

KIC 011154043

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})
011154043-01	OBS	7414.01	4.529943	135.924252	84.8	3.346	23.0	22.8	2.30	8912	2.44	6218.67
011154043-02	OBS	No	4.529819	133.554425	53.9	3.414	15.5	15.3	2.30	8912	1.95	6218.90
011154043-03	OBS	No	1.509973	132.803408	30.5	3.203	12.2	12.3	2.30	8912	1.50	26906.81
011154043-04	OBS	No	1.509917	132.401644	22.2	4.178	11.0	12.0	2.30	8912	1.25	26908.12
011154043-05	OBS	No	1.510086	132.025299	14.9	12.030	10.6	6.7	2.30	8912	0.98	26904.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011154043-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
011154043-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—SAME_NTL_PERIOD
011154043-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
011154043-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
011154043-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS

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

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

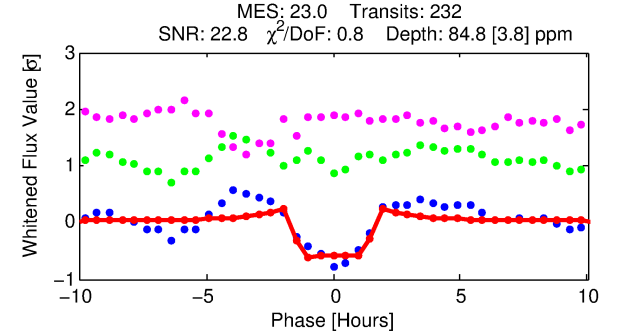
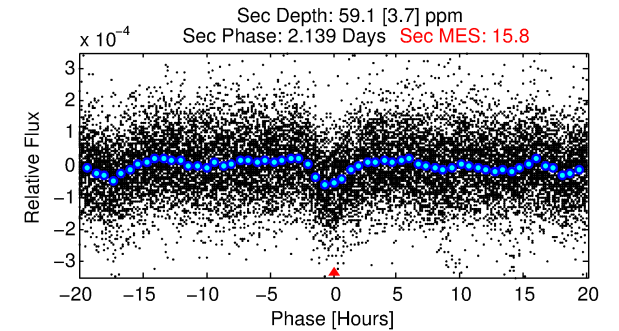
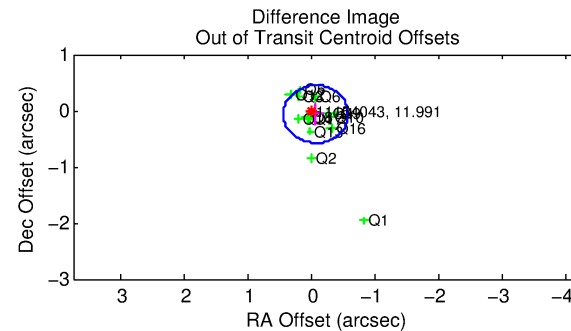
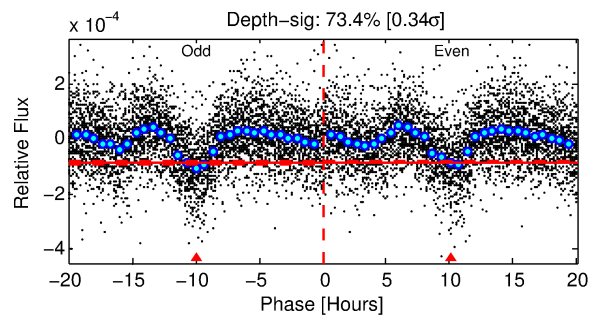
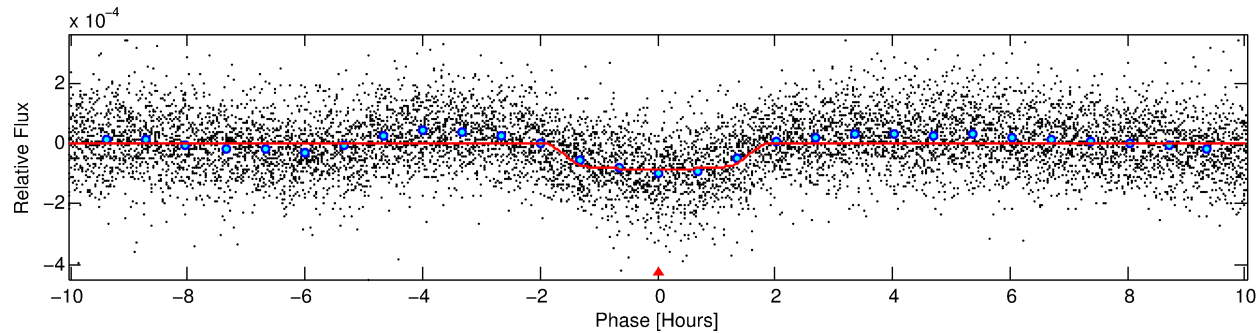
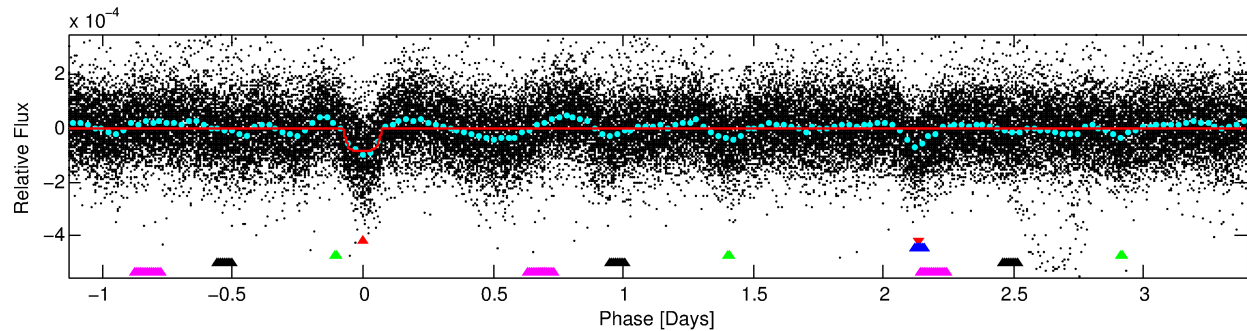
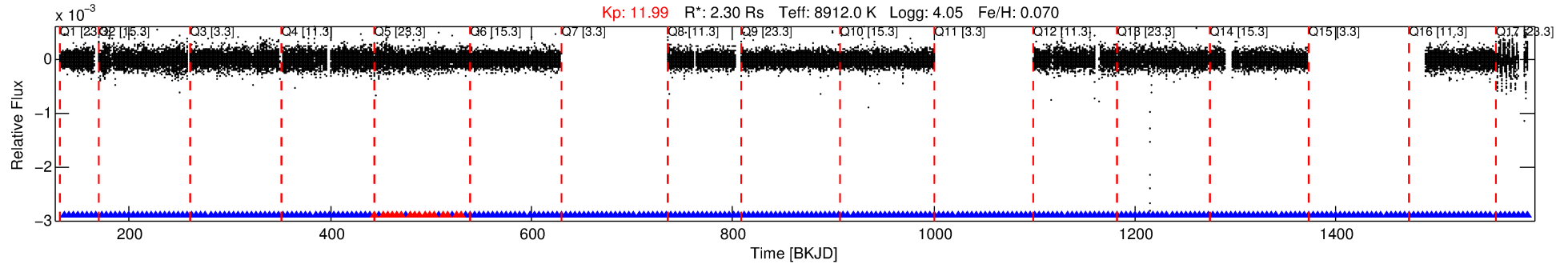
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011154043-01

No Significant Match Found

DV One-Page Summary

KIC: 11154043 Candidate: 1 of 5 Period: 4.530 d
KOI: K07414.01 Corr: 0.952



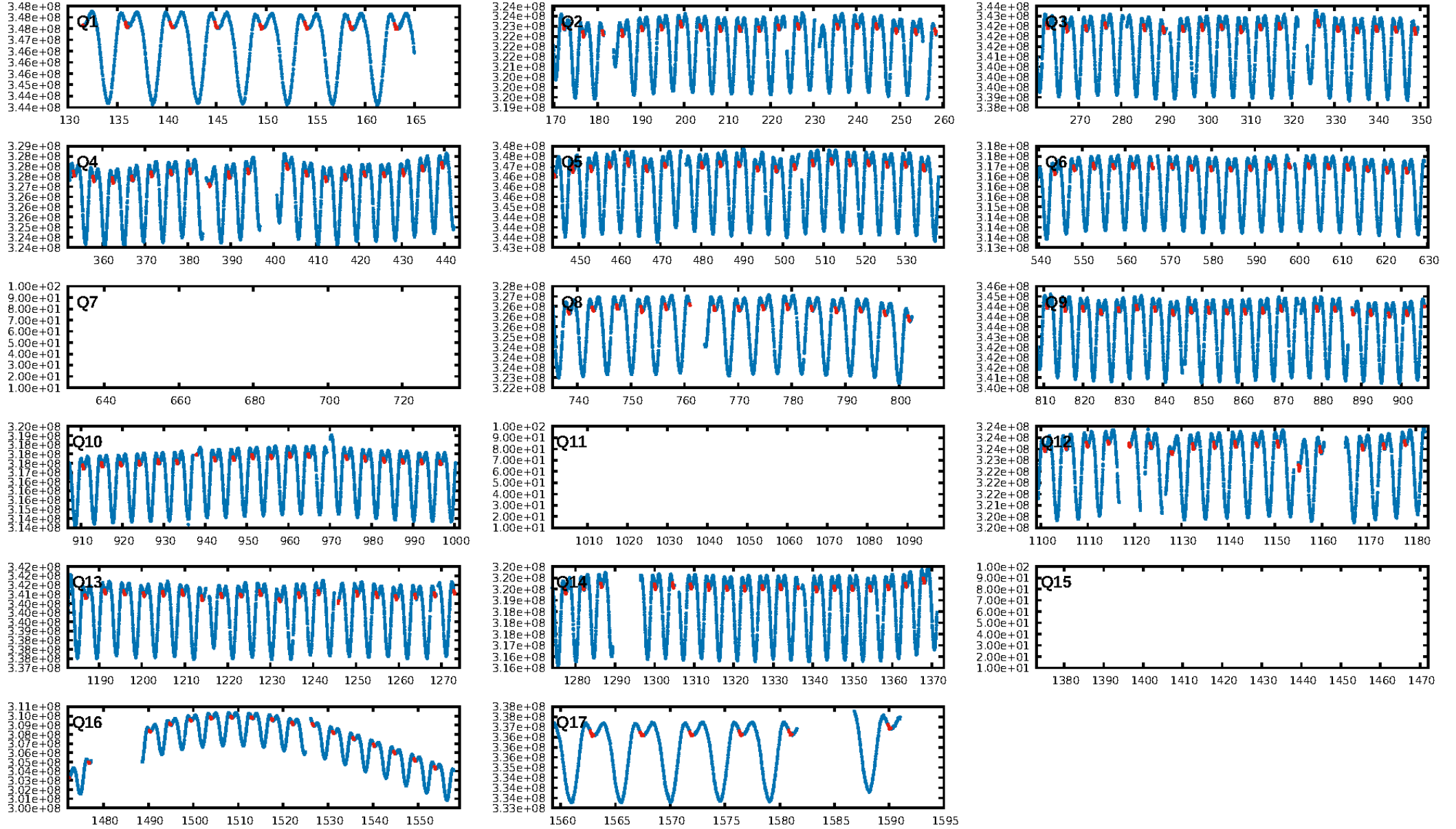
DV Fit Results:

Period = 4.52994 [0.00001] d
Epoch = 135.9243 [0.0016] BKJD
Rp/R* = 0.0097 [0.0011]
a/R* = 4.82 [3.46]
b = 0.90 [0.16]
Seff = 6218.67 [2471.92]
Teq = 2264 [225] K
Rp = 2.44 [0.81] Re
a = 0.0693 [0.0174] AU
Ag = 26.13 [10.84] [2.32 σ]
Teffp = 7916 [586] K [9.00 σ]

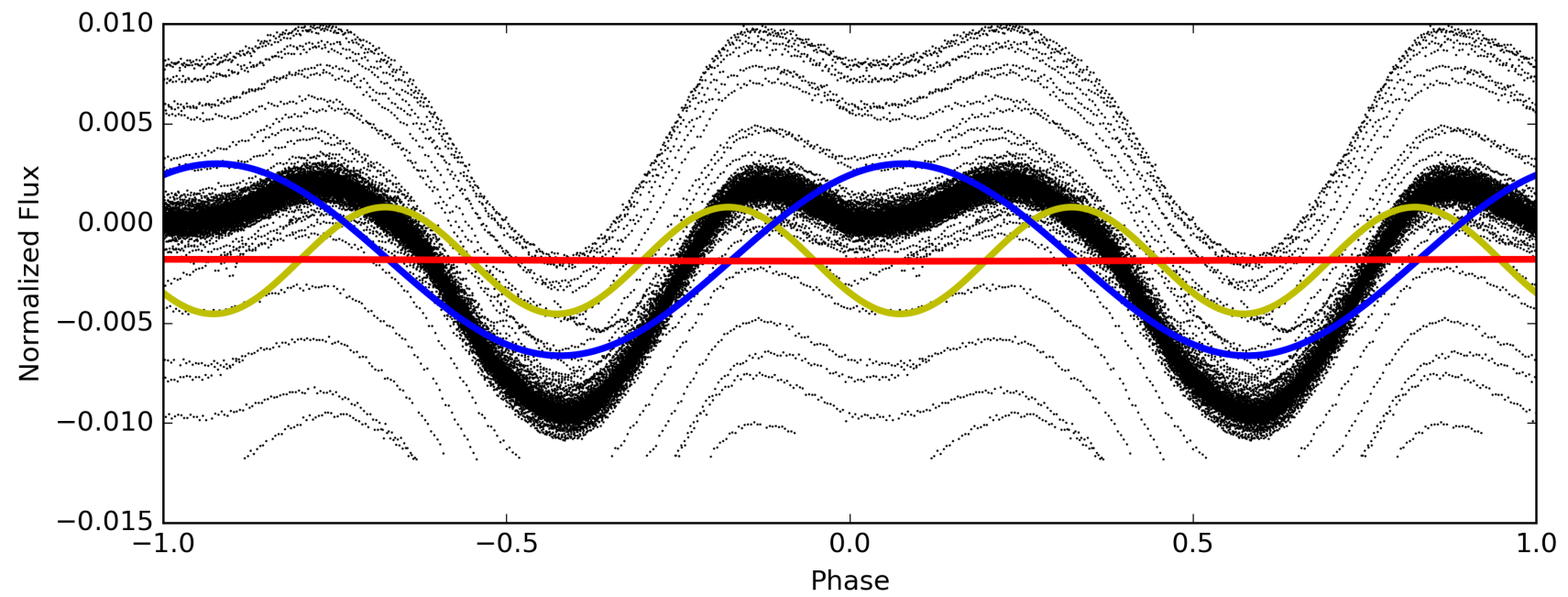
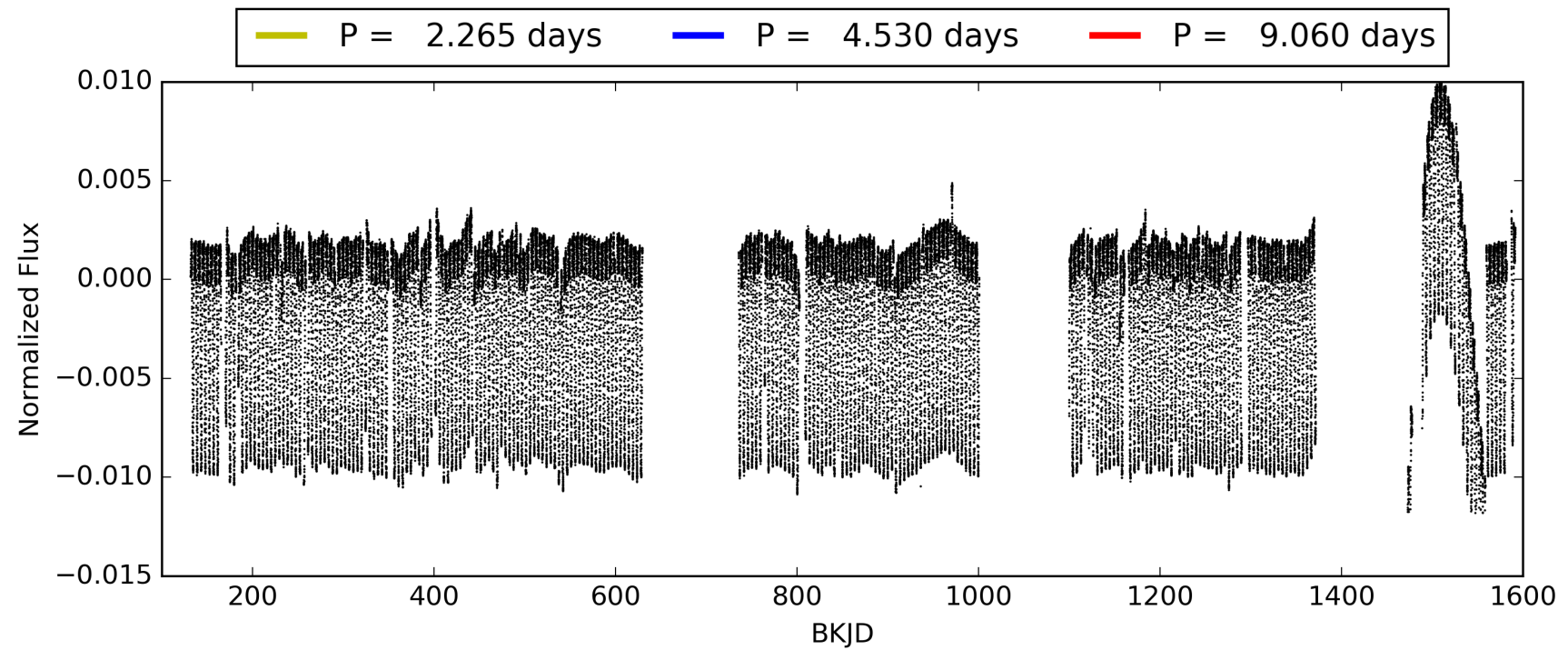
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.93 [203/219]
GhostDiagnostic-chr: 2.98
Centroid-sig: 3.4%
Centroid-so: 0.472 arcsec [1.10 σ]
OotOffset-rm: 0.091 arcsec [0.53 σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-rm: 0.055 arcsec [0.53 σ]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 0.00 [0/14]

TCE 011154043-01, PDC Light Curves

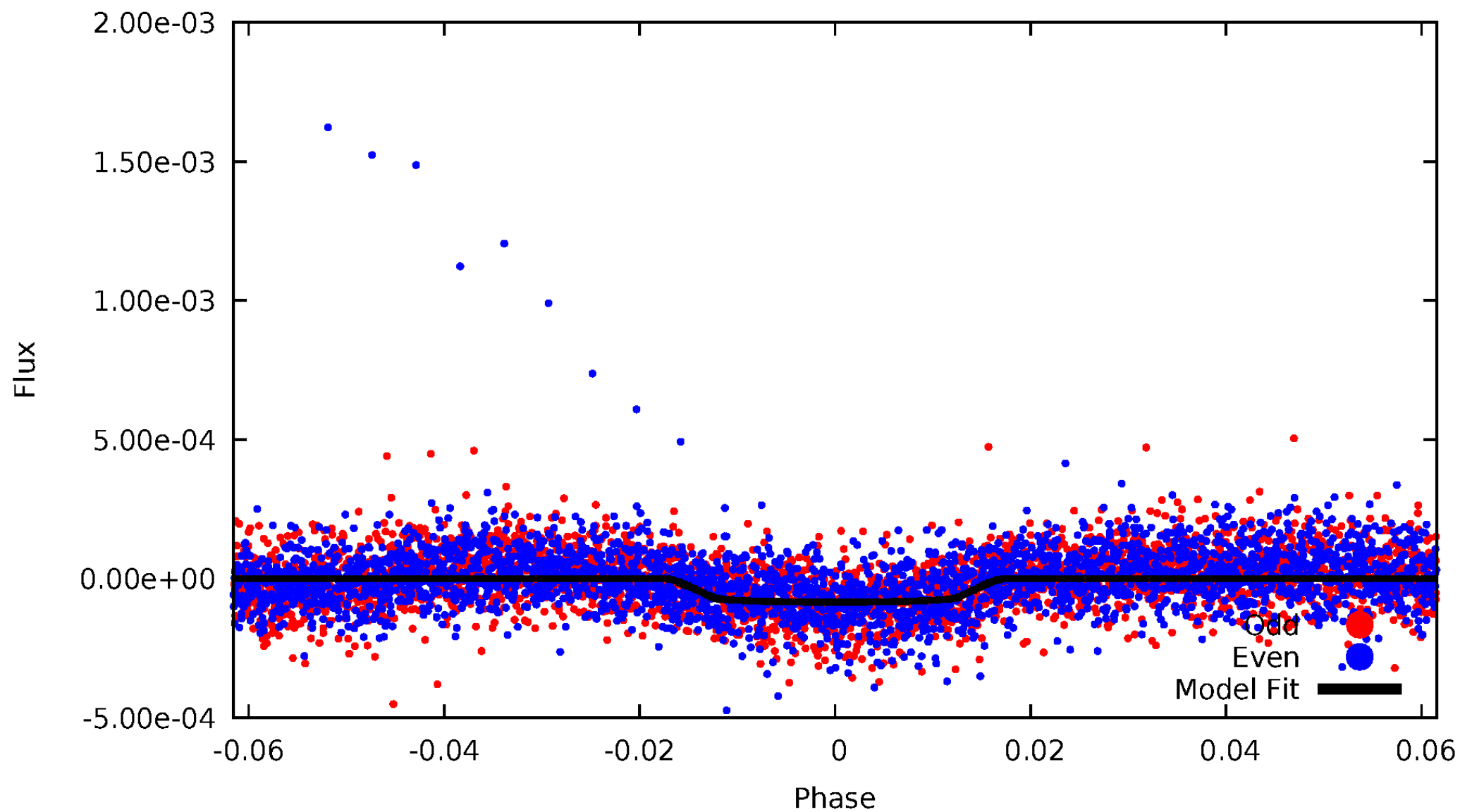


TCE 011154043-01



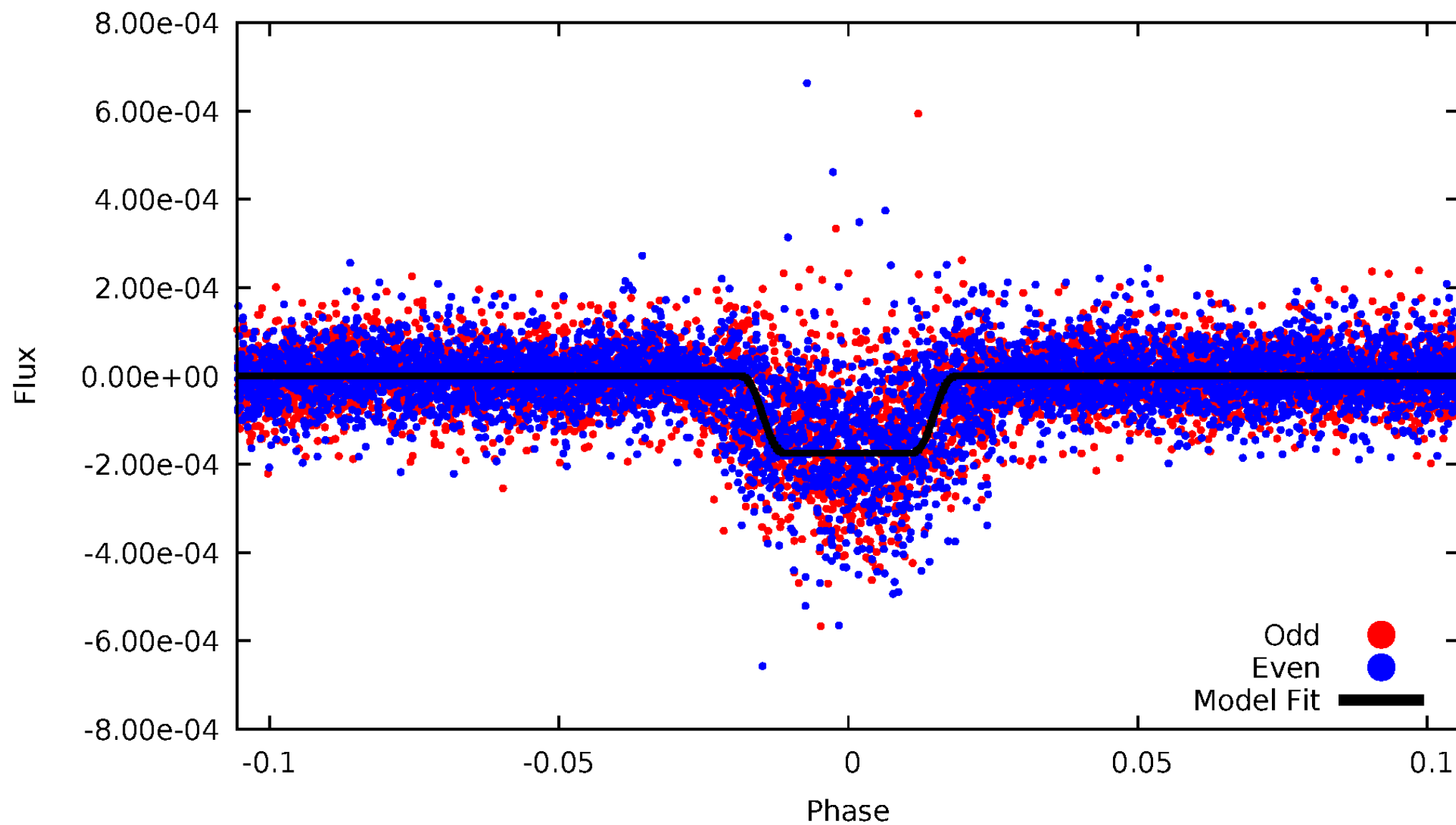
DV Odd/Even

TCE 011154043-01



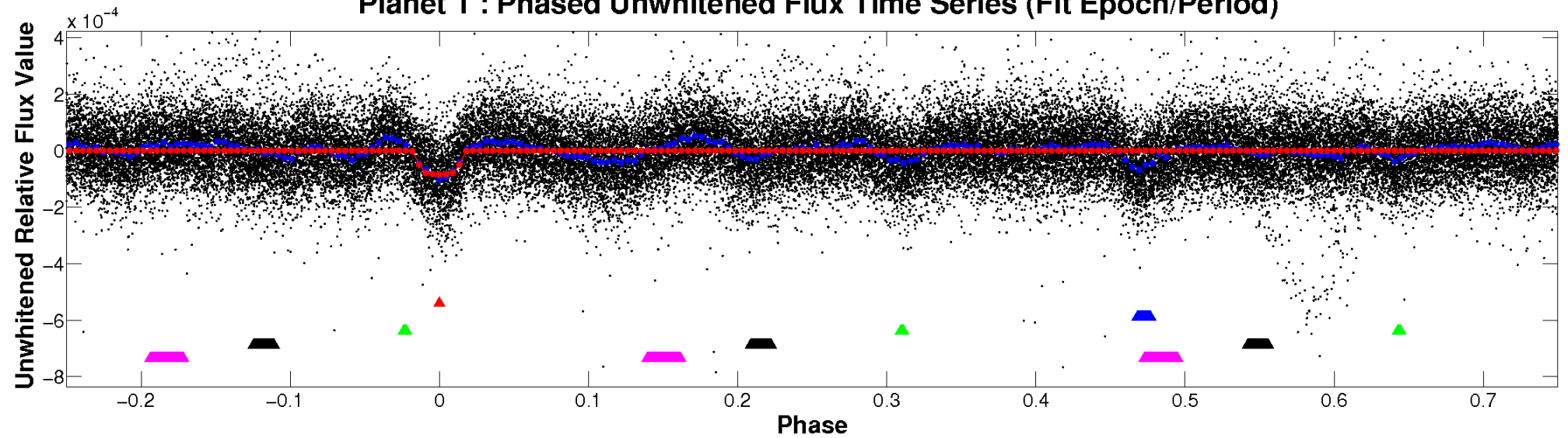
ALT Odd/Even

TCE 011154043-01

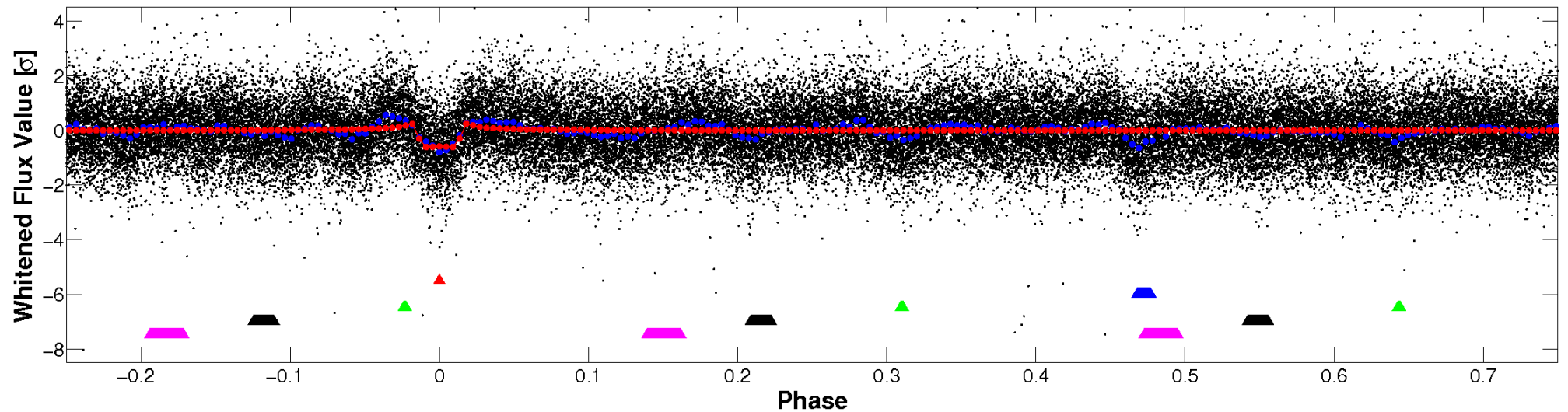


Non-Whitened Vs. Whitened Light Curve

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

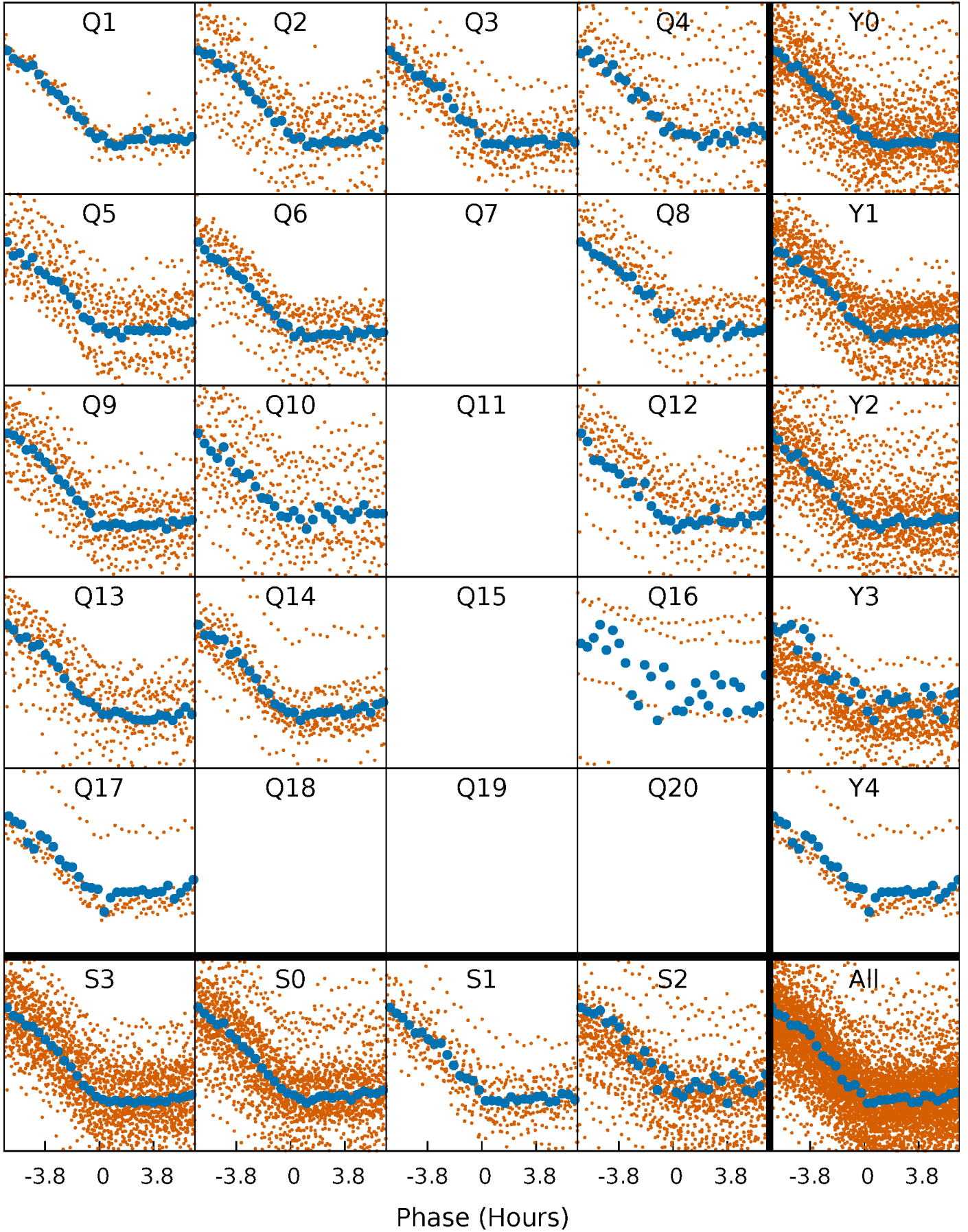


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



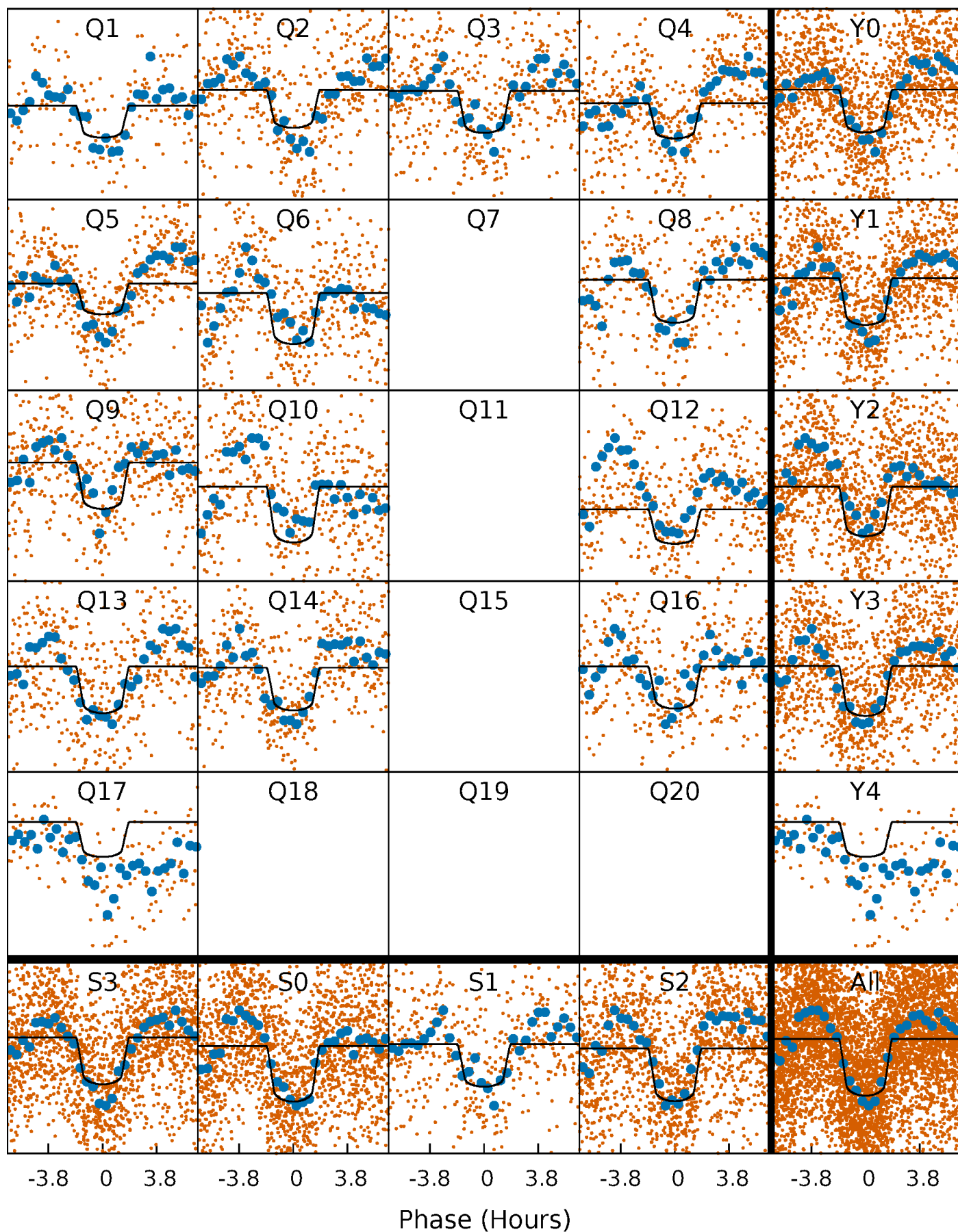
PDC Quarter-Phased Transit Curves

TCE 011154043-01 P= 4.529943 Days $T_0=135.924252$ (BKJD)



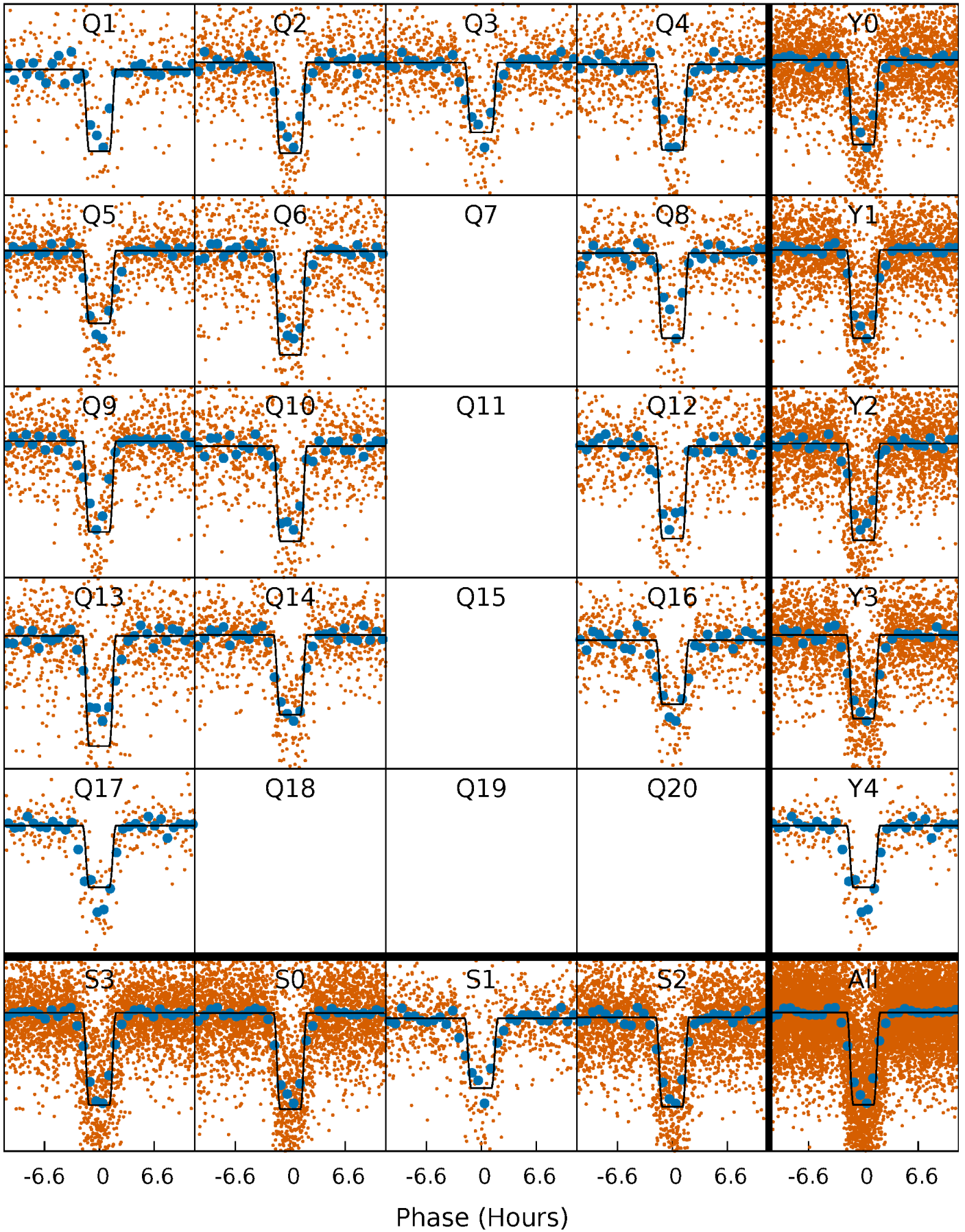
DV Quarter-Phased Transit Curves

TCE 011154043-01 P= 4.529943 Days $T_0=135.924252$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

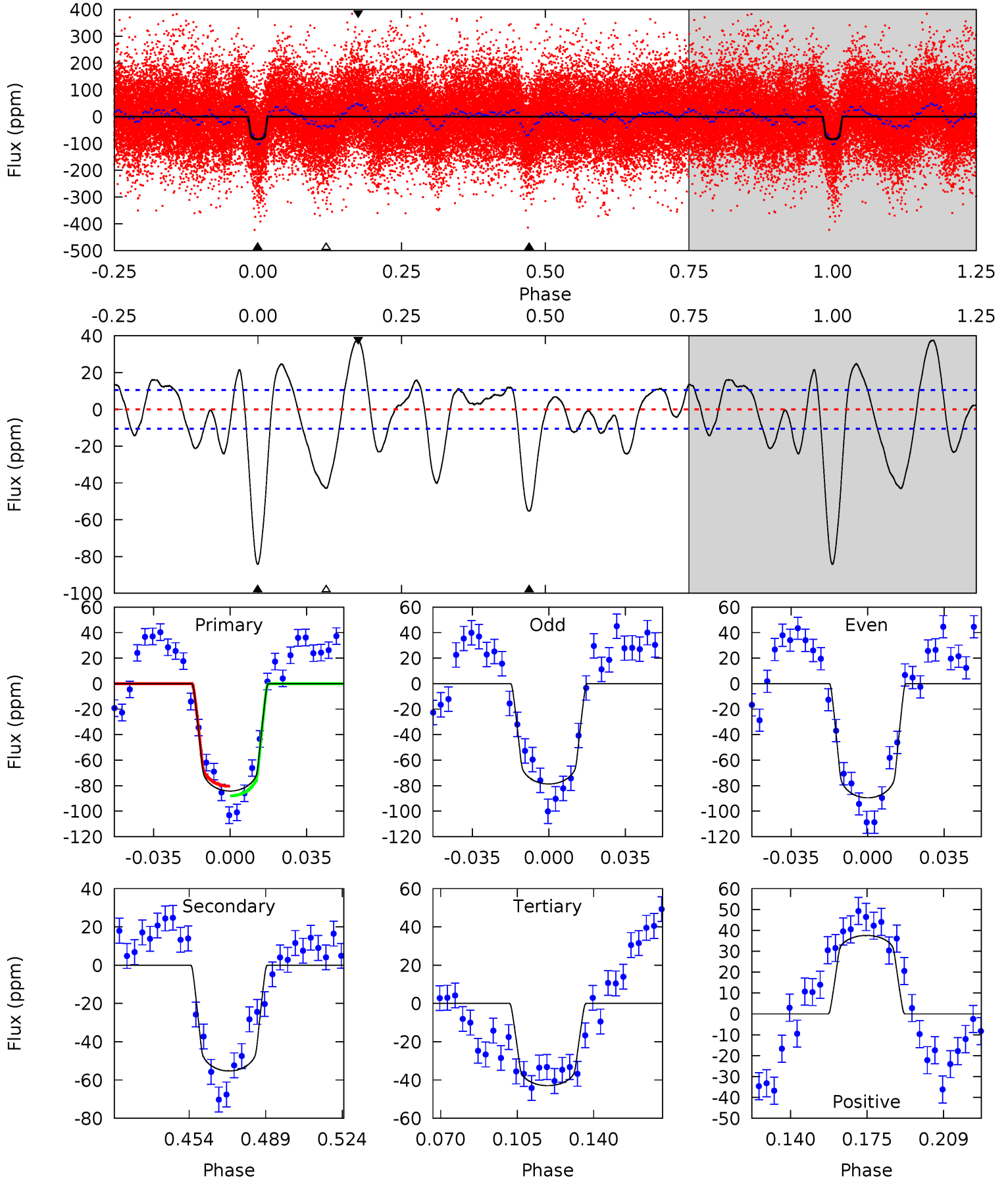
TCE 011154043-01 P= 4.529824 Days $T_0=135.942442$ (BKJD)



DV Model-Shift Uniqueness Test

011154043-01, P = 4.529943 Days, E = 131.394309 Days

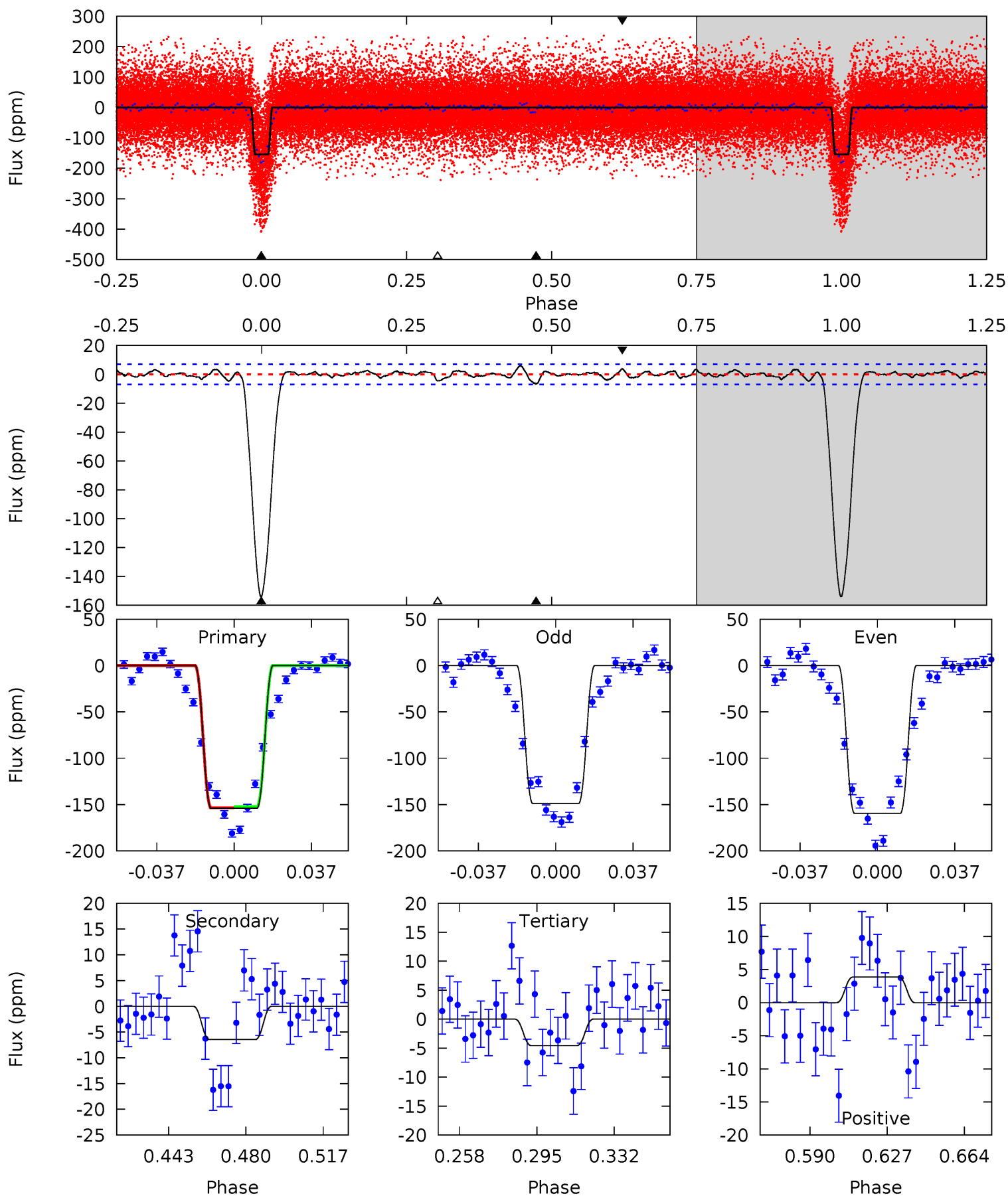
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.3	25.1	19.5	17.1	4.78	2.11	7.17	18.8	21.2	5.61	8.05	2.47	1.03	0.31	1.71



Alt Model-Shift Uniqueness Test

011154043-01, P = 4.529824 Days, E = 131.412618 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
106.1	4.44	3.14	2.66	4.77	2.09	1.10	103.0	103.4	1.30	1.78	3.68	0.99	0.04	0.47



Stellar Parameters For KIC 011154043

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8912^{+249}_{-427}	$4.050^{+0.181}_{-0.165}$	$0.070^{+0.250}_{-0.600}$	$2.299^{+0.724}_{-0.658}$	$2.164^{+0.383}_{-0.574}$	$0.251^{+0.249}_{-0.117}$
	+3%/-5%	+4%/-4%	+357%/-857%	+31%/-29%	+18%/-27%	+99%/-47%
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 011154043-01 / KOI 7414.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-55 ± 2	$2.42^{+0.51}_{-0.43}$	3155^{+218}_{-248}	7460^{+581}_{-503}	25^{+10}_{-8}
Alt.	-6 ± 1	$3.30^{+0.65}_{-0.58}$	3137^{+246}_{-248}	3857^{+229}_{-267}	$1.536^{+0.752}_{-0.511}$

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

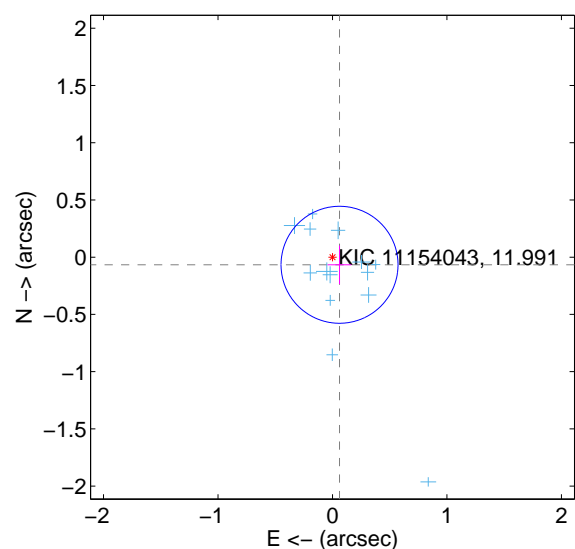
Supplemental centroid analysis for 011154043-01. **Kepler magnitude: 11.99.** Transit SNR 22.81

There are 14 quarters with good PRF difference image offsets

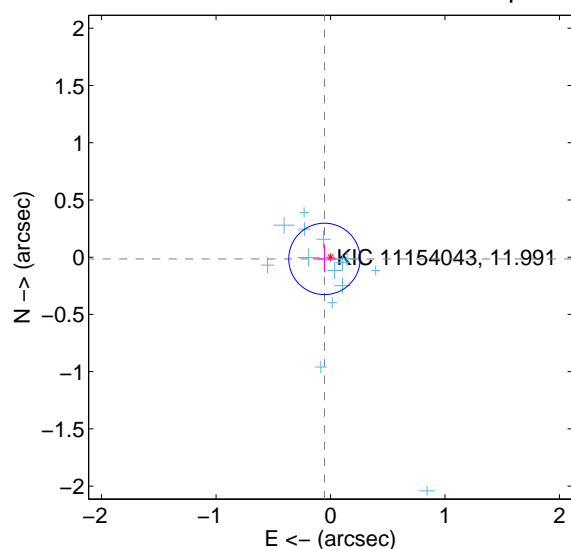
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.091 ± 0.170	0.53	-0.062 ± 0.104	-0.066 ± 0.168
PRF-fit source offset from KIC position	0.055 ± 0.104	0.53	0.053 ± 0.103	-0.015 ± 0.114
photometric centroid source offset	0.47 ± 0.43	1.10	-0.18 ± 0.48	0.44 ± 0.42

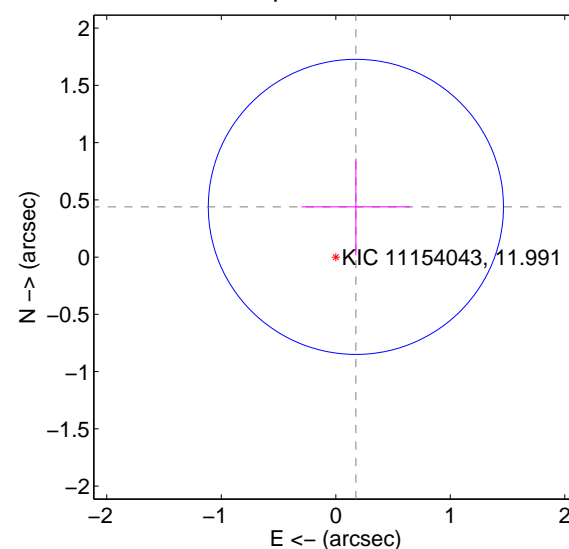
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

