

KIC 011547513

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})
011547513-01	OBS	0295.01	5.317440	134.653746	288.4	3.079	70.3	77.5	1.05	5923	2.12	352.66
011547513-02	OBS	0295.02	10.105747	135.509078	120.3	2.006	17.9	20.5	1.05	5923	1.35	149.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011547513-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011547513-02	OBS	PC	0.96	0	0	0	0	NO_COMMENT

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

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

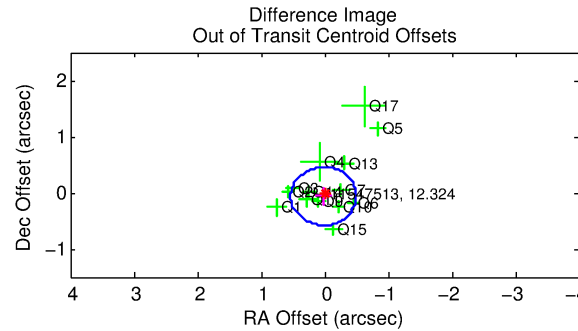
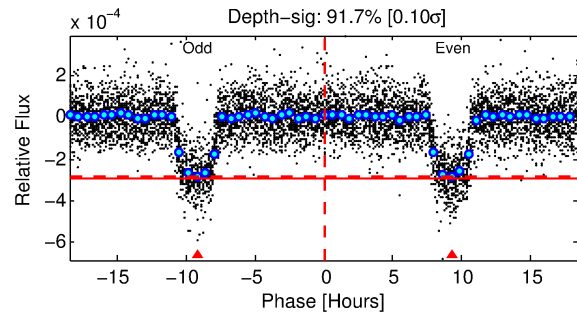
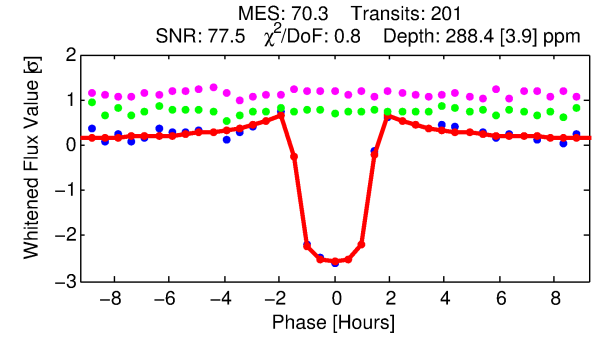
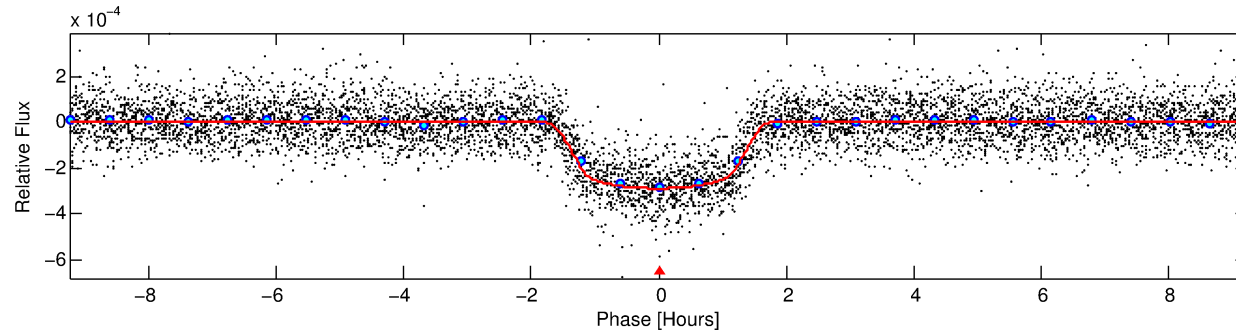
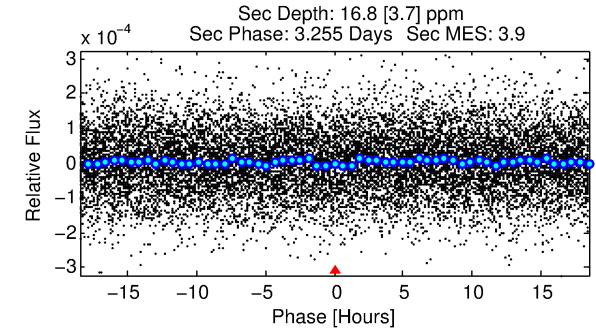
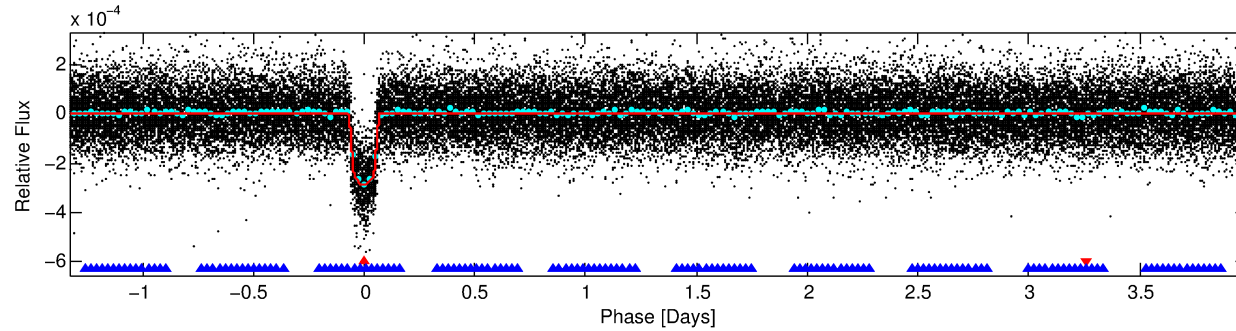
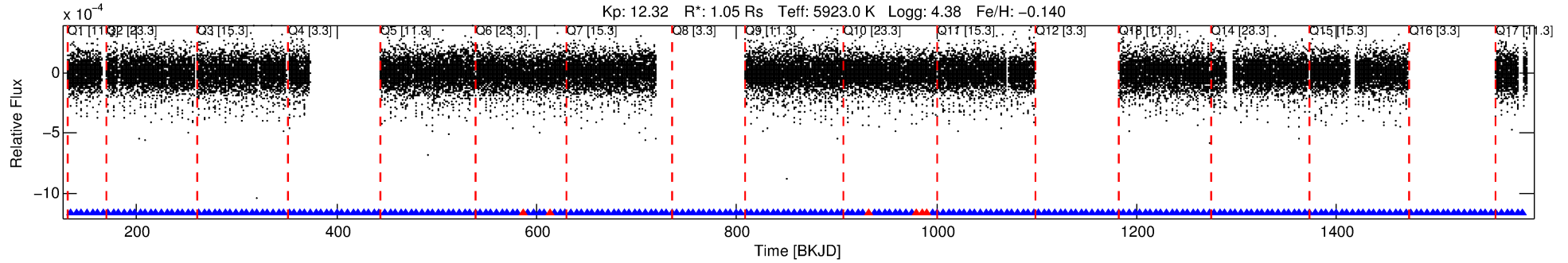
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011547513-01

No Significant Match Found

DV One-Page Summary

KIC: 11547513 Candidate: 1 of 2 Period: 5.317 d
KOI: K00295.01 Name: Kepler-134b Corr: 0.968



DV Fit Results:

Period = 5.31744 [0.00000] d
Epoch = 134.6537 [0.0006] BKJD
Rp/R* = 0.0184 [0.0008]
a/R* = 6.36 [1.35]
b = 0.90 [0.05]
Seff = 352.66 [81.25]
Teff = 1105 [64] K
Rp = 2.12 [0.34] Re
a = 0.0589 [0.0082] AU
Ag = 7.15 [2.29] [2.68σ]
Teffp = 2794 [179] K [8.90σ]

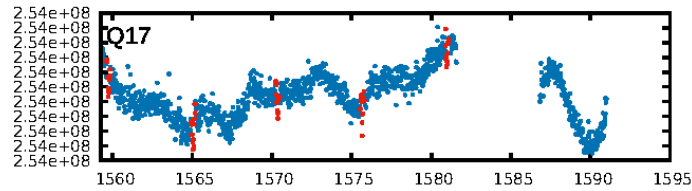
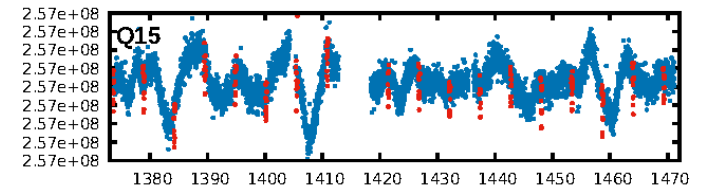
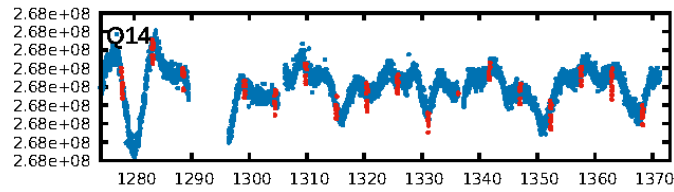
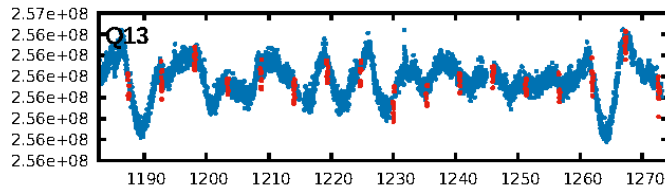
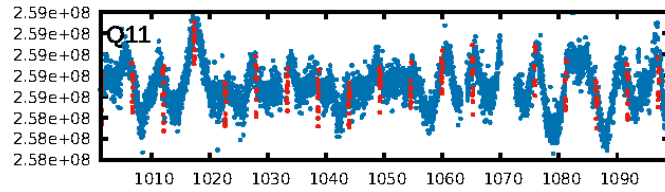
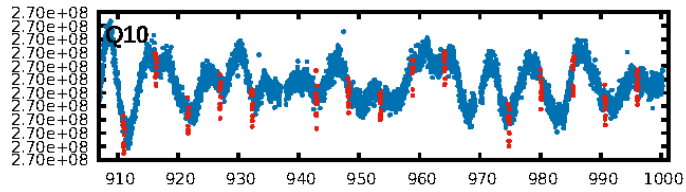
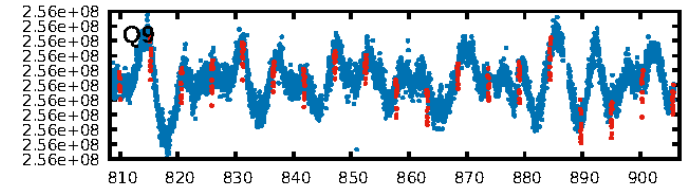
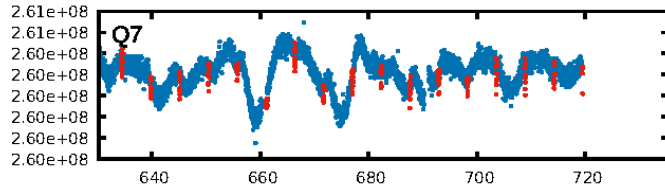
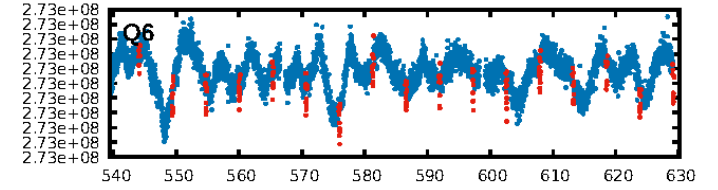
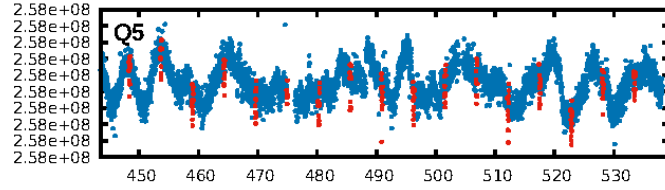
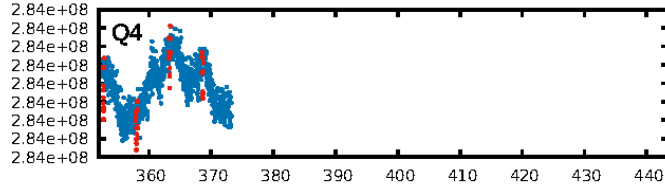
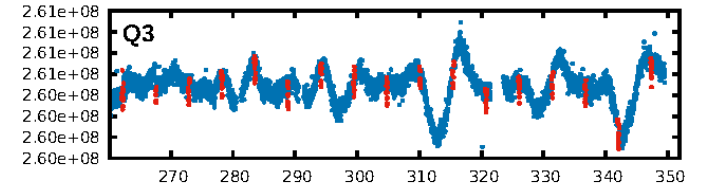
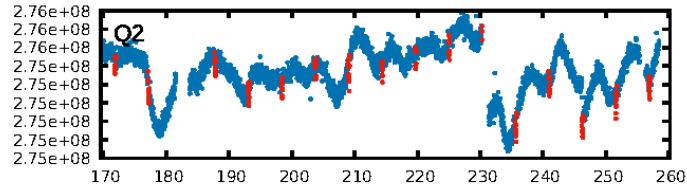
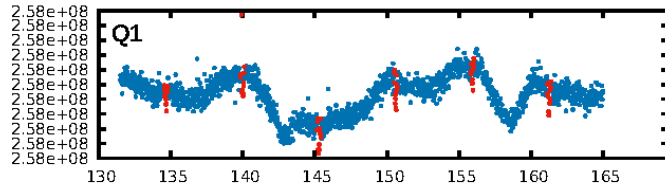
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [31.27σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.97 [180/186]
GhostDiagnostic-chr: 8.436
Centroid-sig: 2.8%
Centroid-so: 0.066 arcsec [0.45σ]
OotOffset-rm: 0.066 arcsec [0.38σ]
KicOffset-rm: 0.146 arcsec [0.99σ]
OotOffset-st: 4/4/1/5 [14]
KicOffset-st: 4/4/1/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

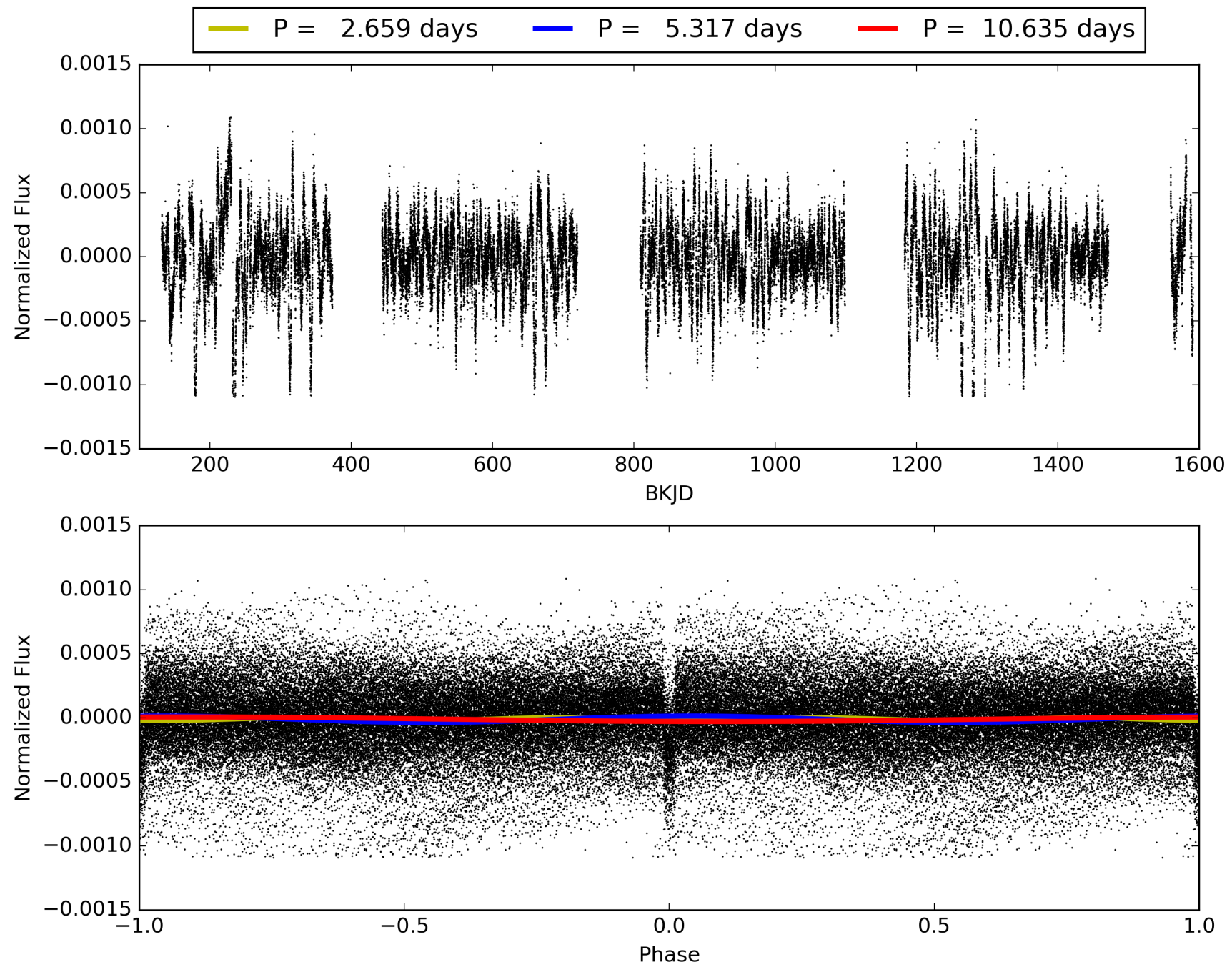
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 02:29:33 Z

