

# KIC 008700506

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008700506-01	OBS	7077.01	43.797335	172.609694	426571.2	4.500	20393.9	-1.0	1.29	6860	61.41	47.25
008700506-02	OBS	No	43.796461	158.912398	410205.3	12.500	12827.6	-1.0	1.29	6860	37.33	47.26
008700506-03	OBS	No	585.006012	391.303276	27742.9	15.000	836.9	-1.0	1.29	6860	21.75	1.49
008700506-04	OBS	No	219.113053	216.099556	27983.8	2.500	540.9	-1.0	1.29	6860	21.88	5.52
008700506-05	OBS	No	43.747990	159.382370	6405.4	15.000	385.0	-1.0	1.29	6860	10.44	47.33
008700506-06	OBS	No	350.637208	172.892505	1215.8	5.643	409.9	24.0	1.29	6860	4.76	2.95
008700506-07	OBS	No	350.401498	435.848436	15759.7	4.500	455.6	-1.0	1.29	6860	16.39	2.95

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008700506-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS
008700506-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS
008700506-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
008700506-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
008700506-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—CENT_NOFITS
008700506-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008700506-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—NO_FITS—CENT_NOFITS

**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.

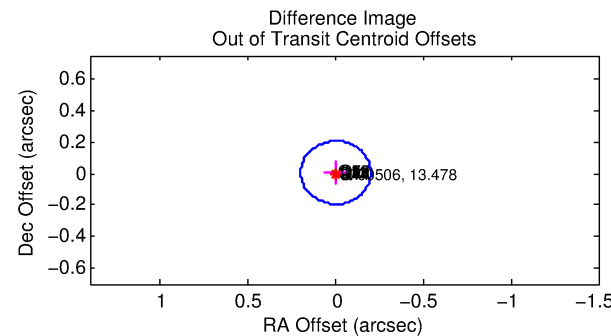
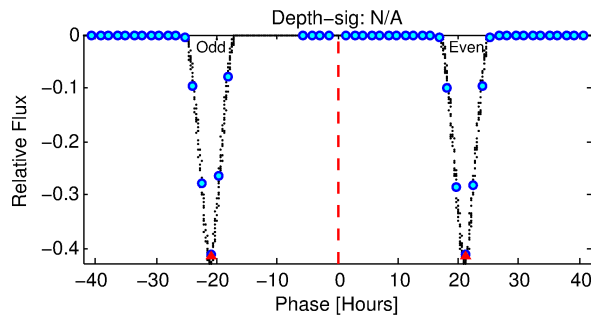
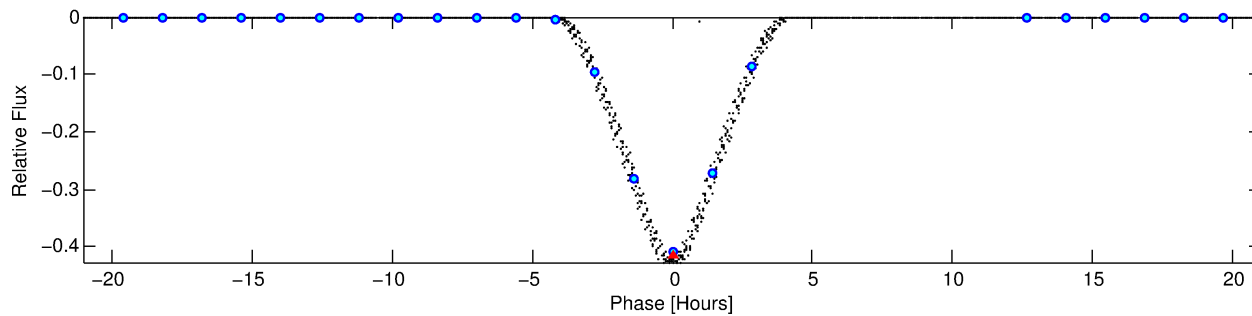
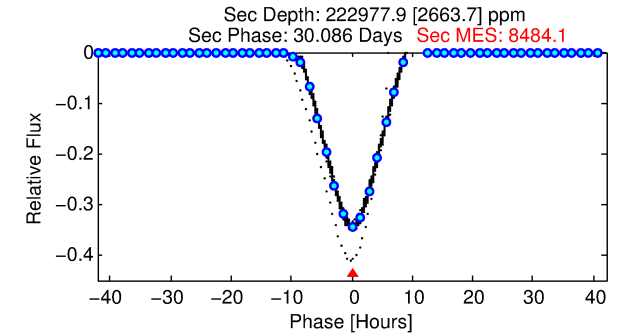
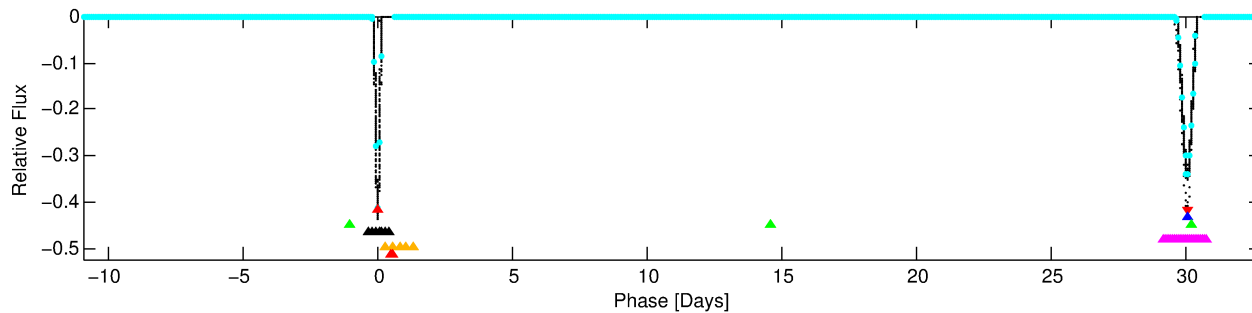
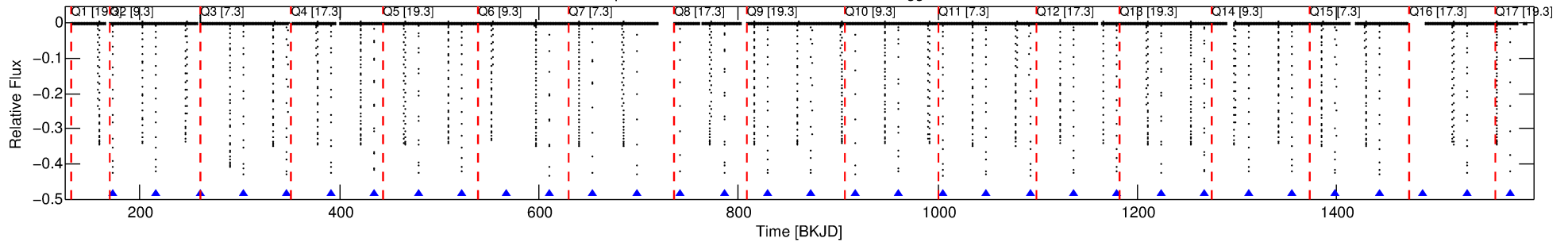
## Ephemeris Match Information For 008700506-01

No Significant Match Found

# DV One-Page Summary

KIC: 8700506 Candidate: 1 of 7 Period: 43.797 d  
KOI: K07077.01 Corr: 0.764

Kp: 13.48 R\*: 1.29 Rs Teff: 6860.0 K Logg: 4.33 Fe/H: -0.100



## TPS TCE Results:

Period = 43.79734 d  
Epoch = 172.6097 BKJD

DV fit results are unavailable

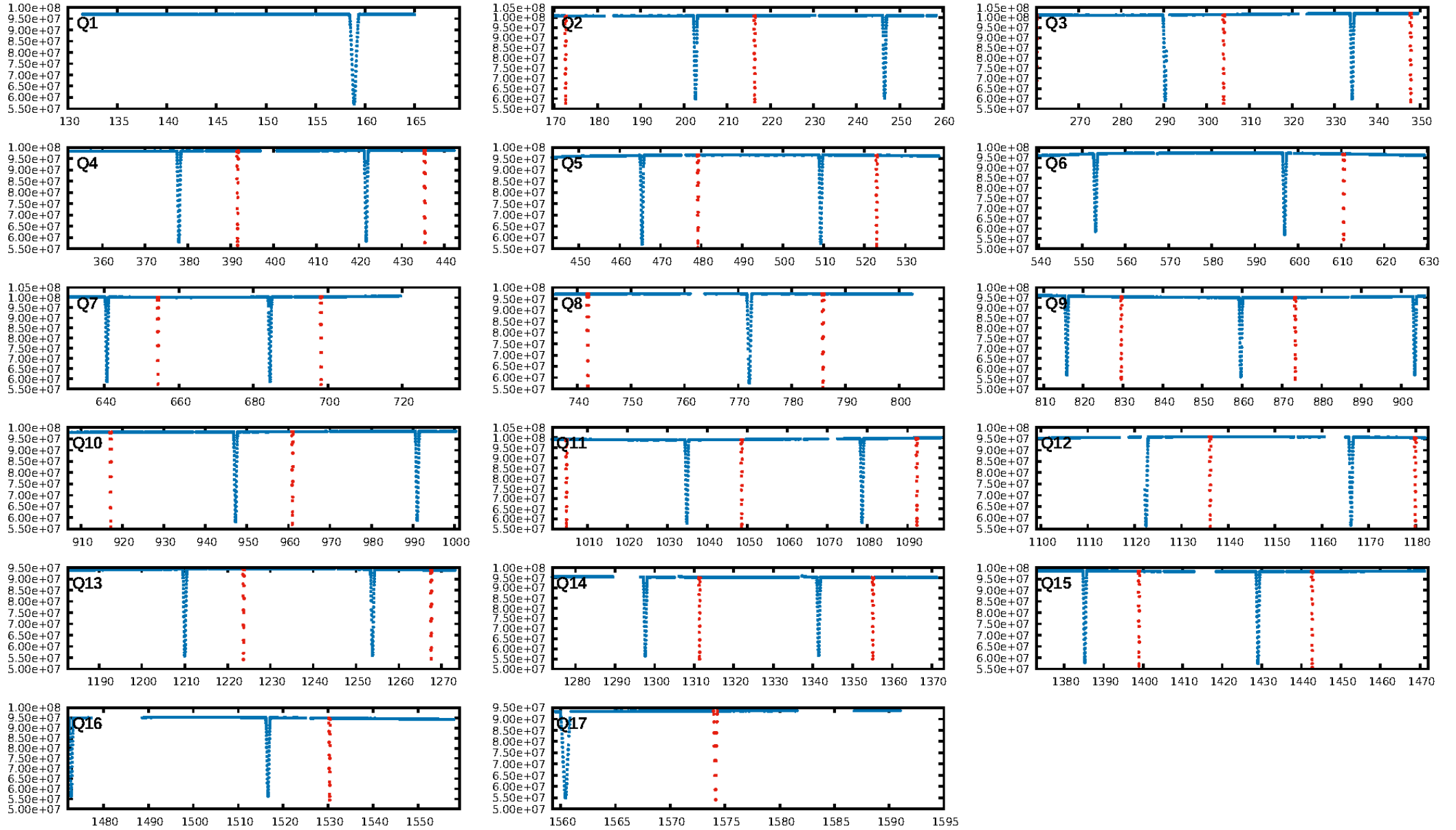
## DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00 $\sigma$ ]  
LongPeriod-sig: 100.0% [817.35 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [30/30]  
GhostDiagnostic-chr: 2.222  
Centroid-sig: 0.0%  
Centroid-so: 0.194 arcsec [549.47 $\sigma$ ]  
OotOffset-rm: 0.008 arcsec [0.11 $\sigma$ ]  
KicOffset-rm: 0.182 arcsec [2.68 $\sigma$ ]  
OotOffset-st: 4/4/4/4 [16]  
KicOffset-st: 4/4/4/4 [16]  
DiffImageQuality-fgm: 1.00 [16/16]  
DiffImageOverlap-fno: 0.88 [14/16]

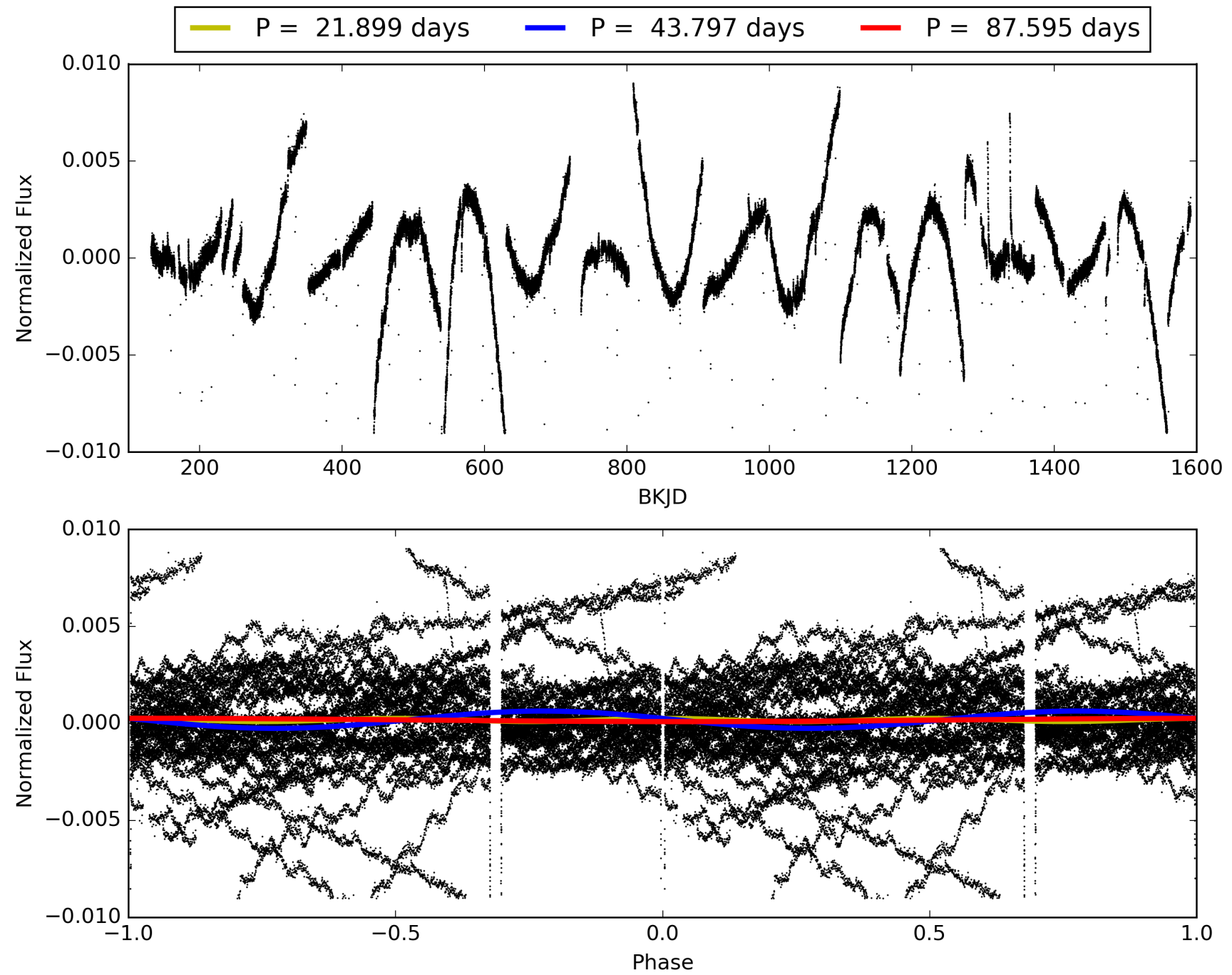
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:21:13 Z

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

# TCE 008700506-01, PDC Light Curves



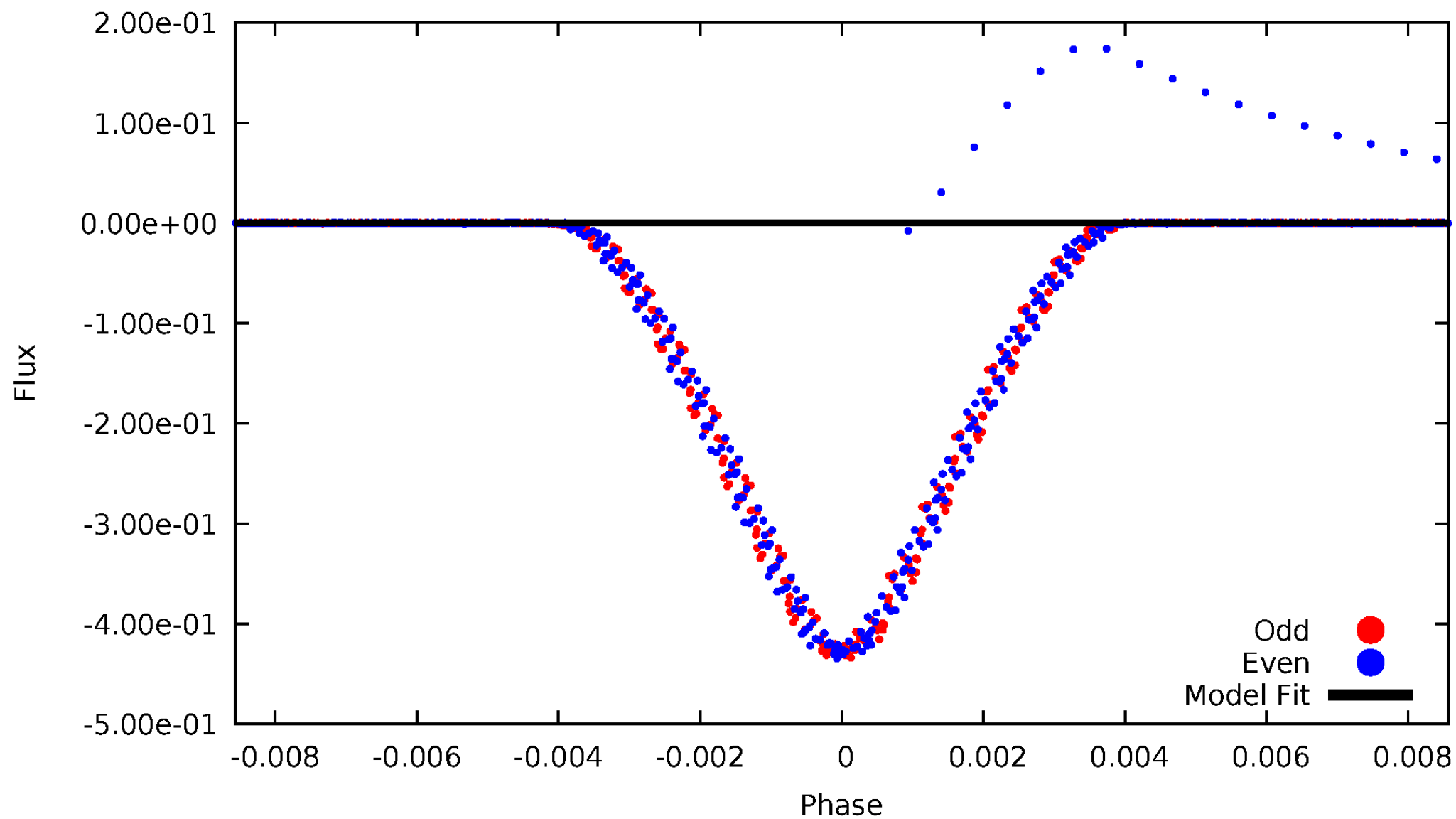
TCE 008700506-01





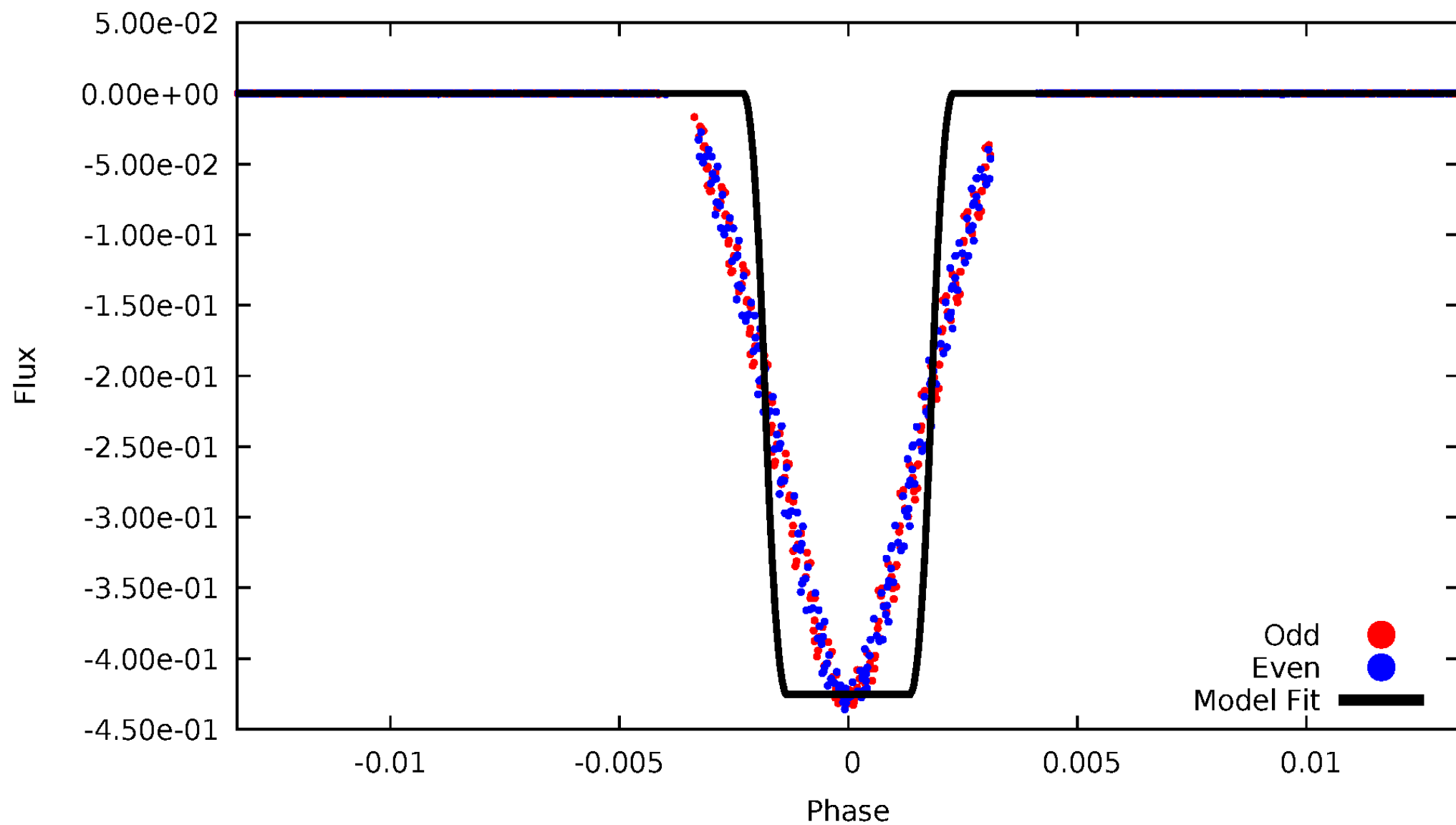
# DV Odd/Even

TCE 008700506-01



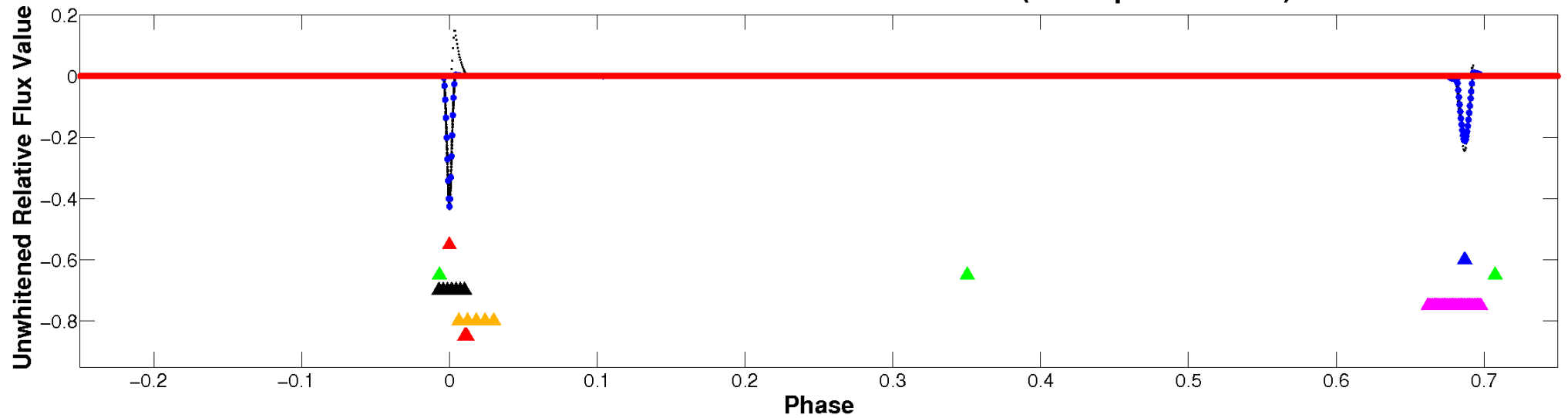
# ALT Odd/Even

TCE 008700506-01

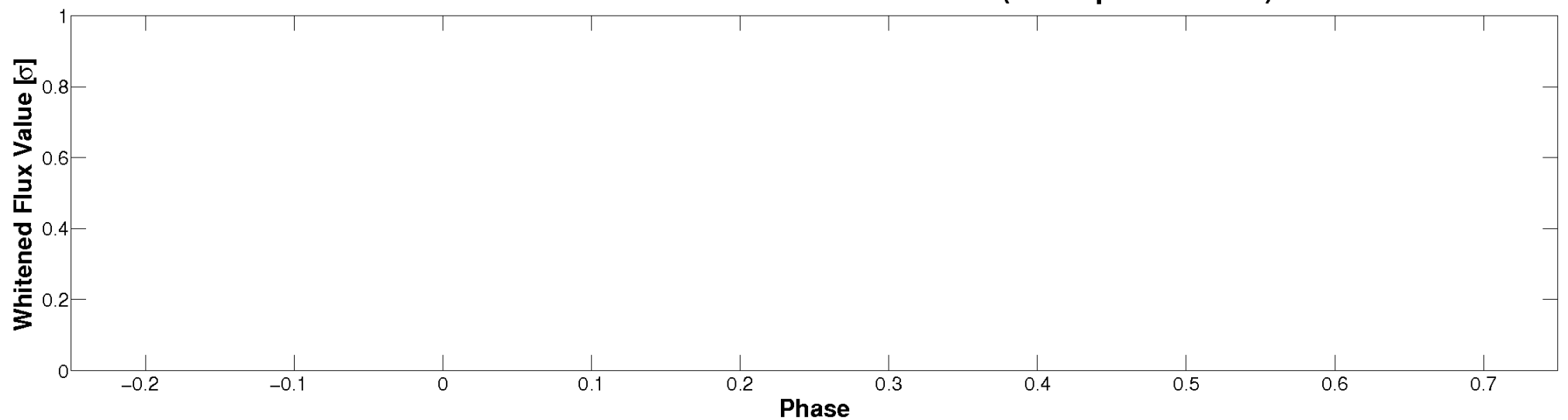


# Non-Whitened Vs. Whitened Light Curve

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

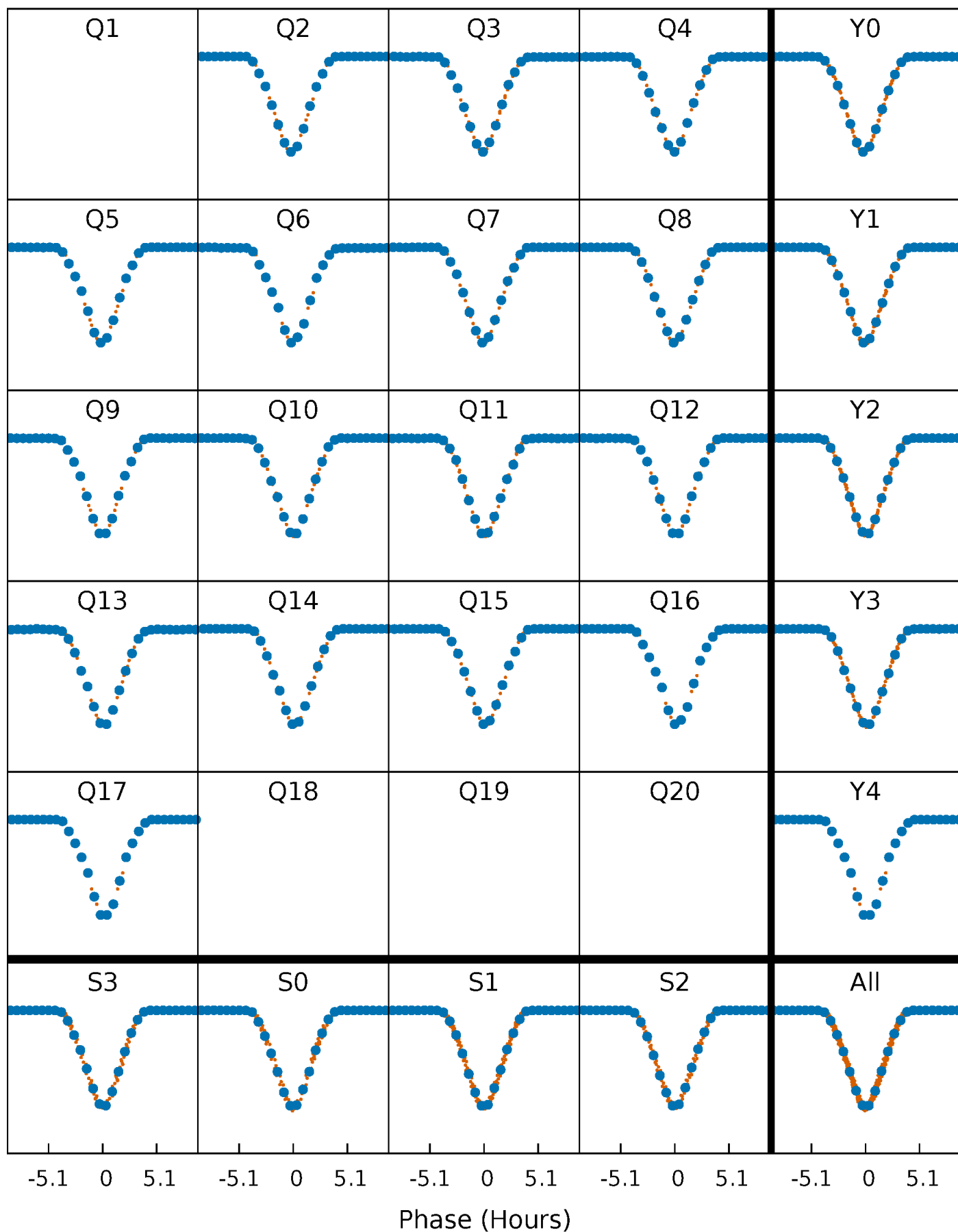


Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)



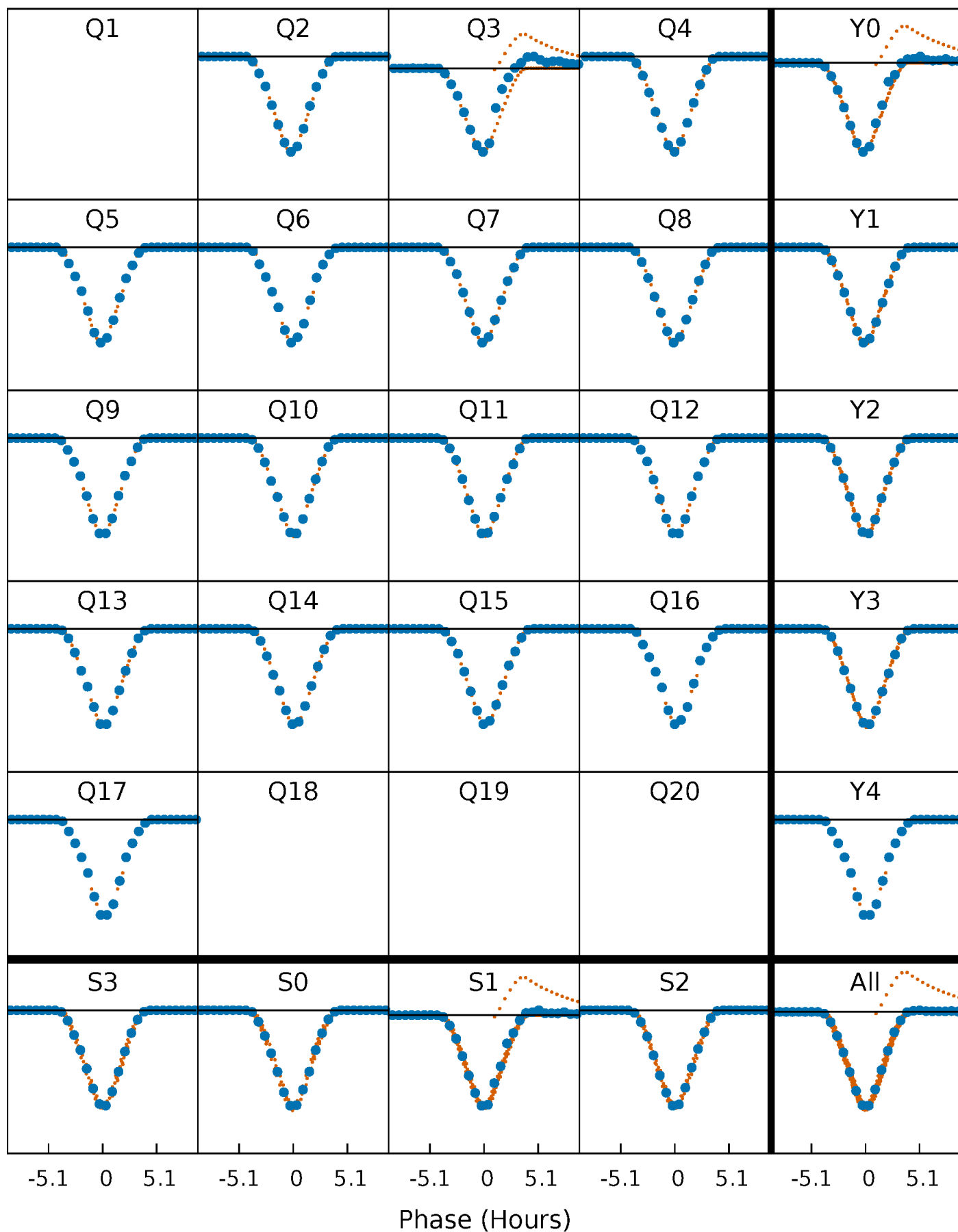
# PDC Quarter-Phased Transit Curves

TCE 008700506-01 P= 43.797335 Days  $T_0=172.609694$  (BKJD)



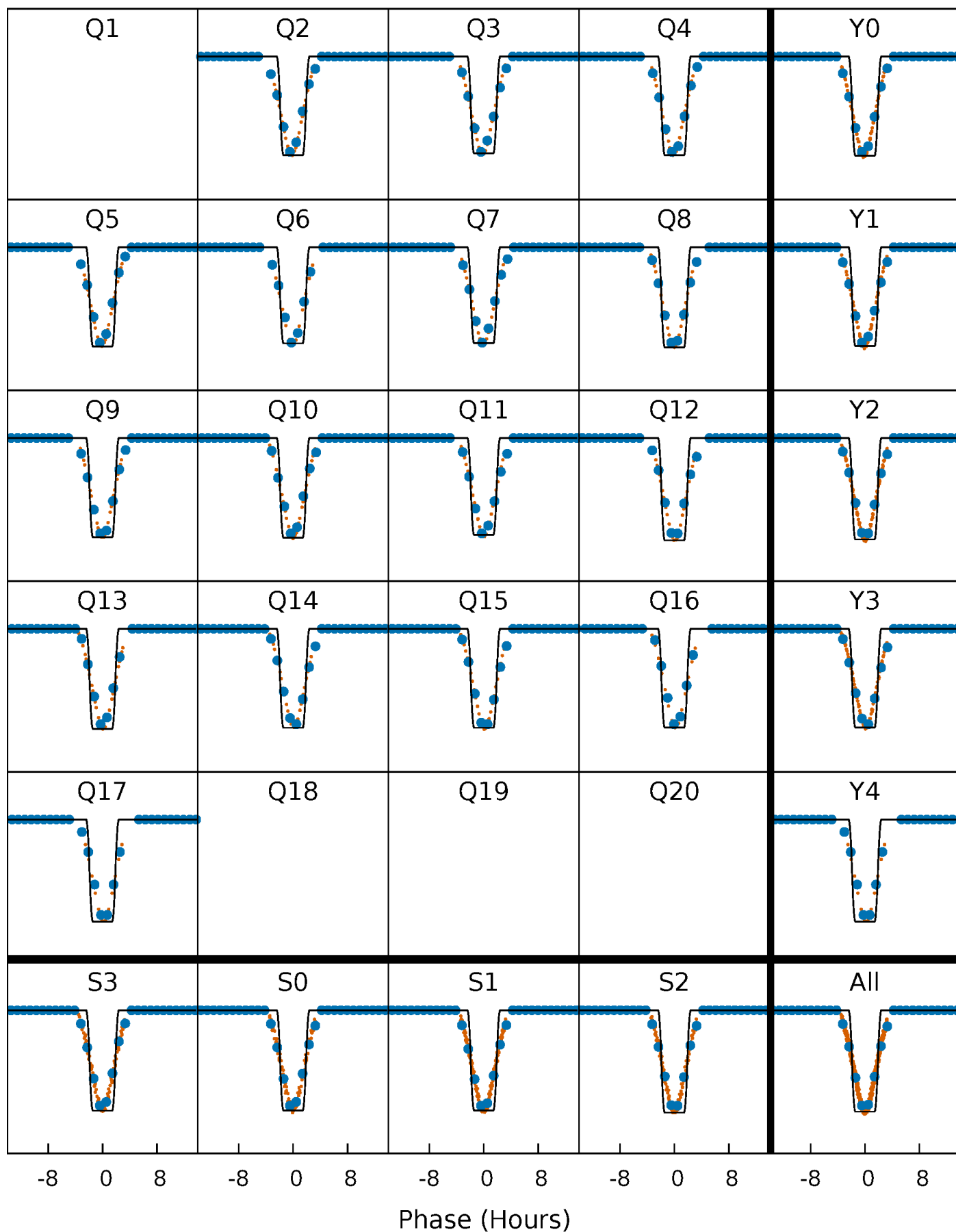
# DV Quarter-Phased Transit Curves

TCE 008700506-01 P= 43.797335 Days  $T_0=172.609694$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

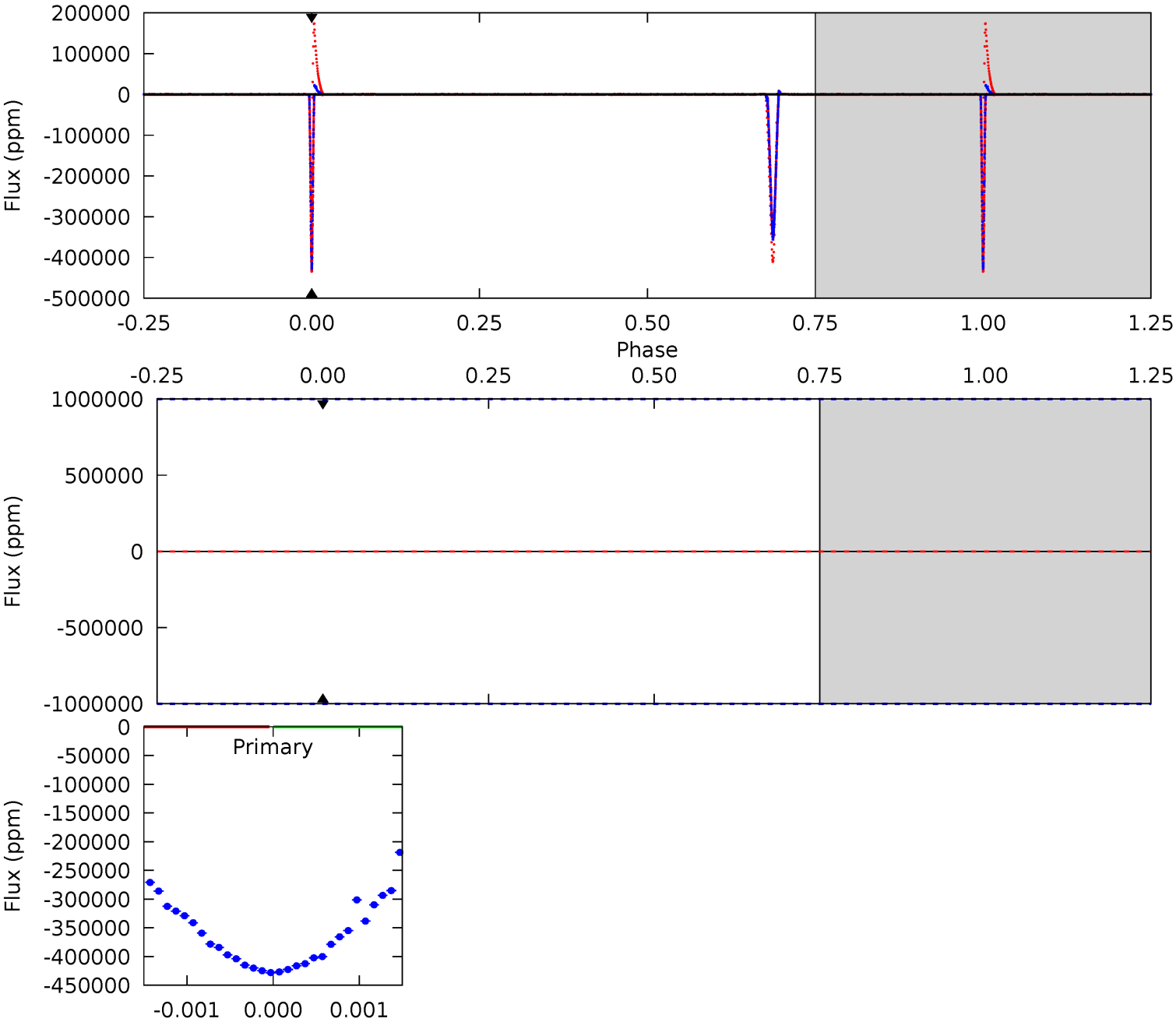
TCE 008700506-01 P= 43.797335 Days  $T_0=172.610030$  (BKJD)



# DV Model-Shift Uniqueness Test

008700506-01, P = 43.797335 Days, E = 128.812359 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

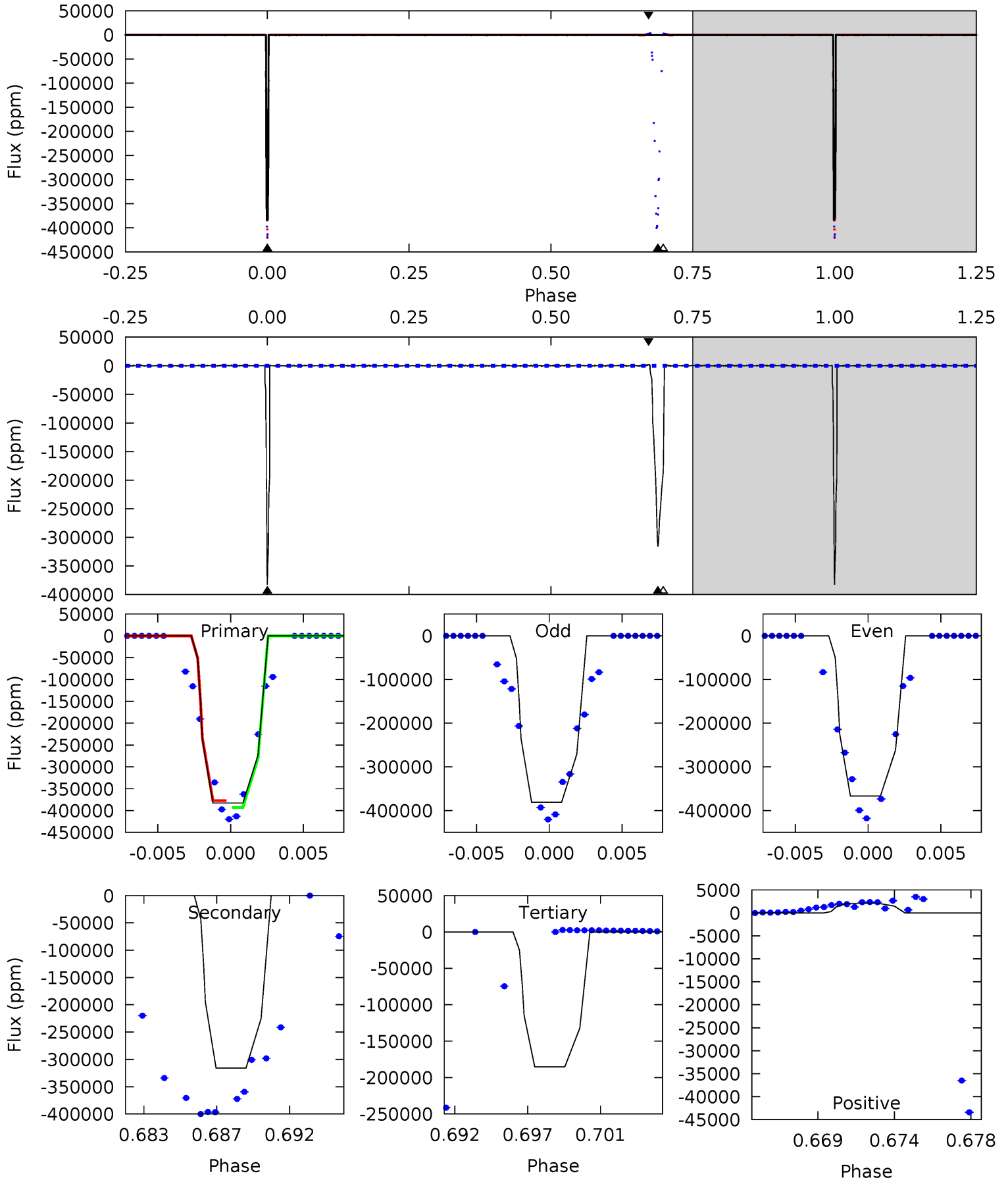




# Alt Model-Shift Uniqueness Test

008700506-01, P = 43.797335 Days, E = 128.812695 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
1214	1001	587.7	6.58	5.18	2.84	6.48	626.2	1207	413.6	994.7	11.8	1.00	0.01	0



### Stellar Parameters For KIC 008700506

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6860^{+167}_{-286}$	$4.326^{+0.066}_{-0.154}$	$-0.100^{+0.250}_{-0.350}$	$1.292^{+0.312}_{-0.144}$	$1.300^{+0.154}_{-0.188}$	$0.849^{+0.247}_{-0.381}$
	+2%/-4%	+2%/-4%	+250%/-350%	+24%/-11%	+12%/-14%	+29%/-45%
Source	PHO1	FLK73	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 008700506-01 / KOI 7077.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 1000000$	$63.55^{+15.67}_{-15.31}$	$944^{+54}_{-44}$	$3303^{+2693}_{-8963}$	$52^{+1039}_{-906}$
Alt.	$-315835 \pm 315$	$94.15^{+16.88}_{-16.74}$	$941^{+54}_{-45}$	$6974^{+811}_{-563}$	$1971^{+899}_{-534}$

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

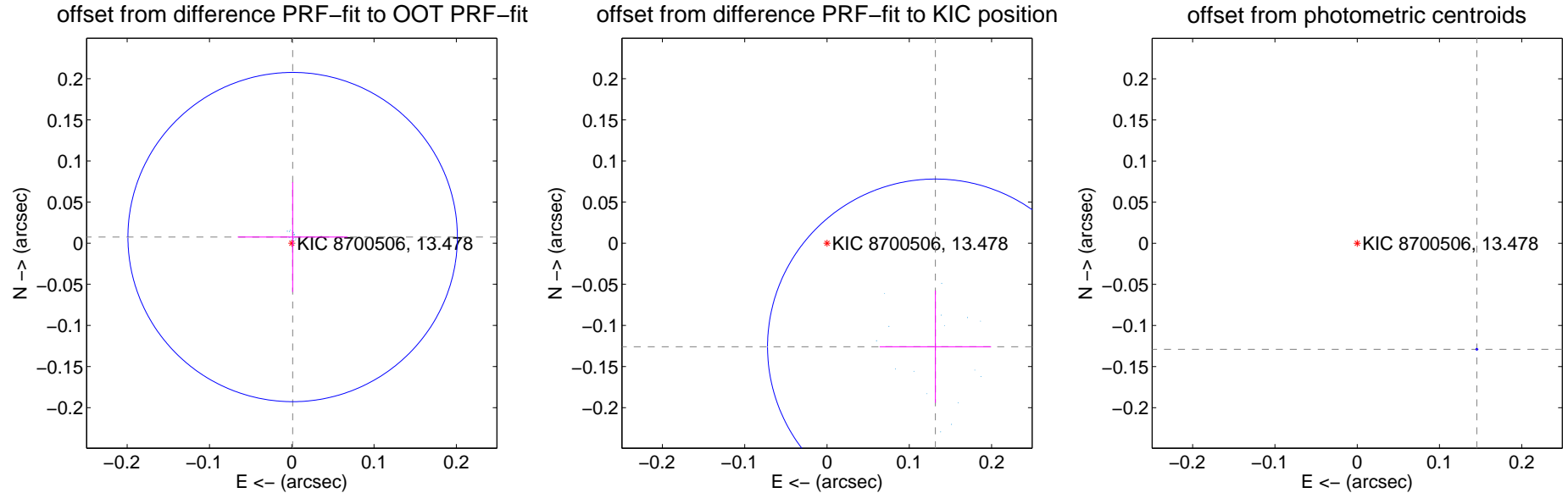
## DV Centroid Data

Supplemental centroid analysis for 008700506-01. Kepler magnitude: 13.48. Transit SNR -1.00

There are 16 quarters with good PRF difference image offsets

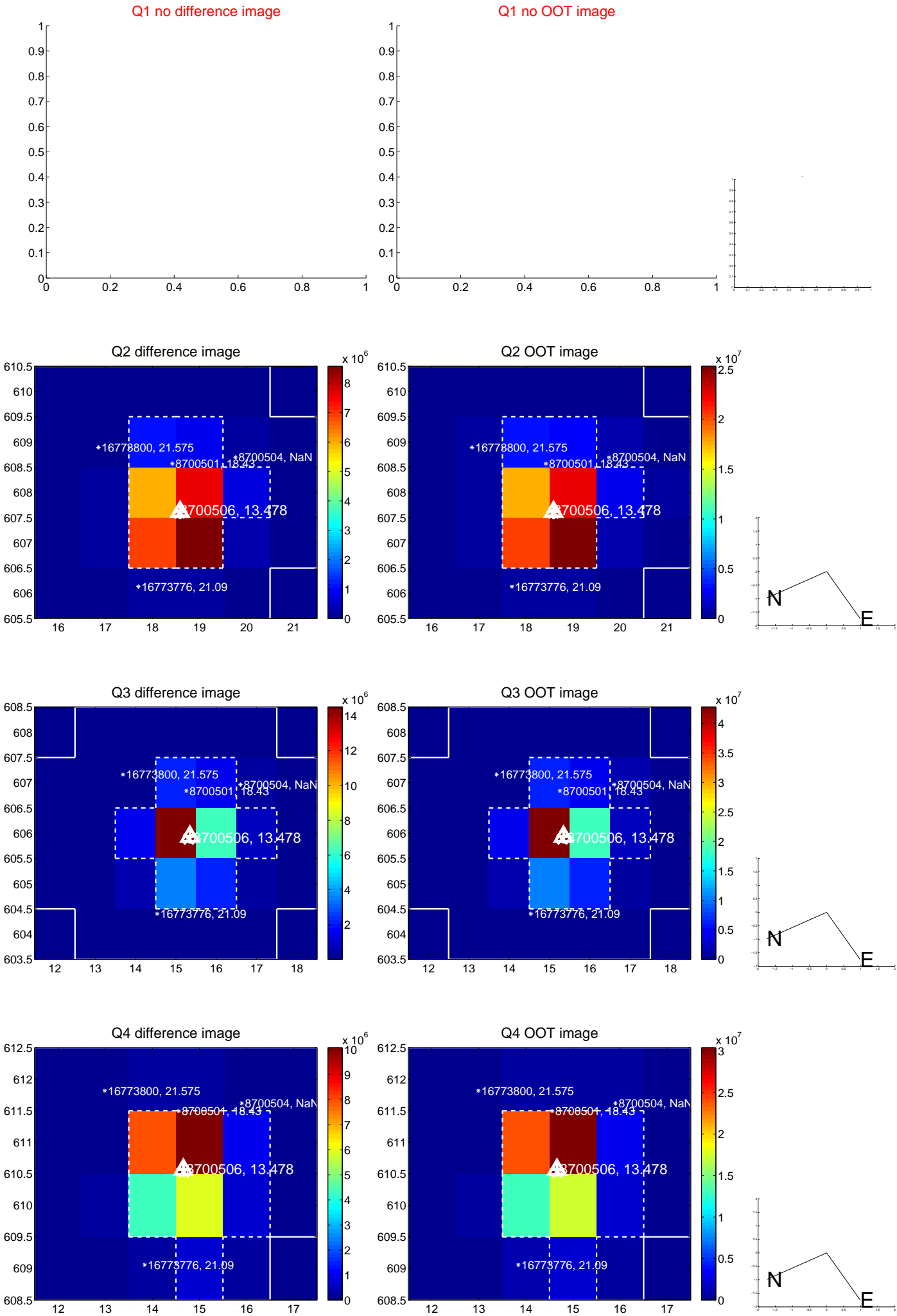
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.008 \pm 0.067$	0.11	$-0.001 \pm 0.067$	$0.007 \pm 0.067$
PRF-fit source offset from KIC position	$0.182 \pm 0.068$	2.68	$-0.132 \pm 0.068$	$-0.126 \pm 0.068$
photometric centroid source offset	$0.19 \pm 0.00$	549.47	$-0.15 \pm 0.00$	$-0.13 \pm 0.00$

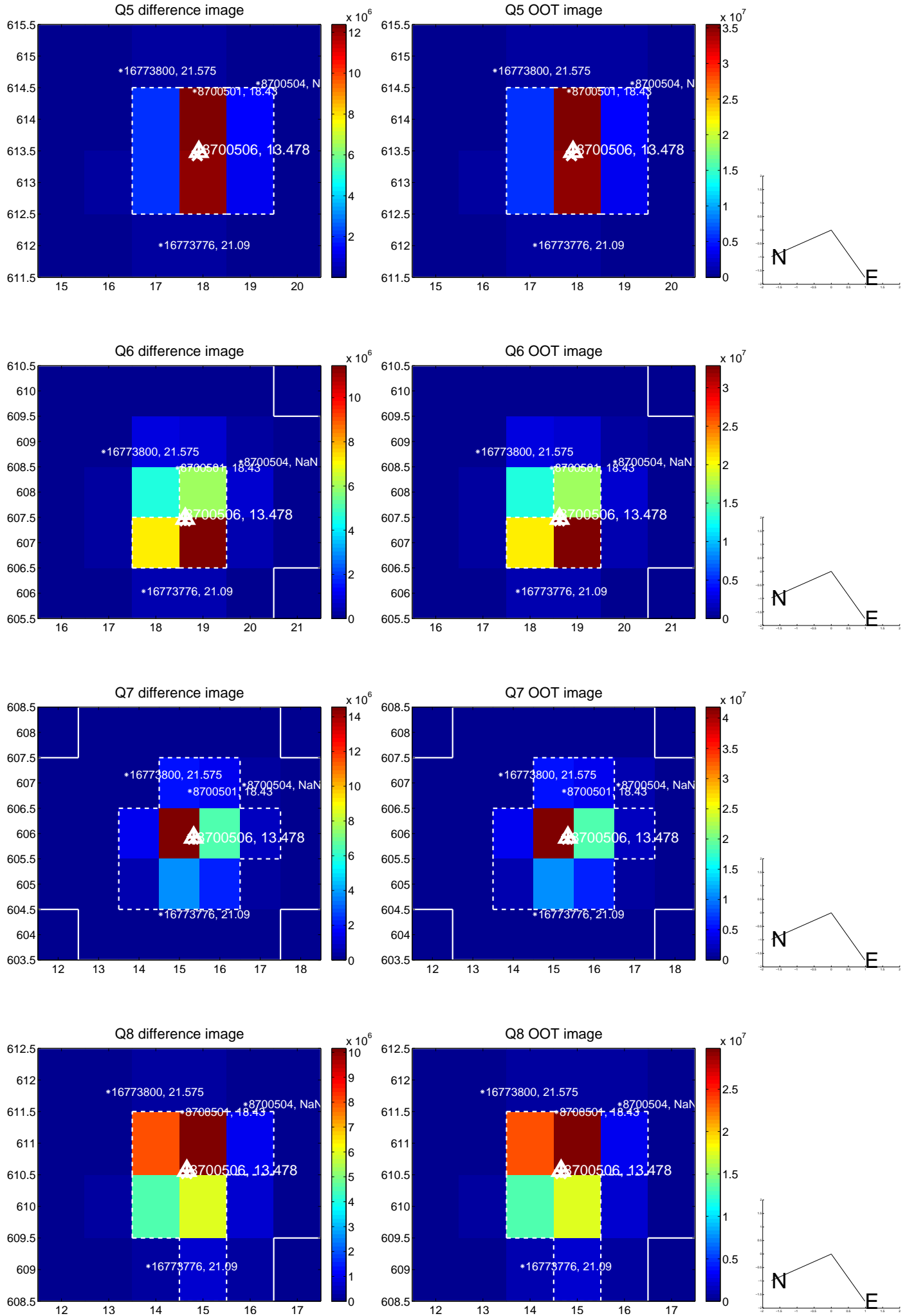


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

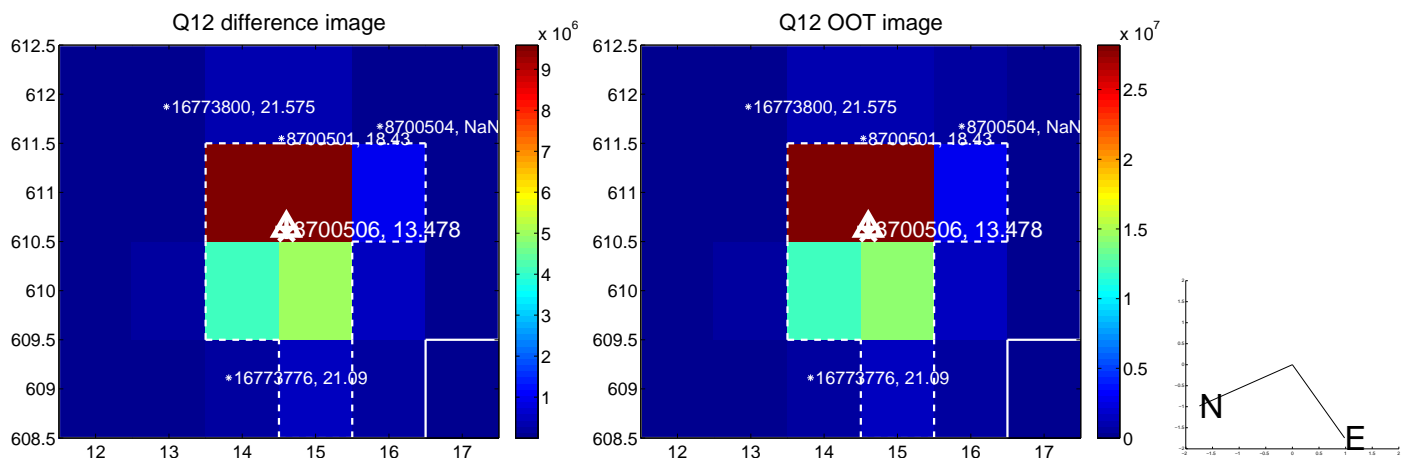
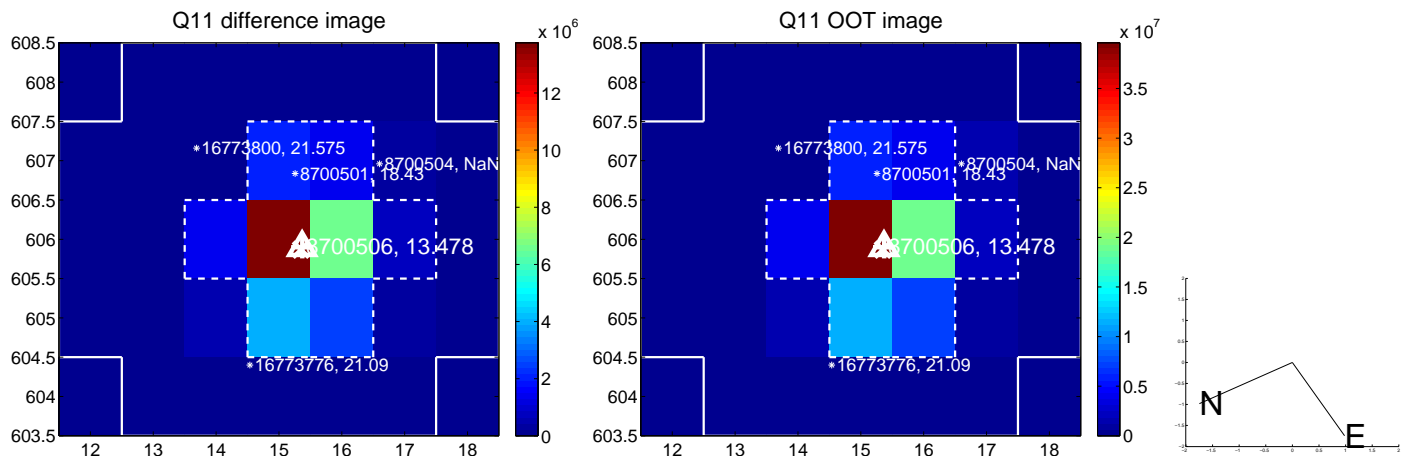
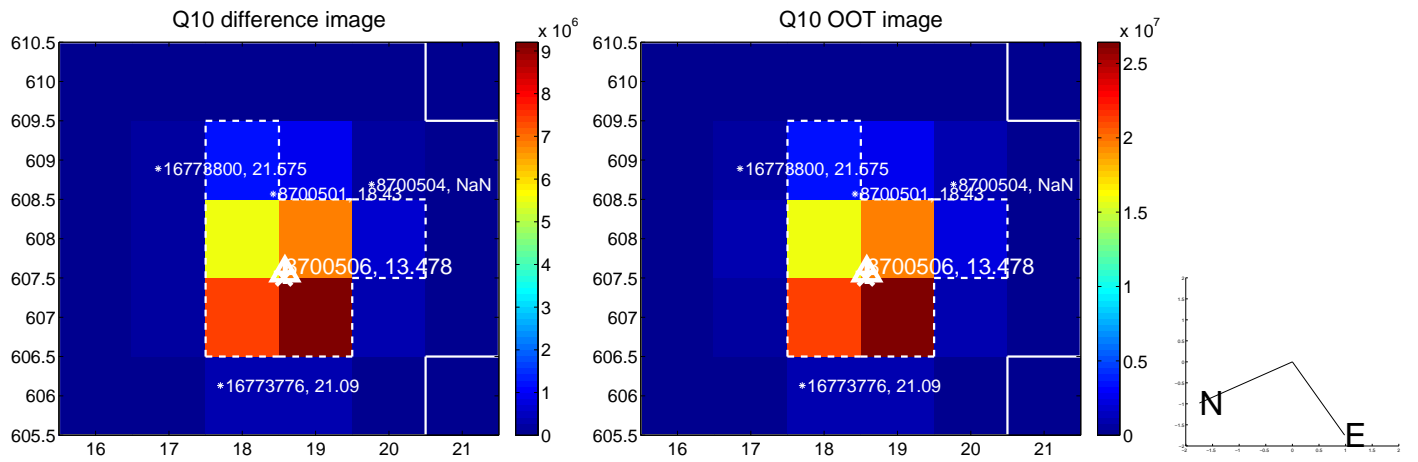
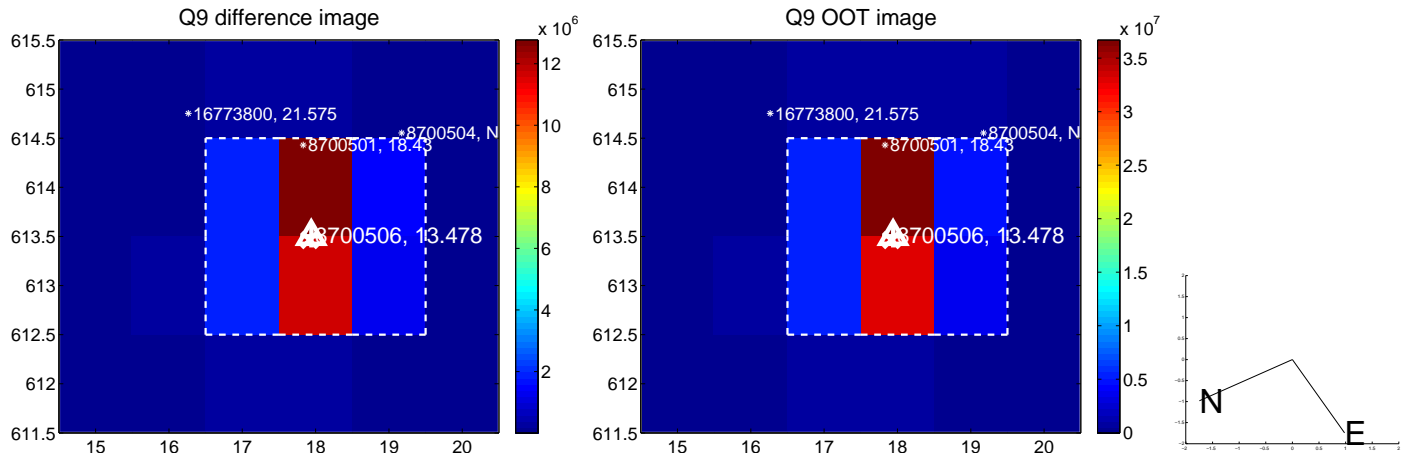
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



