

KIC 009540295

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})
009540295-01	OBS	No	3.383503	133.299188	31.3	11.571	9.2	6.6	4.66	6853	2.74	13729.14
009540295-02	OBS	No	6.766998	131.960240	70.0	18.788	10.0	11.0	4.66	6853	5.31	5448.42
009540295-03	OBS	No	179.364137	243.704040	273.7	5.600	7.3	8.0	4.66	6853	8.47	68.94

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009540295-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL —LPP_DV
009540295-02	OBS	FP	0.00	1	0	0	0	LPP_DV —LPP_ALT—SAME_NTL_PERIOD
009540295-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES —TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

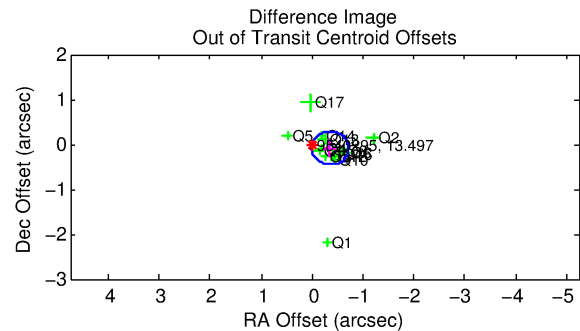
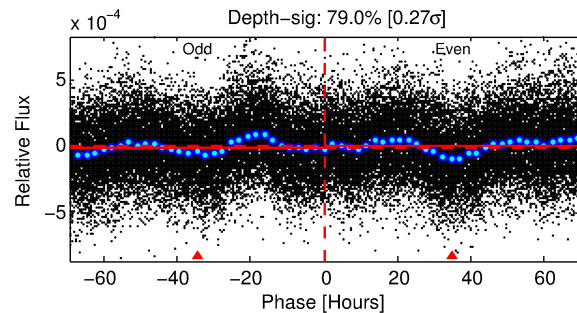
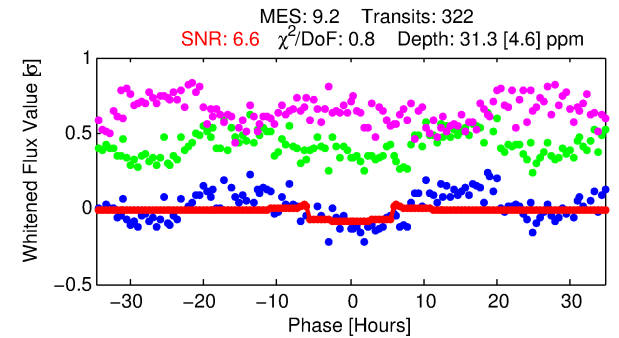
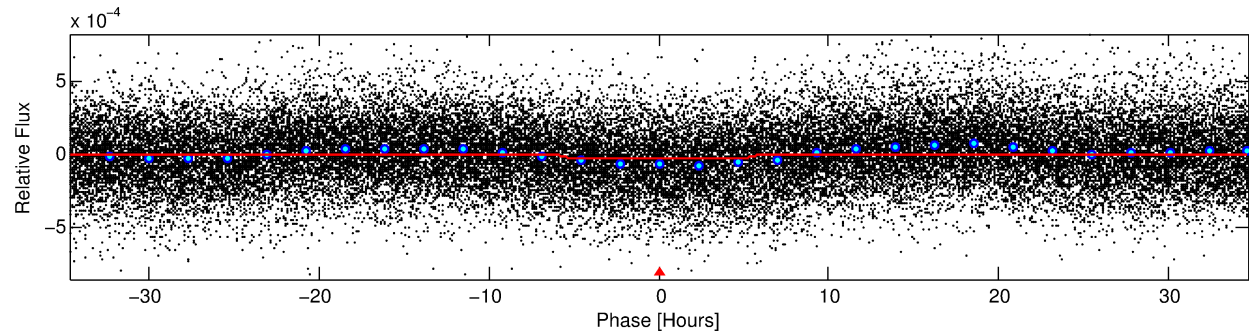
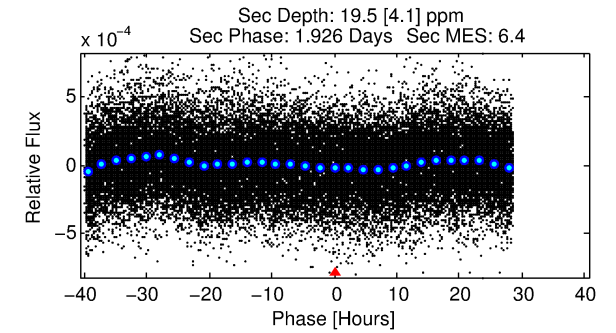
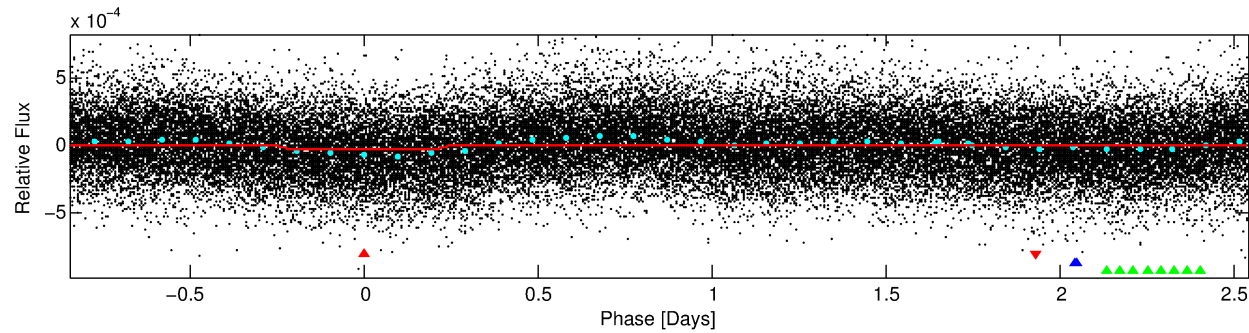
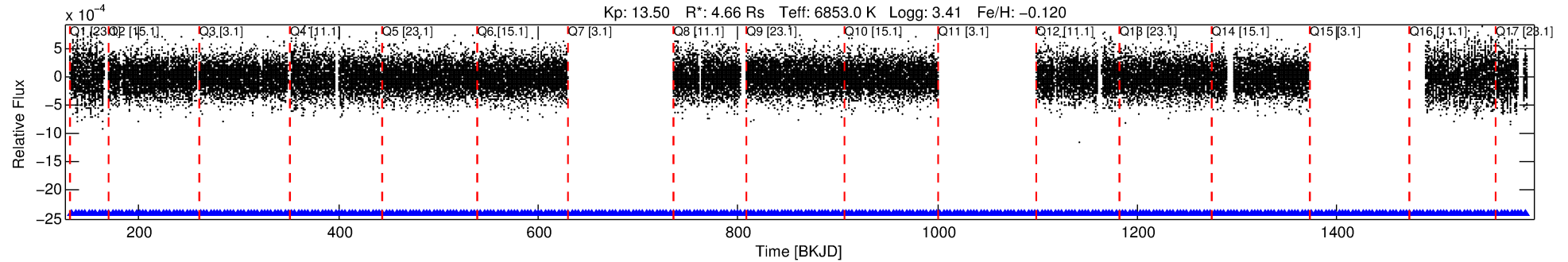
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009540295-01

No Significant Match Found

DV One-Page Summary

KIC: 9540295 Candidate: 1 of 3 Period: 3.384 d



DV Fit Results:

Period = 3.38350 [0.00005] d
Epoch = 133.2992 [0.0089] BKJD
Rp/R* = 0.0054 [0.0019]
a/R* = 1.96 [2.94]
b = 0.60 [2.18]
Seff = 13729.14 [9911.27]
Teq = 2760 [498] K
Rp = 2.74 [1.62] Re
a = 0.0559 [0.0249] AU
Ag = 4.47 [4.59] [0.76σ]
Teffp = 6206 [1174] K [2.70σ]

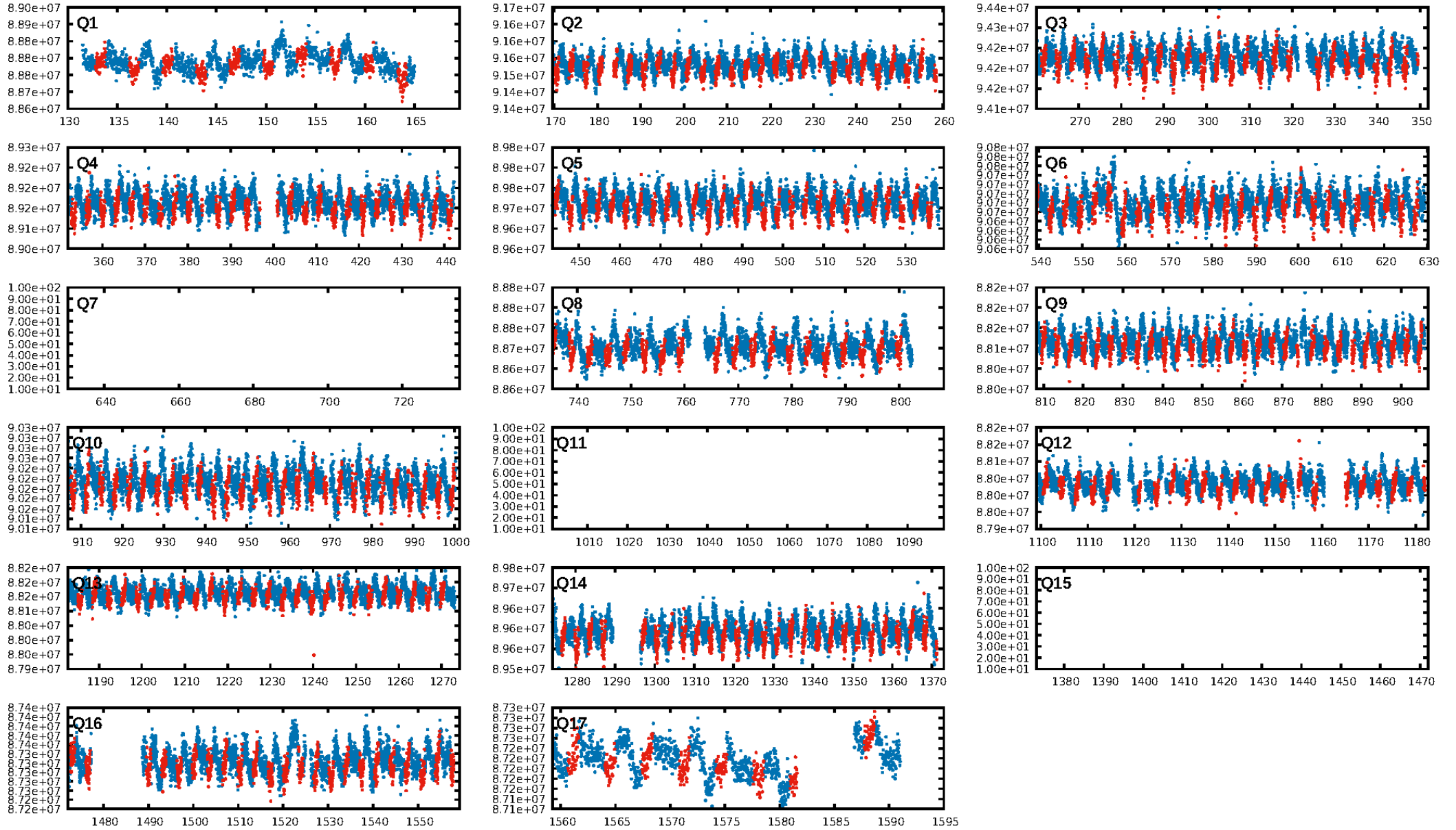
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [3.68σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.67e-08
RollingBand-fgt: 1.00 [304/304]
GhostDiagnostic-chr: 1.896
Centroid-sig: 24.3%
Centroid-so: 0.836 arcsec [0.90σ]
OotOffset-rm: 0.365 arcsec [2.98σ]
KicOffset-rm: 0.294 arcsec [2.32σ]
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]

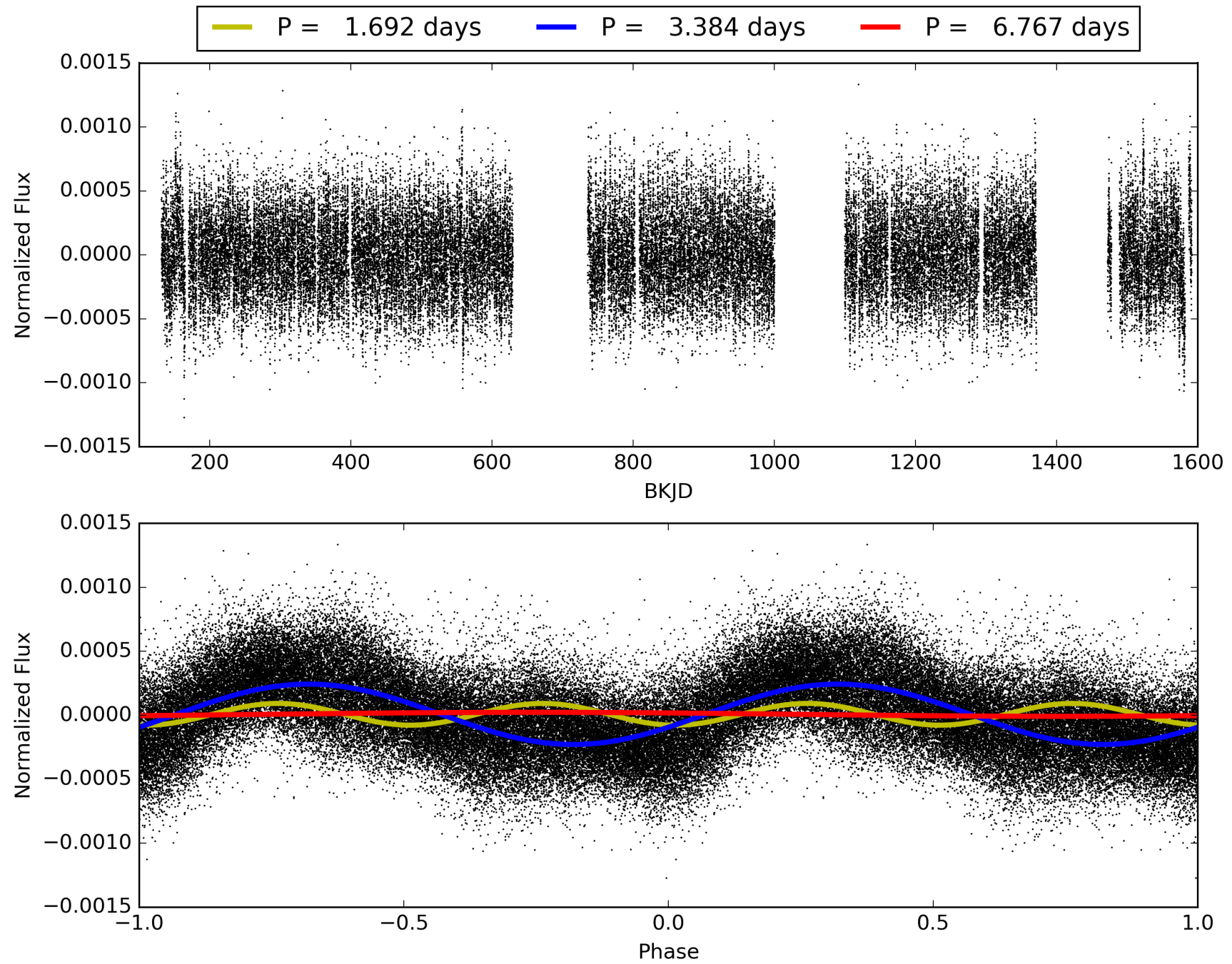
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:02:05 Z

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

TCE 009540295-01, PDC Light Curves

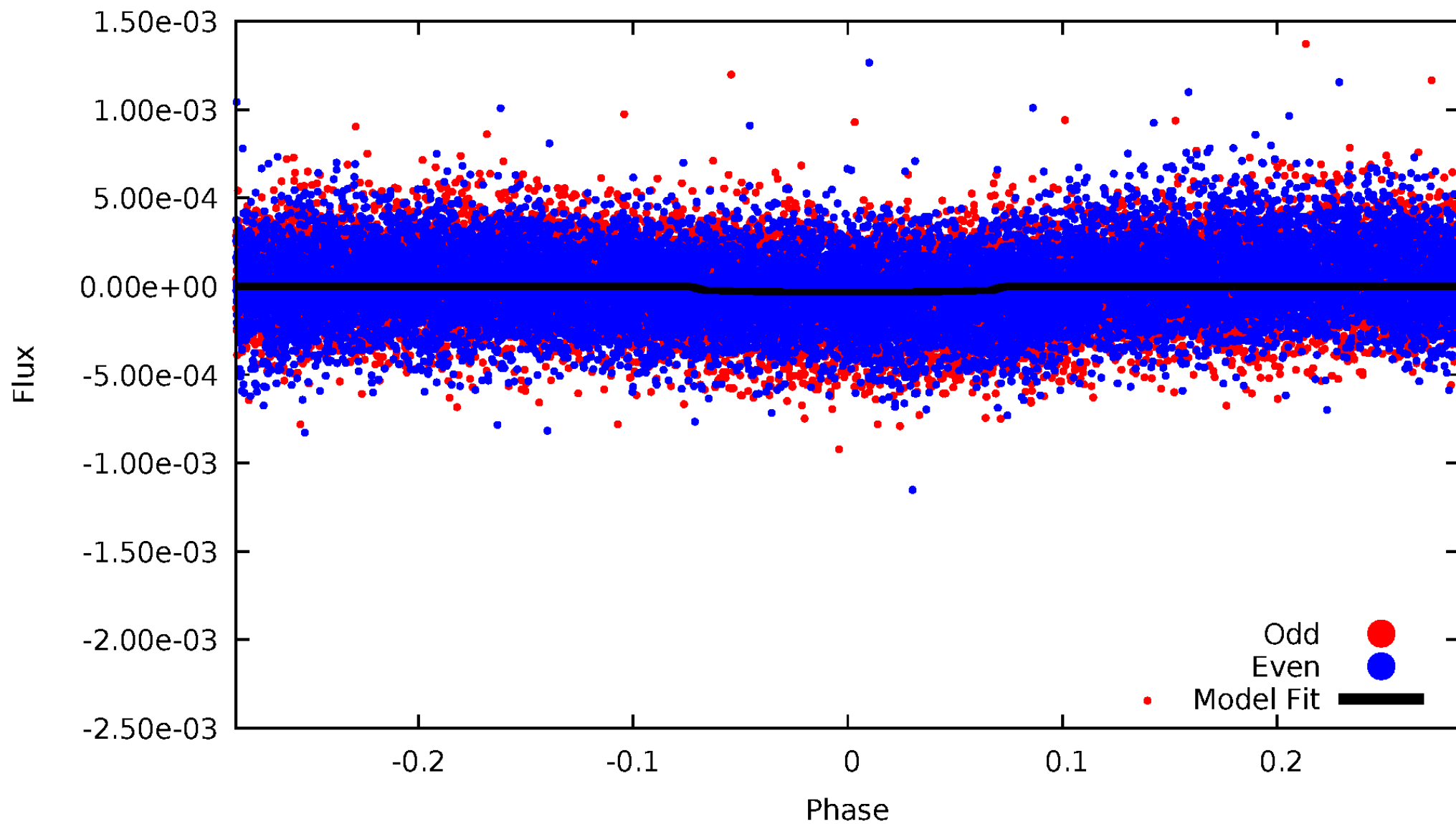


TCE 009540295-01



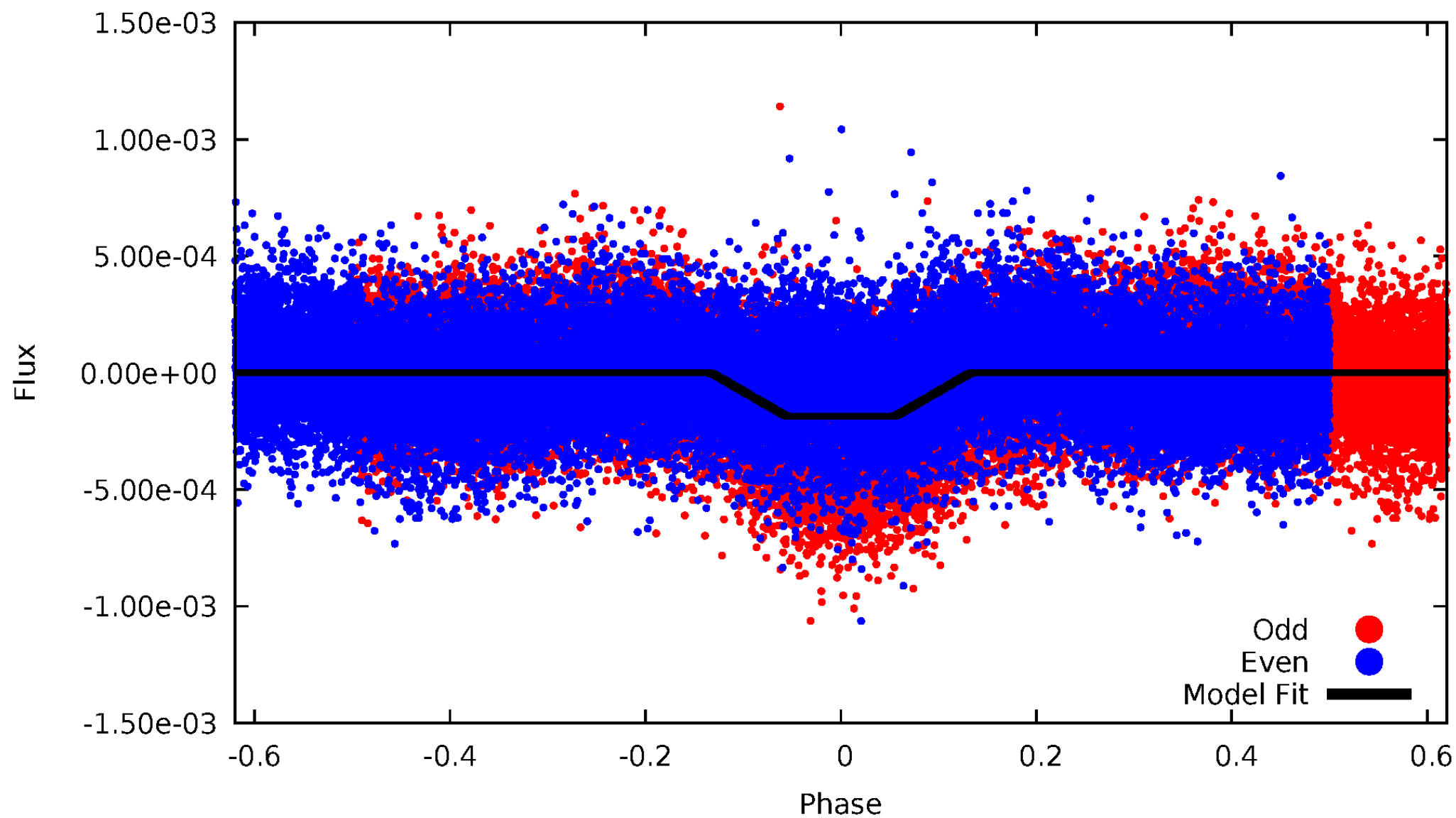
DV Odd/Even

TCE 009540295-01

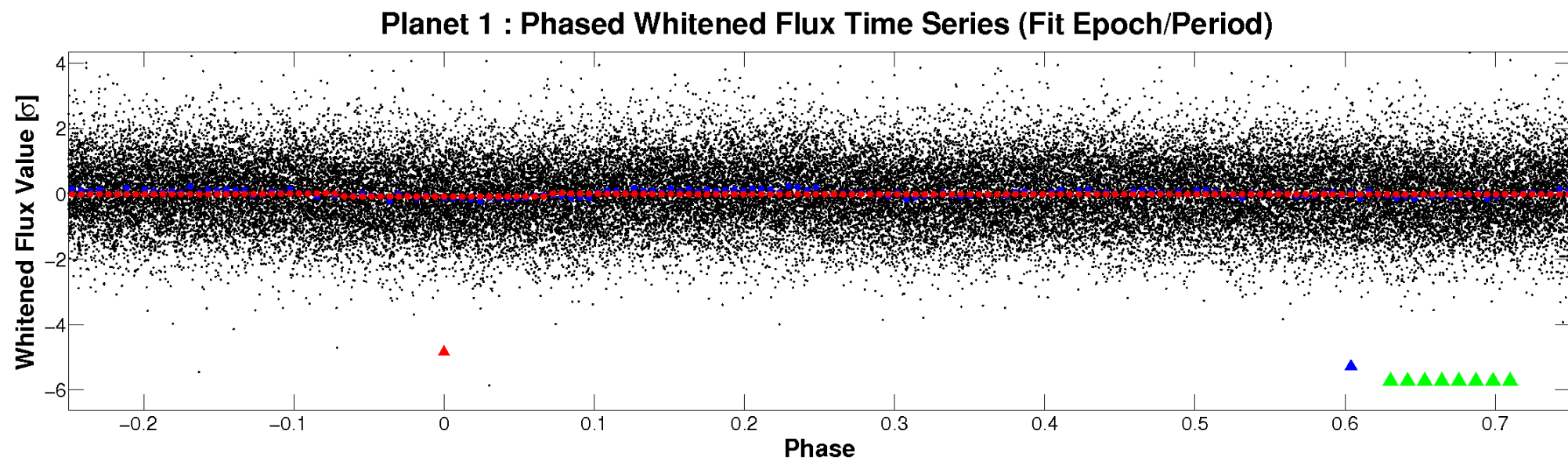
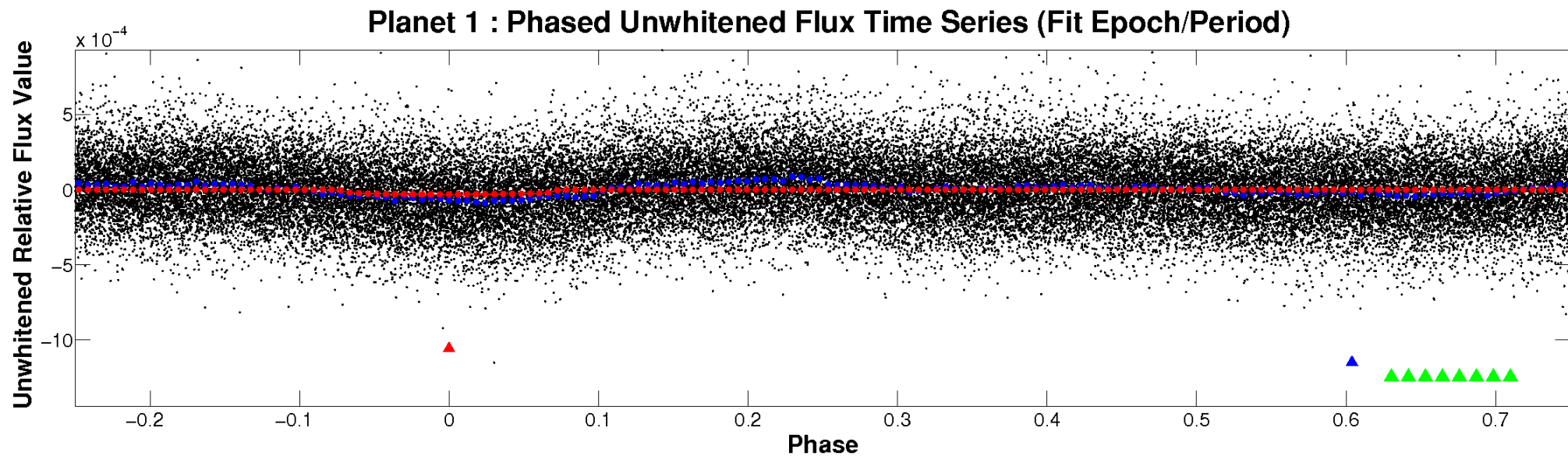


