

KIC 011551692

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})
011551692-01	OBS	1781.01	7.834435	135.222162	2033.8	2.955	238.2	236.0	0.72	4920	3.62	53.49
011551692-02	OBS	1781.02	3.005148	134.100091	685.0	2.162	134.8	134.2	0.72	4920	2.31	191.94
011551692-03	OBS	1781.03	58.019597	151.852023	1298.1	4.412	46.6	48.2	0.72	4920	2.90	3.71
011551692-04	OBS	No	0.853621	131.934110	190.8	2.000	7.8	-1.0	0.72	4920	0.96	1027.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011551692-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
011551692-02	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
011551692-03	OBS	PC	0.97	0	0	0	0	CENT_KIC_POS
011551692-04	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_NOFITS—HALO_GHOST

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

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

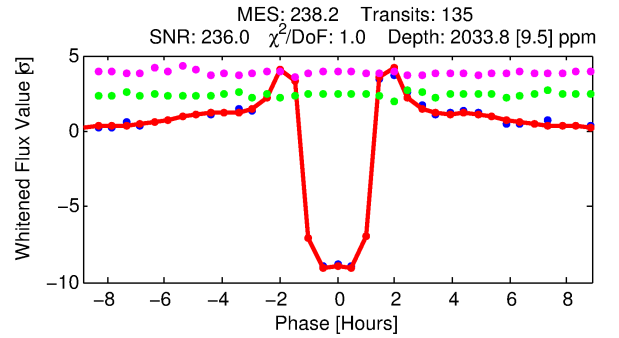
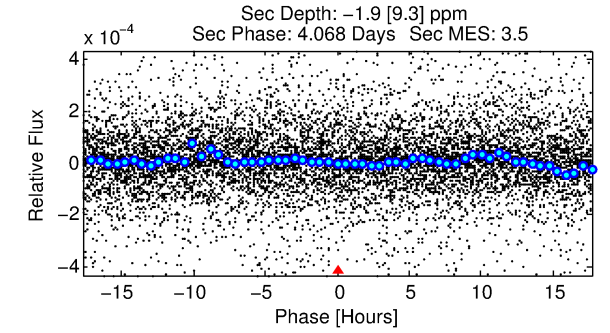
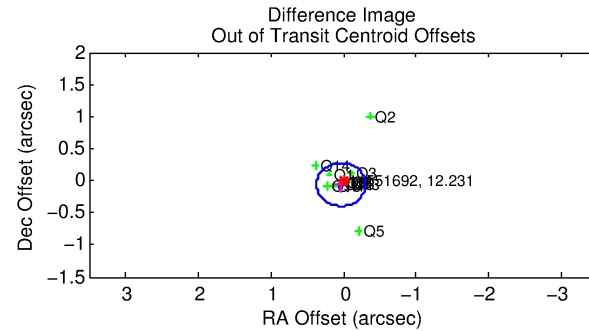
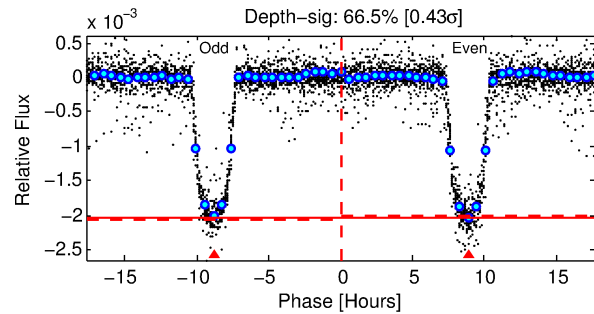
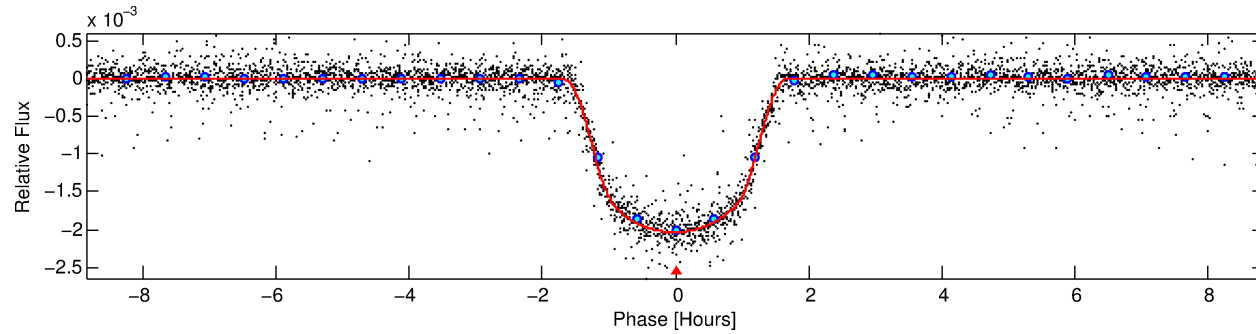
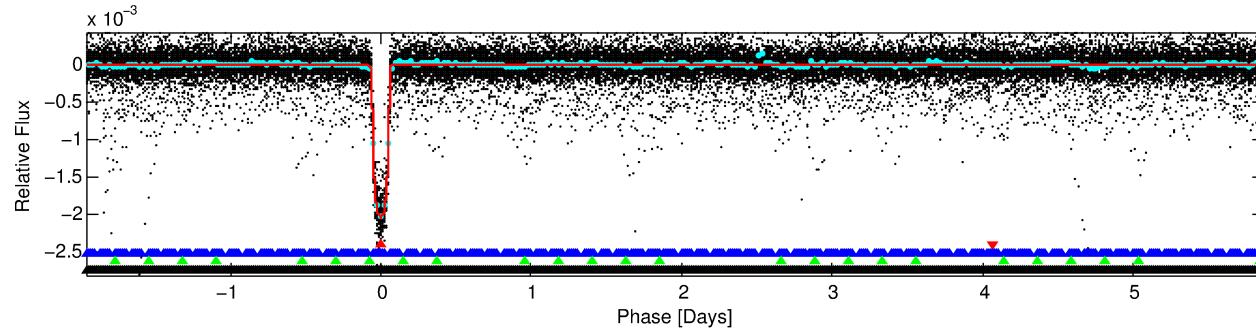
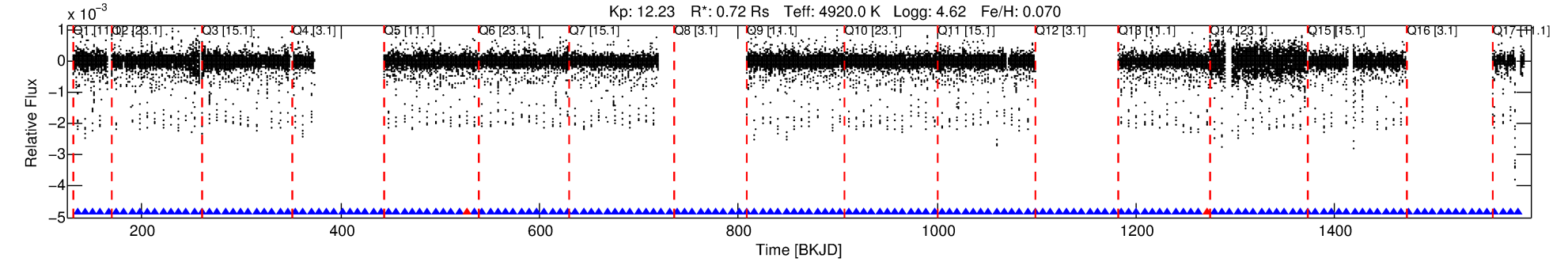
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011551692-01

No Significant Match Found

DV One-Page Summary

KIC: 11551692 Candidate: 1 of 4 Period: 7.834 d
KOI: K01781.01 Corr: 0.971



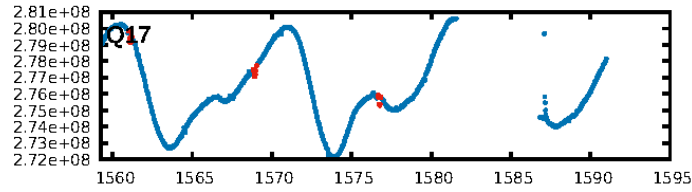
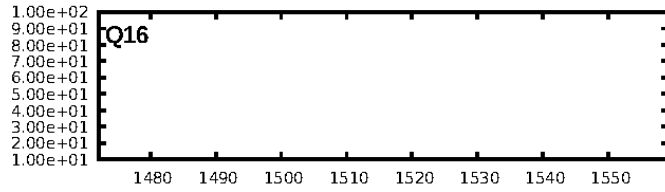
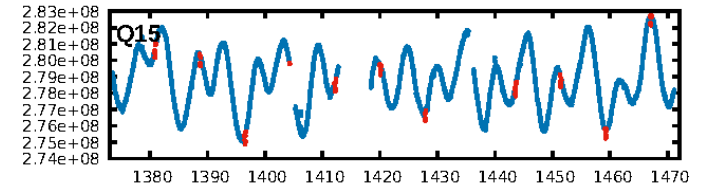
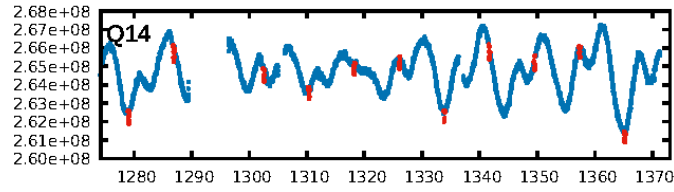
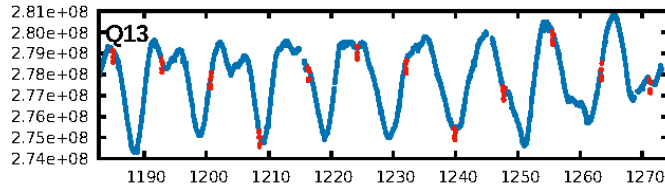
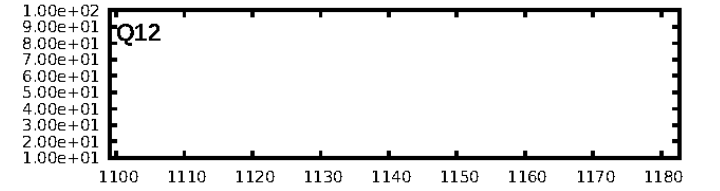
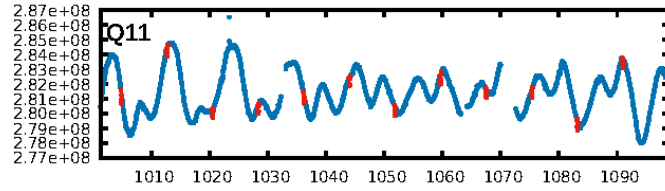
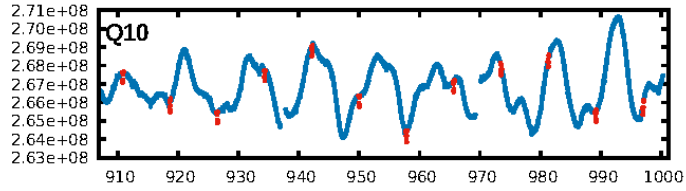
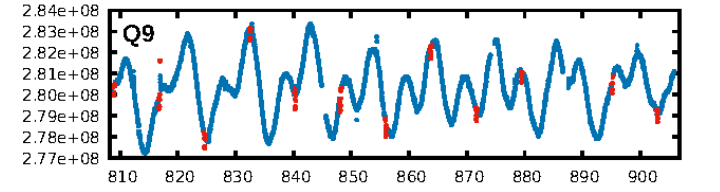
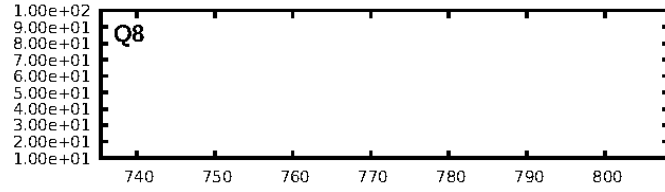
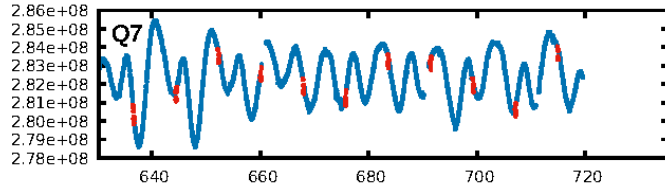
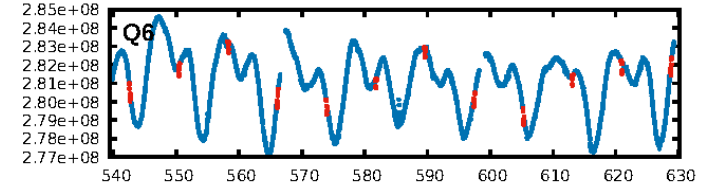
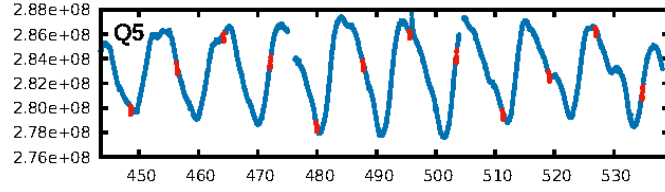
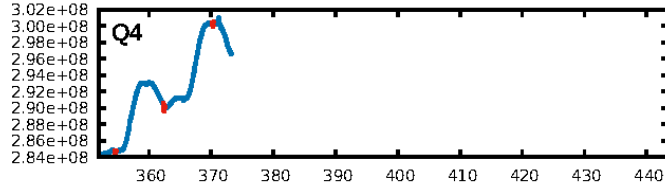
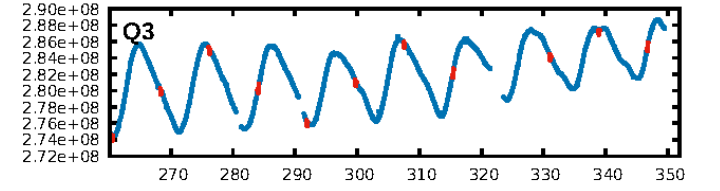
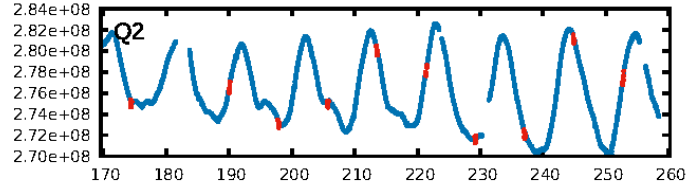
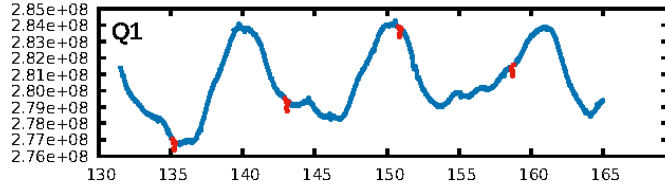
DV Fit Results:

Period = 7.83443 [0.00000] d
Epoch = 135.2222 [0.0002] BKJD
Rp/R* = 0.0461 [0.0007]
a/R* = 13.93 [0.67]
b = 0.79 [0.02]
Seff = 53.49 [7.08]
Teq = 690 [23] K
Rp = 3.62 [0.30] Re
a = 0.0713 [0.0051] AU
Ag = N/A
Teffp = N/A

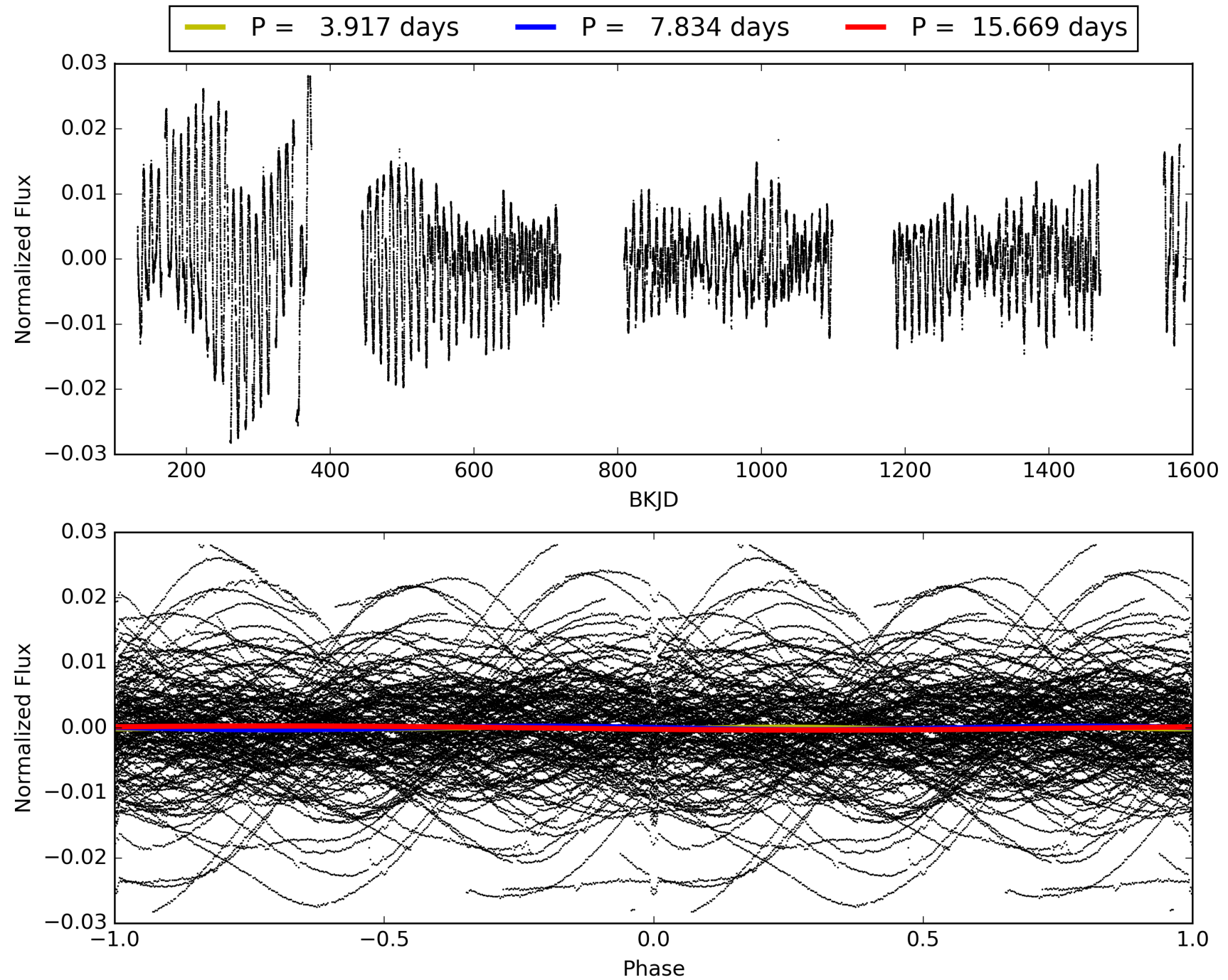
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [31.66 σ]
LongPeriod-sig: 100.0% [226.83 σ]
ModelChiSquare2-sig: 26.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.98 [123/125]
GhostDiagnostic-chr: 1.765
Centroid-sig: 0.0%
Centroid-so: 0.512 arcsec [19.73 σ]
OotOffset-rm: 0.069 arcsec [0.61 σ]
KicOffset-rm: 0.518 arcsec [5.03 σ]
OotOffset-st: 4/4/0/5 [13]
KicOffset-st: 4/4/0/5 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 0.62 [8/13]

TCE 011551692-01, PDC Light Curves

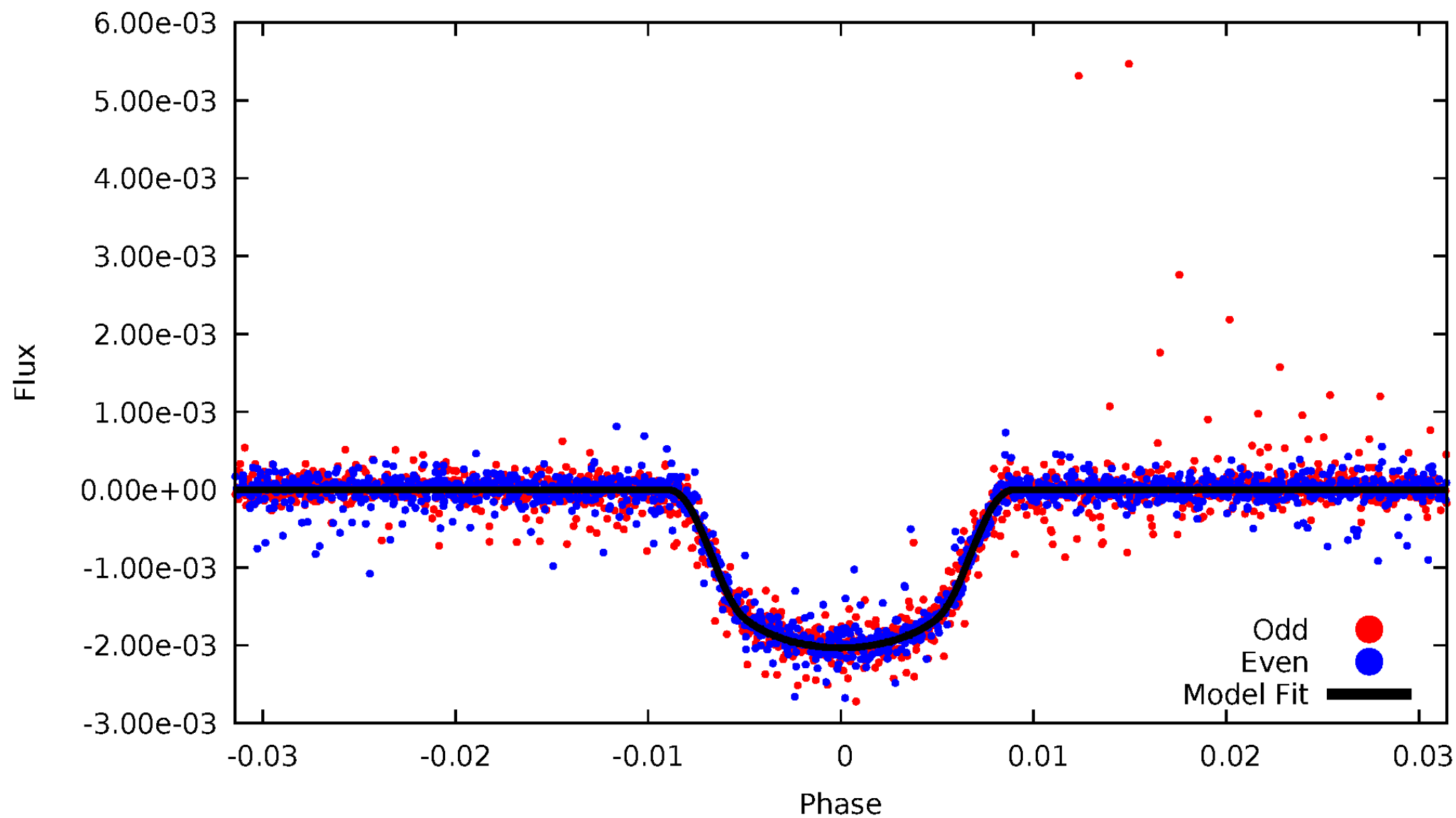


TCE 011551692-01



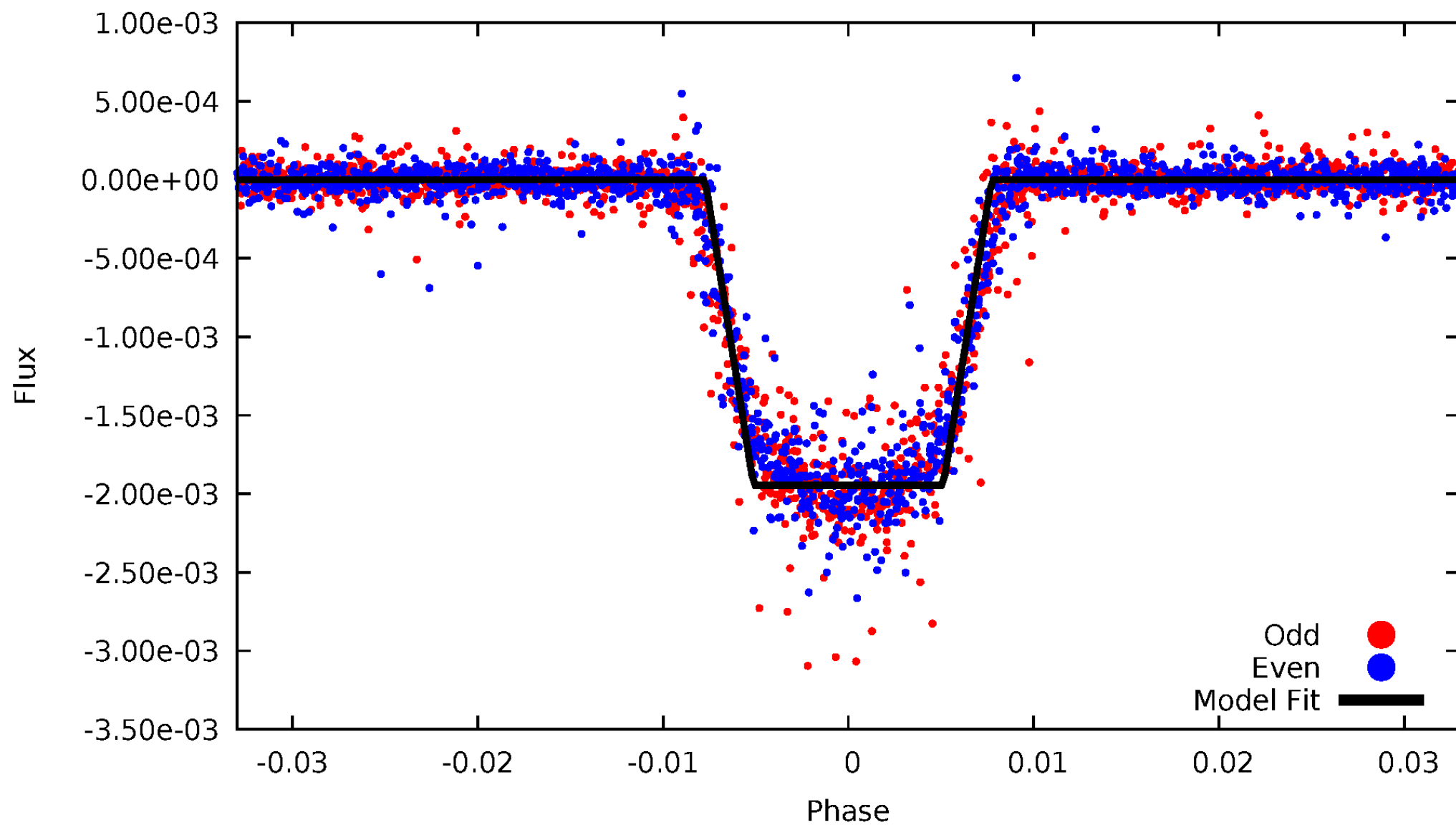
DV Odd/Even

TCE 011551692-01



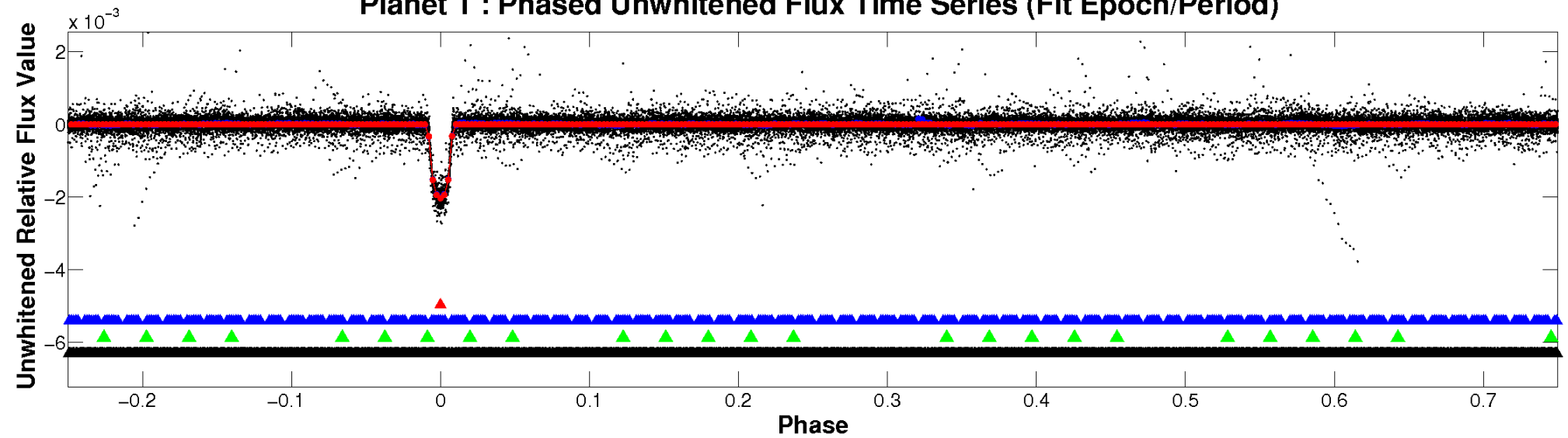
ALT Odd/Even

TCE 011551692-01

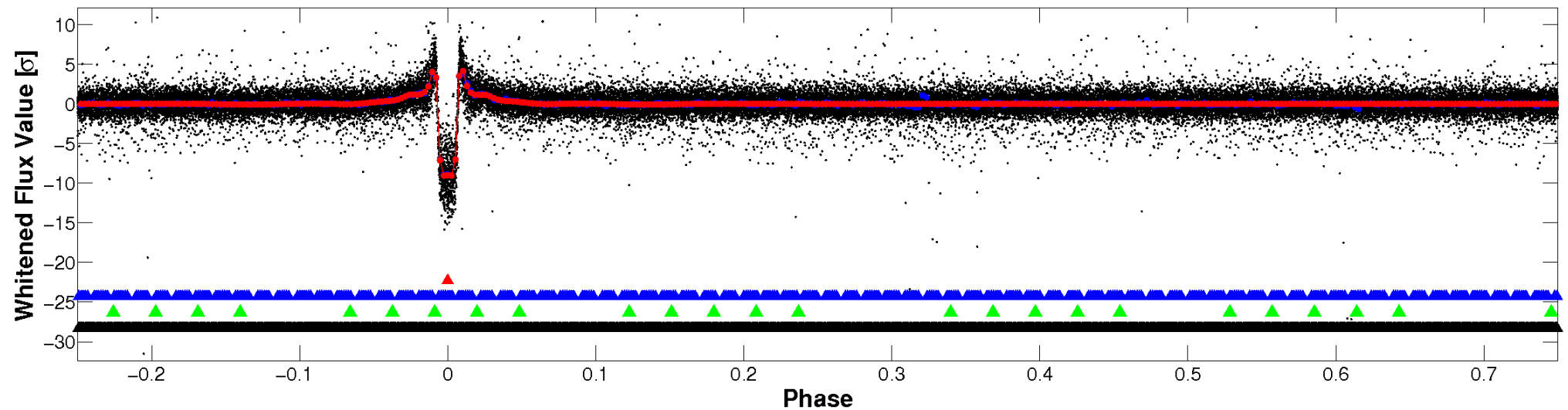


Non-Whitened Vs. Whitened Light Curve

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

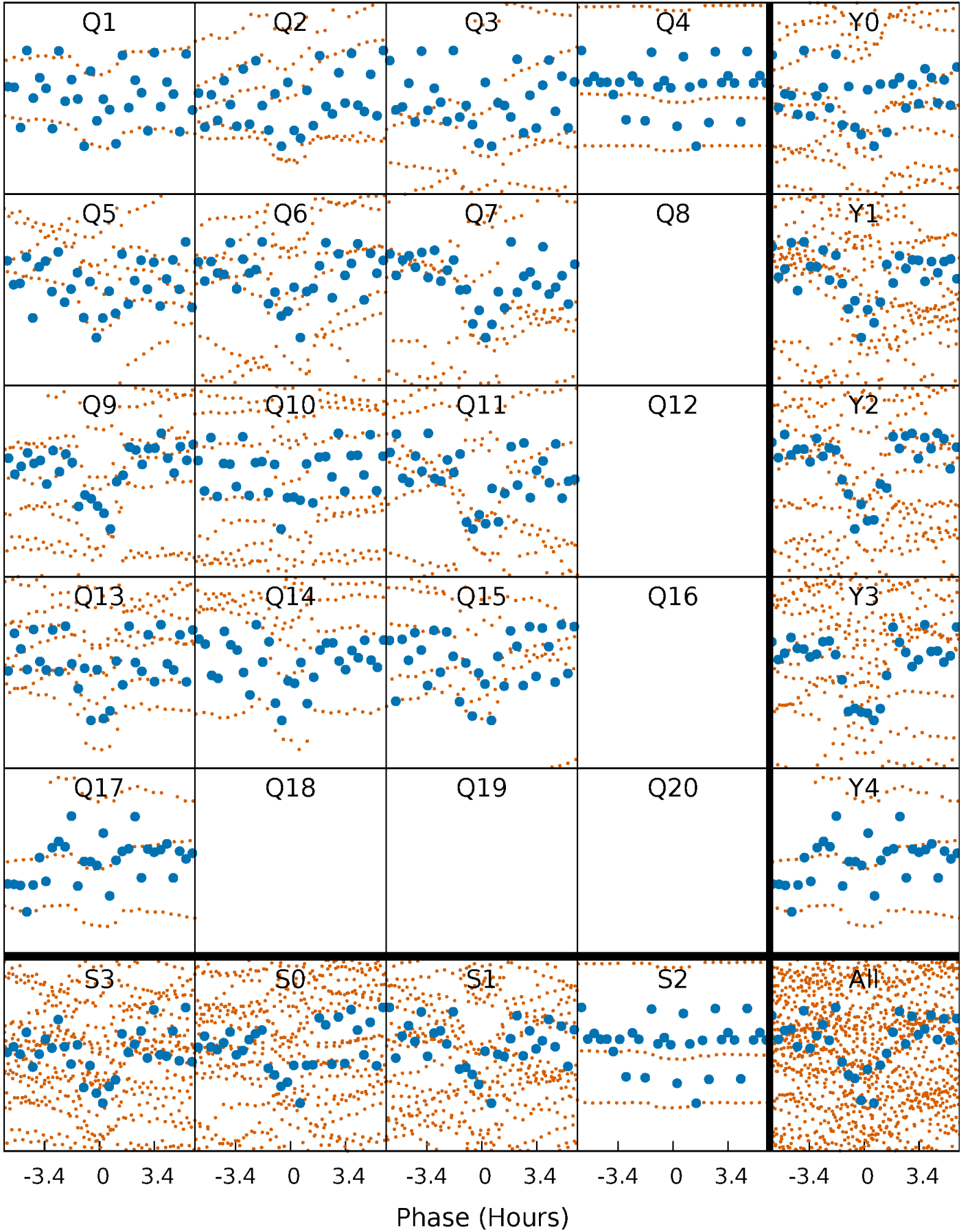


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



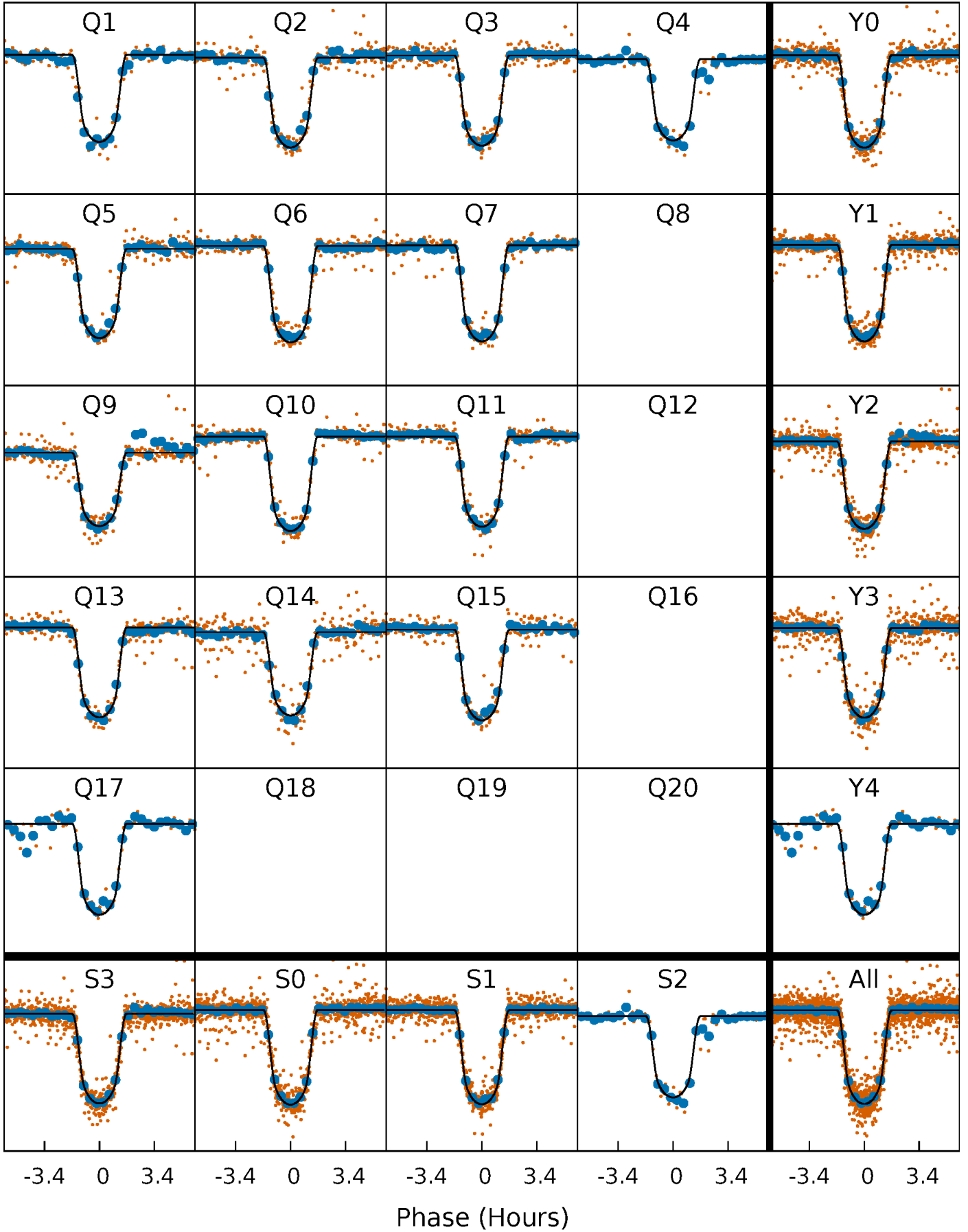
PDC Quarter-Phased Transit Curves

TCE 011551692-01 P= 7.834435 Days $T_0=135.222162$ (BKJD)



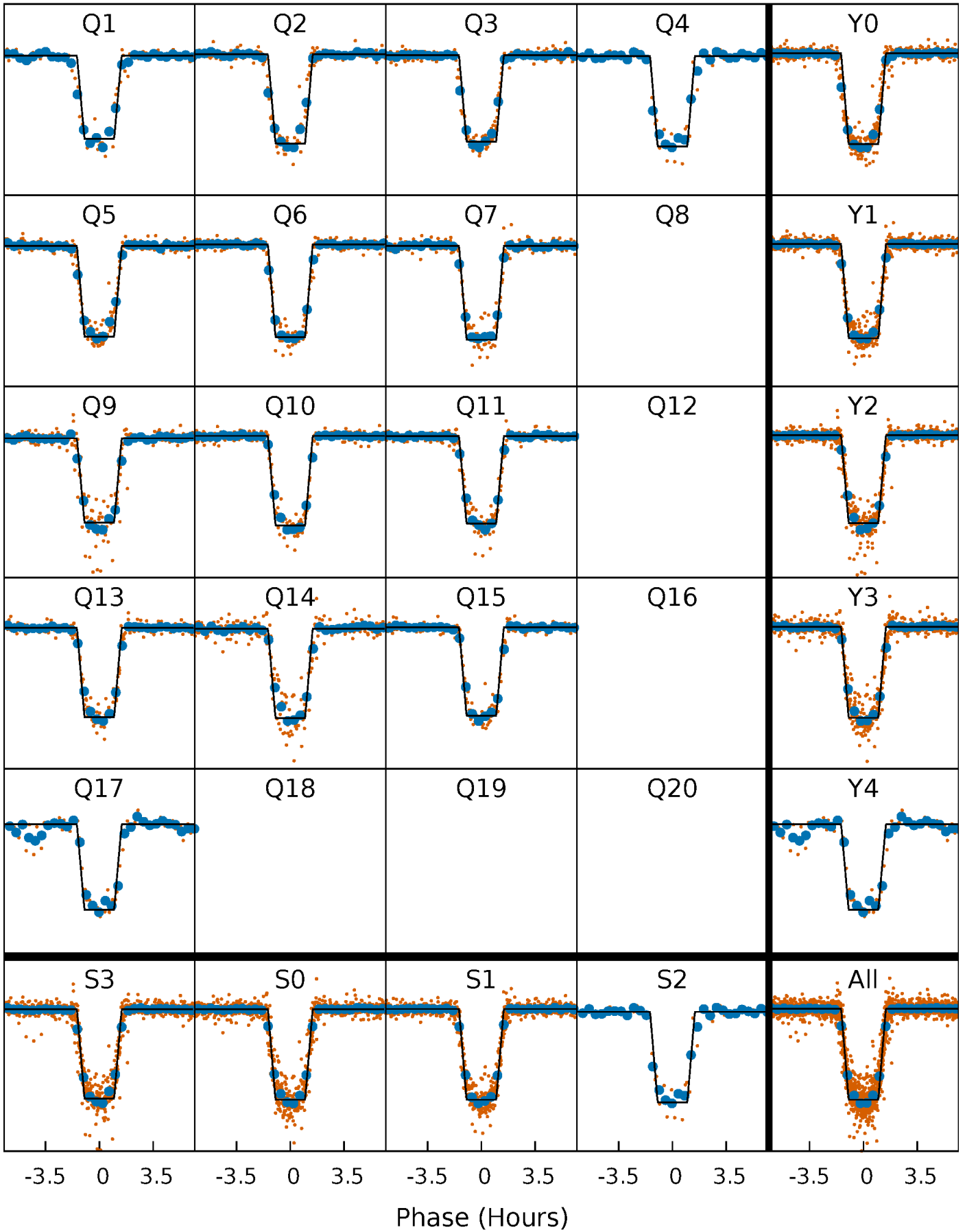
DV Quarter-Phased Transit Curves

TCE 011551692-01 P= 7.834435 Days $T_0=135.222162$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