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

TCE 011547513-01, PDC Light Curves

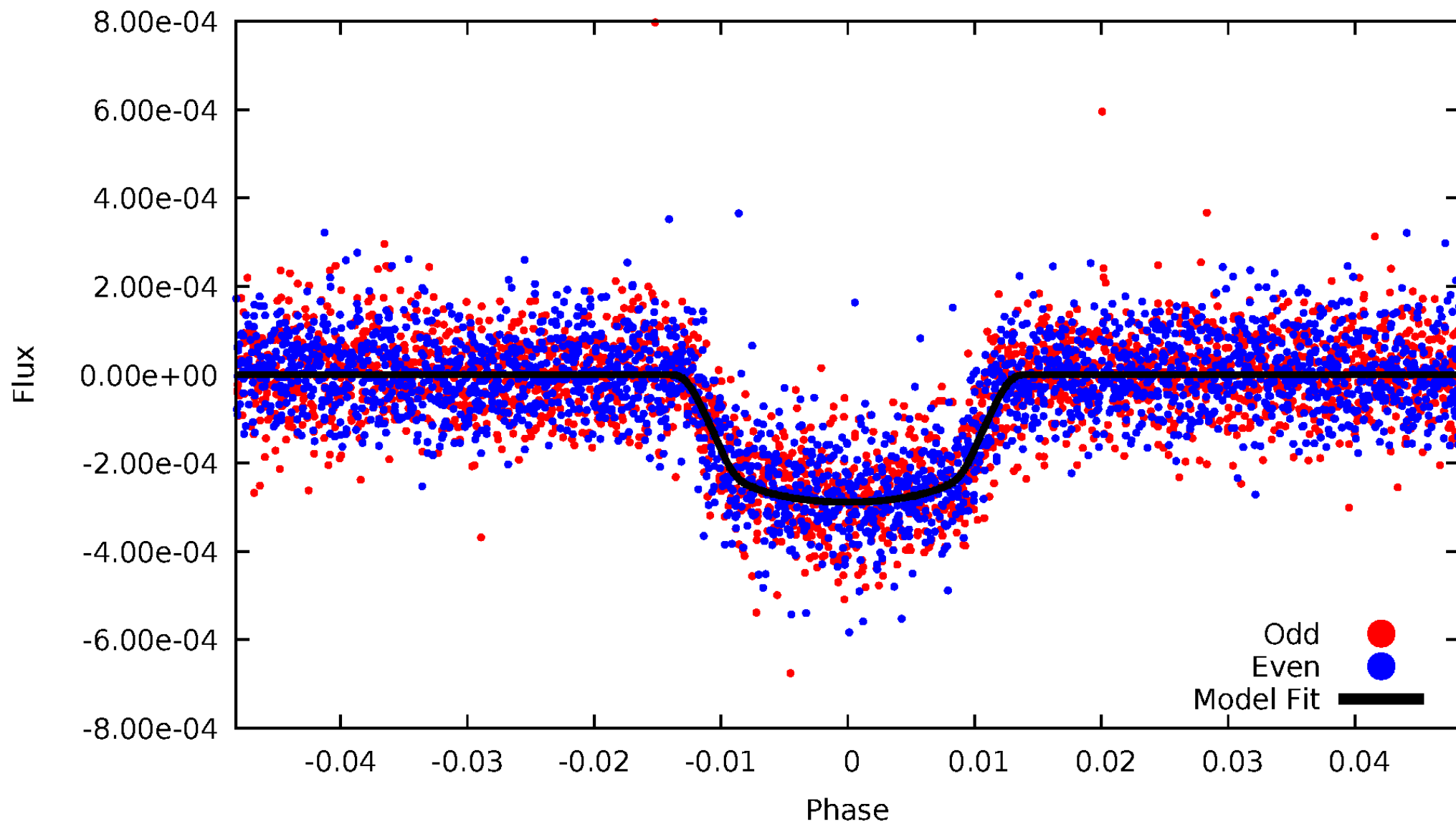


TCE 011547513-01



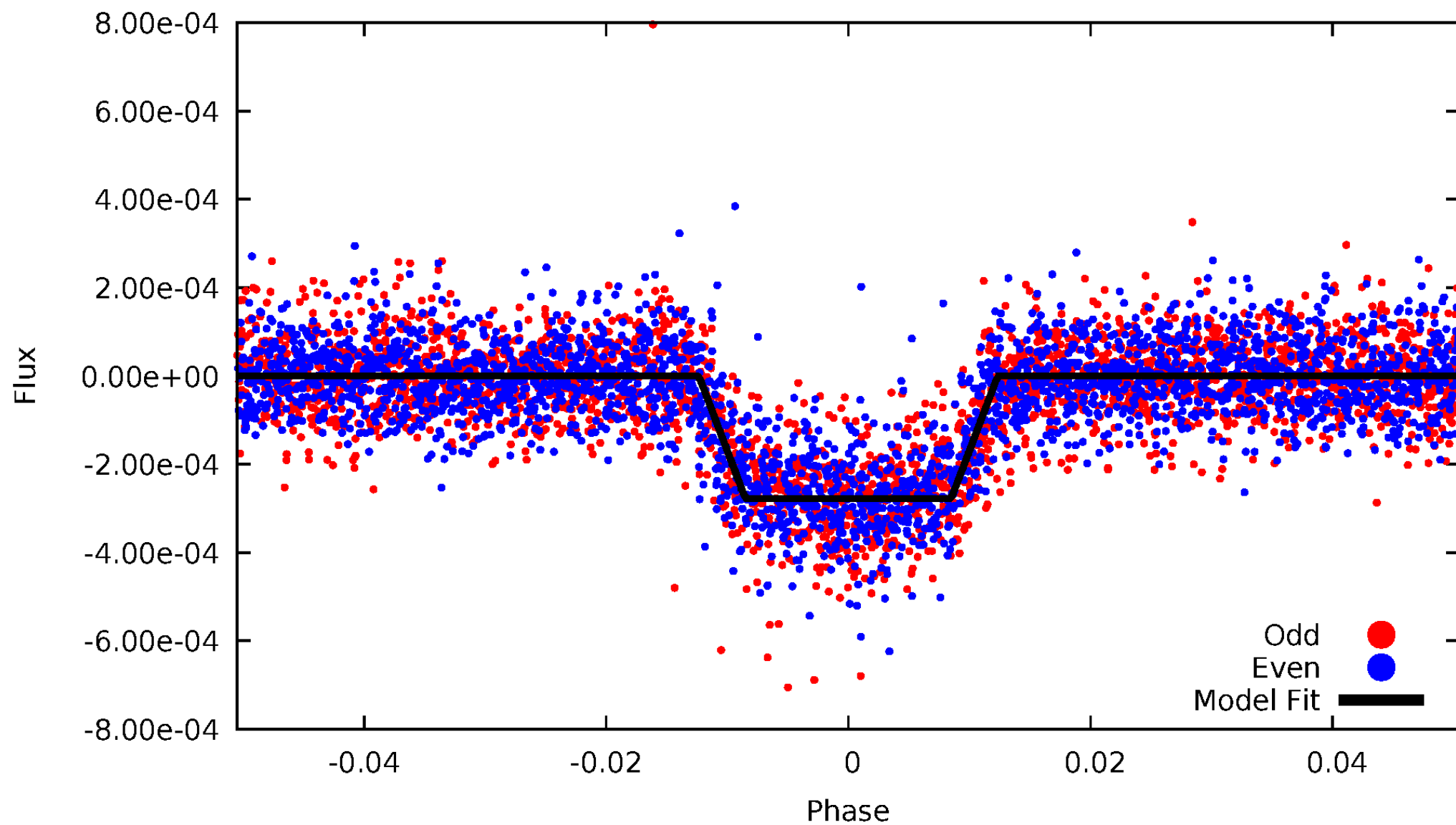
DV Odd/Even

TCE 011547513-01



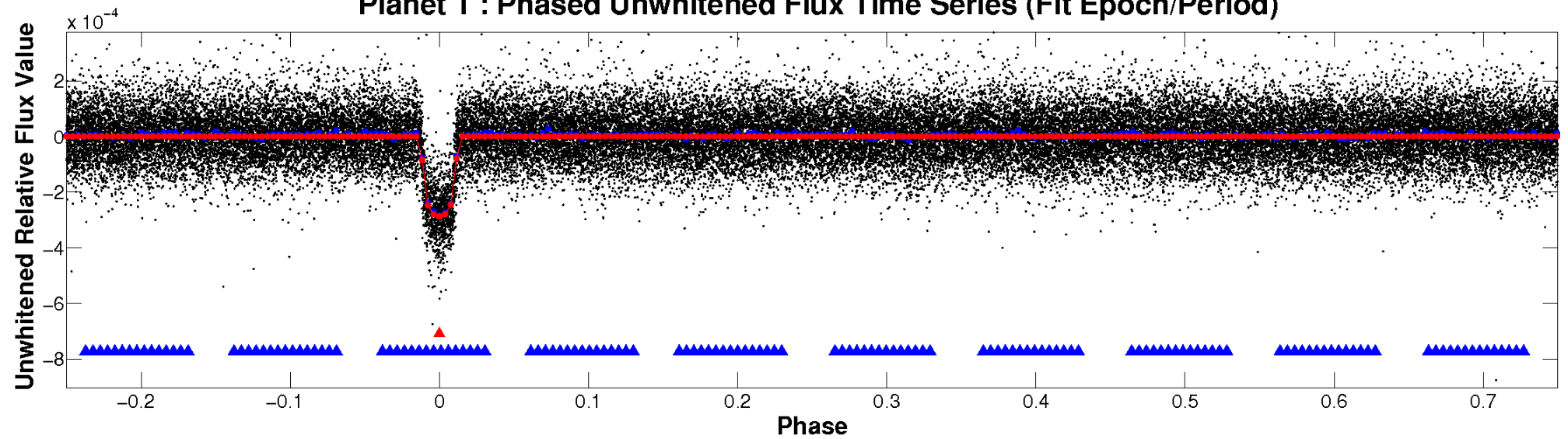
ALT Odd/Even

TCE 011547513-01

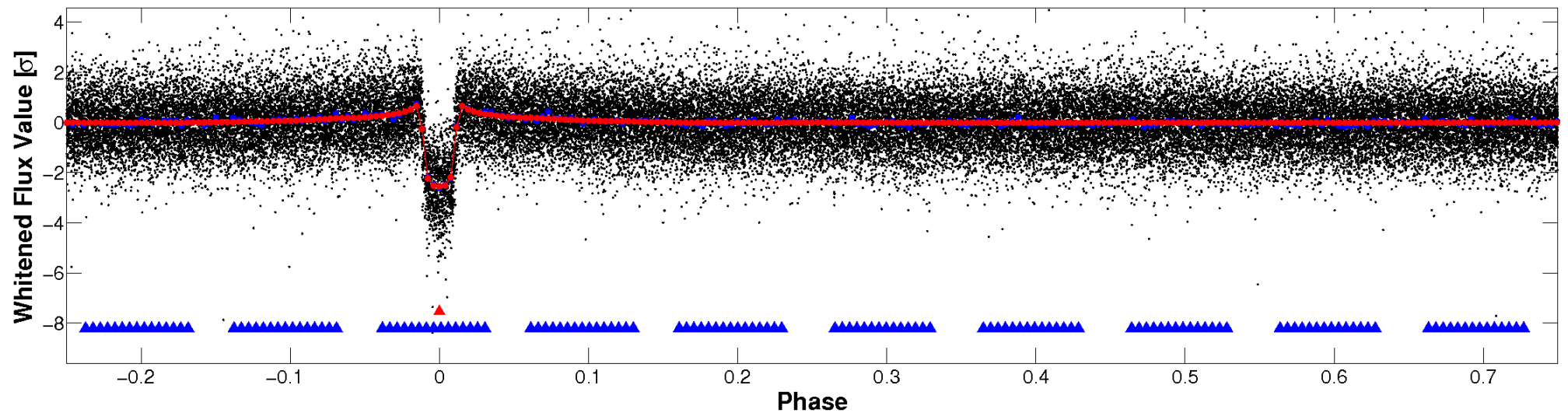


Non-Whitened Vs. Whitened Light Curve

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

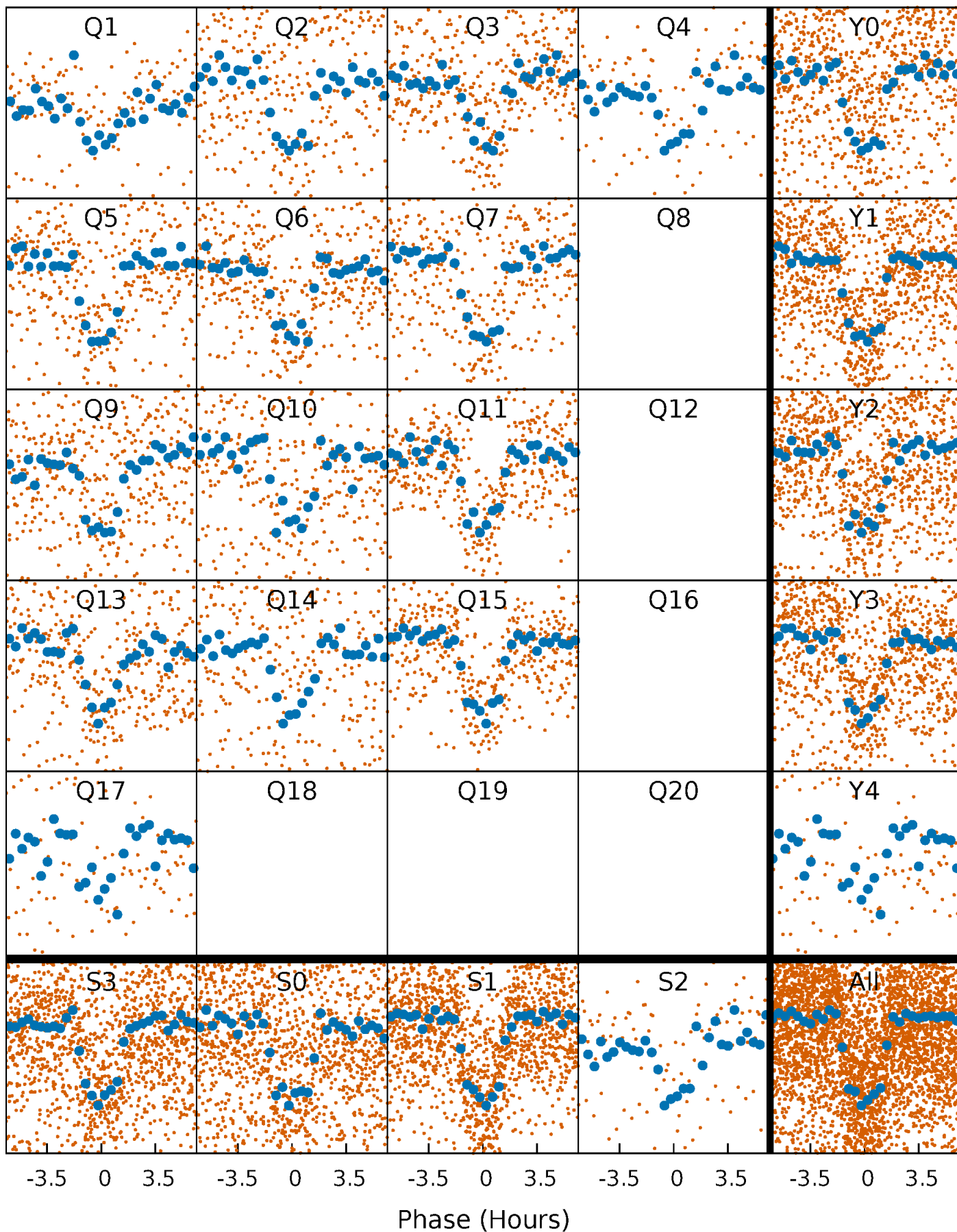


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



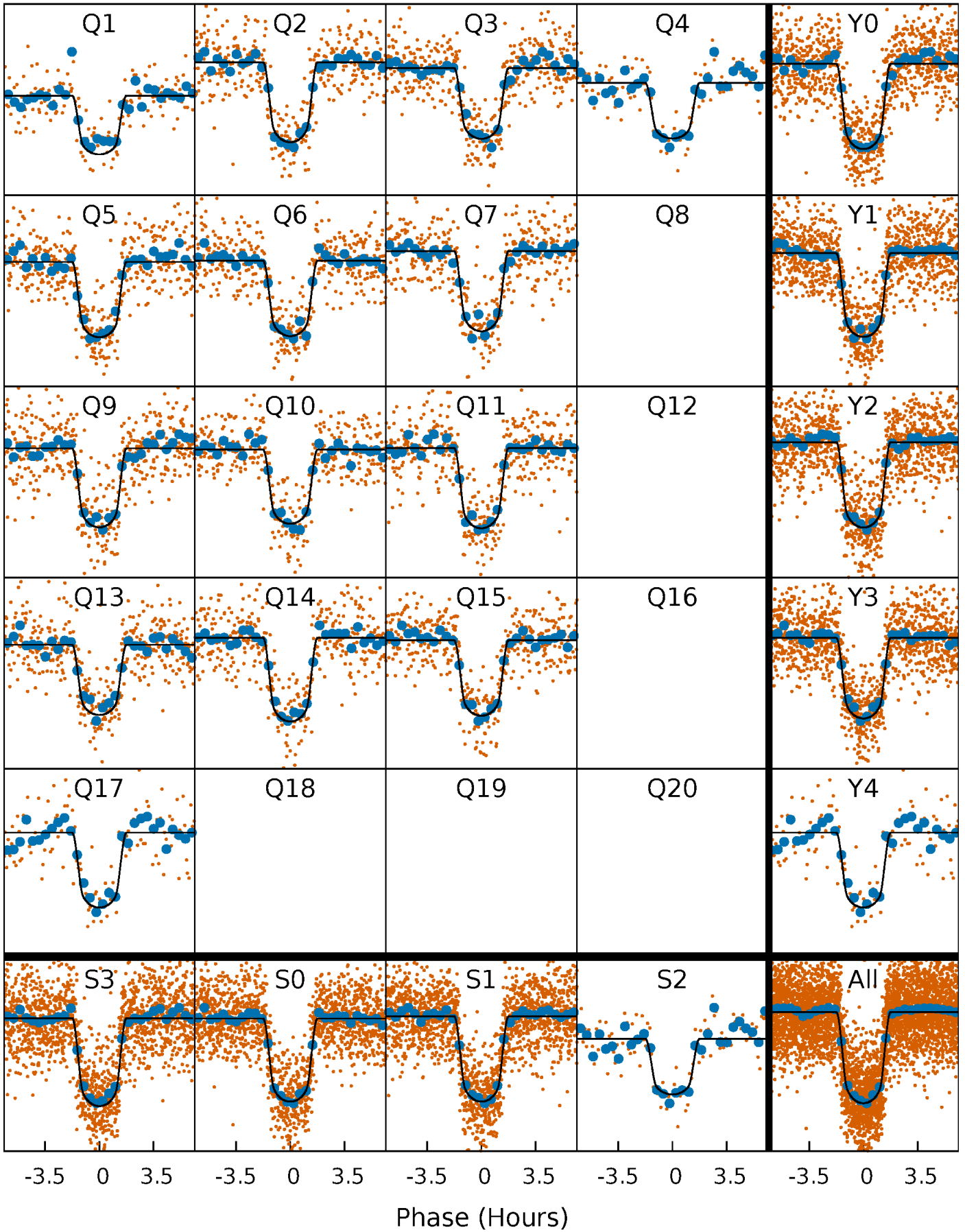
PDC Quarter-Phased Transit Curves

TCE 011547513-01 P= 5.317440 Days $T_0=134.653746$ (BKJD)



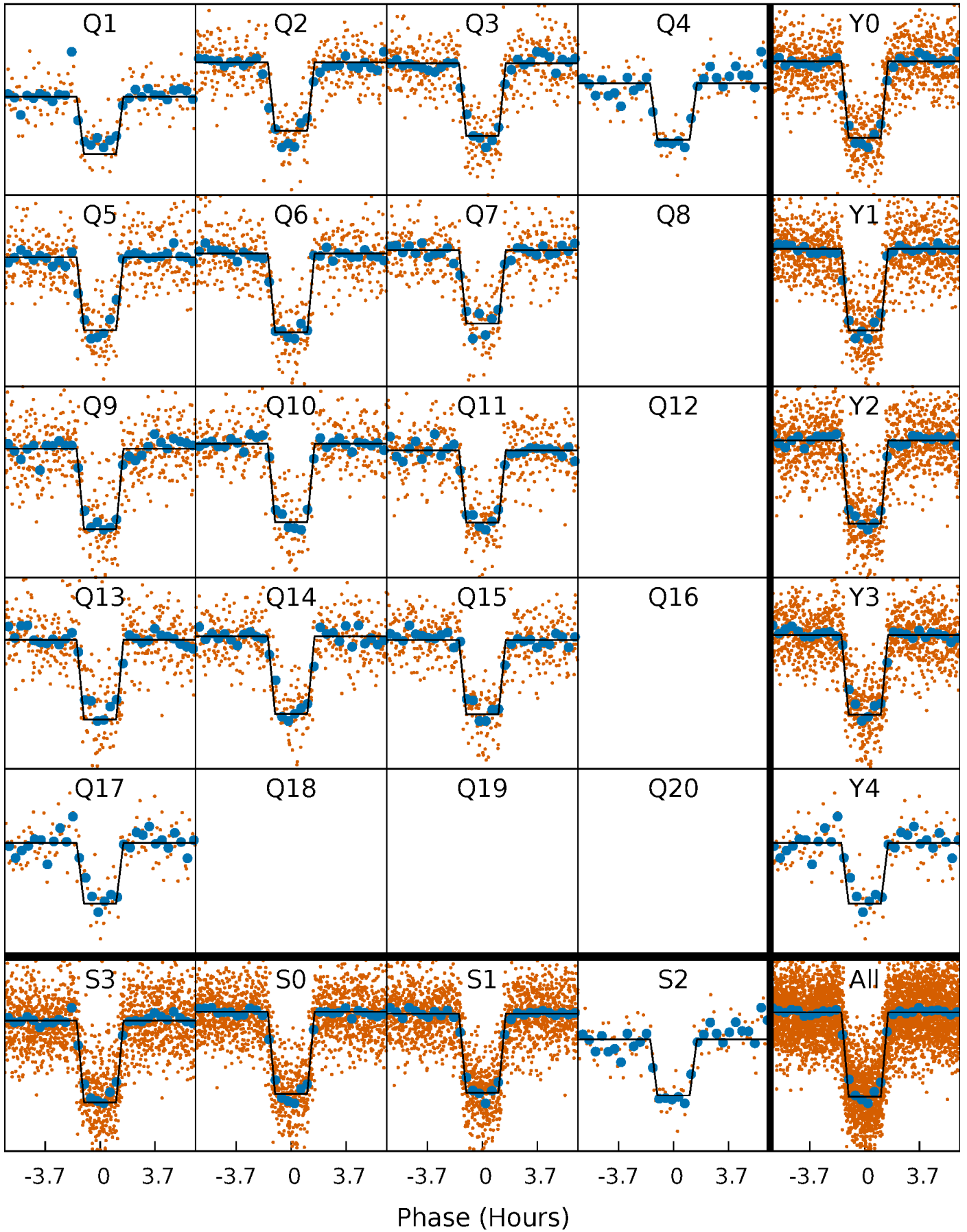
DV Quarter-Phased Transit Curves

TCE 011547513-01 P= 5.317440 Days $T_0=134.653746$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

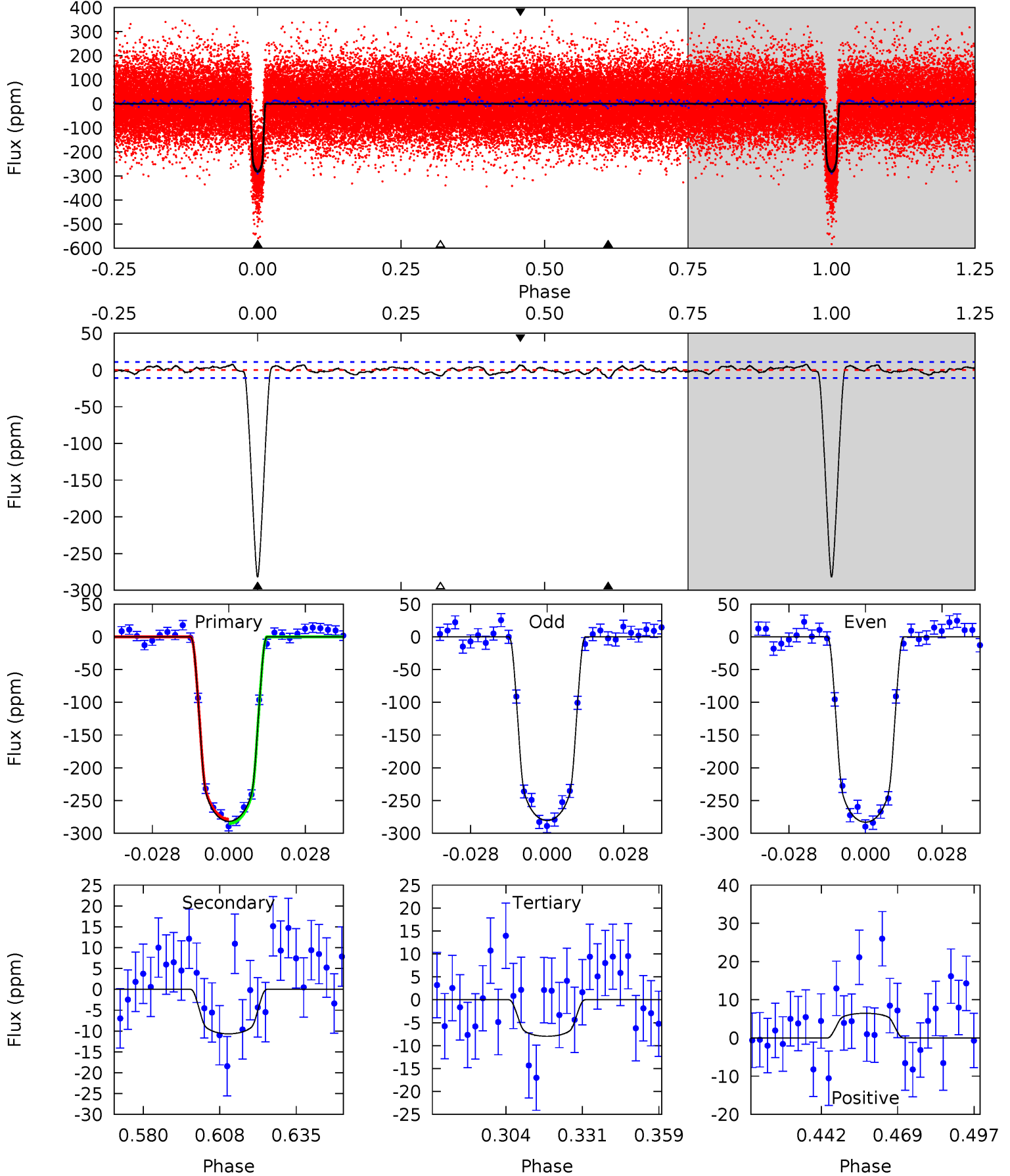
TCE 011547513-01 P= 5.317402 Days $T_0=134.658793$ (BKJD)