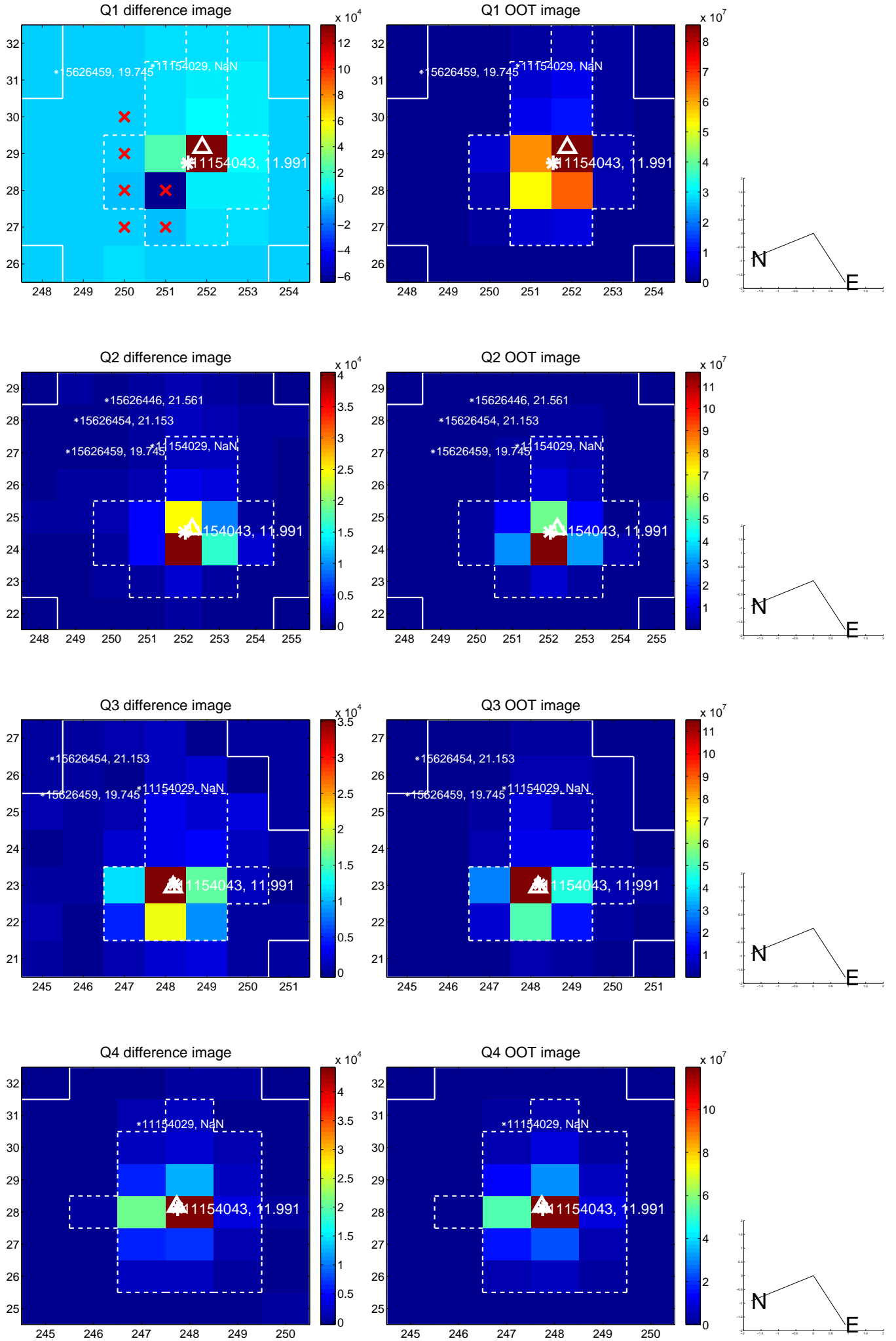


offset from photometric centroids

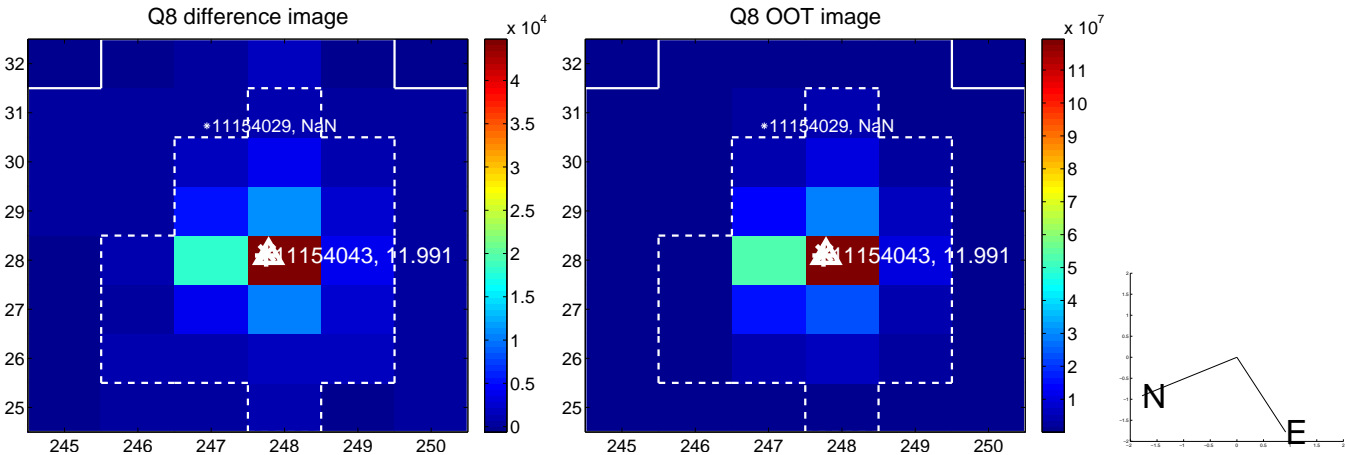
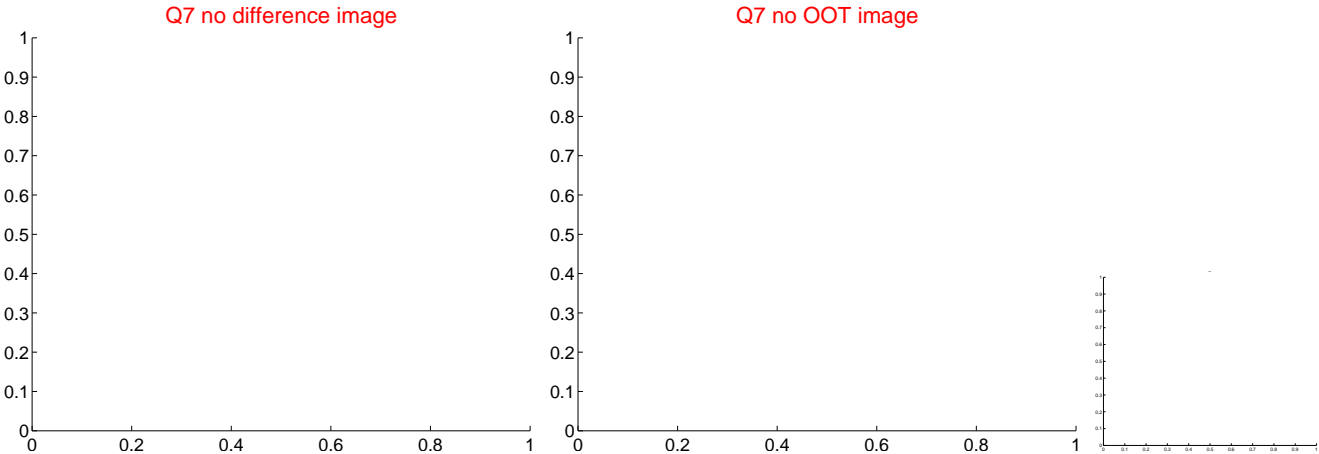
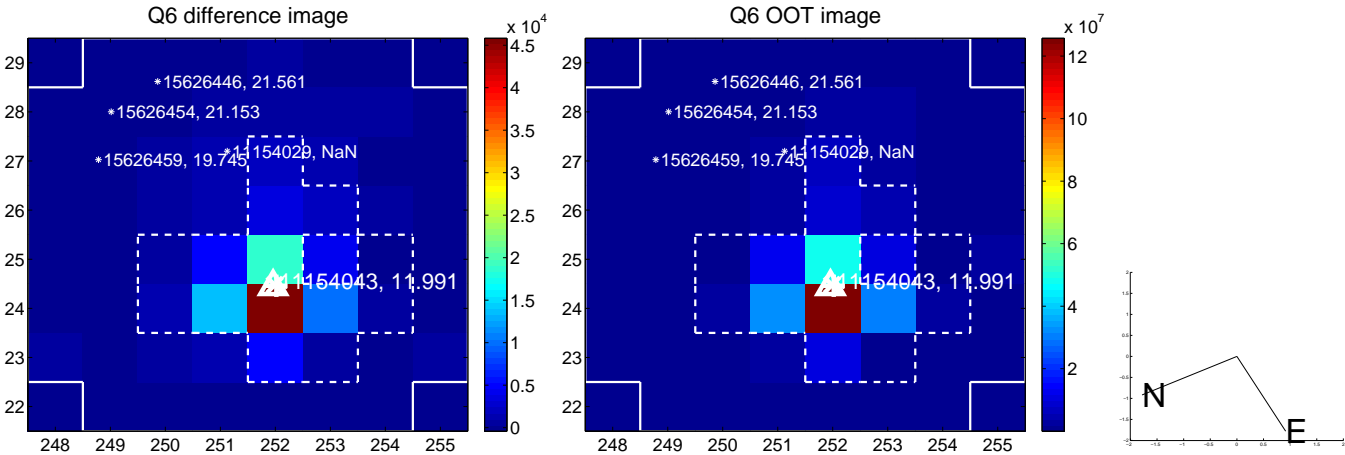
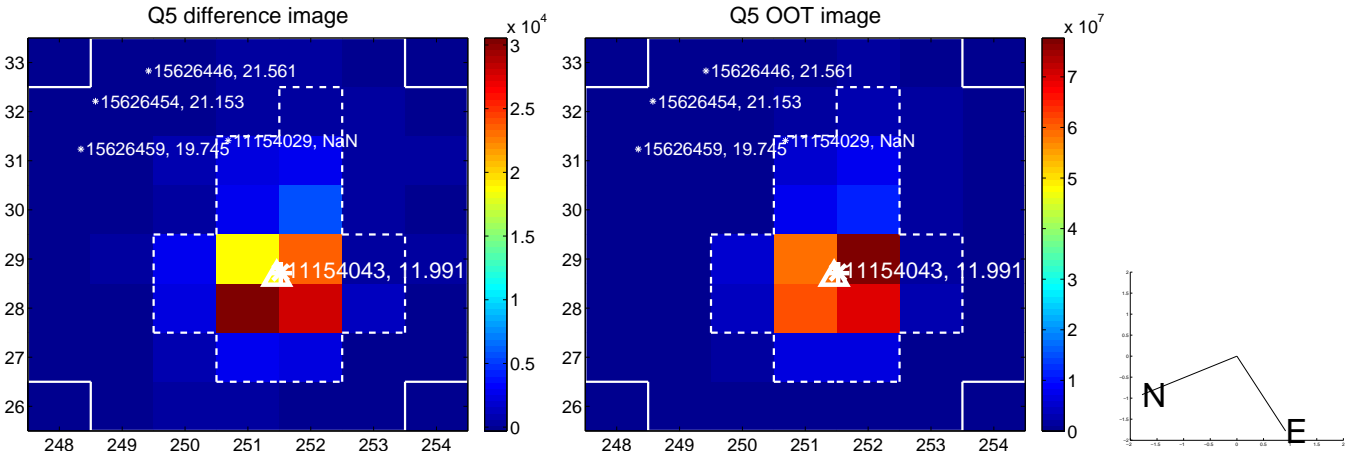


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

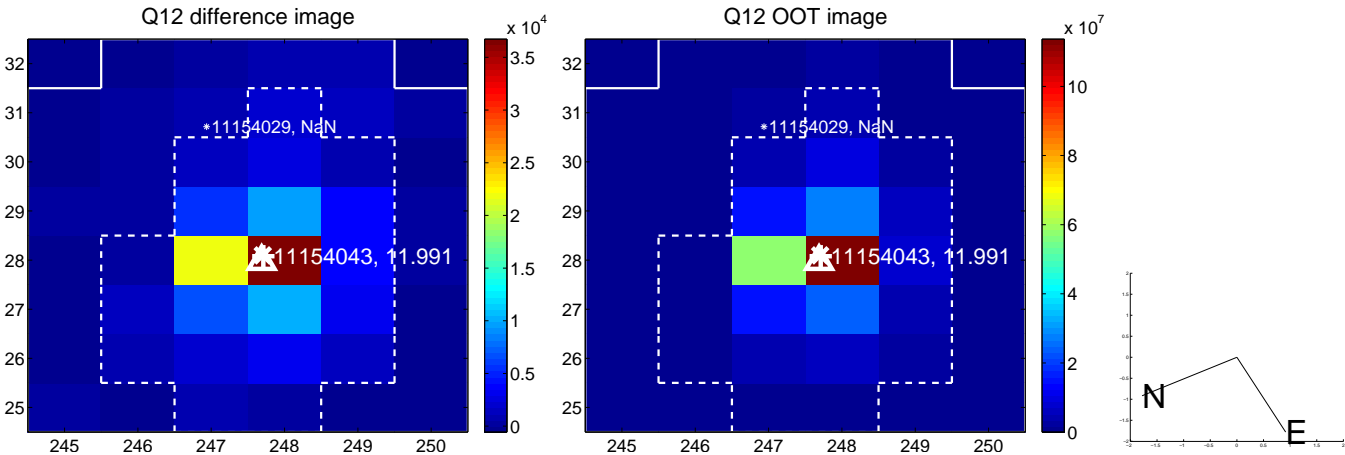
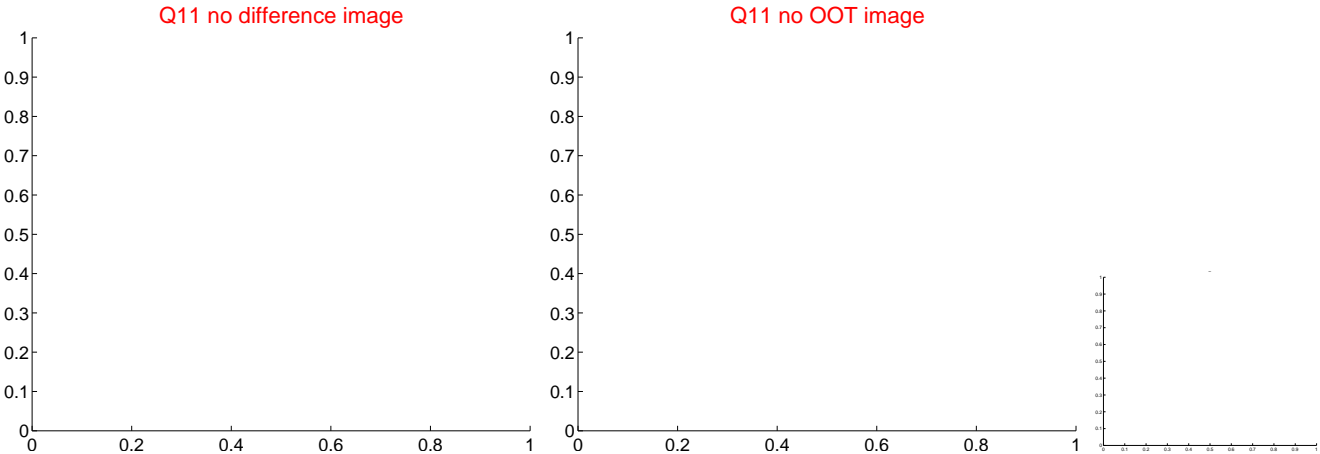
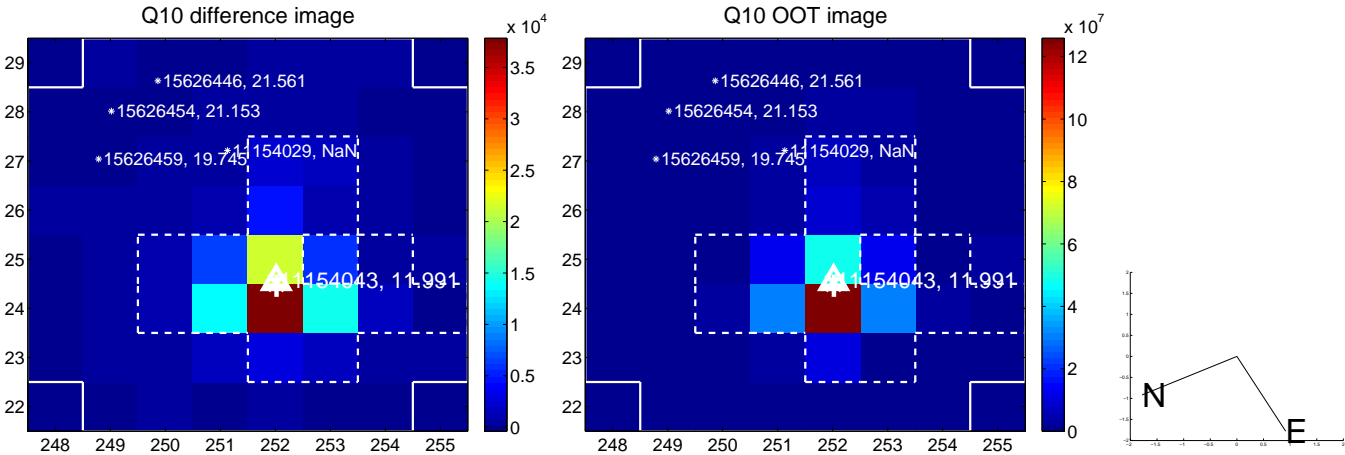
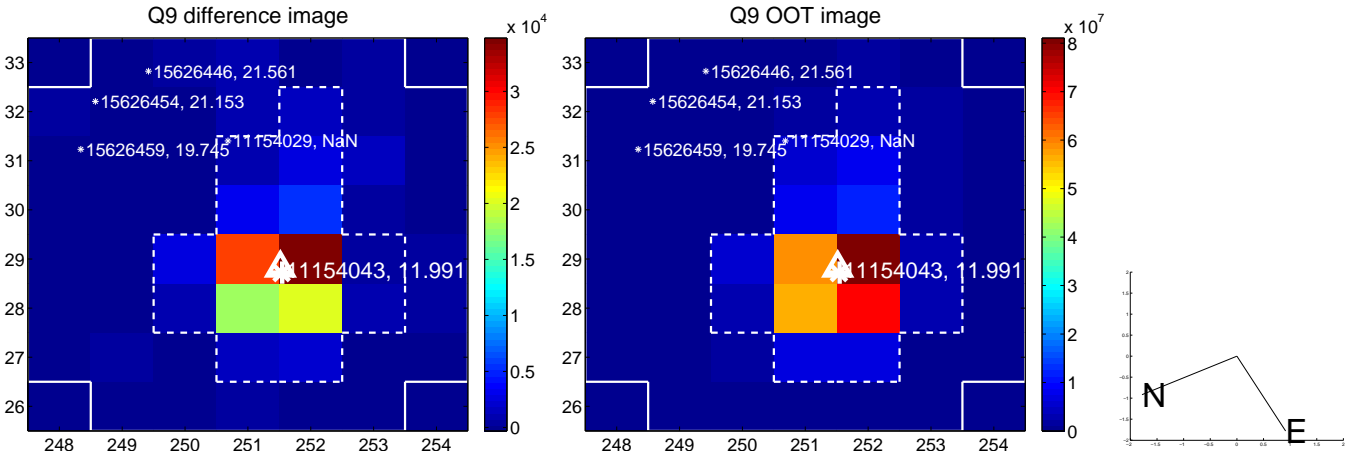
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



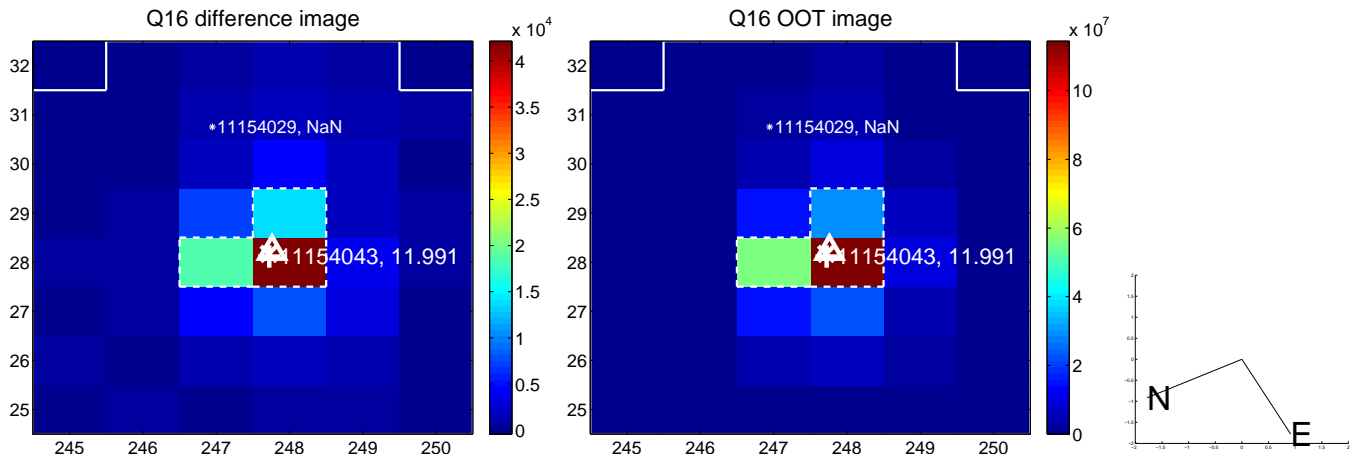
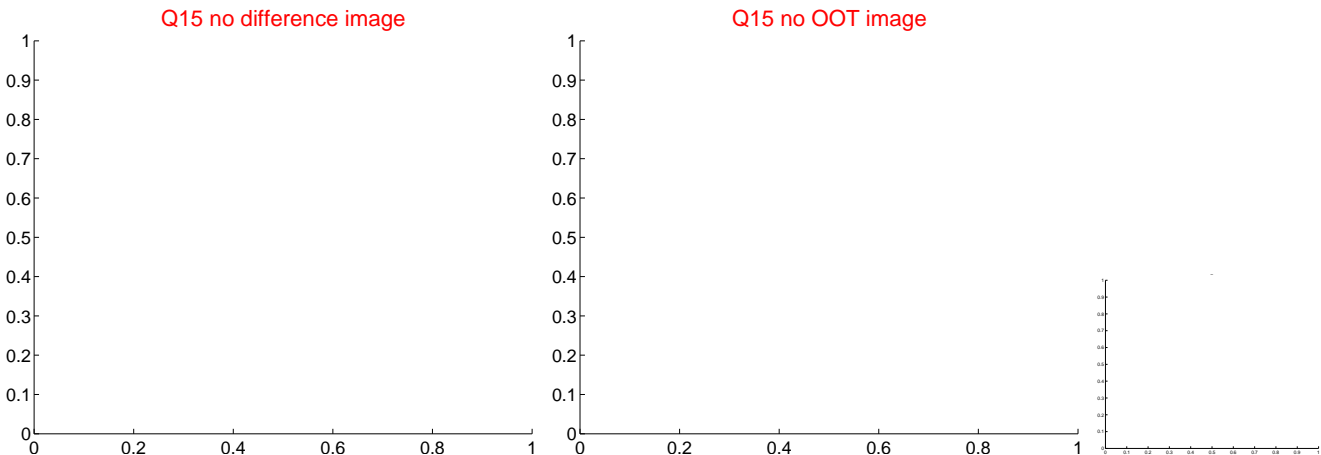
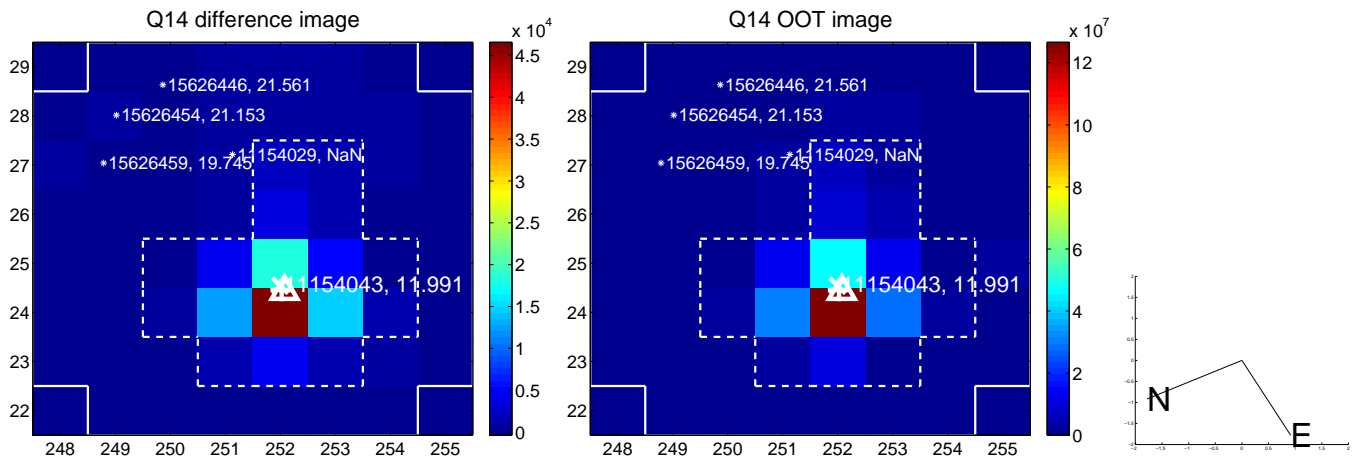
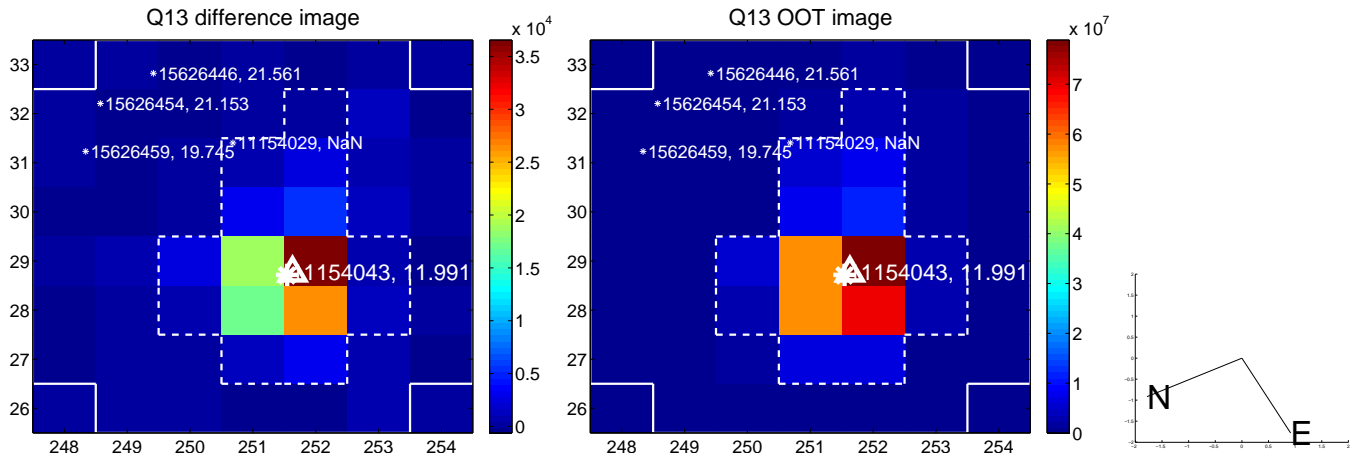
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



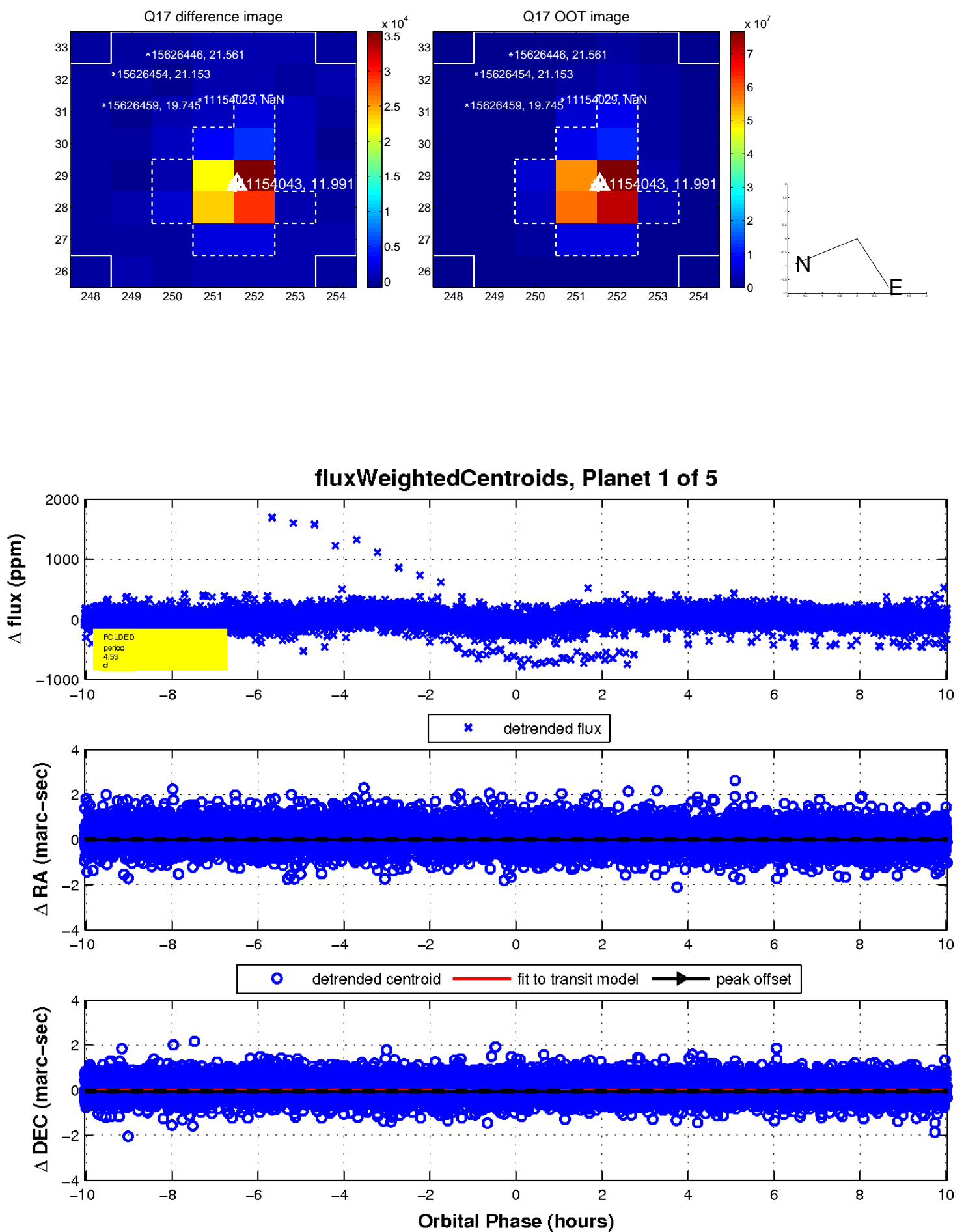
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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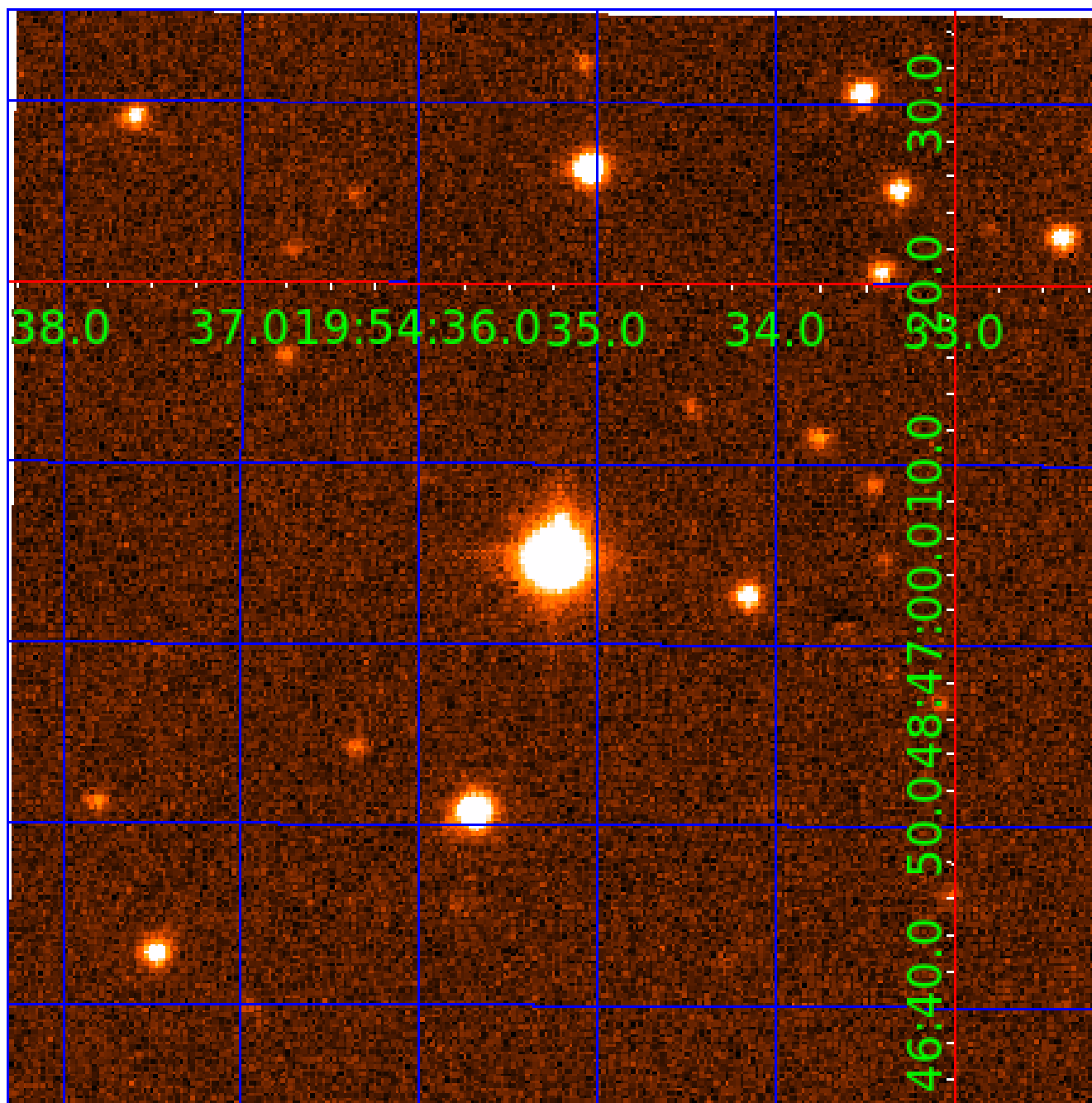


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011154043

Q1-17 DR25 TCE Parameters

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

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011154043-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—SAME_NTL_PERIOD
011154043-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
011154043-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
011154043-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS

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

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

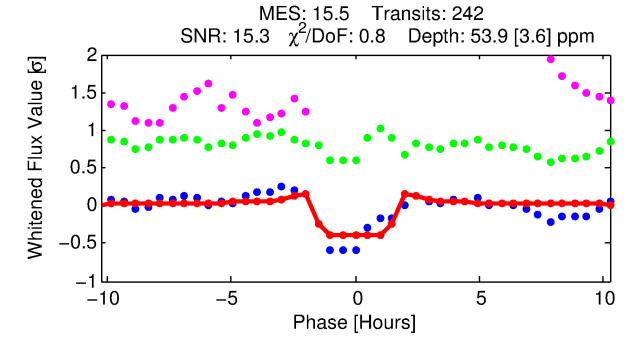
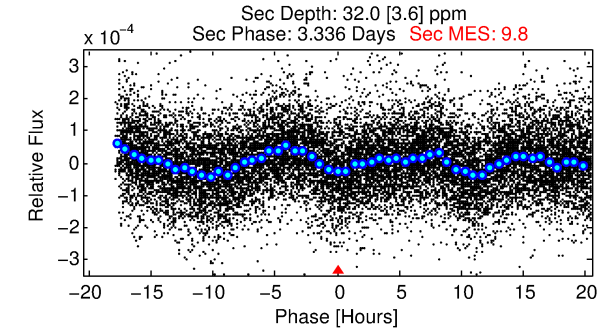
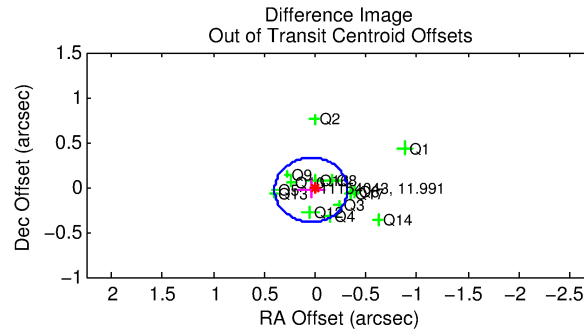
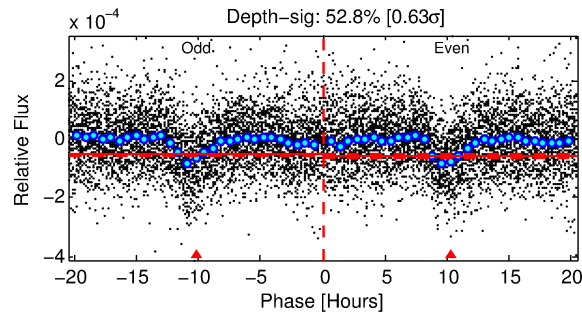
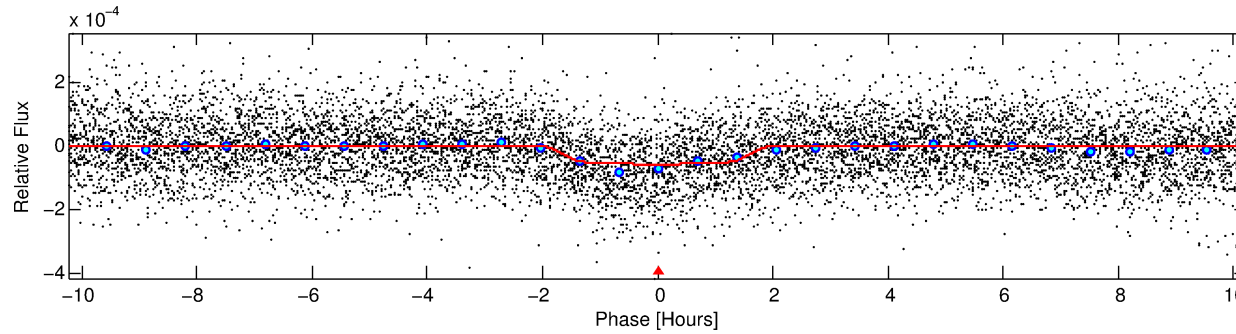
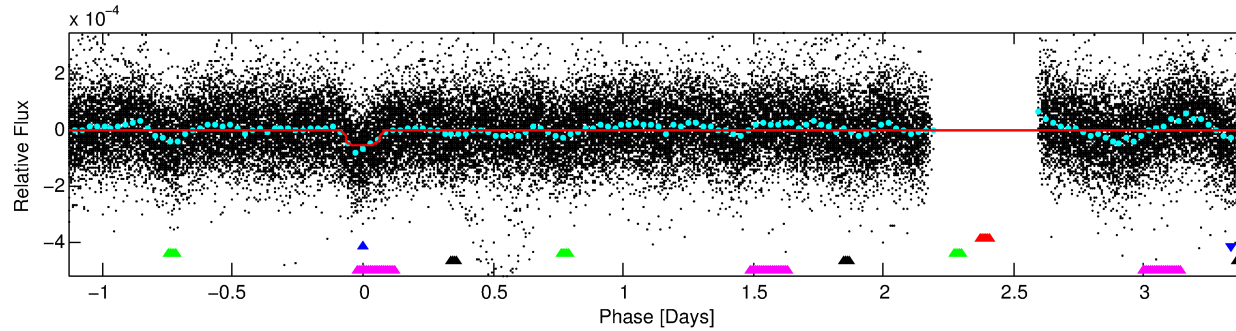
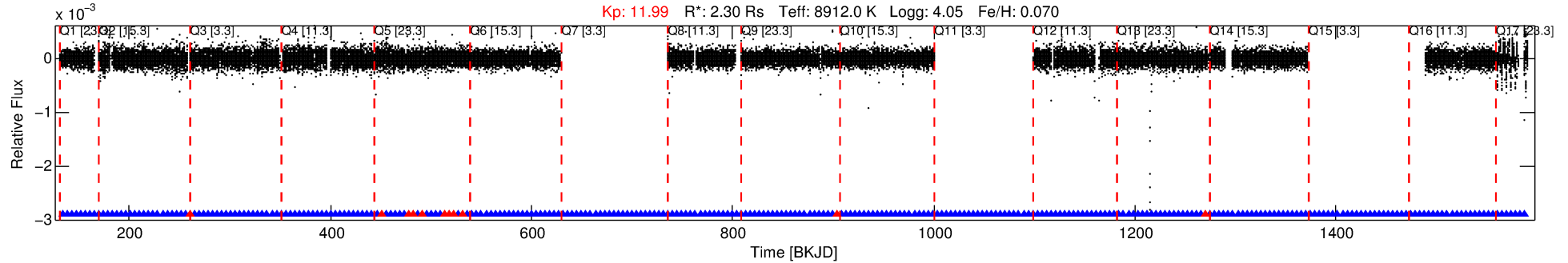
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011154043-02

No Significant Match Found

DV One-Page Summary

KIC: 11154043 Candidate: 2 of 5 Period: 4.530 d
KOI: K07414 Corr: No Ephemeris Match



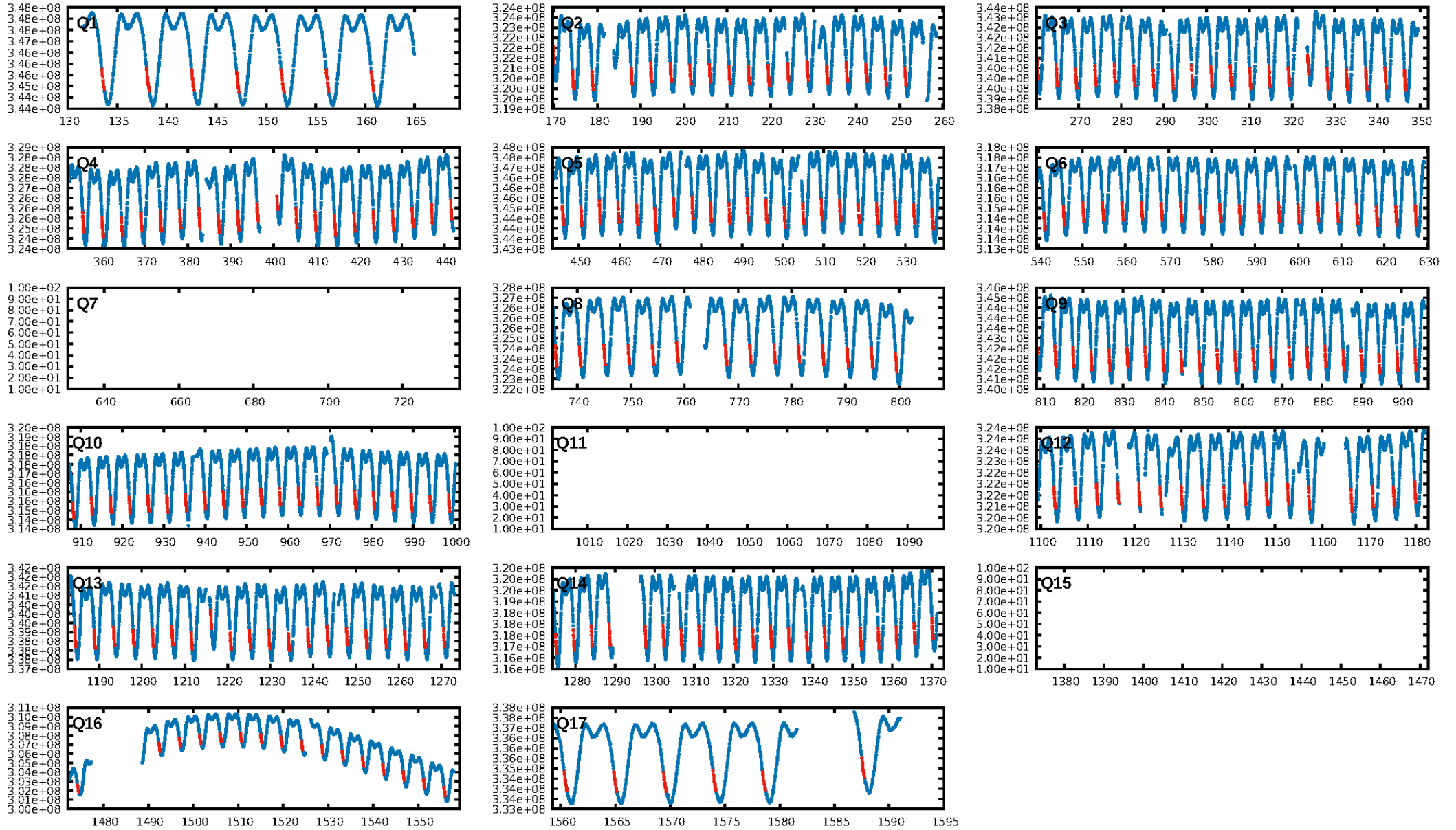
DV Fit Results:

Period = 4.52982 [0.00002] d
Epoch = 133.5544 [0.0024] BKJD
Rp/R* = 0.0078 [0.0012]
a/R* = 4.68 [4.87]
b = 0.90 [0.23]
Seff = 6218.90 [2472.01]
Teq = 2264 [225] K
Rp = 1.95 [0.69] Re
a = 0.0693 [0.0174] AU
Ag = 22.22 [10.68] [1.99 σ]
Teffp = 7601 [727] K [7.01 σ]

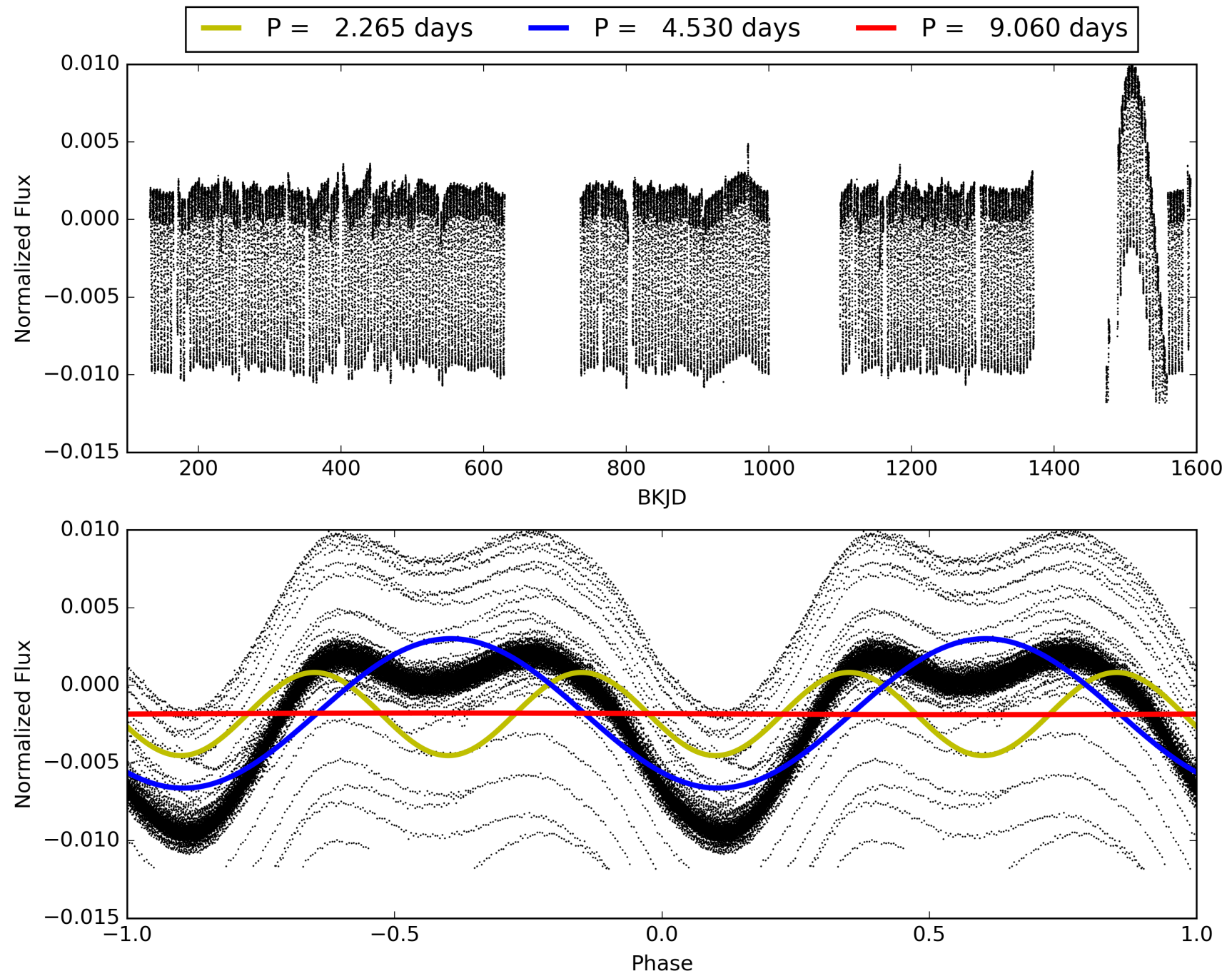
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [5.80 σ]
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.95 [218/229]
GhostDiagnostic-chr: 0.3708
Centroid-sig: 0.0%
Centroid-so: 1.609 arcsec [2.42 σ]
OotOffset-rm: 0.051 arcsec [0.43 σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-rm: 0.115 arcsec [0.97 σ]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 0.00 [0/14]

