

KIC 009541567

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})
009541567-01	OBS	No	0.748539	132.048849	10.7	1.838	13.6	8.6	2.23	9274	0.84	73817.12
009541567-02	OBS	7190.01	2.244693	131.997096	8.6	4.647	11.7	4.6	2.23	9274	0.68	17070.00
009541567-03	OBS	No	2.245581	133.081009	10.5	1.213	8.6	4.3	2.23	9274	0.83	17061.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009541567-01	OBS	FP	0.00	1	0	1	0	LPP_DV—HALO_GHOST
009541567-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT
009541567-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD

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 009541567-01

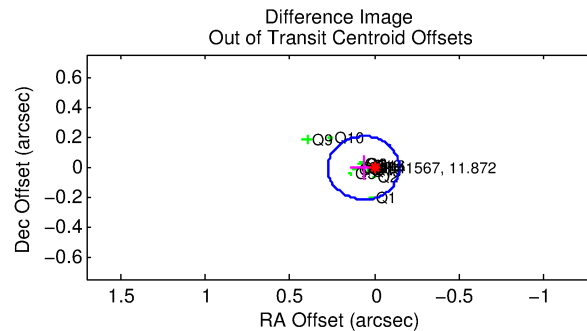
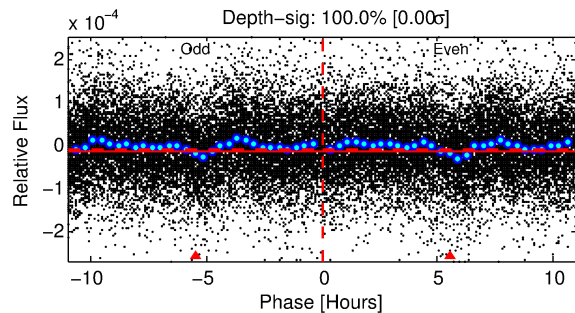
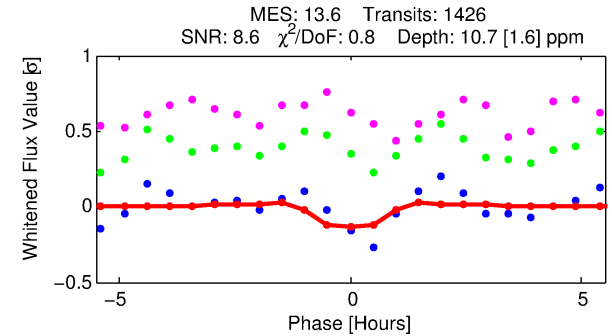
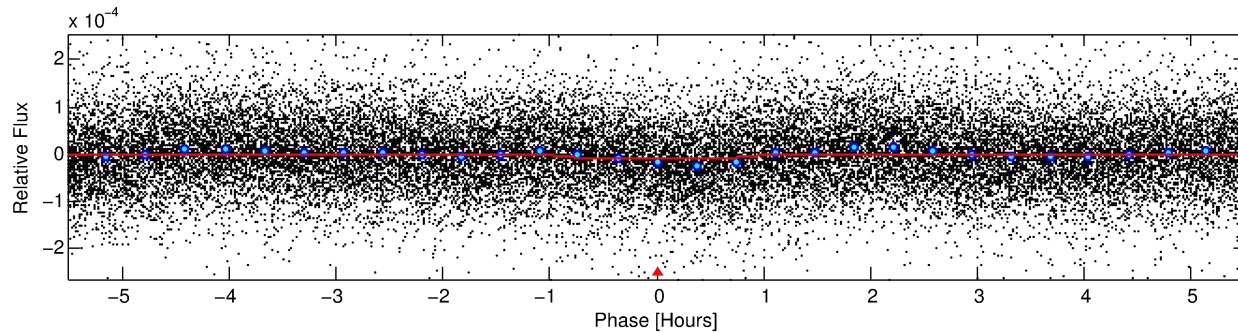
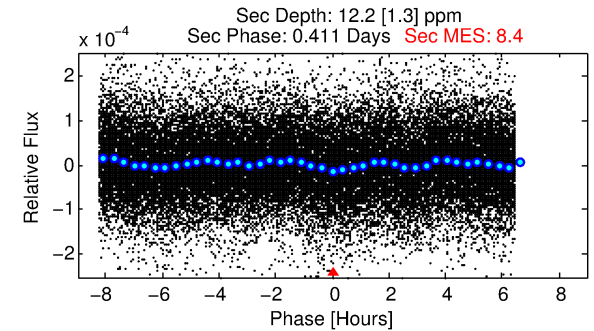
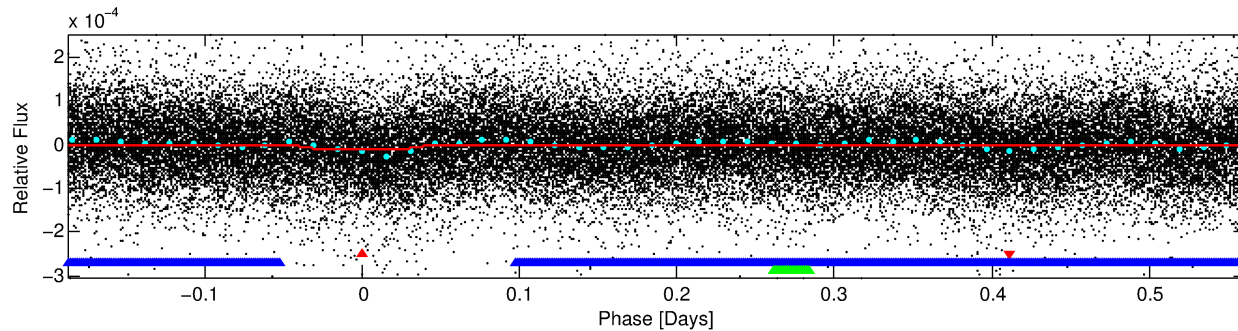
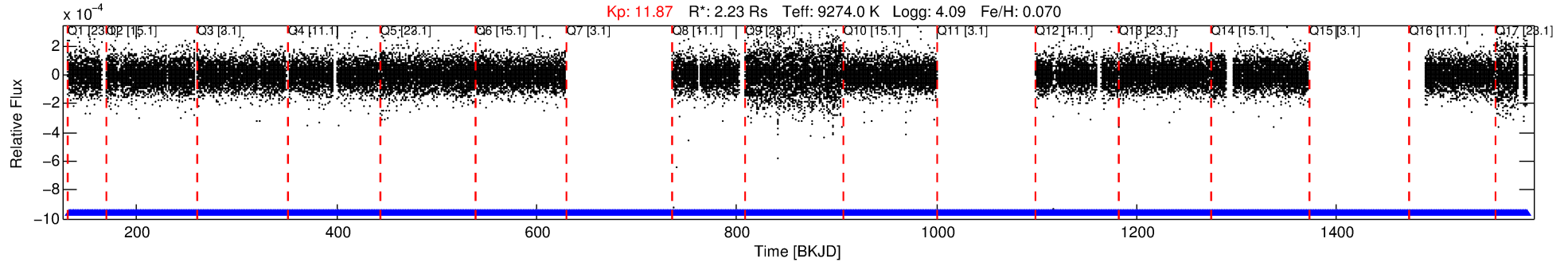
No Significant Match Found

DV One-Page Summary

KIC: 9541567 Candidate: 1 of 3 Period: 0.749 d

KOI: K07190 Corr: No Ephemeris Match

Kp: 11.87 R*: 2.23 Rs Teff: 9274.0 K Logg: 4.09 Fe/H: 0.070



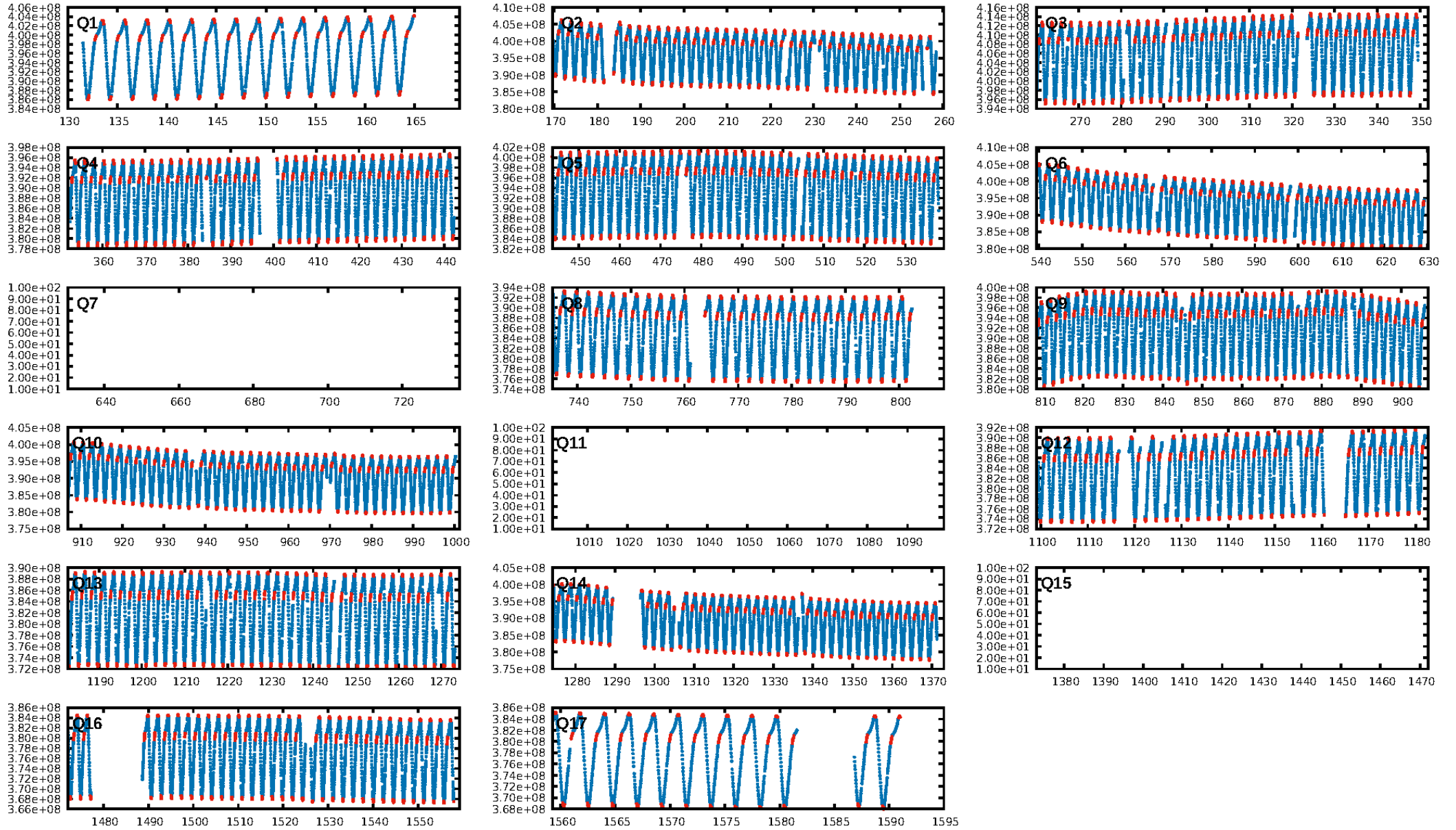
DV Fit Results:

Period = 0.74854 [0.00001] d
Epoch = 132.0488 [0.0026] BKJD
Rp/R* = 0.0035 [0.0005]
a/R* = 1.67 [0.88]
b = 0.90 [0.18]
Seff = 73817.12 [31990.94]
Teff = 4203 [455] K
Rp = 0.84 [0.32] Re
a = 0.0211 [0.0060] AU
Ag = 4.24 [2.02] [1.60σ]
Teffp = 9323 [820] K [5.46σ]

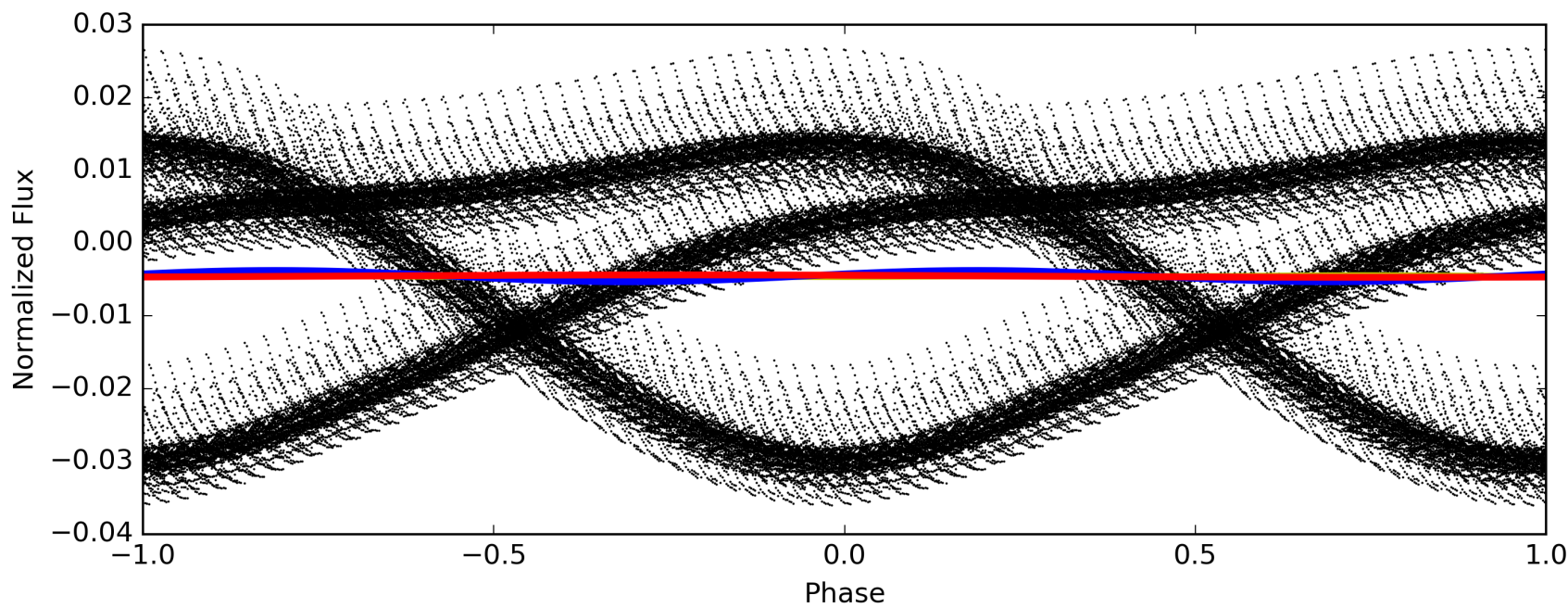
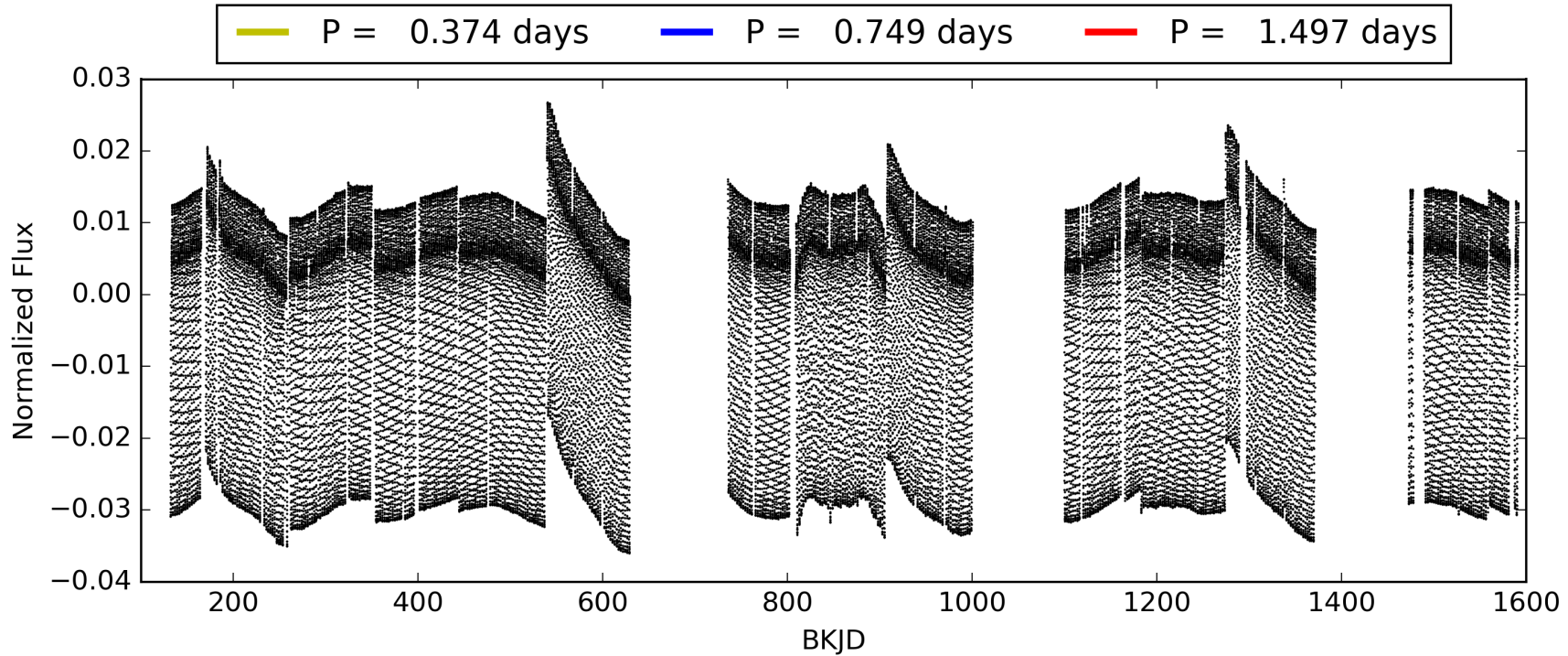
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [7.19σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.31e-37
RollingBand-fgt: 1.00 [1345/1345]
GhostDiagnostic-chr: 0.1422
Centroid-sig: 15.1%
Centroid-so: 1.477 arcsec [1.04σ]
OotOffset-rm: 0.066 arcsec [0.94σ]
KicOffset-rm: 0.006 arcsec [0.08σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.43 [6/14]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 009541567-01, PDC Light Curves

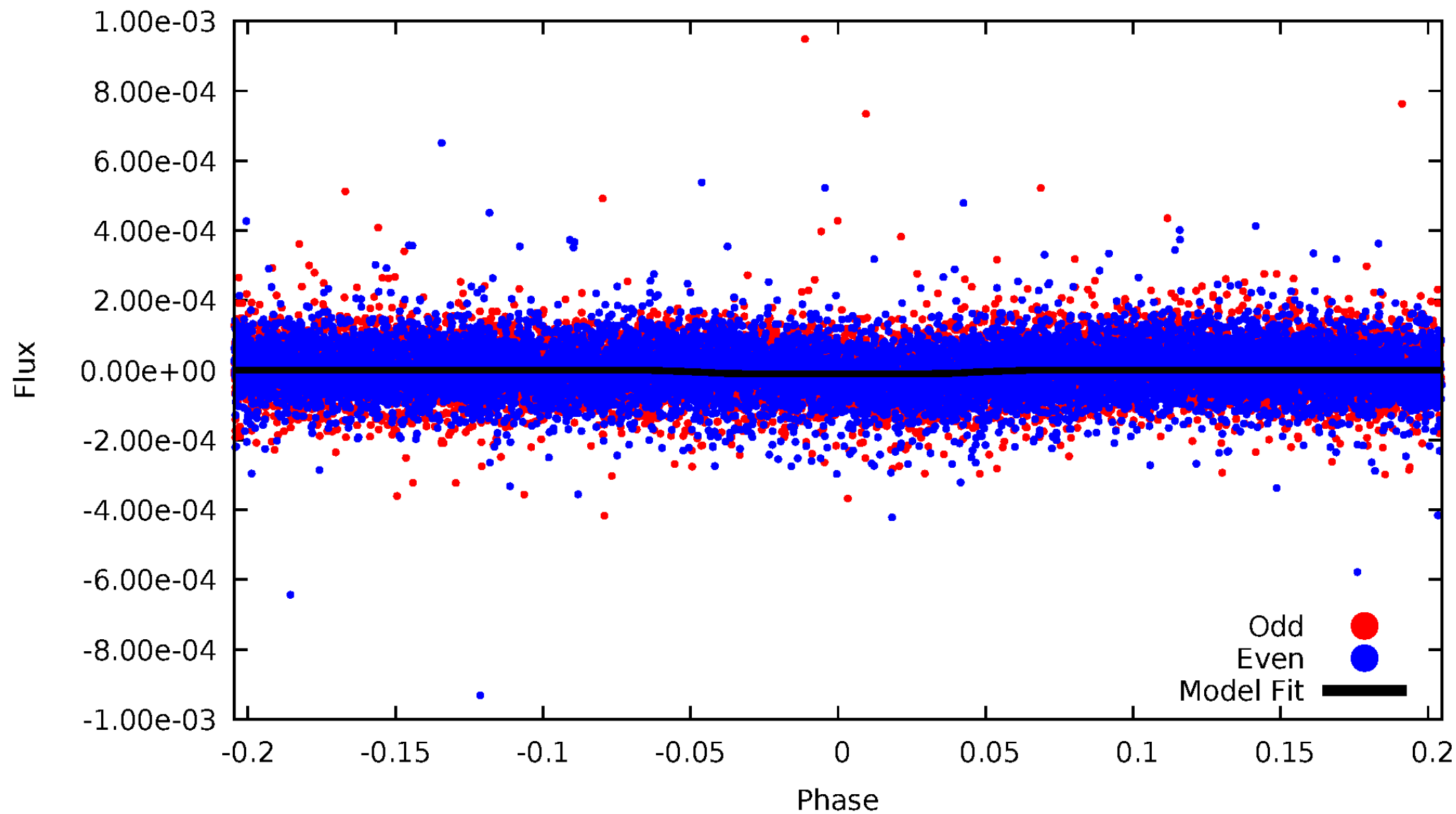


TCE 009541567-01



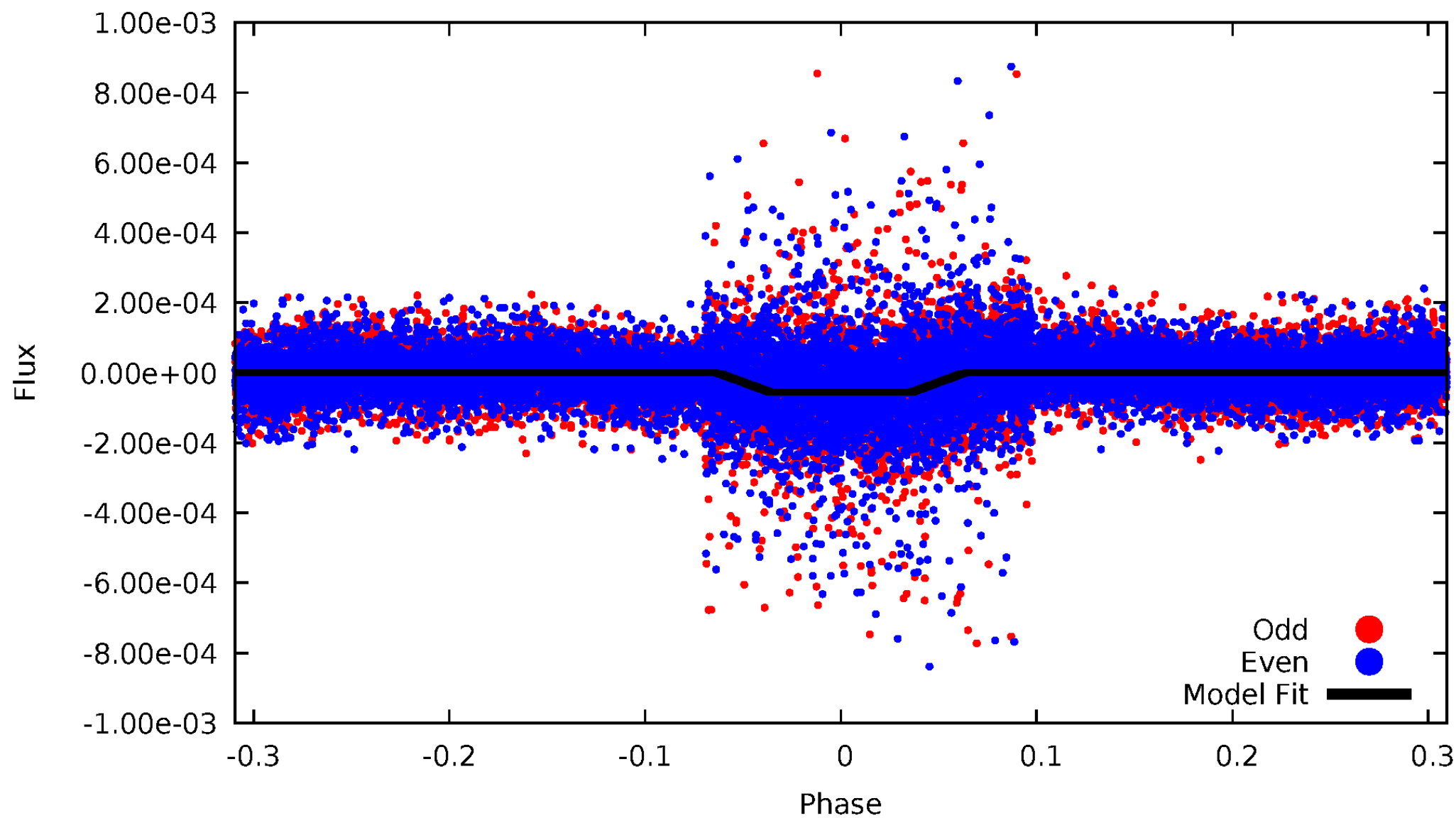
DV Odd/Even

TCE 009541567-01



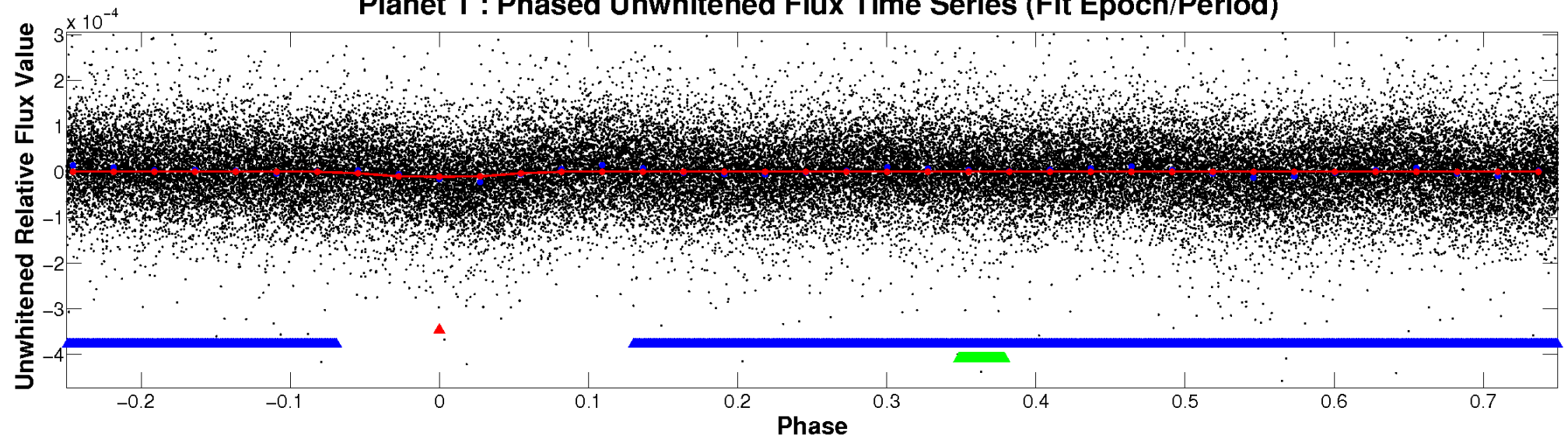
ALT Odd/Even

TCE 009541567-01

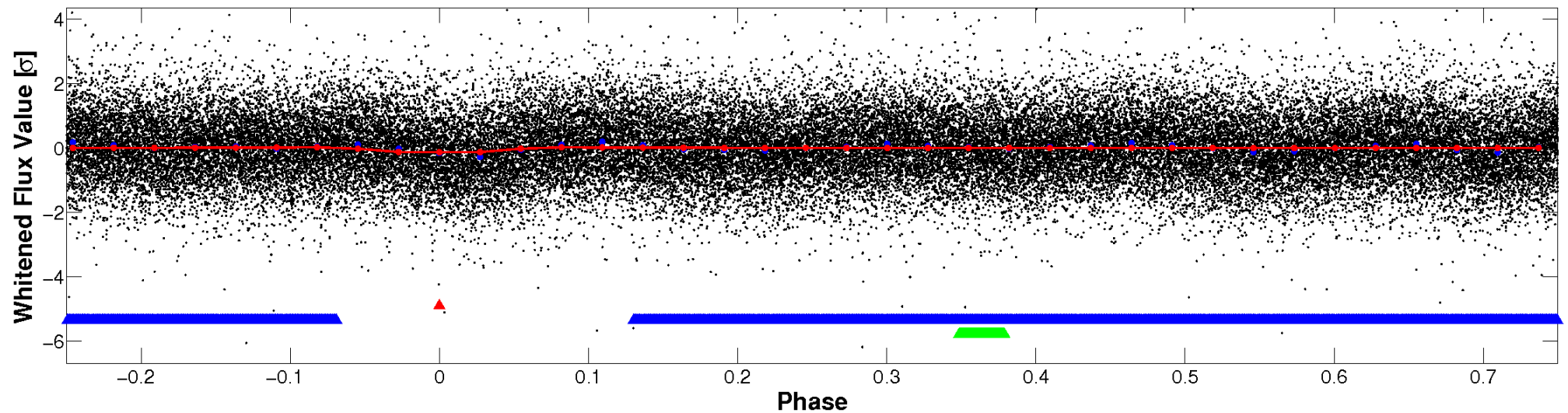


Non-Whitened Vs. Whitened Light Curve

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

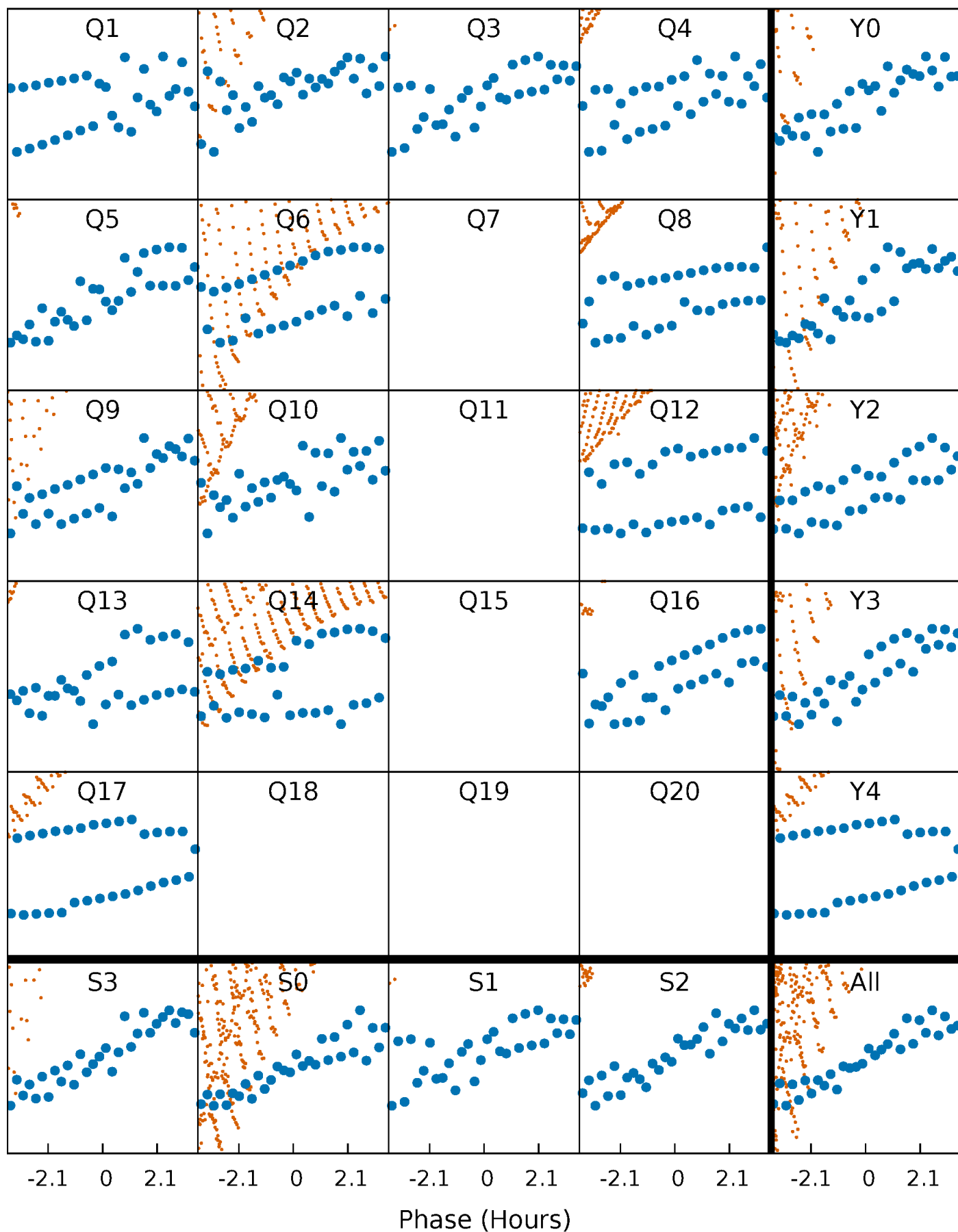


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



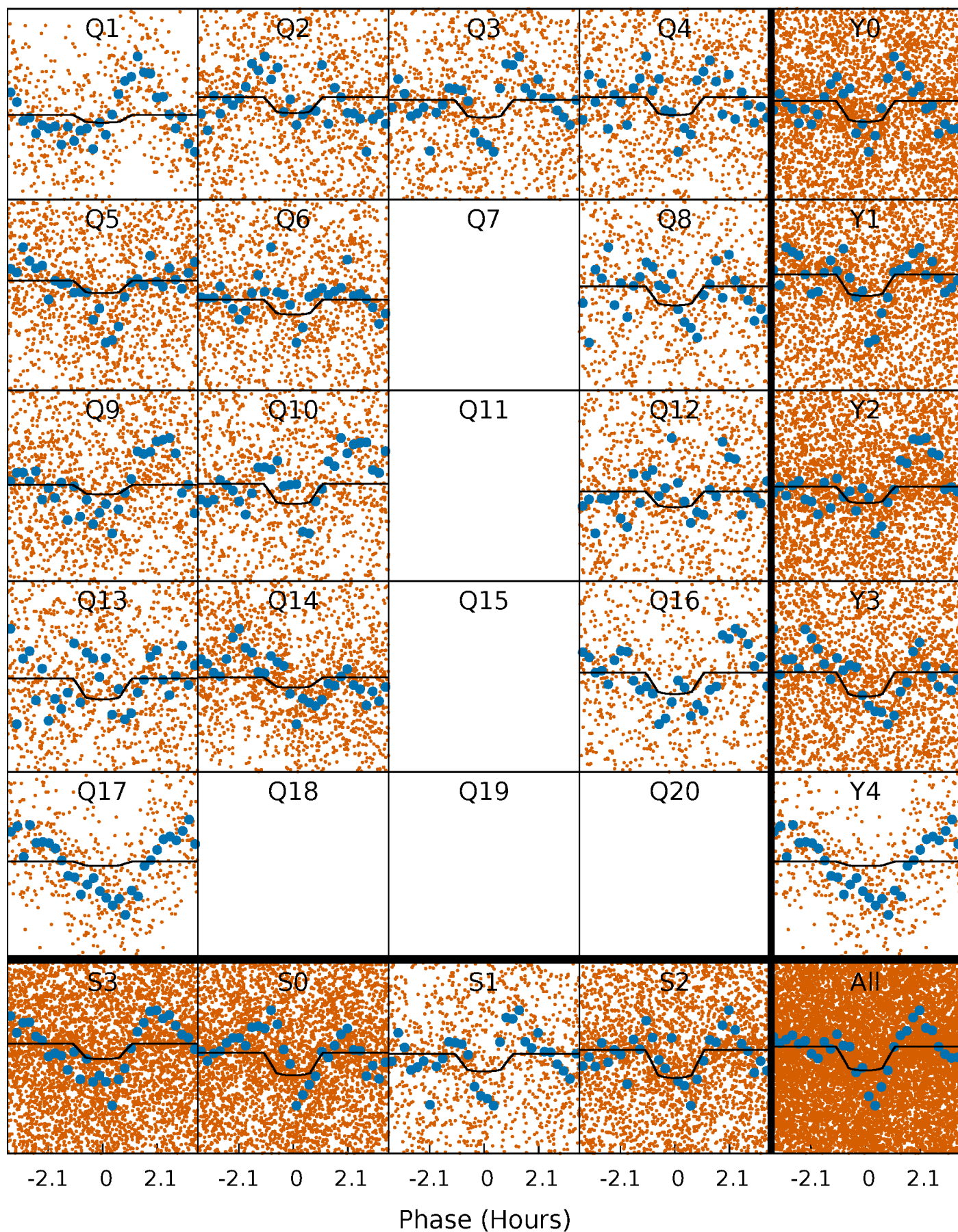
PDC Quarter-Phased Transit Curves

TCE 009541567-01 P= 0.748539 Days $T_0=132.048849$ (BKJD)



