

# KIC 010483436

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010483436-01	OBS	No	2.151570	132.635029	47.1	1.865	18.1	21.6	1.83	7602	1.46	6492.44
010483436-02	OBS	No	4.303206	134.910950	10.6	10.482	12.1	3.4	1.83	7602	0.69	2576.47
010483436-03	OBS	No	111.989531	194.017254	220.1	15.000	25.3	-1.0	1.83	7602	2.75	33.41
010483436-04	OBS	No	1.434597	131.993627	16.5	5.110	13.2	10.0	1.83	7602	0.93	11145.73
010483436-05	OBS	No	1.075175	132.166864	4.1	1.268	14.6	1.7	1.83	7602	0.41	16372.30
010483436-06	OBS	No	1.075793	131.990196	1.3	0.773	11.2	0.4	1.83	7602	0.21	16359.76
010483436-07	OBS	No	79.766297	156.928877	228.0	1.500	8.9	7.9	1.83	7602	2.93	52.52
010483436-08	OBS	No	73.264201	169.197290	111.3	4.500	9.6	-1.0	1.83	7602	1.96	58.83

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010483436-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_SATURATED
010483436-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED
010483436-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010483436-04	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
010483436-05	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010483436-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
010483436-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
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**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

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

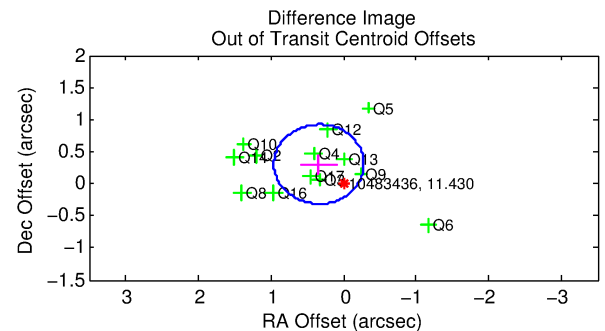
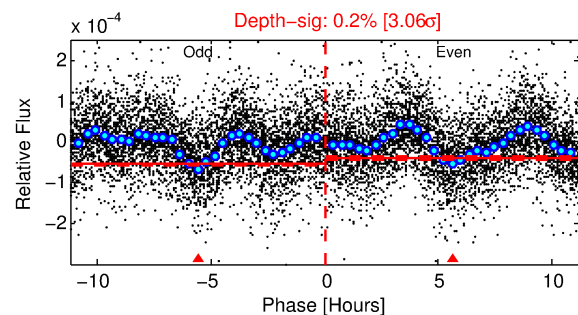
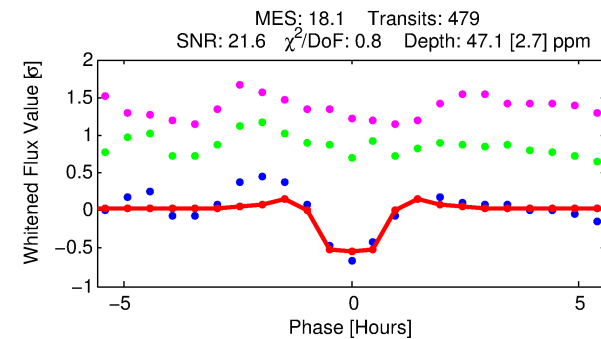
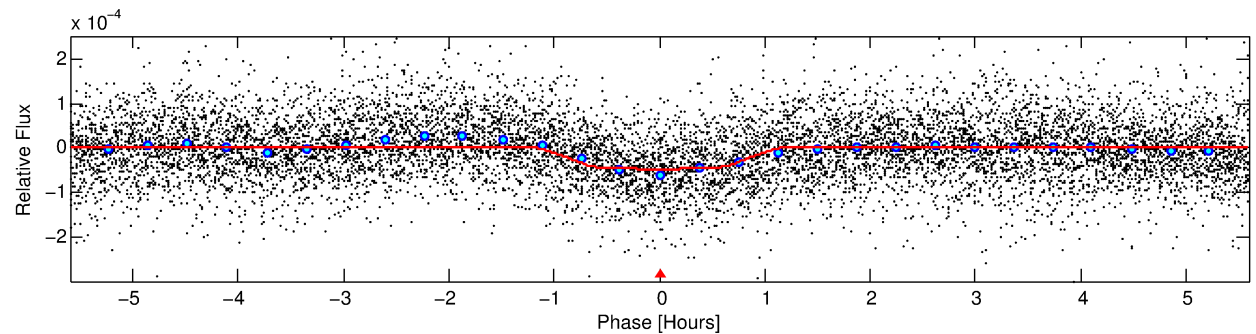
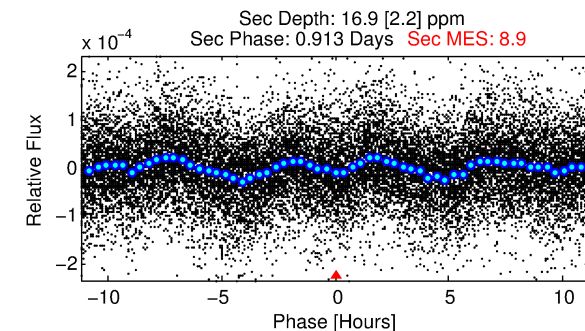
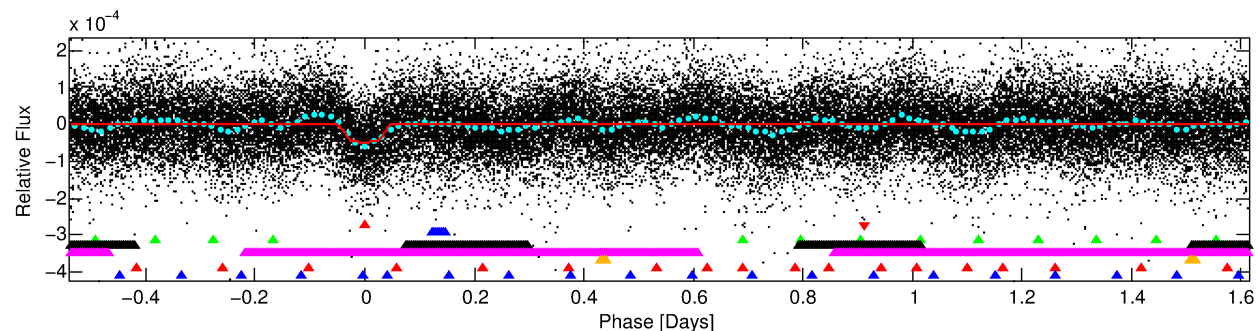
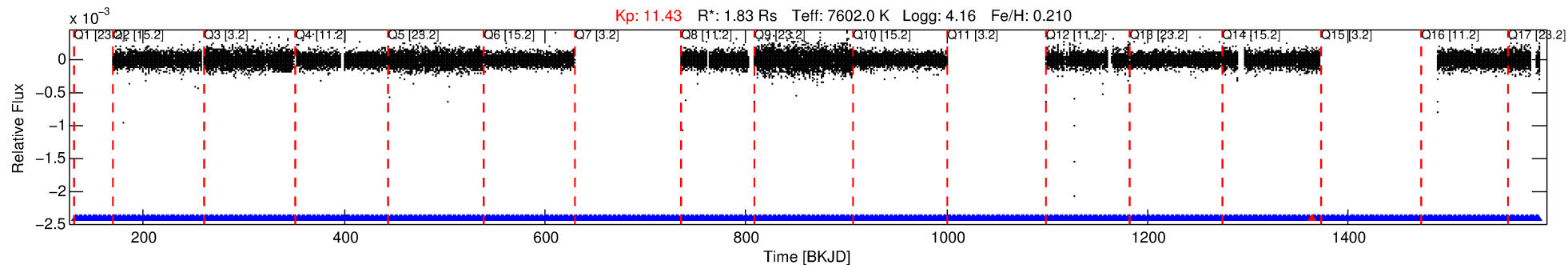
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 010483436-01

No Significant Match Found

# DV One-Page Summary

KIC: 10483436 Candidate: 1 of 8 Period: 2.152 d



## DV Fit Results:

Period = 2.15157 [0.00001] d  
Epoch = 132.6350 [0.0010] BKJD  
 $R_p/R^*$  = 0.0073 [0.0011]  
 $a/R^*$  = 4.06 [3.58]  
 $b$  = 0.90 [0.20]  
 $S_{\text{eff}}$  = 6492.44 [2630.38]  
 $T_{\text{eq}}$  = 2289 [232] K  
 $R_p$  = 1.46 [0.50]  $R_e$   
 $a$  = 0.0393 [0.0101] AU  
 $A_g$  = 6.75 [3.28] [1.75σ]  
Teffp = 5704 [519] K [6.01σ]

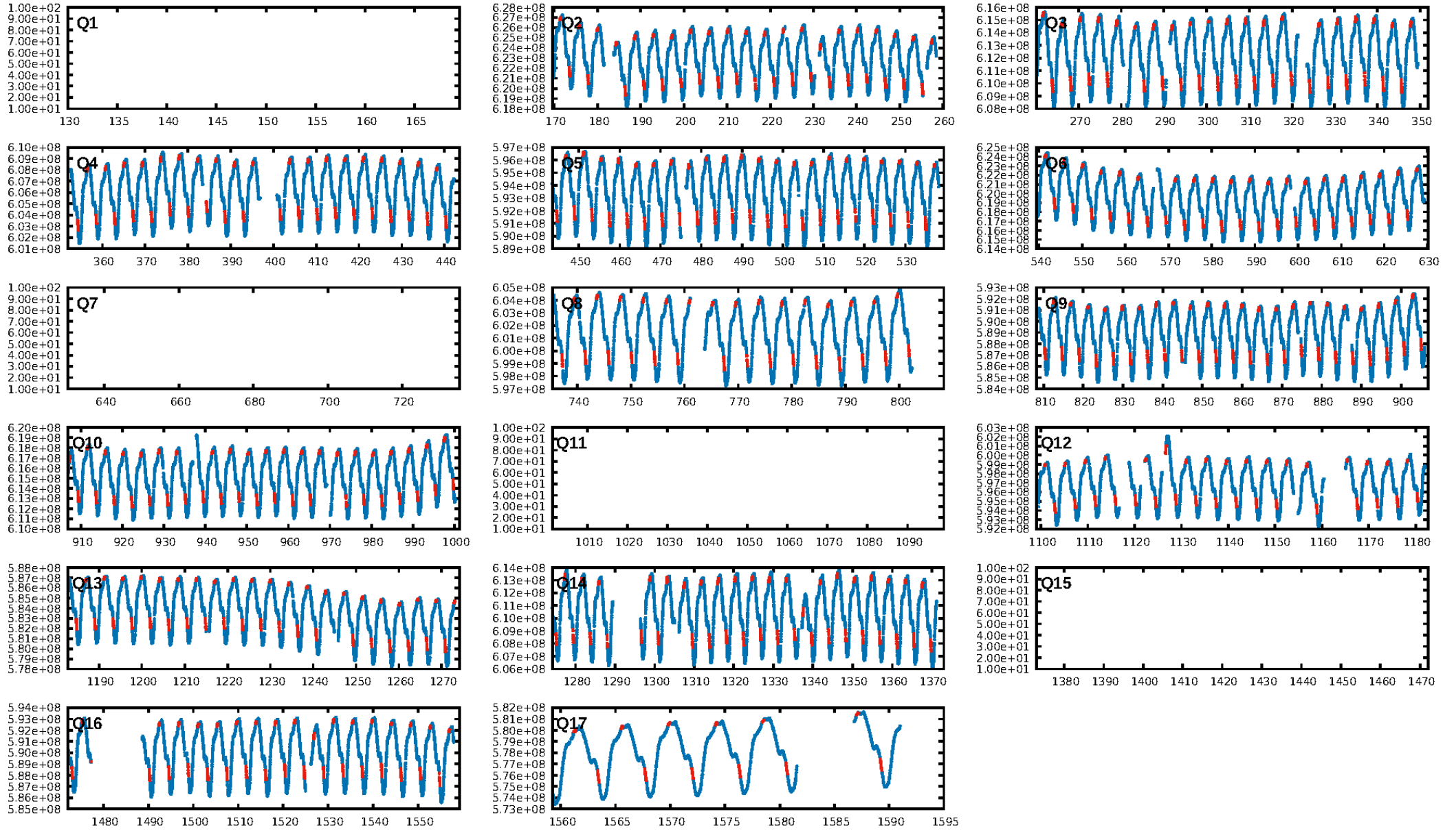
## DV Diagnostic Results:

ShortPeriod-sig: 99.8% [3.16σ]  
LongPeriod-sig: 100.0% [4.85σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [466/467]  
GhostDiagnostic-chr: 1.083  
Centroid-sig: 26.0%  
Centroid-so: 0.369 arcsec [0.77σ]  
OotOffset-rm: 0.455 arcsec [2.21σ]  
KicOffset-rm: 0.471 arcsec [2.25σ]  
OotOffset-st: 4/1/4/4 [13]  
KicOffset-st: 4/1/4/4 [13]  
DiffImageQuality-fgm: 0.00 [0/13]  
DiffImageOverlap-fno: 0.38 [5/13]

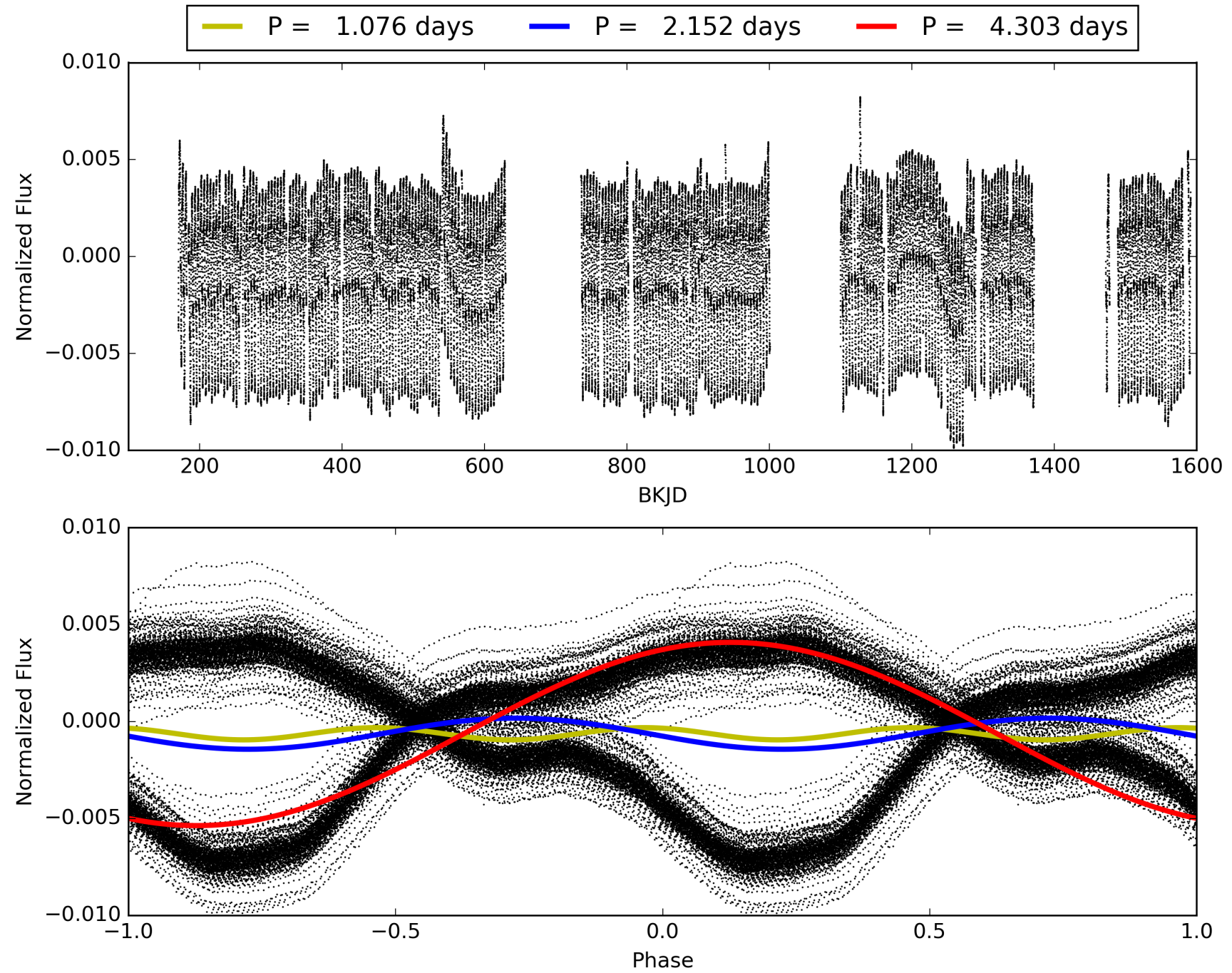
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:52:10 Z

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

# TCE 010483436-01, PDC Light Curves



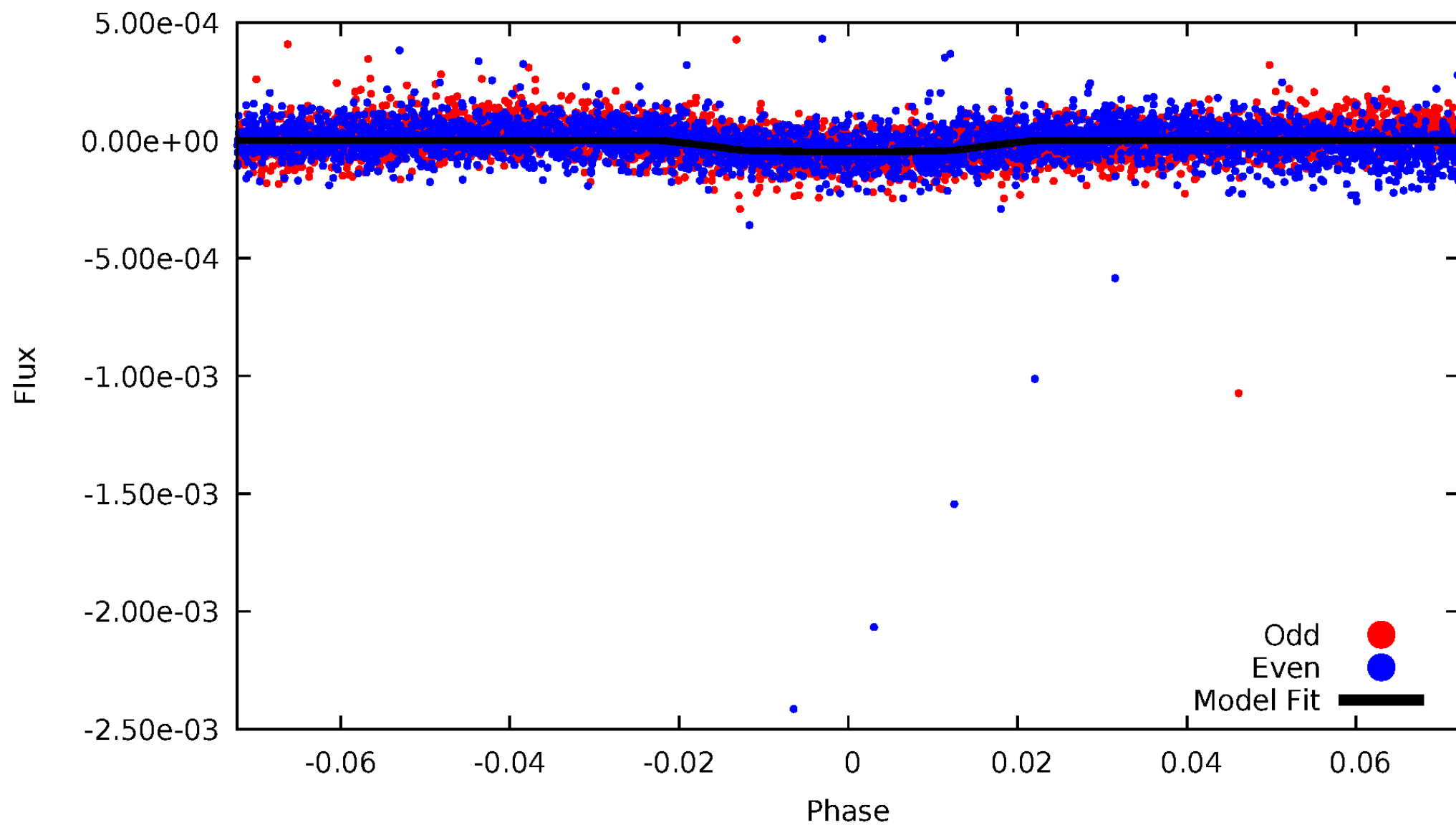
TCE 010483436-01





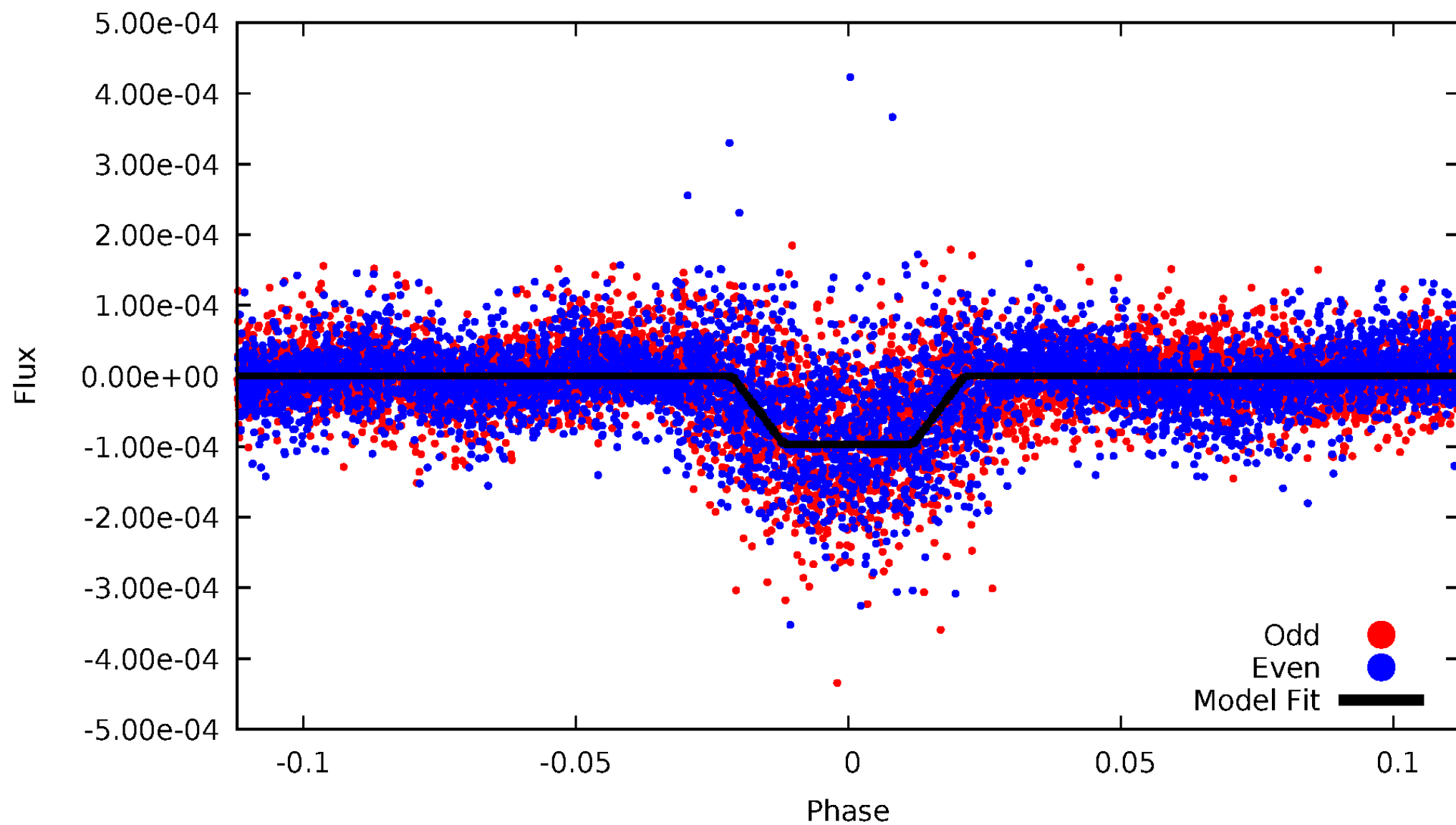
# DV Odd/Even

TCE 010483436-01



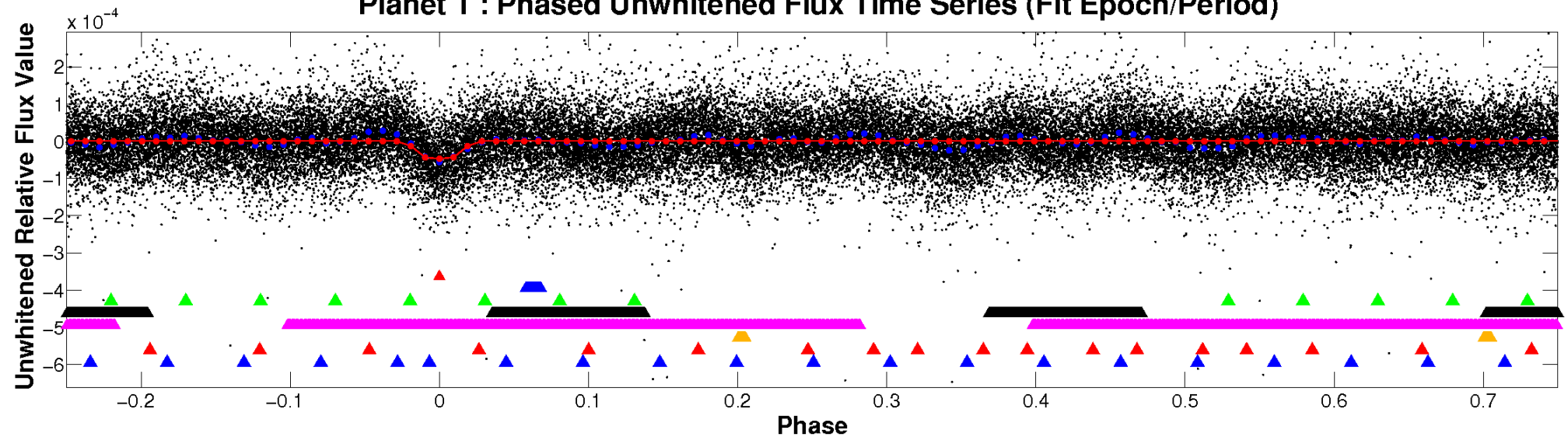
# ALT Odd/Even

TCE 010483436-01

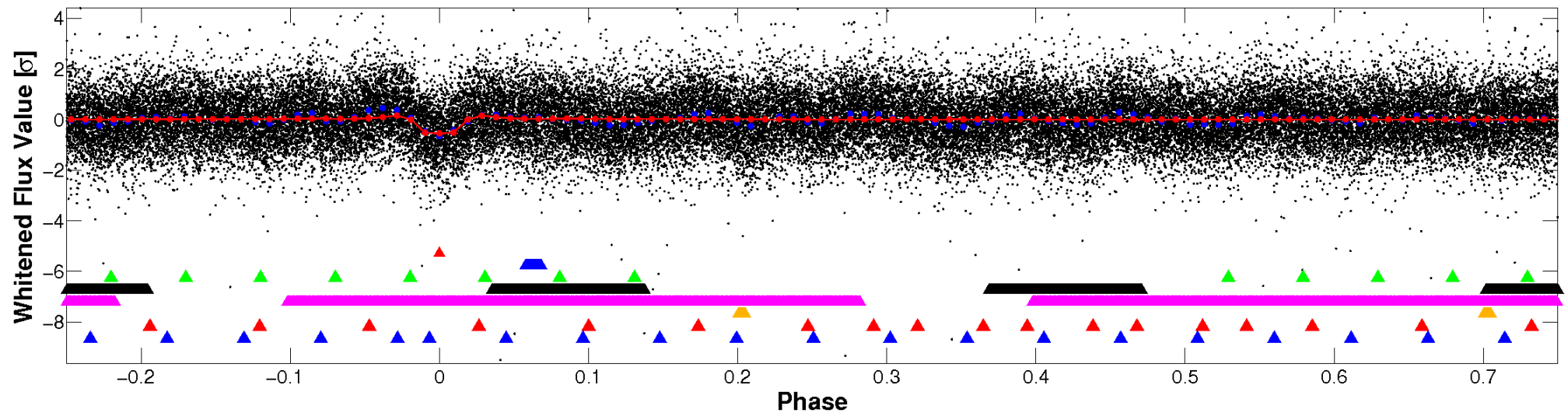


# Non-Whitened Vs. Whitened Light Curve

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

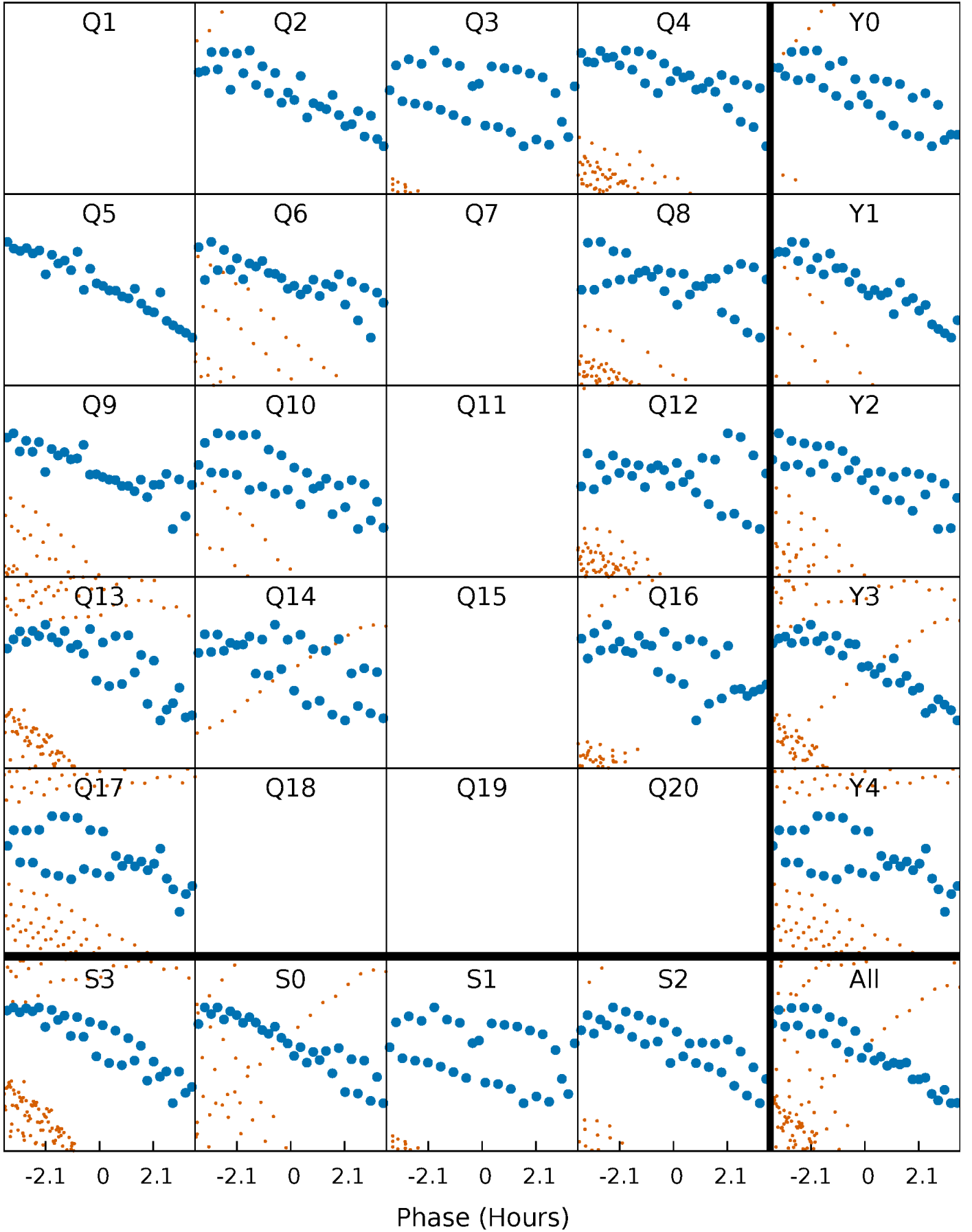


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

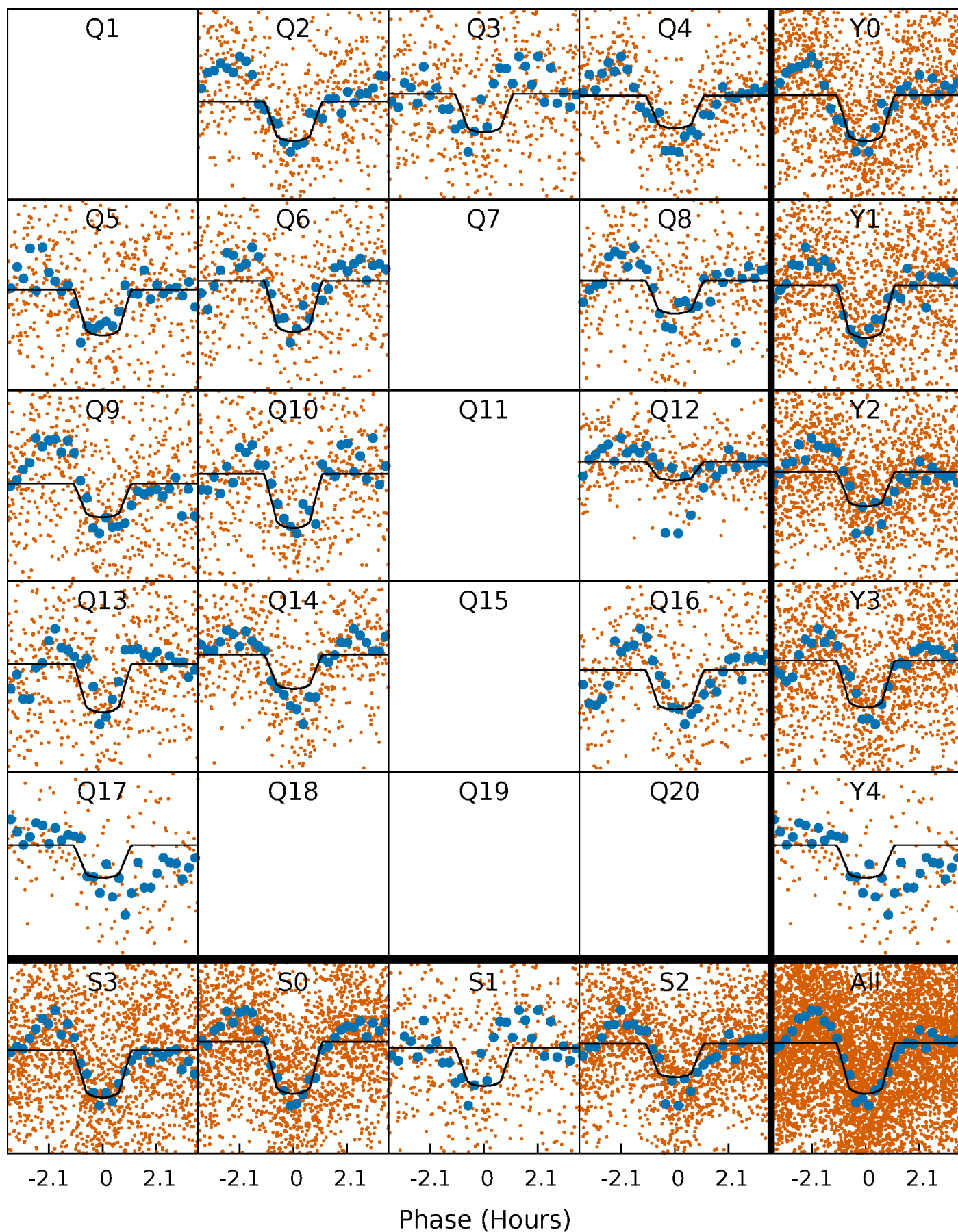
TCE 010483436-01 P= 2.151570 Days  $T_0=132.635029$  (BKJD)





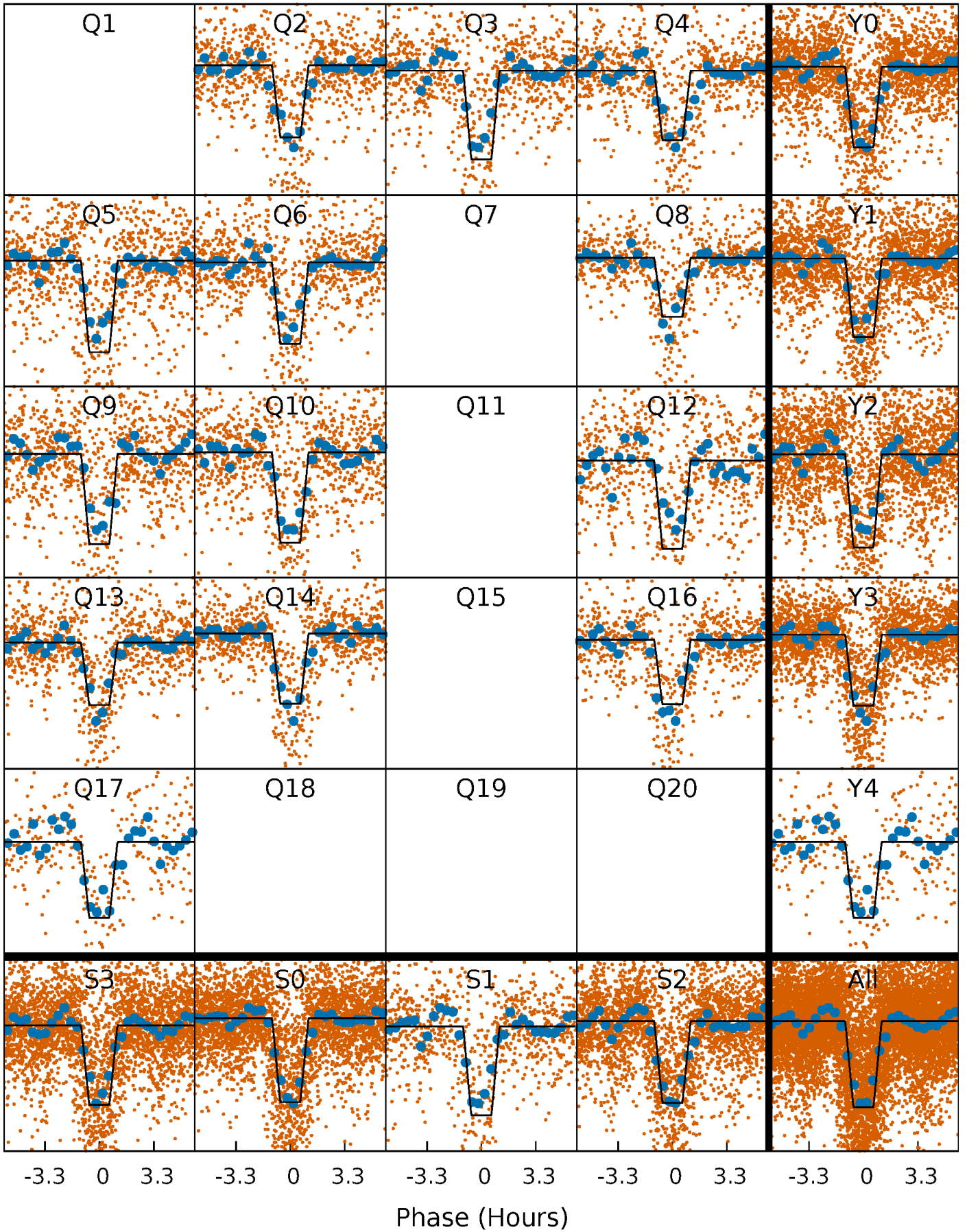
# DV Quarter-Phased Transit Curves

TCE 010483436-01 P= 2.151570 Days  $T_0=132.635029$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

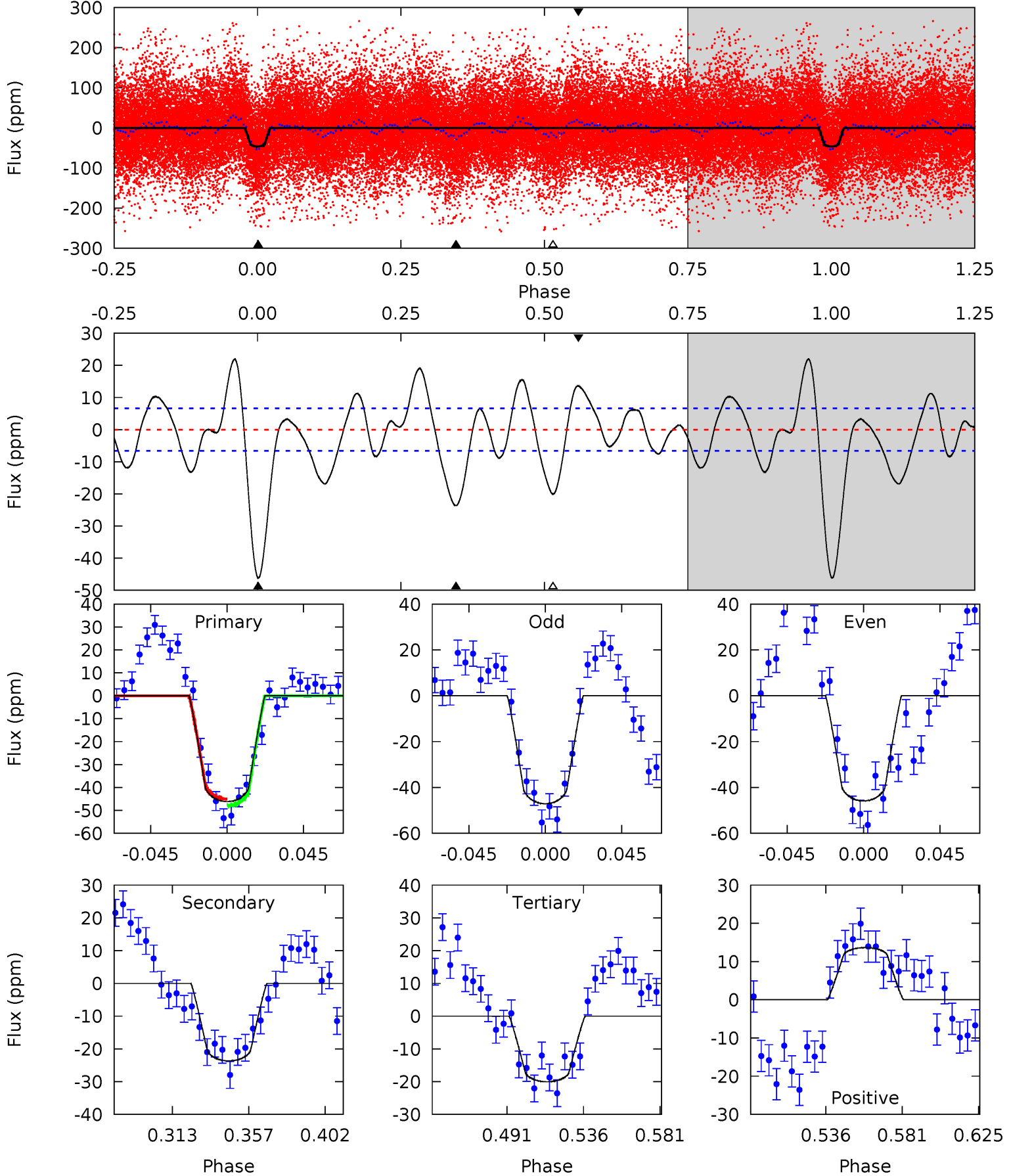
TCE 010483436-01 P= 2.151611 Days  $T_0=132.620860$  (BKJD)



# DV Model-Shift Uniqueness Test

010483436-01, P = 2.151570 Days, E = 132.635029 Days

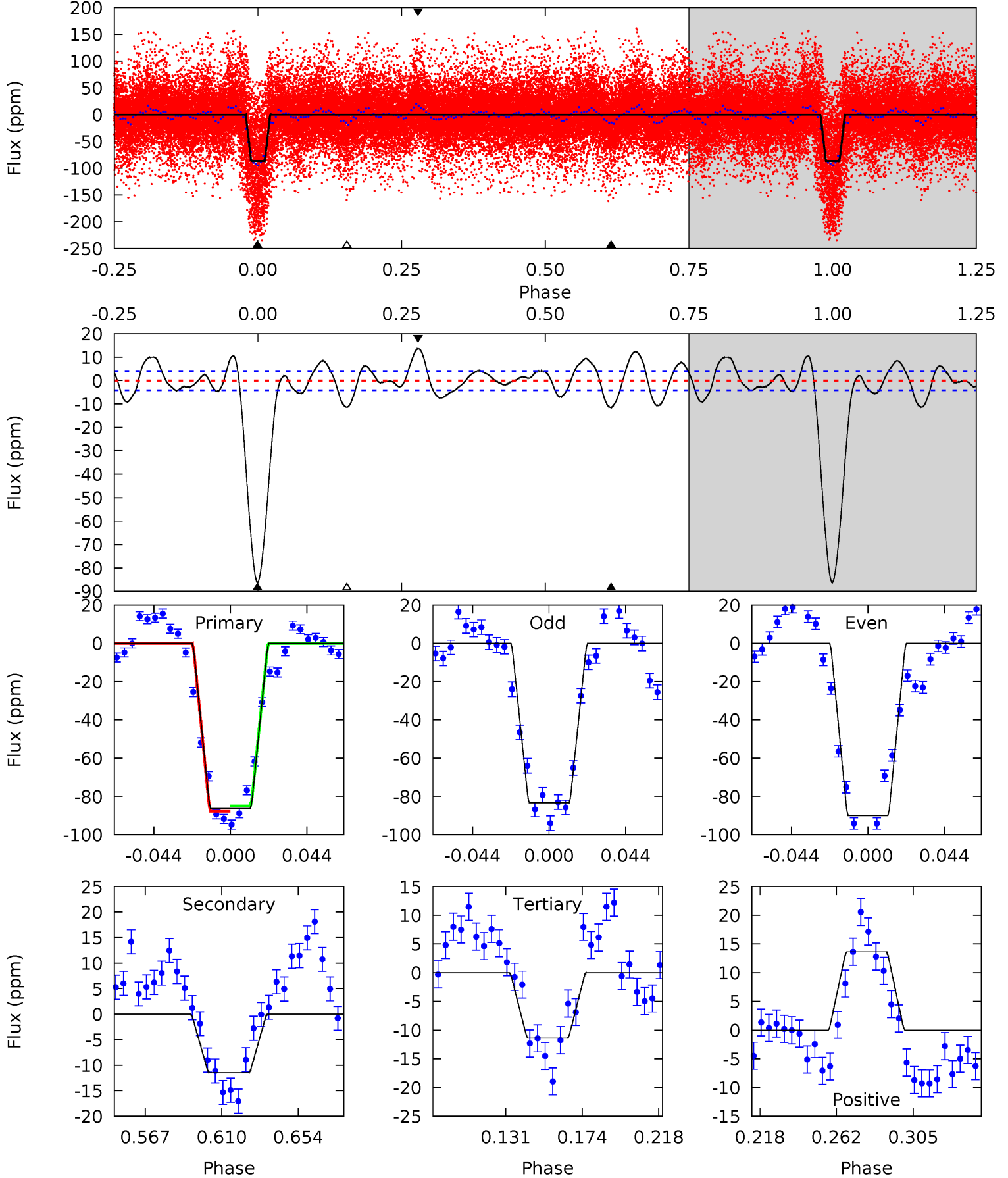
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.0	16.9	14.3	9.76	4.73	2.01	6.18	18.7	23.3	2.59	7.17	0.45	1.10	0.32	1.05



# Alt Model-Shift Uniqueness Test

010483436-01, P = 2.151611 Days, E = 132.620860 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
99.4	13.2	13.1	15.7	4.74	2.02	6.22	86.3	83.7	0.12	-2.50	3.81	0.97	0.14	1.64





### Stellar Parameters For KIC 010483436

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7602^{+210}_{-330}$	$4.155^{+0.070}_{-0.196}$	$0.210^{+0.150}_{-0.350}$	$1.829^{+0.572}_{-0.245}$	$1.743^{+0.212}_{-0.233}$	$0.401^{+0.146}_{-0.207}$
	+3%/-4%	+2%/-5%	+71%/-167%	+31%/-13%	+12%/-13%	+36%/-52%
Source	KIC0	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 010483436-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-24 \pm 1$	$1.51^{+0.30}_{-0.27}$	$3243^{+231}_{-170}$	$6012^{+529}_{-432}$	$8.668^{+3.895}_{-2.514}$
Alt.	$-11 \pm 1$	$2.00^{+0.41}_{-0.29}$	$3238^{+257}_{-190}$	$4430^{+280}_{-240}$	$2.353^{+0.933}_{-0.686}$

$T_{max}$  = Theoretical Maximum Planetary Temperature

$T_{obs}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

$A_{obs}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{obs} \gg T_{max}$  AND  $A_{obs} \gg 1.0$

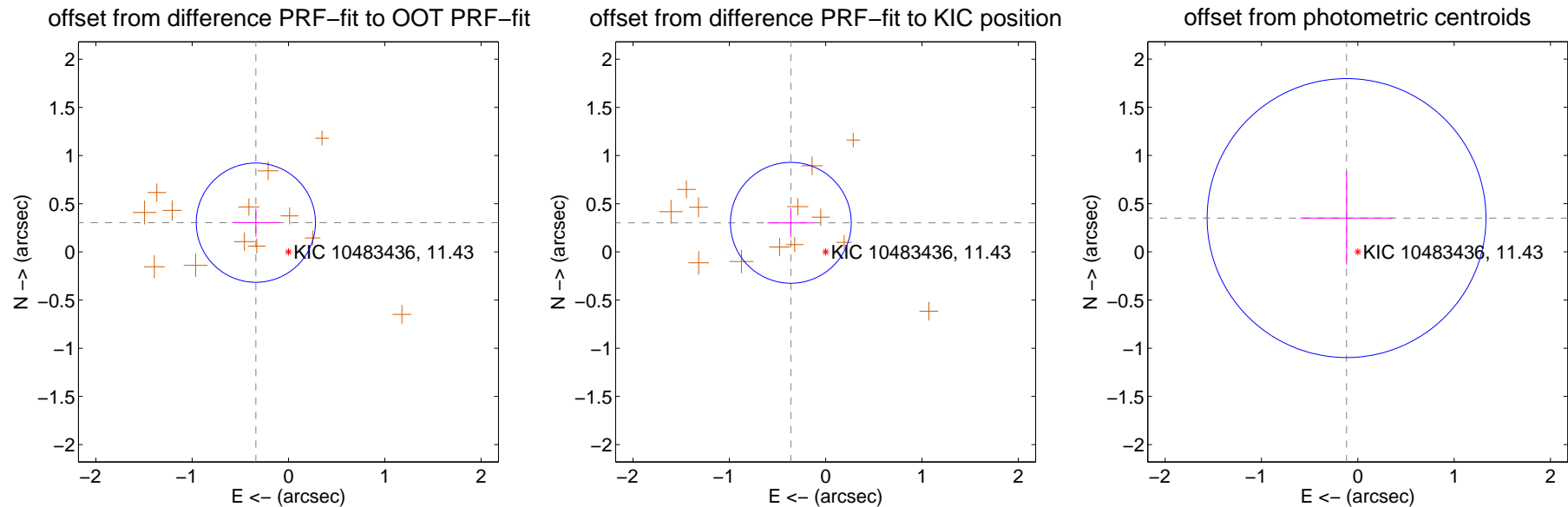
## DV Centroid Data

Supplemental centroid analysis for 010483436-01. **Kepler magnitude: 11.43.** Transit SNR 21.58

**There are 0 quarters with good PRF difference image offsets**

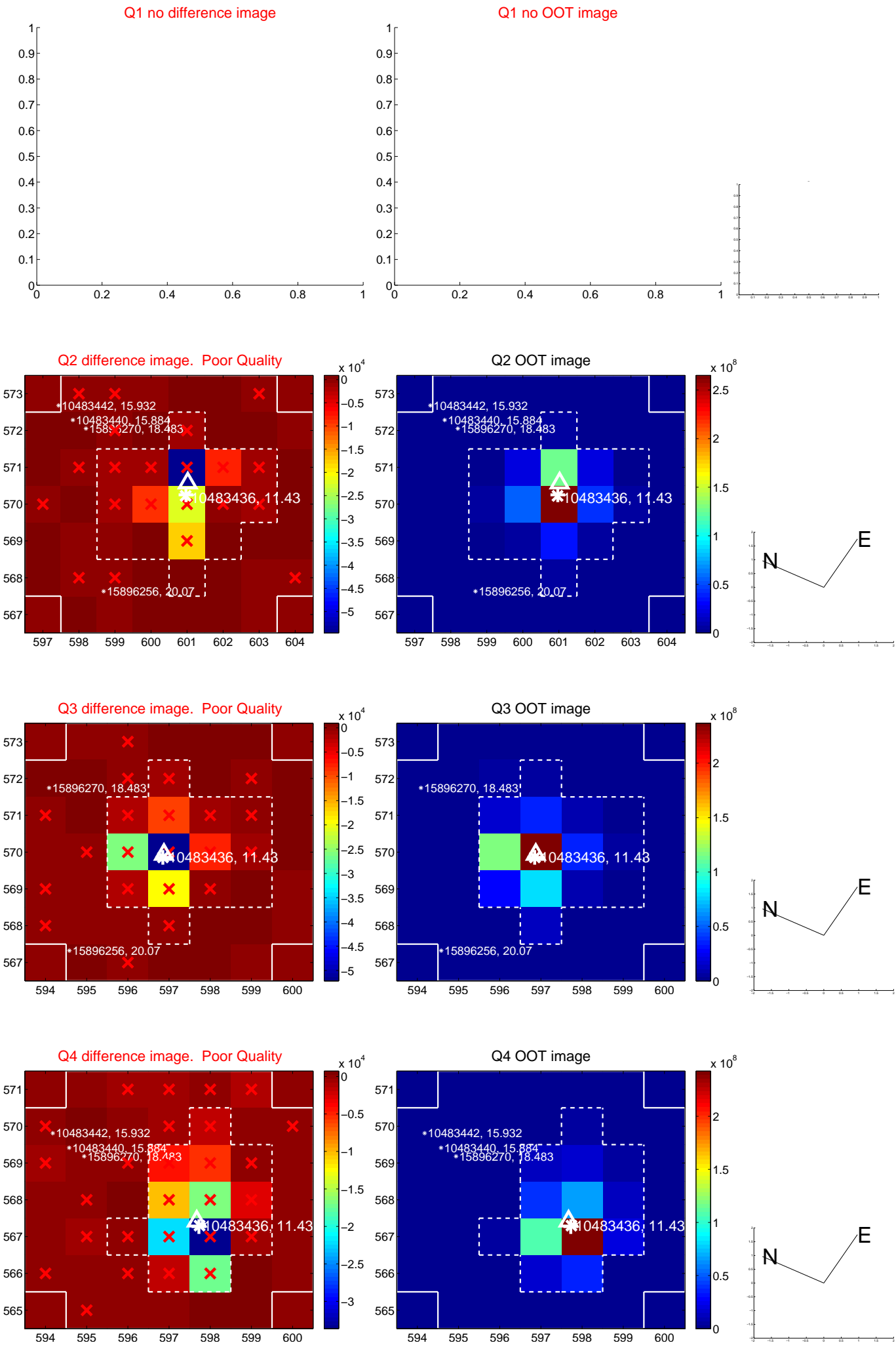
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.455 \pm 0.206$	2.21	$0.339 \pm 0.244$	$0.304 \pm 0.147$
PRF-fit source offset from KIC position	$0.471 \pm 0.209$	2.25	$0.362 \pm 0.242$	$0.302 \pm 0.149$
photometric centroid source offset	$0.37 \pm 0.48$	0.77	$0.12 \pm 0.48$	$0.35 \pm 0.48$

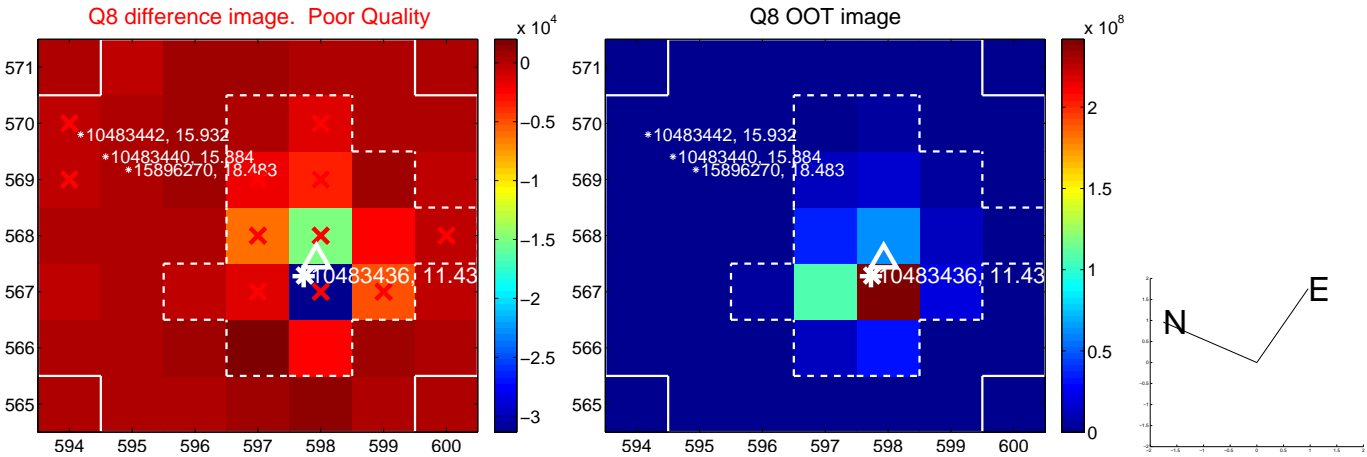
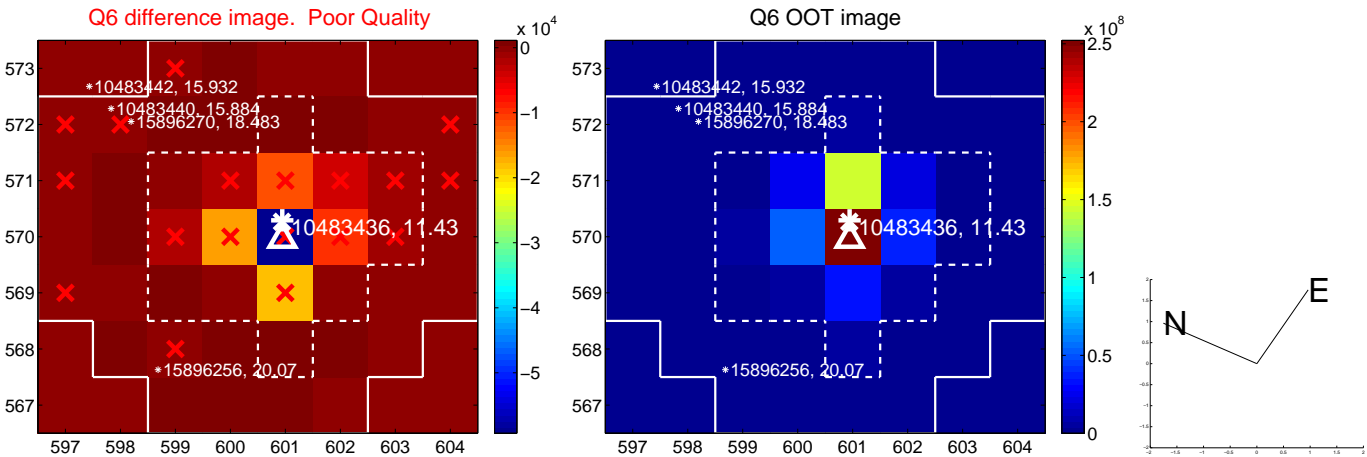
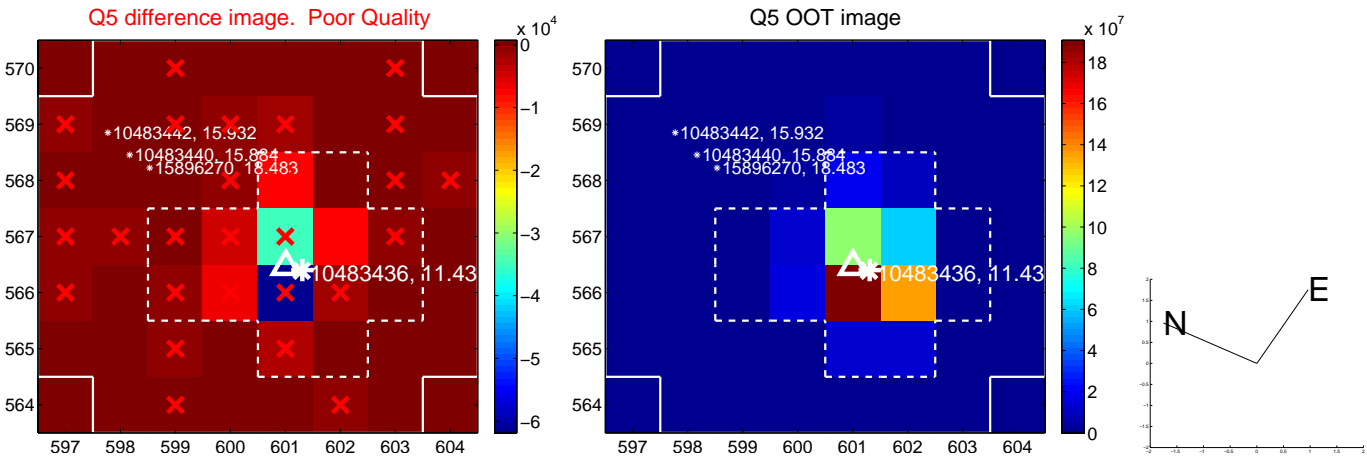


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

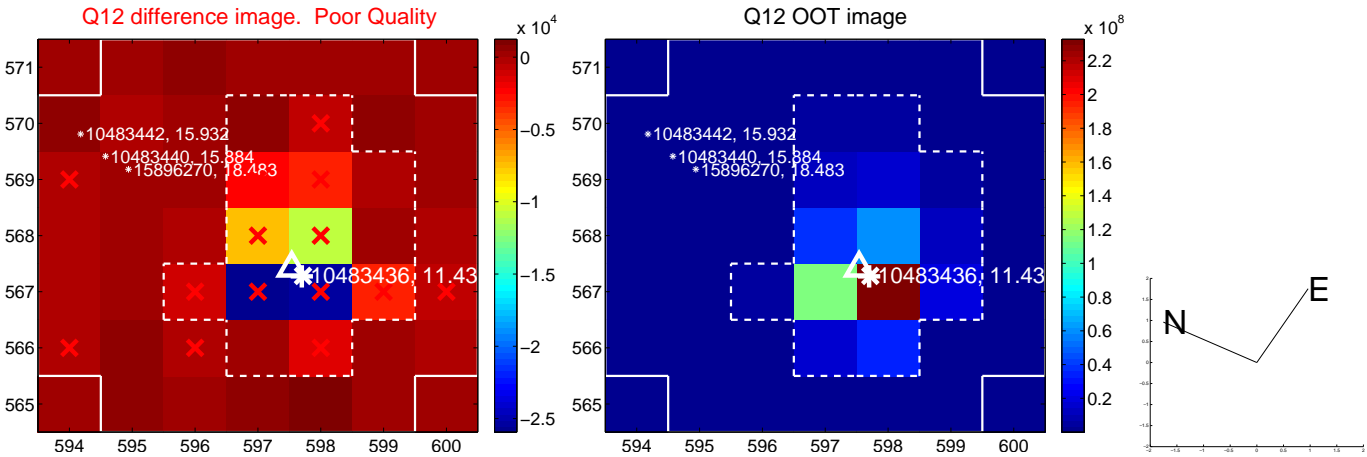
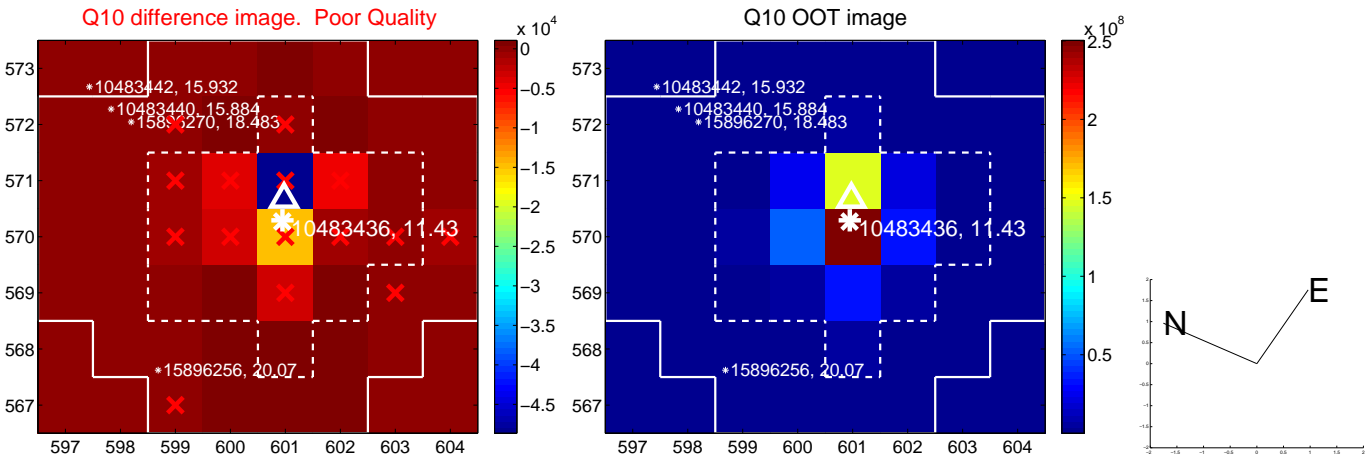
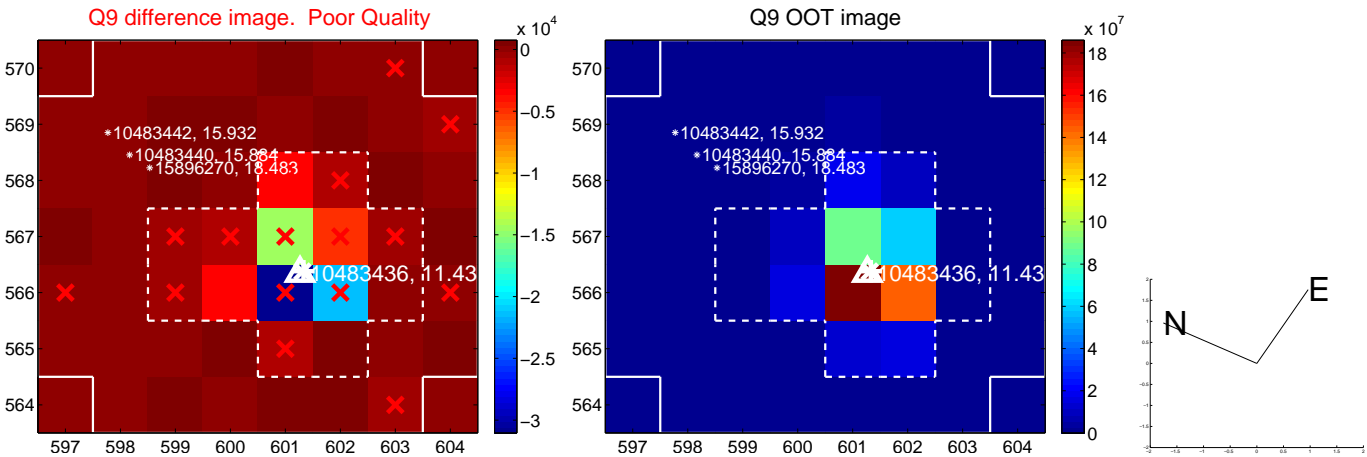


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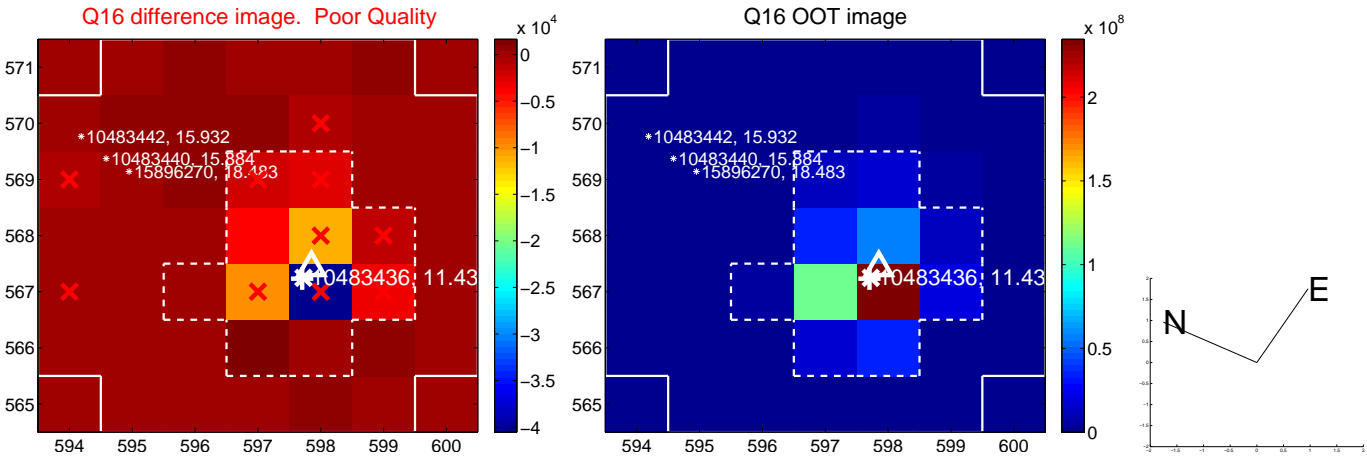
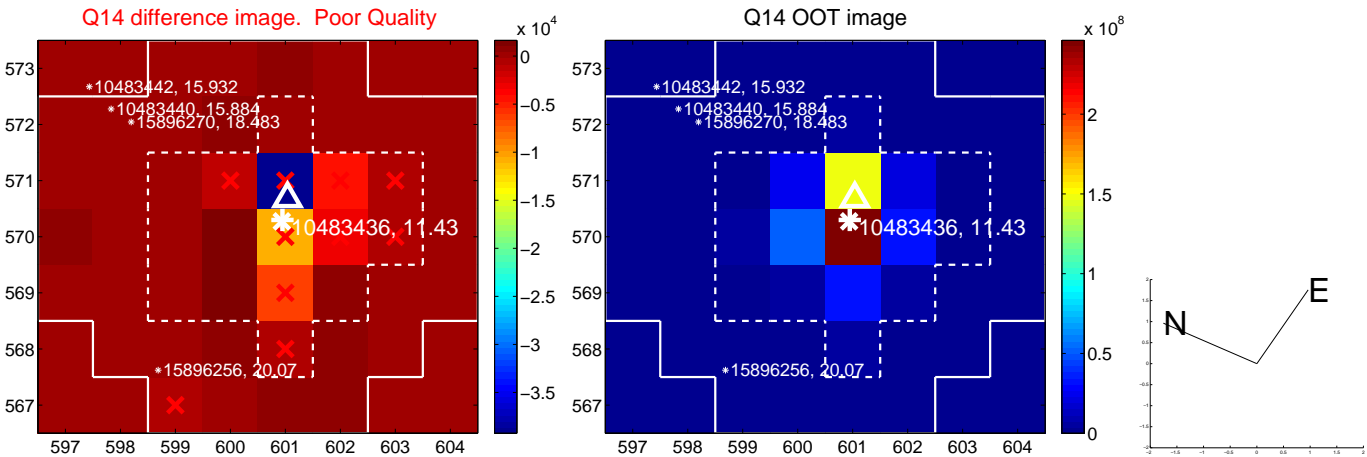
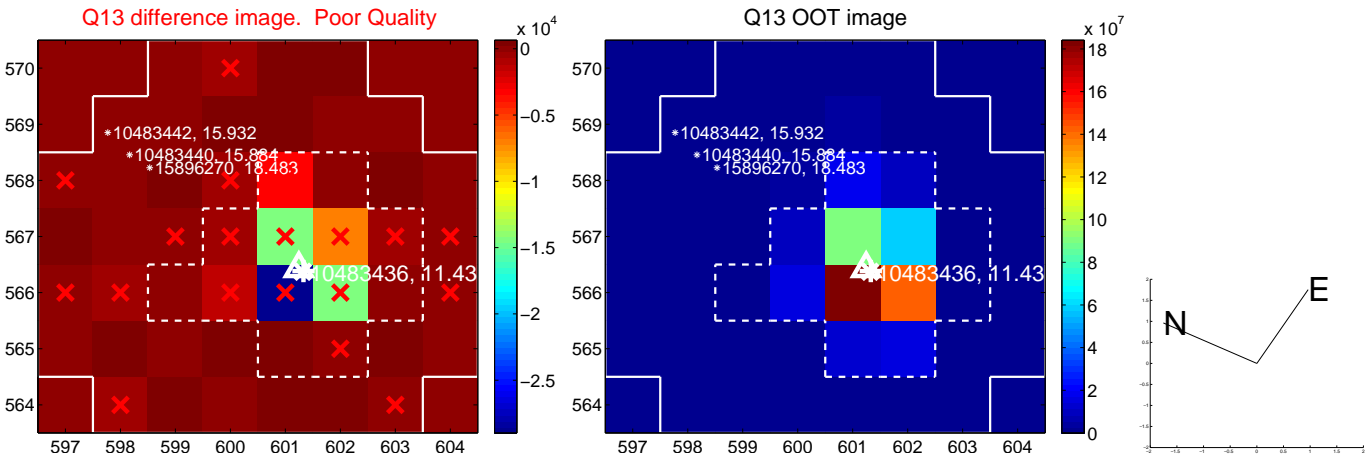




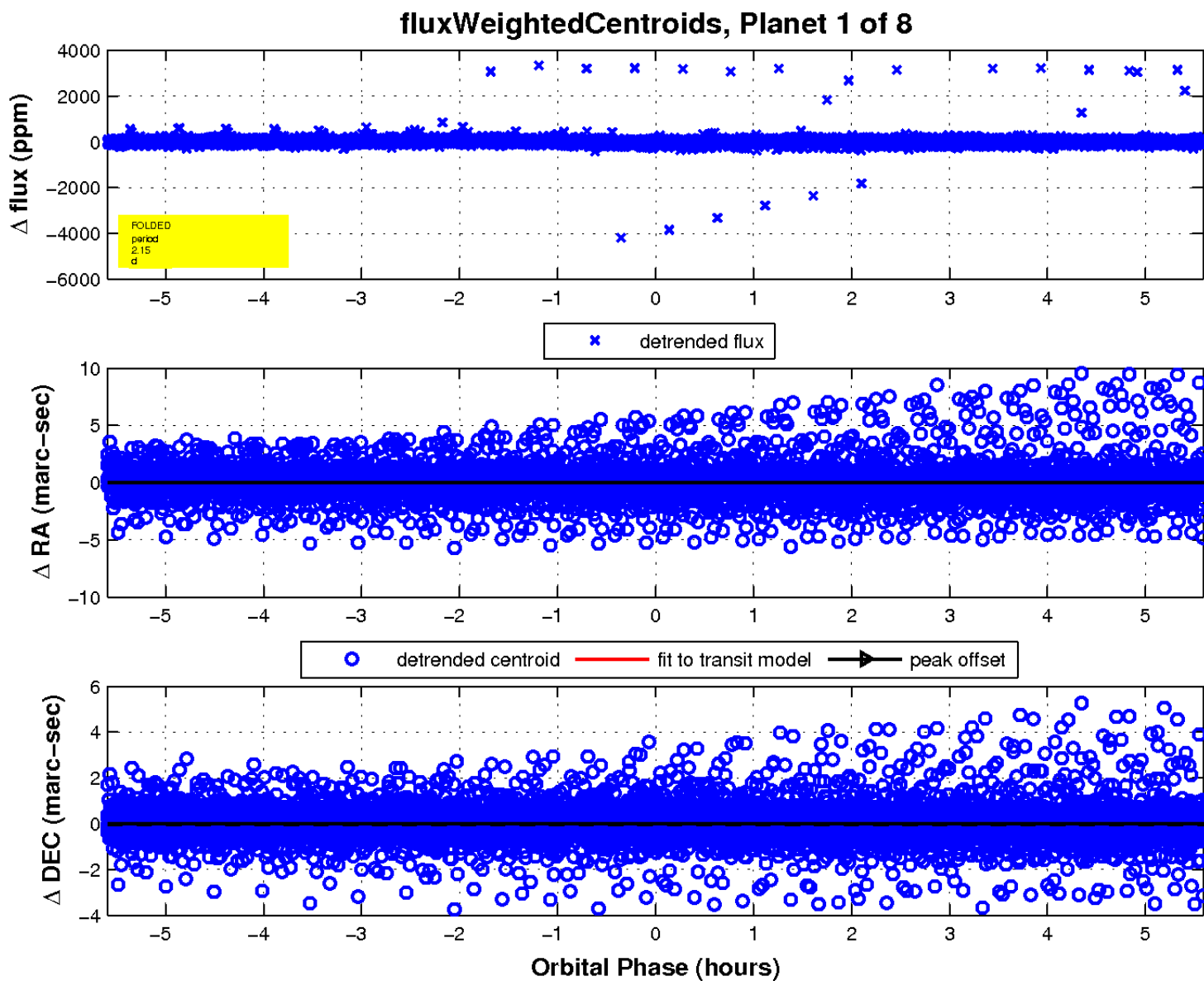
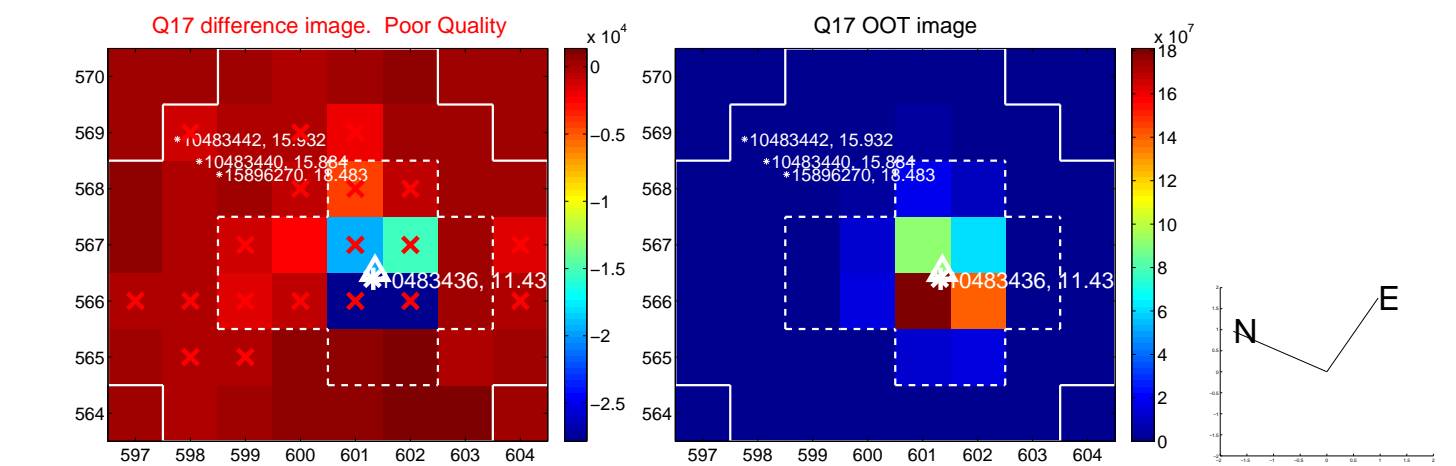
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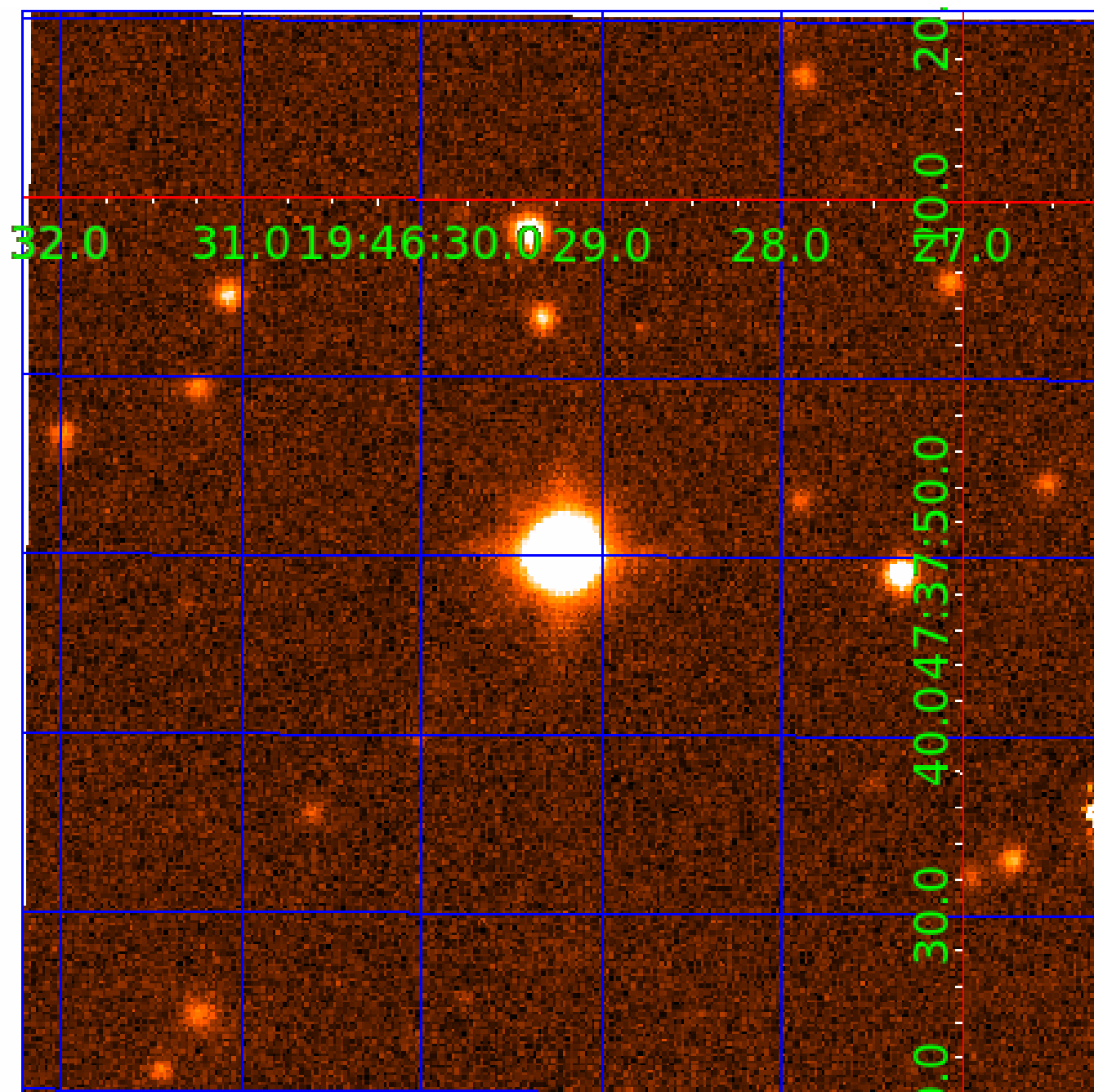


