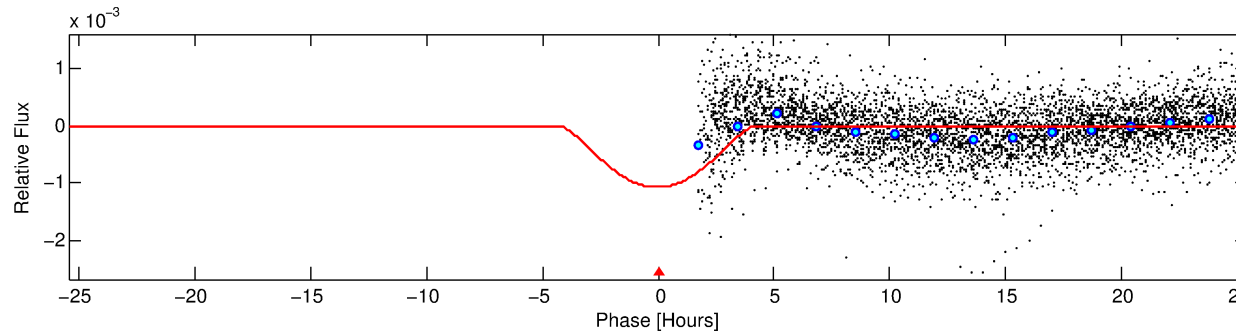
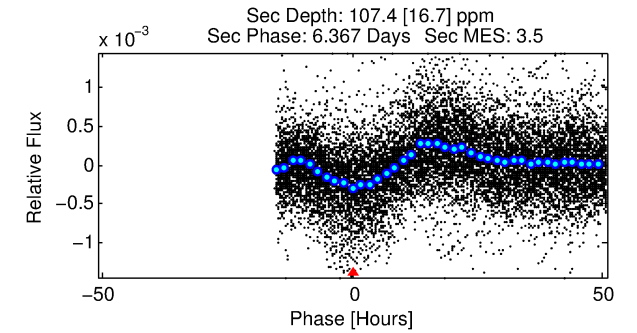
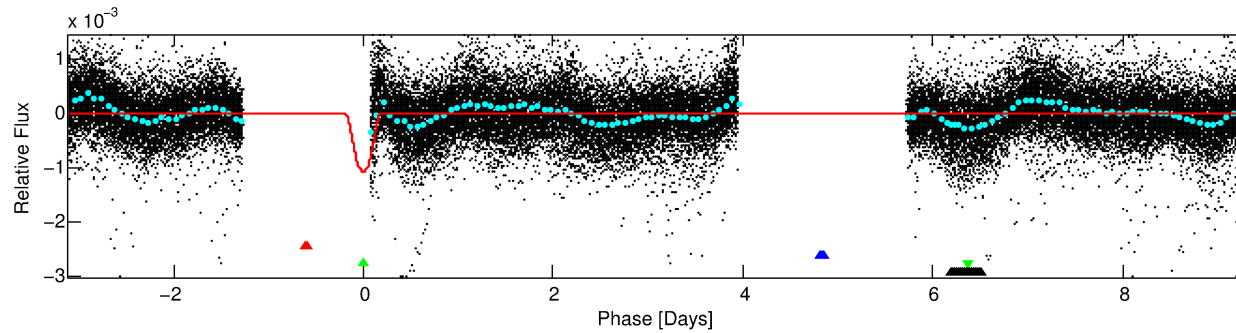
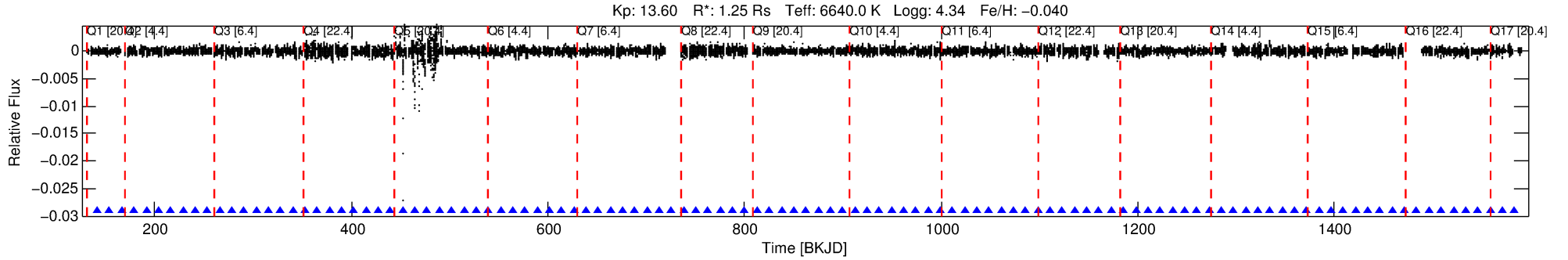
## Ephemeris Match Information For 005385792-03

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ( $''$ )	$\Delta$ Row	$\Delta$ Col	$m_2$	$m_1$	$D_2/D_1$	Mechanism	Flag	$\sigma_P$	$\sigma_T$
005385792-03	5385792	005385778-01	5385778	1:1	22.1	4	5	12.70	13.60	1.21	Direct-PRF	1	0.37	2.58

**Notes:**  $P_1:P_2$  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.  $m_2$  and  $m_1$  are the magnitudes of the parent and child.  $D_2/D_1$  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: 5385792 Candidate: 3 of 4 Period: 12.426 d



## DV Fit Results:

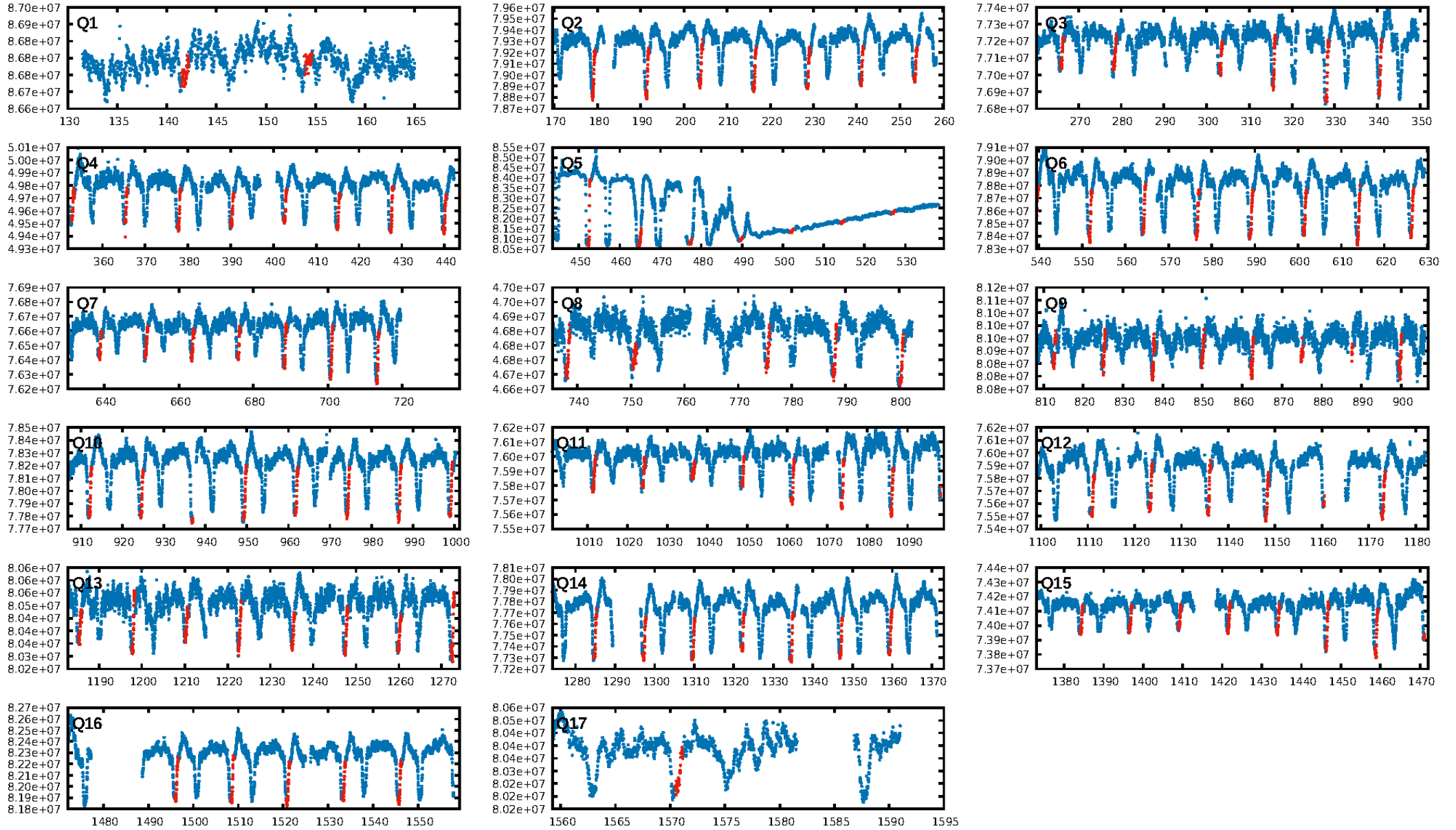
Period = 12.42570 [0.00007] d  
Epoch = 141.8455 [0.0184] BKJD  
Rp/R\* = 0.0566 [0.0683]  
a/R\* = 3.95 [0.71]  
b = 1.00 [0.04]  
Seff = 212.04 [91.78]  
Teff = 973 [105] K  
Rp = 7.72 [9.71] Re  
a = 0.1133 [0.0326] AU  
Ag = 12.72 [31.19] [0.38σ]  
Teffp = 2841 [1721] K [1.08σ]

## DV Diagnostic Results:

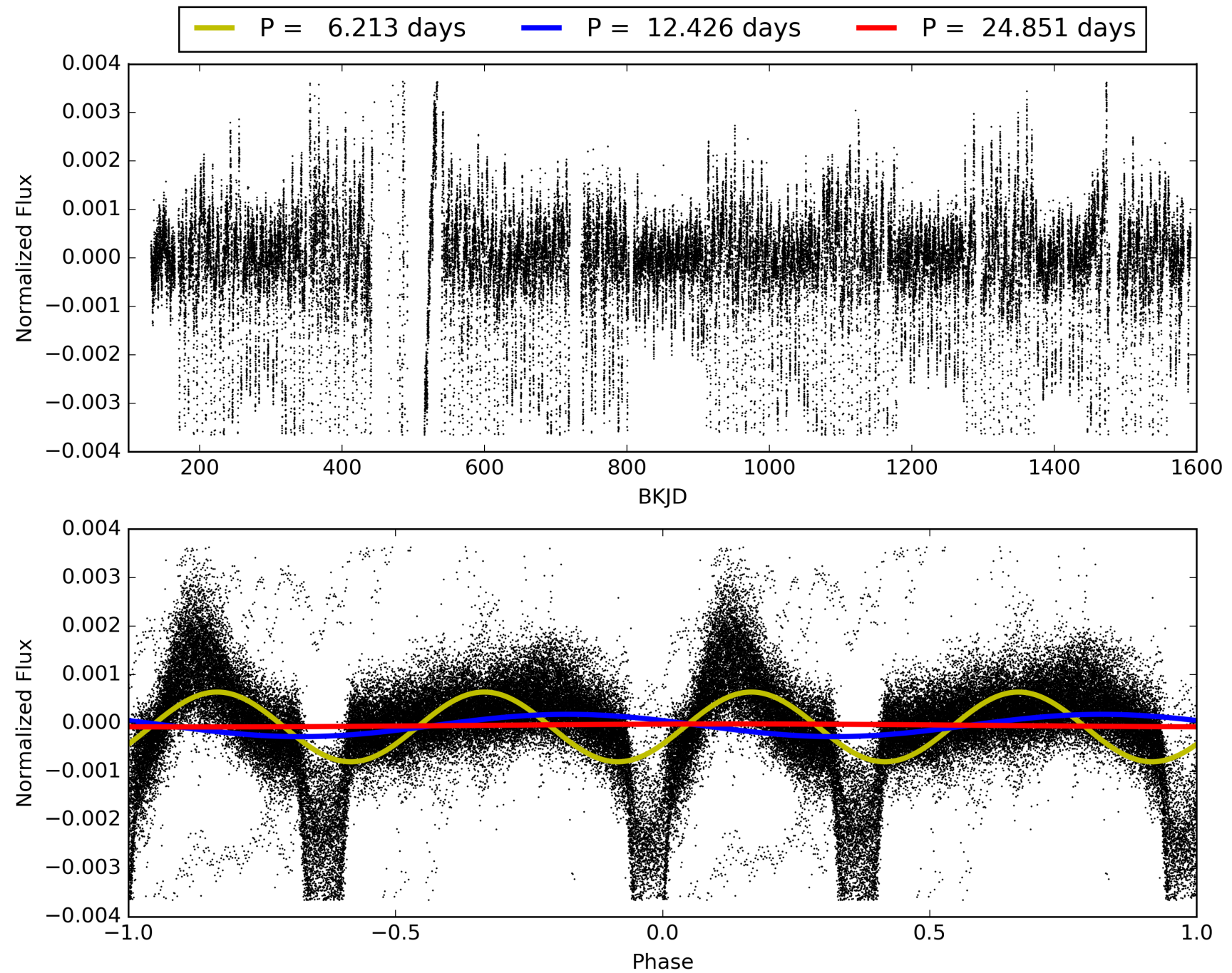
ShortPeriod-sig: 0.0% [0.00σ]  
LongPeriod-sig: 0.2% [0.00σ]  
ModelChiSquare2-sig: 91.9%  
ModelChiSquareGoF-sig: 100.0%  
Bootstrap-pfa: 5.23e-34  
RollingBand-fgt: 1.00 [101/101]  
GhostDiagnostic-chr: 0.1171  
Centroid-sig: 0.0%  
Centroid-so: 1.960 arcsec [7.26σ]  
OotOffset-rm: N/A  
KicOffset-rm: 10.210 arcsec [20.68σ]  
OotOffset-st: 0/0/0 [0]  
KicOffset-st: 4/0/3/2 [9]  
DiffImageQuality-fgm: 0.11 [1/9]  
DiffImageOverlap-fno: 0.00 [0/17]