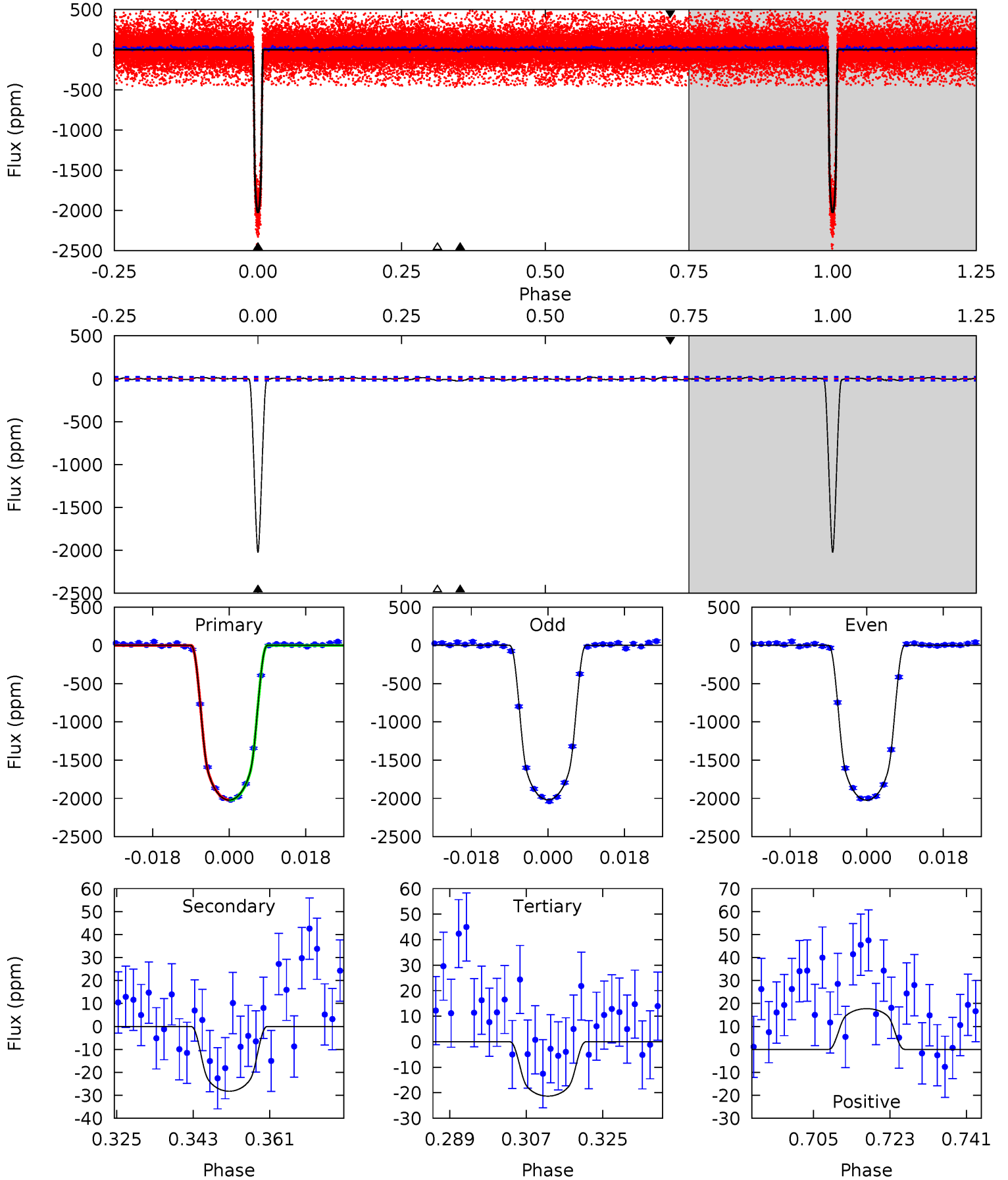
TCE 011551692-01 P= 7.834374 Days $T_0=135.227276$ (BKJD)



DV Model-Shift Uniqueness Test

011551692-01, P = 7.834435 Days, E = 127.387727 Days

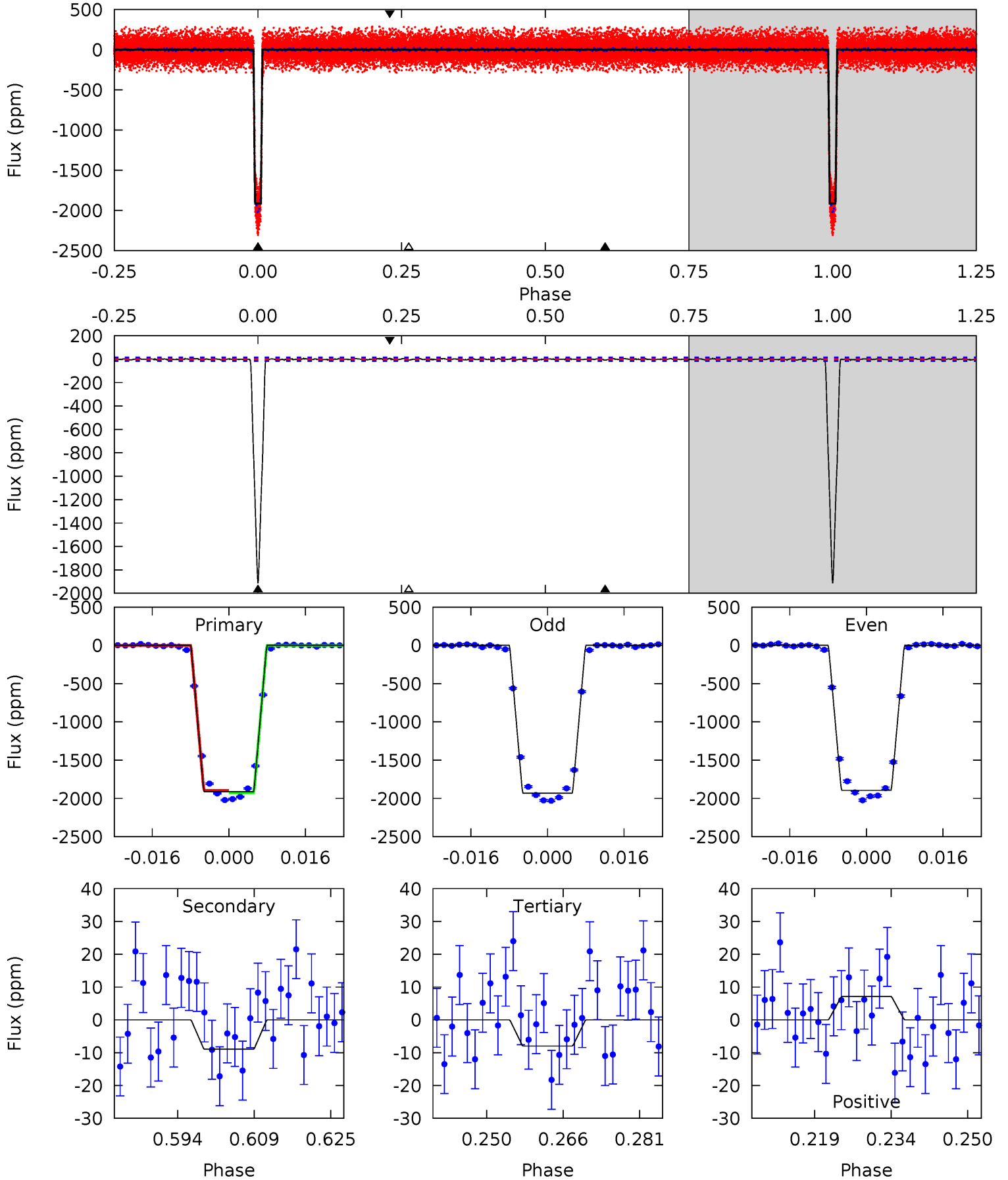
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
460.0	6.42	4.85	4.04	4.91	2.36	1.84	455.1	456.0	1.57	2.38	0.58	1.00	0.01	0.76



Alt Model-Shift Uniqueness Test

011551692-01, P = 7.834374 Days, E = 127.392902 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
604.5	2.83	2.52	2.24	4.94	2.42	0.85	601.9	602.2	0.30	0.59	5.80	1.01	0.00	4.51



Stellar Parameters For KIC 011551692

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4920^{+98}_{-98}	$4.620^{+0.010}_{-0.059}$	$0.070^{+0.150}_{-0.150}$	$0.720^{+0.059}_{-0.022}$	$0.822^{+0.030}_{-0.059}$	$3.104^{+0.143}_{-0.699}$
	+2%/-2%	+0%/-1%	+214%/-214%	+8%/-3%	+4%/-7%	+5%/-23%
Source	SPE59	SPE59	SPE59	DSEP		

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

Secondary Eclipse Parameters for KIC 011551692-01 / KOI 1781.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-28 ± 4	$3.74^{+0.17}_{-0.16}$	975^{+24}_{-23}	2475^{+61}_{-61}	$5.726^{+0.952}_{-1.012}$
Alt.	-9 ± 3	$3.57^{+0.16}_{-0.16}$	975^{+26}_{-24}	2176^{+78}_{-134}	$2.038^{+0.674}_{-0.736}$

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

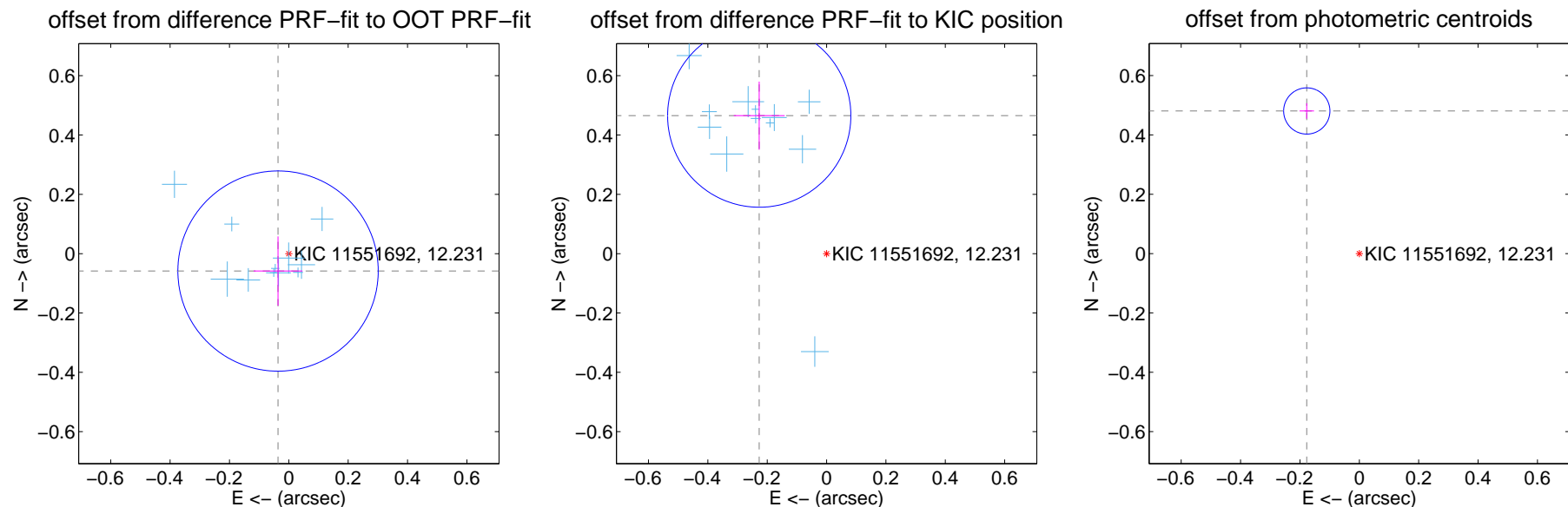
DV Centroid Data

Supplemental centroid analysis for 011551692-01. Kepler magnitude: 12.23. Transit SNR 236.00

There are 13 quarters with good PRF difference image offsets

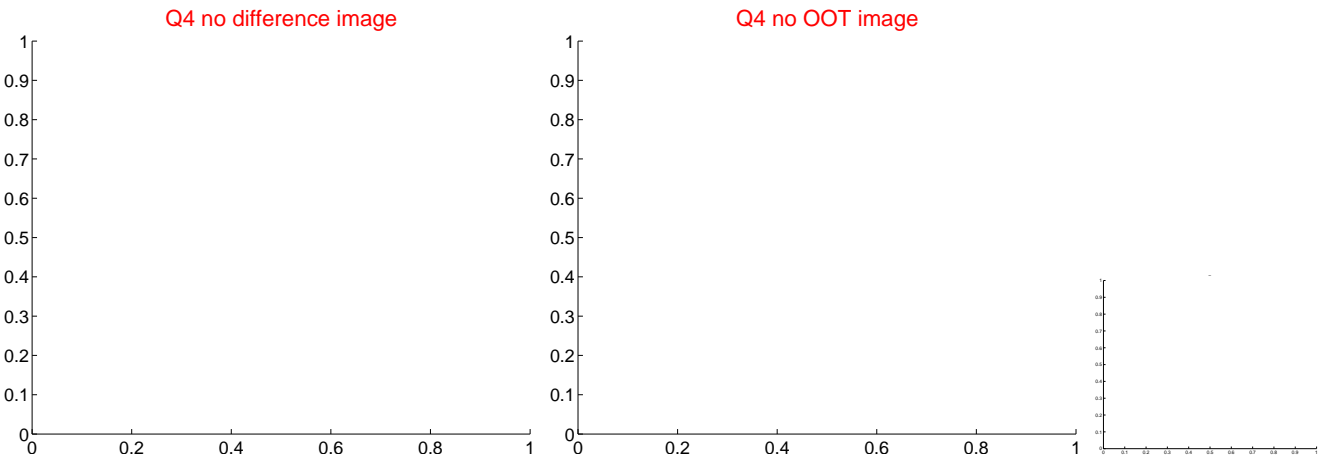
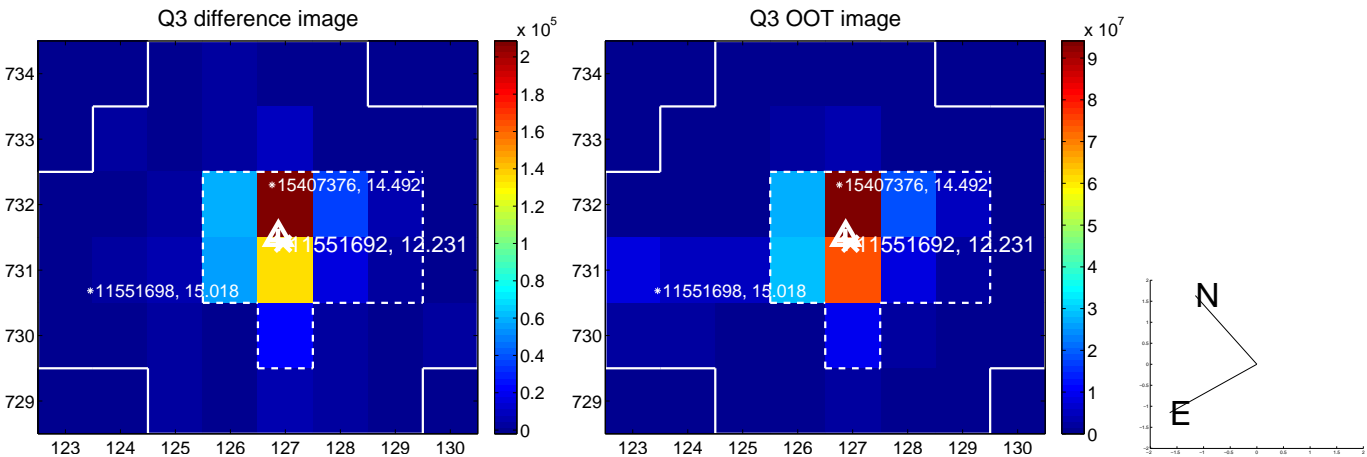
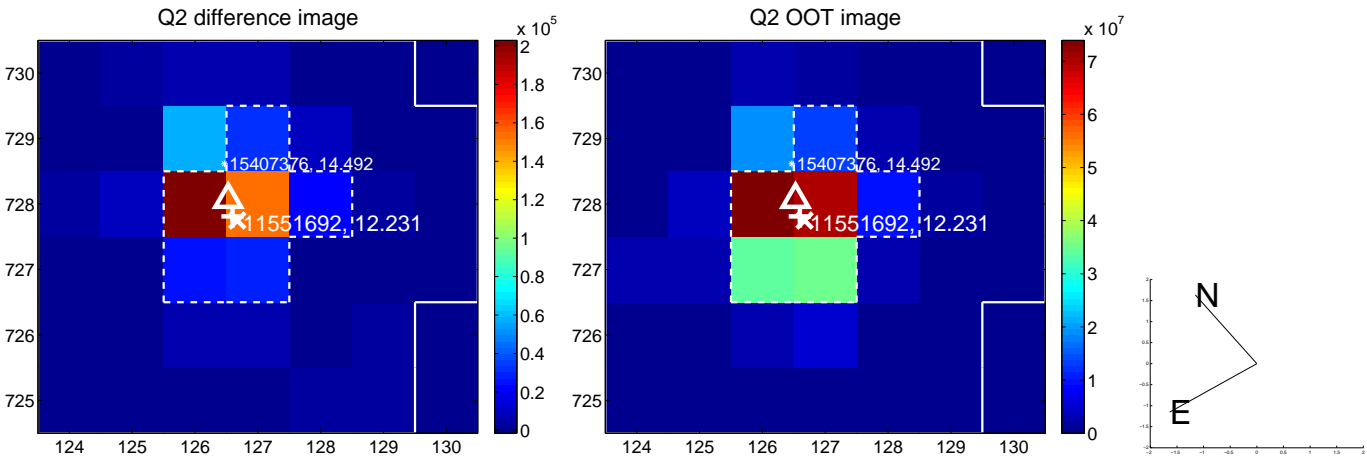
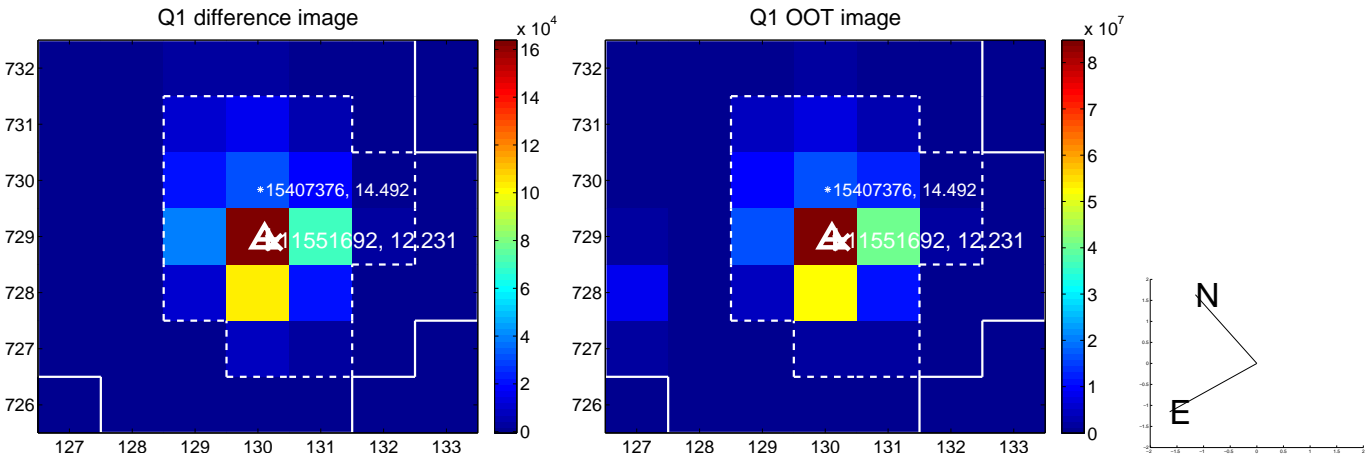
The direct PRF centroid is offset from the target star catalog position by about 0.58 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.069 ± 0.113	0.61	0.036 ± 0.082	-0.059 ± 0.117
PRF-fit source offset from KIC position	0.518 ± 0.103	5.03	0.227 ± 0.086	0.465 ± 0.115
photometric centroid source offset	0.51 ± 0.03	19.73	0.18 ± 0.02	0.48 ± 0.03

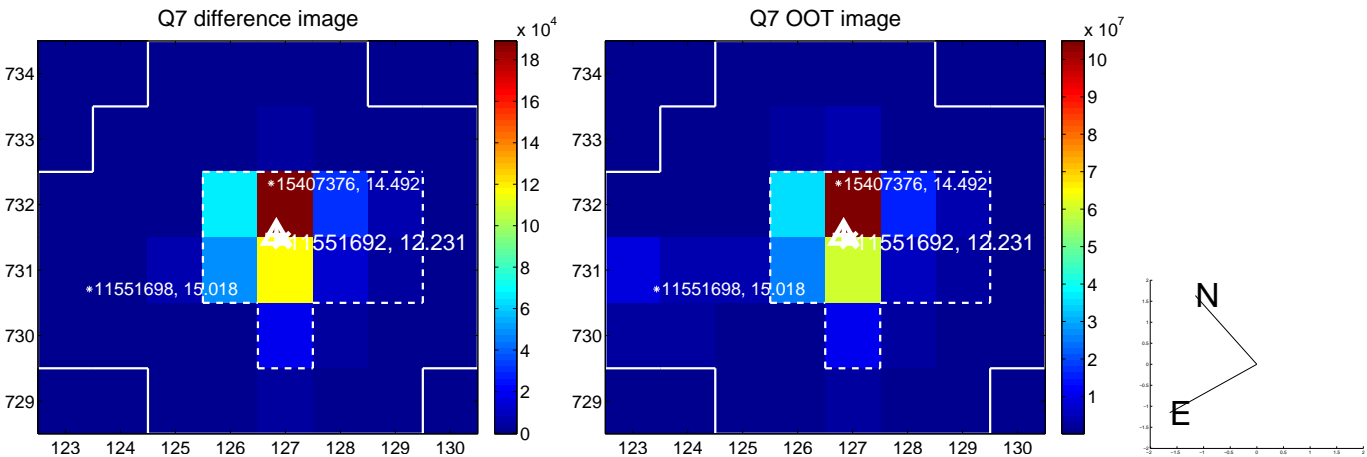
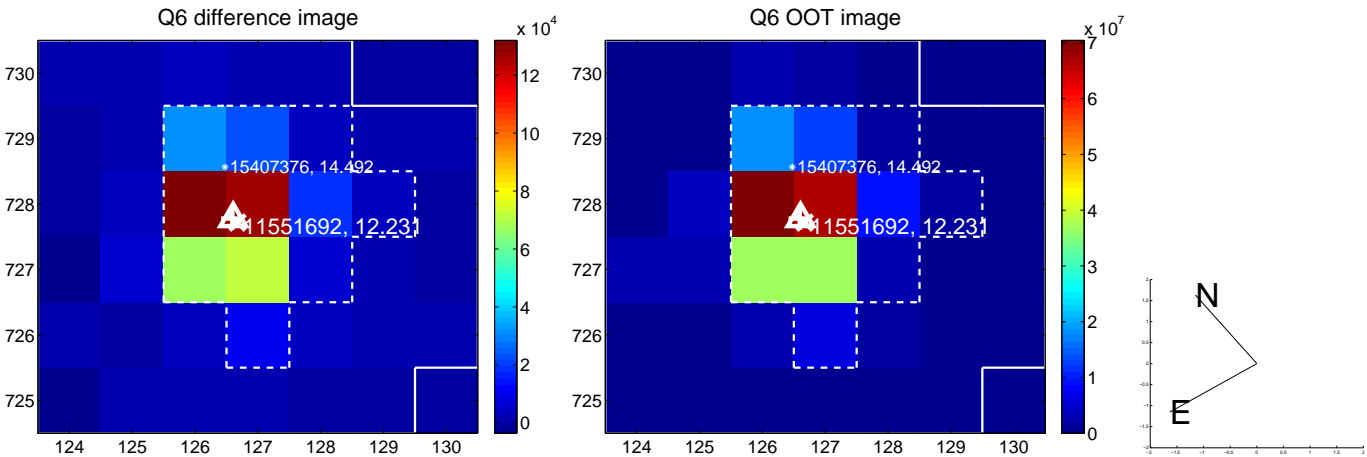
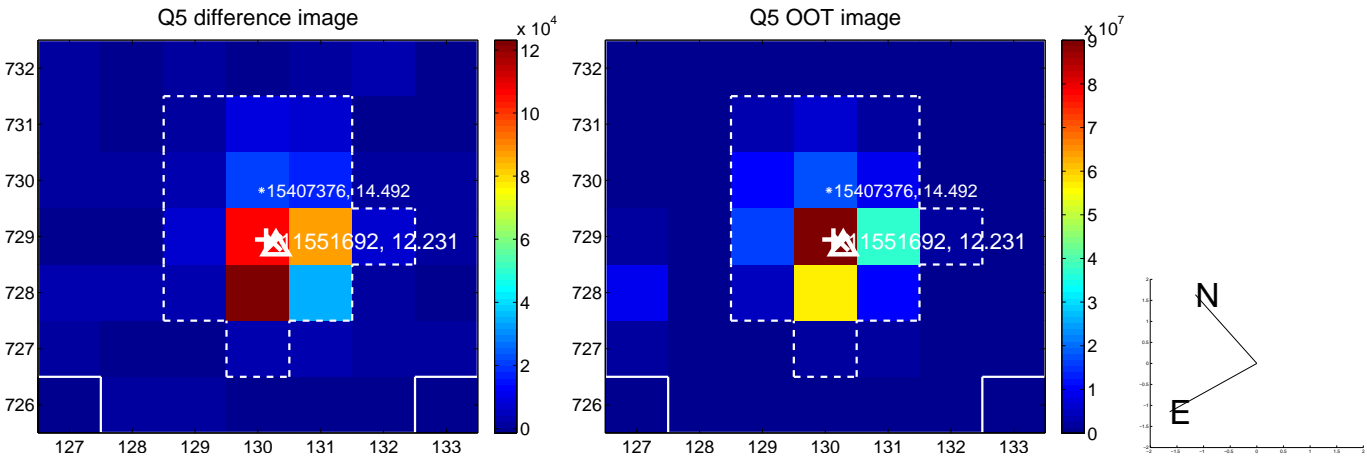


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

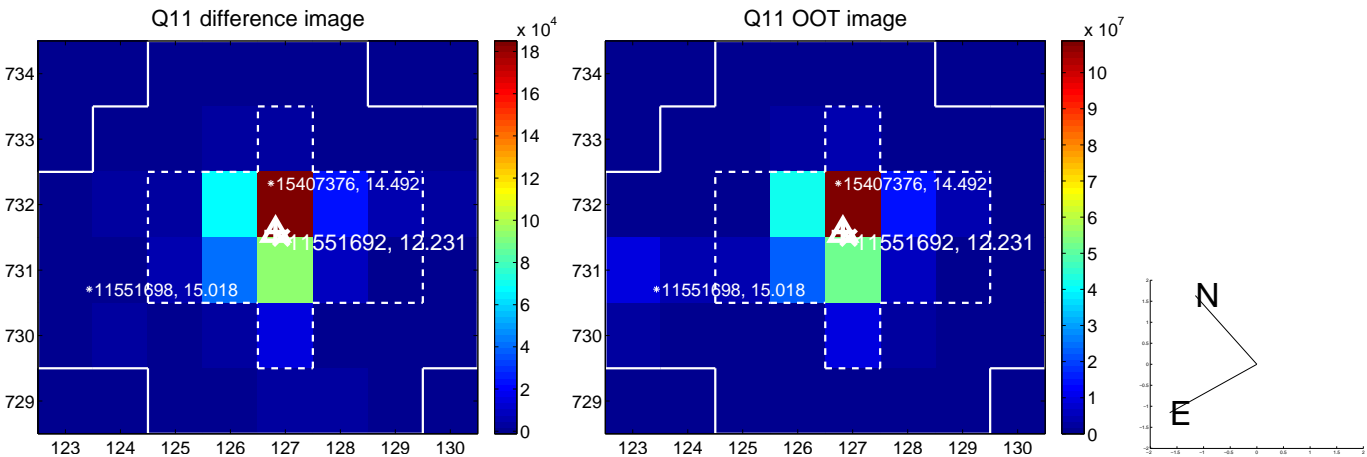
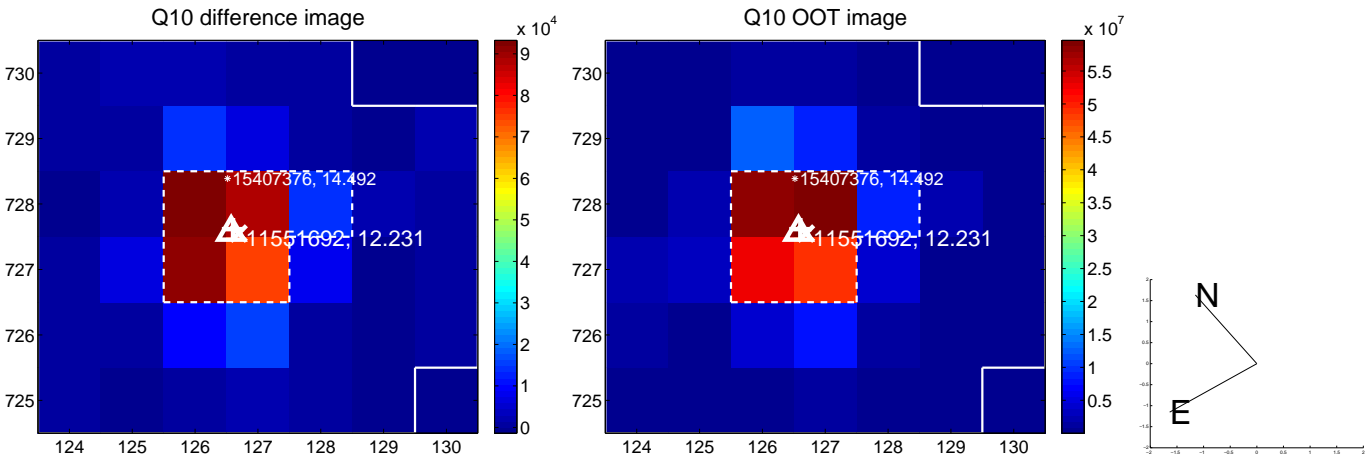
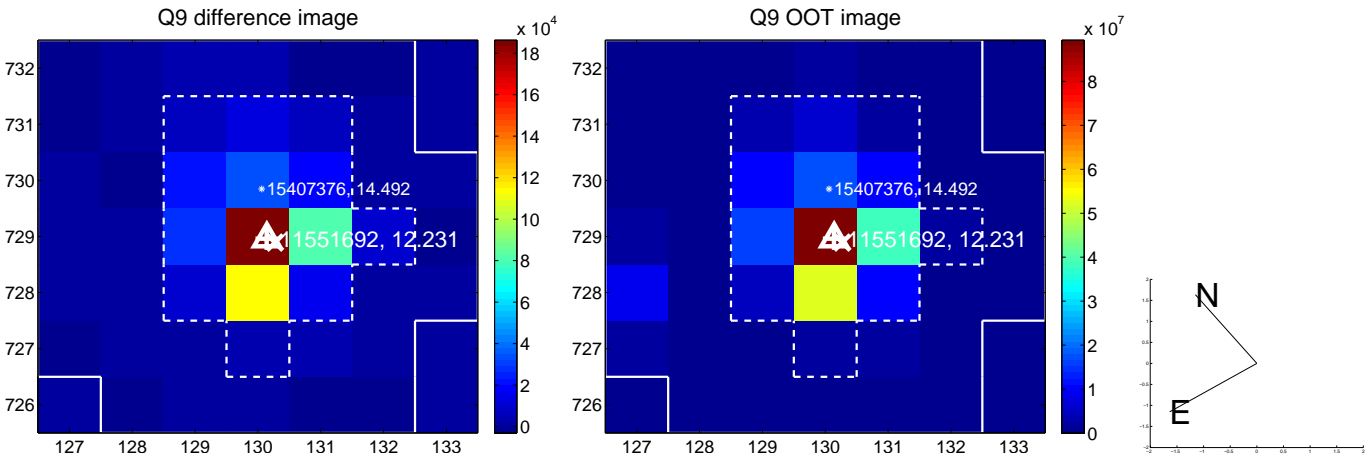
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



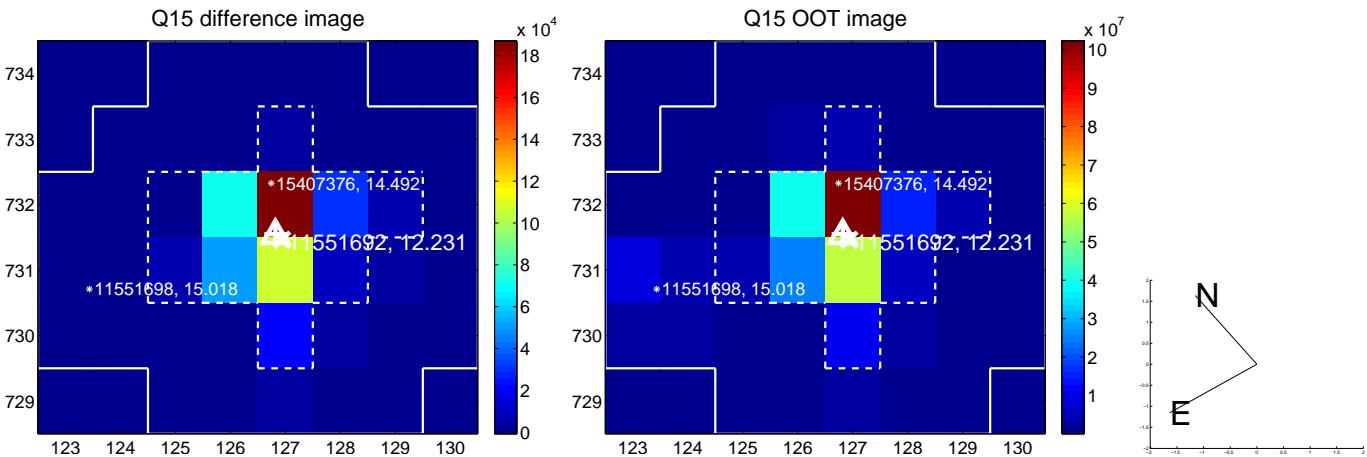
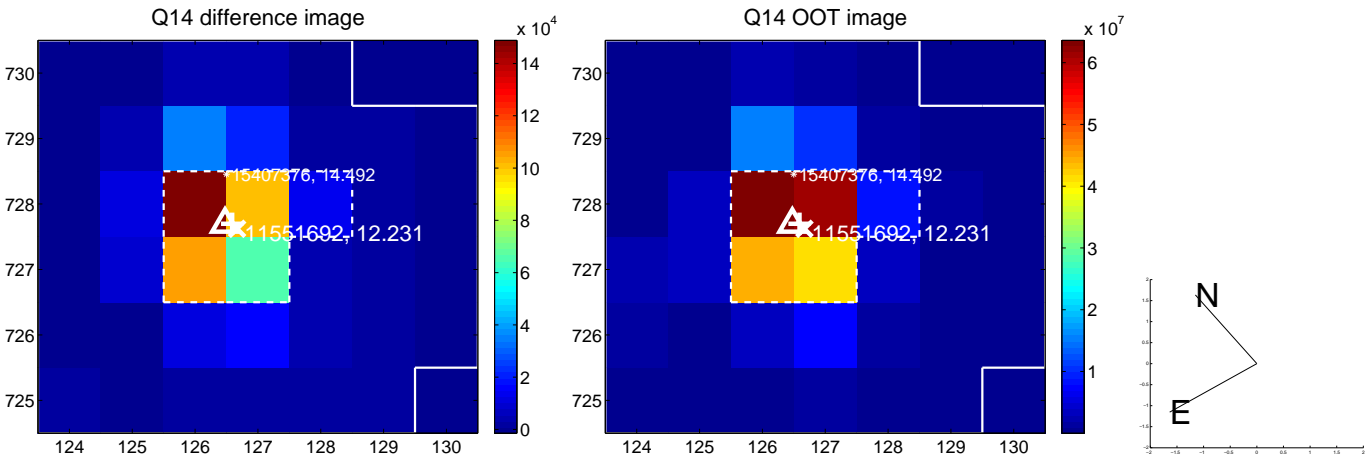
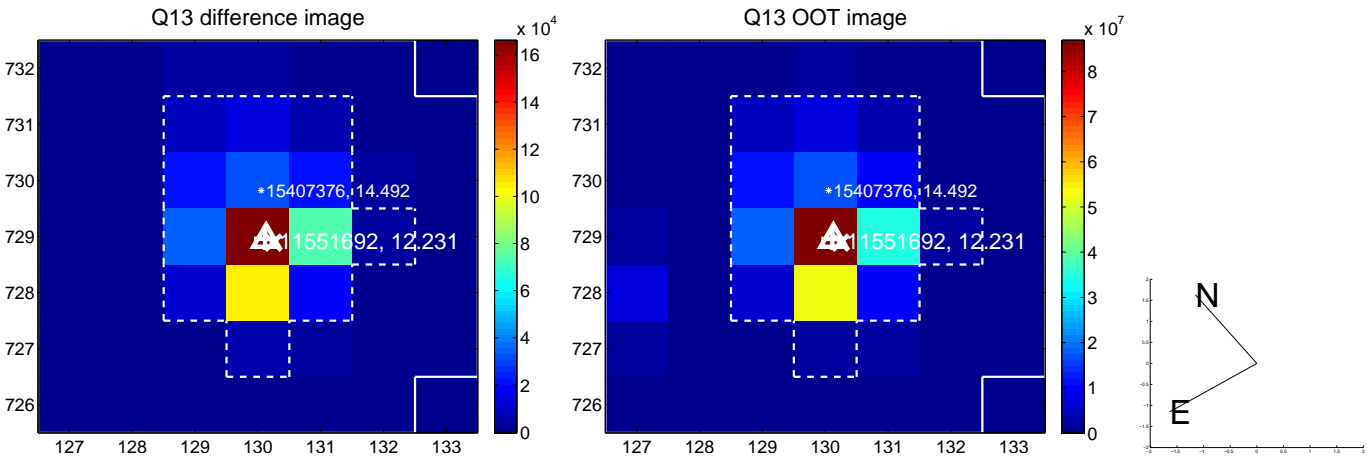
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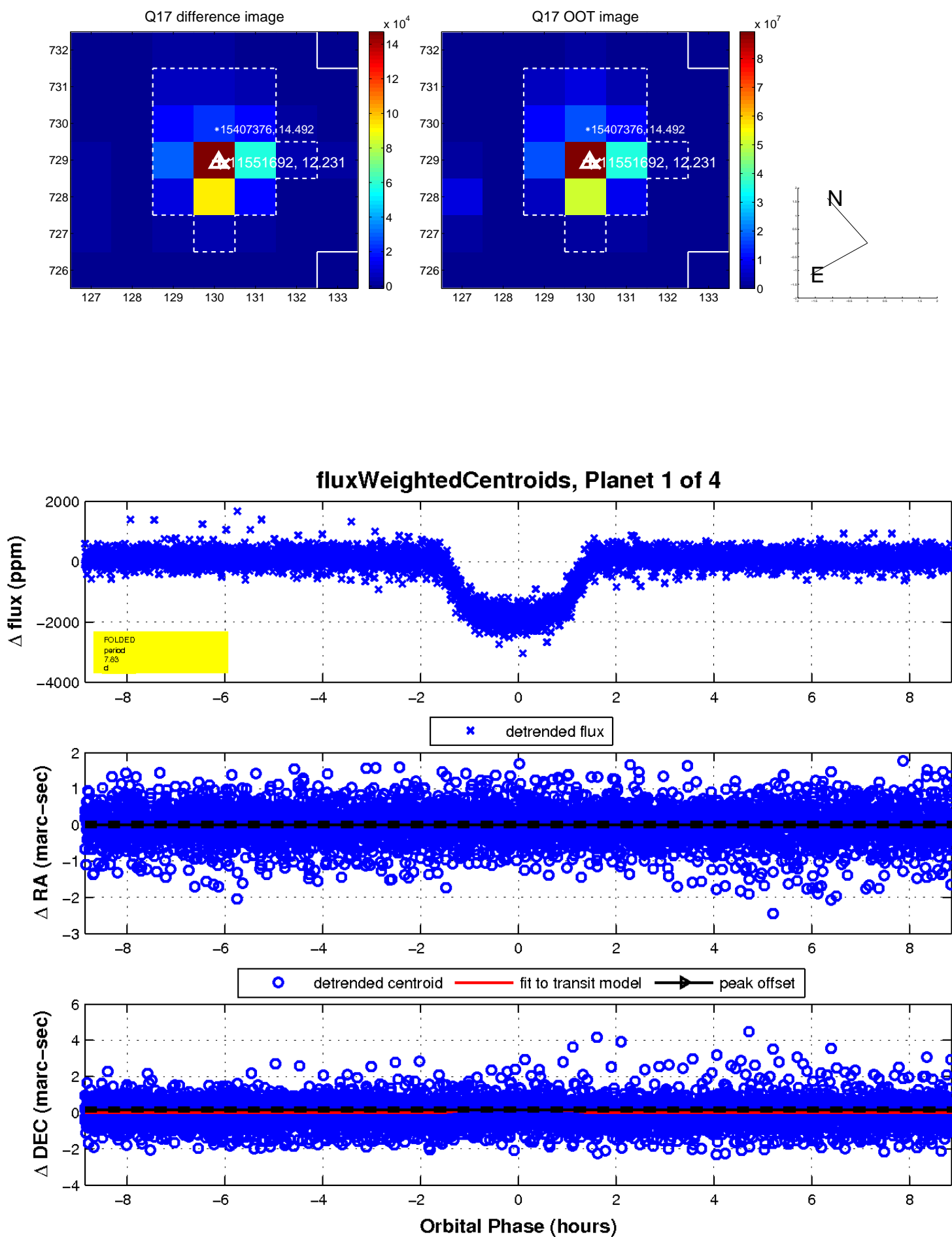
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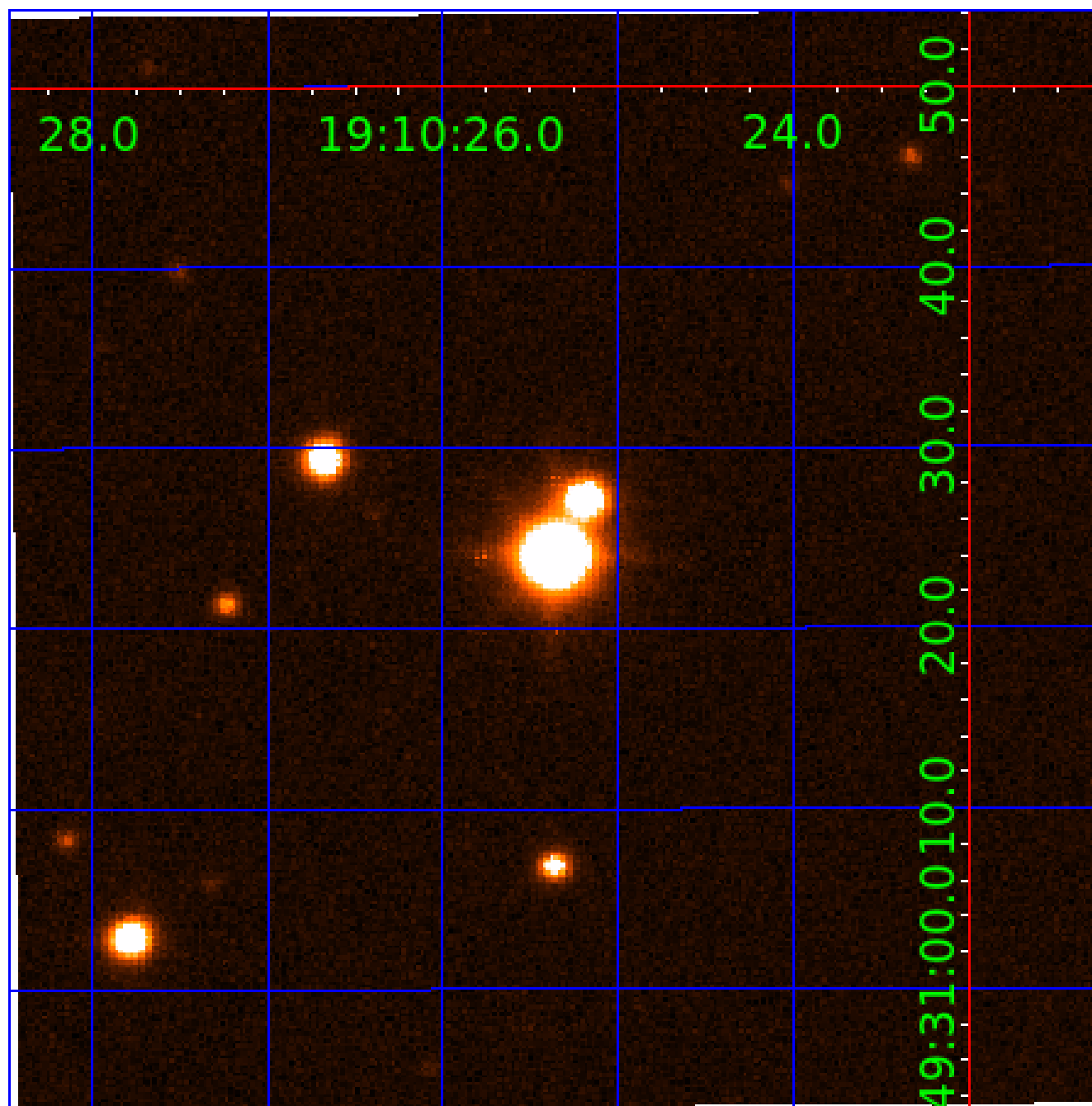