ALT Odd/Even

TCE 009540295-01

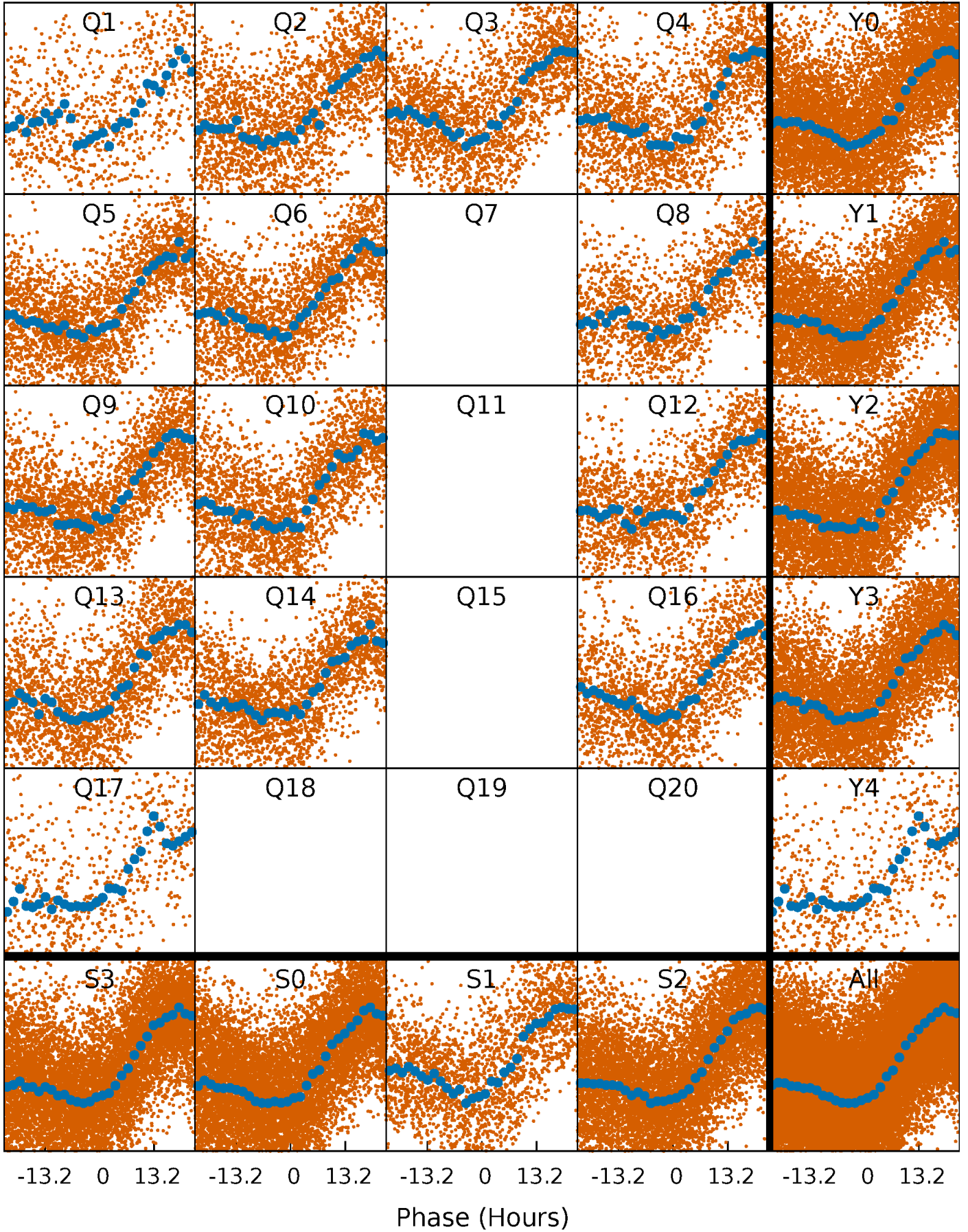


Non-Whitened Vs. Whitened Light Curve



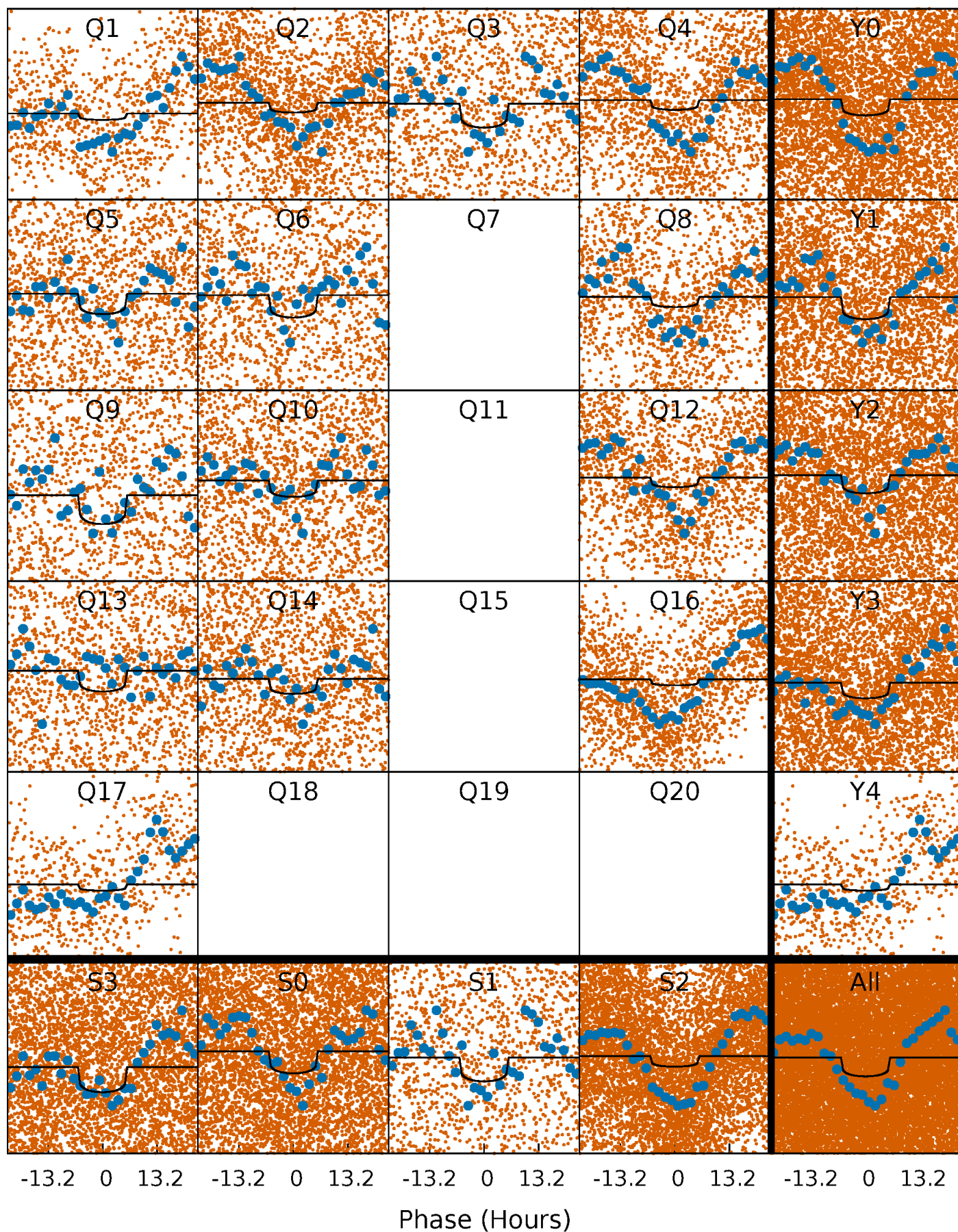
PDC Quarter-Phased Transit Curves

TCE 009540295-01 P= 3.383503 Days $T_0=133.299188$ (BKJD)



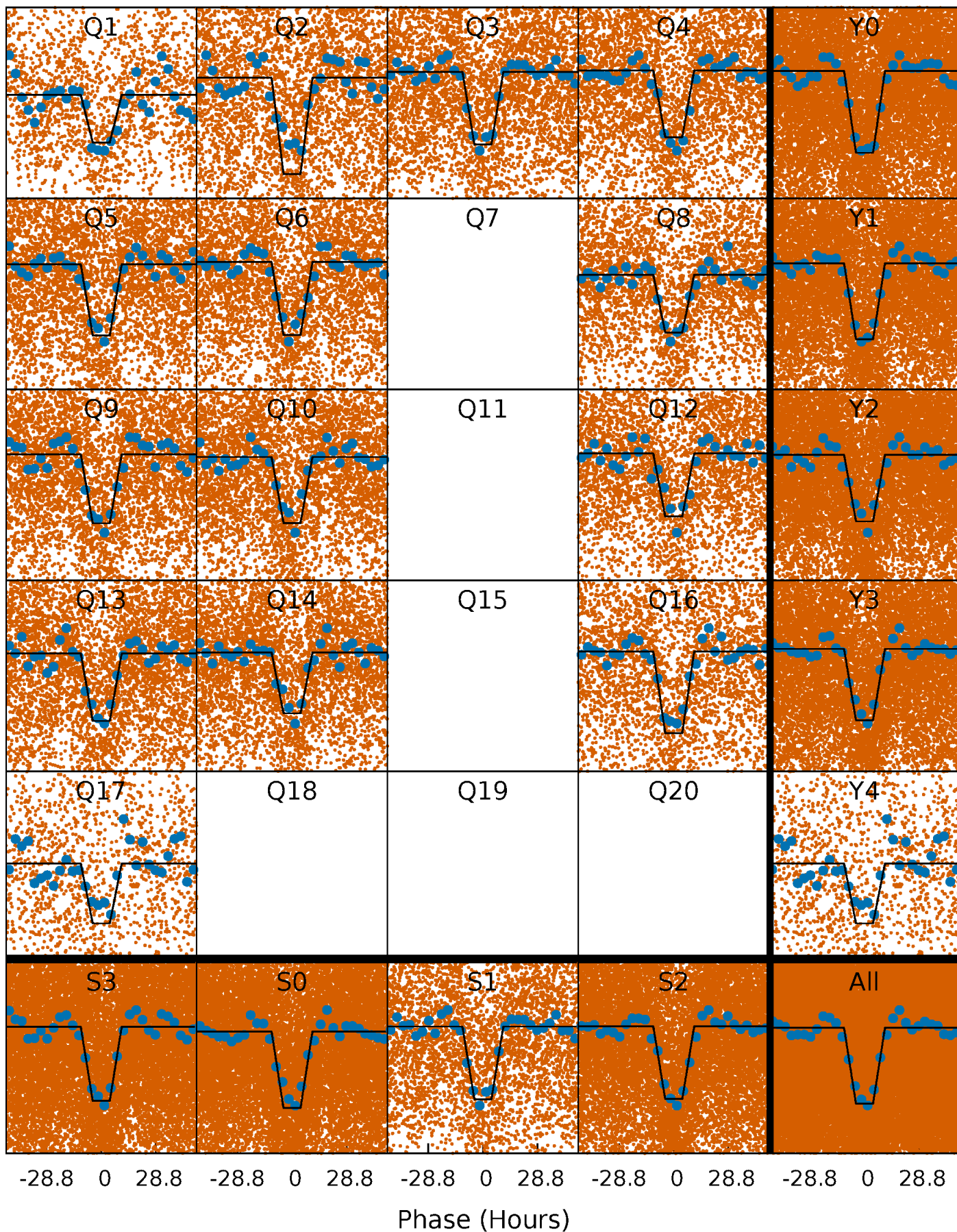
DV Quarter-Phased Transit Curves

TCE 009540295-01 P= 3.383503 Days $T_0=133.299188$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

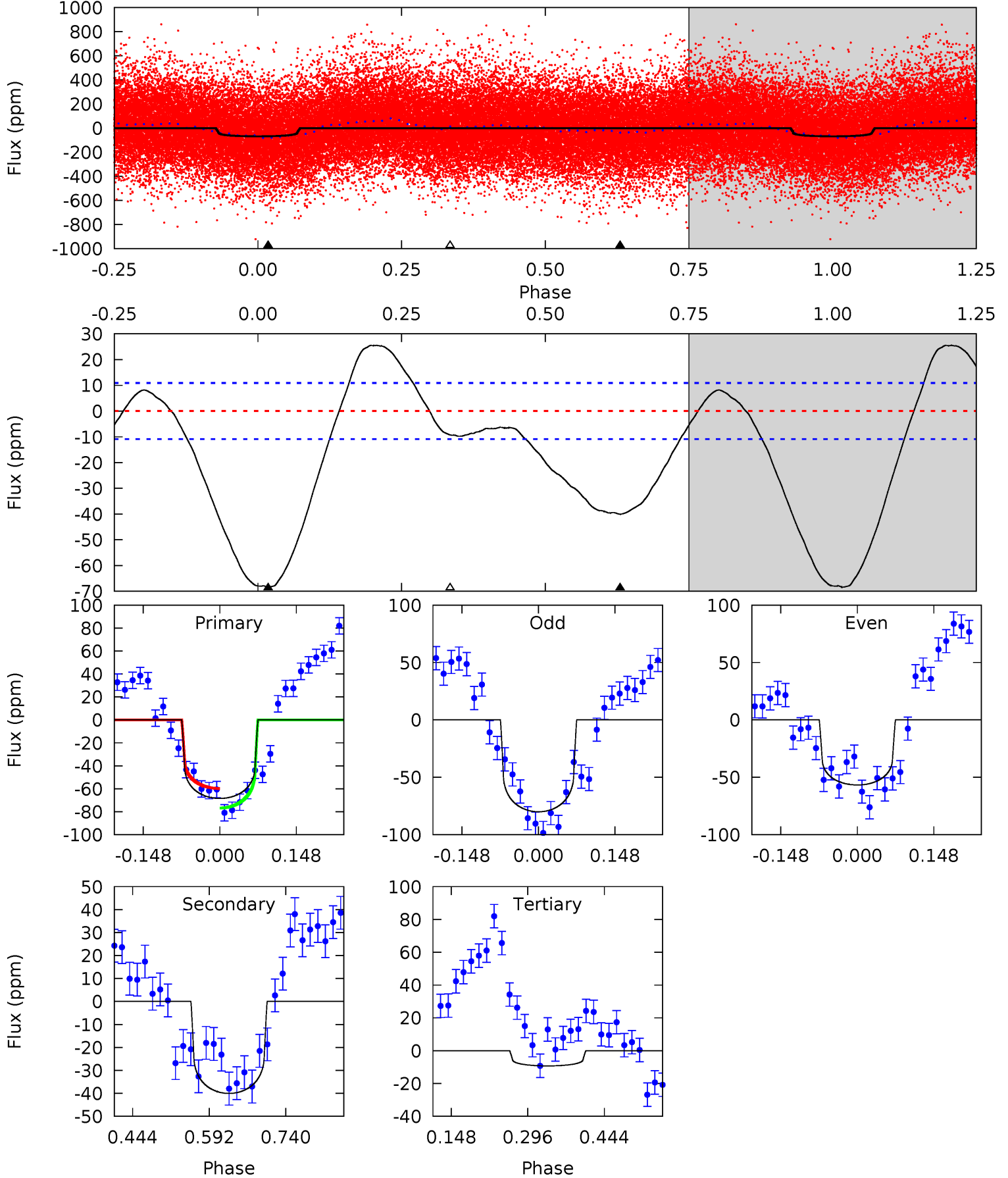
TCE 009540295-01 P= 3.383433 Days $T_0=133.351930$ (BKJD)



DV Model-Shift Uniqueness Test

009540295-01, P = 3.383503 Days, E = 129.915685 Days

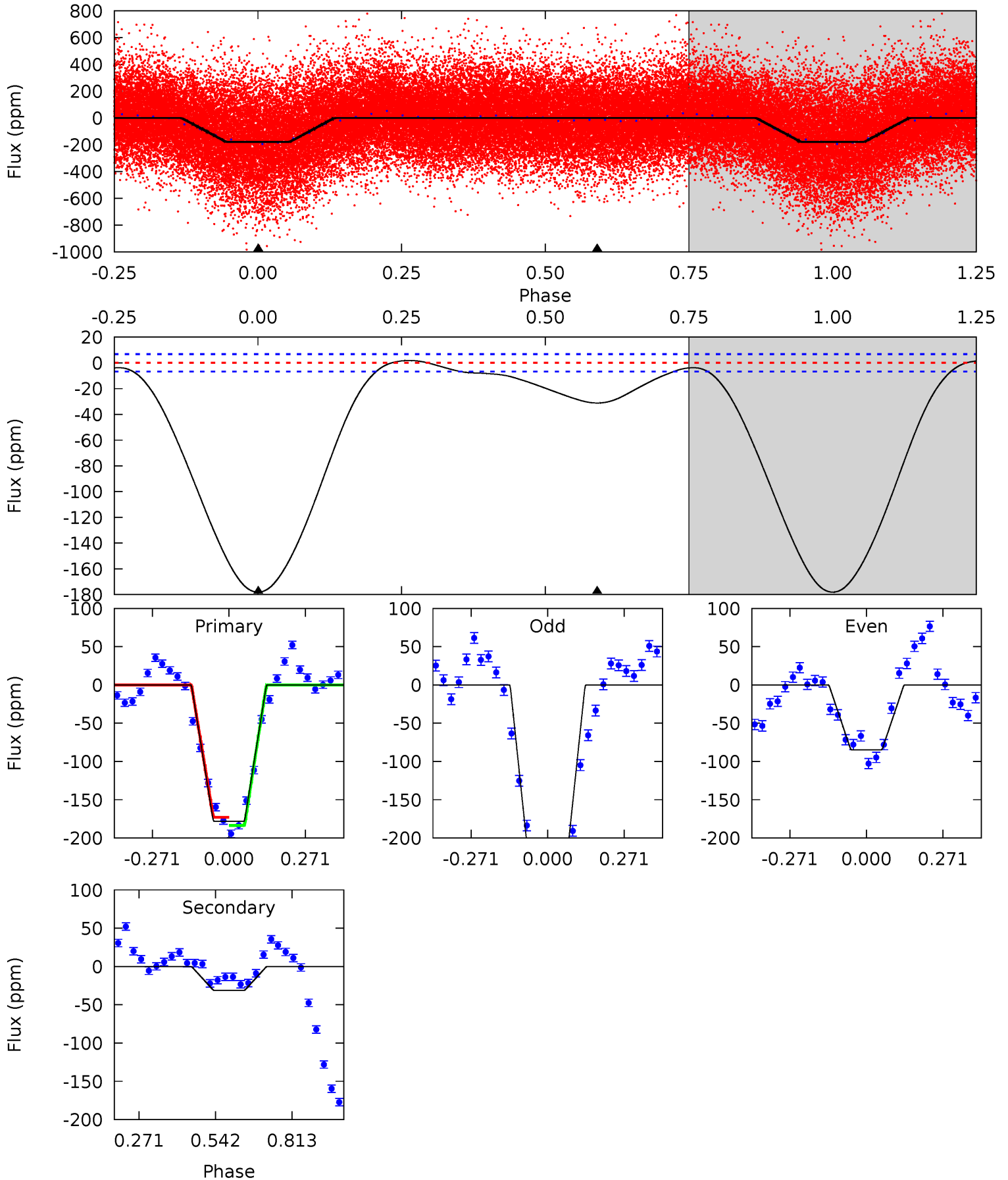
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.2	16.5	3.82	0	4.48	1.45	5.09	24.4	28.2	12.7	16.5	4.79	1.10	0.27	3.52



Alt Model-Shift Uniqueness Test

009540295-01, P = 3.383433 Days, E = 129.968497 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
114.1	20.0	0	0	4.35	1.10	1.68	114.1	114.1	20.0	20.0	59.9	0.96	0.01	3.36



Stellar Parameters For KIC 009540295

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6853^{+191}_{-238}	$3.410^{+0.414}_{-0.046}$	$-0.120^{+0.300}_{-0.250}$	$4.662^{+0.365}_{-2.189}$	$2.041^{+0.085}_{-0.452}$	$0.028^{+0.104}_{-0.004}$
	+3%/-3%	+12%/-1%	+250%/-208%	+8%/-47%	+4%/-22%	+366%/-16%
Source	PHO1	FLK73	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 009540295-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-40 ± 2	$2.37^{+1.06}_{-1.00}$	3711^{+222}_{-447}	7462^{+2533}_{-1219}	12^{+21}_{-7}
Alt.	-31 ± 2	$6.20^{+1.56}_{-1.47}$	3714^{+226}_{-418}	4314^{+355}_{-315}	$1.359^{+0.975}_{-0.451}$

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

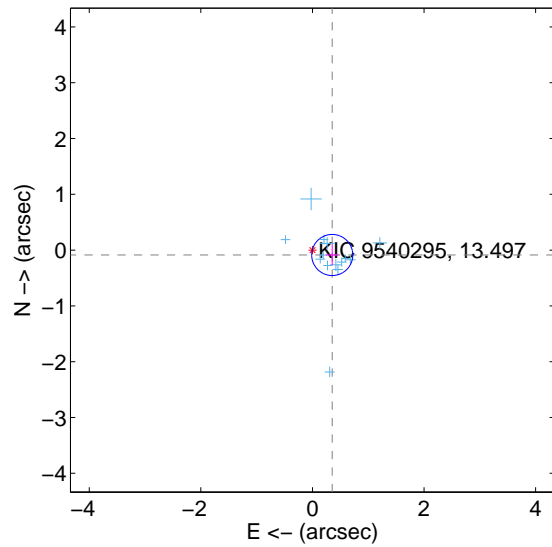
Supplemental centroid analysis for 009540295-01. Kepler magnitude: 13.50. Transit SNR 6.57

There are 14 quarters with good PRF difference image offsets

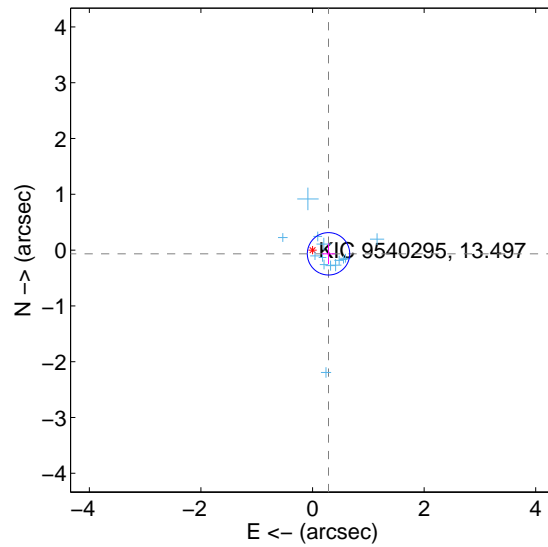
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.365 ± 0.123	2.98	-0.355 ± 0.116	-0.088 ± 0.186
PRF-fit source offset from KIC position	0.294 ± 0.127	2.32	-0.287 ± 0.115	-0.067 ± 0.186
photometric centroid source offset	0.84 ± 0.93	0.90	-0.45 ± 0.99	0.71 ± 0.90

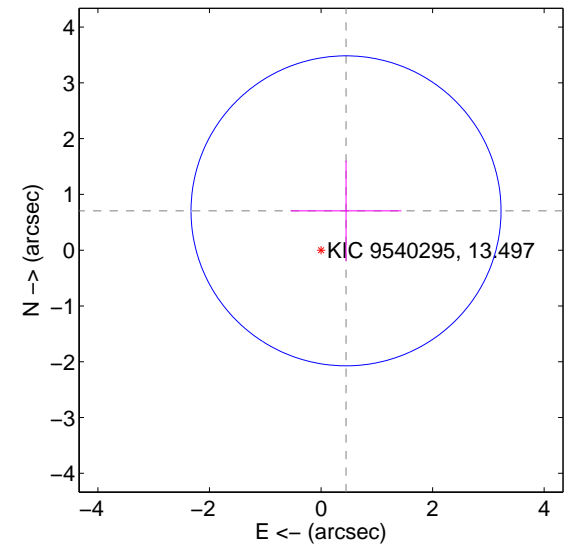
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

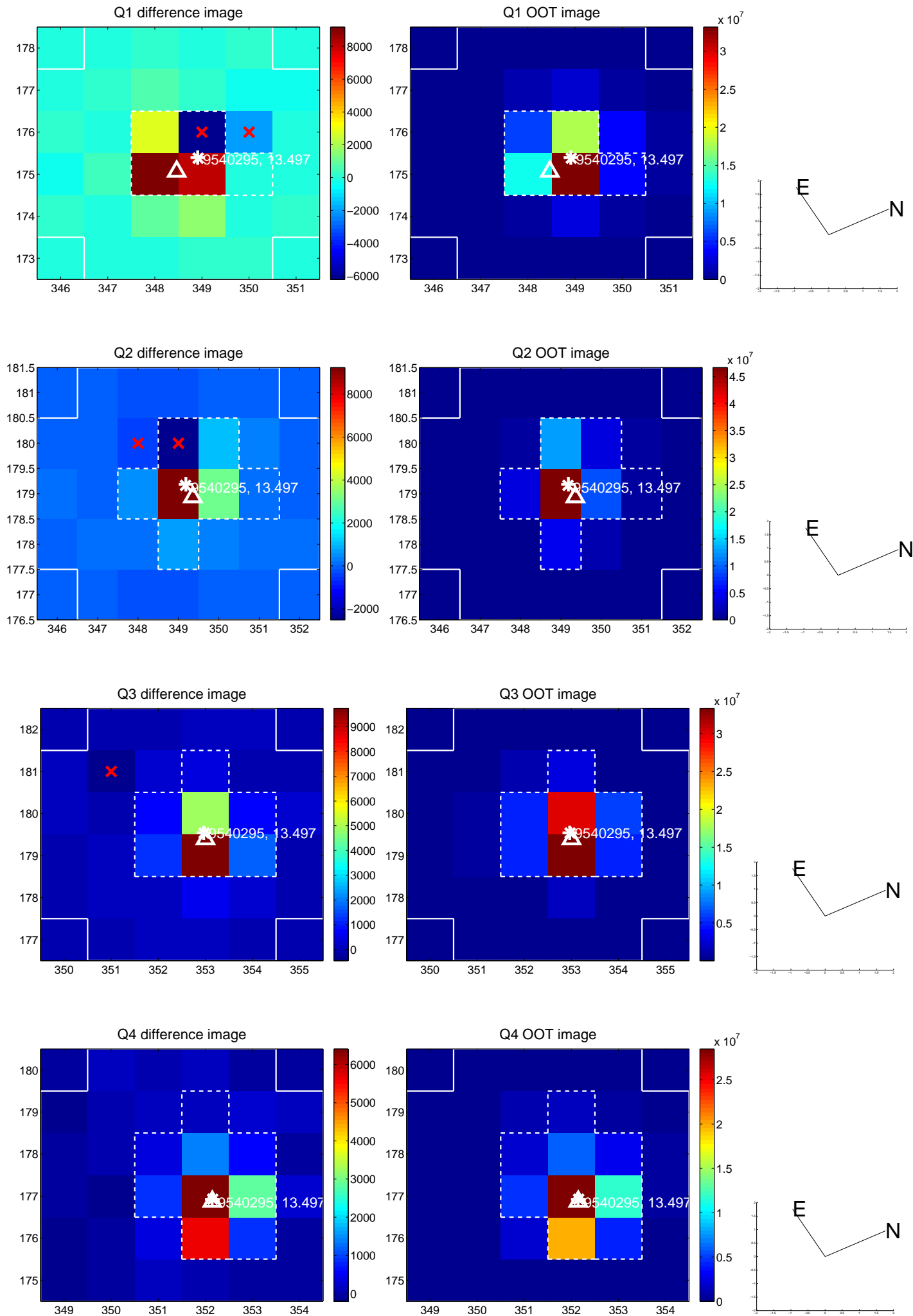


offset from photometric centroids

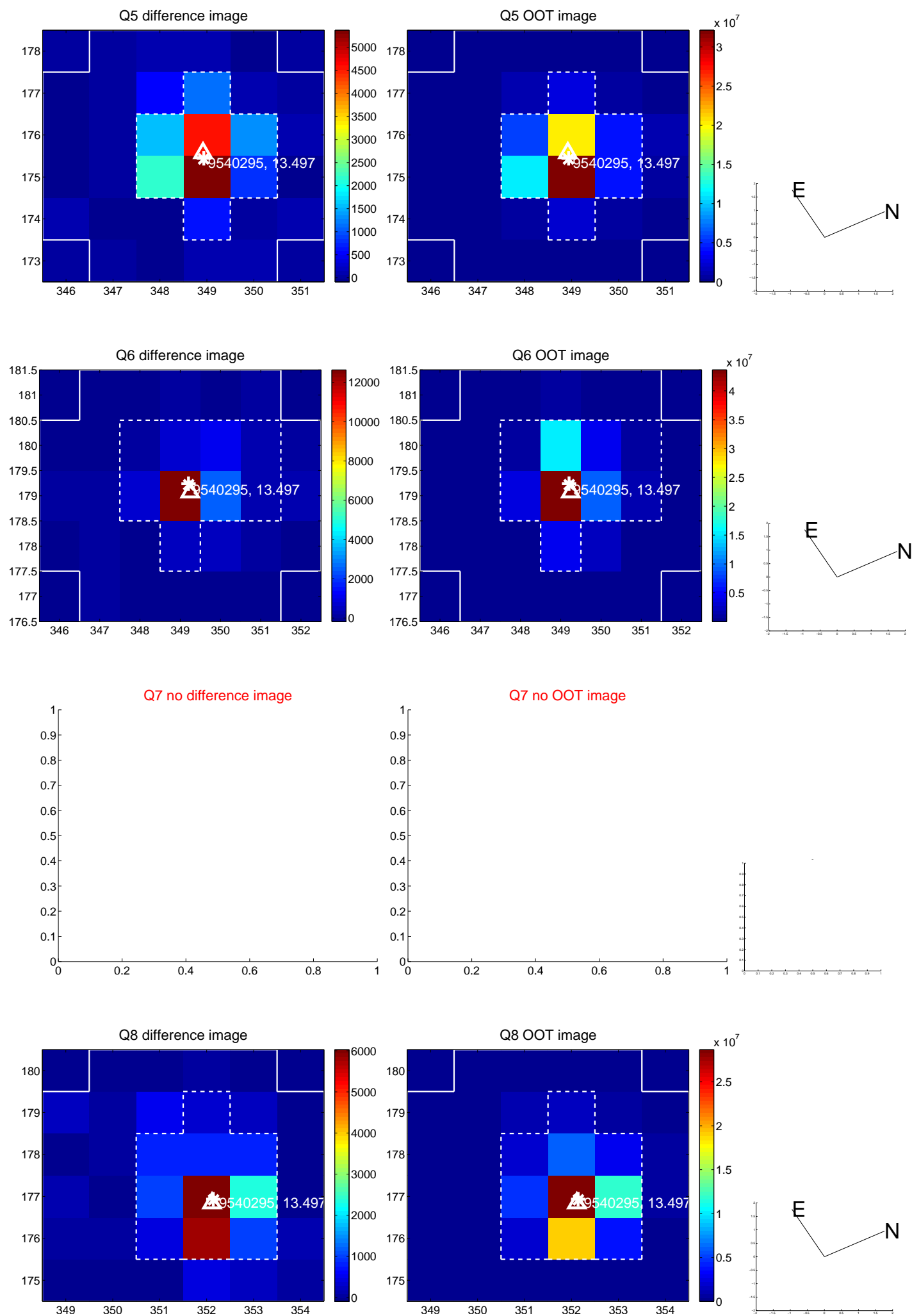


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

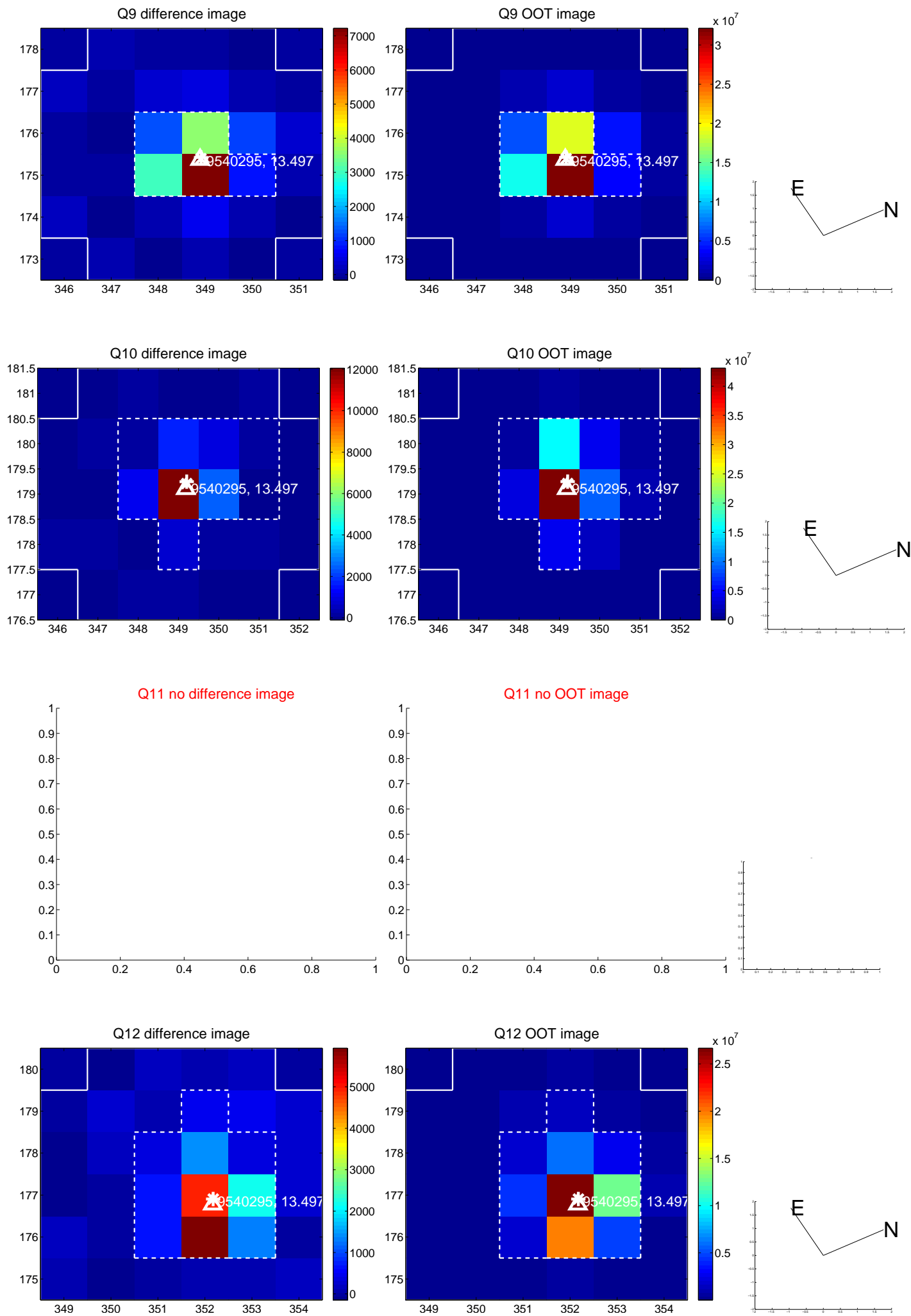
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



