

# KIC 007295373

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007295373-01	OBS	No	0.750453	131.747528	63.7	4.275	8.6	10.8	0.56	4515	0.47	659.96
007295373-02	OBS	No	72.757434	196.072419	440.8	5.985	20.3	3.2	0.56	4515	1.26	1.48
007295373-03	OBS	No	72.909455	194.314739	1221.7	6.313	15.0	7.3	0.56	4515	1.92	1.48
007295373-05	OBS	No	75.715127	182.112979	1118.5	10.598	11.9	6.2	0.56	4515	3.74	1.41
007295373-06	OBS	No	522.296806	188.433994	2597.8	8.087	12.0	10.3	0.56	4515	3.42	0.11

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007295373-01	OBS	FP	0.00	1	0	0	0	LPP_DV
007295373-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
007295373-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_TER_ALT—MOD_POS_ALT
007295373-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007295373-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

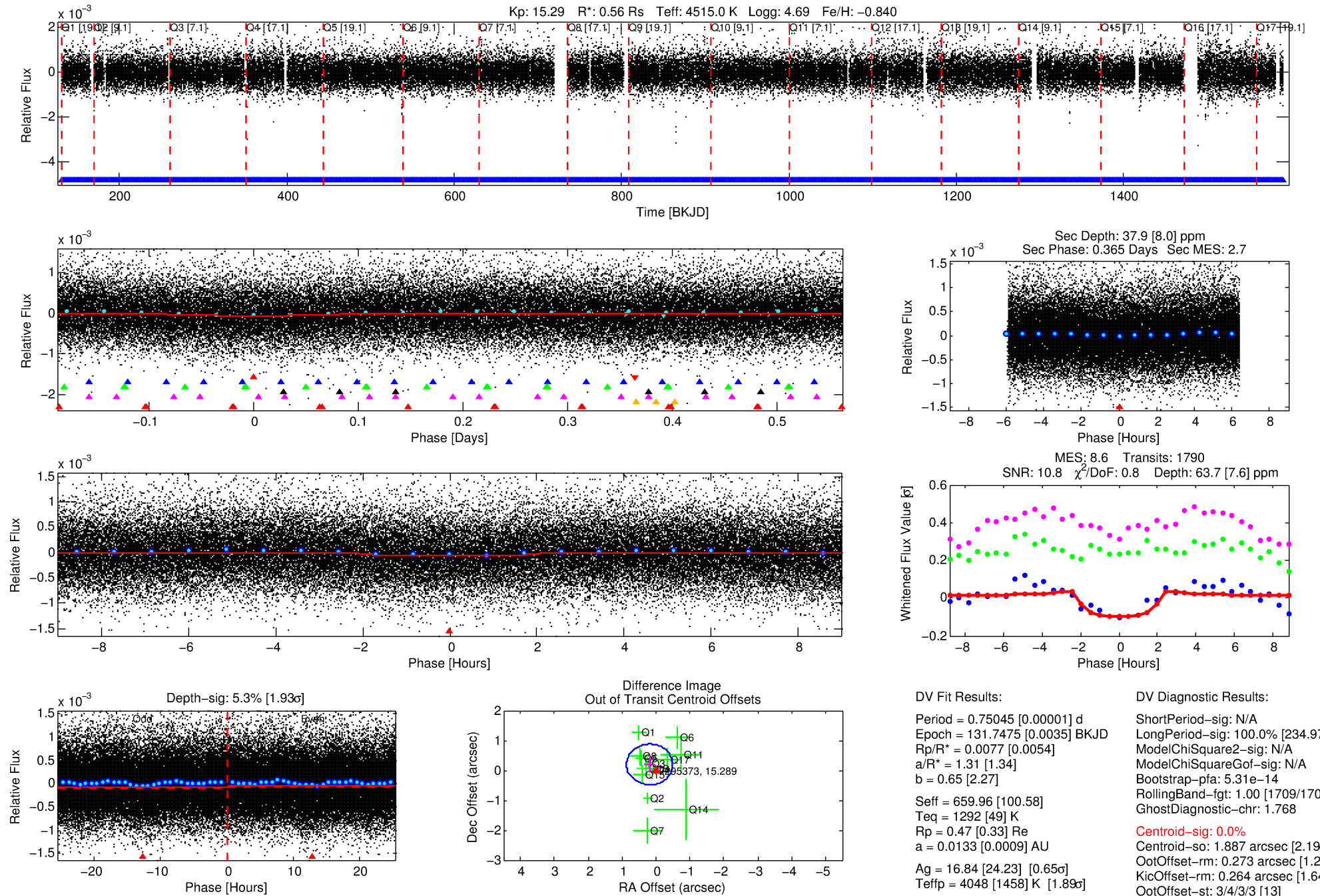
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007295373-01

No Significant Match Found

# DV One-Page Summary

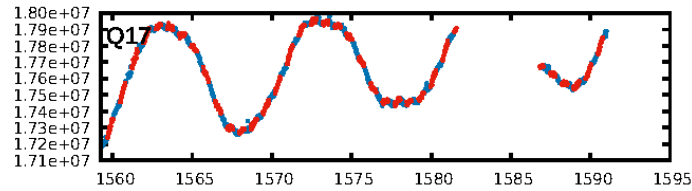
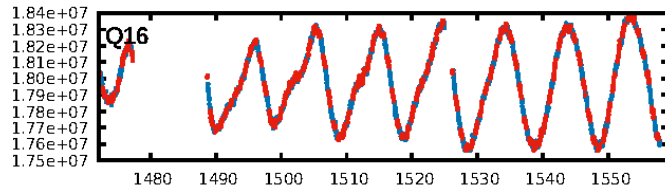
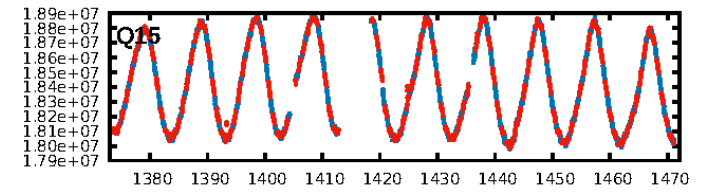
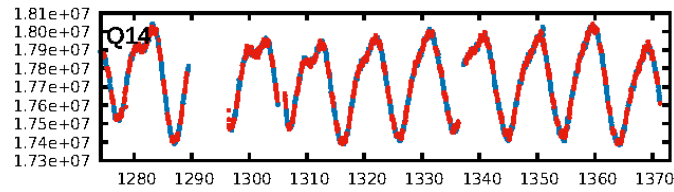
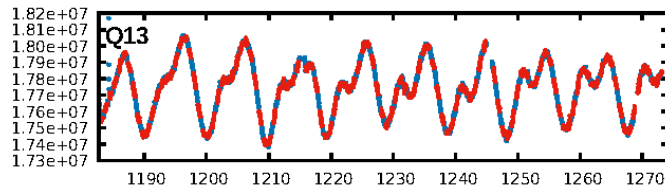
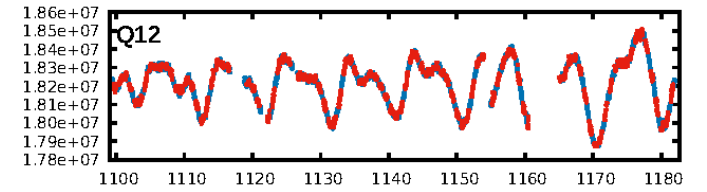
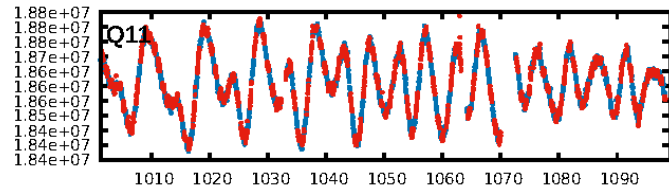
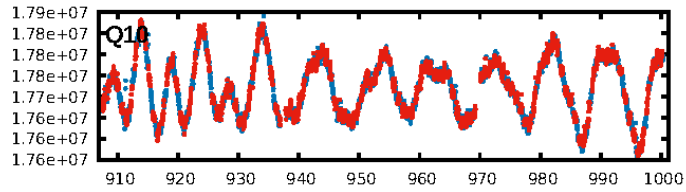
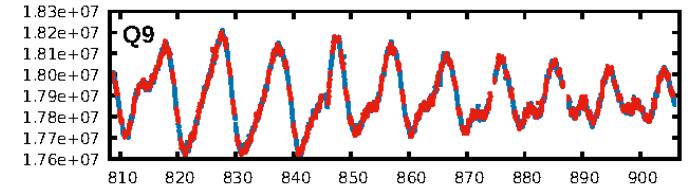
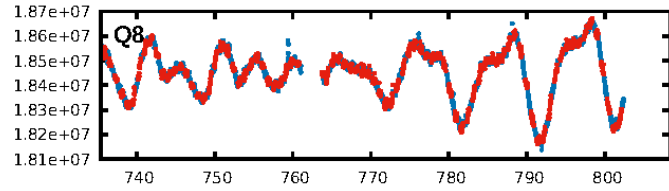
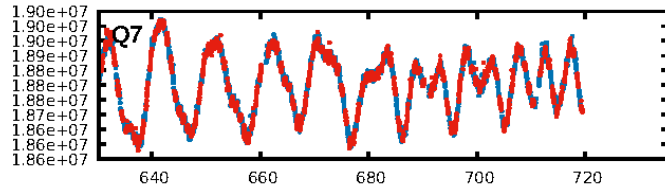
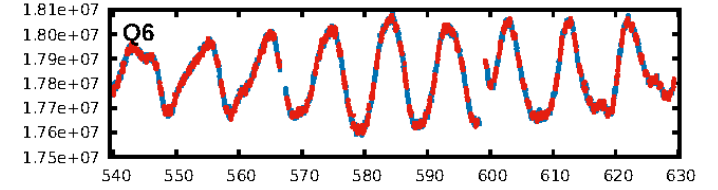
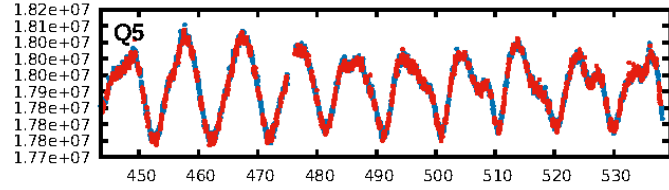
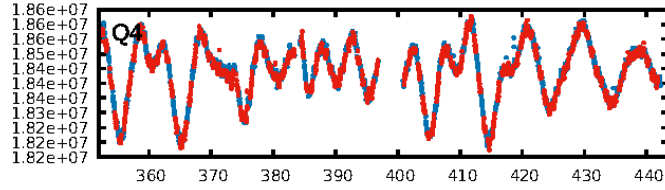
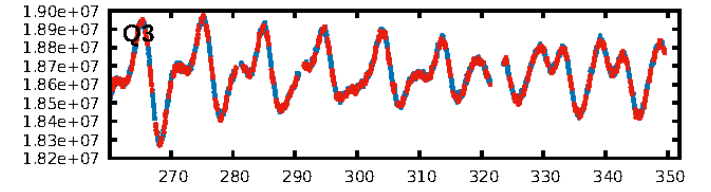
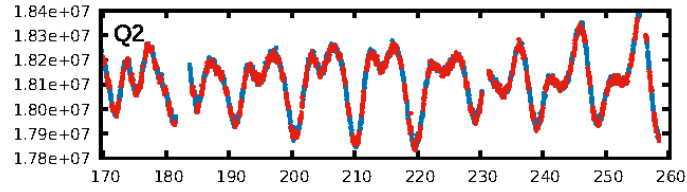
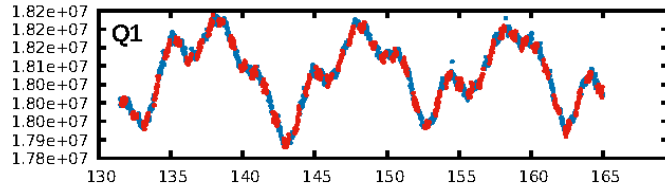
KIC: 7295373 Candidate: 1 of 7 Period: 0.750 d



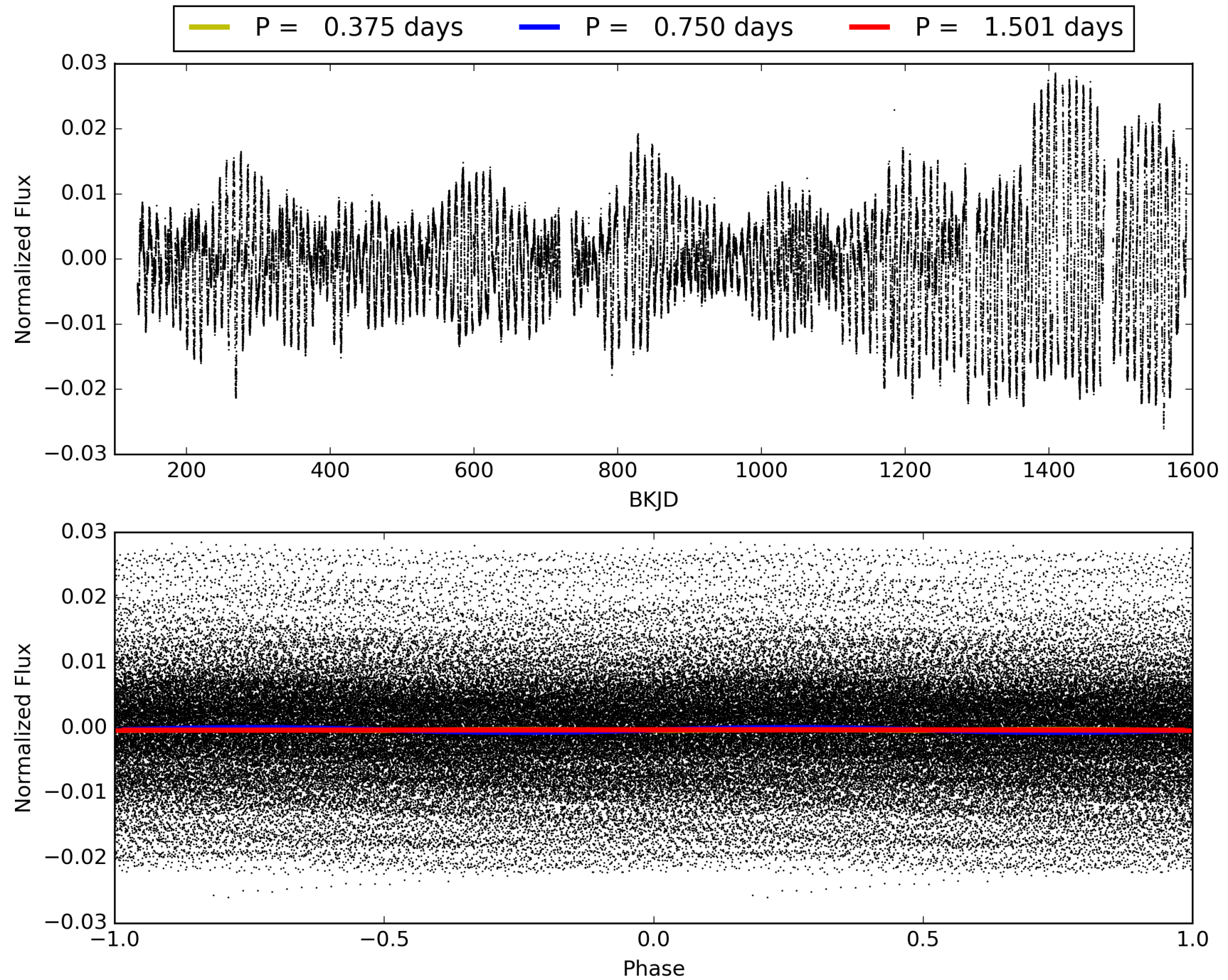
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 02:27:22 Z

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

# TCE 007295373-01, PDC Light Curves



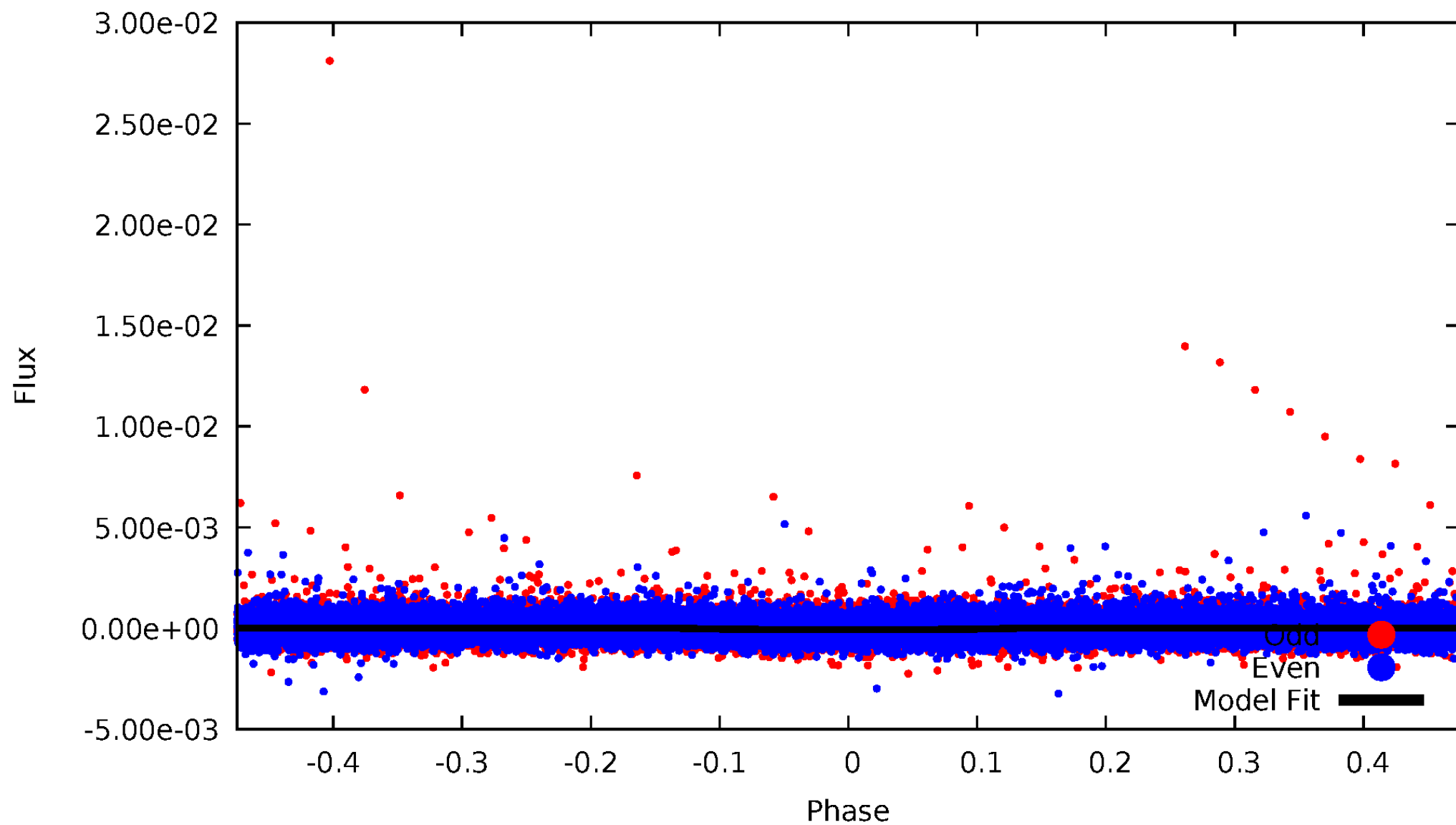
TCE 007295373-01





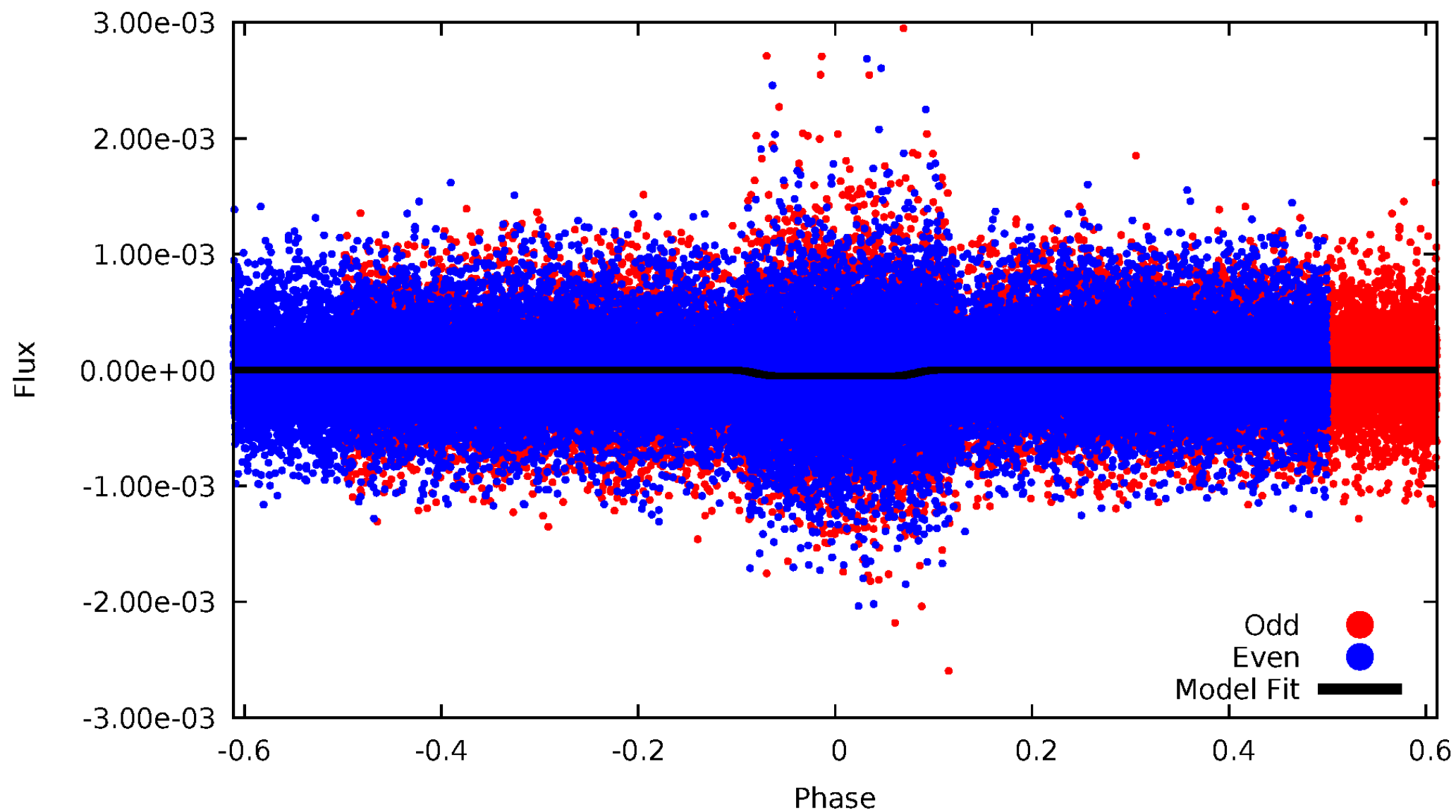
# DV Odd/Even

TCE 007295373-01

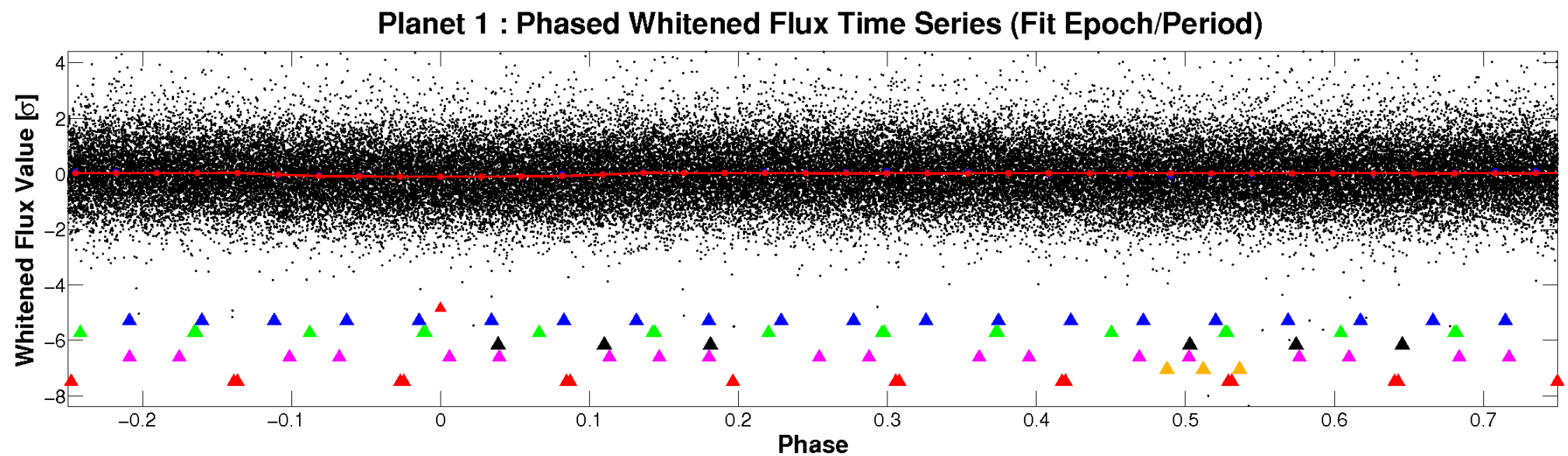
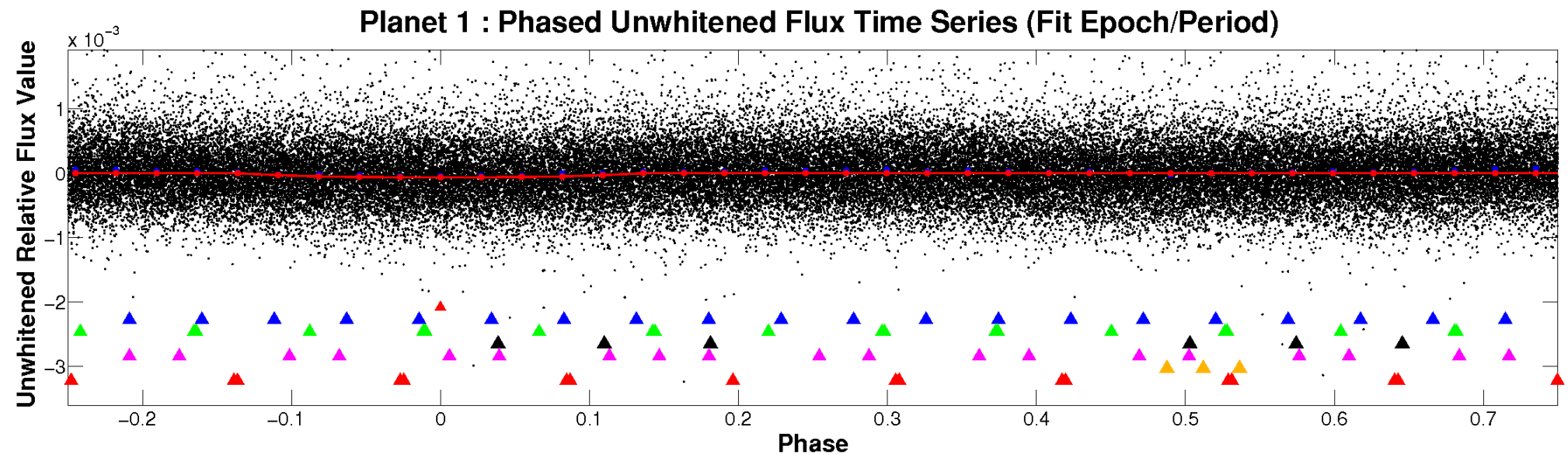


# ALT Odd/Even

TCE 007295373-01

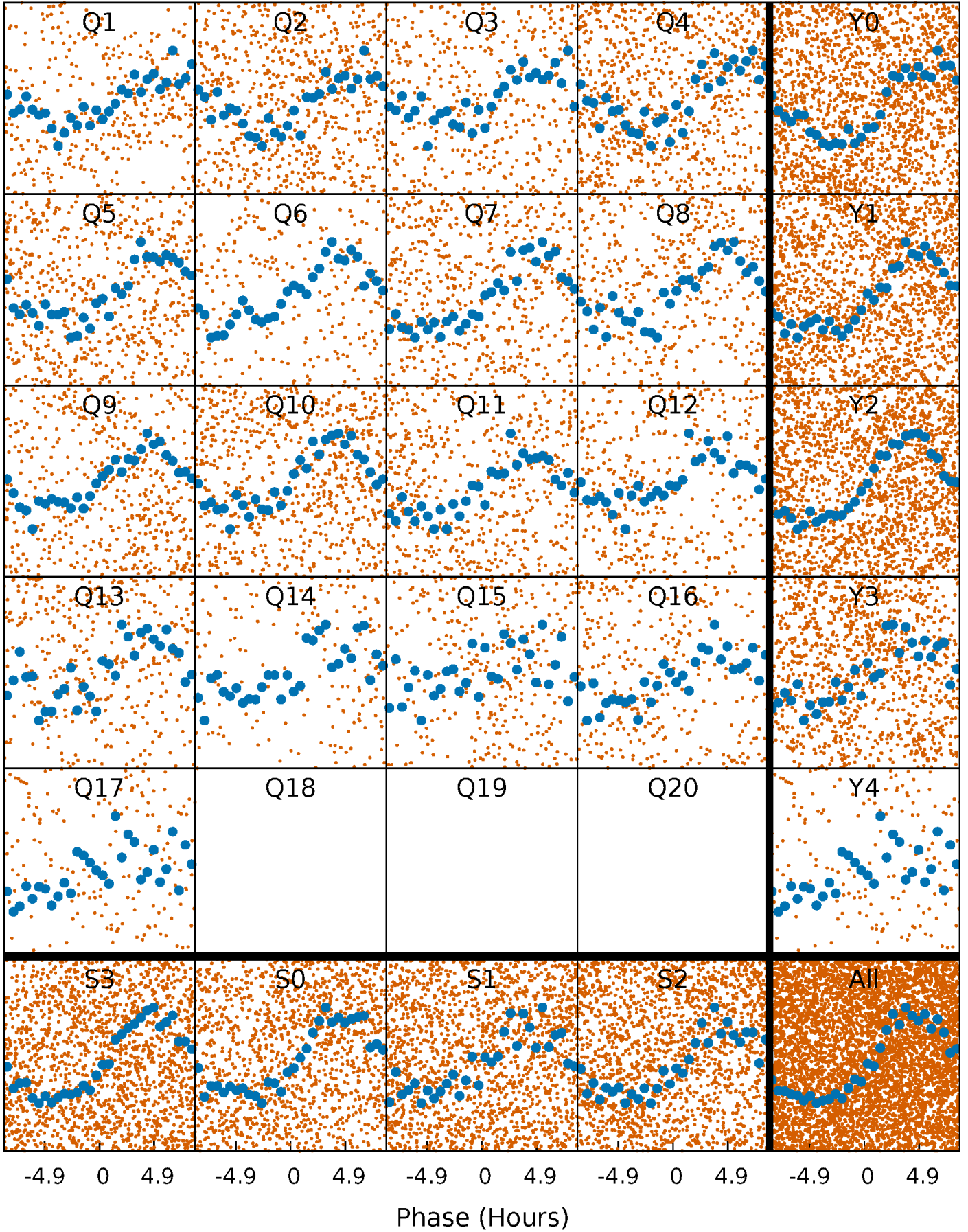


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

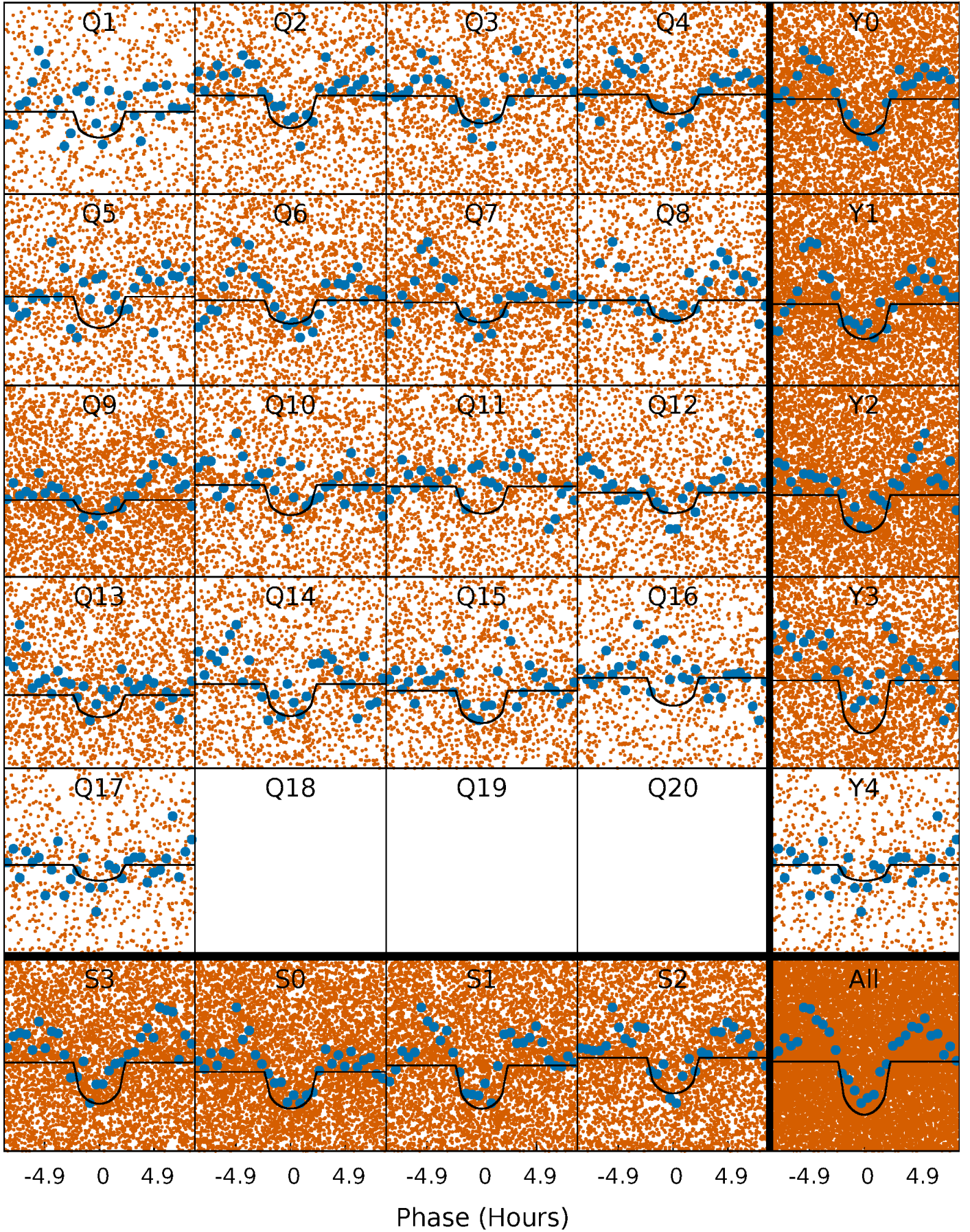
TCE 007295373-01 P= 0.750453 Days  $T_0=131.747528$  (BKJD)





# DV Quarter-Phased Transit Curves

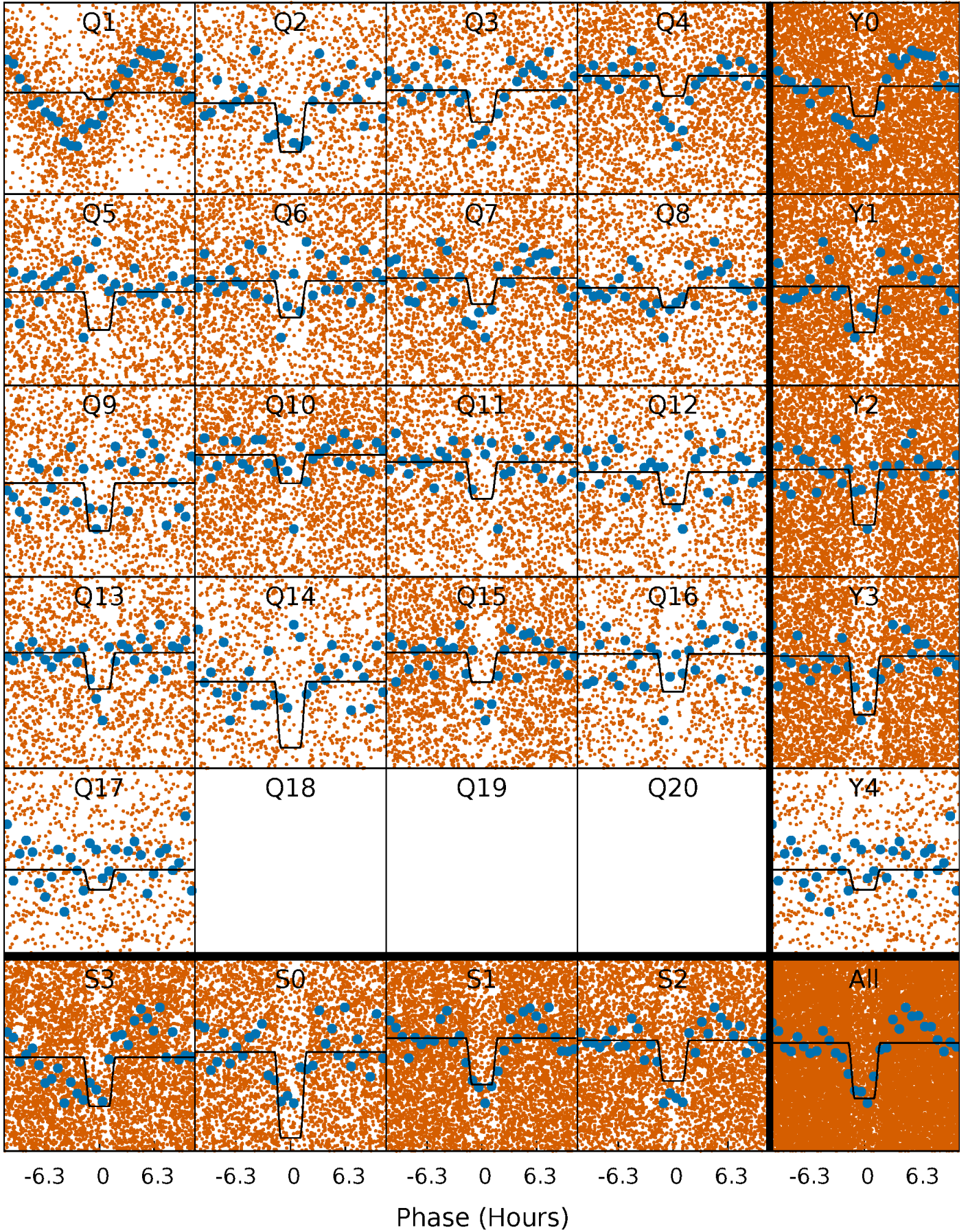
TCE 007295373-01   P= 0.750453 Days    $T_0=131.747528$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

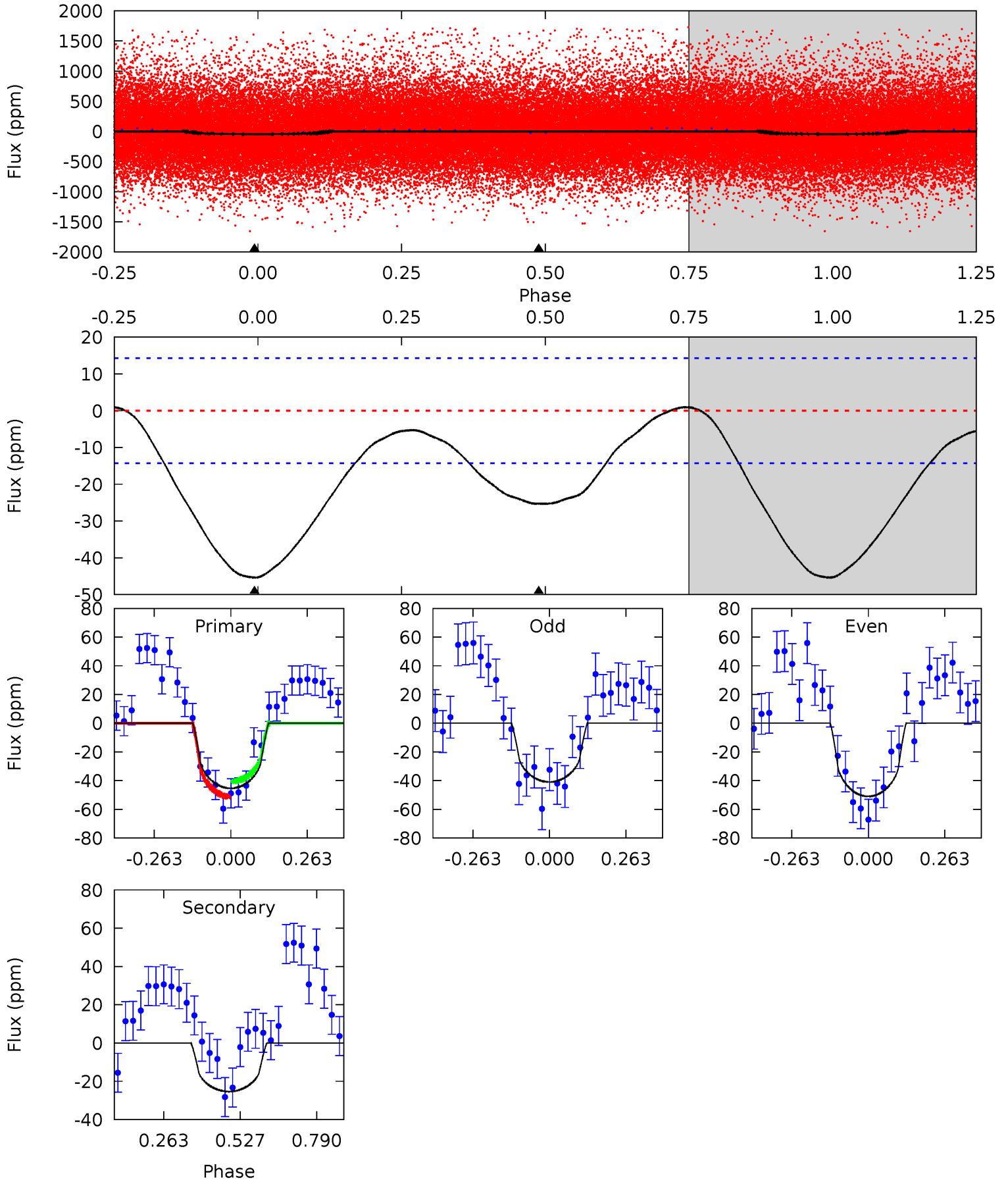
TCE 007295373-01 P= 0.750435 Days  $T_0=131.745965$  (BKJD)



# DV Model-Shift Uniqueness Test

007295373-01, P = 0.750453 Days, E = 130.997075 Days

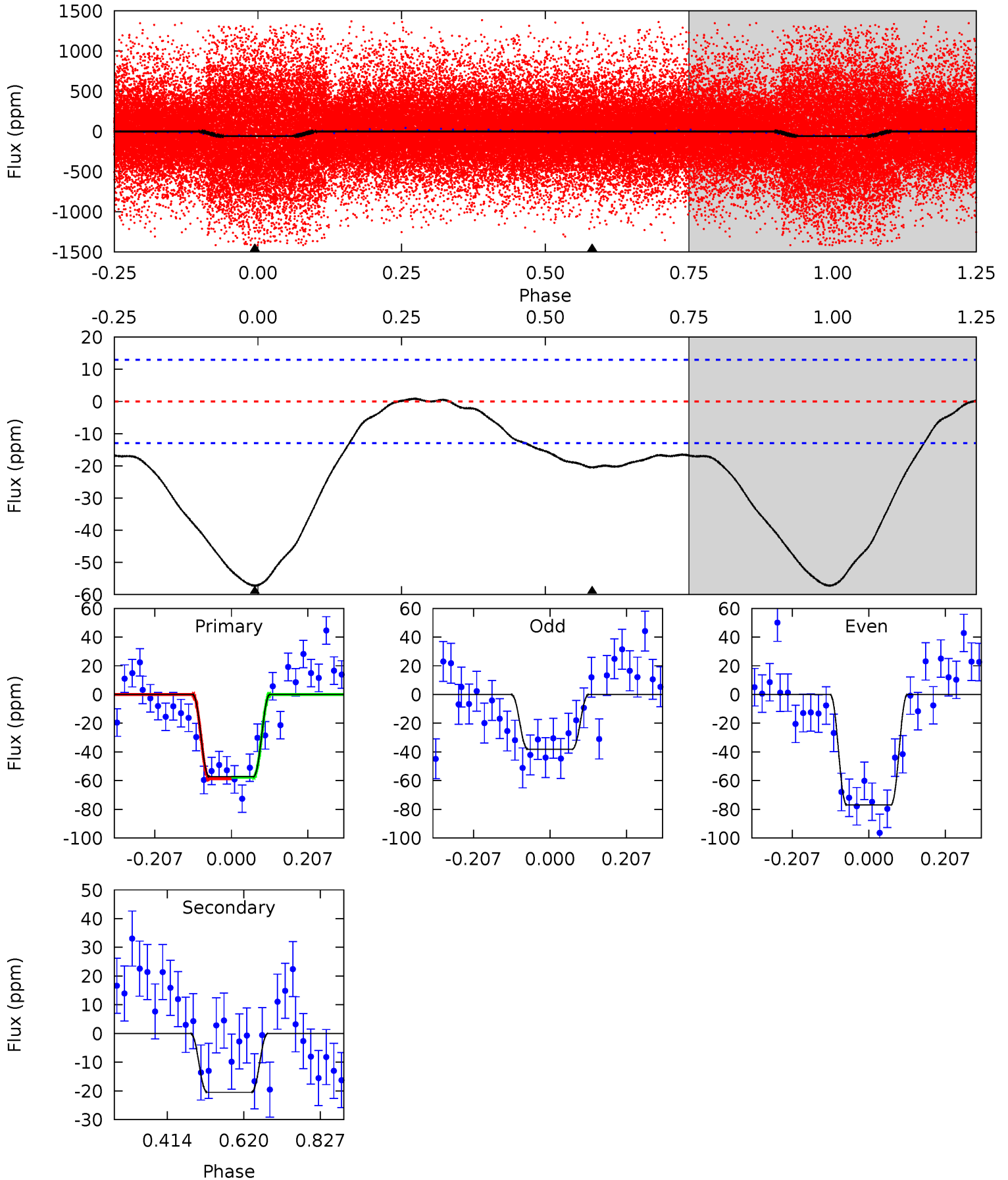
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.8	7.72	0	0	4.36	1.12	1.02	13.8	13.8	7.72	7.72	1.53	0.95	0.02	1.64



# Alt Model-Shift Uniqueness Test

007295373-01, P = 0.750435 Days, E = 130.995530 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
19.5	6.99	0	0	4.41	1.26	0.47	19.5	19.5	6.99	6.99	6.63	0.94	0.01	0.18





### Stellar Parameters For KIC 007295373

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$4515^{+134}_{-134}$	$4.686^{+0.052}_{-0.032}$	$-0.840^{+0.300}_{-0.300}$	$0.558^{+0.044}_{-0.044}$	$0.550^{+0.049}_{-0.031}$	$4.468^{+1.036}_{-0.581}$
	+3%/-3%	+1%/-1%	+36%/-36%	+8%/-8%	+9%/-6%	+23%/-13%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 007295373-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-25 \pm 3$	$0.49^{+0.33}_{-0.28}$	$1802^{+65}_{-61}$	$3773^{+1552}_{-585}$	$10^{+45}_{-7}$
Alt.	$-21 \pm 3$	$0.47^{+0.33}_{-0.28}$	$1799^{+64}_{-62}$	$3708^{+1586}_{-604}$	$8.957^{+50.720}_{-5.800}$

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

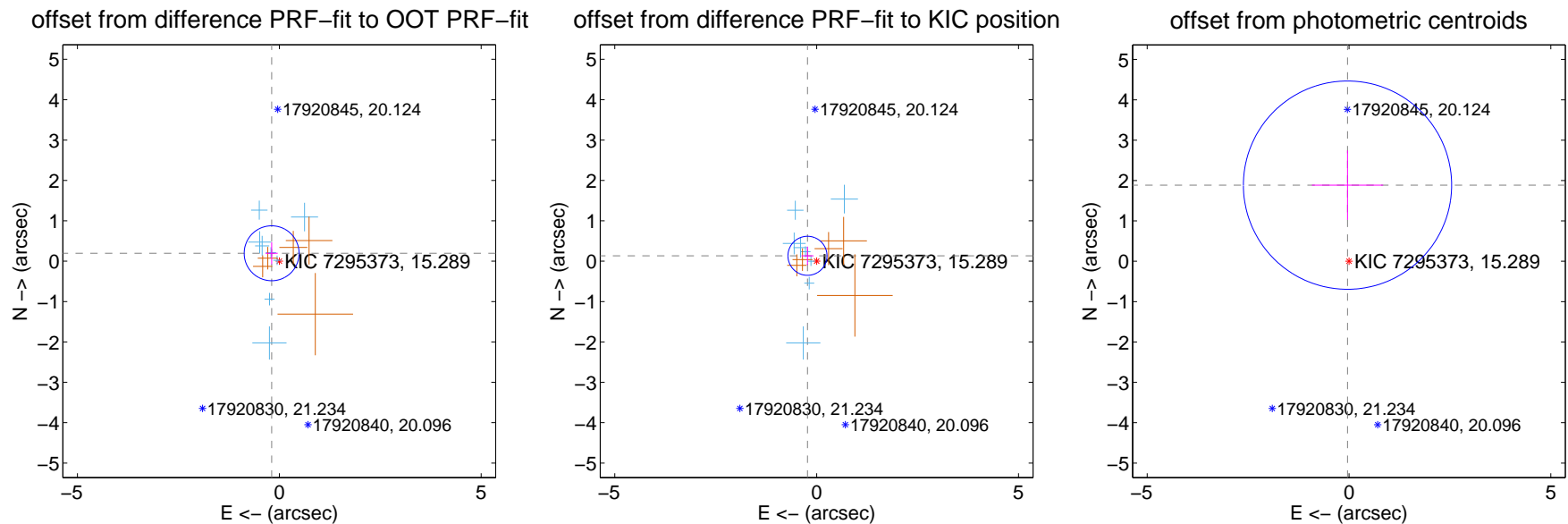
## DV Centroid Data

Supplemental centroid analysis for 007295373-01. Kepler magnitude: 15.29. Transit SNR 10.76