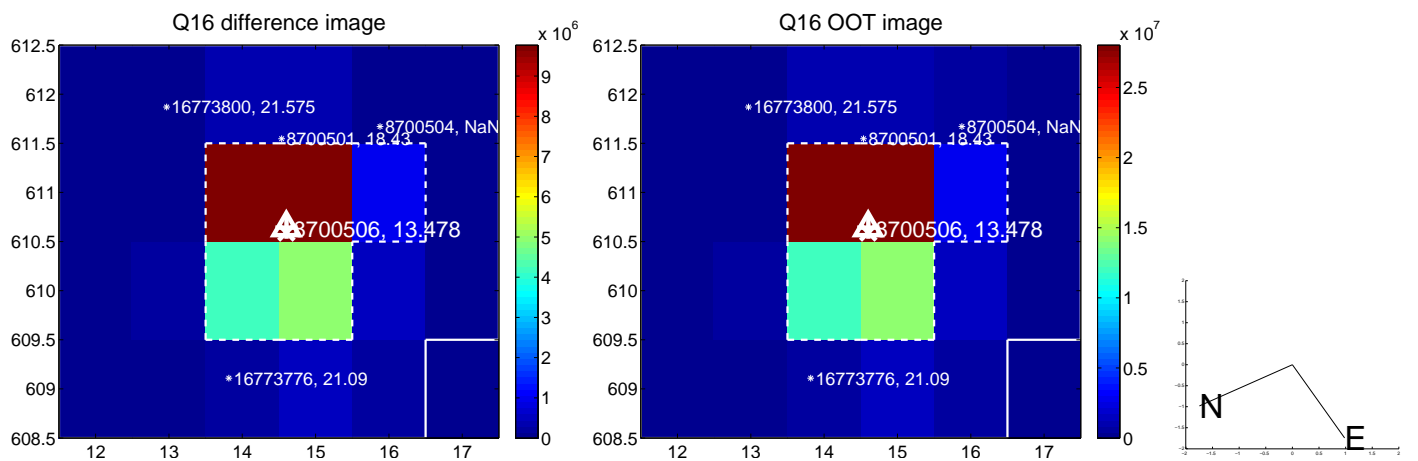
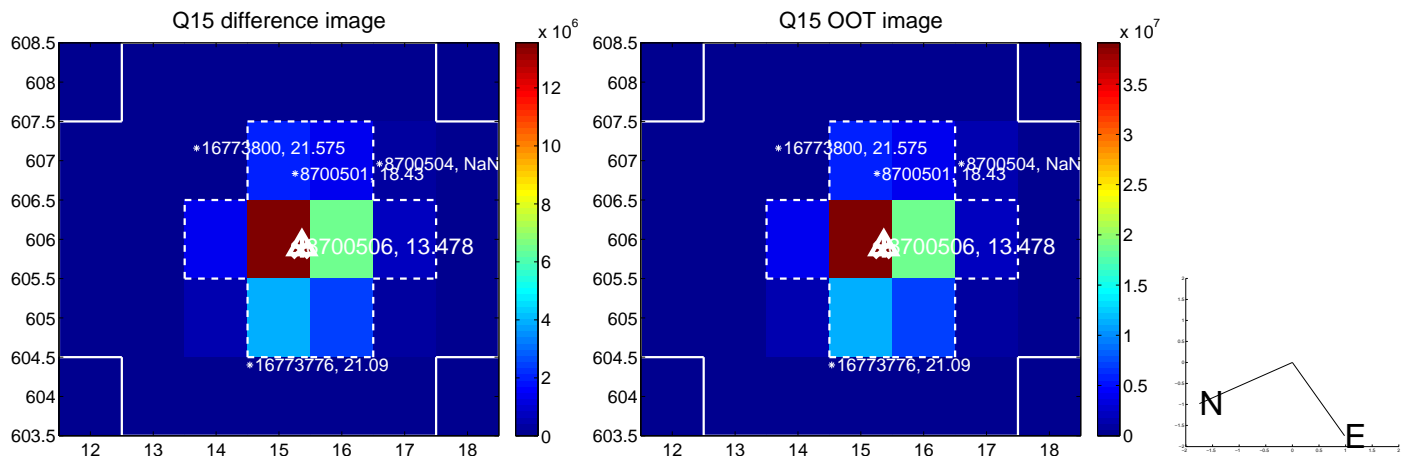
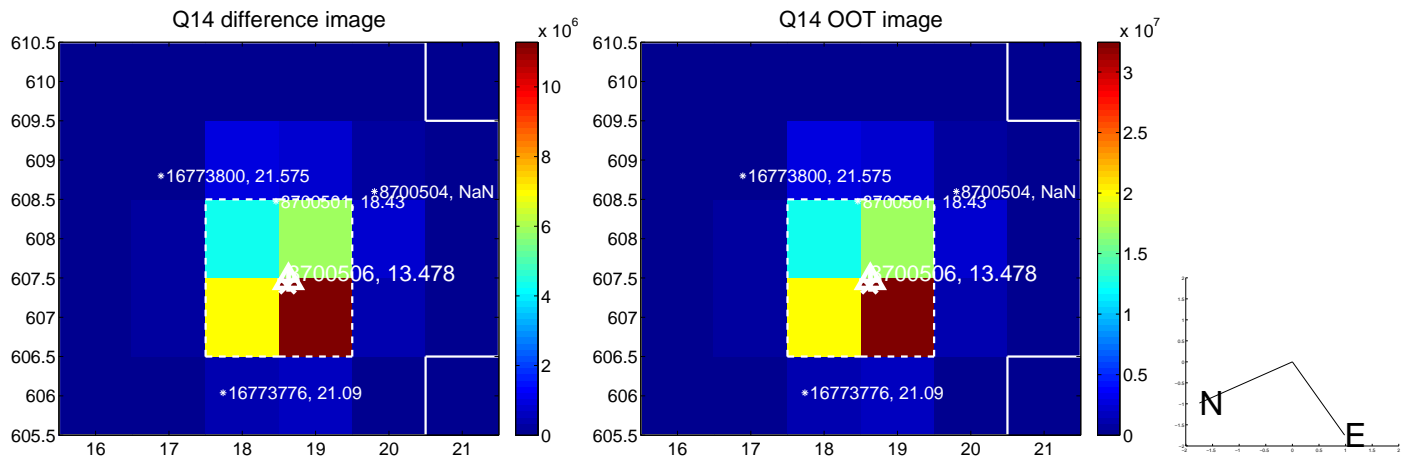
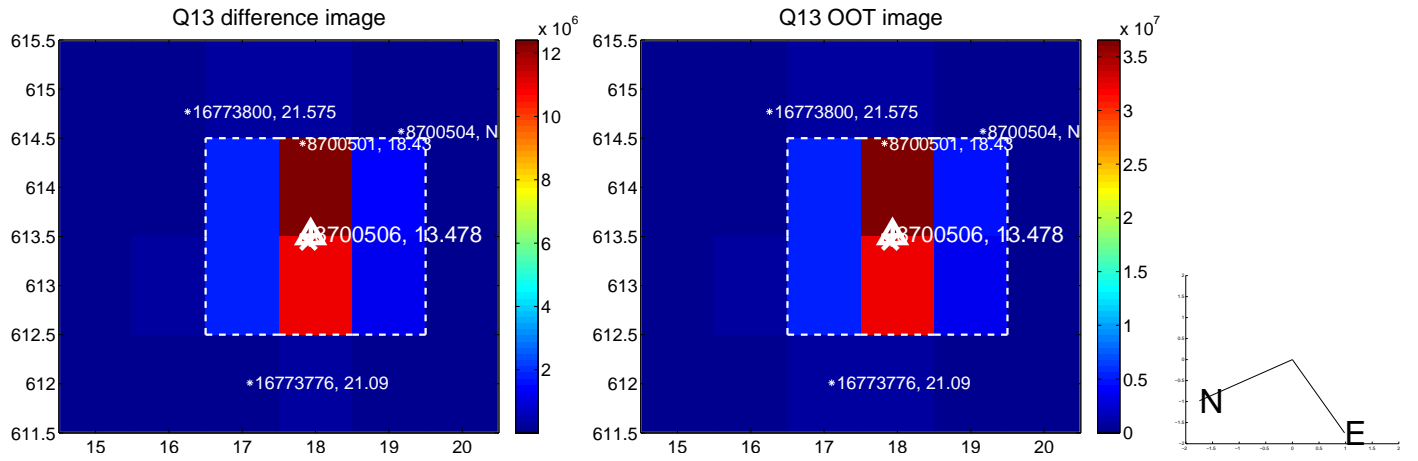
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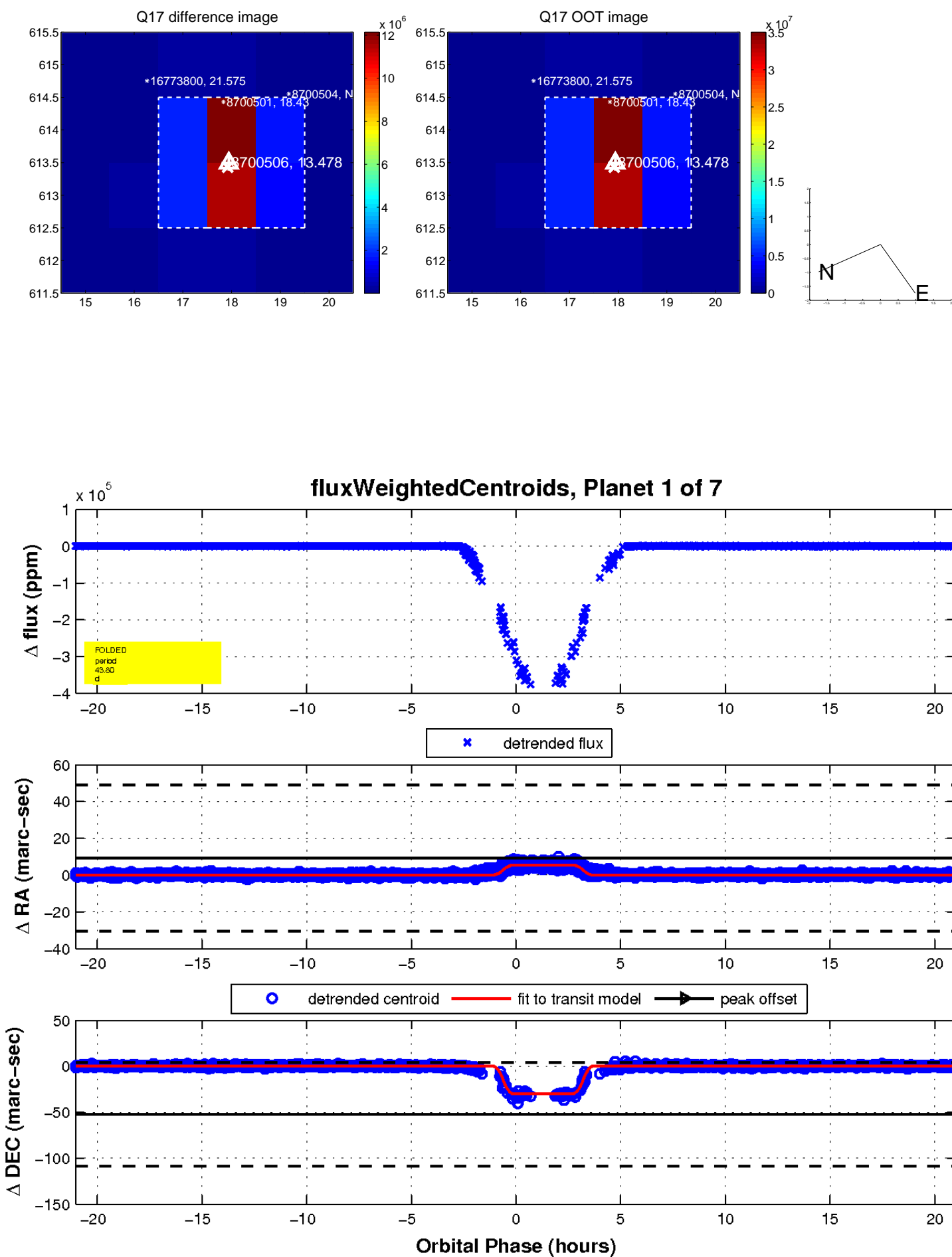


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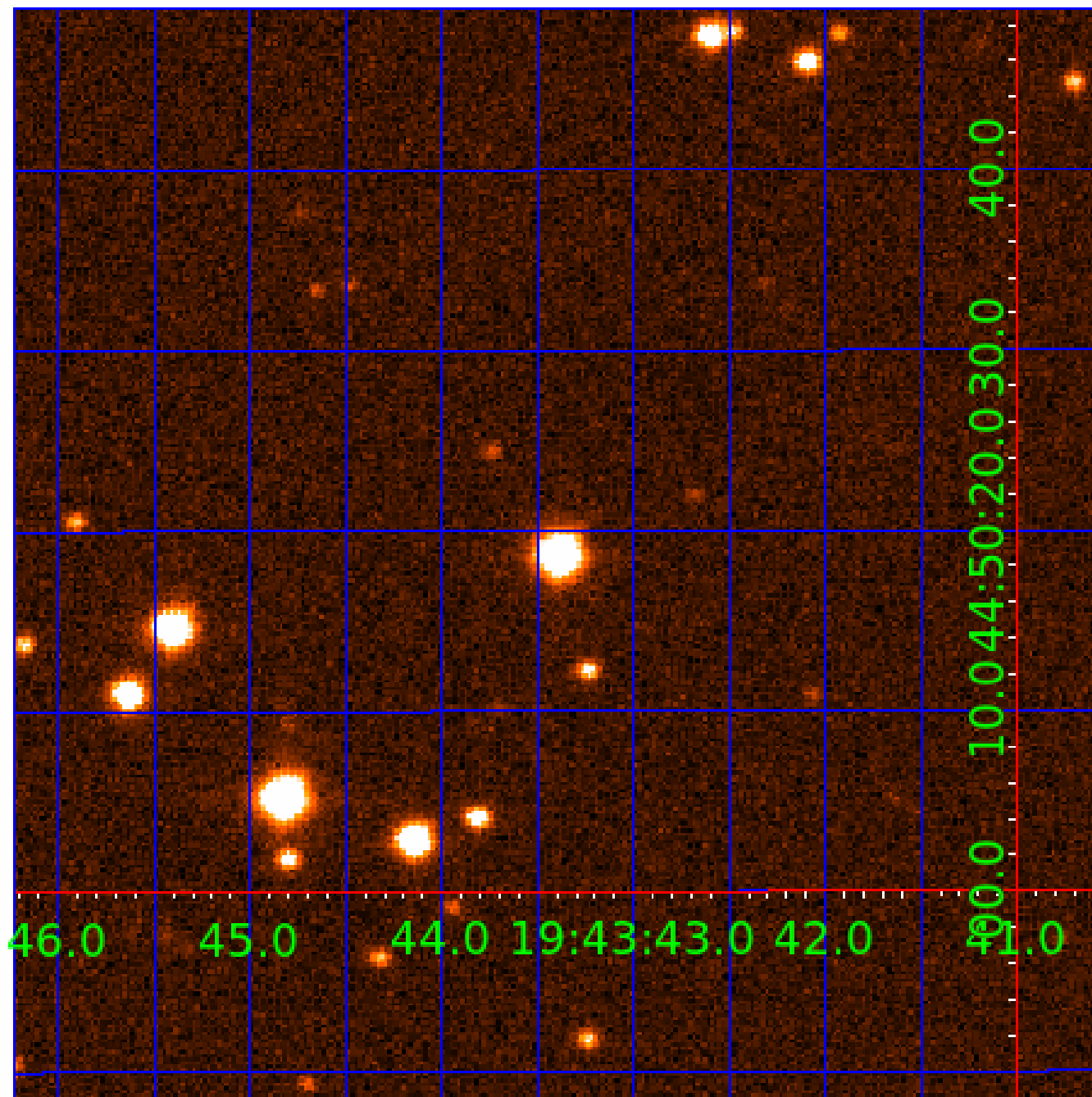


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 008700506

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	$R_{\star}$ ( $R_{\odot}$ )	$T_{\star}$ (K)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
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008700506-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS
008700506-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
008700506-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
008700506-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—CENT_NOFITS
008700506-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008700506-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—NO_FITS—CENT_NOFITS

**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 008700506-02

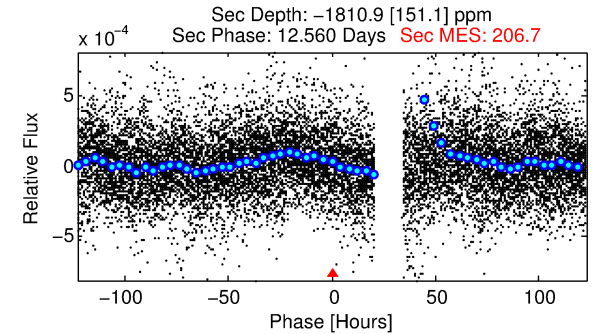
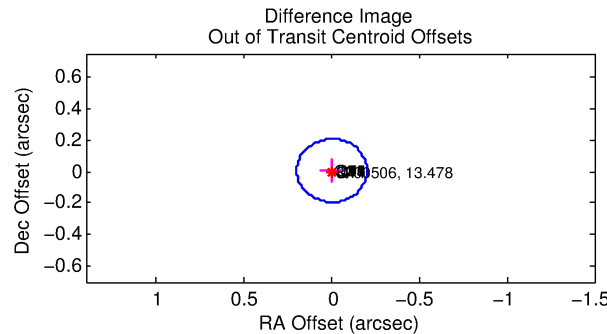
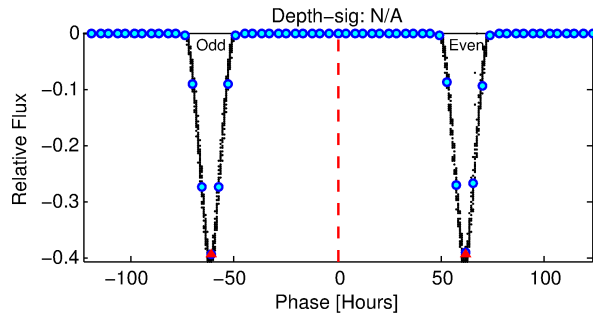
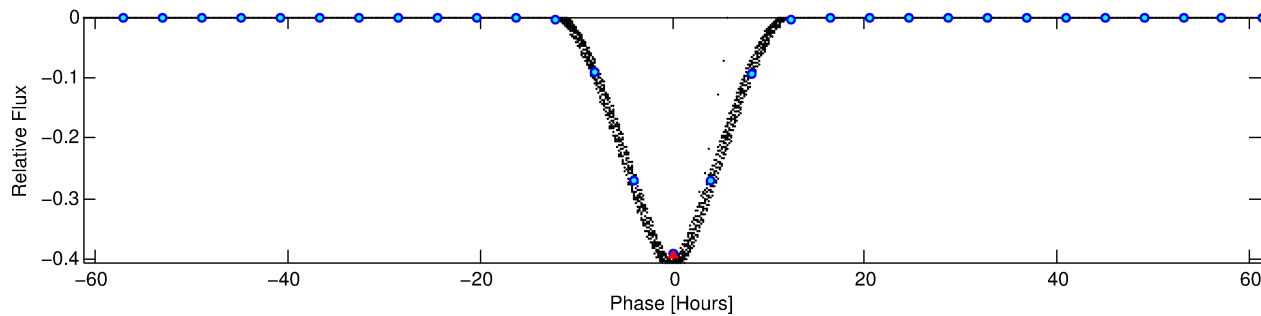
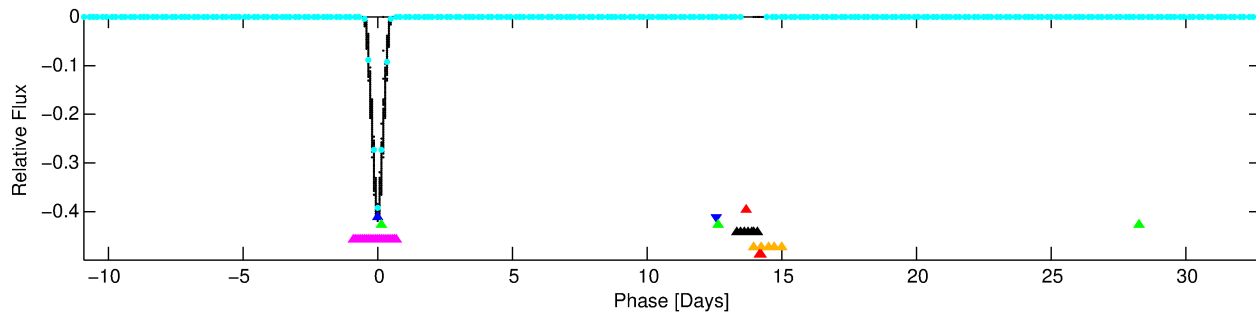
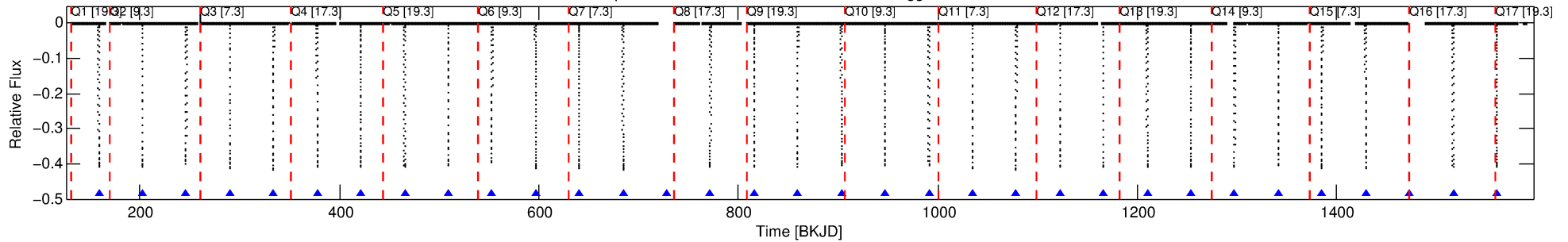
No Significant Match Found

# DV One-Page Summary

KIC: 8700506 Candidate: 2 of 7 Period: 43.796 d

KOI: K07077 Corr: No Ephemeris Match

Kp: 13.48 R\*: 1.29 Rs Teff: 6860.0 K Logg: 4.33 Fe/H: -0.100



## TPS TCE Results:

Period = 43.79646 d  
Epoch = 158.9124 BKJD

DV fit results are unavailable

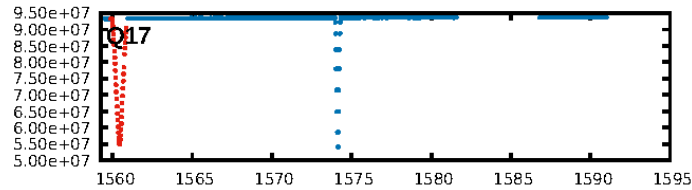
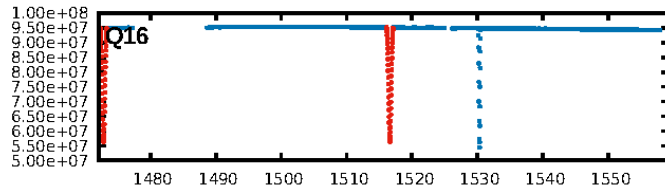
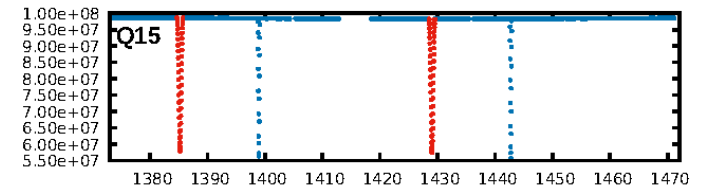
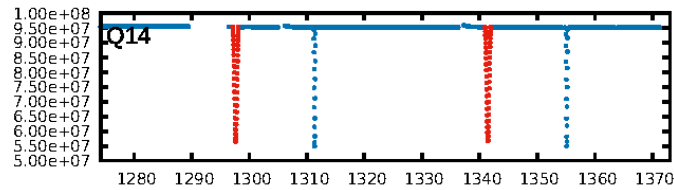
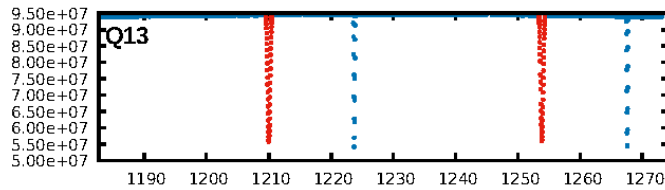
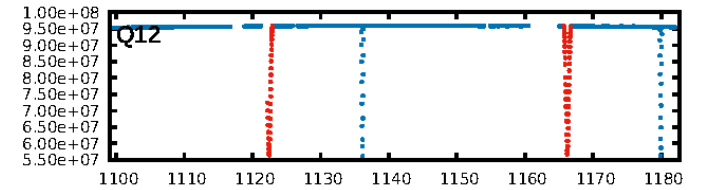
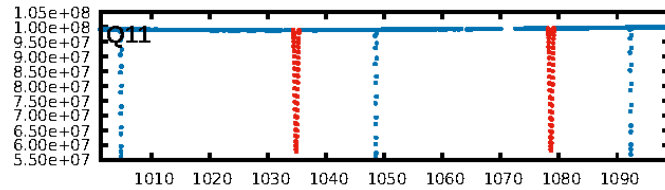
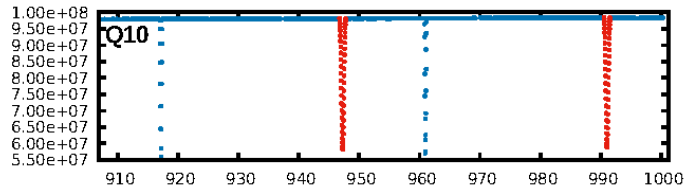
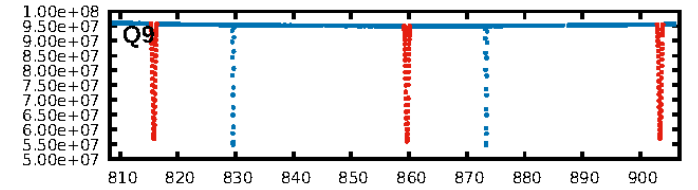
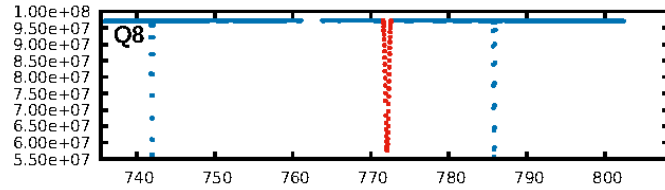
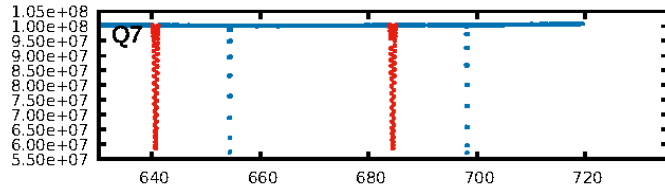
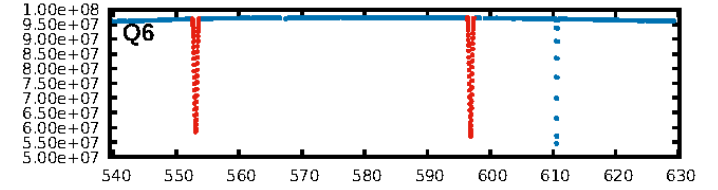
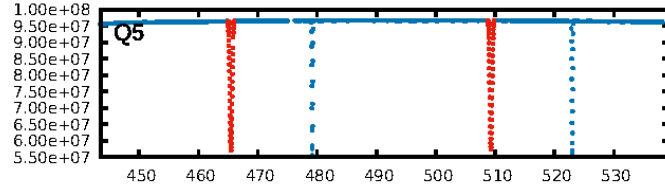
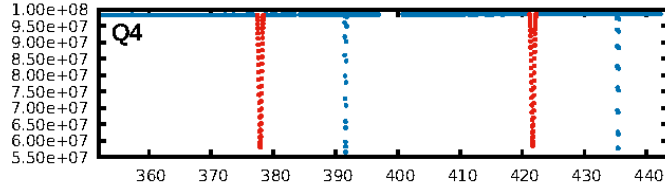
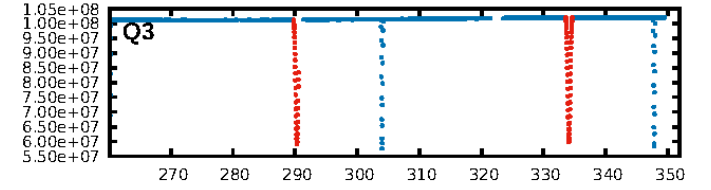
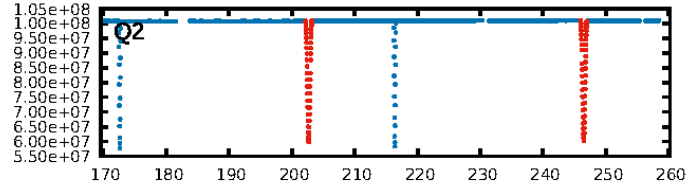
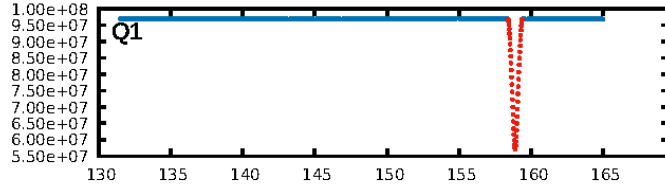
## DV Diagnostic Results:

ShortPeriod-sig: 4.8% [0.06σ]  
LongPeriod-sig: 0.1% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [29/29]  
GhostDiagnostic-chr: 2.027  
Centroid-sig: 0.0%  
Centroid-so: 0.195 arcsec [666.90σ]  
OotOffset-rm: 0.008 arcsec [0.12σ]  
KicOffset-rm: 0.195 arcsec [2.85σ]  
OotOffset-st: 4/4/2/4 [14]  
KicOffset-st: 4/4/2/4 [14]  
DiffImageQuality-fgm: 1.00 [14/14]  
DiffImageOverlap-fno: 0.00 [0/14]

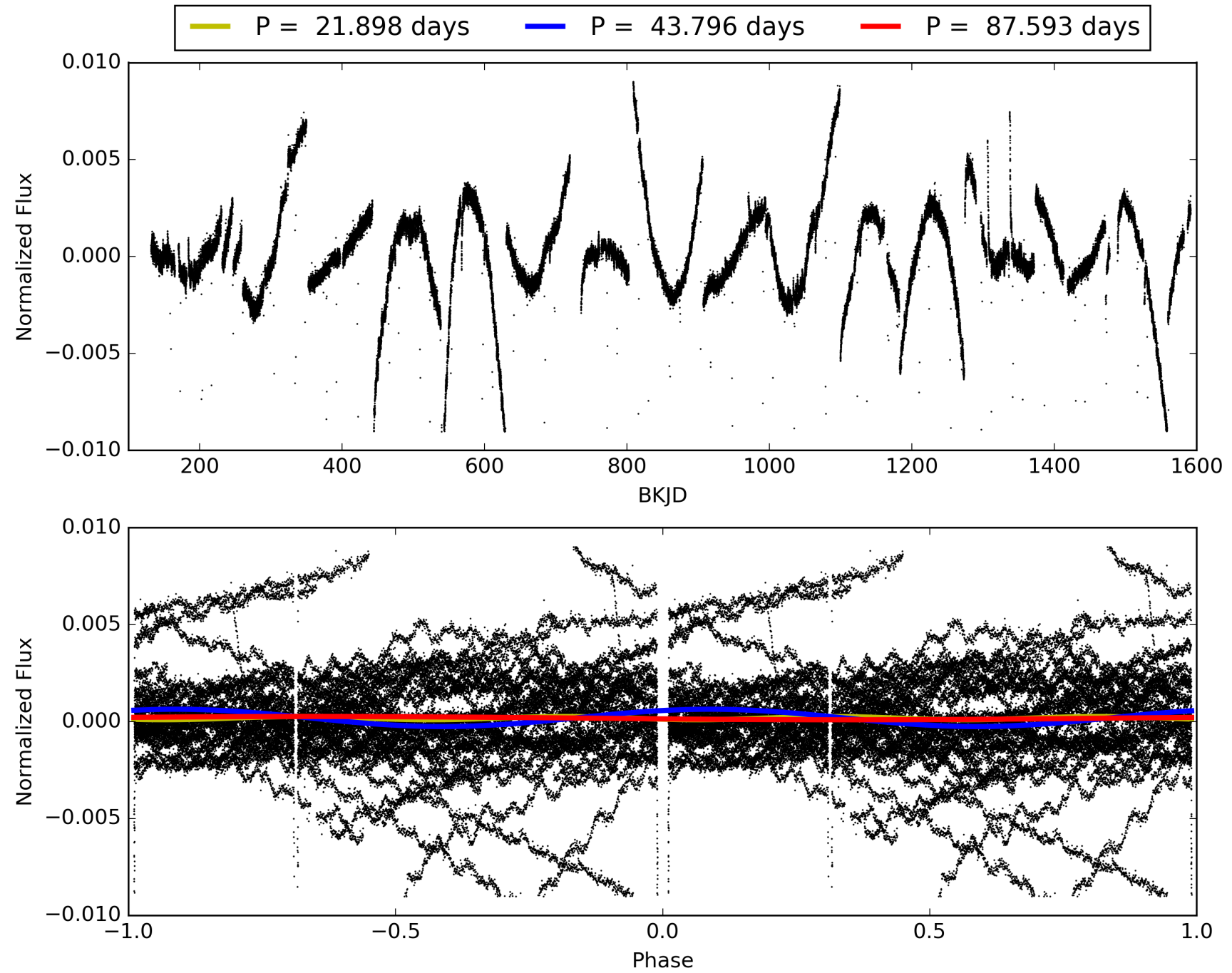
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:21:17 Z

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

# TCE 008700506-02, PDC Light Curves

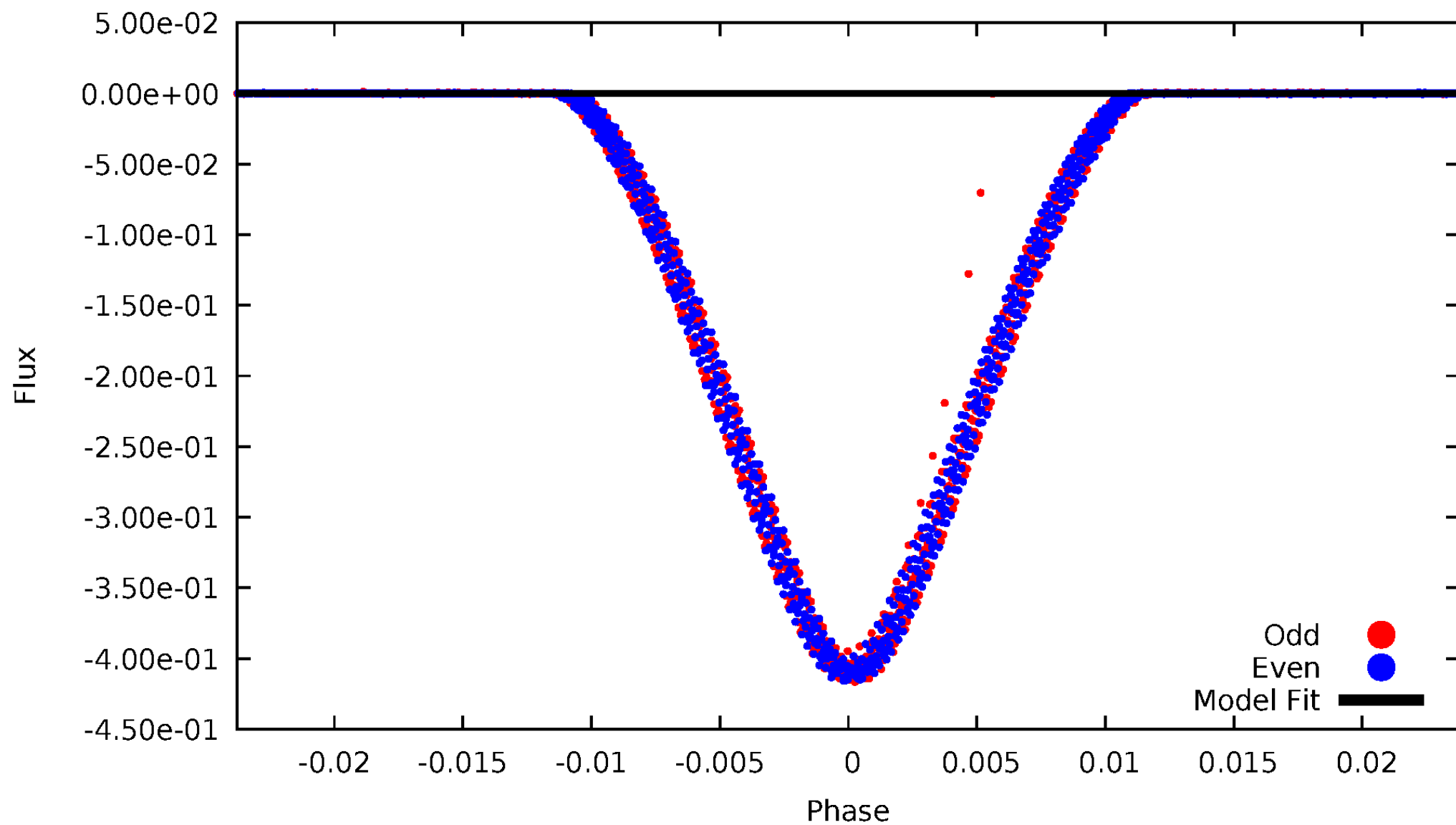


TCE 008700506-02



# DV Odd/Even

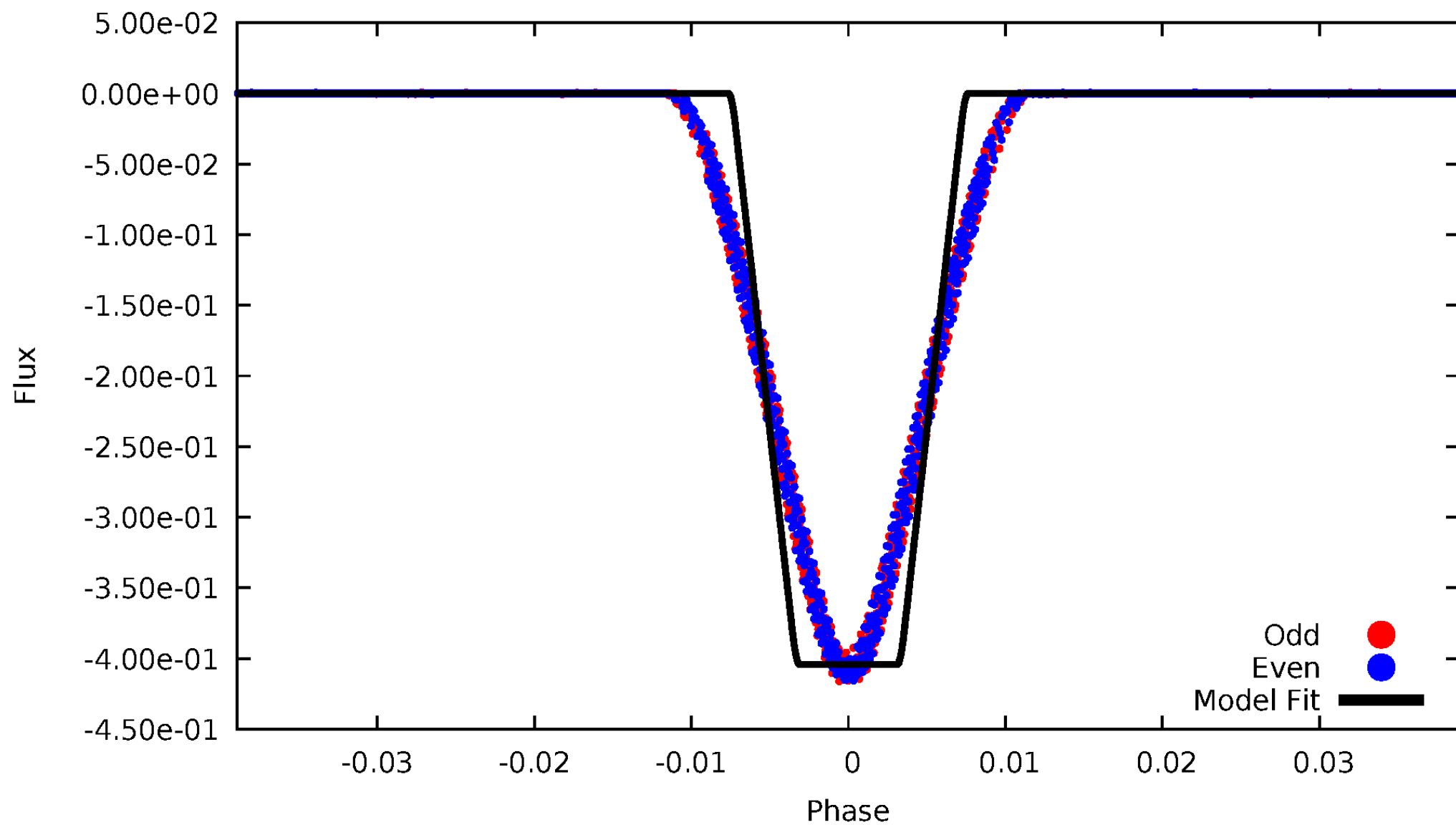
TCE 008700506-02





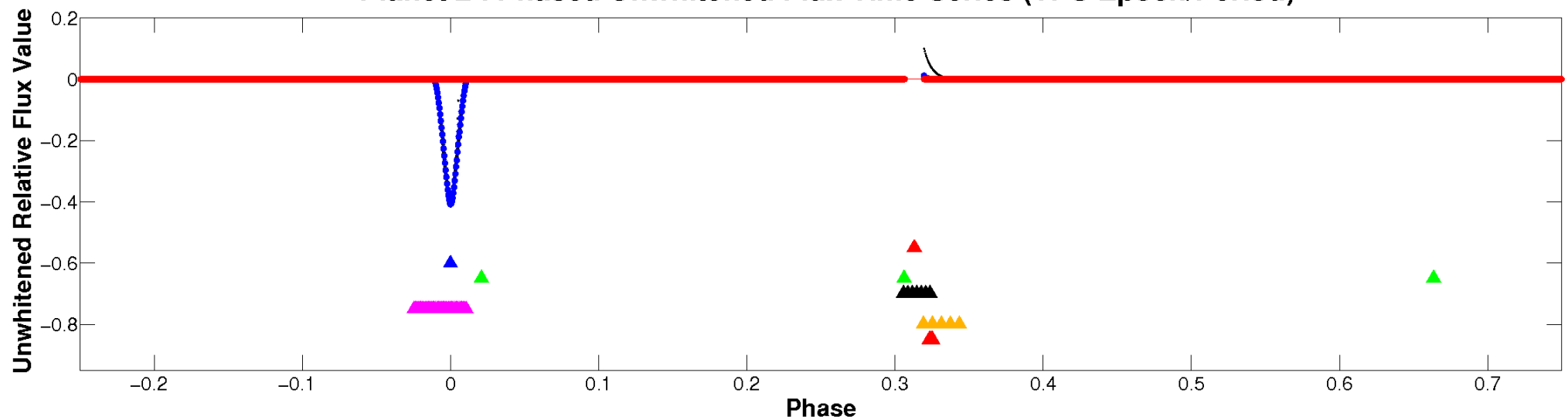
# ALT Odd/Even

TCE 008700506-02

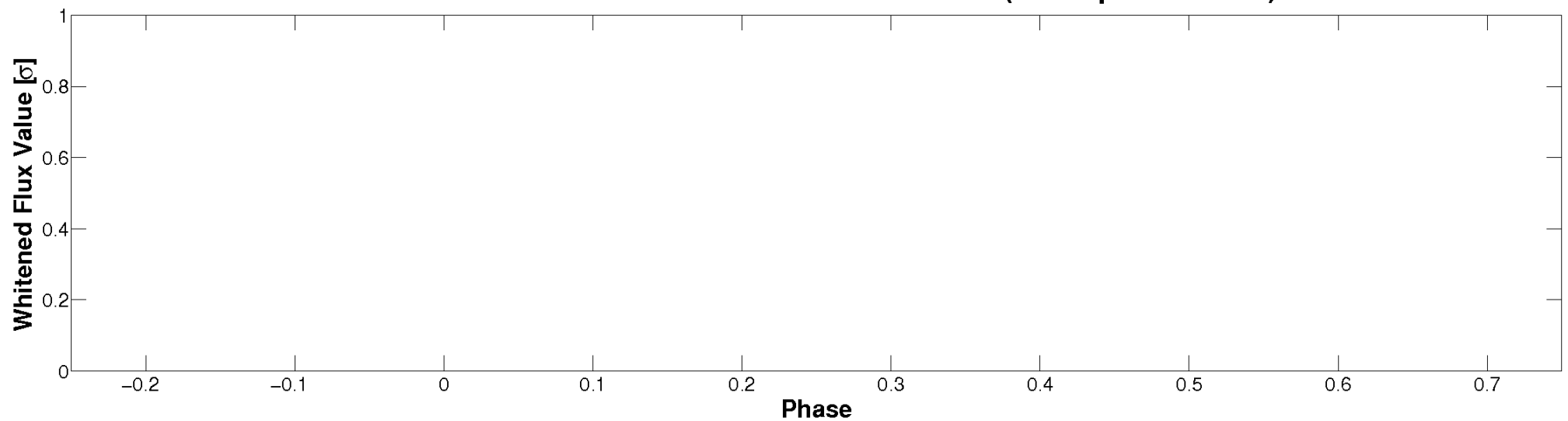


# Non-Whitened Vs. Whitened Light Curve

**Planet 2 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)**

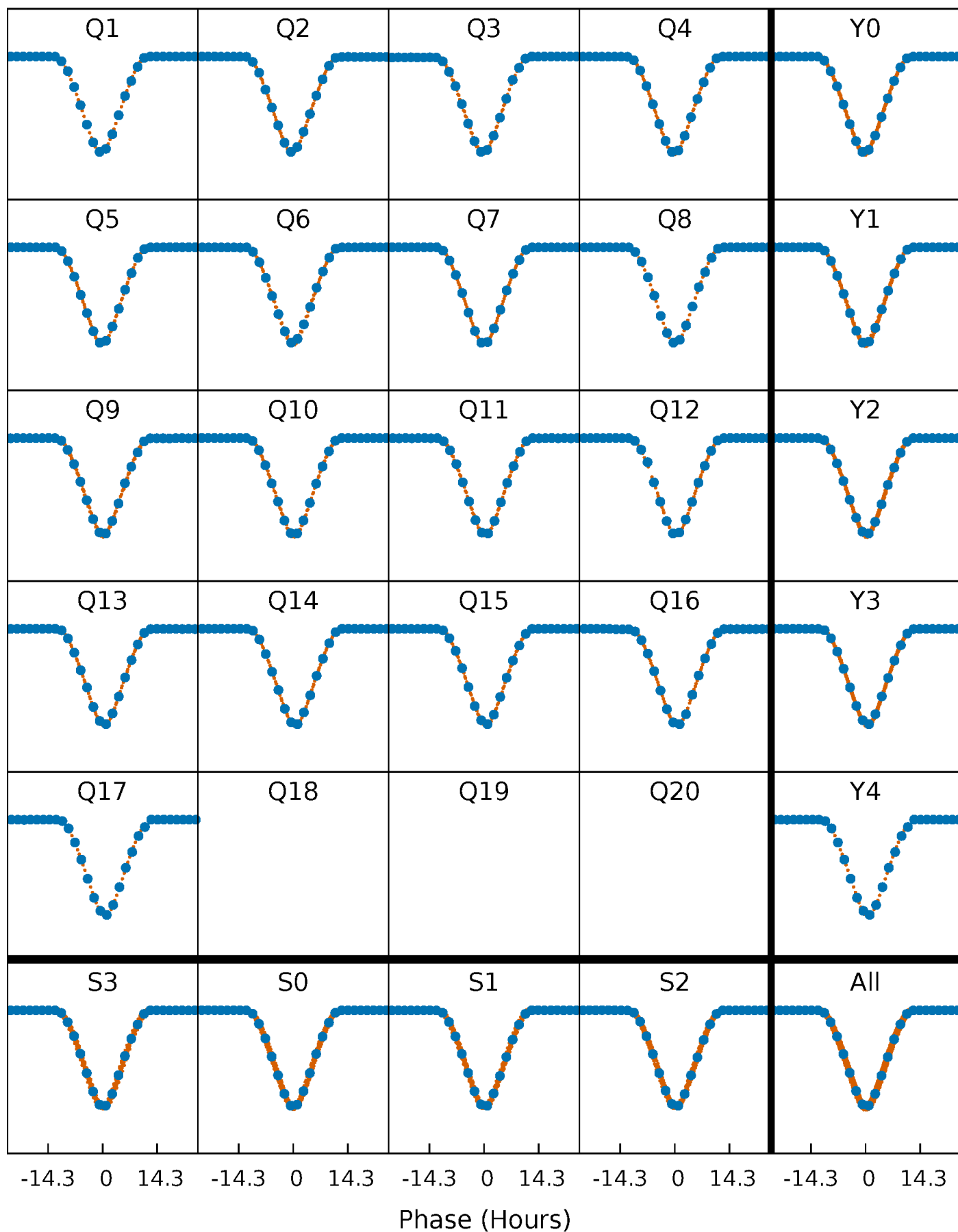


**Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



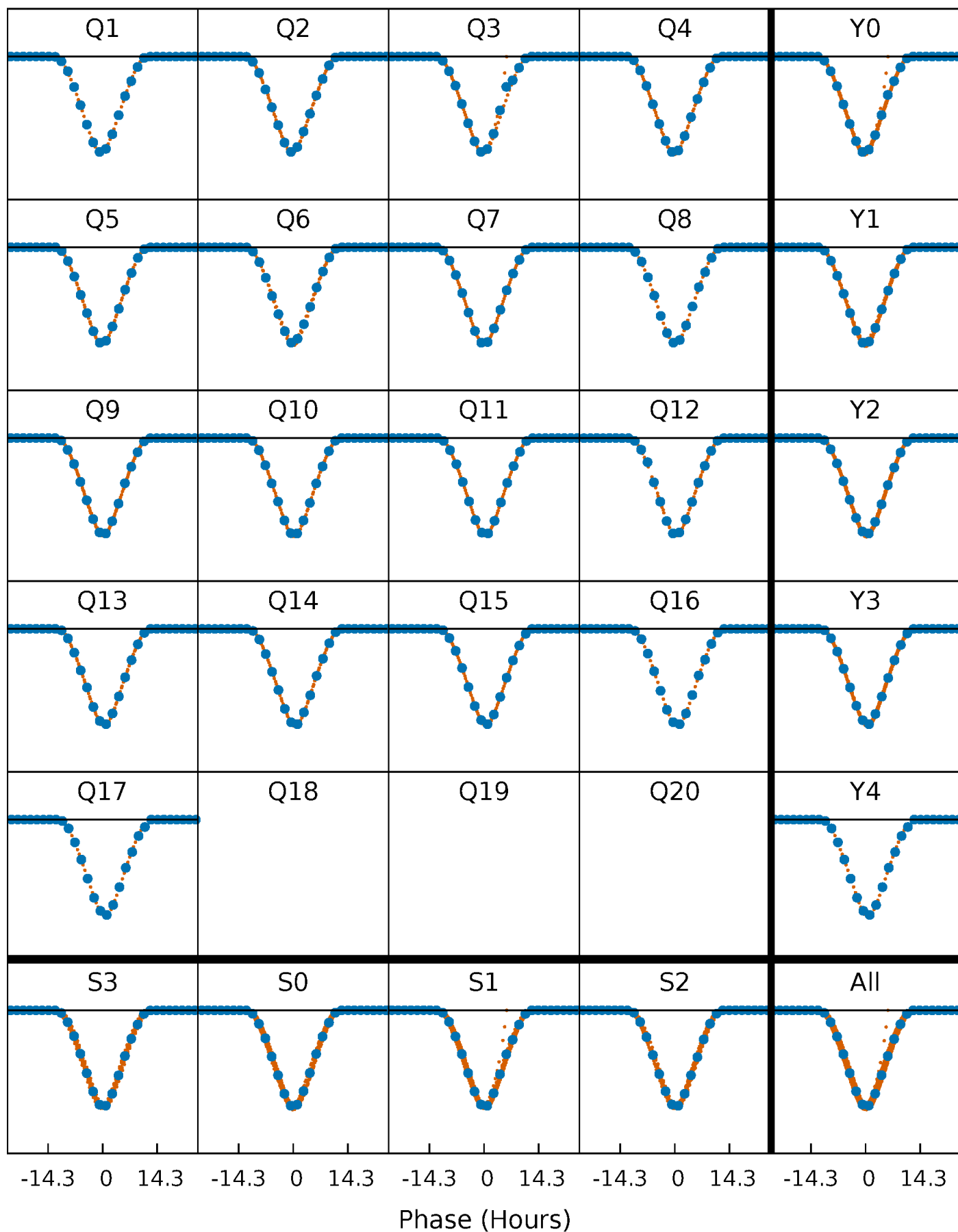
# PDC Quarter-Phased Transit Curves

TCE 008700506-02   P= 43.796461 Days    $T_0=158.912398$  (BKJD)



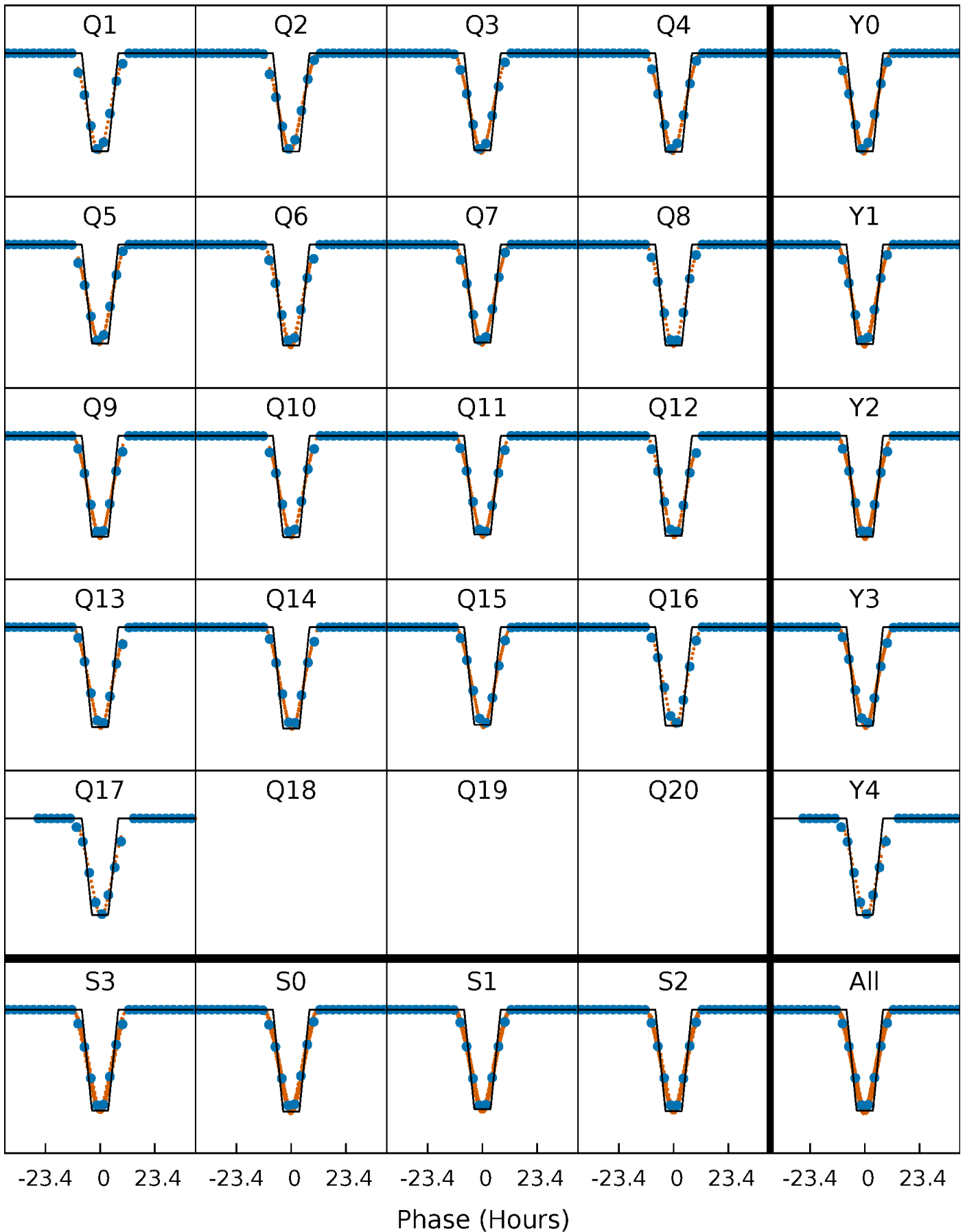
# DV Quarter-Phased Transit Curves

TCE 008700506-02   P= 43.796461 Days    $T_0=158.912398$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

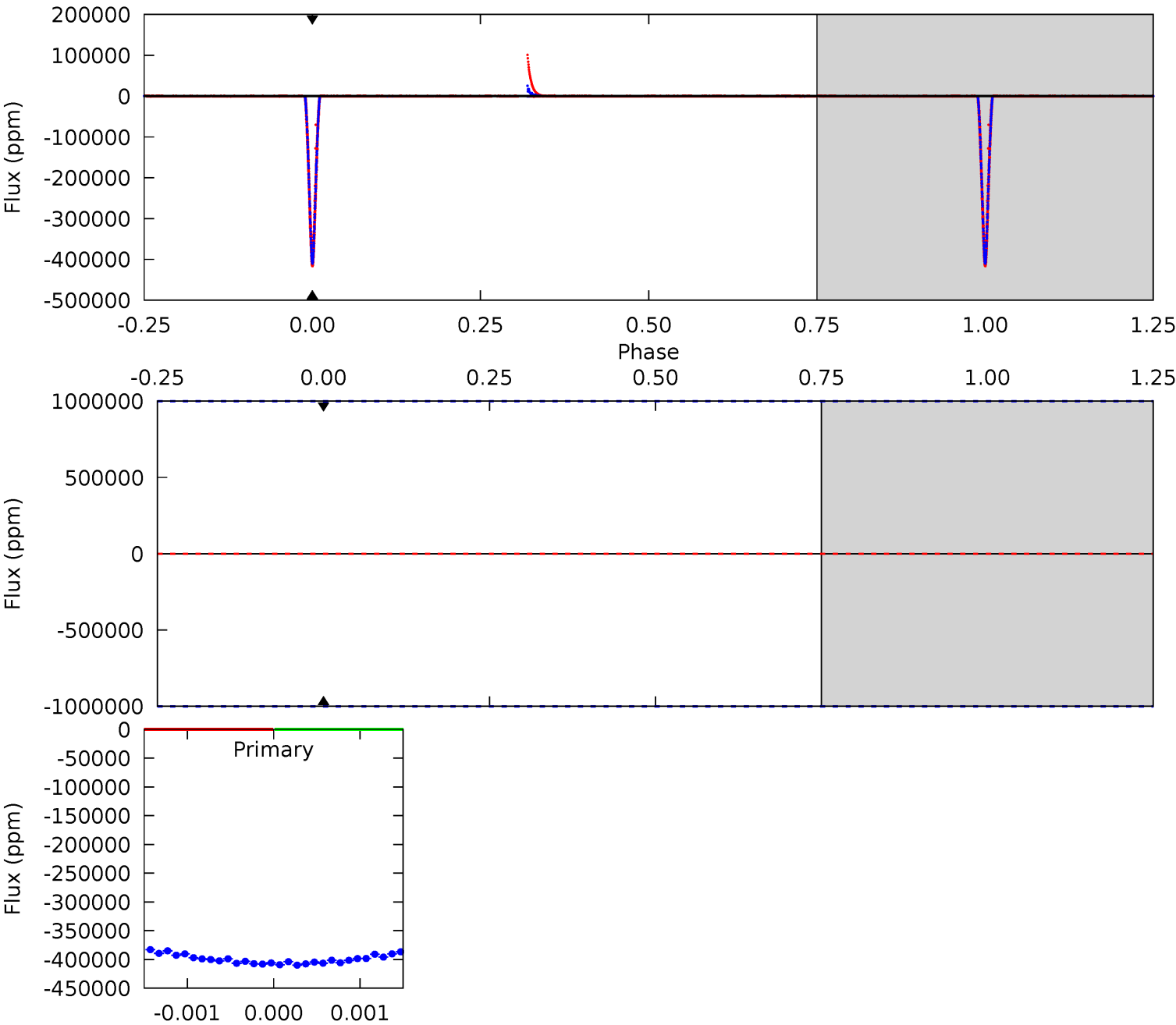
TCE 008700506-02 P= 43.796461 Days  $T_0=158.917584$  (BKJD)