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011551692

Q1-17 DR25 TCE Parameters

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Robovetter Results

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011551692-03	OBS	PC	0.97	0	0	0	0	CENT_KIC_POS
011551692-04	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_NOFITS—HALO_GHOST

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

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

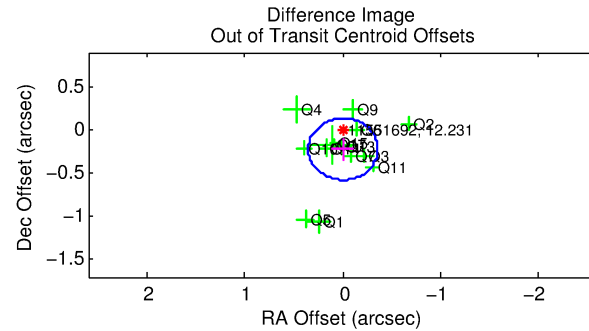
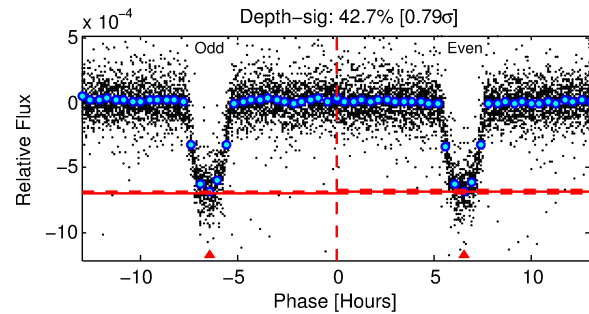
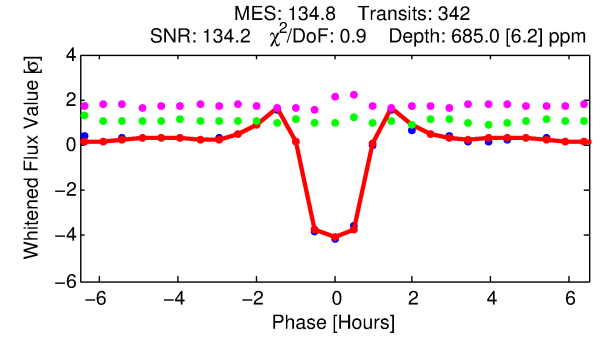
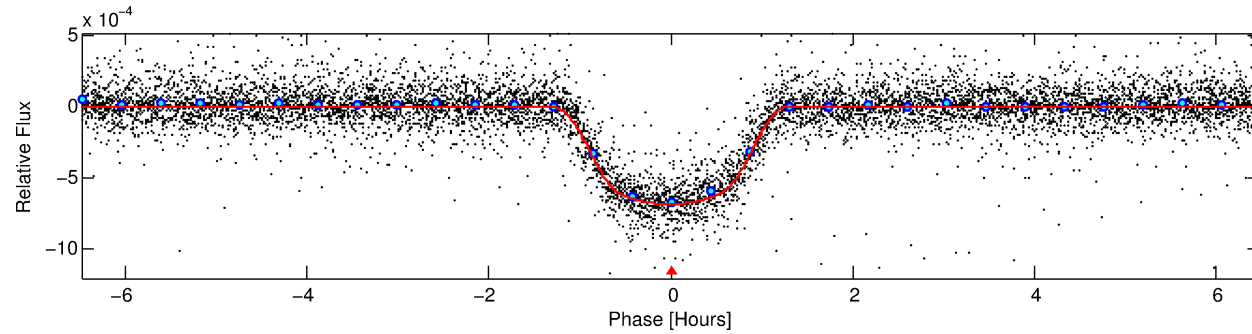
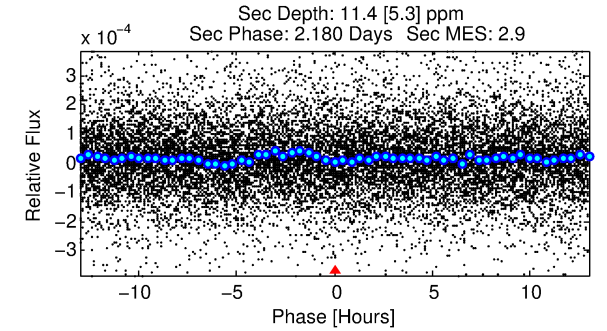
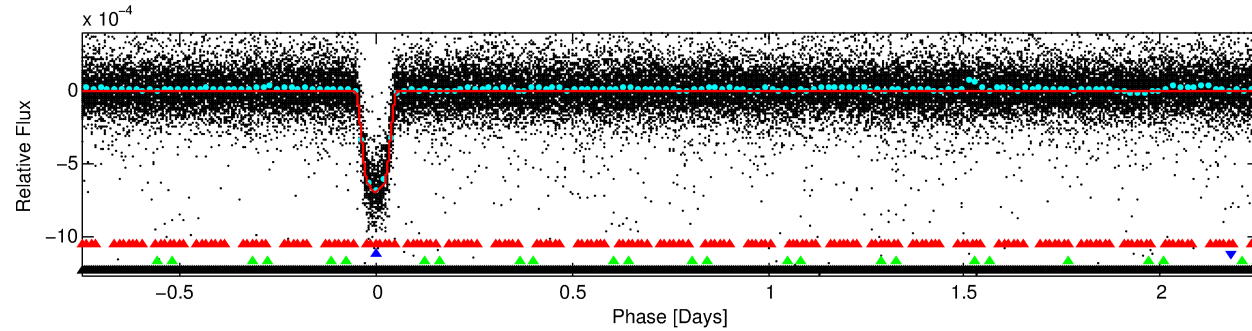
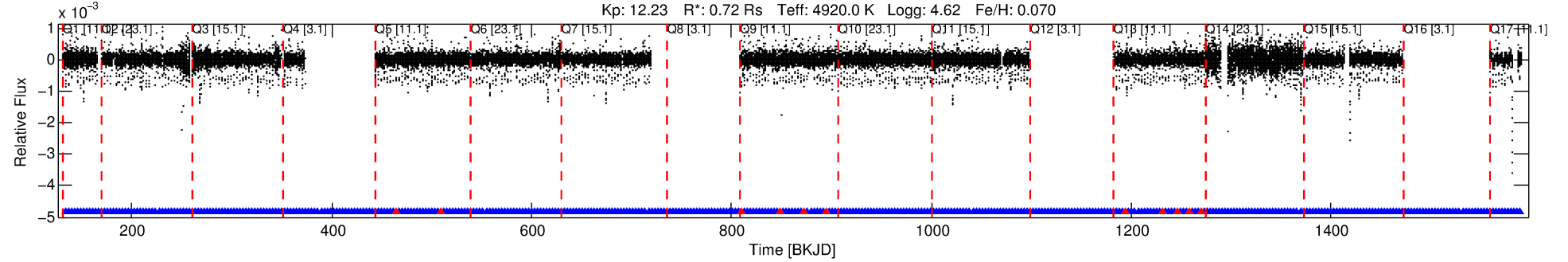
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011551692-02

No Significant Match Found

DV One-Page Summary

KIC: 11551692 Candidate: 2 of 4 Period: 3.005 d
KOI: K01781.02 Name: Kepler-411b Corr: 0.954



DV Fit Results:

Period = 3.00515 [0.00000] d
Epoch = 134.1001 [0.0002] BKJD
Rp/R* = 0.0294 [0.0007]
a/R* = 5.39 [0.43]
b = 0.90 [0.02]
Seff = 191.94 [25.42]
Teq = 949 [31] K
Rp = 2.31 [0.20] Re
a = 0.0377 [0.0027] AU
Ag = 1.66 [0.80] [0.83σ]
Teffp = 1666 [198] K [3.57σ]

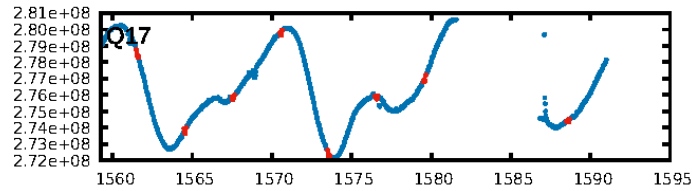
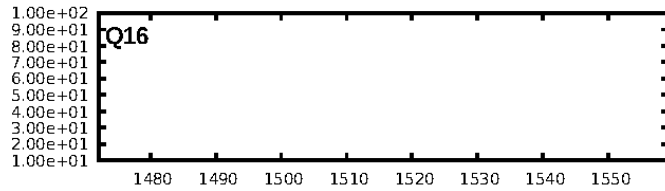
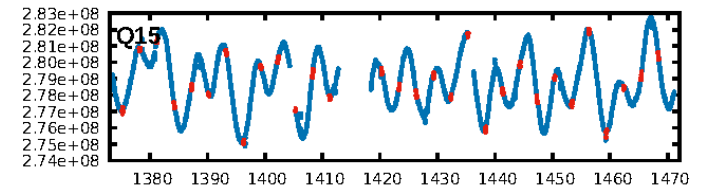
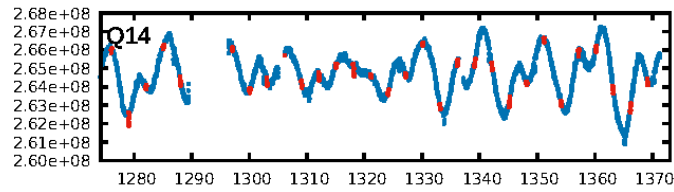
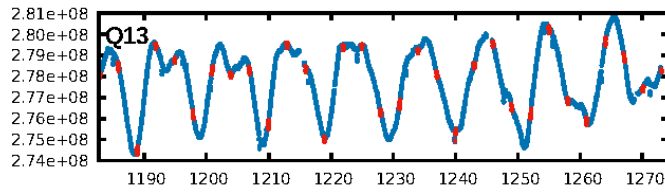
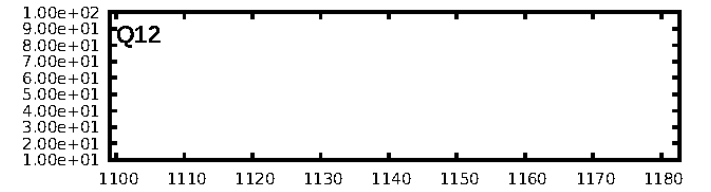
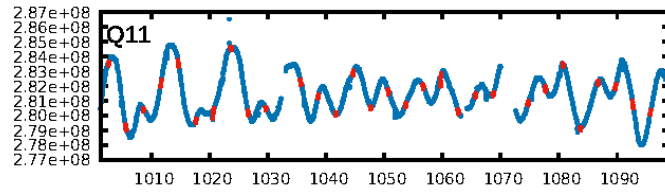
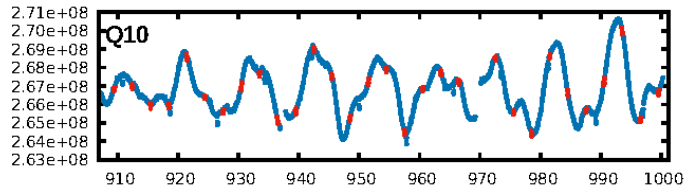
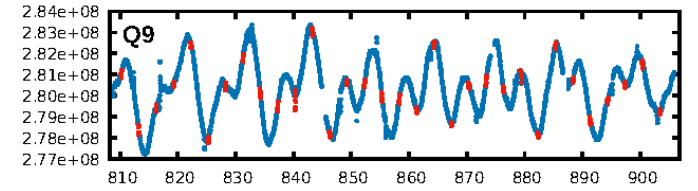
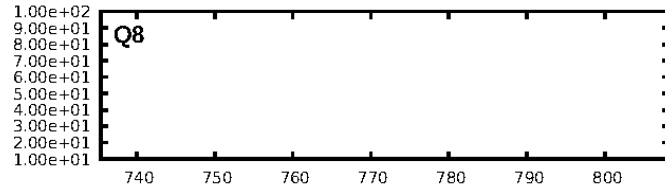
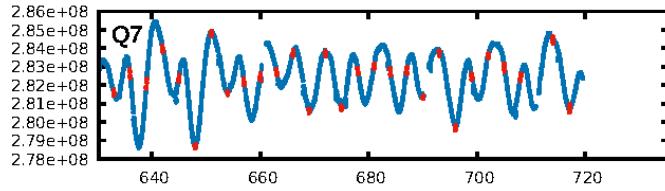
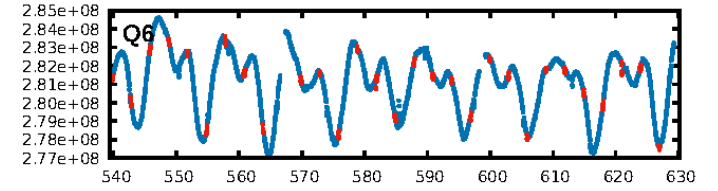
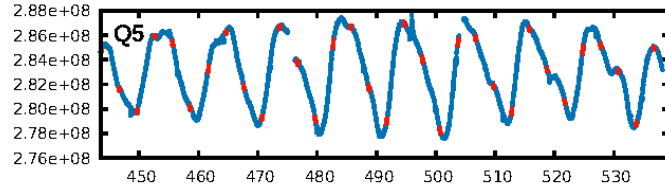
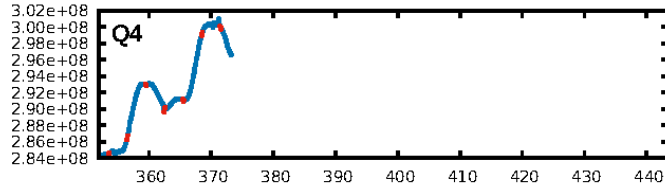
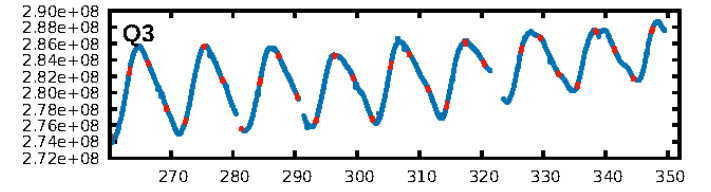
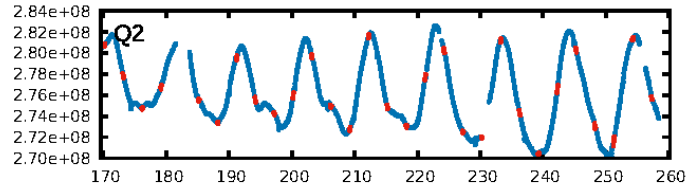
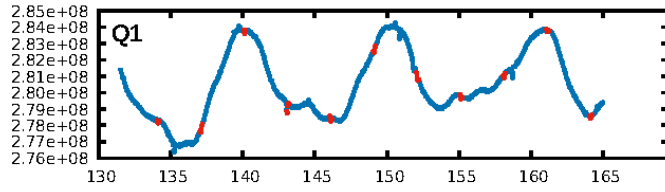
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [17.53σ]
LongPeriod-sig: 100.0% [31.66σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.97 [307/318]
GhostDiagnostic-chr: 2.059
Centroid-sig: 1.6%
Centroid-so: 0.539 arcsec [10.38σ]
OotOffset-rm: 0.220 arcsec [1.86σ]
KicOffset-rm: 0.297 arcsec [2.70σ]
OotOffset-st: 4/4/1/5 [14]
KicOffset-st: 4/4/1/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

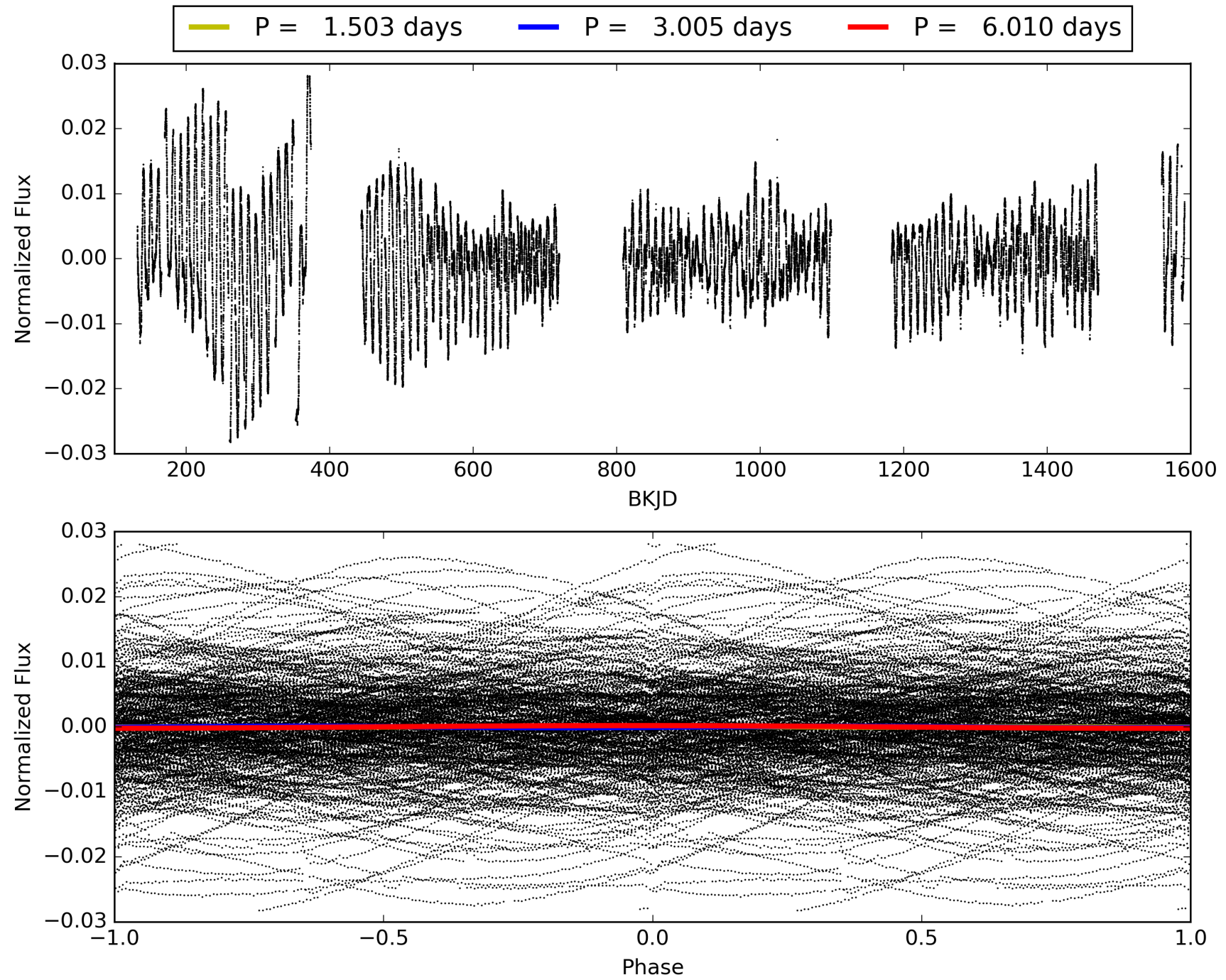
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:25:53 Z

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

TCE 011551692-02, PDC Light Curves

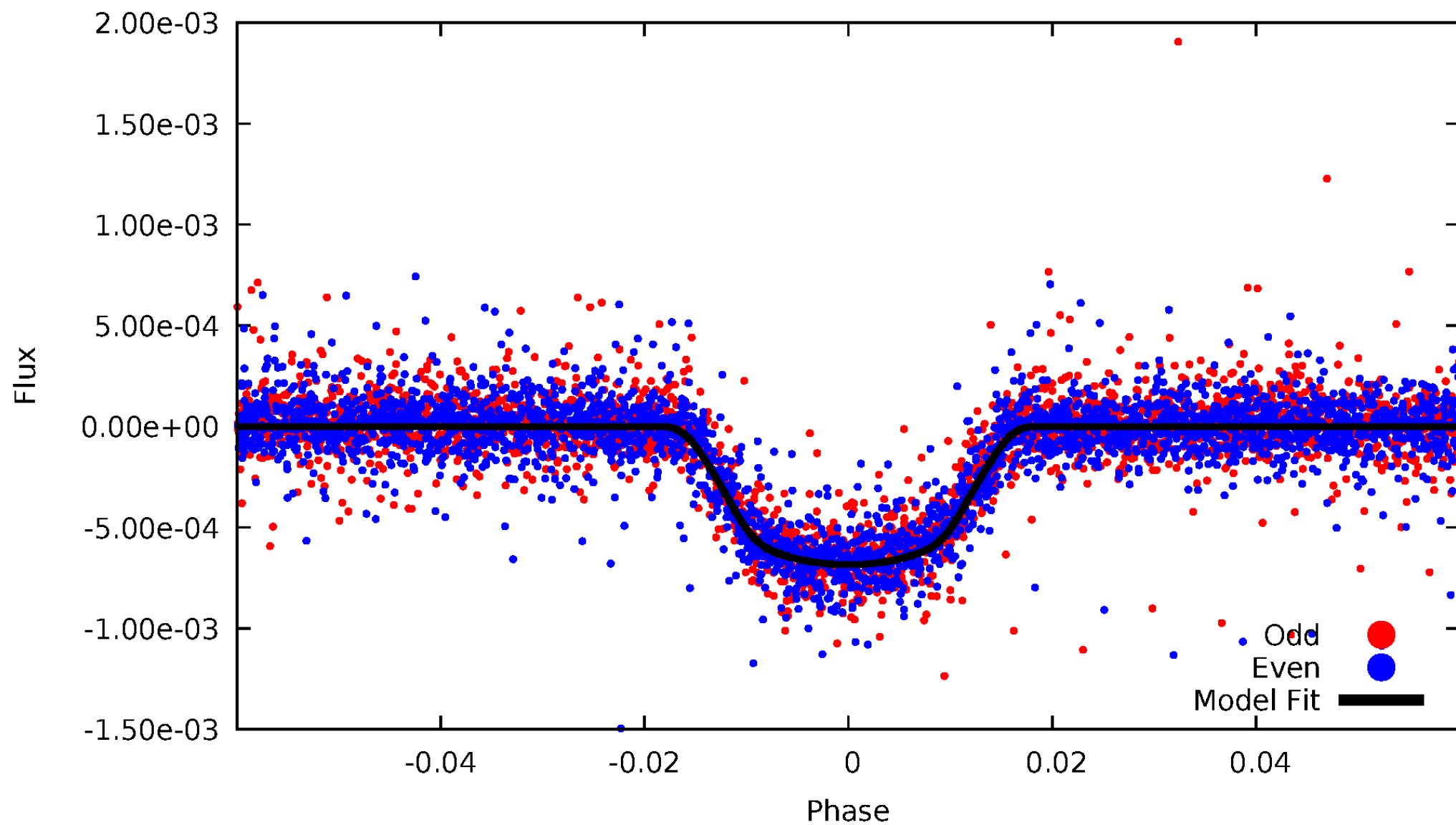


TCE 011551692-02



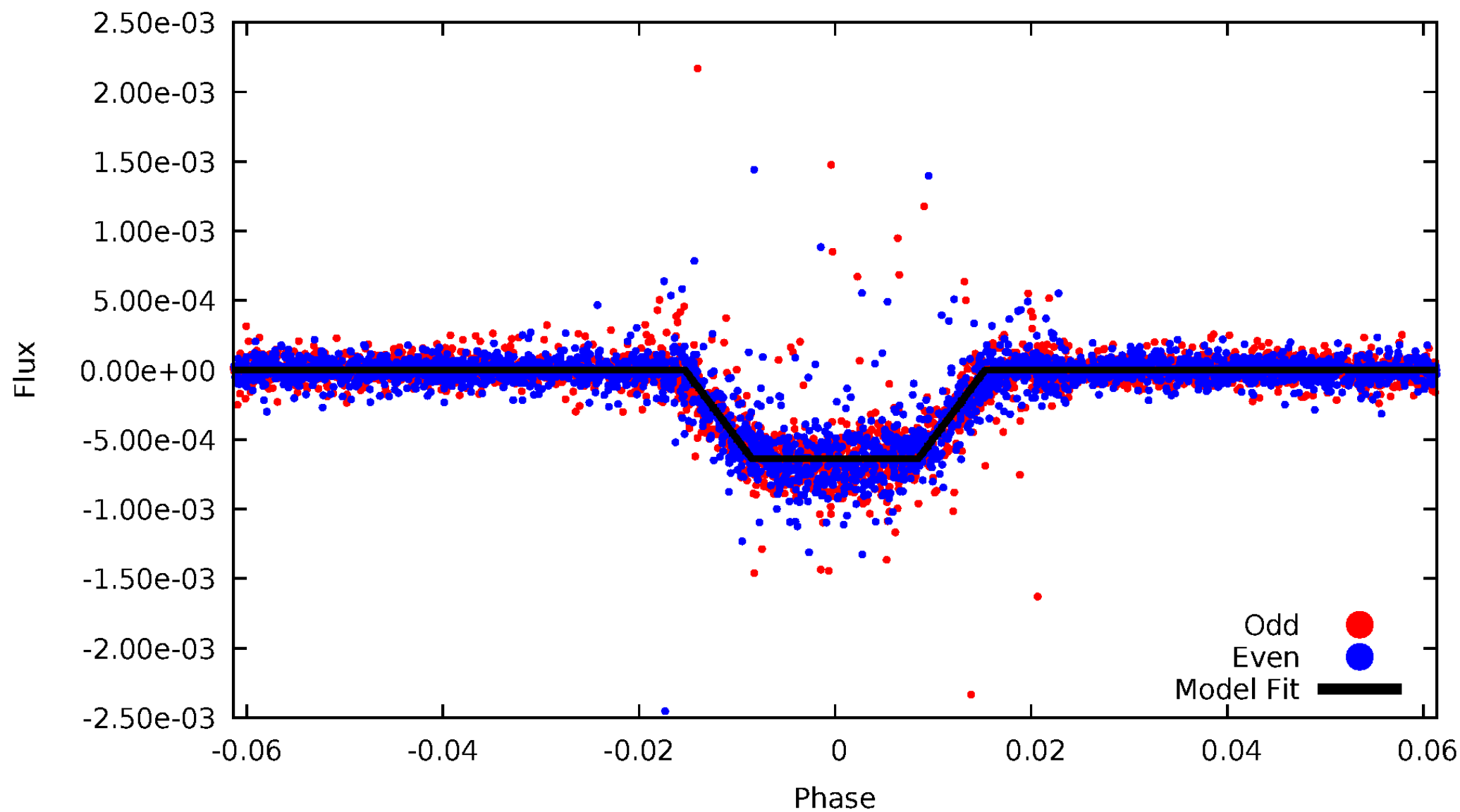
DV Odd/Even

TCE 011551692-02



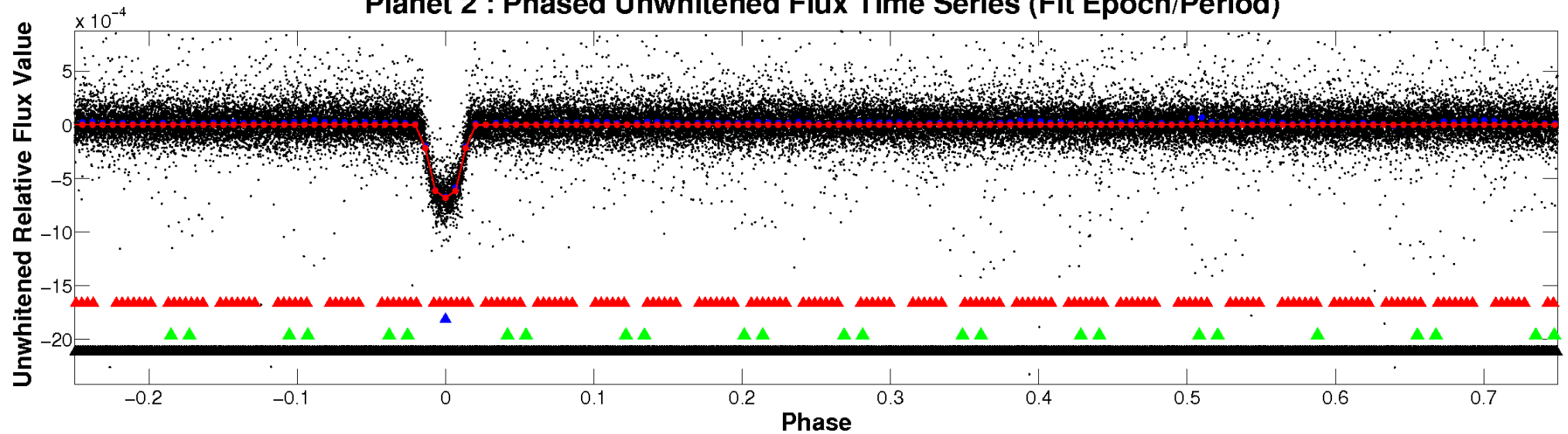
ALT Odd/Even

TCE 011551692-02

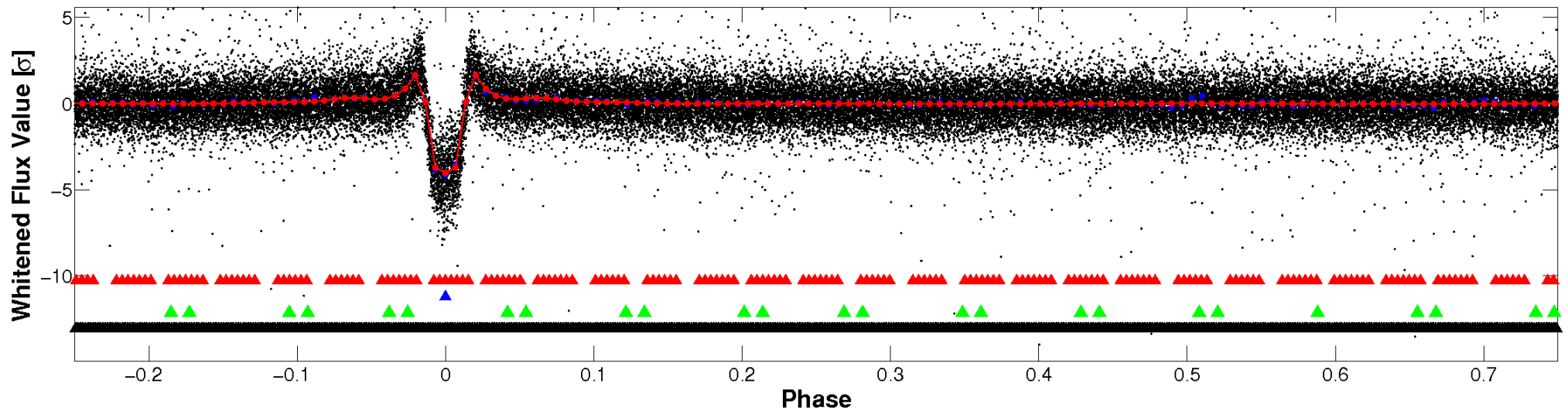


Non-Whitened Vs. Whitened Light Curve

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

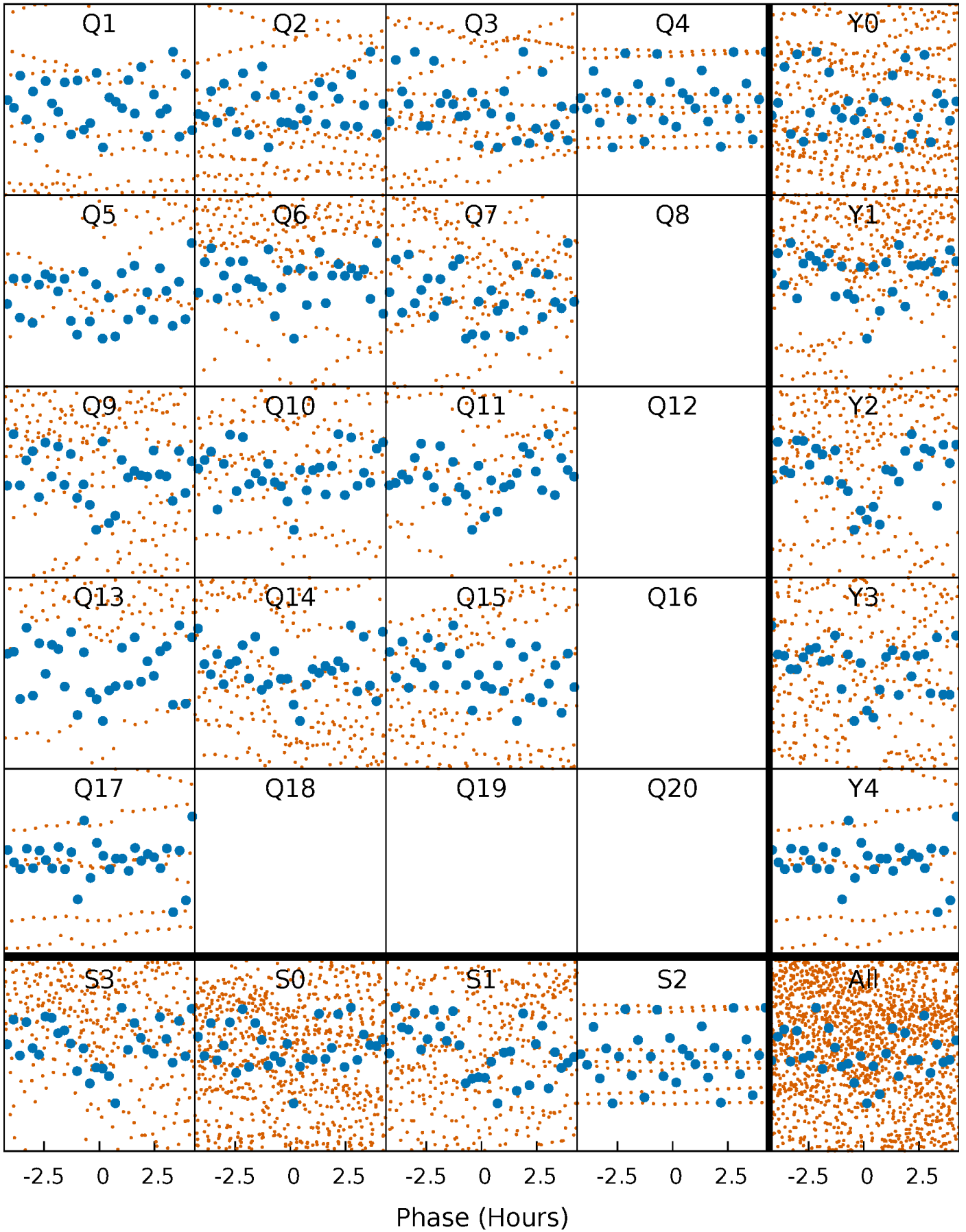


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



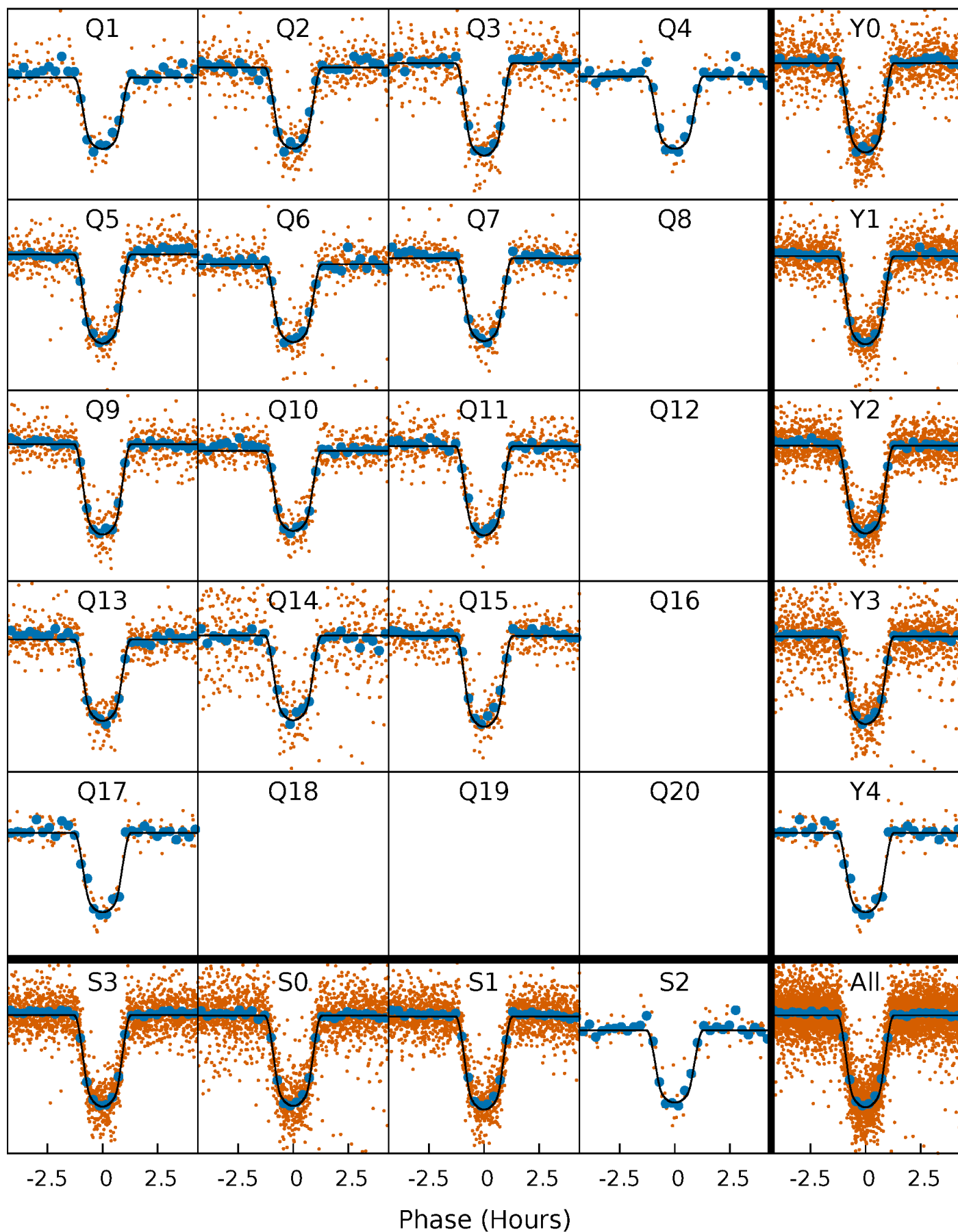
PDC Quarter-Phased Transit Curves

TCE 011551692-02 P= 3.005148 Days $T_0=134.100091$ (BKJD)



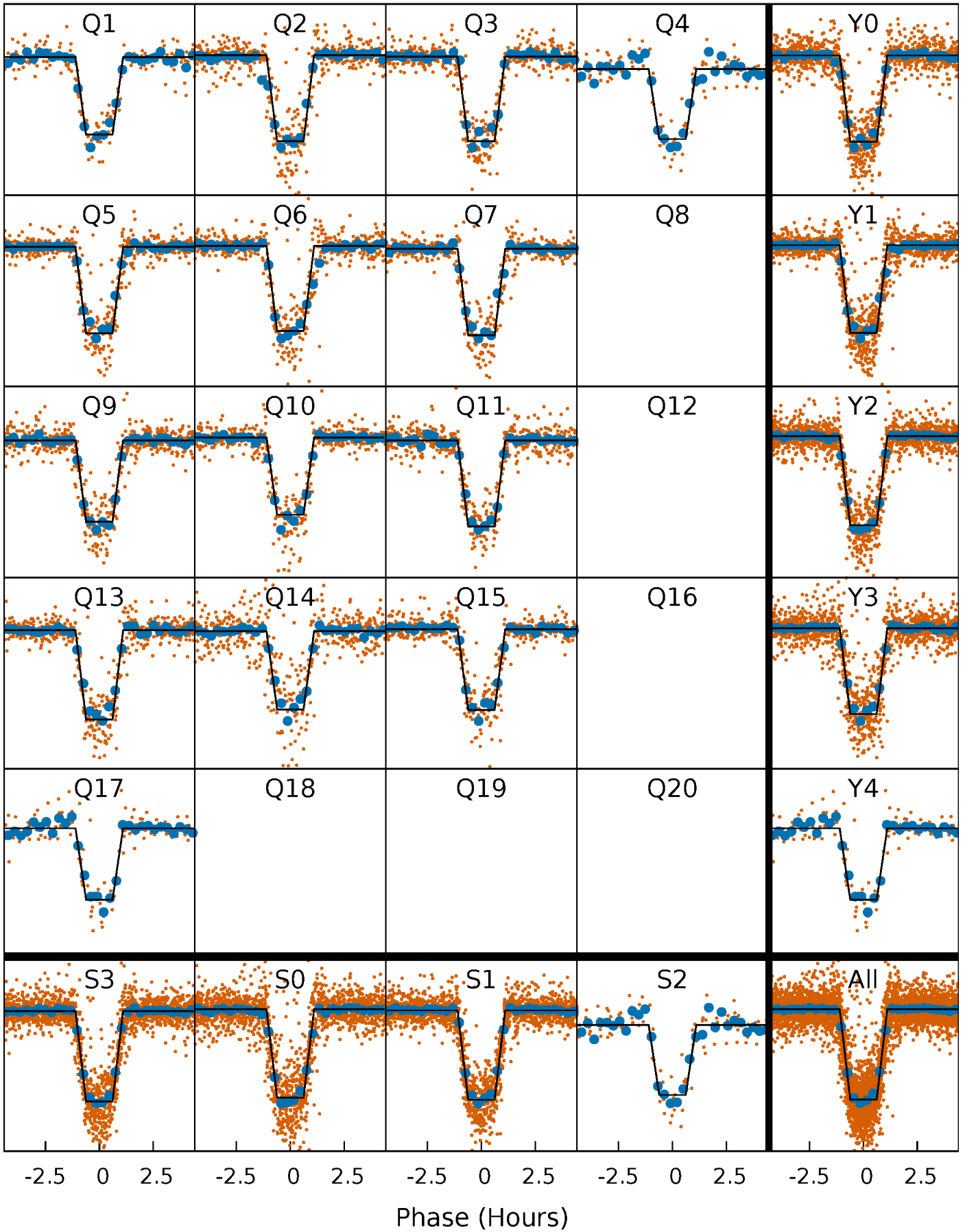
DV Quarter-Phased Transit Curves

TCE 011551692-02 P= 3.005148 Days $T_0=134.100091$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