There are 8 quarters with good PRF difference image offsets

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

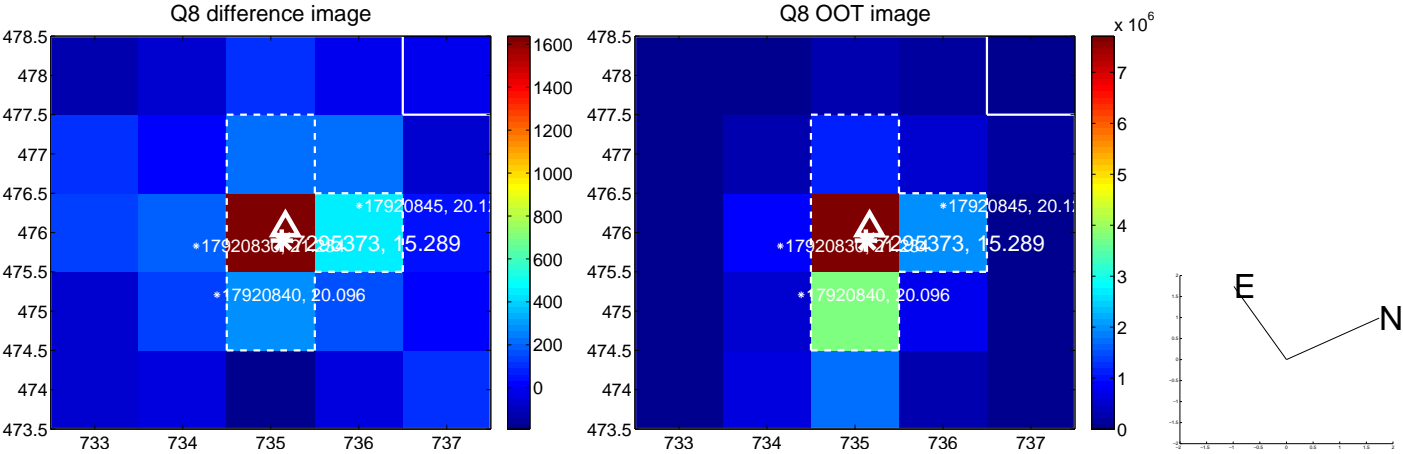
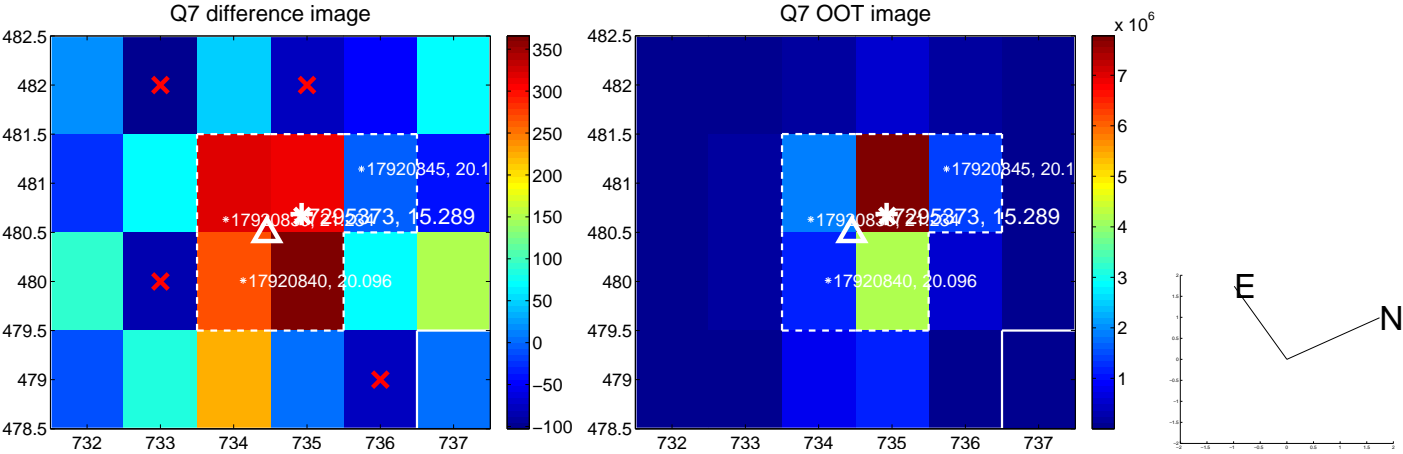
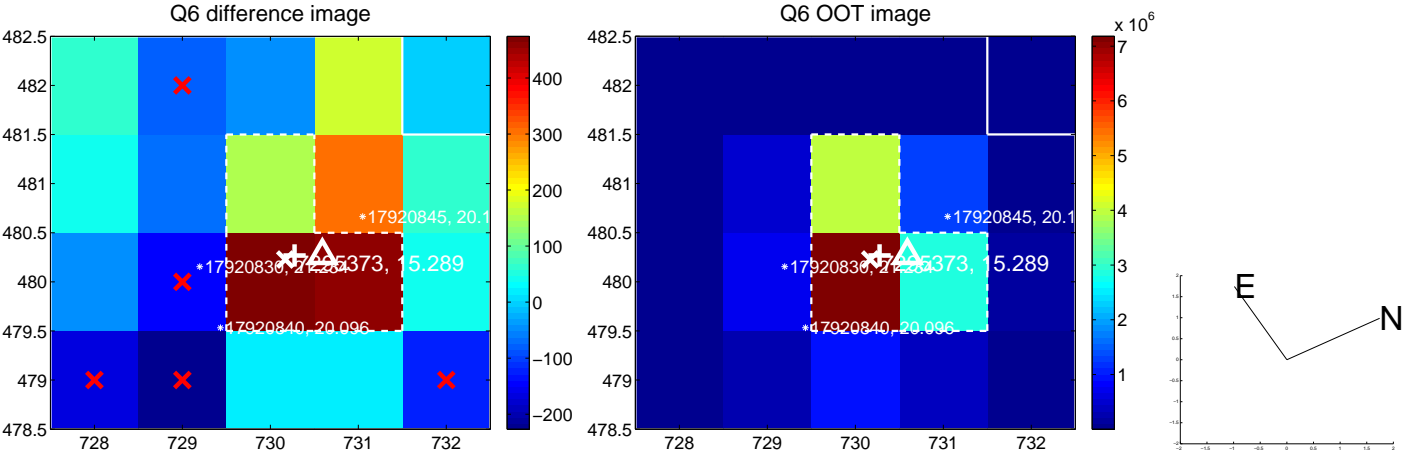
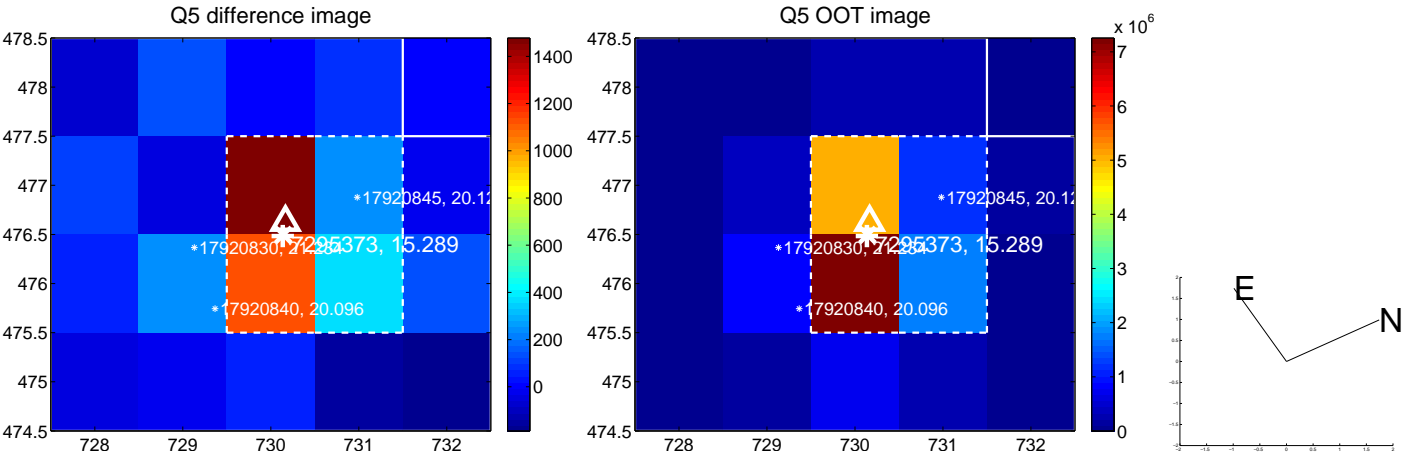
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.273 \pm 0.227$	1.21	$0.190 \pm 0.151$	$0.196 \pm 0.273$
PRF-fit source offset from KIC position	$0.264 \pm 0.161$	1.64	$0.227 \pm 0.150$	$0.134 \pm 0.228$
photometric centroid source offset	$1.89 \pm 0.86$	2.19	$0.04 \pm 0.88$	$1.89 \pm 0.86$



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.

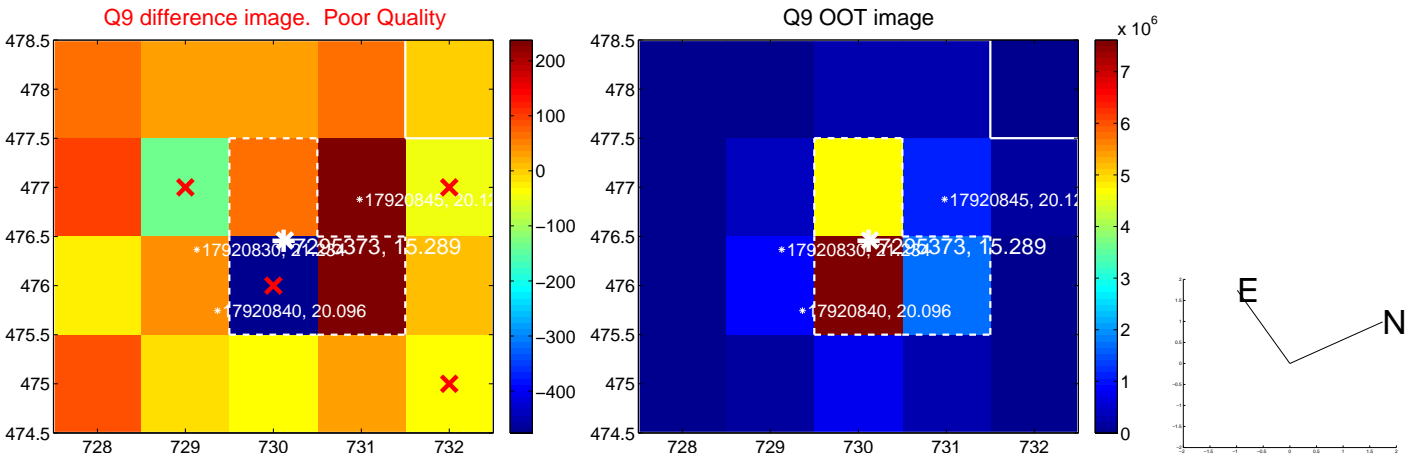


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



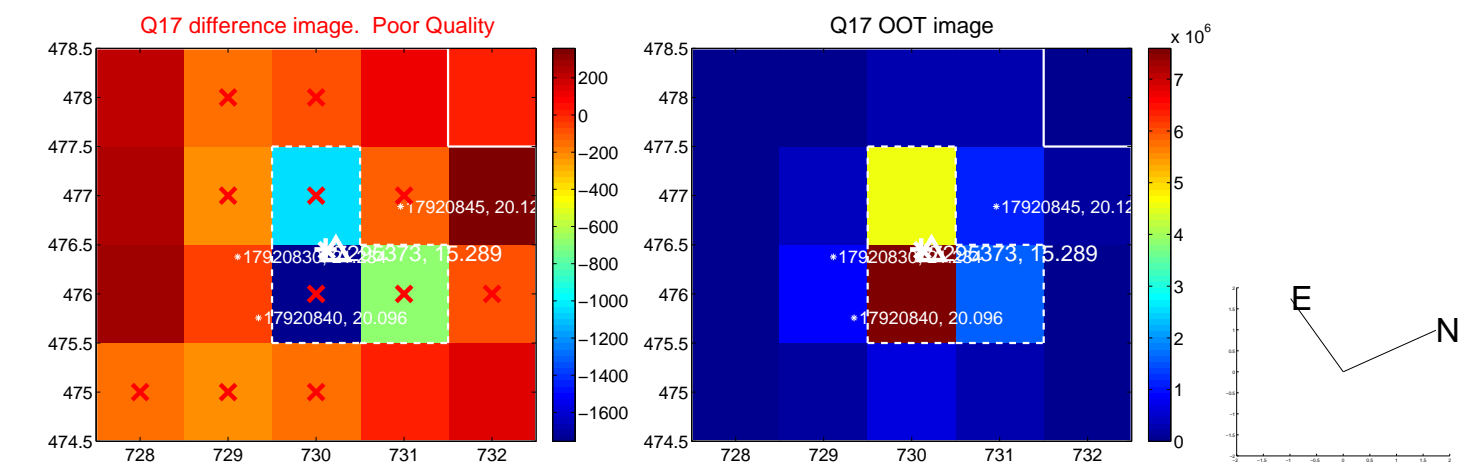


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

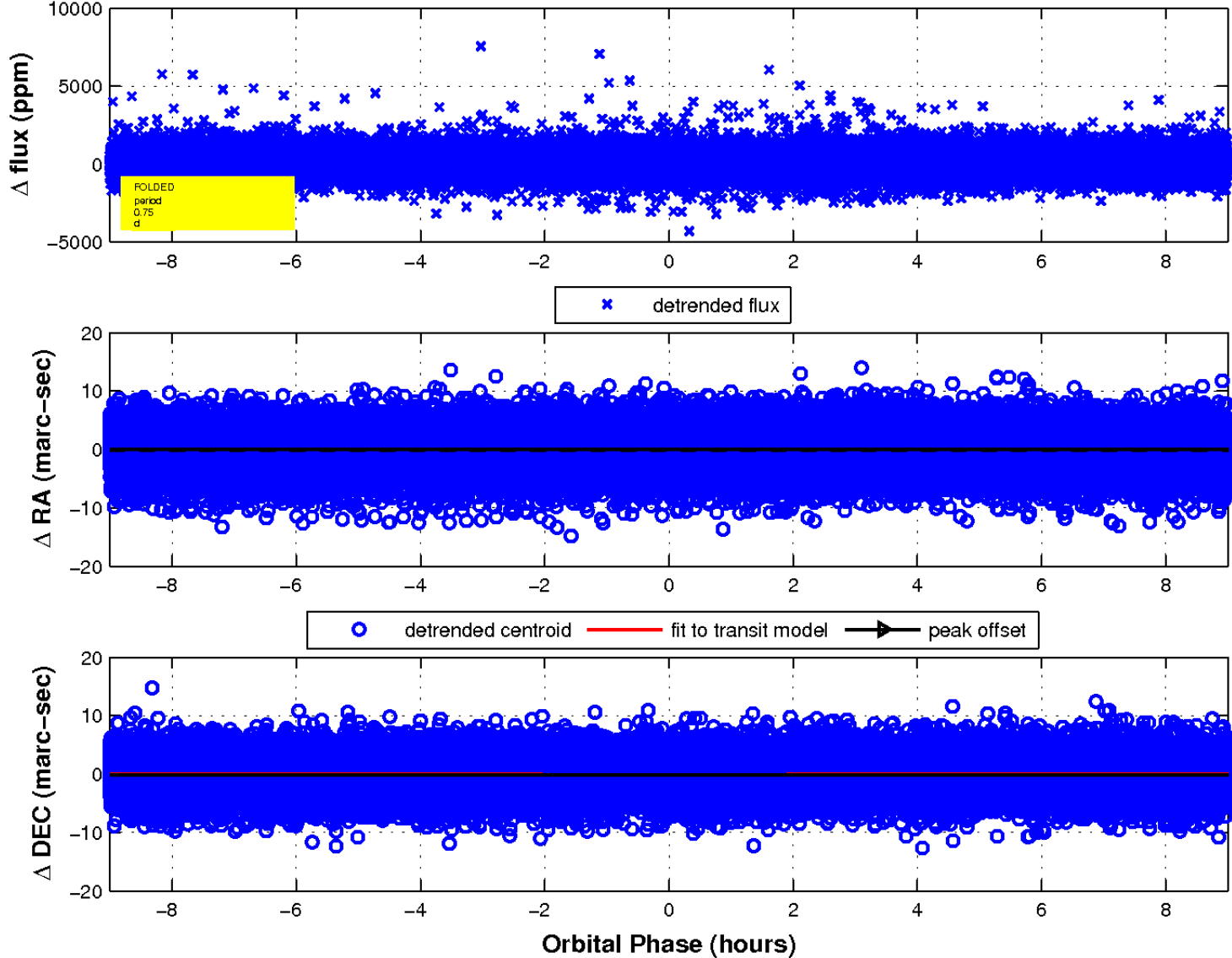




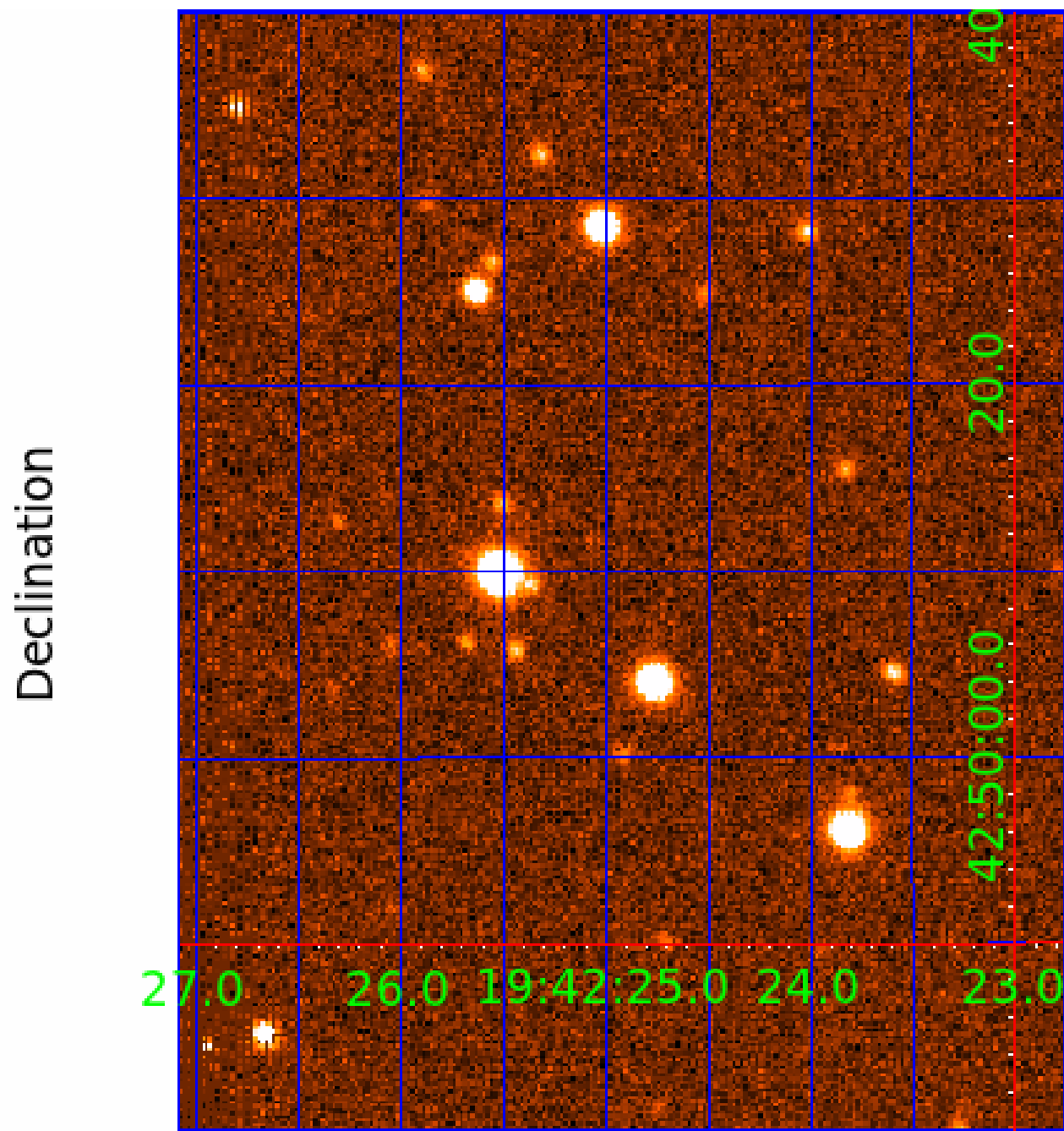
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 7



UKIRT Image





# KIC 007295373

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007295373-01	OBS	No	0.750453	131.747528	63.7	4.275	8.6	10.8	0.56	4515	0.47	659.96
007295373-02	OBS	No	72.757434	196.072419	440.8	5.985	20.3	3.2	0.56	4515	1.26	1.48
007295373-03	OBS	No	72.909455	194.314739	1221.7	6.313	15.0	7.3	0.56	4515	1.92	1.48
007295373-05	OBS	No	75.715127	182.112979	1118.5	10.598	11.9	6.2	0.56	4515	3.74	1.41
007295373-06	OBS	No	522.296806	188.433994	2597.8	8.087	12.0	10.3	0.56	4515	3.42	0.11

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007295373-01	OBS	FP	0.00	1	0	0	0	LPP_DV
007295373-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
007295373-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_TER_ALT—MOD_POS_ALT
007295373-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007295373-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

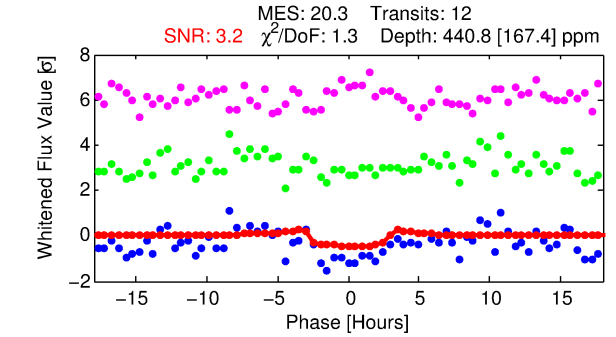
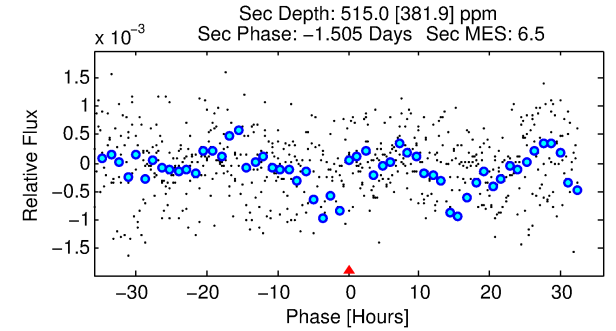
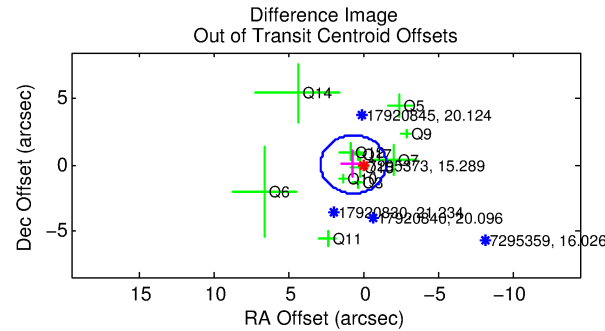
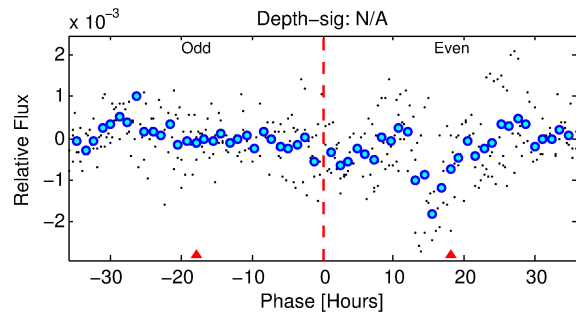
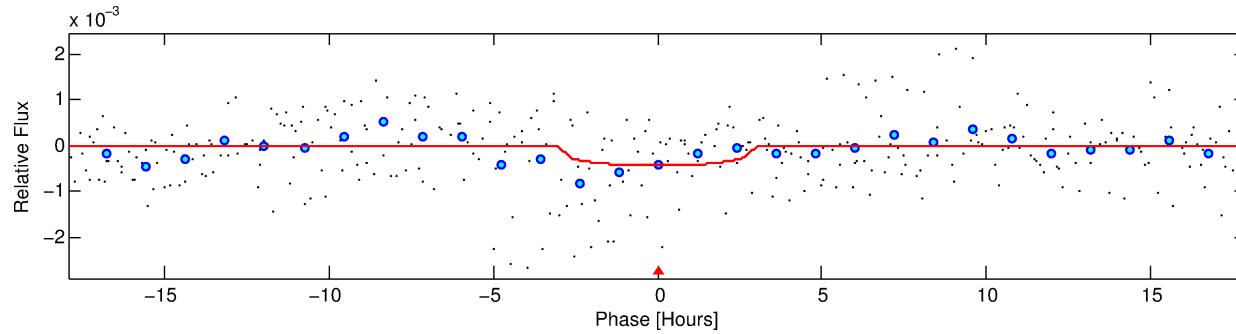
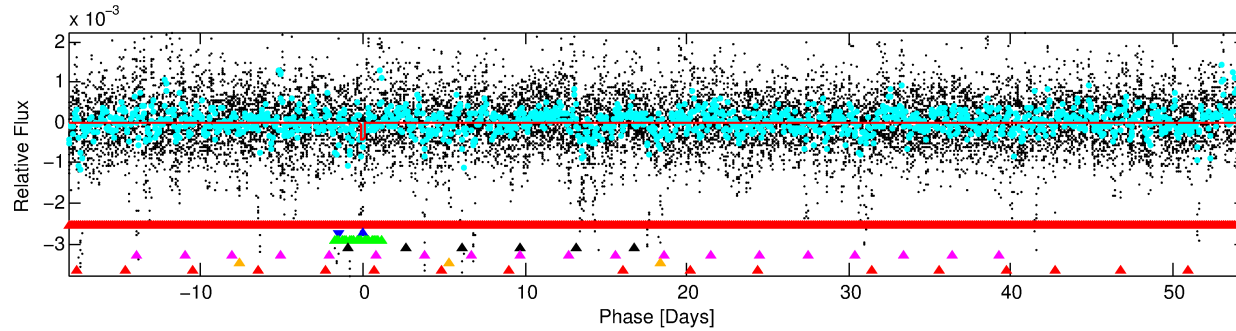
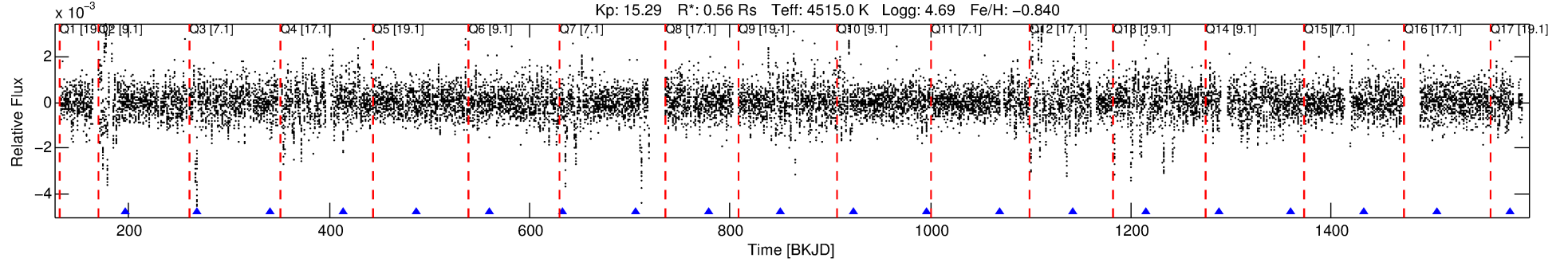
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007295373-02

No Significant Match Found

# DV One-Page Summary

KIC: 7295373 Candidate: 2 of 7 Period: 72.757 d



## DV Fit Results:

Period = 72.75743 [0.00774] d  
Epoch = 196.0724 [0.0404] BKJD  
Rp/R\* = 0.0208 [0.0442]  
a/R\* = 66.12 [494.56]  
b = 0.73 [4.85]  
Seff = 1.48 [0.23]  
Teq = 281 [11] K  
Rp = 1.27 [2.70] Re  
a = 0.2797 [0.0185] AU  
Ag = 13846.79 [59860.96] [0.23σ]  
Teffp = 4718 [5100] K [0.87σ]

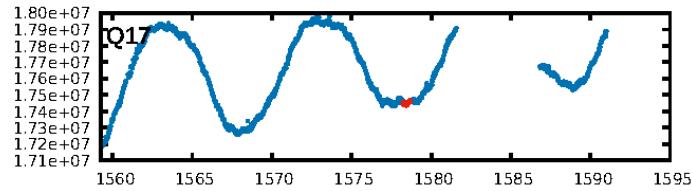
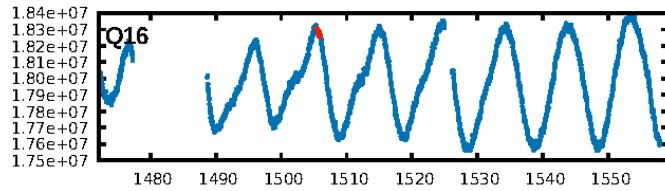
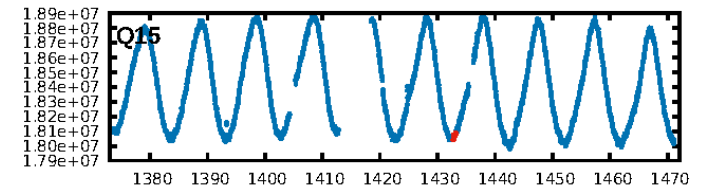
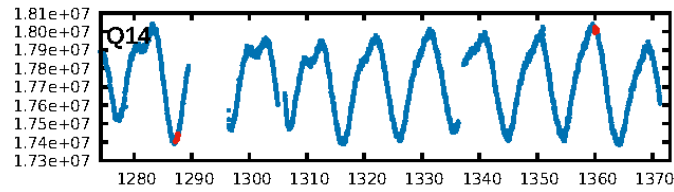
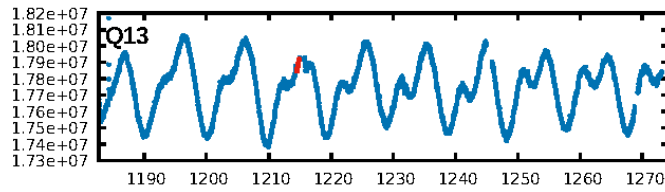
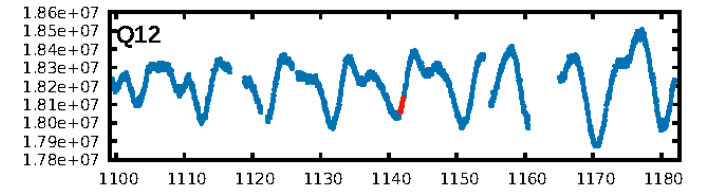
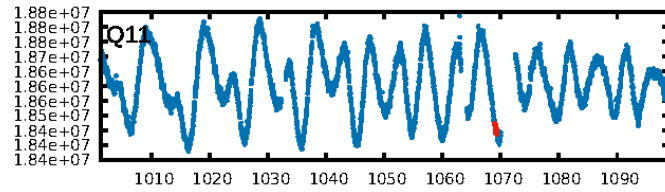
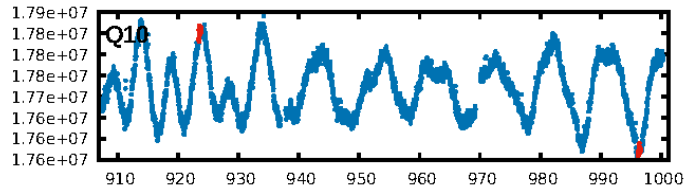
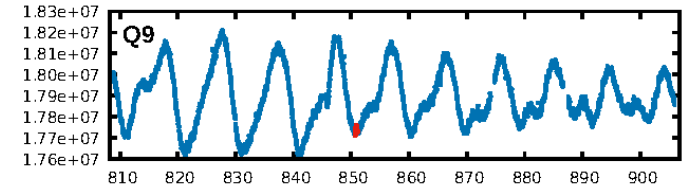
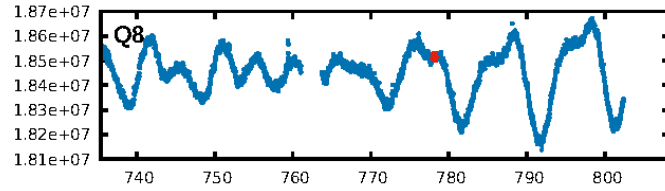
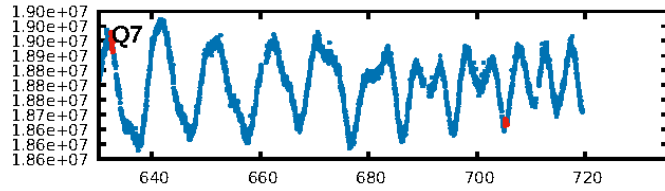
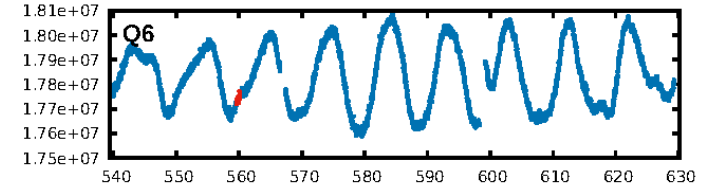
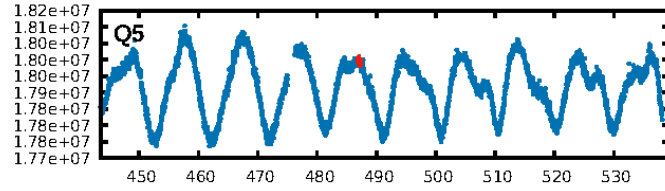
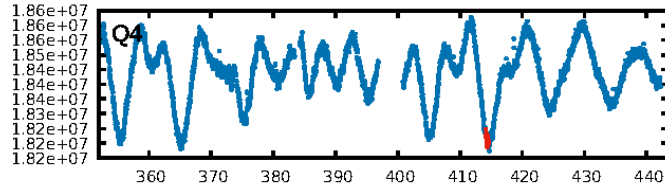
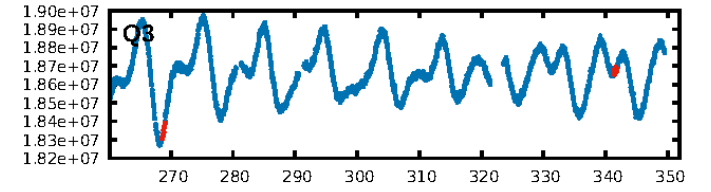
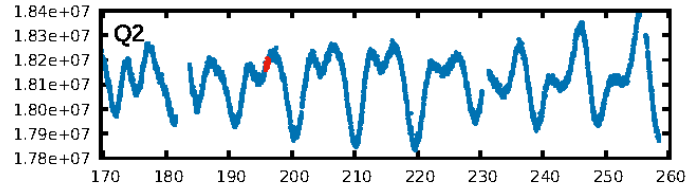
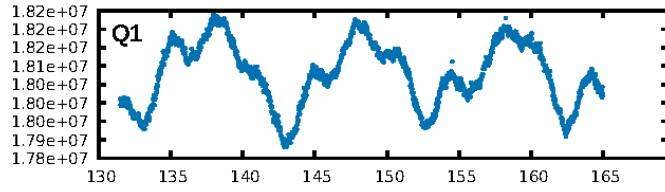
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [234.97σ]  
LongPeriod-sig: 32.5% [0.42σ]  
**ModelChiSquare2-sig: 0.0%**  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 4.87e-41  
RollingBand-fgt: 1.00 [11/11]  
GhostDiagnostic-chr: 25  
Centroid-sig: 73.8%  
Centroid-so: 1.056 arcsec [0.97σ]  
OotOffset-rm: 0.656 arcsec [0.89σ]  
OotOffset-st: 3/4/1/3 [11]  
KicOffset-rm: 0.717 arcsec [0.97σ]  
KicOffset-st: 3/4/1/3 [11]  
DiffImageQuality-fgm: 0.36 [4/11]  
DiffImageOverlap-fno: 0.00 [0/14]

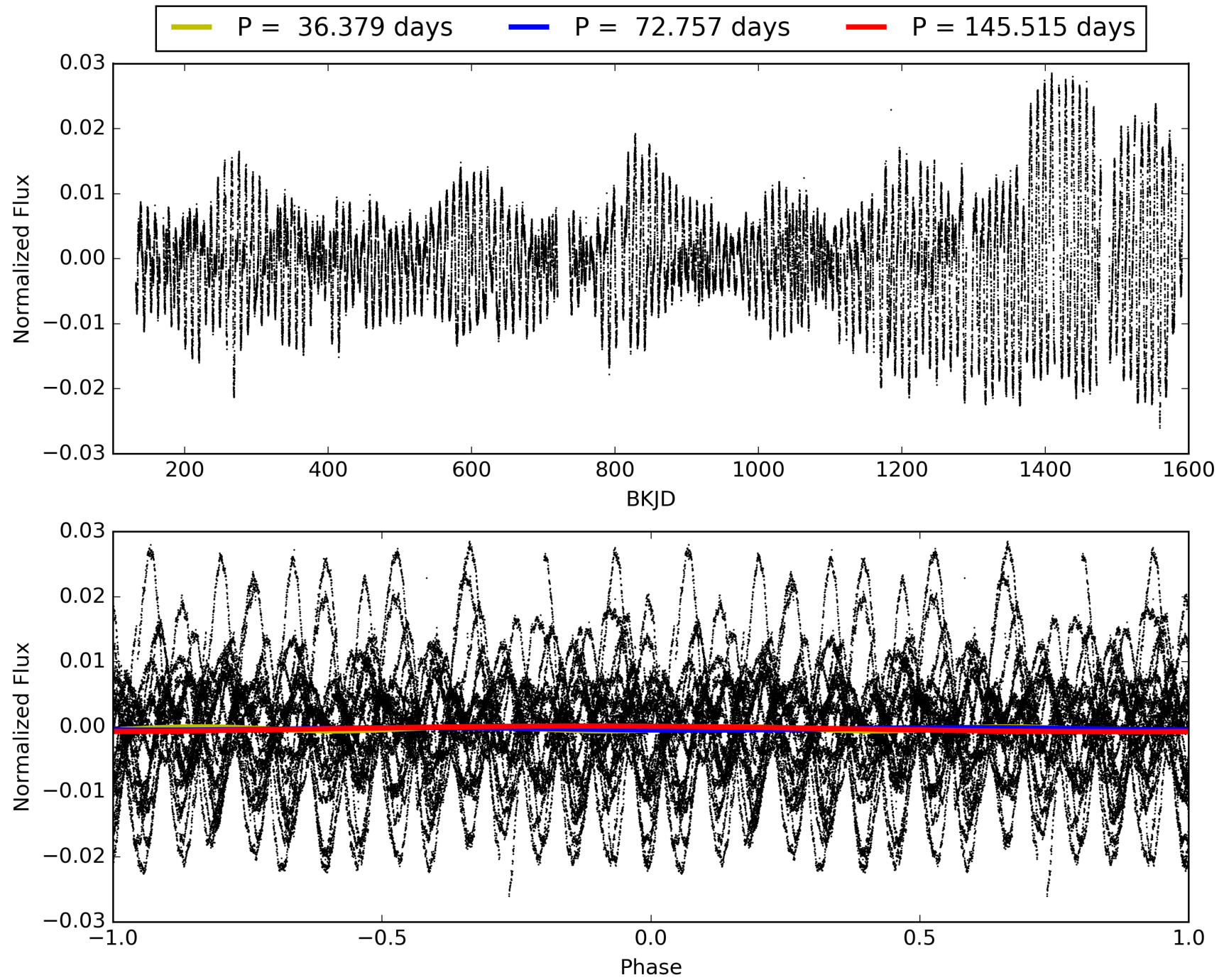
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 02:27:33 Z

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

# TCE 007295373-02, PDC Light Curves

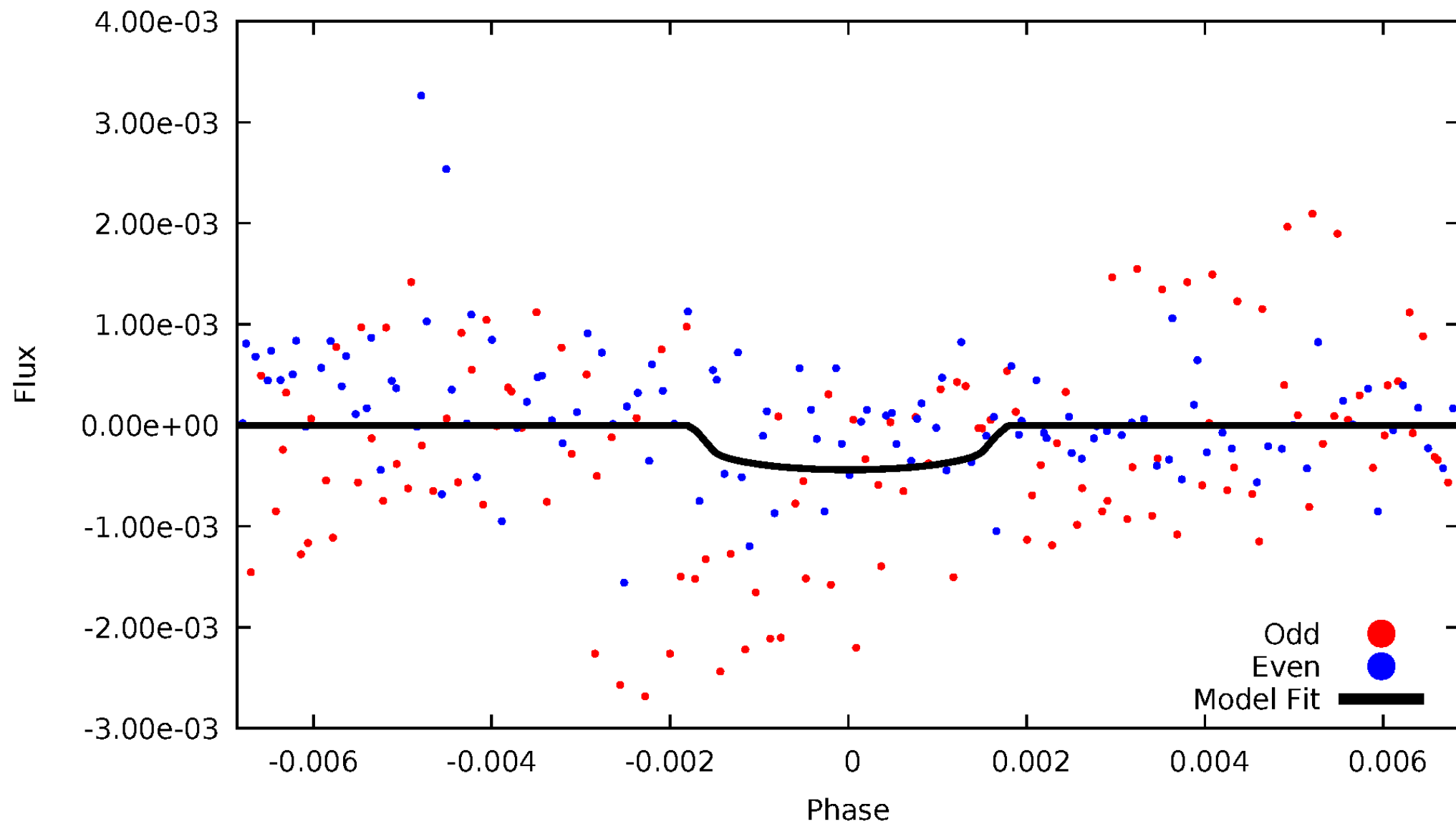


TCE 007295373-02



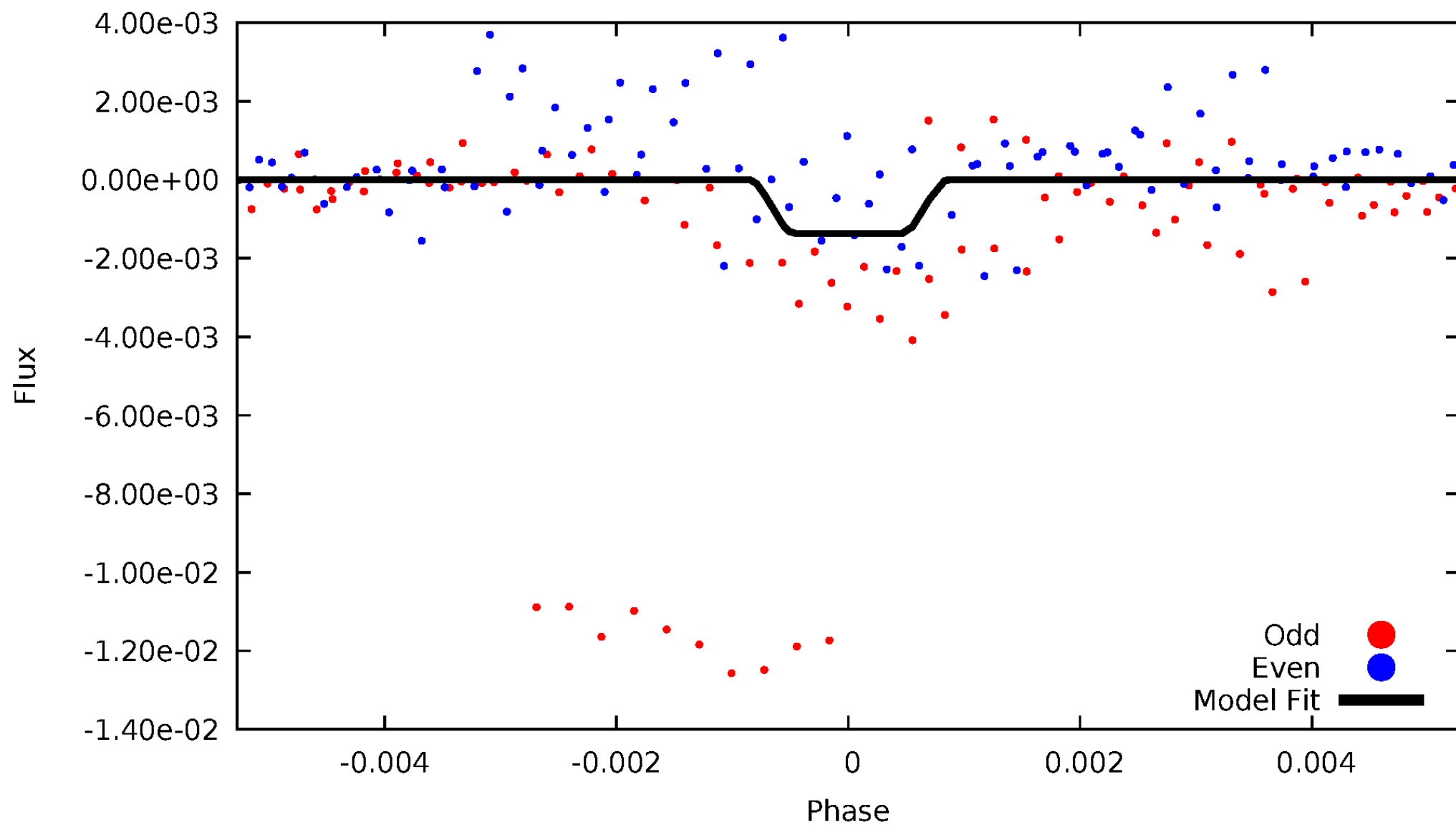
# DV Odd/Even

TCE 007295373-02



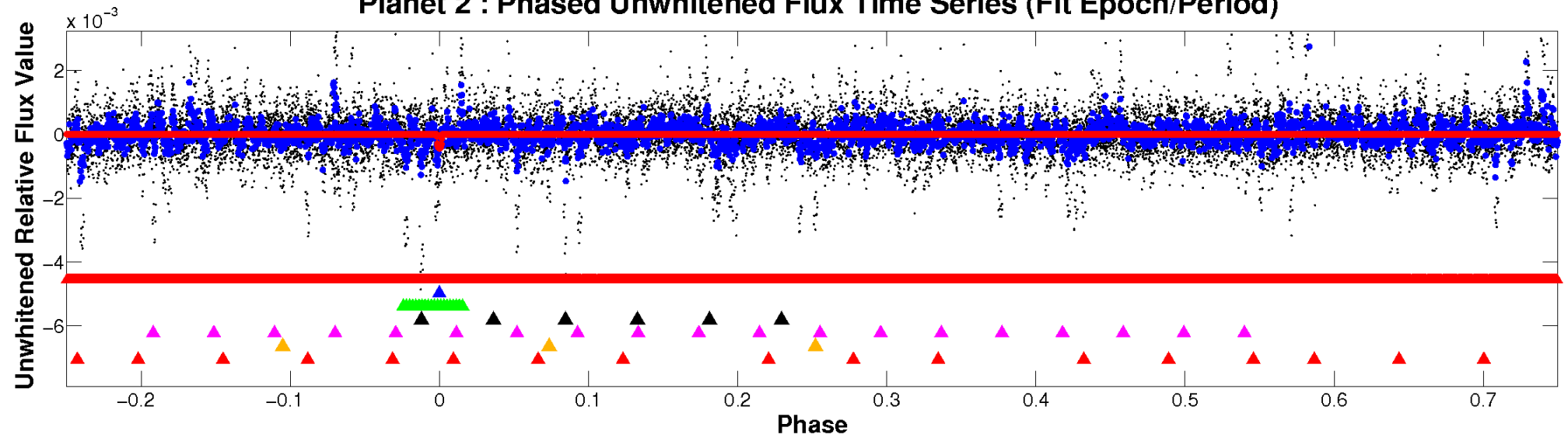
# ALT Odd/Even

TCE 007295373-02

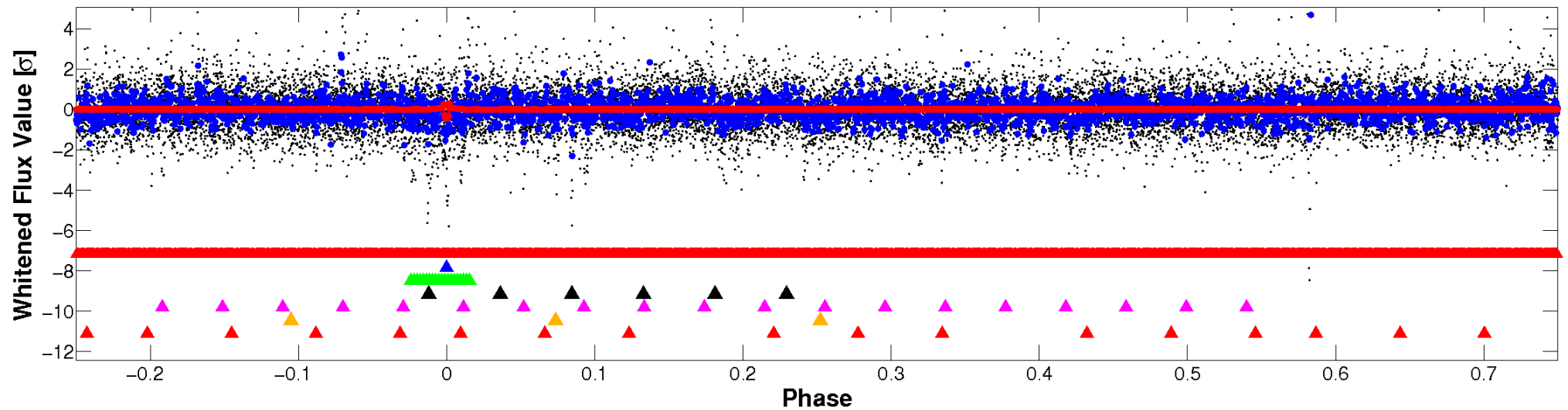


# Non-Whitened Vs. Whitened Light Curve

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



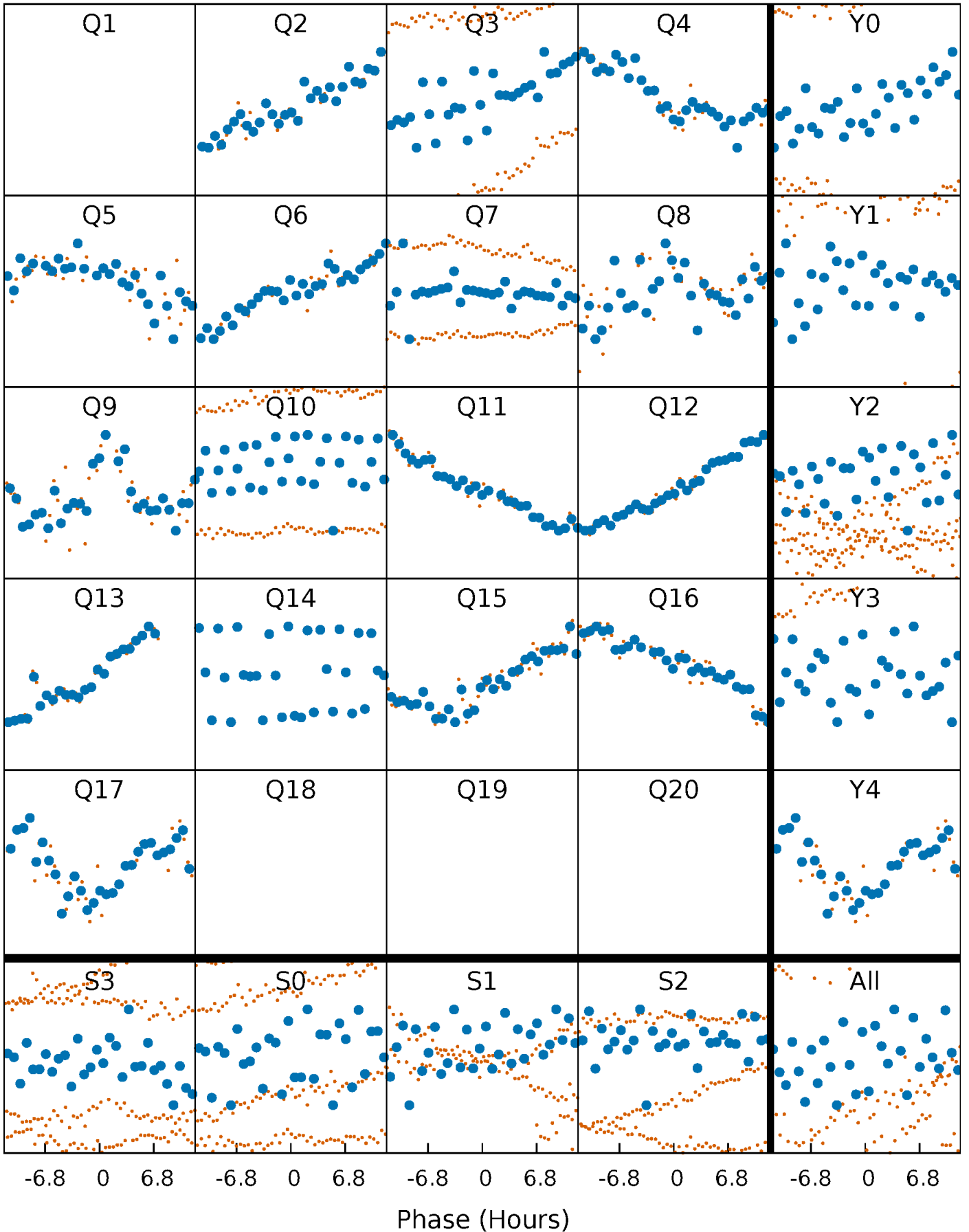
## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)