TCE 011154043-02, PDC Light Curves

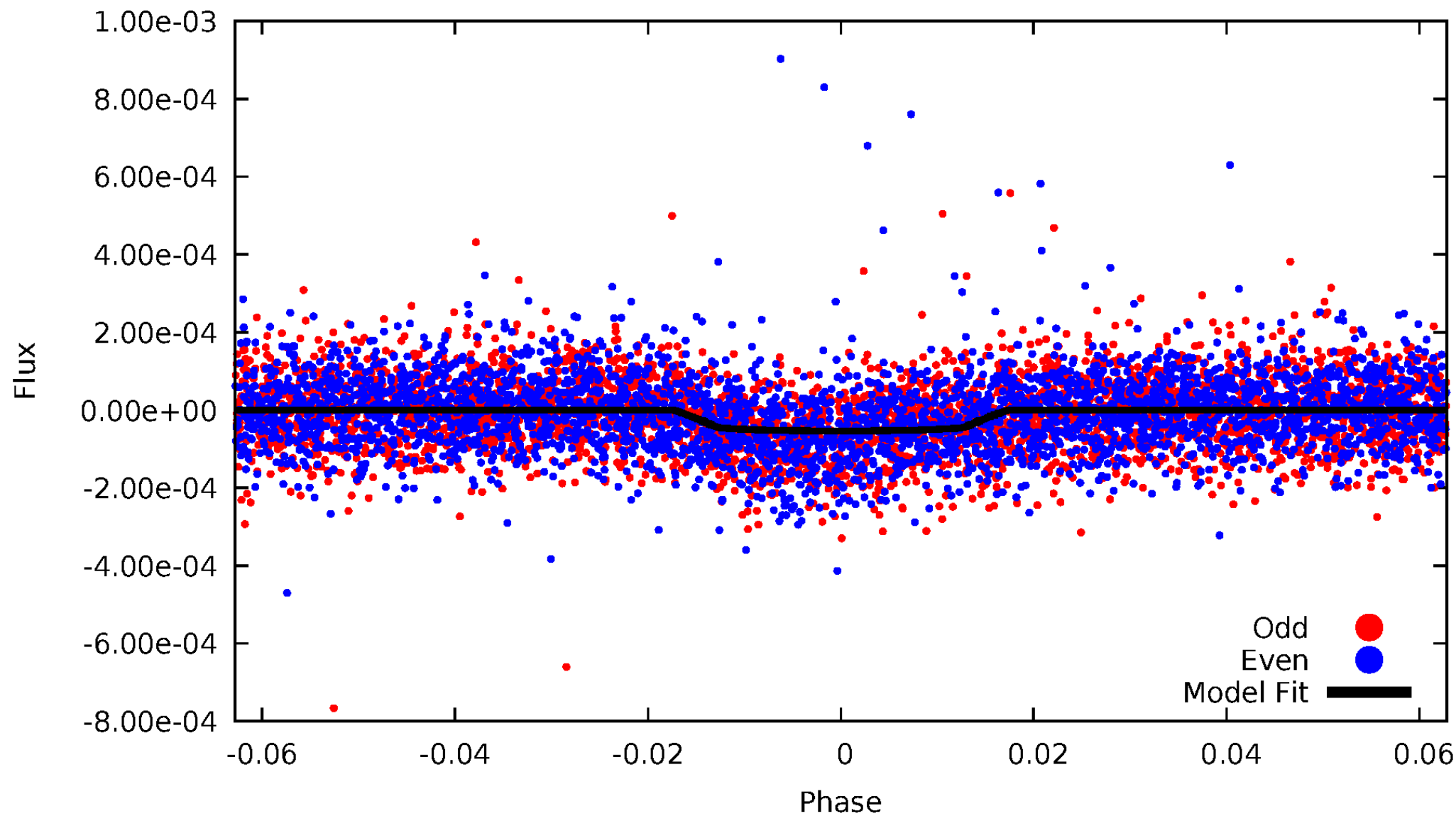


TCE 011154043-02



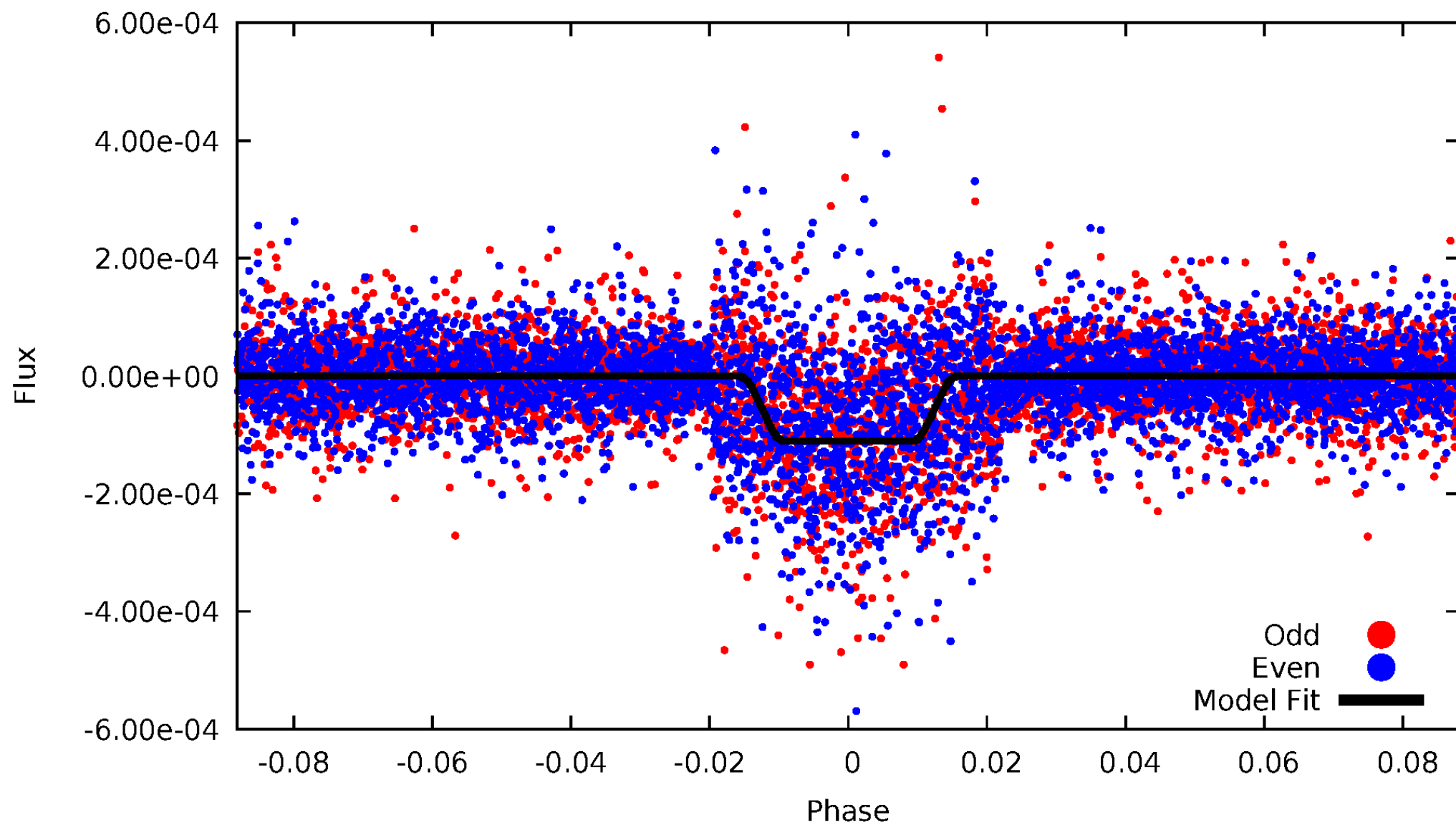
DV Odd/Even

TCE 011154043-02



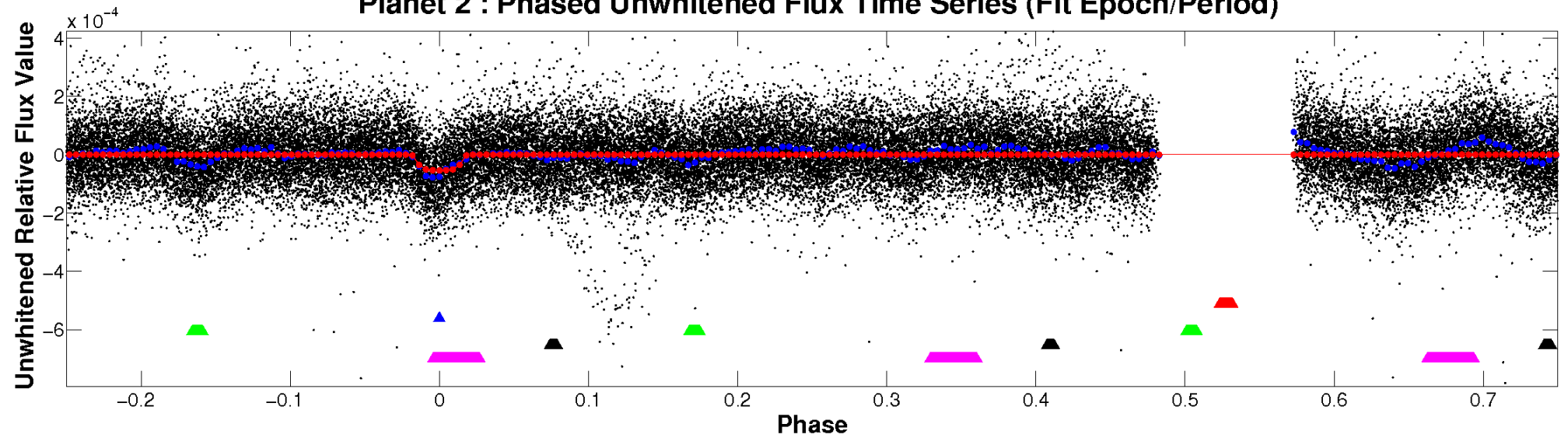
ALT Odd/Even

TCE 011154043-02

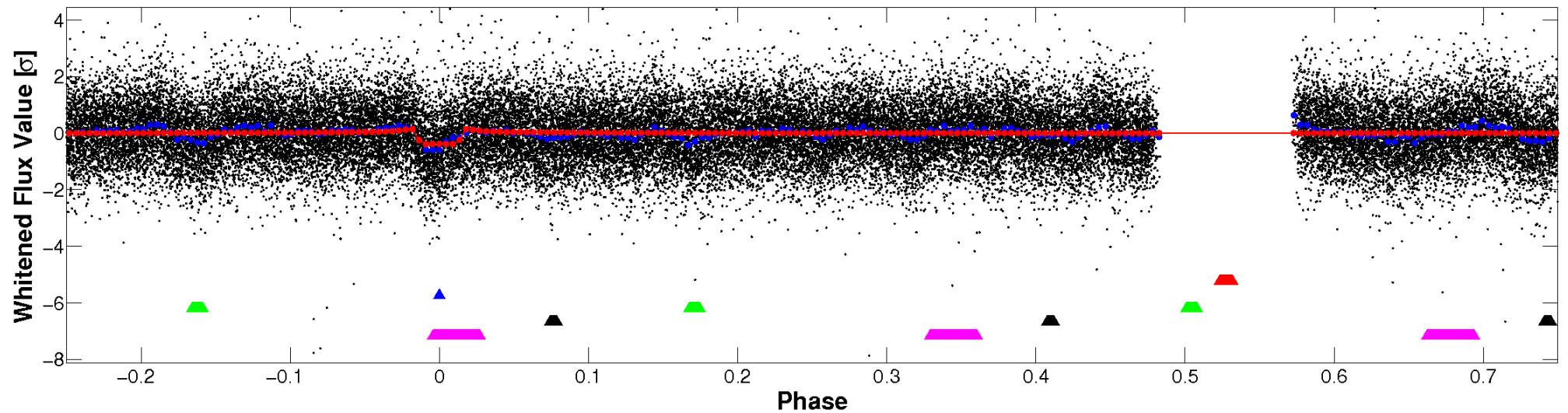


Non-Whitened Vs. Whitened Light Curve

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

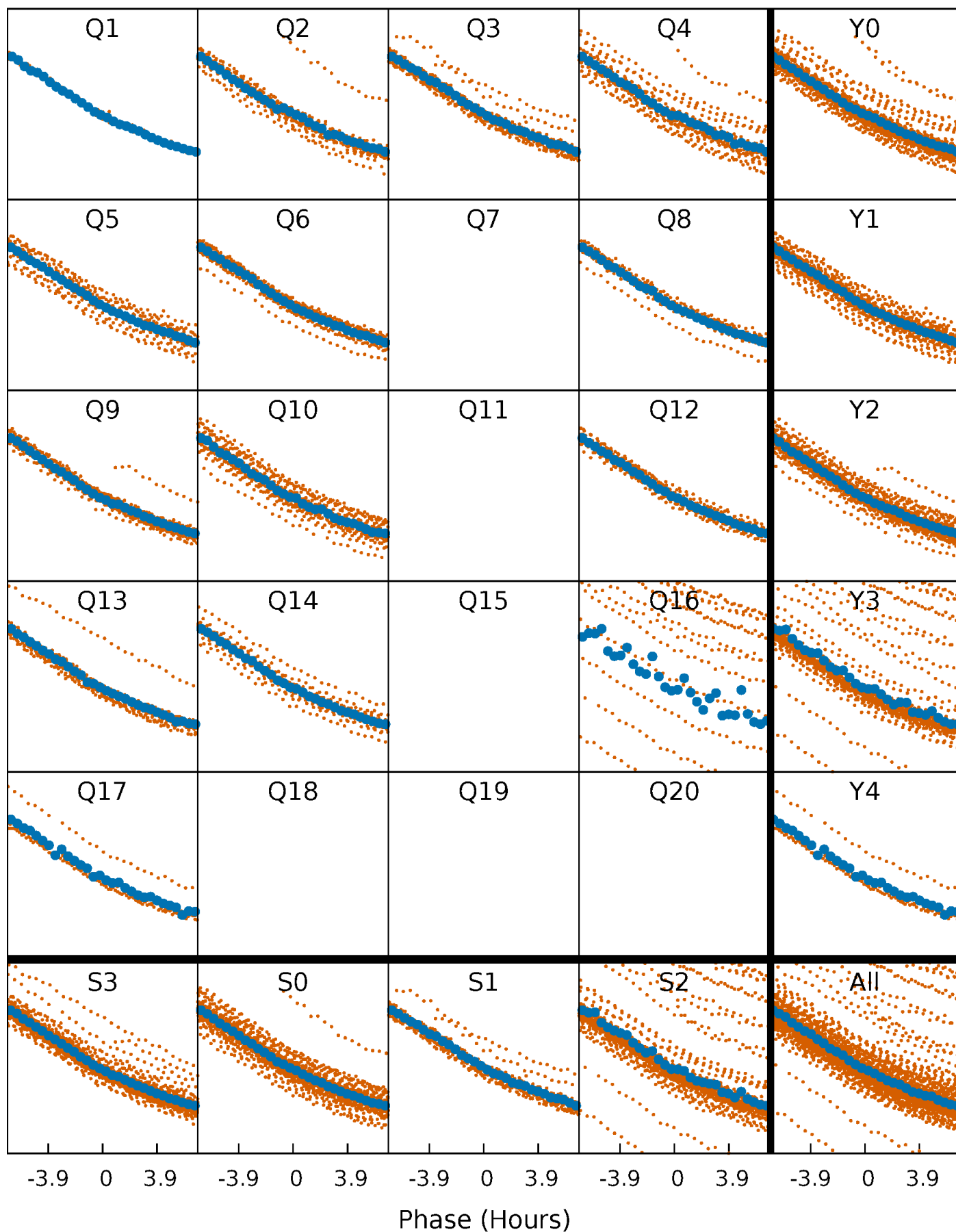


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



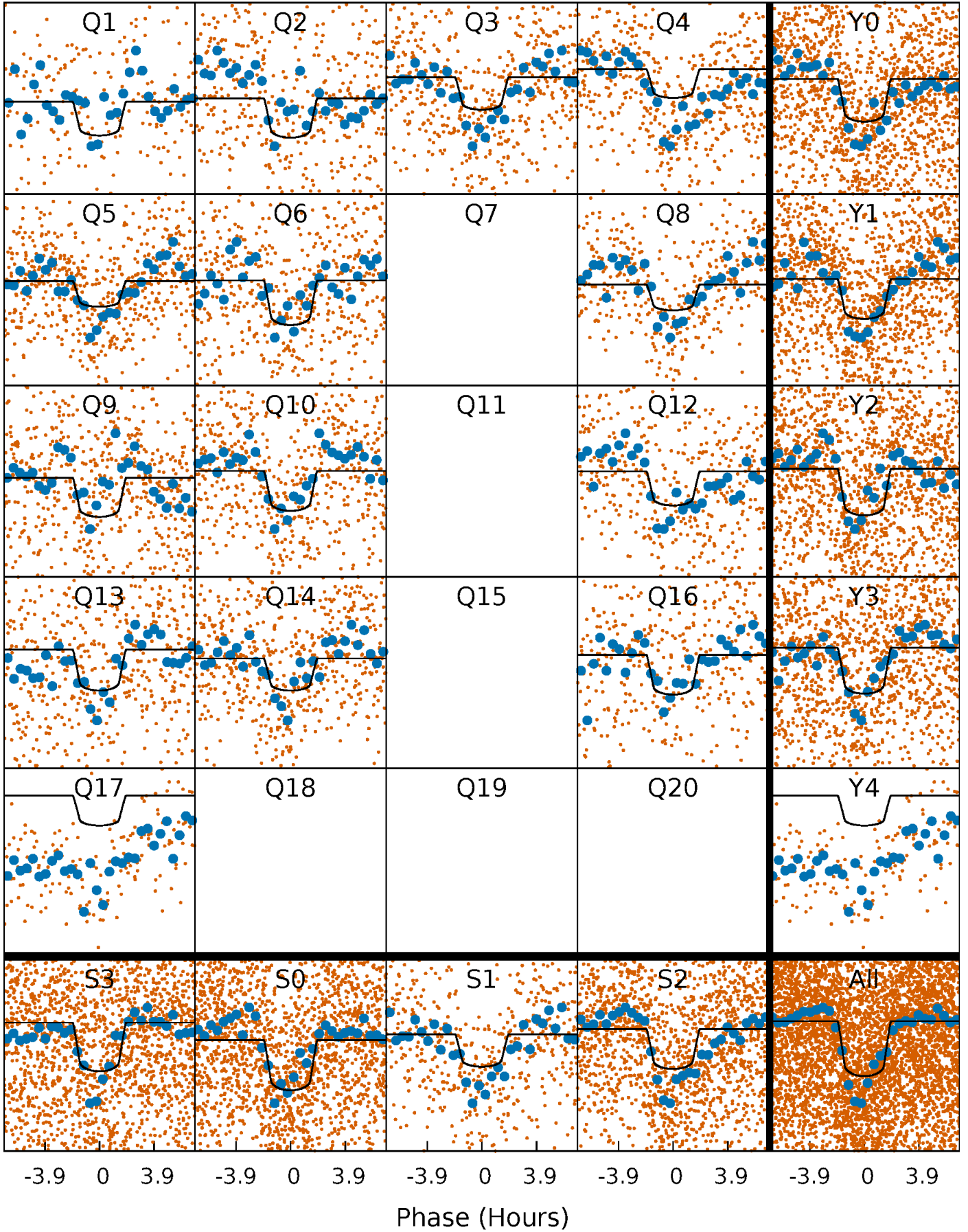
PDC Quarter-Phased Transit Curves

TCE 011154043-02 P= 4.529819 Days $T_0=133.554425$ (BKJD)



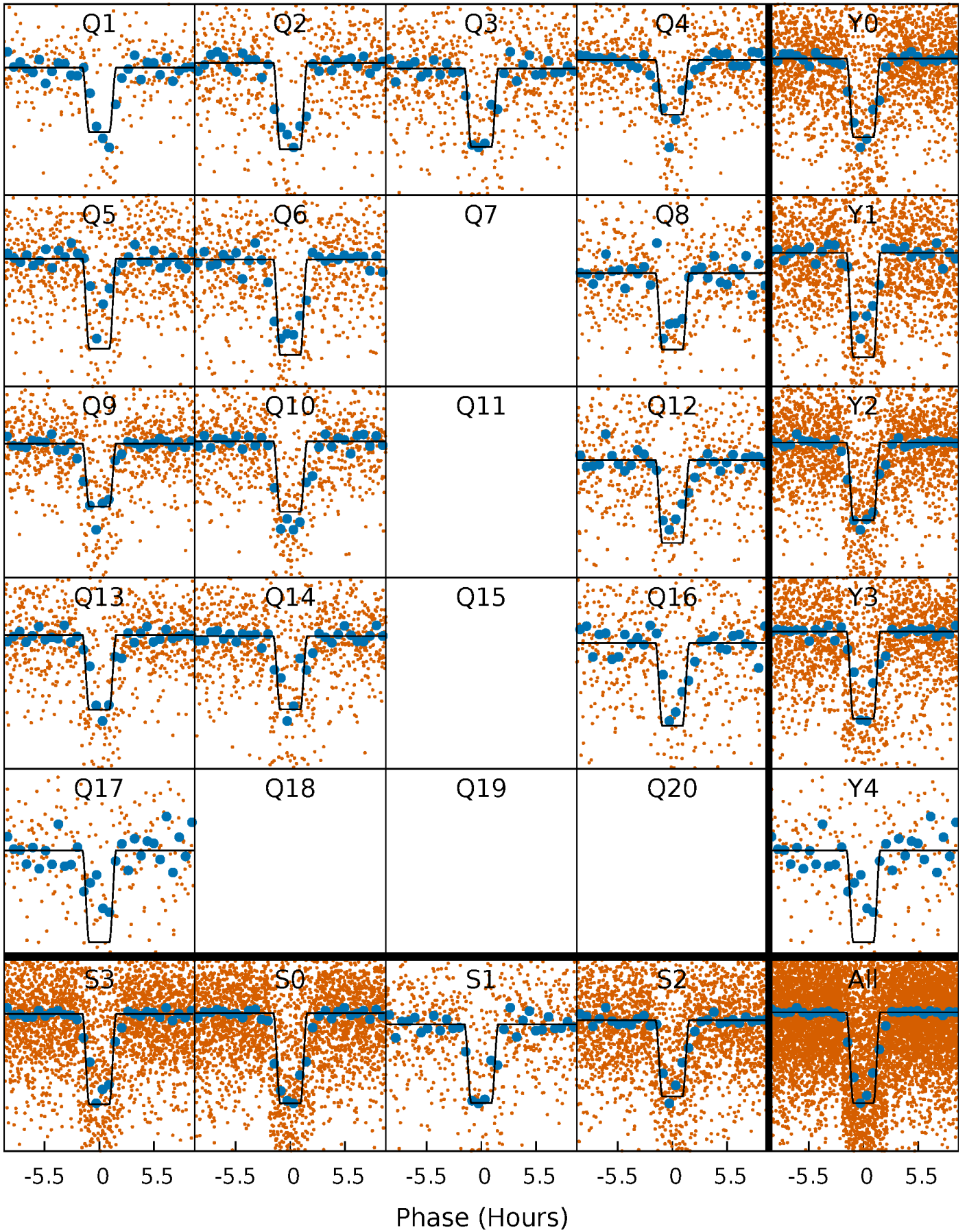
DV Quarter-Phased Transit Curves

TCE 011154043-02 P= 4.529819 Days $T_0=133.554425$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

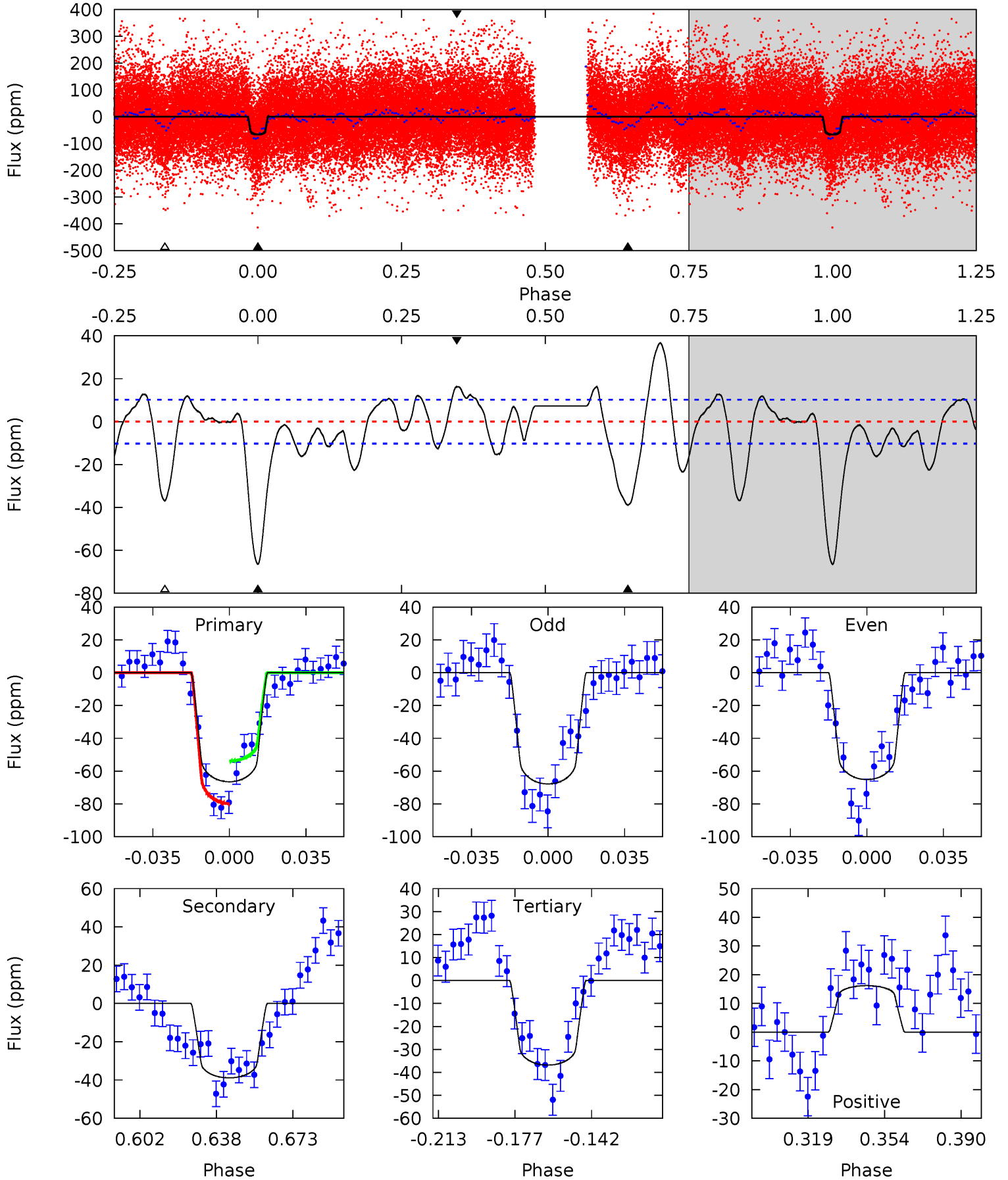
TCE 011154043-02 P= 4.529766 Days $T_0=133.549816$ (BKJD)



DV Model-Shift Uniqueness Test

011154043-02, P = 4.529819 Days, E = 129.024606 Days

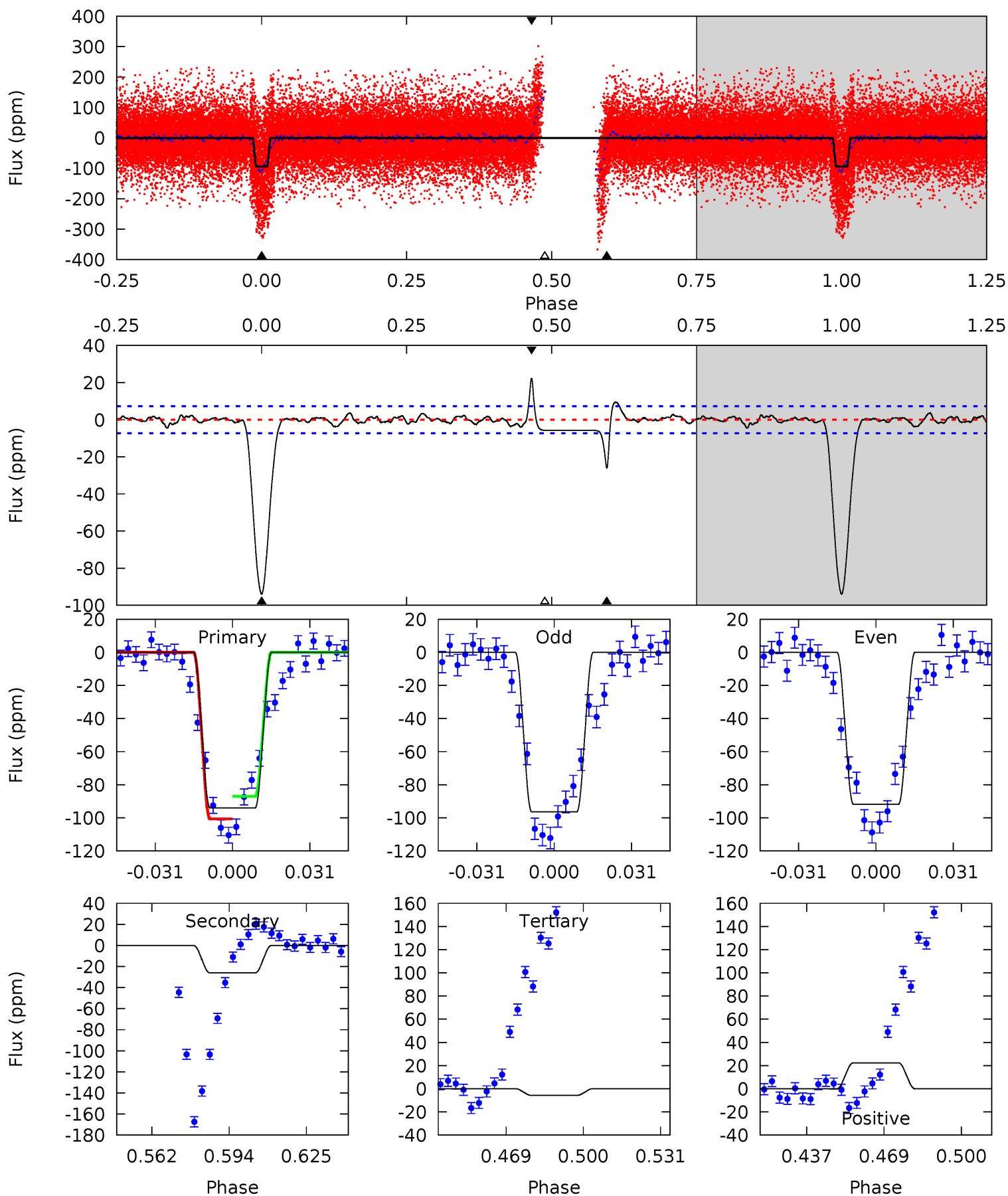
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.1	18.2	17.2	7.57	4.78	2.10	5.93	13.9	23.5	0.95	10.6	0.63	1.03	0.36	6.06



Alt Model-Shift Uniqueness Test

011154043-02, P = 4.529766 Days, E = 129.020050 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
62.3	17.3	3.82	14.8	4.80	2.15	1.60	58.4	47.5	13.4	2.47	1.52	1.08	0.19	4.58



Stellar Parameters For KIC 011154043

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8912^{+249}_{-427}	$4.050^{+0.181}_{-0.165}$	$0.070^{+0.250}_{-0.600}$	$2.299^{+0.724}_{-0.658}$	$2.164^{+0.383}_{-0.574}$	$0.251^{+0.249}_{-0.117}$
	+3%/-5%	+4%/-4%	+357%/-857%	+31%/-29%	+18%/-27%	+99%/-47%
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 011154043-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-39 ± 2	$1.92^{+0.46}_{-0.40}$	3158^{+218}_{-258}	7692^{+902}_{-691}	27^{+16}_{-9}
Alt.	-26 ± 2	$2.61^{+0.57}_{-0.50}$	3130^{+271}_{-231}	5817^{+435}_{-349}	$9.944^{+4.519}_{-3.002}$

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

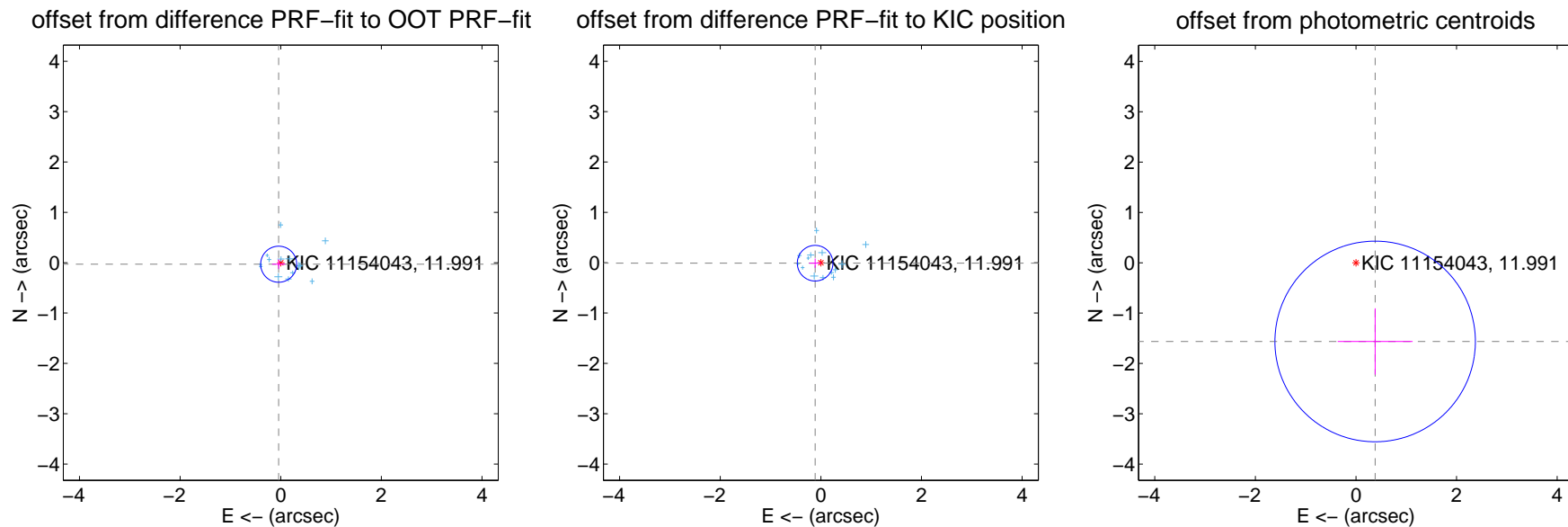
DV Centroid Data

Supplemental centroid analysis for 011154043-02. **Kepler magnitude: 11.99.** Transit SNR 15.35

There are 14 quarters with good PRF difference image offsets

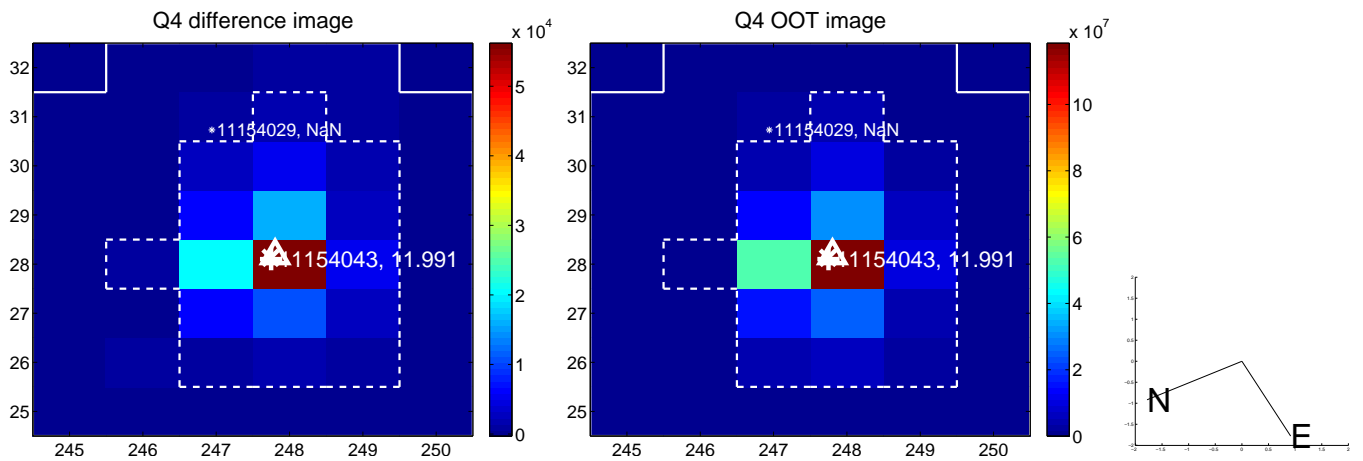
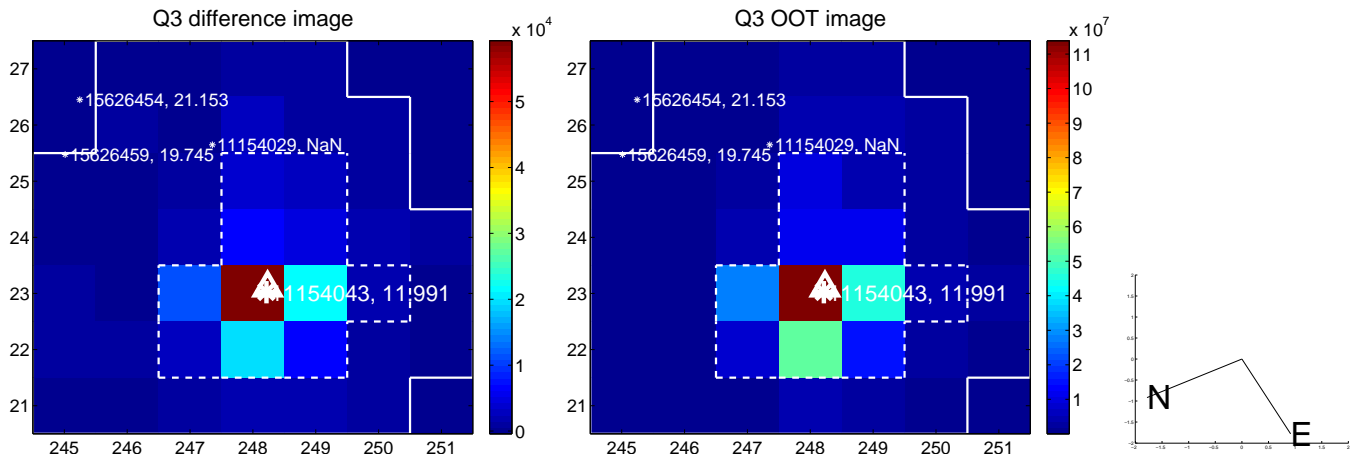
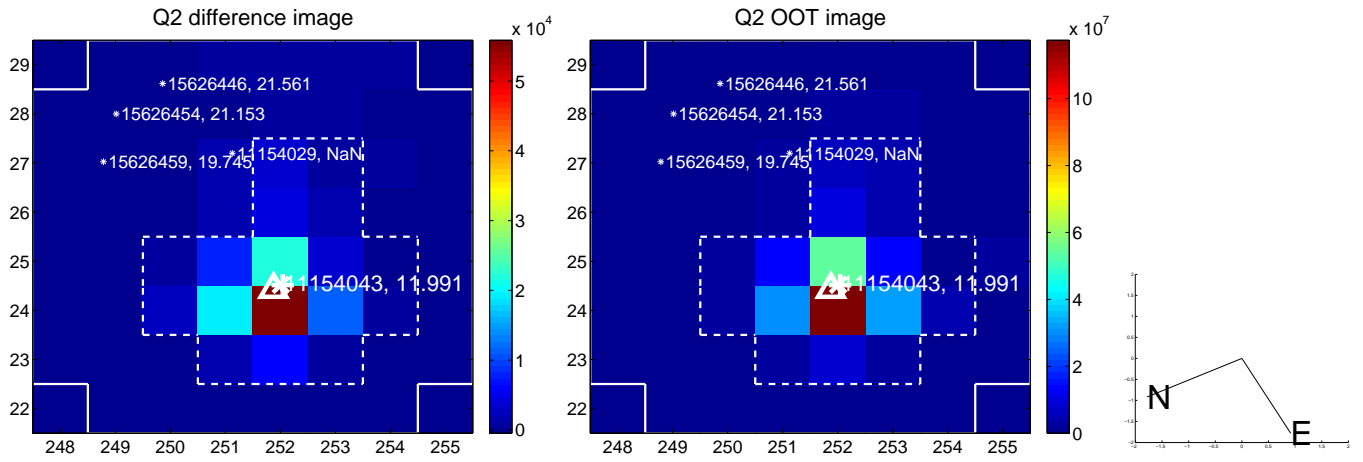
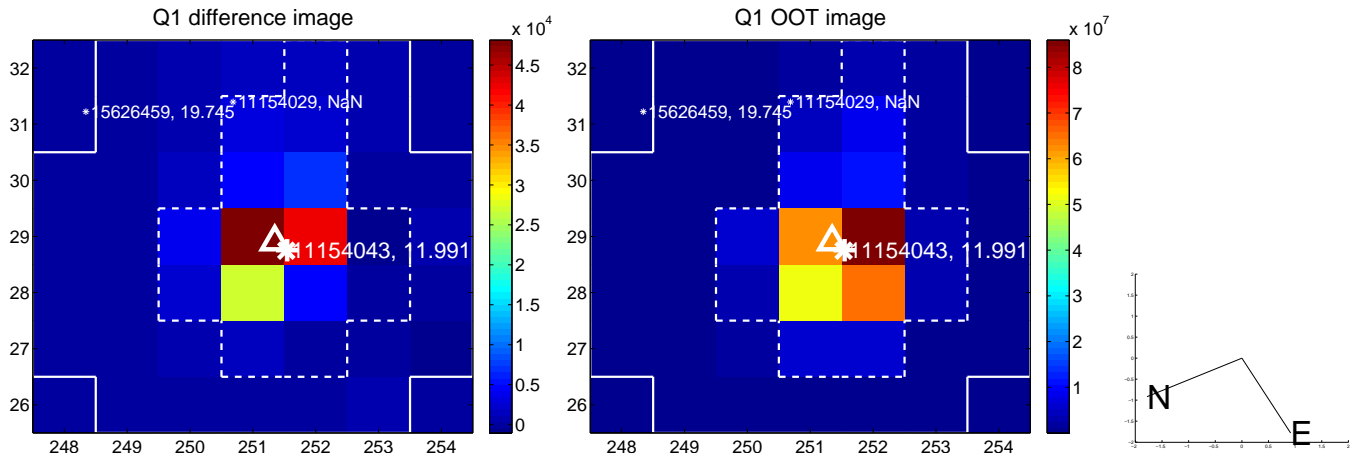
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.051 ± 0.119	0.43	0.041 ± 0.131	-0.030 ± 0.094
PRF-fit source offset from KIC position	0.115 ± 0.118	0.97	0.114 ± 0.118	-0.010 ± 0.093
photometric centroid source offset	1.61 ± 0.66	2.42	-0.38 ± 0.75	-1.56 ± 0.66

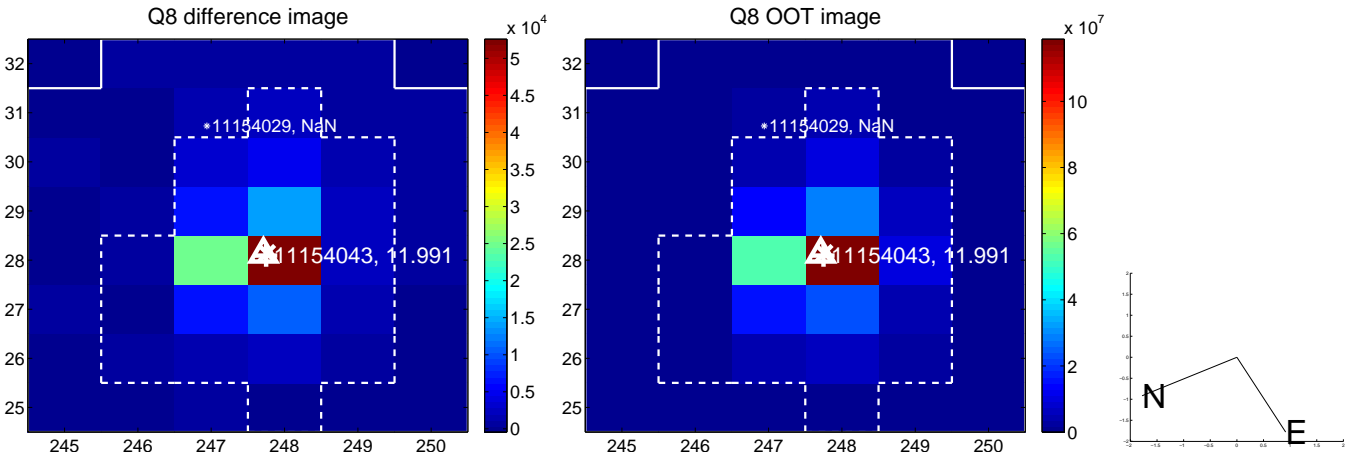
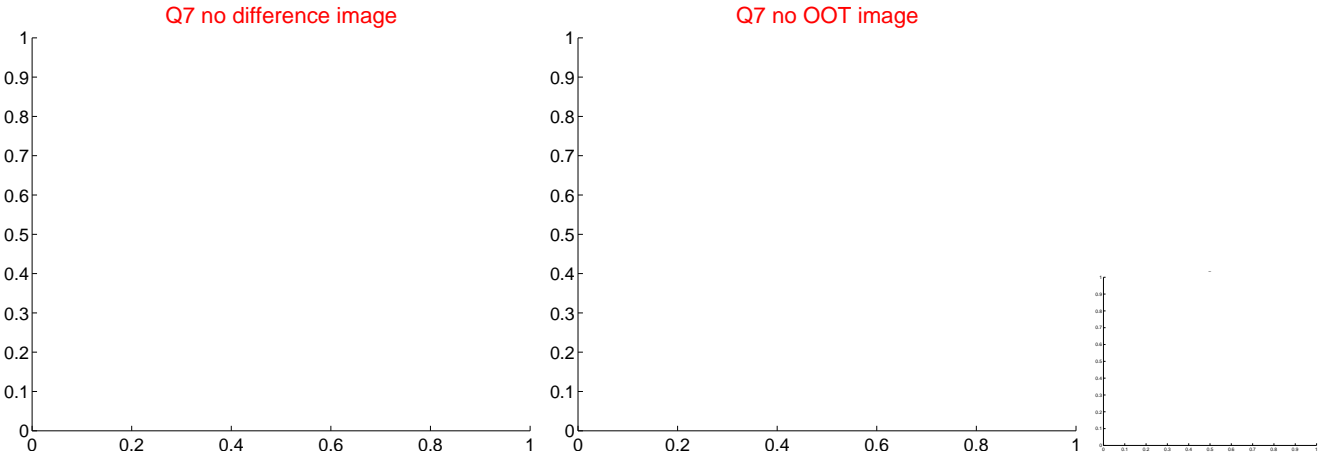
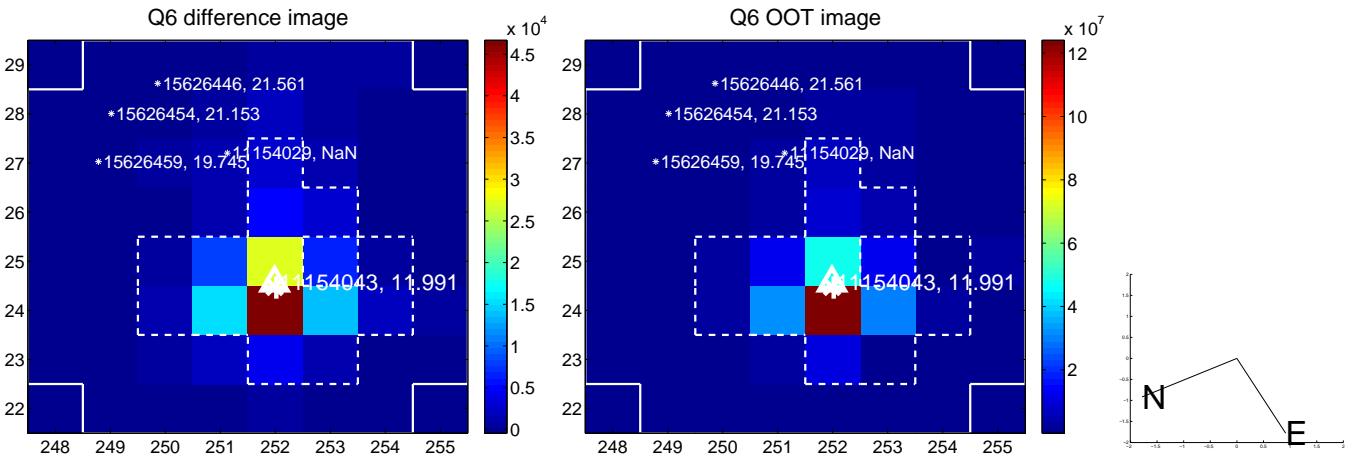
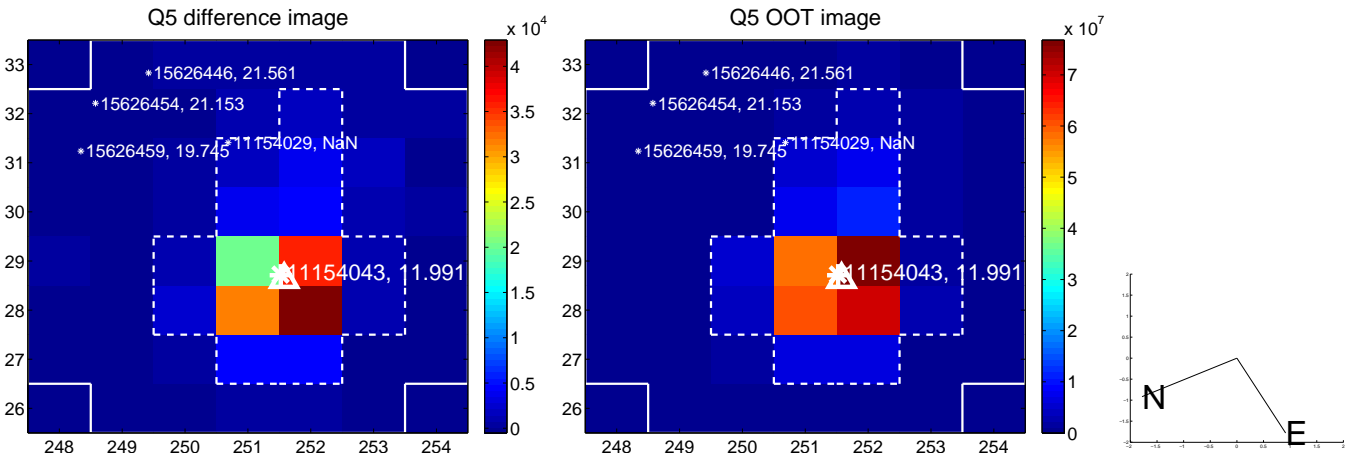


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

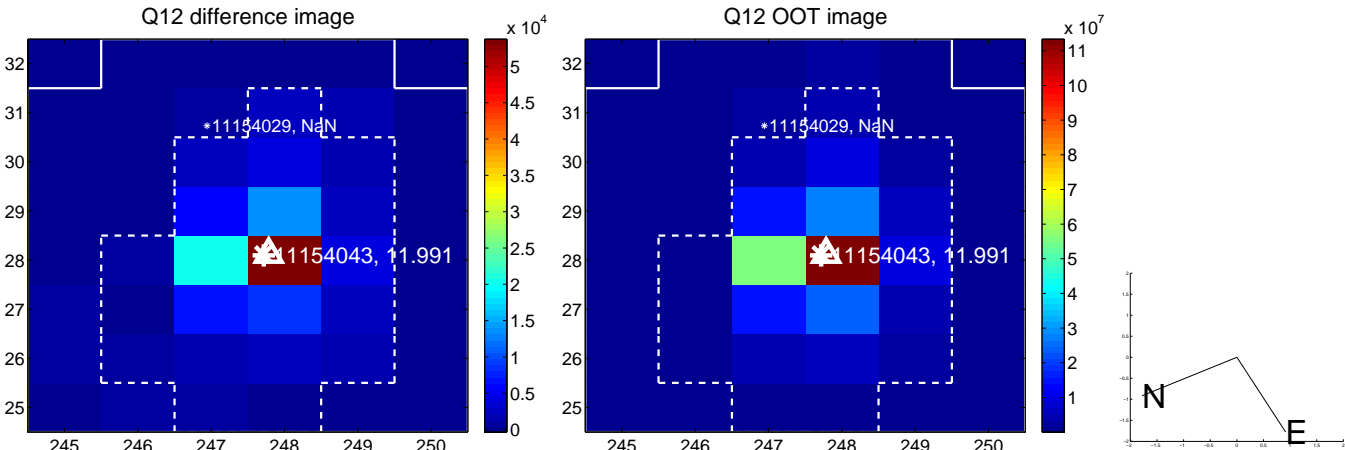
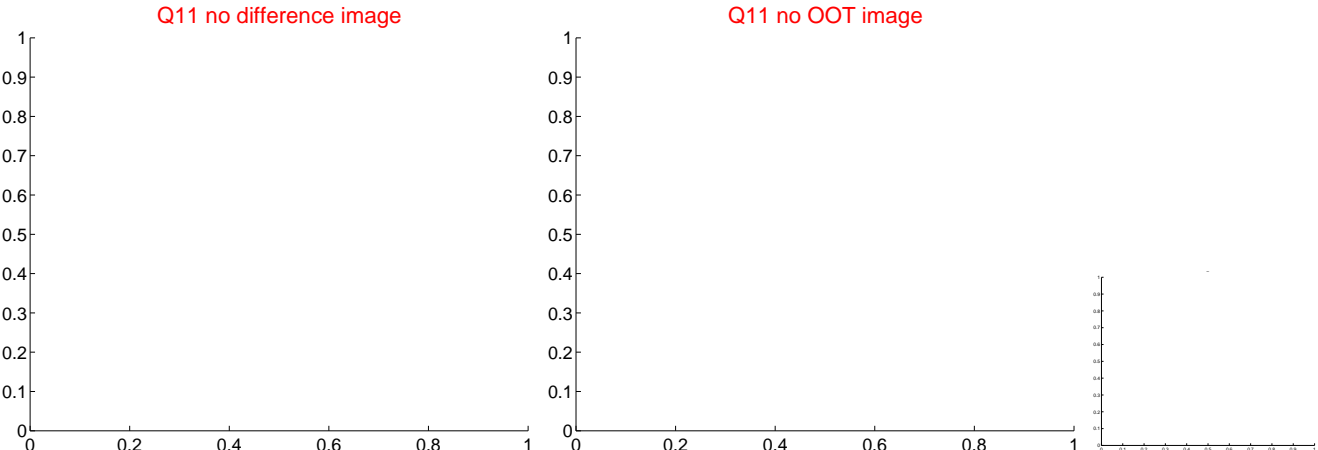
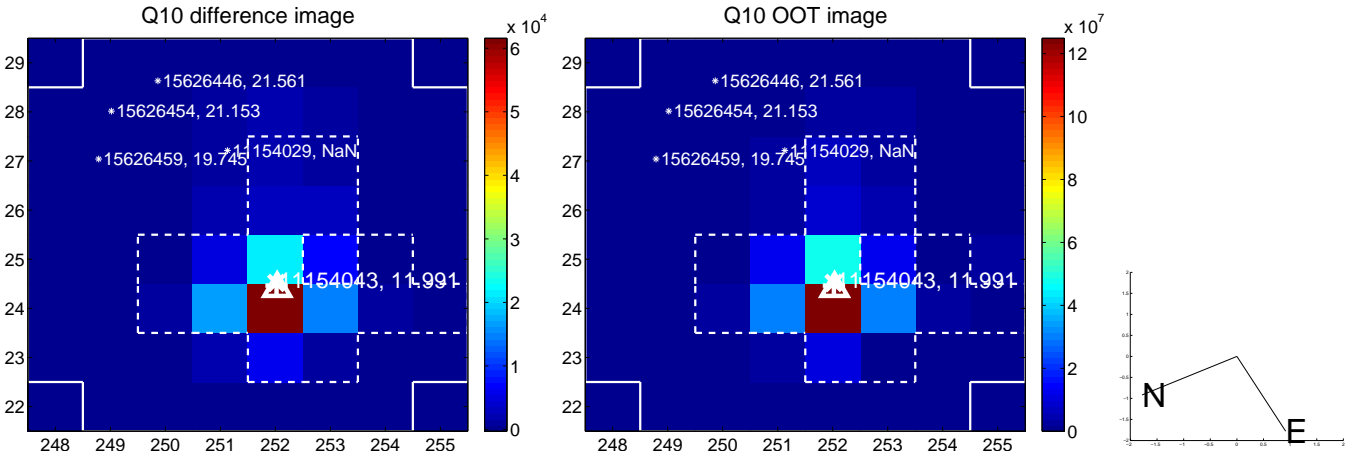
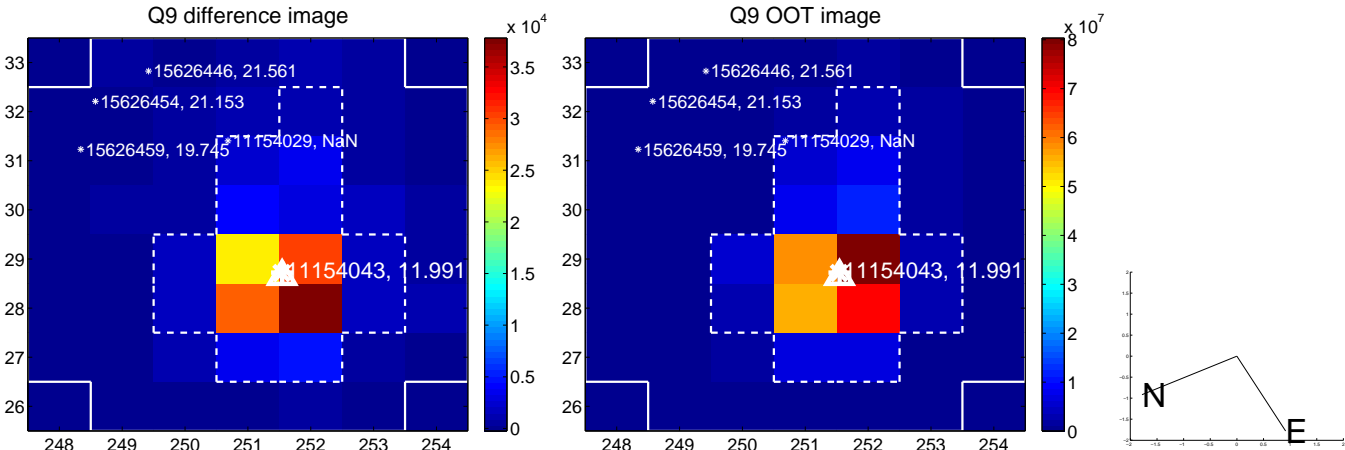
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