# DV Model-Shift Uniqueness Test

008700506-02, P = 43.796461 Days, E = 115.115937 Days

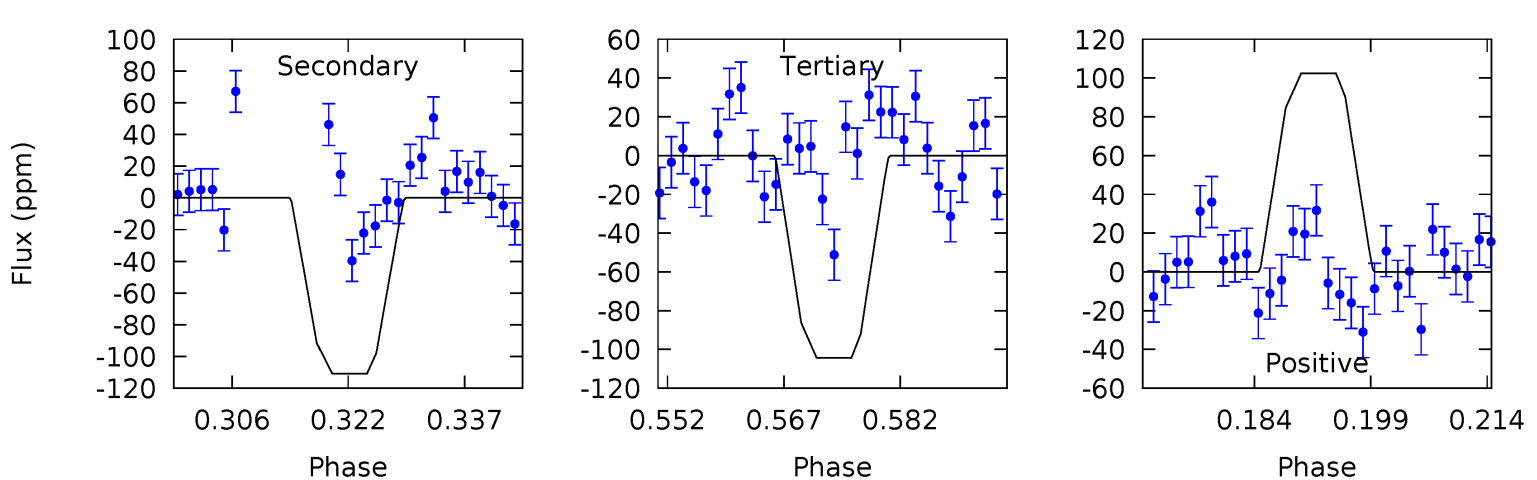
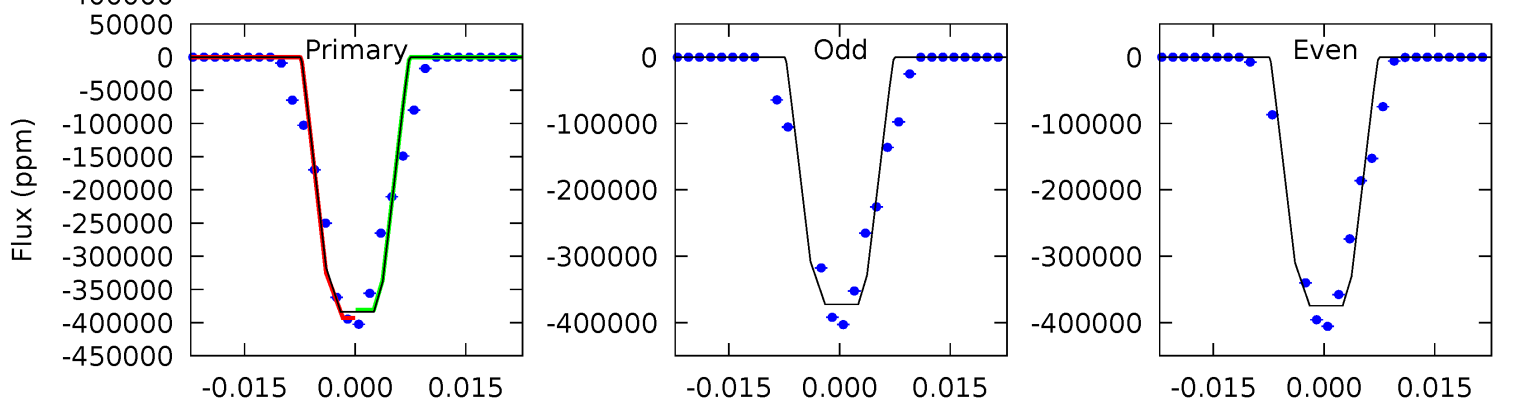
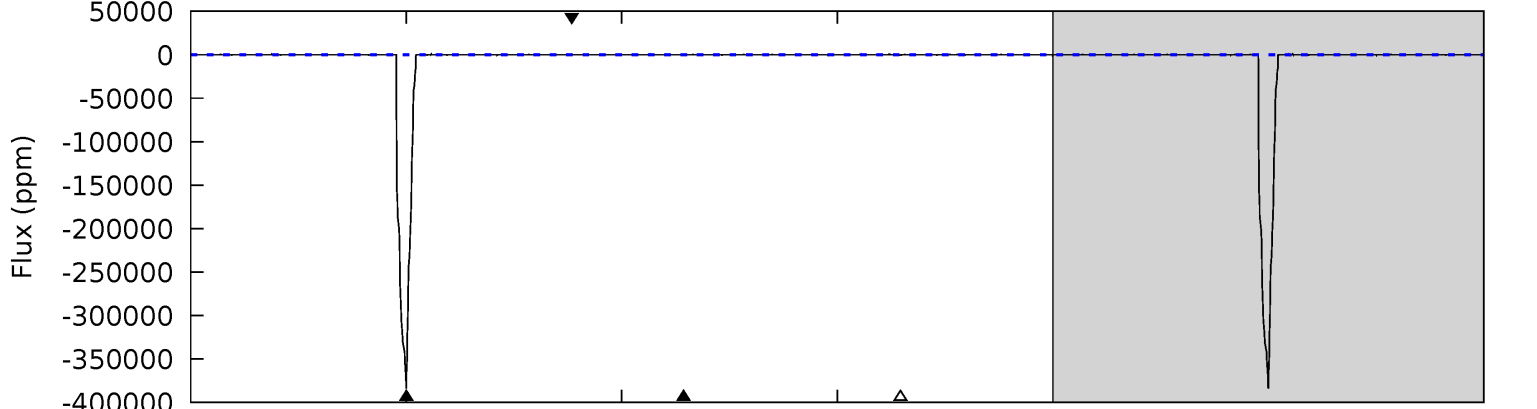
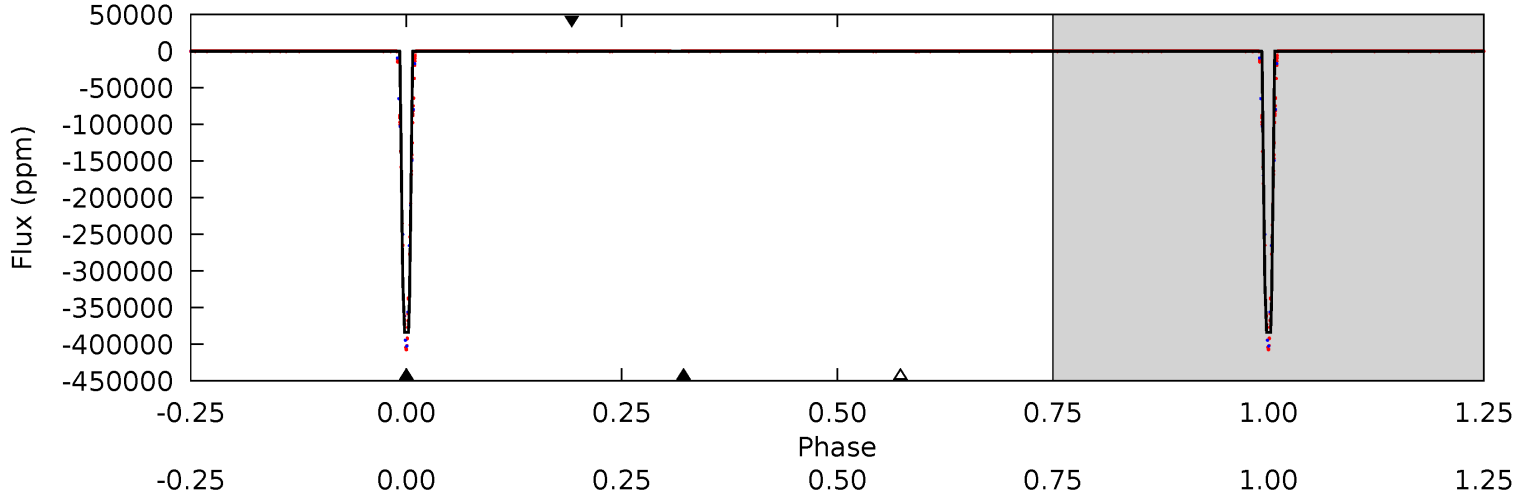
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

008700506-02, P = 43.796461 Days, E = 115.121123 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
17522	5.06	4.76	4.67	4.94	2.42	1.26	17518	17518	0.30	0.38	48.3	1.00	0.00	0





### Stellar Parameters For KIC 008700506

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6860^{+167}_{-286}$	$4.326^{+0.066}_{-0.154}$	$-0.100^{+0.250}_{-0.350}$	$1.292^{+0.312}_{-0.144}$	$1.300^{+0.154}_{-0.188}$	$0.849^{+0.247}_{-0.381}$
	+2%/-4%	+2%/-4%	+250%/-350%	+24%/-11%	+12%/-14%	+29%/-45%
Source	PHO1	FLK73	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 008700506-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$37.84^{+14.46}_{-13.75}$	$938^{+56}_{-46}$	$-3582^{+11897}_{-4359}$	$-64.304^{+3728.755}_{-3072.840}$
Alt.	$-111 \pm 22$	$91.43^{+17.93}_{-15.06}$	$939^{+55}_{-45}$	$1731^{+140}_{-235}$	$0.491^{+0.266}_{-0.160}$

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

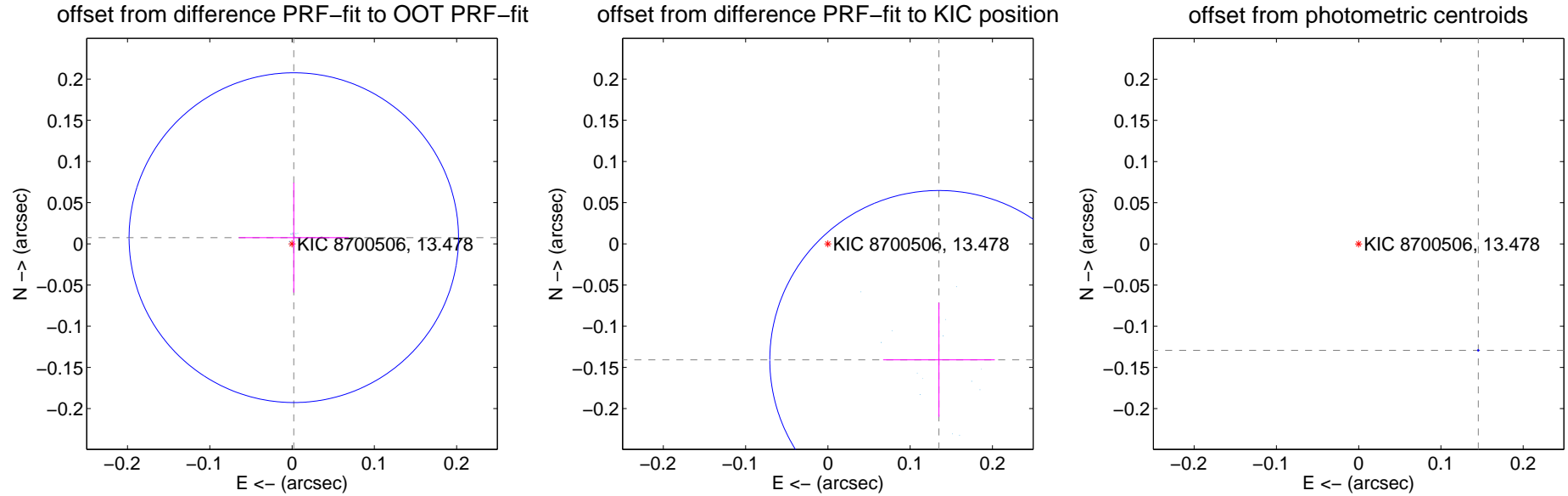
## DV Centroid Data

Supplemental centroid analysis for 008700506-02. Kepler magnitude: 13.48. Transit SNR -1.00

There are 14 quarters with good PRF difference image offsets

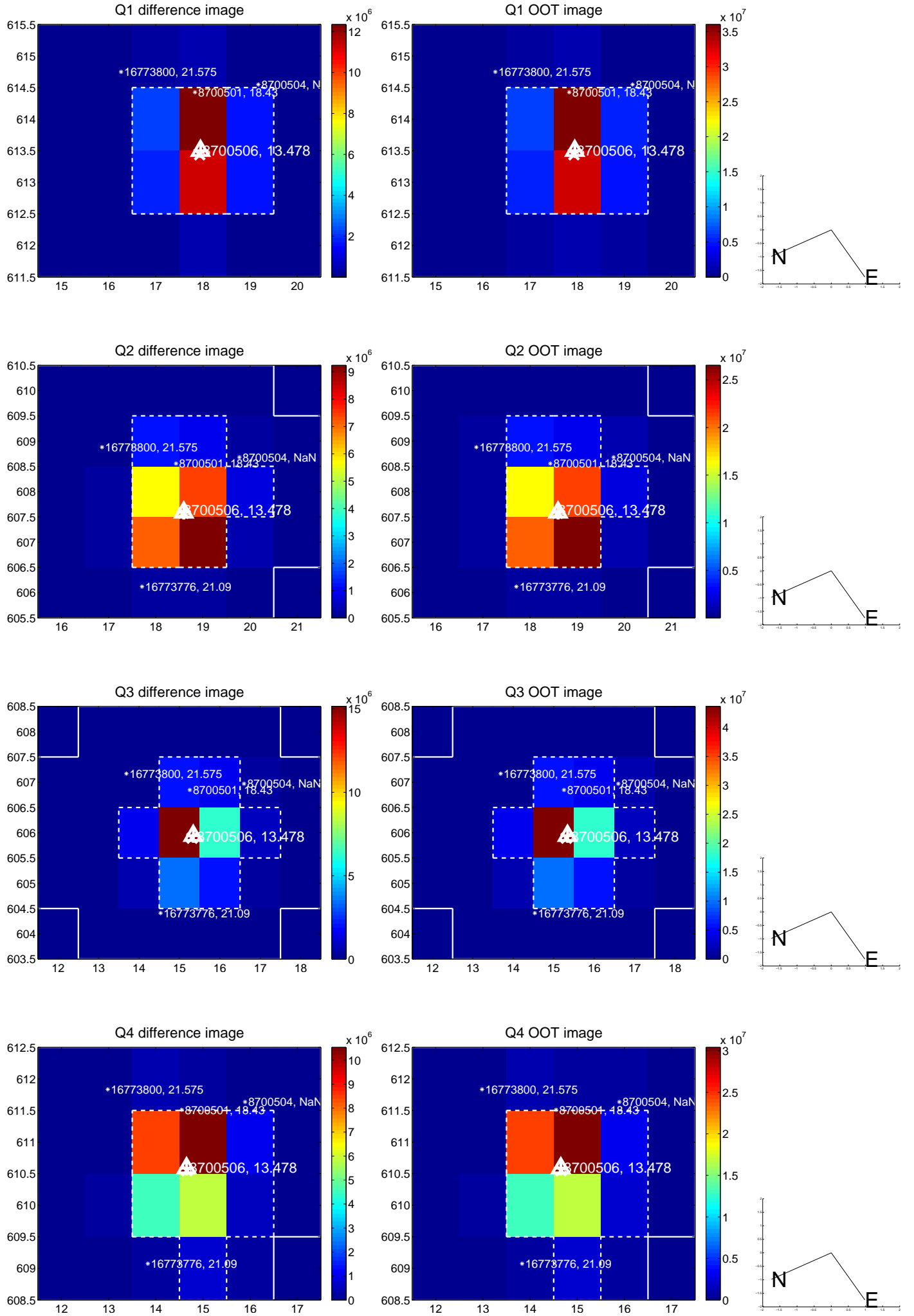
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.008 \pm 0.067$	0.12	$-0.002 \pm 0.067$	$0.007 \pm 0.067$
PRF-fit source offset from KIC position	$0.195 \pm 0.069$	2.85	$-0.135 \pm 0.068$	$-0.141 \pm 0.069$
photometric centroid source offset	$0.19 \pm 0.00$	666.90	$-0.15 \pm 0.00$	$-0.13 \pm 0.00$

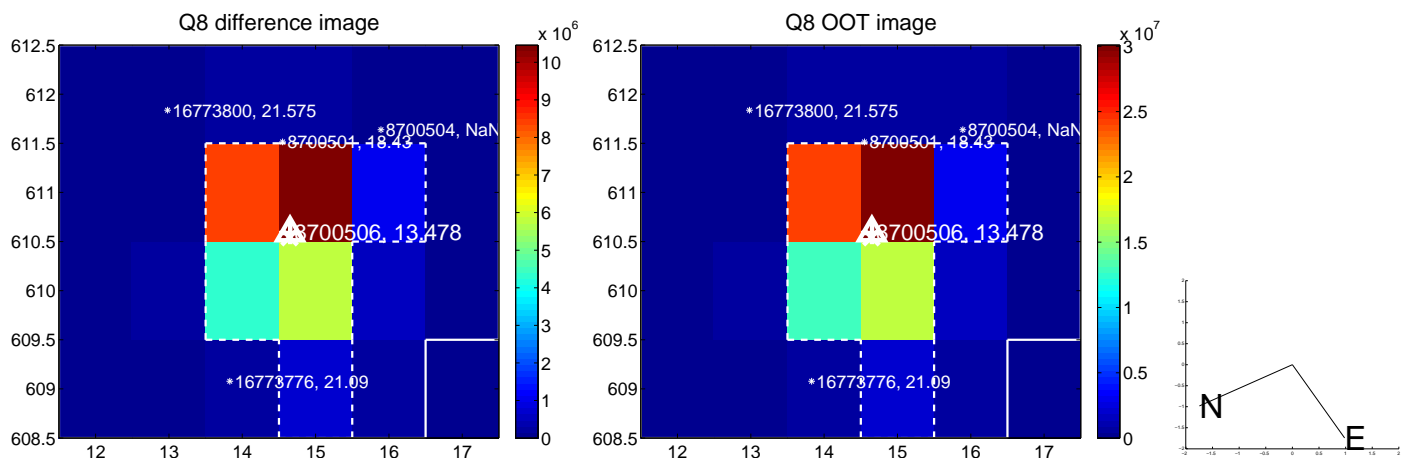
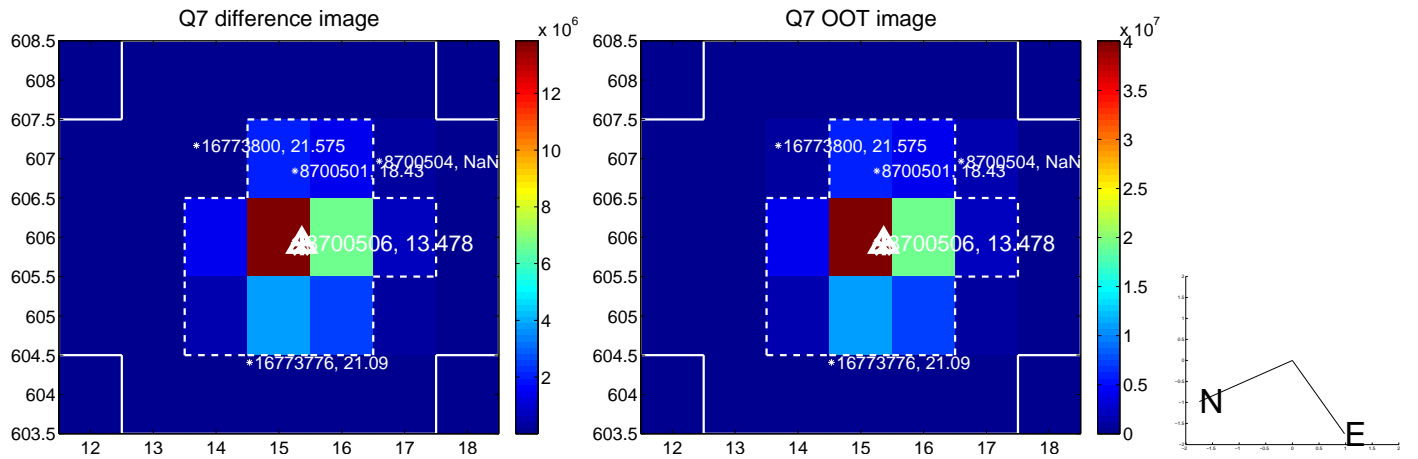
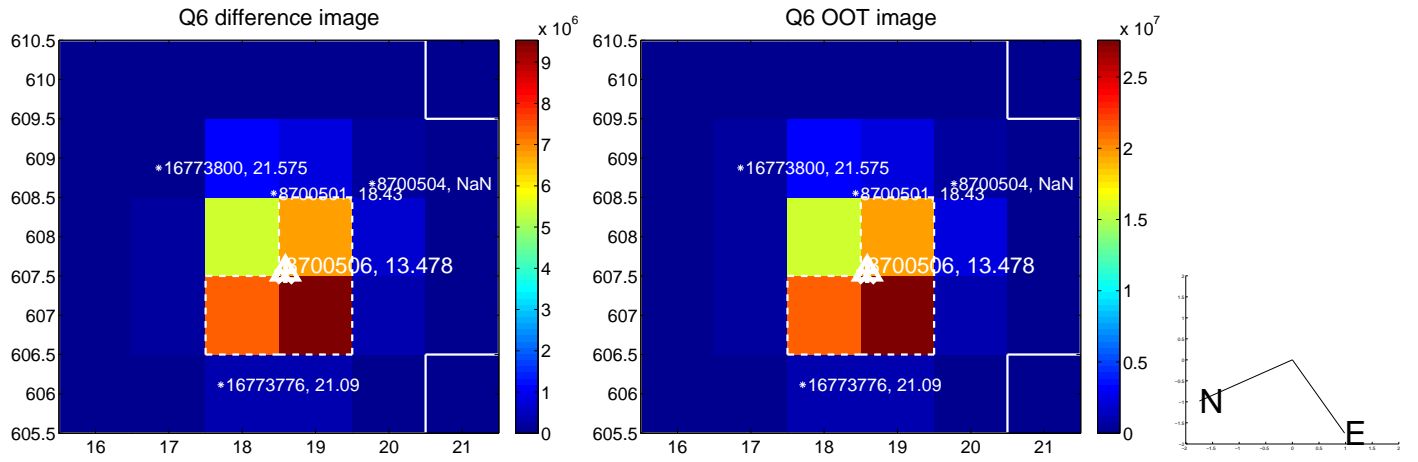
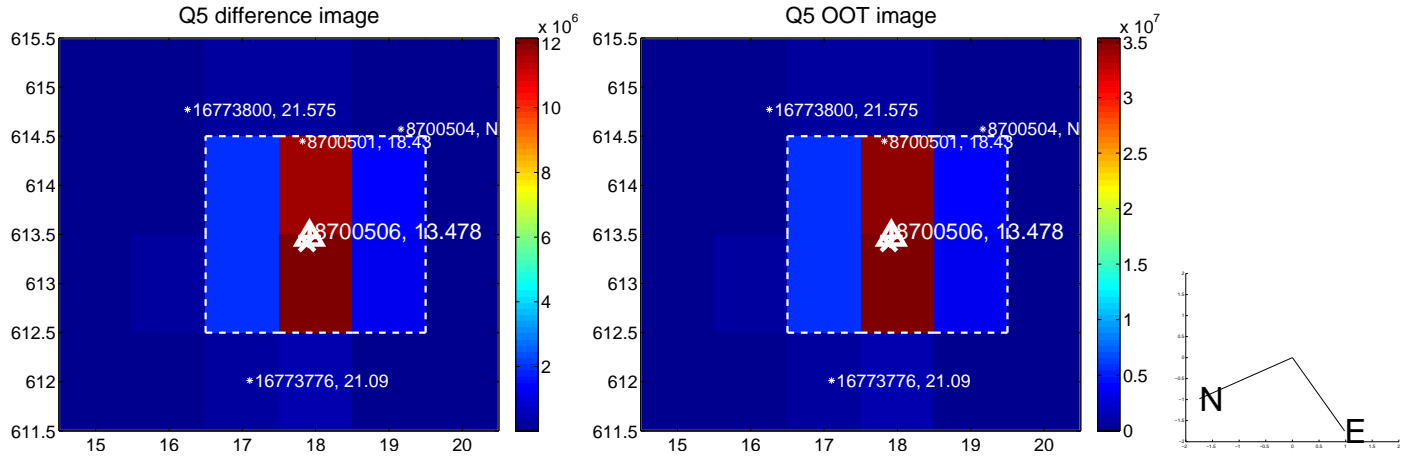


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

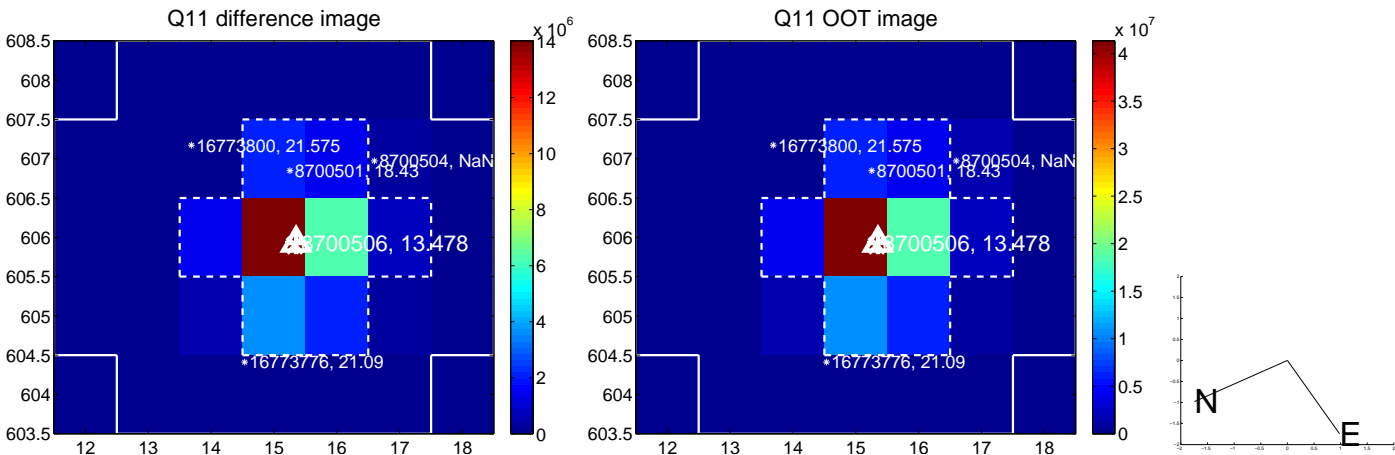
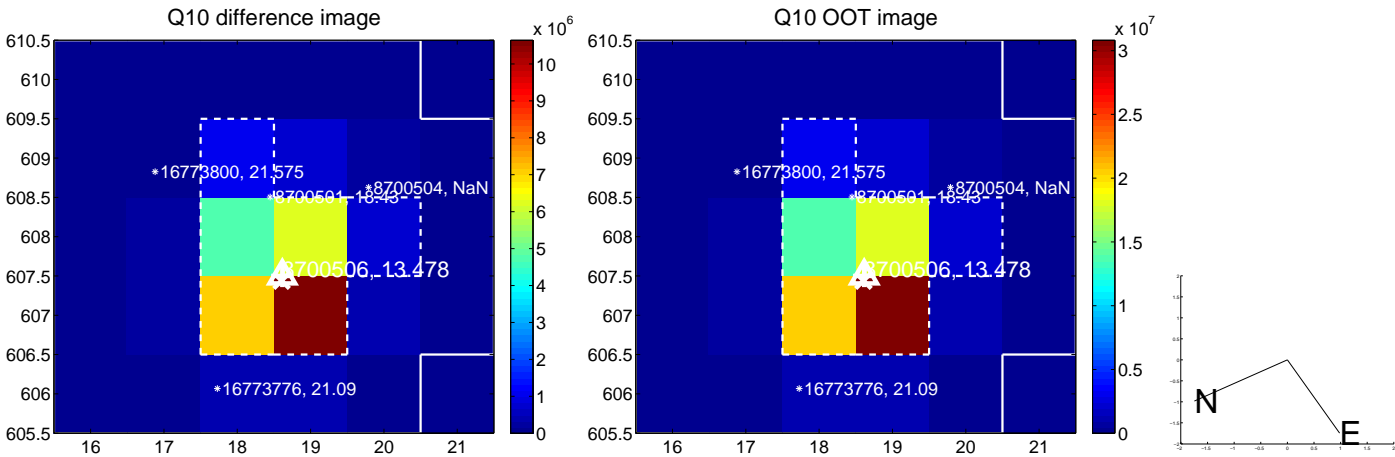
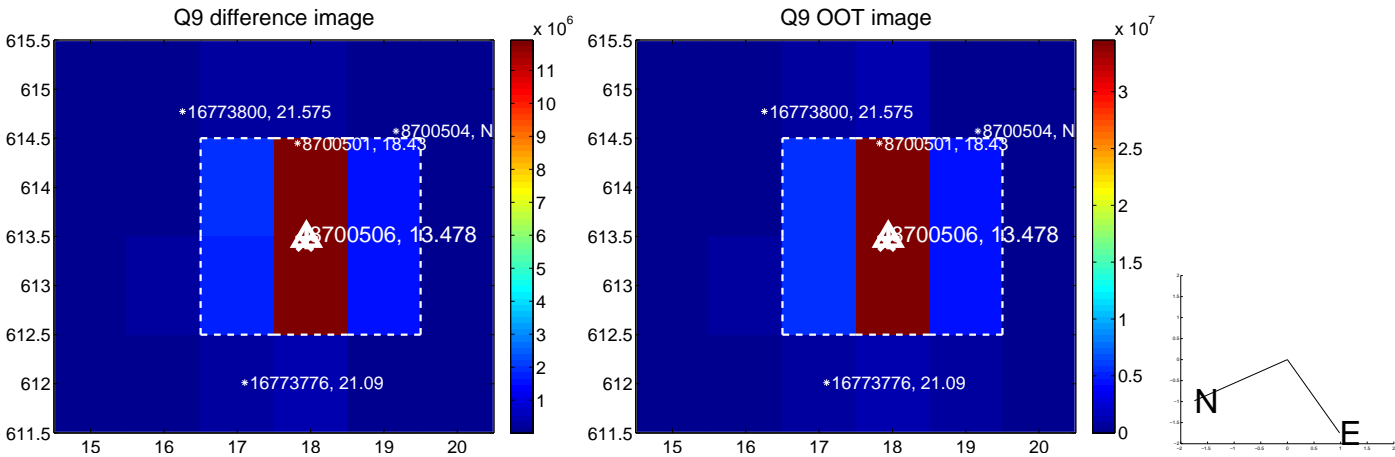
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



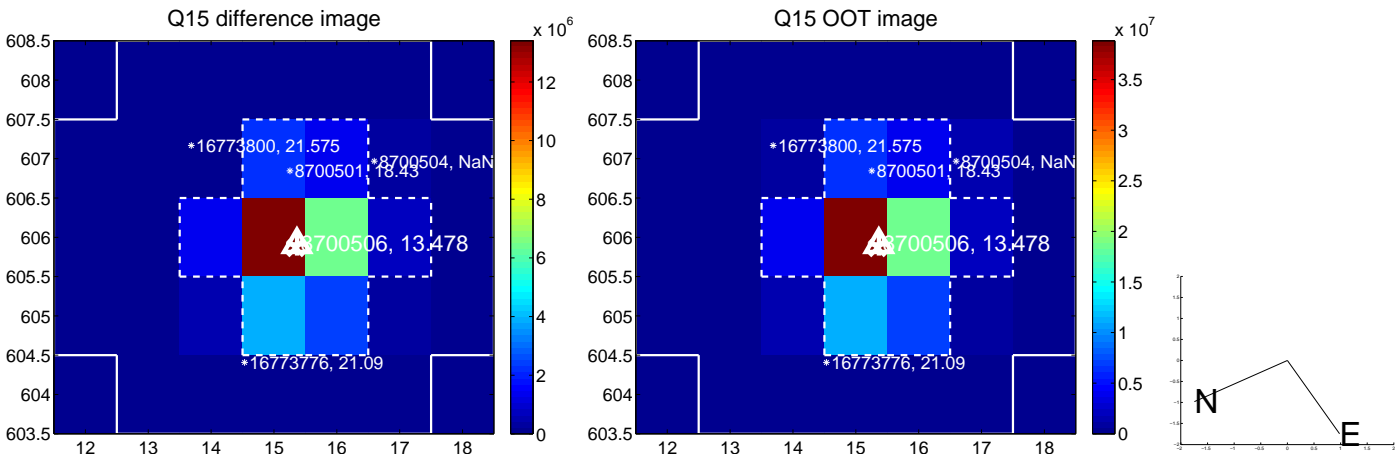
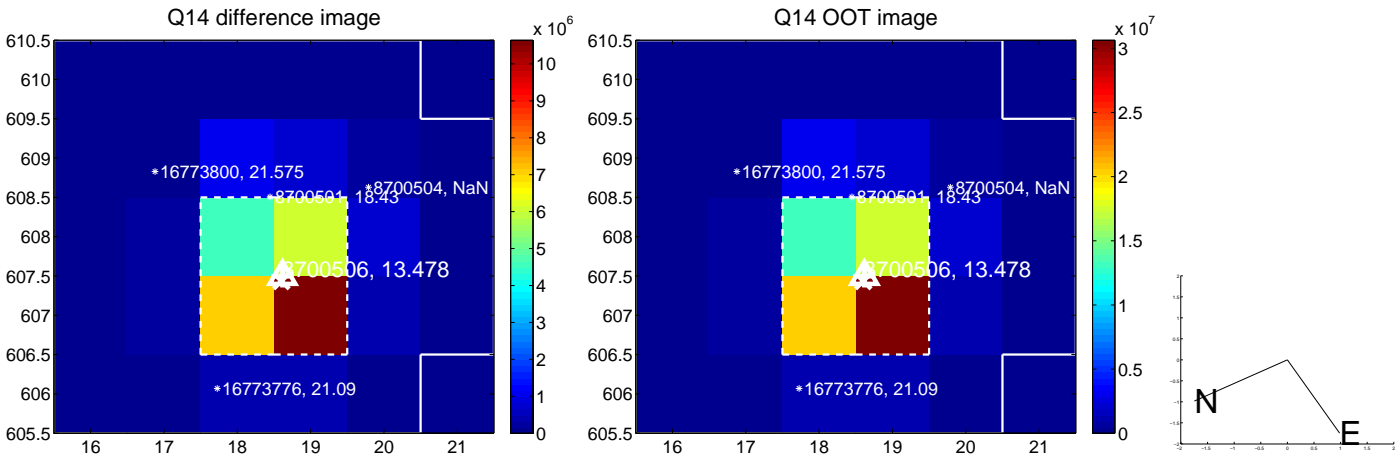
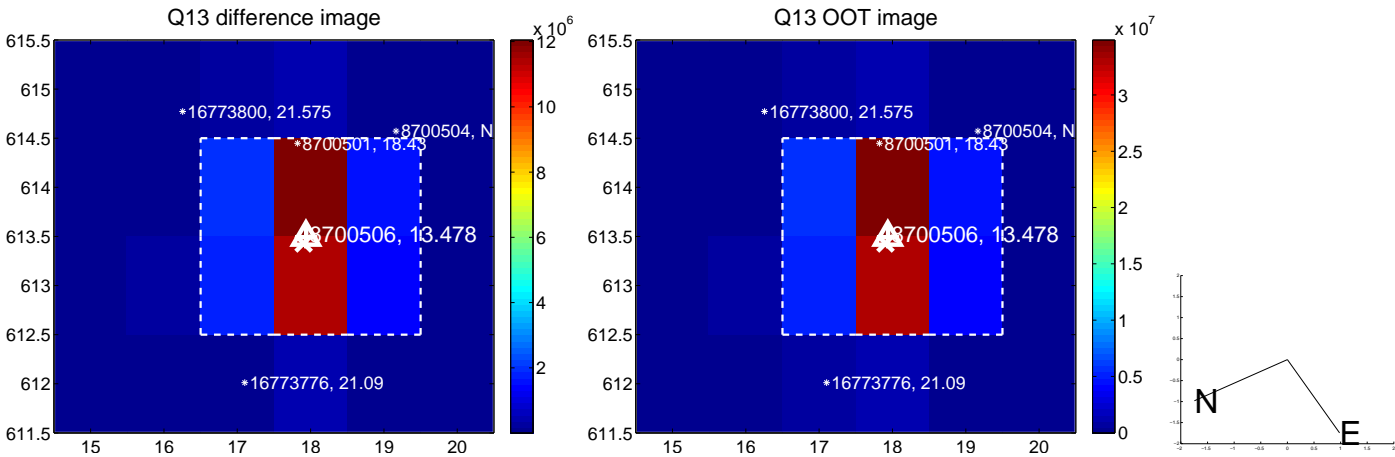
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



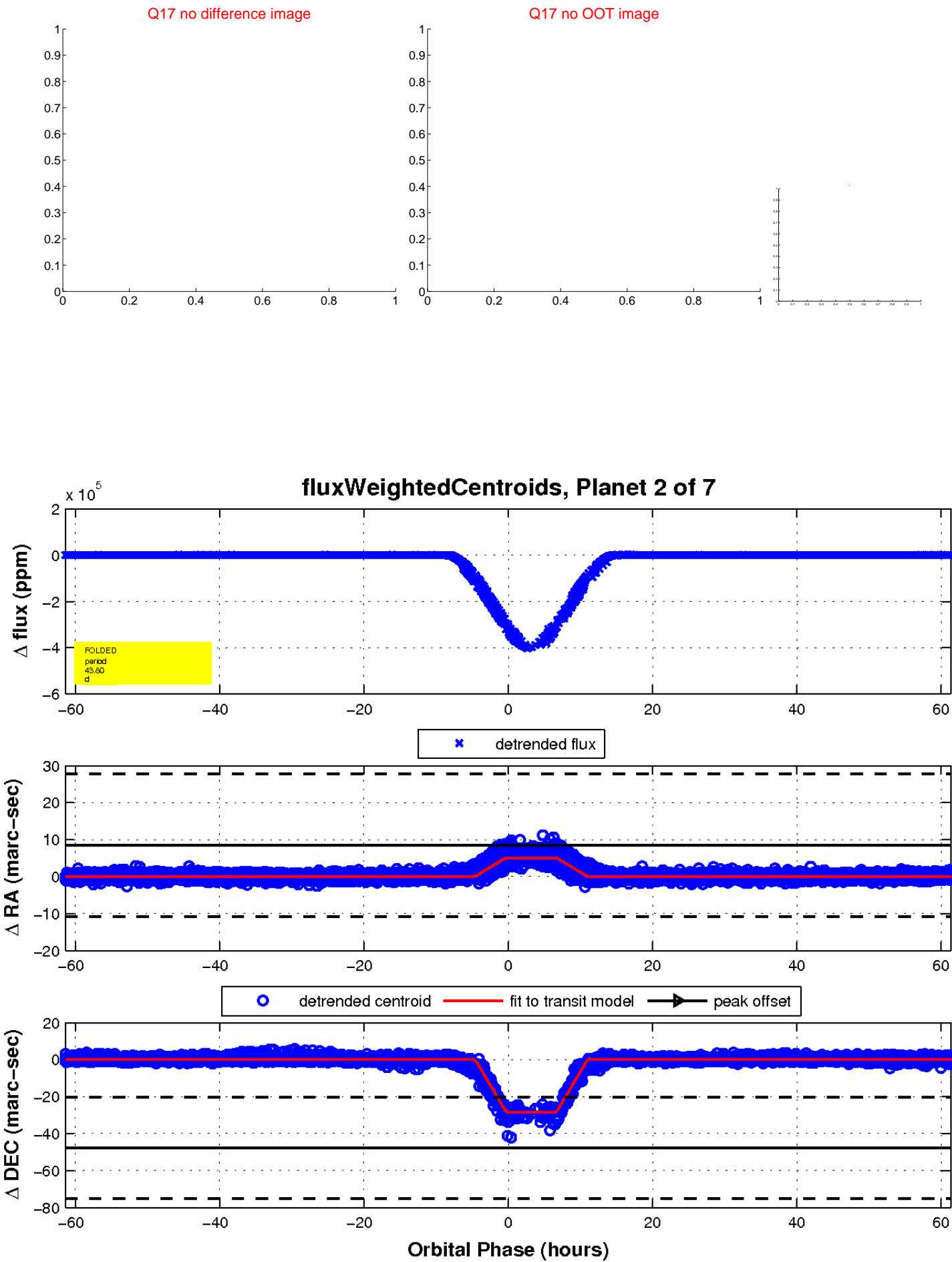
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

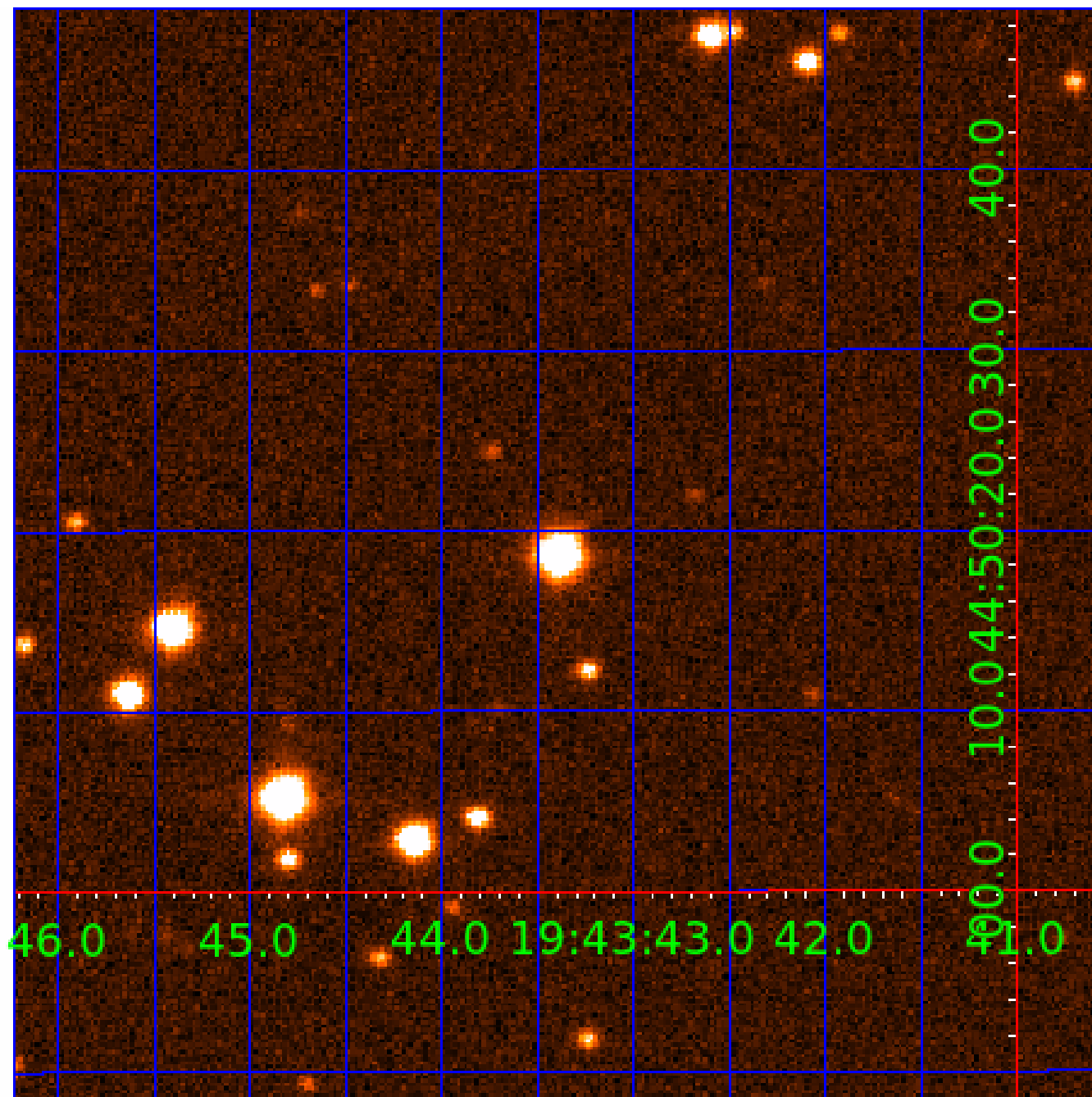


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 008700506

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008700506-01	OBS	7077.01	43.797335	172.609694	426571.2	4.500	20393.9	-1.0	1.29	6860	61.41	47.25
008700506-02	OBS	No	43.796461	158.912398	410205.3	12.500	12827.6	-1.0	1.29	6860	37.33	47.26
008700506-03	OBS	No	585.006012	391.303276	27742.9	15.000	836.9	-1.0	1.29	6860	21.75	1.49
008700506-04	OBS	No	219.113053	216.099556	27983.8	2.500	540.9	-1.0	1.29	6860	21.88	5.52
008700506-05	OBS	No	43.747990	159.382370	6405.4	15.000	385.0	-1.0	1.29	6860	10.44	47.33
008700506-06	OBS	No	350.637208	172.892505	1215.8	5.643	409.9	24.0	1.29	6860	4.76	2.95
008700506-07	OBS	No	350.401498	435.848436	15759.7	4.500	455.6	-1.0	1.29	6860	16.39	2.95

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008700506-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS
008700506-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS
008700506-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
008700506-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
008700506-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—CENT_NOFITS
008700506-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008700506-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—NO_FITS—CENT_NOFITS

**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.

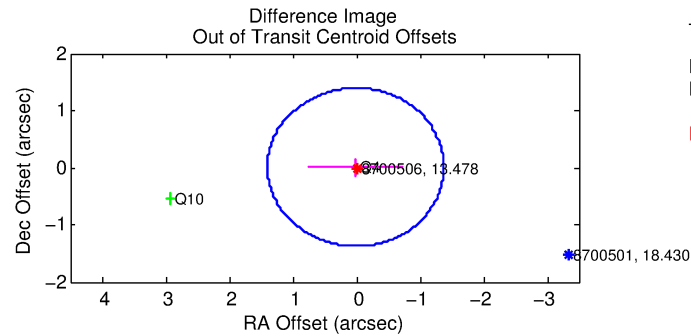
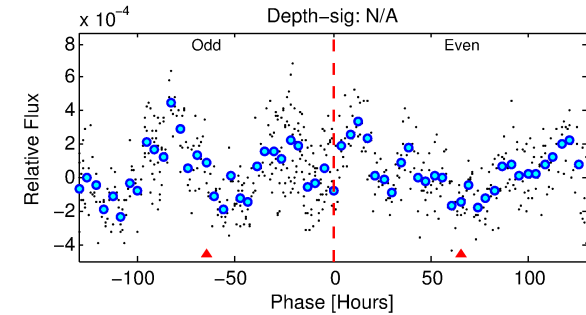
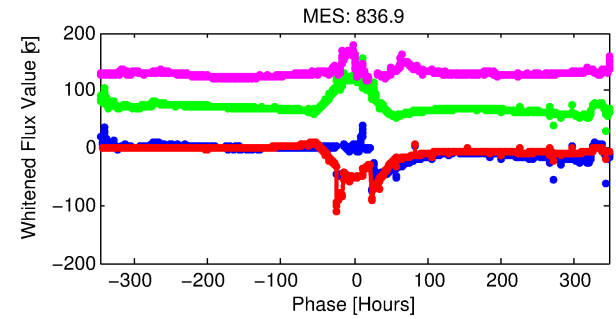
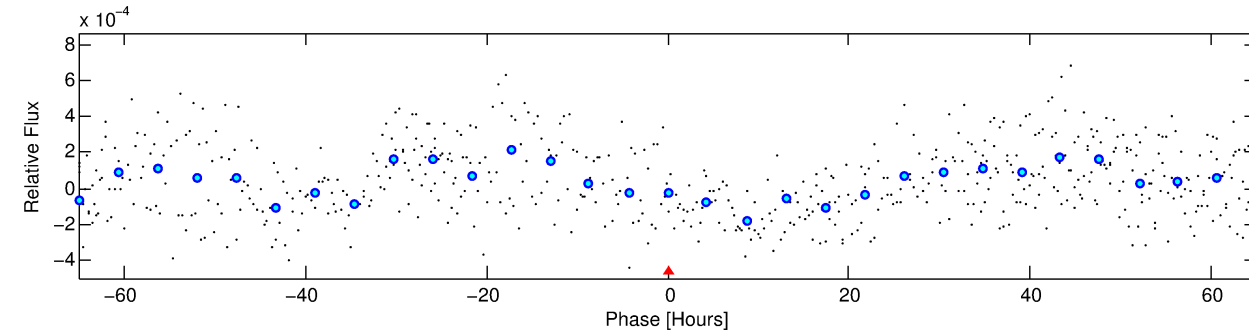
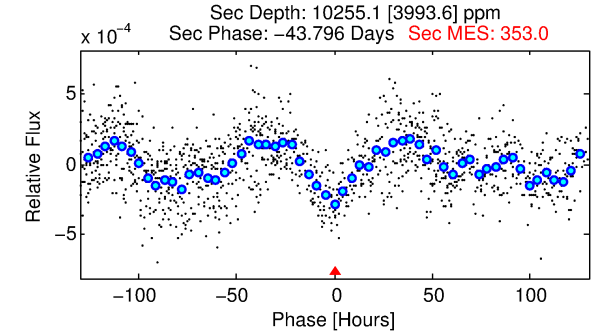
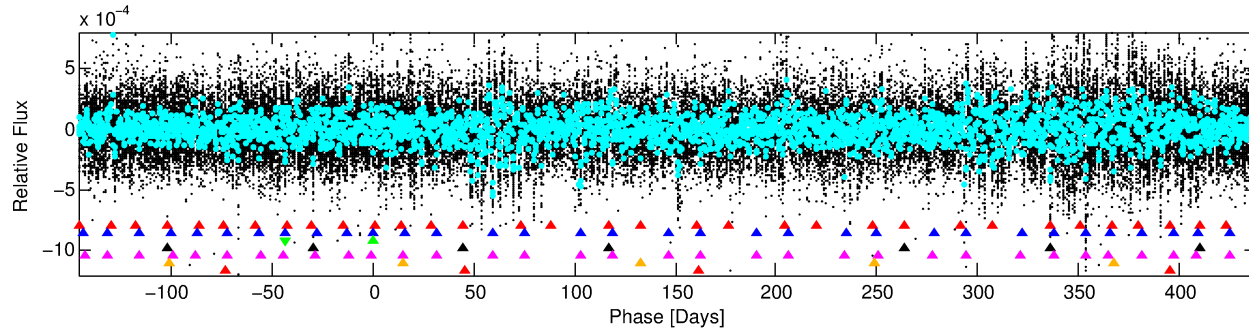
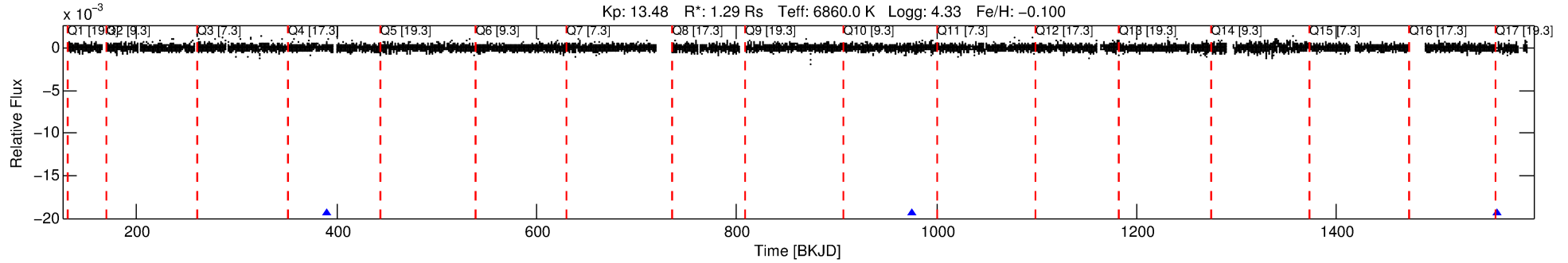
## Ephemeris Match Information For 008700506-03

No Significant Match Found

# DV One-Page Summary

KIC: 8700506 Candidate: 3 of 7 Period: 585.006 d

KOI: K07077 Corr: No Ephemeris Match



TPS TCE Results:

Period = 585.00601 d  
Epoch = 391.3033 BKJD

DV fit results are unavailable

DV Diagnostic Results:

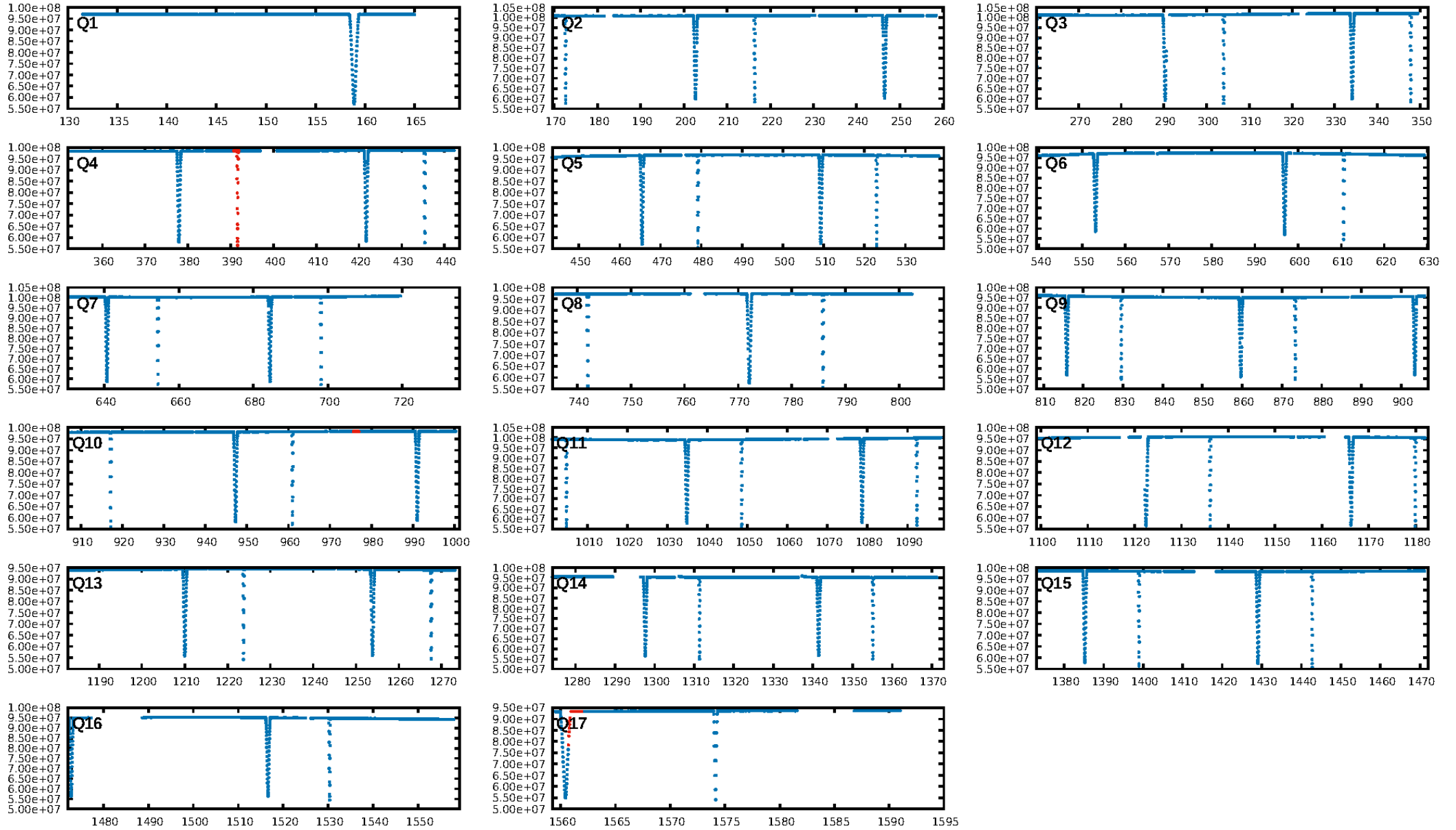
ShortPeriod-sig: 100.0% [350.97σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [2/2]  
GhostDiagnostic-chr: -2.783

Centroid-sig: 0.9%  
Centroid-so: 14.439 arcsec [2.30σ]  
OotOffset-rm: 0.017 arcsec [0.04σ]  
KicOffset-rm: 0.136 arcsec [0.13σ]  
OotOffset-st: 1/0/1/0 [2]  
KicOffset-st: 1/0/1/0 [2]  
DiffImageQuality-fgm: 0.00 [0/2]  
DiffImageOverlap-fno: 0.50 [1/2]

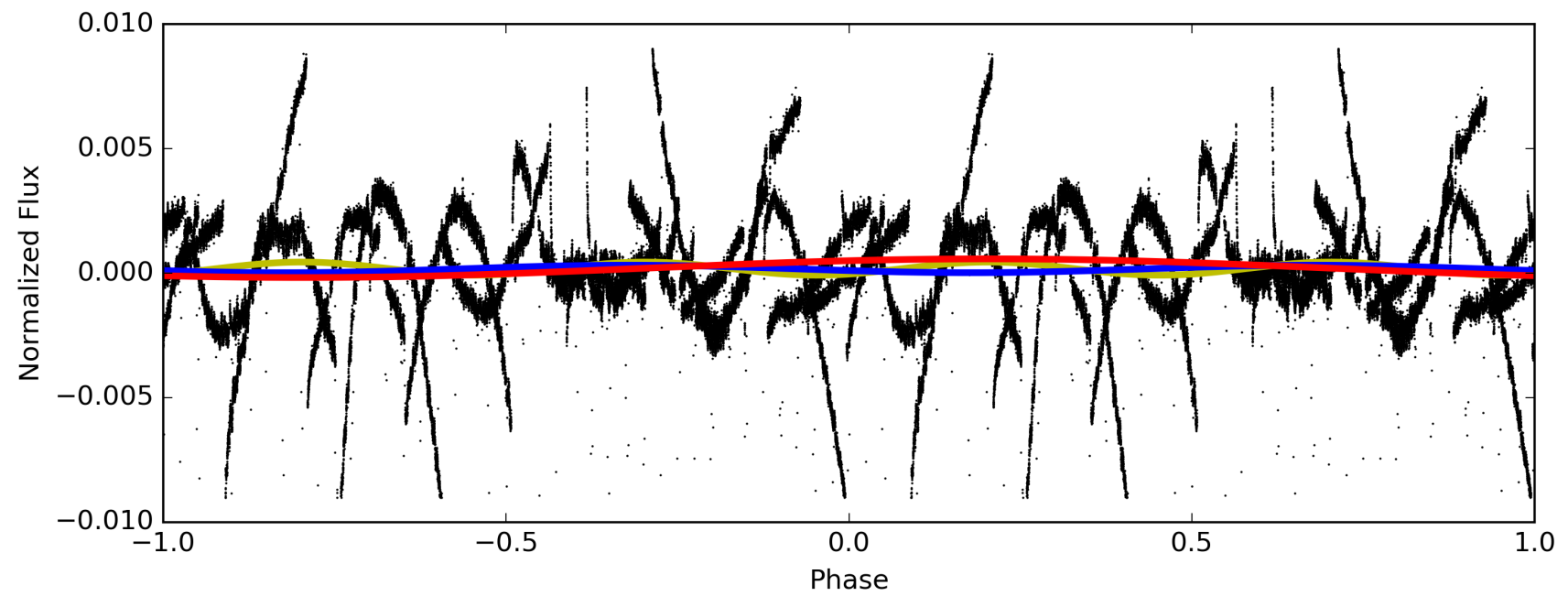
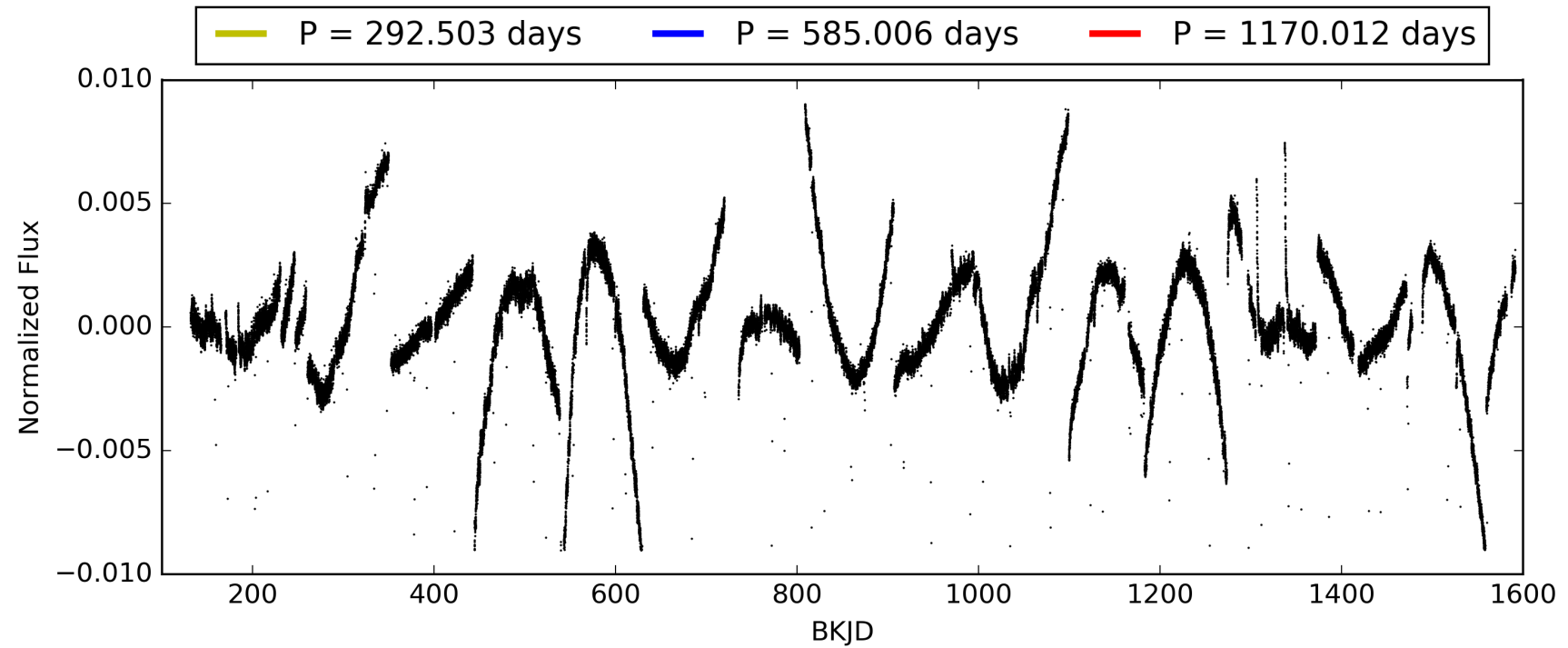
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:21:24 Z

