

KIC 003955867

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})
003955867-01	OBS	7545.01	33.656698	160.910312	16872.9	6.428	205.6	252.0	6.45	4774	152.94	509.61
003955867-02	OBS	No	33.656749	162.132368	13738.2	10.304	190.6	182.0	6.45	4774	82.90	509.60
003955867-03	OBS	No	33.657161	145.430028	5895.6	9.730	72.4	85.0	6.45	4774	71.06	509.60
003955867-04	OBS	No	33.660229	161.337180	1200.6	15.000	68.9	-1.0	6.45	4774	21.57	509.53

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003955867-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED—HAS_SEC_TCE
003955867-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
003955867-03	OBS	FP	0.00	1	0	0	0	LPP_DV—SAME_NTL_PERIOD
003955867-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—NO_FITS—RESIDUAL_TCE—CENT_NOFITS

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.

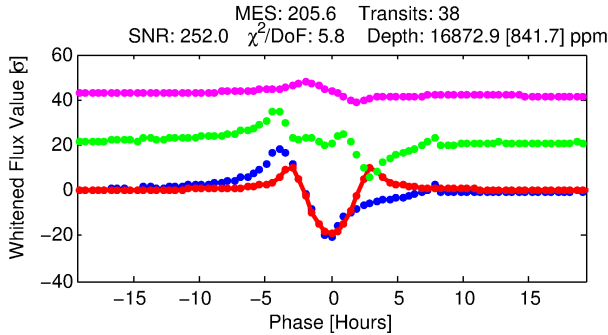
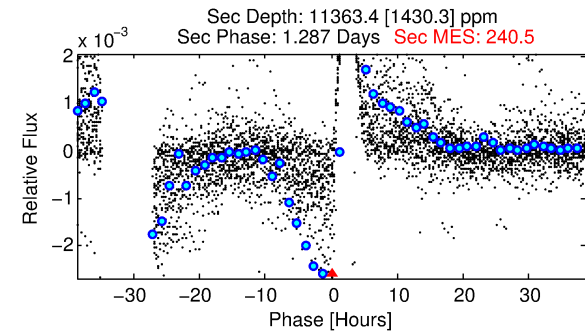
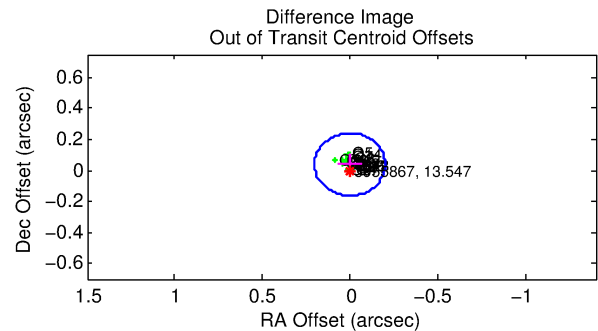
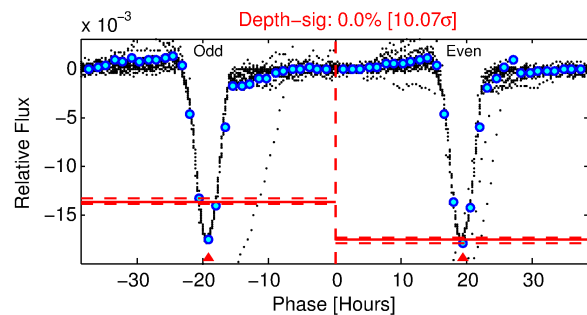
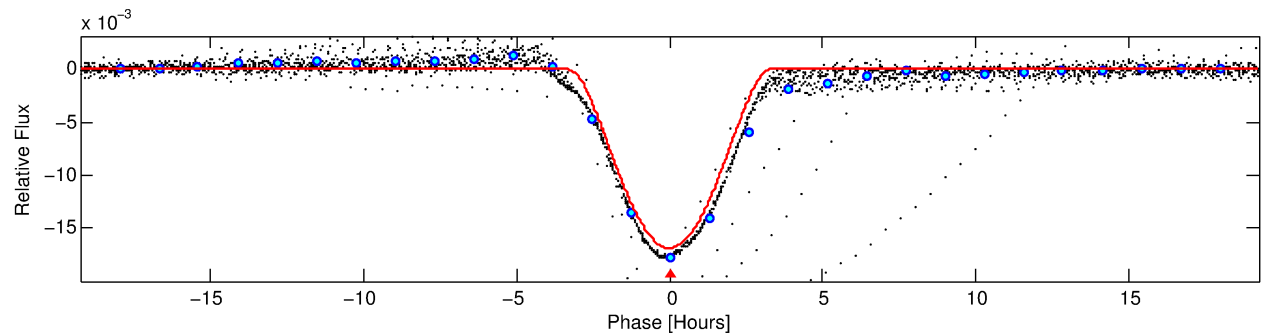
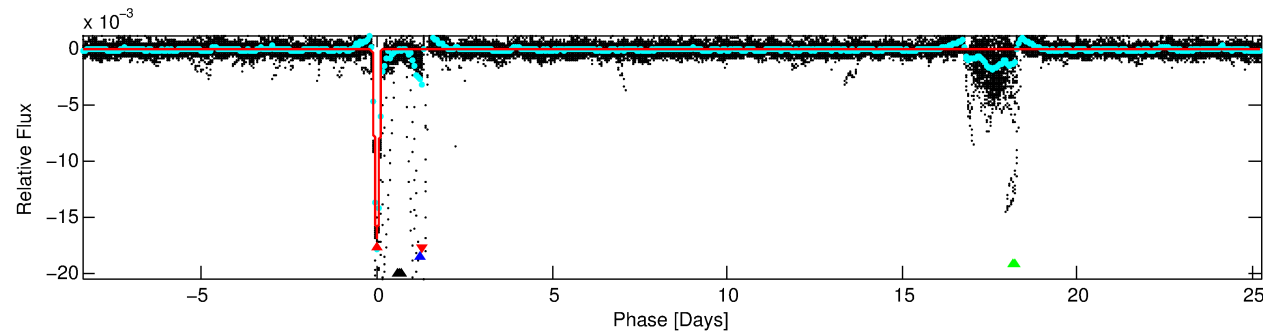
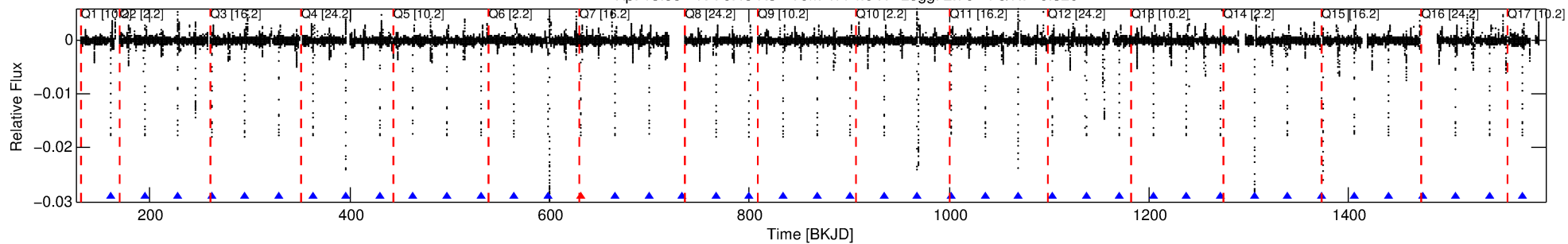
Ephemeris Match Information For 003955867-01

No Significant Match Found

DV One-Page Summary

KIC: 3955867 Candidate: 1 of 4 Period: 33.657 d
KOI: K07545 Corr: No Ephemeris Match

Kp: 13.55 R*: 6.45 Rs Teff: 4774.0 K Logg: 2.76 Fe/H: -0.320



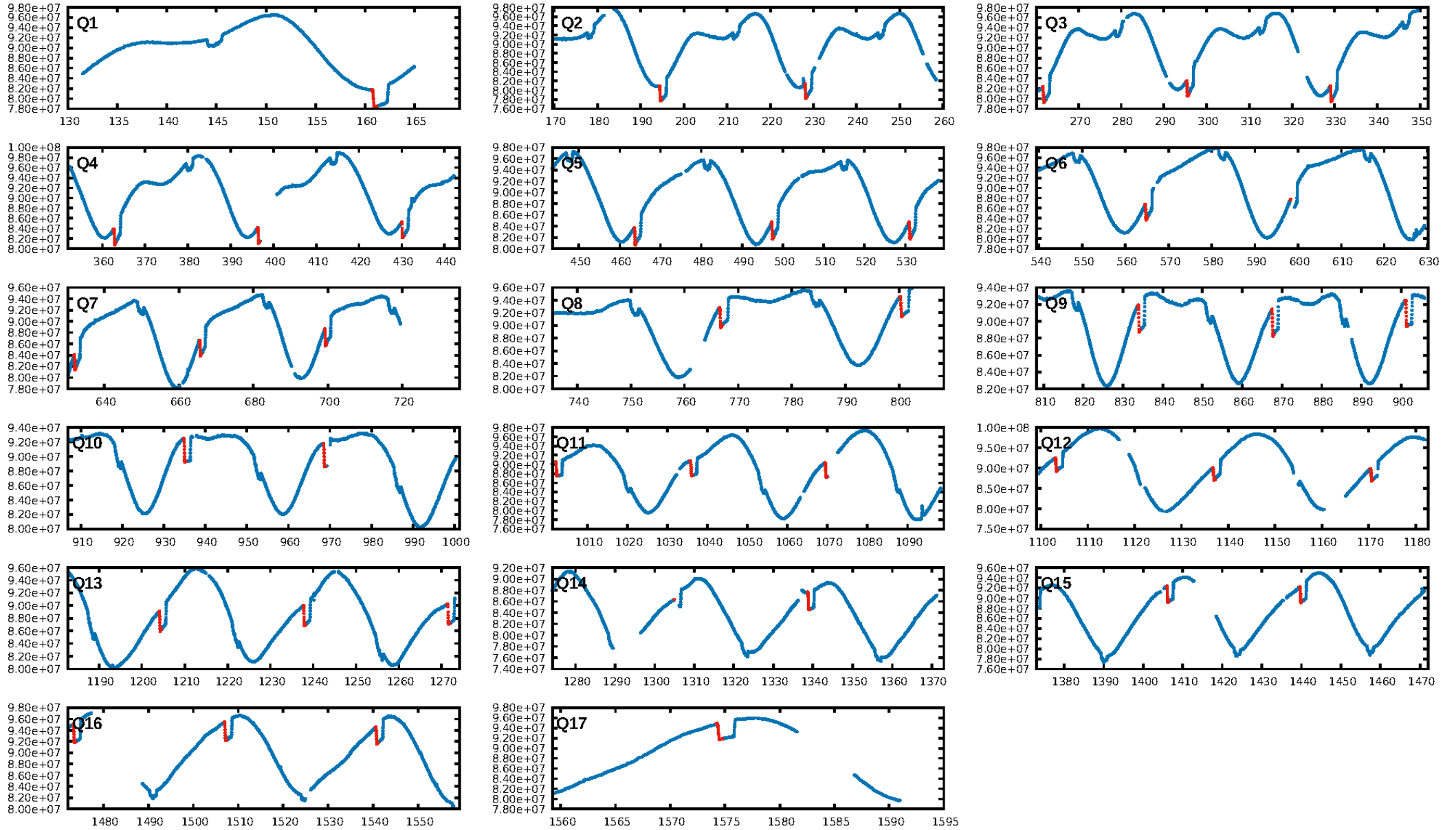
DV Fit Results:

Period = 33.65670 [0.00004] d
Epoch = 160.9103 [0.0009] BKJD
Rp/R* = 0.2174 [0.0497]
a/R* = 27.80 [0.61]
b = 1.00 [0.07]
Seff = 509.61 [169.36]
Teq = 1212 [101] K
Rp = 152.94 [54.83] Re
a = 0.1948 [0.0445] AU
Ag = 10.14 [5.84] [1.57σ]
Teffp = 3343 [399] K [5.18σ]

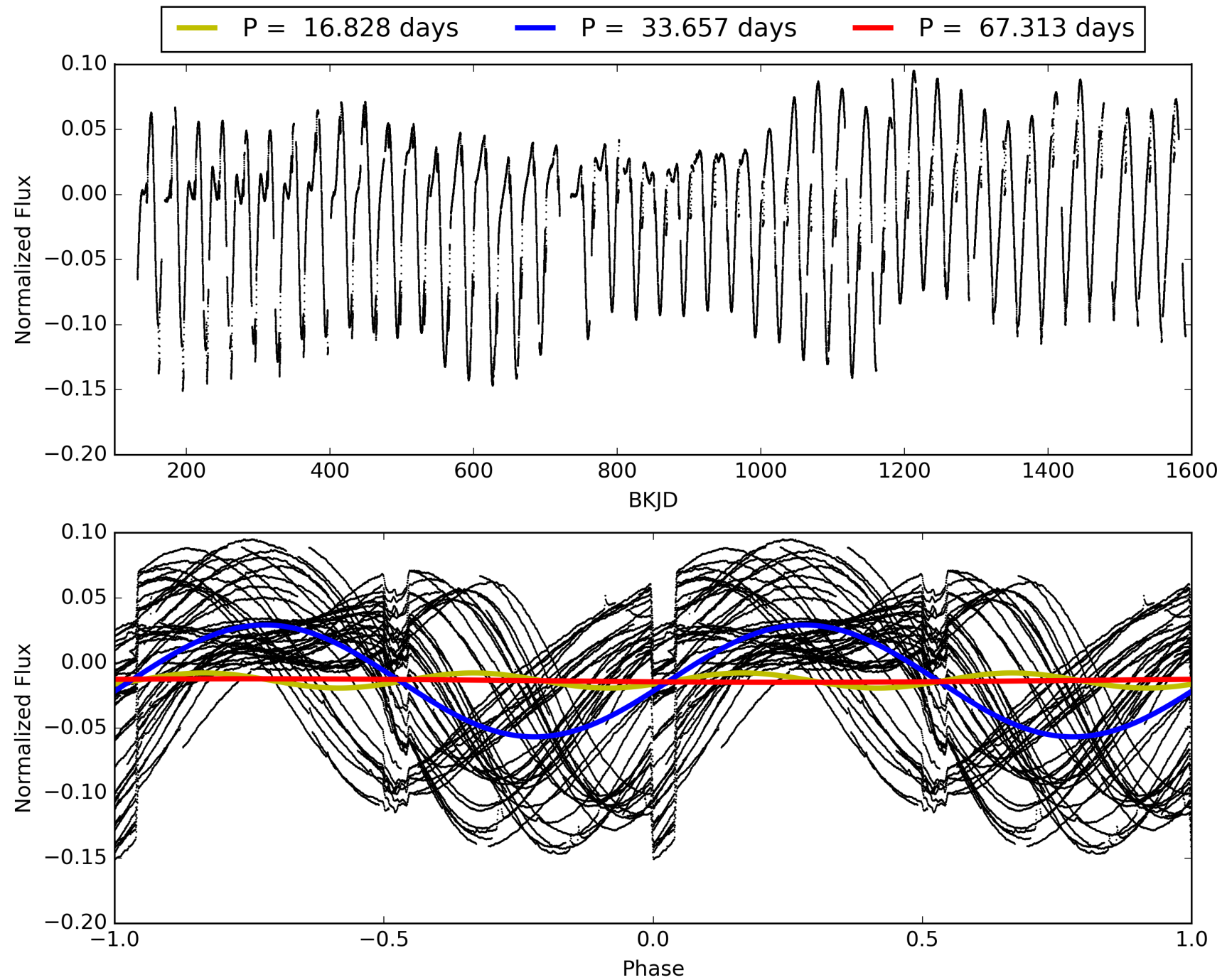
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.97 [35/36]
GhostDiagnostic-chr: 1.03
Centroid-sig: 0.0%
Centroid-so: 0.271 arcsec [19.66σ]
OotOffset-rm: 0.040 arcsec [0.59σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.161 arcsec [2.37σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 003955867-01, PDC Light Curves