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UKIRT Image

Declination





# KIC 010483436

## Q1-17 DR25 TCE Parameters

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010483436-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010483436-04	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
010483436-05	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010483436-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
010483436-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010483436-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

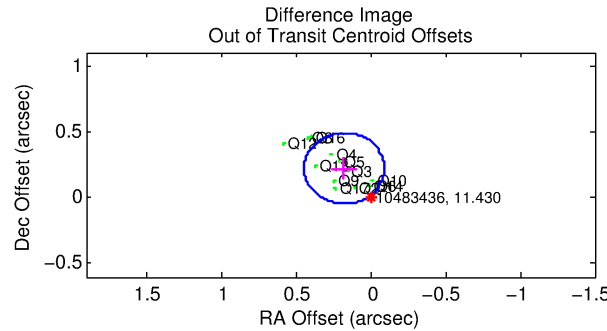
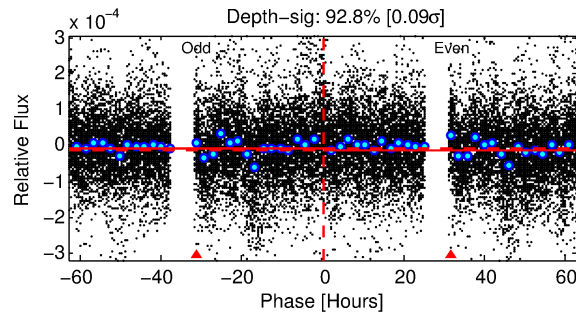
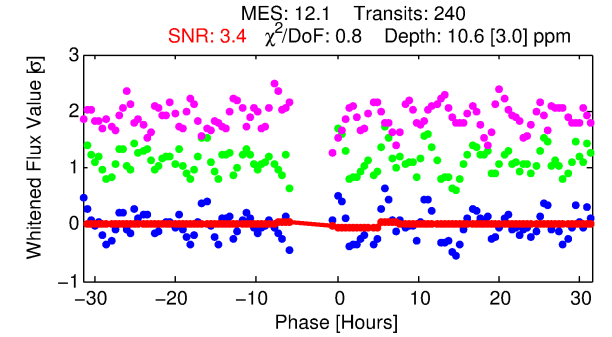
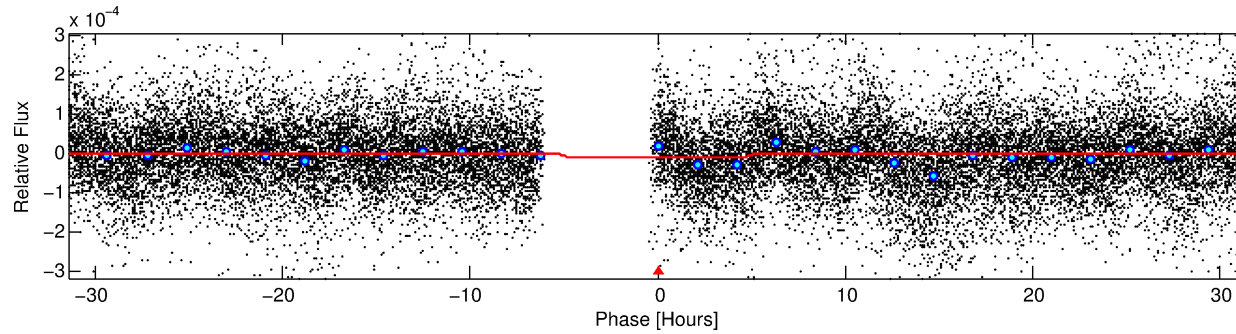
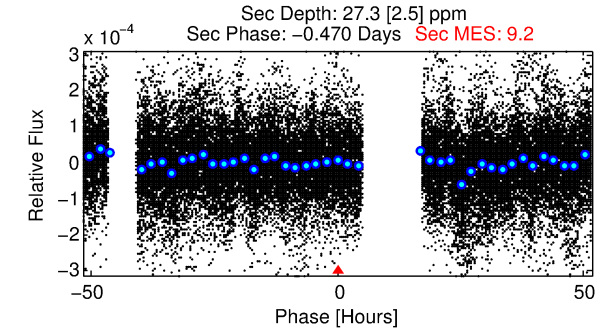
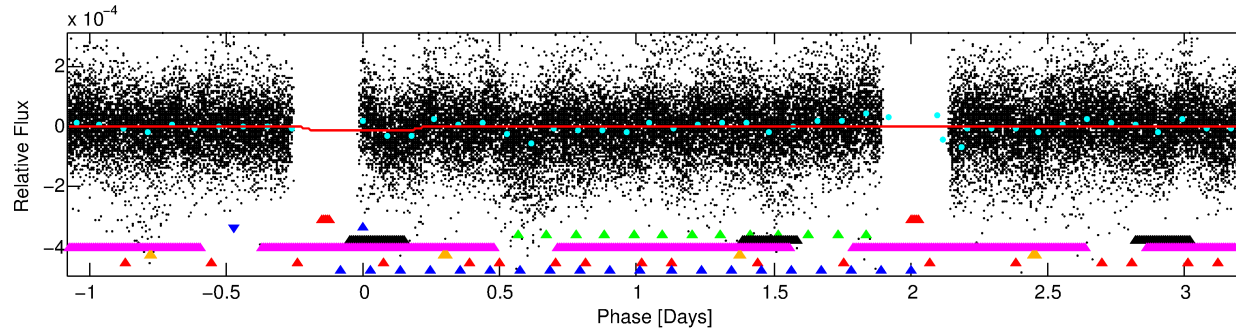
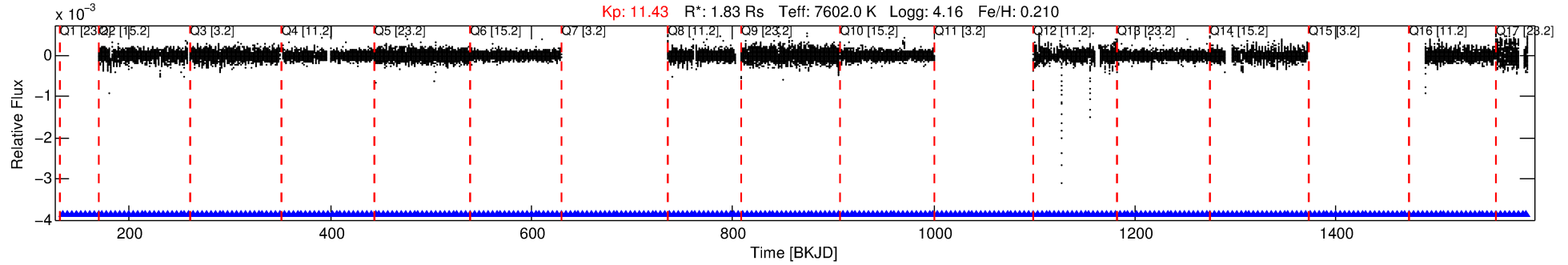
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## Ephemeris Match Information For 010483436-02

No Significant Match Found

# DV One-Page Summary

KIC: 10483436 Candidate: 2 of 8 Period: 4.303 d



## DV Fit Results:

Period = 4.30321 [0.00010] d  
Epoch = 134.9110 [0.0426] BKJD  
Rp/R\* = 0.0034 [0.0011]  
a/R\* = 1.69 [2.11]  
b = 0.90 [0.40]  
Seff = 2576.47 [1043.85]  
Teq = 1817 [184] K  
Rp = 0.69 [0.30] Re  
a = 0.0623 [0.0160] AU  
Ag = 123.28 [89.89] [1.36σ]  
Teffp = 9359 [1530] K [4.89σ]

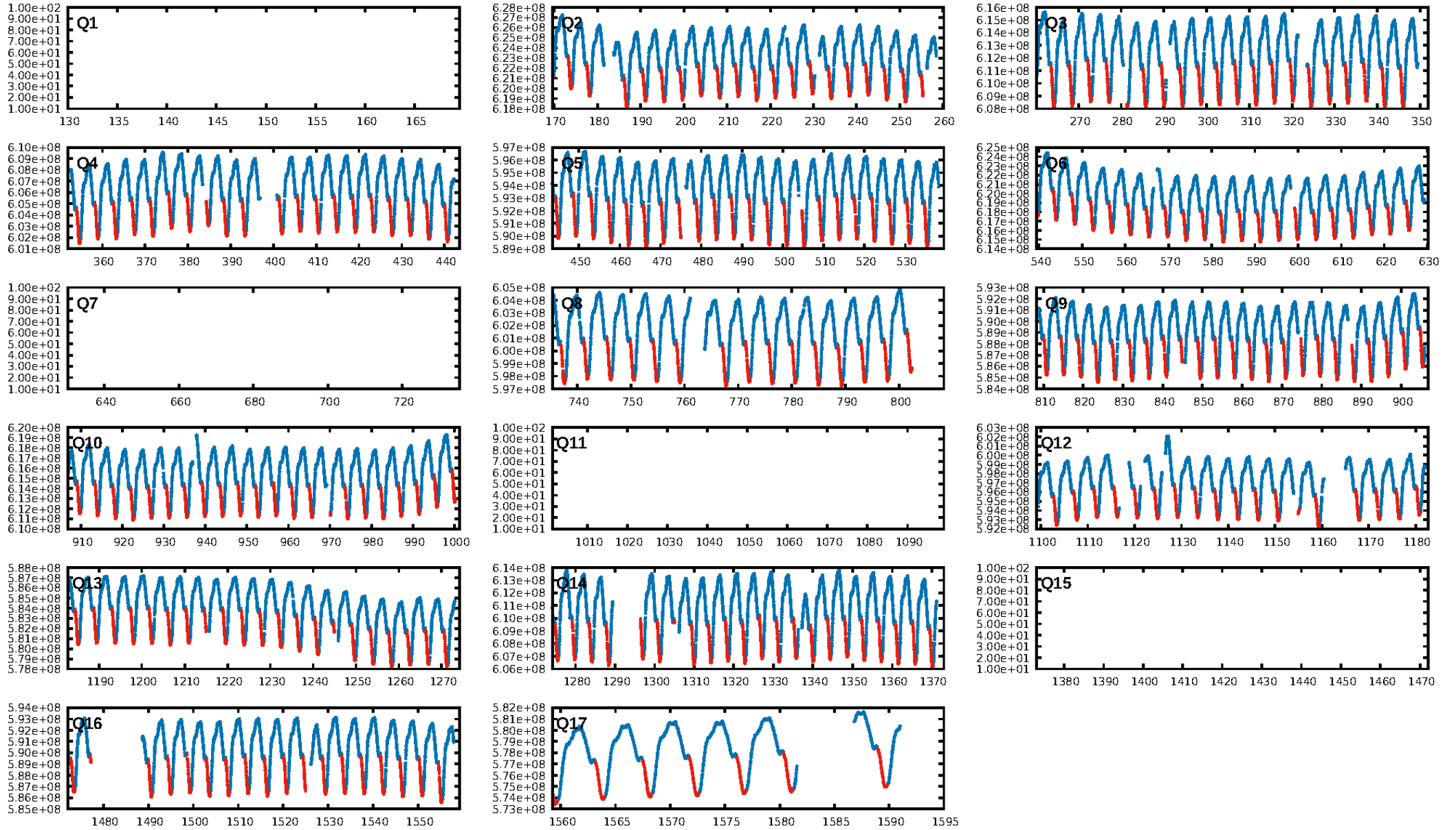
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.85σ]  
LongPeriod-sig: 100.0% [145.09σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [233/233]  
GhostDiagnostic-chr: 1.411  
Centroid-sig: 1.7%  
Centroid-so: 3.913 arcsec [1.53σ]  
OotOffset-rm: 0.283 arcsec [3.16σ]  
KicOffset-rm: 0.313 arcsec [3.89σ]  
OotOffset-st: 4/1/4/4 [13]  
KicOffset-st: 4/1/4/4 [13]  
DiffImageQuality-fgm: 1.00 [13/13]  
DiffImageOverlap-fno: 0.00 [0/13]

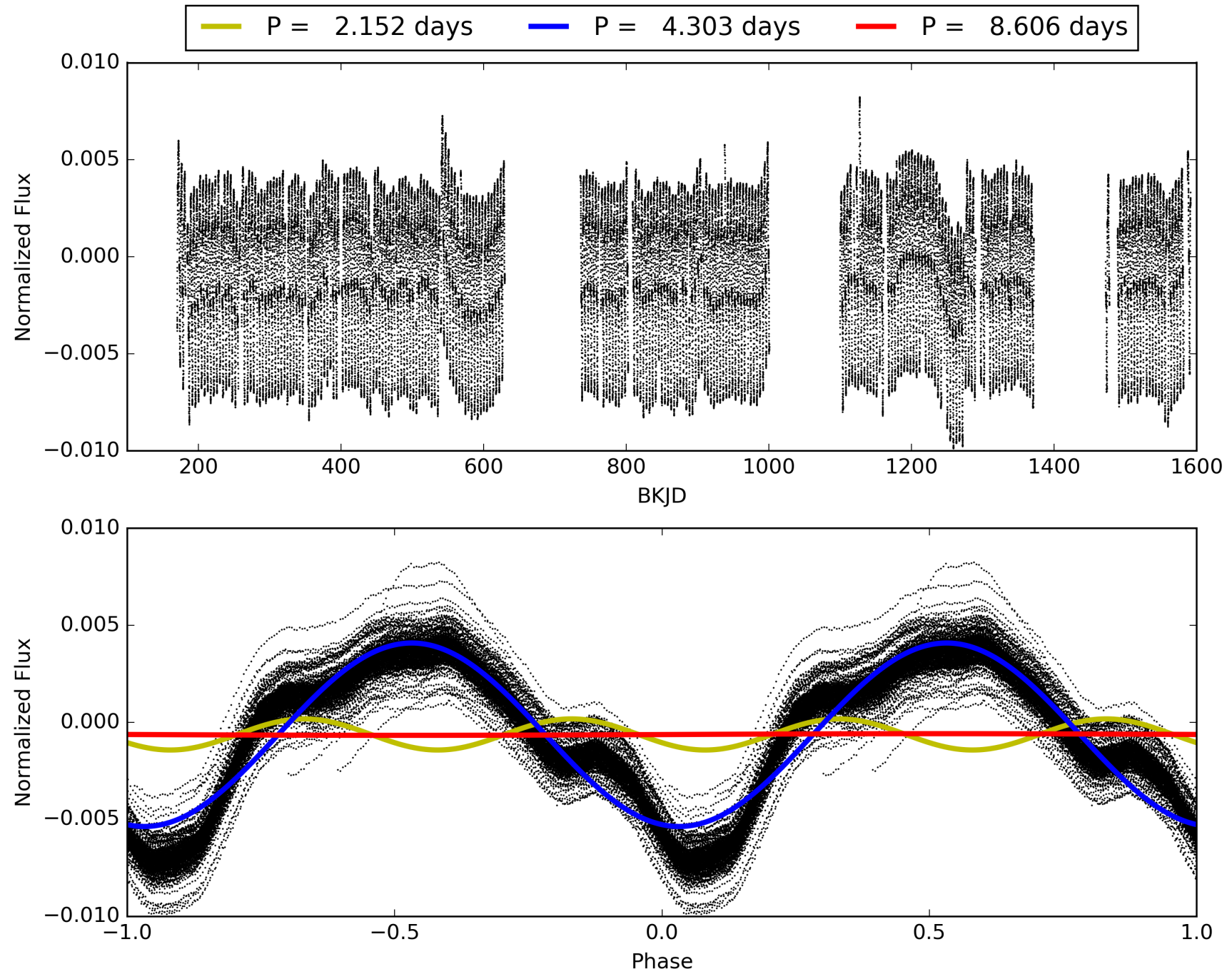
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:52:17 Z

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

# TCE 010483436-02, PDC Light Curves

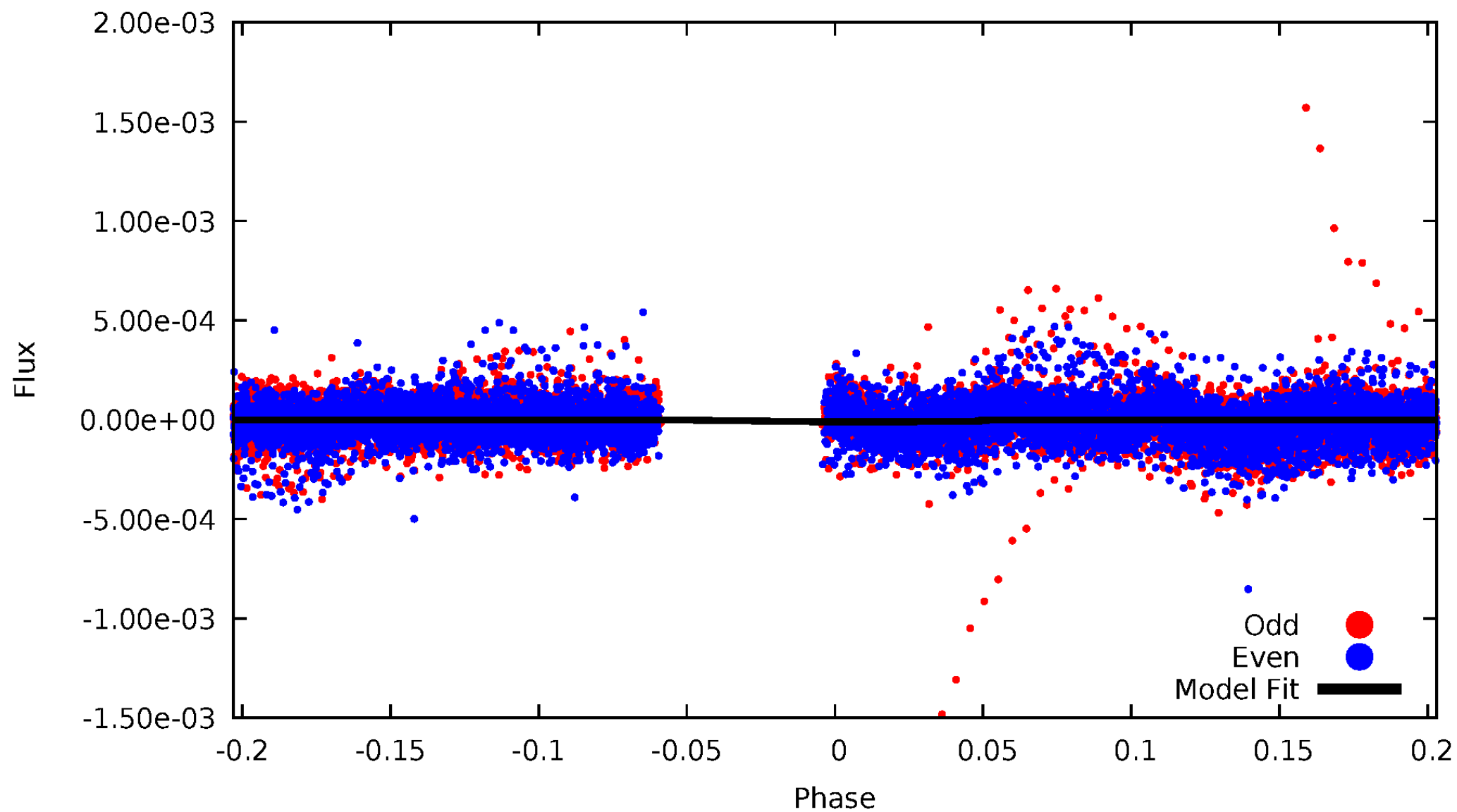


TCE 010483436-02



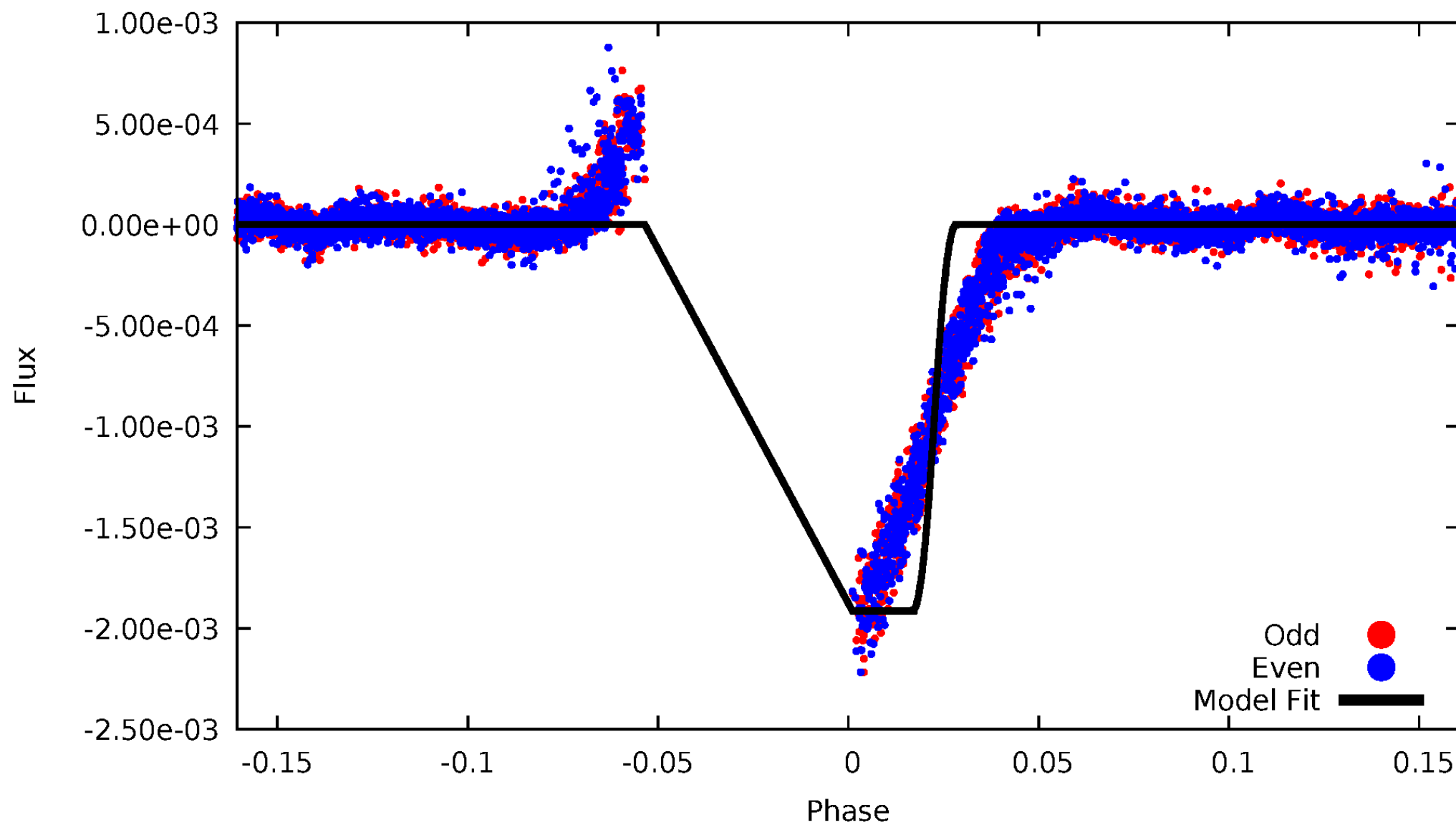
# DV Odd/Even

TCE 010483436-02



# ALT Odd/Even

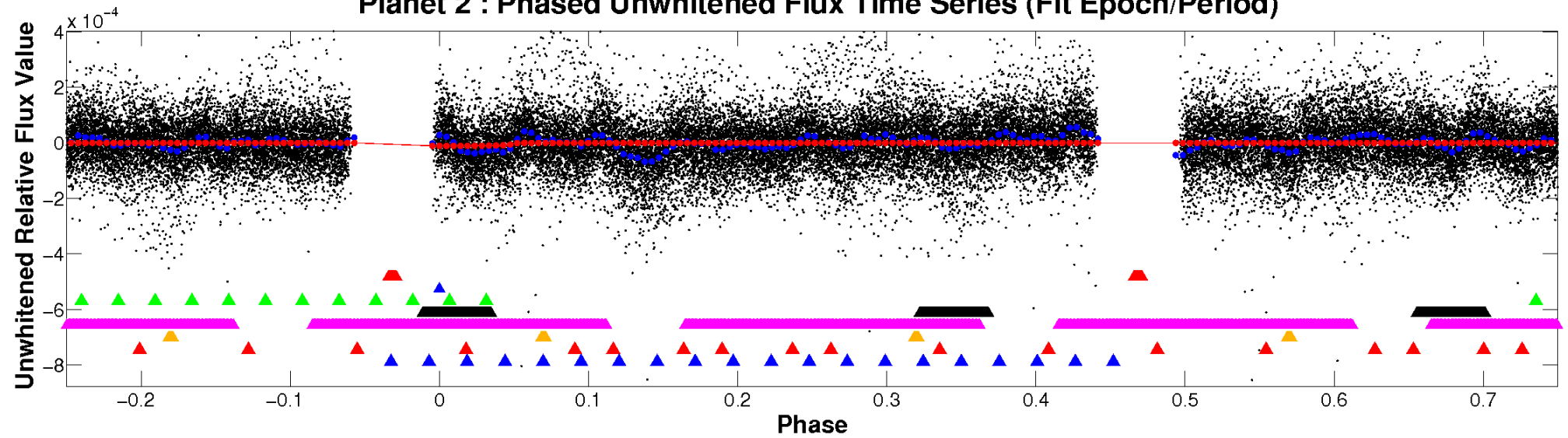
TCE 010483436-02



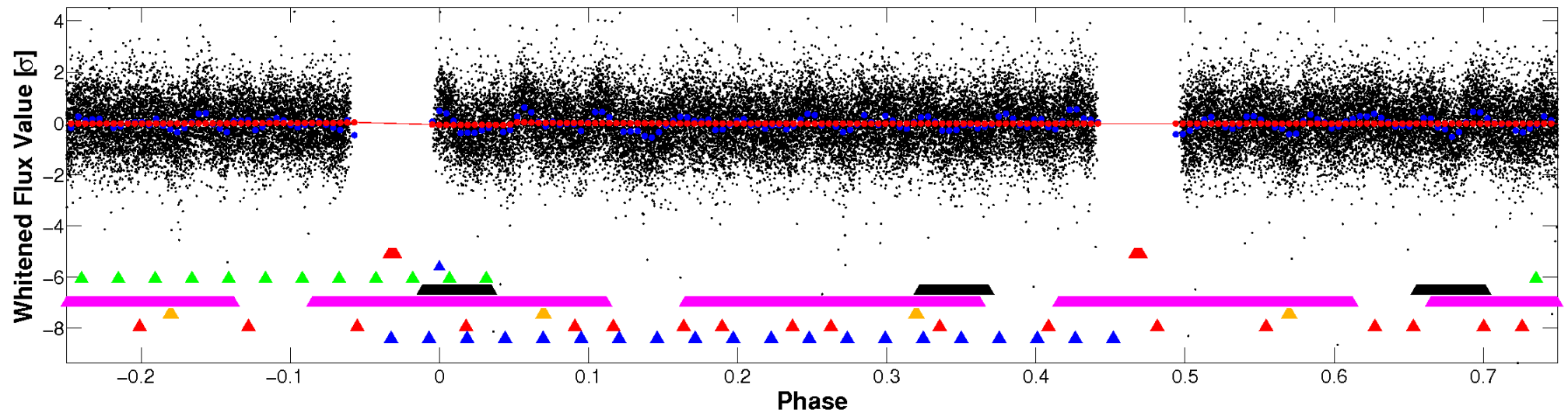


# Non-Whitened Vs. Whitened Light Curve

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

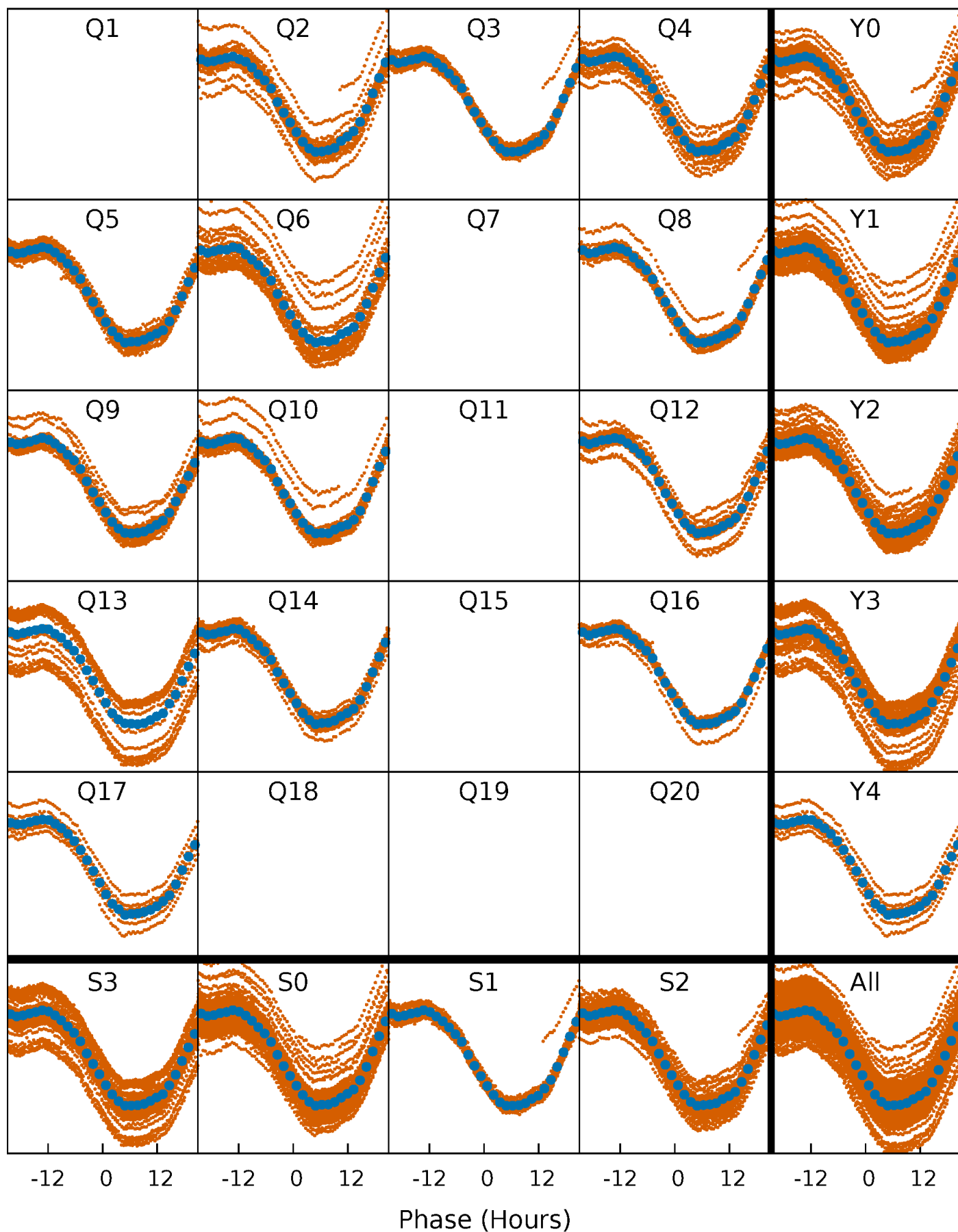


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



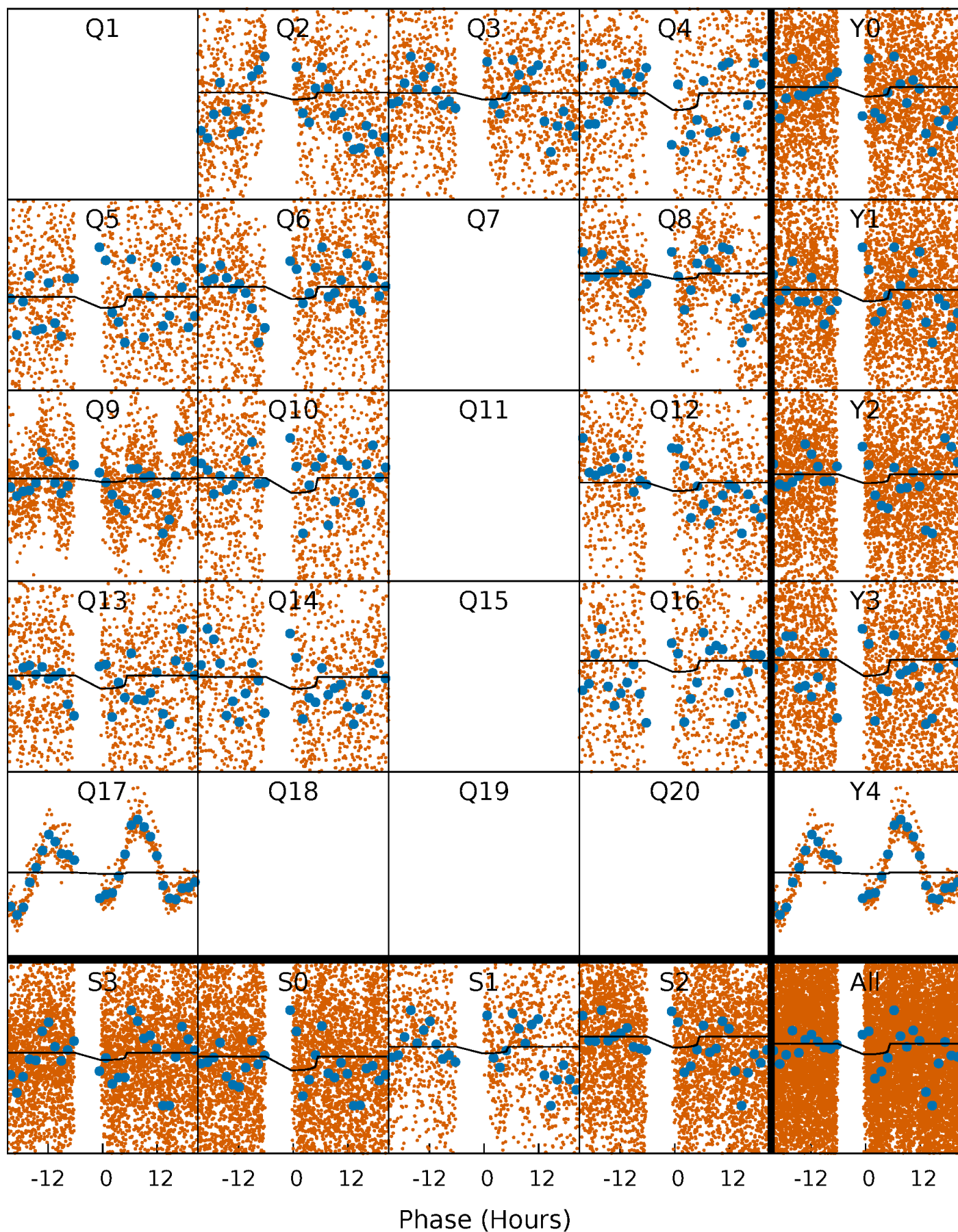
# PDC Quarter-Phased Transit Curves

TCE 010483436-02   P= 4.303206 Days    $T_0=134.910950$  (BKJD)



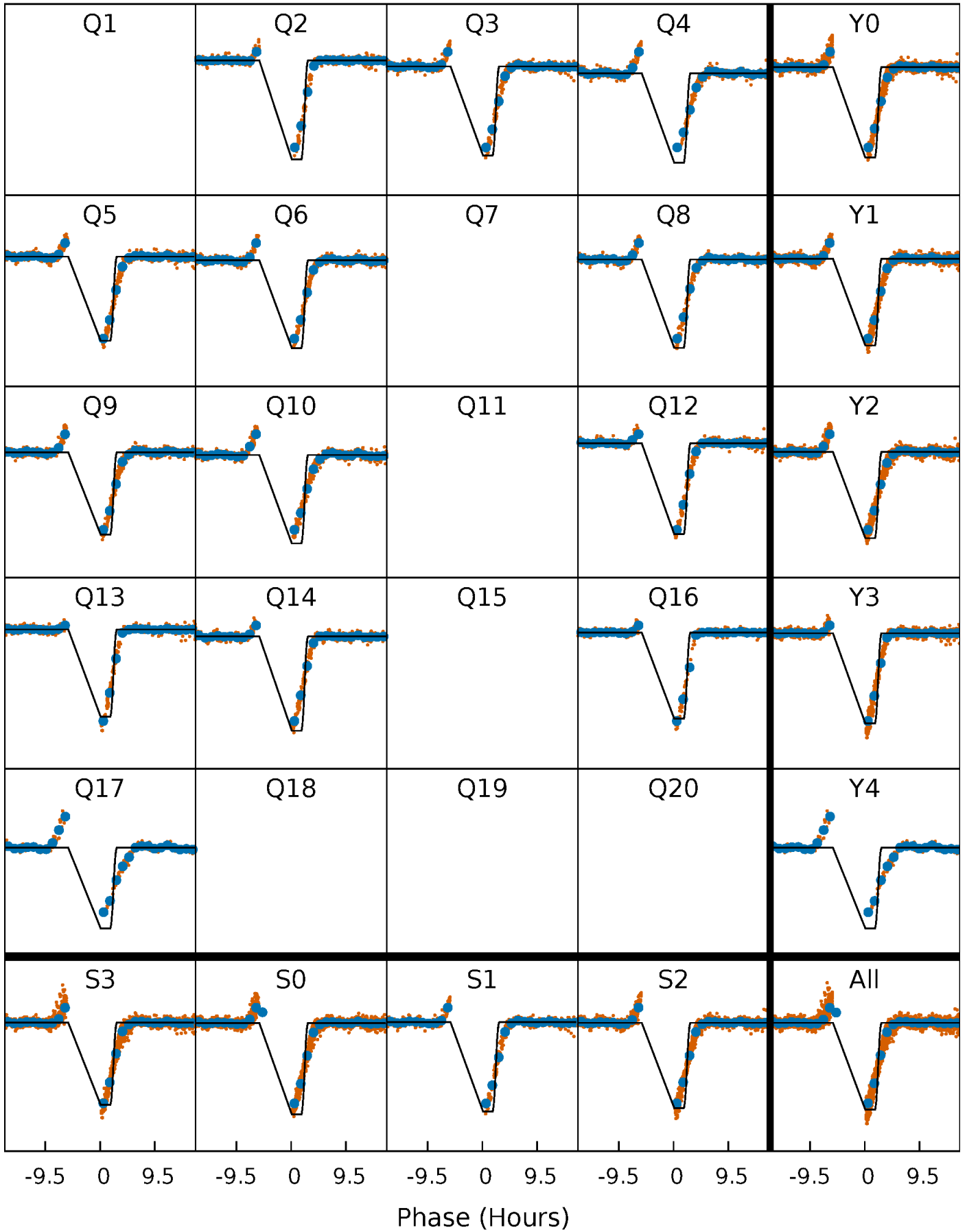
# DV Quarter-Phased Transit Curves

TCE 010483436-02   P= 4.303206 Days    $T_0=134.910950$  (BKJD)



## Alt. Detrend Quarter-Phased Transit Curves

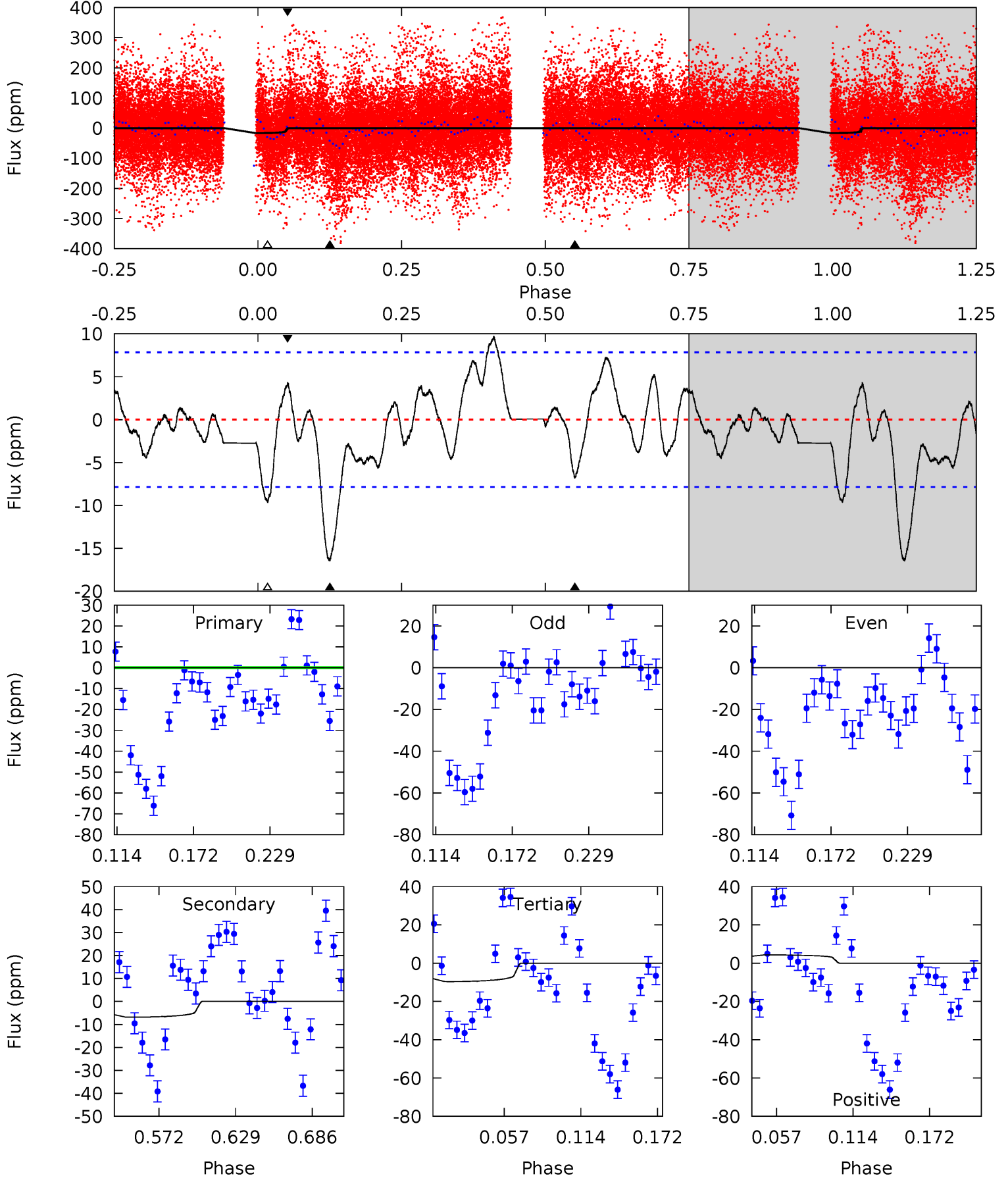
TCE 010483436-02   P= 4.303215 Days    $T_0=134.888565$  (BKJD)



# DV Model-Shift Uniqueness Test

010483436-02, P = 4.303206 Days, E = 134.910950 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
9.84	4.08	5.74	2.56	4.68	1.90	2.16	4.10	7.28	-1.66	1.52	3.16	1.28	0.37	0.93

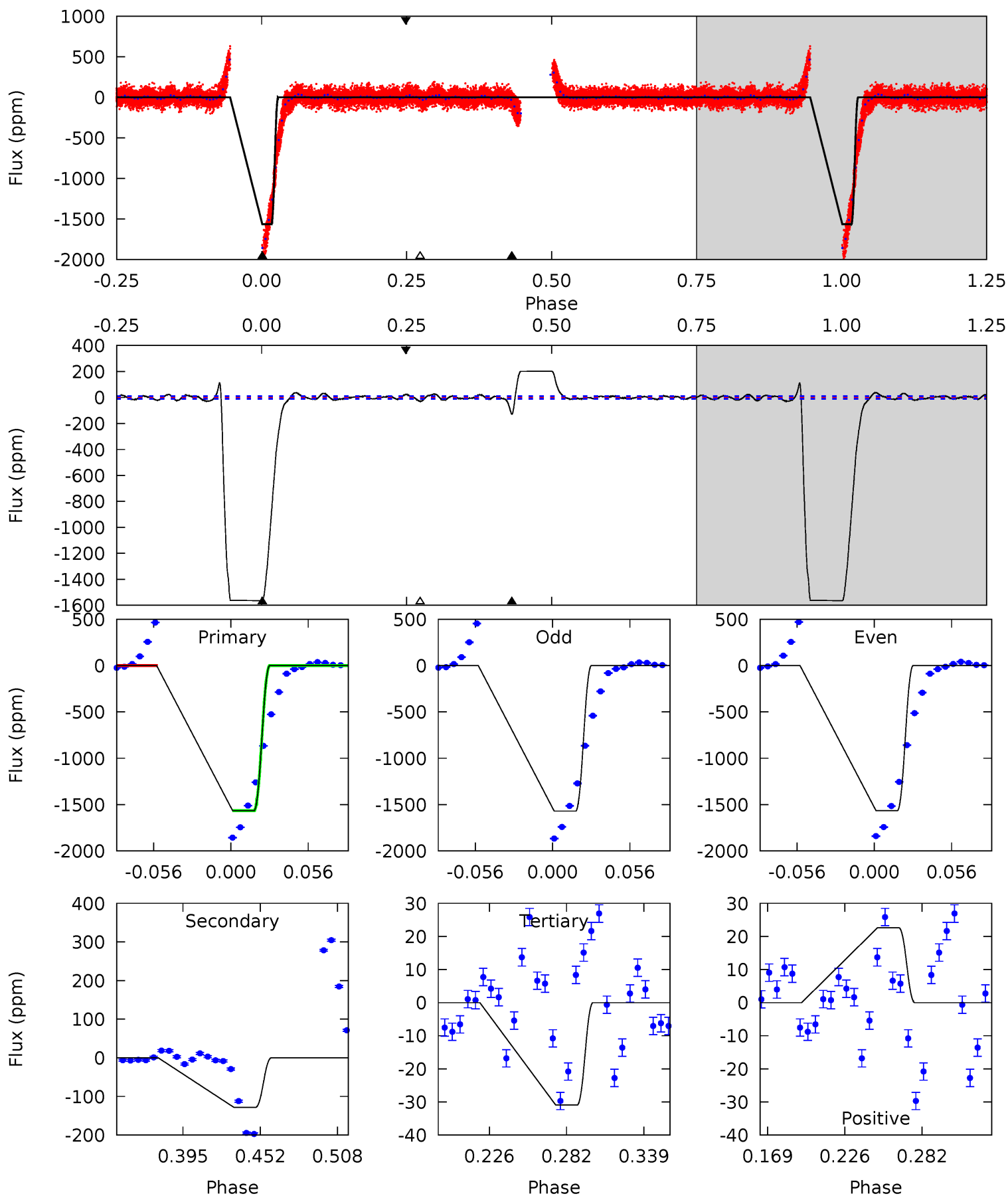




# Alt Model-Shift Uniqueness Test

010483436-02, P = 4.303215 Days, E = 134.888565 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
720.5	59.2	14.2	10.4	4.68	1.91	46.3	706.3	710.1	44.9	48.8	1.48	1.02	0.11	0



### Stellar Parameters For KIC 010483436

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7602^{+210}_{-330}$	$4.155^{+0.070}_{-0.196}$	$0.210^{+0.150}_{-0.350}$	$1.829^{+0.572}_{-0.245}$	$1.743^{+0.212}_{-0.233}$	$0.401^{+0.146}_{-0.207}$
	+3%/-4%	+2%/-5%	+71%/-167%	+31%/-13%	+12%/-13%	+36%/-52%
Source	KIC0	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 010483436-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-7 \pm 2$	$0.72^{+0.24}_{-0.22}$	$2589^{+174}_{-140}$	$6425^{+1477}_{-915}$	$27^{+30}_{-12}$
Alt.	$-129 \pm 2$	$8.89^{+1.45}_{-0.76}$	$2570^{+175}_{-144}$	$4014^{+89}_{-104}$	$3.413^{+0.599}_{-0.856}$

$T_{max}$  = Theoretical Maximum Planetary Temperature

$T_{obs}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

$A_{obs}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{obs} \gg T_{max}$  AND  $A_{obs} \gg 1.0$

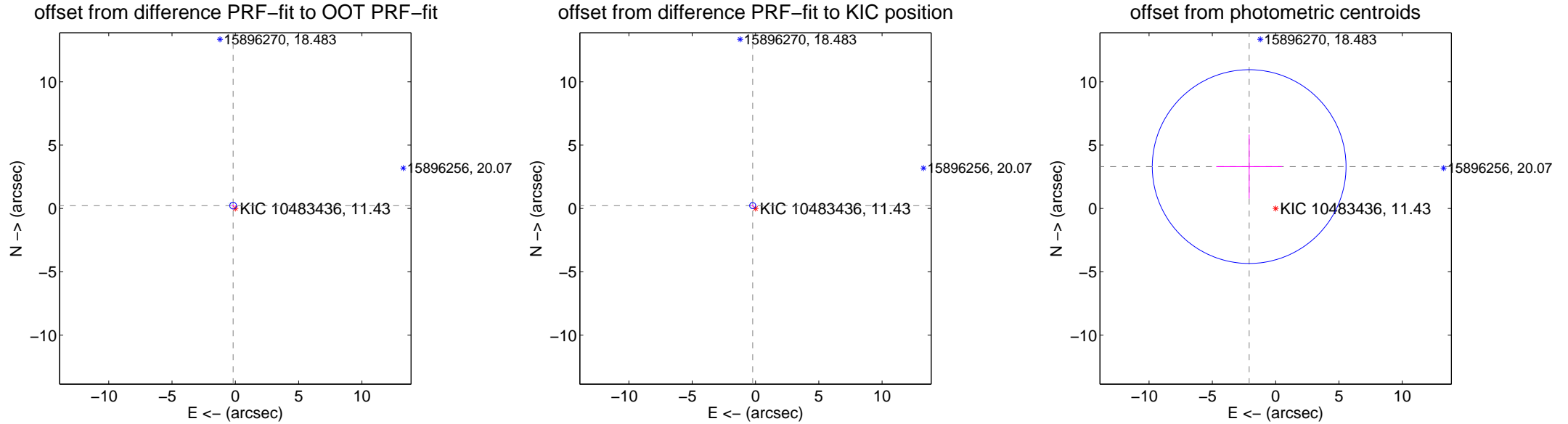
## DV Centroid Data

Supplemental centroid analysis for 010483436-02. **Kepler magnitude: 11.43**. Transit SNR 3.44

There are 13 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

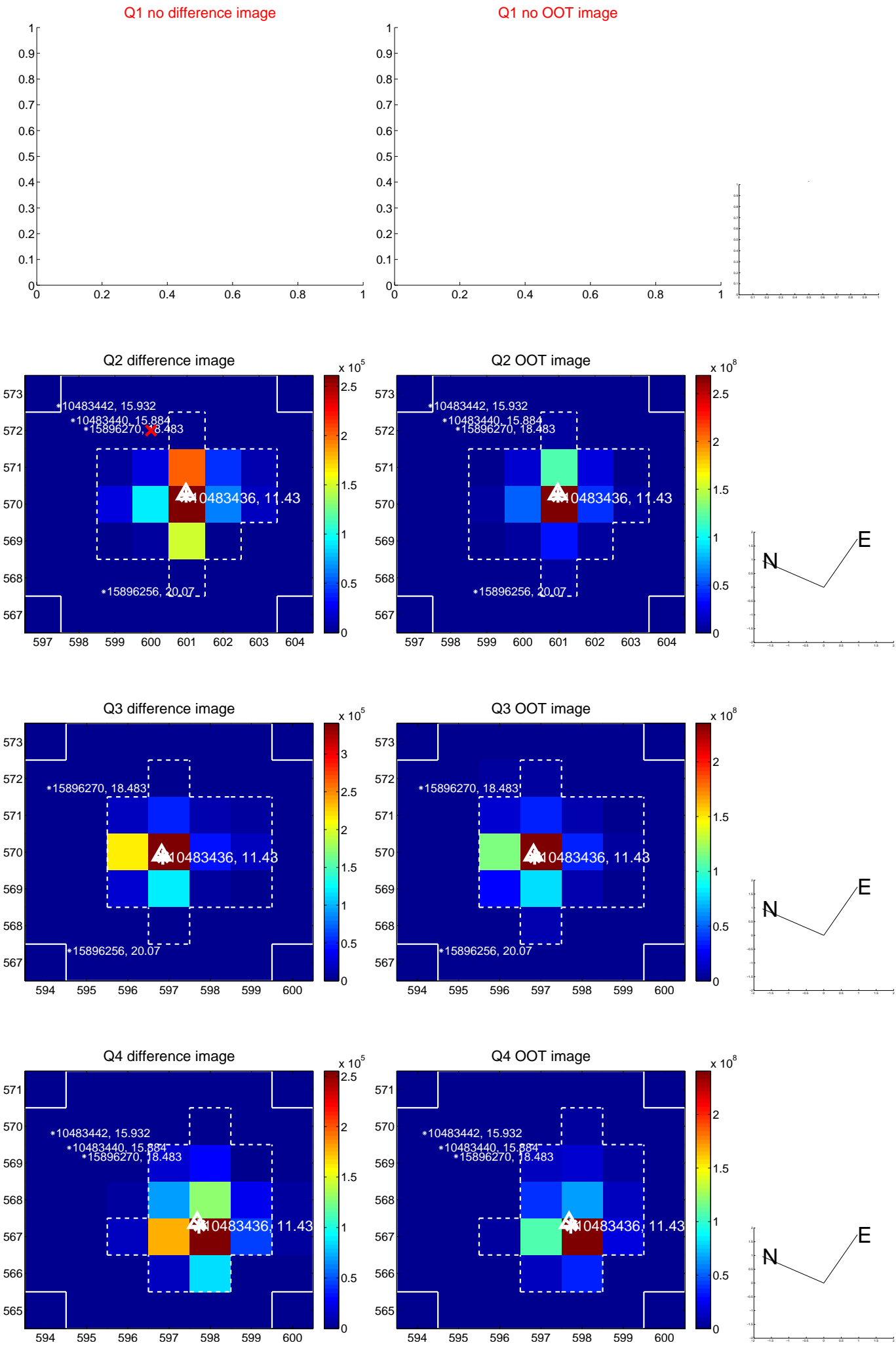
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b>0.283 <math>\pm</math> 0.090</b>	<b>3.16</b>	0.176 $\pm$ 0.083	0.222 $\pm$ 0.078
PRF-fit source offset from KIC position	<b>0.313 <math>\pm</math> 0.080</b>	<b>3.89</b>	0.220 $\pm$ 0.074	0.223 $\pm$ 0.079
photometric centroid source offset	3.91 $\pm$ 2.55	1.53	2.09 $\pm$ 2.60	3.31 $\pm$ 2.53



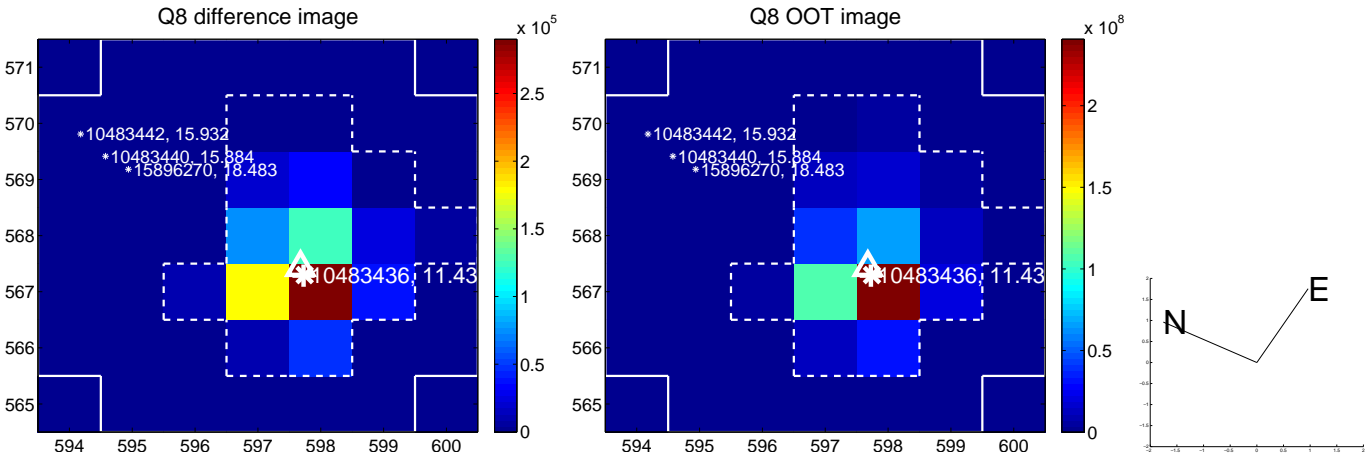
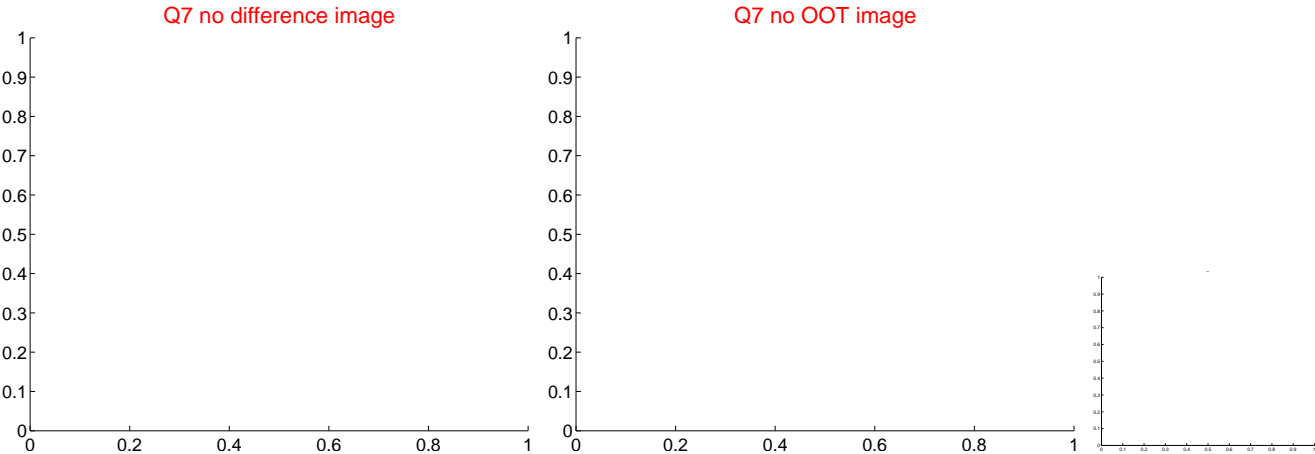
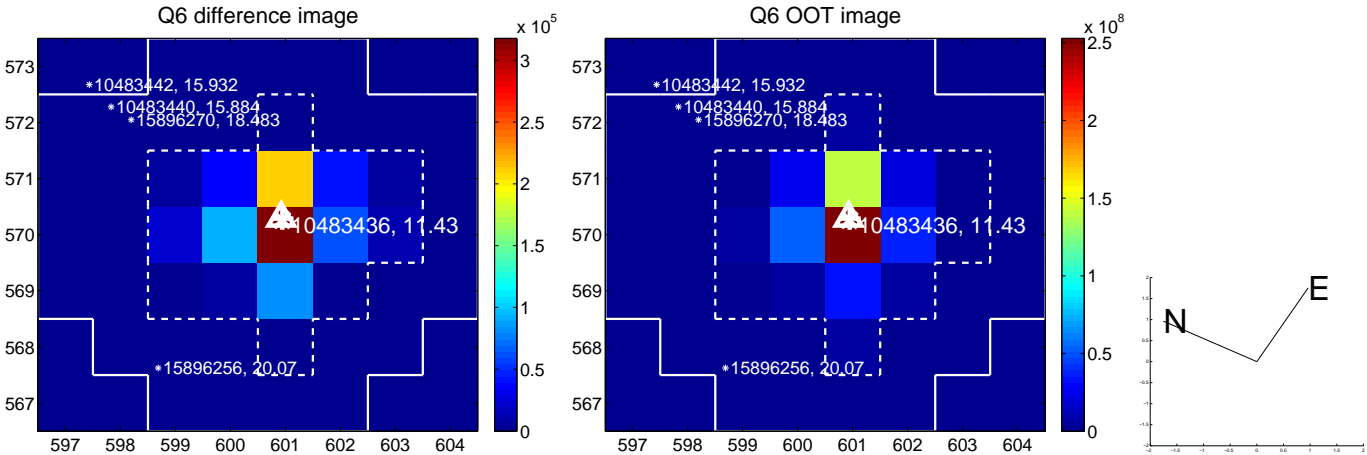
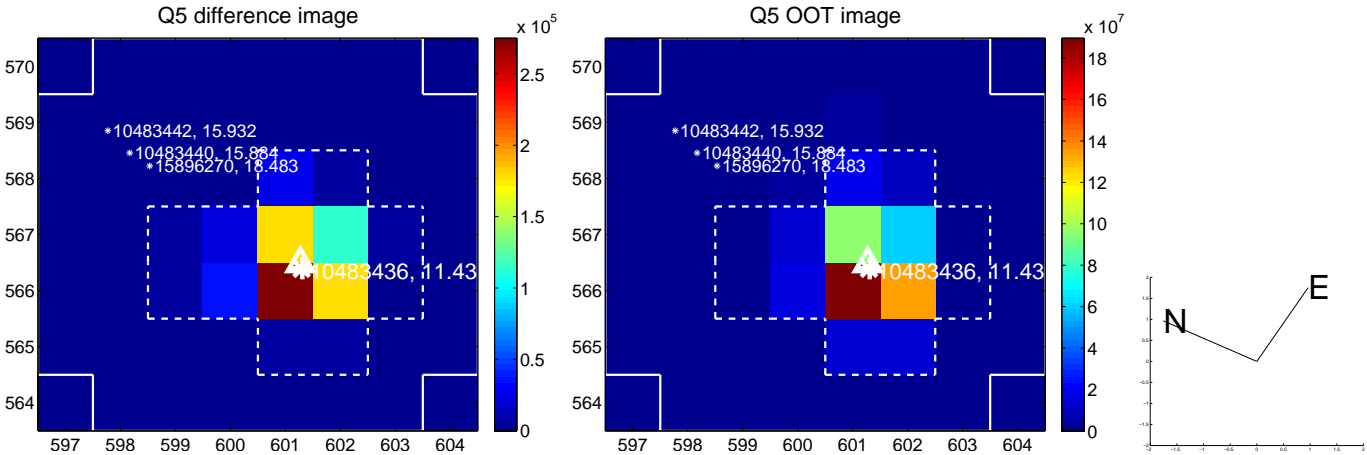
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



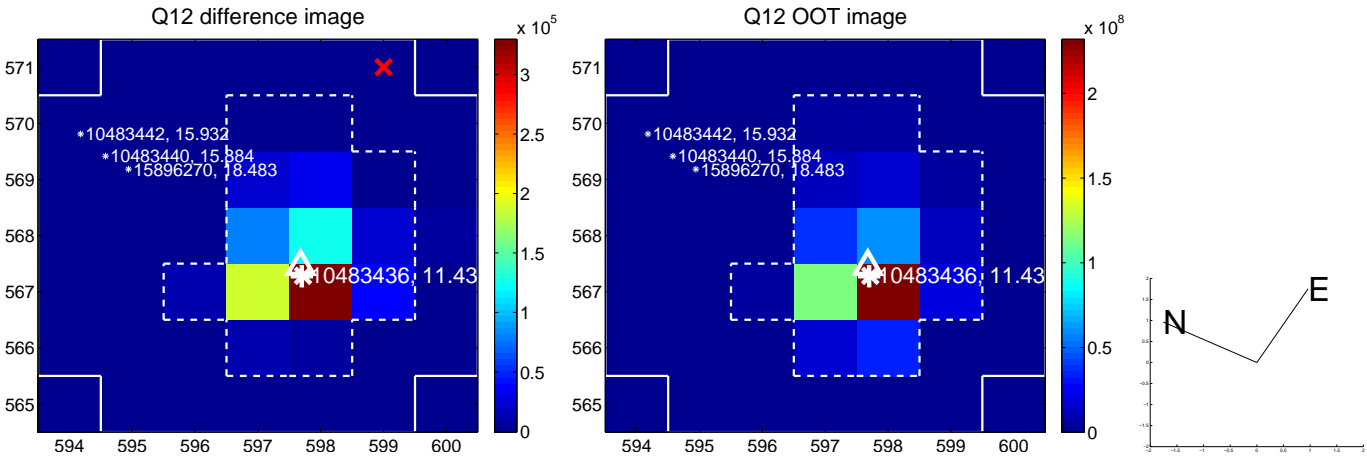
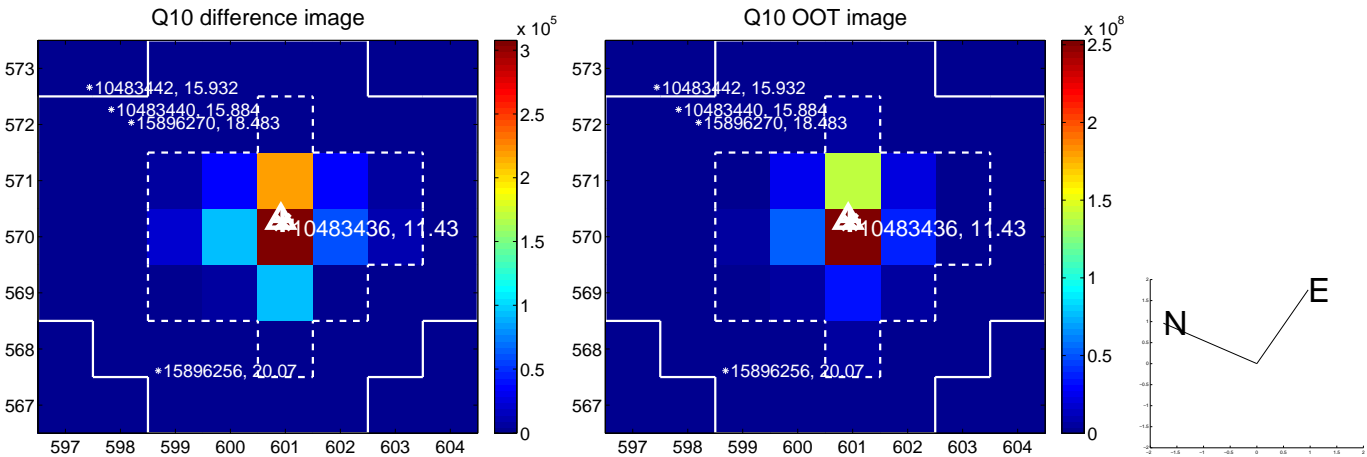
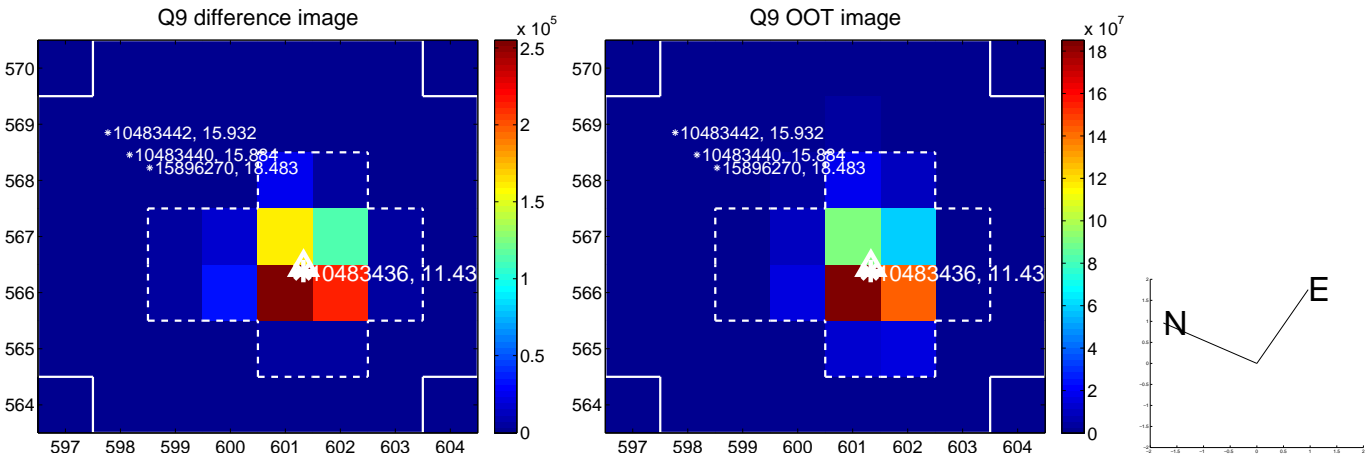
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



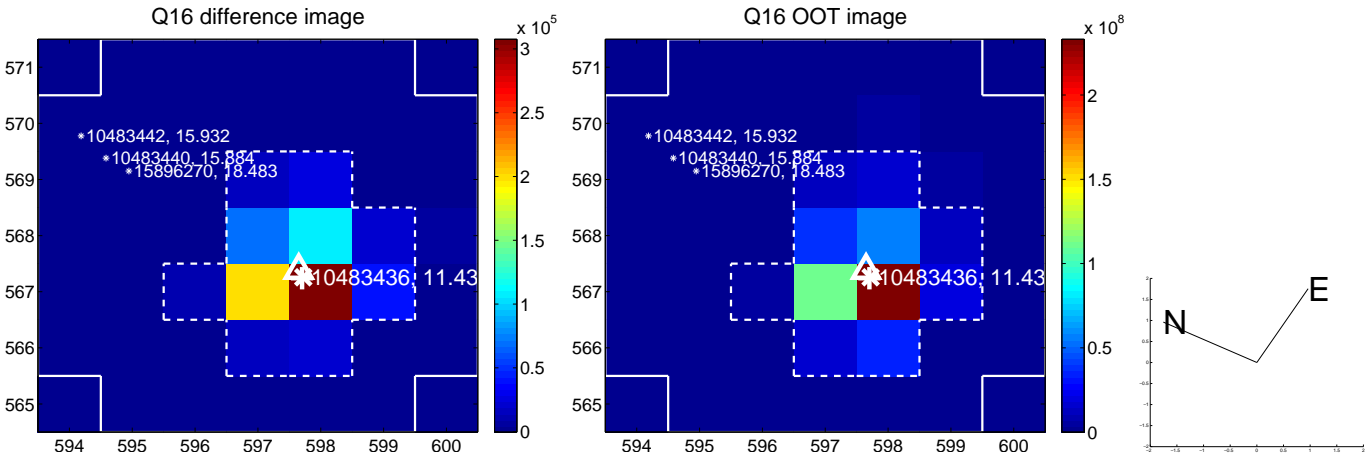
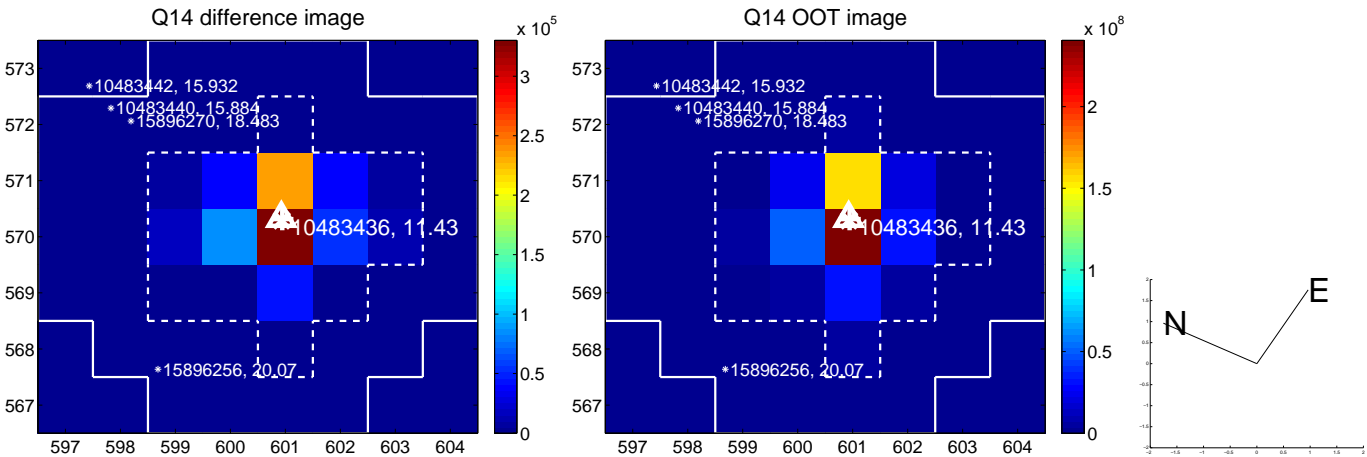
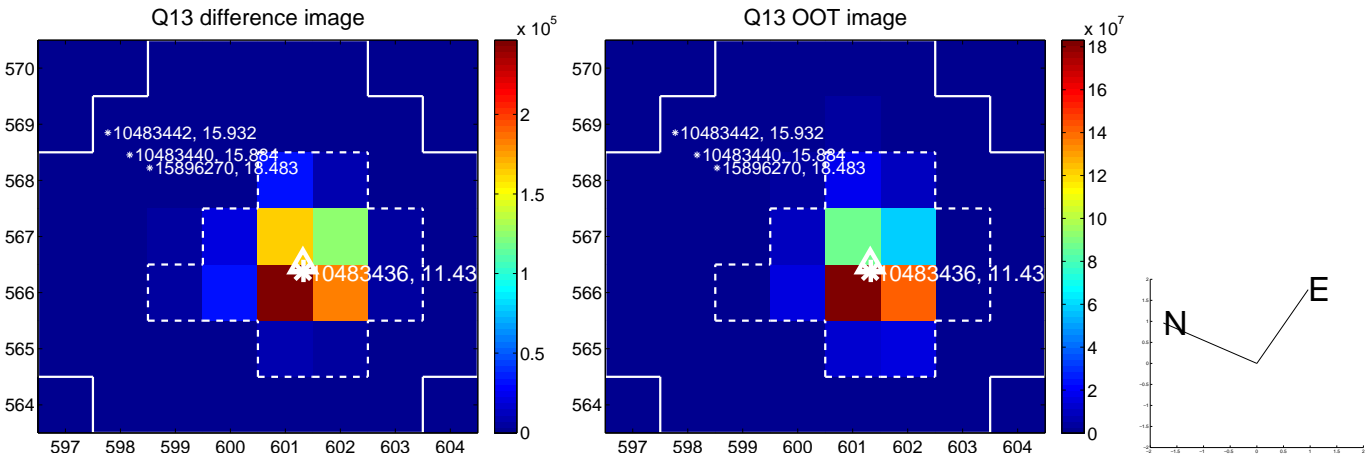
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



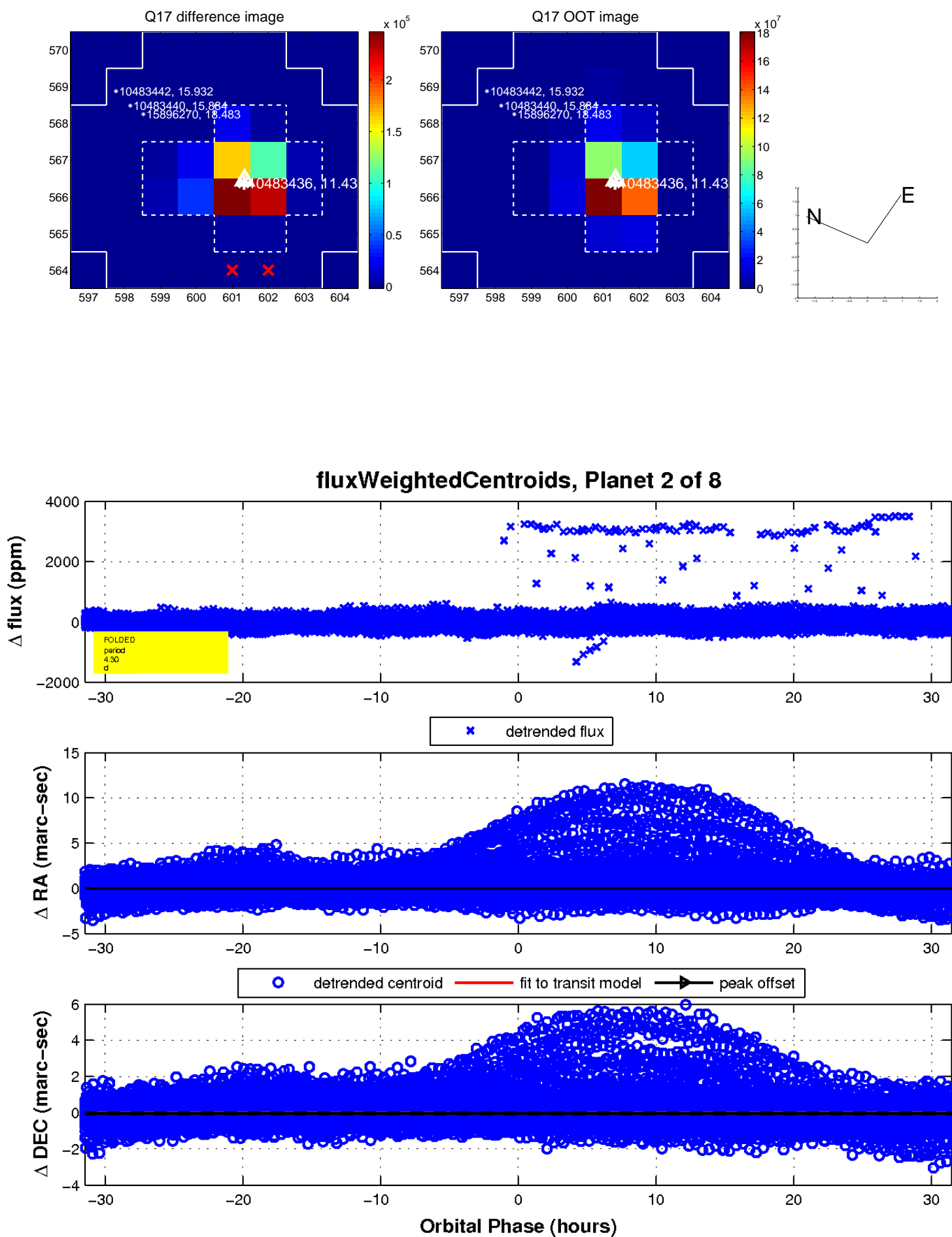
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