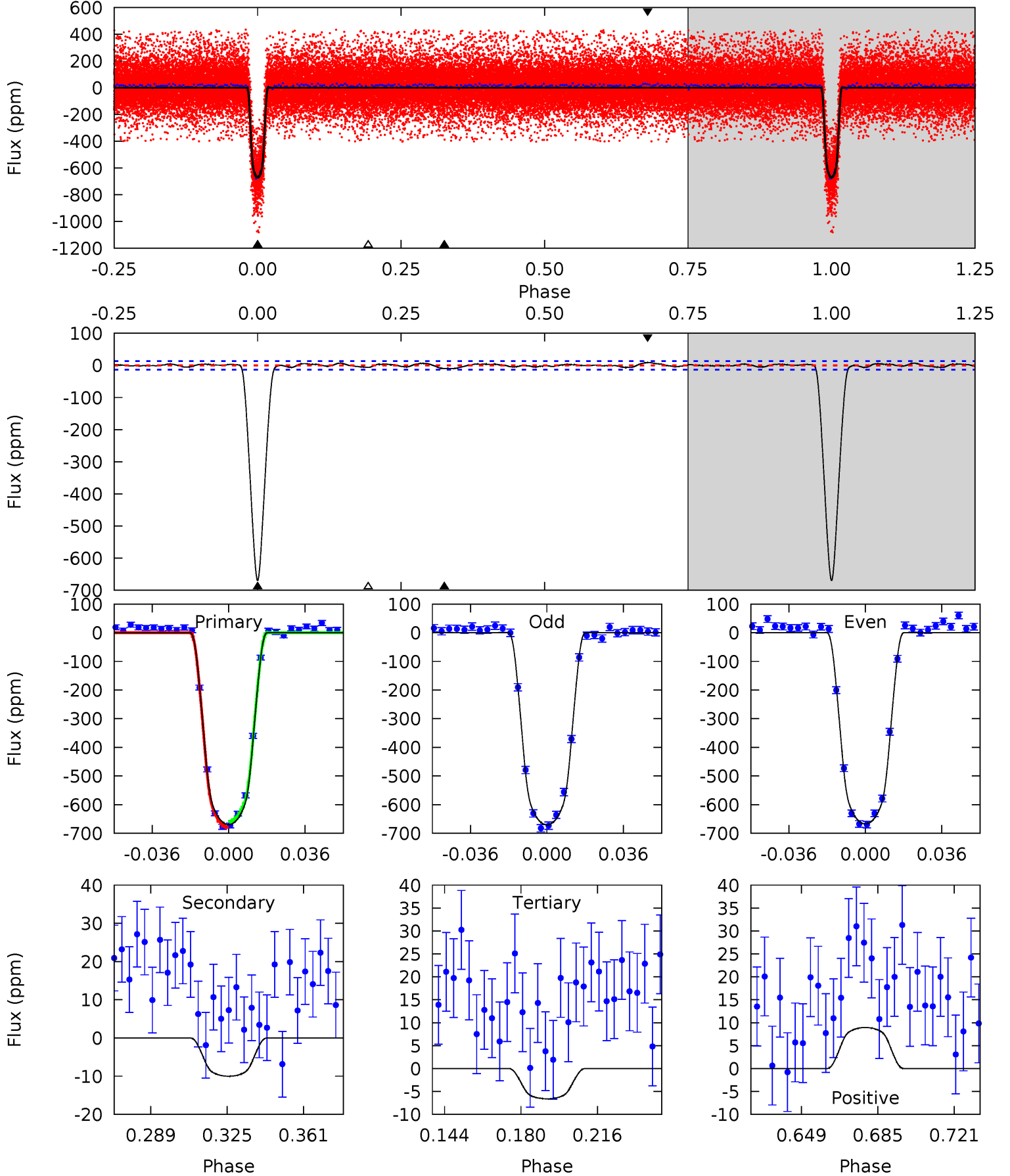
TCE 011551692-02 P= 3.005151 Days $T_0=134.099440$ (BKJD)



DV Model-Shift Uniqueness Test

011551692-02, P = 3.005148 Days, E = 131.094943 Days

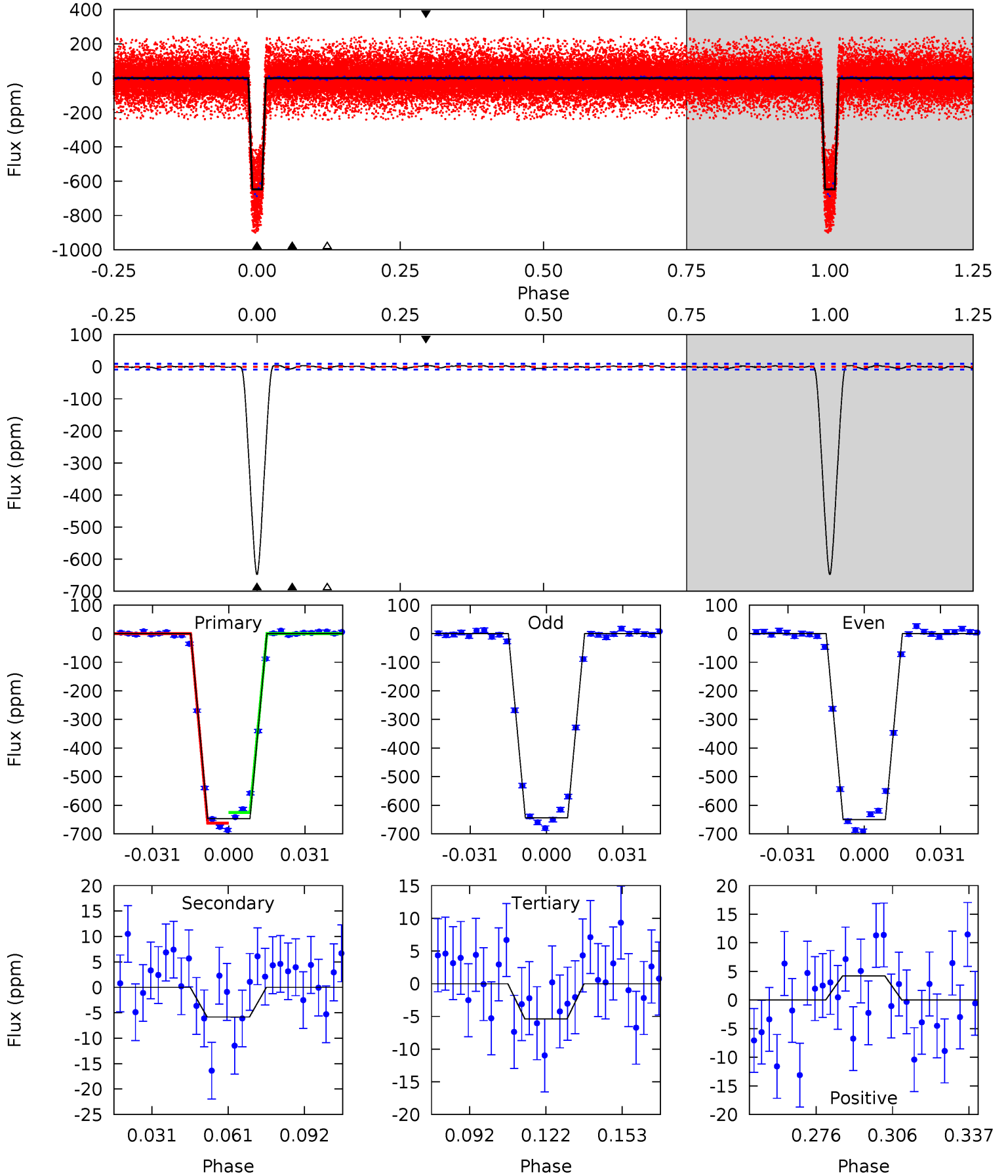
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
240.0	3.59	2.37	3.21	4.77	2.10	1.19	237.6	236.8	1.23	0.38	0.61	0.99	0.01	3.81



Alt Model-Shift Uniqueness Test

011551692-02, P = 3.005151 Days, E = 131.094289 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
347.4	3.13	2.89	2.26	4.81	2.16	1.09	344.5	345.1	0.25	0.87	1.61	0.96	0.01	9.96



Stellar Parameters For KIC 011551692

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4920^{+98}_{-98}	$4.620^{+0.010}_{-0.059}$	$0.070^{+0.150}_{-0.150}$	$0.720^{+0.059}_{-0.022}$	$0.822^{+0.030}_{-0.059}$	$3.104^{+0.143}_{-0.699}$
	+2%/-2%	+0%/-1%	+214%/-214%	+8%/-3%	+4%/-7%	+5%/-23%
Source	SPE59	SPE59	SPE59	DSEP		

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

Secondary Eclipse Parameters for KIC 011551692-02 / KOI 1781.02

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-10 ± 3	$2.37^{+0.11}_{-0.10}$	1342^{+33}_{-31}	2381^{+98}_{-122}	$1.379^{+0.428}_{-0.404}$
Alt.	-6 ± 2	$2.04^{+0.11}_{-0.09}$	1340^{+37}_{-31}	2289^{+115}_{-147}	$1.078^{+0.406}_{-0.353}$

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

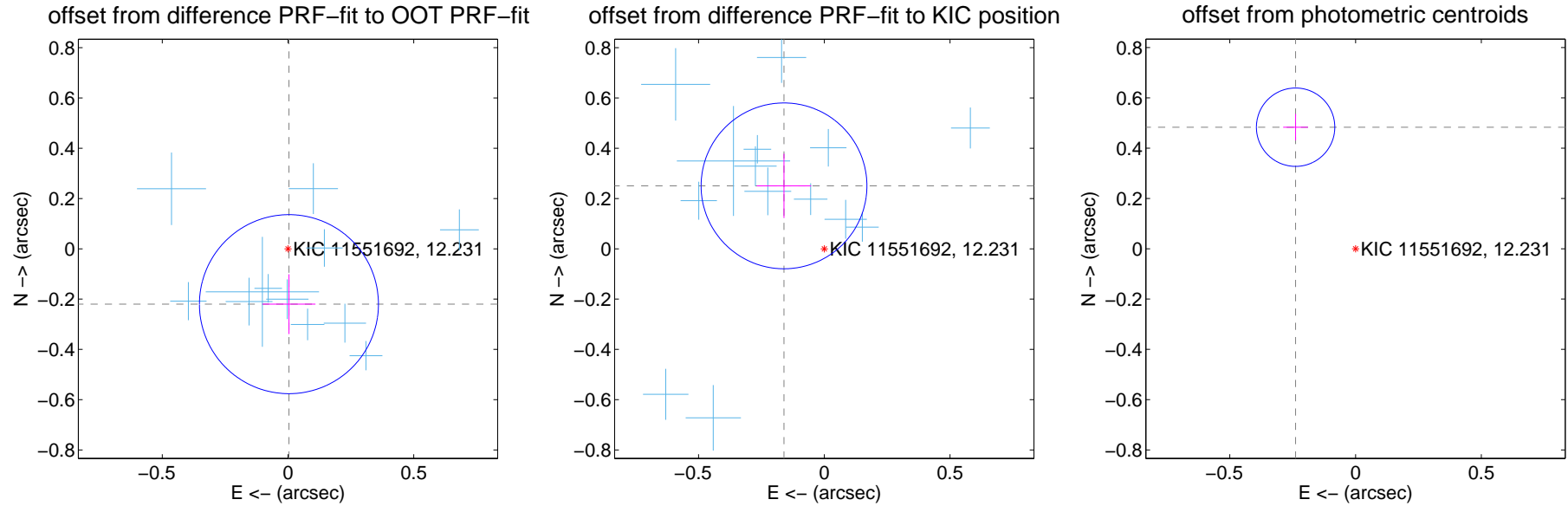
DV Centroid Data

Supplemental centroid analysis for 011551692-02. Kepler magnitude: 12.23. Transit SNR 134.22

There are 14 quarters with good PRF difference image offsets

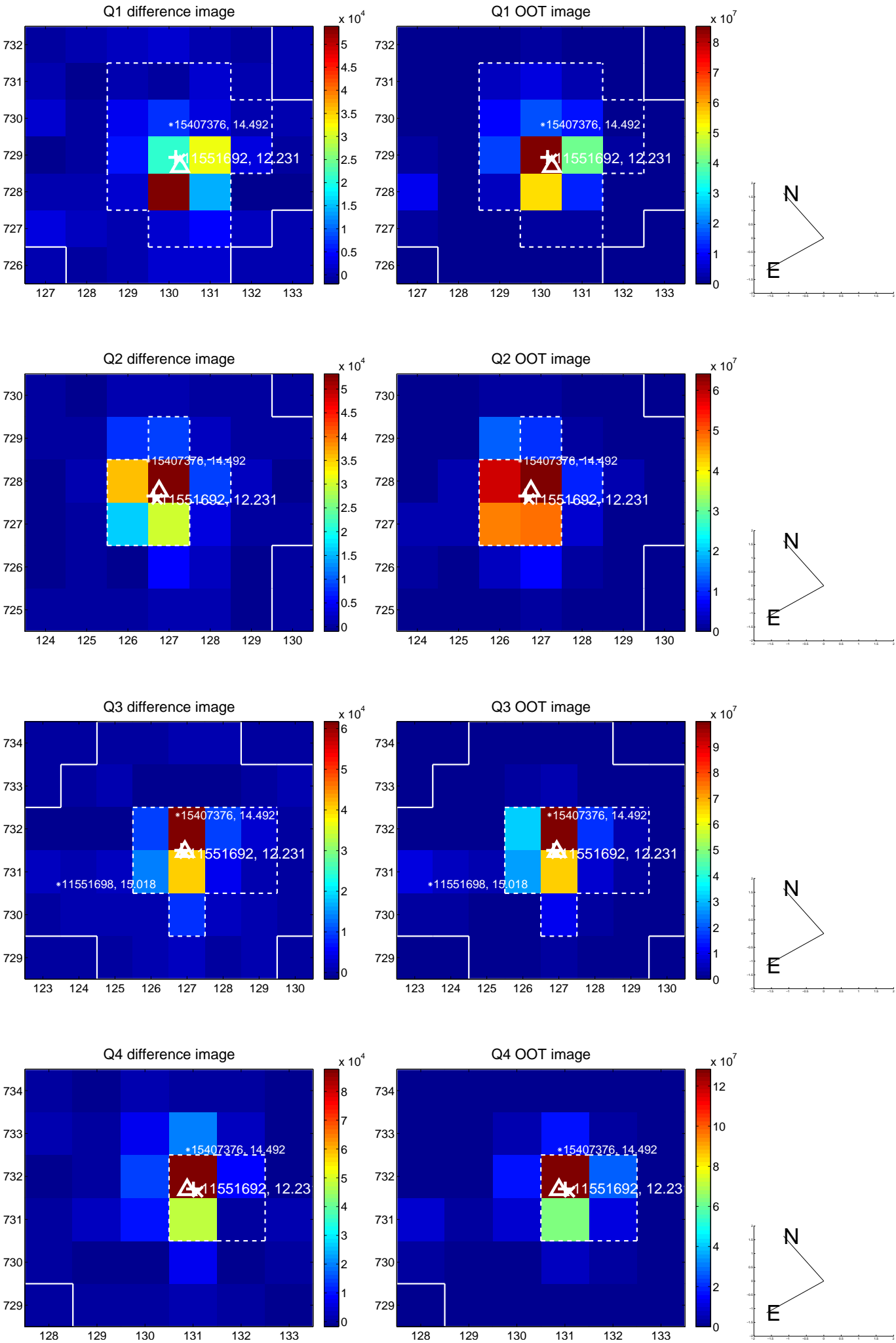
The direct PRF centroid is offset from the target star catalog position by about 0.58 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.220 ± 0.119	1.86	-0.004 ± 0.105	-0.220 ± 0.119
PRF-fit source offset from KIC position	0.297 ± 0.110	2.70	0.160 ± 0.108	0.250 ± 0.128
photometric centroid source offset	0.54 ± 0.05	10.38	0.24 ± 0.05	0.48 ± 0.05

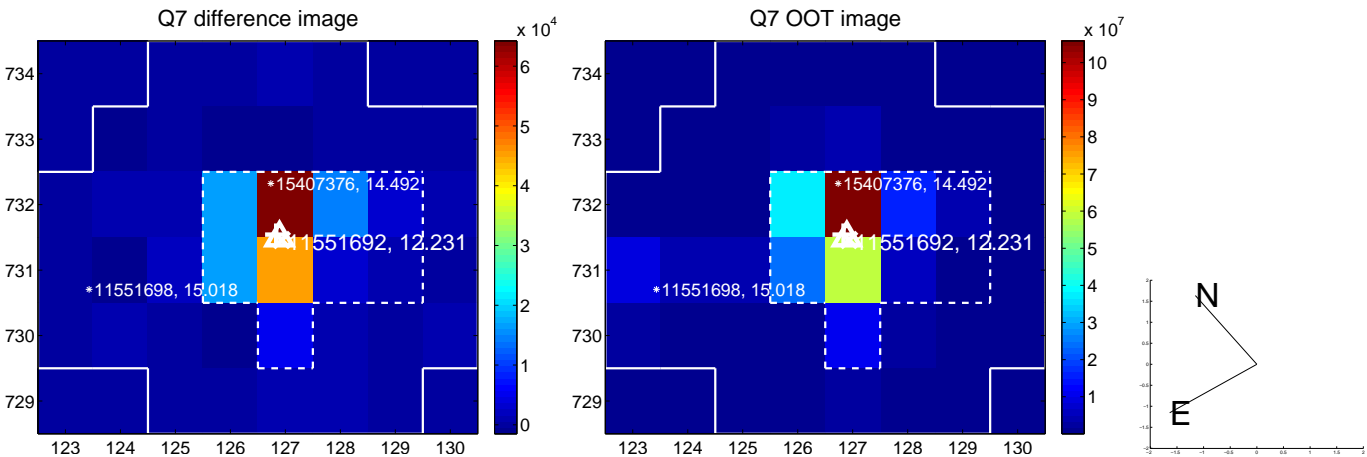
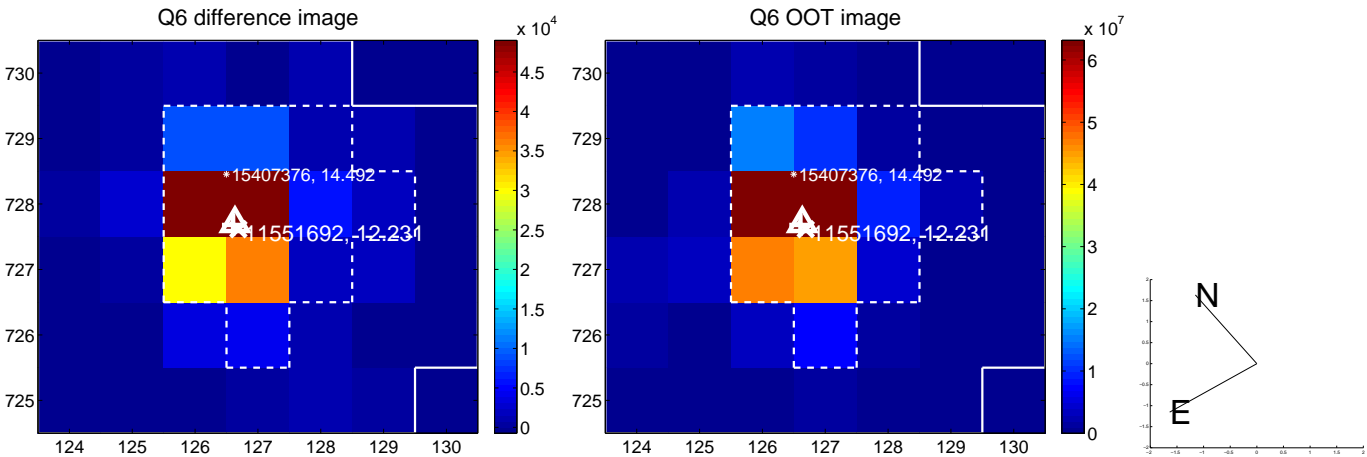
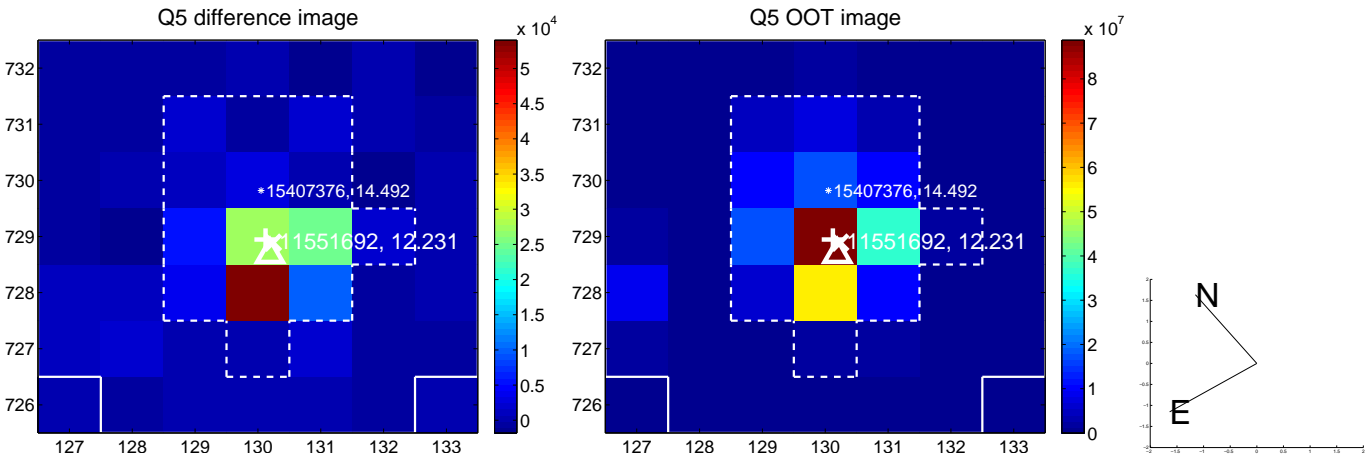


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

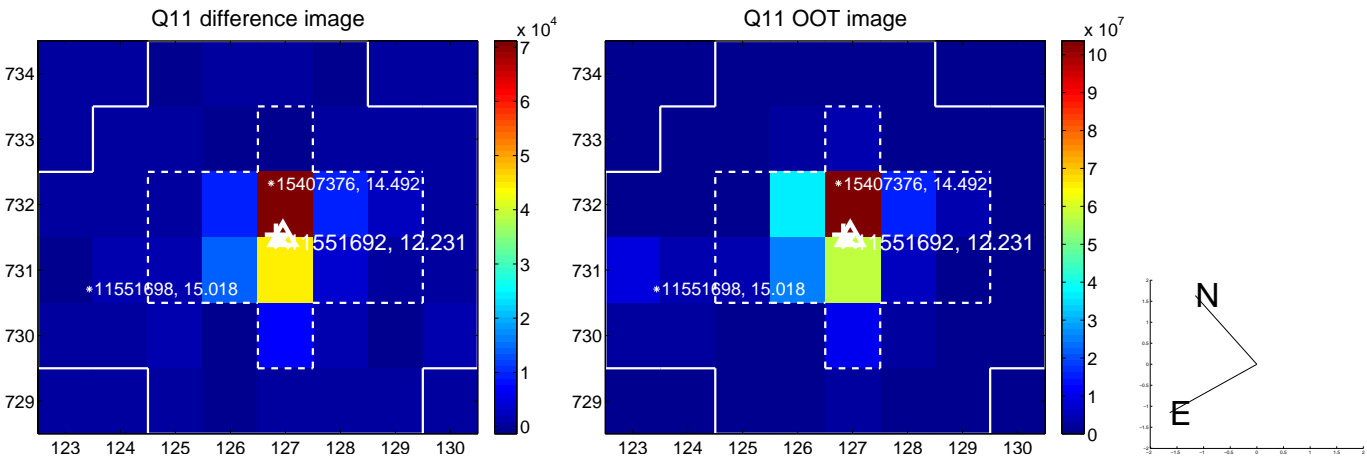
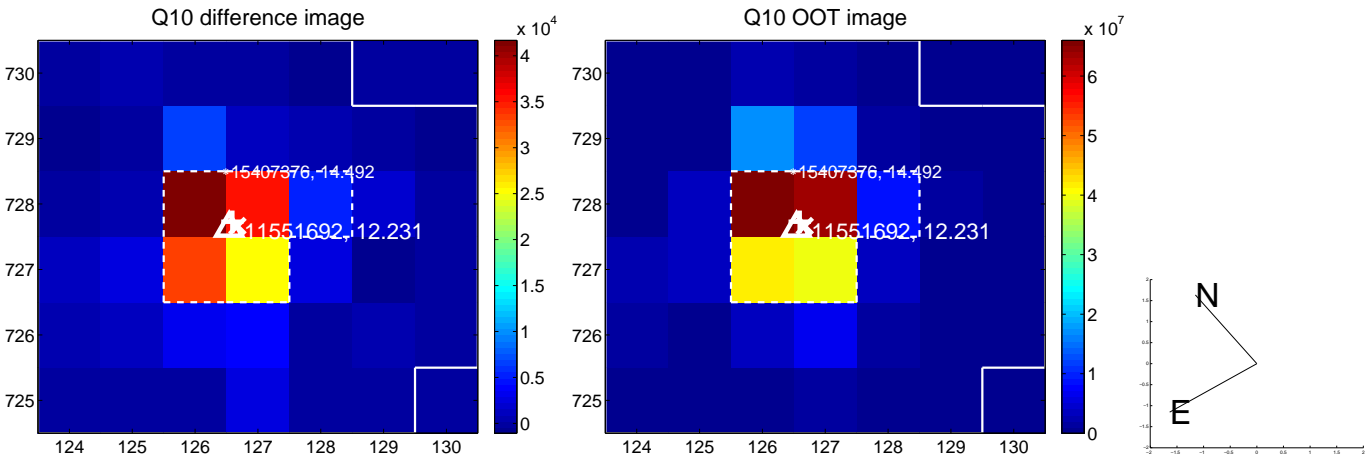
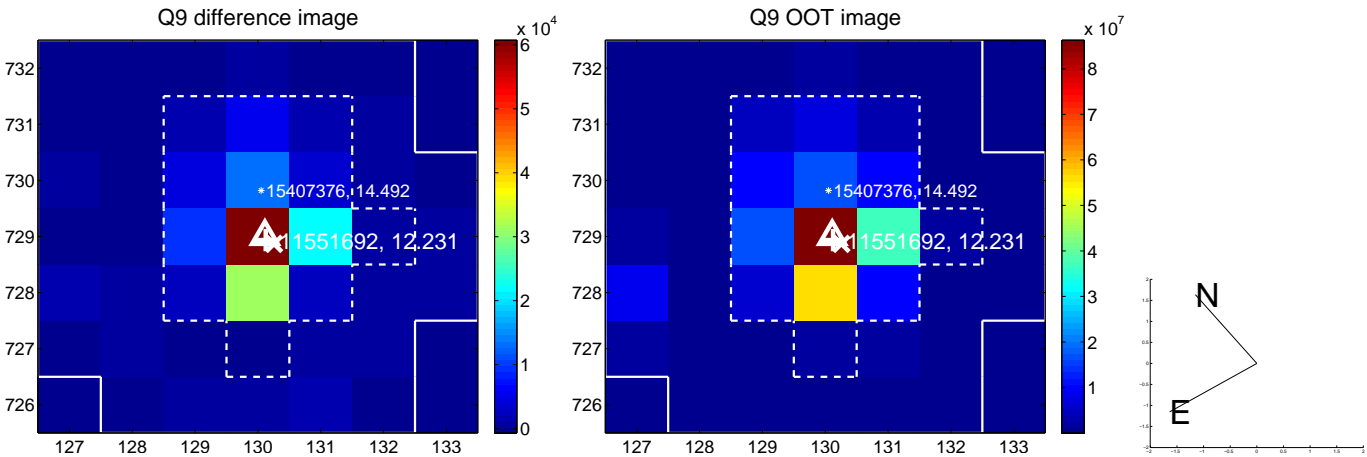
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



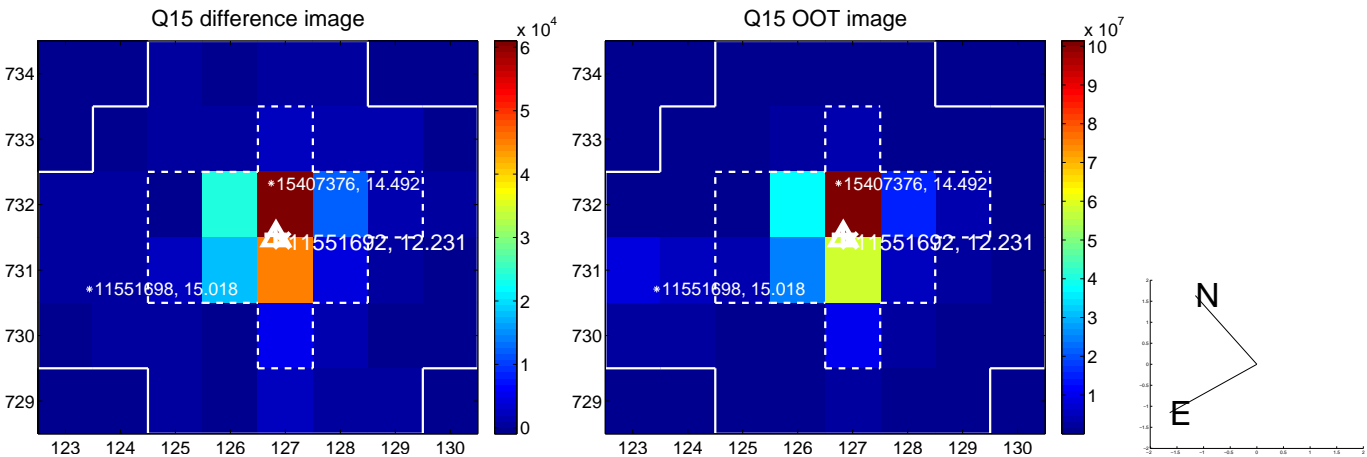
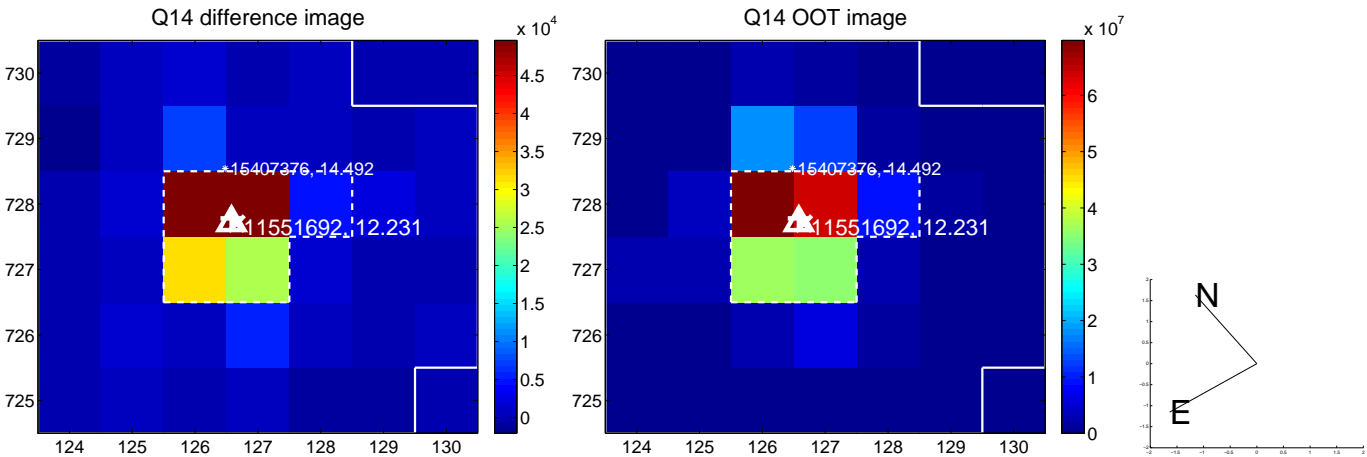
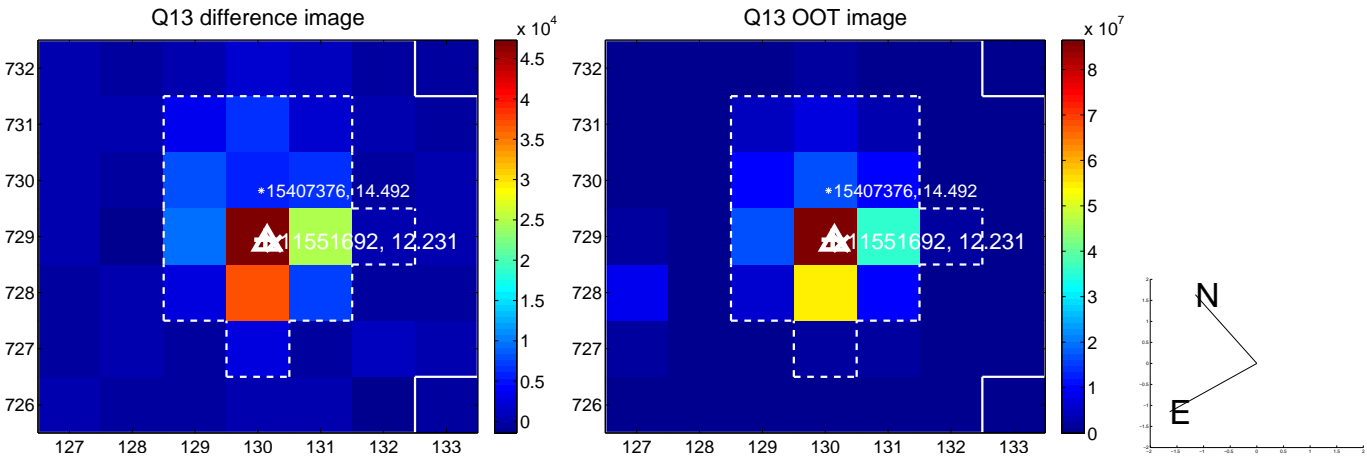
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



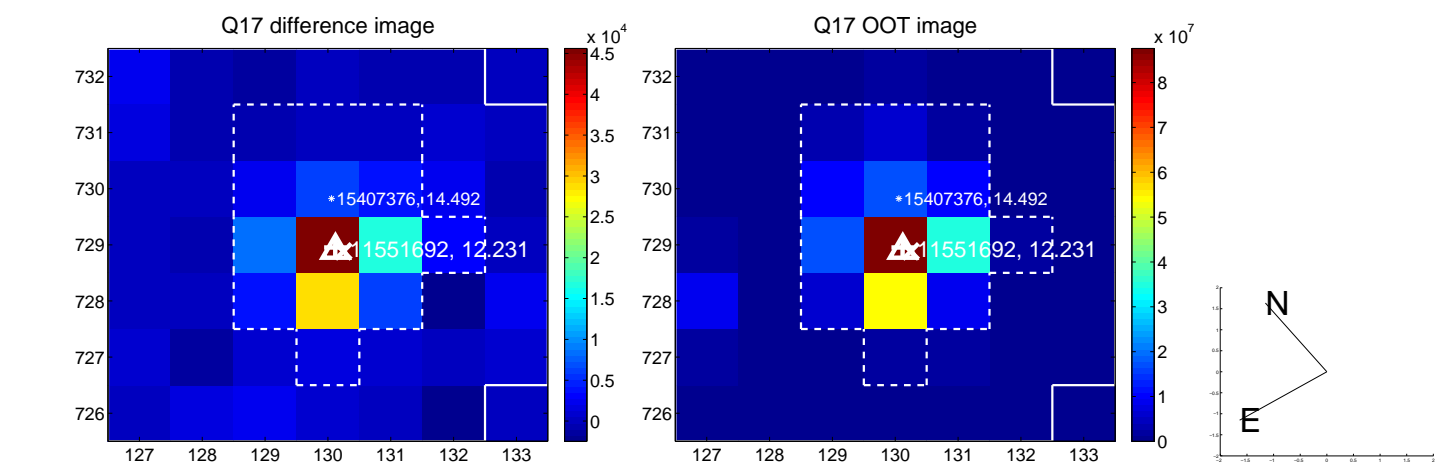
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



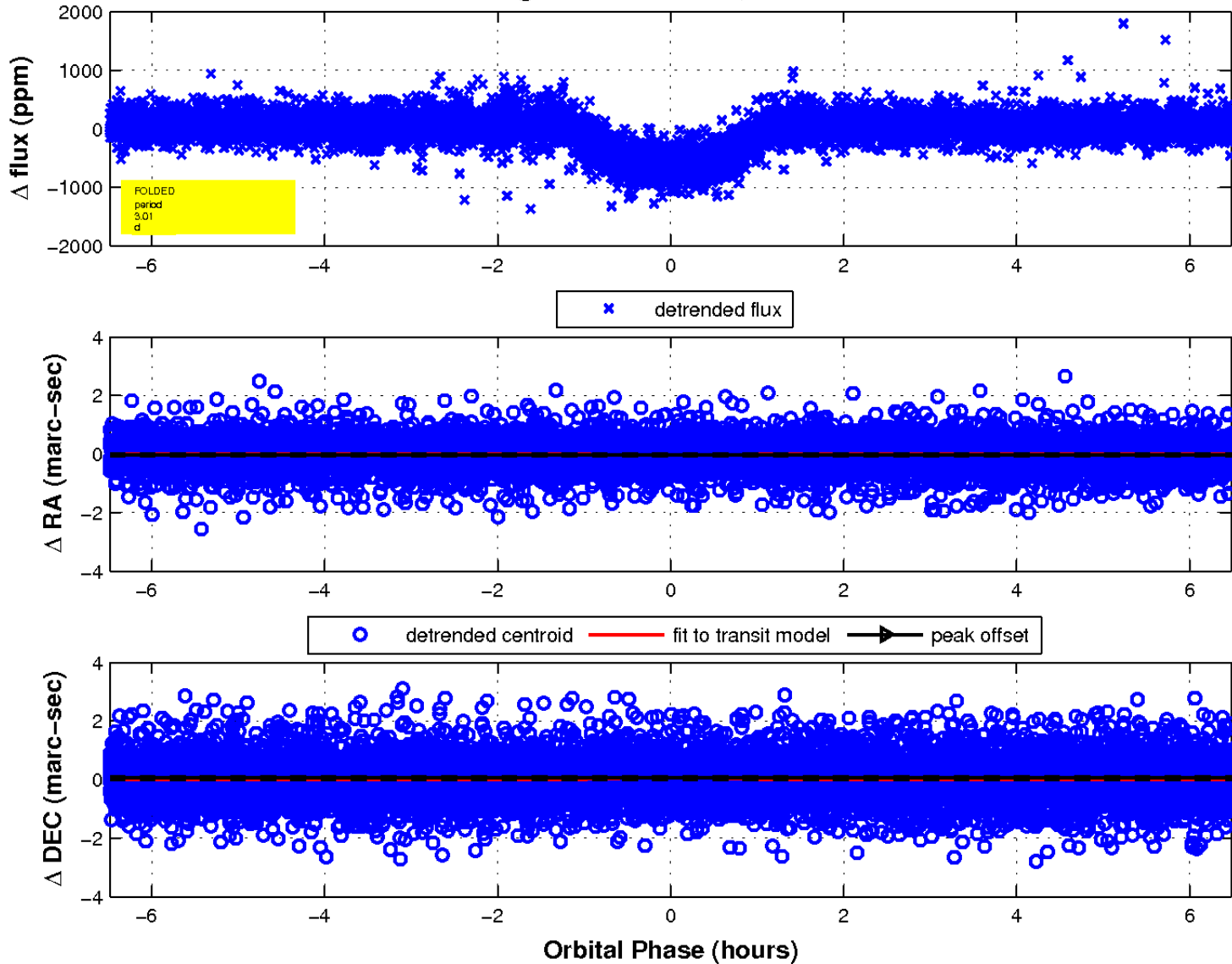
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