DV Model-Shift Uniqueness Test

011547513-01, P = 5.317440 Days, E = 129.336306 Days

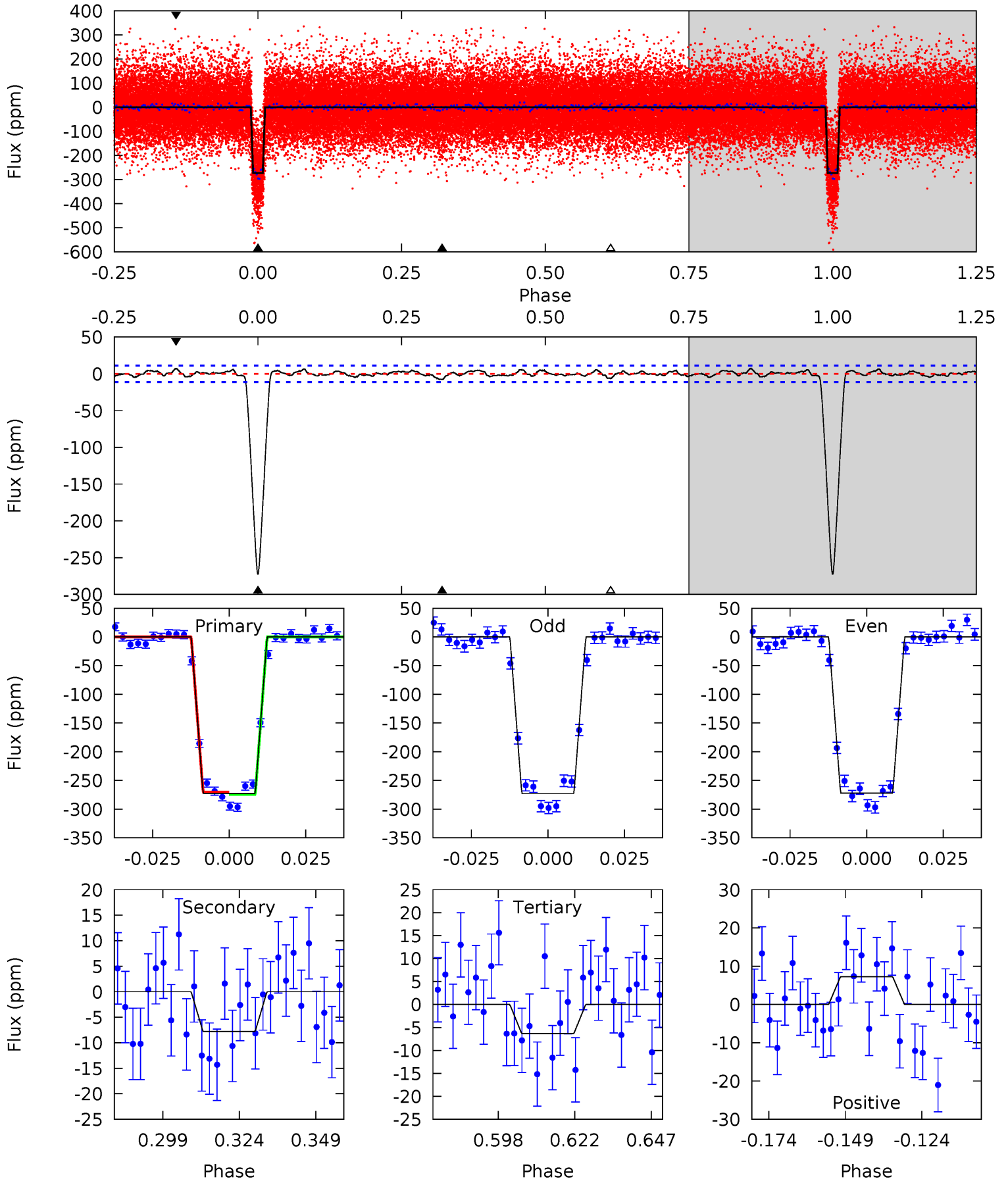
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
124.6	4.72	3.52	2.86	4.83	2.20	1.47	121.0	121.7	1.20	1.87	0.57	1.00	0.03	1.43



Alt Model-Shift Uniqueness Test

011547513-01, P = 5.317402 Days, E = 129.341391 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
118.8	3.39	2.75	3.16	4.85	2.24	1.12	116.0	115.6	0.63	0.23	0.14	1.01	0.03	0.91



Stellar Parameters For KIC 011547513

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5923^{+107}_{-131}	$4.377^{+0.099}_{-0.121}$	$-0.140^{+0.150}_{-0.150}$	$1.054^{+0.164}_{-0.120}$	$0.966^{+0.067}_{-0.067}$	$1.161^{+0.471}_{-0.395}$
	+2%/-2%	+2%/-3%	+107%/-107%	+16%/-11%	+7%/-7%	+41%/-34%
Source	SPE59	SPE59	SPE59	DSEP		

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

Secondary Eclipse Parameters for KIC 011547513-01 / KOI 0295.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-11 ± 2	$2.14^{+0.19}_{-0.18}$	1546^{+70}_{-60}	3089^{+106}_{-128}	$4.433^{+1.356}_{-1.073}$
Alt.	-8 ± 2	$1.92^{+0.19}_{-0.17}$	1542^{+71}_{-58}	3035^{+140}_{-174}	$3.986^{+1.531}_{-1.252}$

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 $A_{obs} \gg 1.0$

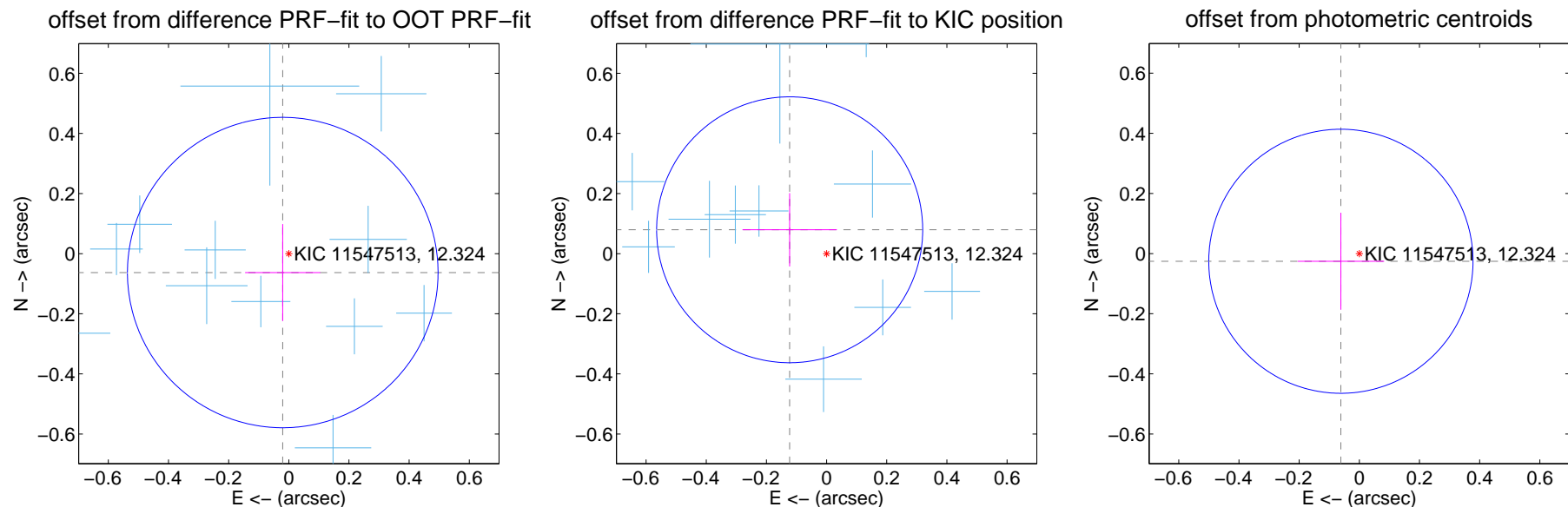
DV Centroid Data

Supplemental centroid analysis for 011547513-01. Kepler magnitude: 12.32. Transit SNR 77.53

There are 14 quarters with good PRF difference image offsets

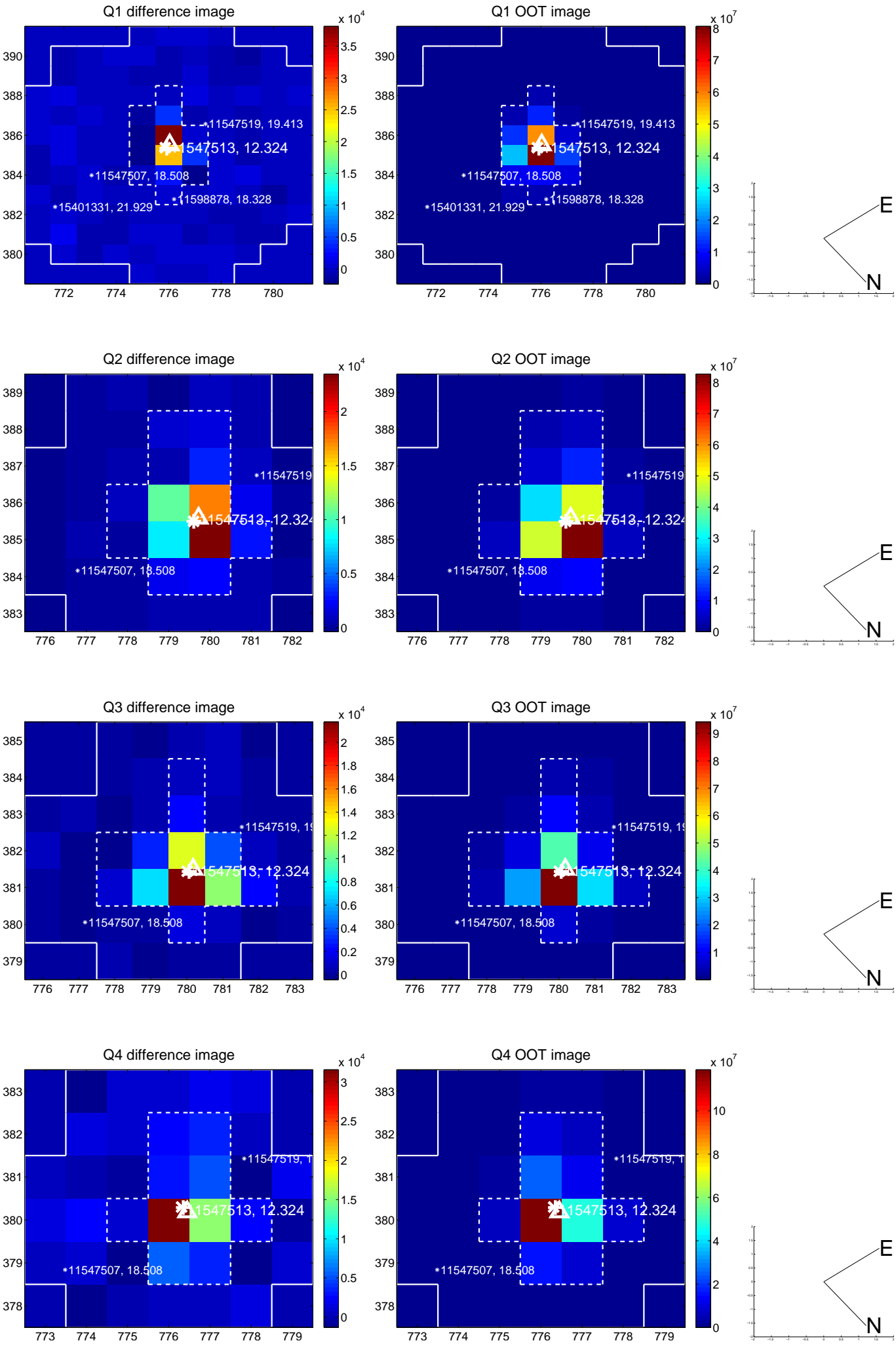
The direct PRF centroid is offset from the target star catalog position by about 0.29 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.066 ± 0.172	0.38	0.020 ± 0.125	-0.063 ± 0.161
PRF-fit source offset from KIC position	0.146 ± 0.147	0.99	0.123 ± 0.157	0.079 ± 0.122
photometric centroid source offset	0.07 ± 0.15	0.45	0.06 ± 0.14	-0.03 ± 0.16

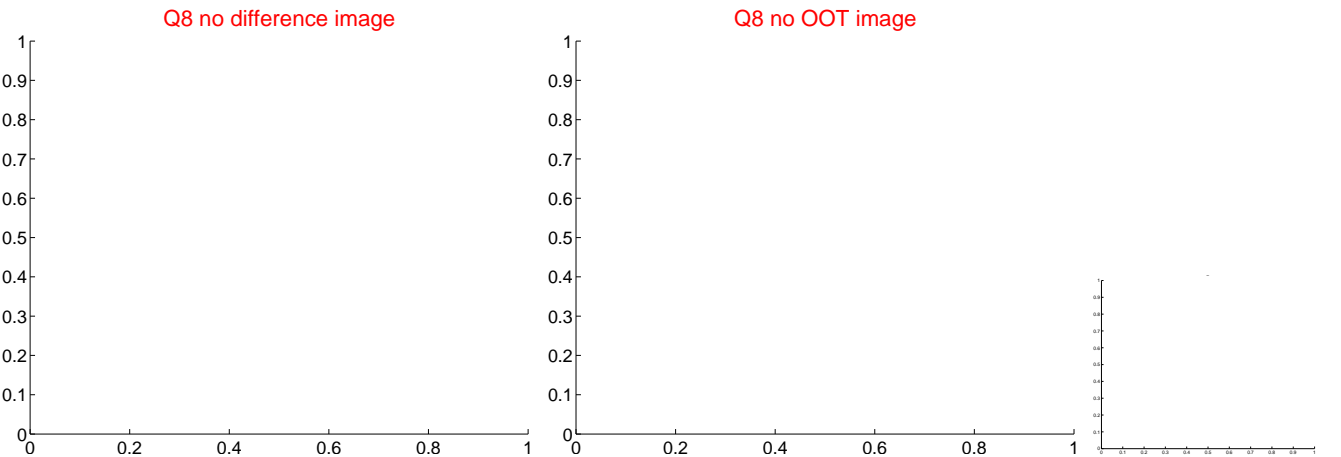
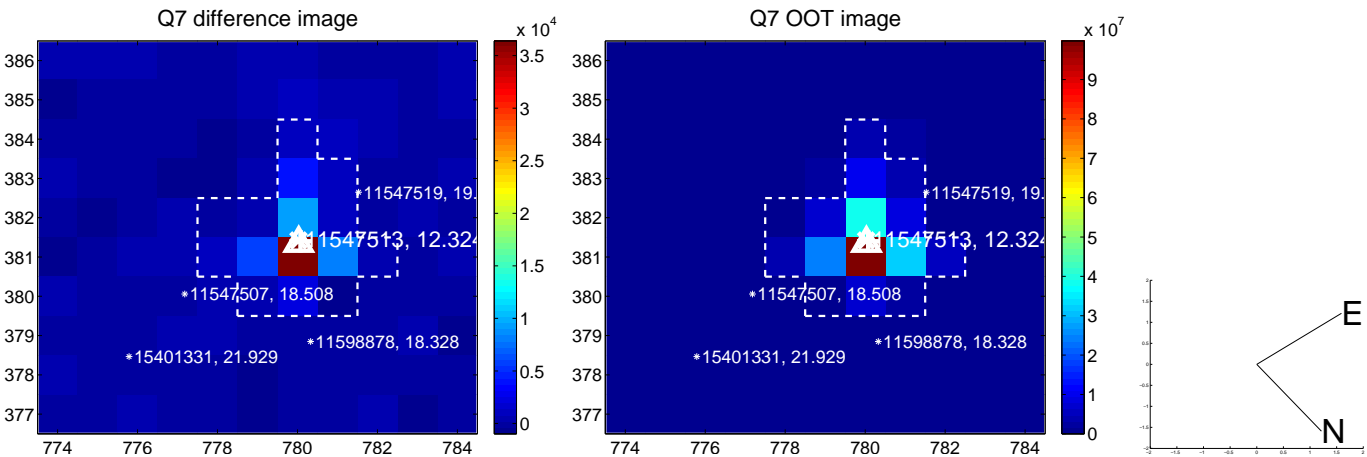
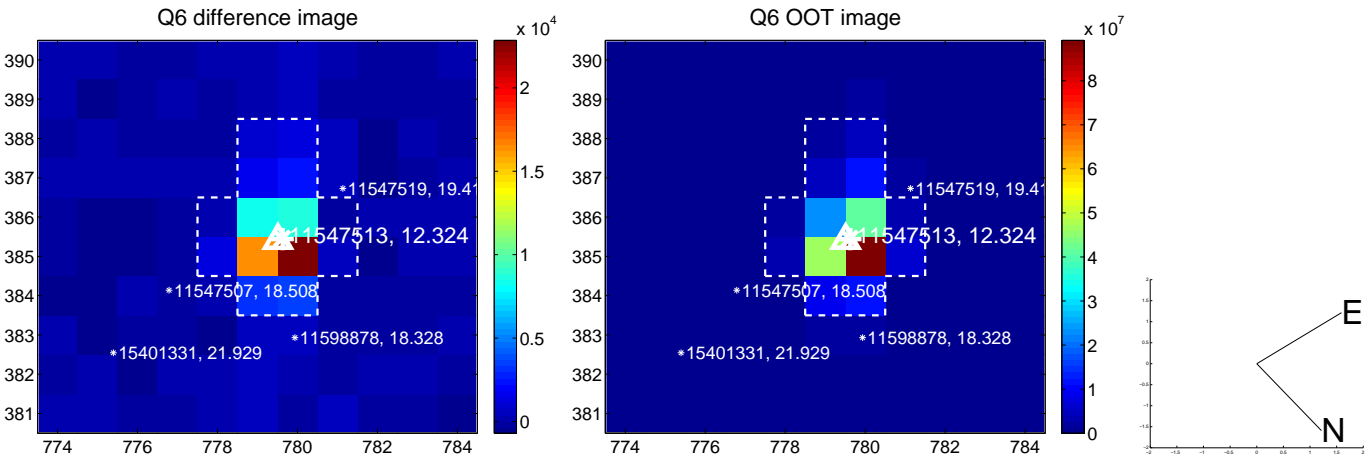
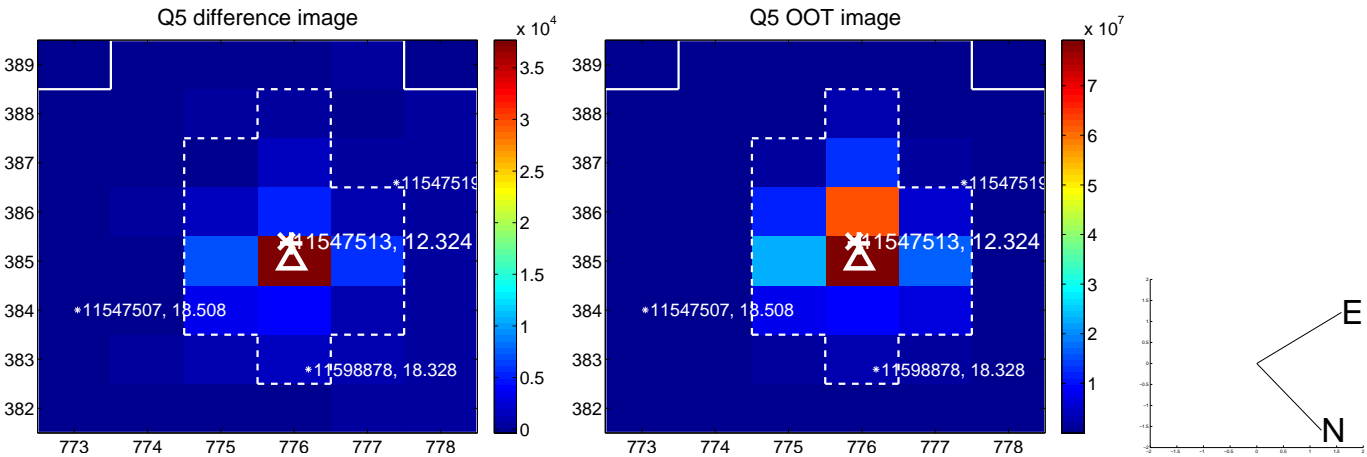