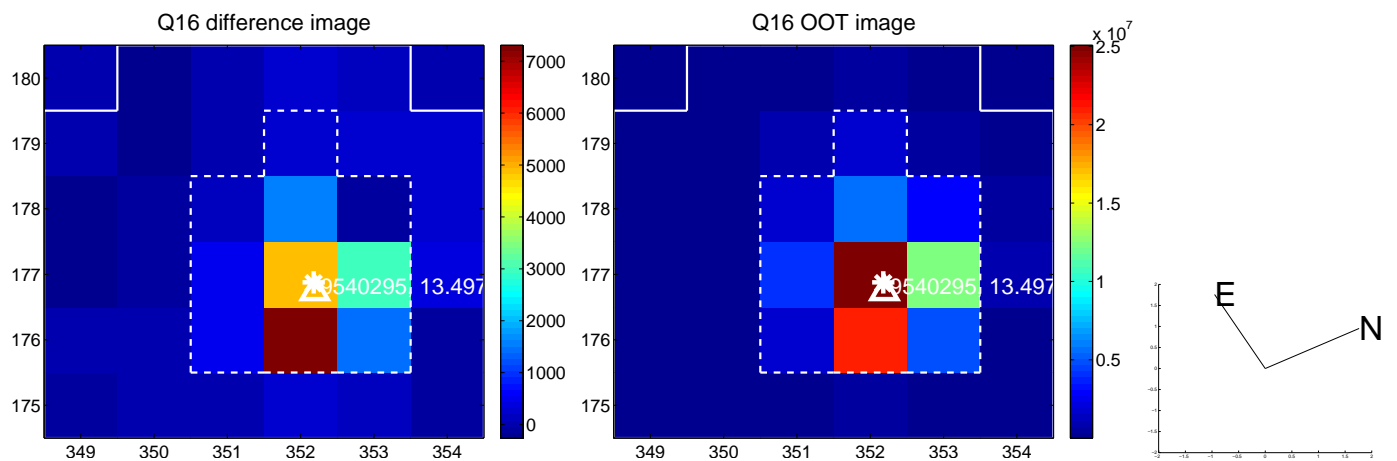
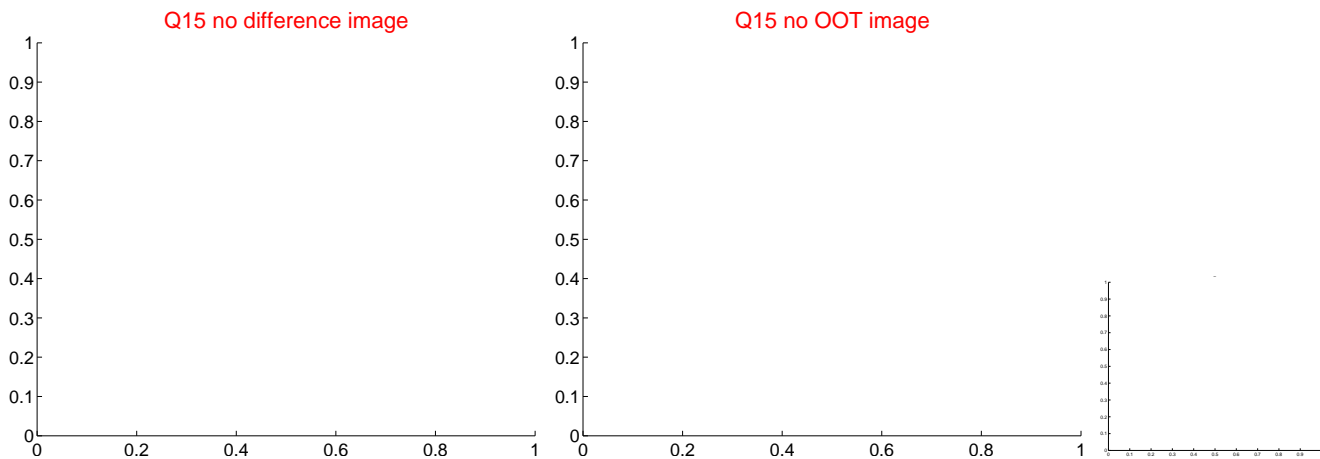
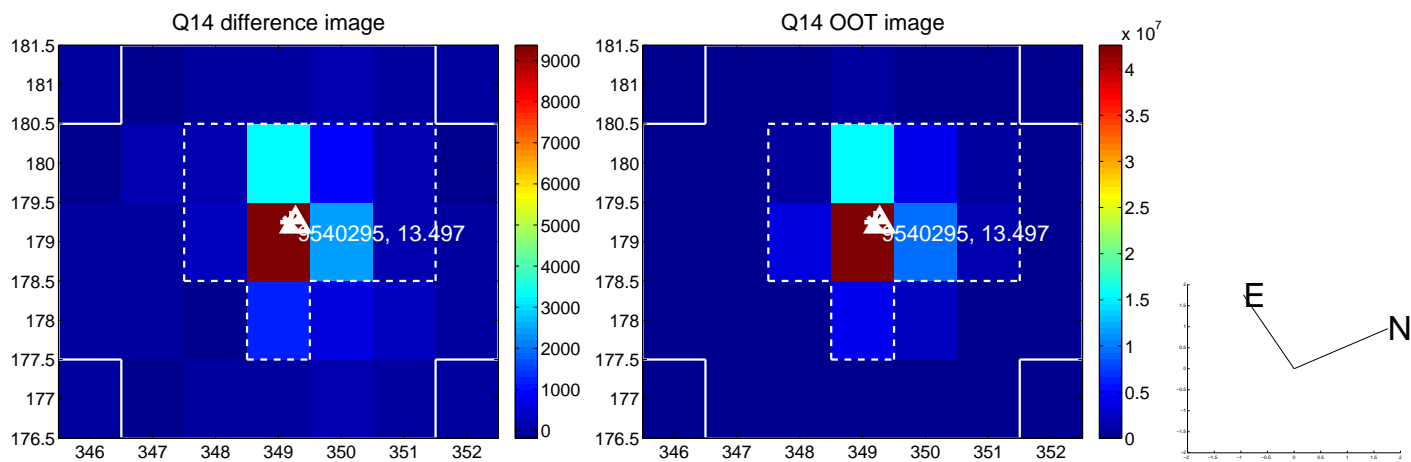
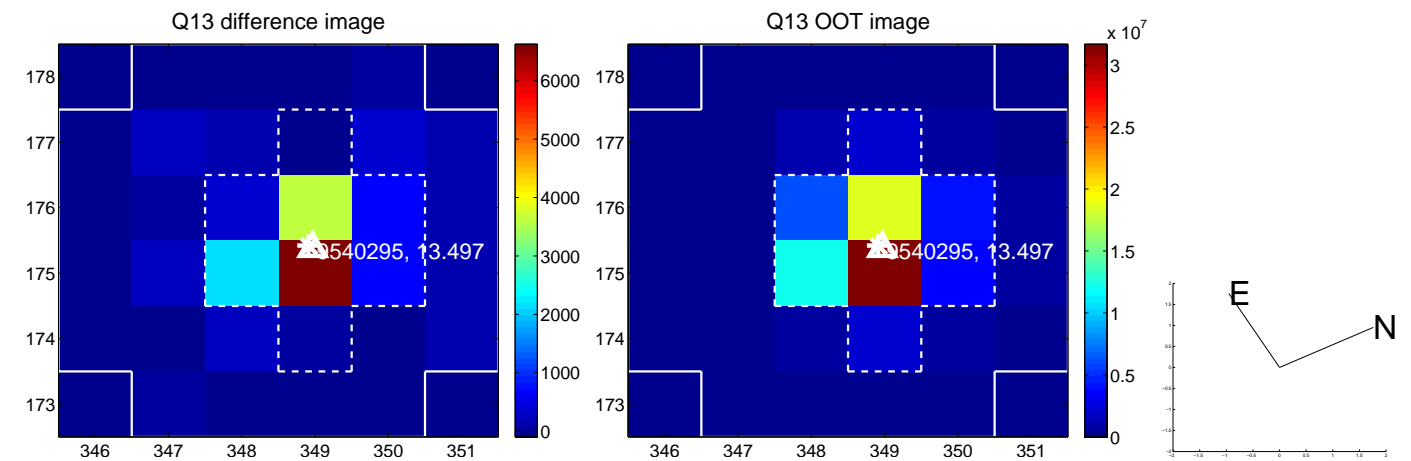
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



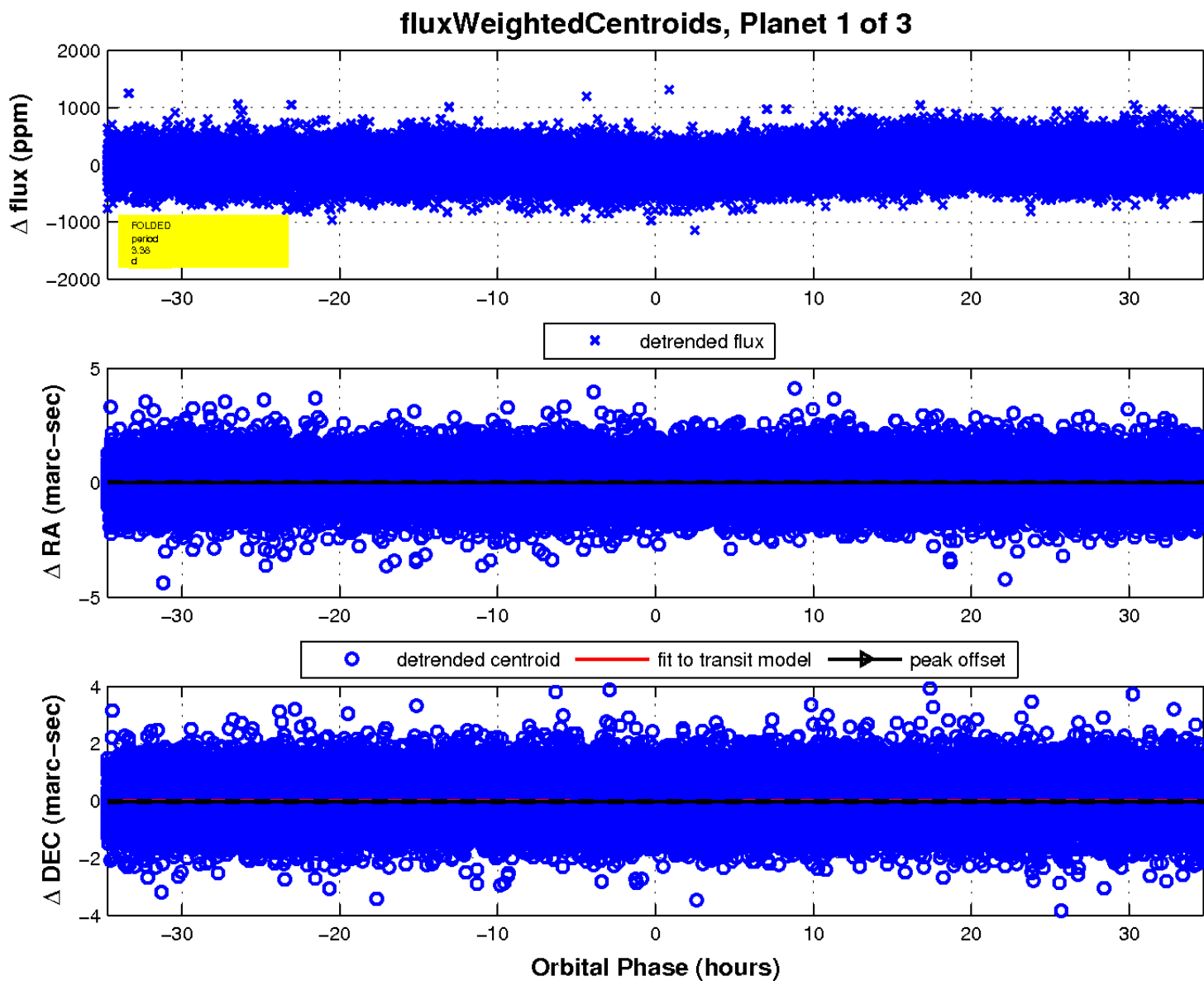
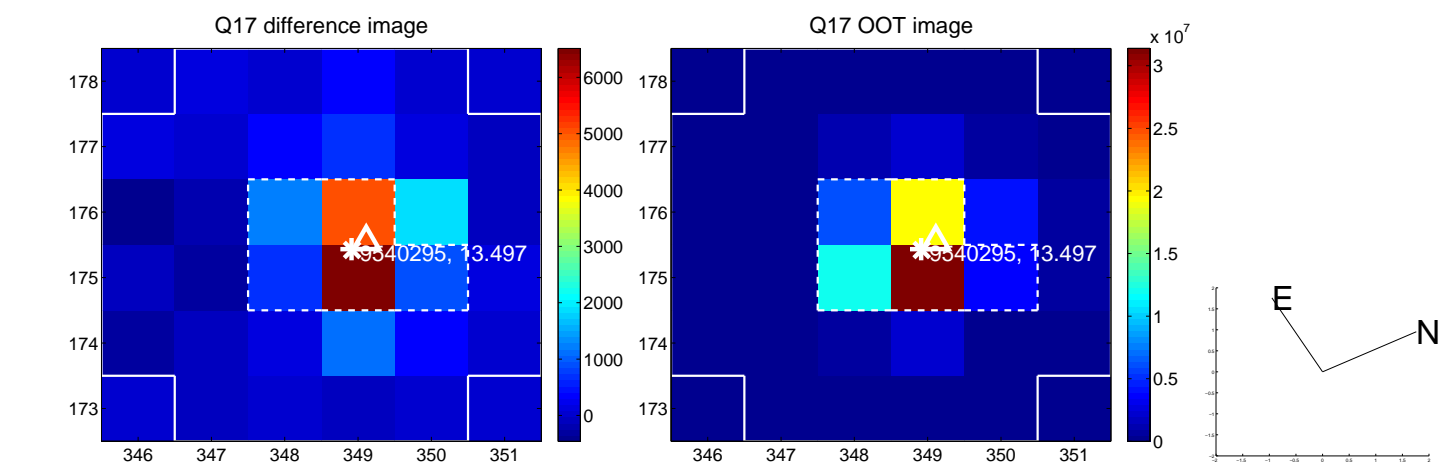
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

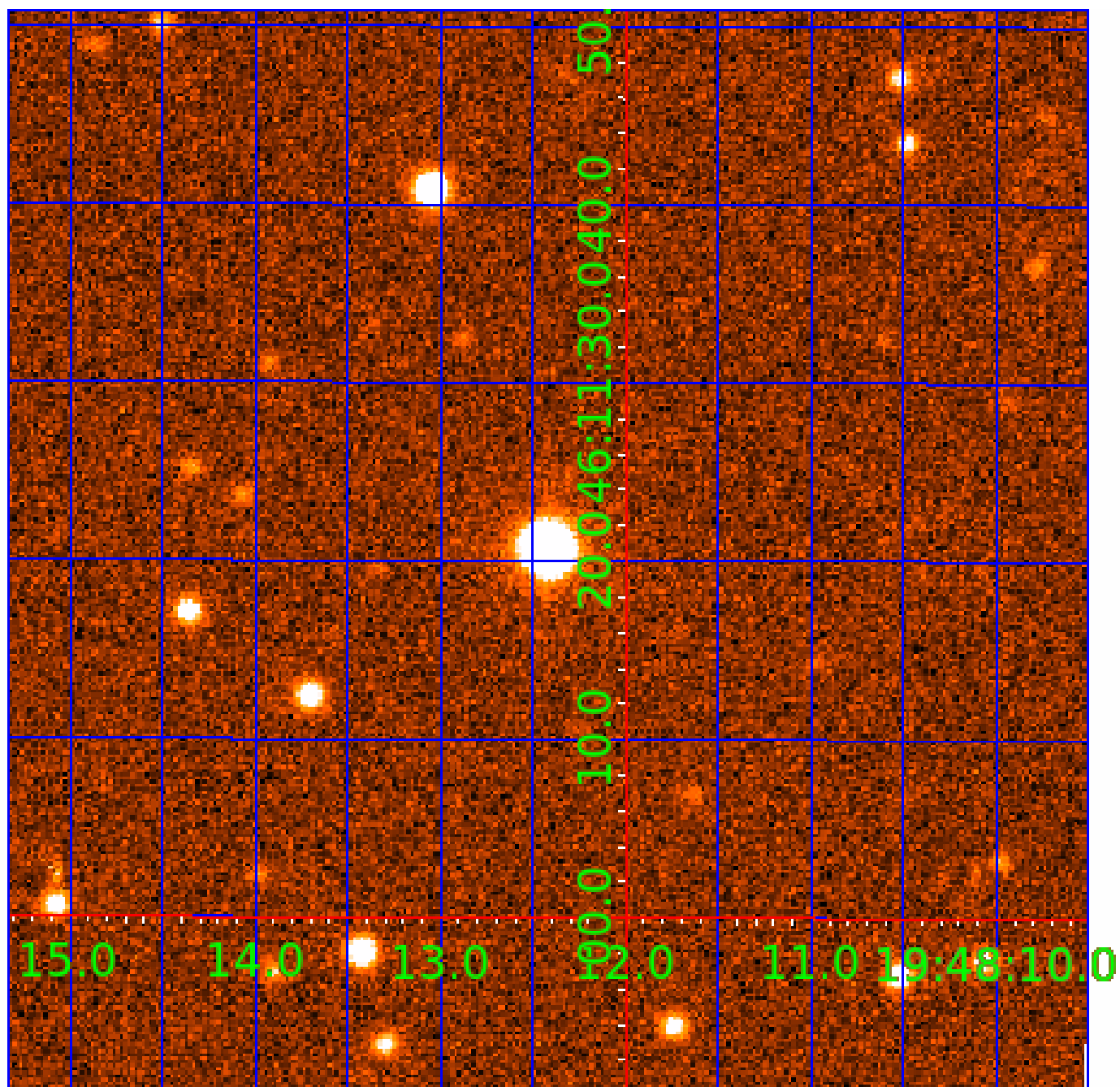


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009540295

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})
009540295-01	OBS	No	3.383503	133.299188	31.3	11.571	9.2	6.6	4.66	6853	2.74	13729.14
009540295-02	OBS	No	6.766998	131.960240	70.0	18.788	10.0	11.0	4.66	6853	5.31	5448.42
009540295-03	OBS	No	179.364137	243.704040	273.7	5.600	7.3	8.0	4.66	6853	8.47	68.94

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009540295-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
009540295-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD
009540295-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

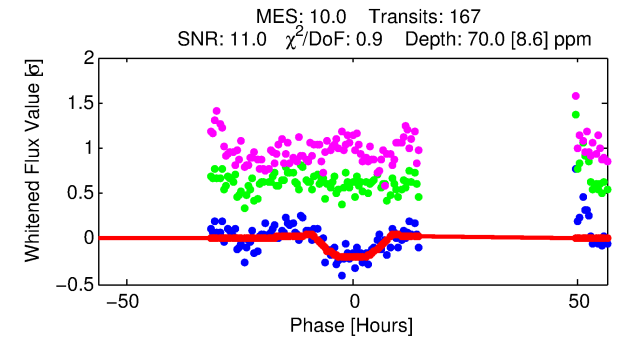
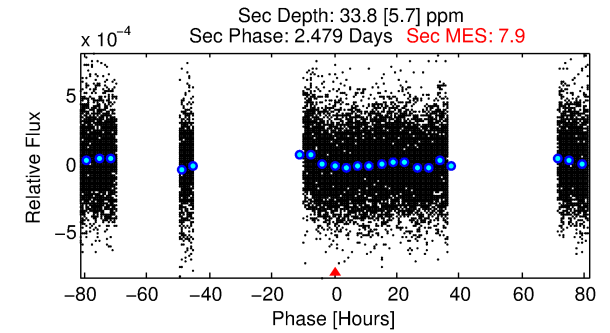
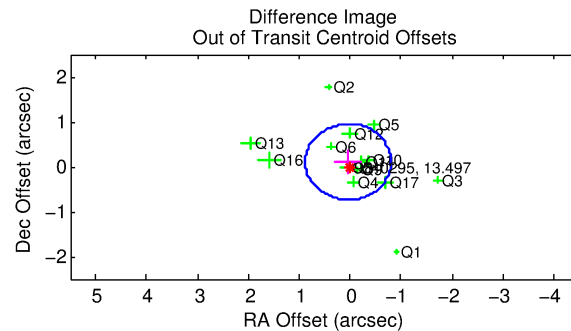
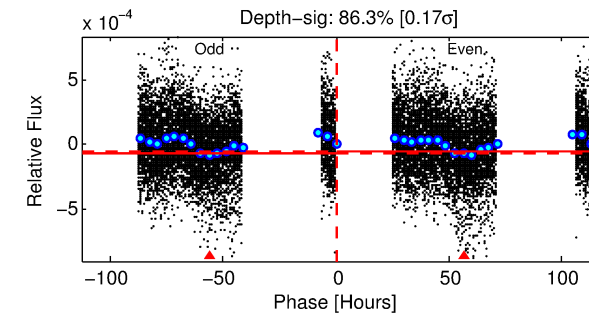
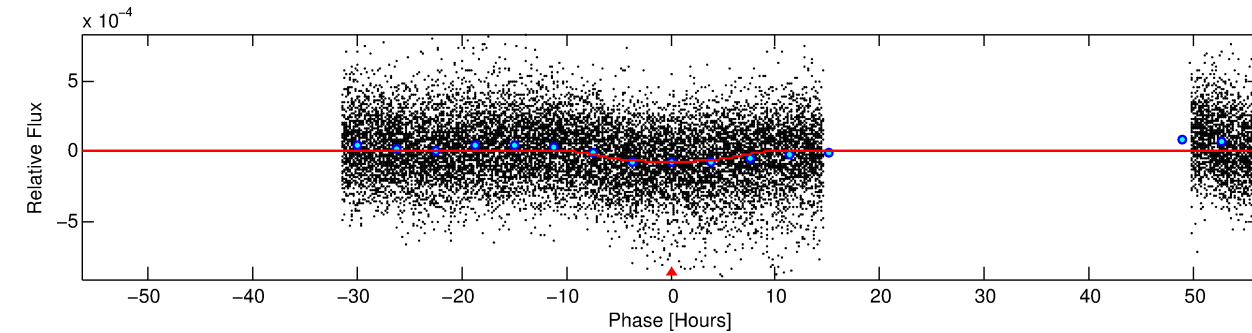
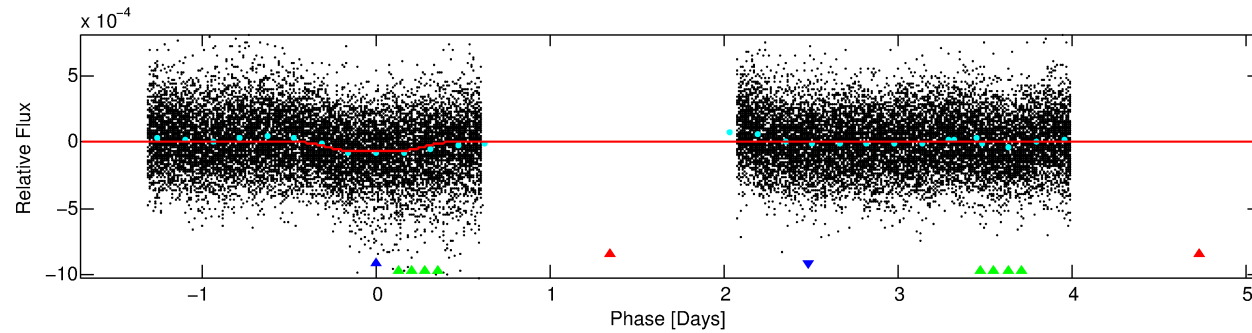
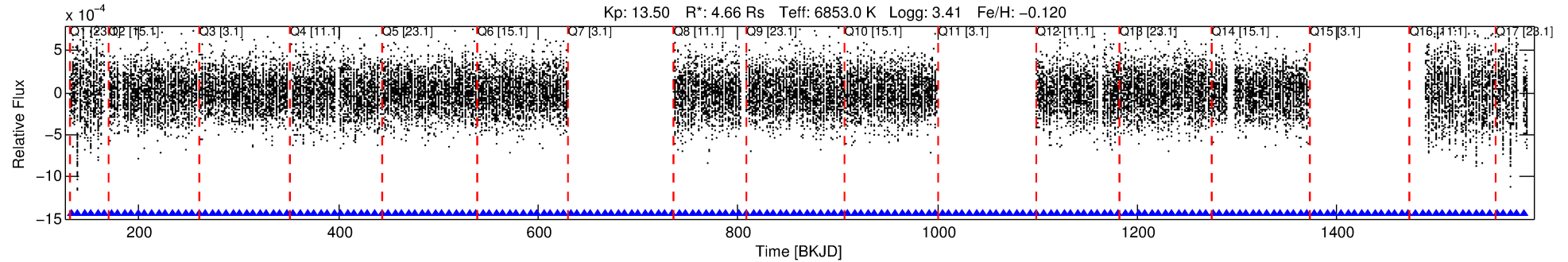
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009540295-02

No Significant Match Found

DV One-Page Summary

KIC: 9540295 Candidate: 2 of 3 Period: 6.767 d



DV Fit Results:

Period = 6.76700 [0.00029] d
Epoch = 131.9602 [0.0327] BKJD
Rp/R* = 0.0104 [0.0008]
a/R* = 1.15 [0.04]
b = 0.99 [0.00]
Seff = 5448.42 [3933.30]
Teq = 2191 [395] K
Rp = 5.31 [2.53] Re
a = 0.0888 [0.0396] AU
Ag = 5.19 [3.86] [1.09 σ]
Teffp = 5113 [337] K [5.62 σ]

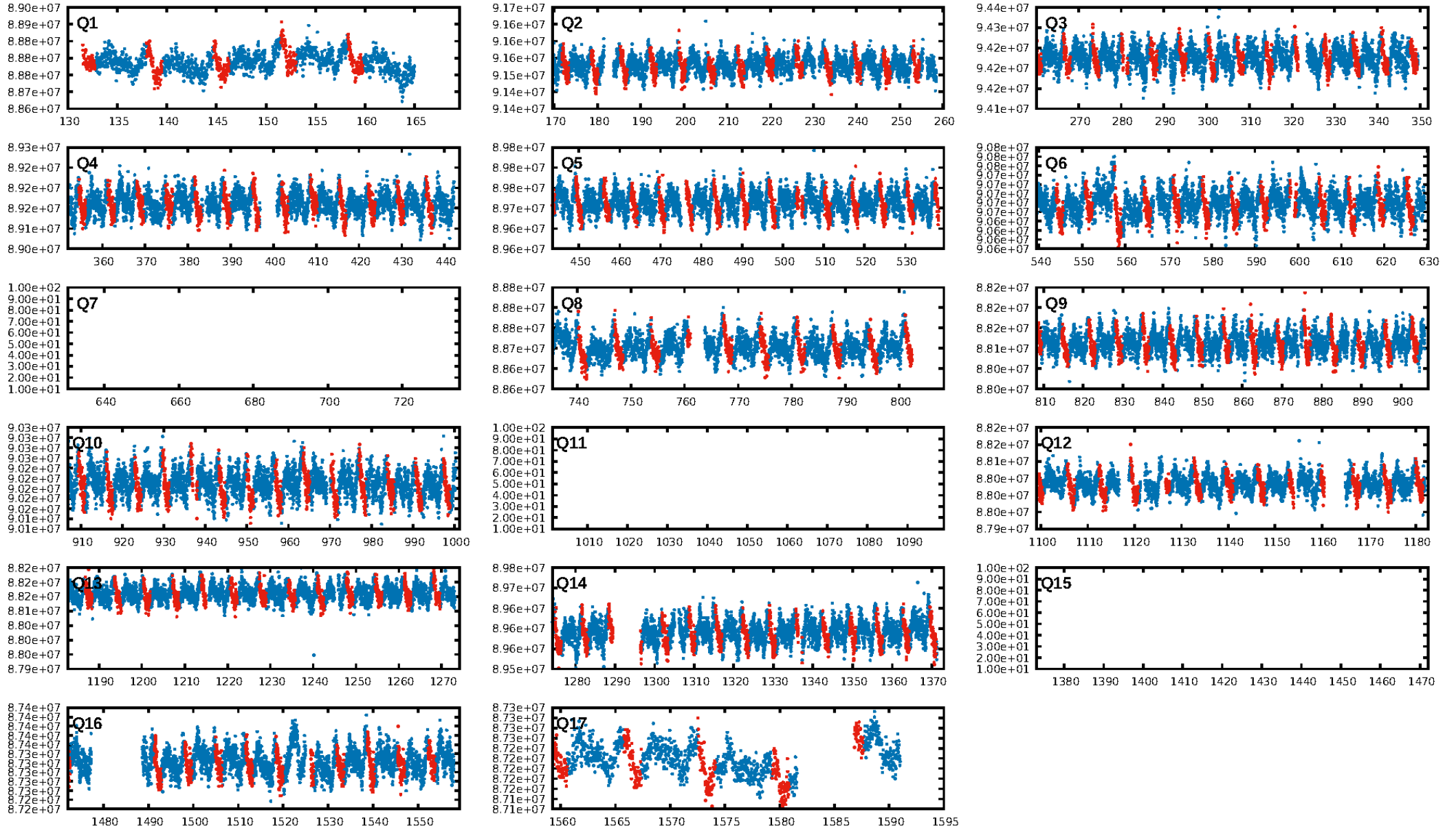
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [3.68 σ]
LongPeriod-sig: 100.0% [211.29 σ]
ModelChiSquare2-sig: 80.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.72e-10
RollingBand-fgt: 1.00 [157/157]
GhostDiagnostic-chr: 1.291
Centroid-sig: 85.9%
Centroid-so: 0.273 arcsec [0.44 σ]
OotOffset-rm: 0.114 arcsec [0.41 σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-rm: 0.168 arcsec [0.58 σ]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 0.00 [0/14]