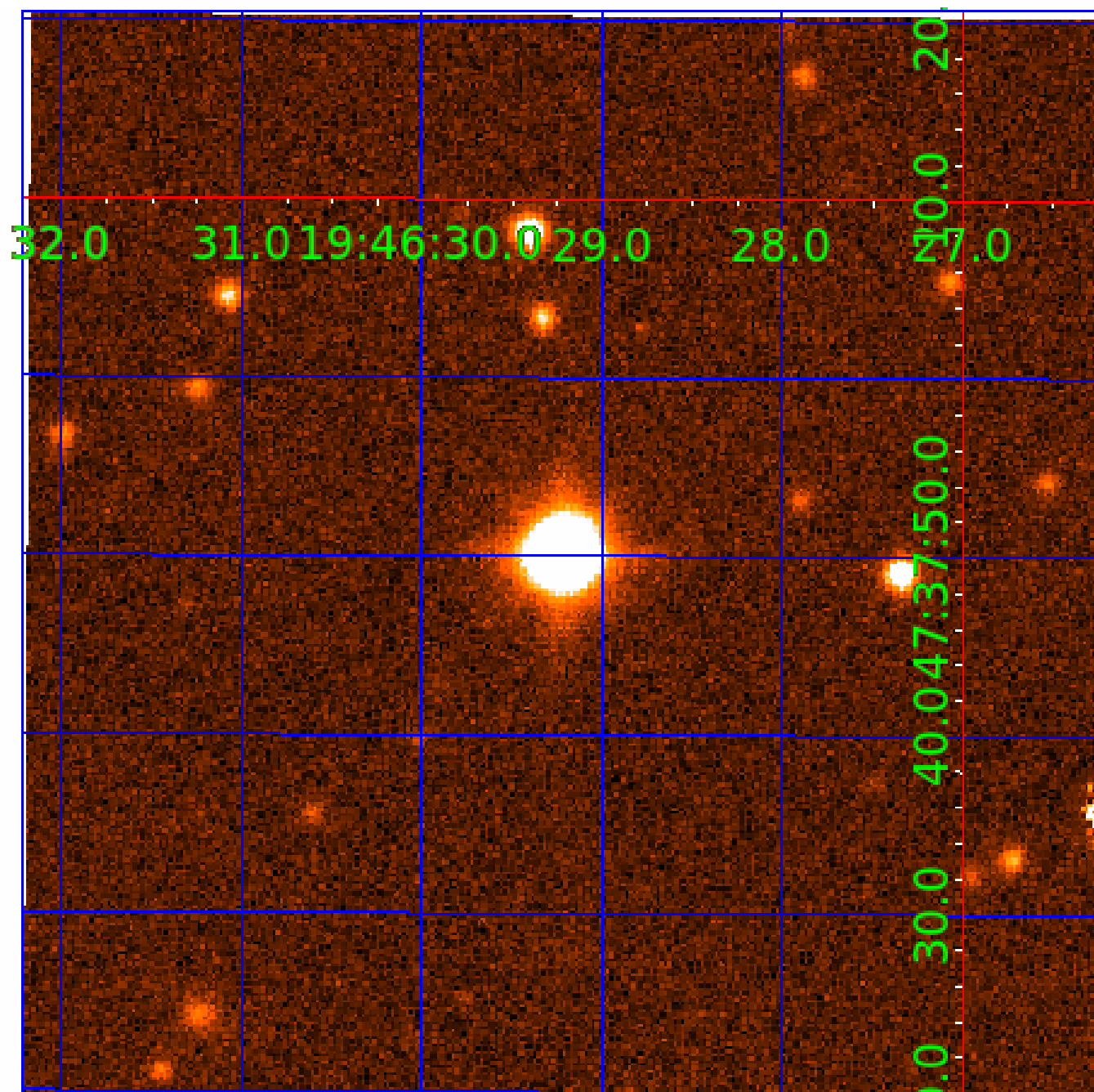


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 010483436

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010483436-01	OBS	No	2.151570	132.635029	47.1	1.865	18.1	21.6	1.83	7602	1.46	6492.44
010483436-02	OBS	No	4.303206	134.910950	10.6	10.482	12.1	3.4	1.83	7602	0.69	2576.47
010483436-03	OBS	No	111.989531	194.017254	220.1	15.000	25.3	-1.0	1.83	7602	2.75	33.41
010483436-04	OBS	No	1.434597	131.993627	16.5	5.110	13.2	10.0	1.83	7602	0.93	11145.73
010483436-05	OBS	No	1.075175	132.166864	4.1	1.268	14.6	1.7	1.83	7602	0.41	16372.30
010483436-06	OBS	No	1.075793	131.990196	1.3	0.773	11.2	0.4	1.83	7602	0.21	16359.76
010483436-07	OBS	No	79.766297	156.928877	228.0	1.500	8.9	7.9	1.83	7602	2.93	52.52
010483436-08	OBS	No	73.264201	169.197290	111.3	4.500	9.6	-1.0	1.83	7602	1.96	58.83

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010483436-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_SATURATED
010483436-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED
010483436-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010483436-04	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
010483436-05	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010483436-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
010483436-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010483436-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_SATURATED

**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.

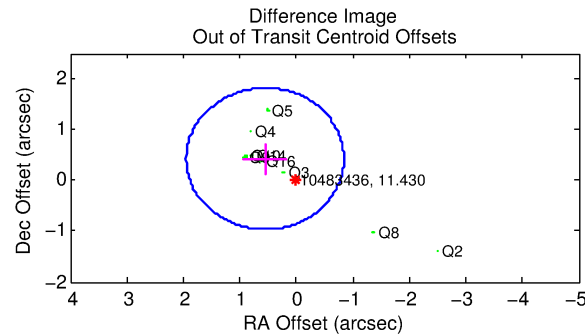
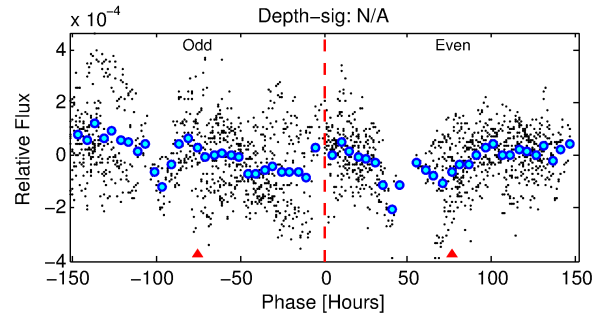
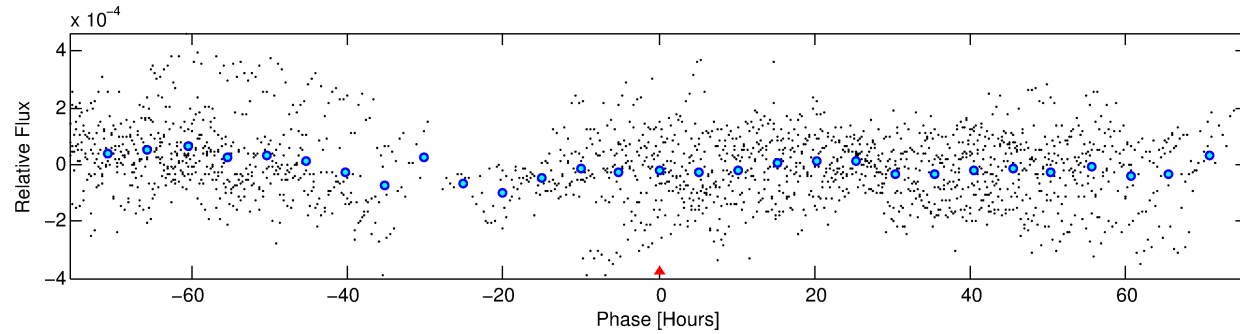
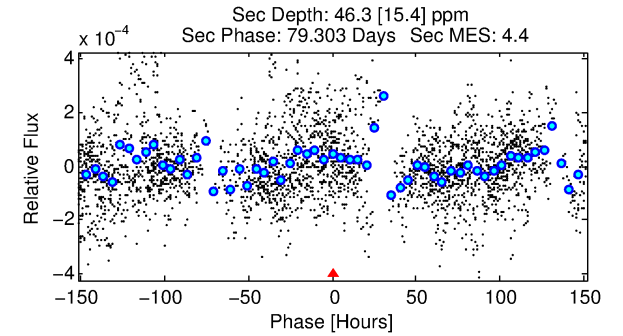
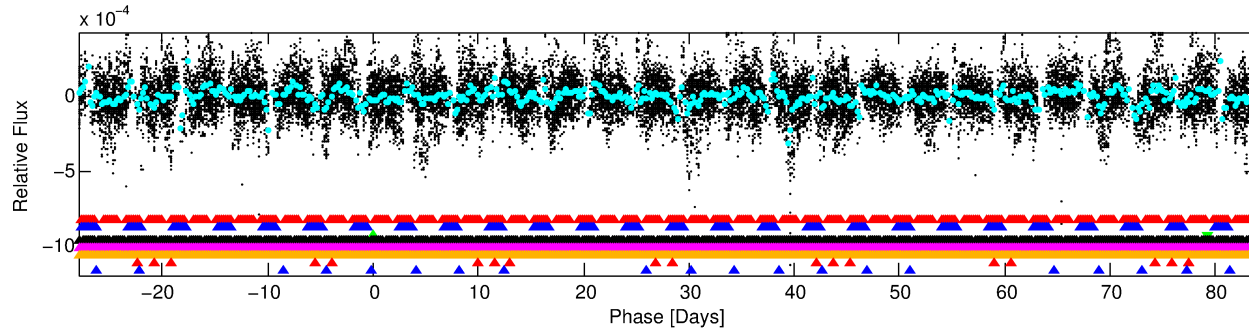
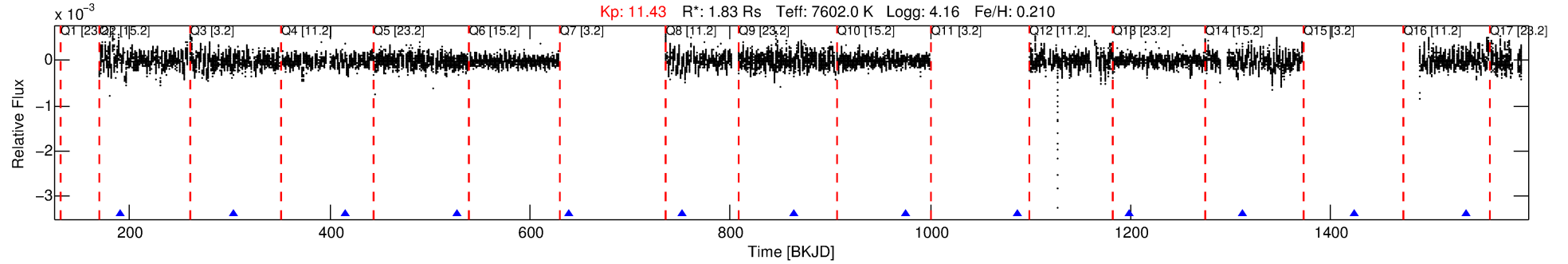
Ephemeris Match Information For 010483436-03

No Significant Match Found



# DV One-Page Summary

KIC: 10483436 Candidate: 3 of 8 Period: 111.990 d



## TPS TCE Results:

Period = 111.98953 d  
Epoch = 194.0173 BKJD

DV fit results are unavailable

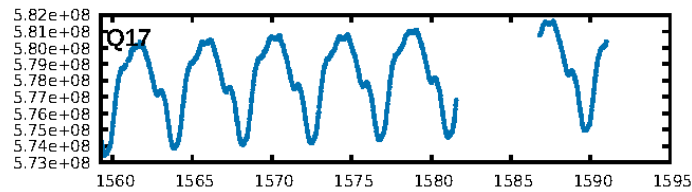
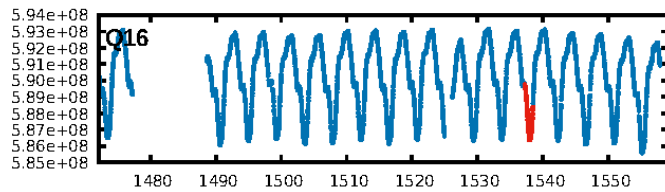
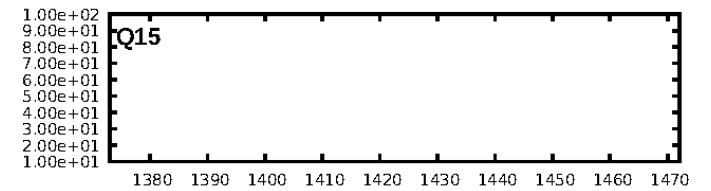
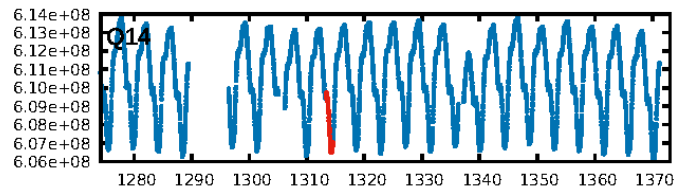
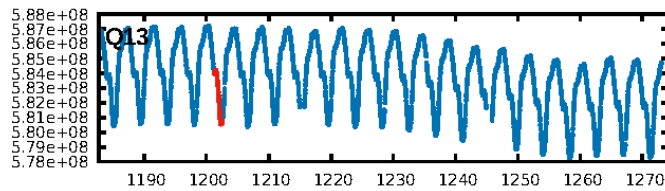
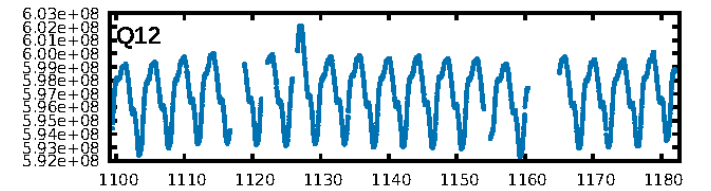
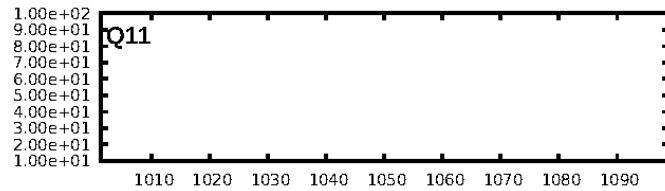
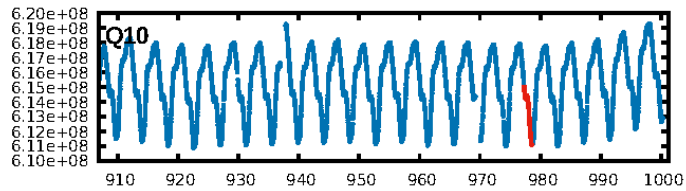
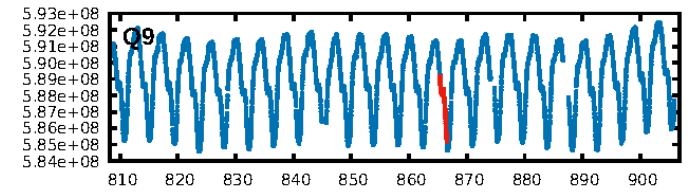
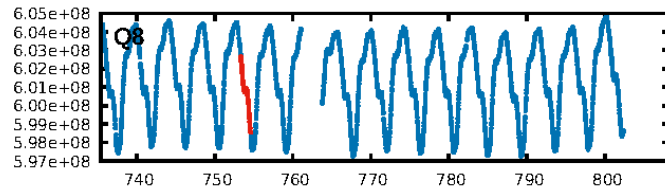
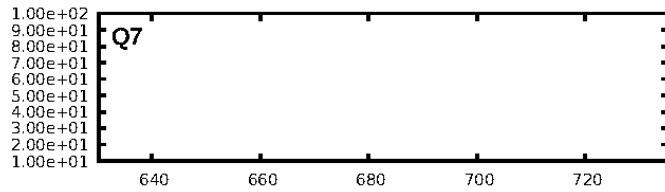
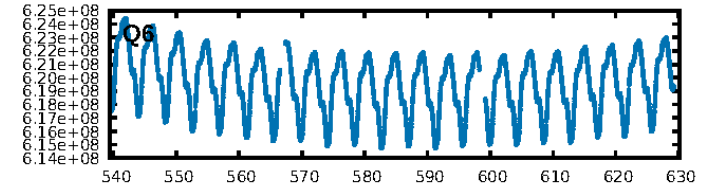
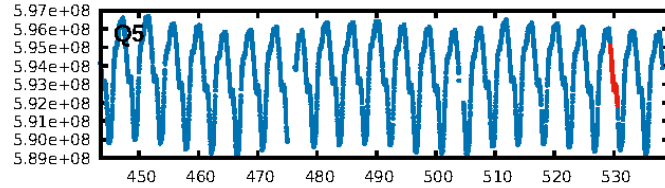
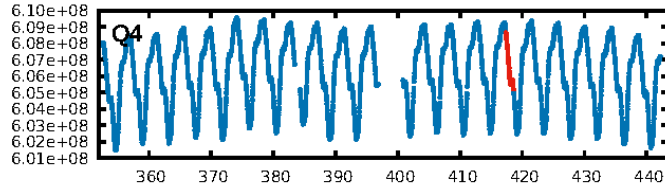
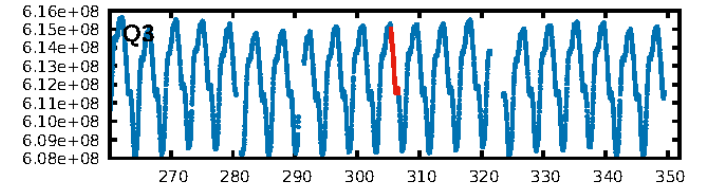
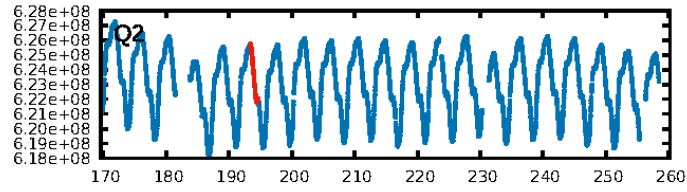
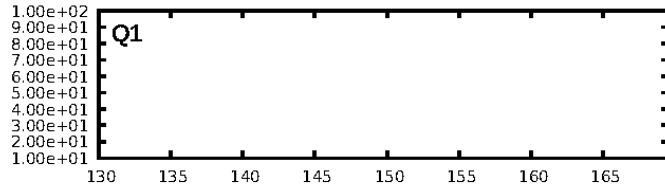
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [51.30 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [10/10]  
GhostDiagnostic-chr: 3.307  
Centroid-sig: 97.8%  
Centroid-so: 0.084 arcsec [0.19 $\sigma$ ]  
OotOffset-rm: 0.701 arcsec [1.51 $\sigma$ ]  
KicOffset-rm: 0.700 arcsec [1.66 $\sigma$ ]  
OotOffset-st: 3/1/3/2 [9]  
KicOffset-st: 3/1/3/2 [9]  
DiffImageQuality-fgm: 0.44 [4/9]  
DiffImageOverlap-fno: 0.00 [0/9]

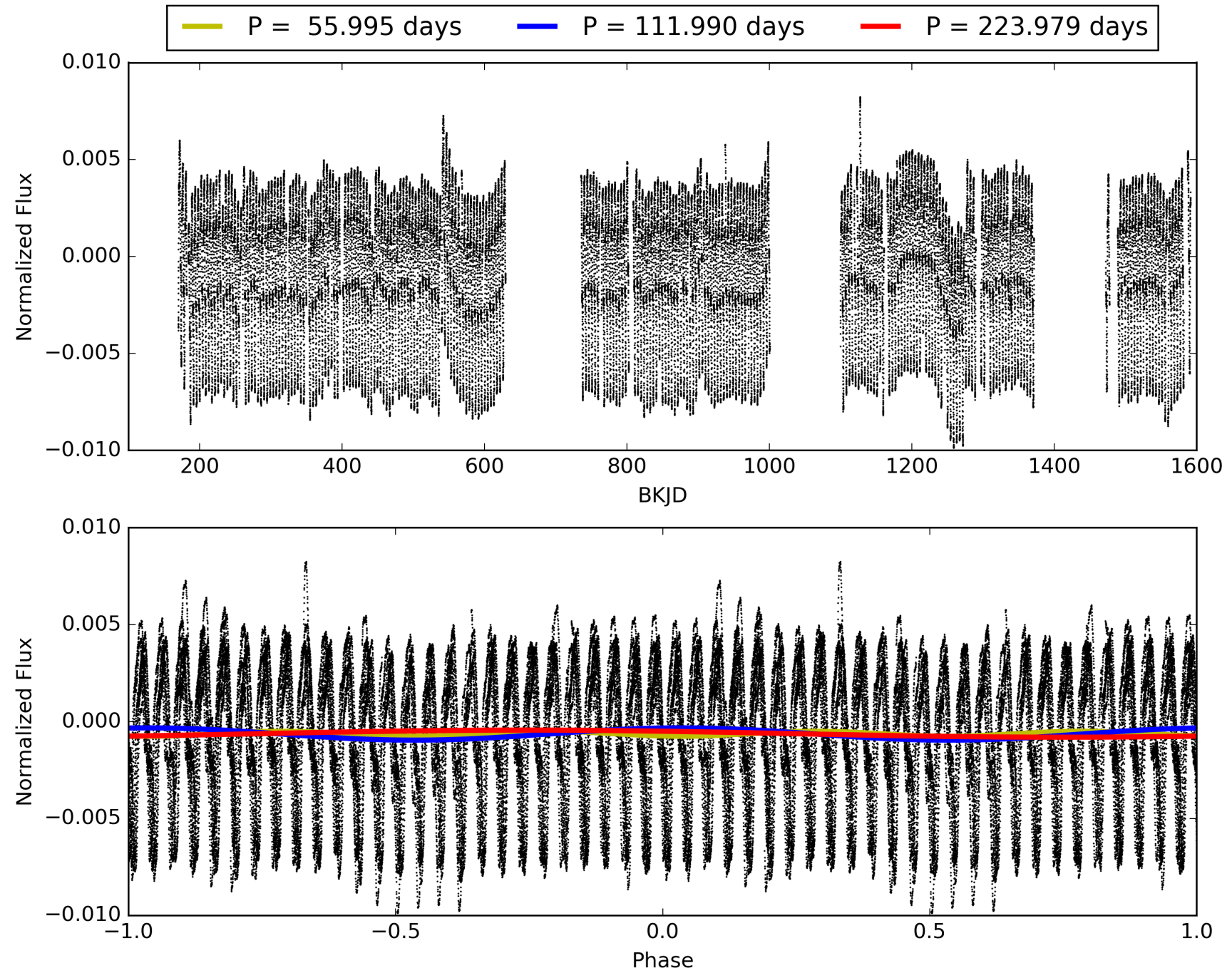
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:52:25 Z

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

# TCE 010483436-03, PDC Light Curves

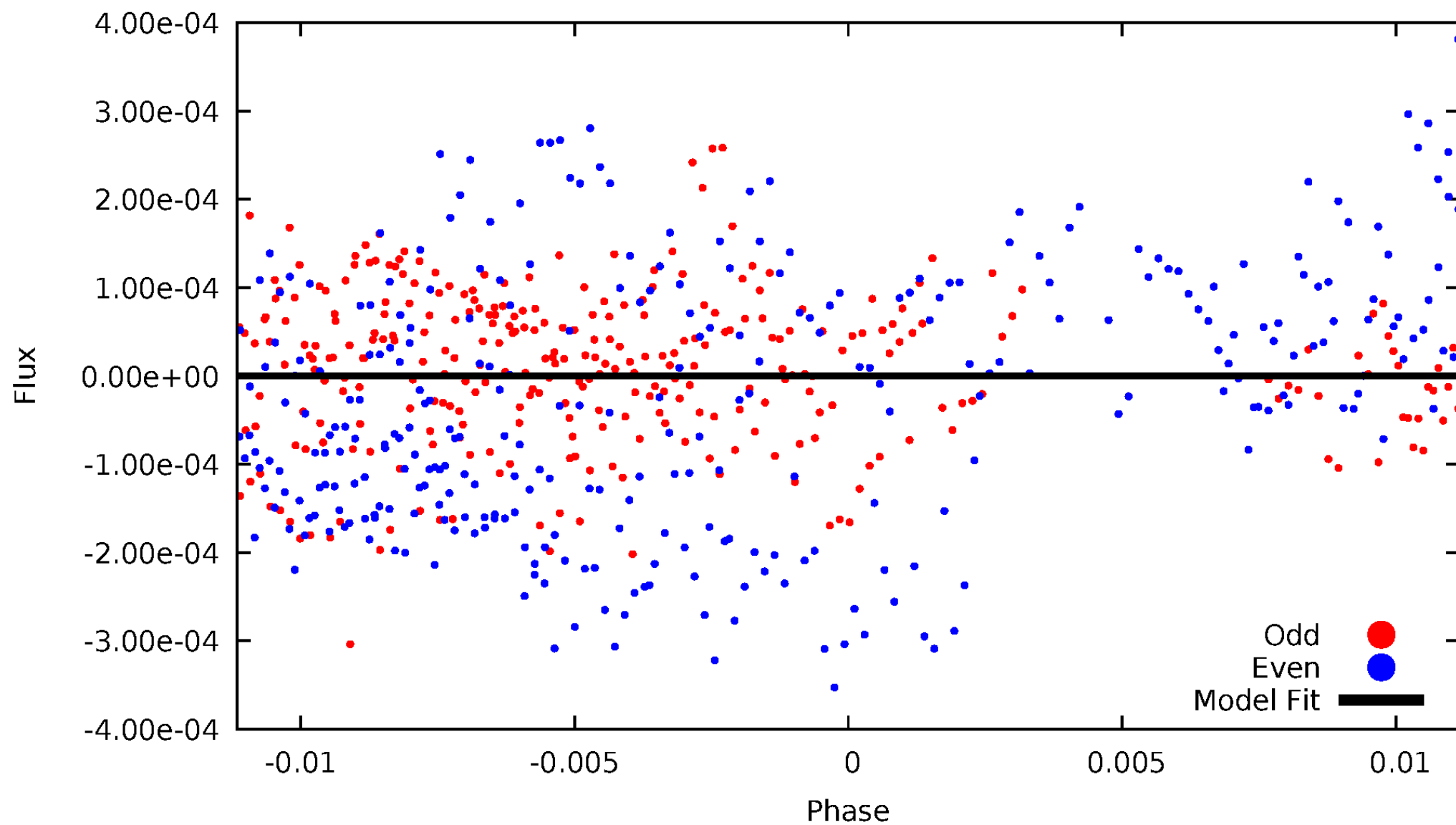


# TCE 010483436-03



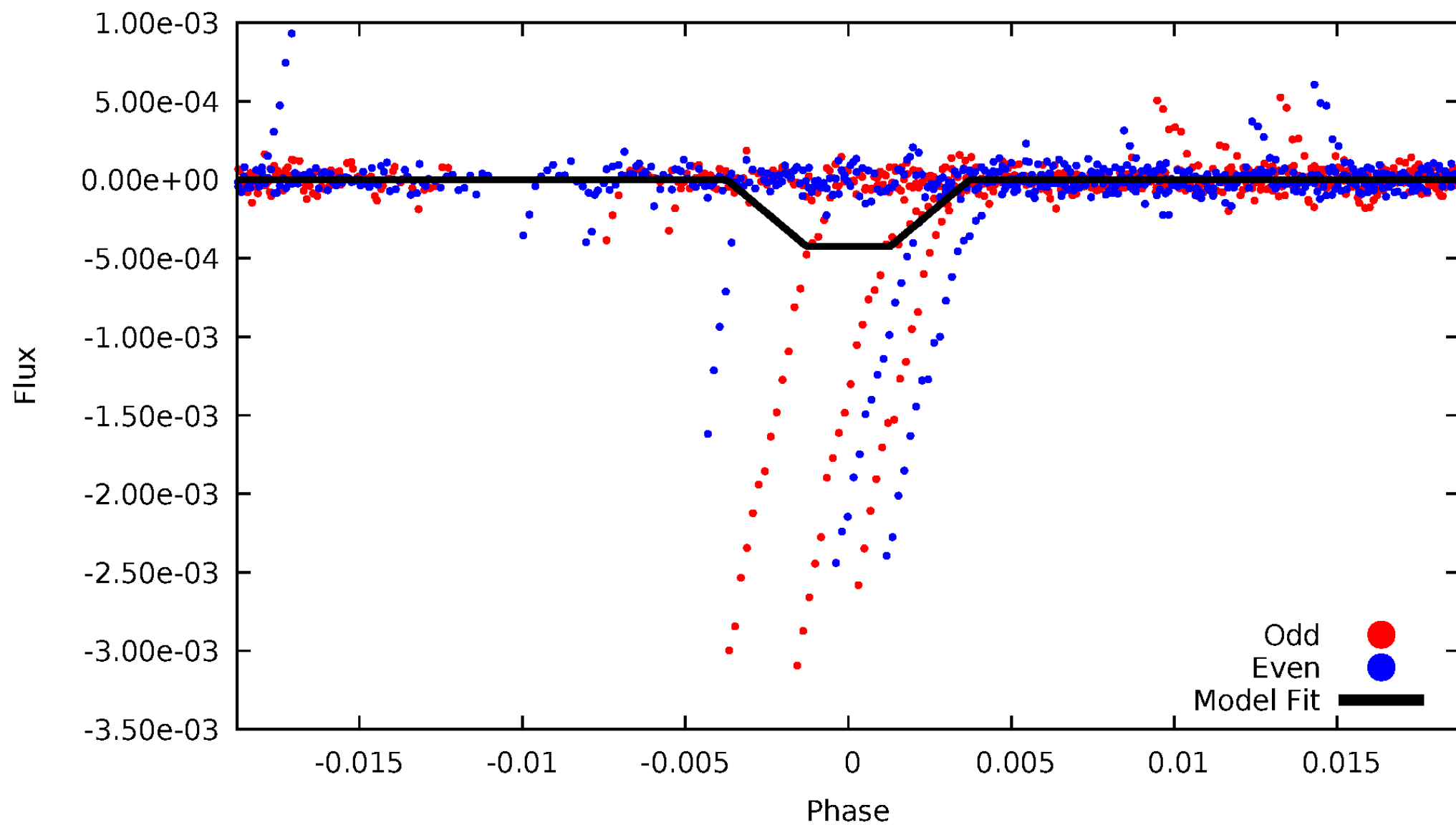
# DV Odd/Even

TCE 010483436-03

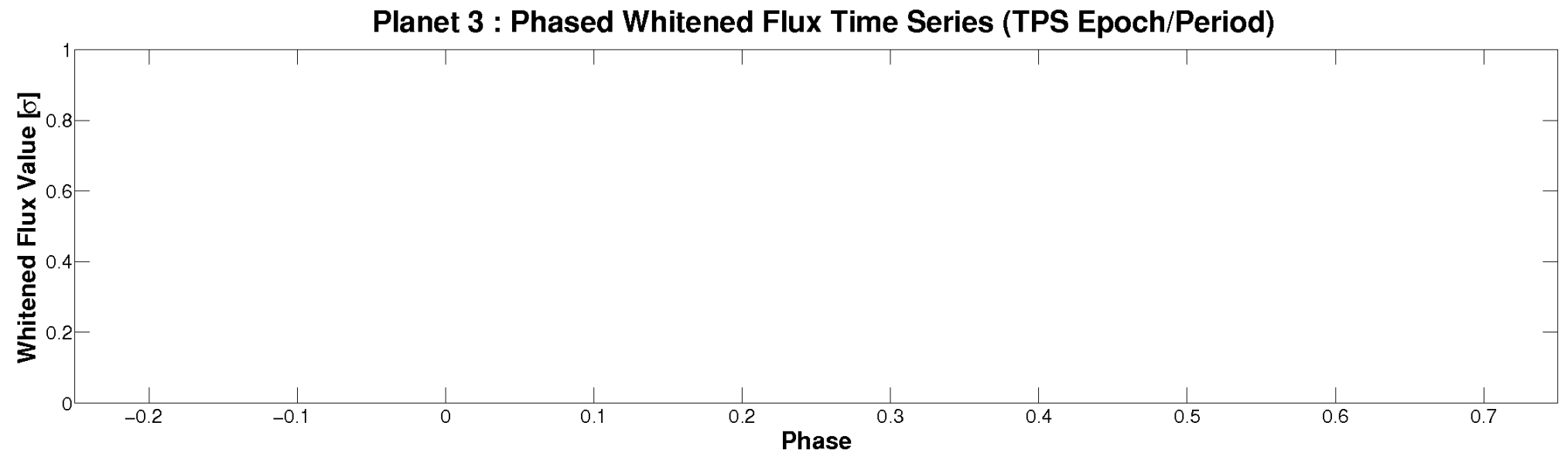
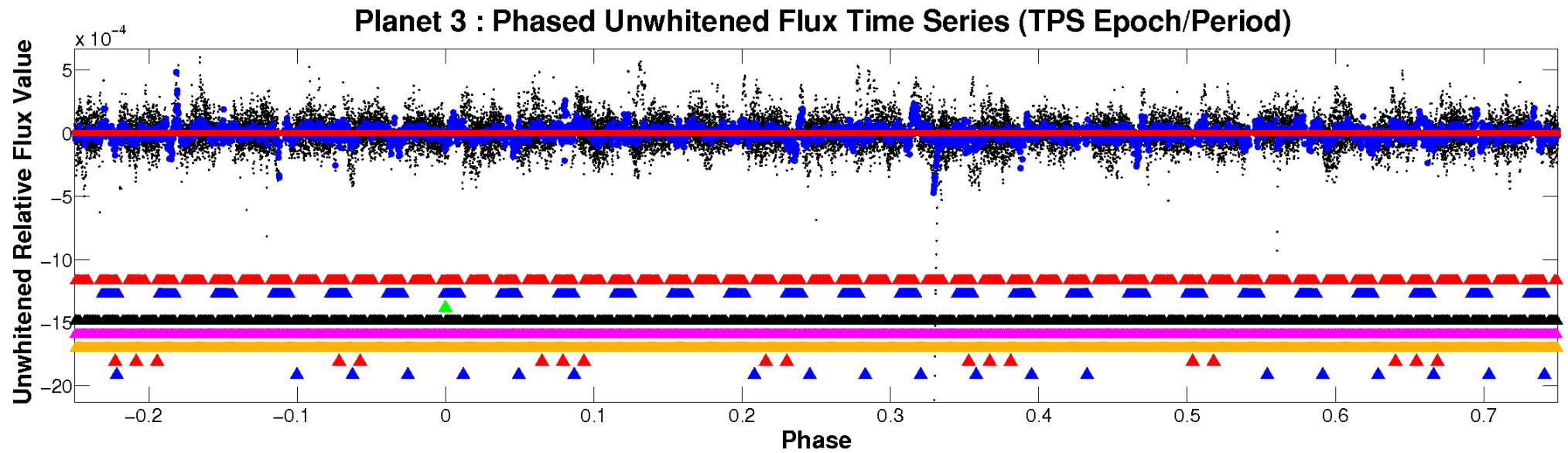


# ALT Odd/Even

TCE 010483436-03

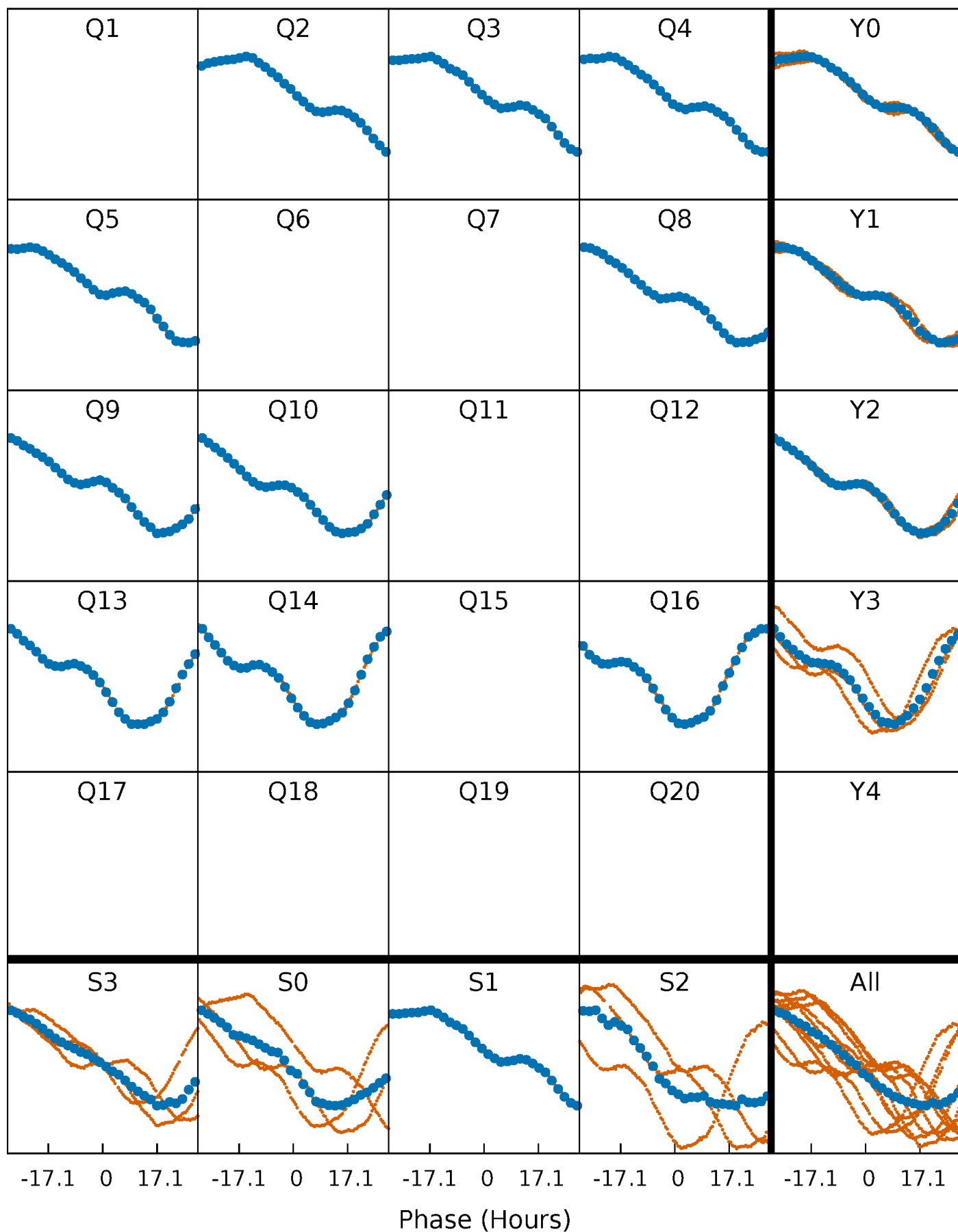


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

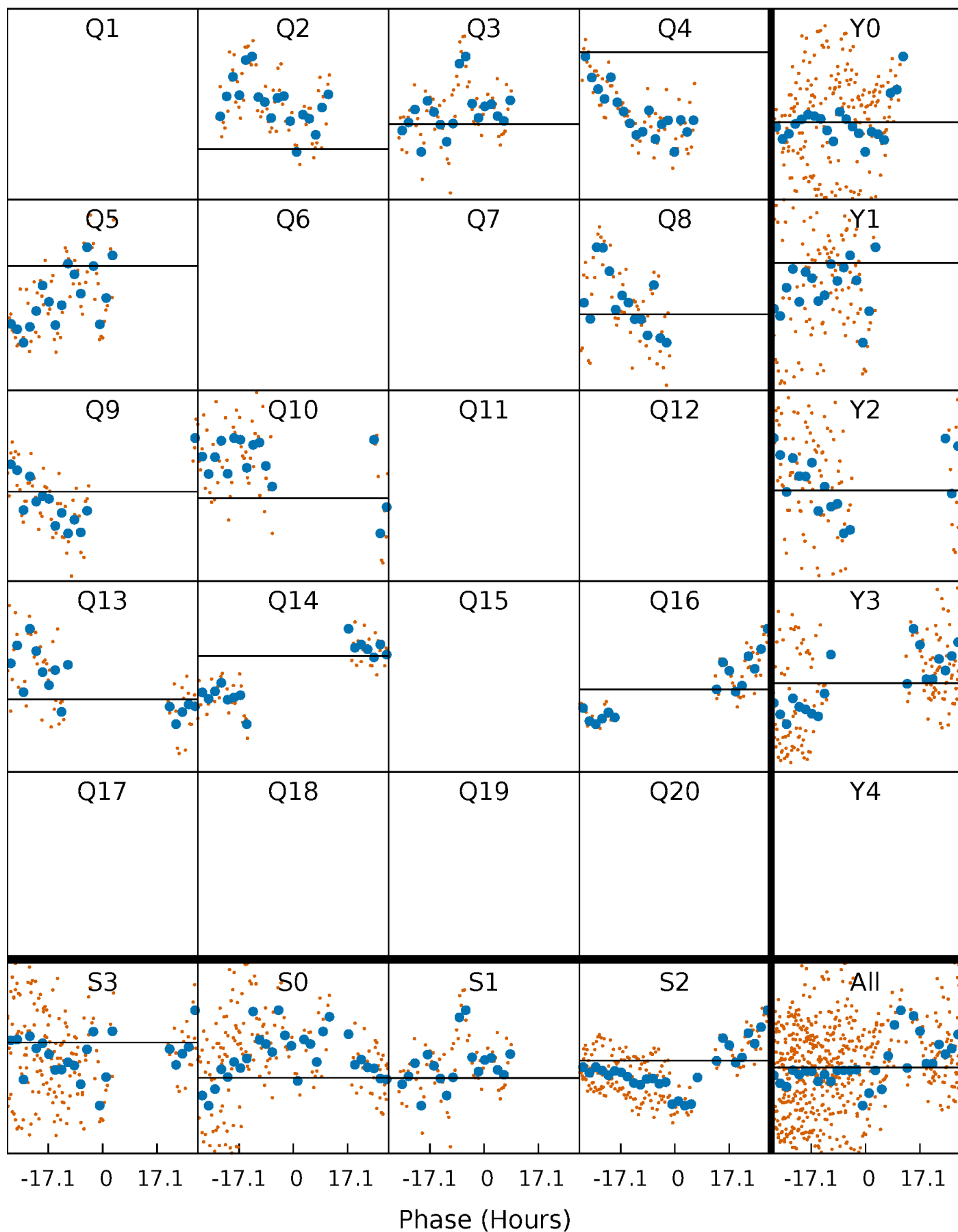
TCE 010483436-03 P=111.989531 Days  $T_0=194.017254$  (BKJD)





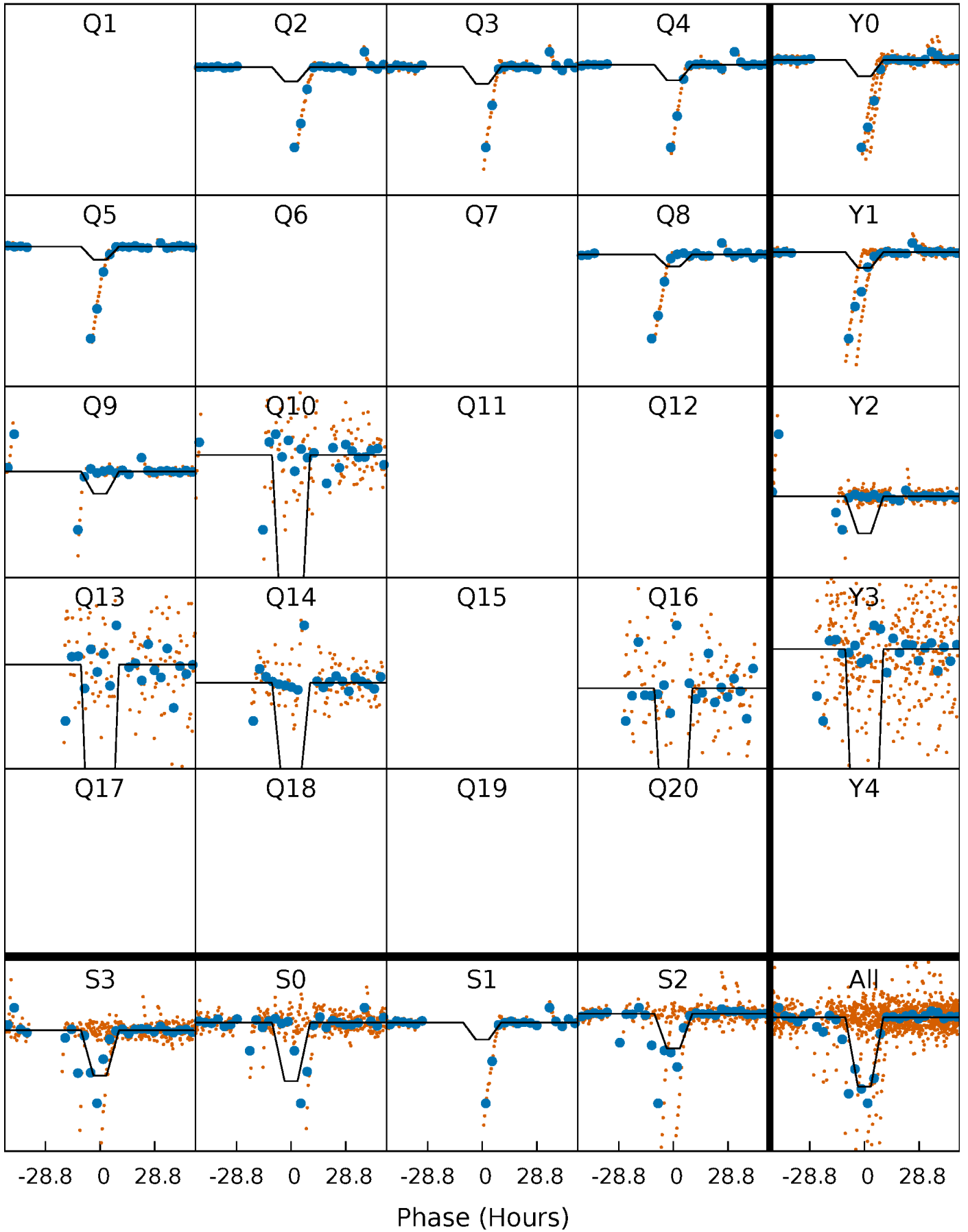
# DV Quarter-Phased Transit Curves

TCE 010483436-03 P=111.989531 Days  $T_0=194.017254$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

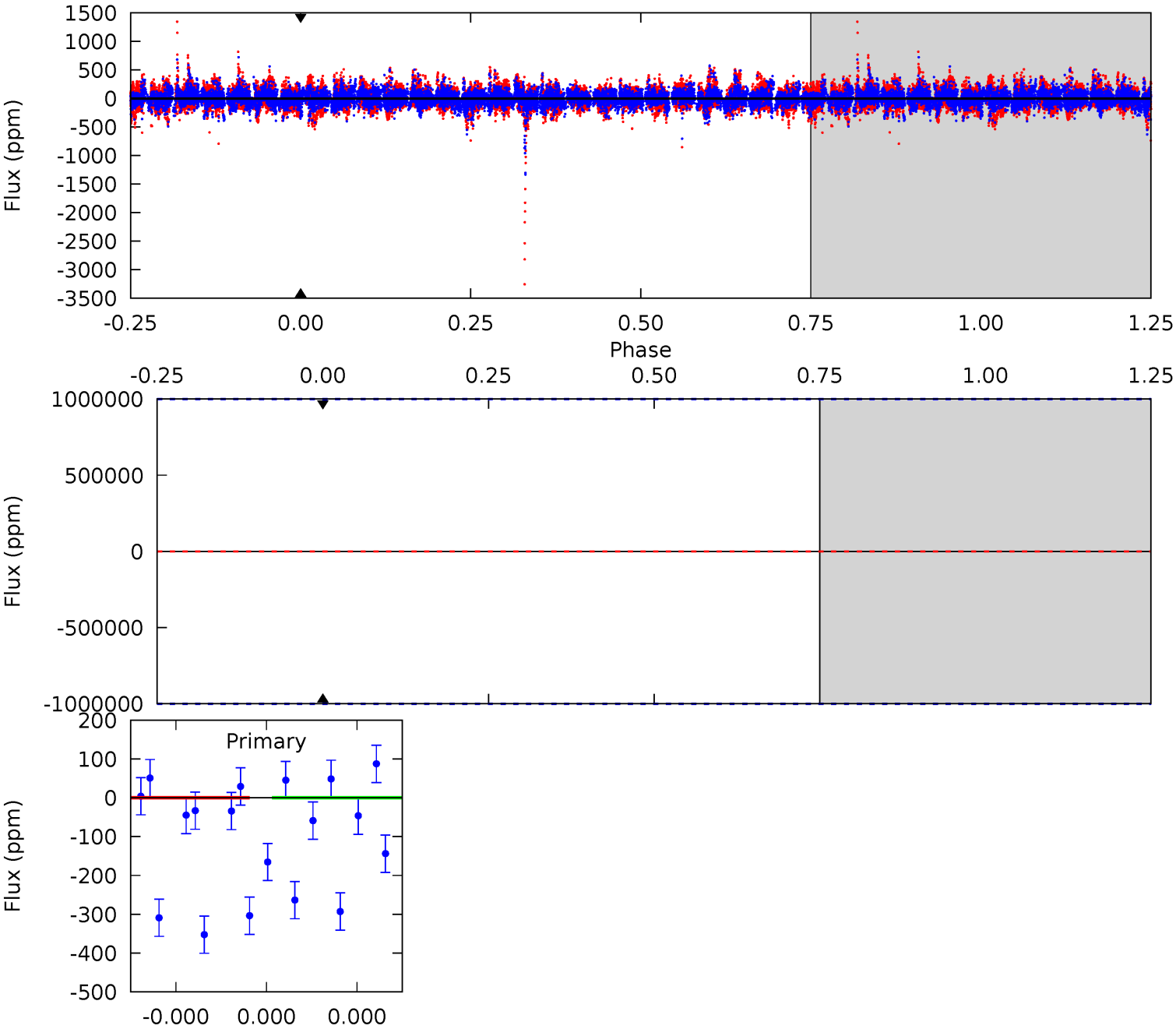
TCE 010483436-03 P=111.989531 Days  $T_0=191.416422$  (BKJD)



# DV Model-Shift Uniqueness Test

010483436-03, P = 111.989531 Days, E = 82.027723 Days

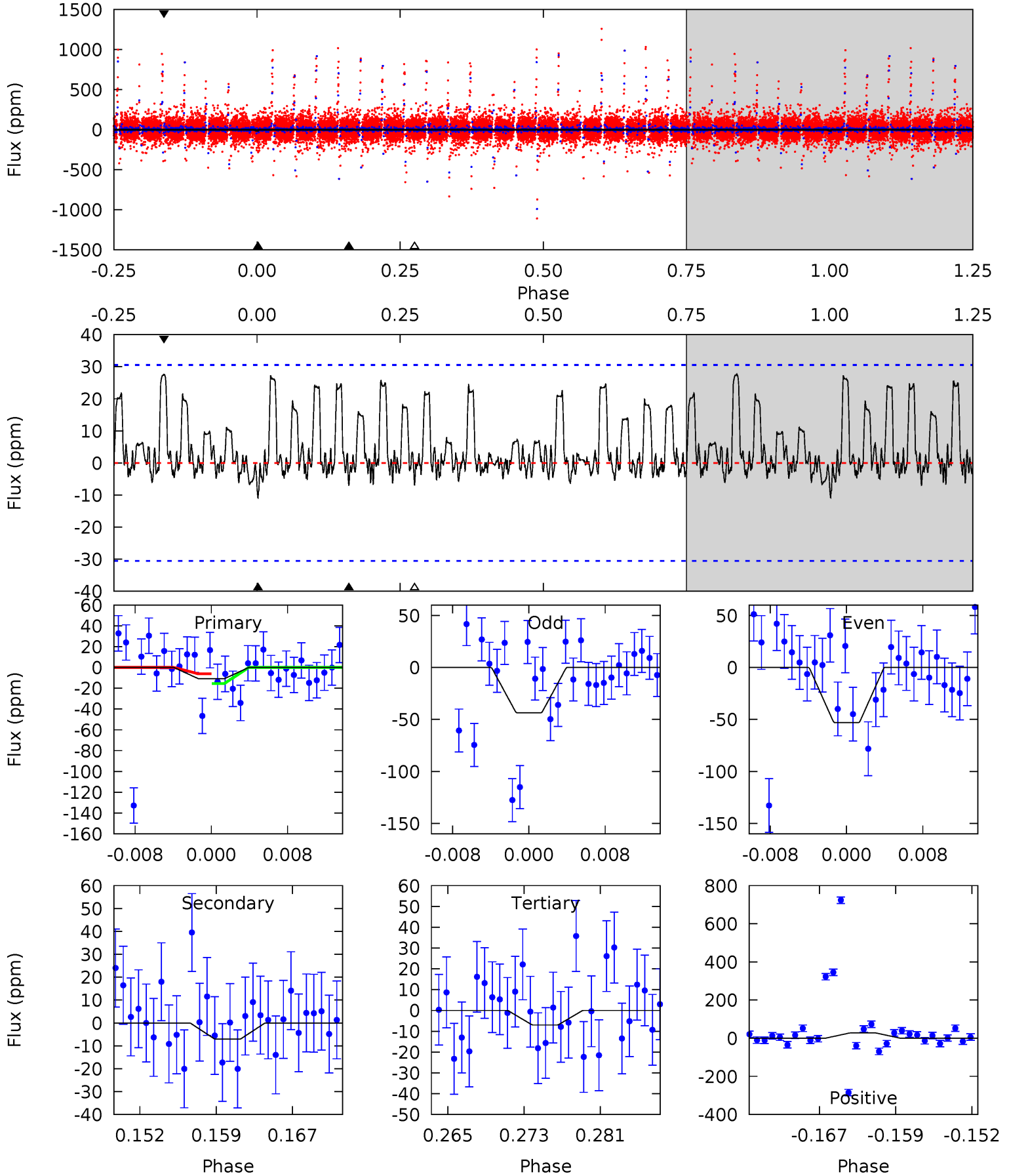
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

010483436-03, P = 111.989531 Days, E = 79.426891 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
1.82	1.18	1.16	4.61	5.08	2.67	1.02	0.65	-2.79	0.01	-3.43	0.68	3.22	0.72	0.78



### Stellar Parameters For KIC 010483436

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7602^{+210}_{-330}$	$4.155^{+0.070}_{-0.196}$	$0.210^{+0.150}_{-0.350}$	$1.829^{+0.572}_{-0.245}$	$1.743^{+0.212}_{-0.233}$	$0.401^{+0.146}_{-0.207}$
	+3%/-4%	+2%/-5%	+71%/-167%	+31%/-13%	+12%/-13%	+36%/-52%
Source	KIC0	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 010483436-03 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$15.51^{+16.09}_{-10.83}$	$870^{+65}_{-48}$	$7103^{+36472}_{-40136}$	$2794^{+130576}_{-96715}$
Alt.	$-7 \pm 6$	$15.71^{+16.65}_{-10.43}$	$869^{+64}_{-44}$	$2209^{+767}_{-792}$	$3.346^{+30.581}_{-3.023}$

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

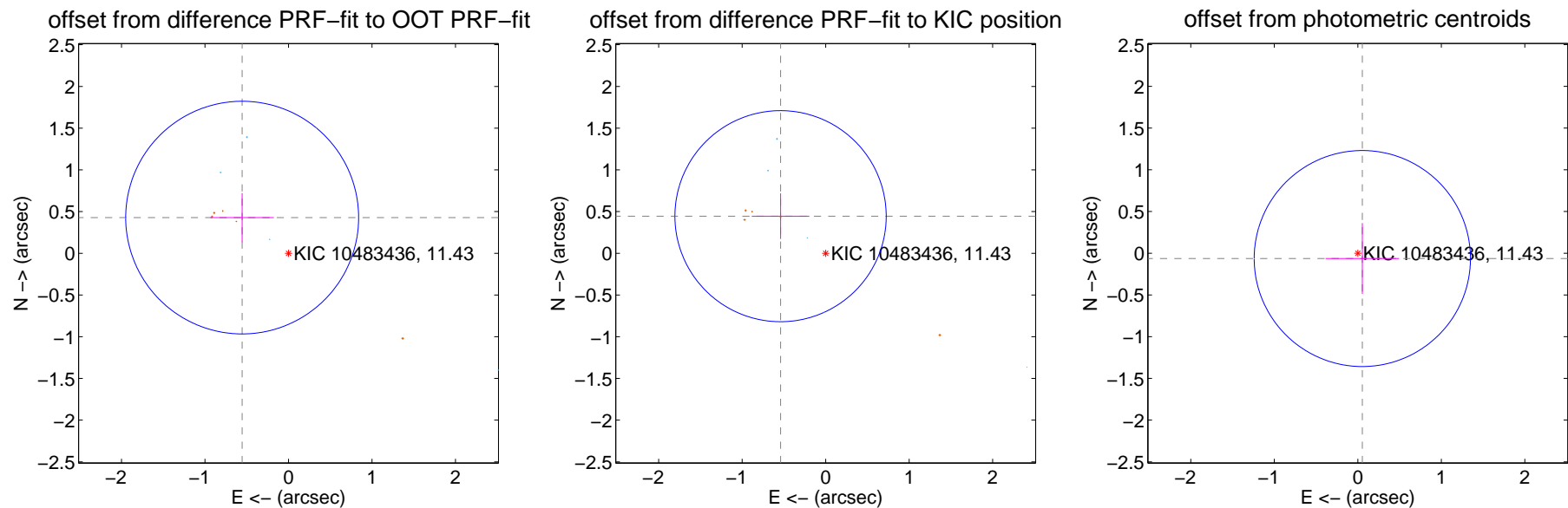
## DV Centroid Data

Supplemental centroid analysis for 010483436-03. **Kepler magnitude: 11.43.** Transit SNR -1.00

There are 4 quarters with good PRF difference image offsets

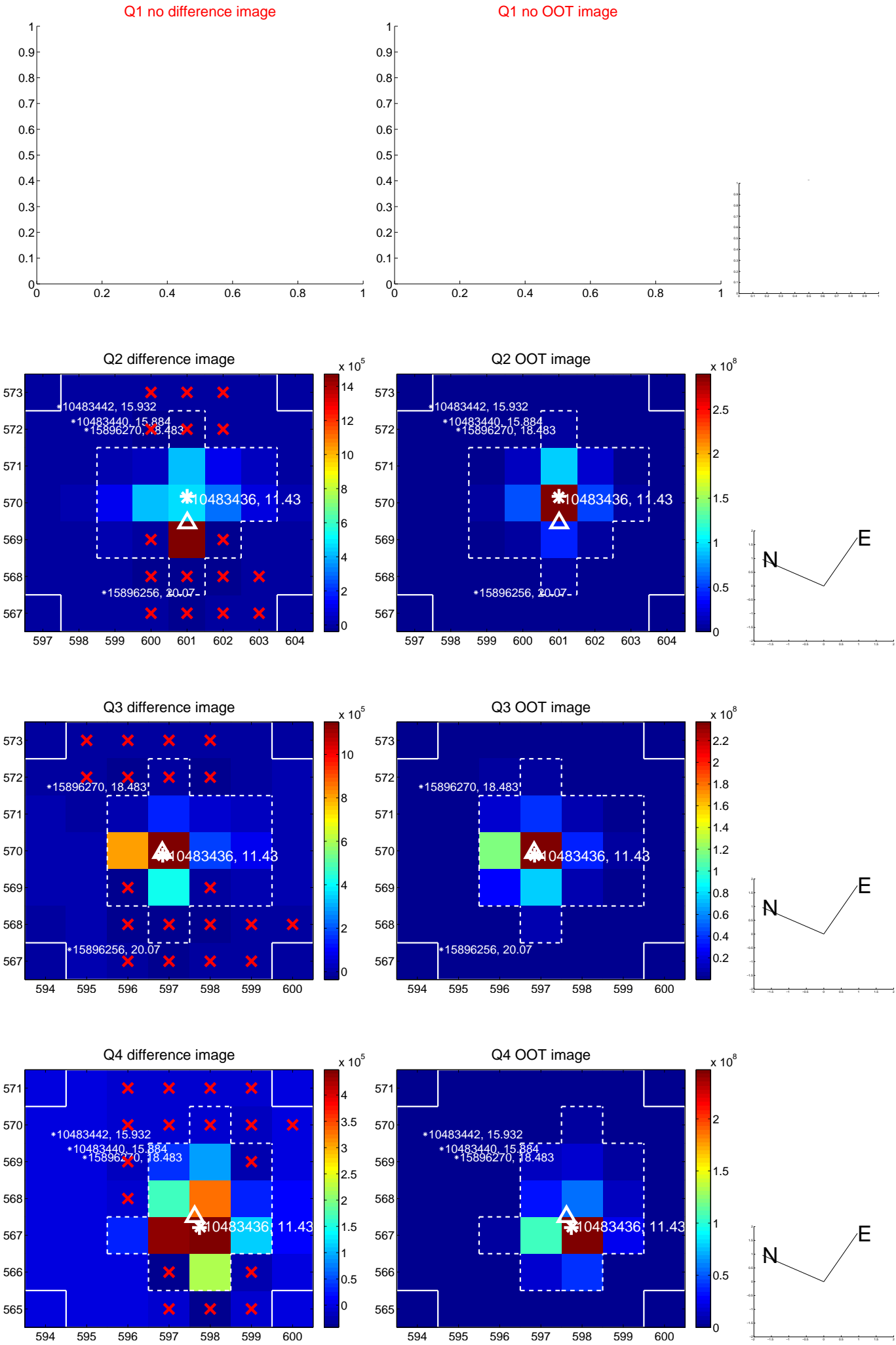
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.701 \pm 0.465$	1.51	$0.555 \pm 0.379$	$0.428 \pm 0.294$
PRF-fit source offset from KIC position	$0.700 \pm 0.422$	1.66	$0.540 \pm 0.345$	$0.445 \pm 0.273$
photometric centroid source offset	$0.08 \pm 0.43$	0.19	$-0.05 \pm 0.44$	$-0.06 \pm 0.42$



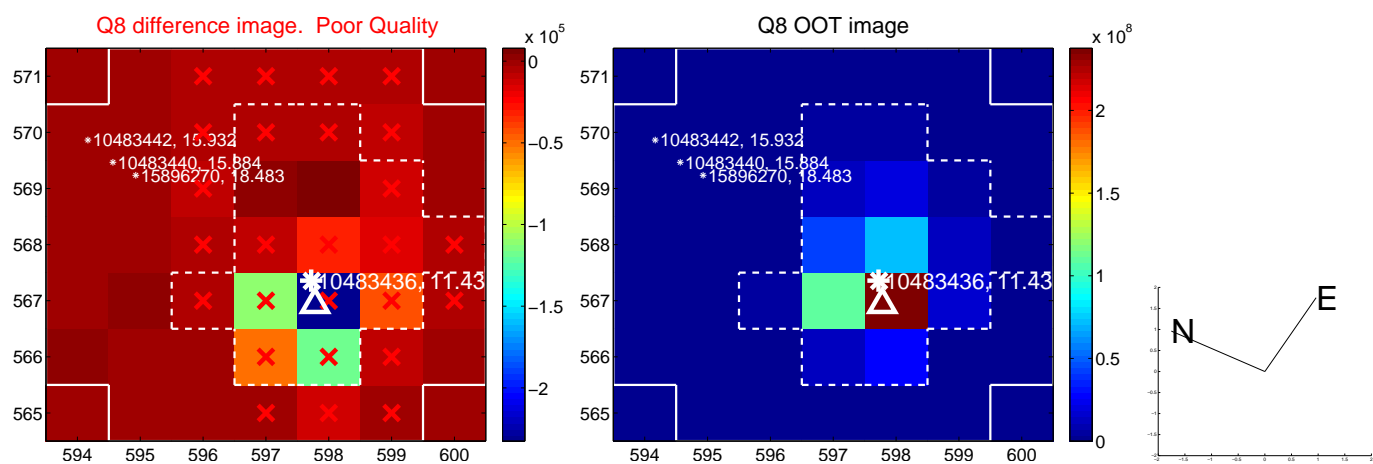
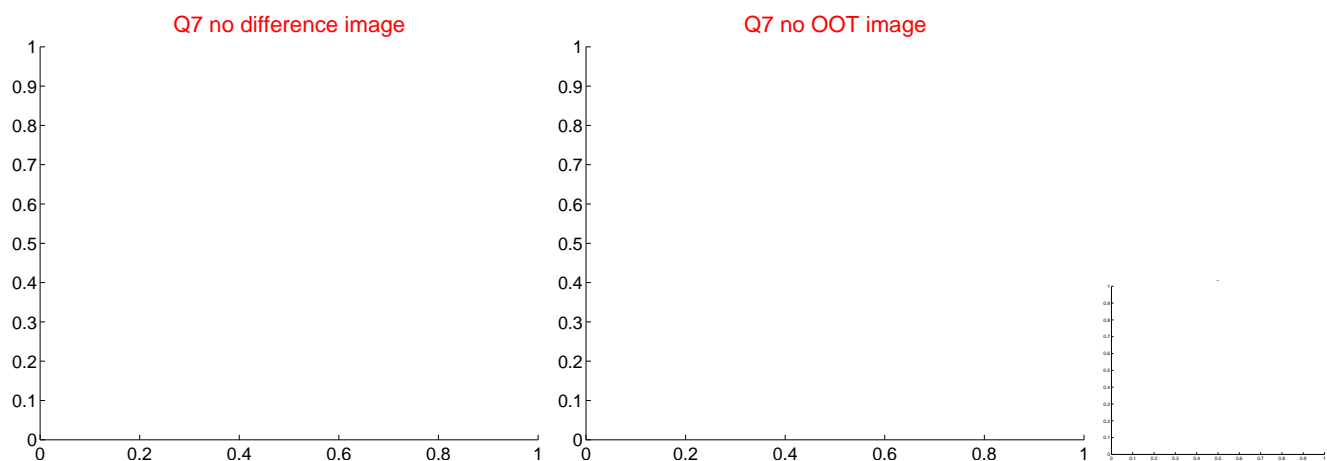
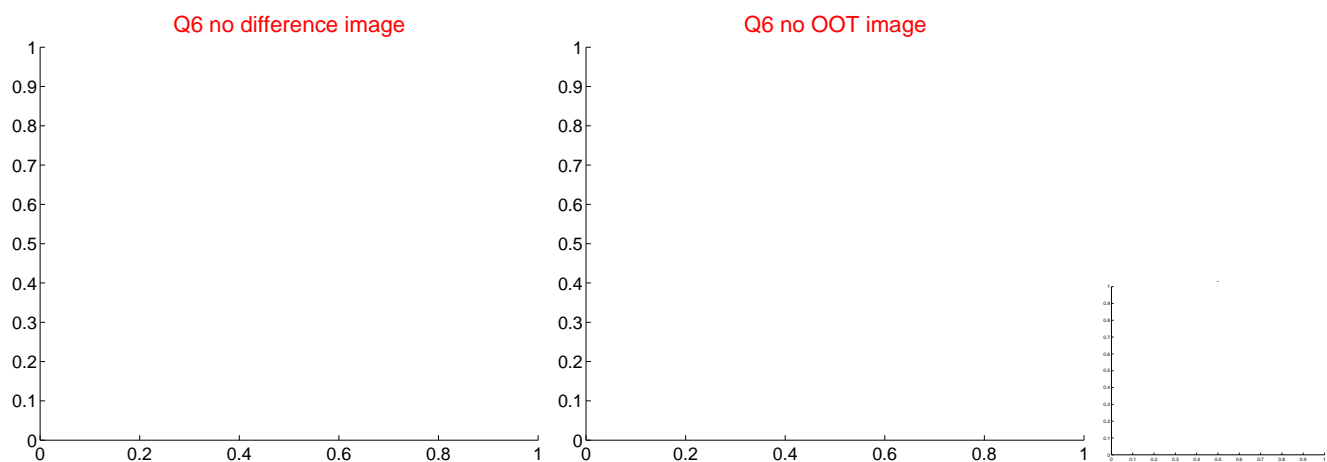
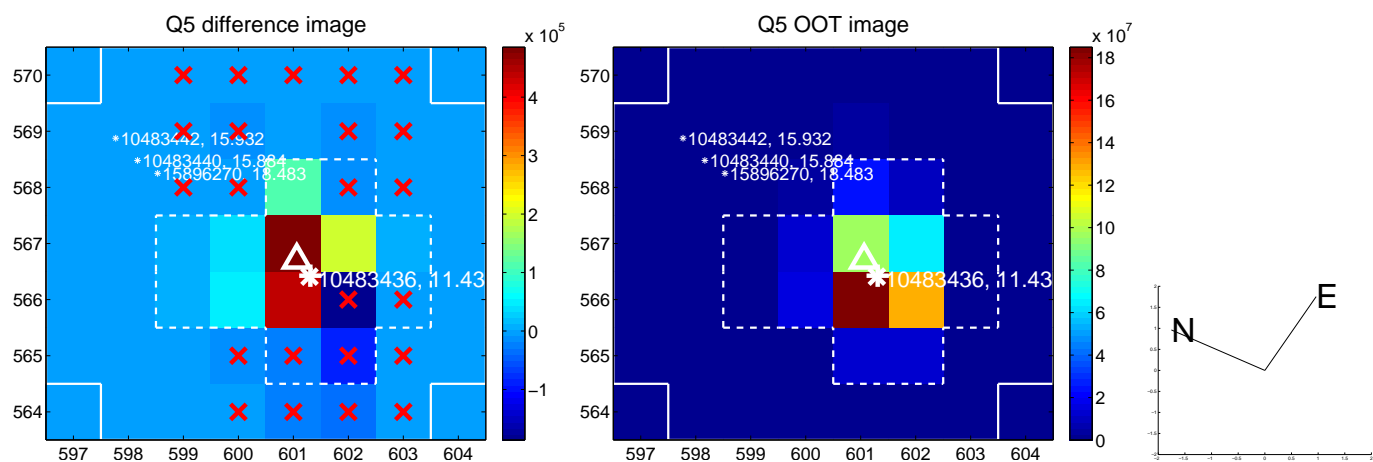
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

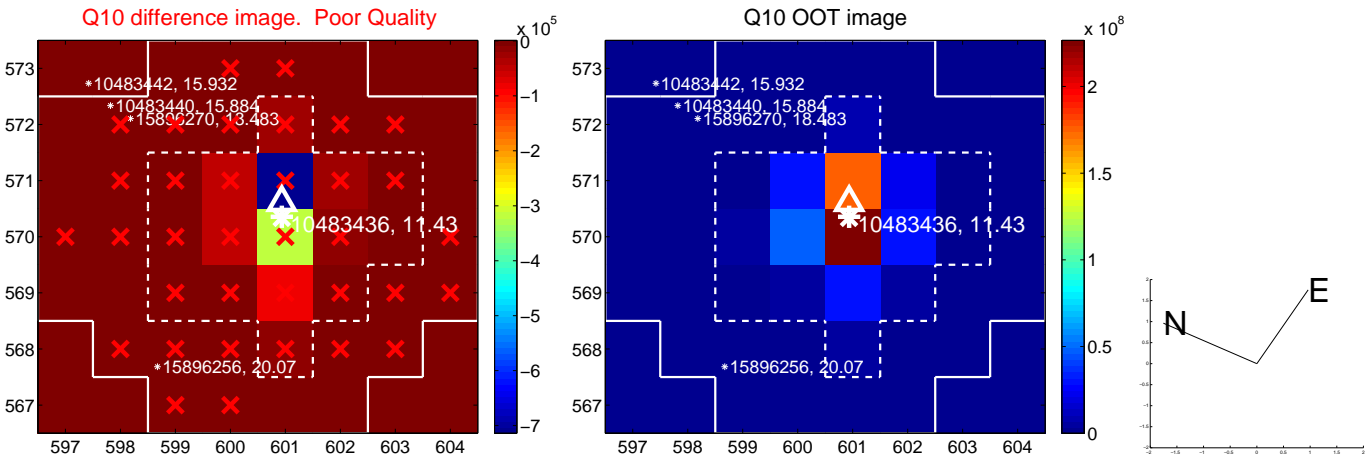
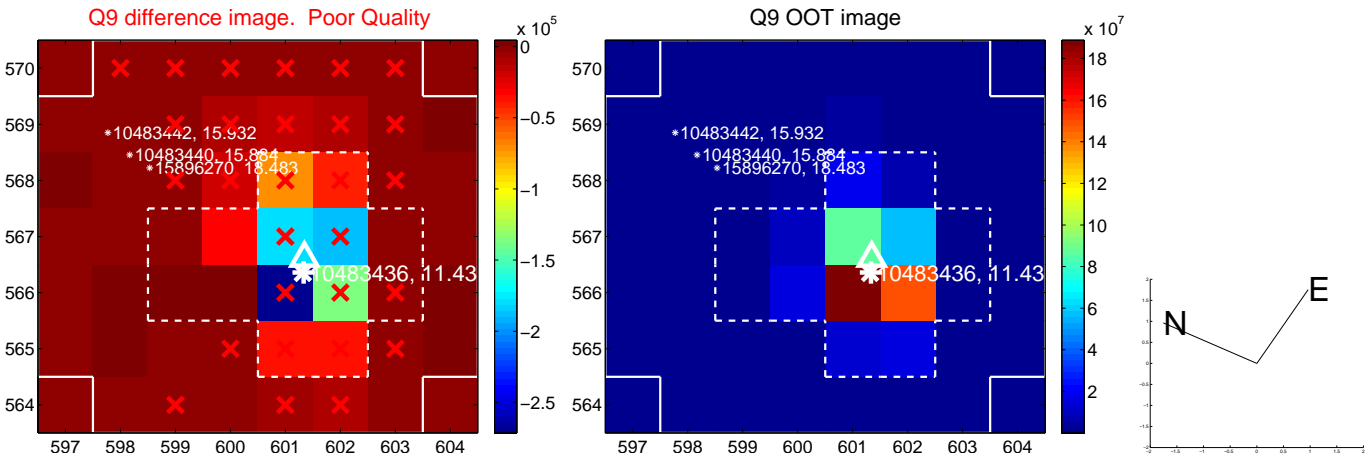




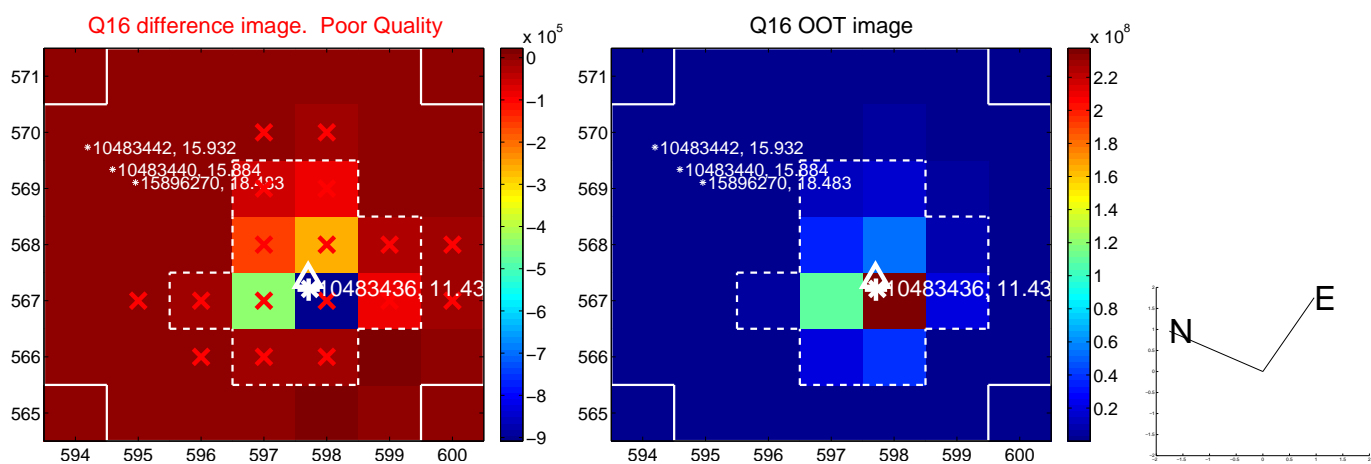
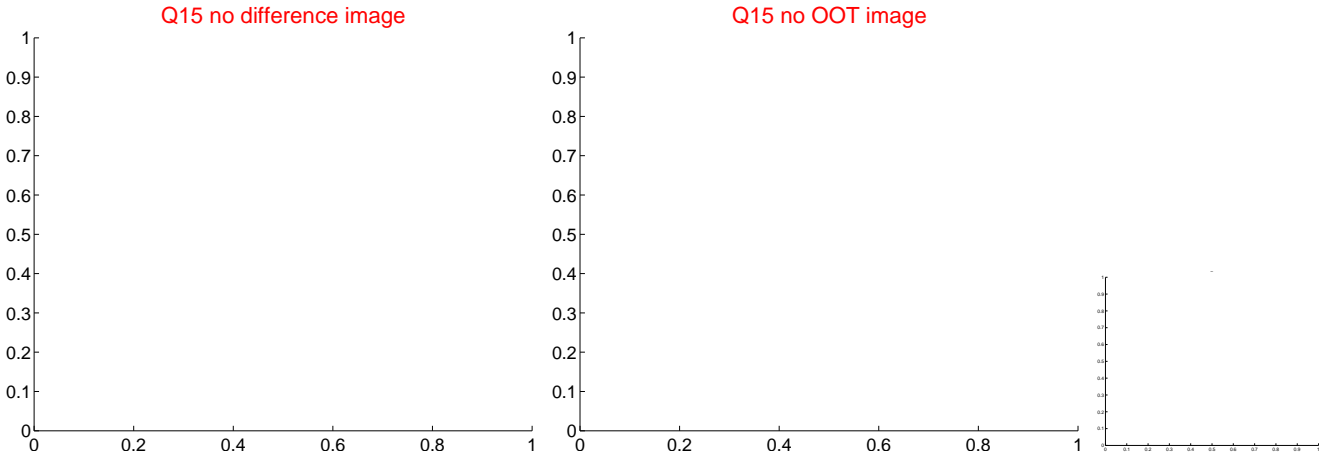
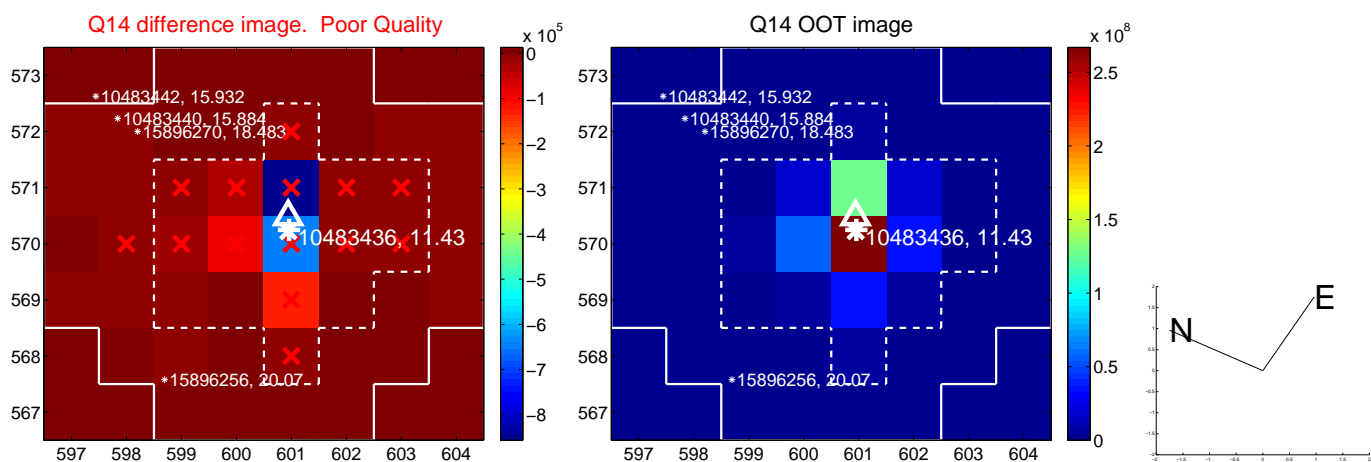
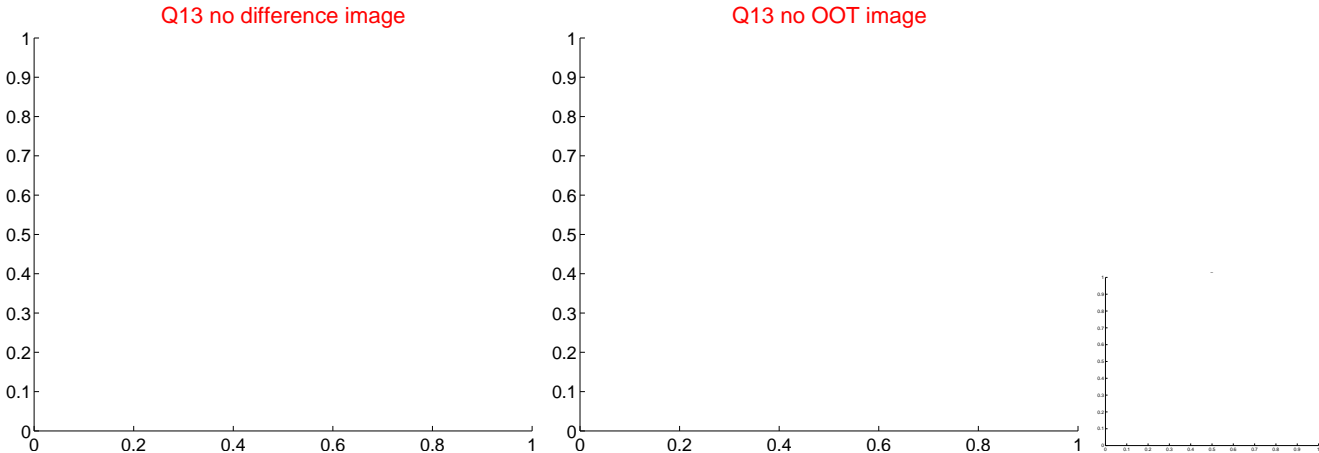
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