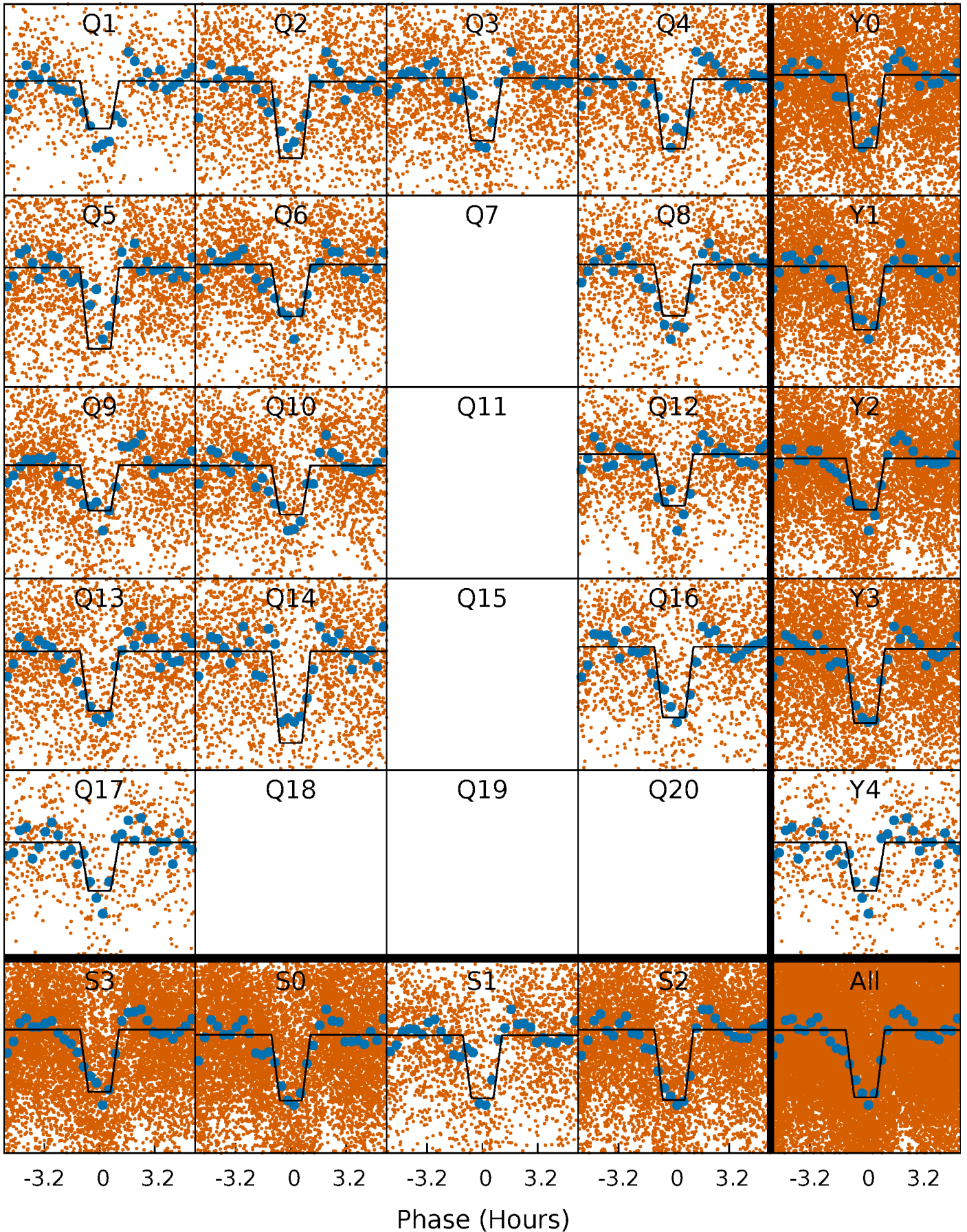
DV Quarter-Phased Transit Curves

TCE 009541567-01 P= 0.748539 Days $T_0=132.048849$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

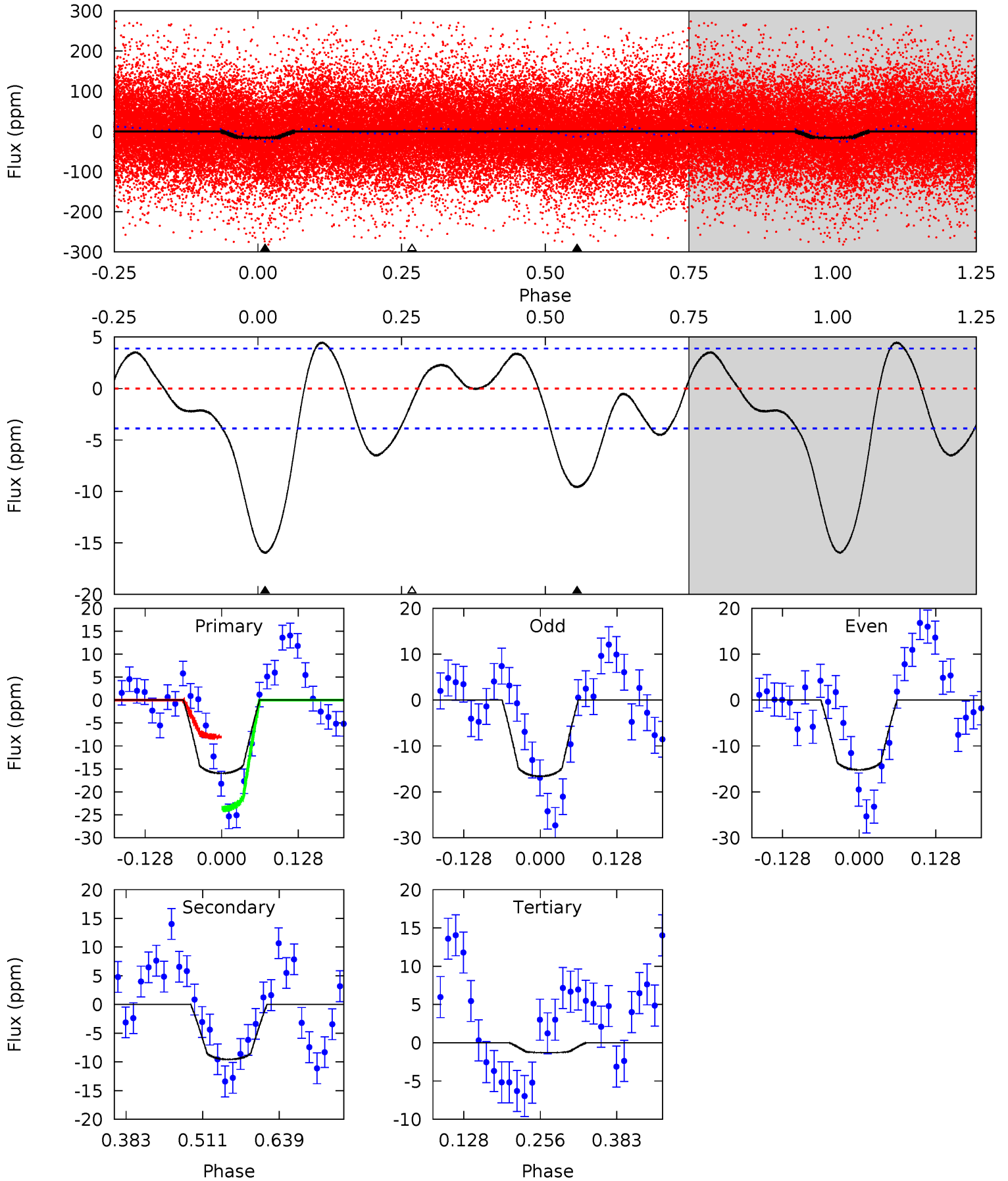
TCE 009541567-01 P= 0.748563 Days $T_0=132.032560$ (BKJD)



DV Model-Shift Uniqueness Test

009541567-01, P = 0.748539 Days, E = 131.300310 Days

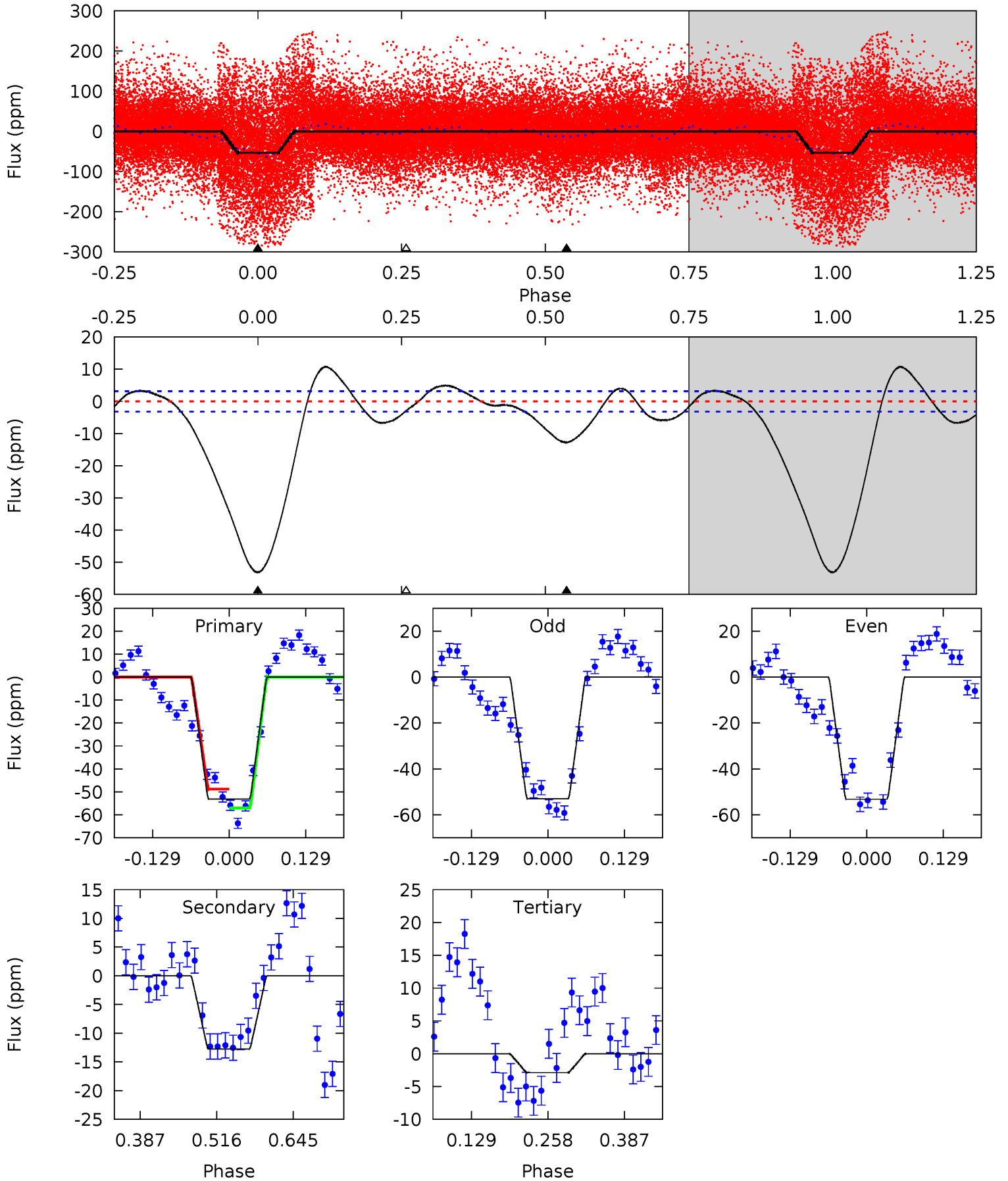
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.6	11.1	1.51	0	4.51	1.52	3.30	17.0	18.6	9.62	11.1	0.82	1.21	0.22	9.15



Alt Model-Shift Uniqueness Test

009541567-01, P = 0.748563 Days, E = 131.283997 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
75.6	18.2	4.13	0	4.51	1.52	5.64	71.5	75.6	14.0	18.2	0.11	1.02	0.17	5.85



Stellar Parameters For KIC 009541567

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	9274^{+255}_{-475}	$4.092^{+0.158}_{-0.193}$	$0.070^{+0.150}_{-0.650}$	$2.227^{+0.805}_{-0.659}$	$2.236^{+0.396}_{-0.594}$	$0.285^{+0.265}_{-0.160}$
	+3%/-5%	+4%/-5%	+214%/-929%	+36%/-30%	+18%/-27%	+93%/-56%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009541567-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-10 ± 1	$0.84^{+0.20}_{-0.16}$	5891^{+459}_{-460}	8286^{+977}_{-859}	$3.245^{+1.469}_{-1.088}$
Alt.	-13 ± 1	$1.82^{+0.34}_{-0.28}$	5883^{+501}_{-476}	5424^{+359}_{-353}	$0.903^{+0.341}_{-0.229}$

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 $A_{\text{obs}} \gg 1.0$

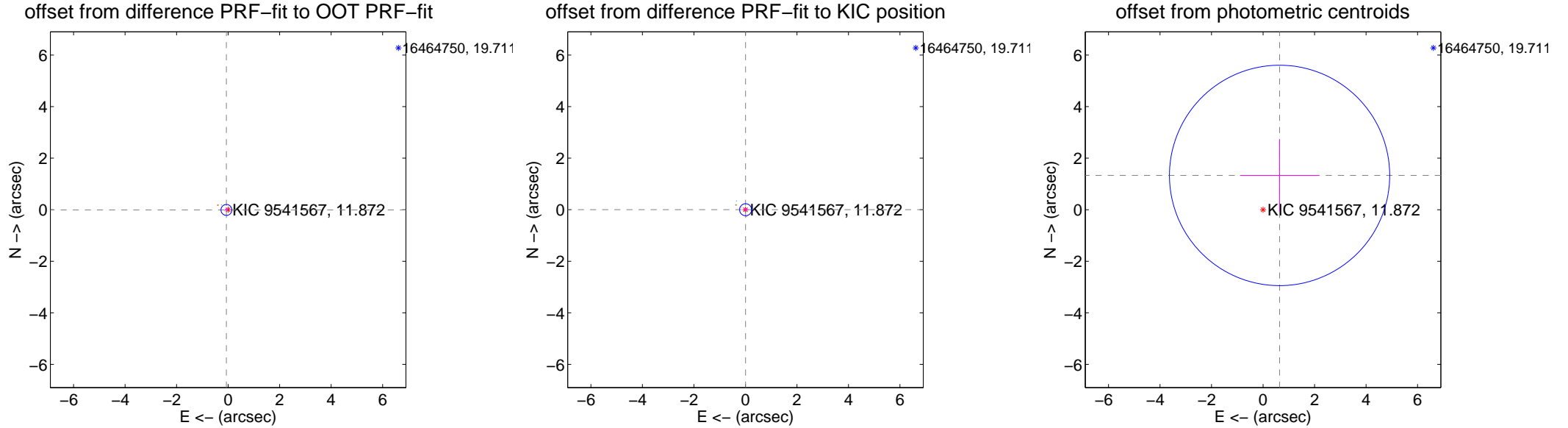
DV Centroid Data

Supplemental centroid analysis for 009541567-01. **Kepler magnitude: 11.87.** Transit SNR 8.63

There are 6 quarters with good PRF difference image offsets

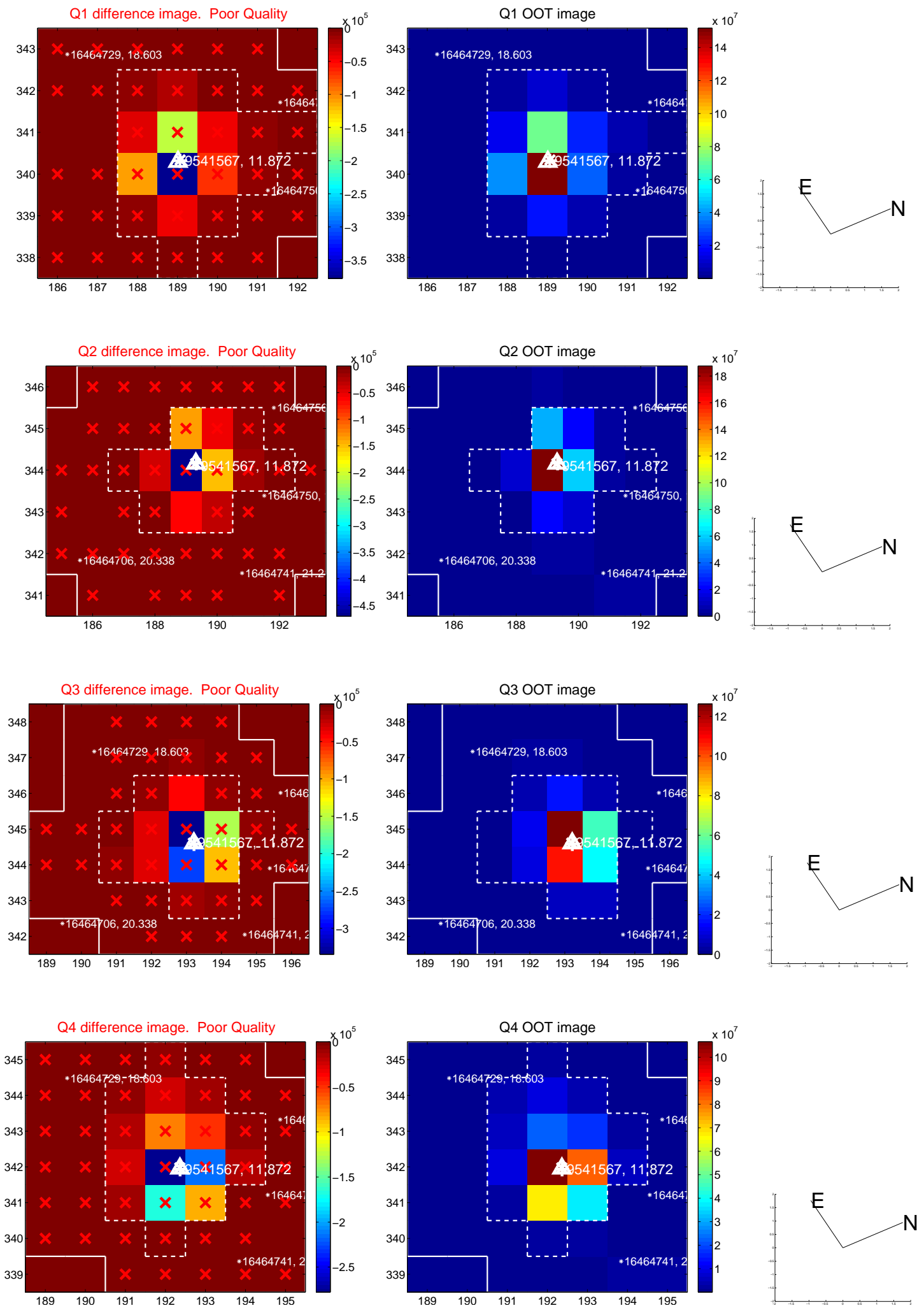
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.066 ± 0.070	0.94	0.066 ± 0.071	-0.009 ± 0.071
PRF-fit source offset from KIC position	0.006 ± 0.078	0.08	-0.006 ± 0.078	0.000 ± 0.075
photometric centroid source offset	1.48 ± 1.42	1.04	-0.64 ± 1.53	1.33 ± 1.40

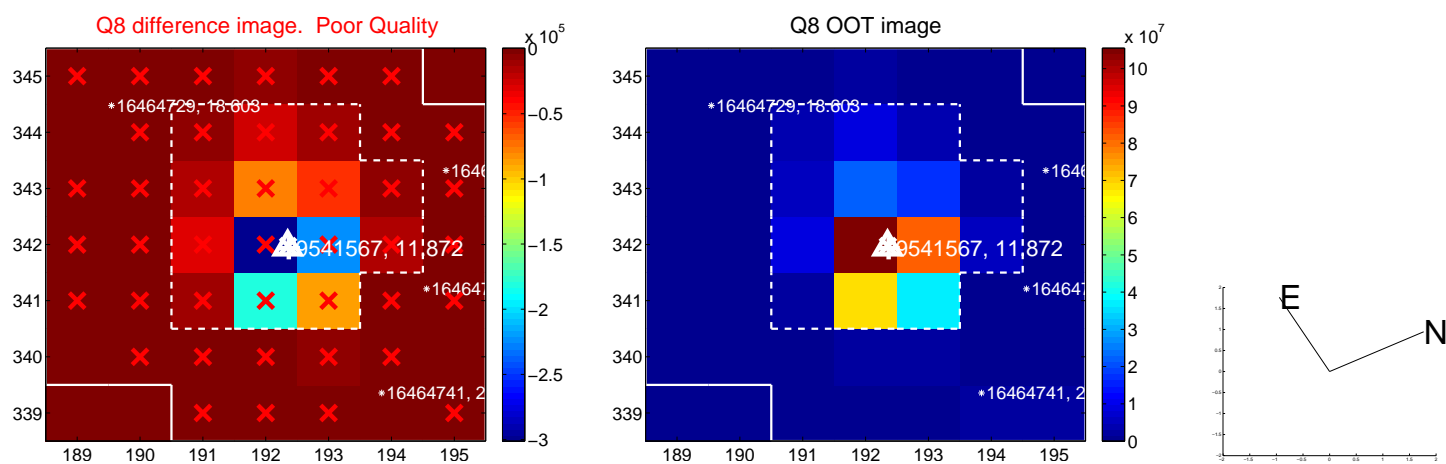
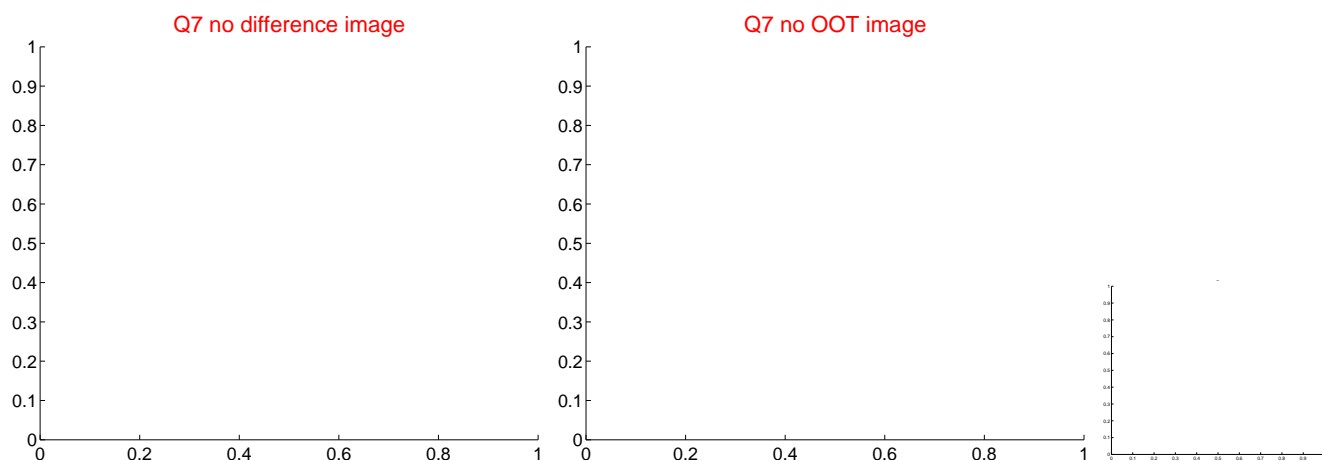
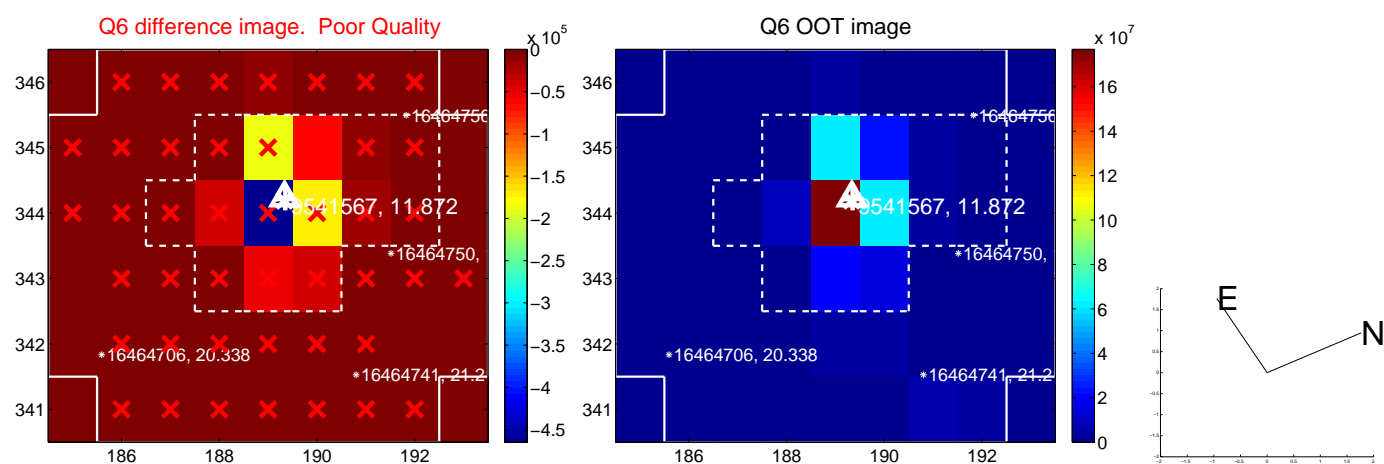
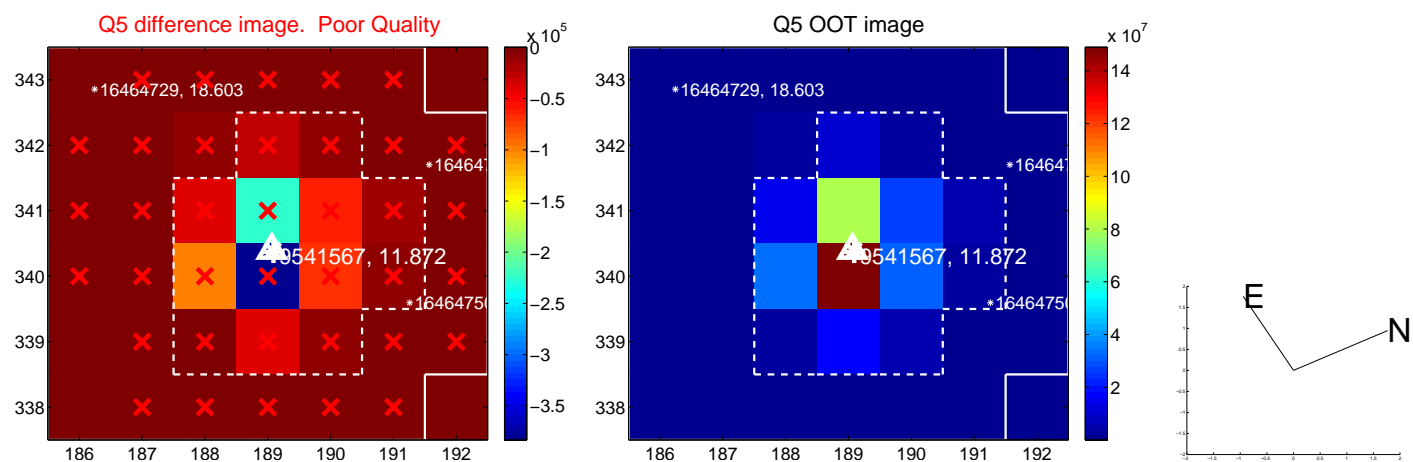