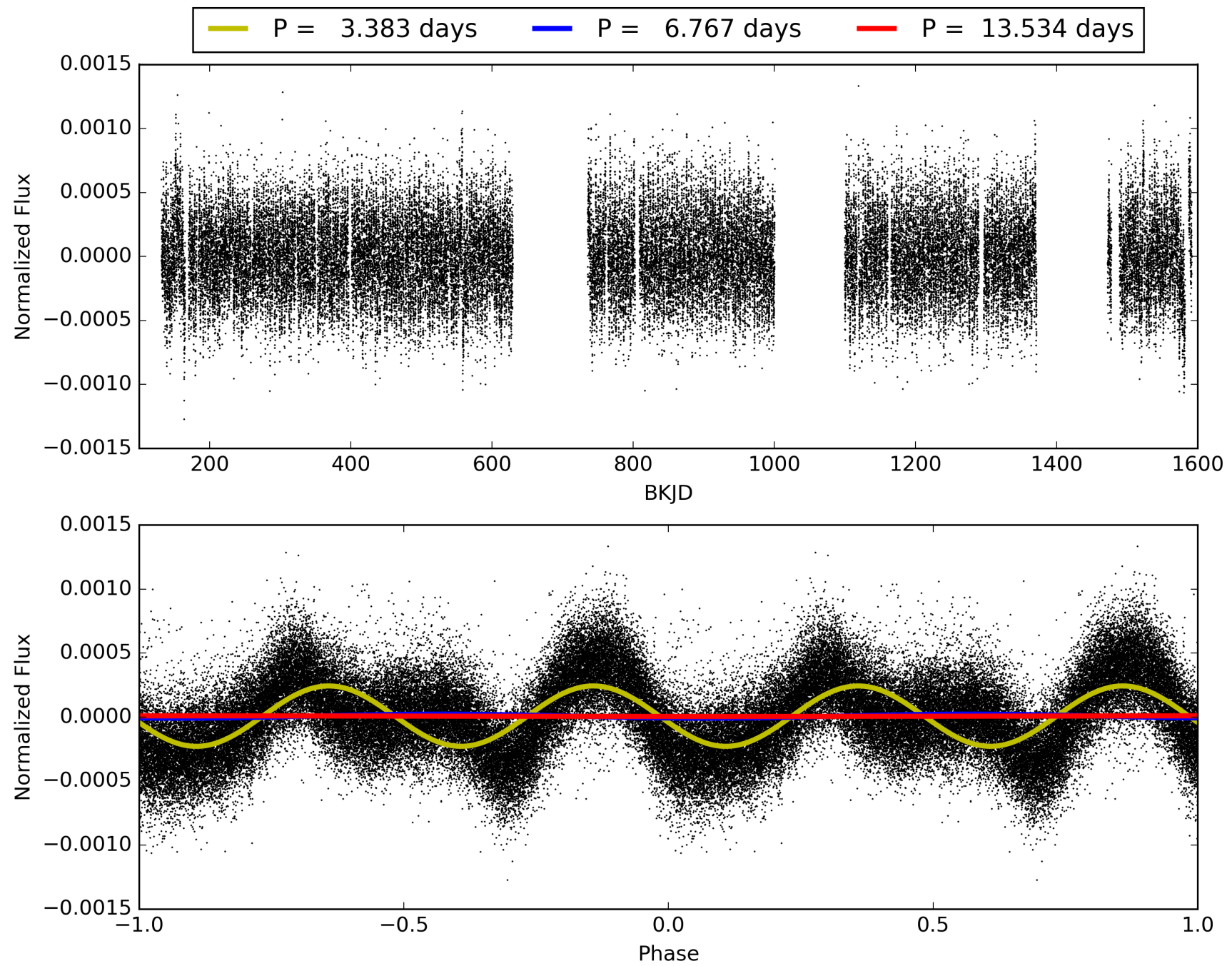
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:02:28 Z

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

TCE 009540295-02, PDC Light Curves

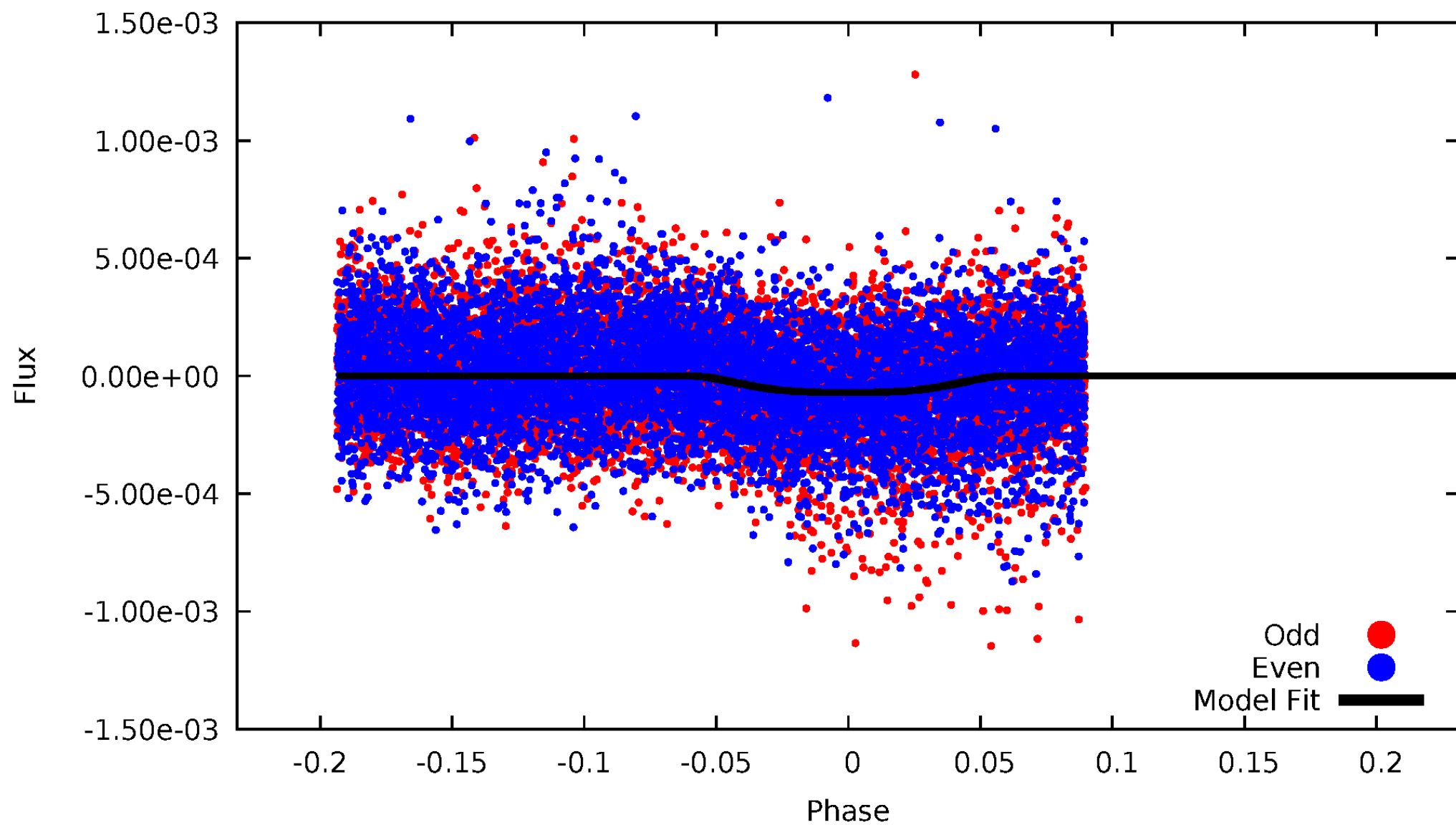


TCE 009540295-02



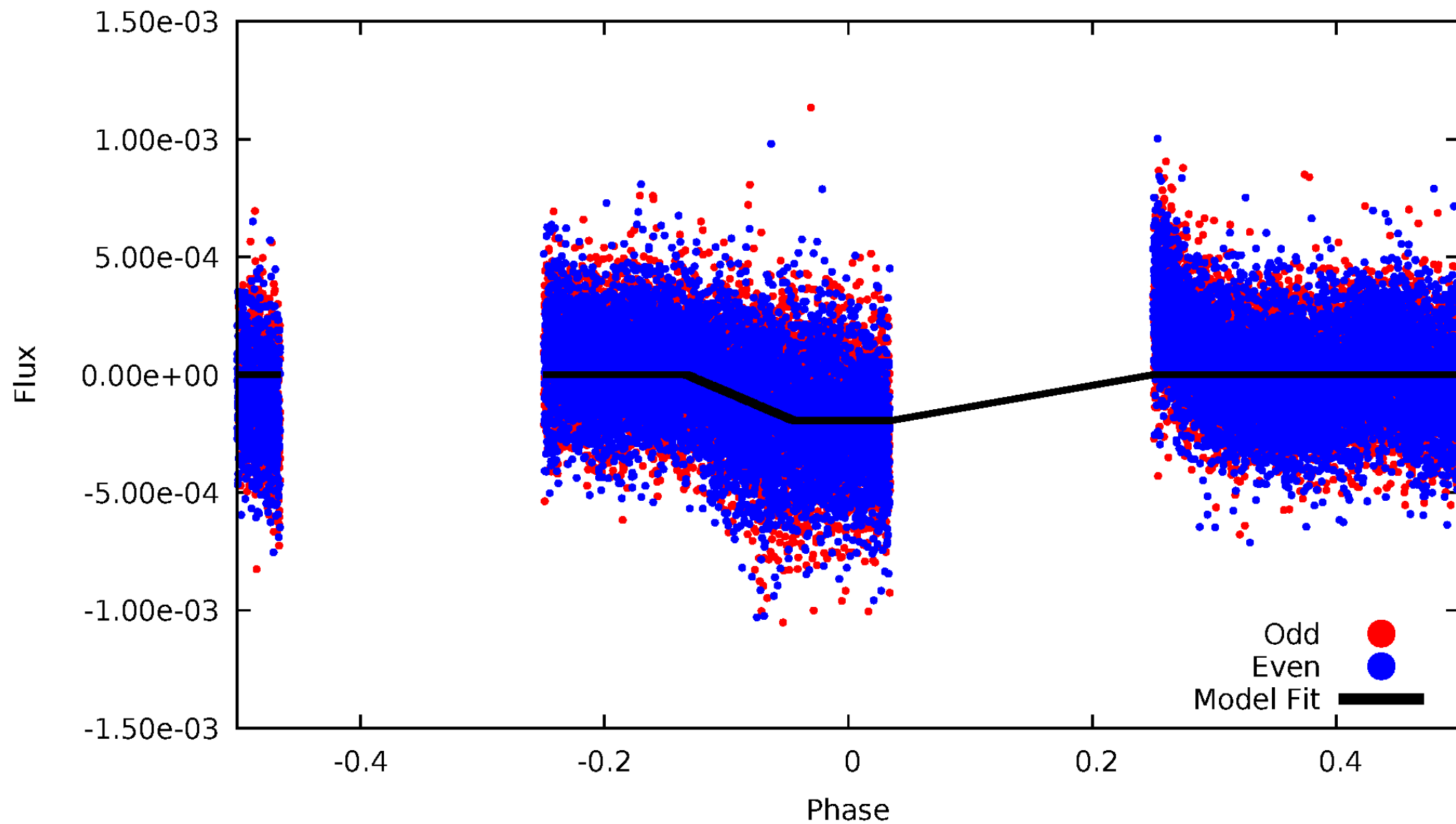
DV Odd/Even

TCE 009540295-02



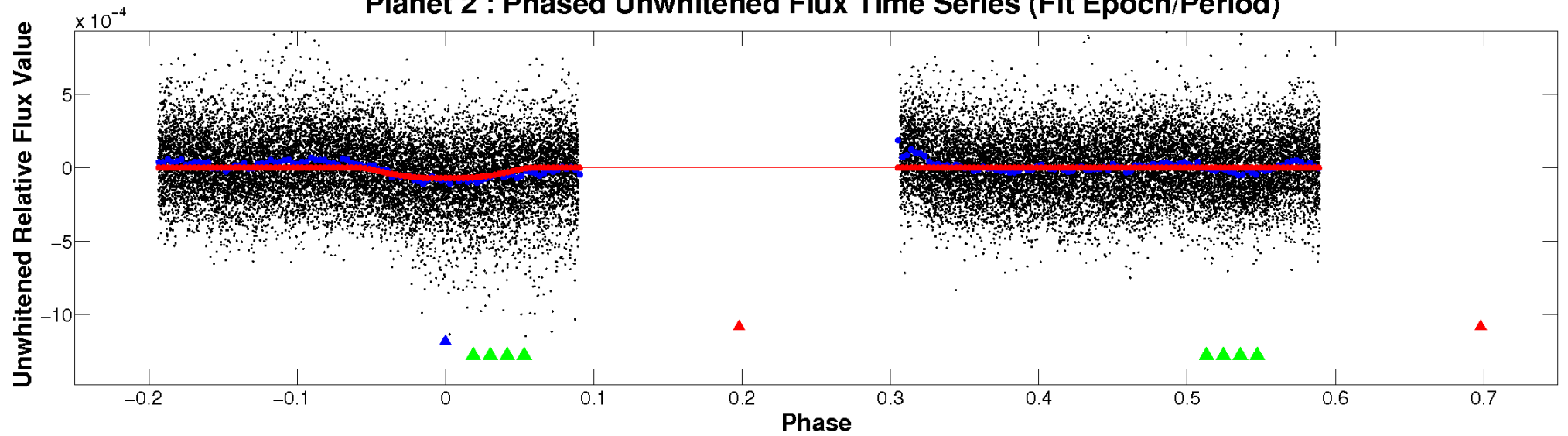
ALT Odd/Even

TCE 009540295-02

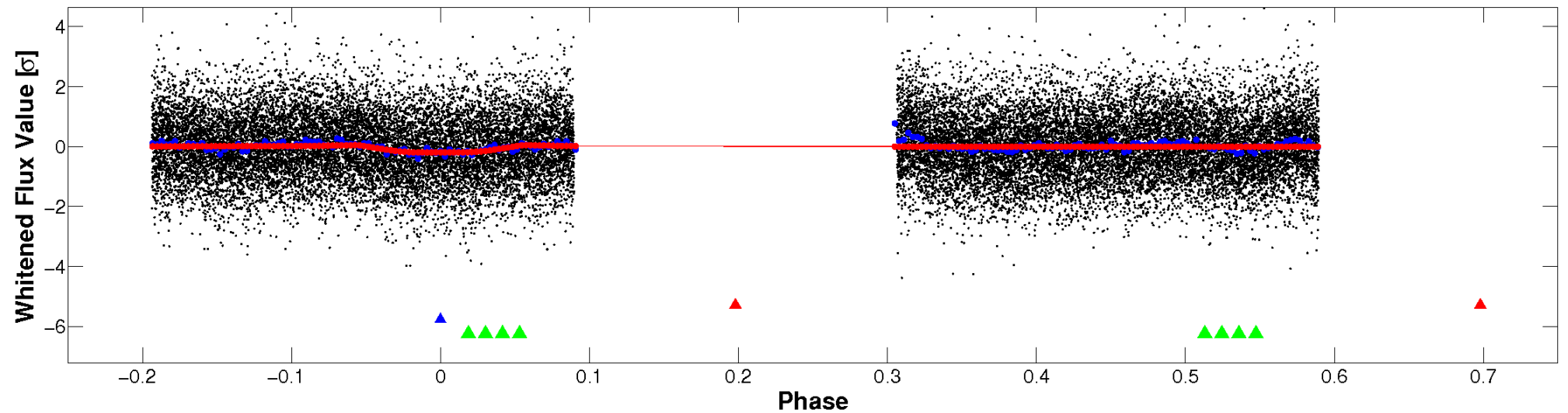


Non-Whitened Vs. Whitened Light Curve

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

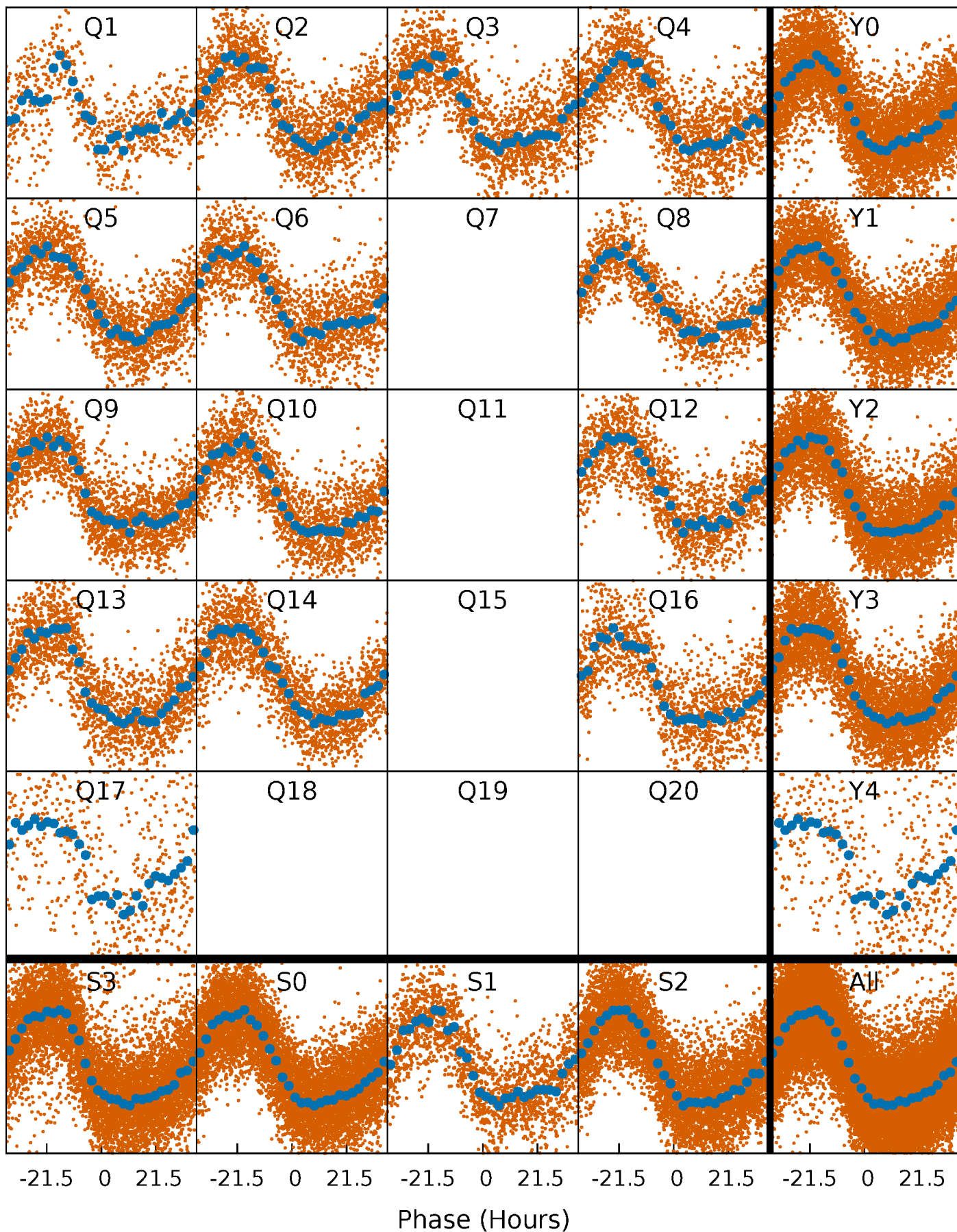


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



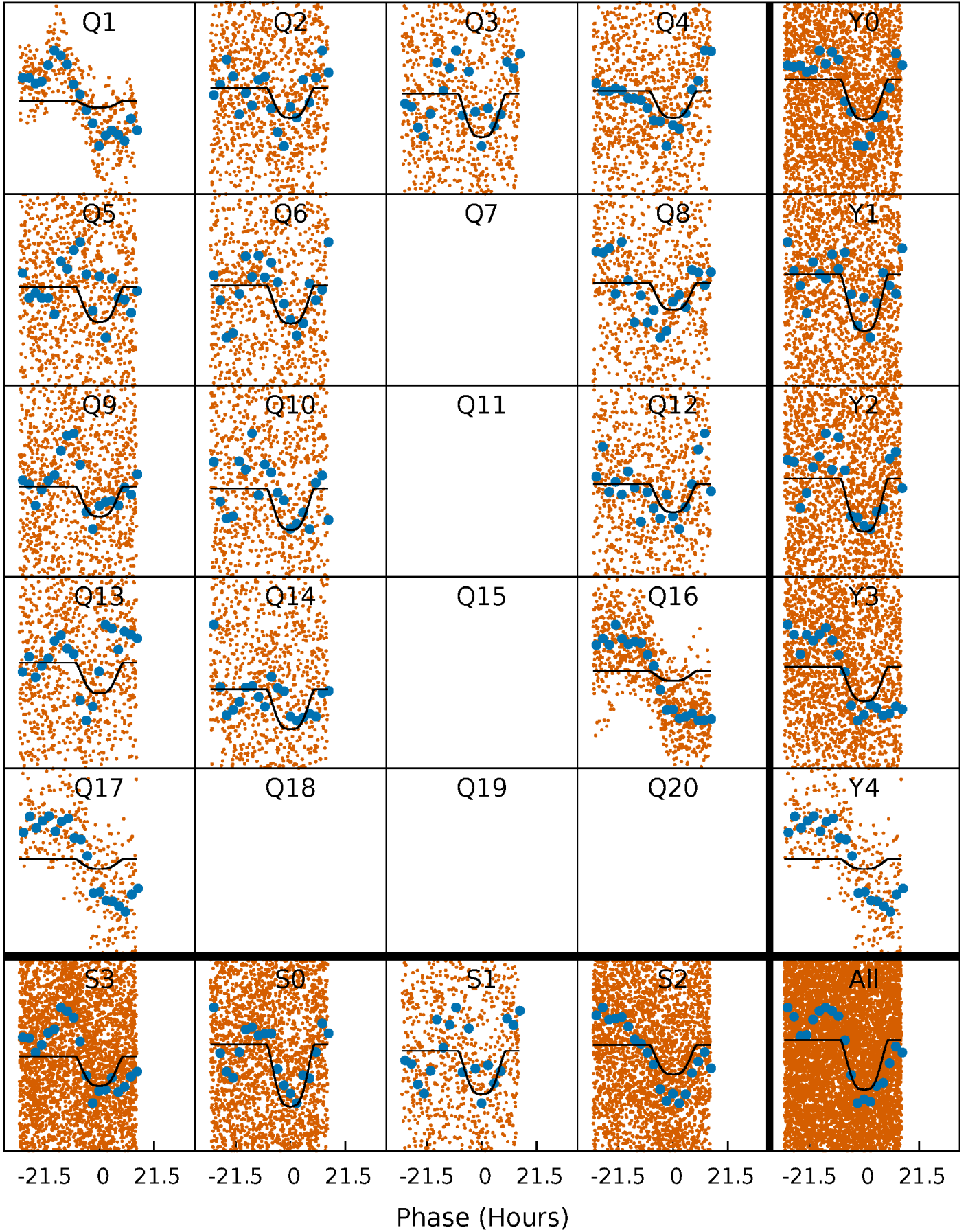
PDC Quarter-Phased Transit Curves

TCE 009540295-02 P= 6.766998 Days $T_0=131.960240$ (BKJD)



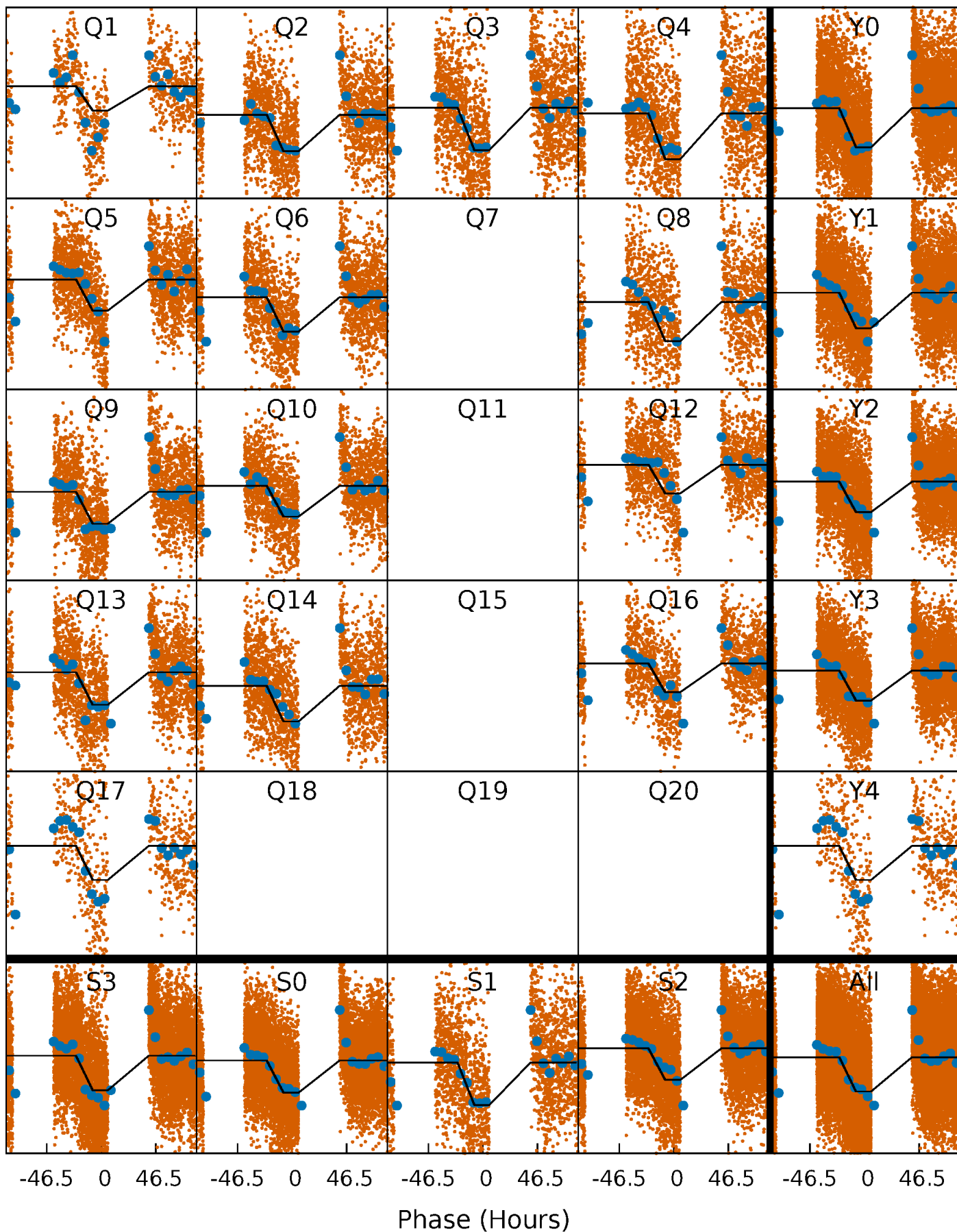
DV Quarter-Phased Transit Curves

TCE 009540295-02 P= 6.766998 Days $T_0=131.960240$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