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

# TCE 008700506-03, PDC Light Curves

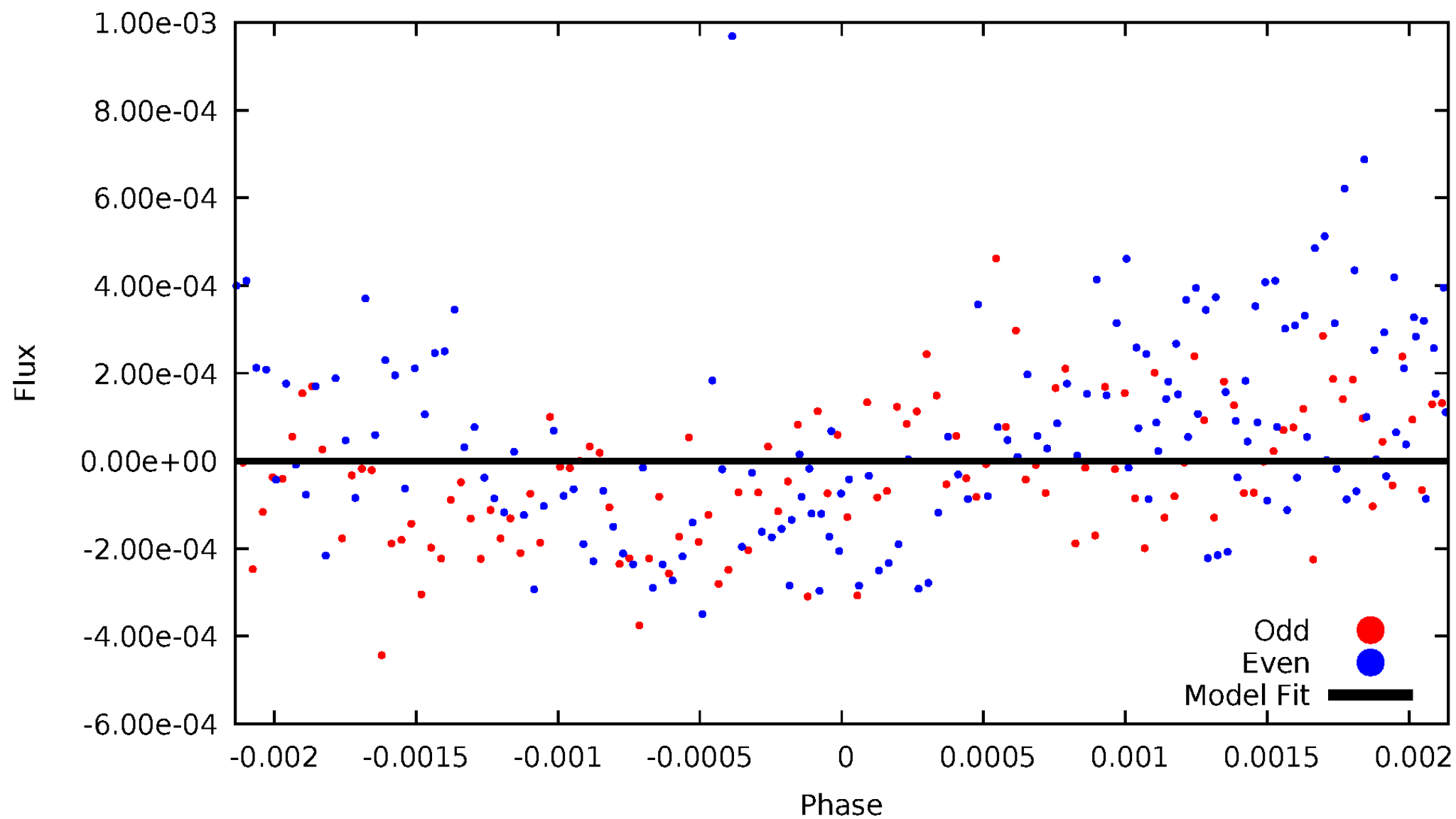


TCE 008700506-03



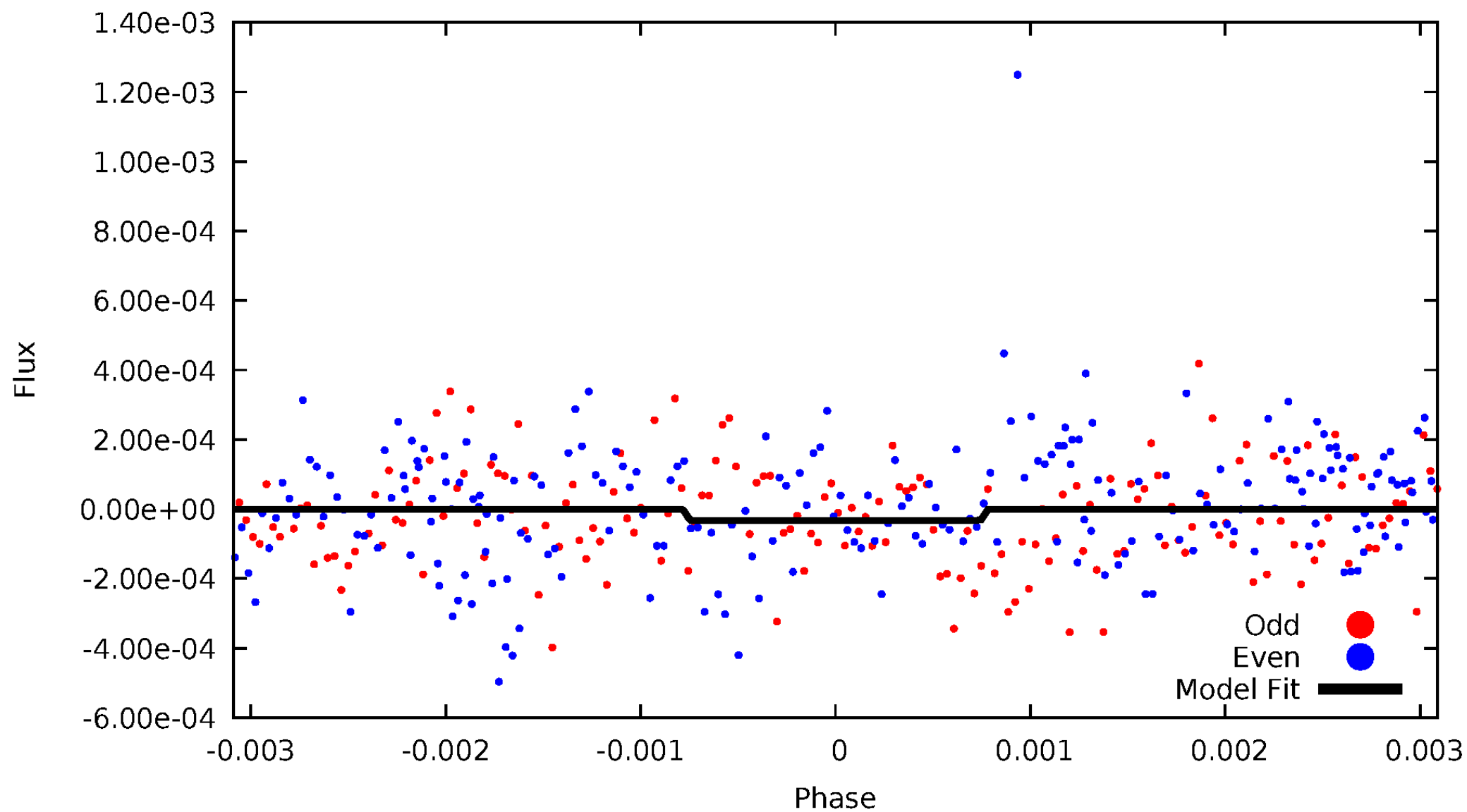
# DV Odd/Even

TCE 008700506-03



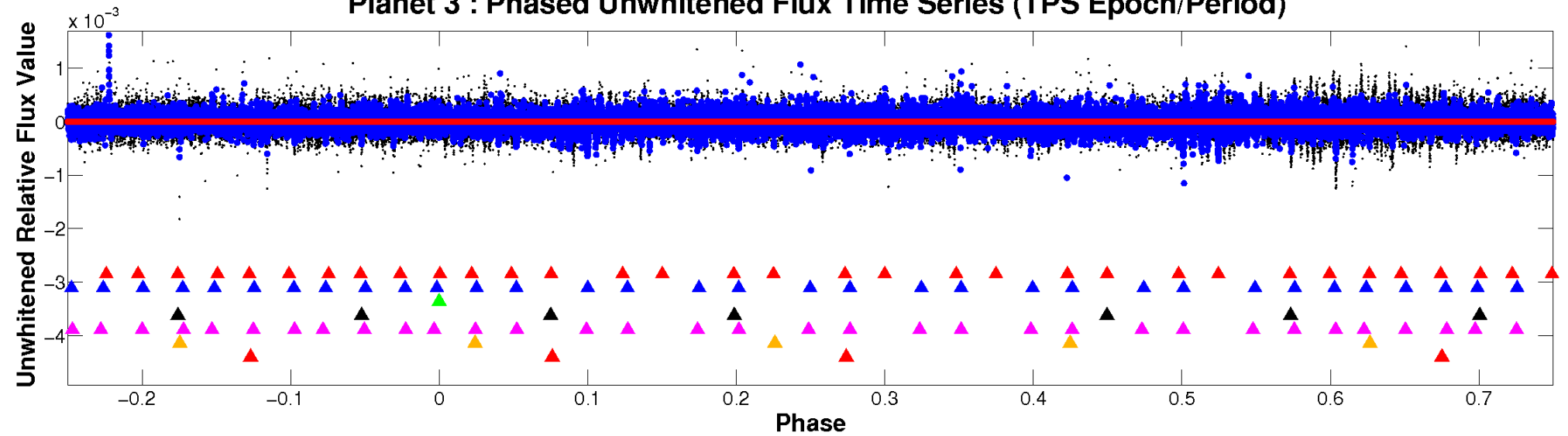
# ALT Odd/Even

TCE 008700506-03

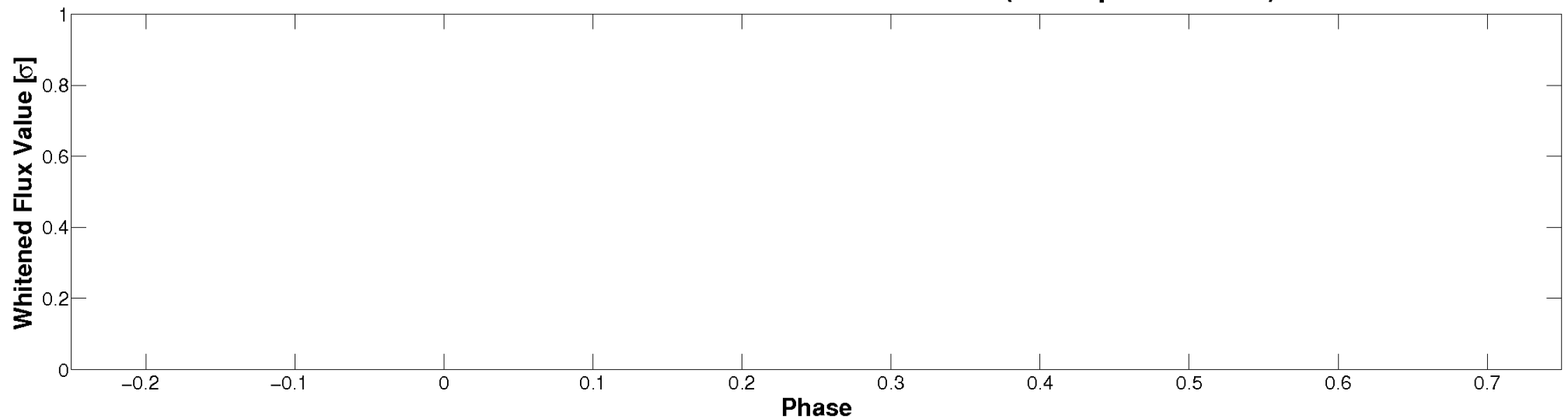


# Non-Whitened Vs. Whitened Light Curve

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

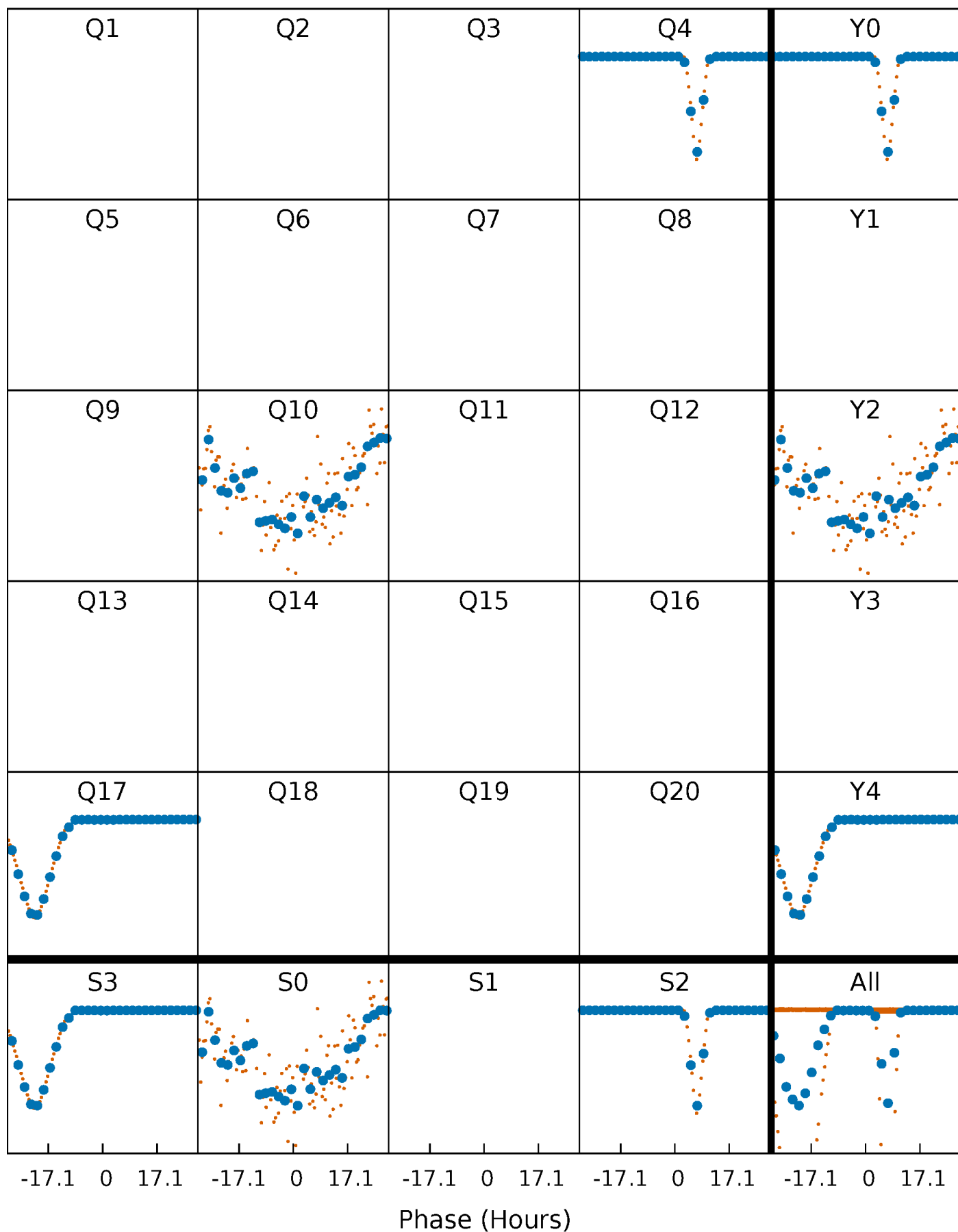


**Planet 3 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



# PDC Quarter-Phased Transit Curves

TCE 008700506-03 P=585.006012 Days  $T_0=391.303276$  (BKJD)





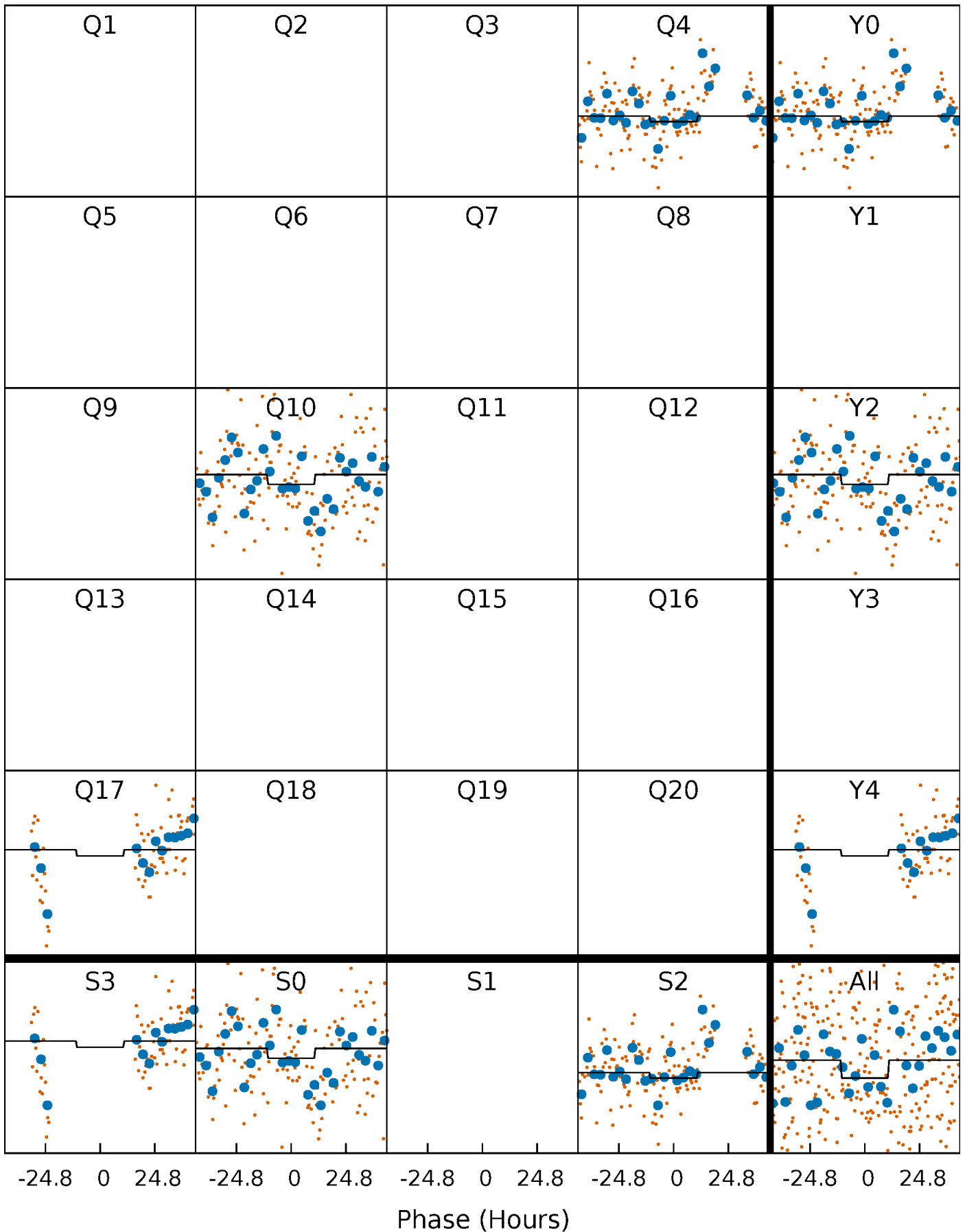
# DV Quarter-Phased Transit Curves

TCE 008700506-03     $P=585.006012$  Days     $T_0=391.303276$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

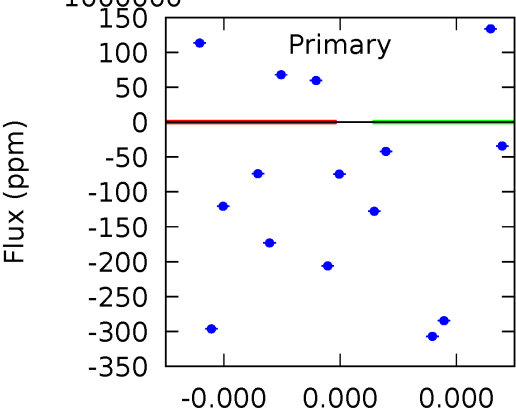
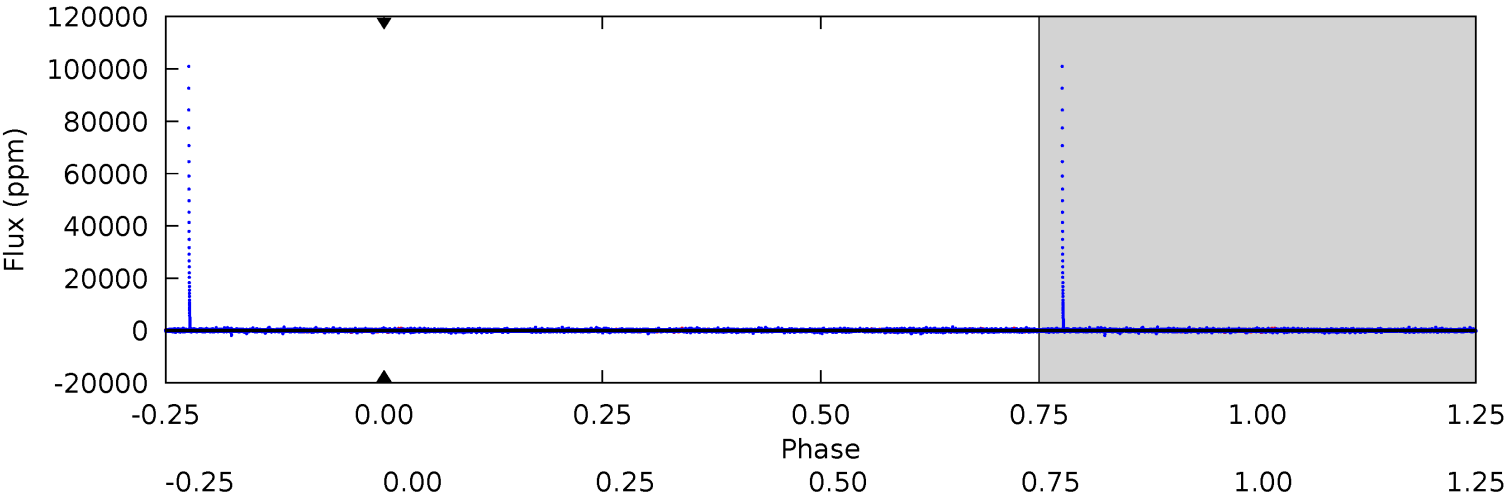
TCE 008700506-03 P=585.006012 Days  $T_0=390.530246$  (BKJD)



# DV Model-Shift Uniqueness Test

008700506-03, P = 585.006012 Days, E = 391.303276 Days

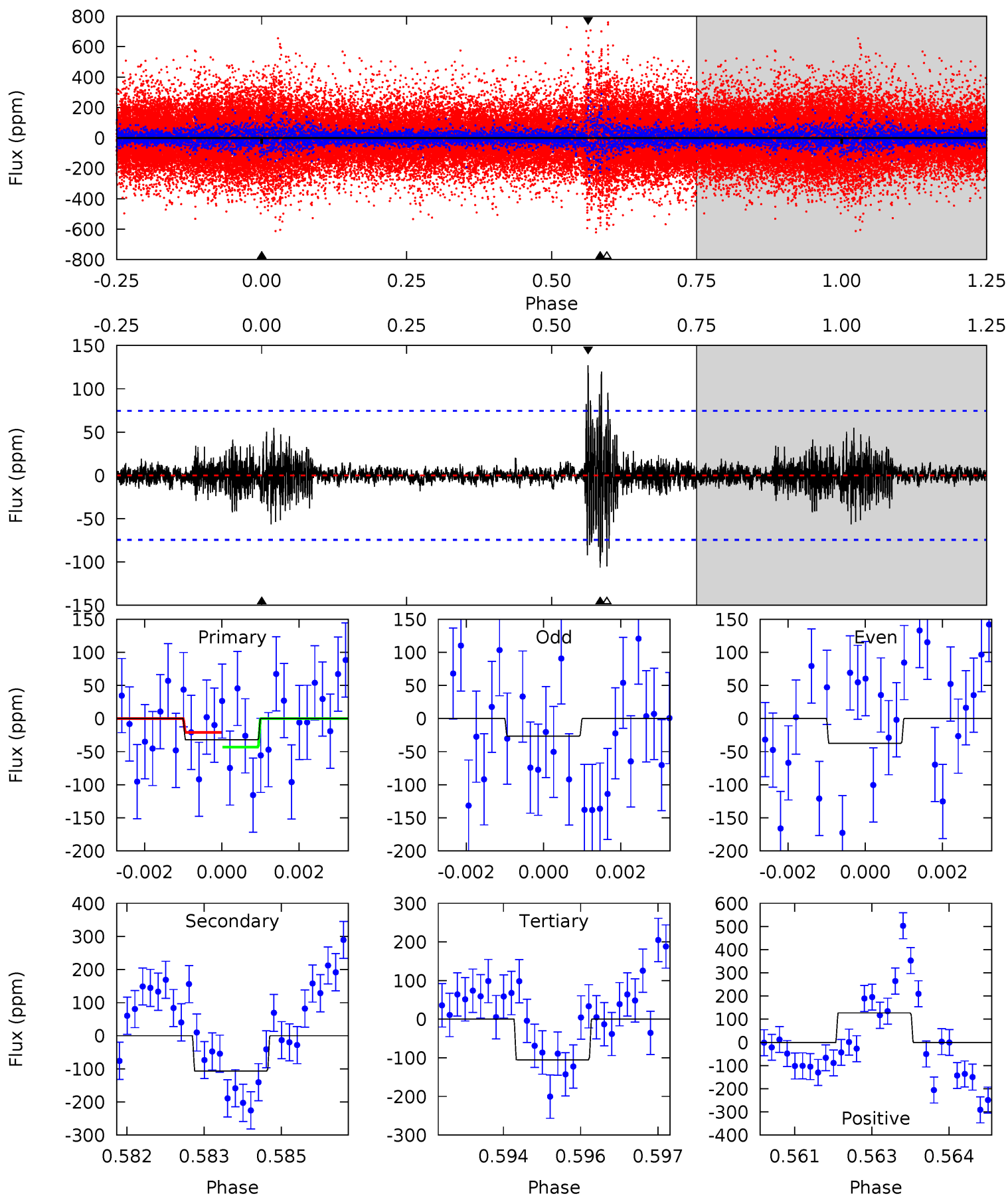
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

008700506-03, P = 585.006012 Days, E = 390.530246 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.32	7.68	7.58	9.16	5.37	3.16	1.02	-5.26	-6.84	0.10	-1.48	0.39	1.00	0.54	0.81



### Stellar Parameters For KIC 008700506

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6860^{+167}_{-286}$	$4.326^{+0.066}_{-0.154}$	$-0.100^{+0.250}_{-0.350}$	$1.292^{+0.312}_{-0.144}$	$1.300^{+0.154}_{-0.188}$	$0.849^{+0.247}_{-0.381}$
	+2%/-4%	+2%/-4%	+250%/-350%	+24%/-11%	+12%/-14%	+29%/-45%
Source	PHO1	FLK73	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 008700506-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 1000000$	$22.62^{+14.69}_{-11.99}$	$396^{+21}_{-19}$	$-4430^{+16557}_{-8055}$	$-8232.579^{+333588.642}_{-332040.856}$
Alt.	$-106 \pm 14$	$10.31^{+10.35}_{-7.14}$	$396^{+23}_{-20}$	$3156^{+1580}_{-517}$	$1183^{+11830}_{-876}$

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

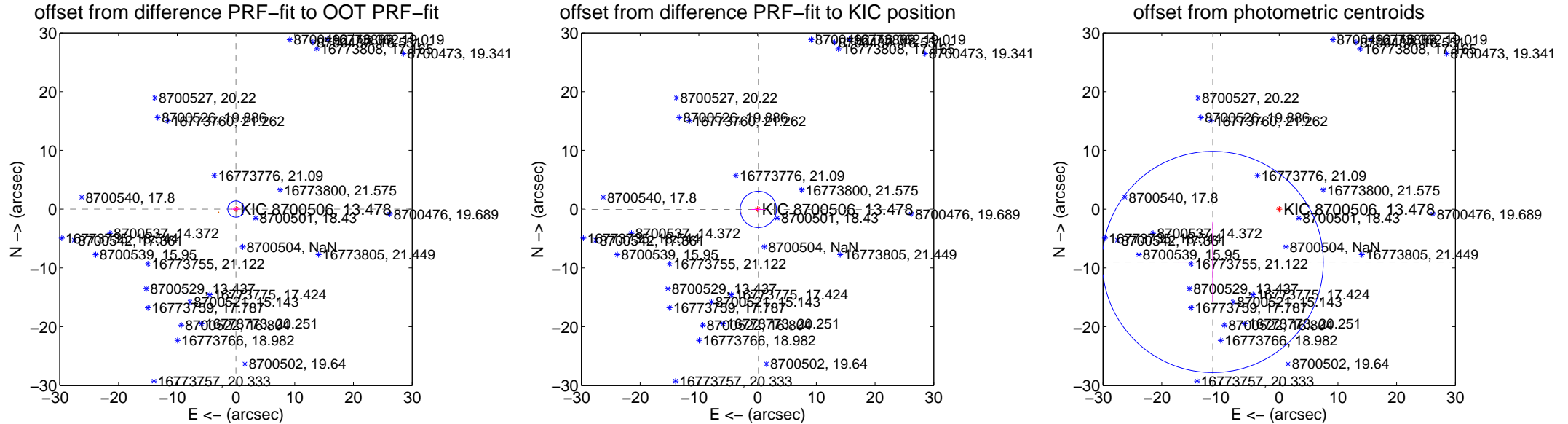
## DV Centroid Data

Supplemental centroid analysis for 008700506-03. Kepler magnitude: 13.48. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

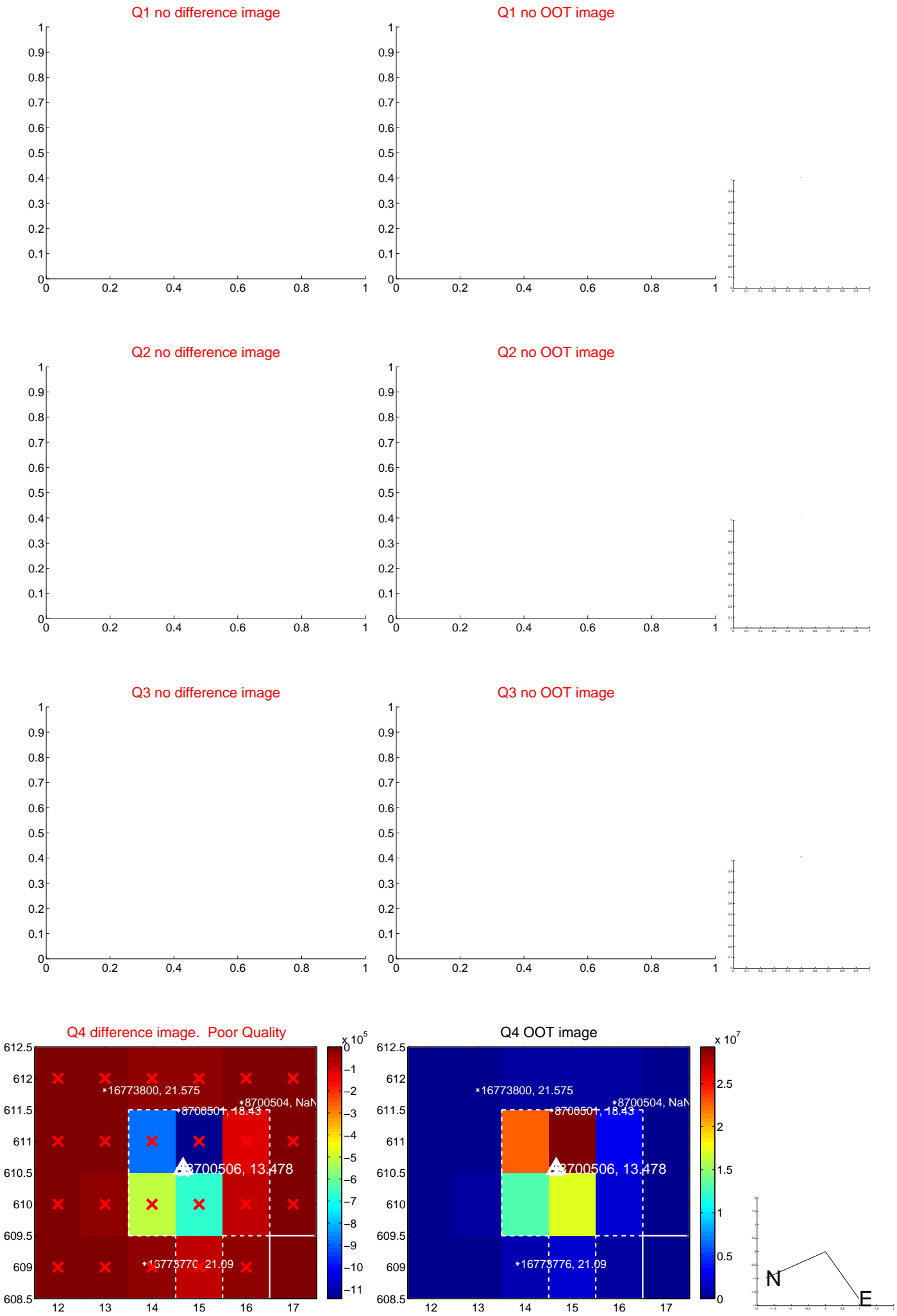
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.017 \pm 0.462$	0.04	$0.013 \pm 0.732$	$0.011 \pm 0.151$
PRF-fit source offset from KIC position	$0.136 \pm 1.030$	0.13	$-0.129 \pm 1.179$	$-0.044 \pm 0.268$
photometric centroid source offset	$14.44 \pm 6.27$	2.30	$11.30 \pm 5.92$	$-8.98 \pm 6.79$



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.

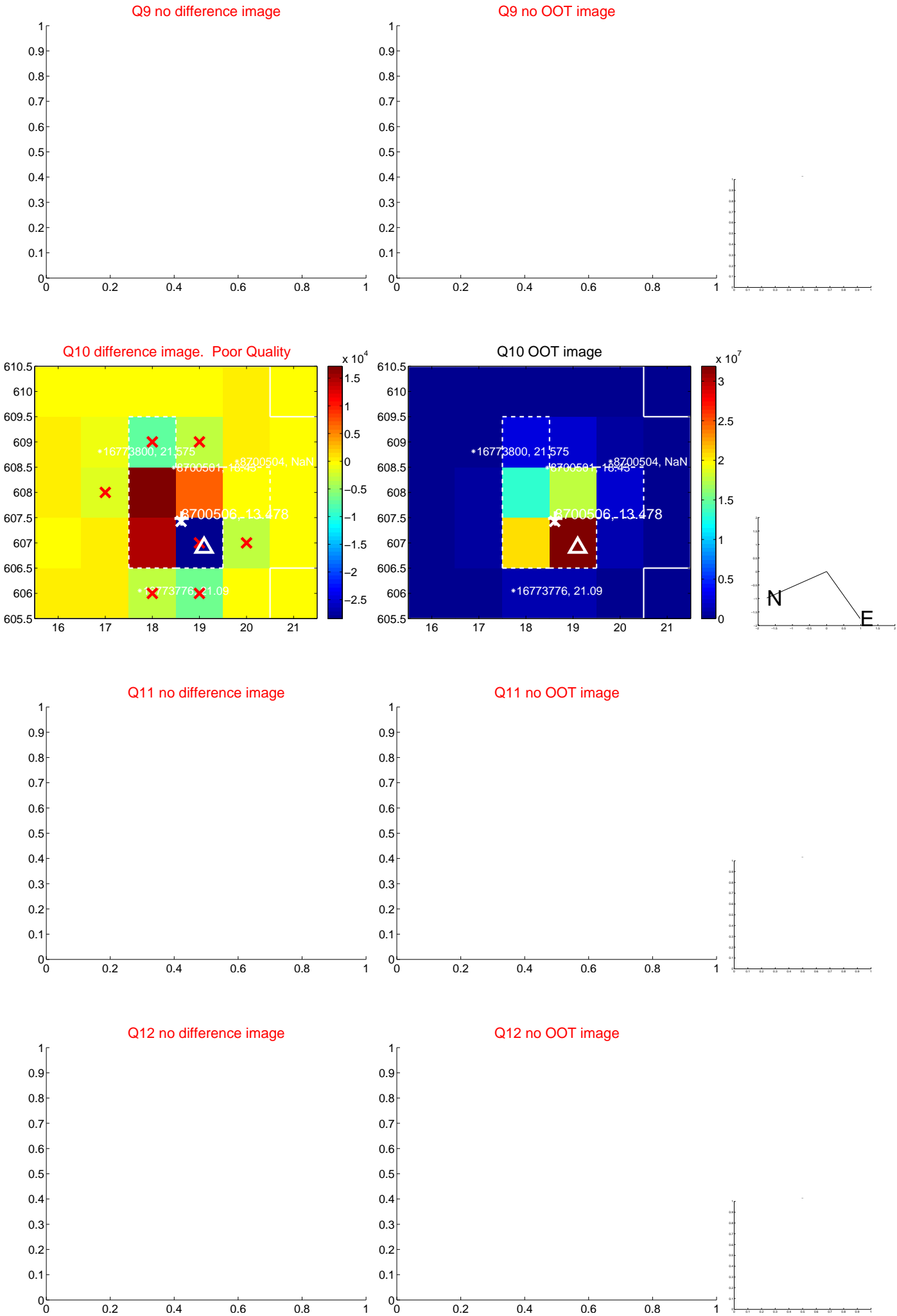


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





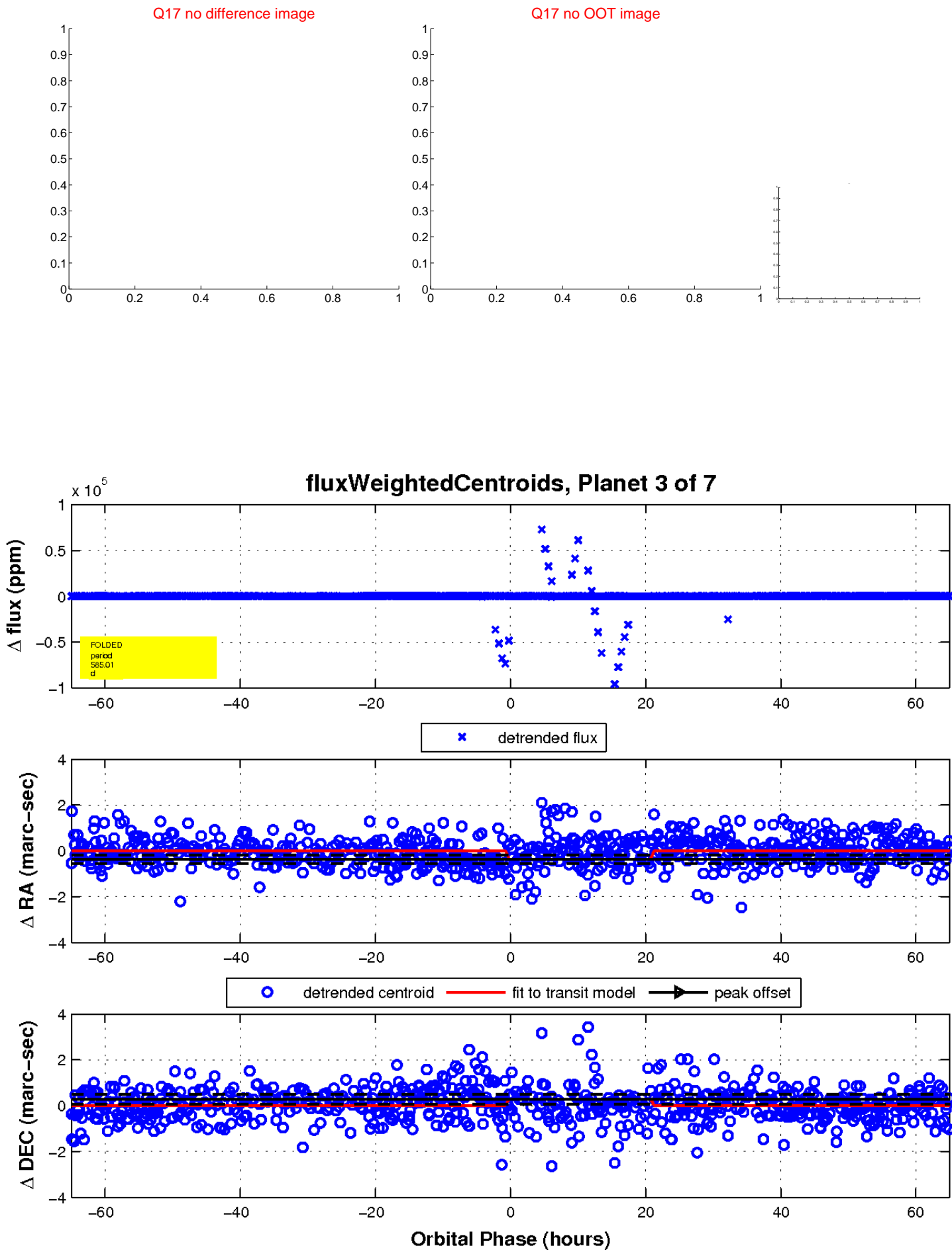
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

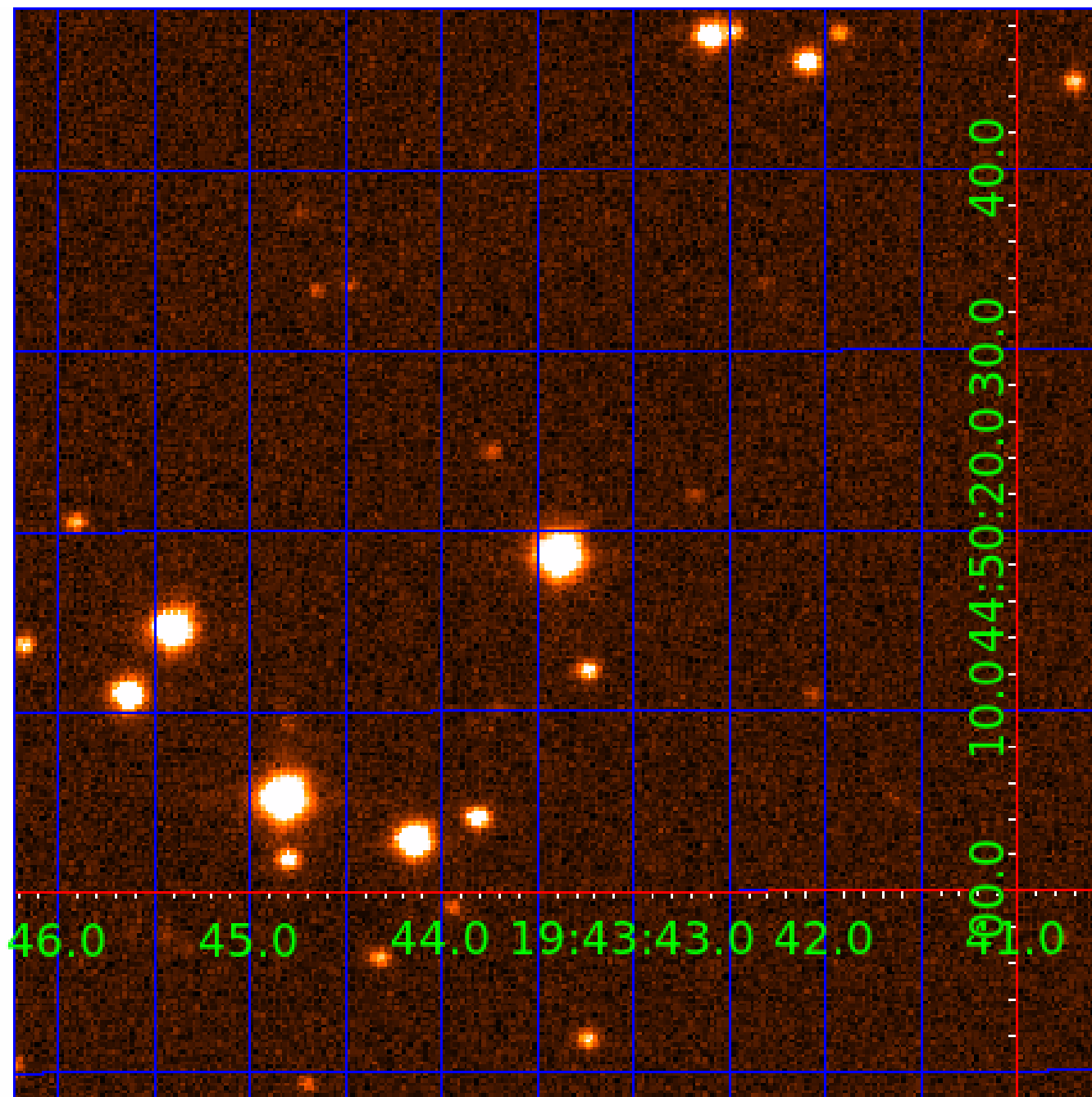


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 008700506

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008700506-01	OBS	7077.01	43.797335	172.609694	426571.2	4.500	20393.9	-1.0	1.29	6860	61.41	47.25
008700506-02	OBS	No	43.796461	158.912398	410205.3	12.500	12827.6	-1.0	1.29	6860	37.33	47.26
008700506-03	OBS	No	585.006012	391.303276	27742.9	15.000	836.9	-1.0	1.29	6860	21.75	1.49
008700506-04	OBS	No	219.113053	216.099556	27983.8	2.500	540.9	-1.0	1.29	6860	21.88	5.52
008700506-05	OBS	No	43.747990	159.382370	6405.4	15.000	385.0	-1.0	1.29	6860	10.44	47.33
008700506-06	OBS	No	350.637208	172.892505	1215.8	5.643	409.9	24.0	1.29	6860	4.76	2.95
008700506-07	OBS	No	350.401498	435.848436	15759.7	4.500	455.6	-1.0	1.29	6860	16.39	2.95

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008700506-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS
008700506-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS
008700506-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
008700506-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
008700506-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—CENT_NOFITS
008700506-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008700506-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—NO_FITS—CENT_NOFITS

**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 008700506-04

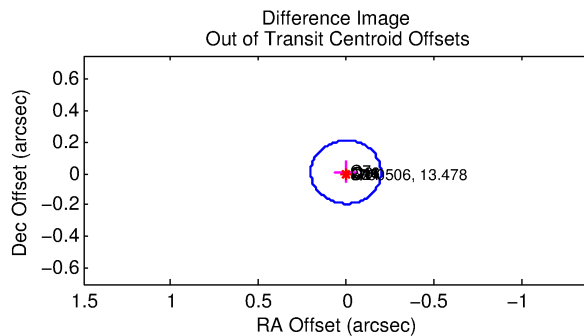
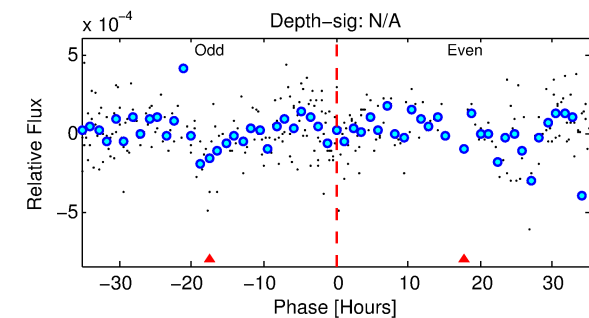
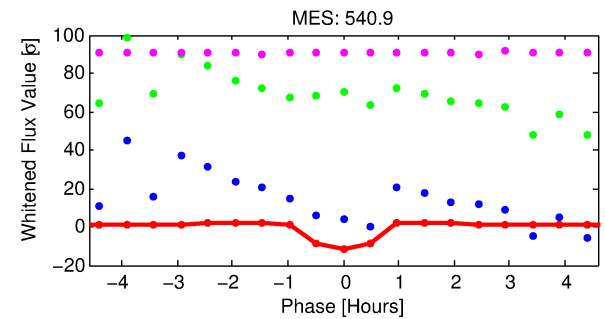
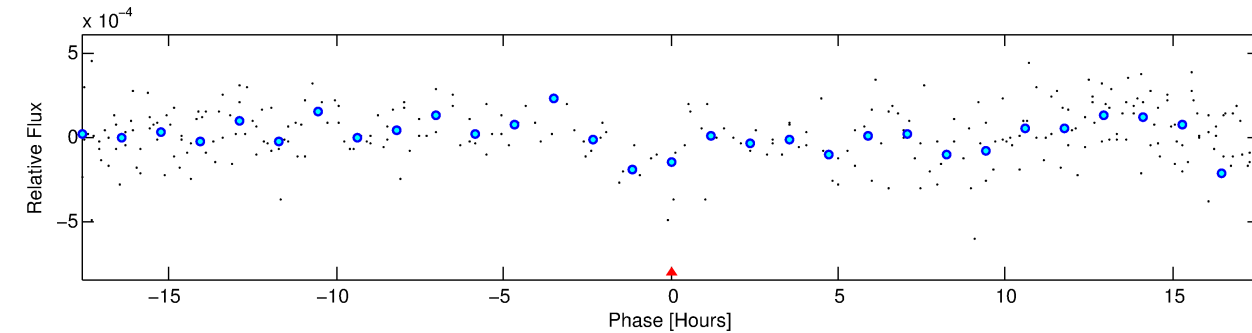
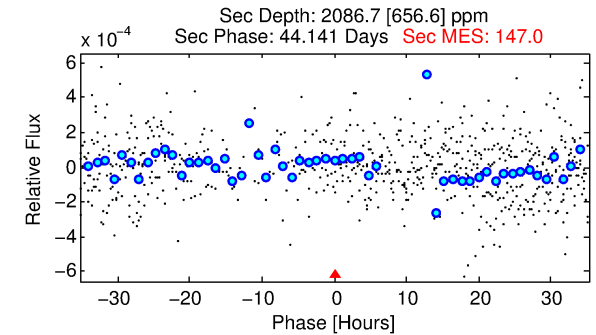
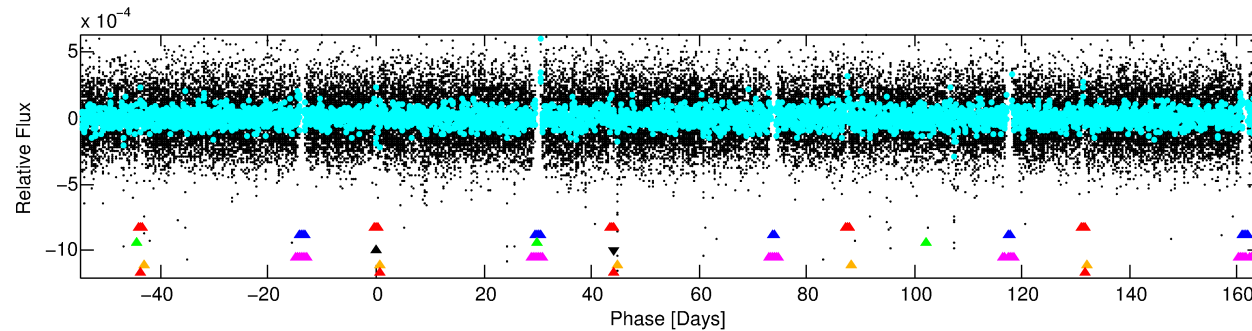
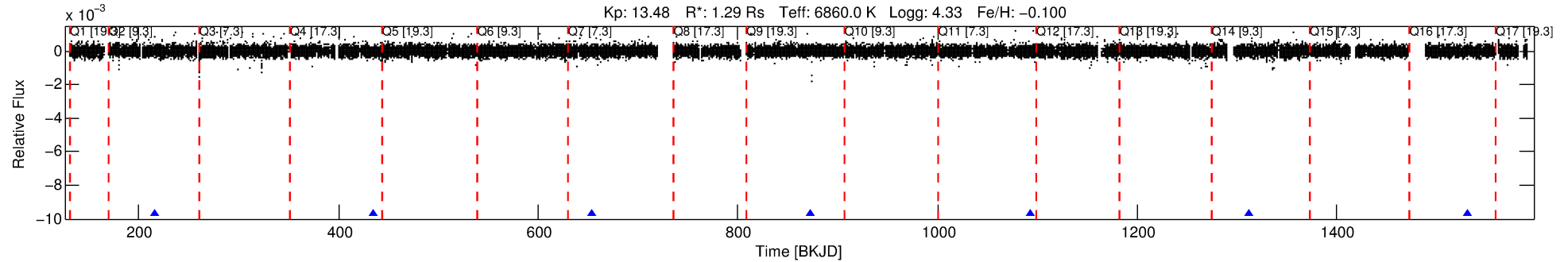
No Significant Match Found

# DV One-Page Summary

KIC: 8700506 Candidate: 4 of 7 Period: 219.113 d

KOI: K07077 Corr: No Ephemeris Match

Kp: 13.48 R\*: 1.29 Rs Teff: 6860.0 K Logg: 4.33 Fe/H: -0.100



TPS TCE Results:

Period = 219.11305 d

Epoch = 216.0996 BKJD

DV fit results are unavailable

DV Diagnostic Results:

ShortPeriod-sig: 100.0% [817.35σ]

LongPeriod-sig: 100.0% [612.09σ]

ModelChiSquare2-sig: N/A

ModelChiSquareGof-sig: N/A

Bootstrap-pfa: N/A

RollingBand-fgt: 1.00 [5/5]

GhostDiagnostic-chr: 0.2247

Centroid-sig: 0.0%

Centroid-so: 4.095 arcsec [2.93σ]

OotOffset-rm: 0.010 arcsec [0.15σ]

KicOffset-rm: 0.178 arcsec [2.53σ]

OotOffset-st: 2/2/1 [7]

KicOffset-st: 2/2/1 [7]

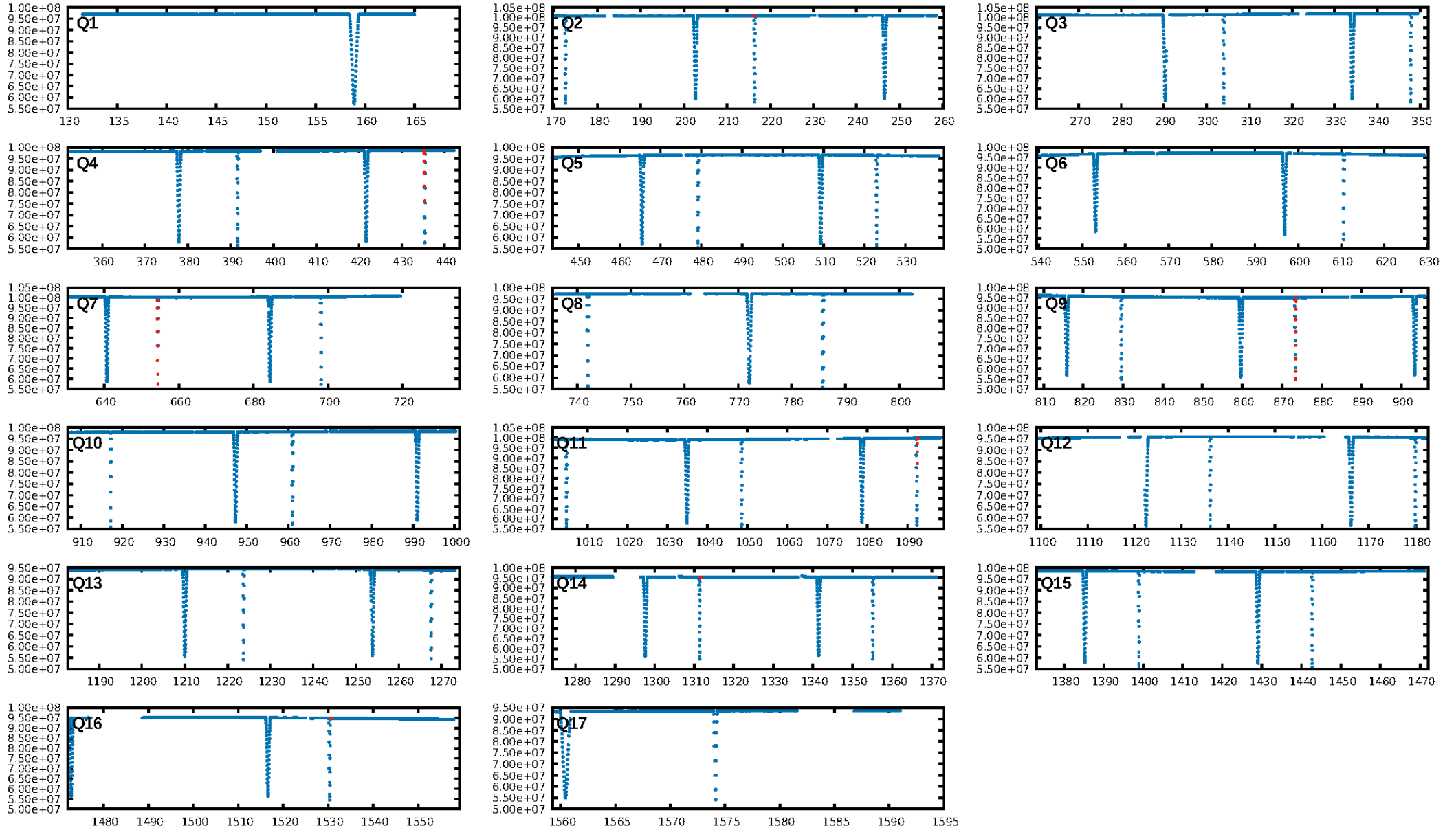
DiffImageQuality-fgm: 0.29 [2/7]

DiffImageOverlap-fno: 0.00 [0/7]

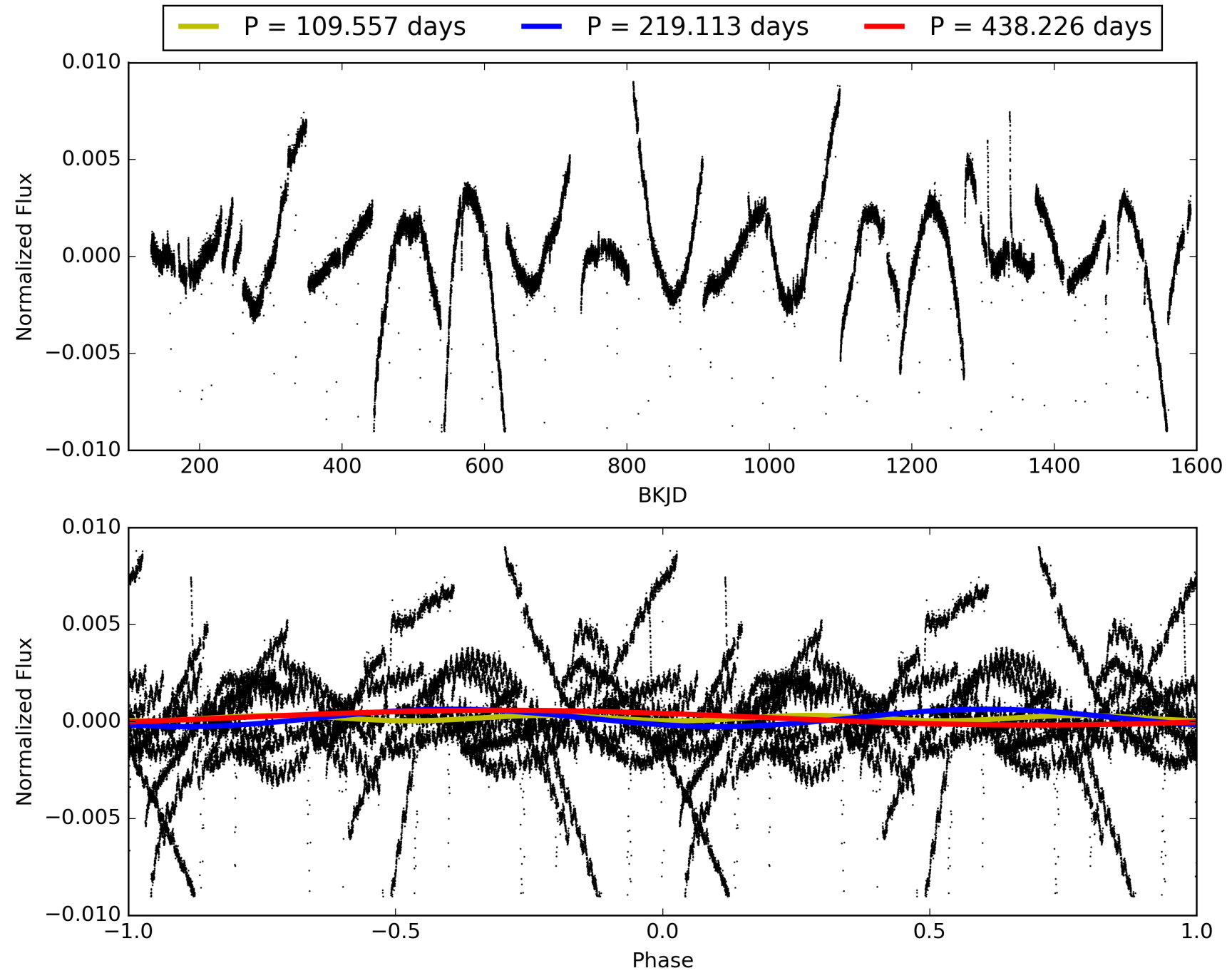
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:21:33 Z