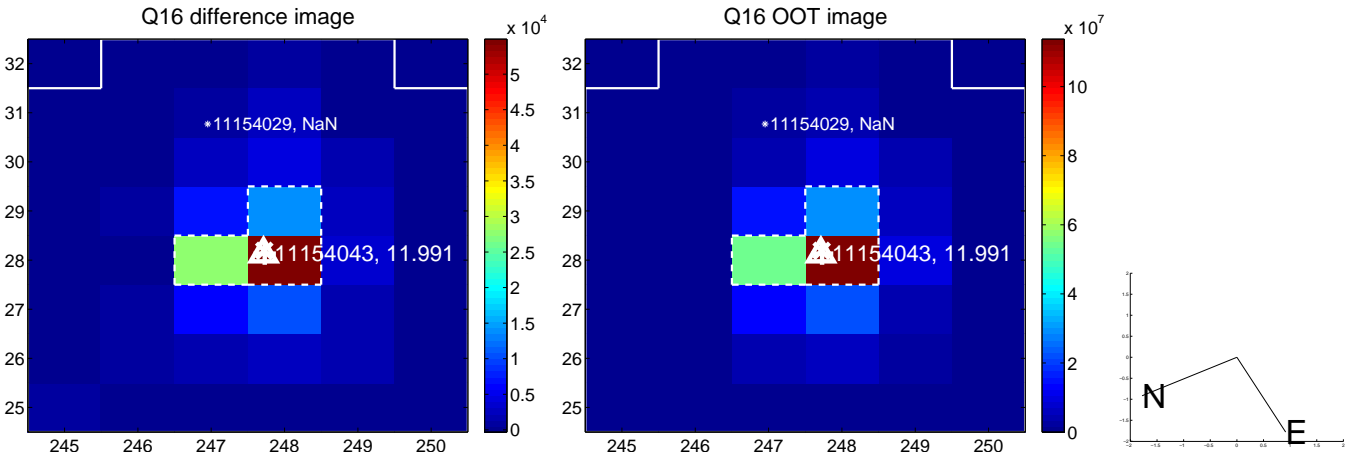
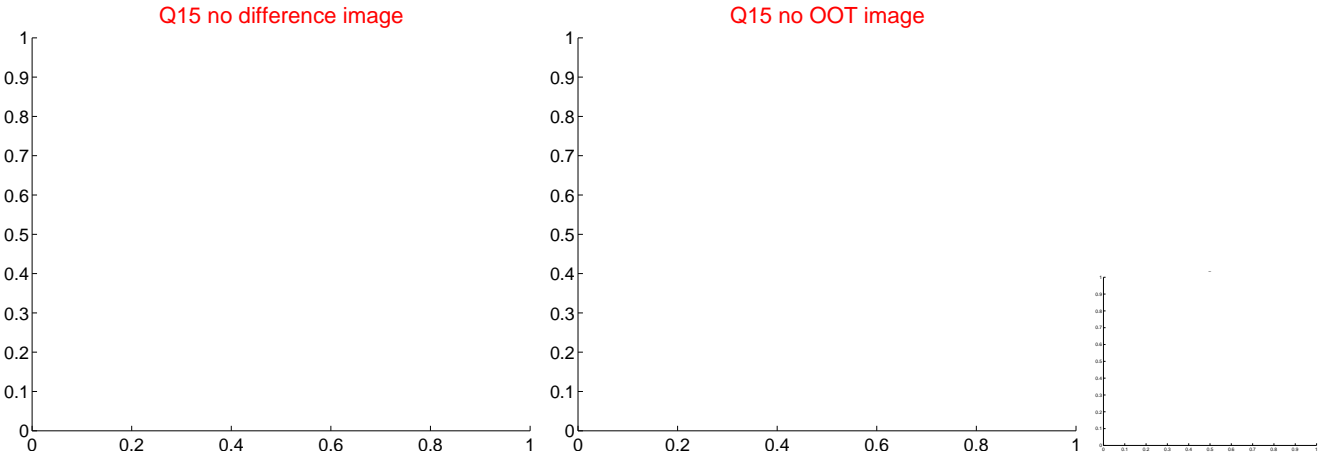
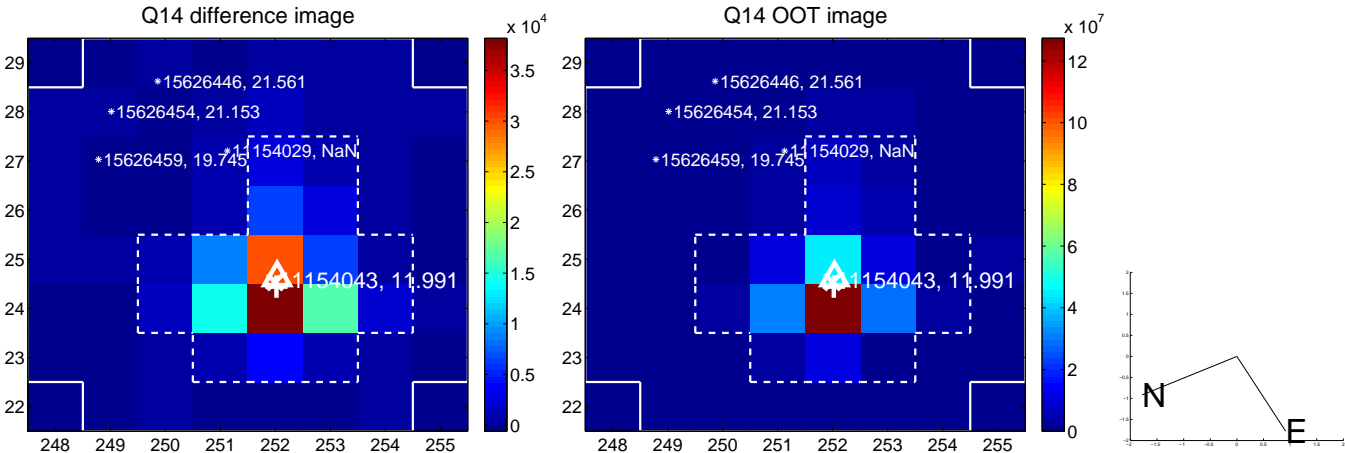
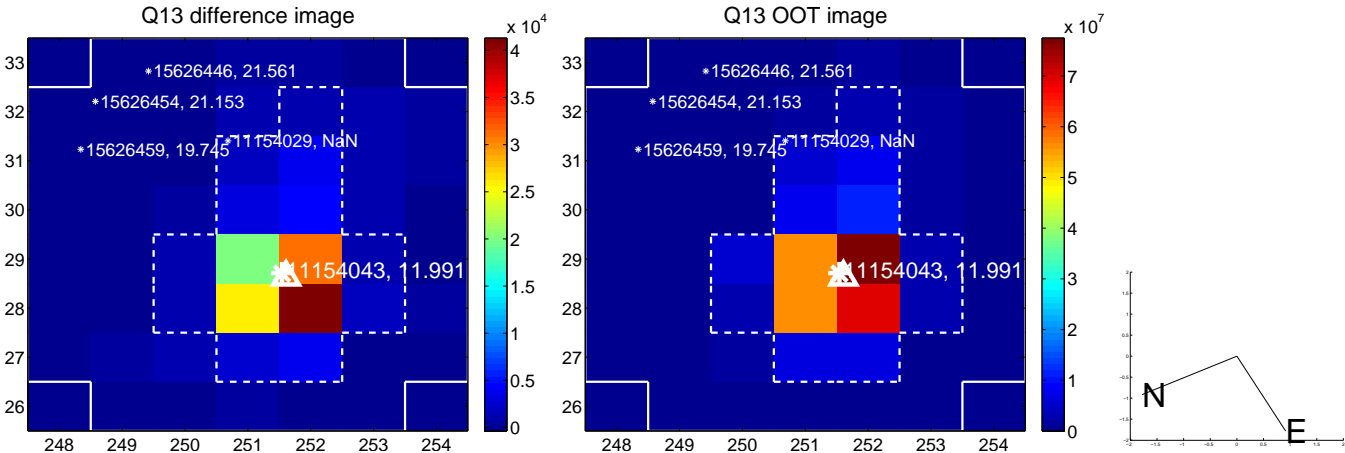
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



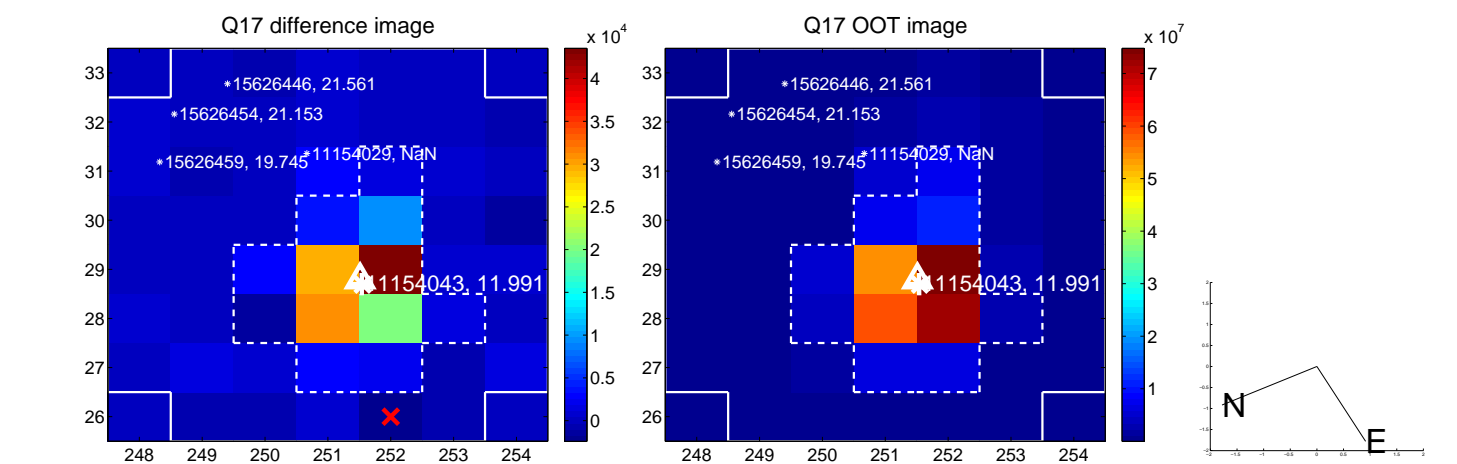
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



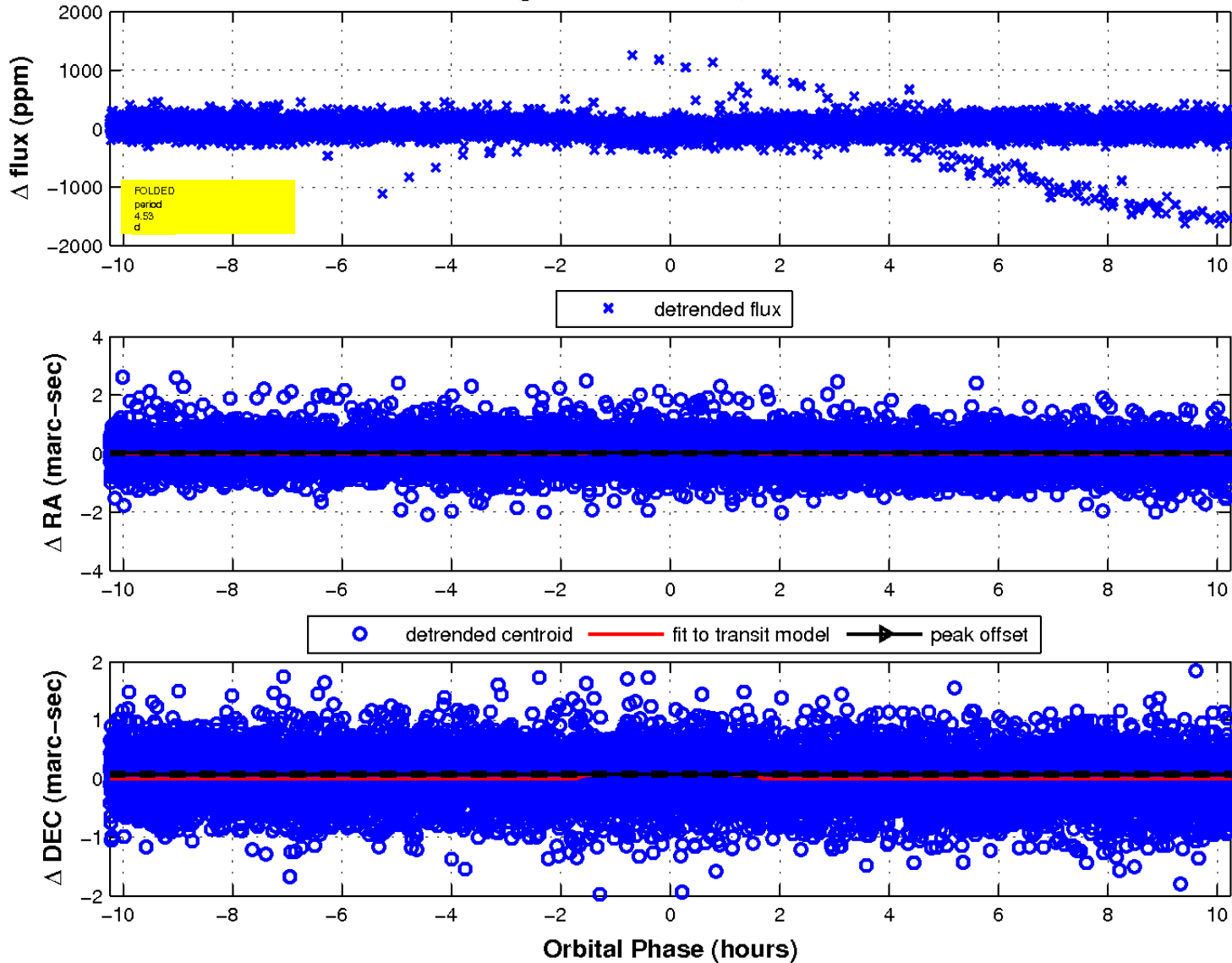
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

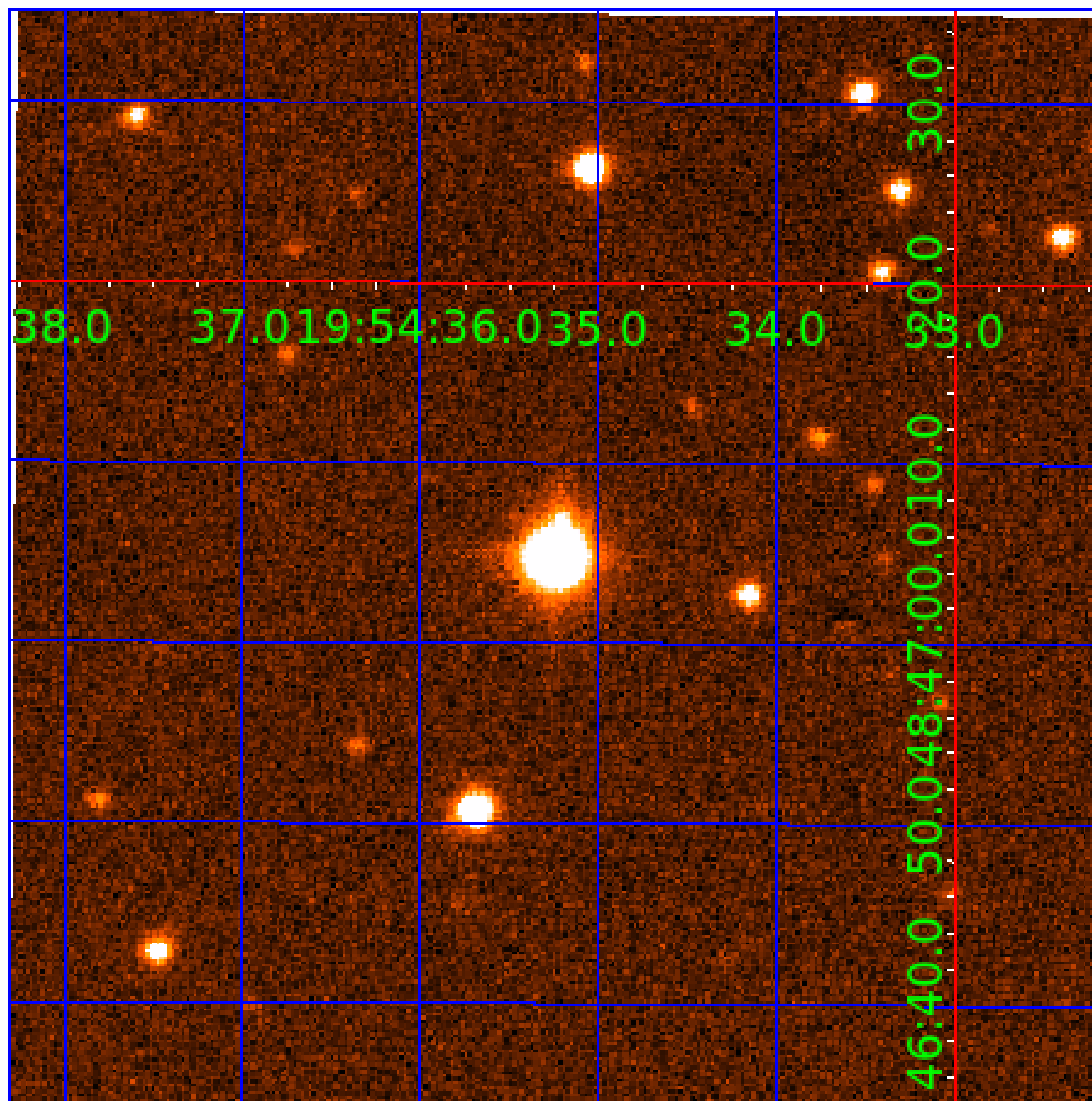


fluxWeightedCentroids, Planet 2 of 5



UKIRT Image

Declination



KIC 011154043

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})
011154043-01	OBS	7414.01	4.529943	135.924252	84.8	3.346	23.0	22.8	2.30	8912	2.44	6218.67
011154043-02	OBS	No	4.529819	133.554425	53.9	3.414	15.5	15.3	2.30	8912	1.95	6218.90
011154043-03	OBS	No	1.509973	132.803408	30.5	3.203	12.2	12.3	2.30	8912	1.50	26906.81
011154043-04	OBS	No	1.509917	132.401644	22.2	4.178	11.0	12.0	2.30	8912	1.25	26908.12
011154043-05	OBS	No	1.510086	132.025299	14.9	12.030	10.6	6.7	2.30	8912	0.98	26904.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011154043-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
011154043-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—SAME_NTL_PERIOD
011154043-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
011154043-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
011154043-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS

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

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

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

Ephemeris Match Information For 011154043-03

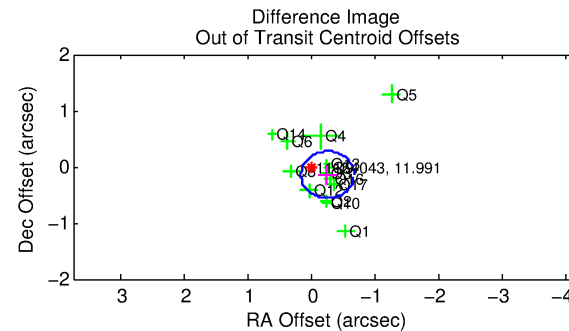
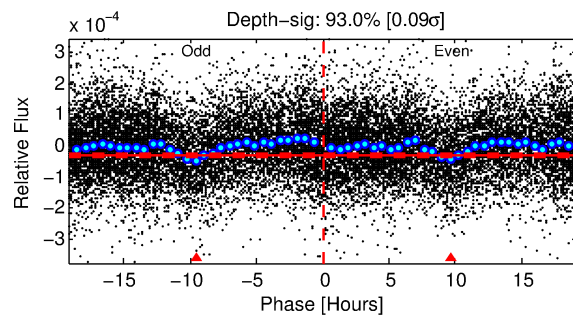
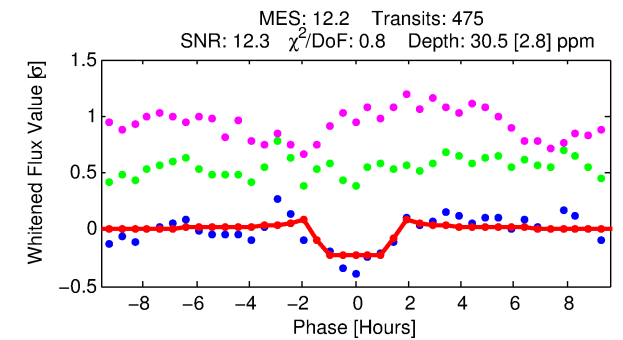
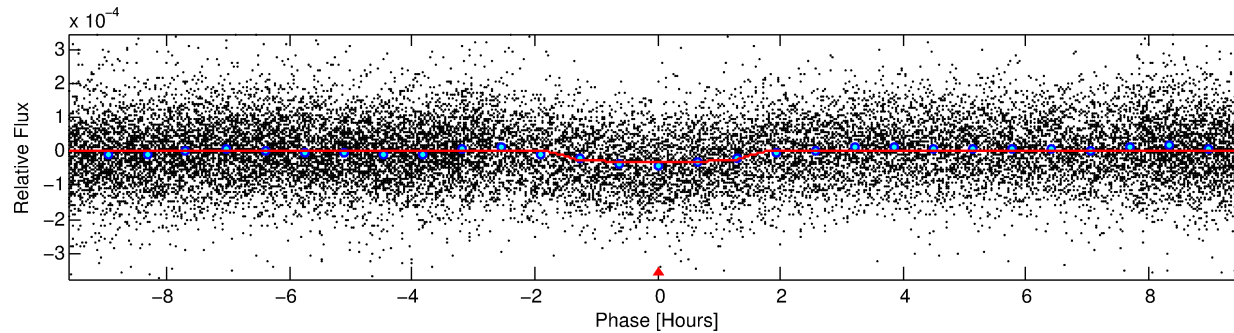
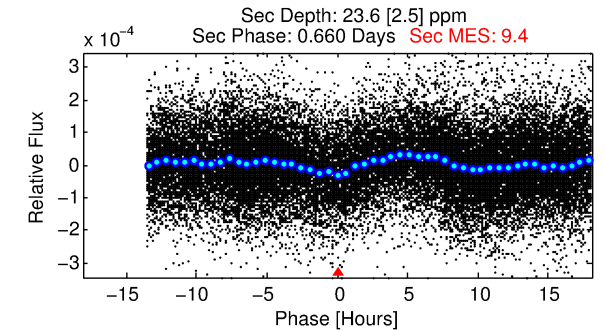
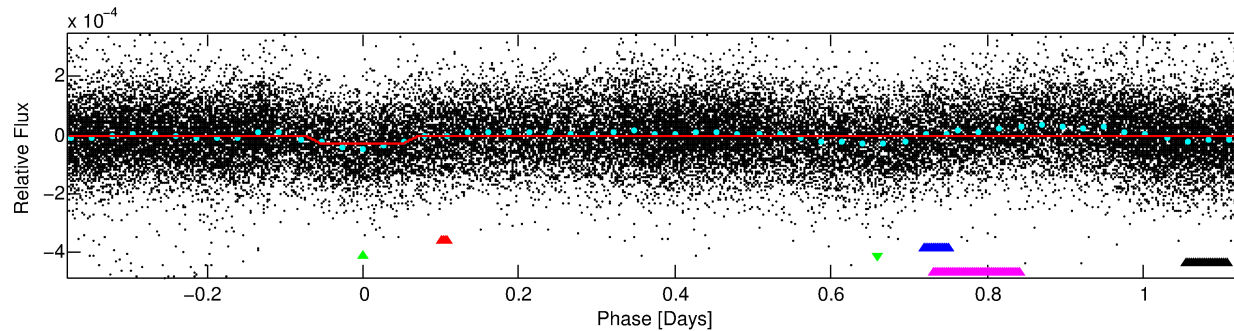
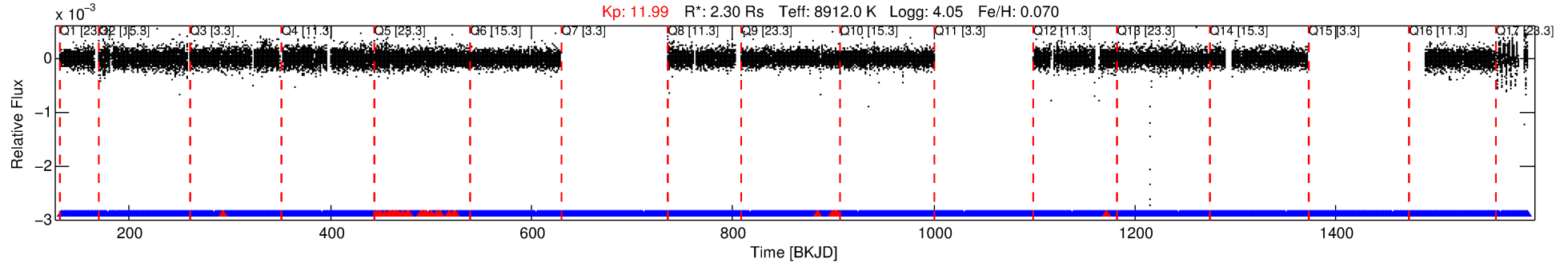
No Significant Match Found

DV One-Page Summary

KIC: 11154043 Candidate: 3 of 5 Period: 1.510 d

KOI: K07414 Corr: No Ephemeris Match

Kp: 11.99 R*: 2.30 Rs Teff: 8912.0 K Logg: 4.05 Fe/H: 0.070



DV Fit Results:

Period = 1.50997 [0.00001] d
Epoch = 132.8034 [0.0024] BKJD
Rp/R* = 0.0060 [0.0012]
a/R* = 1.68 [1.51]
b = 0.93 [0.20]
Seff = 26906.81 [10695.44]
Teq = 3266 [325] K
Rp = 1.50 [0.55] Re
a = 0.0333 [0.0084] AU
Ag = 6.42 [3.41] [1.59σ]
Teffp = 8037 [891] K [5.03σ]

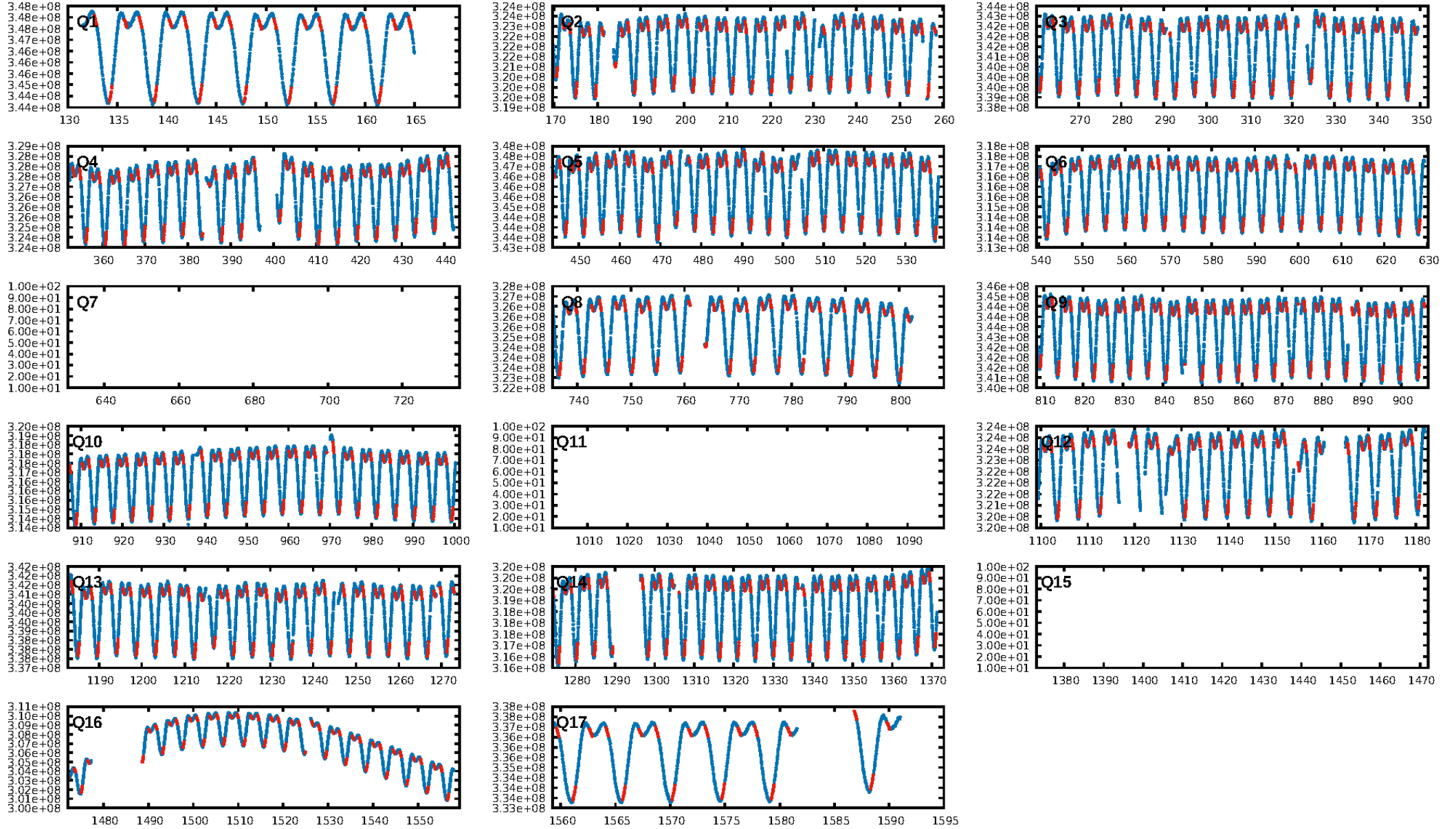
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.94 [421/448]
GhostDiagnostic-chr: 1.49
Centroid-sig: 3.4%
Centroid-so: 1.240 arcsec [1.75σ]
OotOffset-rm: 0.287 arcsec [2.06σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-rm: 0.240 arcsec [1.46σ]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 0.79 [11/14]

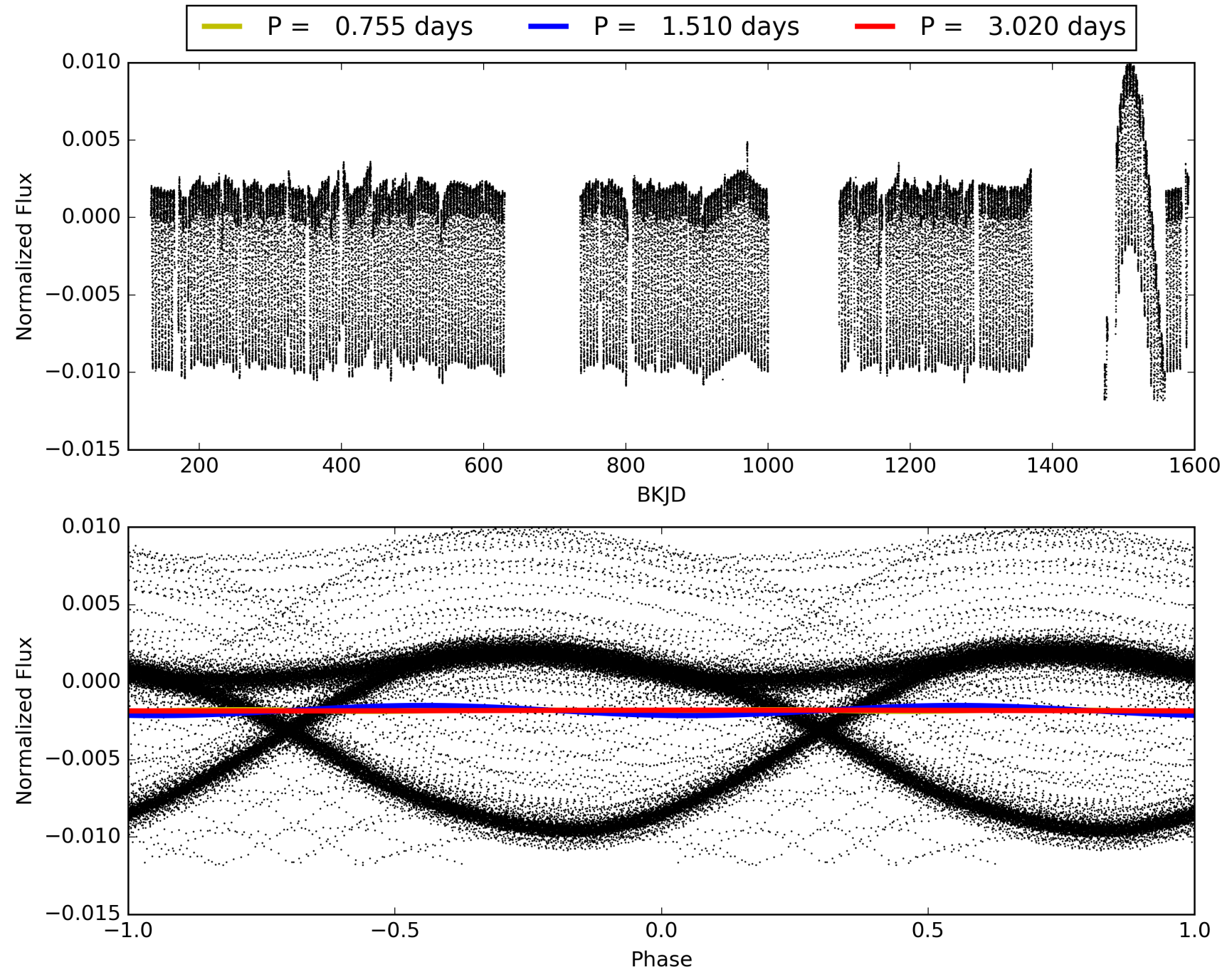
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 07:40:19 Z

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

TCE 011154043-03, PDC Light Curves

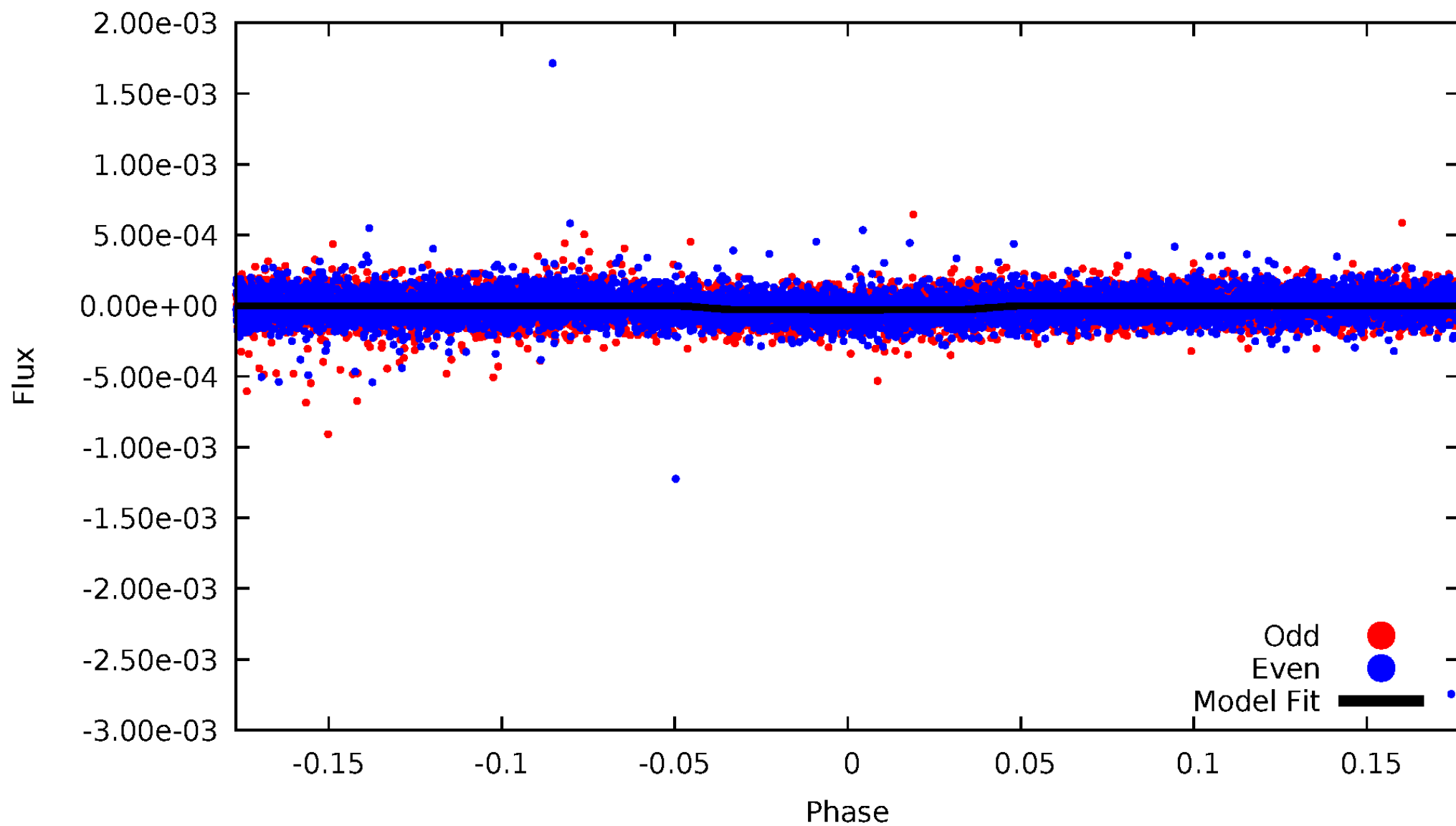


TCE 011154043-03



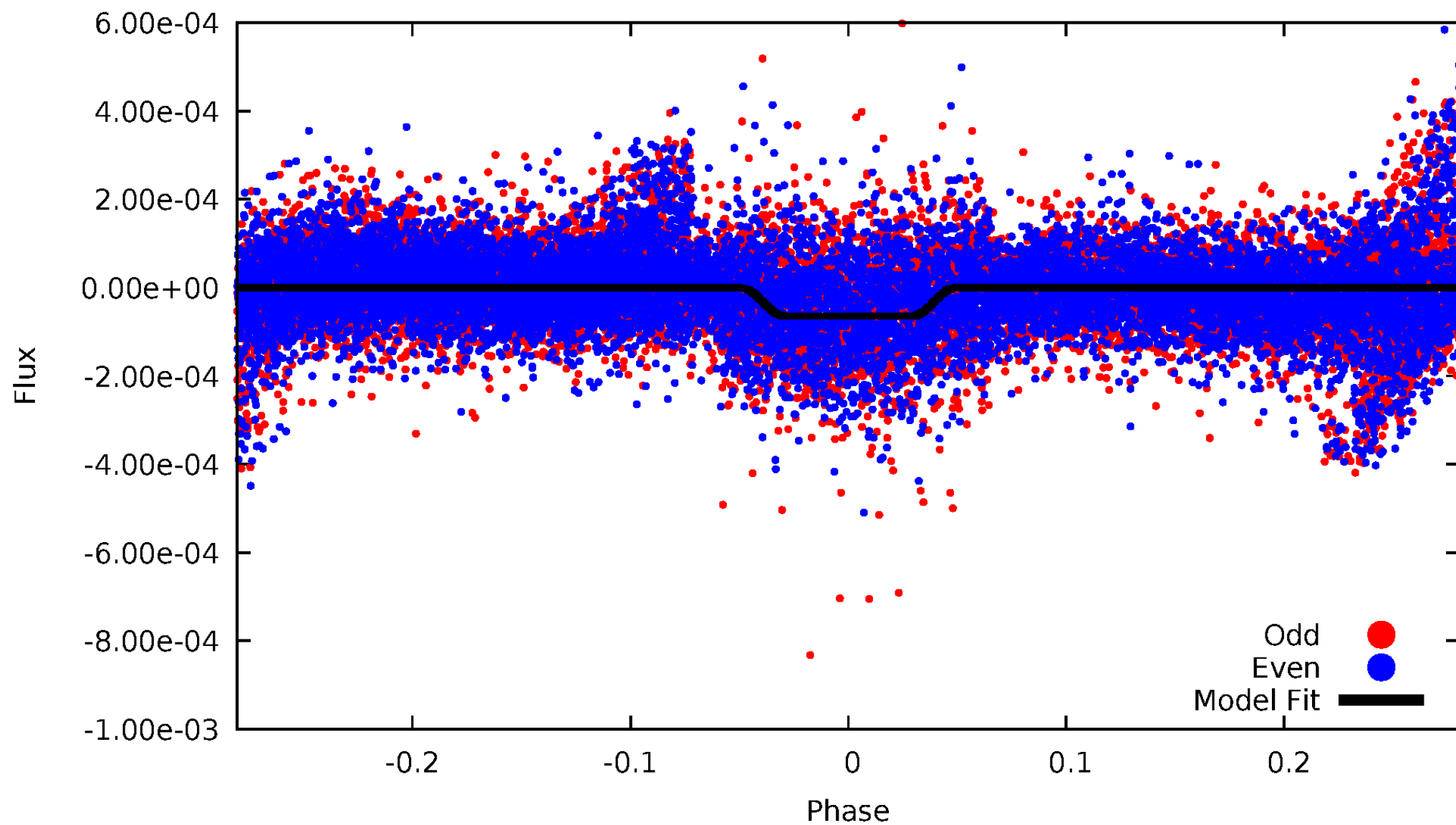
DV Odd/Even

TCE 011154043-03



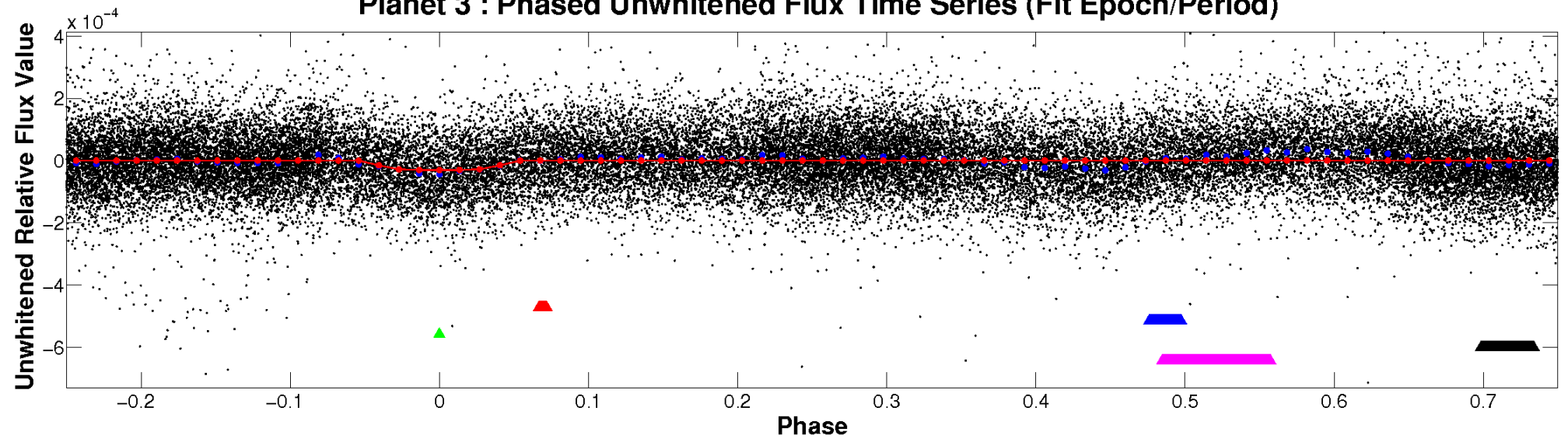
ALT Odd/Even

TCE 011154043-03

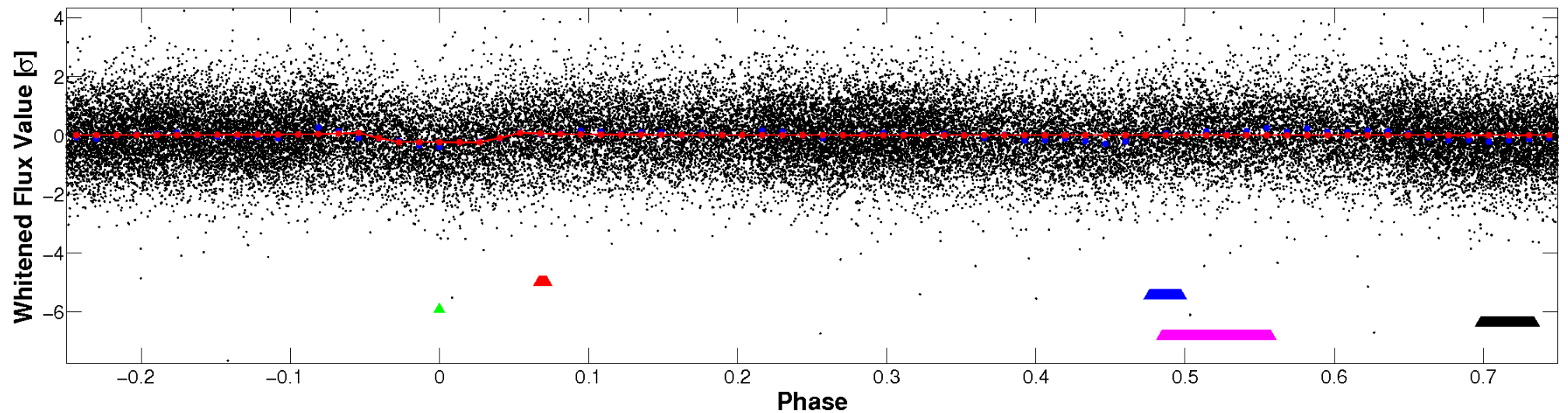


Non-Whitened Vs. Whitened Light Curve

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

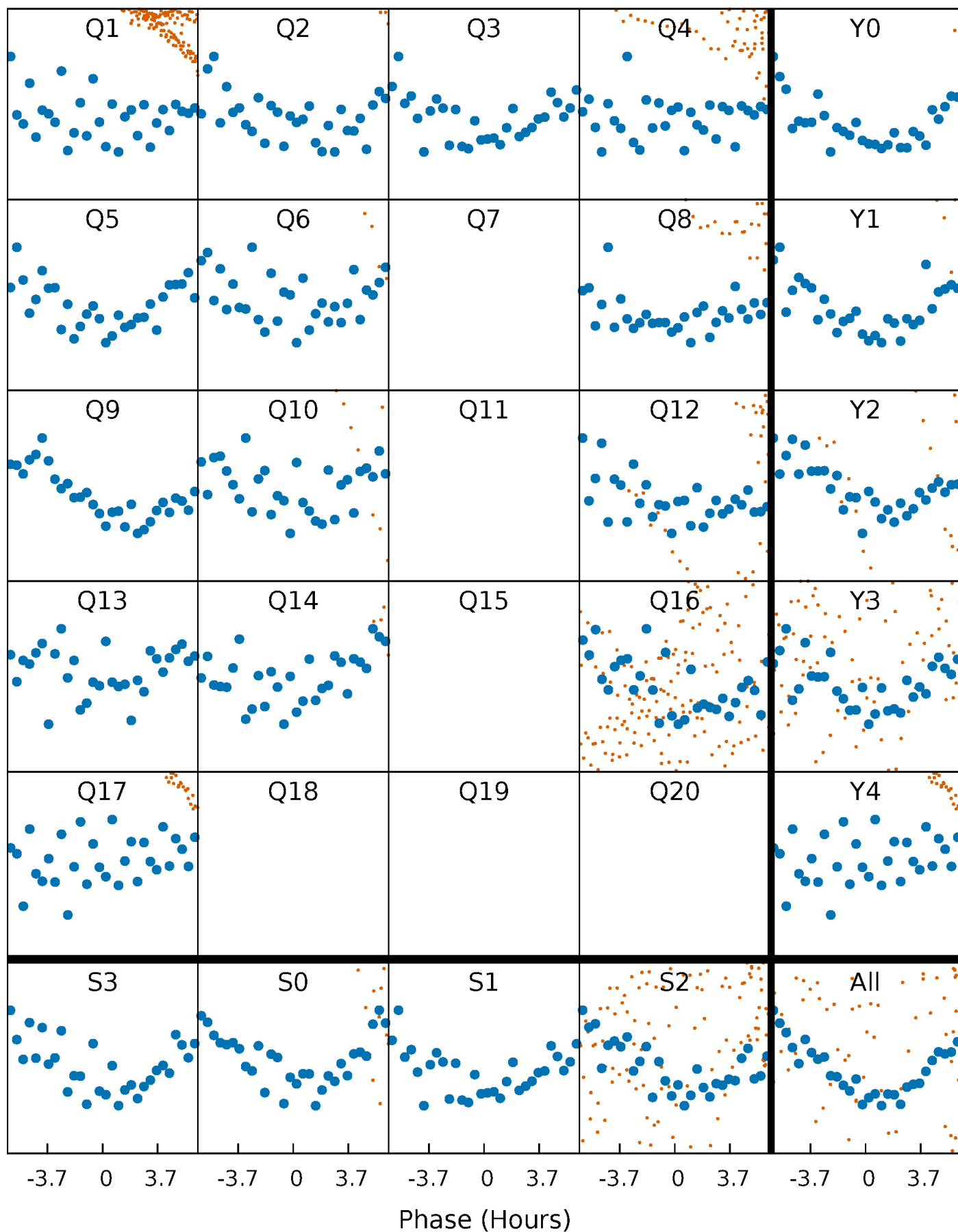


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



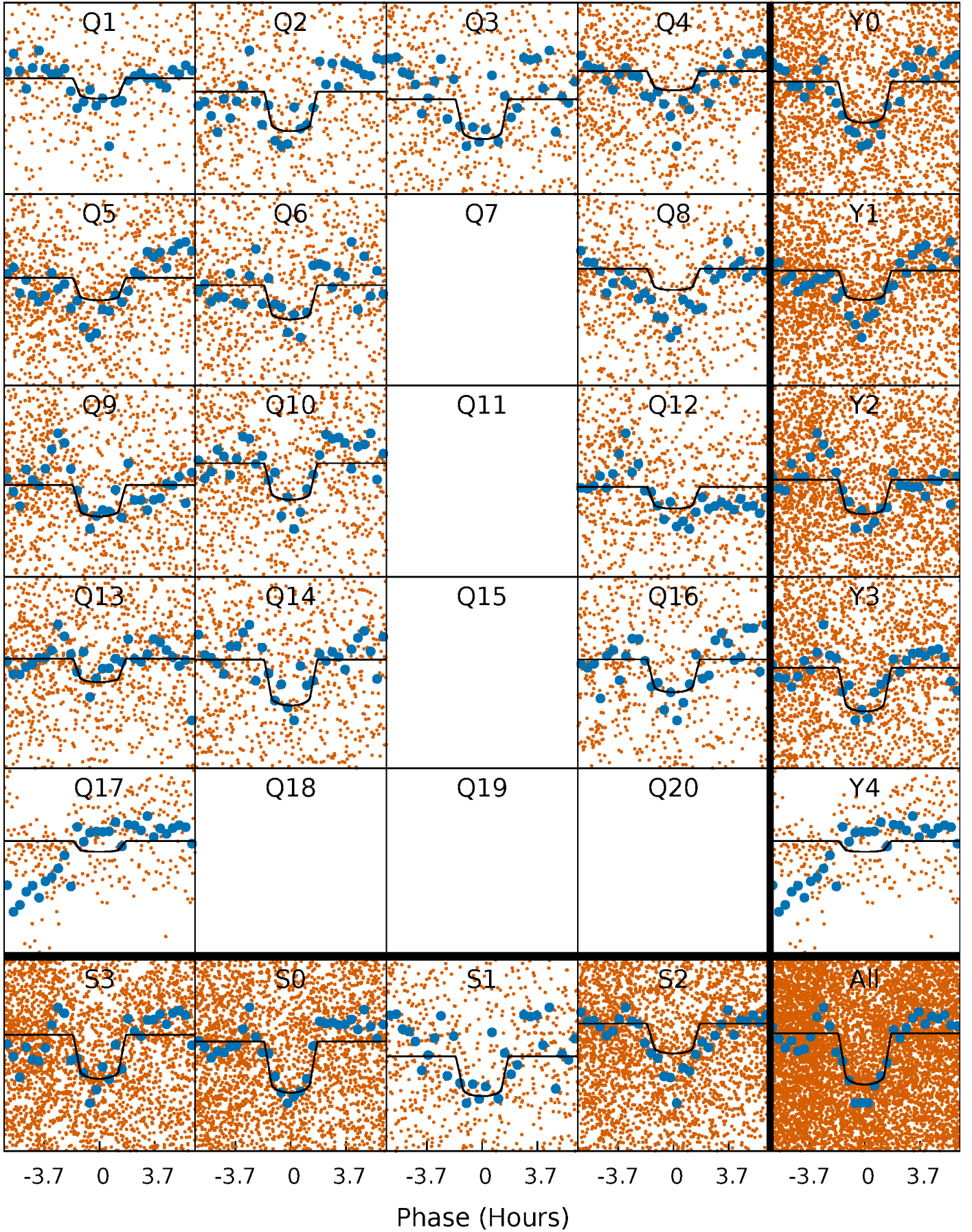
PDC Quarter-Phased Transit Curves

TCE 011154043-03 P= 1.509973 Days $T_0=132.803408$ (BKJD)



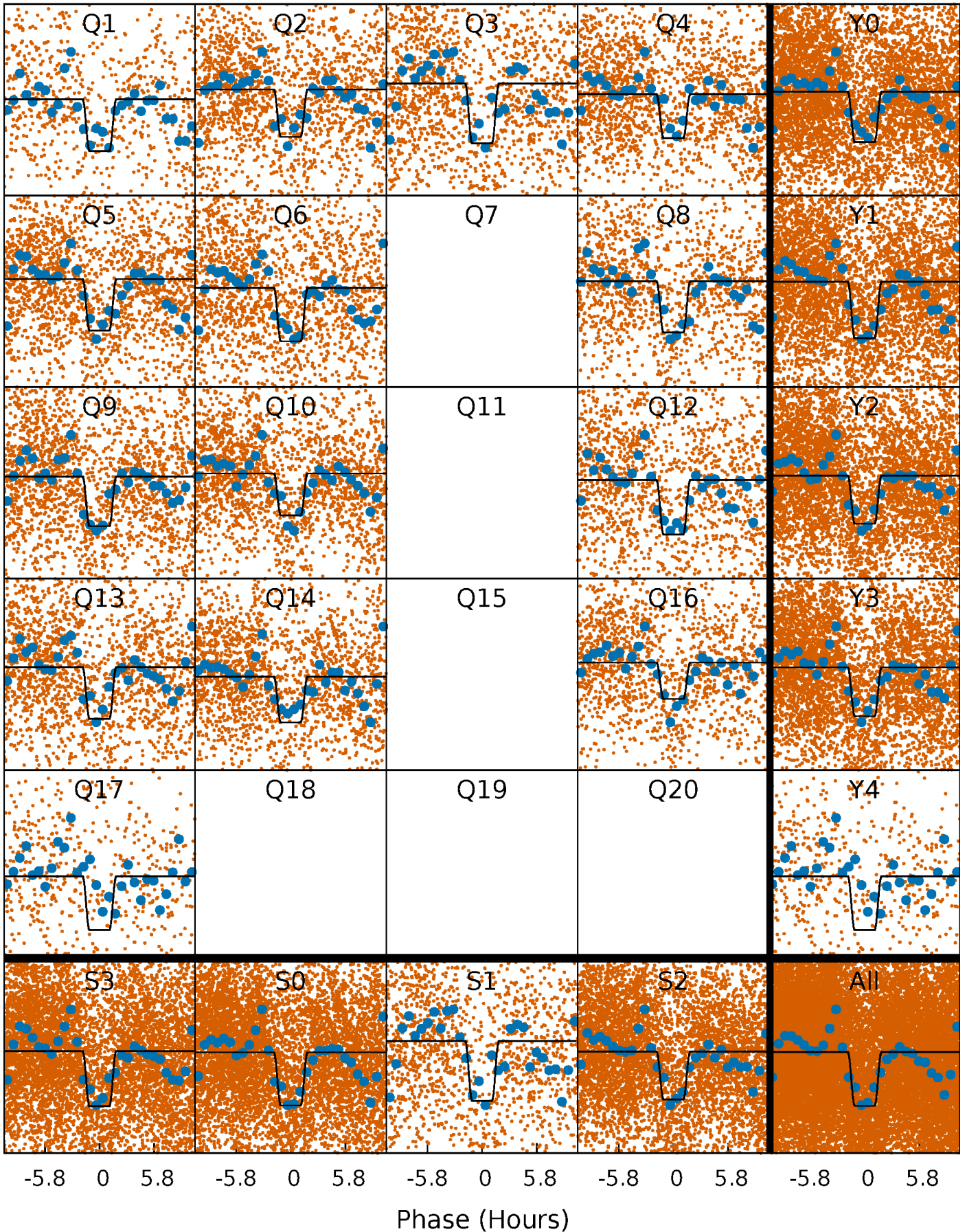
DV Quarter-Phased Transit Curves

TCE 011154043-03 P= 1.509973 Days $T_0=132.803408$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

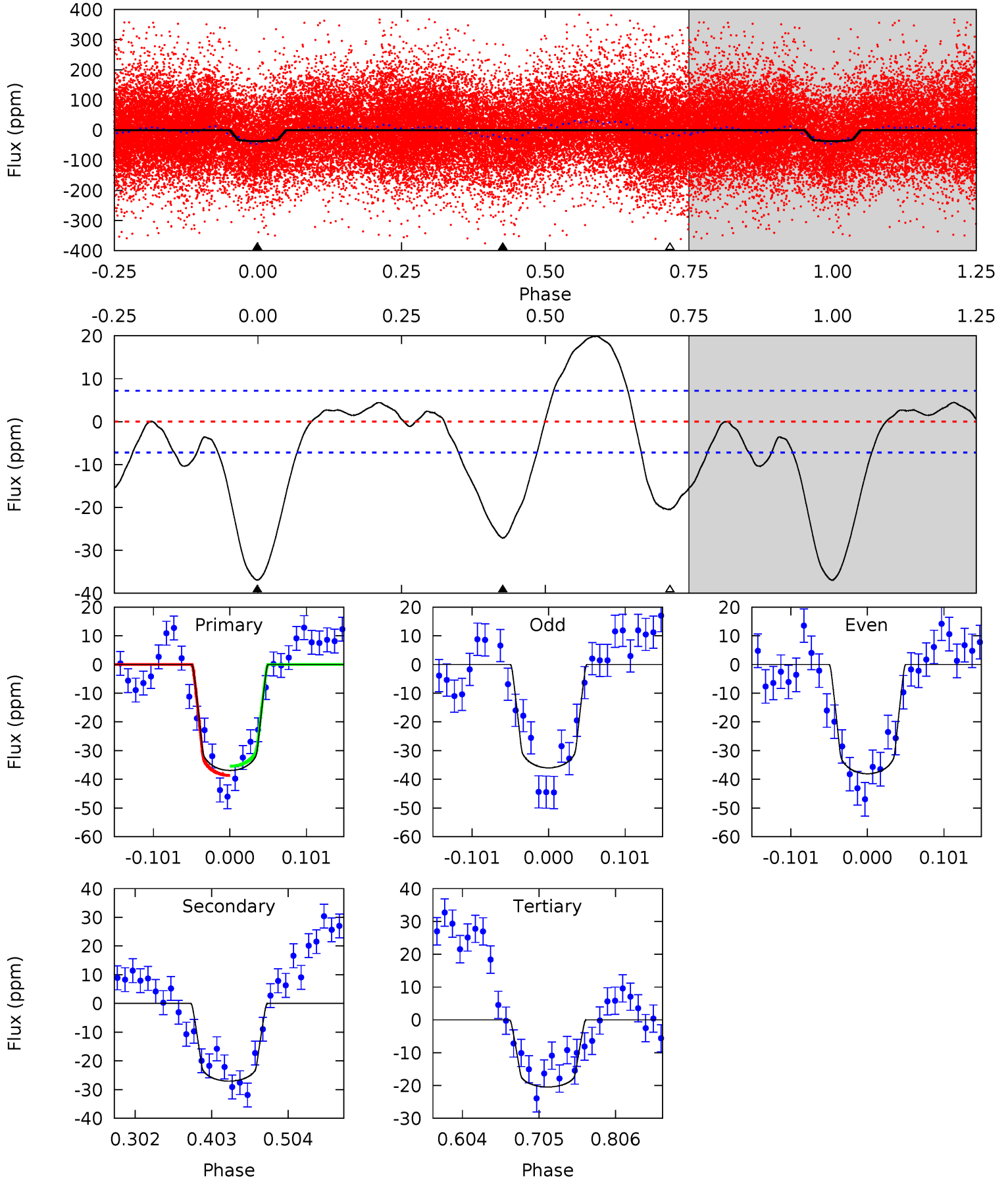
TCE 011154043-03 P= 1.509980 Days $T_0=132.793930$ (BKJD)