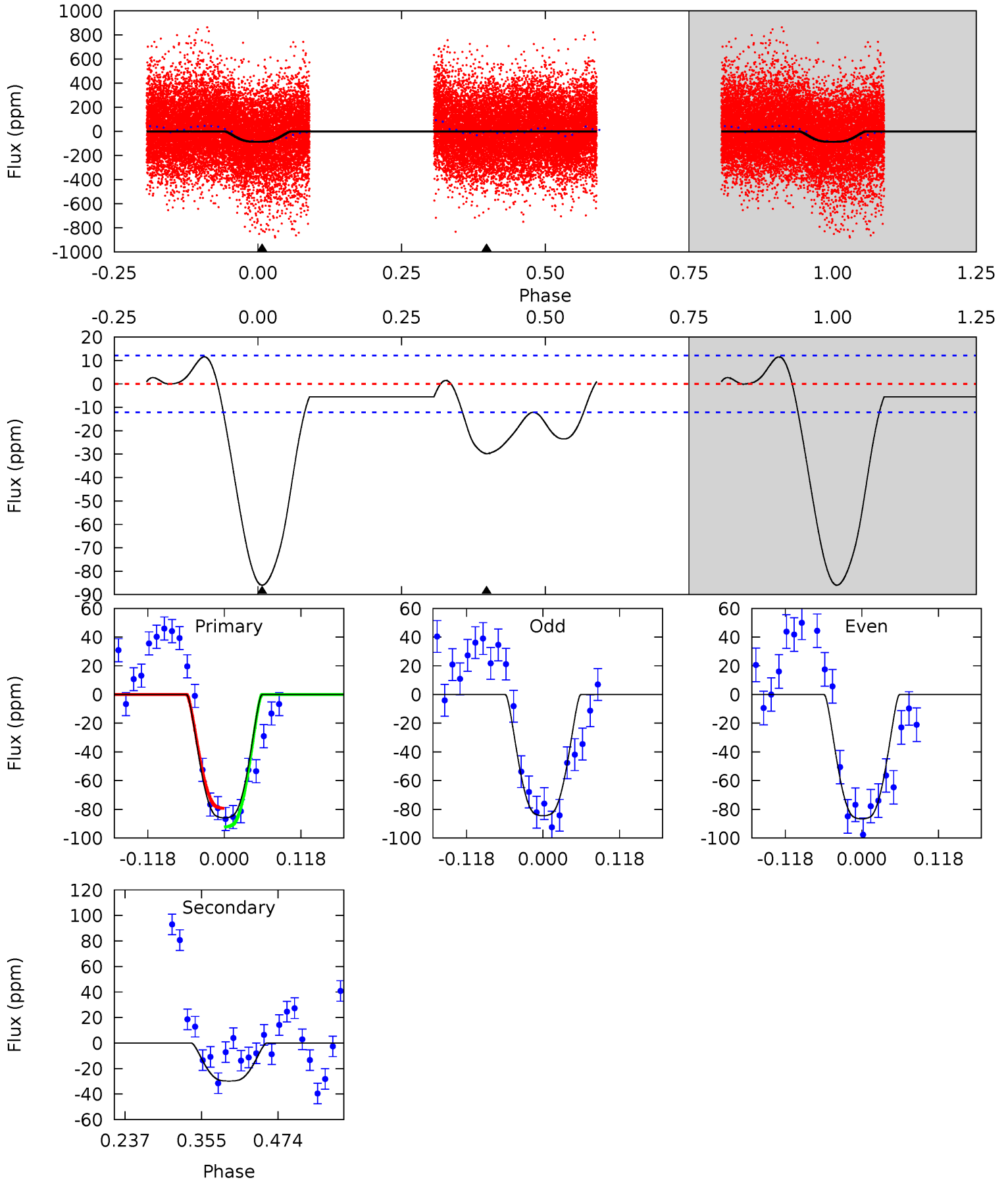
TCE 009540295-02 P= 6.766964 Days $T_0=132.341391$ (BKJD)



DV Model-Shift Uniqueness Test

009540295-02, P = 6.766998 Days, E = 125.193242 Days

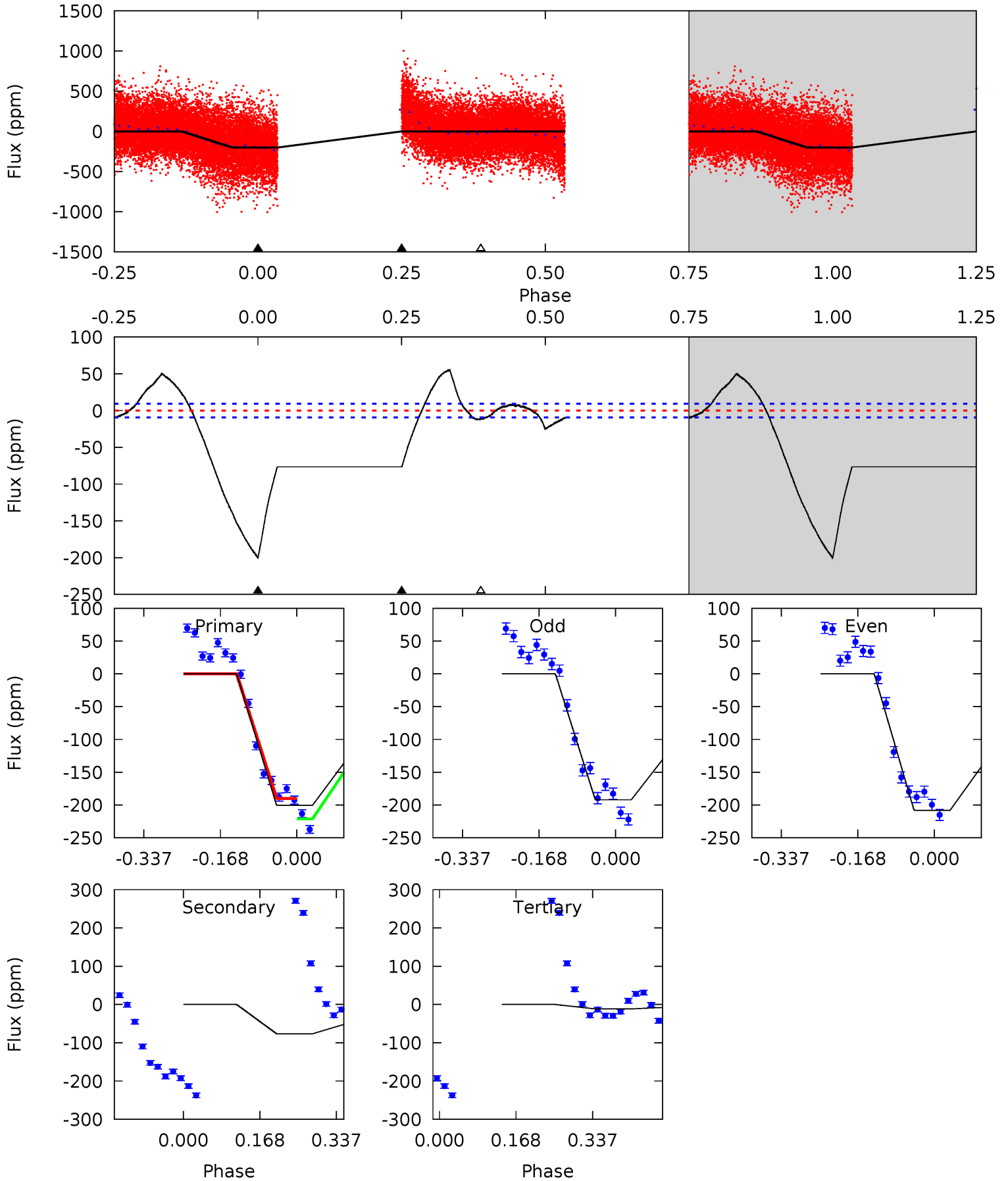
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.0	11.1	0	0	4.53	1.56	3.91	32.0	32.0	11.1	11.1	0.41	1.44	0.12	2.39



Alt Model-Shift Uniqueness Test

009540295-02, P = 6.766964 Days, E = 125.574427 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
96.5	36.8	5.53	0	4.45	1.38	9.43	91.0	96.5	31.3	36.8	3.87	1.04	0.22	6.10



Stellar Parameters For KIC 009540295

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6853^{+191}_{-238}	$3.410^{+0.414}_{-0.046}$	$-0.120^{+0.300}_{-0.250}$	$4.662^{+0.365}_{-2.189}$	$2.041^{+0.085}_{-0.452}$	$0.028^{+0.104}_{-0.004}$
	+3%/-3%	+12%/-1%	+250%/-208%	+8%/-47%	+4%/-22%	+366%/-16%
Source	PHO1	FLK73	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 009540295-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-30 ± 3	$4.92^{+0.70}_{-1.13}$	2955^{+169}_{-334}	4950^{+217}_{-208}	$5.340^{+2.992}_{-1.301}$
Alt.	-76 ± 2	$6.65^{+0.86}_{-1.68}$	2955^{+176}_{-355}	5372^{+209}_{-201}	$7.416^{+5.204}_{-1.418}$

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

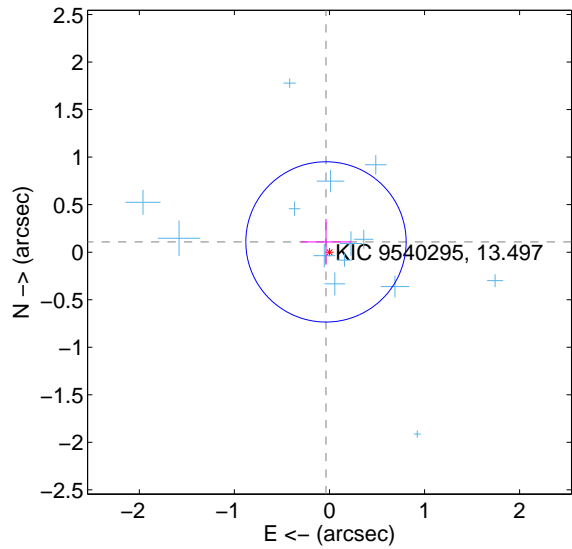
Supplemental centroid analysis for 009540295-02. Kepler magnitude: 13.50. Transit SNR 10.97

There are 14 quarters with good PRF difference image offsets

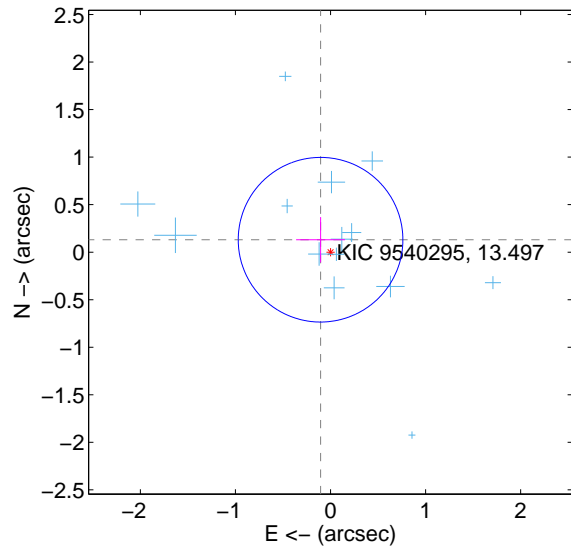
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.114 ± 0.281	0.41	0.037 ± 0.266	0.108 ± 0.241
PRF-fit source offset from KIC position	0.168 ± 0.289	0.58	0.105 ± 0.257	0.131 ± 0.238
photometric centroid source offset	0.27 ± 0.62	0.44	0.23 ± 0.63	-0.14 ± 0.57

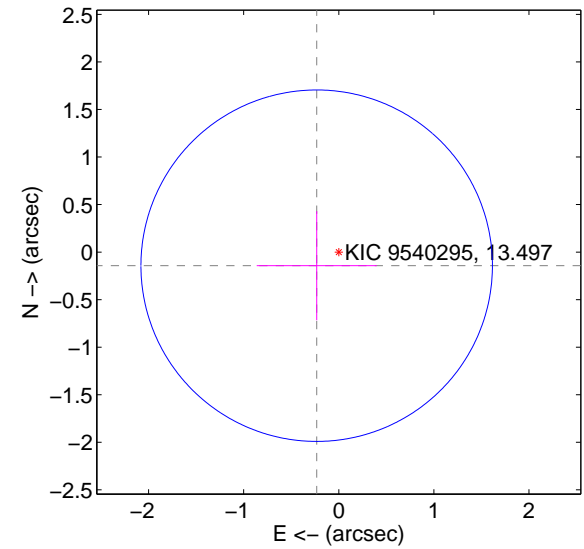
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

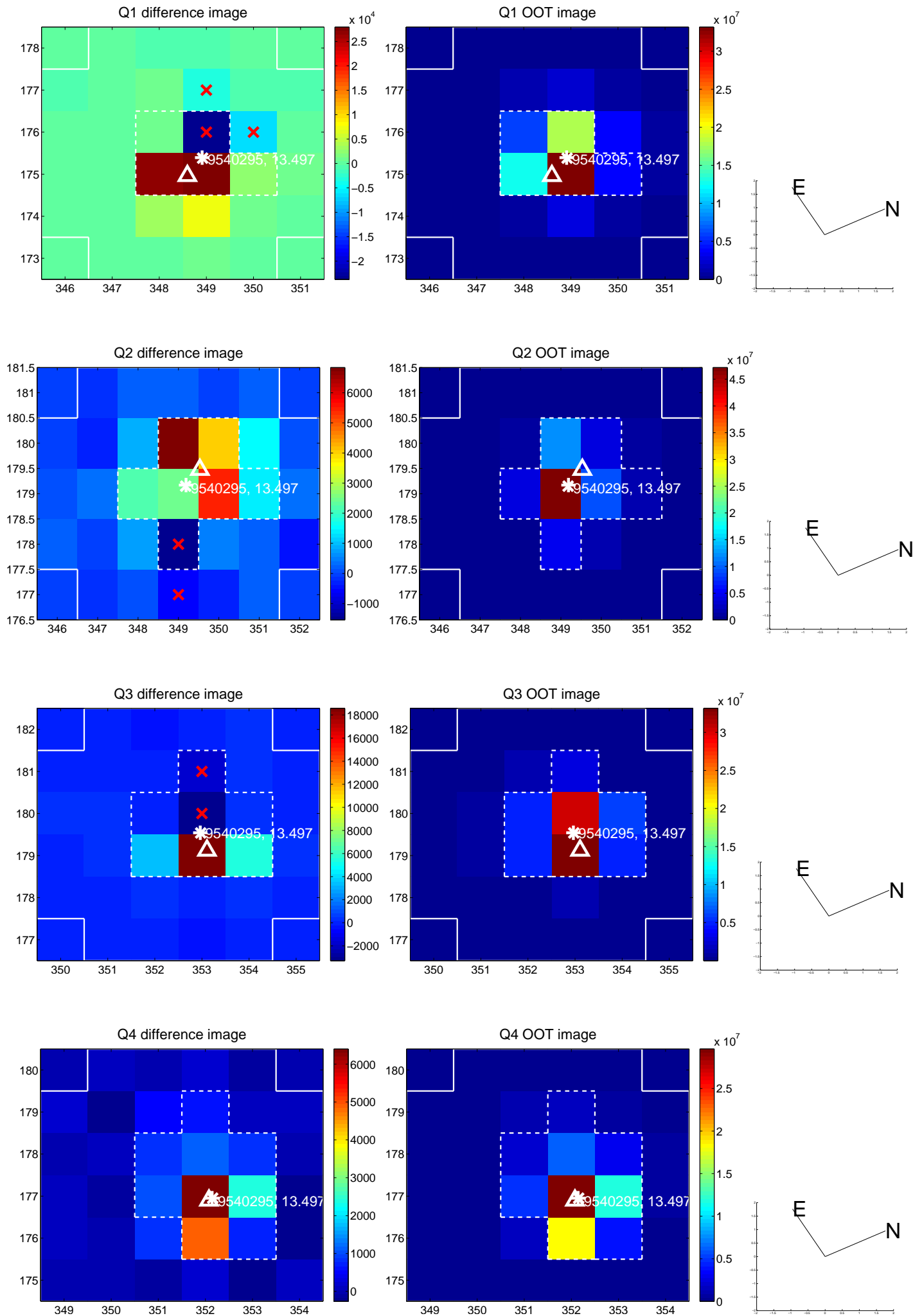


offset from photometric centroids

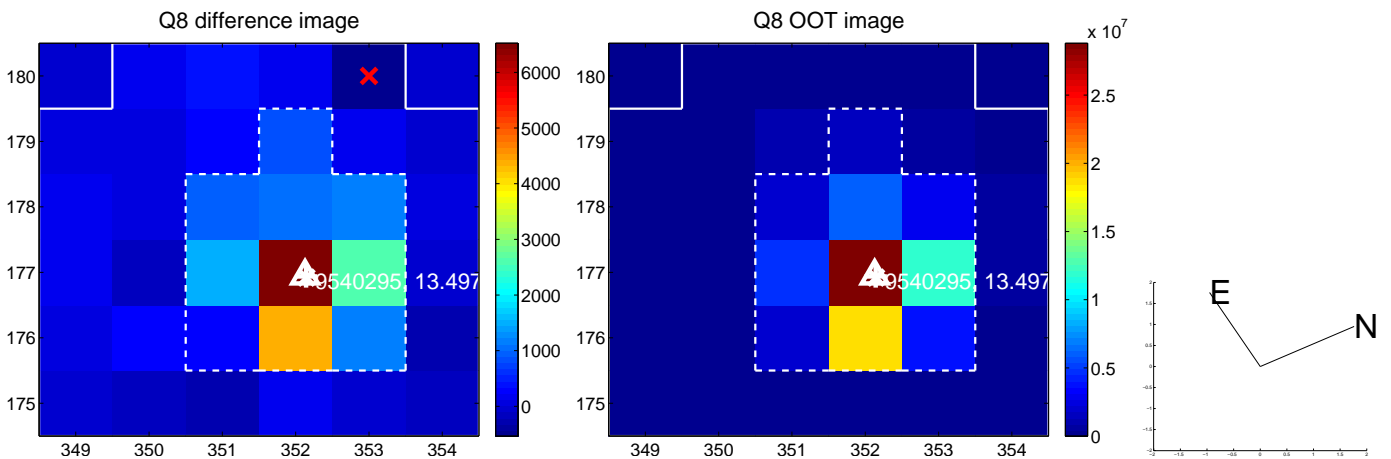
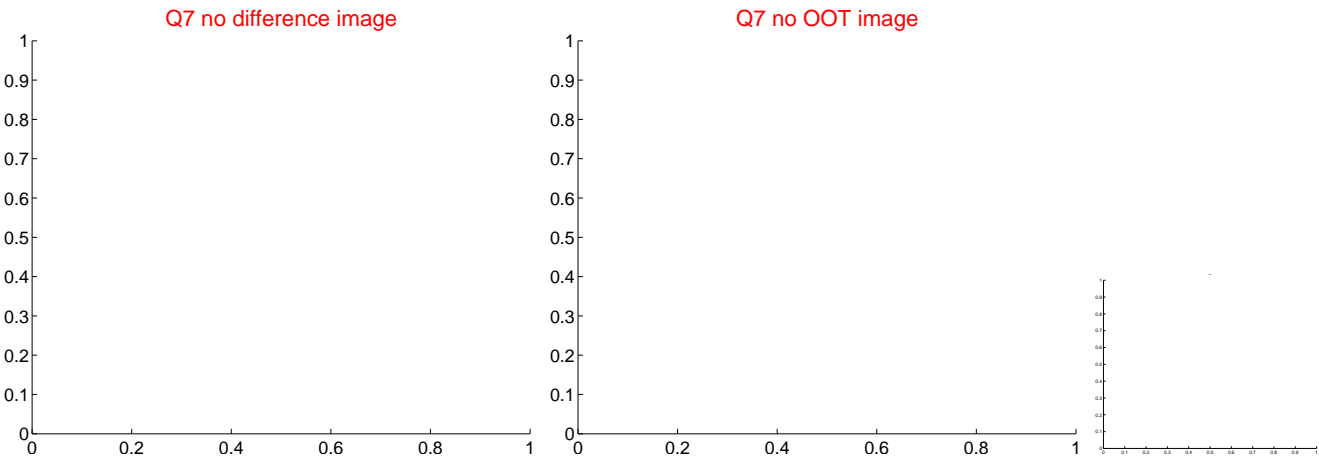
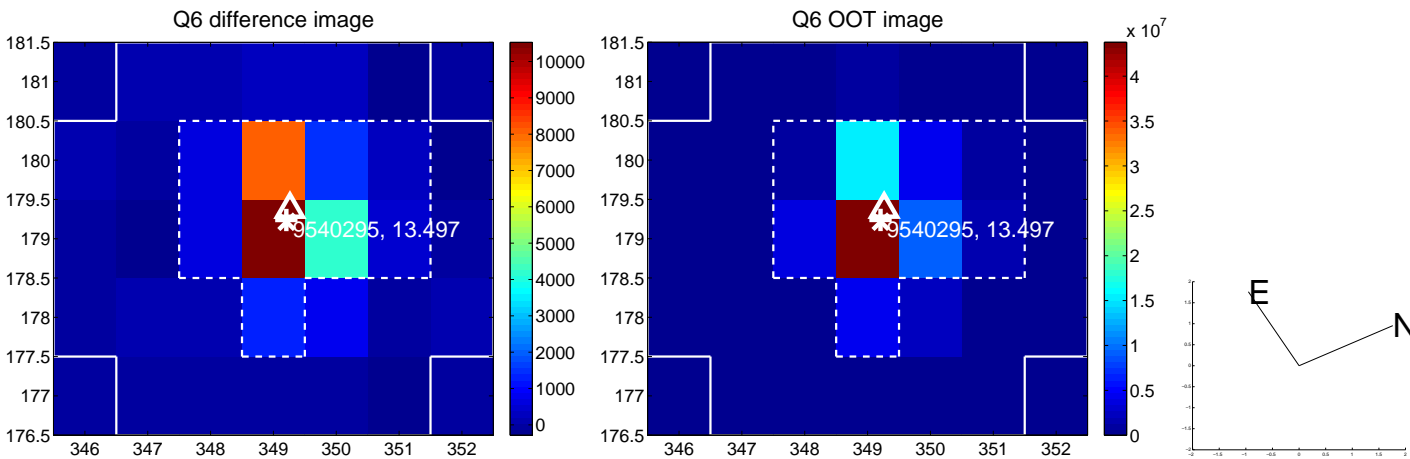
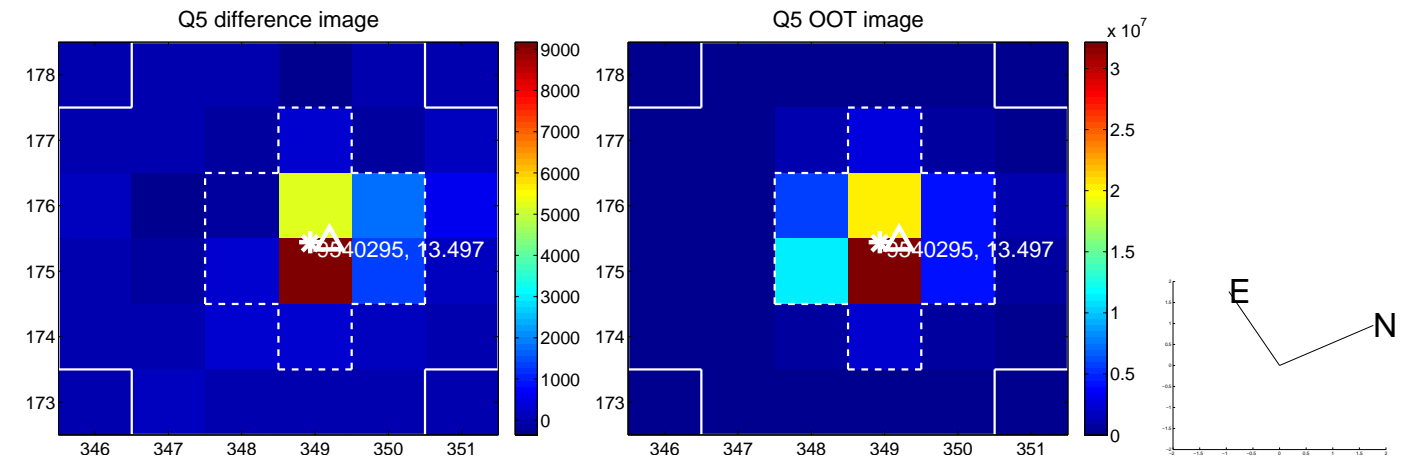


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

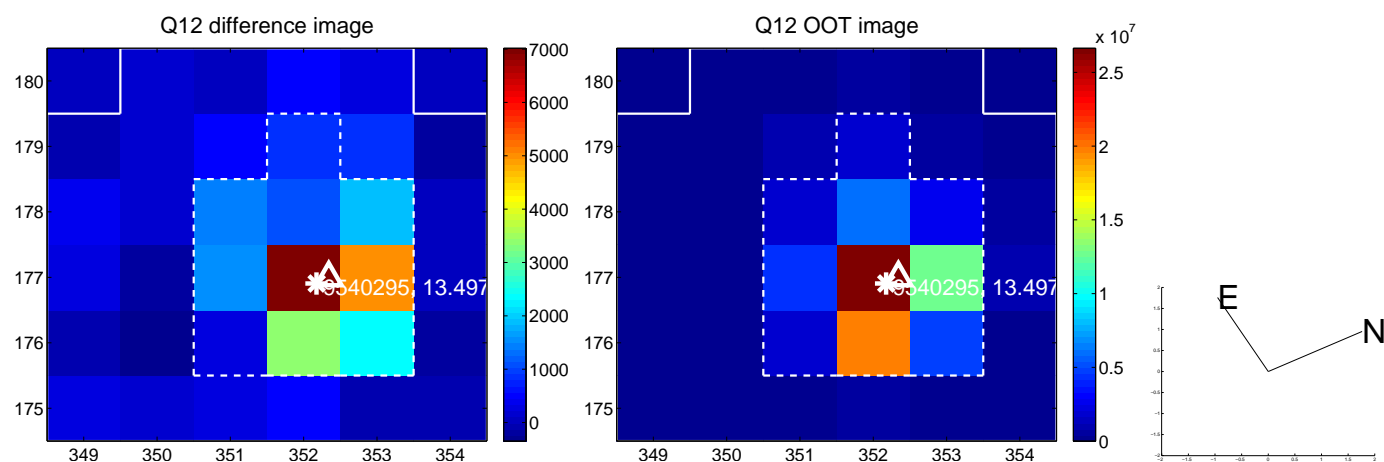
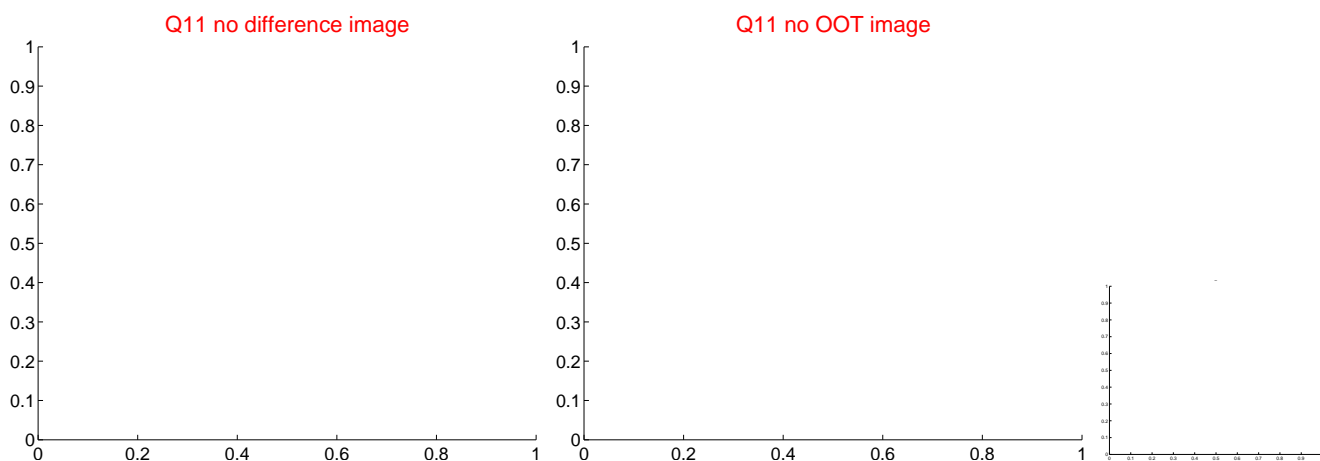
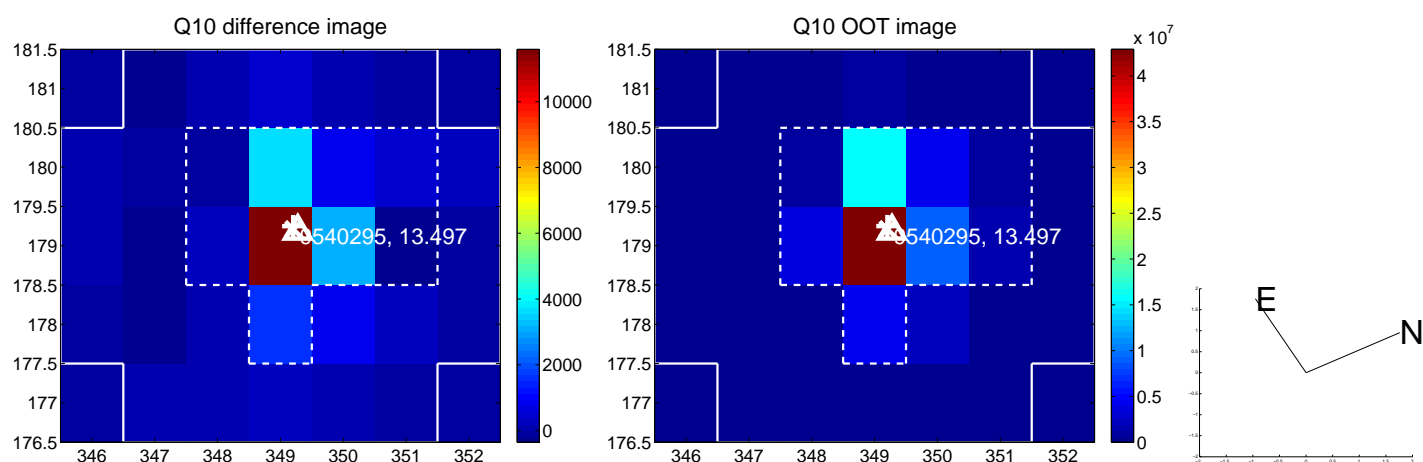
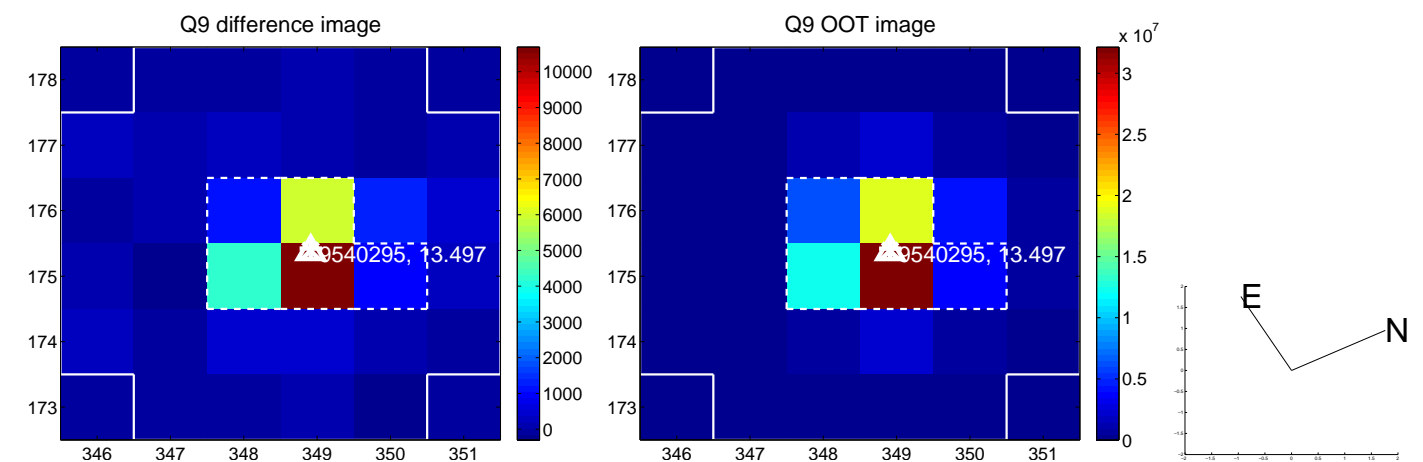
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