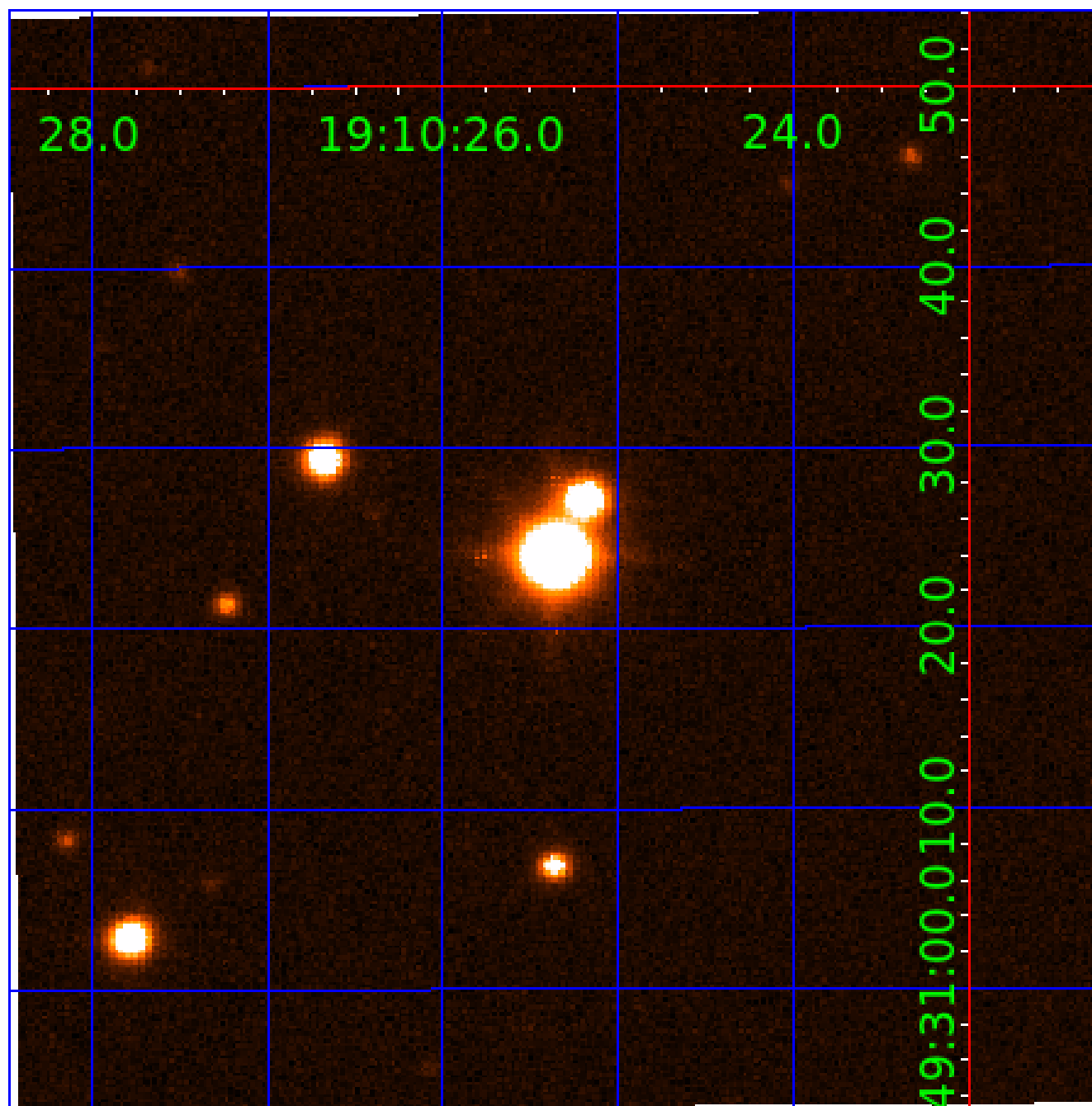


fluxWeightedCentroids, Planet 2 of 4



UKIRT Image

Declination



KIC 011551692

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})
011551692-01	OBS	1781.01	7.834435	135.222162	2033.8	2.955	238.2	236.0	0.72	4920	3.62	53.49
011551692-02	OBS	1781.02	3.005148	134.100091	685.0	2.162	134.8	134.2	0.72	4920	2.31	191.94
011551692-03	OBS	1781.03	58.019597	151.852023	1298.1	4.412	46.6	48.2	0.72	4920	2.90	3.71
011551692-04	OBS	No	0.853621	131.934110	190.8	2.000	7.8	-1.0	0.72	4920	0.96	1027.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011551692-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
011551692-02	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
011551692-03	OBS	PC	0.97	0	0	0	0	CENT_KIC_POS
011551692-04	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_NOFITS—HALO_GHOST

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

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

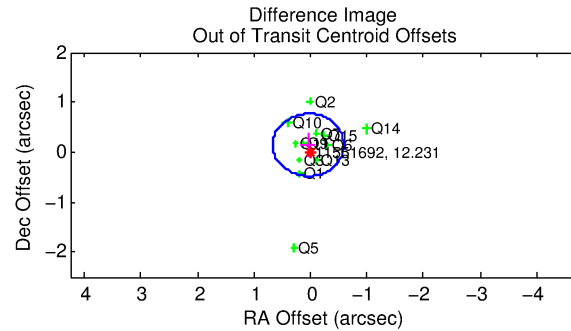
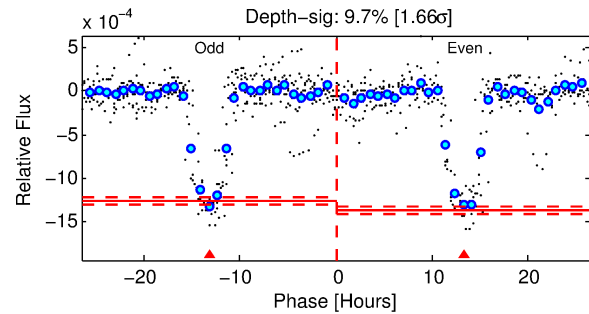
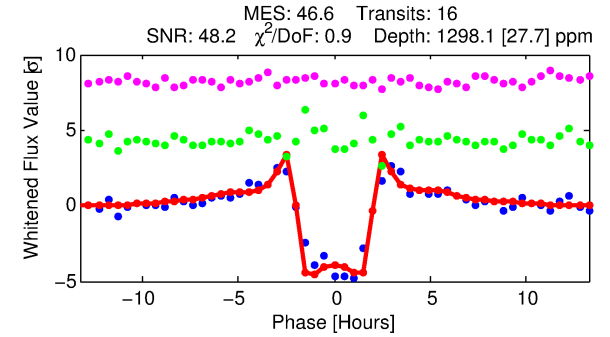
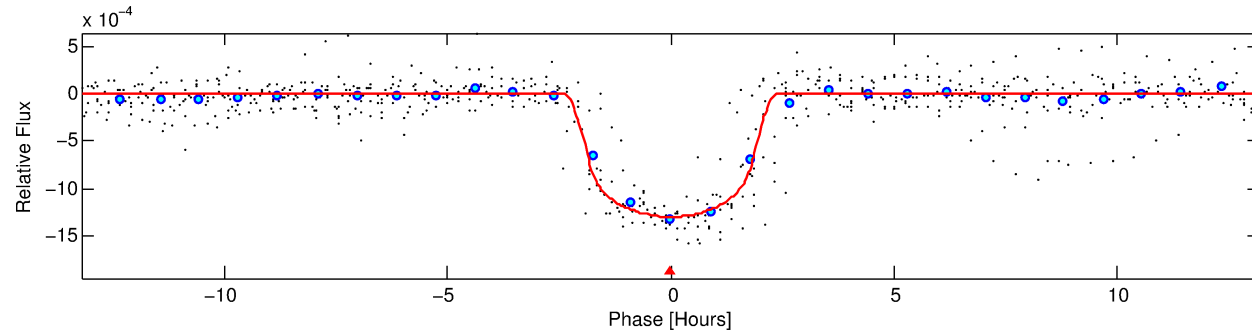
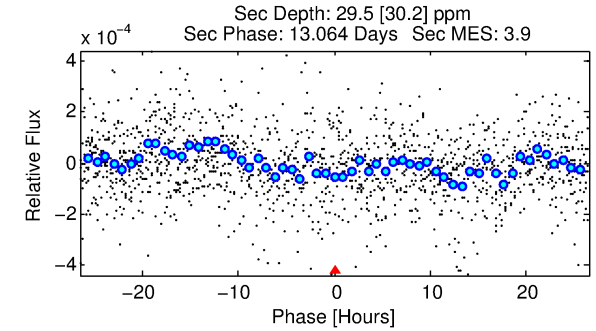
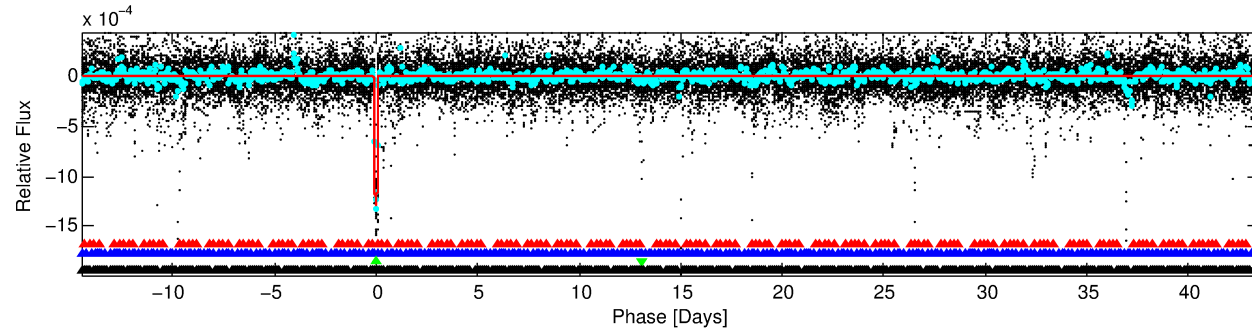
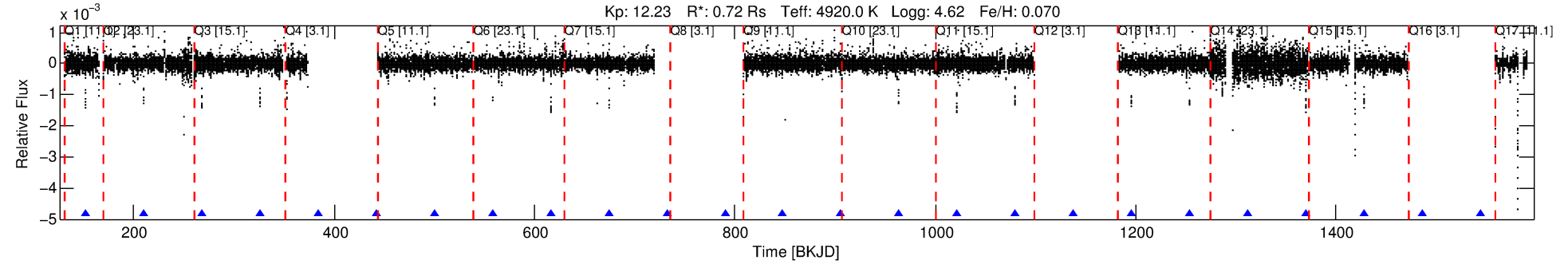
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011551692-03

No Significant Match Found

DV One-Page Summary

KIC: 11551692 Candidate: 3 of 4 Period: 58.020 d
KOI: K01781.03 Corr: 0.882



DV Fit Results:

Period = 58.01960 [0.00008] d
Epoch = 151.8520 [0.0010] BKJD
Rp/R* = 0.0369 [0.0022]
a/R* = 67.08 [13.00]
b = 0.79 [0.09]
Seff = 3.71 [0.49]
Teq = 354 [12] K
Rp = 2.90 [0.29] Re
a = 0.2710 [0.0192] AU
Ag = 141.74 [146.64] [0.96σ]
Teffp = 1887 [487] K [3.15σ]

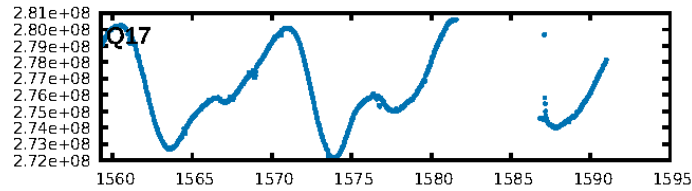
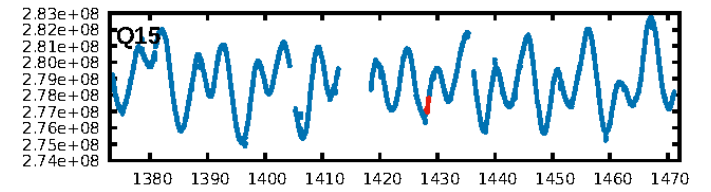
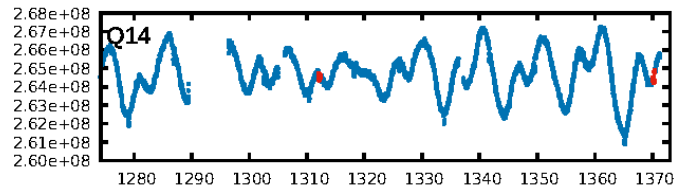
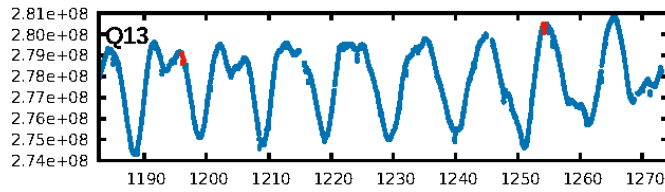
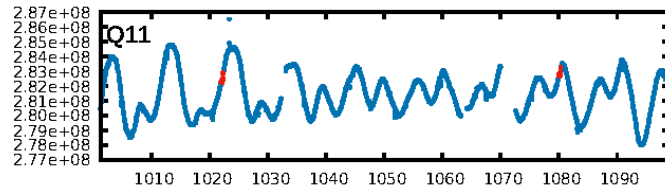
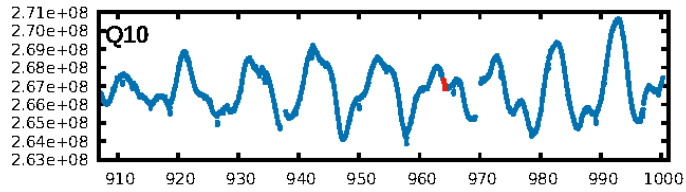
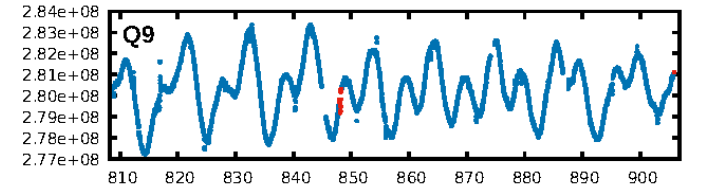
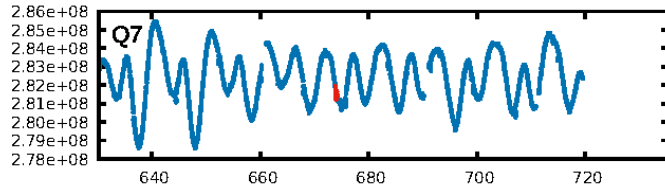
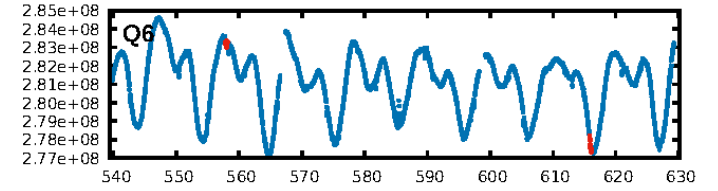
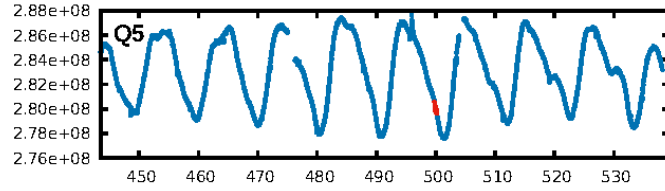
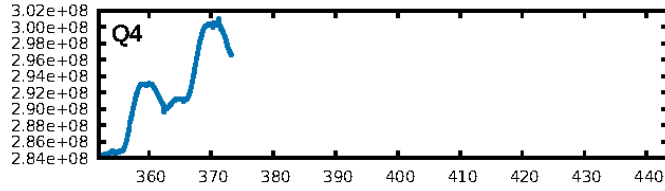
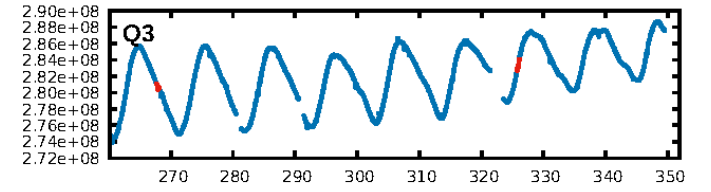
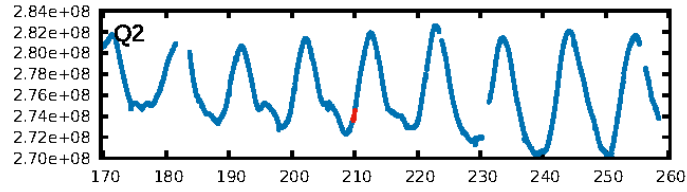
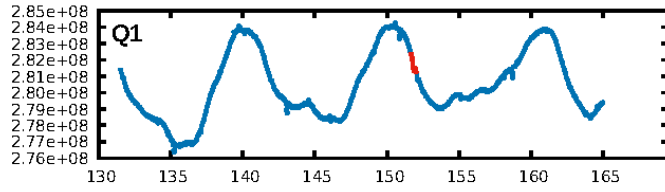
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [226.83σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [15/15]
GhostDiagnostic-chr: 1.776
Centroid-sig: 61.8%
Centroid-so: 0.532 arcsec [5.36σ]
OotOffset-rm: 0.151 arcsec [0.72σ]
KicOffset-rm: 0.655 arcsec [3.44σ]
OotOffset-st: 4/4/0/4 [12]
KicOffset-st: 4/4/0/4 [12]
DiffImageQuality-fgm: 1.00 [12/12]
DiffImageOverlap-fno: 0.00 [0/12]

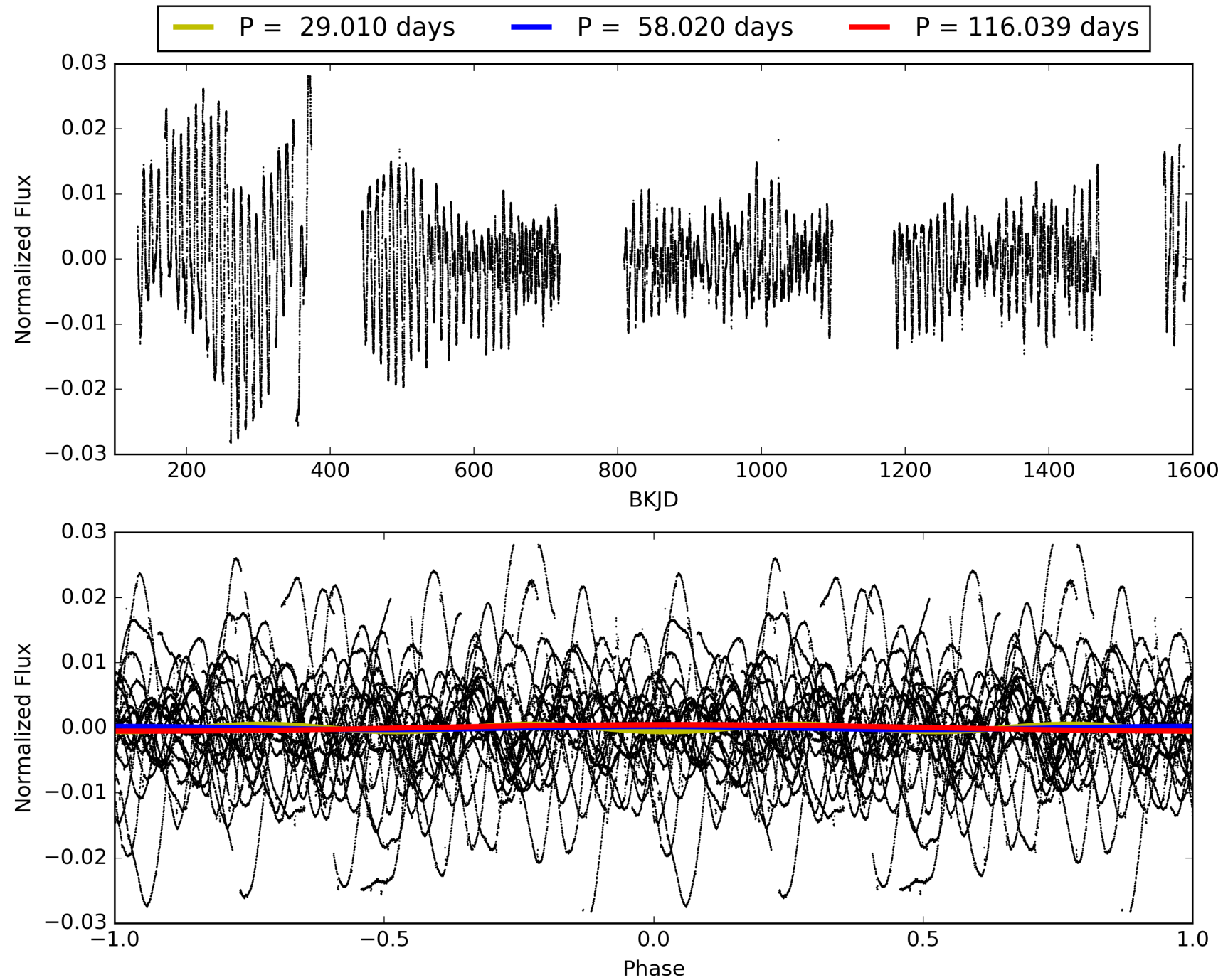
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:26:00 Z

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

TCE 011551692-03, PDC Light Curves

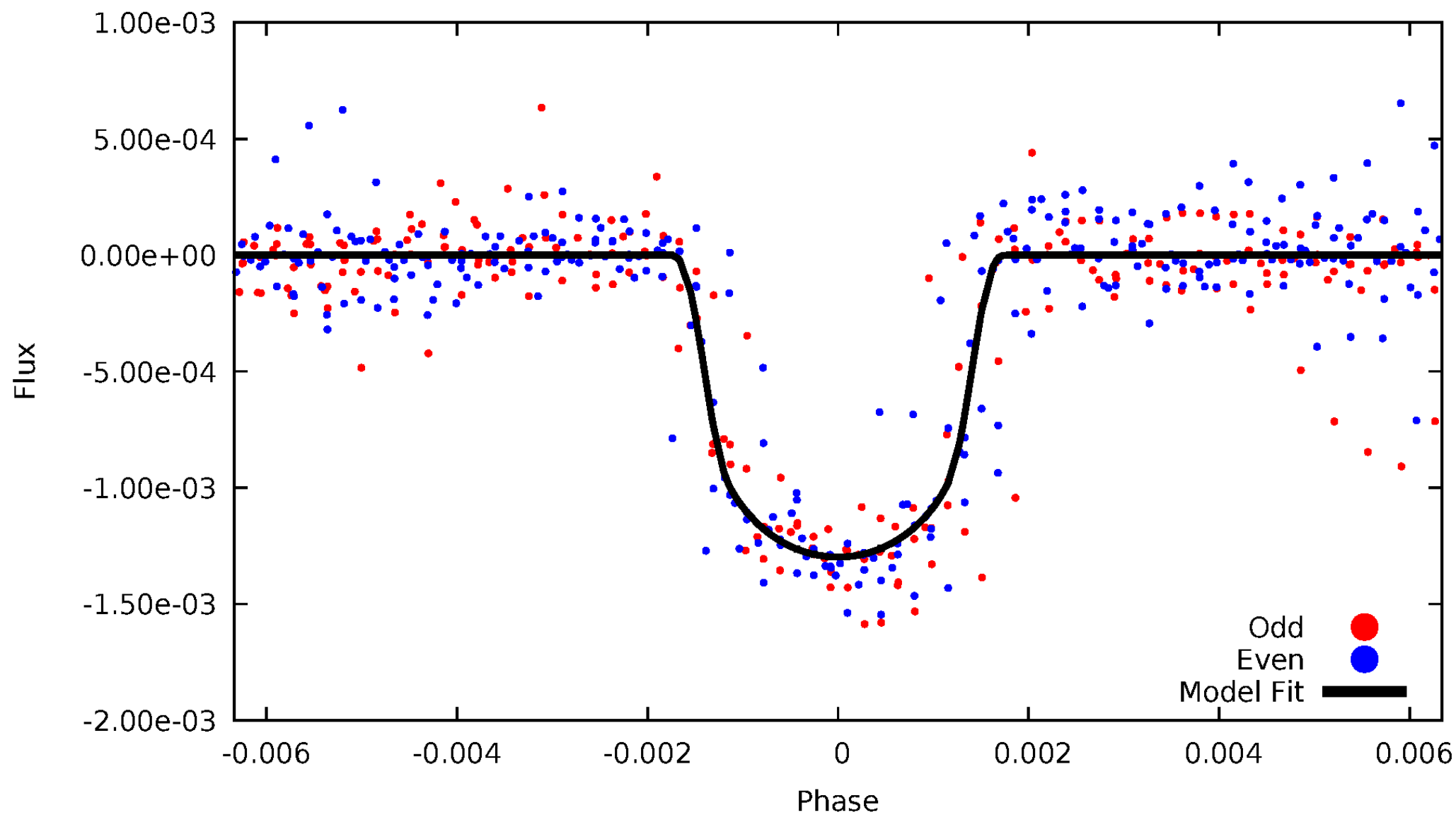


TCE 011551692-03



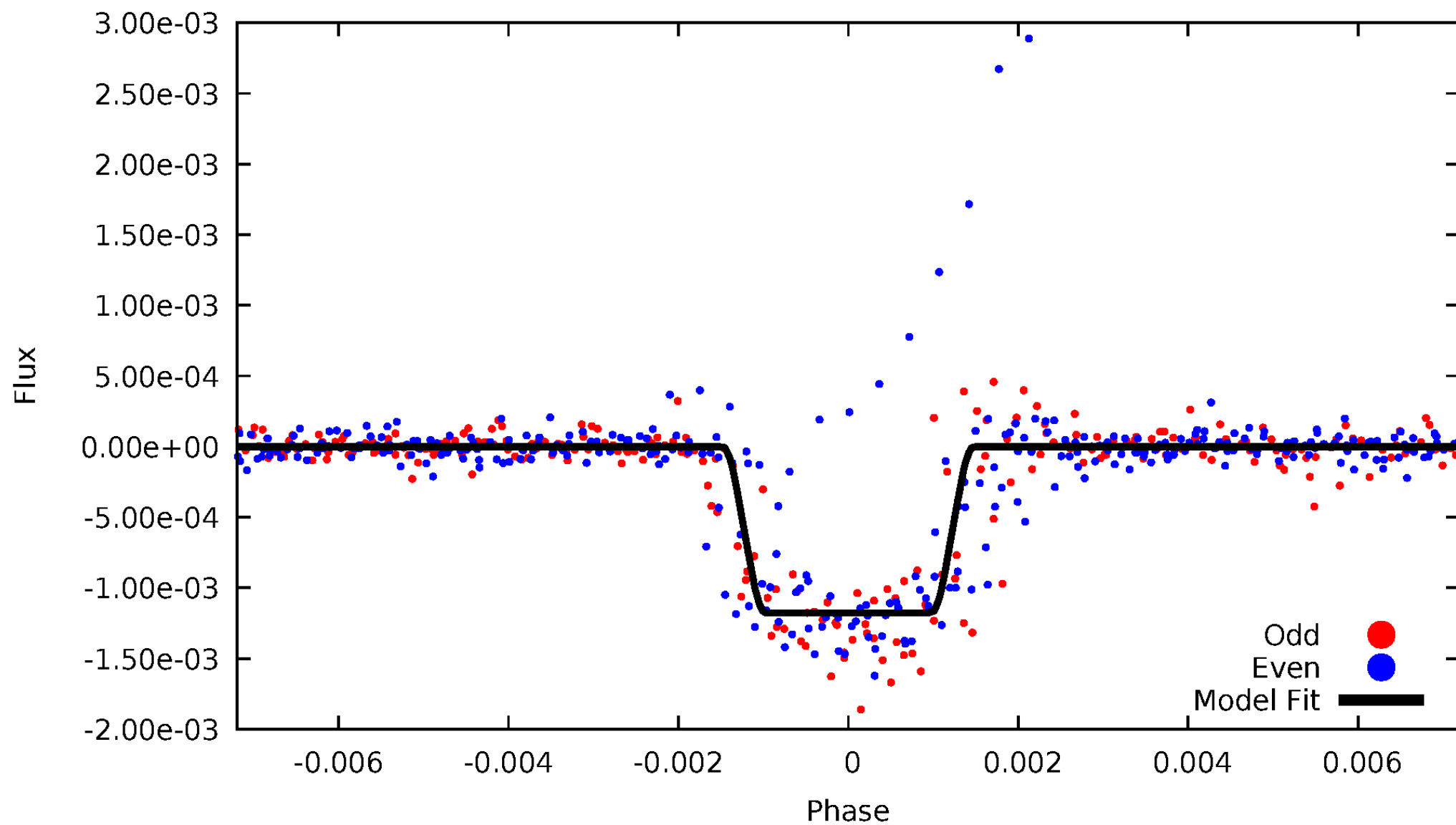
DV Odd/Even

TCE 011551692-03



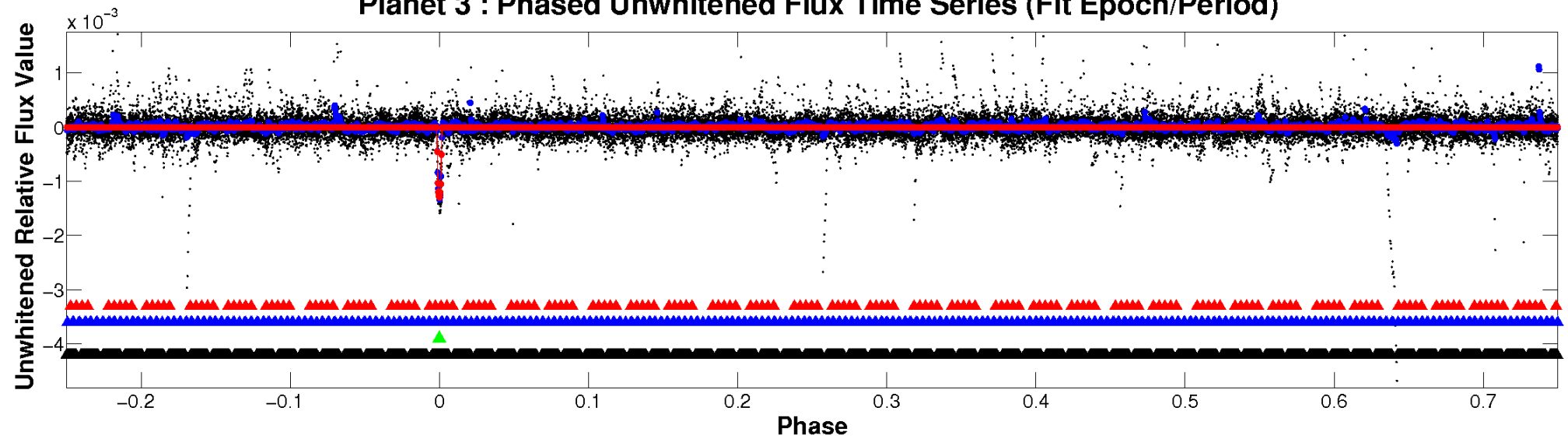
ALT Odd/Even

TCE 011551692-03

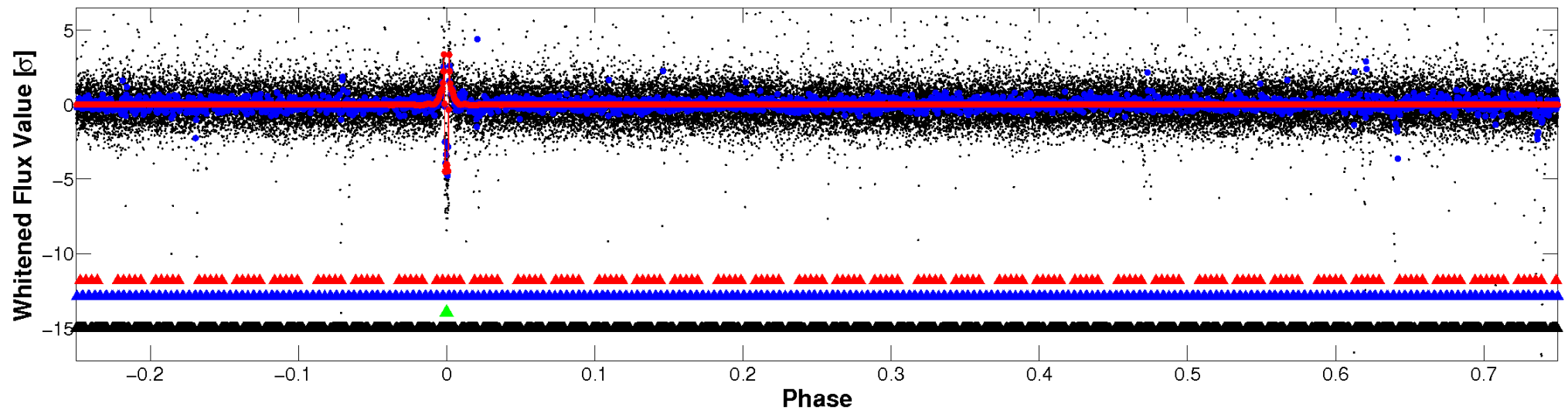


Non-Whitened Vs. Whitened Light Curve

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

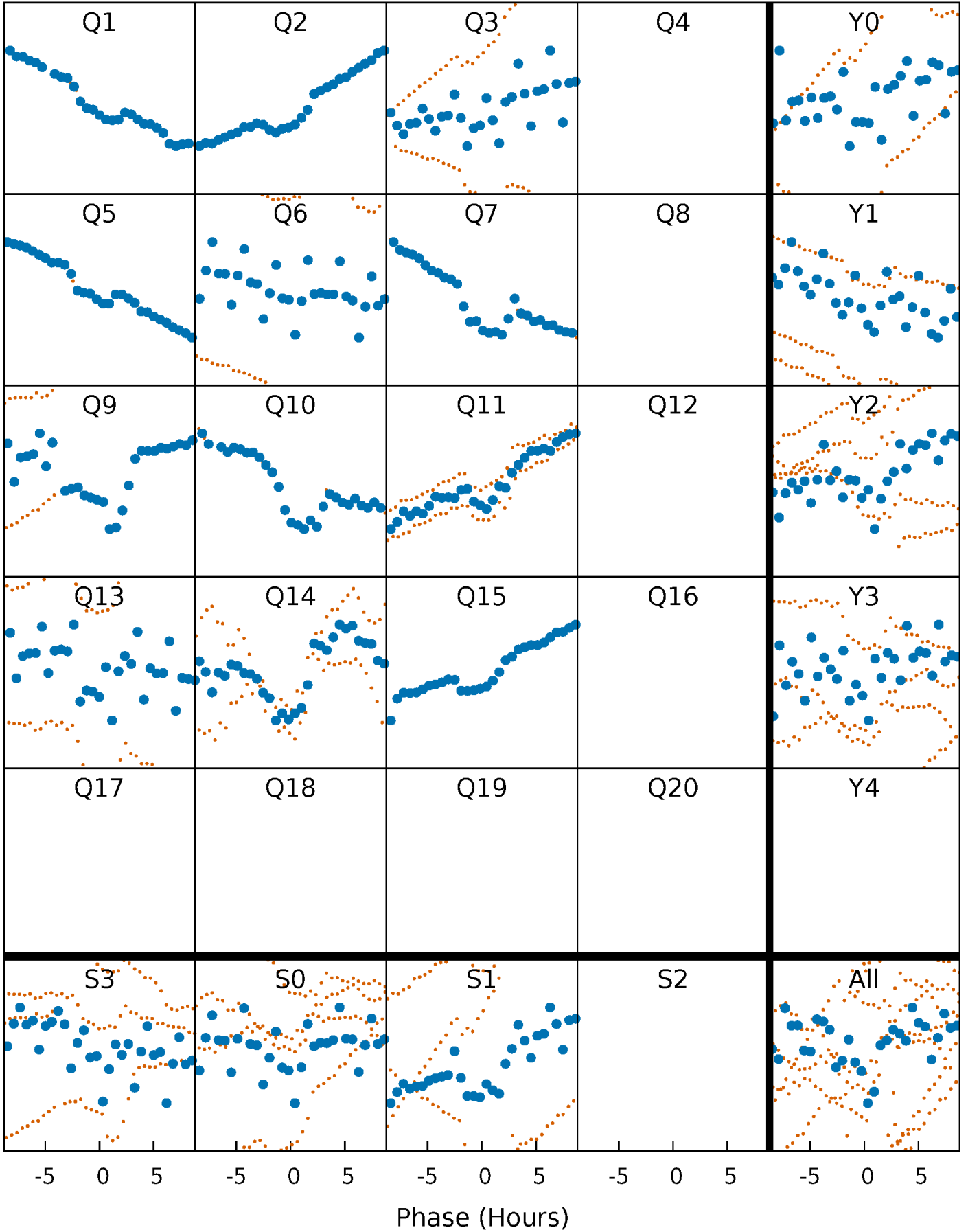


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



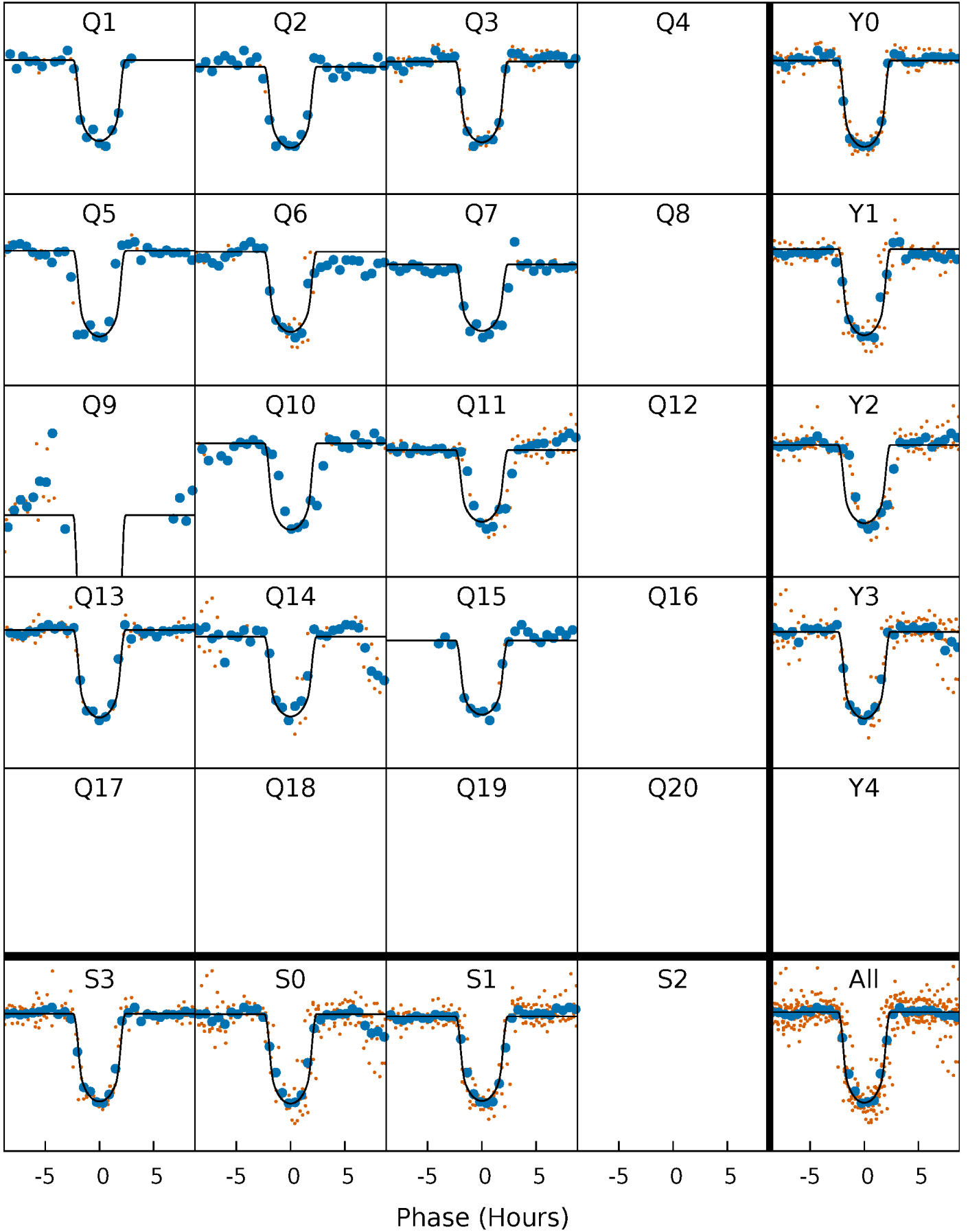
PDC Quarter-Phased Transit Curves

TCE 011551692-03 P= 58.019597 Days $T_0=151.852023$ (BKJD)



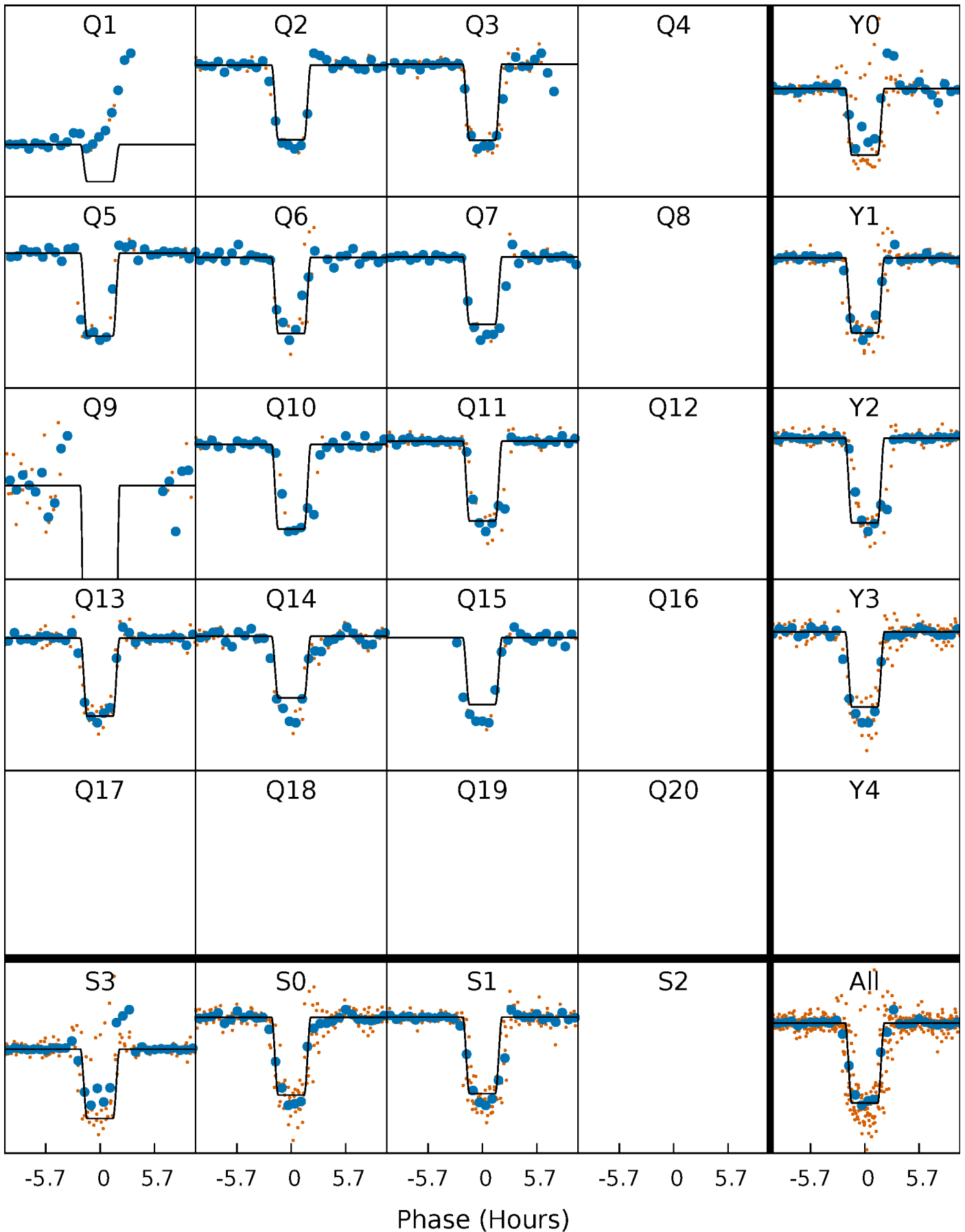
DV Quarter-Phased Transit Curves

TCE 011551692-03 P= 58.019597 Days $T_0=151.852023$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