DV Model-Shift Uniqueness Test

011154043-03, P = 1.509973 Days, E = 131.293435 Days

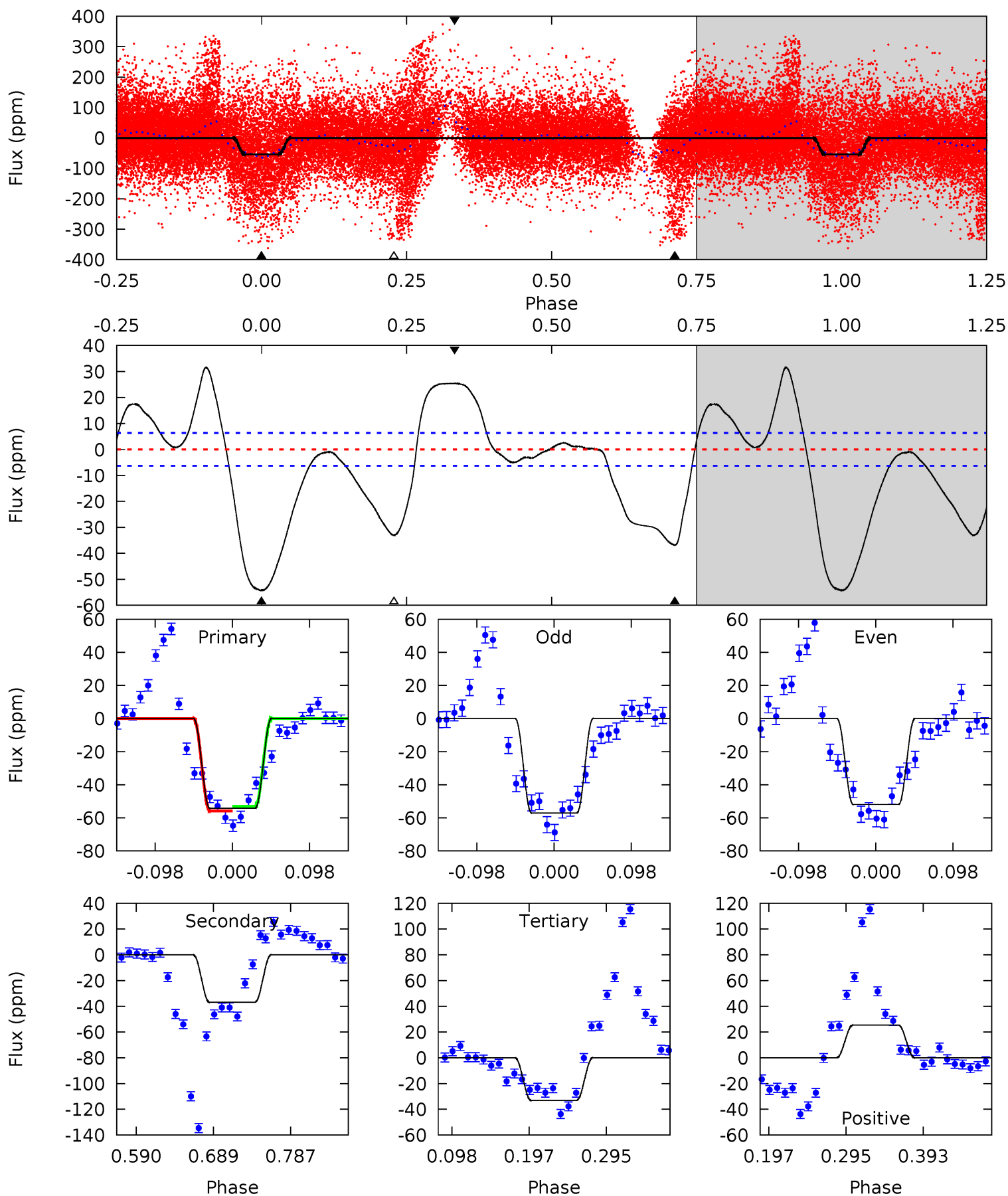
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.5	17.2	13.0	0	4.56	1.64	6.65	10.5	23.5	4.20	17.2	0.66	0.94	0.35	1.03



Alt Model-Shift Uniqueness Test

011154043-03, P = 1.509980 Days, E = 131.283950 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
39.3	26.7	23.9	18.4	4.57	1.65	10.1	15.4	20.9	2.75	8.29	1.93	0.99	0.37	0.96



Stellar Parameters For KIC 011154043

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8912^{+249}_{-427}	$4.050^{+0.181}_{-0.165}$	$0.070^{+0.250}_{-0.600}$	$2.299^{+0.724}_{-0.658}$	$2.164^{+0.383}_{-0.574}$	$0.251^{+0.249}_{-0.117}$
	+3%/-5%	+4%/-4%	+357%/-857%	+31%/-29%	+18%/-27%	+99%/-47%
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 011154043-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-27 ± 2	$1.48^{+0.38}_{-0.34}$	4542^{+338}_{-367}	8010^{+1262}_{-887}	$7.380^{+4.931}_{-2.480}$
Alt.	-37 ± 1	$1.98^{+0.47}_{-0.43}$	4510^{+377}_{-363}	7311^{+875}_{-633}	$5.727^{+3.124}_{-1.886}$

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 $A_{obs} \gg 1.0$

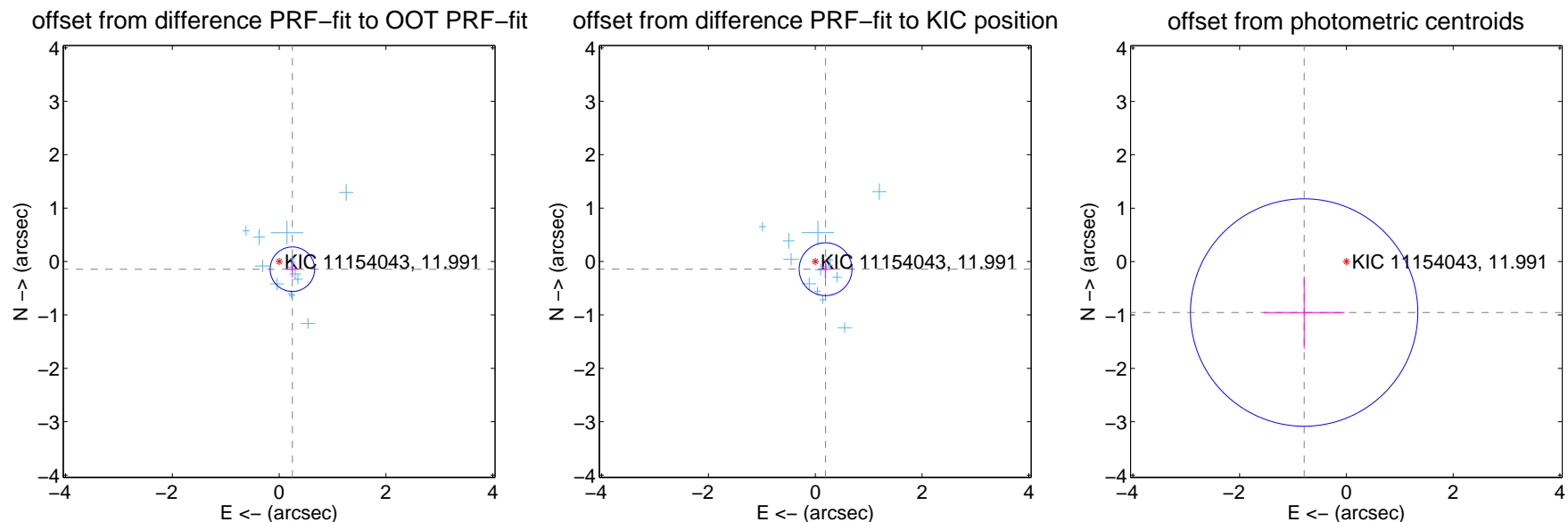
DV Centroid Data

Supplemental centroid analysis for 011154043-03. **Kepler magnitude: 11.99.** Transit SNR 12.27

There are 14 quarters with good PRF difference image offsets

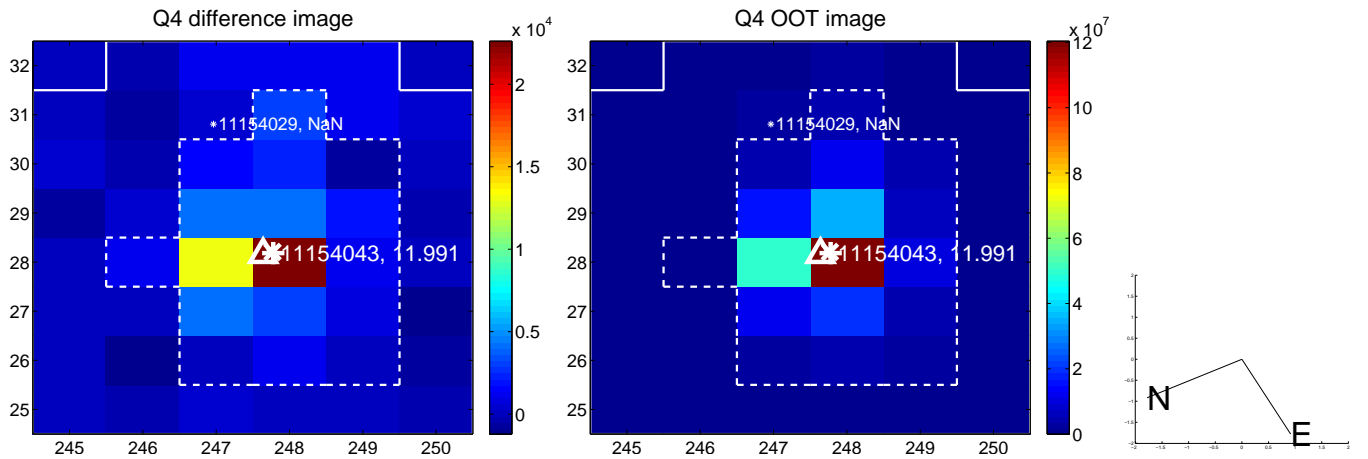
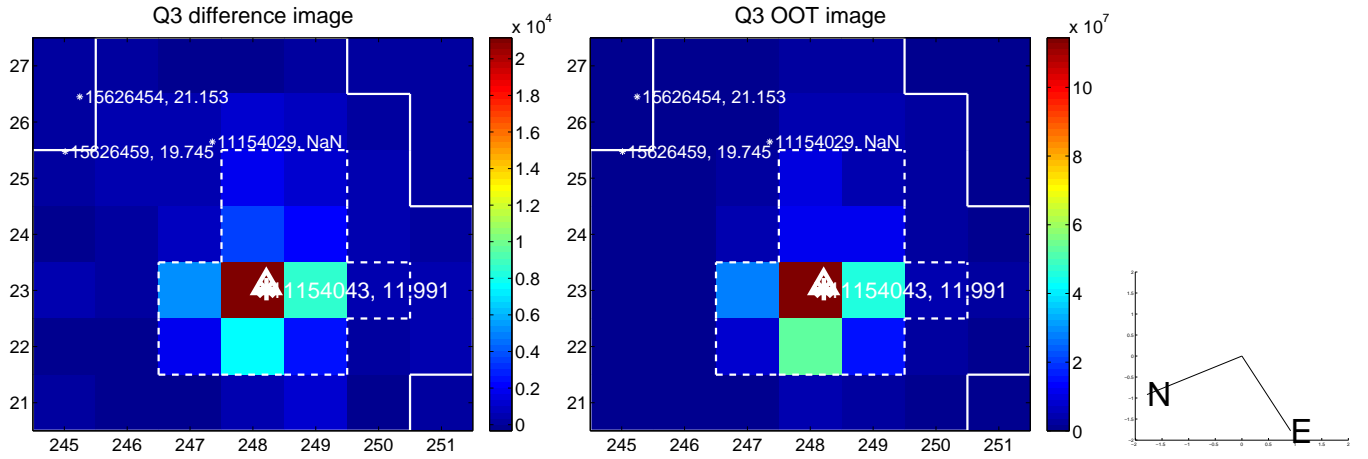
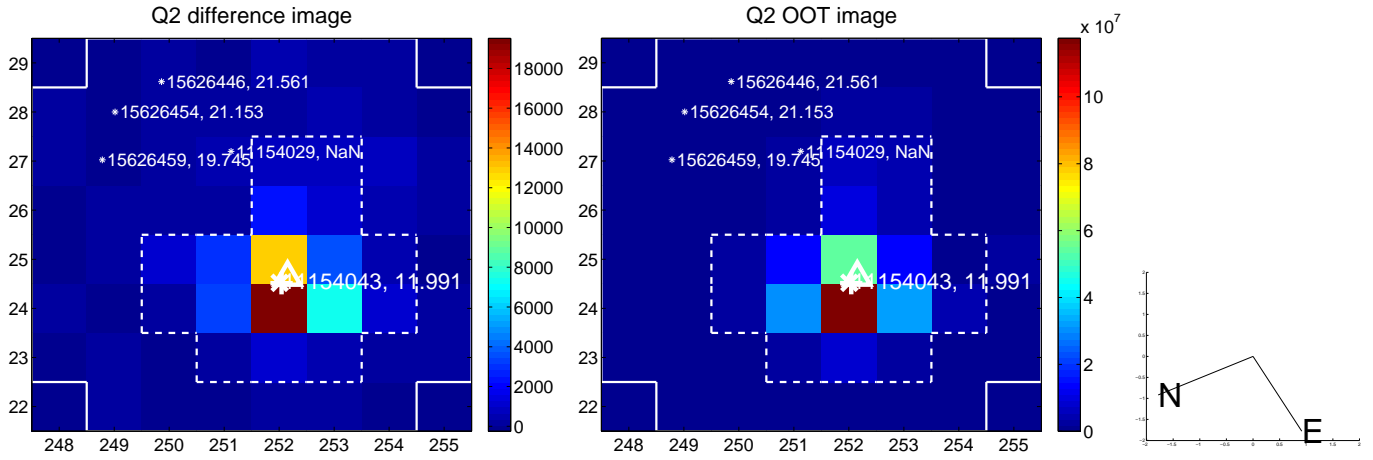
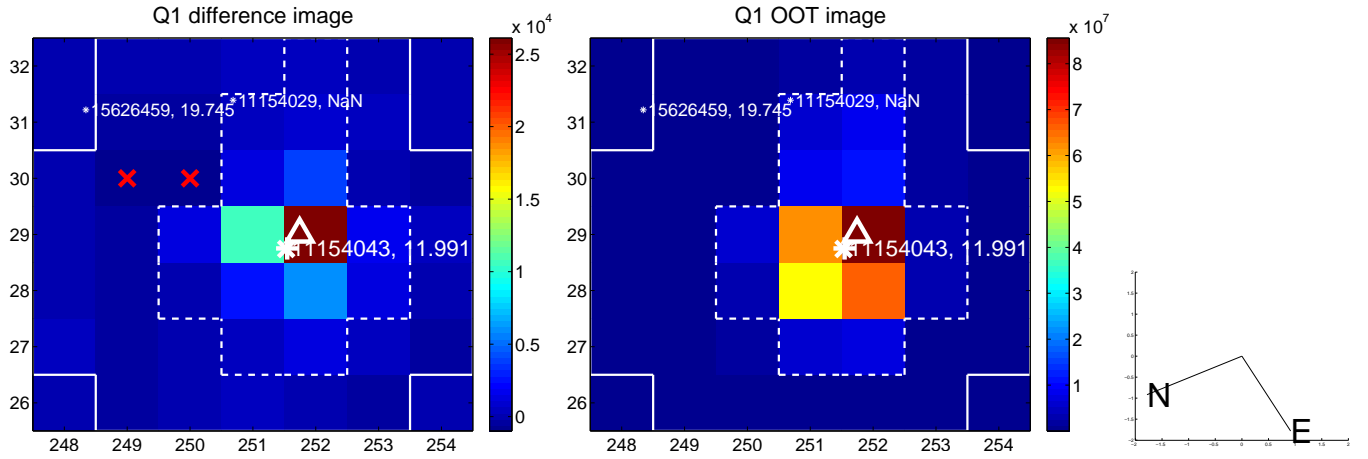
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.287 ± 0.139	2.06	-0.248 ± 0.133	-0.144 ± 0.158
PRF-fit source offset from KIC position	0.240 ± 0.165	1.46	-0.193 ± 0.143	-0.143 ± 0.174
photometric centroid source offset	1.24 ± 0.71	1.75	0.79 ± 0.76	-0.95 ± 0.68

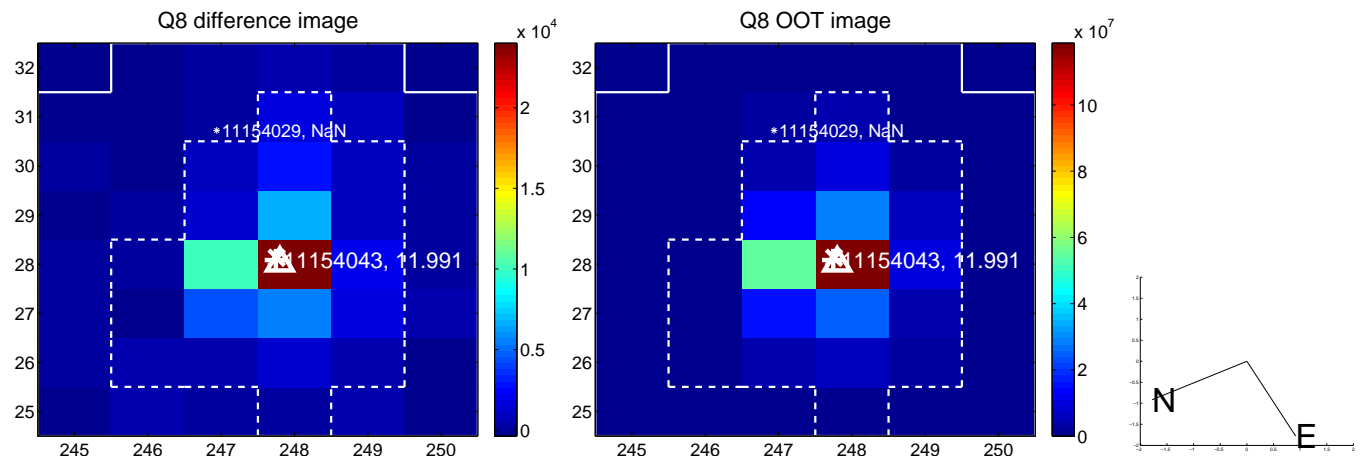
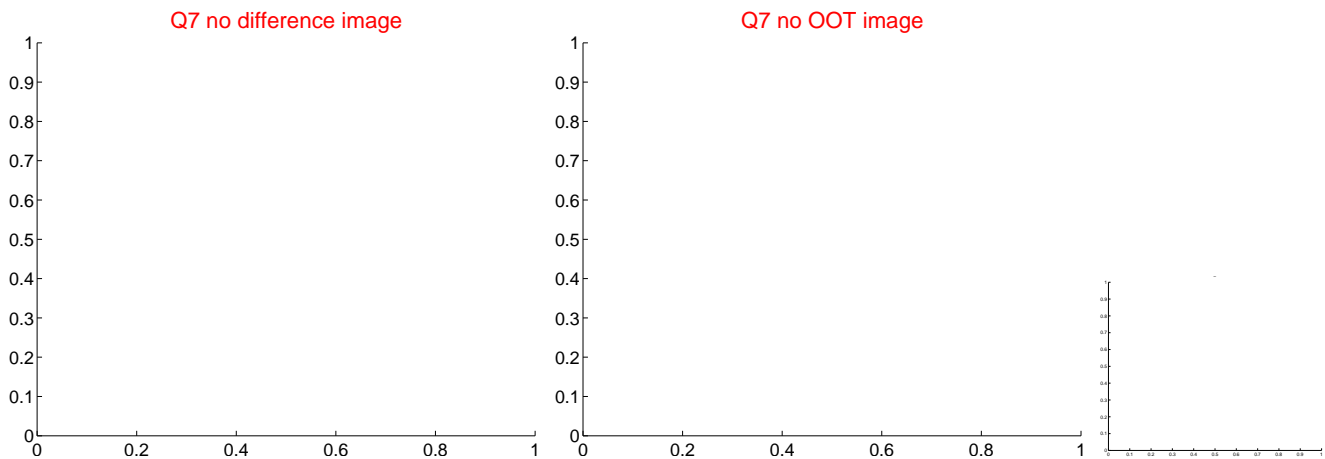
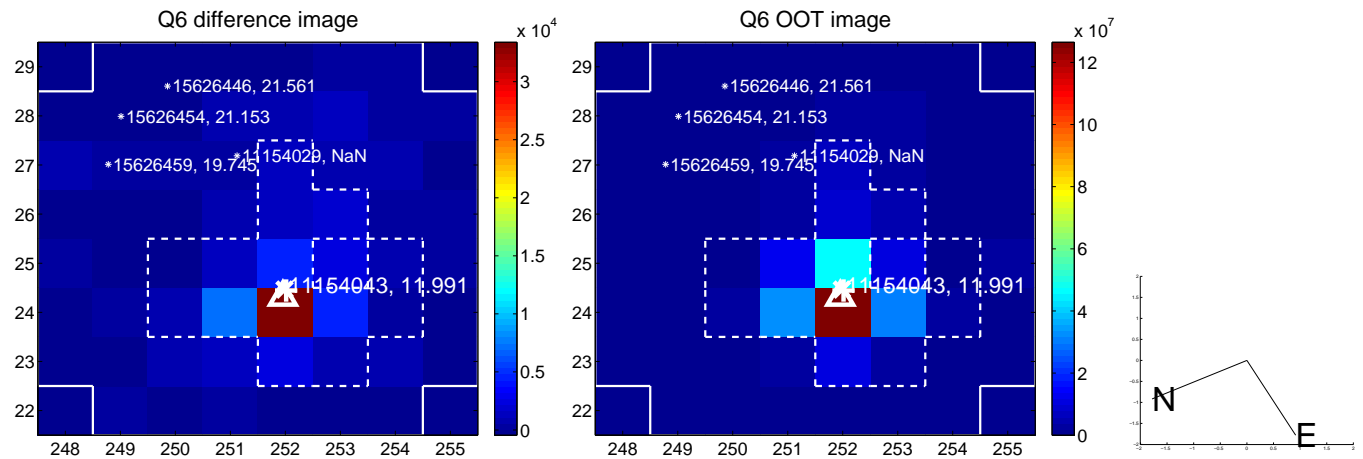
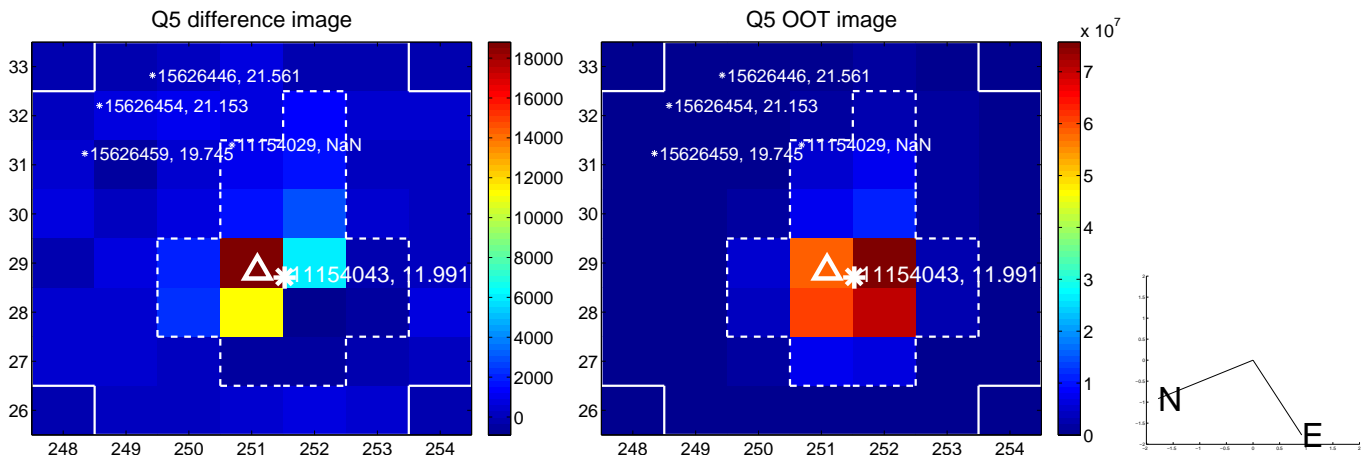


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

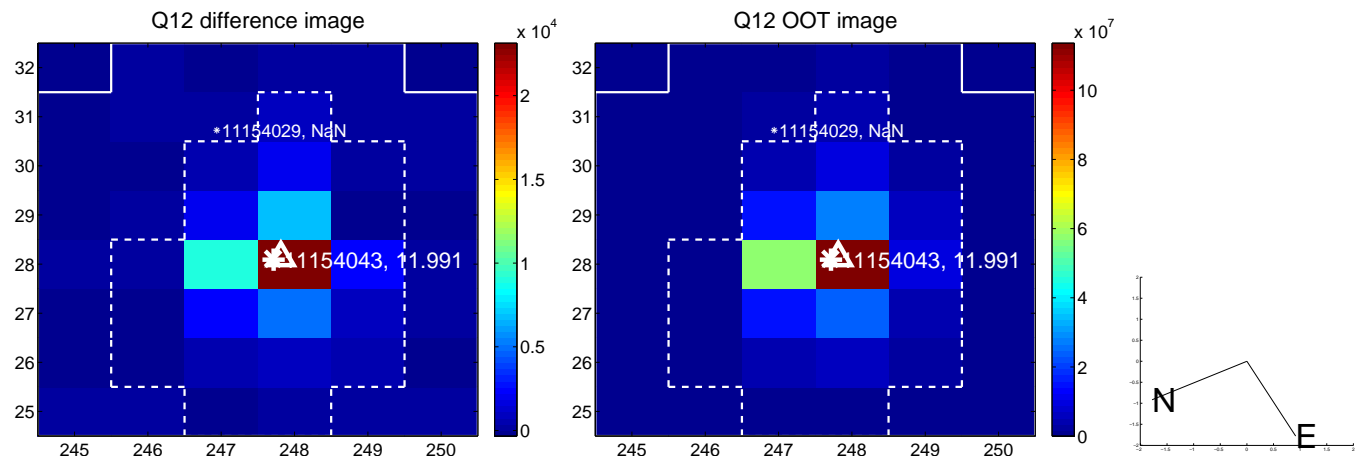
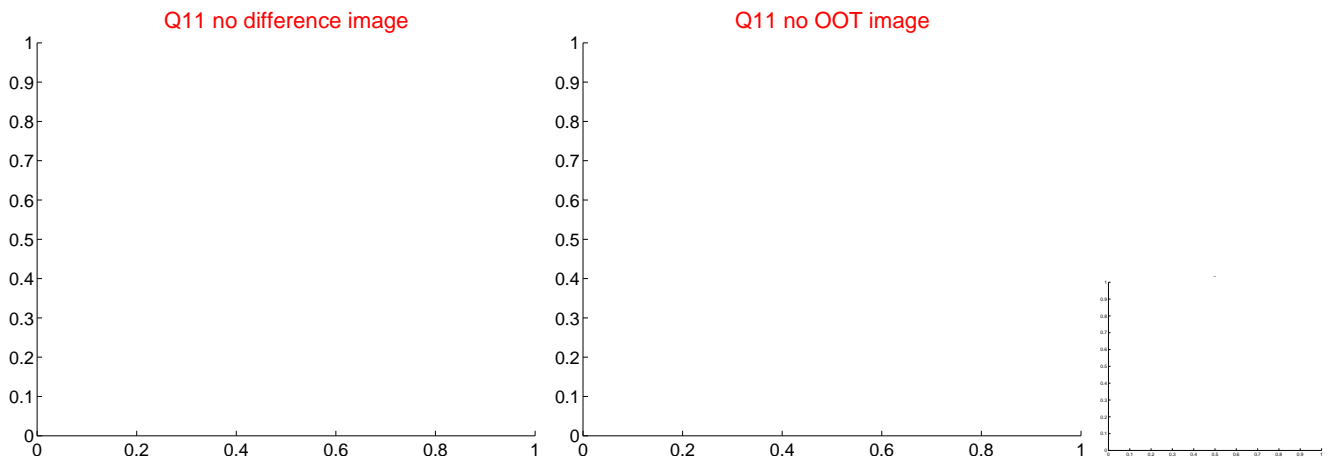
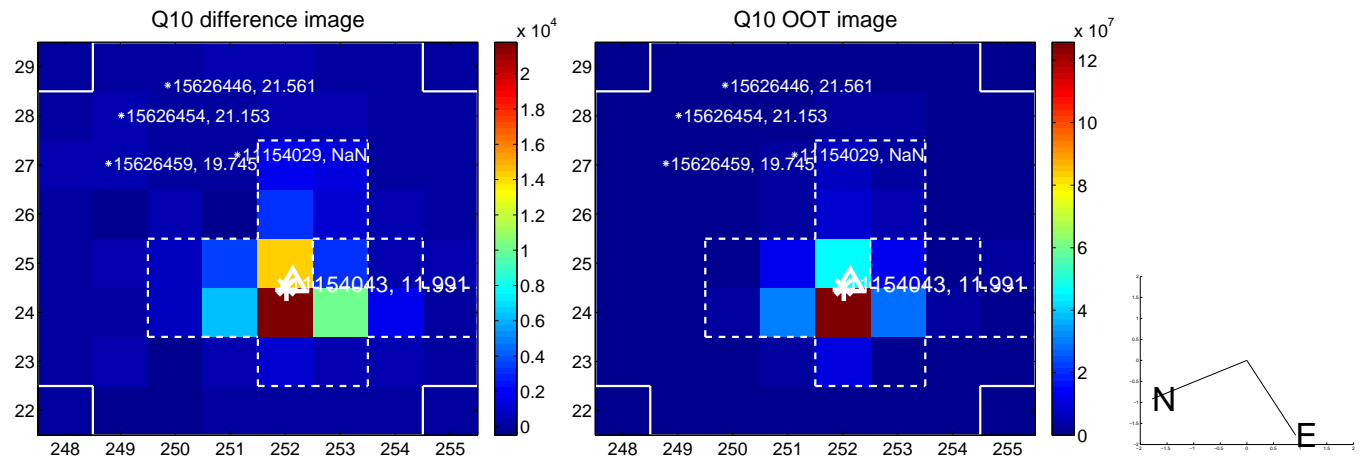
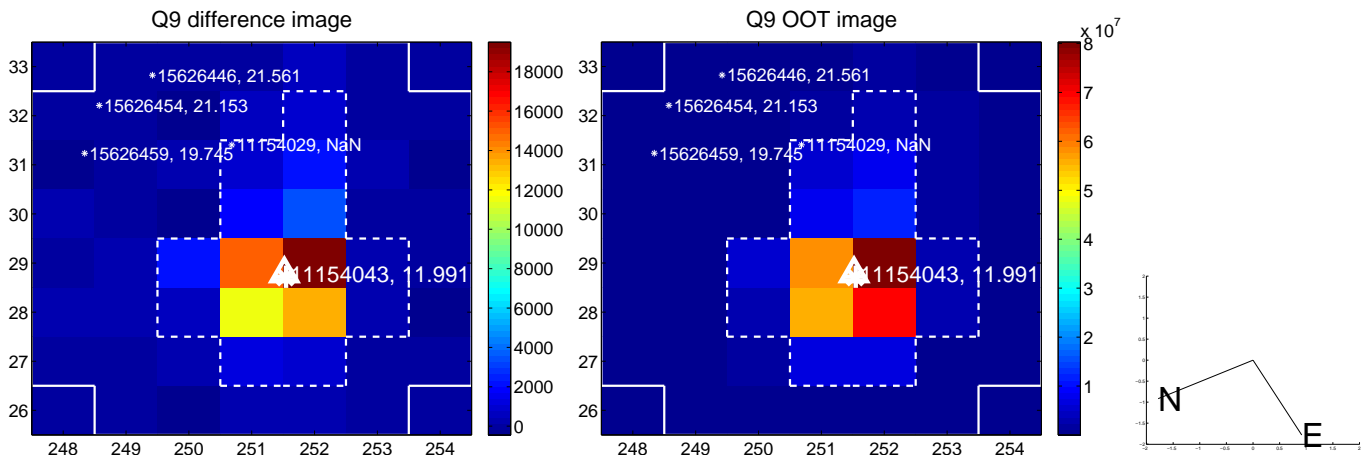
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



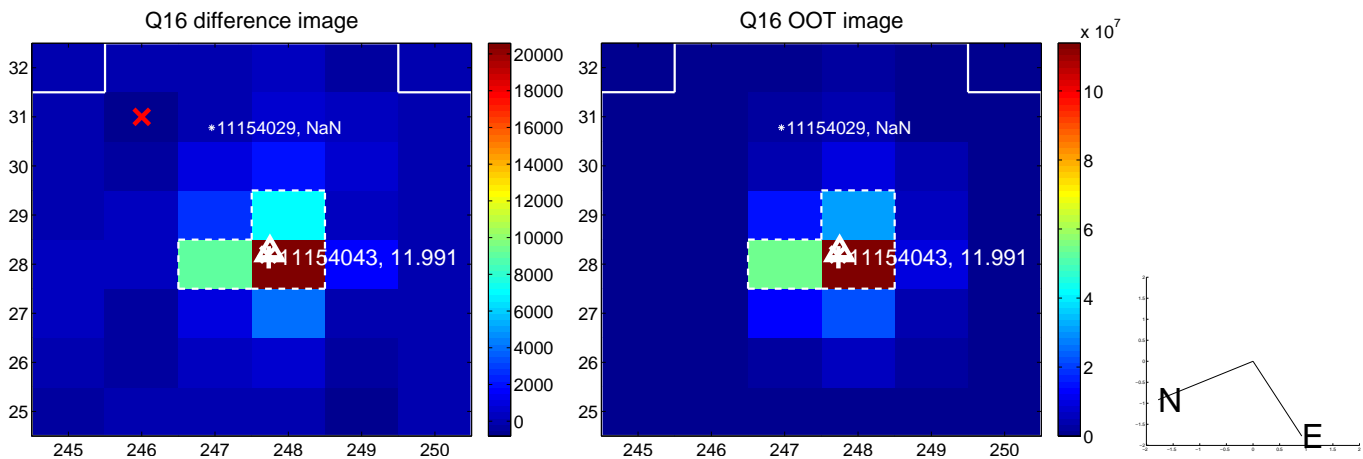
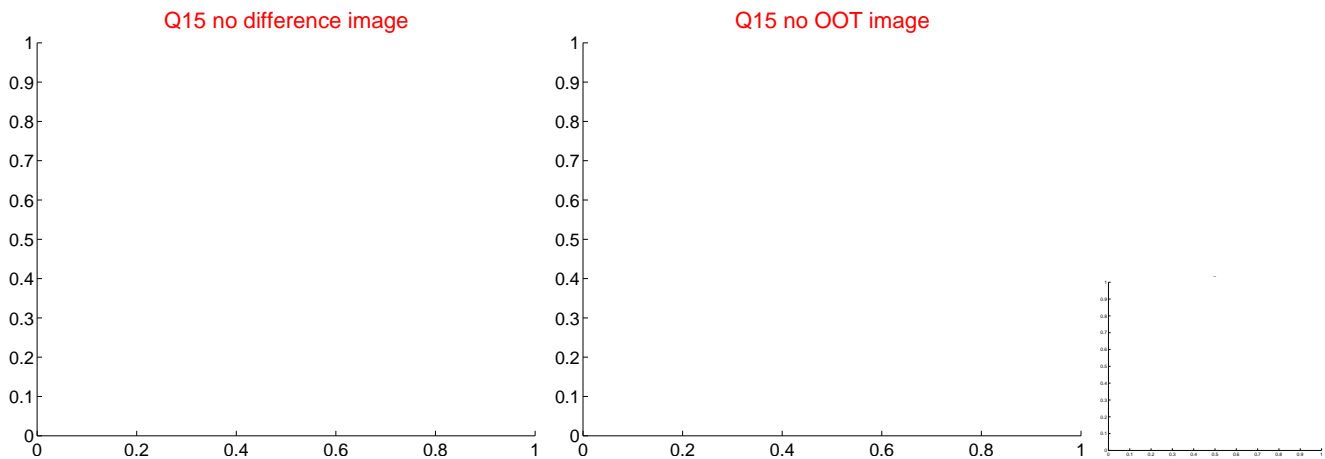
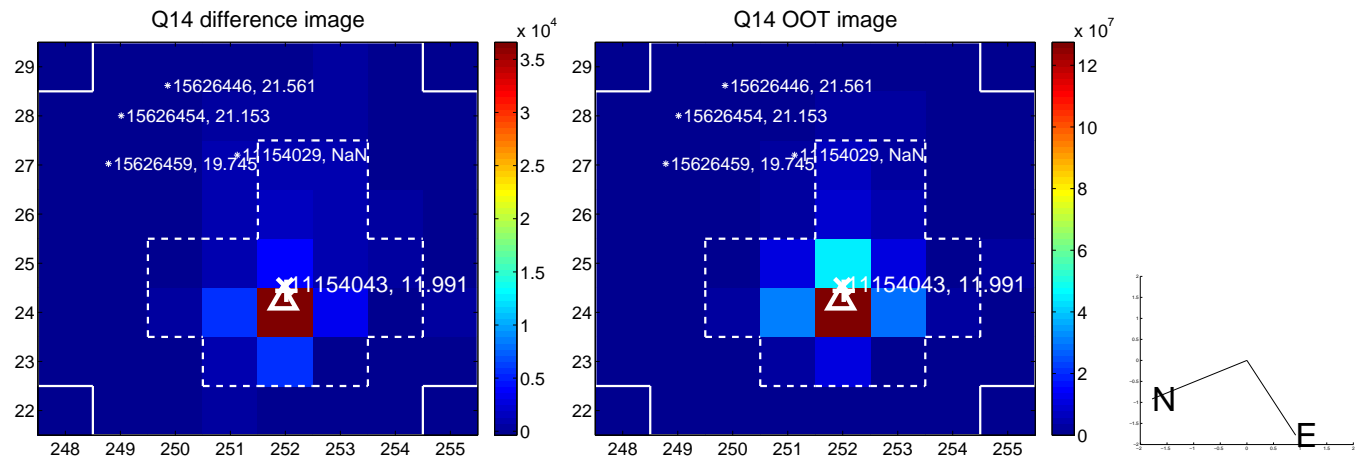
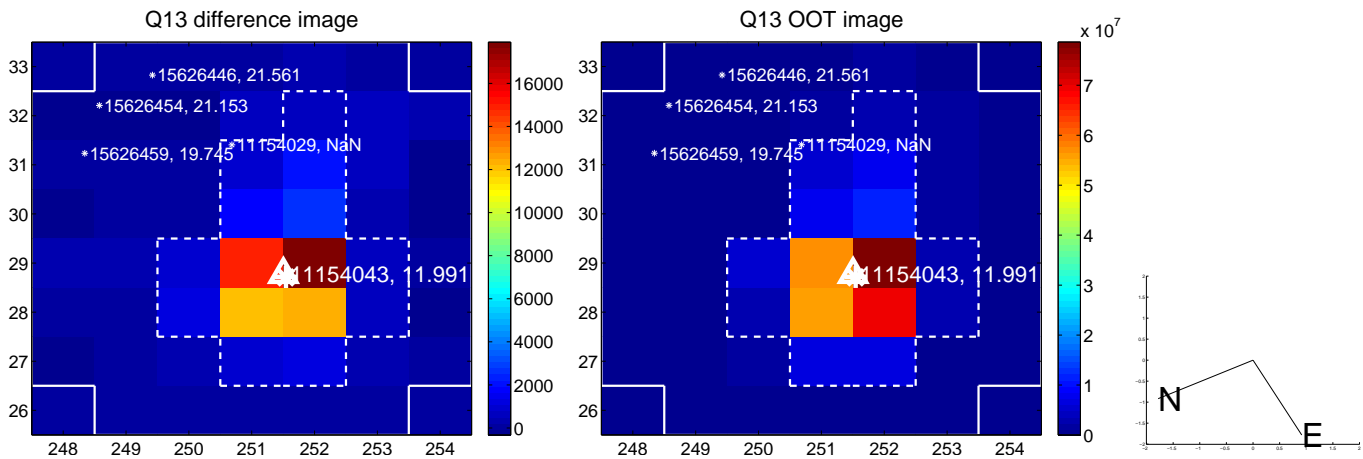
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



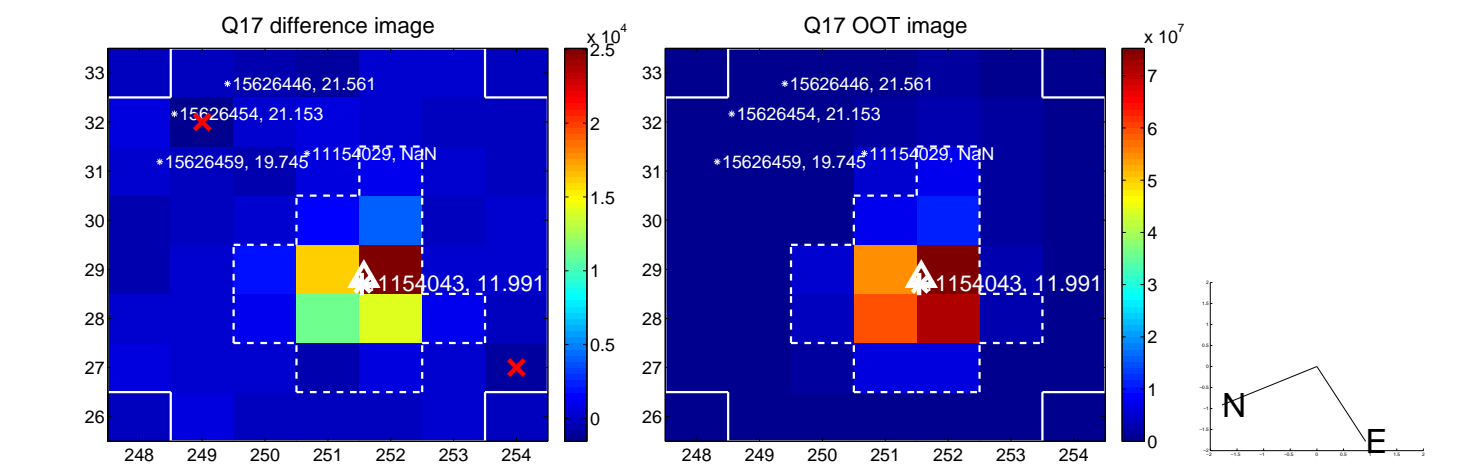
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



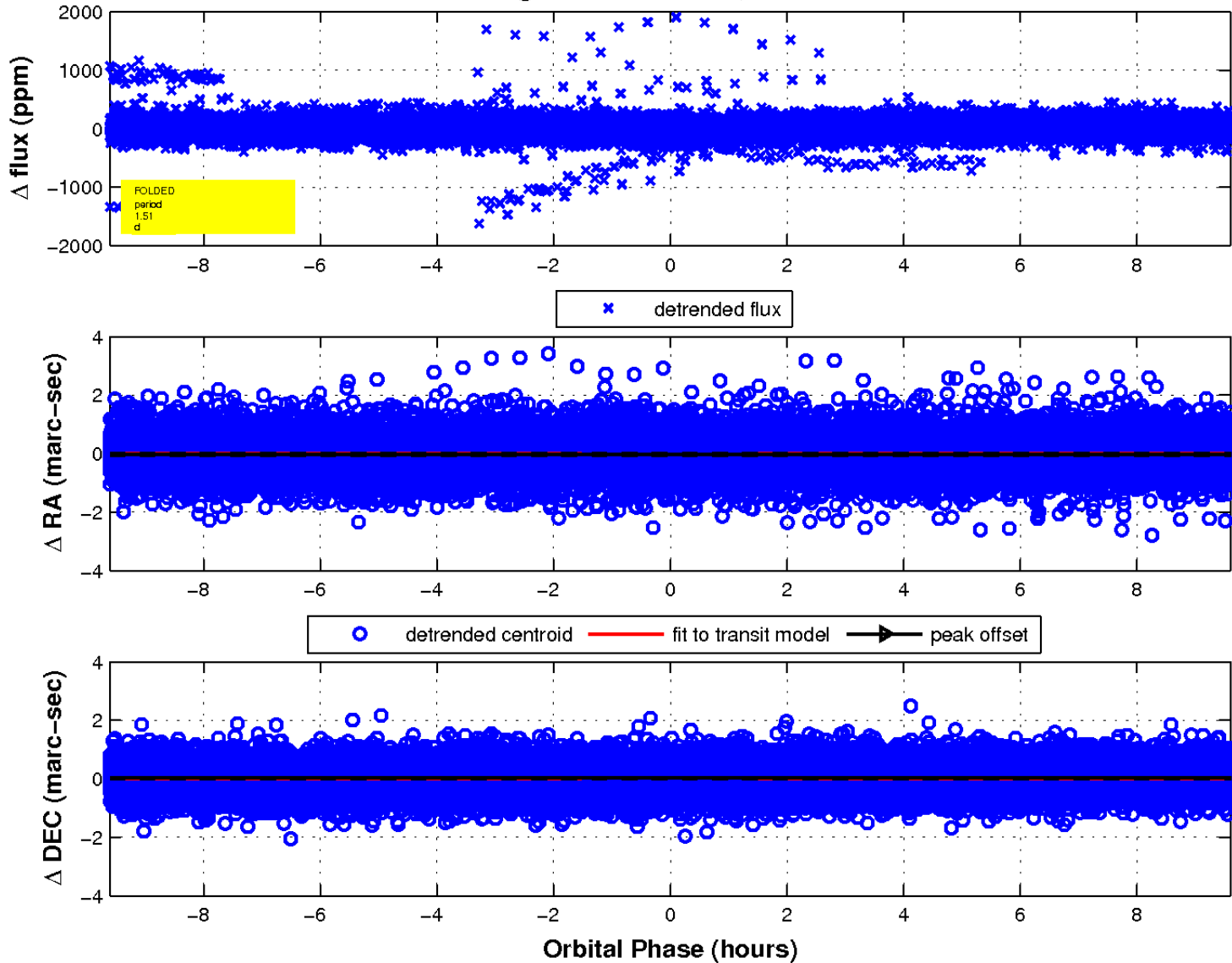
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

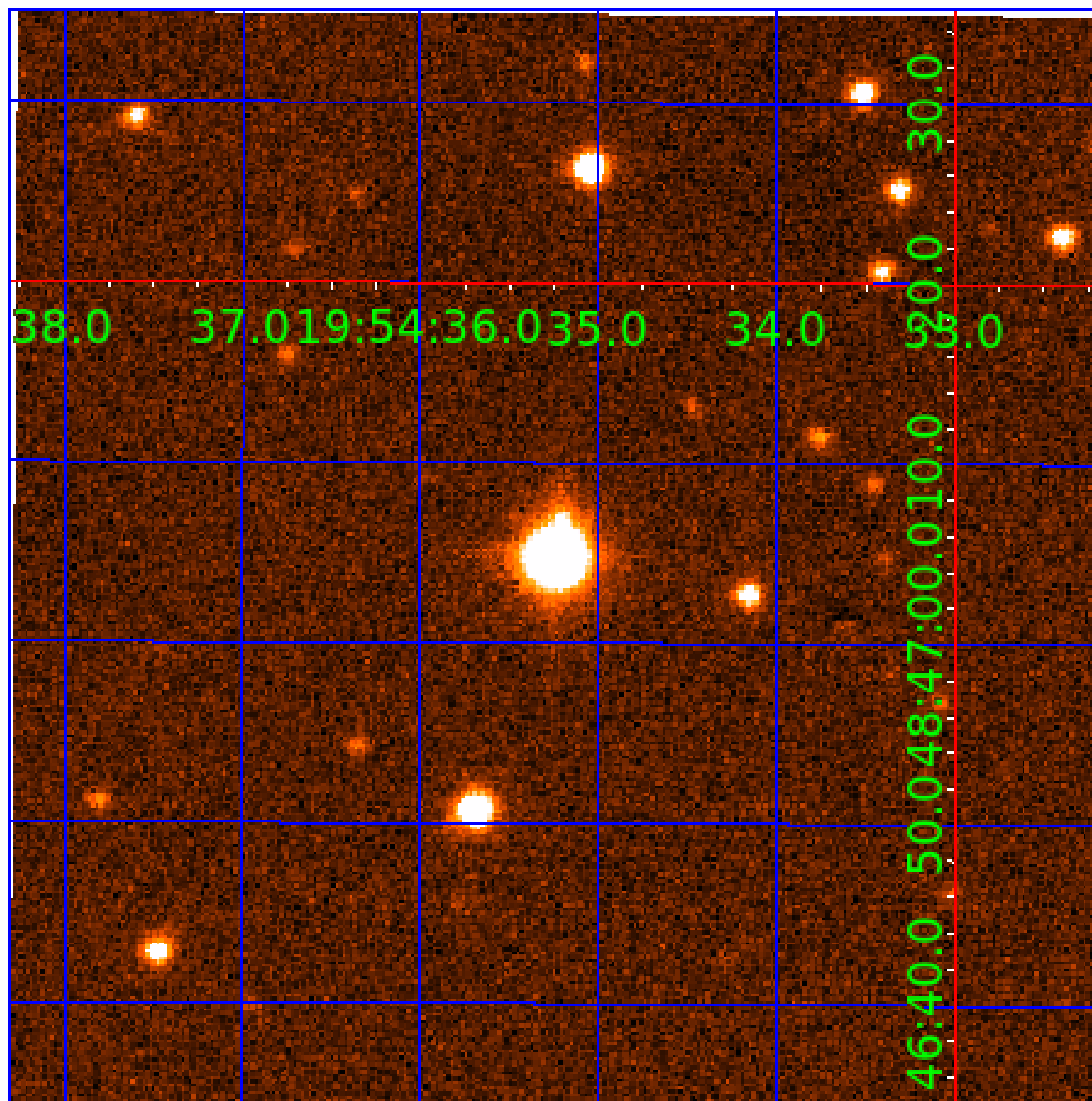


fluxWeightedCentroids, Planet 3 of 5



UKIRT Image

Declination



KIC 011154043

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})
011154043-01	OBS	7414.01	4.529943	135.924252	84.8	3.346	23.0	22.8	2.30	8912	2.44	6218.67
011154043-02	OBS	No	4.529819	133.554425	53.9	3.414	15.5	15.3	2.30	8912	1.95	6218.90
011154043-03	OBS	No	1.509973	132.803408	30.5	3.203	12.2	12.3	2.30	8912	1.50	26906.81
011154043-04	OBS	No	1.509917	132.401644	22.2	4.178	11.0	12.0	2.30	8912	1.25	26908.12
011154043-05	OBS	No	1.510086	132.025299	14.9	12.030	10.6	6.7	2.30	8912	0.98	26904.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011154043-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
011154043-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—SAME_NTL_PERIOD
011154043-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
011154043-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
011154043-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS