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

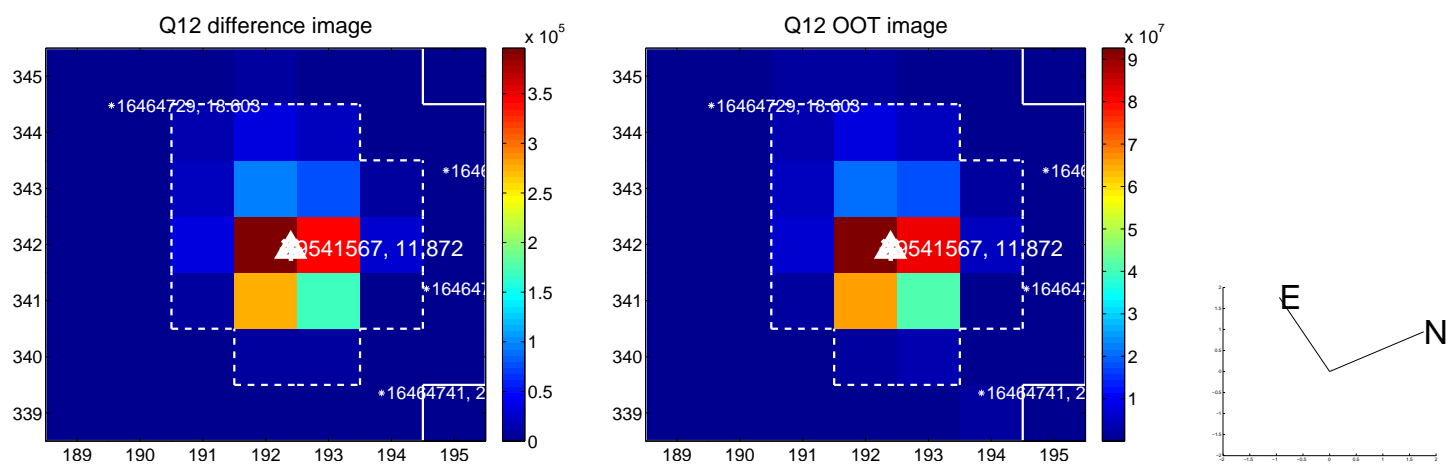
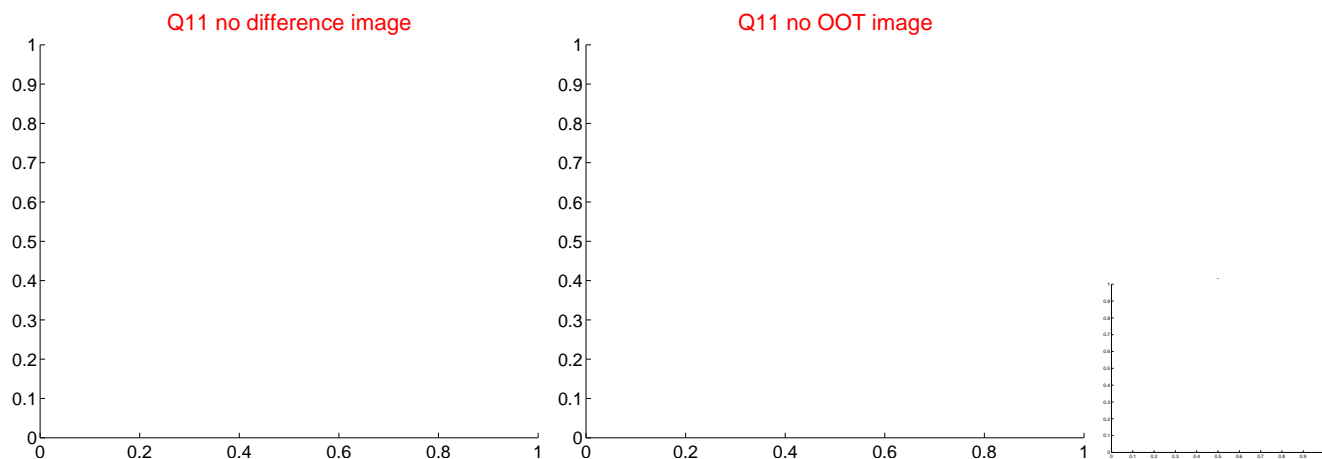
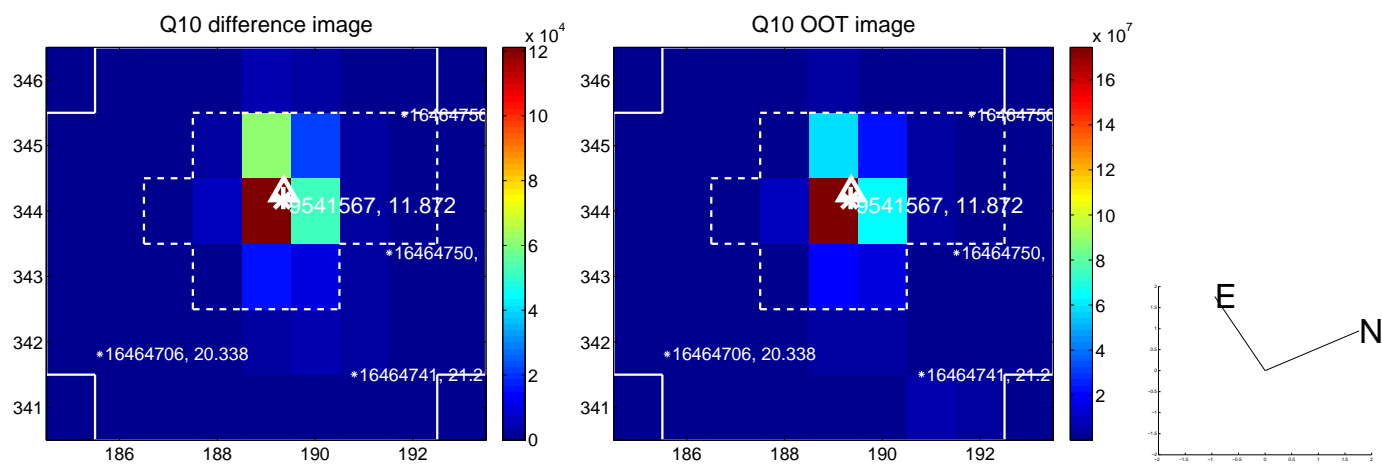
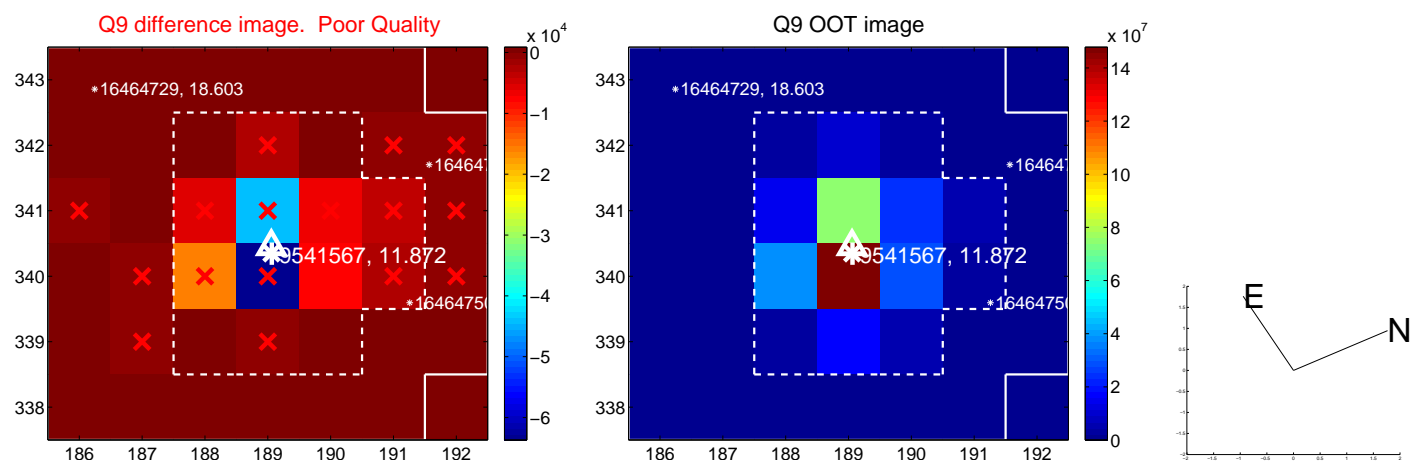
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



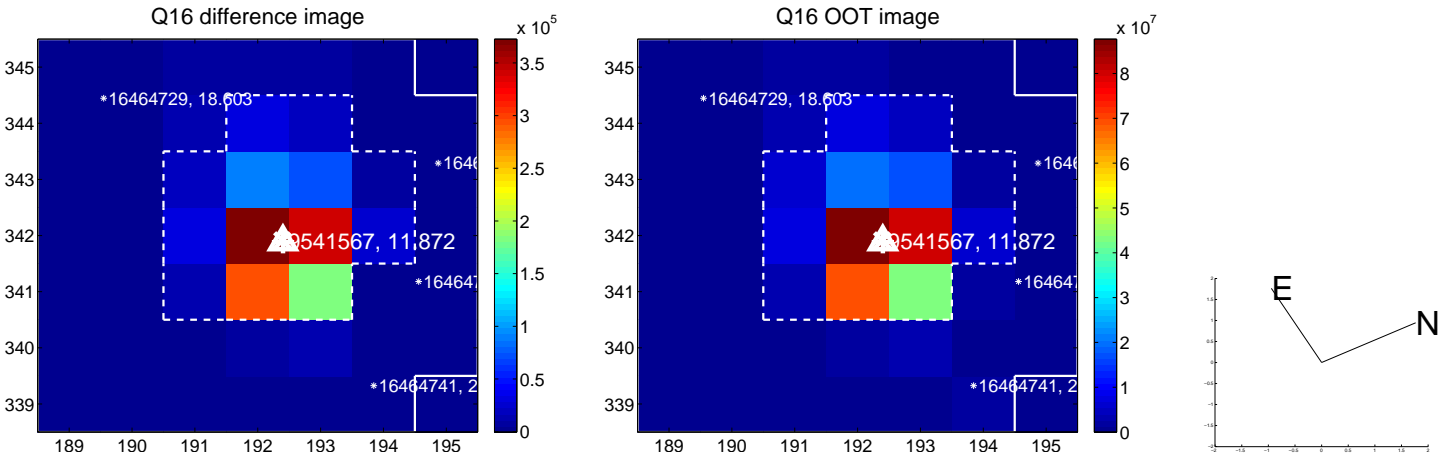
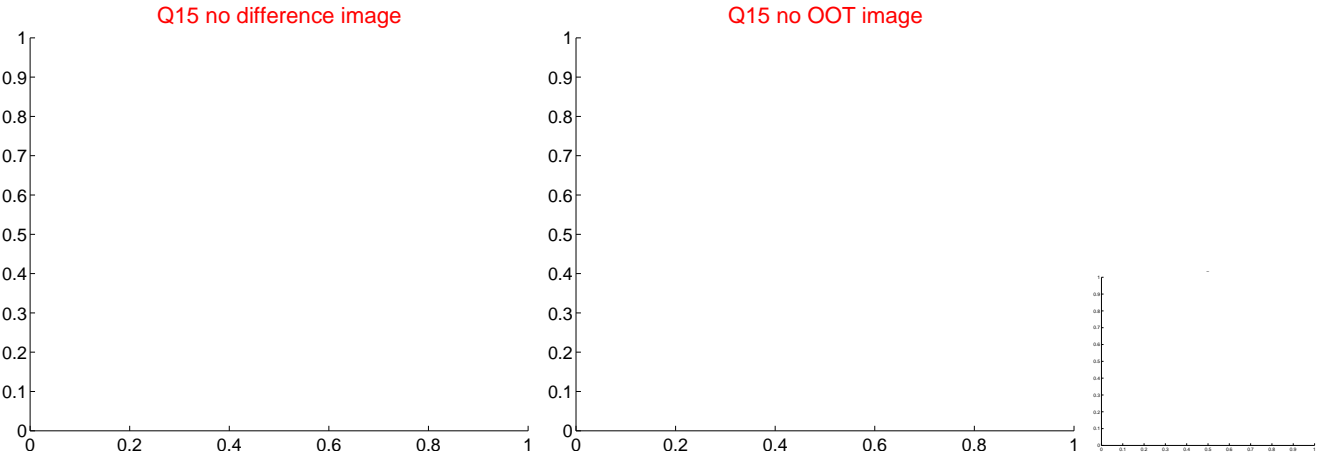
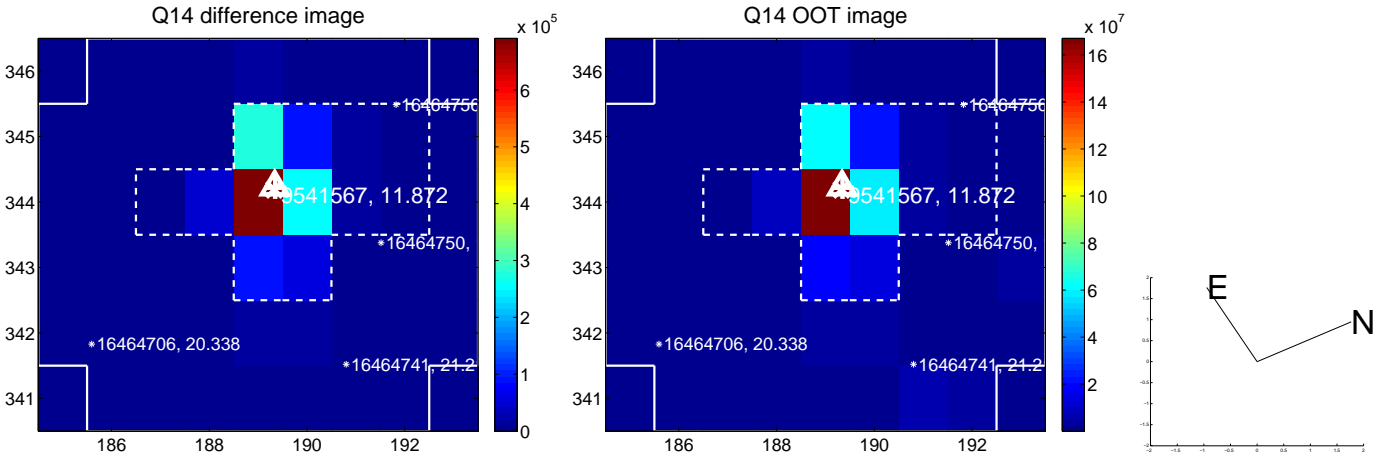
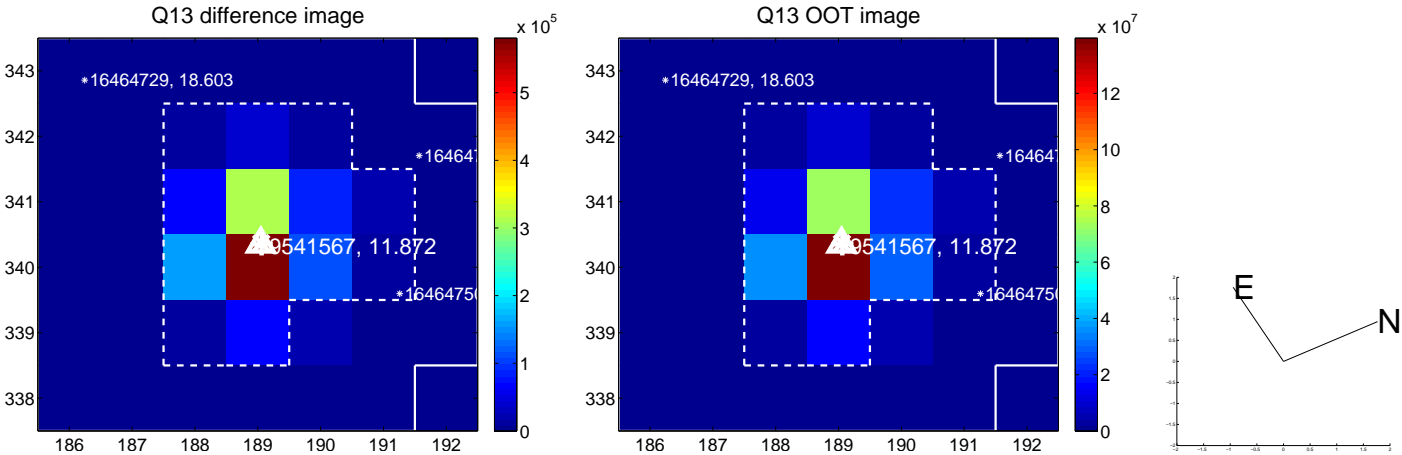
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

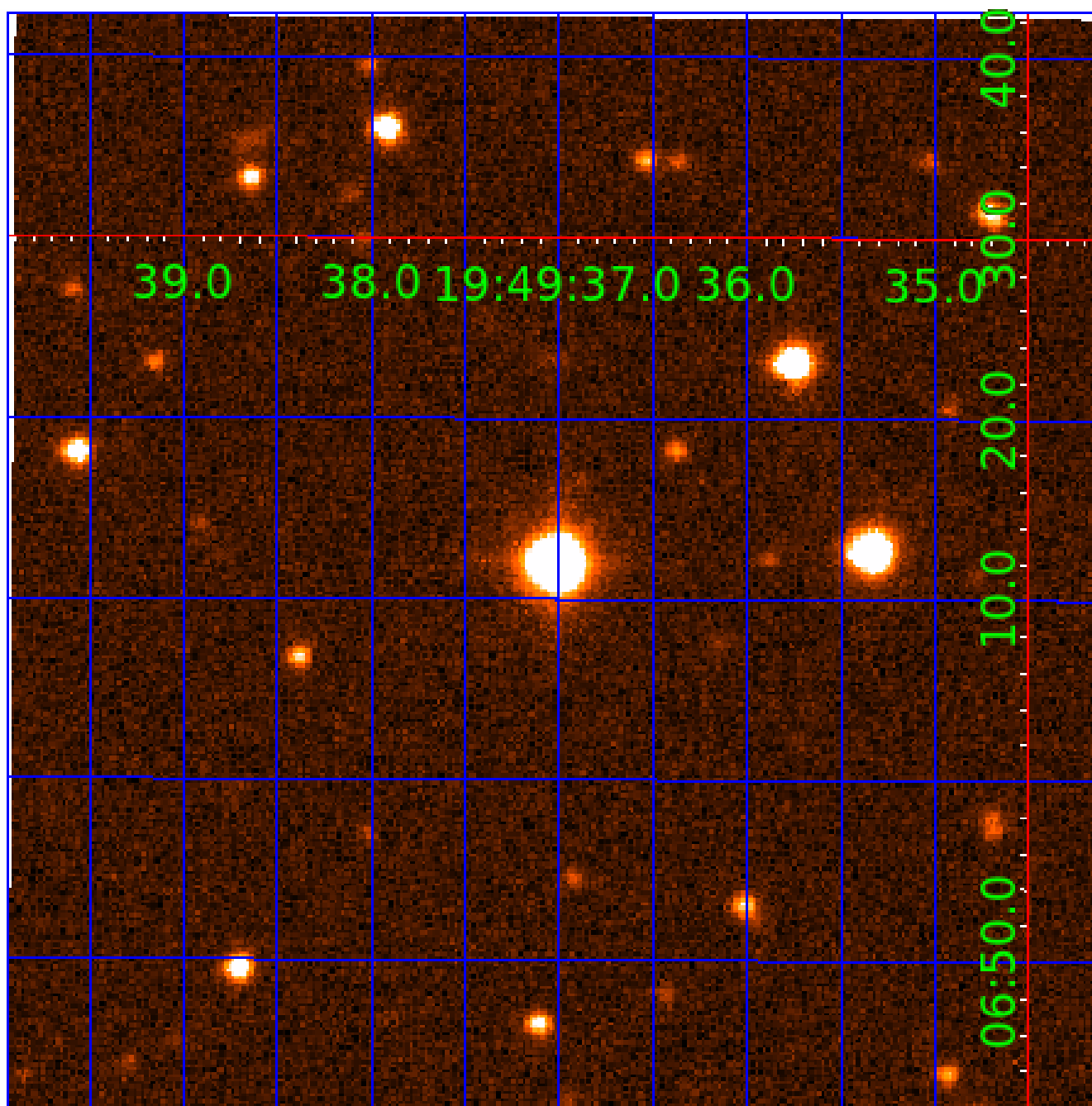


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009541567

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})
009541567-01	OBS	No	0.748539	132.048849	10.7	1.838	13.6	8.6	2.23	9274	0.84	73817.12
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Robovetter Results

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009541567-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT
009541567-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD

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 009541567-02

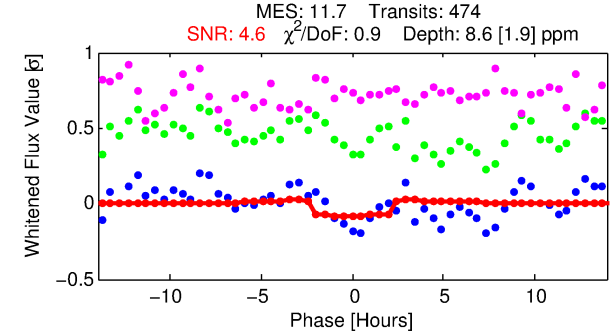
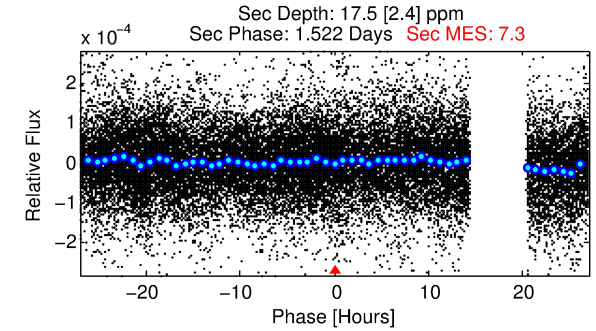
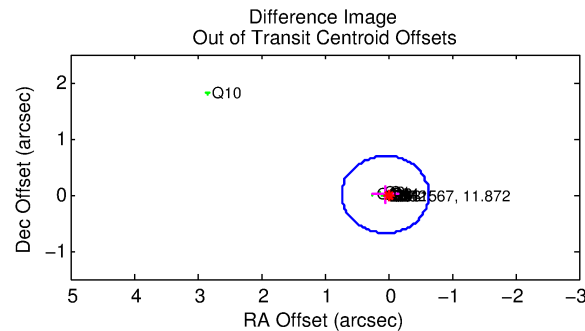
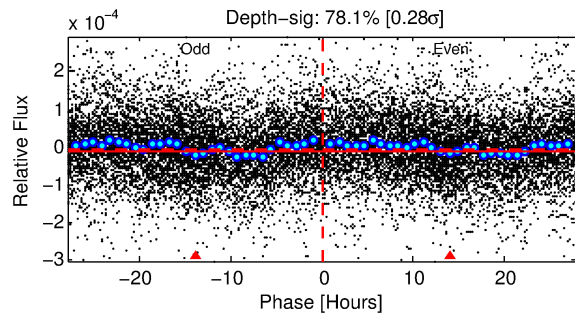
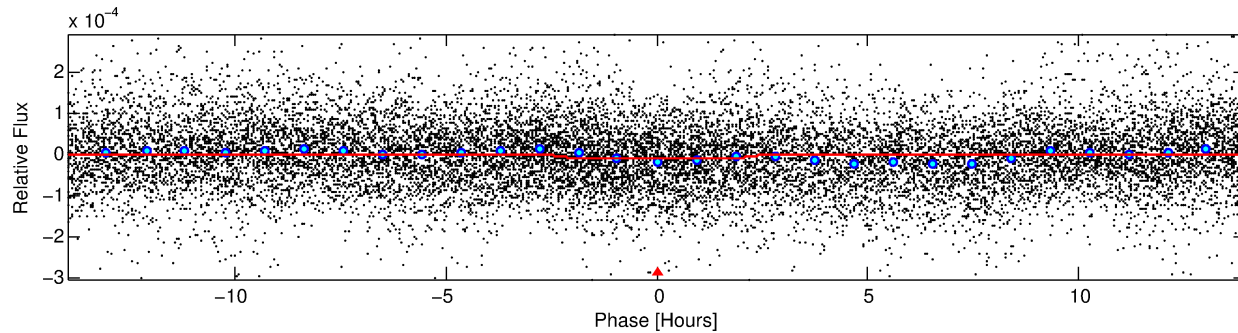
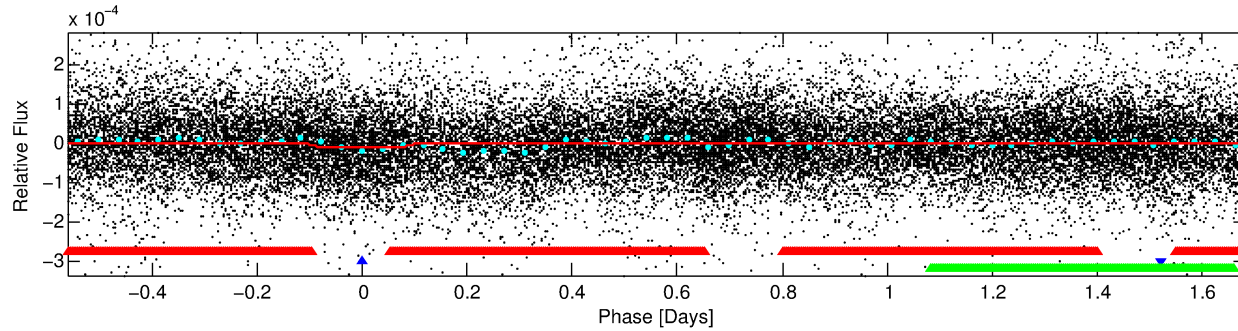
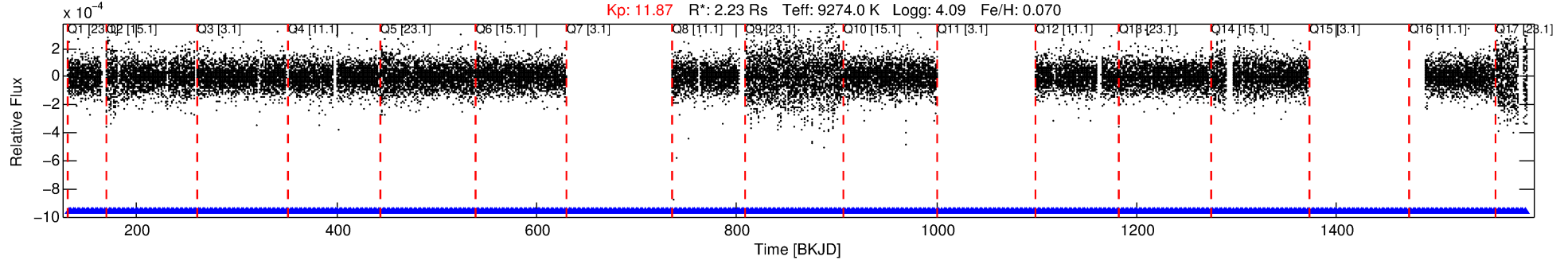
No Significant Match Found

DV One-Page Summary

KIC: 9541567 Candidate: 2 of 3 Period: 2.245 d

KOI: K07190 Corr: No Ephemeris Match

Kp: 11.87 R*: 2.23 Rs Teff: 9274.0 K Logg: 4.09 Fe/H: 0.070



DV Fit Results:

Period = 2.24469 [0.00004] d
Epoch = 131.9971 [0.0087] BKJD
Rp/R* = 0.0028 [0.0007]
a/R* = 3.38 [4.45]
b = 0.45 [2.58]
Seff = 17070.00 [7397.81]
Teff = 2915 [316] K
Rp = 0.68 [0.29] Re
a = 0.0439 [0.0124] AU
Ag = 40.37 [25.36] [1.55σ]
Teffp = 11359 [1532] K [5.40σ]

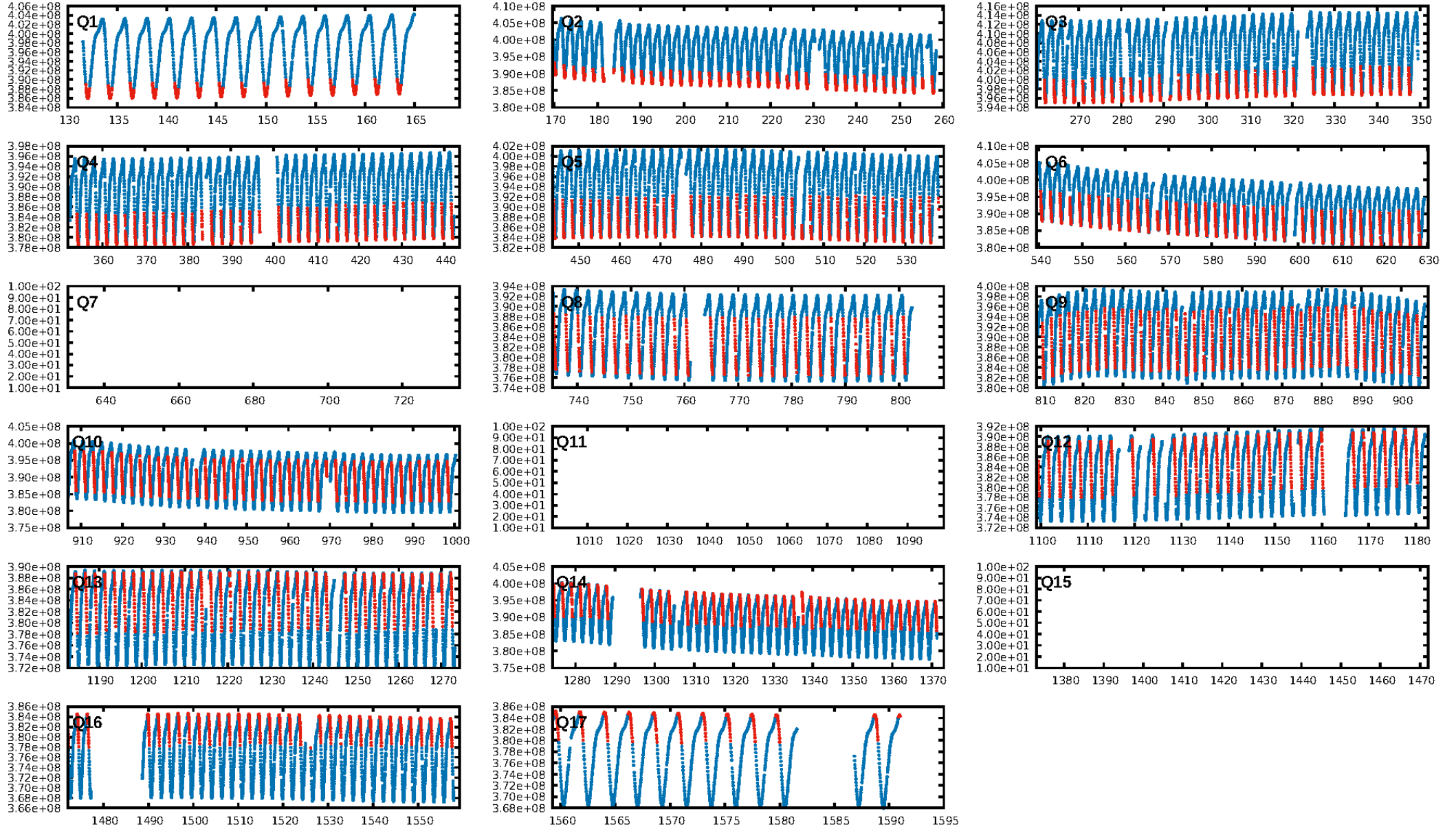
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [7.19σ]
LongPeriod-sig: 0.4% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: 2.10e-28
RollingBand-fgt: 1.00 [448/448]
GhostDiagnostic-chr: -2.509
Centroid-sig: 46.6%
Centroid-so: 2.285 arcsec [0.88σ]
OotOffset-rm: 0.047 arcsec [0.20σ]
KicOffset-rm: 0.027 arcsec [0.27σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
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DiffImageOverlap-fno: 0.00 [0/14]

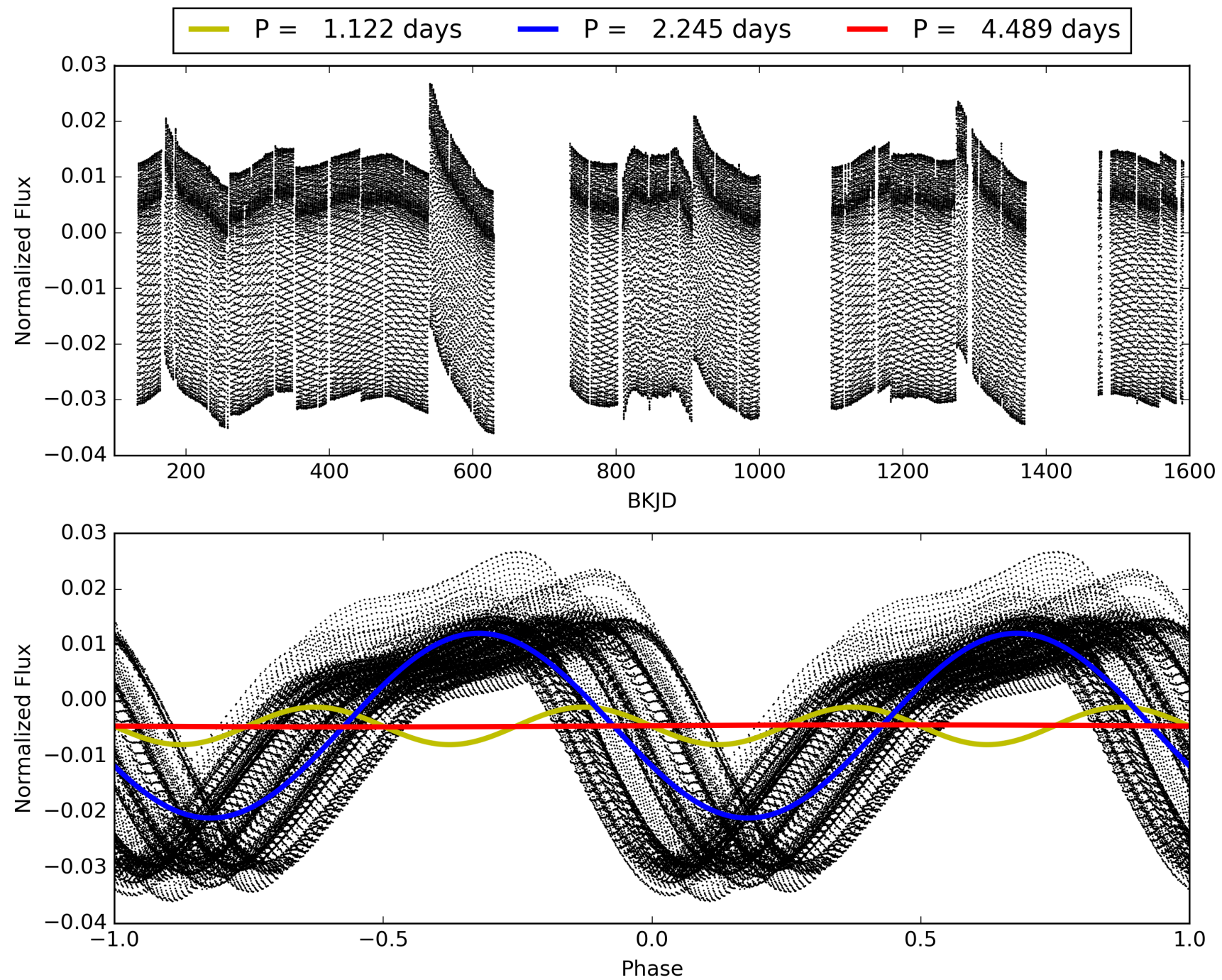
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 04:09:19 Z

