

# KIC 005535029

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005535029-01	OBS	No	0.695183	132.181393	17.0	3.451	9.4	4.2	19.54	4462	9.95	0.00
005535029-02	OBS	No	576.349091	345.178436	2613.4	10.693	15.5	6.9	19.54	4462	200.21	55.98
005535029-03	OBS	No	281.070454	216.564752	3274.1	17.457	11.1	7.2	19.54	4462	137.03	145.82

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005535029-01	OBS	FP	0.00	1	0	1	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
005535029-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005535029-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS

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

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

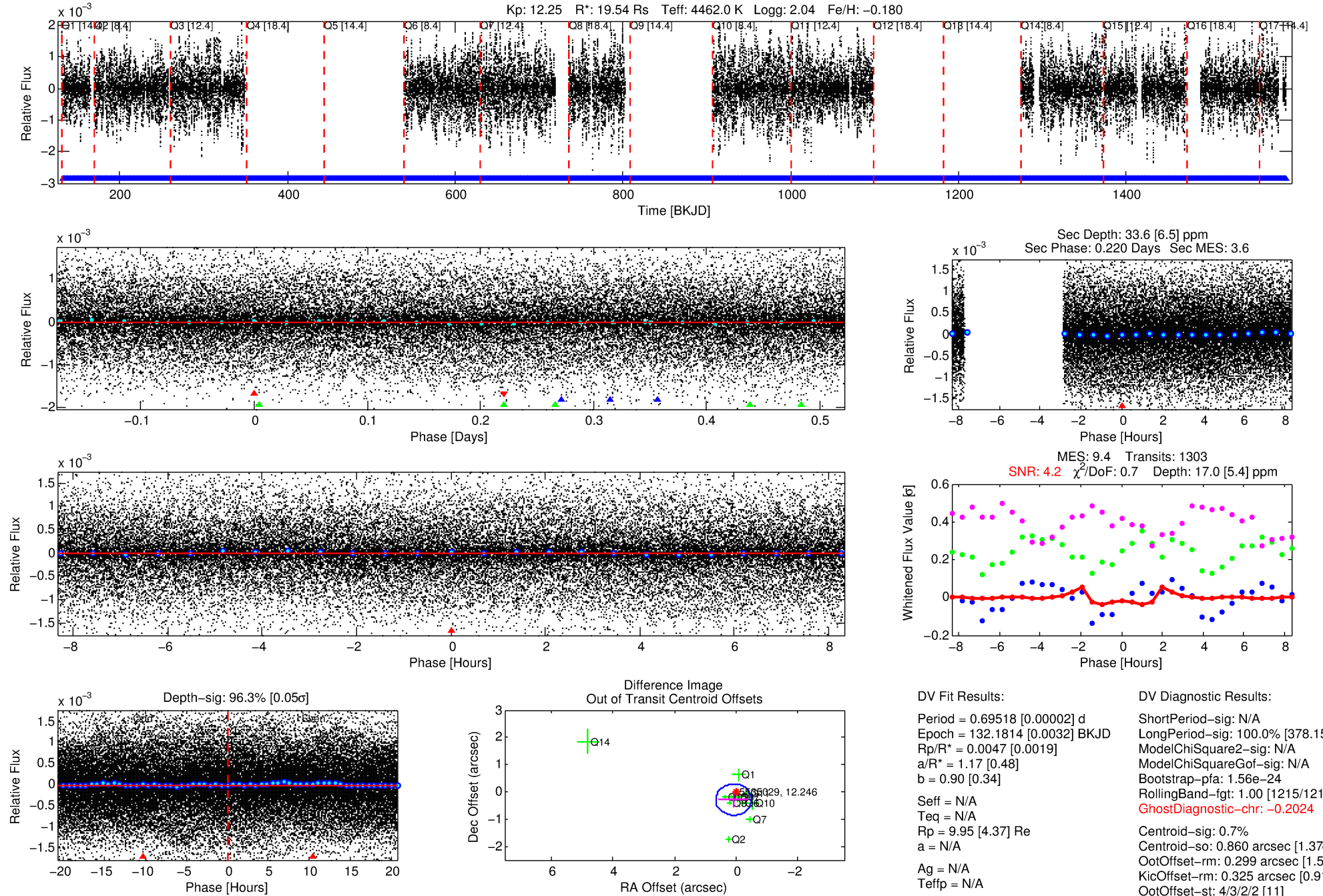
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005535029-01

No Significant Match Found

# DV One-Page Summary

KIC: 5535029 Candidate: 1 of 3 Period: 0.695 d



## DV Fit Results:

Period = 0.69518 [0.00002] d  
Epoch = 132.1814 [0.0032] BKJD  
Rp/R\* = 0.0047 [0.0019]  
a/R\* = 1.17 [0.48]  
b = 0.90 [0.34]  
Seff = N/A  
Teq = N/A  
Rp = 9.95 [4.37] Re  
a = N/A  
Ag = N/A  
Teffp = N/A

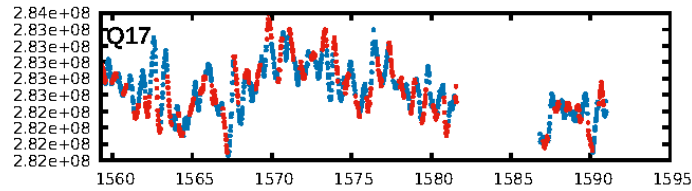
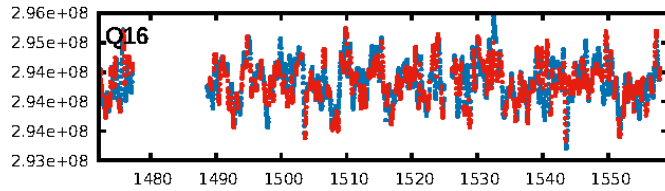
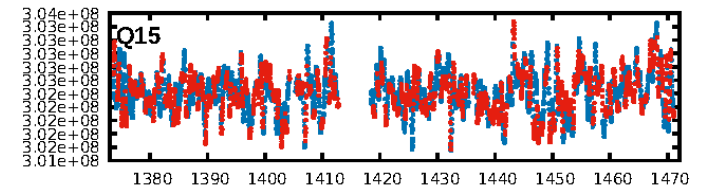
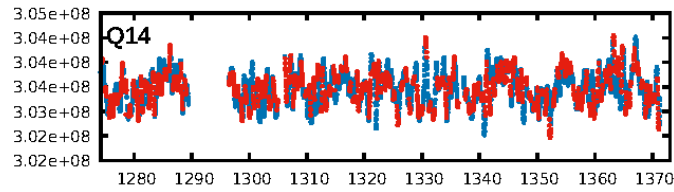
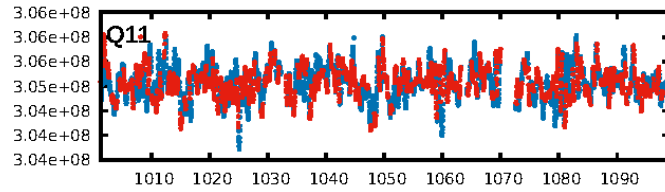
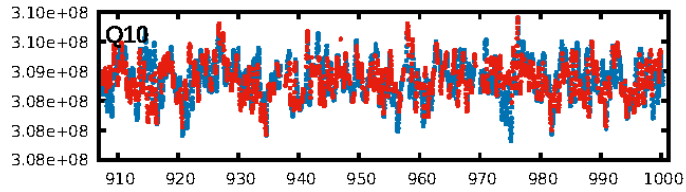
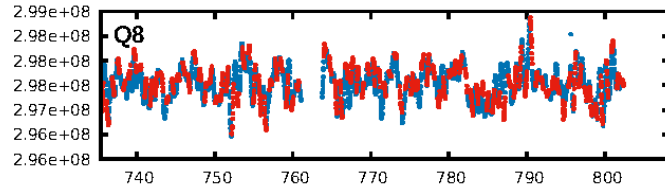
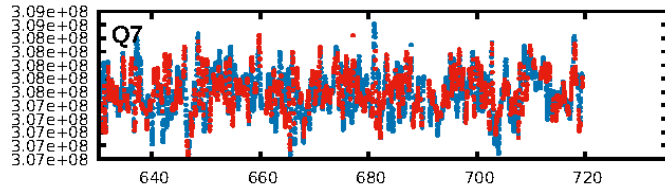
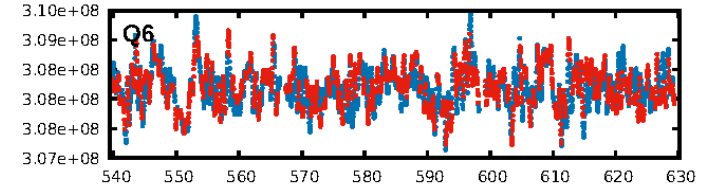
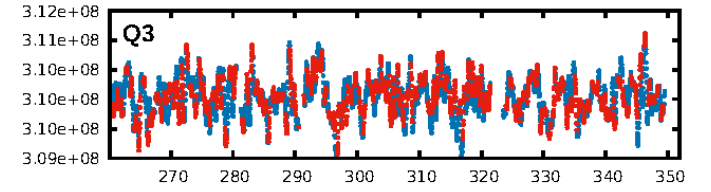
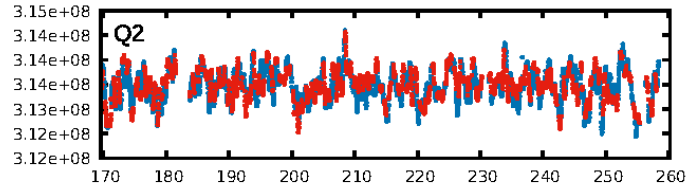
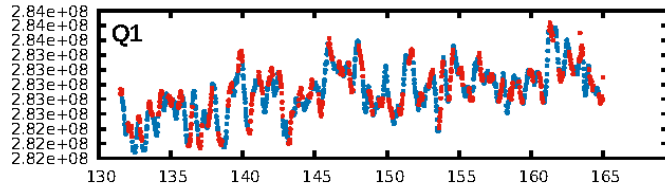
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [378.15 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.56e-24  
RollingBand-fgt: 1.00 [1215/1215]  
GhostDiagnostic-chr: -0.2024  
Centroid-sig: 0.7%  
Centroid-so: 0.860 arcsec [1.37 $\sigma$ ]  
OotOffset-rm: 0.299 arcsec [1.56 $\sigma$ ]  
KicOffset-rm: 0.325 arcsec [0.91 $\sigma$ ]  
OotOffset-st: 4/3/2/2 [11]  
KicOffset-st: 4/3/2/2 [11]  
DiffImageQuality-fgm: 0.45 [5/11]  
DiffImageOverlap-fno: 1.00 [12/12]

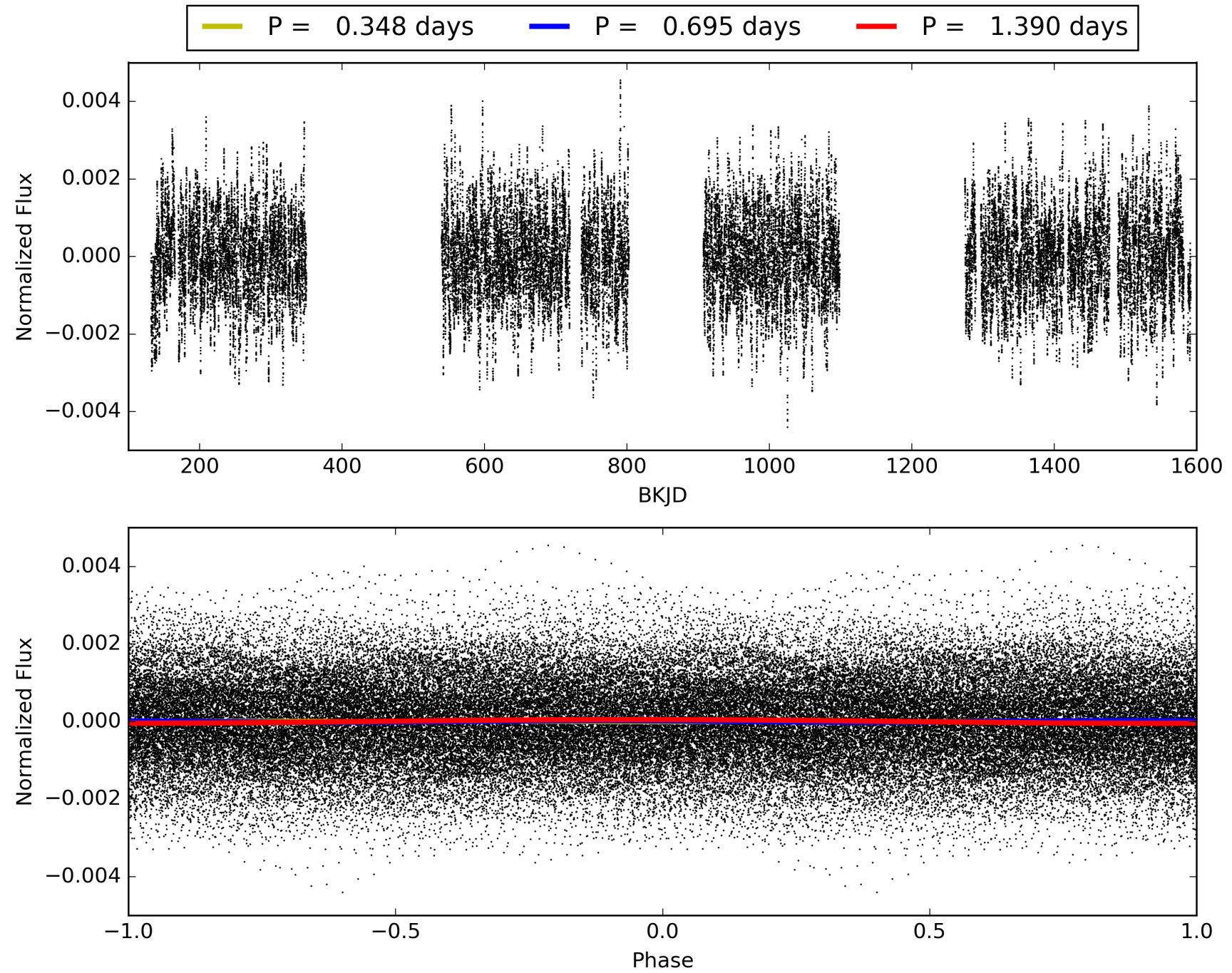
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 005535029-01, PDC Light Curves



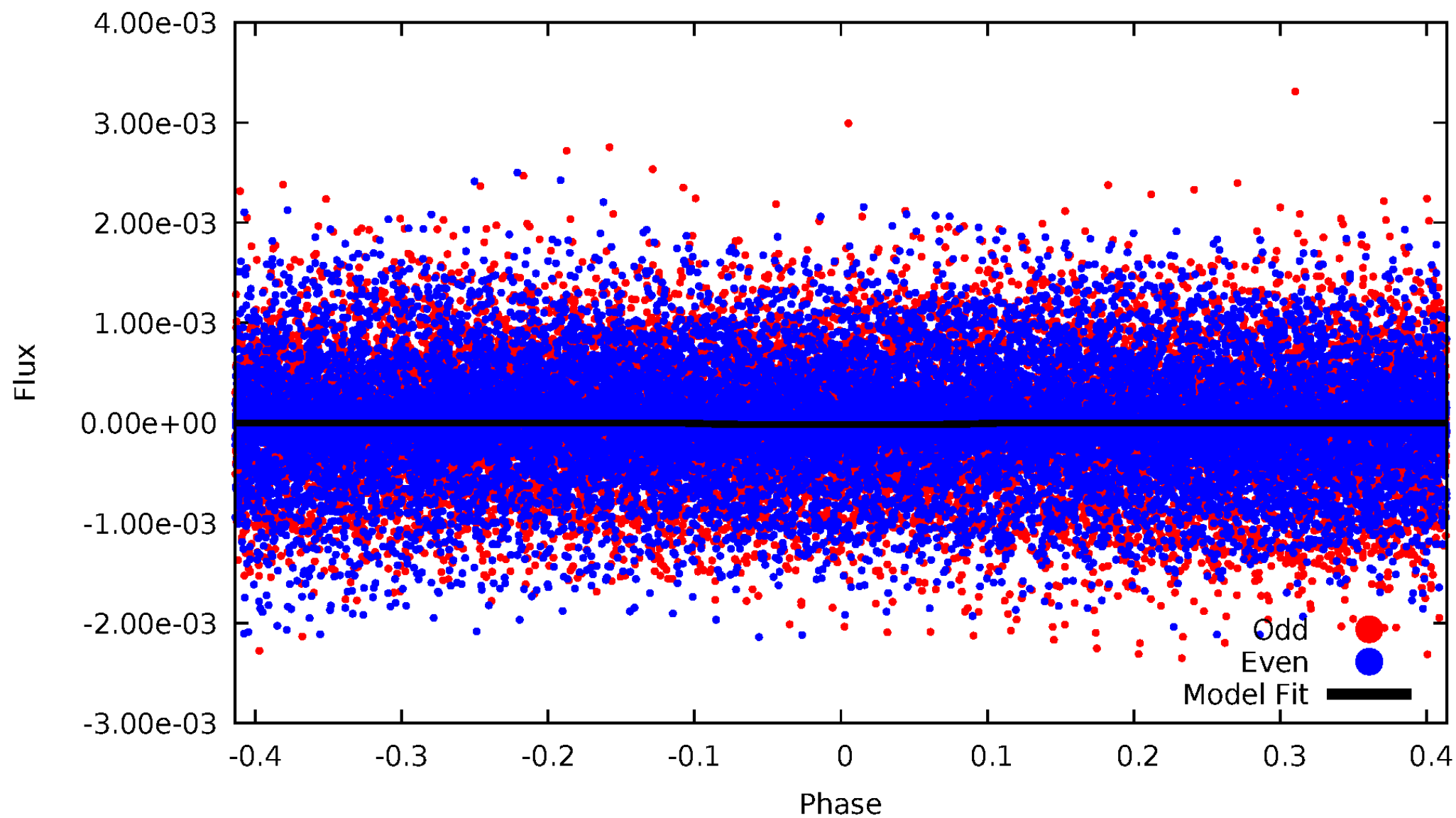
TCE 005535029-01





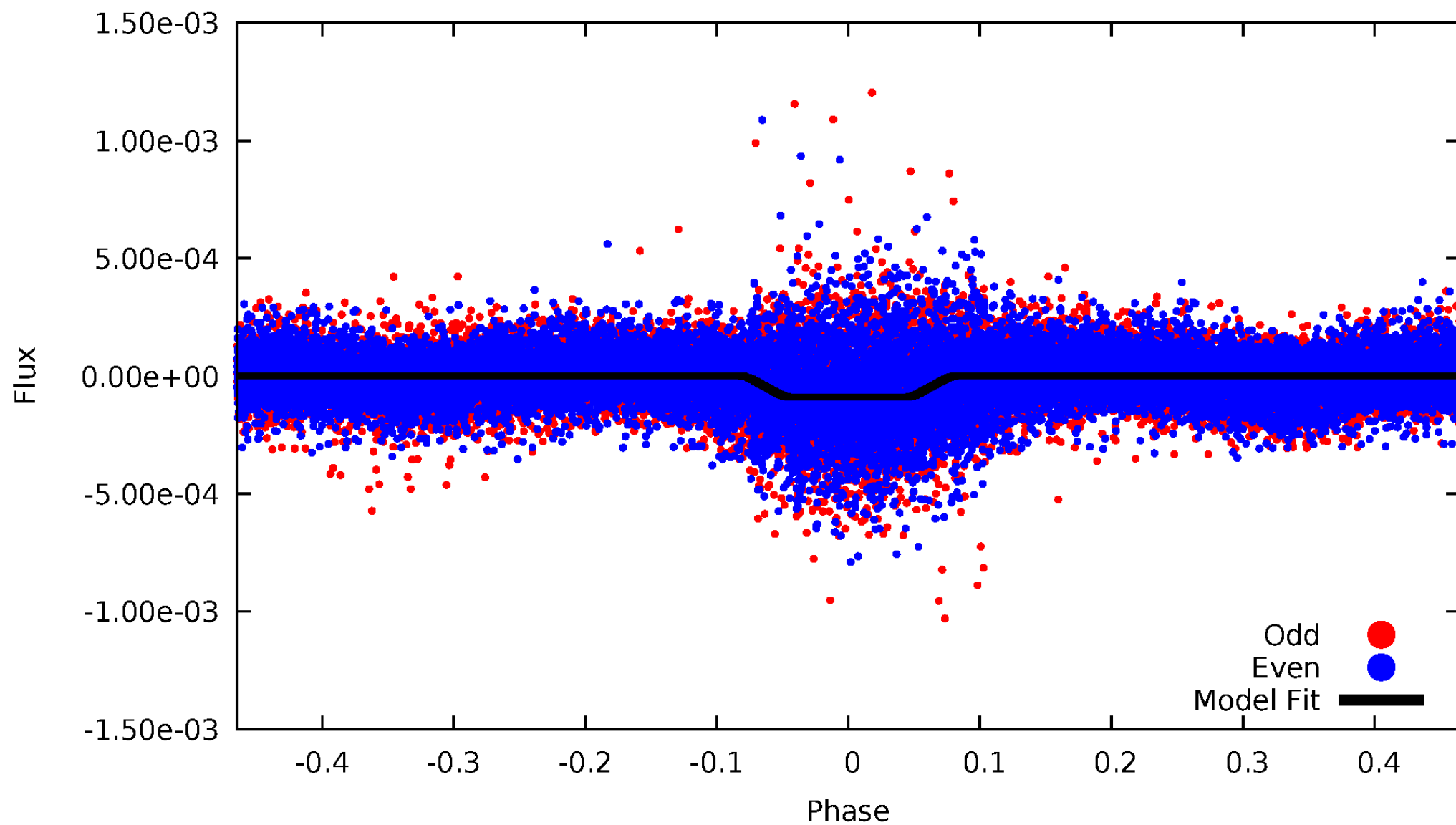
# DV Odd/Even

TCE 005535029-01

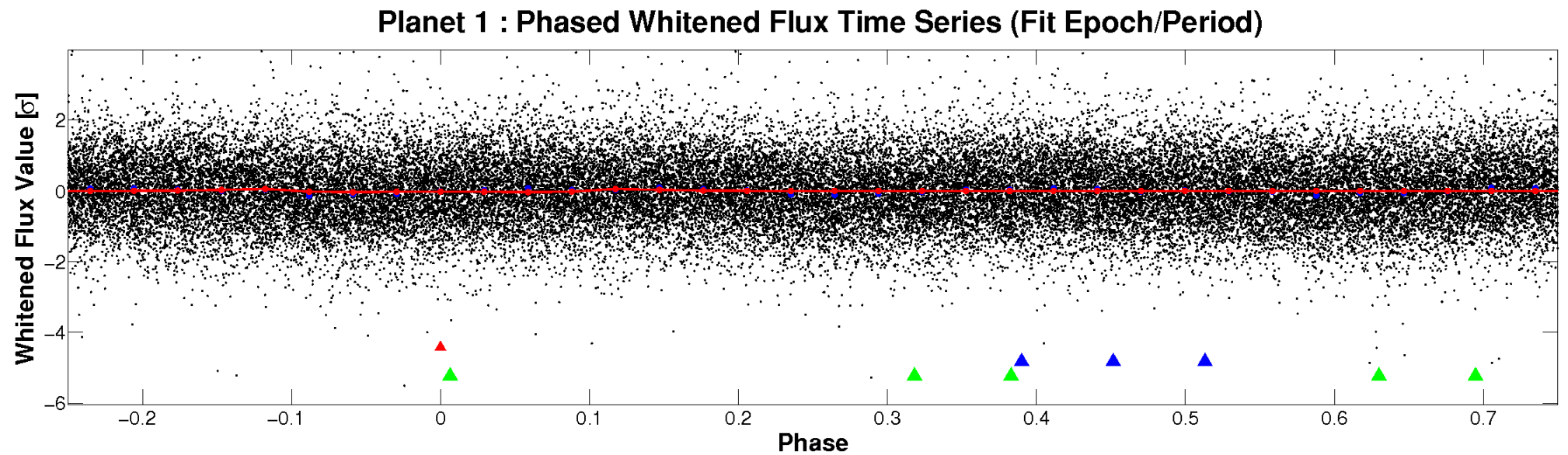
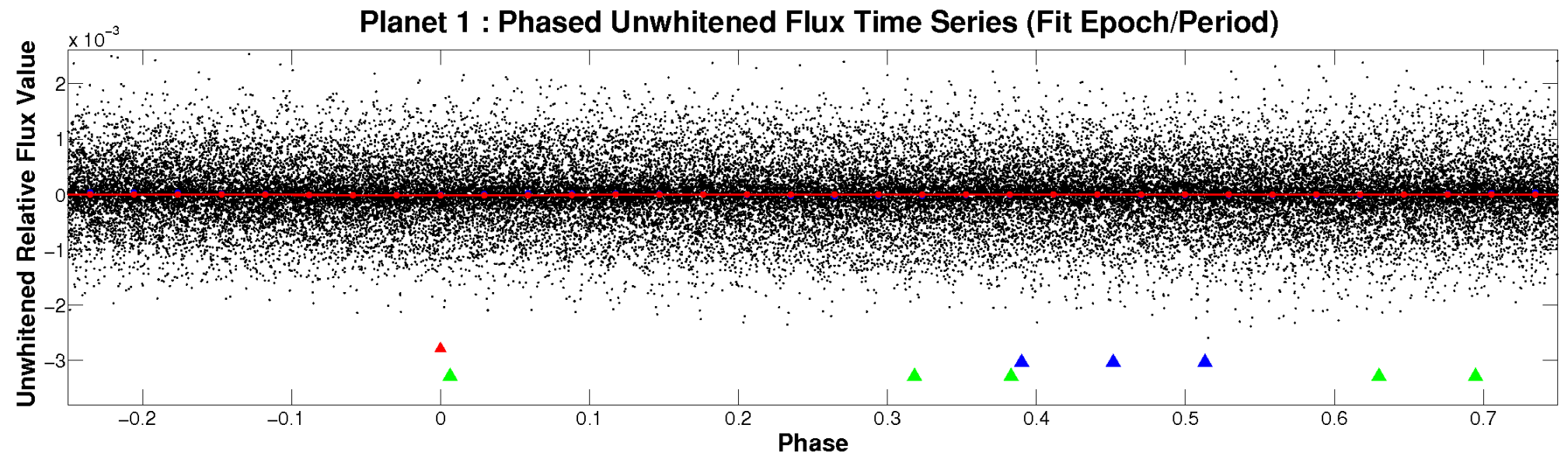