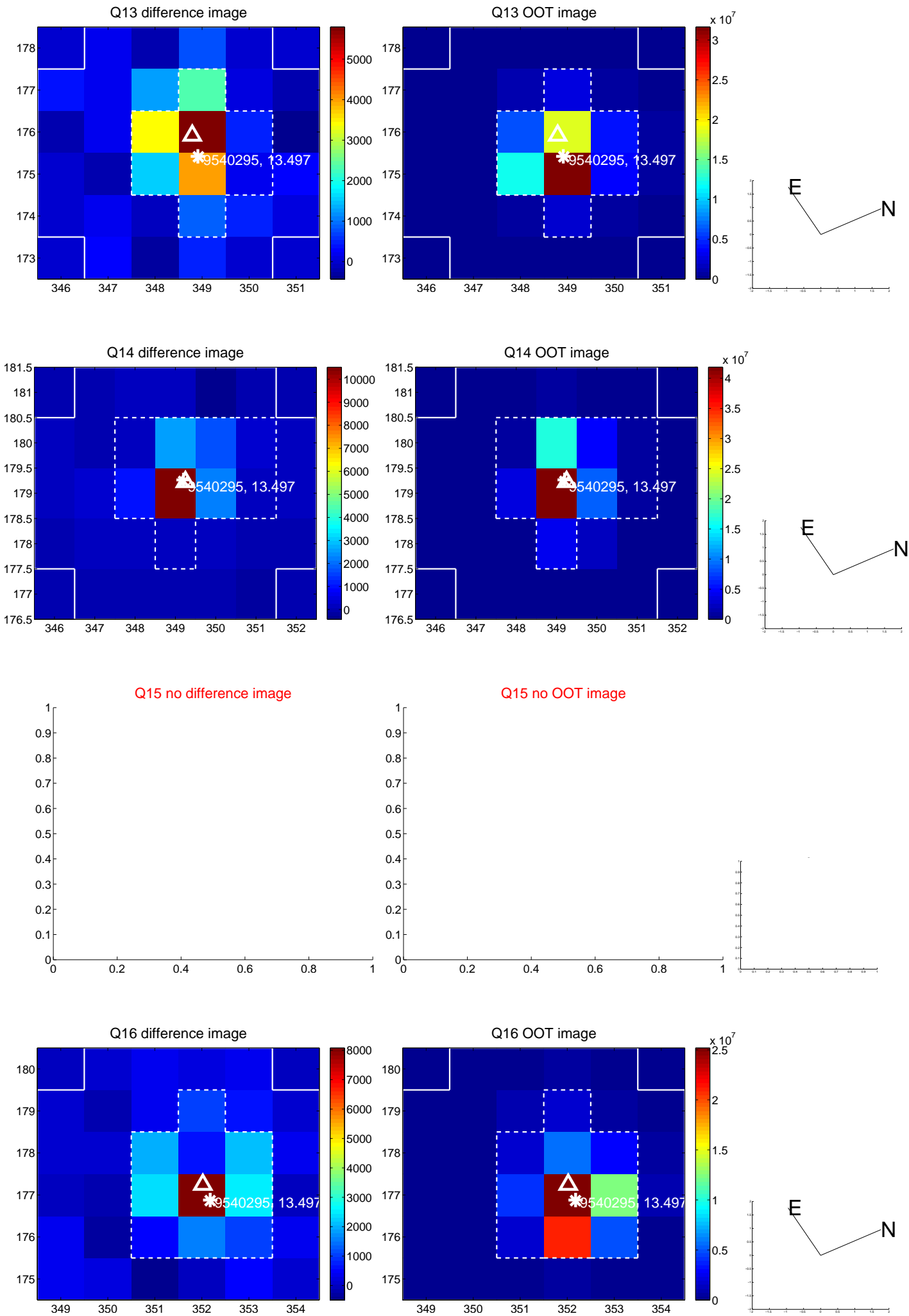
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



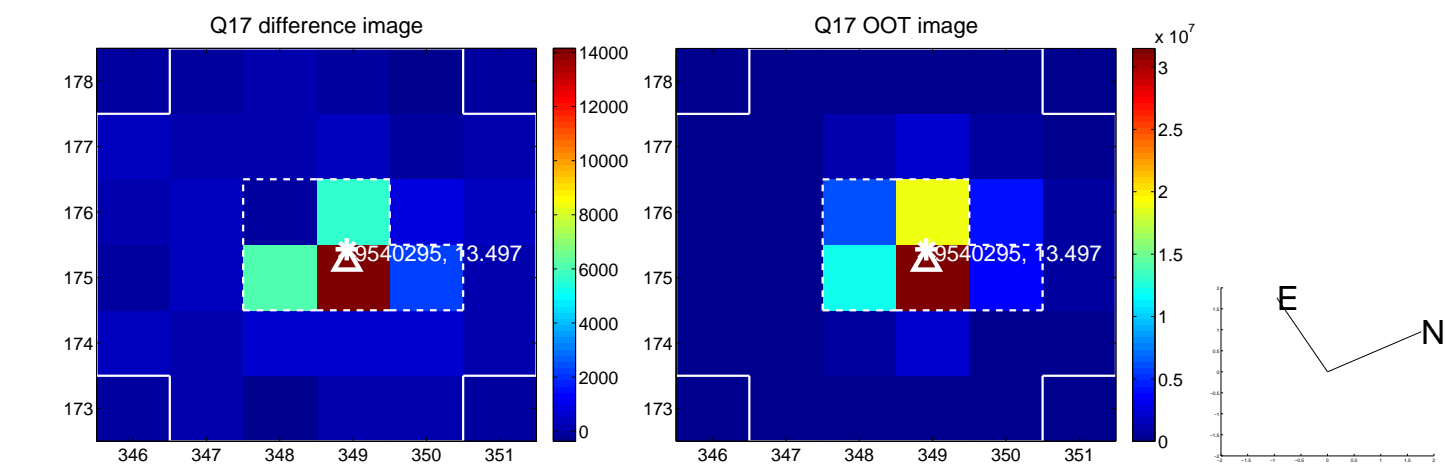
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



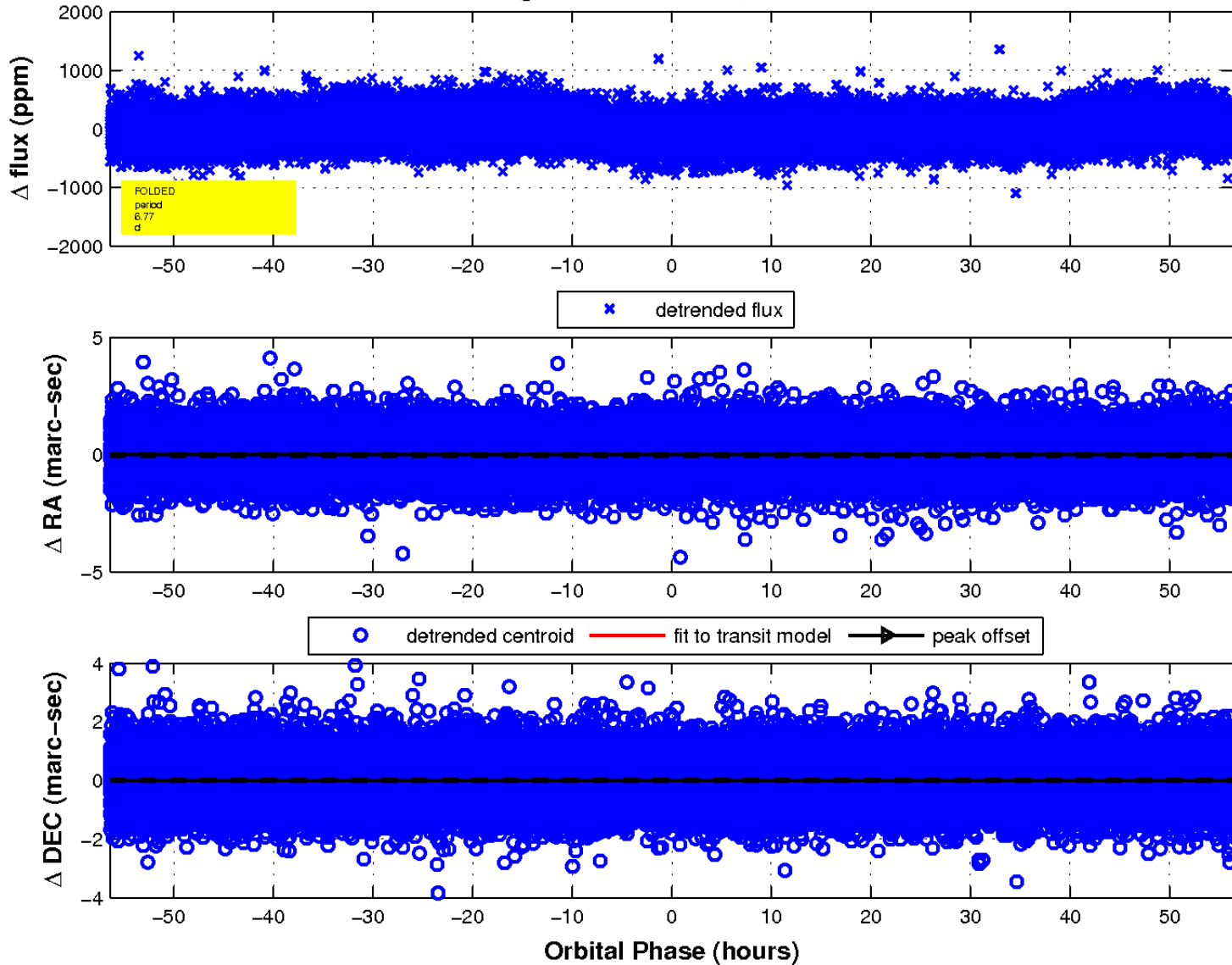
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

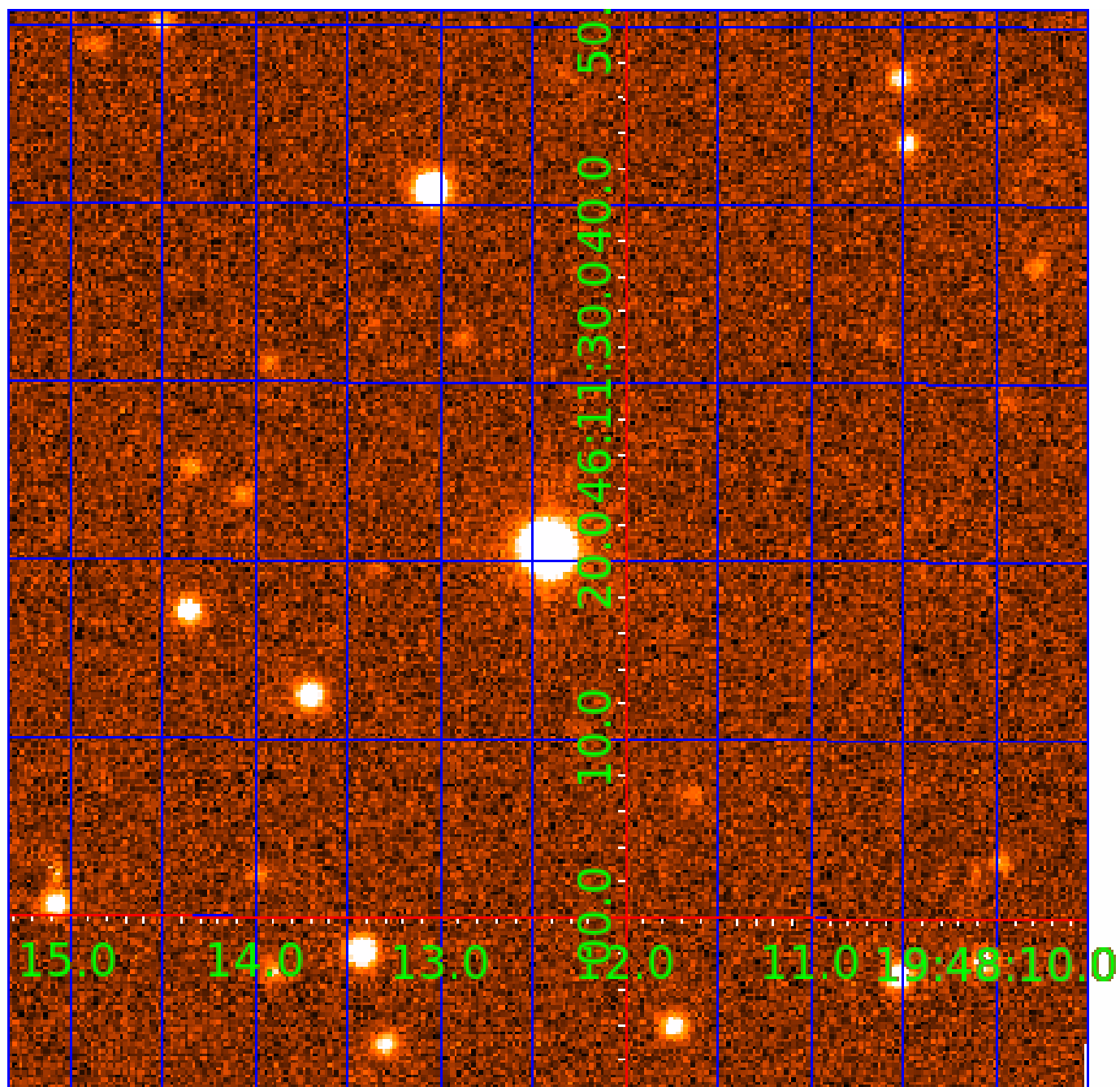


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 009540295

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})
009540295-01	OBS	No	3.383503	133.299188	31.3	11.571	9.2	6.6	4.66	6853	2.74	13729.14
009540295-02	OBS	No	6.766998	131.960240	70.0	18.788	10.0	11.0	4.66	6853	5.31	5448.42
009540295-03	OBS	No	179.364137	243.704040	273.7	5.600	7.3	8.0	4.66	6853	8.47	68.94

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009540295-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
009540295-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD
009540295-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

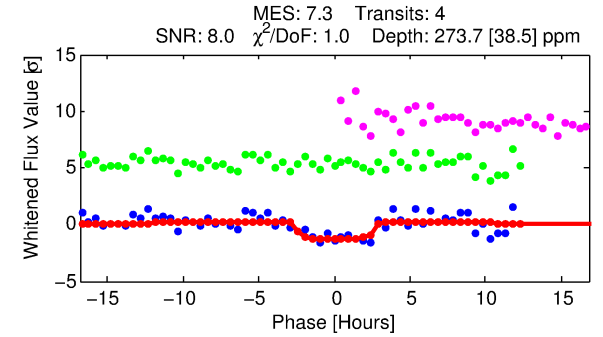
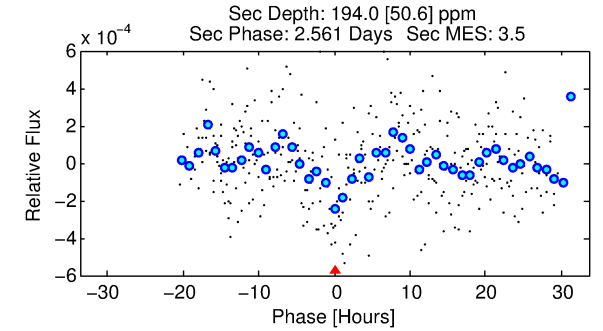
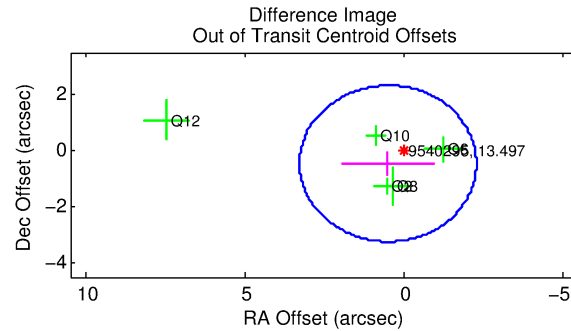
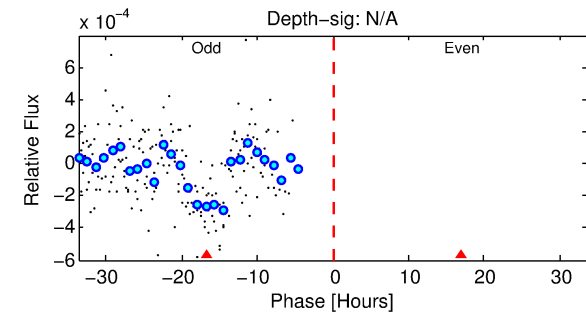
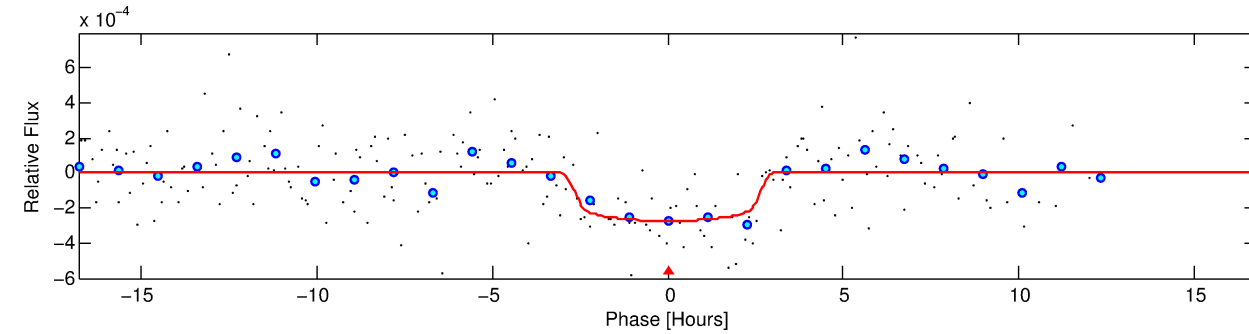
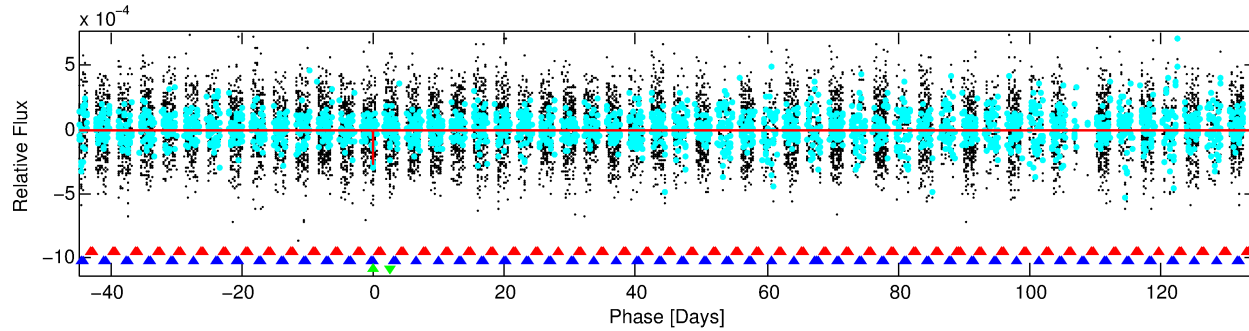
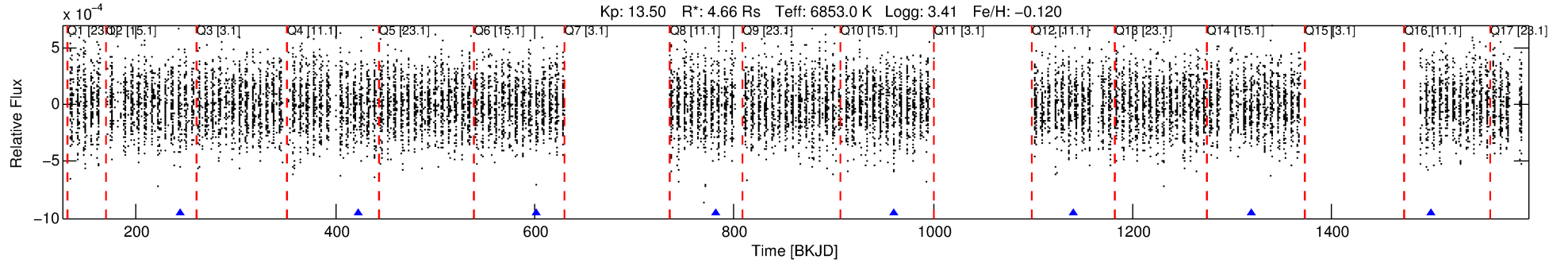
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009540295-03

No Significant Match Found

DV One-Page Summary

KIC: 9540295 Candidate: 3 of 3 Period: 179.364 d



DV Fit Results:

Period = 179.36414 [0.00313] d
Epoch = 243.7040 [0.0107] BKJD
Rp/R* = 0.0167 [0.0093]
a/R* = 156.98 [512.94]
b = 0.79 [1.57]
Seff = 68.94 [49.77]
Teq = 735 [133] K
Rp = 8.47 [6.18] Re
a = 0.7893 [0.3521] AU
Ag = 925.73 [1247.94] [0.74σ]
Teffp = 6266 [1810] K [3.05σ]

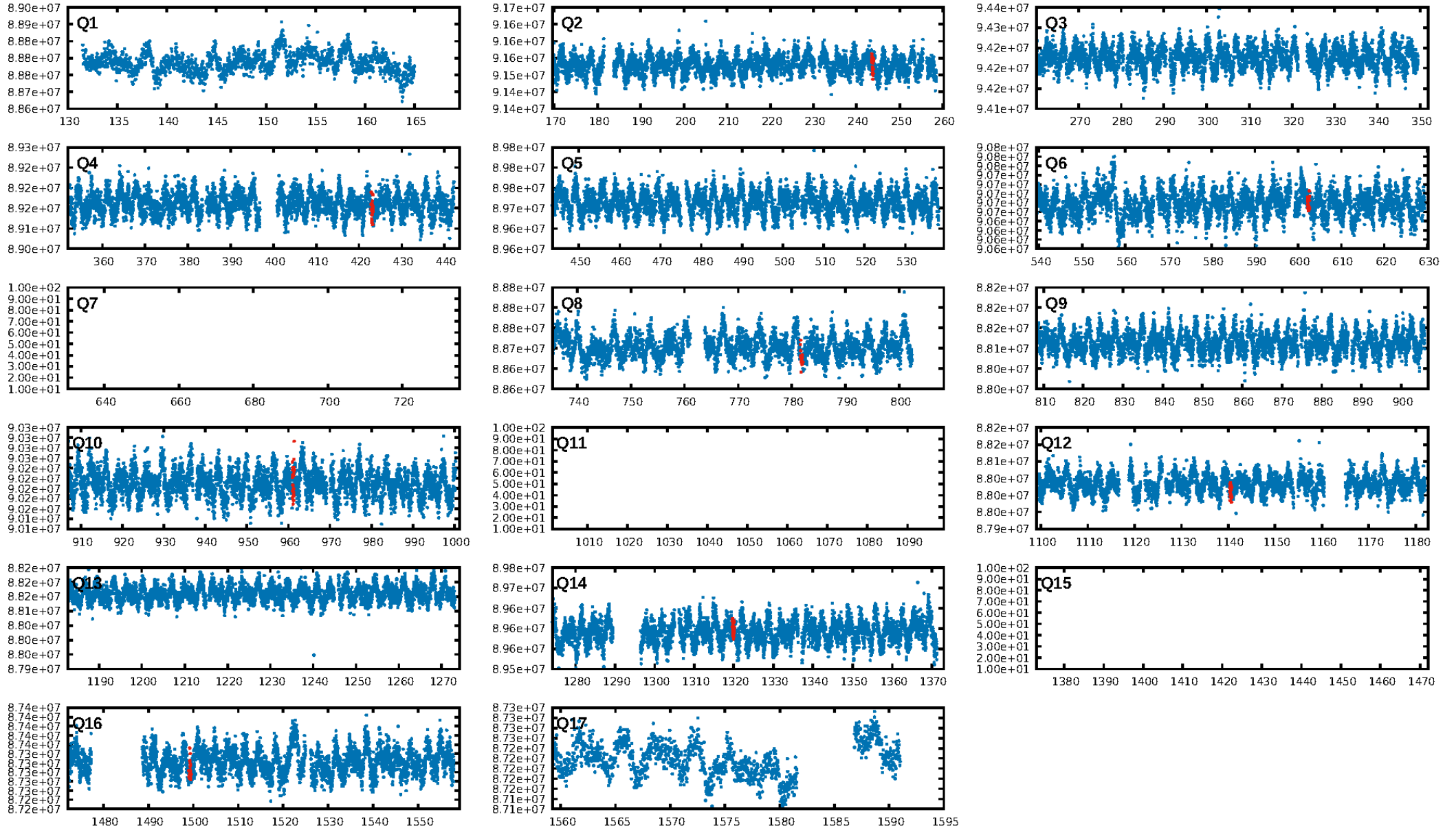
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [211.29σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 39.2%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 2.99e-06
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -2.004
Centroid-sig: 53.3%
Centroid-so: 0.719 arcsec [0.70σ]
OotOffset-rm: 0.687 arcsec [0.74σ]
OotOffset-st: 3/0/2/0 [5]
KicOffset-rm: 0.735 arcsec [0.79σ]
KicOffset-st: 3/0/2/0 [5]
DiffImageQuality-fgm: 0.80 [4/5]
DiffImageOverlap-fno: 0.57 [4/7]

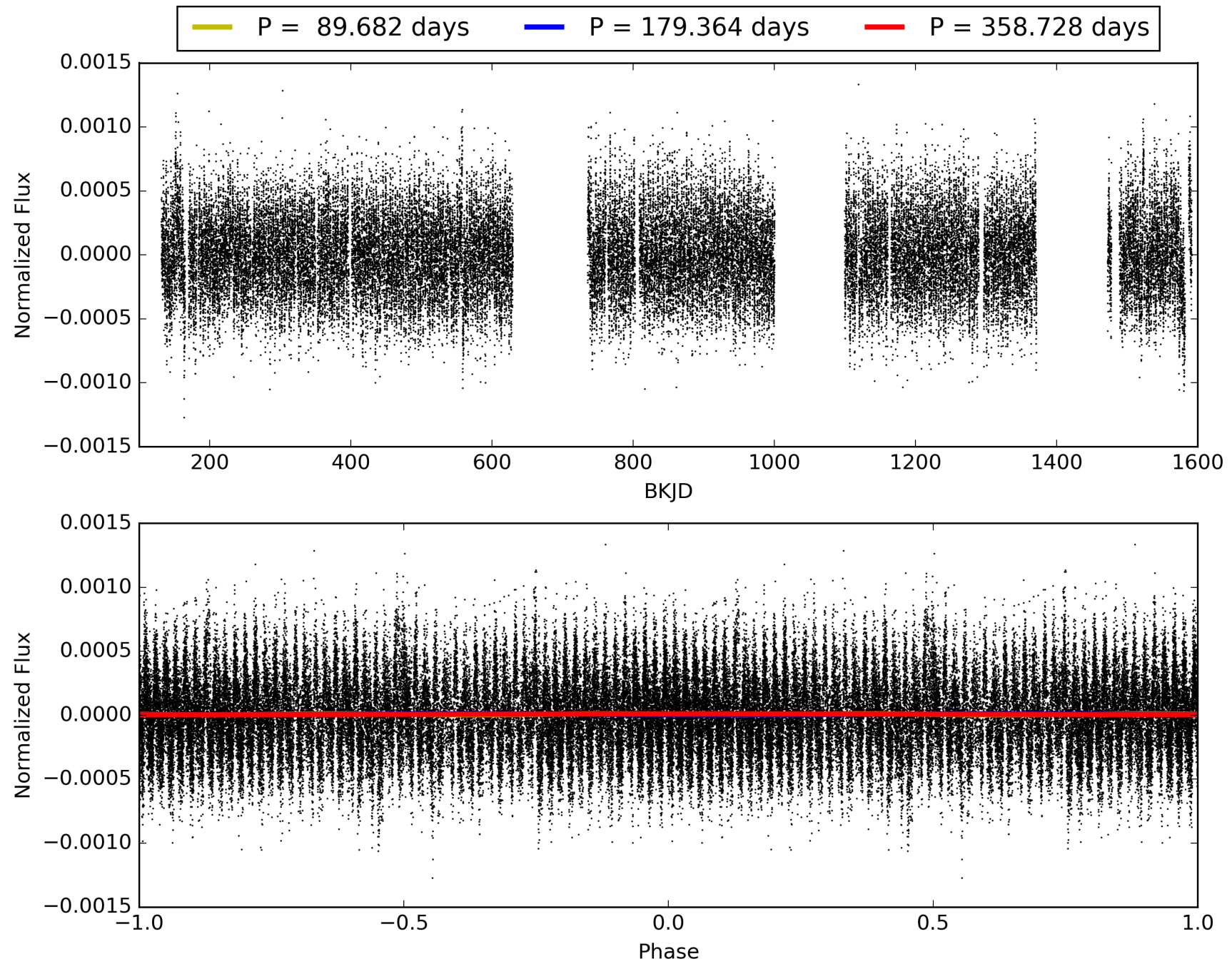
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:02:35 Z