# TCE 005385792-03, PDC Light Curves

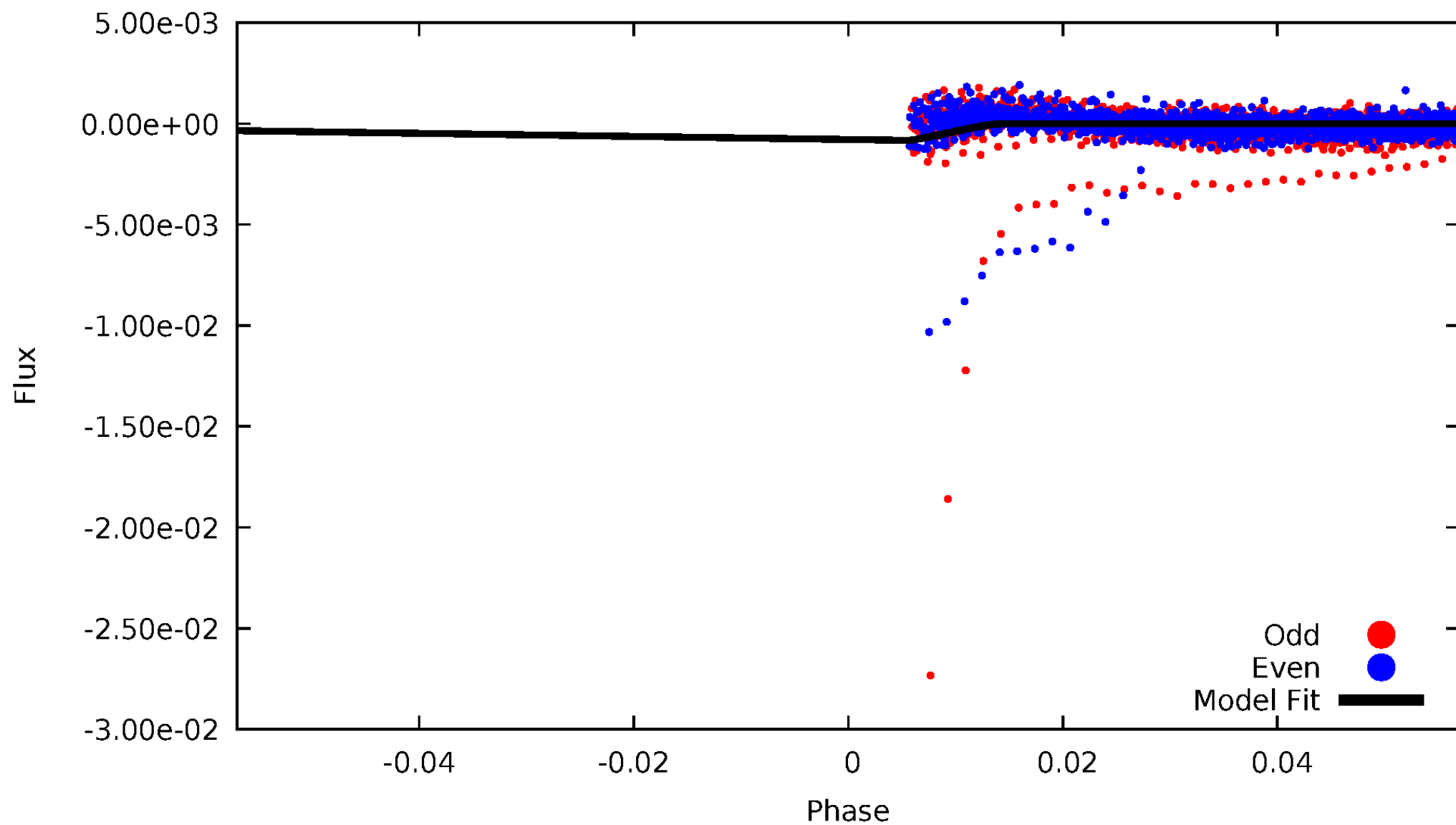


TCE 005385792-03



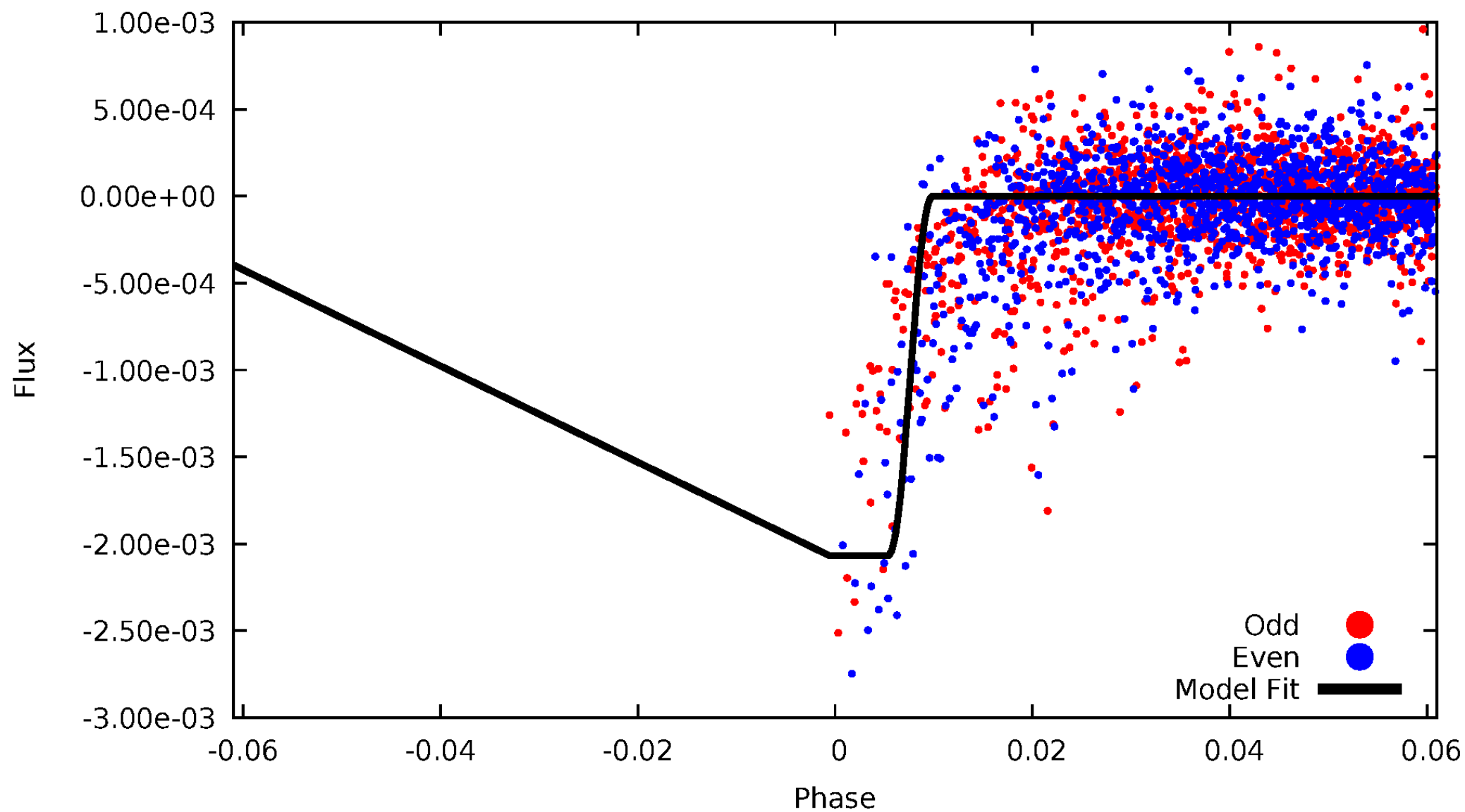
DV Odd/Even

TCE 005385792-03



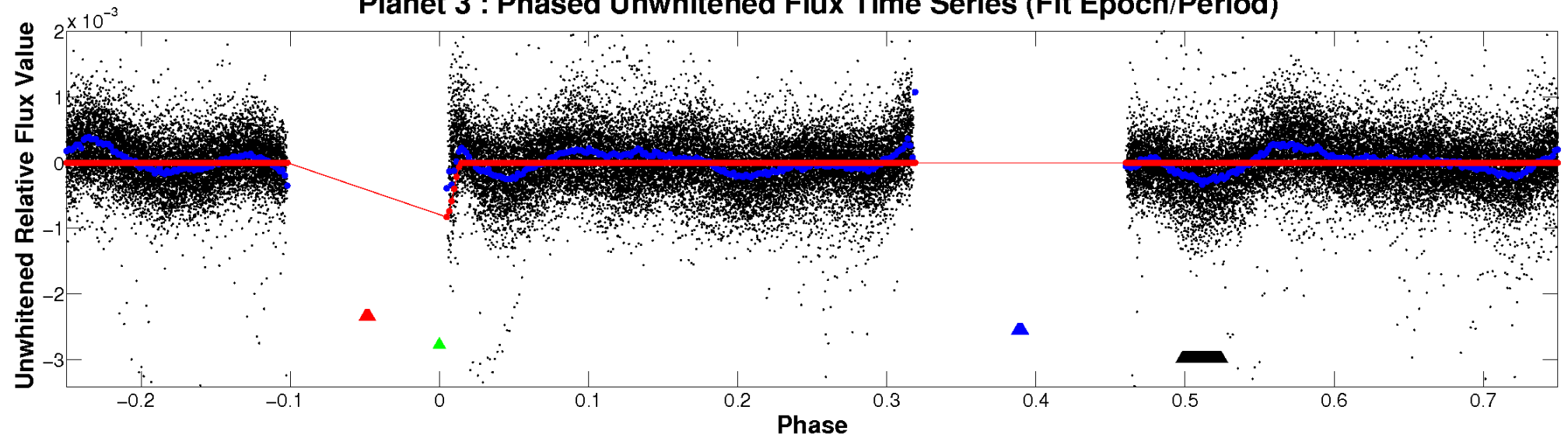
# ALT Odd/Even

TCE 005385792-03

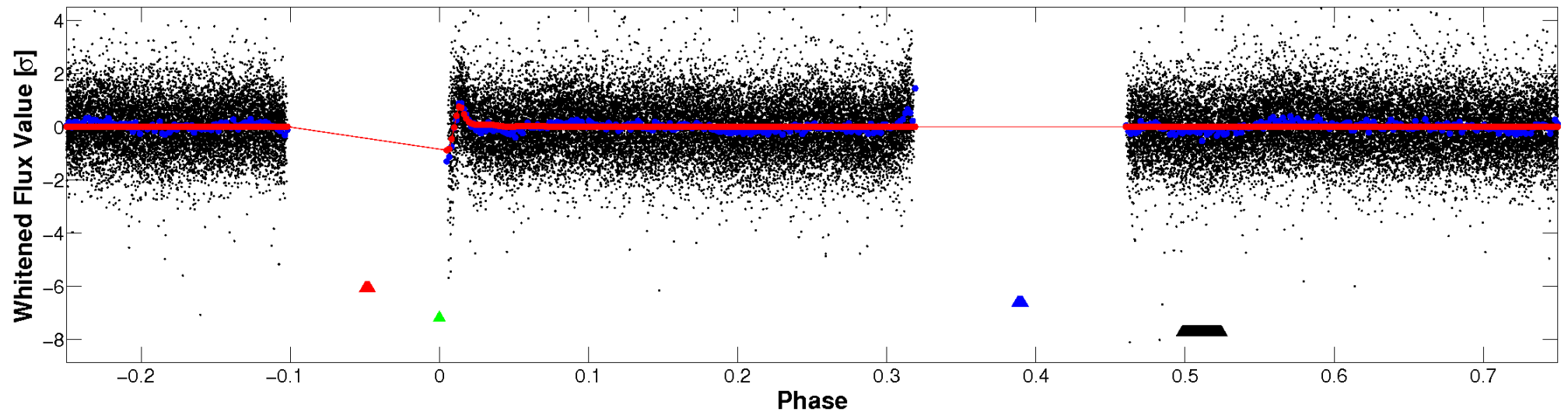


# Non-Whitened Vs. Whitened Light Curve

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

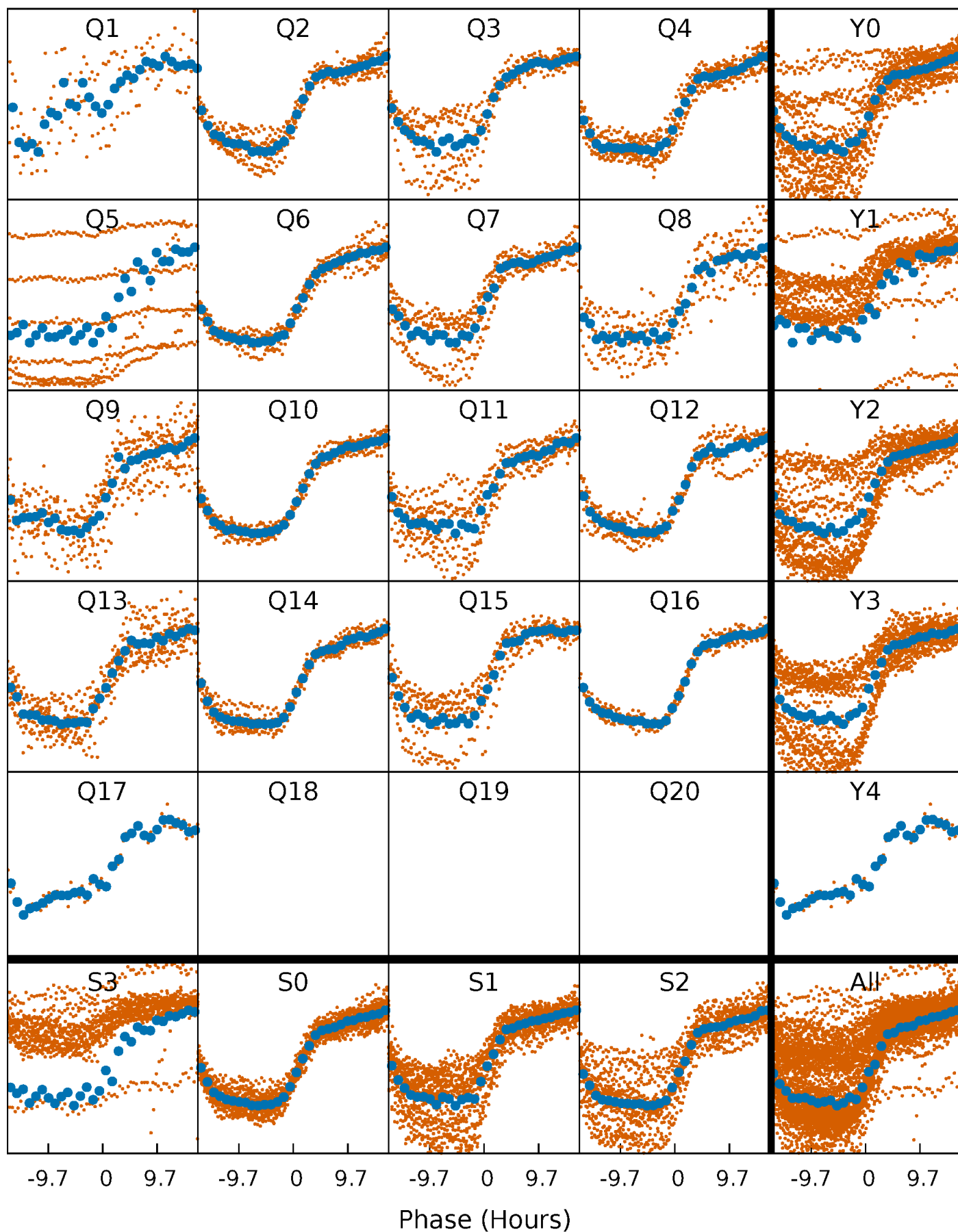


**Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

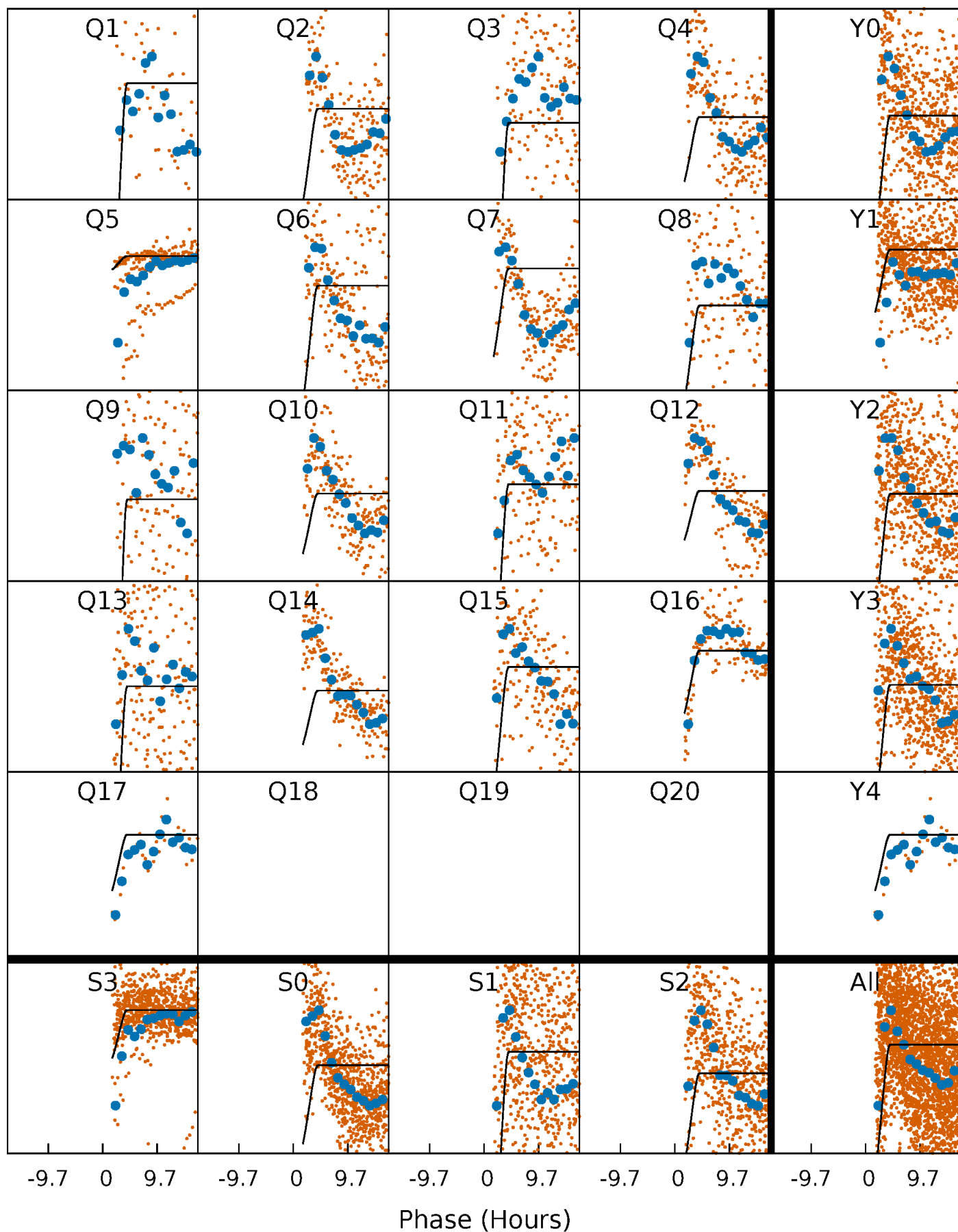
TCE 005385792-03   P= 12.425696 Days    $T_0=141.845503$  (BKJD)





# DV Quarter-Phased Transit Curves

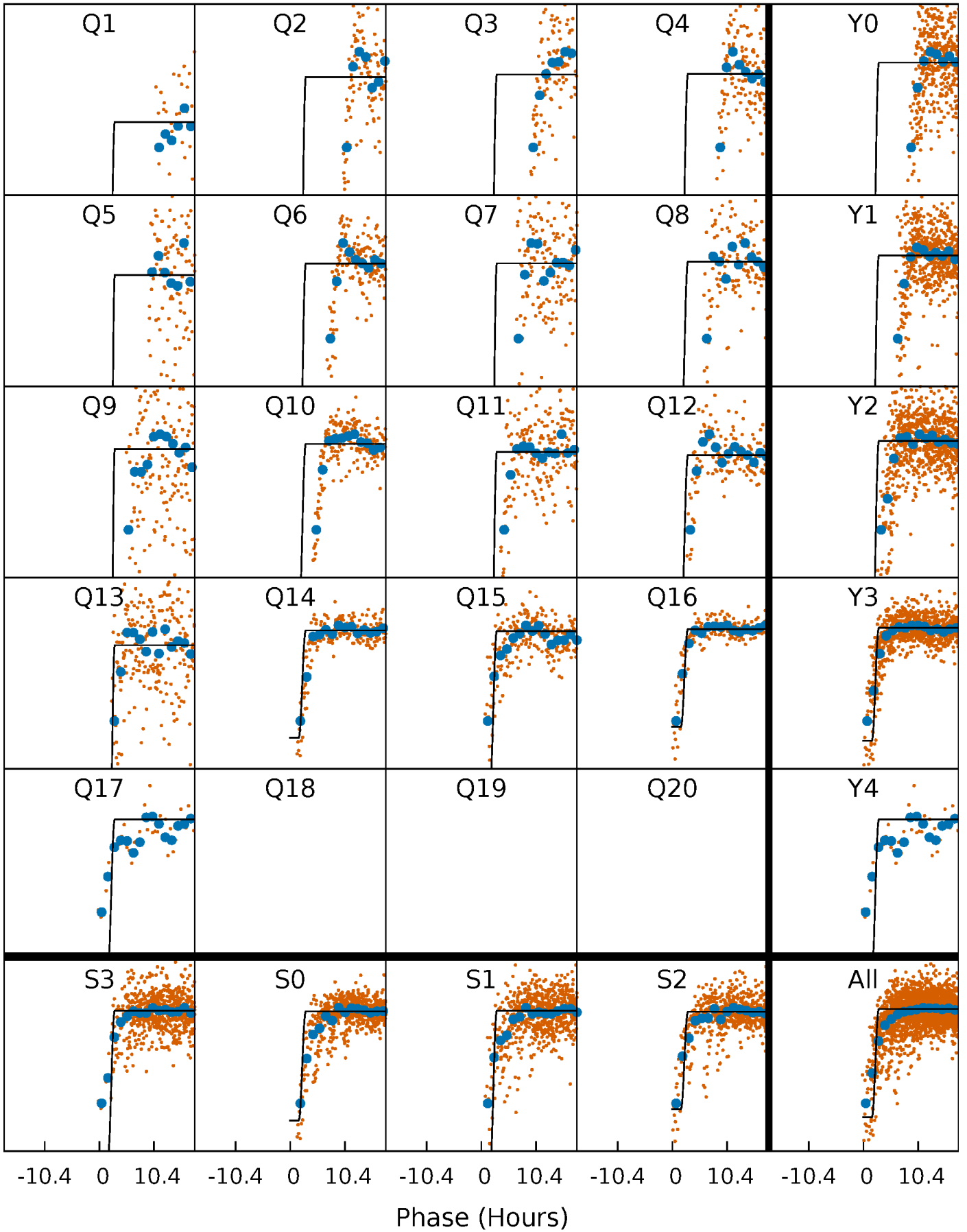
TCE 005385792-03   P= 12.425696 Days    $T_0=141.845503$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

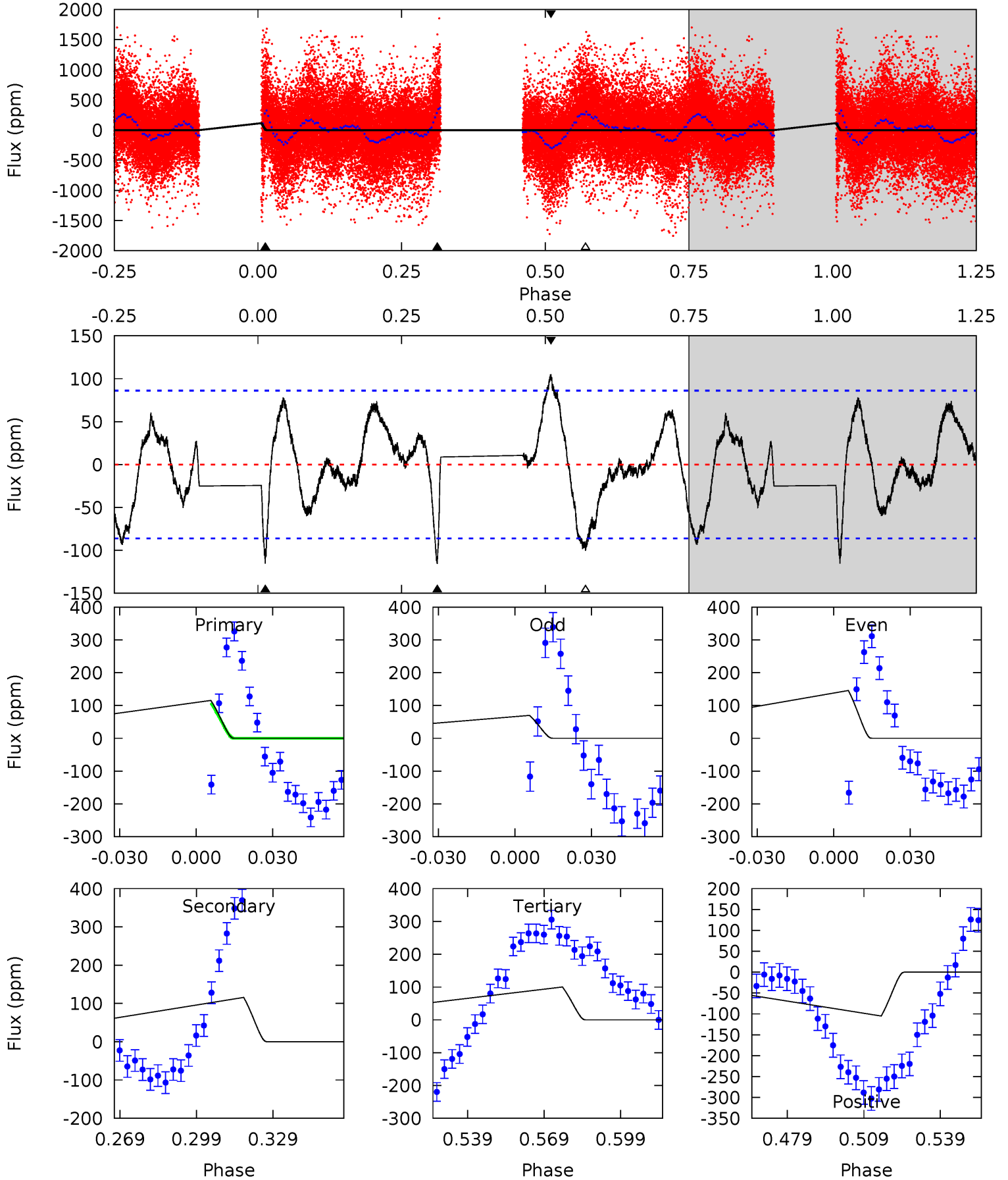
TCE 005385792-03   P= 12.429387 Days    $T_0=141.500279$  (BKJD)



# DV Model-Shift Uniqueness Test

005385792-03, P = 12.425696 Days, E = 129.419807 Days

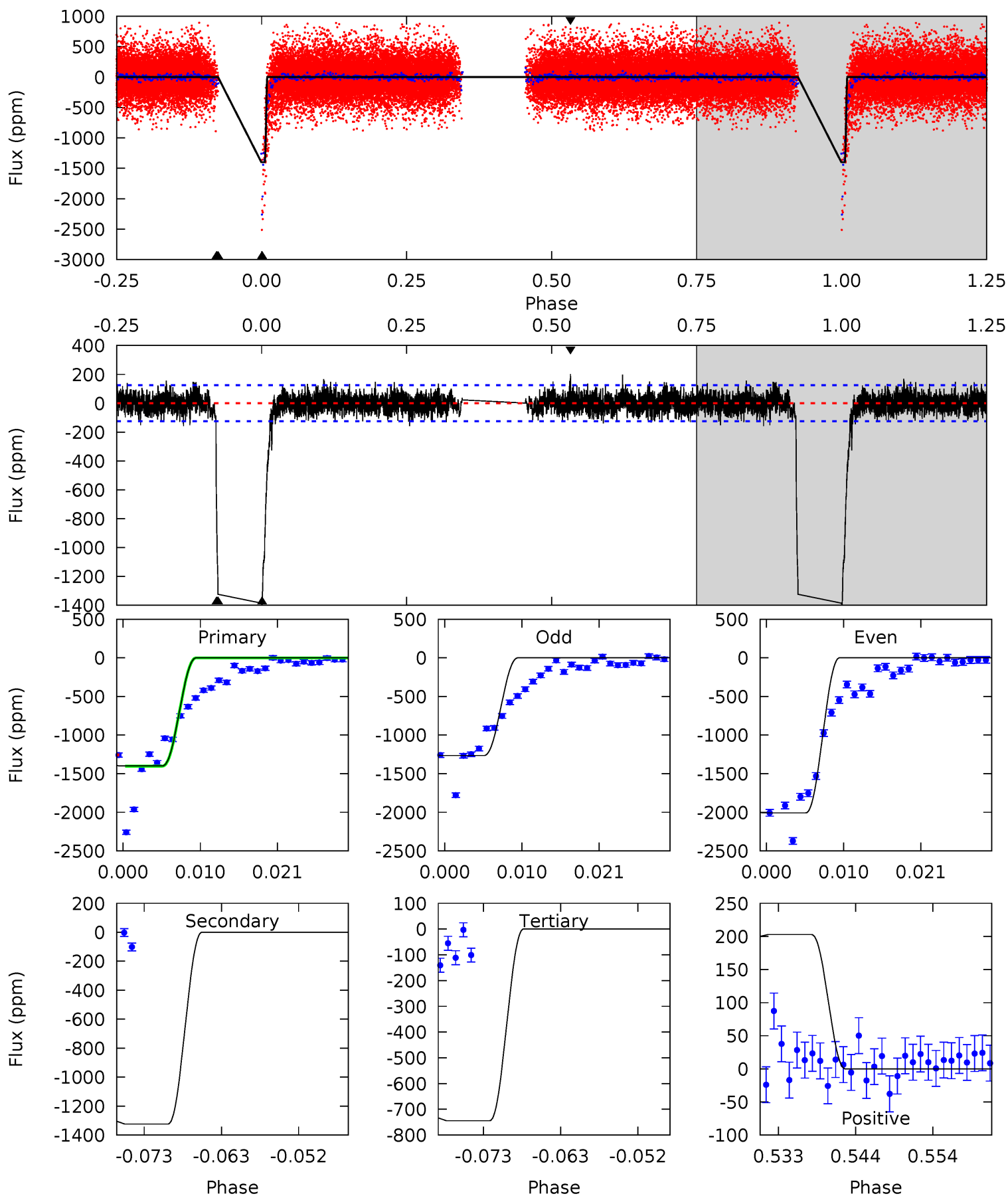
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.45	6.48	5.61	5.88	4.81	2.17	2.36	0.84	0.57	0.87	0.60	2.12	-2.47	0.48	0