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

# TCE 008700506-04, PDC Light Curves



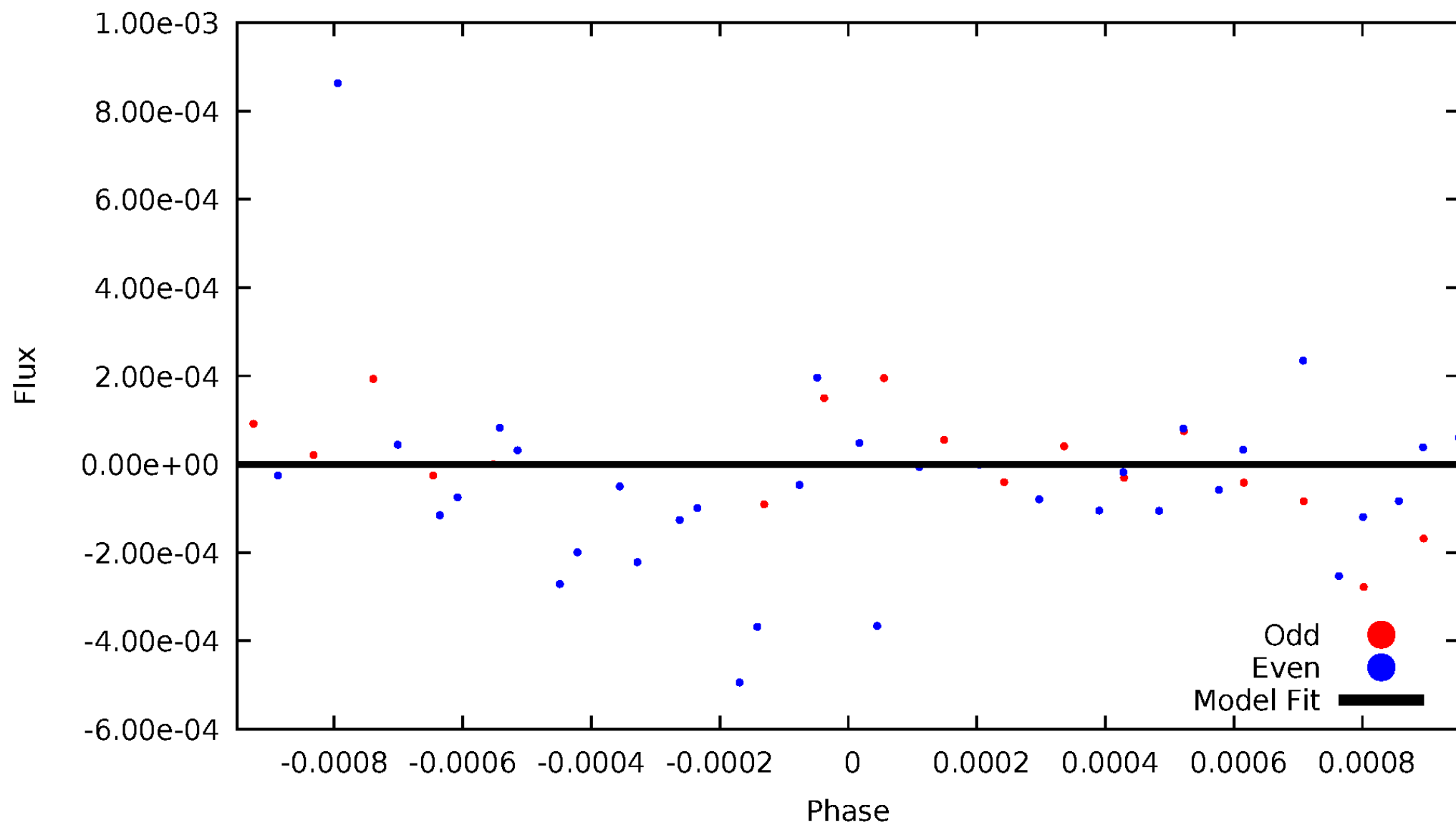
TCE 008700506-04





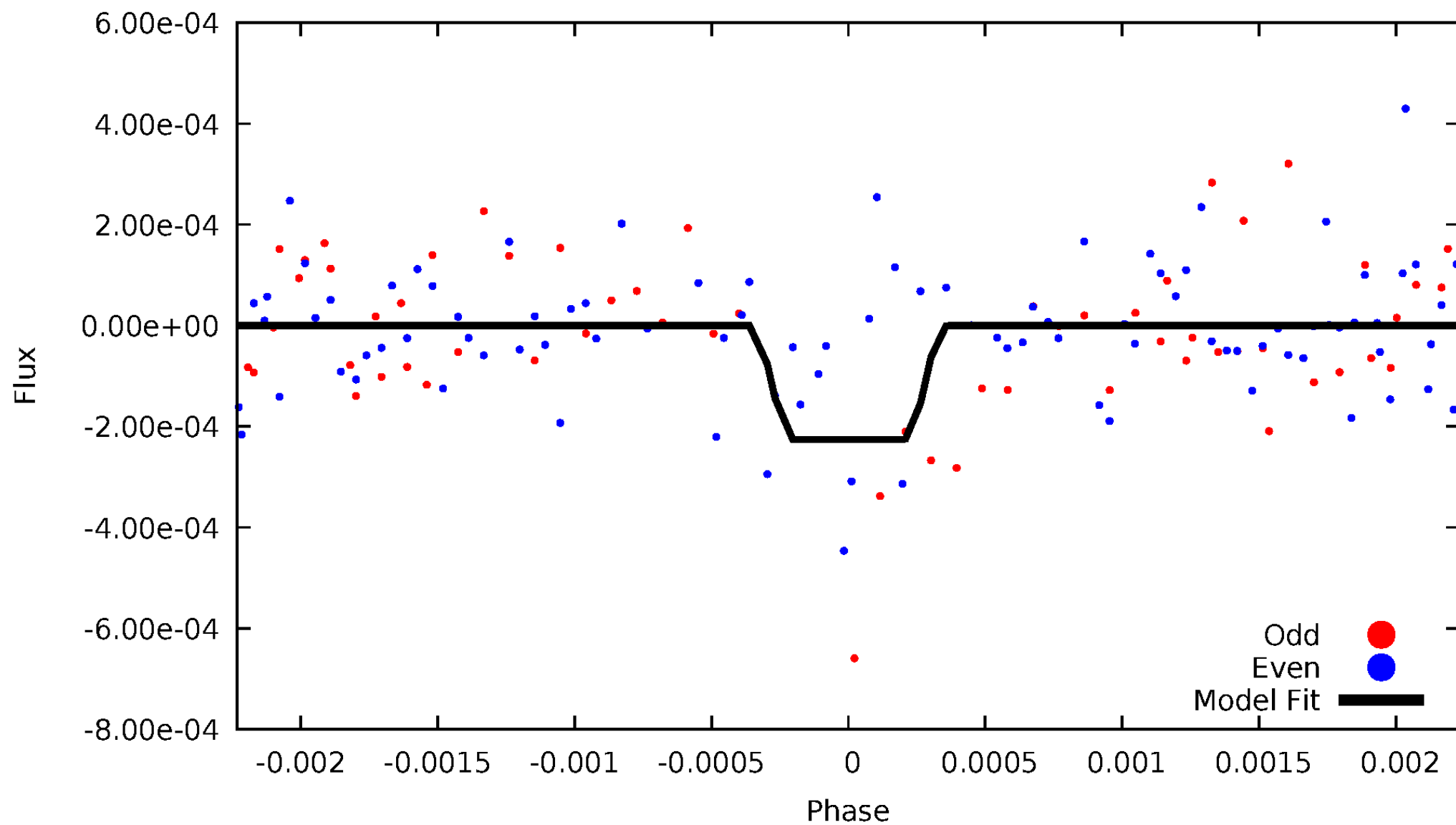
# DV Odd/Even

TCE 008700506-04



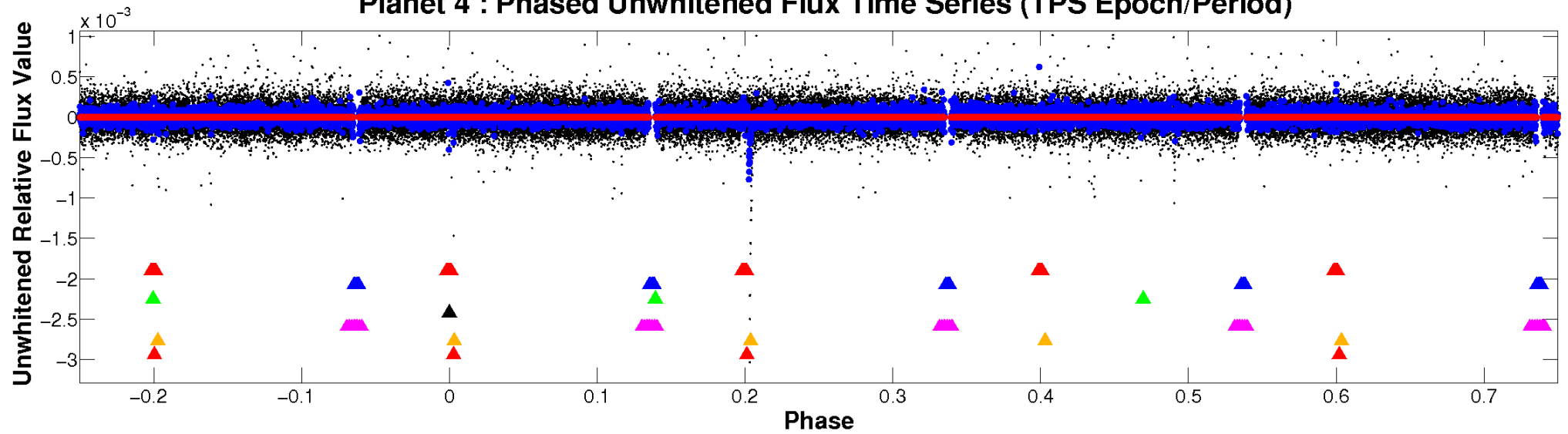
# ALT Odd/Even

TCE 008700506-04



# Non-Whitened Vs. Whitened Light Curve

**Planet 4 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)**

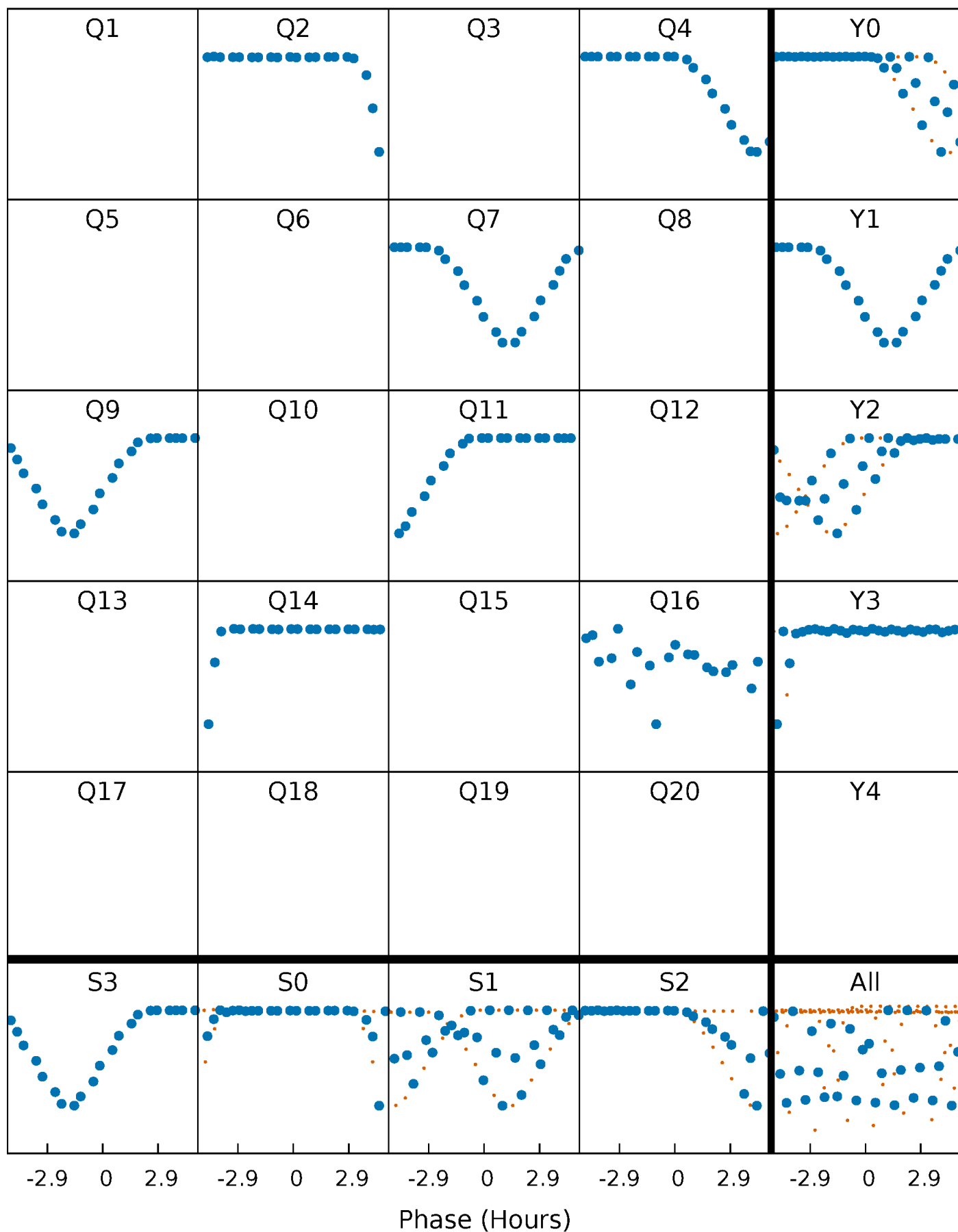


**Planet 4 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



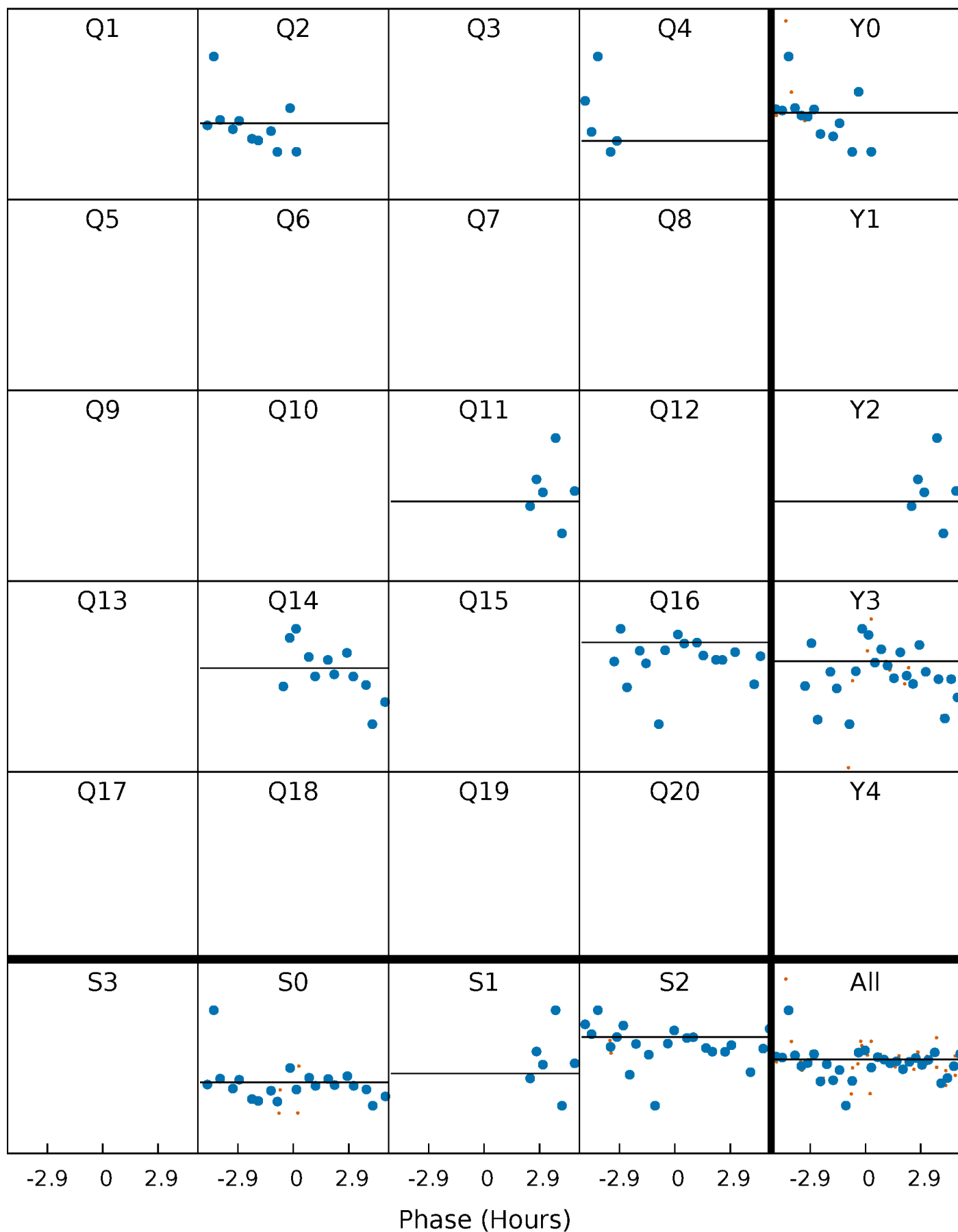
# PDC Quarter-Phased Transit Curves

TCE 008700506-04 P=219.113053 Days  $T_0=216.099556$  (BKJD)



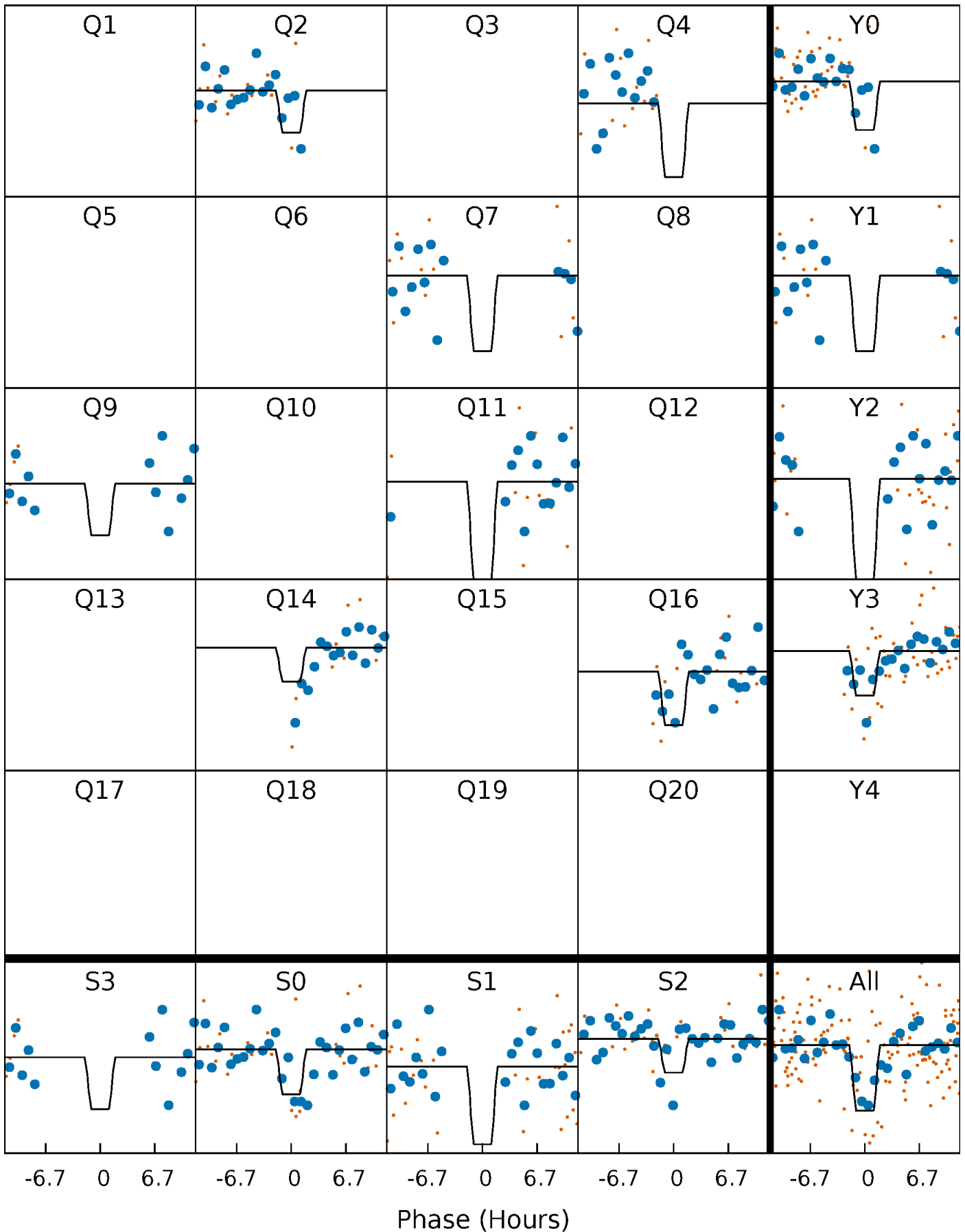
# DV Quarter-Phased Transit Curves

TCE 008700506-04 P=219.113053 Days  $T_0=216.099556$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

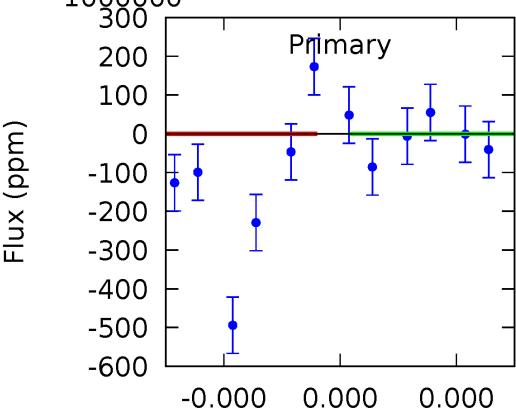
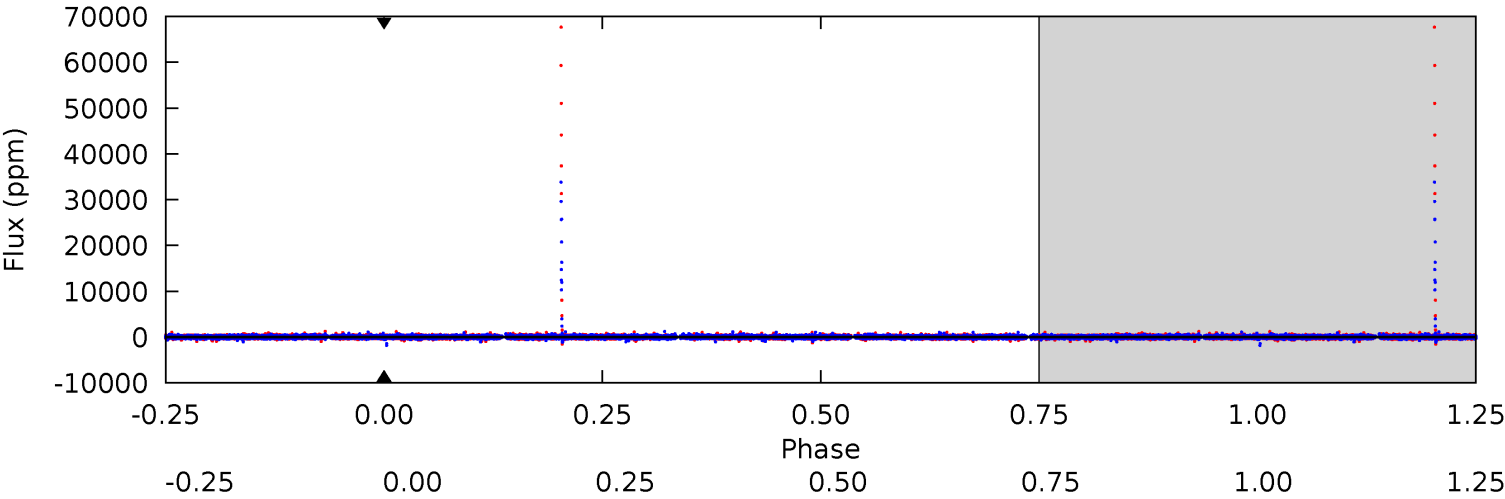
TCE 008700506-04 P=219.113053 Days  $T_0=216.066006$  (BKJD)



DV Model-Shift Uniqueness Test

008700506-04, P = 219.113053 Days, E = 216.099556 Days

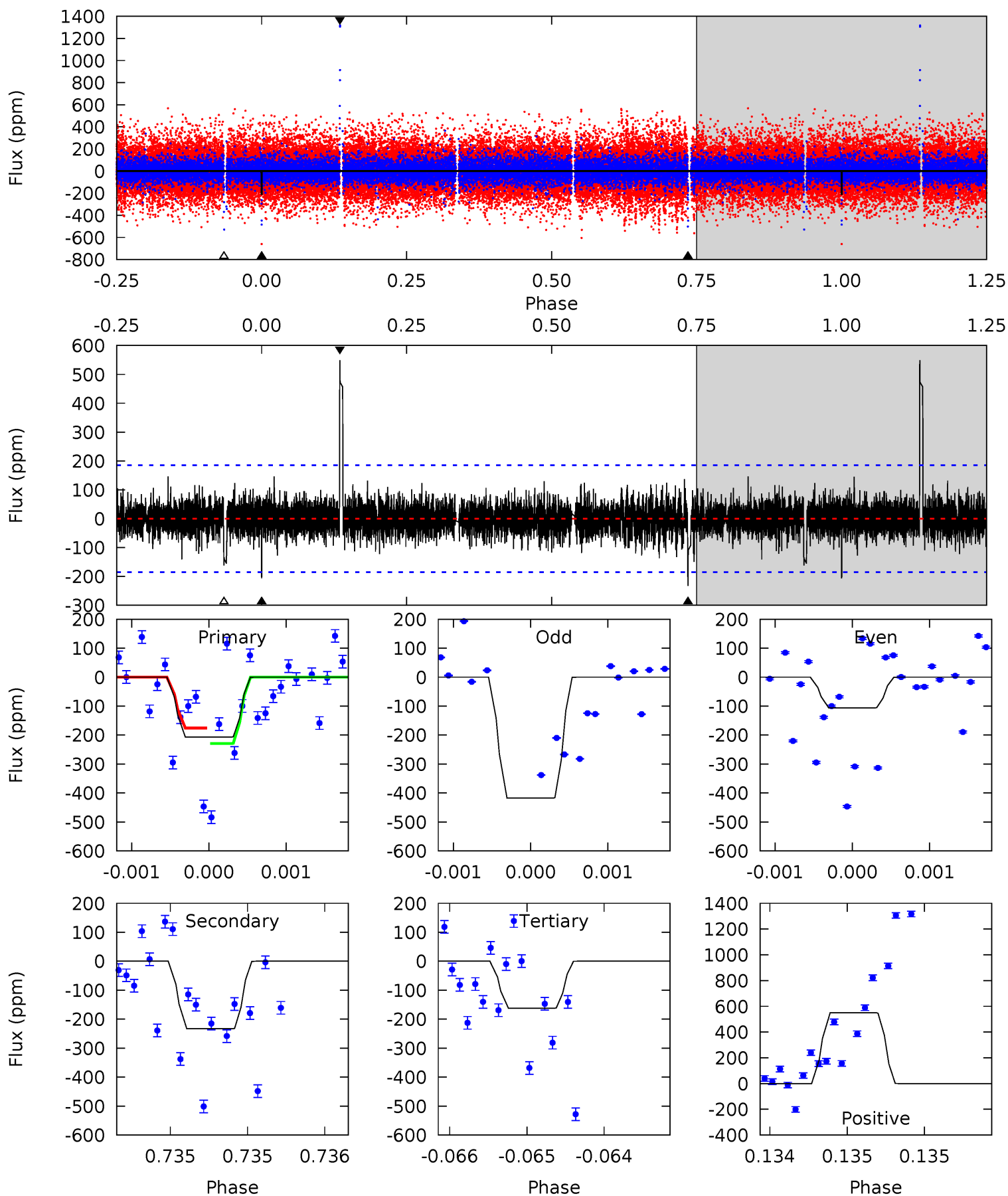
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

008700506-04, P = 219.113053 Days, E = 216.066006 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.17	6.95	4.83	16.4	5.52	3.40	1.07	1.34	-10.2	2.12	-9.44	4.26	1.74	0.70	0.75





### Stellar Parameters For KIC 008700506

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6860^{+167}_{-286}$	$4.326^{+0.066}_{-0.154}$	$-0.100^{+0.250}_{-0.350}$	$1.292^{+0.312}_{-0.144}$	$1.300^{+0.154}_{-0.188}$	$0.849^{+0.247}_{-0.381}$
	+2%/-4%	+2%/-4%	+250%/-350%	+24%/-11%	+12%/-14%	+29%/-45%
Source	PHO1	FLK73	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 008700506-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 1000000$	$23.80^{+14.82}_{-13.42}$	$552^{+33}_{-27}$	$2996^{+8801}_{-13667}$	$255^{+75739}_{-63138}$
Alt.	$-233 \pm 33$	$10.78^{+10.56}_{-7.57}$	$551^{+30}_{-26}$	$3559^{+2080}_{-696}$	$662^{+6934}_{-503}$

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

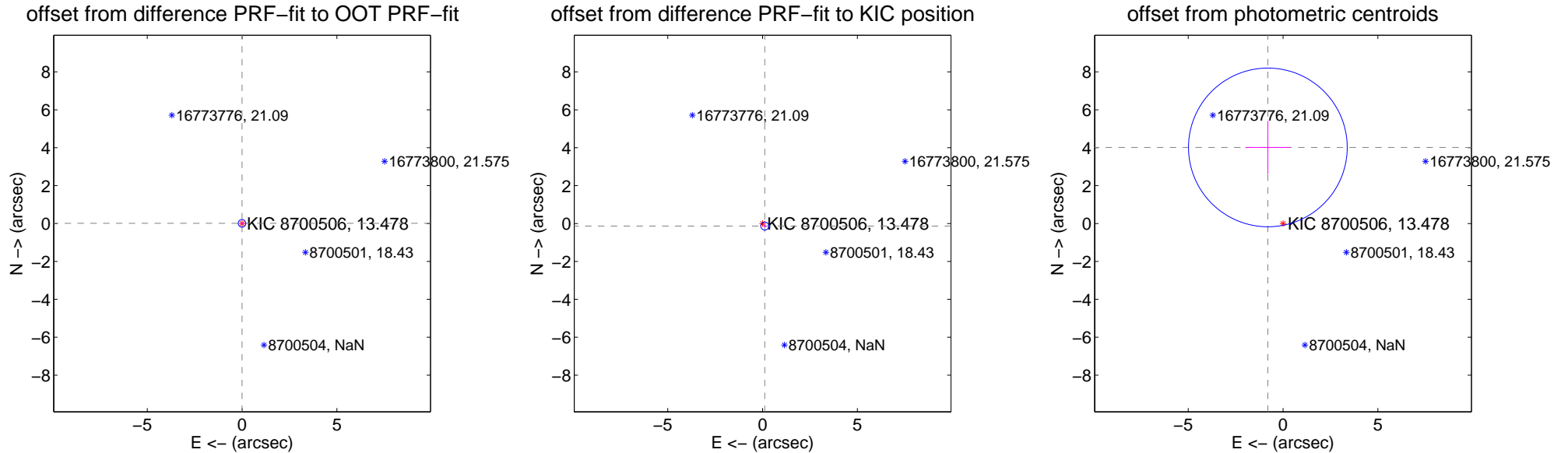
## DV Centroid Data

Supplemental centroid analysis for 008700506-04. Kepler magnitude: 13.48. Transit SNR -1.00

There are 2 quarters with good PRF difference image offsets

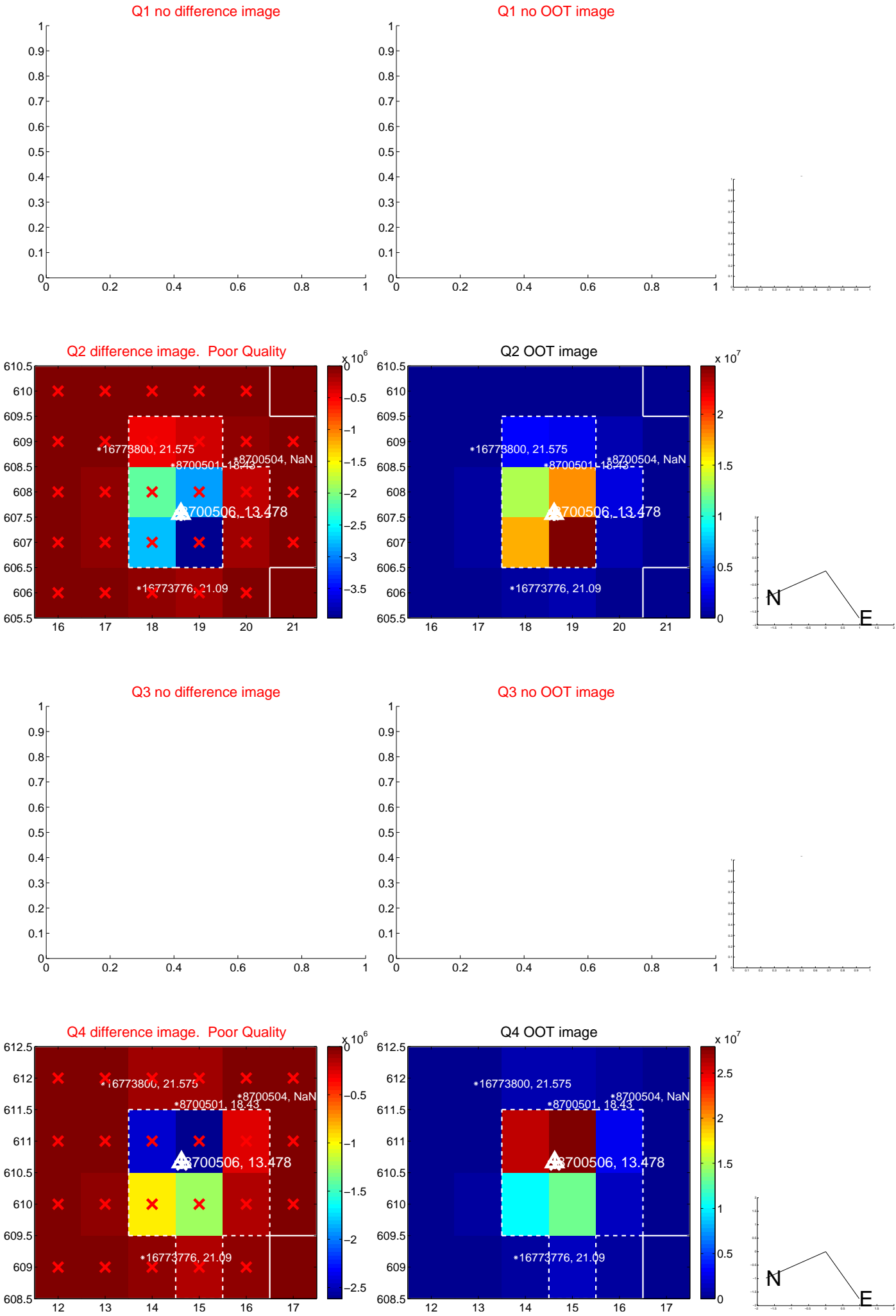
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.010 \pm 0.067$	0.15	$0.003 \pm 0.067$	$0.010 \pm 0.067$
PRF-fit source offset from KIC position	$0.178 \pm 0.070$	2.53	$-0.117 \pm 0.070$	$-0.134 \pm 0.069$
photometric centroid source offset	$4.10 \pm 1.40$	2.93	$0.80 \pm 1.19$	$4.02 \pm 1.40$



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



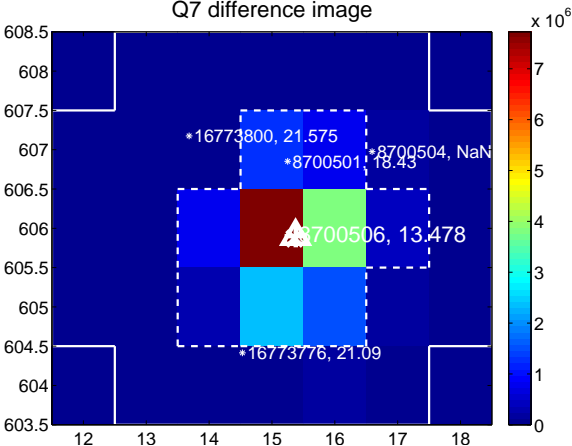
Q6 no difference image



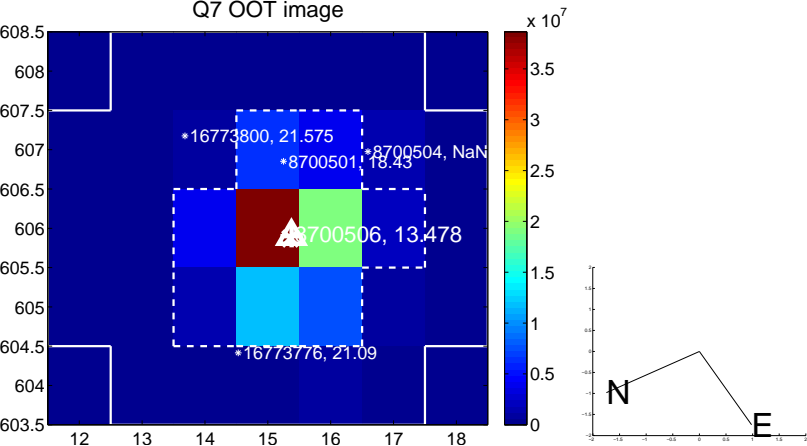
Q6 no OOT image



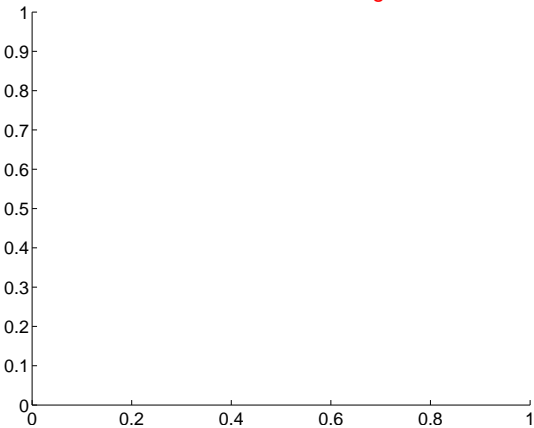
Q7 difference image



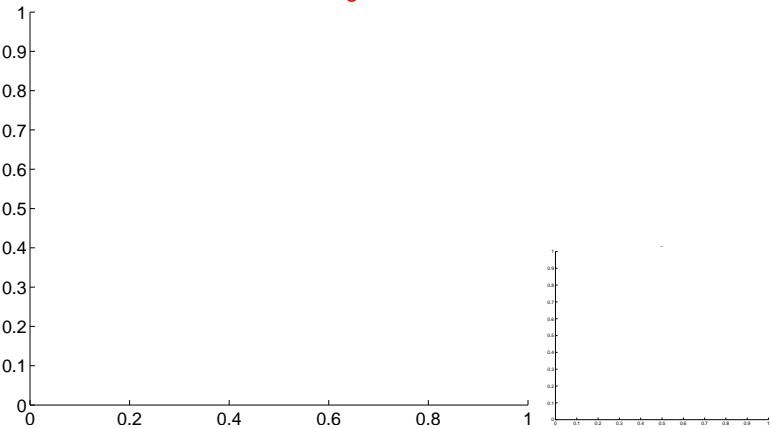
Q7 OOT image



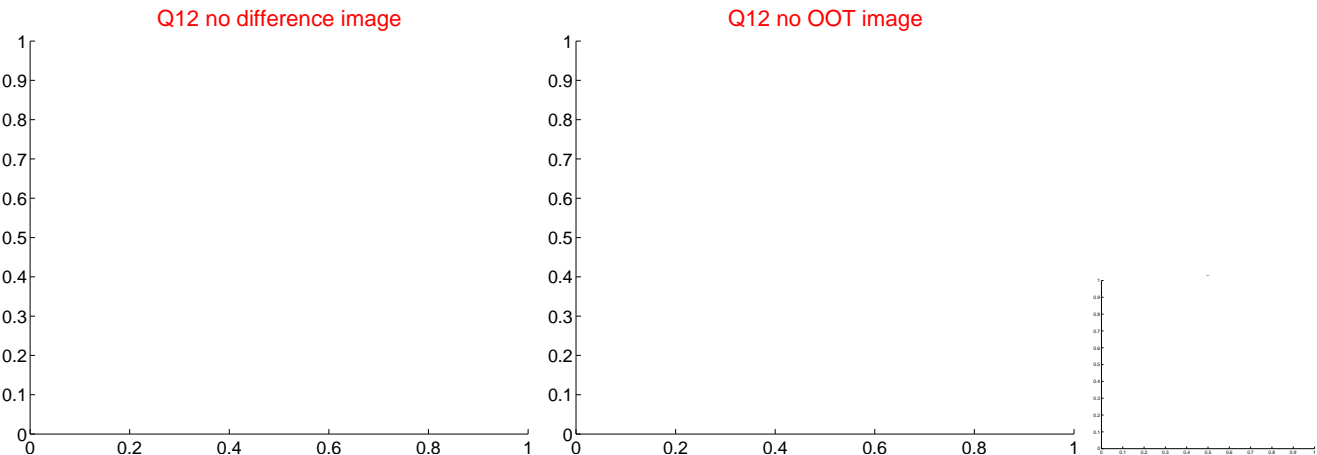
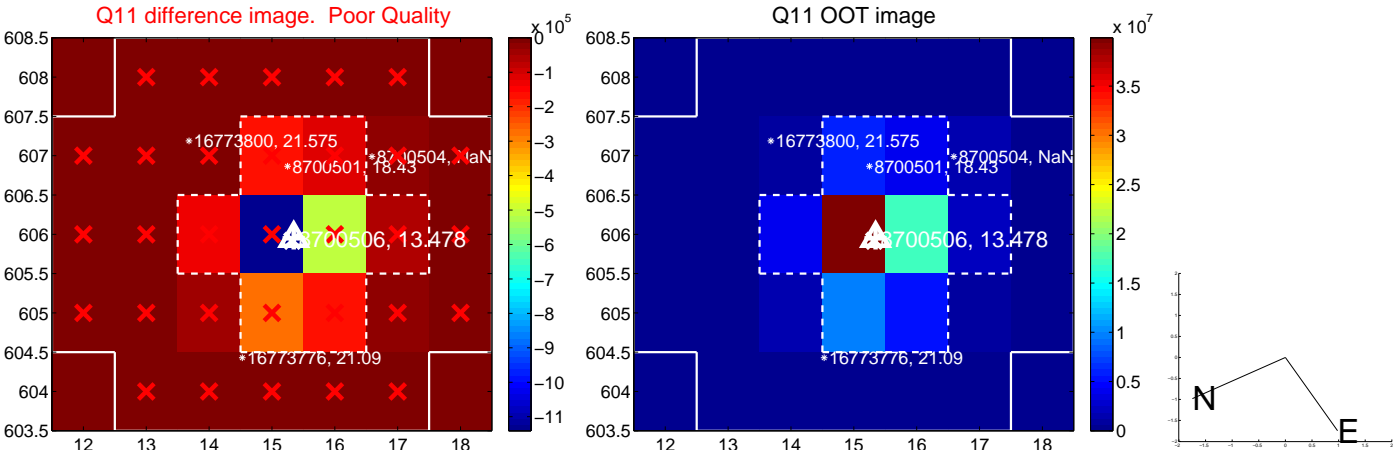
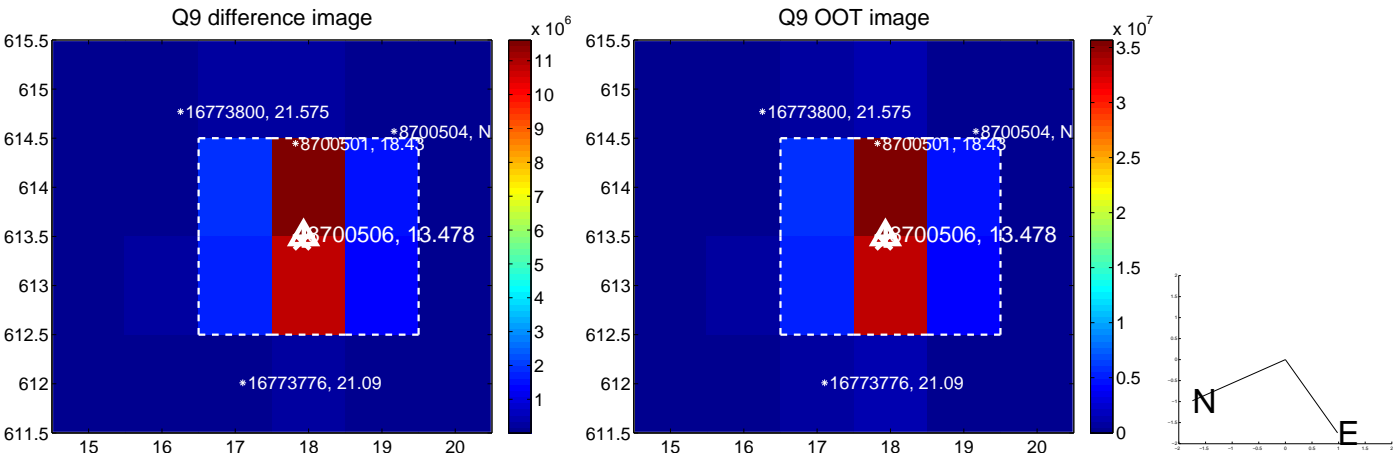
Q8 no difference image



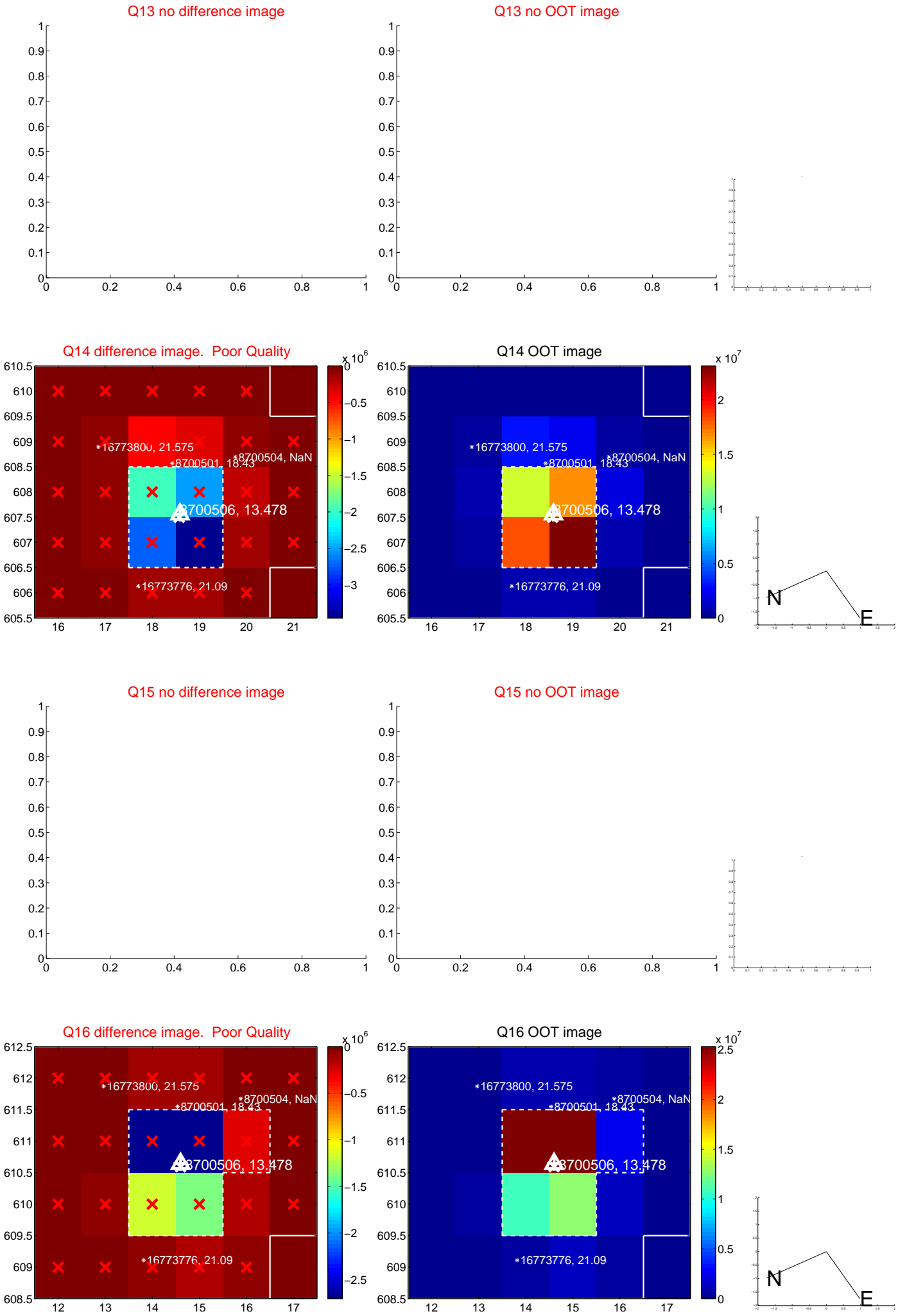
Q8 no OOT image



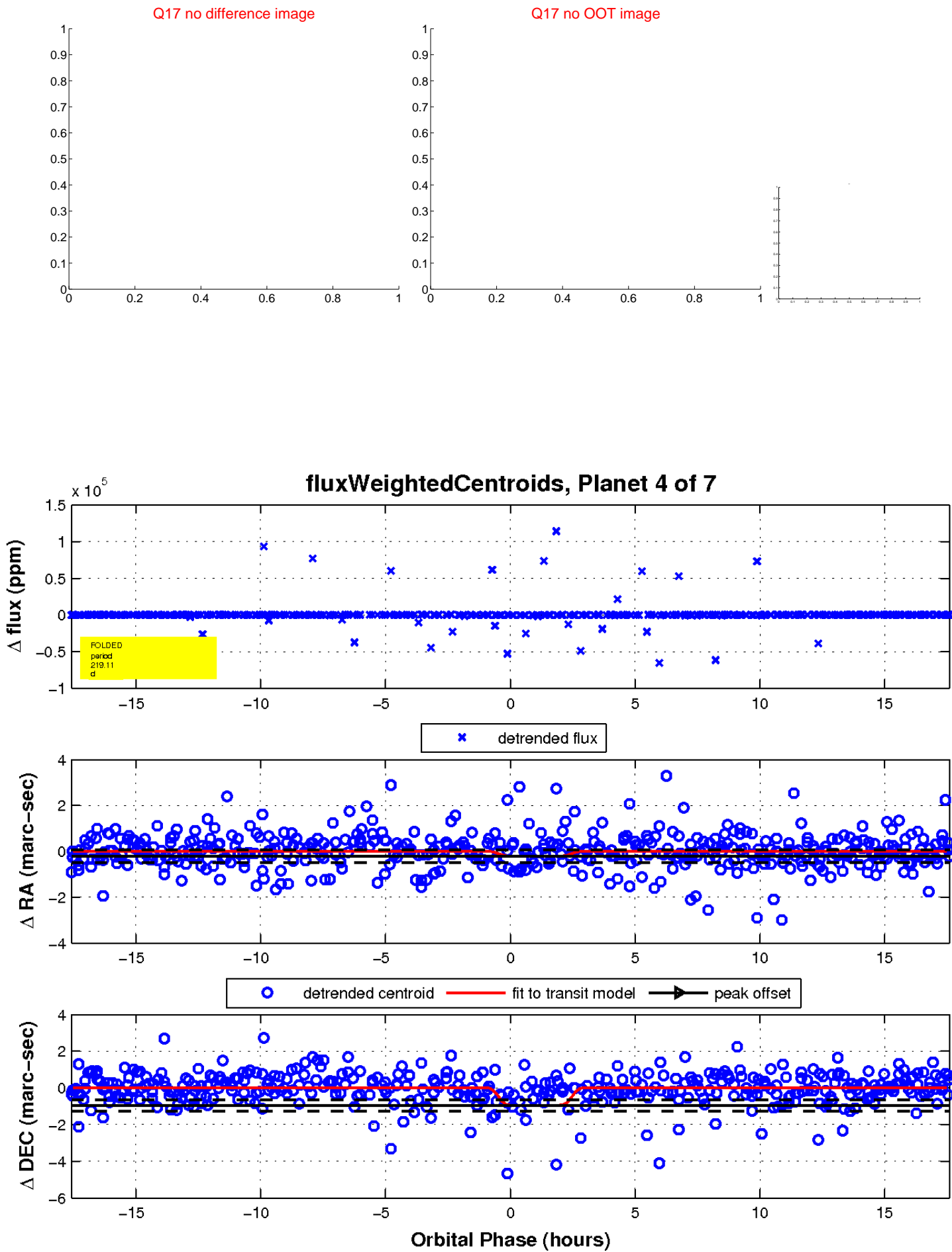
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

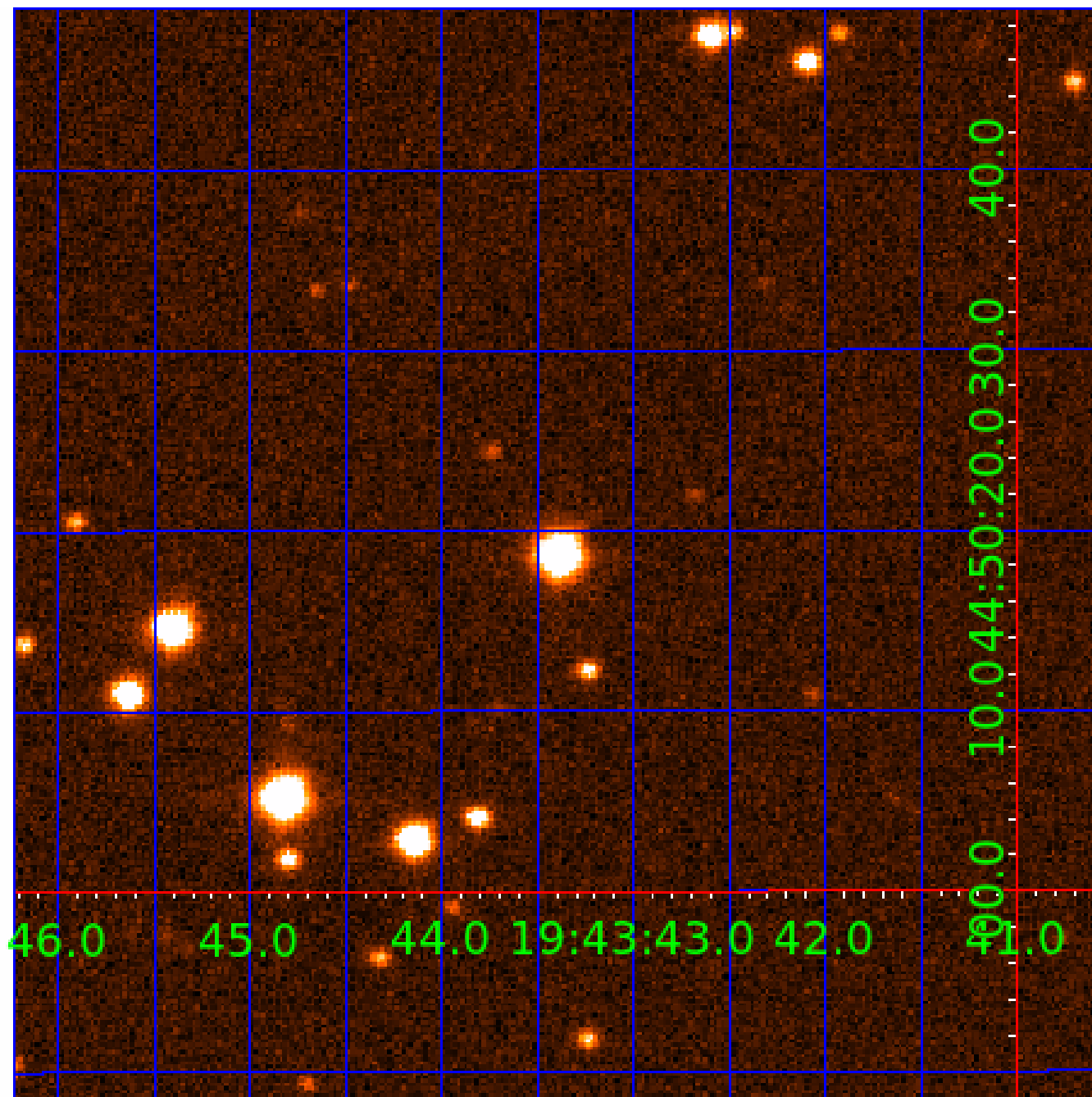


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 008700506

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008700506-01	OBS	7077.01	43.797335	172.609694	426571.2	4.500	20393.9	-1.0	1.29	6860	61.41	47.25
008700506-02	OBS	No	43.796461	158.912398	410205.3	12.500	12827.6	-1.0	1.29	6860	37.33	47.26
008700506-03	OBS	No	585.006012	391.303276	27742.9	15.000	836.9	-1.0	1.29	6860	21.75	1.49
008700506-04	OBS	No	219.113053	216.099556	27983.8	2.500	540.9	-1.0	1.29	6860	21.88	5.52
008700506-05	OBS	No	43.747990	159.382370	6405.4	15.000	385.0	-1.0	1.29	6860	10.44	47.33
008700506-06	OBS	No	350.637208	172.892505	1215.8	5.643	409.9	24.0	1.29	6860	4.76	2.95
008700506-07	OBS	No	350.401498	435.848436	15759.7	4.500	455.6	-1.0	1.29	6860	16.39	2.95

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008700506-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS
008700506-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS
008700506-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
008700506-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
008700506-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—CENT_NOFITS
008700506-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008700506-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—NO_FITS—CENT_NOFITS

**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.

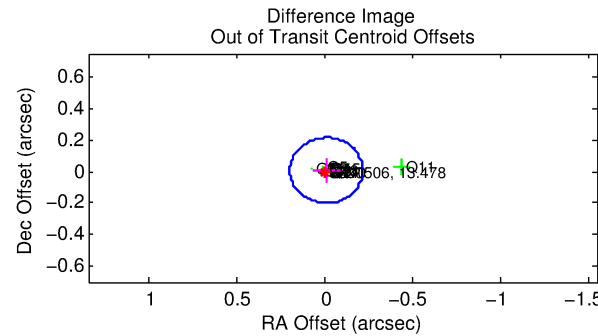
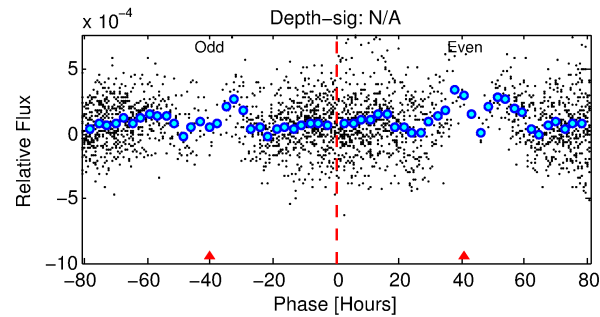
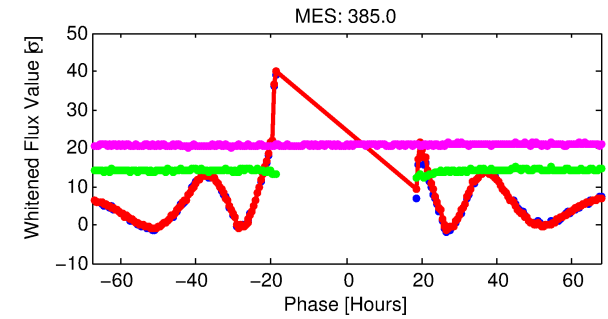
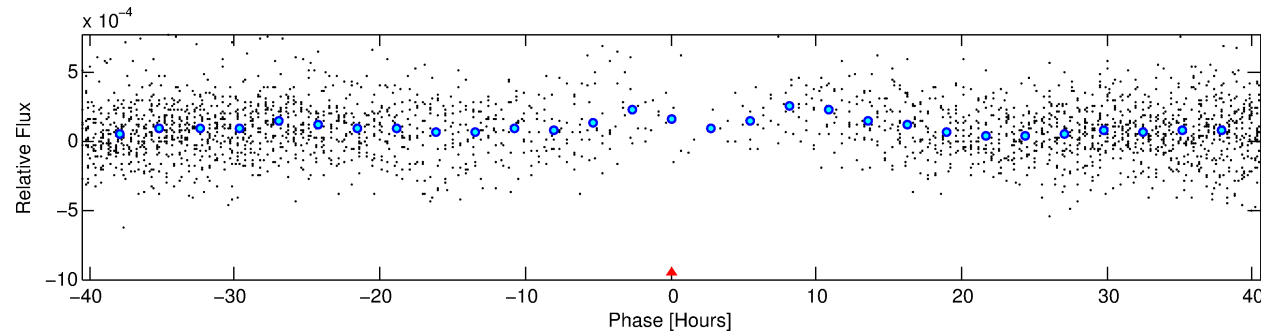
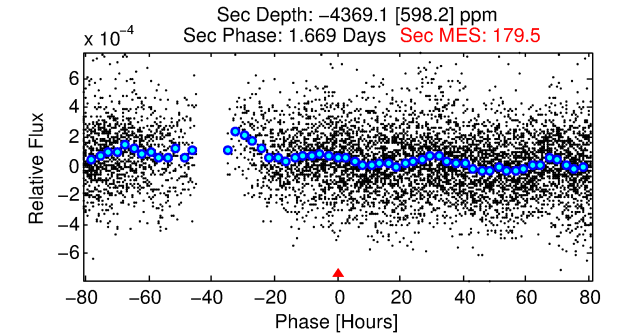
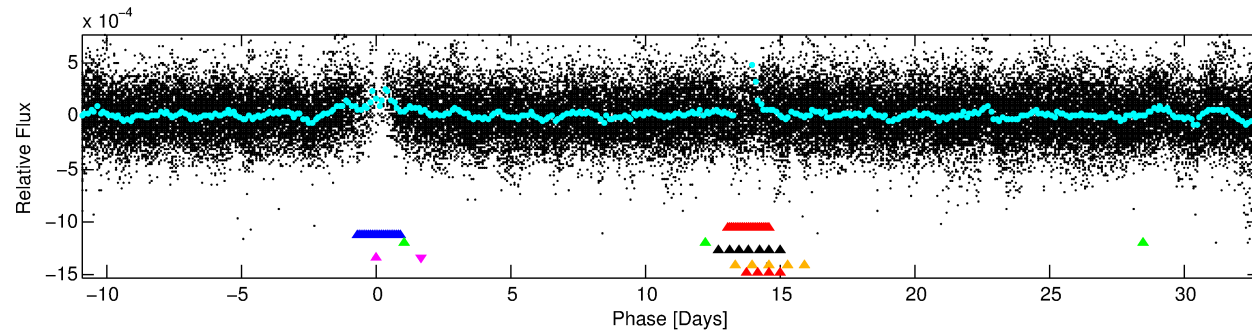
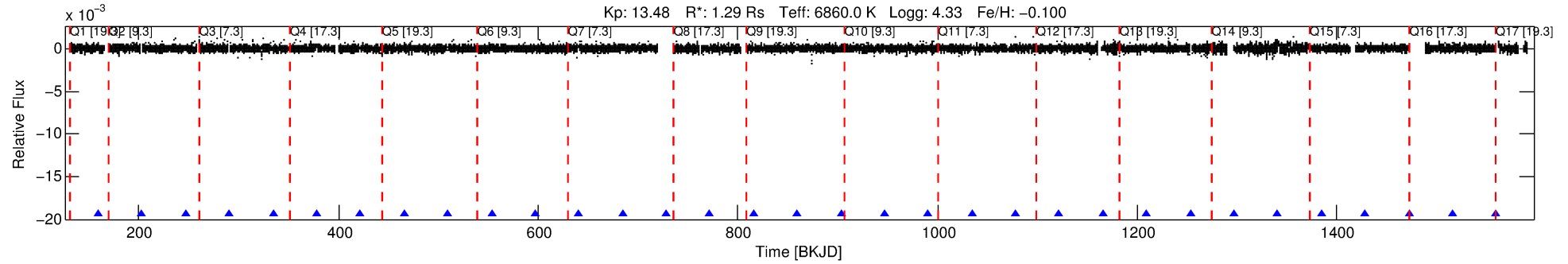
Ephemeris Match Information For 008700506-05

No Significant Match Found

# DV One-Page Summary

KIC: 8700506 Candidate: 5 of 7 Period: 43.748 d

KOI: K07077 Corr: No Ephemeris Match



TPS TCE Results:

Period = 43.74799 d

Epoch = 159.3824 BKJD

DV fit results are unavailable

DV Diagnostic Results:

ShortPeriod-sig: N/A

LongPeriod-sig: 4.8% [0.06σ]

ModelChiSquare2-sig: N/A

ModelChiSquareGof-sig: N/A

Bootstrap-pfa: N/A

RollingBand-fgt: 1.00 [8/8]

GhostDiagnostic-chr: 4.806

Centroid-sig: 1.0%

Centroid-so: 0.892 arcsec [2.75σ]

OotOffset-rm: 0.011 arcsec [0.15σ]

KicOffset-rm: 0.179 arcsec [2.52σ]

OotOffset-st: 4/4/2/4 [14]

KicOffset-st: 4/4/2/4 [14]

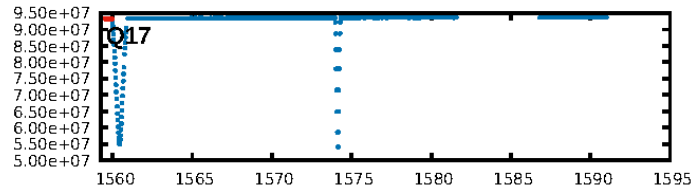
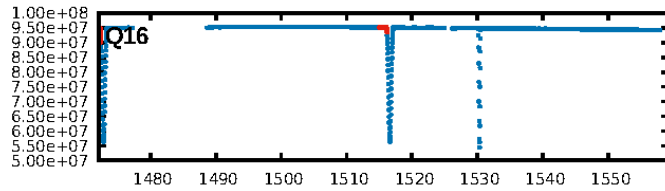
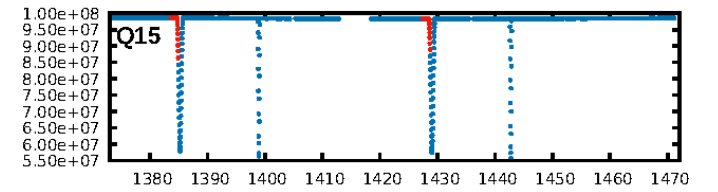
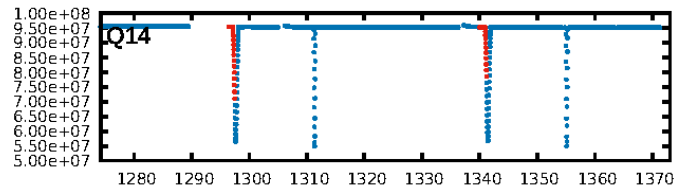
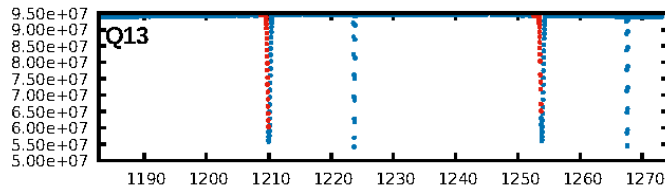
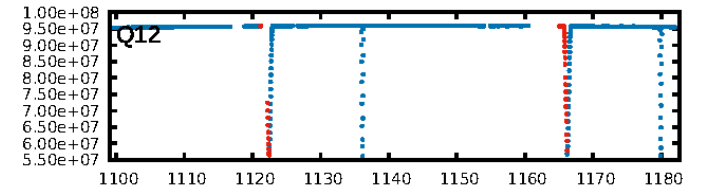
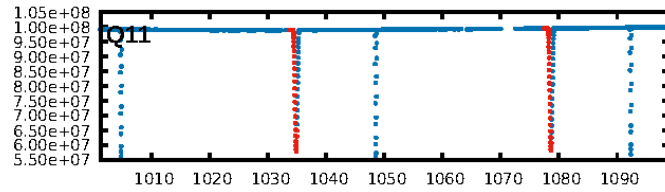
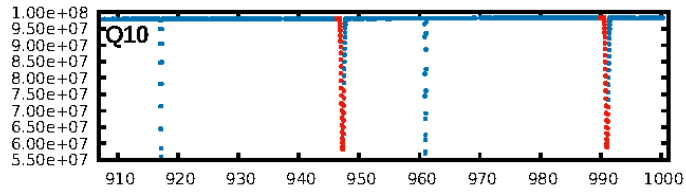
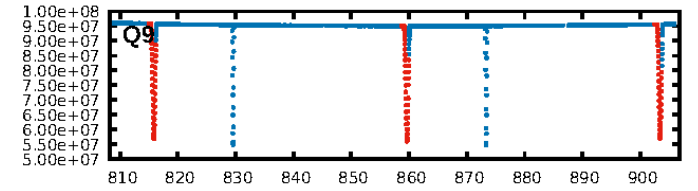
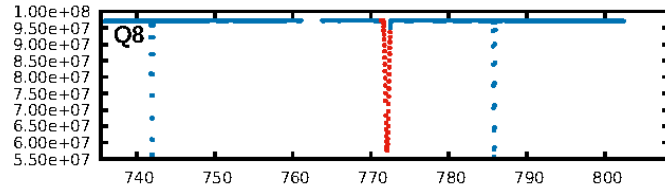
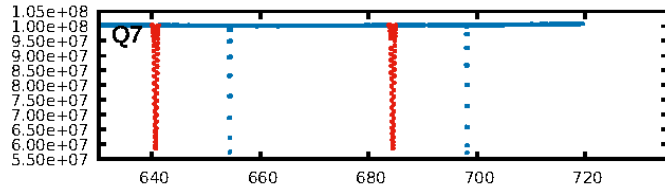
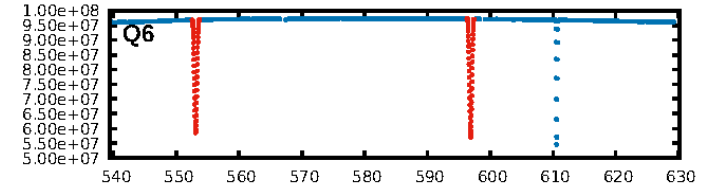
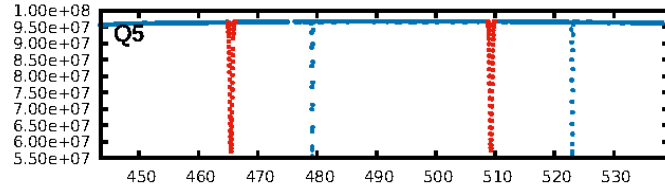
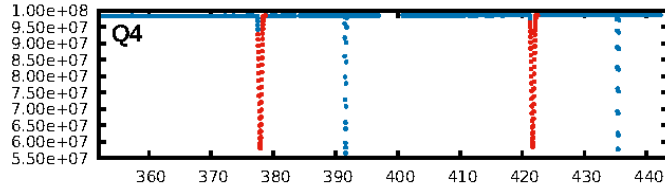
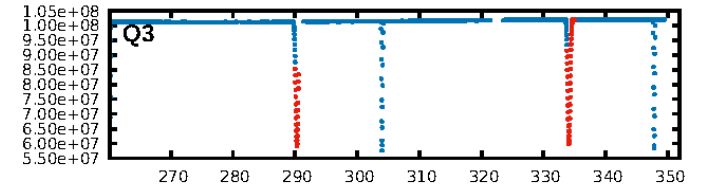
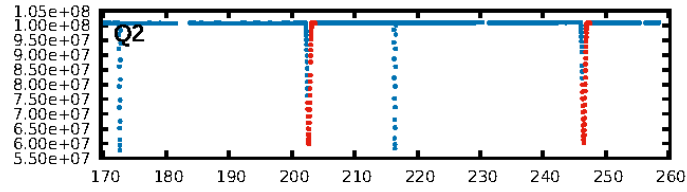
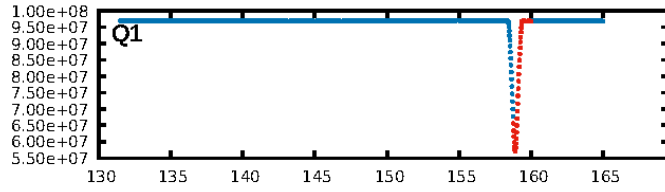
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DiffImageOverlap-fno: 0.00 [0/14]