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

TCE 009540295-03, PDC Light Curves

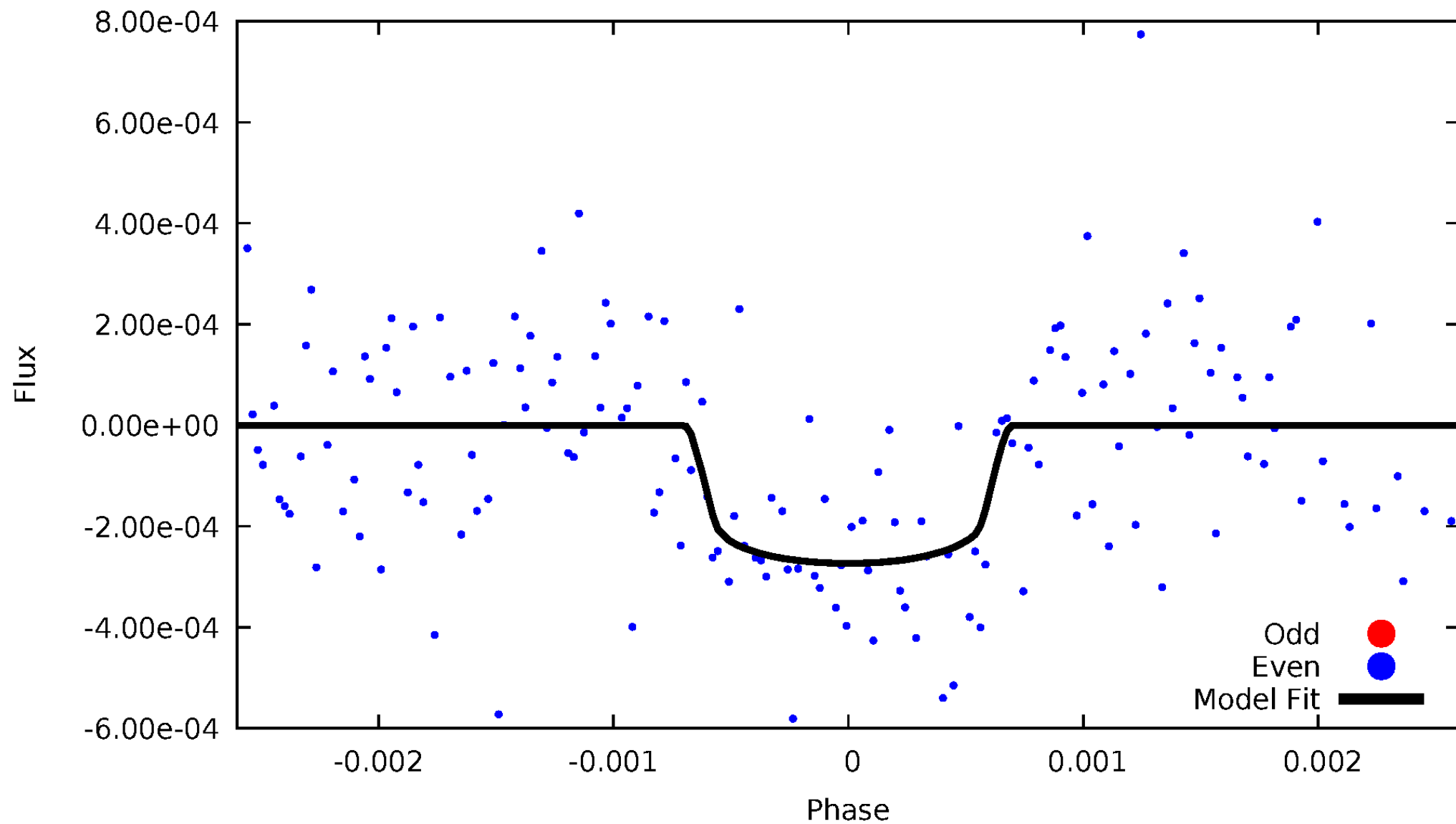


TCE 009540295-03



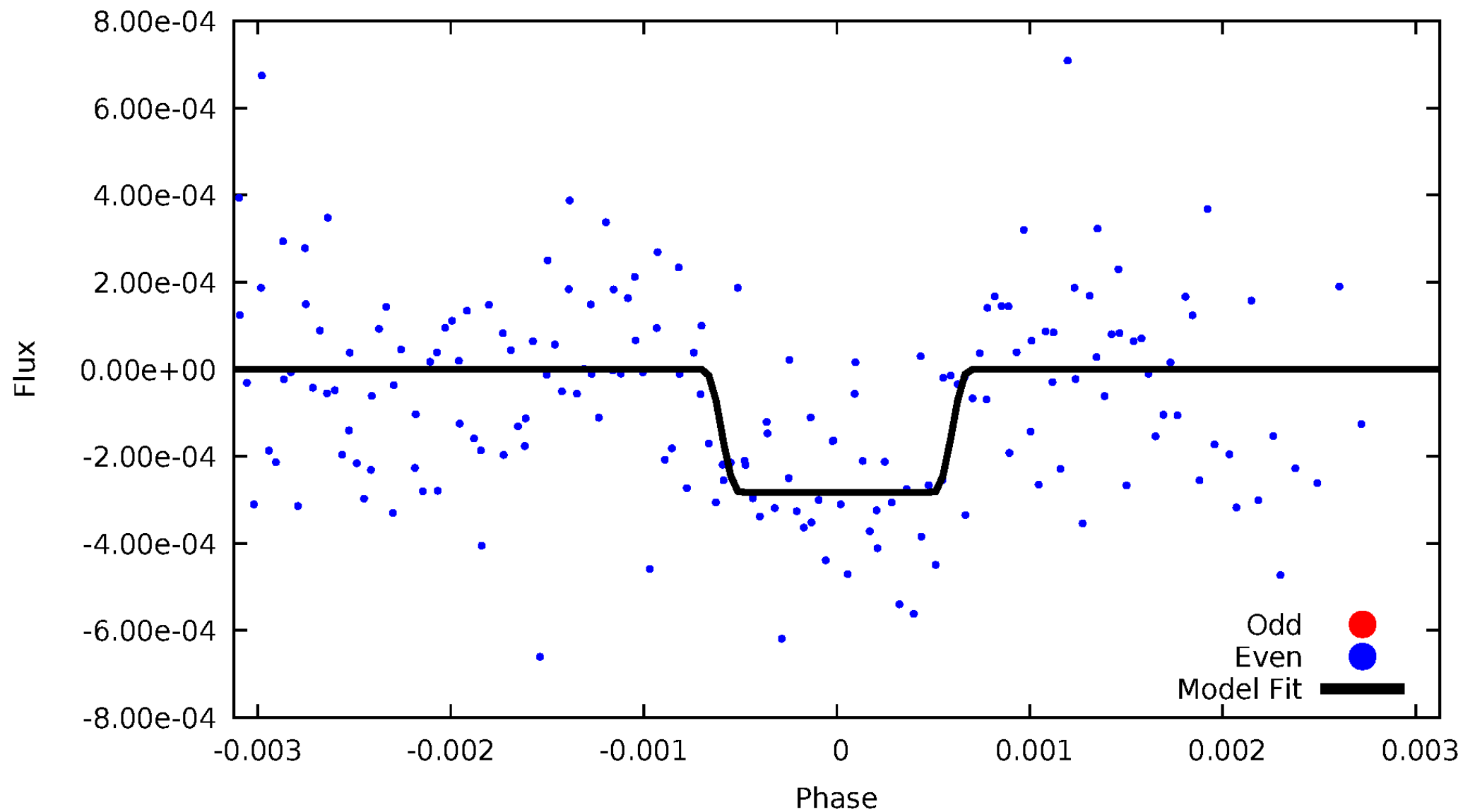
DV Odd/Even

TCE 009540295-03



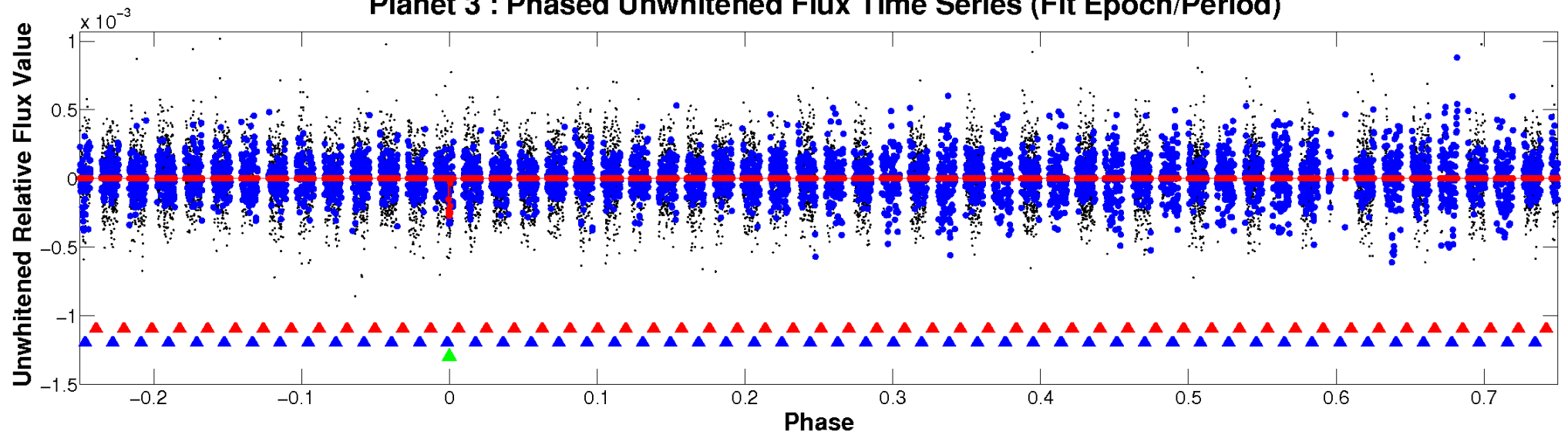
ALT Odd/Even

TCE 009540295-03

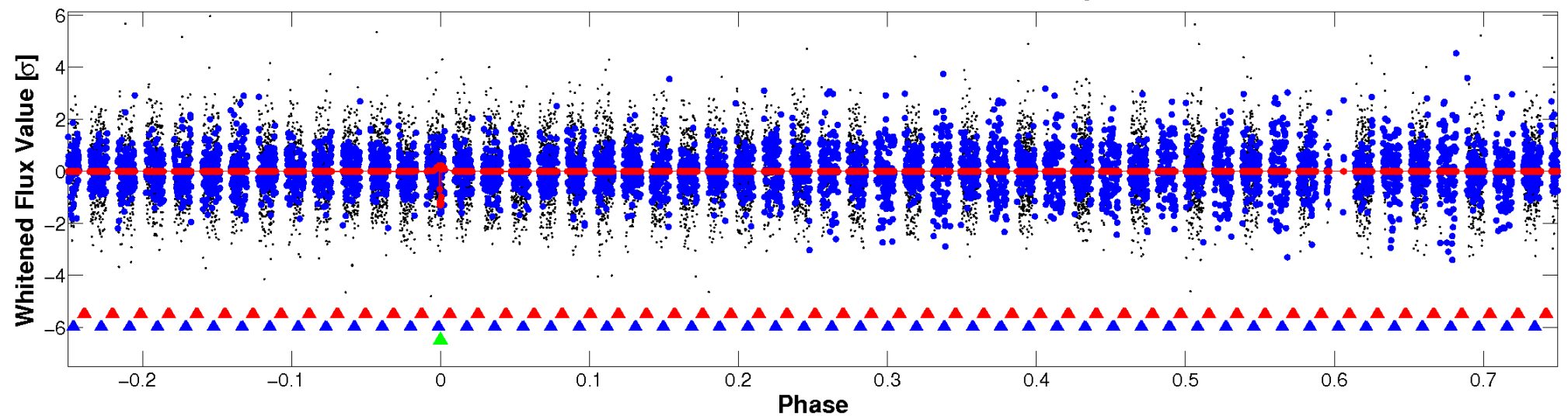


Non-Whitened Vs. Whitened Light Curve

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



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



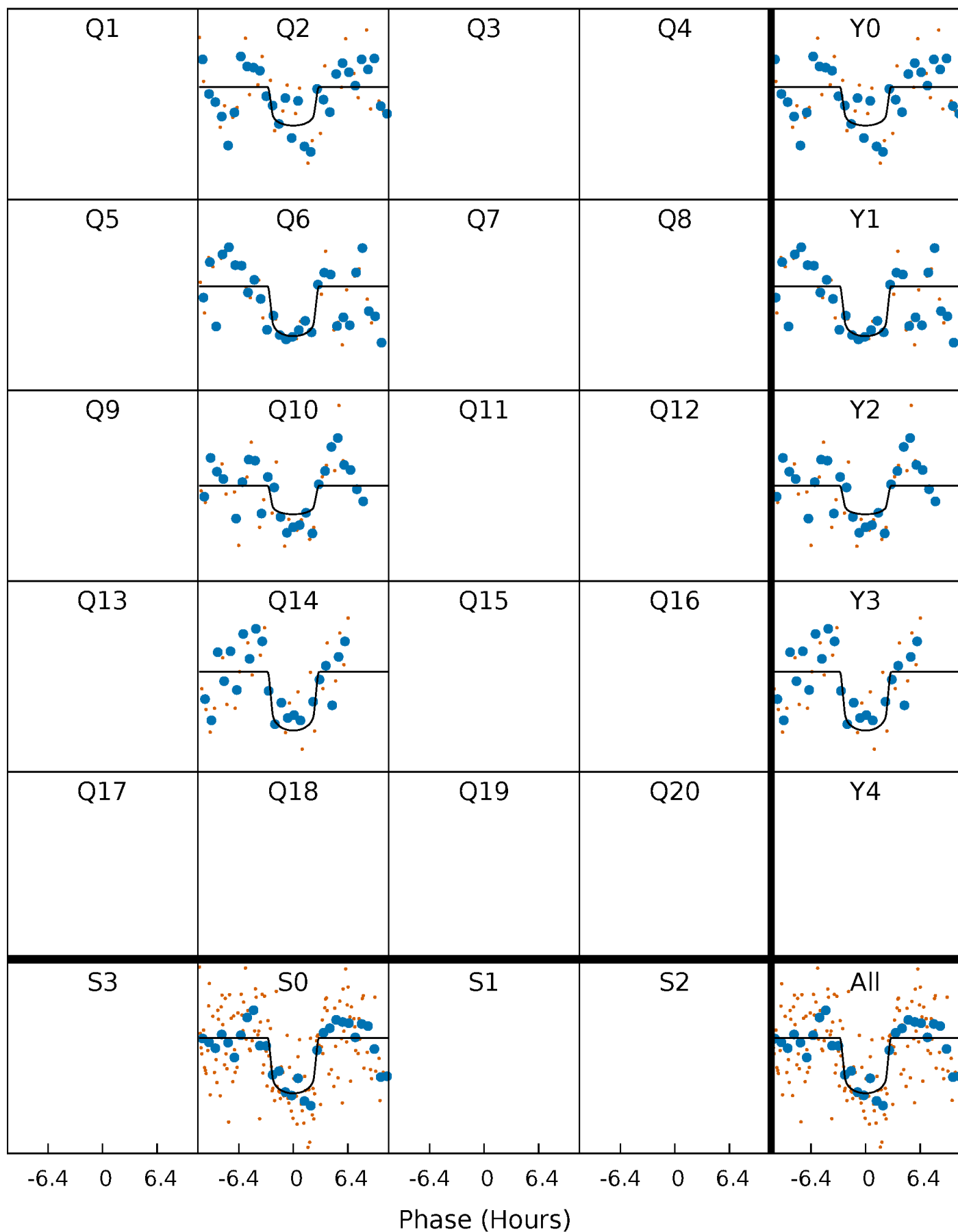
PDC Quarter-Phased Transit Curves

TCE 009540295-03 P=179.364137 Days $T_0=243.704040$ (BKJD)



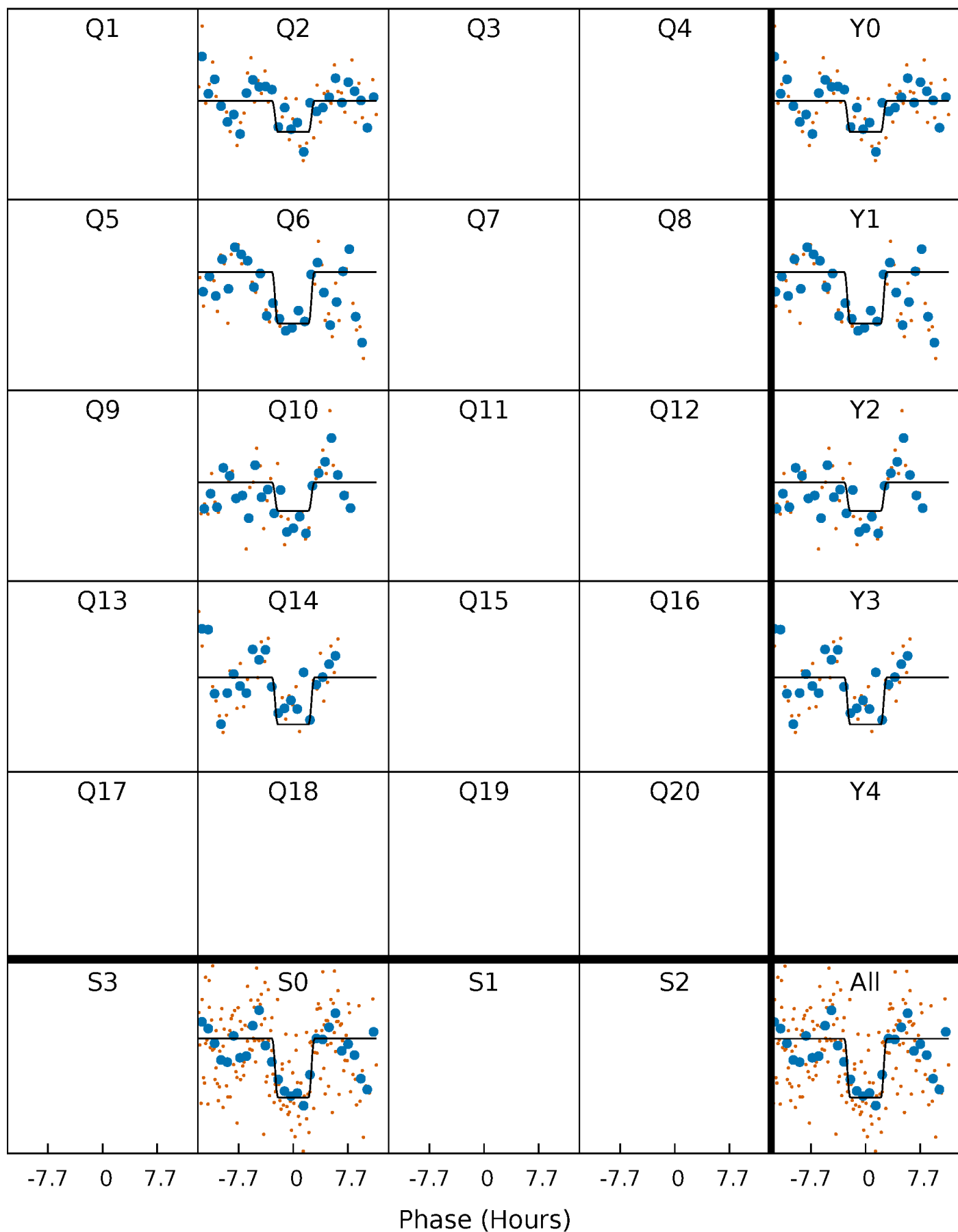
DV Quarter-Phased Transit Curves

TCE 009540295-03 P=179.364137 Days $T_0=243.704040$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

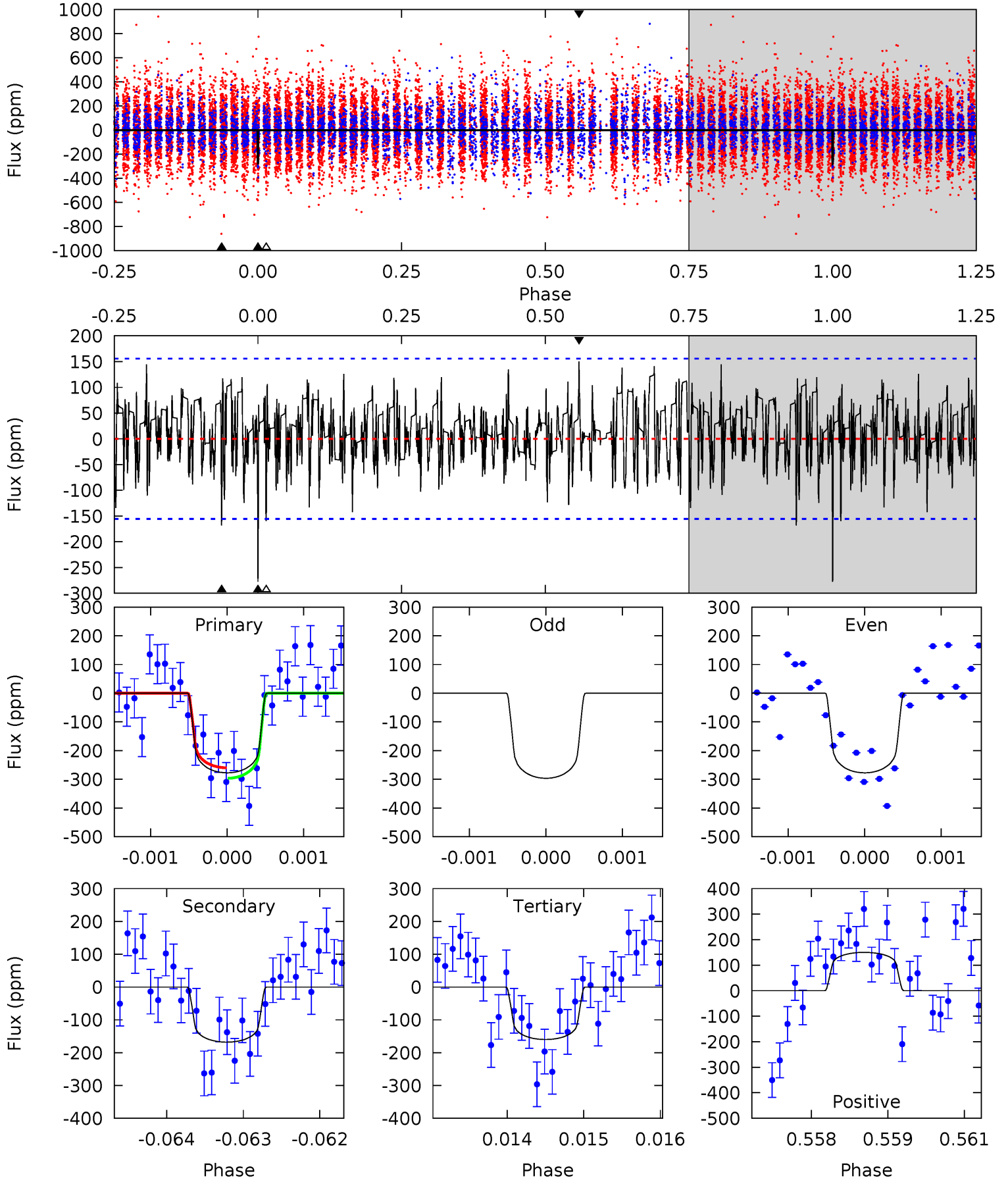
TCE 009540295-03 P=179.362861 Days $T_0=243.718002$ (BKJD)



DV Model-Shift Uniqueness Test

009540295-03, P = 179.364137 Days, E = 64.339903 Days

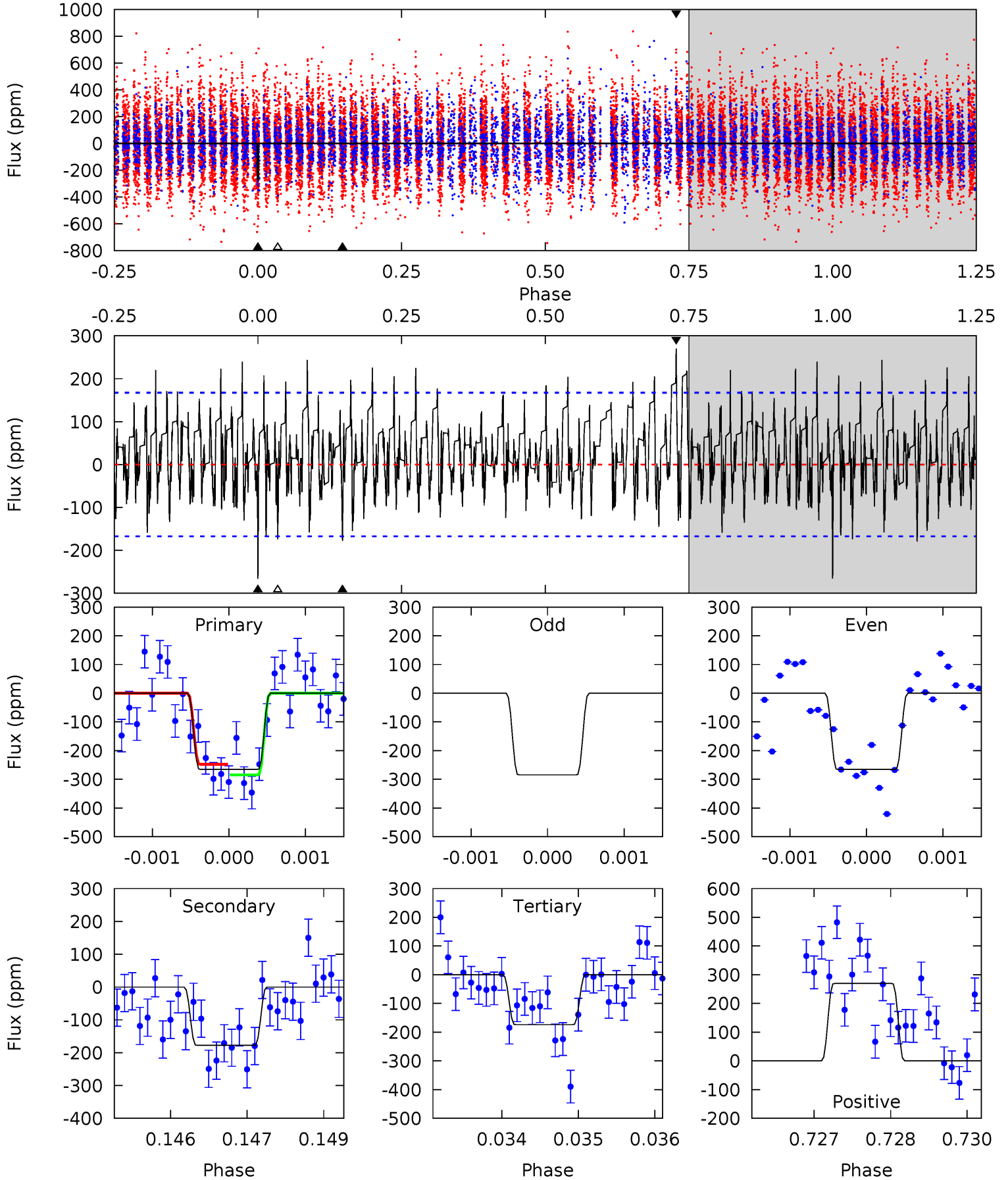
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.62	5.82	5.54	5.20	5.40	3.20	1.69	4.08	4.42	0.28	0.62	0.39	1.04	0.35	0.63



Alt Model-Shift Uniqueness Test

009540295-03, P = 179.362861 Days, E = 64.355141 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.58	5.74	5.61	8.72	5.41	3.22	2.27	2.97	-0.13	0.12	-2.98	0.36	1.04	0.50	0.59



Stellar Parameters For KIC 009540295

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6853^{+191}_{-238}	$3.410^{+0.414}_{-0.046}$	$-0.120^{+0.300}_{-0.250}$	$4.662^{+0.365}_{-2.189}$	$2.041^{+0.085}_{-0.452}$	$0.028^{+0.104}_{-0.004}$
	+3%/-3%	+12%/-1%	+250%/-208%	+8%/-47%	+4%/-22%	+366%/-16%
Source	PHO1	FLK73	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 009540295-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-168 ± 29	$7.13^{+4.85}_{-3.66}$	994^{+58}_{-116}	6007^{+3185}_{-1083}	1104^{+3767}_{-722}
Alt.	-178 ± 31	$7.60^{+4.71}_{-4.02}$	990^{+59}_{-113}	5961^{+3326}_{-1065}	1015^{+3606}_{-609}

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

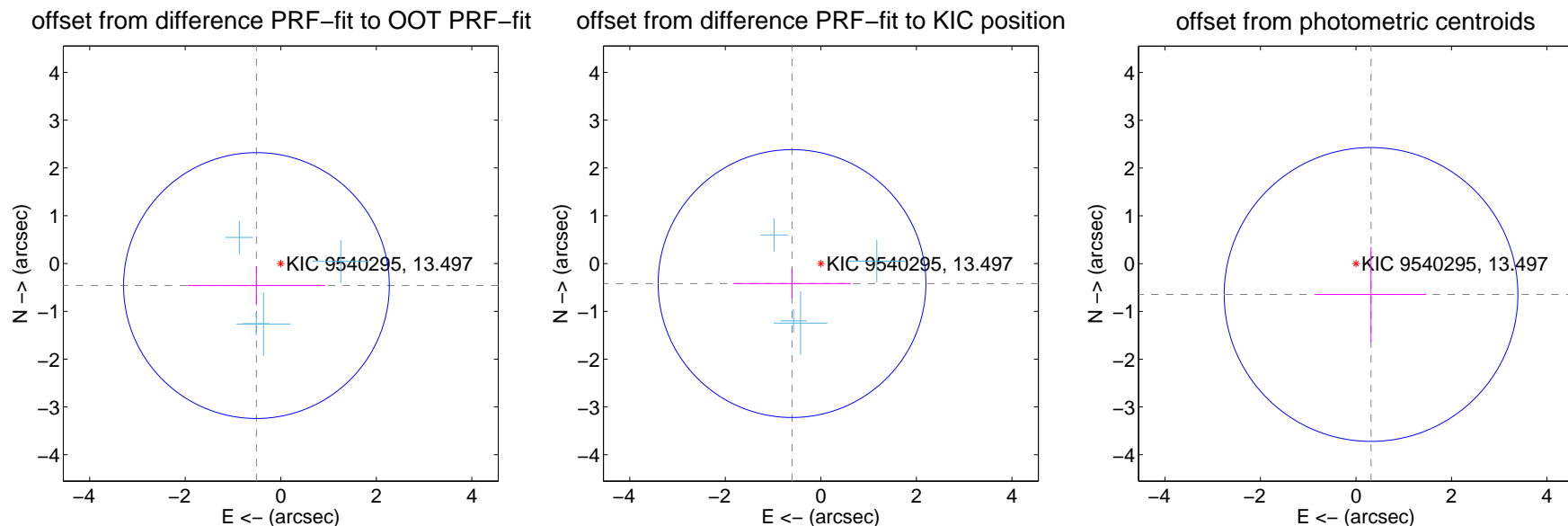
DV Centroid Data

Supplemental centroid analysis for 009540295-03. Kepler magnitude: 13.50. Transit SNR 7.95