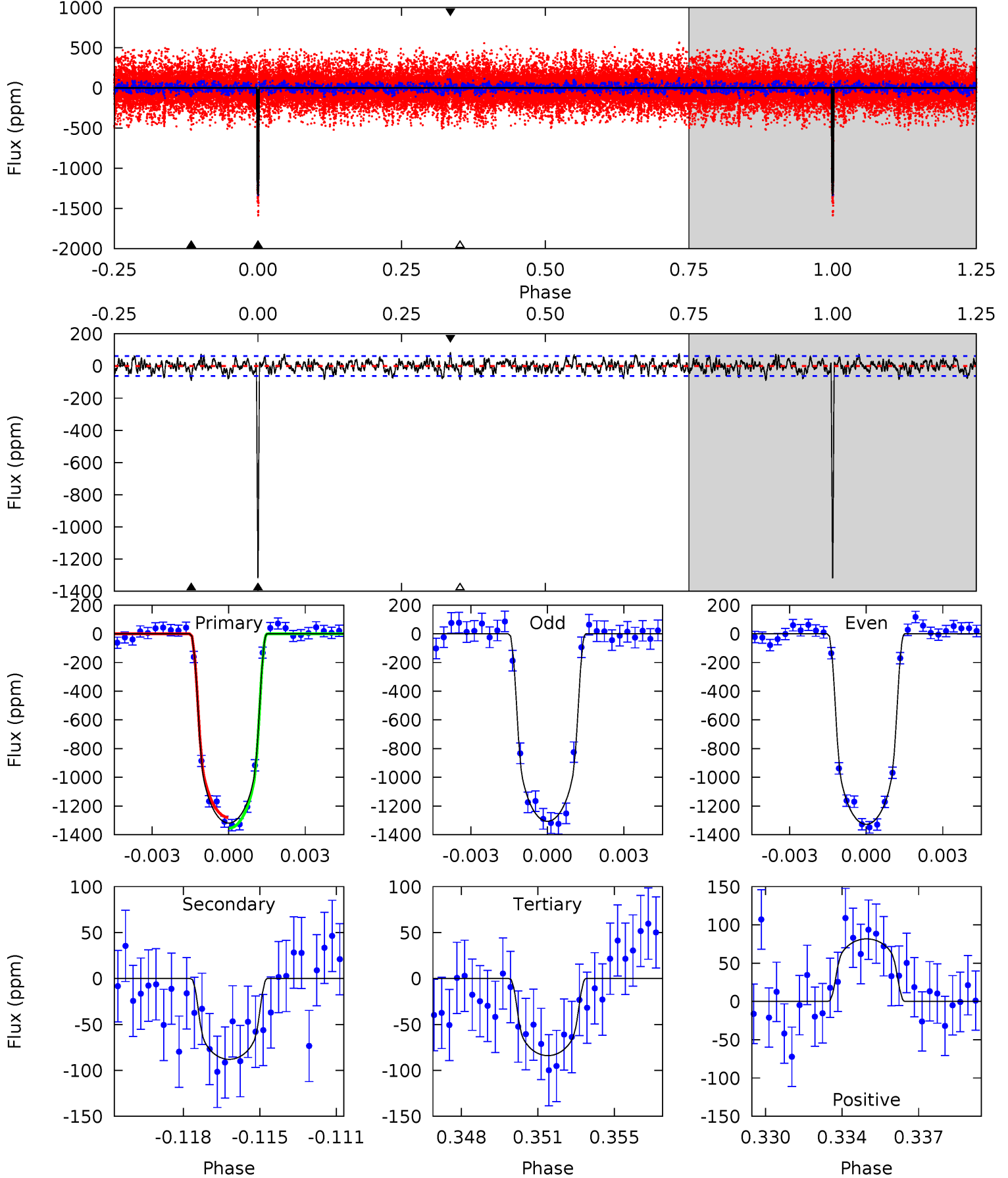
TCE 011551692-03 P= 58.020359 Days $T_0=151.843561$ (BKJD)



DV Model-Shift Uniqueness Test

011551692-03, P = 58.019597 Days, E = 93.832426 Days

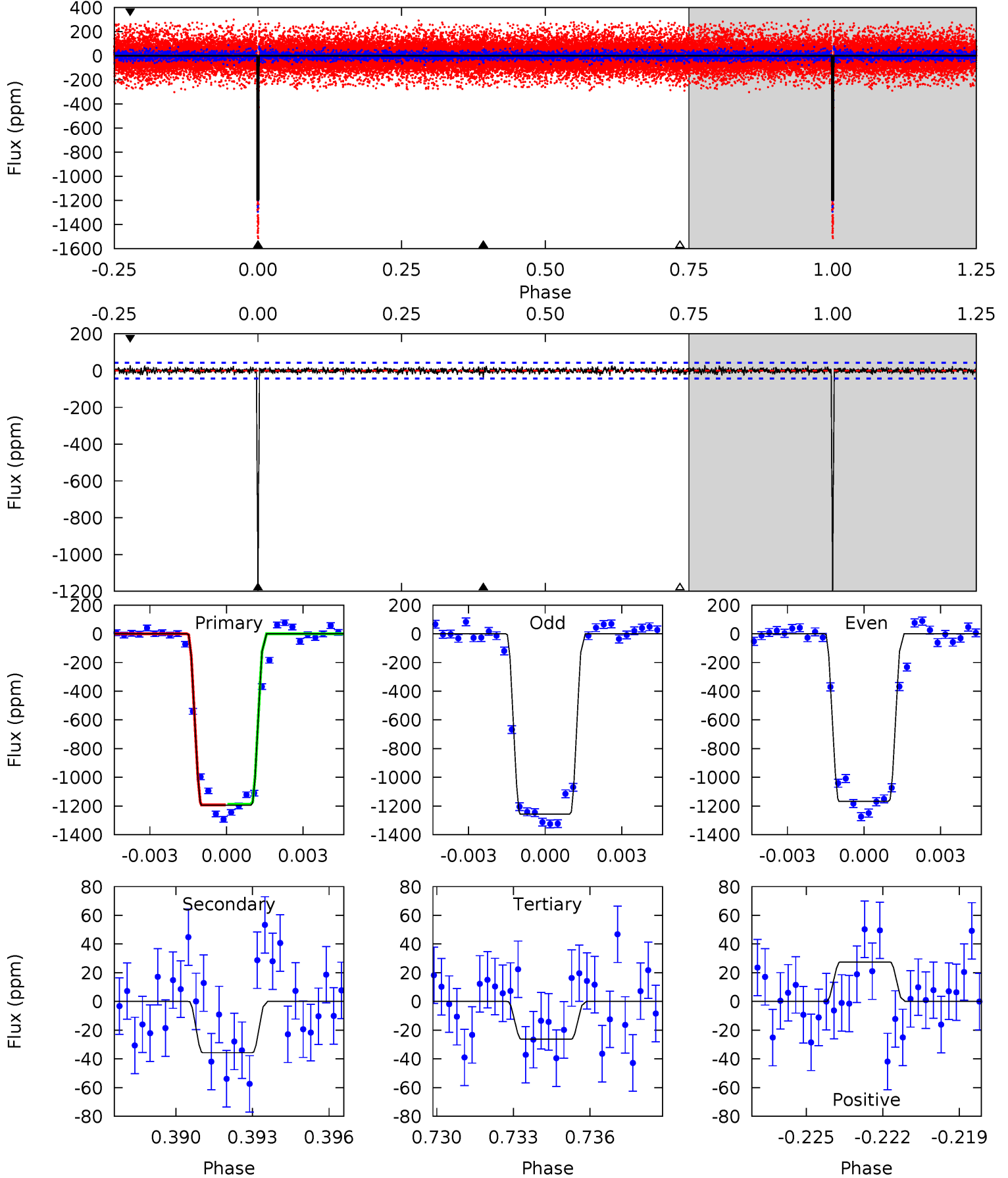
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
111.4	7.43	7.09	6.90	5.23	2.92	2.25	104.3	104.5	0.34	0.53	0.90	0.96	0.06	3.20



Alt Model-Shift Uniqueness Test

011551692-03, P = 58.020359 Days, E = 93.823202 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
145.4	4.34	3.21	3.35	5.26	2.97	0.88	142.2	142.0	1.14	1.00	5.25	0.94	0.02	0.35



Stellar Parameters For KIC 011551692

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4920^{+98}_{-98}	$4.620^{+0.010}_{-0.059}$	$0.070^{+0.150}_{-0.150}$	$0.720^{+0.059}_{-0.022}$	$0.822^{+0.030}_{-0.059}$	$3.104^{+0.143}_{-0.699}$
	+2%/-2%	+0%/-1%	+214%/-214%	+8%/-3%	+4%/-7%	+5%/-23%
Source	SPE59	SPE59	SPE59	DSEP		

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

Secondary Eclipse Parameters for KIC 011551692-03 / KOI 1781.03

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-88 ± 12	$2.97^{+0.22}_{-0.18}$	501^{+13}_{-12}	3069^{+92}_{-87}	404^{+79}_{-73}
Alt.	-36 ± 8	$2.78^{+0.22}_{-0.22}$	500^{+12}_{-12}	2765^{+97}_{-108}	188^{+55}_{-48}

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 $A_{obs} \gg 1.0$

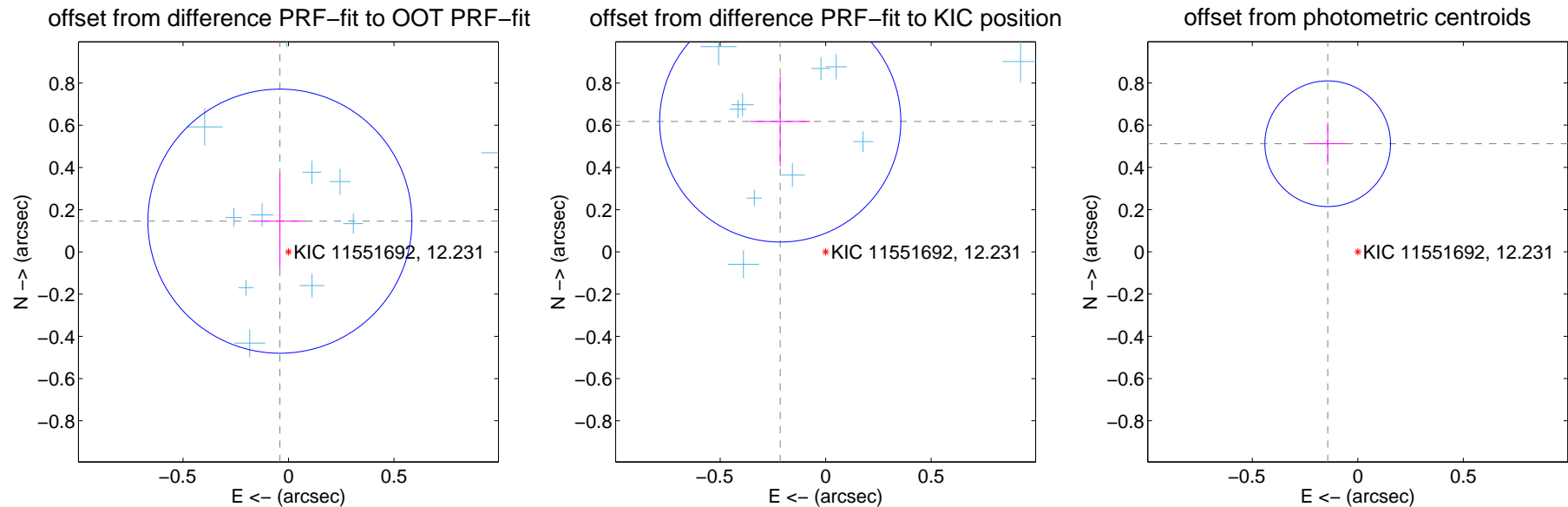
DV Centroid Data

Supplemental centroid analysis for 011551692-03. Kepler magnitude: 12.23. Transit SNR 48.20

There are 12 quarters with good PRF difference image offsets

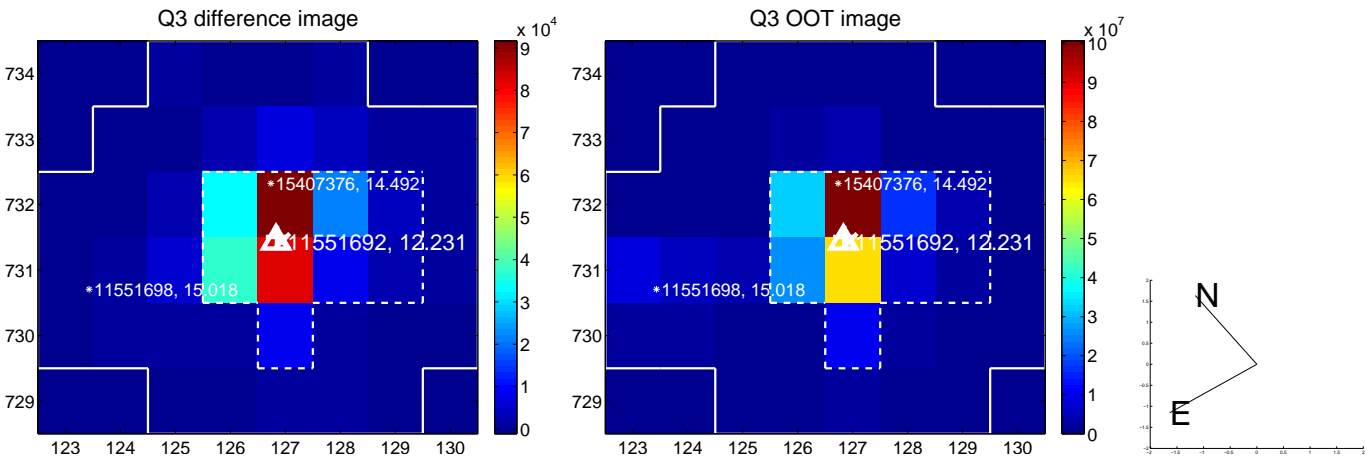
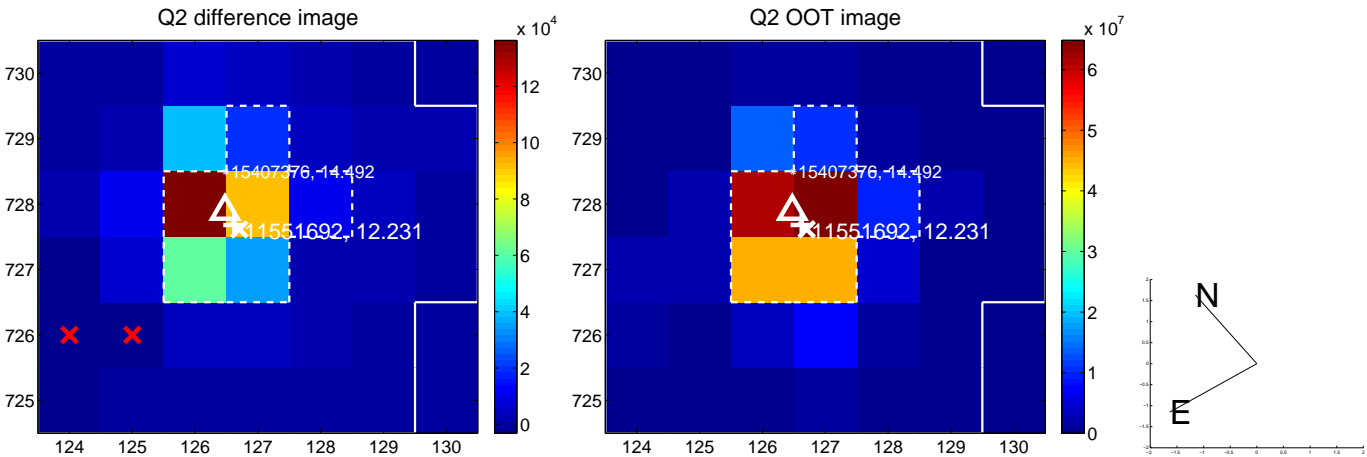
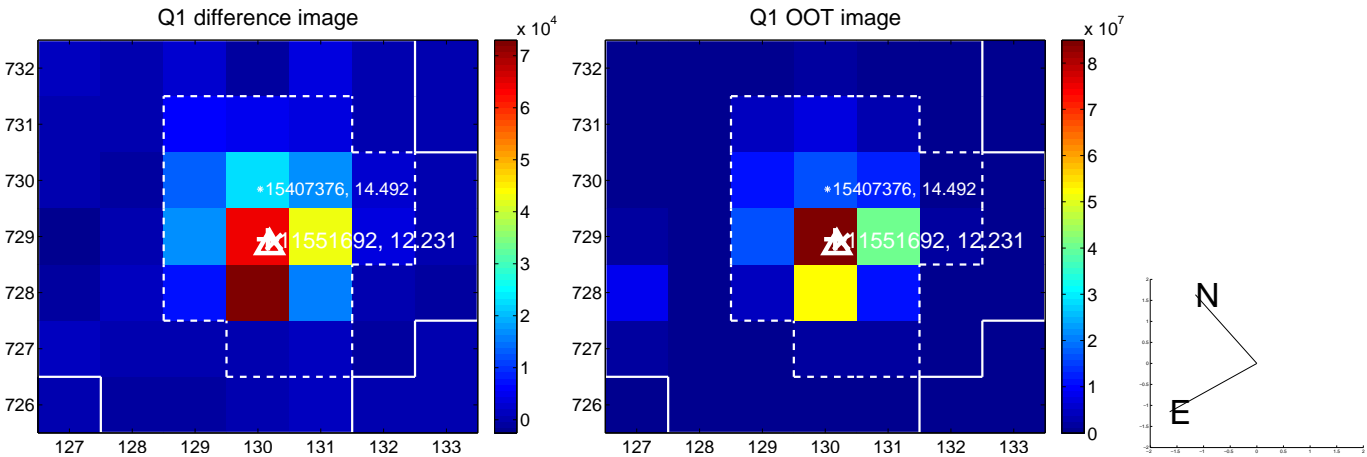
The direct PRF centroid is offset from the target star catalog position by about 0.58 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.151 ± 0.209	0.72	0.041 ± 0.122	0.146 ± 0.226
PRF-fit source offset from KIC position	0.655 ± 0.190	3.44	0.215 ± 0.143	0.618 ± 0.213
photometric centroid source offset	0.53 ± 0.10	5.36	0.14 ± 0.09	0.51 ± 0.10

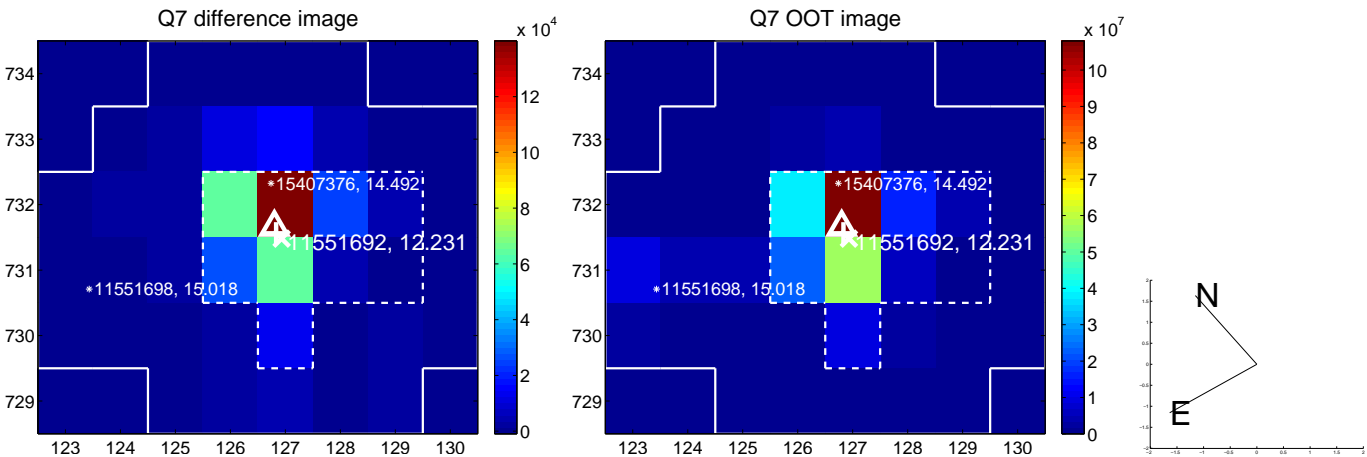
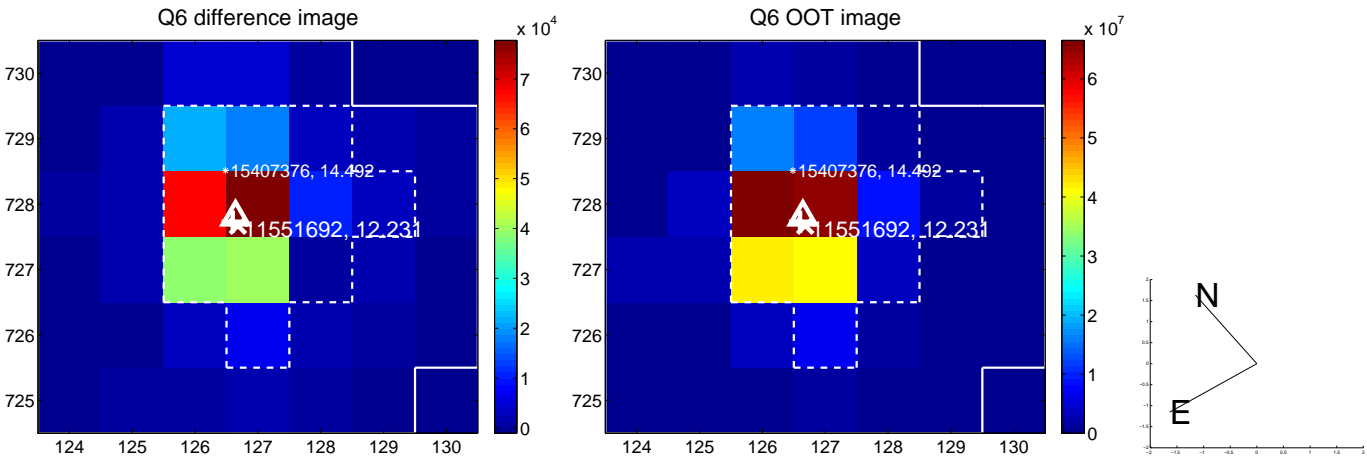
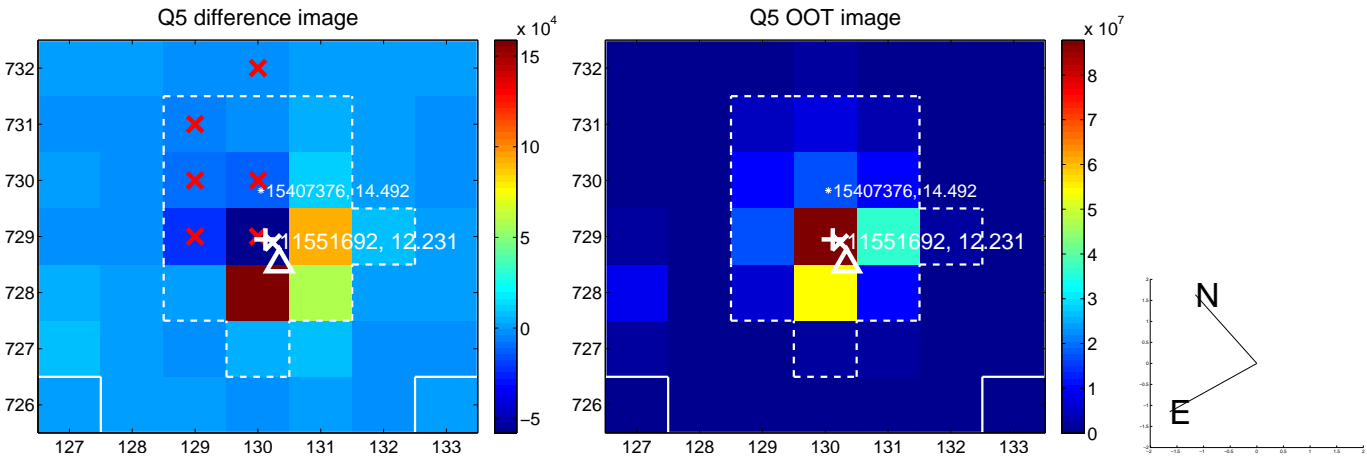


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

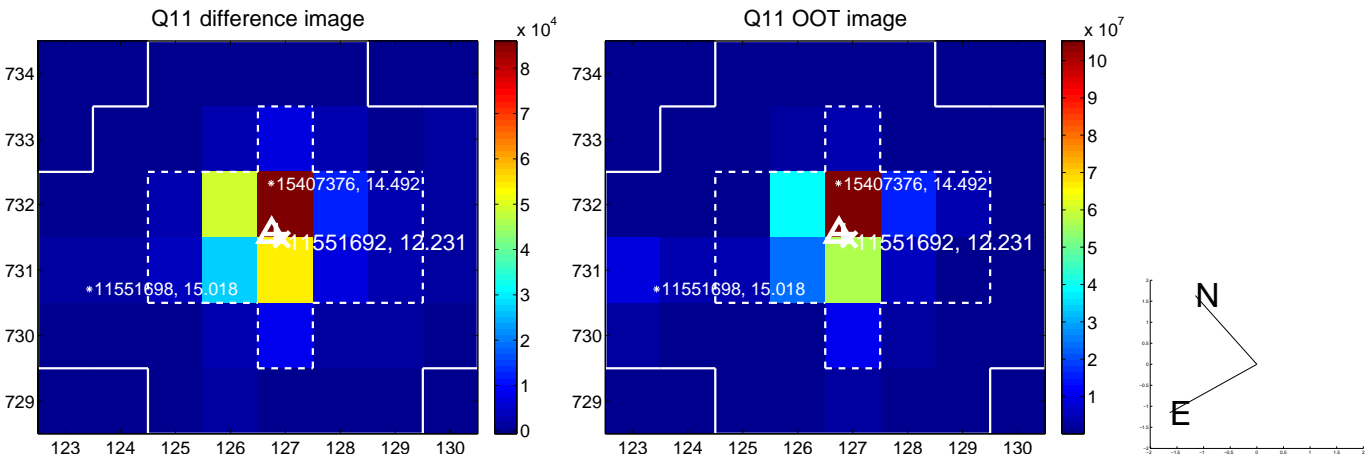
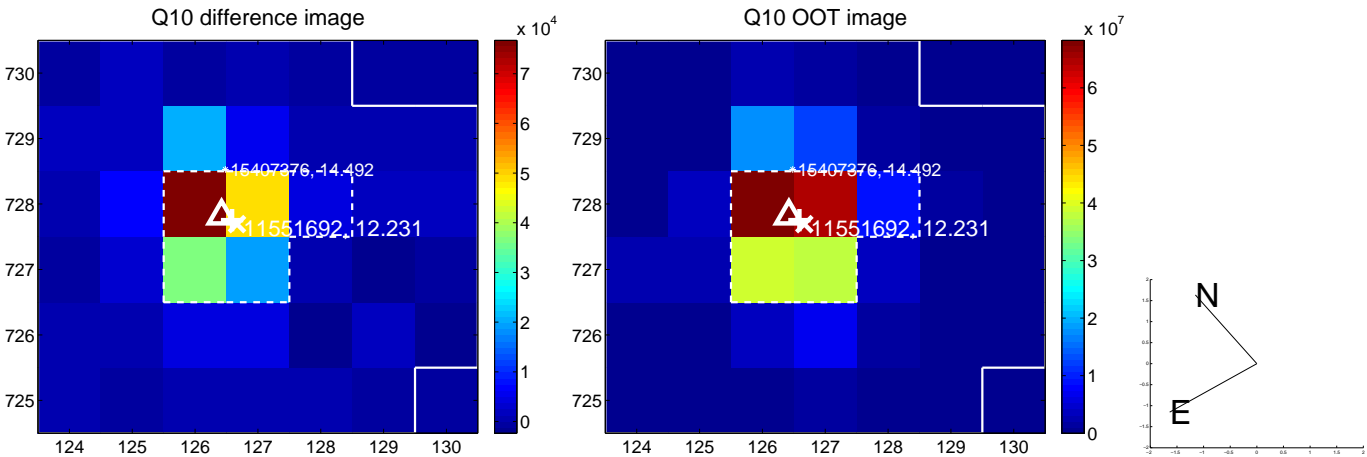
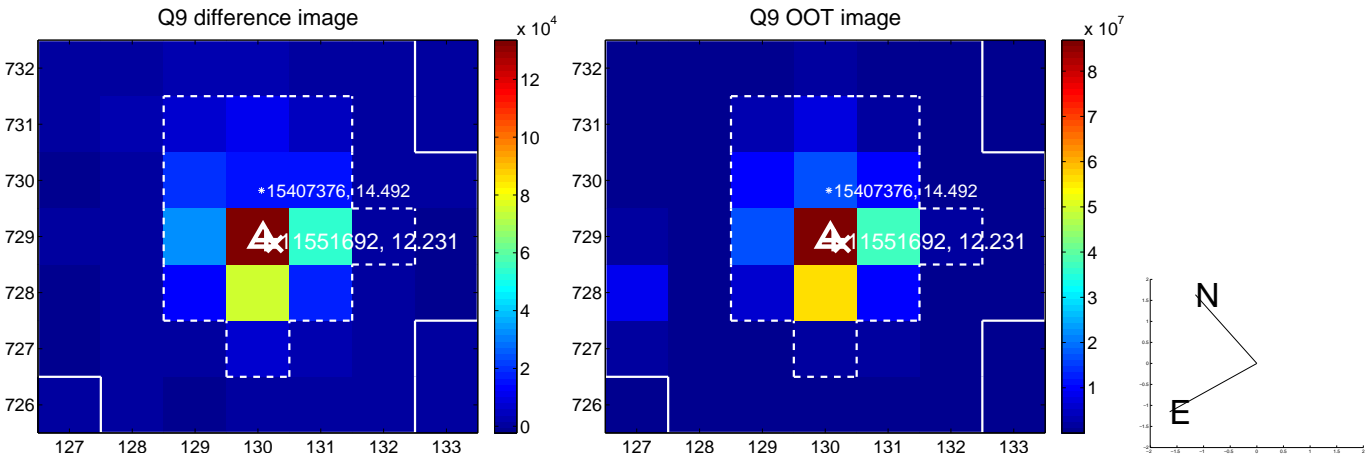
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



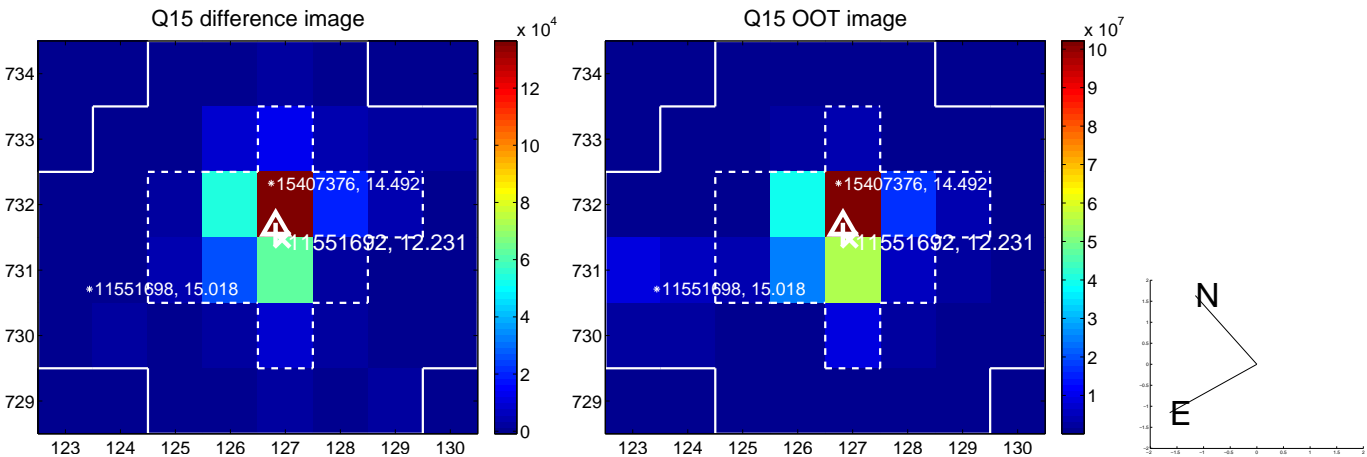
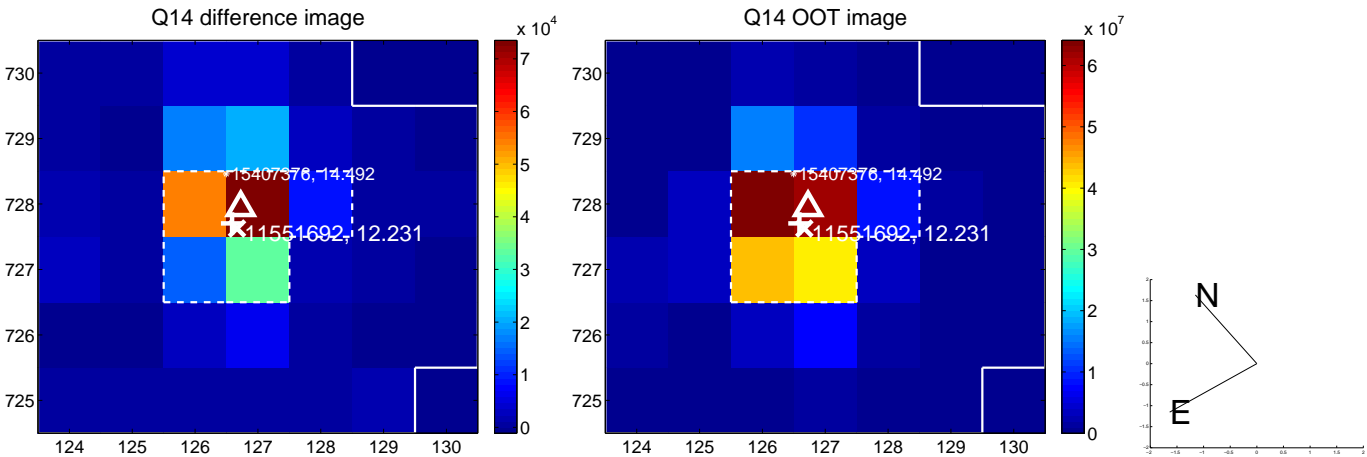
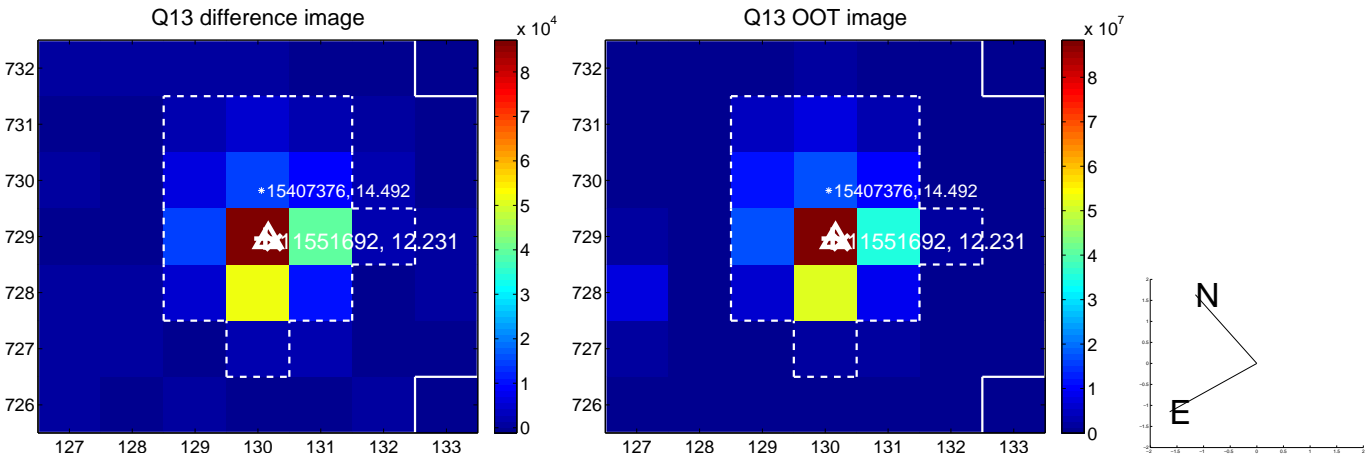
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



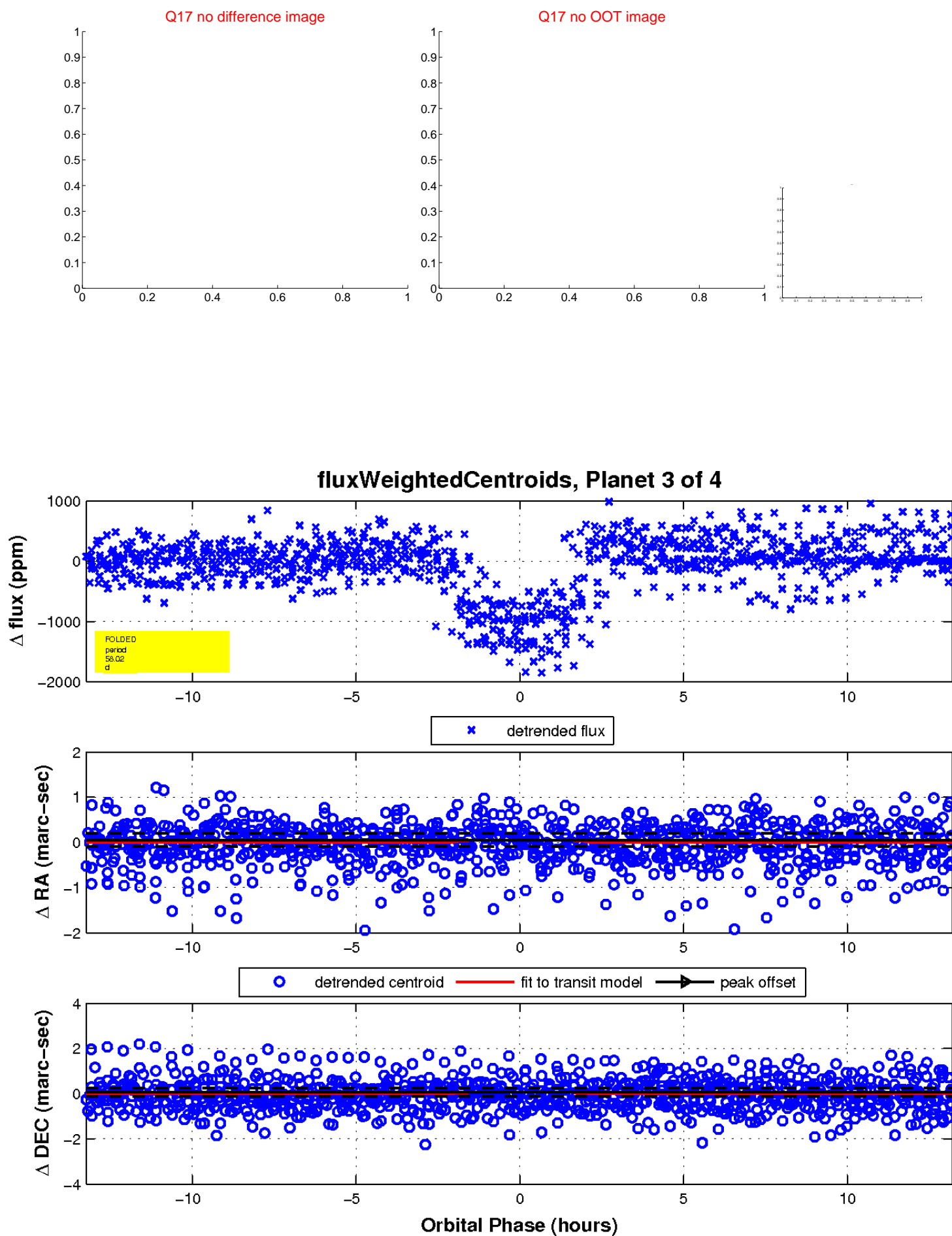
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

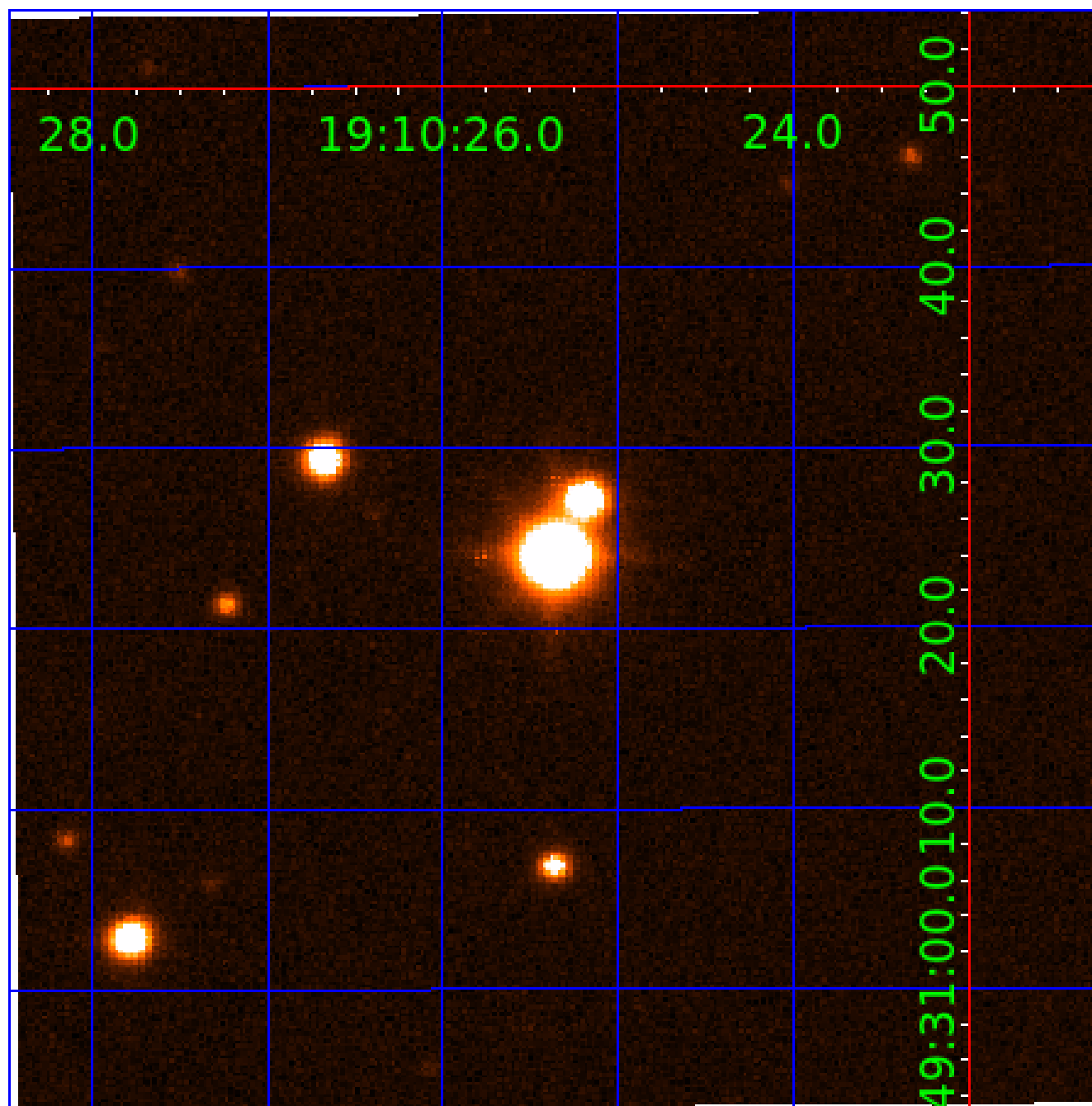


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011551692

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})
011551692-01	OBS	1781.01	7.834435	135.222162	2033.8	2.955	238.2	236.0	0.72	4920	3.62	53.49
011551692-02	OBS	1781.02	3.005148	134.100091	685.0	2.162	134.8	134.2	0.72	4920	2.31	191.94
011551692-03	OBS	1781.03	58.019597	151.852023	1298.1	4.412	46.6	48.2	0.72	4920	2.90	3.71
011551692-04	OBS	No	0.853621	131.934110	190.8	2.000	7.8	-1.0	0.72	4920	0.96	1027.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011551692-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
011551692-02	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS
011551692-03	OBS	PC	0.97	0	0	0	0	CENT_KIC_POS
011551692-04	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_NOFITS—HALO_GHOST