# ALT Odd/Even

TCE 005535029-01

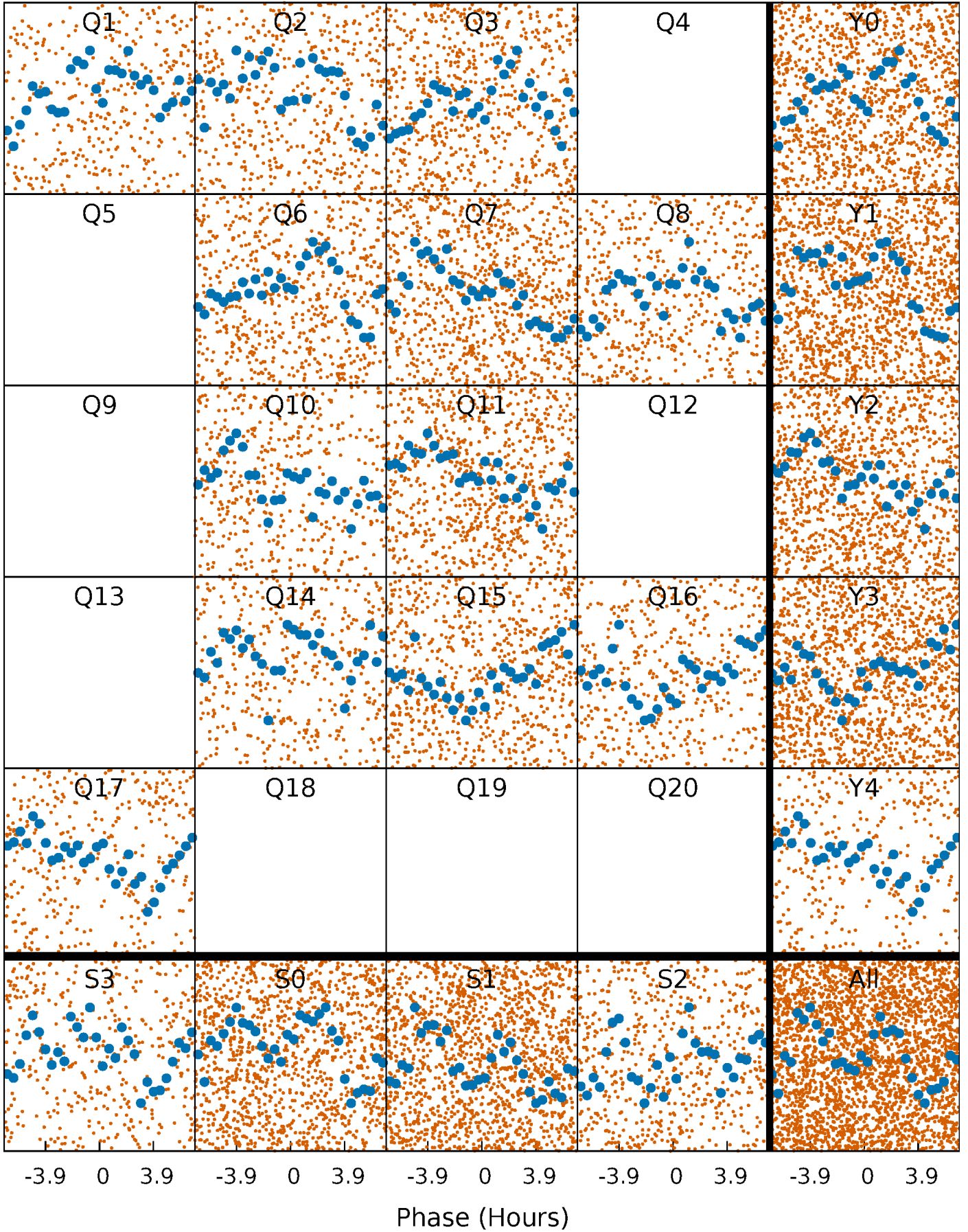


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

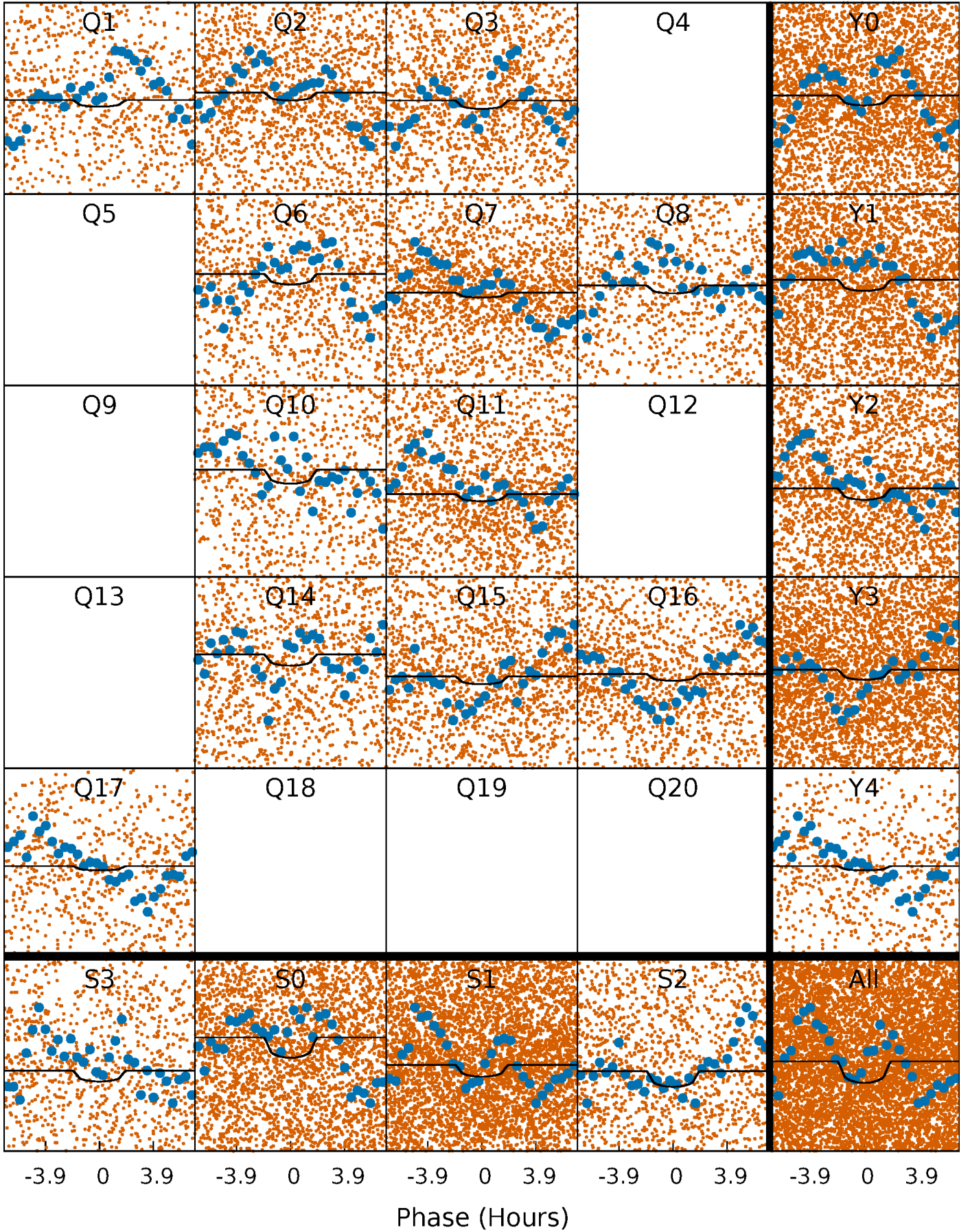
TCE 005535029-01   P= 0.695183 Days    $T_0=132.181393$  (BKJD)





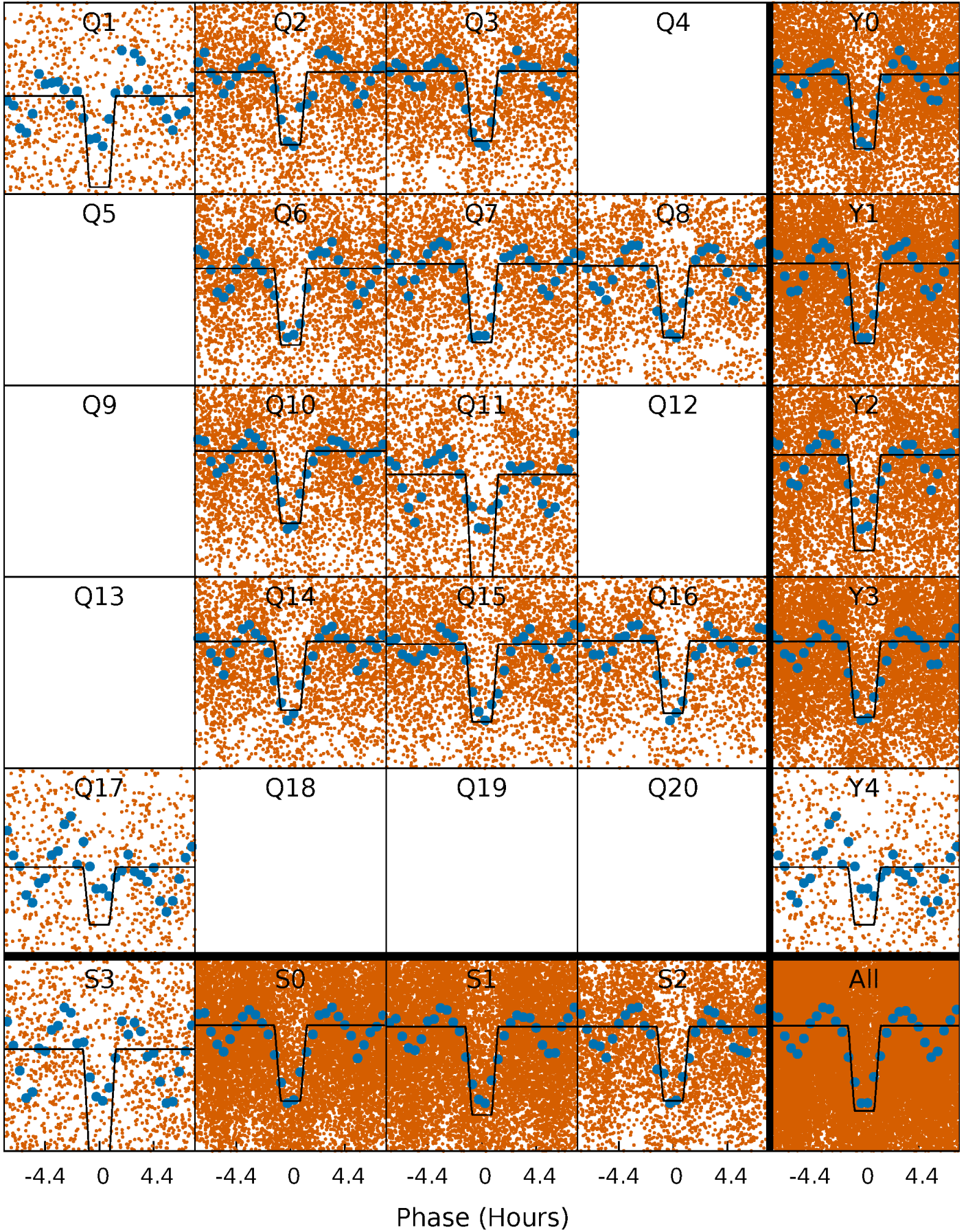
# DV Quarter-Phased Transit Curves

TCE 005535029-01 P= 0.695183 Days  $T_0=132.181393$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 005535029-01   P= 0.695144 Days    $T_0=132.176870$  (BKJD)

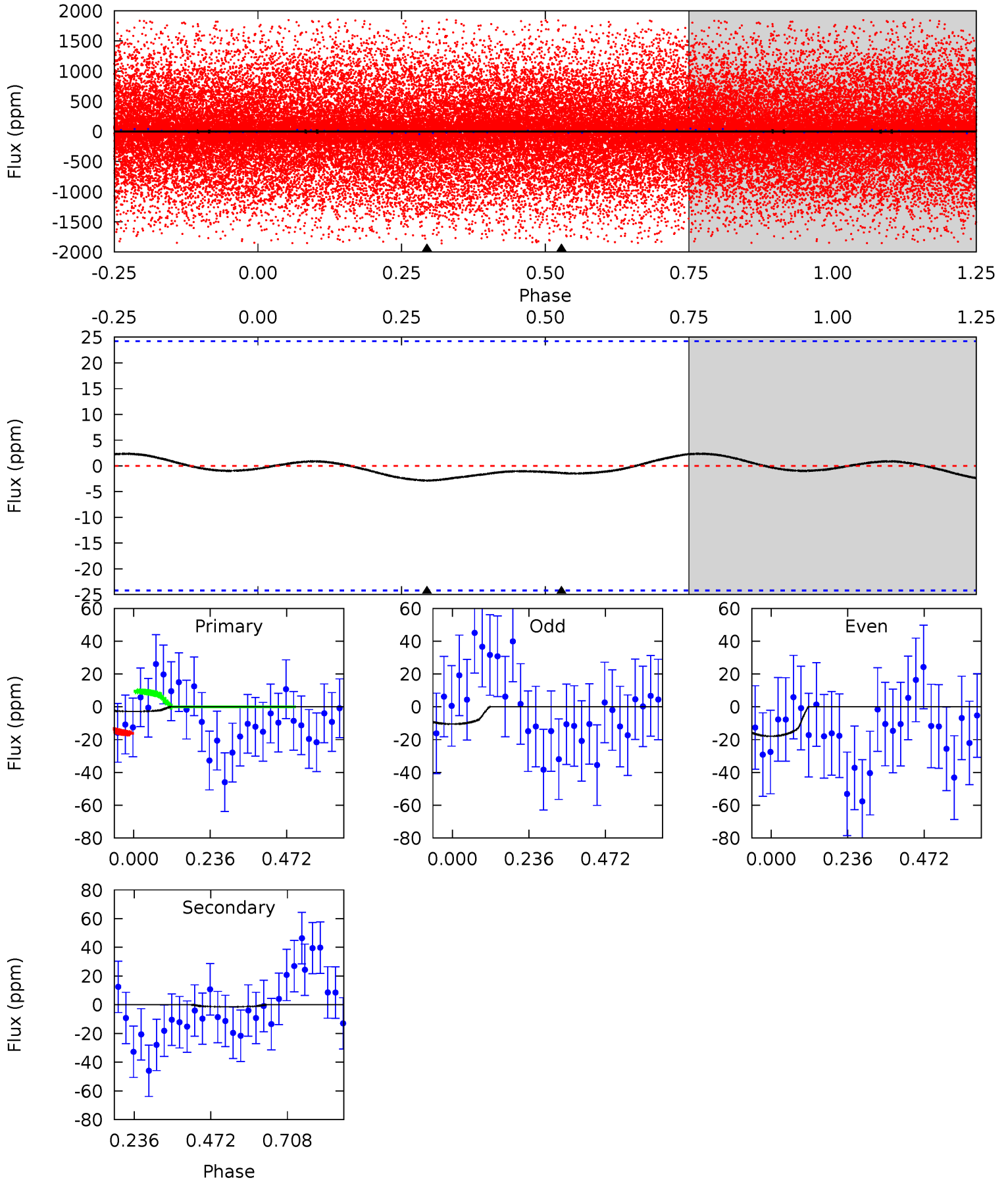




# DV Model-Shift Uniqueness Test

005535029-01, P = 0.695183 Days, E = 131.486210 Days

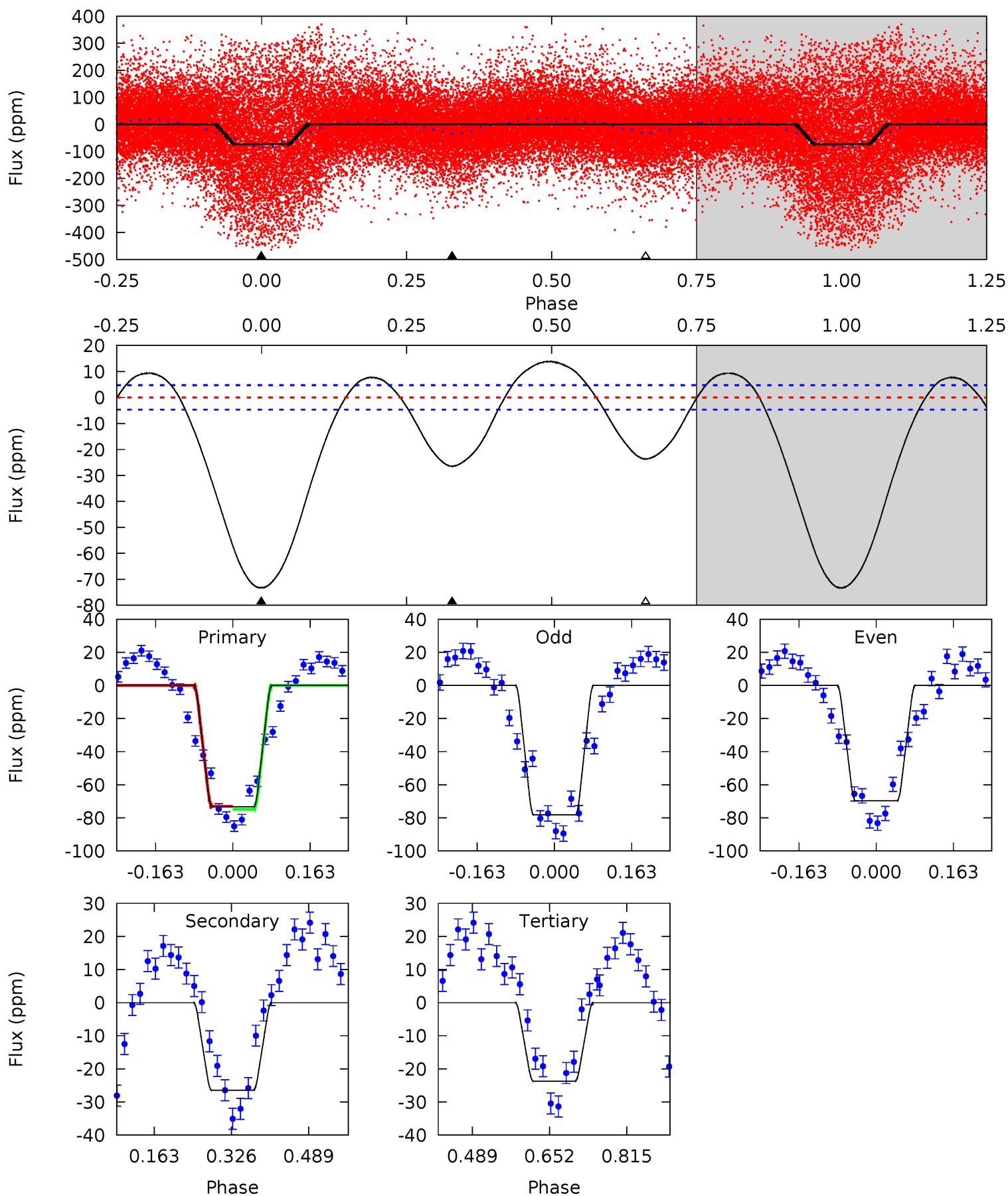
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.51	0.25	0	0	4.38	1.19	0.20	0.51	0.51	0.25	0.25	0.66	0.06	0.45	0.60



# Alt Model-Shift Uniqueness Test

005535029-01, P = 0.695144 Days, E = 131.481726 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
69.3	25.1	22.4	0	4.46	1.39	12.1	46.9	69.3	2.62	25.1	4.01	0.98	0.16	0





### Stellar Parameters For KIC 005535029

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$4462^{+58}_{-58}$	$2.036^{+0.033}_{-0.027}$	$-0.180^{+0.100}_{-0.100}$	$19.537^{+1.751}_{-3.253}$	$1.513^{+0.298}_{-0.446}$	$0.000^{+0.000}_{-0.000}$
	+1%/-1%	+2%/-1%	+56%/-56%	+9%/-17%	+20%/-29%	+21%/-11%
Source	SPE74	AST9	SPE74	DSEP		

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

### Secondary Eclipse Parameters for KIC 005535029-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-1 \pm 6$	$10.06^{+3.84}_{-3.99}$	$9152^{+181}_{-203}$	$-7213^{+263}_{-221}$	$0.003^{+0.013}_{-0.010}$
Alt.	$-26 \pm 1$	$20.15^{+4.63}_{-4.41}$	$9163^{+186}_{-226}$	$-7157^{+238}_{-195}$	$0.011^{+0.007}_{-0.003}$

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

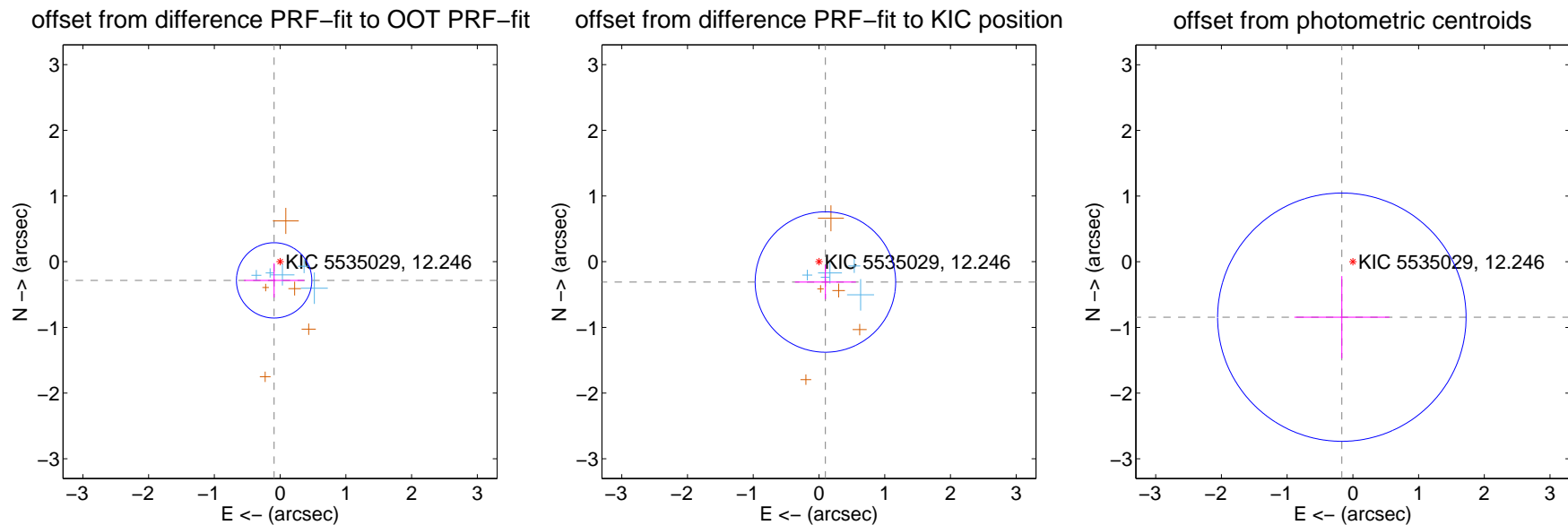
## DV Centroid Data

Supplemental centroid analysis for 005535029-01. Kepler magnitude: 12.25. Transit SNR 4.23

There are 5 quarters with good PRF difference image offsets

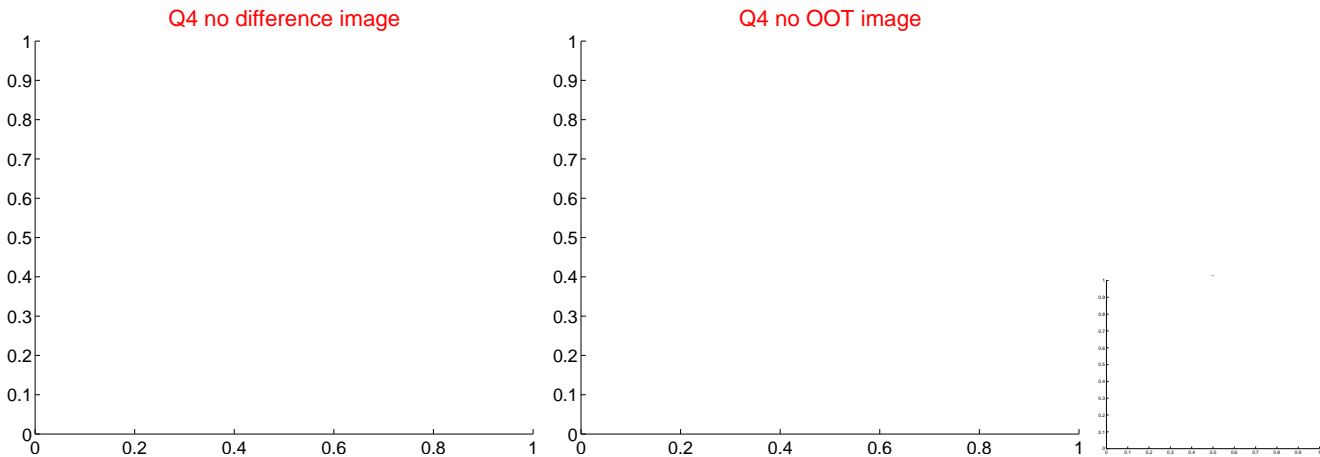
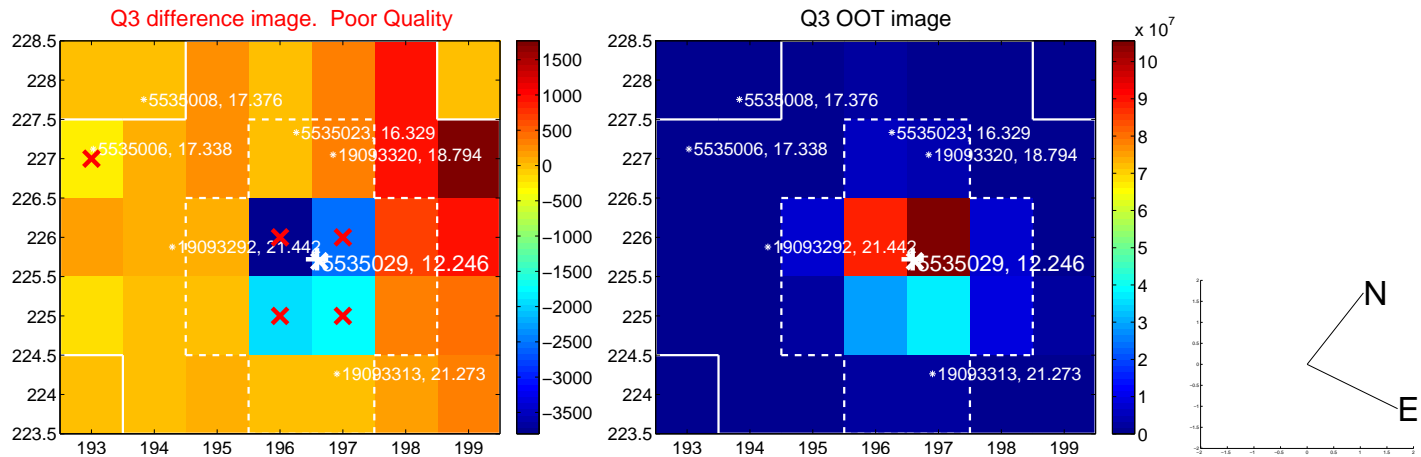
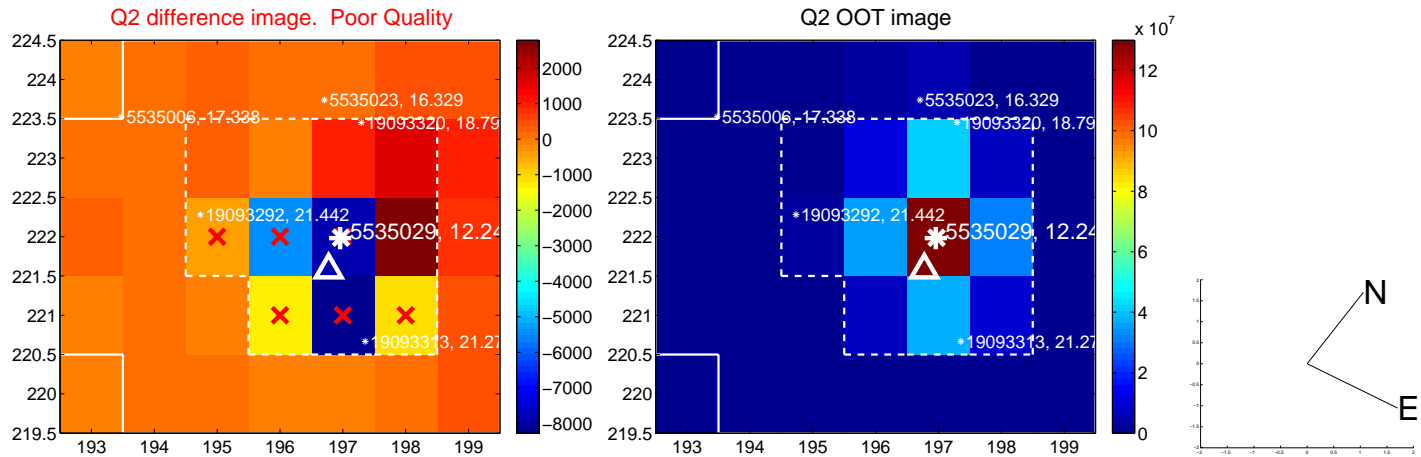
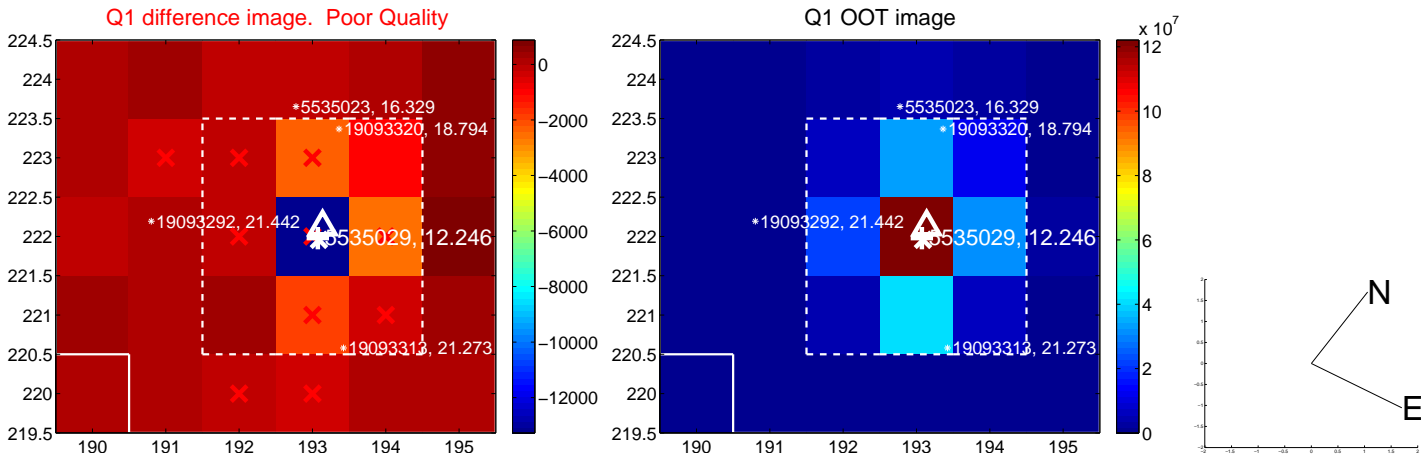
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.299 \pm 0.191$	1.56	$0.091 \pm 0.458$	$-0.284 \pm 0.262$
PRF-fit source offset from KIC position	$0.325 \pm 0.356$	0.91	$-0.098 \pm 0.464$	$-0.309 \pm 0.261$
photometric centroid source offset	$0.86 \pm 0.63$	1.37	$0.17 \pm 0.72$	$-0.84 \pm 0.63$