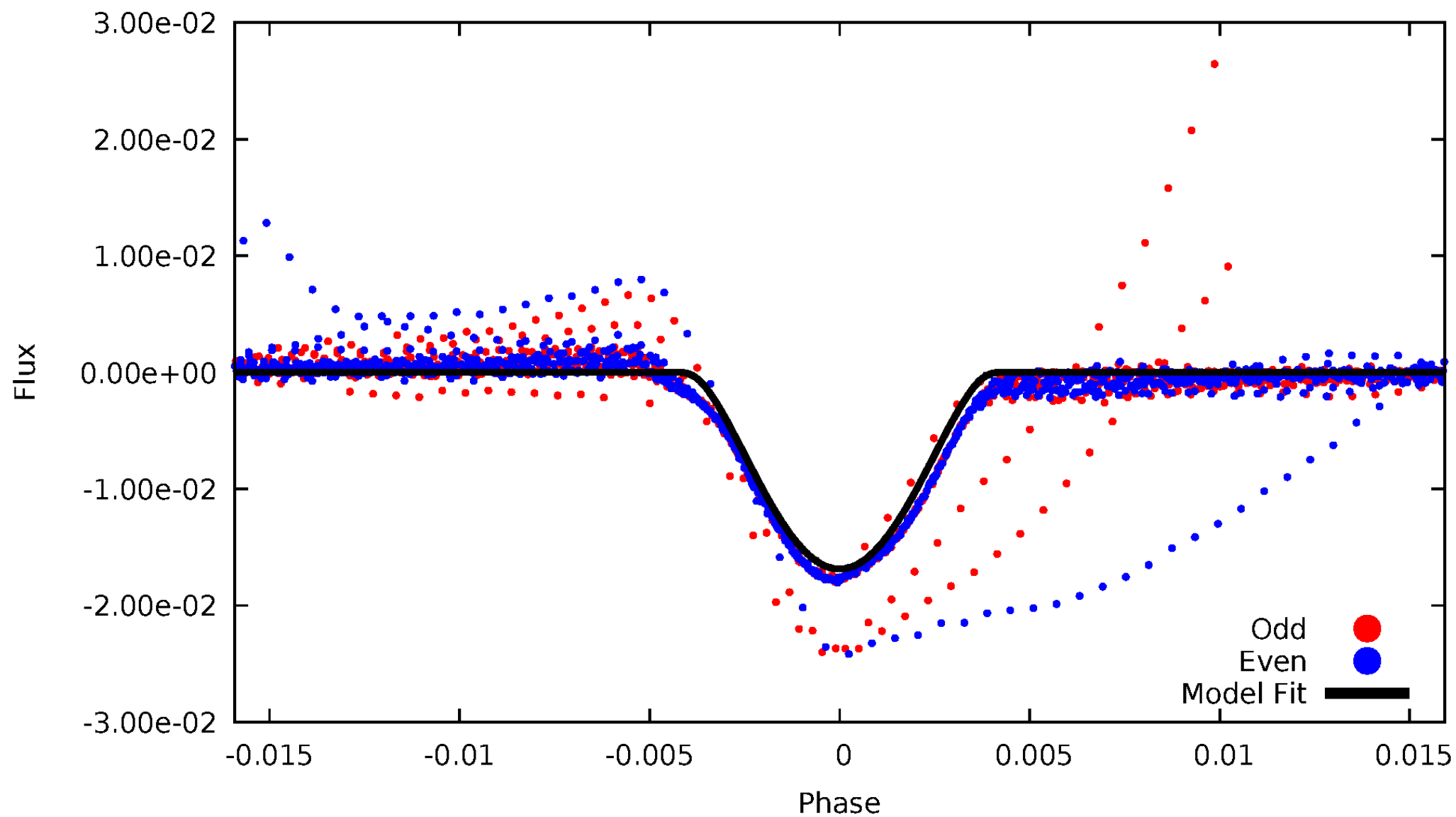


TCE 003955867-01



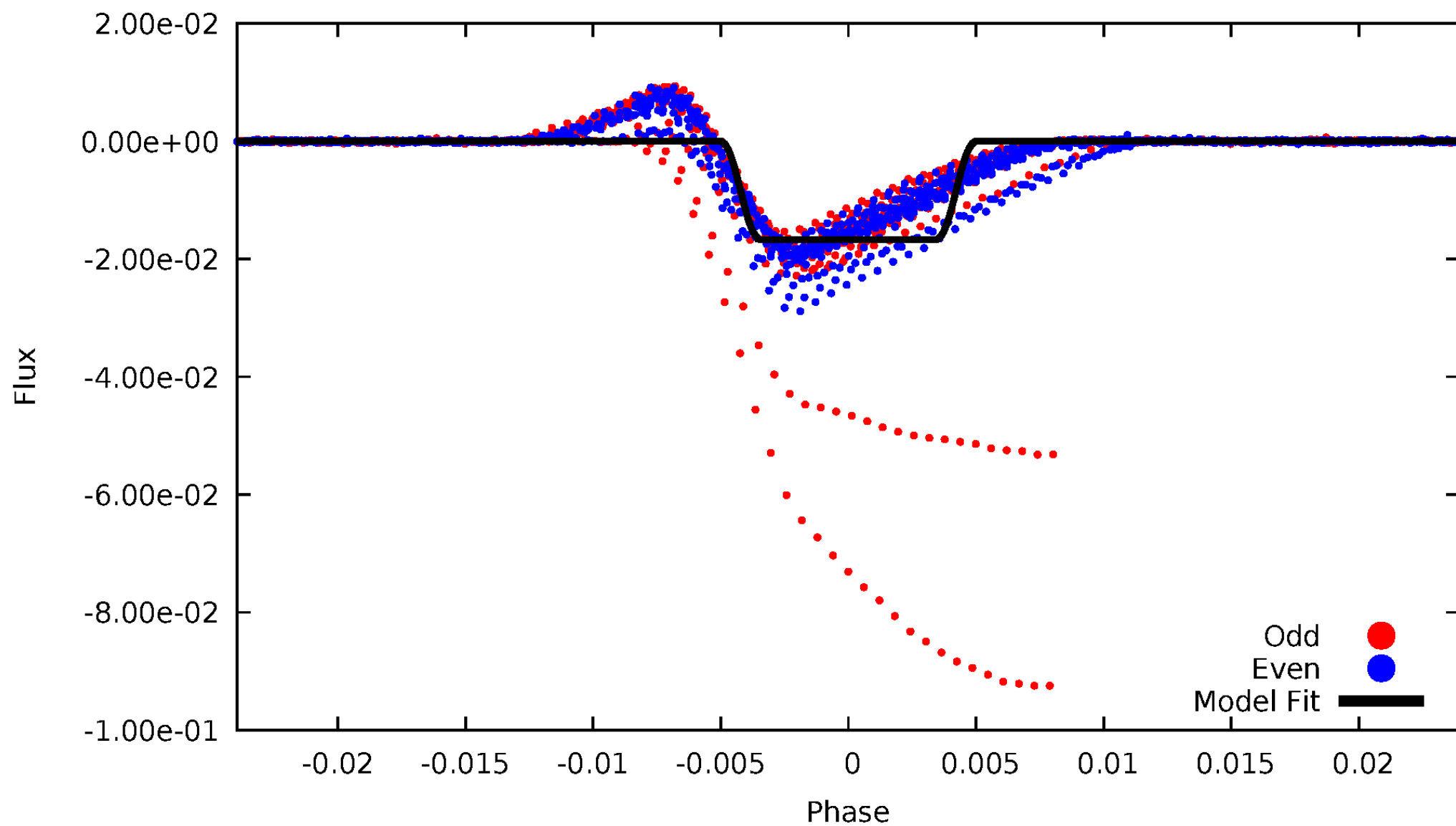
DV Odd/Even

TCE 003955867-01



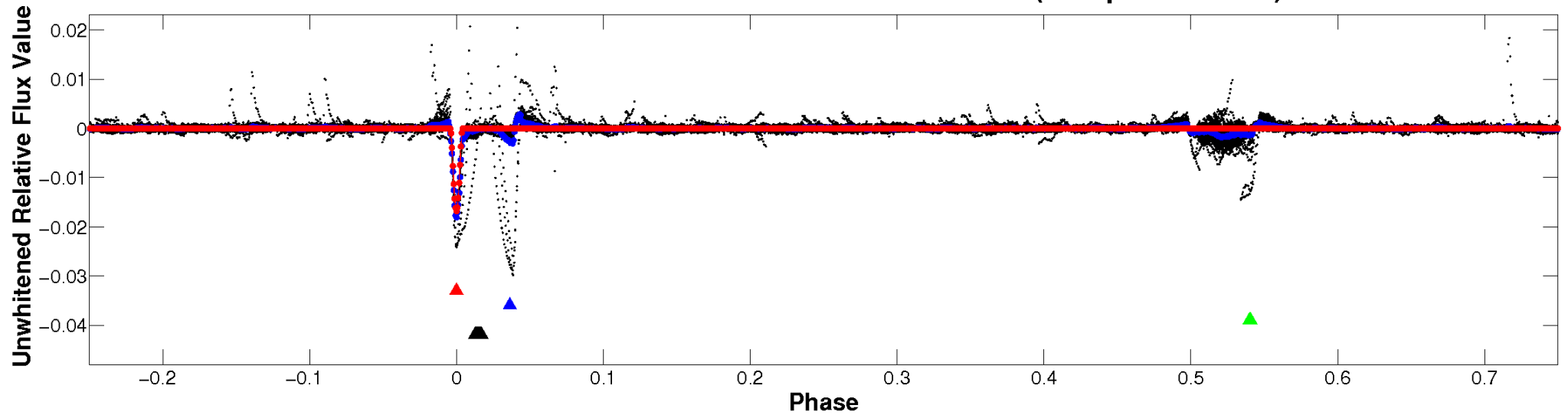
ALT Odd/Even

TCE 003955867-01

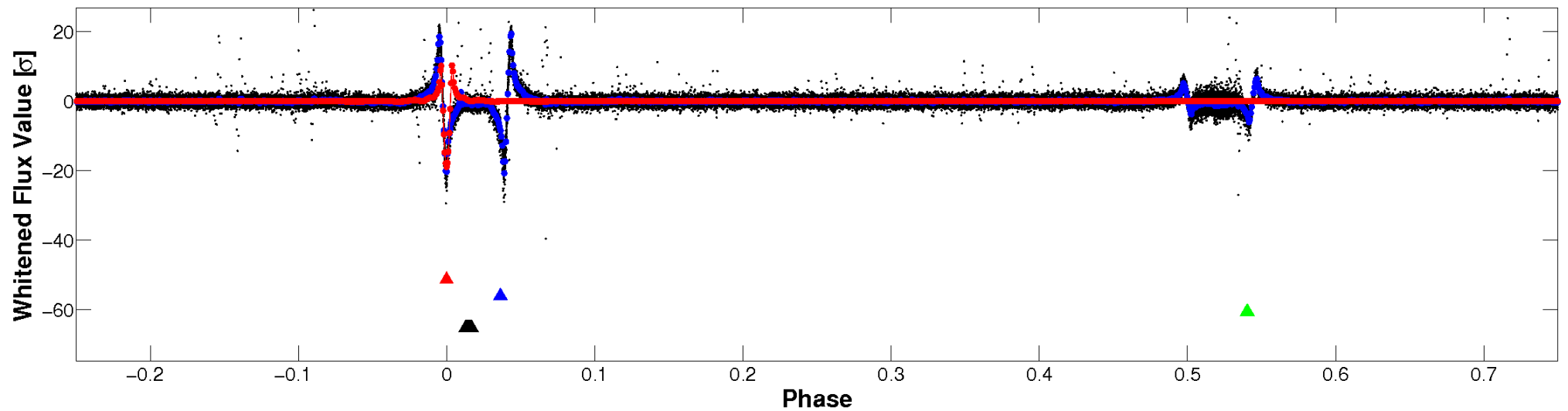


Non-Whitened Vs. Whitened Light Curve

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

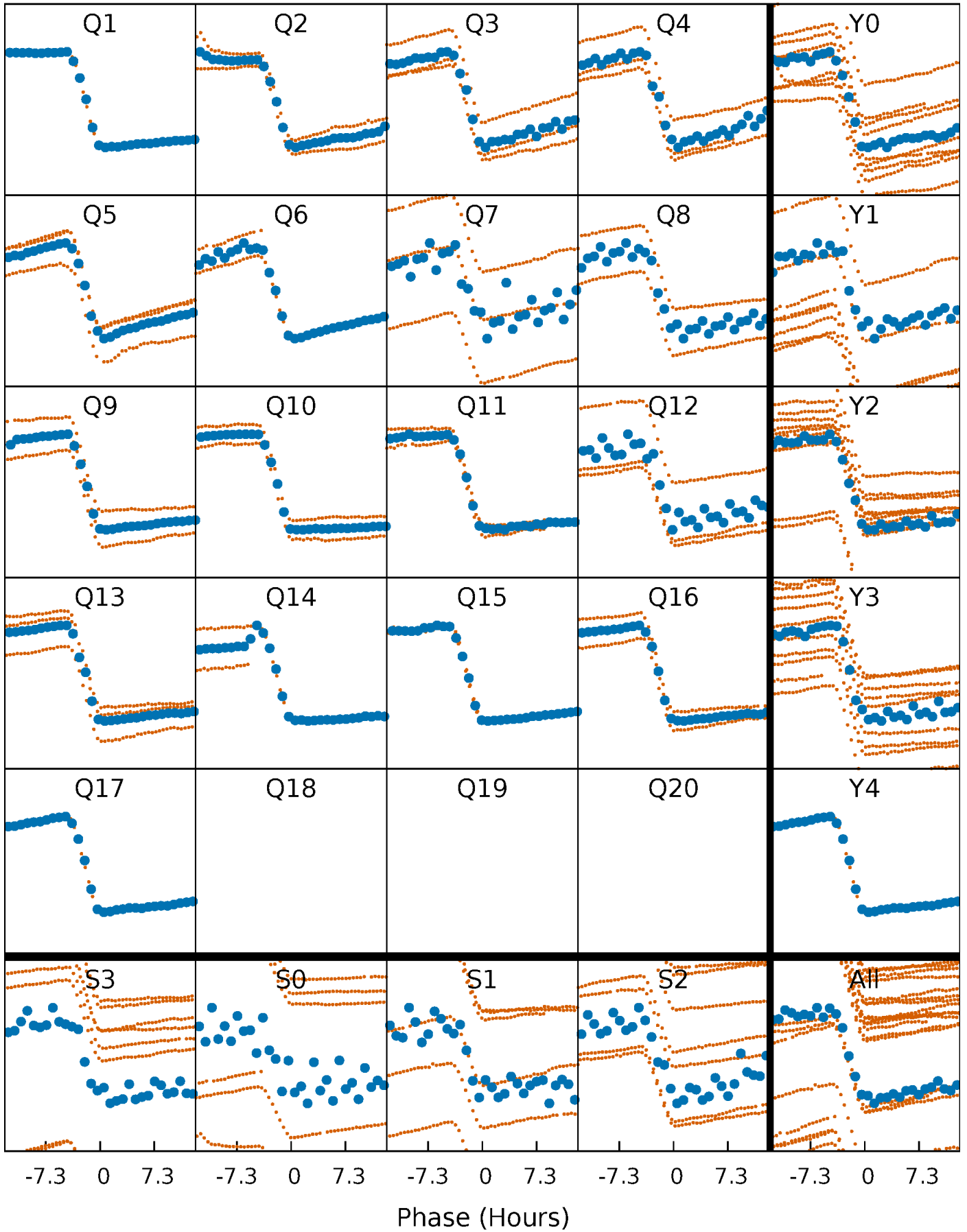


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



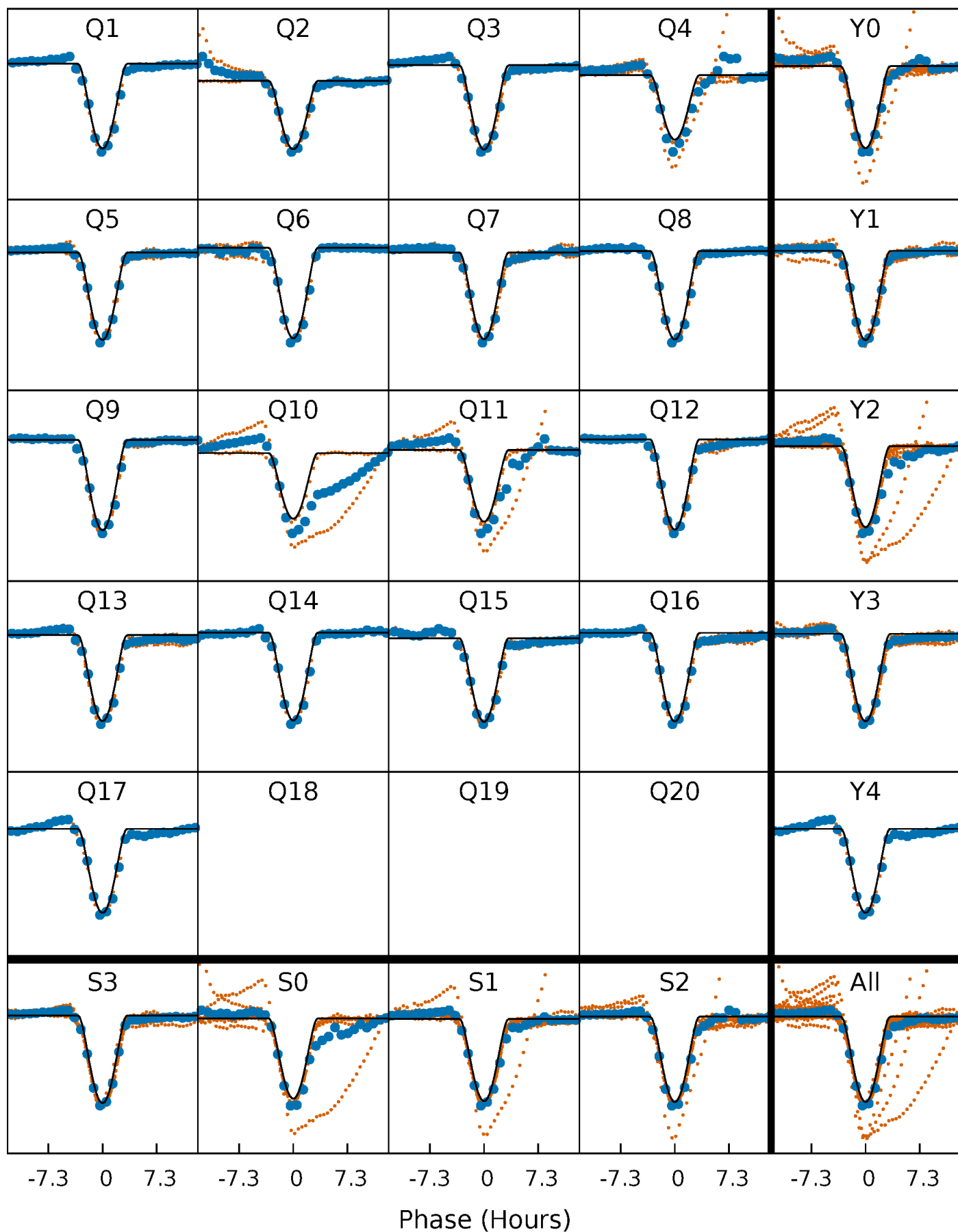
PDC Quarter-Phased Transit Curves

TCE 003955867-01 P= 33.656698 Days $T_0=160.910313$ (BKJD)



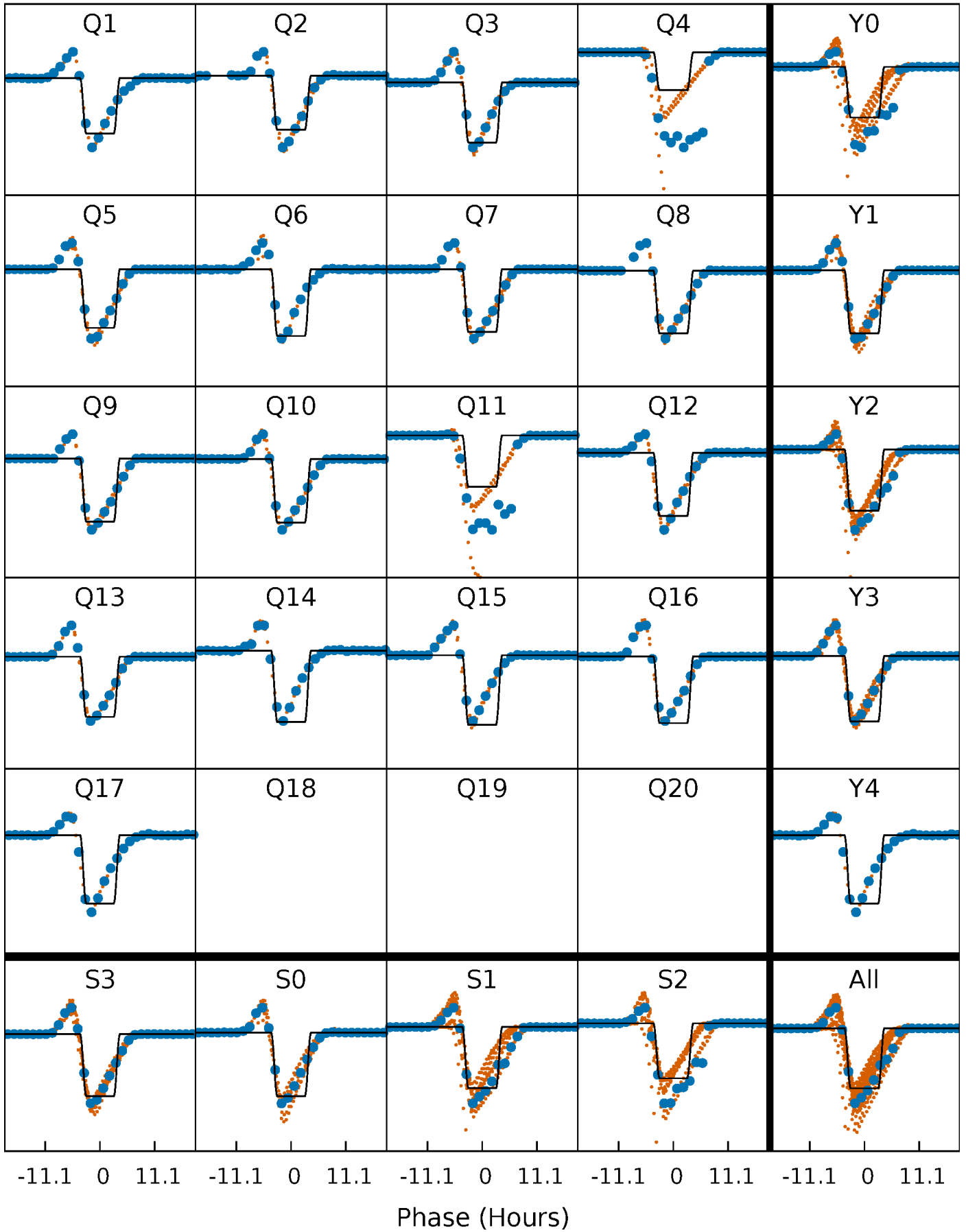
DV Quarter-Phased Transit Curves

TCE 003955867-01 P= 33.656698 Days $T_0=160.910313$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

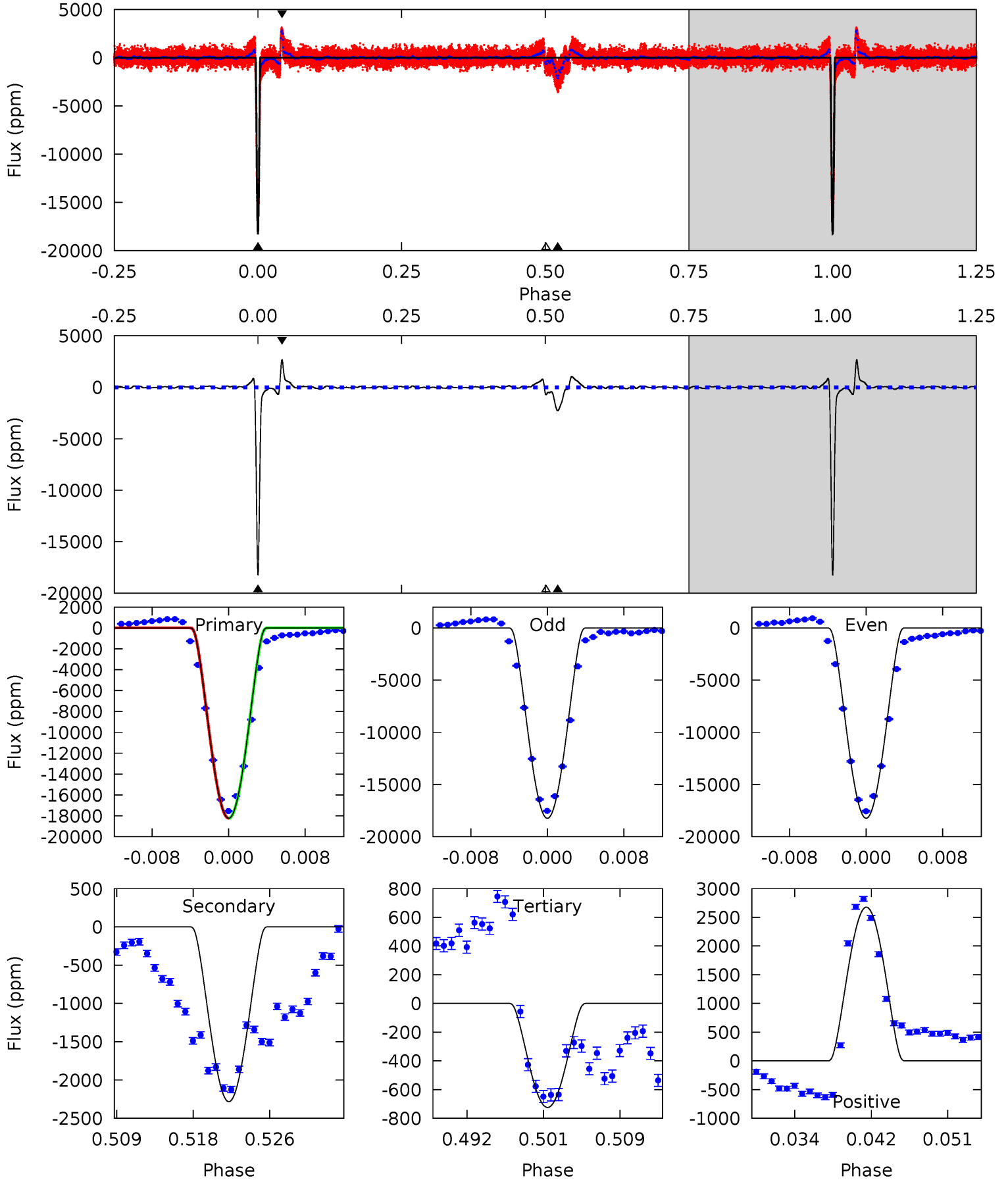
TCE 003955867-01 P= 33.657079 Days $T_0=160.973815$ (BKJD)



DV Model-Shift Uniqueness Test

003955867-01, P = 33.656698 Days, E = 127.253615 Days

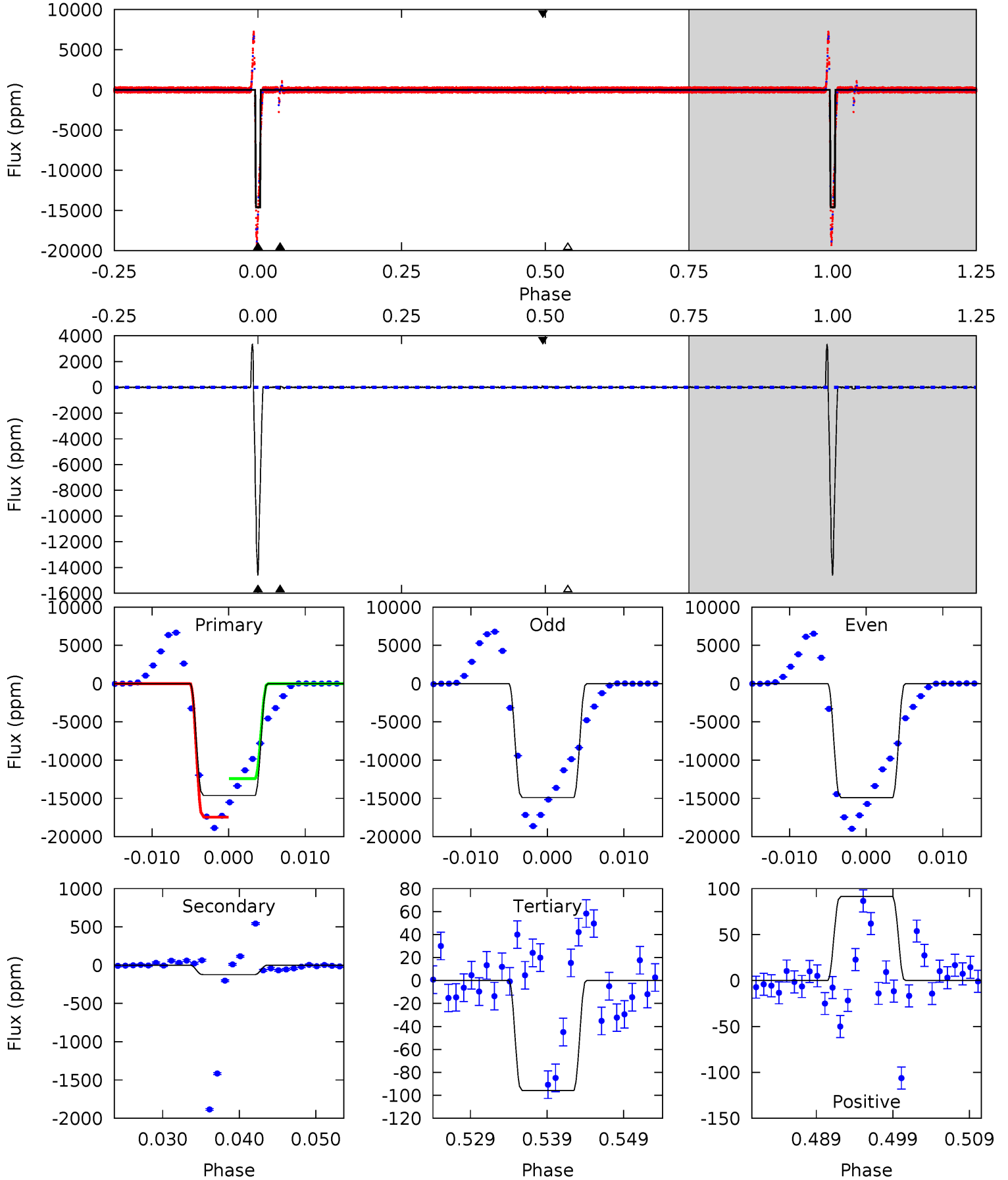
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
962.7	120.5	38.2	141.3	5.06	2.63	13.0	924.4	821.3	82.3	-20.8	0.15	1.03	0.13	0.35



Alt Model-Shift Uniqueness Test

003955867-01, P = 33.657079 Days, E = 127.316736 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1258	10.6	8.24	7.88	5.03	2.58	4.84	1250	1250	2.36	2.73	0.55	1.18	0.18	211.4



Stellar Parameters For KIC 003955867

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4774^{+71}_{-62}	$2.759^{+0.128}_{-0.176}$	$-0.320^{+0.150}_{-0.100}$	$6.447^{+1.781}_{-0.822}$	$0.871^{+0.151}_{-0.016}$	$0.005^{+0.003}_{-0.002}$
	+1%/-1%	+5%/-6%	+47%/-31%	+28%/-13%	+17%/-2%	+55%/-48%
Source	SPE74	SPE74	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 003955867-01 / KOI 7545.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2283 ± 19	$155.09^{+41.25}_{-38.81}$	1687^{+121}_{-77}	2831^{+262}_{-182}	$2.056^{+1.574}_{-0.763}$
Alt.	-123 ± 12	$93.86^{+39.85}_{-36.14}$	1693^{+115}_{-76}	-1533^{+3944}_{-604}	$0.295^{+0.518}_{-0.145}$

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 $A_{obs} \gg 1.0$

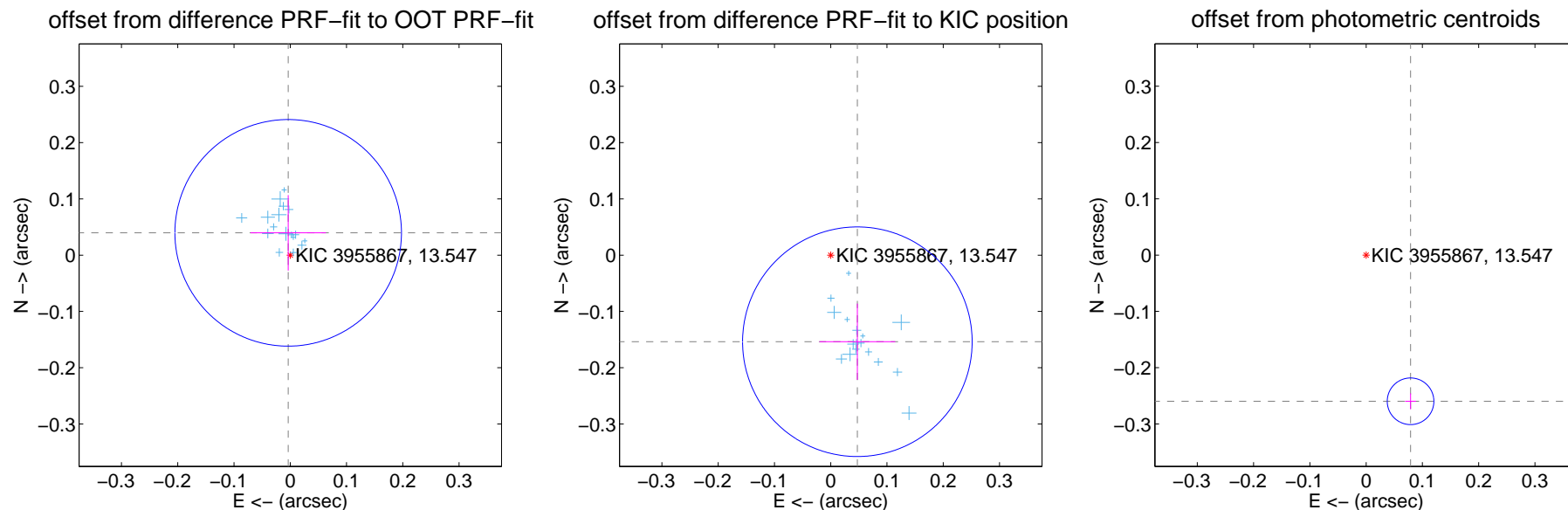
DV Centroid Data

Supplemental centroid analysis for 003955867-01. Kepler magnitude: 13.55. Transit SNR 252.04