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

TCE 009541567-02, PDC Light Curves

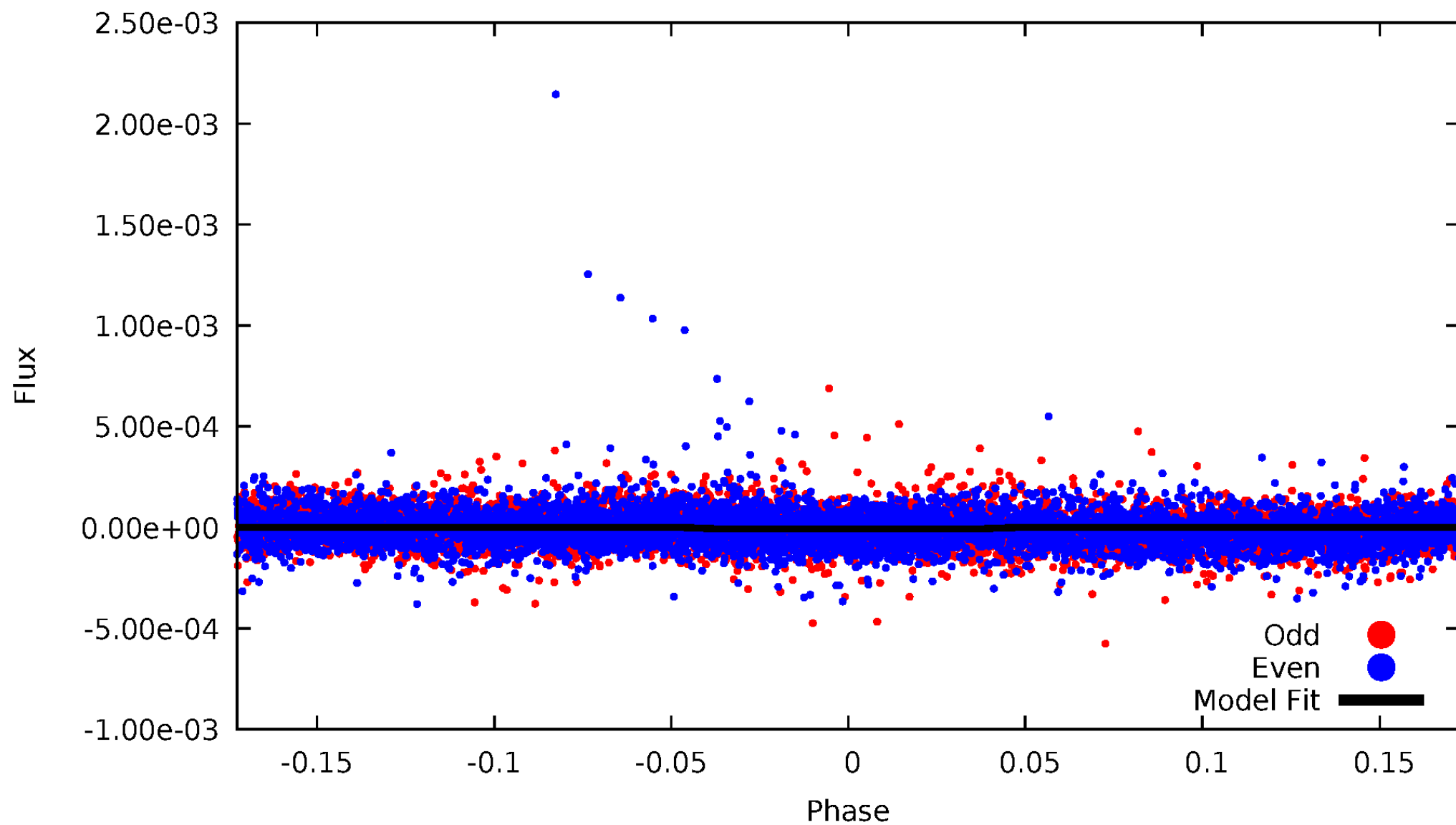


TCE 009541567-02



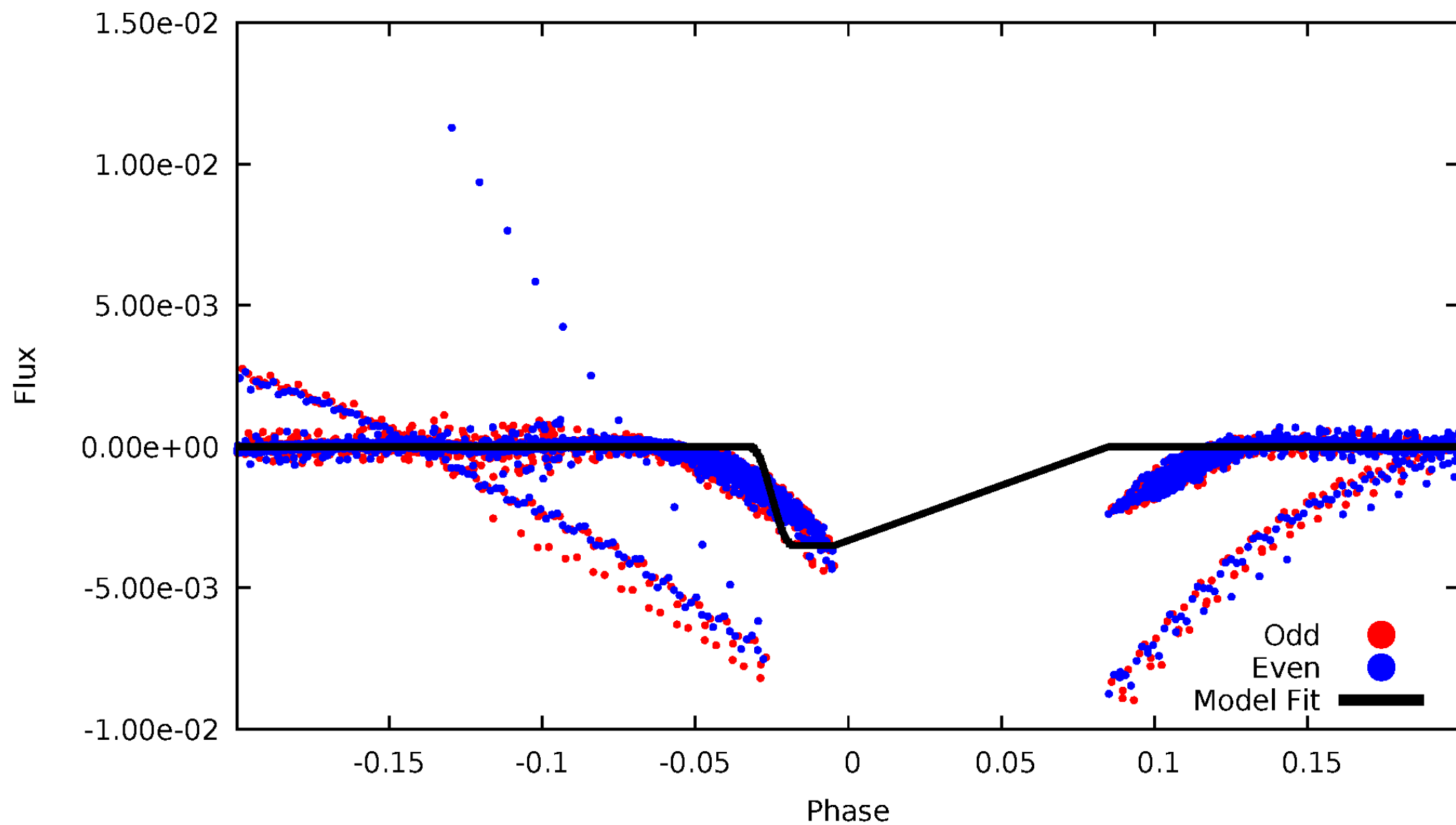
DV Odd/Even

TCE 009541567-02



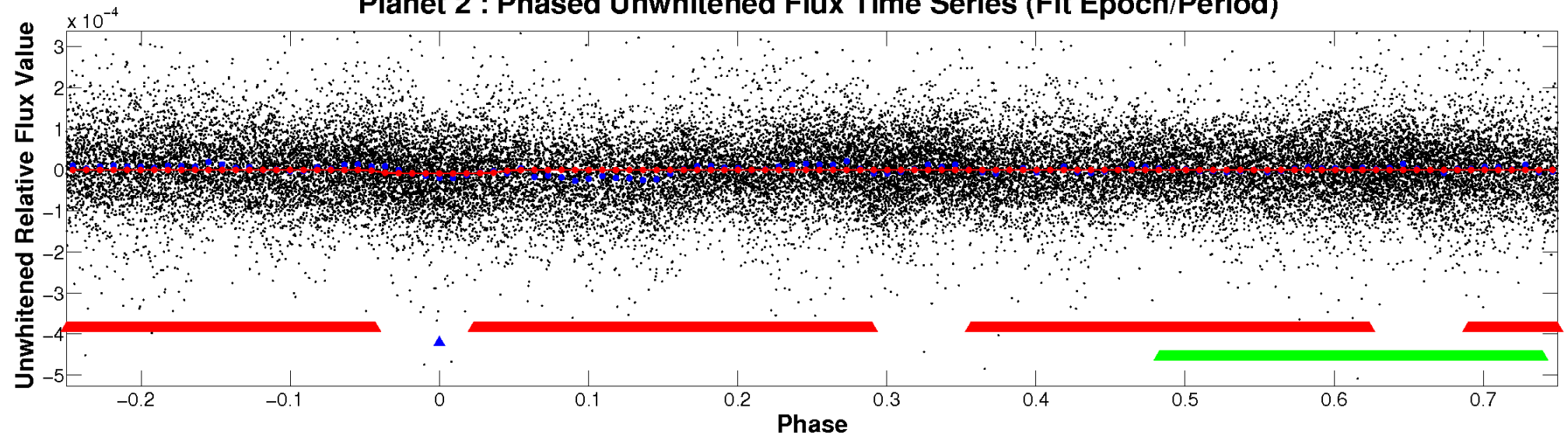
ALT Odd/Even

TCE 009541567-02

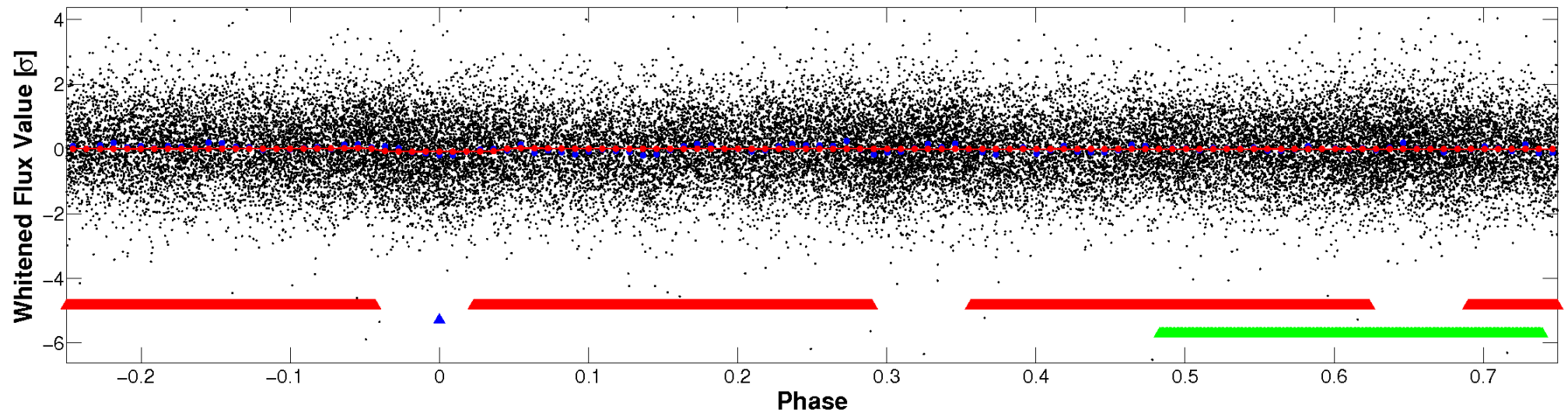


Non-Whitened Vs. Whitened Light Curve

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

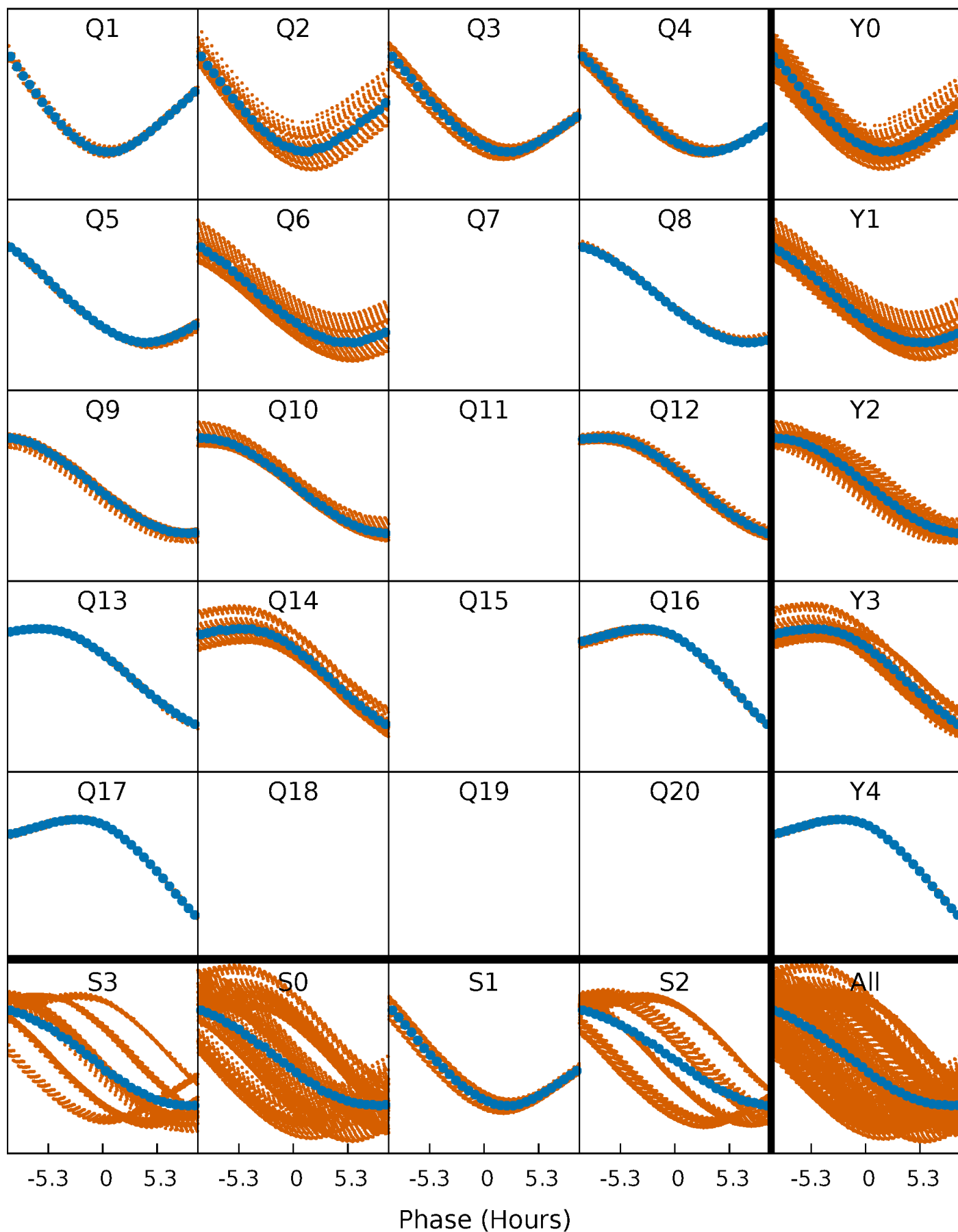


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



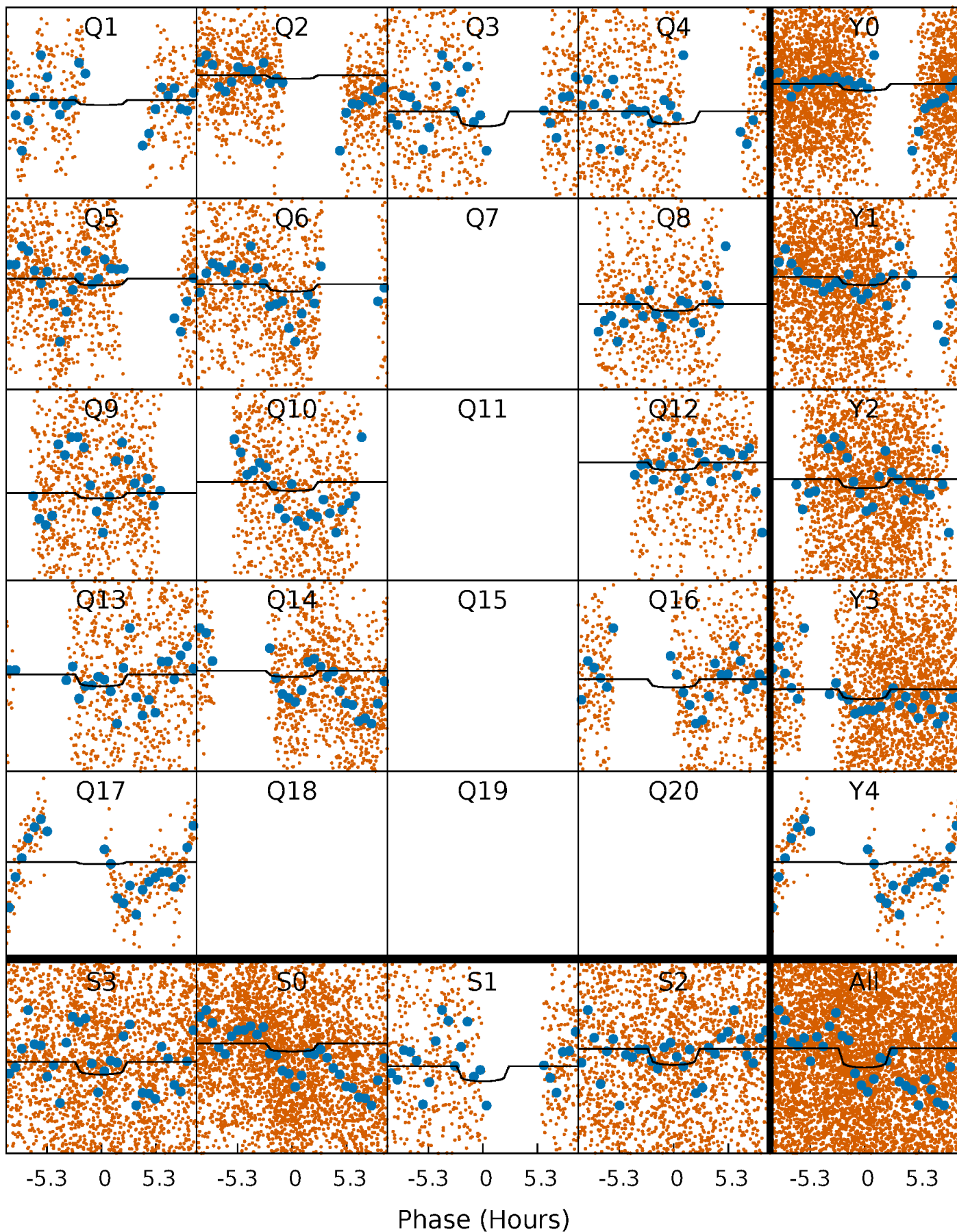
PDC Quarter-Phased Transit Curves

TCE 009541567-02 P= 2.244693 Days $T_0=131.997096$ (BKJD)



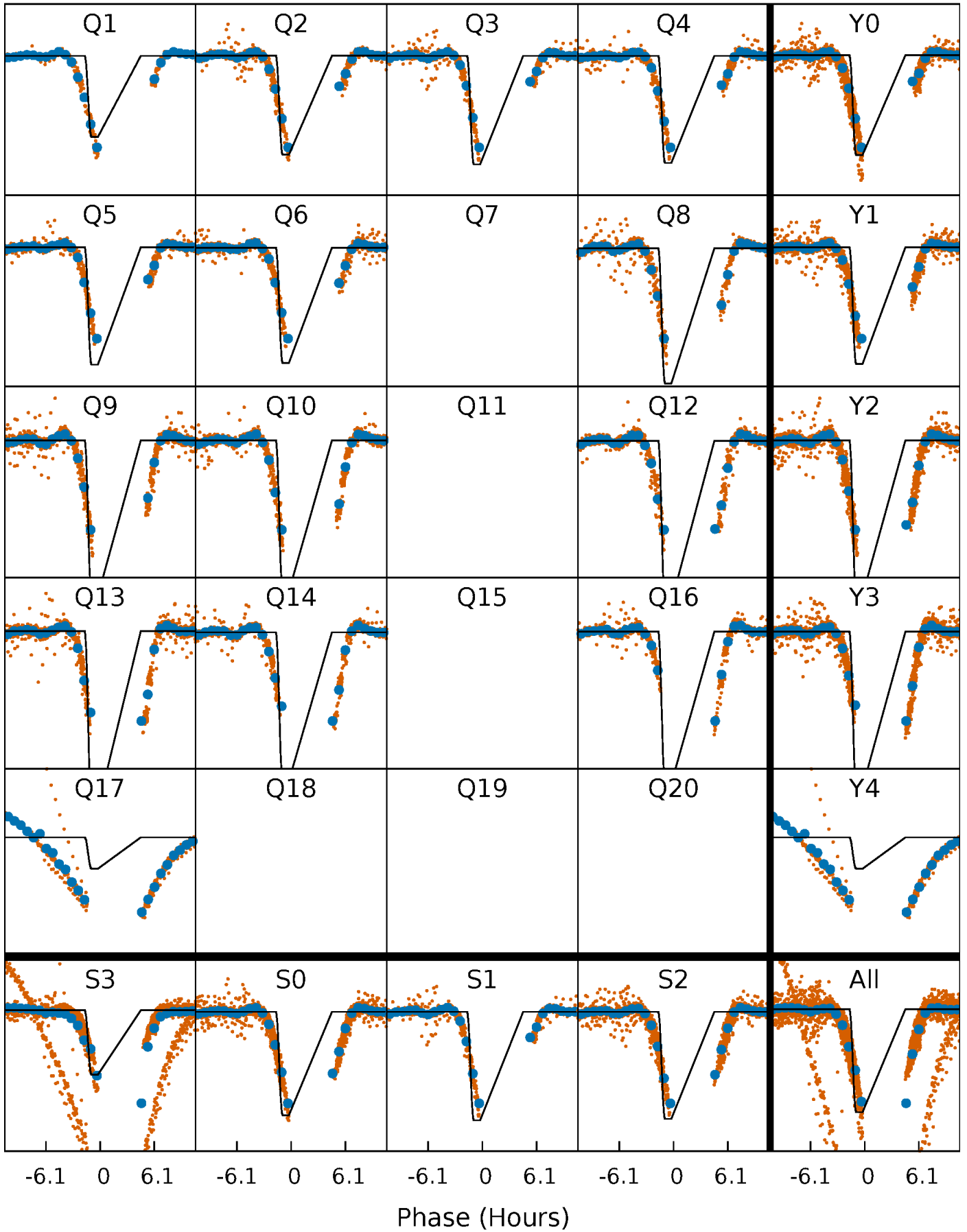
DV Quarter-Phased Transit Curves

TCE 009541567-02 P= 2.244693 Days $T_0=131.997096$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

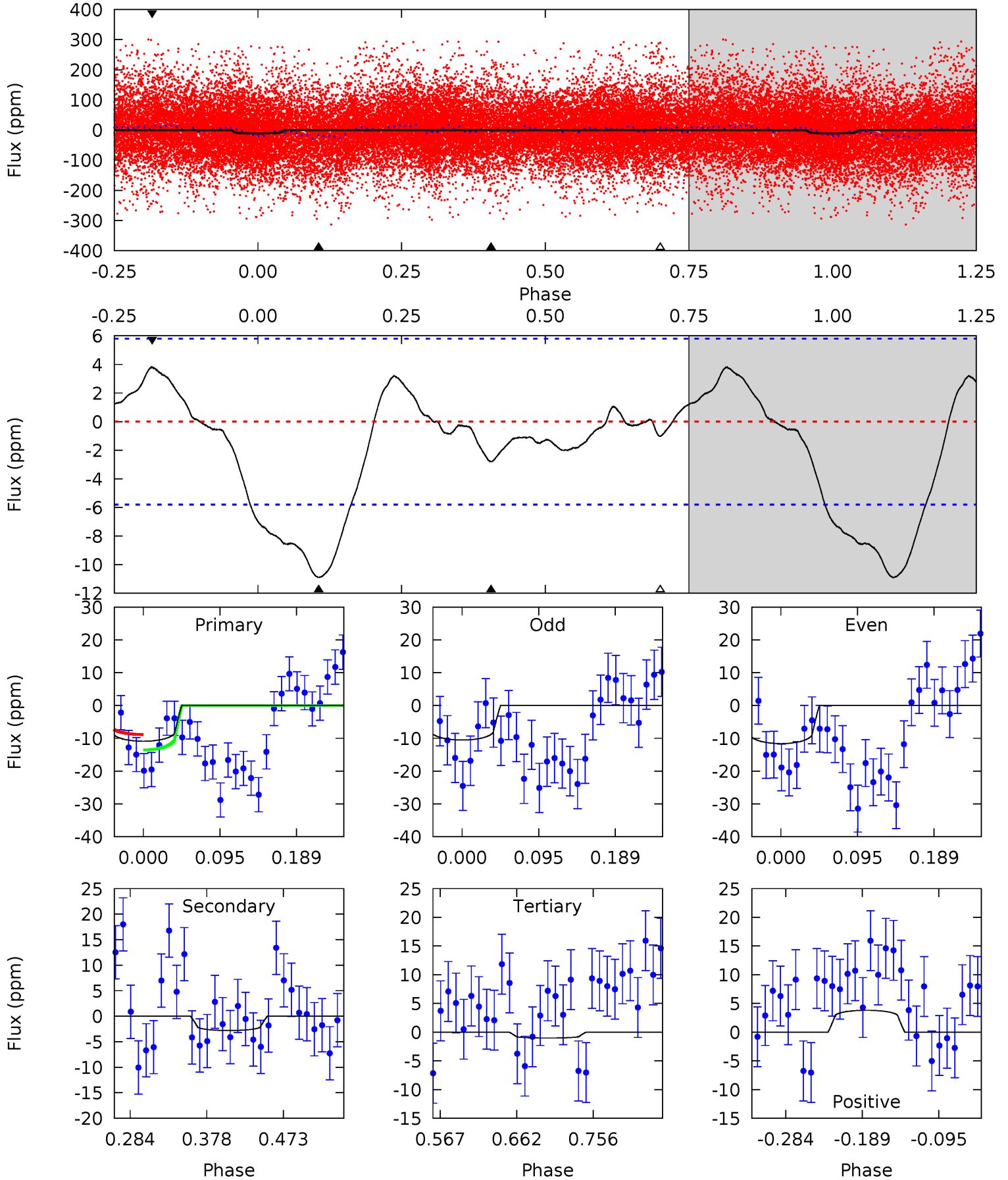
TCE 009541567-02 $P = 2.245696$ Days $T_0 = 131.932966$ (BKJD)



DV Model-Shift Uniqueness Test

009541567-02, P = 2.244693 Days, E = 129.752403 Days

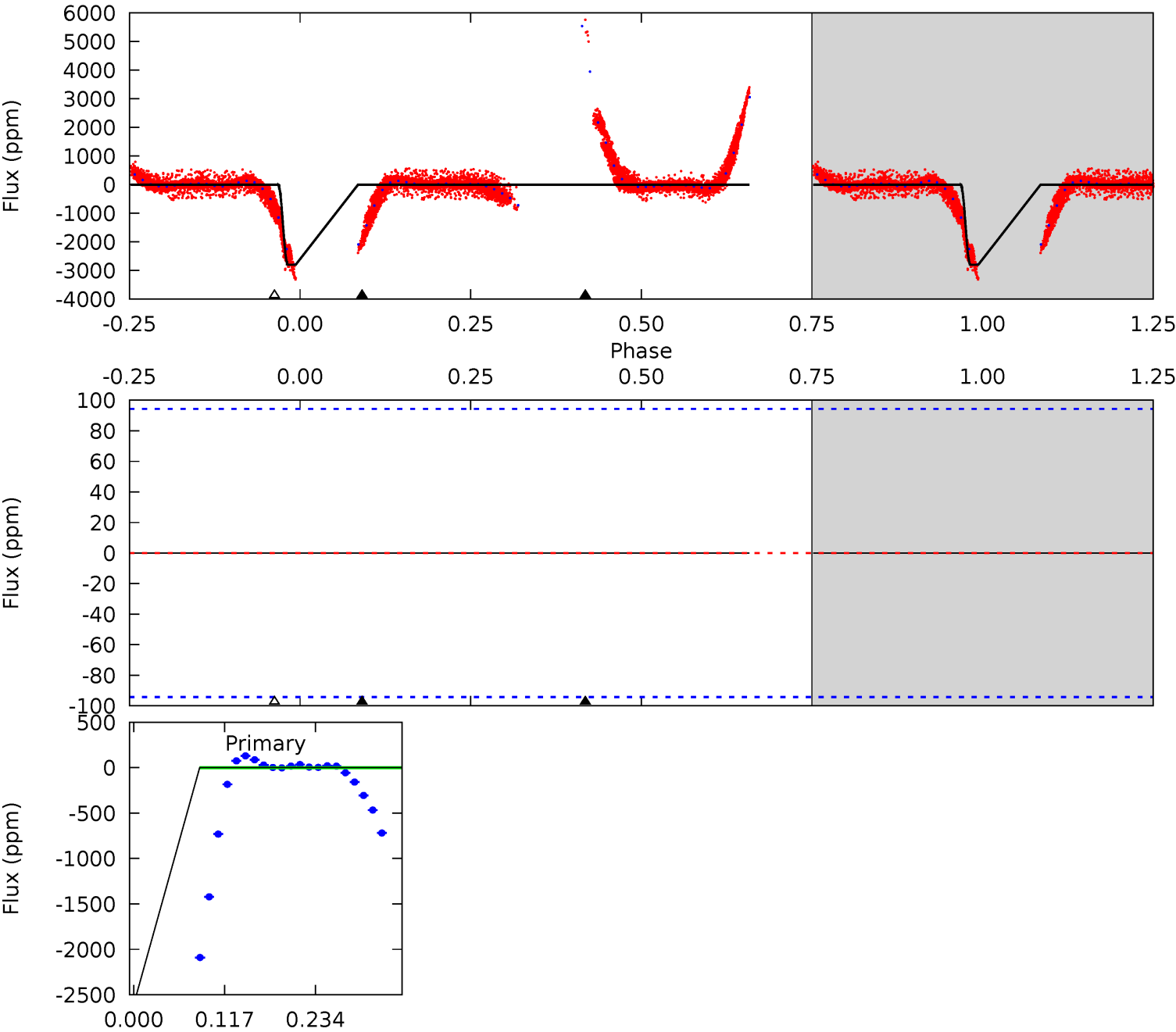
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.60	2.21	0.81	3.01	4.58	1.67	1.83	7.79	5.60	1.41	-0.79	0.44	0.79	0.26	1.85



Alt Model-Shift Uniqueness Test

009541567-02, P = 2.245696 Days, E = 129.687270 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	4.53	1.57	0	0	0	0	0	0	0	0	0