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

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

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

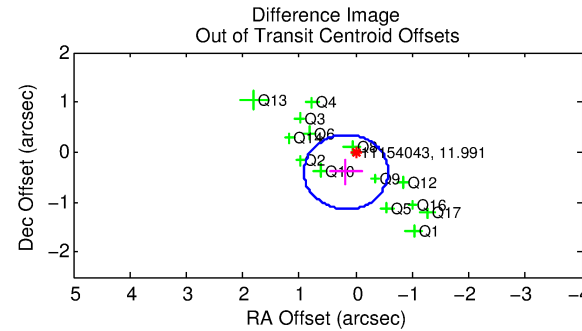
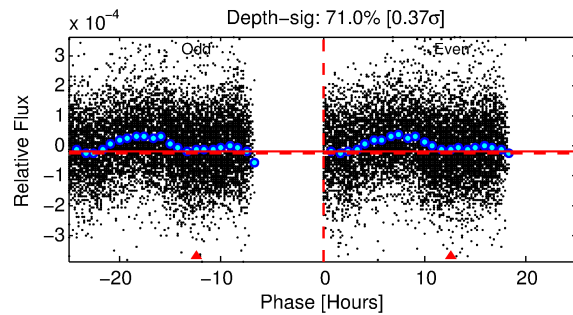
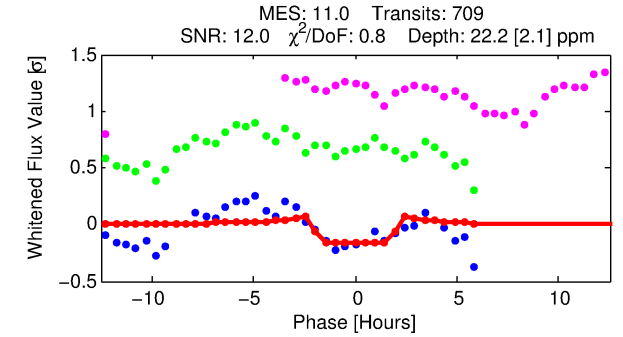
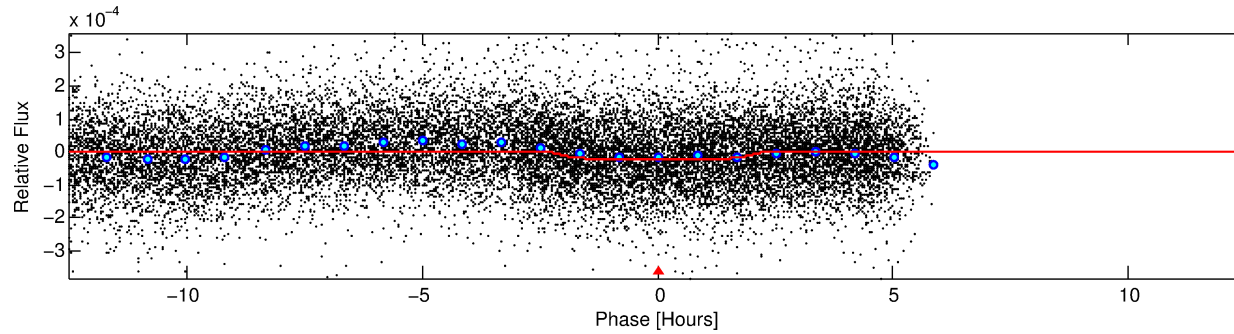
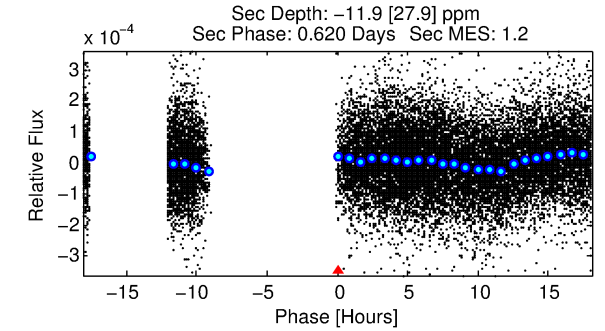
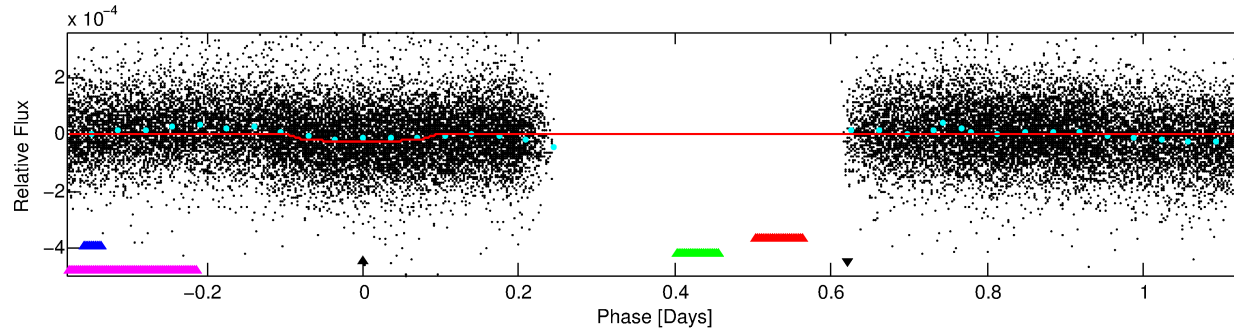
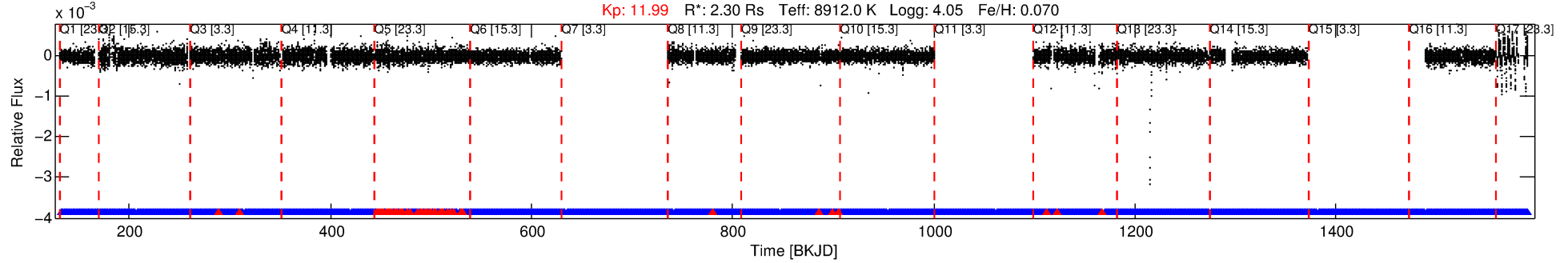
Ephemeris Match Information For 011154043-04

No Significant Match Found

DV One-Page Summary

KIC: 11154043 Candidate: 4 of 5 Period: 1.510 d
KOI: K07414 Corr: No Ephemeris Match

Kp: 11.99 R*: 2.30 Rs Teff: 8912.0 K Logg: 4.05 Fe/H: 0.070



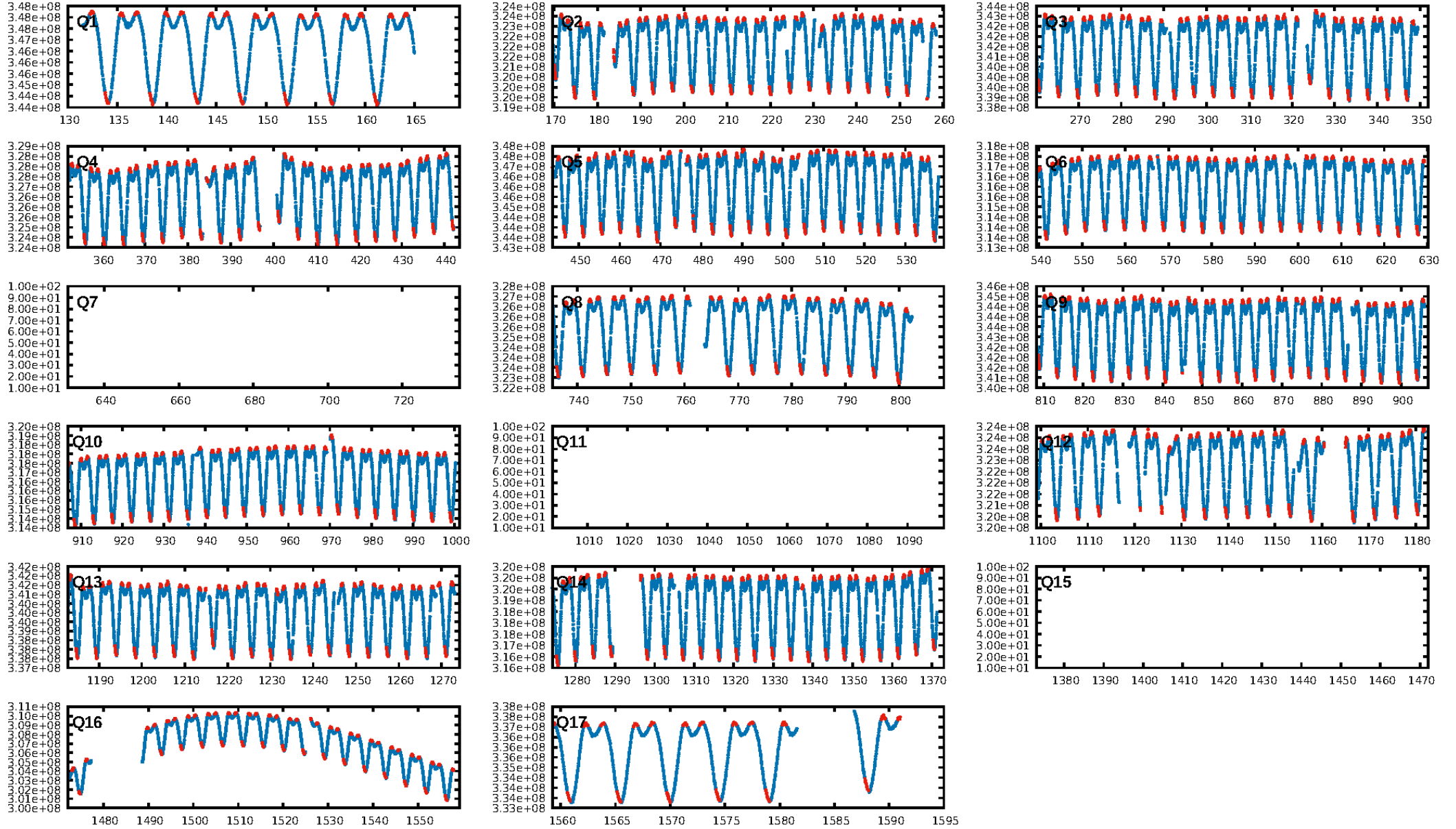
DV Fit Results:

Period = 1.50992 [0.00001] d
Epoch = 132.4016 [0.0029] BKJD
Rp/R* = 0.0050 [0.0009]
a/R* = 1.57 [1.19]
b = 0.89 [0.29]
Seff = 26908.12 [10695.97]
Teq = 3266 [325] K
Rp = 1.25 [0.45] Re
a = 0.0333 [0.0084] AU
Ag = N/A
Teffp = N/A

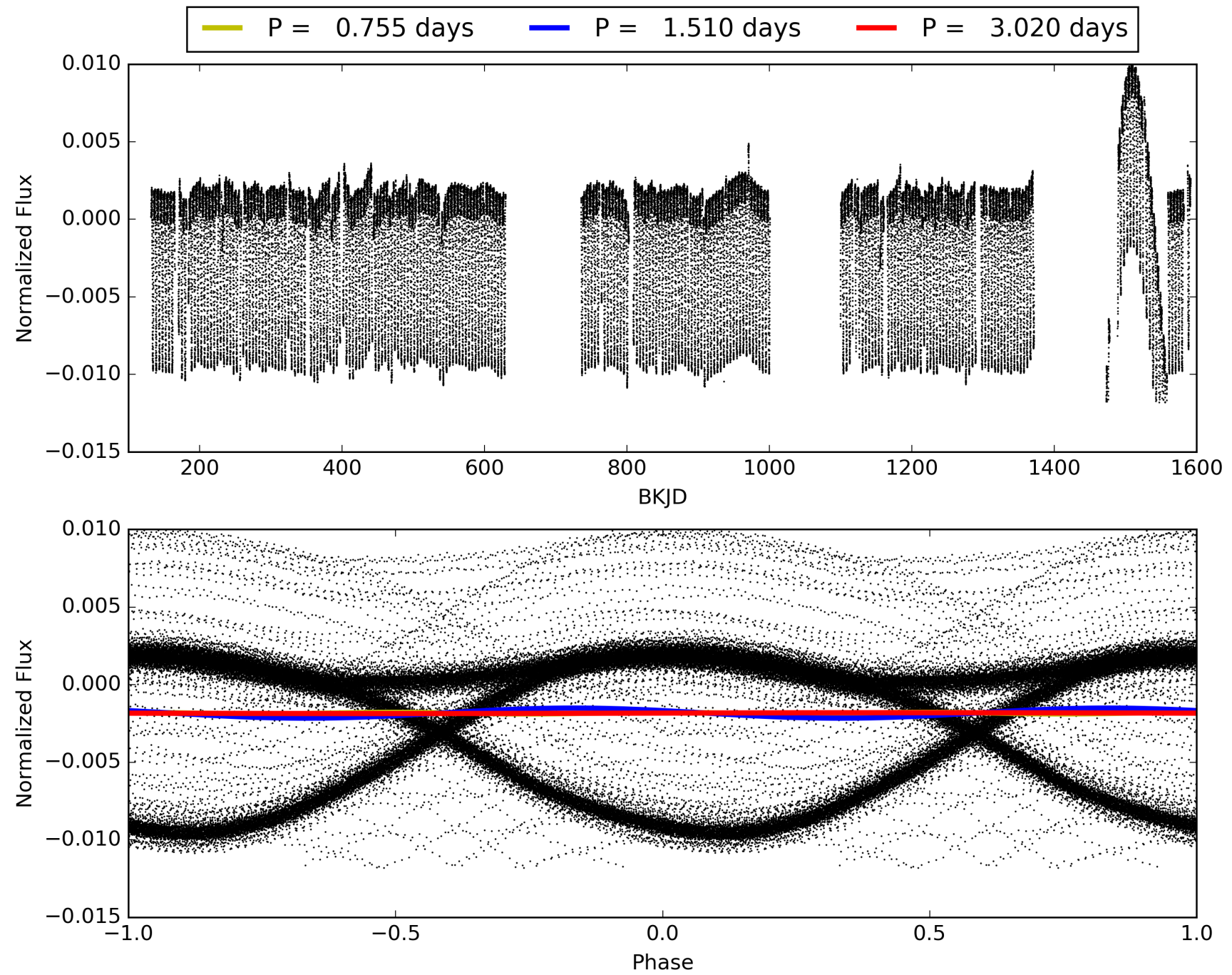
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.94 [626/669]
GhostDiagnostic-chr: 0.3935
Centroid-sig: 39.7%
Centroid-so: 0.761 arcsec [0.84σ]
OotOffset-rm: 0.432 arcsec [1.74σ]
KicOffset-rm: 0.476 arcsec [1.84σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.00 [0/14]
DiffImageOverlap-fno: 0.00 [0/14]

TCE 011154043-04, PDC Light Curves

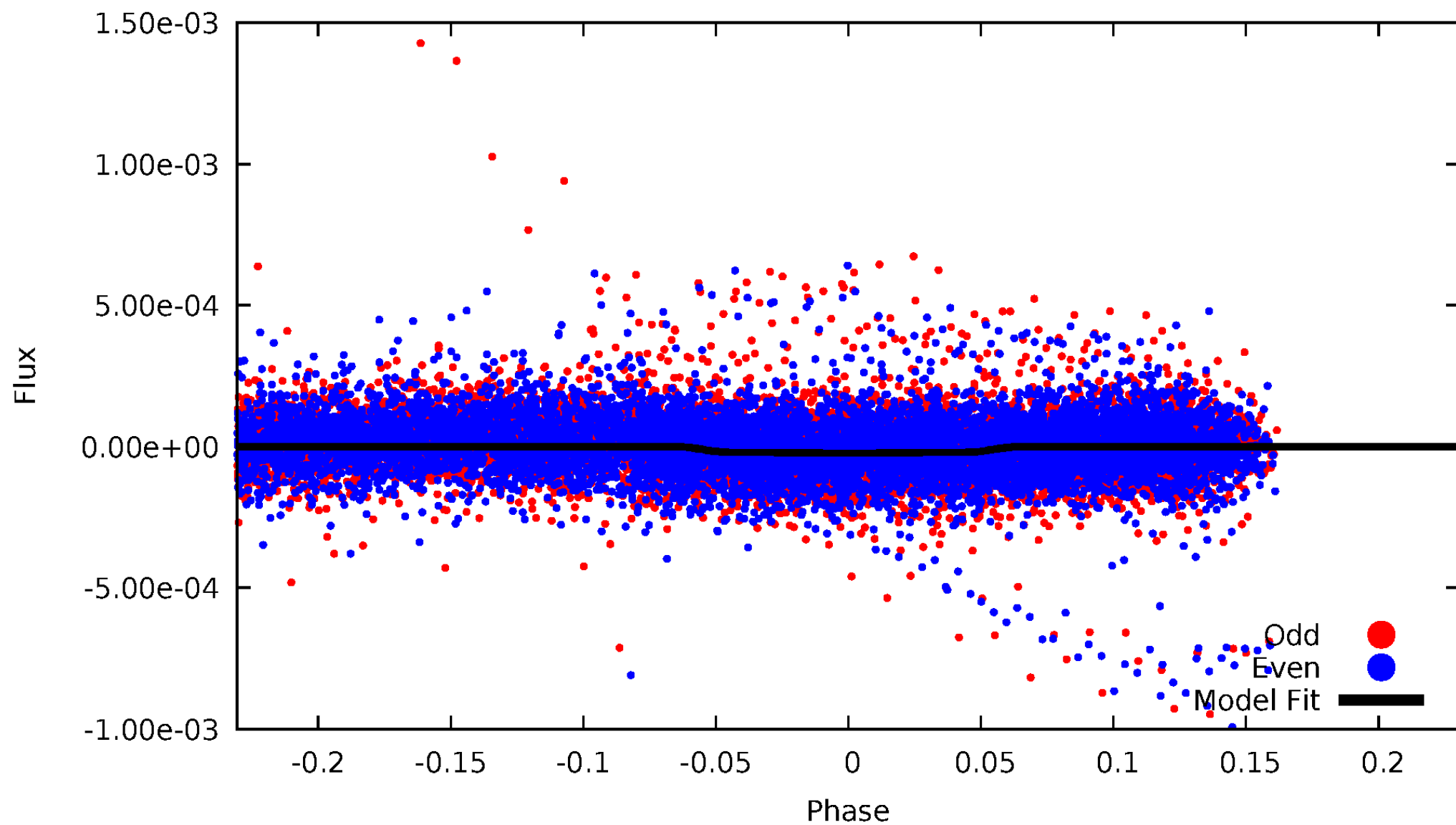


TCE 011154043-04



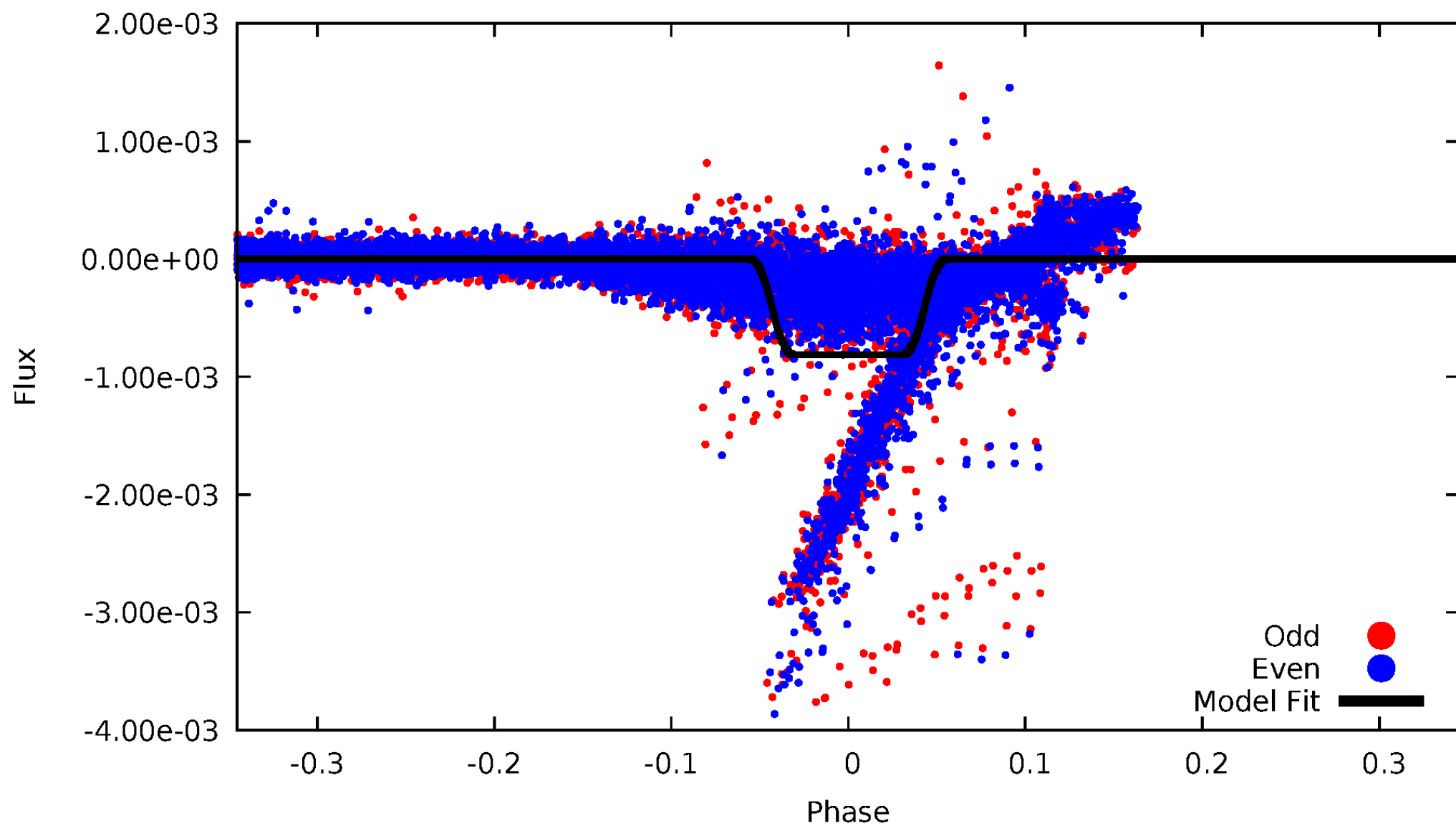
DV Odd/Even

TCE 011154043-04



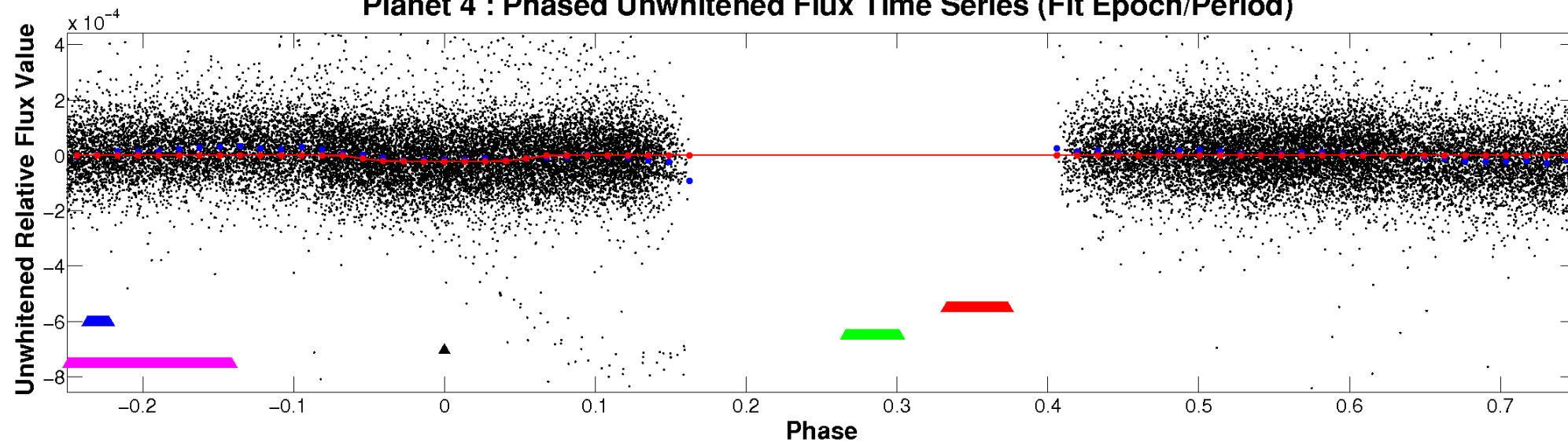
ALT Odd/Even

TCE 011154043-04

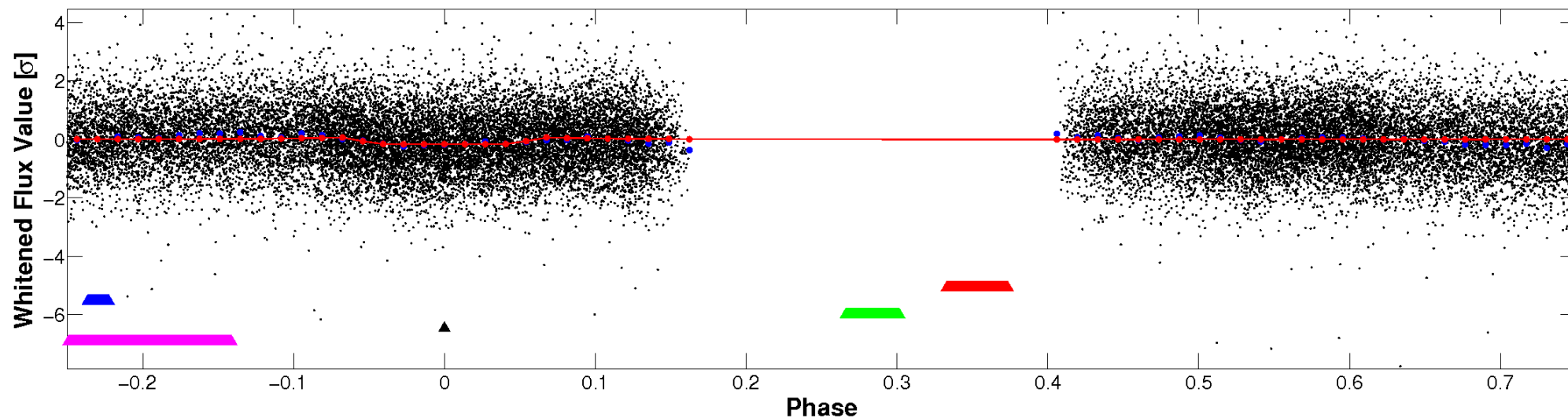


Non-Whitened Vs. Whitened Light Curve

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

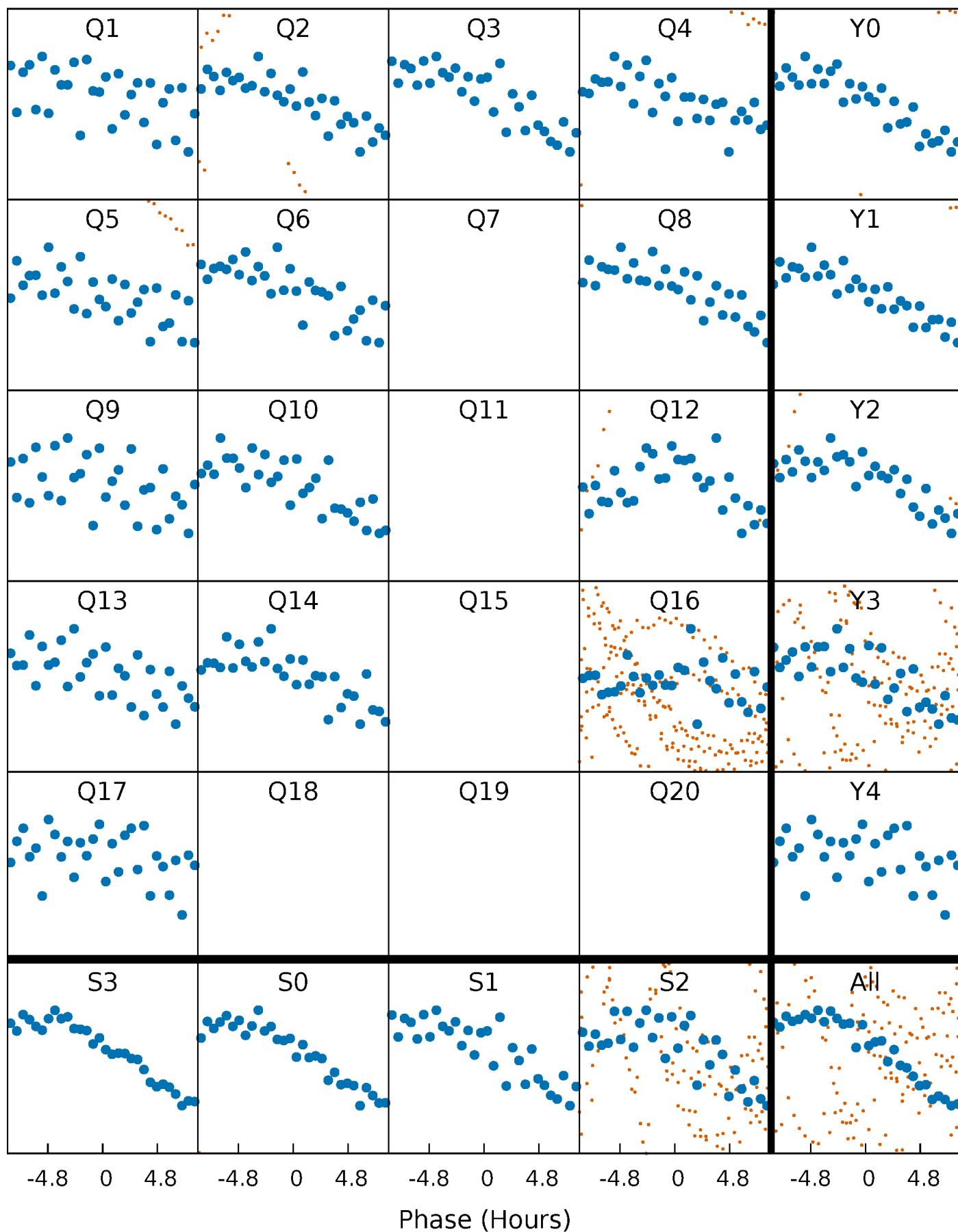


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



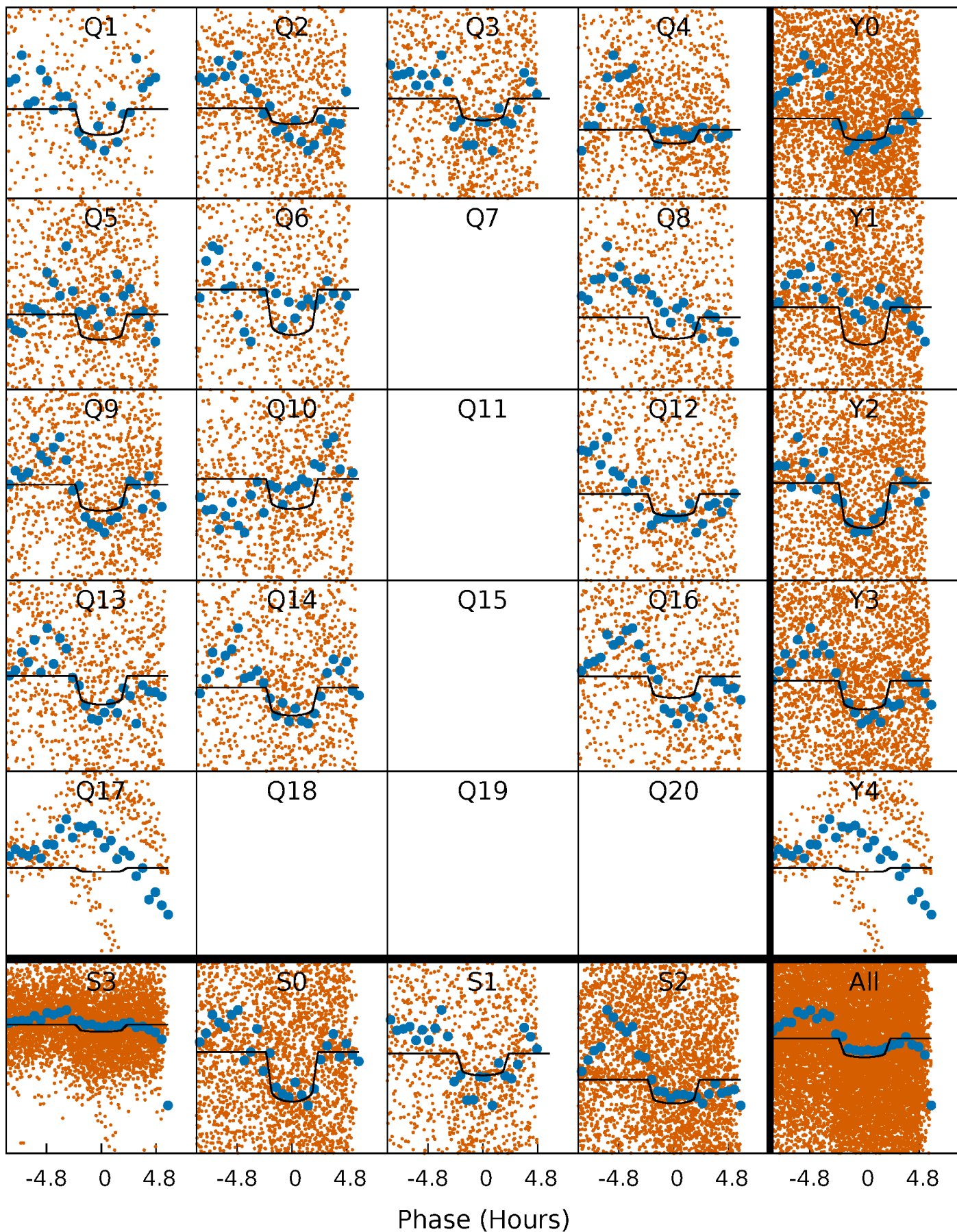
PDC Quarter-Phased Transit Curves

TCE 011154043-04 $P = 1.509917$ Days $T_0 = 132.401644$ (BKJD)



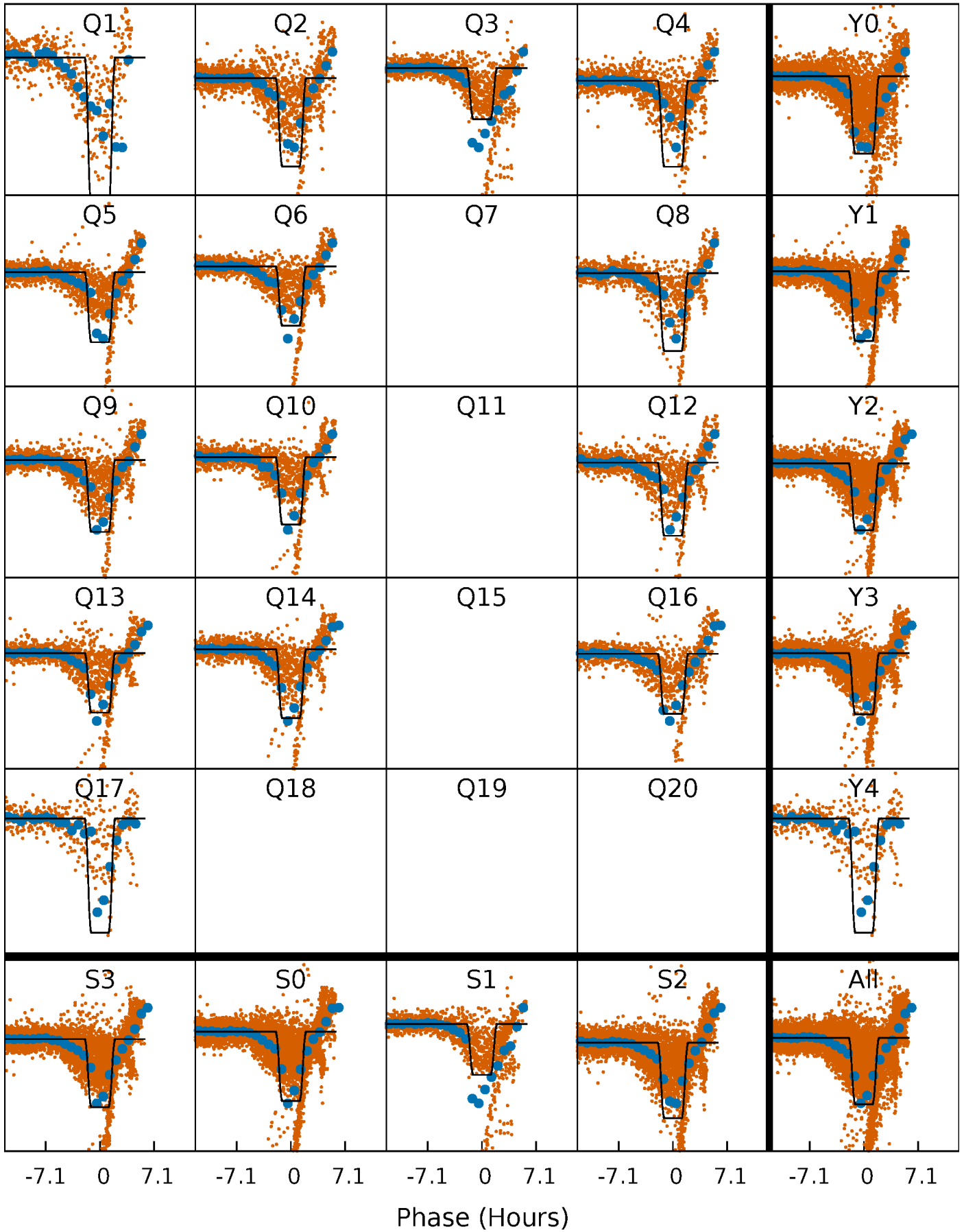
DV Quarter-Phased Transit Curves

TCE 011154043-04 P= 1.509917 Days $T_0=132.401644$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

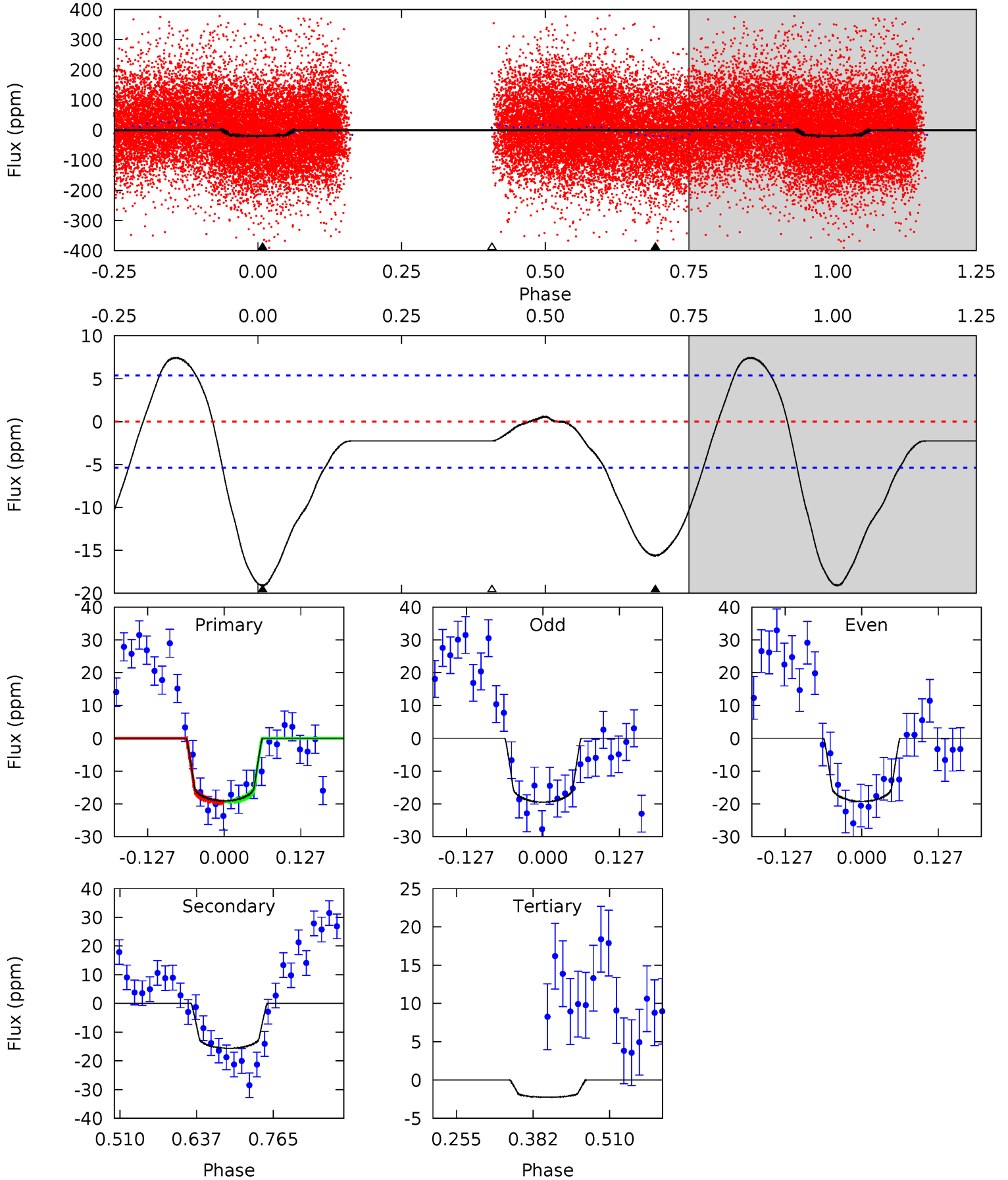
TCE 011154043-04 $P = 1.509966$ Days $T_0 = 132.352264$ (BKJD)



DV Model-Shift Uniqueness Test

011154043-04, P = 1.509917 Days, E = 130.891727 Days

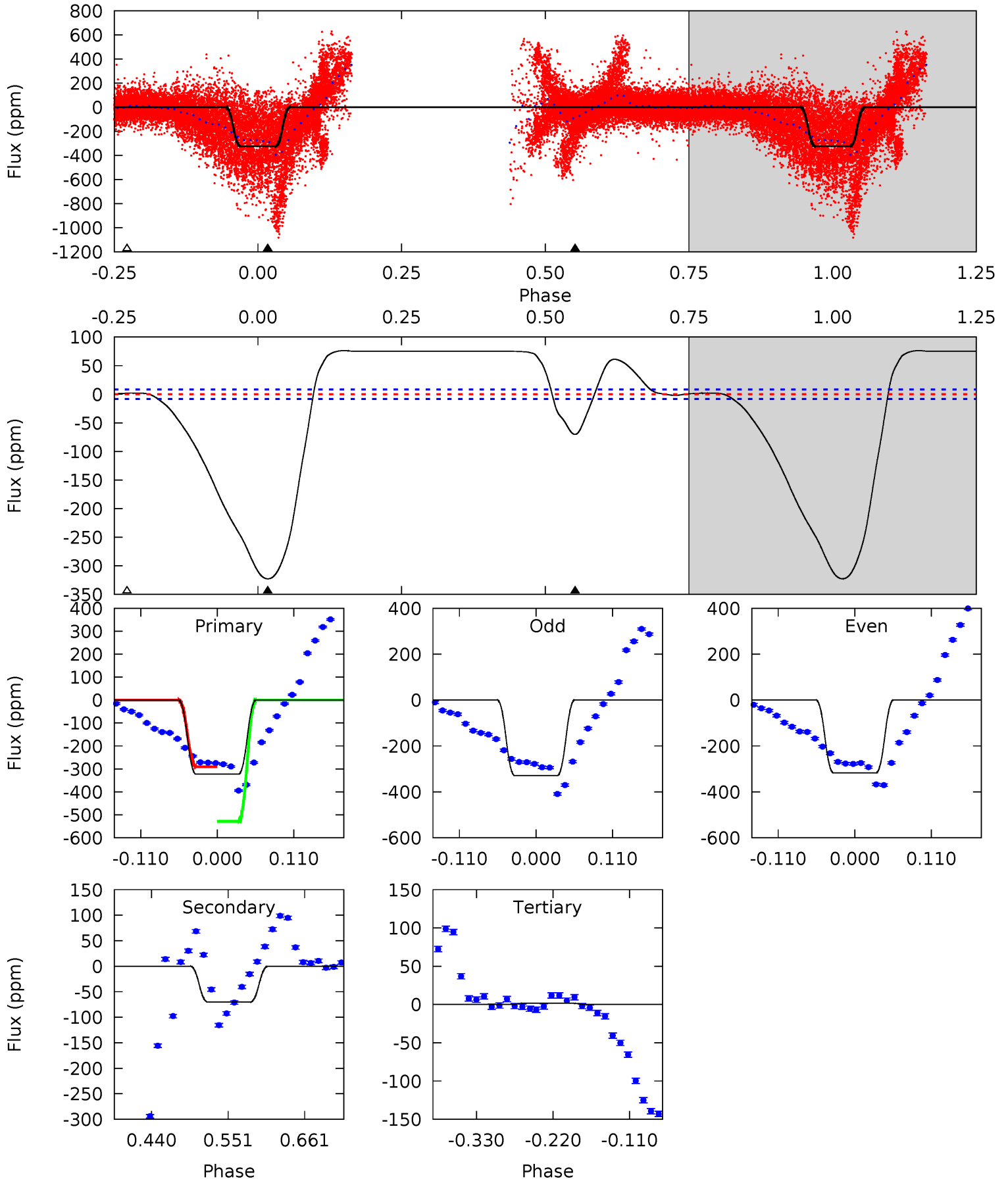
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.0	13.1	1.89	0	4.51	1.52	2.67	14.1	16.0	11.2	13.1	0.10	0.69	0.28	0.08



Alt Model-Shift Uniqueness Test

011154043-04, P = 1.509966 Days, E = 130.842298 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
179.5	39.0	-1.05	0	4.54	1.60	22.1	180.6	179.5	40.1	39.0	3.28	1.73	0.19	37.7



Stellar Parameters For KIC 011154043

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8912^{+249}_{-427}	$4.050^{+0.181}_{-0.165}$	$0.070^{+0.250}_{-0.600}$	$2.299^{+0.724}_{-0.658}$	$2.164^{+0.383}_{-0.574}$	$0.251^{+0.249}_{-0.117}$
	+3%/-5%	+4%/-4%	+357%/-857%	+31%/-29%	+18%/-27%	+99%/-47%
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 011154043-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-16 ± 1	$1.23^{+0.33}_{-0.27}$	4520^{+362}_{-344}	7548^{+1173}_{-785}	$6.339^{+3.820}_{-2.362}$
Alt.	-70 ± 2	$7.12^{+1.21}_{-1.08}$	4524^{+381}_{-357}	4314^{+162}_{-198}	$0.842^{+0.245}_{-0.204}$

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

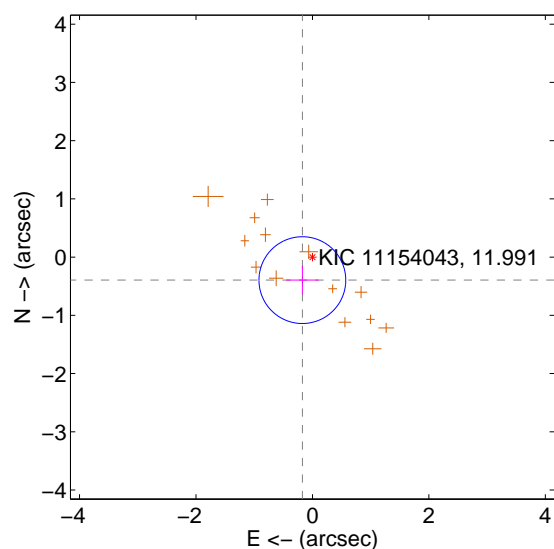
Supplemental centroid analysis for 011154043-04. **Kepler magnitude: 11.99.** Transit SNR 12.02

There are 0 quarters with good PRF difference image offsets

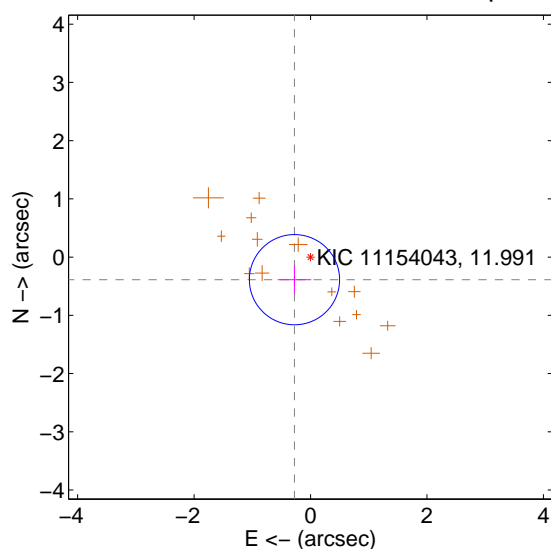
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.432 ± 0.248	1.74	0.173 ± 0.279	-0.395 ± 0.242
PRF-fit source offset from KIC position	0.476 ± 0.258	1.84	0.276 ± 0.288	-0.388 ± 0.242
photometric centroid source offset	0.76 ± 0.90	0.84	-0.70 ± 0.91	0.30 ± 0.83

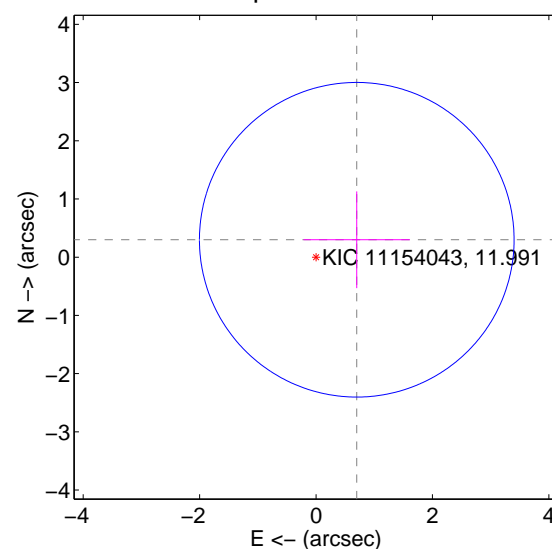
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