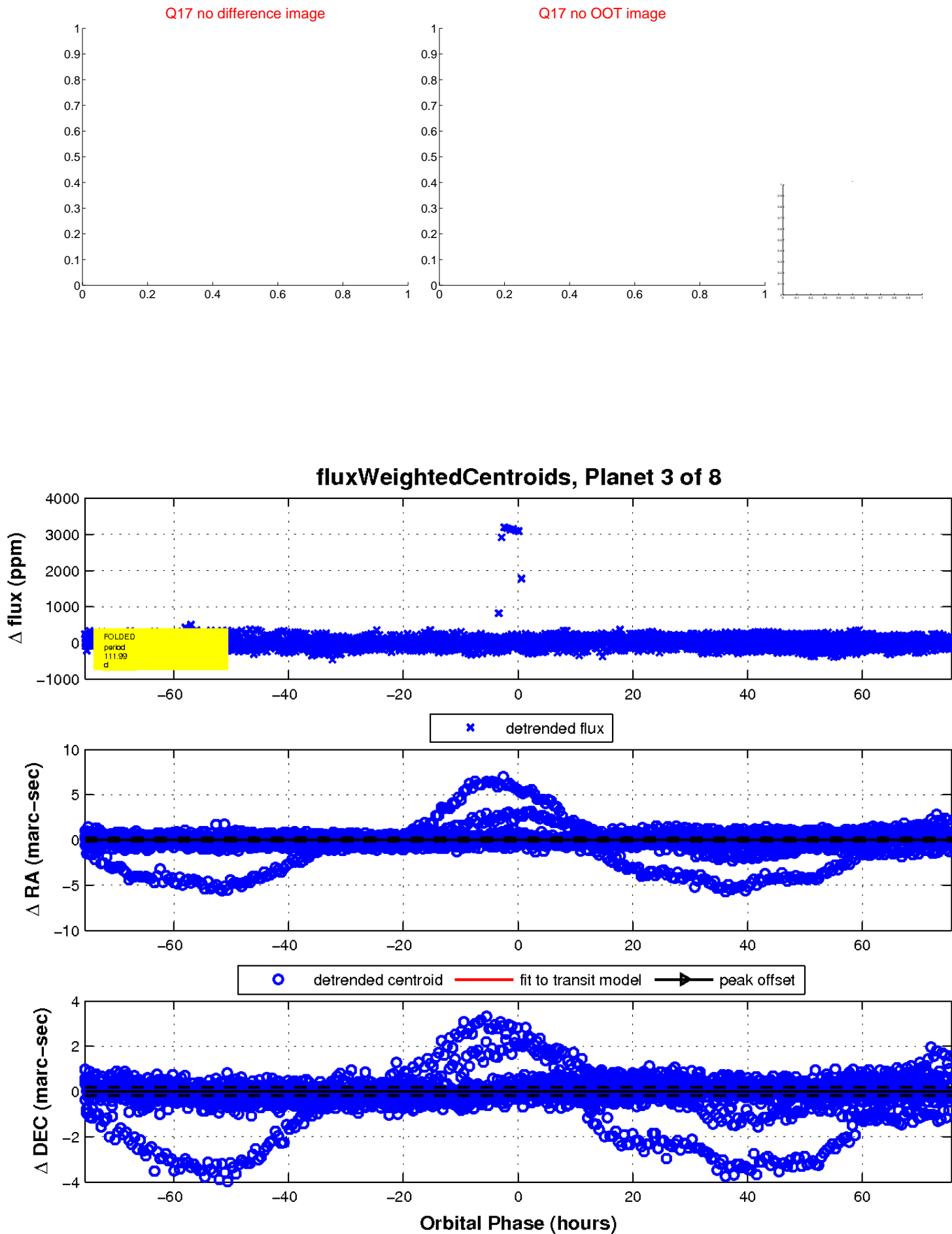
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

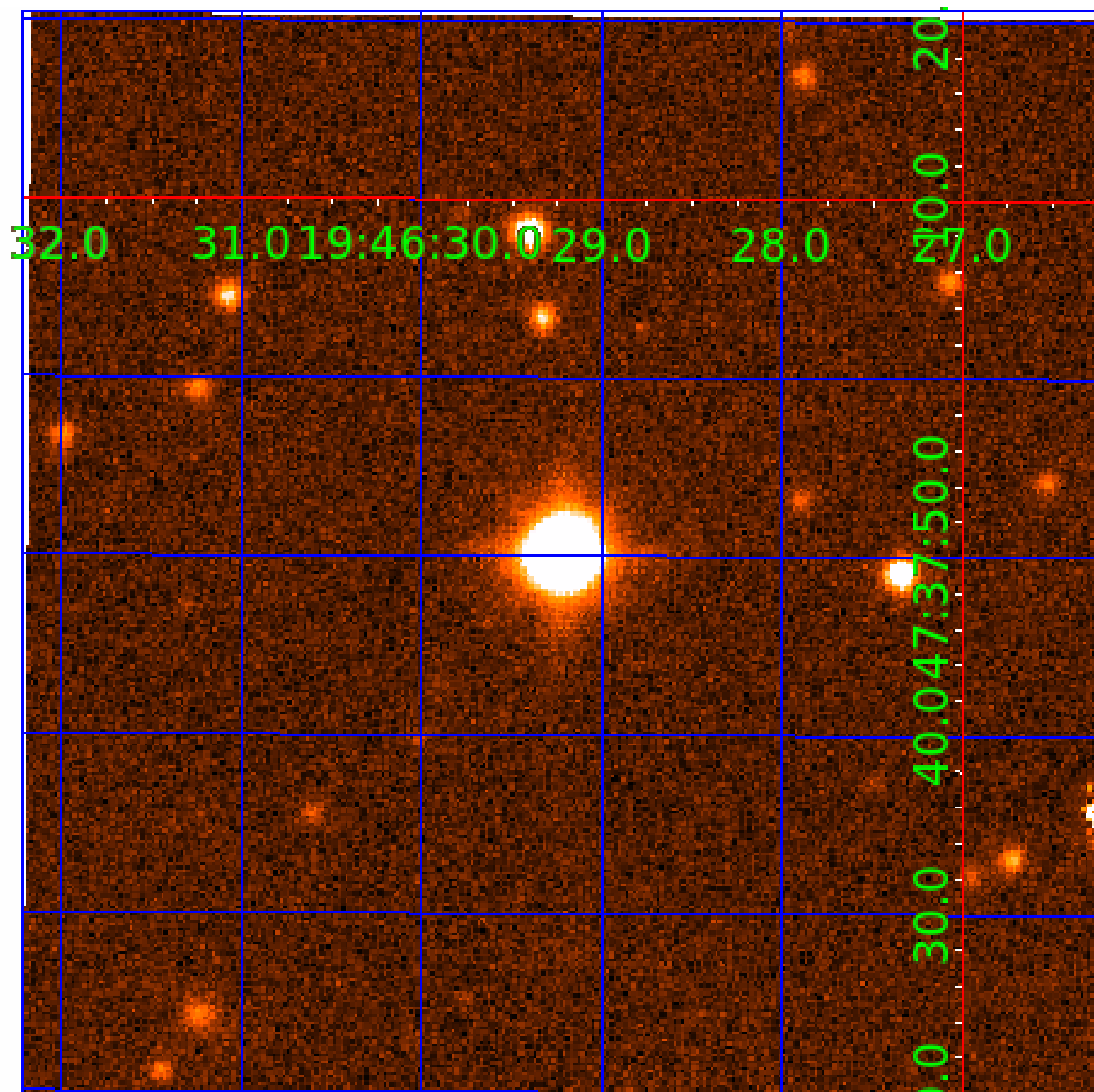


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 010483436

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010483436-01	OBS	No	2.151570	132.635029	47.1	1.865	18.1	21.6	1.83	7602	1.46	6492.44
010483436-02	OBS	No	4.303206	134.910950	10.6	10.482	12.1	3.4	1.83	7602	0.69	2576.47
010483436-03	OBS	No	111.989531	194.017254	220.1	15.000	25.3	-1.0	1.83	7602	2.75	33.41
010483436-04	OBS	No	1.434597	131.993627	16.5	5.110	13.2	10.0	1.83	7602	0.93	11145.73
010483436-05	OBS	No	1.075175	132.166864	4.1	1.268	14.6	1.7	1.83	7602	0.41	16372.30
010483436-06	OBS	No	1.075793	131.990196	1.3	0.773	11.2	0.4	1.83	7602	0.21	16359.76
010483436-07	OBS	No	79.766297	156.928877	228.0	1.500	8.9	7.9	1.83	7602	2.93	52.52
010483436-08	OBS	No	73.264201	169.197290	111.3	4.500	9.6	-1.0	1.83	7602	1.96	58.83

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010483436-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_SATURATED
010483436-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED
010483436-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010483436-04	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
010483436-05	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010483436-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
010483436-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010483436-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

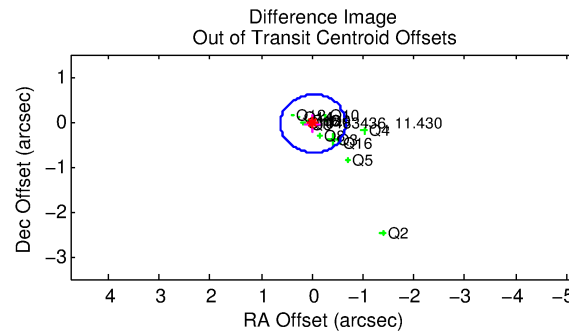
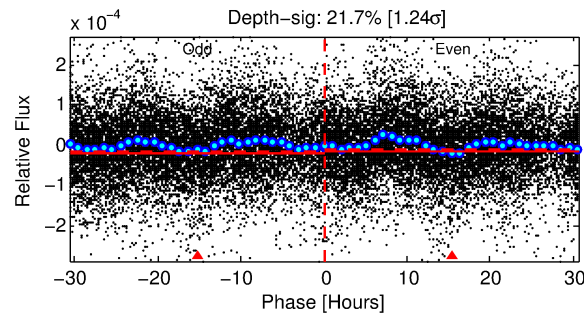
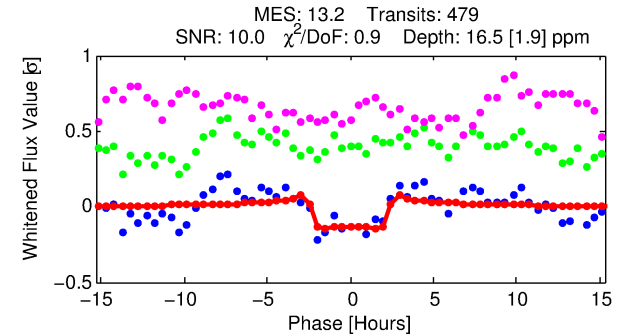
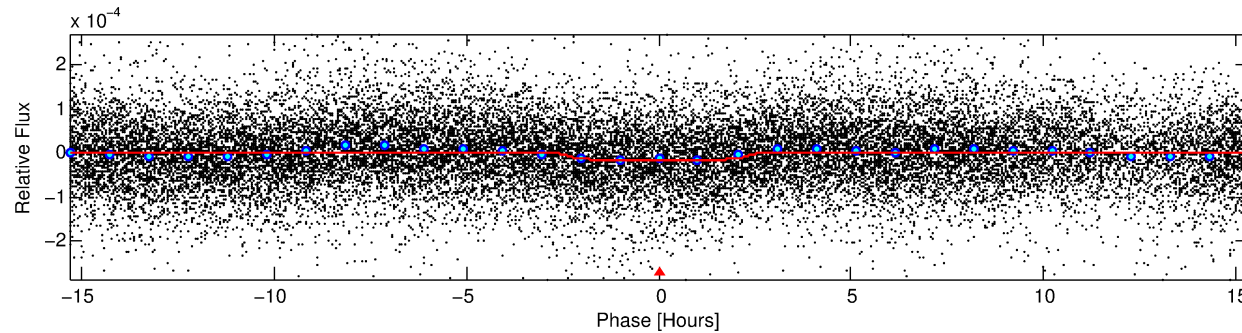
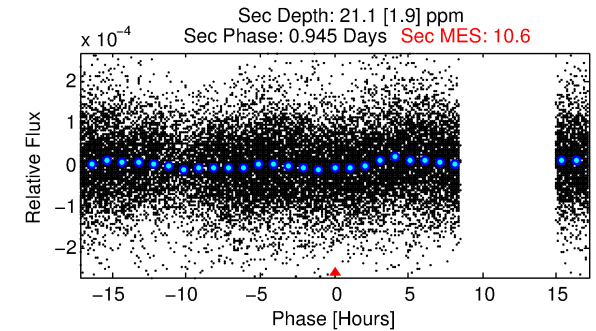
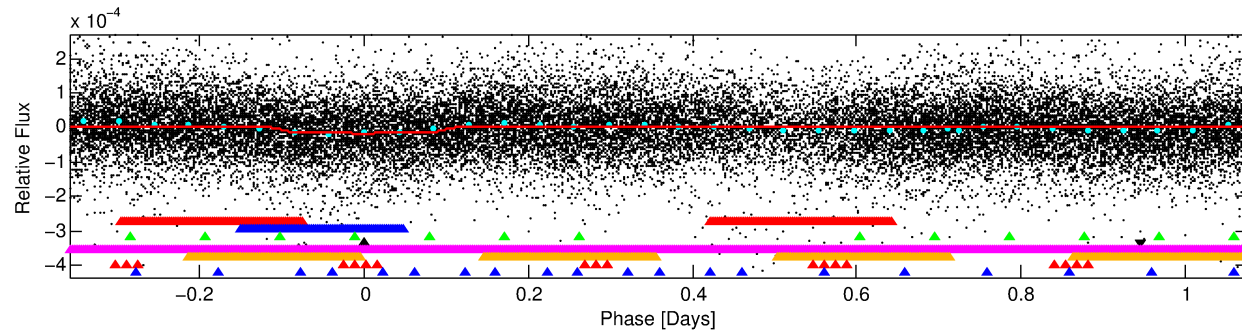
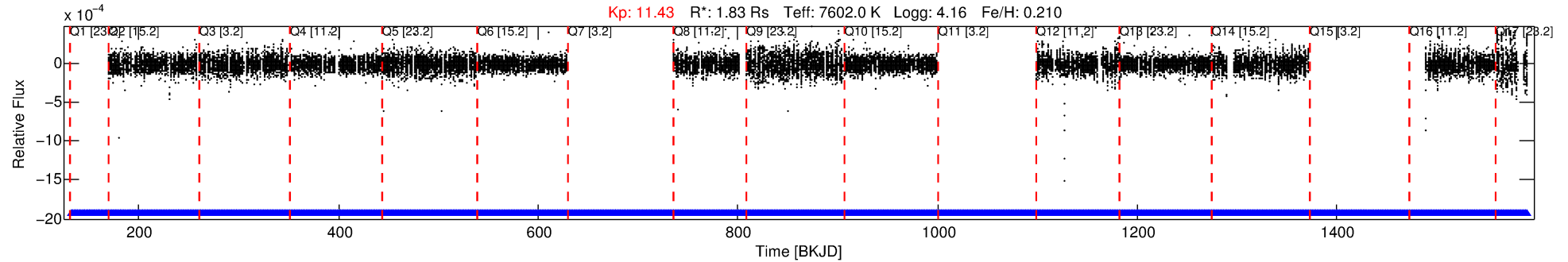
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 010483436-04

No Significant Match Found

# DV One-Page Summary

KIC: 10483436 Candidate: 4 of 8 Period: 1.435 d



## DV Fit Results:

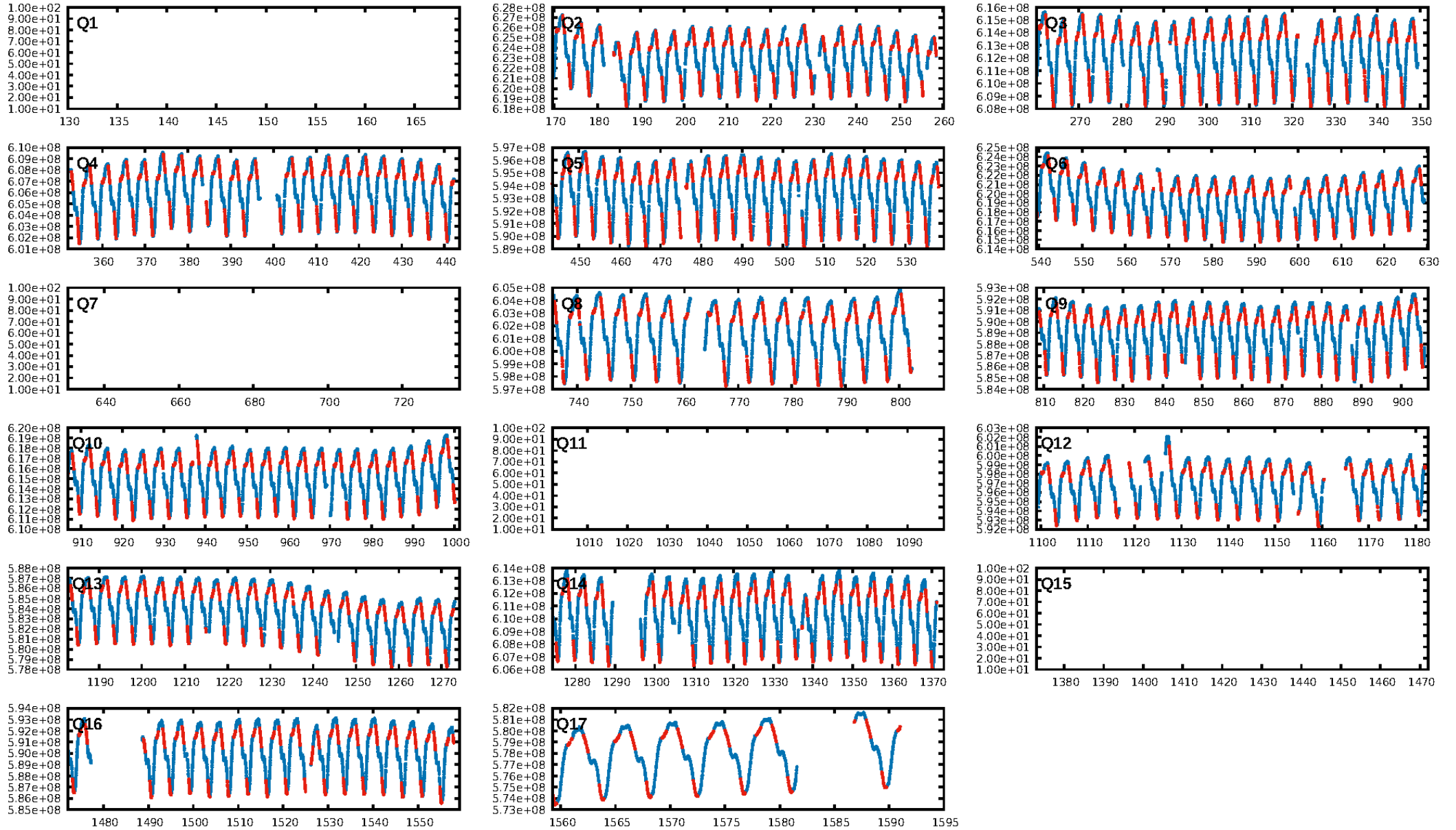
Period = 1.43460 [0.00001] d  
Epoch = 131.9936 [0.0036] BKJD  
Rp/R\* = 0.0047 [0.0005]  
a/R\* = 1.13 [0.17]  
b = 0.97 [0.04]  
Seff = 11145.73 [4515.64]  
Teq = 2620 [265] K  
Rp = 0.93 [0.31] Re  
a = 0.0300 [0.0077] AU  
Ag = 11.97 [5.31] [2.06σ]  
Teffp = 7534 [575] K [7.76σ]

## DV Diagnostic Results:

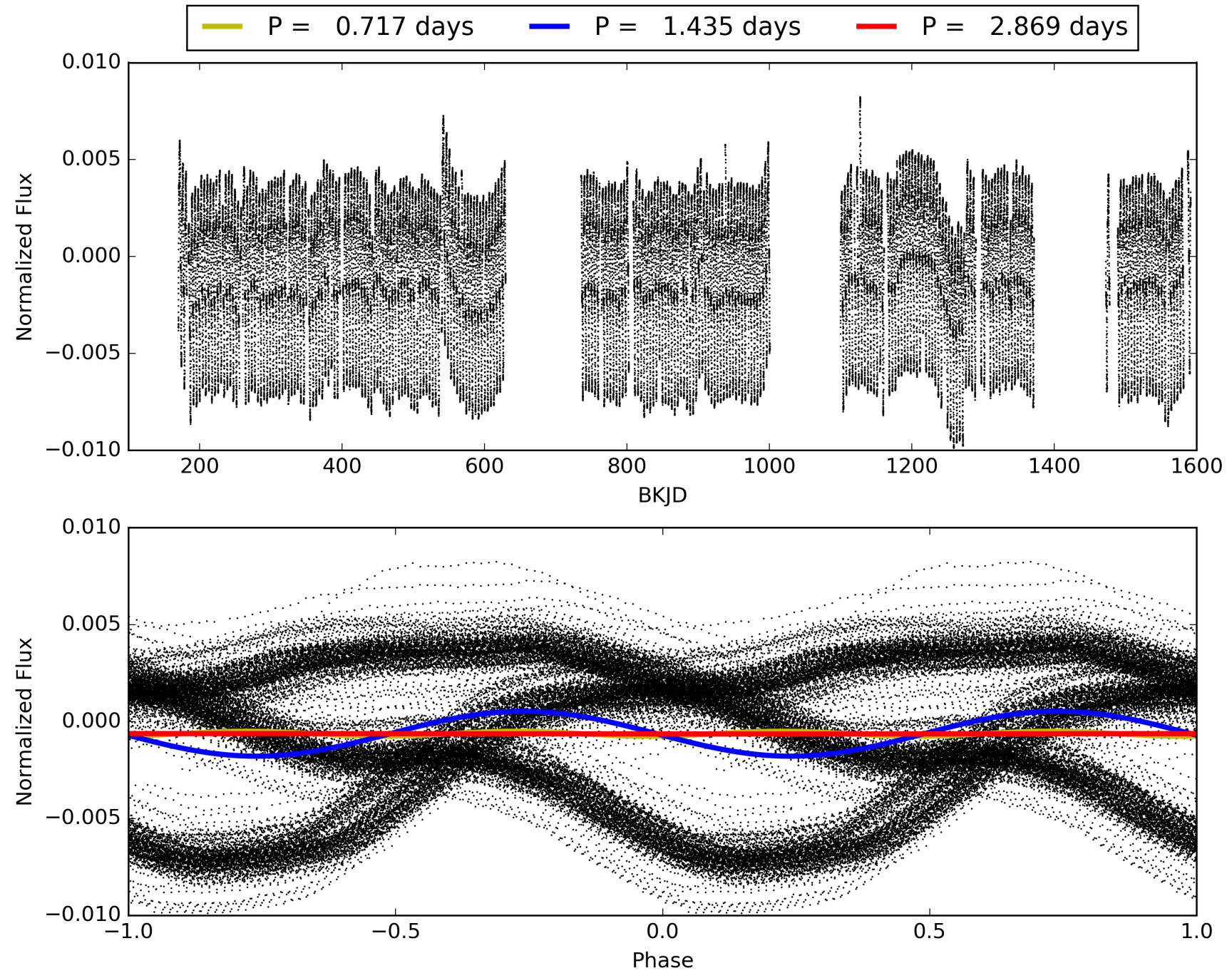
ShortPeriod-sig: 90.4% [1.67σ]  
LongPeriod-sig: 99.8% [3.16σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [467/467]  
GhostDiagnostic-chr: 6.021  
Centroid-sig: 95.5%  
Centroid-so: 0.147 arcsec [0.16σ]  
OotOffset-rm: 0.048 arcsec [0.22σ]  
KicOffset-rm: 0.055 arcsec [0.40σ]  
OotOffset-st: 4/1/4/4 [13]  
KicOffset-st: 4/1/4/4 [13]  
DiffImageQuality-fgm: 0.92 [12/13]  
DiffImageOverlap-fno: 0.00 [0/13]



# TCE 010483436-04, PDC Light Curves

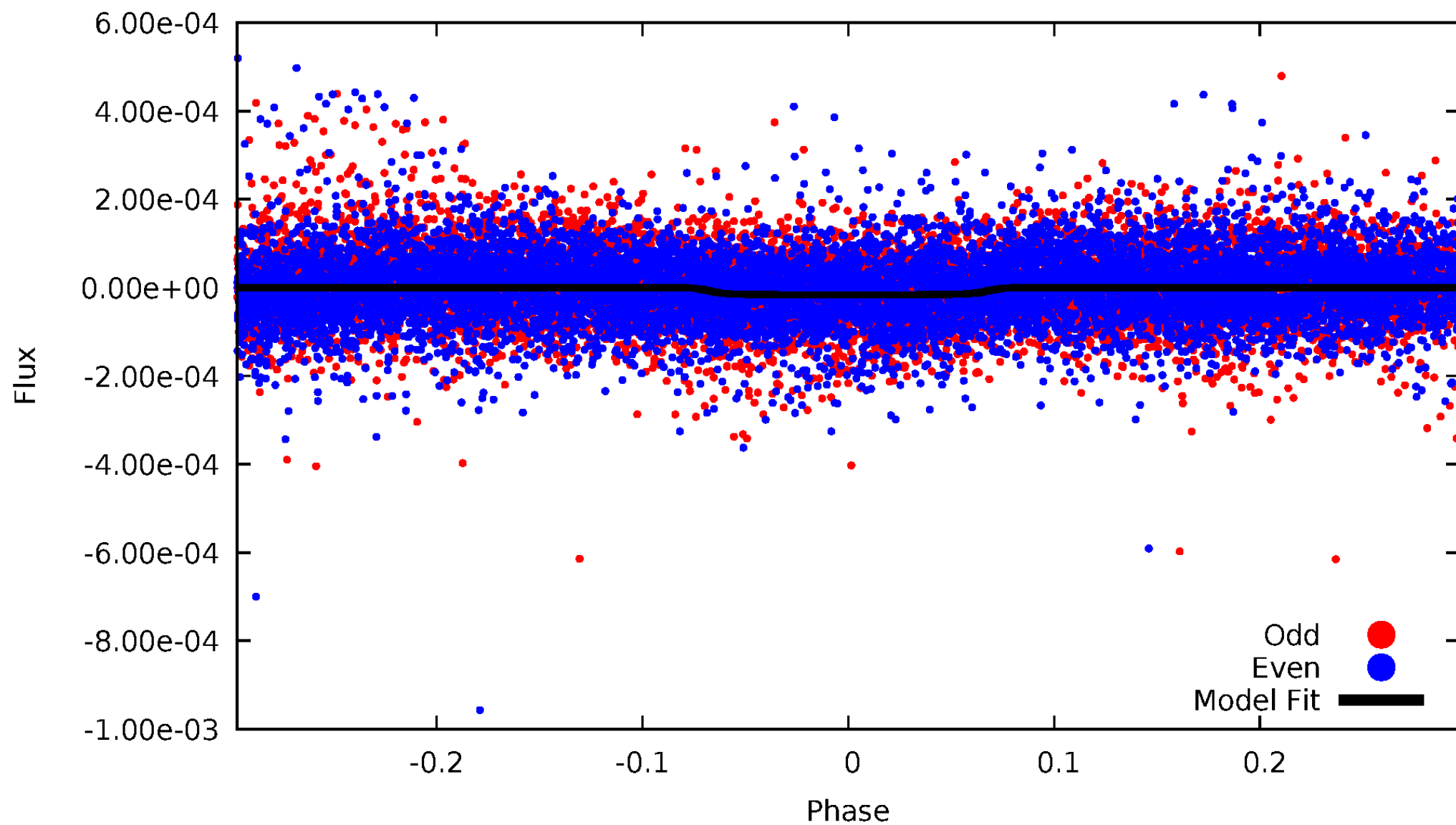


TCE 010483436-04



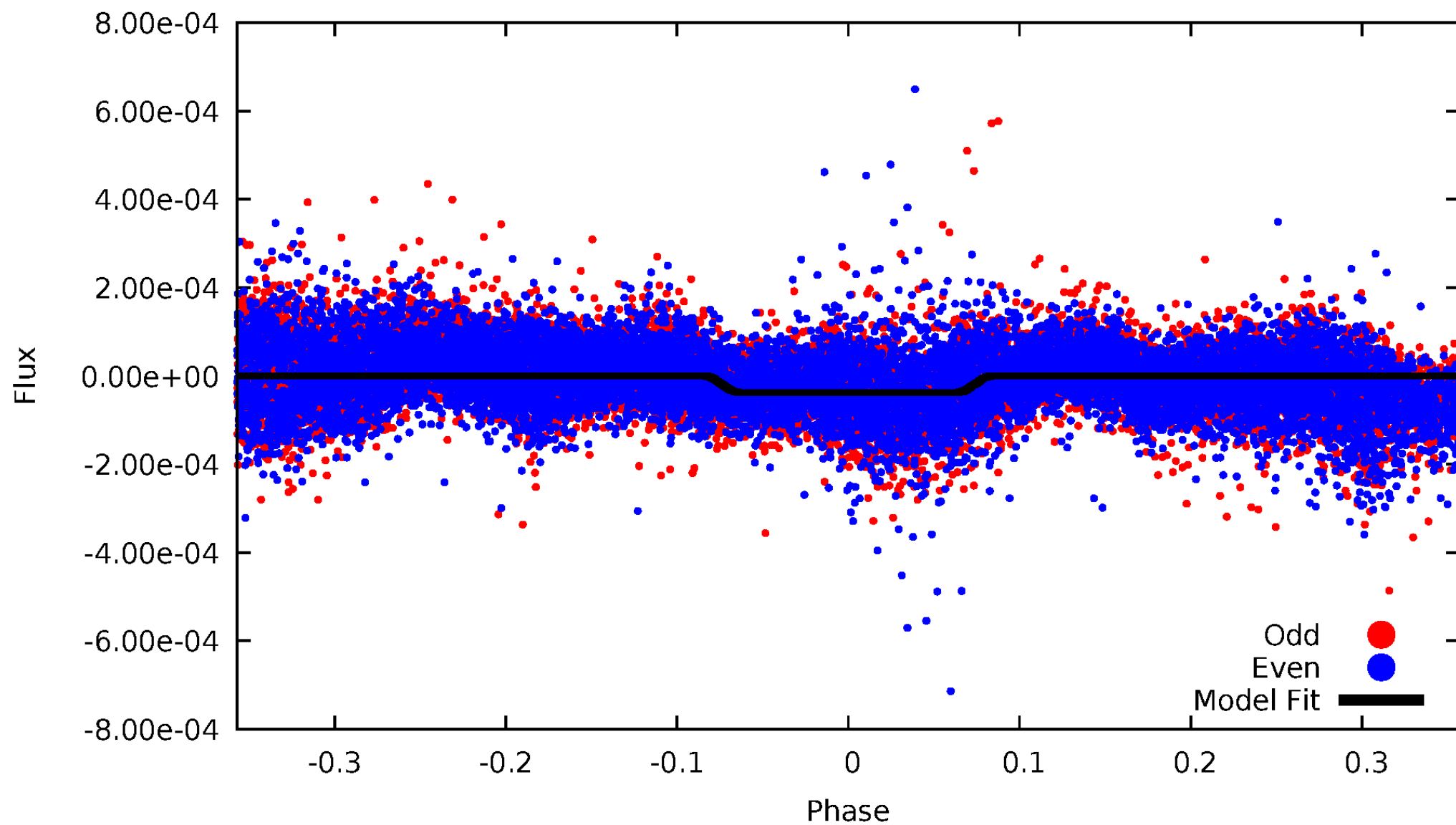
# DV Odd/Even

TCE 010483436-04



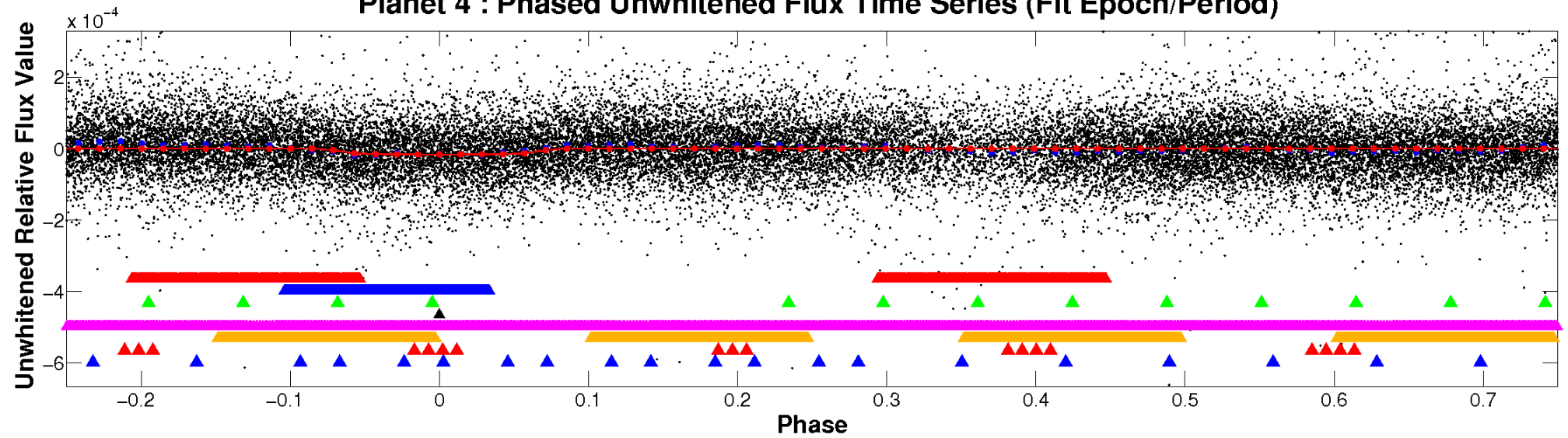
# ALT Odd/Even

TCE 010483436-04

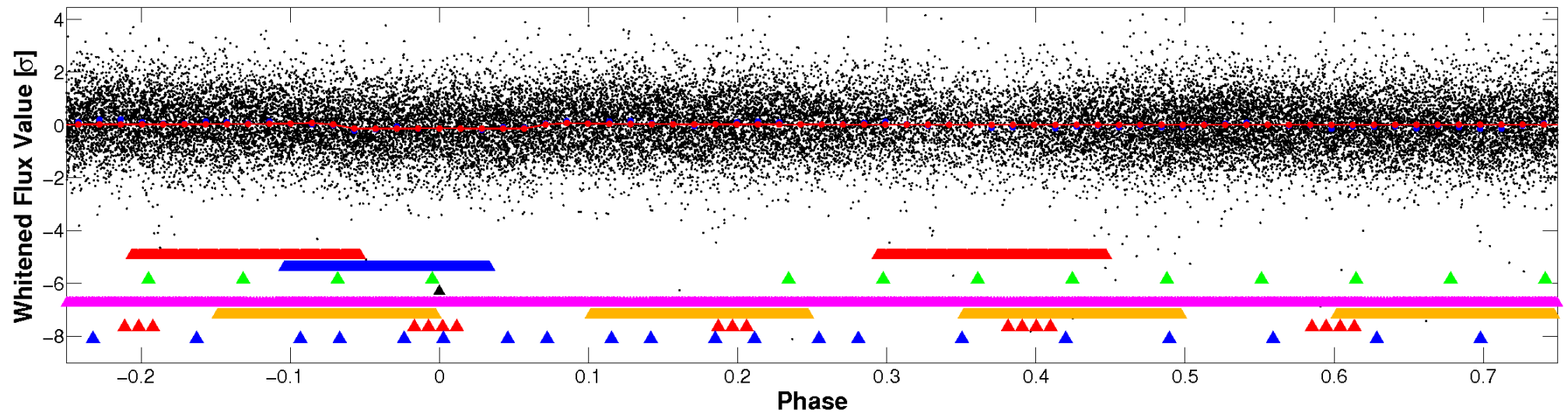


# Non-Whitened Vs. Whitened Light Curve

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



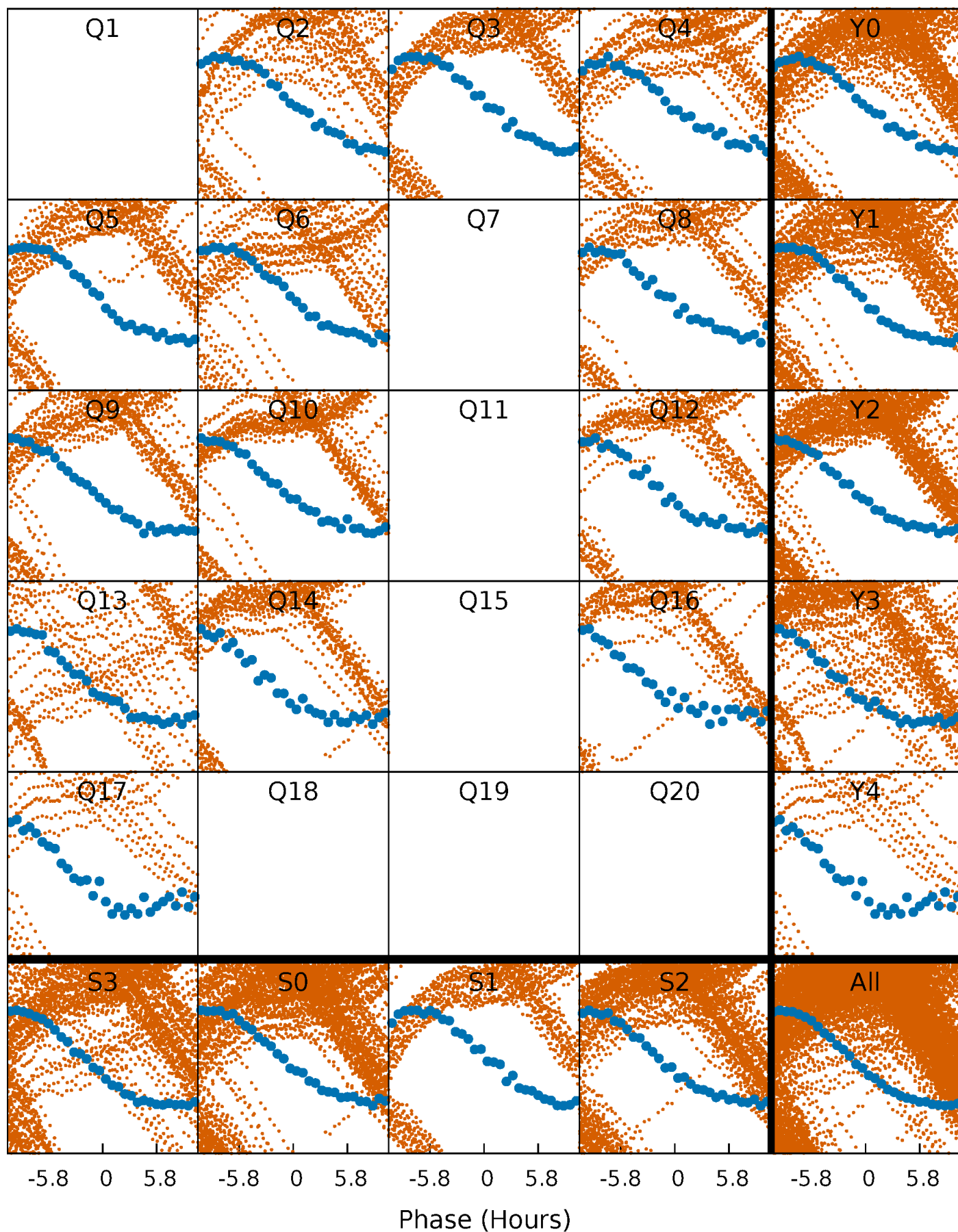
## Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)





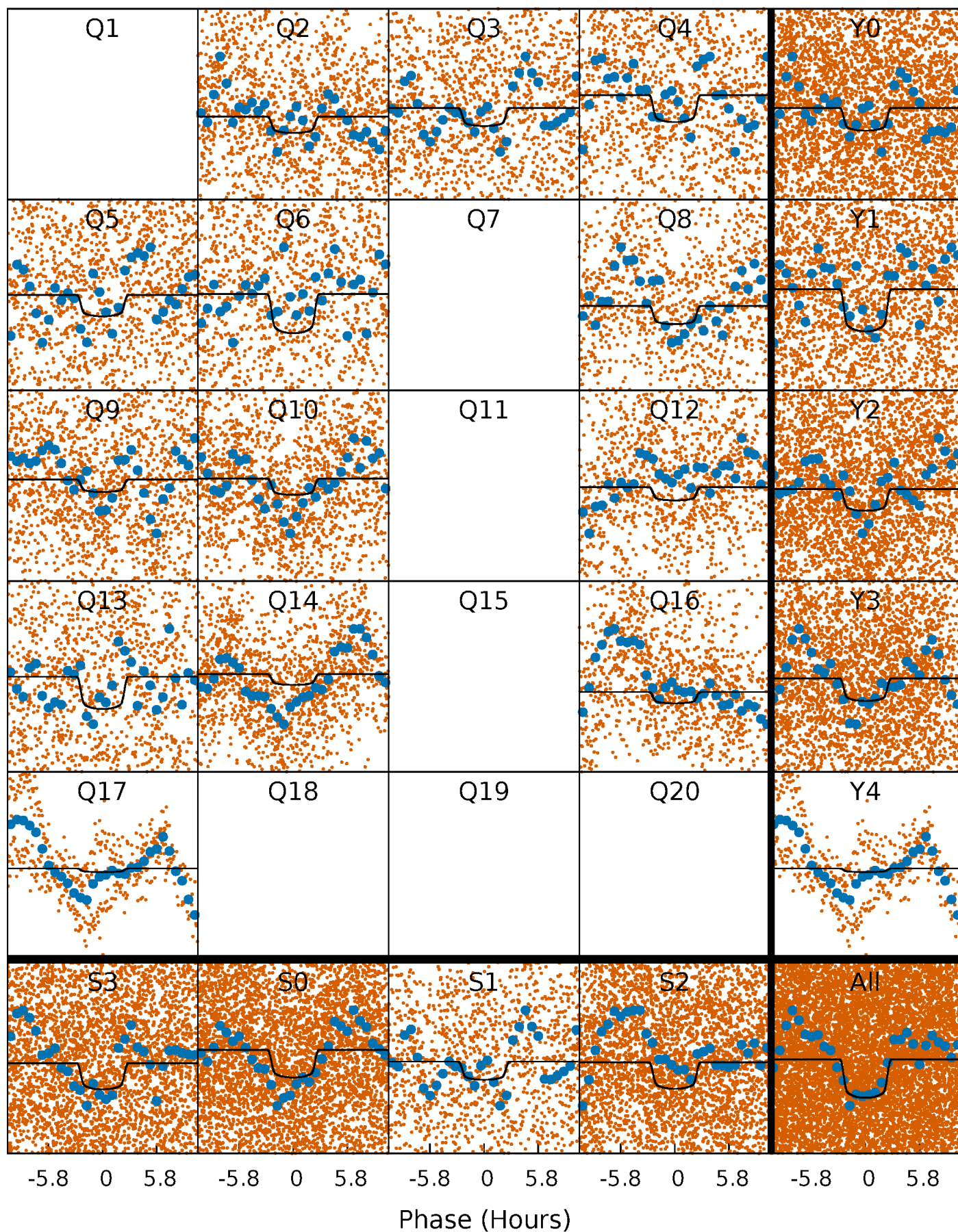
# PDC Quarter-Phased Transit Curves

TCE 010483436-04 P= 1.434597 Days  $T_0=131.993627$  (BKJD)



# DV Quarter-Phased Transit Curves

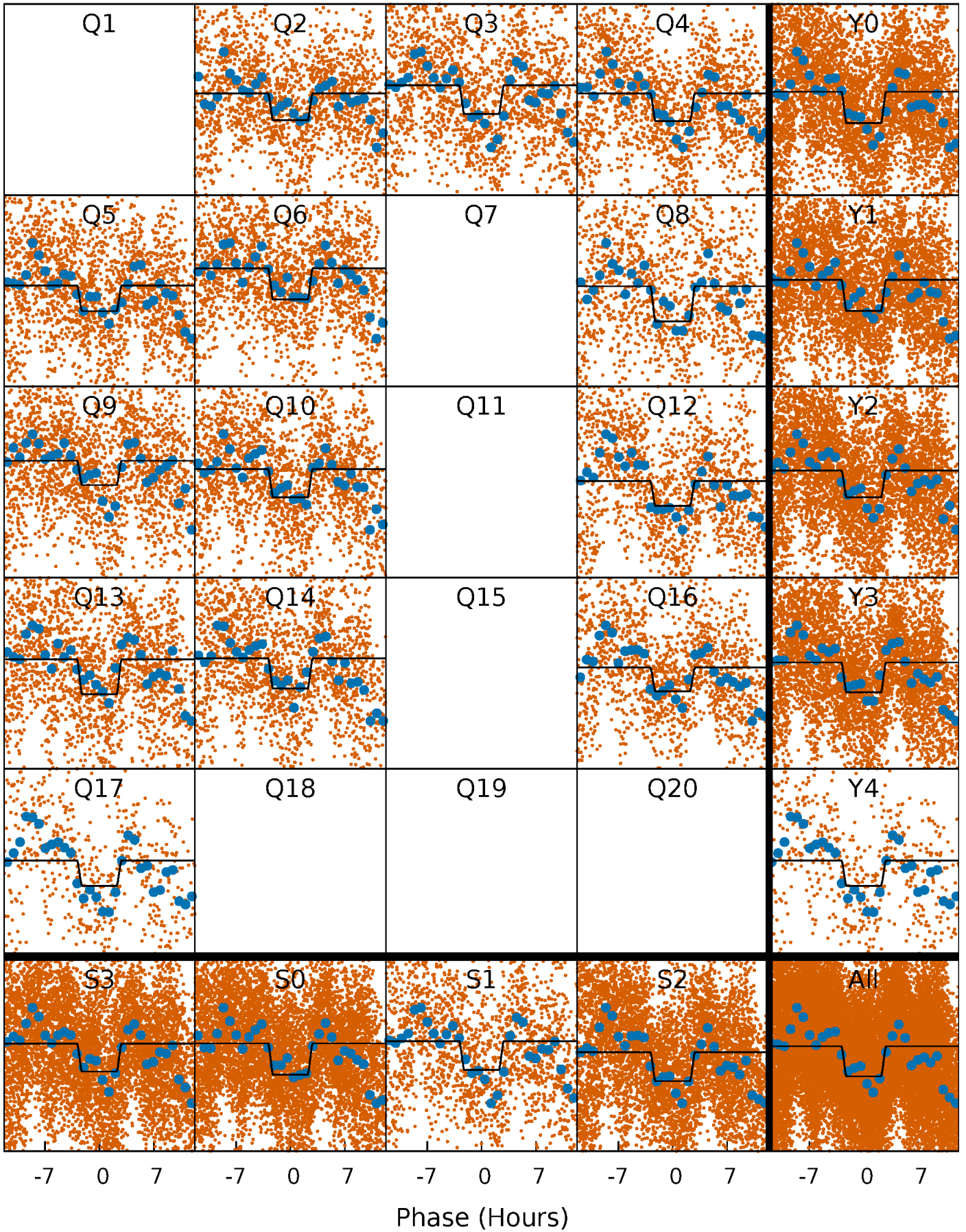
TCE 010483436-04   P= 1.434597 Days    $T_0=131.993627$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

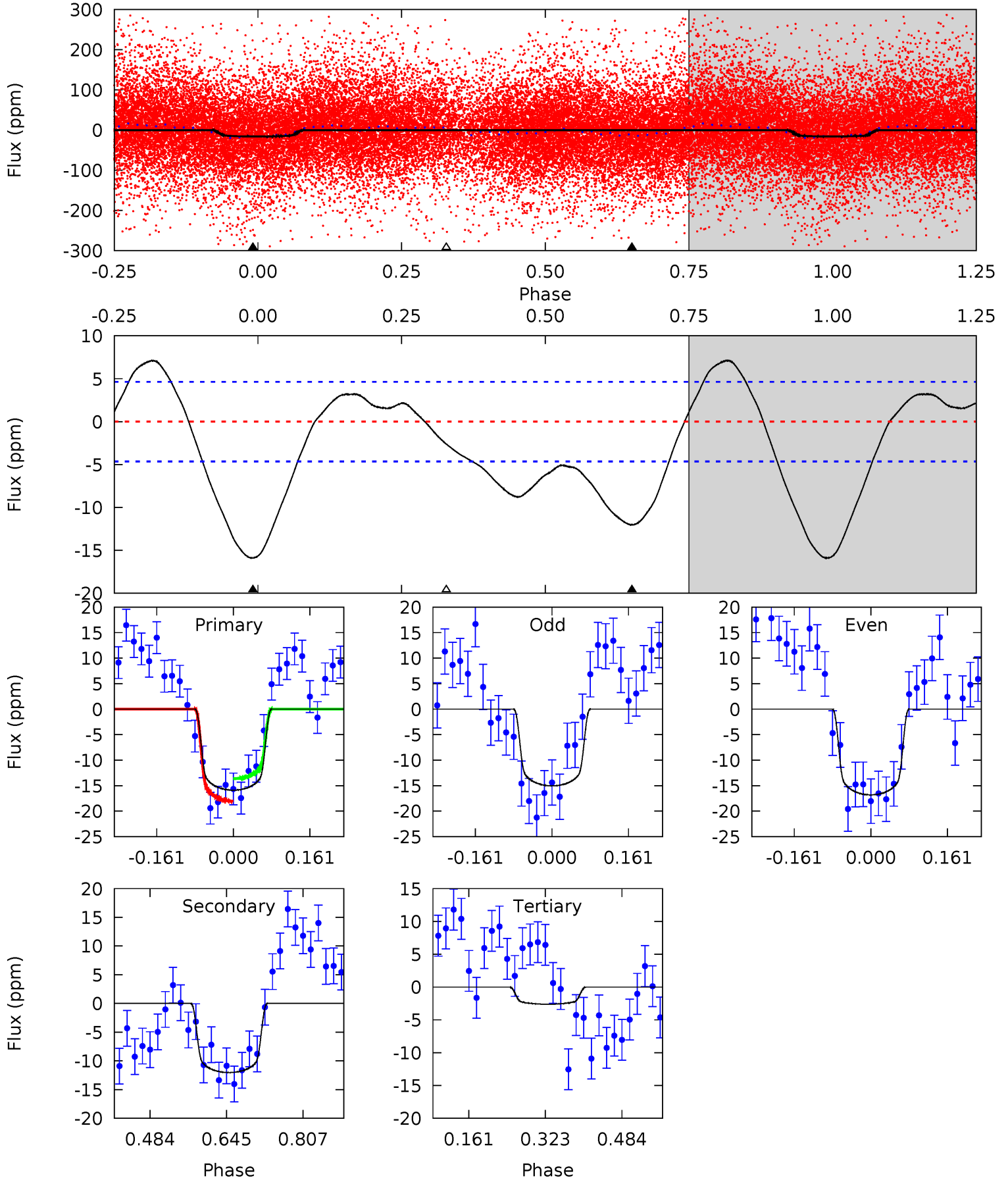
TCE 010483436-04 P= 1.434427 Days  $T_0=132.032458$  (BKJD)



# DV Model-Shift Uniqueness Test

010483436-04, P = 1.434597 Days, E = 131.993627 Days

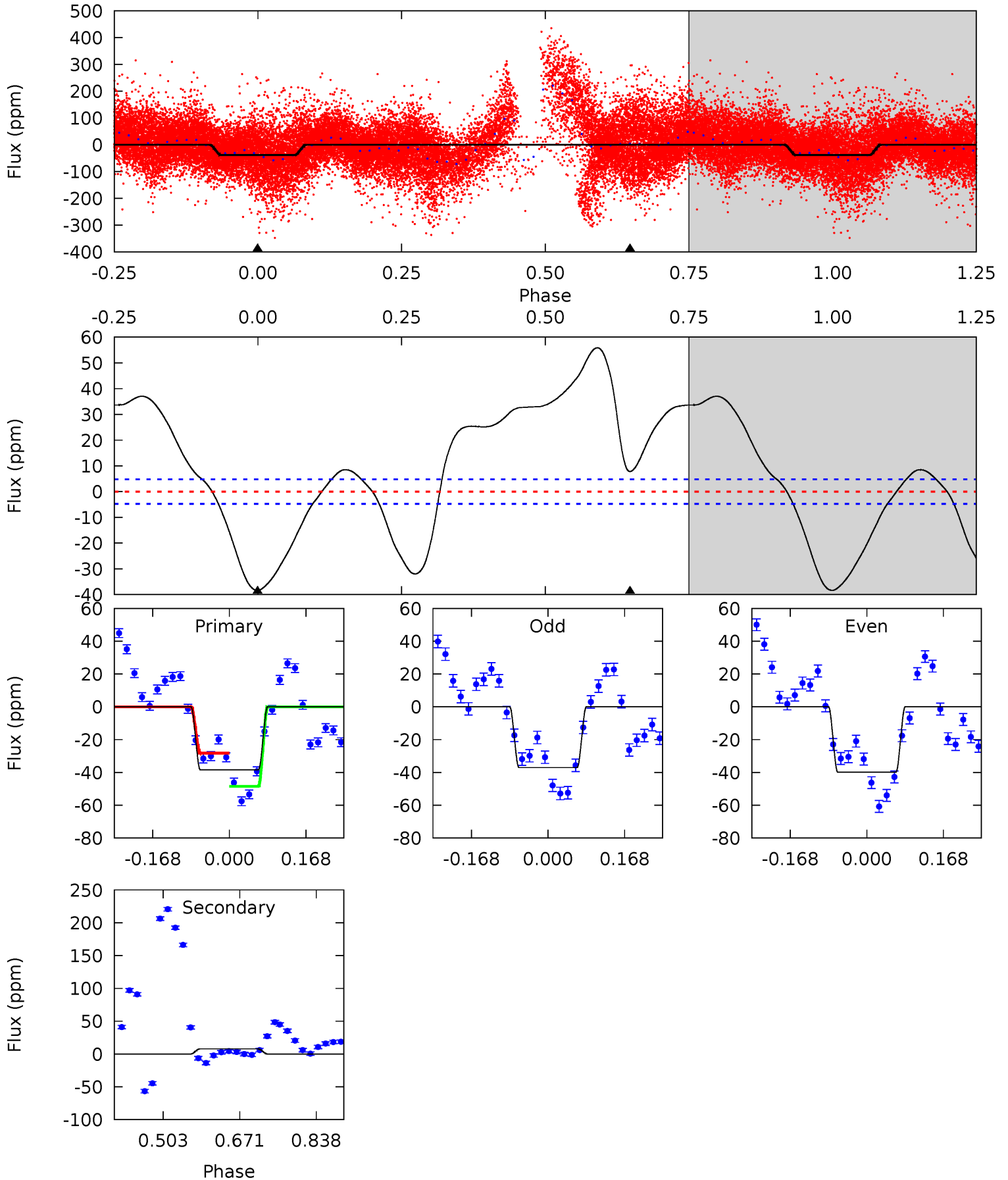
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.3	11.6	2.51	0	4.46	1.40	4.59	12.8	15.3	9.05	11.6	0.86	1.13	0.31	2.12



# Alt Model-Shift Uniqueness Test

010483436-04, P = 1.434427 Days, E = 132.032458 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
36.0	-7.31	0	0	4.46	1.38	20.8	36.0	36.0	-7.31	-7.31	1.32	0.91	0.59	9.99



### Stellar Parameters For KIC 010483436

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7602^{+210}_{-330}$	$4.155^{+0.070}_{-0.196}$	$0.210^{+0.150}_{-0.350}$	$1.829^{+0.572}_{-0.245}$	$1.743^{+0.212}_{-0.233}$	$0.401^{+0.146}_{-0.207}$
	+3%/-4%	+2%/-5%	+71%/-167%	+31%/-13%	+12%/-13%	+36%/-52%
Source	KIC0	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 010483436-04 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-12 \pm 1$	$0.96^{+0.17}_{-0.13}$	$3705^{+256}_{-197}$	$6313^{+515}_{-432}$	$6.359^{+2.182}_{-1.881}$
Alt.	$8 \pm 1$	$1.25^{+0.21}_{-0.16}$	$3699^{+278}_{-196}$	$-5260^{+277}_{-258}$	$-2.421^{+0.719}_{-0.854}$

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

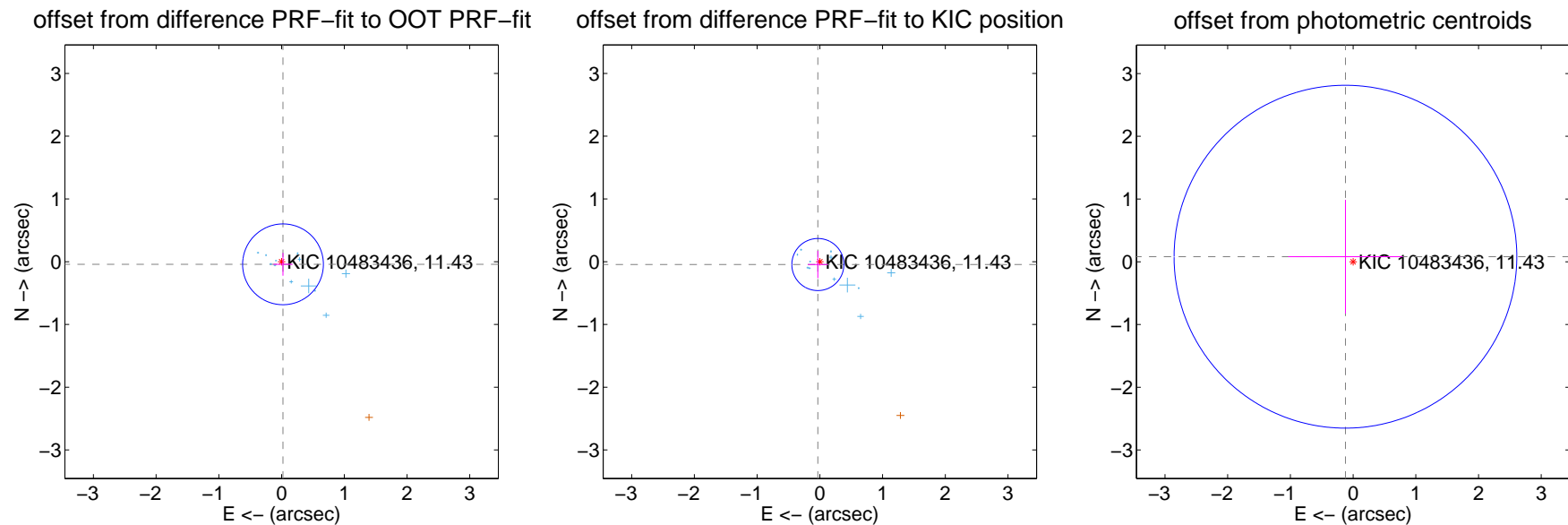
## DV Centroid Data

Supplemental centroid analysis for 010483436-04. **Kepler magnitude: 11.43.** Transit SNR 9.95

There are 12 quarters with good PRF difference image offsets

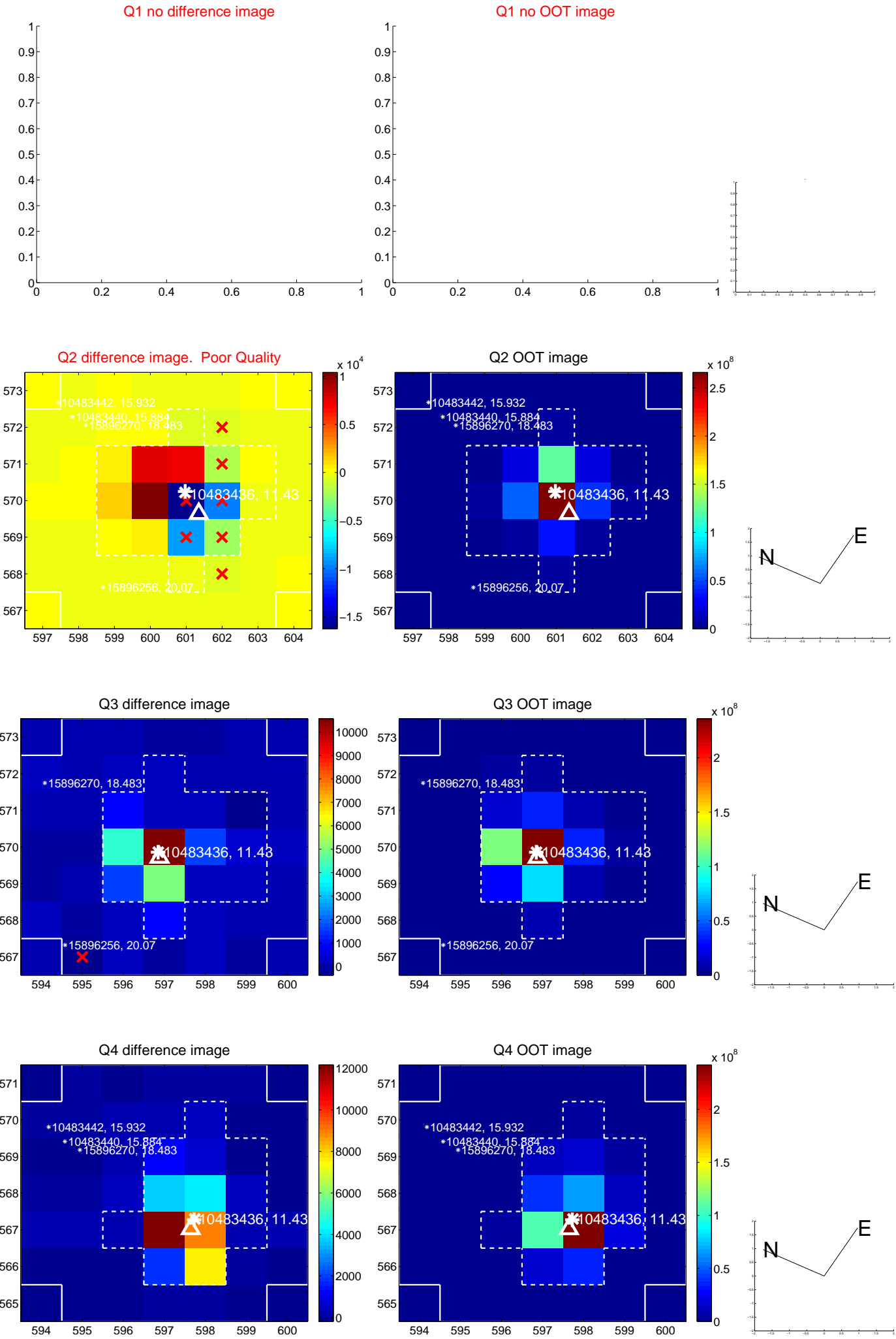
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.048 \pm 0.215$	0.22	$-0.023 \pm 0.153$	$-0.042 \pm 0.181$
PRF-fit source offset from KIC position	$0.055 \pm 0.138$	0.40	$0.032 \pm 0.159$	$-0.045 \pm 0.218$
photometric centroid source offset	$0.15 \pm 0.91$	0.16	$0.12 \pm 0.91$	$0.08 \pm 0.91$

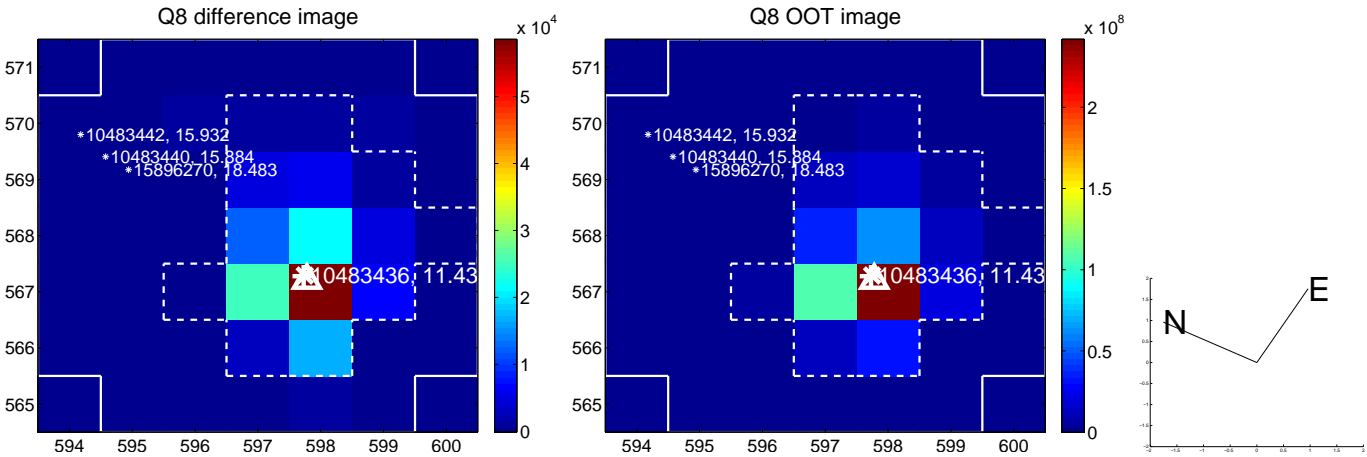
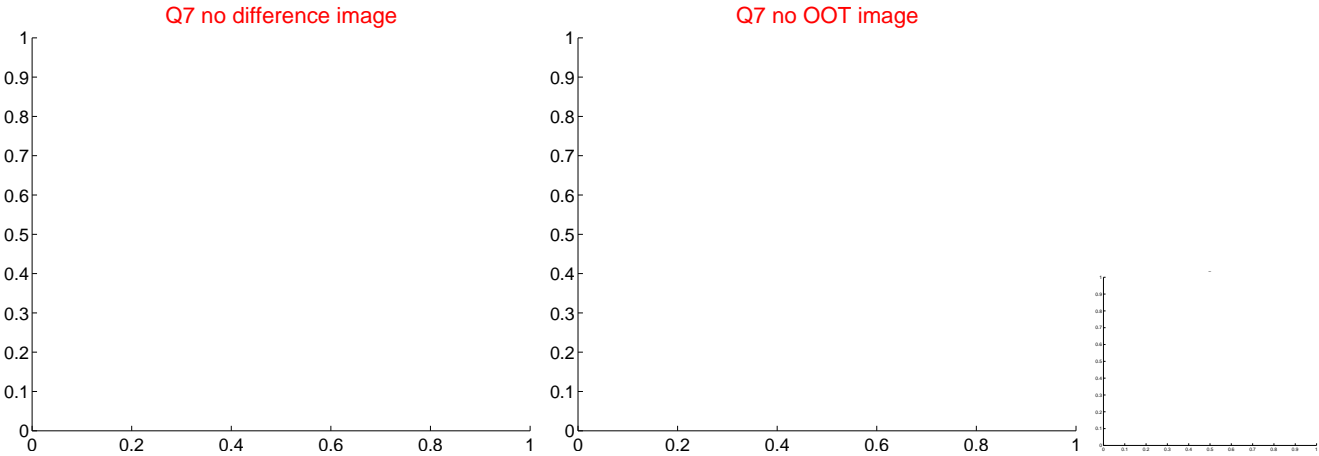
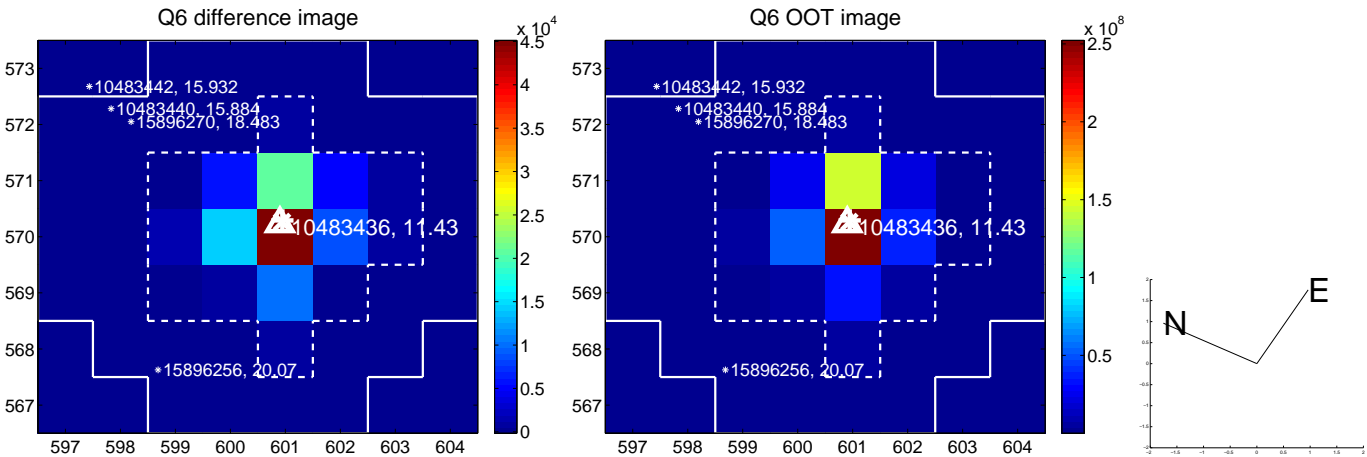
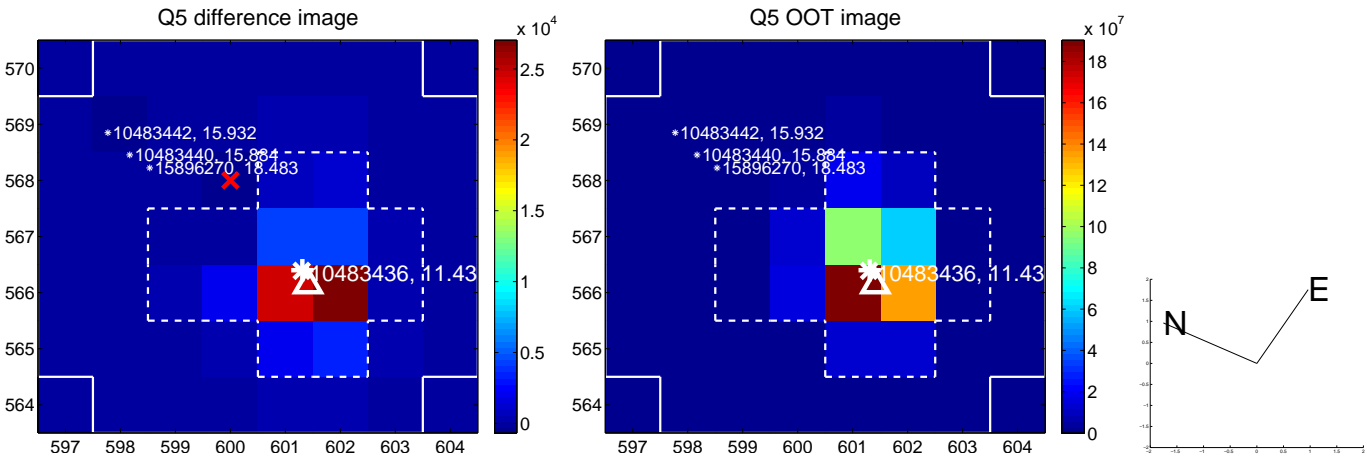


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

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

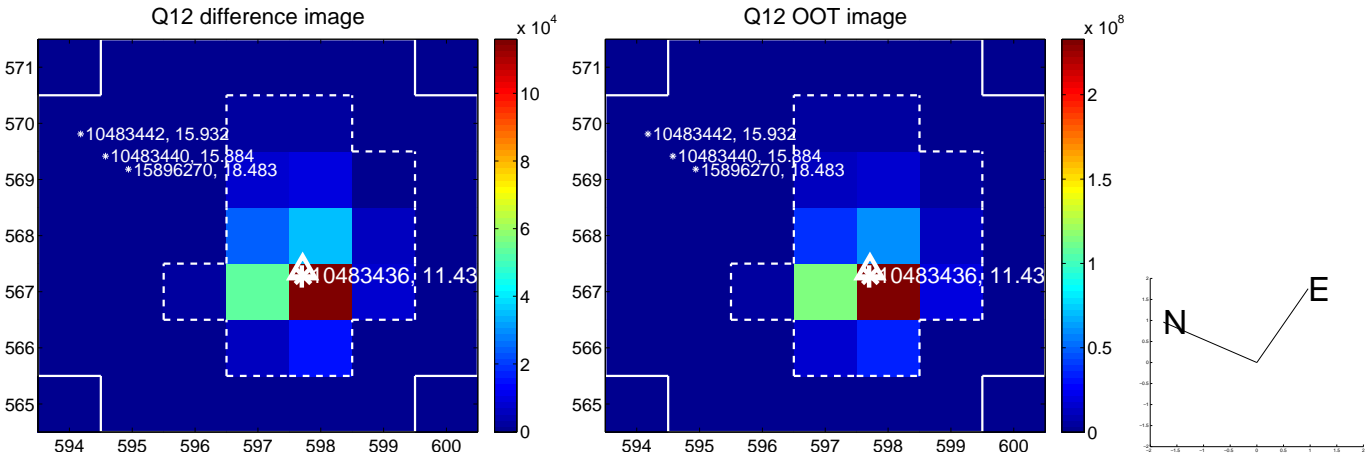
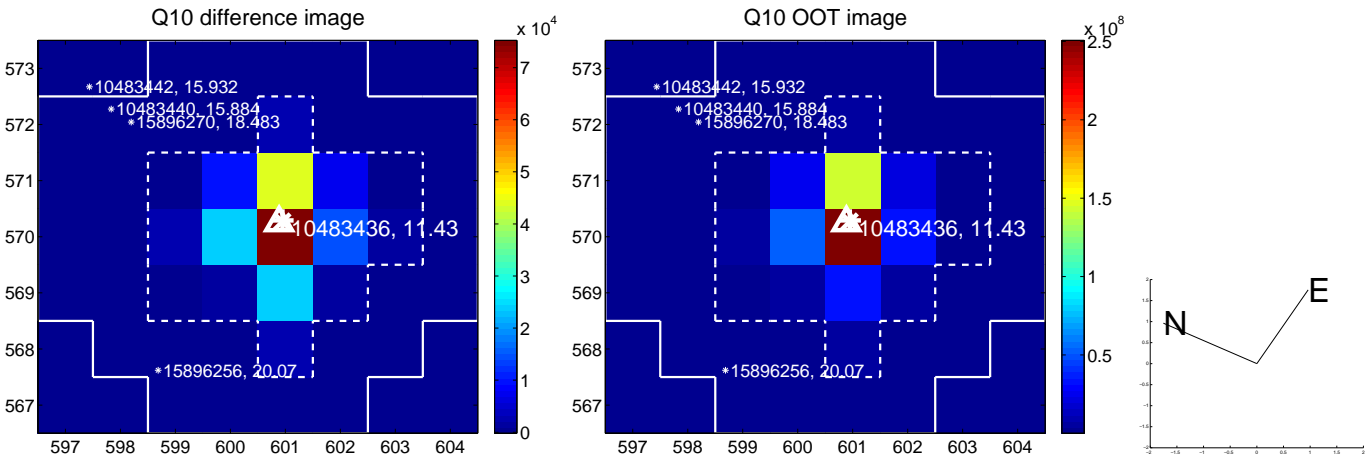
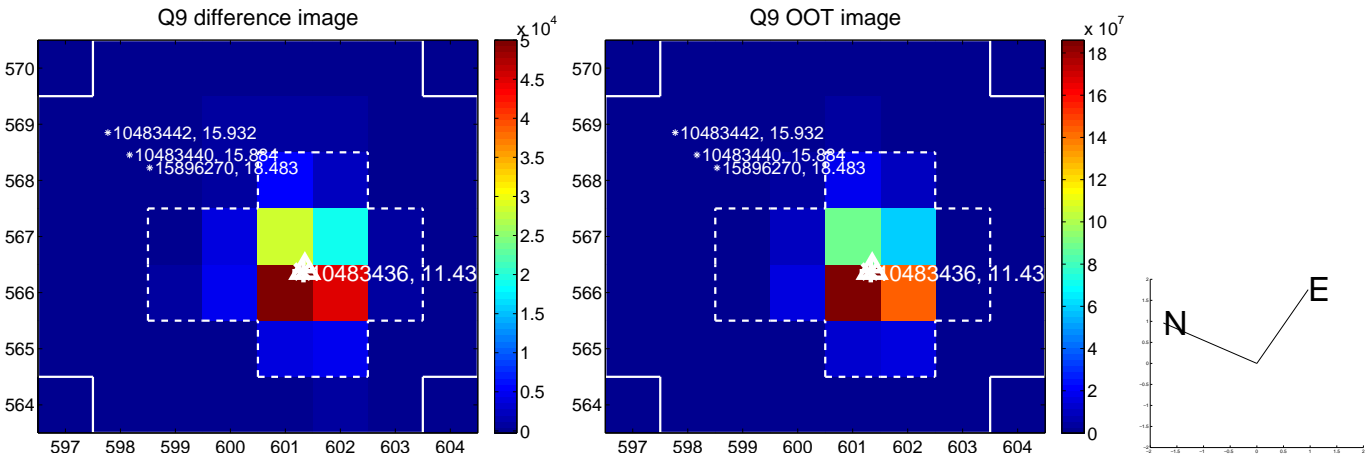


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

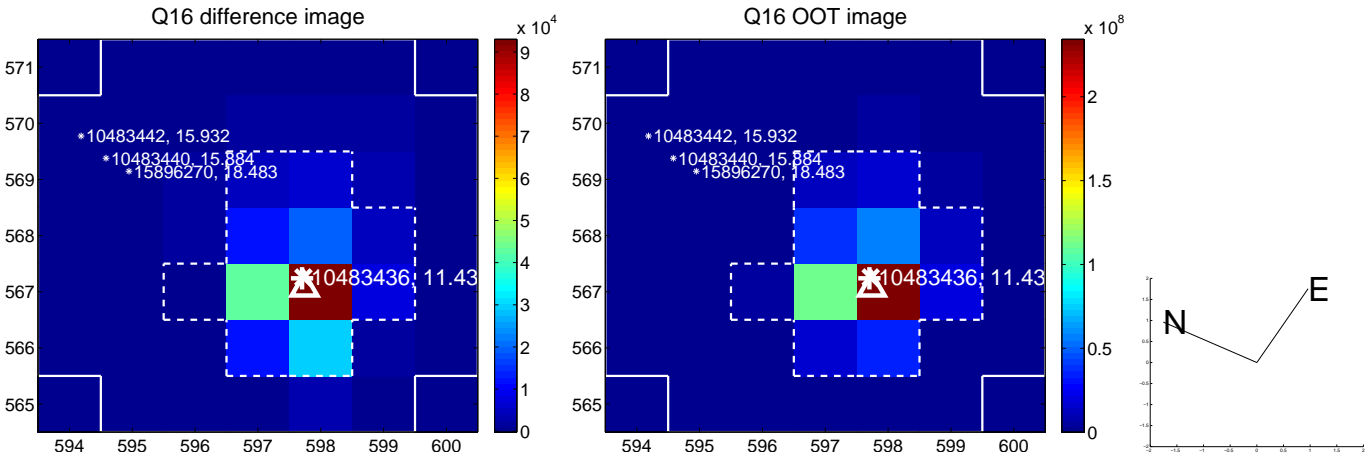
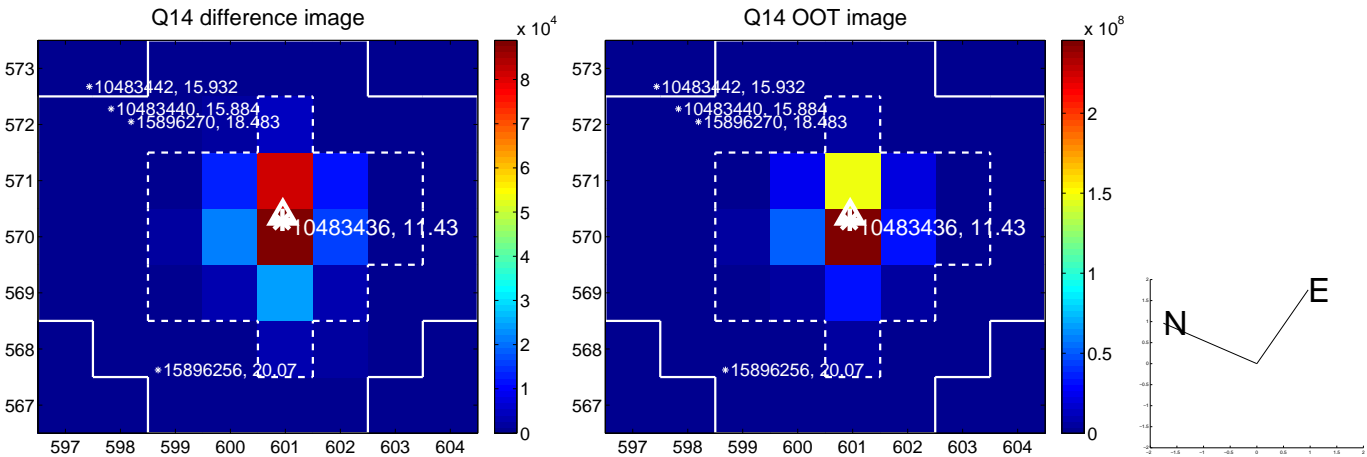
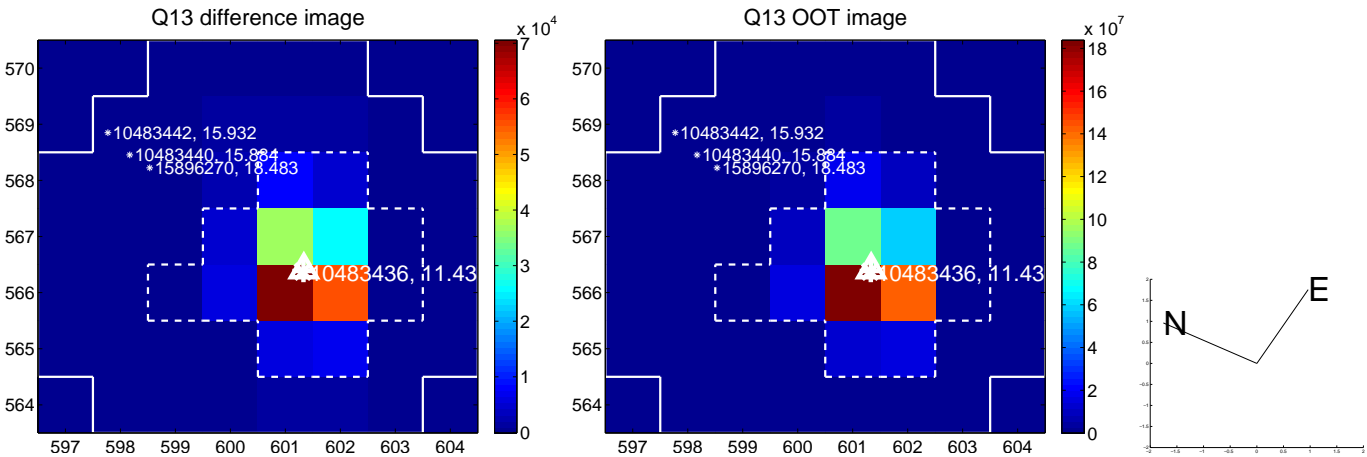