Stellar Parameters For KIC 009541567

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	9274^{+255}_{-475}	$4.092^{+0.158}_{-0.193}$	$0.070^{+0.150}_{-0.650}$	$2.227^{+0.805}_{-0.659}$	$2.236^{+0.396}_{-0.594}$	$0.285^{+0.265}_{-0.160}$
	+3%/-5%	+4%/-5%	+214%/-929%	+36%/-30%	+18%/-27%	+93%/-56%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009541567-02 / KOI 7190.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-3 ± 1	$0.67^{+0.22}_{-0.18}$	4069^{+363}_{-340}	6657^{+1334}_{-1183}	$6.024^{+5.956}_{-3.258}$
Alt.	-0 ± 21	$14.45^{+2.72}_{-1.92}$	4075^{+347}_{-316}	-3618^{+317}_{-252}	$-0.005^{+0.111}_{-0.098}$

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 $A_{obs} \gg 1.0$

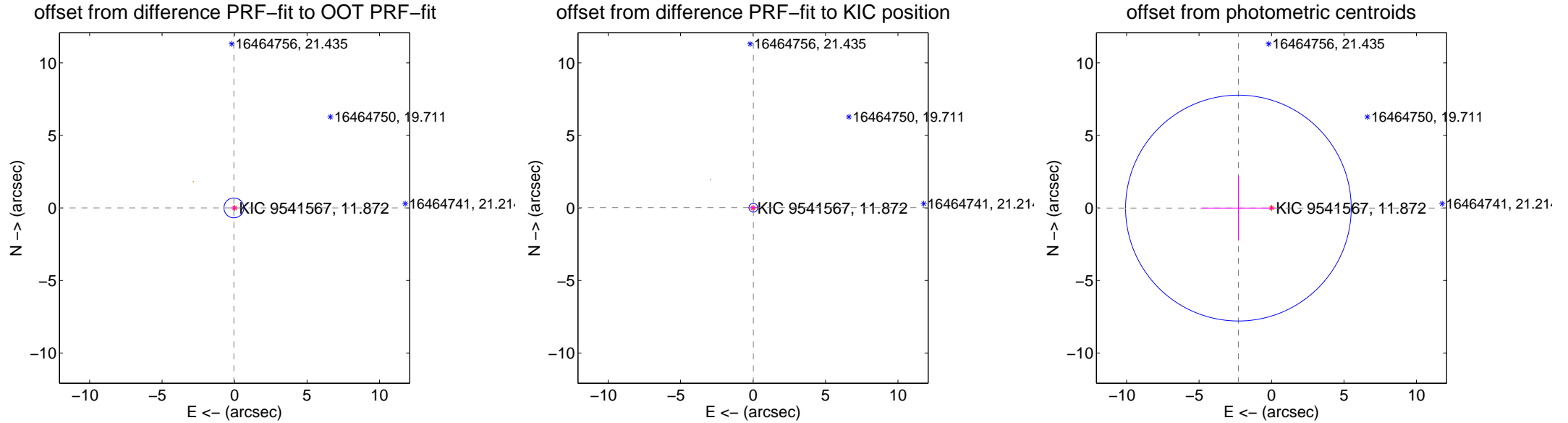
DV Centroid Data

Supplemental centroid analysis for 009541567-02. **Kepler magnitude: 11.87.** Transit SNR 4.63

There are 8 quarters with good PRF difference image offsets

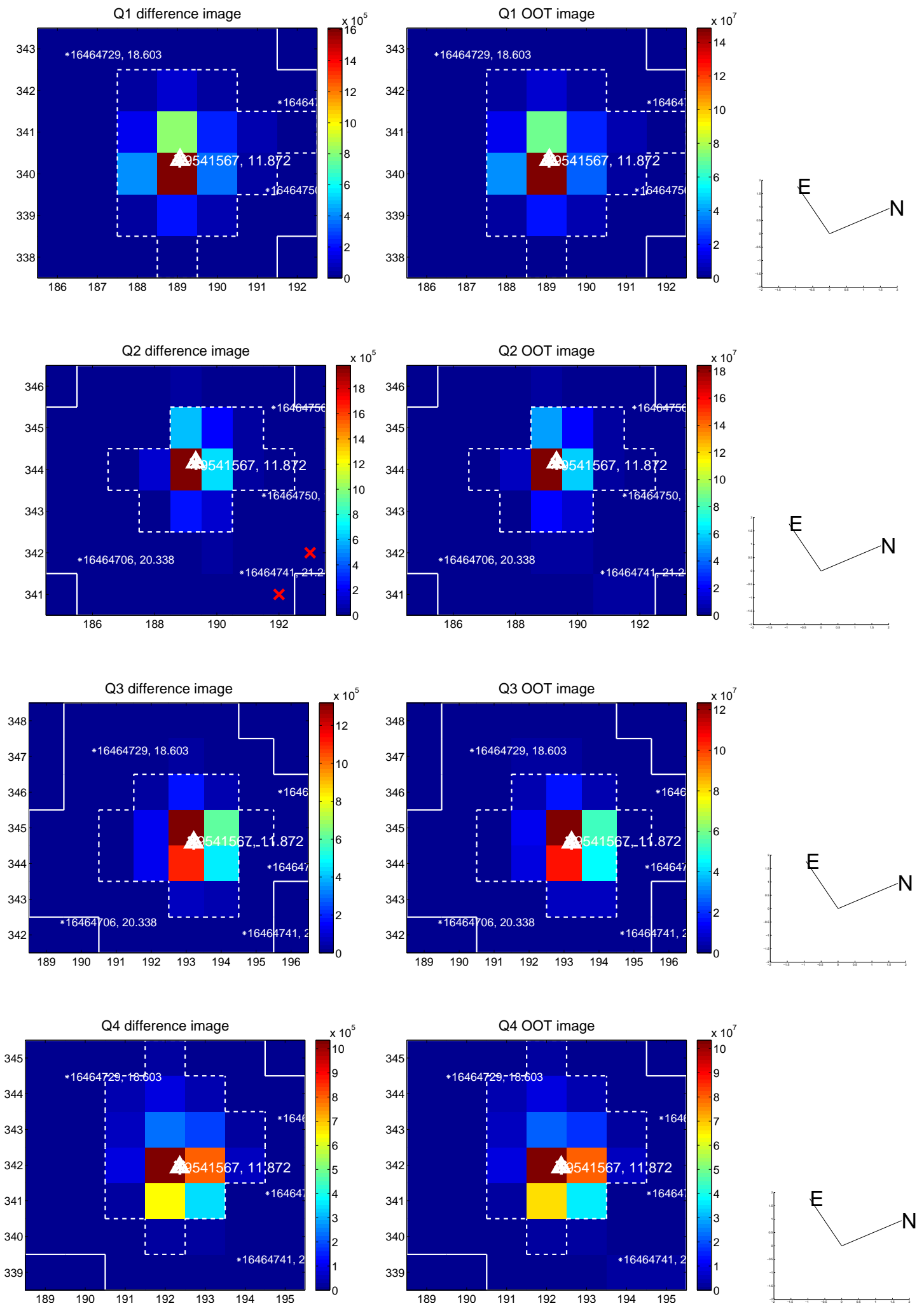
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.047 ± 0.229	0.20	0.047 ± 0.217	0.005 ± 0.148
PRF-fit source offset from KIC position	0.027 ± 0.101	0.27	-0.021 ± 0.224	0.017 ± 0.157
photometric centroid source offset	2.29 ± 2.60	0.88	2.29 ± 2.60	-0.01 ± 2.24

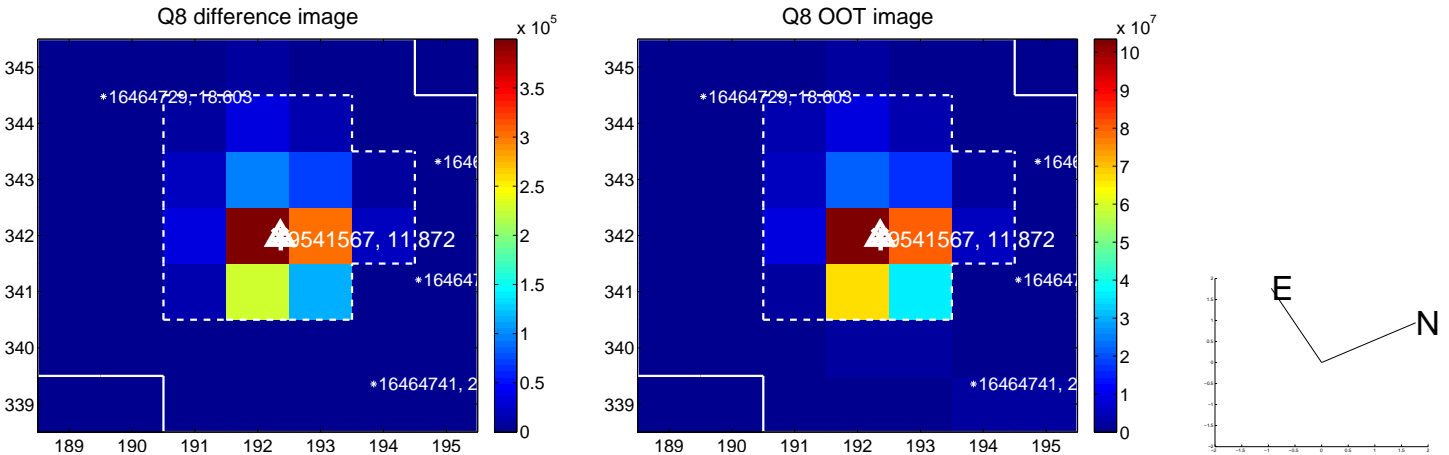
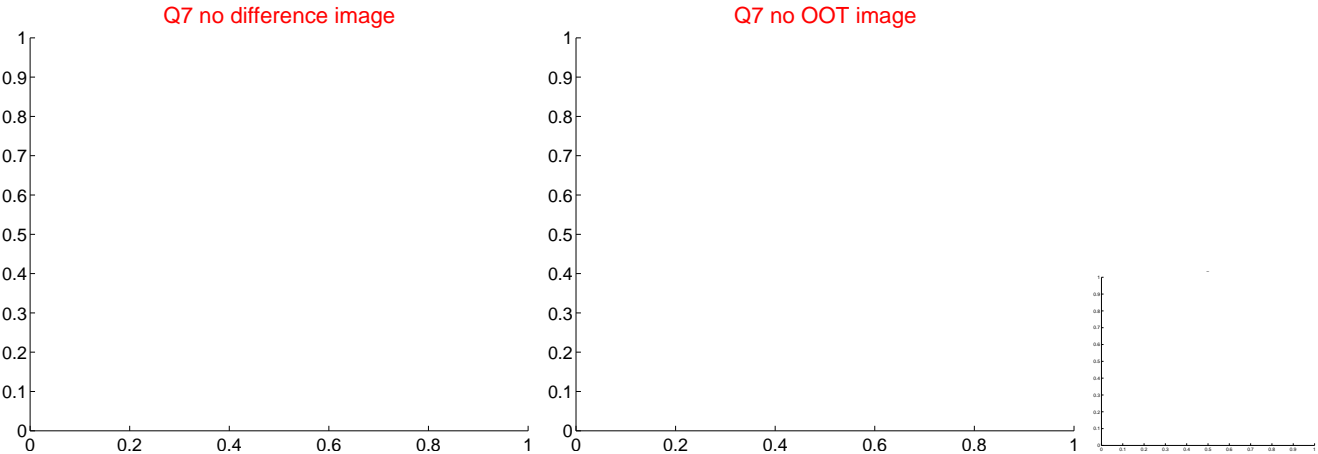
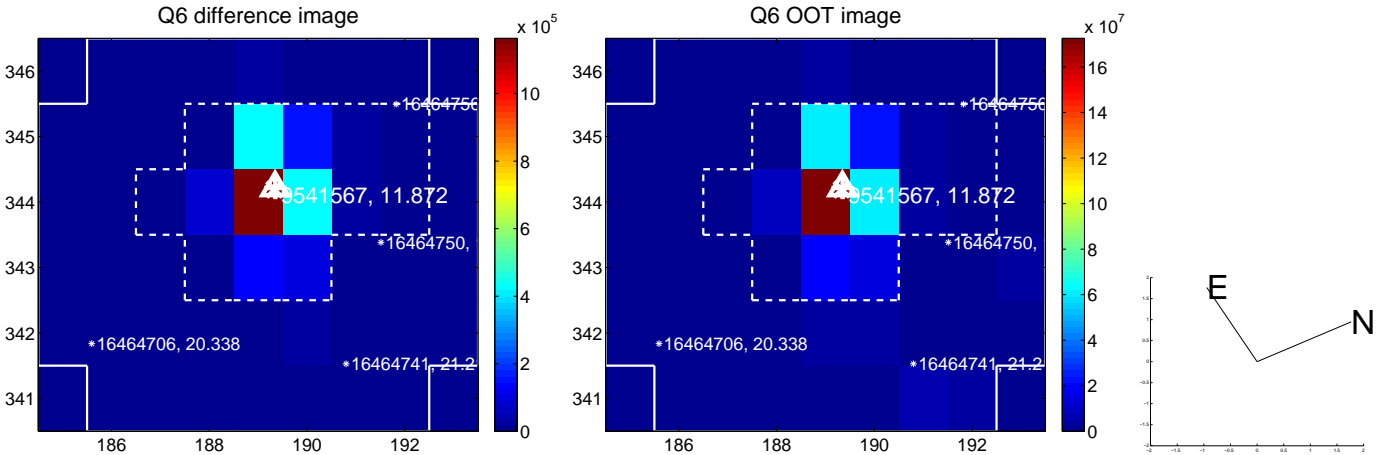
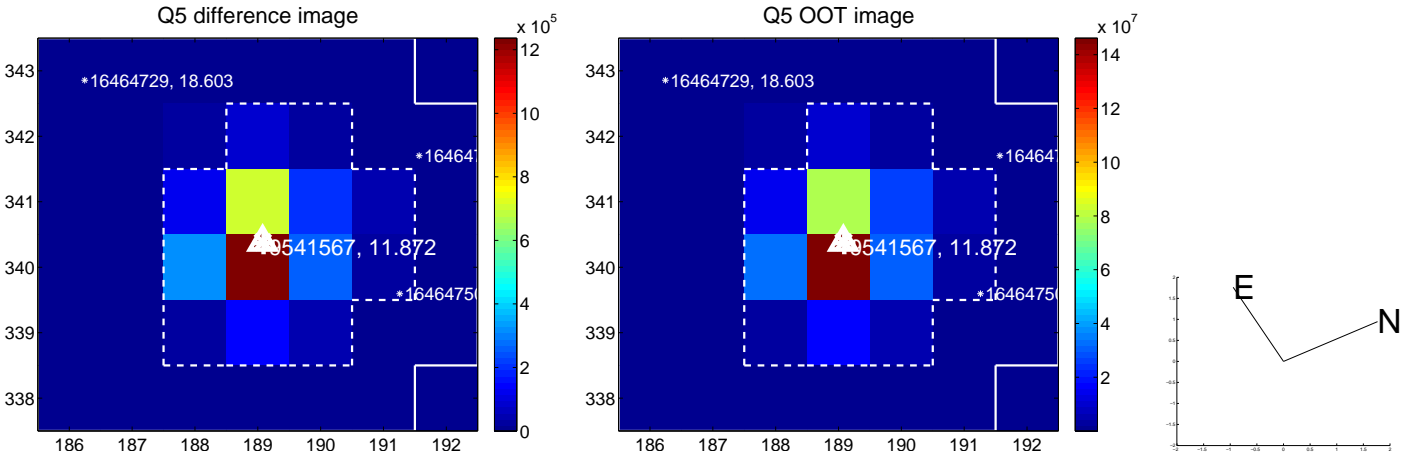


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

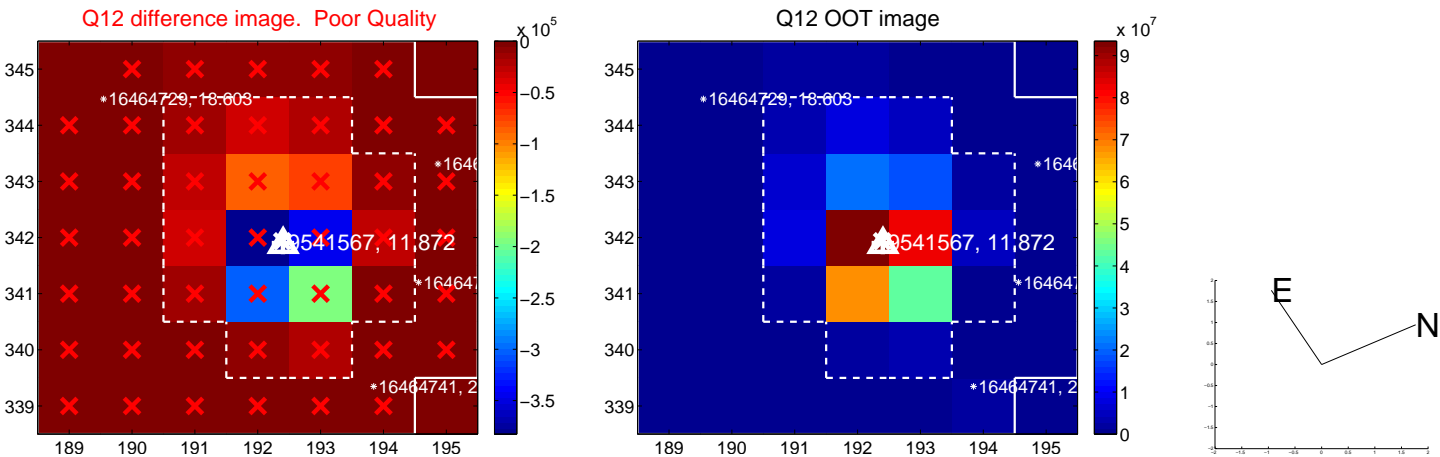
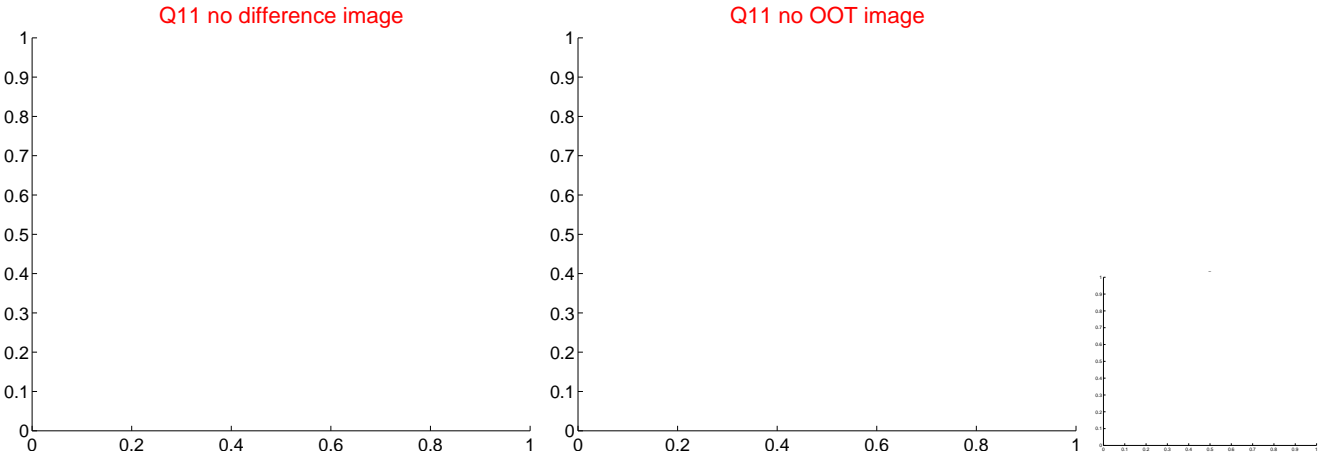
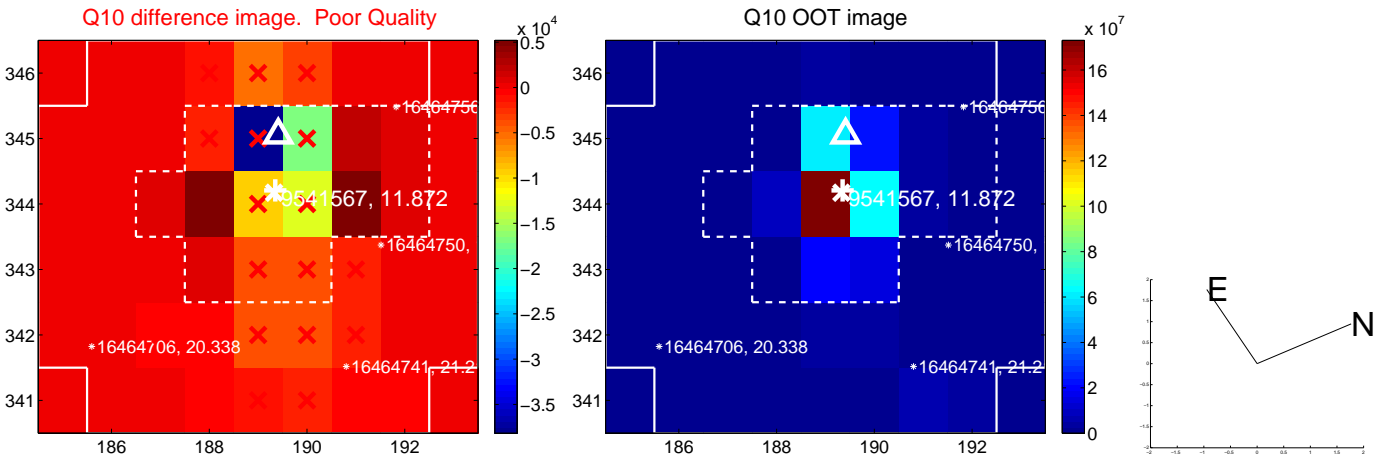
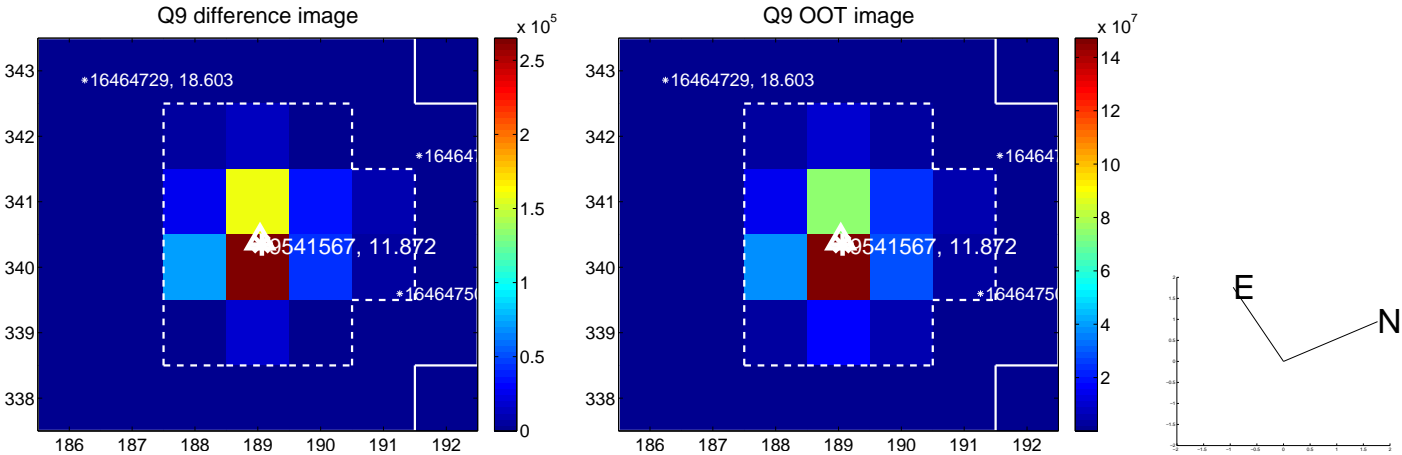
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



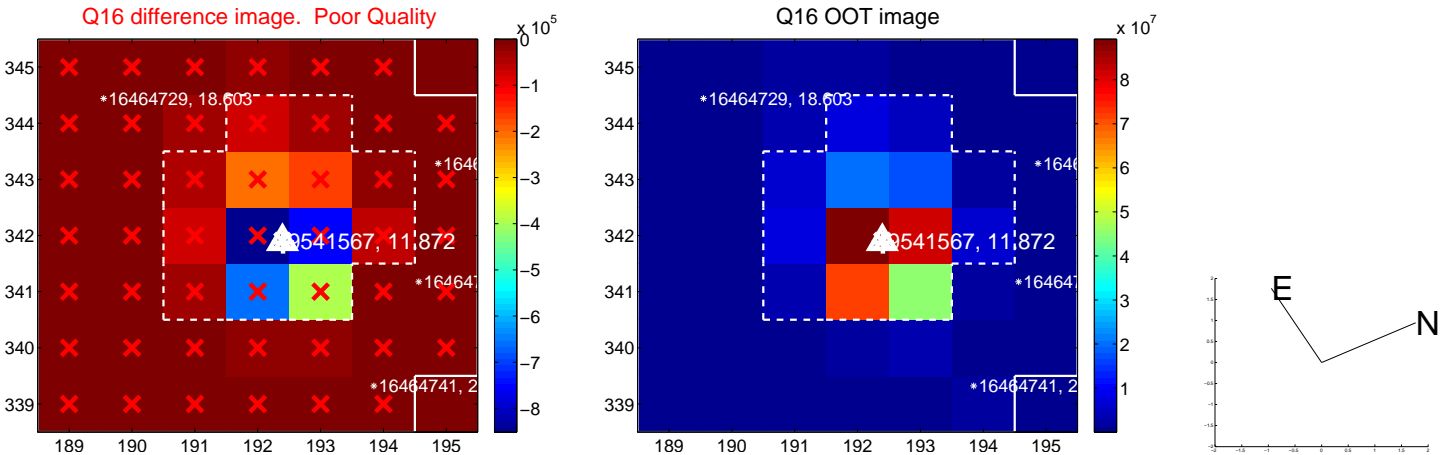
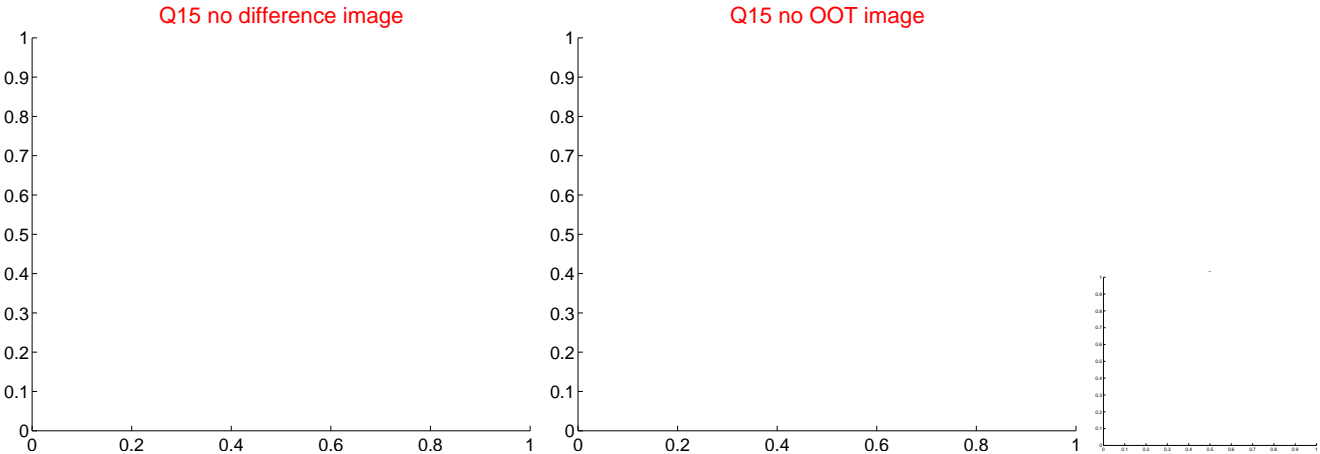
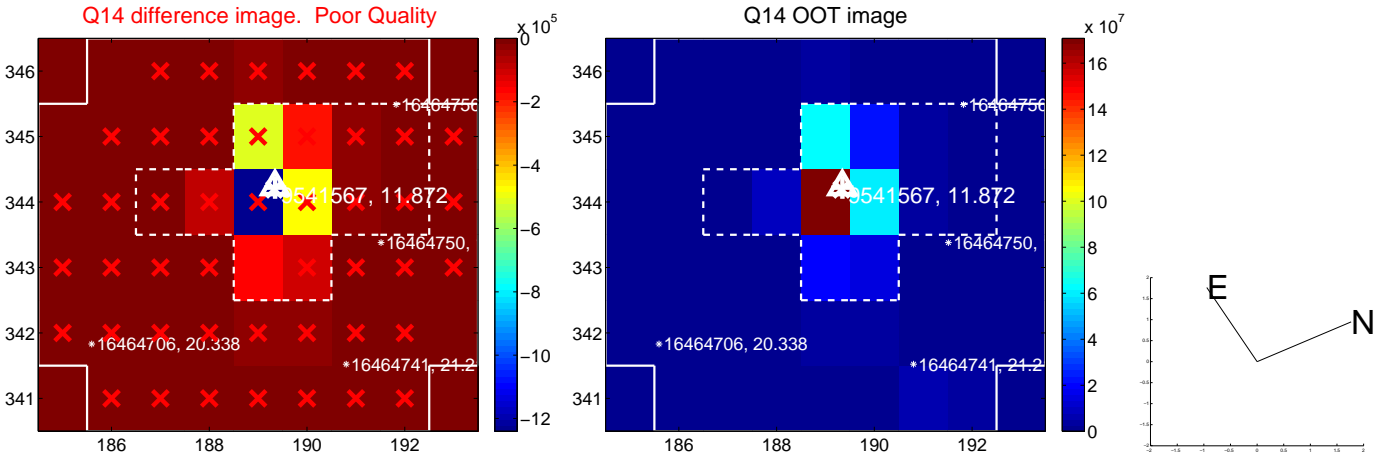
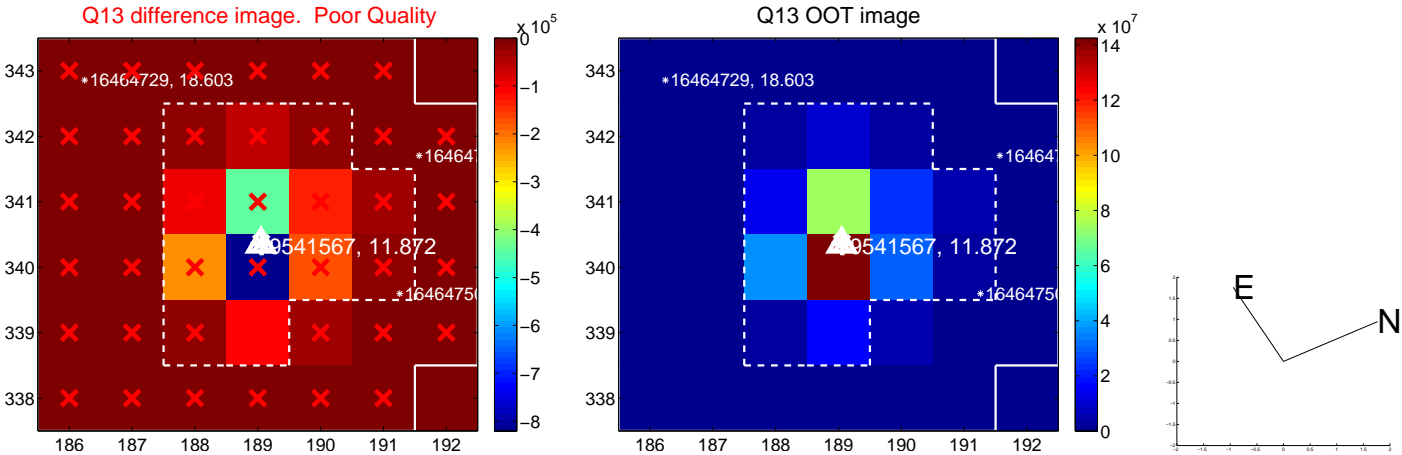
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



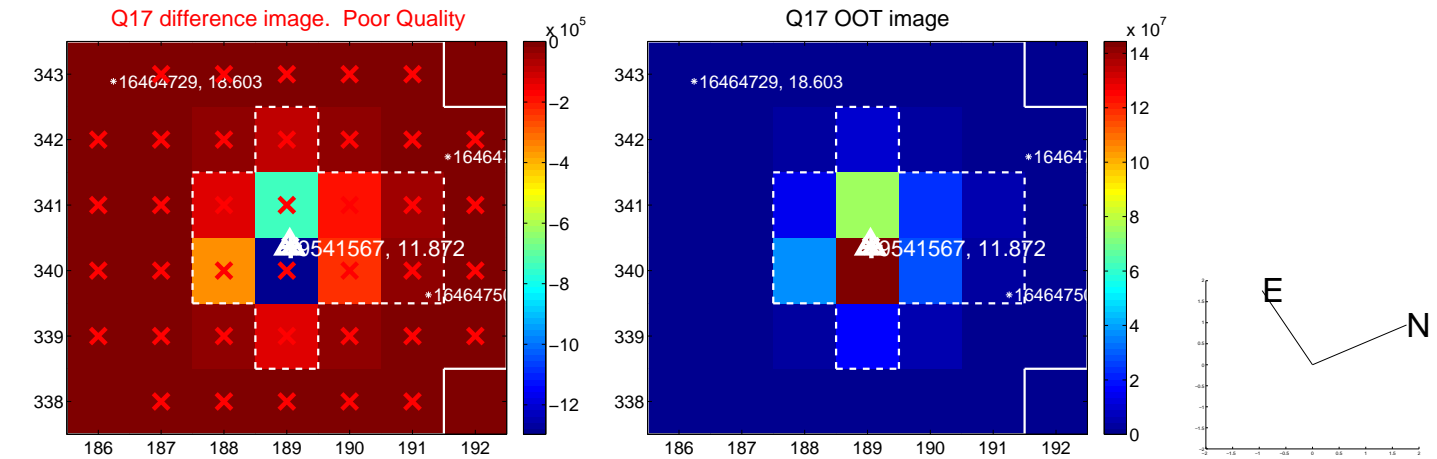
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