There are 17 quarters with good PRF difference image offsets

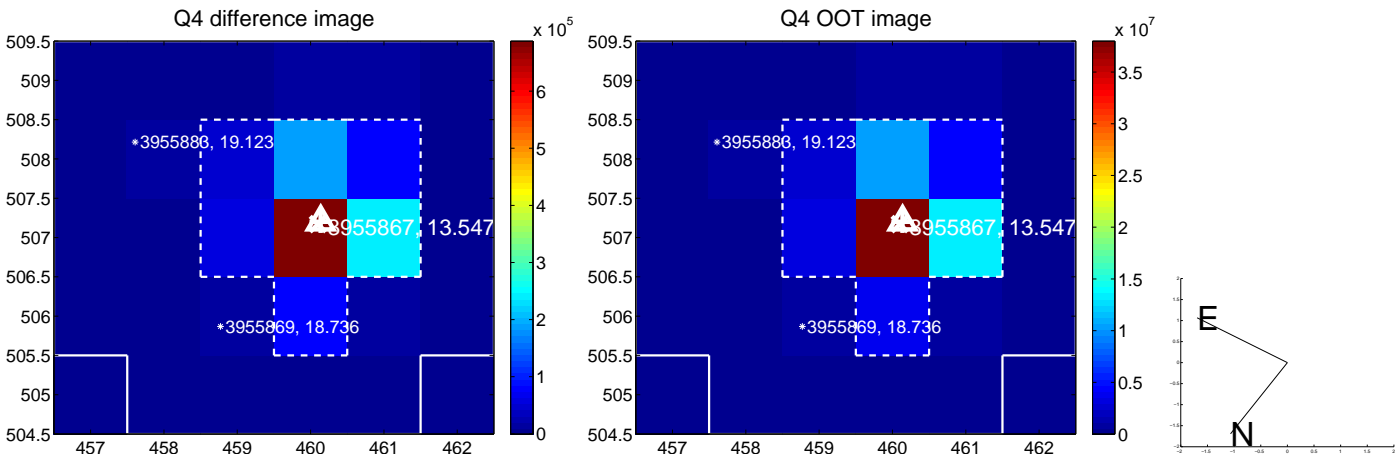
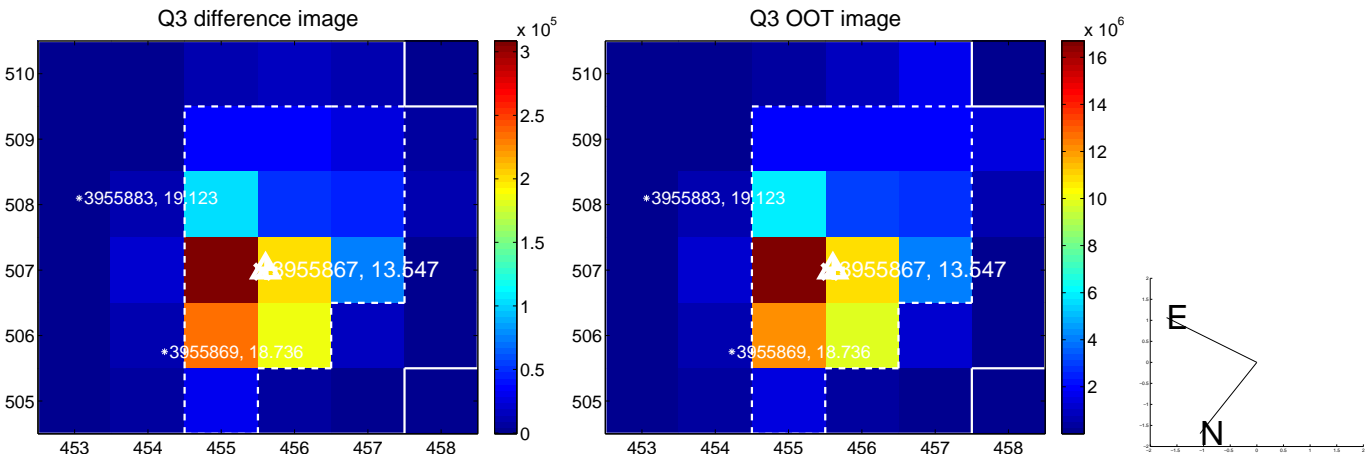
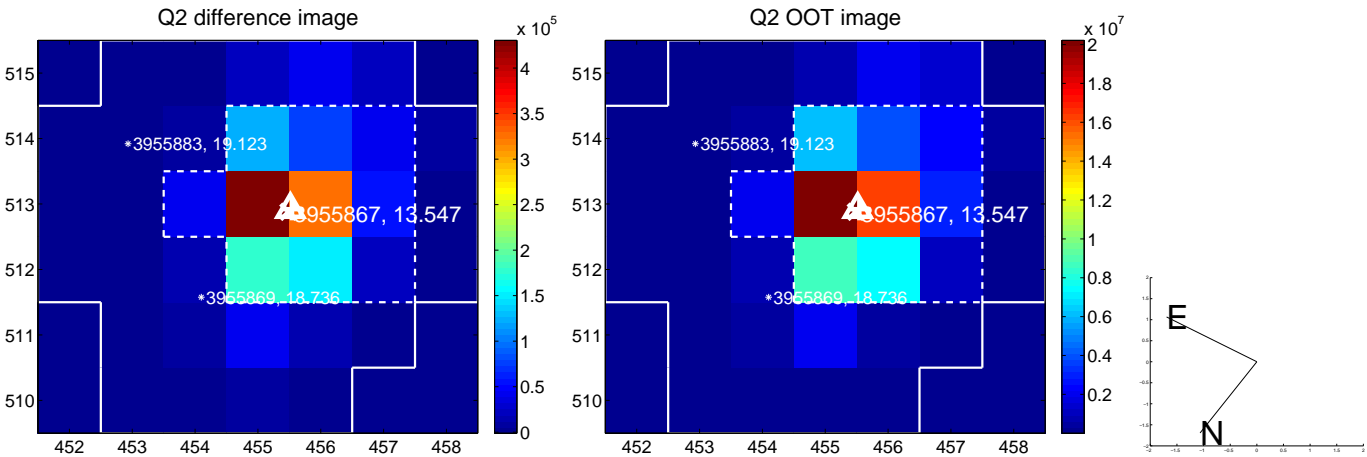
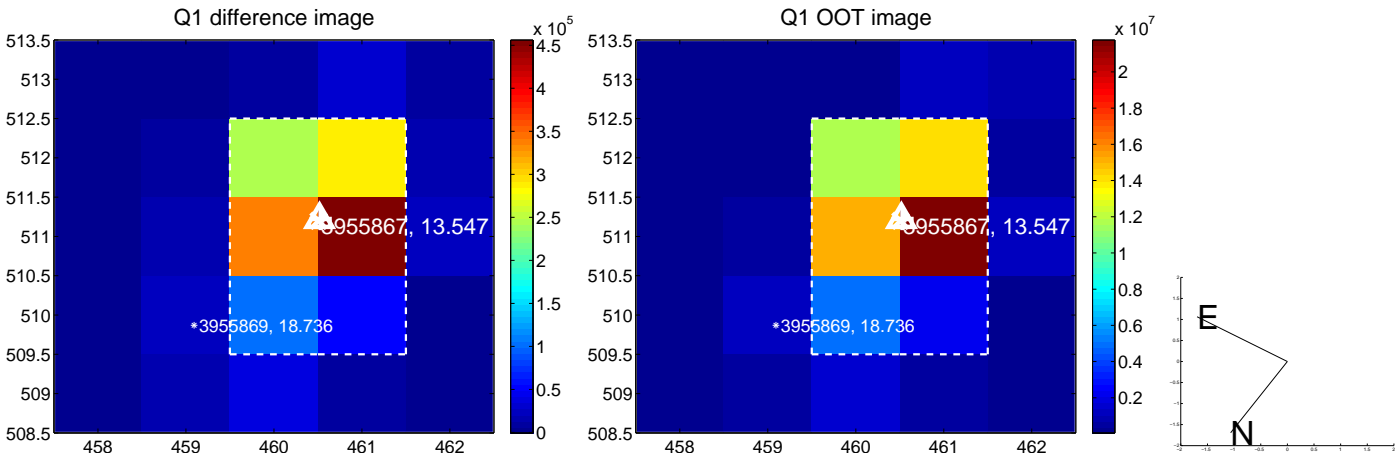
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.040 ± 0.067	0.59	0.004 ± 0.067	0.040 ± 0.067
PRF-fit source offset from KIC position	0.161 ± 0.068	2.37	-0.047 ± 0.067	-0.154 ± 0.068
photometric centroid source offset	0.27 ± 0.01	19.66	-0.08 ± 0.01	-0.26 ± 0.01

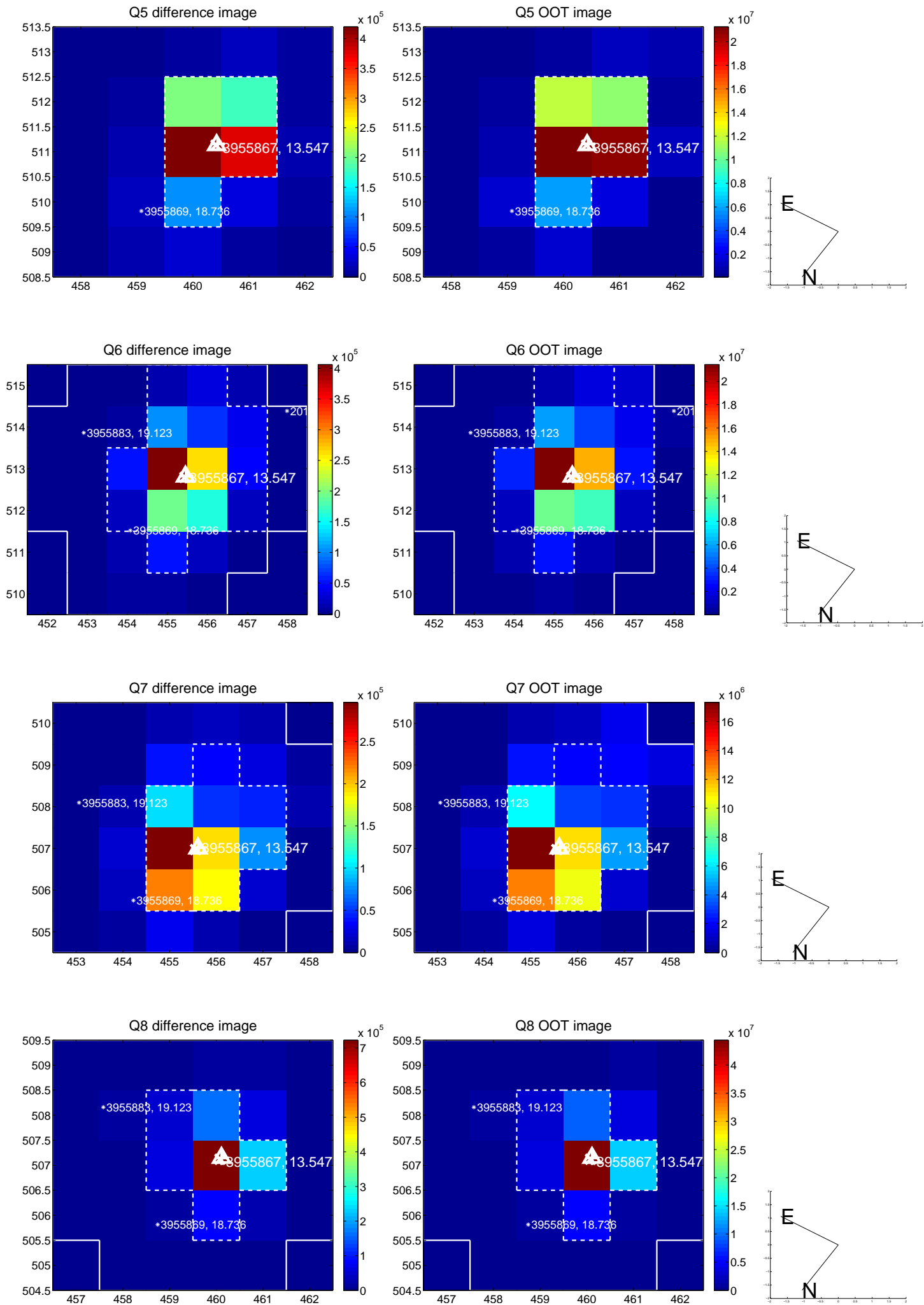


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

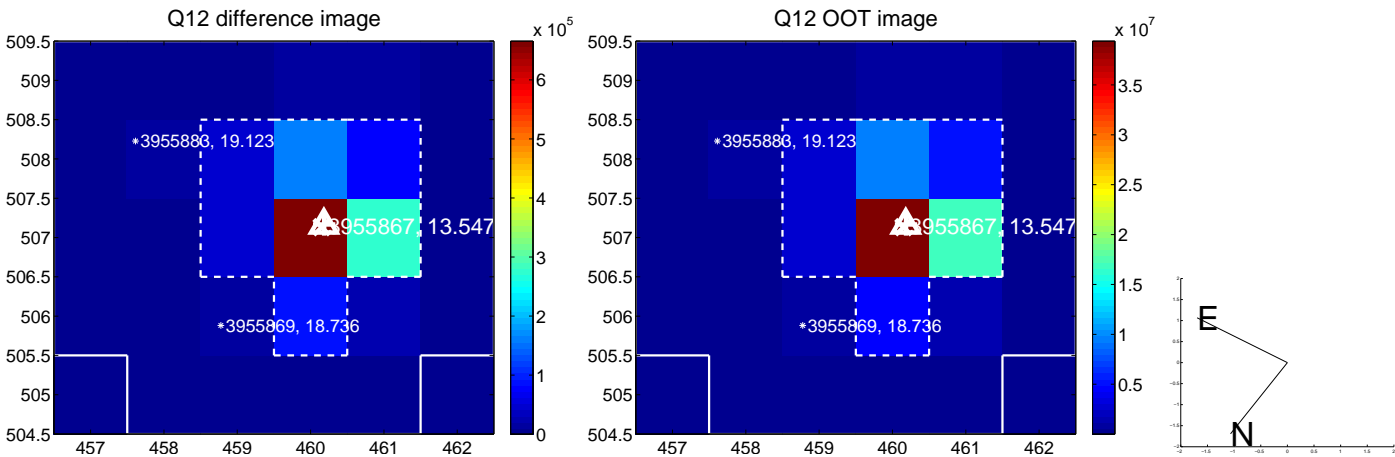
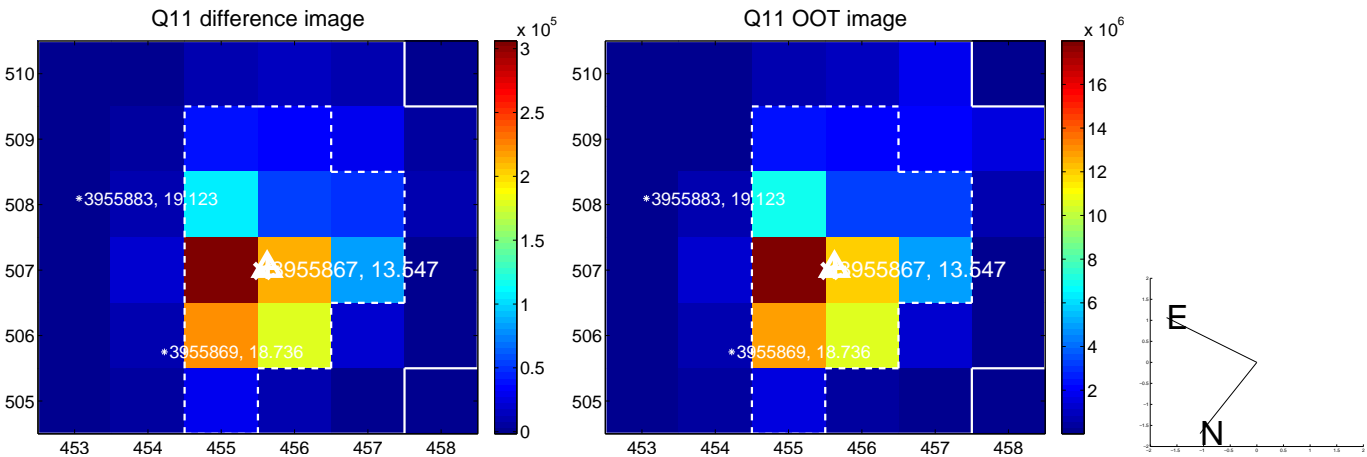
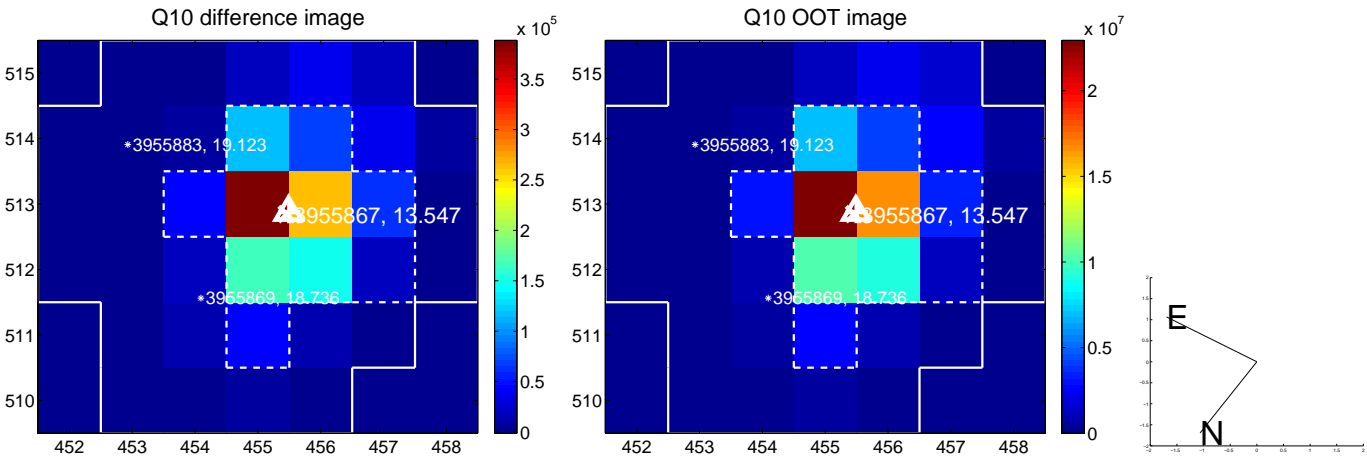
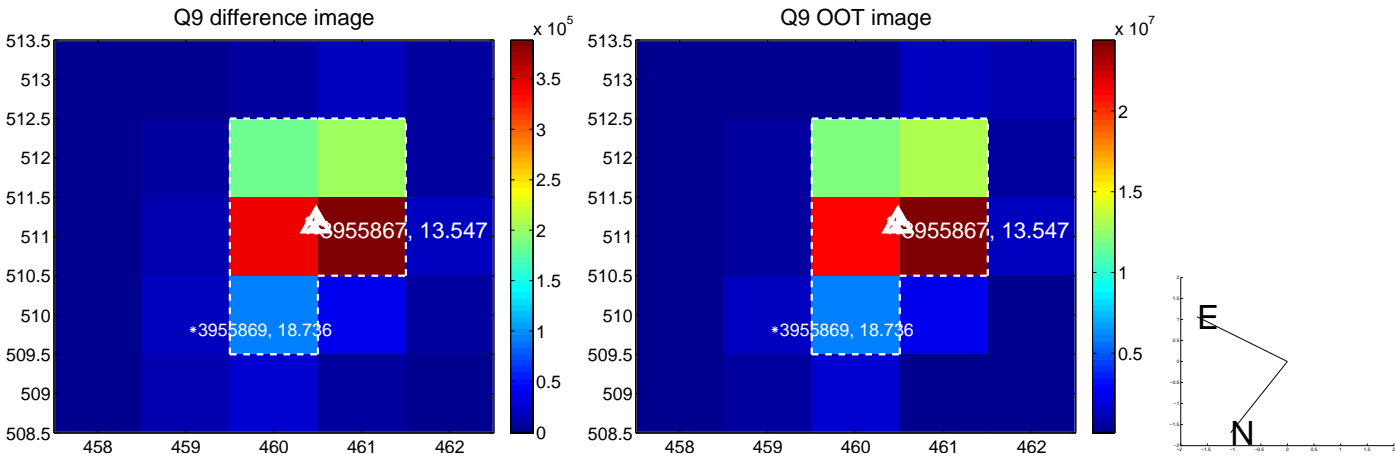
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