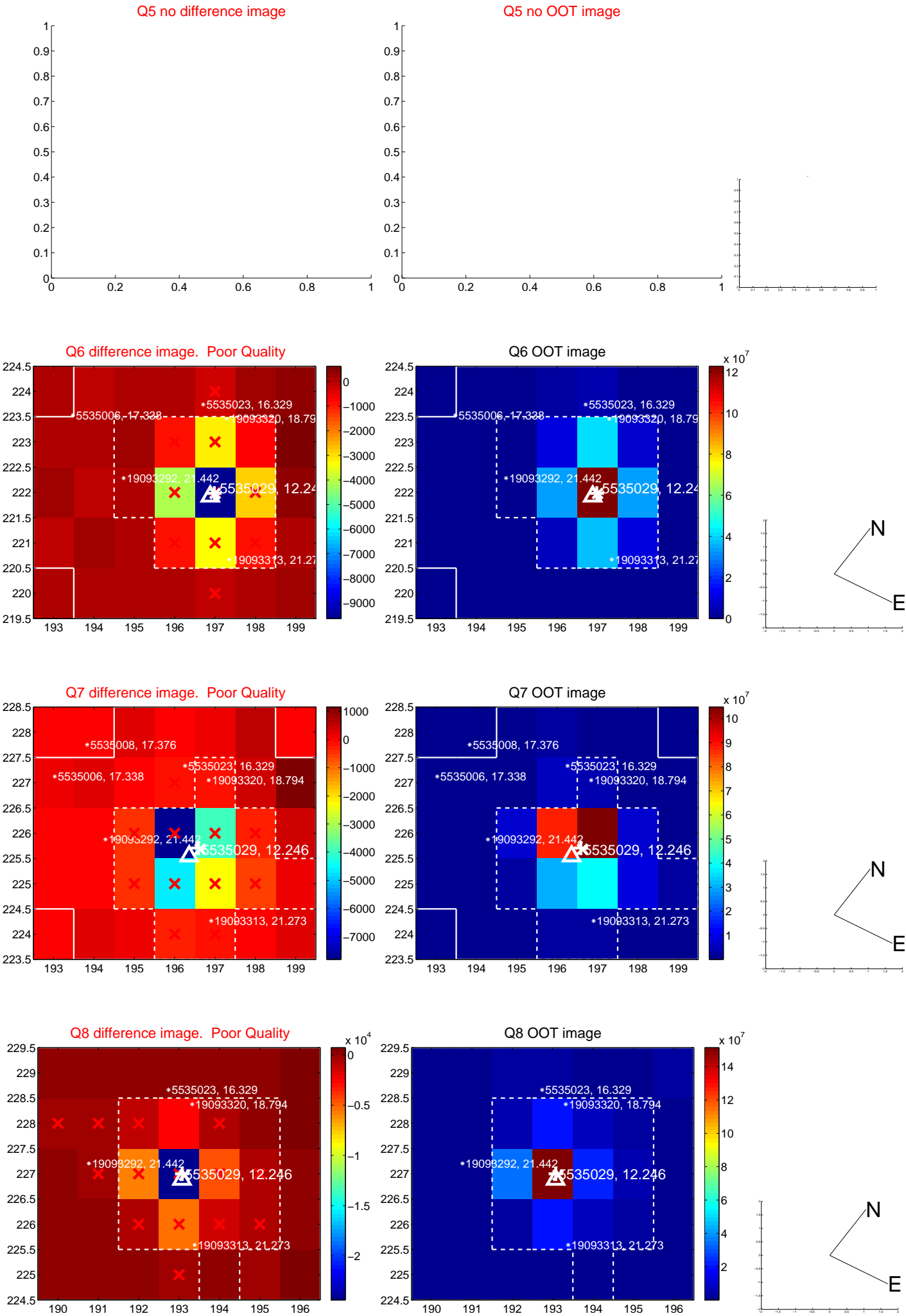


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

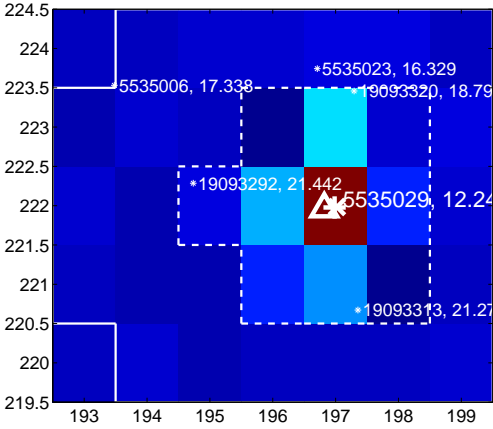
Q9 no difference image



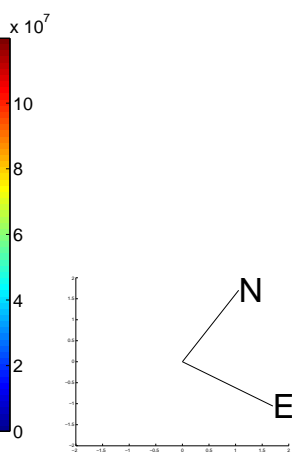
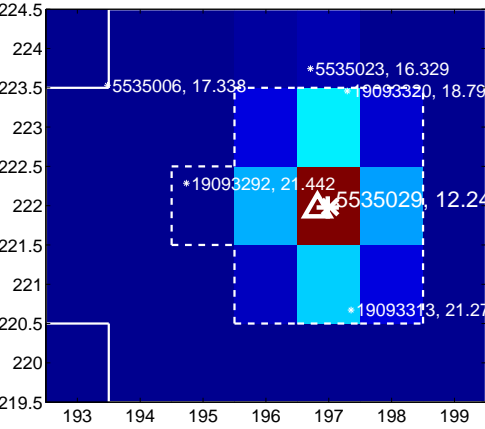
Q9 no OOT image



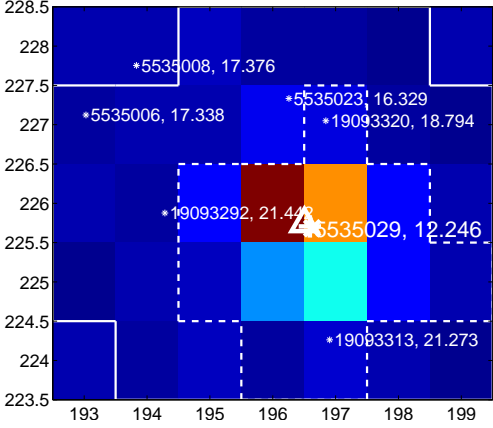
Q10 difference image



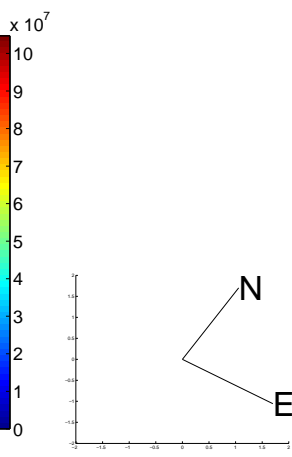
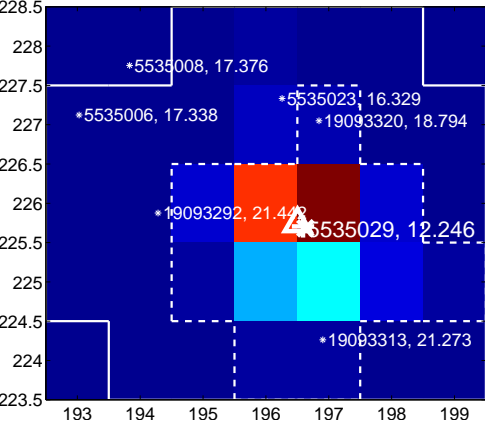
Q10 OOT image



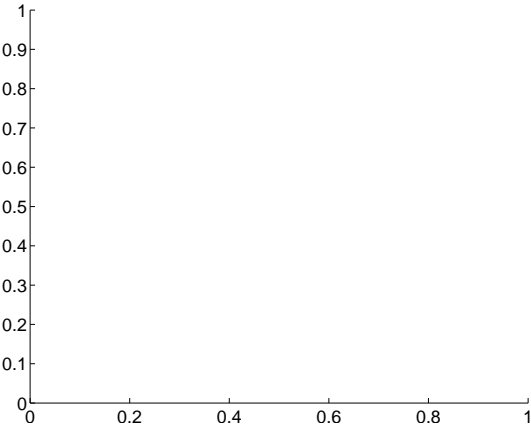
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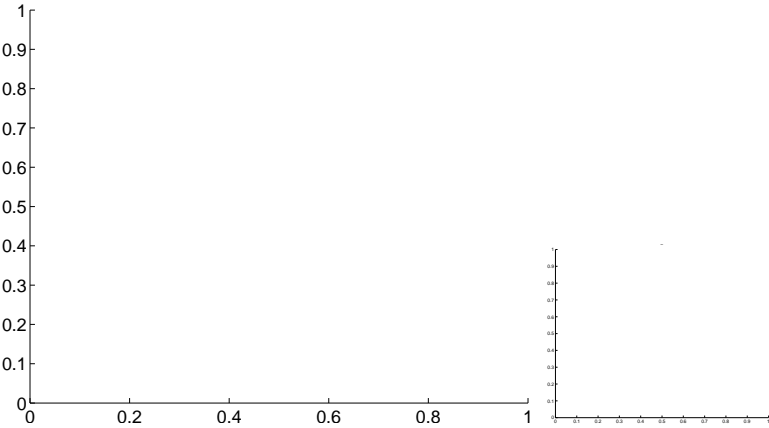
Q11 OOT image



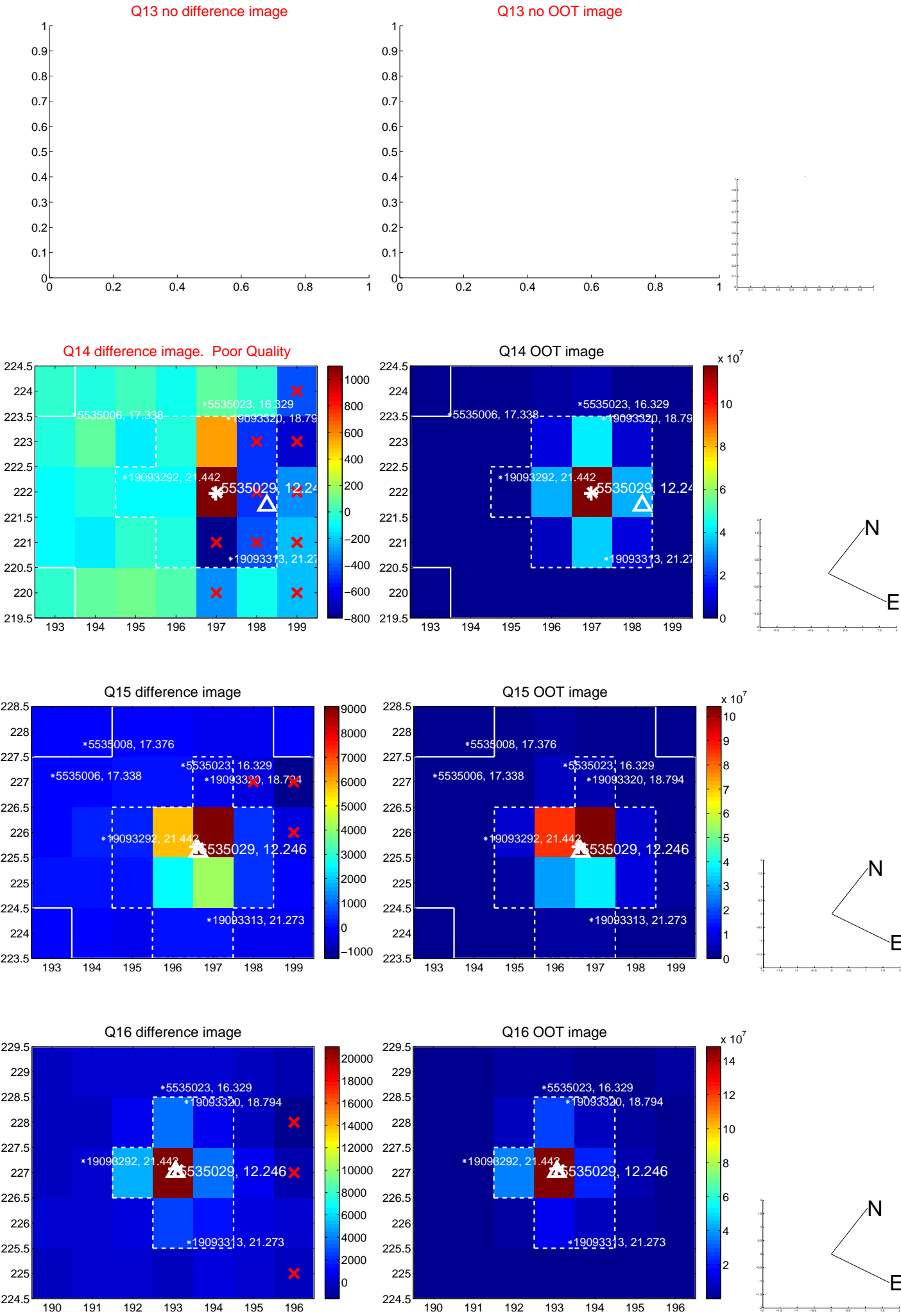
Q12 no difference image



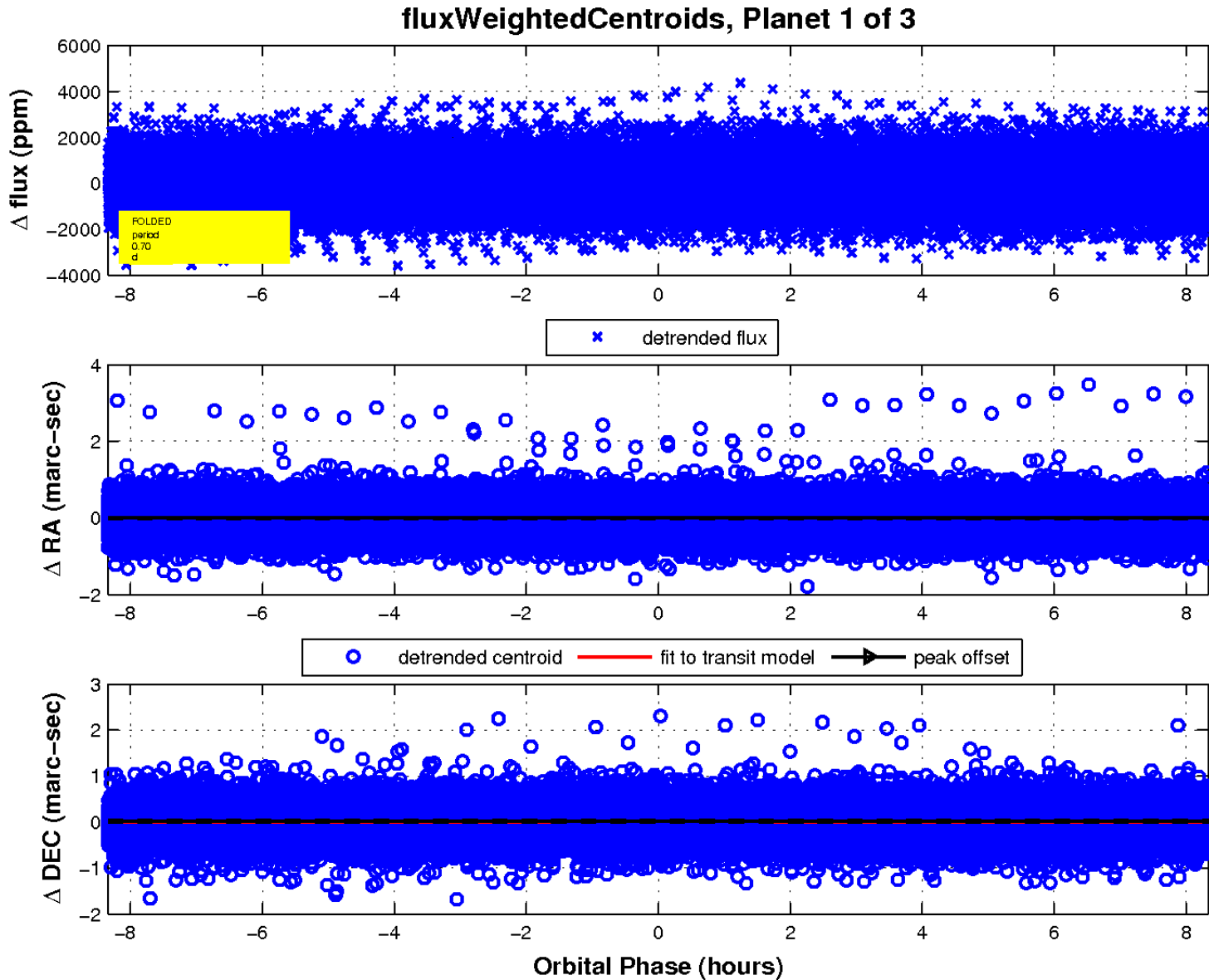
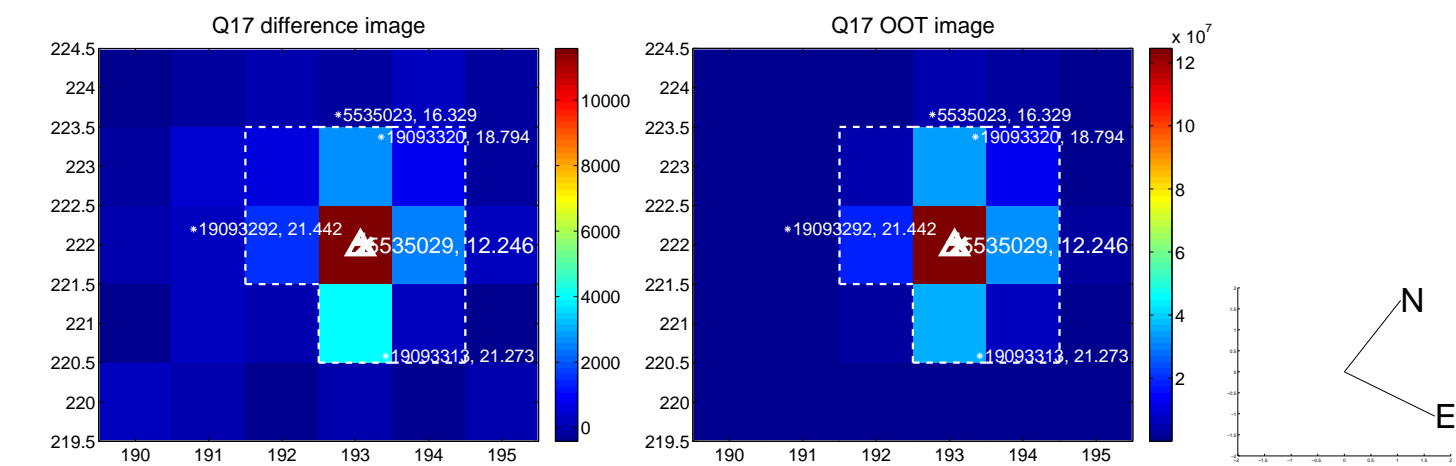
Q12 no OOT image



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

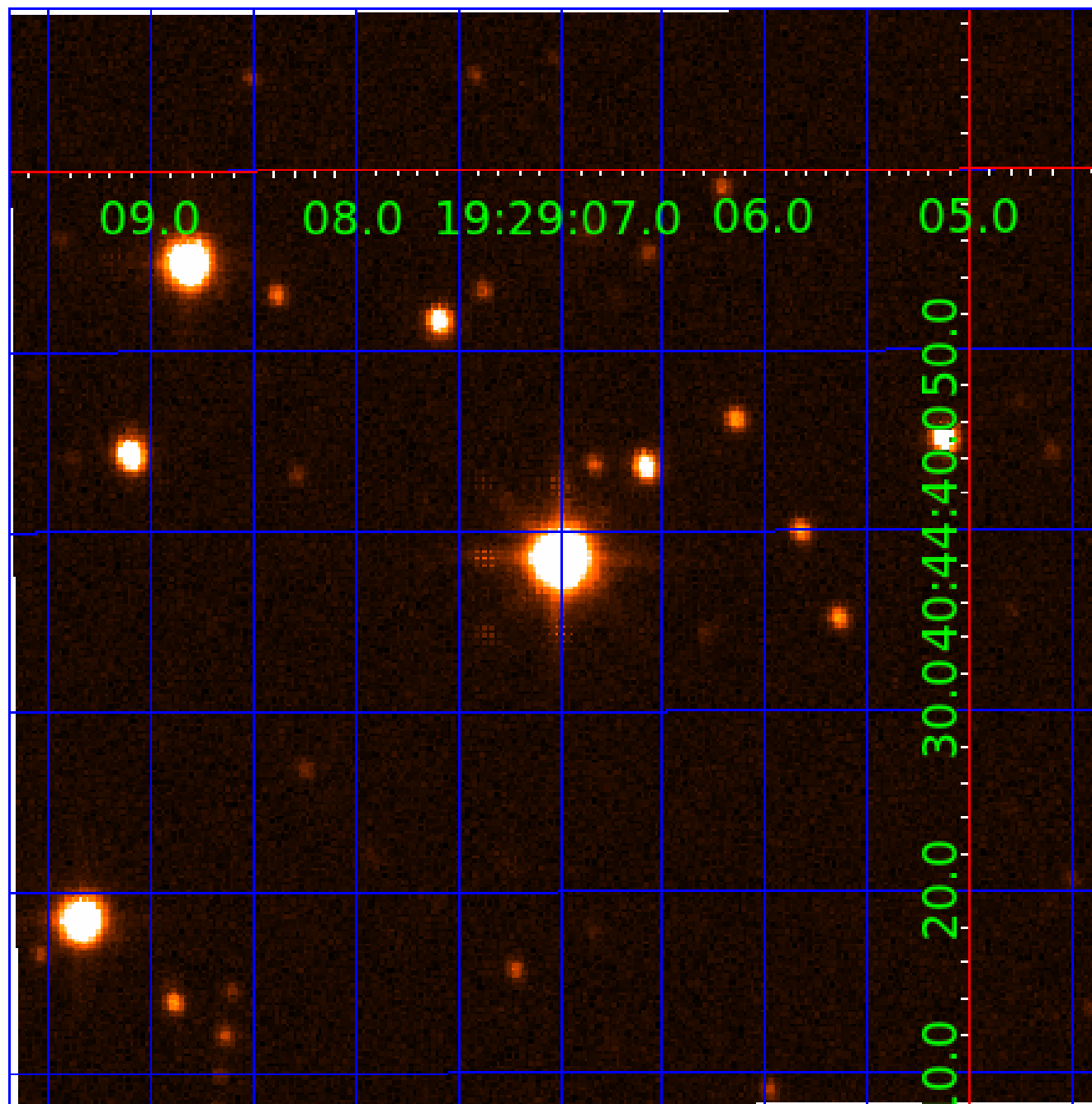


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 005535029

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	$R_{\star}$ ( $R_{\odot}$ )	$T_{\star}$ (K)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
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## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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005535029-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005535029-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS