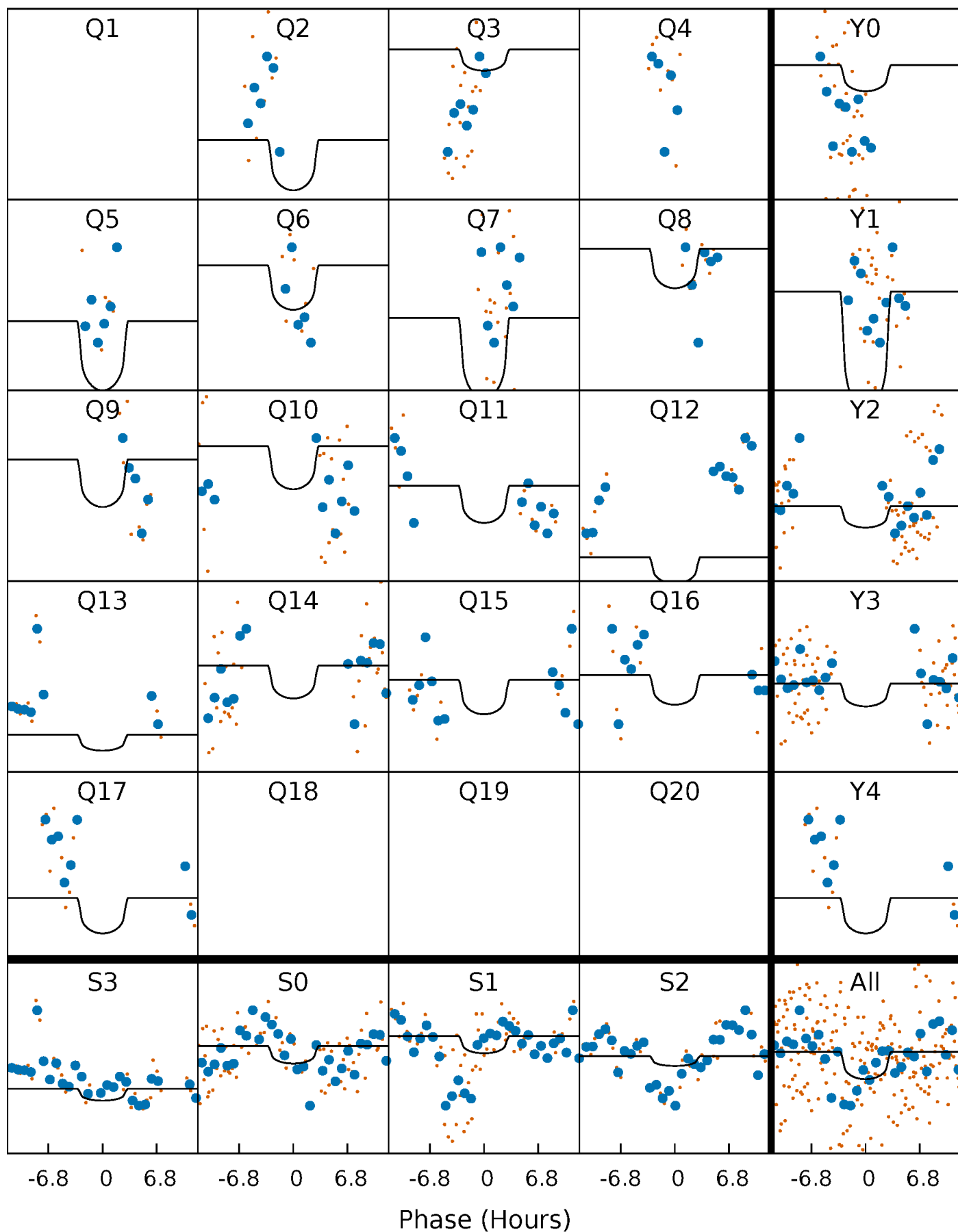
# PDC Quarter-Phased Transit Curves

TCE 007295373-02   P= 72.757434 Days    $T_0=196.072419$  (BKJD)



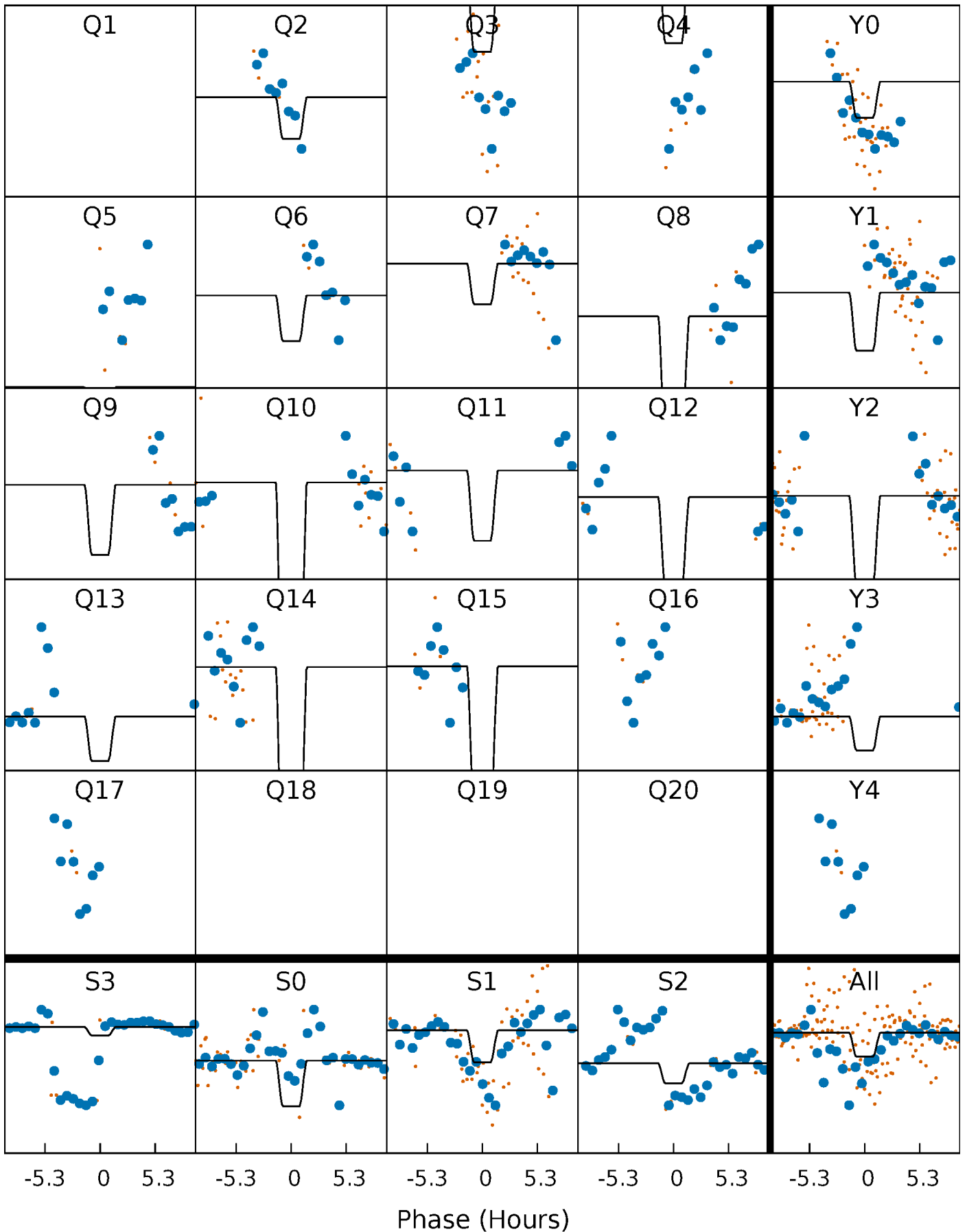
# DV Quarter-Phased Transit Curves

TCE 007295373-02   P= 72.757434 Days    $T_0=196.072419$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

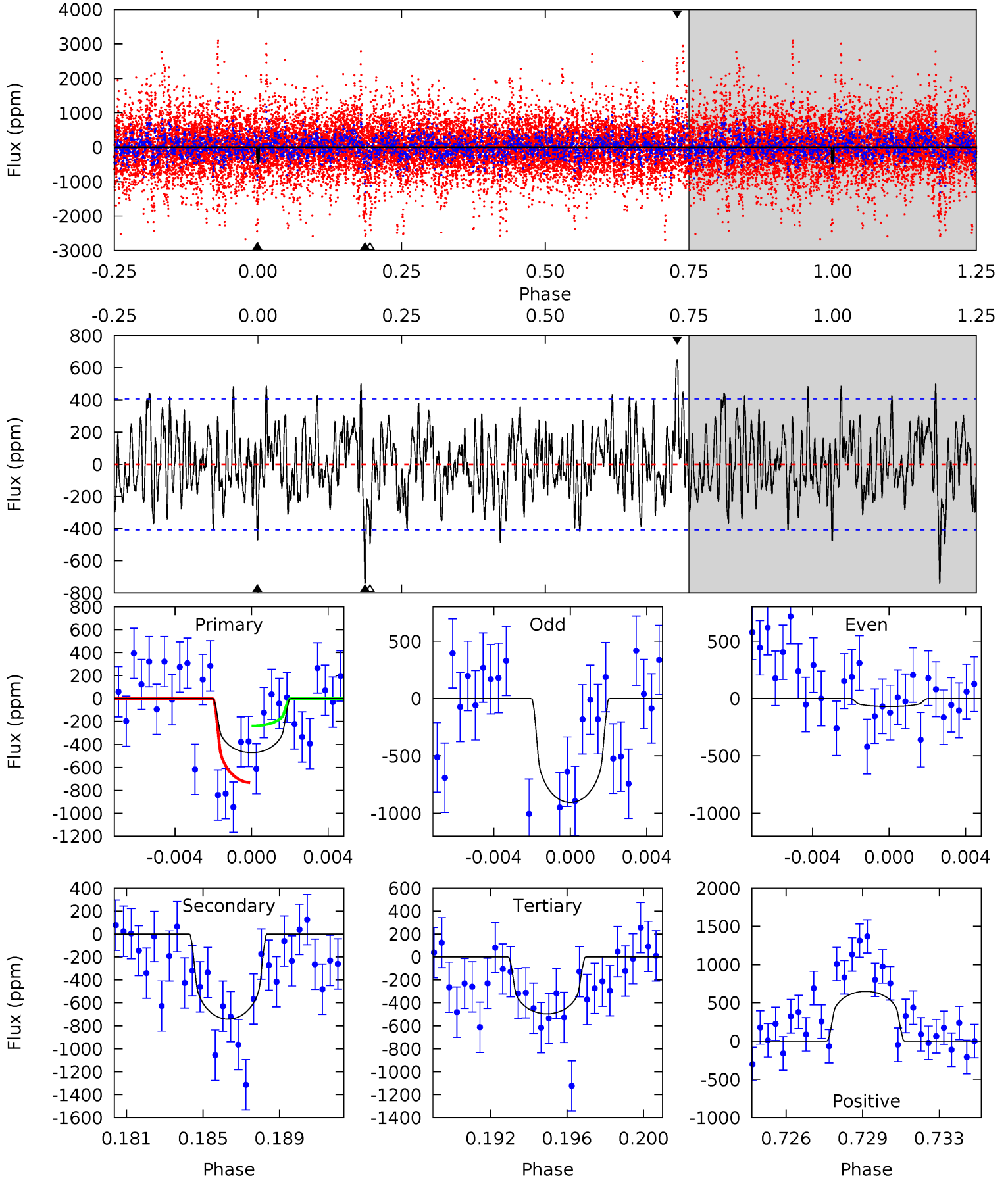
TCE 007295373-02     $P = 72.756542$  Days     $T_0 = 195.969357$  (BKJD)



# DV Model-Shift Uniqueness Test

007295373-02, P = 72.757434 Days, E = 123.314985 Days

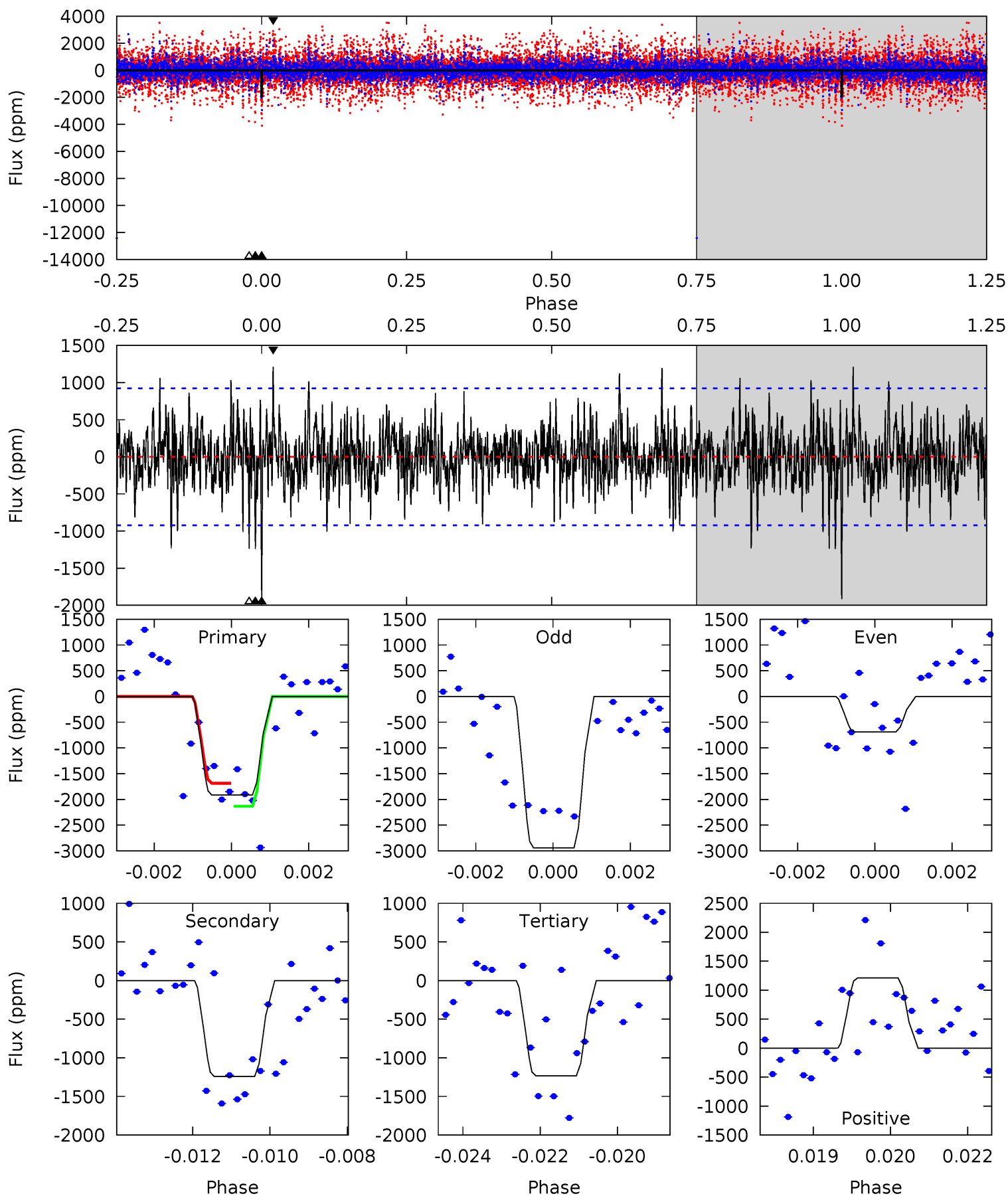
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.05	9.51	6.35	8.34	5.22	2.91	2.25	-0.29	-2.28	3.16	1.17	5.10	3.74	0.47	3.18



# Alt Model-Shift Uniqueness Test

007295373-02, P = 72.756542 Days, E = 123.212815 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
11.1	7.20	7.16	7.03	5.36	3.14	1.76	3.96	4.09	0.04	0.17	3.93	1.35	0.39	1.32



### Stellar Parameters For KIC 007295373

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$4515^{+134}_{-134}$	$4.686^{+0.052}_{-0.032}$	$-0.840^{+0.300}_{-0.300}$	$0.558^{+0.044}_{-0.044}$	$0.550^{+0.049}_{-0.031}$	$4.468^{+1.036}_{-0.581}$
	+3%/-3%	+1%/-1%	+36%/-36%	+8%/-8%	+9%/-6%	+23%/-13%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 007295373-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-742 \pm 78$	$2.44^{+2.17}_{-1.70}$	$392^{+13}_{-13}$	$3963^{+2486}_{-754}$	$5440^{+55183}_{-3897}$
Alt.	$-1240 \pm 172$	$2.87^{+2.16}_{-1.77}$	$391^{+15}_{-14}$	$4027^{+2034}_{-677}$	$6293^{+37632}_{-4183}$

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

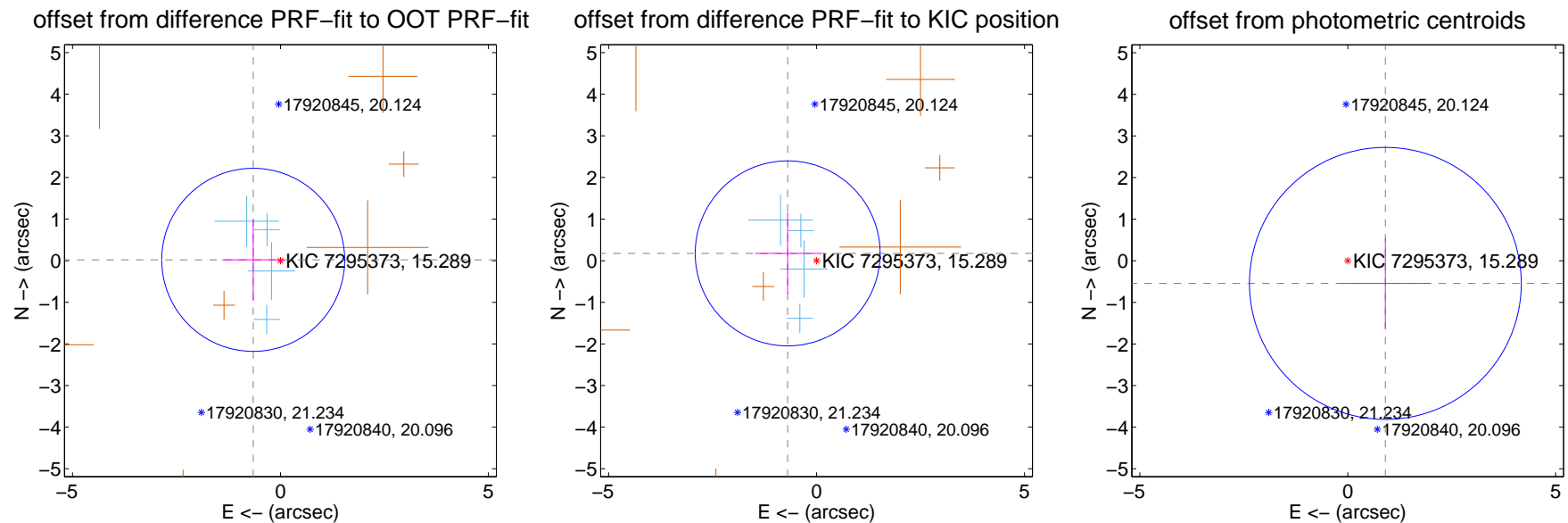
## DV Centroid Data

Supplemental centroid analysis for 007295373-02. Kepler magnitude: 15.29. Transit SNR 3.22

There are 4 quarters with good PRF difference image offsets

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

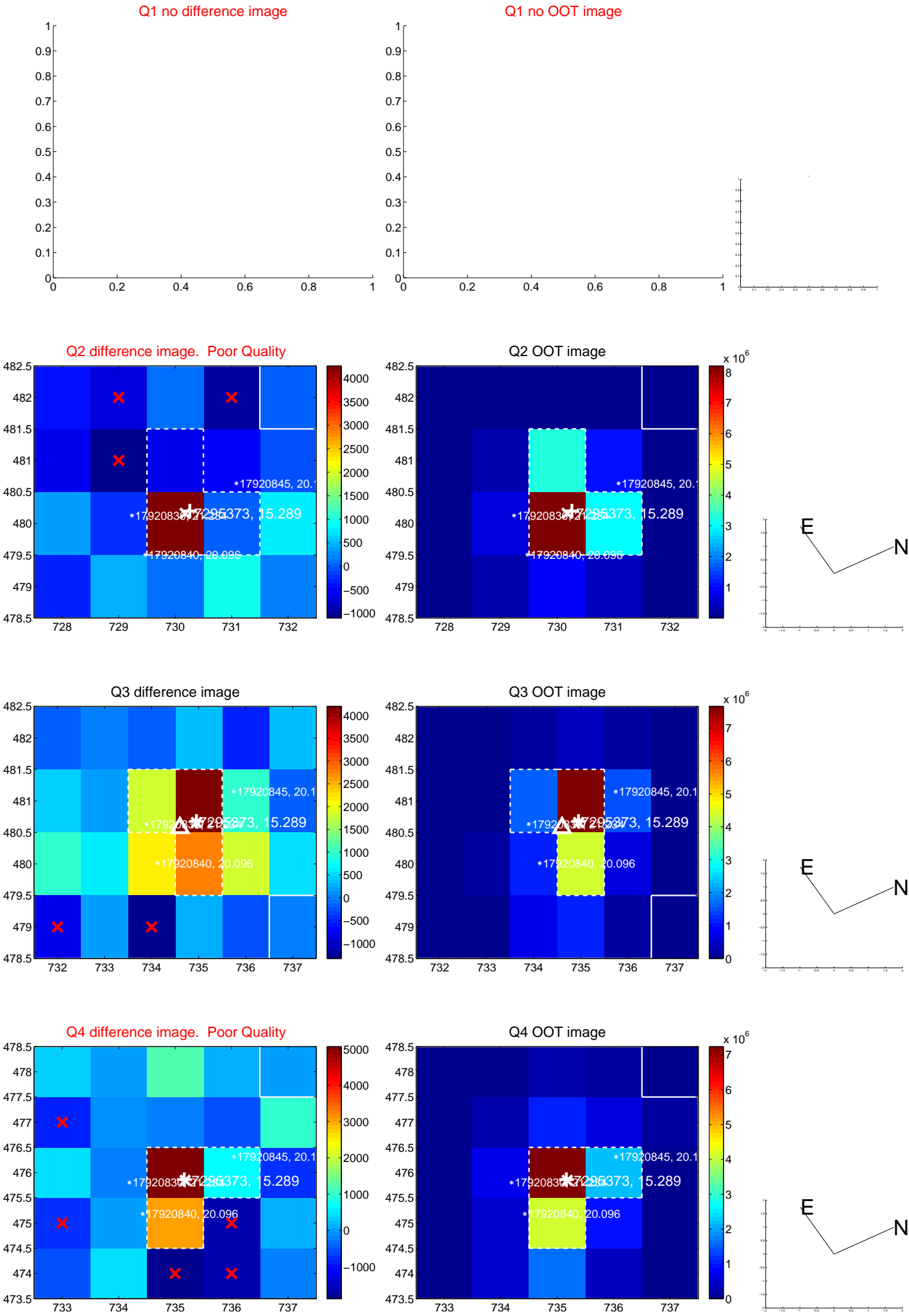
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.656 \pm 0.733$	0.89	$0.655 \pm 0.743$	$0.021 \pm 0.986$
PRF-fit source offset from KIC position	$0.717 \pm 0.741$	0.97	$0.695 \pm 0.780$	$0.176 \pm 0.983$
photometric centroid source offset	$1.06 \pm 1.09$	0.97	$-0.91 \pm 1.09$	$-0.54 \pm 1.08$



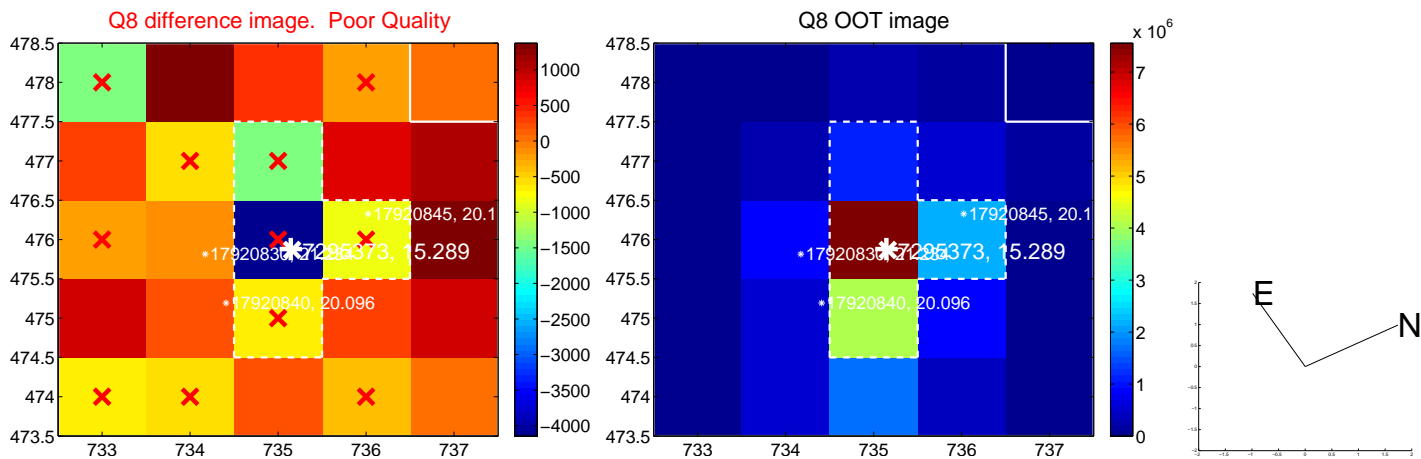
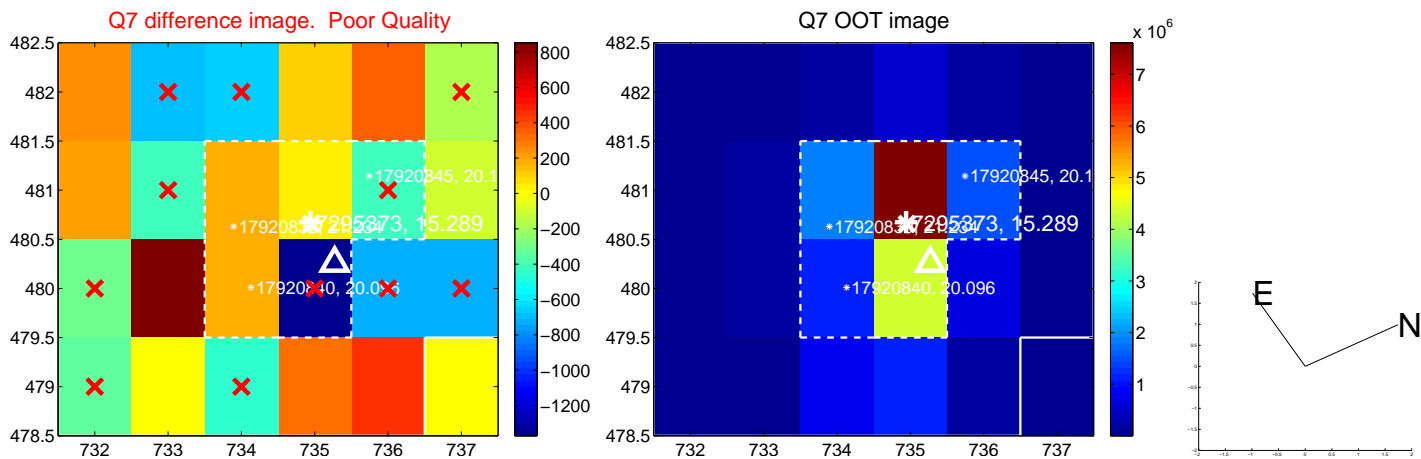
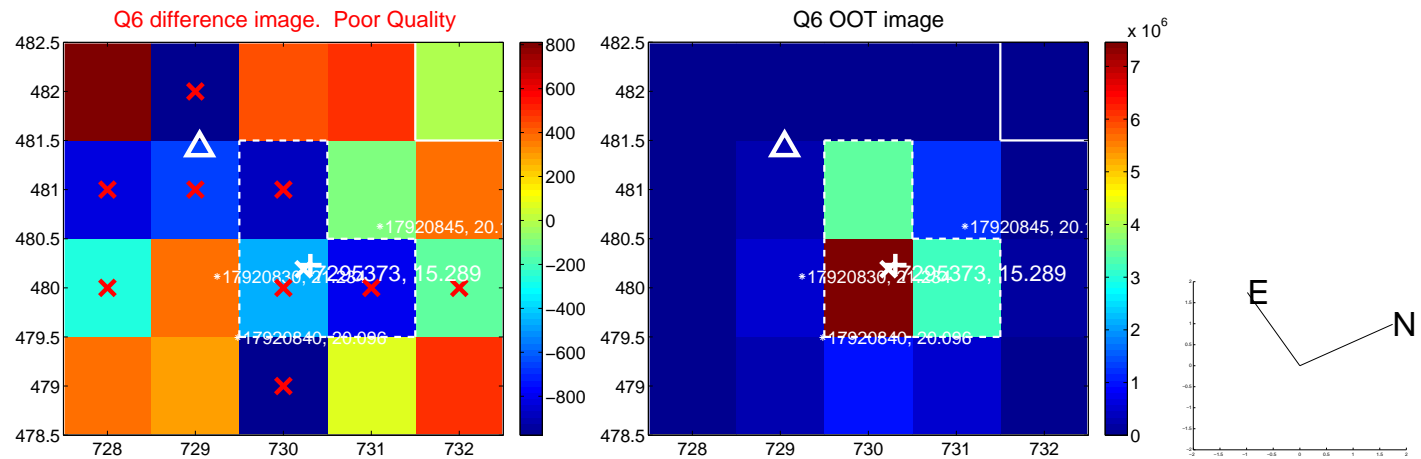
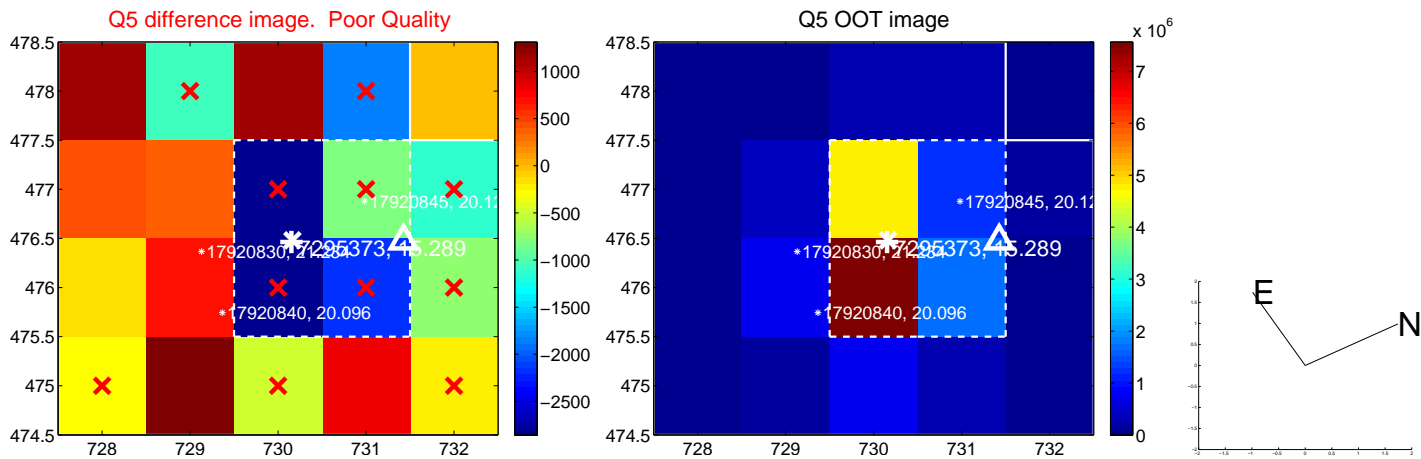
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



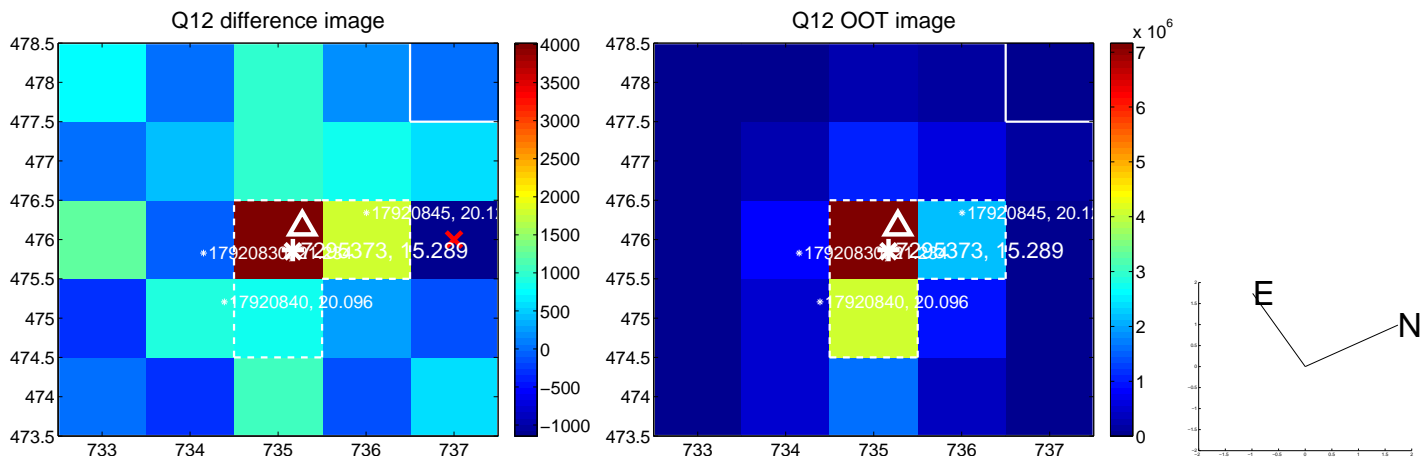
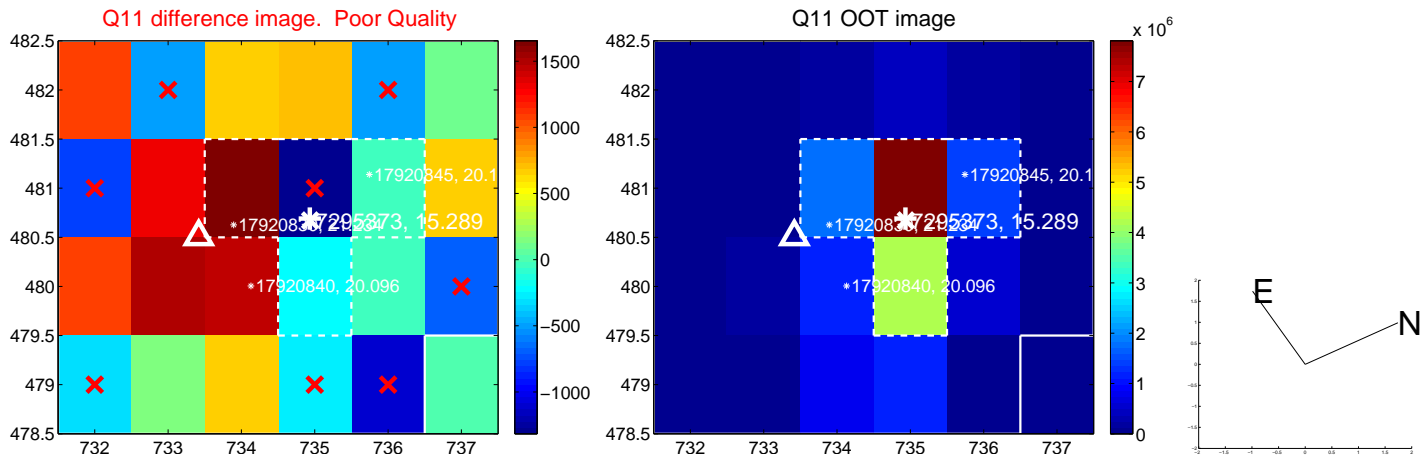
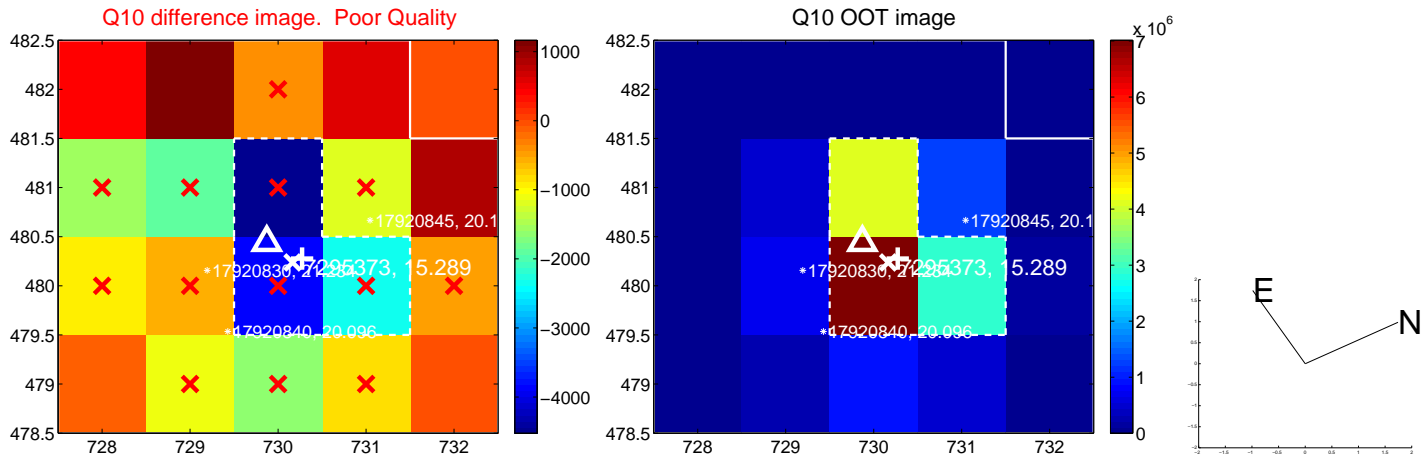
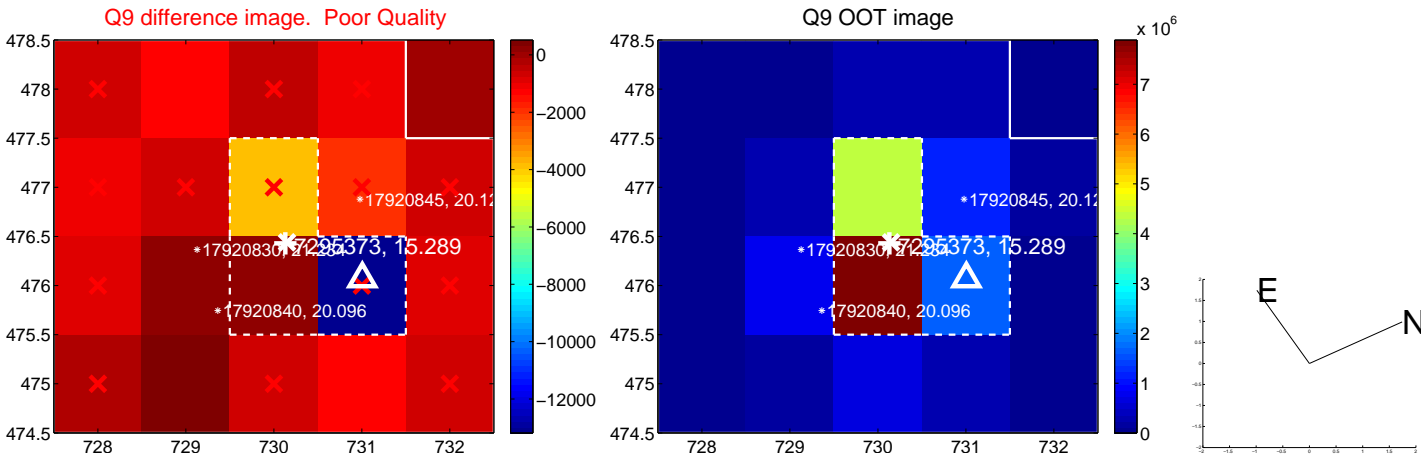
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.