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

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

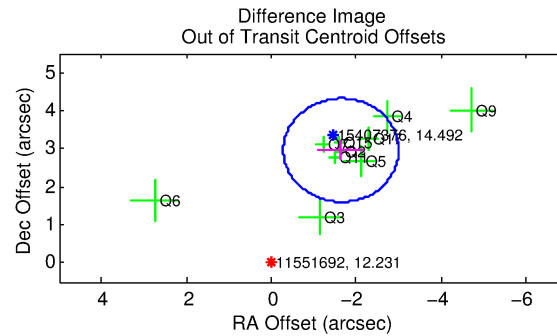
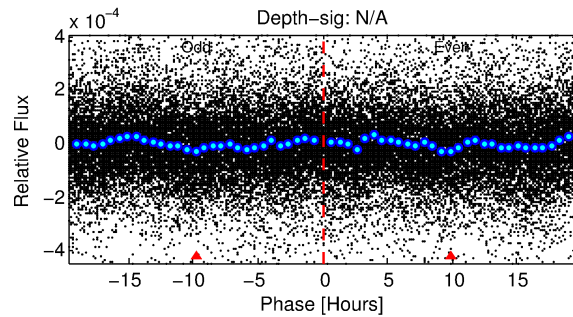
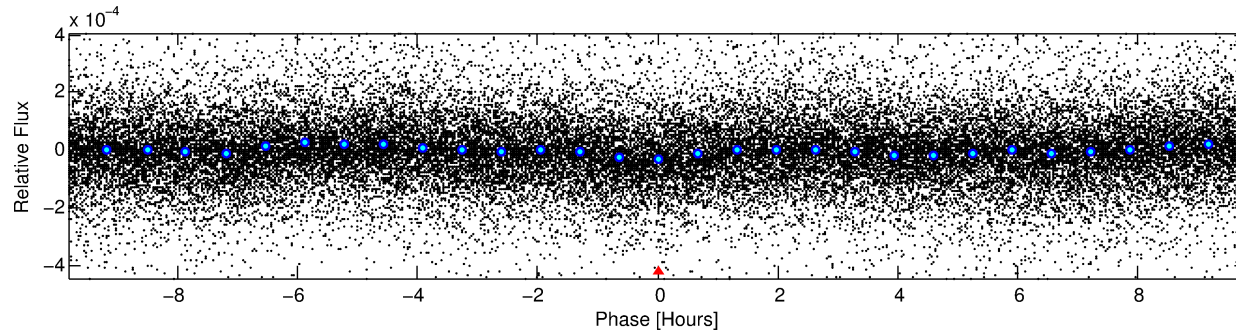
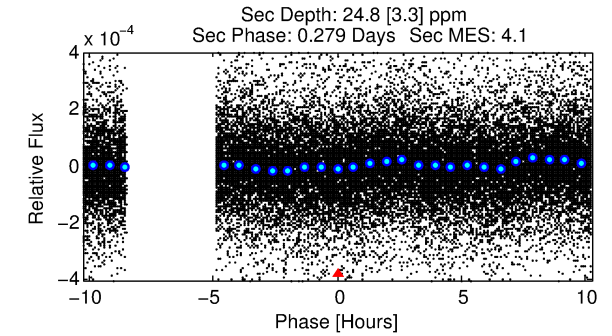
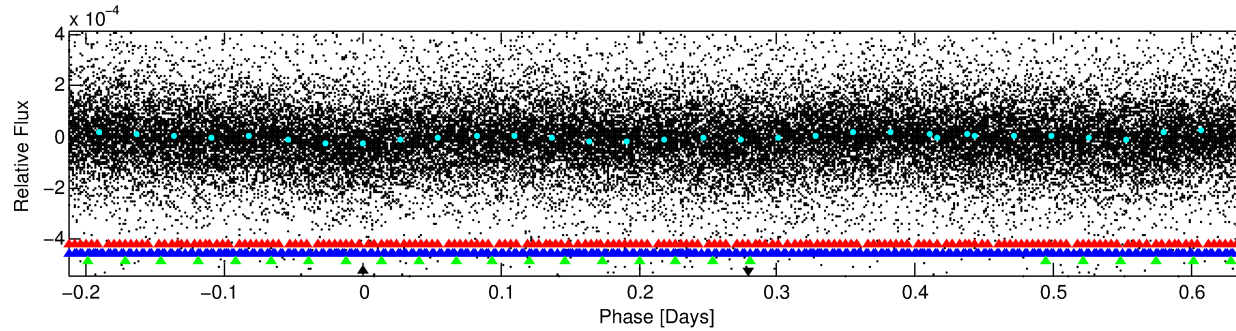
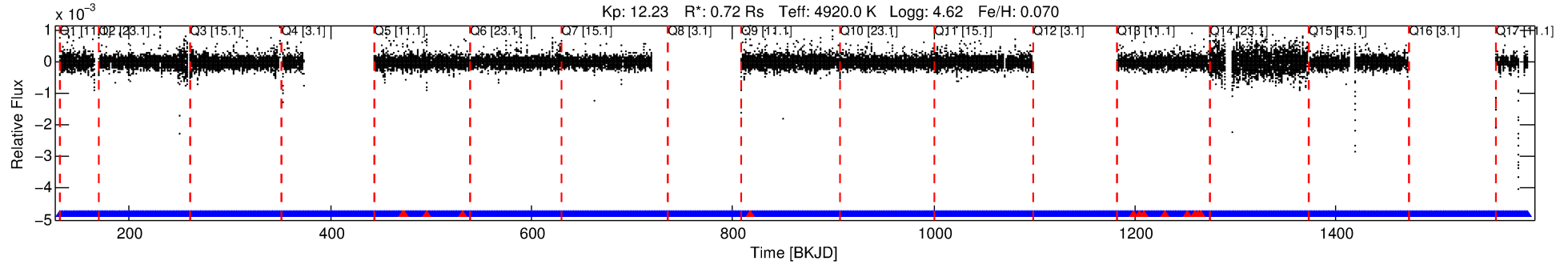
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011551692-04

No Significant Match Found

DV One-Page Summary

KIC: 11551692 Candidate: 4 of 4 Period: 0.854 d
KOI: K01781 Name: Kepler-411 Corr: No Ephemeris Match



TPS TCE Results:

Period = 0.85362 d
Epoch = 131.9341 BKJD

DV fit results are unavailable

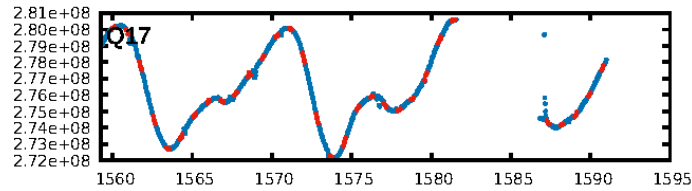
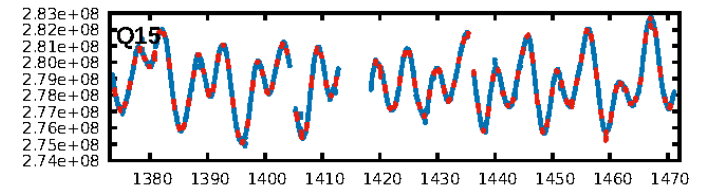
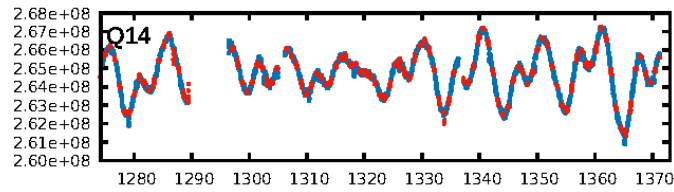
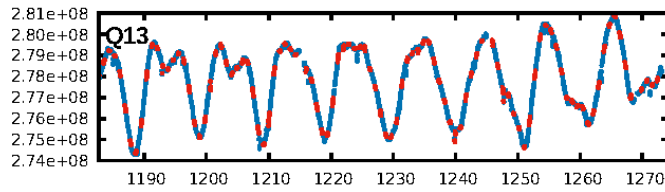
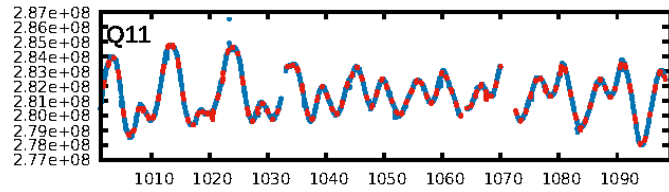
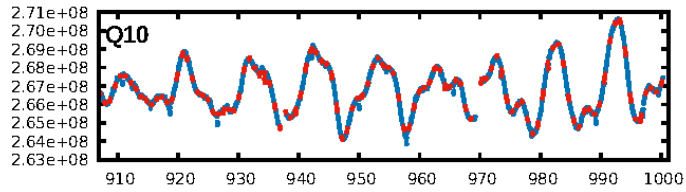
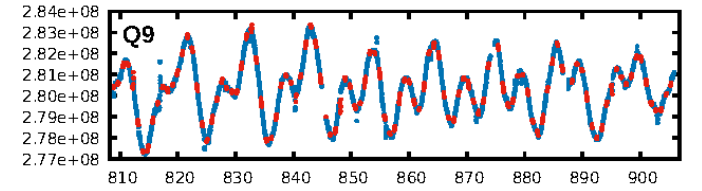
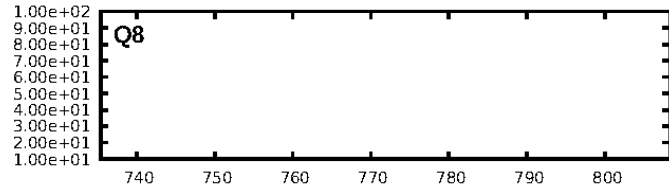
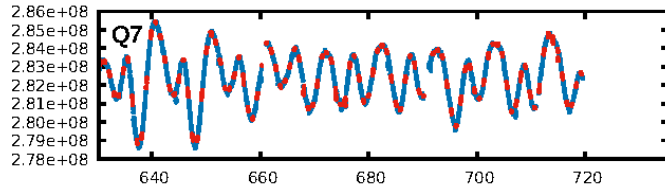
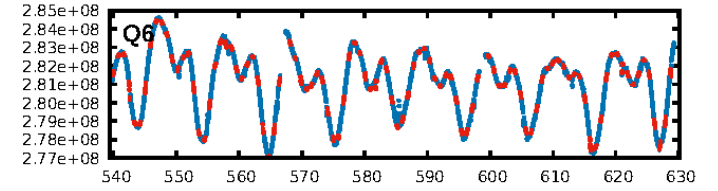
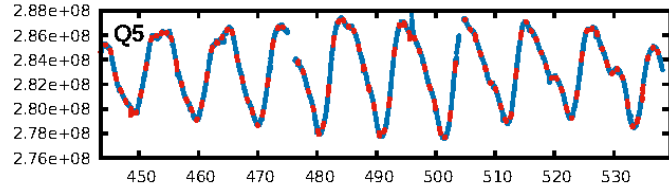
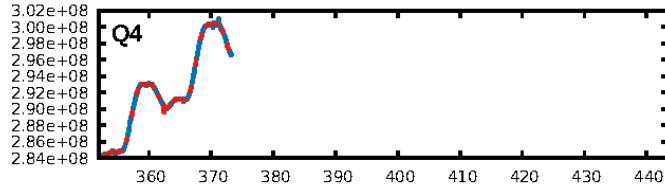
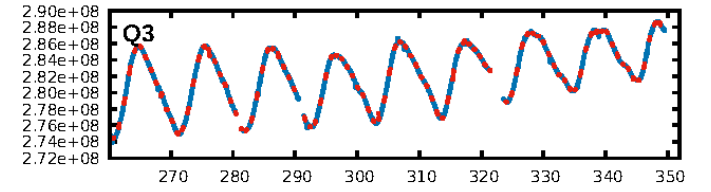
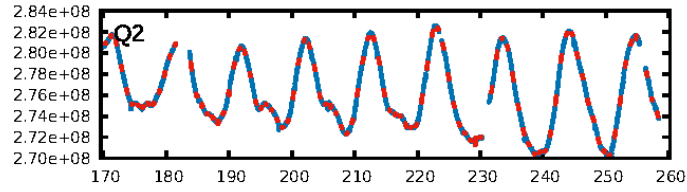
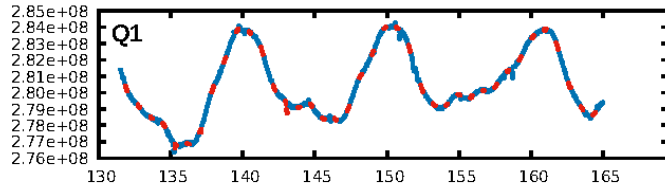
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [17.53σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [1045/1058]
GhostDiagnostic-chr: -0.2357
Centroid-sig: 1.3%
Centroid-so: 1.300 arcsec [2.75σ]
OotOffset-rm: 3.390 arcsec [7.48σ]
KicOffset-rm: 3.746 arcsec [8.52σ]
OotOffset-st: 2/4/1/3 [10]
KicOffset-st: 2/4/1/3 [10]
DiffImageQuality-fgm: 0.60 [6/10]
DiffImageOverlap-fno: 1.00 [14/14]

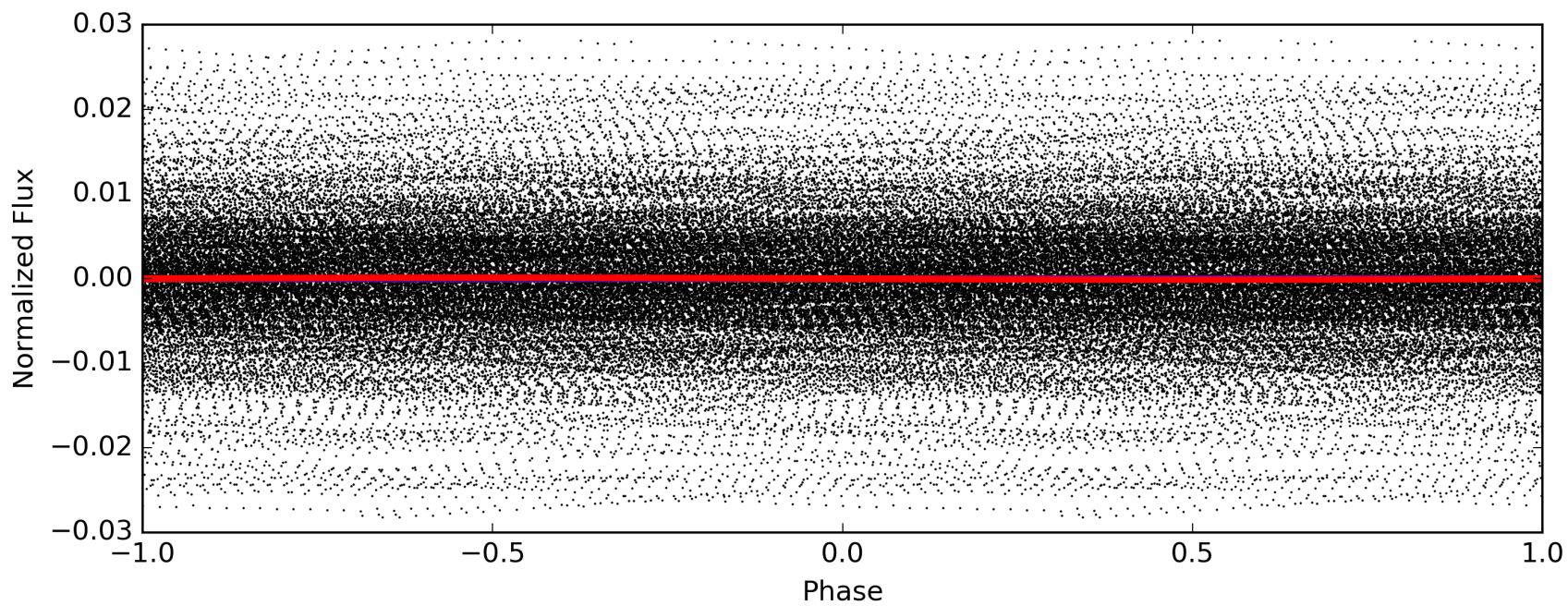
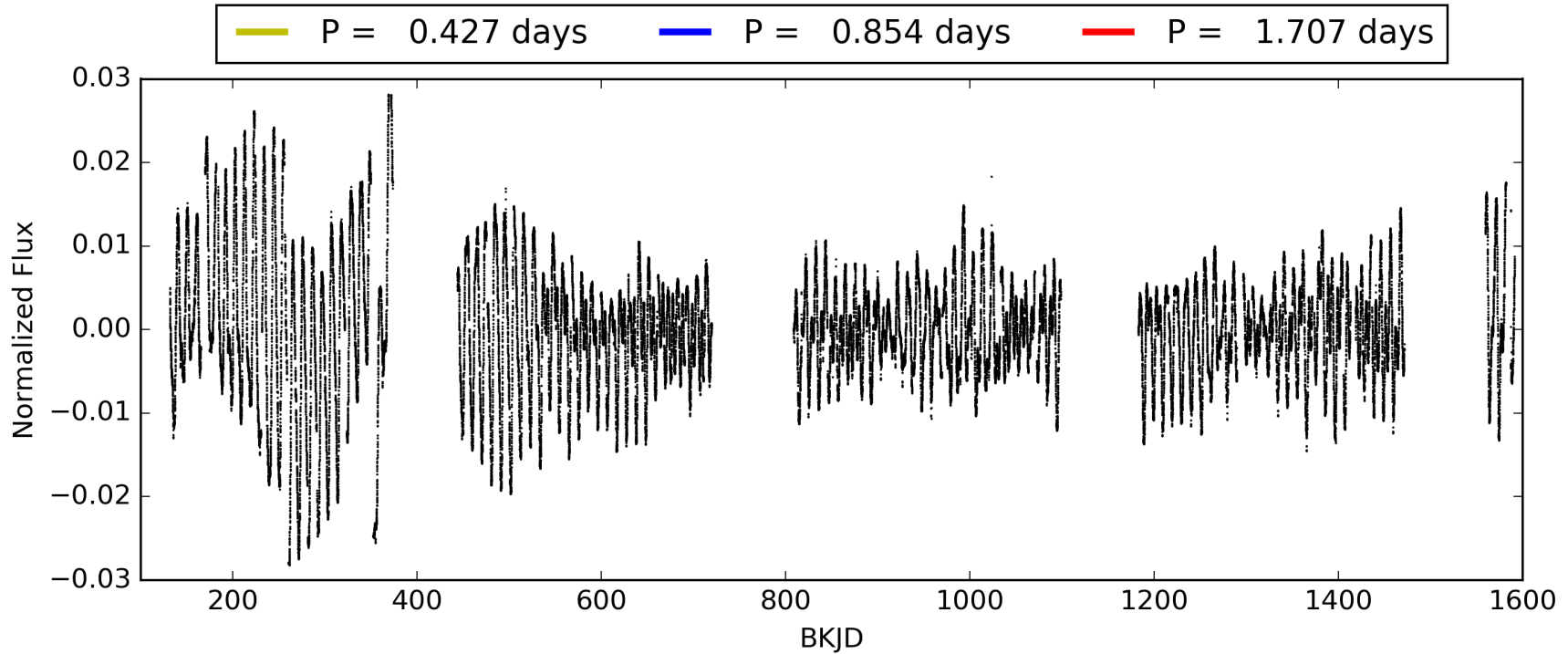
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:26:07 Z

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

TCE 011551692-04, PDC Light Curves

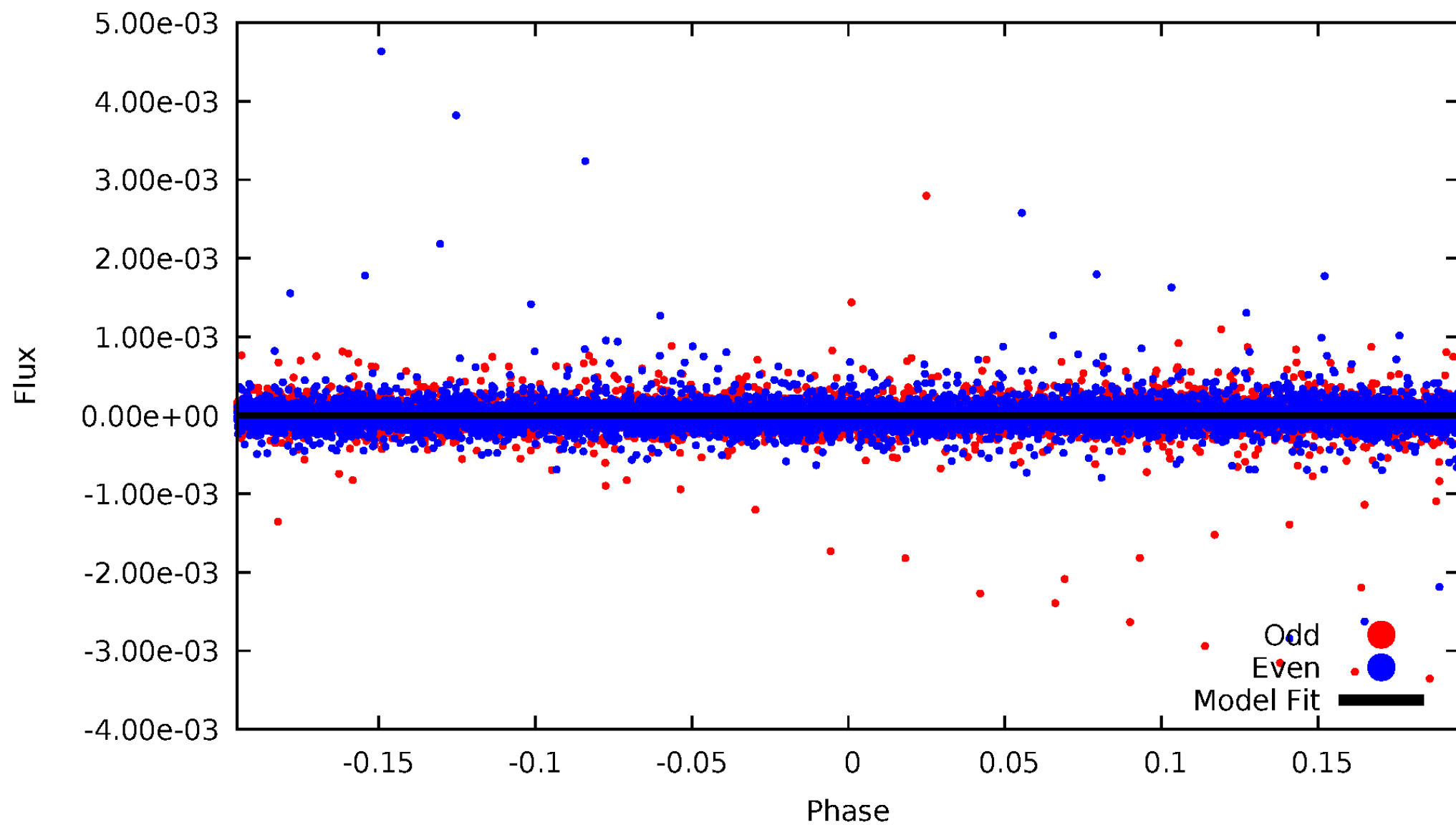


TCE 011551692-04



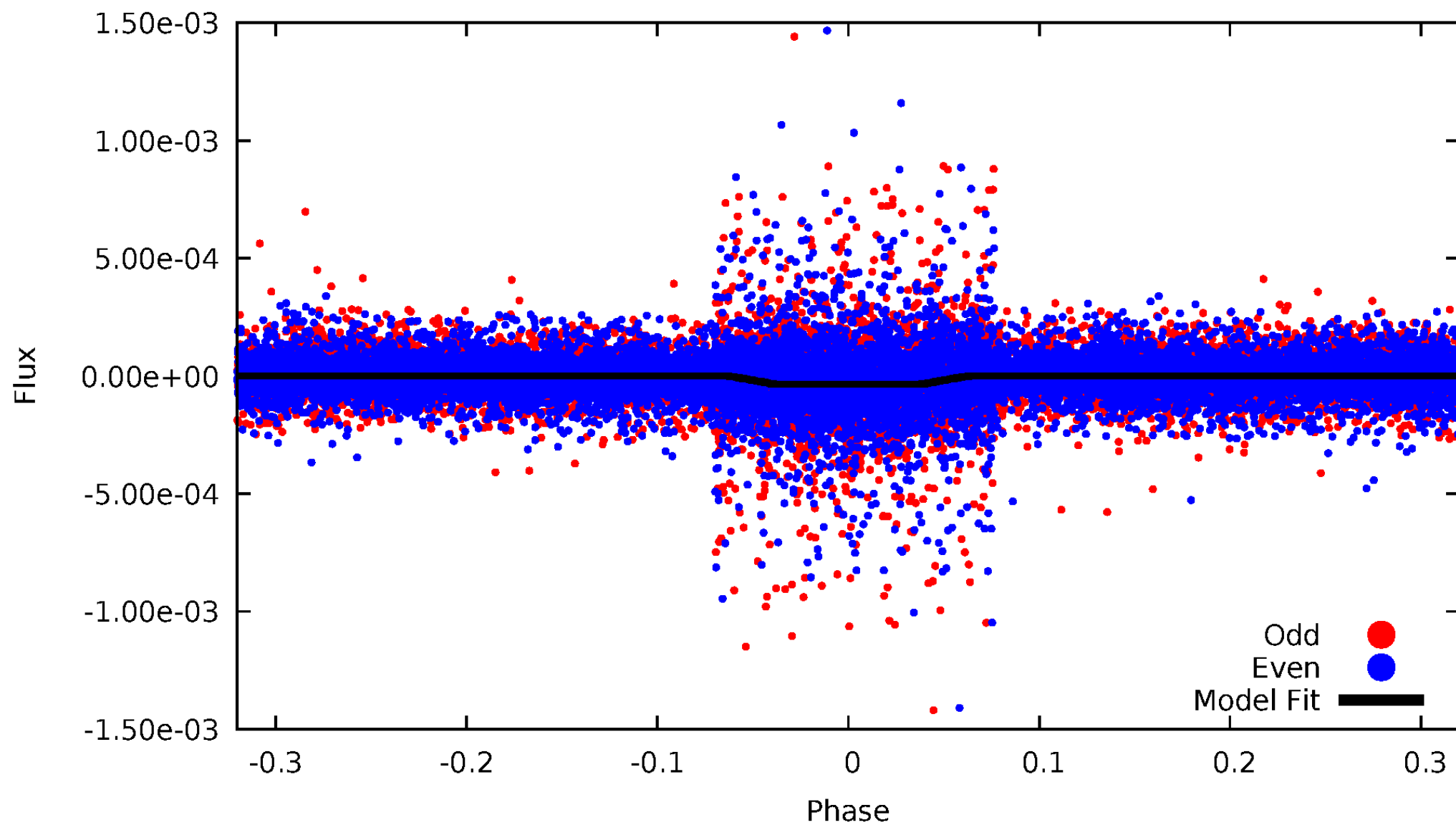
DV Odd/Even

TCE 011551692-04



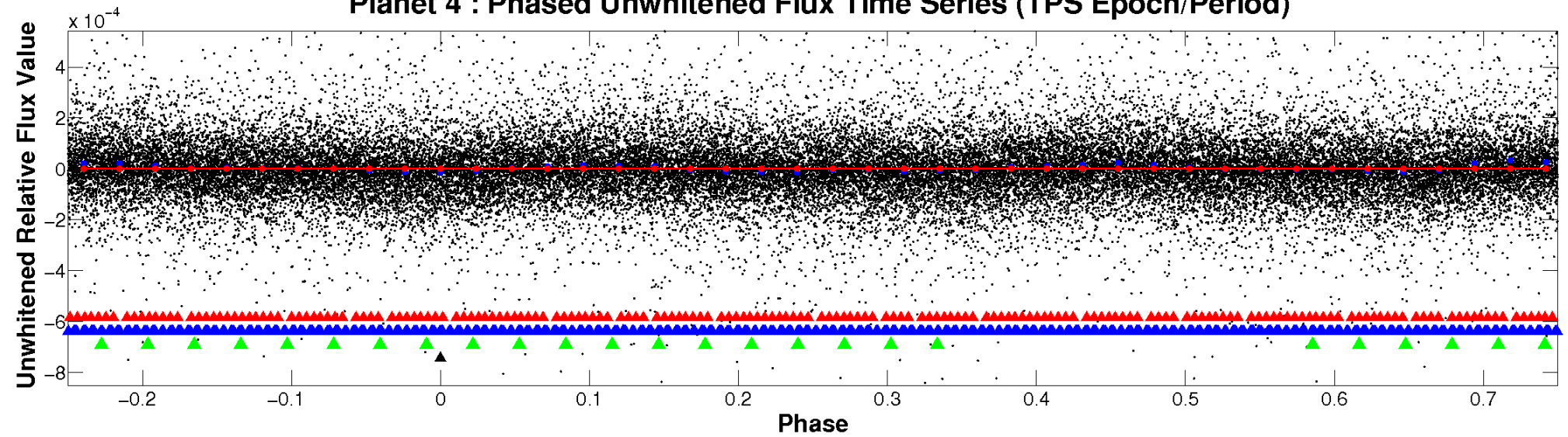
ALT Odd/Even

TCE 011551692-04



Non-Whitened Vs. Whitened Light Curve

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

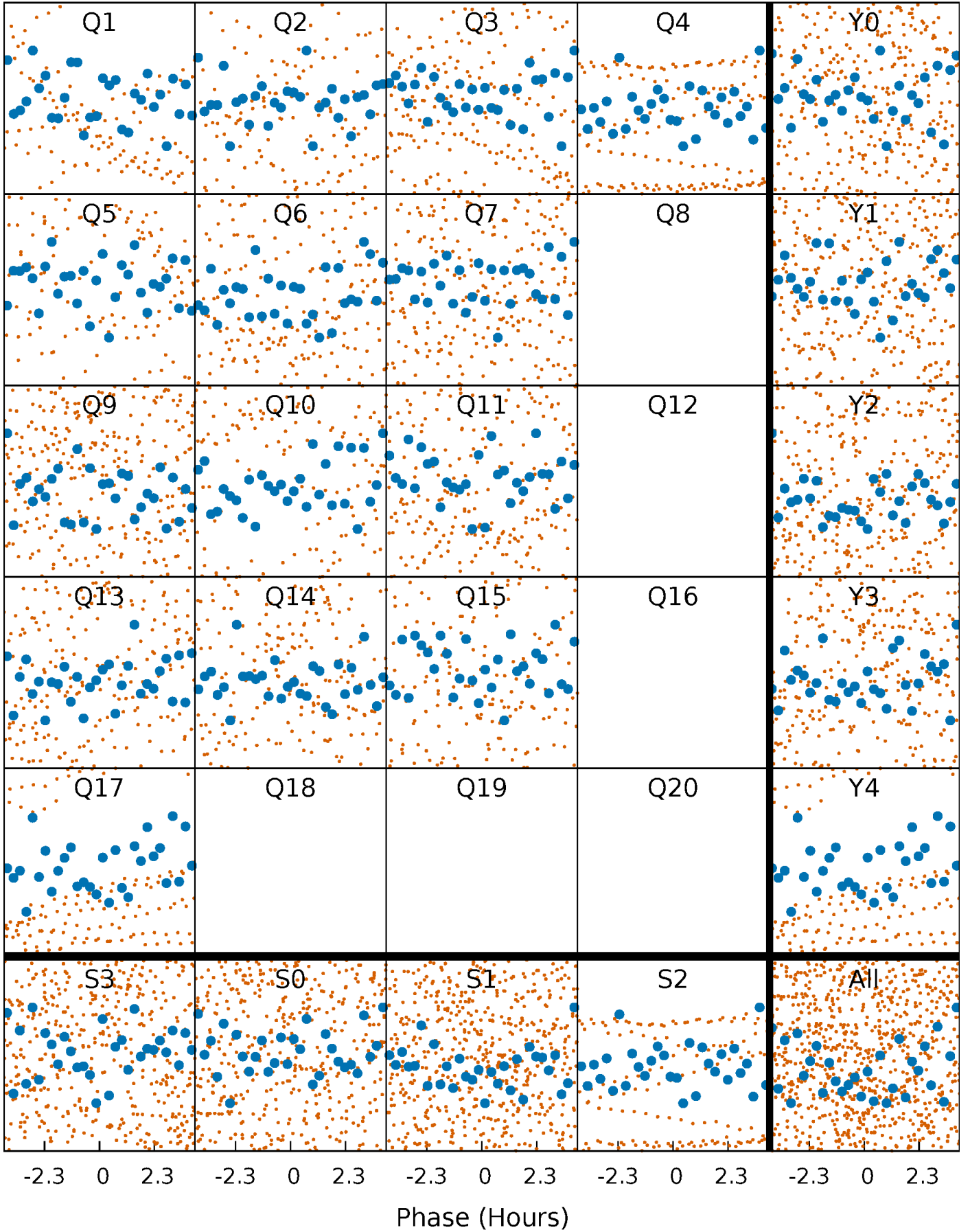


Planet 4 : Phased Whitened Flux Time Series (TPS Epoch/Period)



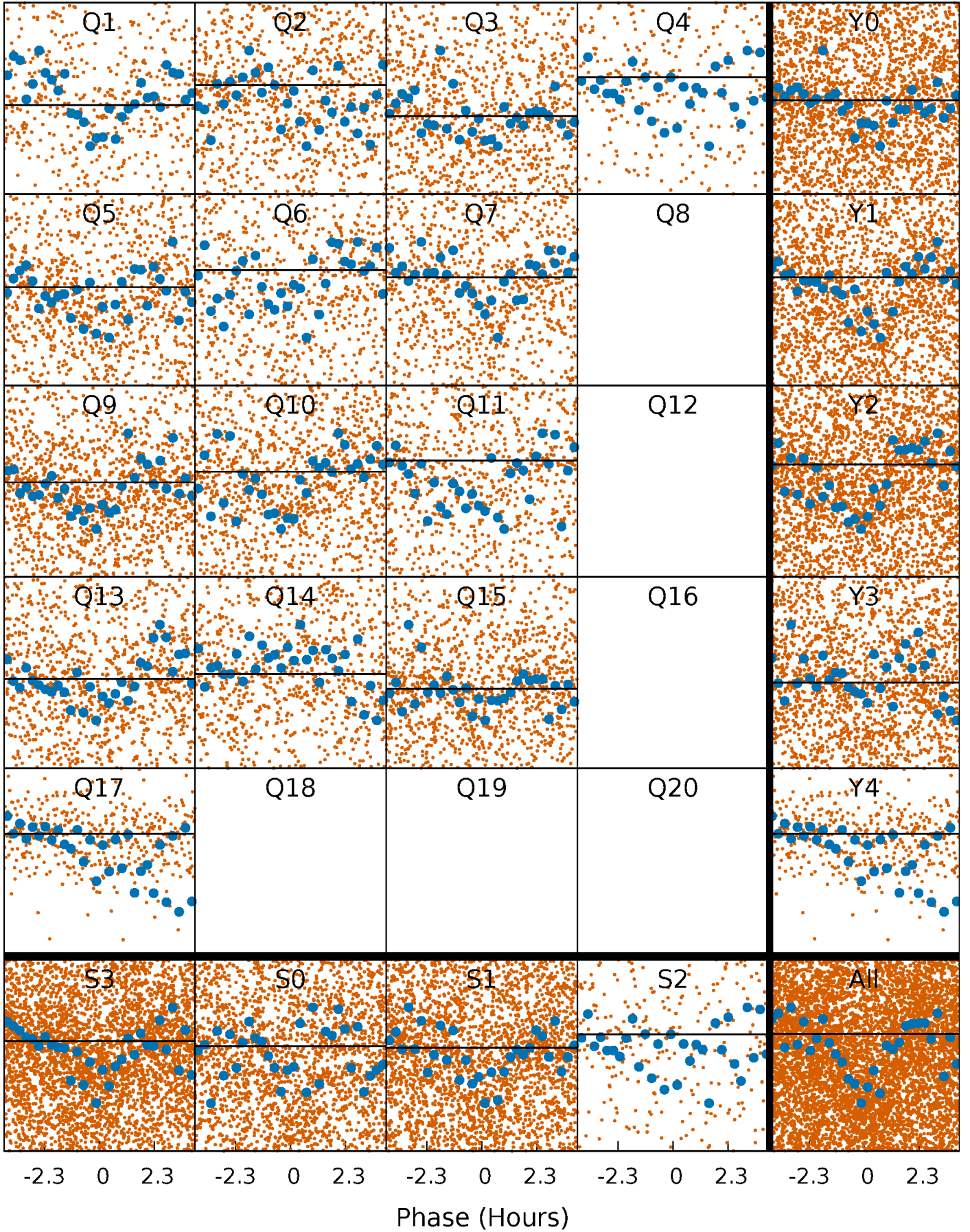
PDC Quarter-Phased Transit Curves

TCE 011551692-04 P= 0.853621 Days $T_0=131.934111$ (BKJD)



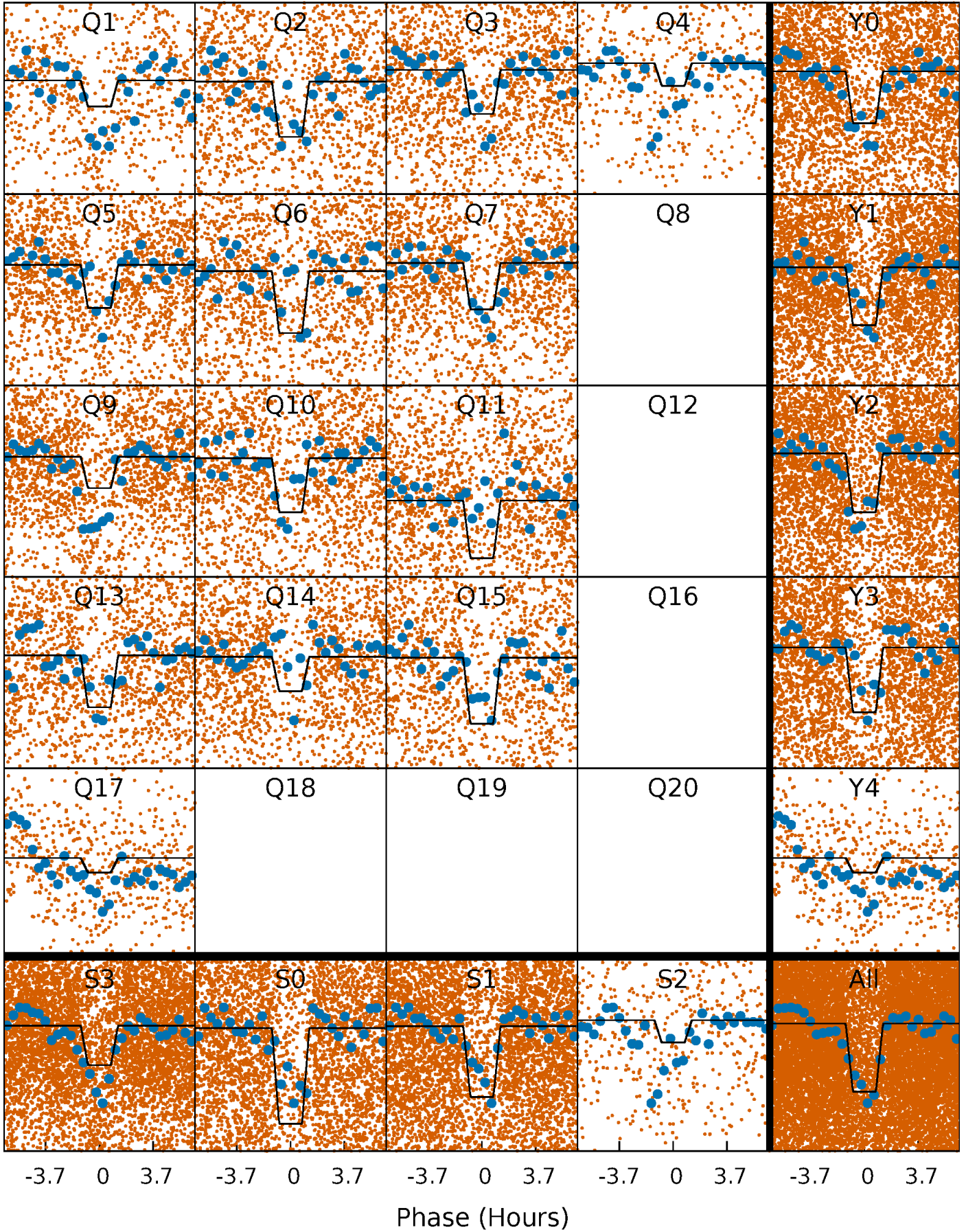
DV Quarter-Phased Transit Curves

TCE 011551692-04 $P = 0.853621$ Days $T_0 = 131.934111$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