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

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

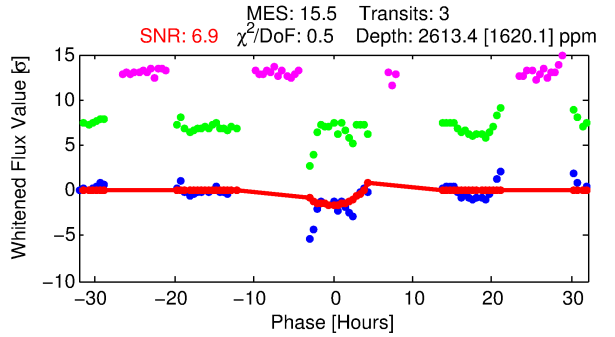
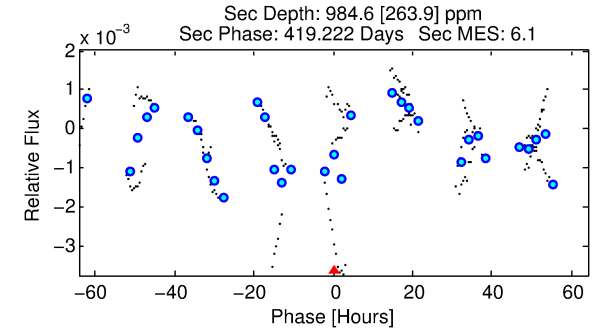
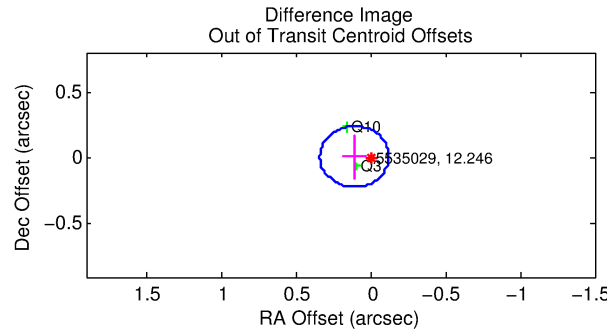
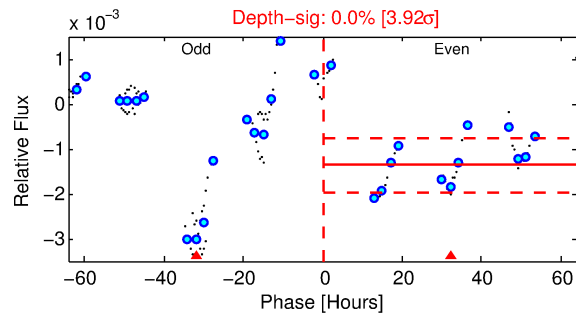
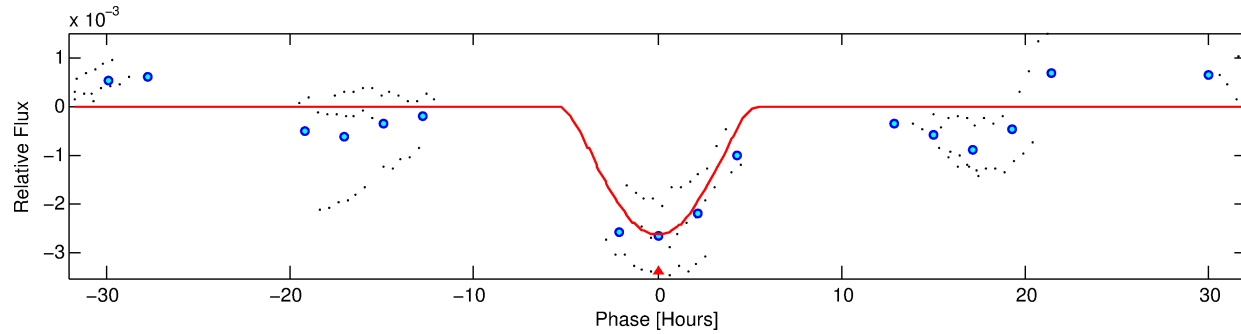
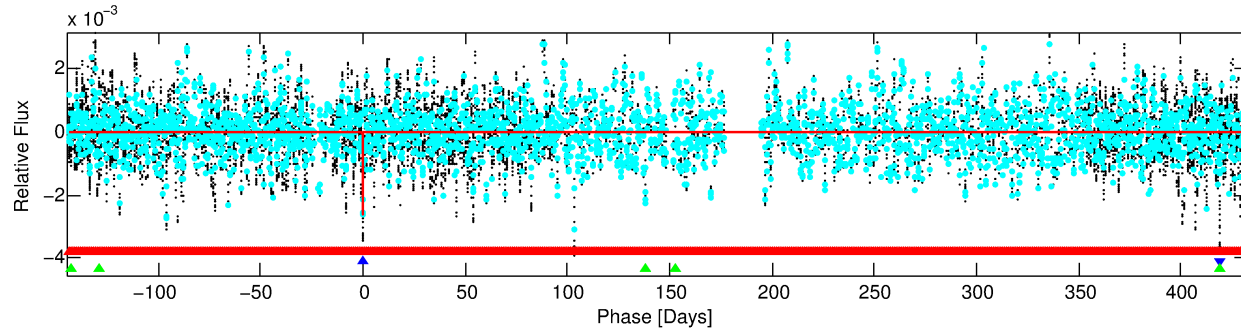
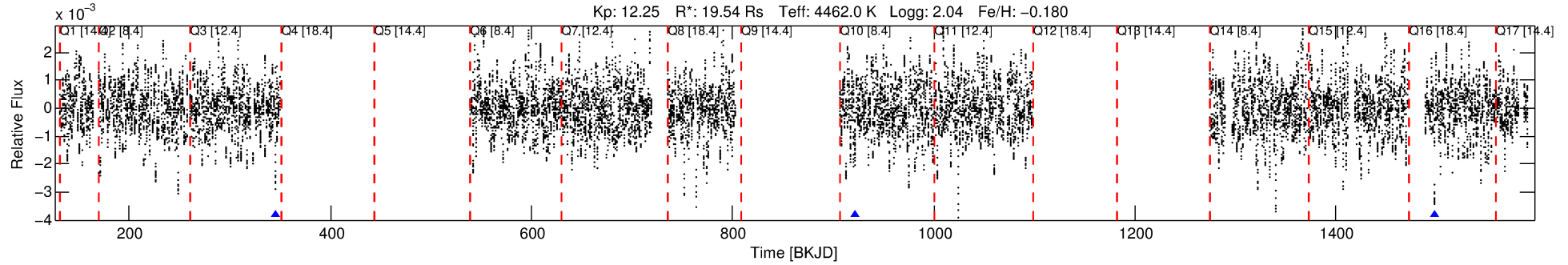
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005535029-02

No Significant Match Found

# DV One-Page Summary

KIC: 5535029 Candidate: 2 of 3 Period: 576.349 d



## DV Fit Results:

Period = 576.34909 [0.02126] d  
Epoch = 345.1784 [0.0352] BKJD  
Rp/R\* = 0.0939 [0.1637]  
a/R\* = 182.62 [77.19]  
b = 1.00 [0.26]  
Seff = 55.98 [7.42]  
Teq = 697 [23] K  
Rp = 200.21 [350.51] Re  
a = 1.5562 [0.1772] AU  
Ag = 32.72 [114.46] [0.28σ]  
Teffp = 2579 [2254] K [0.83σ]

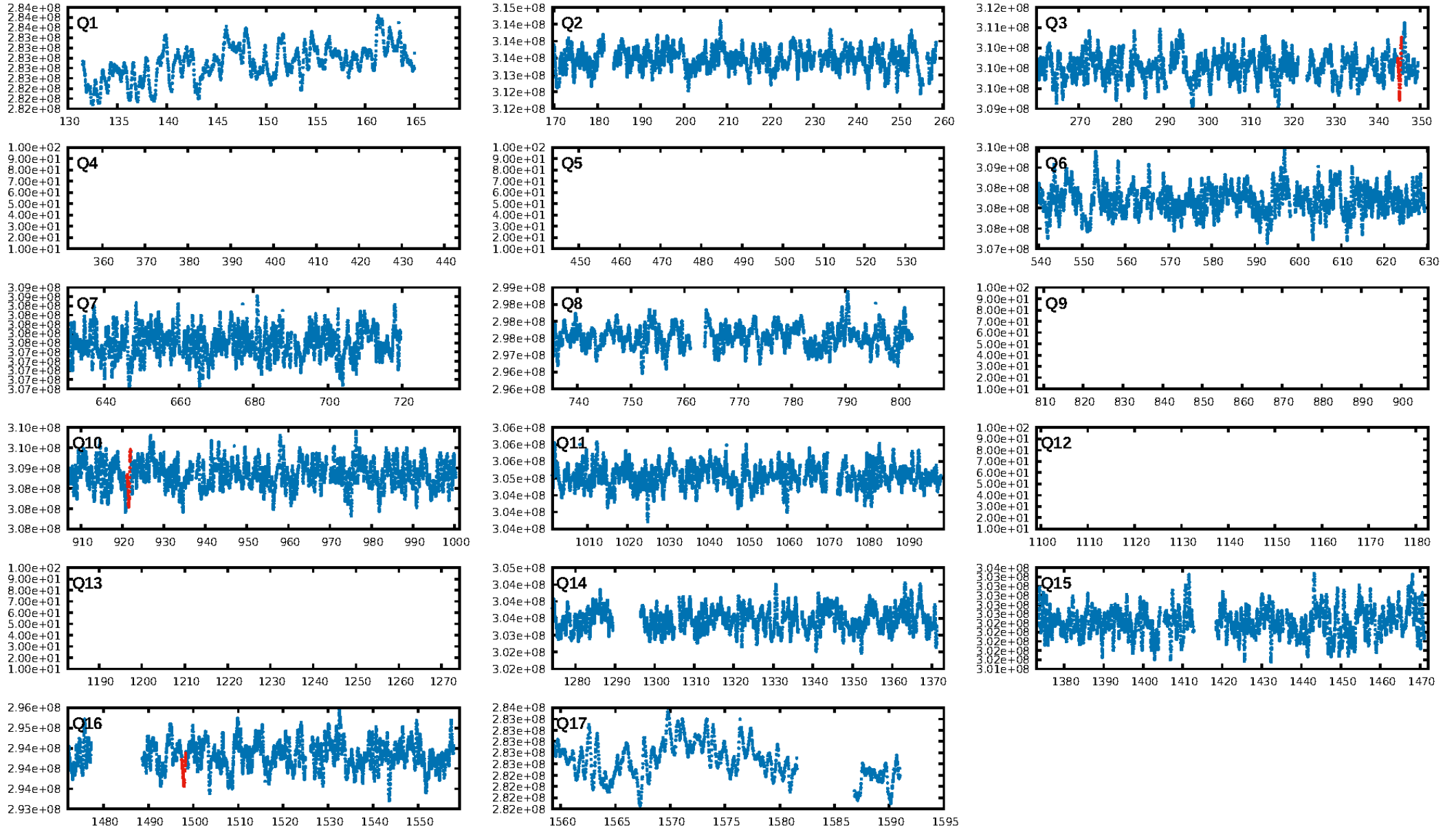
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [346.18σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 35.7%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.16e-28  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 0.2568  
Centroid-sig: 30.6%  
Centroid-so: 0.294 arcsec [3.12σ]  
OotOffset-rm: 0.109 arcsec [1.42σ]  
KicOffset-rm: 0.141 arcsec [0.85σ]  
OotOffset-st: 1/1/0/0 [2]  
KicOffset-st: 1/1/0/0 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 0.00 [0/2]

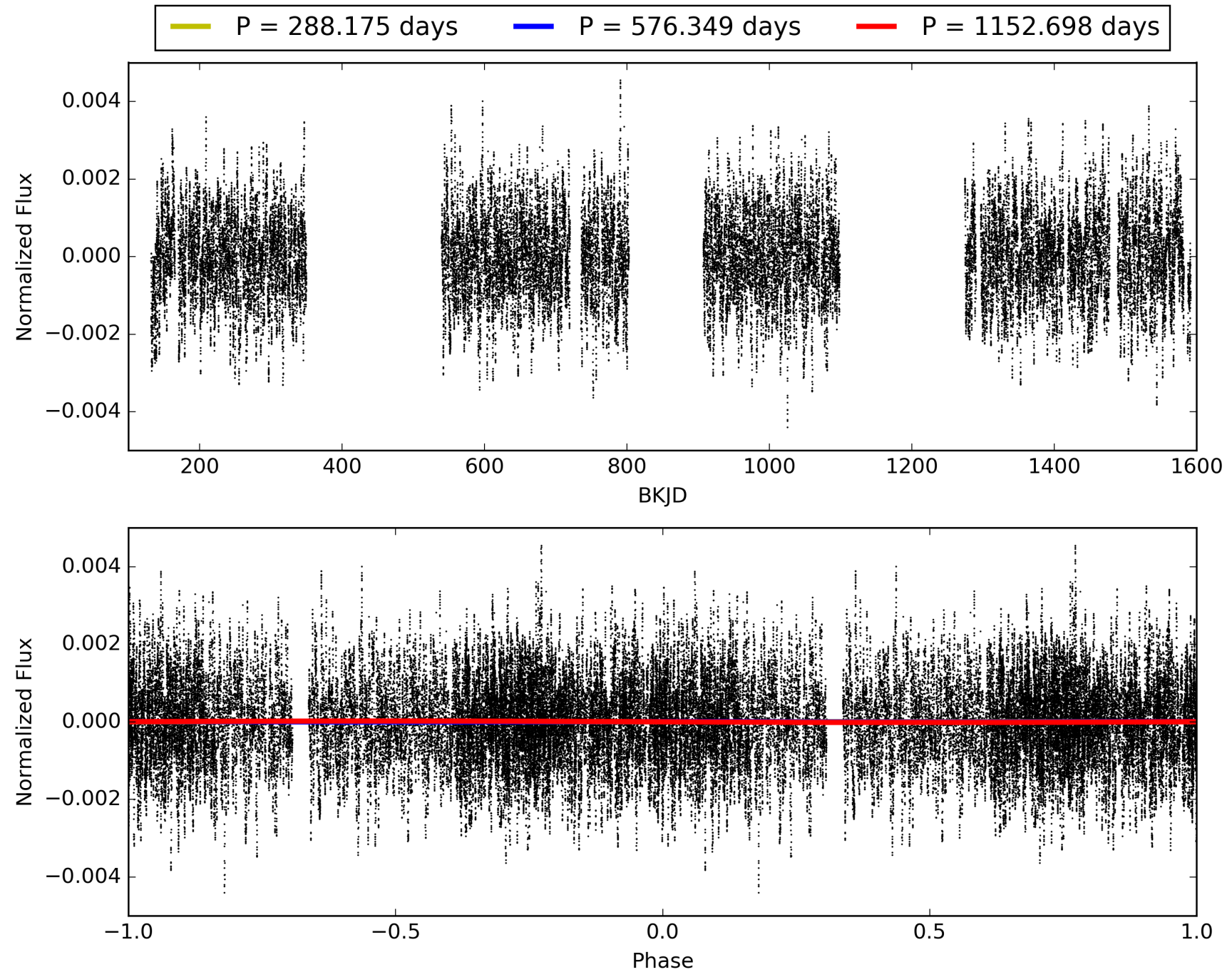
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:50:03 Z