# Alt Model-Shift Uniqueness Test

005385792-03,  $P = 12.429387$  Days,  $E = 129.070892$  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
56.3	53.2	29.9	8.16	5.02	2.56	1.87	26.3	48.1	23.3	45.1	15.0	1.04	0.13	0.00



### Stellar Parameters For KIC 005385792

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6640^{+161}_{-241}$	$4.343^{+0.058}_{-0.217}$	$-0.040^{+0.250}_{-0.350}$	$1.250^{+0.441}_{-0.147}$	$1.261^{+0.187}_{-0.187}$	$0.911^{+0.289}_{-0.517}$
	+2%/-4%	+1%/-5%	+625%/-875%	+35%/-12%	+15%/-15%	+32%/-57%
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 005385792-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-116 \pm 18$	$10.59^{+9.00}_{-6.96}$	$1383^{+99}_{-68}$	$3104^{+1322}_{-517}$	$6.806^{+54.234}_{-4.717}$
Alt.	$-1324 \pm 25$	$9.63^{+8.85}_{-6.47}$	$1389^{+104}_{-73}$	$4989^{+3869}_{-1074}$	$100^{+774}_{-72}$

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

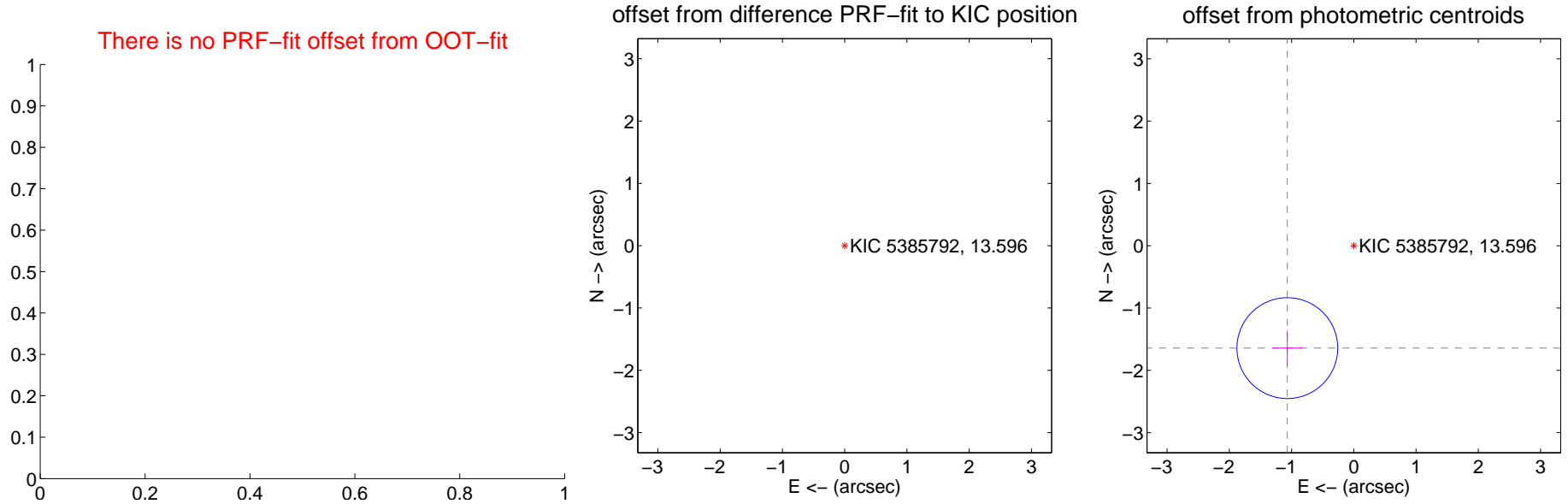
## DV Centroid Data

Supplemental centroid analysis for 005385792-03. Kepler magnitude: 13.60. Transit SNR 14.84

There are 1 quarters with good PRF difference image offsets

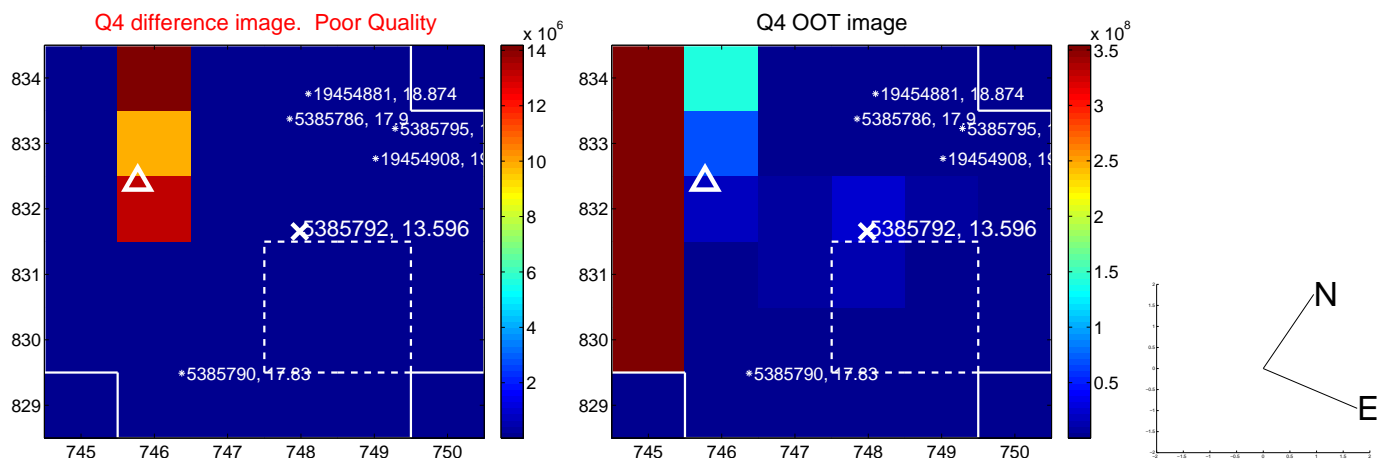
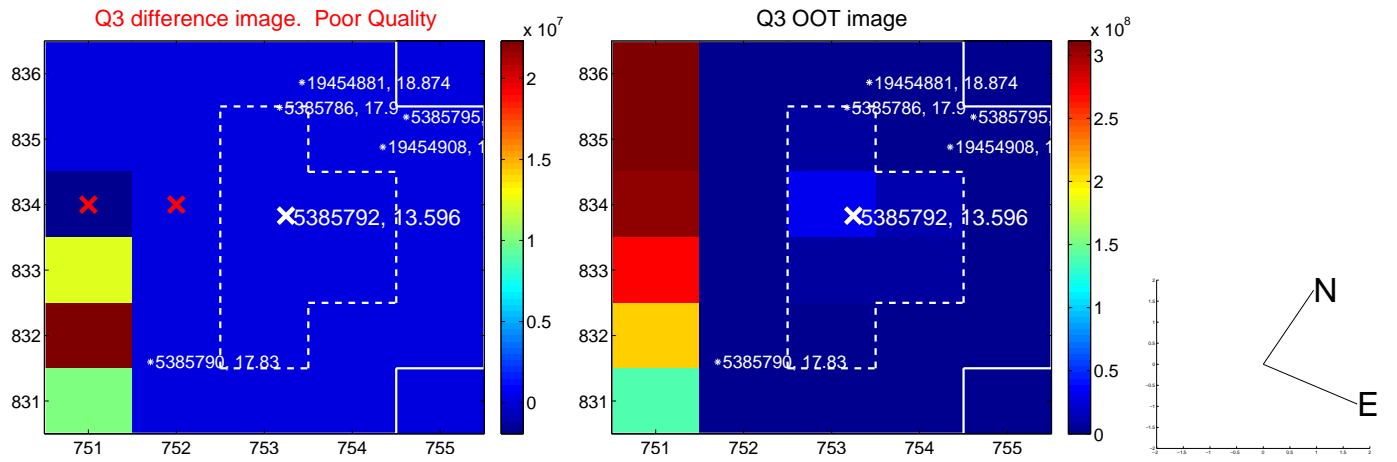
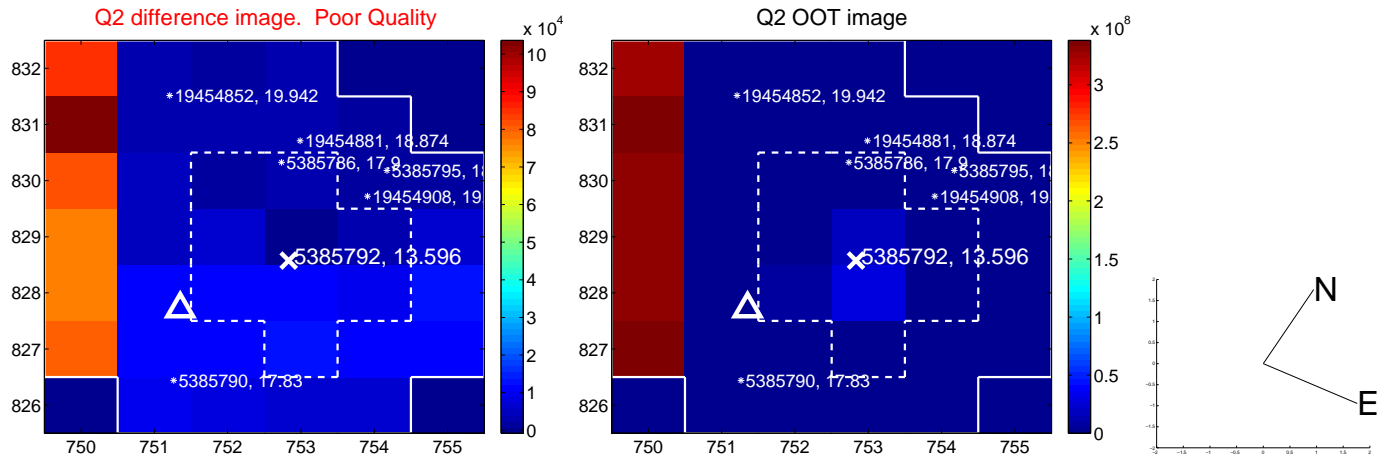
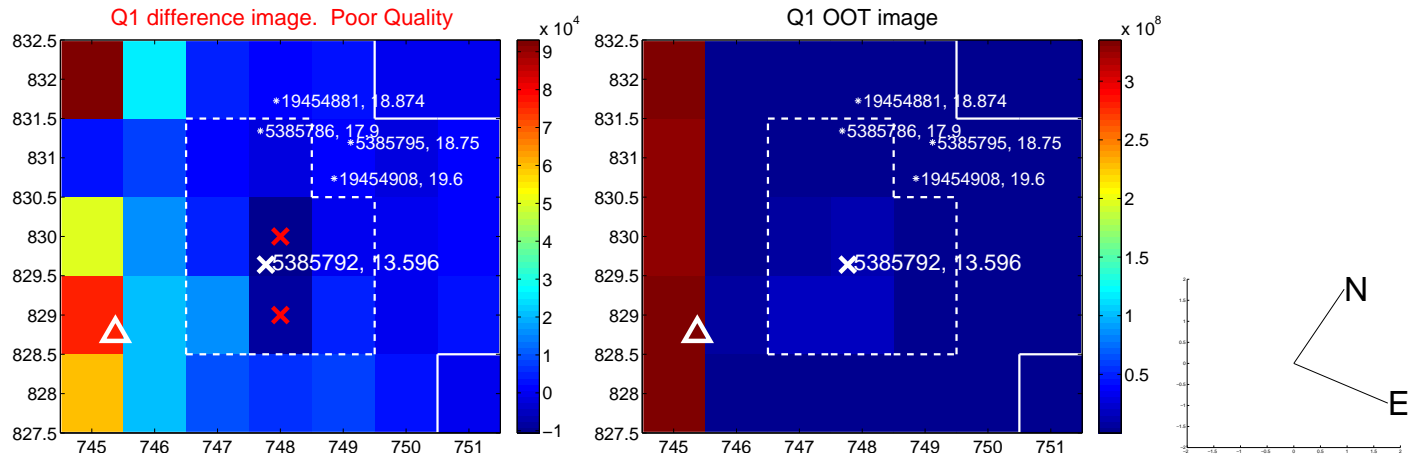
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	$10.210 \pm 0.494$	20.68	$-9.261 \pm 0.740$	$-4.297 \pm 0.929$
photometric centroid source offset	$1.96 \pm 0.27$	7.26	$1.07 \pm 0.24$	$-1.64 \pm 0.28$

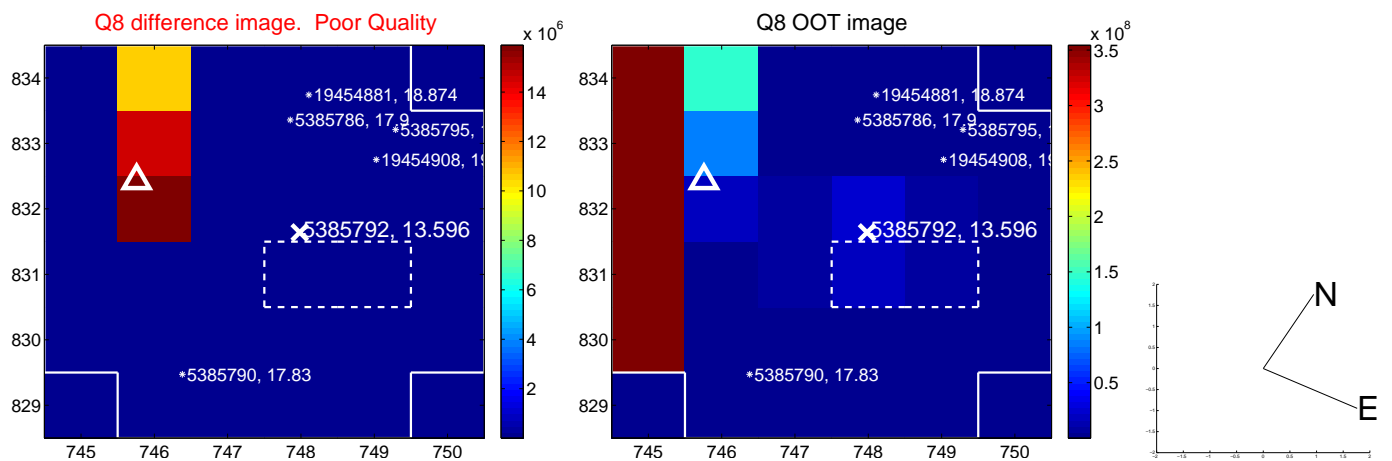
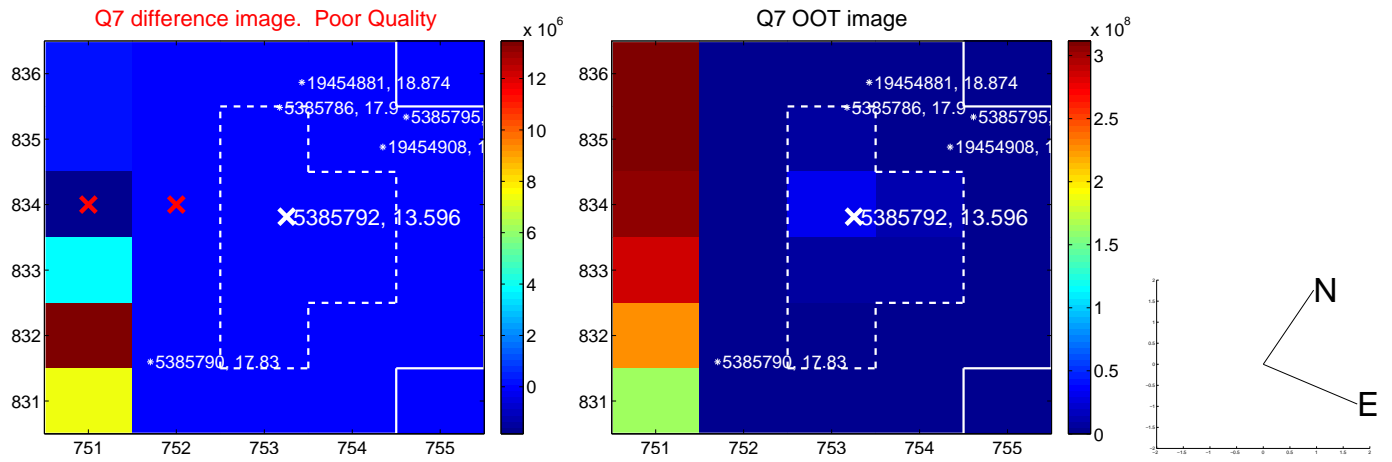
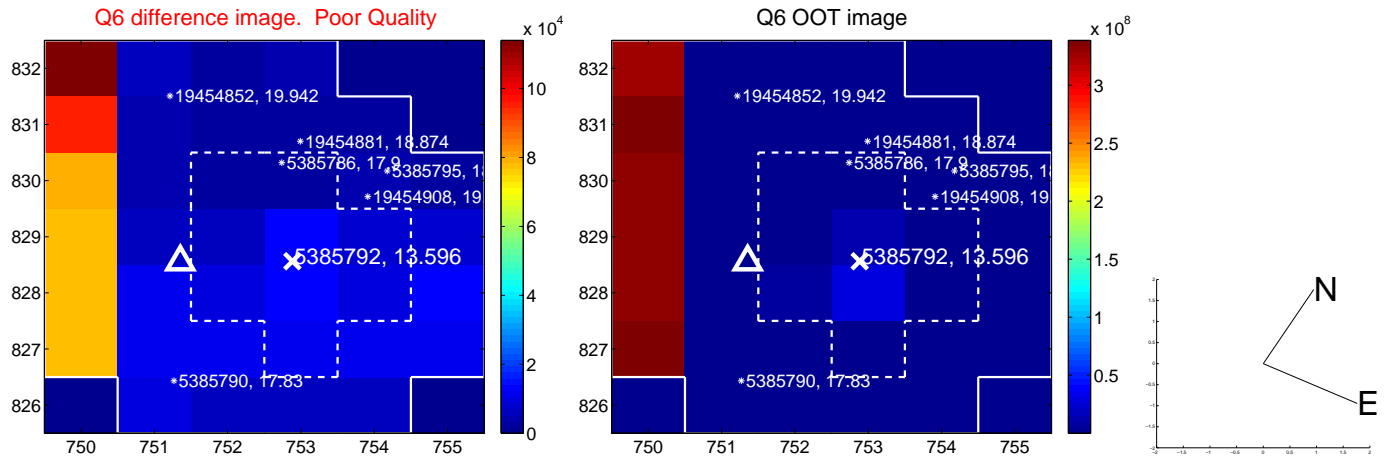
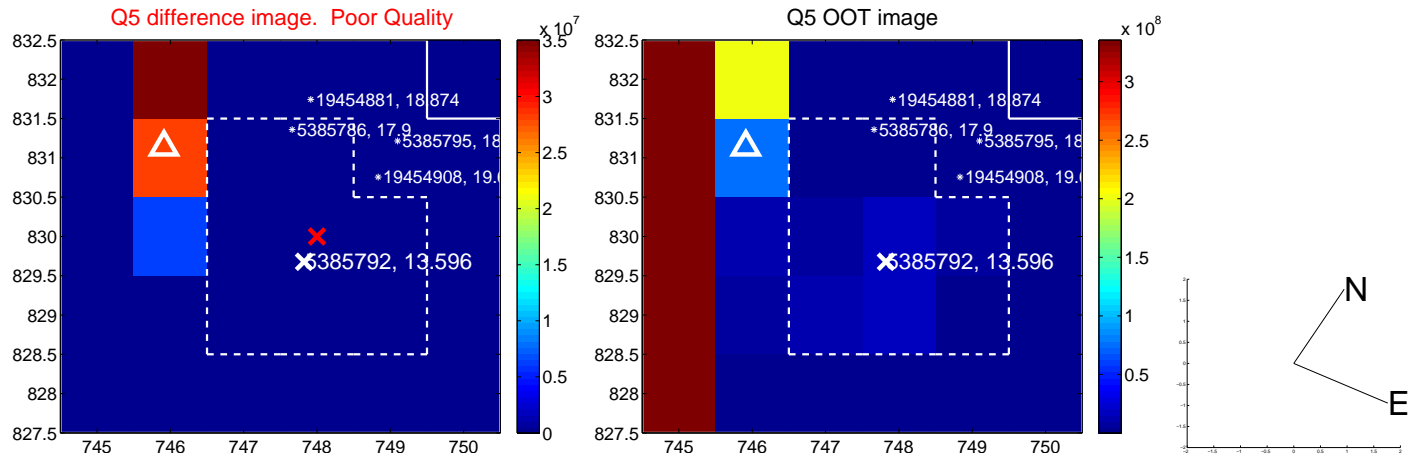