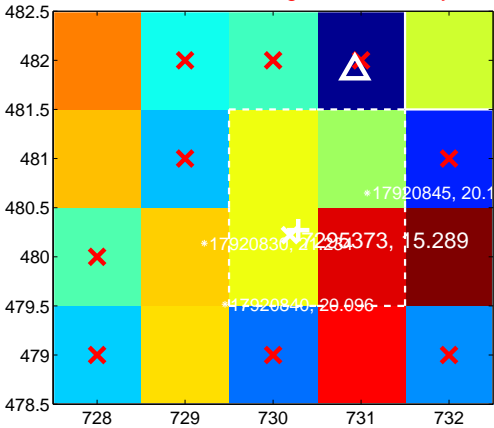
Q13 no difference image



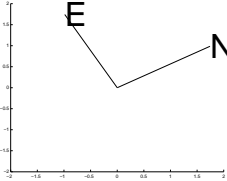
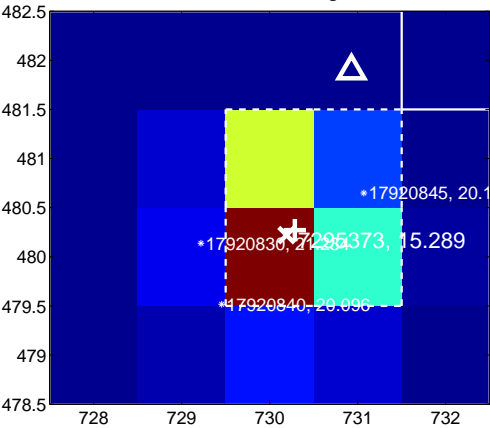
Q13 no OOT image



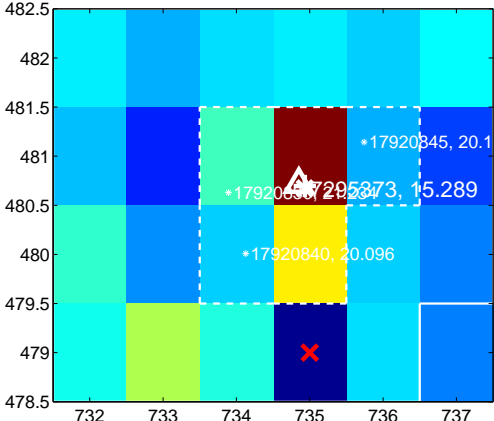
Q14 difference image. Poor Quality



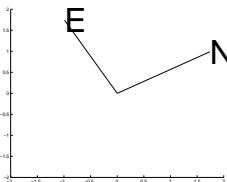
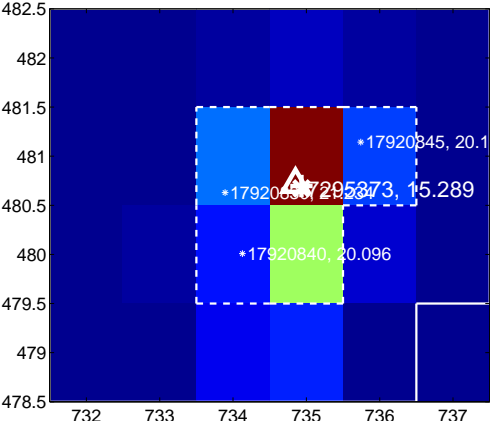
Q14 OOT image



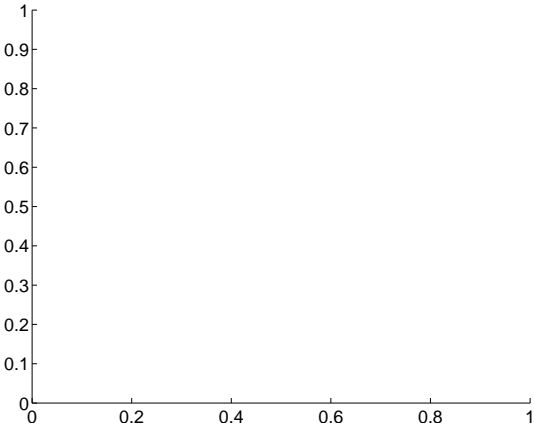
Q15 difference image



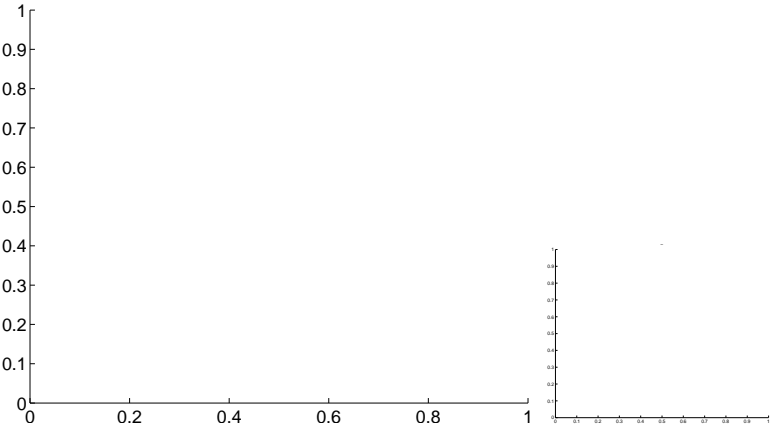
Q15 OOT image



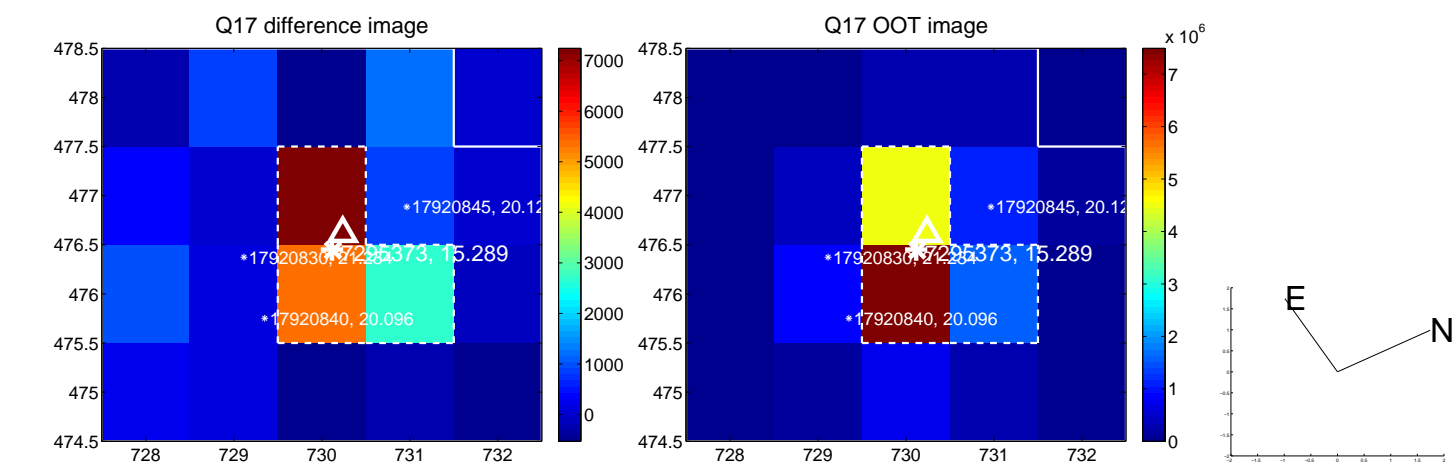
Q16 no difference image



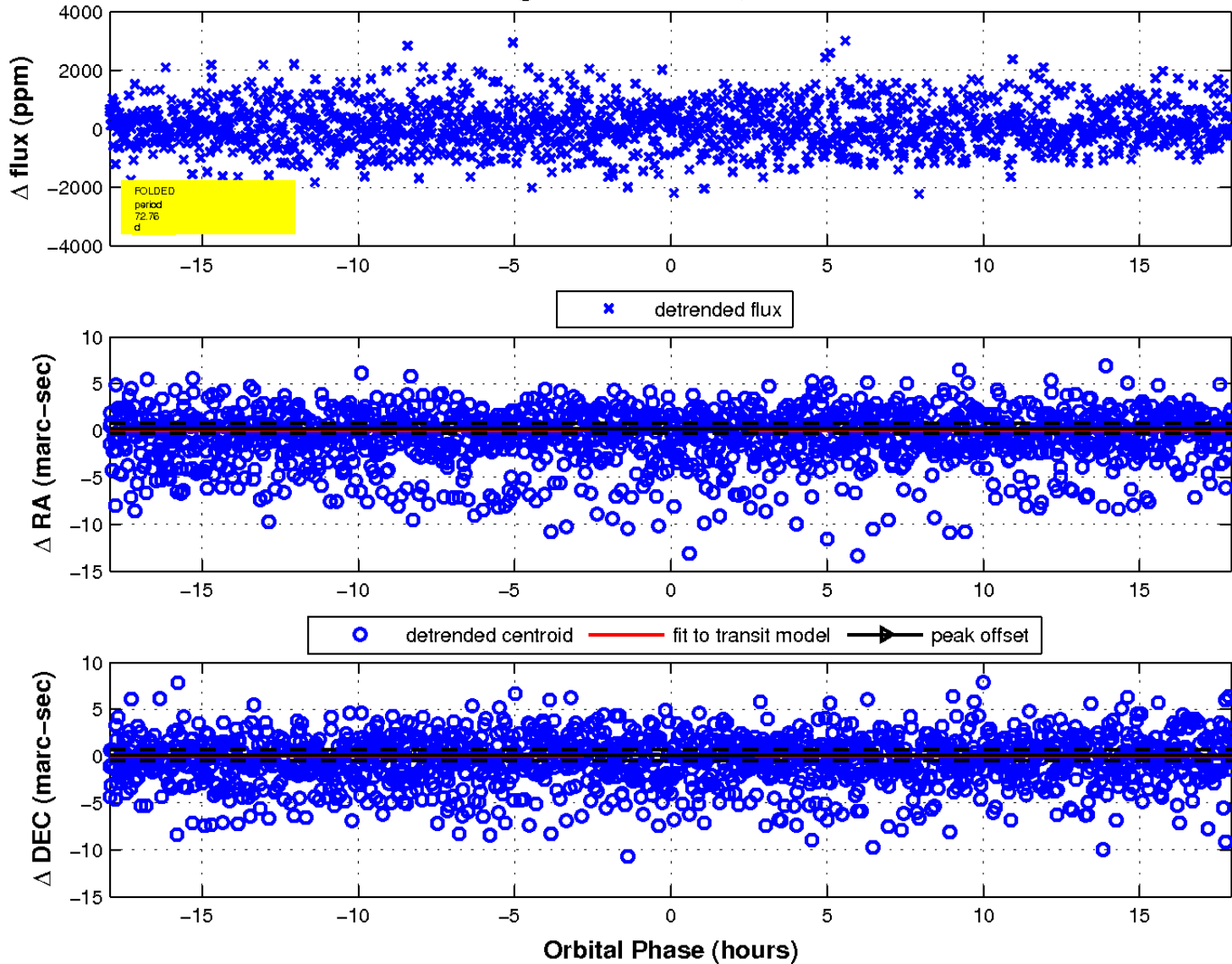
Q16 no OOT image



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

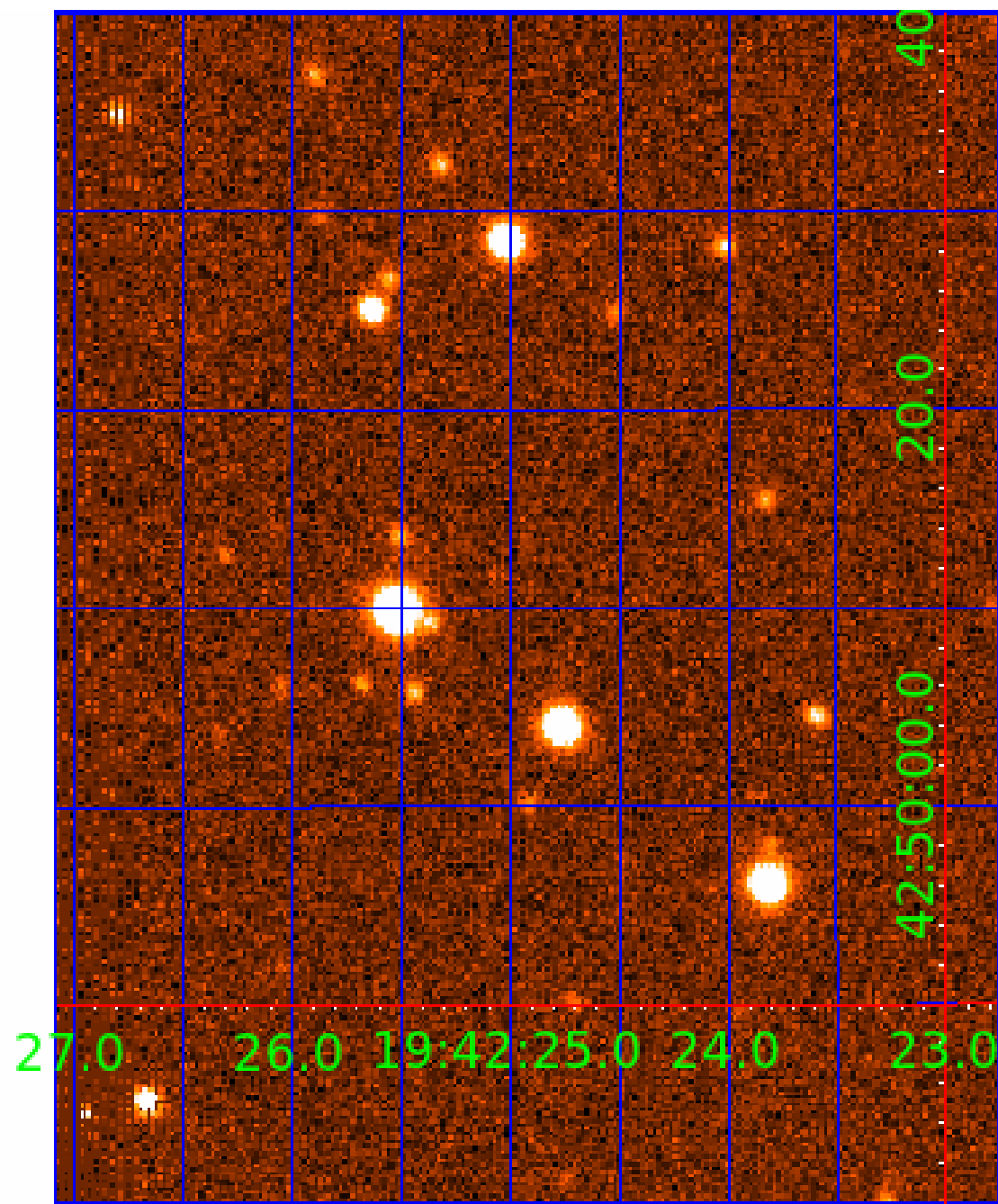


fluxWeightedCentroids, Planet 2 of 7



UKIRT Image

Declination



# KIC 007295373

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007295373-01	OBS	No	0.750453	131.747528	63.7	4.275	8.6	10.8	0.56	4515	0.47	659.96
007295373-02	OBS	No	72.757434	196.072419	440.8	5.985	20.3	3.2	0.56	4515	1.26	1.48
007295373-03	OBS	No	72.909455	194.314739	1221.7	6.313	15.0	7.3	0.56	4515	1.92	1.48
007295373-05	OBS	No	75.715127	182.112979	1118.5	10.598	11.9	6.2	0.56	4515	3.74	1.41
007295373-06	OBS	No	522.296806	188.433994	2597.8	8.087	12.0	10.3	0.56	4515	3.42	0.11

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007295373-01	OBS	FP	0.00	1	0	0	0	LPP_DV
007295373-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
007295373-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_TER_ALT—MOD_POS_ALT
007295373-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007295373-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

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

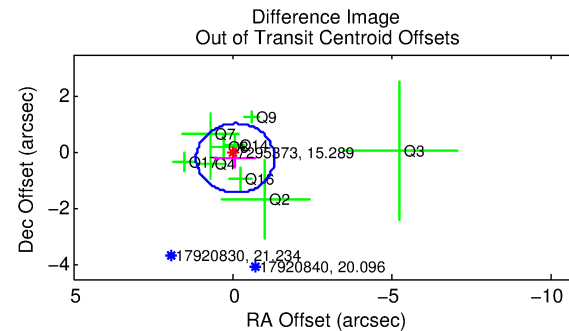
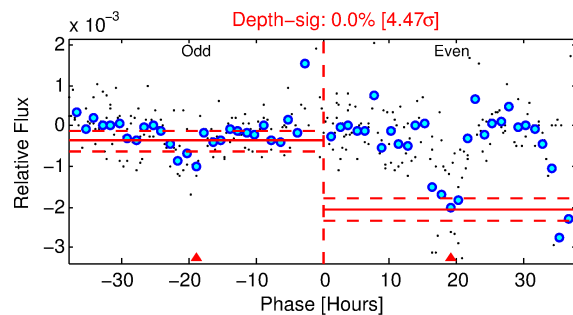
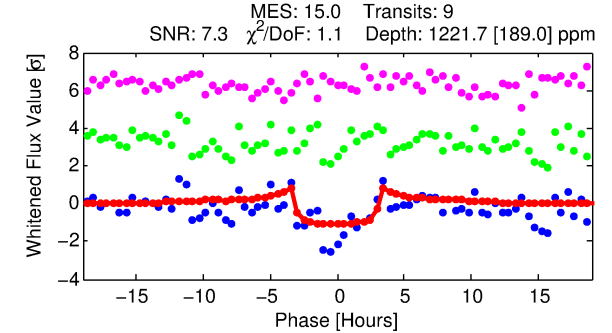
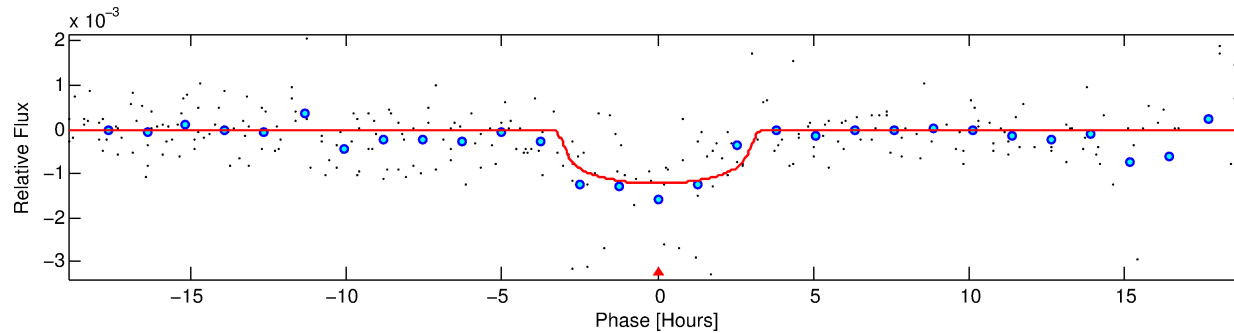
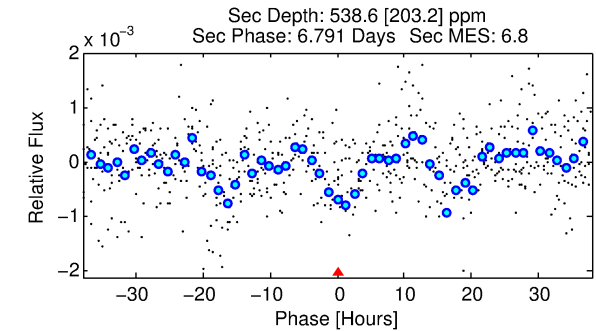
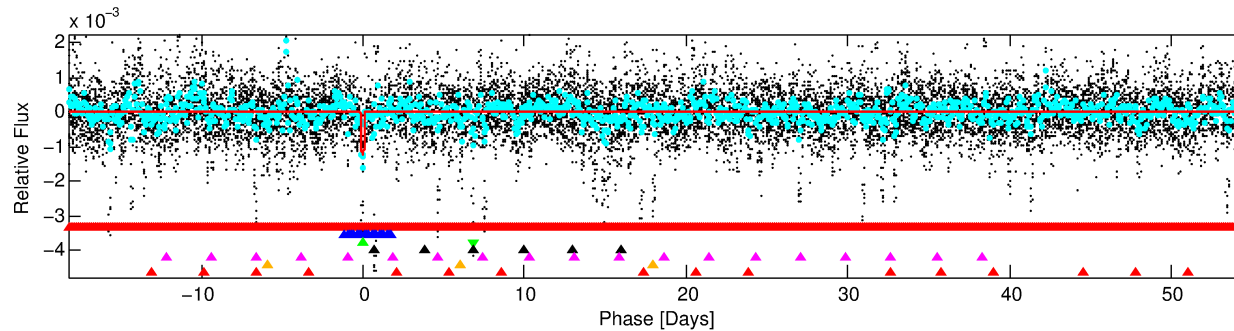
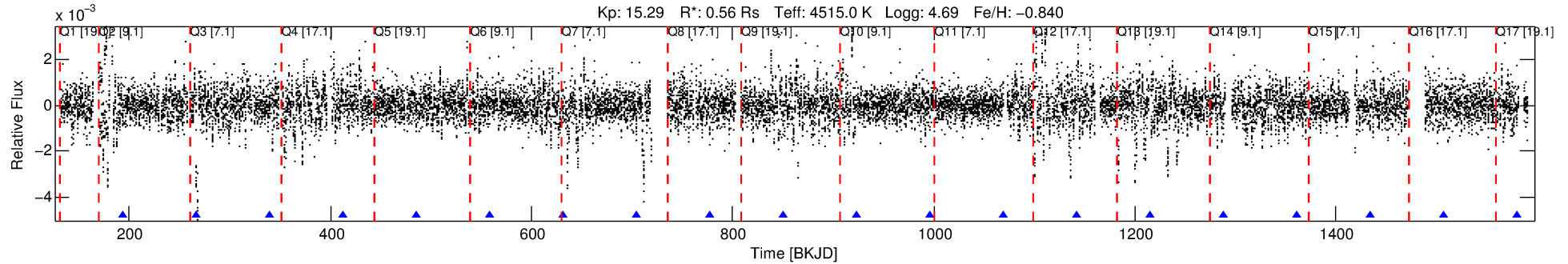
## Ephemeris Match Information For 007295373-03

No Significant Match Found



# DV One-Page Summary

KIC: 7295373 Candidate: 3 of 7 Period: 72.909 d



## DV Fit Results:

Period = 72.90945 [0.00100] d  
Epoch = 194.3147 [0.0105] BKJD  
Rp/R\* = 0.0314 [0.0757]  
a/R\* = 86.57 [704.24]  
b = 0.32 [23.35]  
Seff = 1.48 [0.23]  
Teq = 281 [11] K  
Rp = 1.91 [4.61] Re  
a = 0.2801 [0.0185] AU  
Ag = 6338.96 [30607.56] [0.21 $\sigma$ ]  
Teff = 3878 [4682] K [0.77 $\sigma$ ]

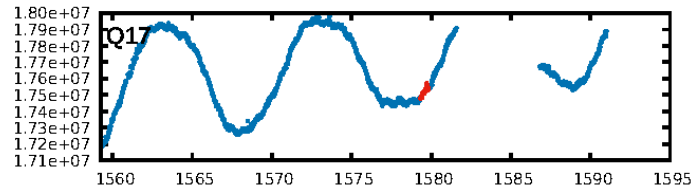
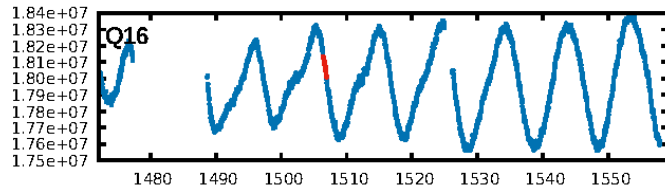
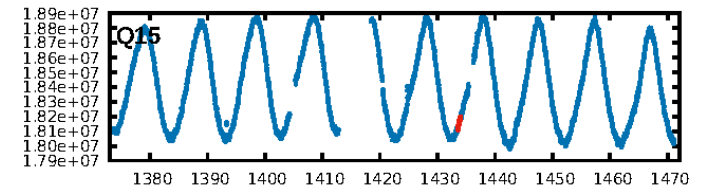
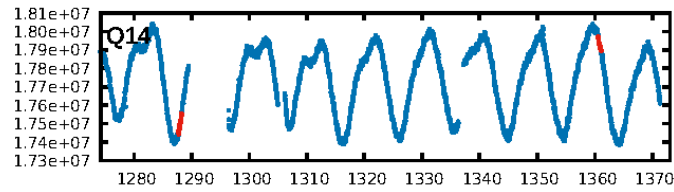
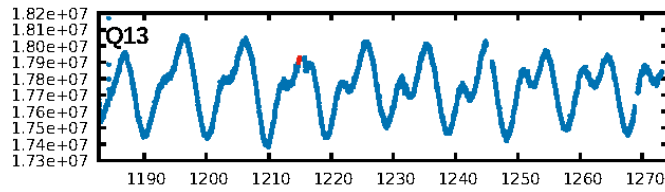
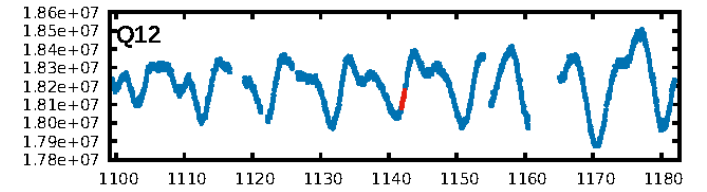
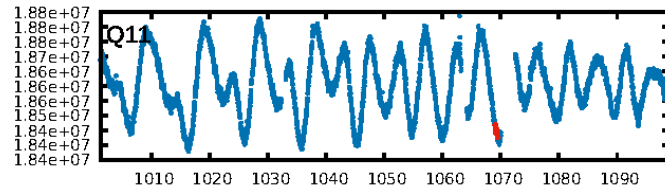
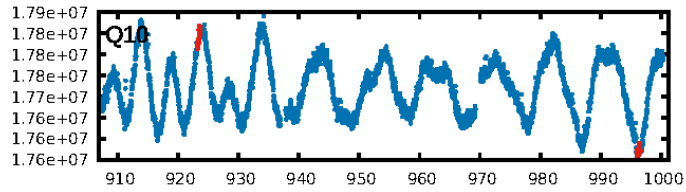
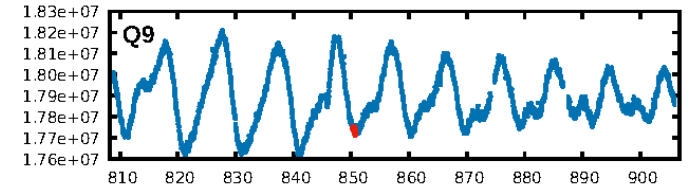
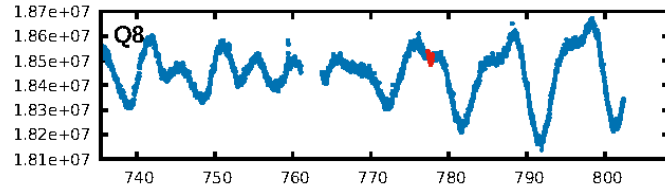
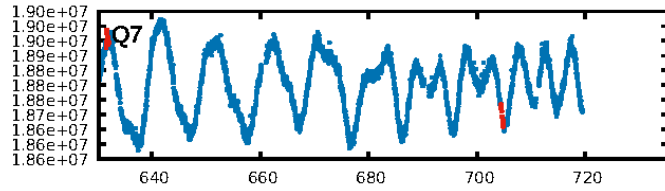
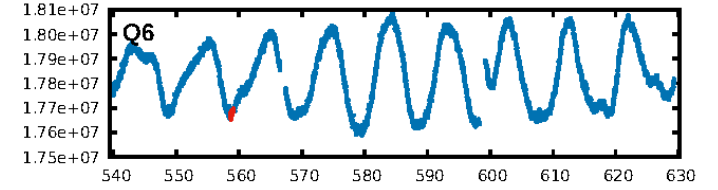
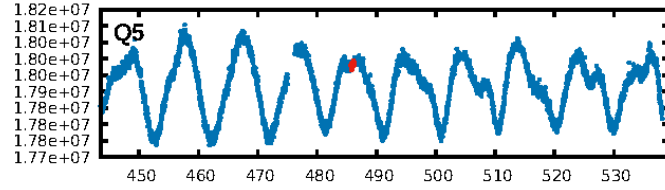
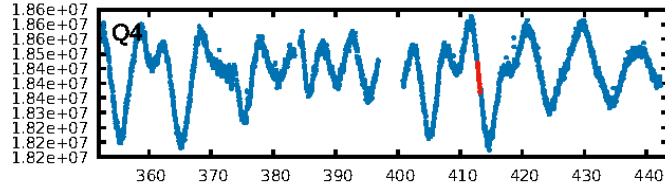
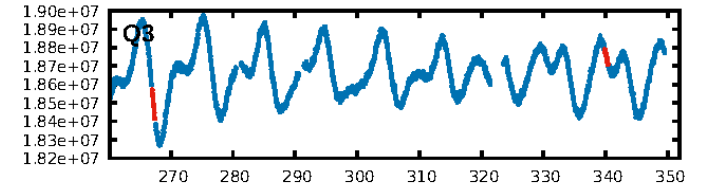
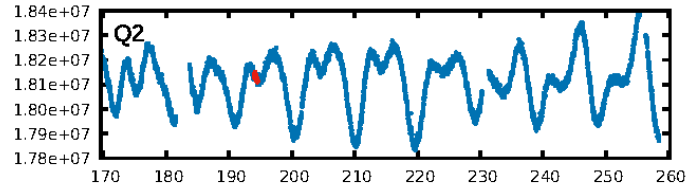
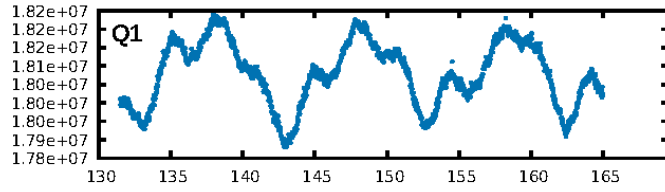
## DV Diagnostic Results:

ShortPeriod-sig: 32.5% [0.42 $\sigma$ ]  
LongPeriod-sig: 100.0% [5.46 $\sigma$ ]  
**ModelChiSquare2-sig: 0.0%**  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 8.35e-29  
RollingBand-fgt: 1.00 [8/8]  
GhostDiagnostic-chr: 16.88  
Centroid-sig: 12.6%  
Centroid-so: 0.248 arcsec [0.63 $\sigma$ ]  
OotOffset-rm: 0.223 arcsec [0.54 $\sigma$ ]  
OotOffset-st: 2/2/3/2 [9]  
KicOffset-rm: 0.174 arcsec [0.51 $\sigma$ ]  
KicOffset-st: 2/2/3/2 [9]  
DiffImageQuality-fgm: 0.44 [4/9]  
DiffImageOverlap-fno: 0.00 [0/15]

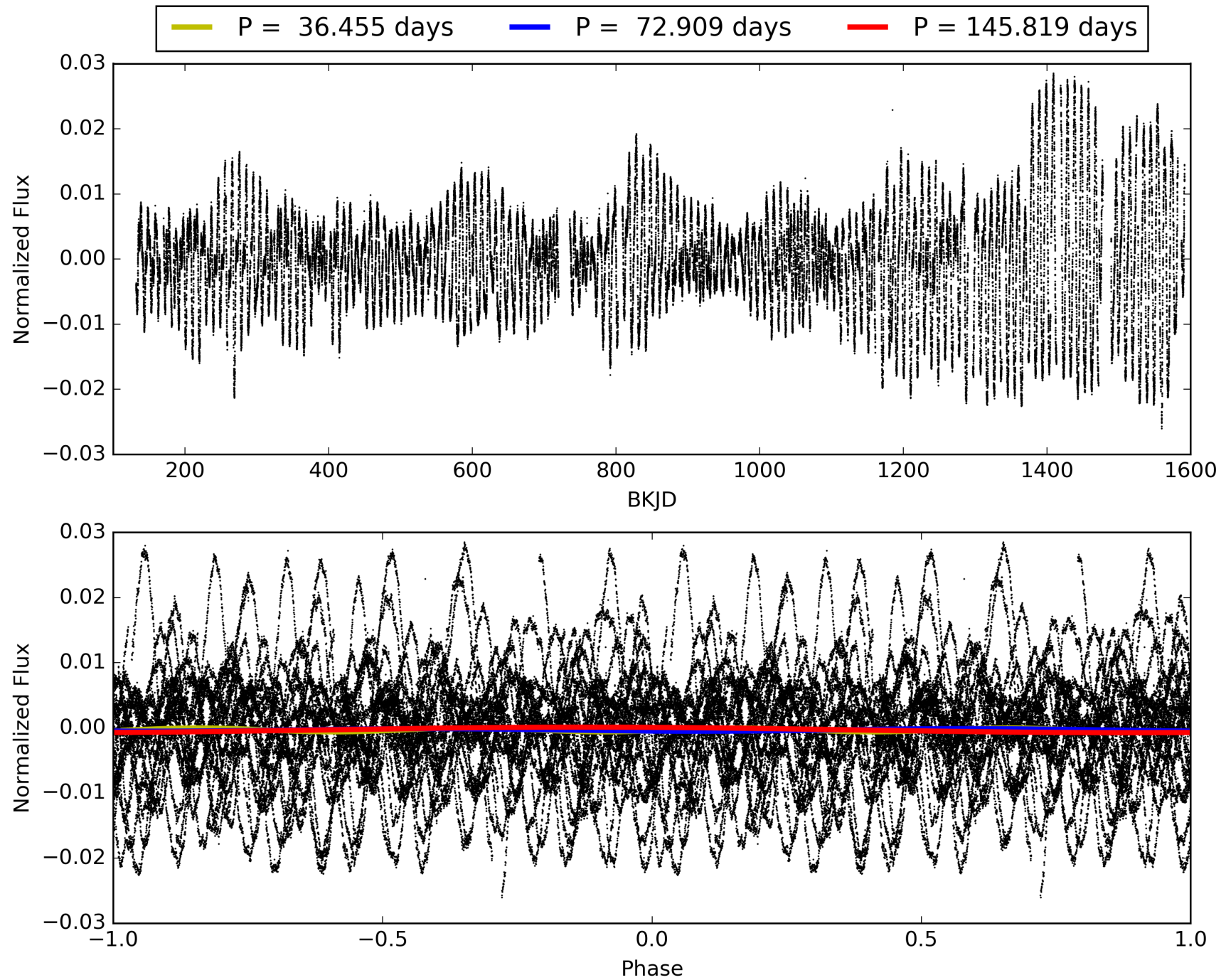
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 02:27:37 Z

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

# TCE 007295373-03, PDC Light Curves

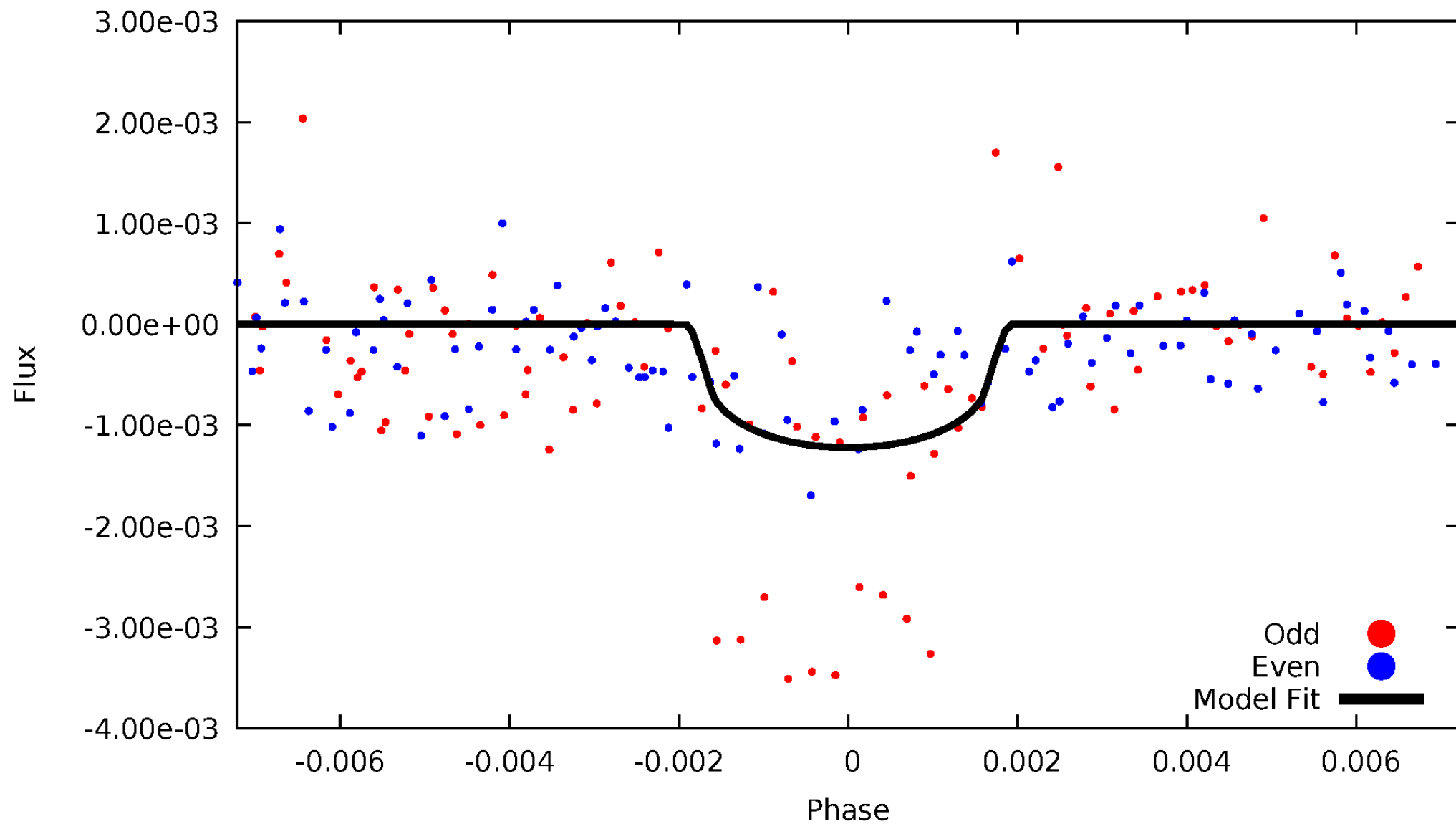


# TCE 007295373-03



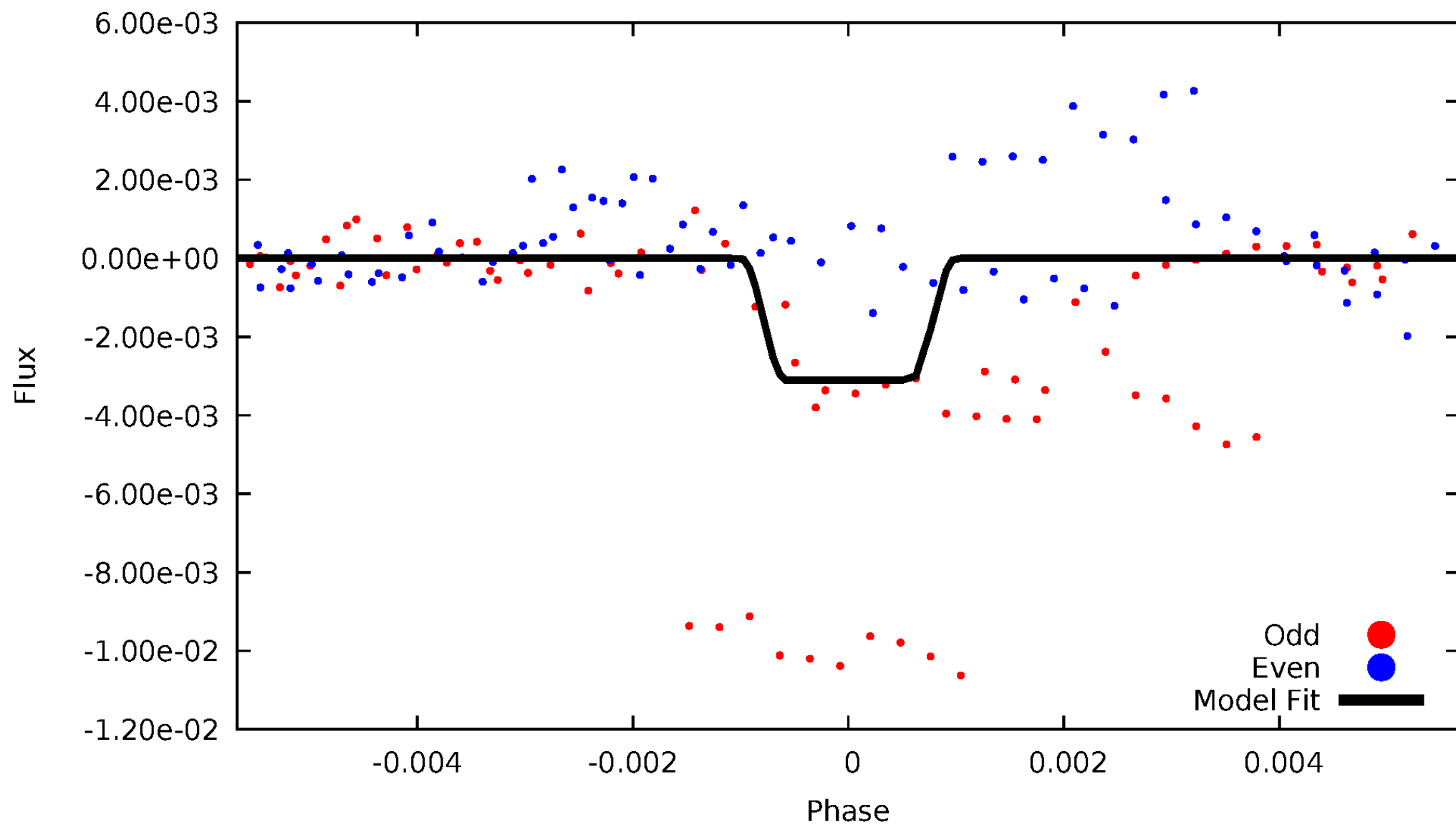
DV Odd/Even

TCE 007295373-03



# ALT Odd/Even

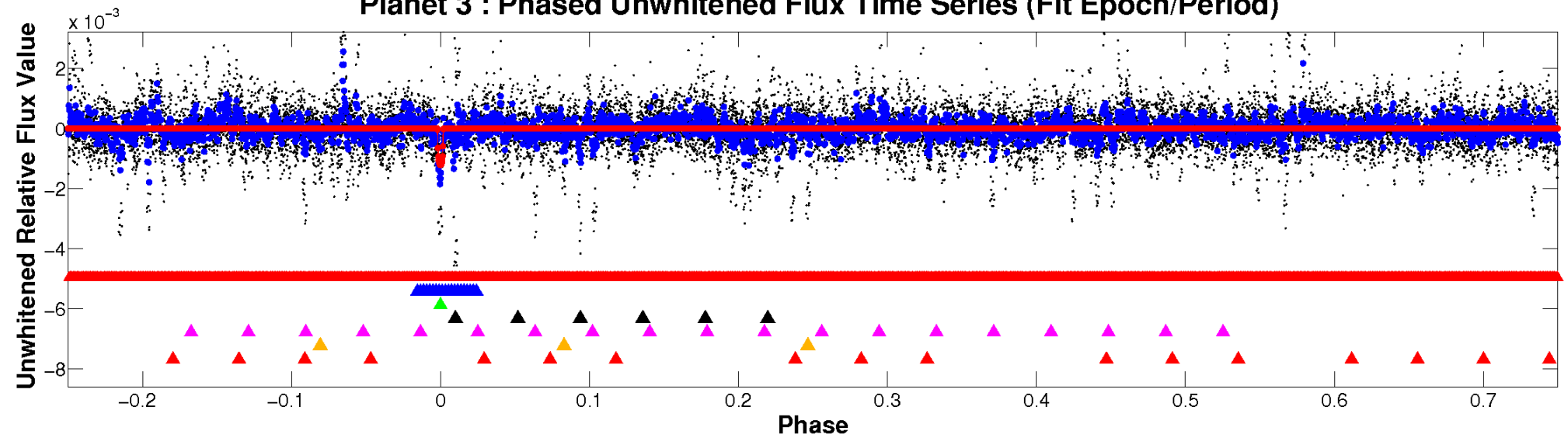
TCE 007295373-03



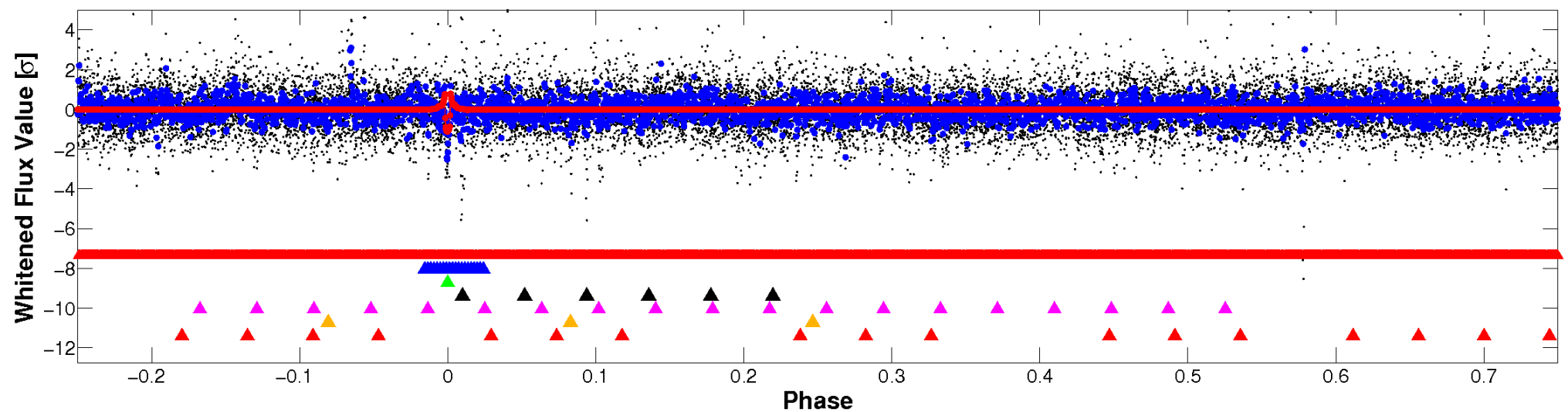


# Non-Whitened Vs. Whitened Light Curve

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

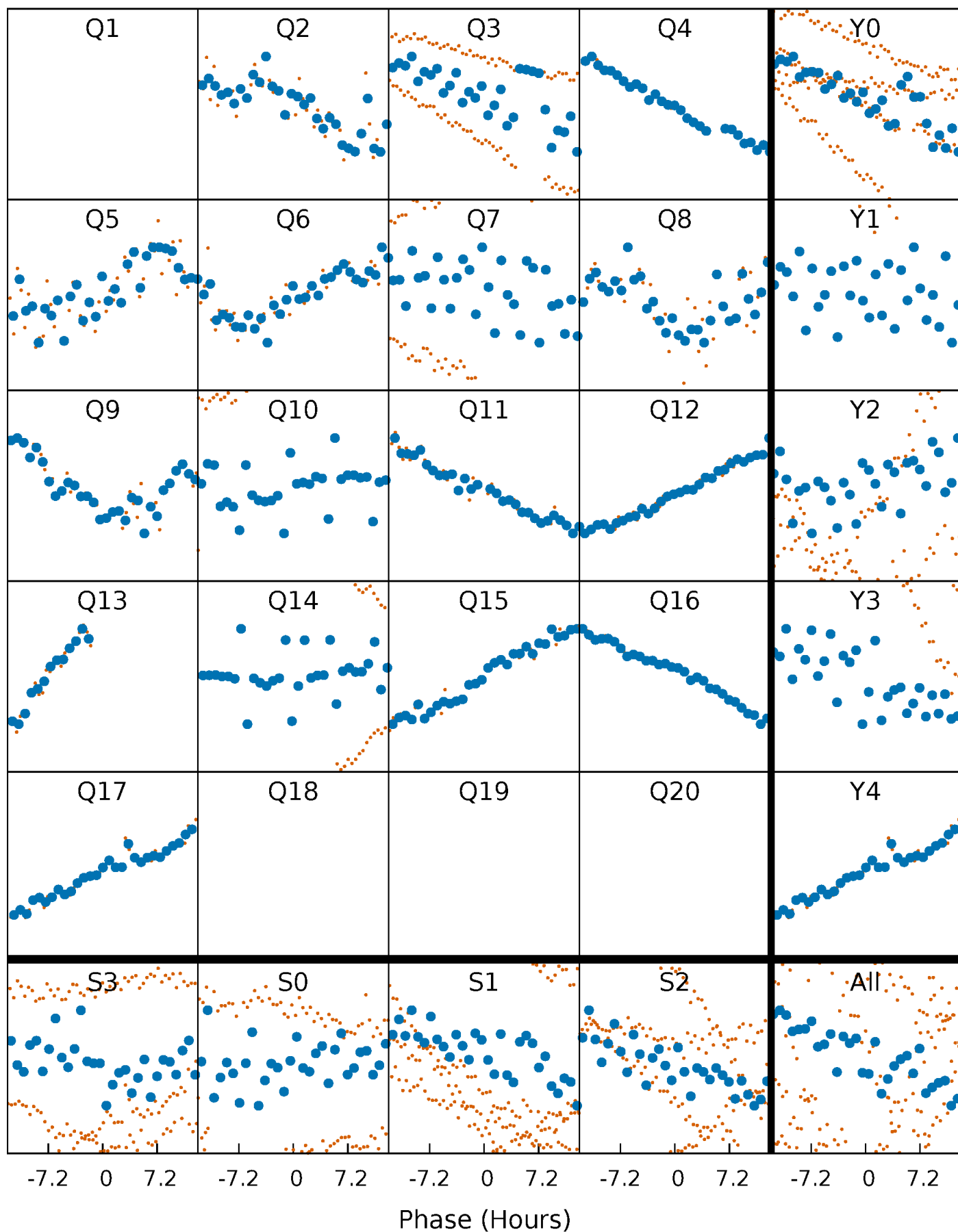


## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



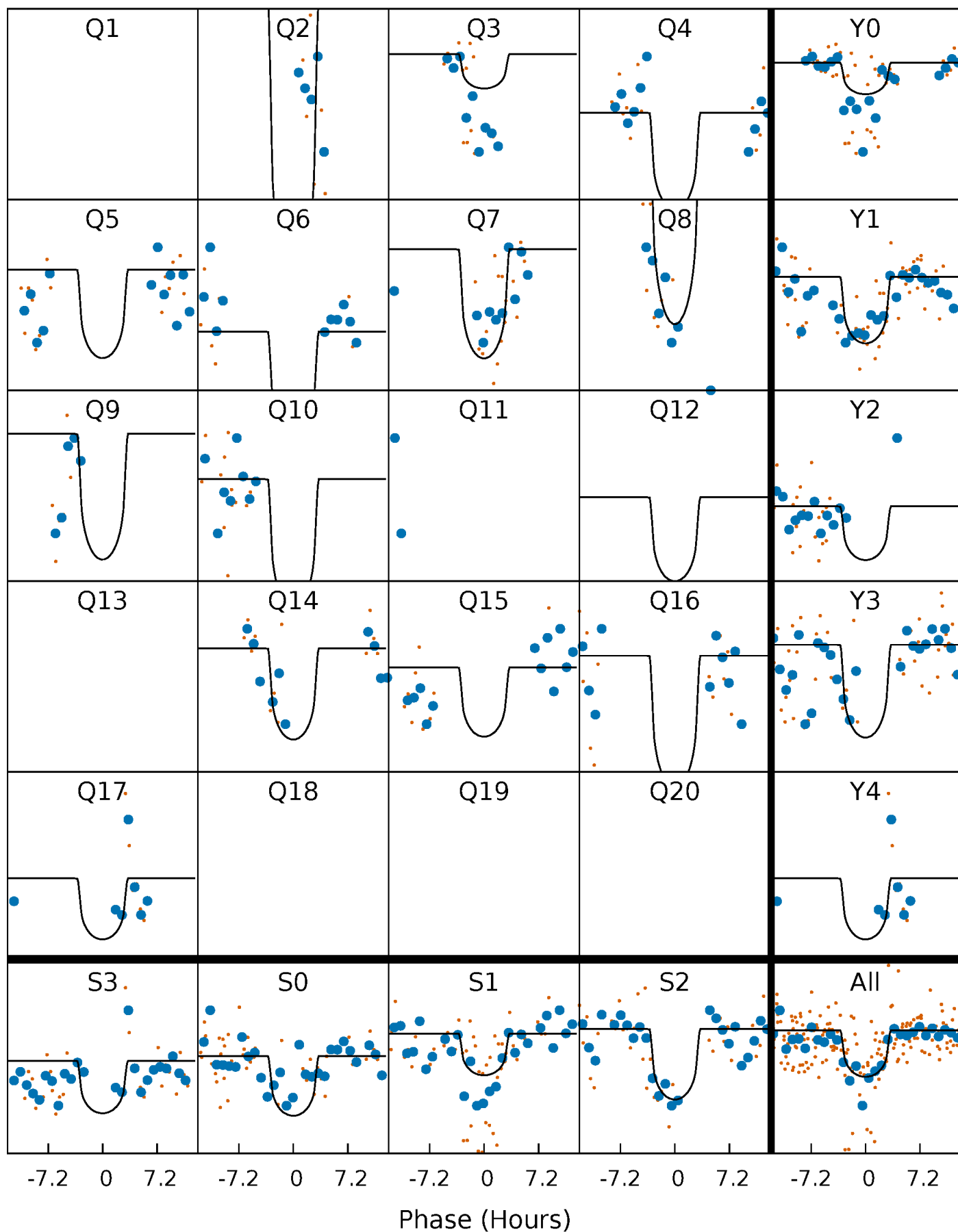
# PDC Quarter-Phased Transit Curves

TCE 007295373-03   P= 72.909455 Days    $T_0=194.314740$  (BKJD)



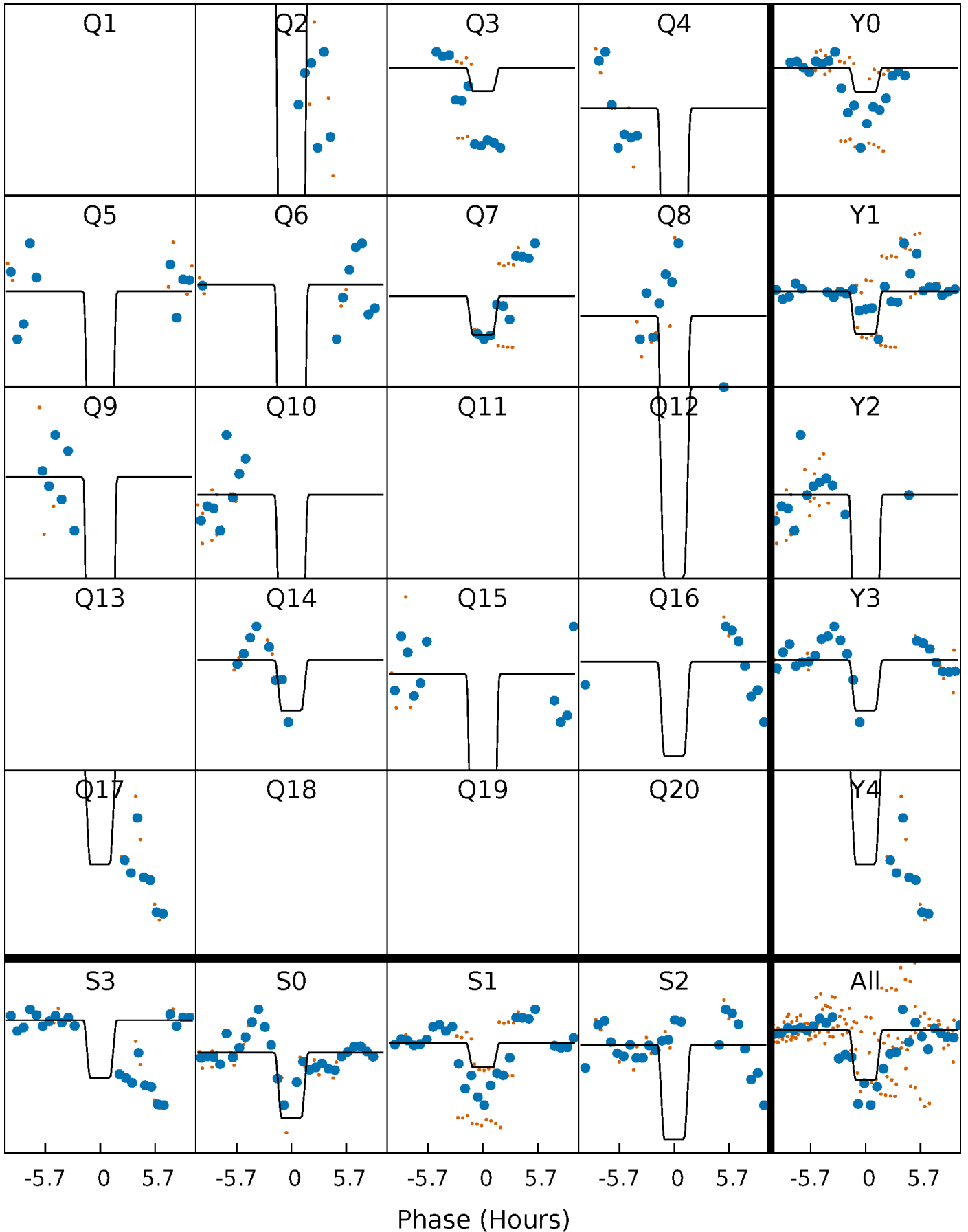
# DV Quarter-Phased Transit Curves

TCE 007295373-03 P= 72.909455 Days  $T_0=194.314740$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