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

# TCE 005535029-02, PDC Light Curves



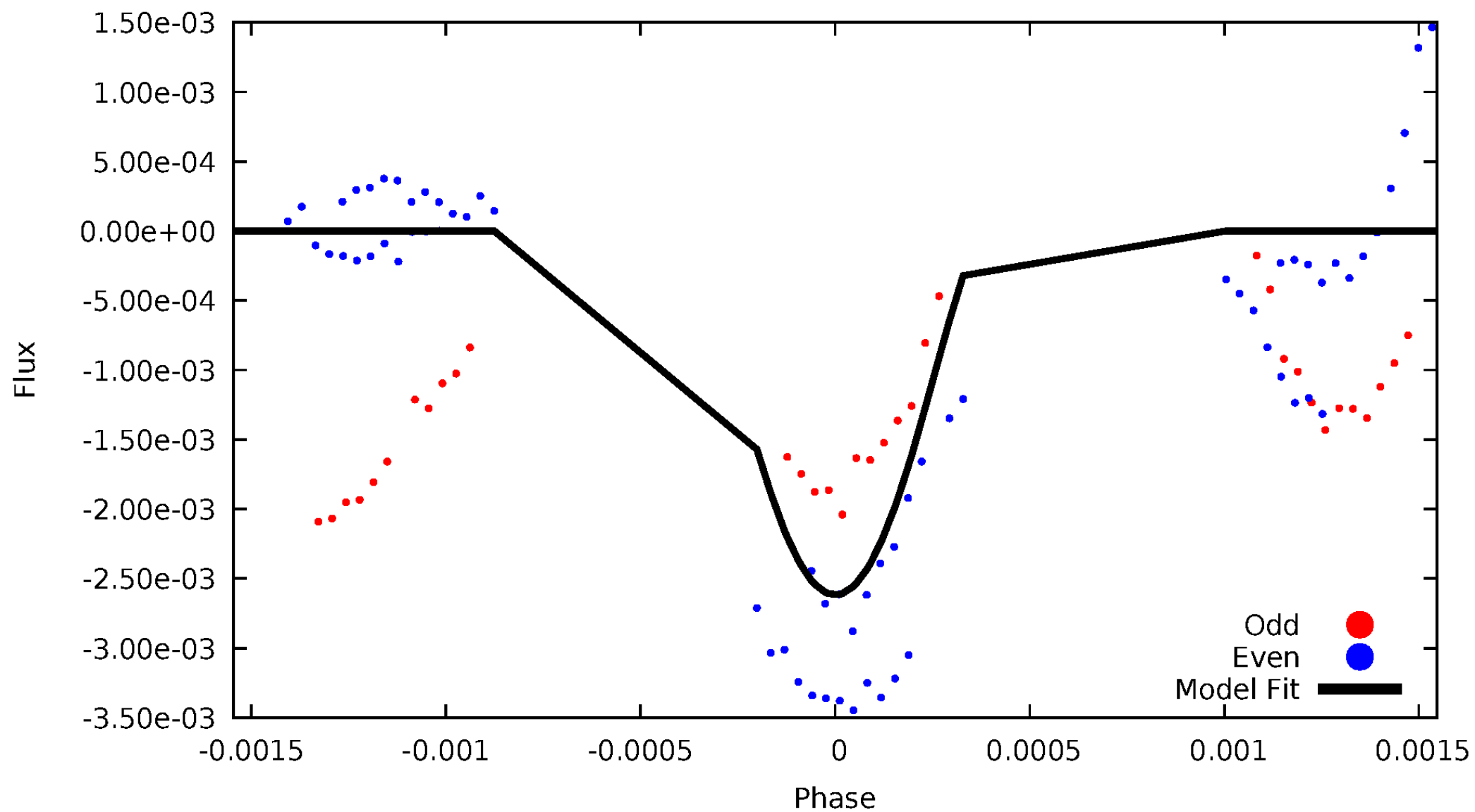
TCE 005535029-02





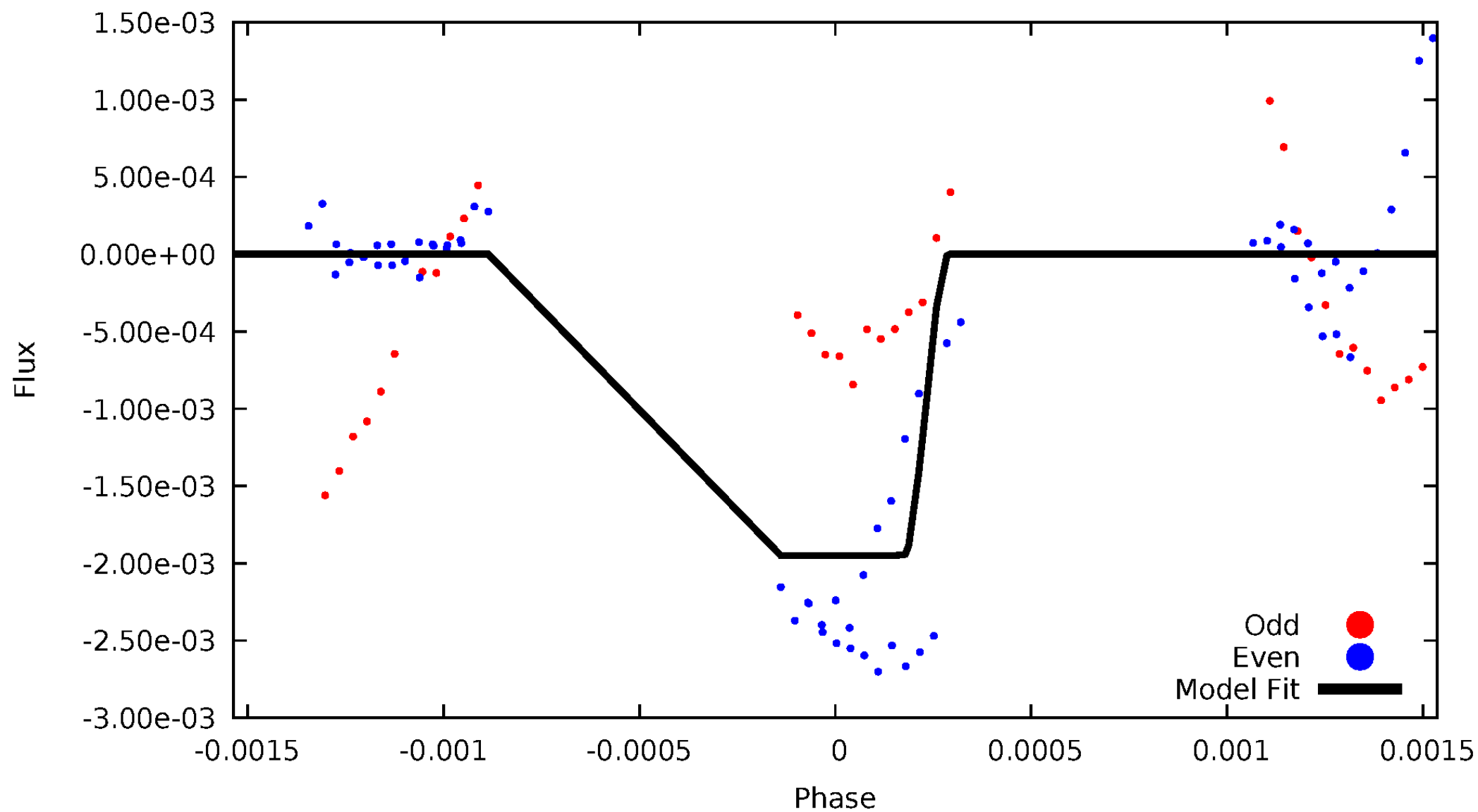
# DV Odd/Even

TCE 005535029-02



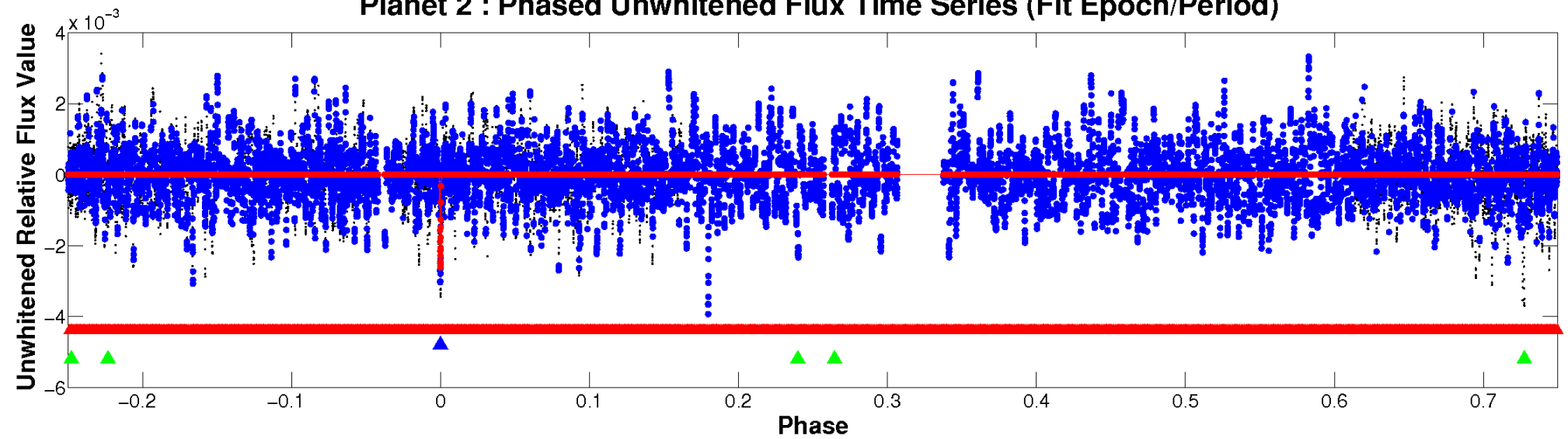
# ALT Odd/Even

TCE 005535029-02

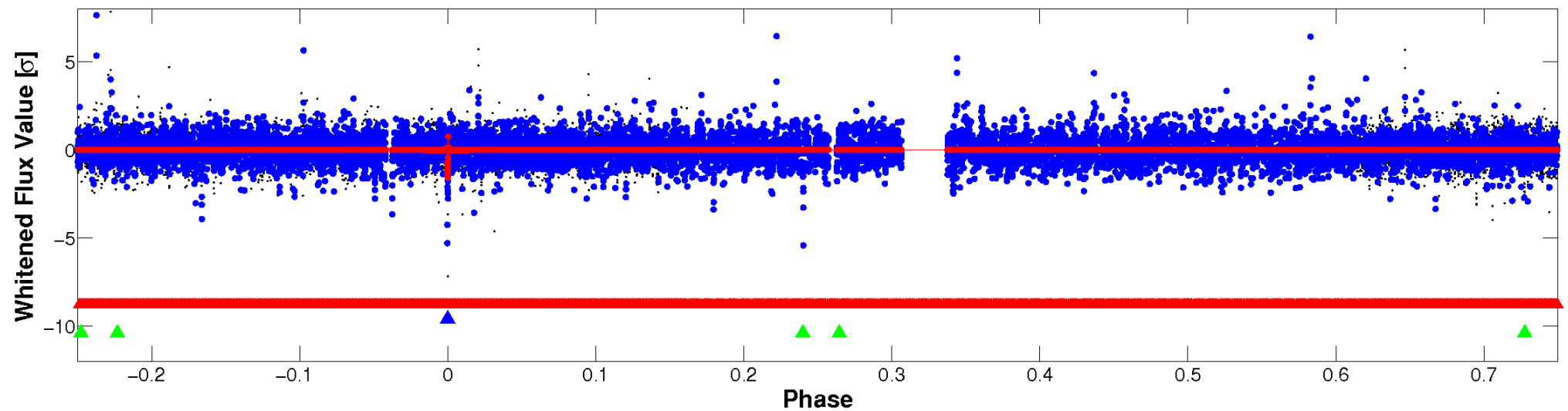


# Non-Whitened Vs. Whitened Light Curve

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

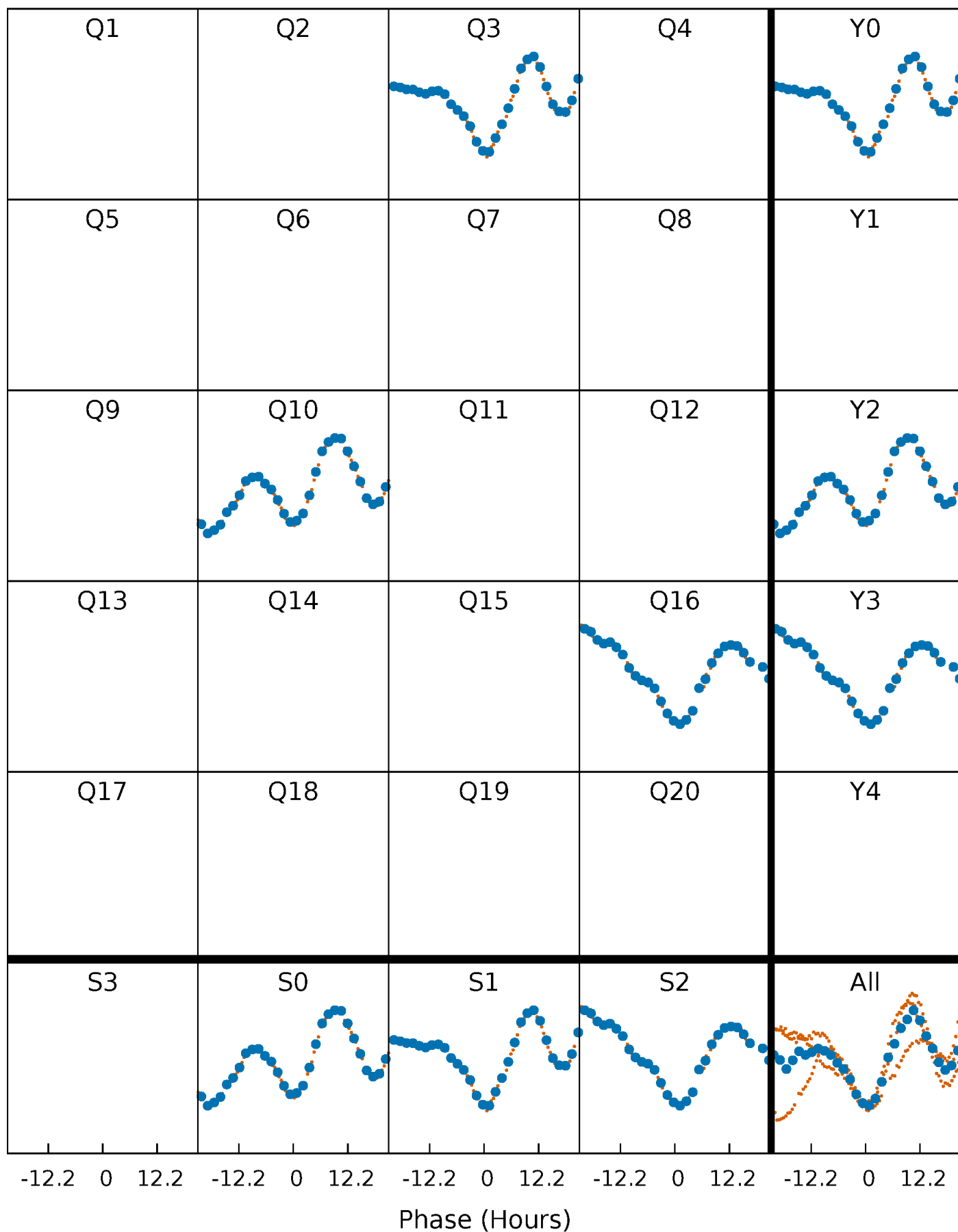


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



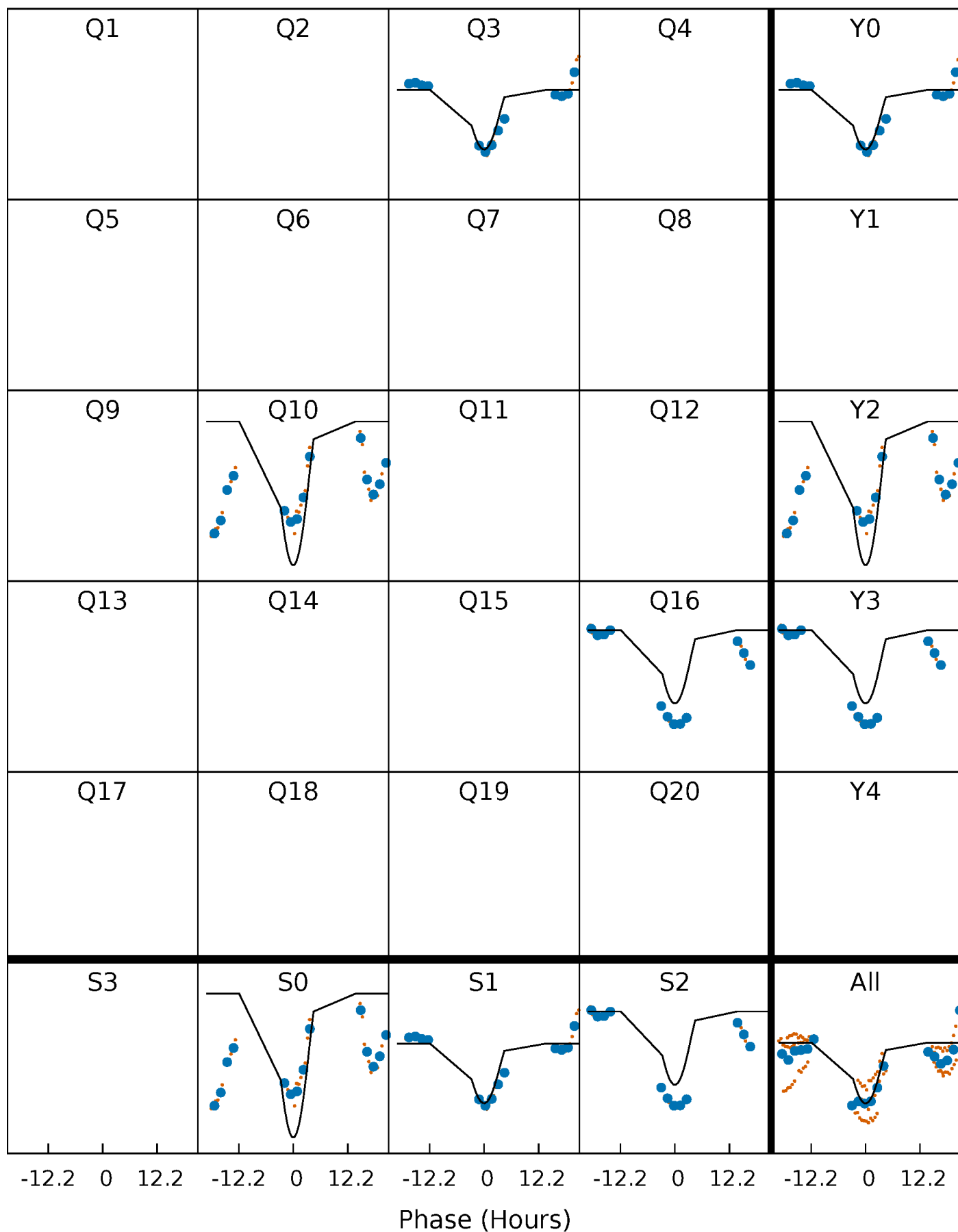
# PDC Quarter-Phased Transit Curves

TCE 005535029-02 P=576.349091 Days  $T_0=345.178436$  (BKJD)



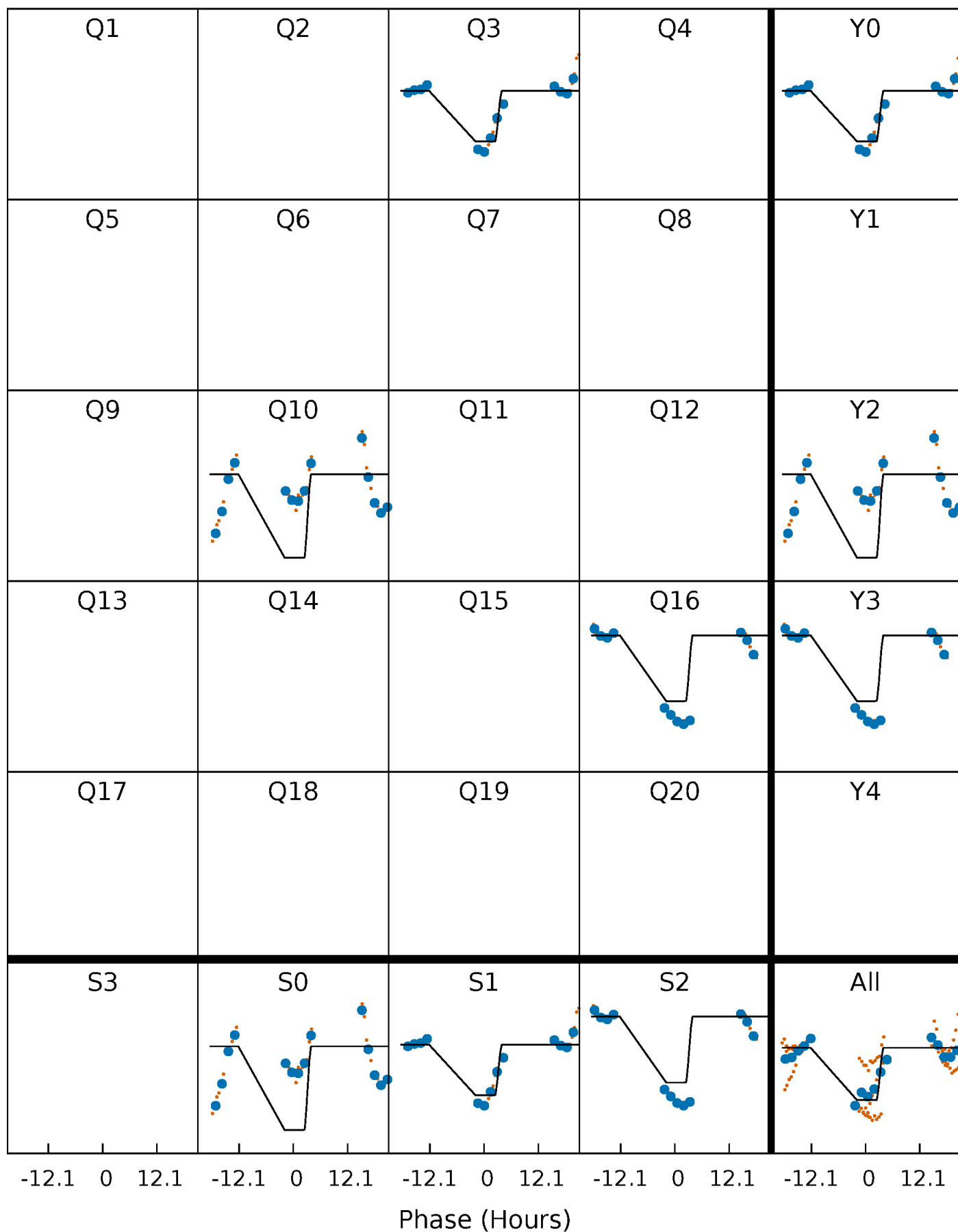
# DV Quarter-Phased Transit Curves

TCE 005535029-02 P=576.349091 Days  $T_0=345.178436$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 005535029-02 P=576.328560 Days  $T_0=345.183582$  (BKJD)

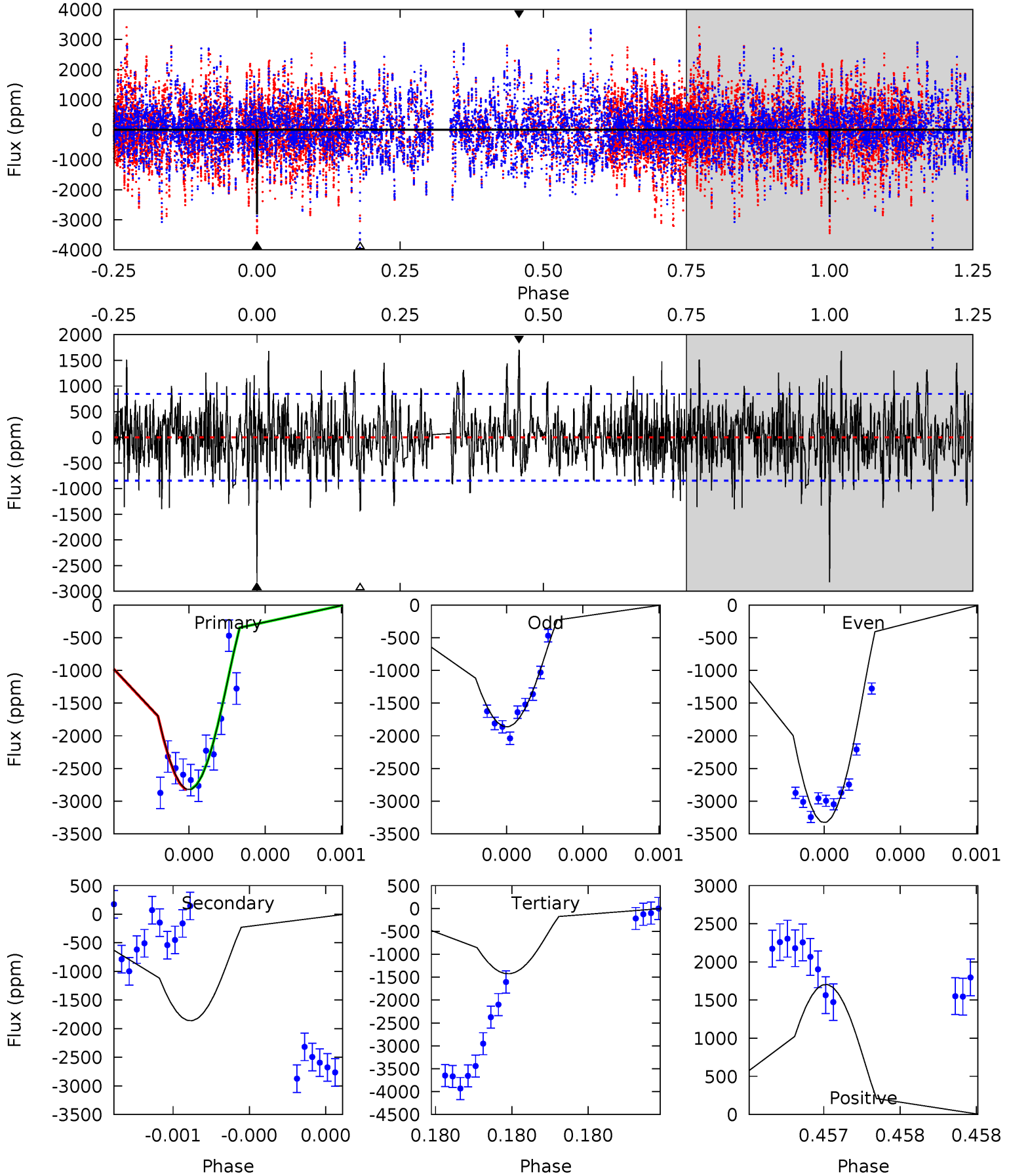




# DV Model-Shift Uniqueness Test

005535029-02, P = 576.349091 Days, E = 345.178436 Days

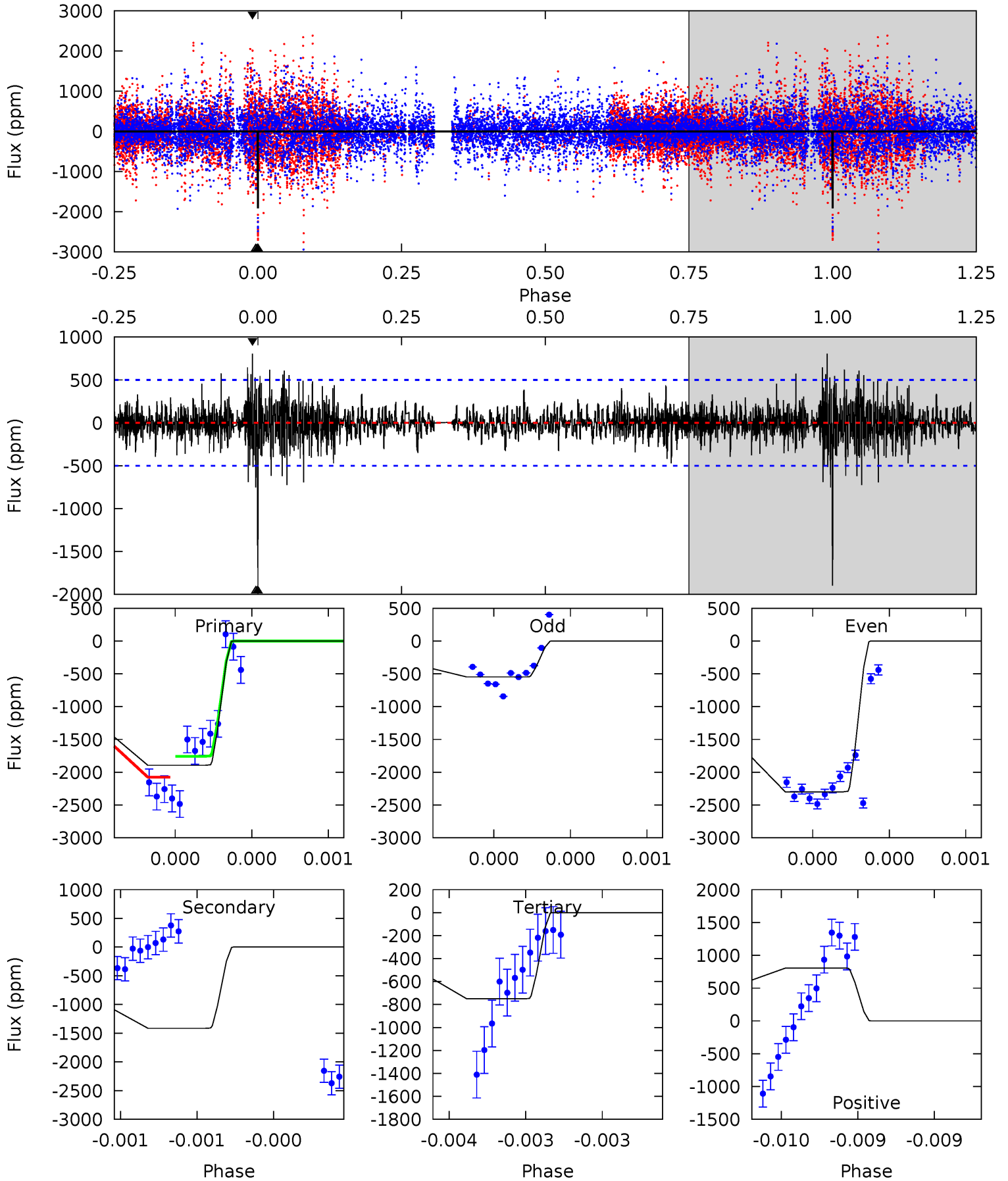
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.6	12.3	9.39	11.2	5.58	3.48	2.93	9.21	7.37	2.87	1.04	4.63	0.99	0.38	0.03



# Alt Model-Shift Uniqueness Test

005535029-02, P = 576.328560 Days, E = 345.183582 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
21.3	15.9	8.42	9.04	5.62	3.55	1.56	12.8	12.2	7.46	6.83	10.3	0.87	0.30	1.49



### Stellar Parameters For KIC 005535029

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$4462^{+58}_{-58}$	$2.036^{+0.033}_{-0.027}$	$-0.180^{+0.100}_{-0.100}$	$19.537^{+1.751}_{-3.253}$	$1.513^{+0.298}_{-0.446}$	$0.000^{+0.000}_{-0.000}$
	+1%/-1%	+2%/-1%	+56%/-56%	+9%/-17%	+20%/-29%	+21%/-11%
Source	SPE74	AST9	SPE74	DSEP		

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

### Secondary Eclipse Parameters for KIC 005535029-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-1860 \pm 152$	$340.45^{+287.42}_{-216.97}$	$975^{+20}_{-23}$	$2904^{+1135}_{-414}$	$22^{+150}_{-15}$
Alt.	$-1415 \pm 89$	$294.28^{+243.84}_{-207.42}$	$975^{+19}_{-21}$	$2949^{+1357}_{-474}$	$23^{+226}_{-16}$

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

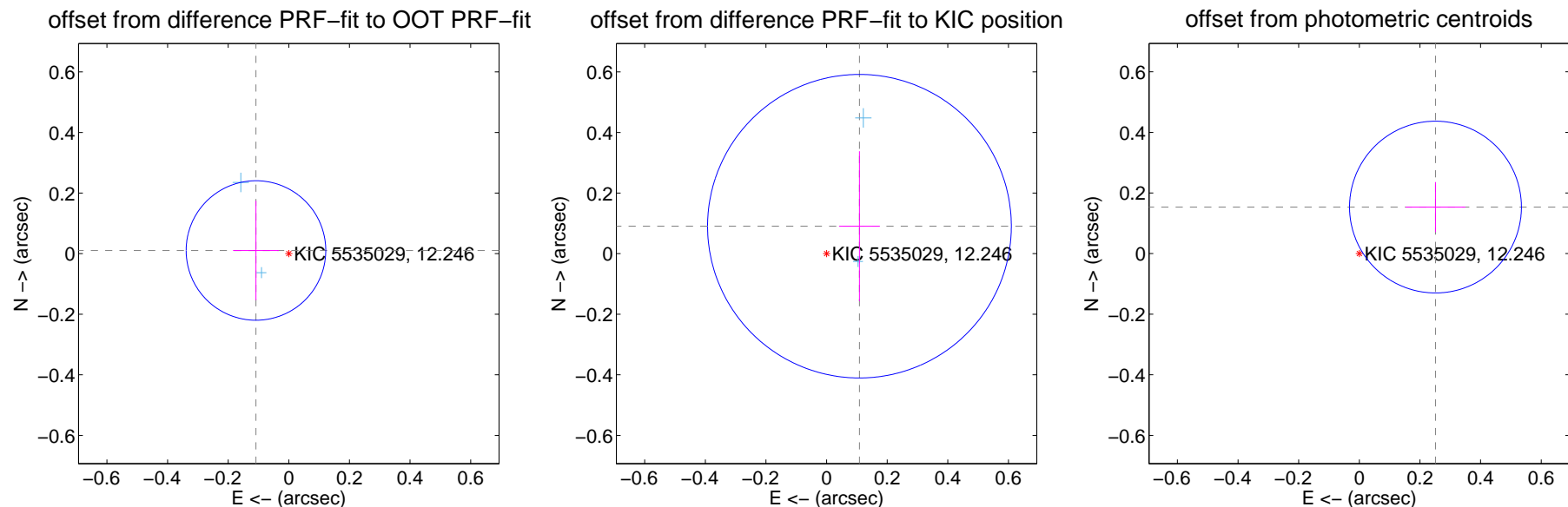
## DV Centroid Data

Supplemental centroid analysis for 005535029-02. Kepler magnitude: 12.25. Transit SNR 6.94

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.35 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.109 \pm 0.077$	1.42	$0.108 \pm 0.075$	$0.010 \pm 0.164$
PRF-fit source offset from KIC position	$0.141 \pm 0.167$	0.85	$-0.108 \pm 0.067$	$0.091 \pm 0.248$
photometric centroid source offset	$0.29 \pm 0.09$	3.12	$-0.25 \pm 0.10$	$0.15 \pm 0.08$



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.

Q1 no difference image



Q1 no OOT image



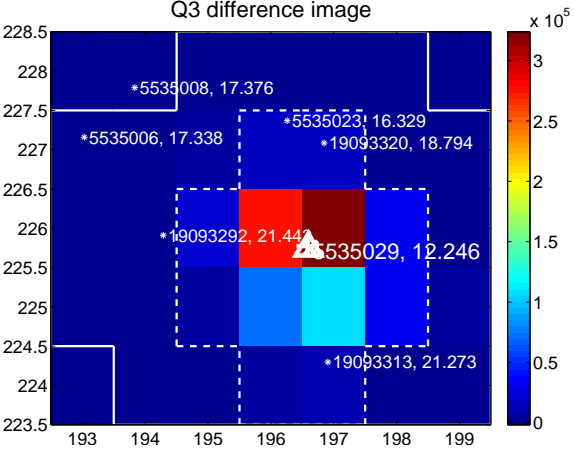
Q2 no difference image



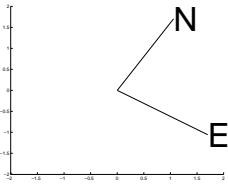
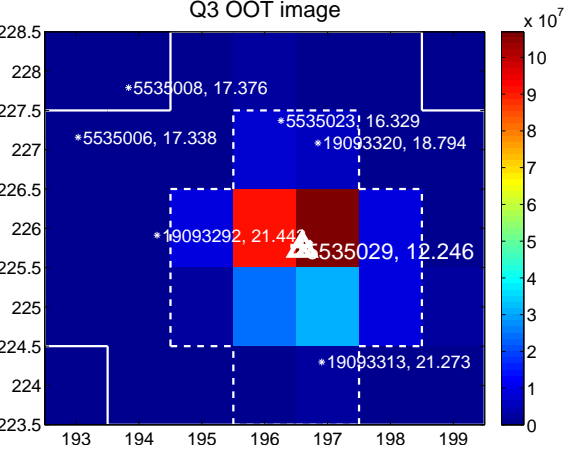
Q2 no OOT image