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

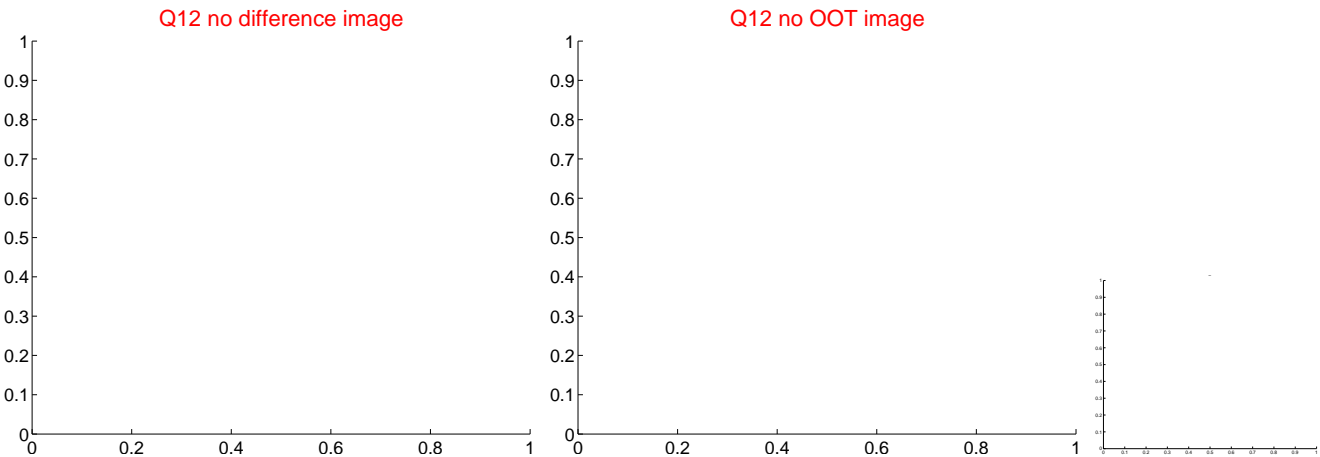
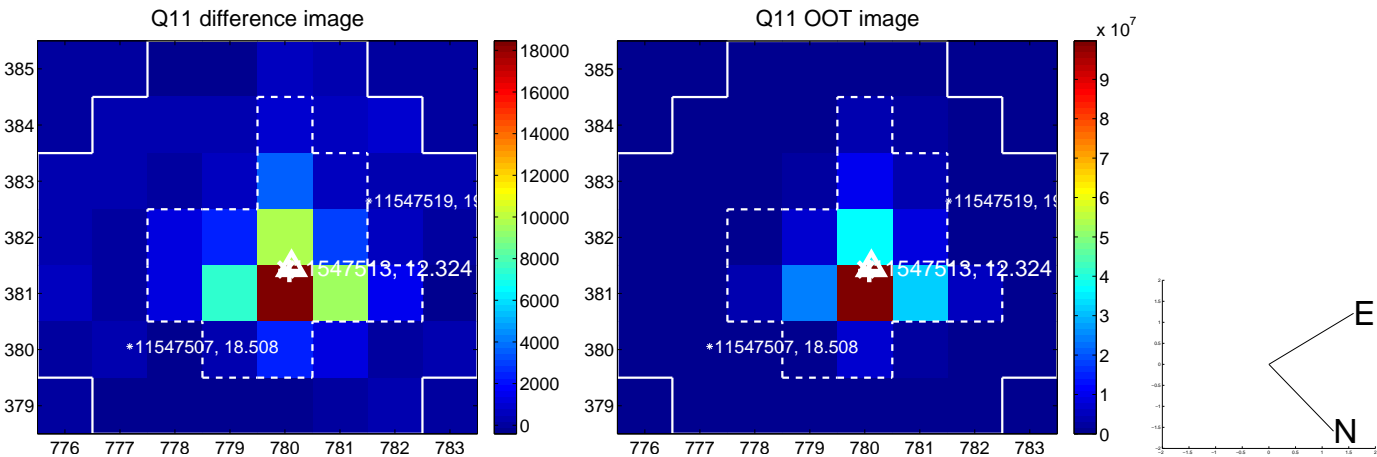
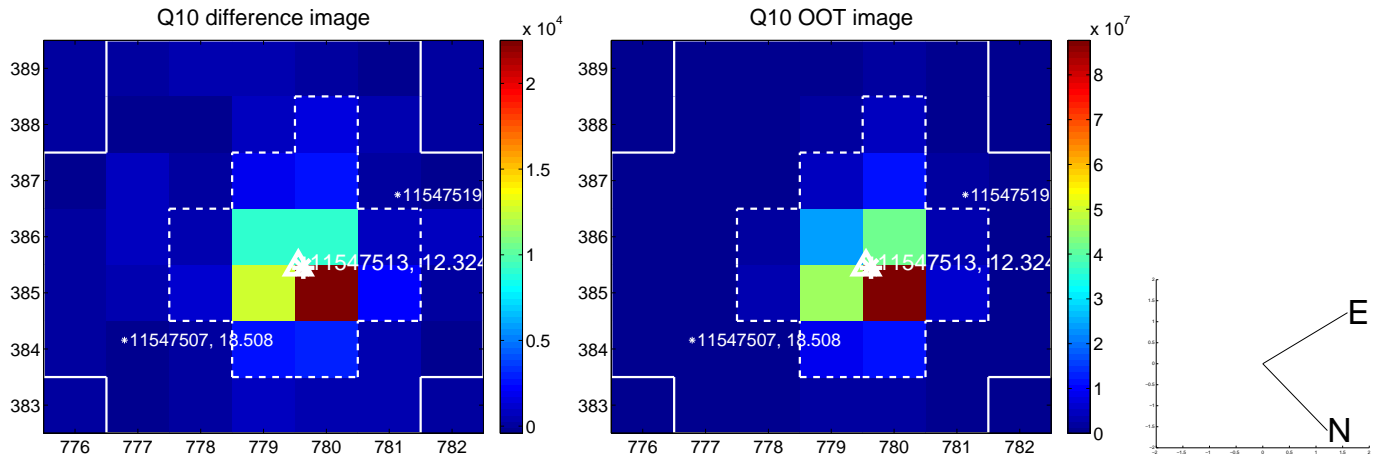
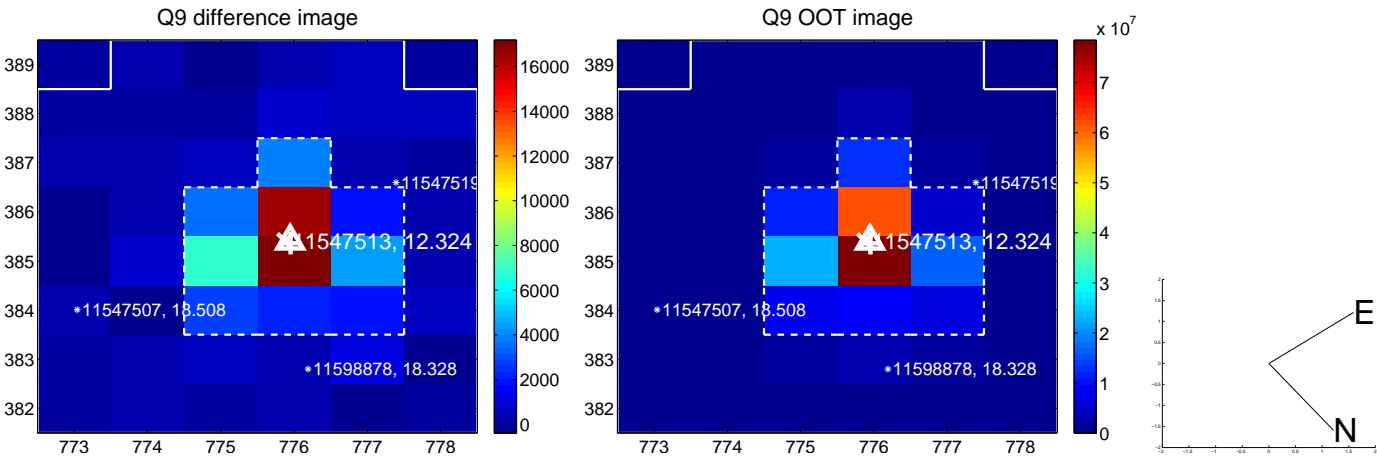
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



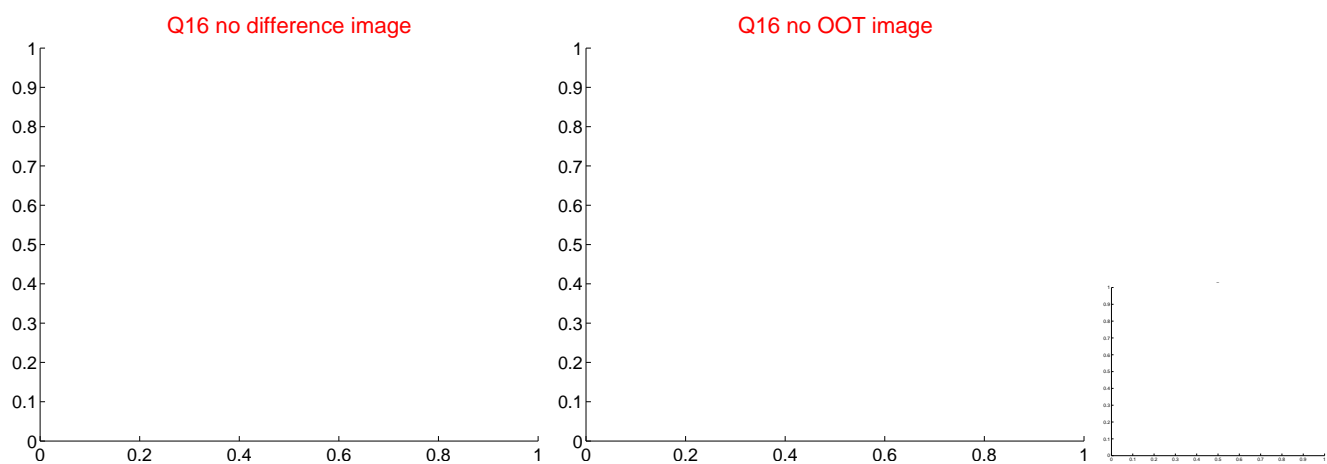
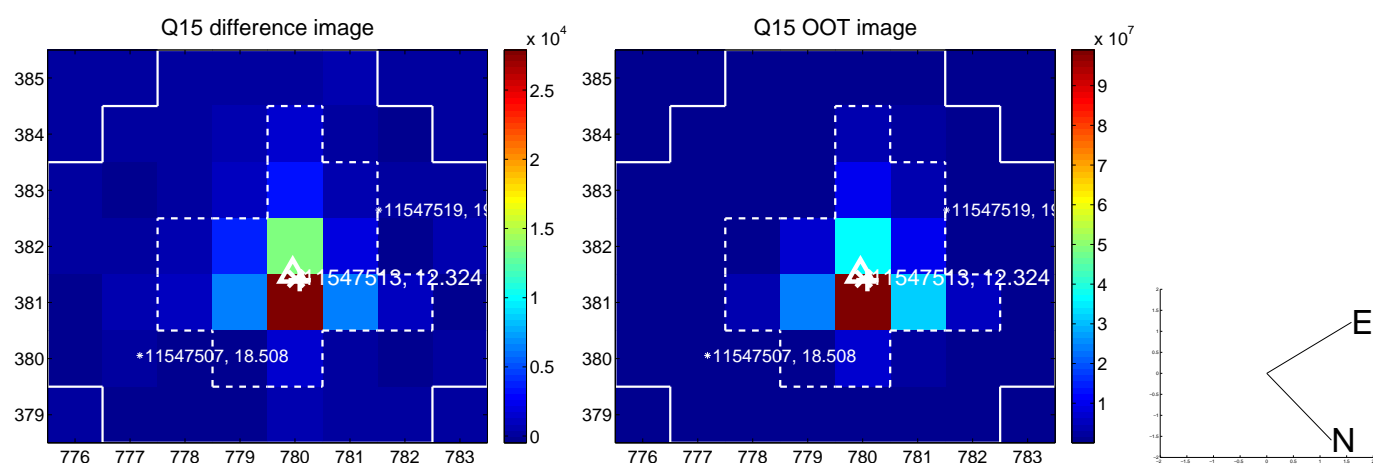
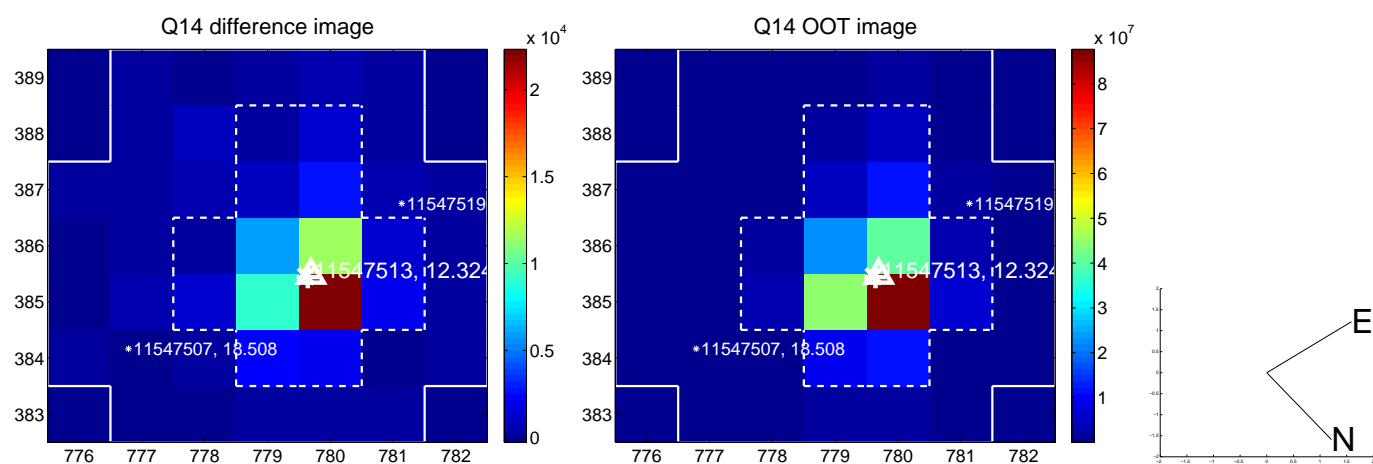
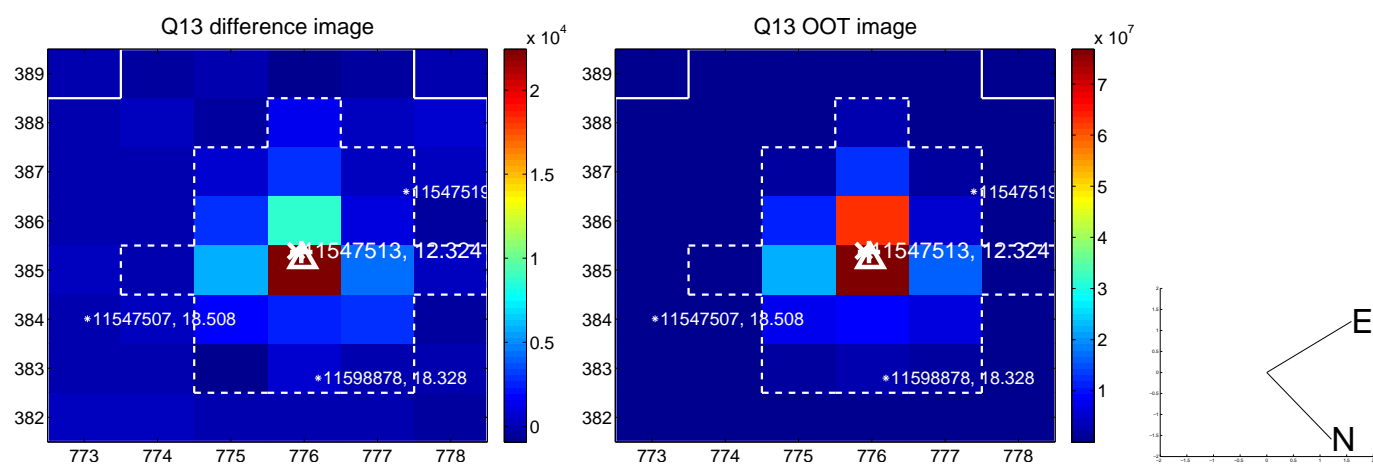
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



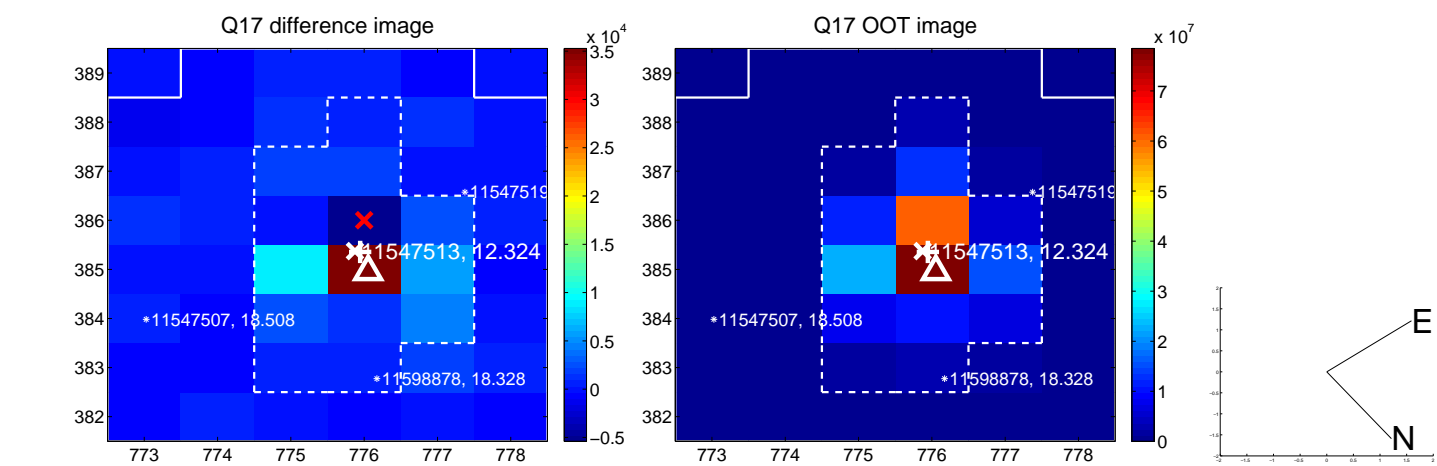
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



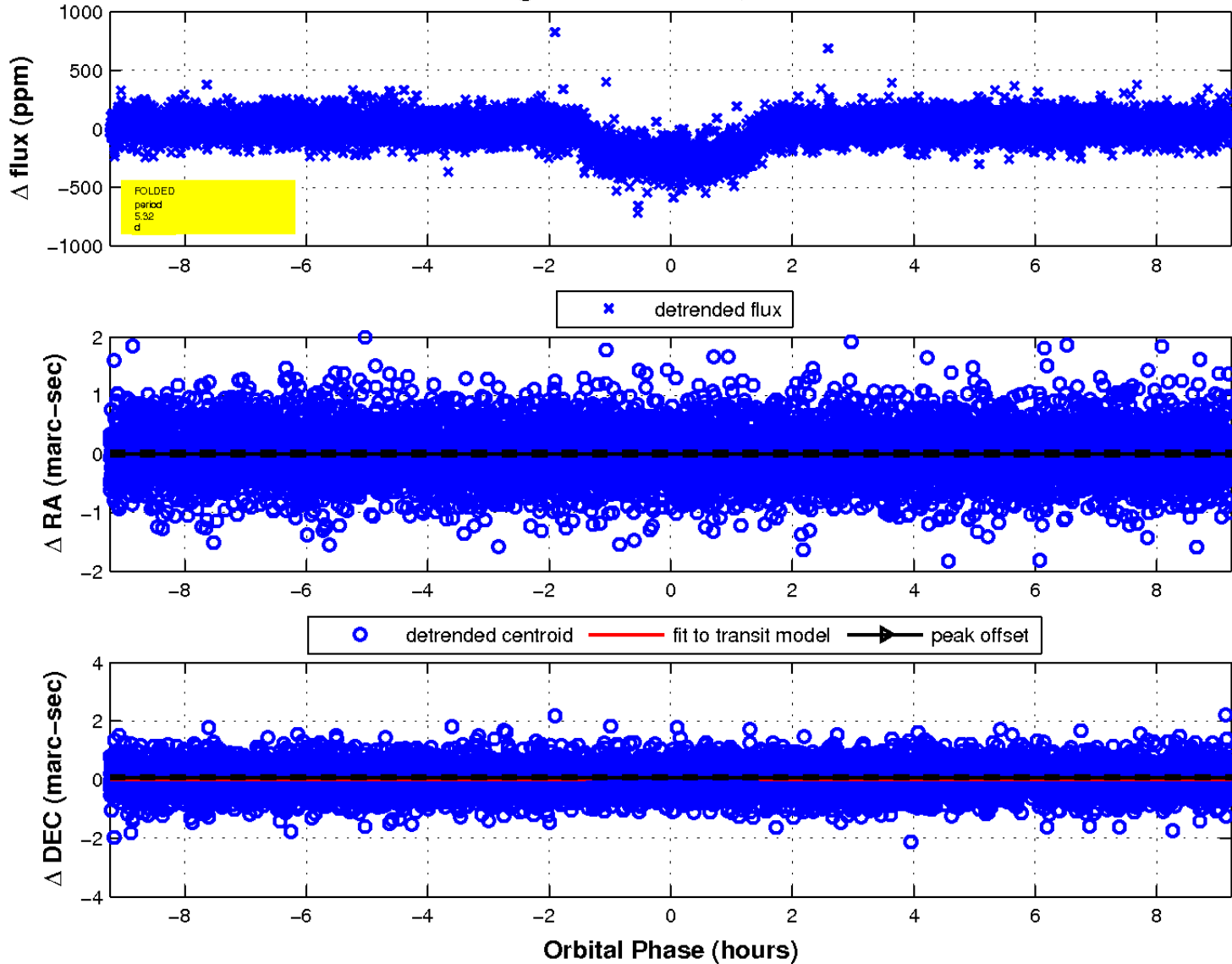
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



fluxWeightedCentroids, Planet 1 of 2



Declination

KIC 011547513

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})
011547513-01	OBS	0295.01	5.317440	134.653746	288.4	3.079	70.3	77.5	1.05	5923	2.12	352.66
011547513-02	OBS	0295.02	10.105747	135.509078	120.3	2.006	17.9	20.5	1.05	5923	1.35	149.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011547513-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011547513-02	OBS	PC	0.96	0	0	0	0	NO_COMMENT