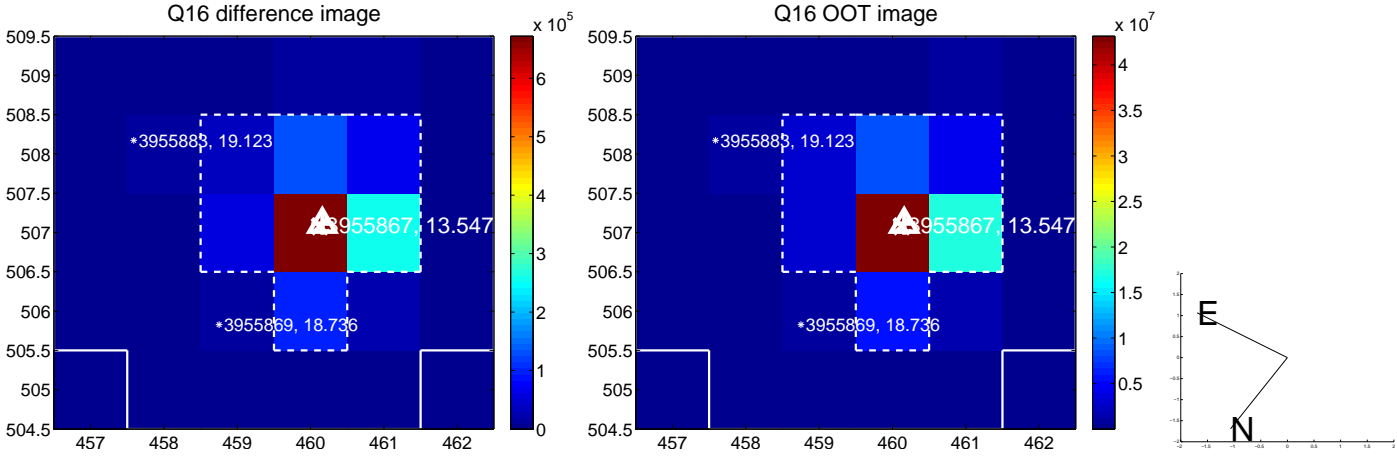
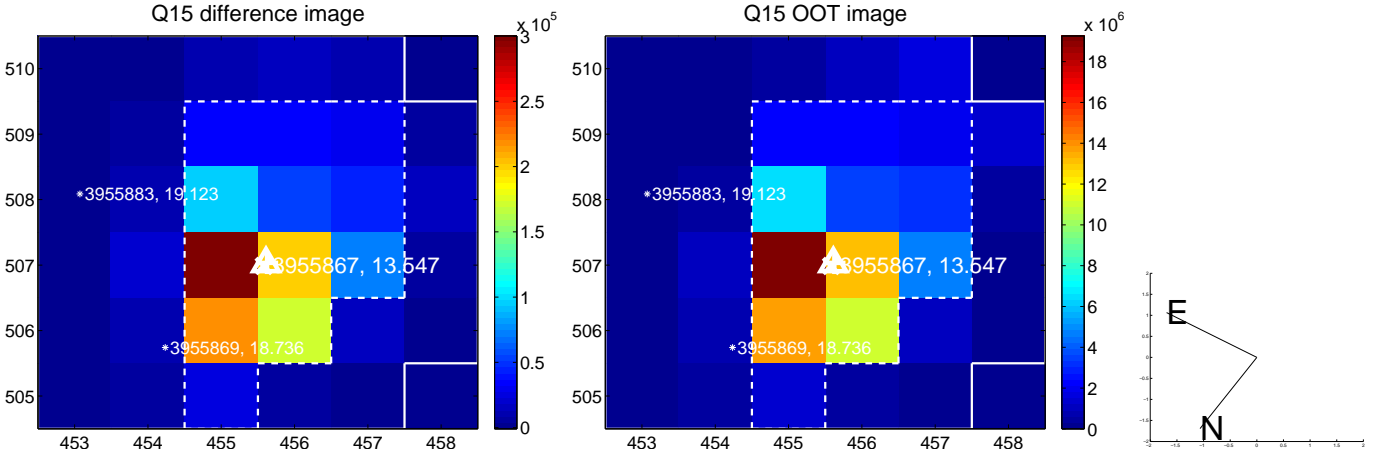
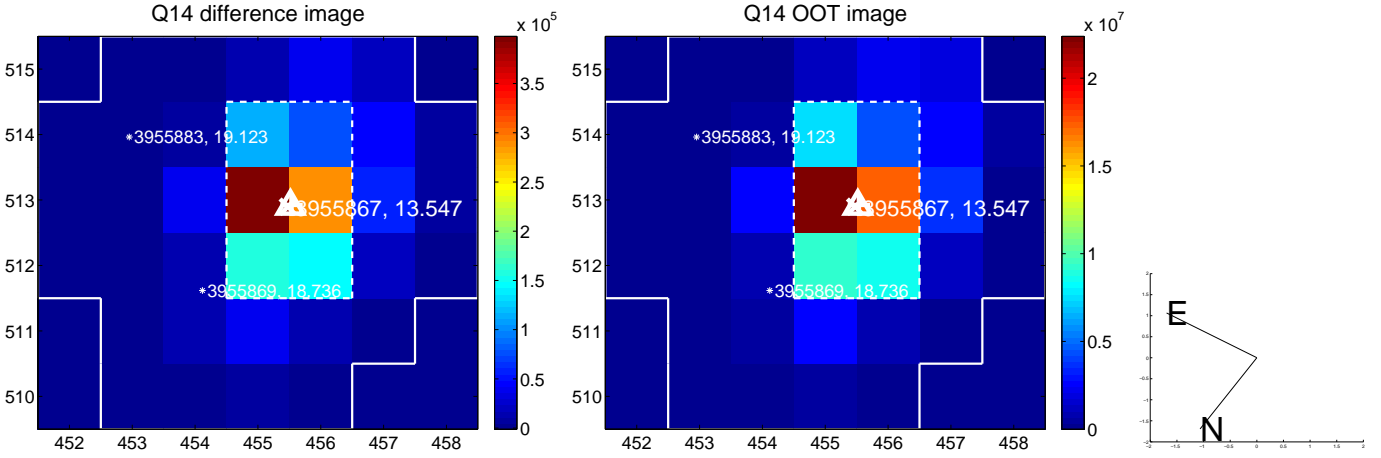
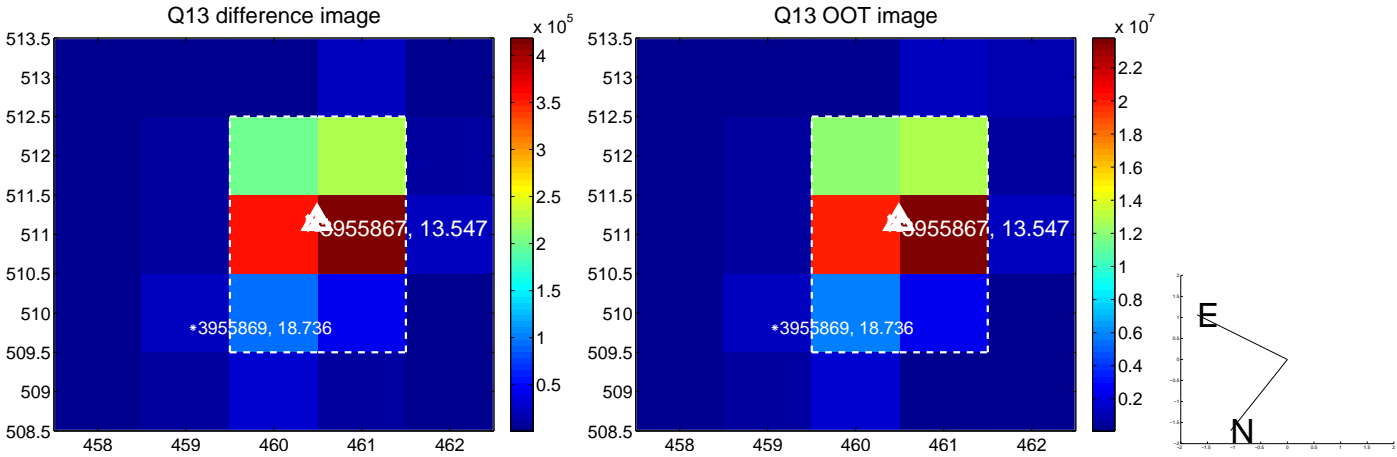
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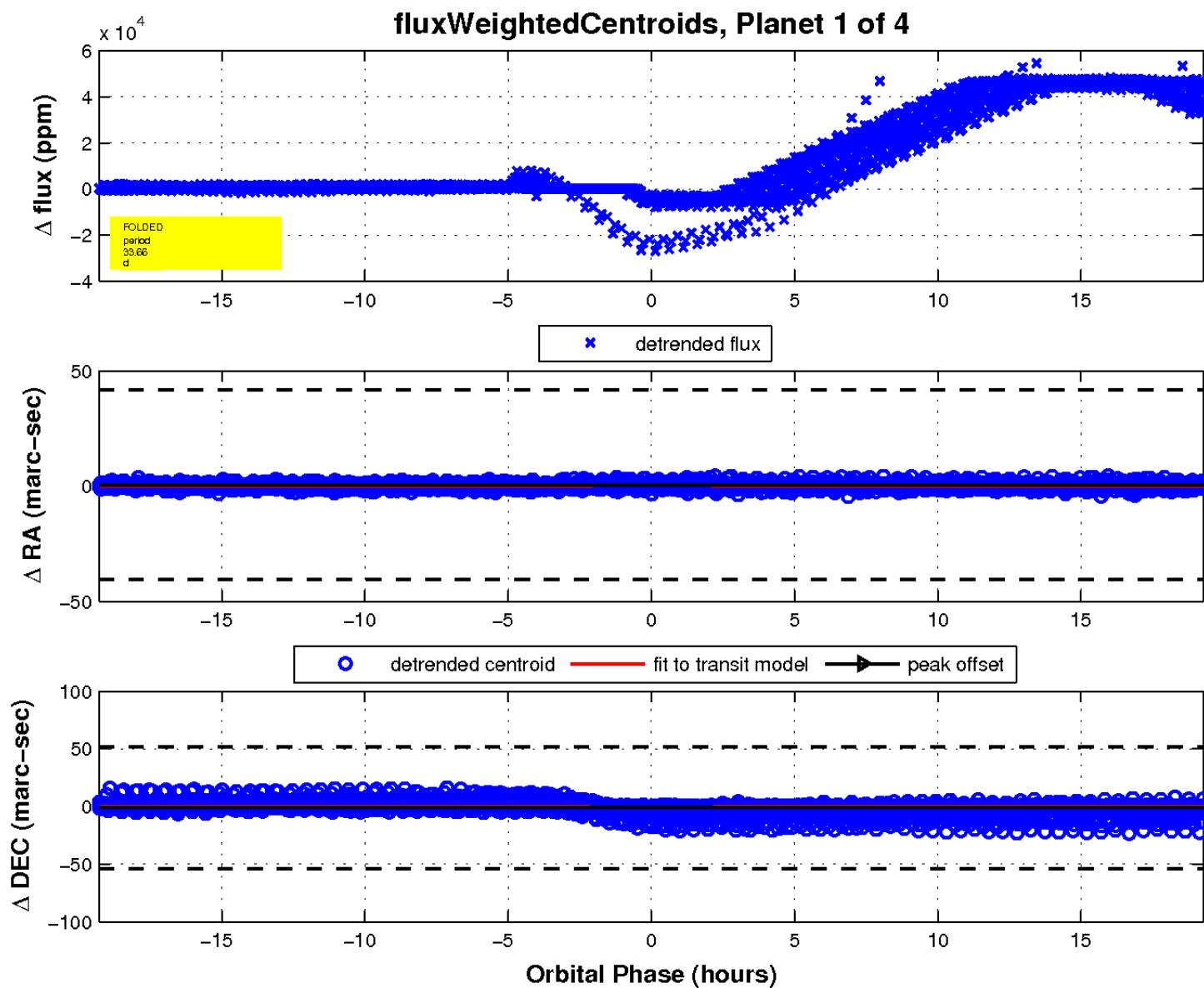
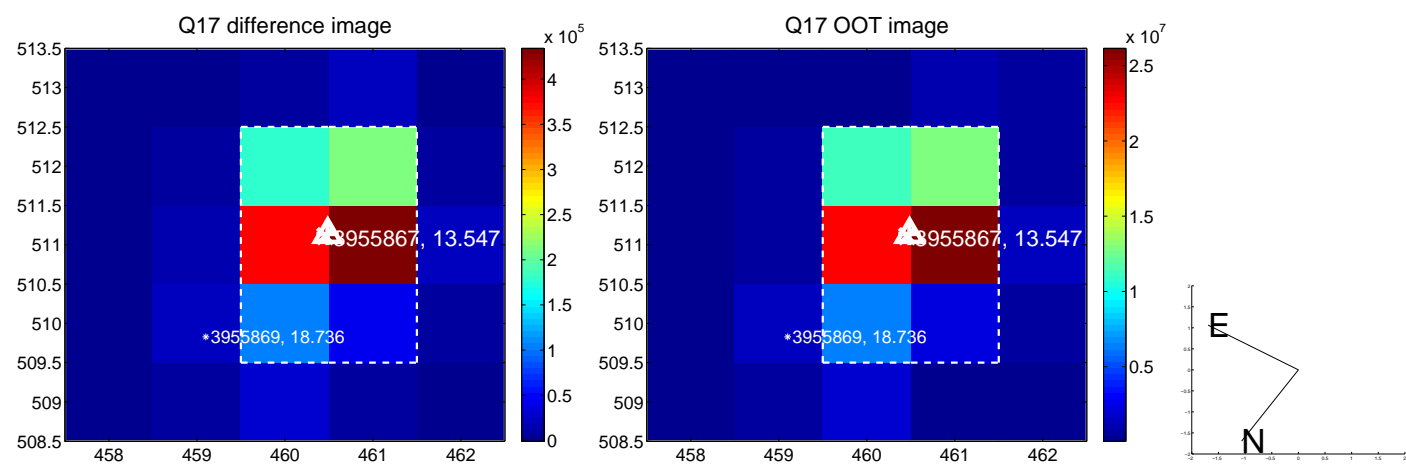
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white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

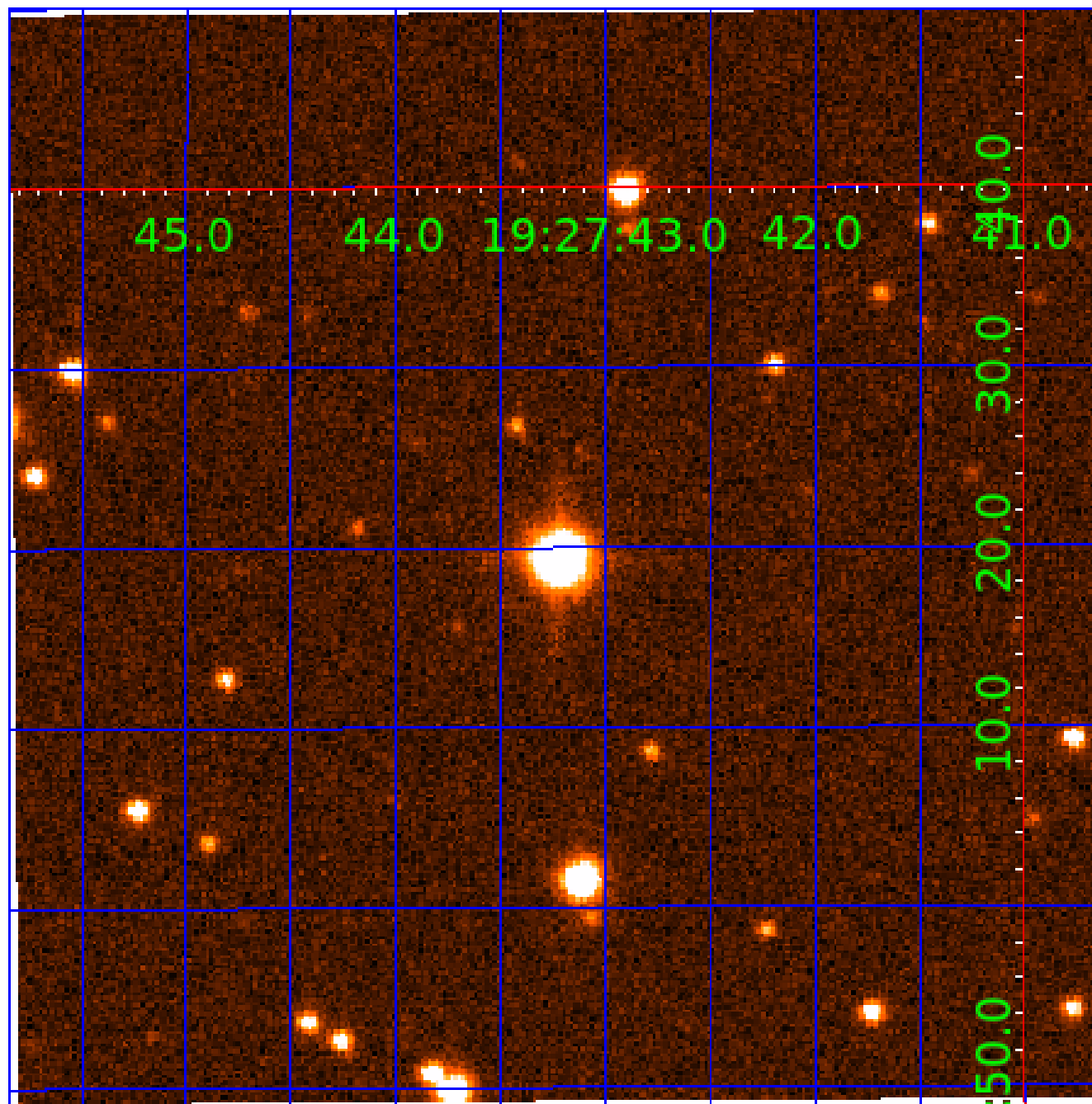


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003955867

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

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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003955867-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
003955867-03	OBS	FP	0.00	1	0	0	0	LPP_DV—SAME_NTL_PERIOD
003955867-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—NO_FITS—RESIDUAL_TCE—CENT_NOFITS

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.

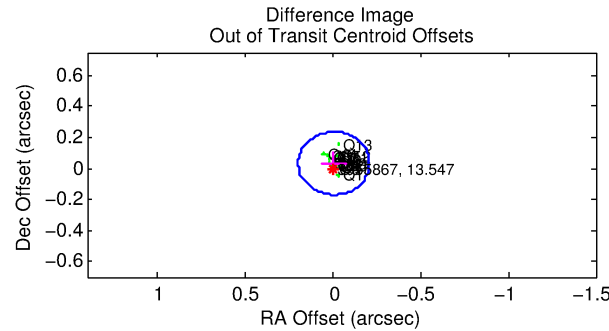
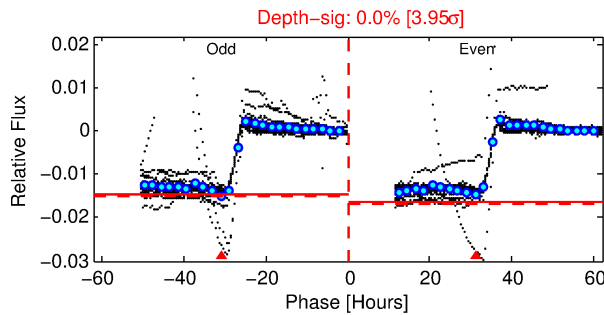
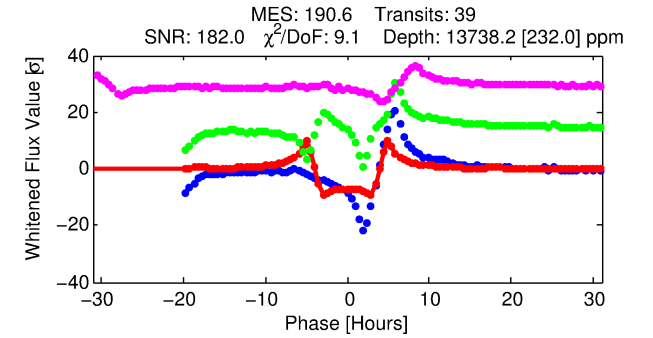
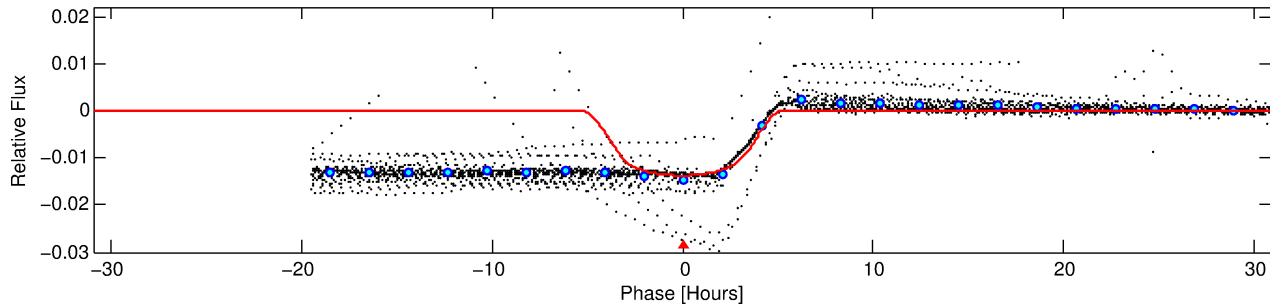
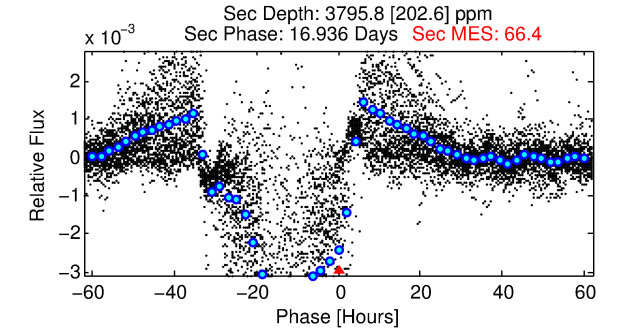
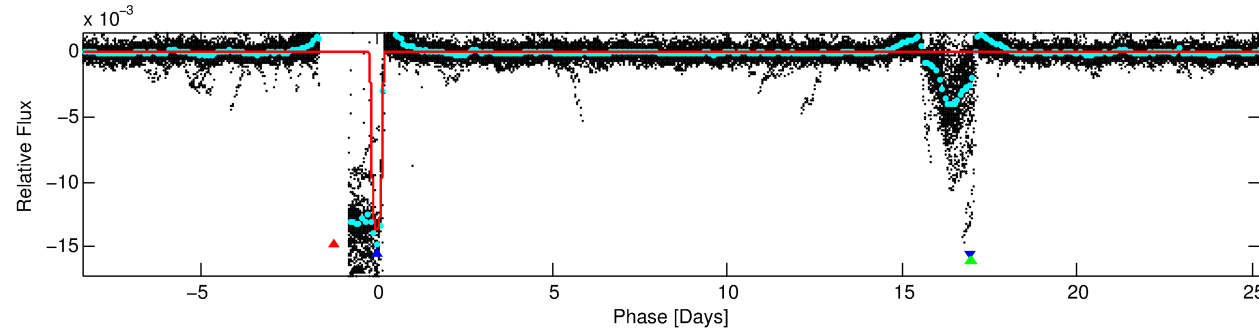
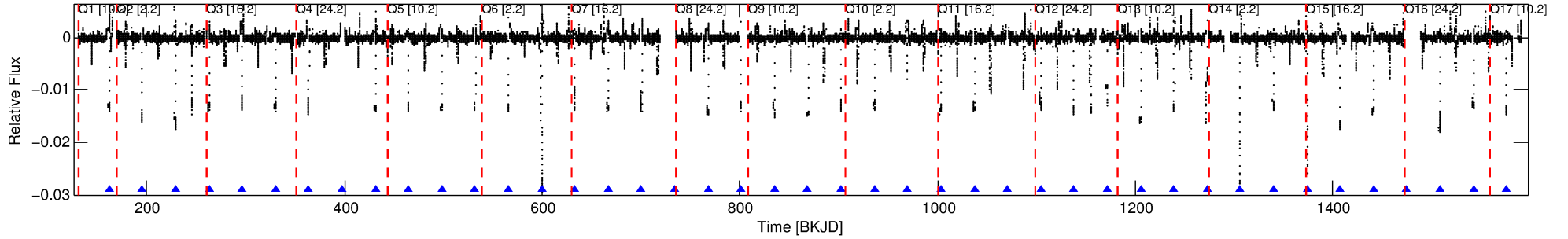
Ephemeris Match Information For 003955867-02

No Significant Match Found

DV One-Page Summary

KIC: 3955867 Candidate: 2 of 4 Period: 33.657 d
KOI: K07545 Corr: No Ephemeris Match

Kp: 13.55 R*: 6.45 Rs Teff: 4774.0 K Logg: 2.76 Fe/H: -0.320



DV Fit Results:

Period = 33.65675 [0.00006] d
Epoch = 162.1324 [0.0015] BKJD
Rp/R* = 0.1178 [0.0011]
a/R* = 20.59 [0.24]
b = 0.75 [0.01]
Seff = 509.60 [169.36]
Teq = 1212 [101] K
Rp = 82.90 [22.92] Re
a = 0.1948 [0.0445] AU
Ag = 11.53 [3.83] [2.75σ]
Teffp = 3452 [71] K [18.19σ]

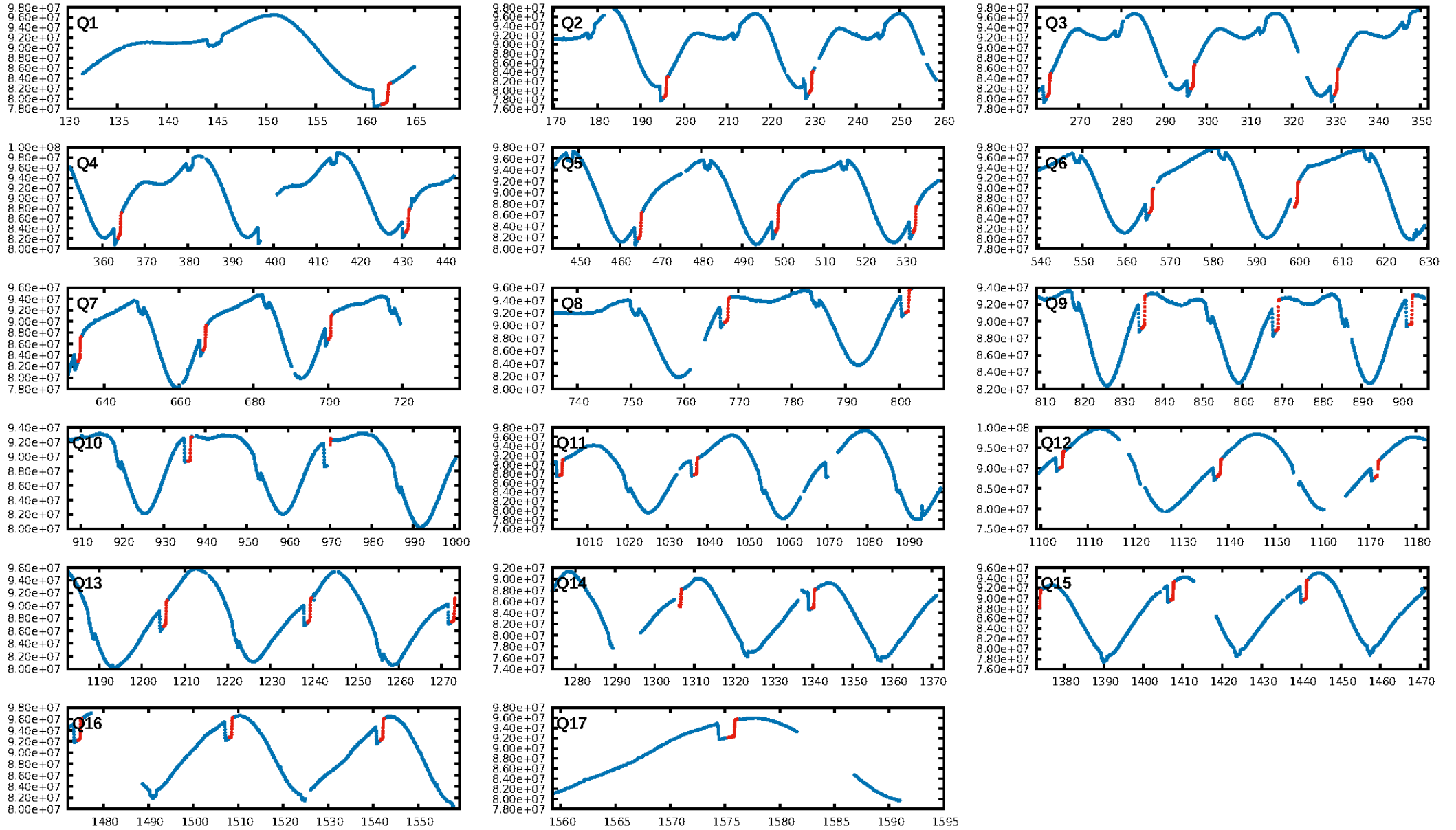
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [37/37]
GhostDiagnostic-chr: 0.7653
Centroid-sig: 0.0%
Centroid-so: 0.241 arcsec [16.51σ]
OotOffset-rm: 0.034 arcsec [0.50σ]
KicOffset-rm: 0.166 arcsec [2.43σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 0.00 [0/16]