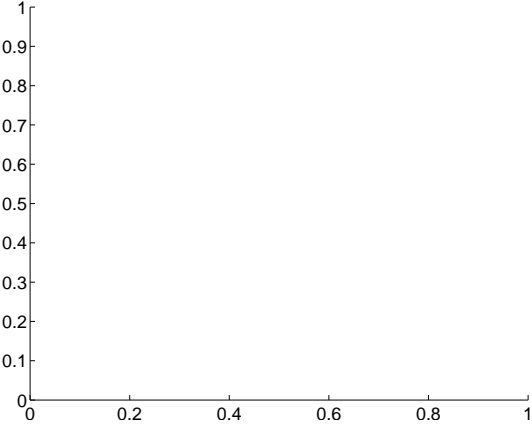
Q3 difference image



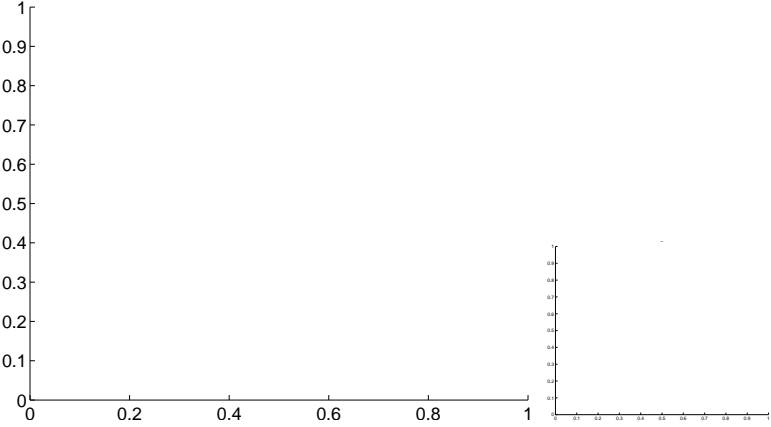
Q3 OOT image



Q4 no difference image



Q4 no OOT image

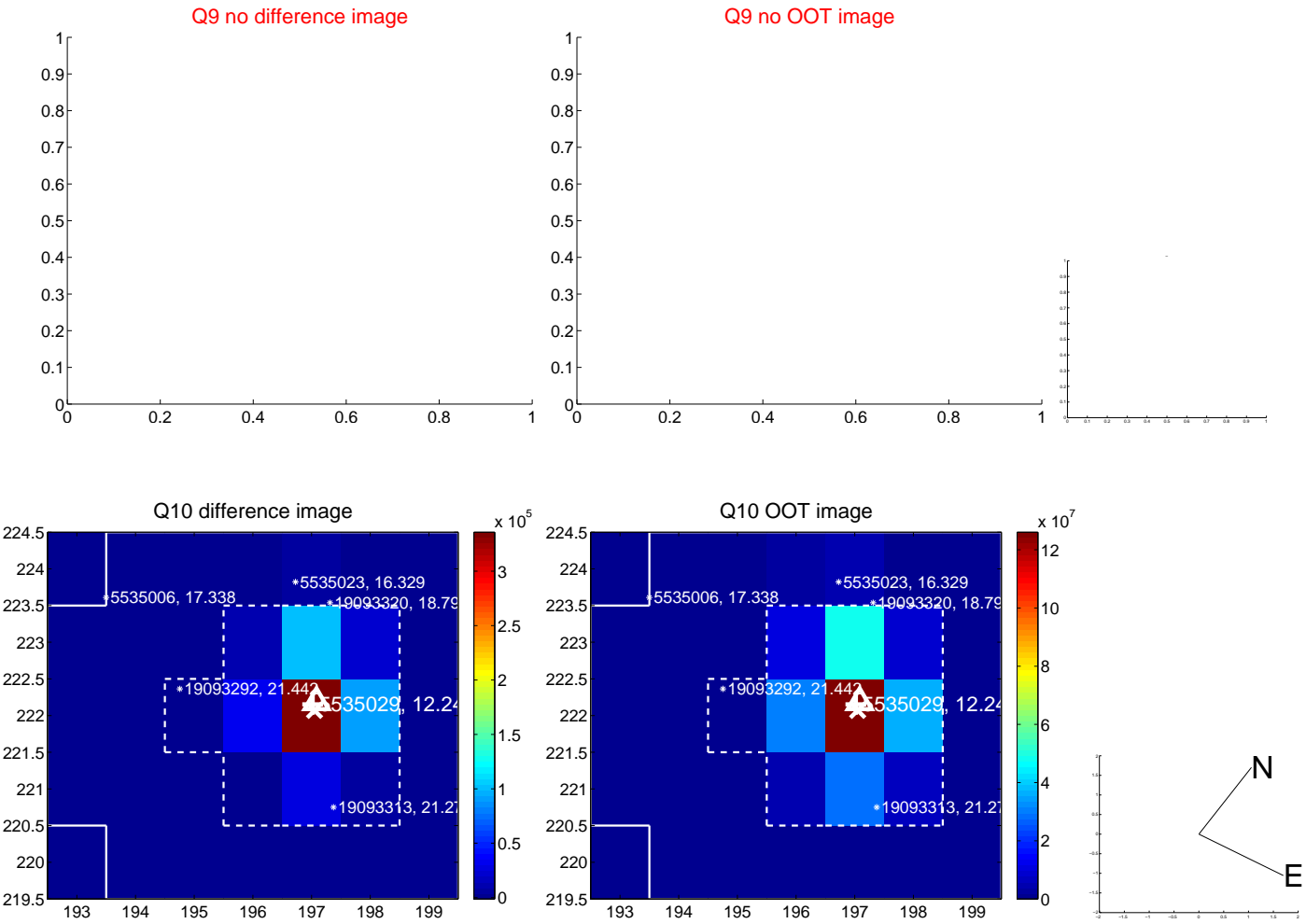


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





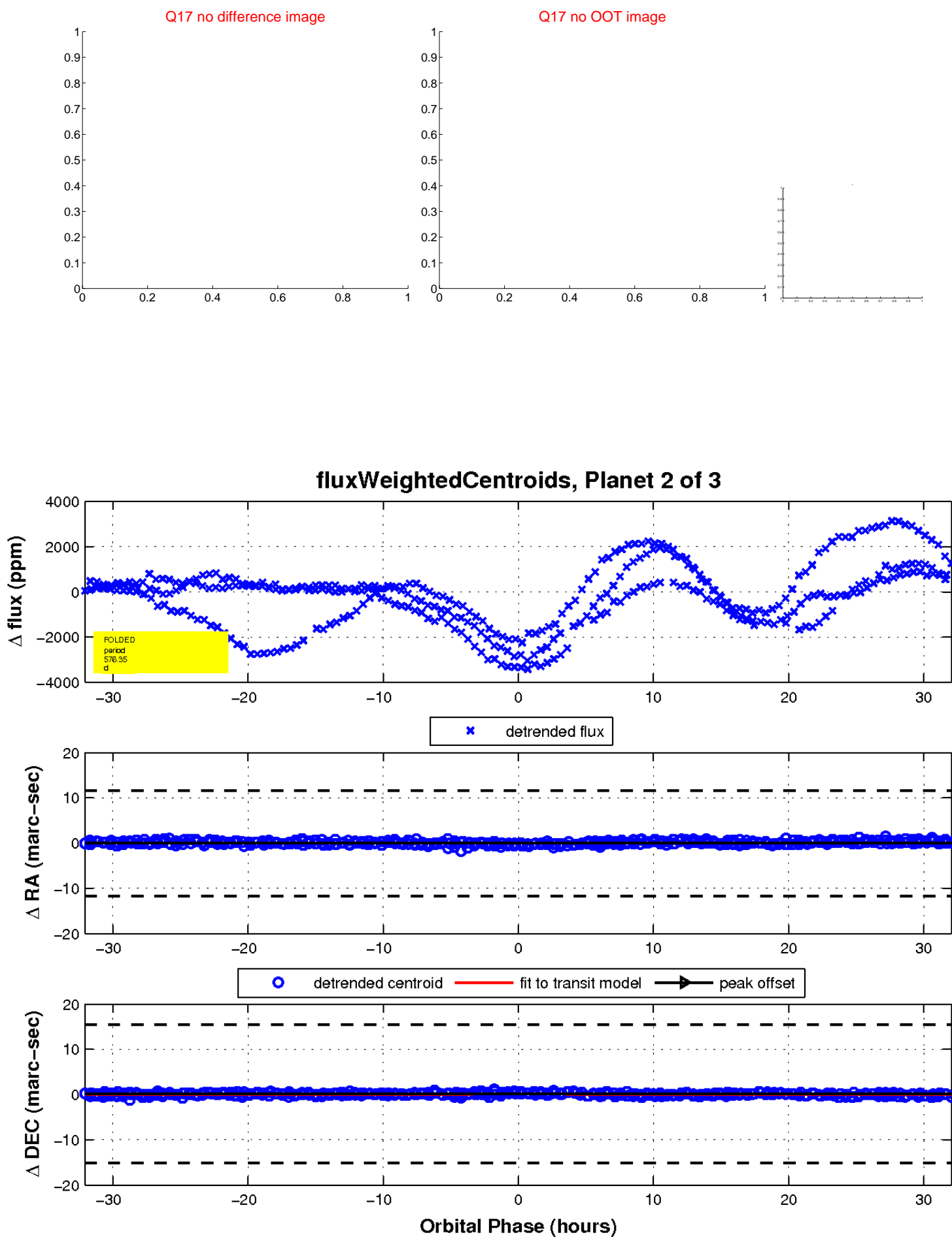
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

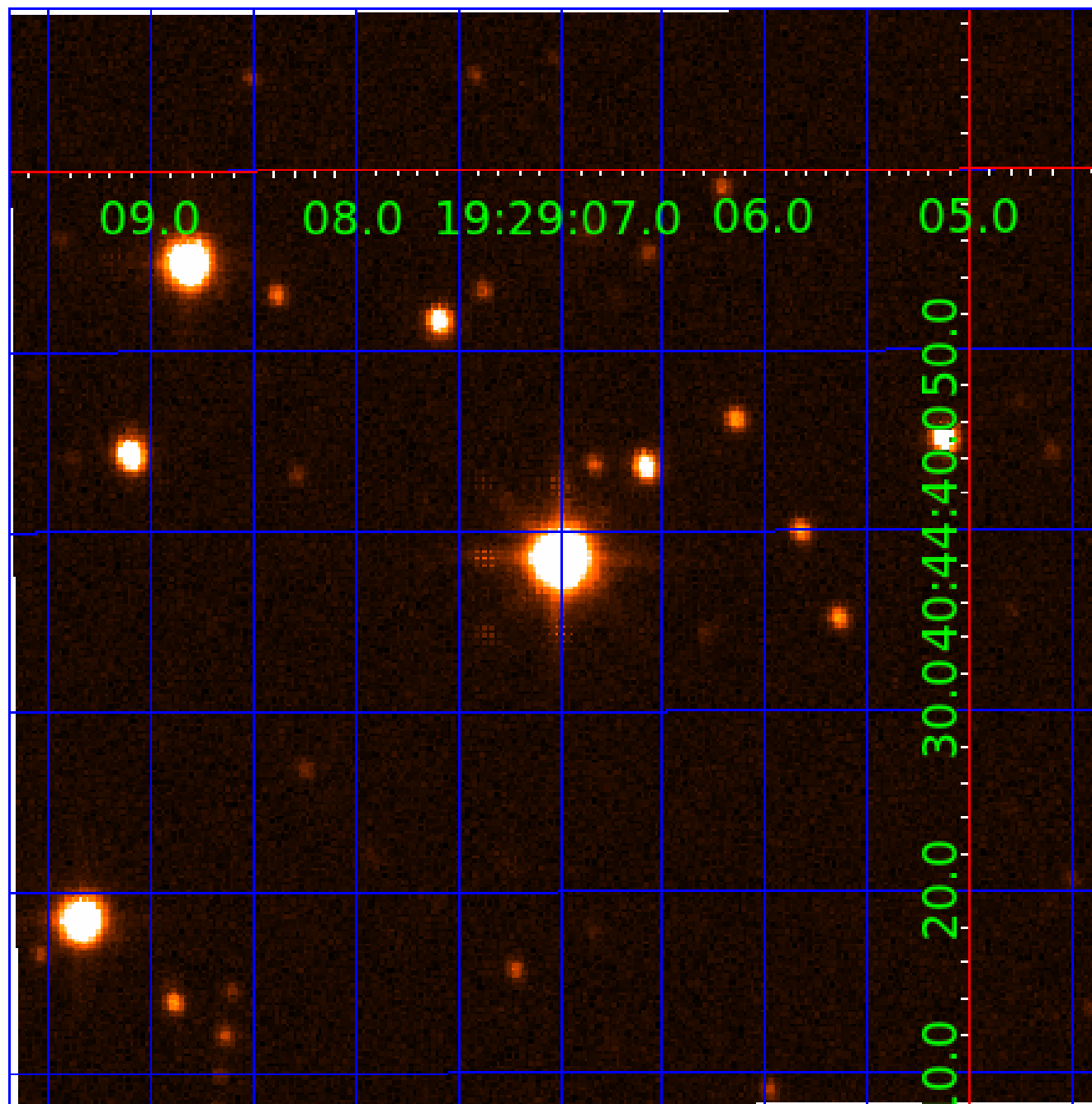


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 005535029

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005535029-01	OBS	No	0.695183	132.181393	17.0	3.451	9.4	4.2	19.54	4462	9.95	0.00
005535029-02	OBS	No	576.349091	345.178436	2613.4	10.693	15.5	6.9	19.54	4462	200.21	55.98
005535029-03	OBS	No	281.070454	216.564752	3274.1	17.457	11.1	7.2	19.54	4462	137.03	145.82

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005535029-01	OBS	FP	0.00	1	0	1	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
005535029-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005535029-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS

**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.

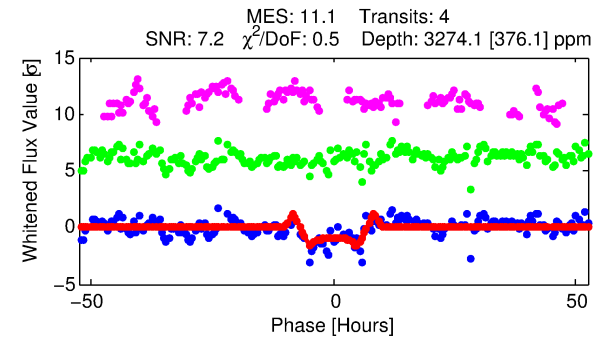
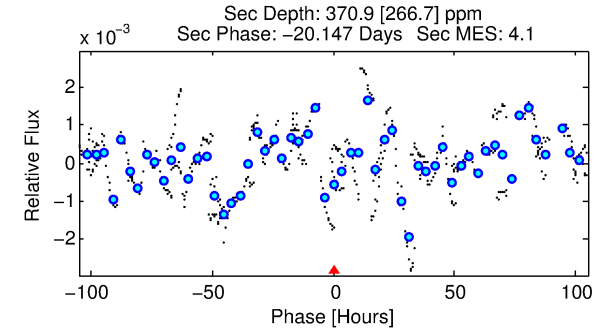
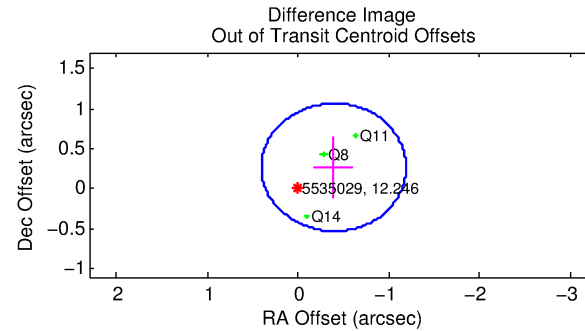
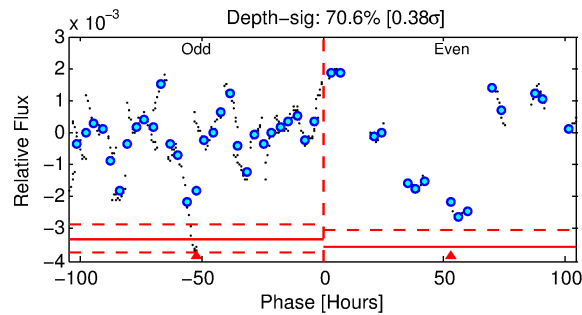
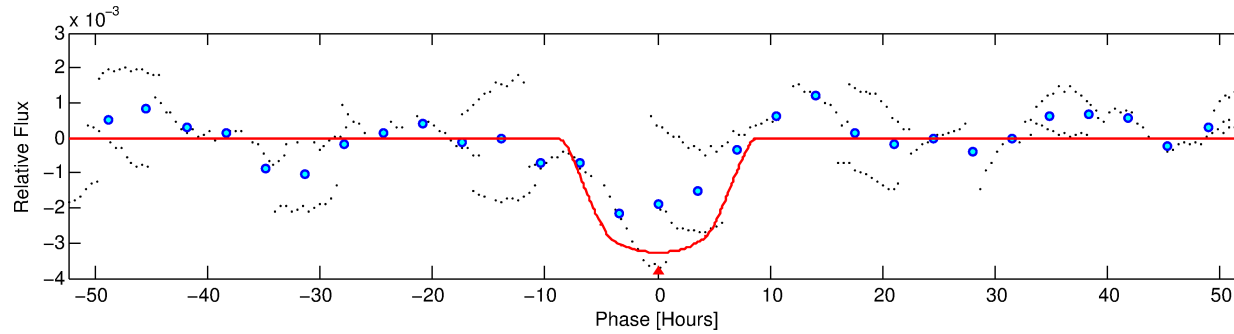
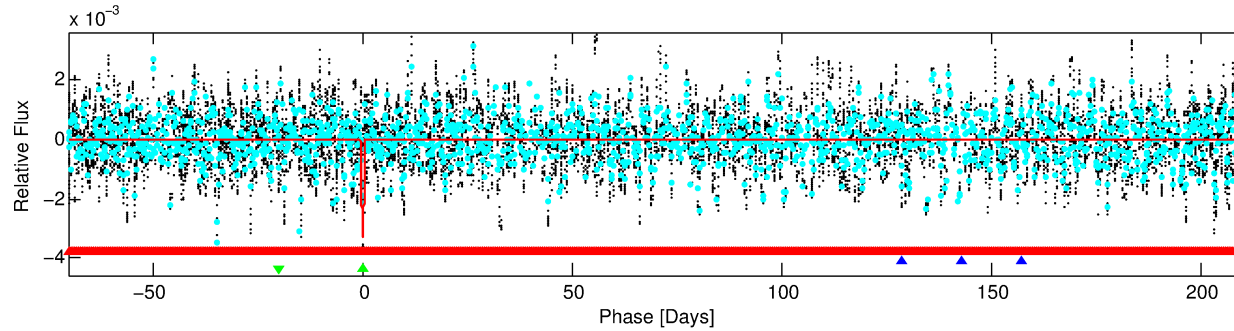
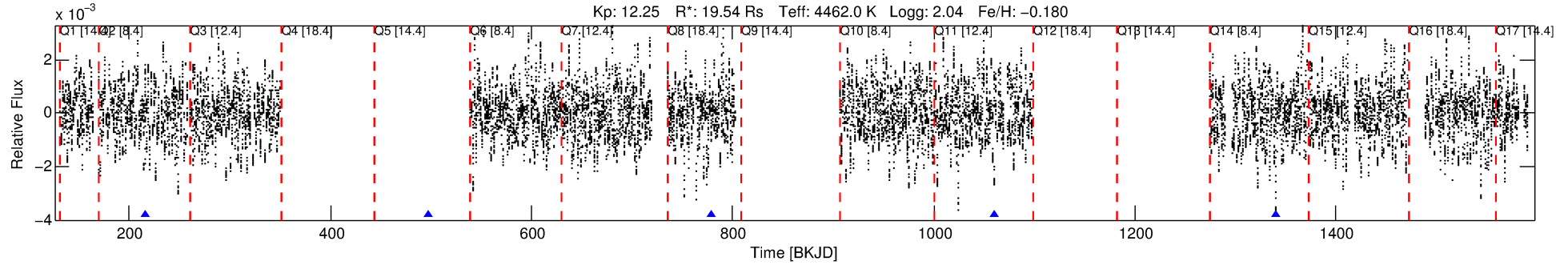
## Ephemeris Match Information For 005535029-03

No Significant Match Found



# DV One-Page Summary

KIC: 5535029 Candidate: 3 of 3 Period: 281.070 d



## DV Fit Results:

Period = 281.07045 [0.01537] d  
Epoch = 216.5648 [0.0339] BKJD  
Rp/R\* = 0.0643 [0.0038]  
a/R\* = 71.69 [3.94]  
b = 0.89 [0.01]  
Seff = 145.82 [19.34]  
Teq = 886 [29] K  
Rp = 137.03 [24.21] Re  
a = 0.9642 [0.1098] AU  
Ag = 10.10 [7.46] [1.22 $\sigma$ ]  
Teffp = 2442 [446] K [3.48 $\sigma$ ]

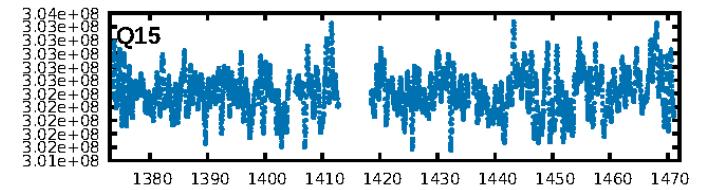
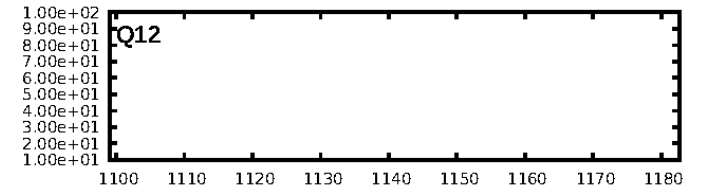
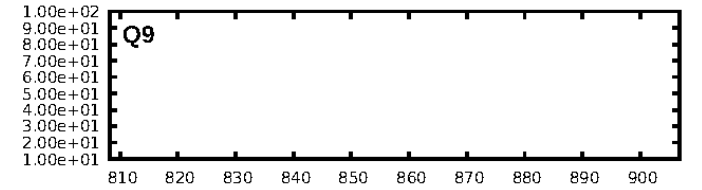
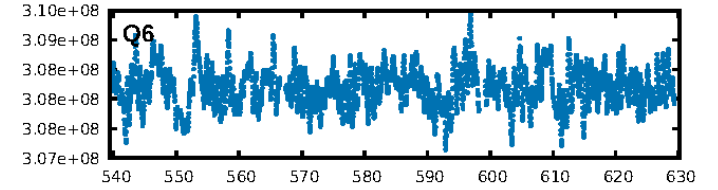
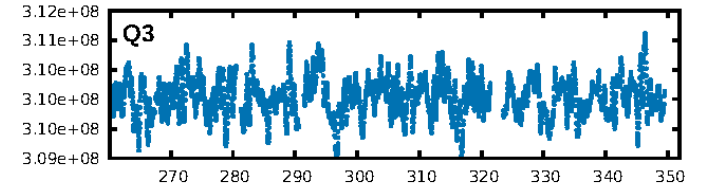
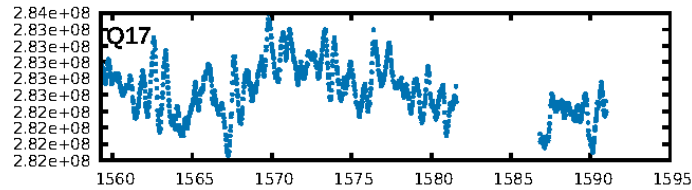
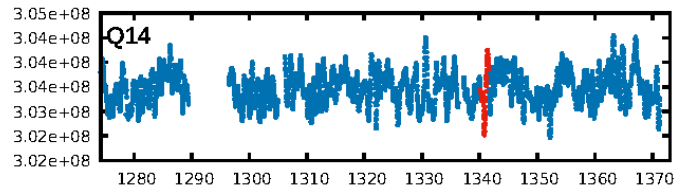
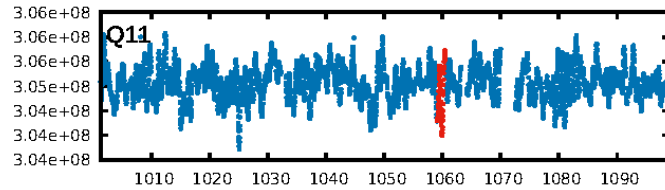
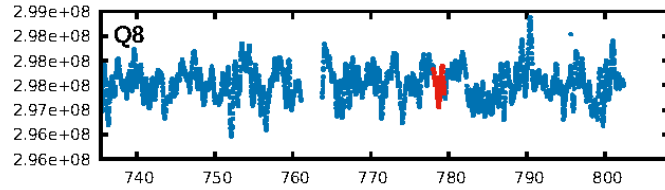
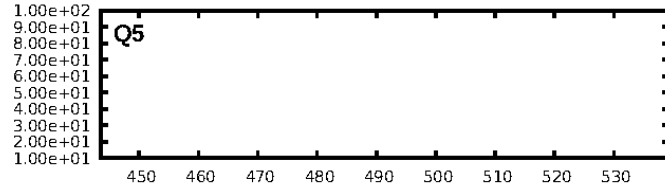
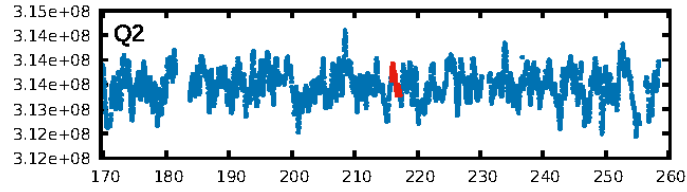
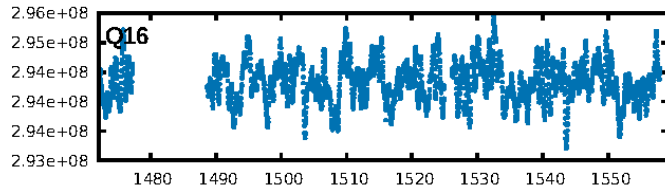
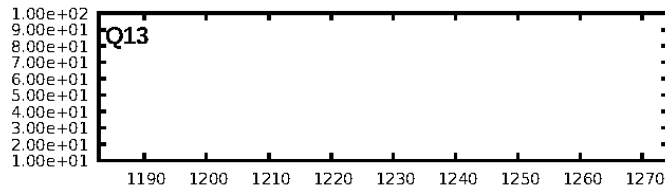
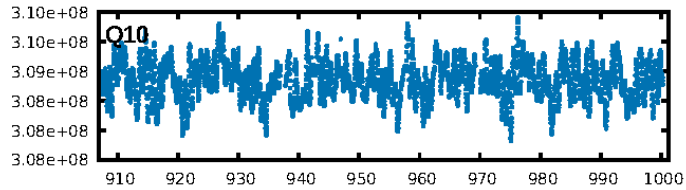
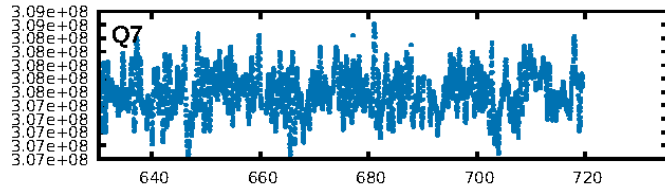
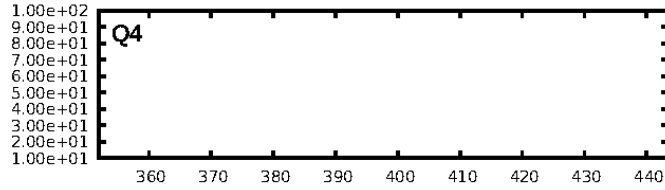
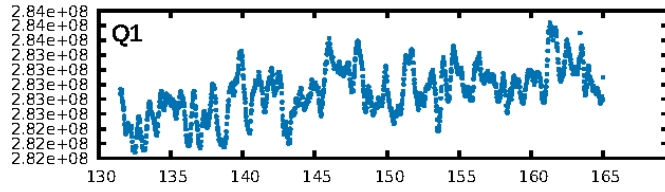
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [378.15 $\sigma$ ]  
LongPeriod-sig: 100.0% [346.18 $\sigma$ ]  
ModelChiSquare2-sig: 0.1%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.39e-16  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: -0.8456  
Centroid-sig: 23.6%  
Centroid-so: 0.351 arcsec [6.92 $\sigma$ ]  
OotOffset-rm: 0.474 arcsec [1.79 $\sigma$ ]  
OotOffset-st: 1/1/1/0 [3]  
KicOffset-rm: 0.599 arcsec [2.21 $\sigma$ ]  
KicOffset-st: 1/1/1/0 [3]  
DiffImageQuality-fgm: 1.00 [3/3]  
DiffImageOverlap-fno: 0.00 [0/4]

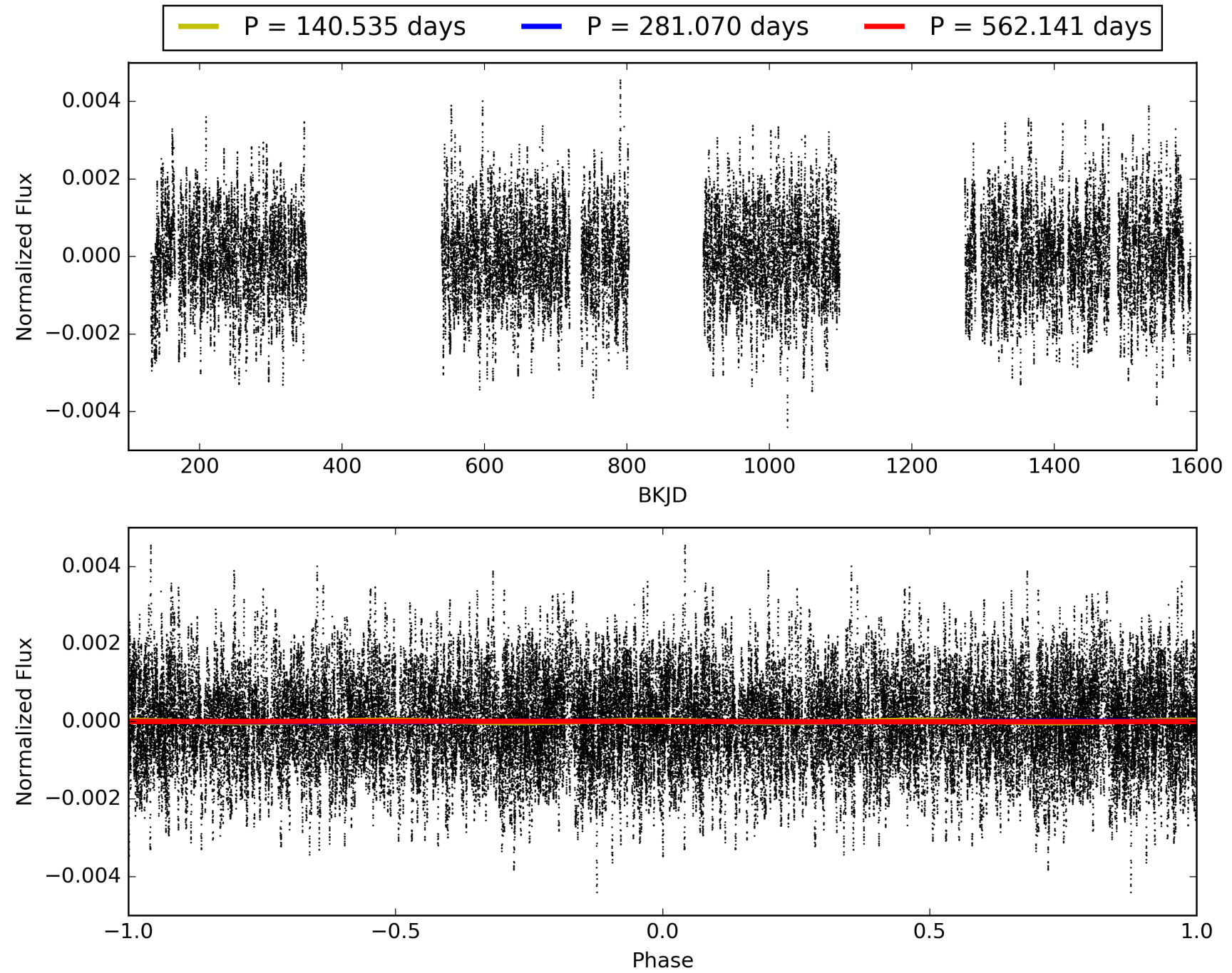
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:50:07 Z