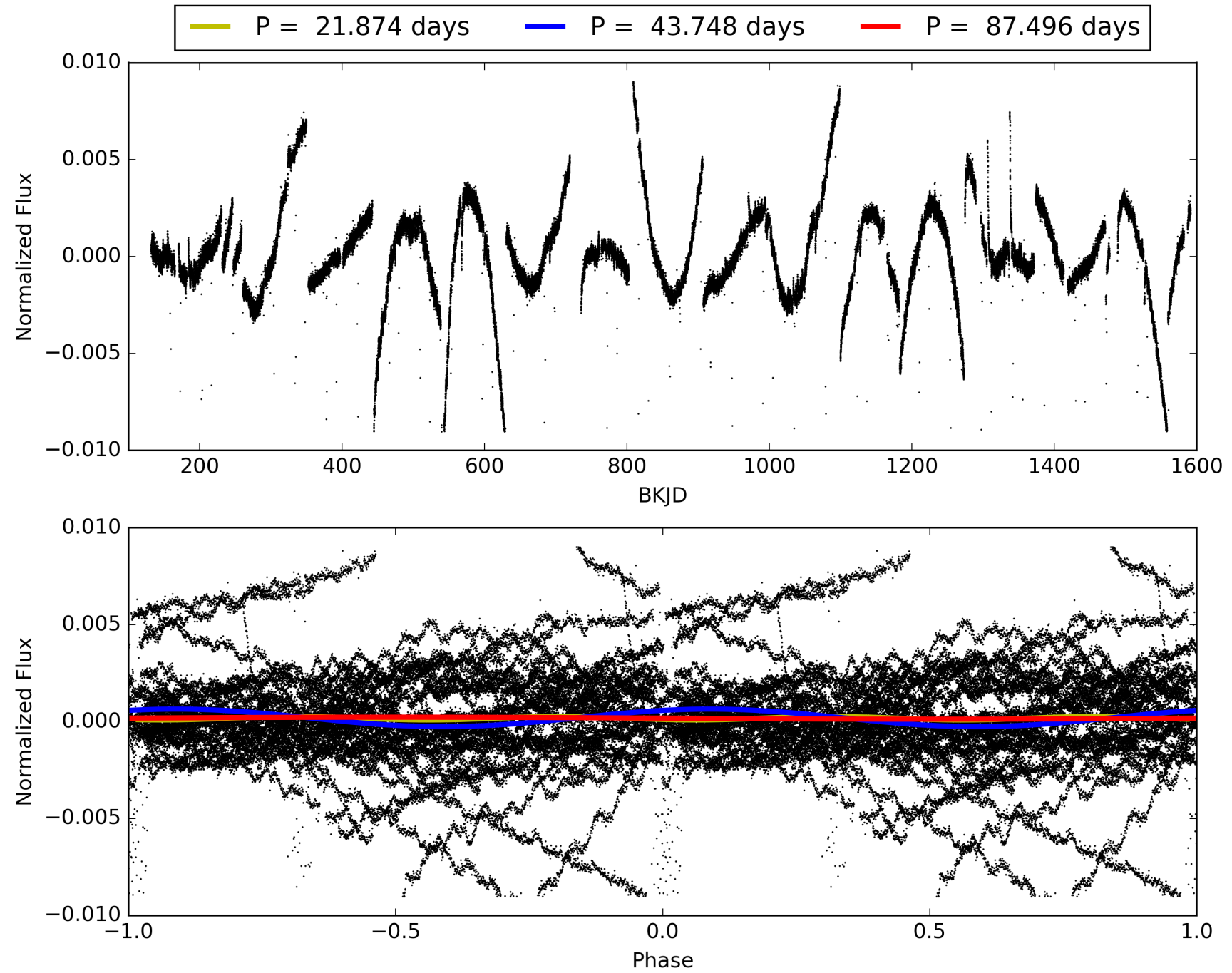
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:21:39 Z

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

# TCE 008700506-05, PDC Light Curves

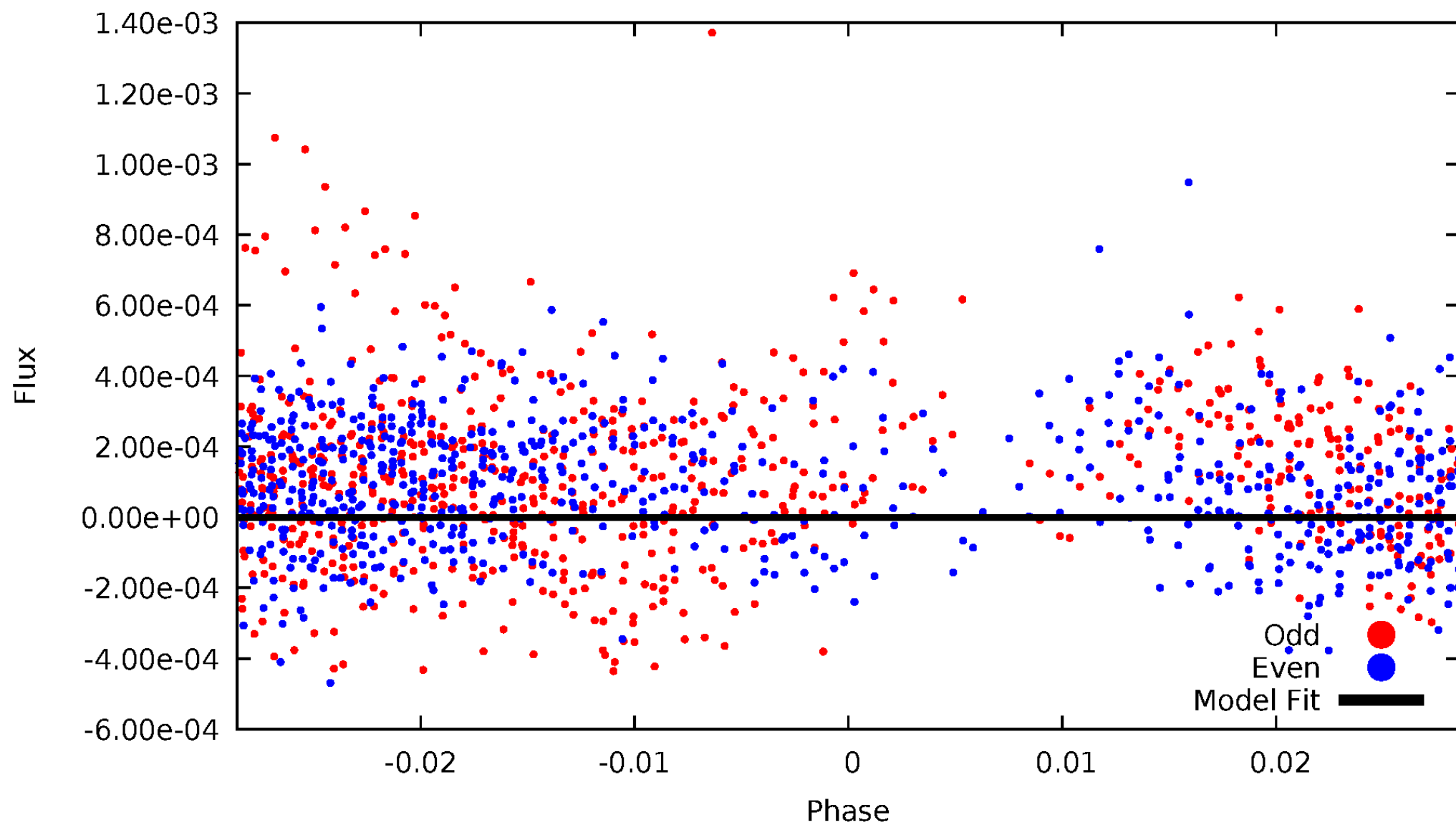


TCE 008700506-05



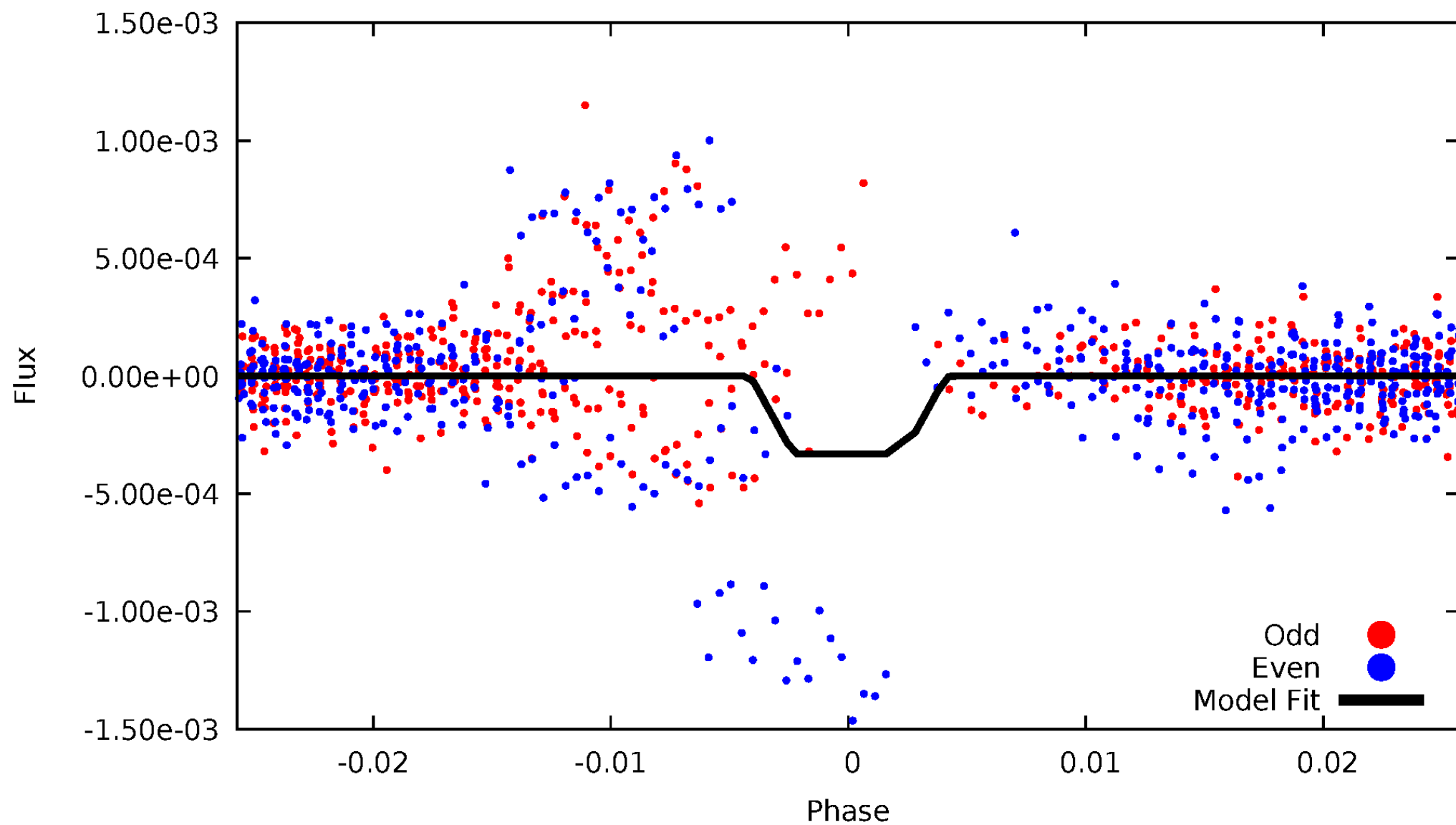
# DV Odd/Even

TCE 008700506-05

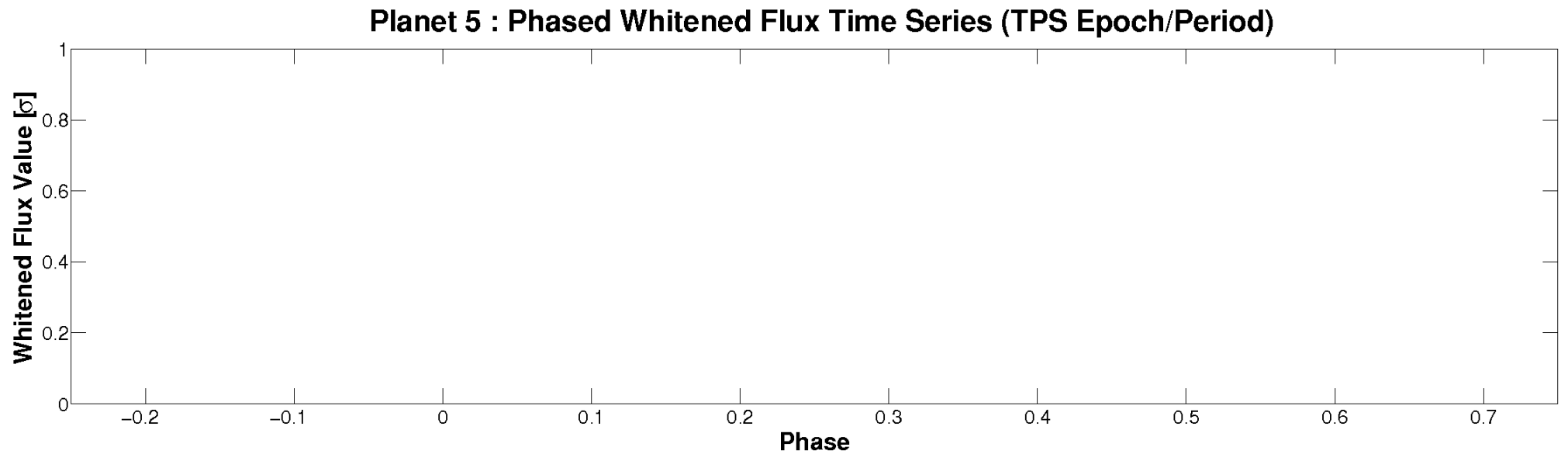
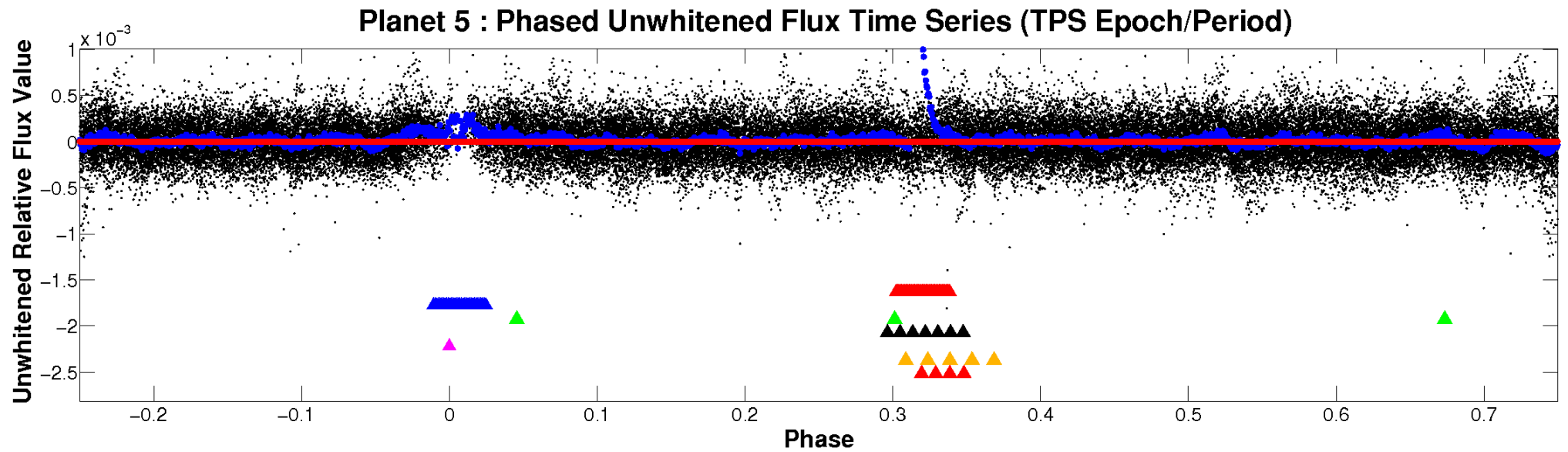


# ALT Odd/Even

TCE 008700506-05

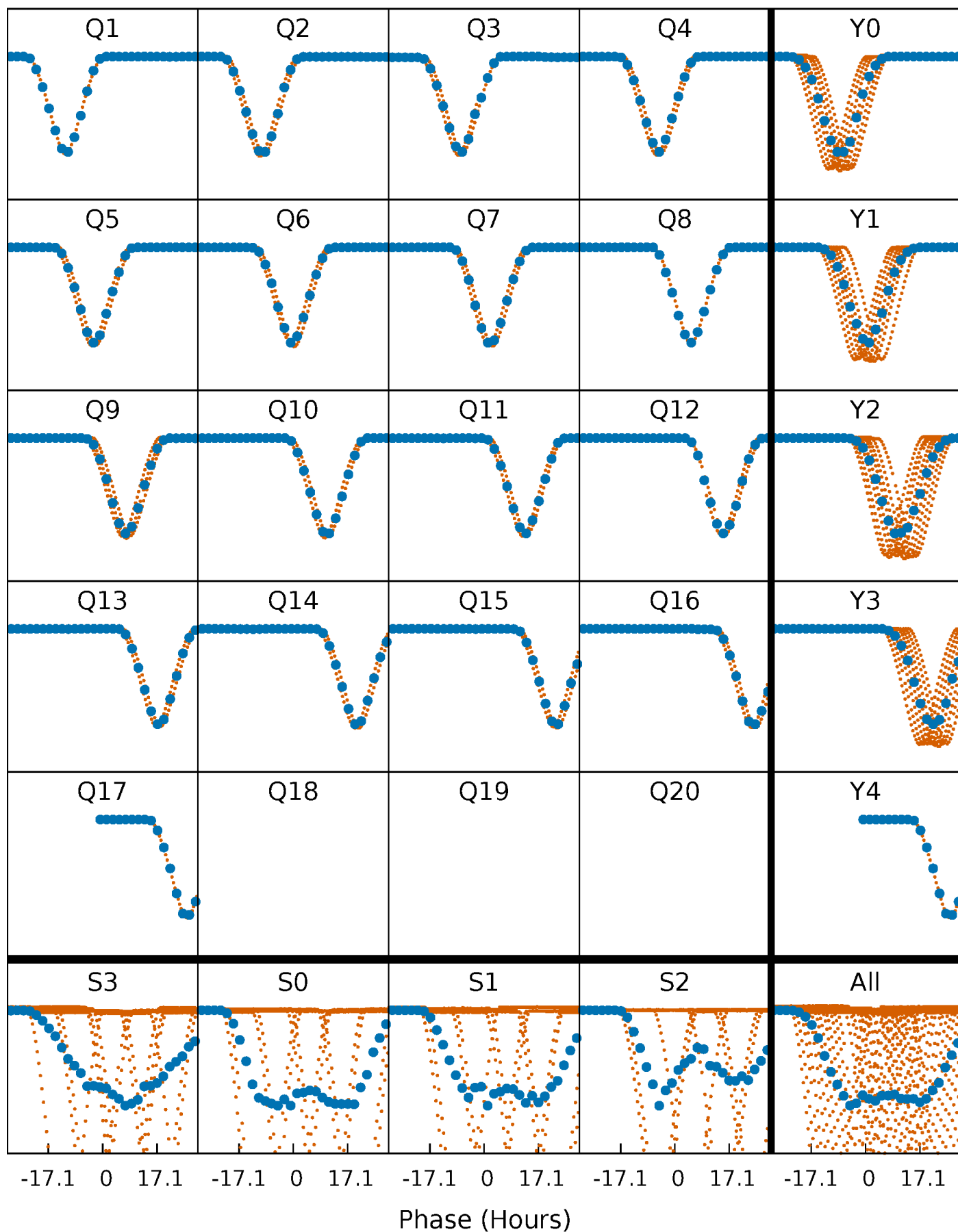


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

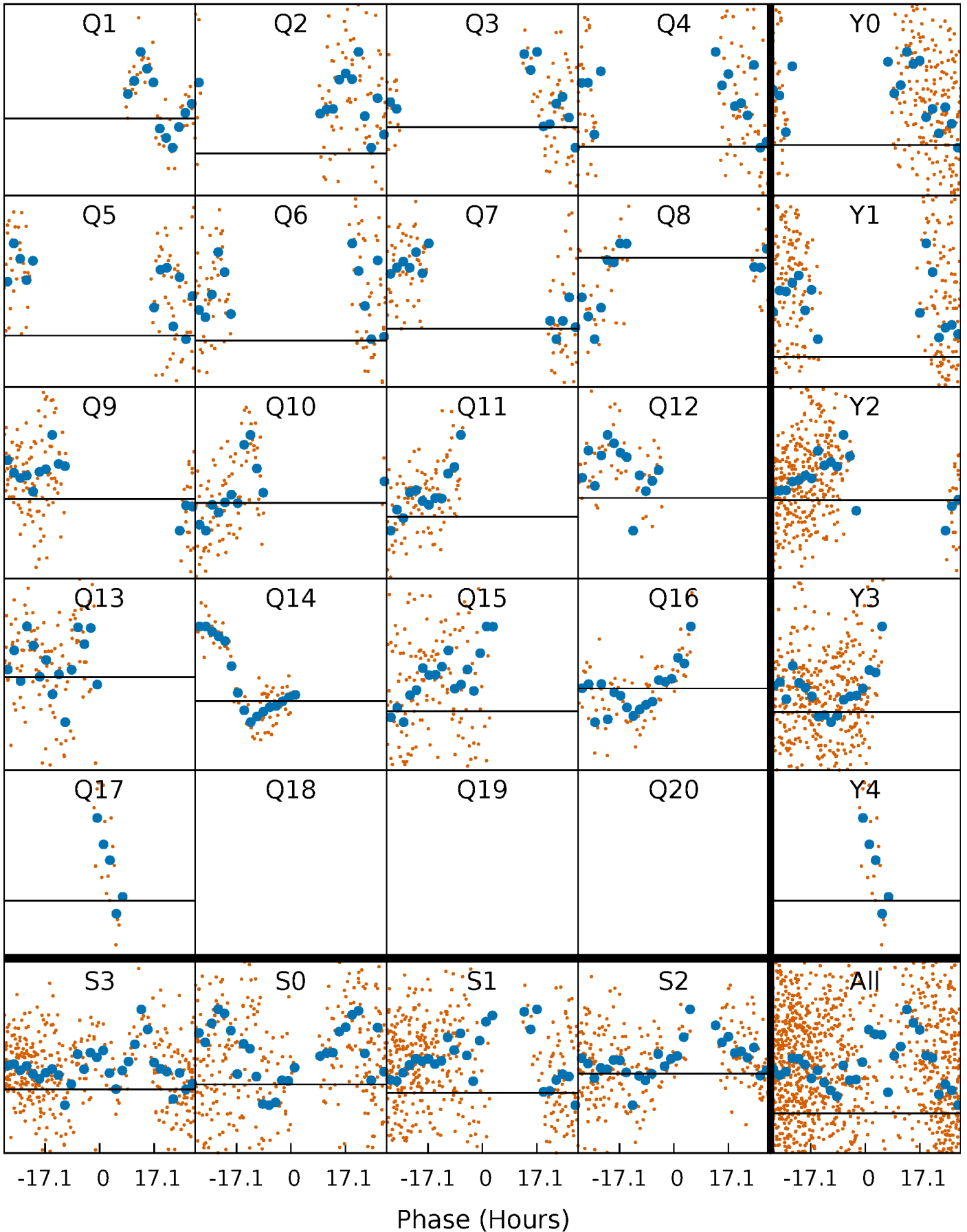
TCE 008700506-05     $P = 43.747990$  Days     $T_0 = 159.382370$  (BKJD)





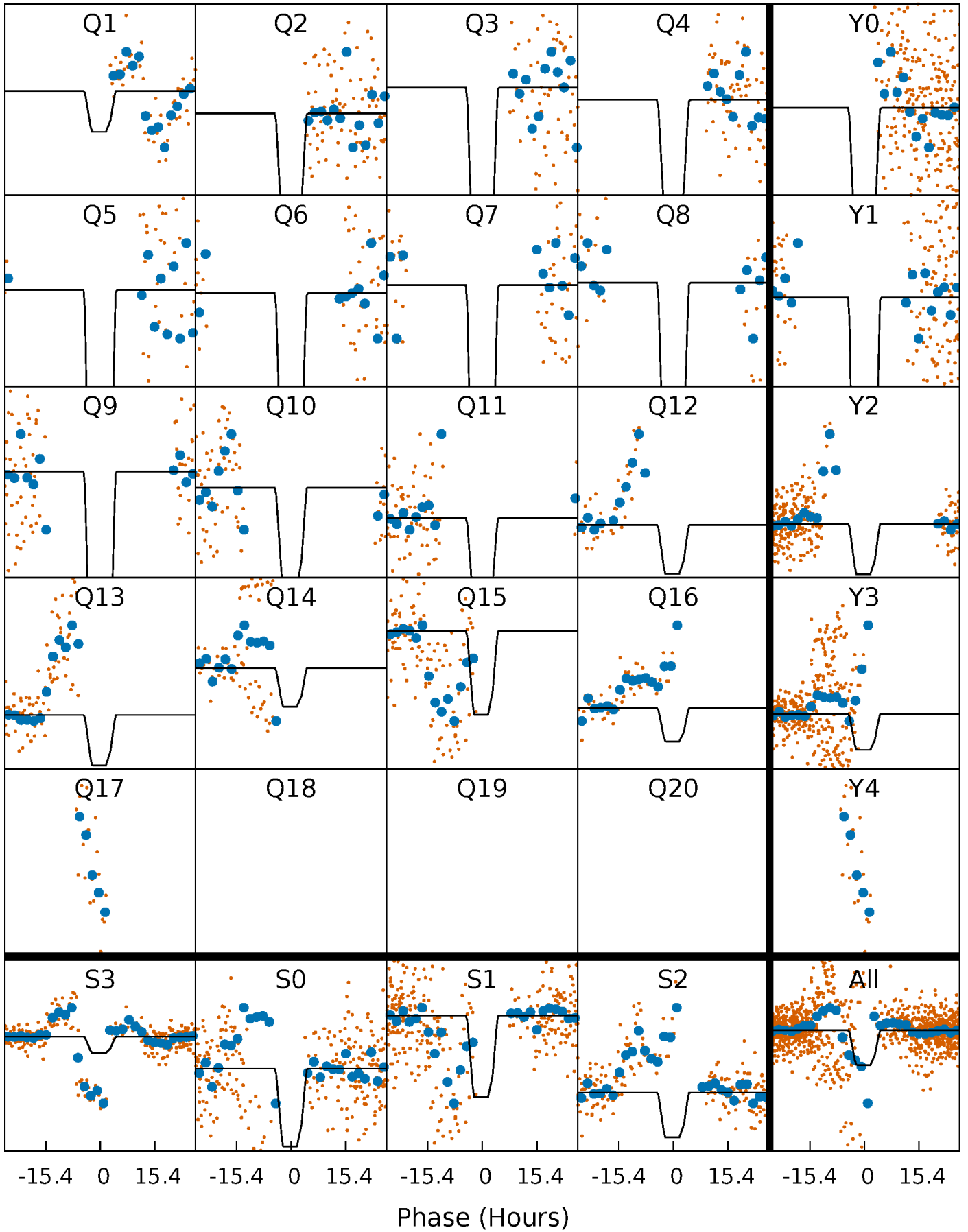
# DV Quarter-Phased Transit Curves

TCE 008700506-05     $P = 43.747990$  Days     $T_0 = 159.382370$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

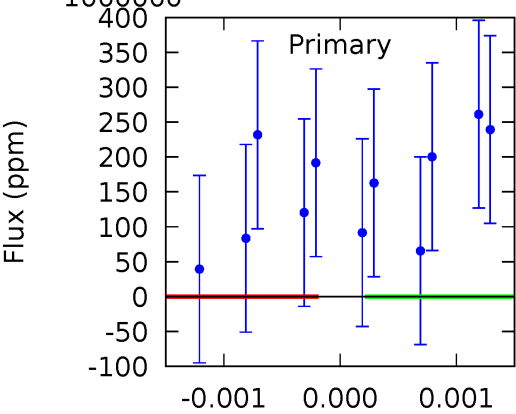
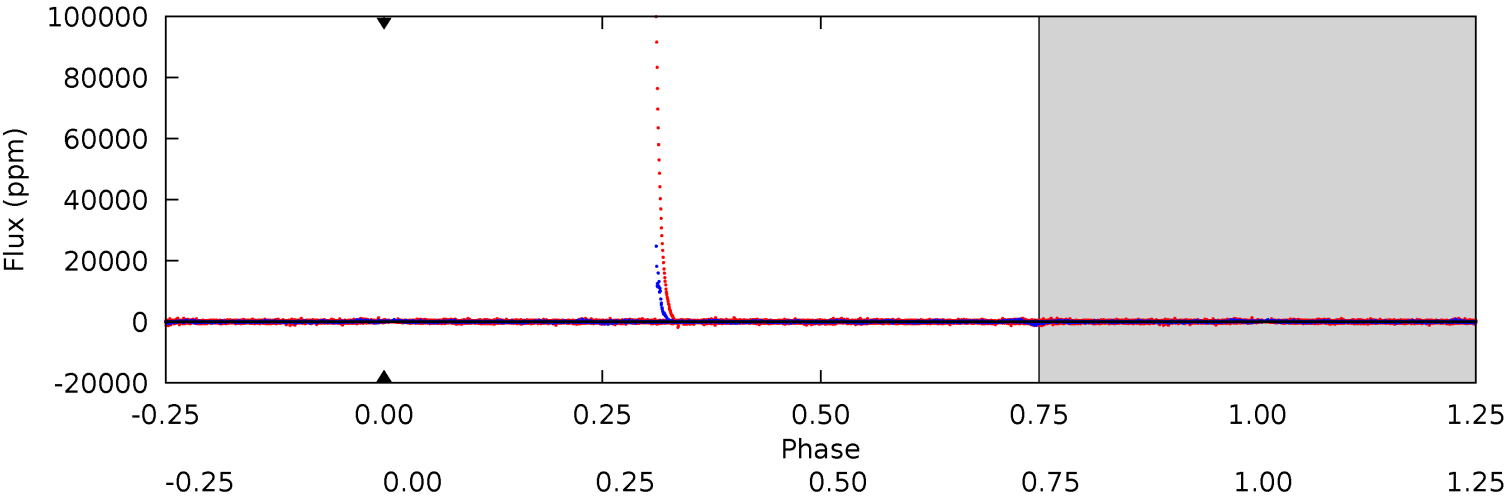
TCE 008700506-05     $P = 43.747990$  Days     $T_0 = 159.588364$  (BKJD)



# DV Model-Shift Uniqueness Test

008700506-05, P = 43.747990 Days, E = 115.634380 Days

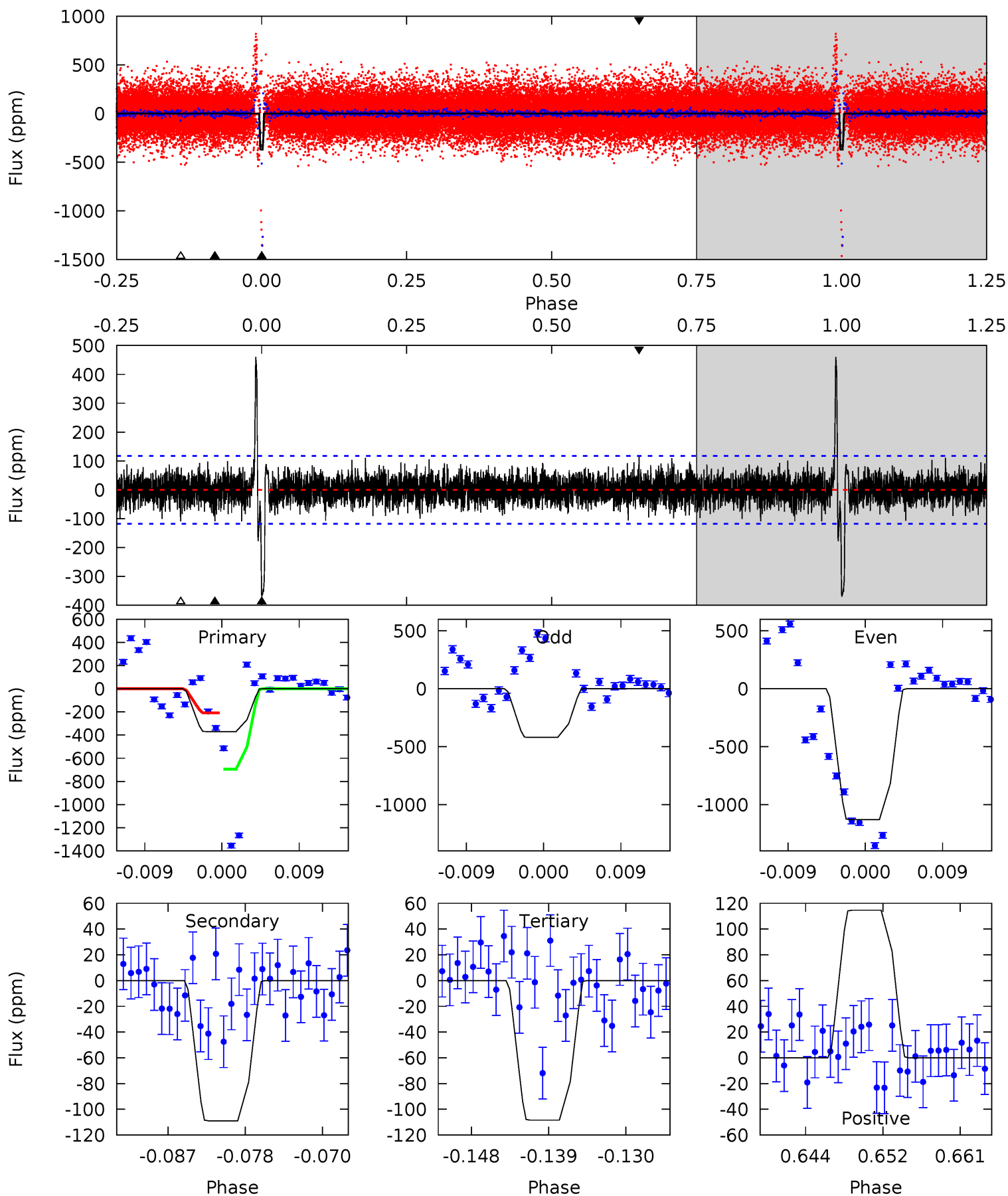
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

008700506-05,  $P = 43.747990$  Days,  $E = 115.840374$  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
15.9	4.68	4.65	4.92	5.05	2.62	1.38	11.2	11.0	0.02	-0.24	16.5	-1.61	0.55	9.70



### Stellar Parameters For KIC 008700506

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6860^{+167}_{-286}$	$4.326^{+0.066}_{-0.154}$	$-0.100^{+0.250}_{-0.350}$	$1.292^{+0.312}_{-0.144}$	$1.300^{+0.154}_{-0.188}$	$0.849^{+0.247}_{-0.381}$
	+2%/-4%	+2%/-4%	+250%/-350%	+24%/-11%	+12%/-14%	+29%/-45%
Source	PHO1	FLK73	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 008700506-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$15.02^{+12.76}_{-9.91}$	$941^{+57}_{-45}$	$-3094^{+23807}_{-14820}$	$-27.684^{+29989.798}_{-22330.695}$
Alt.	$-109 \pm 23$	$10.74^{+11.76}_{-7.38}$	$941^{+54}_{-44}$	$3138^{+1518}_{-569}$	$36^{+321}_{-28}$

$T_{\text{max}}$  = 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

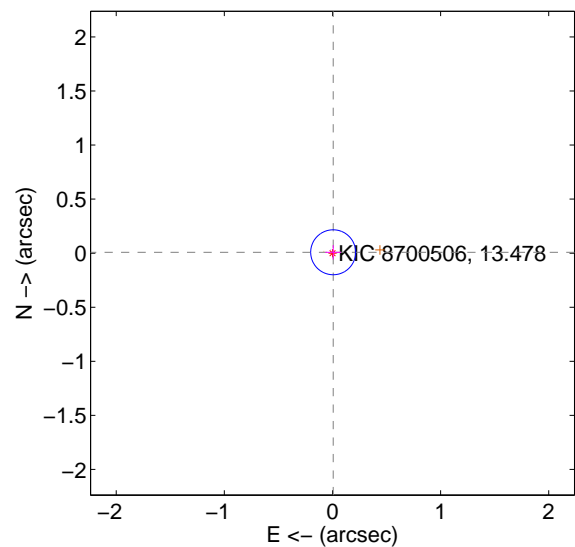
Supplemental centroid analysis for 008700506-05. Kepler magnitude: 13.48. Transit SNR -1.00

There are 6 quarters with good PRF difference image offsets

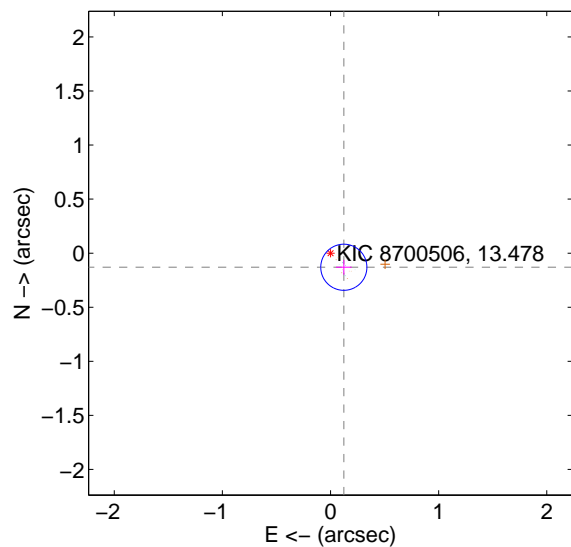
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.011 \pm 0.069$	0.15	$-0.006 \pm 0.073$	$0.008 \pm 0.067$
PRF-fit source offset from KIC position	$0.179 \pm 0.071$	2.52	$-0.123 \pm 0.073$	$-0.130 \pm 0.068$
photometric centroid source offset	$0.89 \pm 0.32$	2.75	$0.53 \pm 0.29$	$-0.72 \pm 0.34$

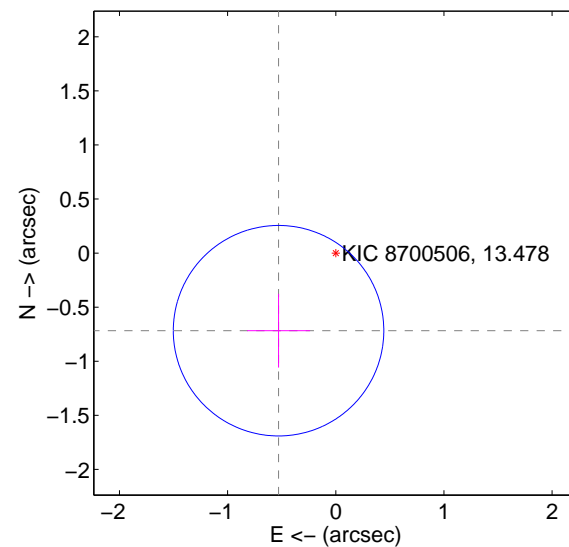
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

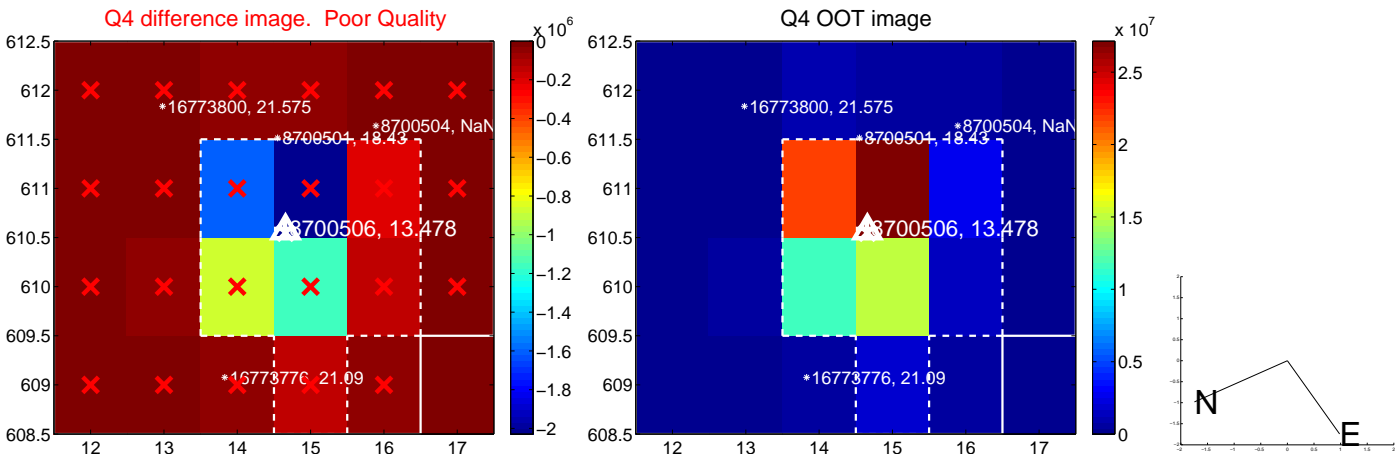
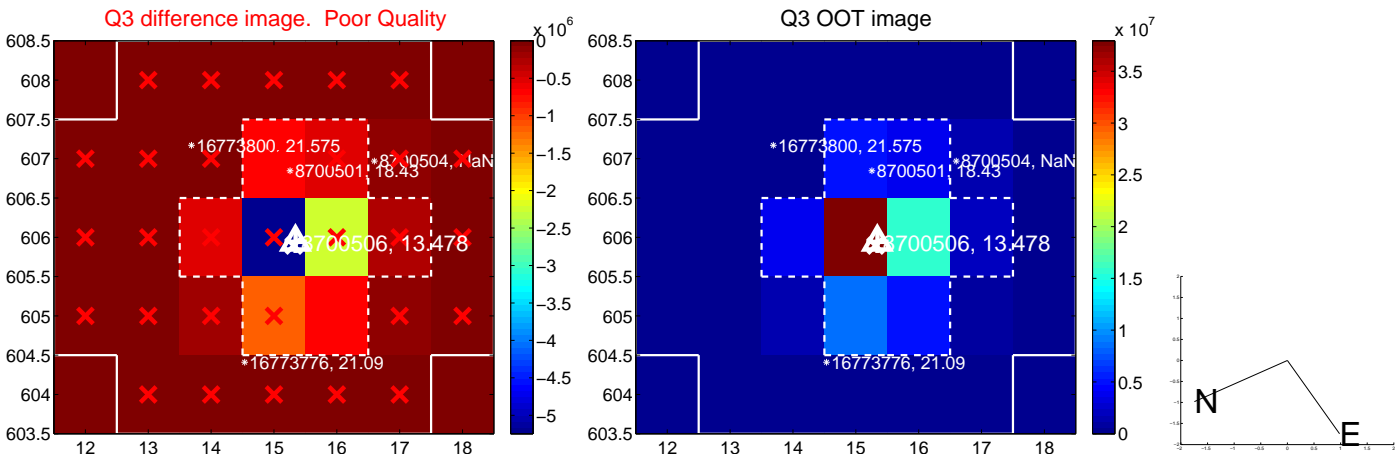
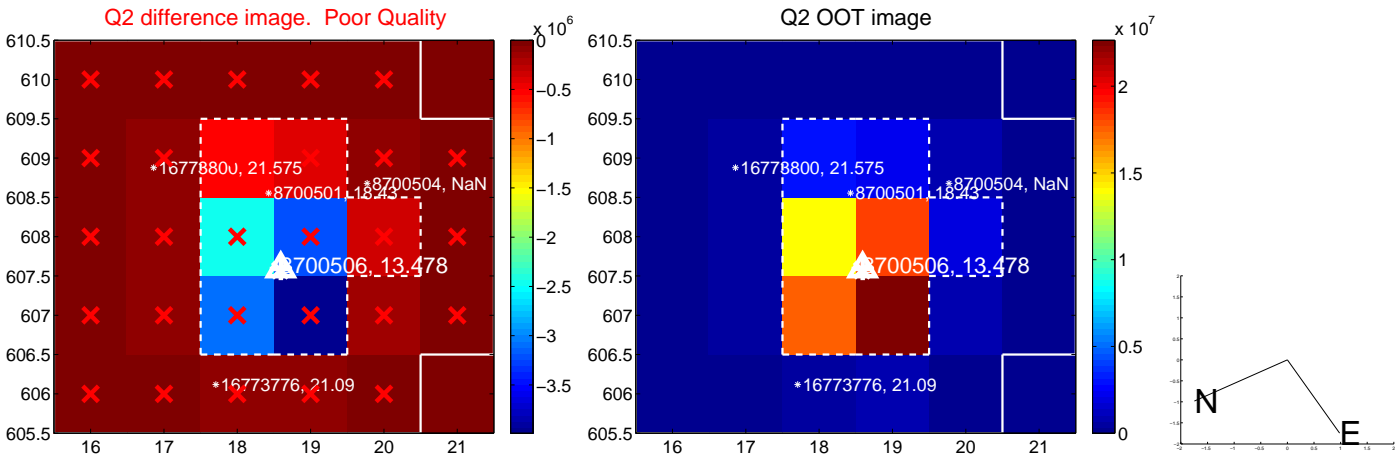
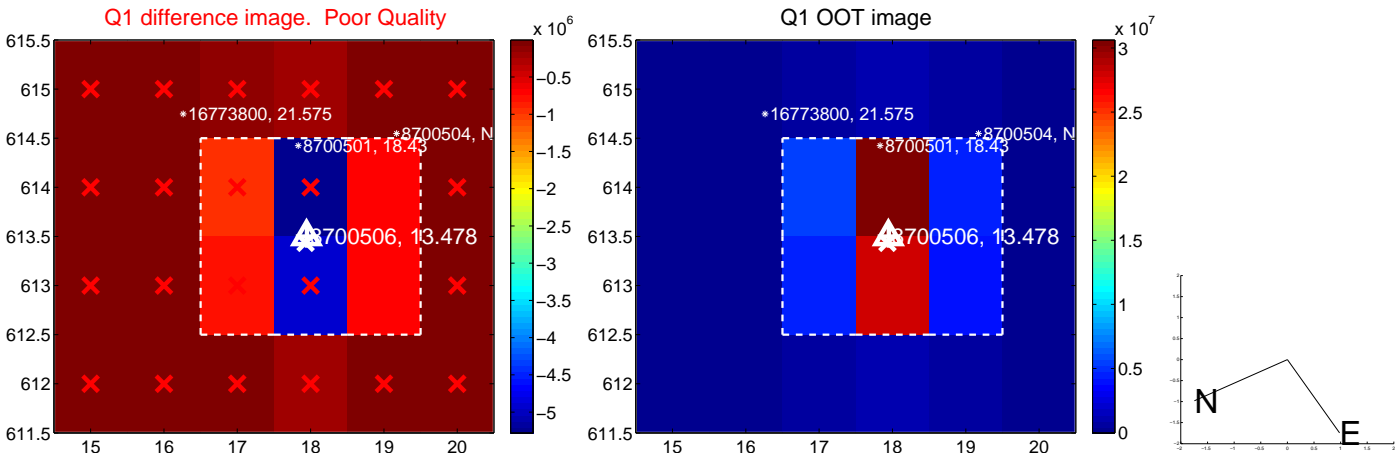


offset from photometric centroids

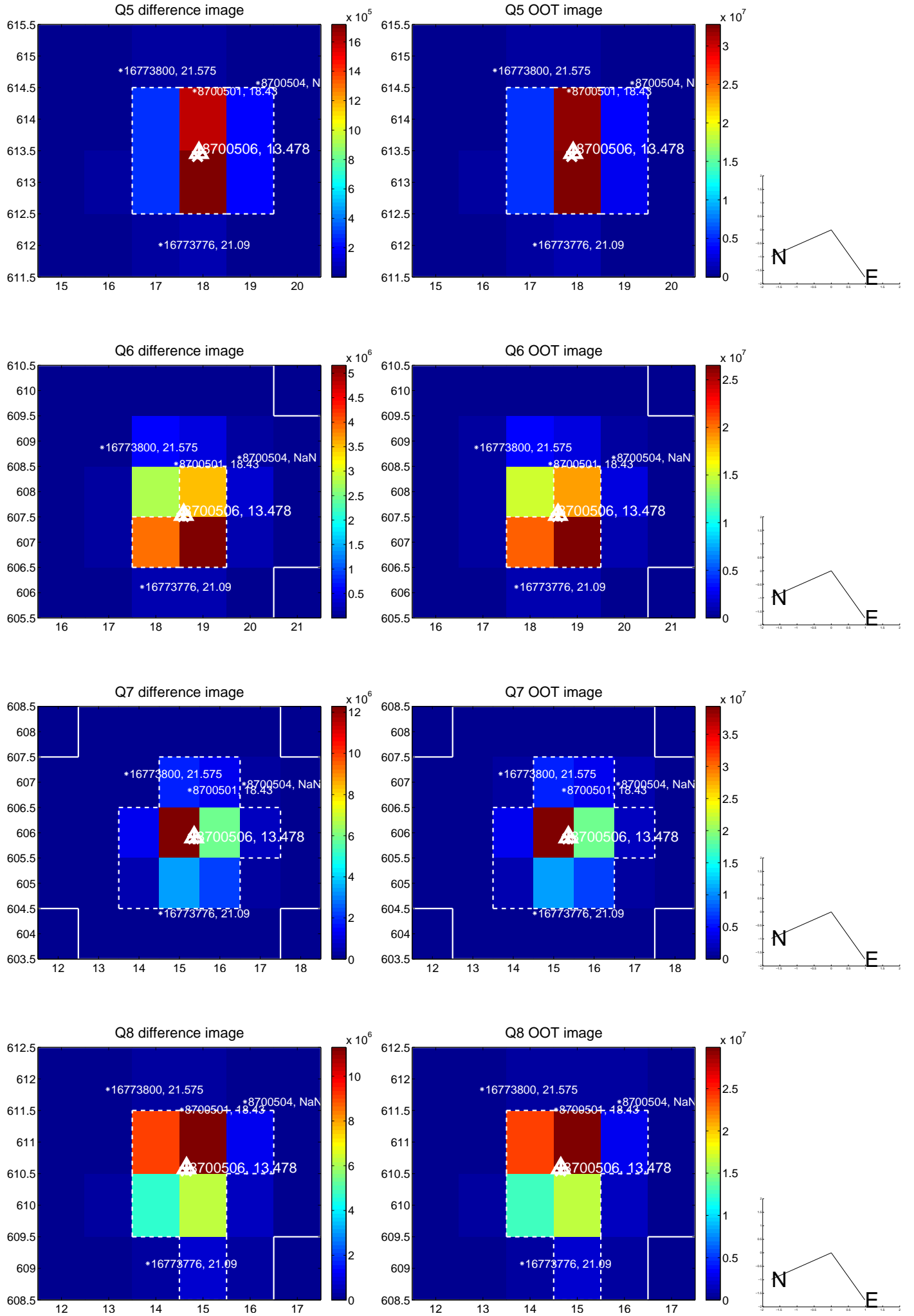


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

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

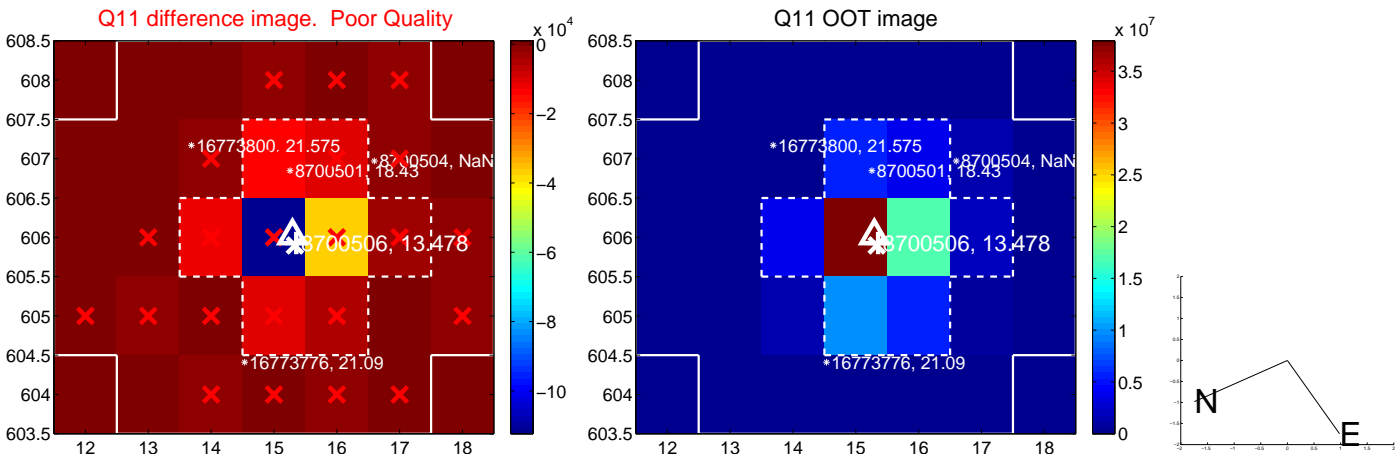
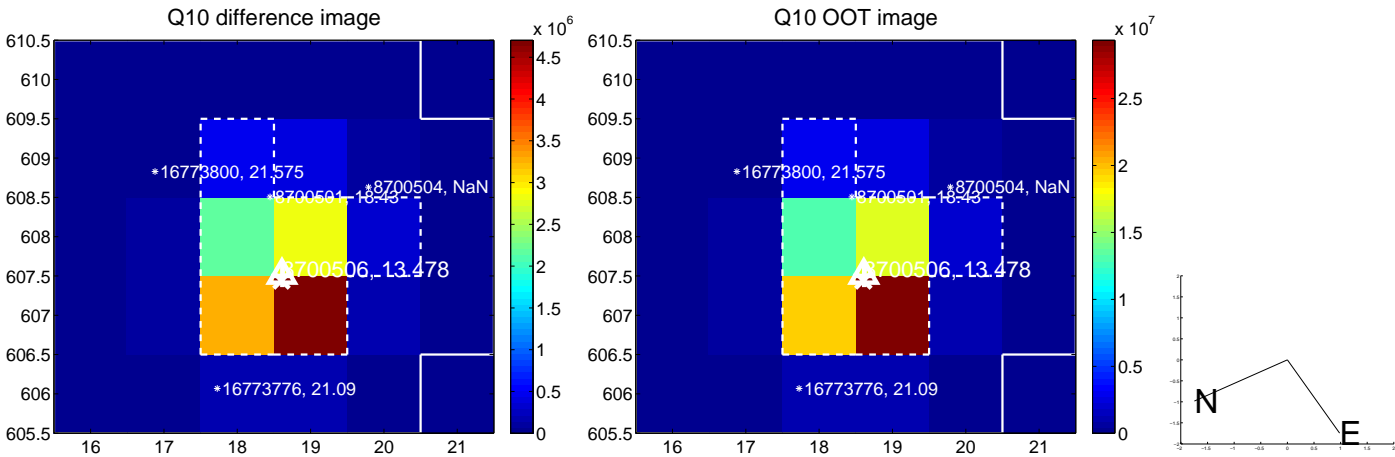
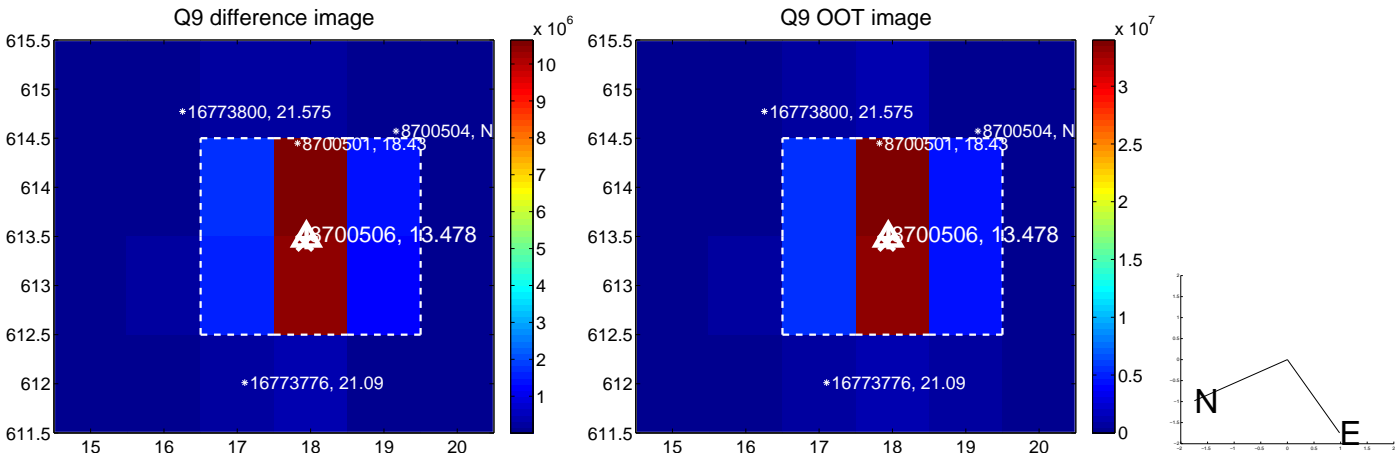


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

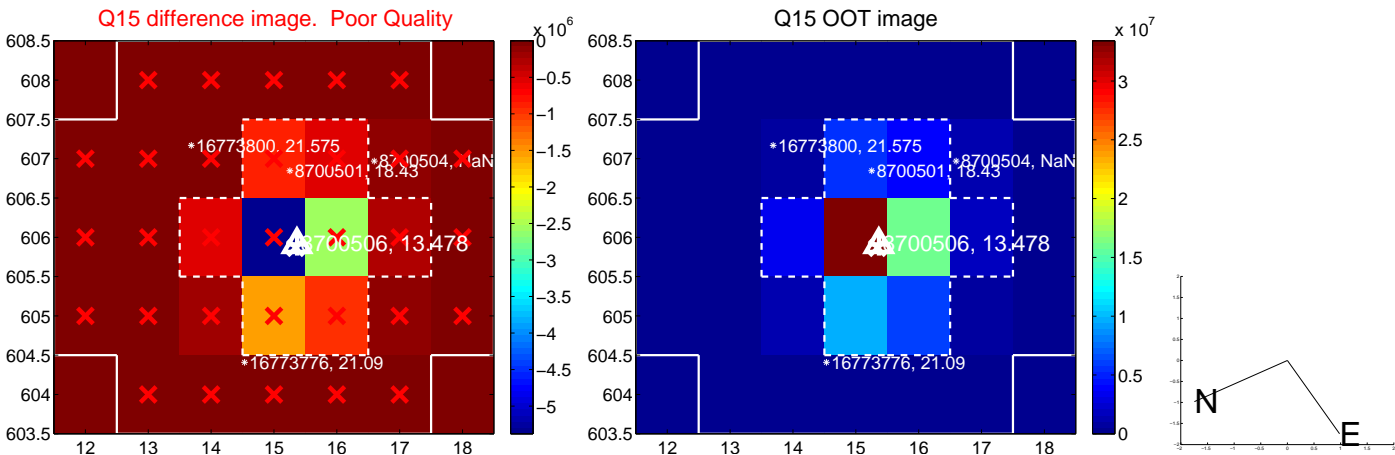
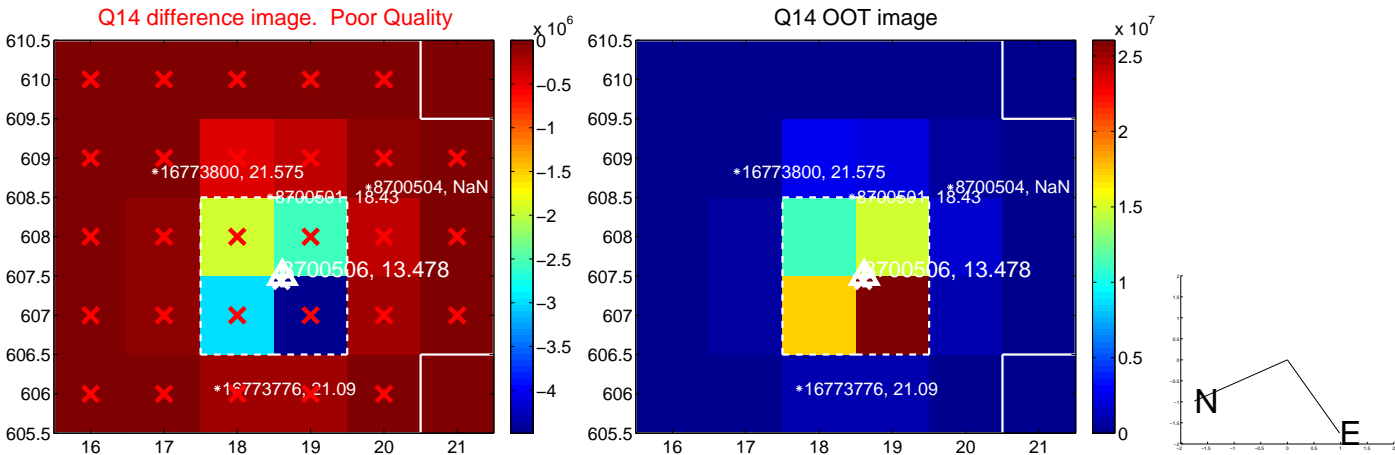
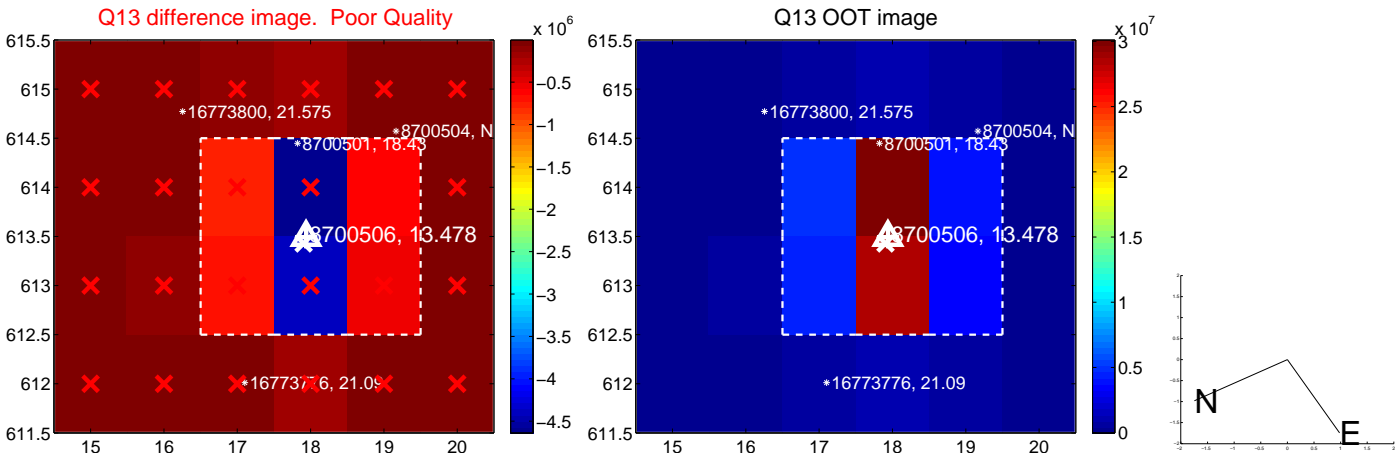