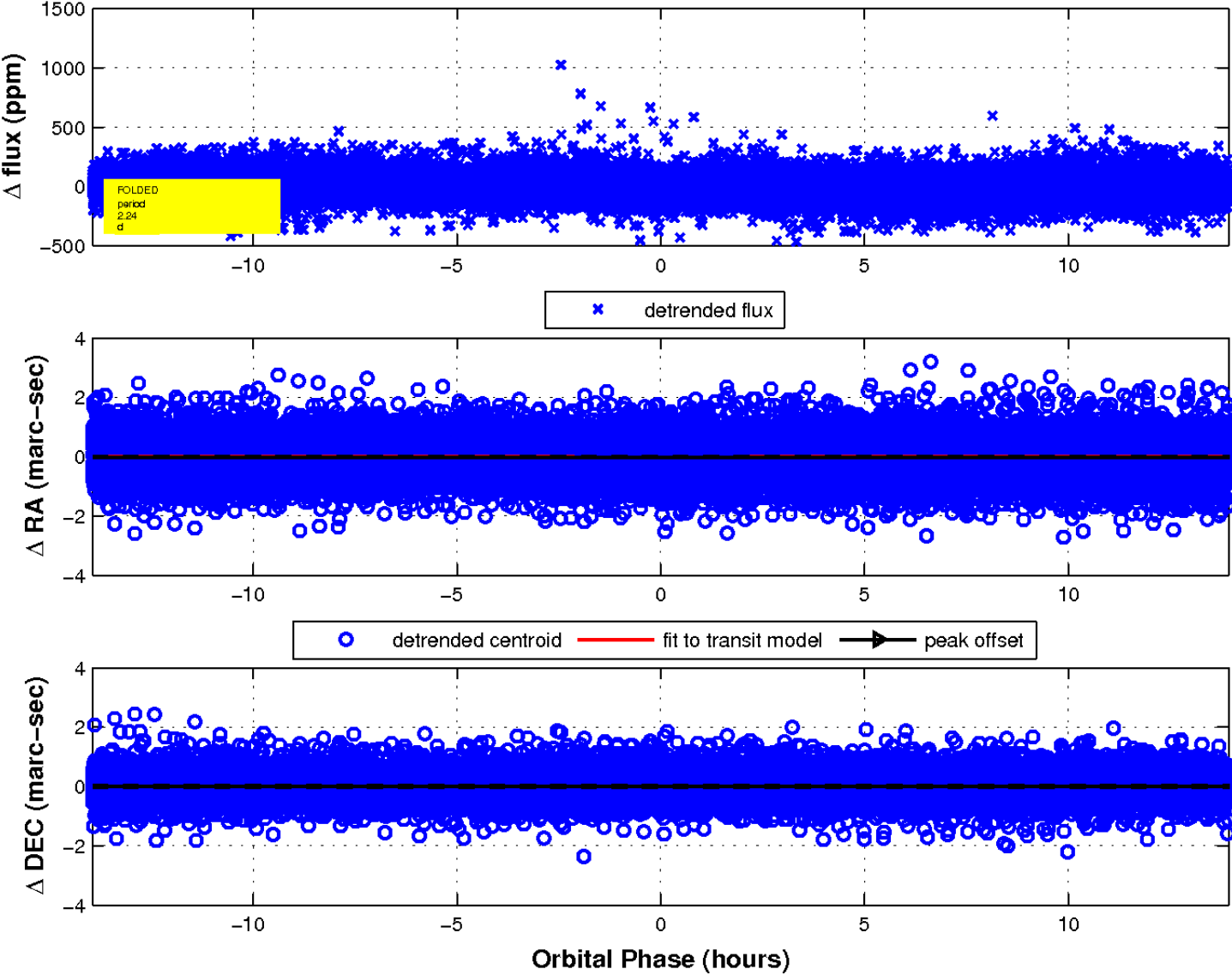
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

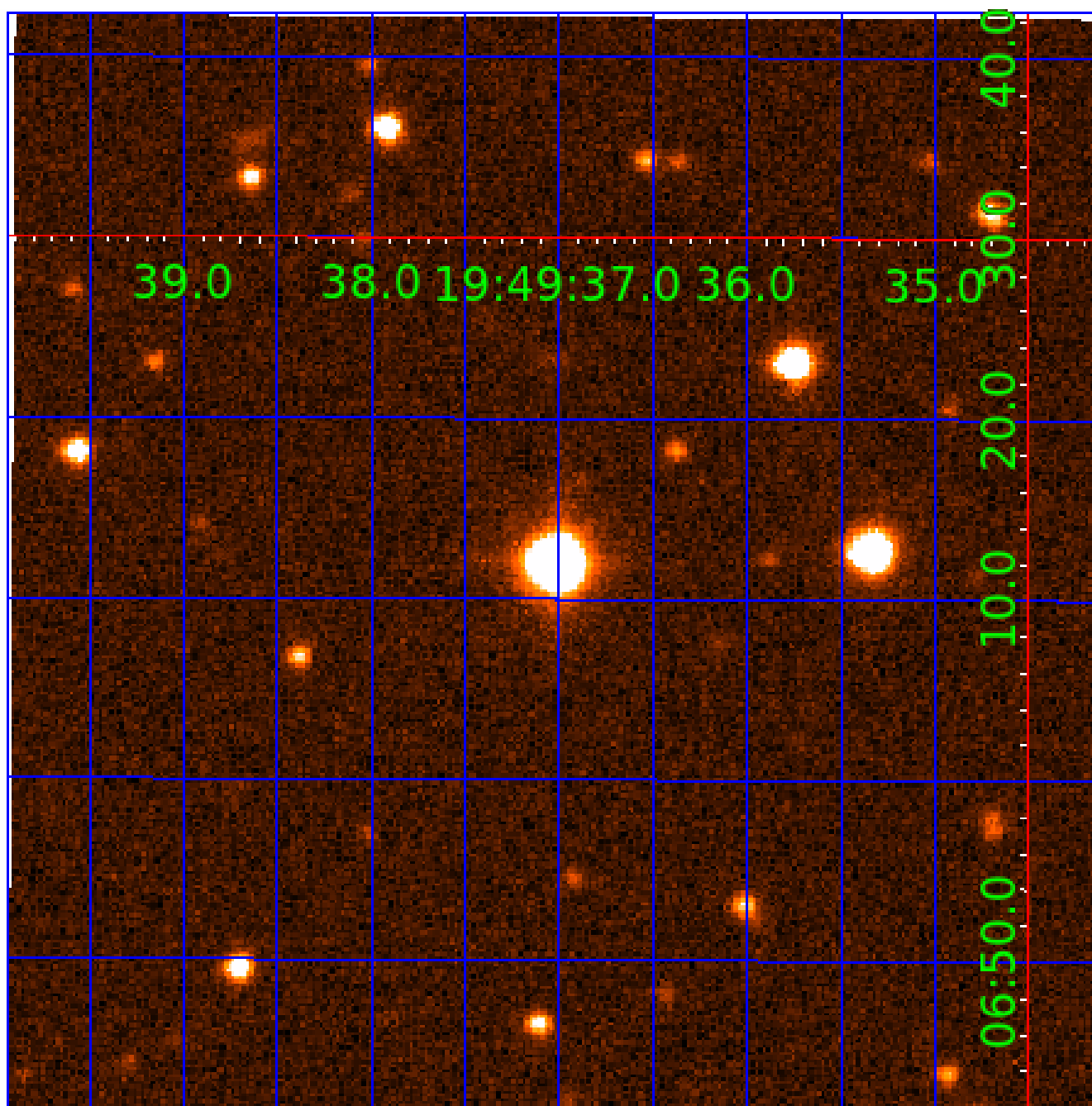


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 009541567

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})
009541567-01	OBS	No	0.748539	132.048849	10.7	1.838	13.6	8.6	2.23	9274	0.84	73817.12
009541567-02	OBS	7190.01	2.244693	131.997096	8.6	4.647	11.7	4.6	2.23	9274	0.68	17070.00
009541567-03	OBS	No	2.245581	133.081009	10.5	1.213	8.6	4.3	2.23	9274	0.83	17061.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009541567-01	OBS	FP	0.00	1	0	1	0	LPP_DV—HALO_GHOST
009541567-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT
009541567-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD

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 009541567-03

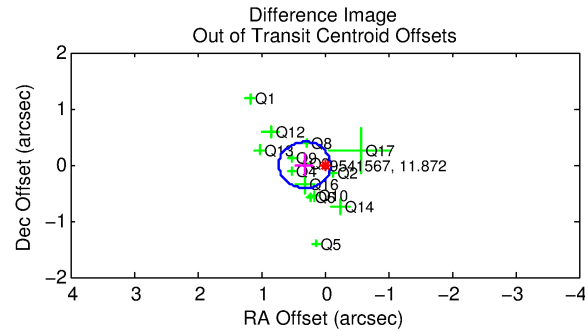
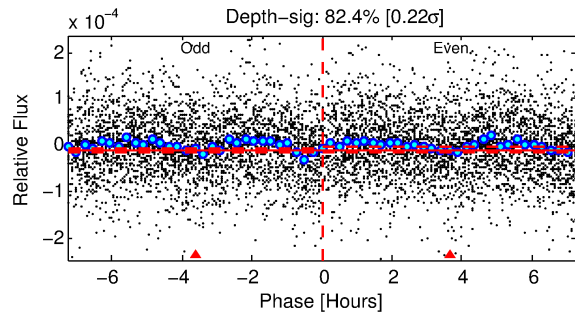
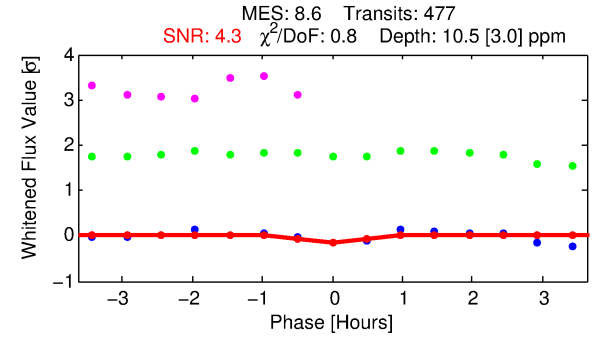
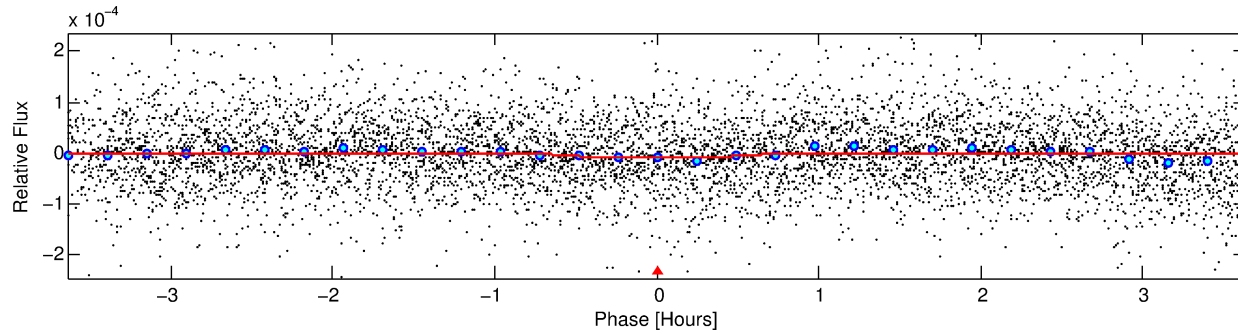
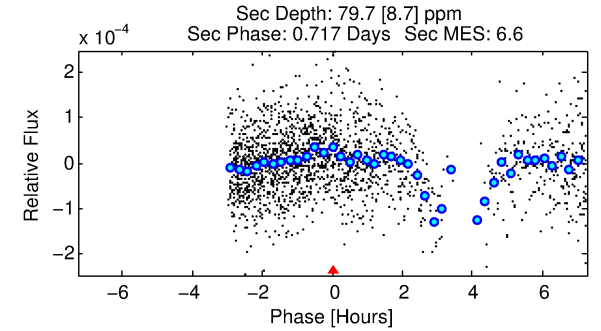
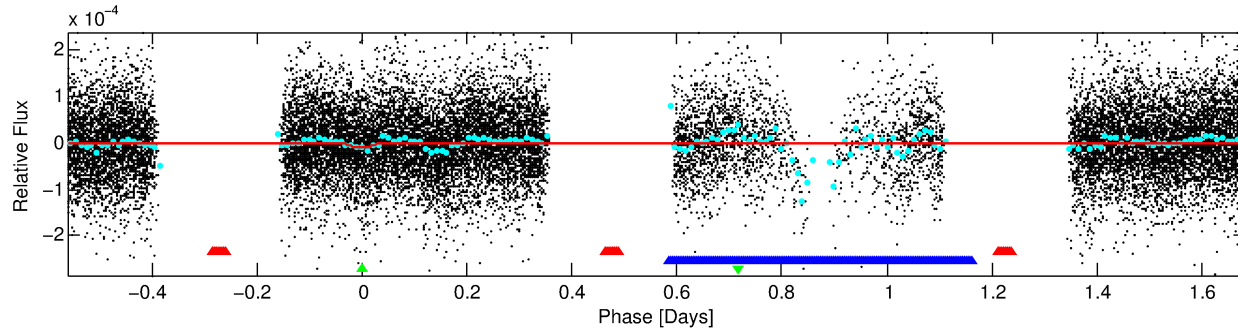
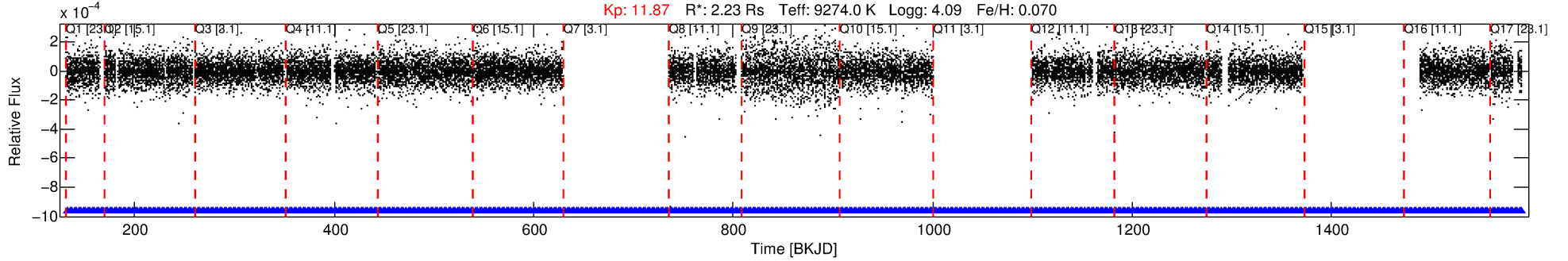
No Significant Match Found

DV One-Page Summary

KIC: 9541567 Candidate: 3 of 3 Period: 2.246 d

KOI: K07190 Corr: No Ephemeris Match

Kp: 11.87 R*: 2.23 Rs Teff: 9274.0 K Logg: 4.09 Fe/H: 0.070



DV Fit Results:

Period = 2.24558 [0.00003] d
Epoch = 133.0810 [0.0047] BKJD
Rp/R* = 0.0034 [0.0008]
a/R* = 6.34 [8.78]
b = 0.90 [0.30]
Seff = 17061.00 [7393.91]
Teq = 2914 [316] K
Rp = 0.83 [0.36] Re
a = 0.0439 [0.0124] AU
Ag = 121.63 [74.91] [1.61σ]
Teffp = 14963 [1963] K [6.06σ]

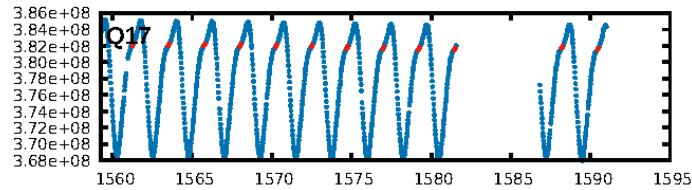
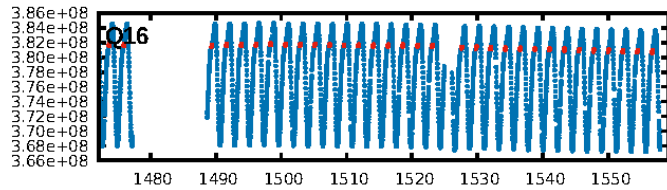
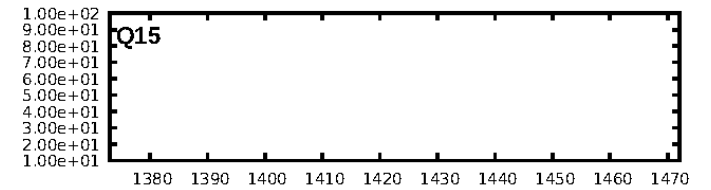
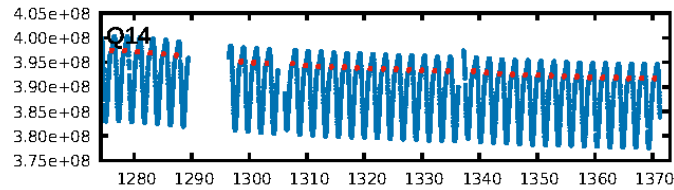
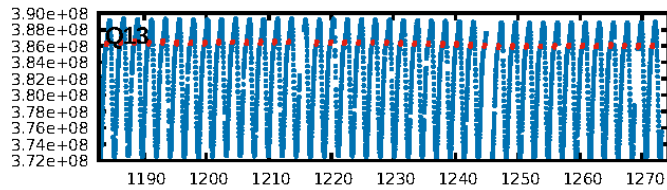
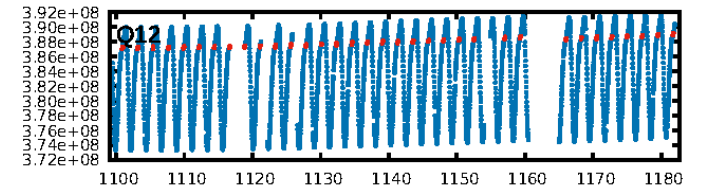
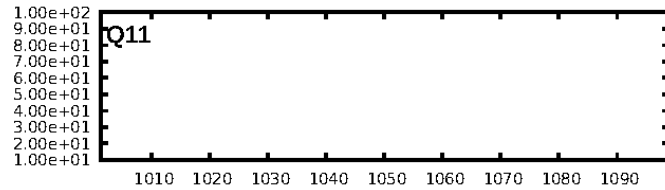
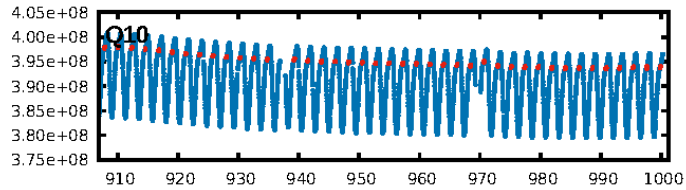
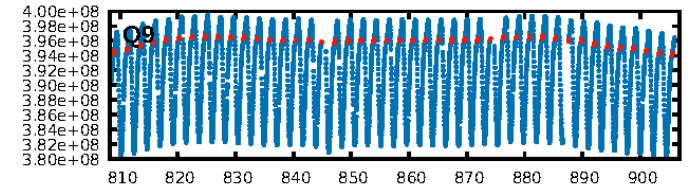
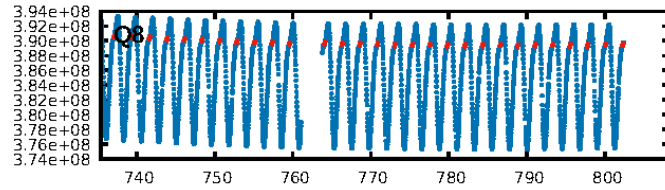
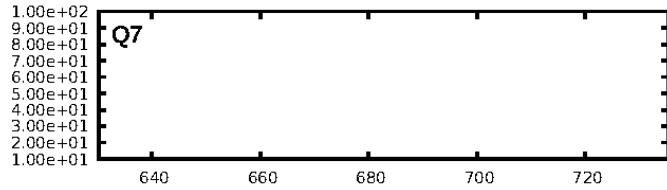
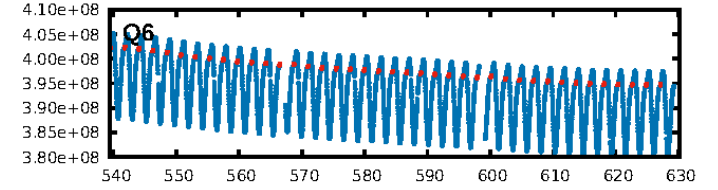
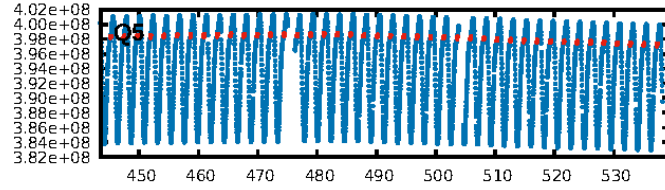
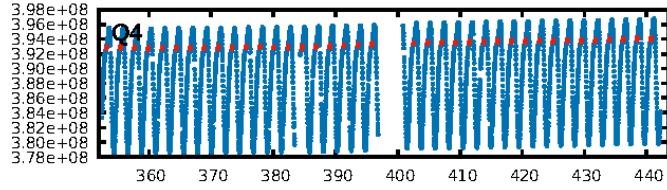
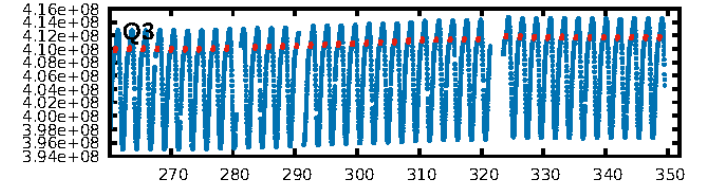
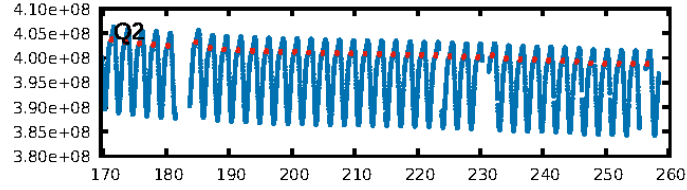
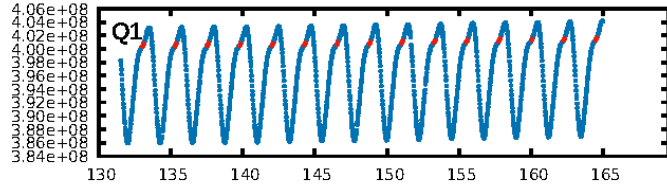
DV Diagnostic Results:

ShortPeriod-sig: 0.4% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.26e-16
RollingBand-fgt: 1.00 [450/450]
GhostDiagnostic-chr: -2.61
Centroid-sig: 2.3%
Centroid-so: 4.333 arcsec [1.43σ]
OotOffset-rm: 0.315 arcsec [2.31σ]
KicOffset-rm: 0.248 arcsec [1.78σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

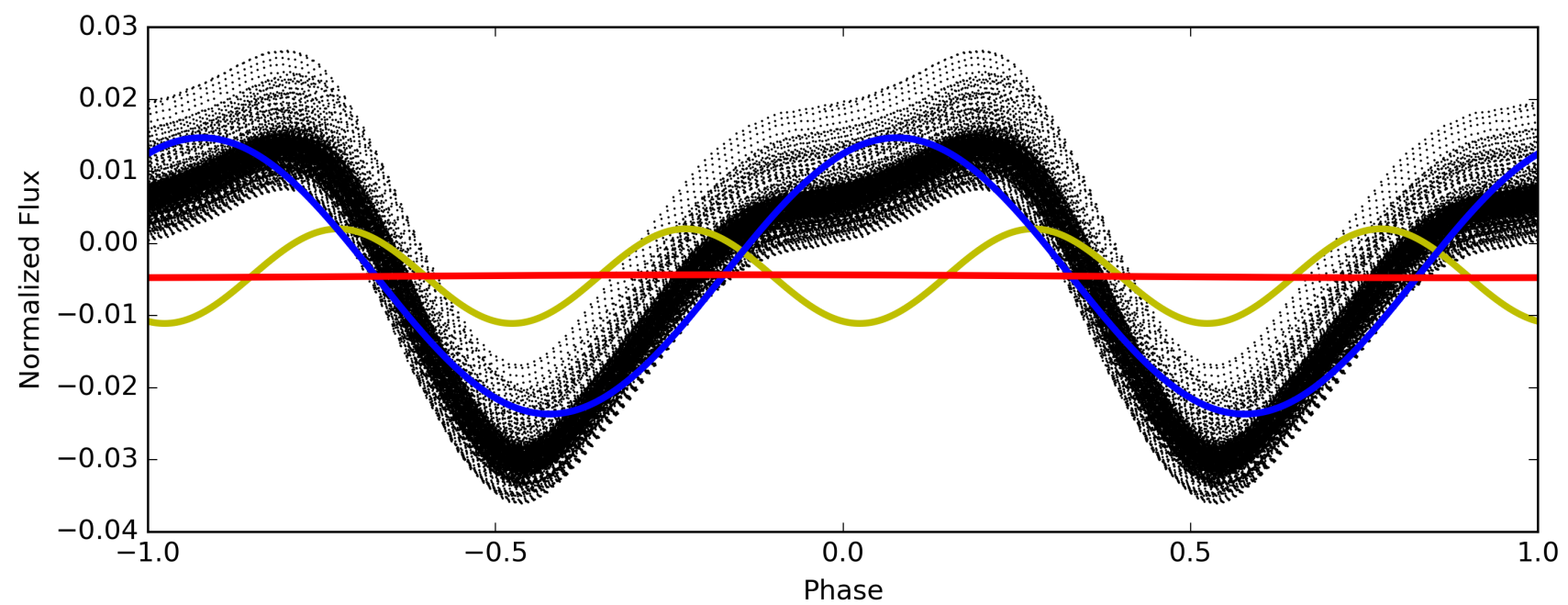
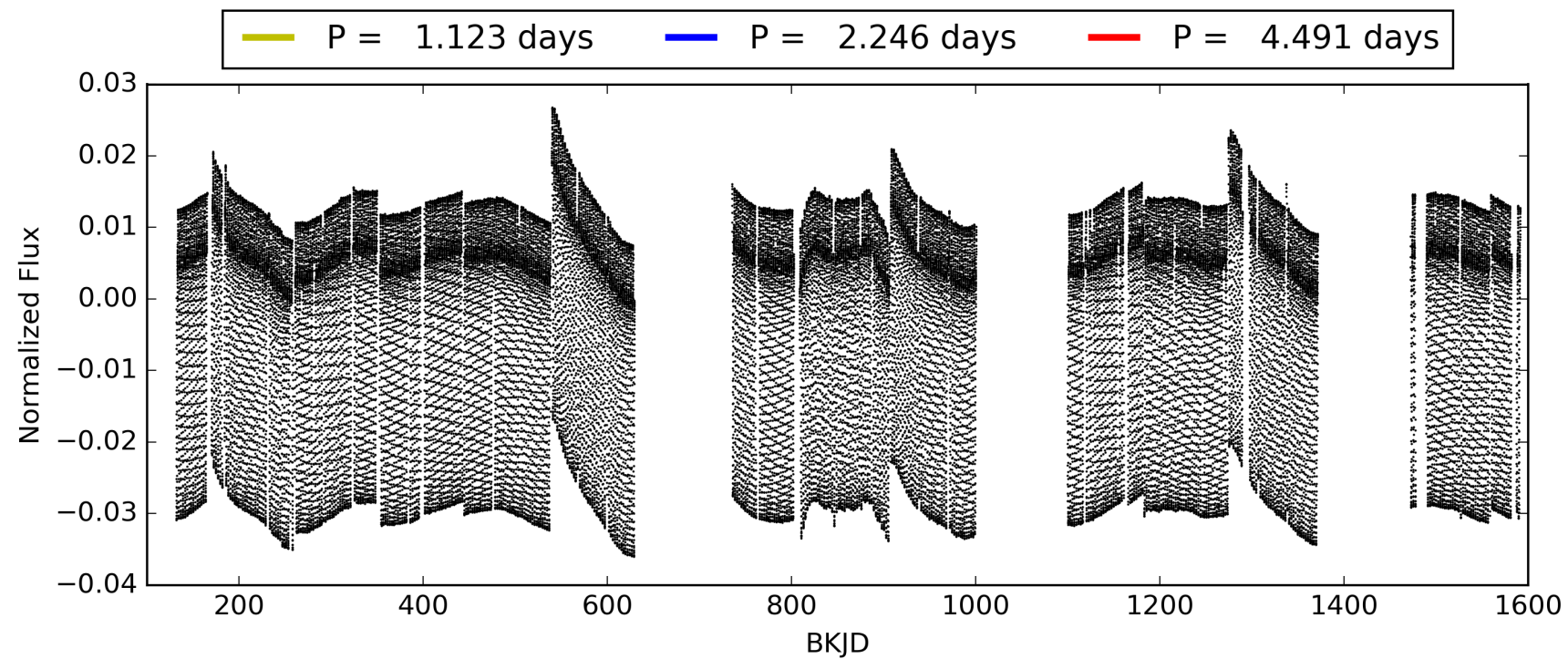
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 04:09:26 Z