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

# TCE 005535029-03, PDC Light Curves

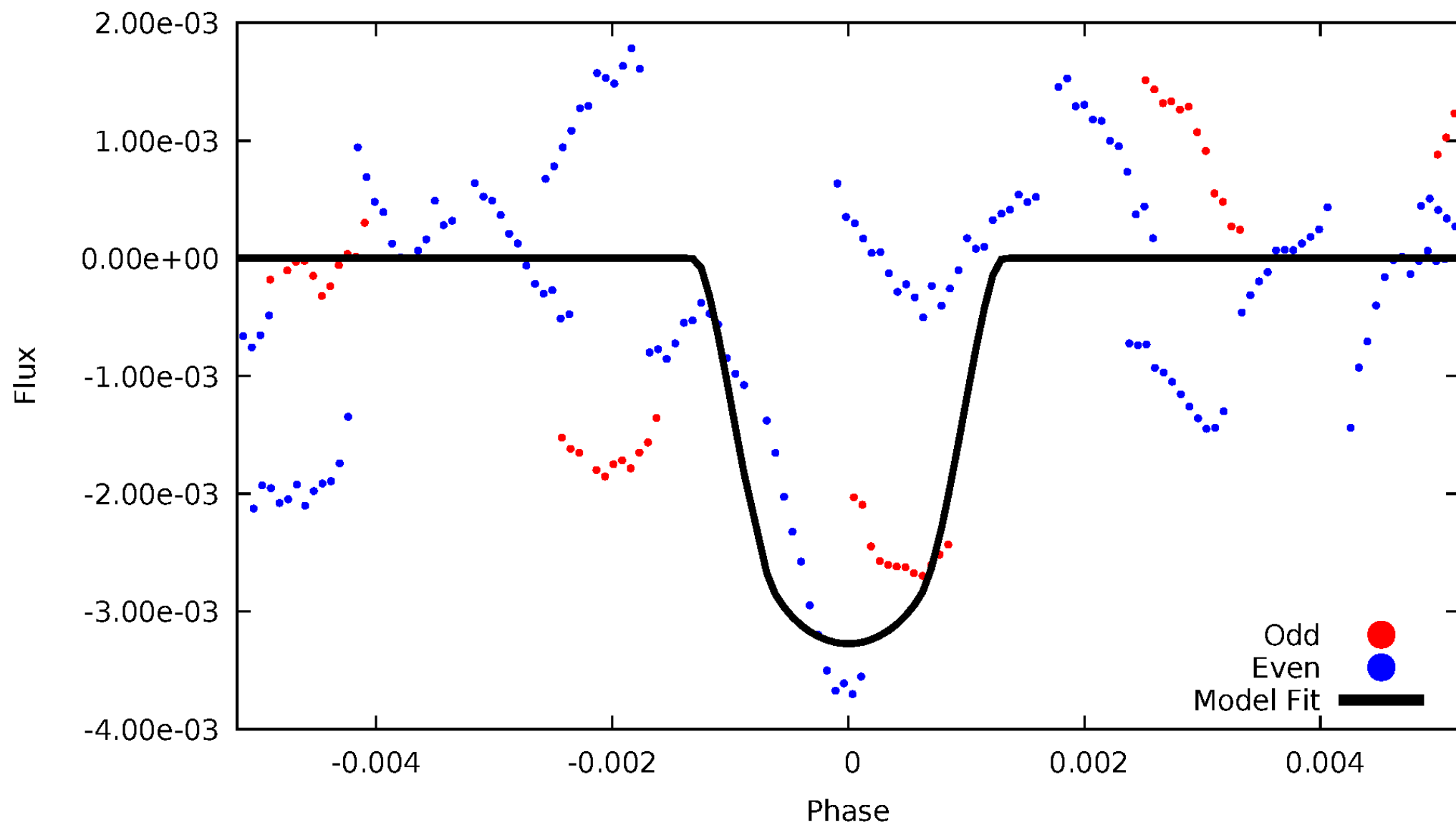


TCE 005535029-03



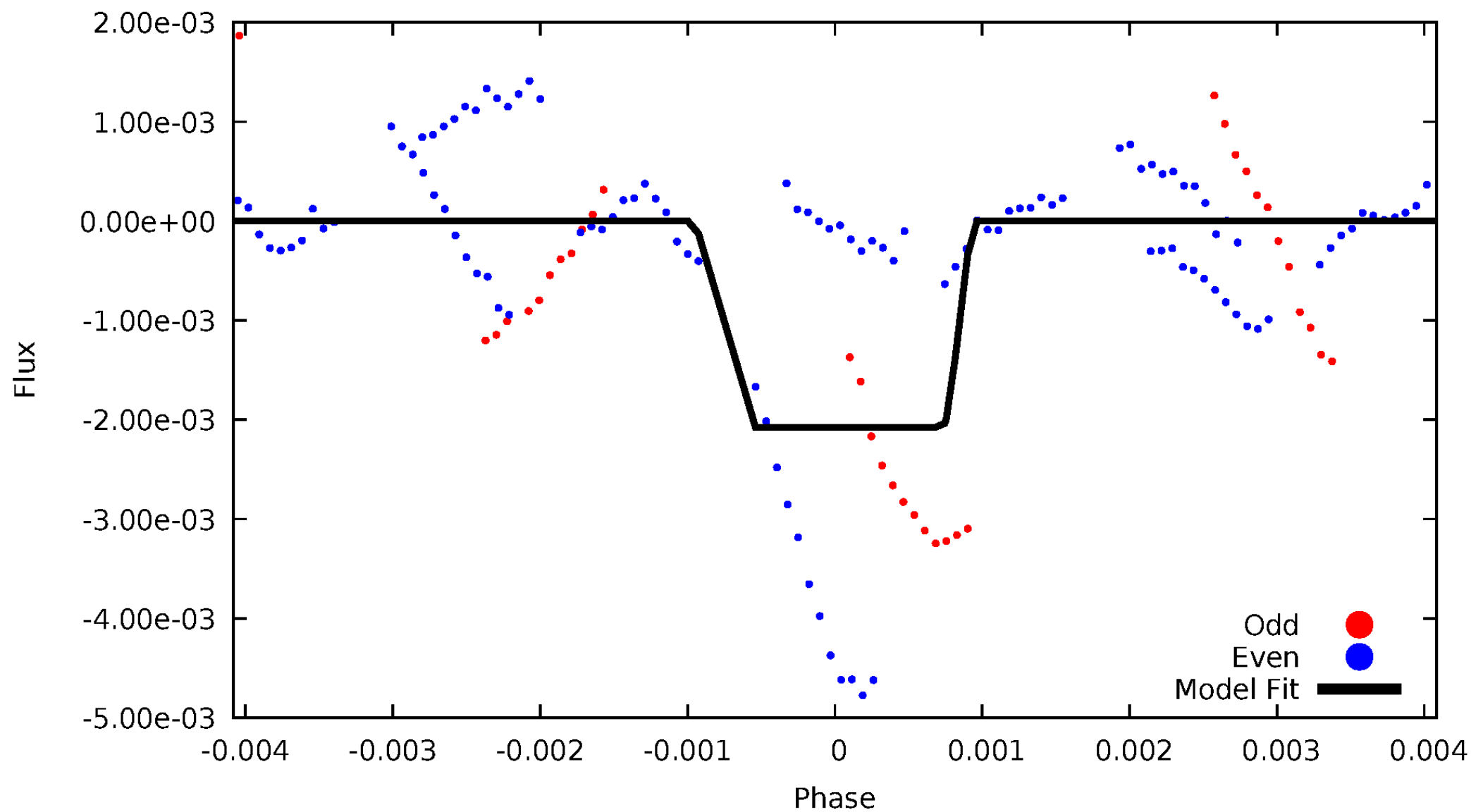
# DV Odd/Even

TCE 005535029-03



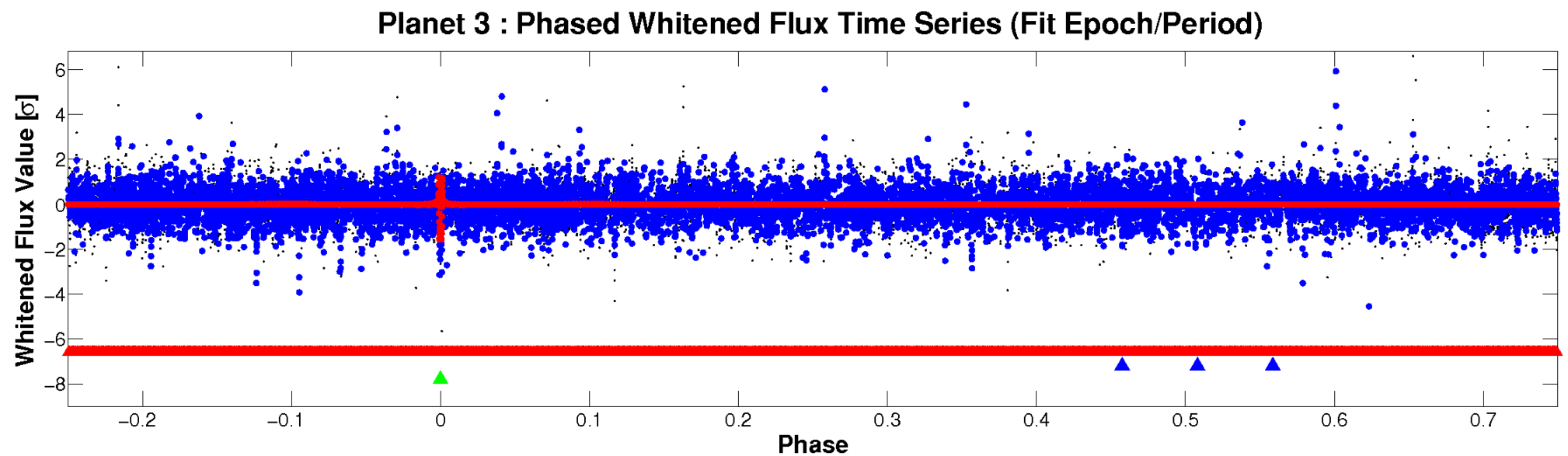
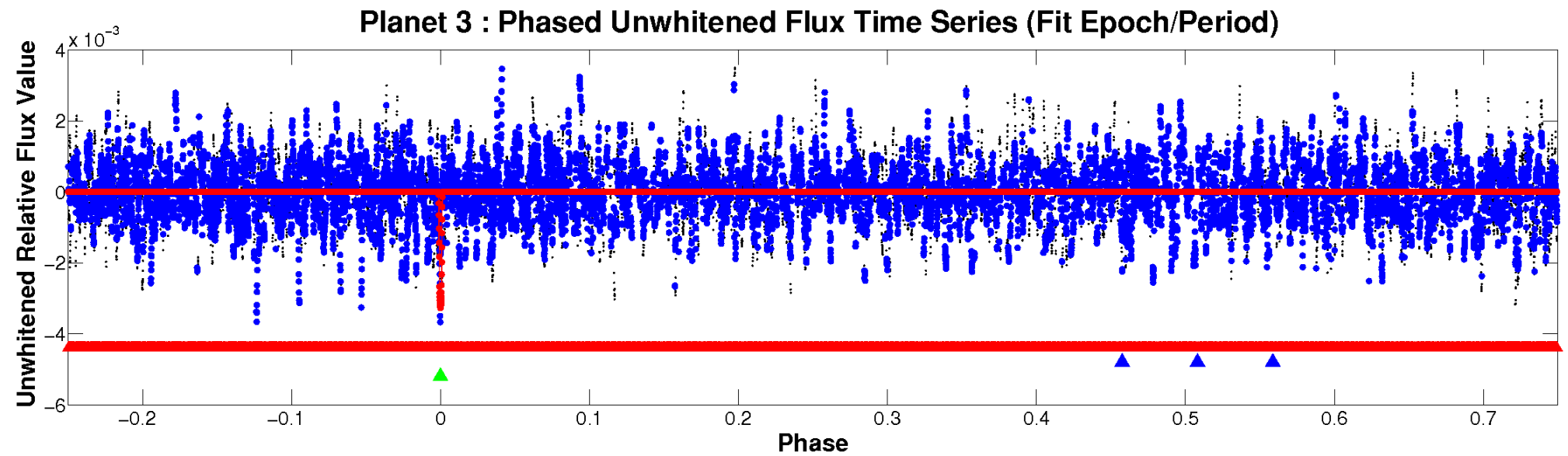
# ALT Odd/Even

TCE 005535029-03



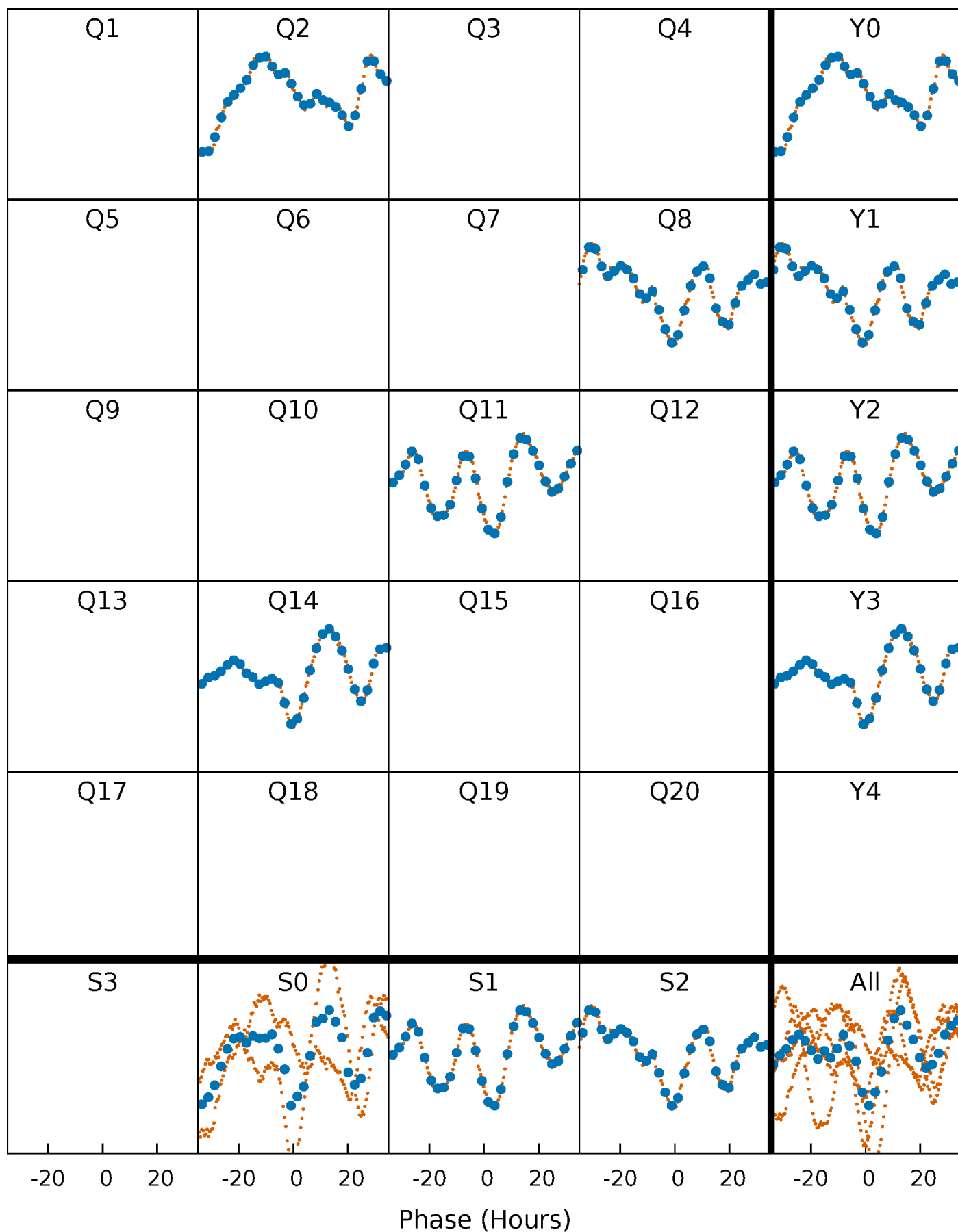


# Non-Whitened Vs. Whitened Light Curve



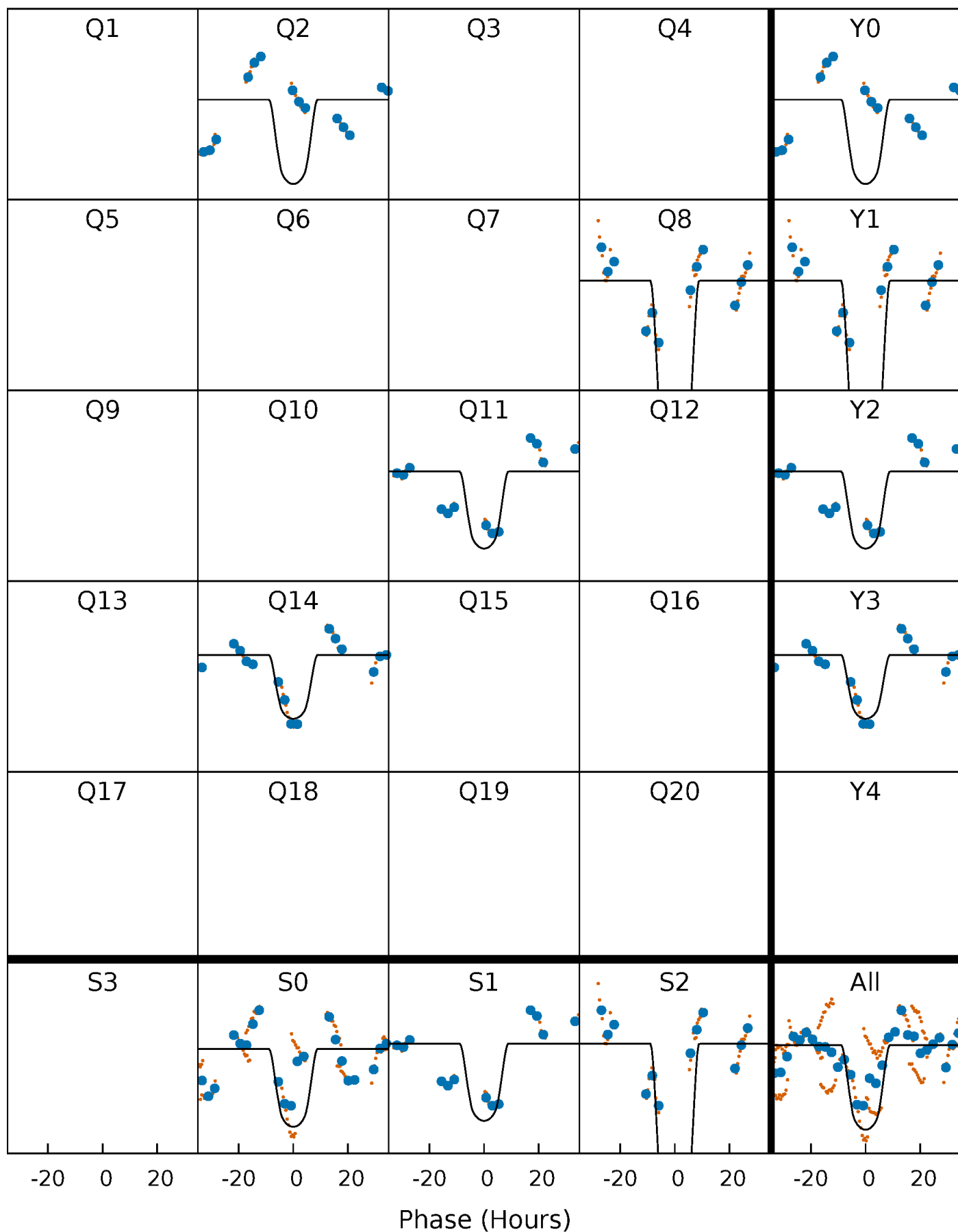
# PDC Quarter-Phased Transit Curves

TCE 005535029-03     $P=281.070454$  Days     $T_0=216.564752$  (BKJD)



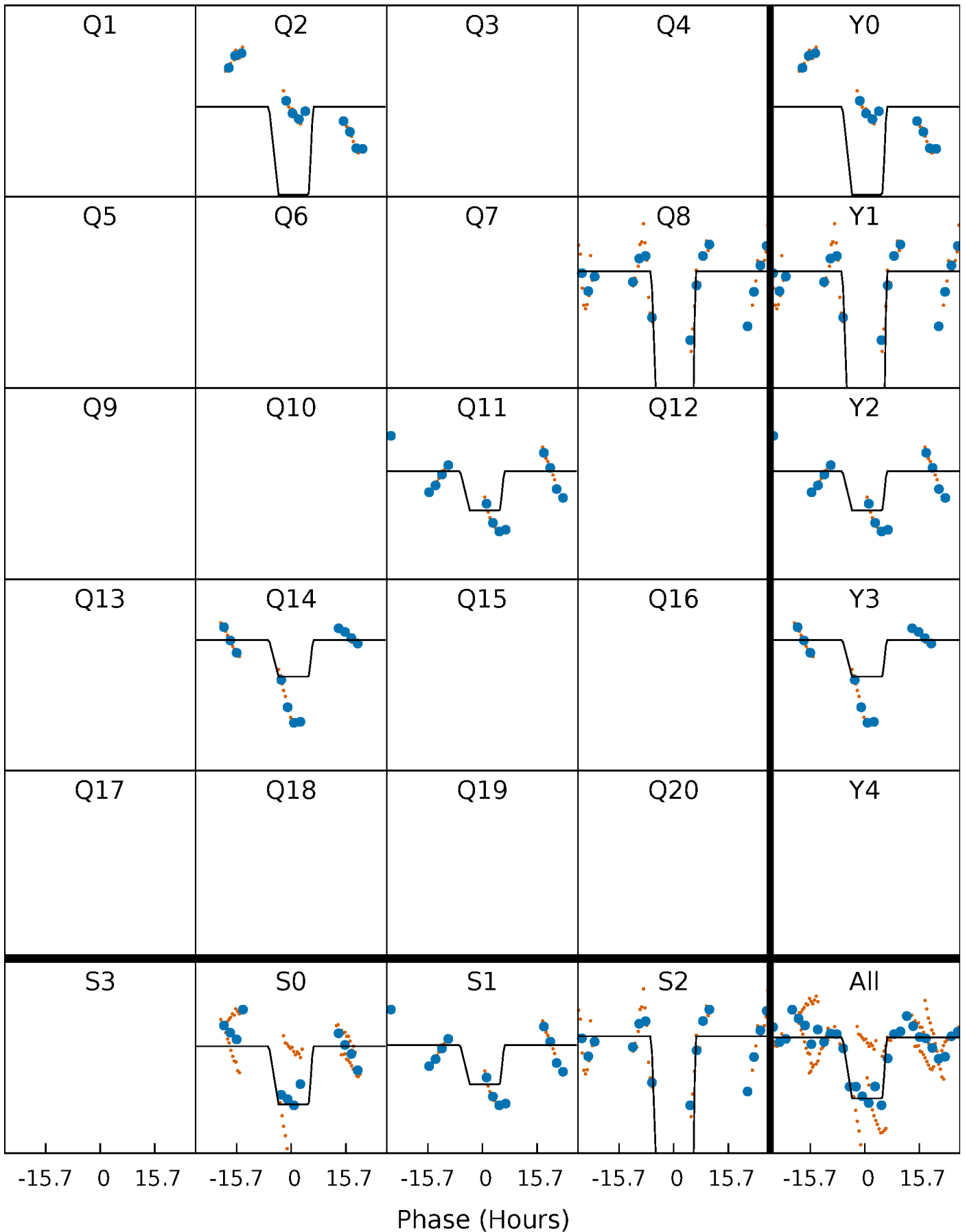
# DV Quarter-Phased Transit Curves

TCE 005535029-03     $P=281.070454$  Days     $T_0=216.564752$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

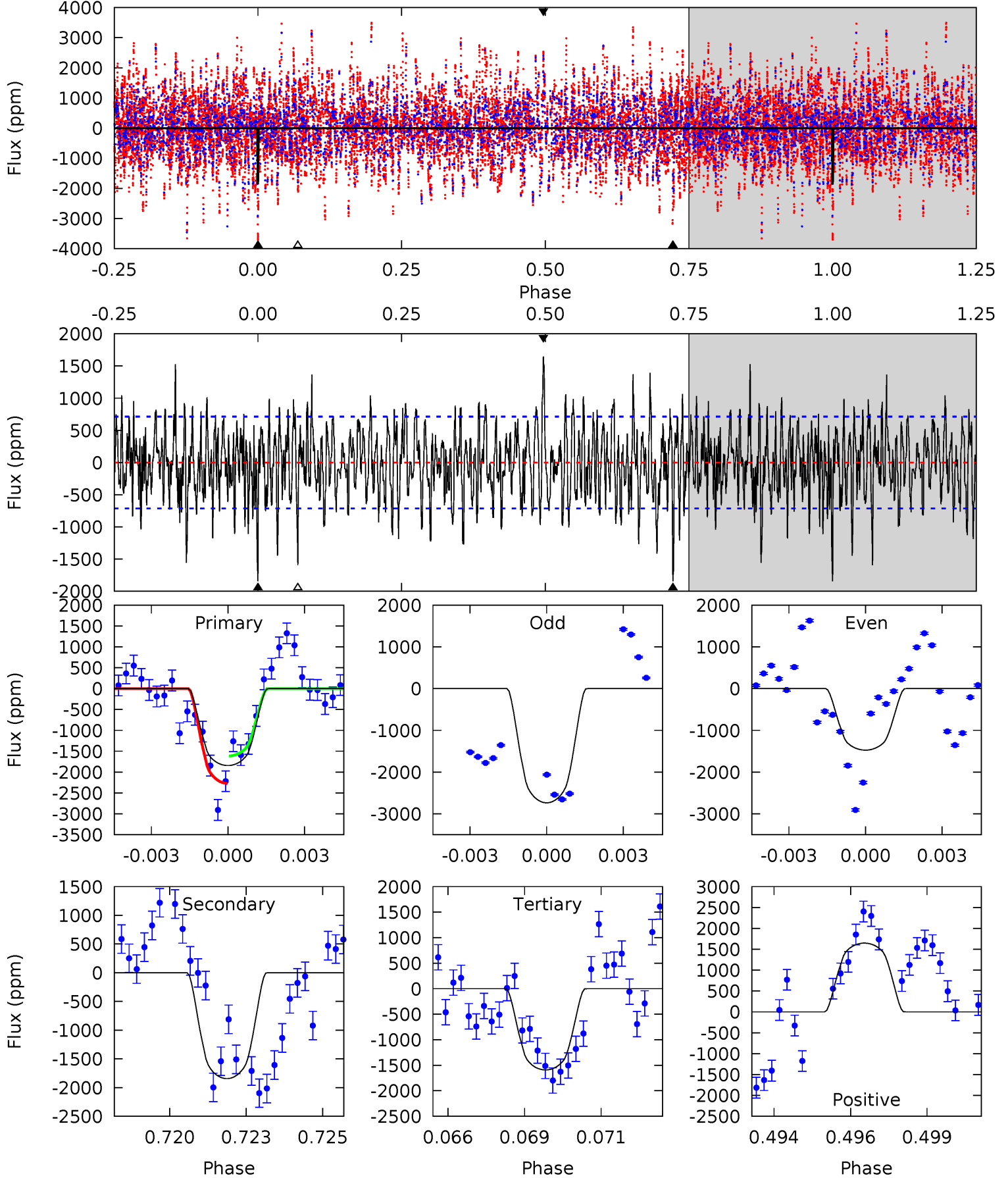
TCE 005535029-03 P=281.043184 Days  $T_0=216.631070$  (BKJD)