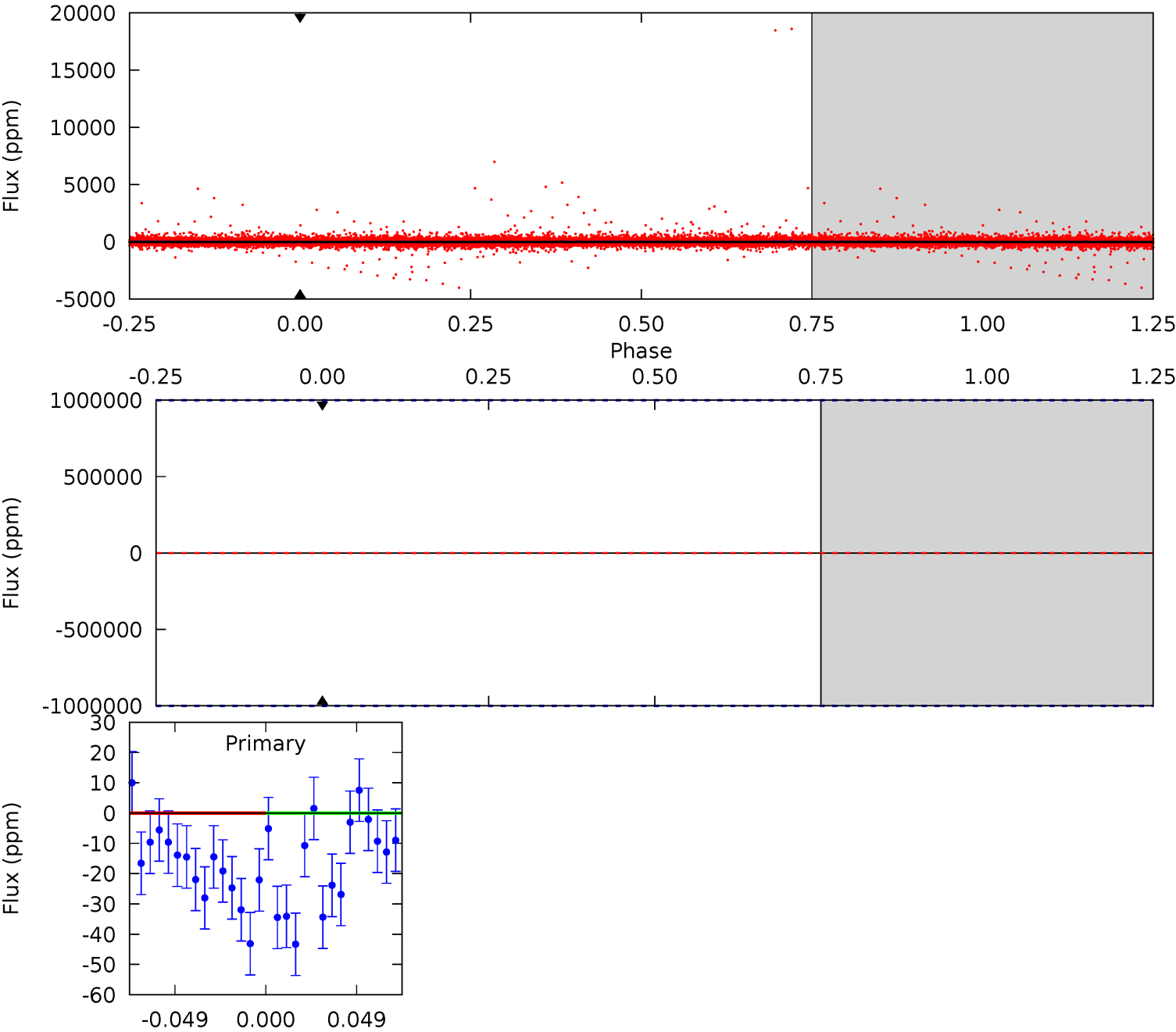
TCE 011551692-04 $P = 0.853621$ Days $T_0 = 131.938724$ (BKJD)



DV Model-Shift Uniqueness Test

011551692-04, P = 0.853621 Days, E = 131.080490 Days

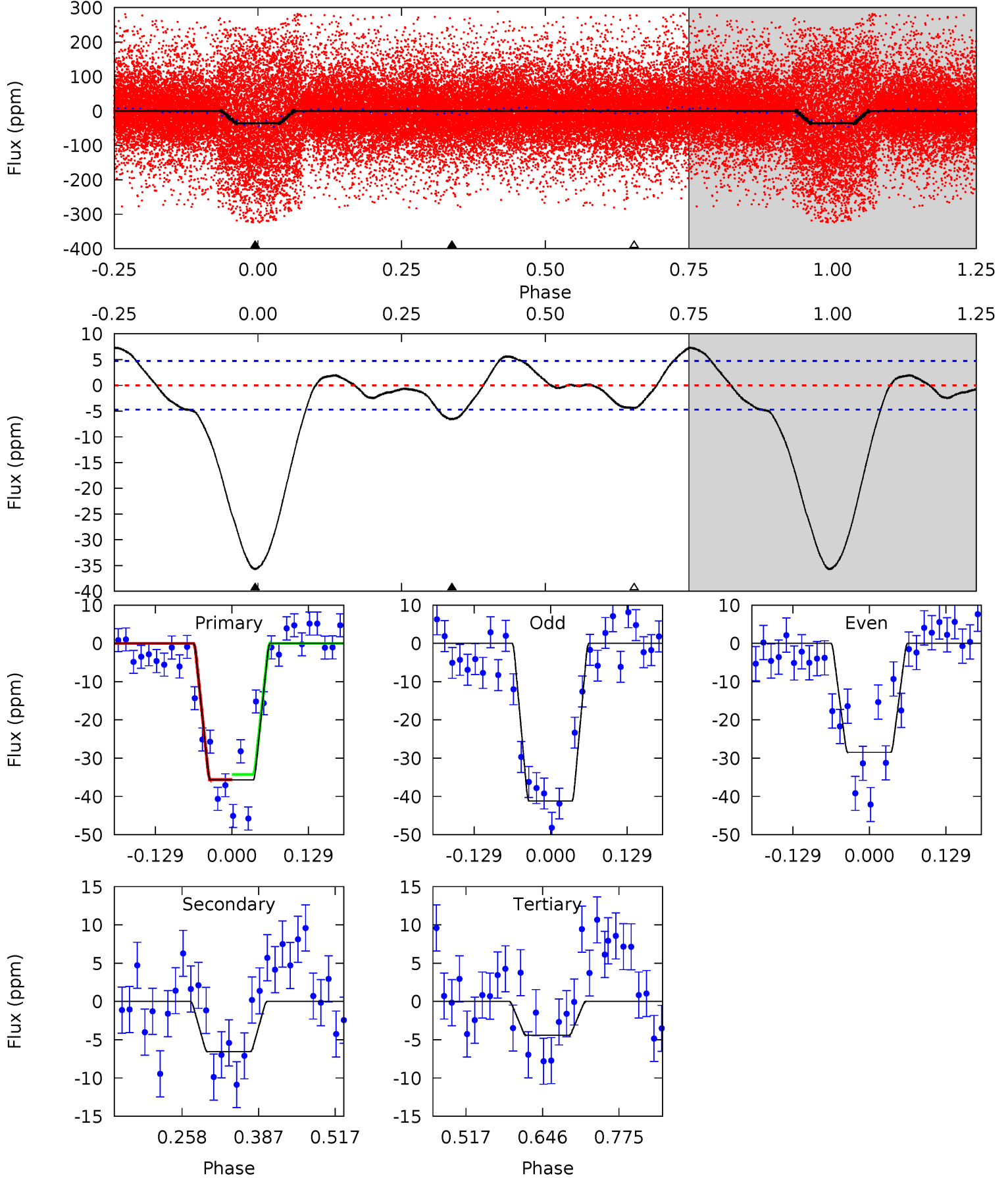
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

011551692-04, P = 0.853621 Days, E = 131.085103 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.2	6.28	4.24	0	4.51	1.52	3.02	29.9	34.2	2.04	6.28	6.09	1.03	0.17	0



Stellar Parameters For KIC 011551692

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4920^{+98}_{-98}	$4.620^{+0.010}_{-0.059}$	$0.070^{+0.150}_{-0.150}$	$0.720^{+0.059}_{-0.022}$	$0.822^{+0.030}_{-0.059}$	$3.104^{+0.143}_{-0.699}$
	+2%/-2%	+0%/-1%	+214%/-214%	+8%/-3%	+4%/-7%	+5%/-23%
Source	SPE59	SPE59	SPE59	DSEP		

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

Secondary Eclipse Parameters for KIC 011551692-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$5.72^{+6.43}_{-4.10}$	2044^{+57}_{-47}	-3683^{+20420}_{-11627}	$-4.620^{+950.396}_{-814.780}$
Alt.	-7 ± 1	$5.71^{+5.97}_{-3.86}$	2038^{+52}_{-43}	-2448^{+1191}_{-52}	$0.029^{+0.261}_{-0.022}$

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

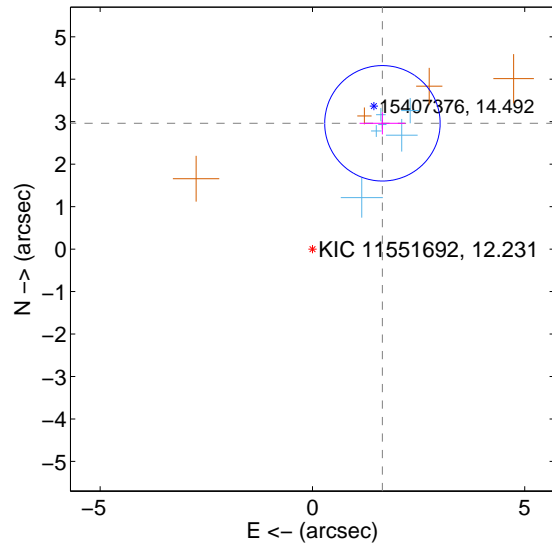
Supplemental centroid analysis for 011551692-04. Kepler magnitude: 12.23. Transit SNR -1.00

There are 6 quarters with good PRF difference image offsets

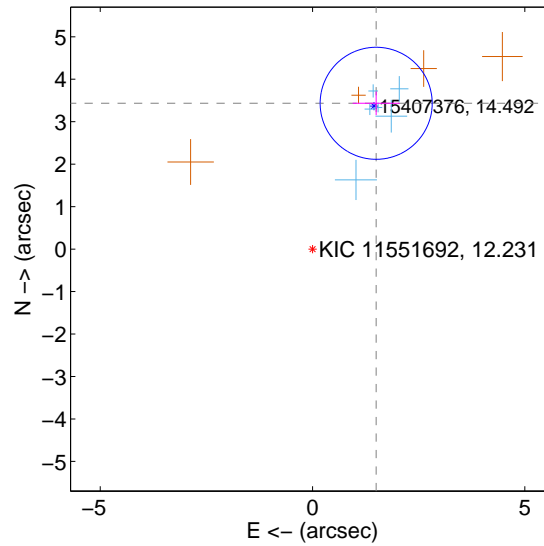
The direct PRF centroid is offset from the target star catalog position by about 0.58 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.390 ± 0.453	7.48	-1.648 ± 0.537	2.962 ± 0.262
PRF-fit source offset from KIC position	3.746 ± 0.440	8.52	-1.499 ± 0.554	3.434 ± 0.278
photometric centroid source offset	1.30 ± 0.47	2.75	-0.47 ± 0.44	1.21 ± 0.48

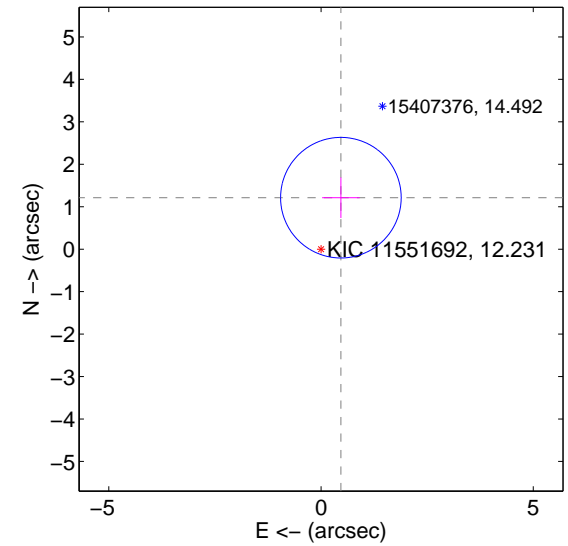
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

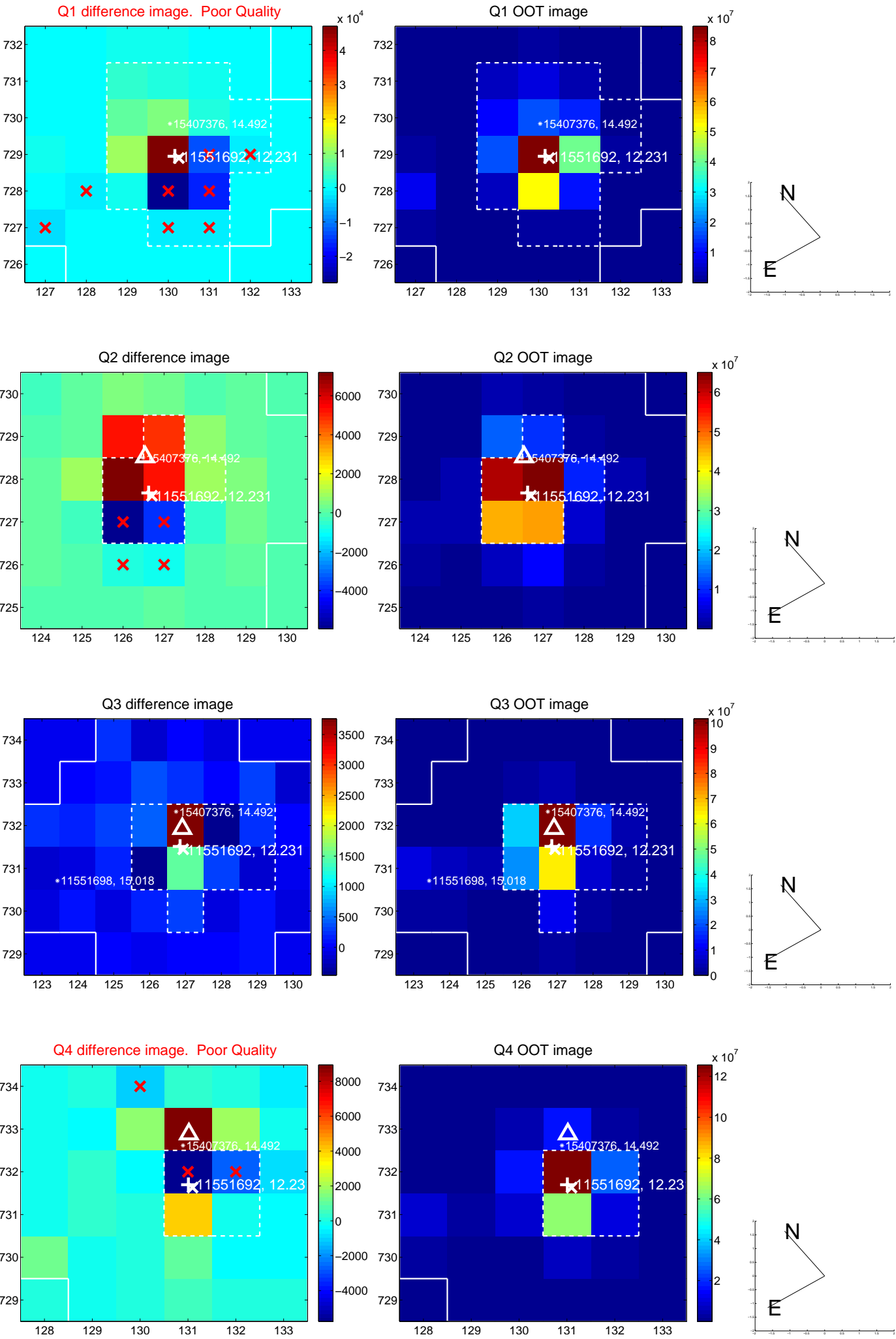


offset from photometric centroids

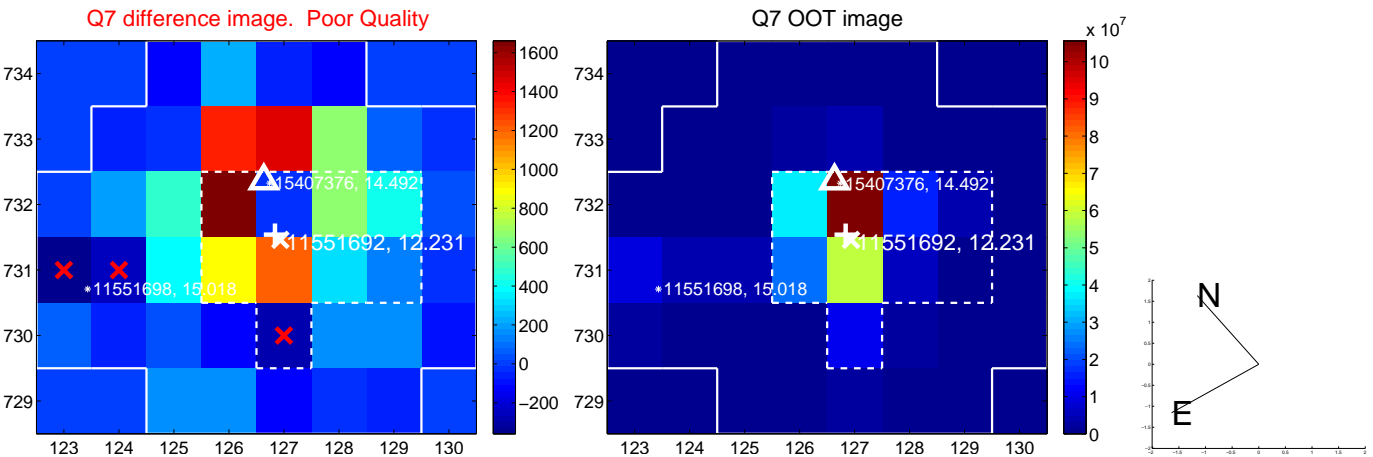
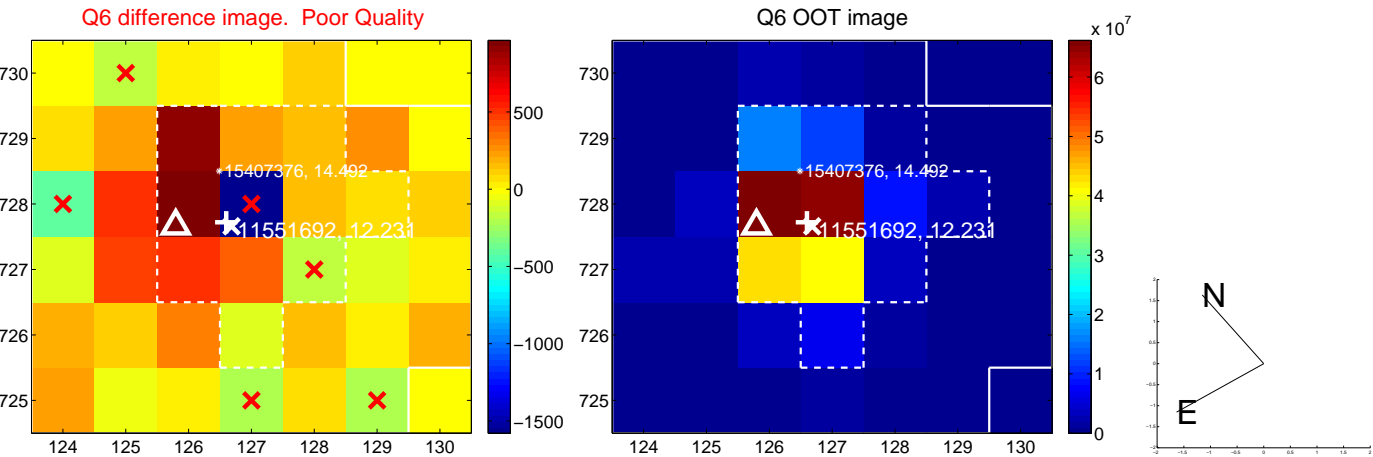
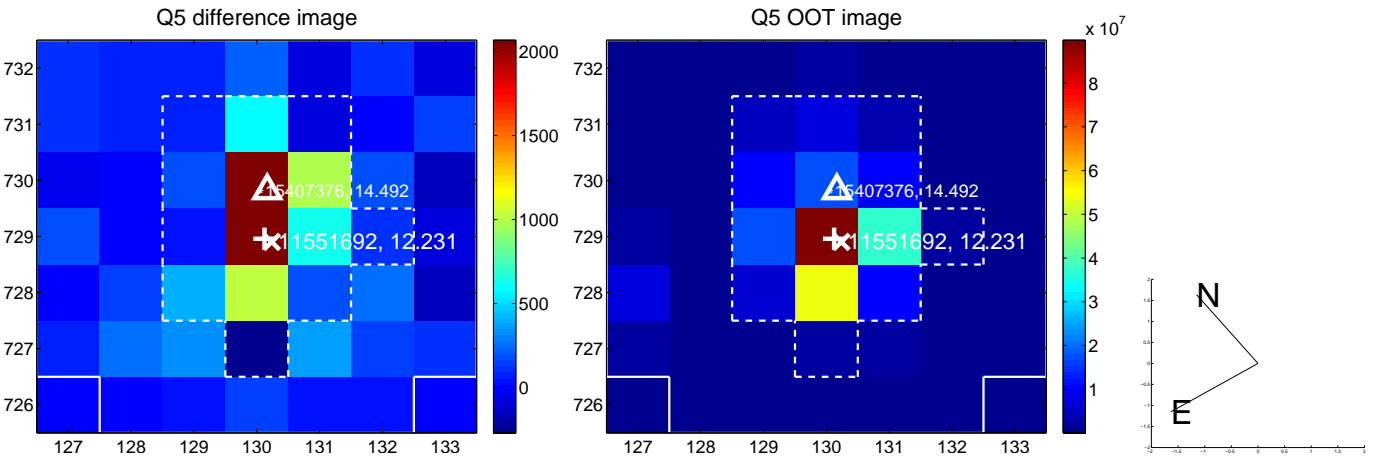


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

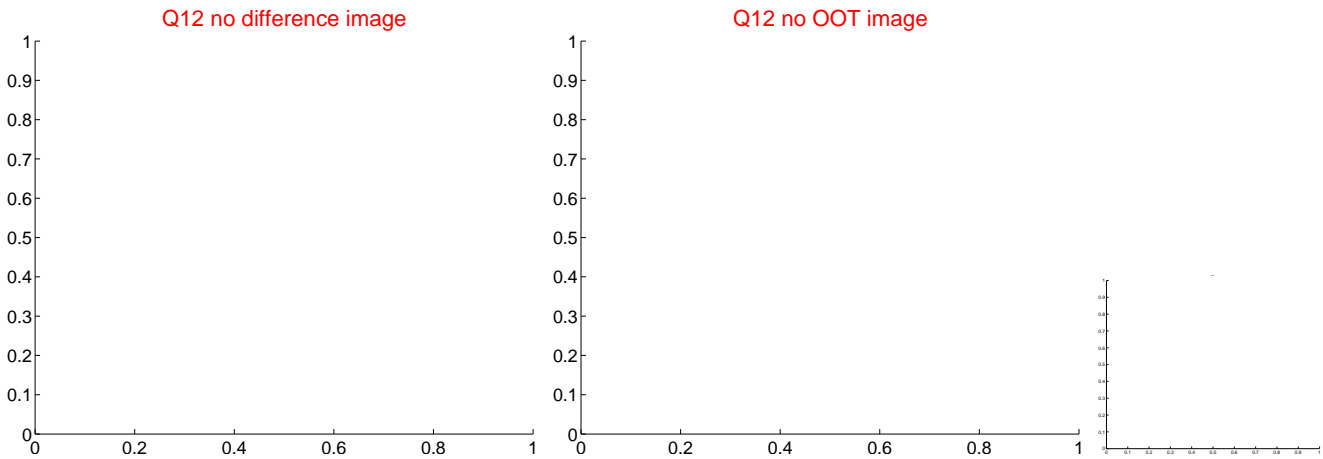
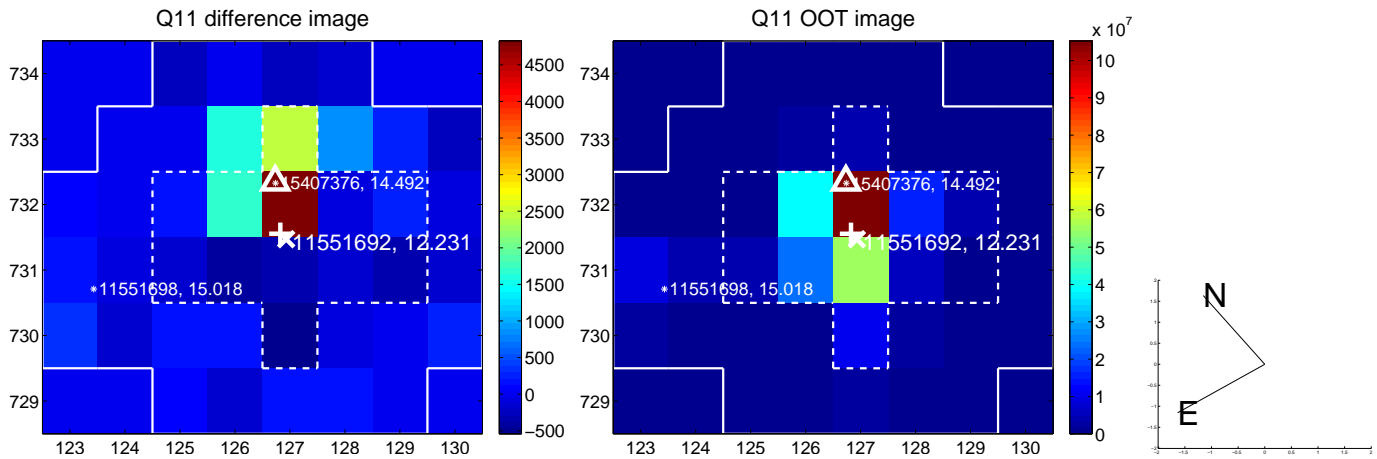
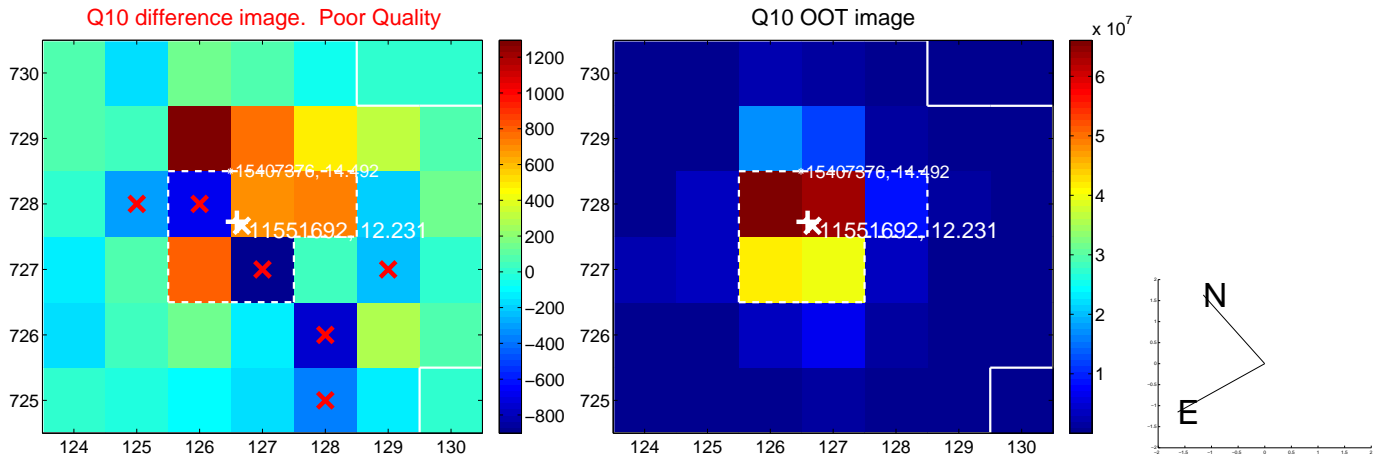
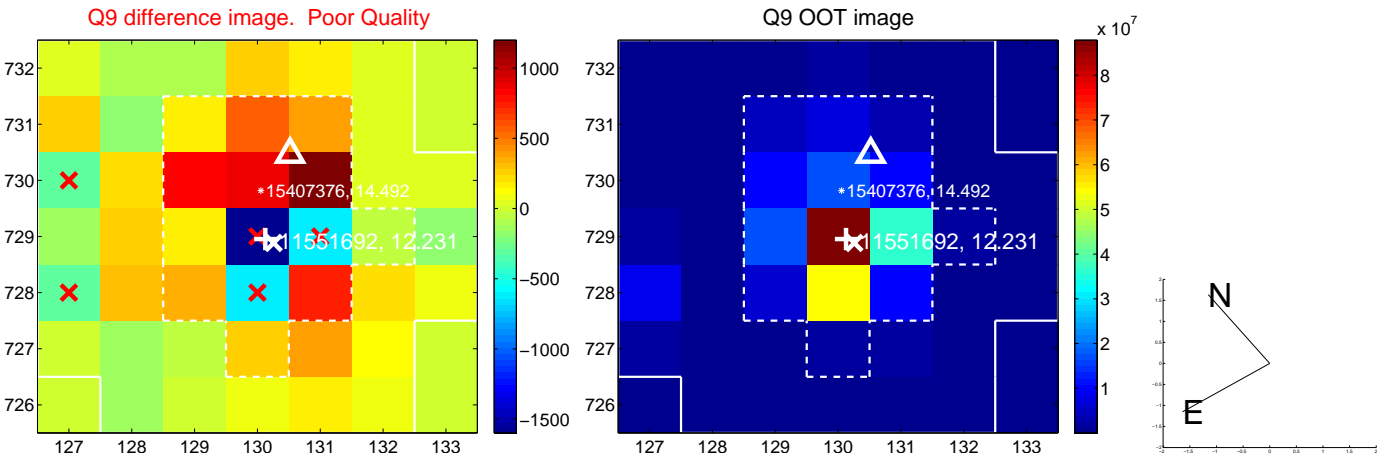
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



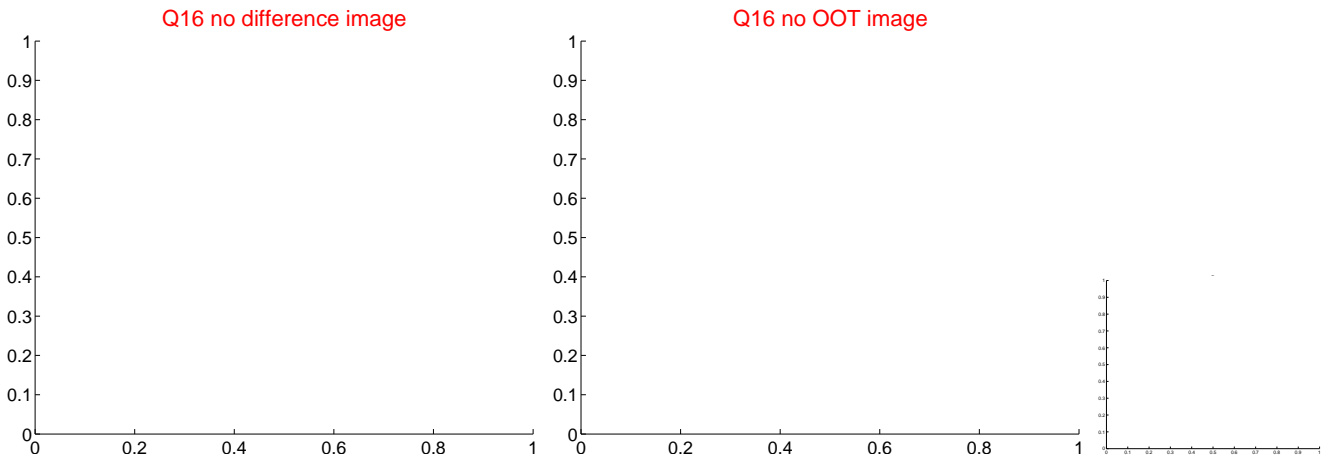
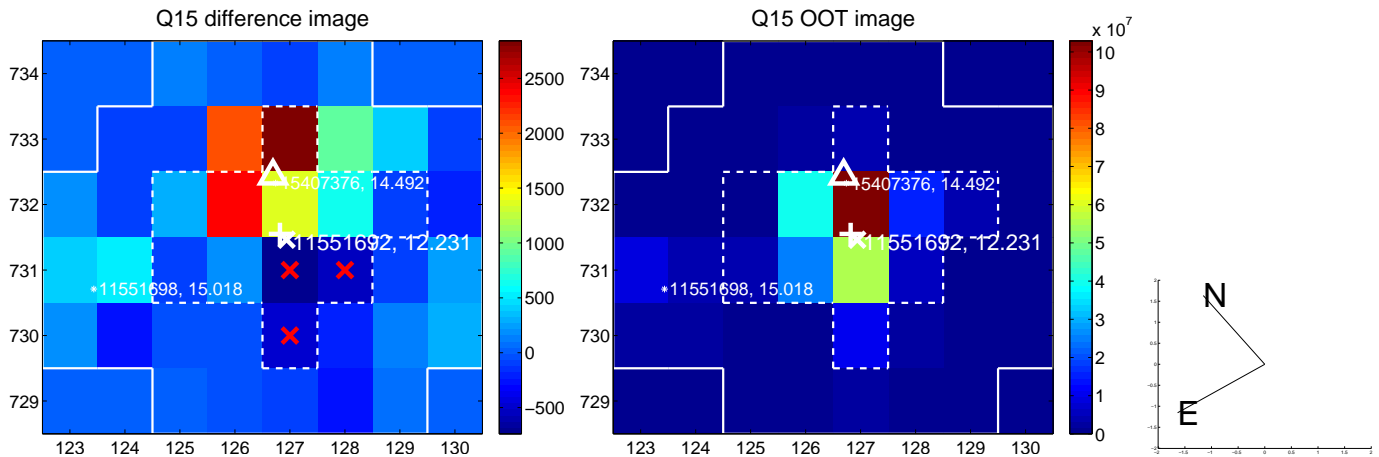
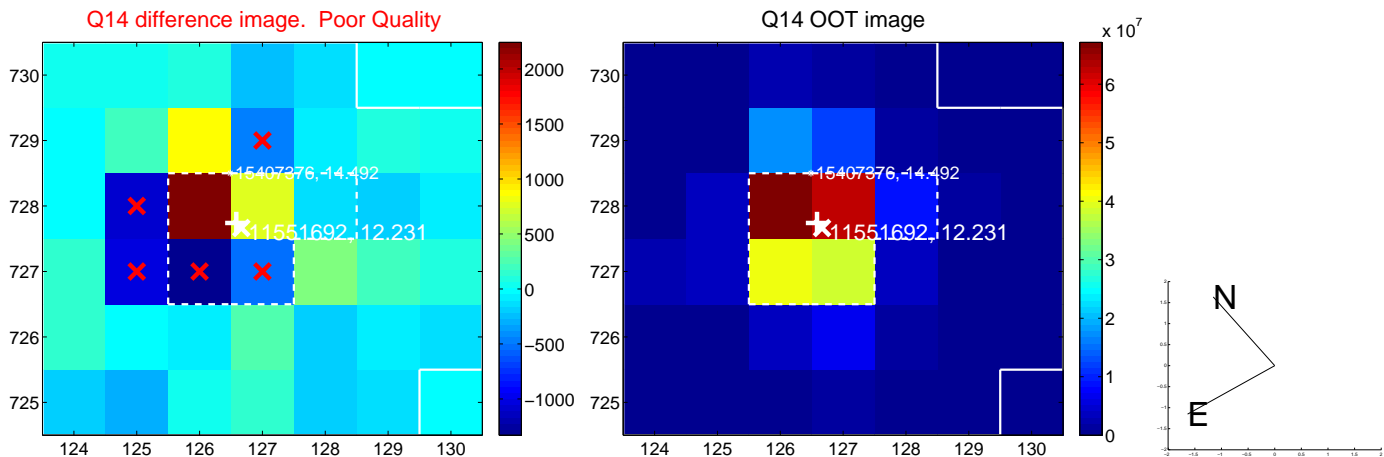
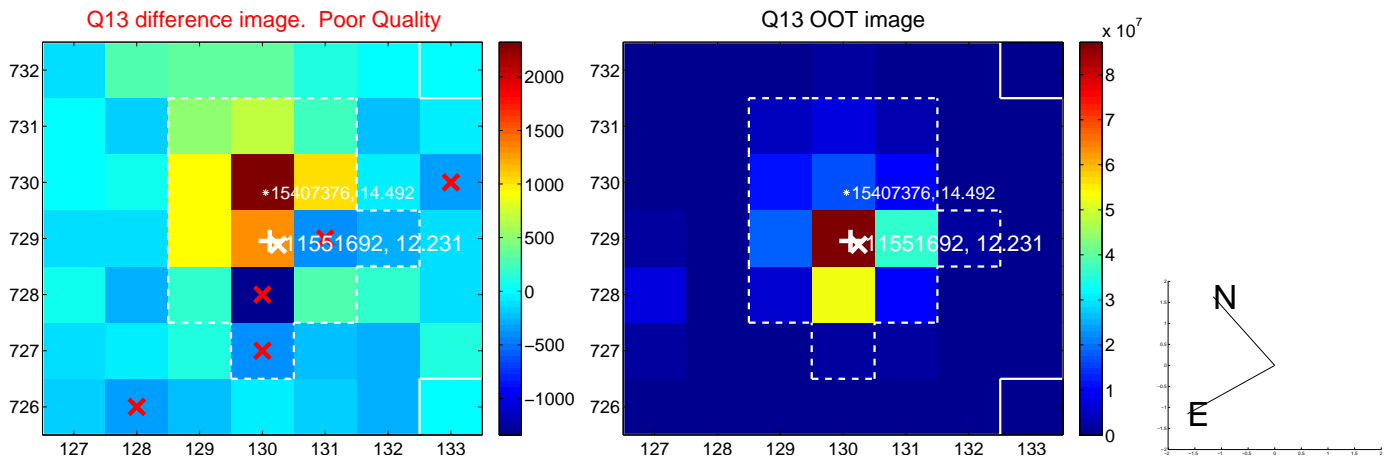
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



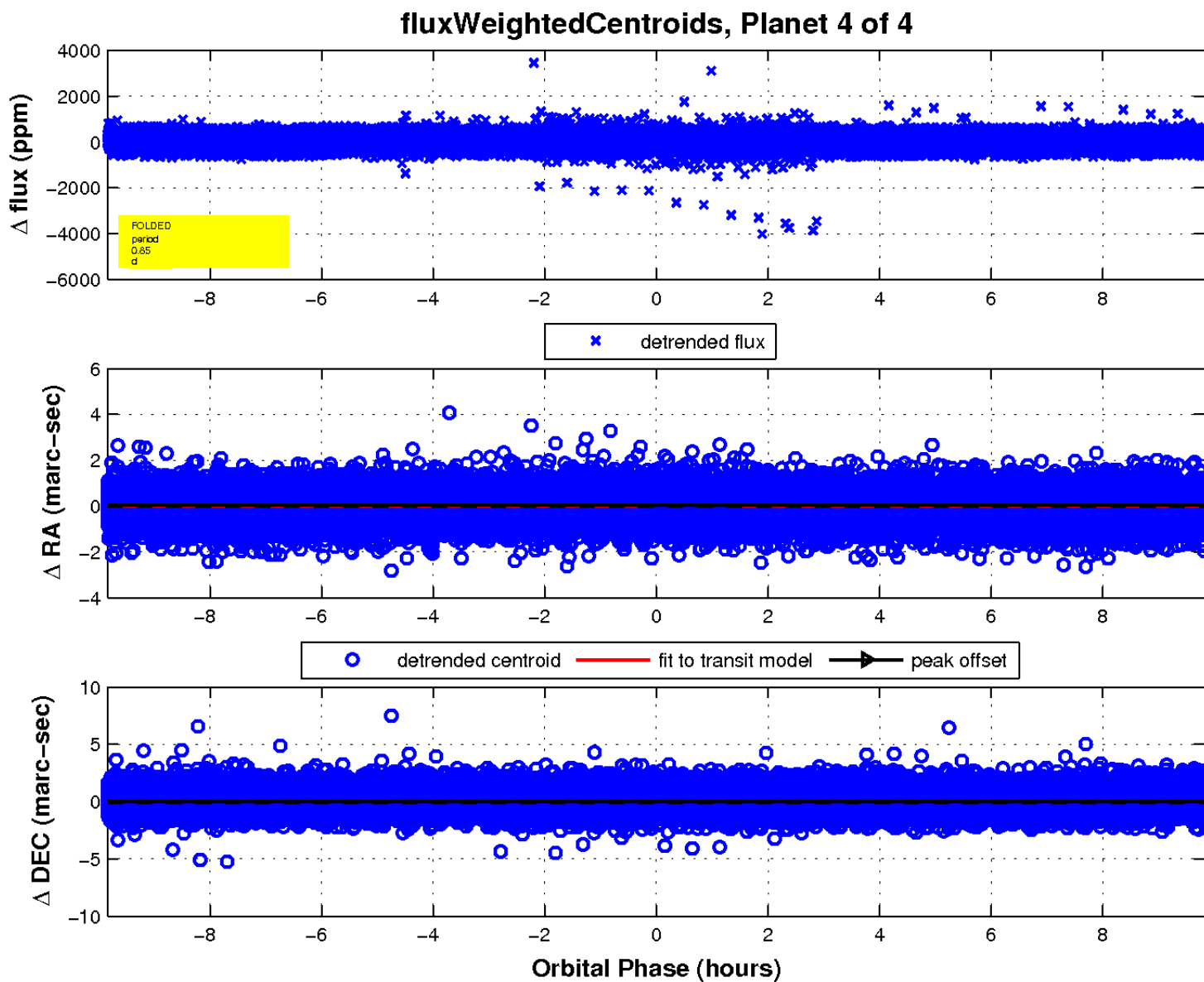
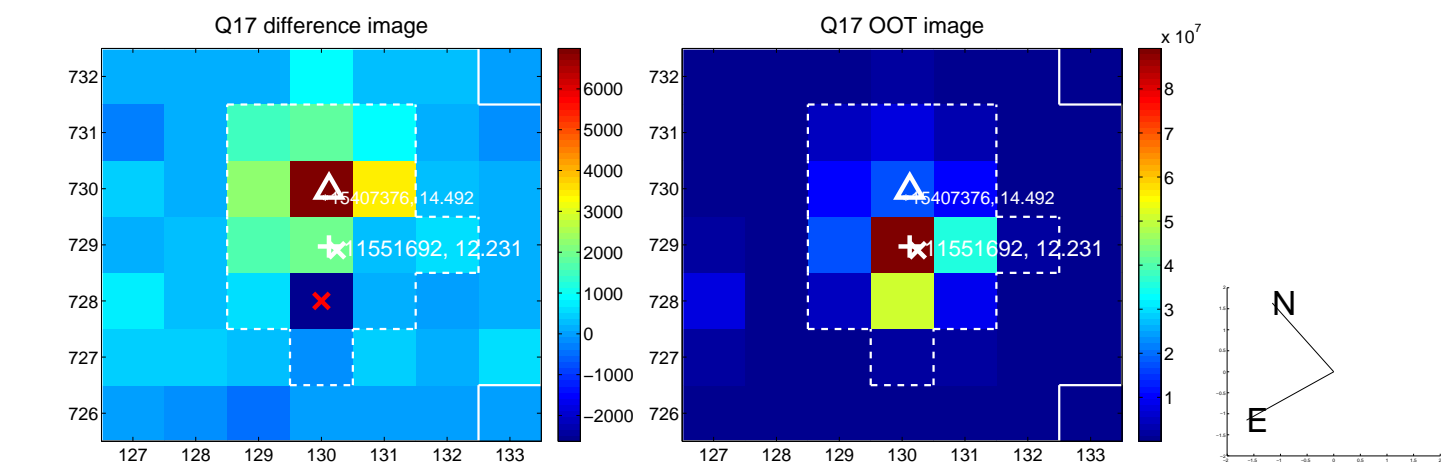
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