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

TCE 009541567-03, PDC Light Curves

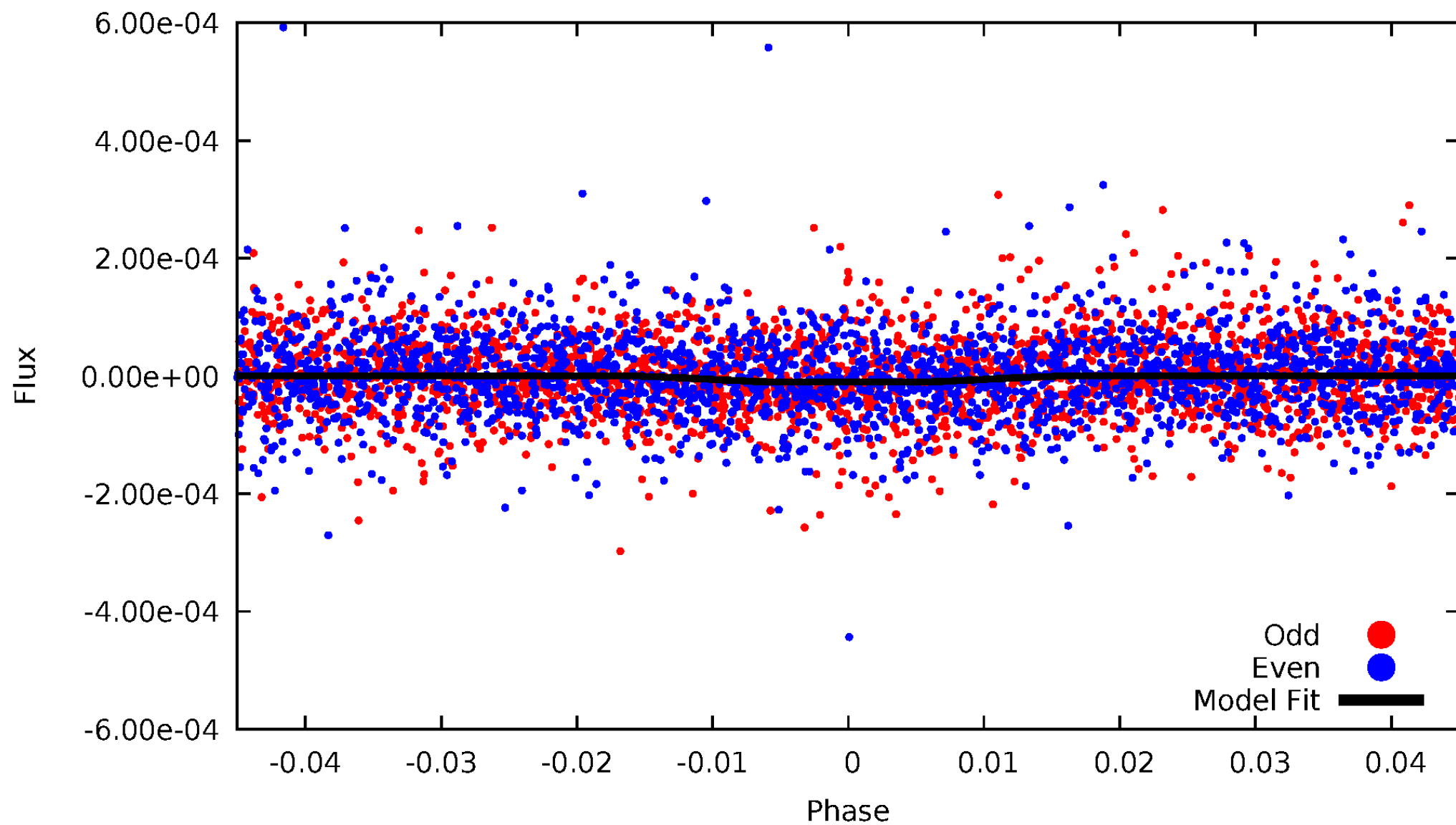


TCE 009541567-03



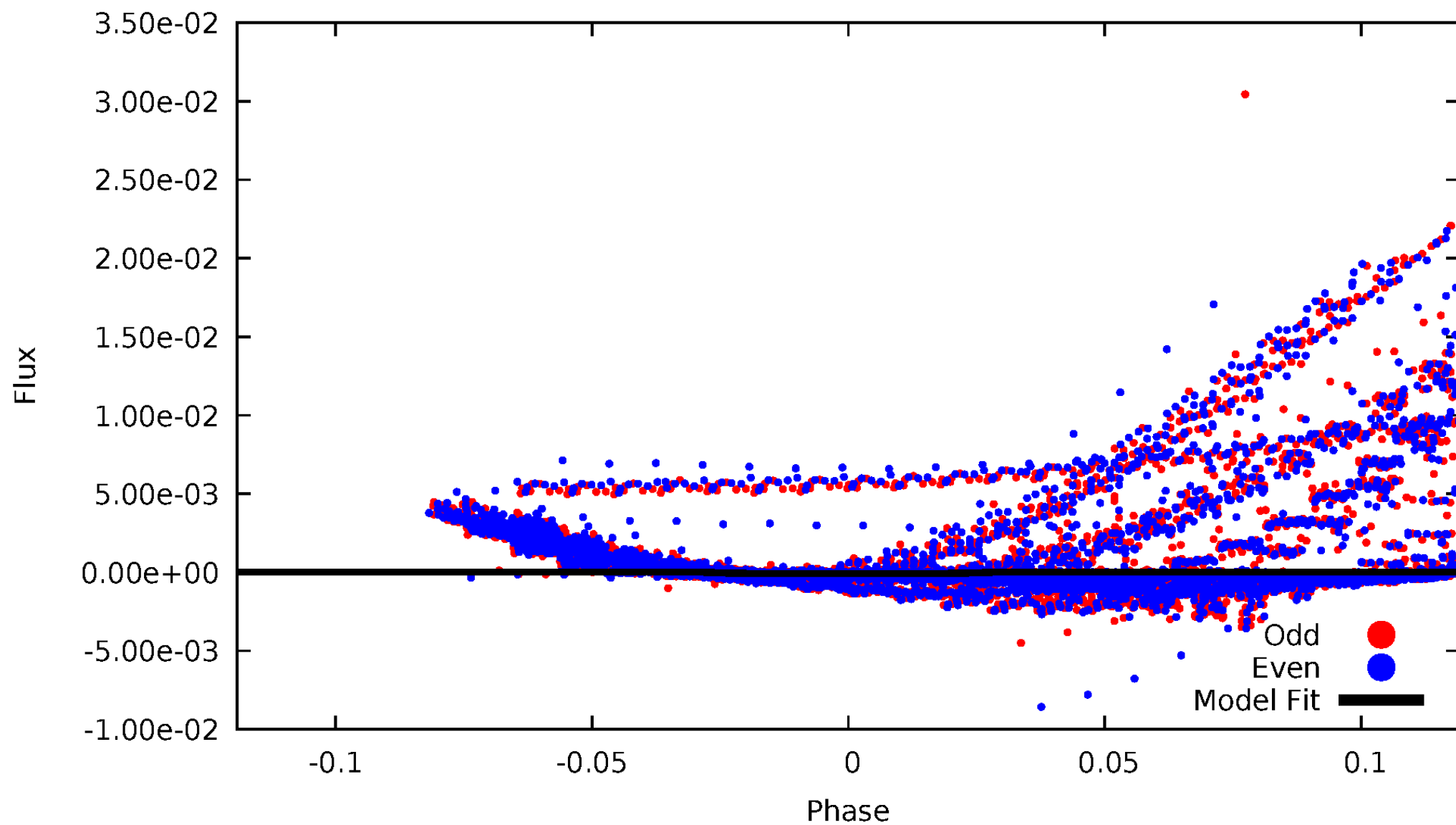
DV Odd/Even

TCE 009541567-03



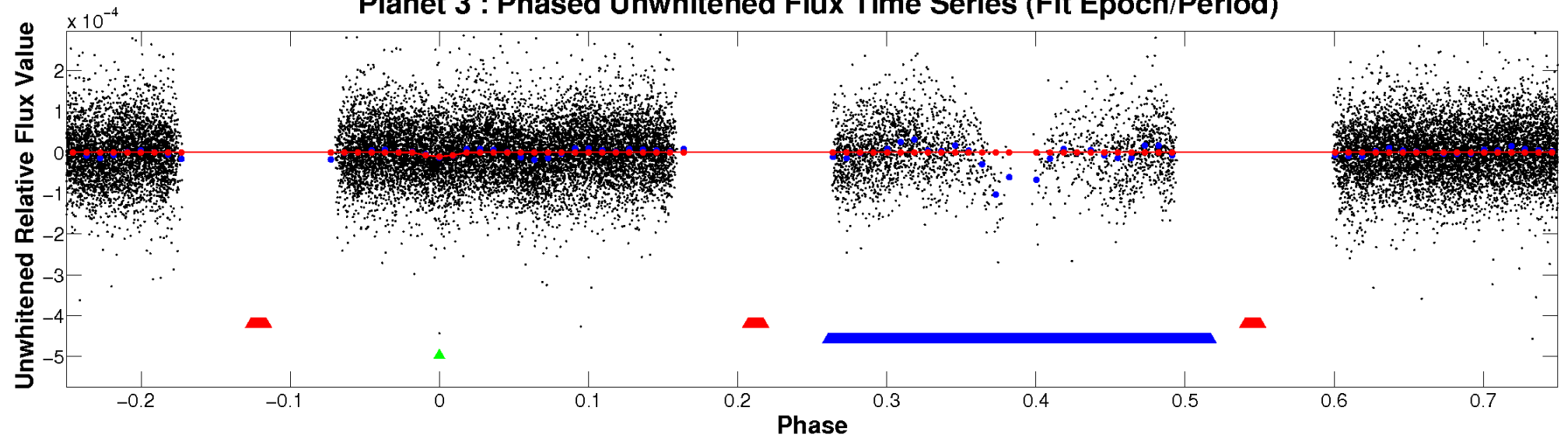
ALT Odd/Even

TCE 009541567-03

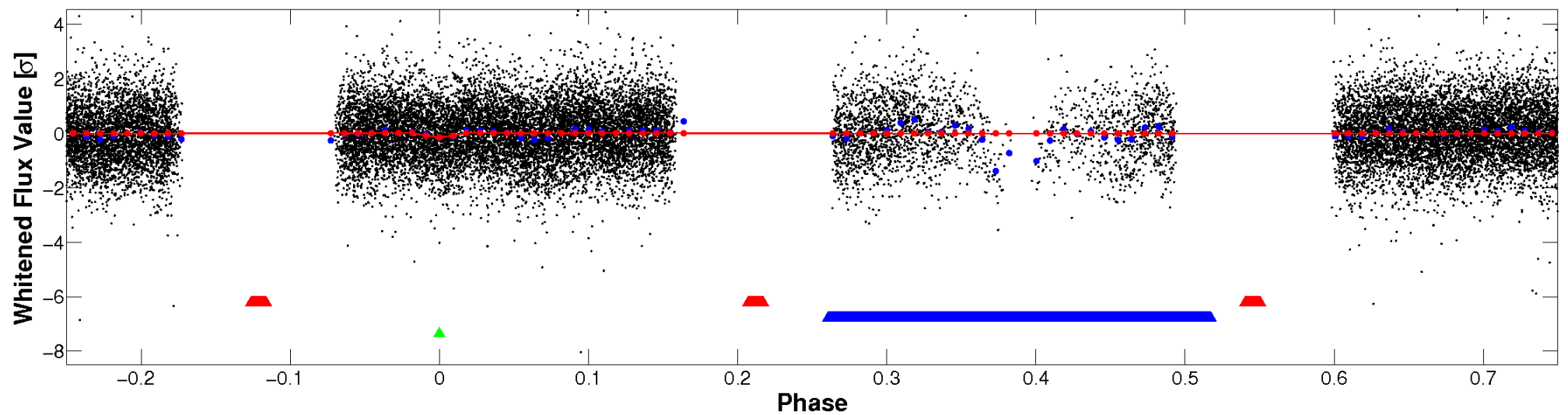


Non-Whitened Vs. Whitened Light Curve

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

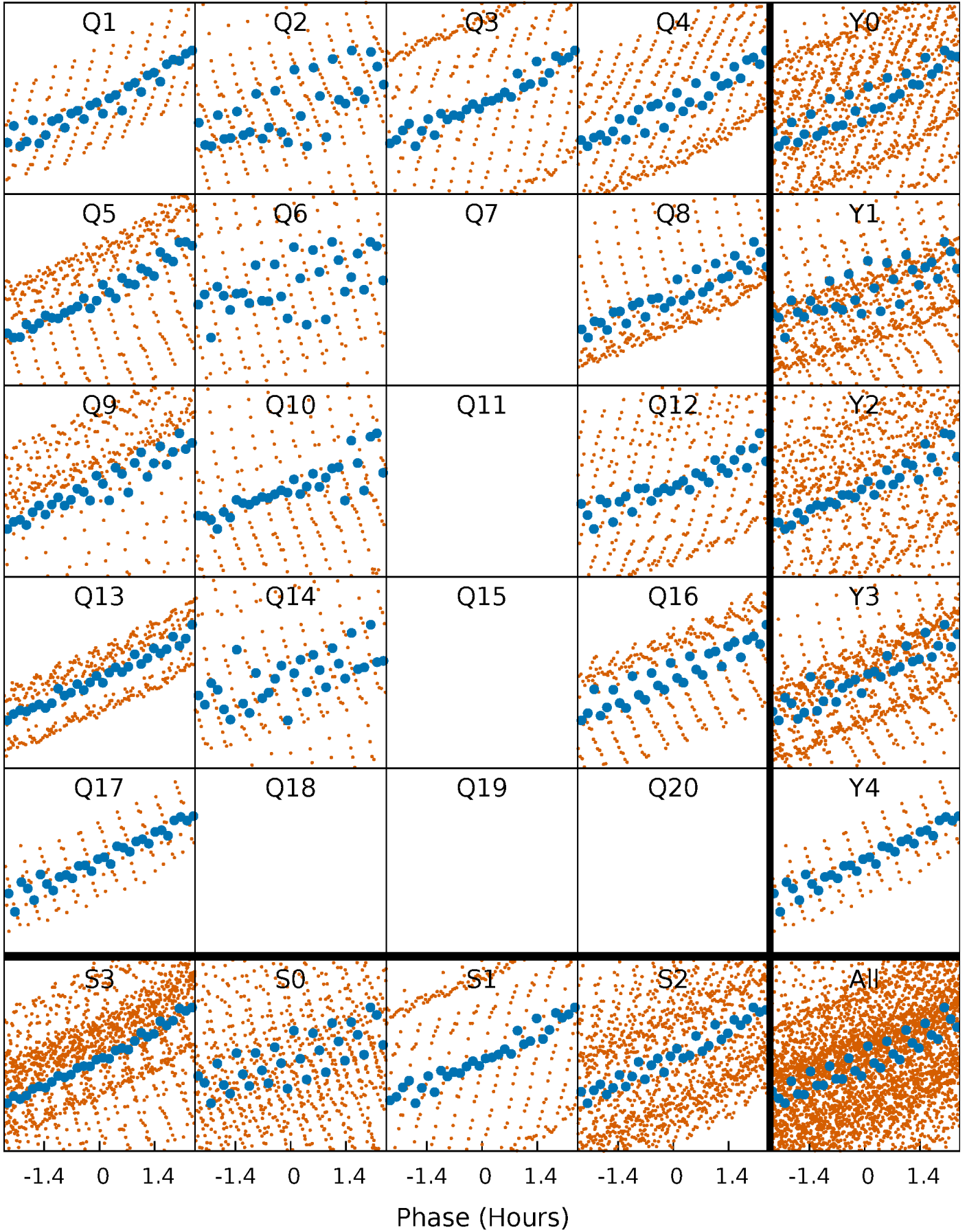


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



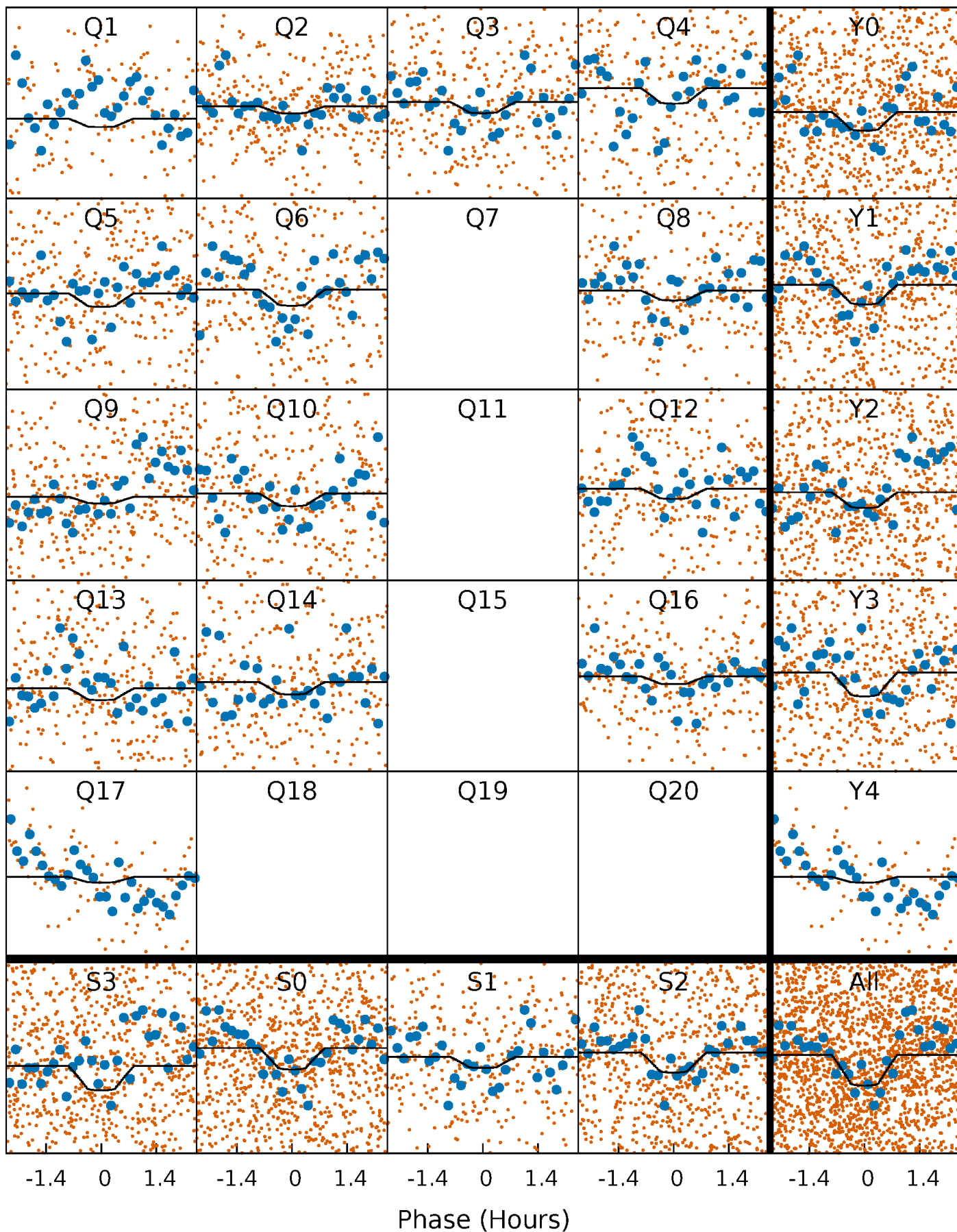
PDC Quarter-Phased Transit Curves

TCE 009541567-03 P= 2.245581 Days $T_0=133.081009$ (BKJD)



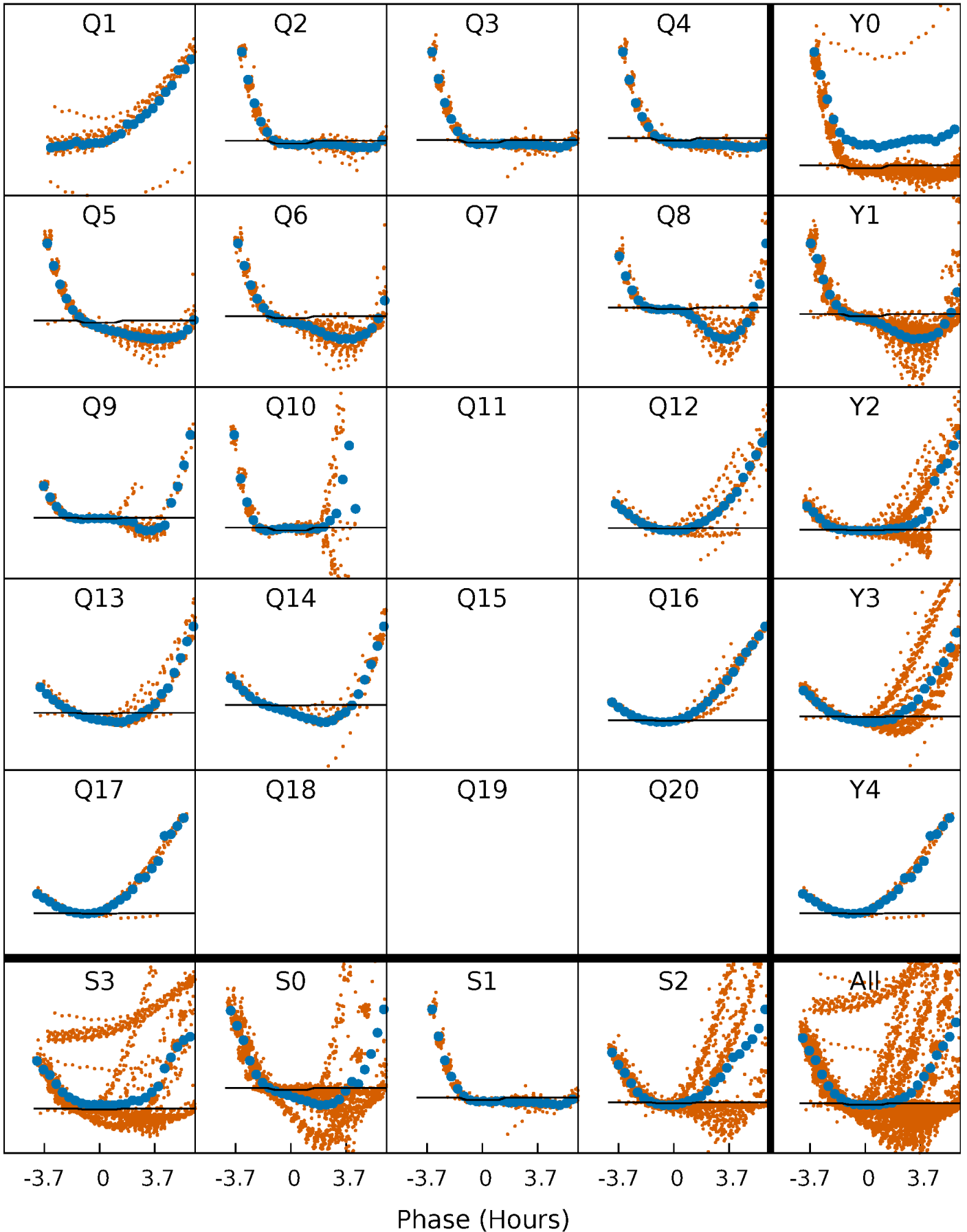
DV Quarter-Phased Transit Curves

TCE 009541567-03 $P = 2.245581$ Days $T_0 = 133.081009$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

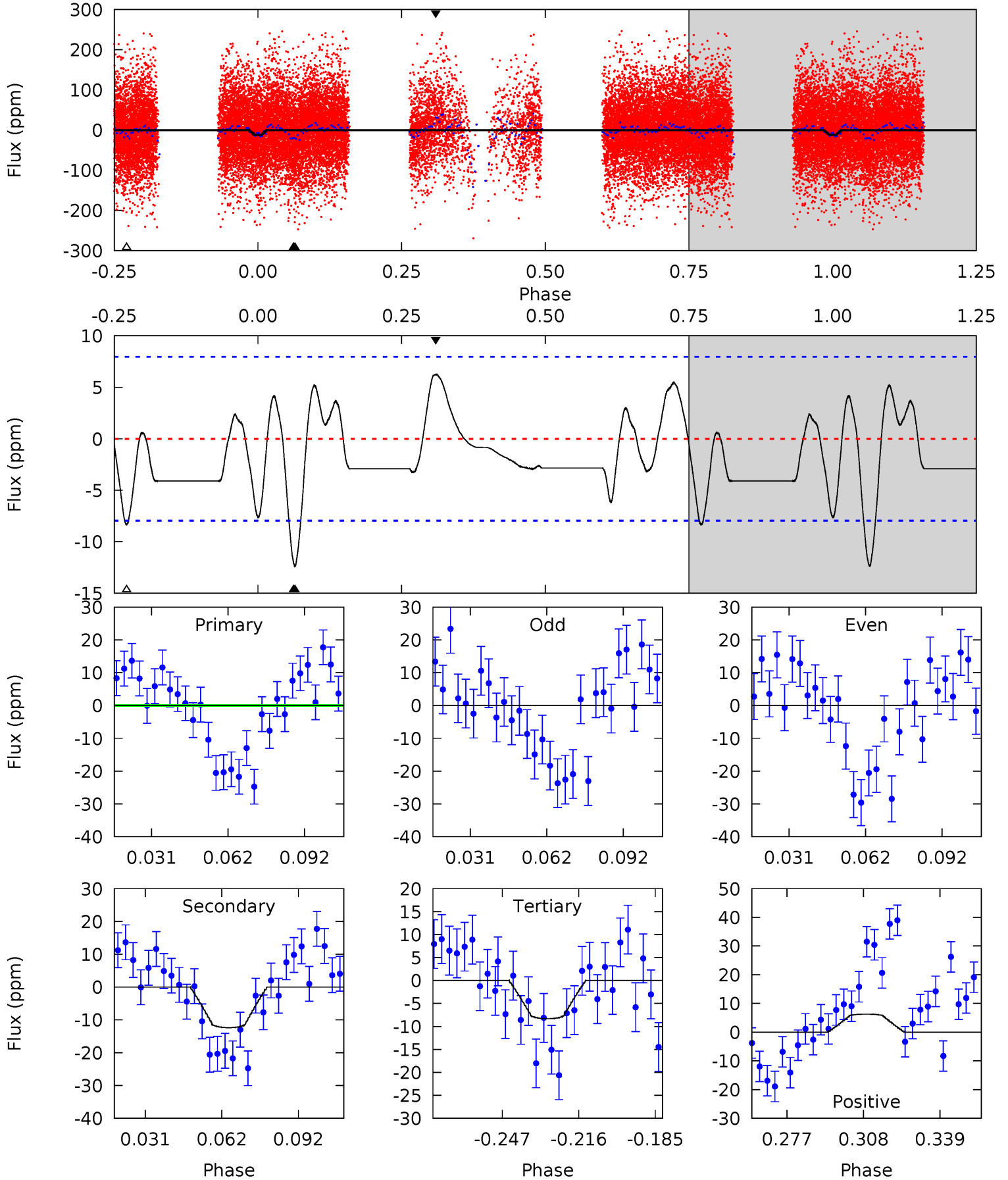
TCE 009541567-03 $P = 2.245677$ Days $T_0 = 133.067408$ (BKJD)



DV Model-Shift Uniqueness Test

009541567-03, P = 2.245581 Days, E = 130.835428 Days

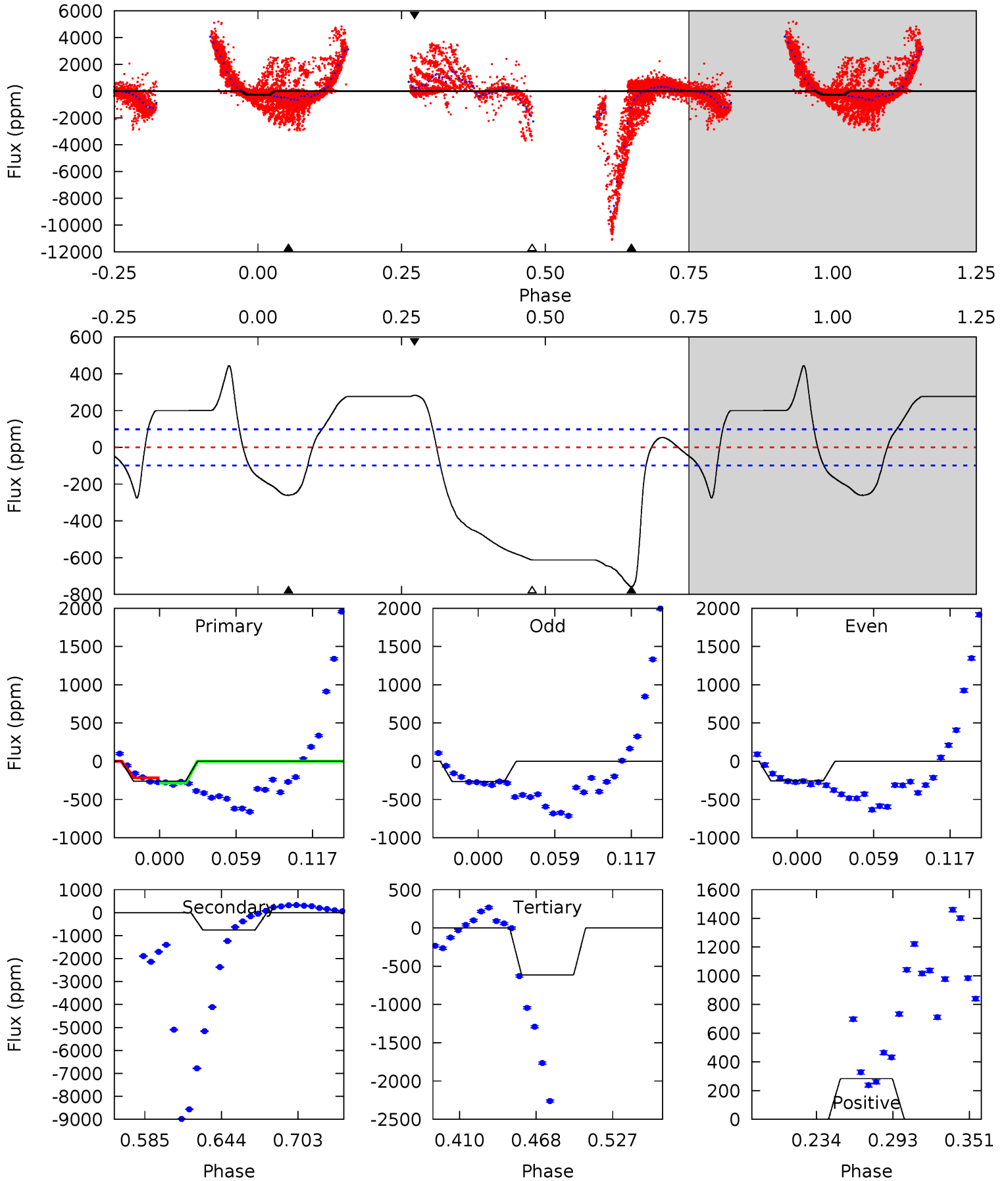
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.27	7.48	5.03	3.79	4.81	2.16	2.13	2.24	3.48	2.45	3.69	0.50	1.17	0.34	0.99



Alt Model-Shift Uniqueness Test

009541567-03, P = 2.245677 Days, E = 130.821731 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.4	36.1	29.1	13.5	4.68	1.89	10.6	-16.7	-1.09	6.97	22.6	0.18	0.45	0.37	1.42



Stellar Parameters For KIC 009541567

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	9274^{+255}_{-475}	$4.092^{+0.158}_{-0.193}$	$0.070^{+0.150}_{-0.650}$	$2.227^{+0.805}_{-0.659}$	$2.236^{+0.396}_{-0.594}$	$0.285^{+0.265}_{-0.160}$
	+3%/-5%	+4%/-5%	+214%/-929%	+36%/-30%	+18%/-27%	+93%/-56%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009541567-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-12 ± 2	$0.82^{+0.27}_{-0.22}$	4067^{+349}_{-295}	9382^{+2359}_{-1371}	19^{+16}_{-8}
Alt.	-759 ± 21	$2.18^{+0.45}_{-0.41}$	4074^{+330}_{-309}	27039^{+4153}_{-3636}	165^{+68}_{-47}

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 $A_{obs} \gg 1.0$

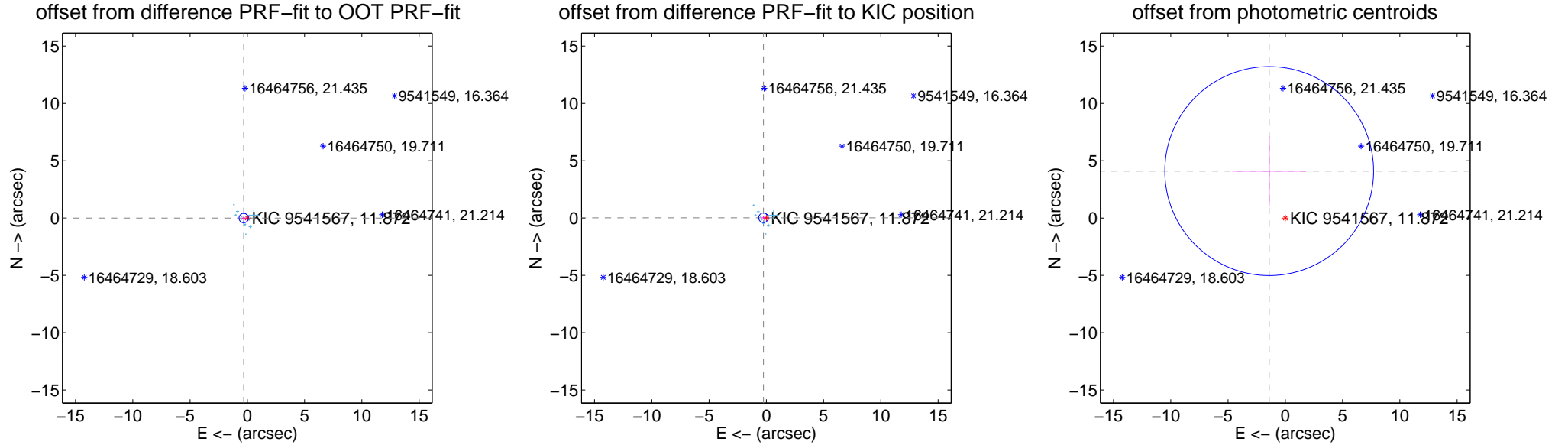
DV Centroid Data

Supplemental centroid analysis for 009541567-03. **Kepler magnitude: 11.87.** Transit SNR 4.33