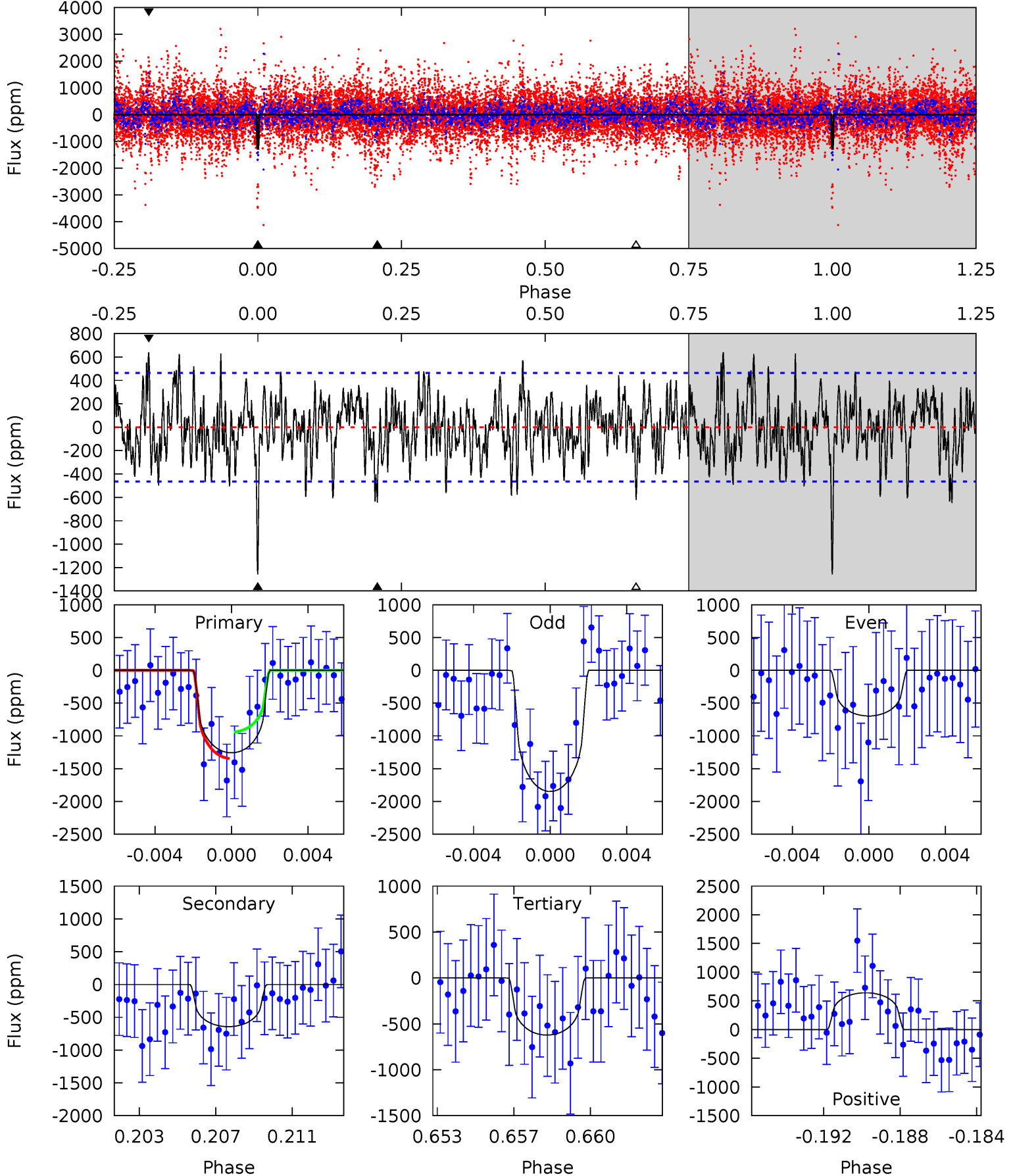
TCE 007295373-03 P= 72.908262 Days  $T_0=194.310551$  (BKJD)



# DV Model-Shift Uniqueness Test

007295373-03,  $P = 72.909455$  Days,  $E = 121.405285$  Days

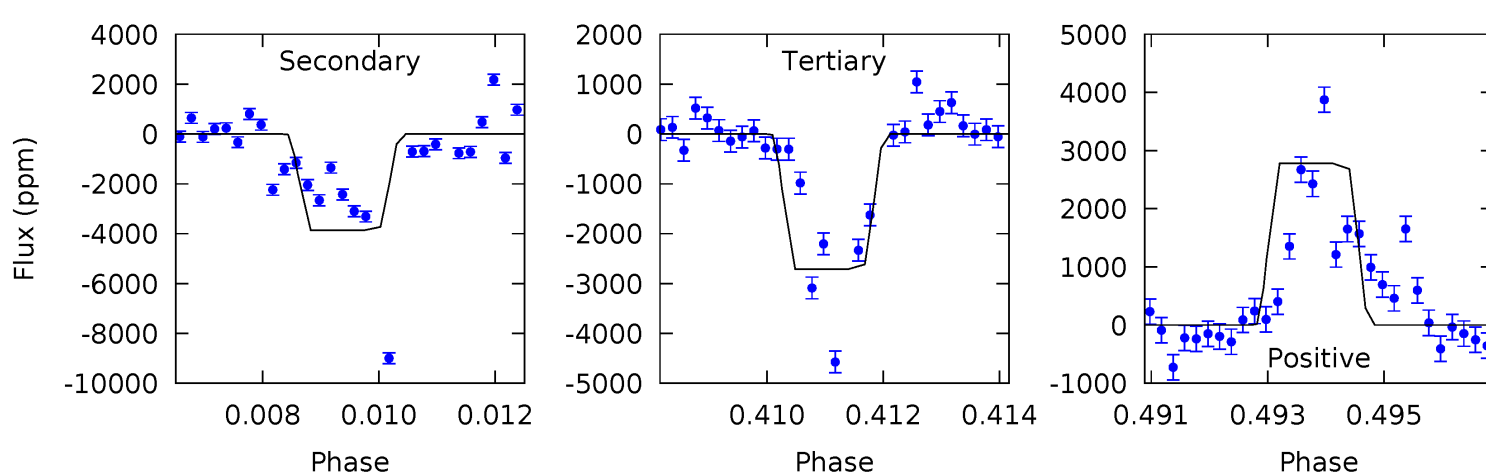
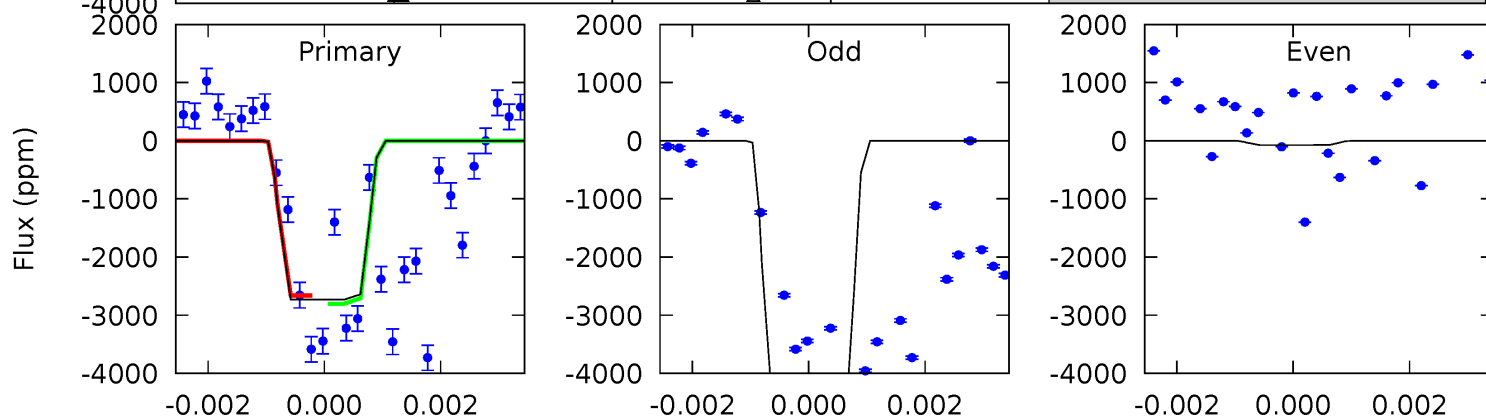
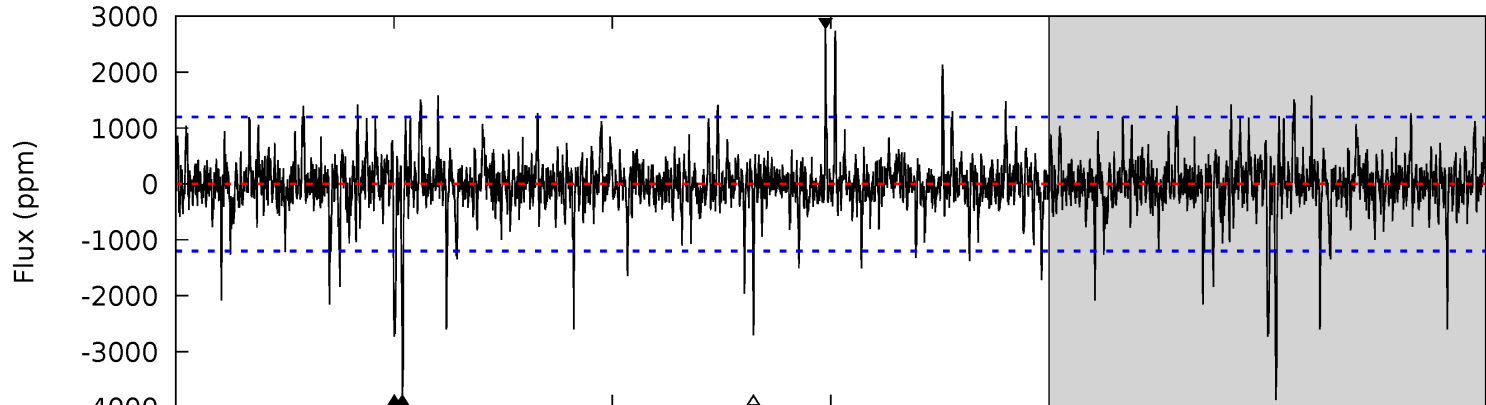
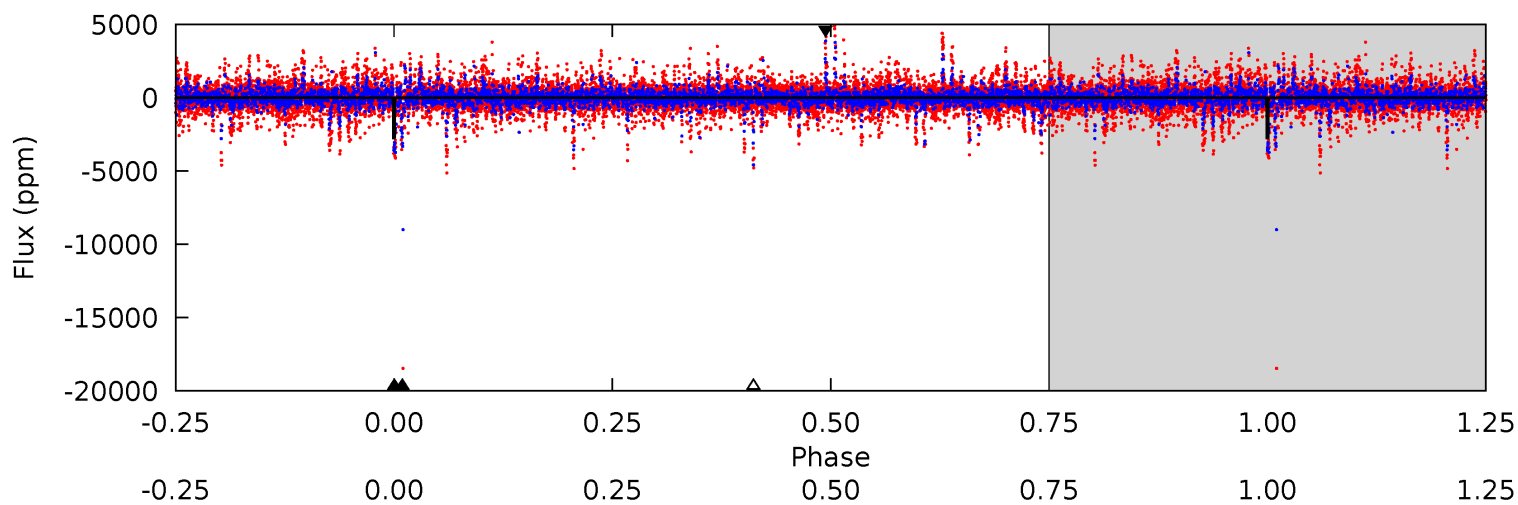
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.1	7.21	6.98	7.18	5.21	2.89	2.34	7.13	6.93	0.23	0.03	6.20	1.56	0.34	2.23



# Alt Model-Shift Uniqueness Test

007295373-03, P = 72.908262 Days, E = 121.402289 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
12.1	17.2	12.0	12.3	5.32	3.09	1.76	0.10	-0.20	5.13	4.82	9.74	1.58	0.42	0





### Stellar Parameters For KIC 007295373

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$4515^{+134}_{-134}$	$4.686^{+0.052}_{-0.032}$	$-0.840^{+0.300}_{-0.300}$	$0.558^{+0.044}_{-0.044}$	$0.550^{+0.049}_{-0.031}$	$4.468^{+1.036}_{-0.581}$
	+3%/-3%	+1%/-1%	+36%/-36%	+8%/-8%	+9%/-6%	+23%/-13%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 007295373-03 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-643 \pm 89$	$3.69^{+3.67}_{-2.38}$	$391^{+12}_{-14}$	$3352^{+1455}_{-612}$	$2082^{+13720}_{-1573}$
Alt.	$-3863 \pm 225$	$4.58^{+4.21}_{-2.90}$	$391^{+14}_{-14}$	$4180^{+2317}_{-815}$	$7970^{+50984}_{-5776}$

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

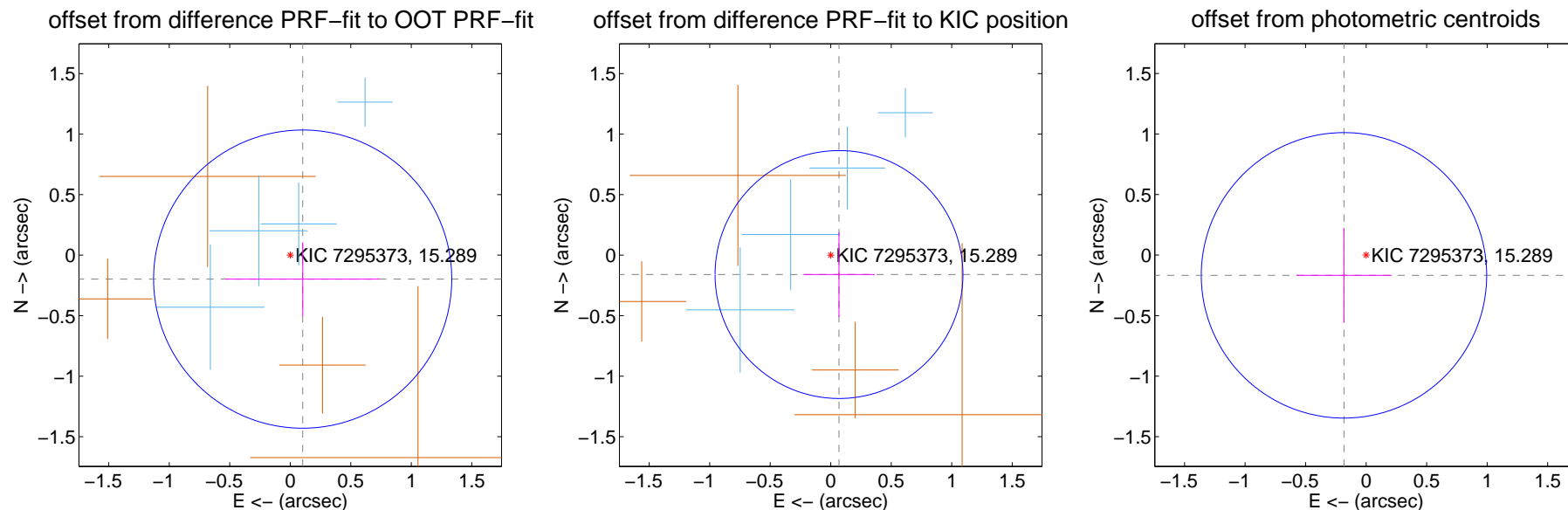
## DV Centroid Data

Supplemental centroid analysis for 007295373-03. Kepler magnitude: 15.29. Transit SNR 7.26

There are 4 quarters with good PRF difference image offsets

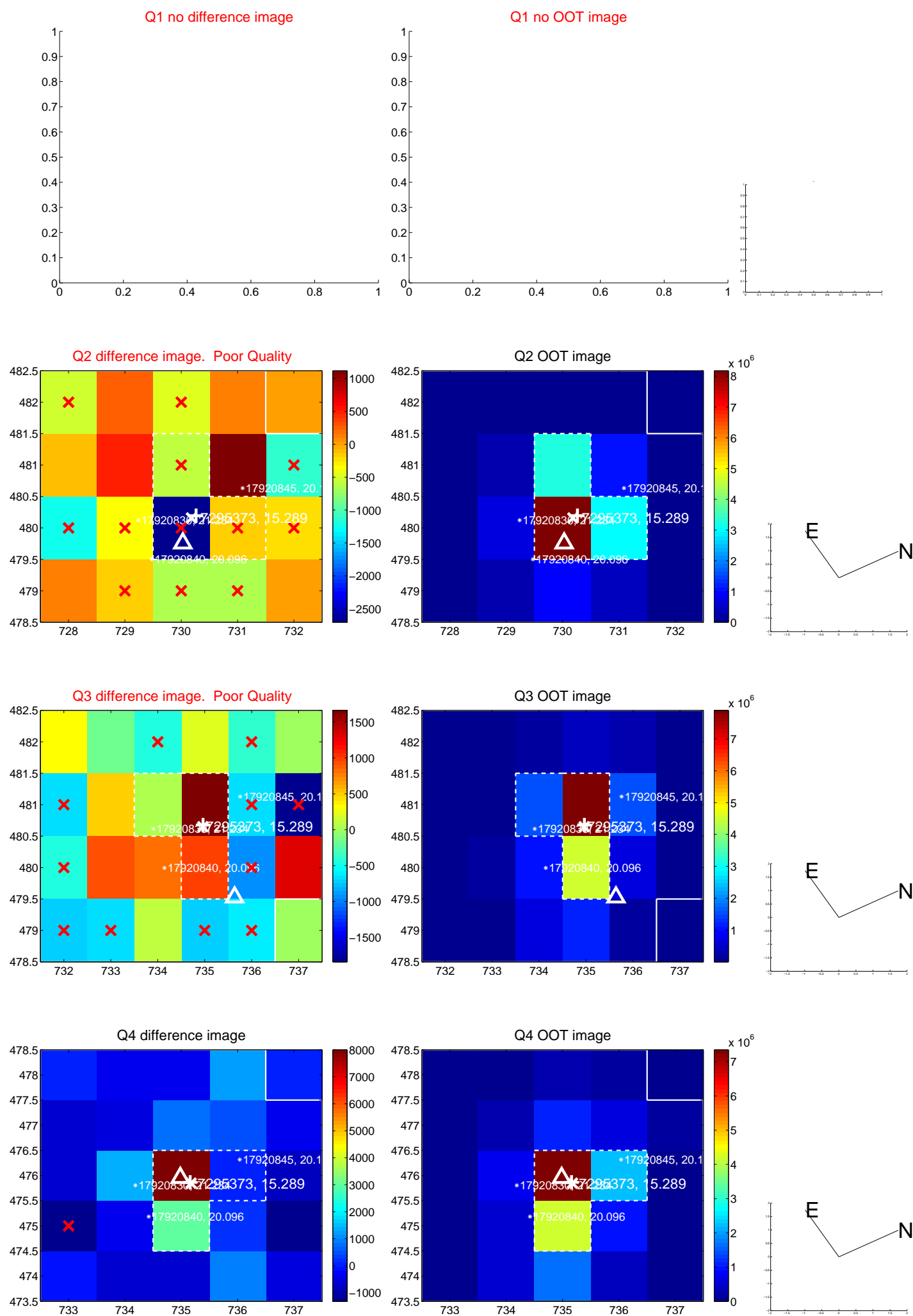
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.223 \pm 0.411$	0.54	$-0.102 \pm 0.637$	$-0.198 \pm 0.305$
PRF-fit source offset from KIC position	$0.174 \pm 0.341$	0.51	$-0.069 \pm 0.295$	$-0.160 \pm 0.349$
photometric centroid source offset	$0.25 \pm 0.39$	0.63	$0.18 \pm 0.39$	$-0.17 \pm 0.39$

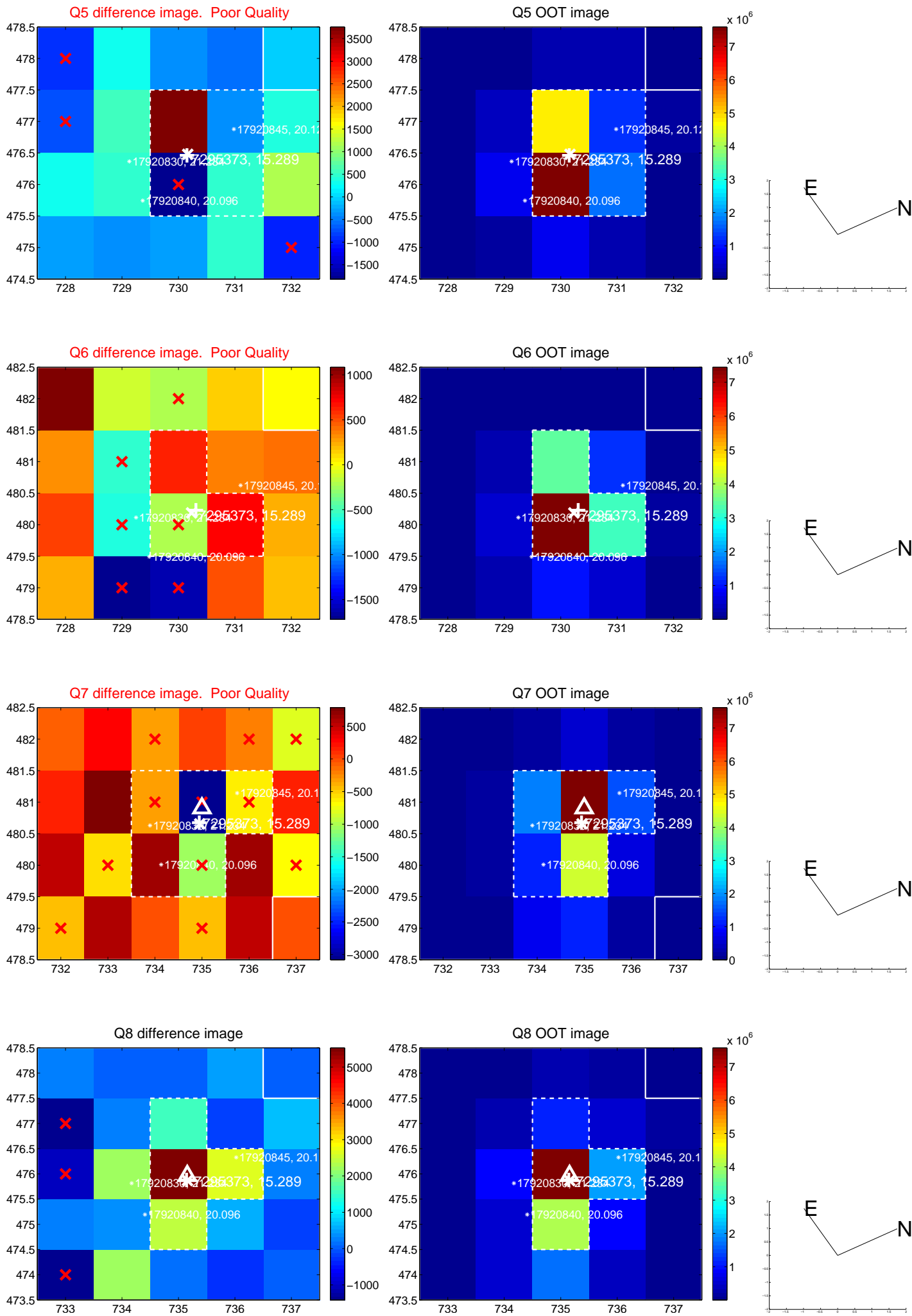


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

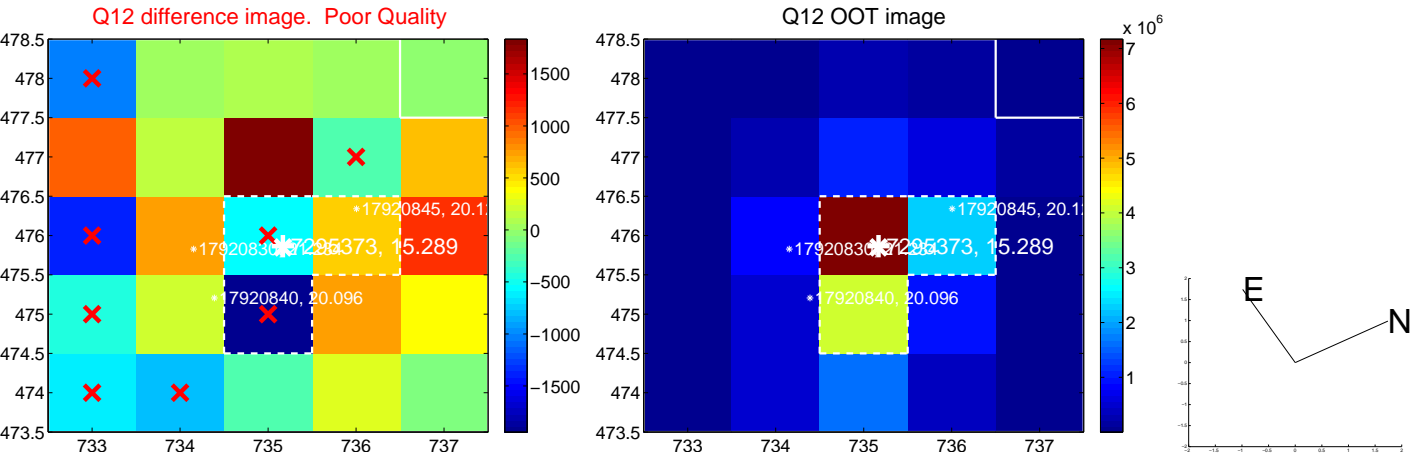
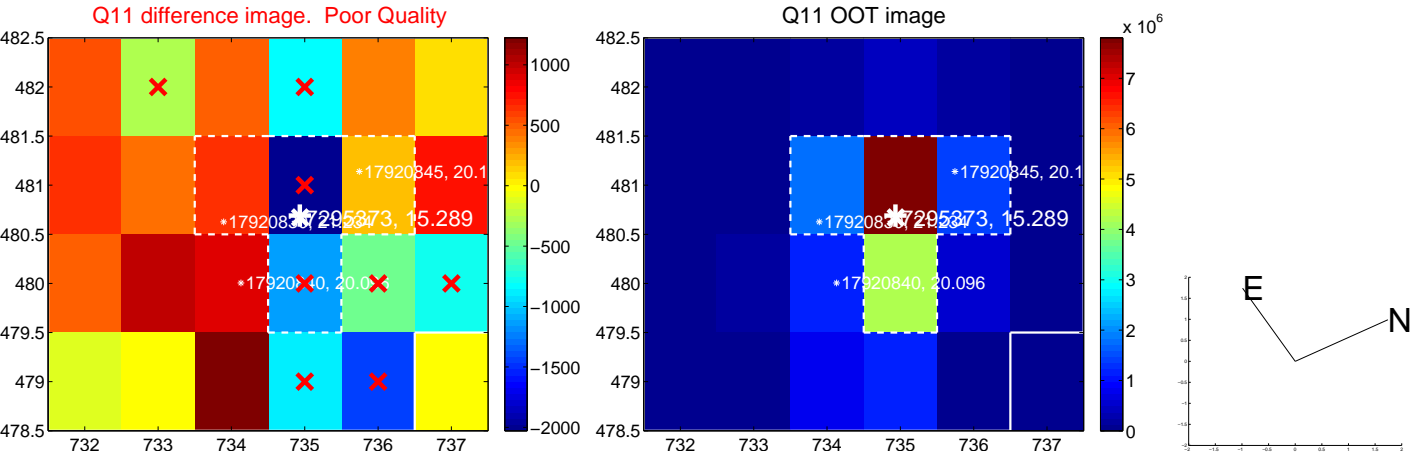
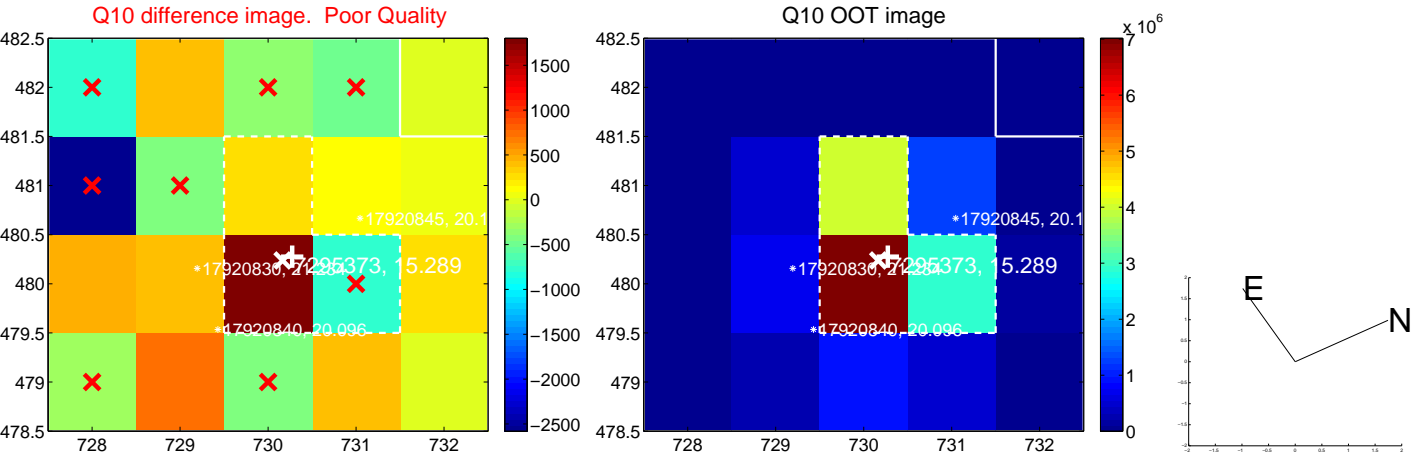
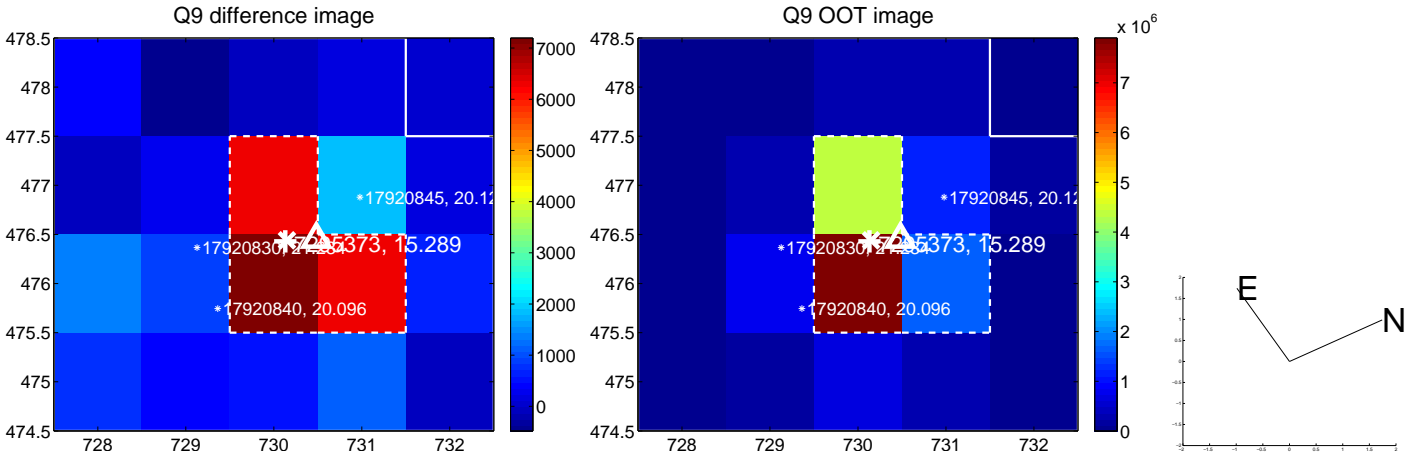
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



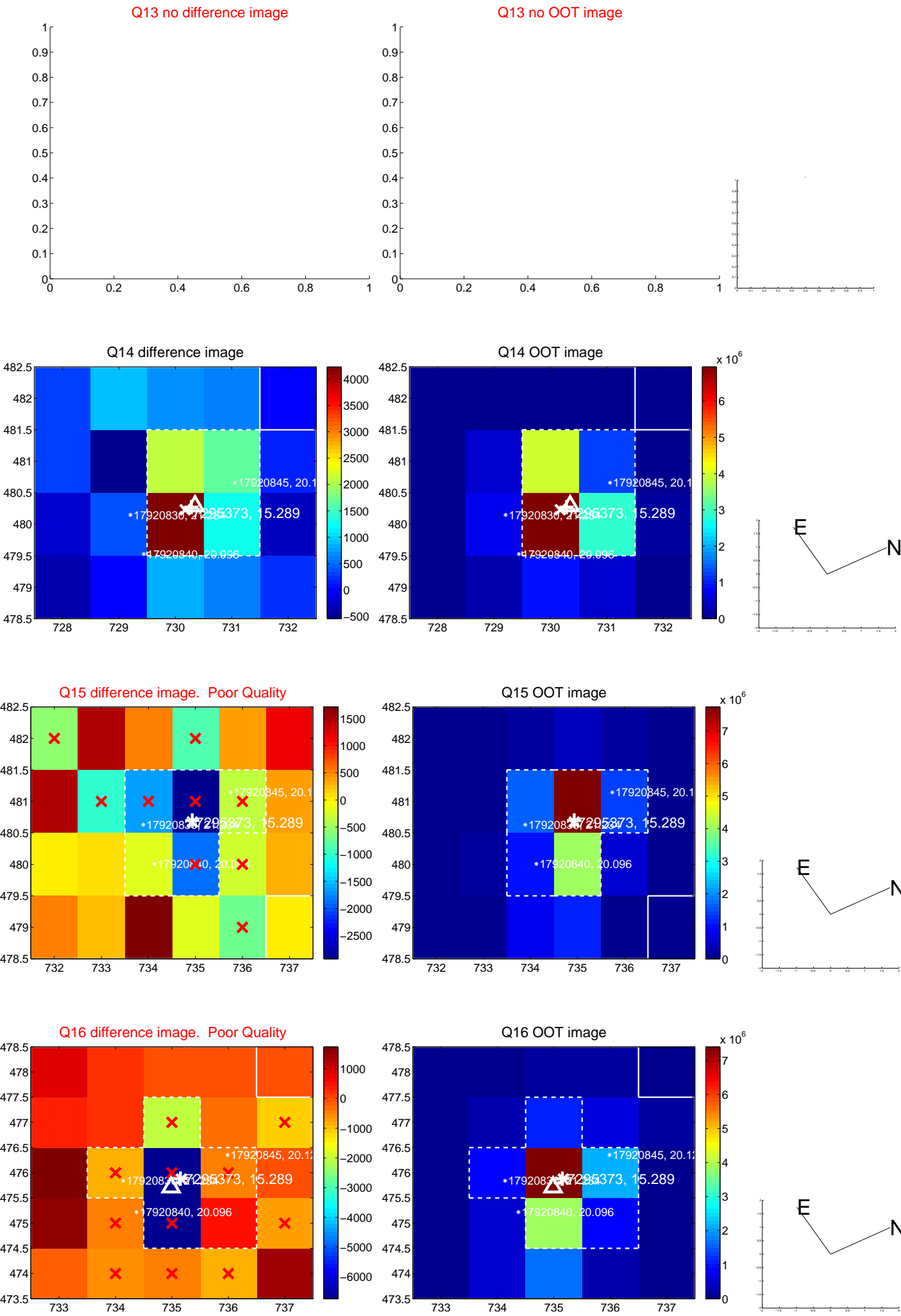
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



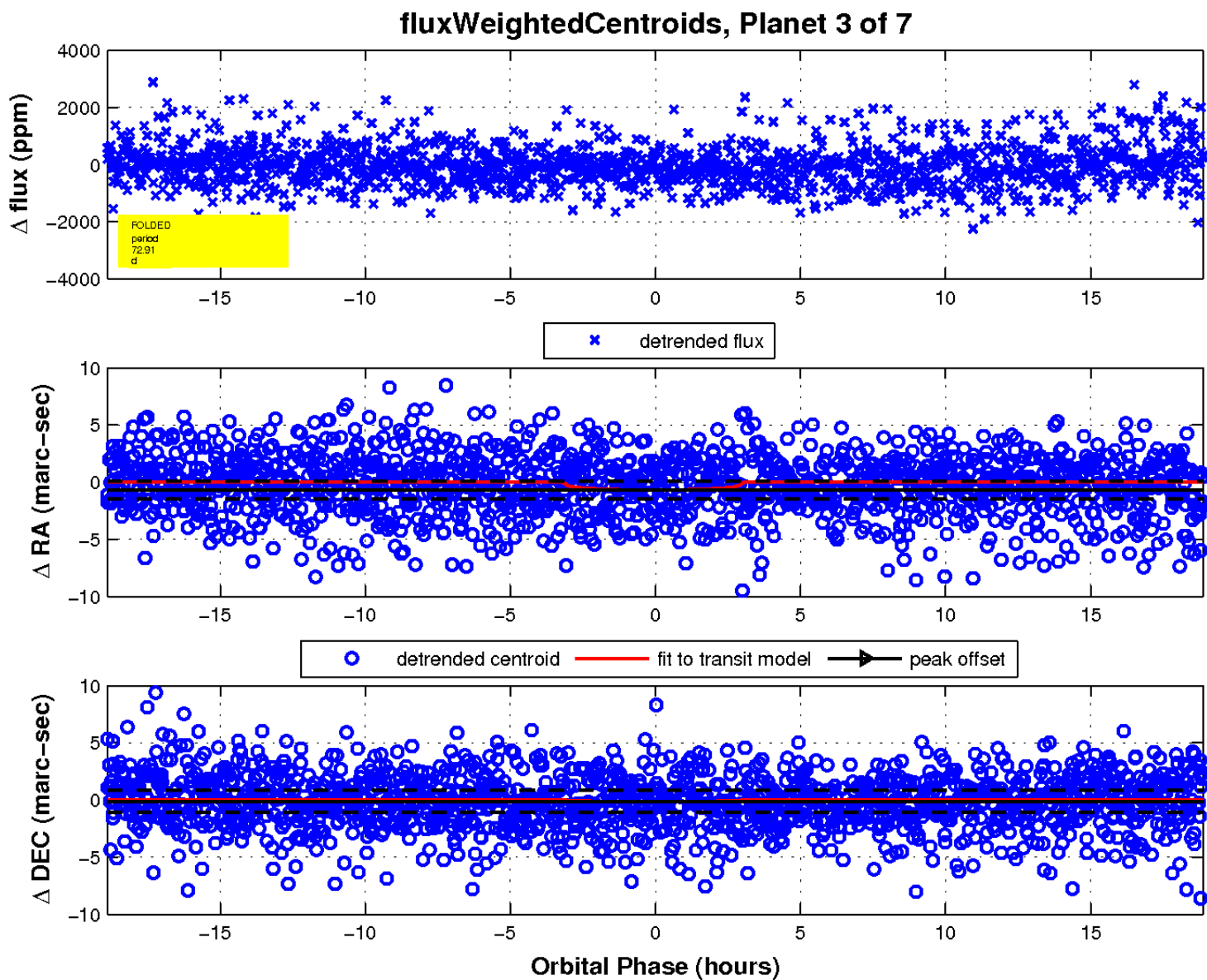
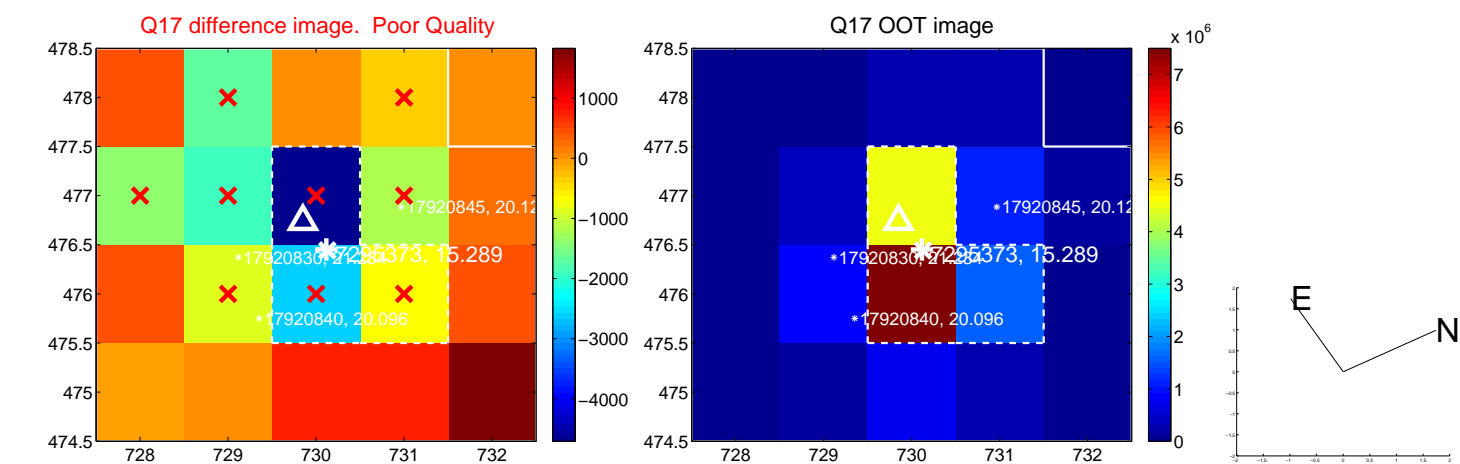
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

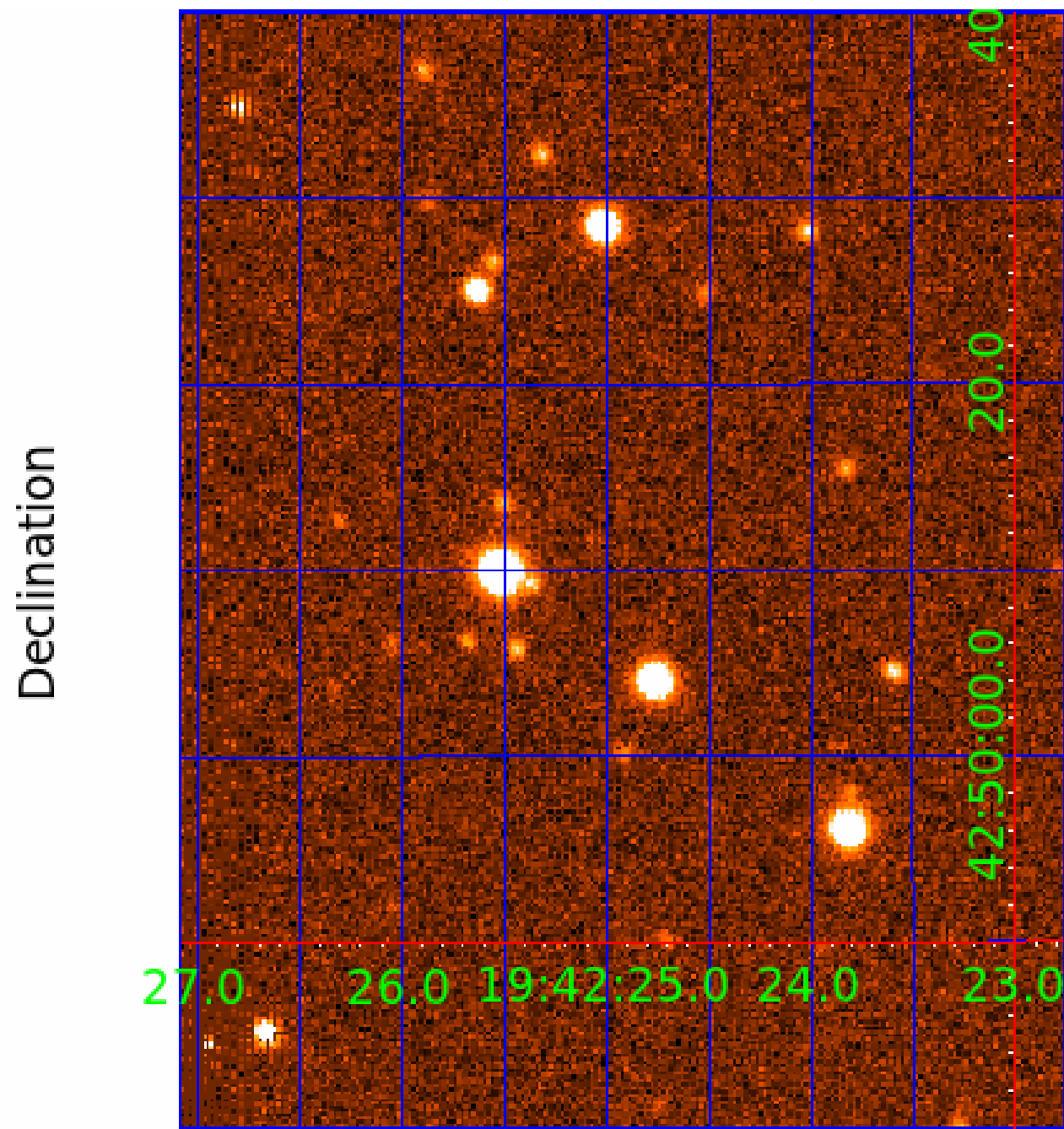


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





UKIRT Image



# KIC 007295373

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007295373-01	OBS	No	0.750453	131.747528	63.7	4.275	8.6	10.8	0.56	4515	0.47	659.96
007295373-02	OBS	No	72.757434	196.072419	440.8	5.985	20.3	3.2	0.56	4515	1.26	1.48
007295373-03	OBS	No	72.909455	194.314739	1221.7	6.313	15.0	7.3	0.56	4515	1.92	1.48
007295373-05	OBS	No	75.715127	182.112979	1118.5	10.598	11.9	6.2	0.56	4515	3.74	1.41
007295373-06	OBS	No	522.296806	188.433994	2597.8	8.087	12.0	10.3	0.56	4515	3.42	0.11

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007295373-01	OBS	FP	0.00	1	0	0	0	LPP_DV
007295373-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
007295373-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_TER_ALT—MOD_POS_ALT
007295373-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007295373-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