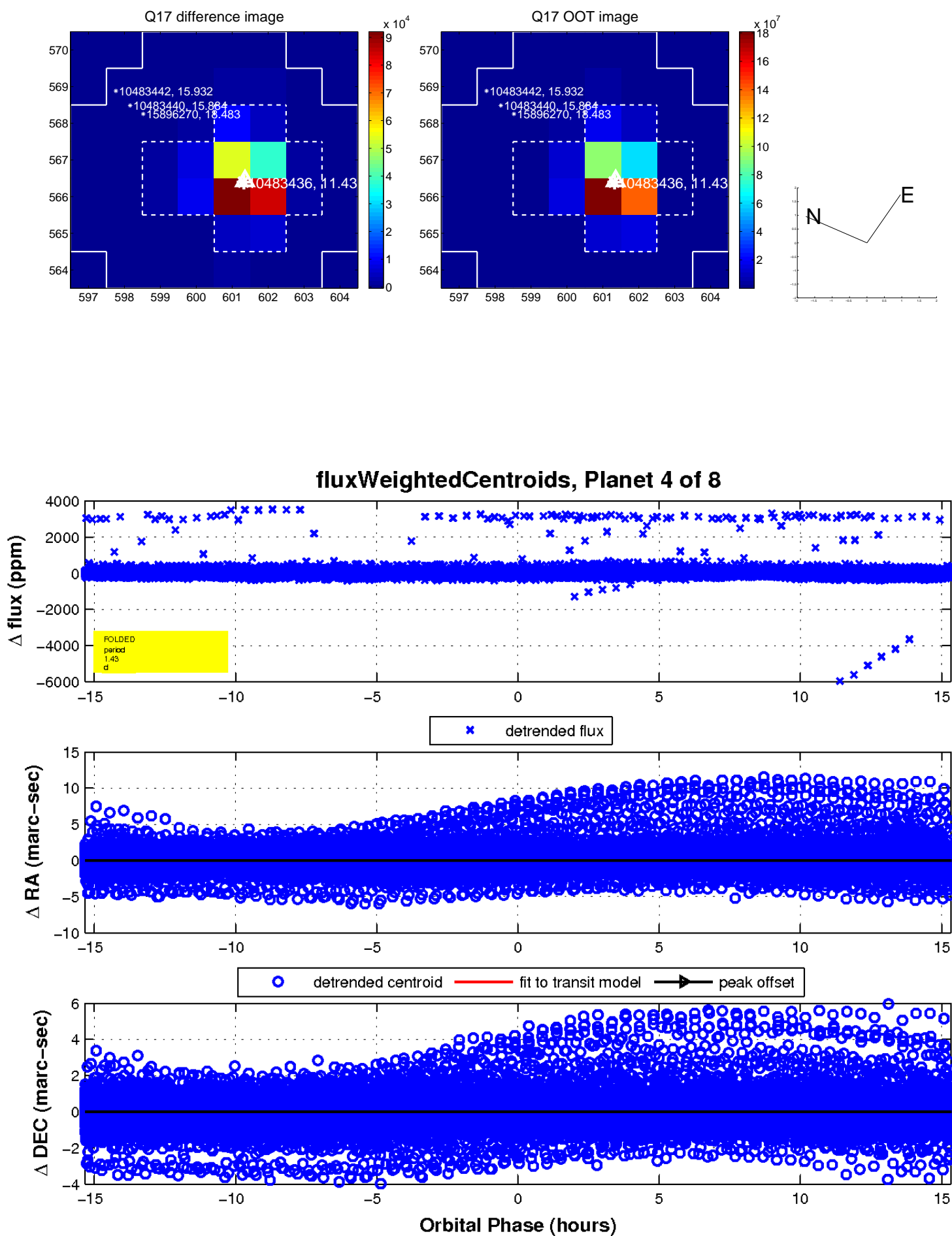
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

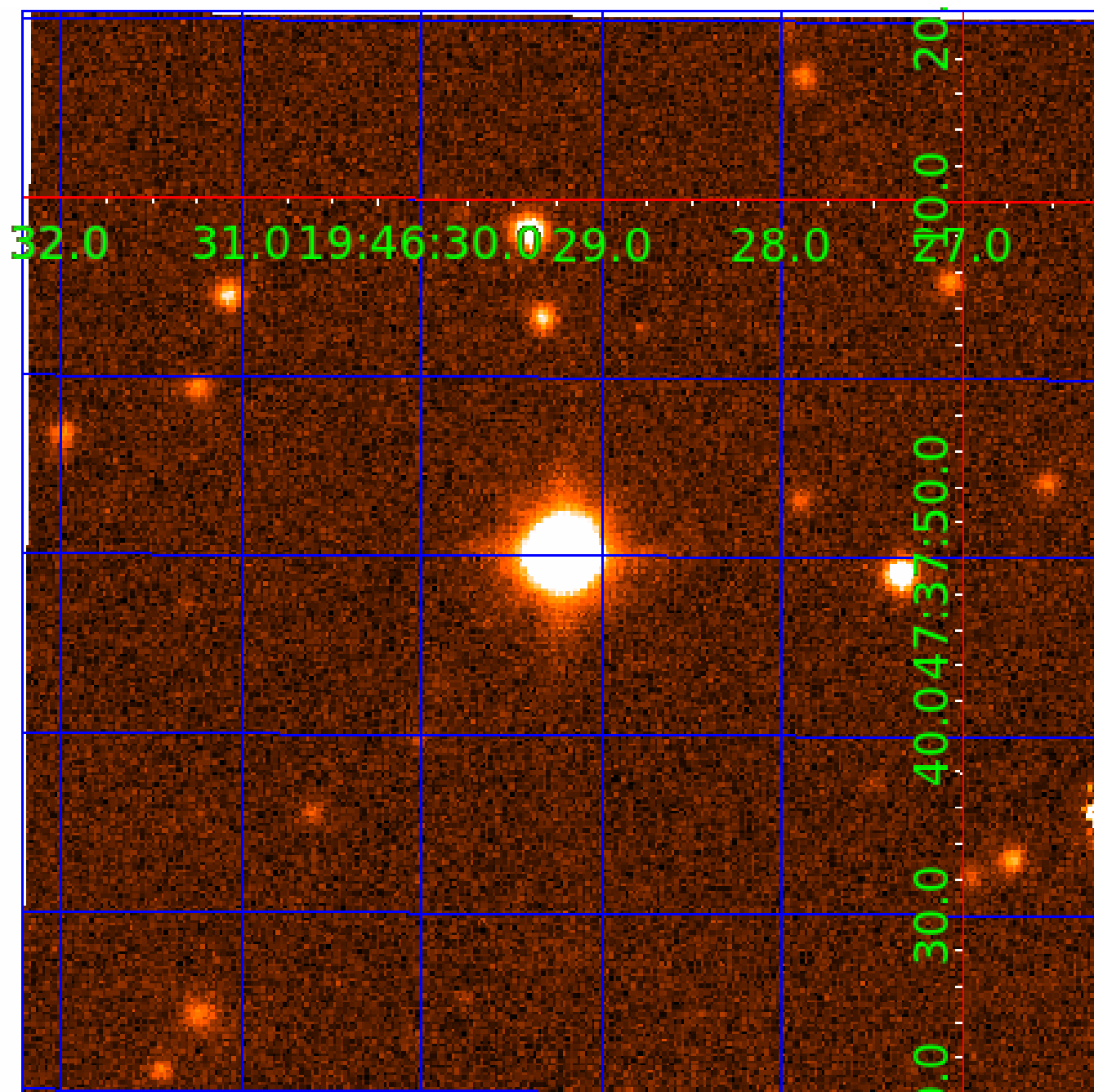


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 010483436

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010483436-01	OBS	No	2.151570	132.635029	47.1	1.865	18.1	21.6	1.83	7602	1.46	6492.44
010483436-02	OBS	No	4.303206	134.910950	10.6	10.482	12.1	3.4	1.83	7602	0.69	2576.47
010483436-03	OBS	No	111.989531	194.017254	220.1	15.000	25.3	-1.0	1.83	7602	2.75	33.41
010483436-04	OBS	No	1.434597	131.993627	16.5	5.110	13.2	10.0	1.83	7602	0.93	11145.73
010483436-05	OBS	No	1.075175	132.166864	4.1	1.268	14.6	1.7	1.83	7602	0.41	16372.30
010483436-06	OBS	No	1.075793	131.990196	1.3	0.773	11.2	0.4	1.83	7602	0.21	16359.76
010483436-07	OBS	No	79.766297	156.928877	228.0	1.500	8.9	7.9	1.83	7602	2.93	52.52
010483436-08	OBS	No	73.264201	169.197290	111.3	4.500	9.6	-1.0	1.83	7602	1.96	58.83

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010483436-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_SATURATED
010483436-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED
010483436-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010483436-04	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
010483436-05	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010483436-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
010483436-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010483436-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

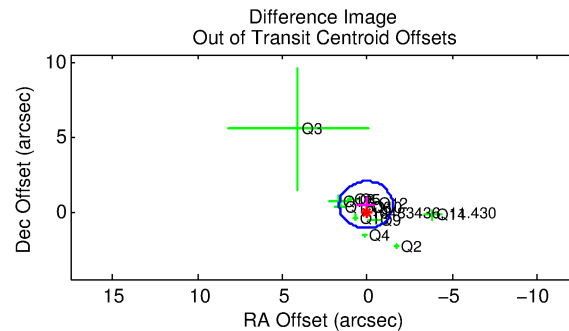
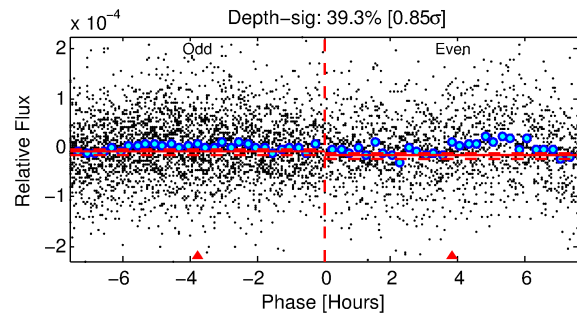
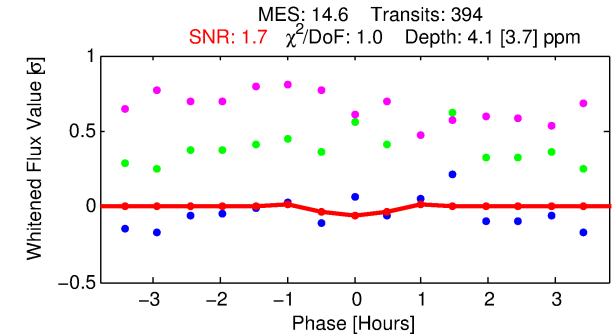
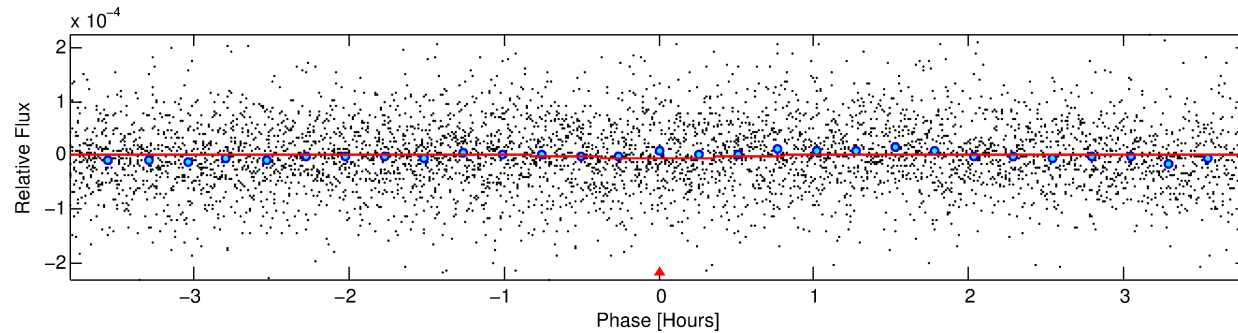
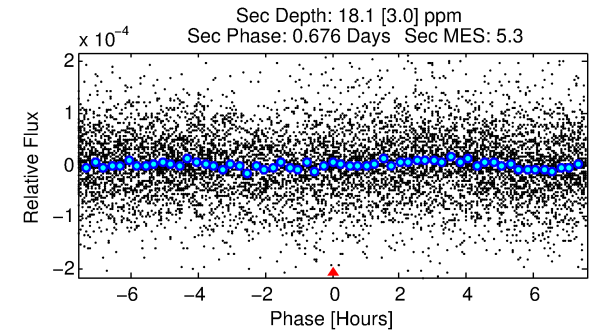
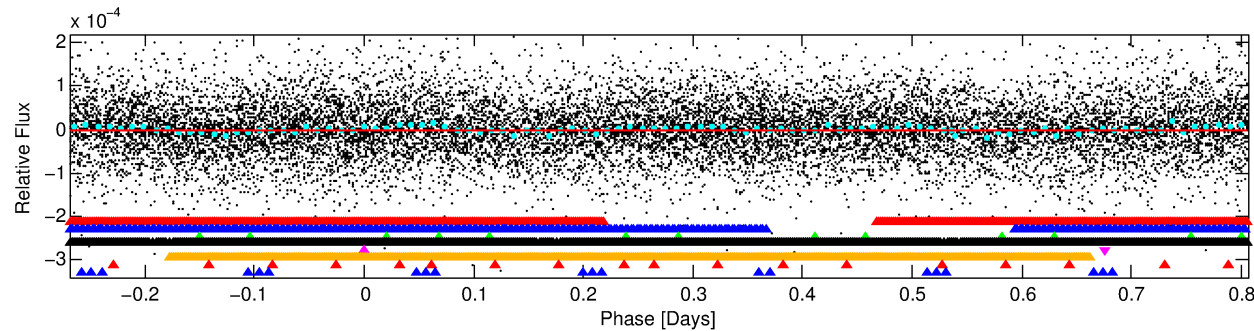
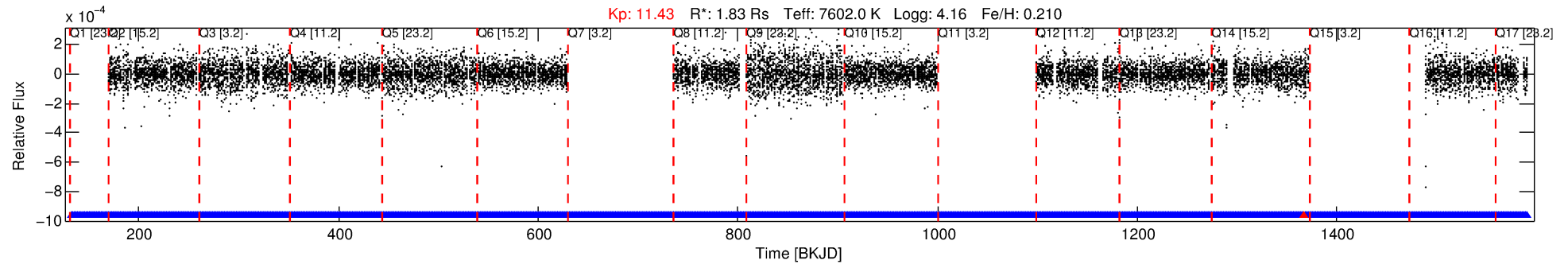
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 010483436-05

No Significant Match Found

# DV One-Page Summary

KIC: 10483436 Candidate: 5 of 8 Period: 1.075 d



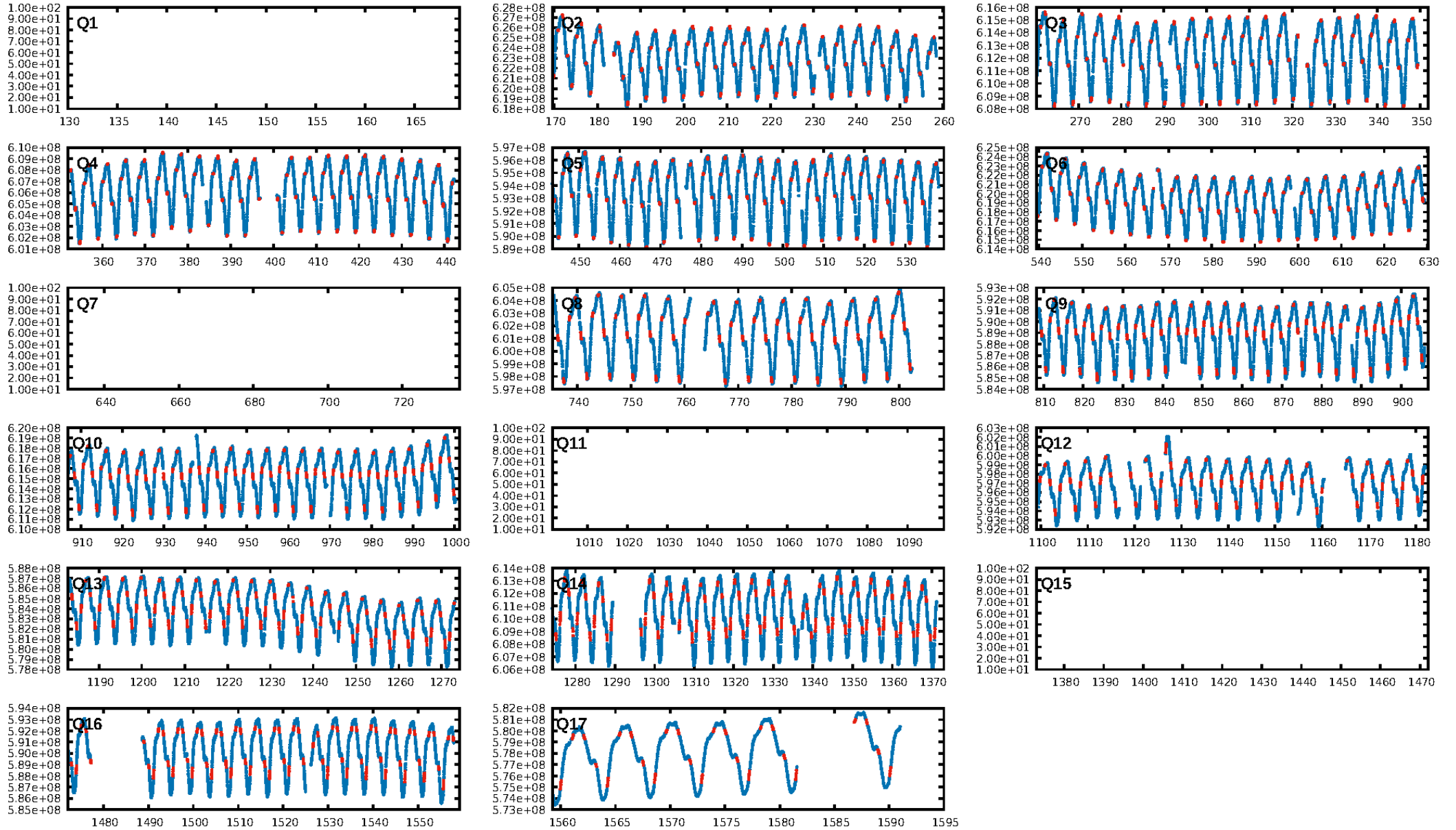
## DV Fit Results:

Period = 1.07517 [0.00006] d  
Epoch = 132.1669 [0.0120] BKJD  
Rp/R\* = 0.0021 [0.0012]  
a/R\* = 3.85 [8.03]  
b = 0.82 [0.90]  
Seff = 16372.30 [6633.17]  
Teq = 2884 [292] K  
Rp = 0.41 [0.27] Re  
a = 0.0247 [0.0064] AU  
Ag = 35.55 [42.79] [0.81σ]  
Teffp = 10889 [3158] K [2.52σ]

## DV Diagnostic Results:

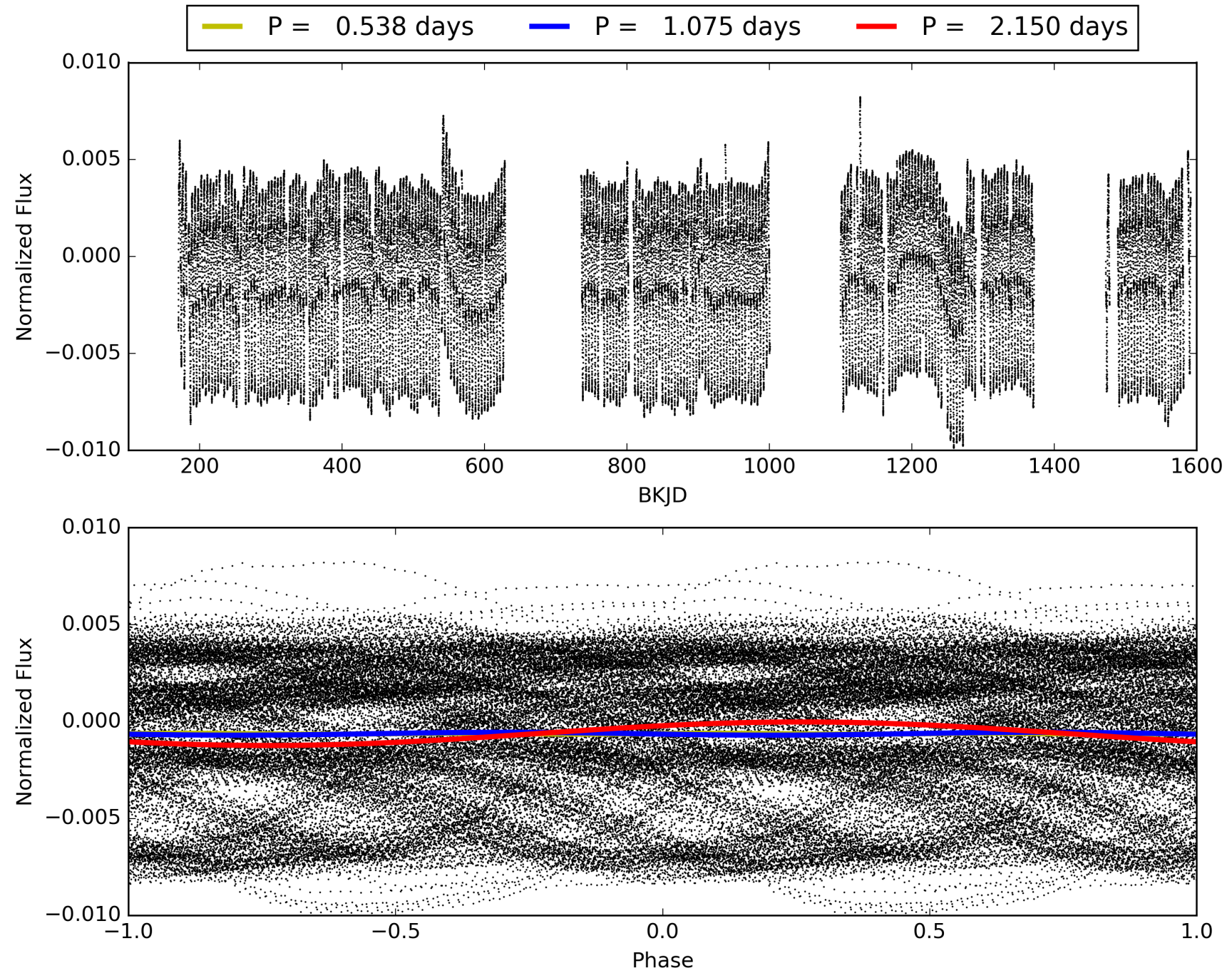
ShortPeriod-sig: N/A  
LongPeriod-sig: 0.8% [0.01σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [386/387]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 0.457 arcsec [0.87σ]  
KicOffset-rm: 0.492 arcsec [0.87σ]  
OotOffset-st: 4/1/4/4 [13]  
KicOffset-st: 4/1/4/4 [13]  
DiffImageQuality-fgm: 0.46 [6/13]  
DiffImageOverlap-fno: 0.54 [7/13]

# TCE 010483436-05, PDC Light Curves



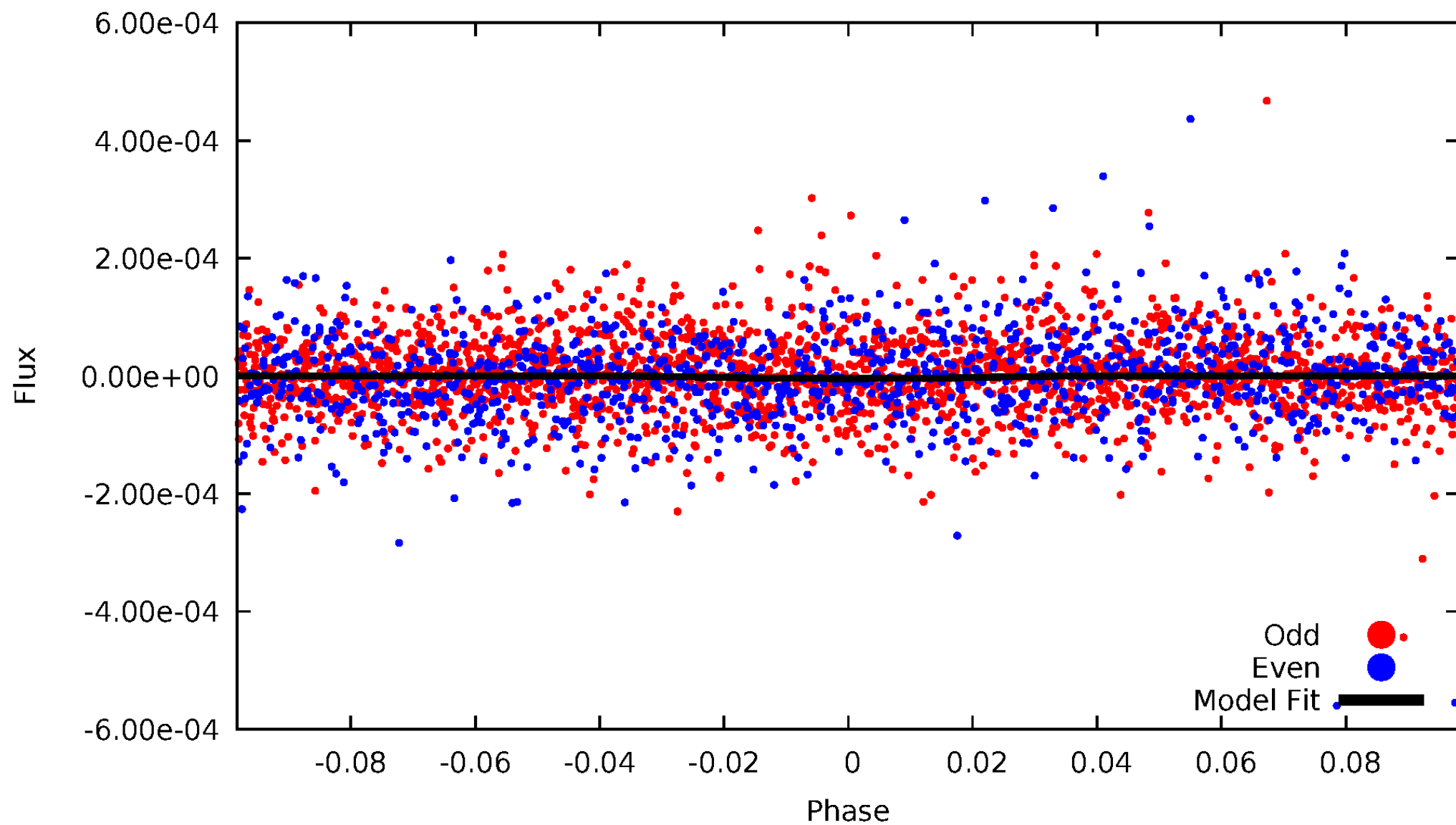


TCE 010483436-05



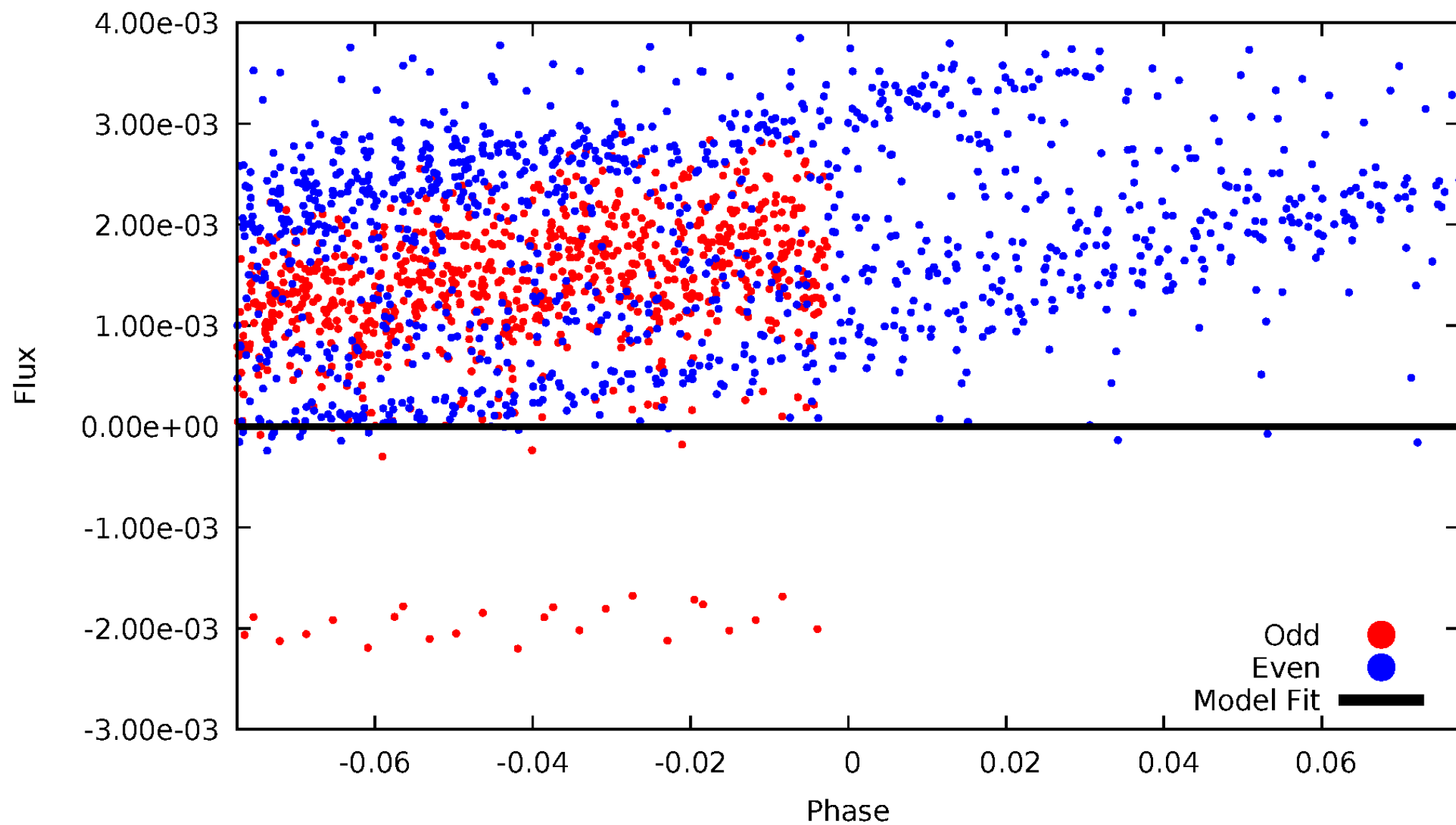
# DV Odd/Even

TCE 010483436-05



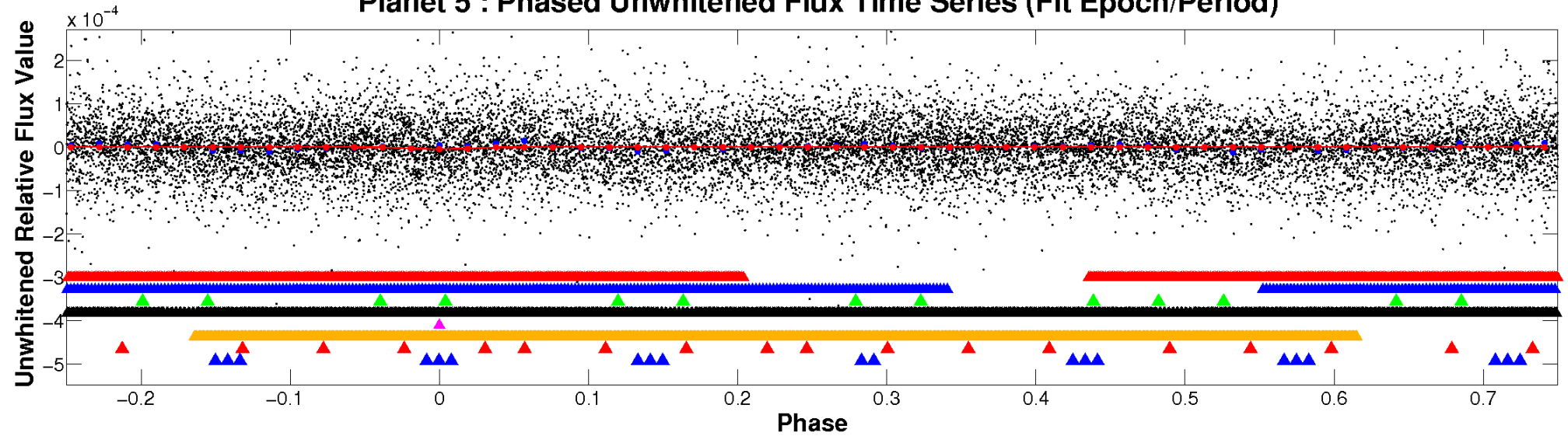
# ALT Odd/Even

TCE 010483436-05

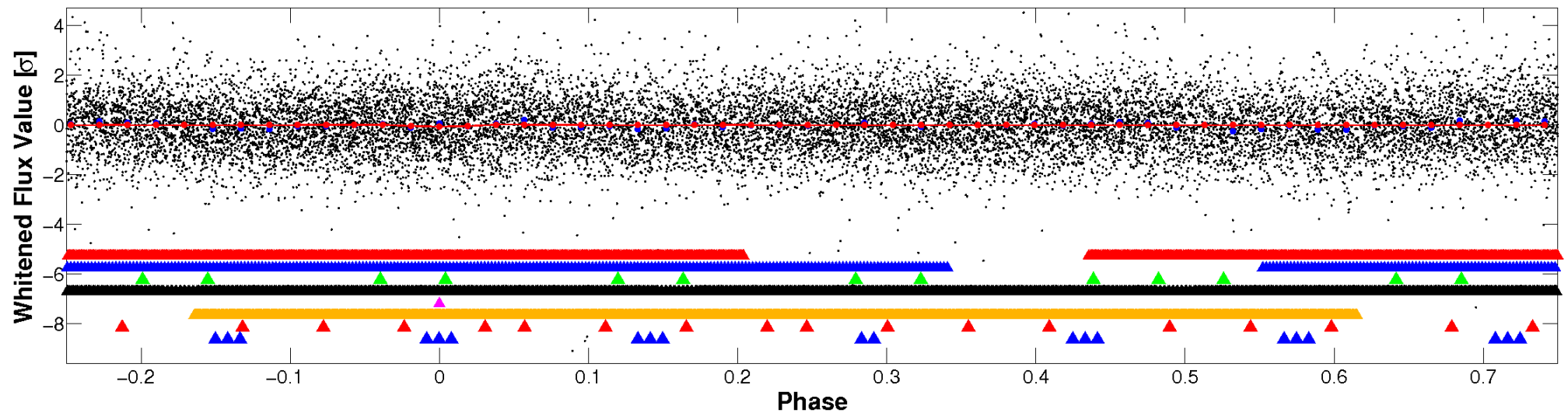


# Non-Whitened Vs. Whitened Light Curve

## Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

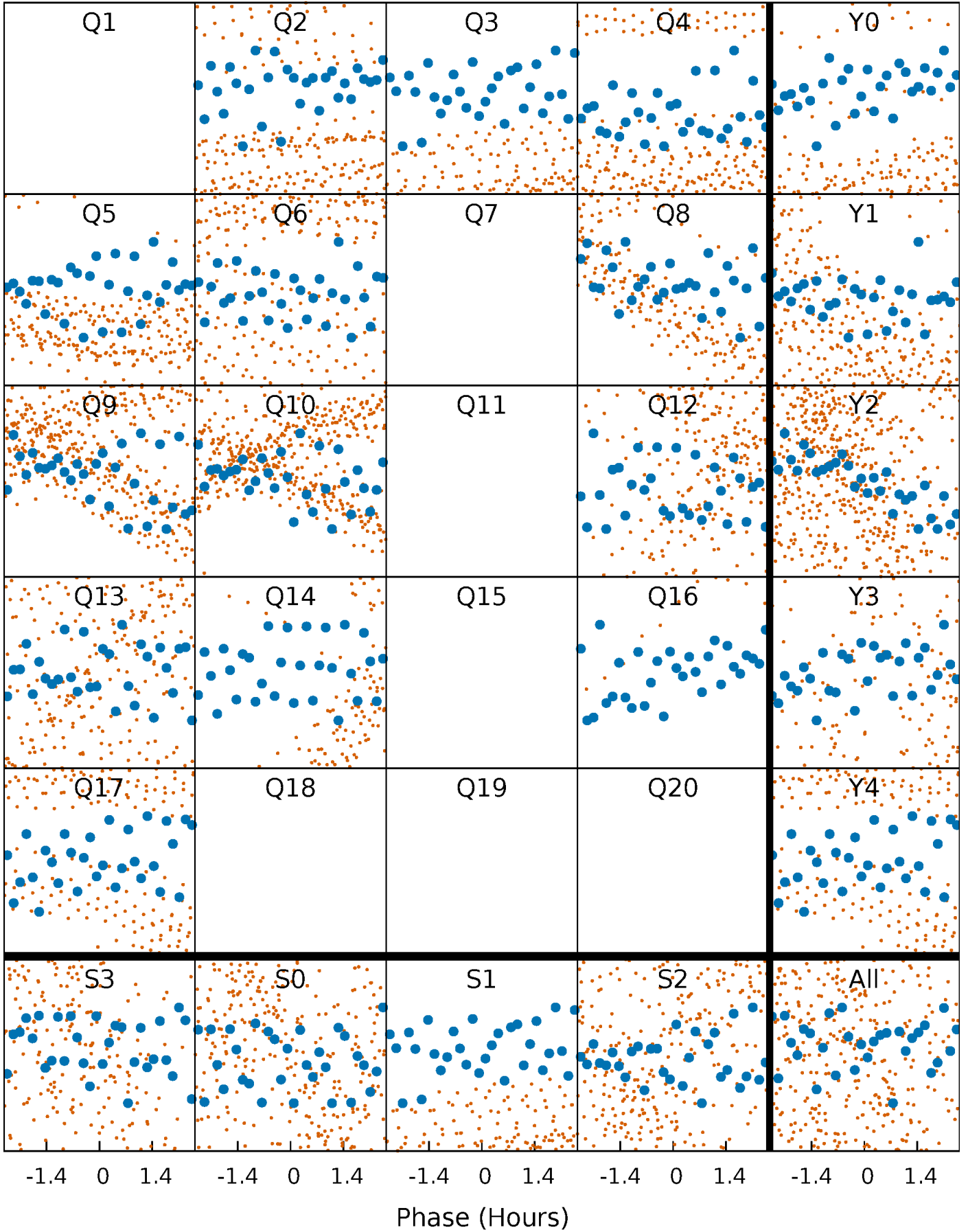


## Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

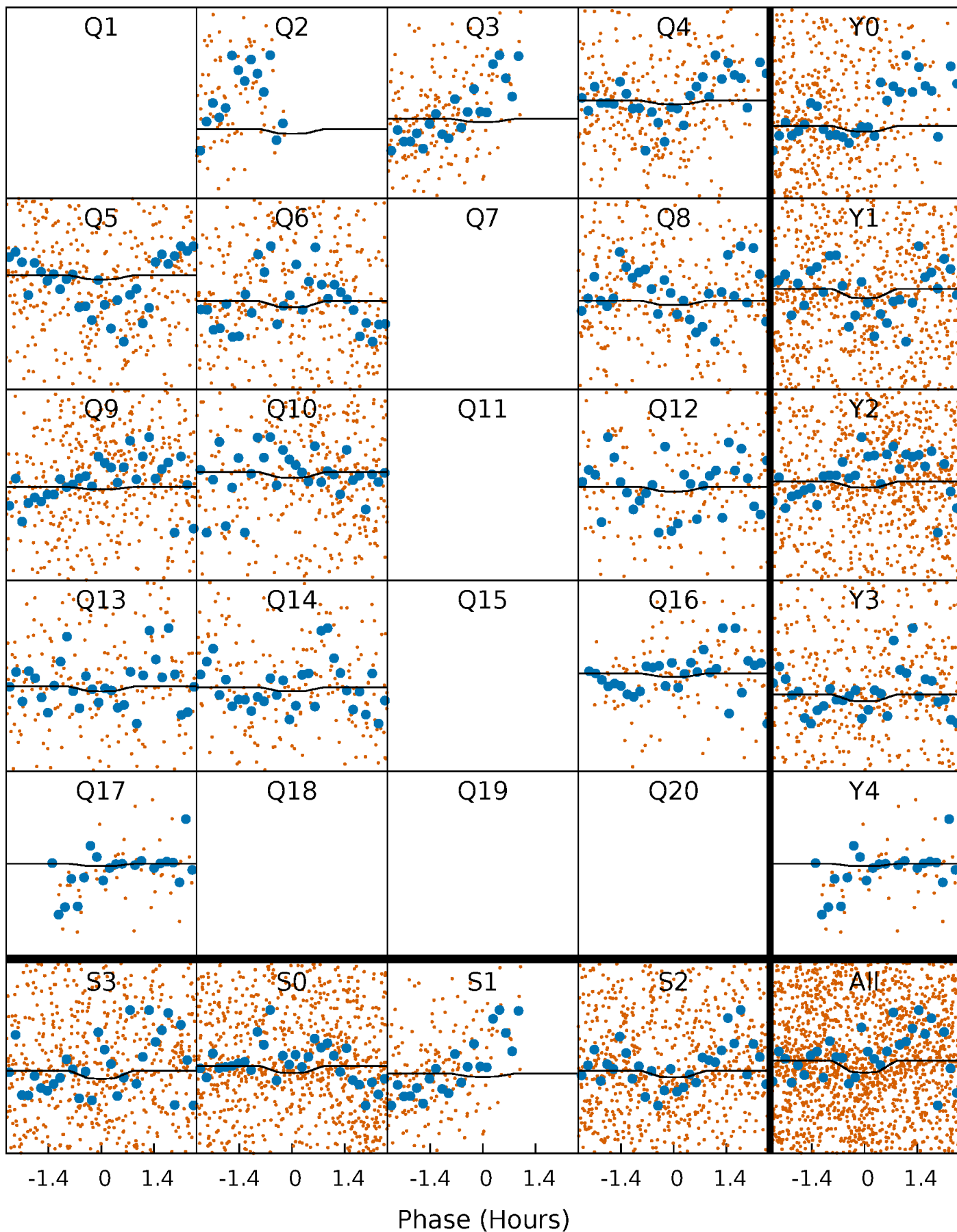
TCE 010483436-05   P= 1.075175 Days    $T_0=132.166864$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 010483436-05     $P = 1.075175$  Days     $T_0 = 132.166864$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 010483436-05     $P = 1.075802$  Days     $T_0 = 132.095999$  (BKJD)

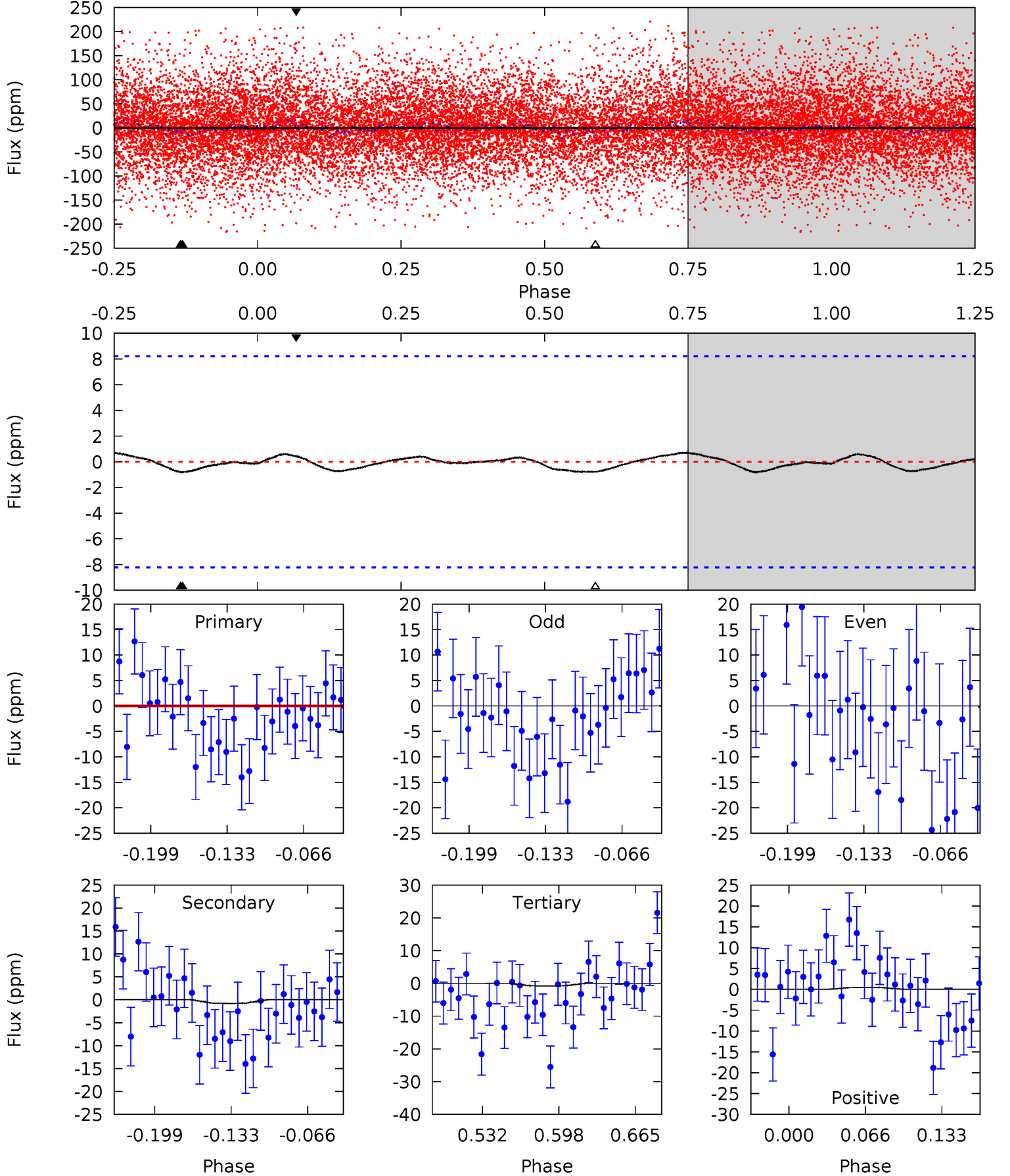




# DV Model-Shift Uniqueness Test

010483436-05, P = 1.075175 Days, E = 132.166864 Days

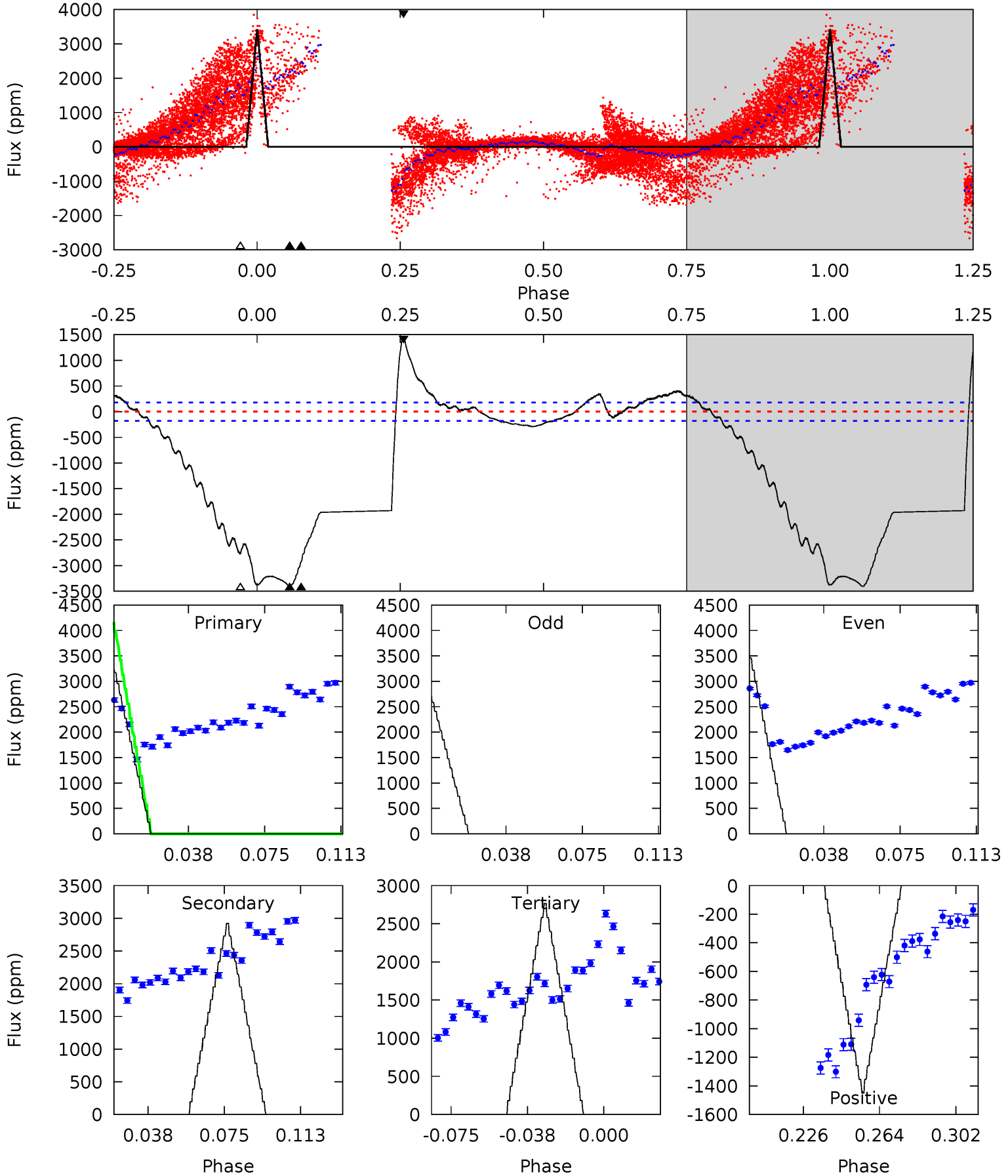
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.46	0.45	0.45	0.25	4.65	1.84	0.22	0.01	0.21	0.01	0.21	0.60	-0.19	0.47	0.28



# Alt Model-Shift Uniqueness Test

010483436-05, P = 1.075802 Days, E = 132.095999 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
90.7	77.9	73.7	38.7	4.77	2.08	25.0	17.0	52.1	4.21	39.2	12.9	1.12	0.30	0



### Stellar Parameters For KIC 010483436

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7602^{+210}_{-330}$	$4.155^{+0.070}_{-0.196}$	$0.210^{+0.150}_{-0.350}$	$1.829^{+0.572}_{-0.245}$	$1.743^{+0.212}_{-0.233}$	$0.401^{+0.146}_{-0.207}$
	+3%/-4%	+2%/-5%	+71%/-167%	+31%/-13%	+12%/-13%	+36%/-52%
Source	KIC0	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 010483436-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-1 \pm 2$	$0.45^{+0.23}_{-0.24}$	$4081^{+309}_{-219}$	$4212^{+3114}_{-9819}$	$0.912^{+6.004}_{-2.969}$
Alt.	$-2924 \pm 38$	$0.35^{+0.24}_{-0.20}$	$4089^{+300}_{-239}$	$864233^{+3832931}_{-516579}$	$7537^{+31826}_{-4778}$

$T_{max}$  = Theoretical Maximum Planetary Temperature

$T_{obs}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

$A_{obs}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{obs} \gg T_{max}$  AND  $A_{obs} \gg 1.0$

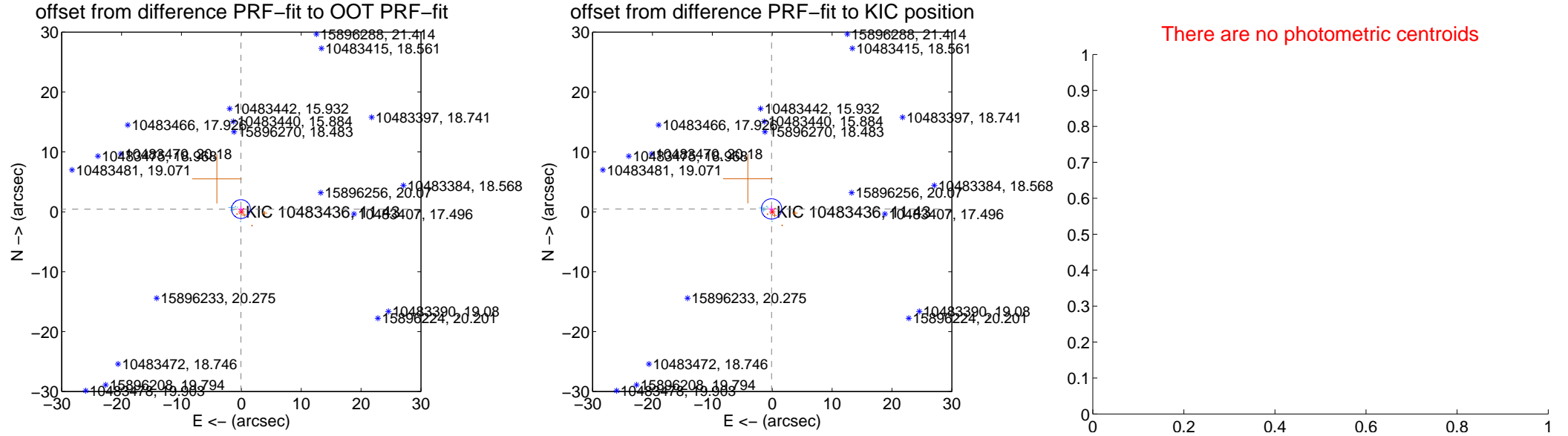
## DV Centroid Data

Supplemental centroid analysis for 010483436-05. **Kepler magnitude: 11.43.** Transit SNR 1.69

There are 6 quarters with good PRF difference image offsets

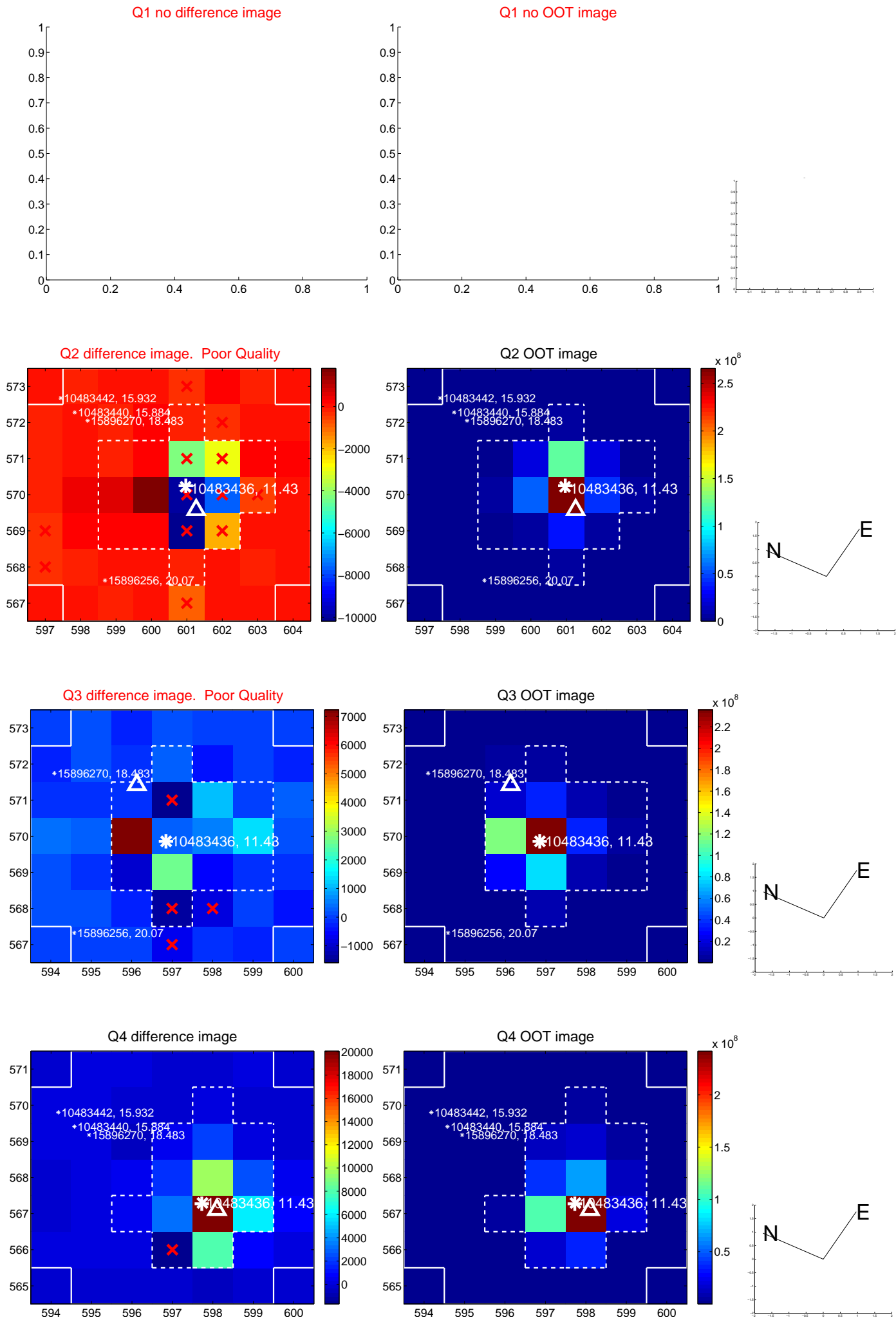
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.457 \pm 0.524$	0.87	$0.060 \pm 0.502$	$0.453 \pm 0.480$
PRF-fit source offset from KIC position	$0.492 \pm 0.566$	0.87	$0.108 \pm 0.512$	$0.480 \pm 0.490$
photometric centroid source offset	—	—	—	—

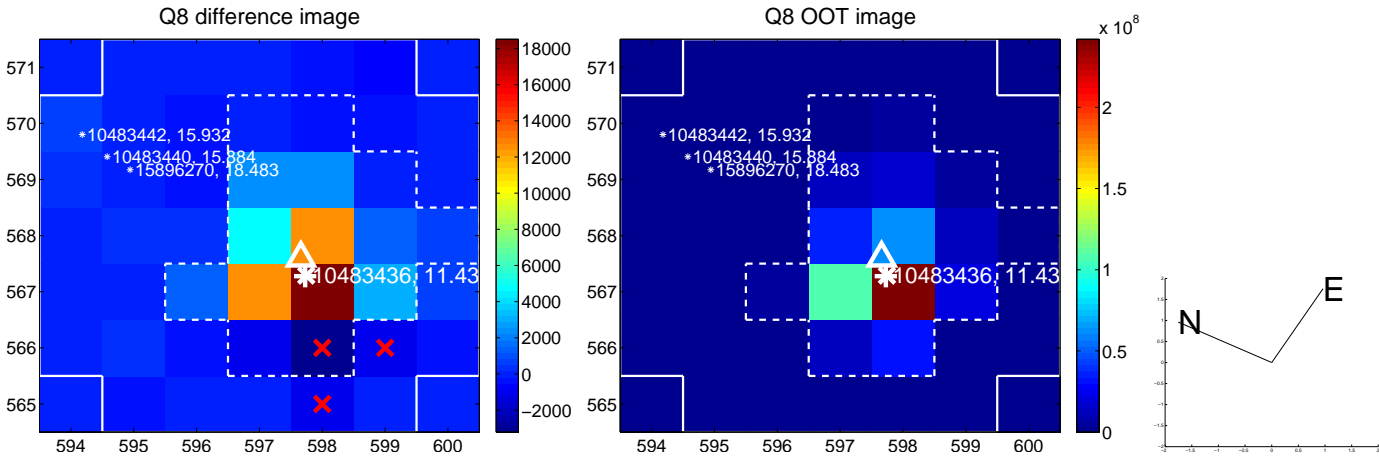
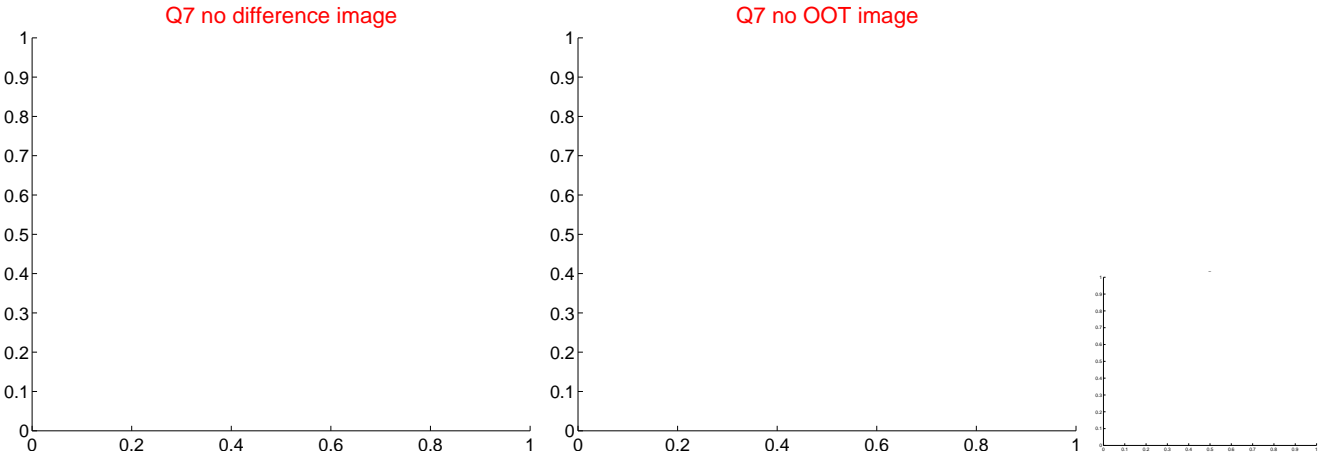
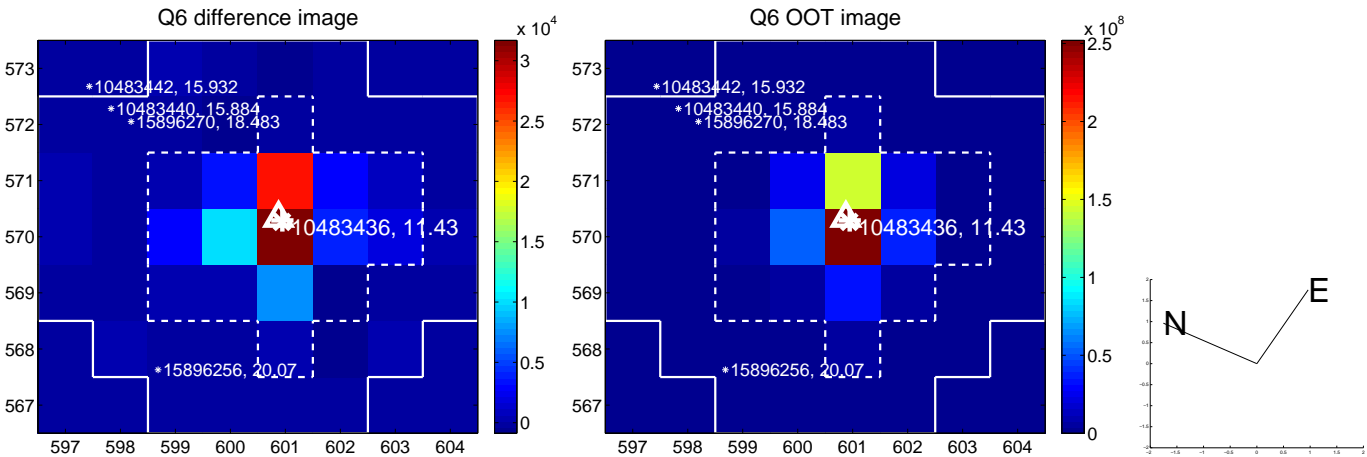
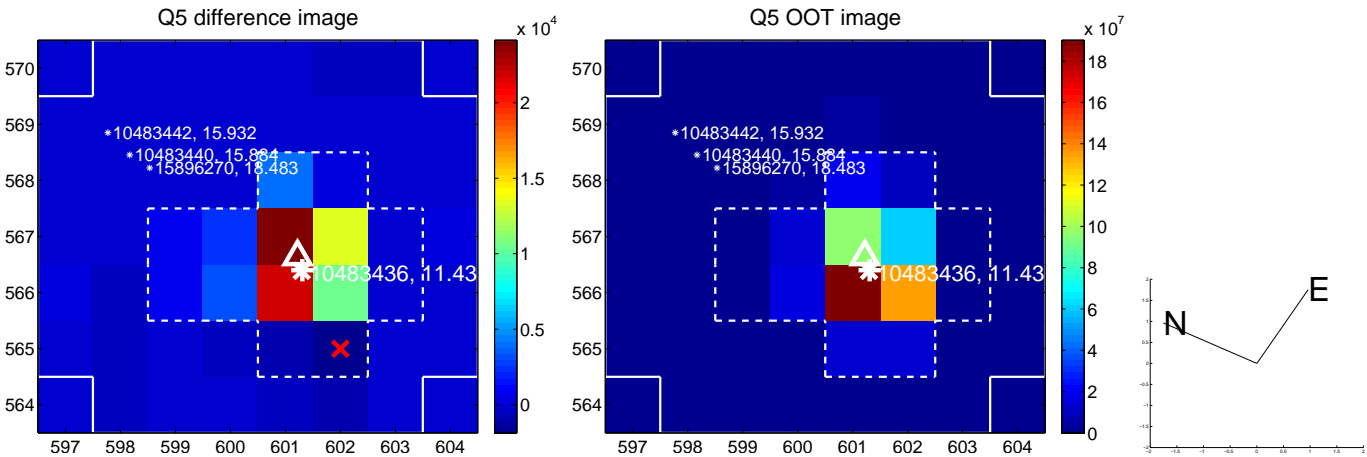


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

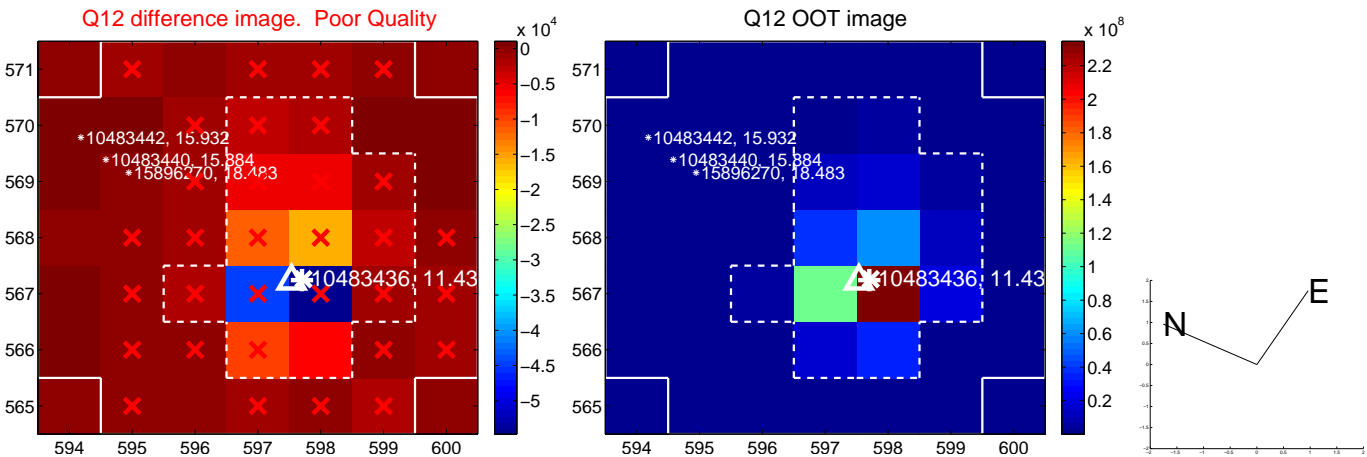
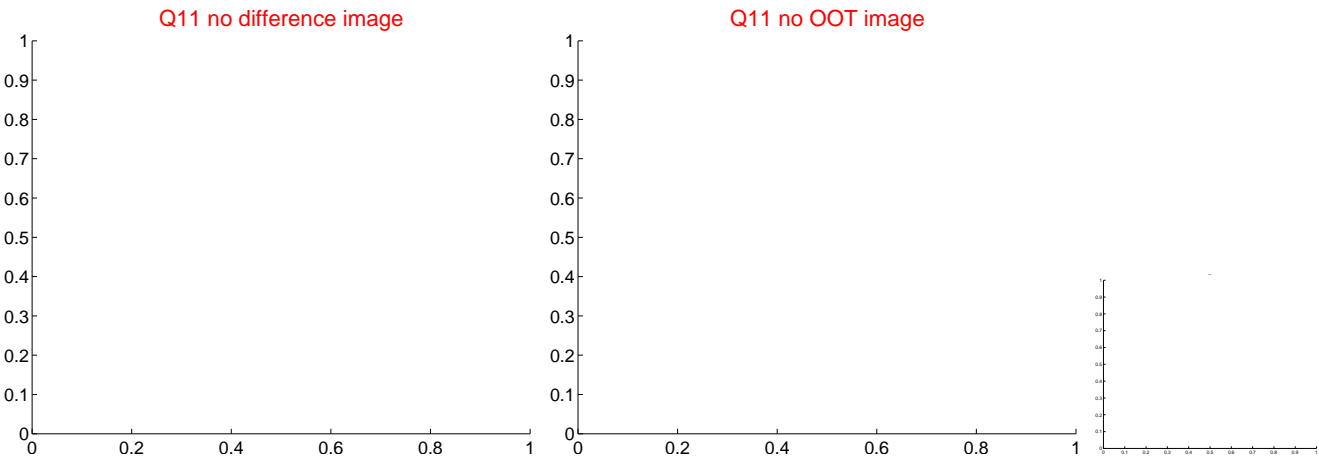
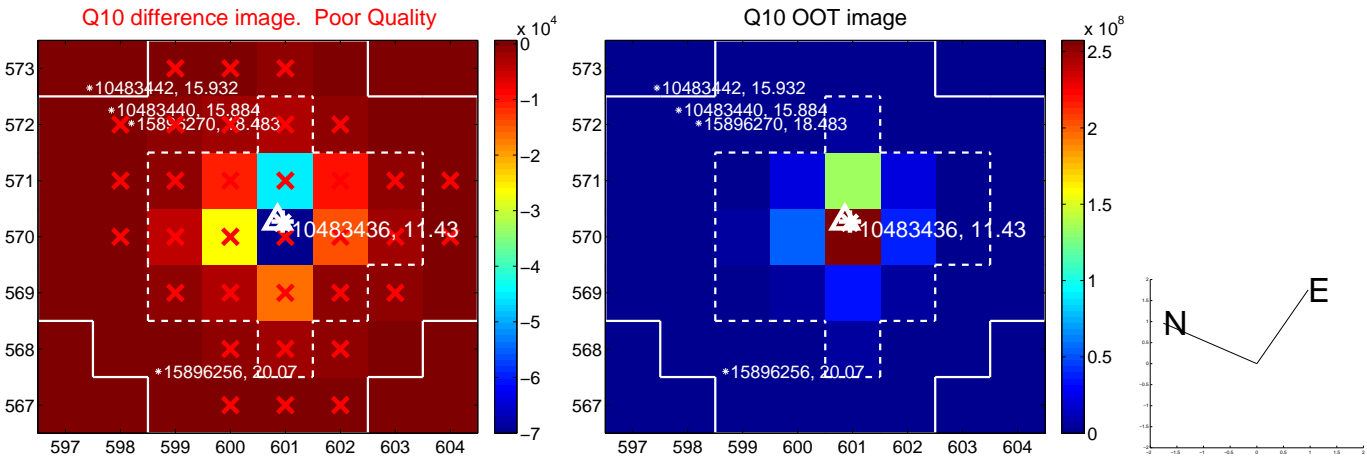
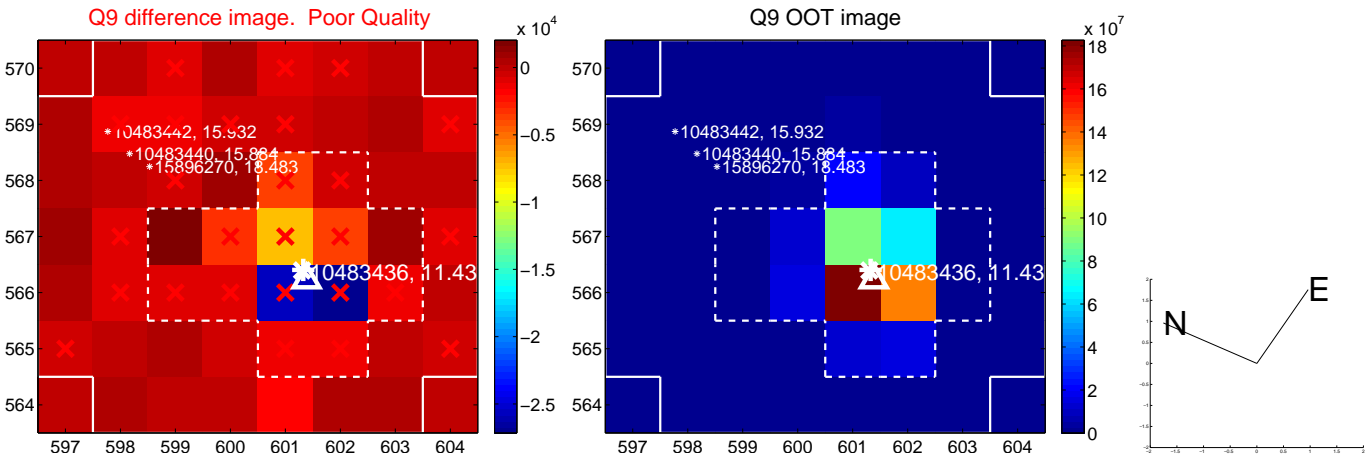
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

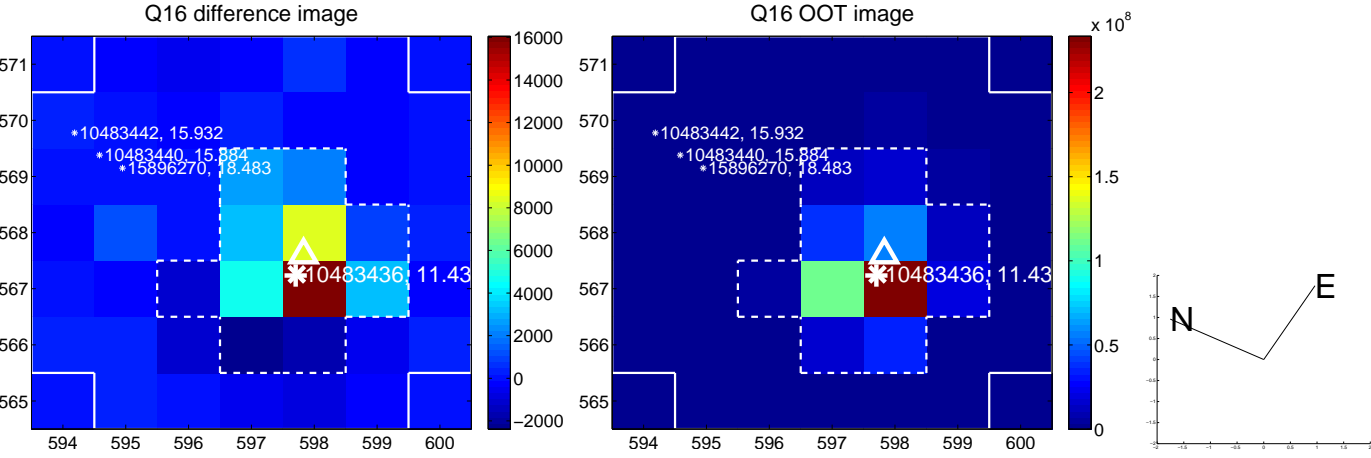
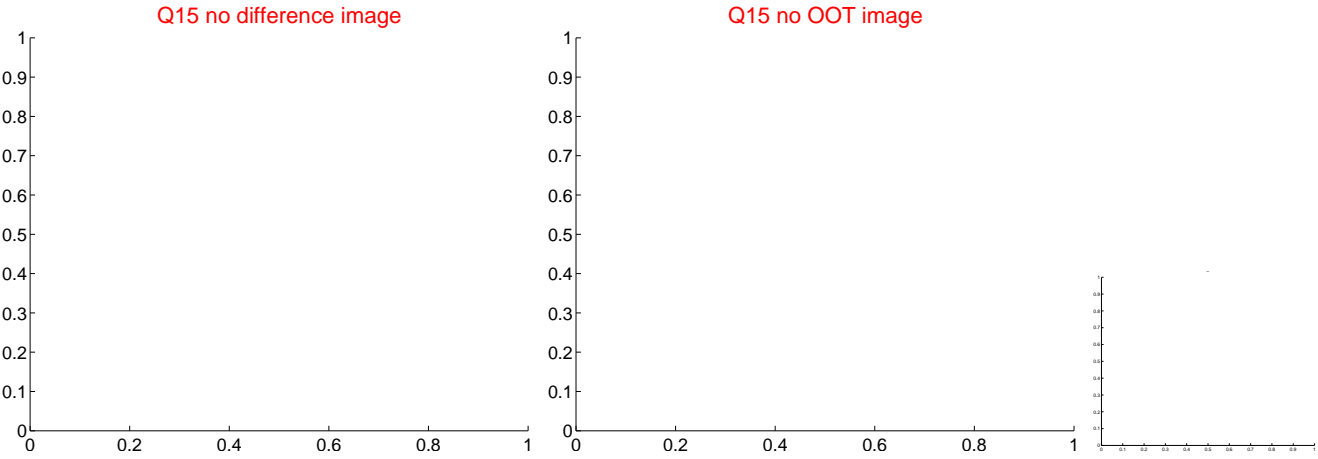
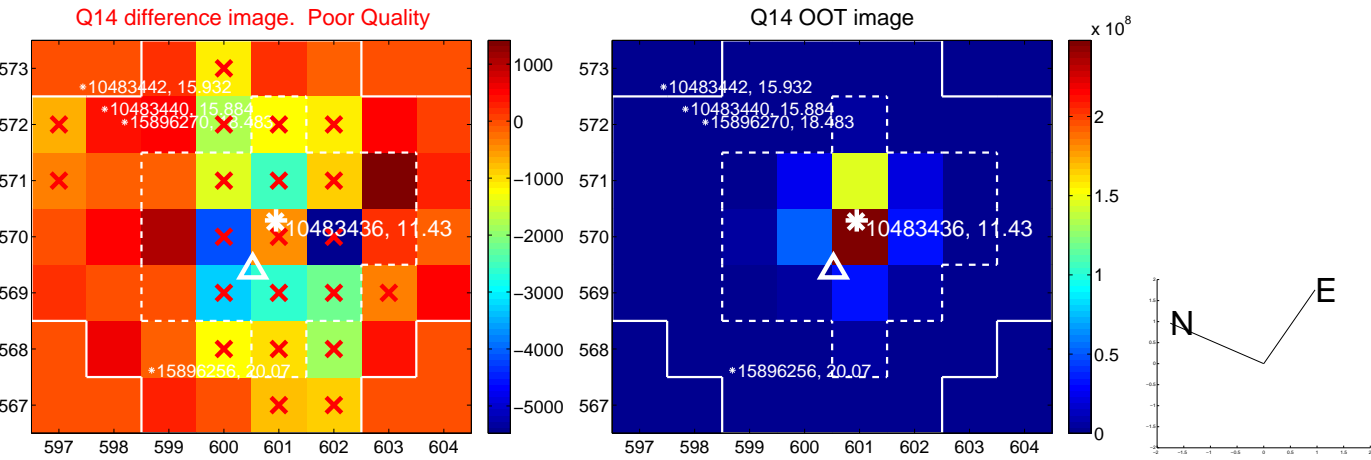
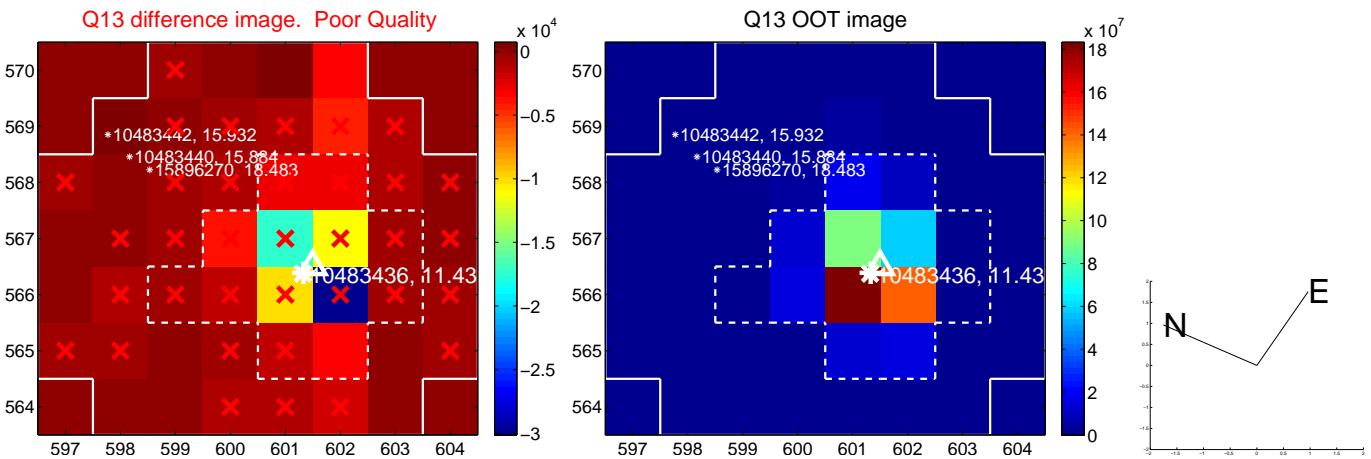


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

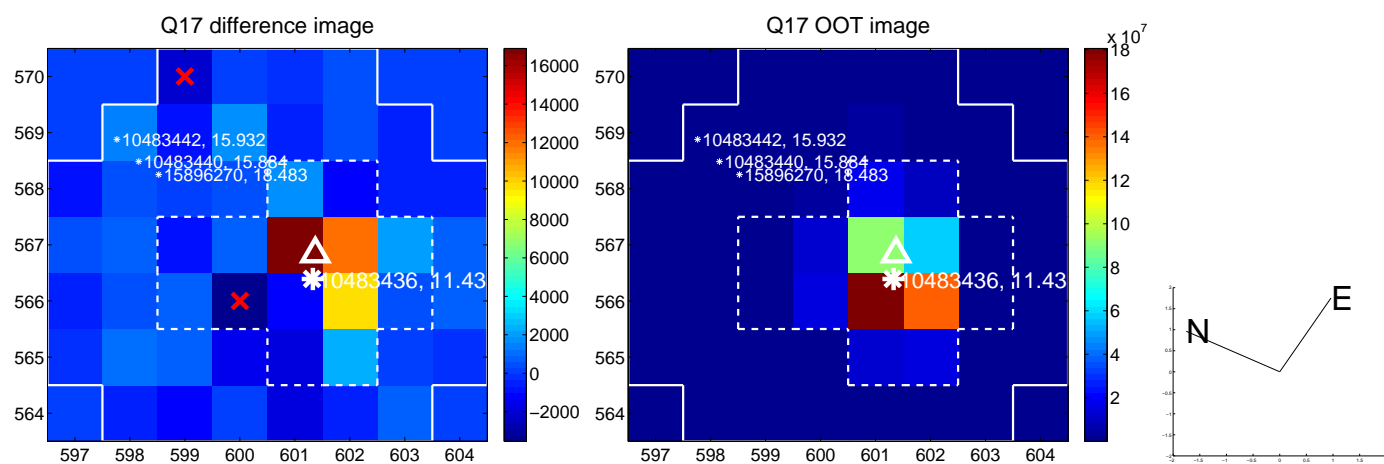




white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

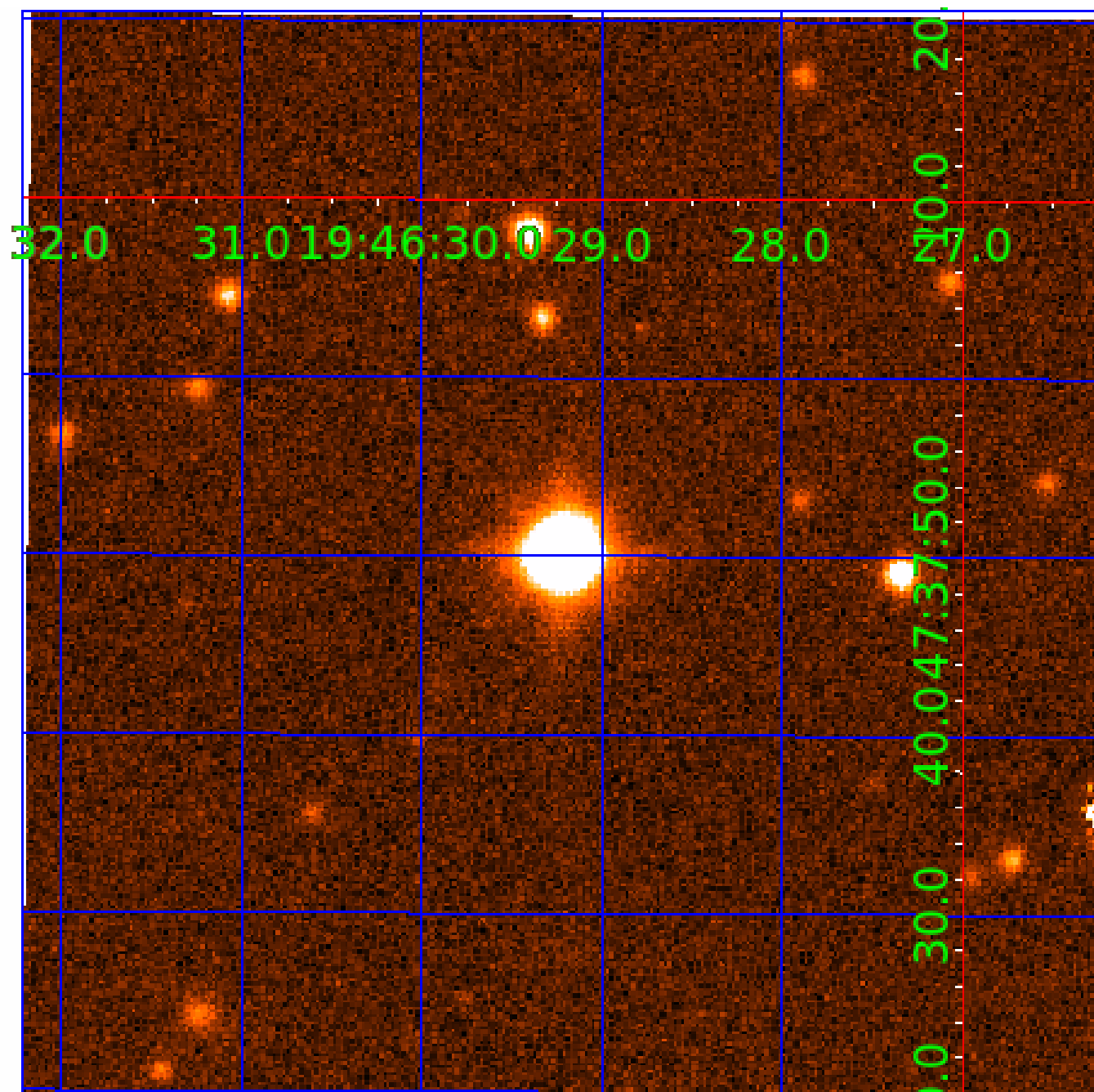


folded centroid time series figure for this object.