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

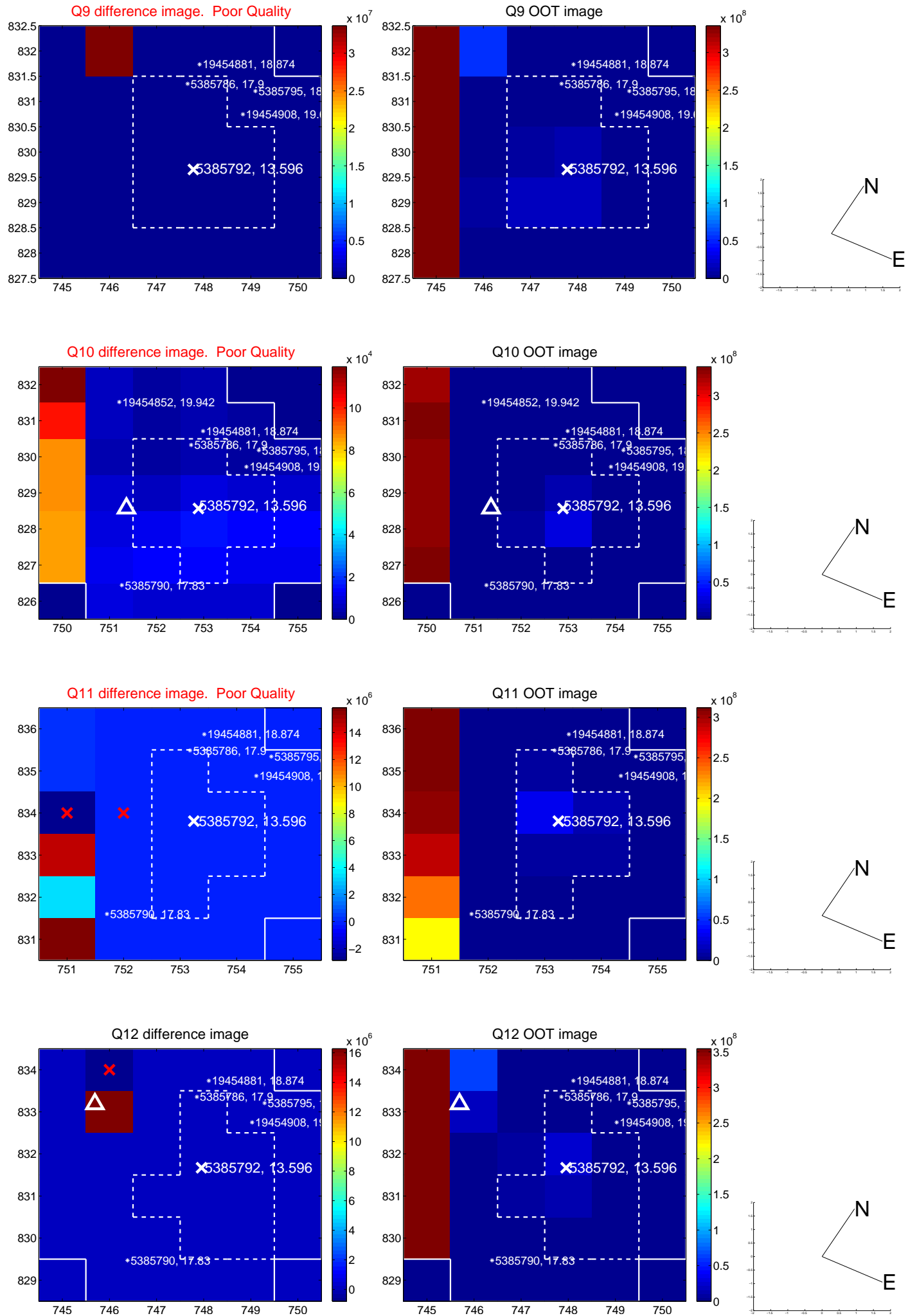


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

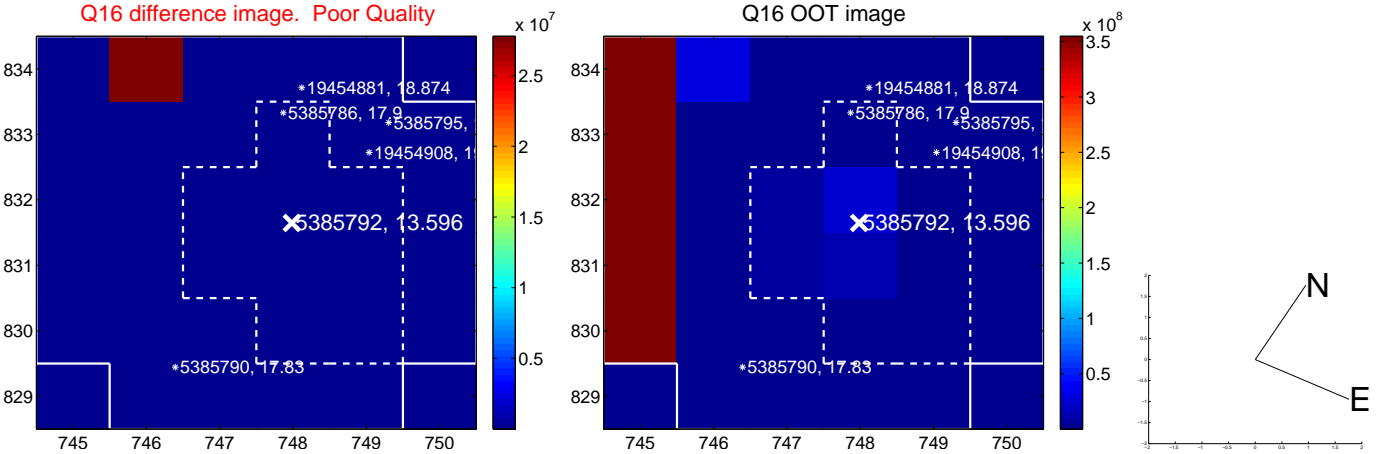
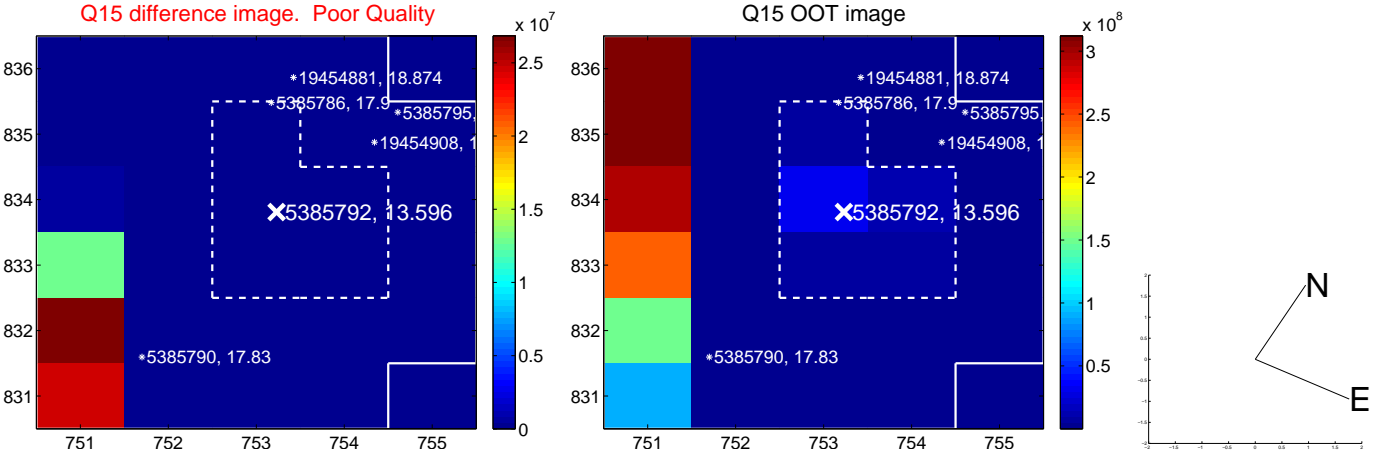
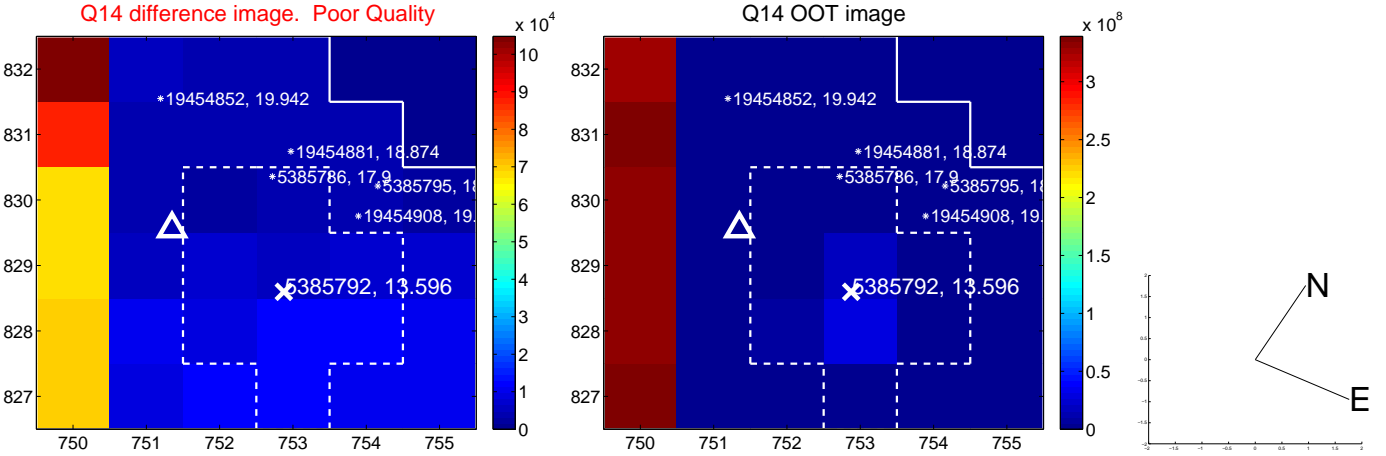
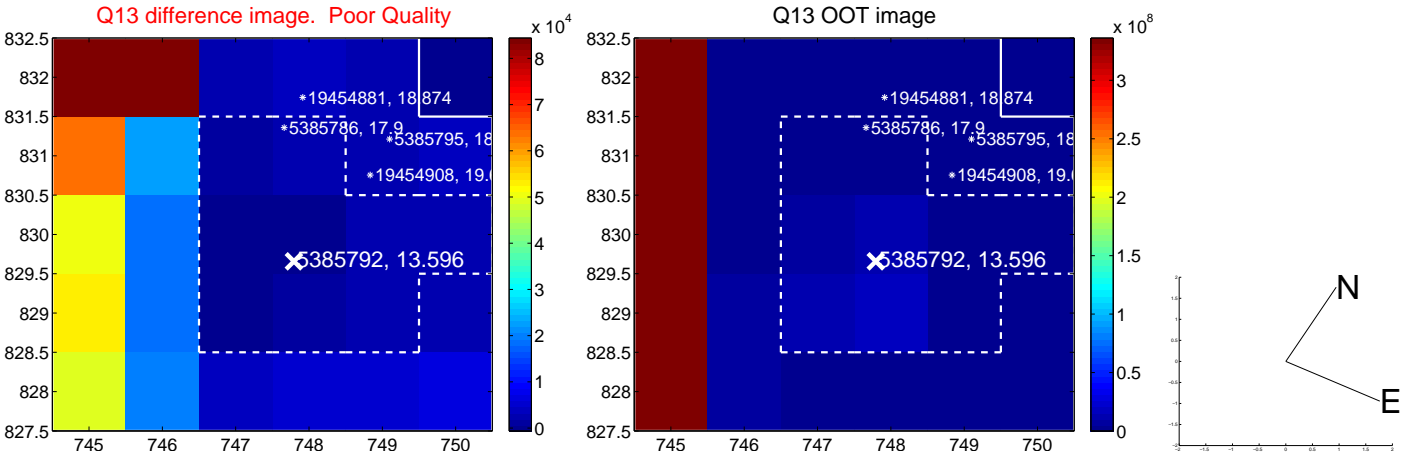




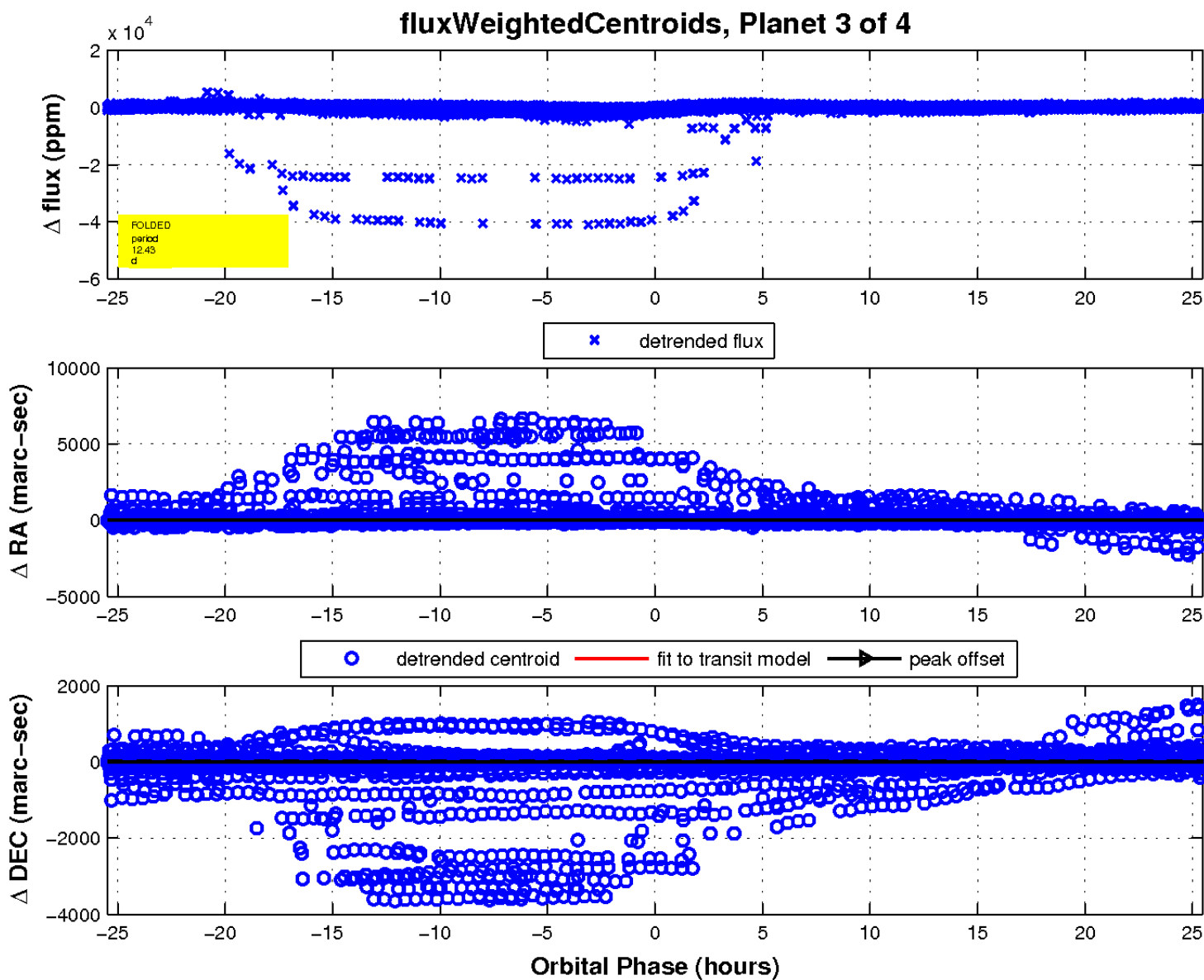
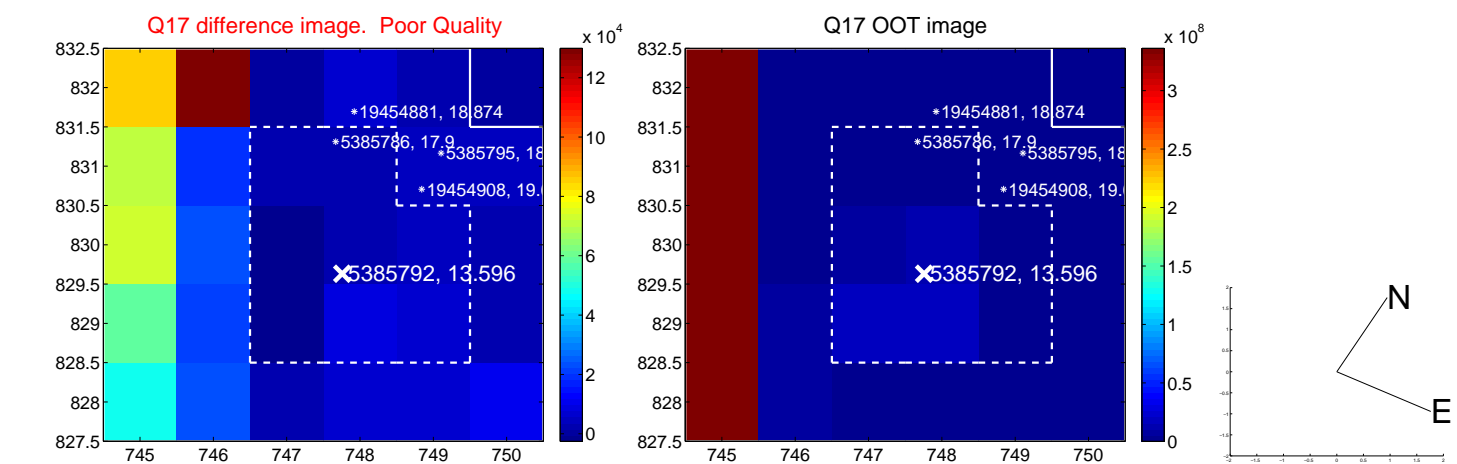
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

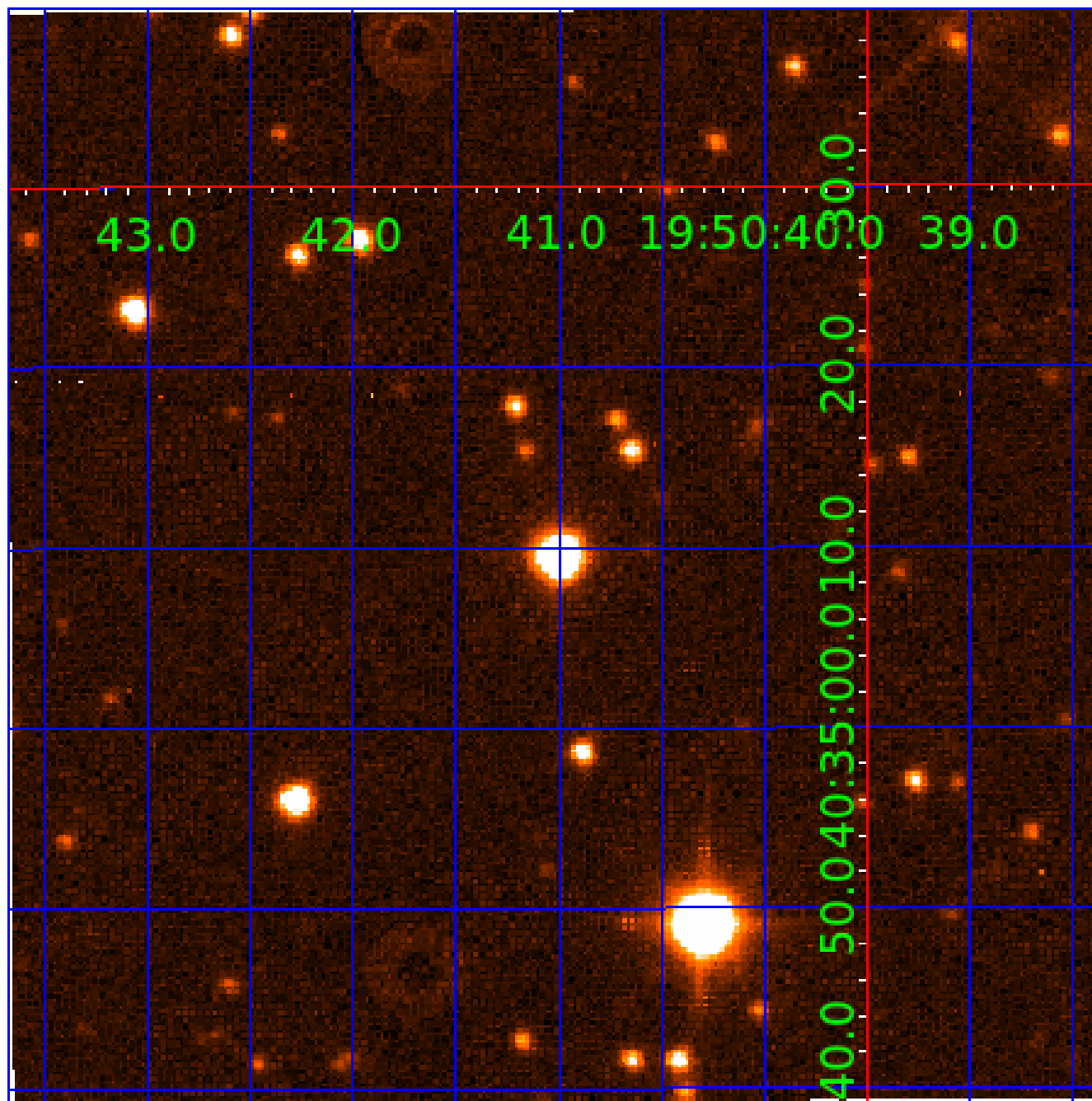


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 005385792

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005385792-01	OBS	No	12.425411	141.262074	761.9	10.747	17.4	24.4	1.25	6640	6.55	212.04
005385792-02	OBS	No	12.425362	134.278207	529.5	14.217	13.4	17.5	1.25	6640	5.52	212.04
005385792-03	OBS	No	12.425696	141.845503	1079.6	8.491	12.7	14.8	1.25	6640	7.72	212.04
005385792-04	OBS	No	12.428477	135.610217	420.2	31.695	8.6	12.9	1.25	6640	4.95	211.97

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005385792-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
005385792-02	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET—HALO_GHOST
005385792-03	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
005385792-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—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.