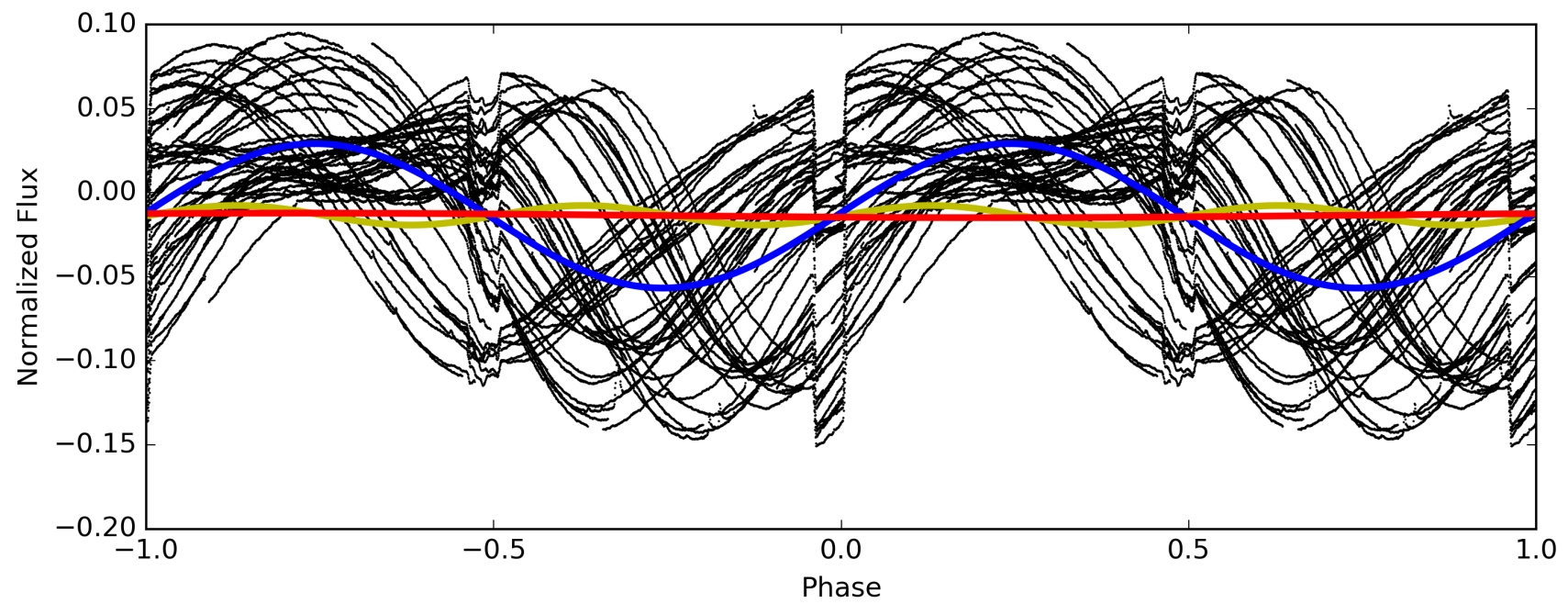
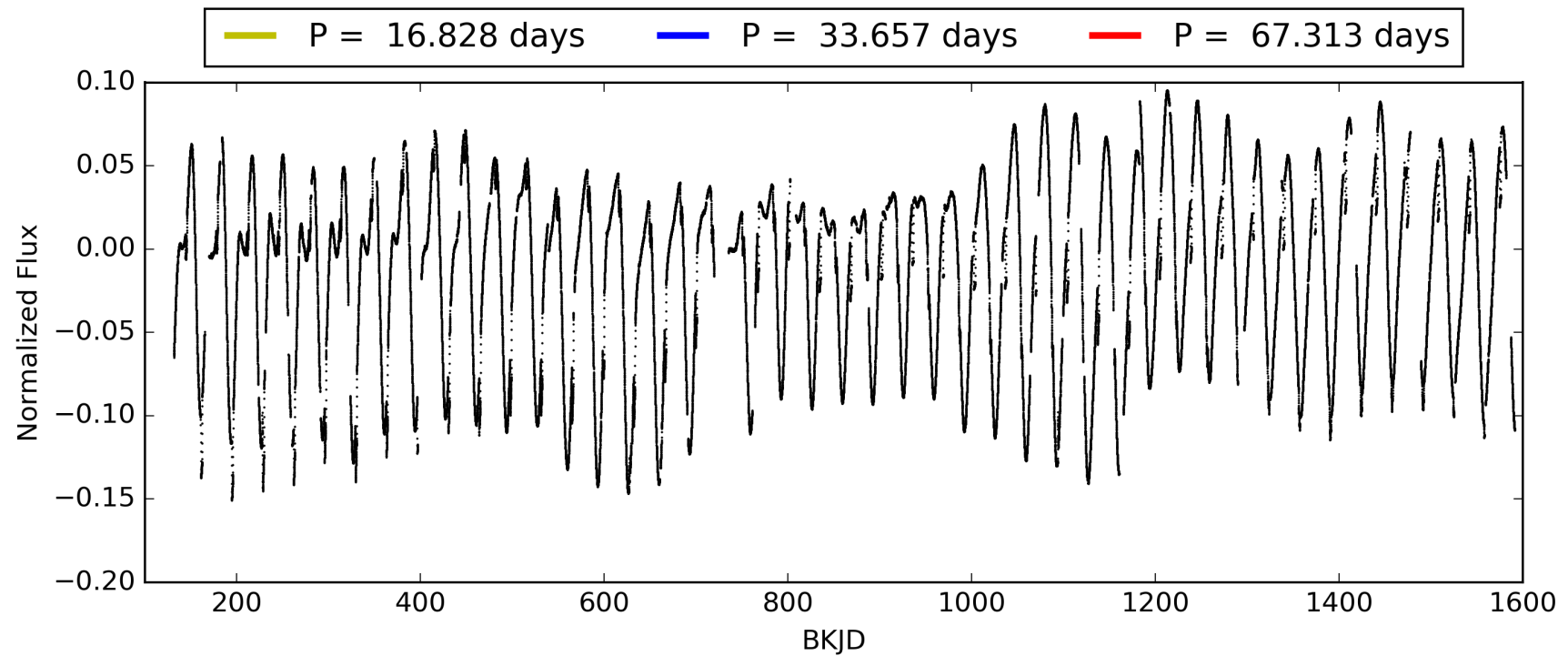
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 003955867-02, PDC Light Curves

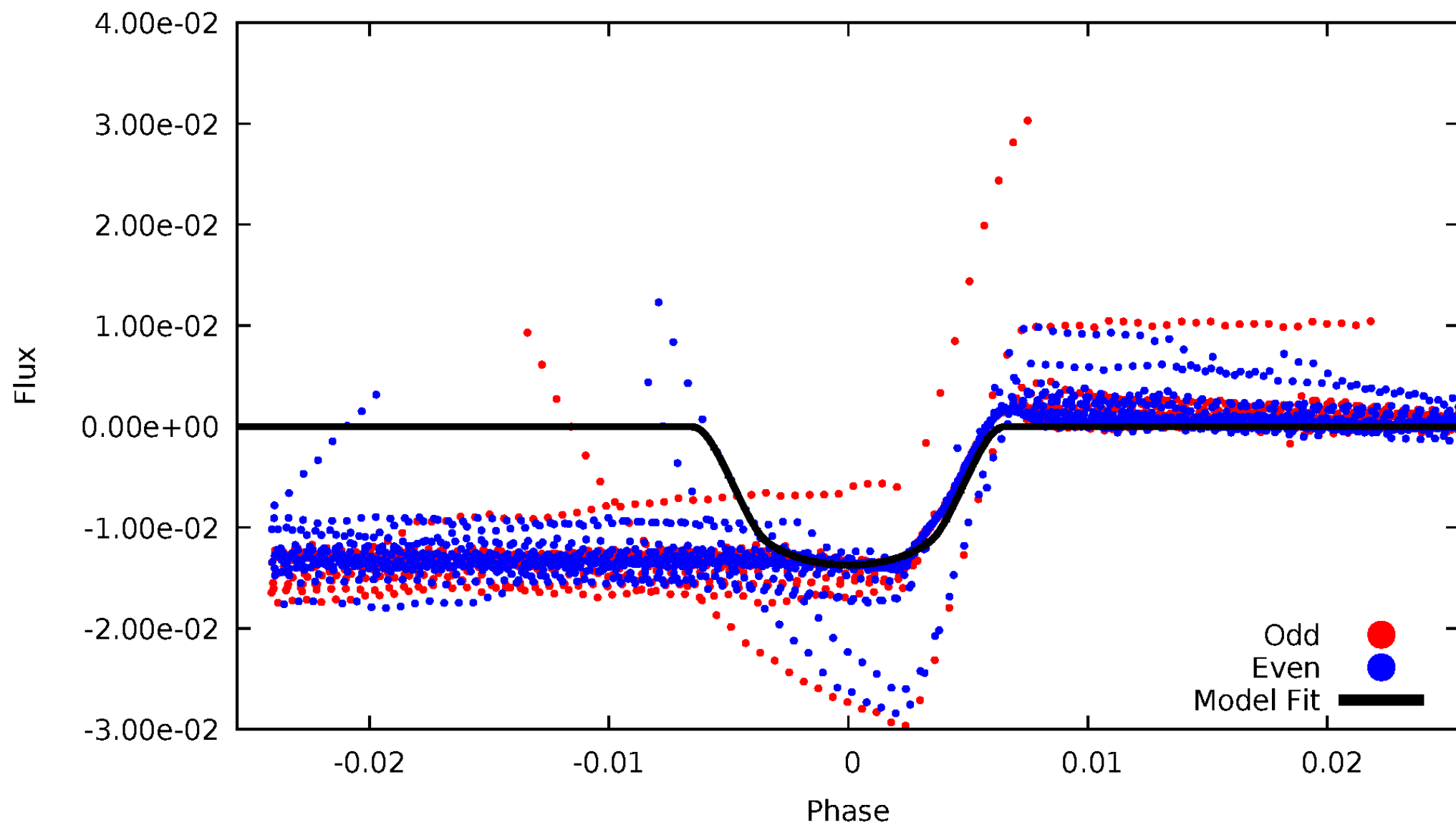


TCE 003955867-02



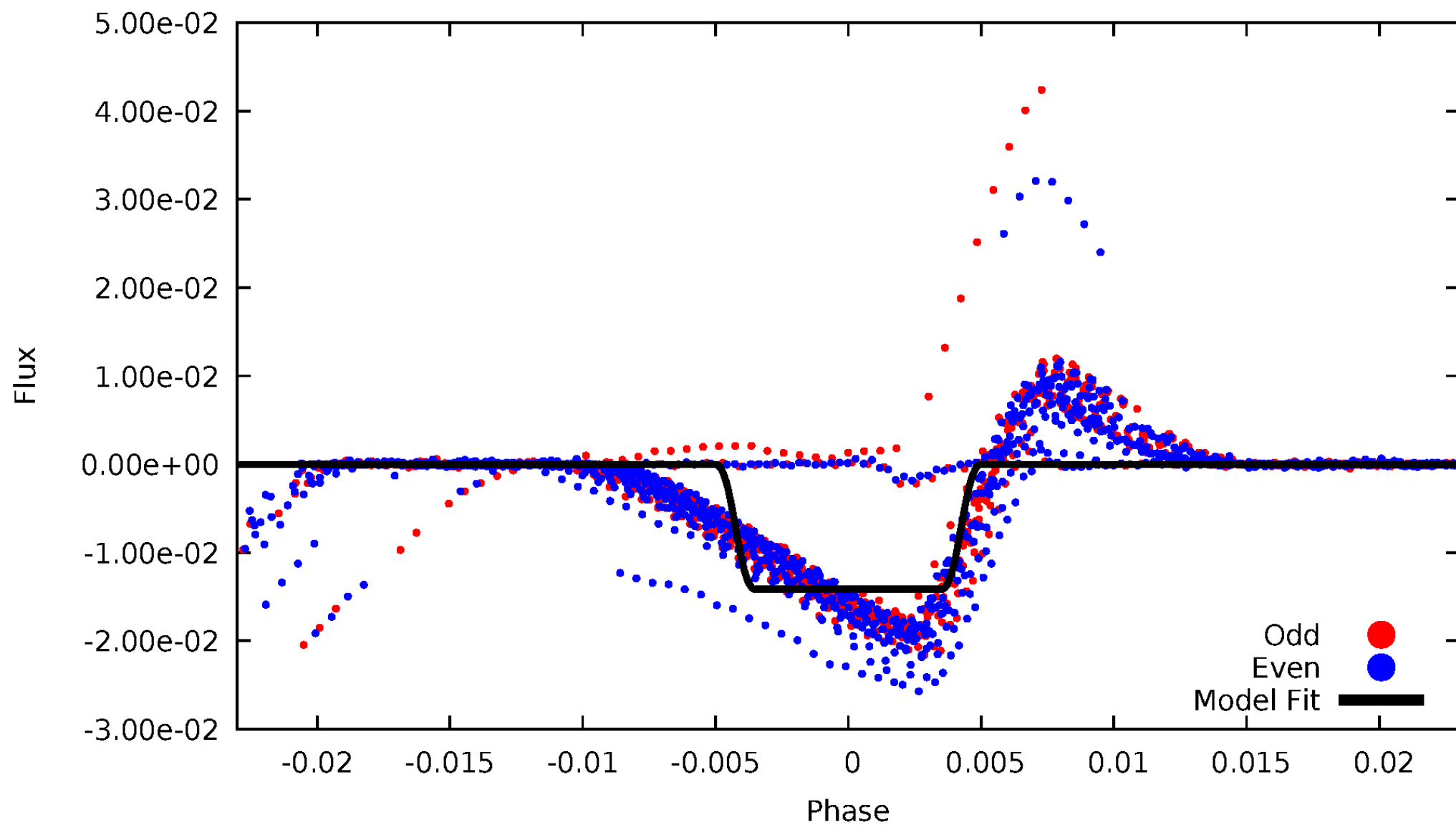
DV Odd/Even

TCE 003955867-02



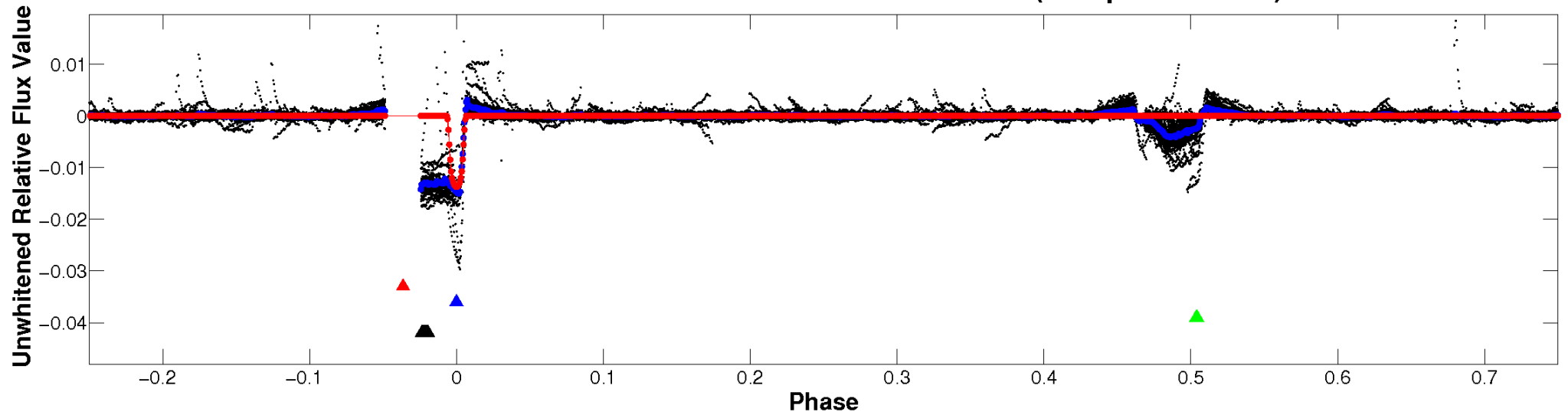
ALT Odd/Even

TCE 003955867-02

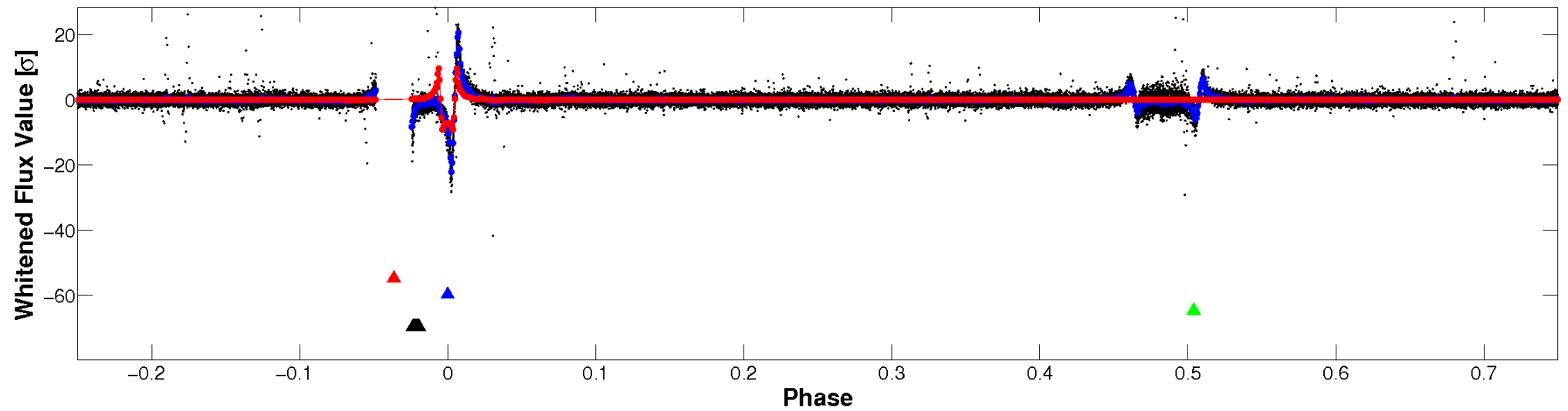


Non-Whitened Vs. Whitened Light Curve

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

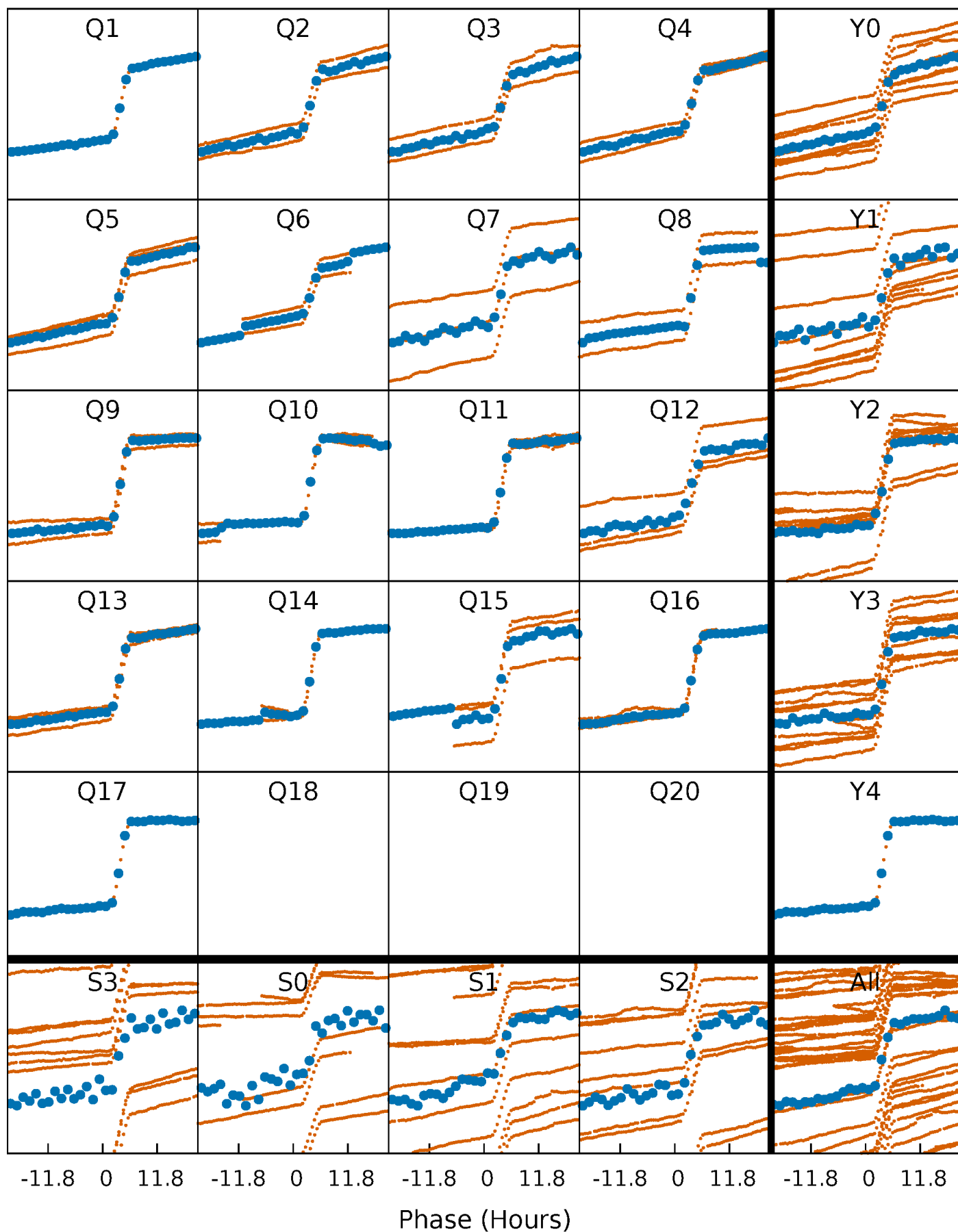


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



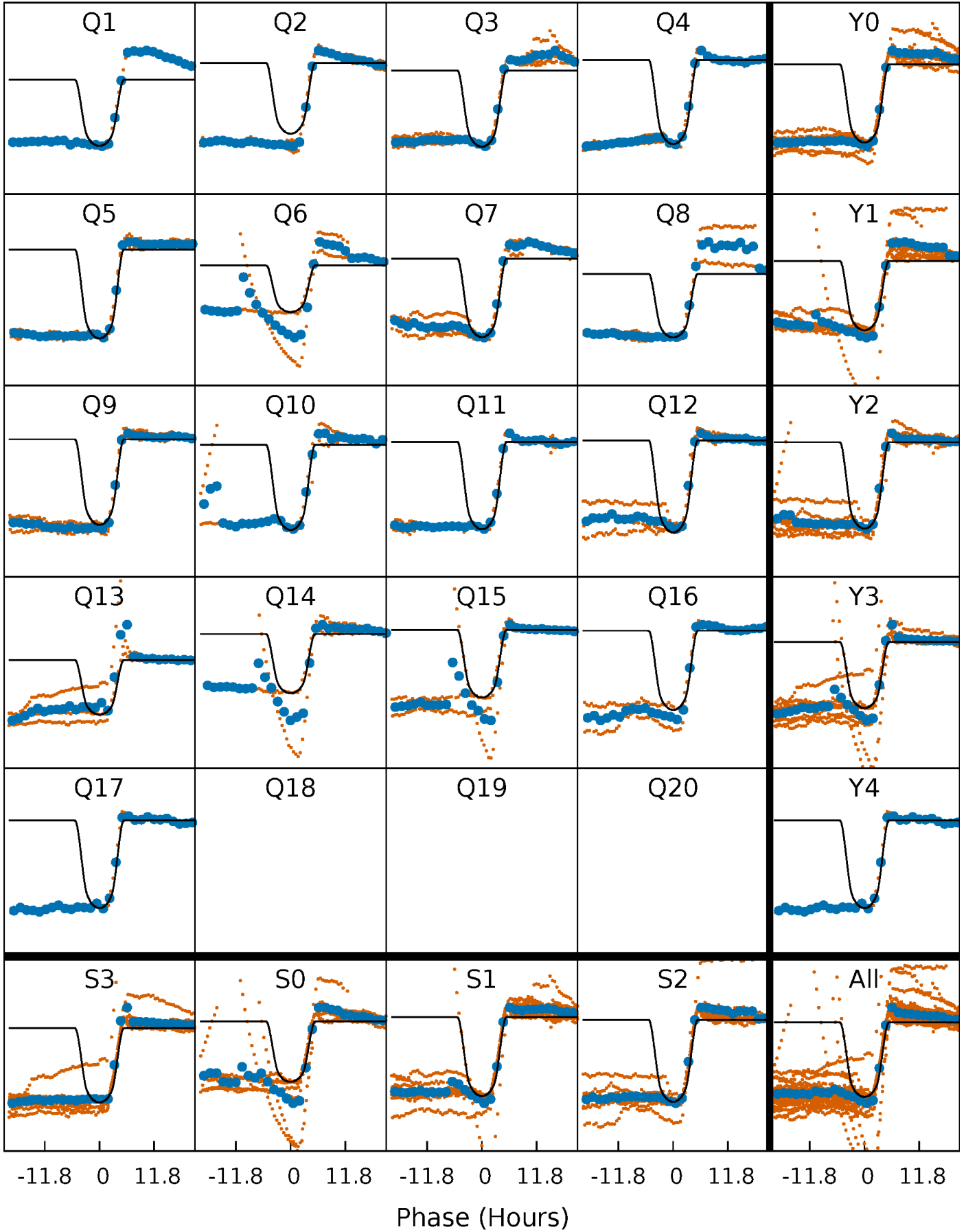
PDC Quarter-Phased Transit Curves

TCE 003955867-02 P= 33.656749 Days $T_0=162.132368$ (BKJD)