UKIRT Image

Declination



# KIC 010483436

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010483436-01	OBS	No	2.151570	132.635029	47.1	1.865	18.1	21.6	1.83	7602	1.46	6492.44
010483436-02	OBS	No	4.303206	134.910950	10.6	10.482	12.1	3.4	1.83	7602	0.69	2576.47
010483436-03	OBS	No	111.989531	194.017254	220.1	15.000	25.3	-1.0	1.83	7602	2.75	33.41
010483436-04	OBS	No	1.434597	131.993627	16.5	5.110	13.2	10.0	1.83	7602	0.93	11145.73
010483436-05	OBS	No	1.075175	132.166864	4.1	1.268	14.6	1.7	1.83	7602	0.41	16372.30
010483436-06	OBS	No	1.075793	131.990196	1.3	0.773	11.2	0.4	1.83	7602	0.21	16359.76
010483436-07	OBS	No	79.766297	156.928877	228.0	1.500	8.9	7.9	1.83	7602	2.93	52.52
010483436-08	OBS	No	73.264201	169.197290	111.3	4.500	9.6	-1.0	1.83	7602	1.96	58.83

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010483436-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_SATURATED
010483436-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED
010483436-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010483436-04	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
010483436-05	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010483436-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
010483436-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010483436-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

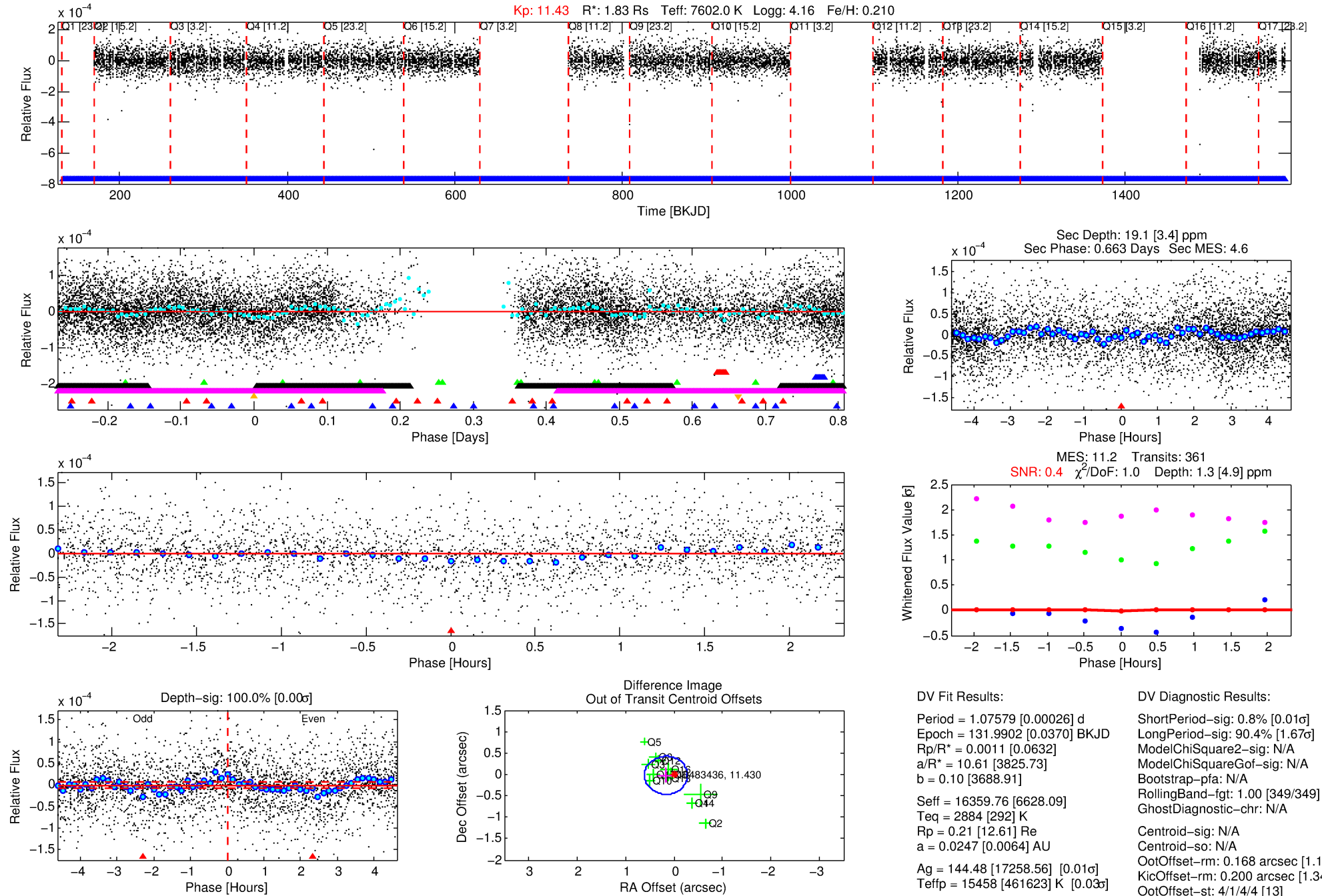
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 010483436-06

No Significant Match Found

# DV One-Page Summary

KIC: 10483436 Candidate: 6 of 8 Period: 1.076 d



## DV Fit Results:

Period = 1.07579 [0.00026] d  
Epoch = 131.9902 [0.0370] BKJD  
Rp/R\* = 0.0011 [0.0632]  
a/R\* = 10.61 [3825.73]  
b = 0.10 [3688.91]  
Seff = 16359.76 [6628.09]  
Teq = 2884 [292] K  
Rp = 0.21 [12.61] Re  
a = 0.0247 [0.0064] AU  
Ag = 144.48 [17258.56] [0.01σ]  
Teffp = 15458 [461623] K [0.03σ]

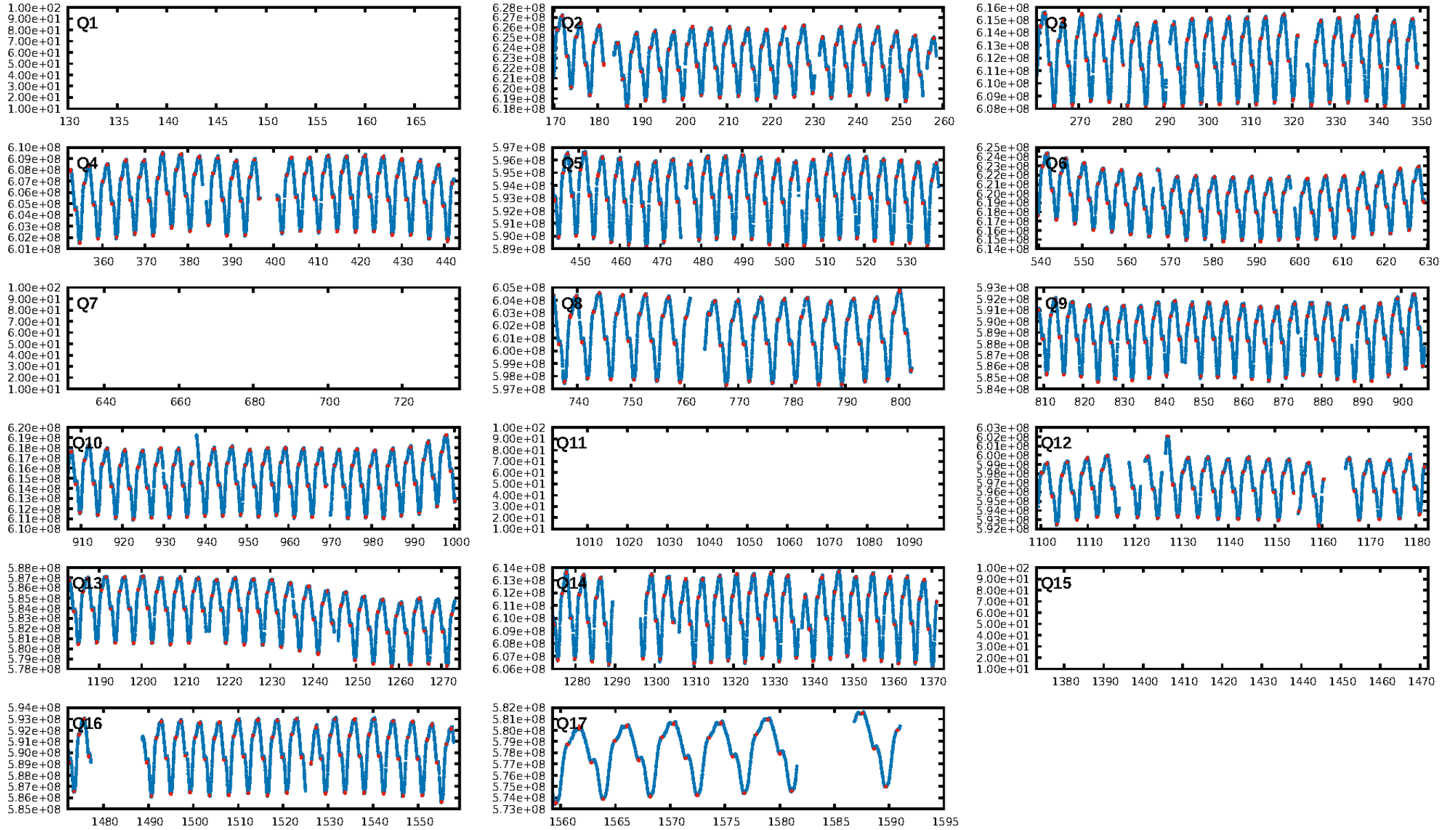
## DV Diagnostic Results:

ShortPeriod-sig: 0.8% [0.01σ]  
LongPeriod-sig: 90.4% [1.67σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [349/349]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 0.168 arcsec [1.13σ]  
KicOffset-rm: 0.200 arcsec [1.34σ]  
OotOffset-st: 4/1/4/4 [13]  
KicOffset-st: 4/1/4/4 [13]  
DiffImageQuality-fgm: 1.00 [13/13]  
DiffImageOverlap-fno: 0.54 [7/13]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:52:44 Z

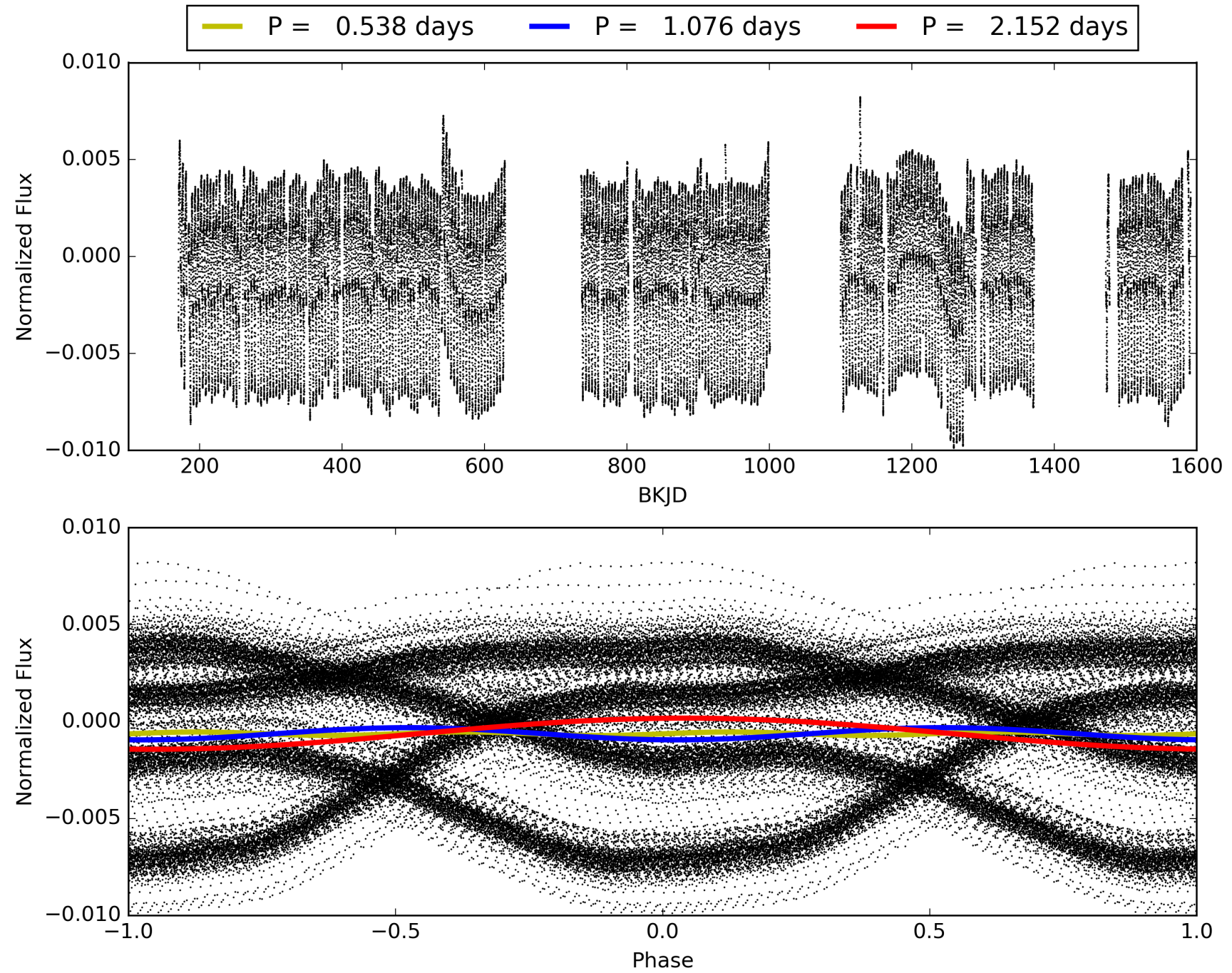
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 010483436-06, PDC Light Curves





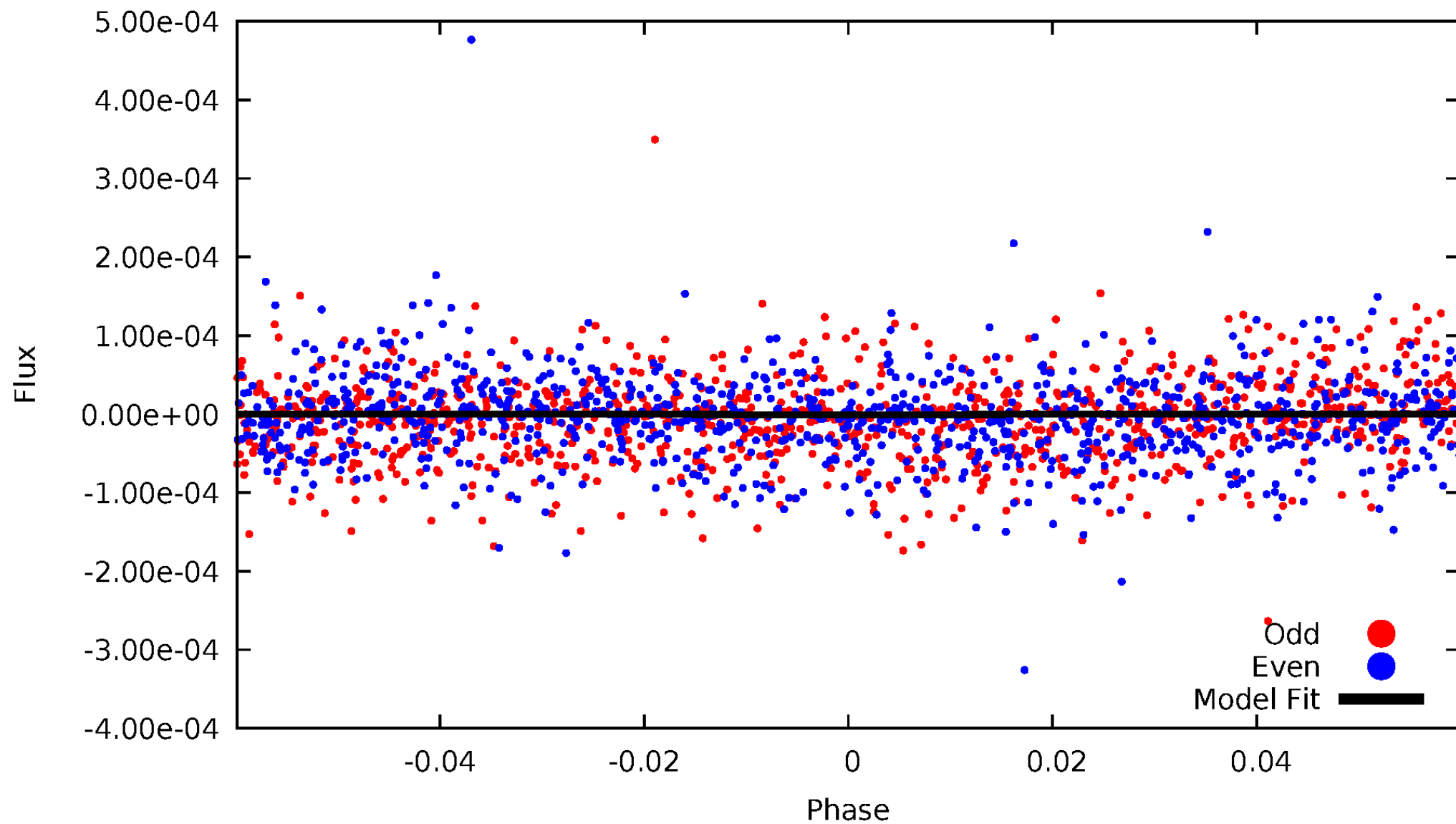
# TCE 010483436-06





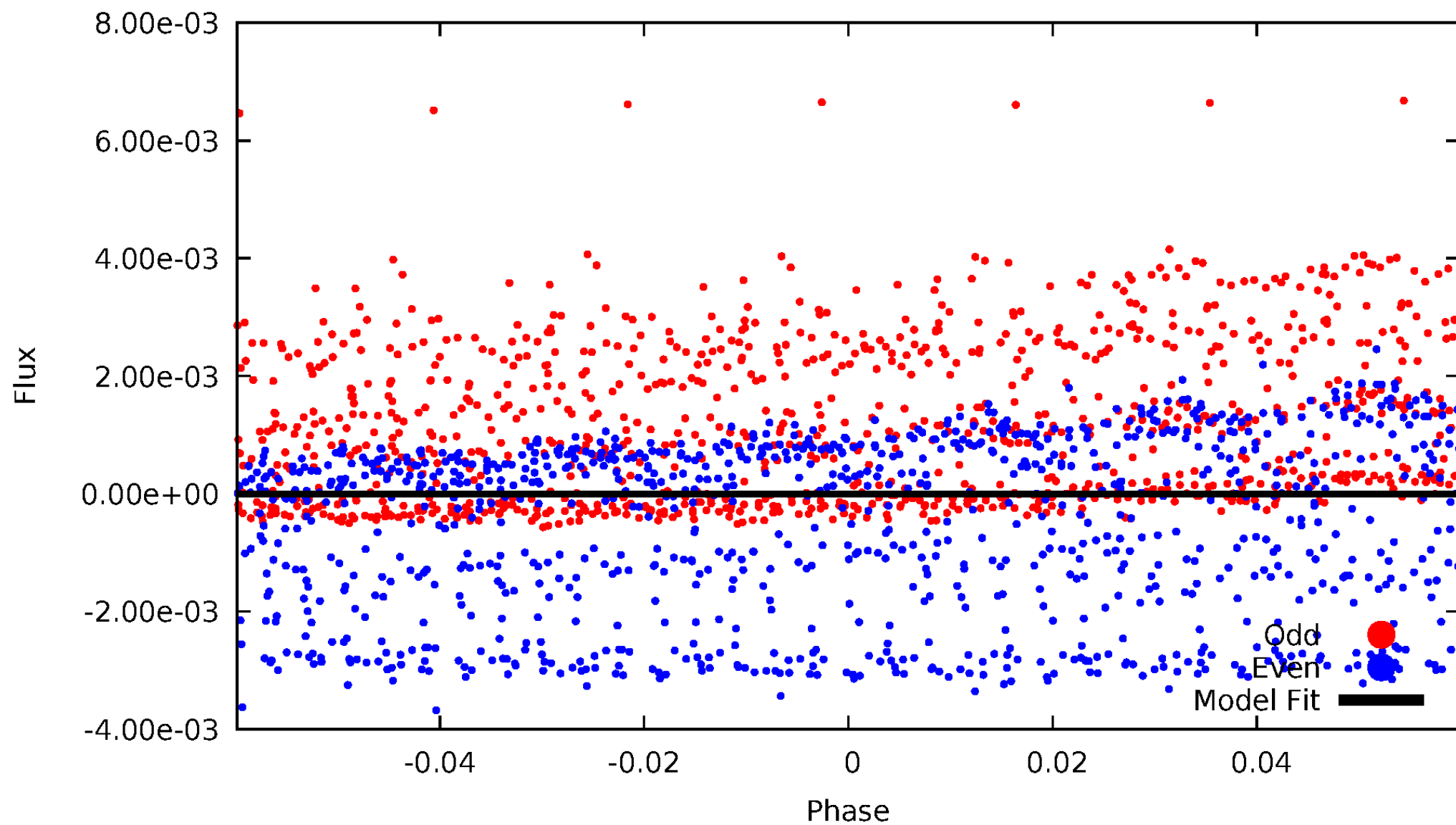
# DV Odd/Even

TCE 010483436-06



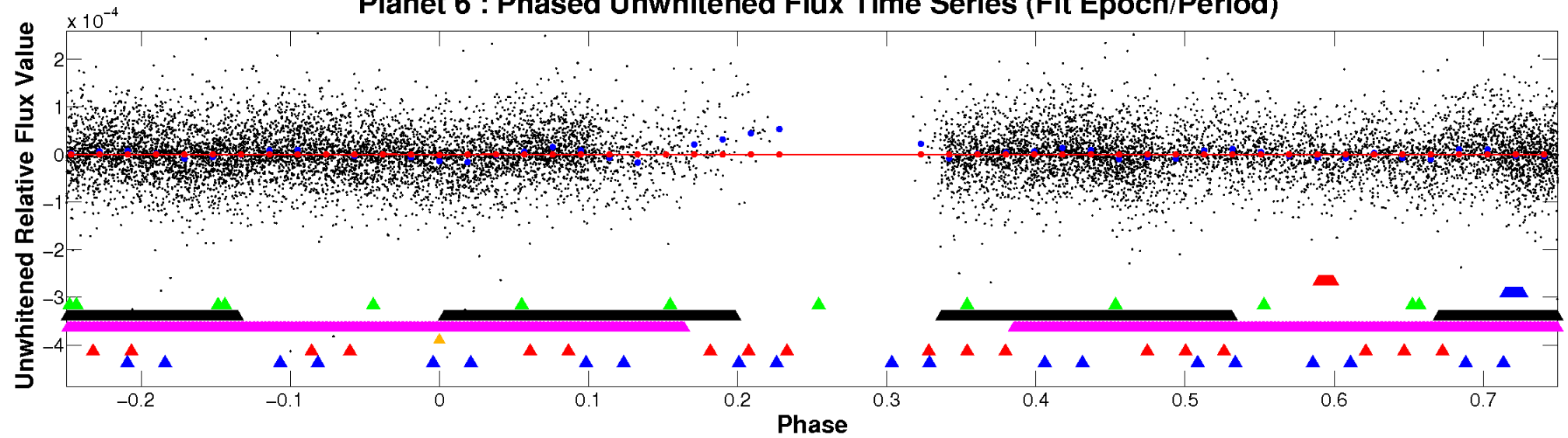
# ALT Odd/Even

TCE 010483436-06

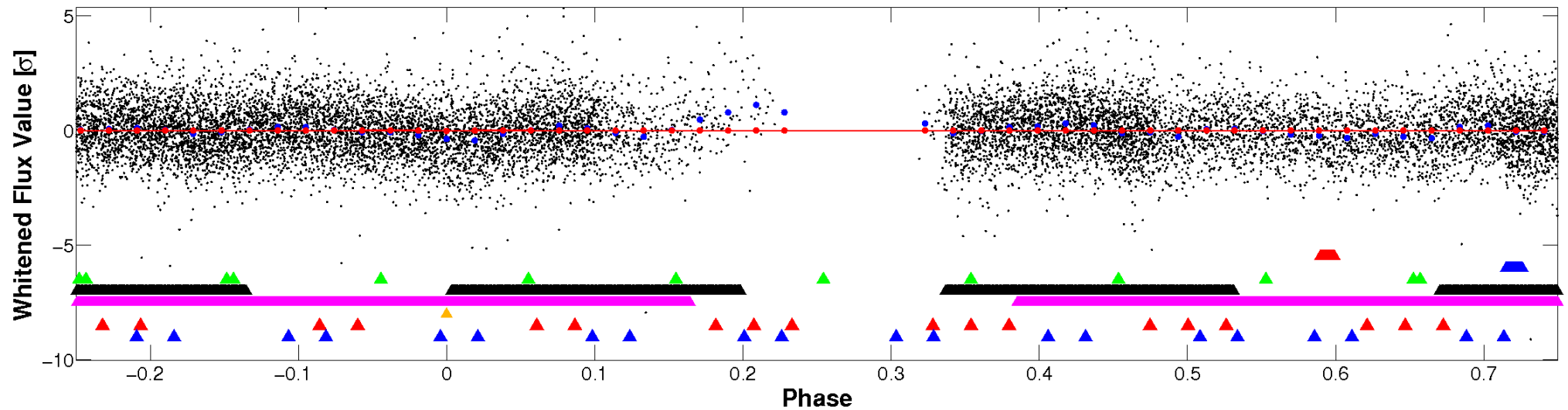


# Non-Whitened Vs. Whitened Light Curve

## Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

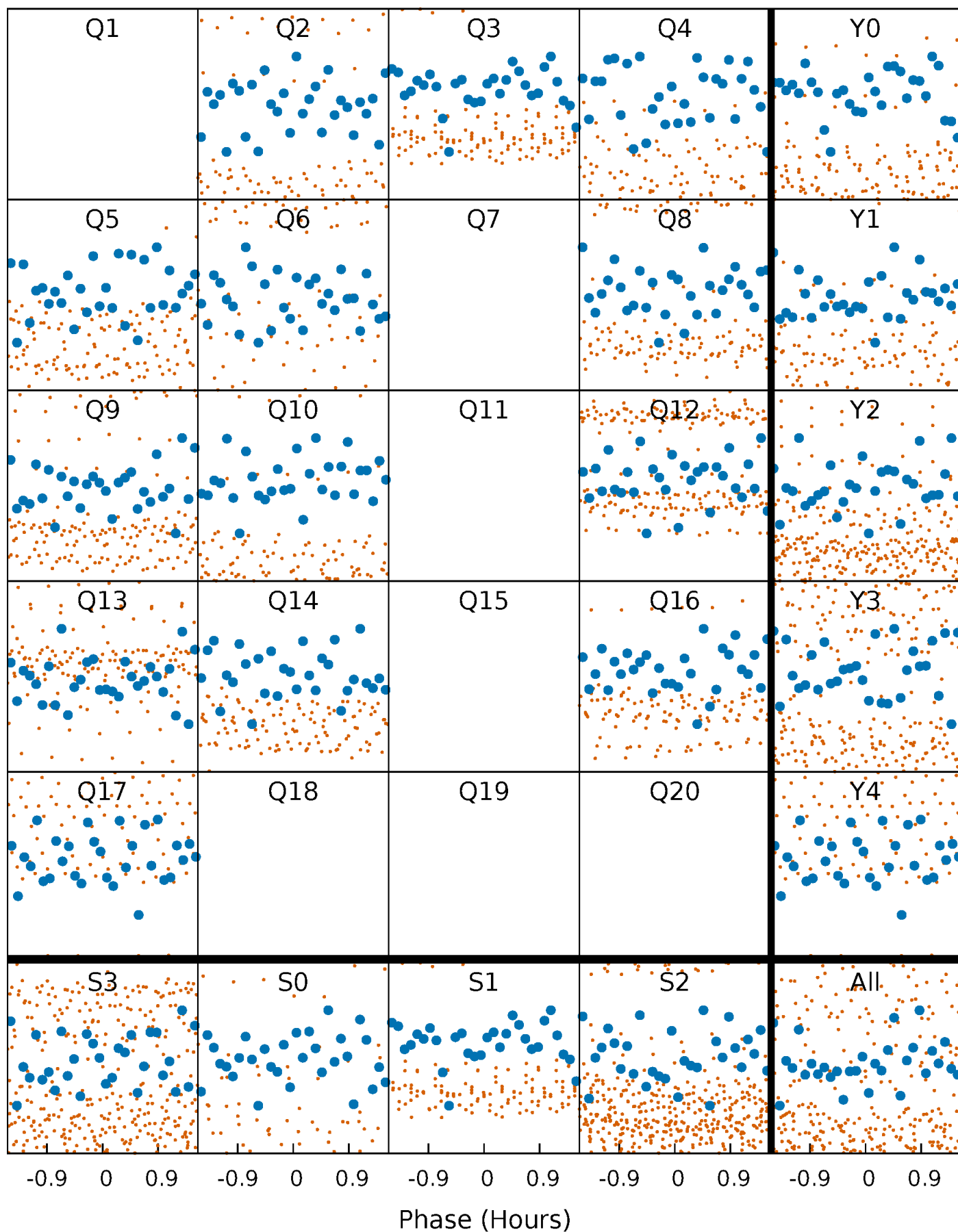


## Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



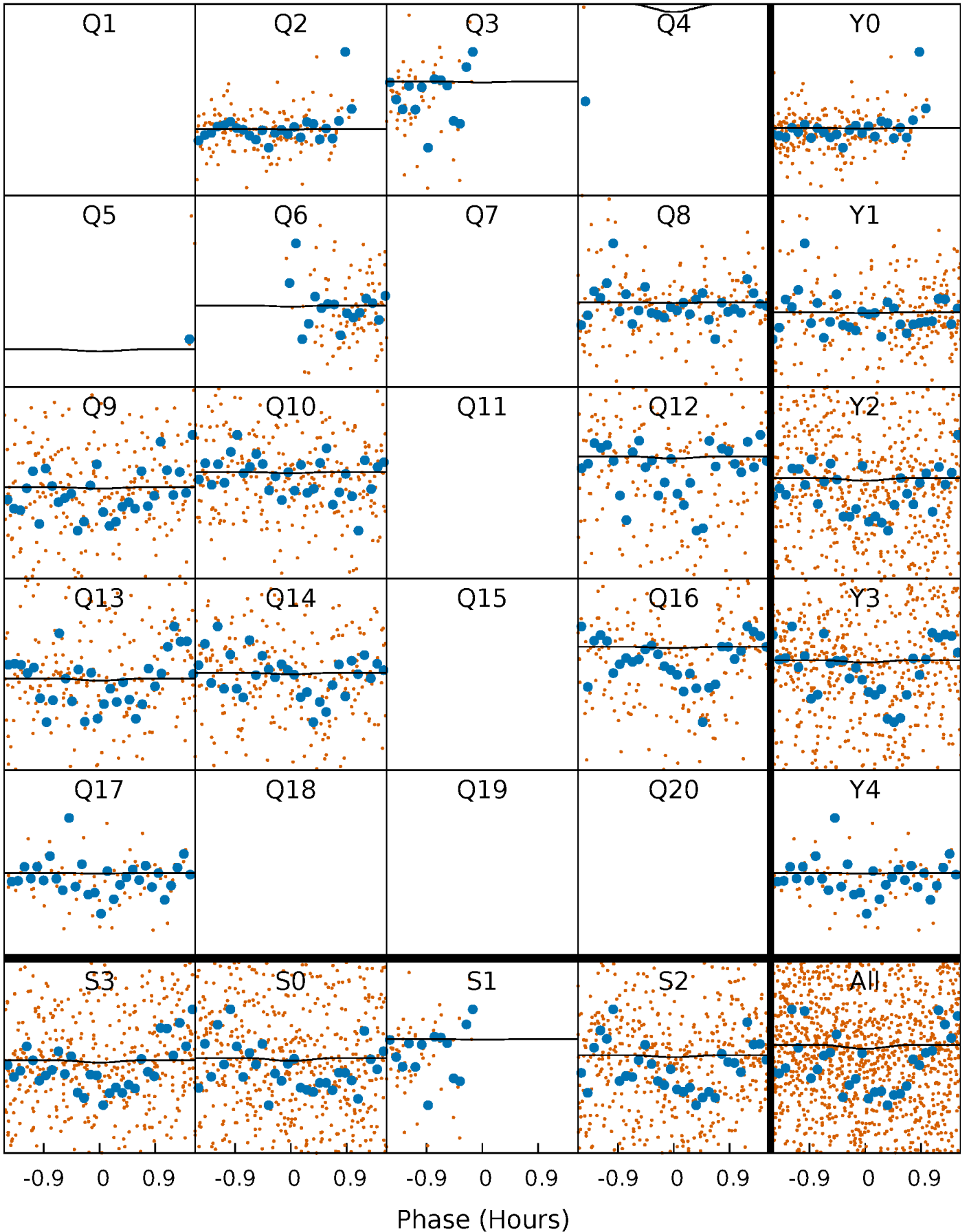
# PDC Quarter-Phased Transit Curves

TCE 010483436-06 P= 1.075793 Days  $T_0=131.990196$  (BKJD)



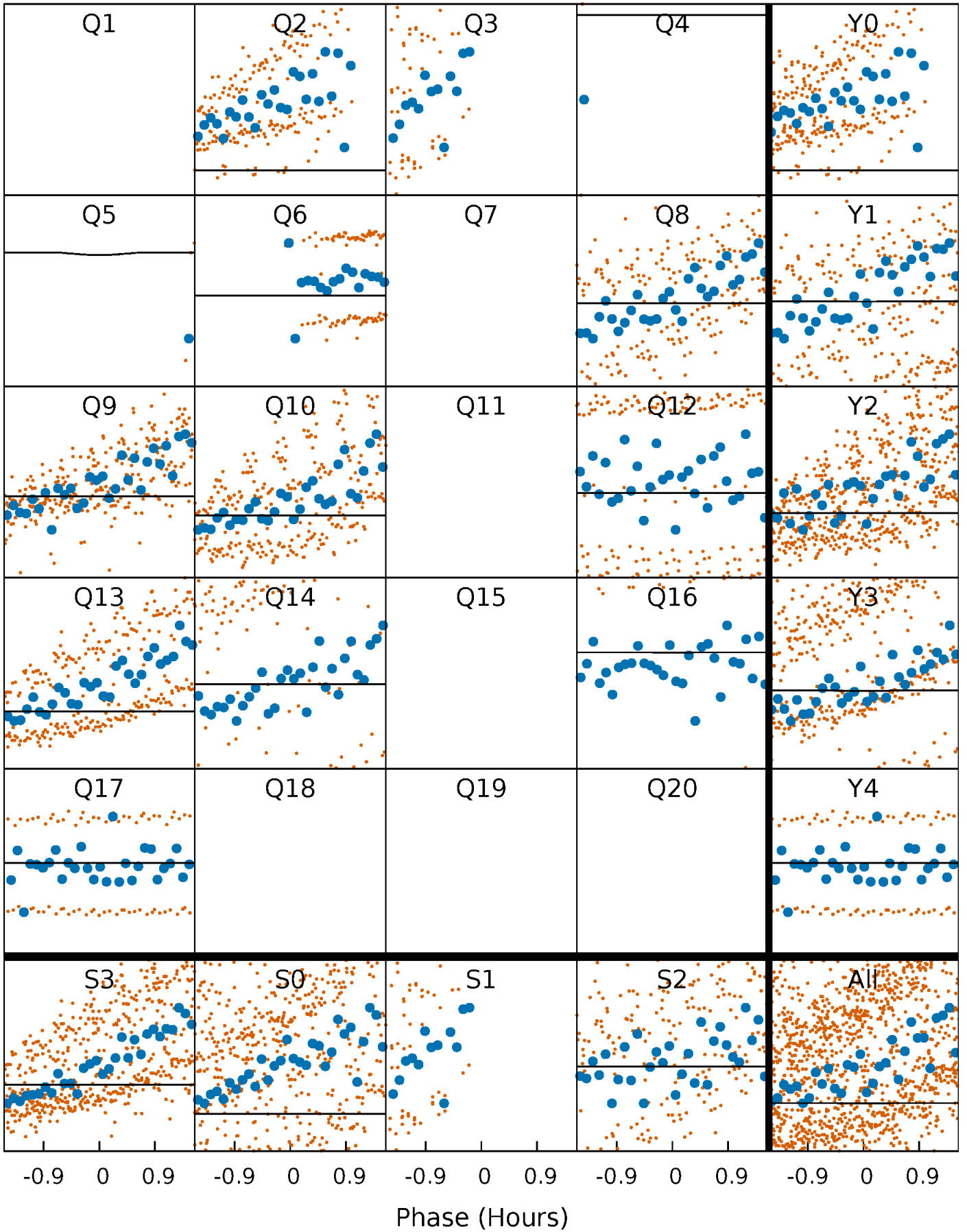
# DV Quarter-Phased Transit Curves

TCE 010483436-06 P= 1.075793 Days  $T_0=131.990196$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

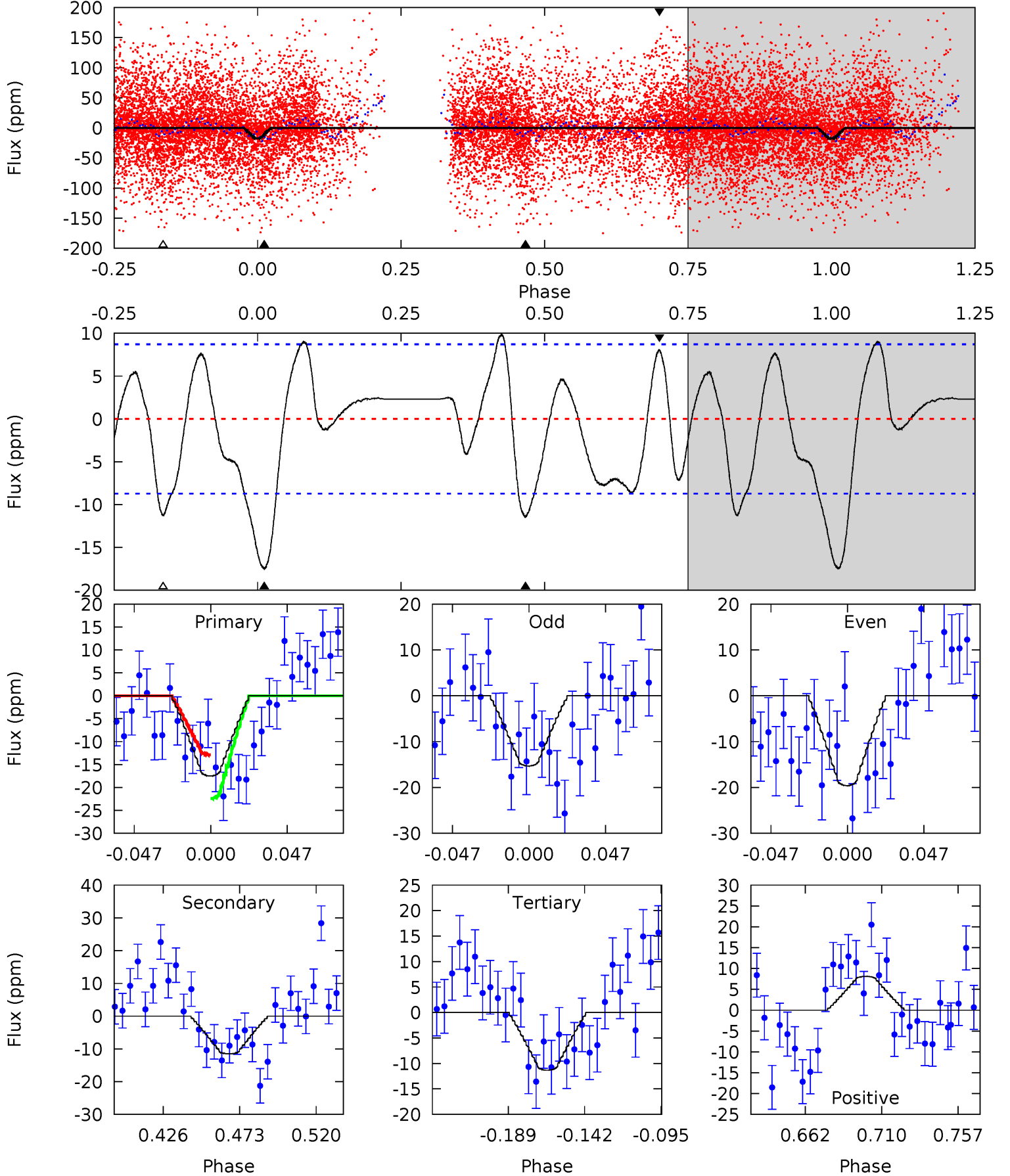
TCE 010483436-06 P= 1.075793 Days  $T_0=131.990168$  (BKJD)



# DV Model-Shift Uniqueness Test

010483436-06, P = 1.075793 Days, E = 131.990196 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
9.49	6.24	6.15	4.39	4.72	1.98	2.96	3.35	5.10	0.09	1.85	1.17	1.16	0.36	2.61

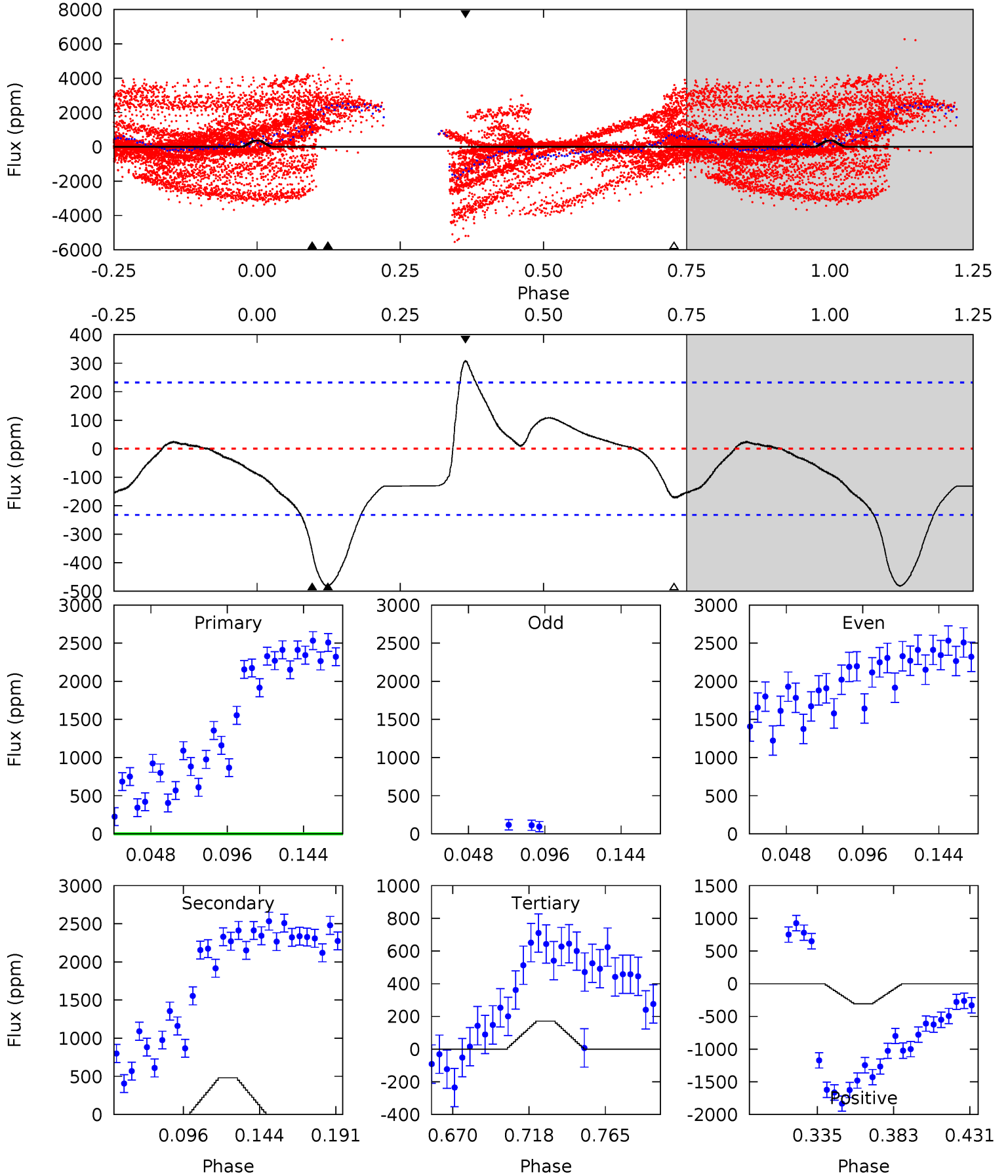




# Alt Model-Shift Uniqueness Test

010483436-06, P = 1.075793 Days, E = 131.990168 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
7.31	9.78	3.48	6.27	4.72	1.98	2.11	3.83	1.04	6.30	3.51	6.92	0.76	0.39	3.89



### Stellar Parameters For KIC 010483436

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7602^{+210}_{-330}$	$4.155^{+0.070}_{-0.196}$	$0.210^{+0.150}_{-0.350}$	$1.829^{+0.572}_{-0.245}$	$1.743^{+0.212}_{-0.233}$	$0.401^{+0.146}_{-0.207}$
	+3%/-4%	+2%/-5%	+71%/-167%	+31%/-13%	+12%/-13%	+36%/-52%
Source	KIC0	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 010483436-06 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-12 \pm 2$	$9.73^{+9.66}_{-7.01}$	$4070^{+284}_{-205}$	$-3555^{+7087}_{-210}$	$0.041^{+0.462}_{-0.031}$
Alt.	$-481 \pm 49$	$8.70^{+10.25}_{-6.11}$	$4088^{+305}_{-219}$	$5199^{+5624}_{-1916}$	$2.059^{+21.328}_{-1.619}$

$T_{max}$  = Theoretical Maximum Planetary Temperature

$T_{obs}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

$A_{obs}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{obs} \gg T_{max}$  AND  $A_{obs} \gg 1.0$

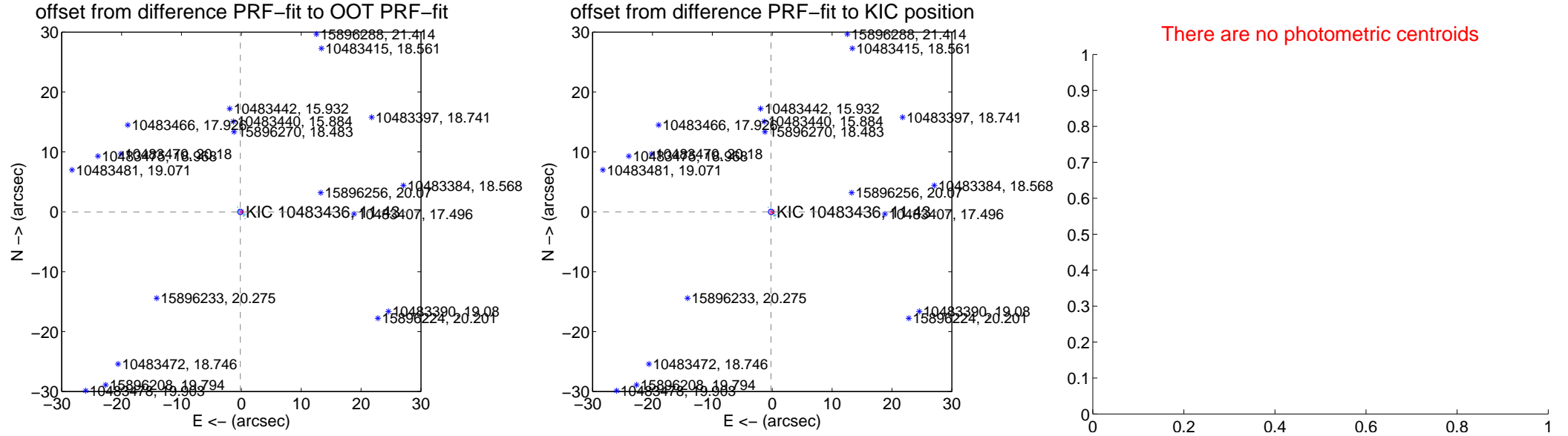
## DV Centroid Data

Supplemental centroid analysis for 010483436-06. **Kepler magnitude: 11.43.** Transit SNR 0.40

There are 13 quarters with good PRF difference image offsets

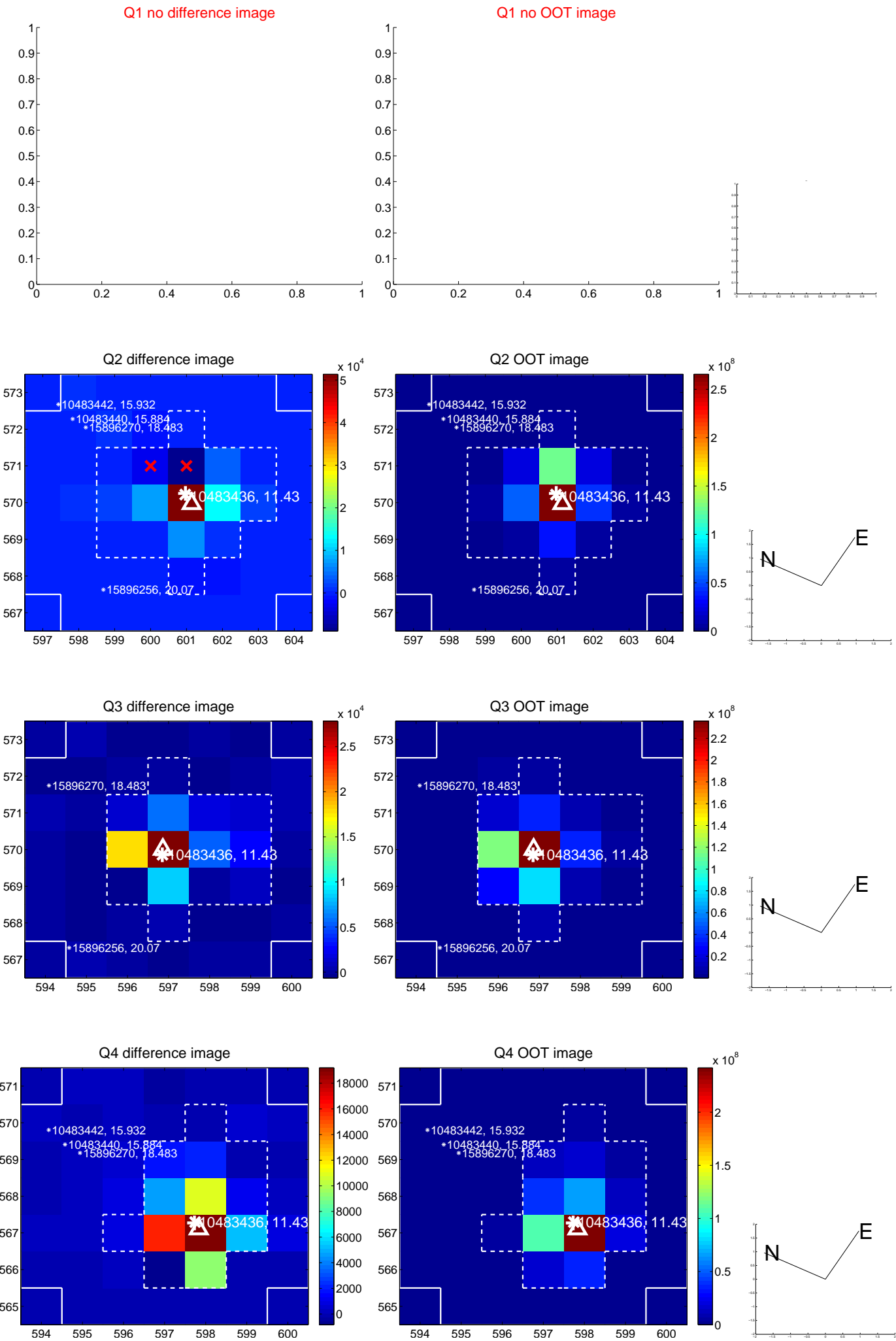
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.168 \pm 0.148$	1.13	$0.167 \pm 0.148$	$-0.023 \pm 0.165$
PRF-fit source offset from KIC position	$0.200 \pm 0.149$	1.34	$0.199 \pm 0.149$	$-0.014 \pm 0.170$
photometric centroid source offset	—	—	—	—

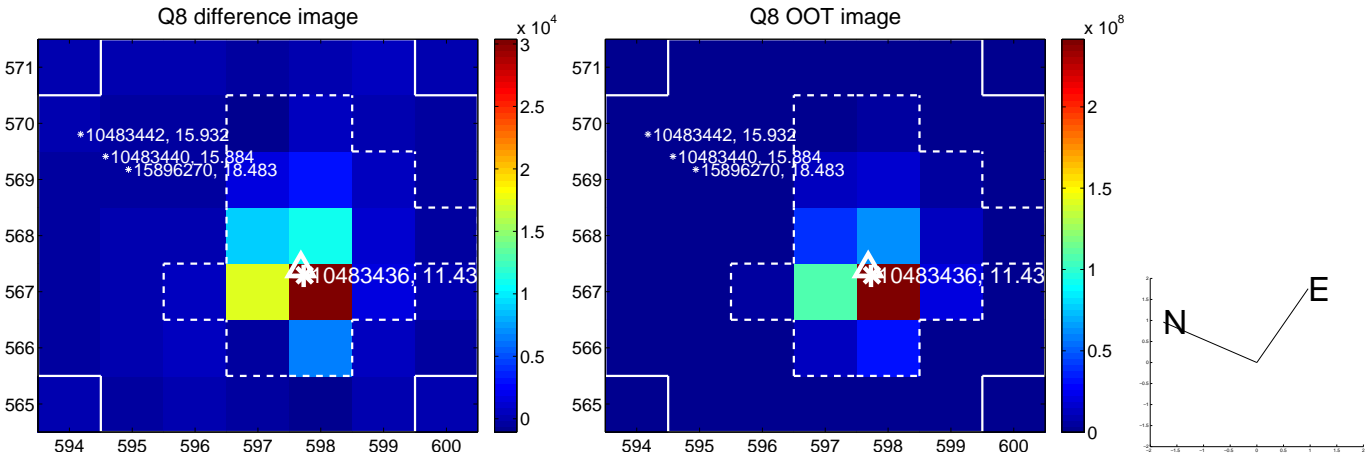
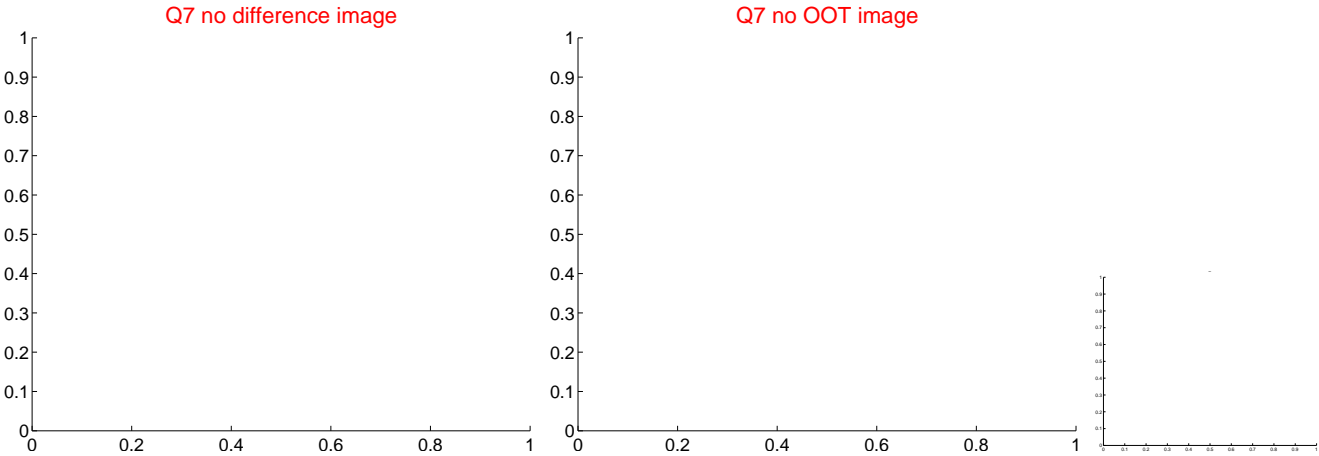
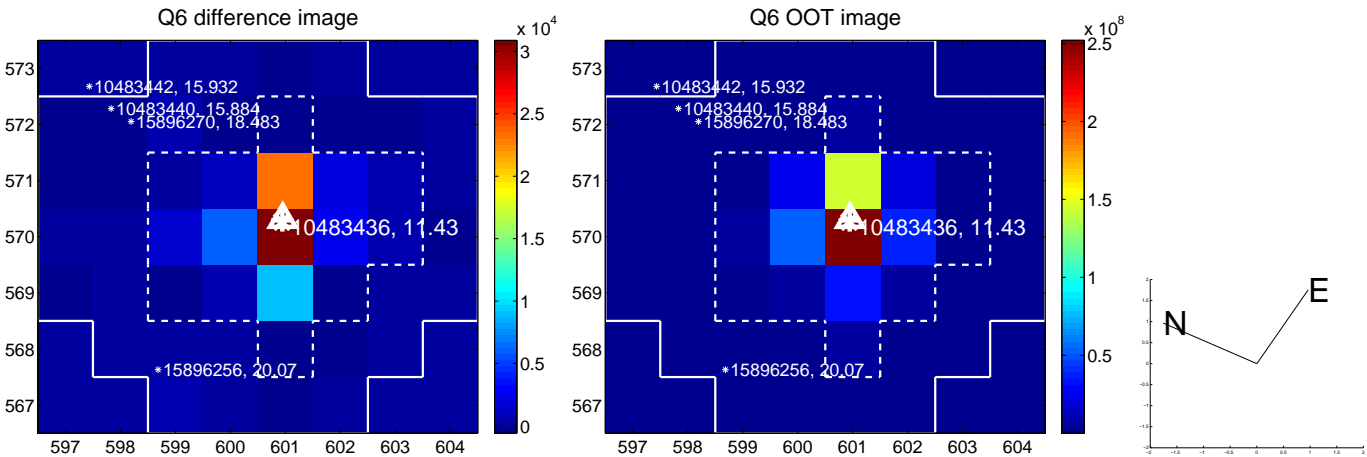
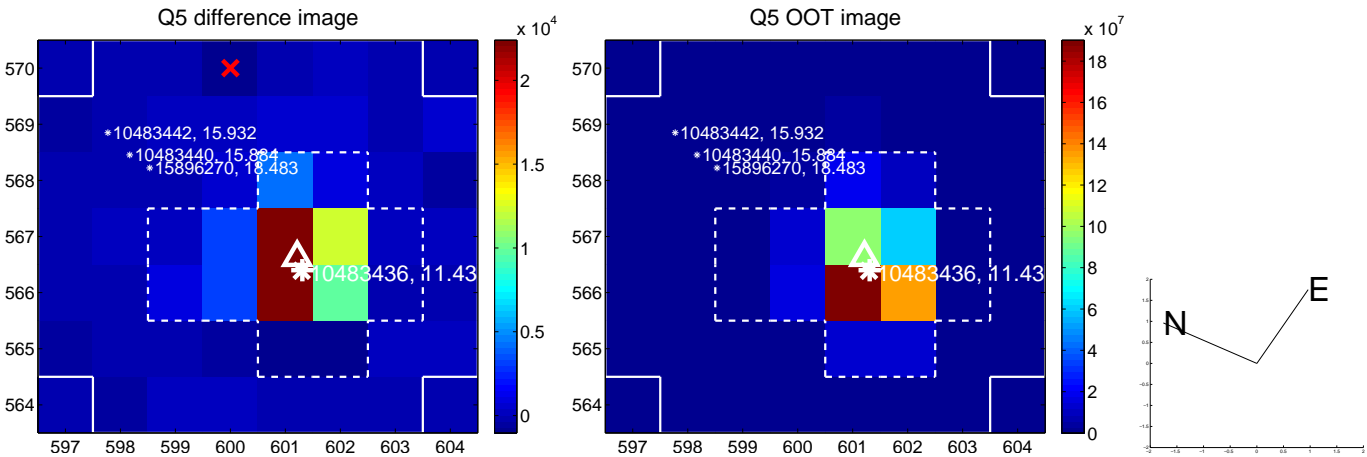


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

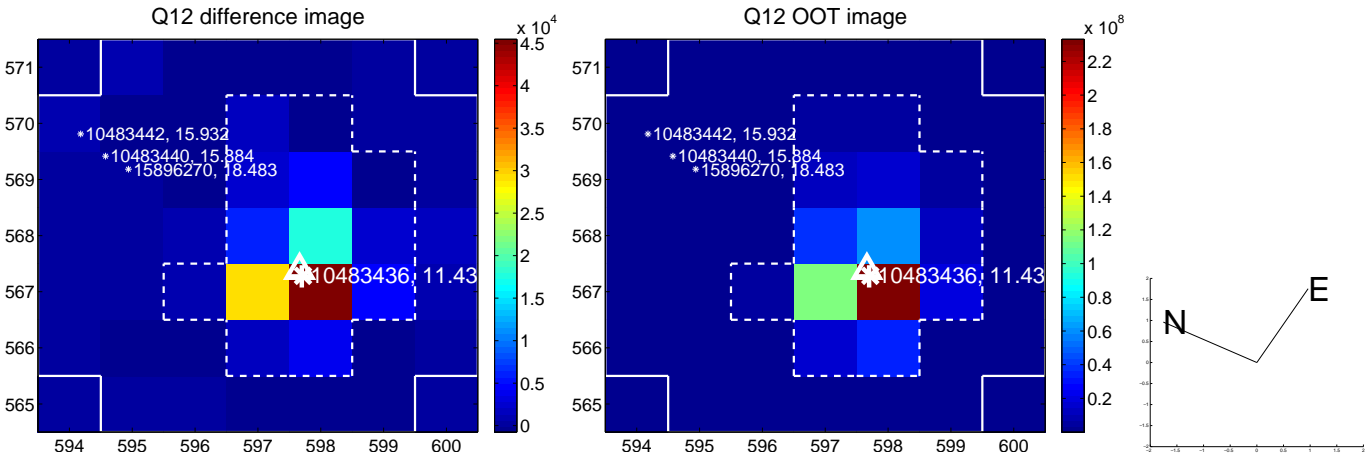
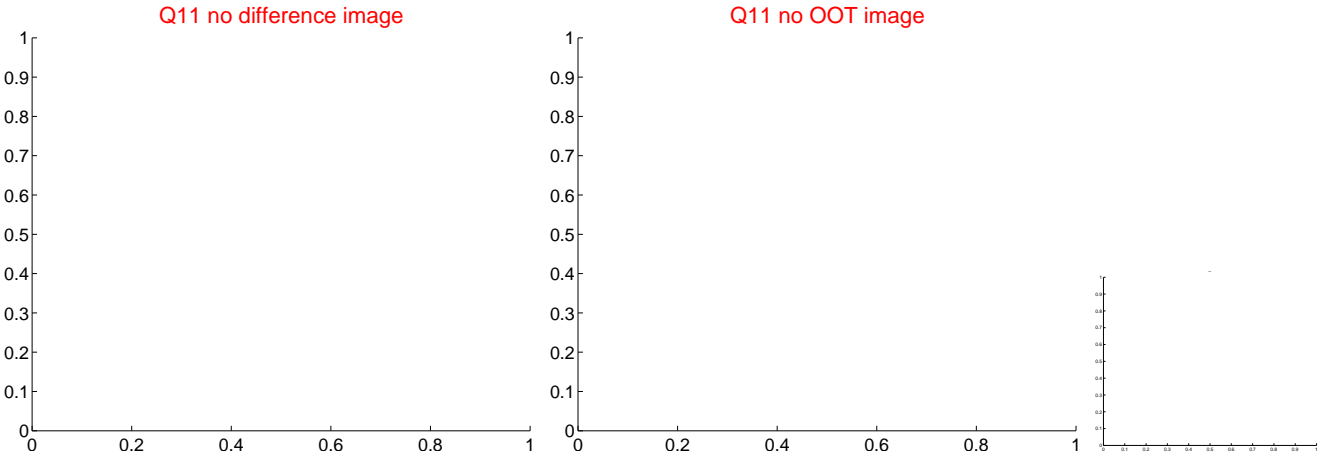
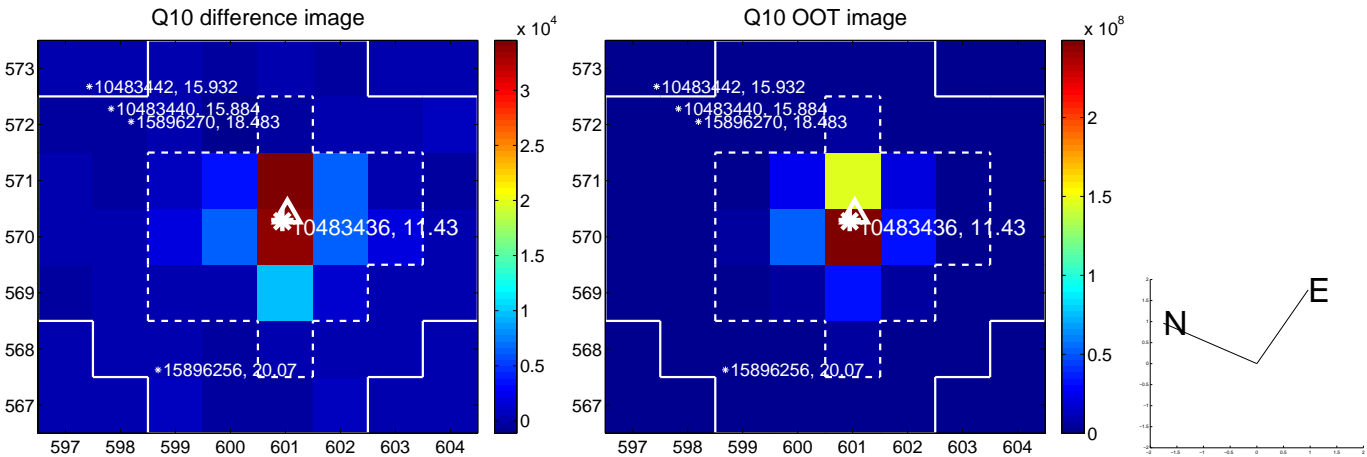
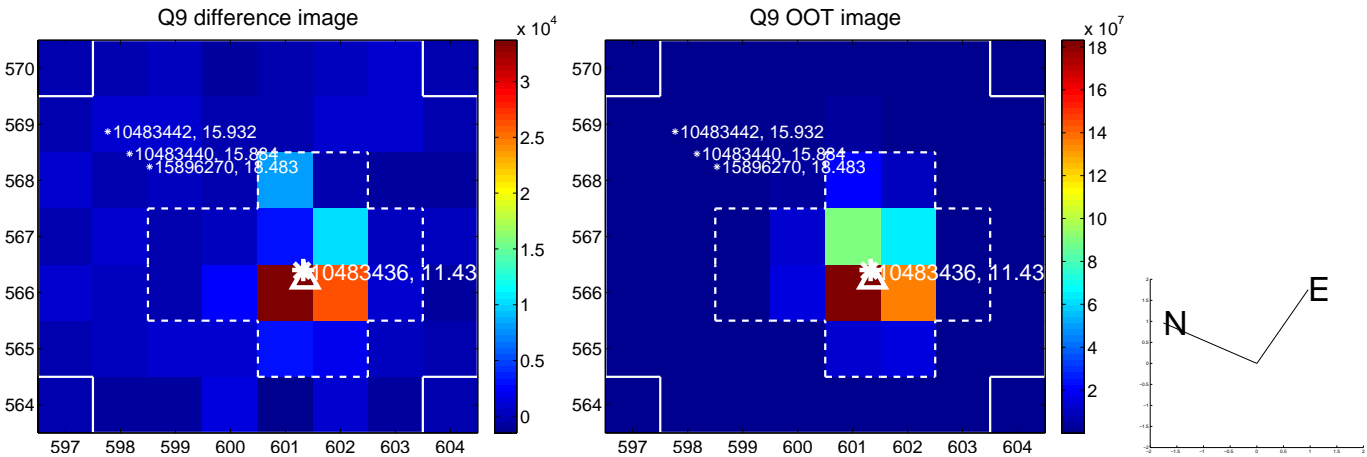
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



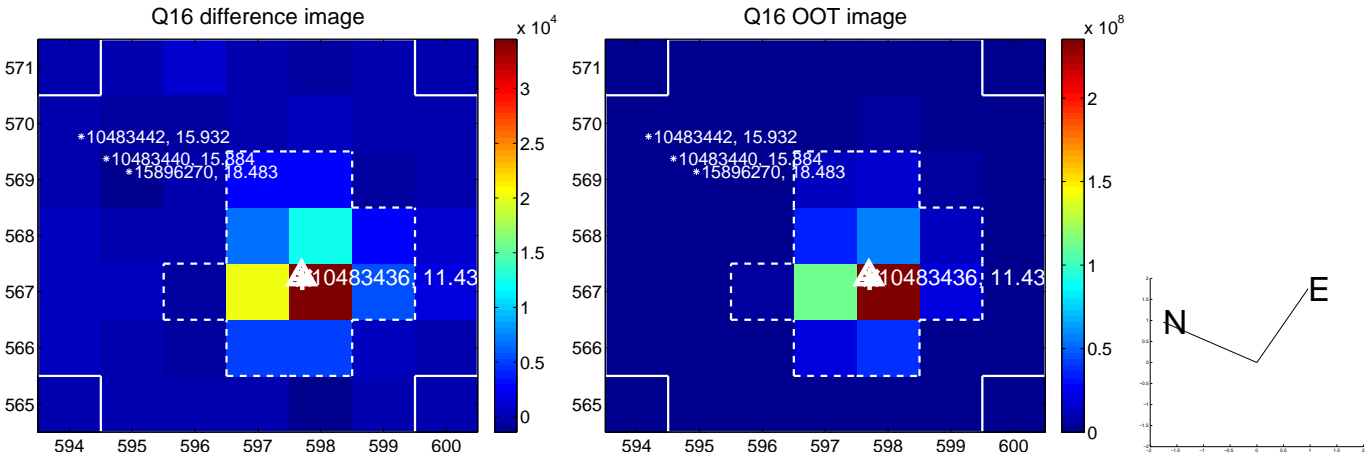
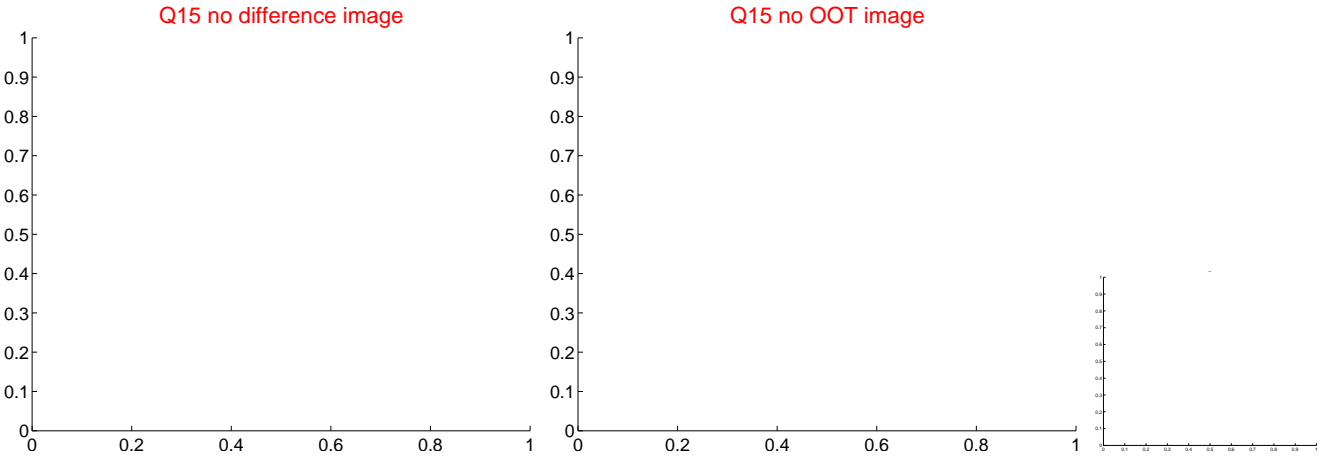
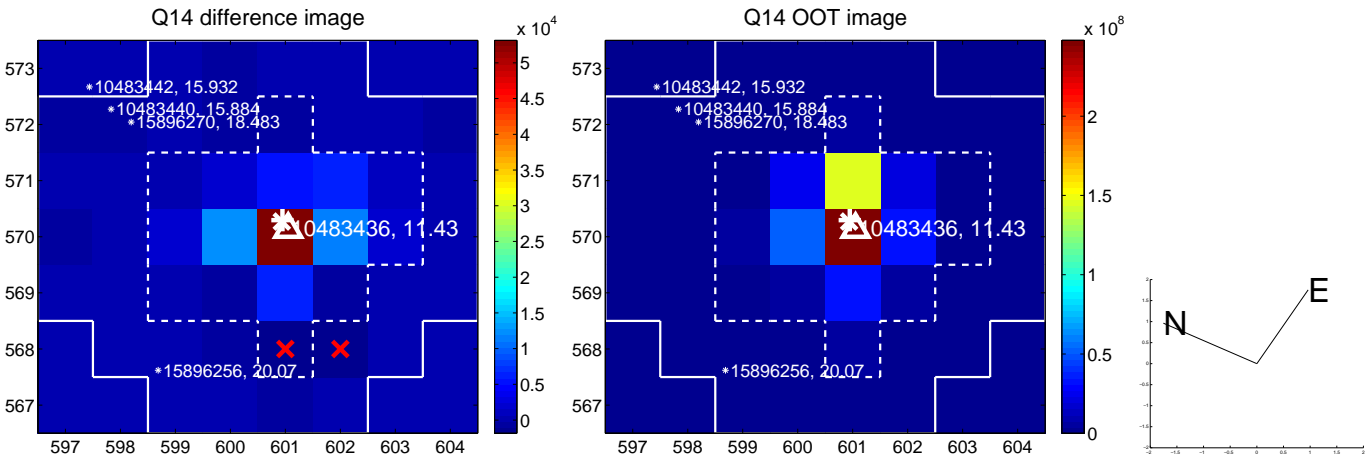
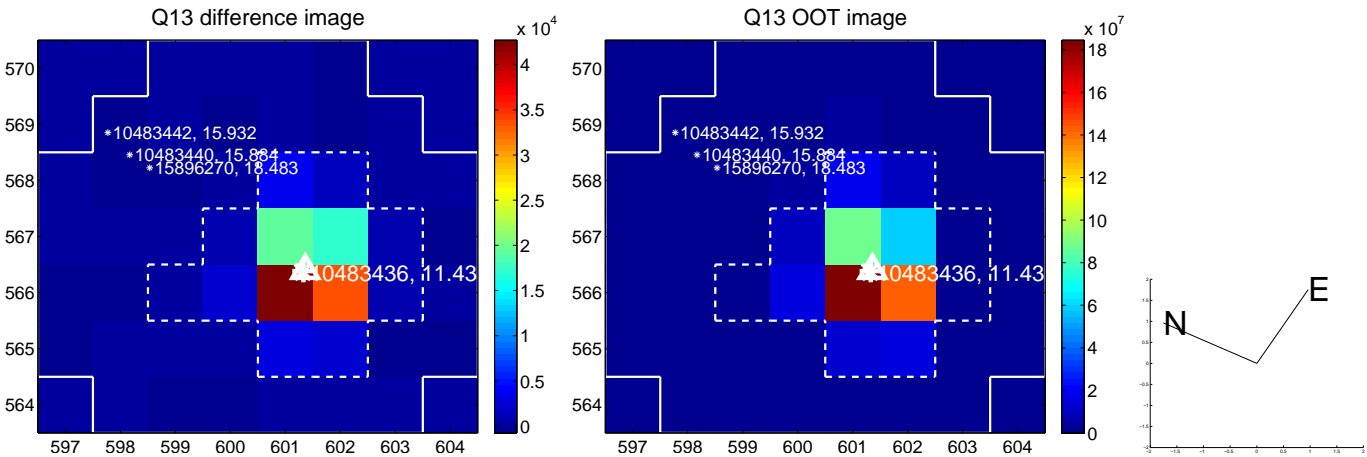
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