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

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

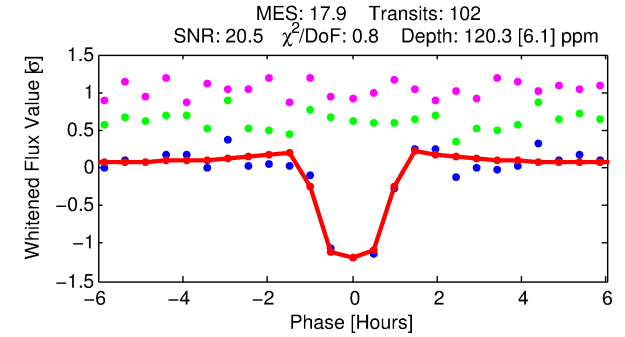
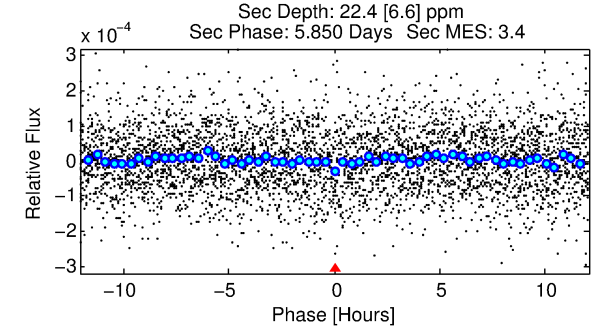
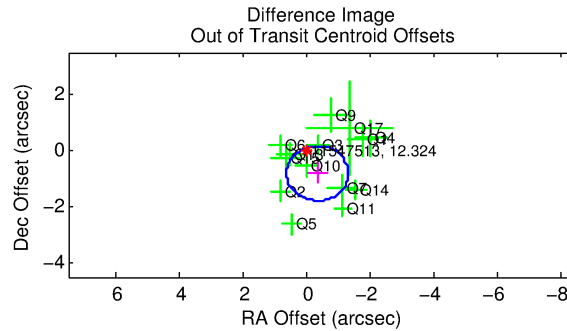
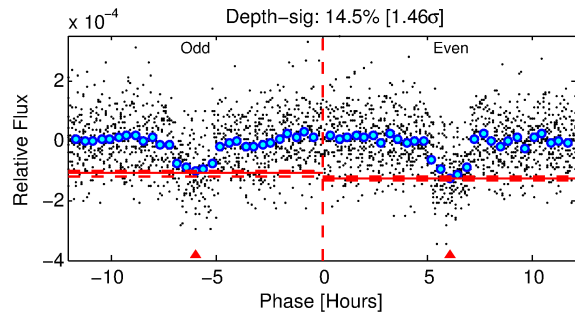
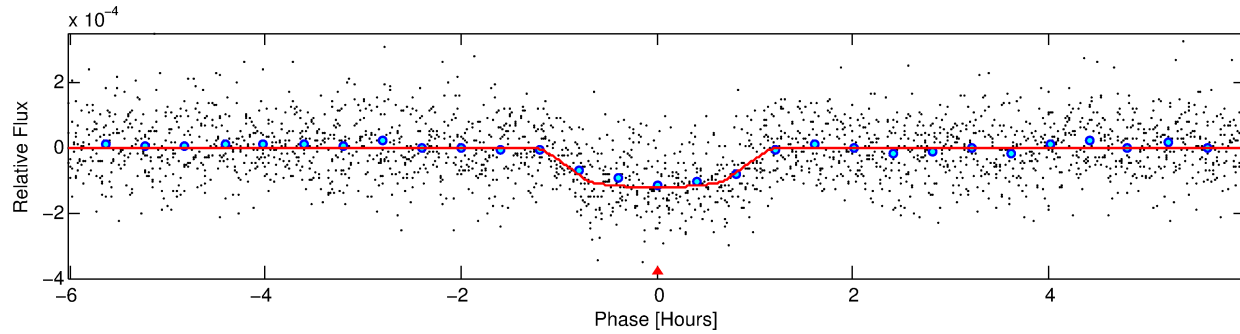
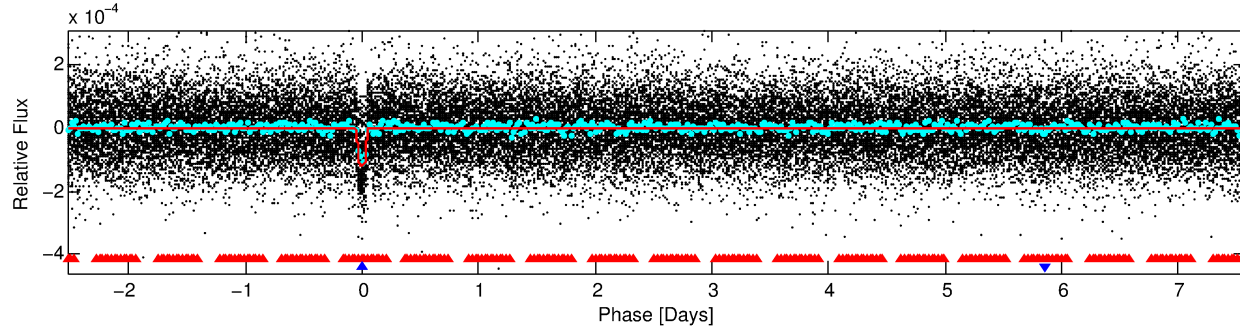
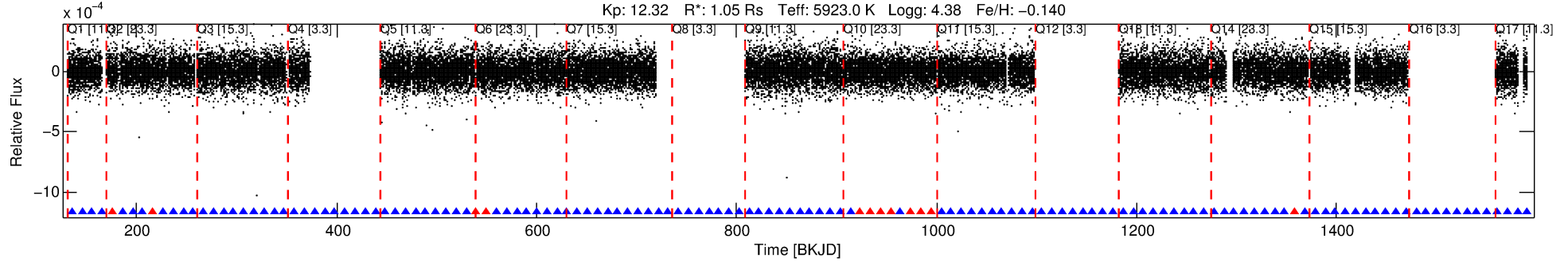
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011547513-02

No Significant Match Found

DV One-Page Summary

KIC: 11547513 Candidate: 2 of 2 Period: 10.106 d
KOI: K00295.02 Name: Kepler-134c Corr: 0.993



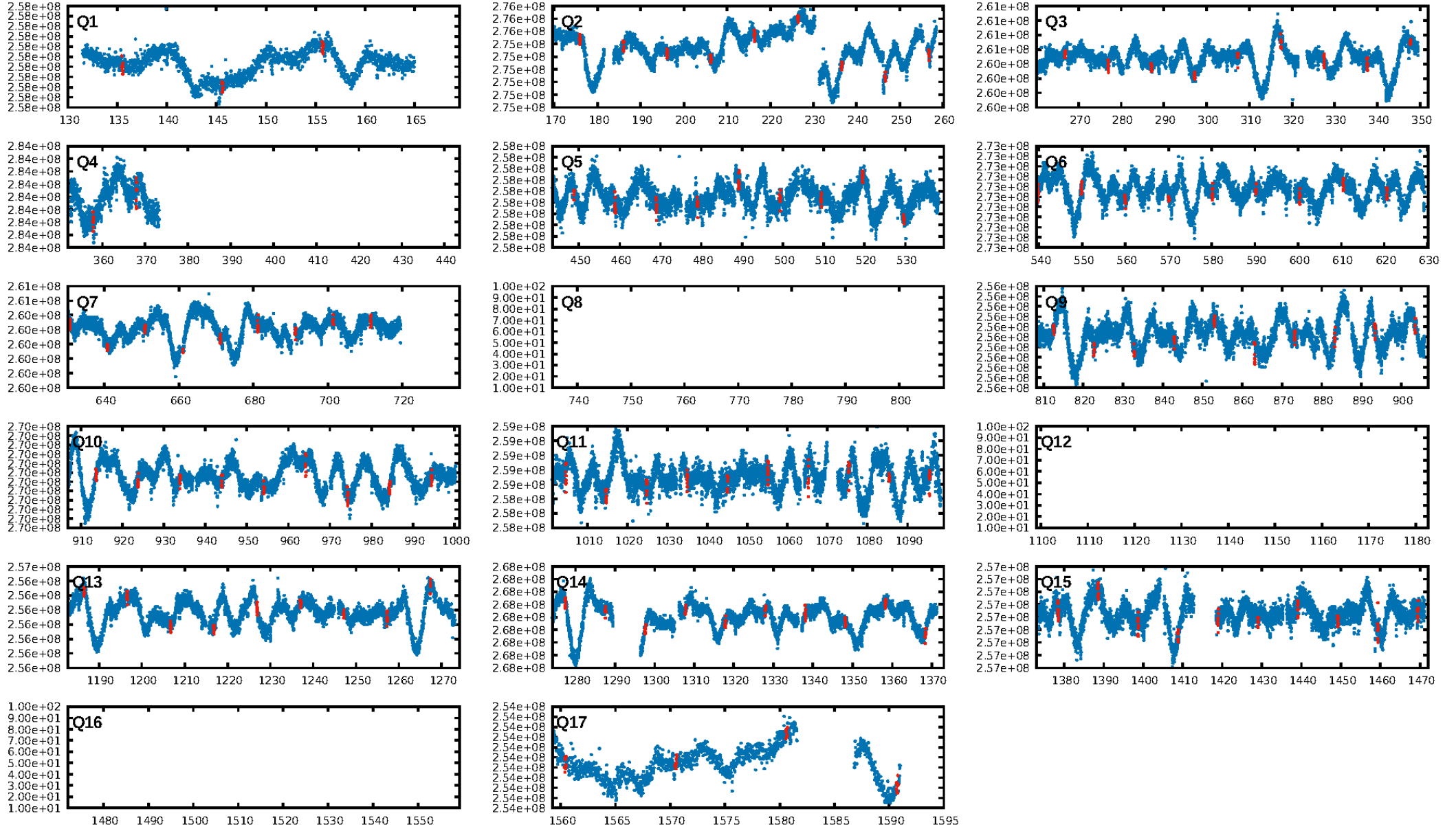
DV Fit Results:

Period = 10.10575 [0.00003] d
Epoch = 135.5091 [0.0021] BKJD
Rp/R* = 0.0118 [0.0041]
a/R* = 18.83 [32.84]
b = 0.89 [0.43]
Seff = 149.81 [34.52]
Teq = 892 [51] K
Rp = 1.35 [0.52] Re
a = 0.0904 [0.0126] AU
Ag = 55.25 [43.43] [1.25 σ]
Teffp = 3760 [716] K [4.00 σ]

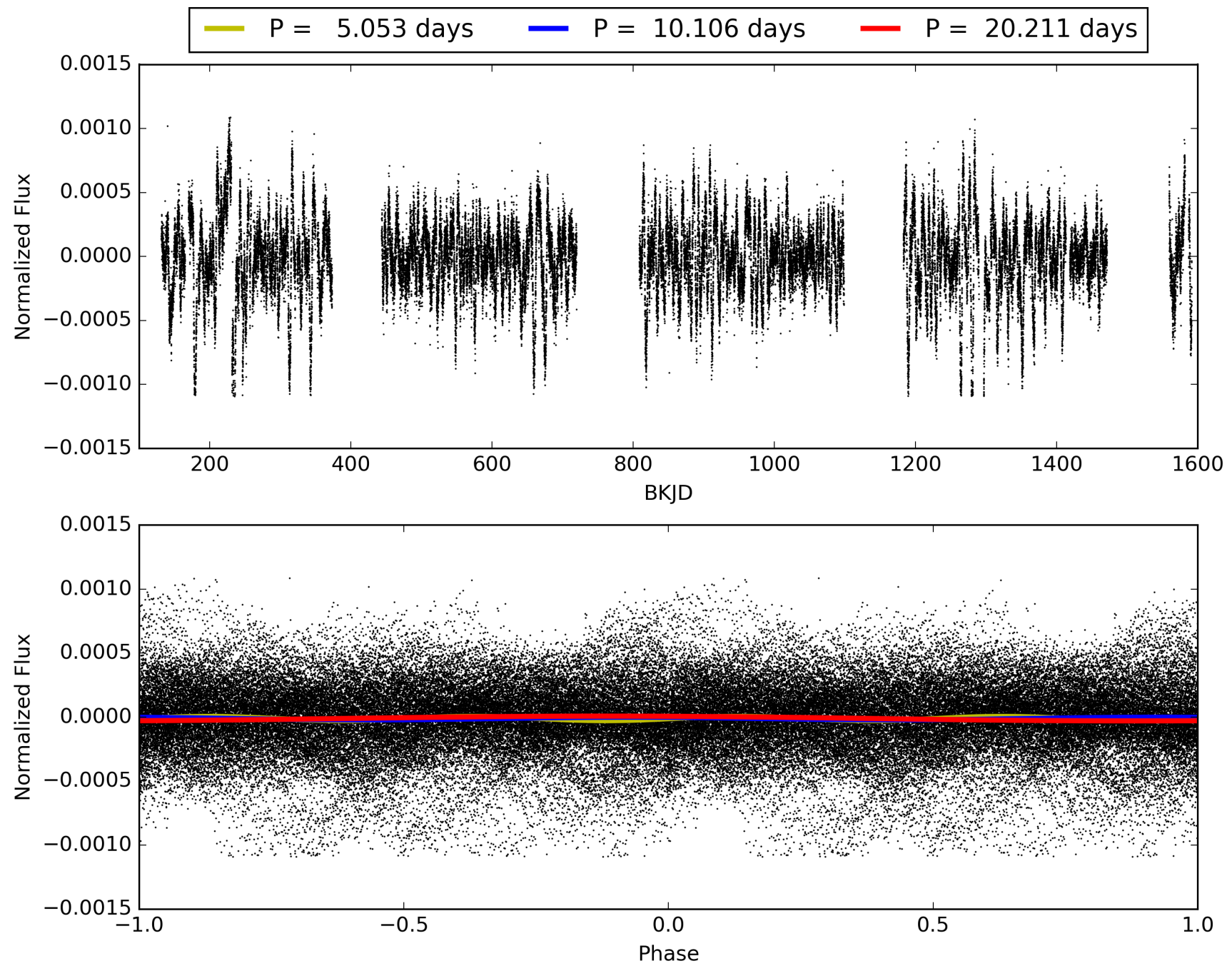
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [31.27 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 9.65e-68
RollingBand-fgt: 0.87 [82/94]
GhostDiagnostic-chr: 3.54
Centroid-sig: 1.7%
Centroid-so: 1.184 arcsec [2.03 σ]
OotOffset-rm: 0.877 arcsec [2.71 σ]
OotOffset-st: 4/4/1/5 [14]
KicOffset-rm: 0.717 arcsec [2.23 σ]
KicOffset-st: 4/4/1/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 011547513-02, PDC Light Curves