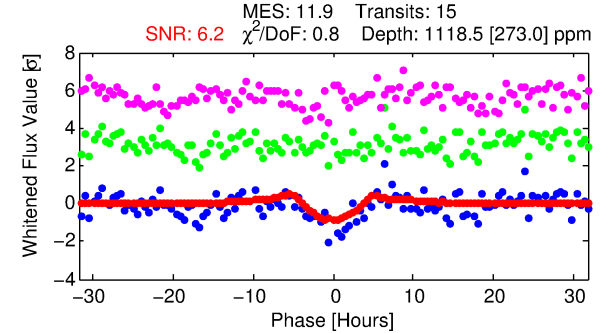
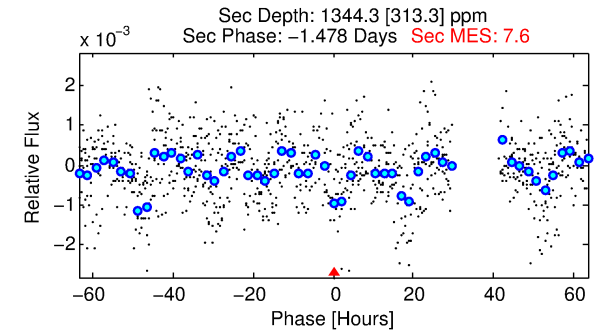
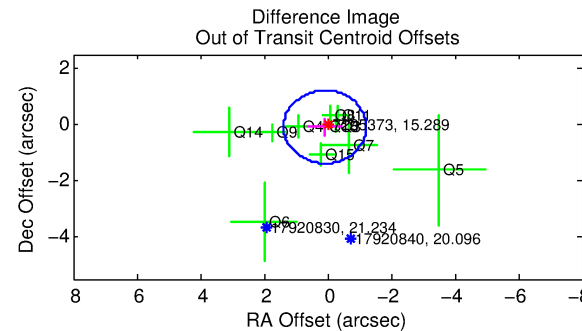
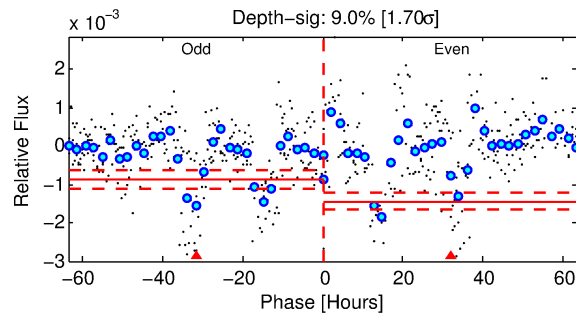
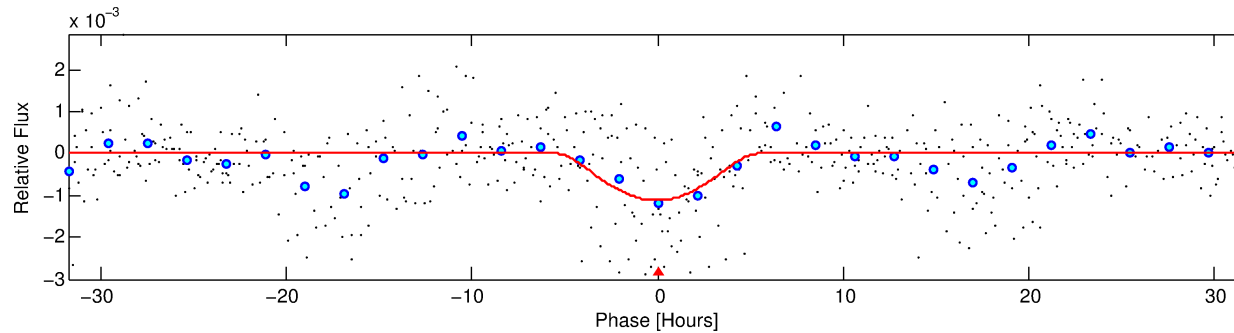
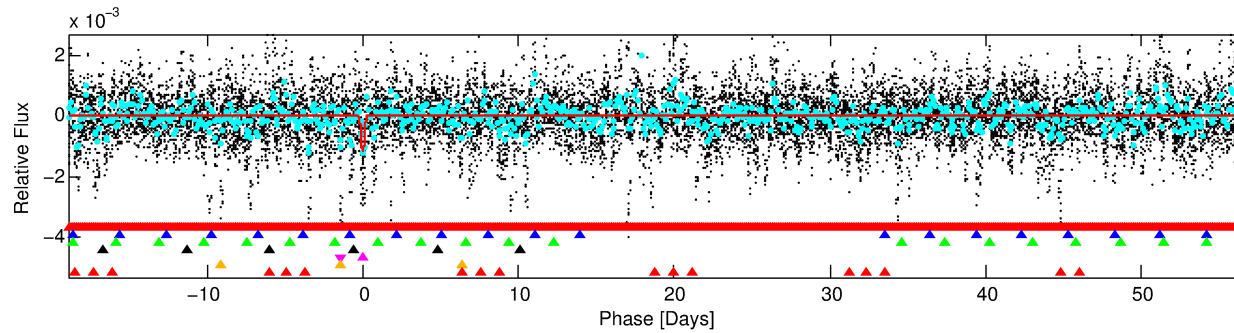
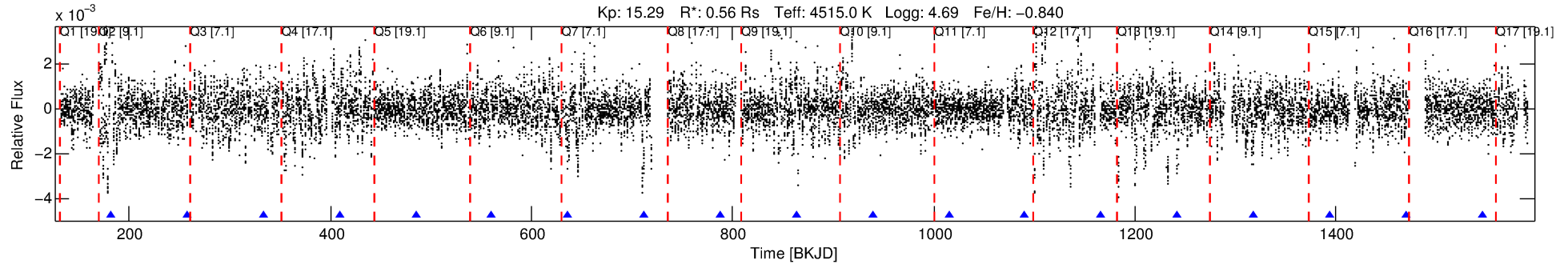
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007295373-05

No Significant Match Found

# DV One-Page Summary

KIC: 7295373 Candidate: 5 of 7 Period: 75.715 d



## DV Fit Results:

Period = 75.71513 [0.00286] d  
Epoch = 182.1130 [0.0310] BKJD  
Rp/R\* = 0.0614 [0.1775]  
a/R\* = 19.63 [12.83]  
b = 1.00 [0.26]  
Seff = 1.41 [0.21]  
Teq = 278 [11] K  
Rp = 3.74 [10.81] Re  
a = 0.2872 [0.0190] AU  
Ag = 4367.47 [25282.69] [0.17 $\sigma$ ]  
Teffp = 3489 [5050] K [0.64 $\sigma$ ]

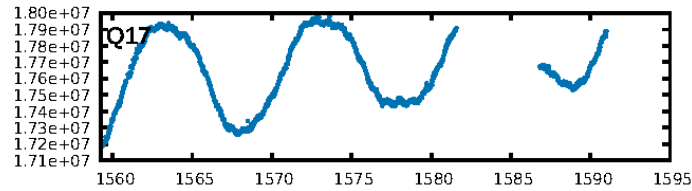
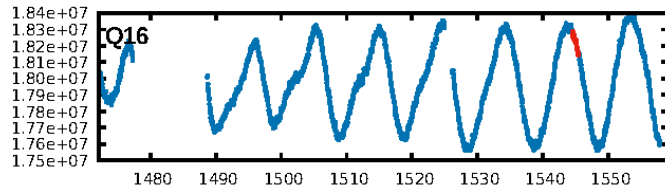
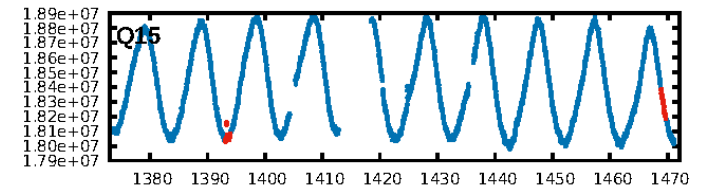
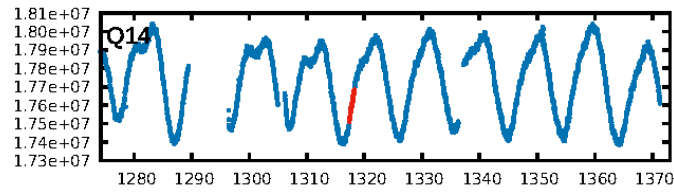
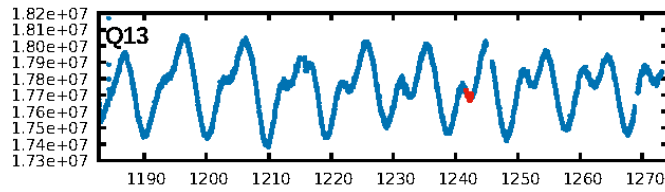
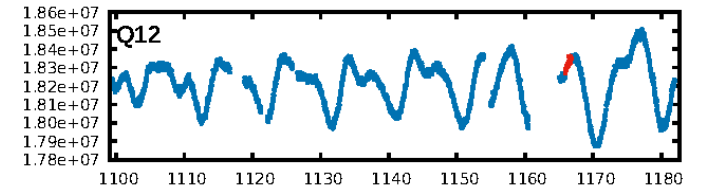
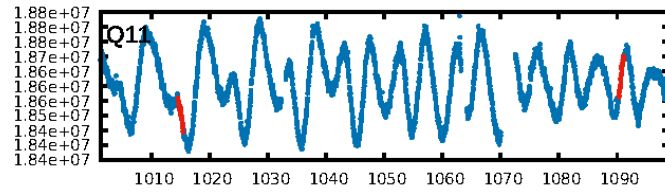
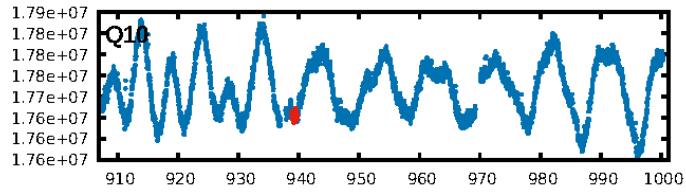
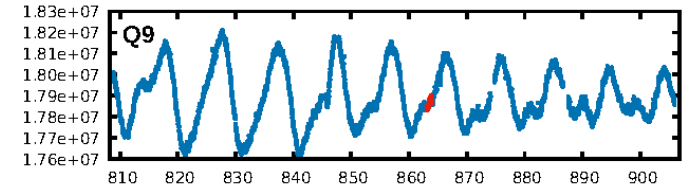
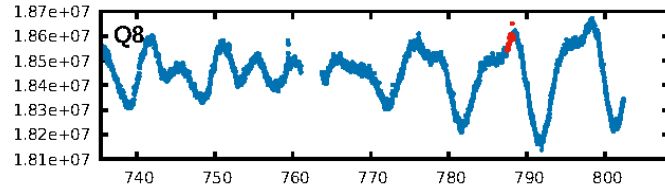
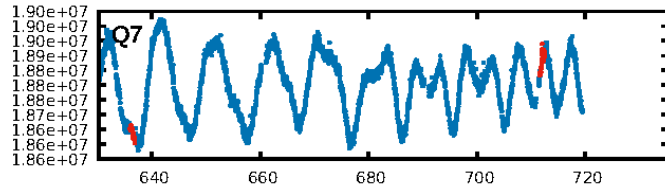
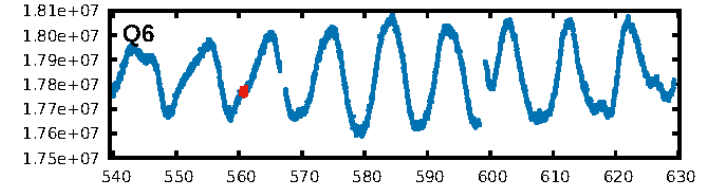
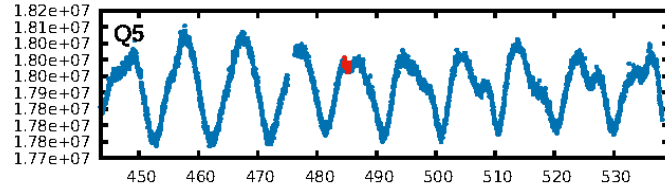
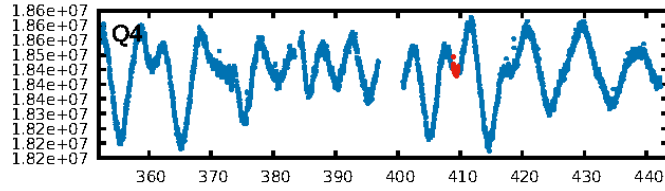
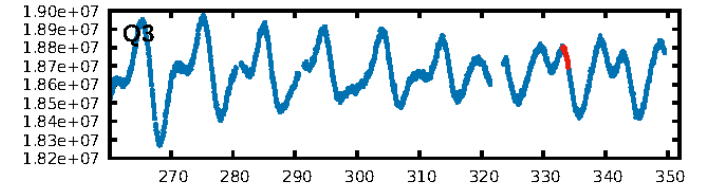
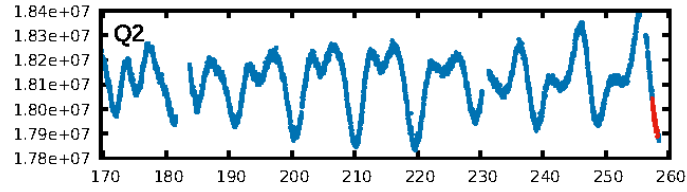
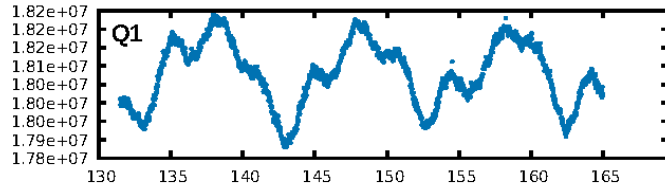
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [5.46 $\sigma$ ]  
LongPeriod-sig: 100.0% [23.88 $\sigma$ ]  
ModelChiSquare2-sig: 0.1%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 3.10e-19  
RollingBand-fgt: 1.00 [15/15]  
GhostDiagnostic-chr: 0.9841  
Centroid-sig: 6.3%  
Centroid-so: 0.354 arcsec [0.73 $\sigma$ ]  
OotOffset-rm: 0.121 arcsec [0.28 $\sigma$ ]  
KicOffset-rm: 0.178 arcsec [0.41 $\sigma$ ]  
OotOffset-st: 2/4/3/2 [11]  
KicOffset-st: 2/4/3/2 [11]  
DiffImageQuality-fgm: 0.18 [2/11]  
DiffImageOverlap-fno: 0.00 [0/11]

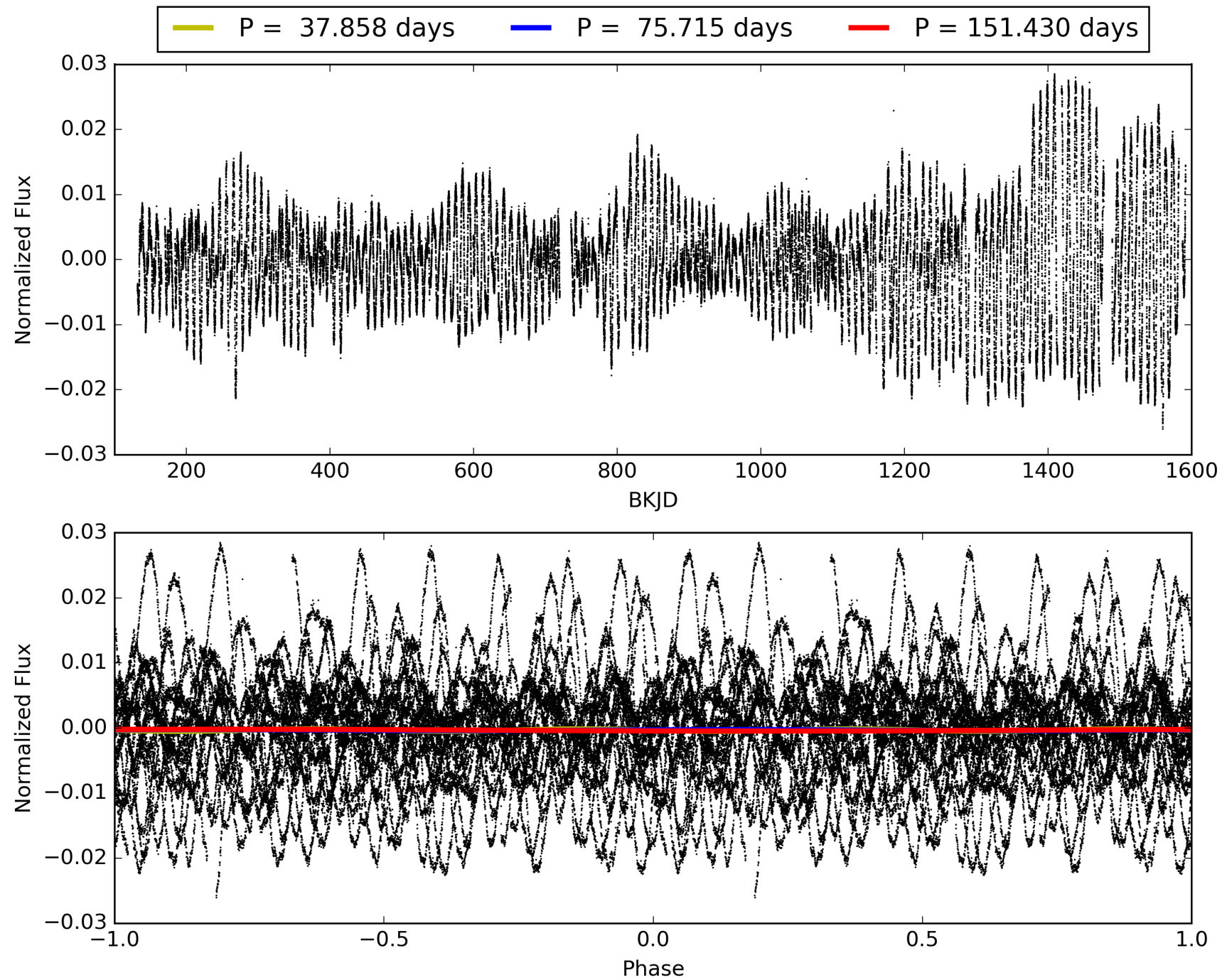
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 02:27:46 Z

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

# TCE 007295373-05, PDC Light Curves

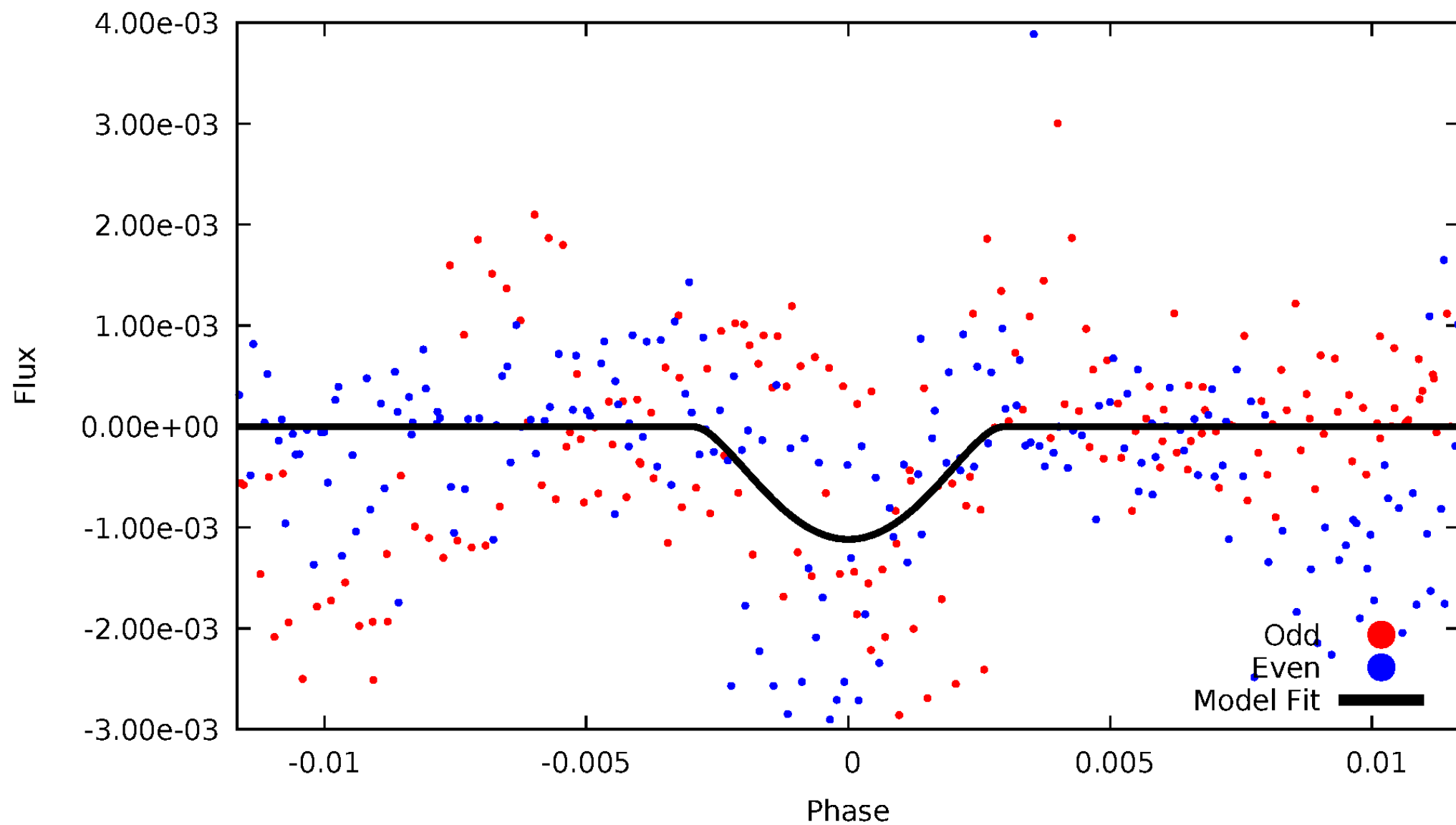


# TCE 007295373-05



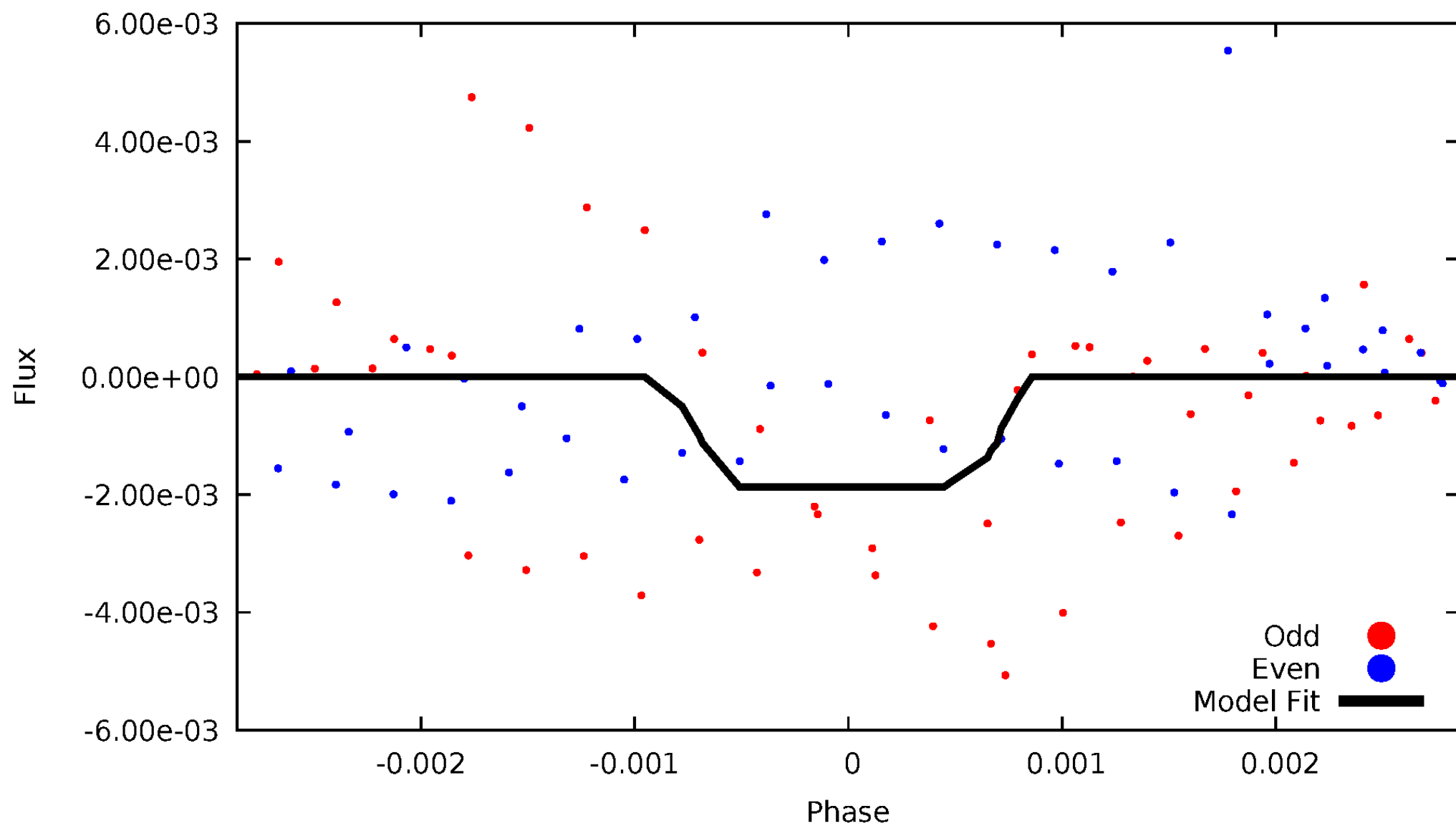
# DV Odd/Even

TCE 007295373-05



# ALT Odd/Even

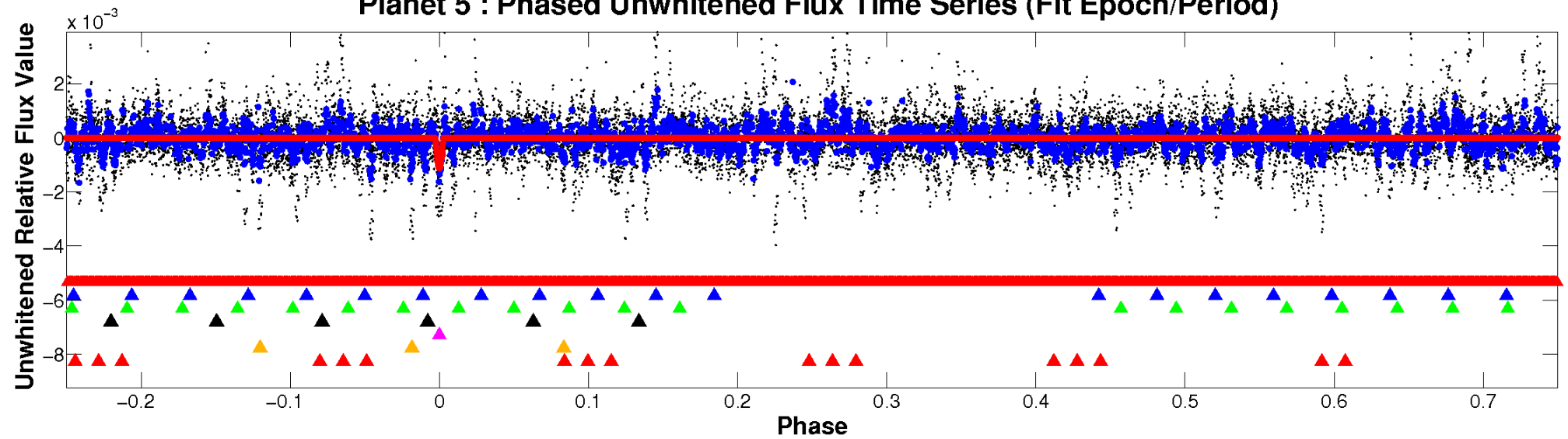
TCE 007295373-05



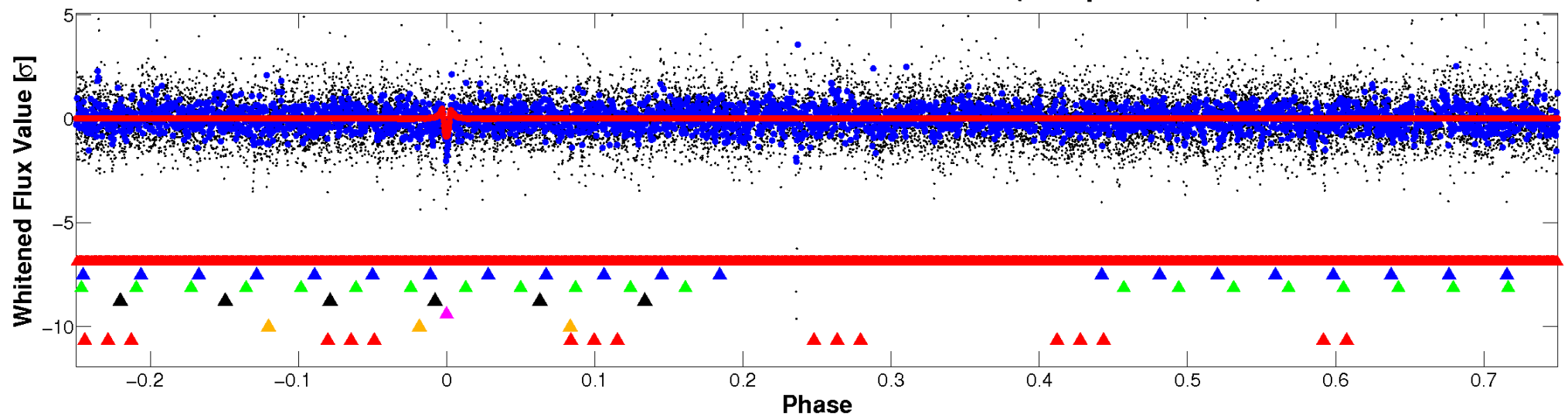


# Non-Whitened Vs. Whitened Light Curve

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

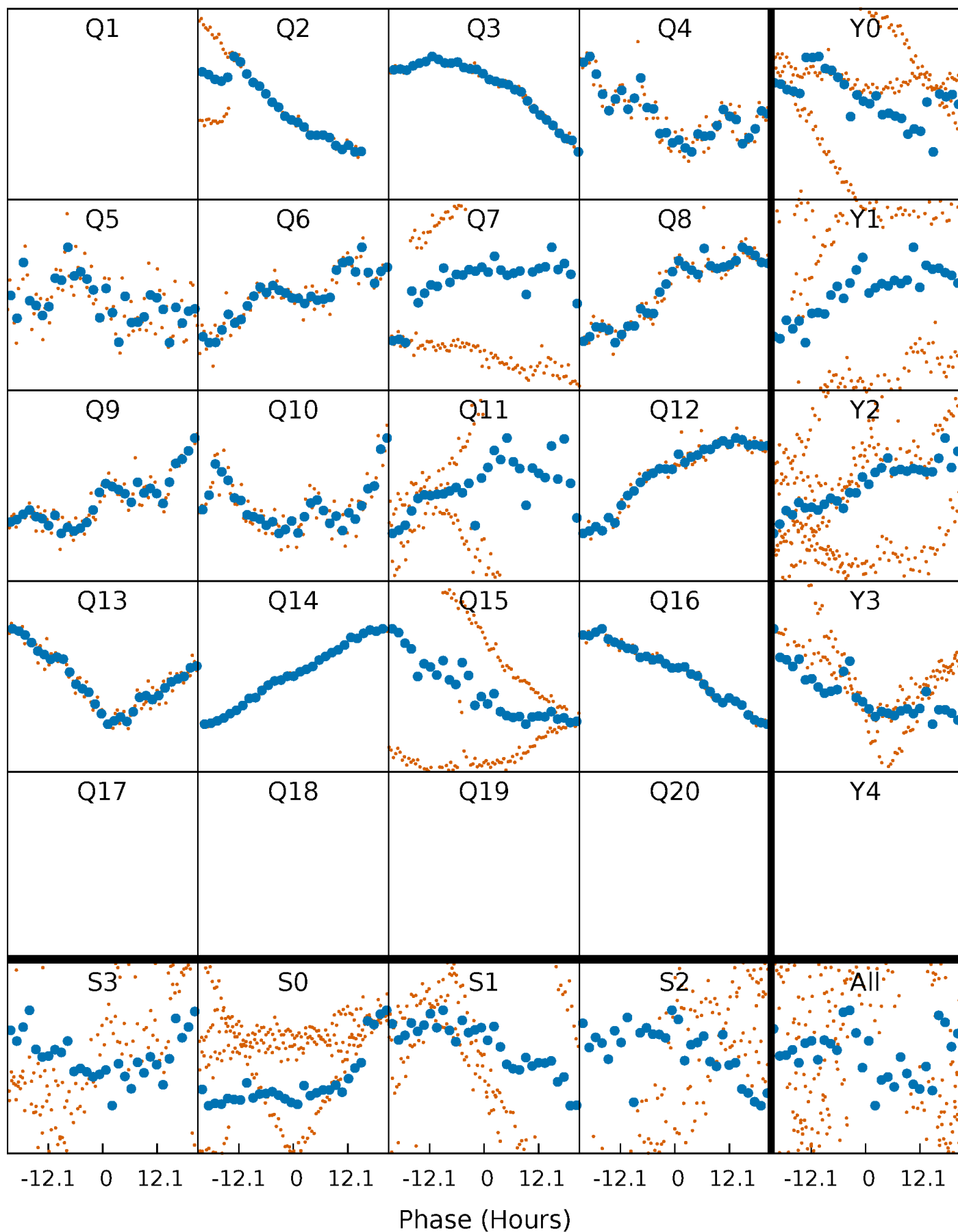


## Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



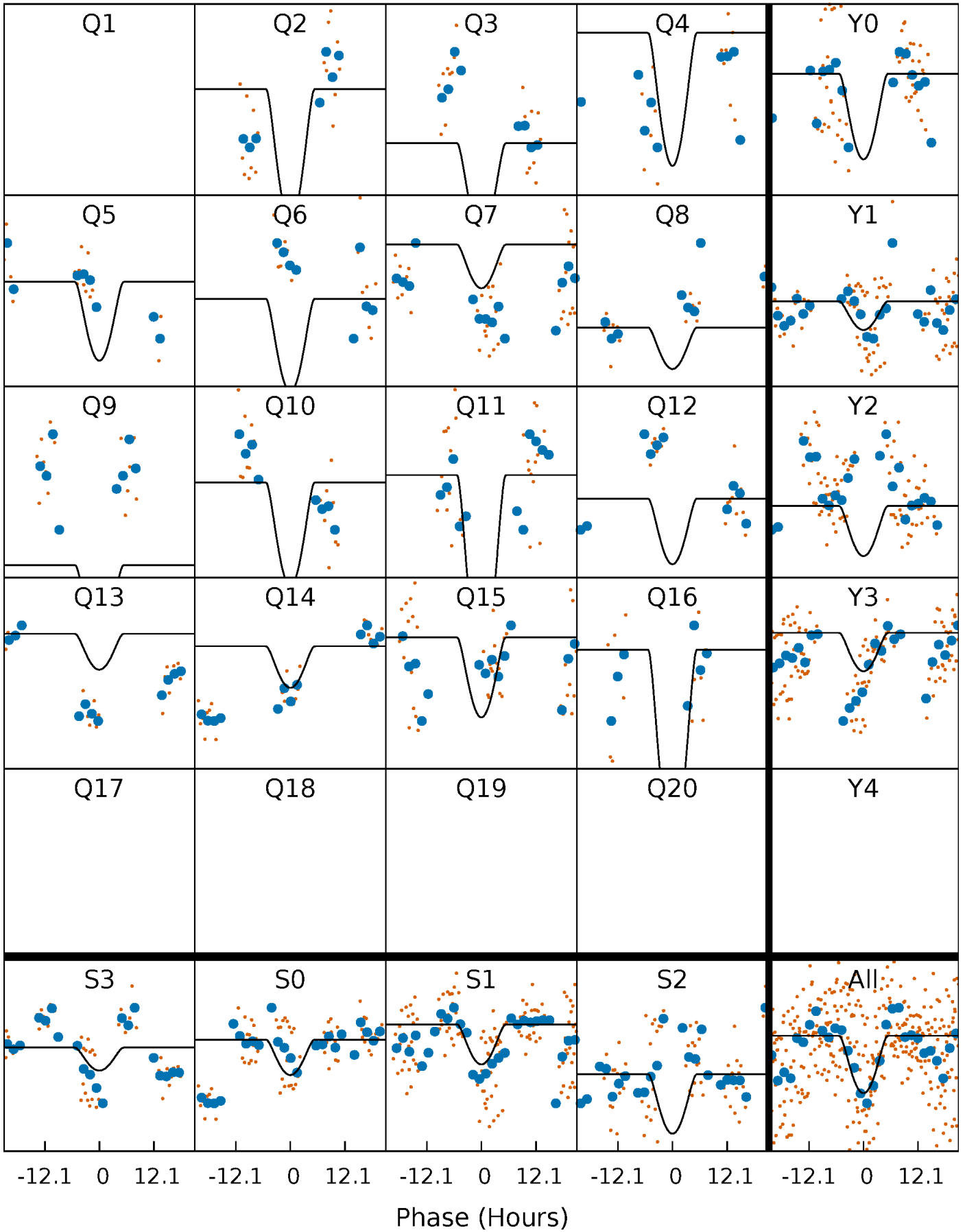
# PDC Quarter-Phased Transit Curves

TCE 007295373-05   P= 75.715127 Days    $T_0=182.112979$  (BKJD)



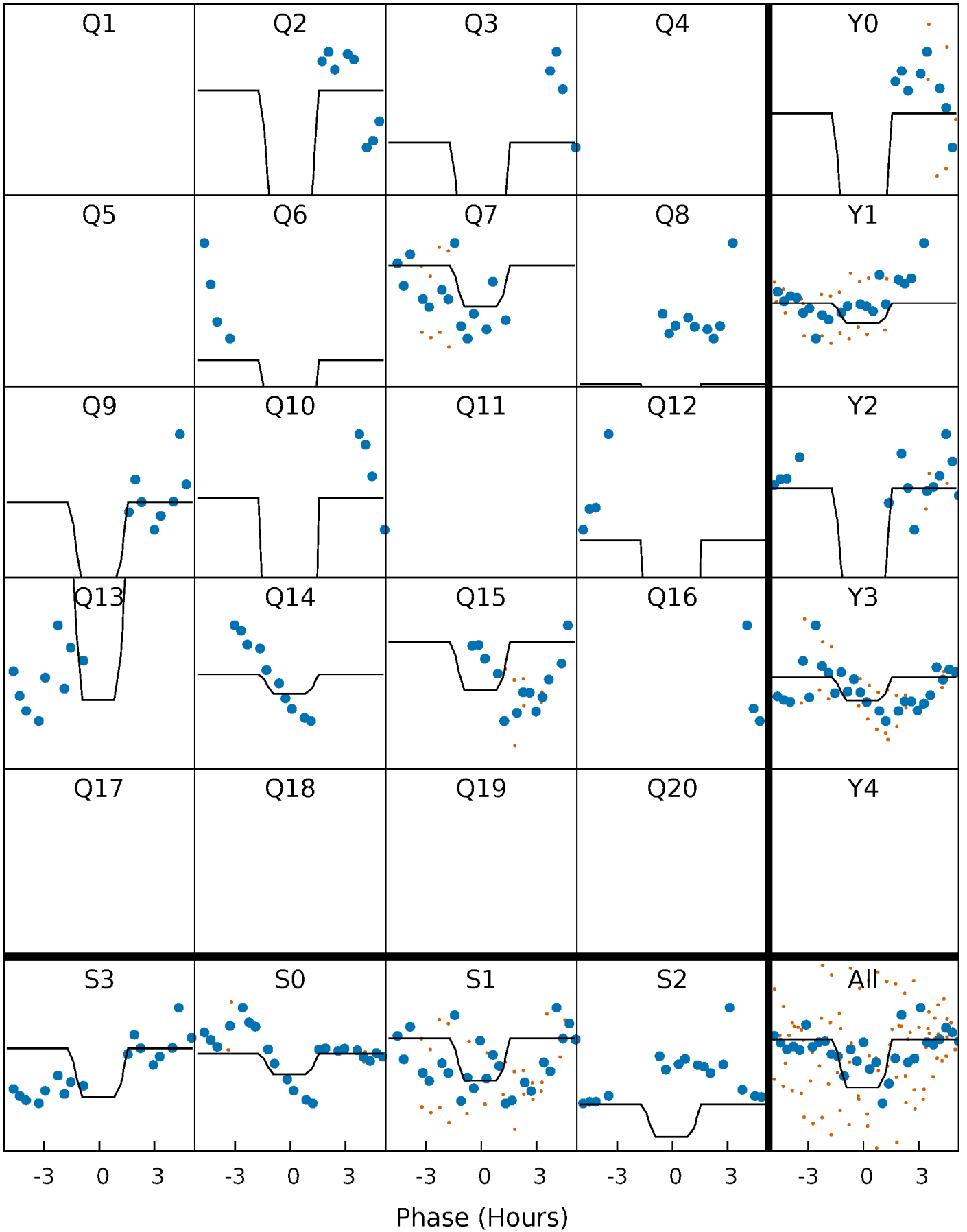
# DV Quarter-Phased Transit Curves

TCE 007295373-05   P= 75.715127 Days    $T_0=182.112979$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

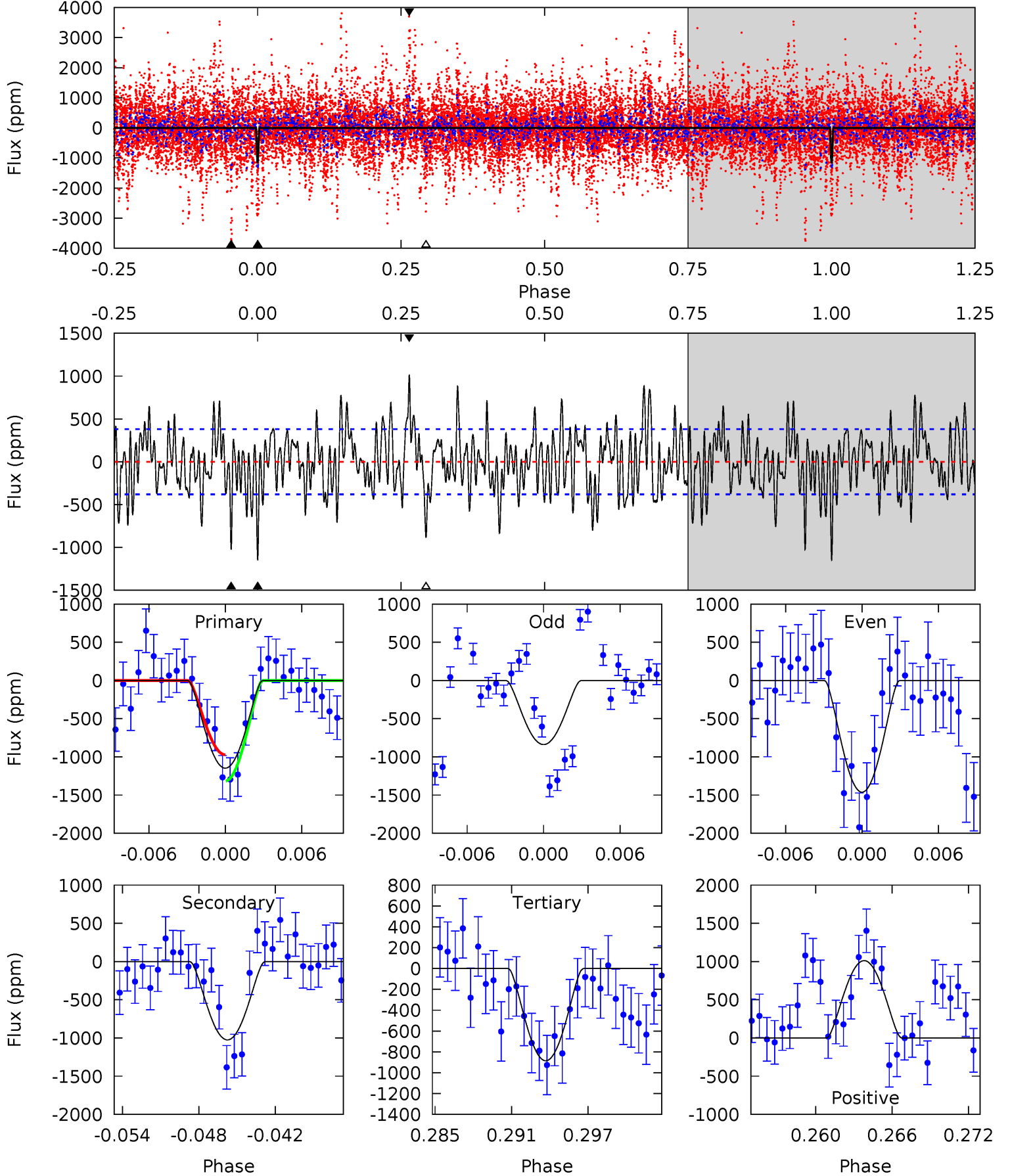
TCE 007295373-05     $P = 75.701715$  Days     $T_0 = 182.353798$  (BKJD)



# DV Model-Shift Uniqueness Test

007295373-05, P = 75.715127 Days, E = 106.397852 Days

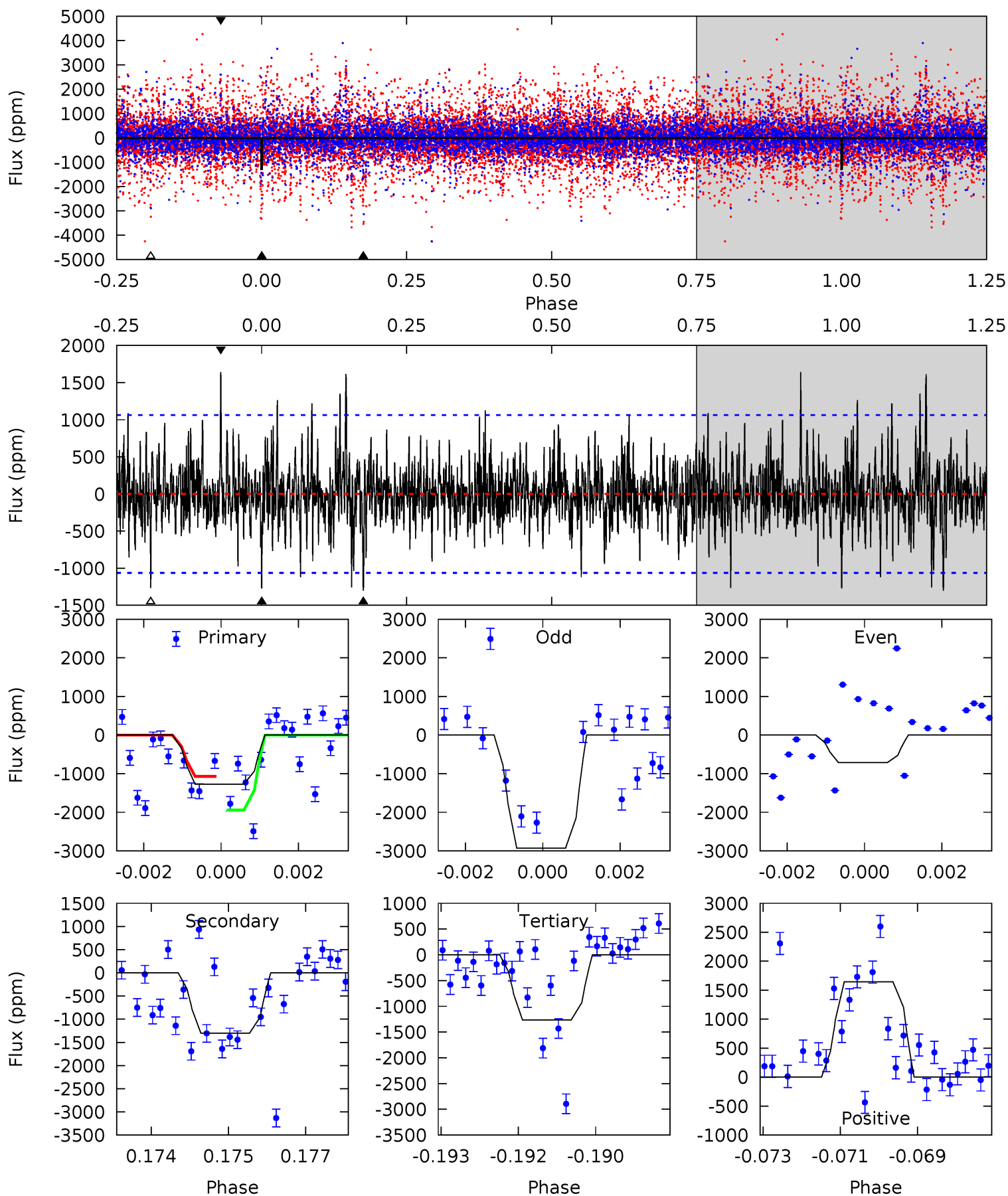
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.4	13.8	11.9	13.6	5.12	2.74	4.19	3.53	1.83	1.89	0.19	4.08	0.24	0.47	2.31



# Alt Model-Shift Uniqueness Test

007295373-05,  $P = 75.701715$  Days,  $E = 106.652083$  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
6.44	6.59	6.41	8.32	5.38	3.17	1.61	0.03	-1.88	0.18	-1.73	5.45	0.62	0.56	2.27



### Stellar Parameters For KIC 007295373

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$4515^{+134}_{-134}$	$4.686^{+0.052}_{-0.032}$	$-0.840^{+0.300}_{-0.300}$	$0.558^{+0.044}_{-0.044}$	$0.550^{+0.049}_{-0.031}$	$4.468^{+1.036}_{-0.581}$
	+3%/-3%	+1%/-1%	+36%/-36%	+8%/-8%	+9%/-6%	+23%/-13%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 007295373-05 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-1025 \pm 74$	$9.10^{+8.19}_{-6.09}$	$386^{+13}_{-14}$	$2783^{+1079}_{-427}$	$557^{+4550}_{-398}$
Alt.	$-1301 \pm 198$	$8.69^{+8.18}_{-5.87}$	$386^{+14}_{-13}$	$2902^{+1197}_{-472}$	$815^{+6889}_{-604}$

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



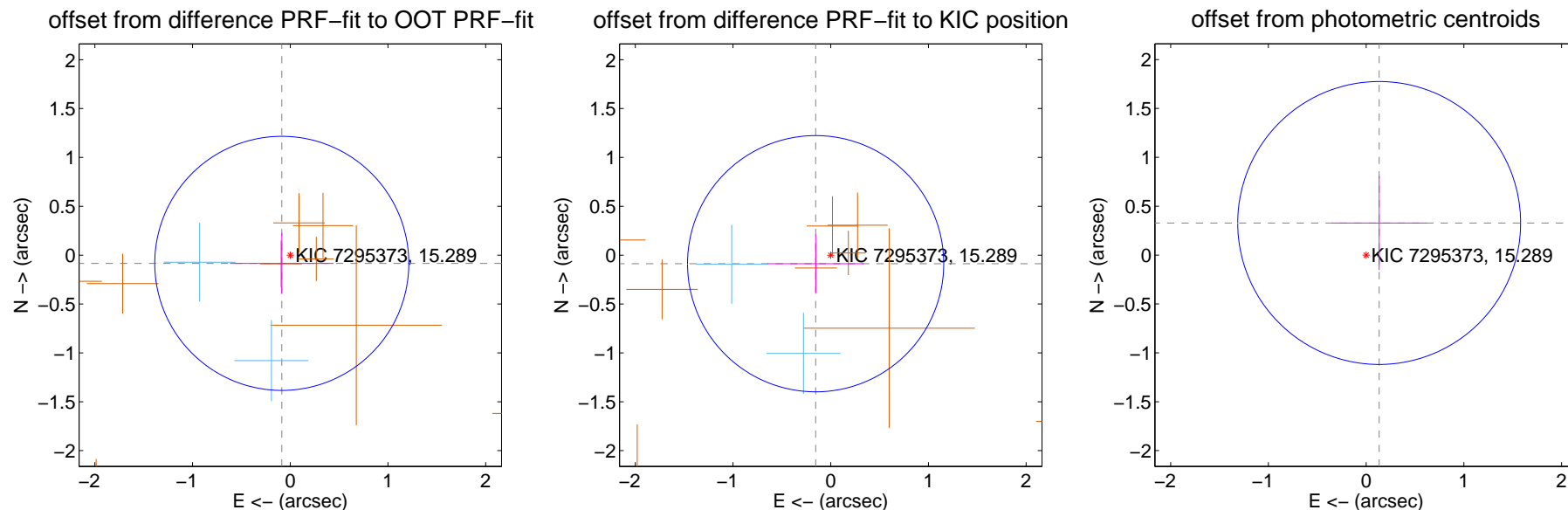
## DV Centroid Data

Supplemental centroid analysis for 007295373-05. Kepler magnitude: 15.29. Transit SNR 6.22