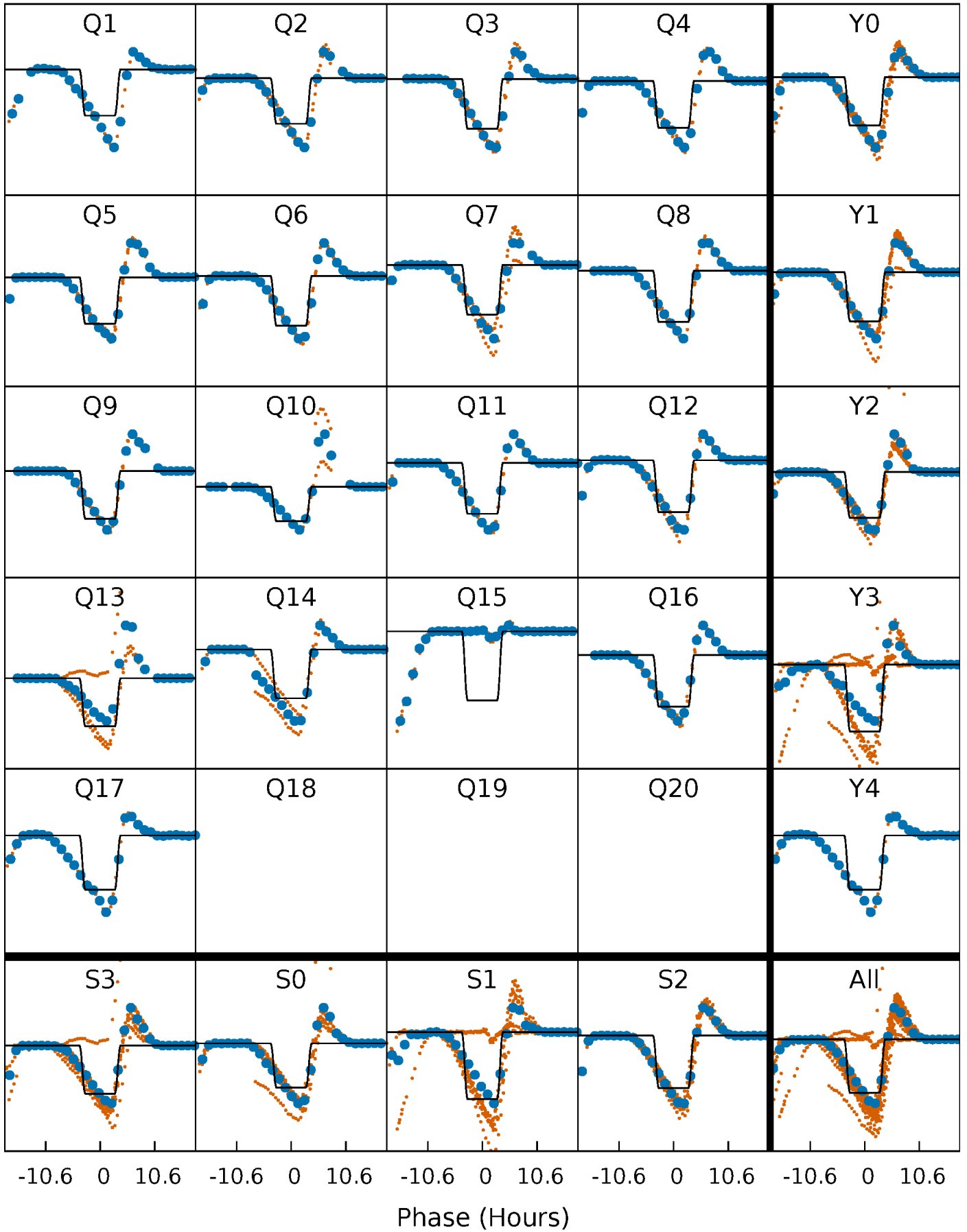
DV Quarter-Phased Transit Curves

TCE 003955867-02 P= 33.656749 Days $T_0=162.132368$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

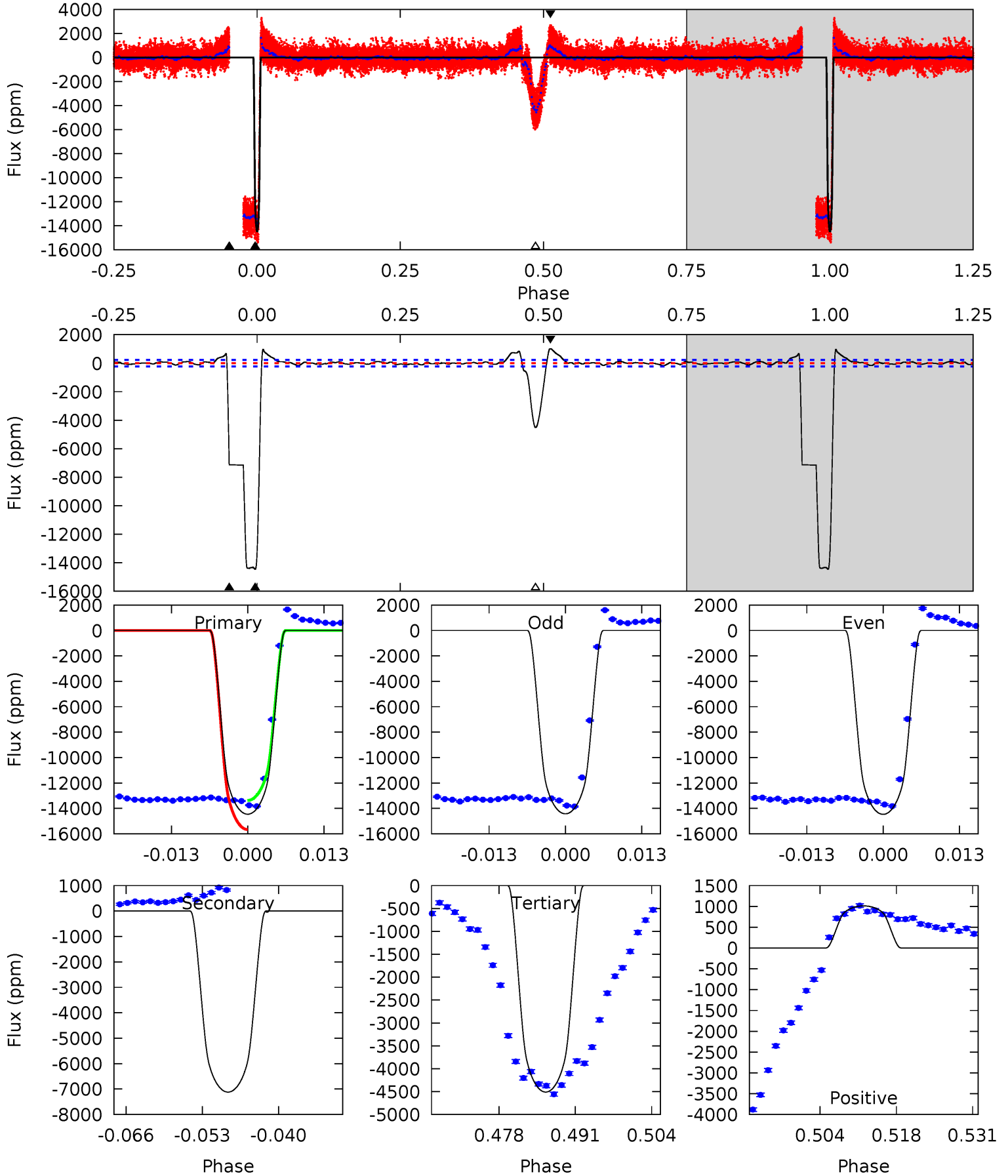
TCE 003955867-02 P= 33.657774 Days $T_0=162.105696$ (BKJD)



DV Model-Shift Uniqueness Test

003955867-02, P = 33.656749 Days, E = 128.475619 Days

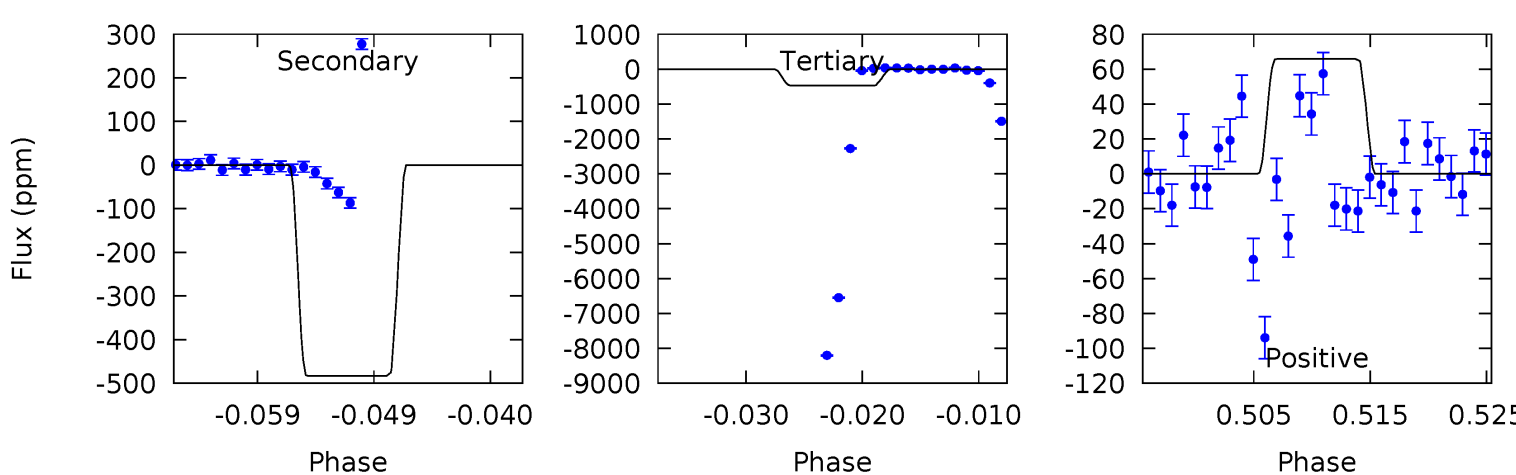
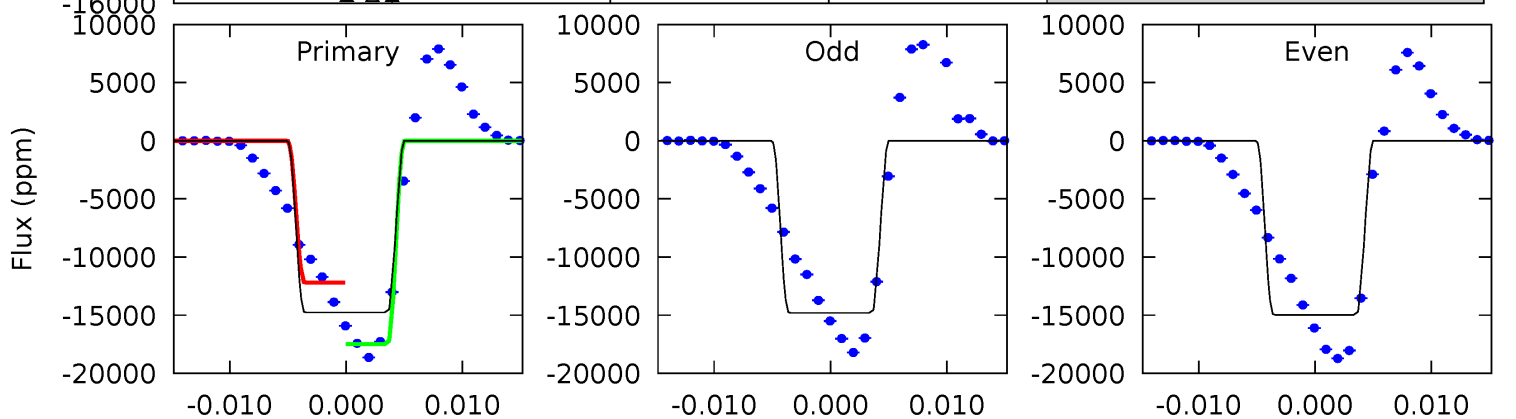
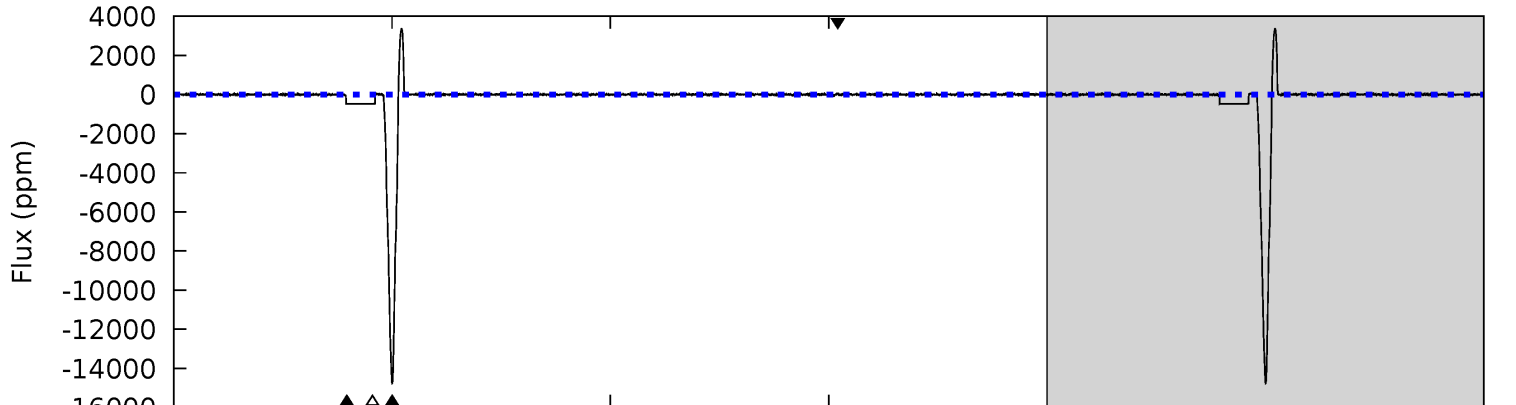
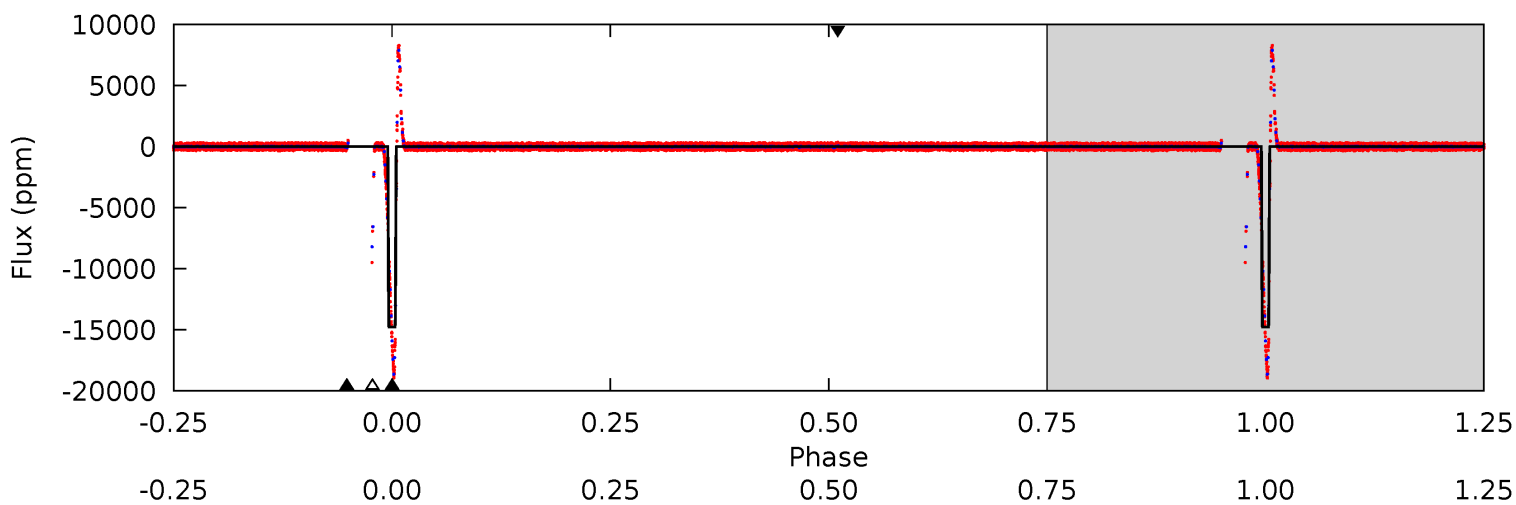
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
311.4	153.4	97.2	21.8	4.97	2.48	22.0	214.2	289.6	56.2	131.5	0.43	1.14	0.07	21.2



Alt Model-Shift Uniqueness Test

003955867-02, P = 33.657774 Days, E = 128.447922 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1077	35.3	34.6	4.80	5.03	2.58	4.54	1043	1072	0.68	30.5	5.83	0.92	0.19	0



Stellar Parameters For KIC 003955867

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4774^{+71}_{-62}	$2.759^{+0.128}_{-0.176}$	$-0.320^{+0.150}_{-0.100}$	$6.447^{+1.781}_{-0.822}$	$0.871^{+0.151}_{-0.016}$	$0.005^{+0.003}_{-0.002}$
	+1%/-1%	+5%/-6%	+47%/-31%	+28%/-13%	+17%/-2%	+55%/-48%
Source	SPE74	SPE74	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 003955867-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-7119 \pm 46	$83.34^{+12.88}_{-6.64}$	1693^{+110}_{-81}	4191^{+56}_{-54}	22^{+4}_{-5}
Alt.	-483 \pm 14	$84.69^{+13.39}_{-6.66}$	1700^{+113}_{-79}	2675^{+34}_{-37}	$1.430^{+0.284}_{-0.320}$

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 $A_{obs} \gg 1.0$

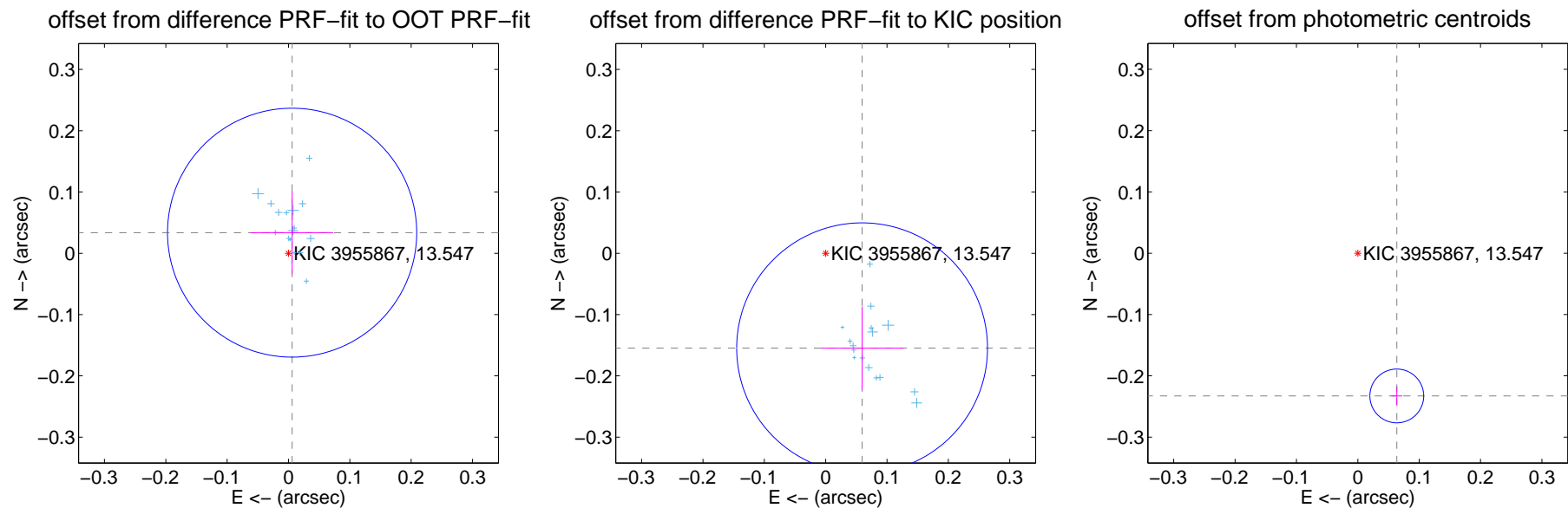
DV Centroid Data

Supplemental centroid analysis for 003955867-02. Kepler magnitude: 13.55. Transit SNR 182.01