There are 14 quarters with good PRF difference image offsets

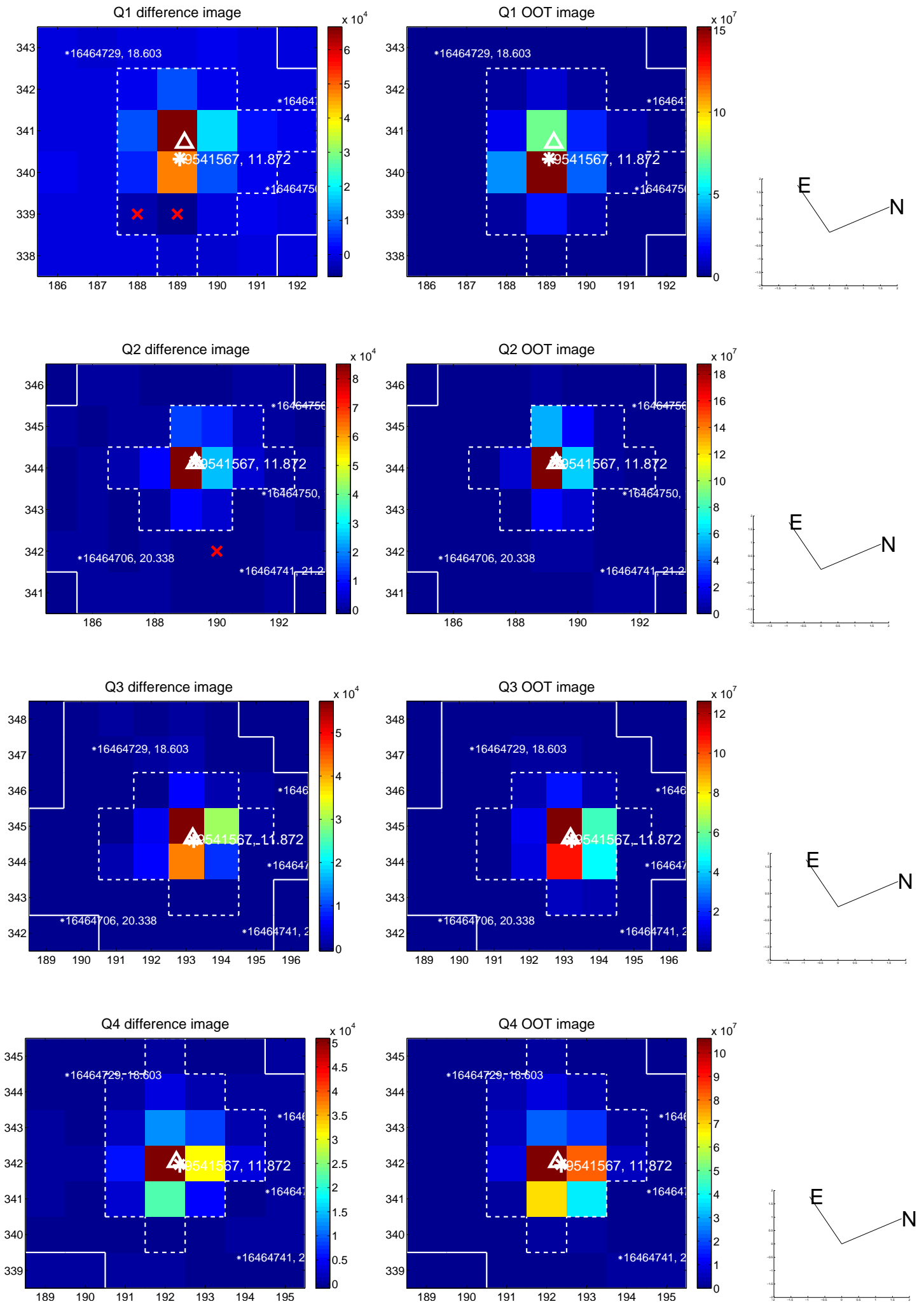
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.315 ± 0.137	2.31	0.315 ± 0.138	-0.005 ± 0.178
PRF-fit source offset from KIC position	0.248 ± 0.139	1.78	0.247 ± 0.135	0.021 ± 0.158
photometric centroid source offset	4.33 ± 3.04	1.43	1.41 ± 3.23	4.10 ± 3.01

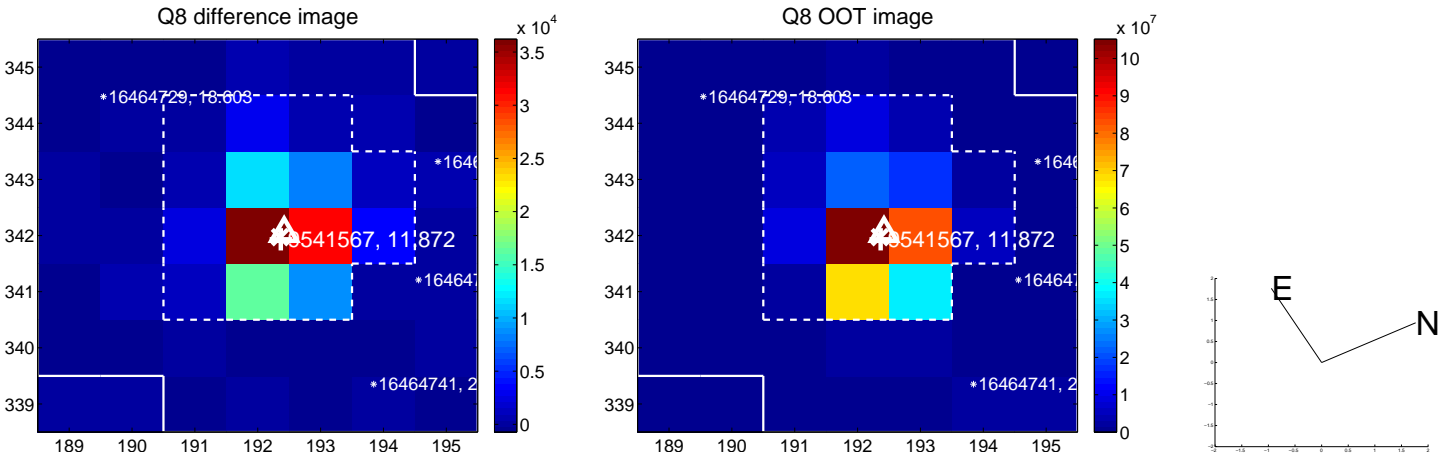
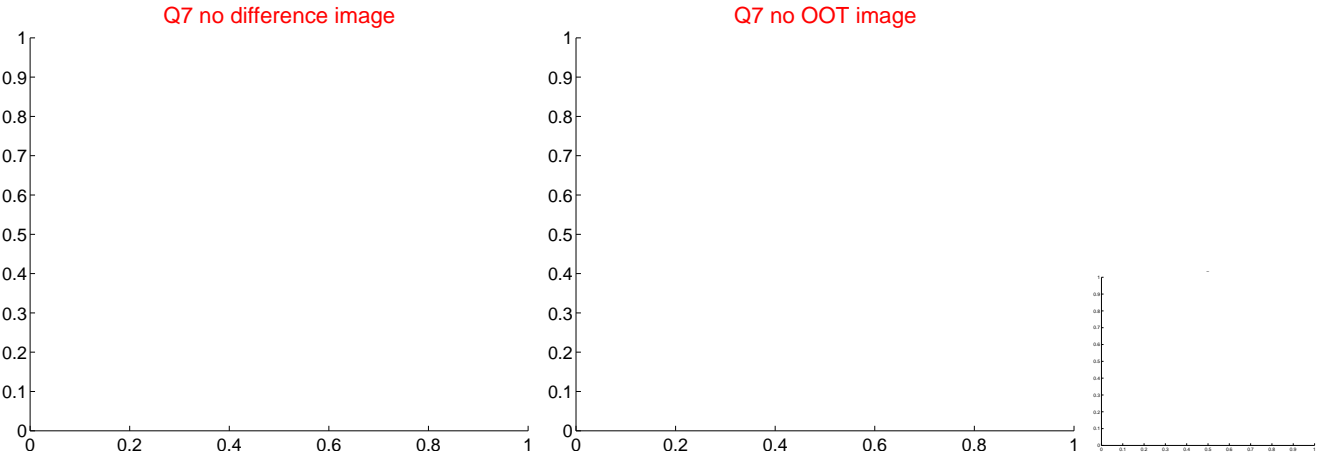
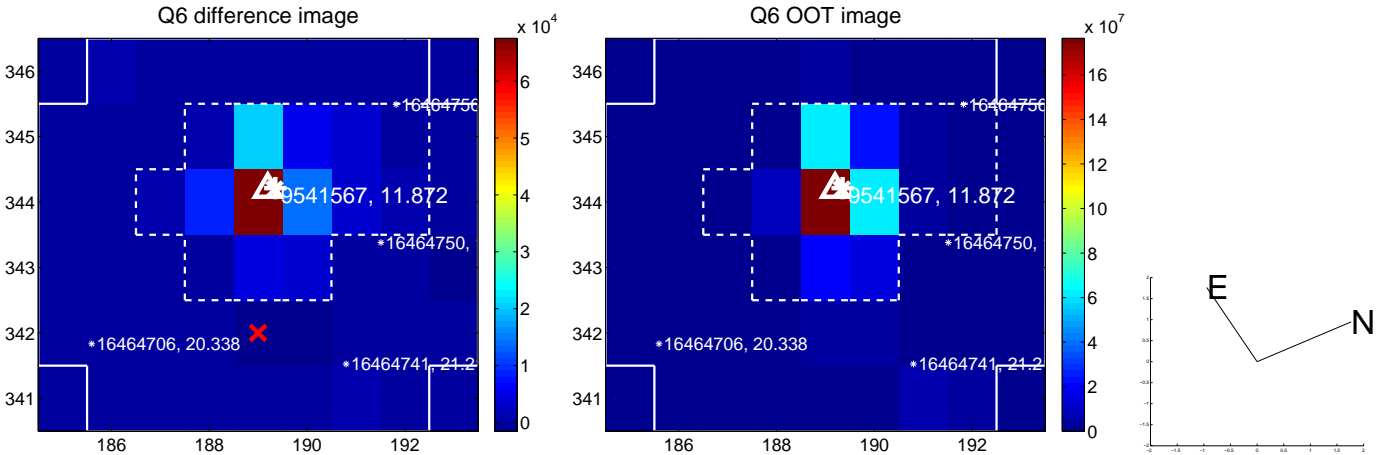
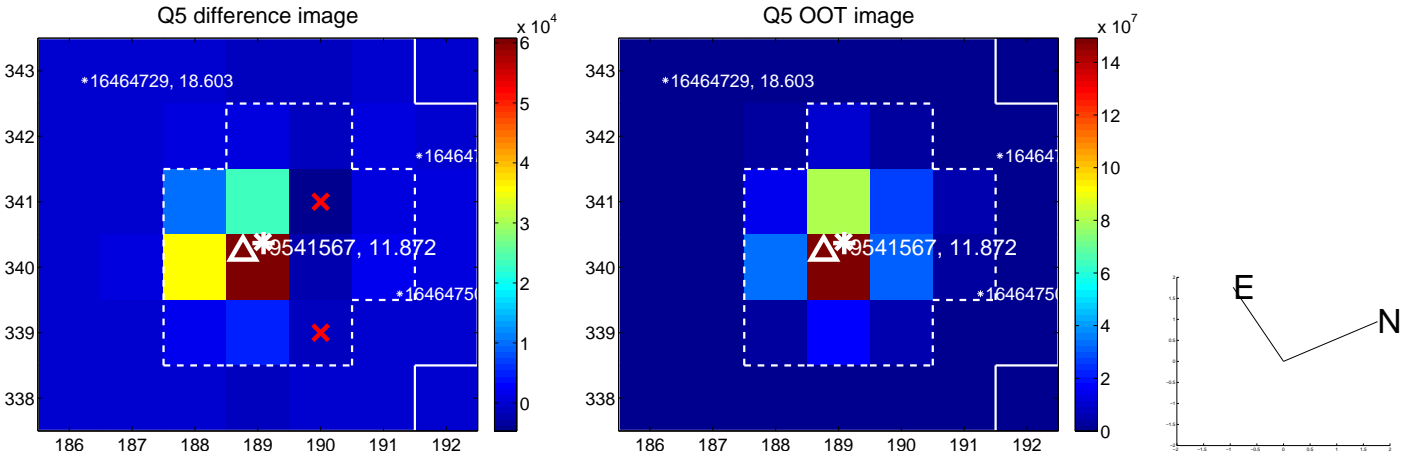


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

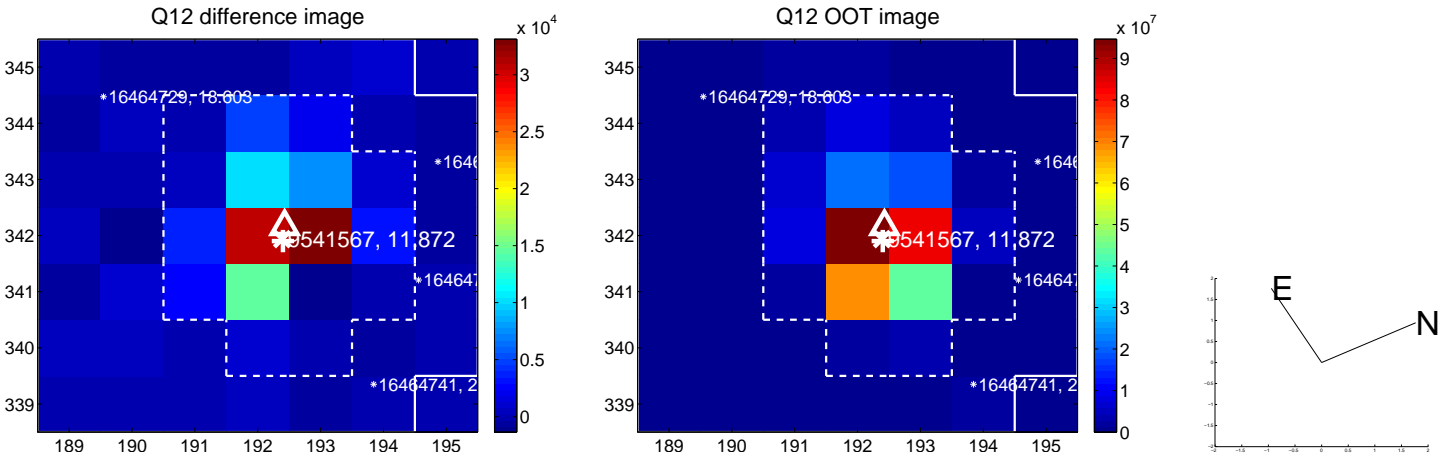
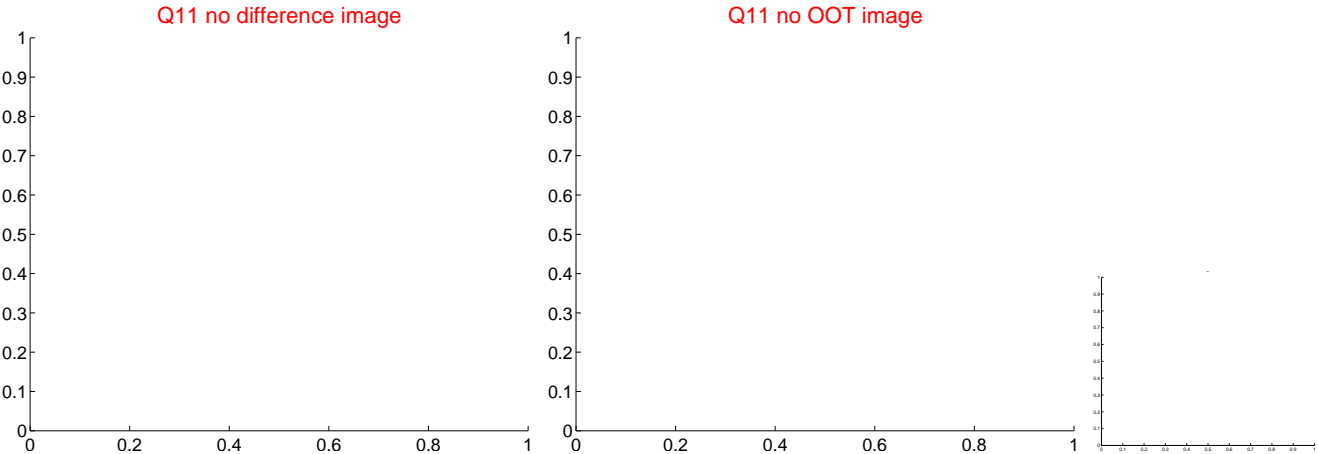
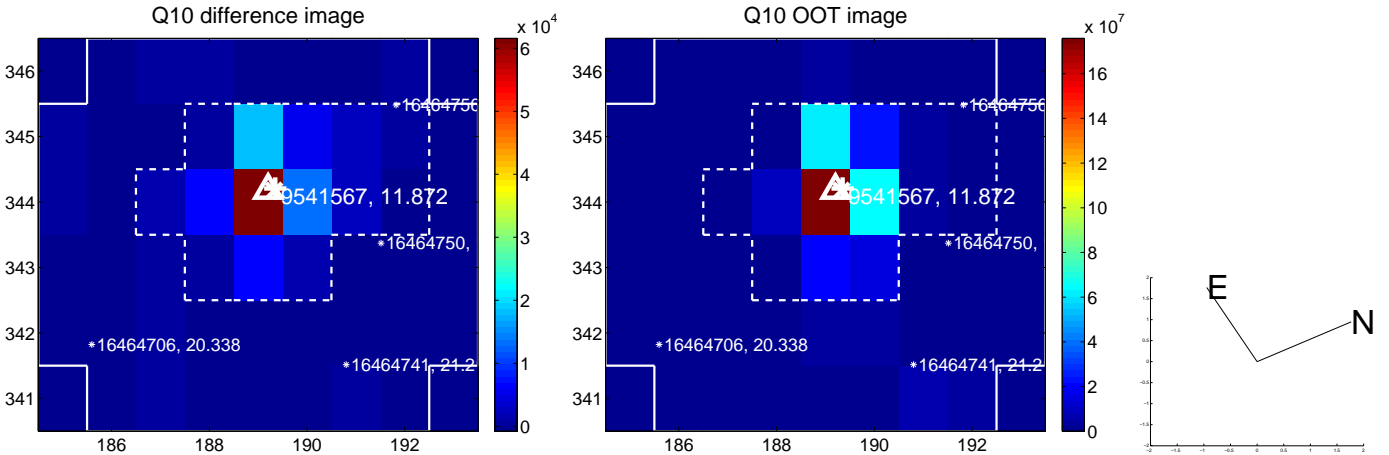
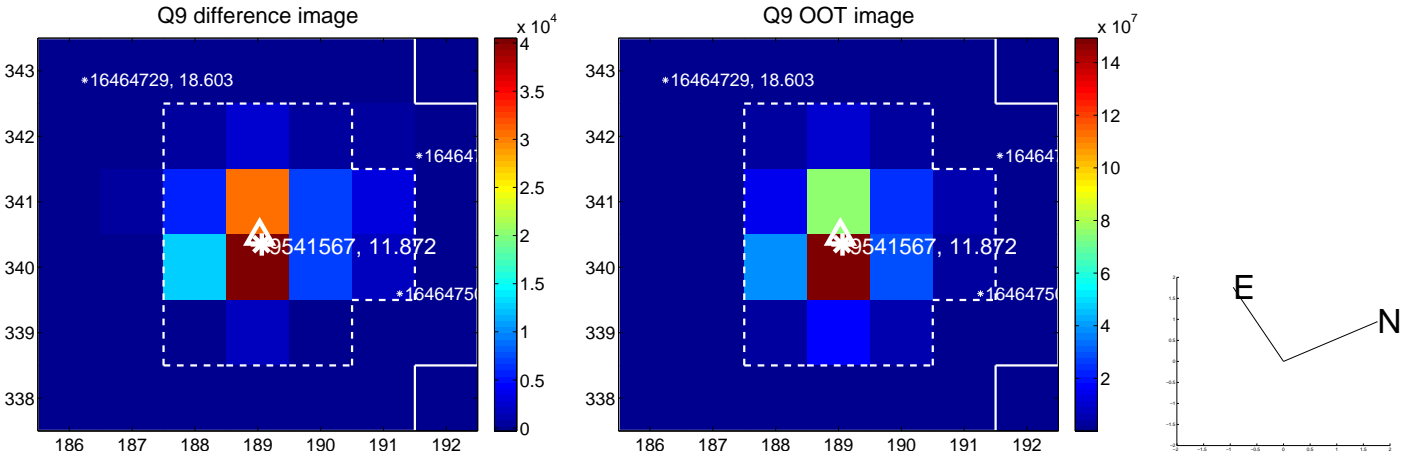
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



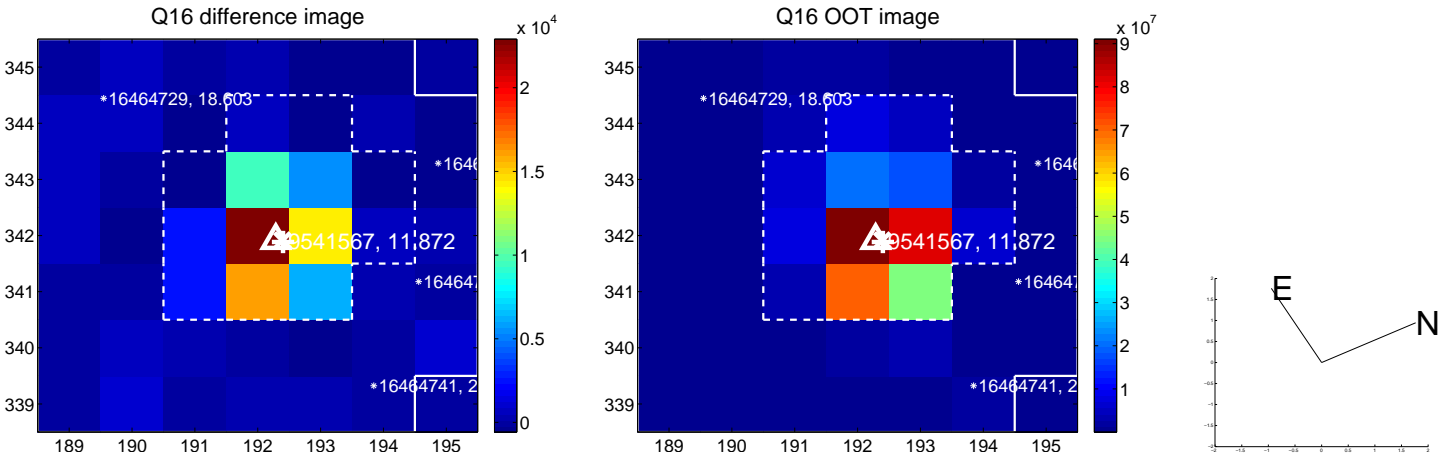
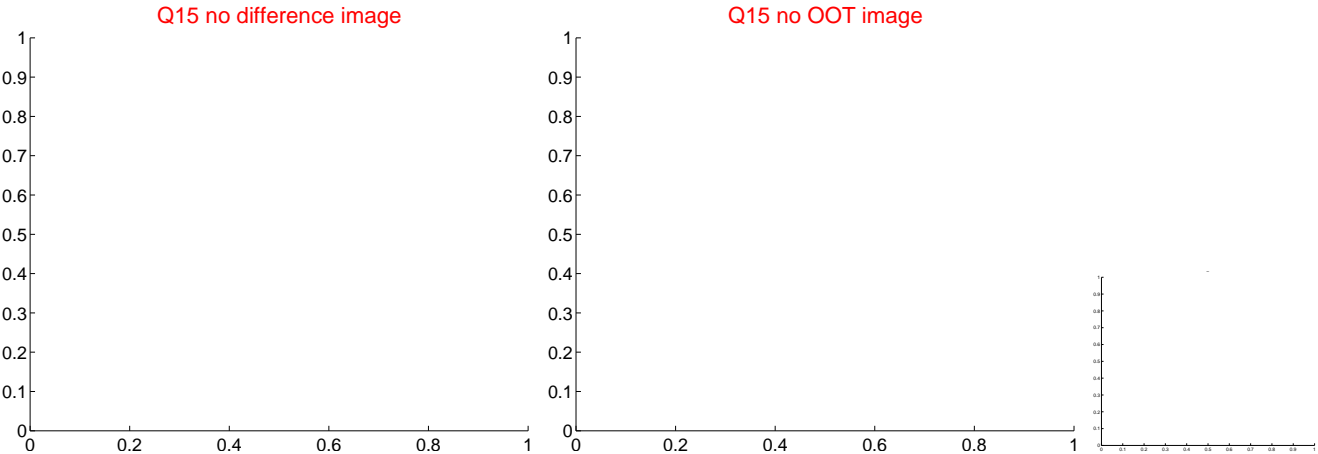
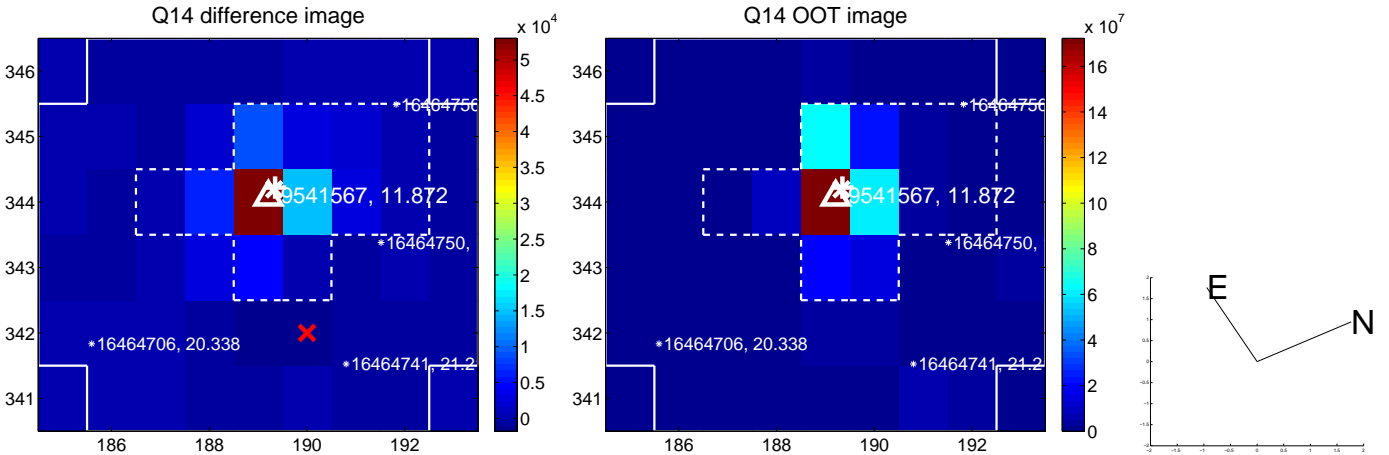
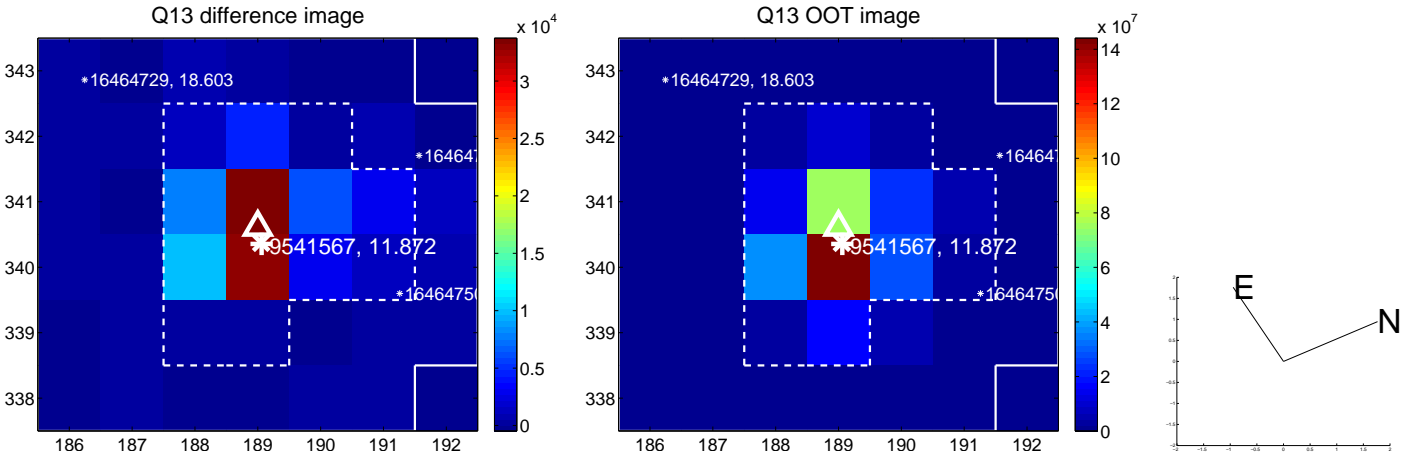
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



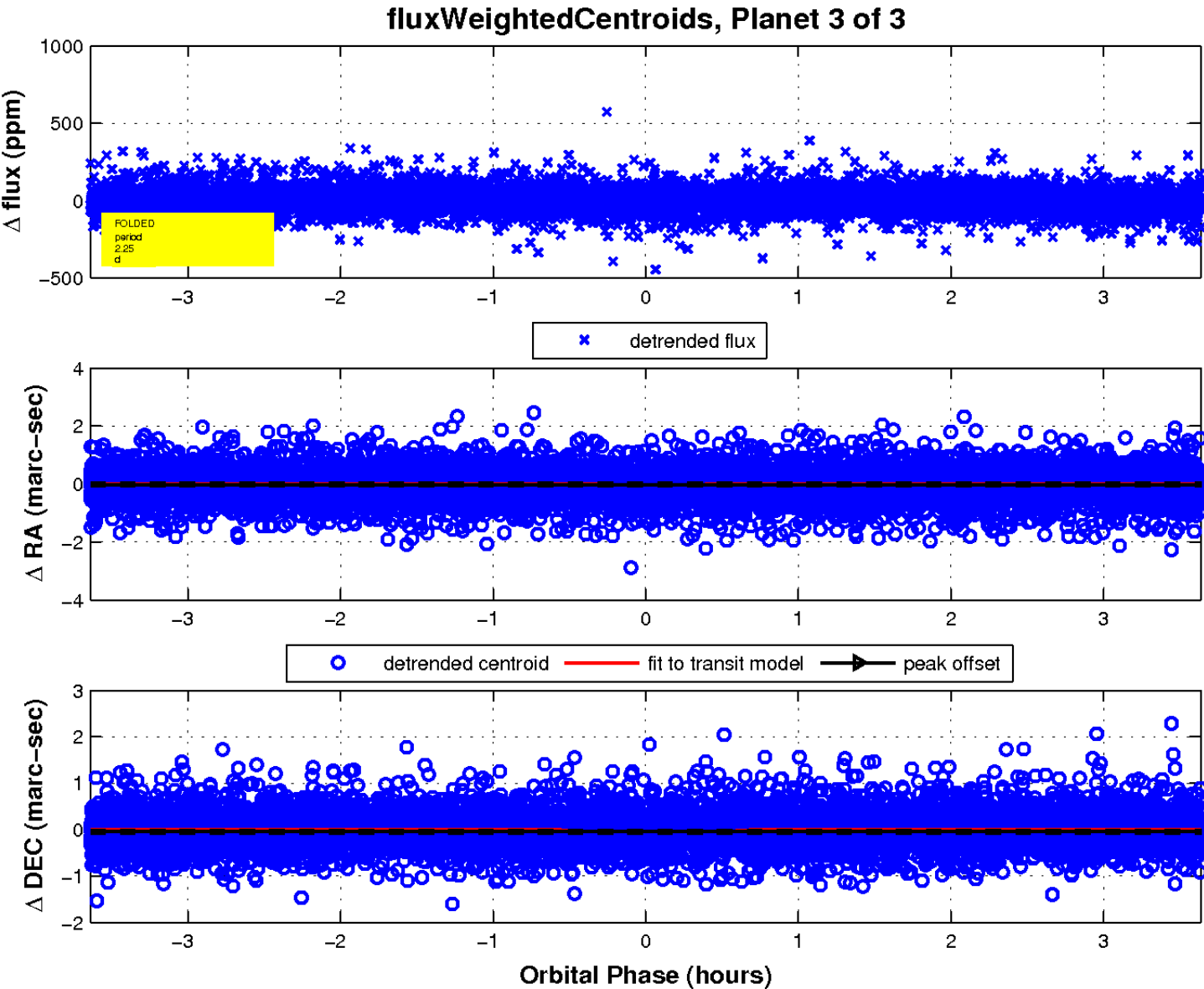
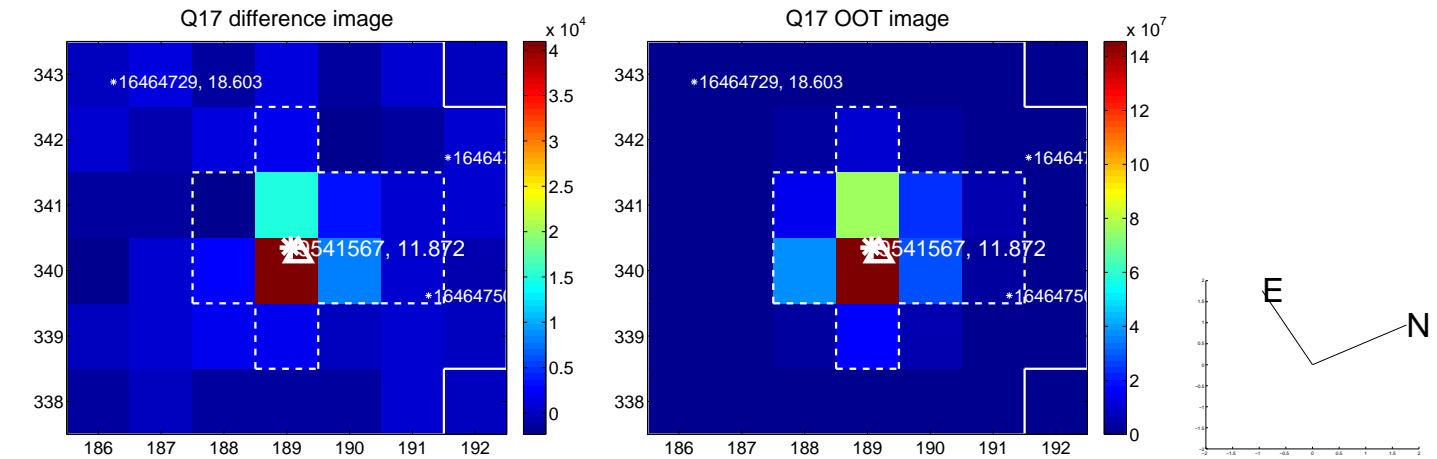
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