There are 2 quarters with good PRF difference image offsets

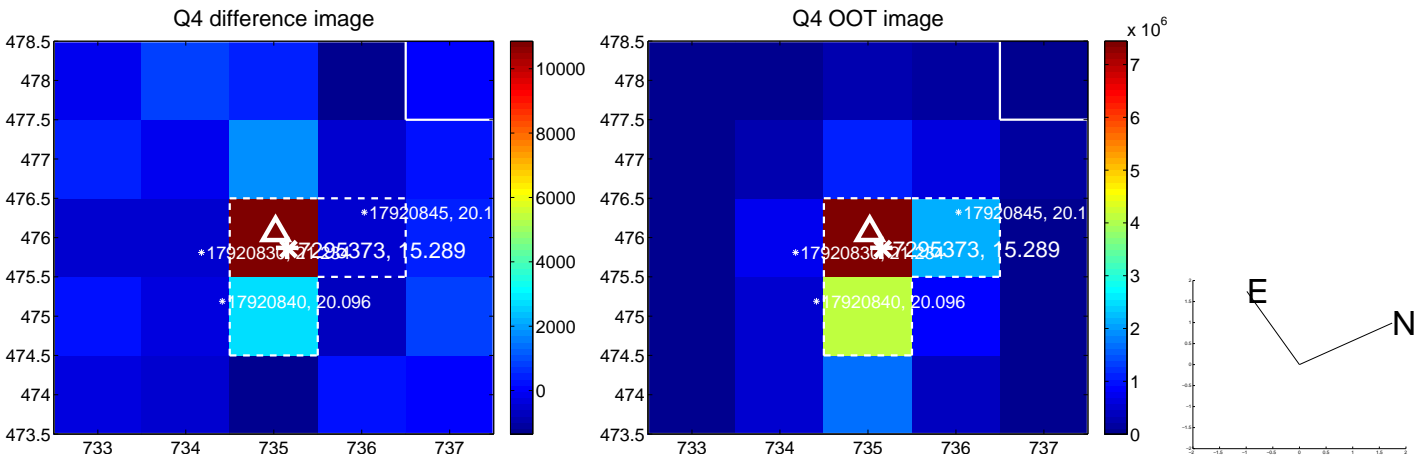
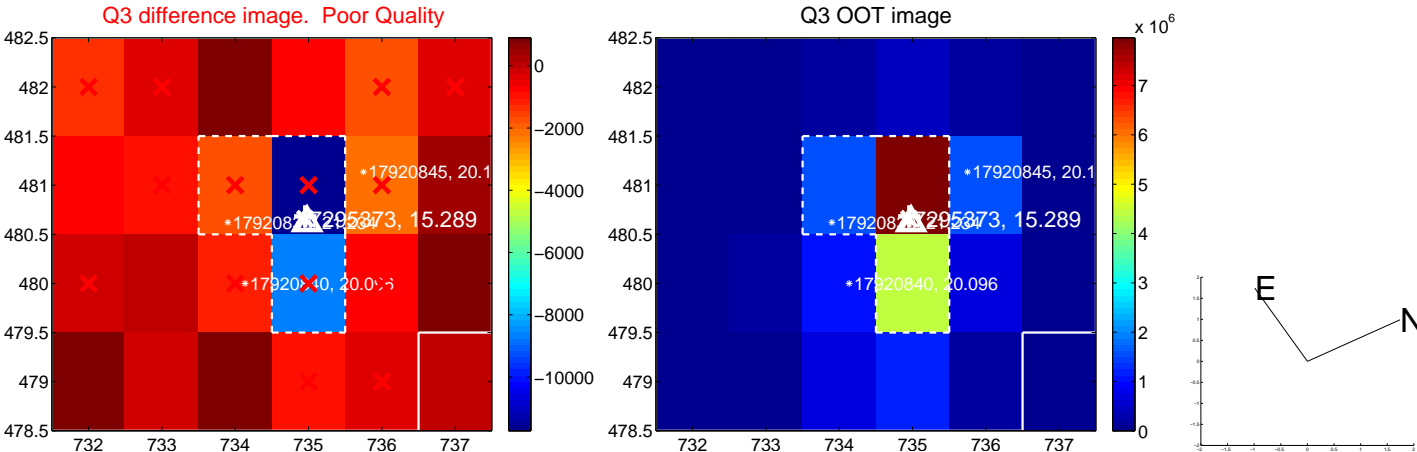
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.121 \pm 0.433$	0.28	$0.087 \pm 0.529$	$-0.084 \pm 0.312$
PRF-fit source offset from KIC position	$0.178 \pm 0.437$	0.41	$0.154 \pm 0.492$	$-0.088 \pm 0.297$
photometric centroid source offset	$0.35 \pm 0.48$	0.73	$-0.13 \pm 0.49$	$0.33 \pm 0.48$

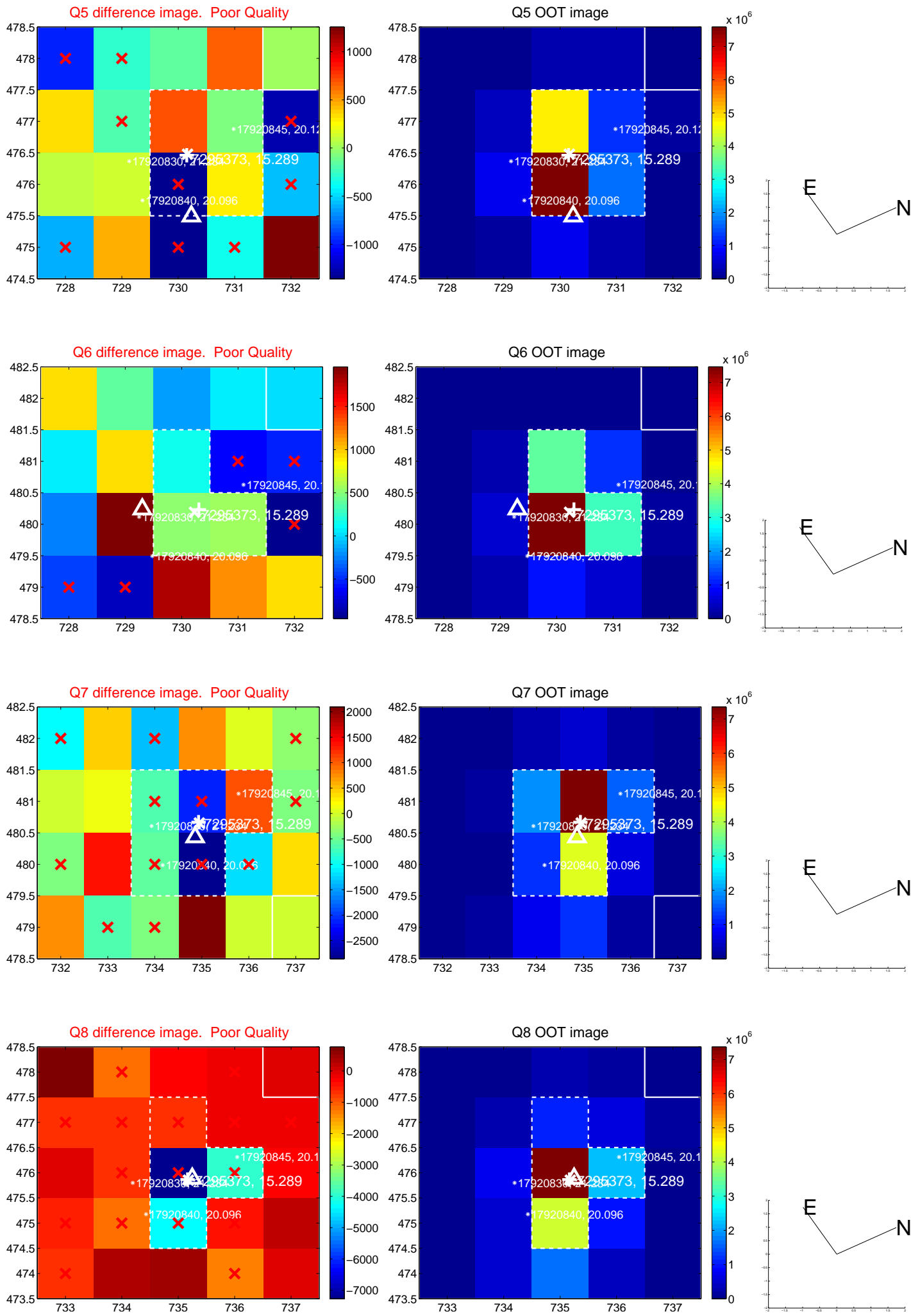


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

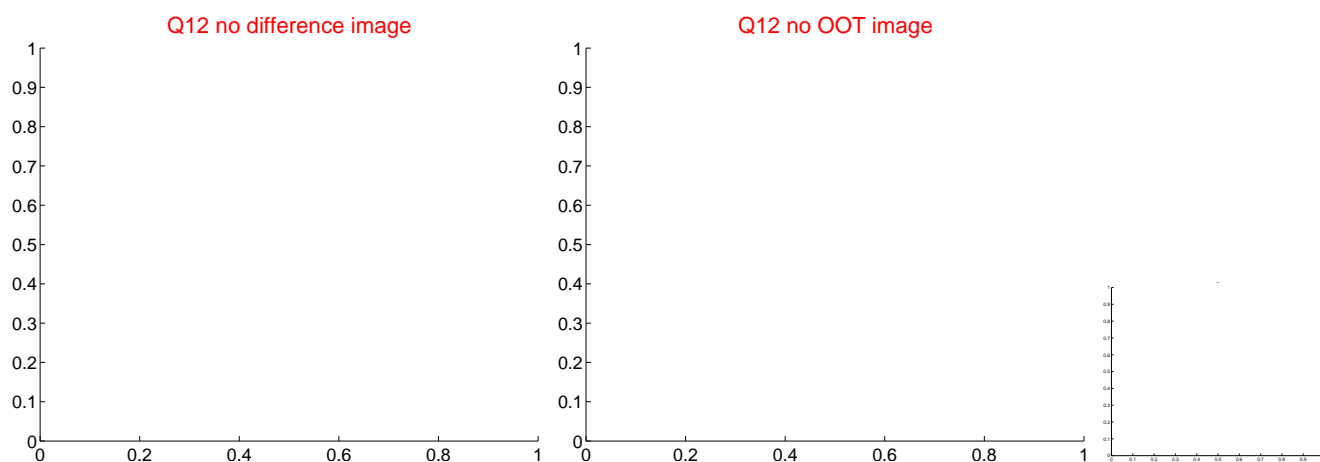
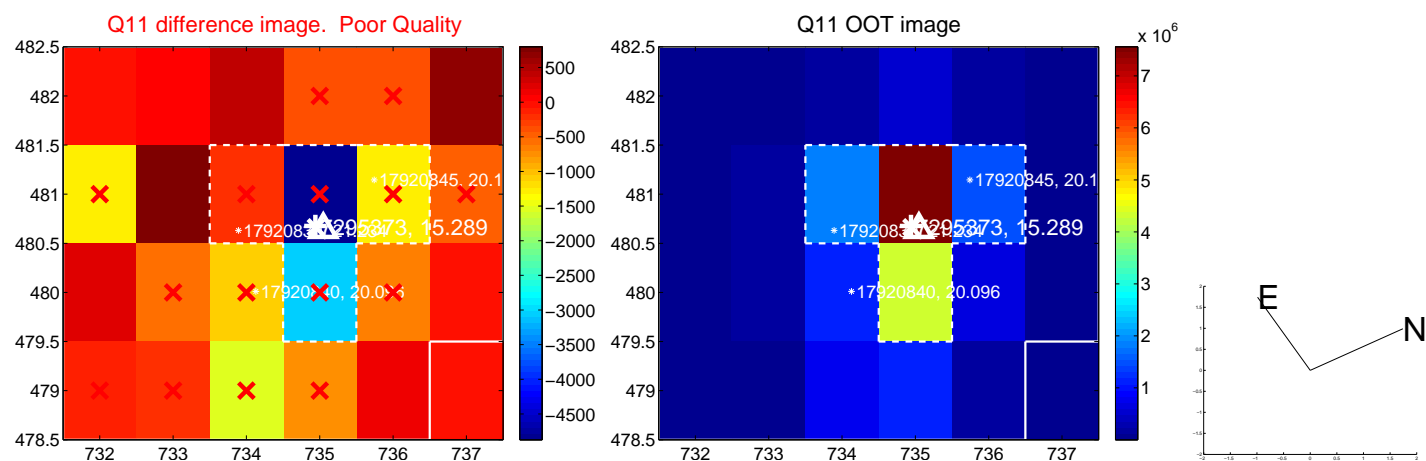
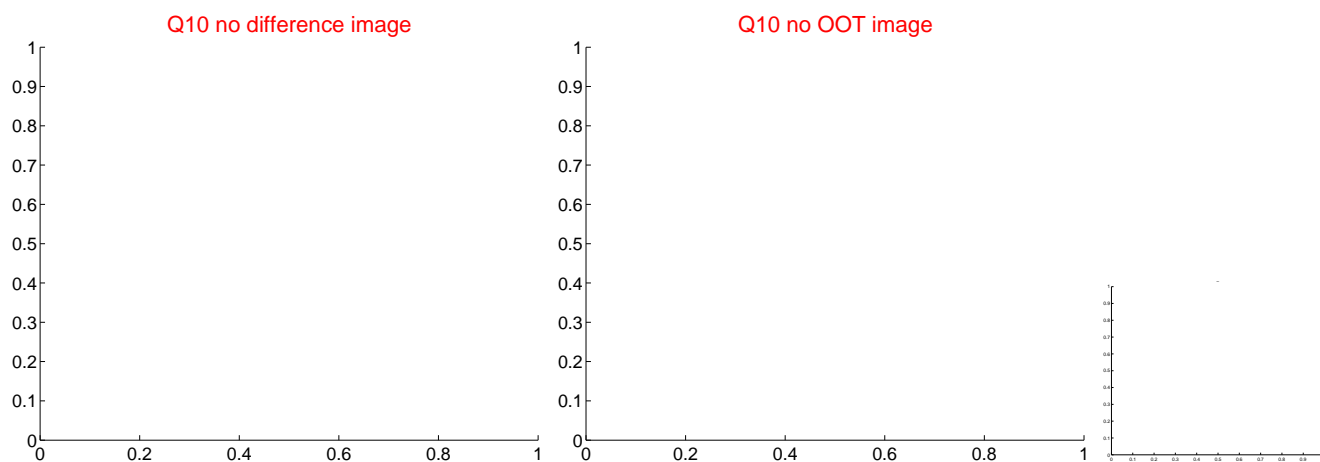
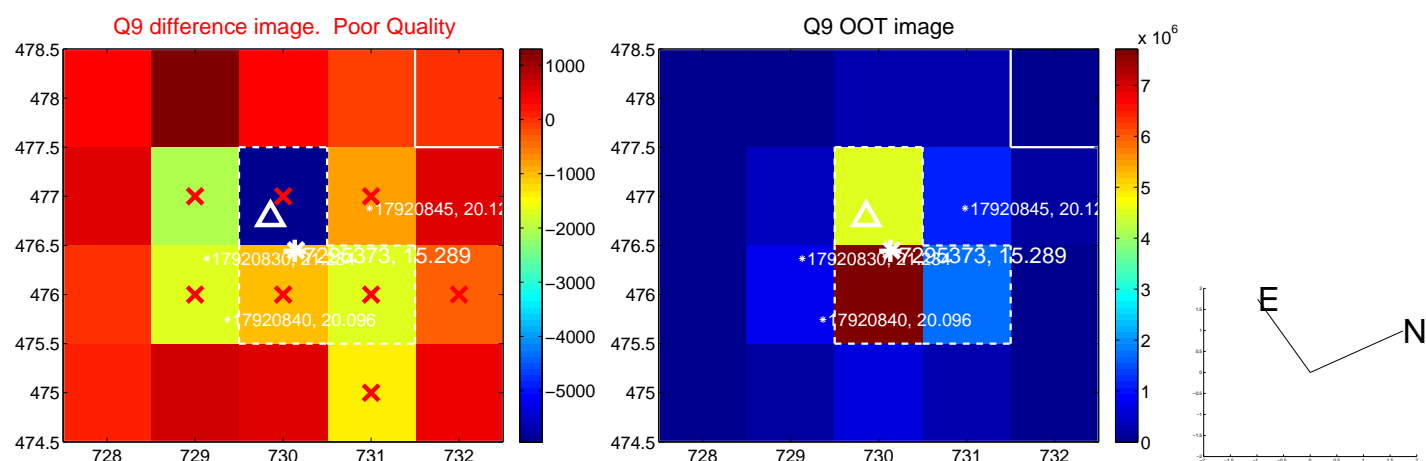
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



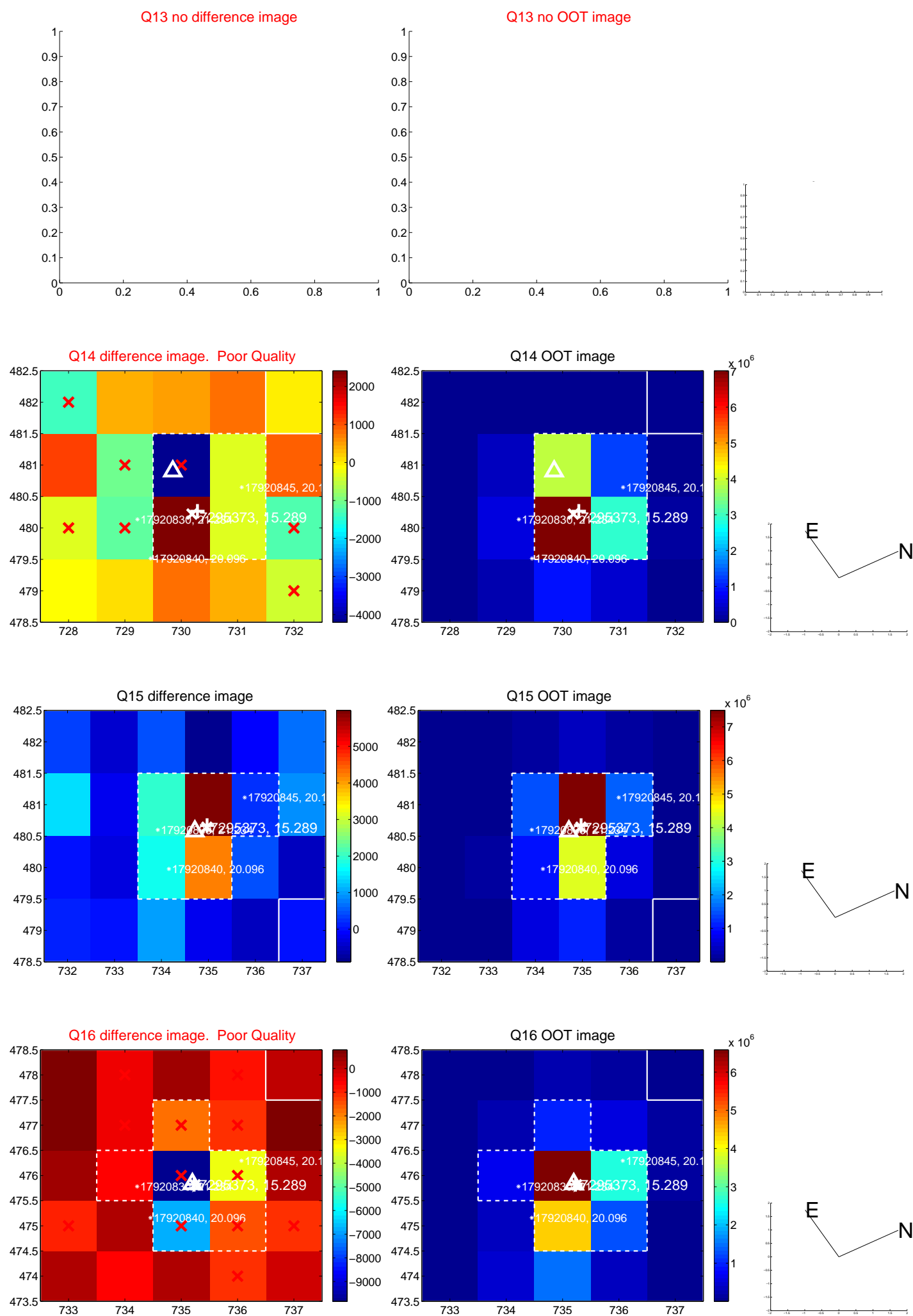
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



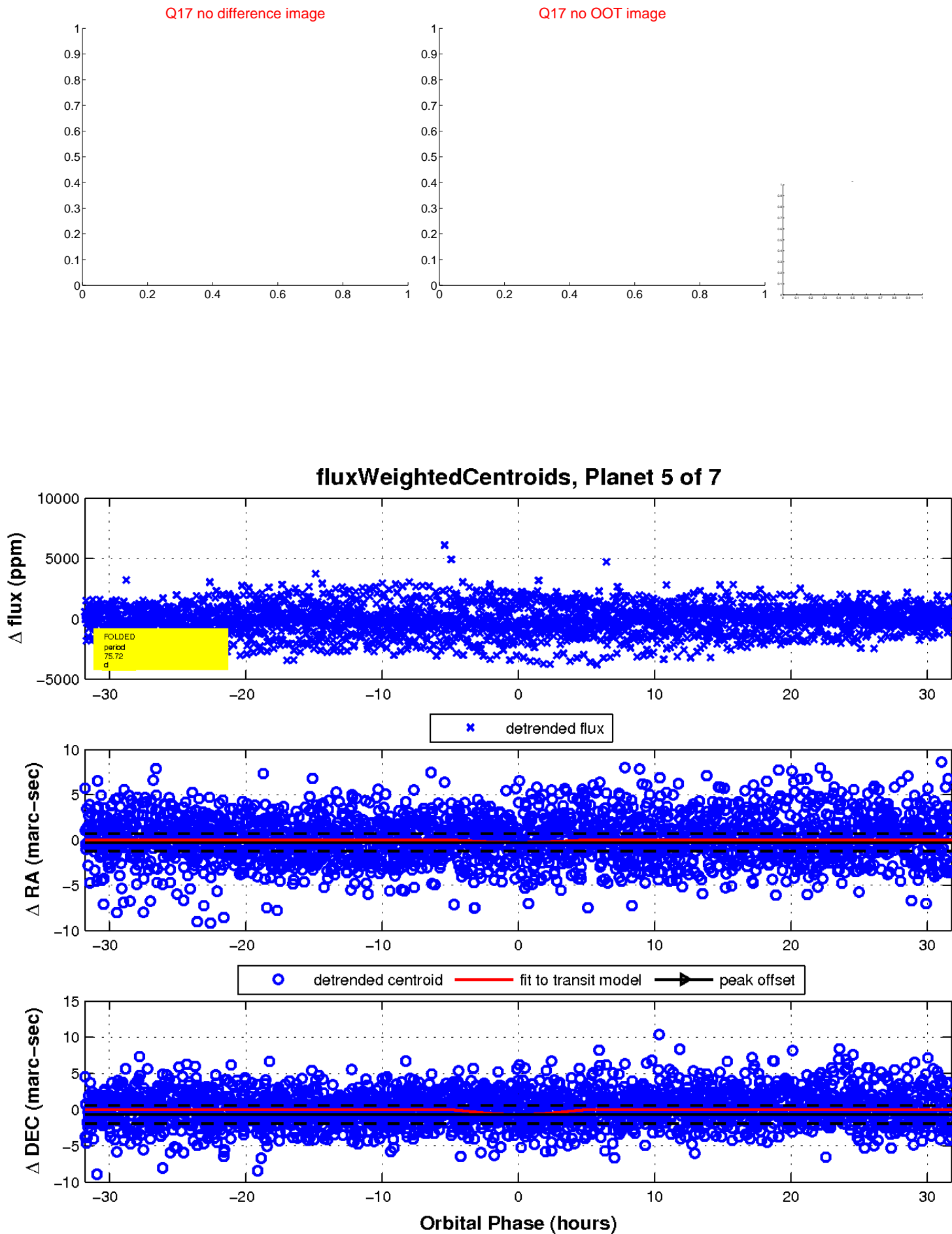
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



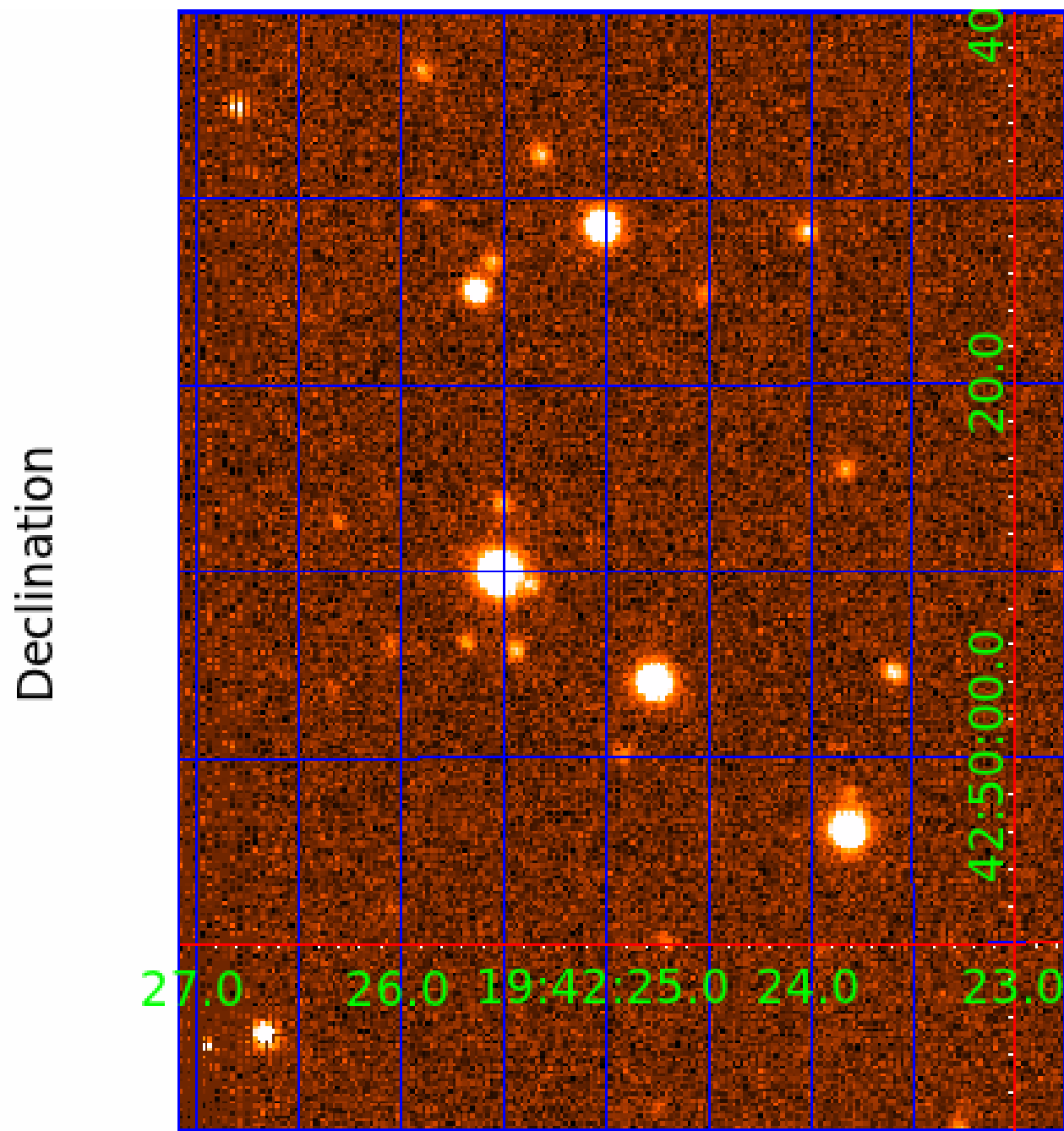
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image





# KIC 007295373

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007295373-01	OBS	No	0.750453	131.747528	63.7	4.275	8.6	10.8	0.56	4515	0.47	659.96
007295373-02	OBS	No	72.757434	196.072419	440.8	5.985	20.3	3.2	0.56	4515	1.26	1.48
007295373-03	OBS	No	72.909455	194.314739	1221.7	6.313	15.0	7.3	0.56	4515	1.92	1.48
007295373-05	OBS	No	75.715127	182.112979	1118.5	10.598	11.9	6.2	0.56	4515	3.74	1.41
007295373-06	OBS	No	522.296806	188.433994	2597.8	8.087	12.0	10.3	0.56	4515	3.42	0.11

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007295373-01	OBS	FP	0.00	1	0	0	0	LPP_DV
007295373-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
007295373-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_TER_ALT—MOD_POS_ALT
007295373-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007295373-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

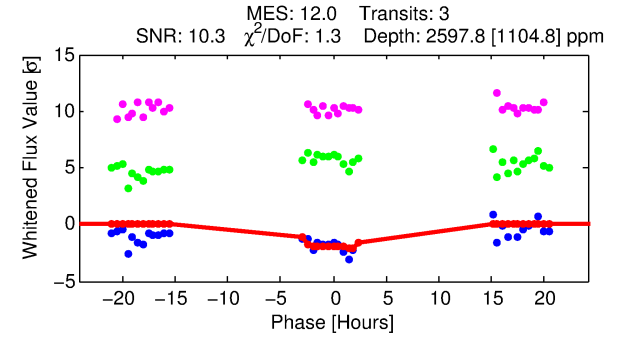
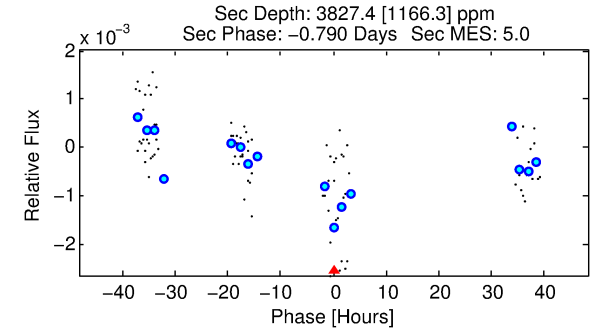
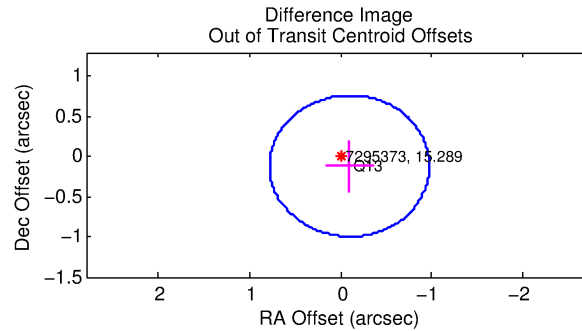
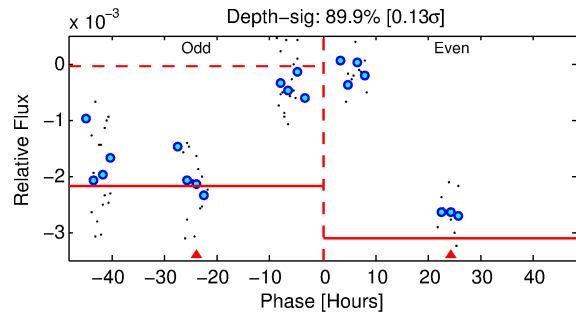
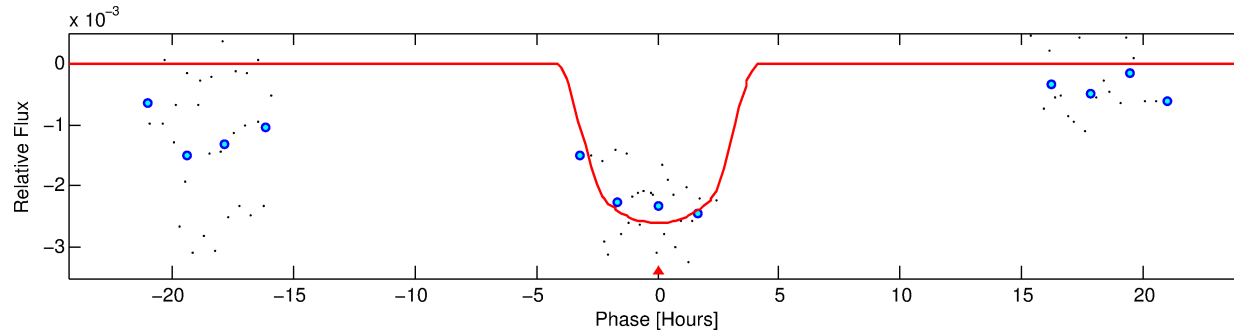
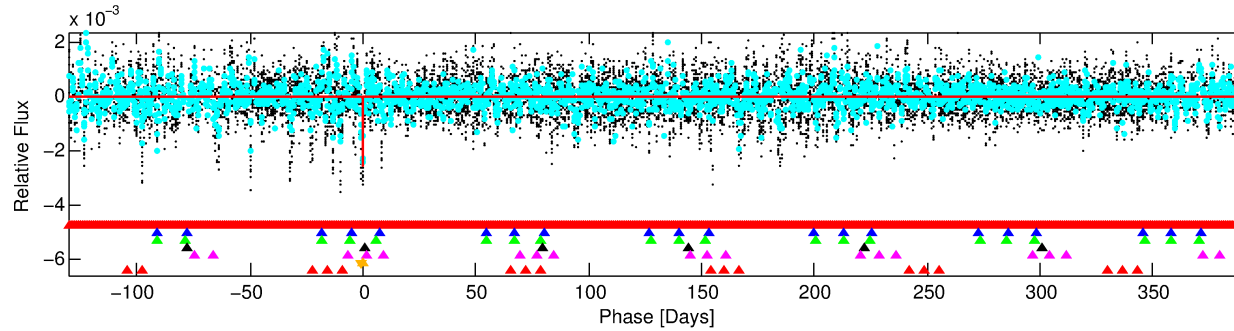
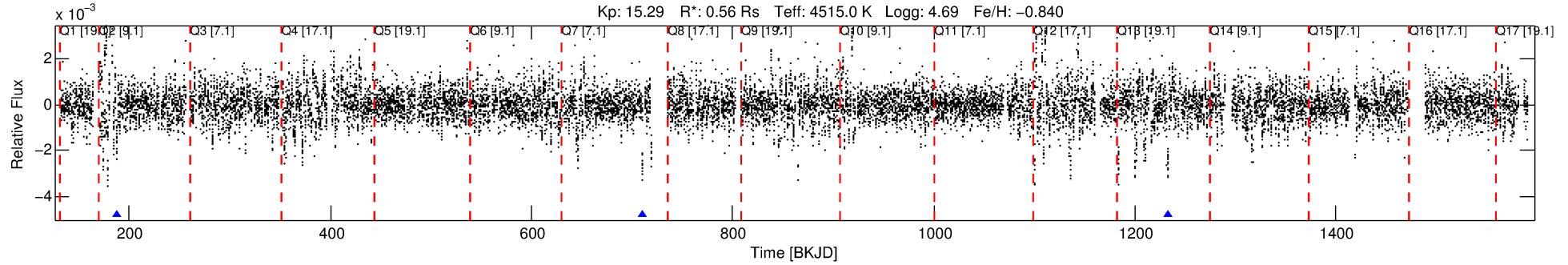
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007295373-06

No Significant Match Found

# DV One-Page Summary

KIC: 7295373 Candidate: 6 of 7 Period: 522.297 d



## DV Fit Results:

Period = 522.29681 [0.08149] d  
Epoch = 188.4340 [0.0785] BKJD  
Rp/R\* = 0.0561 [0.0380]  
a/R\* = 284.25 [676.70]  
b = 0.89 [0.51]  
Seff = 0.11 [0.02]  
Teq = 146 [6] K  
Rp = 3.42 [2.33] Re  
a = 1.0409 [0.0687] AU  
Ag = 195587.62 [272030.58] [0.72 $\sigma$ ]  
Teffp = 4742 [1651] K [2.78 $\sigma$ ]

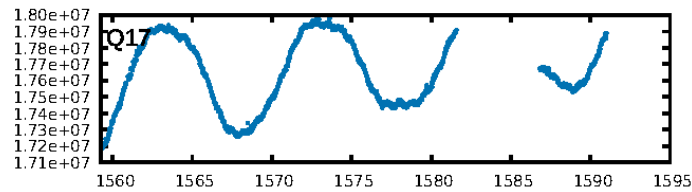
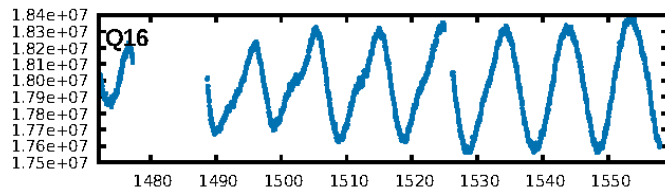
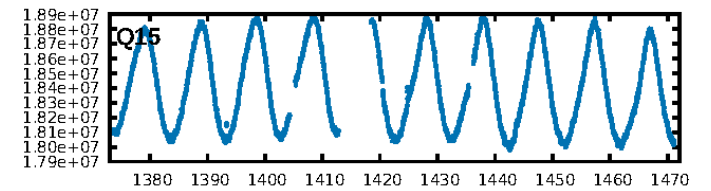
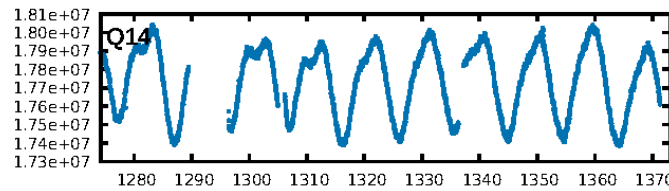
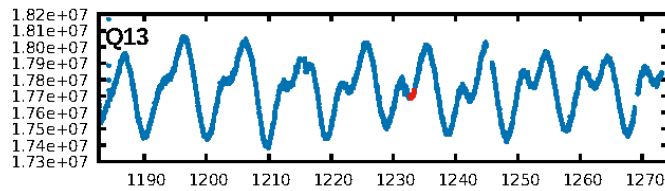
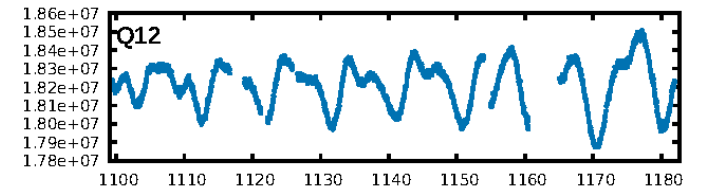
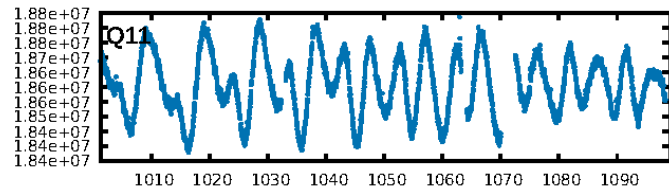
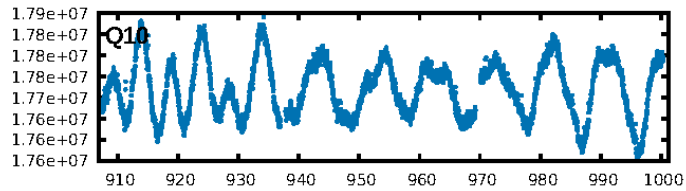
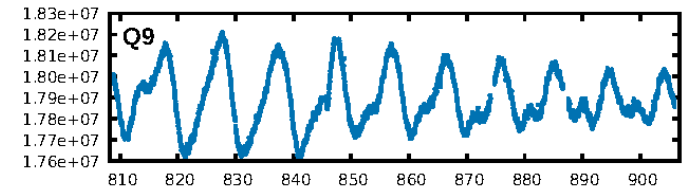
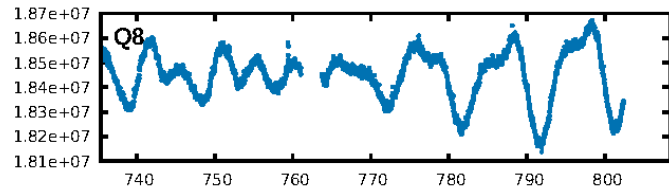
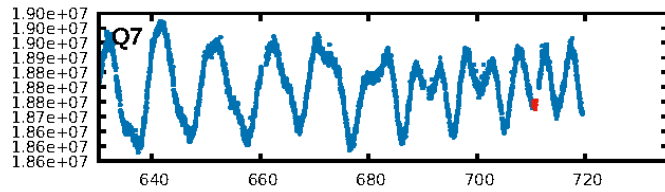
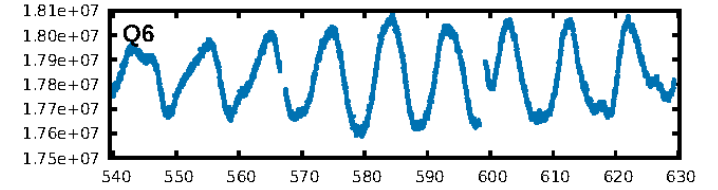
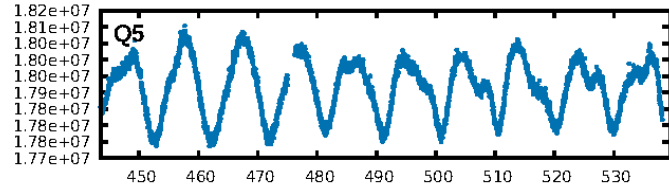
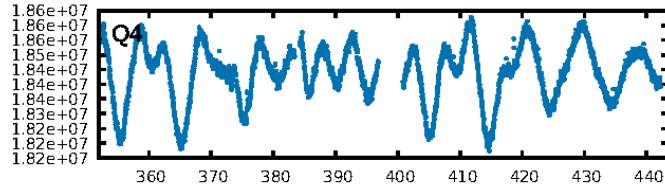
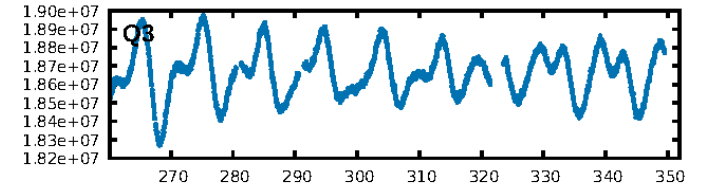
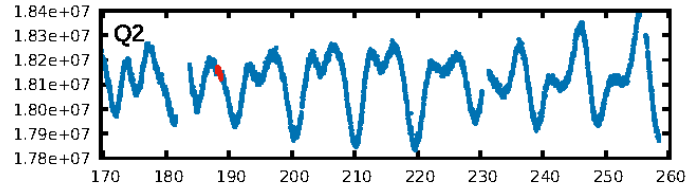
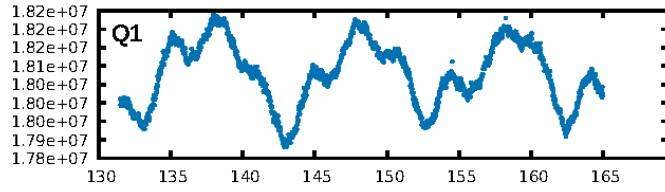
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [745.56 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 43.4%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.04e-16  
RollingBand-fgt: 1.00 [3/3]  
**GhostDiagnostic-chr: 3.48**  
Centroid-sig: 83.1%  
Centroid-so: 0.535 arcsec [1.25 $\sigma$ ]  
OotOffset-rm: 0.153 arcsec [0.52 $\sigma$ ]  
OotOffset-st: 0/0/0/1 [1]  
KicOffset-rm: 0.177 arcsec [0.58 $\sigma$ ]  
KicOffset-st: 0/0/0/1 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 0.00 [0/2]

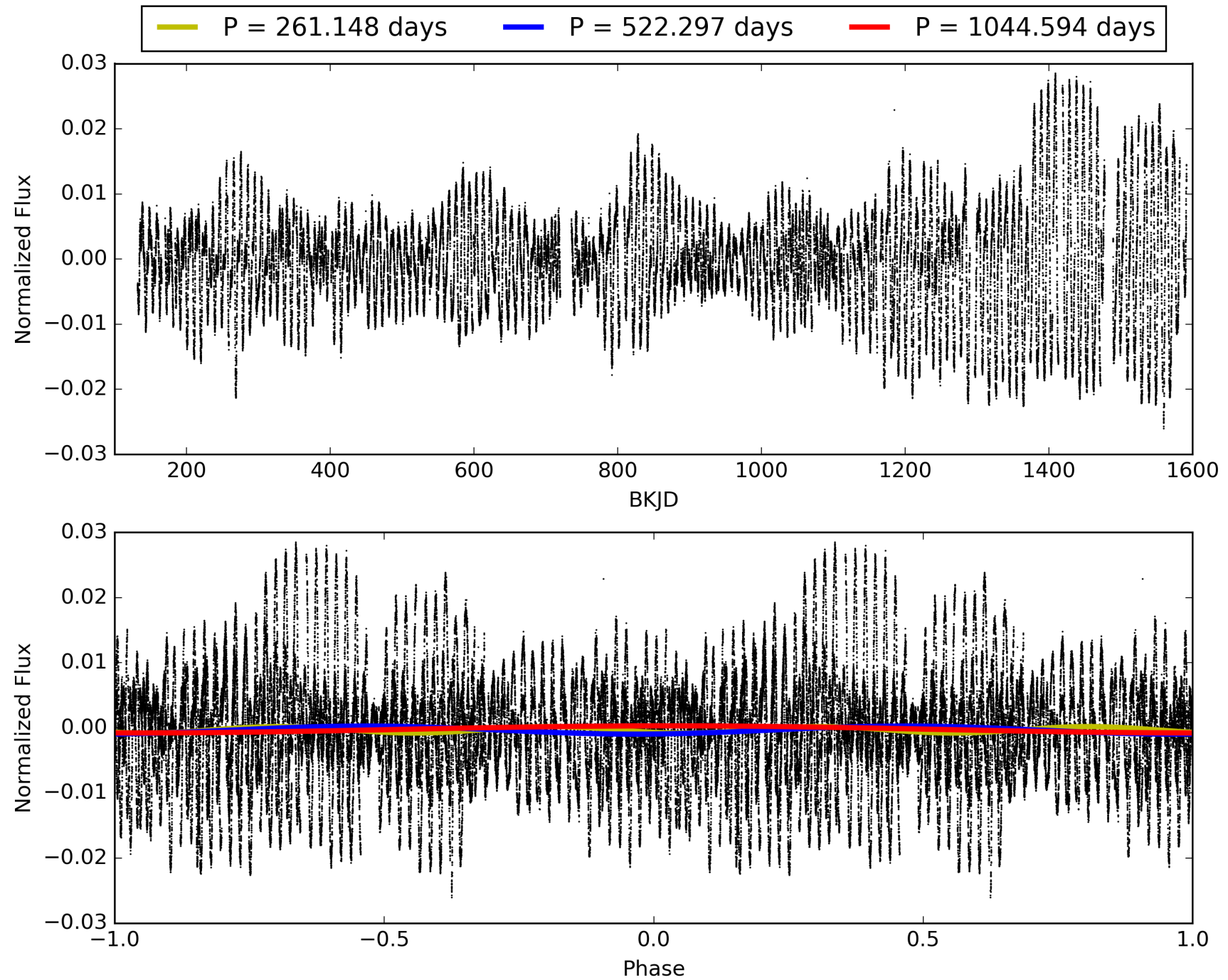
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 02:27:52 Z