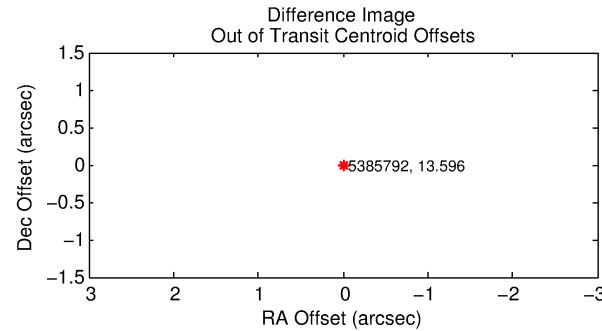
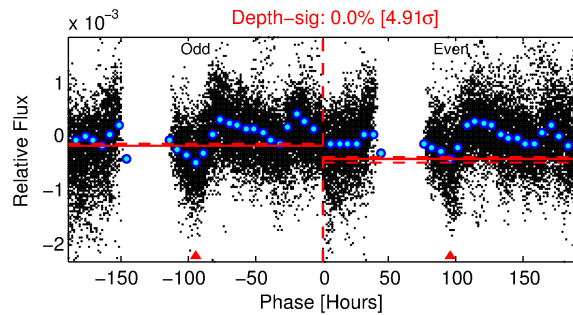
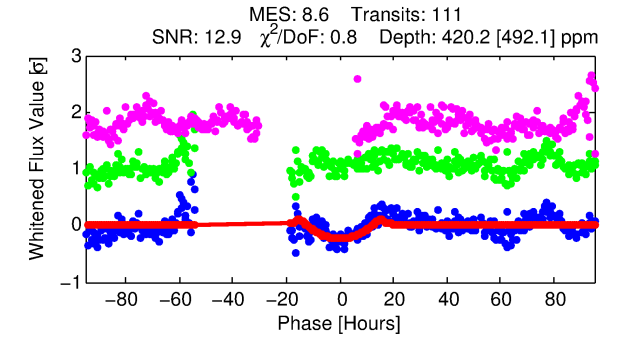
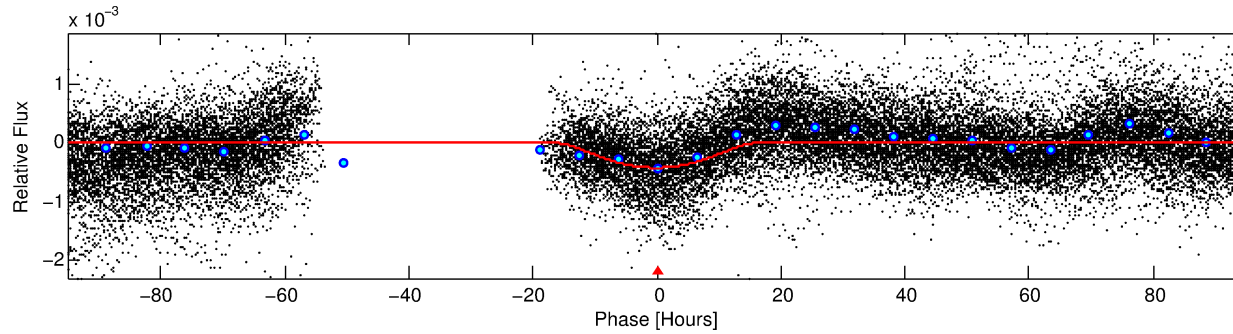
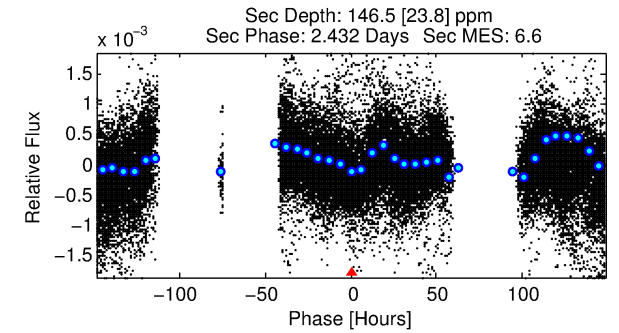
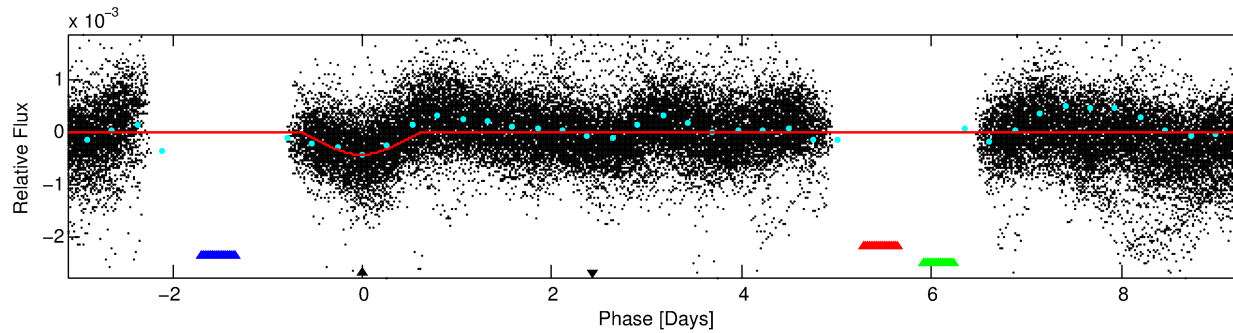
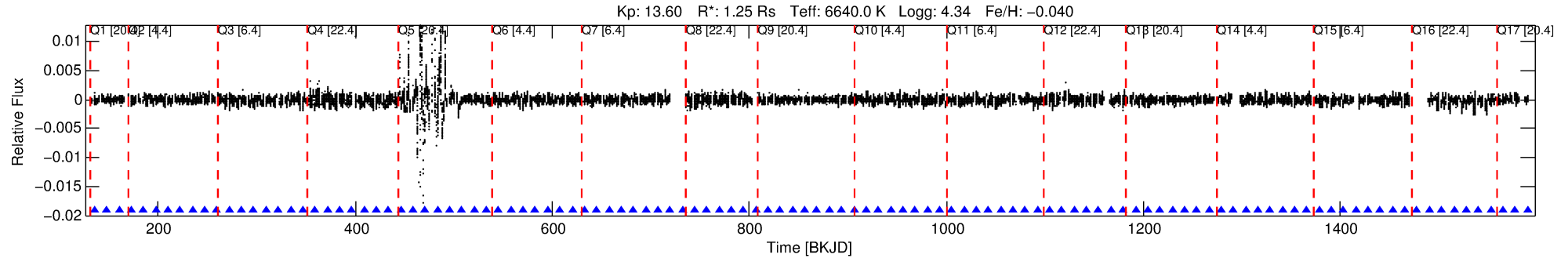
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 005385792-04

No Significant Match Found

# DV One-Page Summary

KIC: 5385792 Candidate: 4 of 4 Period: 12.428 d



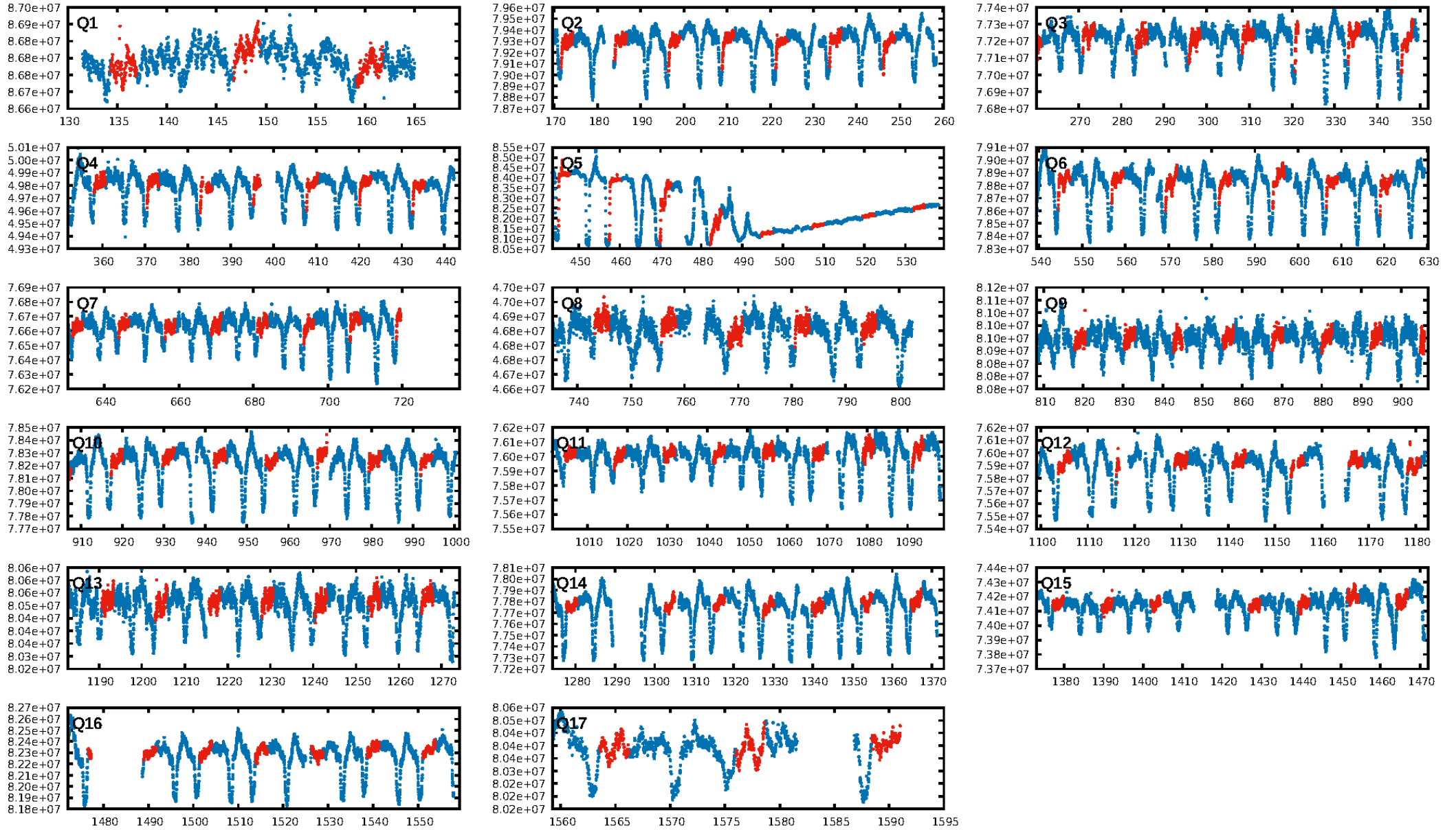
## DV Fit Results:

Period = 12.42848 [0.00058] d  
Epoch = 135.6102 [0.0424] BKJD  
Rp/R\* = 0.0363 [0.0331]  
a/R\* = 1.30 [0.08]  
b = 1.00 [0.02]  
Seff = 211.97 [91.75]  
T<sub>eq</sub> = 973 [105] K  
Rp = 4.95 [4.84] Re  
a = 0.1133 [0.0327] AU  
Ag = 42.29 [79.42] [0.52σ]  
T<sub>eff</sub> = 3836 [1764] K [1.62σ]

## DV Diagnostic Results:

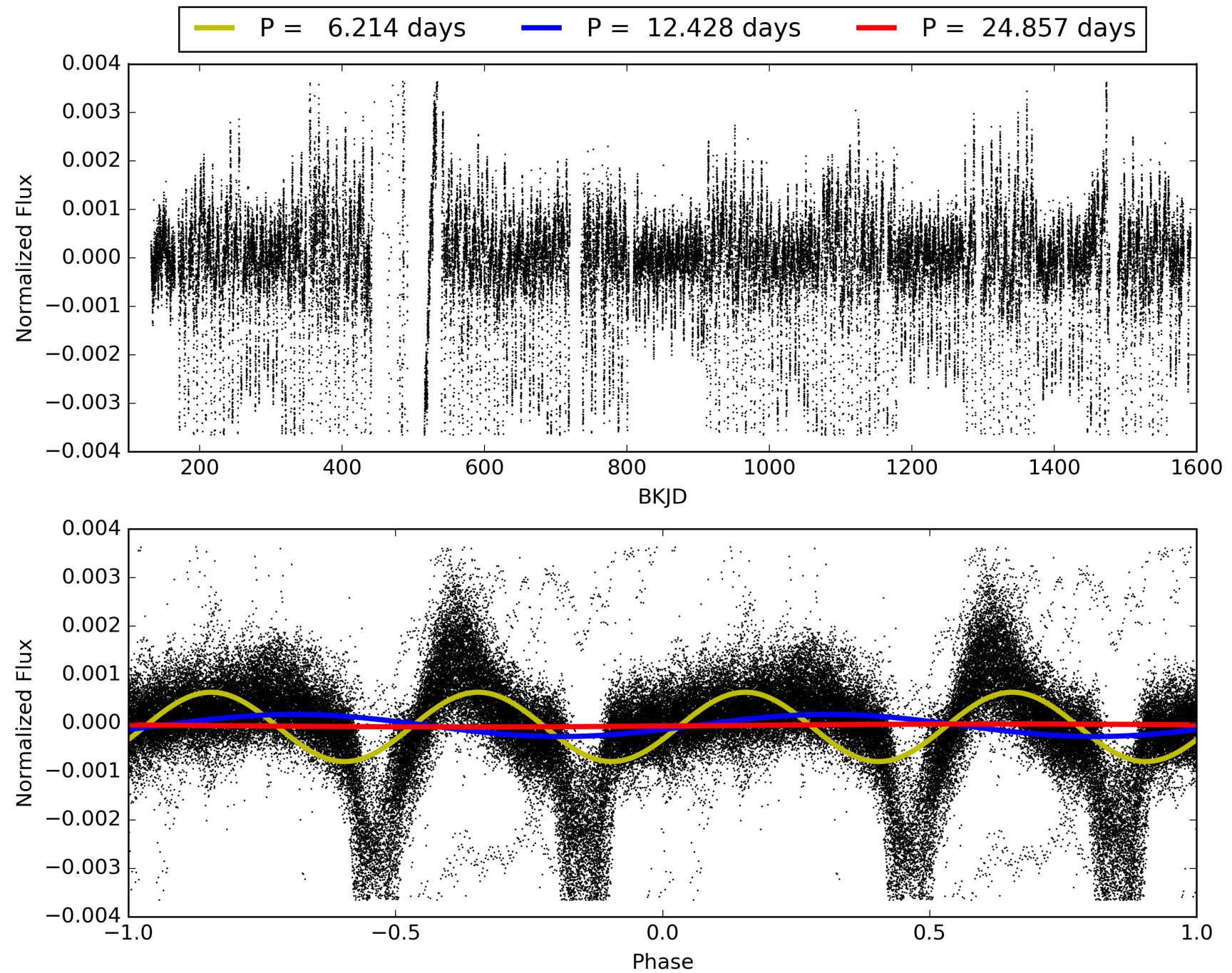
ShortPeriod-sig: 0.2% [0.00σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 84.0%  
ModelChiSquareGoF-sig: 100.0%  
Bootstrap-pfa: 3.35e-15  
RollingBand-fgt: 1.00 [105/105]  
GhostDiagnostic-chr: -0.2853  
Centroid-sig: 0.0%  
Centroid-so: 4.655 arcsec [3.31σ]  
OotOffset-rm: N/A  
KicOffset-rm: 6.870 arcsec [6.27σ]  
OotOffset-st: 0/0/0 [0]  
KicOffset-st: 4/0/2 [8]  
DiffImageQuality-fgm: 0.00 [0/8]  
DiffImageOverlap-fno: 0.00 [0/17]