There are 16 quarters with good PRF difference image offsets

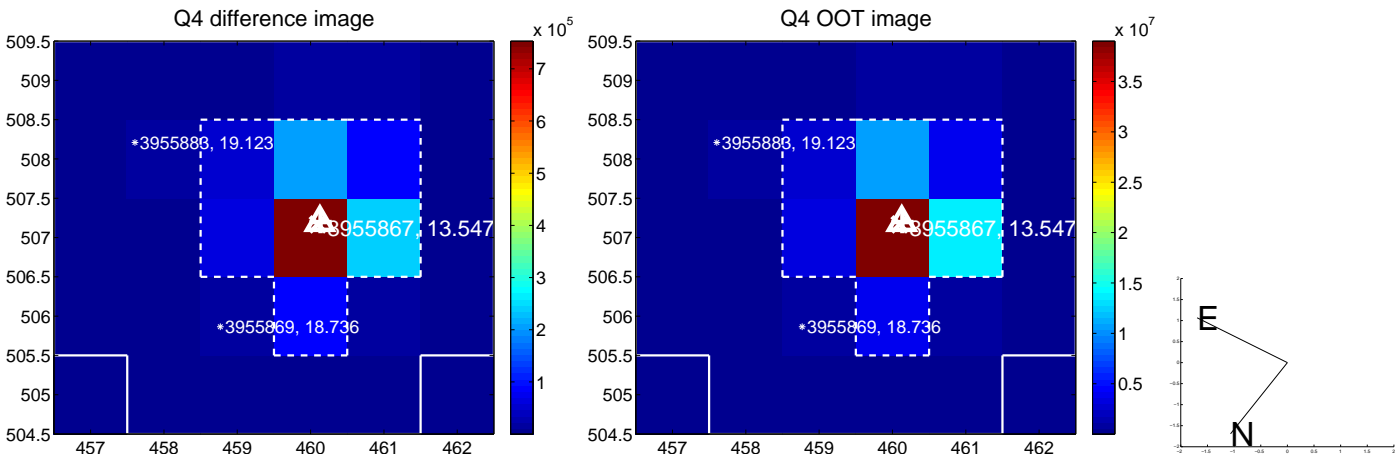
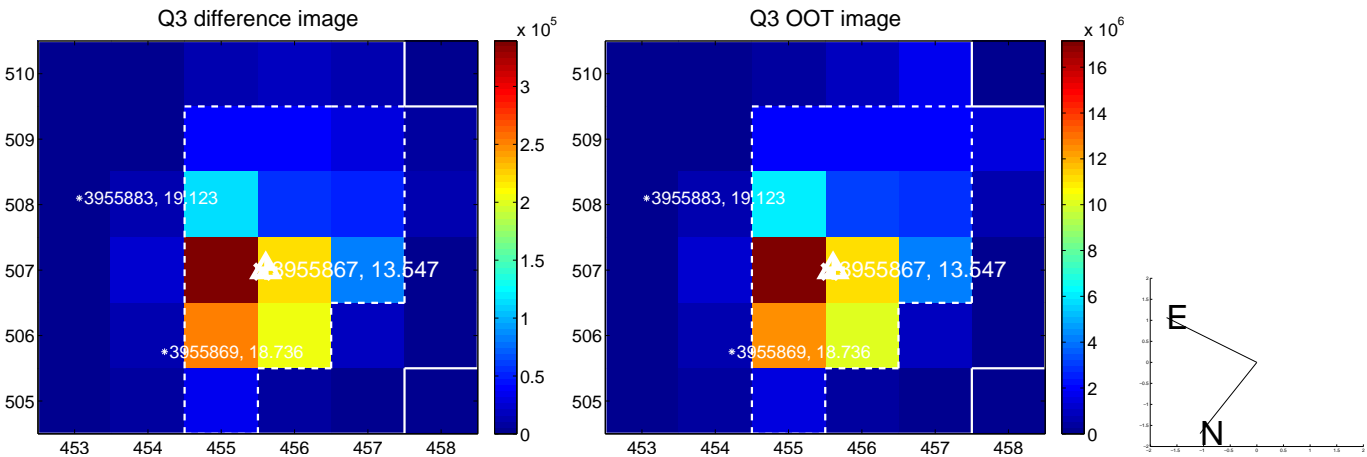
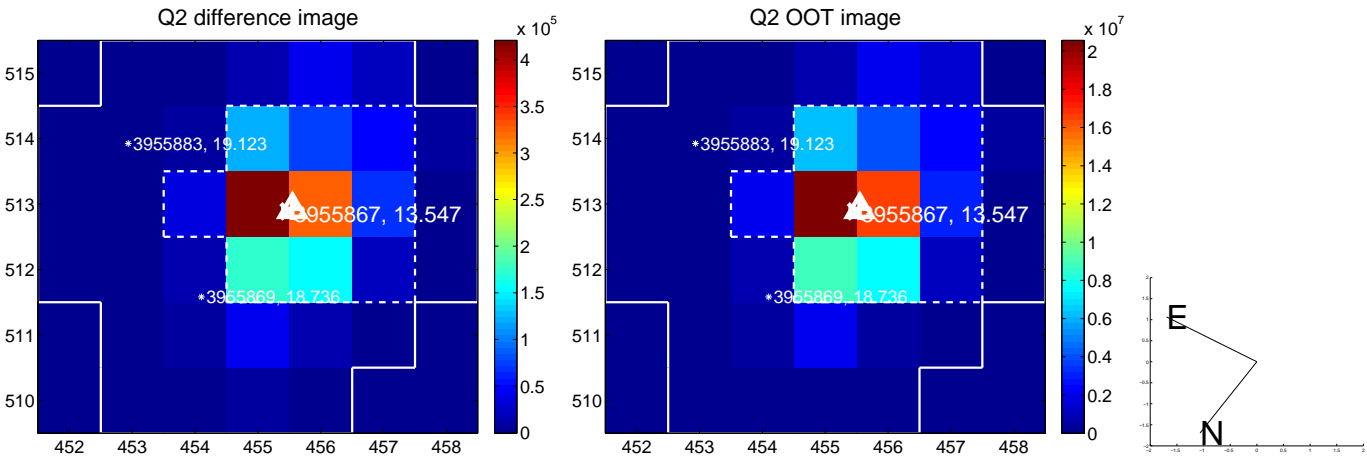
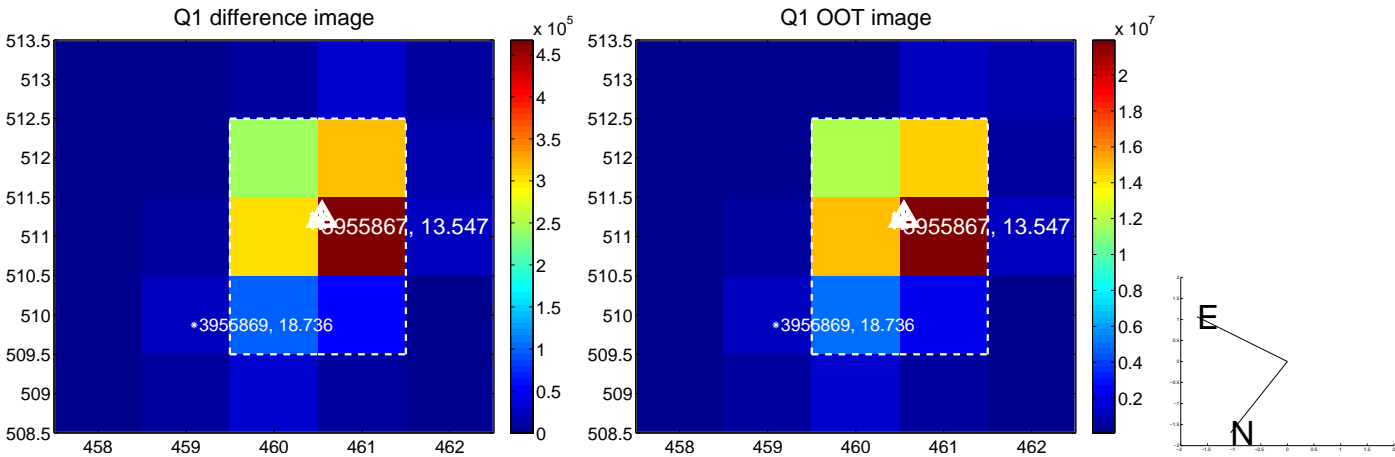
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.034 ± 0.068	0.50	-0.006 ± 0.067	0.034 ± 0.068
PRF-fit source offset from KIC position	0.166 ± 0.068	2.43	-0.059 ± 0.067	-0.155 ± 0.068
photometric centroid source offset	0.24 ± 0.01	16.51	-0.06 ± 0.01	-0.23 ± 0.01

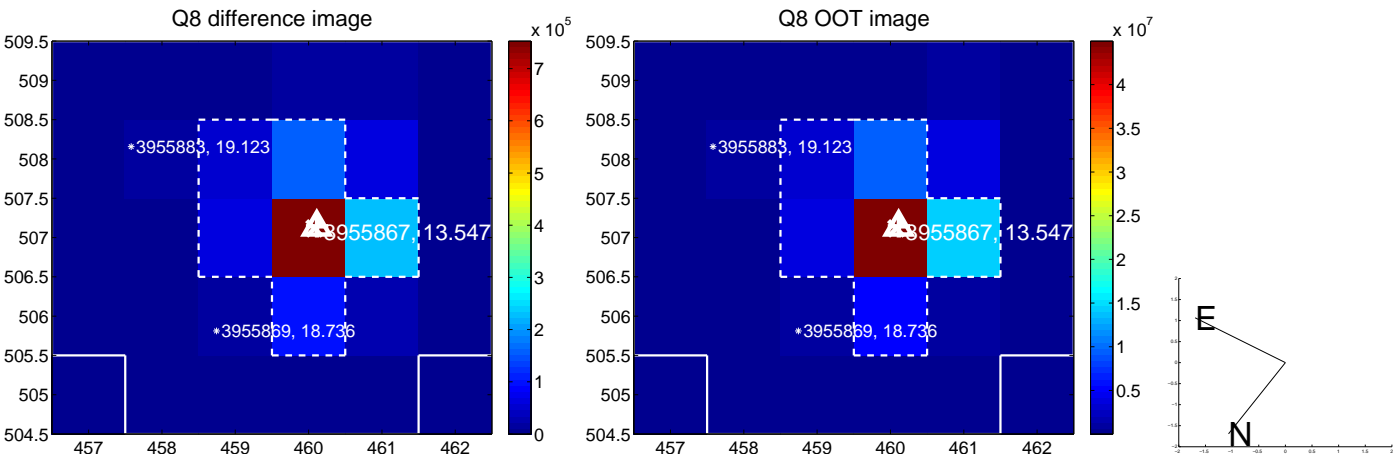
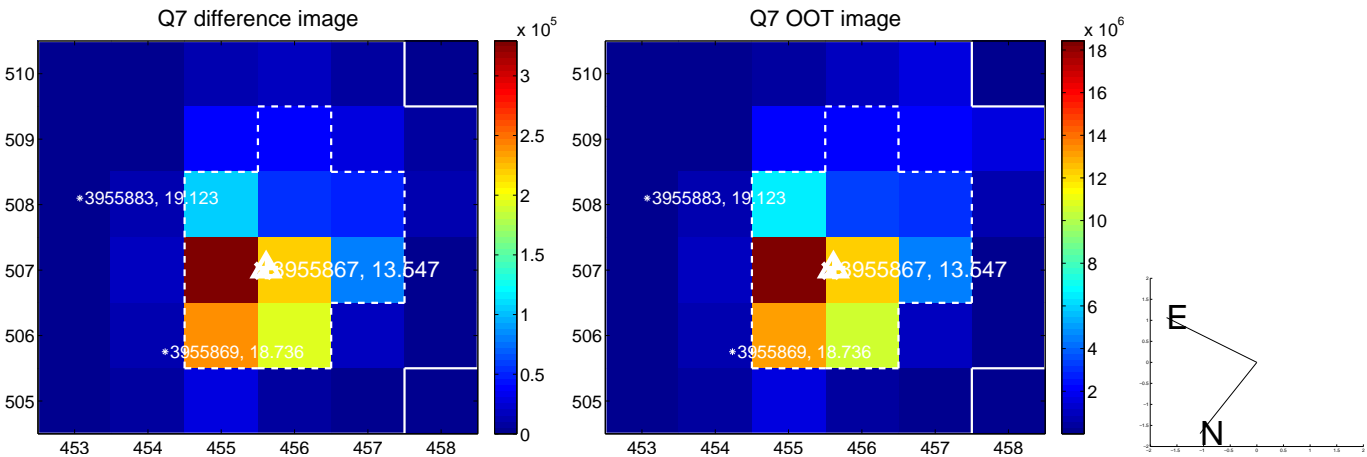
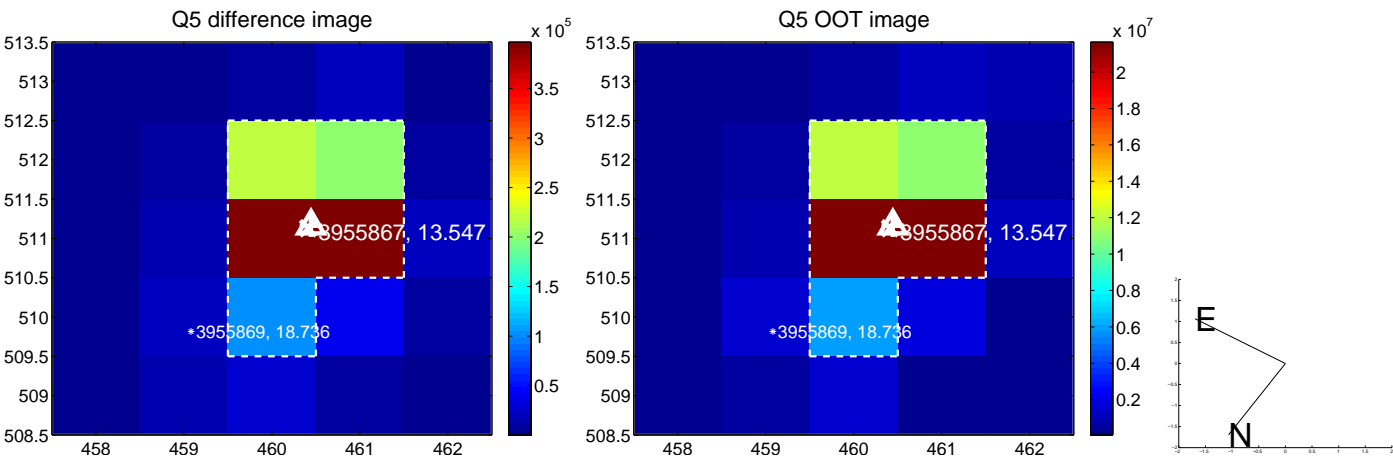


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

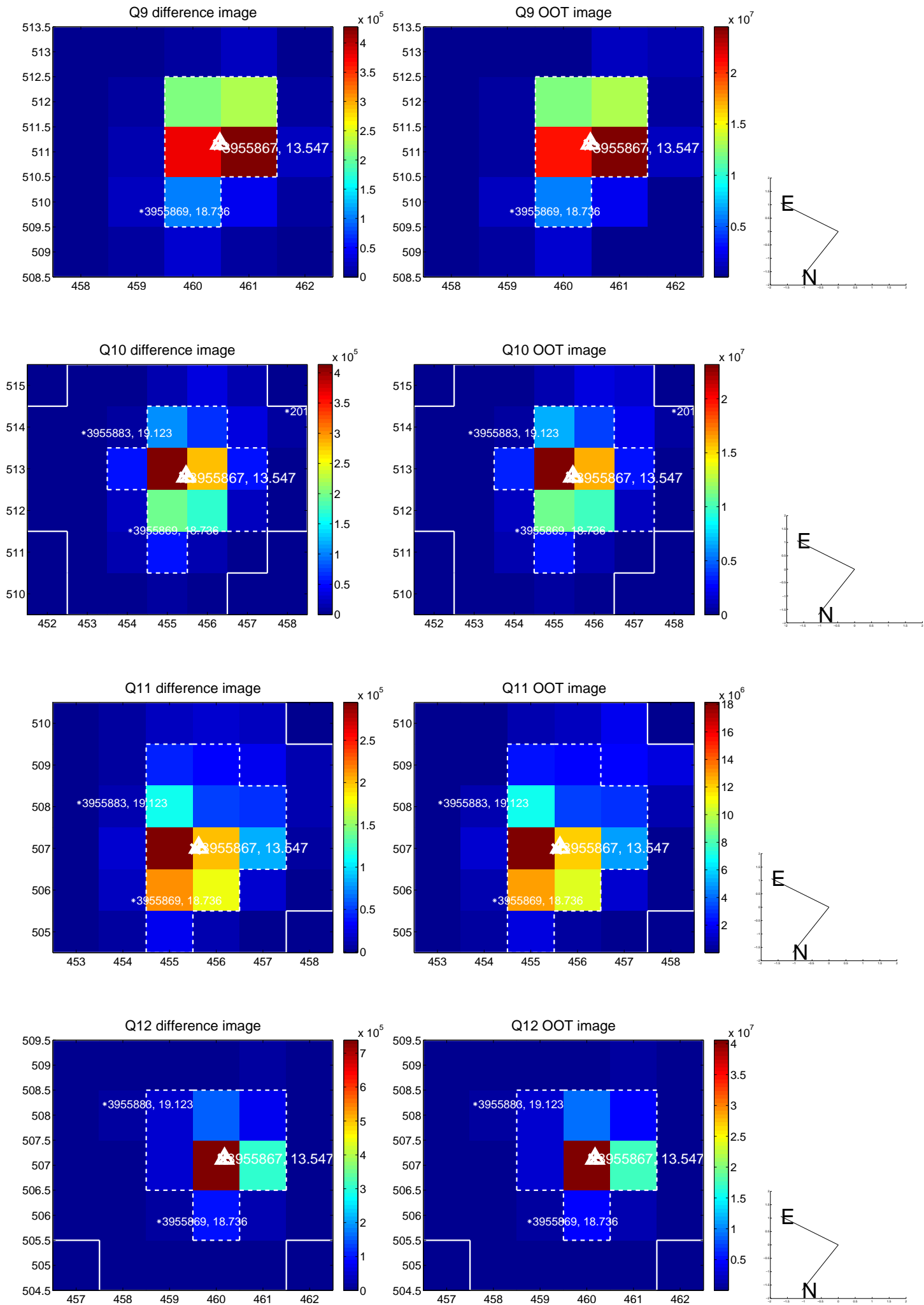
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



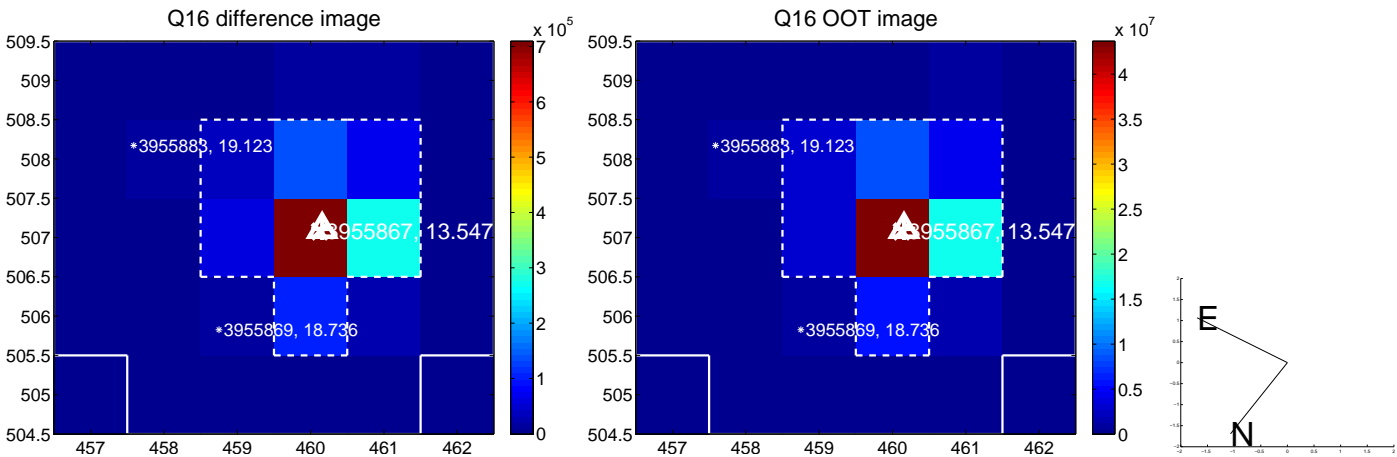
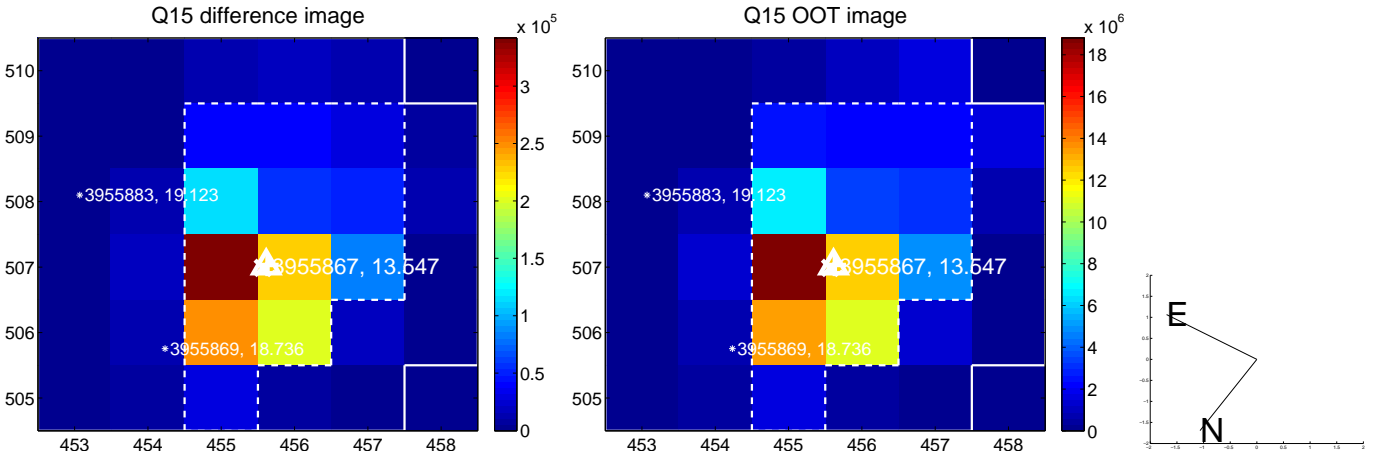
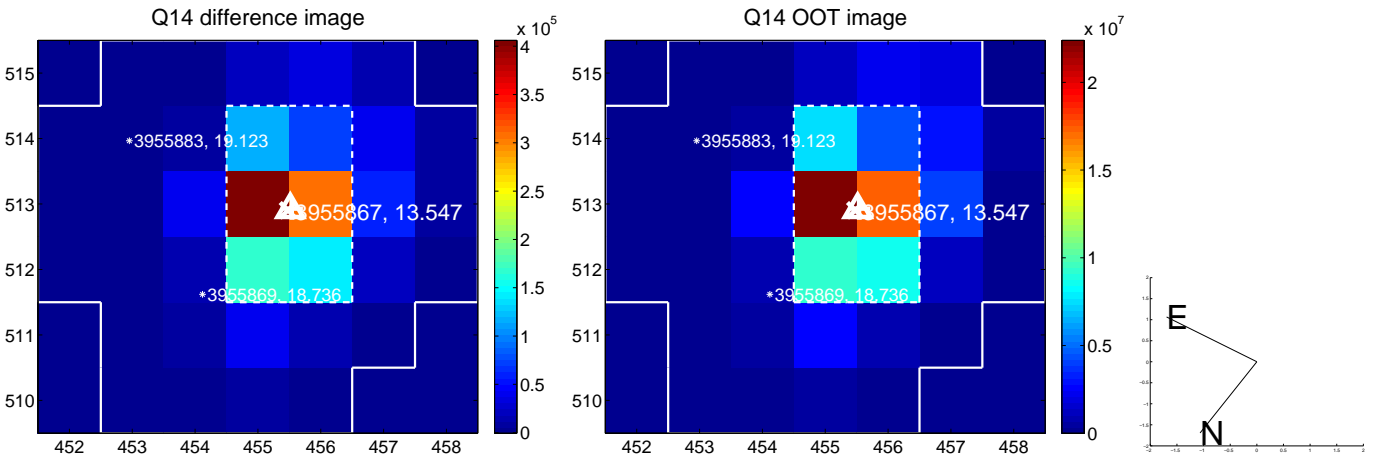
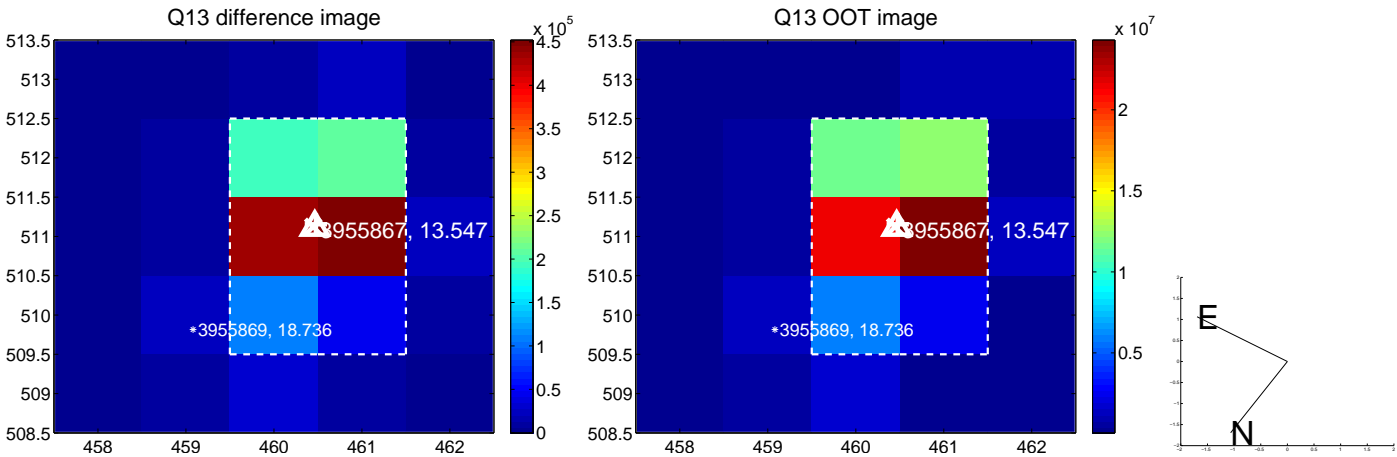
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