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

# TCE 007295373-06, PDC Light Curves

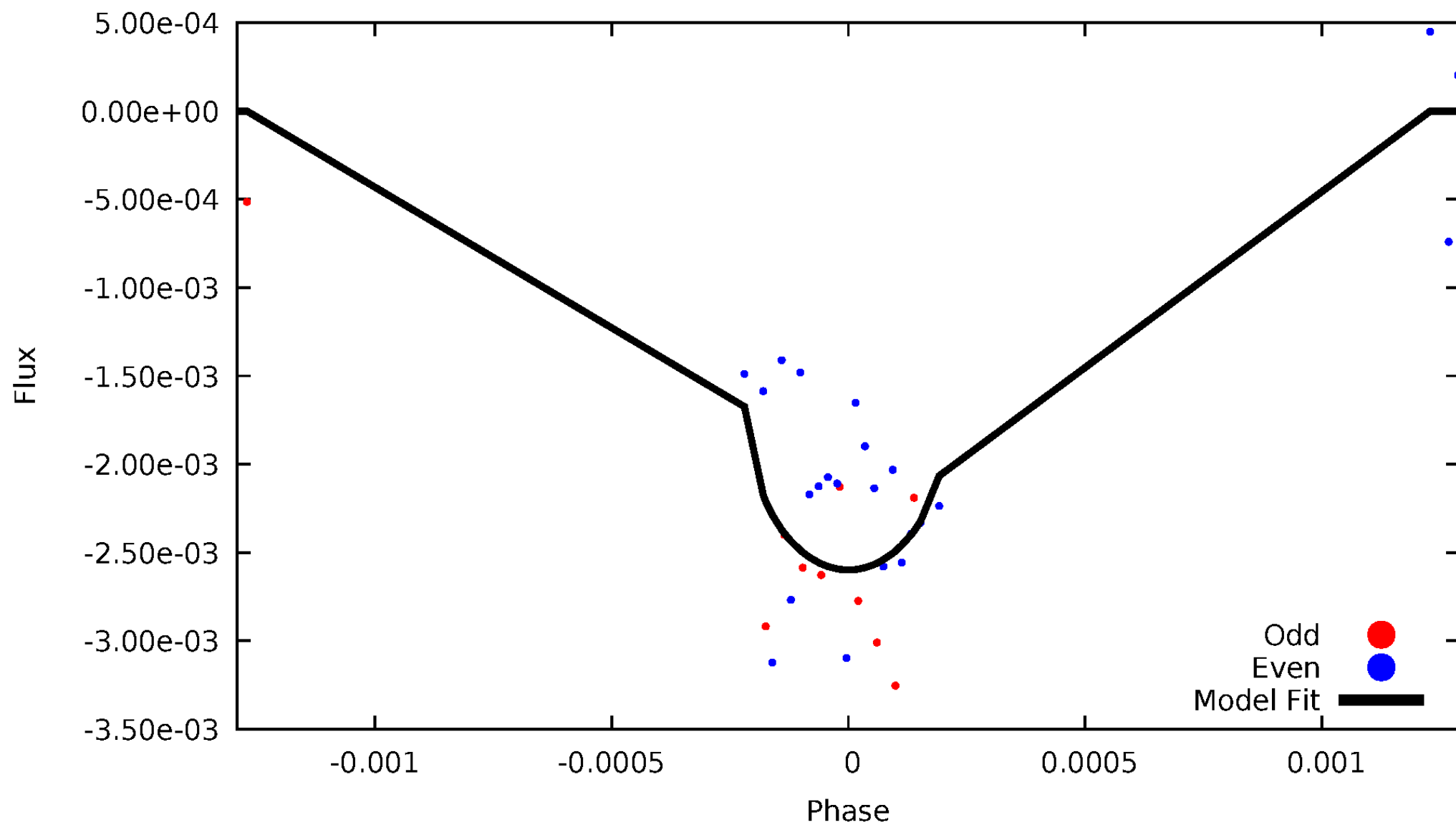


TCE 007295373-06



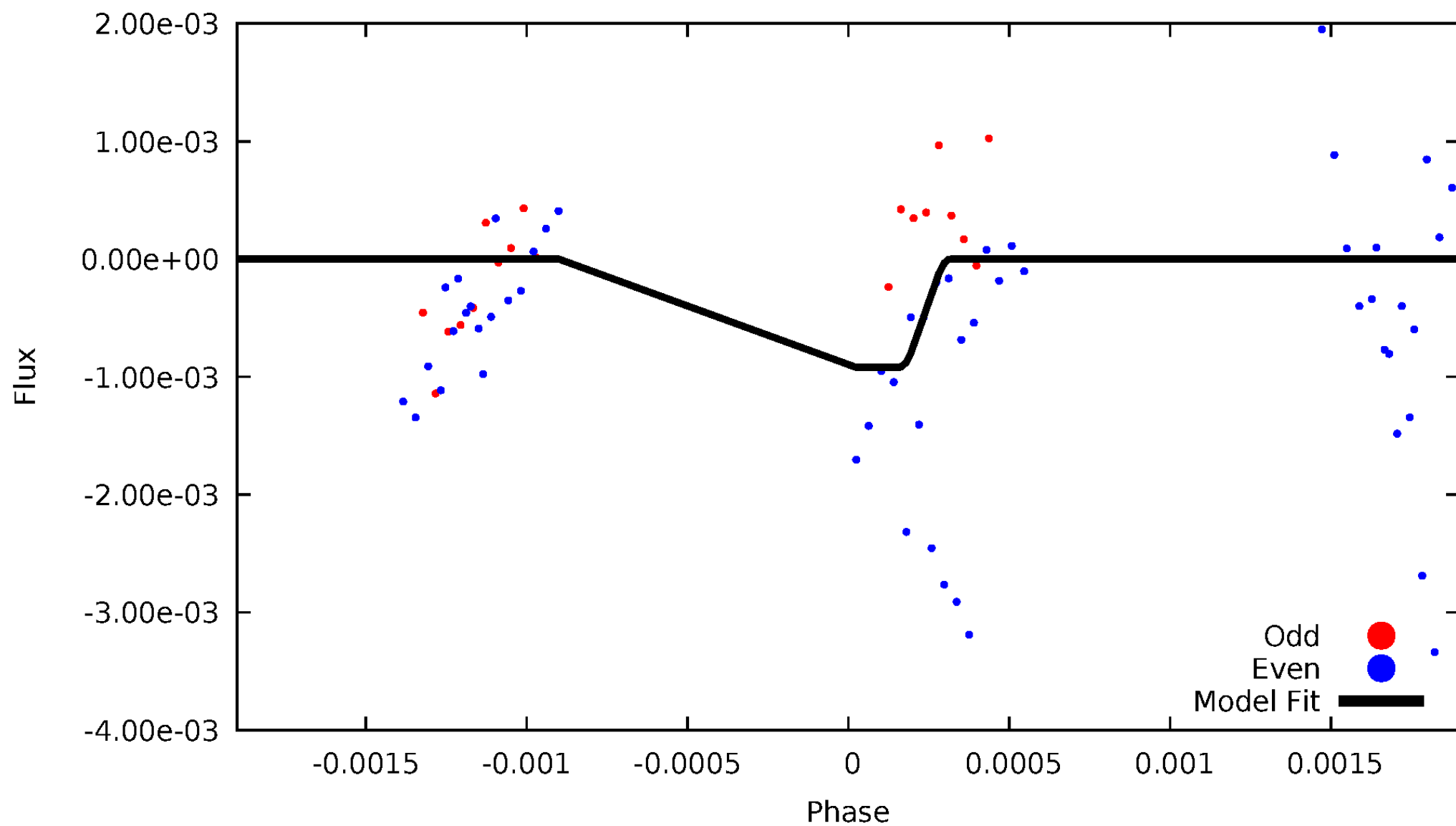
# DV Odd/Even

TCE 007295373-06



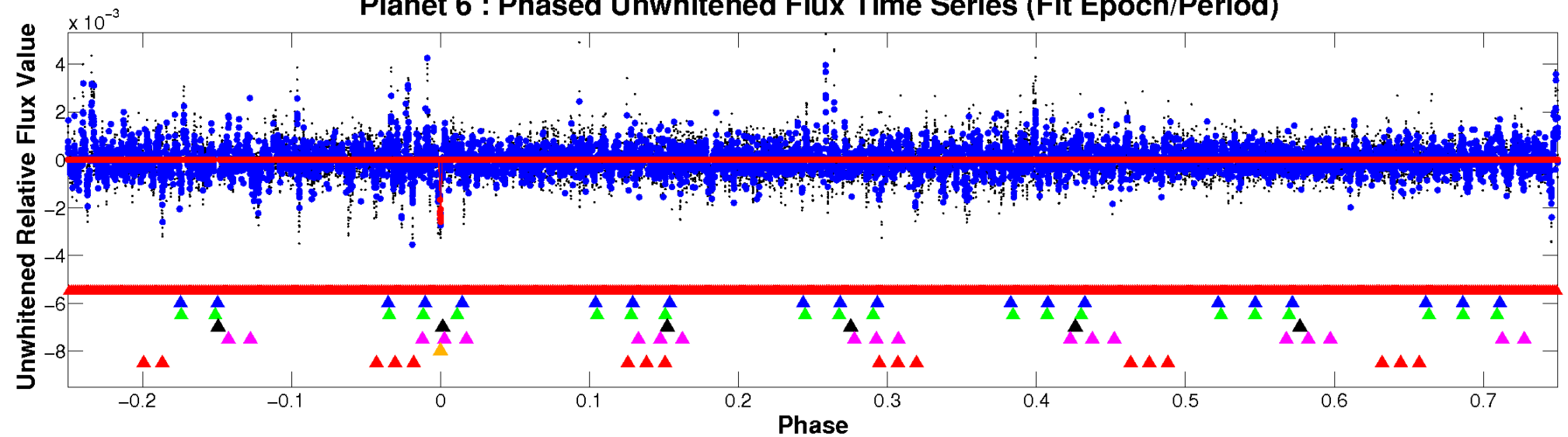
# ALT Odd/Even

TCE 007295373-06

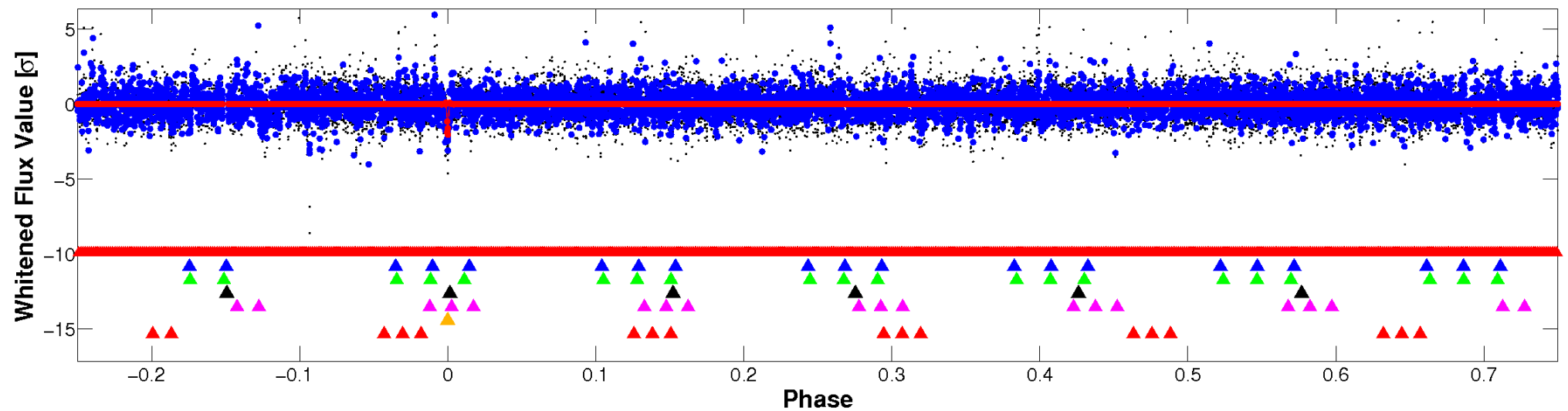


# Non-Whitened Vs. Whitened Light Curve

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



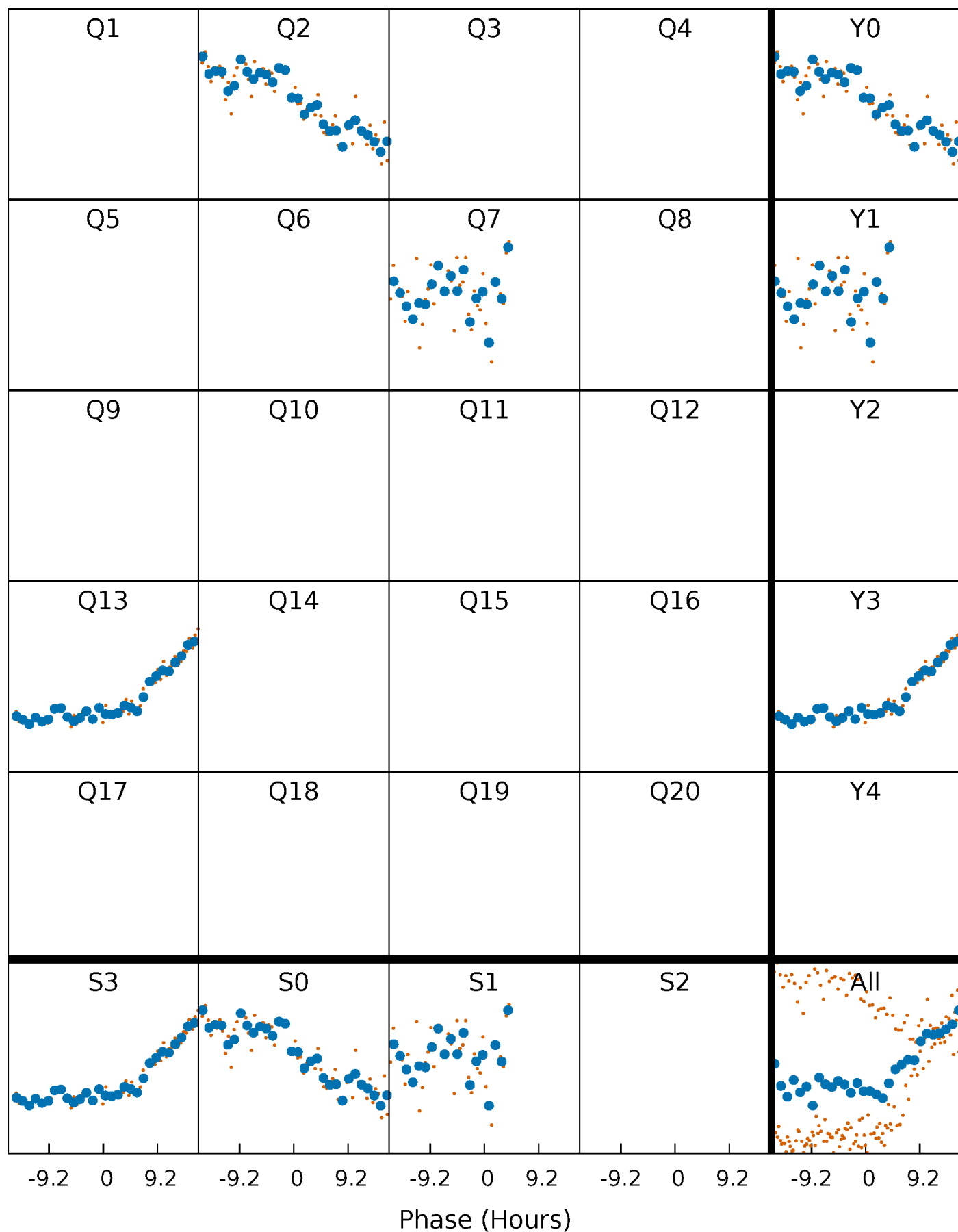
## Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)





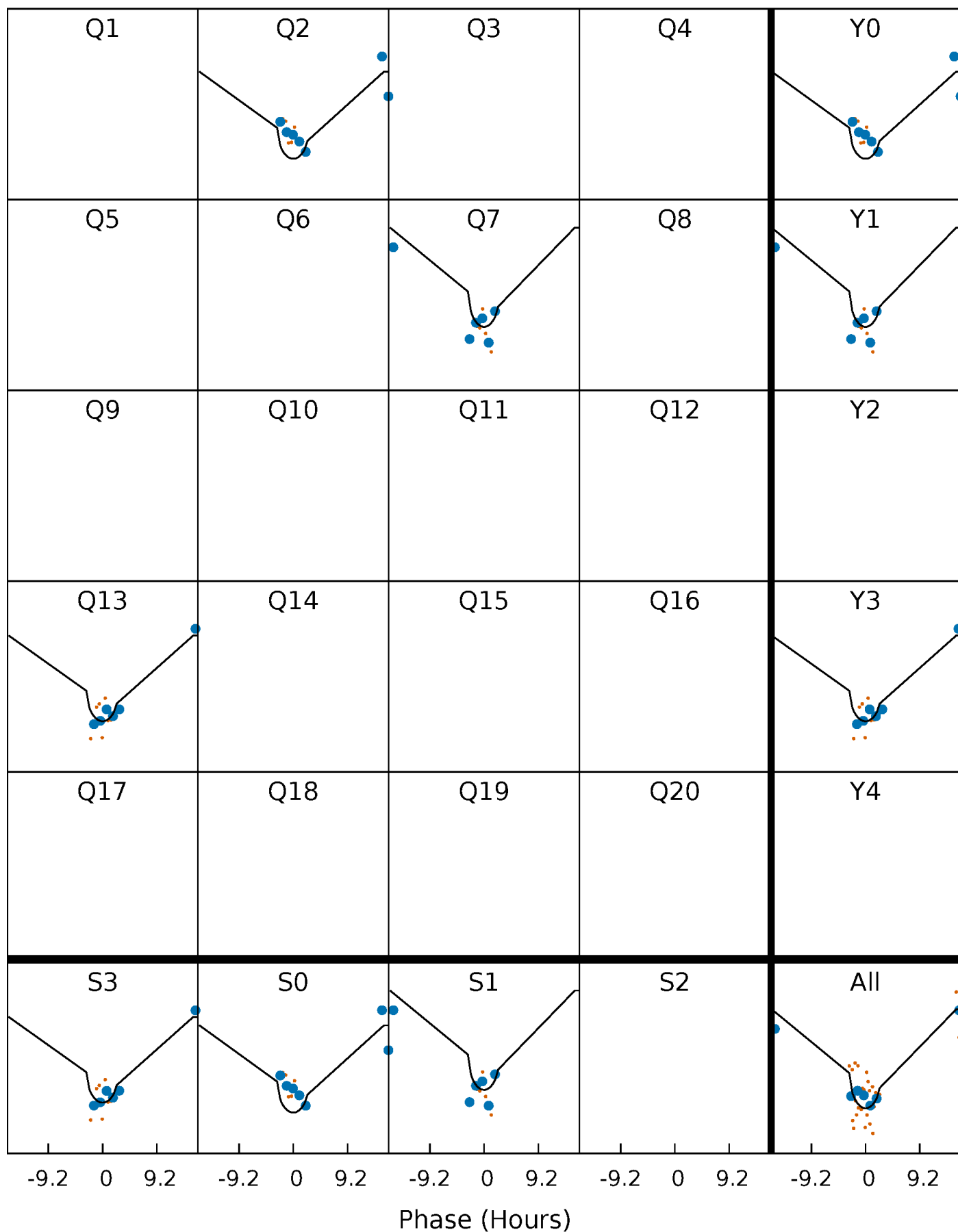
# PDC Quarter-Phased Transit Curves

TCE 007295373-06 P=522.296806 Days  $T_0=188.433994$  (BKJD)



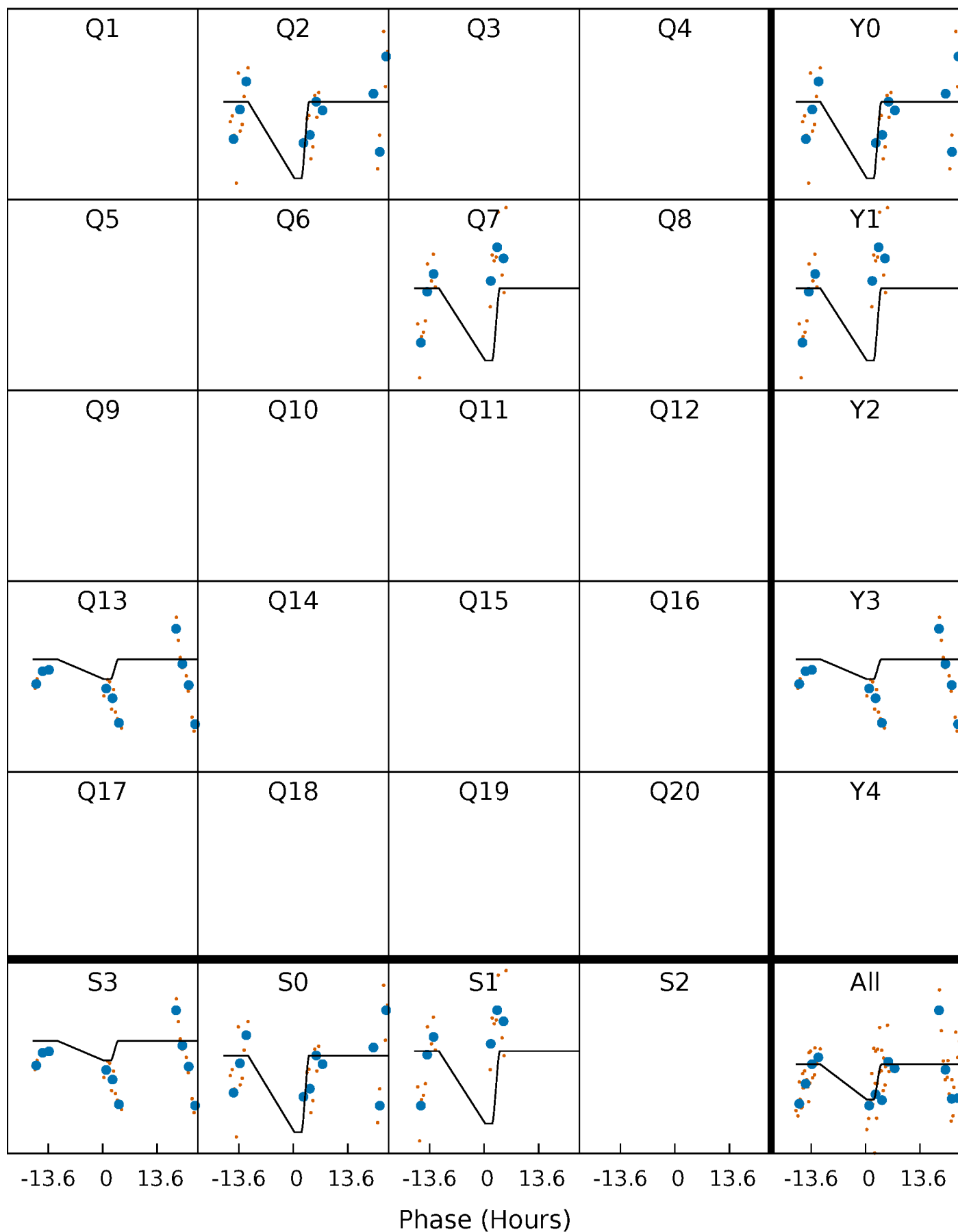
# DV Quarter-Phased Transit Curves

TCE 007295373-06 P=522.296806 Days  $T_0=188.433994$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

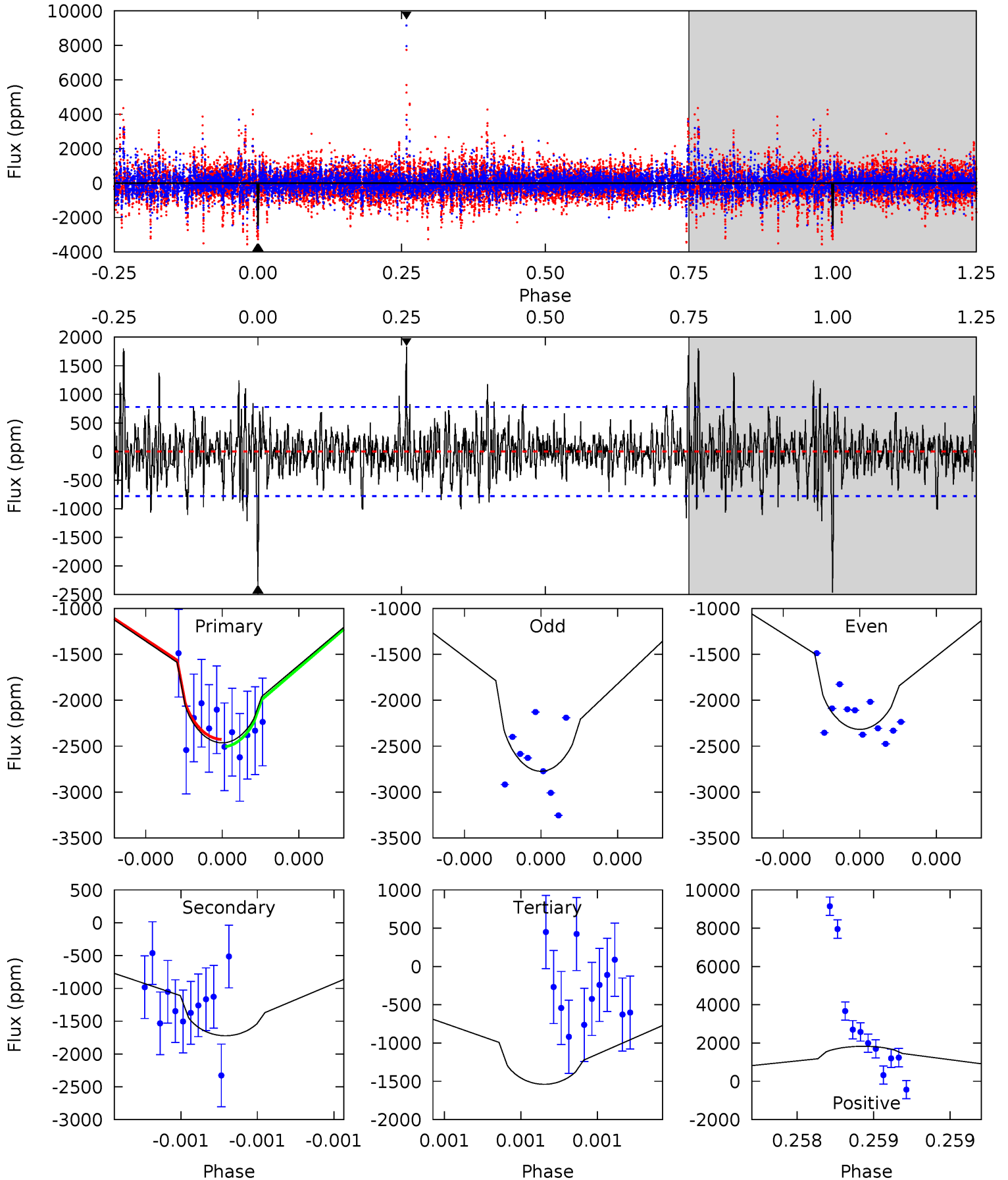
TCE 007295373-06 P=522.356717 Days  $T_0=188.217811$  (BKJD)



# DV Model-Shift Uniqueness Test

007295373-06, P = 522.296806 Days, E = 188.433994 Days

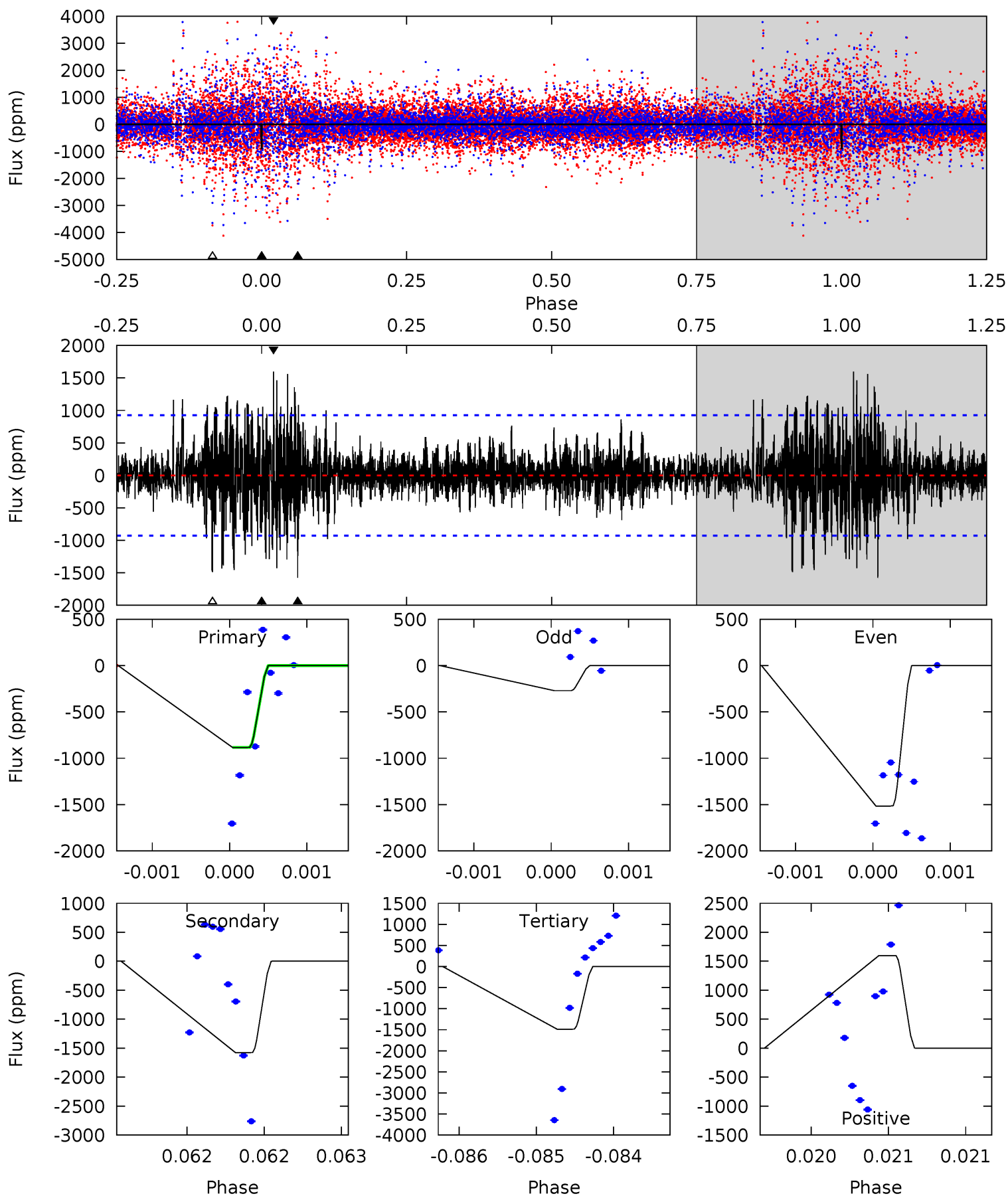
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.8	12.4	11.1	13.2	5.62	3.56	2.40	6.67	4.56	1.32	-0.79	1.59	0.94	0.43	0.28



# Alt Model-Shift Uniqueness Test

007295373-06, P = 522.356717 Days, E = 188.217811 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.27	9.41	8.88	9.53	5.53	3.42	1.66	-3.60	-4.26	0.54	-0.12	3.85	1.02	0.50	0



### Stellar Parameters For KIC 007295373

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4515^{+134}_{-134}$	$4.686^{+0.052}_{-0.032}$	$-0.840^{+0.300}_{-0.300}$	$0.558^{+0.044}_{-0.044}$	$0.550^{+0.049}_{-0.031}$	$4.468^{+1.036}_{-0.581}$
	+3%/-3%	+1%/-1%	+36%/-36%	+8%/-8%	+9%/-6%	+23%/-13%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 007295373-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-1722 \pm 139$	$3.52^{+2.22}_{-1.90}$	$203^{+7}_{-7}$	$3988^{+1463}_{-593}$	$84937^{+311035}_{-54080}$
Alt.	$-1578 \pm 168$	$2.49^{+2.05}_{-1.64}$	$203^{+7}_{-7}$	$4453^{+2829}_{-847}$	$152720^{+1088105}_{-106002}$

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

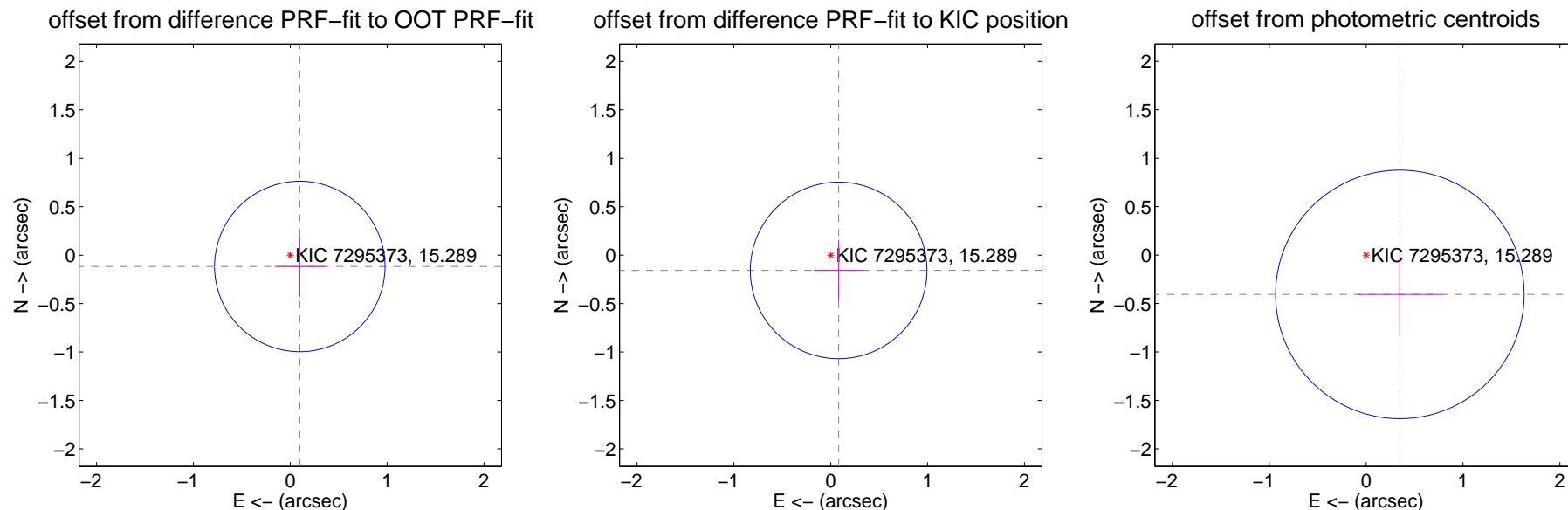
## DV Centroid Data

Supplemental centroid analysis for 007295373-06. Kepler magnitude: 15.29. Transit SNR 10.35

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.153 \pm 0.293$	0.52	$-0.098 \pm 0.260$	$-0.117 \pm 0.315$
PRF-fit source offset from KIC position	$0.177 \pm 0.304$	0.58	$-0.082 \pm 0.260$	$-0.157 \pm 0.315$
photometric centroid source offset	$0.53 \pm 0.43$	1.25	$-0.35 \pm 0.44$	$-0.41 \pm 0.42$



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



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

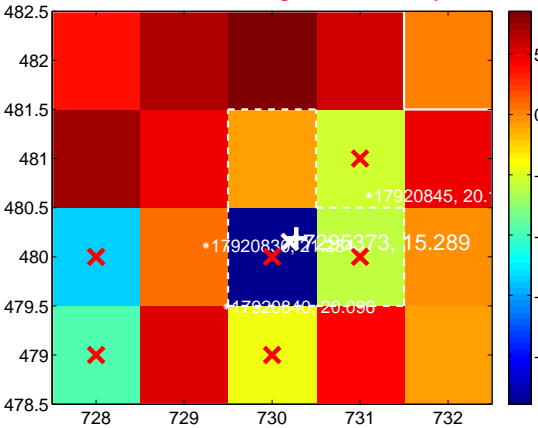
Q1 no difference image



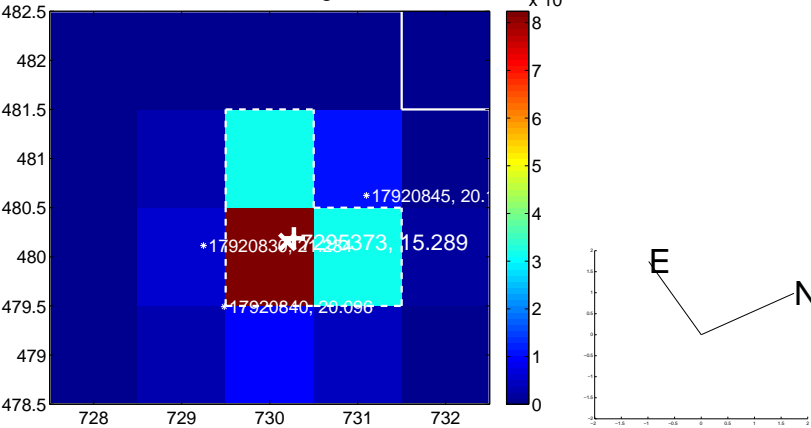
Q1 no OOT image



Q2 difference image. Poor Quality



Q2 OOT image



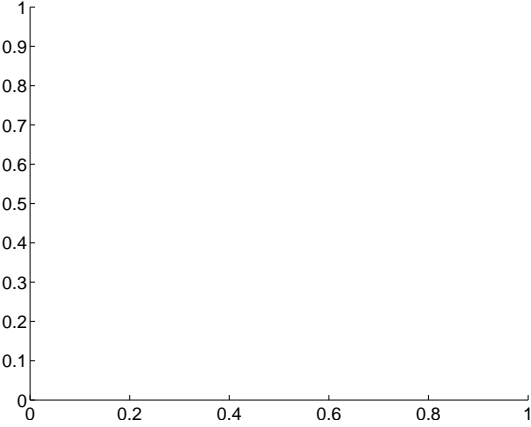
Q3 no difference image



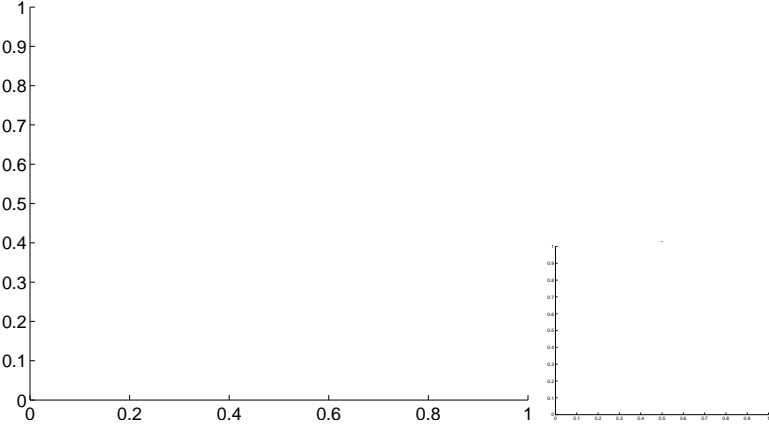
Q3 no OOT image



Q4 no difference image



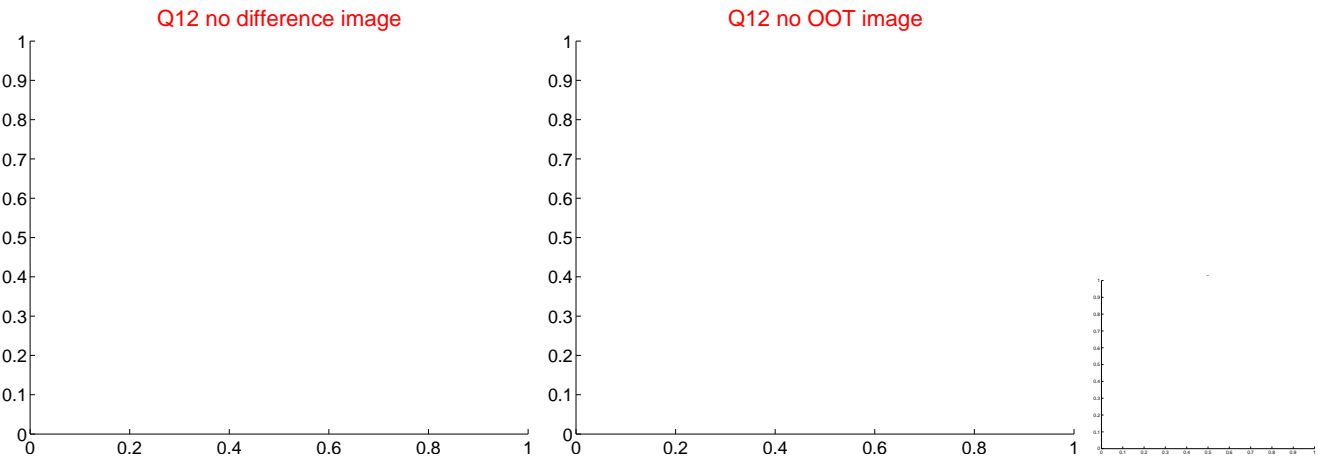
Q4 no OOT image



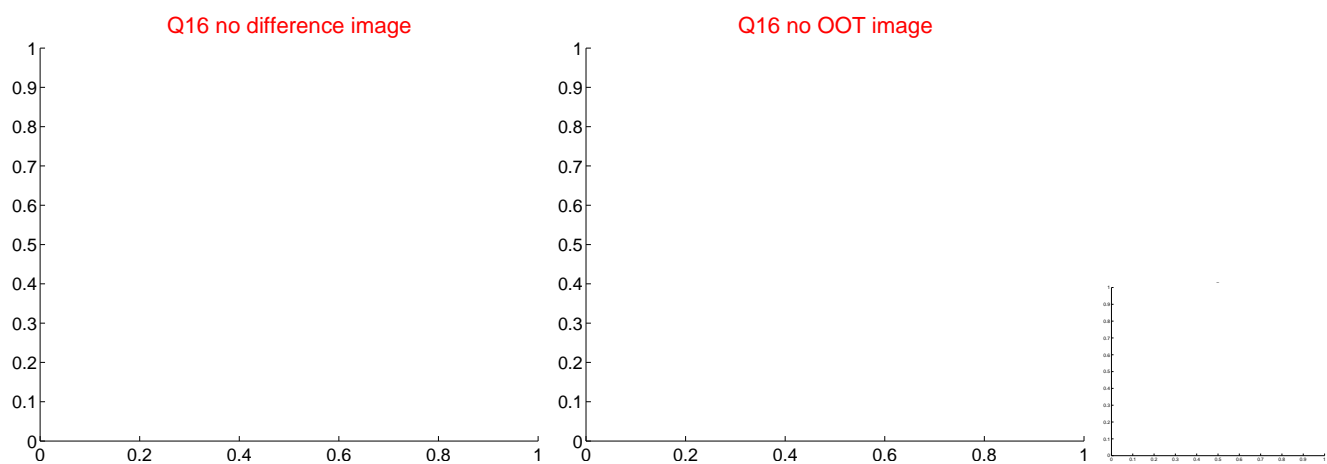
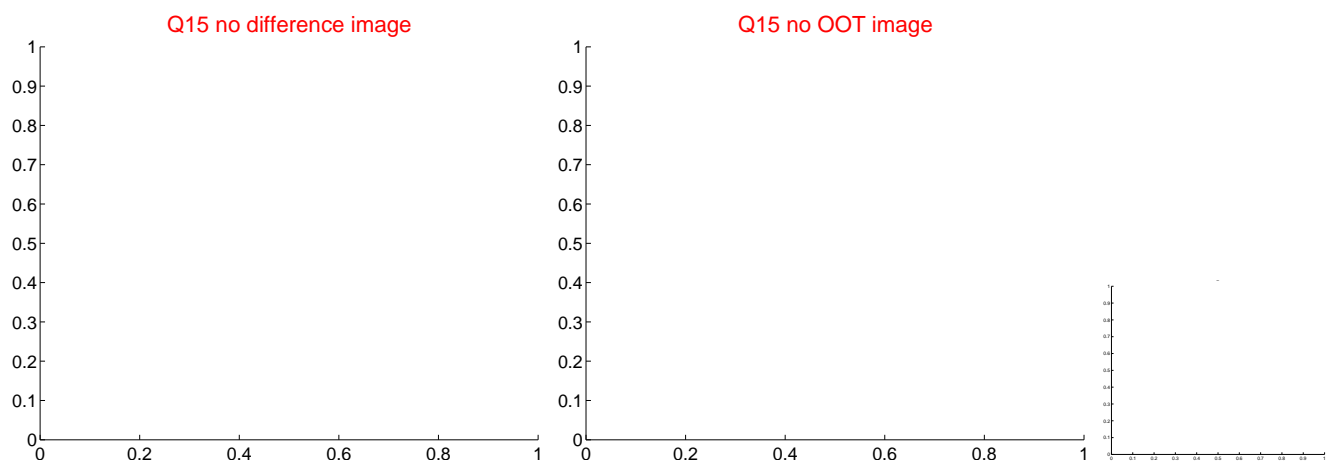
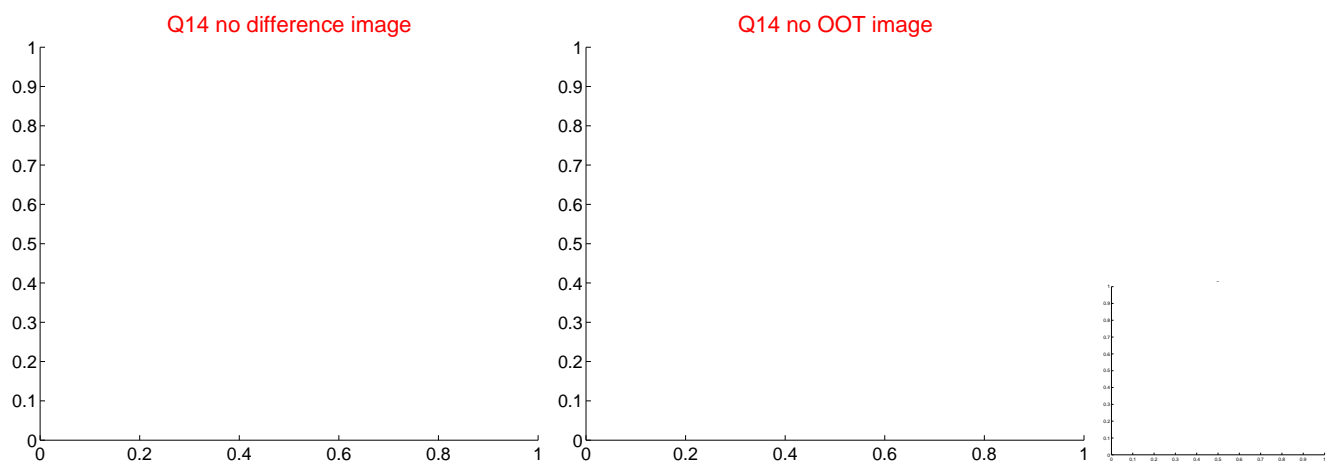
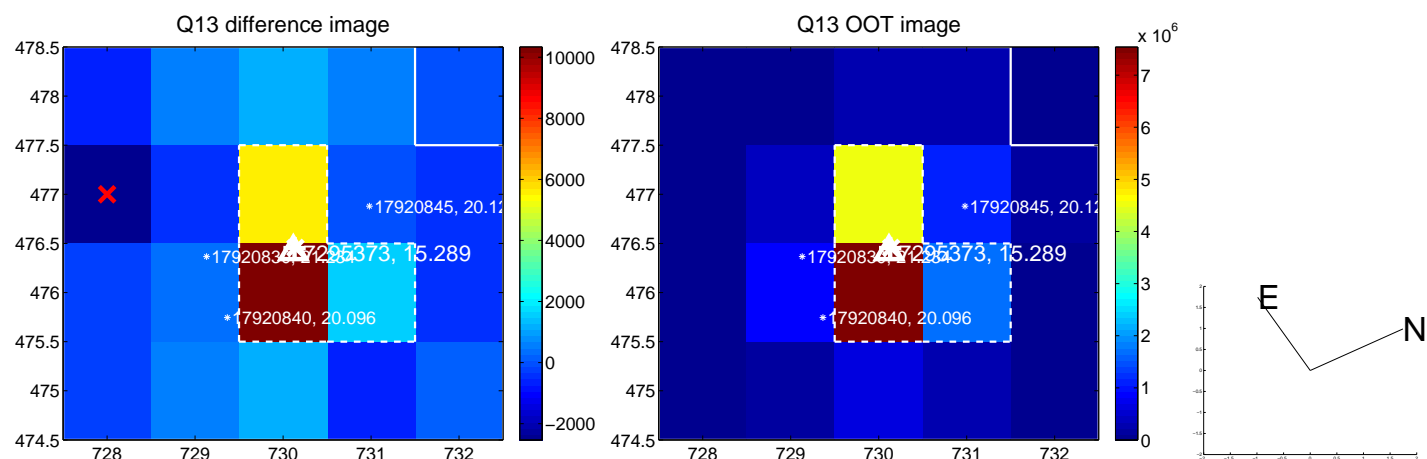
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



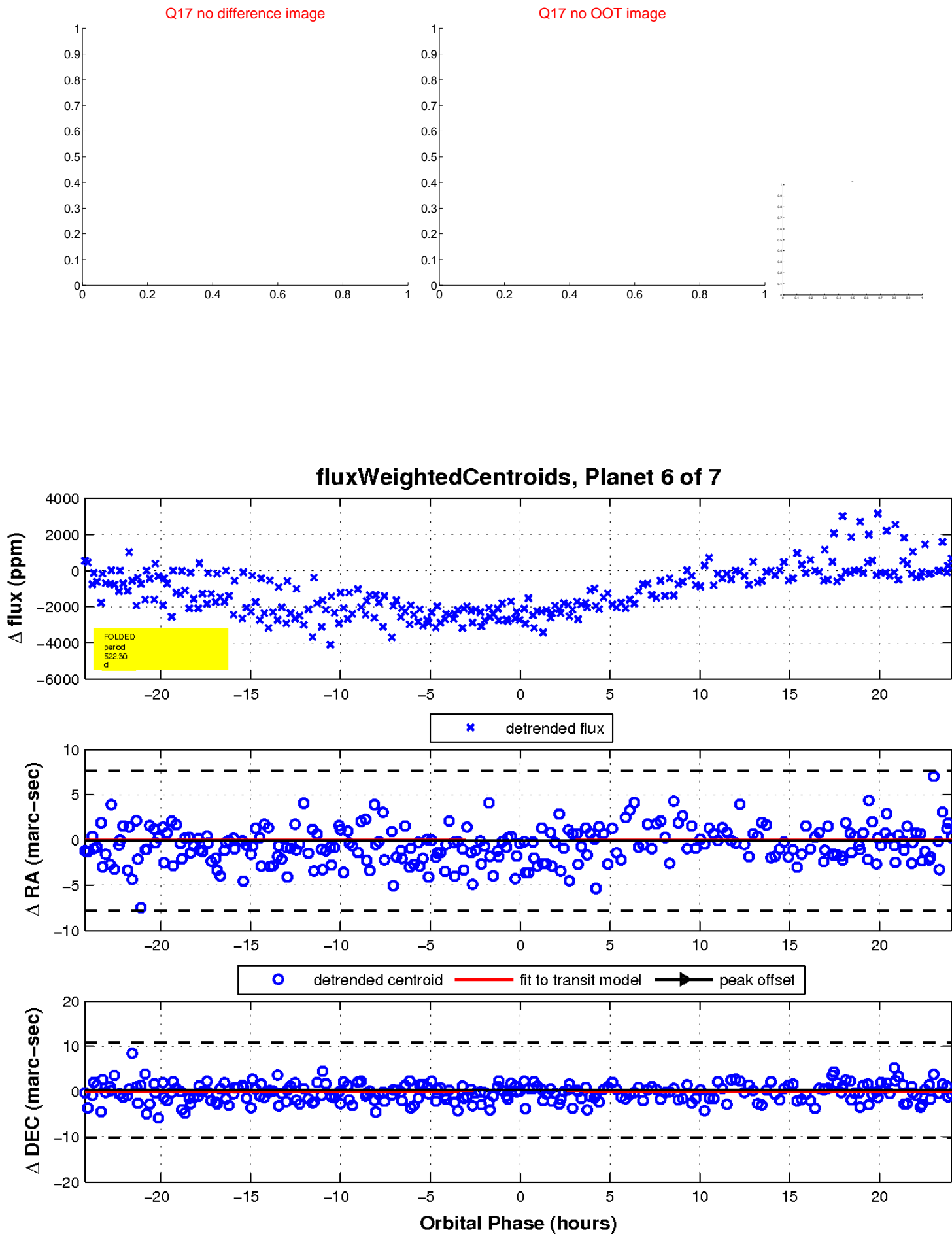
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



UKIRT Image