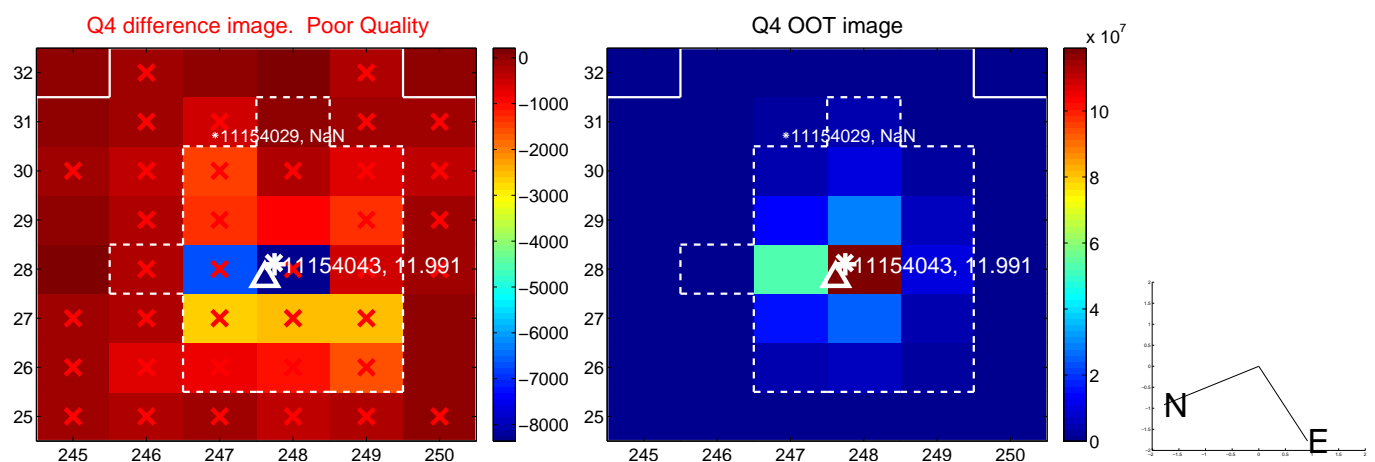
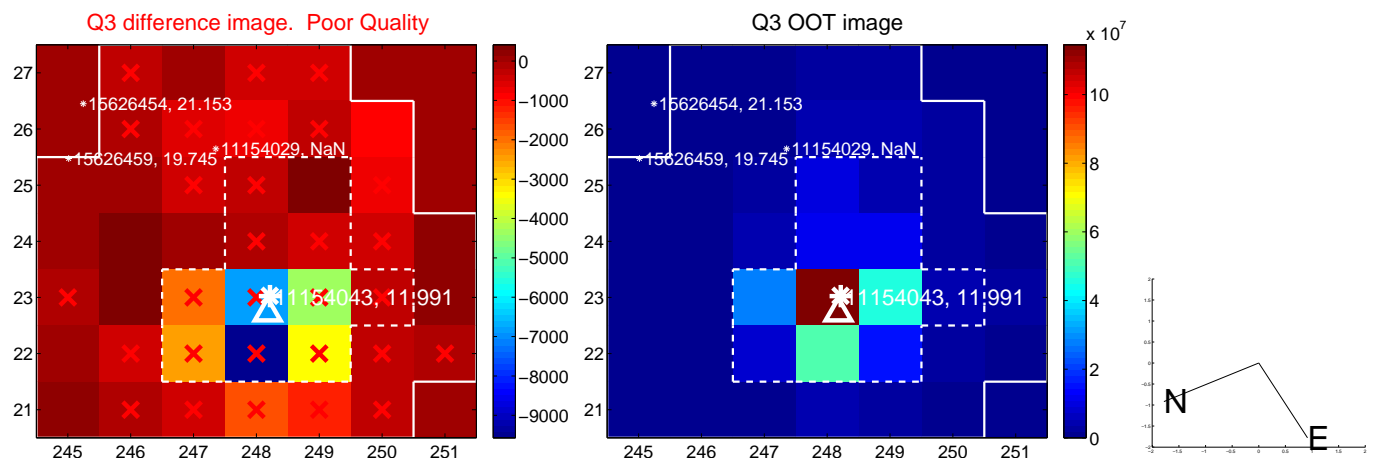
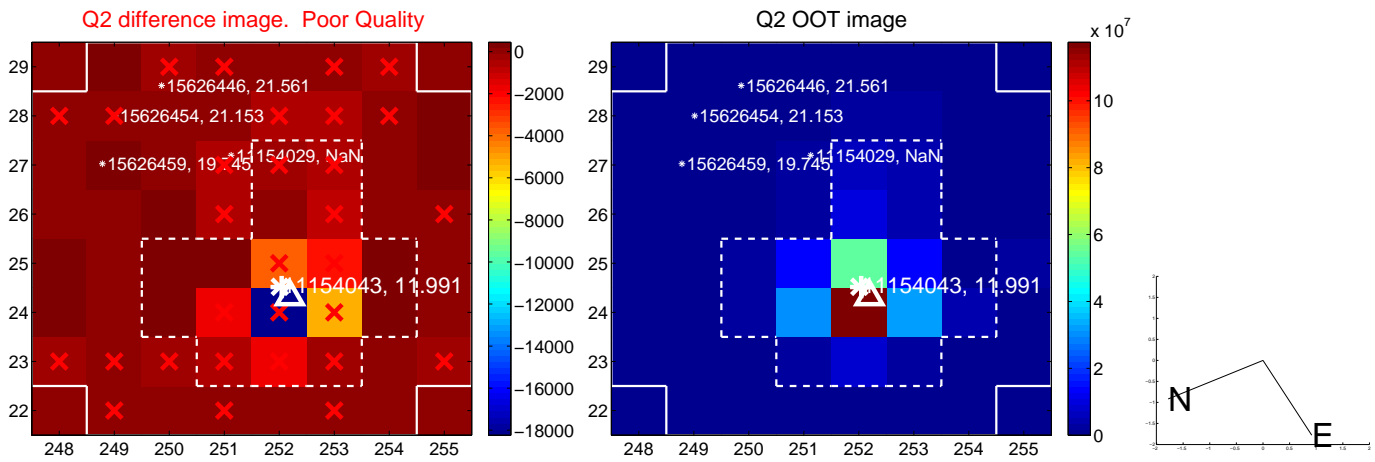
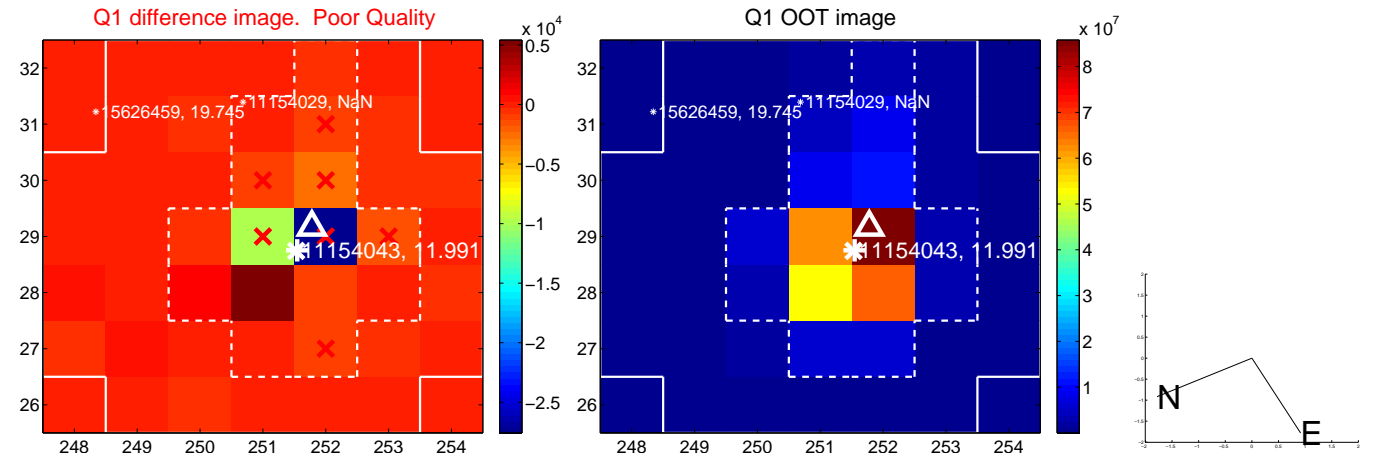


offset from photometric centroids

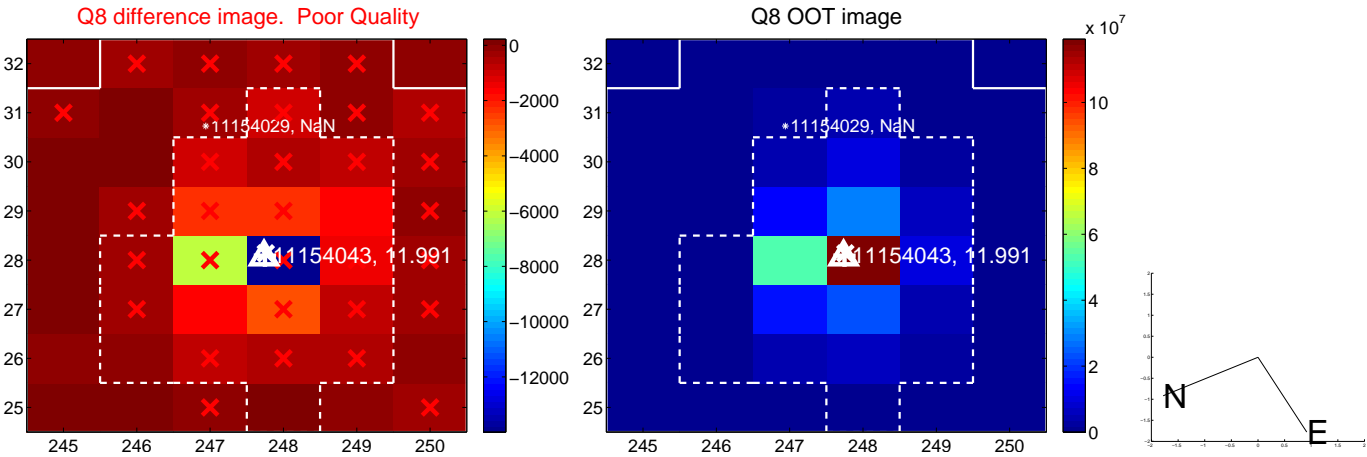
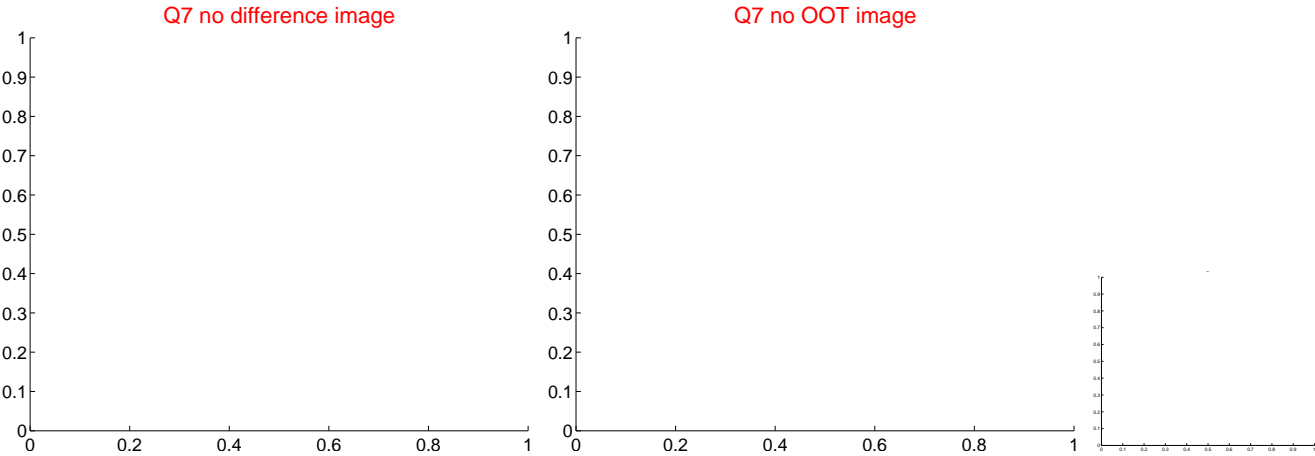
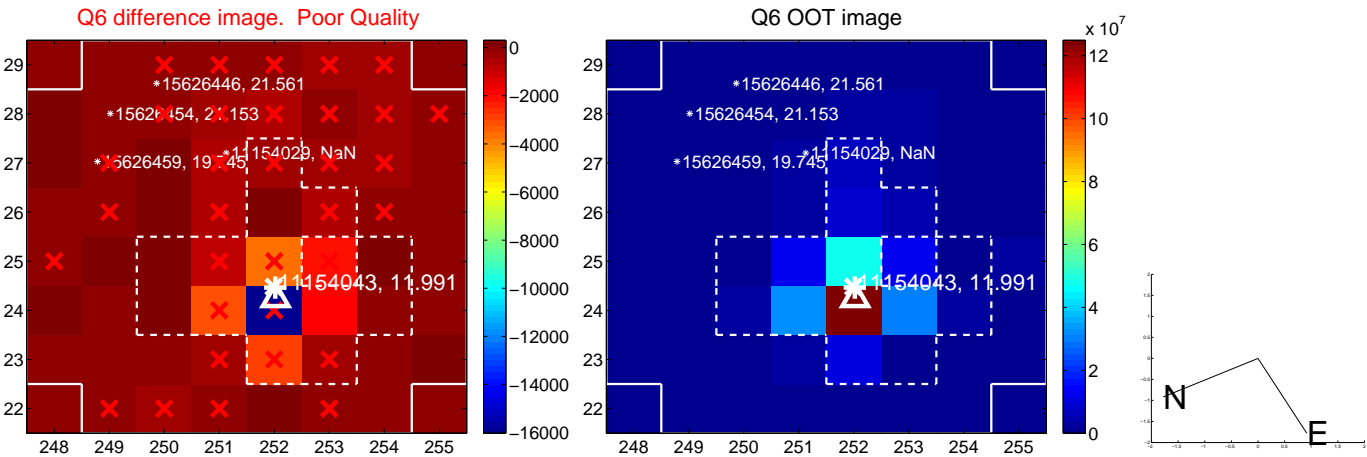
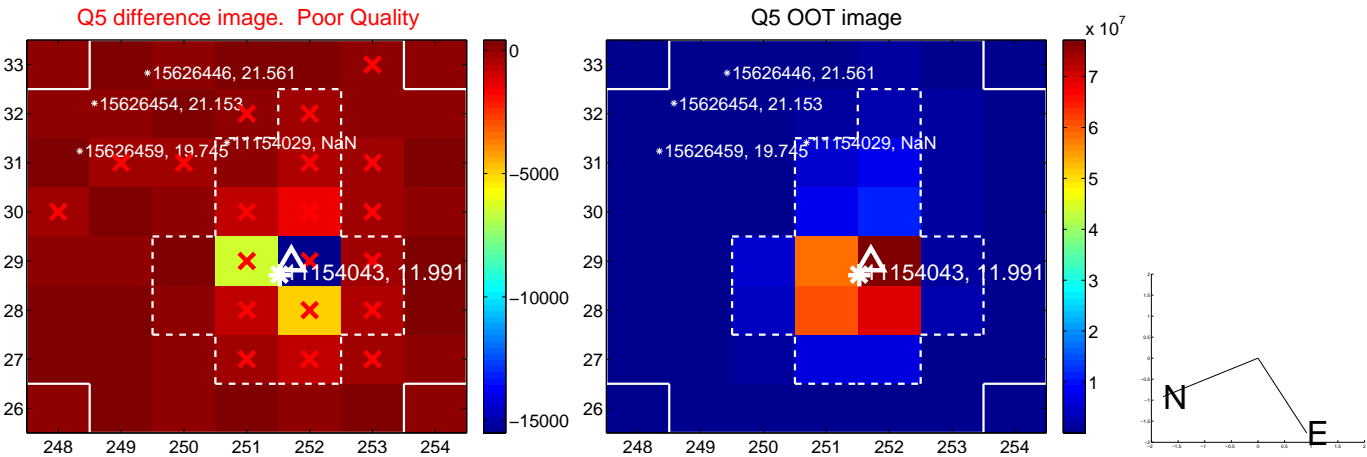


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

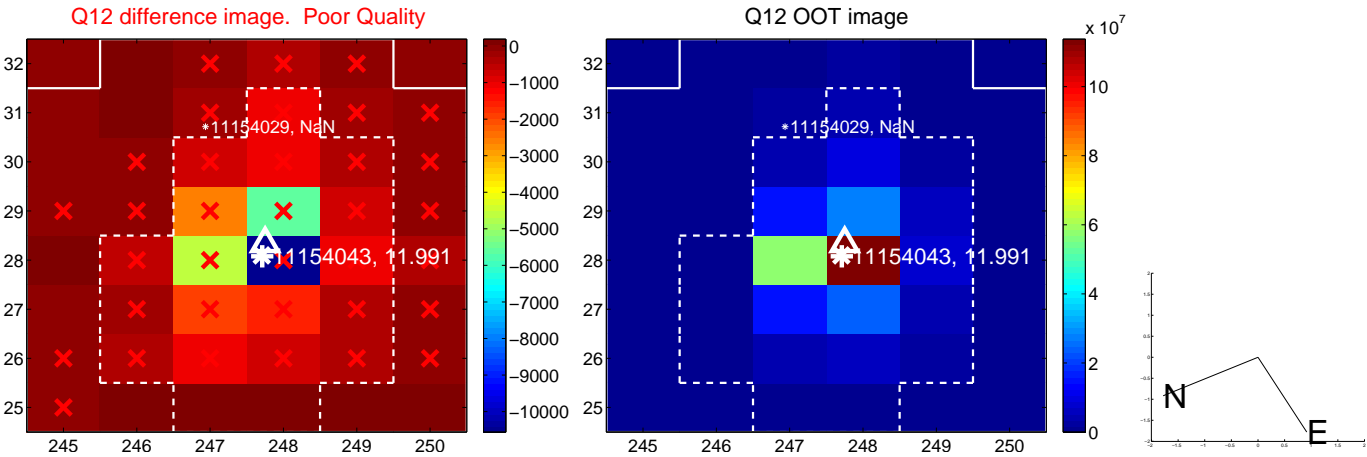
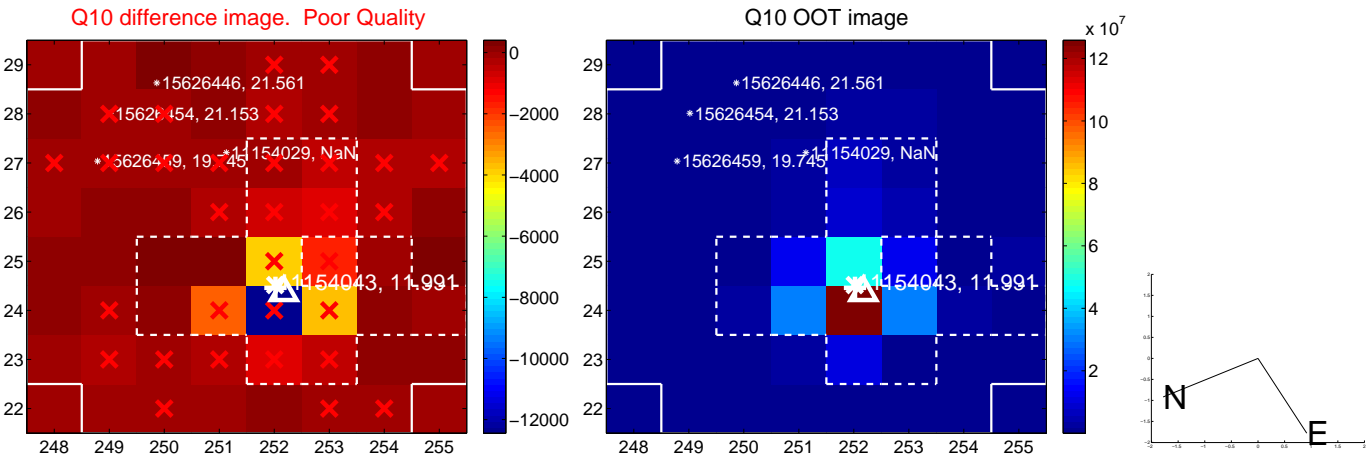
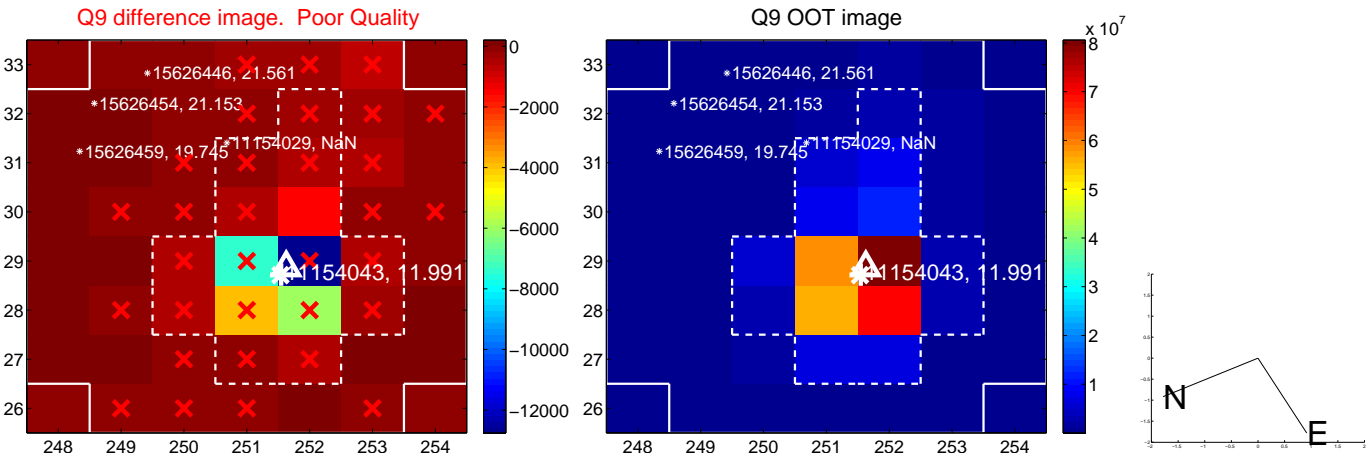
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



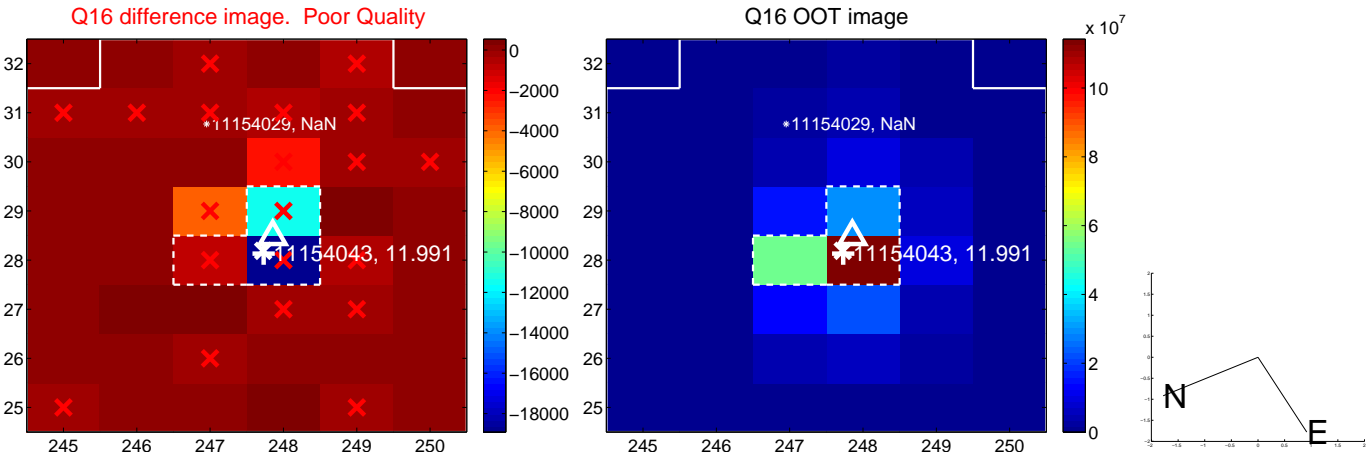
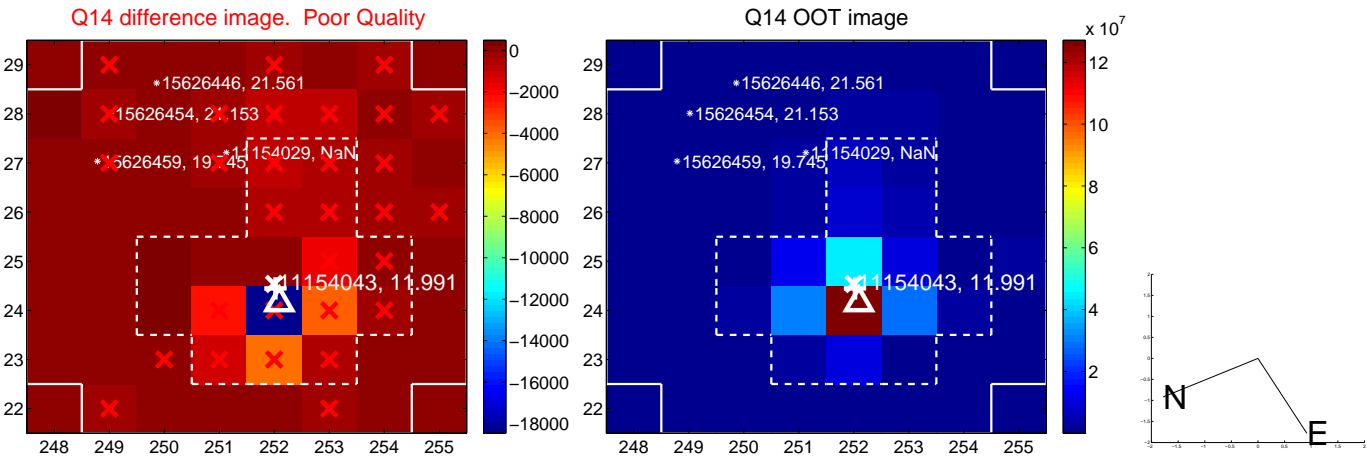
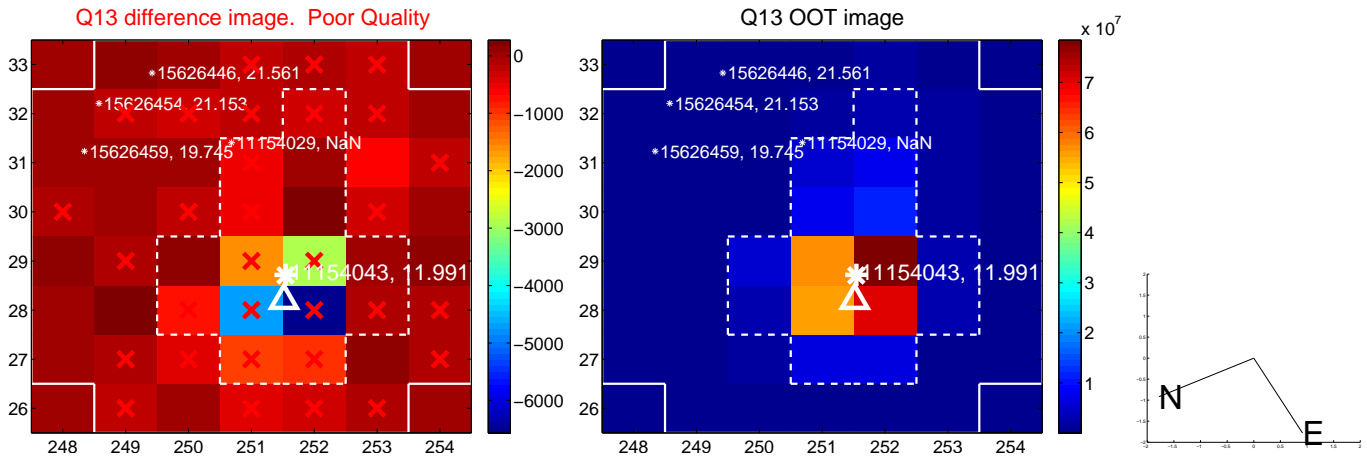
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



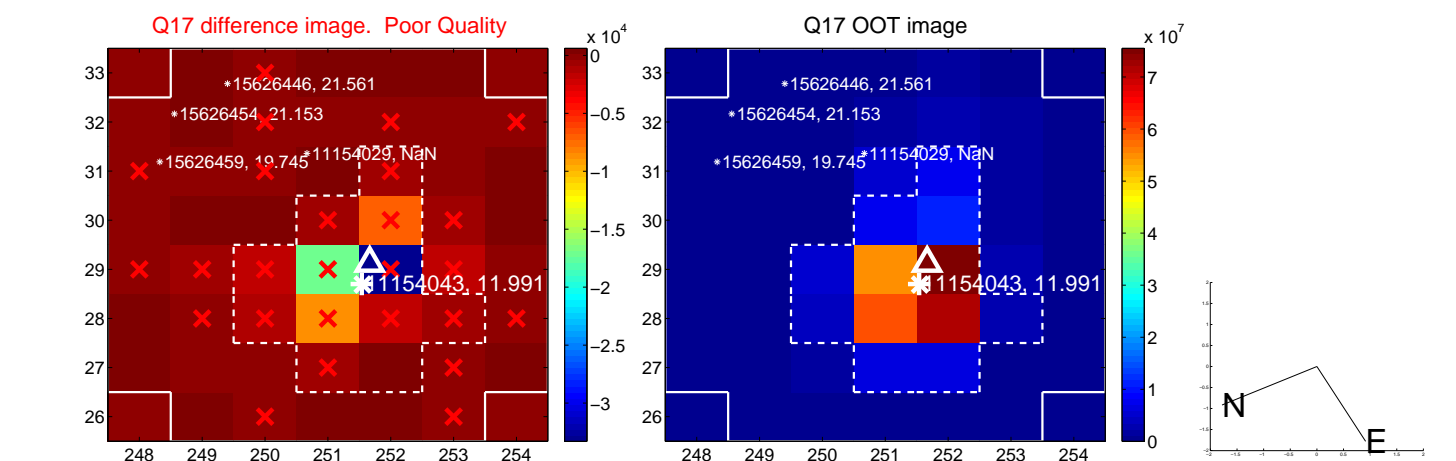
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



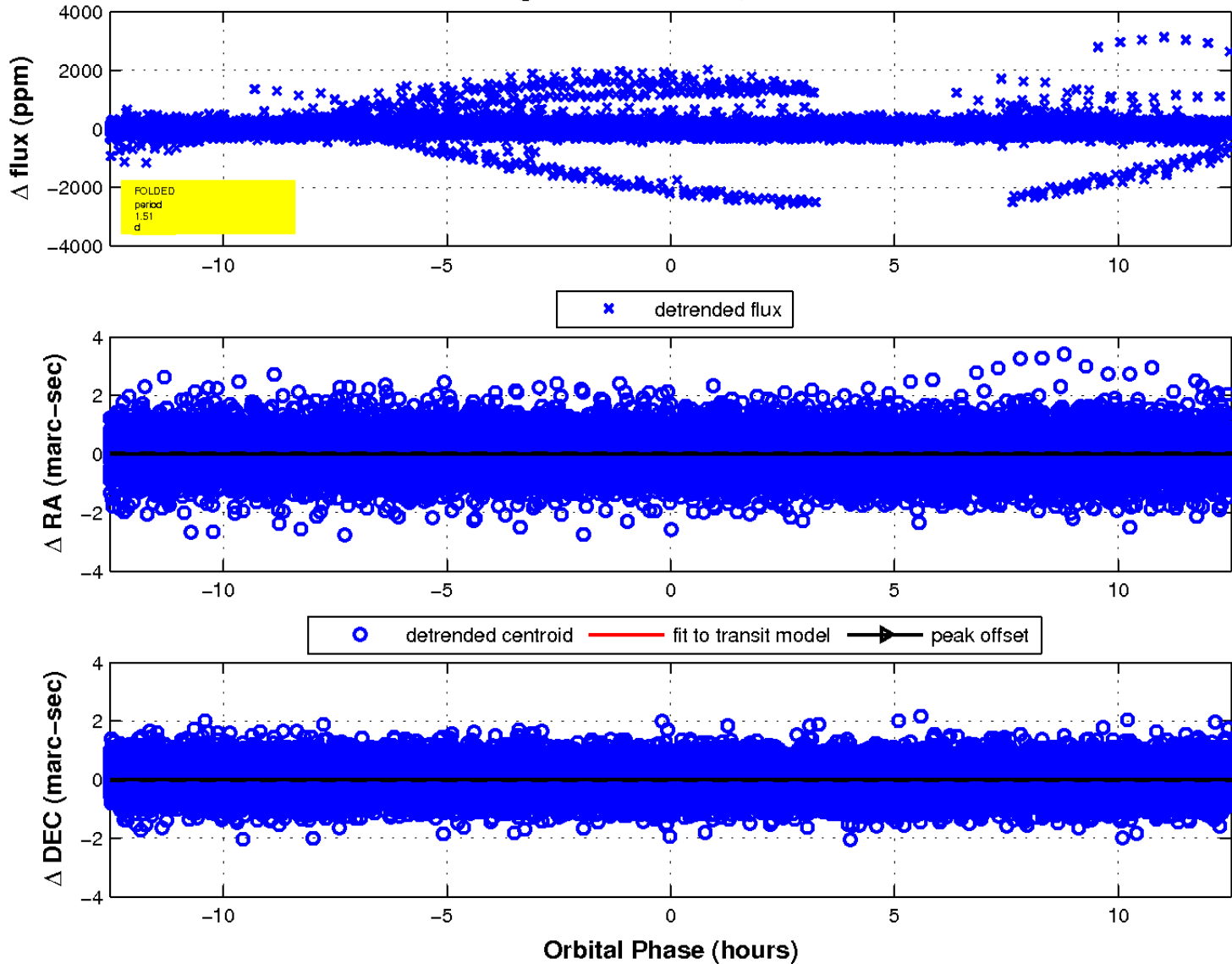
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

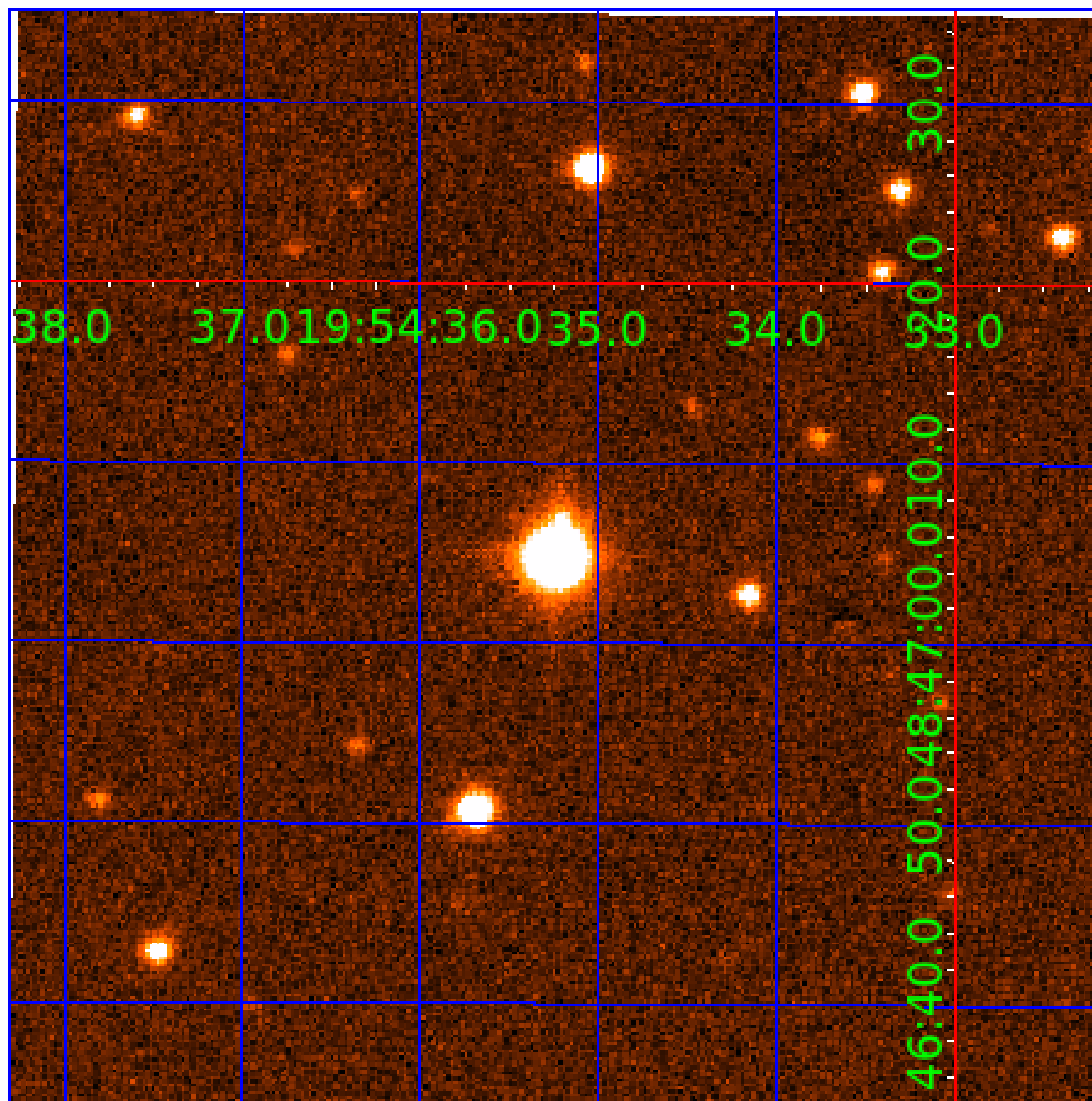


fluxWeightedCentroids, Planet 4 of 5



UKIRT Image

Declination



KIC 011154043

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
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011154043-02	OBS	No	4.529819	133.554425	53.9	3.414	15.5	15.3	2.30	8912	1.95	6218.90
011154043-03	OBS	No	1.509973	132.803408	30.5	3.203	12.2	12.3	2.30	8912	1.50	26906.81
011154043-04	OBS	No	1.509917	132.401644	22.2	4.178	11.0	12.0	2.30	8912	1.25	26908.12
011154043-05	OBS	No	1.510086	132.025299	14.9	12.030	10.6	6.7	2.30	8912	0.98	26904.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011154043-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
011154043-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—SAME_NTL_PERIOD
011154043-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
011154043-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
011154043-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS

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

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

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

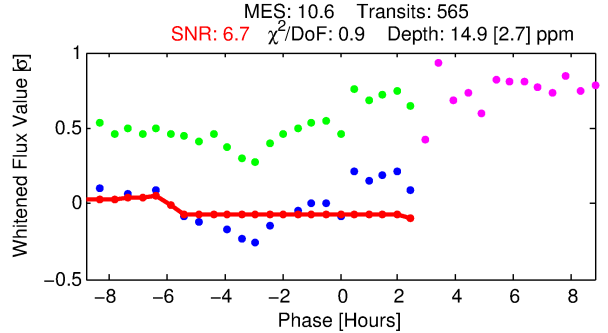
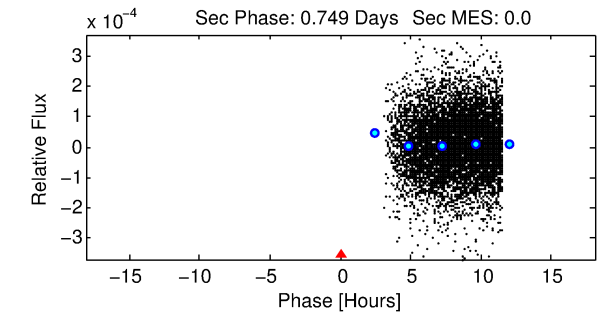
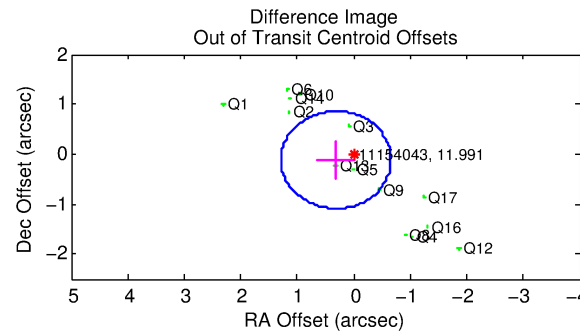
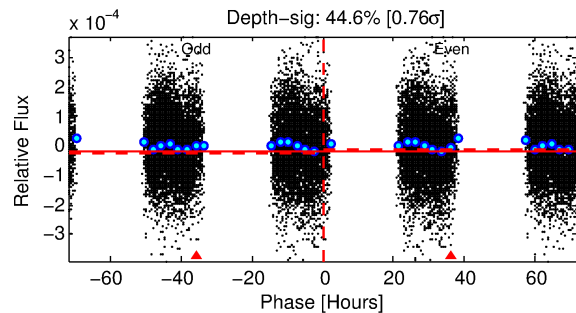
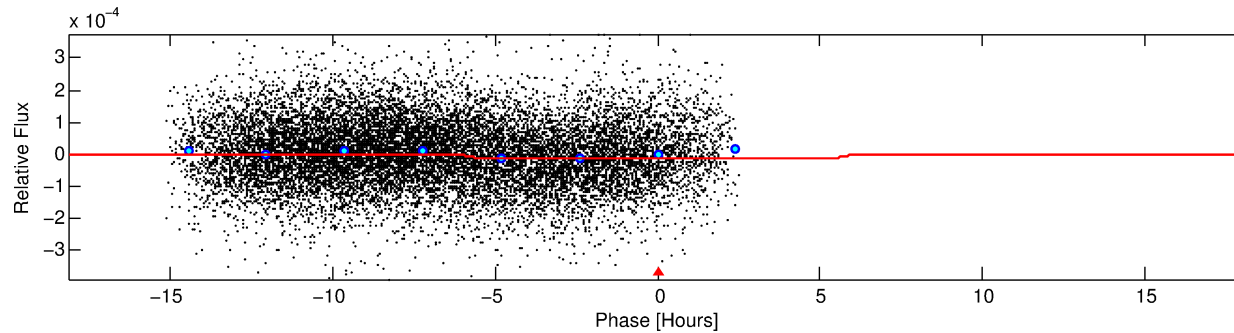
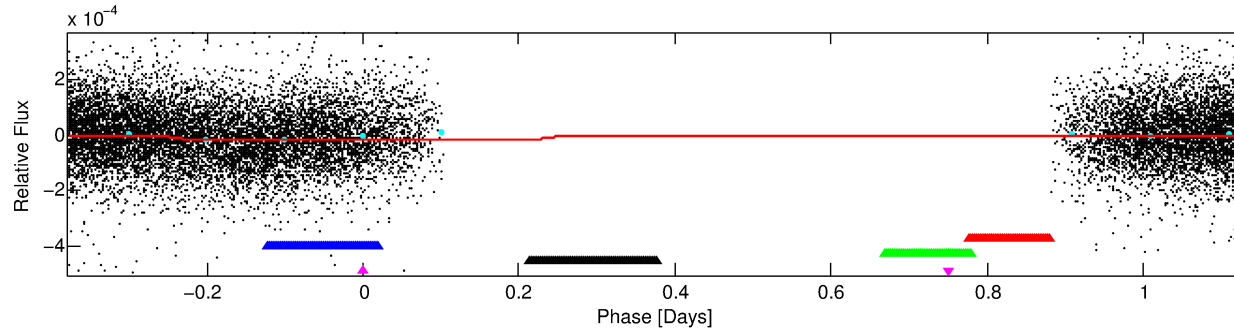
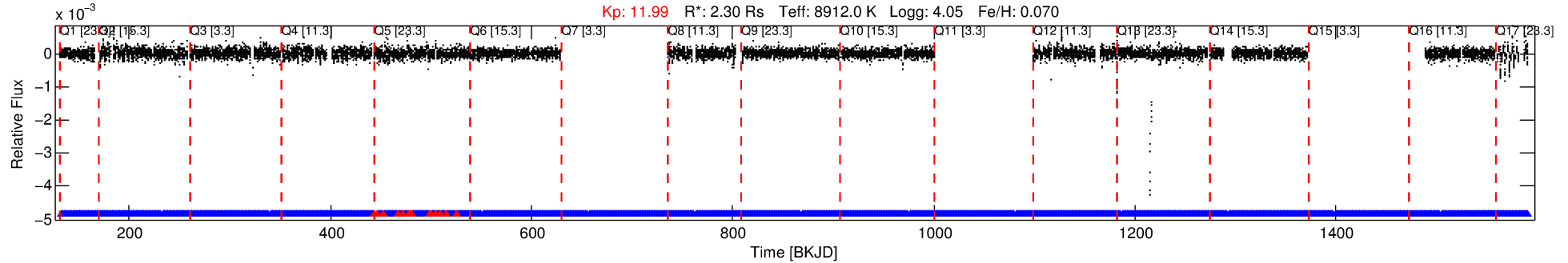
Ephemeris Match Information For 011154043-05

No Significant Match Found

DV One-Page Summary

KIC: 11154043 Candidate: 5 of 5 Period: 1.510 d
KOI: K07414 Corr: No Ephemeris Match

Kp: 11.99 R*: 2.30 Rs Teff: 8912.0 K Logg: 4.05 Fe/H: 0.070



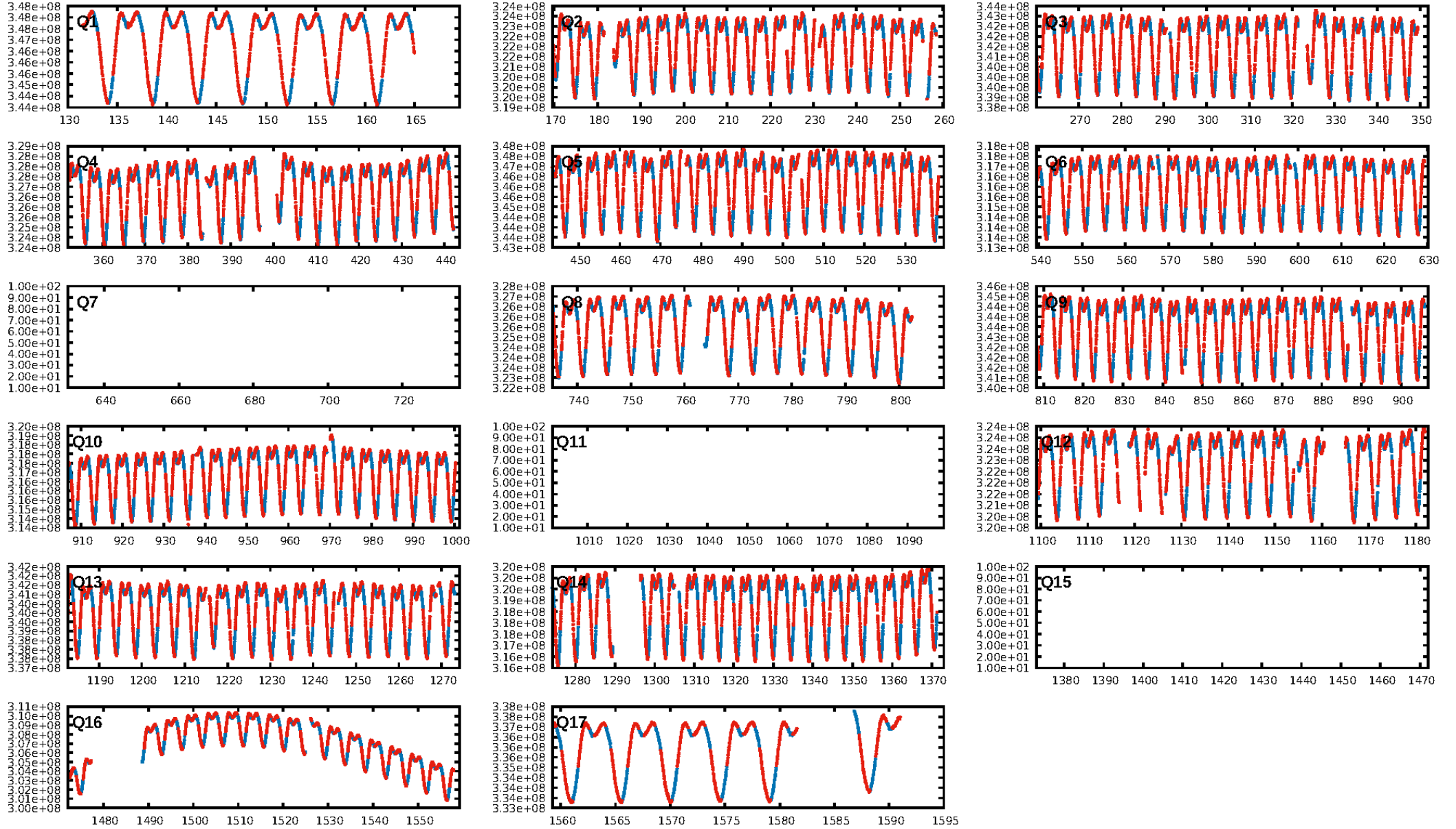
DV Fit Results:

Period = 1.51009 [0.00004] d
Epoch = 132.0253 [0.0434] BKJD
Rp/R* = 0.0039 [0.0027]
a/R* = 1.07 [0.57]
b = 0.80 [2.18]
Seff = 26904.11 [10694.37]
Teq = 3266 [325] K
Rp = 0.98 [0.74] Re
a = 0.0333 [0.0084] AU
Ag = N/A
Teffp = N/A

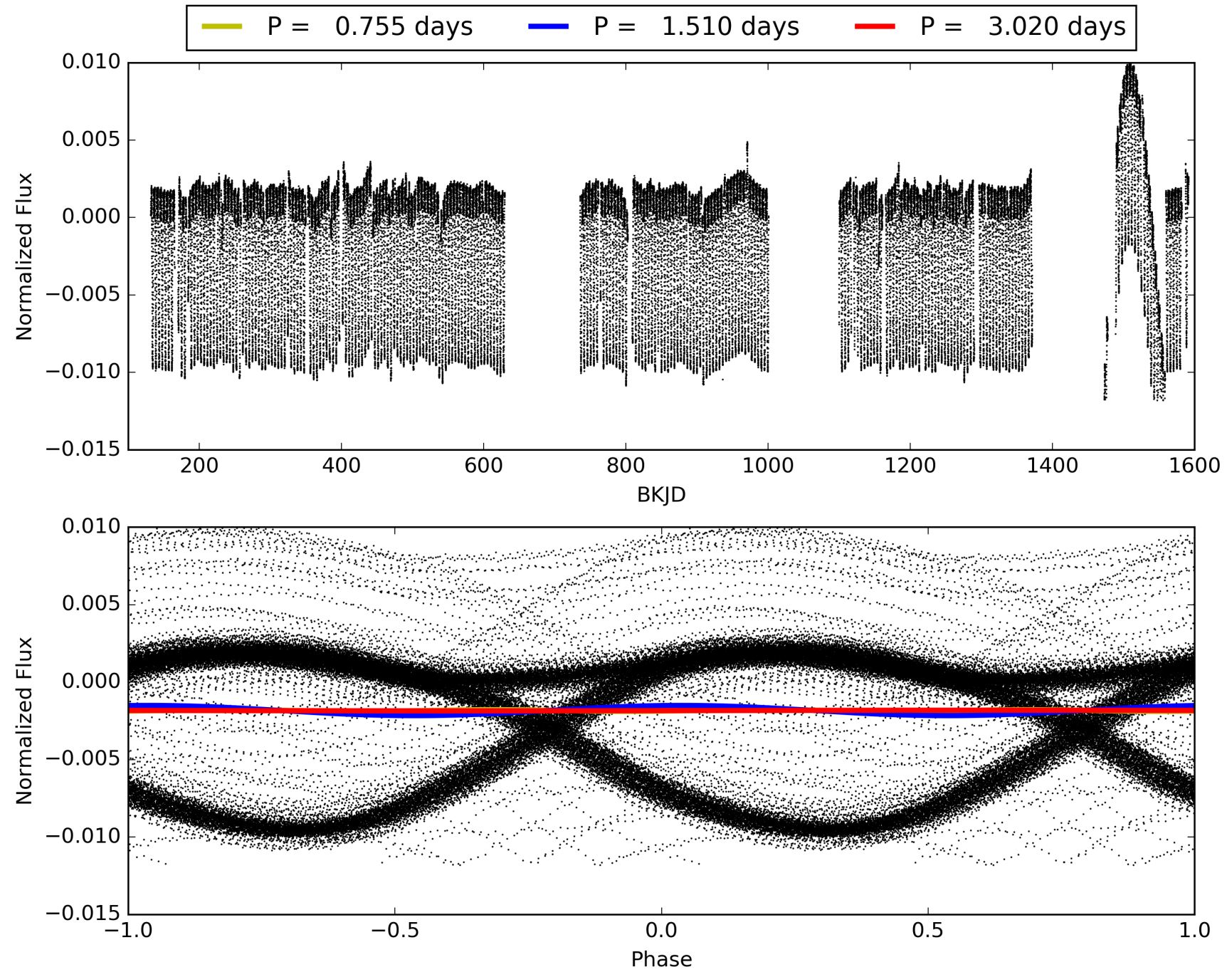
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 100.0% [5.80σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.97 [517/531]
GhostDiagnostic-chr: 1.754
Centroid-sig: 24.6%
Centroid-so: 1.065 arcsec [1.12σ]
OotOffset-rm: 0.338 arcsec [1.04σ]
KicOffset-rm: 0.472 arcsec [1.41σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.00 [0/14]
DiffImageOverlap-fno: 0.00 [0/14]