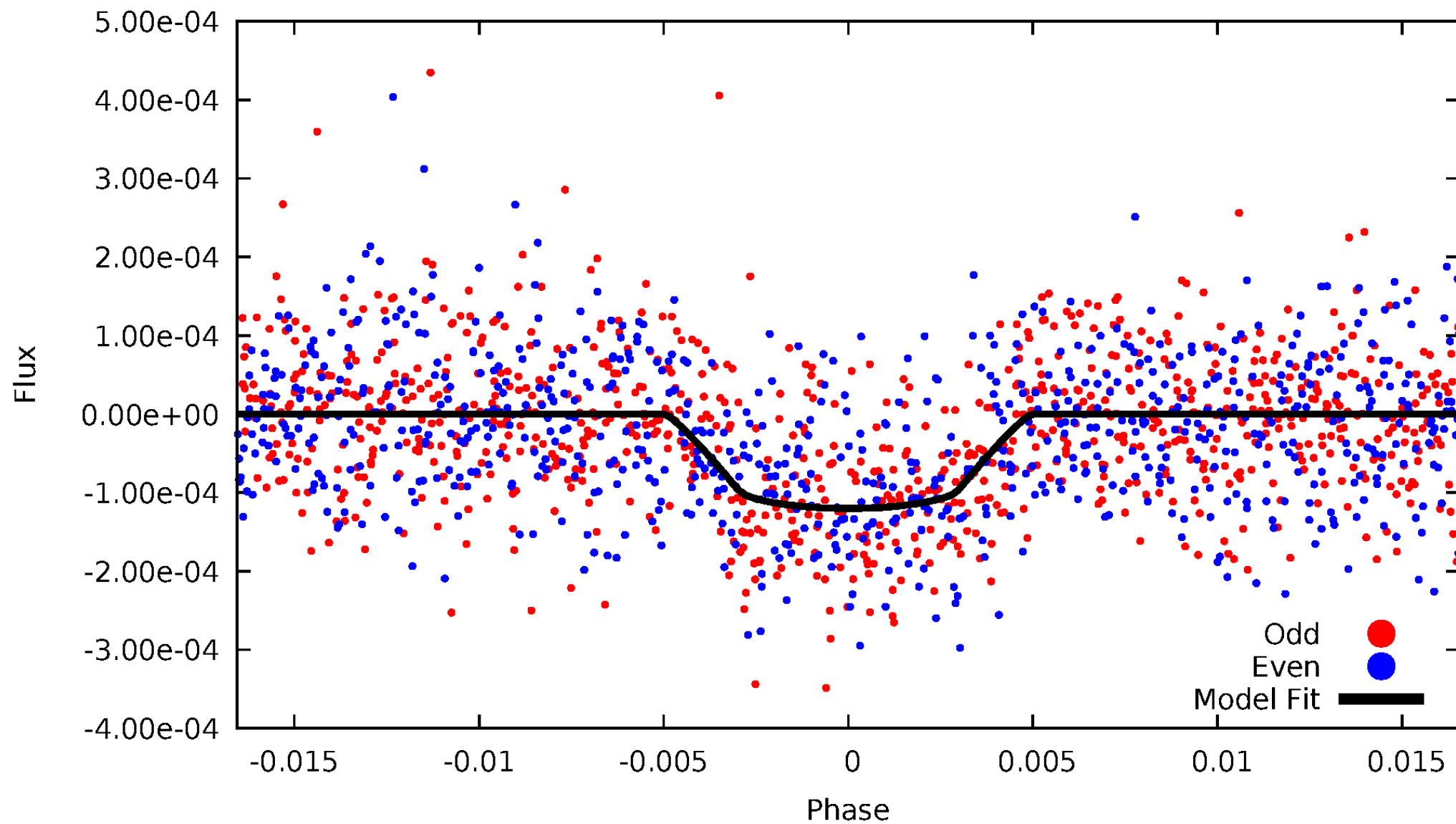


TCE 011547513-02



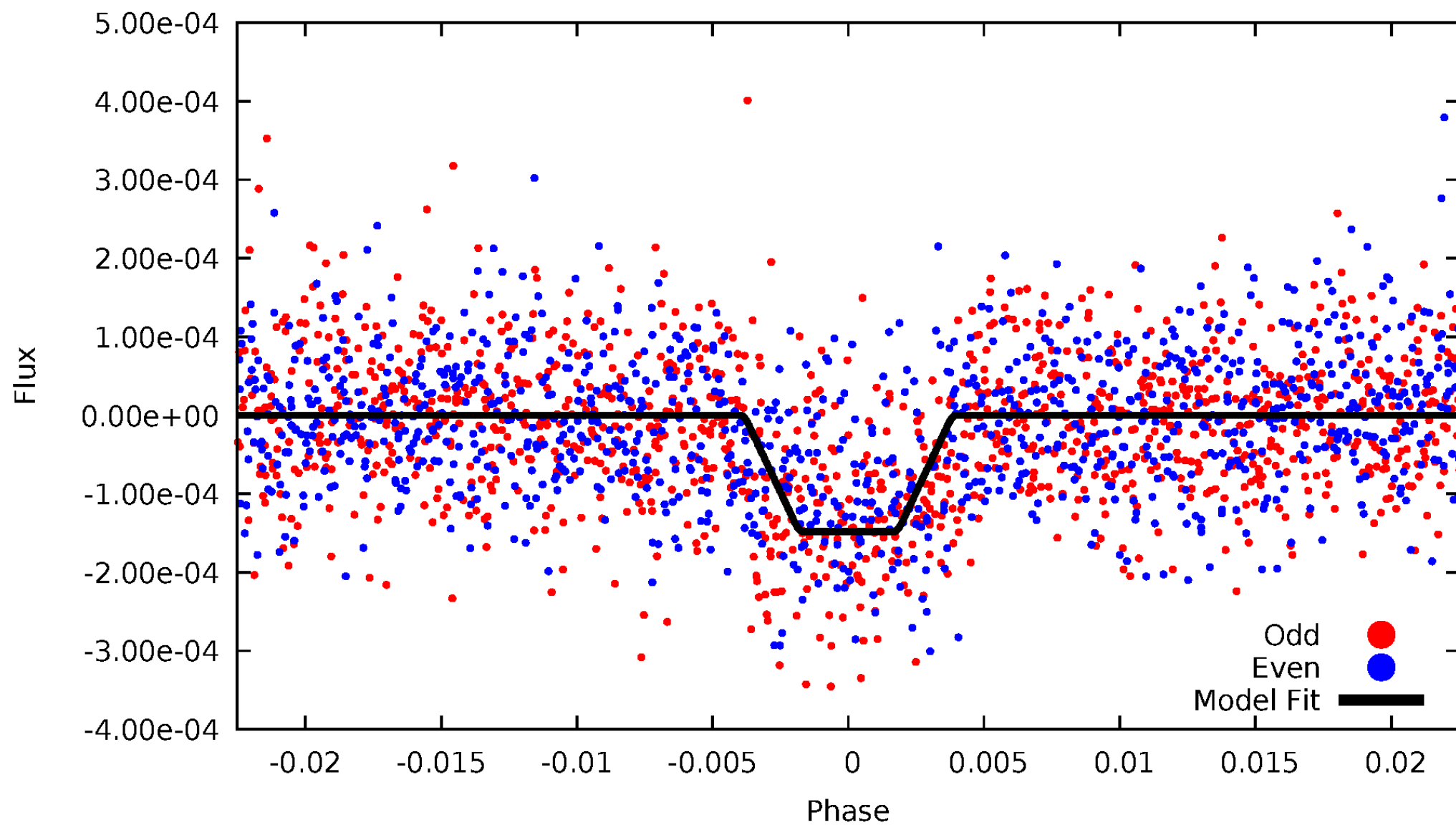
DV Odd/Even

TCE 011547513-02



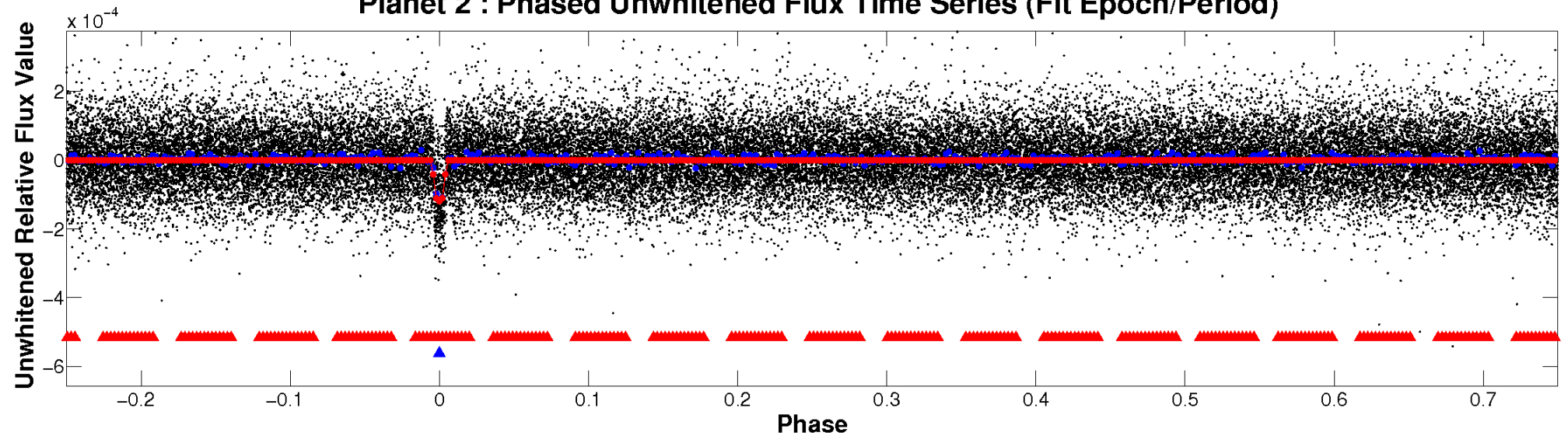
ALT Odd/Even

TCE 011547513-02

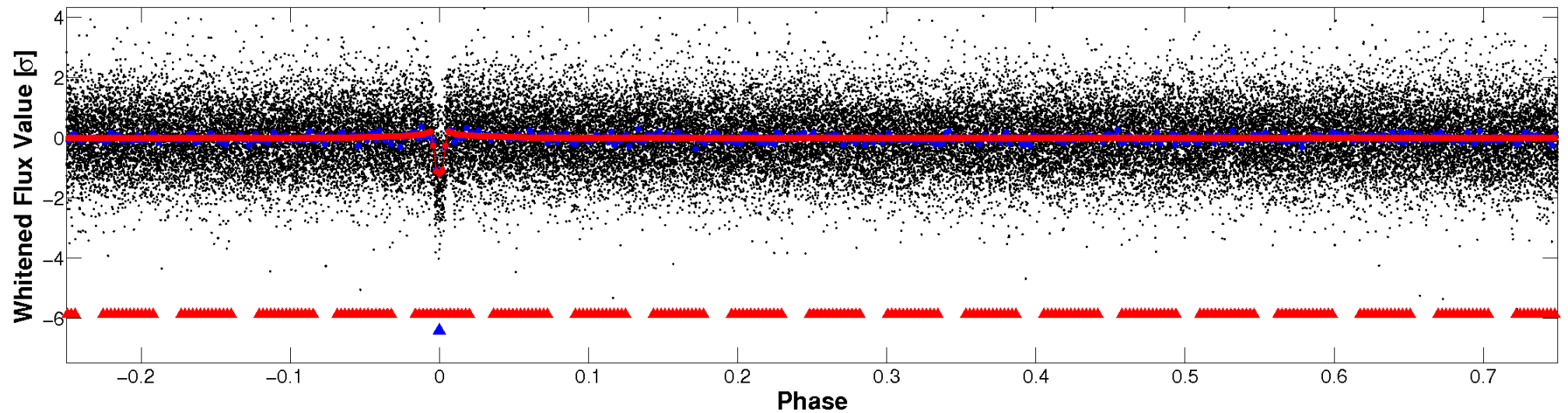


Non-Whitened Vs. Whitened Light Curve

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

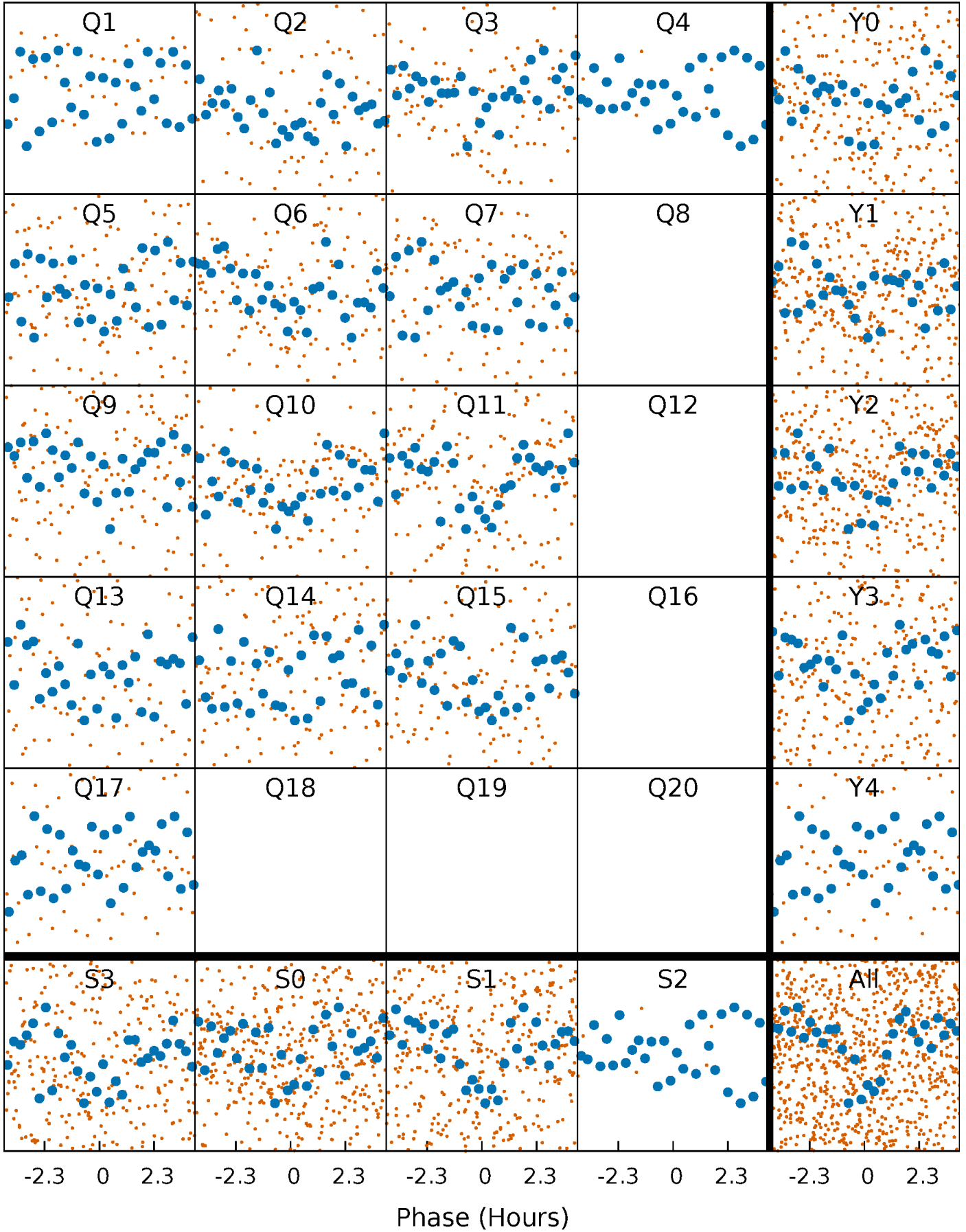


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



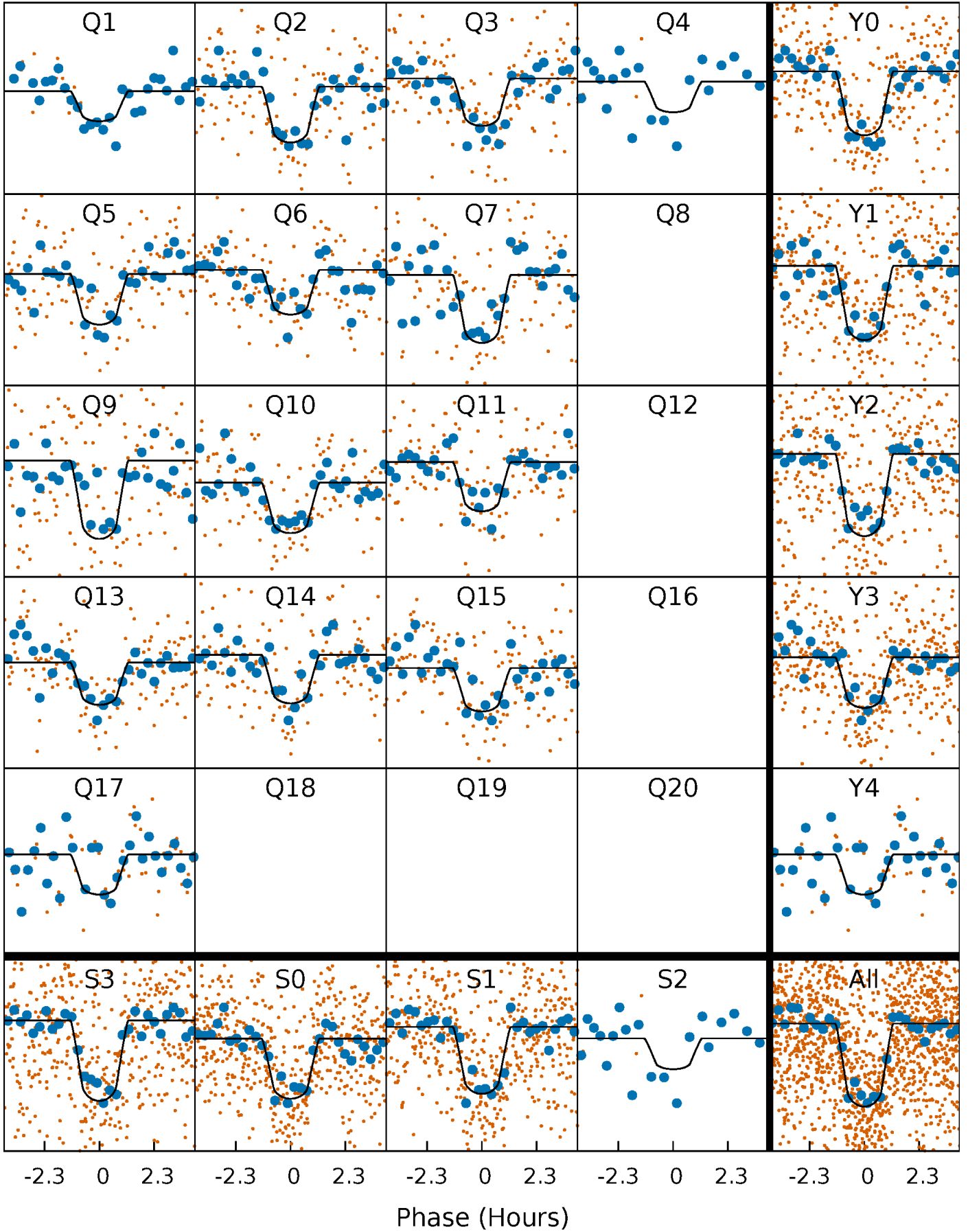
PDC Quarter-Phased Transit Curves

TCE 011547513-02 P= 10.105747 Days $T_0=135.509077$ (BKJD)



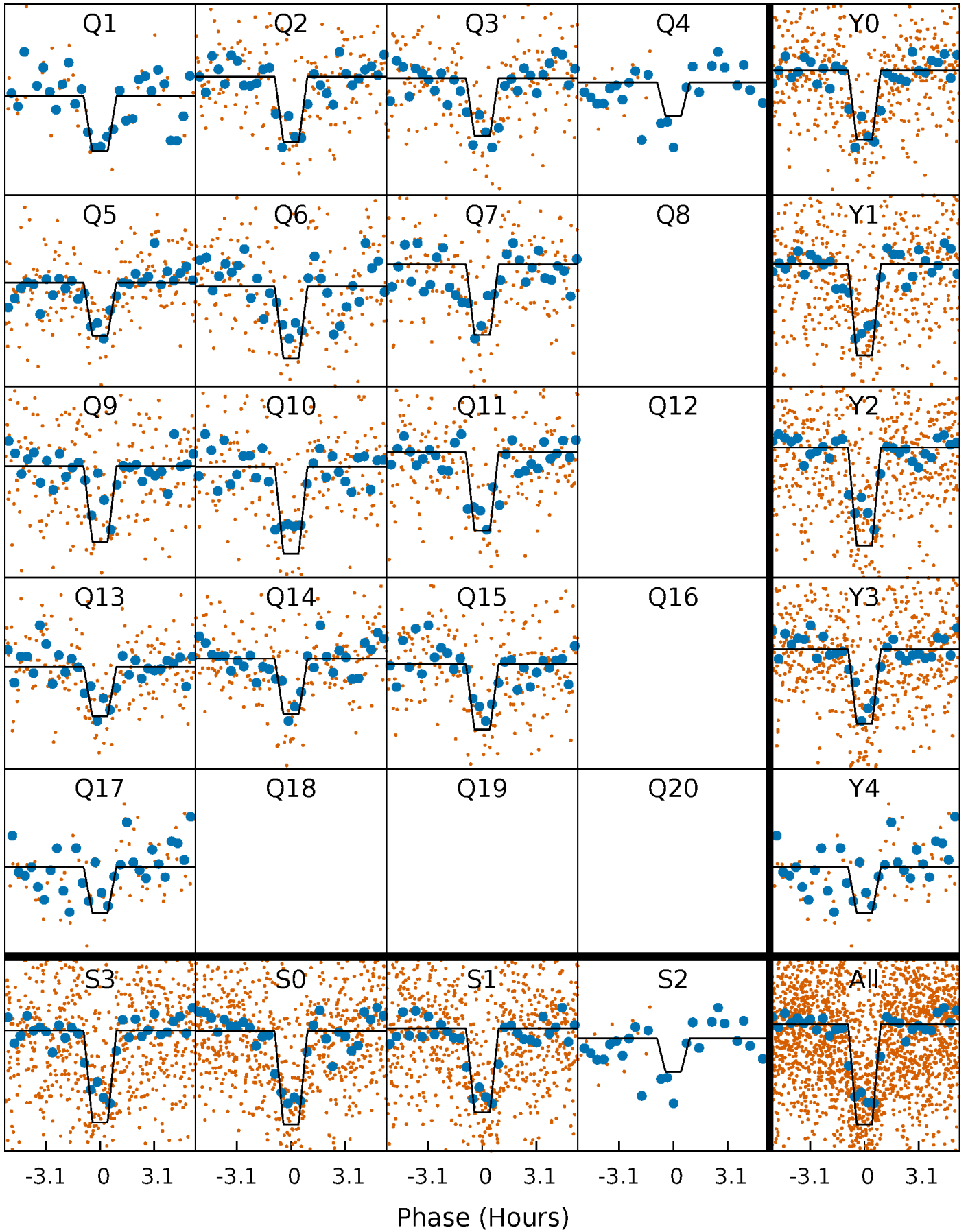
DV Quarter-Phased Transit Curves

TCE 011547513-02 P= 10.105747 Days $T_0=135.509077$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

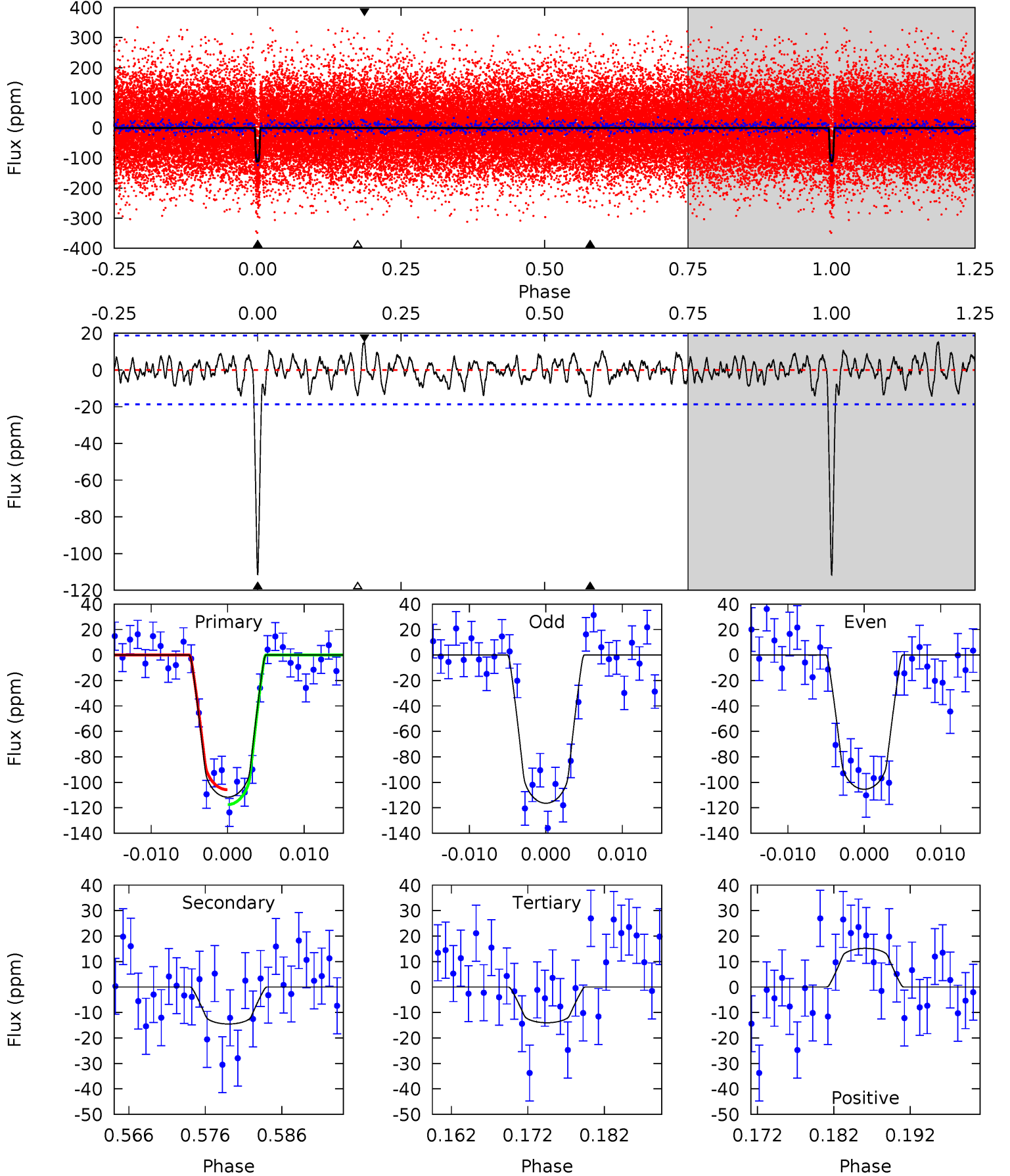
TCE 011547513-02 P= 10.105764 Days $T_0=135.508957$ (BKJD)