# TCE 005385792-04, PDC Light Curves



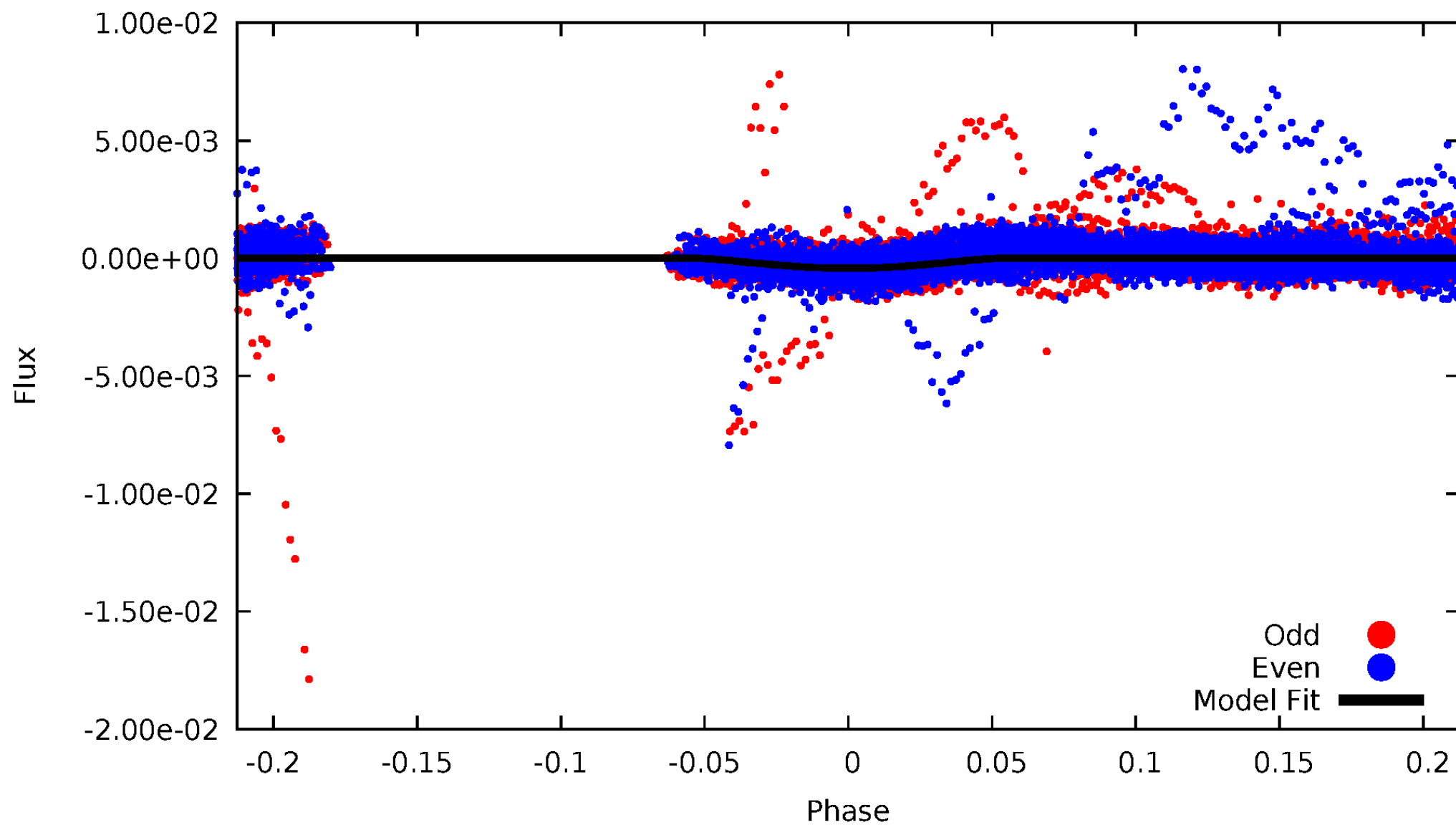


TCE 005385792-04



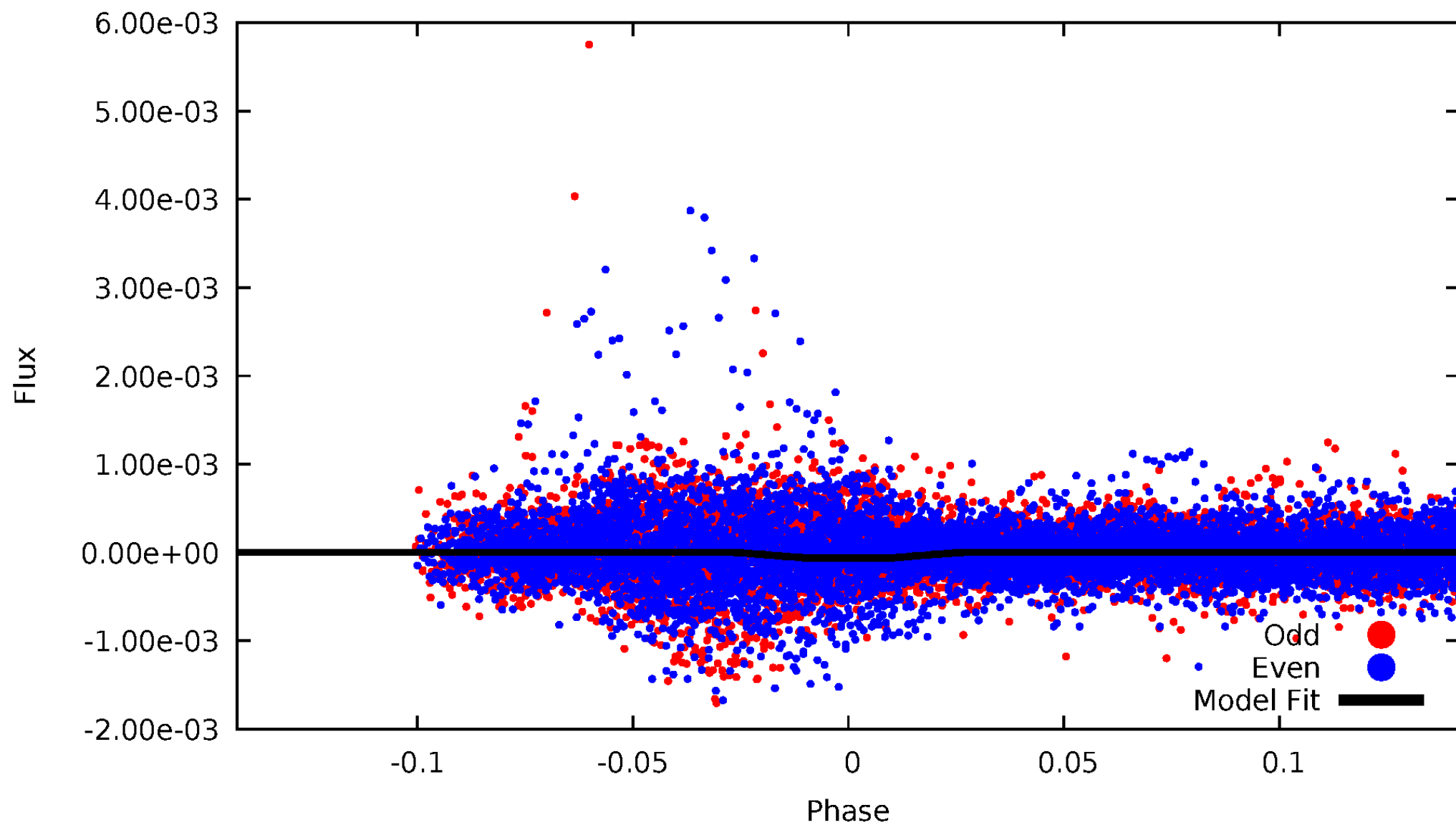
# DV Odd/Even

TCE 005385792-04



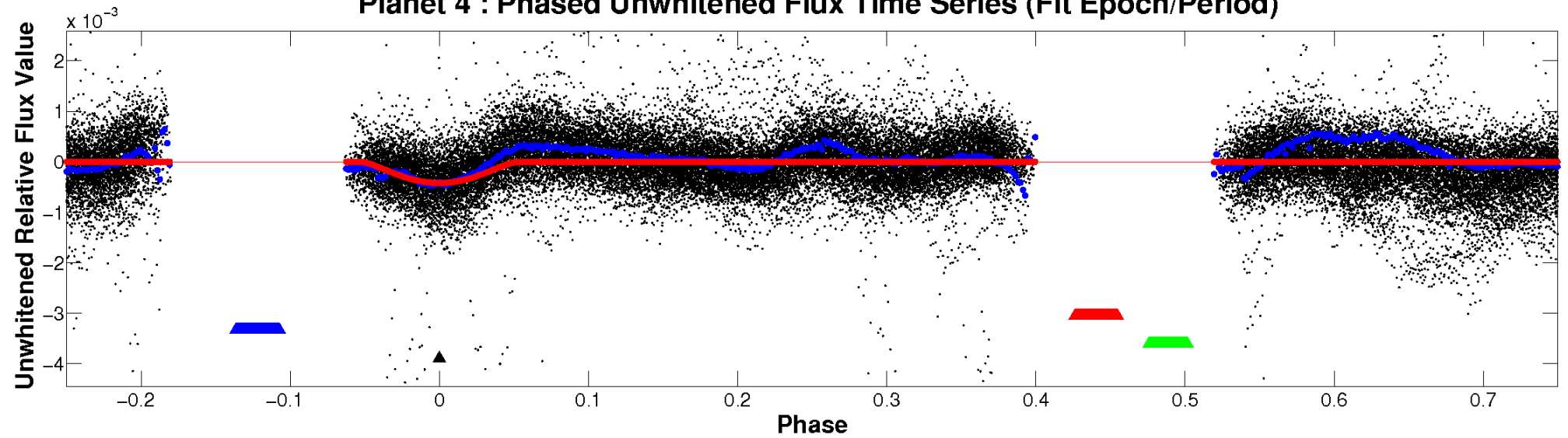
# ALT Odd/Even

TCE 005385792-04

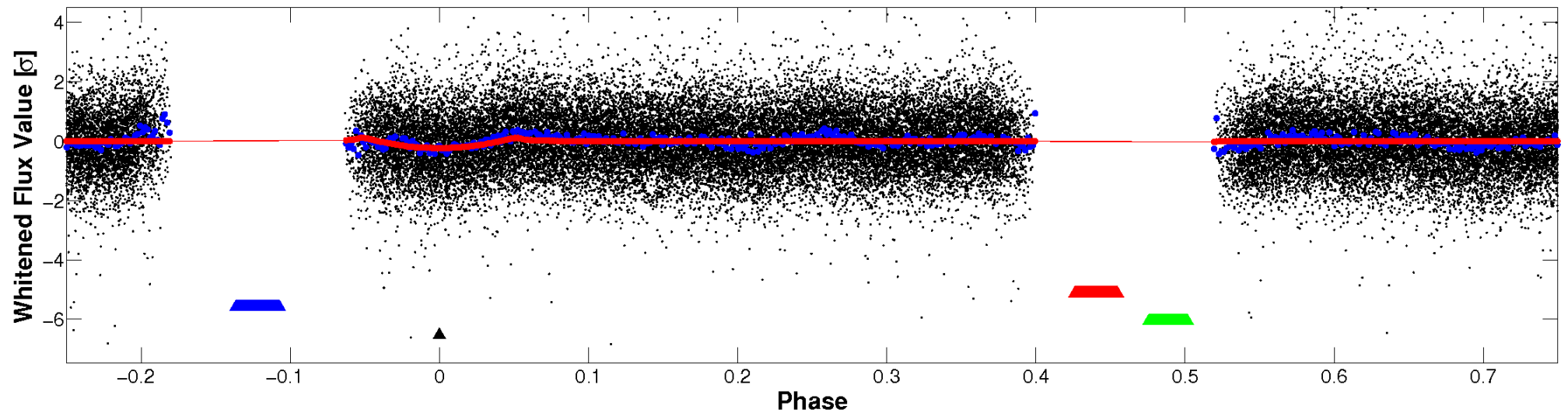


# Non-Whitened Vs. Whitened Light Curve

## Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

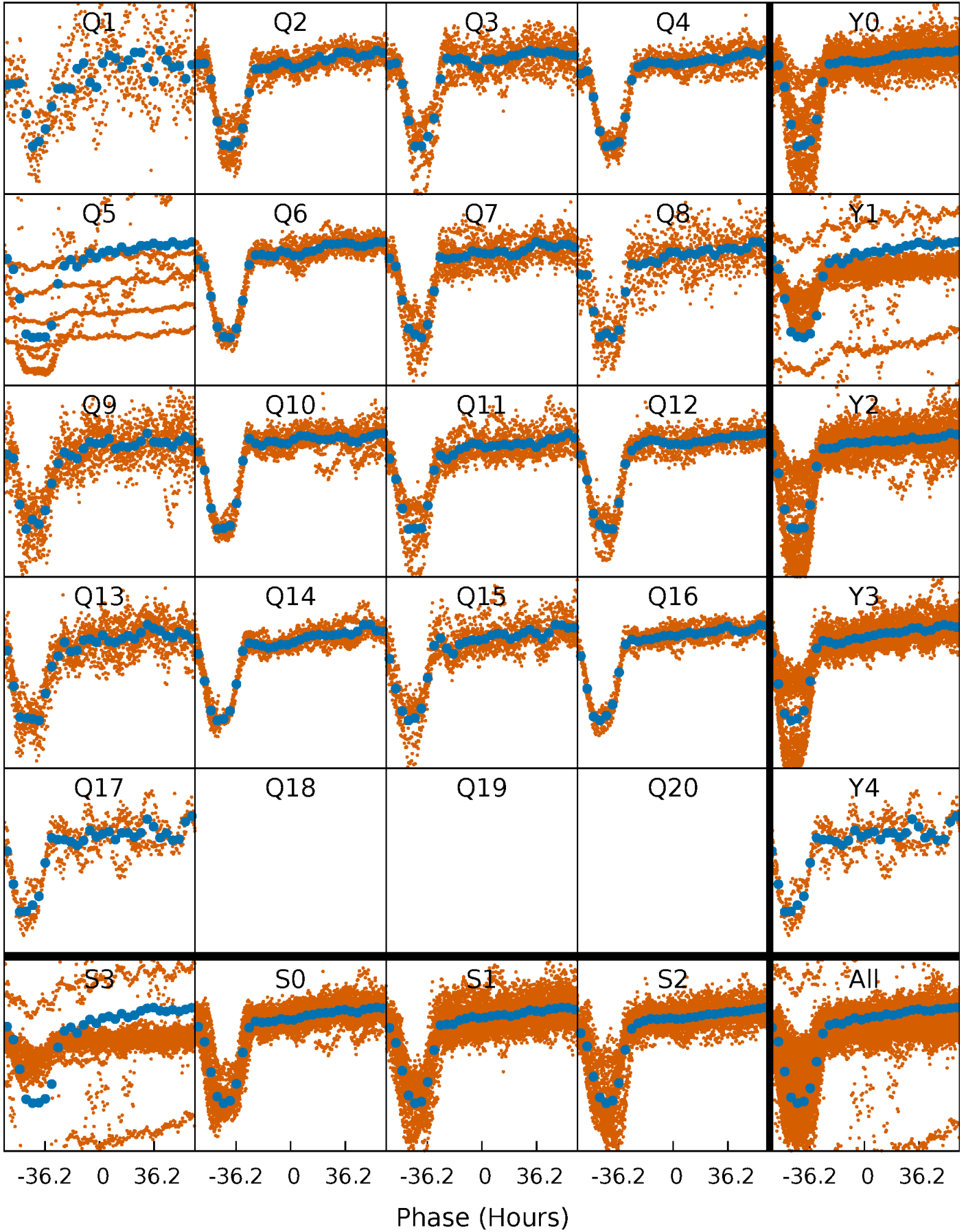


## Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

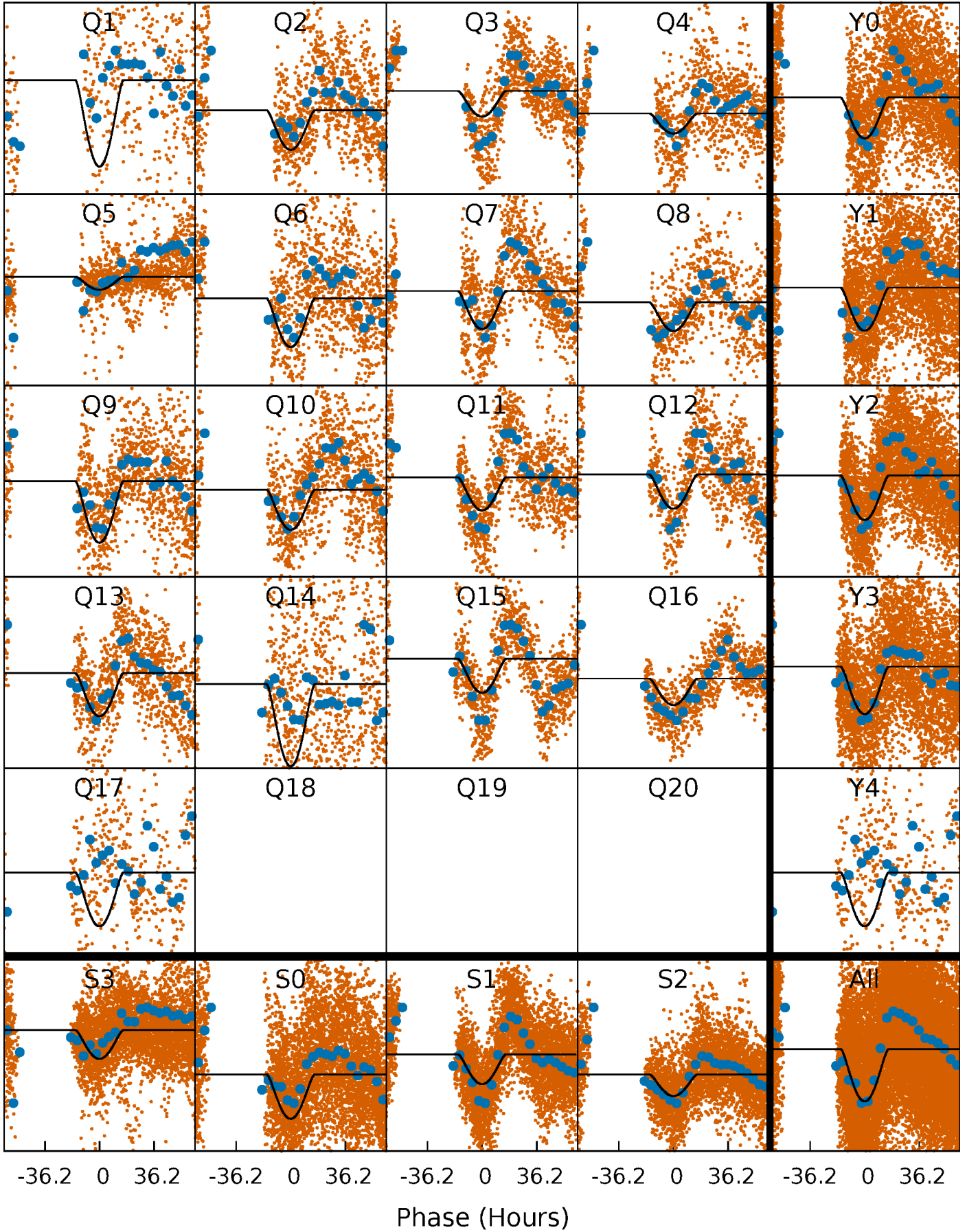
TCE 005385792-04   P= 12.428477 Days    $T_0=135.610217$  (BKJD)





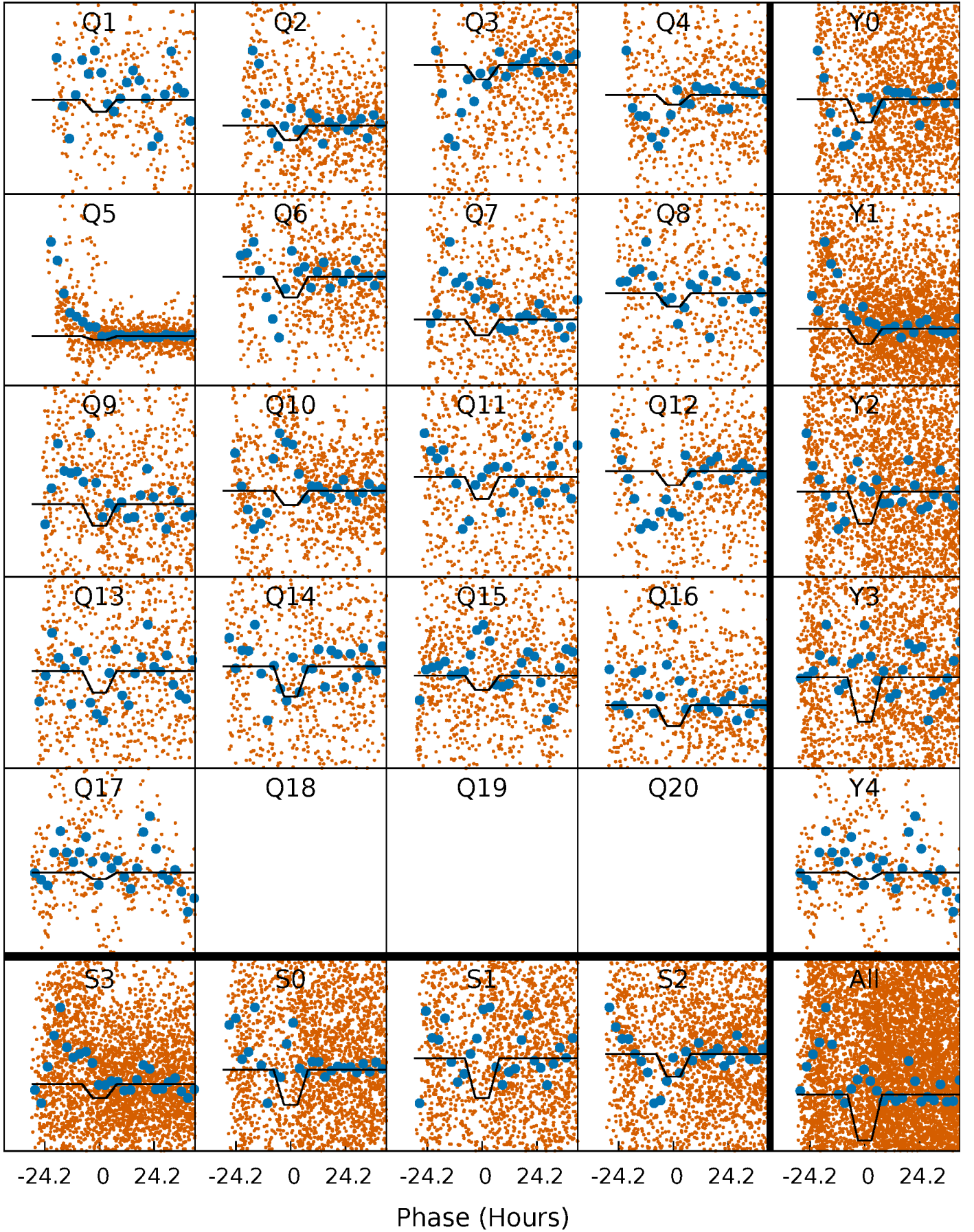
# DV Quarter-Phased Transit Curves

TCE 005385792-04   P= 12.428477 Days    $T_0=135.610217$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 005385792-04     $P = 12.428850$  Days     $T_0 = 136.029764$  (BKJD)

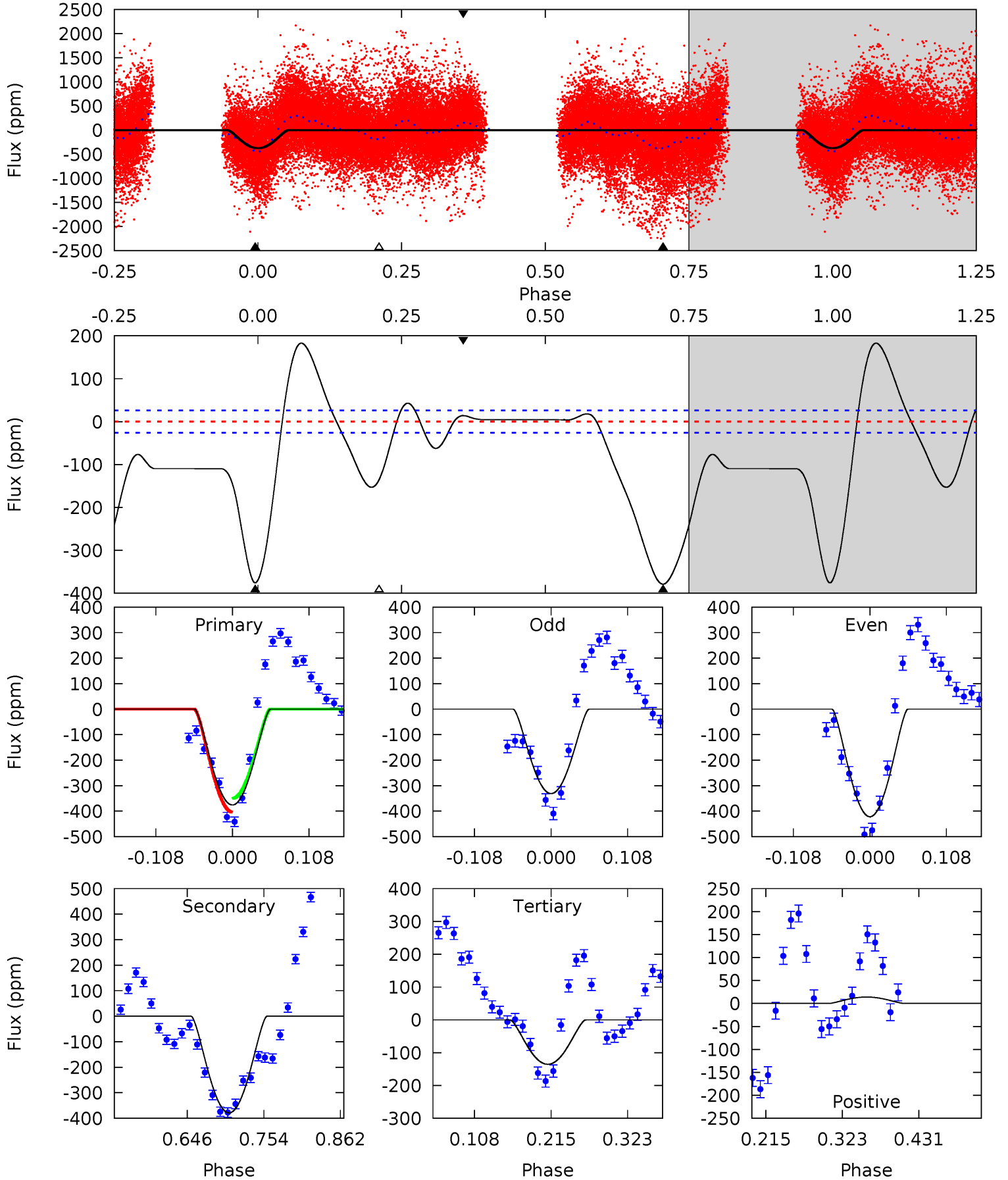




# DV Model-Shift Uniqueness Test

005385792-04, P = 12.428477 Days, E = 123.181740 Days

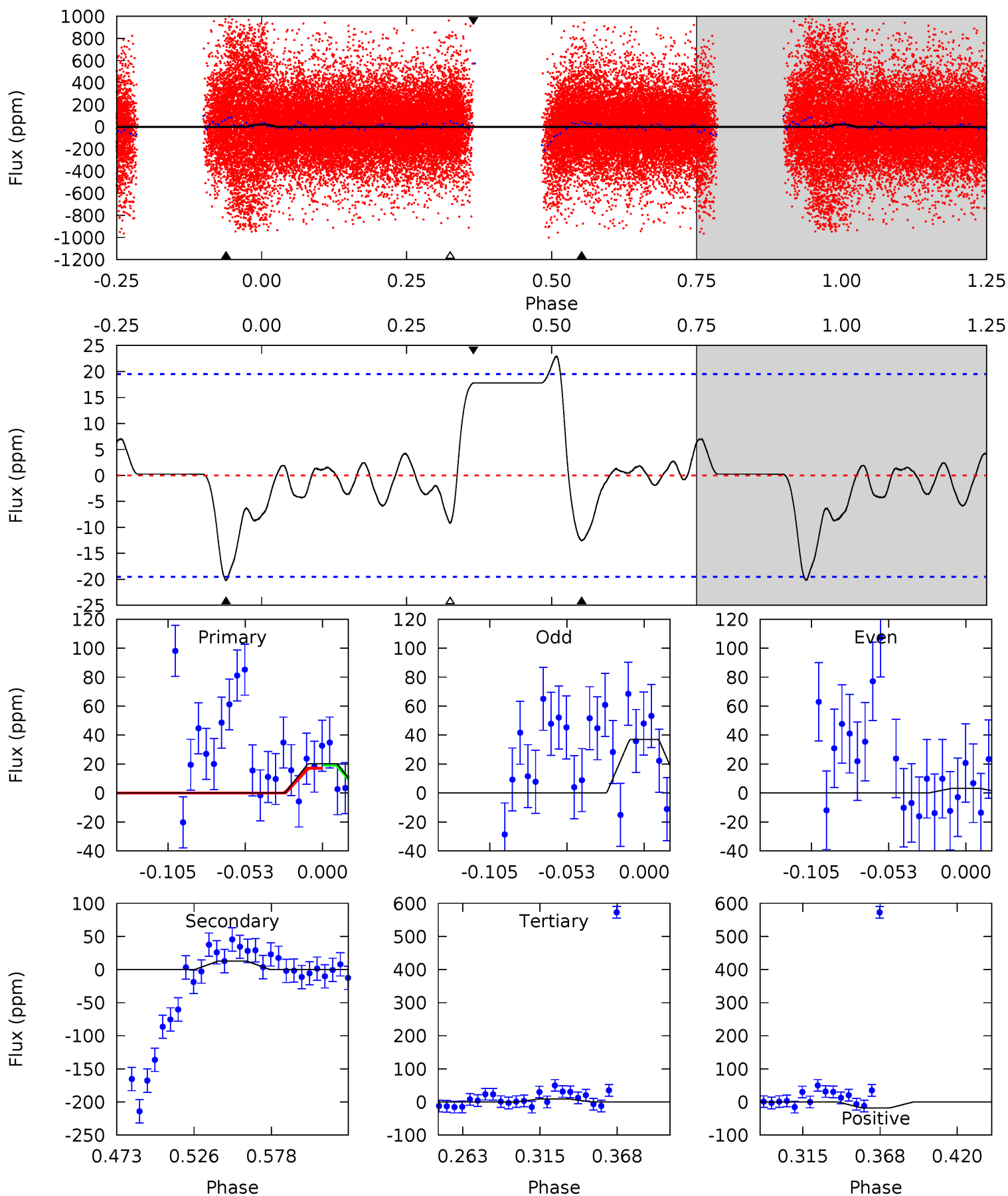
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
65.6	66.2	23.6	2.44	4.55	1.61	10.3	42.0	63.2	42.5	63.7	7.96	1.12	0.33	4.66