TCE 011154043-05, PDC Light Curves

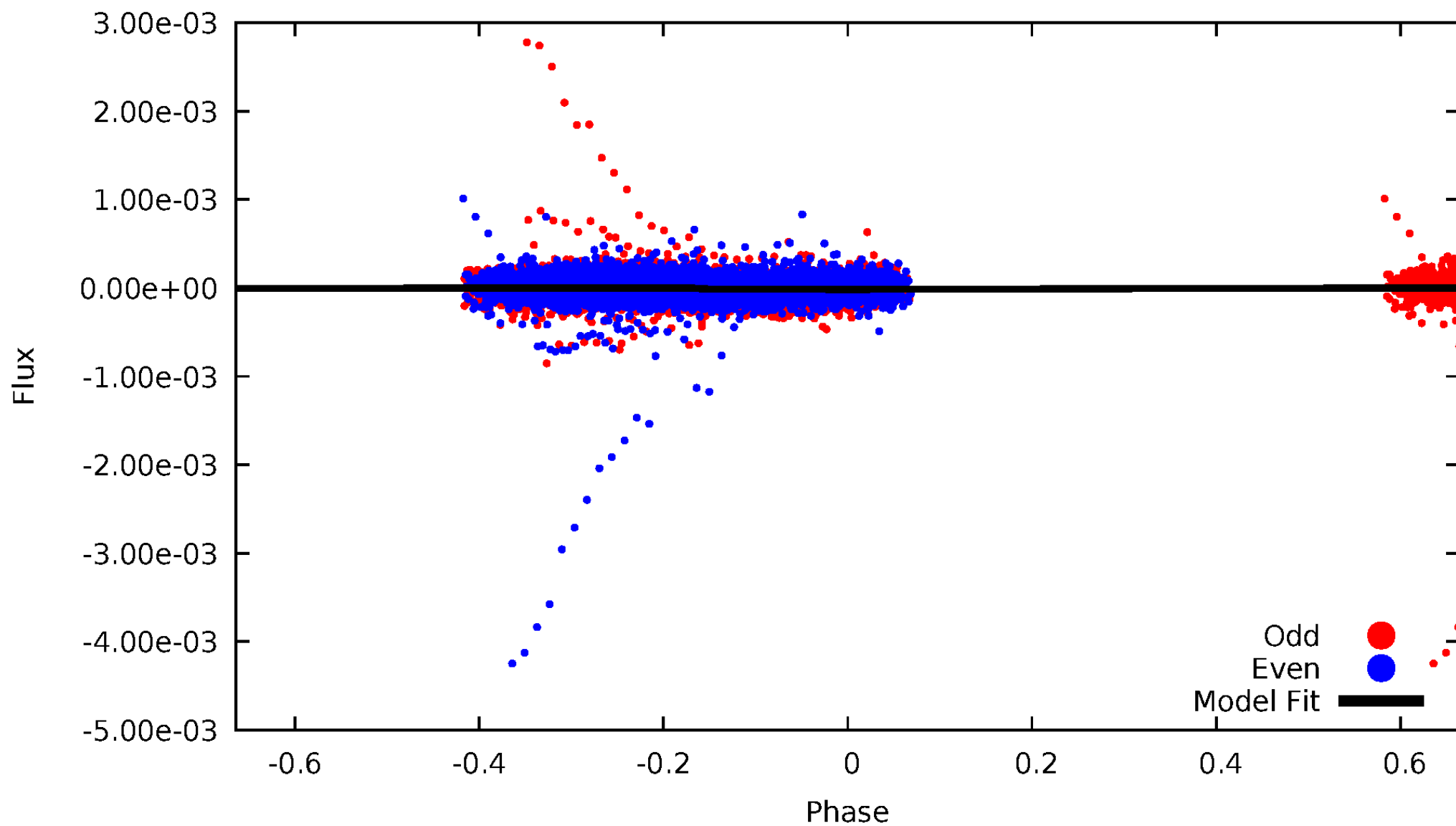


TCE 011154043-05



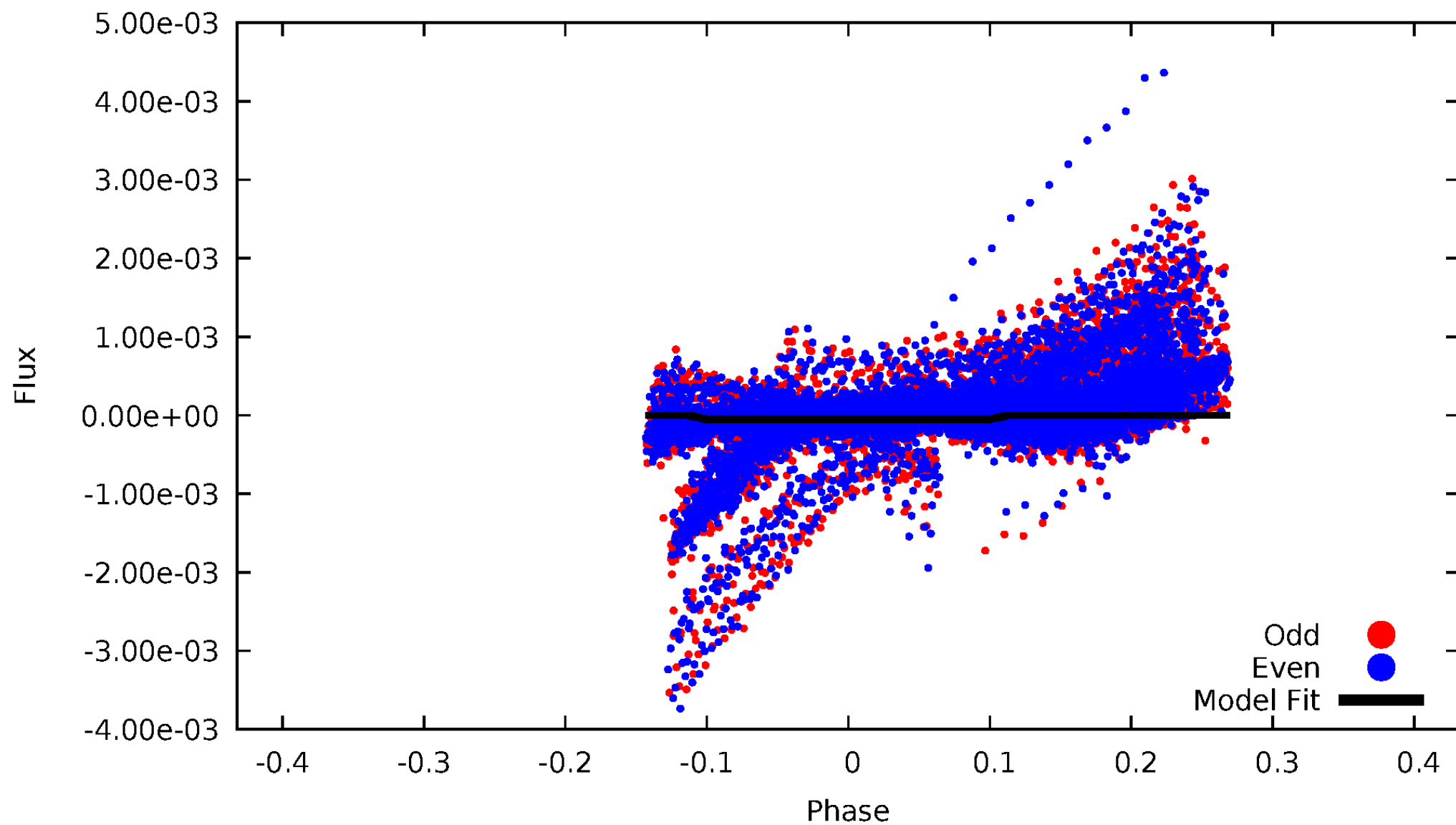
DV Odd/Even

TCE 011154043-05



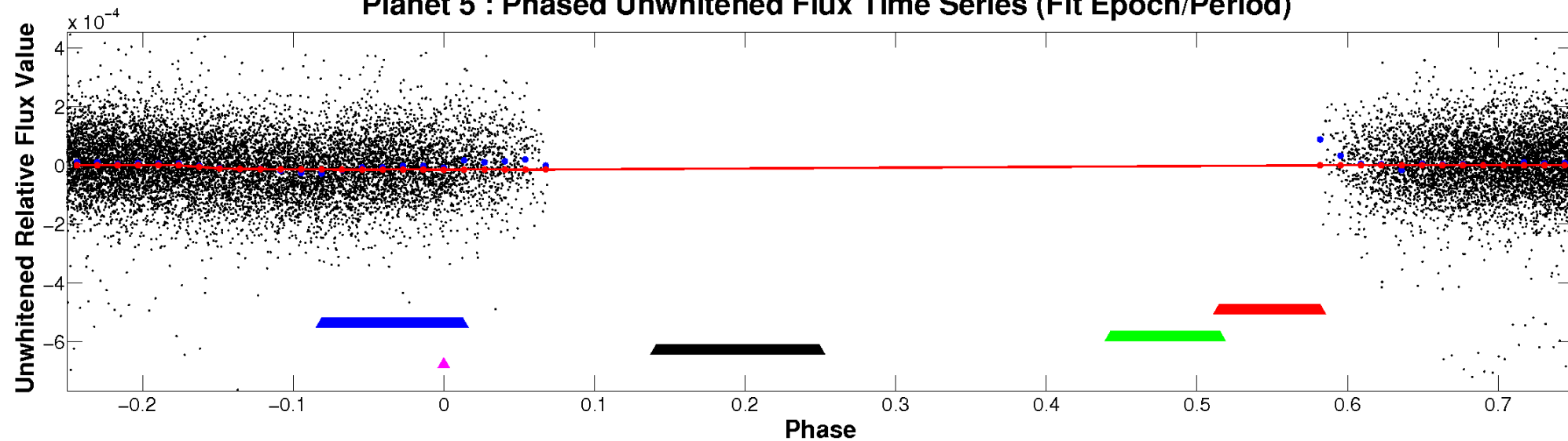
ALT Odd/Even

TCE 011154043-05

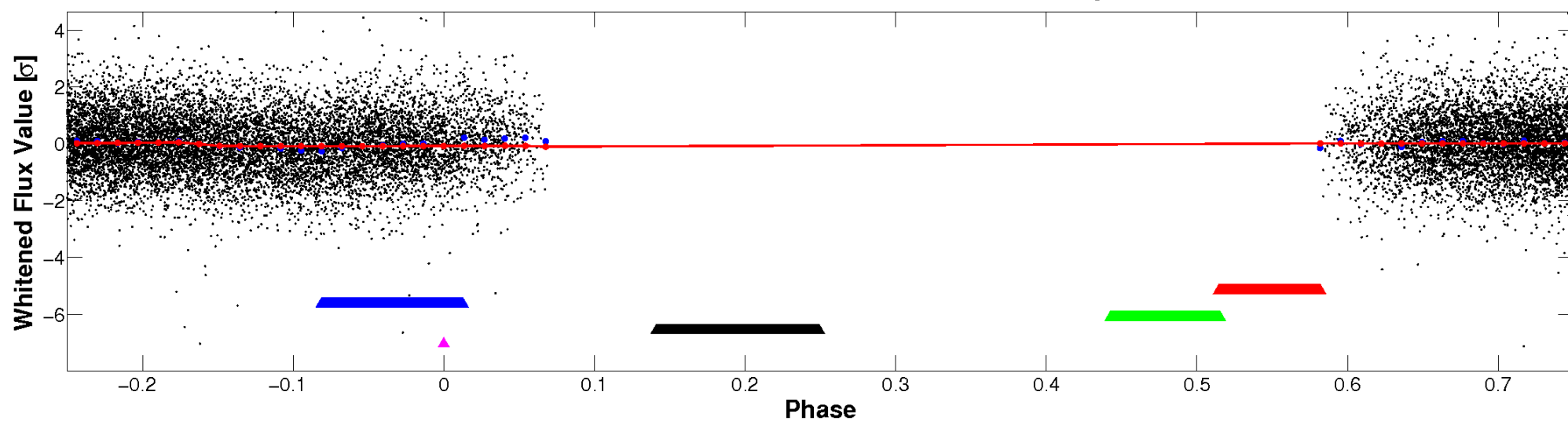


Non-Whitened Vs. Whitened Light Curve

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

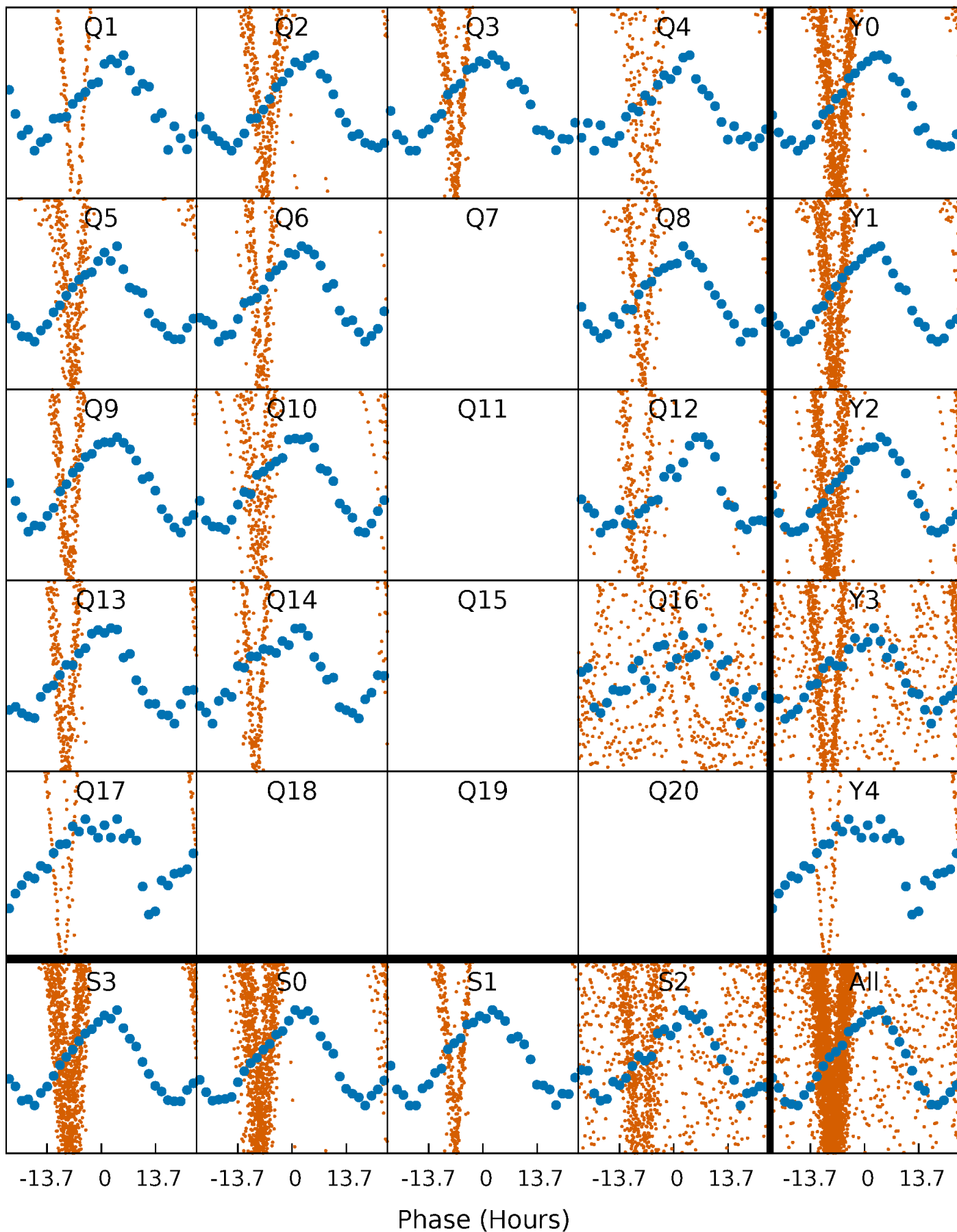


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



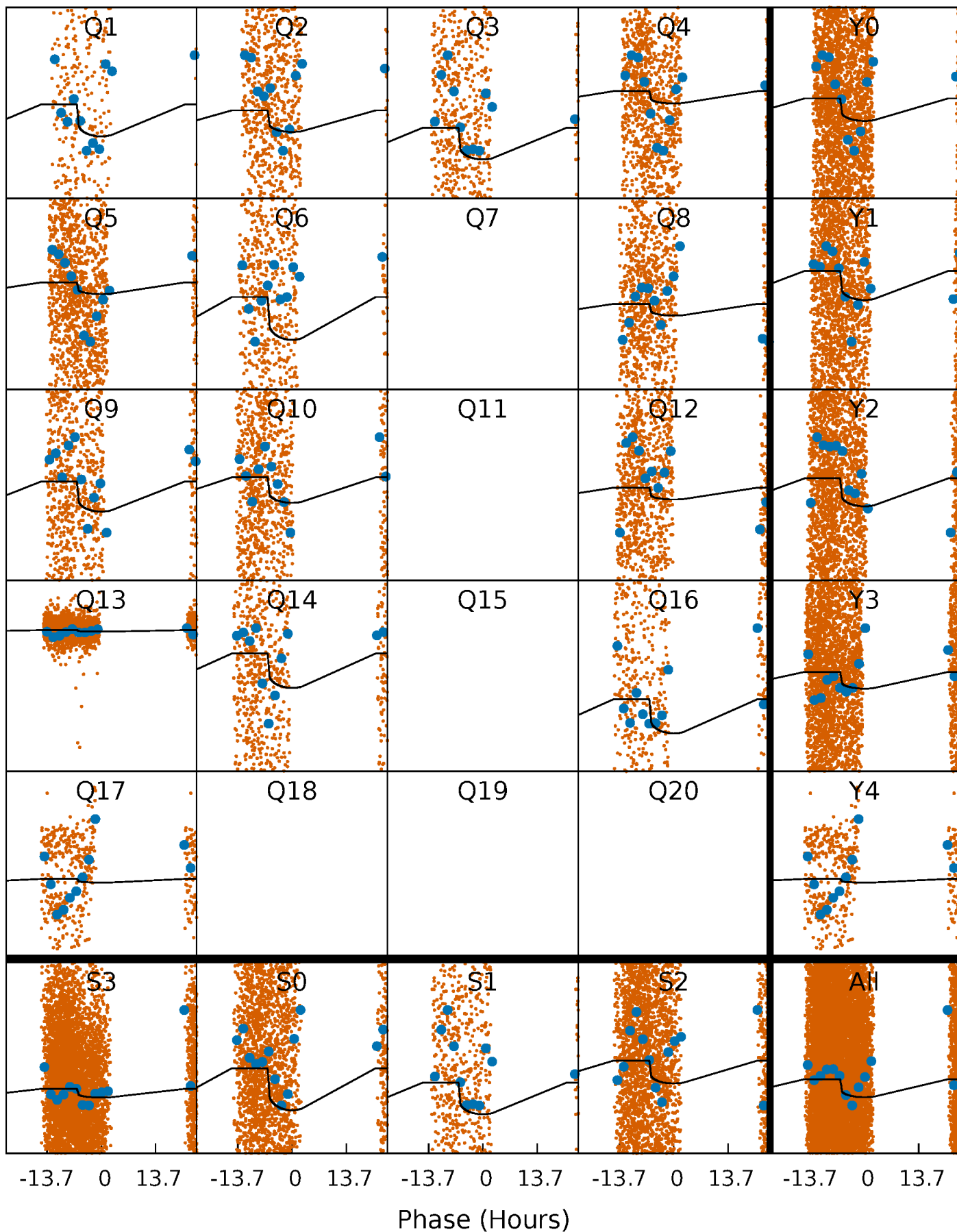
PDC Quarter-Phased Transit Curves

TCE 011154043-05 P= 1.510086 Days $T_0=132.025299$ (BKJD)



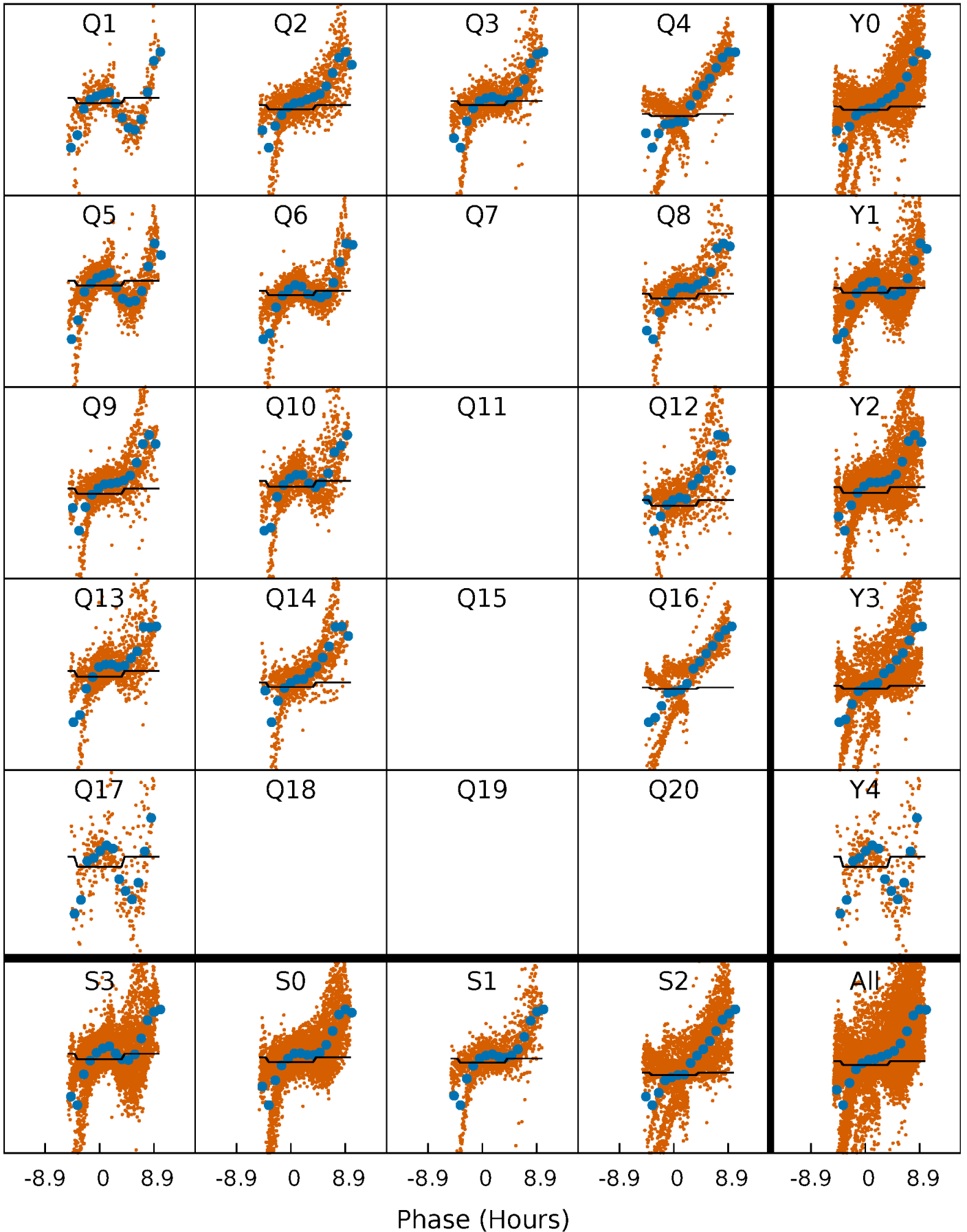
DV Quarter-Phased Transit Curves

TCE 011154043-05 P= 1.510086 Days $T_0=132.025299$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

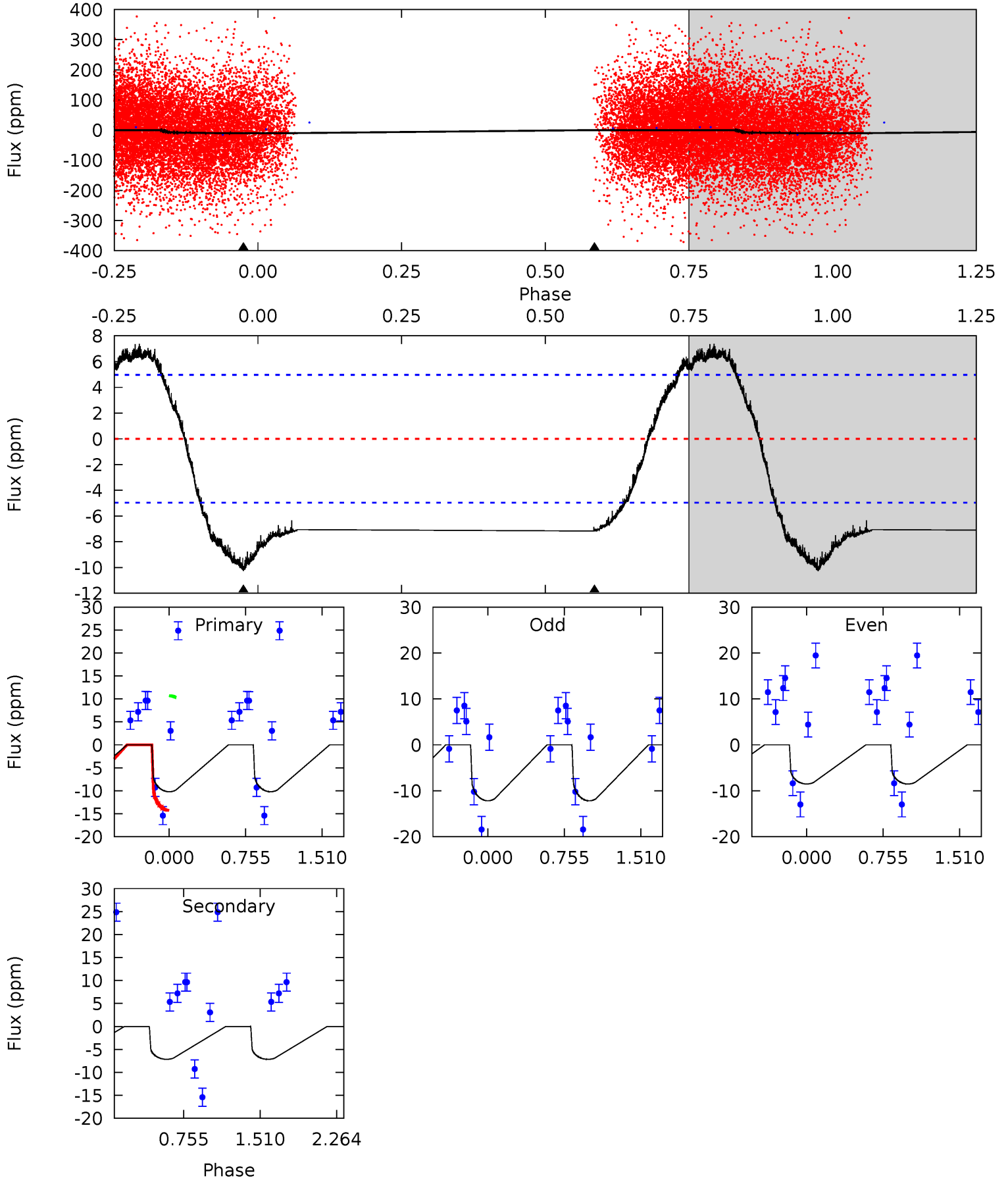
TCE 011154043-05 $P = 1.509946$ Days $T_0 = 131.722016$ (BKJD)



DV Model-Shift Uniqueness Test

011154043-05, P = 1.510086 Days, E = 130.515213 Days

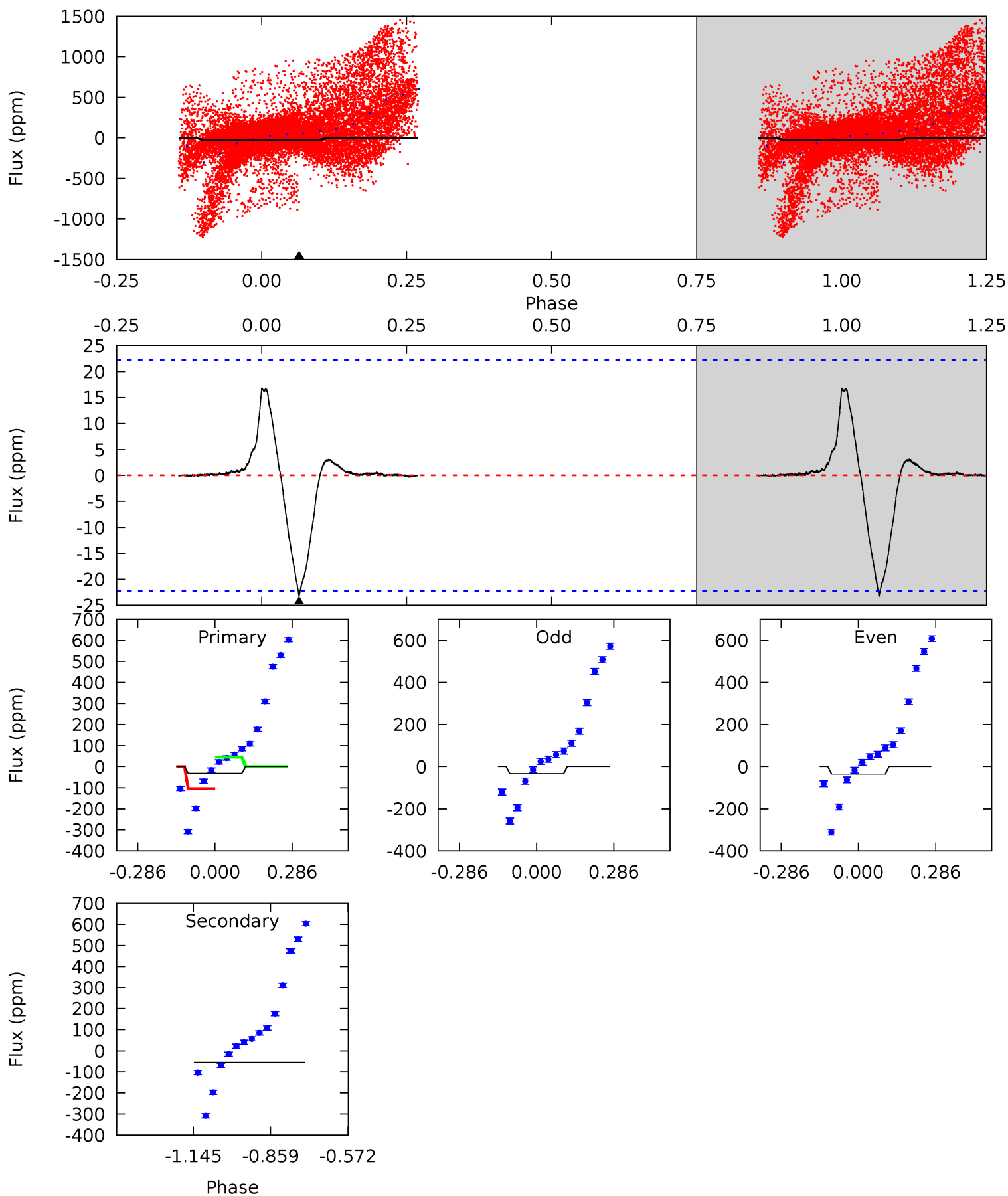
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.47	5.95	0	0	4.12	0.31	1.91	8.47	8.47	5.95	5.95	1.51	0.69	0.42	1.07



Alt Model-Shift Uniqueness Test

011154043-05, P = 1.509946 Days, E = 130.212070 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.56	0	0	0	4.34	1.07	0.02	4.56	4.56	0	0	0.13	0	0.42	5.62



Stellar Parameters For KIC 011154043

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8912^{+249}_{-427}	$4.050^{+0.181}_{-0.165}$	$0.070^{+0.250}_{-0.600}$	$2.299^{+0.724}_{-0.658}$	$2.164^{+0.383}_{-0.574}$	$0.251^{+0.249}_{-0.117}$
	+3%/-5%	+4%/-4%	+357%/-857%	+31%/-29%	+18%/-27%	+99%/-47%
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 011154043-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-7 ± 1	$1.02^{+0.68}_{-0.56}$	4531^{+357}_{-349}	6736^{+4341}_{-1710}	$4.046^{+15.621}_{-2.615}$
Alt.	0 ± 5	$1.81^{+0.78}_{-0.62}$	4534^{+359}_{-327}	-3992^{+8477}_{-1274}	$-0.045^{+1.019}_{-1.133}$

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

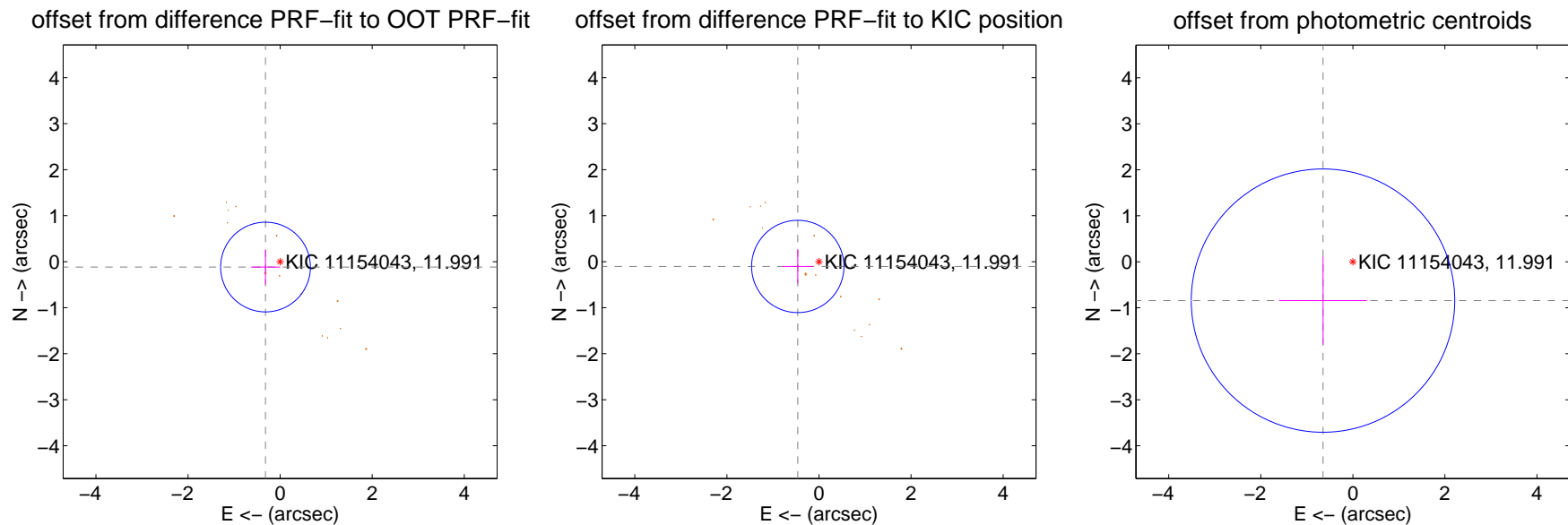
DV Centroid Data

Supplemental centroid analysis for 011154043-05. **Kepler magnitude: 11.99.** Transit SNR 6.68

There are 0 quarters with good PRF difference image offsets

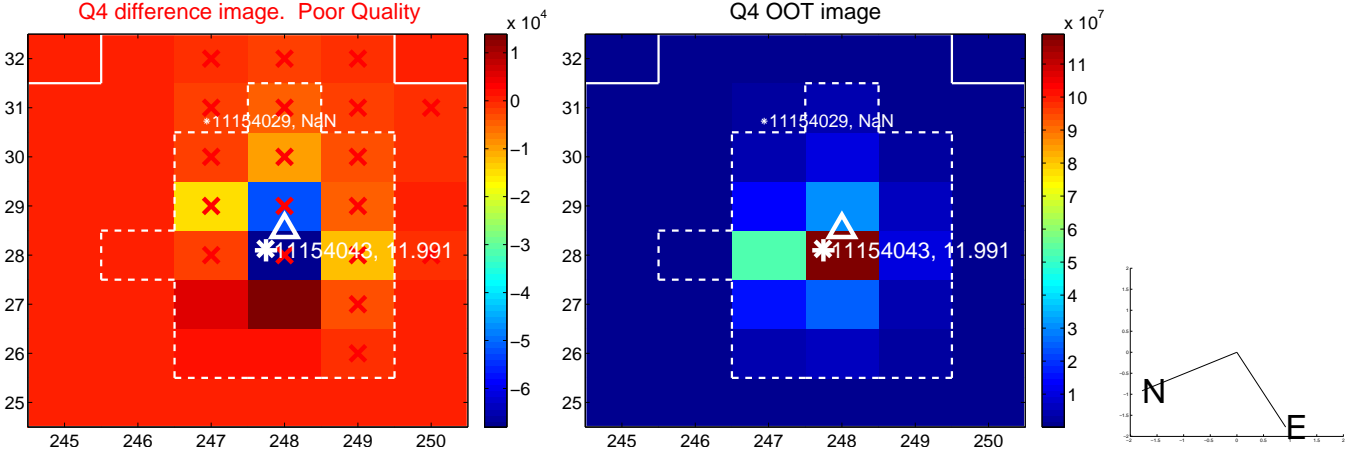
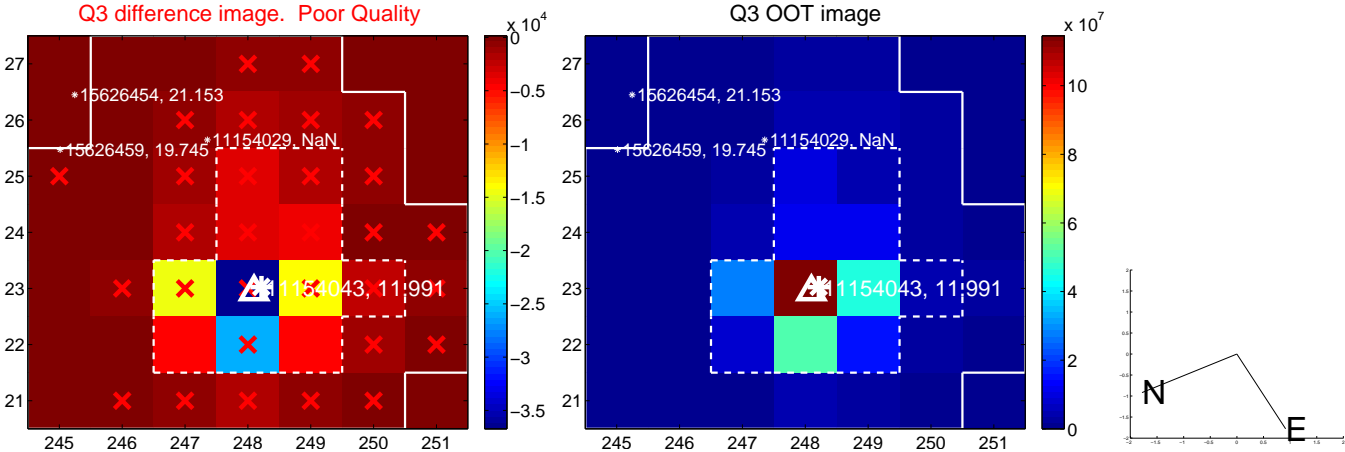
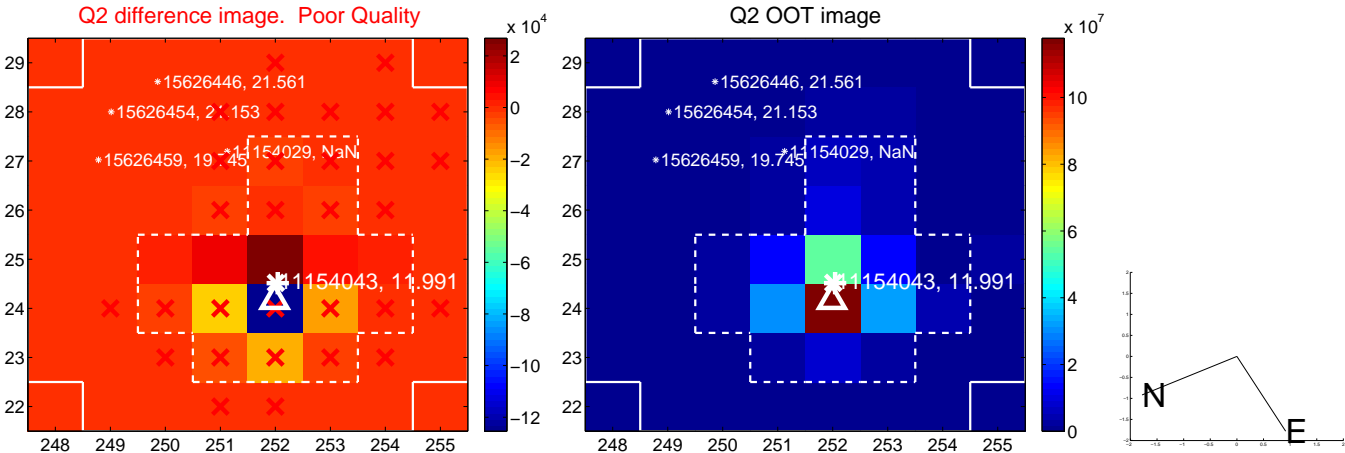
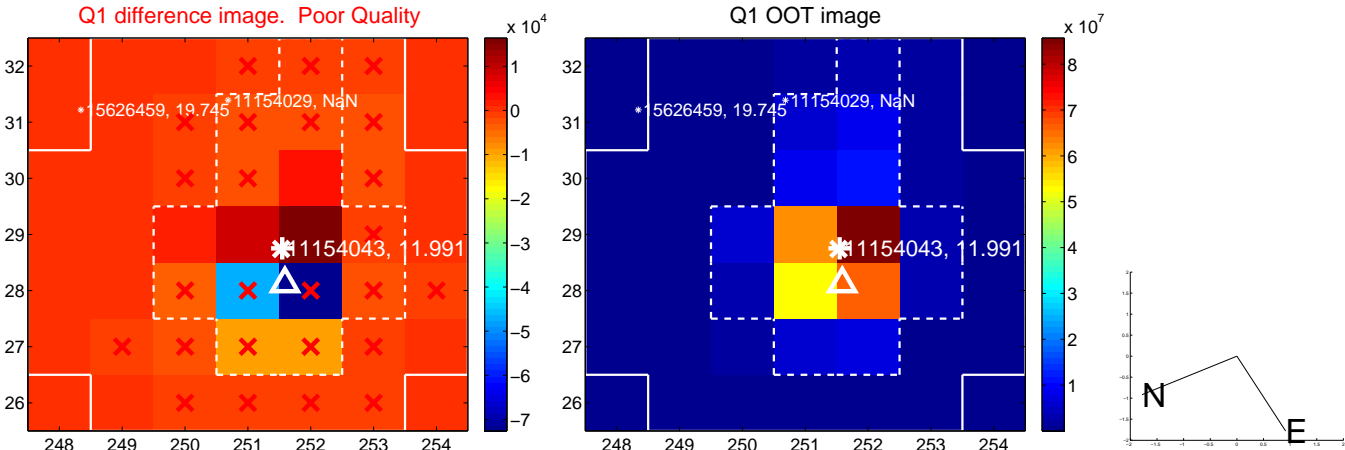
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.338 ± 0.325	1.04	0.317 ± 0.317	-0.116 ± 0.377
PRF-fit source offset from KIC position	0.472 ± 0.334	1.41	0.461 ± 0.332	-0.103 ± 0.371
photometric centroid source offset	1.06 ± 0.95	1.12	0.65 ± 0.95	-0.84 ± 0.95

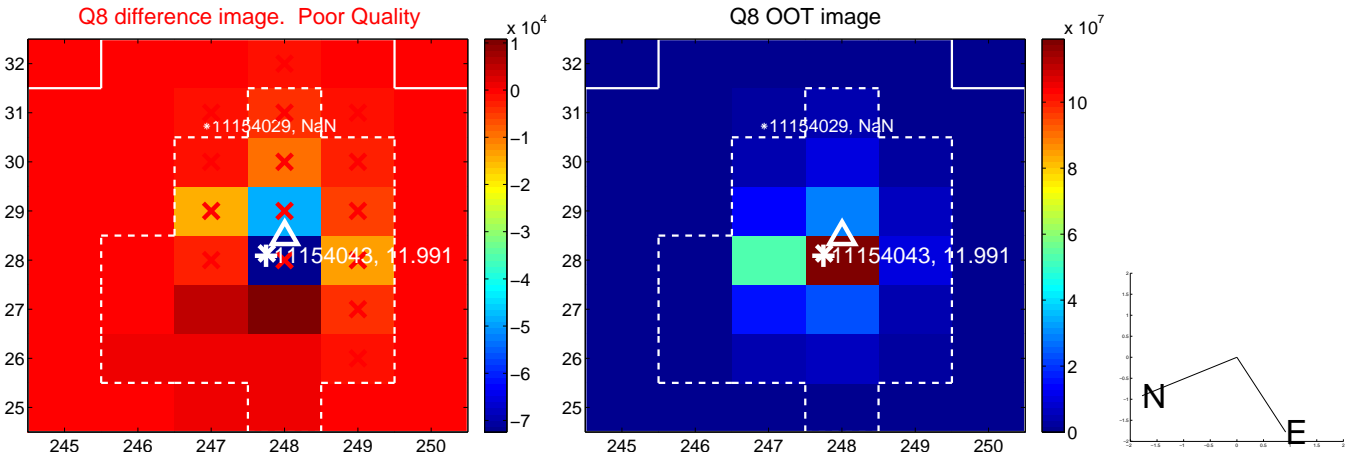
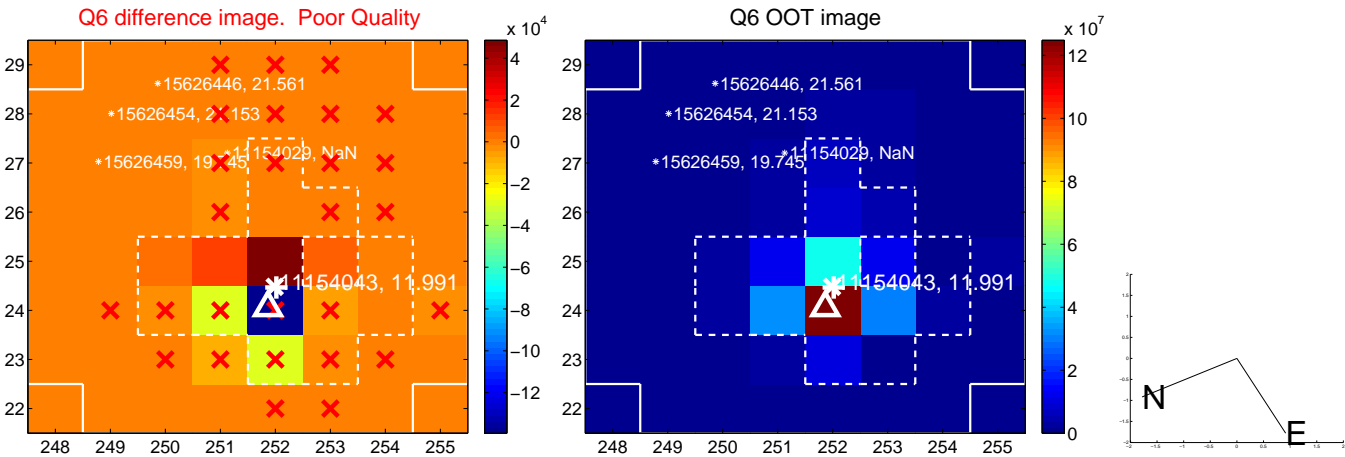
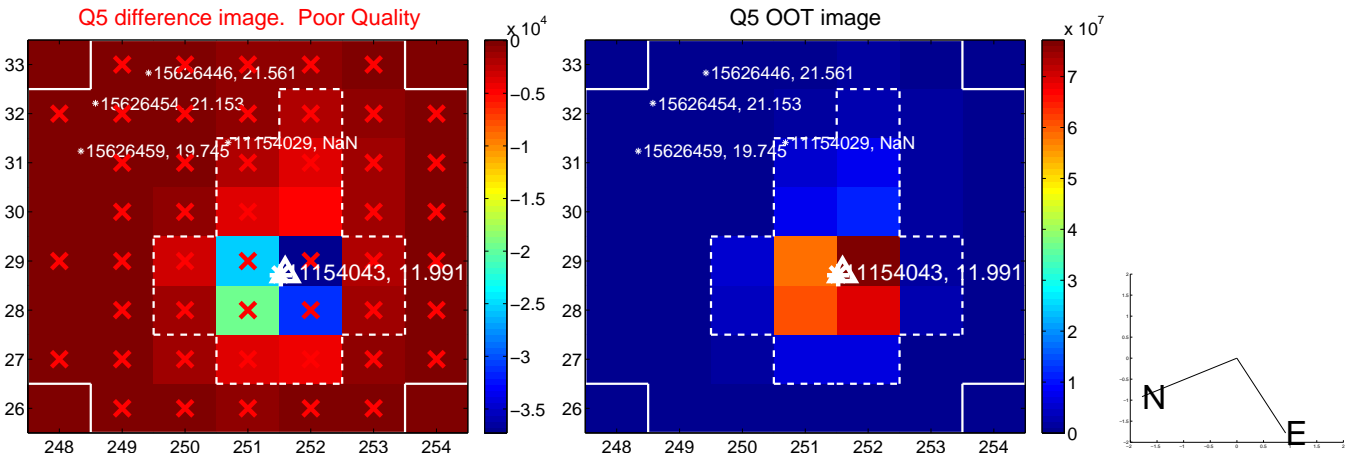


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

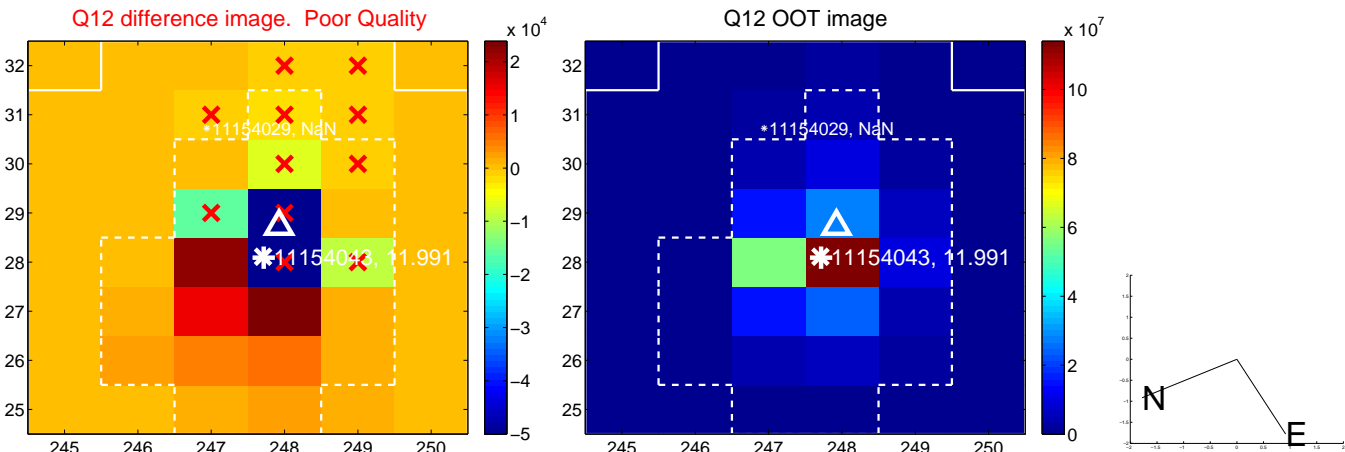
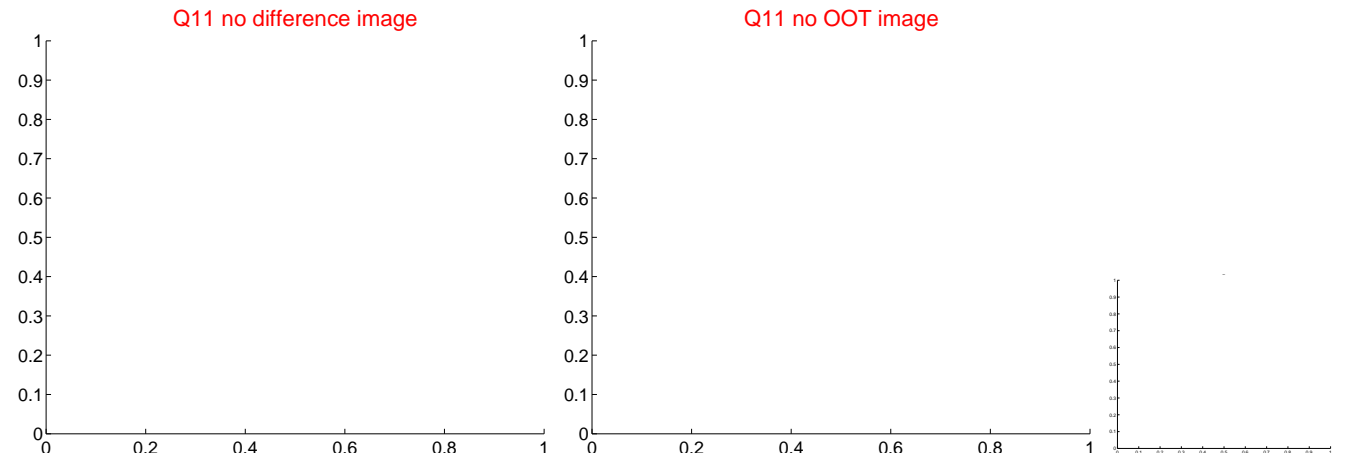
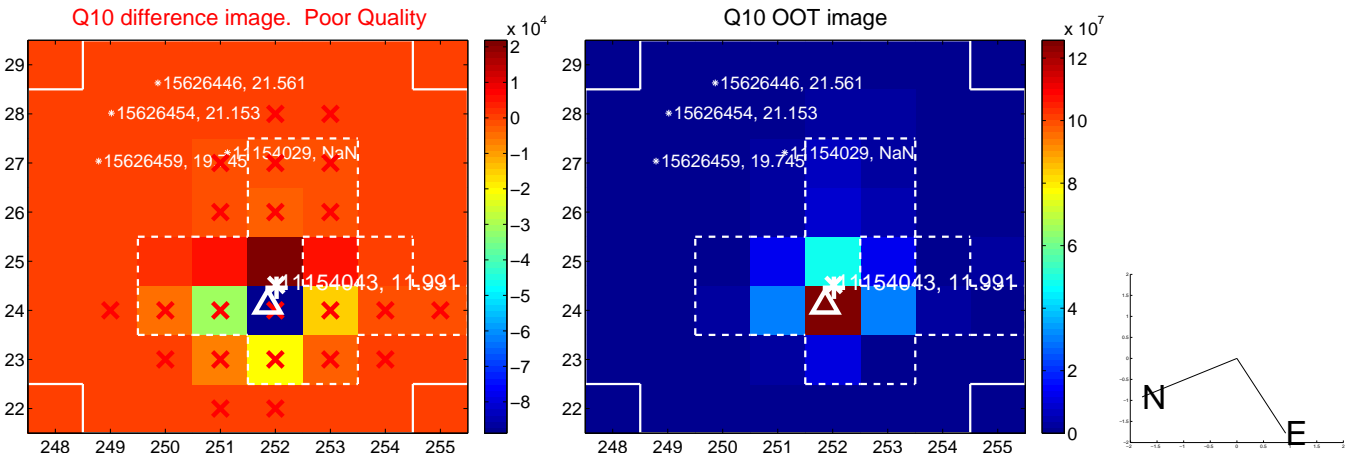
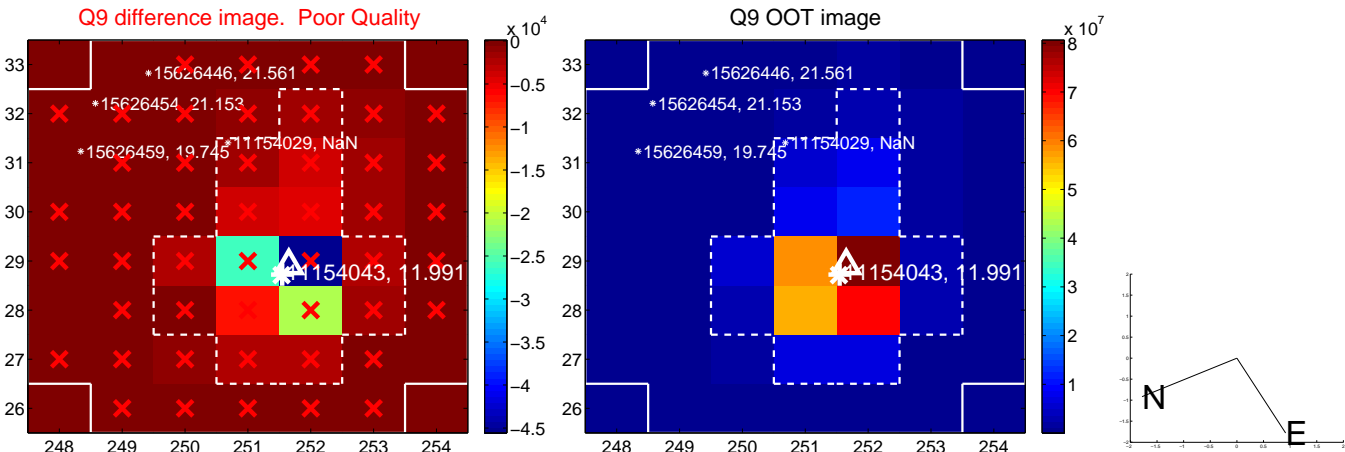
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



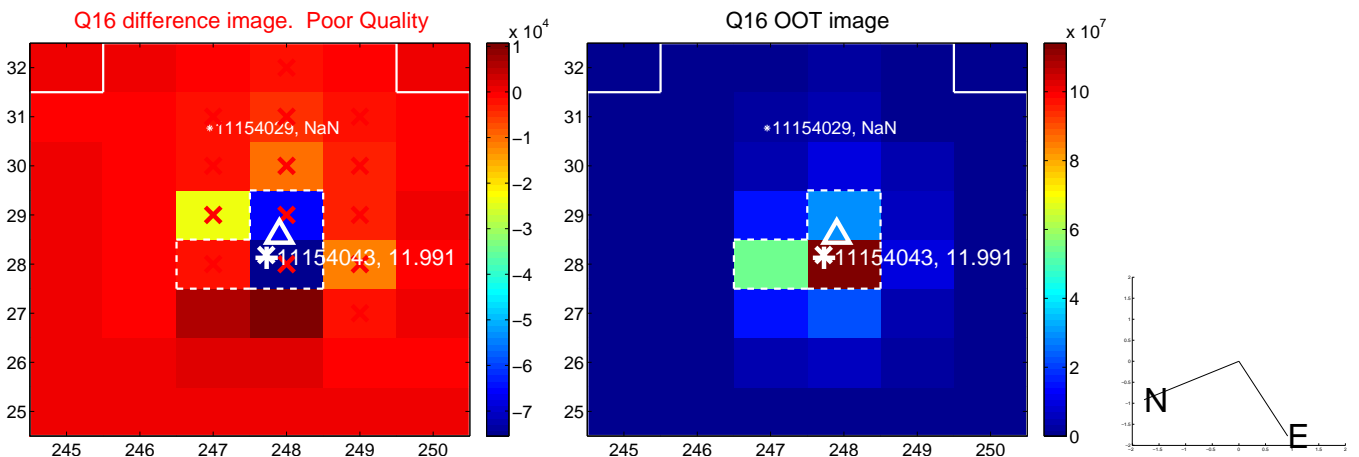
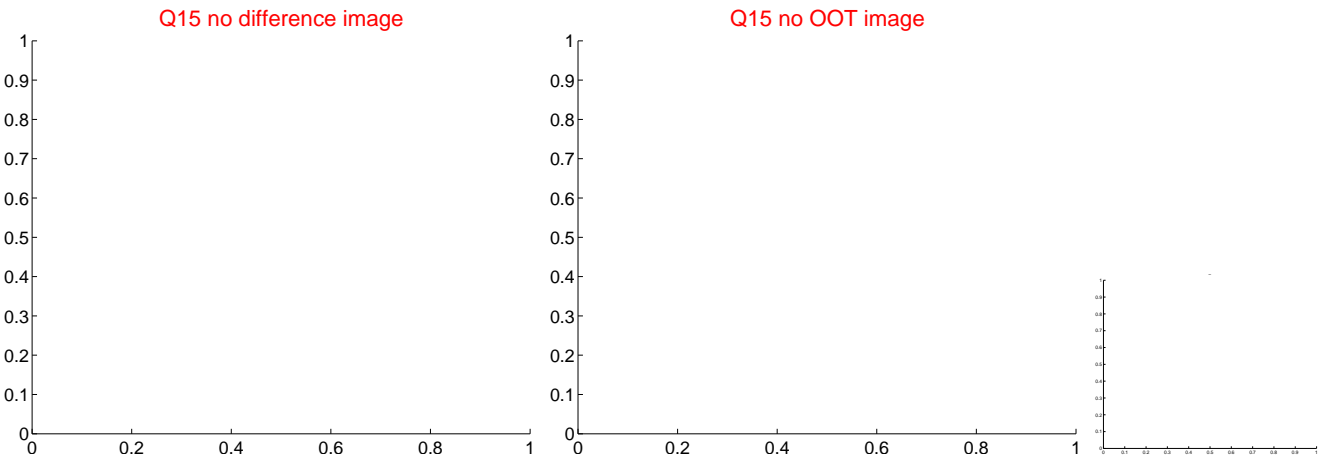
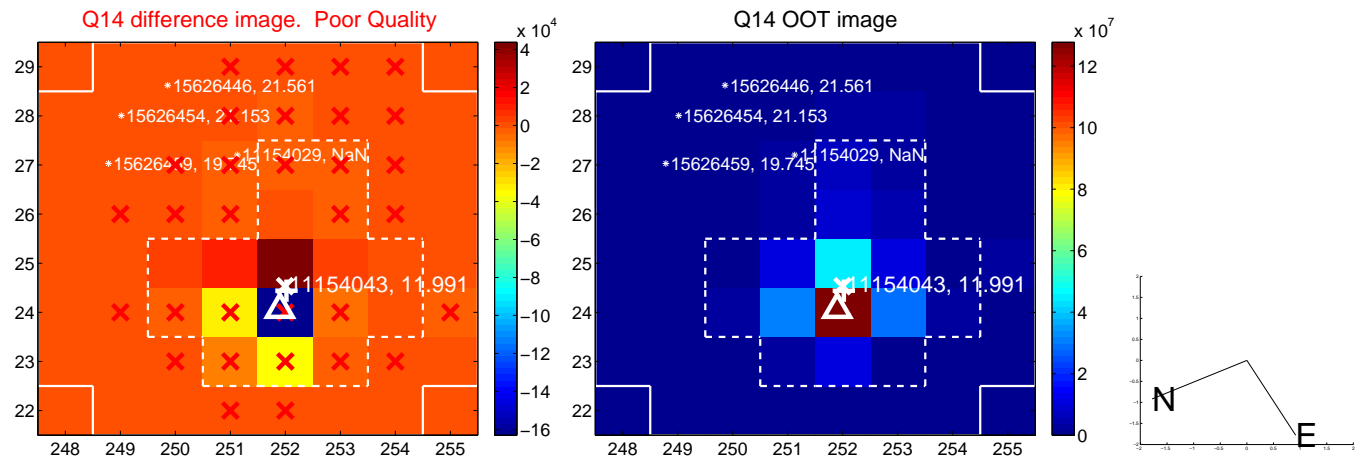
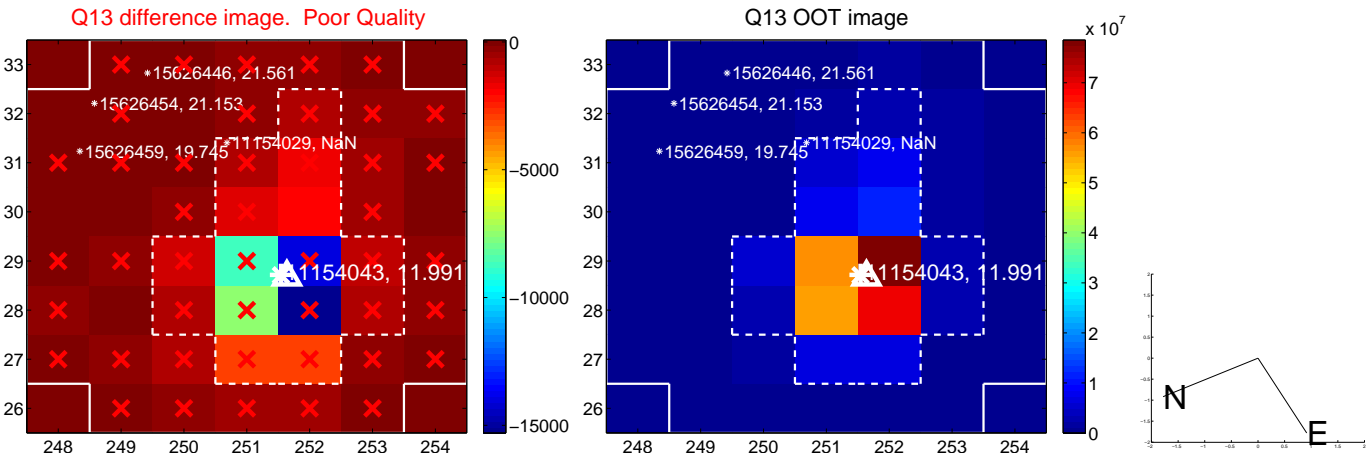
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