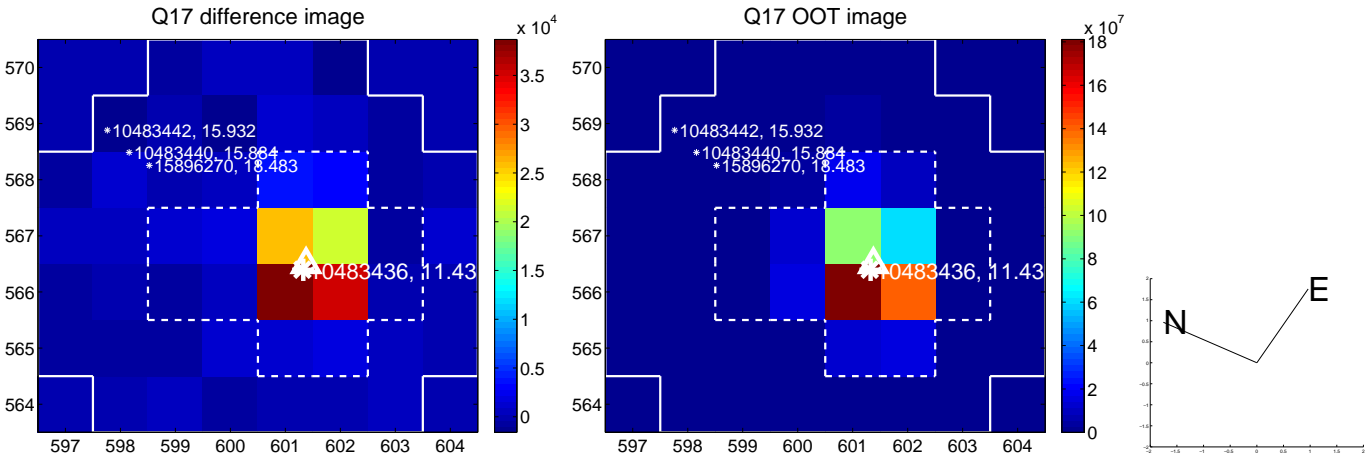


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





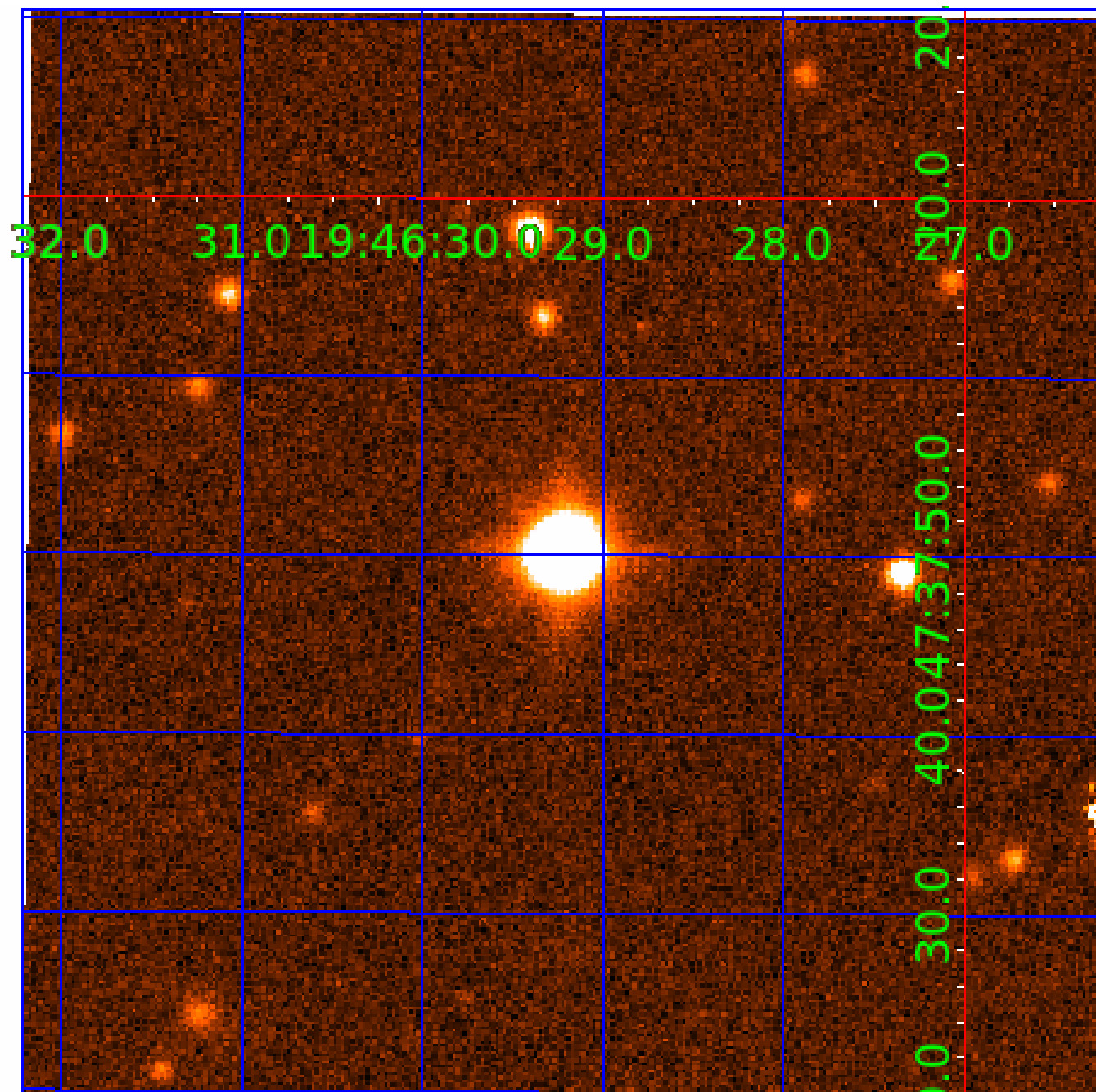
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



# KIC 010483436

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010483436-01	OBS	No	2.151570	132.635029	47.1	1.865	18.1	21.6	1.83	7602	1.46	6492.44
010483436-02	OBS	No	4.303206	134.910950	10.6	10.482	12.1	3.4	1.83	7602	0.69	2576.47
010483436-03	OBS	No	111.989531	194.017254	220.1	15.000	25.3	-1.0	1.83	7602	2.75	33.41
010483436-04	OBS	No	1.434597	131.993627	16.5	5.110	13.2	10.0	1.83	7602	0.93	11145.73
010483436-05	OBS	No	1.075175	132.166864	4.1	1.268	14.6	1.7	1.83	7602	0.41	16372.30
010483436-06	OBS	No	1.075793	131.990196	1.3	0.773	11.2	0.4	1.83	7602	0.21	16359.76
010483436-07	OBS	No	79.766297	156.928877	228.0	1.500	8.9	7.9	1.83	7602	2.93	52.52
010483436-08	OBS	No	73.264201	169.197290	111.3	4.500	9.6	-1.0	1.83	7602	1.96	58.83

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010483436-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_SATURATED
010483436-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED
010483436-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010483436-04	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
010483436-05	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010483436-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
010483436-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010483436-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

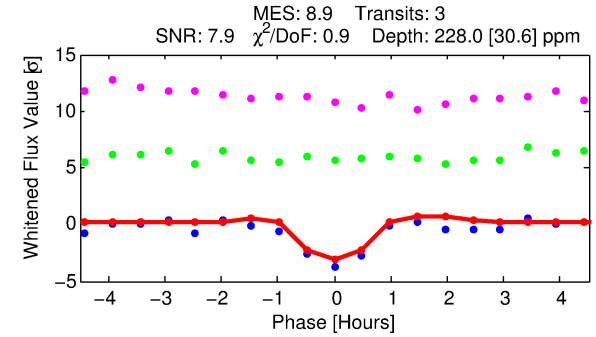
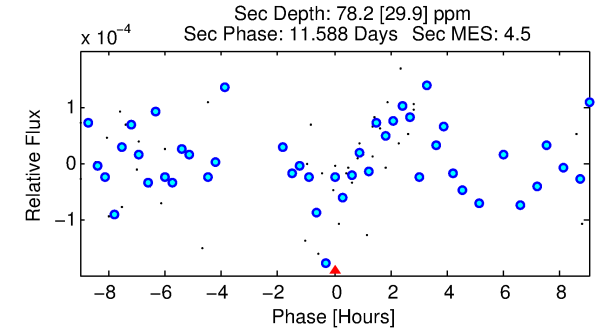
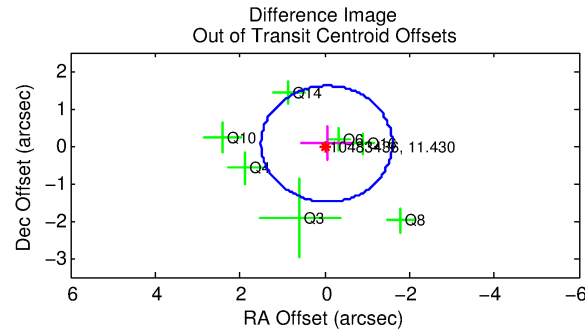
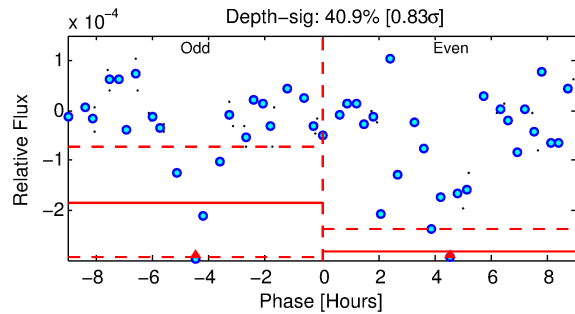
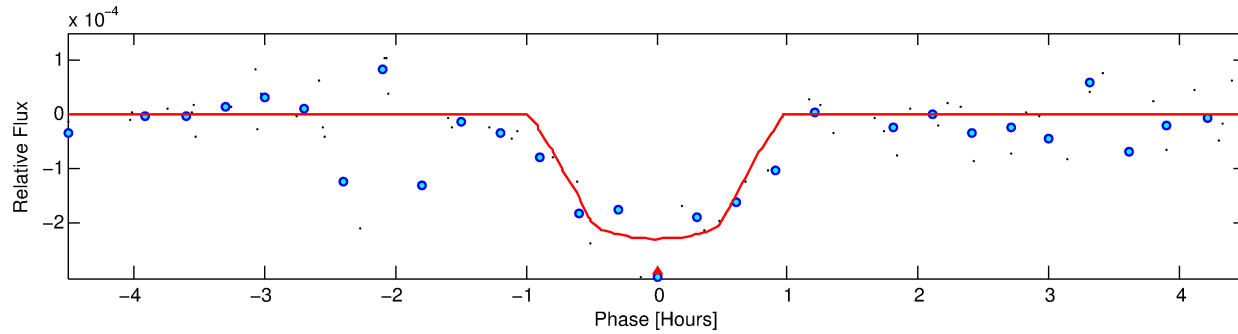
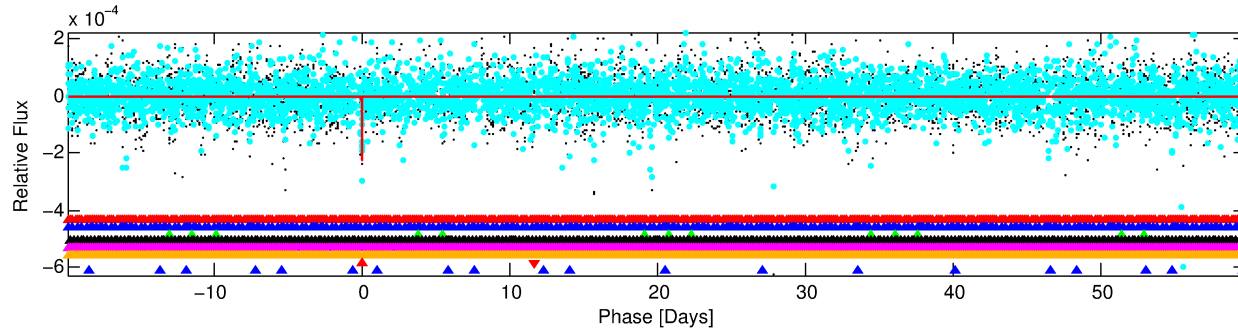
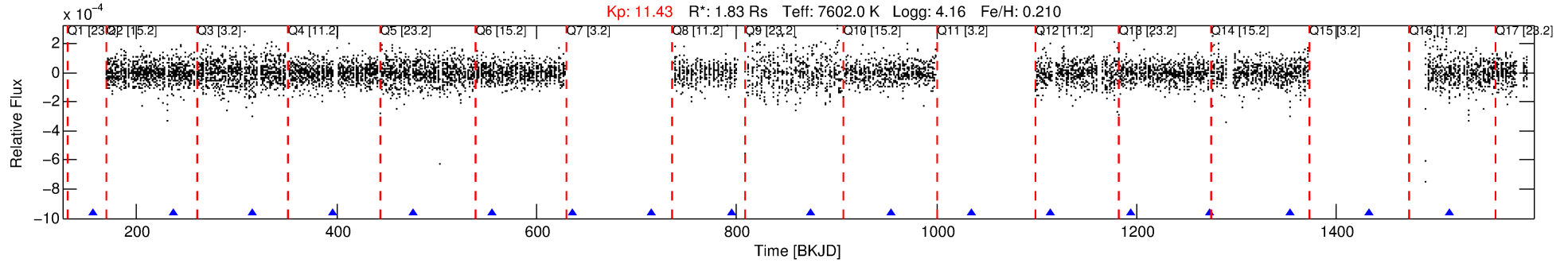
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 010483436-07

No Significant Match Found

# DV One-Page Summary

KIC: 10483436 Candidate: 7 of 8 Period: 79.766 d



## DV Fit Results:

Period = 79.76630 [0.00043] d  
Epoch = 156.9289 [0.0063] BKJD  
Rp/R\* = 0.0147 [0.0100]  
a/R\* = 322.72 [1349.67]  
b = 0.63 [3.99]  
Seff = 52.52 [21.28]  
Teff = 686 [70] K  
Rp = 2.93 [2.19] Re  
a = 0.4366 [0.1122] AU  
Ag = 955.46 [1392.24] [0.69σ]  
Teffp = 5901 [2096] K [2.49σ]

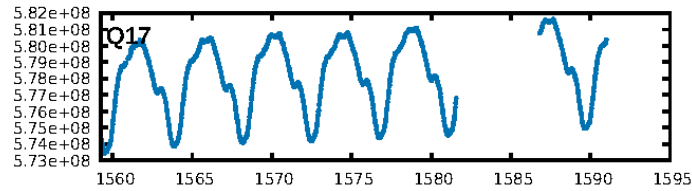
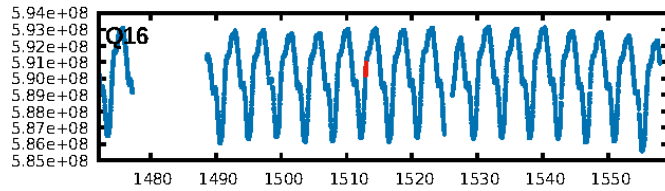
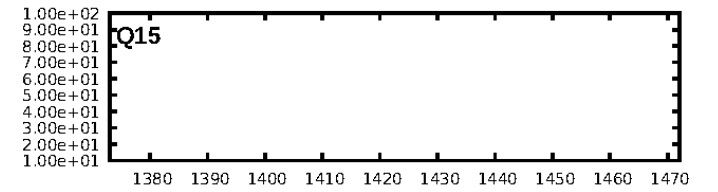
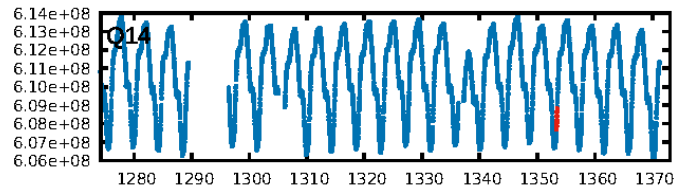
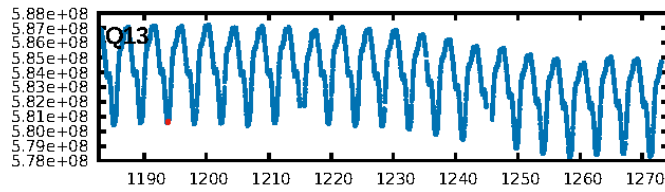
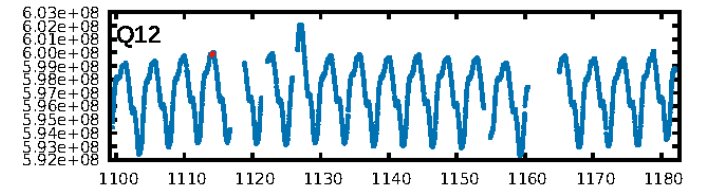
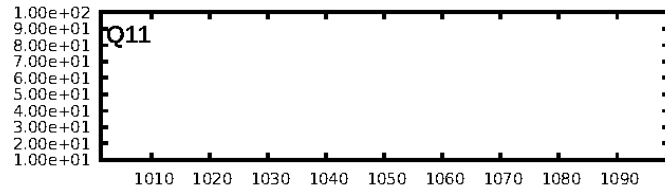
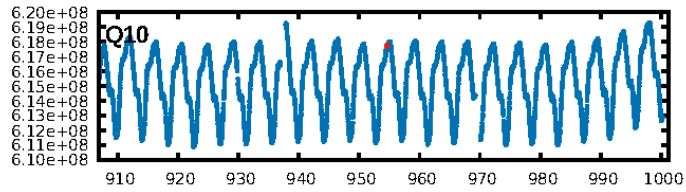
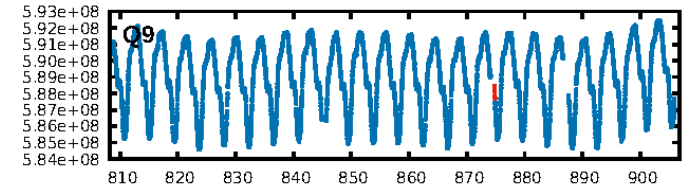
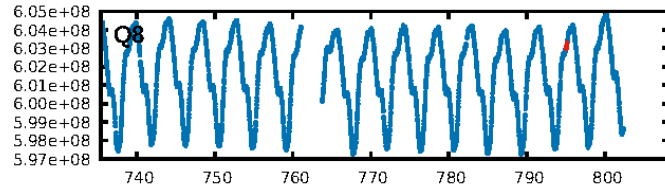
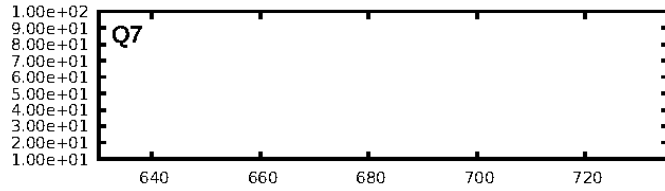
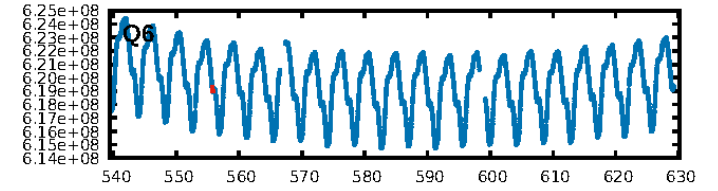
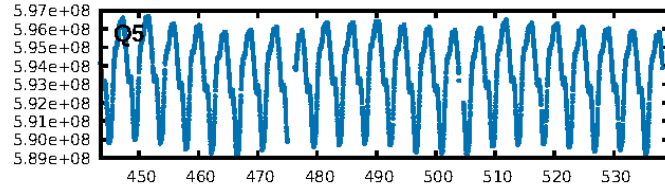
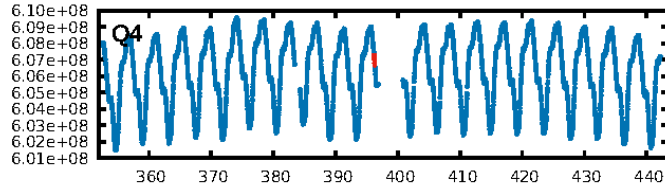
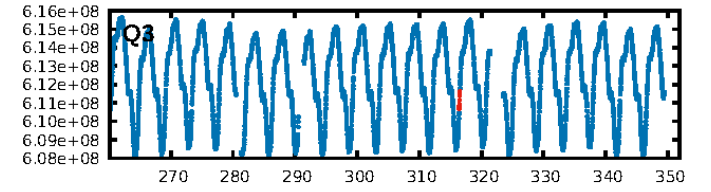
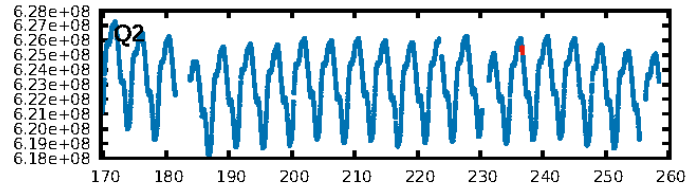
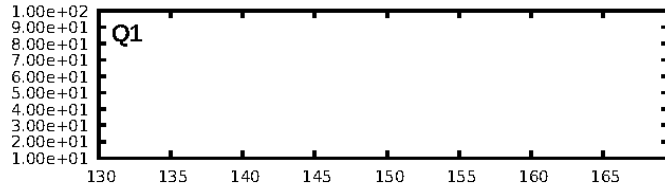
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [32.90σ]  
LongPeriod-sig: 100.0% [51.30σ]  
ModelChiSquare2-sig: 20.9%  
ModelChiSquareGof-sig: 97.1%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 4.073  
Centroid-sig: 26.3%  
Centroid-so: 0.858 arcsec [1.24σ]  
OotOffset-rm: 0.072 arcsec [0.14σ]  
KicOffset-rm: 0.087 arcsec [0.19σ]  
OotOffset-st: 3/1/3/0 [7]  
KicOffset-st: 3/1/3/0 [7]  
DiffImageQuality-fgm: 0.71 [5/7]  
DiffImageOverlap-fno: 0.22 [2/9]

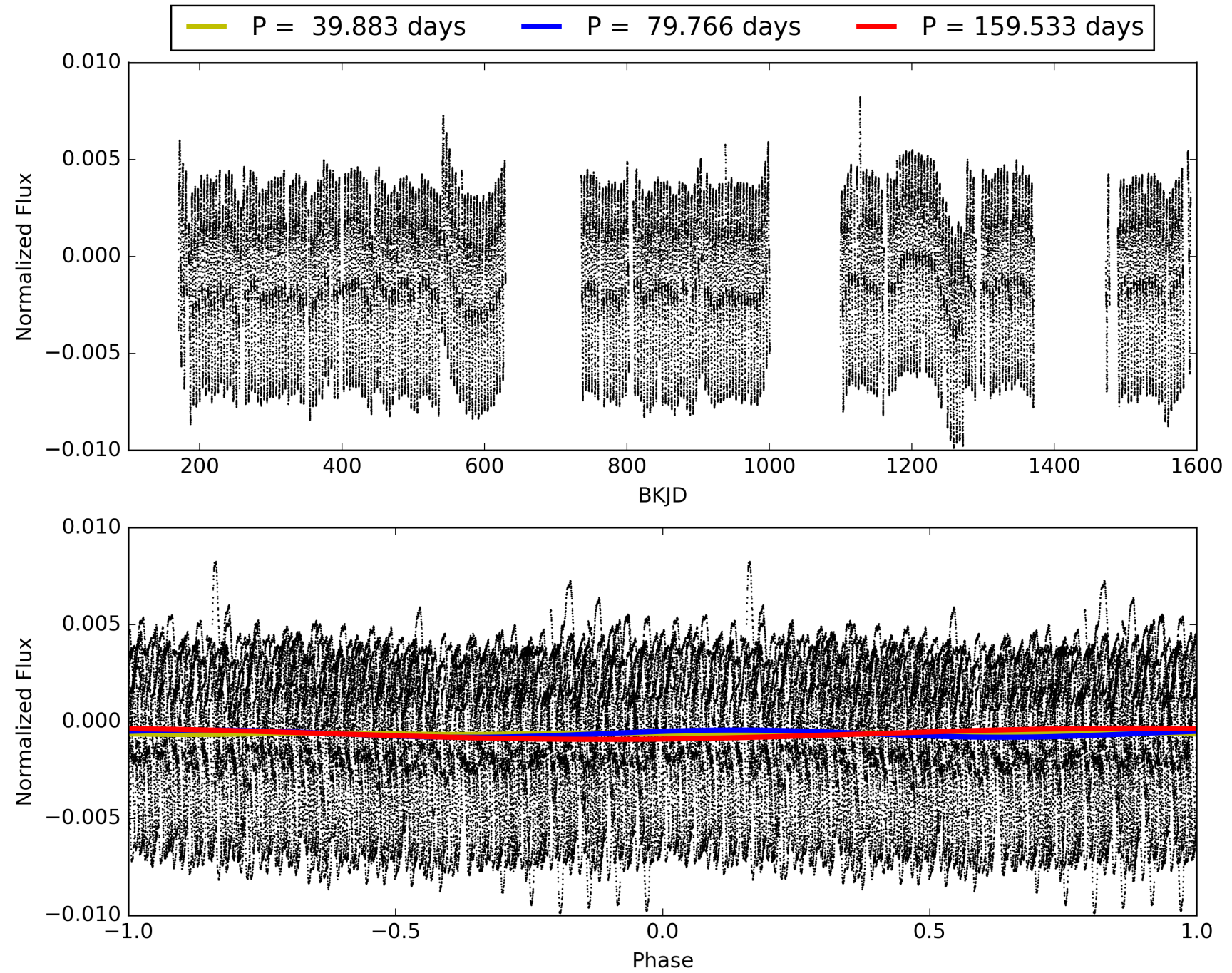
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:52:48 Z

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

# TCE 010483436-07, PDC Light Curves



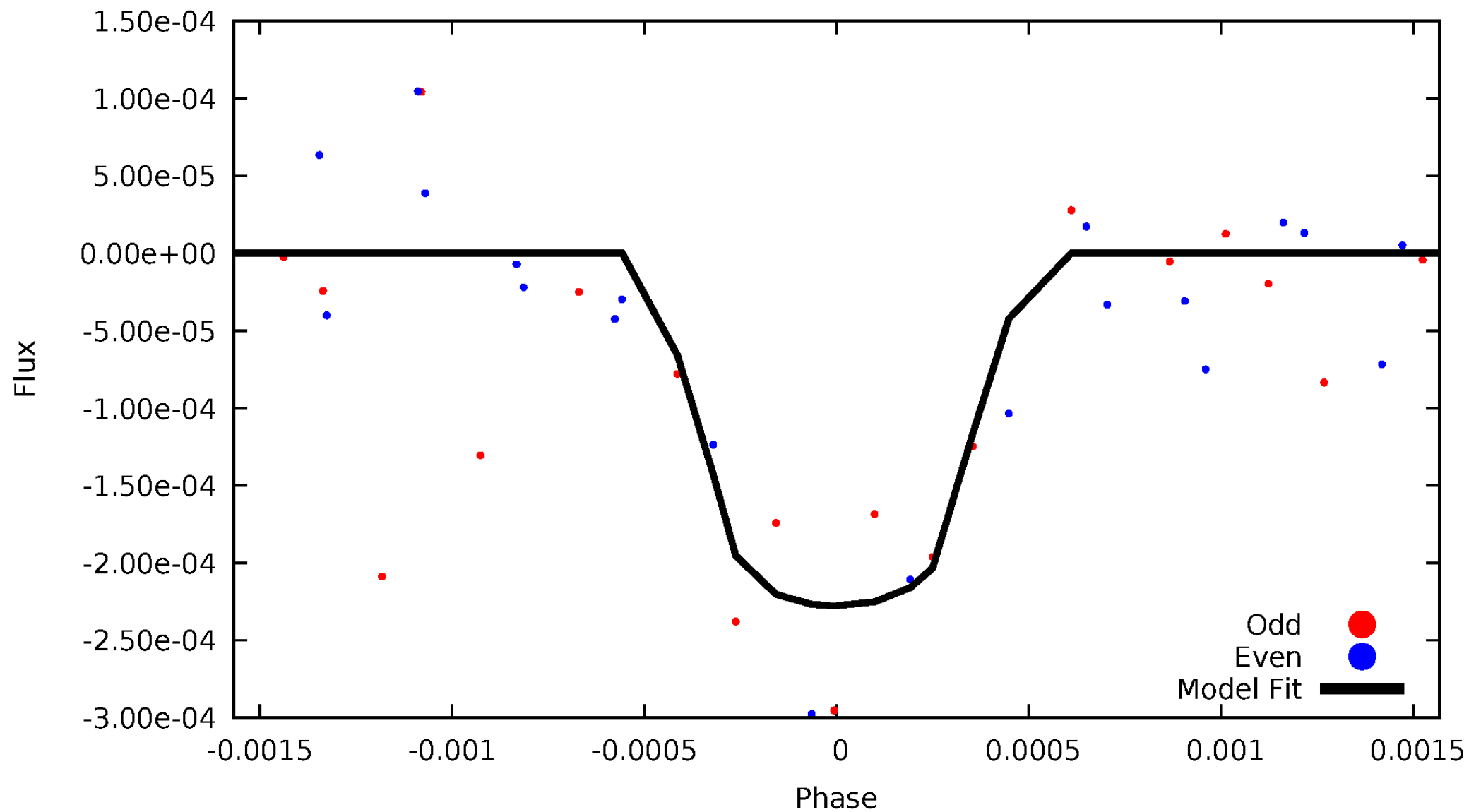
TCE 010483436-07





# DV Odd/Even

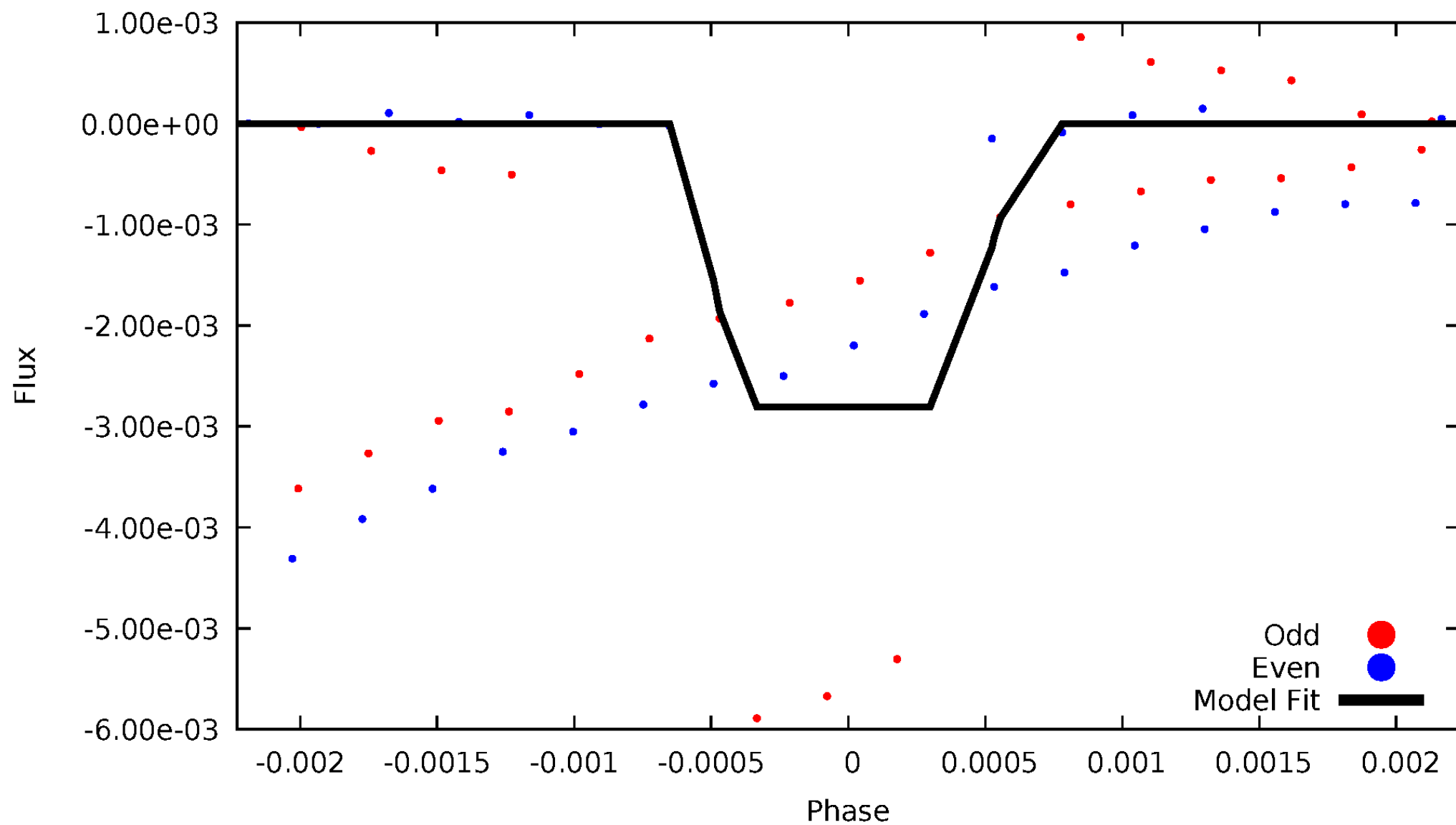
TCE 010483436-07





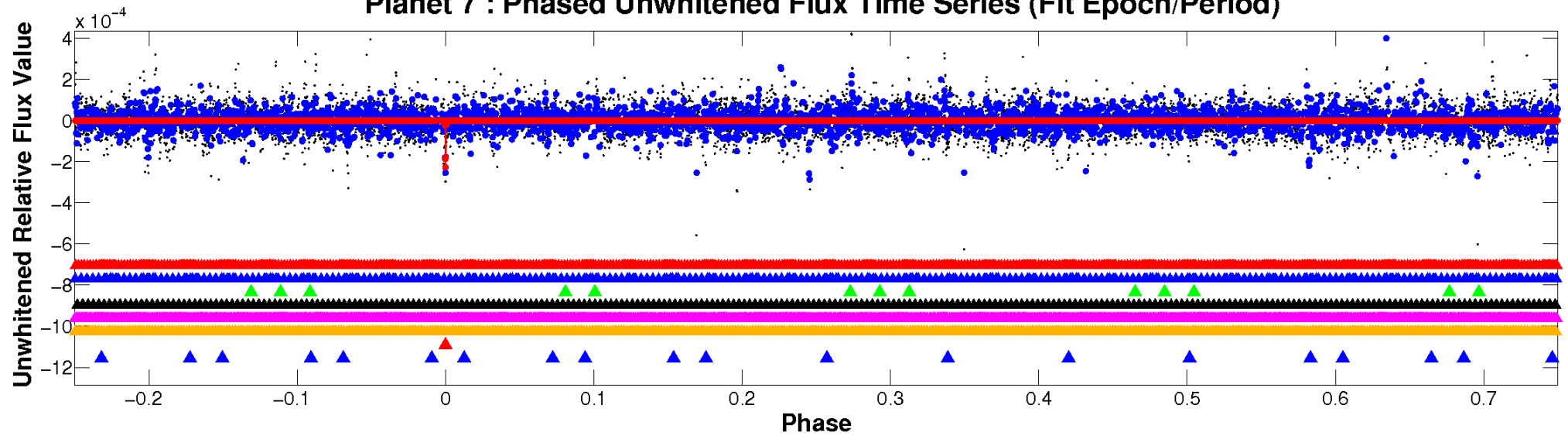
# ALT Odd/Even

TCE 010483436-07

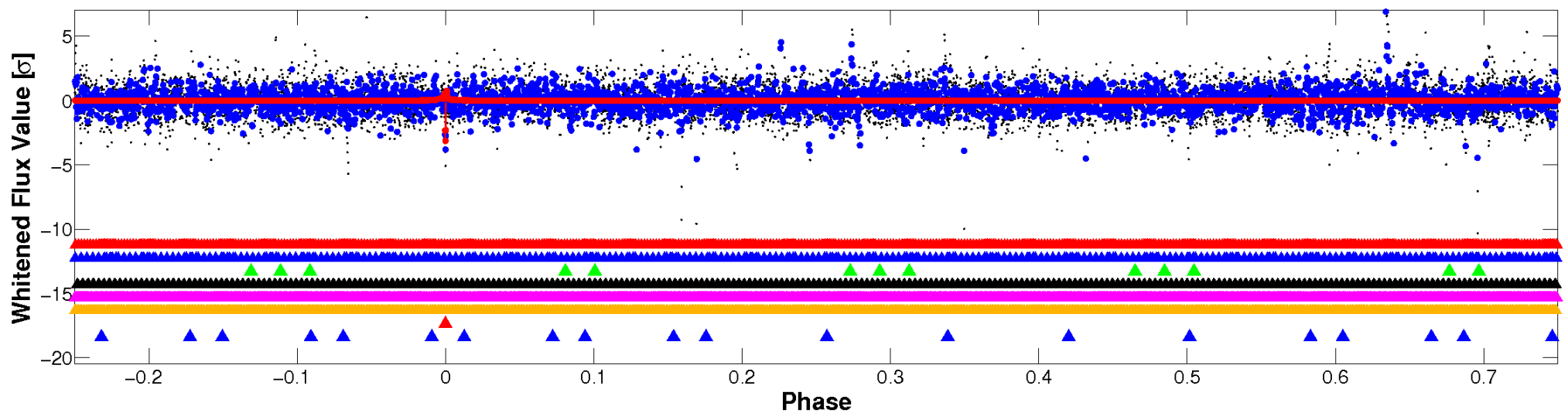


# Non-Whitened Vs. Whitened Light Curve

## Planet 7 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

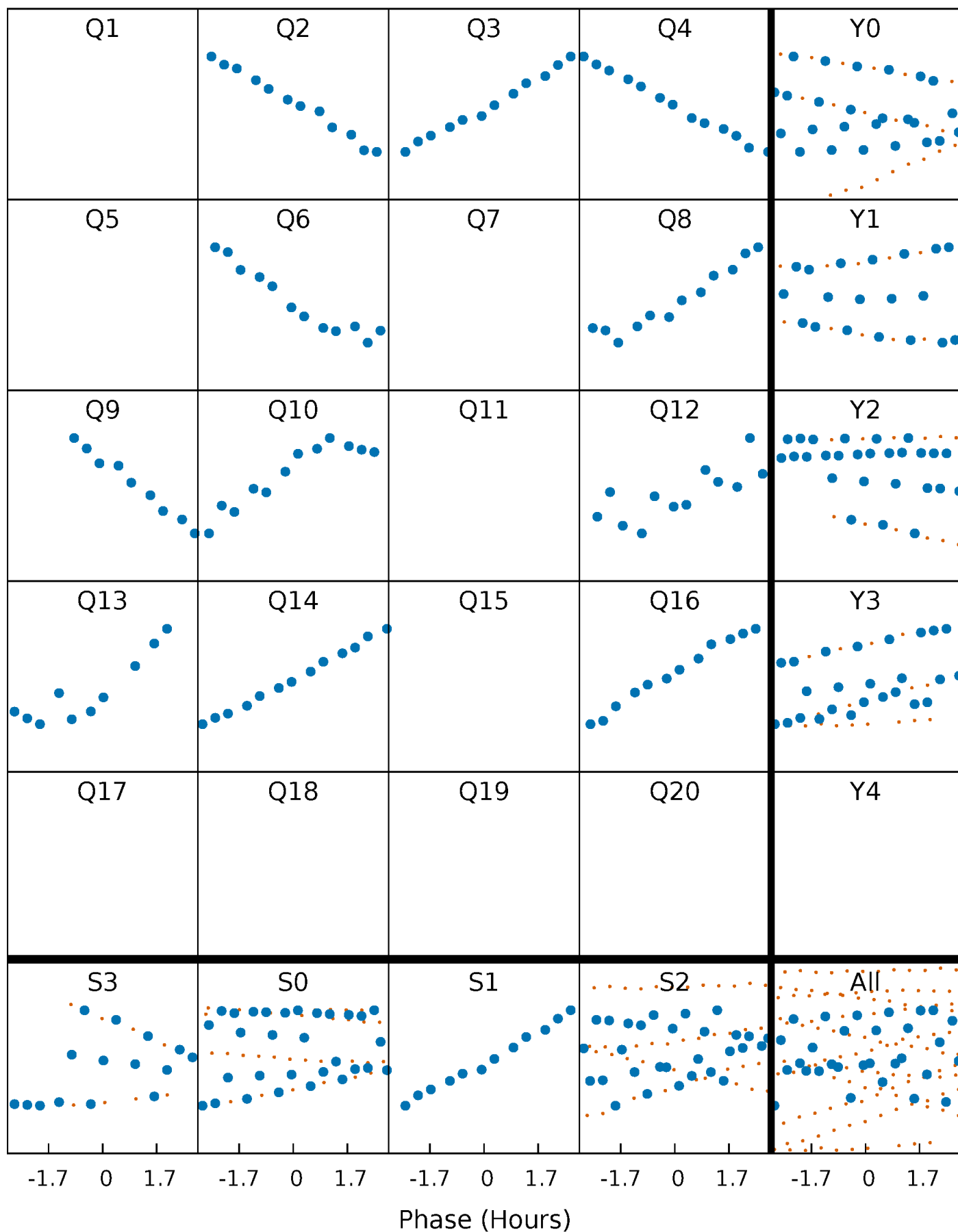


## Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



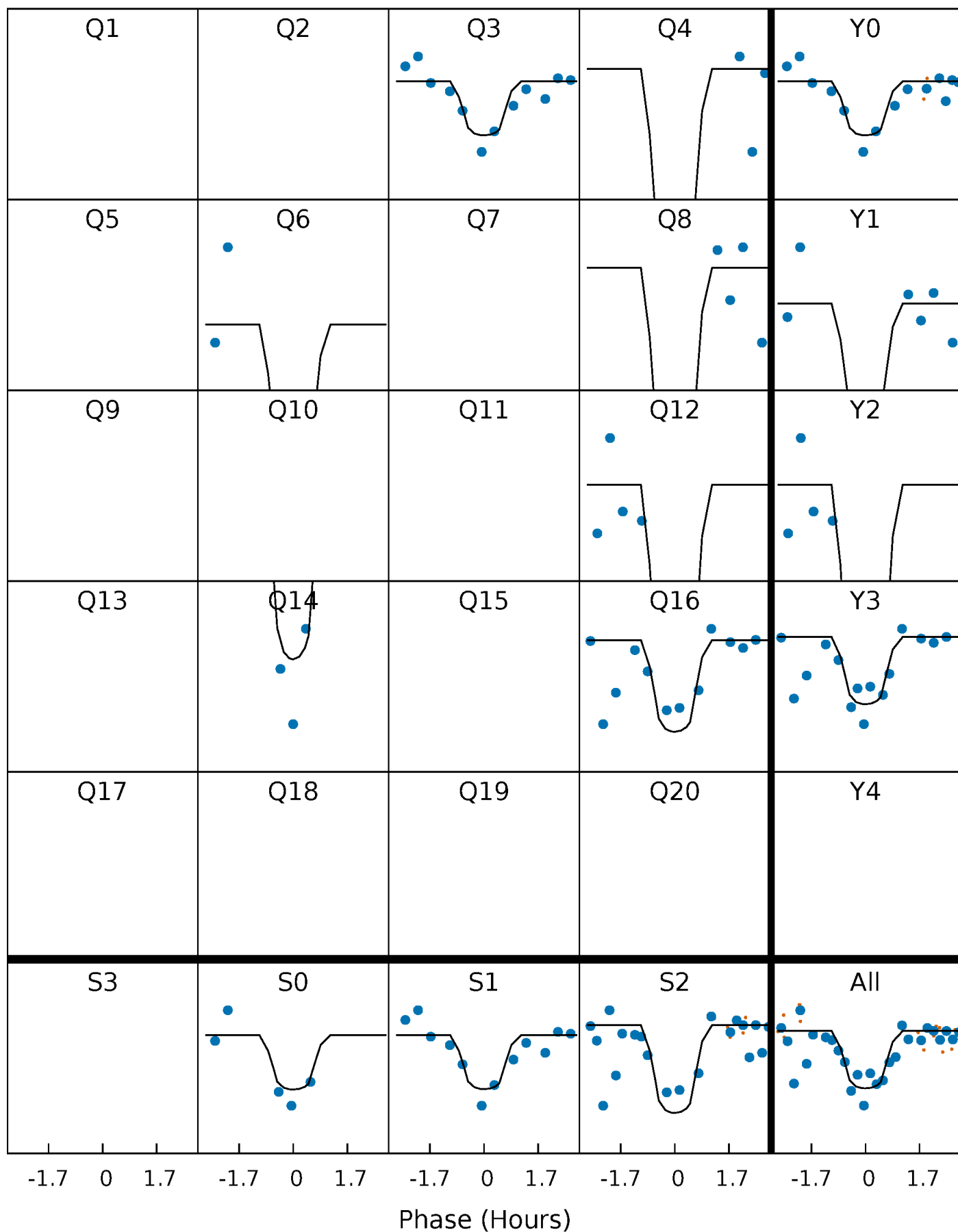
# PDC Quarter-Phased Transit Curves

TCE 010483436-07 P= 79.766297 Days  $T_0=156.928877$  (BKJD)



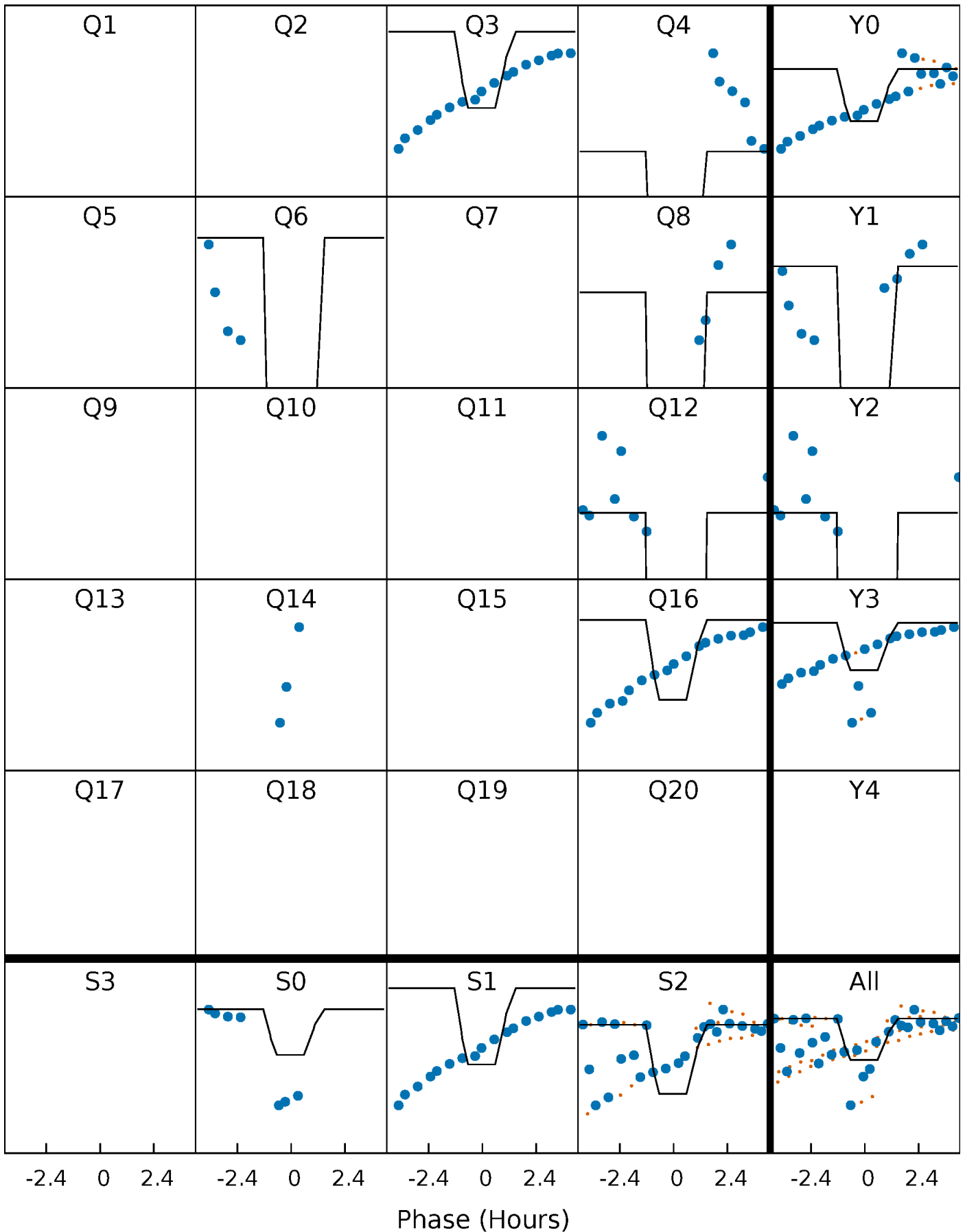
# DV Quarter-Phased Transit Curves

TCE 010483436-07     $P = 79.766297$  Days     $T_0 = 156.928877$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

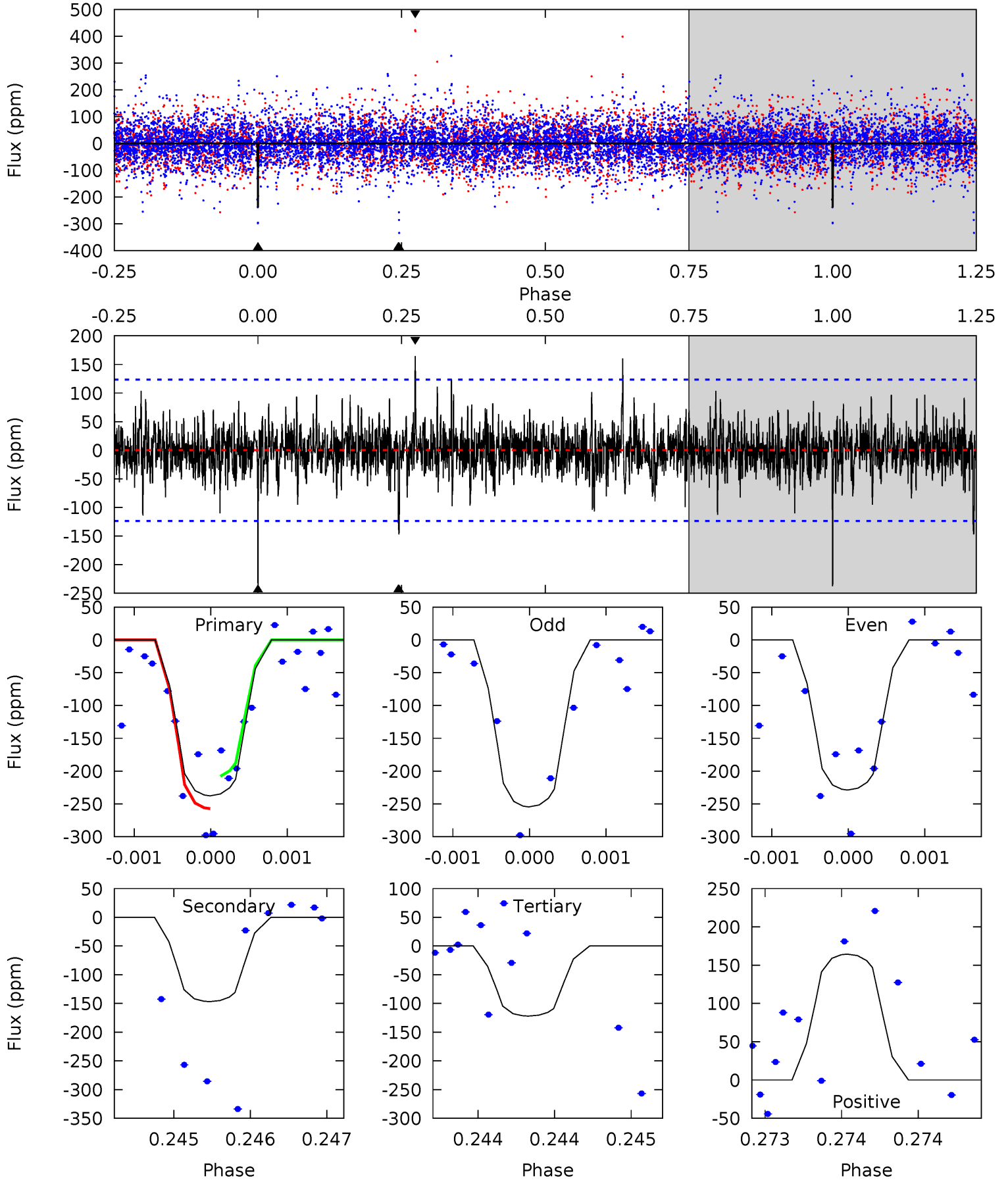
TCE 010483436-07     $P = 79.765684$  Days     $T_0 = 156.943779$  (BKJD)



# DV Model-Shift Uniqueness Test

010483436-07, P = 79.766297 Days, E = 156.928877 Days

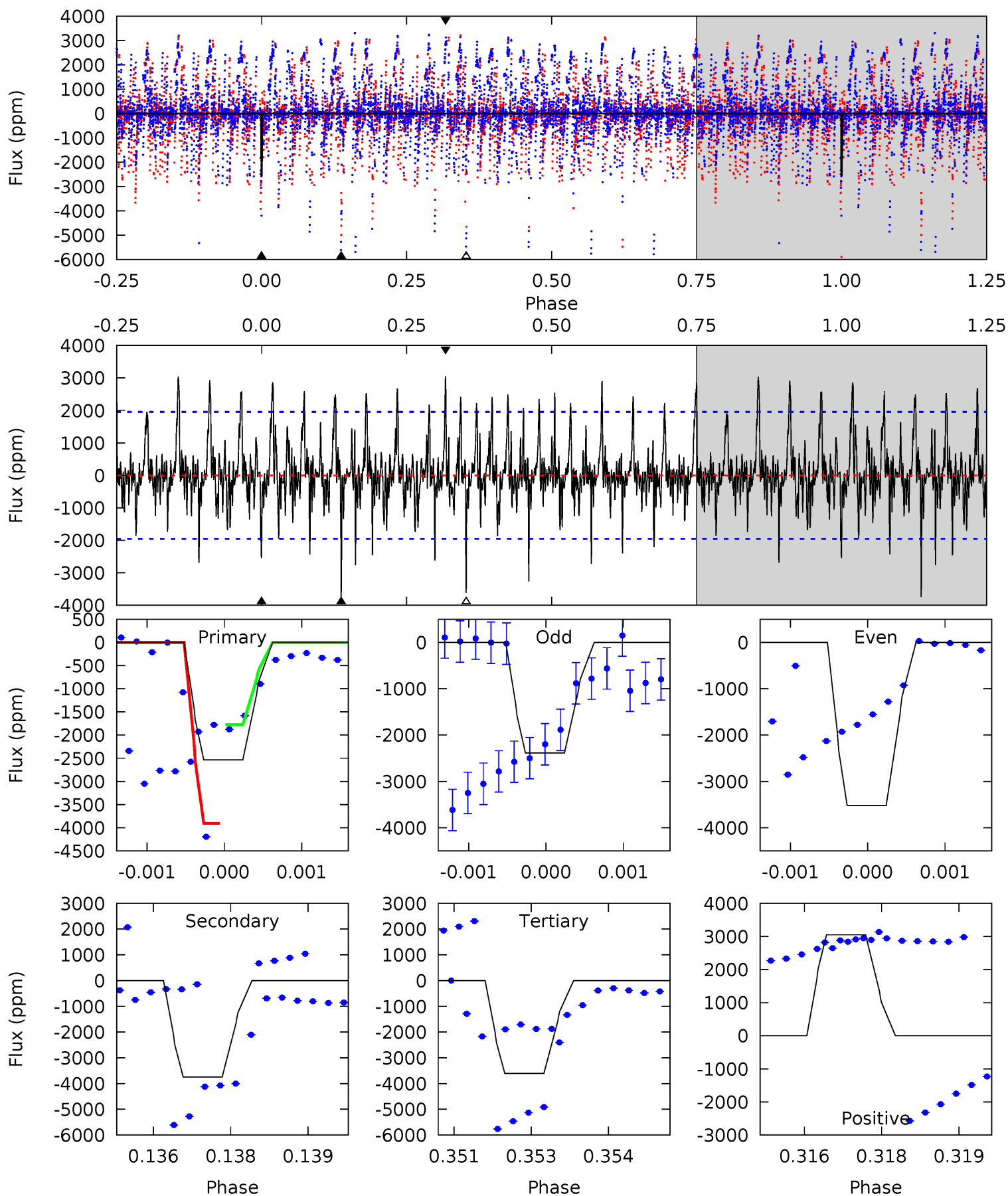
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.6	6.53	5.43	7.32	5.50	3.36	1.32	5.15	3.26	1.10	-0.79	0.49	0.92	0.41	1.11



# Alt Model-Shift Uniqueness Test

010483436-07, P = 79.765684 Days, E = 156.943779 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
7.02	10.4	10.00	8.45	5.41	3.23	2.10	-2.97	-1.42	0.37	1.92	1.64	1.32	0.45	3.09





### Stellar Parameters For KIC 010483436

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7602^{+210}_{-330}$	$4.155^{+0.070}_{-0.196}$	$0.210^{+0.150}_{-0.350}$	$1.829^{+0.572}_{-0.245}$	$1.743^{+0.212}_{-0.233}$	$0.401^{+0.146}_{-0.207}$
	+3%/-4%	+2%/-5%	+71%/-167%	+31%/-13%	+12%/-13%	+36%/-52%
Source	KIC0	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 010483436-07 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-147 \pm 22$	$3.19^{+2.01}_{-1.76}$	$972^{+74}_{-52}$	$6533^{+4808}_{-1308}$	$1491^{+5858}_{-927}$
Alt.	$-3741 \pm 361$	$10.82^{+2.75}_{-2.40}$	$971^{+67}_{-55}$	$8269^{+1409}_{-910}$	$3287^{+2041}_{-1180}$

$T_{max}$  = Theoretical Maximum Planetary Temperature

$T_{obs}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

$A_{obs}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{obs} \gg T_{max}$  AND  $A_{obs} \gg 1.0$

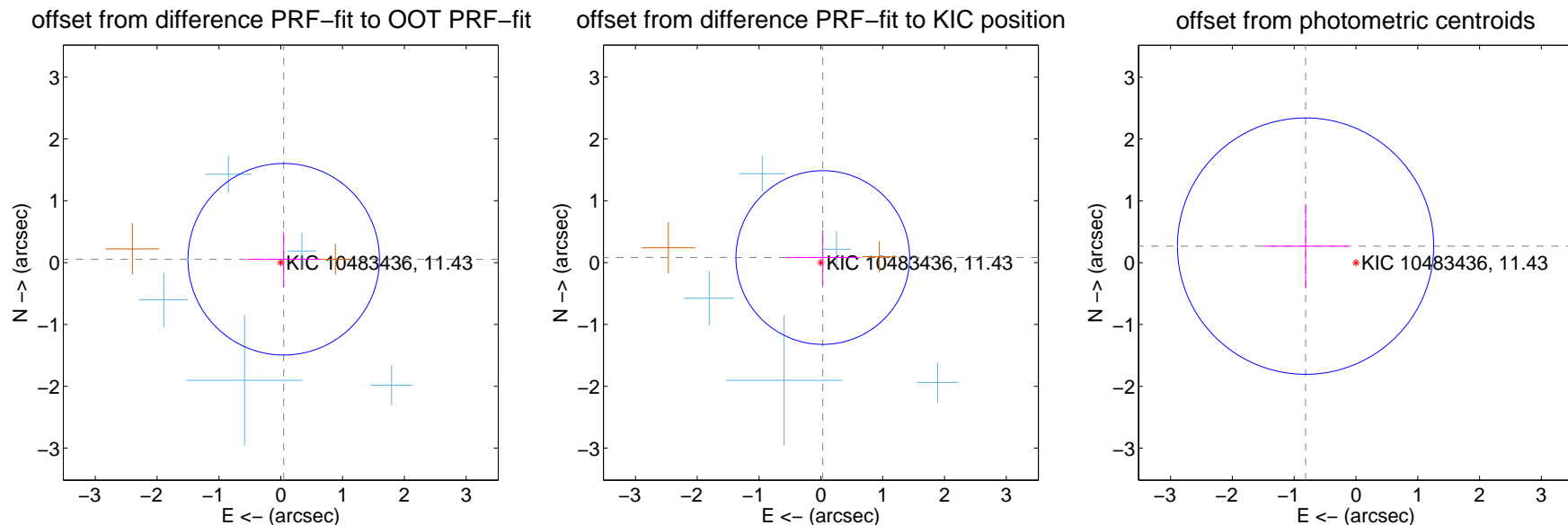
## DV Centroid Data

Supplemental centroid analysis for 010483436-07. **Kepler magnitude: 11.43.** Transit SNR 7.87

There are 5 quarters with good PRF difference image offsets

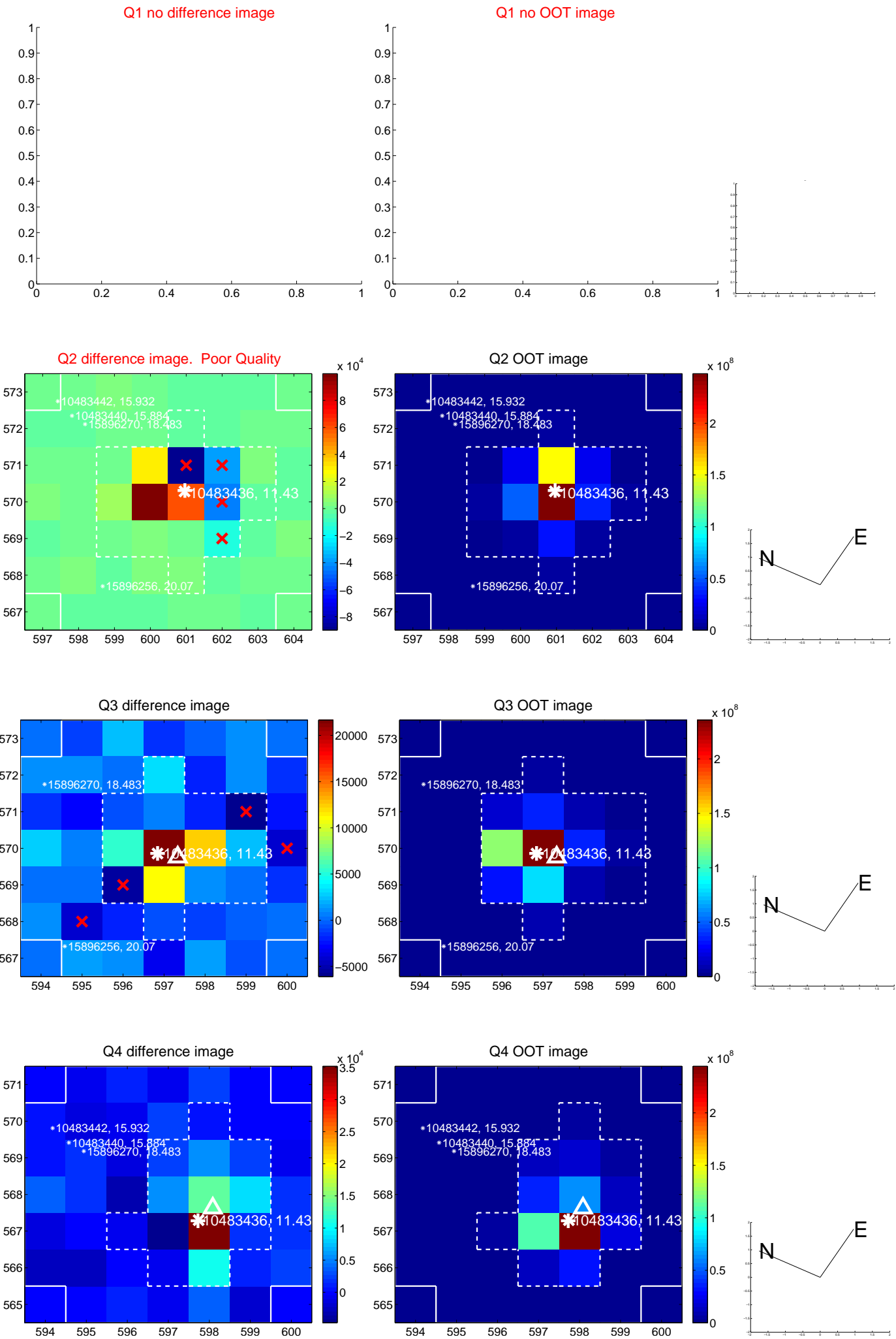
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.072 \pm 0.516$	0.14	$-0.048 \pm 0.592$	$0.054 \pm 0.448$
PRF-fit source offset from KIC position	$0.087 \pm 0.468$	0.19	$-0.031 \pm 0.596$	$0.082 \pm 0.446$
photometric centroid source offset	$0.86 \pm 0.69$	1.24	$0.82 \pm 0.69$	$0.27 \pm 0.68$



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.

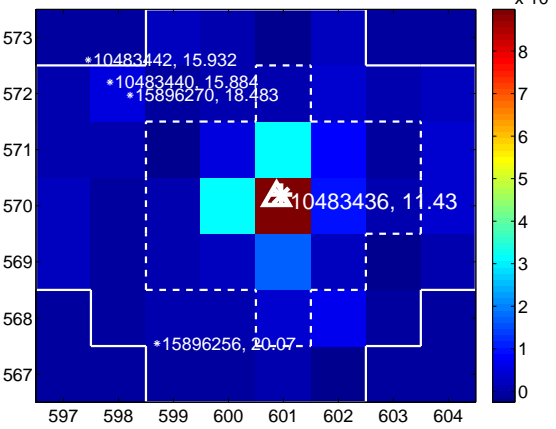
Q5 no difference image



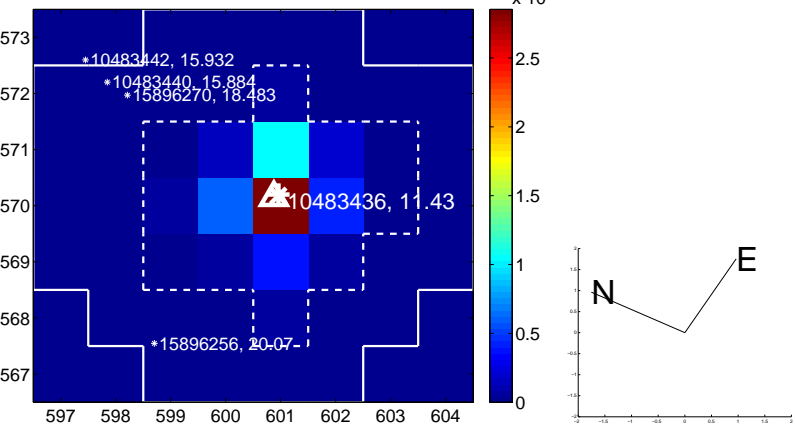
Q5 no OOT image



Q6 difference image



Q6 OOT image



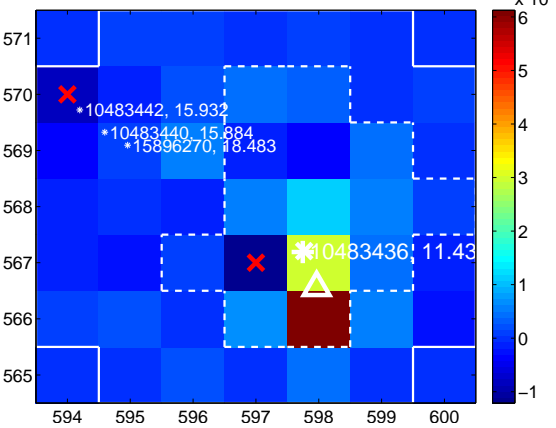
Q7 no difference image



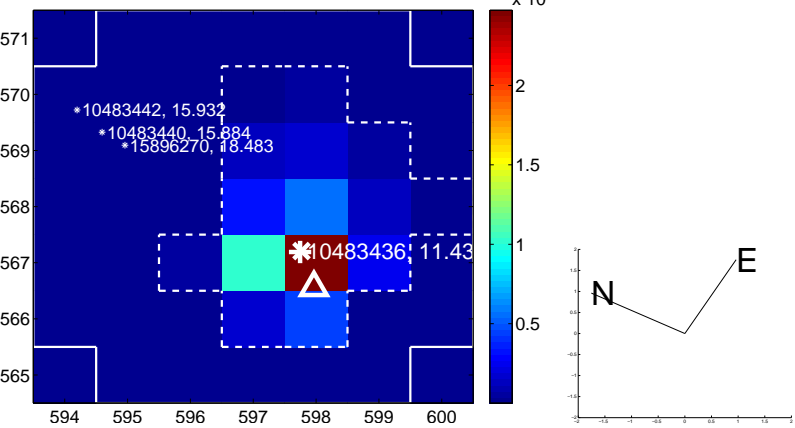
Q7 no OOT image



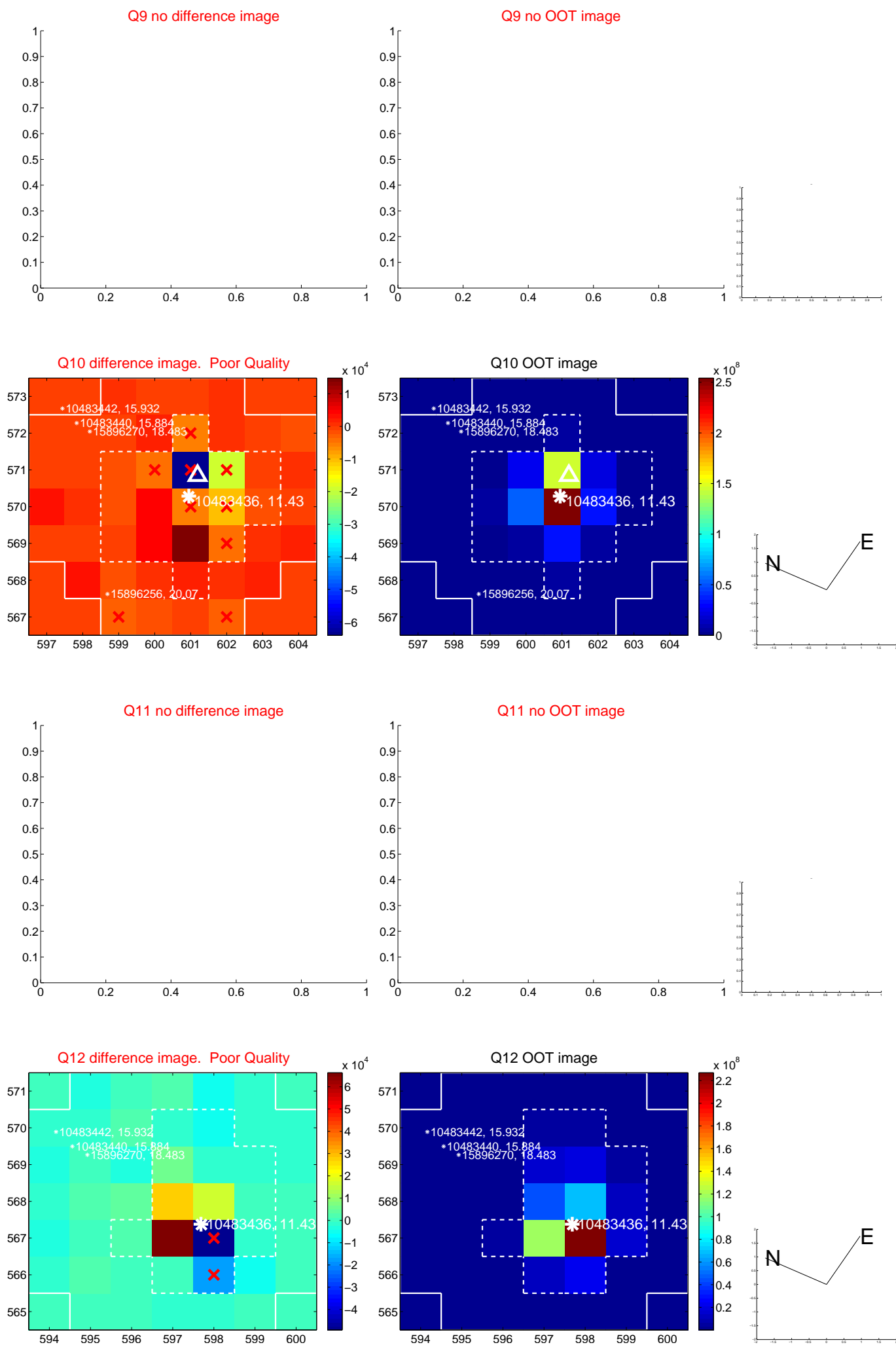
Q8 difference image



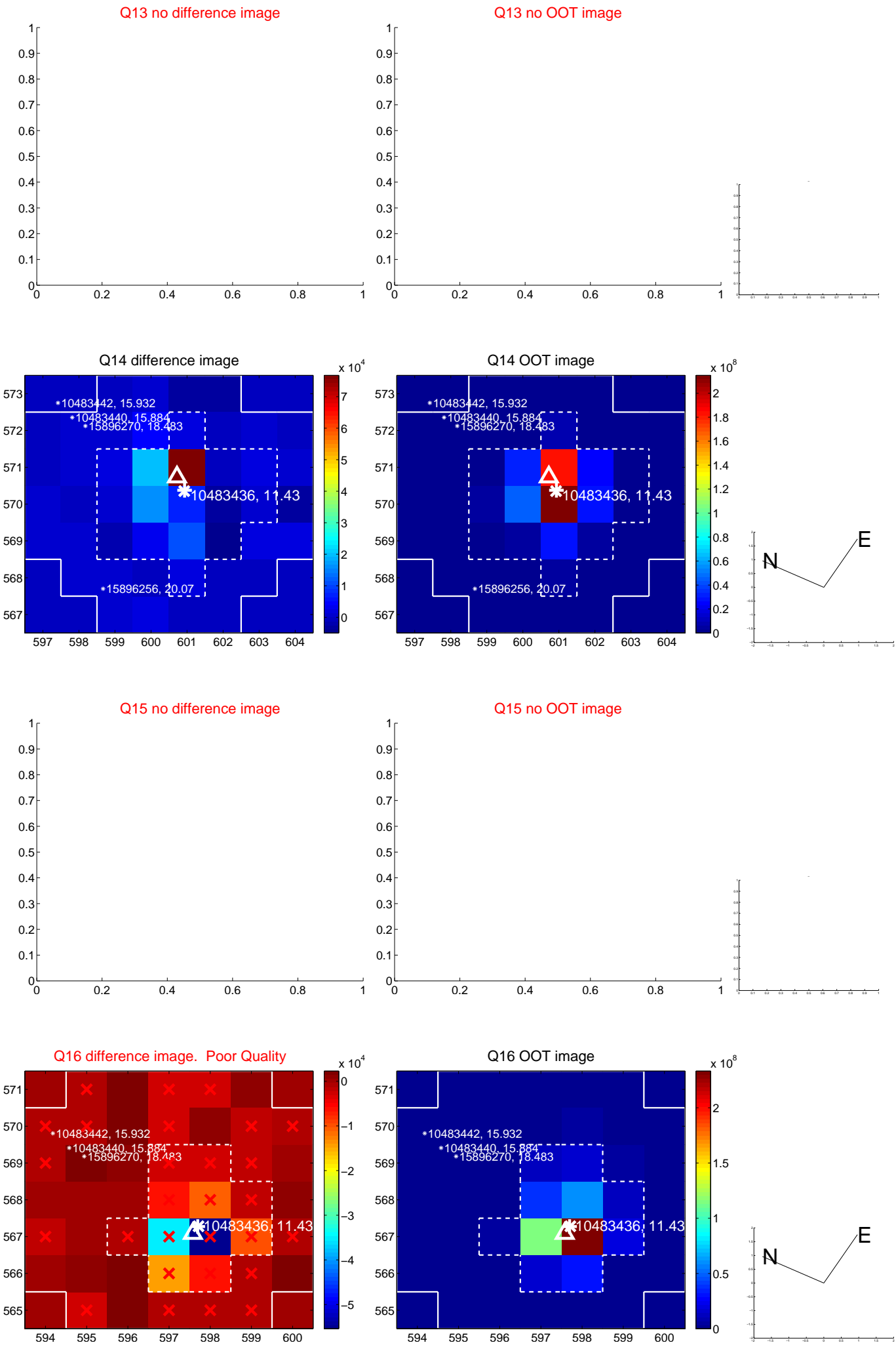
Q8 OOT image



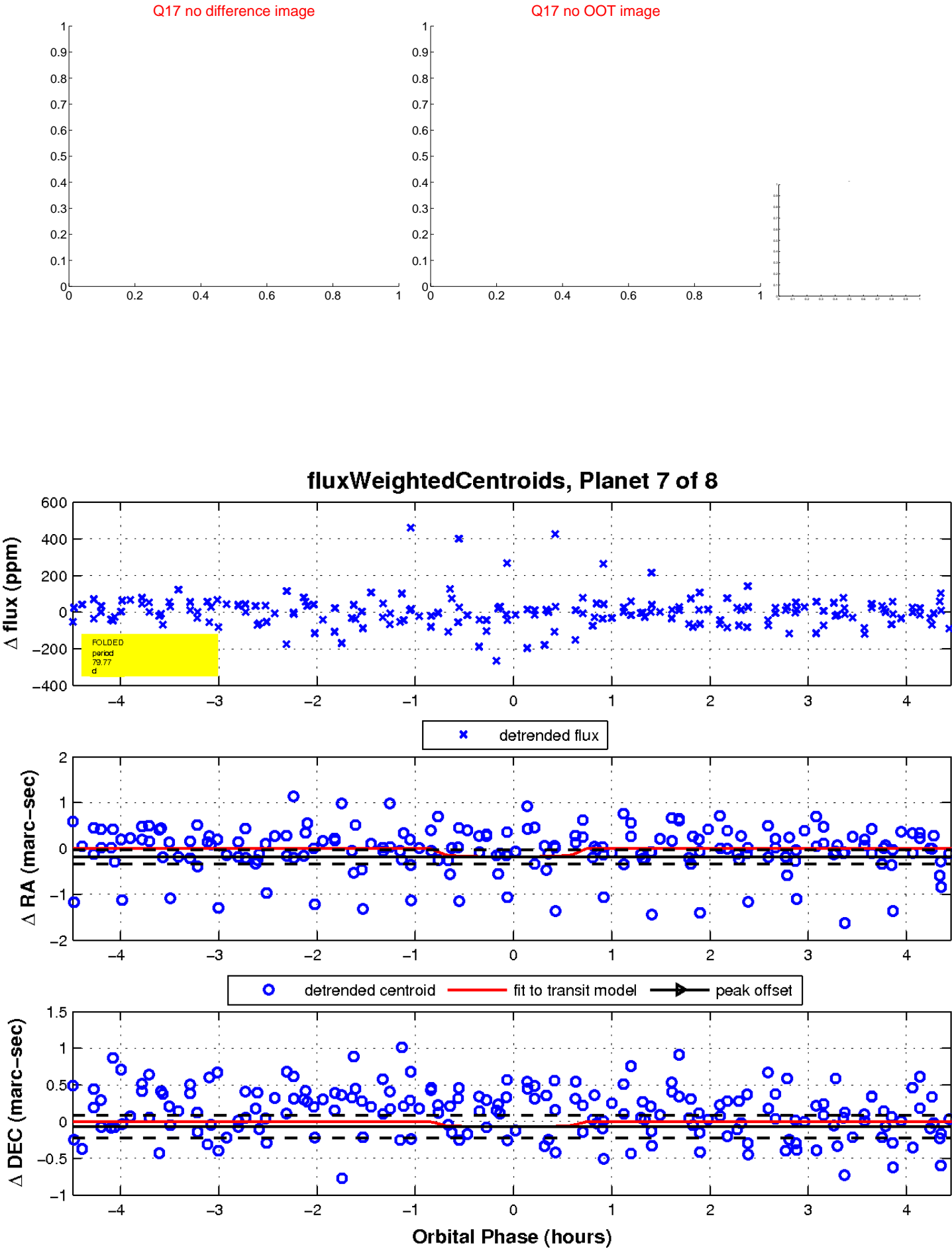
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