# Alt Model-Shift Uniqueness Test

005385792-04, P = 12.428850 Days, E = 123.600914 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
4.86	3.02	2.22	4.28	4.70	1.94	1.00	2.64	0.57	0.81	-1.26	4.06	0.11	0.53	0.26



### Stellar Parameters For KIC 005385792

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6640^{+161}_{-241}$	$4.343^{+0.058}_{-0.217}$	$-0.040^{+0.250}_{-0.350}$	$1.250^{+0.441}_{-0.147}$	$1.261^{+0.187}_{-0.187}$	$0.911^{+0.289}_{-0.517}$
	+2%/-4%	+1%/-5%	+625%/-875%	+35%/-12%	+15%/-15%	+32%/-57%
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 005385792-04 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-379 \pm 6$	$6.01^{+4.48}_{-3.62}$	$1388^{+111}_{-67}$	$4638^{+2518}_{-836}$	$71^{+371}_{-47}$
Alt.	$-13 \pm 4$	$3.76^{+3.87}_{-2.61}$	$1384^{+113}_{-67}$	$3034^{+1398}_{-578}$	$6.006^{+52.711}_{-4.595}$

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

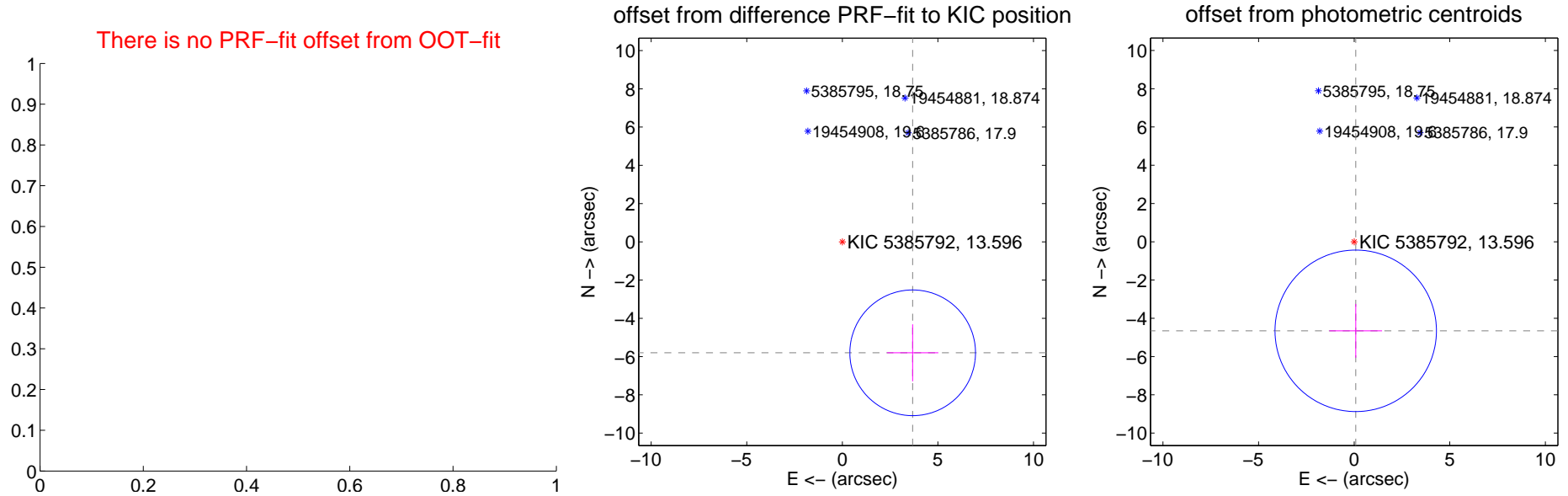
## DV Centroid Data

Supplemental centroid analysis for 005385792-04. Kepler magnitude: 13.60. Transit SNR 12.90

There are 0 quarters with good PRF difference image offsets

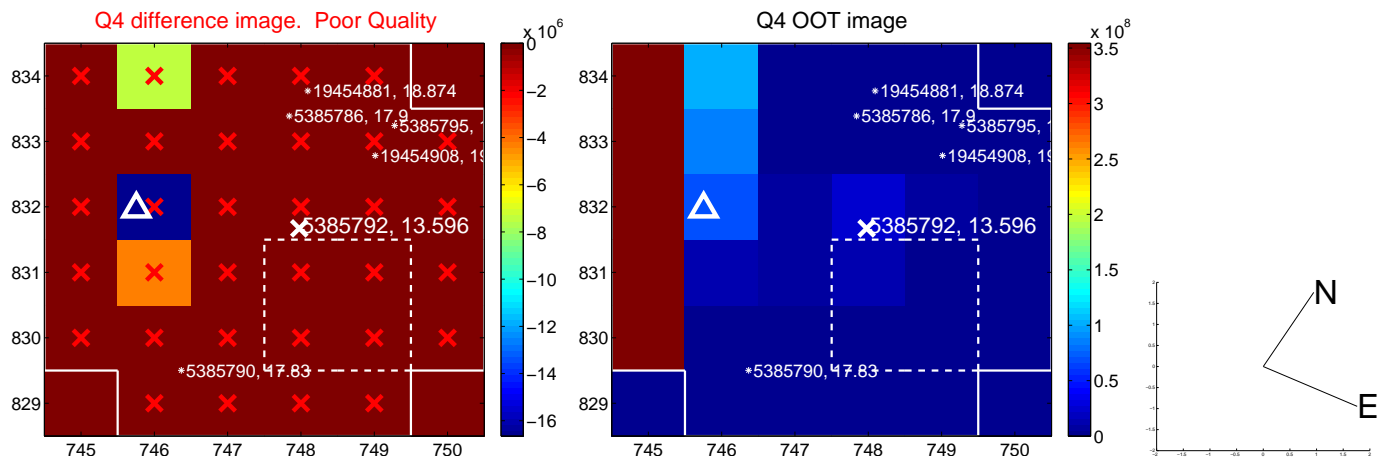
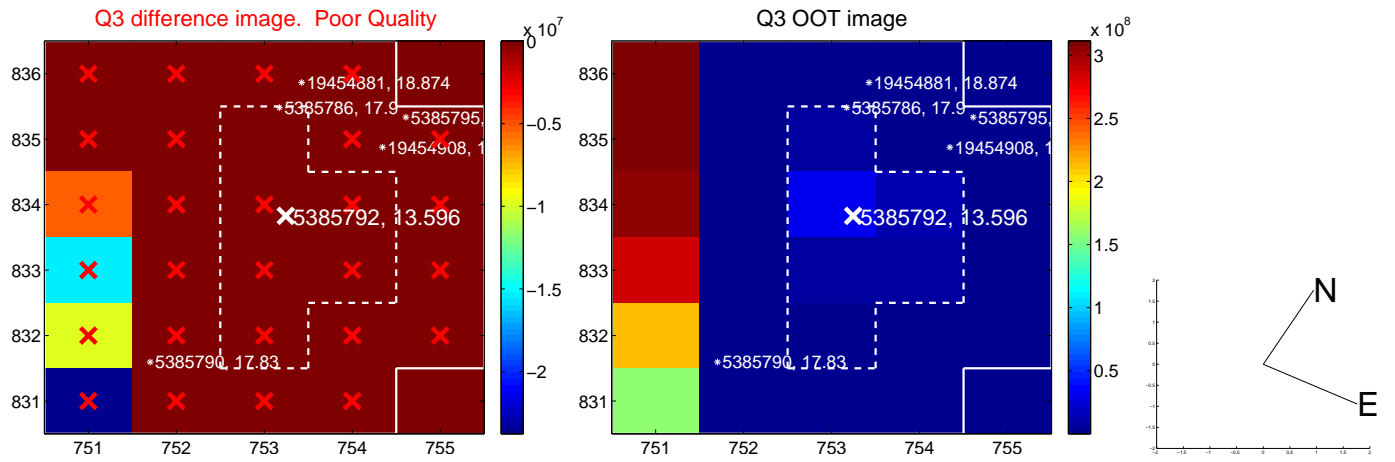
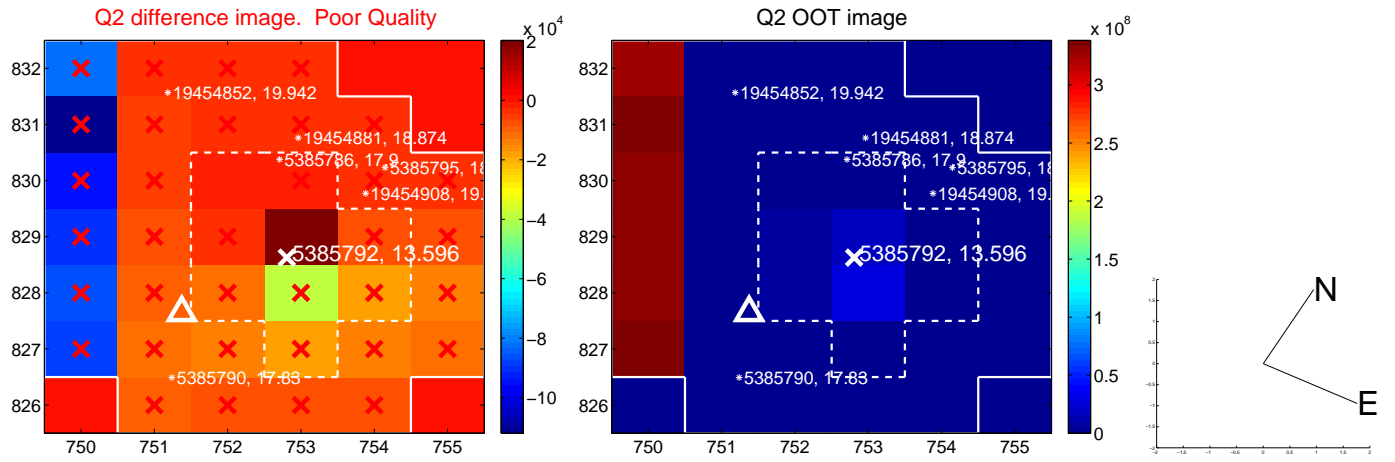
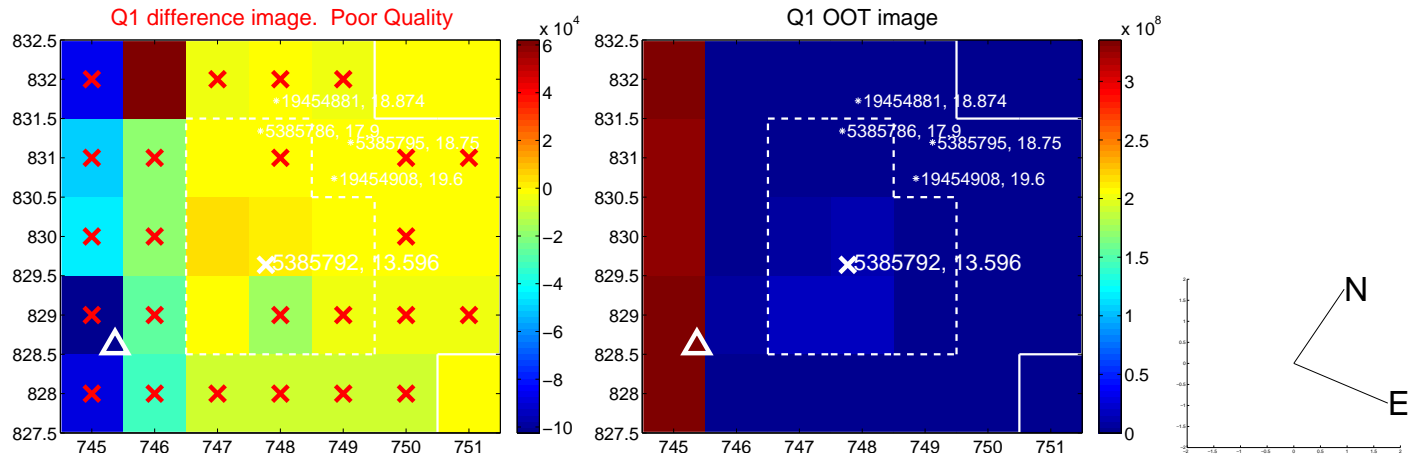
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	$6.870 \pm 1.095$	6.27	$-3.680 \pm 1.343$	$-5.801 \pm 1.489$
photometric centroid source offset	$4.66 \pm 1.41$	3.31	$-0.08 \pm 1.38$	$-4.65 \pm 1.41$

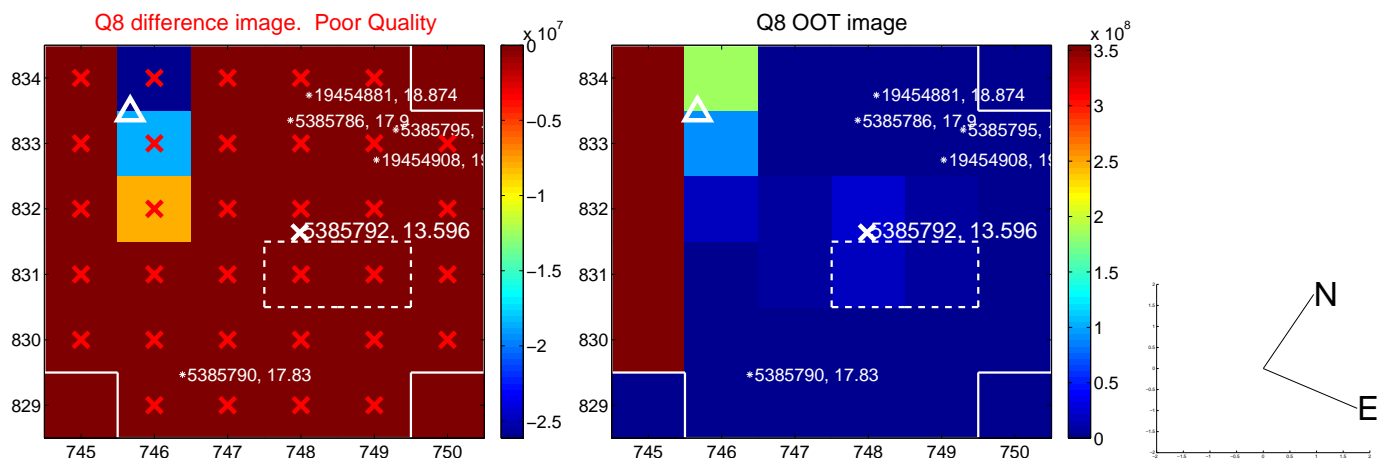
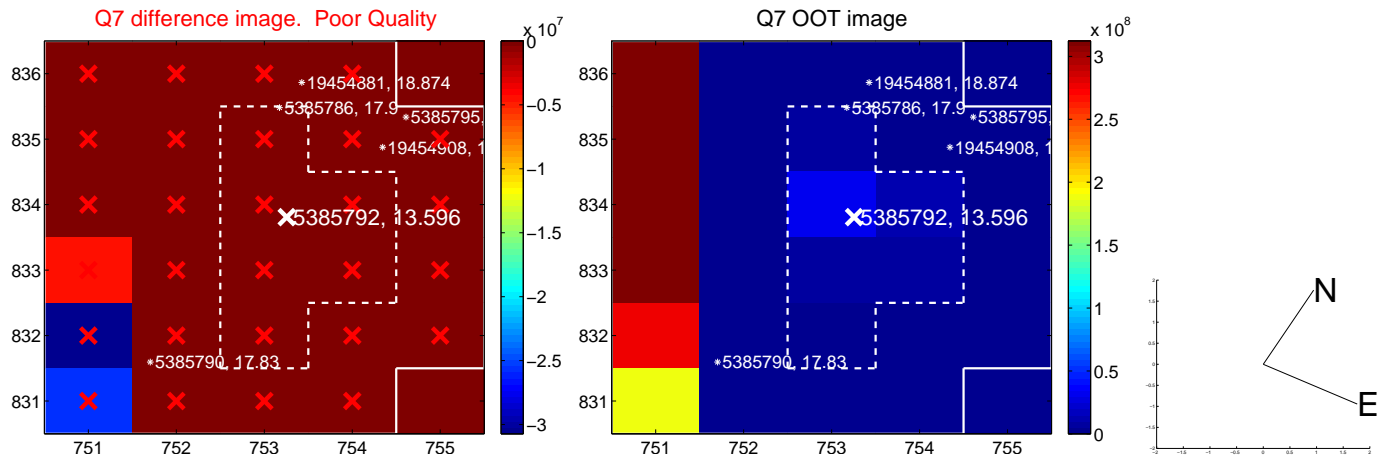
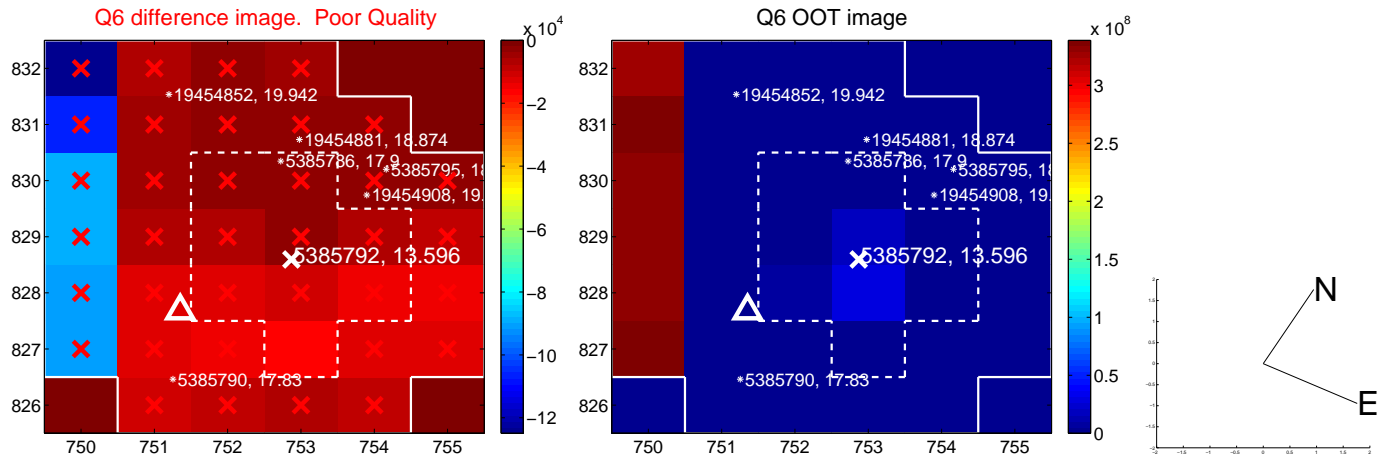
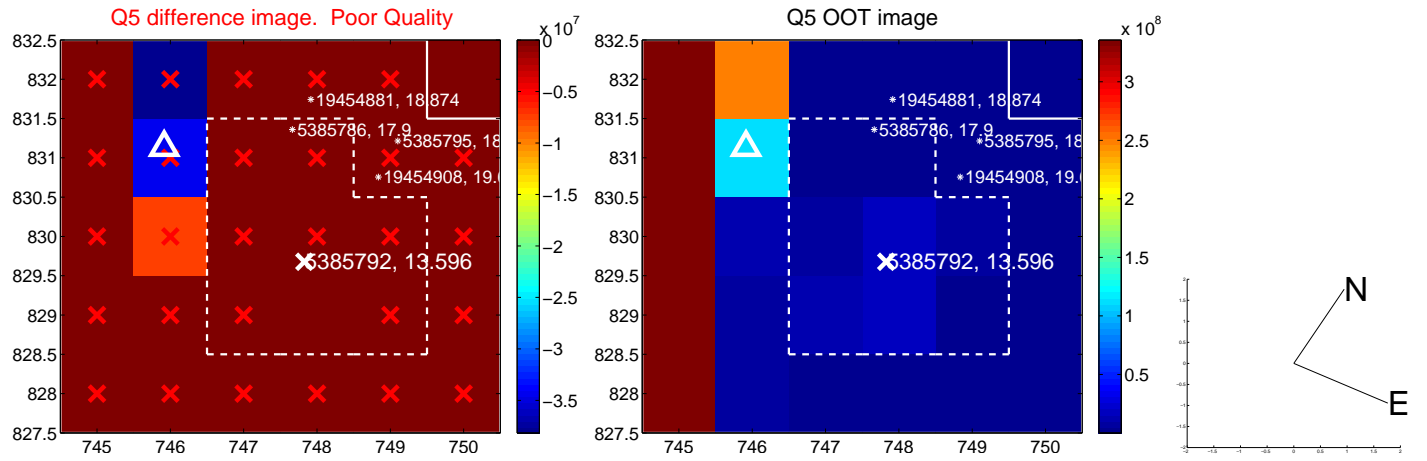