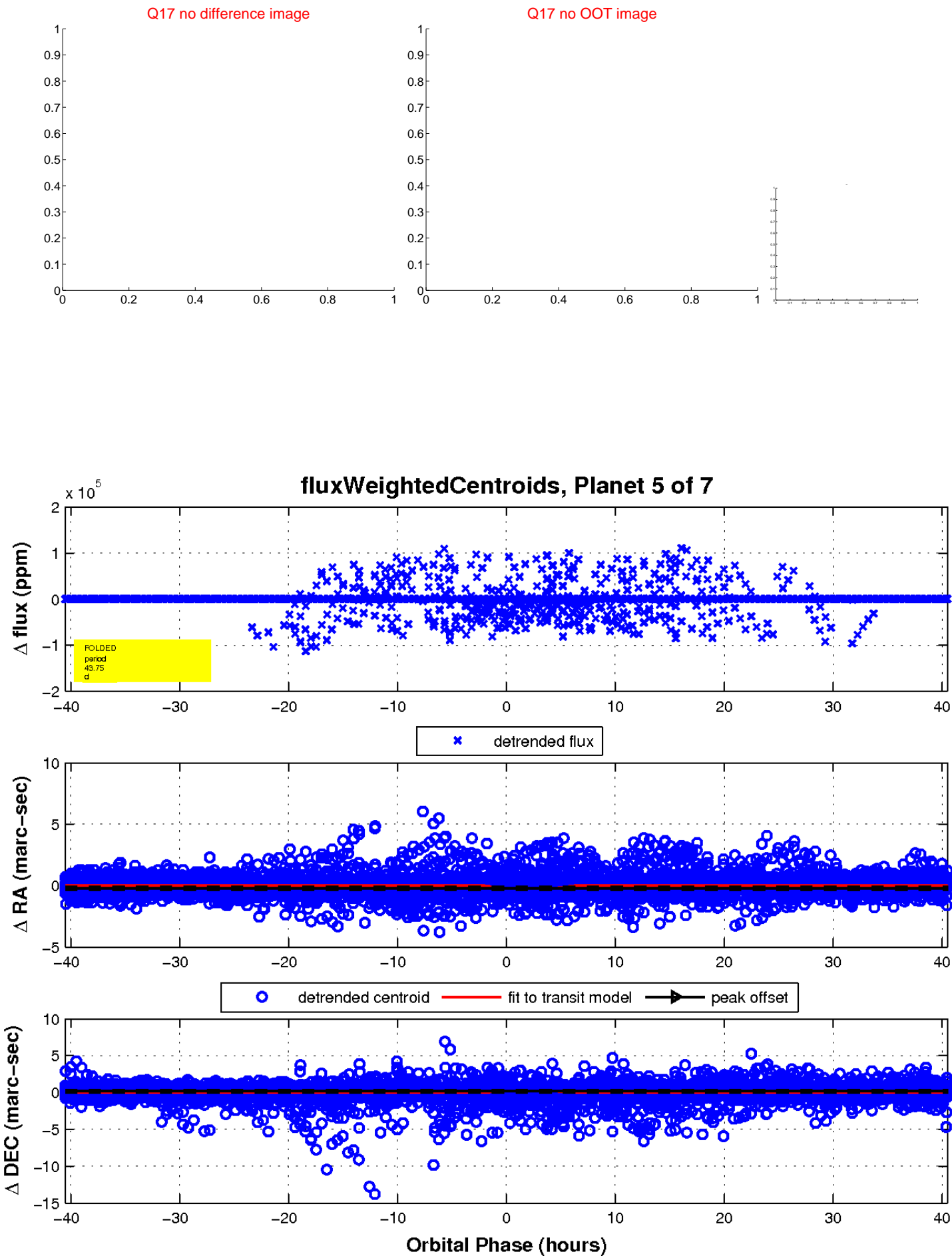
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

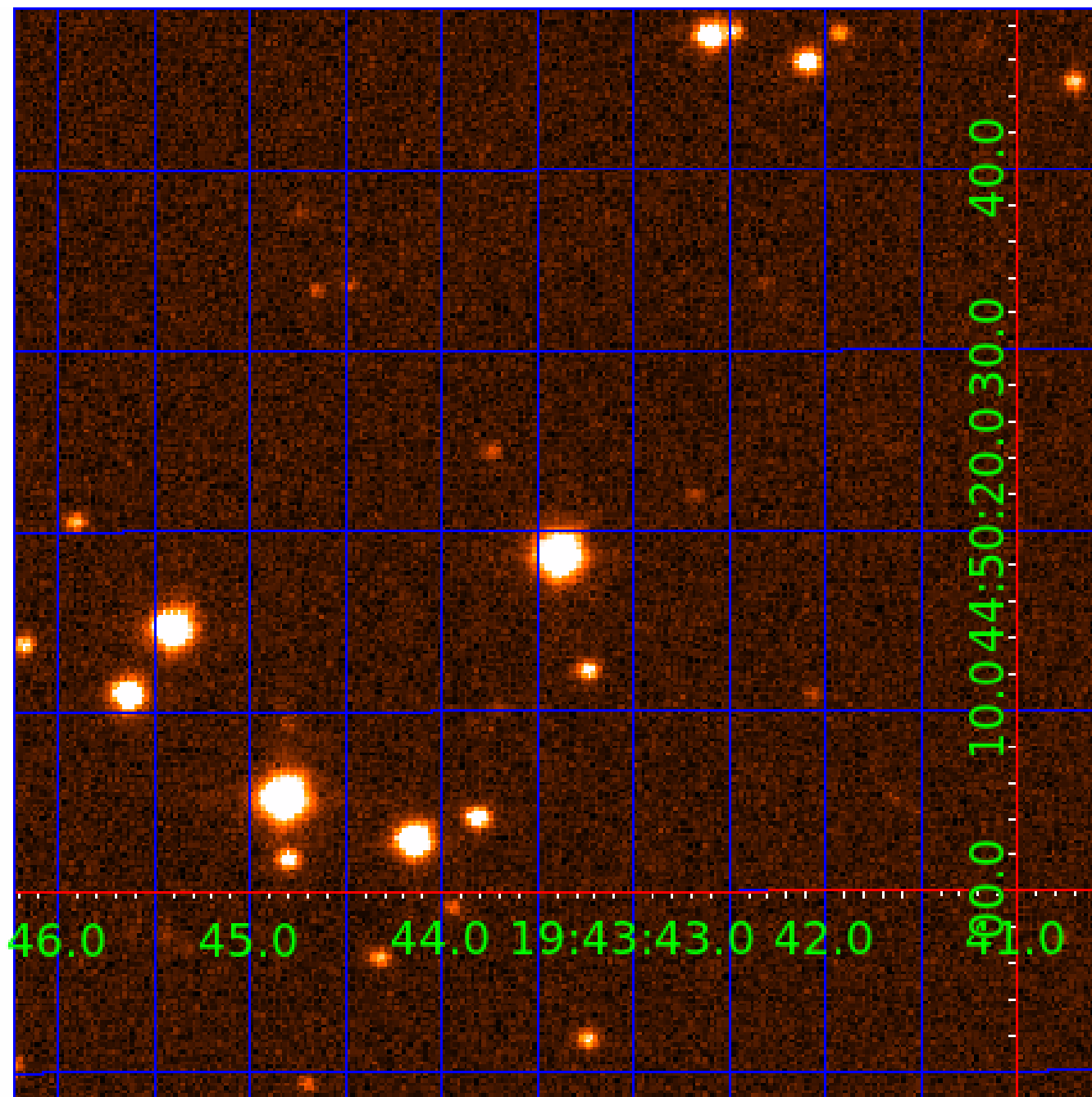


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 008700506

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008700506-01	OBS	7077.01	43.797335	172.609694	426571.2	4.500	20393.9	-1.0	1.29	6860	61.41	47.25
008700506-02	OBS	No	43.796461	158.912398	410205.3	12.500	12827.6	-1.0	1.29	6860	37.33	47.26
008700506-03	OBS	No	585.006012	391.303276	27742.9	15.000	836.9	-1.0	1.29	6860	21.75	1.49
008700506-04	OBS	No	219.113053	216.099556	27983.8	2.500	540.9	-1.0	1.29	6860	21.88	5.52
008700506-05	OBS	No	43.747990	159.382370	6405.4	15.000	385.0	-1.0	1.29	6860	10.44	47.33
008700506-06	OBS	No	350.637208	172.892505	1215.8	5.643	409.9	24.0	1.29	6860	4.76	2.95
008700506-07	OBS	No	350.401498	435.848436	15759.7	4.500	455.6	-1.0	1.29	6860	16.39	2.95

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008700506-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS
008700506-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS
008700506-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
008700506-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
008700506-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—CENT_NOFITS
008700506-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008700506-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—NO_FITS—CENT_NOFITS

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

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

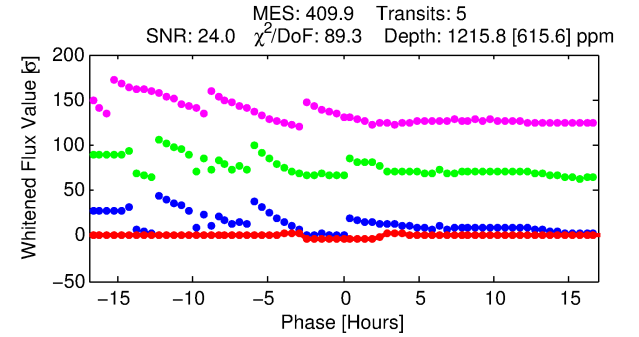
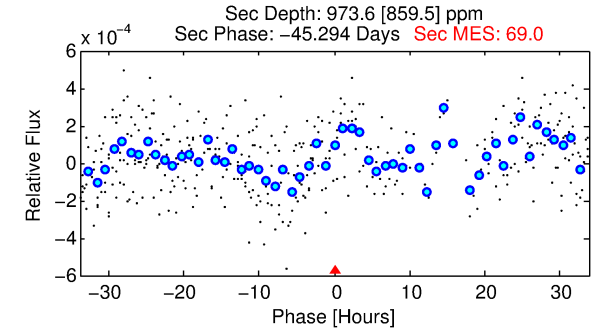
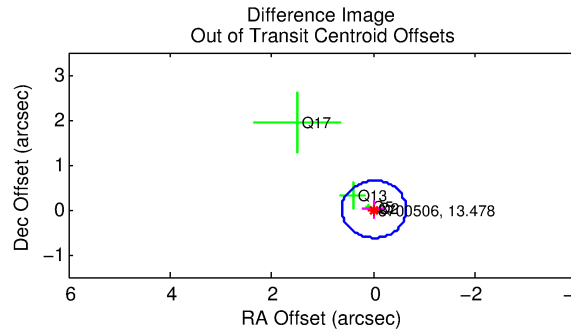
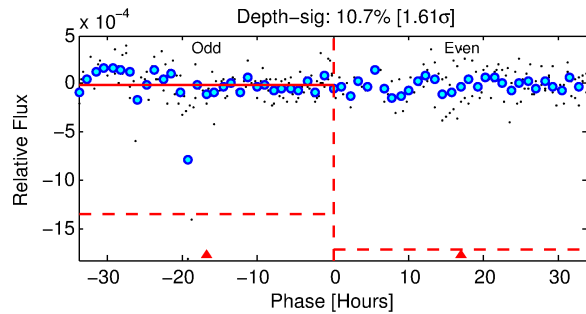
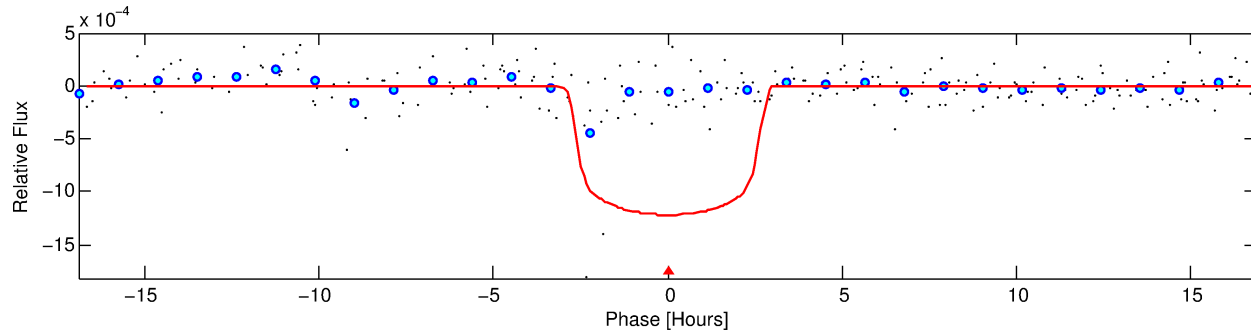
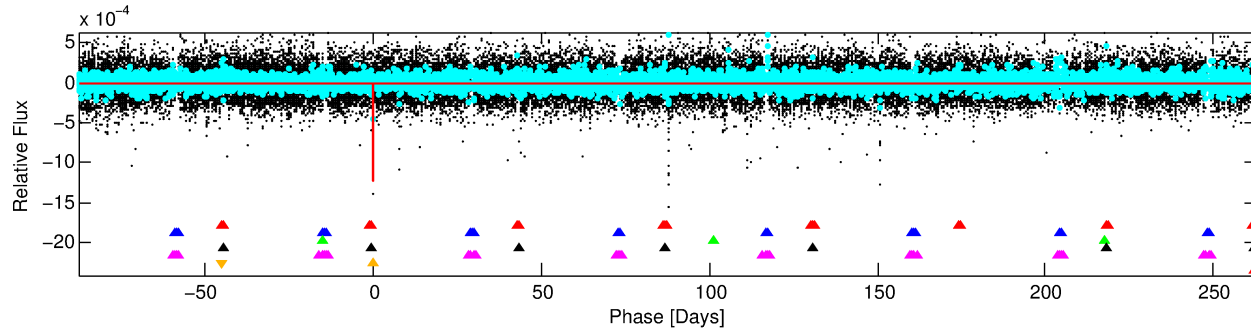
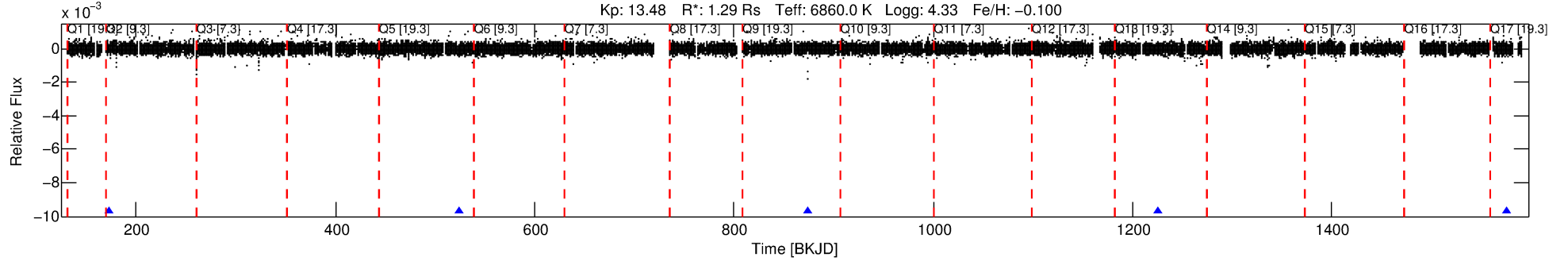
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 008700506-06

No Significant Match Found

# DV One-Page Summary

KIC: 8700506 Candidate: 6 of 7 Period: 350.637 d  
KOI: K07077 Corr: No Ephemeris Match



## DV Fit Results:

Period = 350.63721 [0.01229] d  
Epoch = 172.8925 [0.0354] BKJD  
Rp/R\* = 0.0338 [0.0381]  
a/R\* = 385.31 [2293.23]  
b = 0.64 [5.50]  
Seff = 2.95 [0.98]  
Teq = 334 [28] K  
Rp = 4.76 [5.49] Re  
a = 1.0595 [0.2116] AU  
Ag = 26494.00 [64622.30] [0.41σ]  
Teffp = 6592 [4001] K [1.56σ]

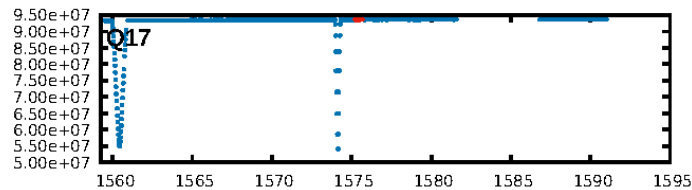
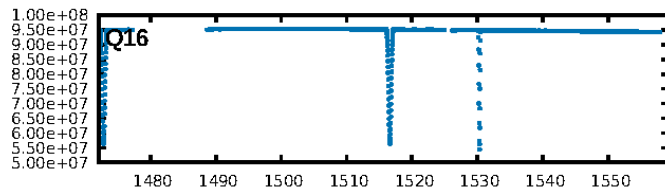
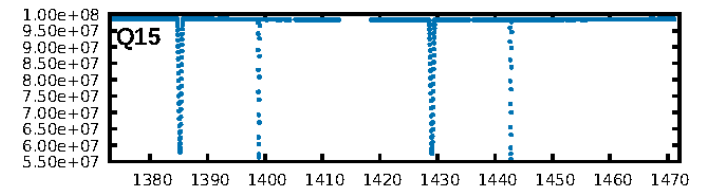
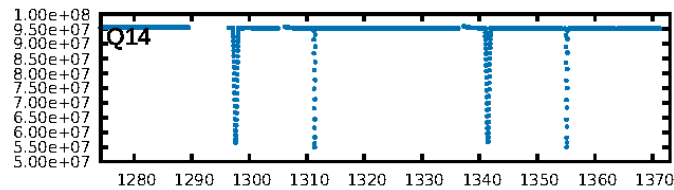
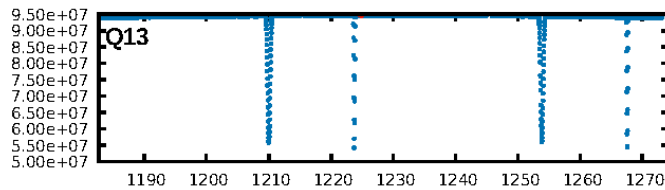
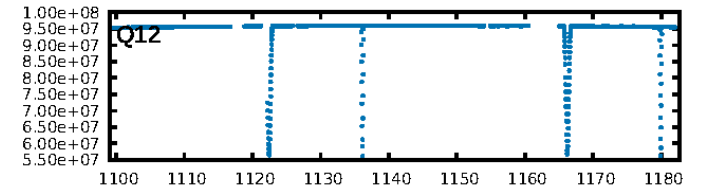
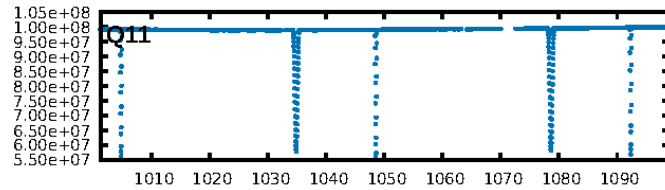
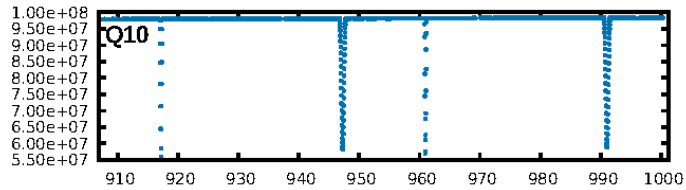
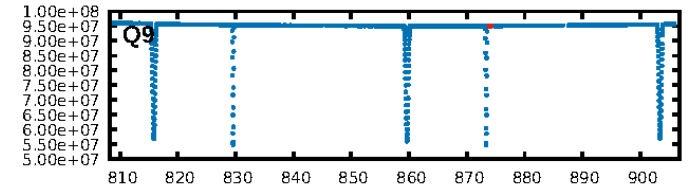
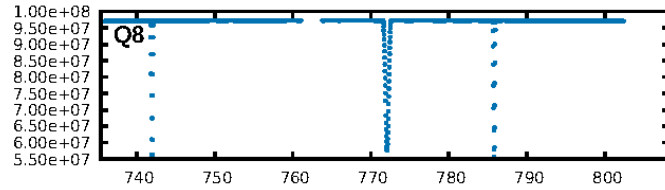
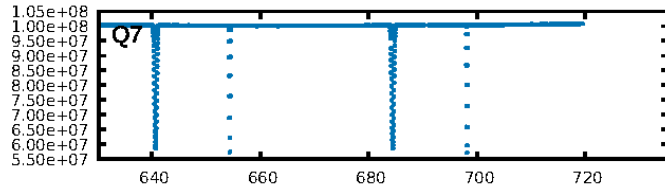
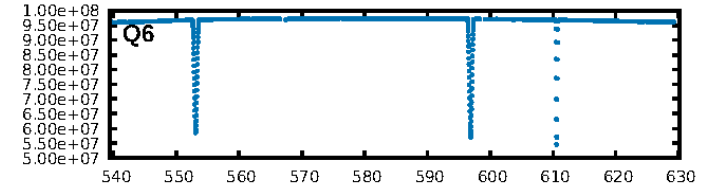
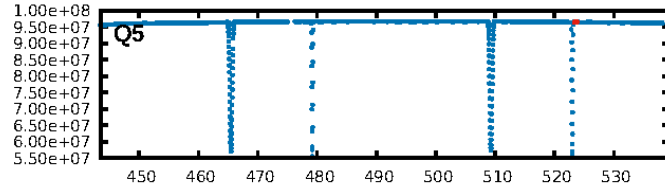
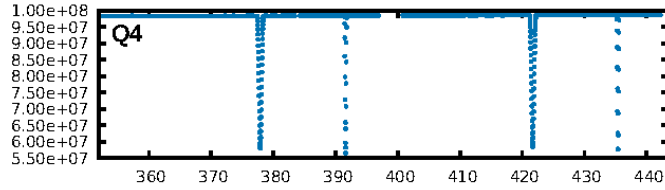
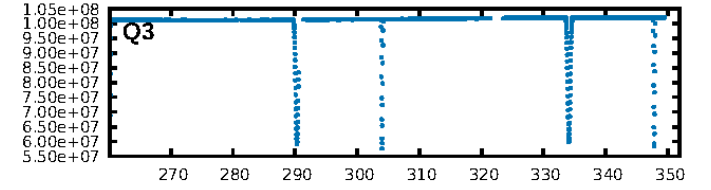
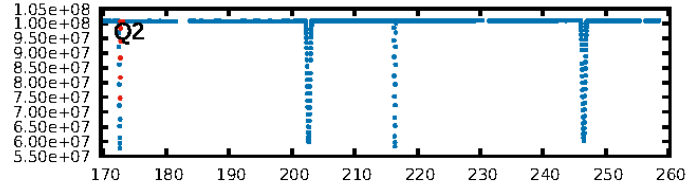
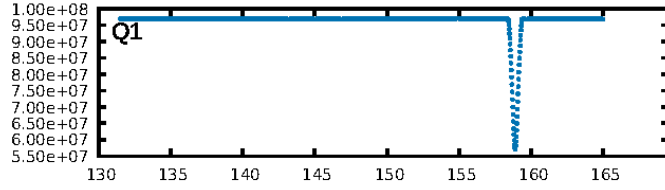
## DV Diagnostic Results:

ShortPeriod-sig: 56.7% [0.78σ]  
LongPeriod-sig: 100.0% [350.97σ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 0.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 6.319  
Centroid-sig: 9.3%  
Centroid-so: 0.459 arcsec [1.67σ]  
OotOffset-rm: 0.008 arcsec [0.04σ]  
OotOffset-st: 1/0/0/3 [4]  
KicOffset-rm: 0.056 arcsec [0.15σ]  
KicOffset-st: 1/0/0/3 [4]  
DiffImageQuality-fgm: 0.25 [1/4]  
DiffImageOverlap-fno: 0.50 [2/4]

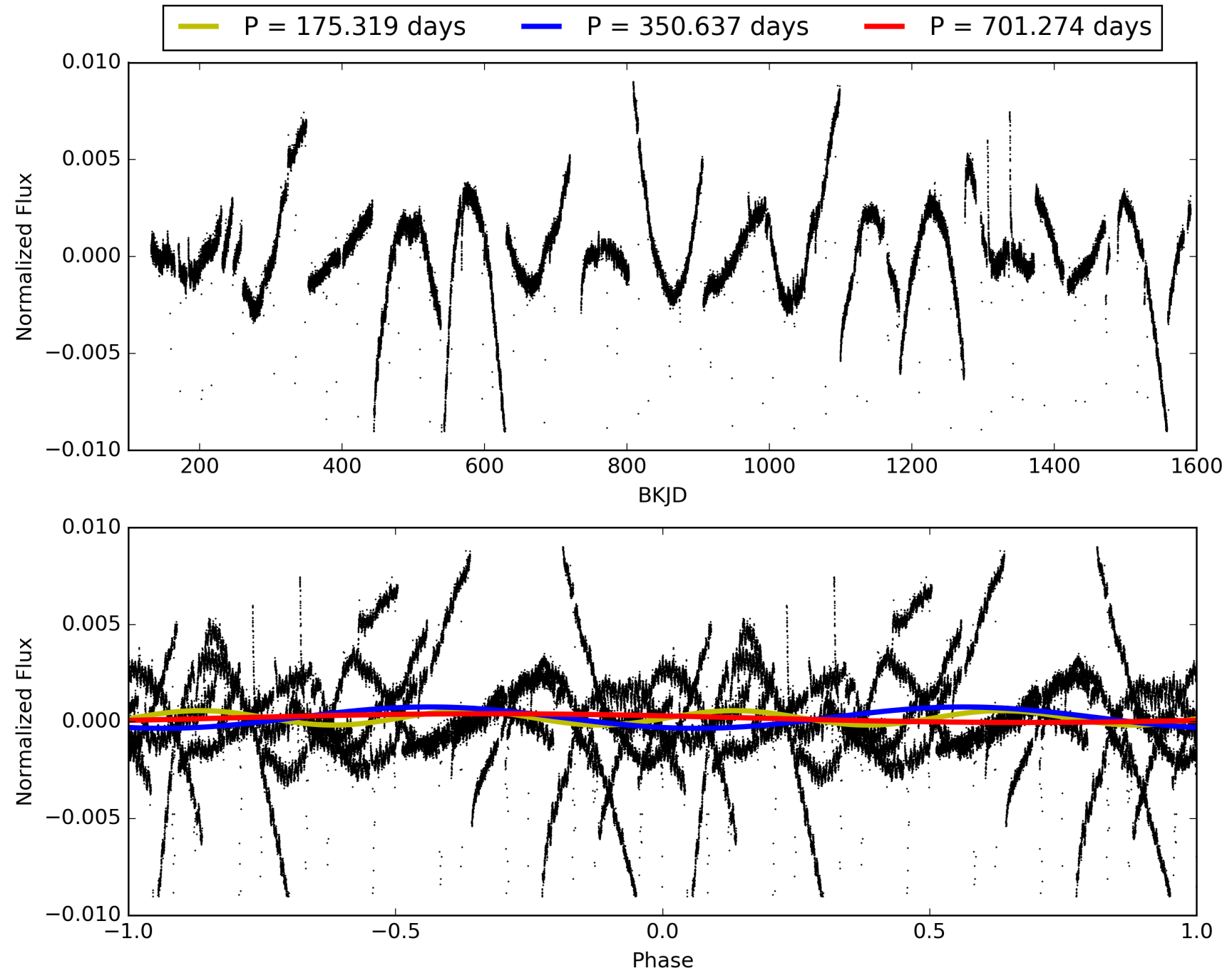
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008700506-06, PDC Light Curves



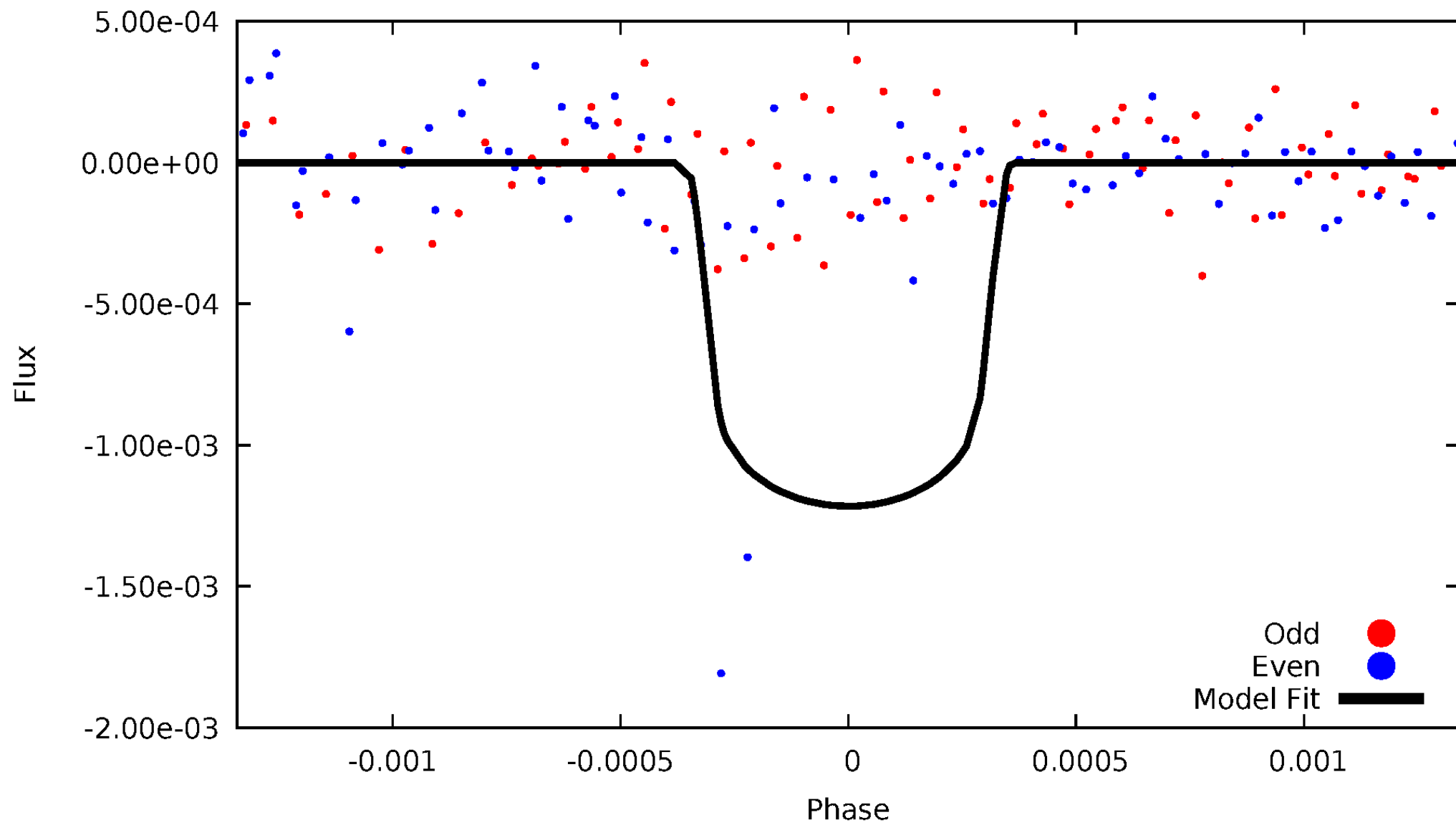
TCE 008700506-06





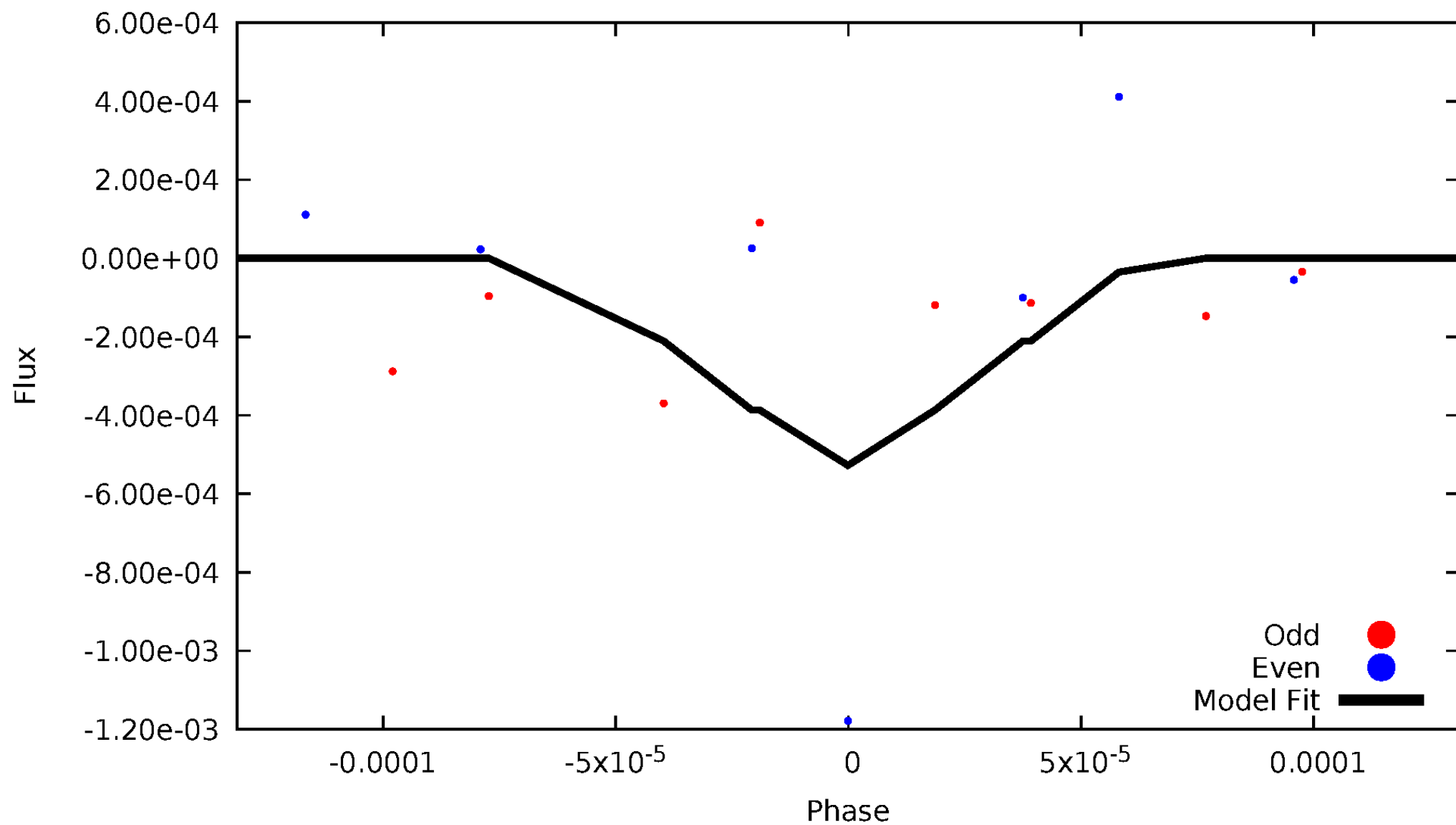
# DV Odd/Even

TCE 008700506-06



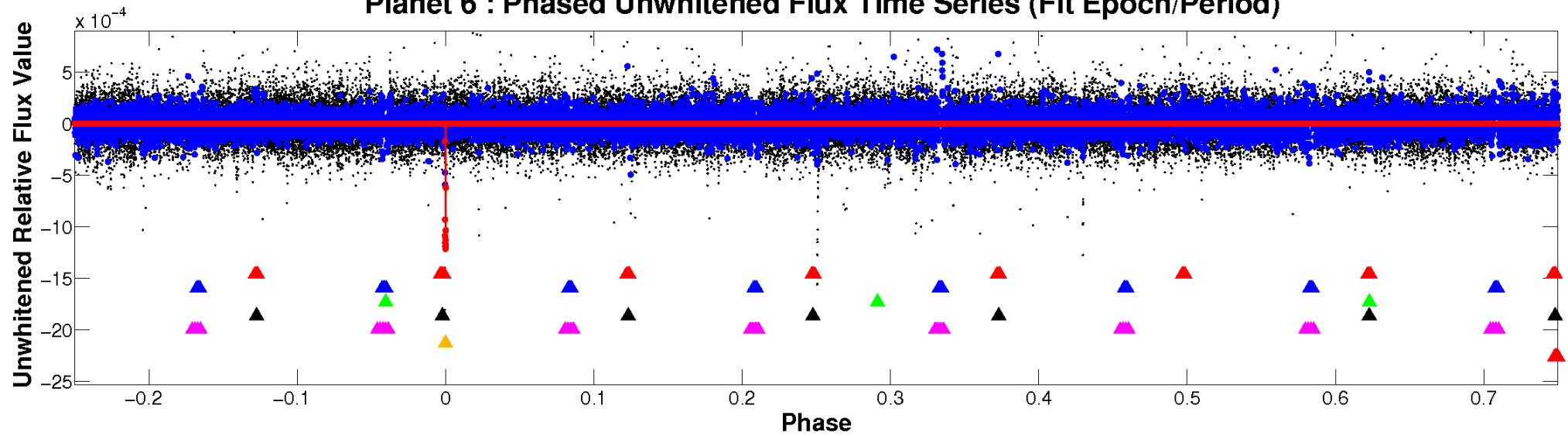
# ALT Odd/Even

TCE 008700506-06

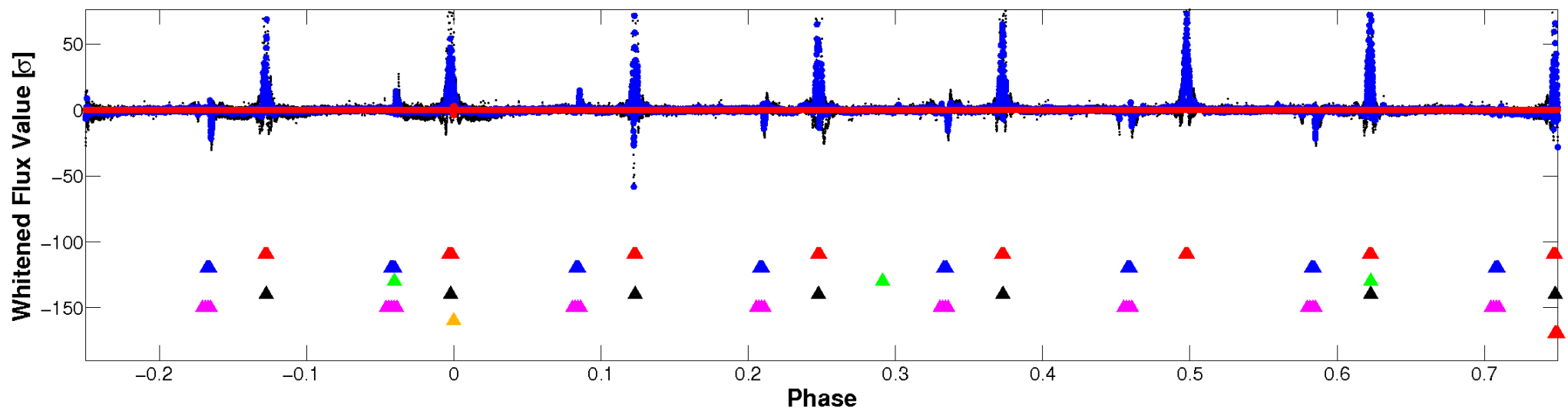


# Non-Whitened Vs. Whitened Light Curve

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

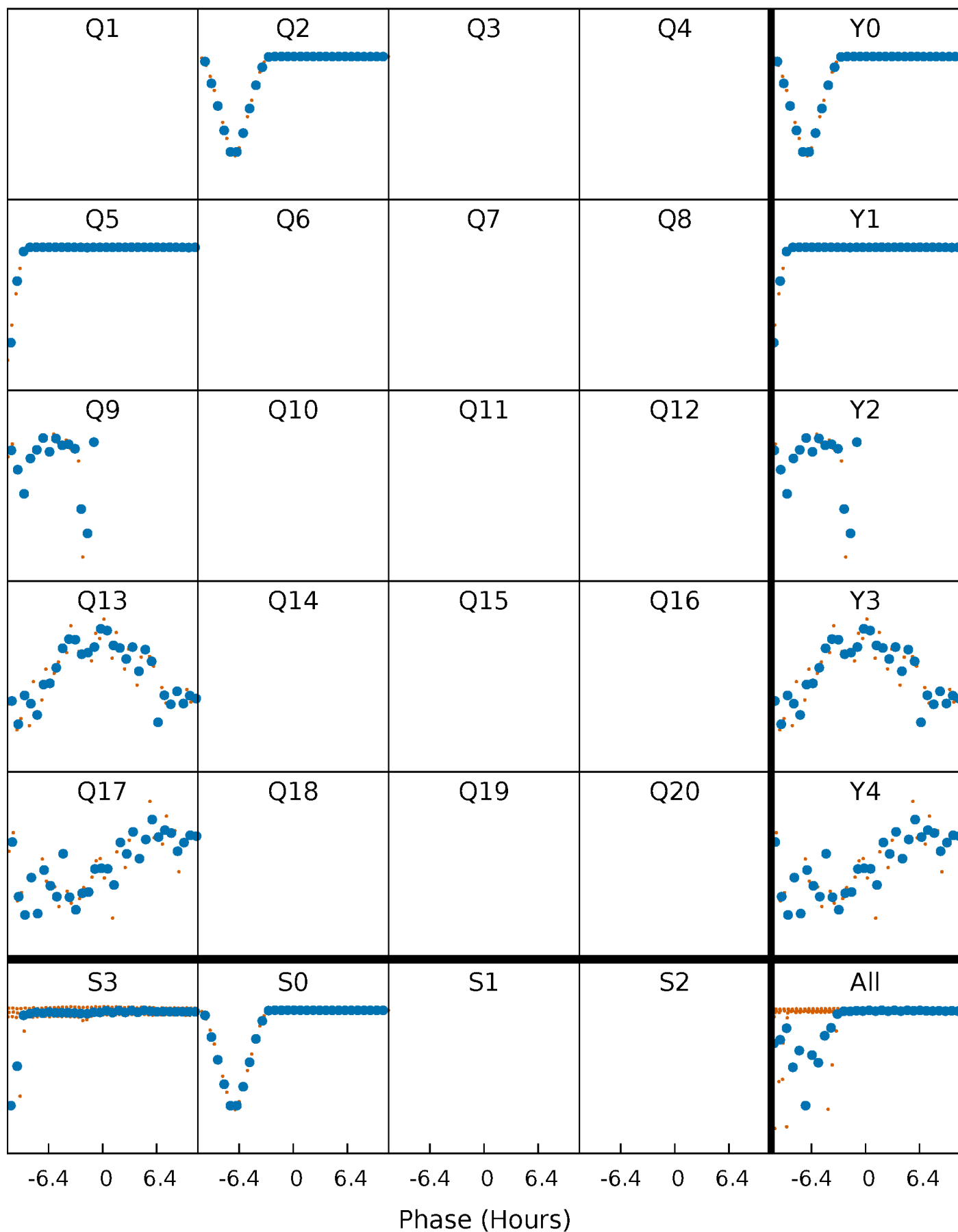


## Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



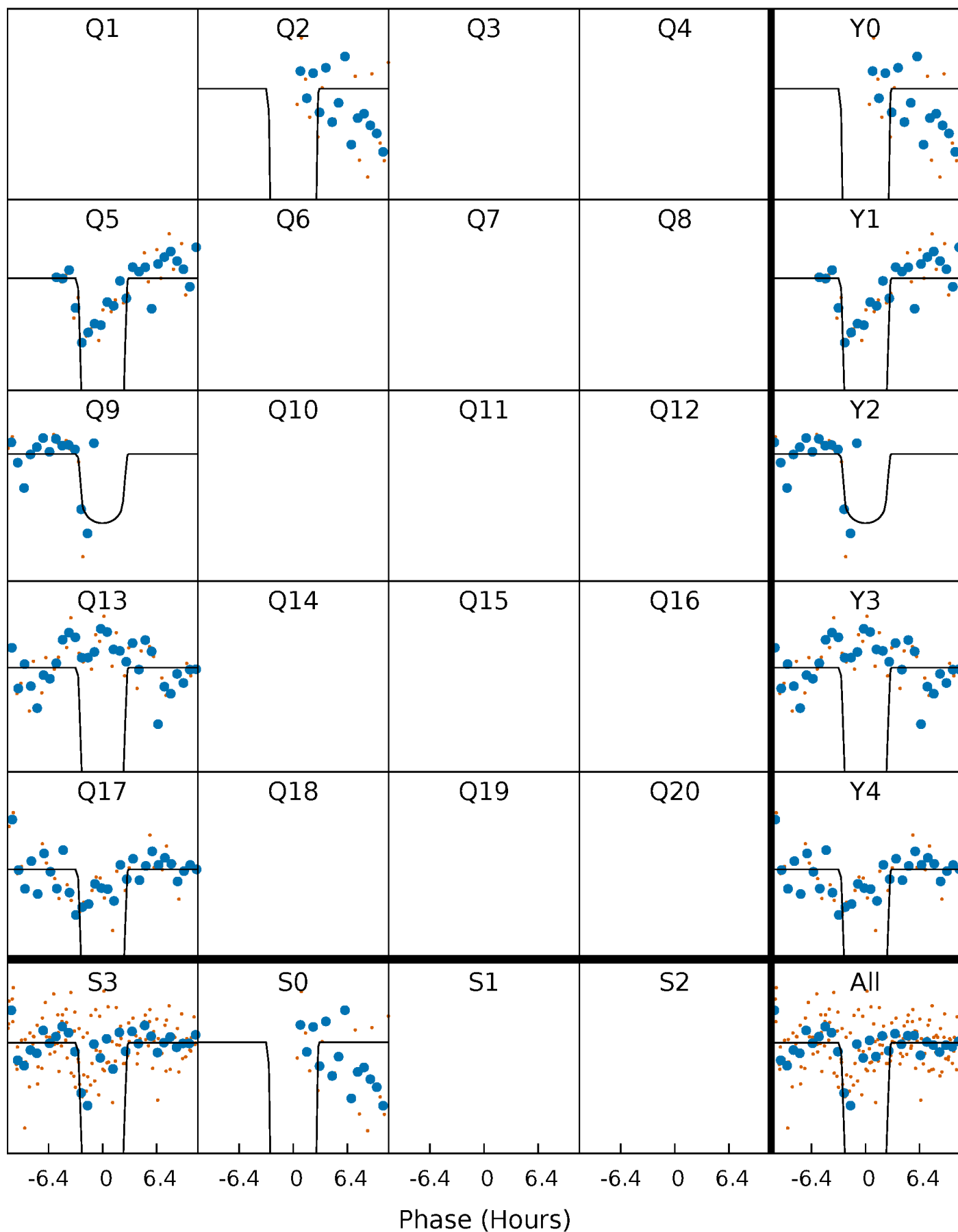
# PDC Quarter-Phased Transit Curves

TCE 008700506-06 P=350.637208 Days  $T_0=172.892505$  (BKJD)



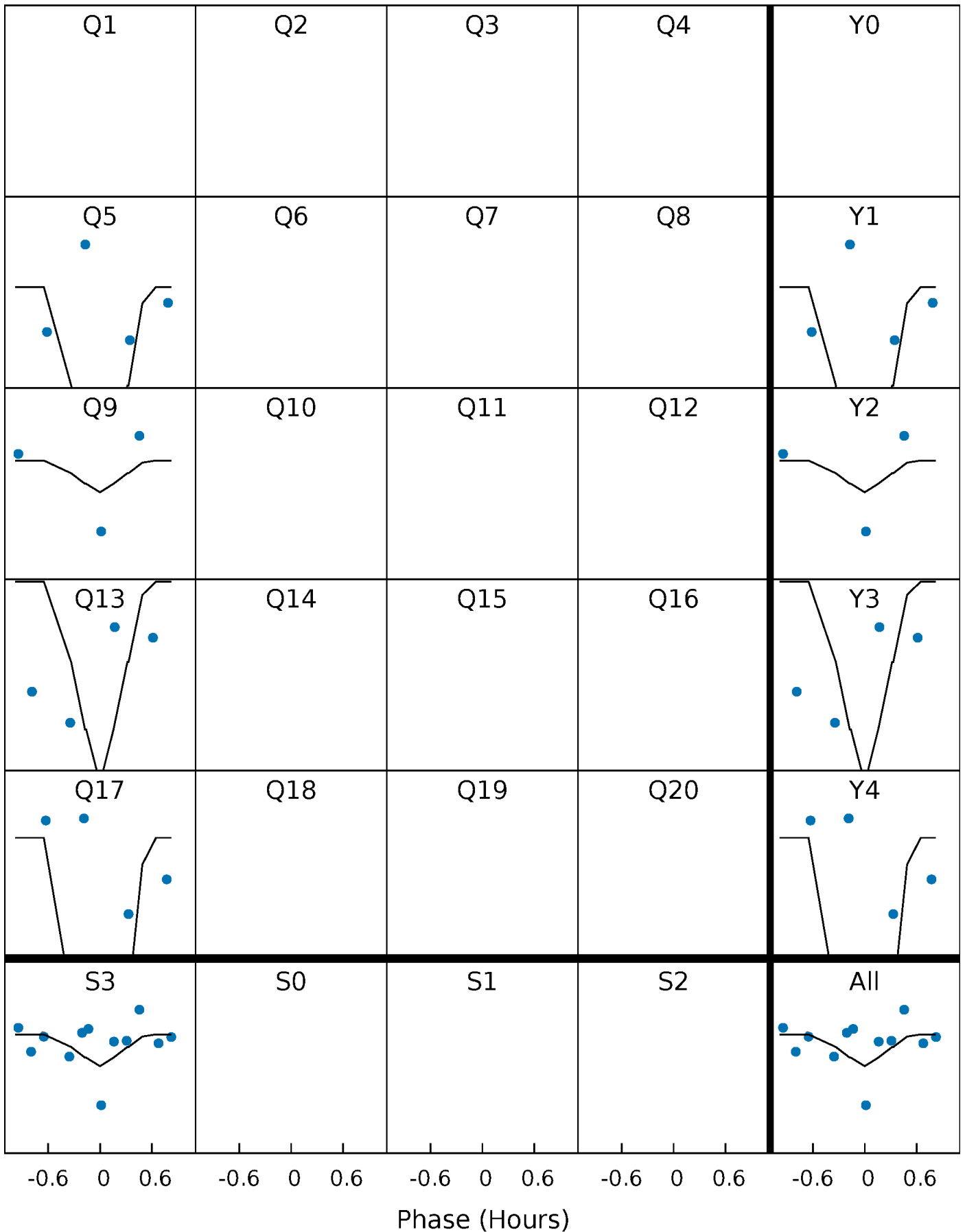
# DV Quarter-Phased Transit Curves

TCE 008700506-06     $P=350.637208$  Days     $T_0=172.892505$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

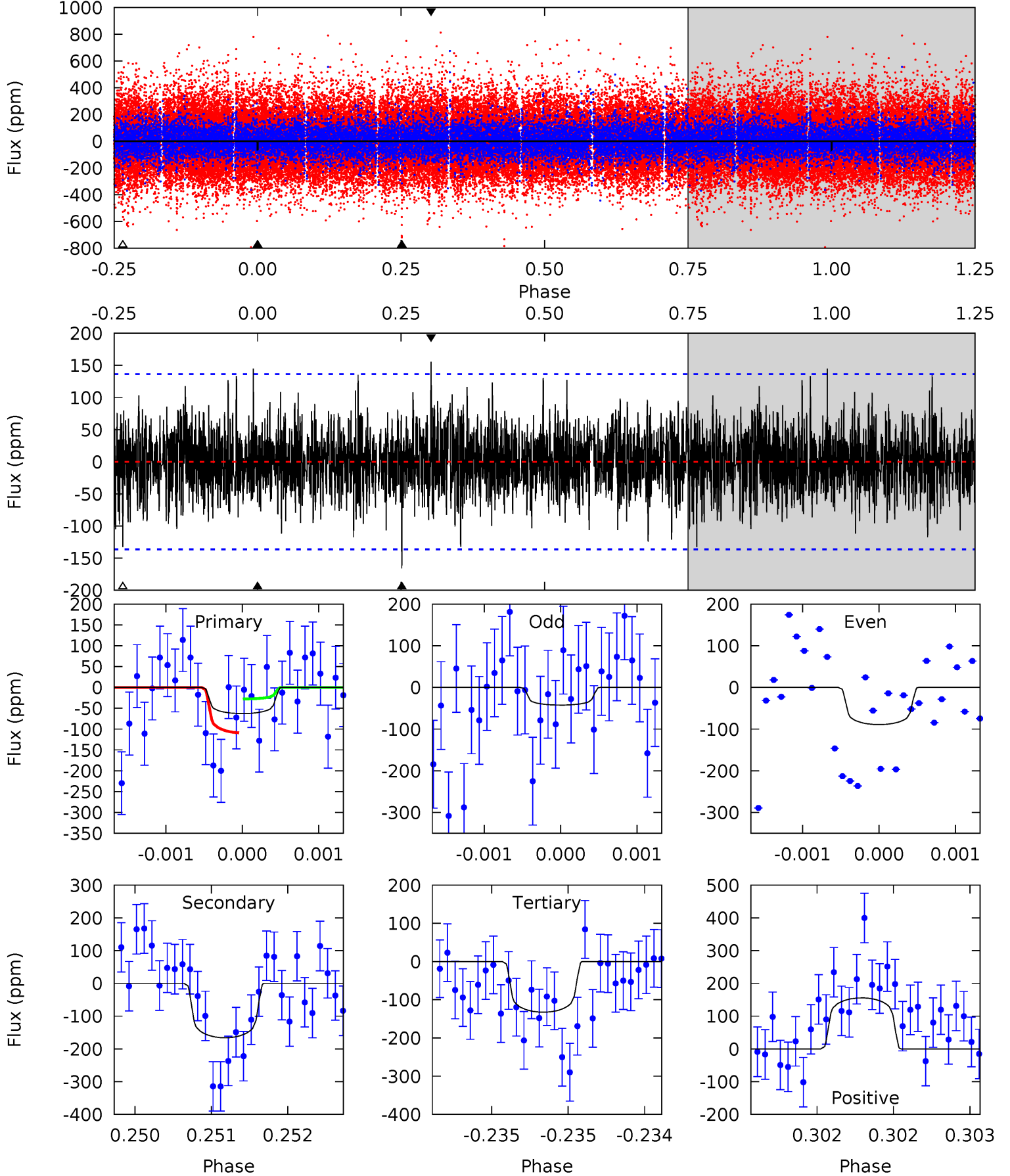
TCE 008700506-06     $P=350.673946$  Days     $T_0=172.741549$  (BKJD)



# DV Model-Shift Uniqueness Test

008700506-06, P = 350.637208 Days, E = 172.892505 Days

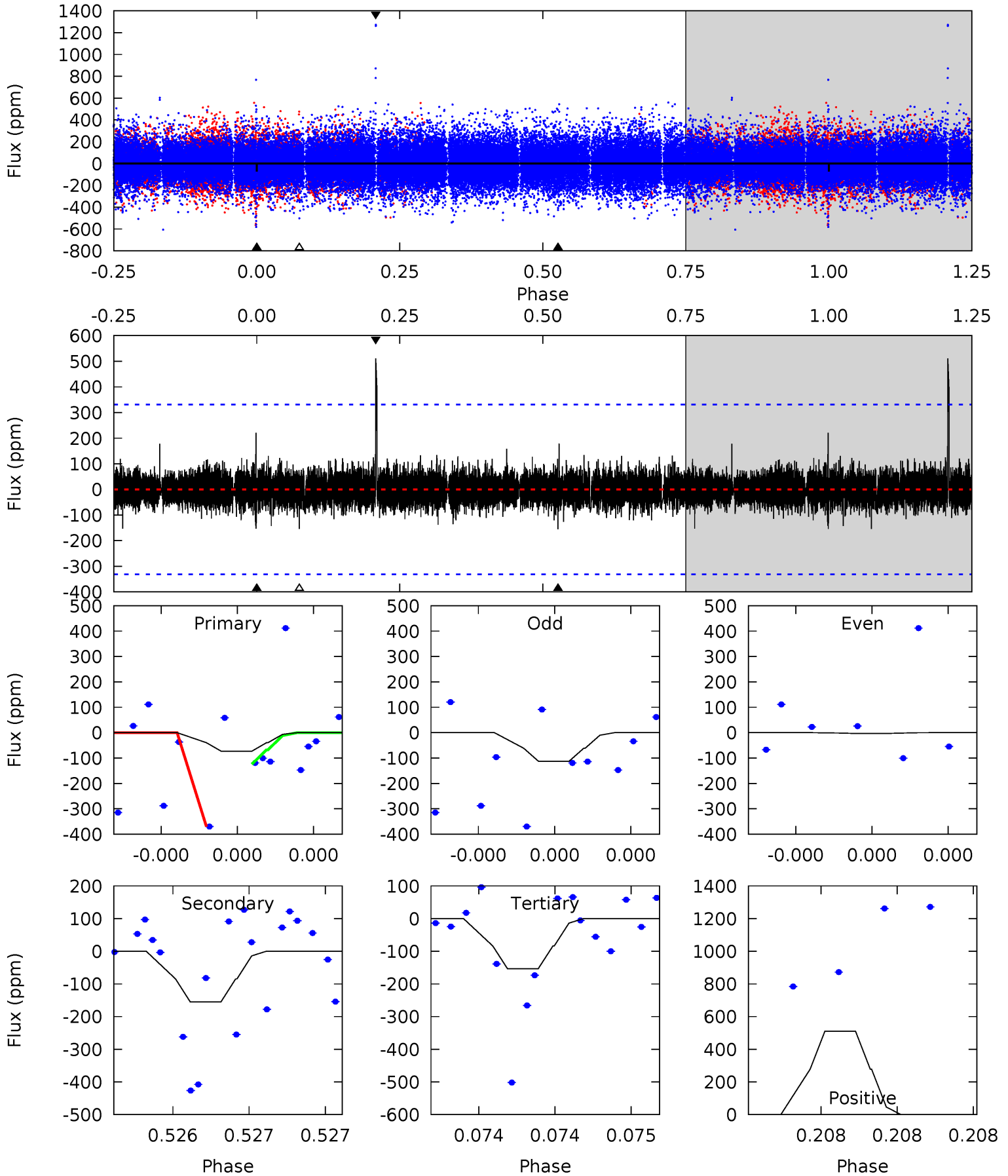
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.54	6.72	5.36	6.30	5.51	3.38	1.53	-2.82	-3.76	1.36	0.42	0.94	1.58	0.48	1.63



# Alt Model-Shift Uniqueness Test

008700506-06, P = 350.673946 Days, E = 172.741549 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
1.29	2.74	2.71	9.01	5.85	3.90	0.59	-1.43	-7.73	0.03	-6.27	0.93	2.02	0.77	0





### Stellar Parameters For KIC 008700506

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6860^{+167}_{-286}$	$4.326^{+0.066}_{-0.154}$	$-0.100^{+0.250}_{-0.350}$	$1.292^{+0.312}_{-0.144}$	$1.300^{+0.154}_{-0.188}$	$0.849^{+0.247}_{-0.381}$
	+2%/-4%	+2%/-4%	+250%/-350%	+24%/-11%	+12%/-14%	+29%/-45%
Source	PHO1	FLK73	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 008700506-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-166 \pm 25$	$6.11^{+5.19}_{-3.79}$	$470^{+27}_{-23}$	$4064^{+2059}_{-752}$	$2793^{+15956}_{-2010}$
Alt.	$-155 \pm 57$	$5.08^{+4.54}_{-3.34}$	$472^{+26}_{-25}$	$4275^{+2593}_{-955}$	$3505^{+26703}_{-2620}$

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

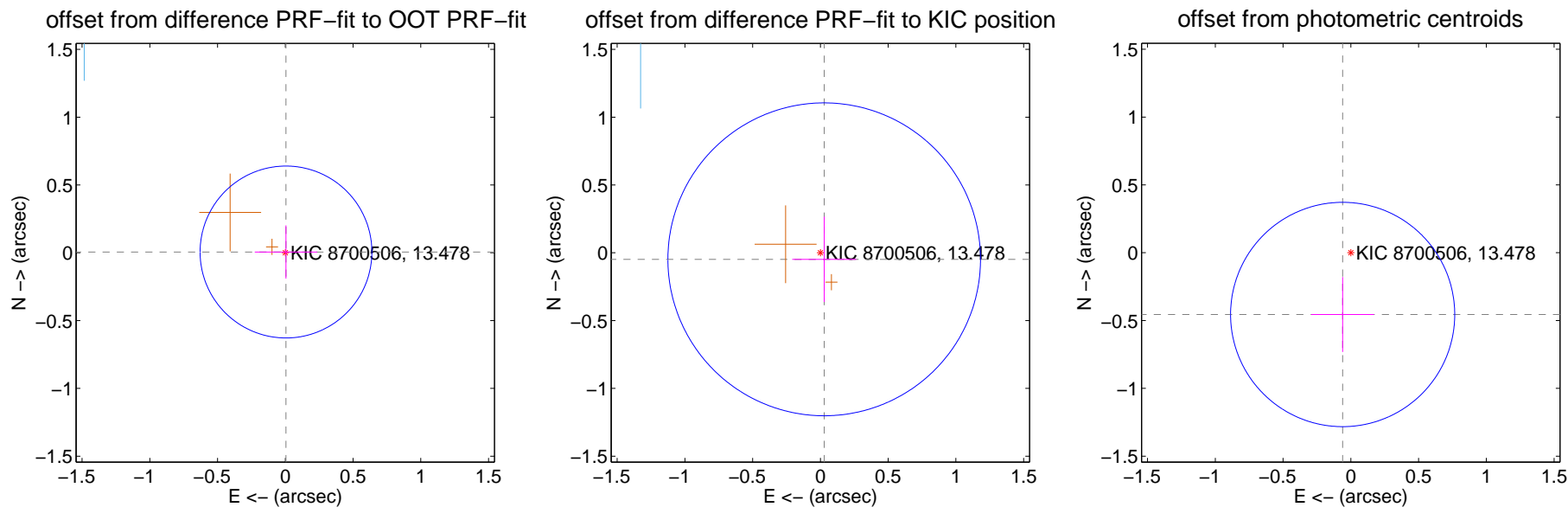
## DV Centroid Data

Supplemental centroid analysis for 008700506-06. Kepler magnitude: 13.48. Transit SNR 24.01