DV Model-Shift Uniqueness Test

011547513-02, $P = 10.105747$ Days, $E = 125.403330$ Days

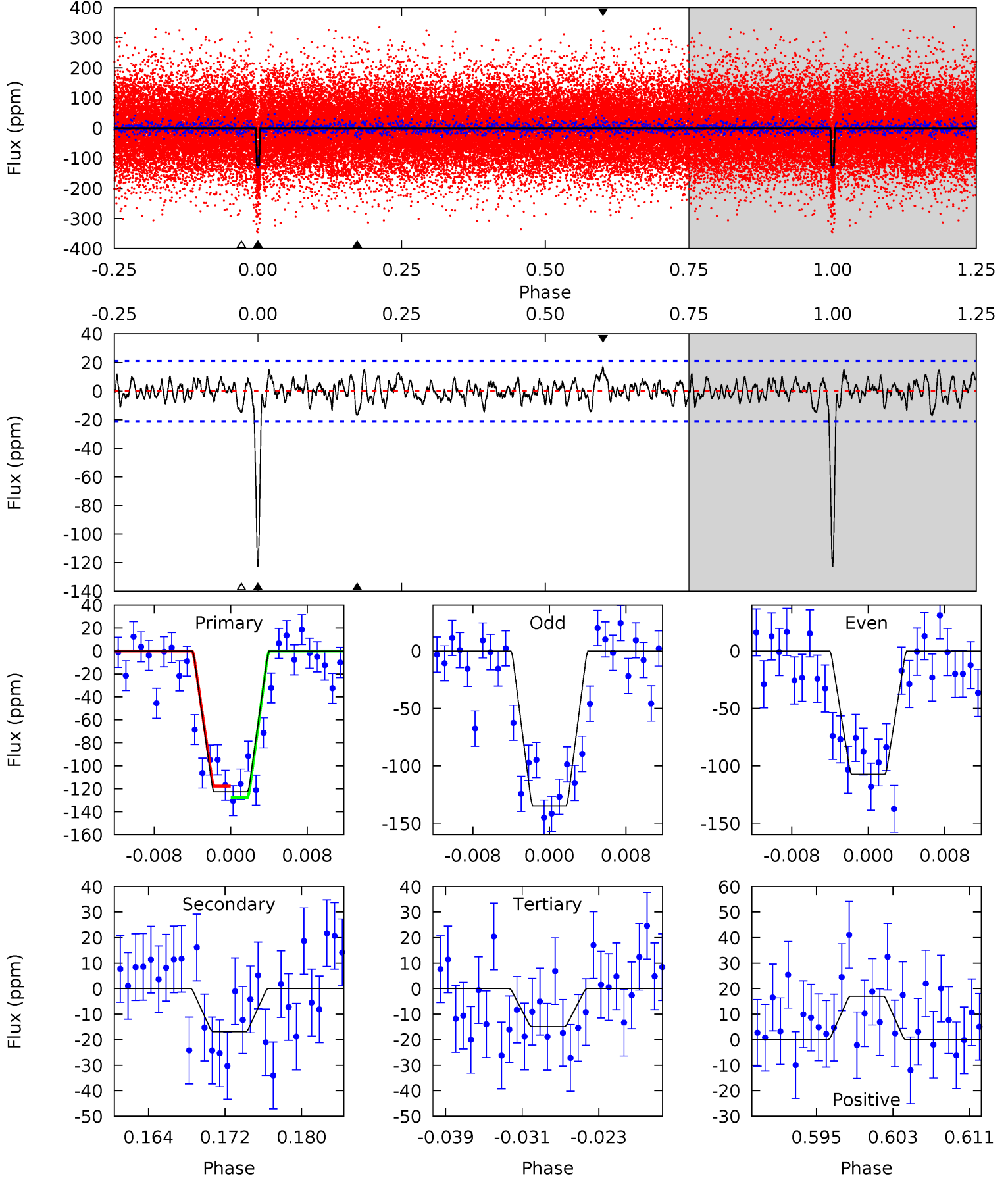
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.0	3.89	3.76	4.07	5.02	2.57	1.33	26.2	25.9	0.13	-0.18	1.47	1.00	0.12	1.57



Alt Model-Shift Uniqueness Test

011547513-02, P = 10.105764 Days, E = 125.403193 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.6	4.06	3.58	4.12	5.07	2.66	1.34	26.0	25.5	0.49	-0.05	3.32	0.98	0.12	1.20



Stellar Parameters For KIC 011547513

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5923^{+107}_{-131}	$4.377^{+0.099}_{-0.121}$	$-0.140^{+0.150}_{-0.150}$	$1.054^{+0.164}_{-0.120}$	$0.966^{+0.067}_{-0.067}$	$1.161^{+0.471}_{-0.395}$
	+2%/-2%	+2%/-3%	+107%/-107%	+16%/-11%	+7%/-7%	+41%/-34%
Source	SPE59	SPE59	SPE59	DSEP		

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

Secondary Eclipse Parameters for KIC 011547513-02 / KOI 0295.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-15 ± 4	$1.36^{+0.52}_{-0.51}$	1250^{+55}_{-56}	3766^{+630}_{-416}	35^{+52}_{-18}
Alt.	-17 ± 4	$1.38^{+0.51}_{-0.45}$	1246^{+57}_{-51}	3814^{+631}_{-390}	39^{+53}_{-19}

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

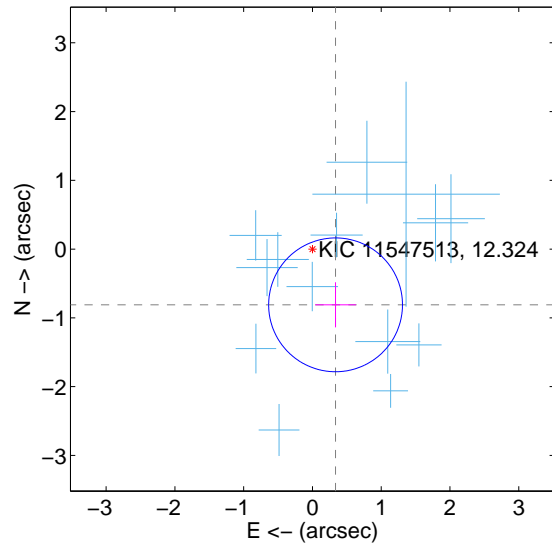
Supplemental centroid analysis for 011547513-02. Kepler magnitude: 12.32. Transit SNR 20.51

There are 14 quarters with good PRF difference image offsets

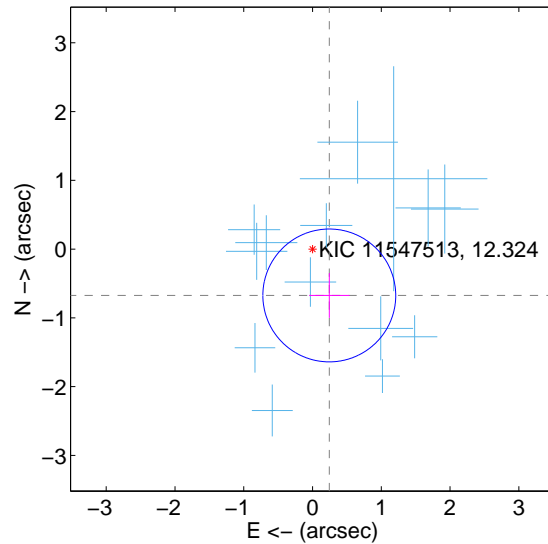
The direct PRF centroid is offset from the target star catalog position by about 0.29 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.877 ± 0.324	2.71	-0.336 ± 0.298	-0.810 ± 0.329
PRF-fit source offset from KIC position	0.717 ± 0.322	2.23	-0.244 ± 0.292	-0.674 ± 0.326
photometric centroid source offset	1.18 ± 0.58	2.03	-0.79 ± 0.55	0.88 ± 0.61

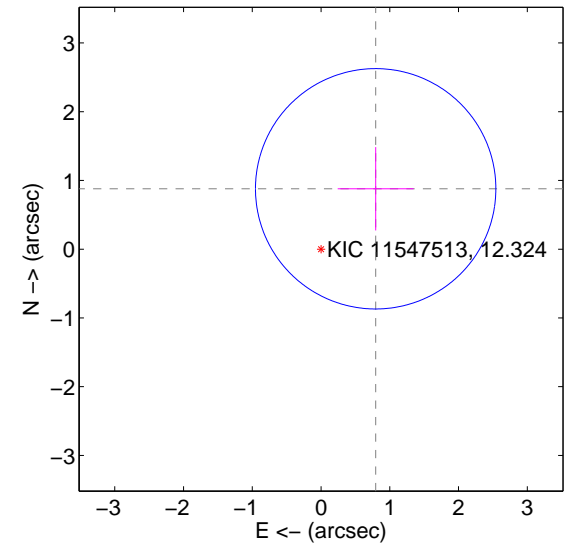
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

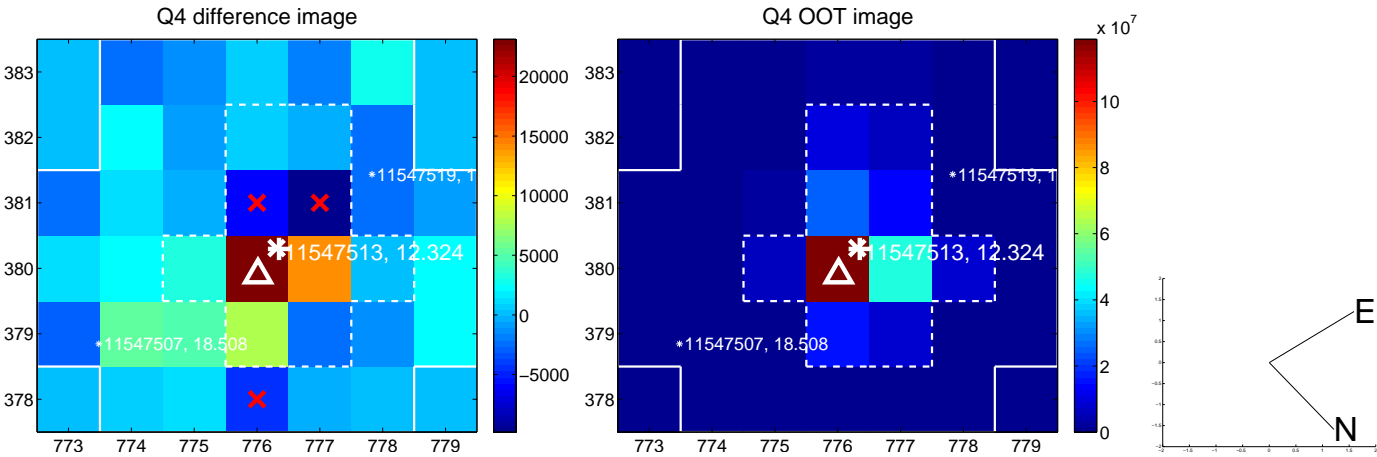
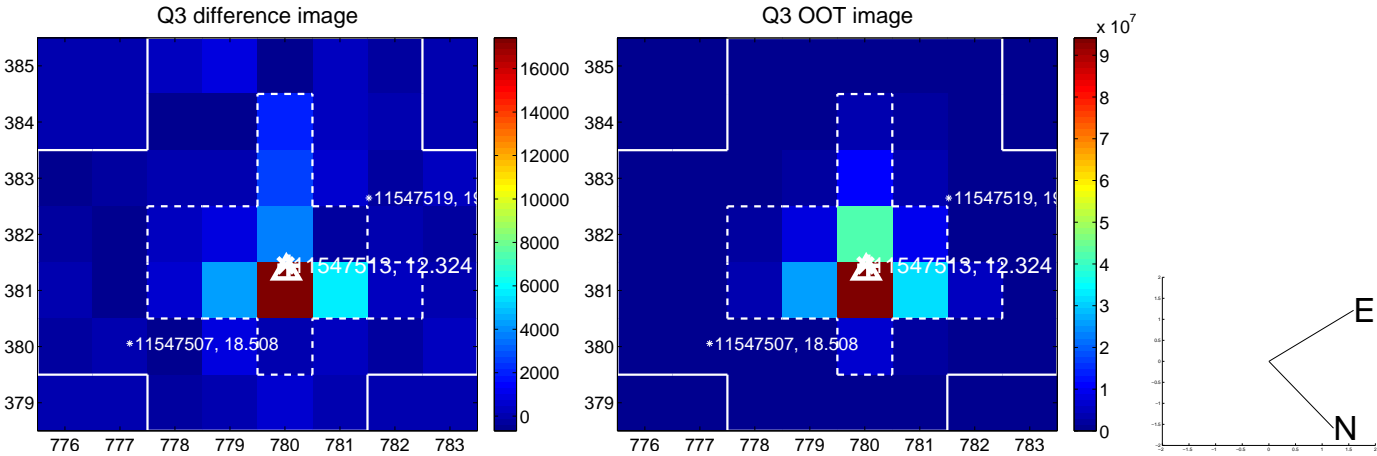
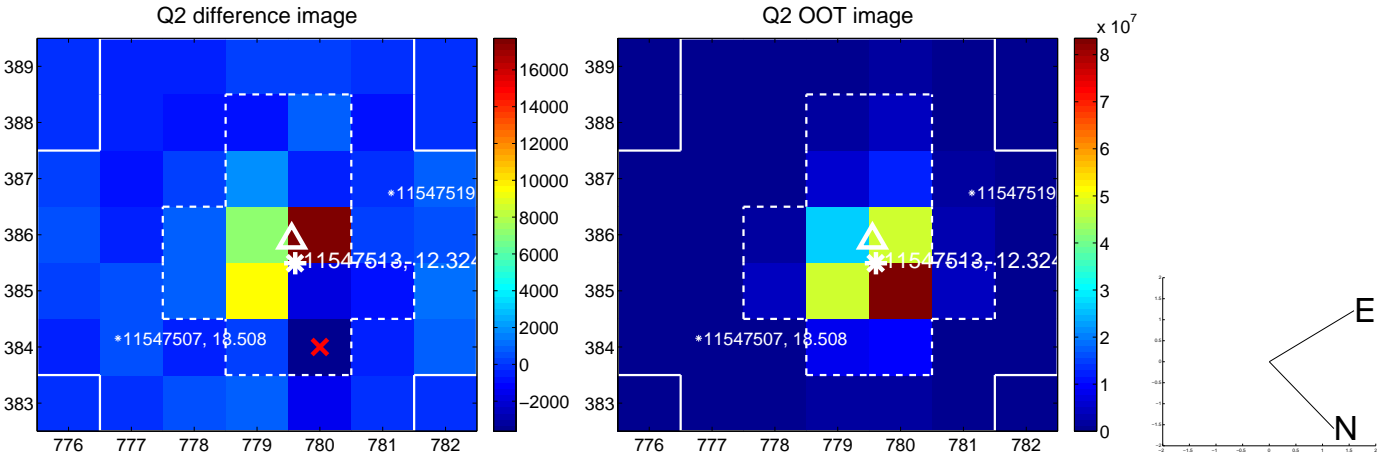
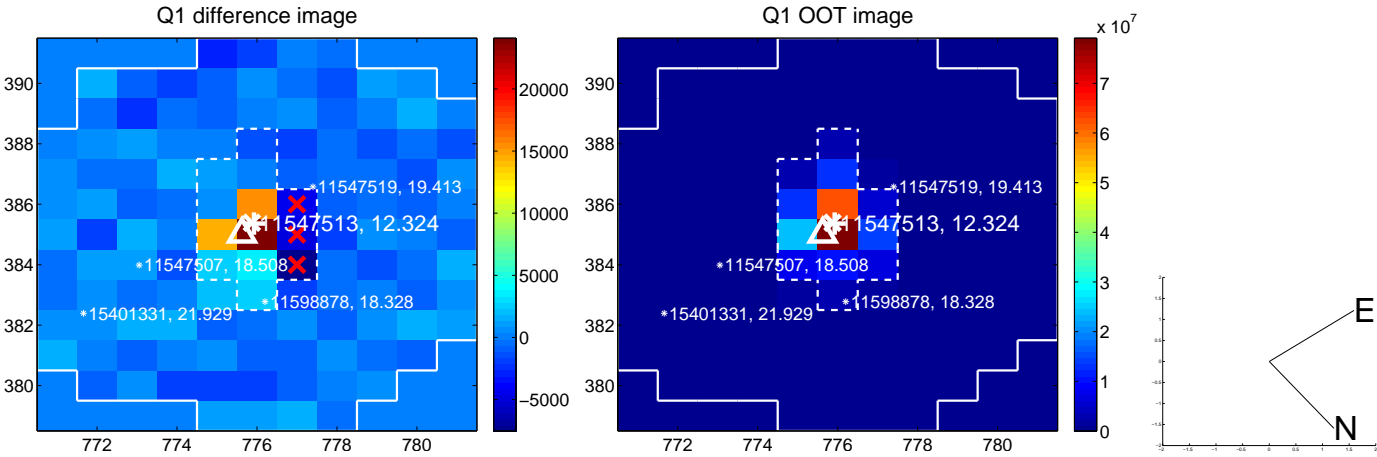


offset from photometric centroids

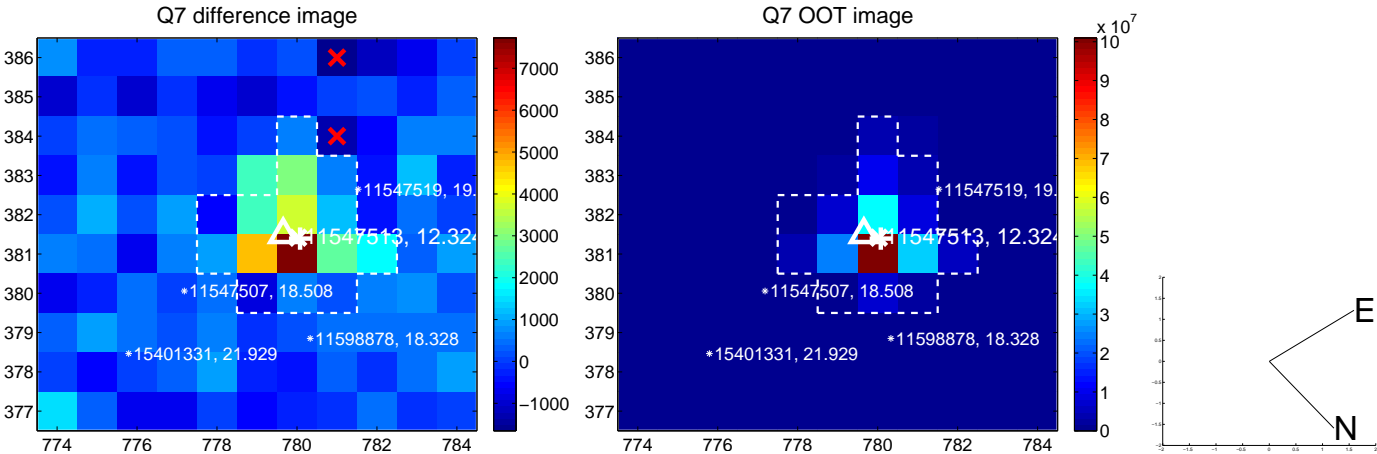
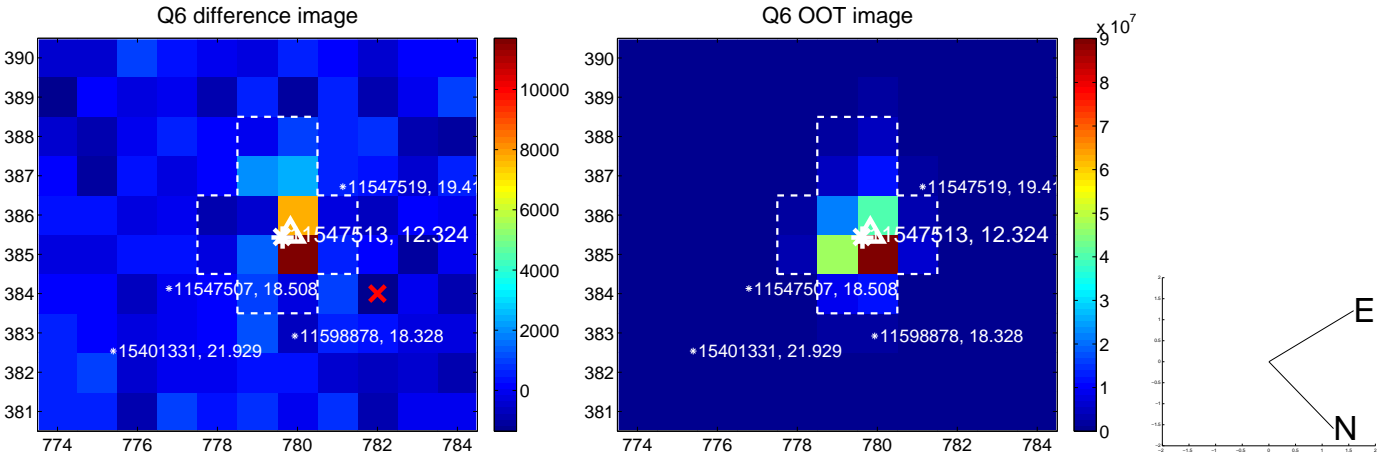
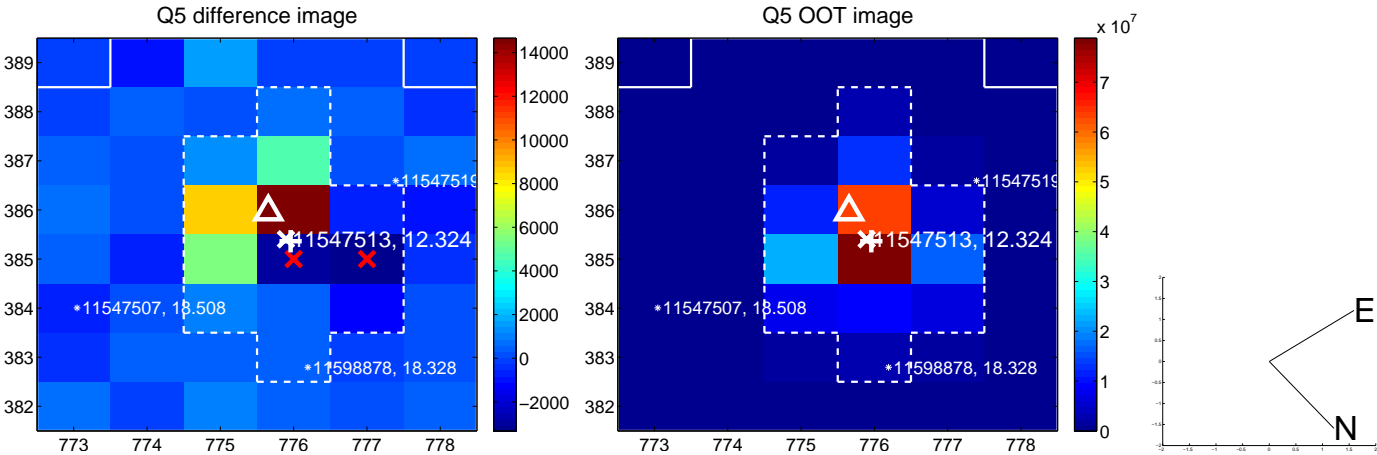