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

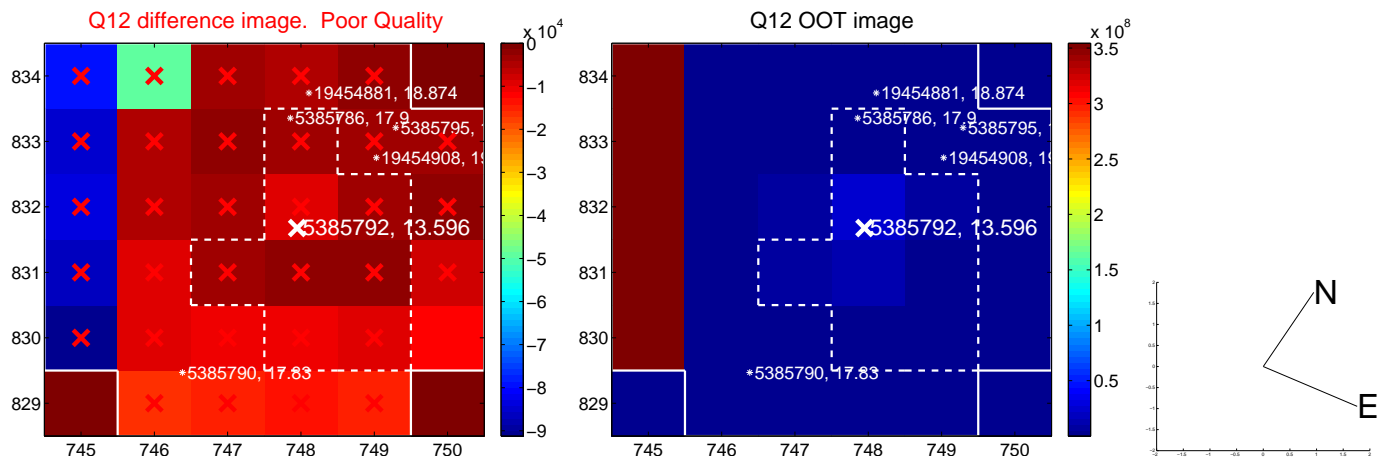
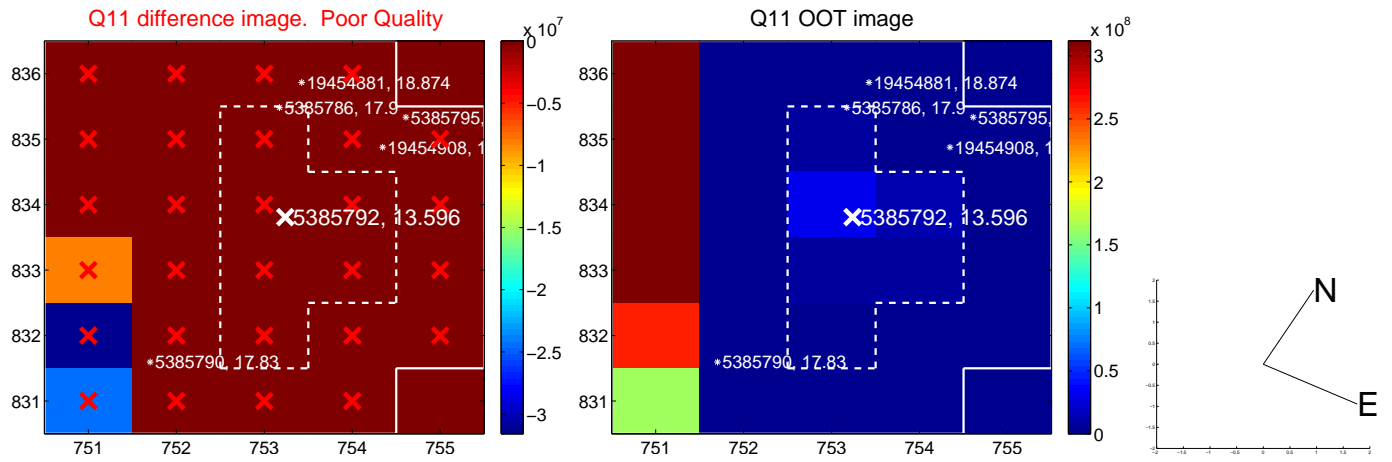
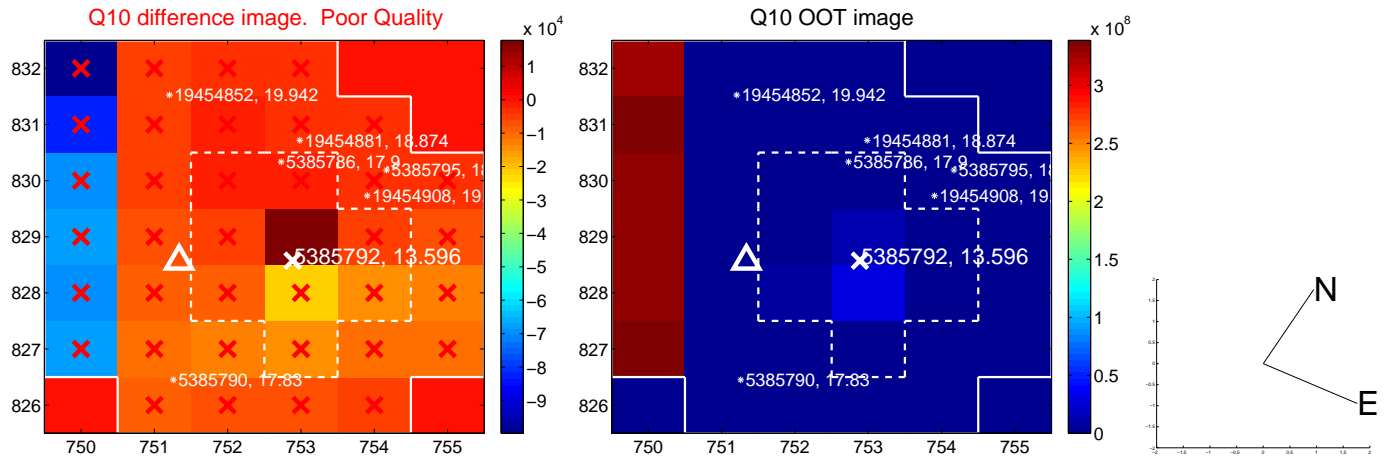
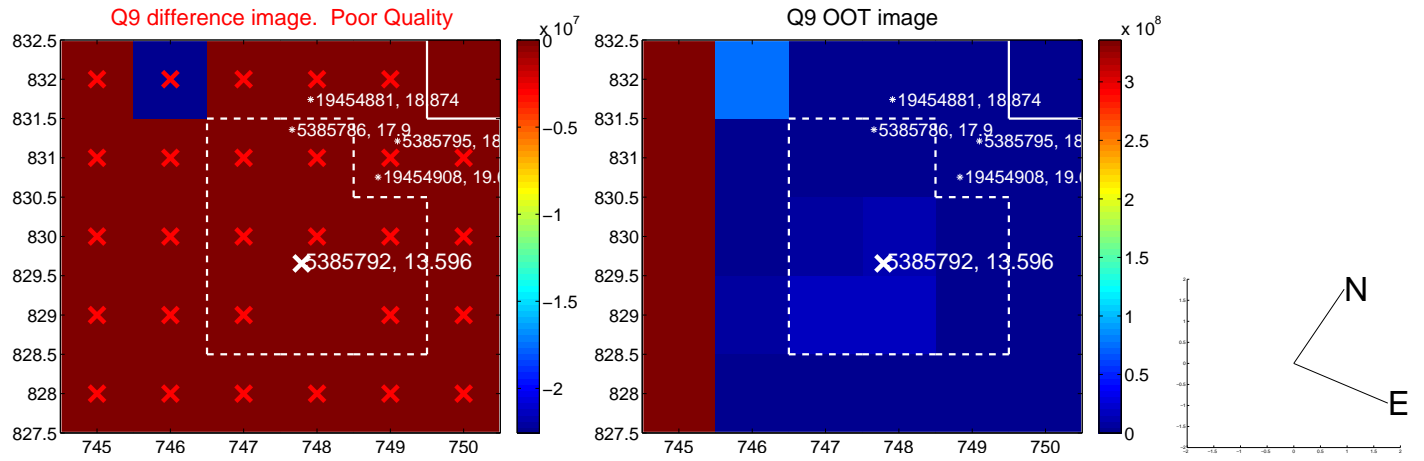
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

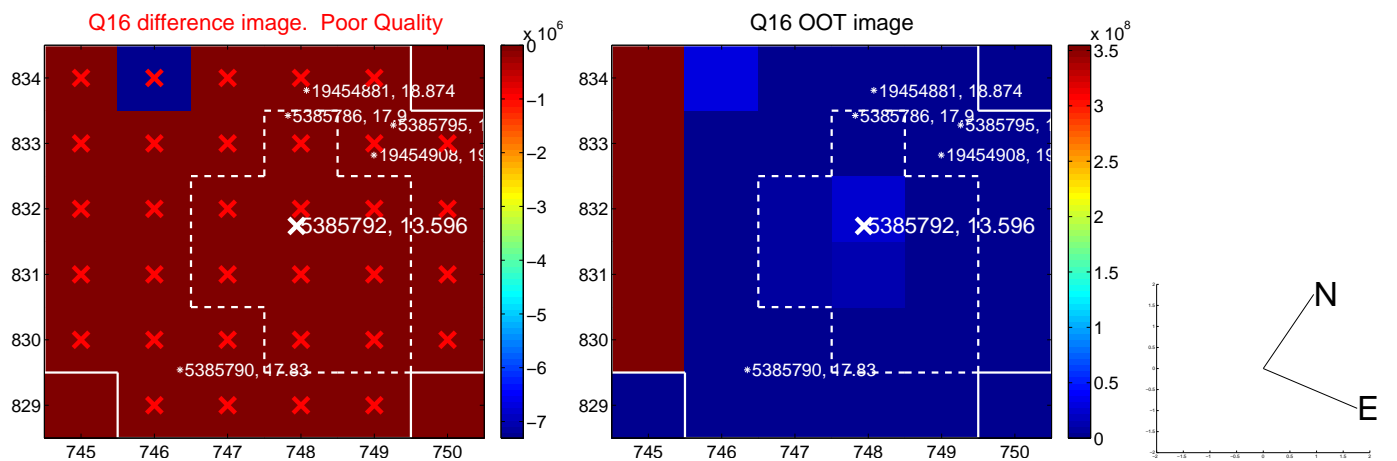
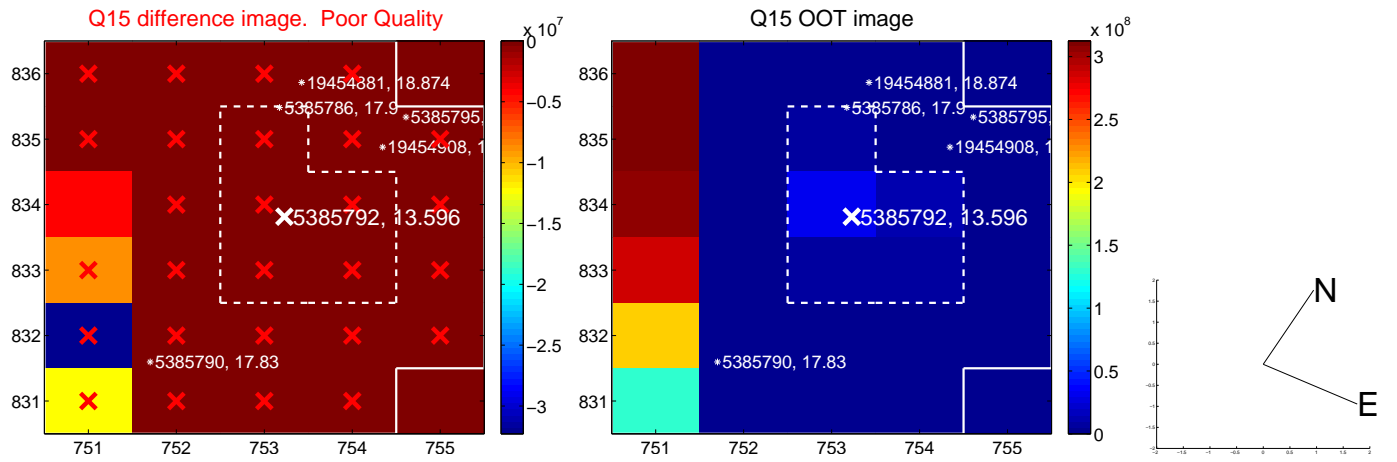
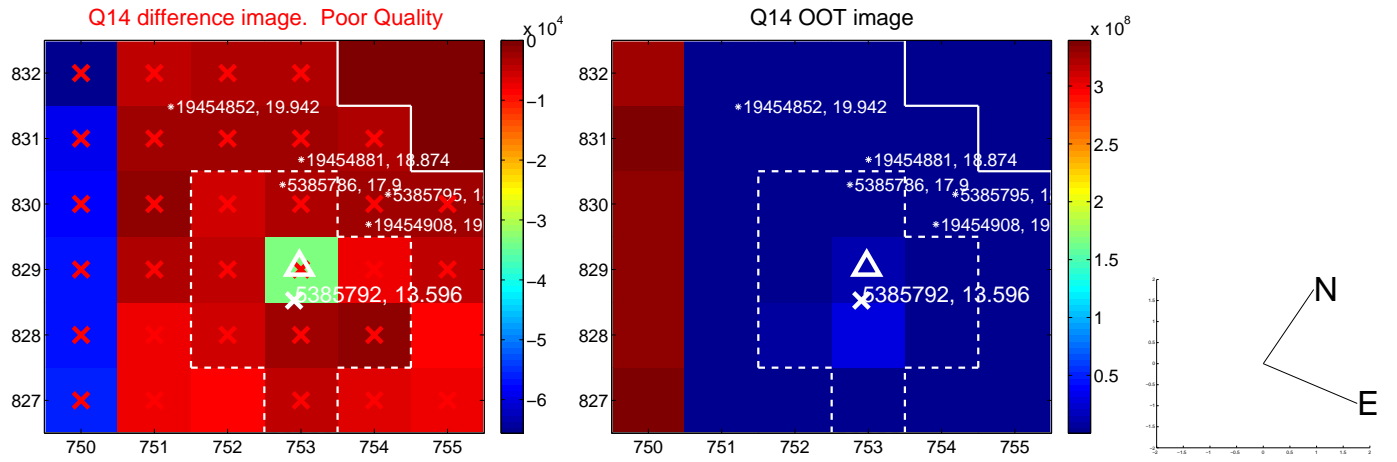
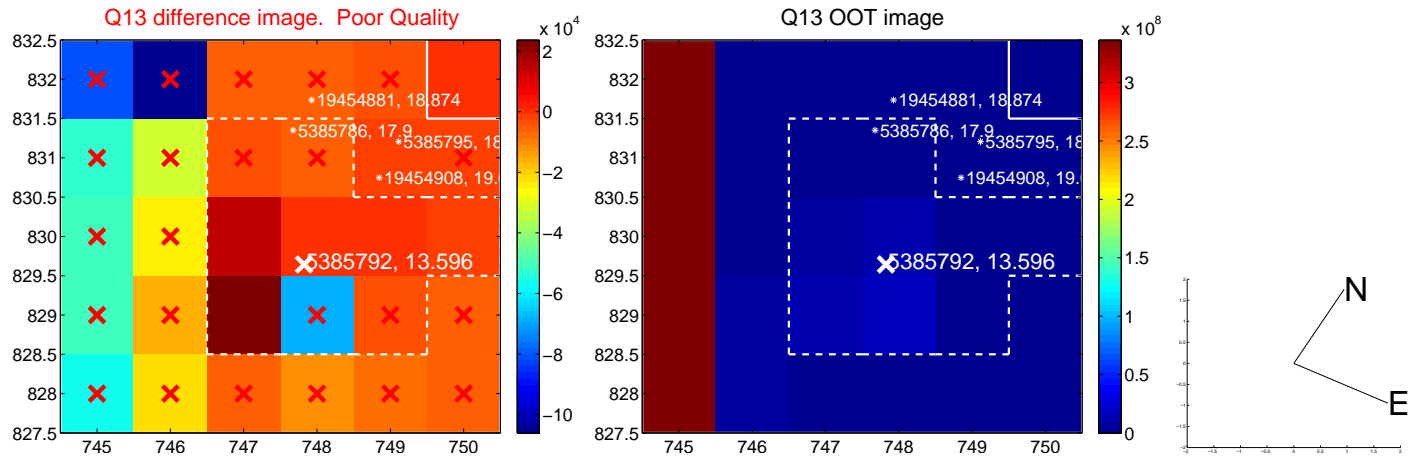


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

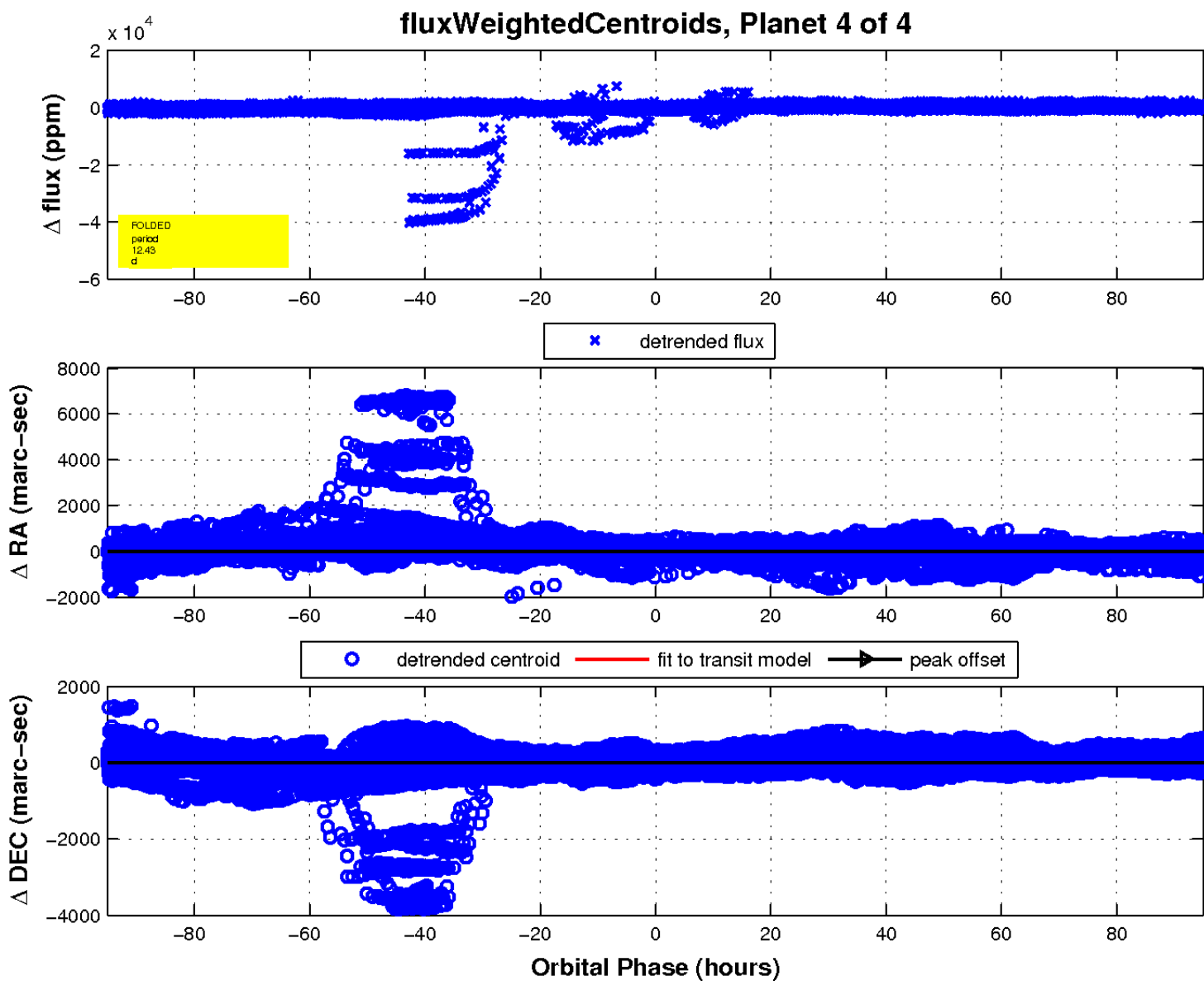
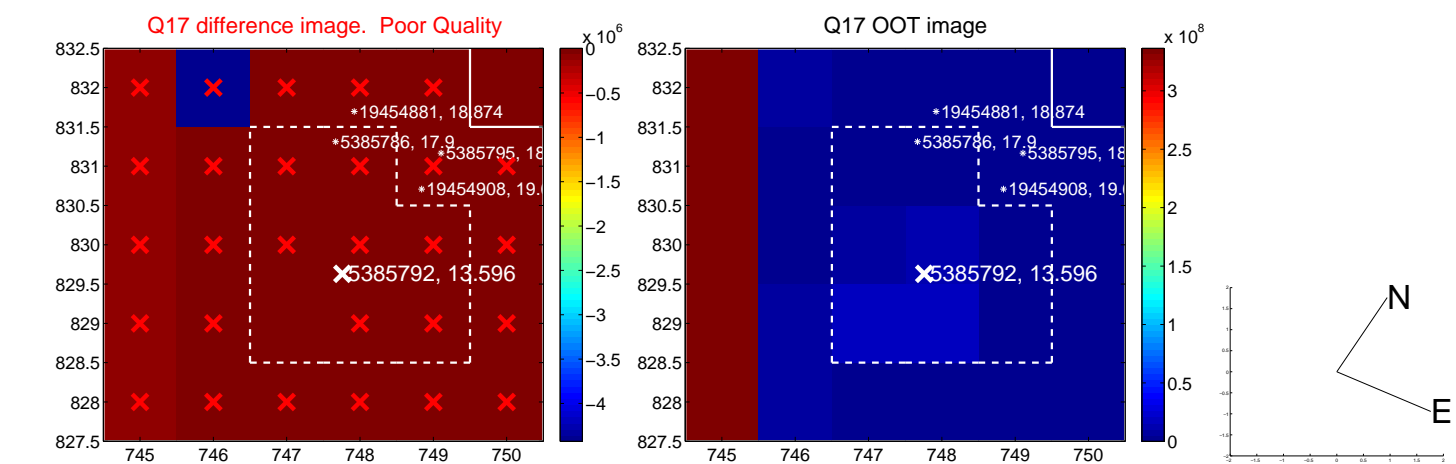




white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