There are 1 quarters with good PRF difference image offsets

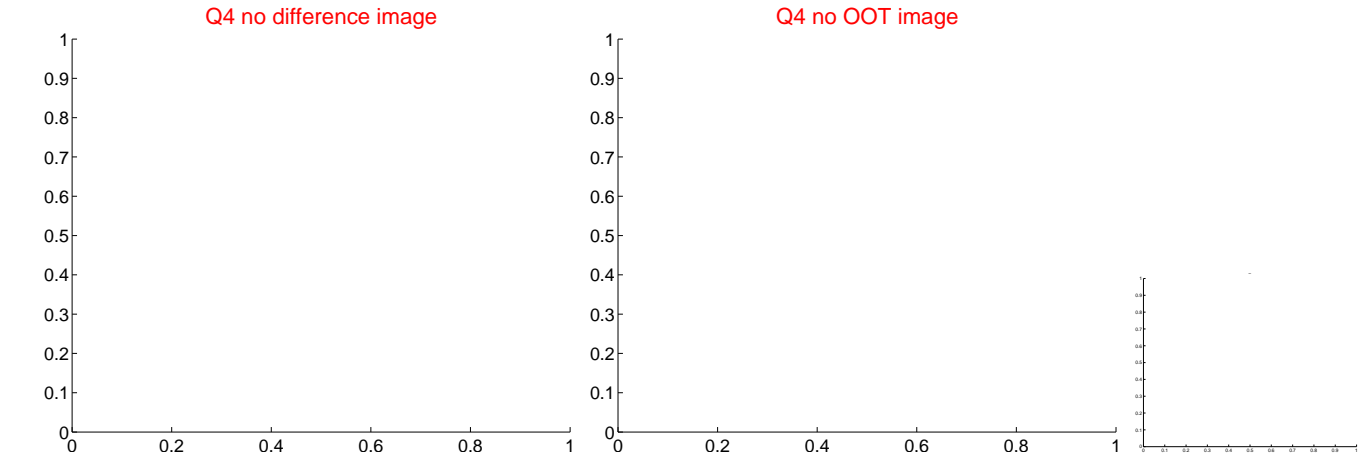
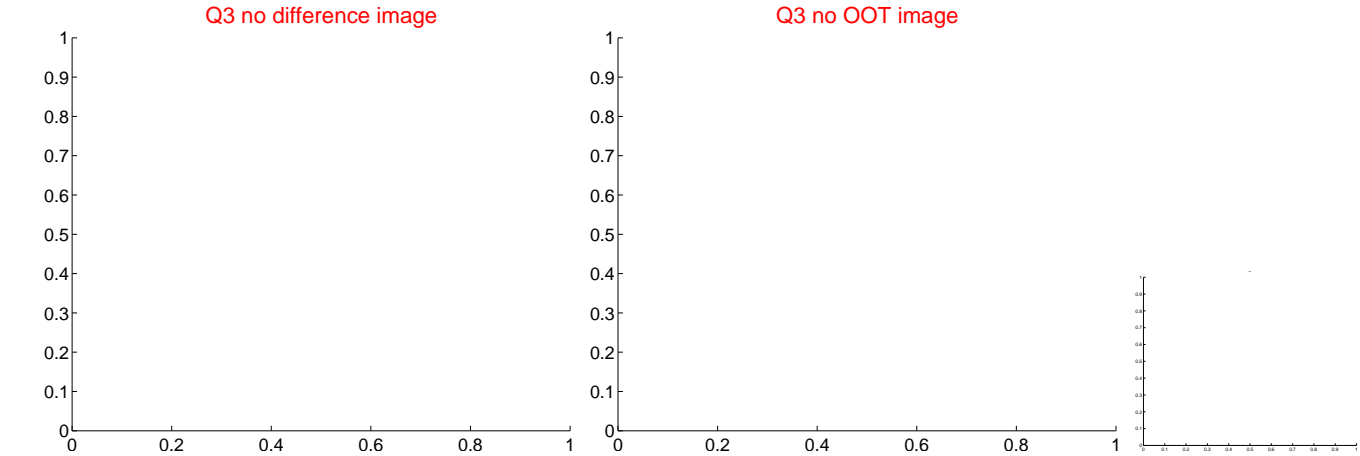
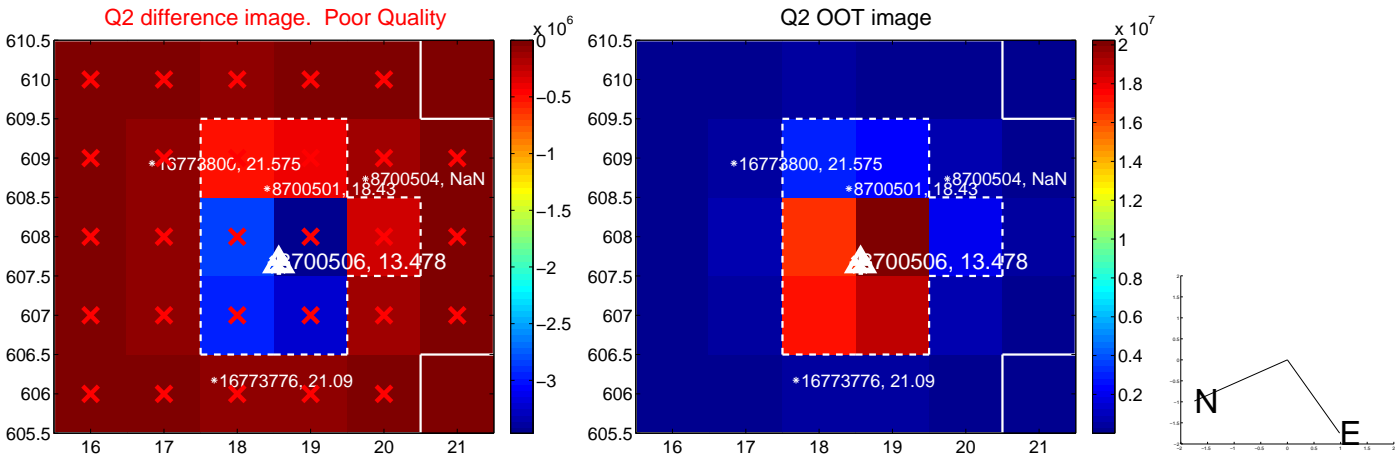
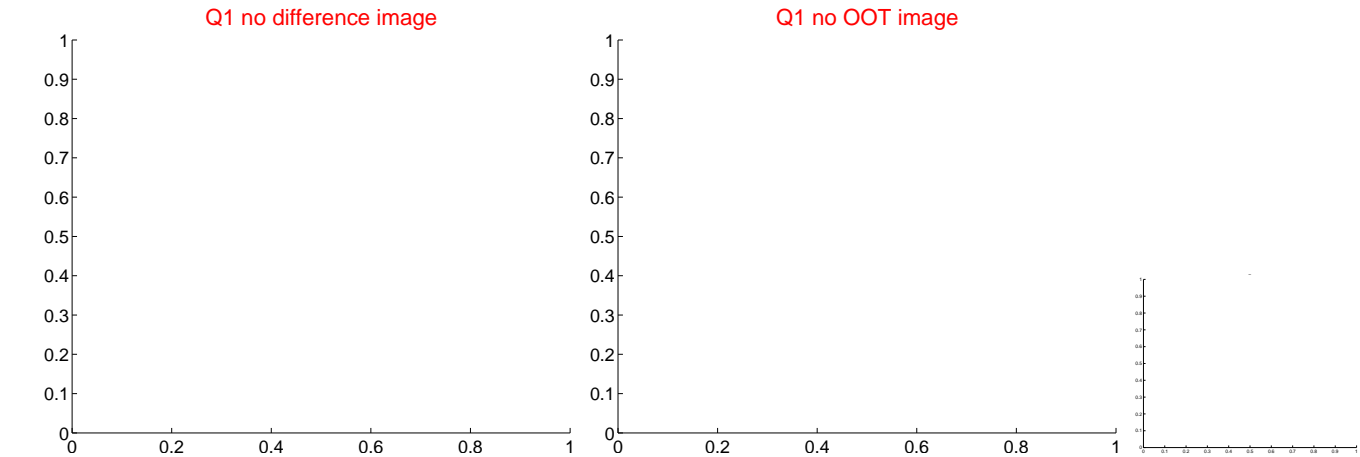
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.008 \pm 0.211$	0.04	$-0.005 \pm 0.230$	$0.006 \pm 0.196$
PRF-fit source offset from KIC position	$0.056 \pm 0.385$	0.15	$-0.028 \pm 0.236$	$-0.048 \pm 0.315$
photometric centroid source offset	$0.46 \pm 0.28$	1.67	$0.06 \pm 0.23$	$-0.46 \pm 0.28$

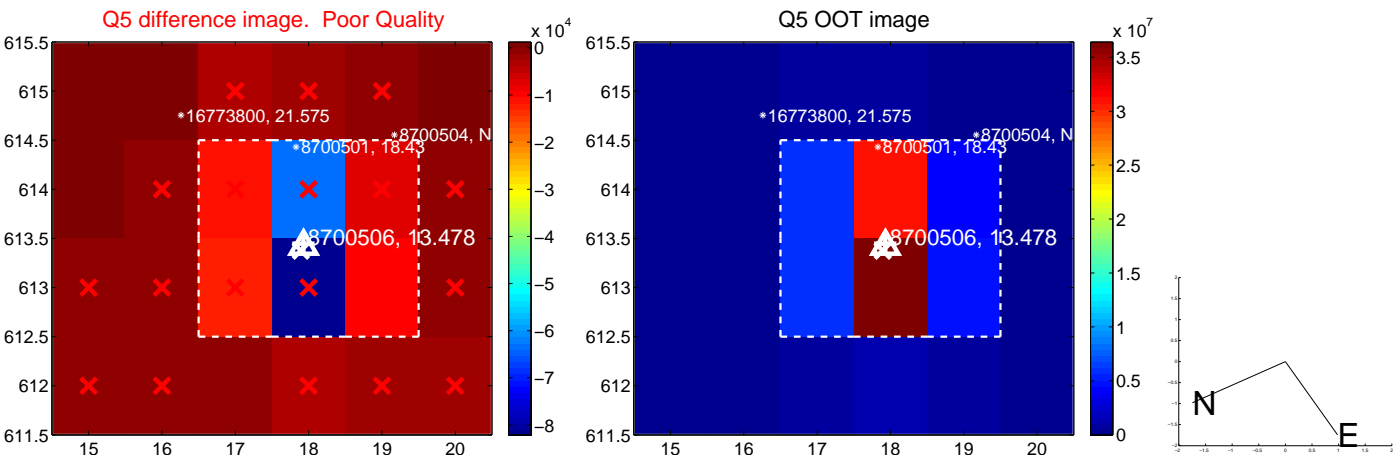


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

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



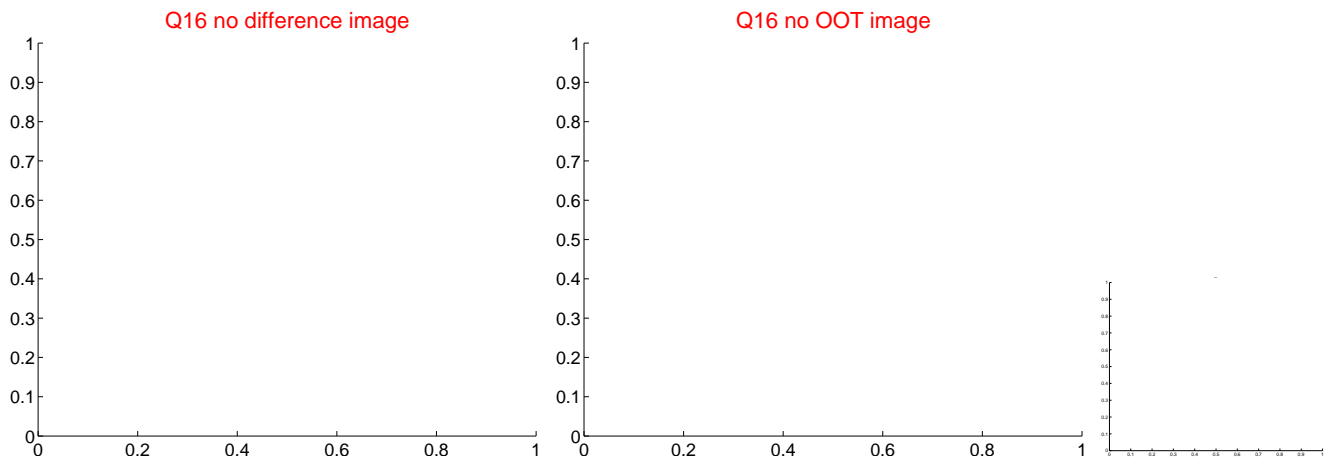
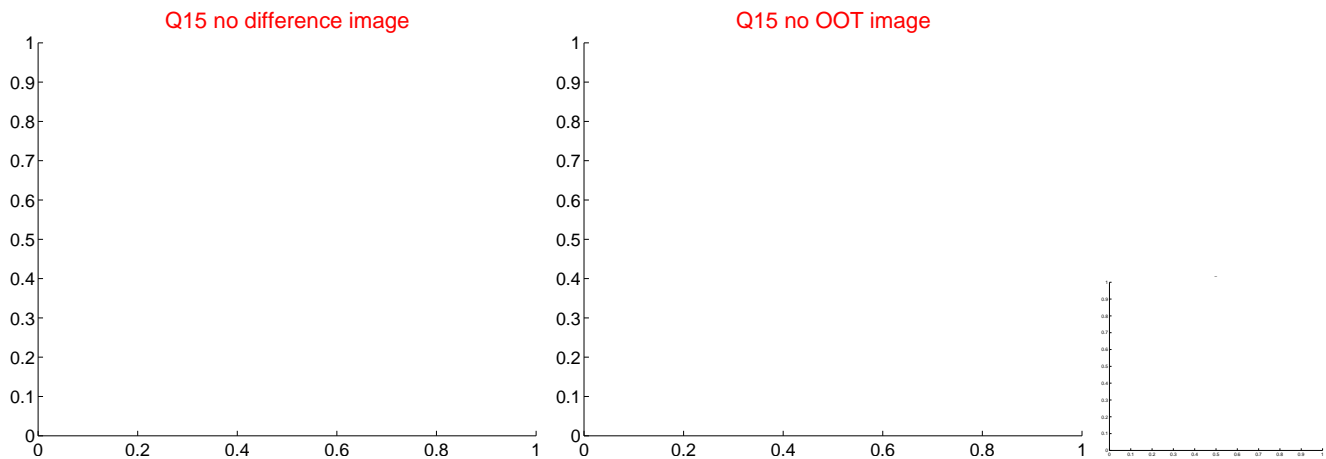
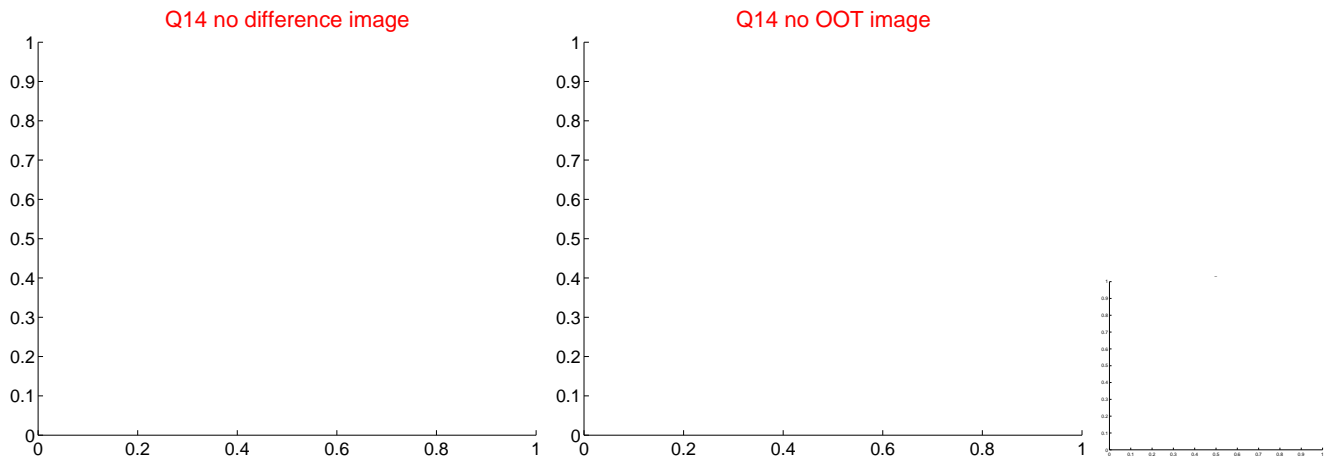
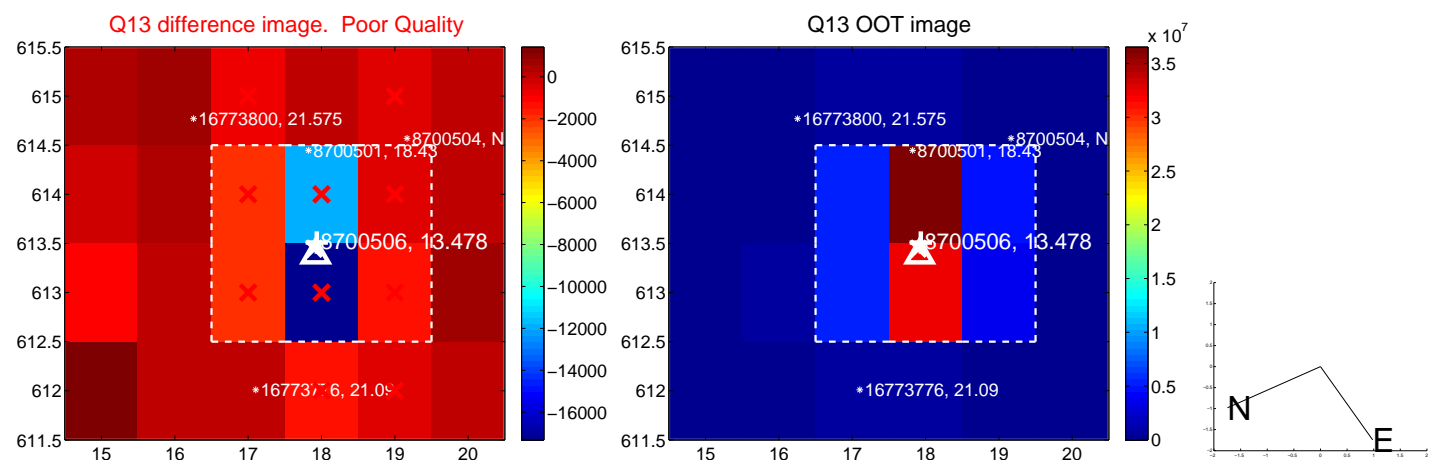
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



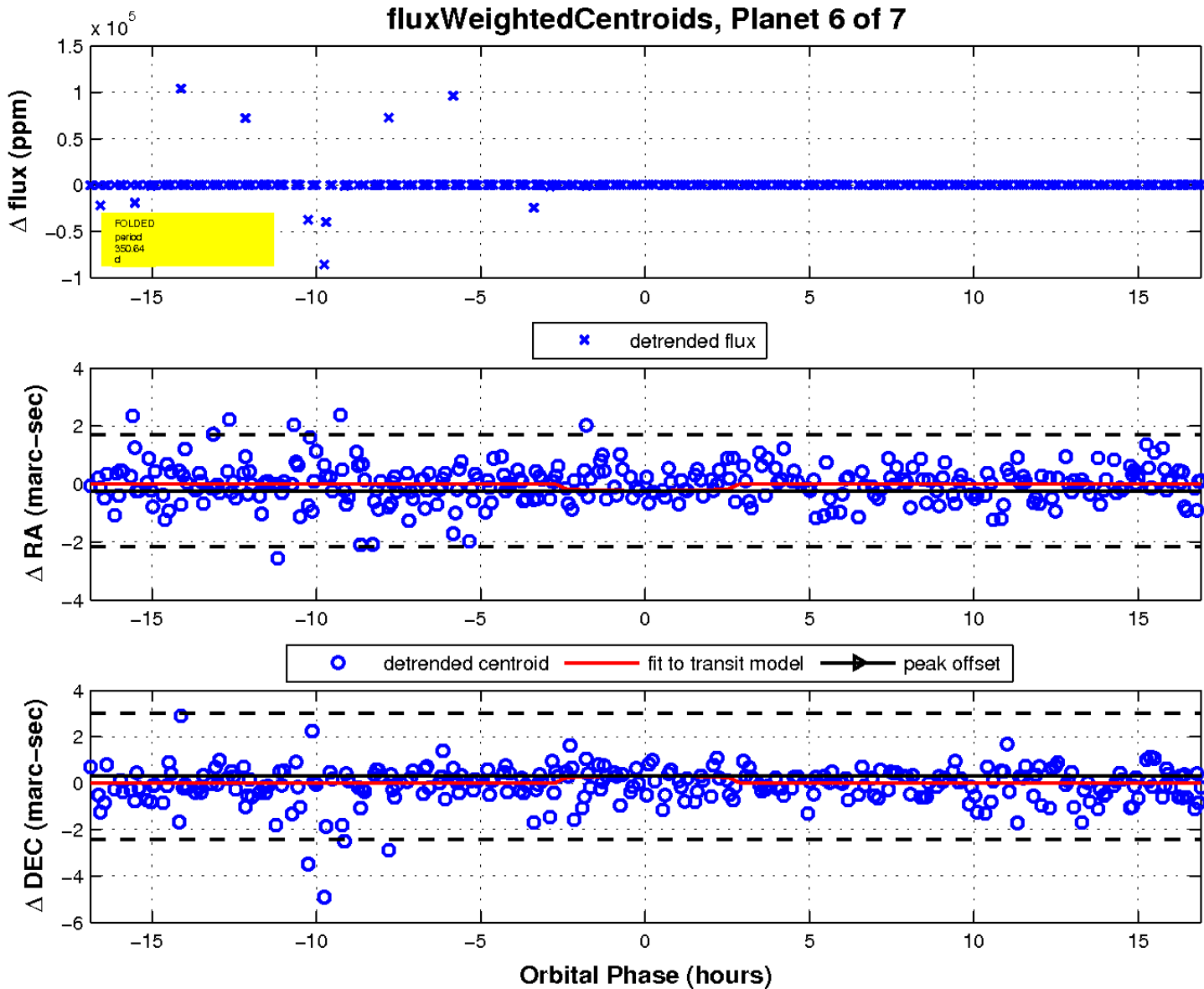
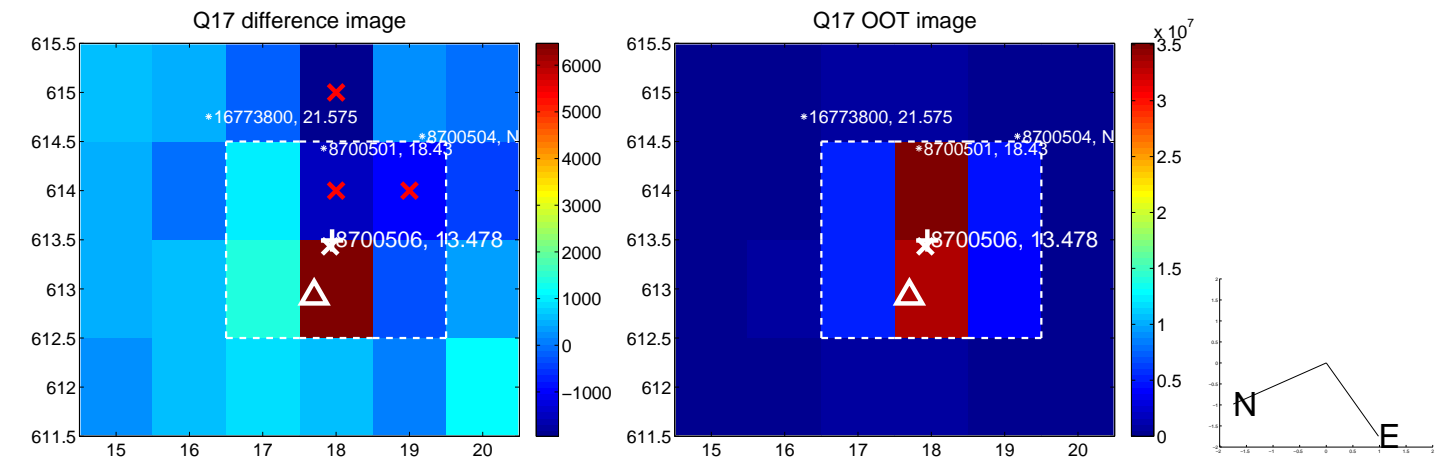
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white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

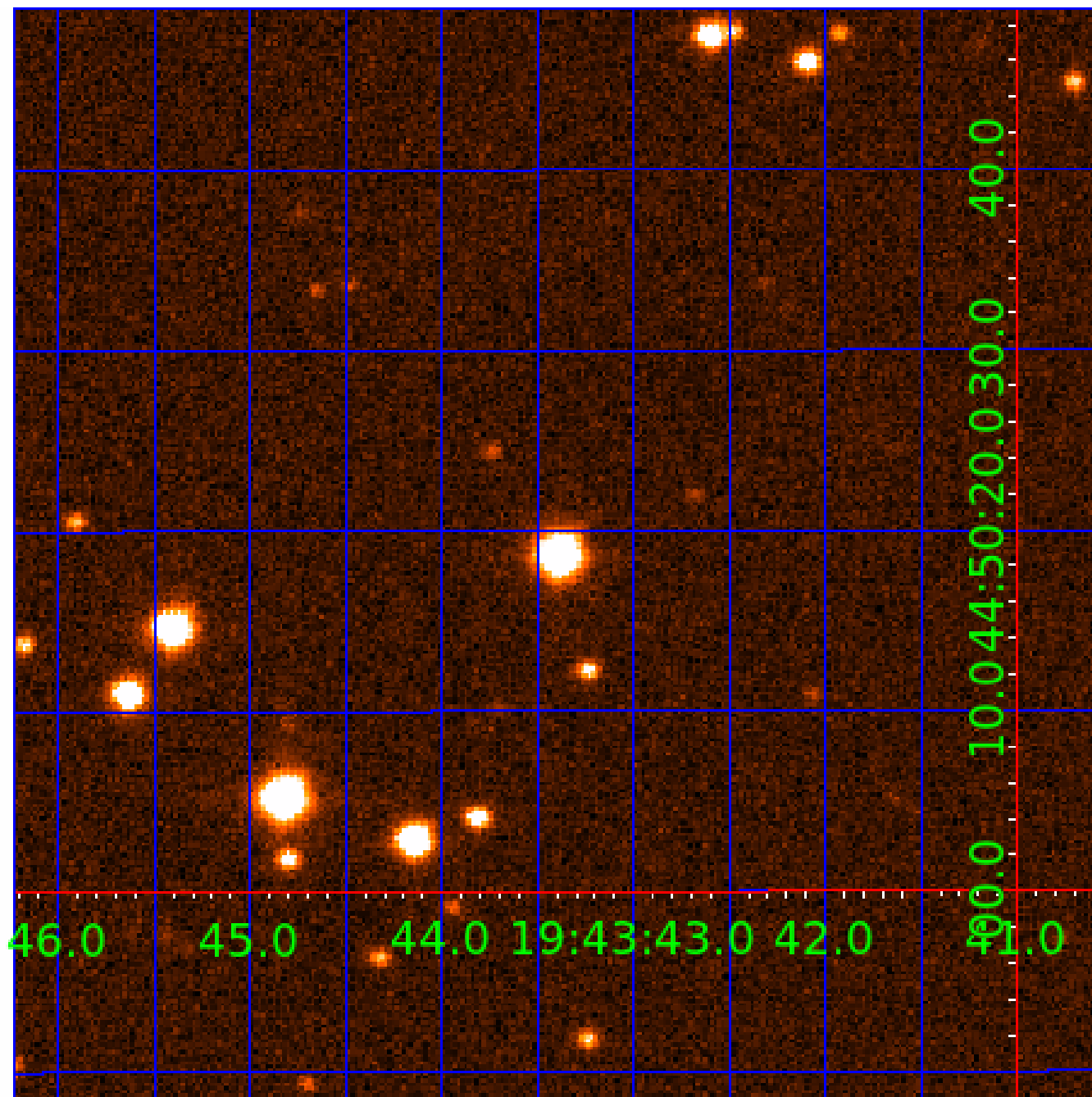


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 008700506

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008700506-01	OBS	7077.01	43.797335	172.609694	426571.2	4.500	20393.9	-1.0	1.29	6860	61.41	47.25
008700506-02	OBS	No	43.796461	158.912398	410205.3	12.500	12827.6	-1.0	1.29	6860	37.33	47.26
008700506-03	OBS	No	585.006012	391.303276	27742.9	15.000	836.9	-1.0	1.29	6860	21.75	1.49
008700506-04	OBS	No	219.113053	216.099556	27983.8	2.500	540.9	-1.0	1.29	6860	21.88	5.52
008700506-05	OBS	No	43.747990	159.382370	6405.4	15.000	385.0	-1.0	1.29	6860	10.44	47.33
008700506-06	OBS	No	350.637208	172.892505	1215.8	5.643	409.9	24.0	1.29	6860	4.76	2.95
008700506-07	OBS	No	350.401498	435.848436	15759.7	4.500	455.6	-1.0	1.29	6860	16.39	2.95

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008700506-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—HAS_SEC_TCE—CENT_NOFITS
008700506-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS
008700506-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
008700506-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
008700506-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—CENT_NOFITS
008700506-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008700506-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—NO_FITS—CENT_NOFITS

**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.

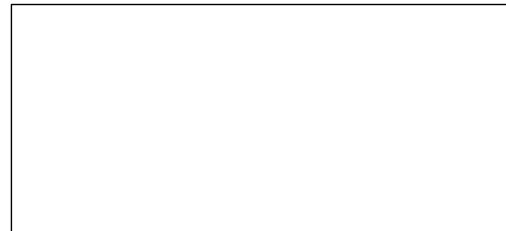
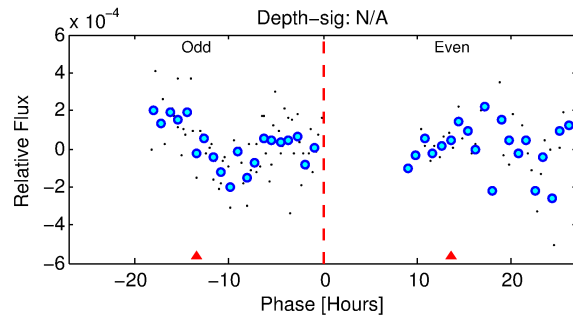
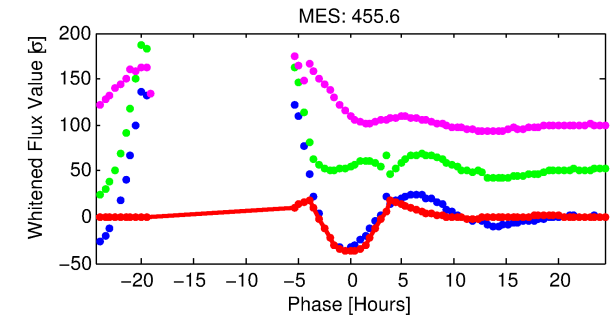
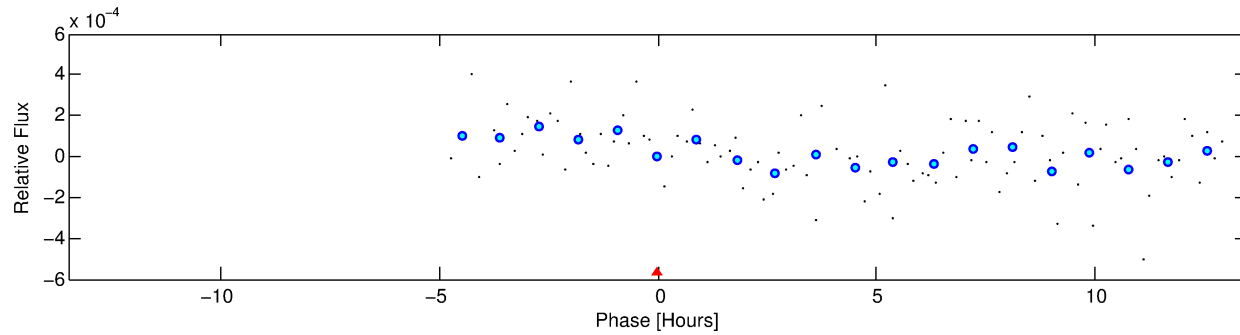
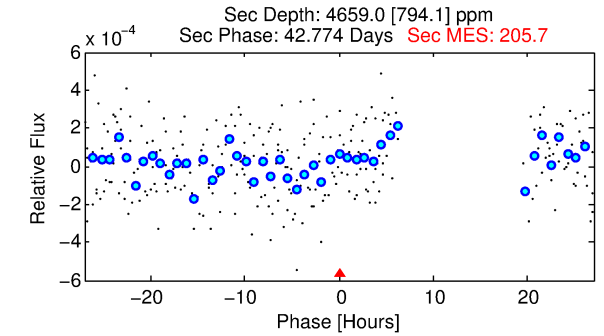
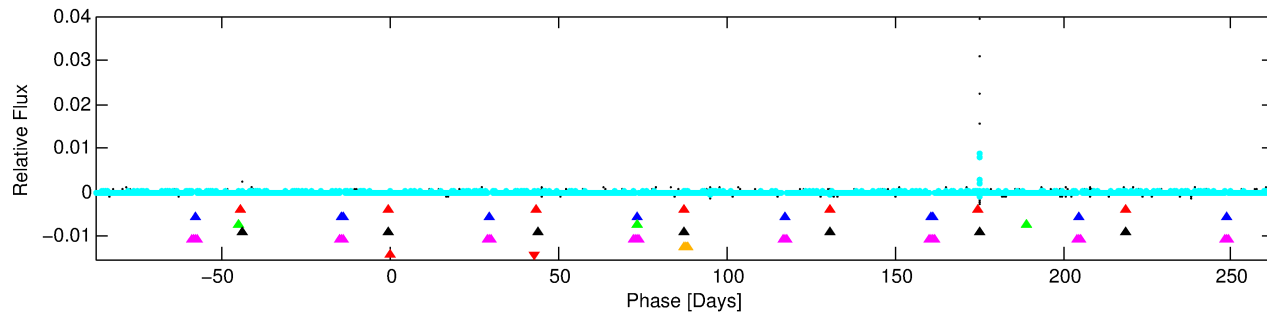
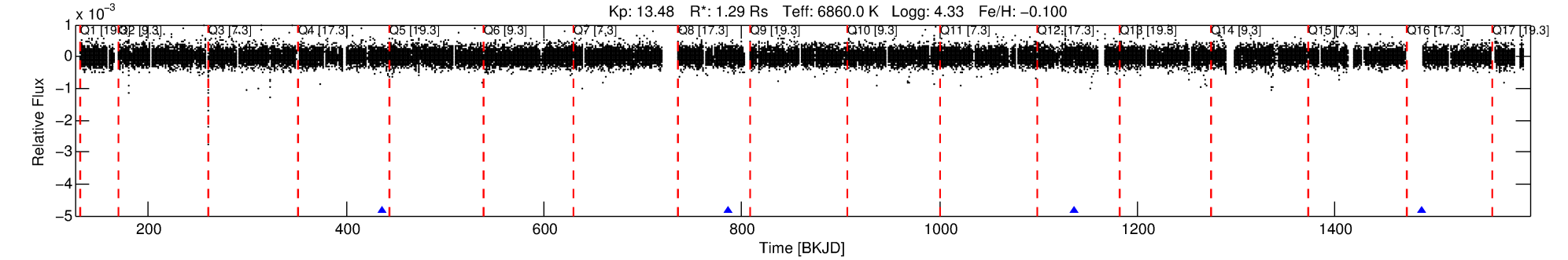
## Ephemeris Match Information For 008700506-07

No Significant Match Found

# DV One-Page Summary

KIC: 8700506 Candidate: 7 of 7 Period: 350.401 d  
KOI: K07077 Corr: No Ephemeris Match

Kp: 13.48 R\*: 1.29 Rs Teff: 6860.0 K Logg: 4.33 Fe/H: -0.100



## TPS TCE Results:

Period = 350.40150 d  
Epoch = 435.8484 BKJD

DV fit results are unavailable

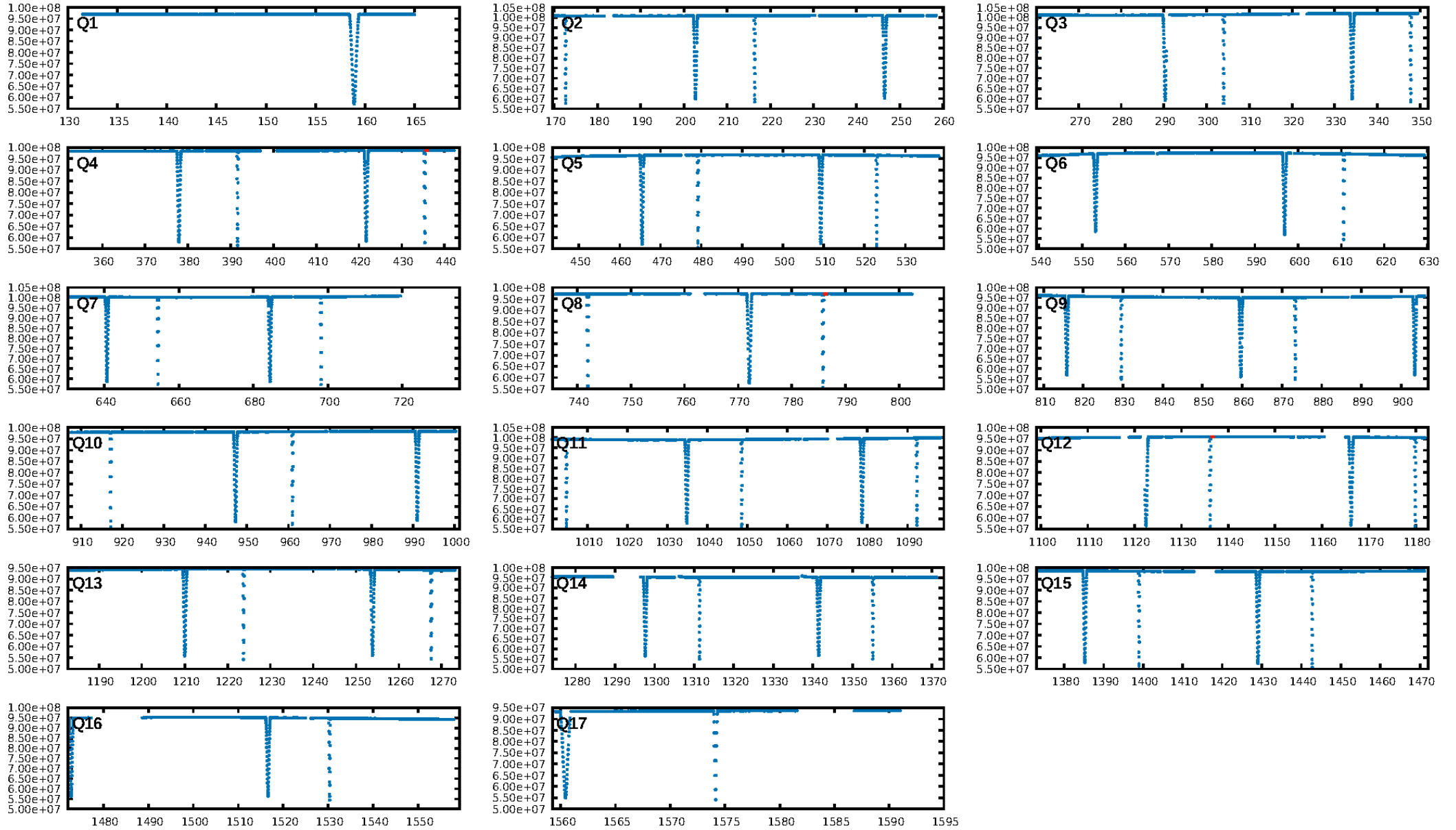
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [612.09σ]  
LongPeriod-sig: 56.7% [0.78σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: N/A  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0/0 [0]  
KicOffset-st: 0/0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: N/A

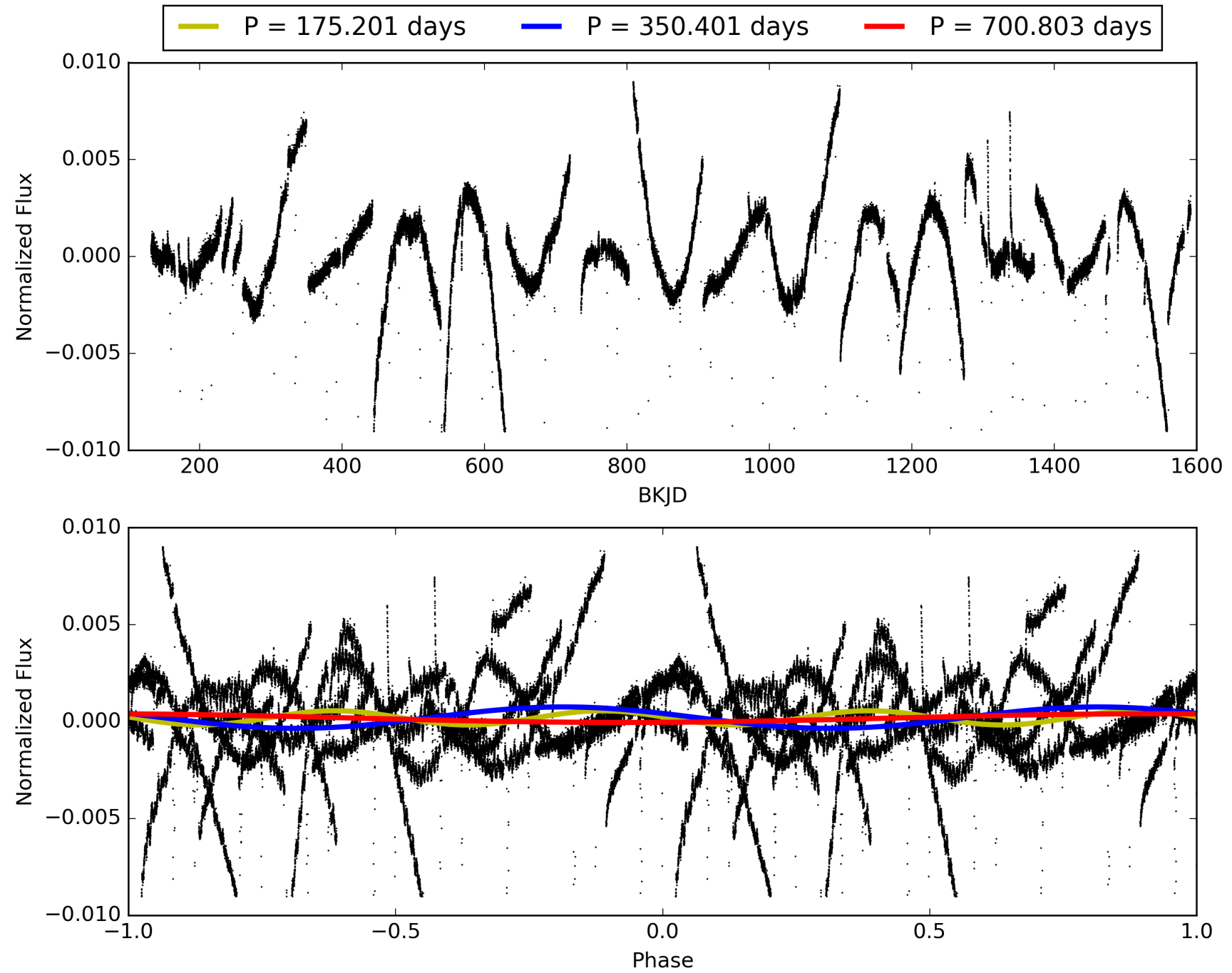
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:22:02 Z

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

# TCE 008700506-07, PDC Light Curves

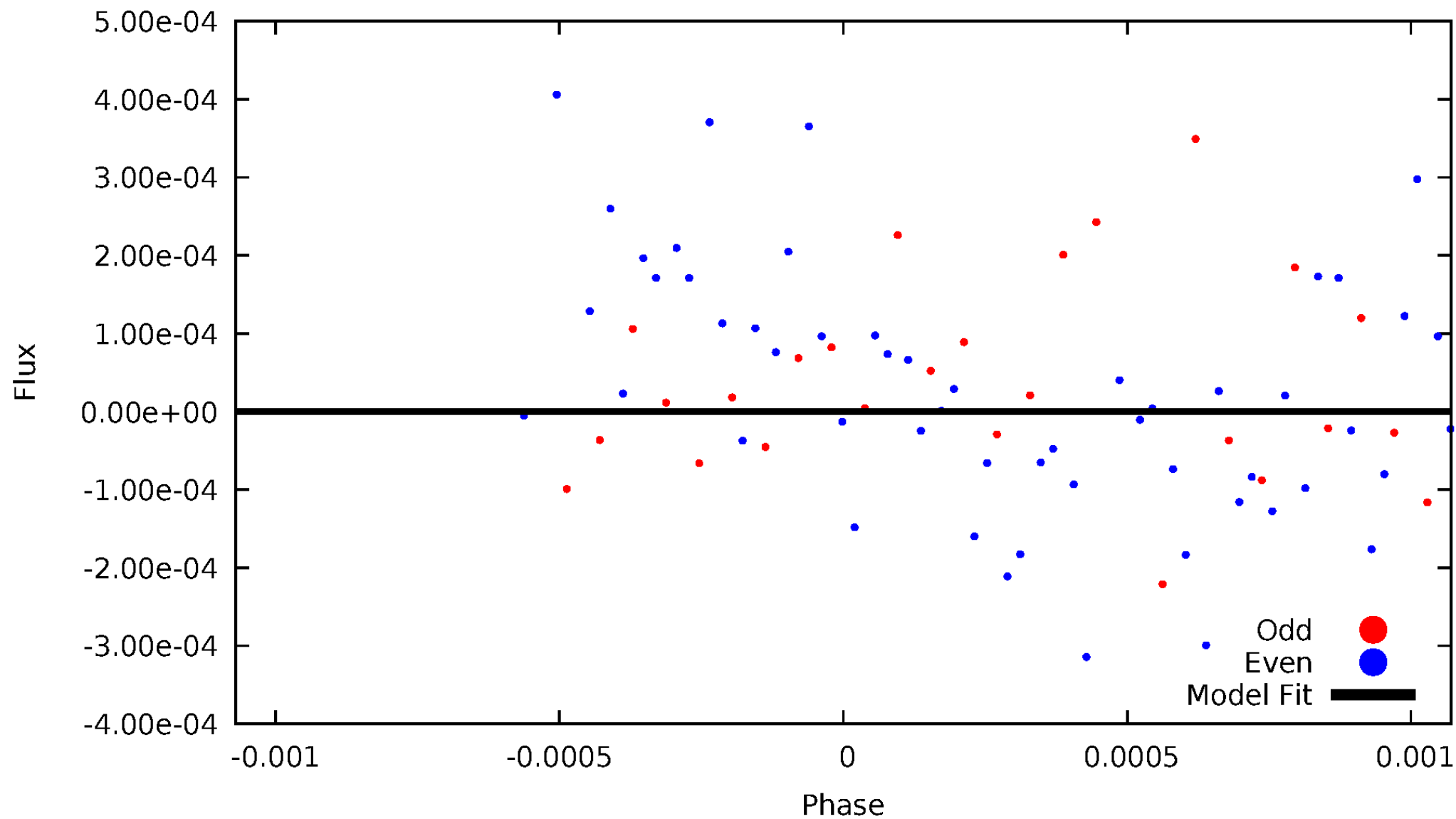


TCE 008700506-07



# DV Odd/Even

TCE 008700506-07

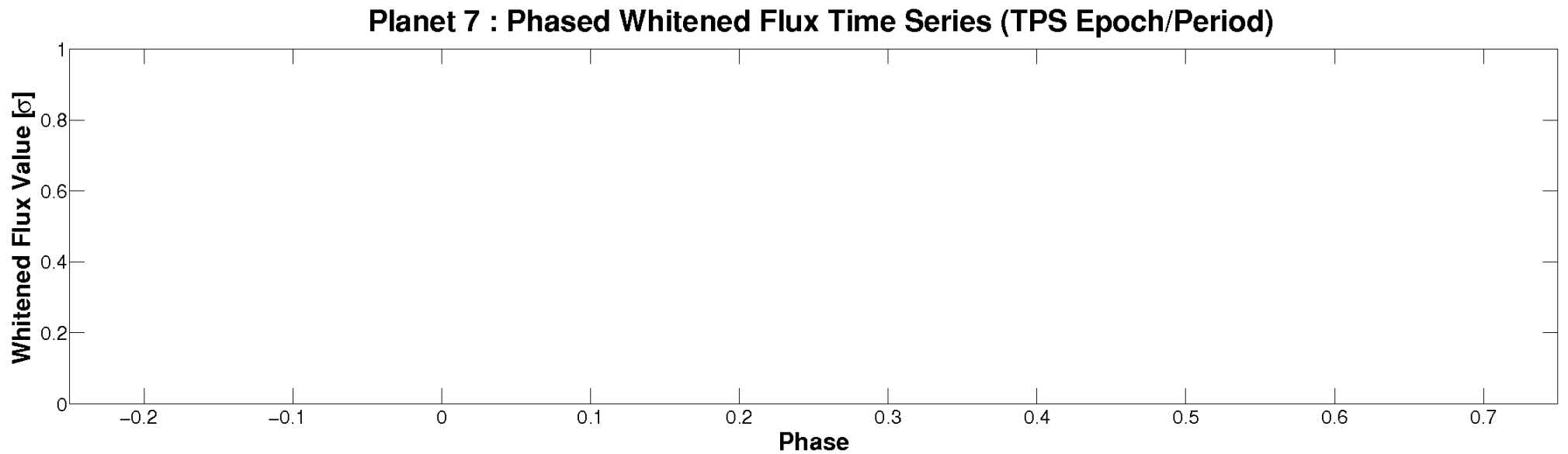
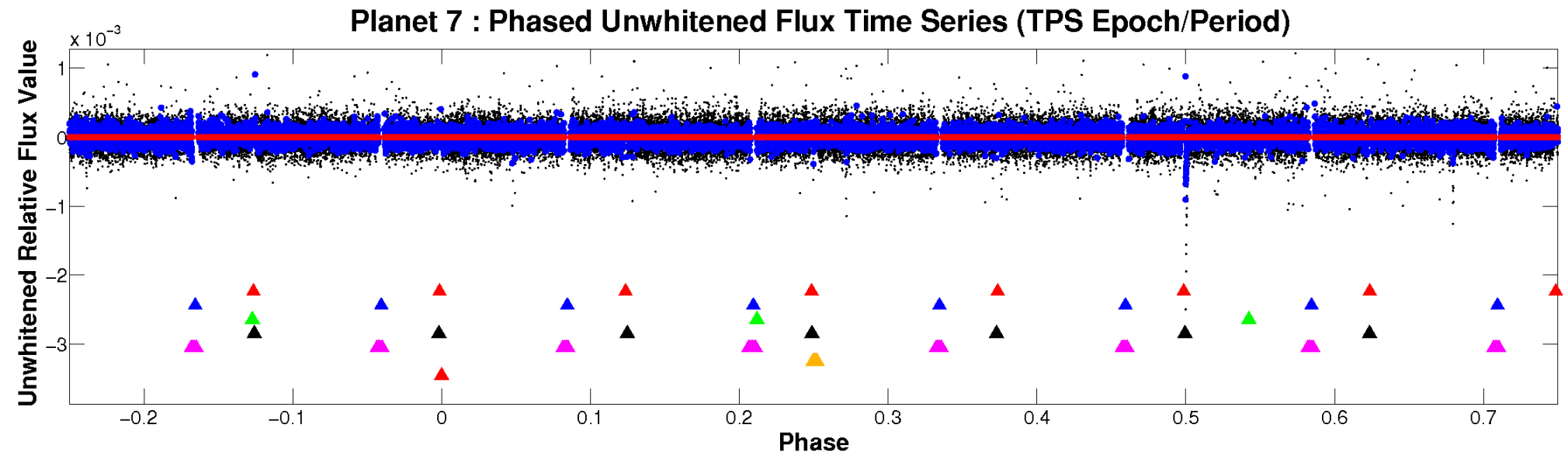




ALT Odd/Even

This plot does not exist for this TCE.

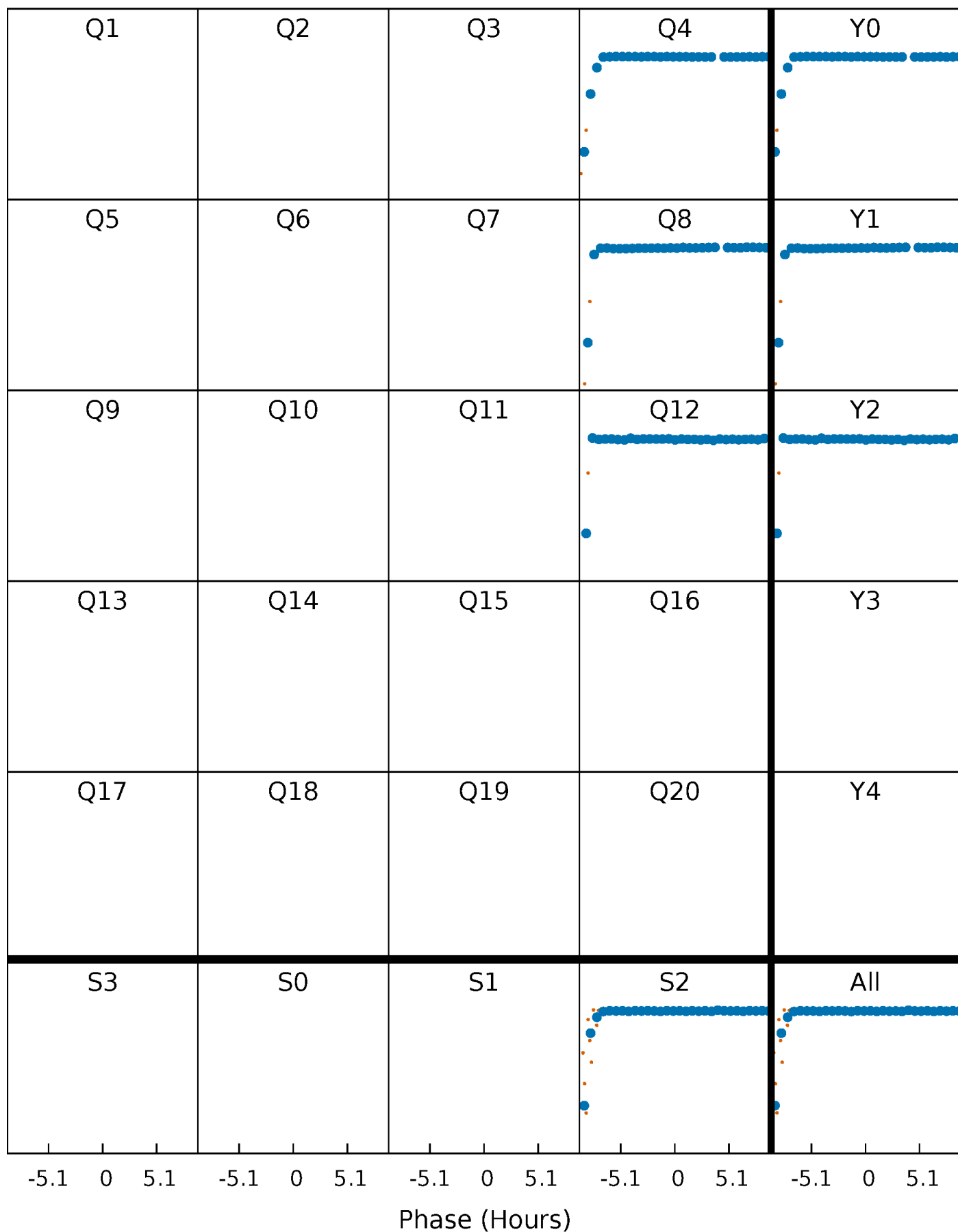
# Non-Whitened Vs. Whitened Light Curve





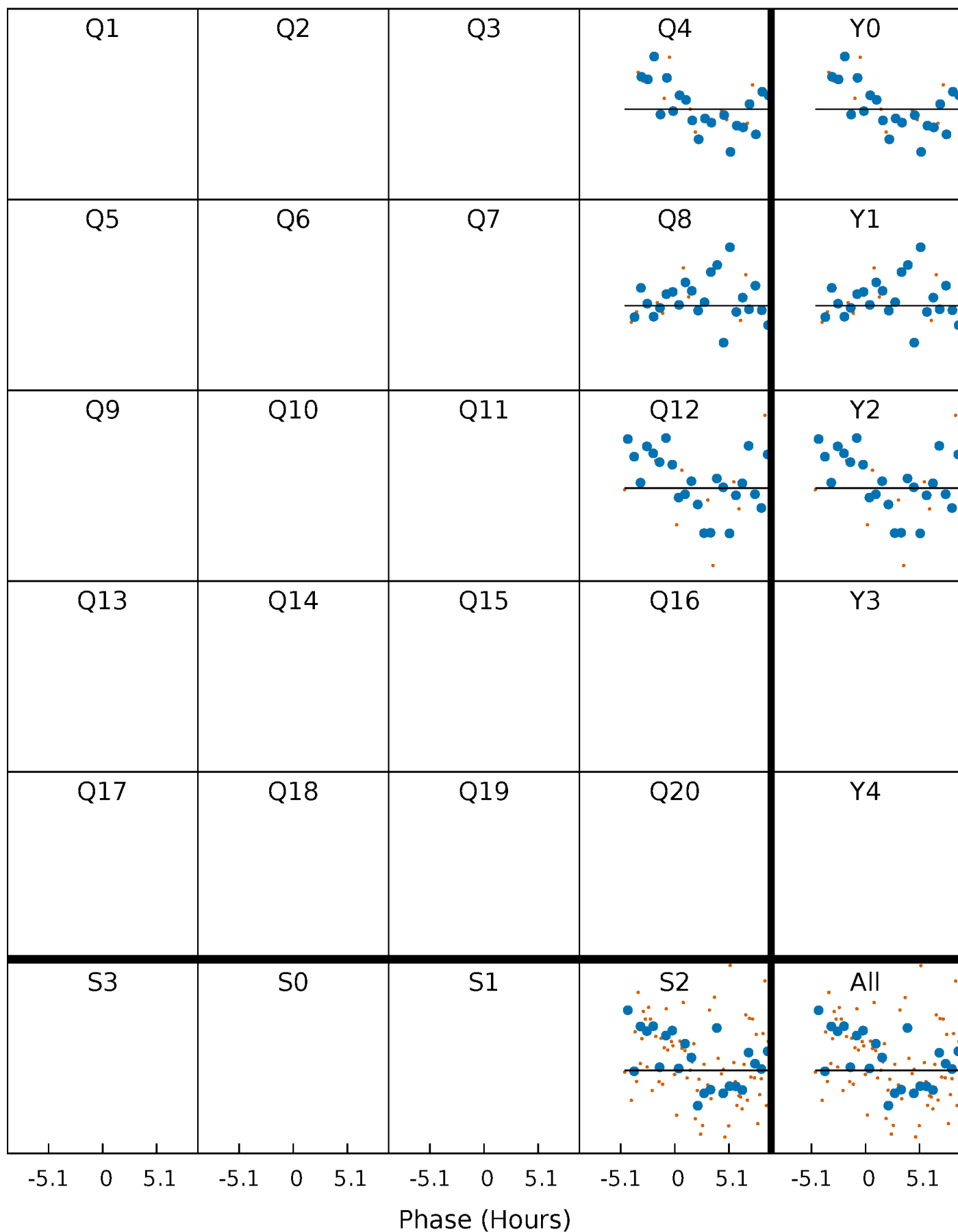
# PDC Quarter-Phased Transit Curves

TCE 008700506-07     $P=350.401498$  Days     $T_0=435.848436$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 008700506-07     $P=350.401498$  Days     $T_0=435.848436$  (BKJD)

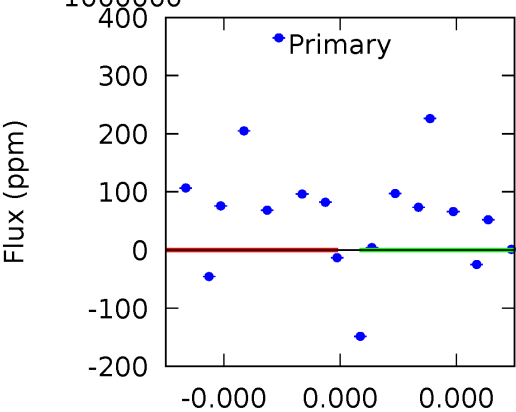
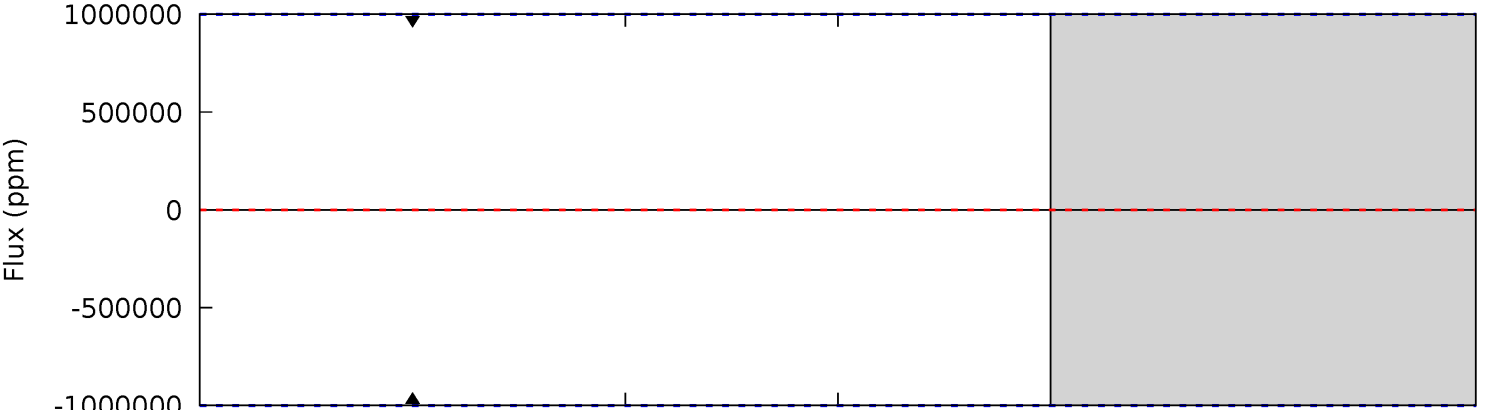
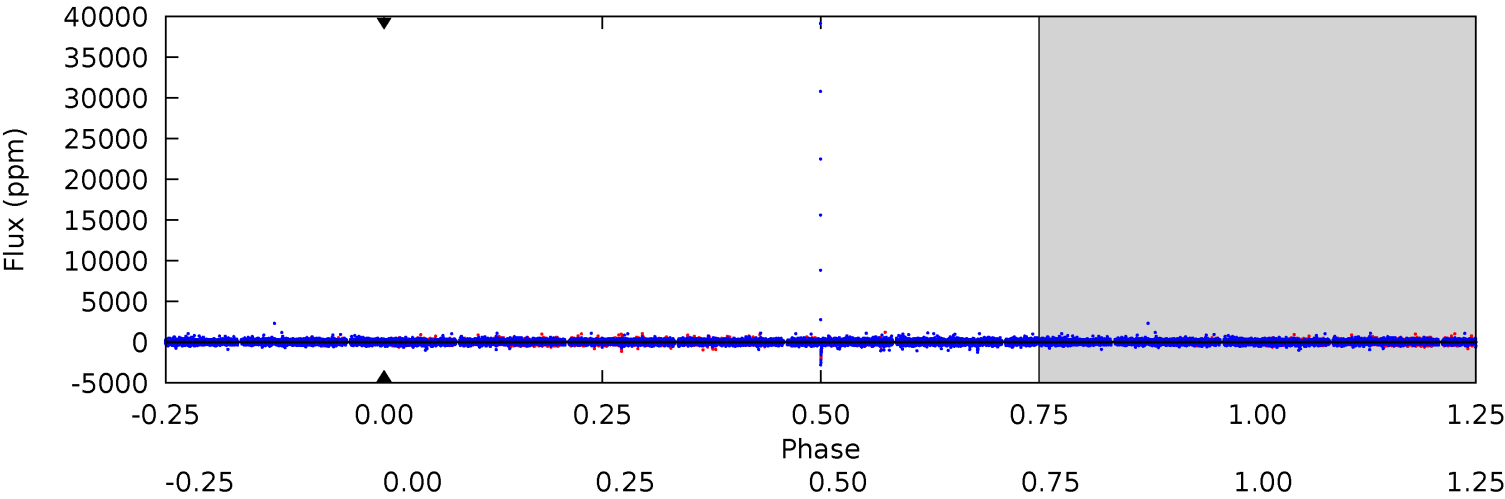


This plot does not exist for this TCE.

# DV Model-Shift Uniqueness Test

008700506-07, P = 350.401498 Days, E = 85.446938 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

This plot does not exist for this TCE.

### Stellar Parameters For KIC 008700506

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6860^{+167}_{-286}$	$4.326^{+0.066}_{-0.154}$	$-0.100^{+0.250}_{-0.350}$	$1.292^{+0.312}_{-0.144}$	$1.300^{+0.154}_{-0.188}$	$0.849^{+0.247}_{-0.381}$
	+2%/-4%	+2%/-4%	+250%/-350%	+24%/-11%	+12%/-14%	+29%/-45%
Source	PHO1	FLK73	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 008700506-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 1000000$	$19.82^{+13.62}_{-12.14}$	$469^{+27}_{-22}$	$3321^{+11929}_{-16619}$	$790^{+276009}_{-198875}$
Alt.	N/A	N/A	N/A	N/A	N/A

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

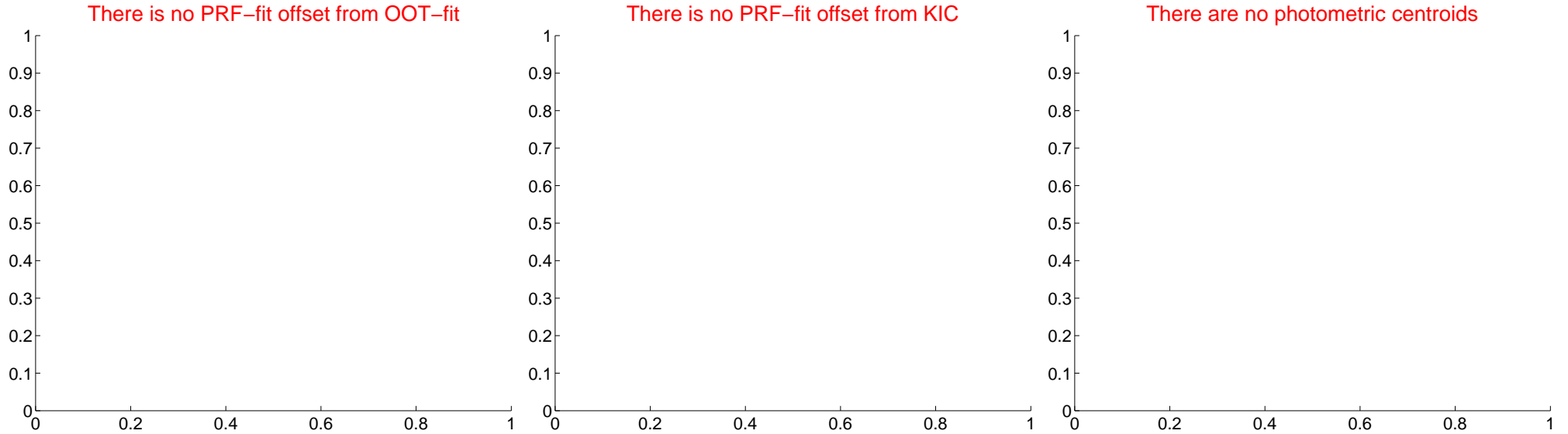
## DV Centroid Data

Supplemental centroid analysis for 008700506-07. Kepler magnitude: 13.48. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

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

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



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

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





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



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



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



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



folded centroid time series figure for this object.

UKIRT Image

Declination