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

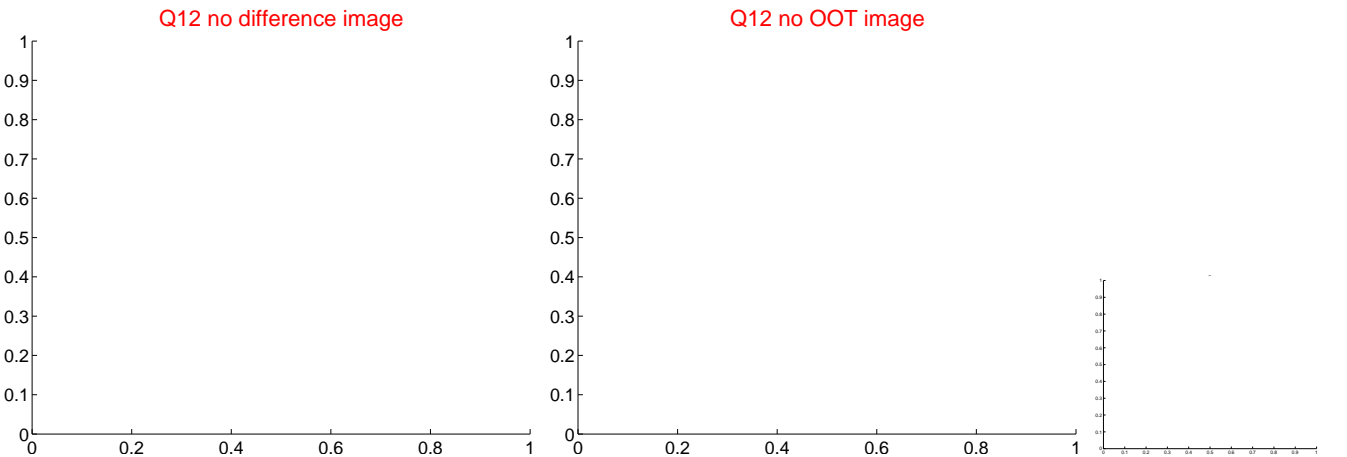
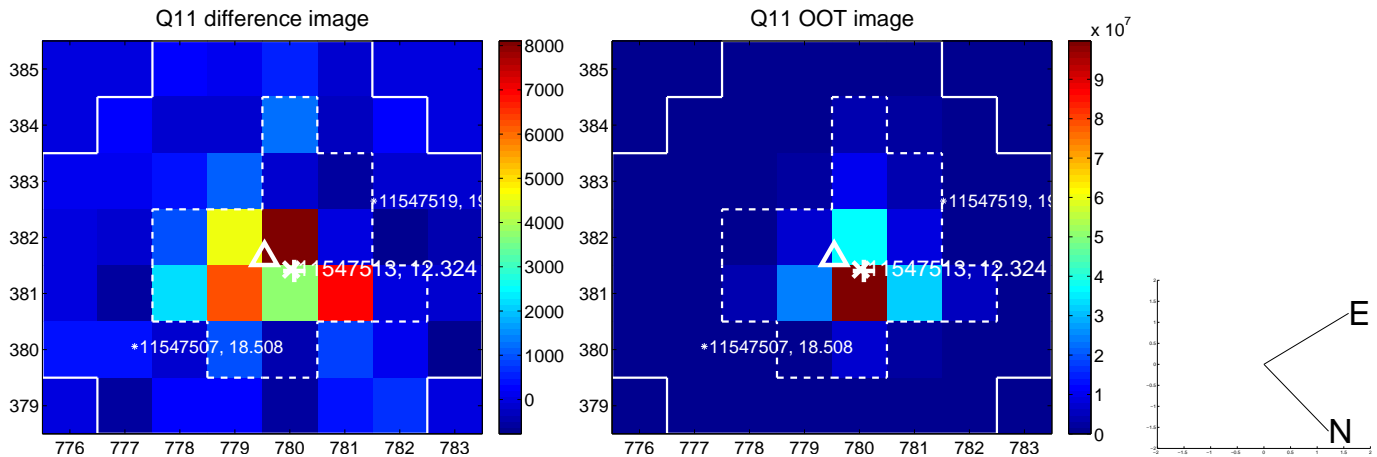
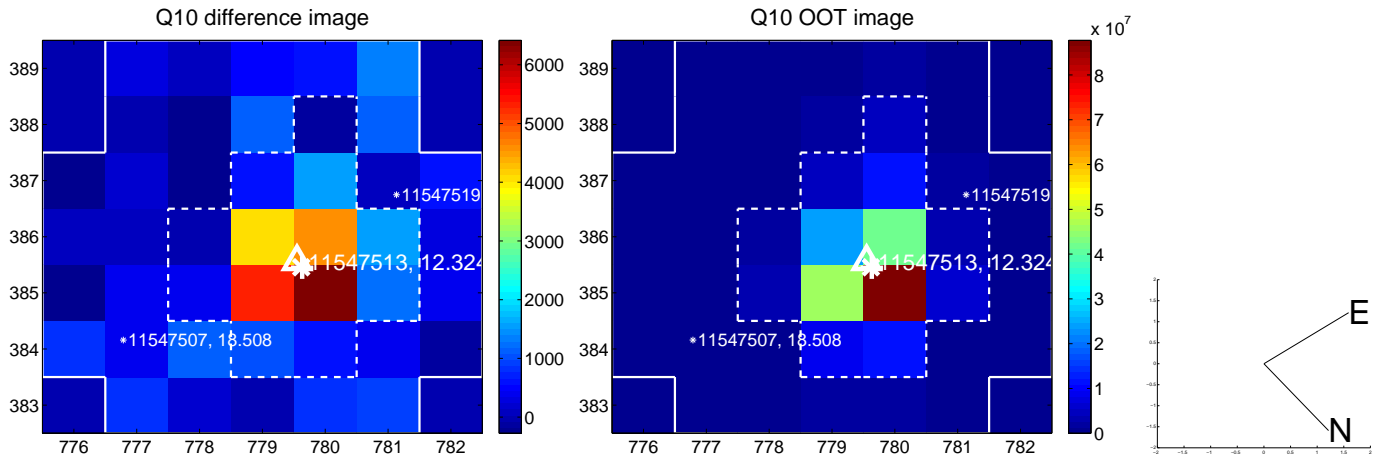
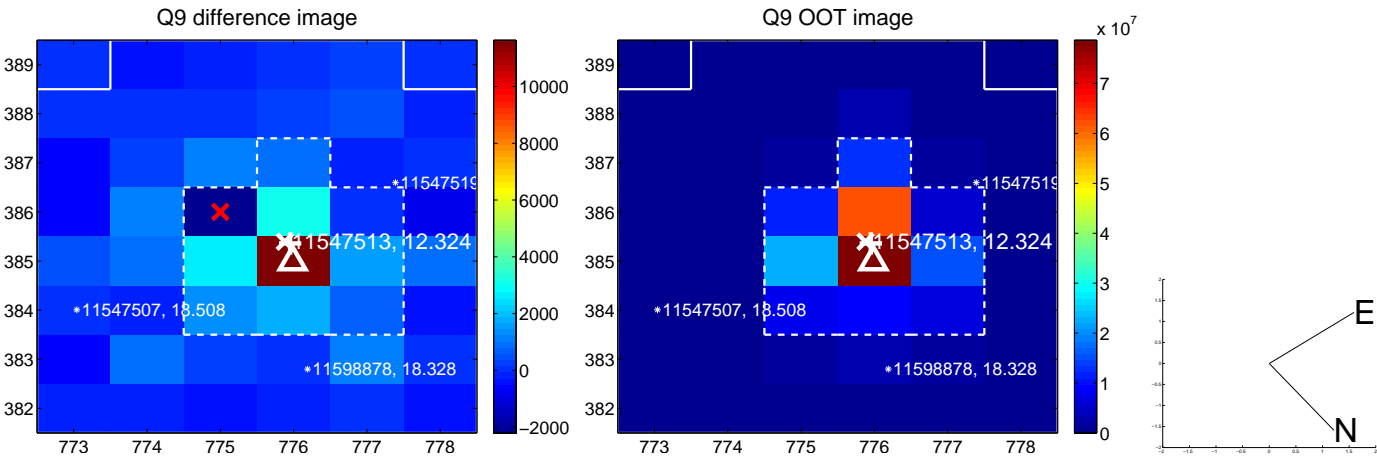
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



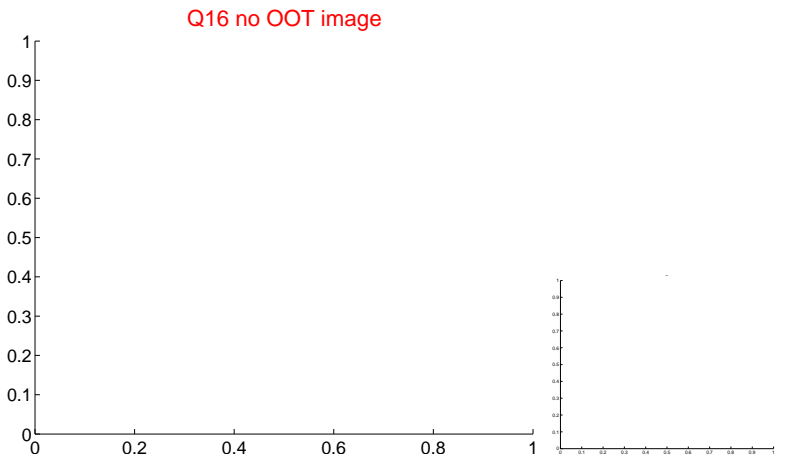
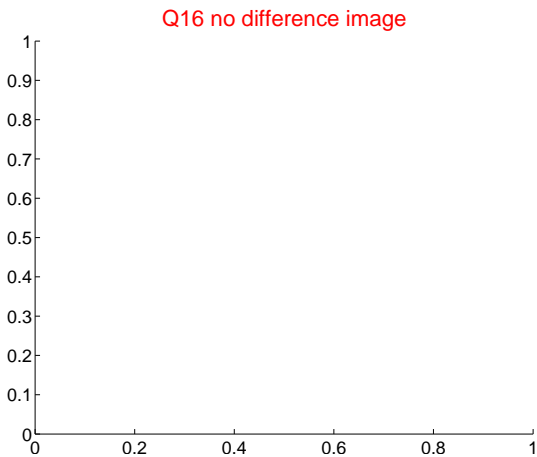
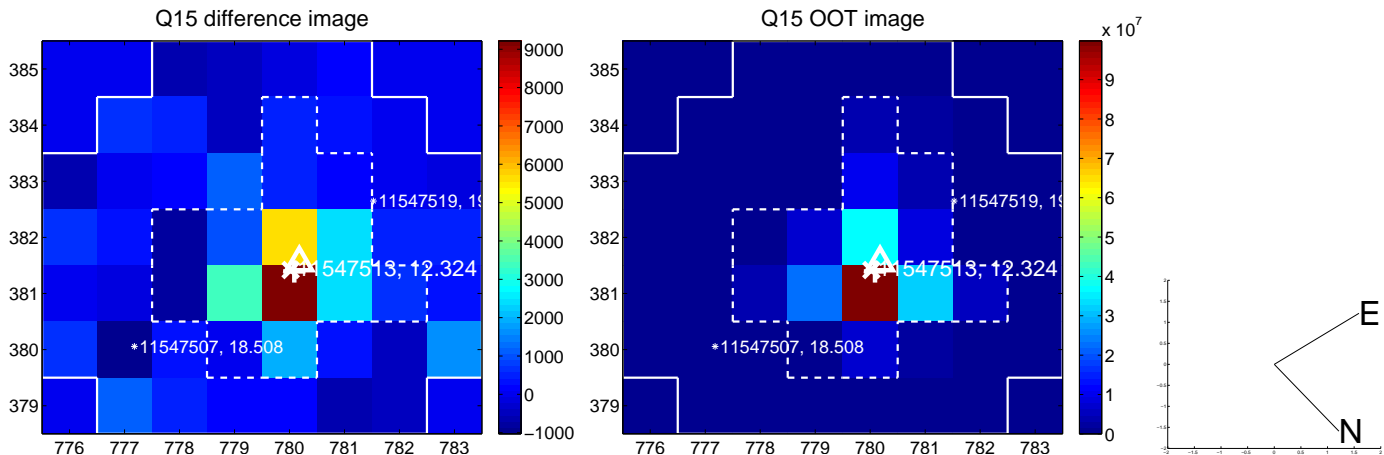
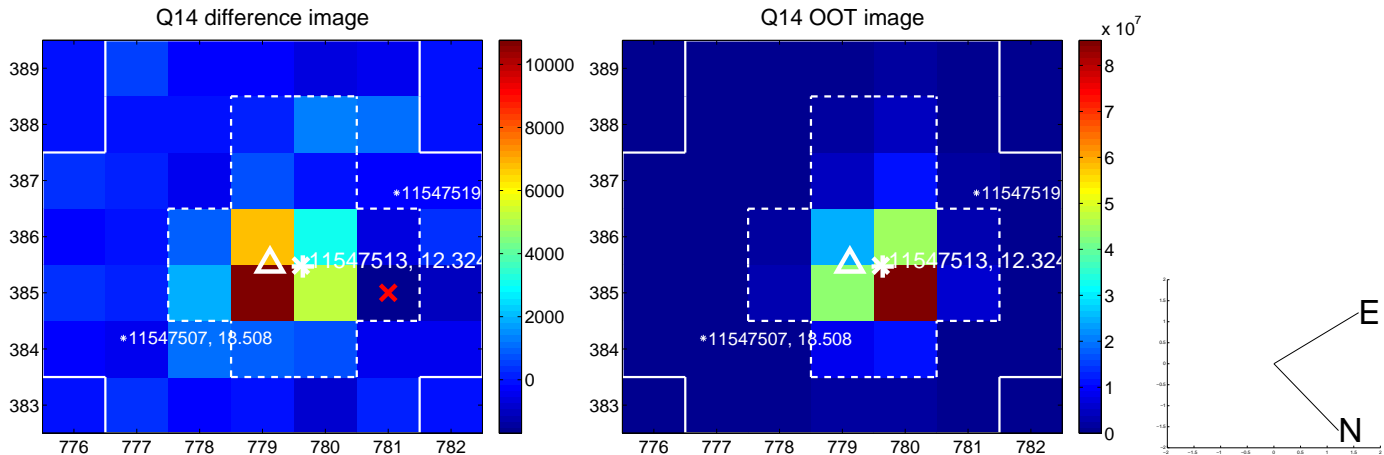
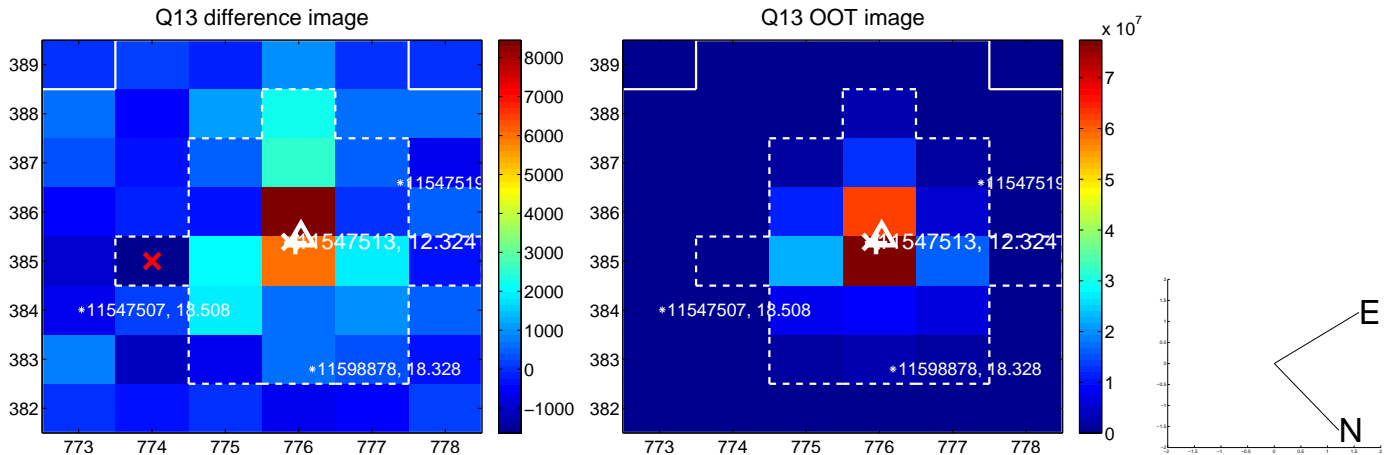
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



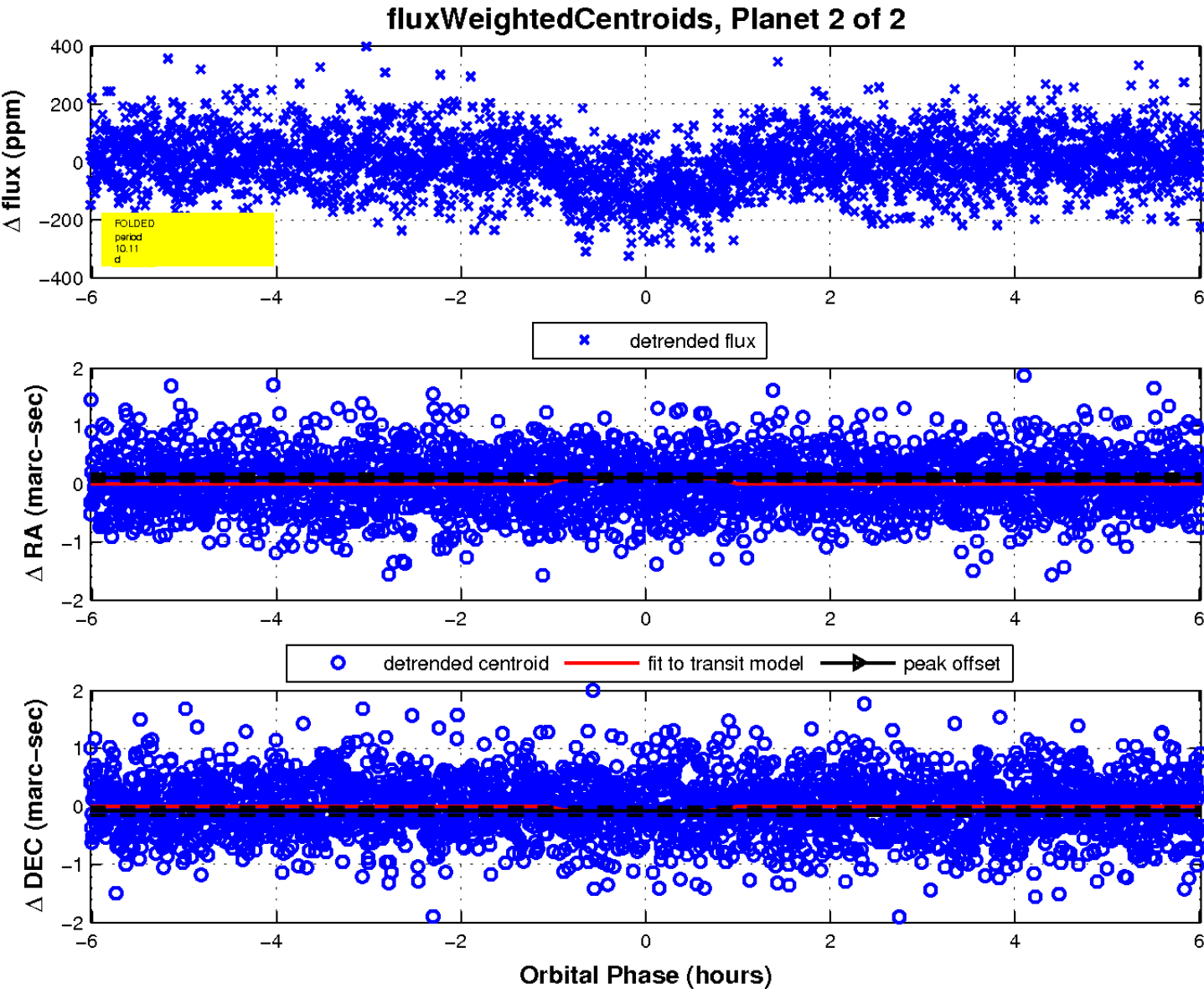
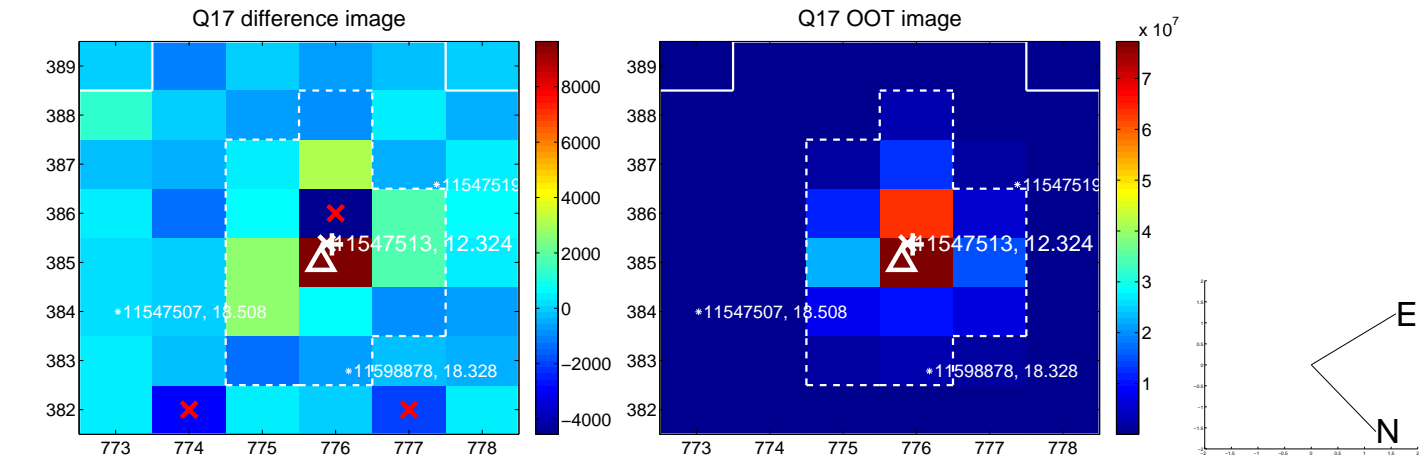
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