There are 4 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

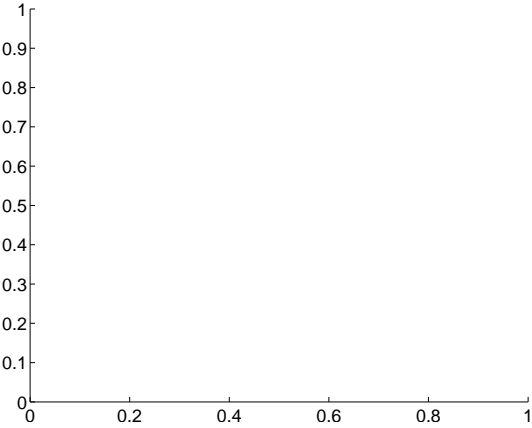
	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.687 ± 0.927	0.74	0.509 ± 1.440	-0.461 ± 0.406
PRF-fit source offset from KIC position	0.735 ± 0.934	0.79	0.604 ± 1.231	-0.419 ± 0.307
photometric centroid source offset	0.72 ± 1.03	0.70	-0.32 ± 1.16	-0.65 ± 0.99



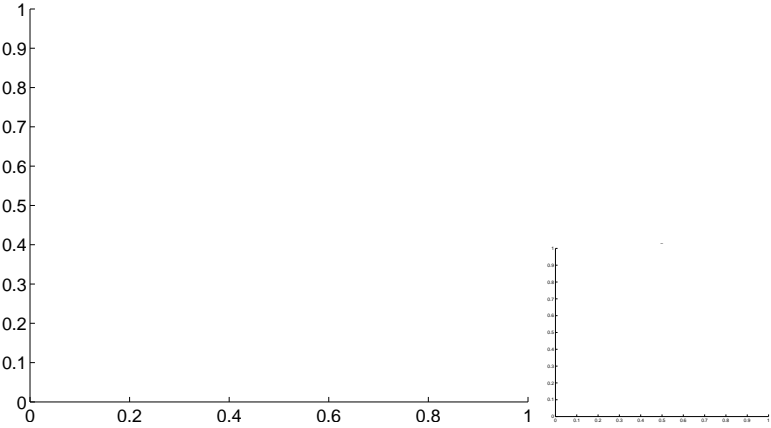
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

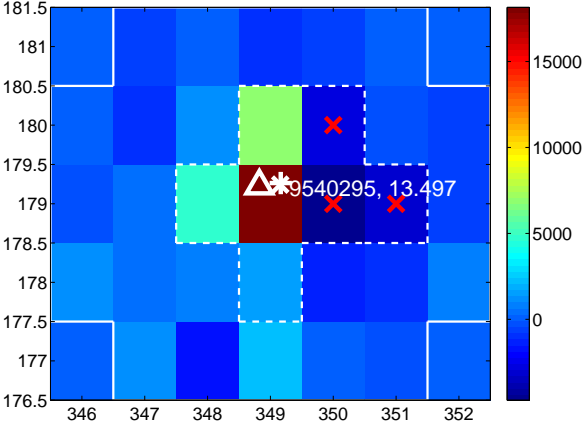
Q1 no difference image



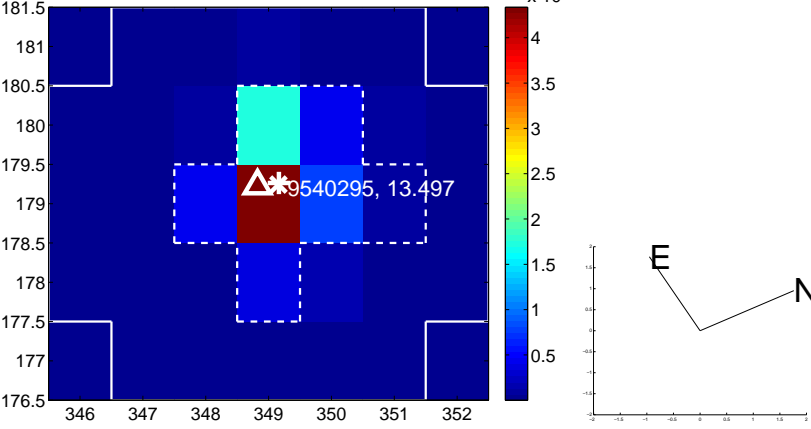
Q1 no OOT image



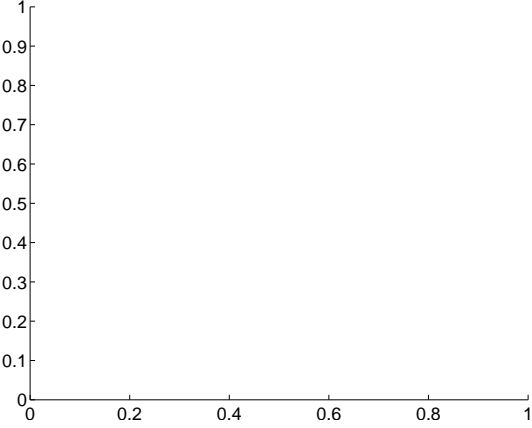
Q2 difference image



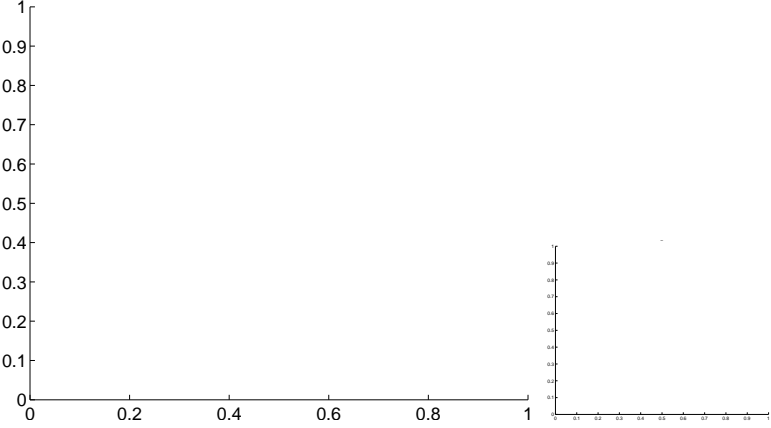
Q2 OOT image



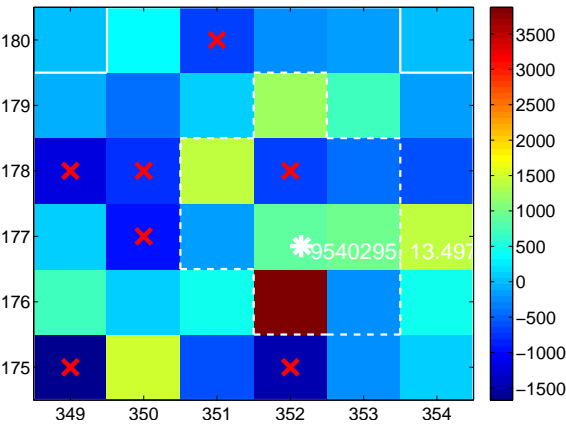
Q3 no difference image



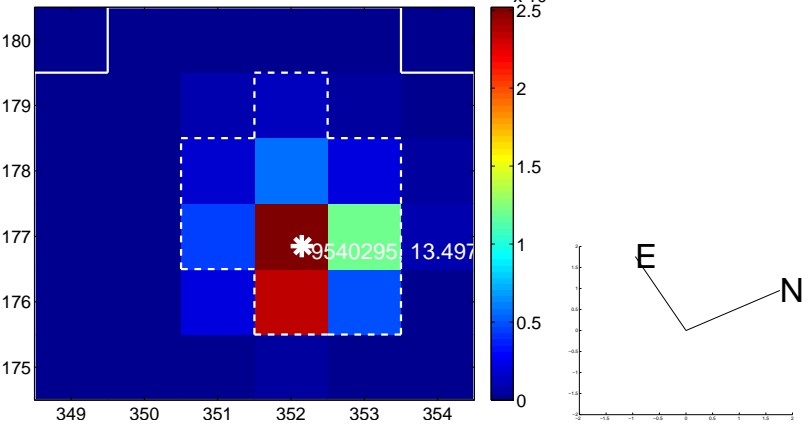
Q3 no OOT image



Q4 difference image. Poor Quality

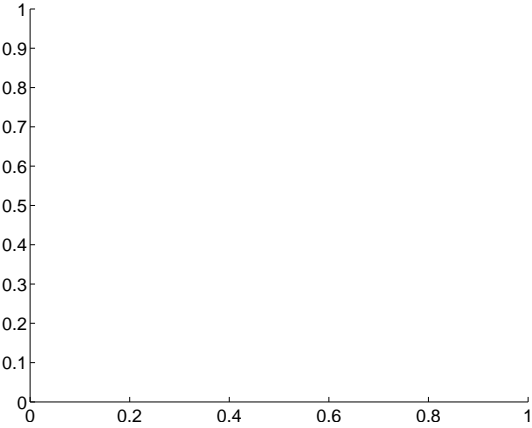


Q4 OOT image

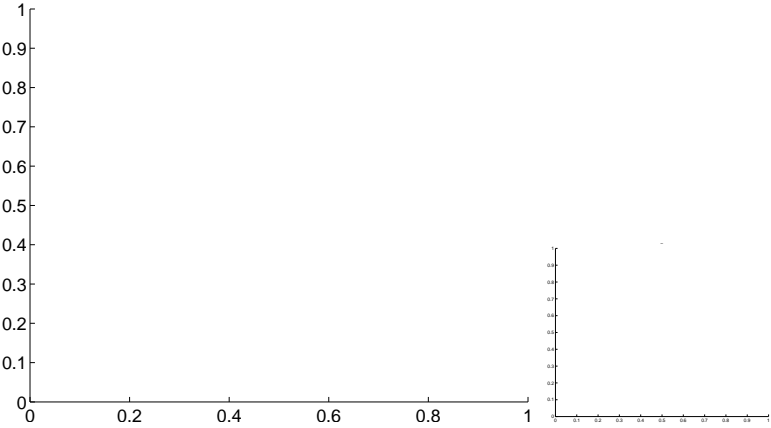


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

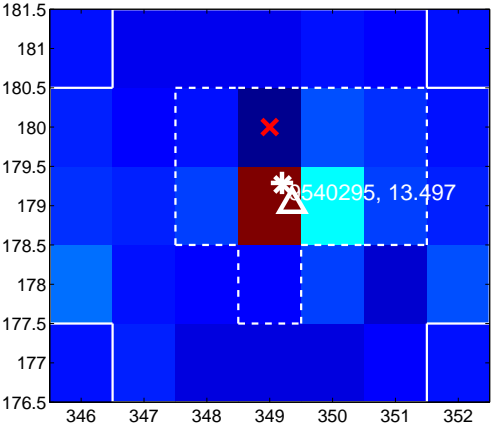
Q5 no difference image



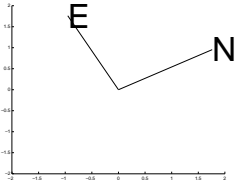
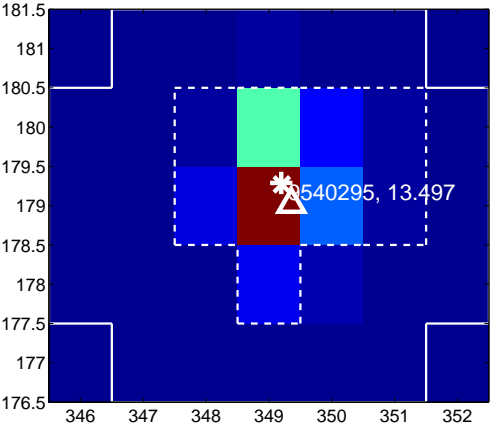
Q5 no OOT image



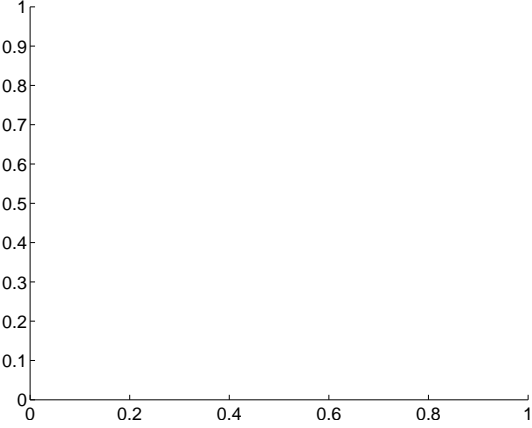
Q6 difference image



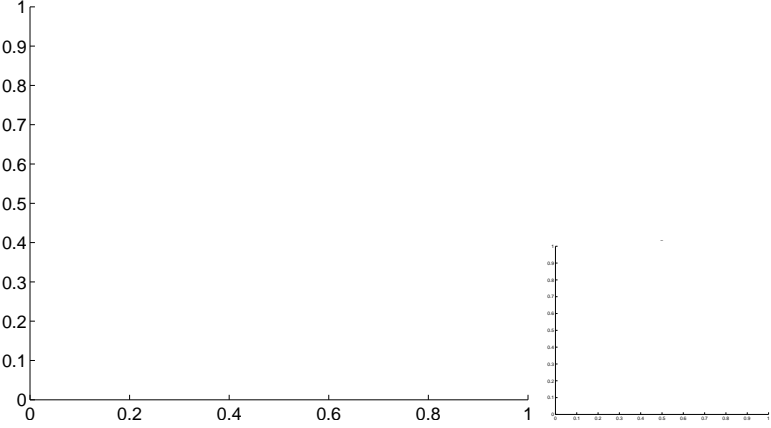
Q6 OOT image



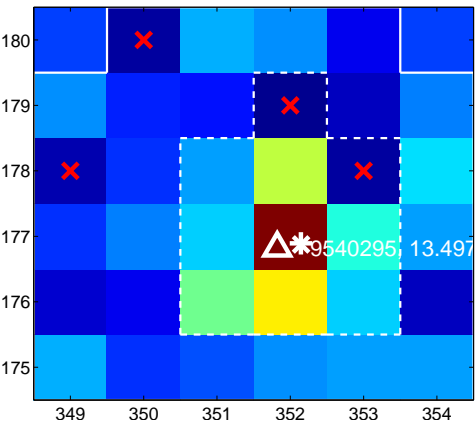
Q7 no difference image



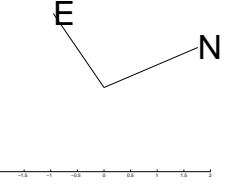
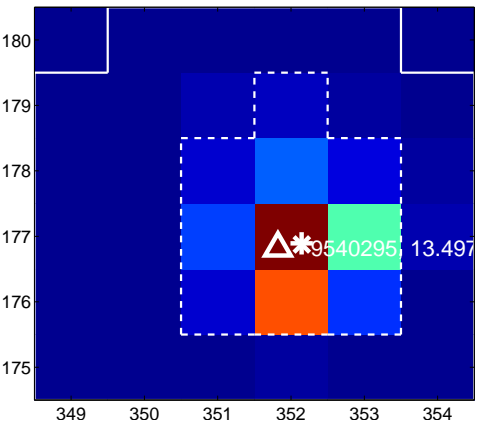
Q7 no OOT image



Q8 difference image

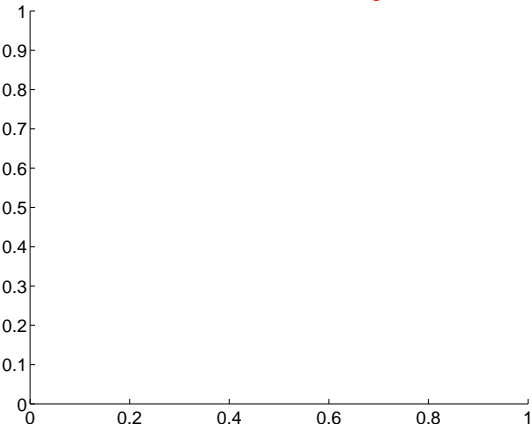


Q8 OOT image

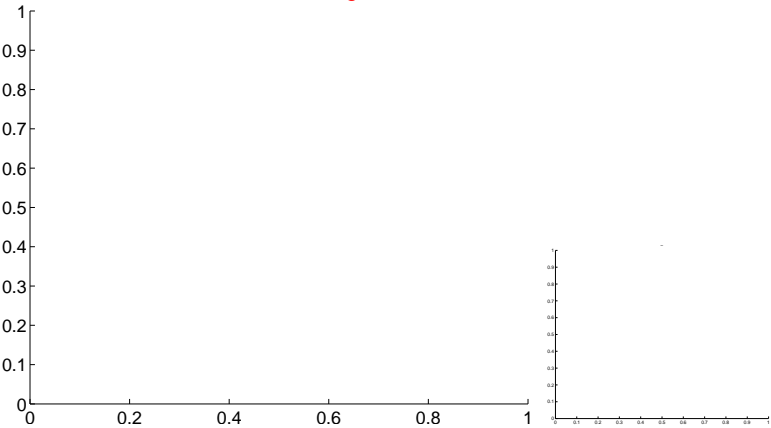


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

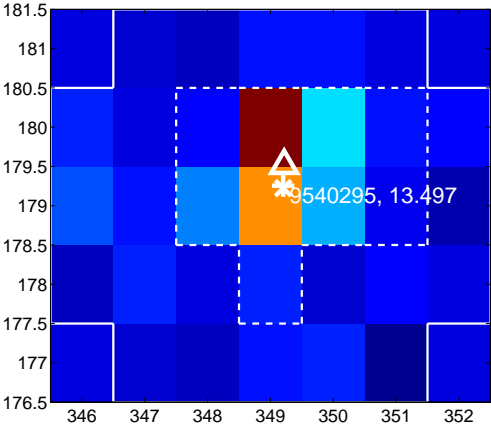
Q9 no difference image



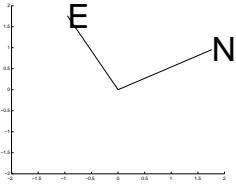
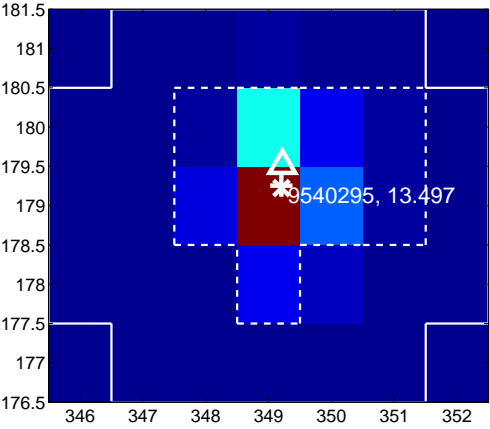
Q9 no OOT image



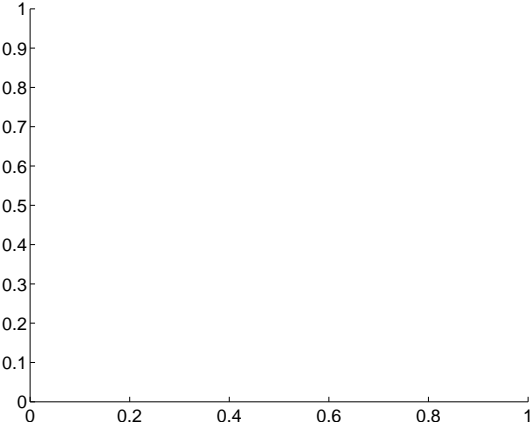
Q10 difference image



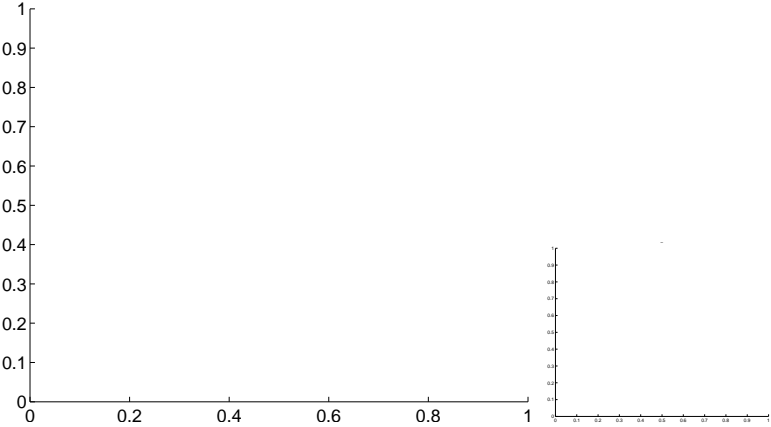
Q10 OOT image



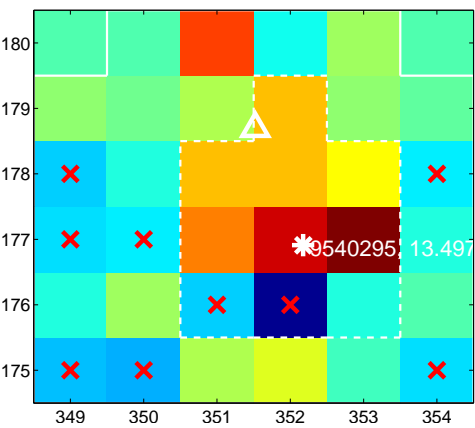
Q11 no difference image



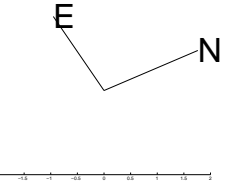
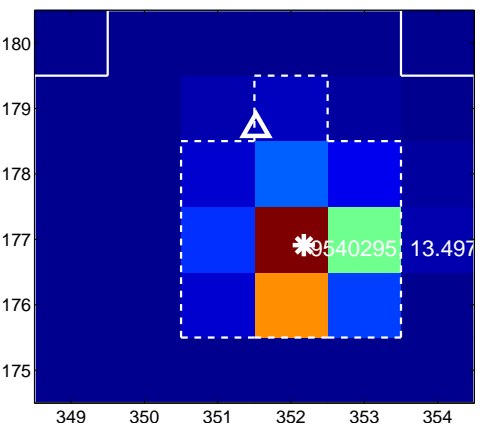
Q11 no OOT image



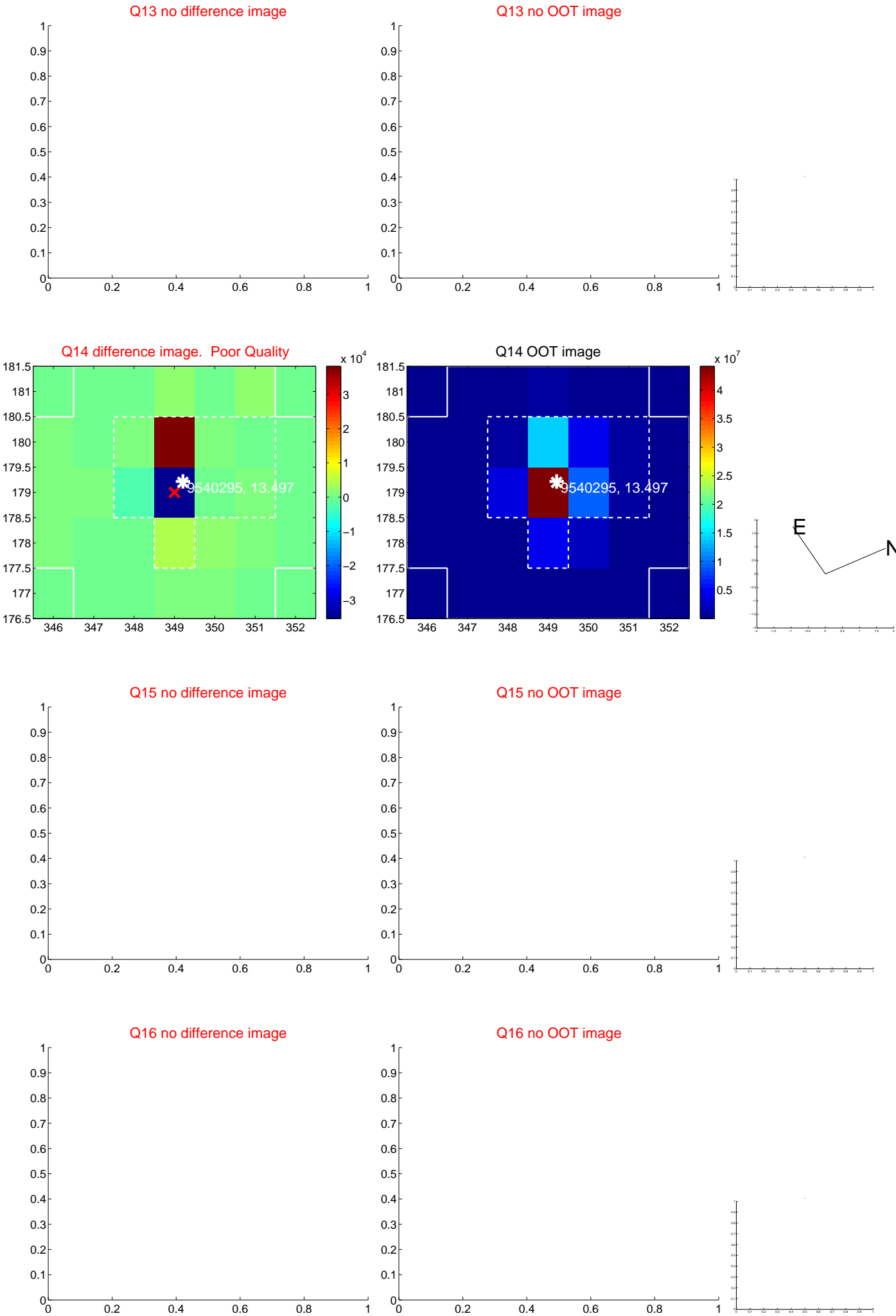
Q12 difference image. Poor Quality



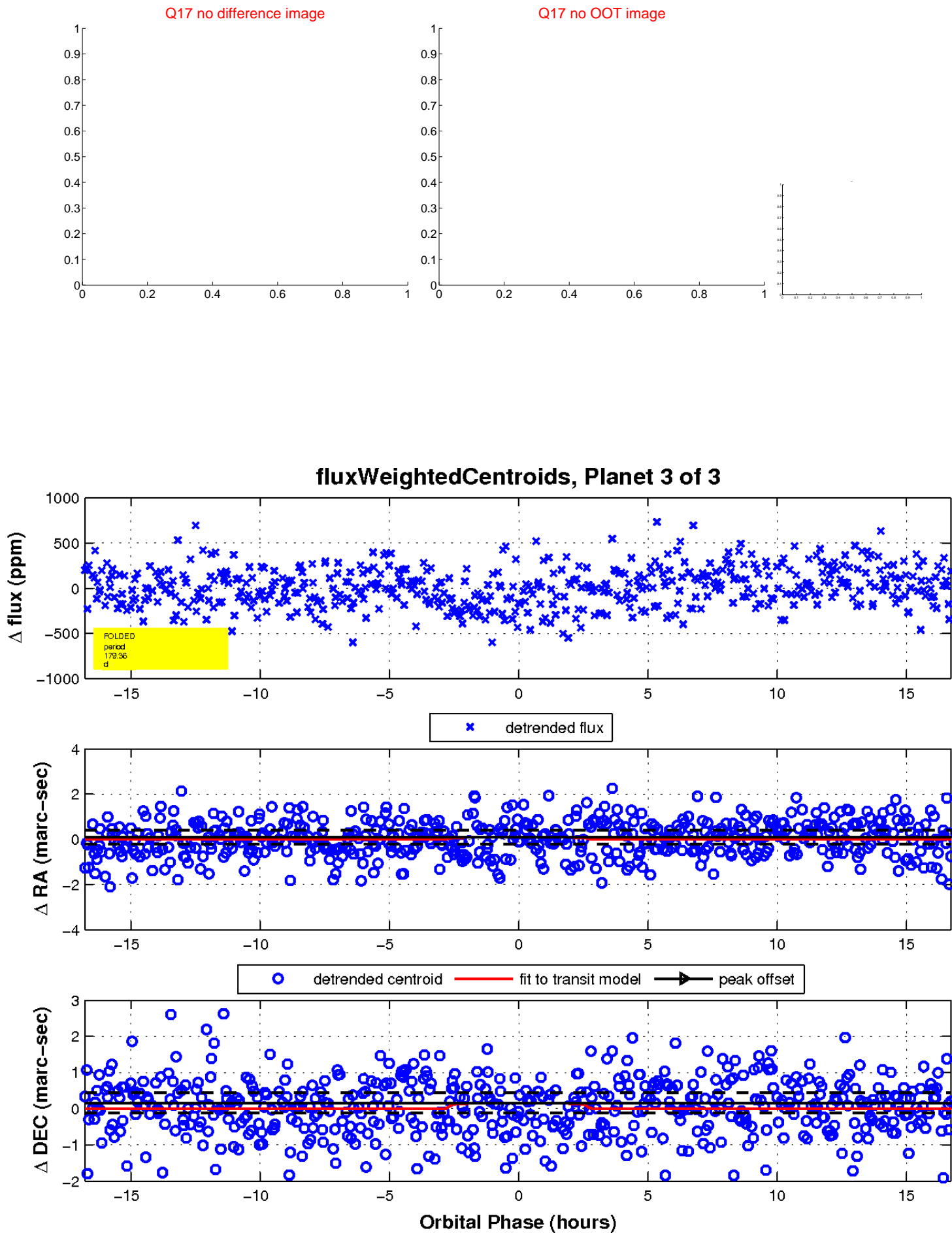
Q12 OOT image



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



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



UKIRT Image

Declination