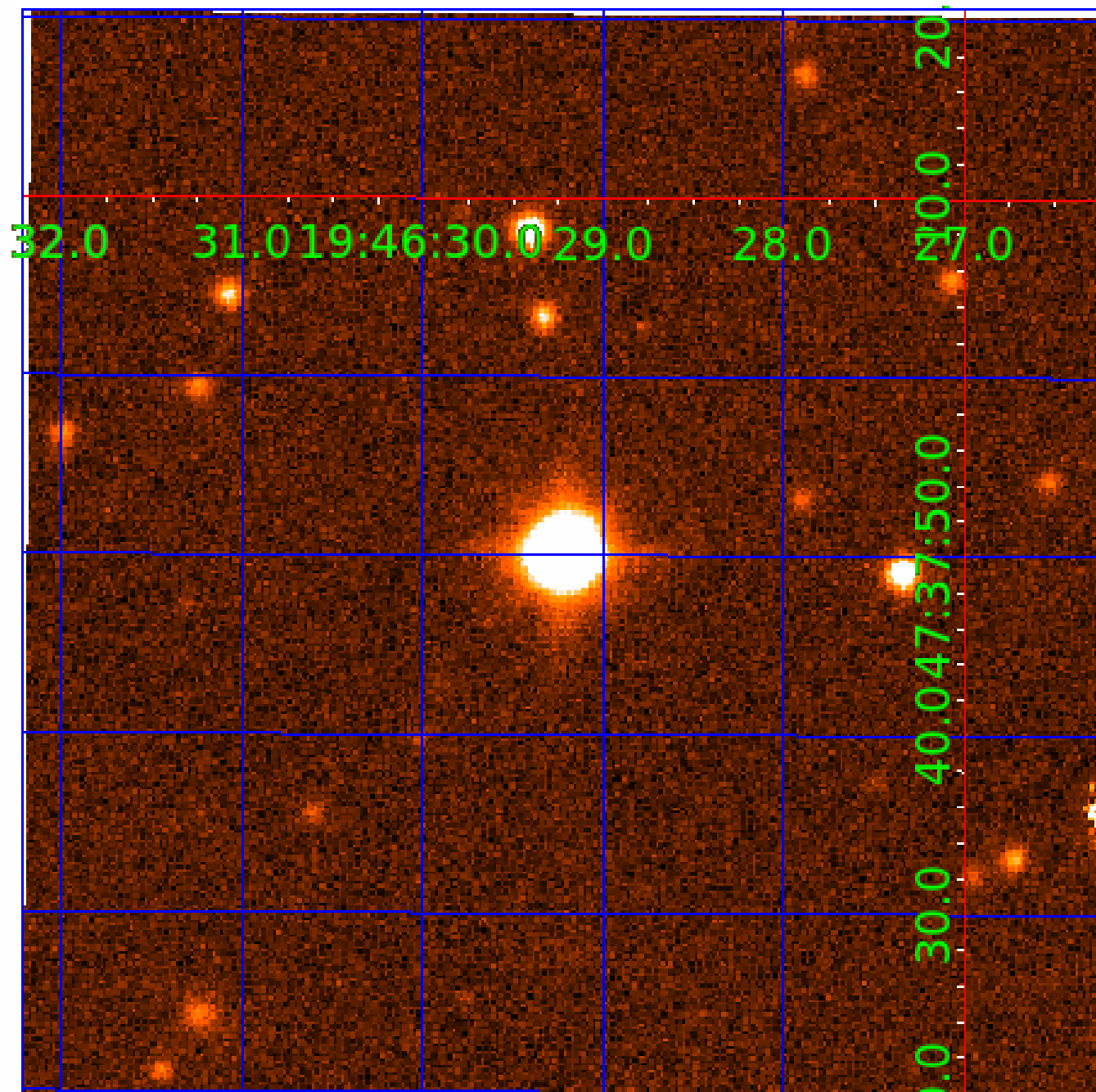
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





UKIRT Image

Declination



# KIC 010483436

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010483436-01	OBS	No	2.151570	132.635029	47.1	1.865	18.1	21.6	1.83	7602	1.46	6492.44
010483436-02	OBS	No	4.303206	134.910950	10.6	10.482	12.1	3.4	1.83	7602	0.69	2576.47
010483436-03	OBS	No	111.989531	194.017254	220.1	15.000	25.3	-1.0	1.83	7602	2.75	33.41
010483436-04	OBS	No	1.434597	131.993627	16.5	5.110	13.2	10.0	1.83	7602	0.93	11145.73
010483436-05	OBS	No	1.075175	132.166864	4.1	1.268	14.6	1.7	1.83	7602	0.41	16372.30
010483436-06	OBS	No	1.075793	131.990196	1.3	0.773	11.2	0.4	1.83	7602	0.21	16359.76
010483436-07	OBS	No	79.766297	156.928877	228.0	1.500	8.9	7.9	1.83	7602	2.93	52.52
010483436-08	OBS	No	73.264201	169.197290	111.3	4.500	9.6	-1.0	1.83	7602	1.96	58.83

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010483436-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—CENT_SATURATED
010483436-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED
010483436-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010483436-04	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
010483436-05	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010483436-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
010483436-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
010483436-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

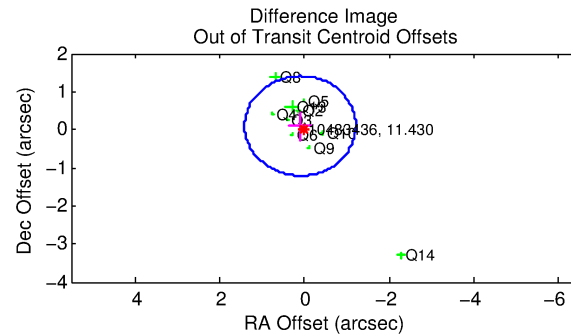
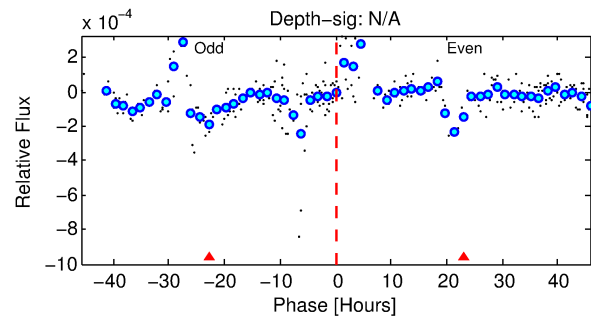
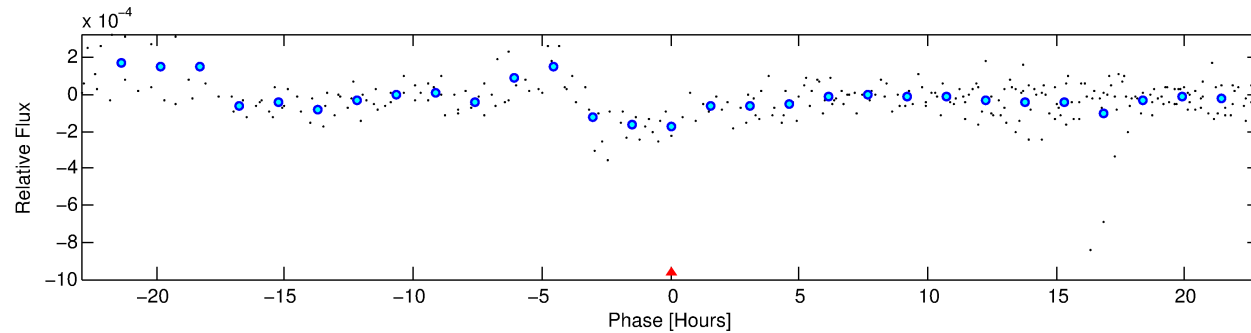
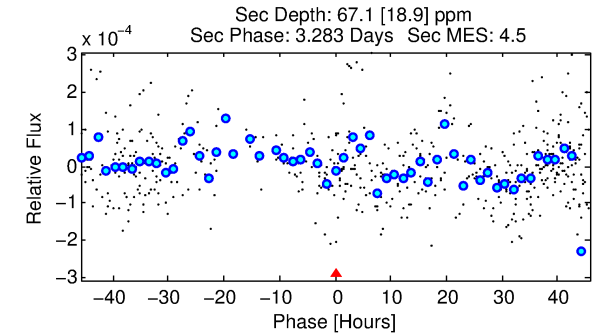
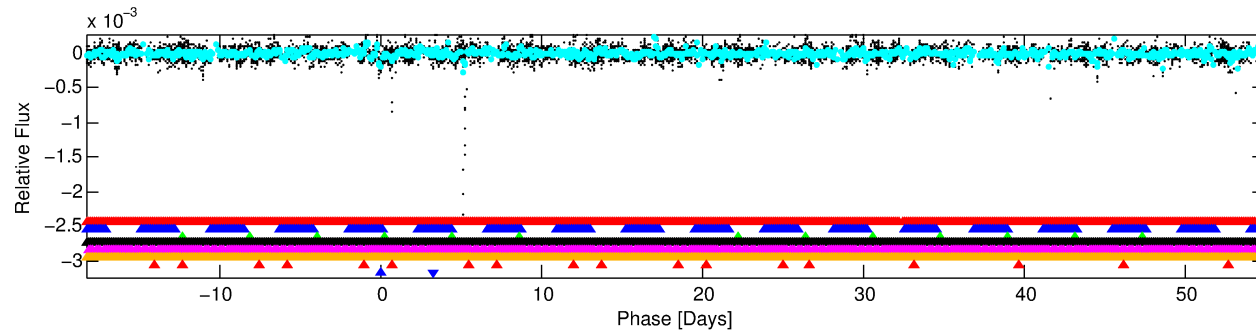
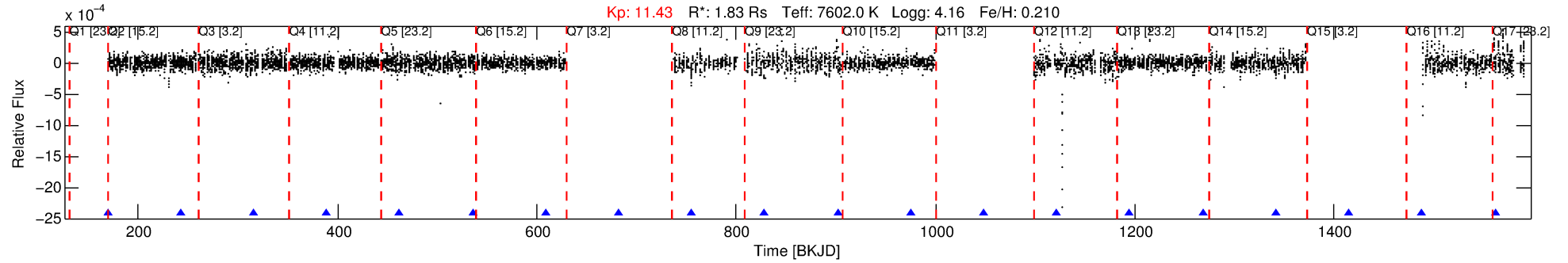
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 010483436-08

No Significant Match Found

# DV One-Page Summary

KIC: 10483436 Candidate: 8 of 8 Period: 73.264 d



## TPS TCE Results:

Period = 73.26420 d  
Epoch = 169.1973 BKJD

DV fit results are unavailable

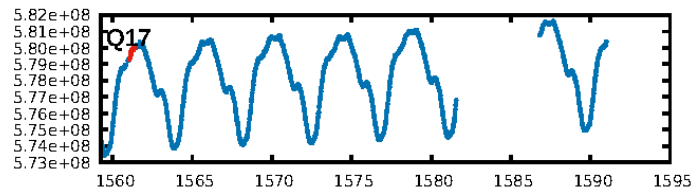
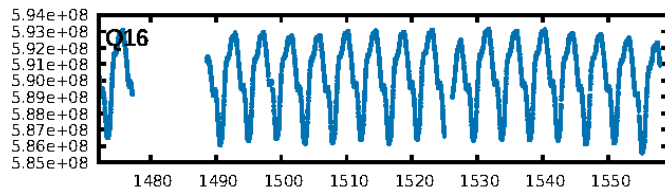
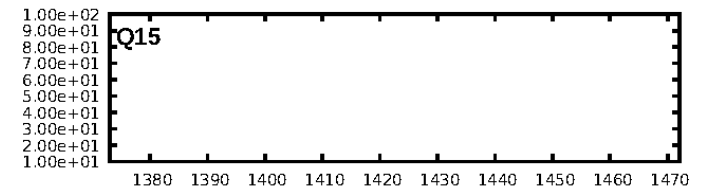
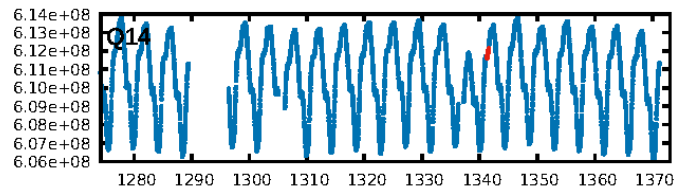
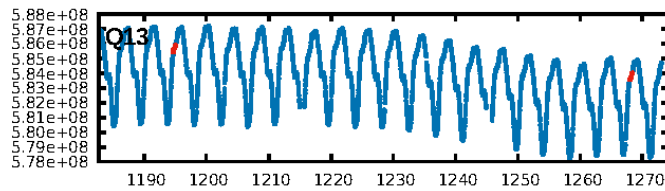
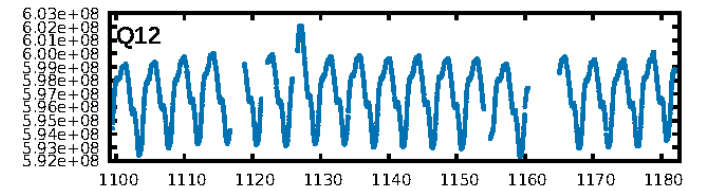
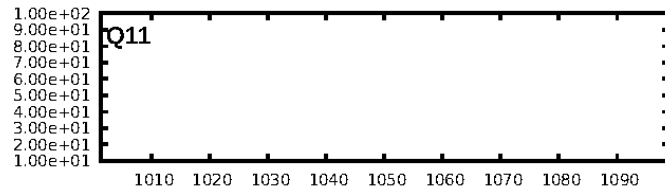
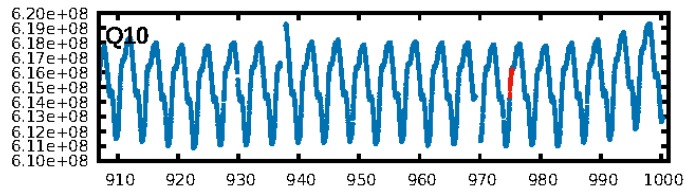
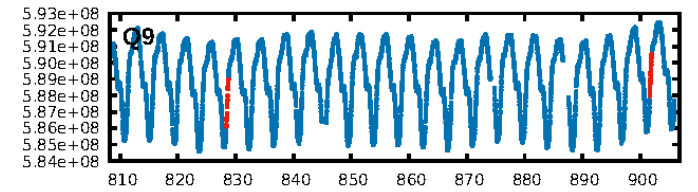
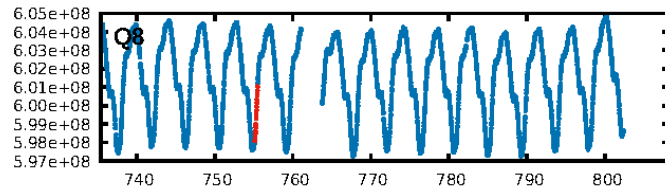
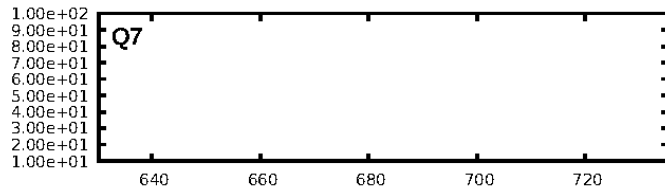
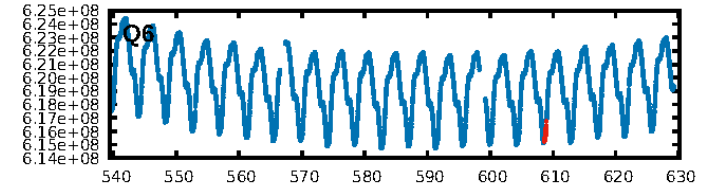
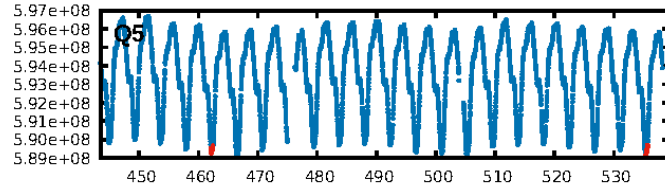
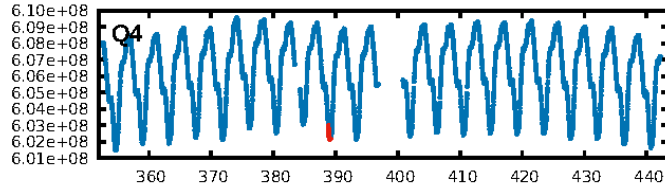
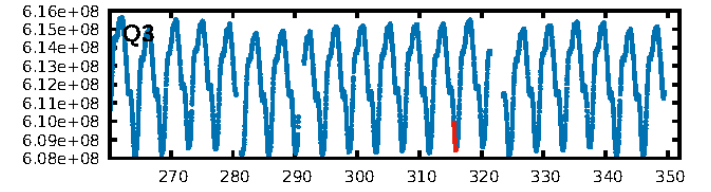
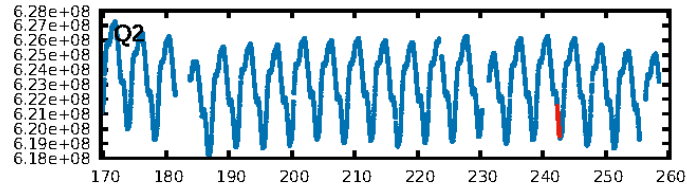
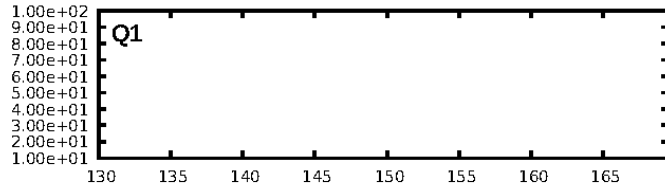
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [145.09]  
LongPeriod-sig: 100.0% [32.90]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: 5.79  
Centroid-sig: 16.5%  
Centroid-so: 0.047 arcsec [1.50]  
OotOffset-rm: 0.139 arcsec [0.32]  
KicOffset-rm: 0.273 arcsec [0.72]  
OotOffset-st: 4/1/2/3 [10]  
KicOffset-st: 4/1/2/3 [10]  
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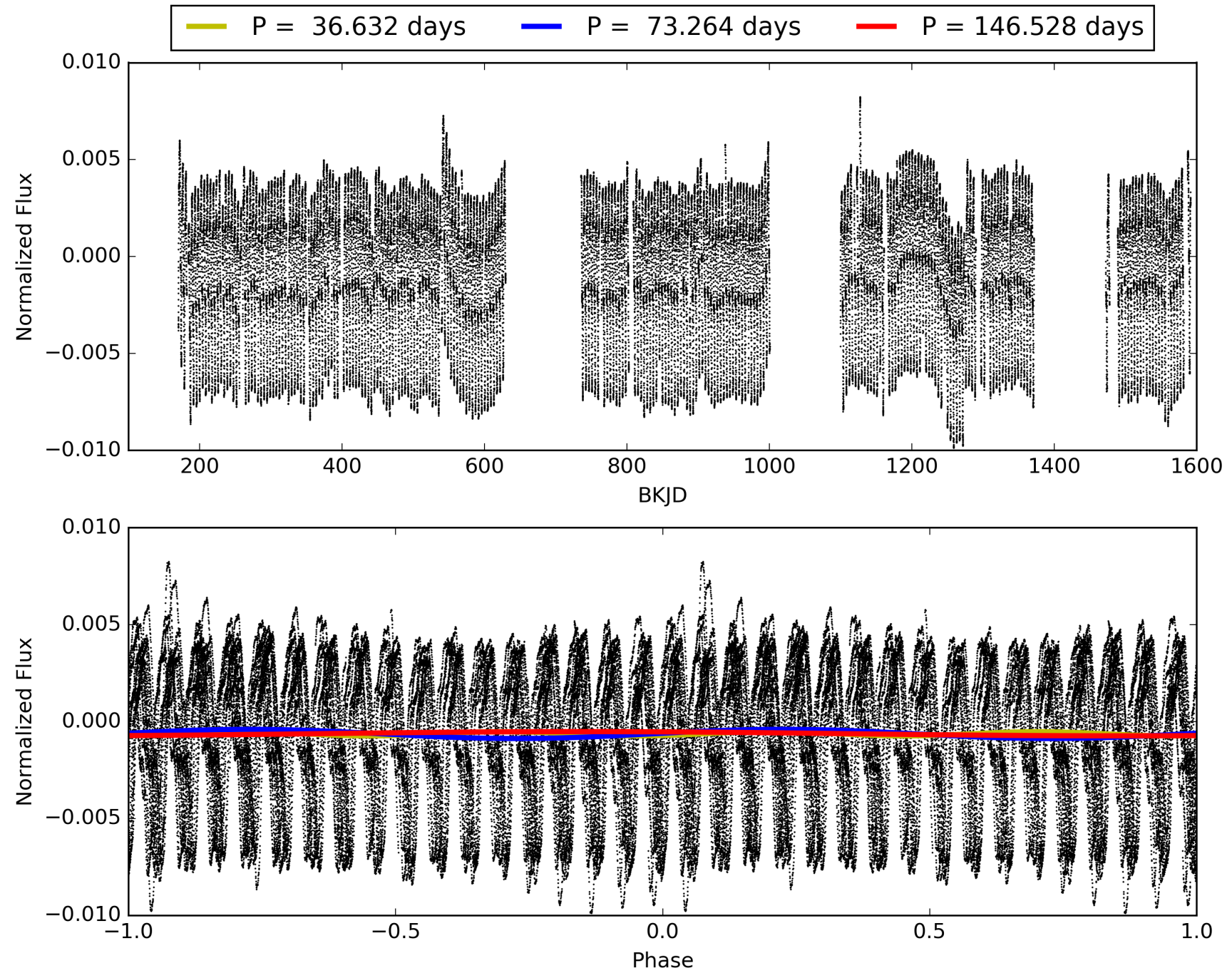
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:52:51 Z

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

# TCE 010483436-08, PDC Light Curves

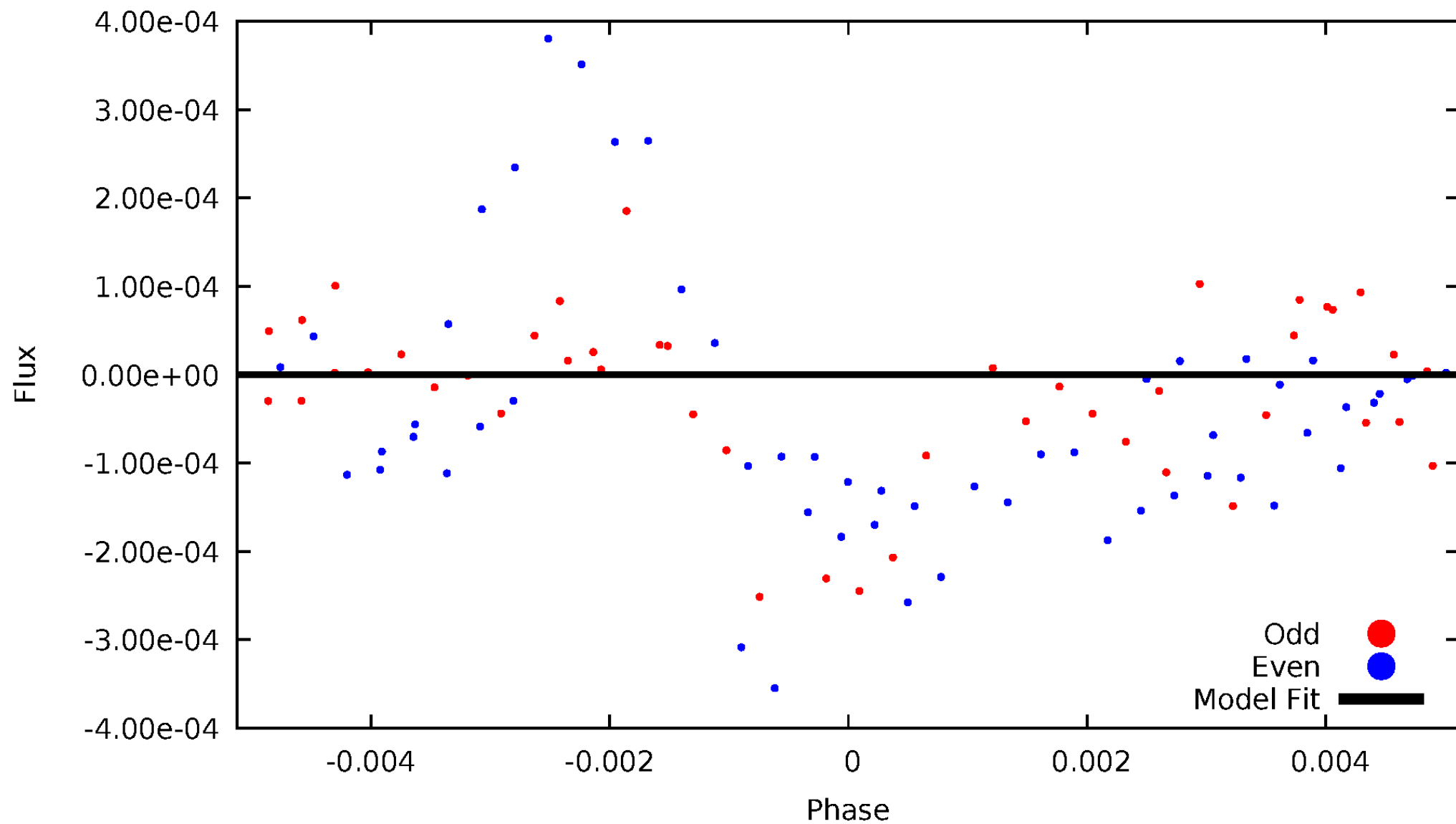


# TCE 010483436-08



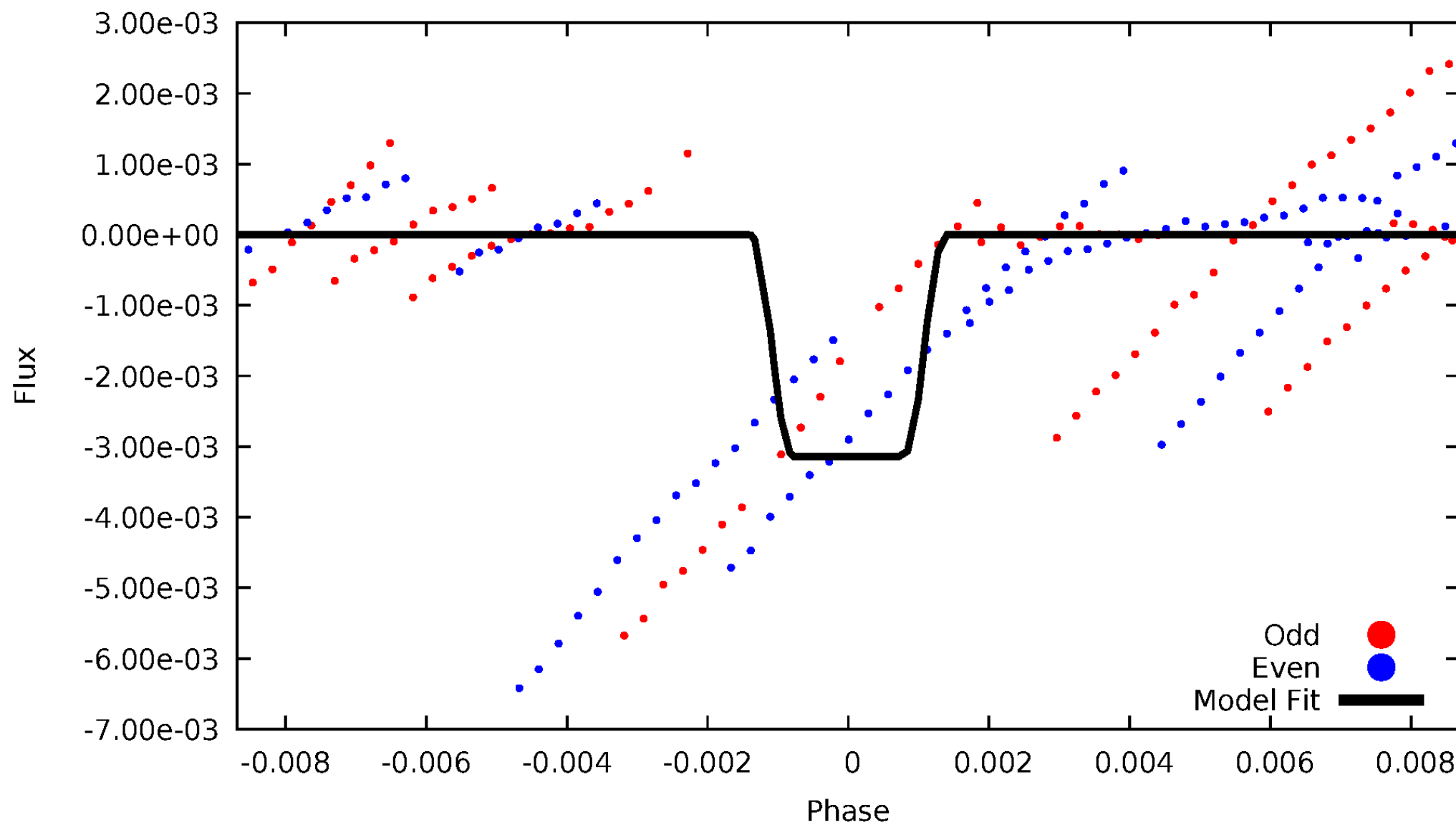
# DV Odd/Even

TCE 010483436-08



# ALT Odd/Even

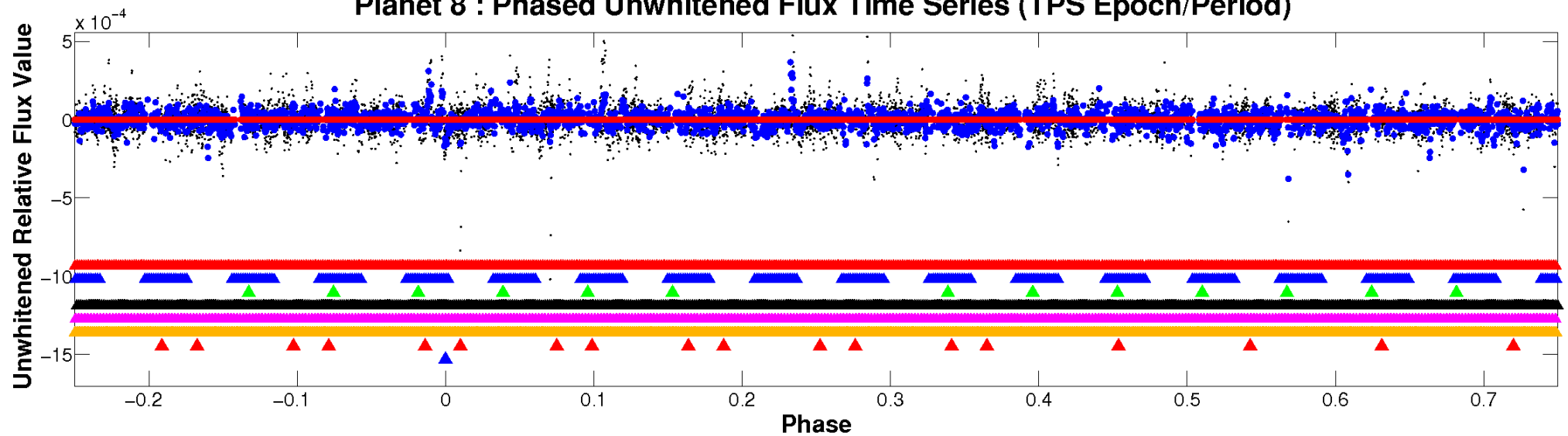
TCE 010483436-08



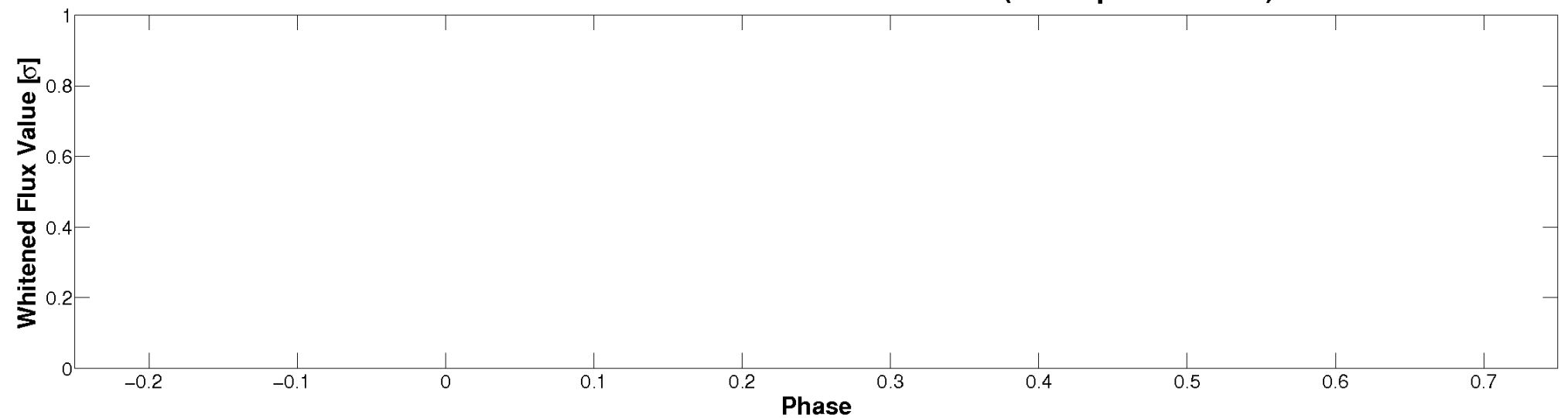


# Non-Whitened Vs. Whitened Light Curve

**Planet 8 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)**

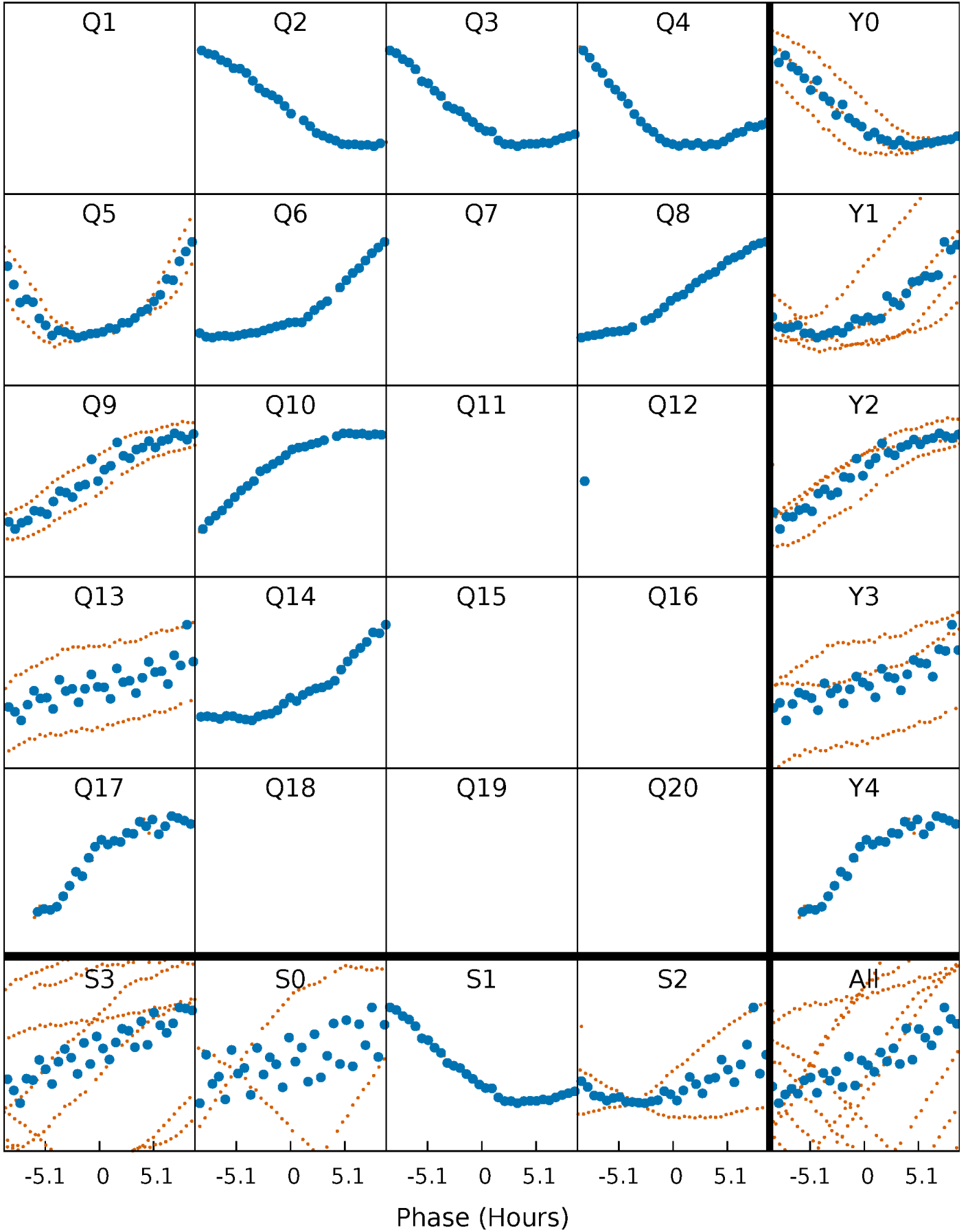


**Planet 8 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



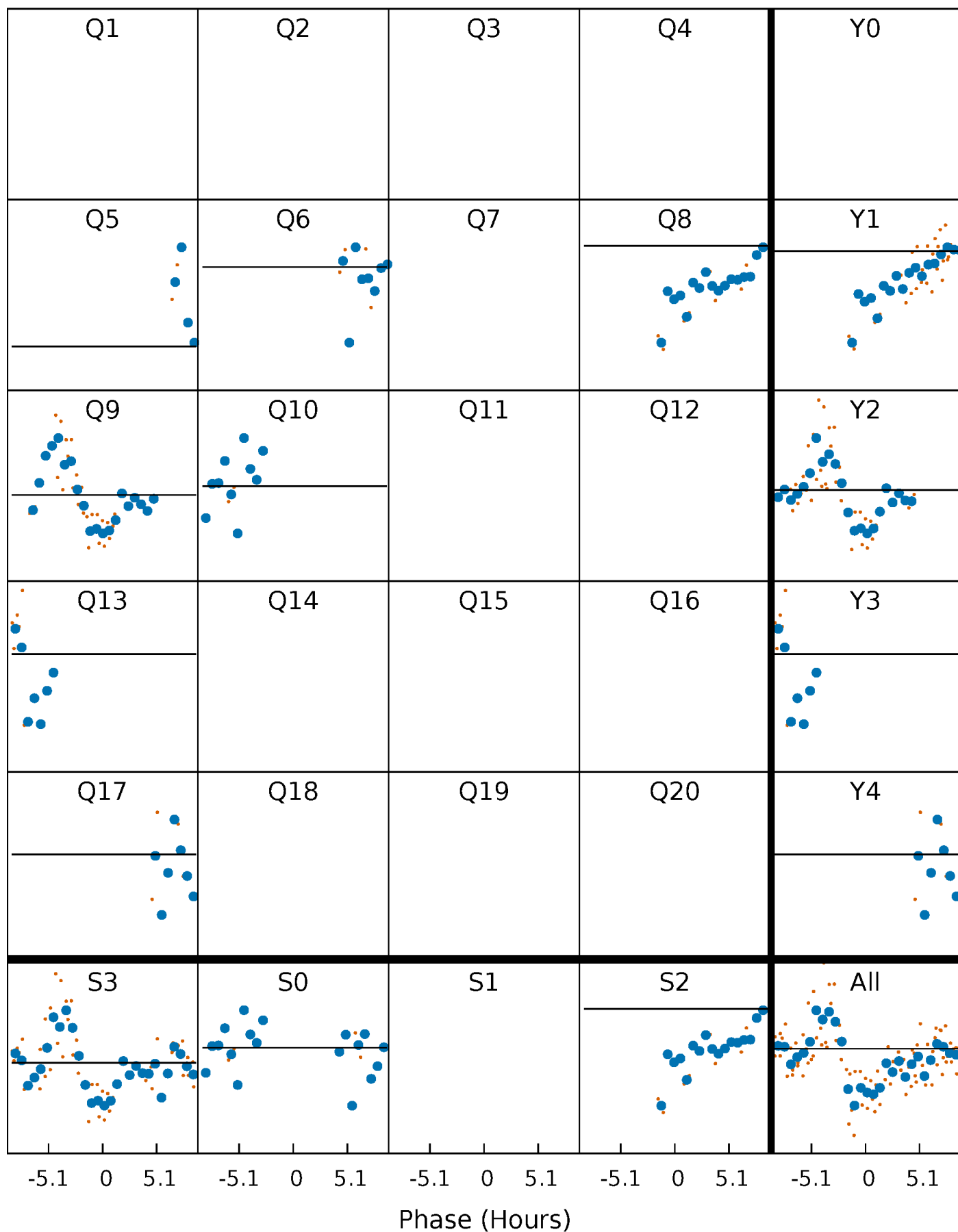
# PDC Quarter-Phased Transit Curves

TCE 010483436-08   P= 73.264201 Days    $T_0=169.197290$  (BKJD)



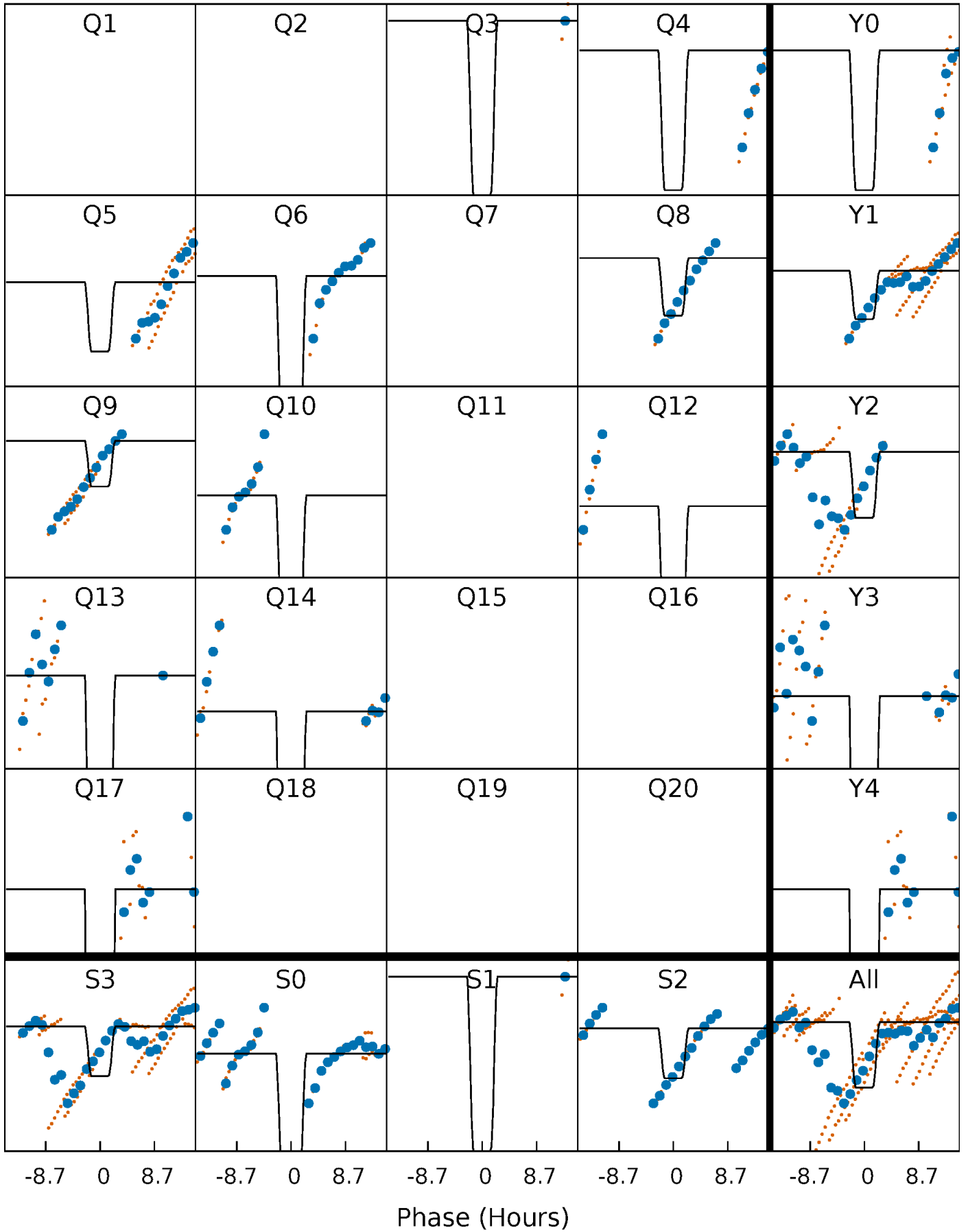
# DV Quarter-Phased Transit Curves

TCE 010483436-08     $P = 73.264201$  Days     $T_0 = 169.197290$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

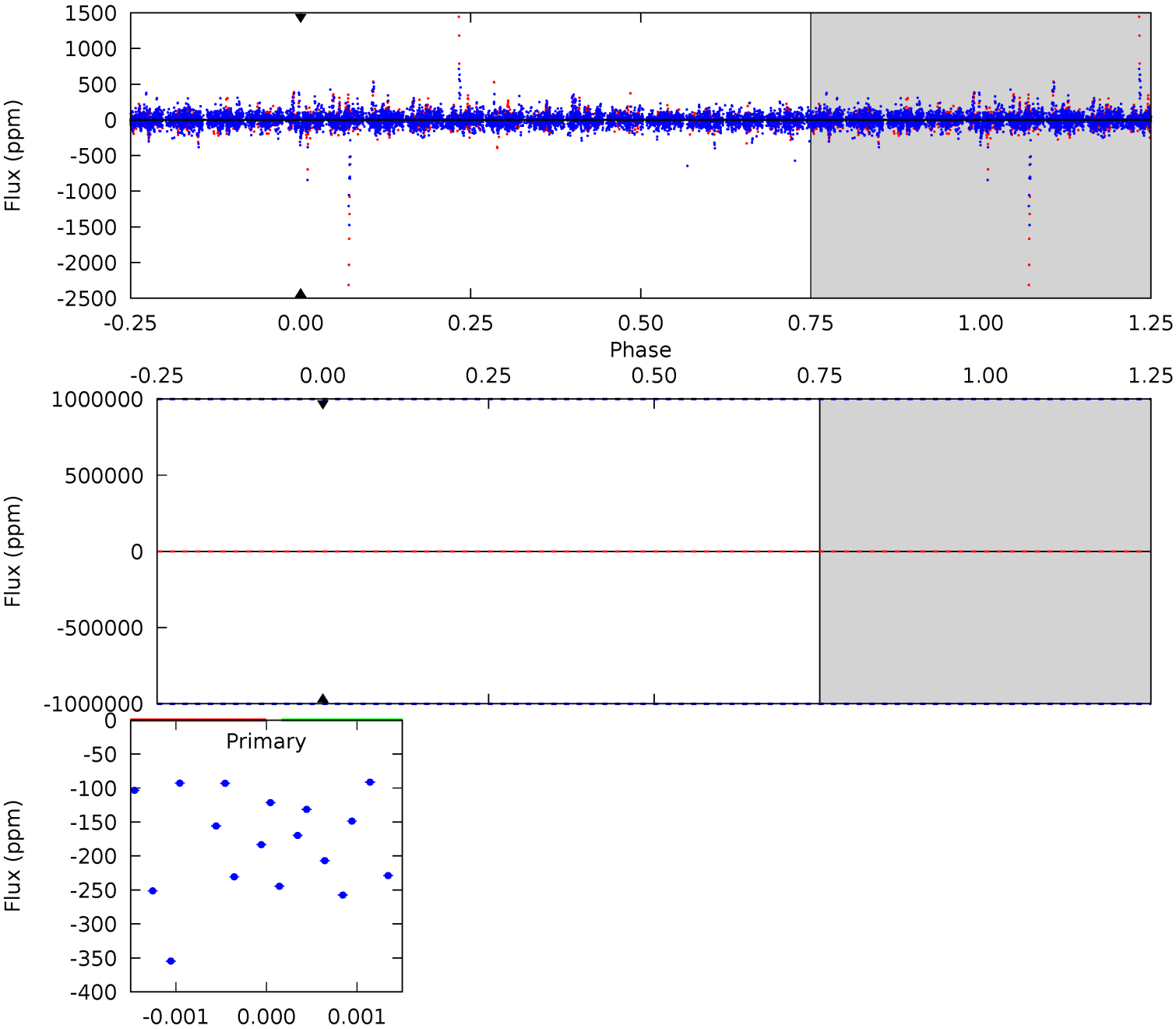
TCE 010483436-08   P= 73.264201 Days    $T_0=169.253761$  (BKJD)



# DV Model-Shift Uniqueness Test

010483436-08, P = 73.264201 Days, E = 169.197290 Days

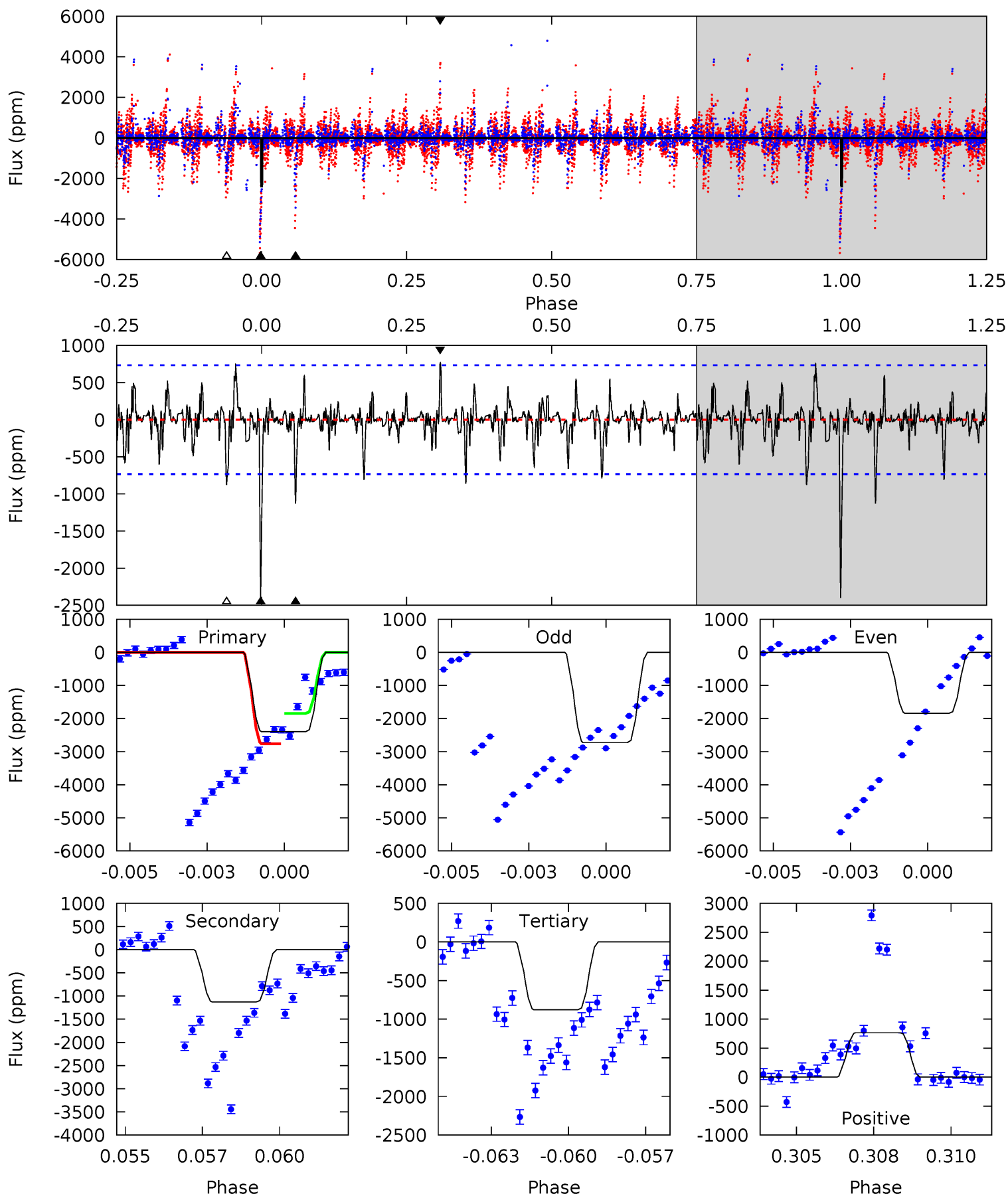
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

010483436-08, P = 73.264201 Days, E = 169.253761 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
17.3	8.11	6.31	5.51	5.28	3.01	1.25	10.9	11.7	1.79	2.60	2.35	1.14	0.24	3.28



### Stellar Parameters For KIC 010483436

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7602^{+210}_{-330}$	$4.155^{+0.070}_{-0.196}$	$0.210^{+0.150}_{-0.350}$	$1.829^{+0.572}_{-0.245}$	$1.743^{+0.212}_{-0.233}$	$0.401^{+0.146}_{-0.207}$
	+3%/-4%	+2%/-5%	+71%/-167%	+31%/-13%	+12%/-13%	+36%/-52%
Source	KIC0	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 010483436-08 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$15.42^{+15.67}_{-10.95}$	$998^{+79}_{-52}$	$-3910^{+47332}_{-30617}$	$-104.589^{+73515.029}_{-61016.799}$
Alt.	$-1127 \pm 139$	$18.68^{+19.08}_{-12.46}$	$998^{+80}_{-56}$	$4672^{+3381}_{-1045}$	$300^{+2464}_{-229}$

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



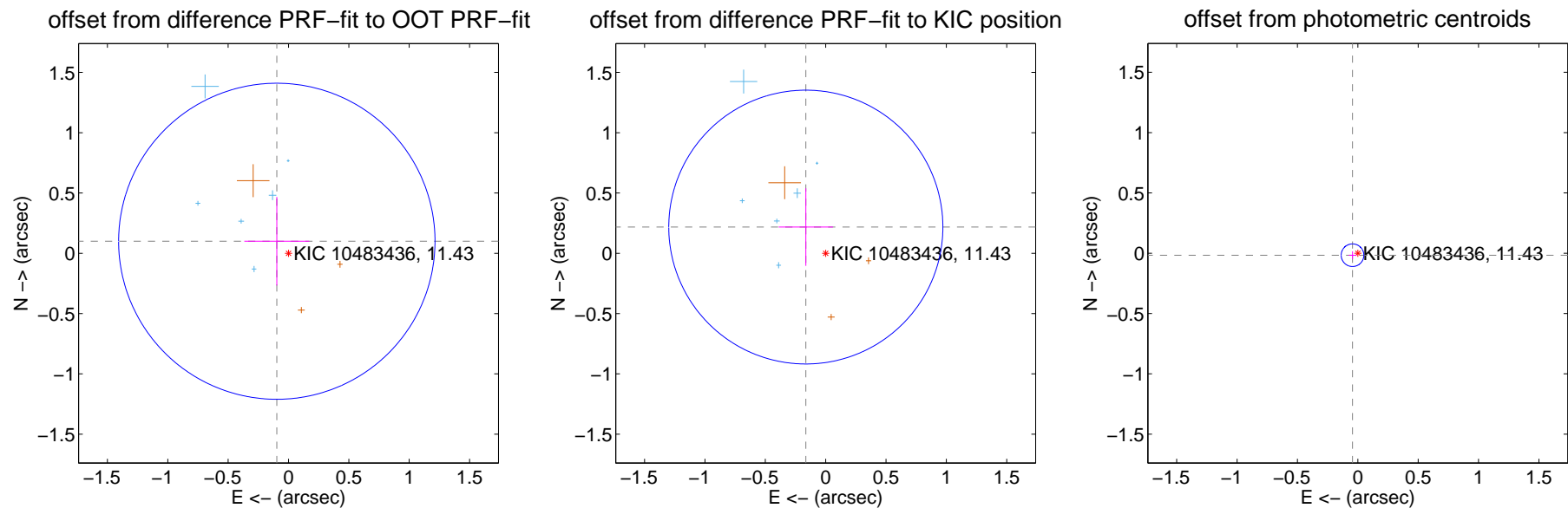
## DV Centroid Data

Supplemental centroid analysis for 010483436-08. **Kepler magnitude: 11.43.** Transit SNR -1.00

There are 6 quarters with good PRF difference image offsets

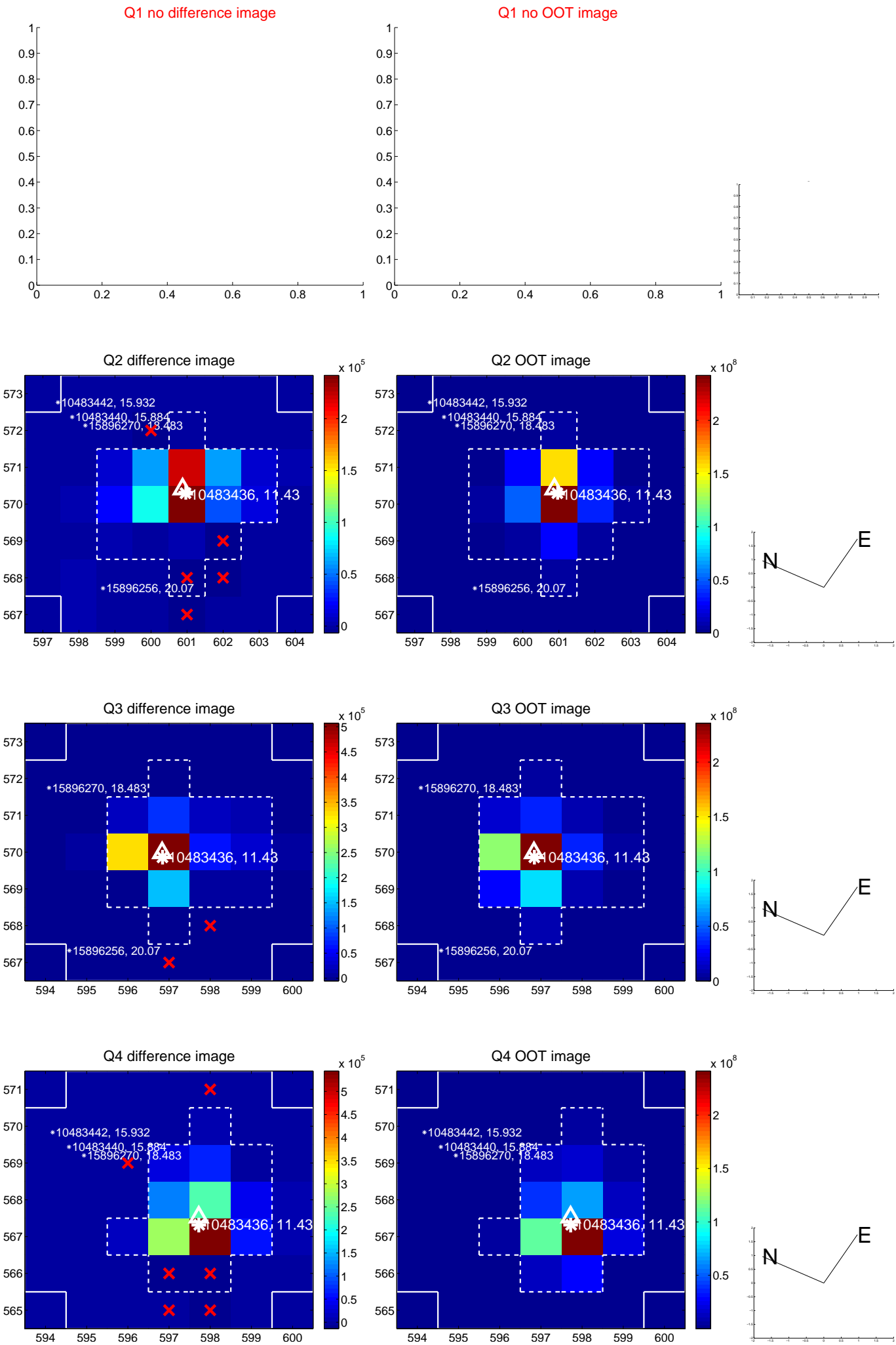
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.139 \pm 0.437$	0.32	$0.097 \pm 0.269$	$0.100 \pm 0.367$
PRF-fit source offset from KIC position	$0.273 \pm 0.378$	0.72	$0.164 \pm 0.225$	$0.217 \pm 0.322$
photometric centroid source offset	$0.05 \pm 0.03$	1.50	$0.04 \pm 0.03$	$-0.02 \pm 0.03$

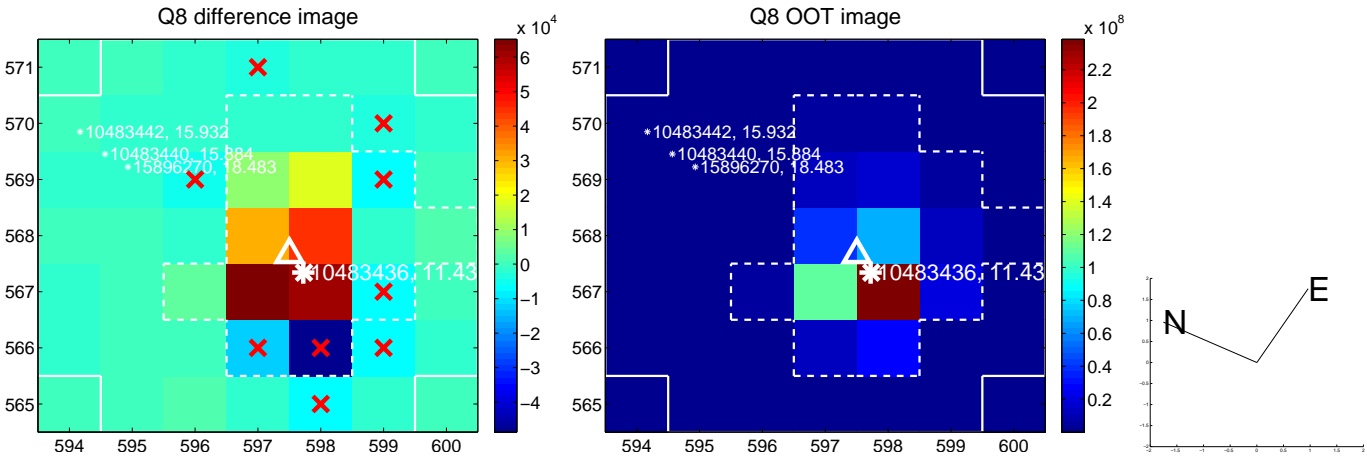
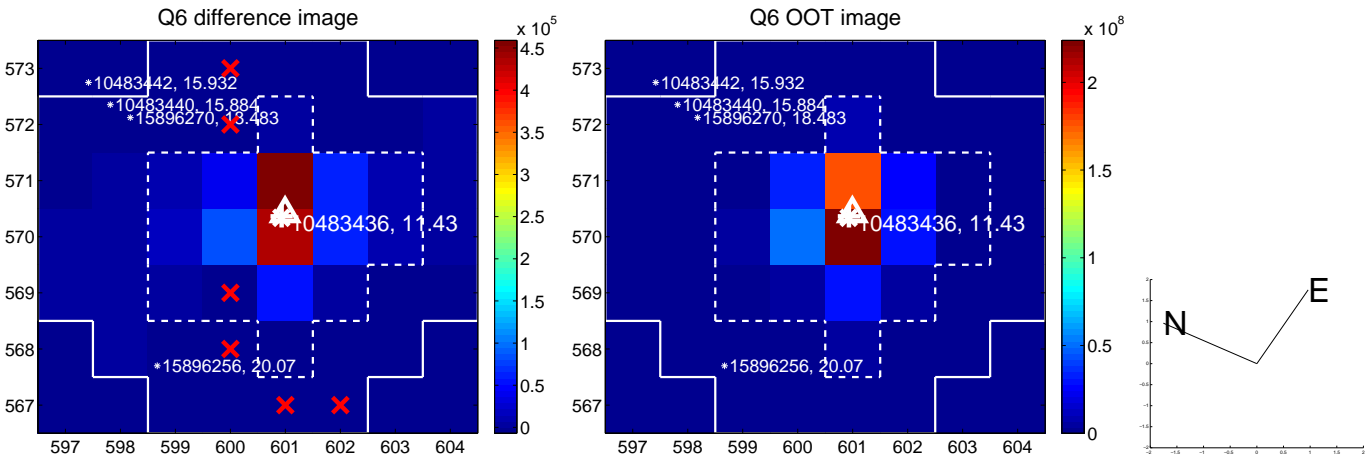
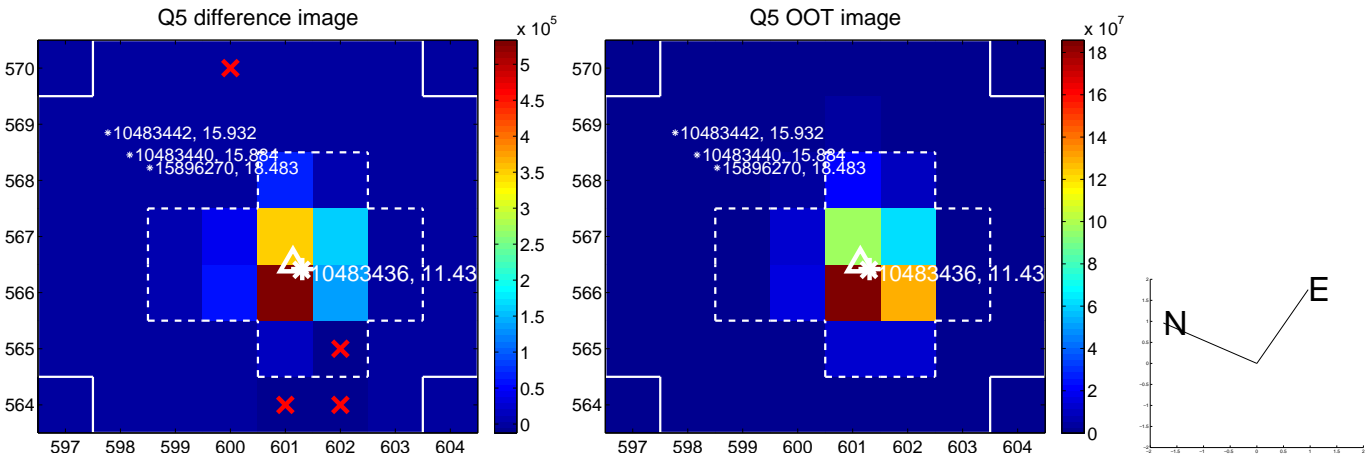


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

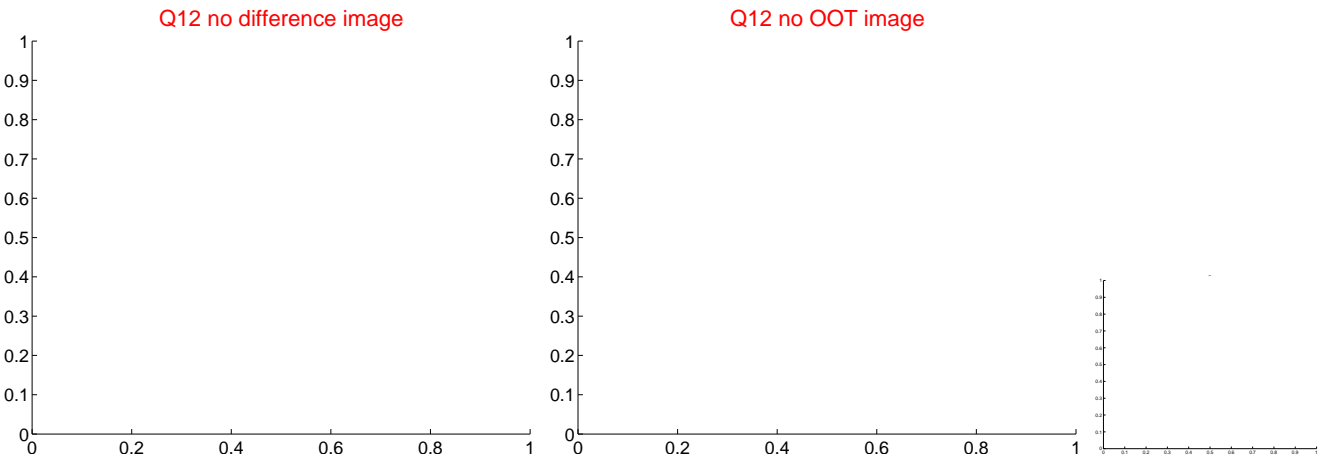
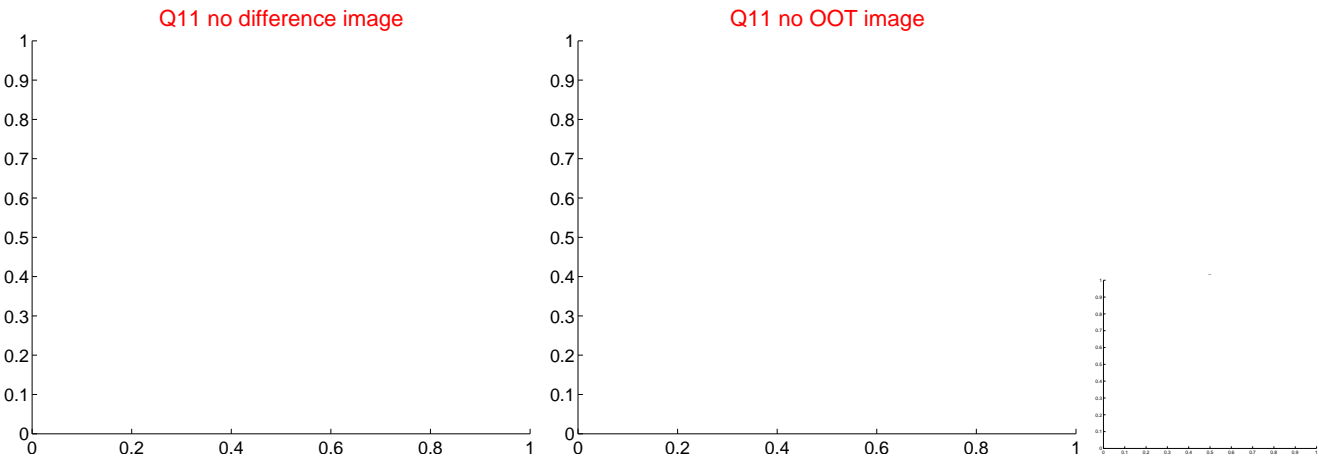
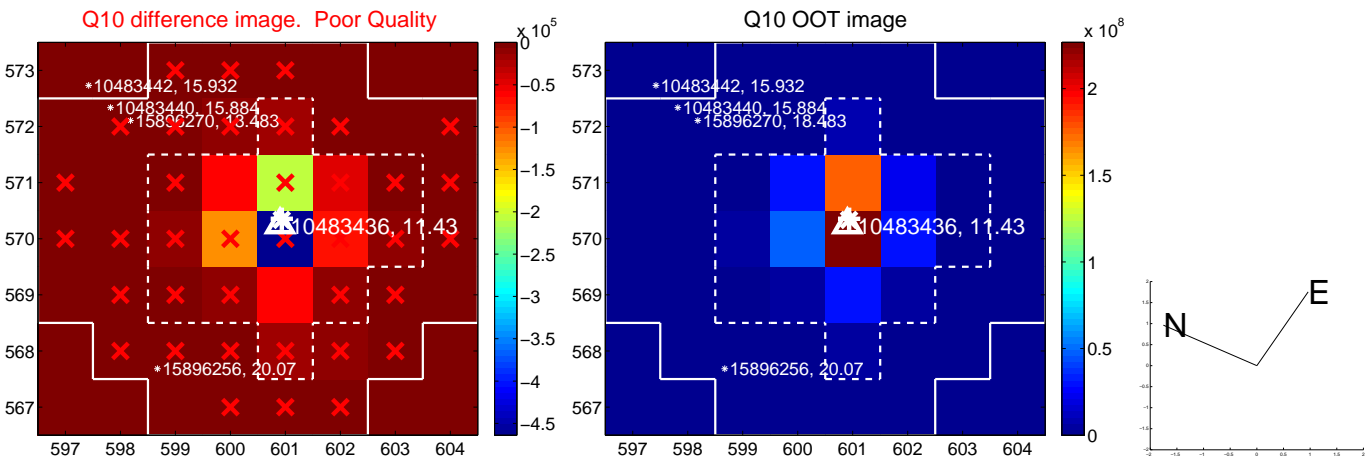
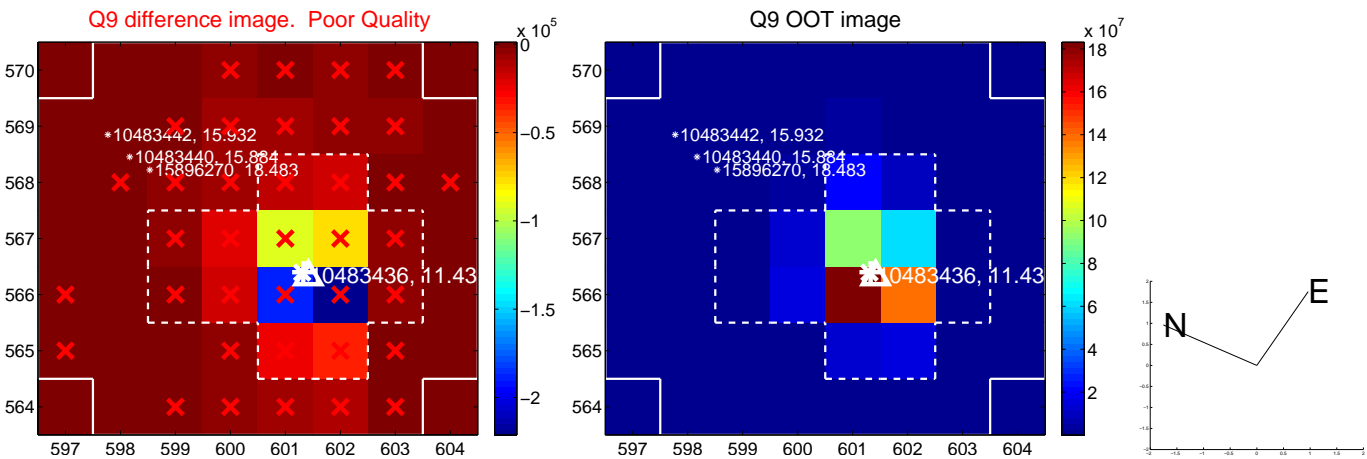
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



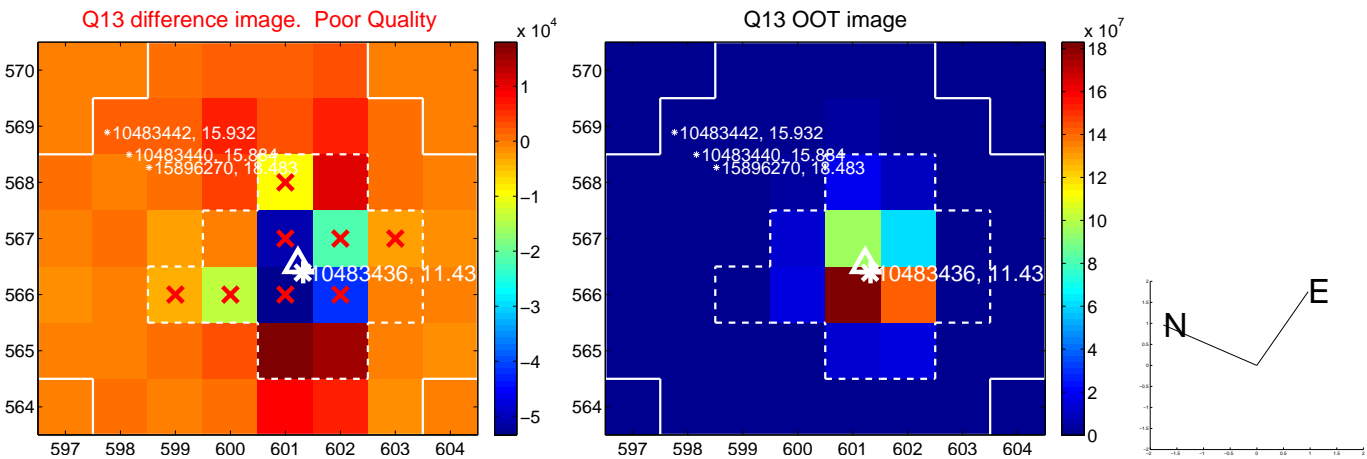
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



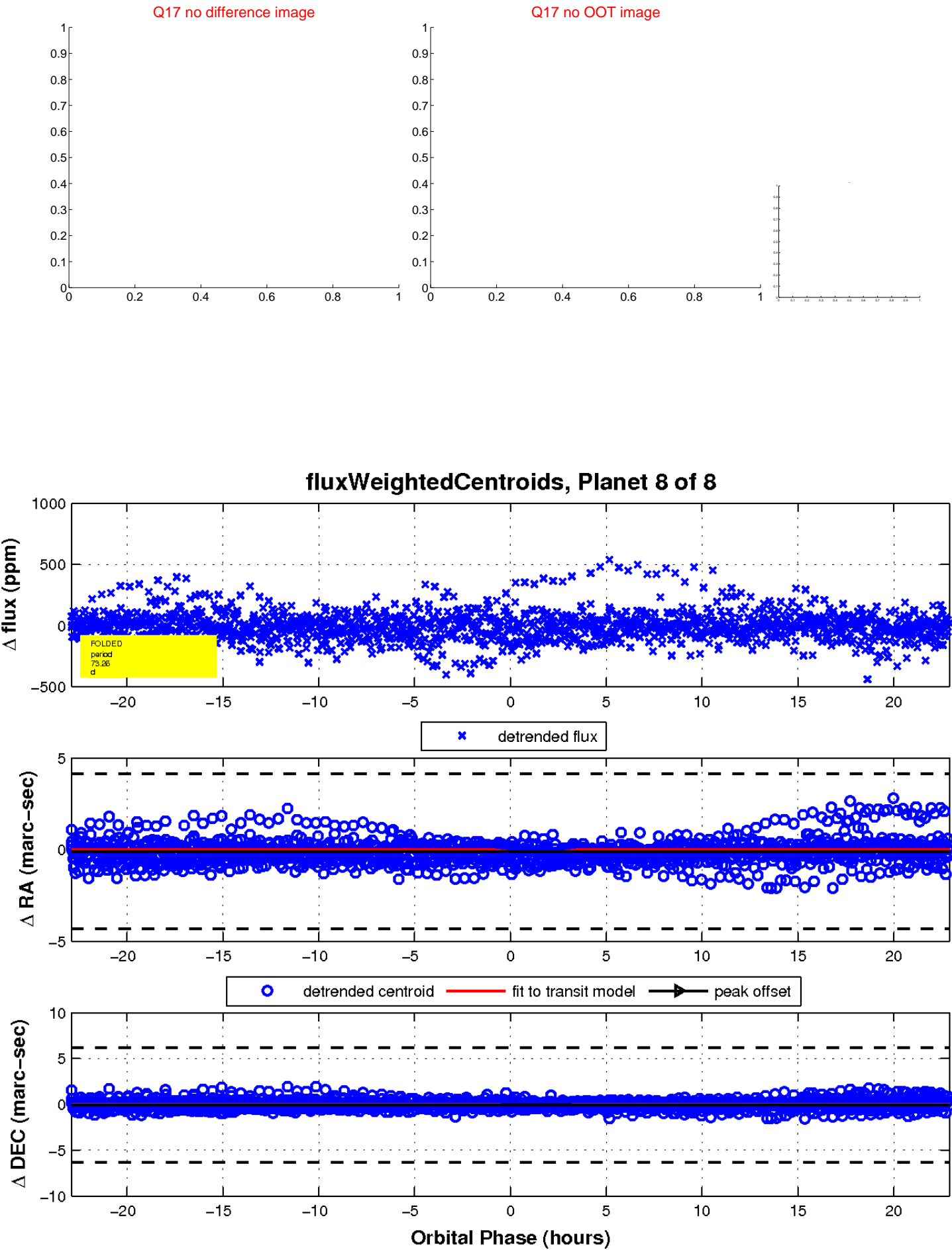
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