# DV Model-Shift Uniqueness Test

005535029-03, P = 281.070454 Days, E = 216.564752 Days

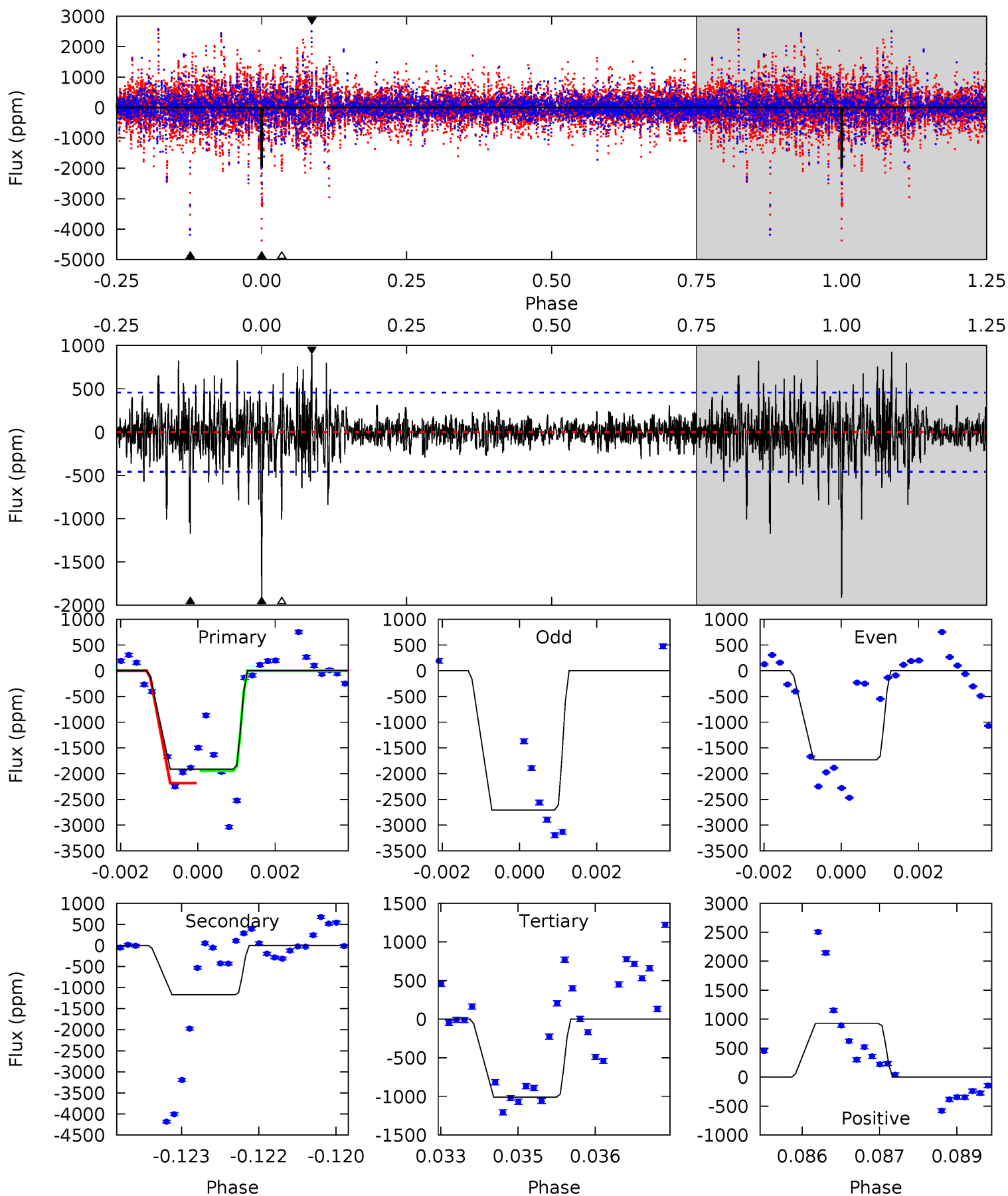
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.7	13.7	11.8	12.2	5.28	3.02	3.51	1.86	1.45	1.87	1.46	4.09	0.91	0.47	2.34



# Alt Model-Shift Uniqueness Test

005535029-03, P = 281.043184 Days, E = 216.631070 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
22.5	13.8	11.9	10.9	5.38	3.17	2.14	10.6	11.6	1.89	2.88	6.23	1.04	0.33	1.32



### Stellar Parameters For KIC 005535029

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$4462^{+58}_{-58}$	$2.036^{+0.033}_{-0.027}$	$-0.180^{+0.100}_{-0.100}$	$19.537^{+1.751}_{-3.253}$	$1.513^{+0.298}_{-0.446}$	$0.000^{+0.000}_{-0.000}$
	+1%/-1%	+2%/-1%	+56%/-56%	+9%/-17%	+20%/-29%	+21%/-11%
Source	SPE74	AST9	SPE74	DSEP		

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

### Secondary Eclipse Parameters for KIC 005535029-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-1844 \pm 135$	$138.77^{+12.55}_{-14.54}$	$1239^{+25}_{-28}$	$3851^{+112}_{-99}$	$50^{+9}_{-7}$
Alt.	$-1171 \pm 85$	$97.97^{+10.72}_{-11.12}$	$1239^{+26}_{-28}$	$4010^{+145}_{-130}$	$63^{+15}_{-10}$

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



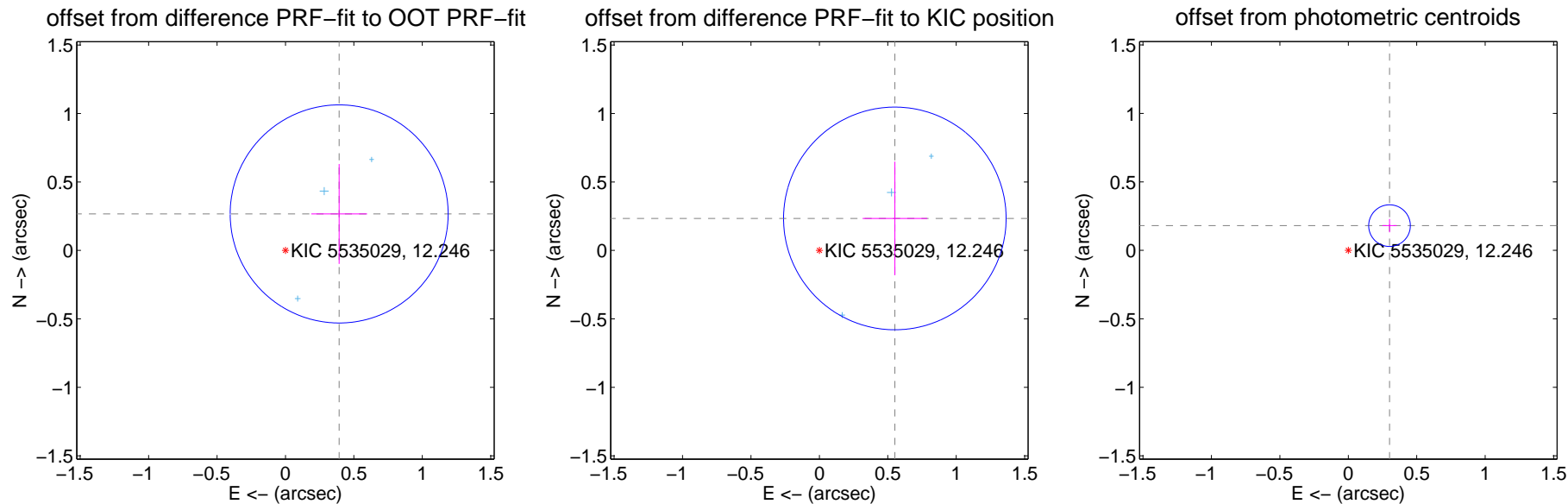
## DV Centroid Data

Supplemental centroid analysis for 005535029-03. Kepler magnitude: 12.25. Transit SNR 7.16

There are 3 quarters with good PRF difference image offsets

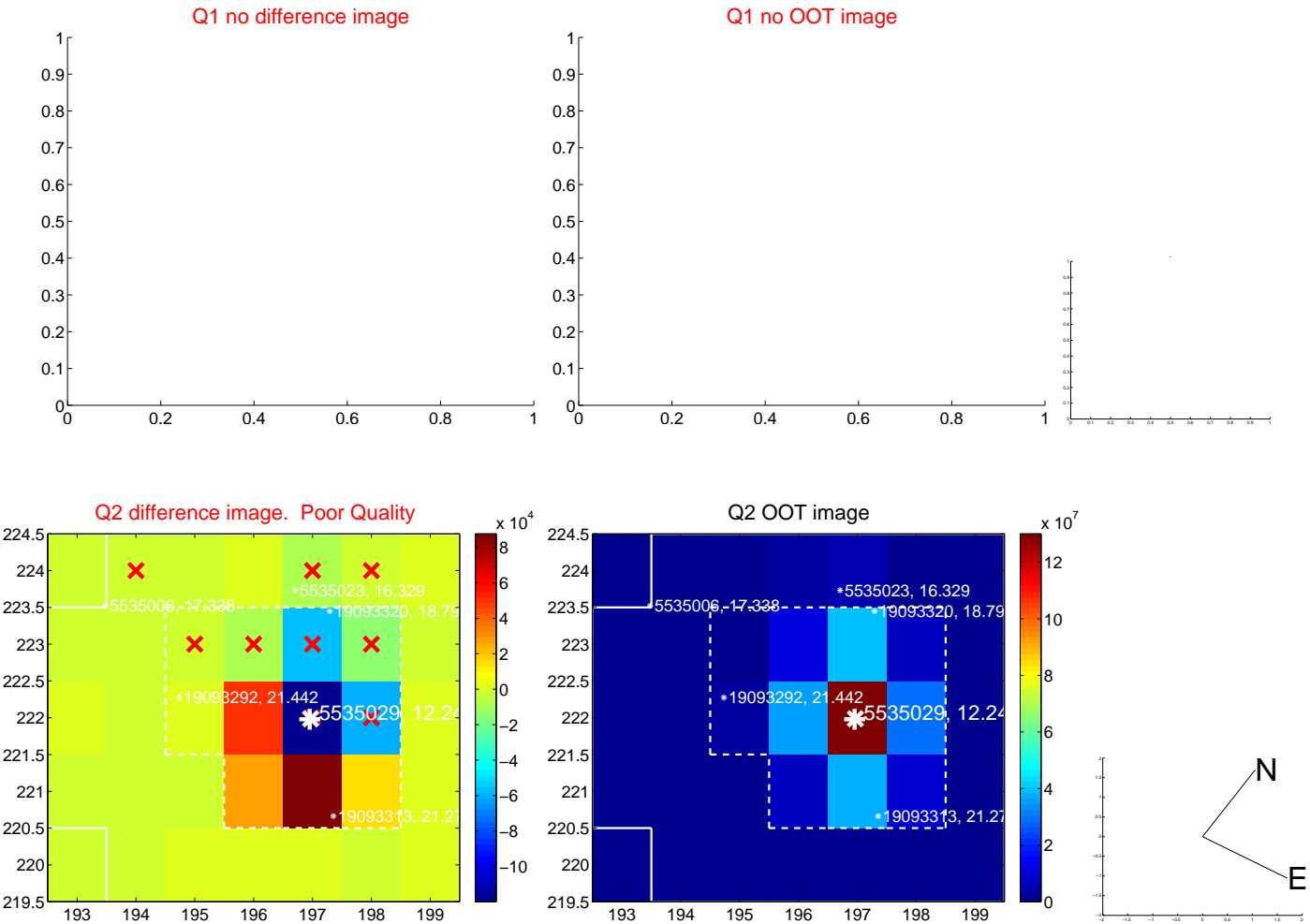
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.474 \pm 0.265$	1.79	$-0.392 \pm 0.204$	$0.266 \pm 0.365$
PRF-fit source offset from KIC position	$0.599 \pm 0.271$	2.21	$-0.551 \pm 0.236$	$0.234 \pm 0.415$
photometric centroid source offset	$0.35 \pm 0.05$	6.92	$-0.30 \pm 0.05$	$0.18 \pm 0.05$

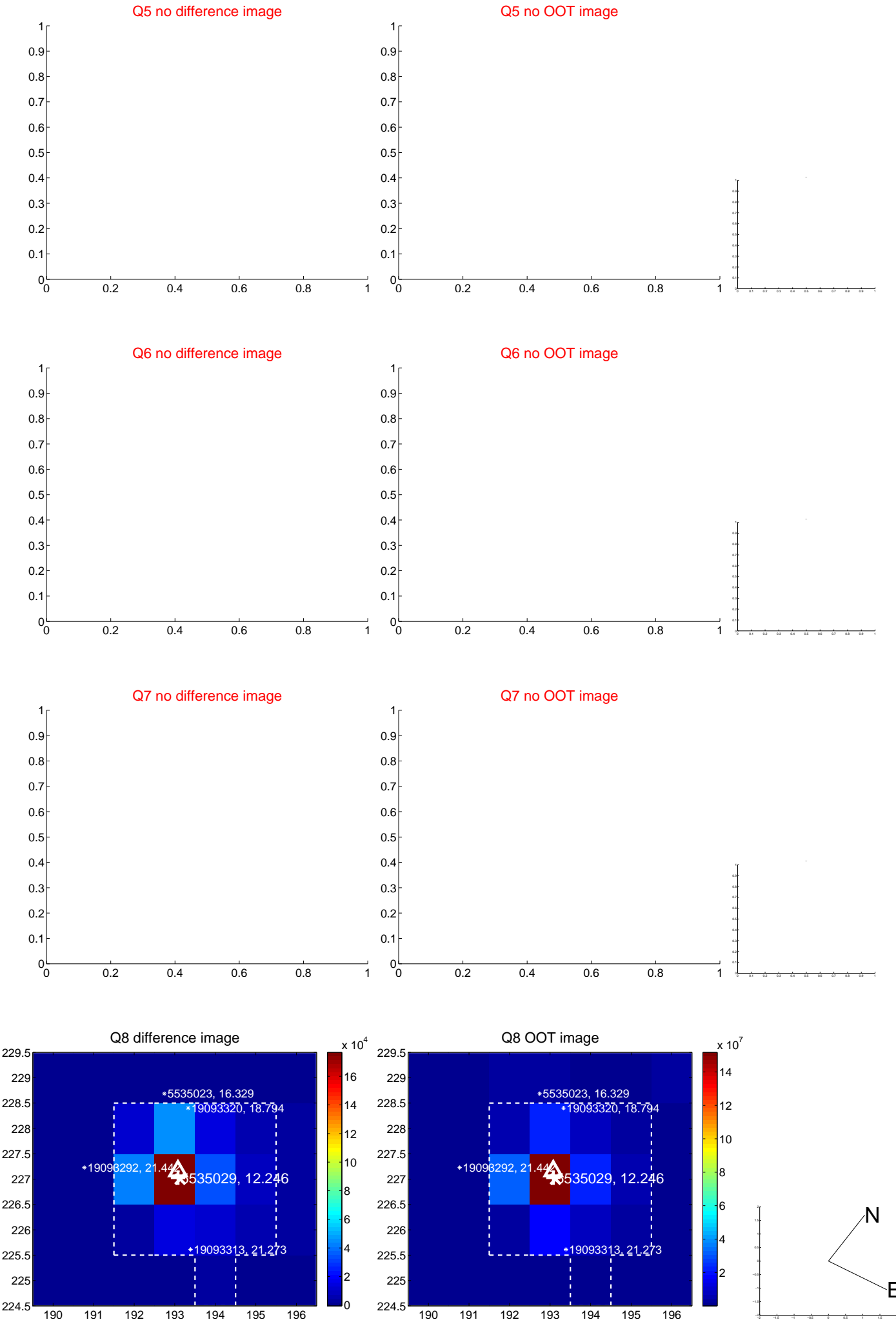


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

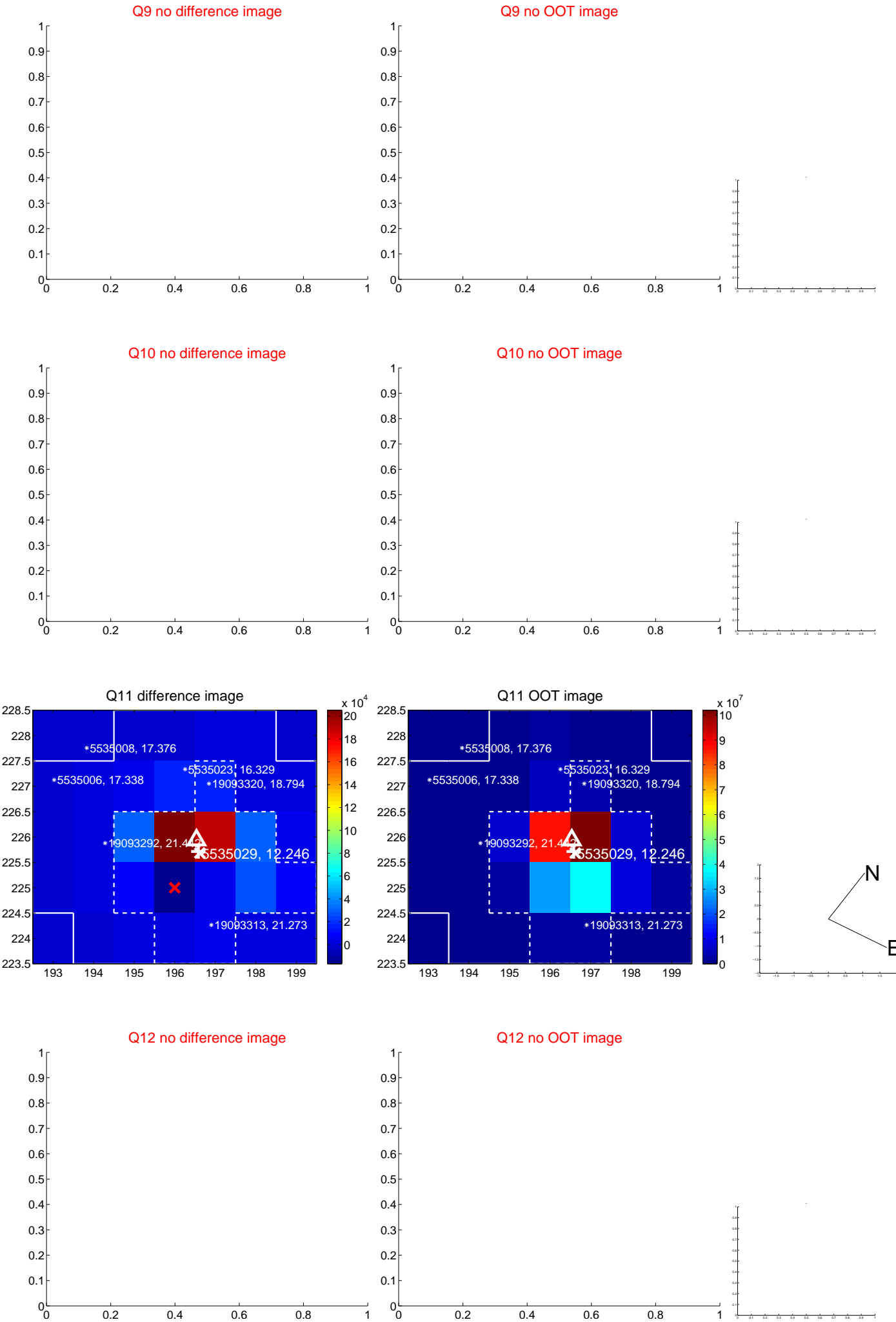
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

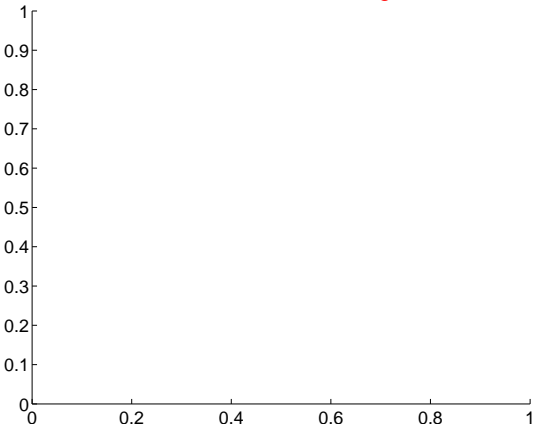


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

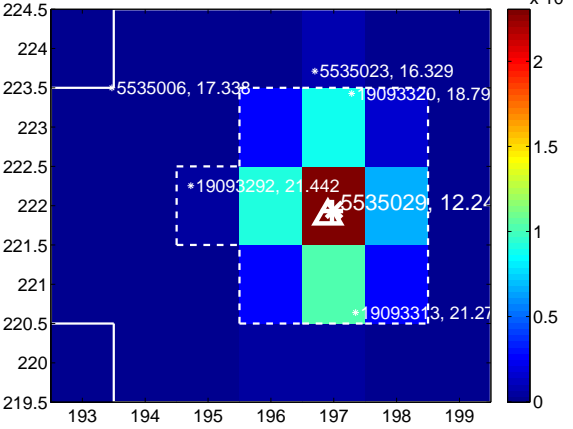
Q13 no difference image



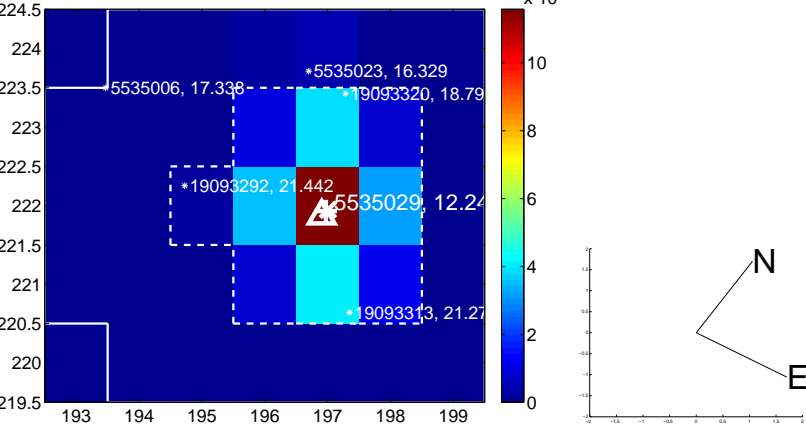
Q13 no OOT image



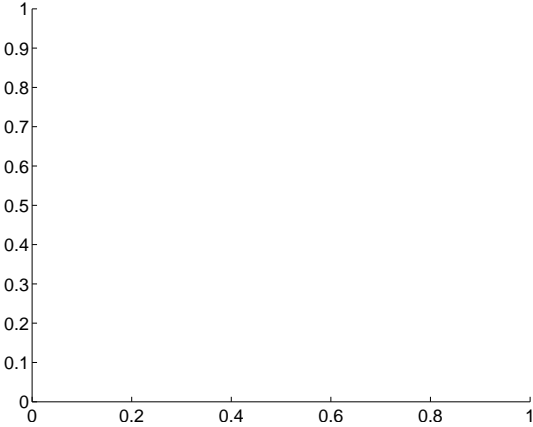
Q14 difference image



Q14 OOT image



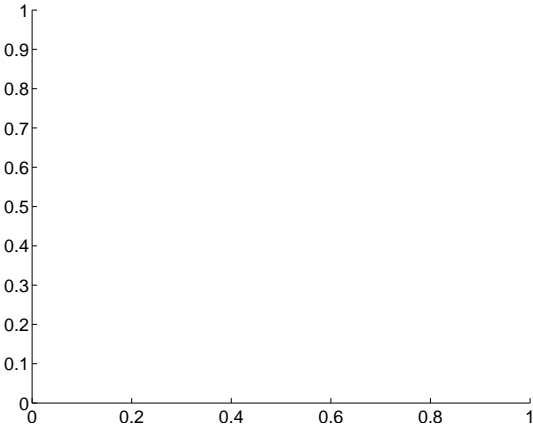
Q15 no difference image



Q15 no OOT image



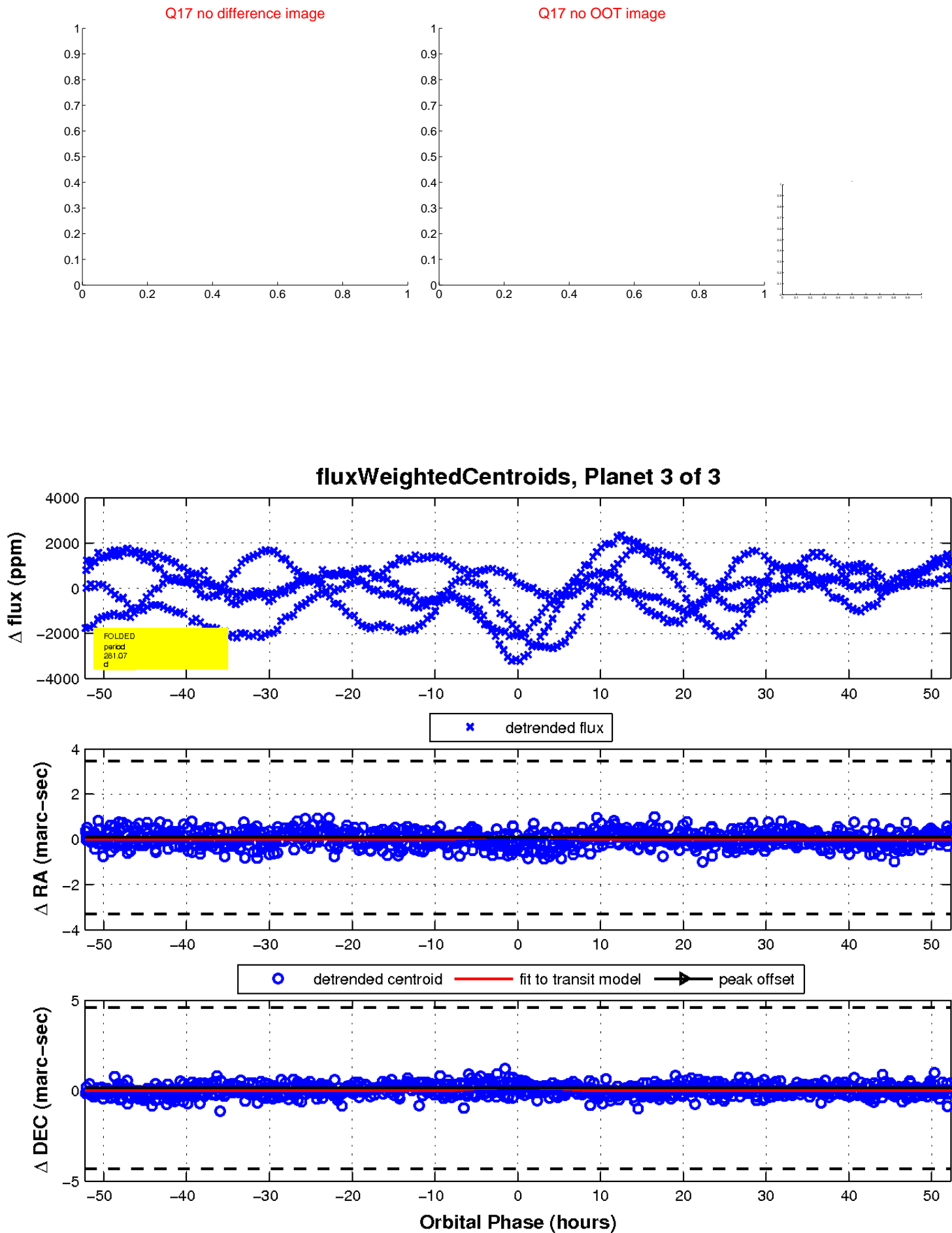
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