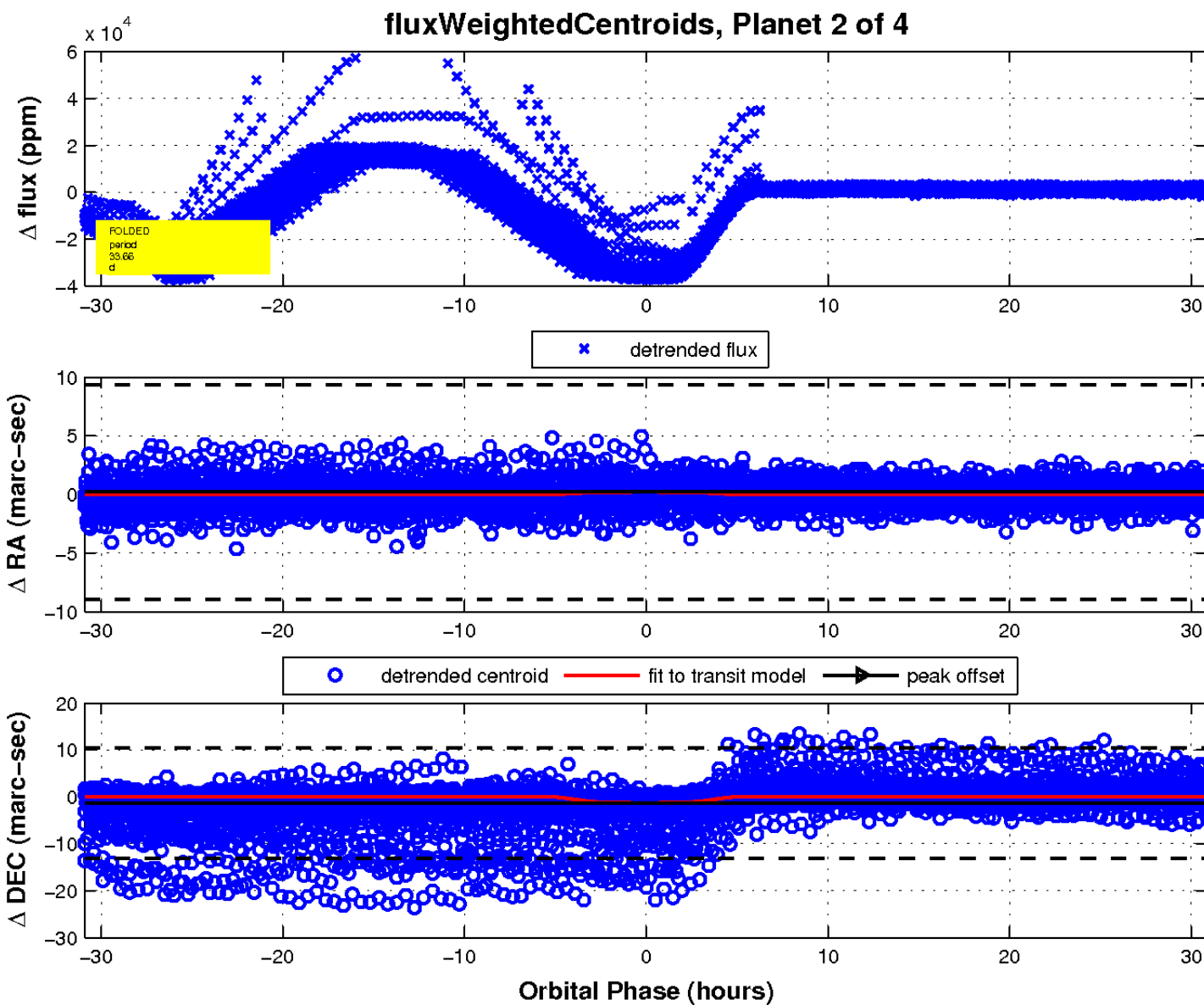
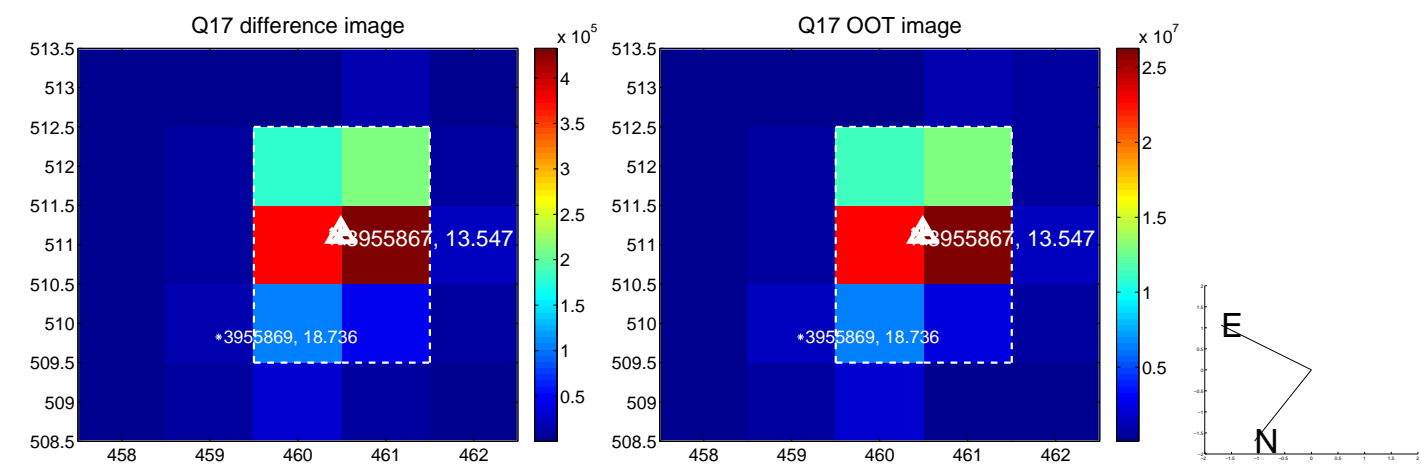
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

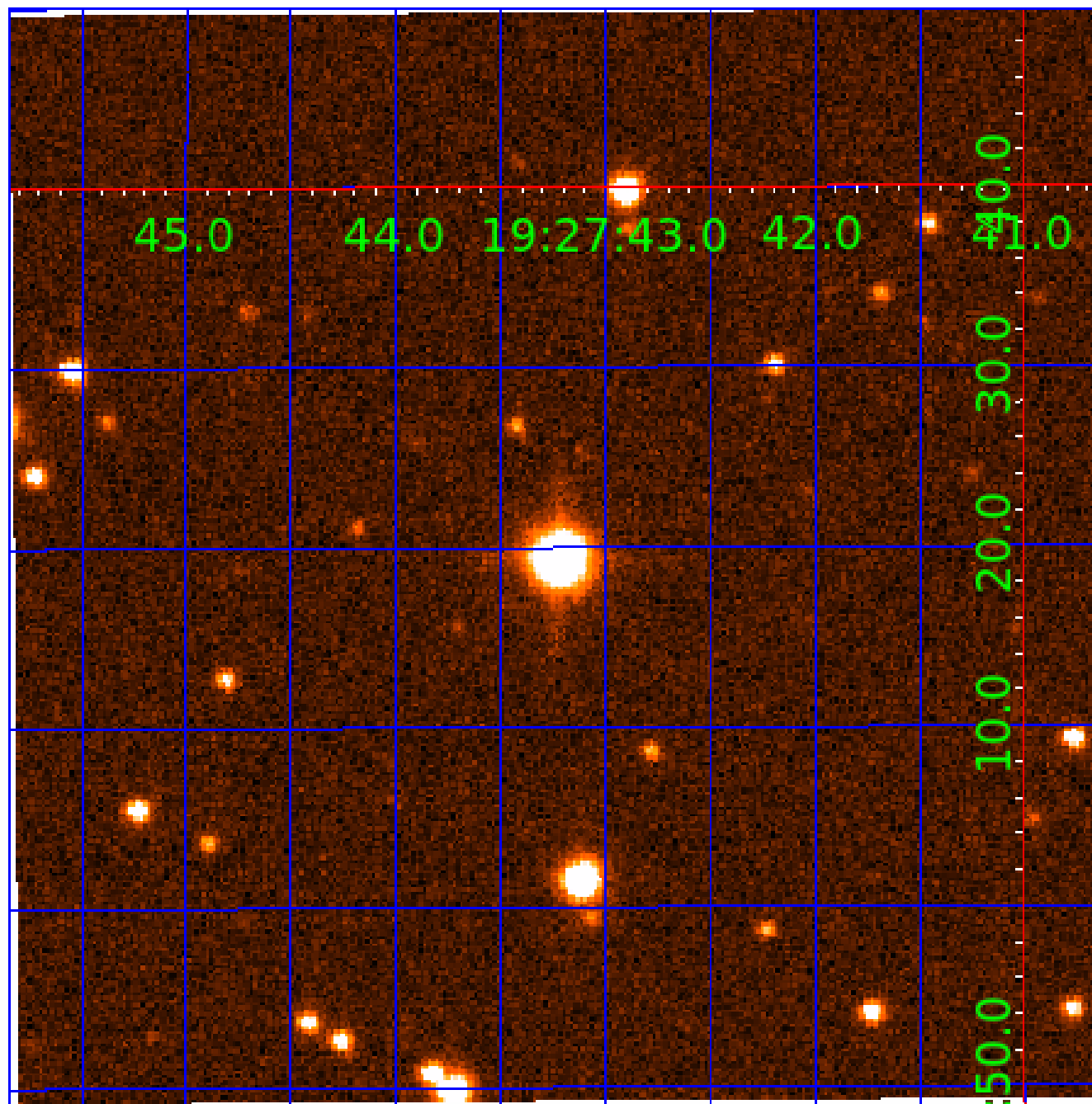


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003955867

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})
003955867-01	OBS	7545.01	33.656698	160.910312	16872.9	6.428	205.6	252.0	6.45	4774	152.94	509.61
003955867-02	OBS	No	33.656749	162.132368	13738.2	10.304	190.6	182.0	6.45	4774	82.90	509.60
003955867-03	OBS	No	33.657161	145.430028	5895.6	9.730	72.4	85.0	6.45	4774	71.06	509.60
003955867-04	OBS	No	33.660229	161.337180	1200.6	15.000	68.9	-1.0	6.45	4774	21.57	509.53

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003955867-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED—HAS_SEC_TCE
003955867-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
003955867-03	OBS	FP	0.00	1	0	0	0	LPP_DV—SAME_NTL_PERIOD
003955867-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—NO_FITS—RESIDUAL_TCE—CENT_NOFITS

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.

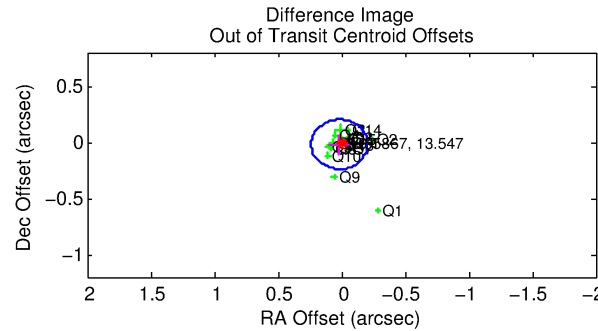
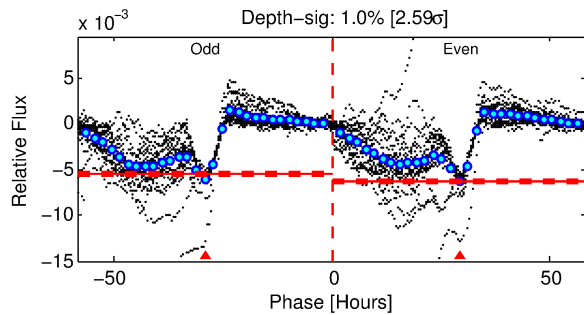
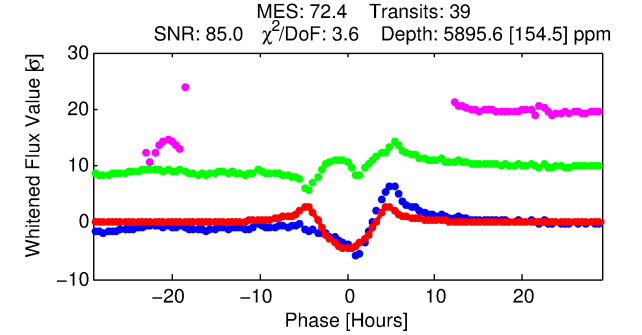
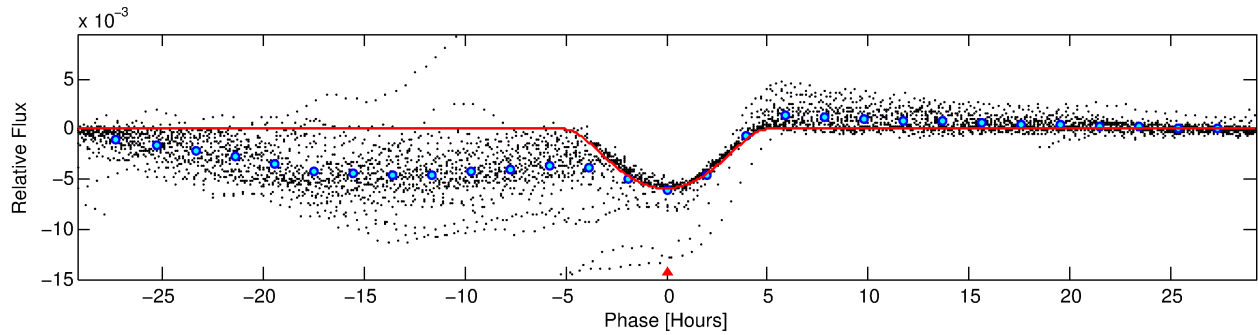
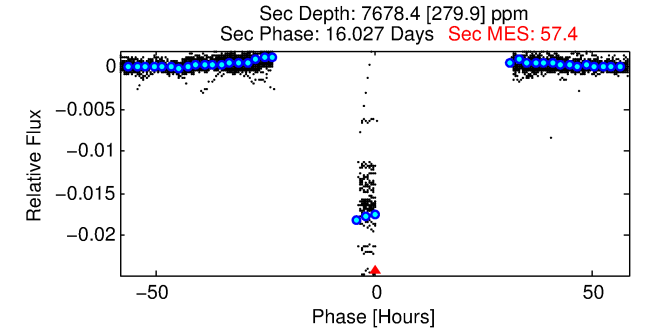
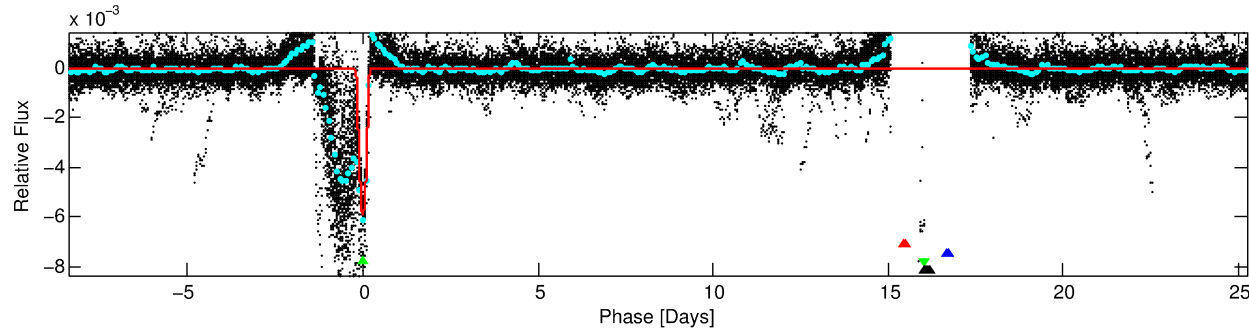
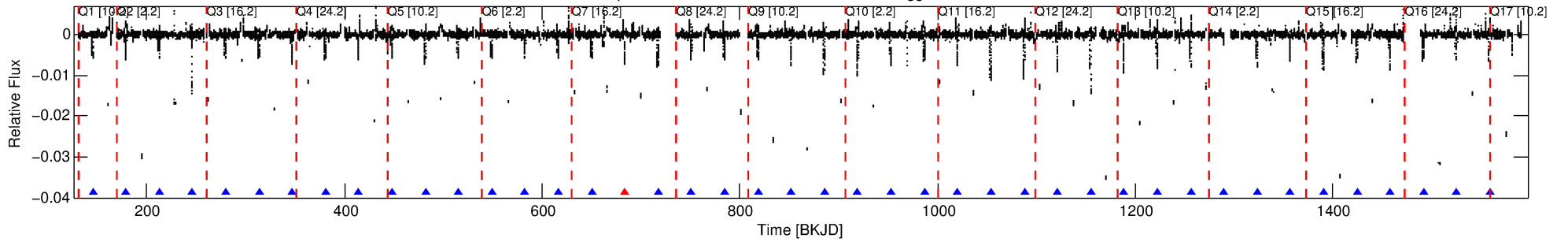
Ephemeris Match Information For 003955867-03

No Significant Match Found

DV One-Page Summary

KIC: 3955867 Candidate: 3 of 4 Period: 33.657 d
KOI: K07545 Corr: No Ephemeris Match

Kp: 13.55 R*: 6.45 Rs Teff: 4774.0 K Logg: 2.76 Fe/H: -0.320



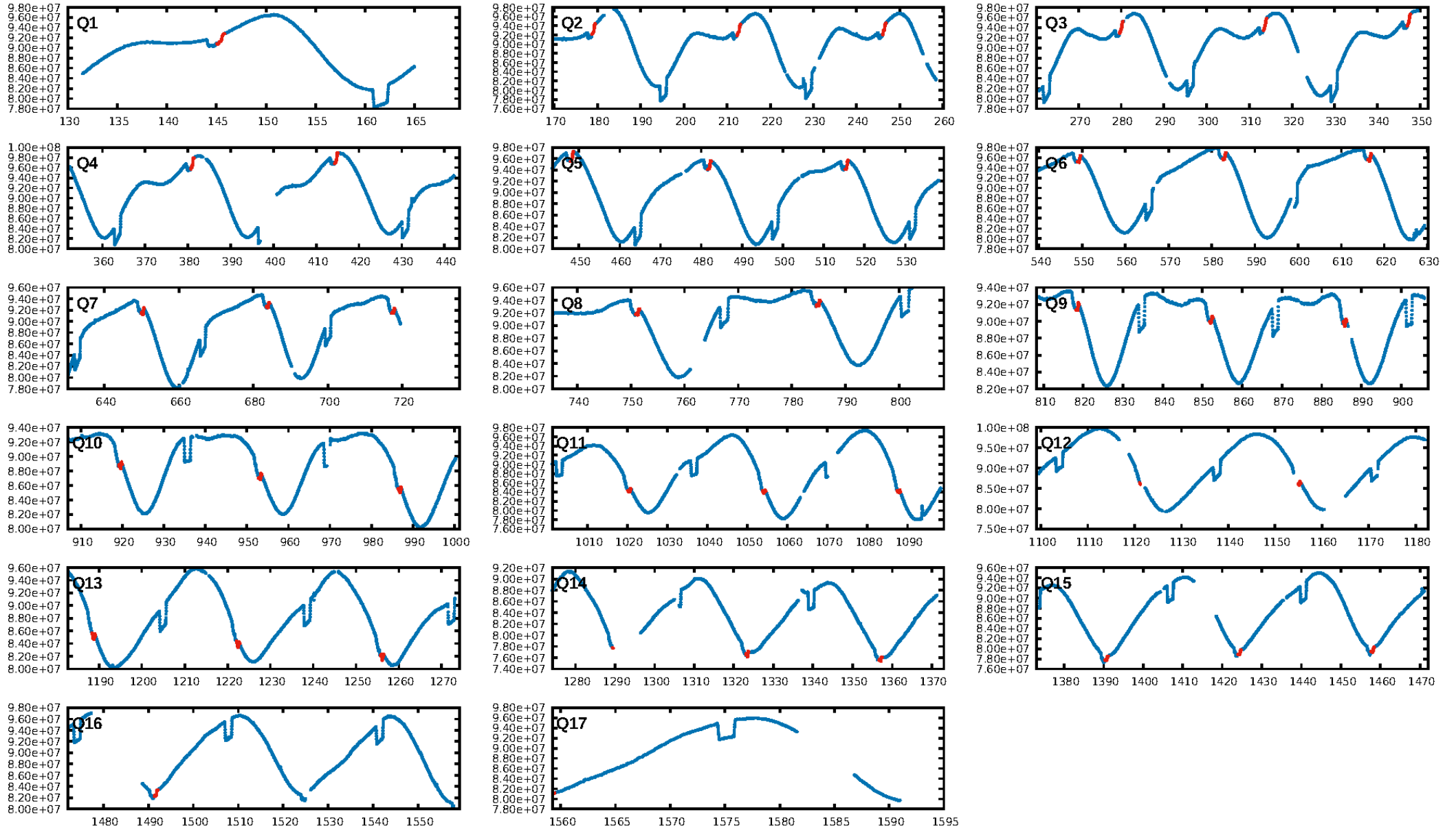
DV Fit Results:

Period = 33.65716 [0.00013] d
Epoch = 145.4300 [0.0032] BKJD
Rp/R* = 0.1010 [0.0105]
a/R* = 14.91 [0.50]
b = 0.95 [0.02]
Seff = 509.60 [169.36]
Teq = 1212 [101] K
Rp = 71.06 [20.99] Re
a = 0.1948 [0.0445] AU
Ag = 31.75 [12.37] [2.49σ]
Teffp = 4446 [245] K [12.22σ]

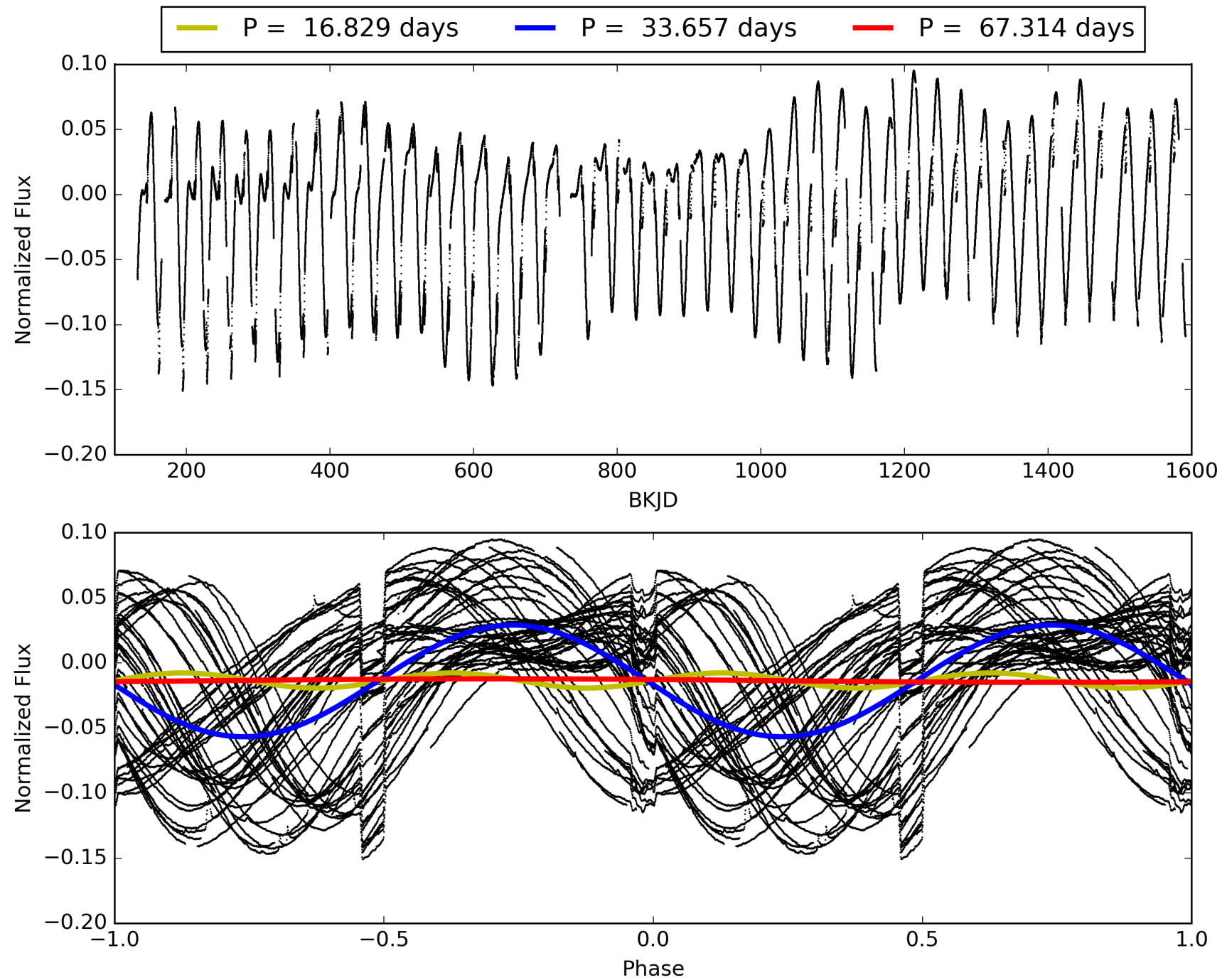
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: 0.3% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.97 [37/38]
GhostDiagnostic-chr: 0.8781
Centroid-sig: 50.8%
Centroid-so: 0.348 arcsec [8.69σ]
OotOffset-rm: 0.026 arcsec [0.35σ]
KicOffset-rm: 0.206 arcsec [2.61σ]
OotOffset-st: 4/4/3/4 [15]
KicOffset-st: 4/4/3/4 [15]
DiffImageQuality-fgm: 1.00 [15/15]
DiffImageOverlap-fno: 1.00 [15/15]

TCE 003955867-03, PDC Light Curves

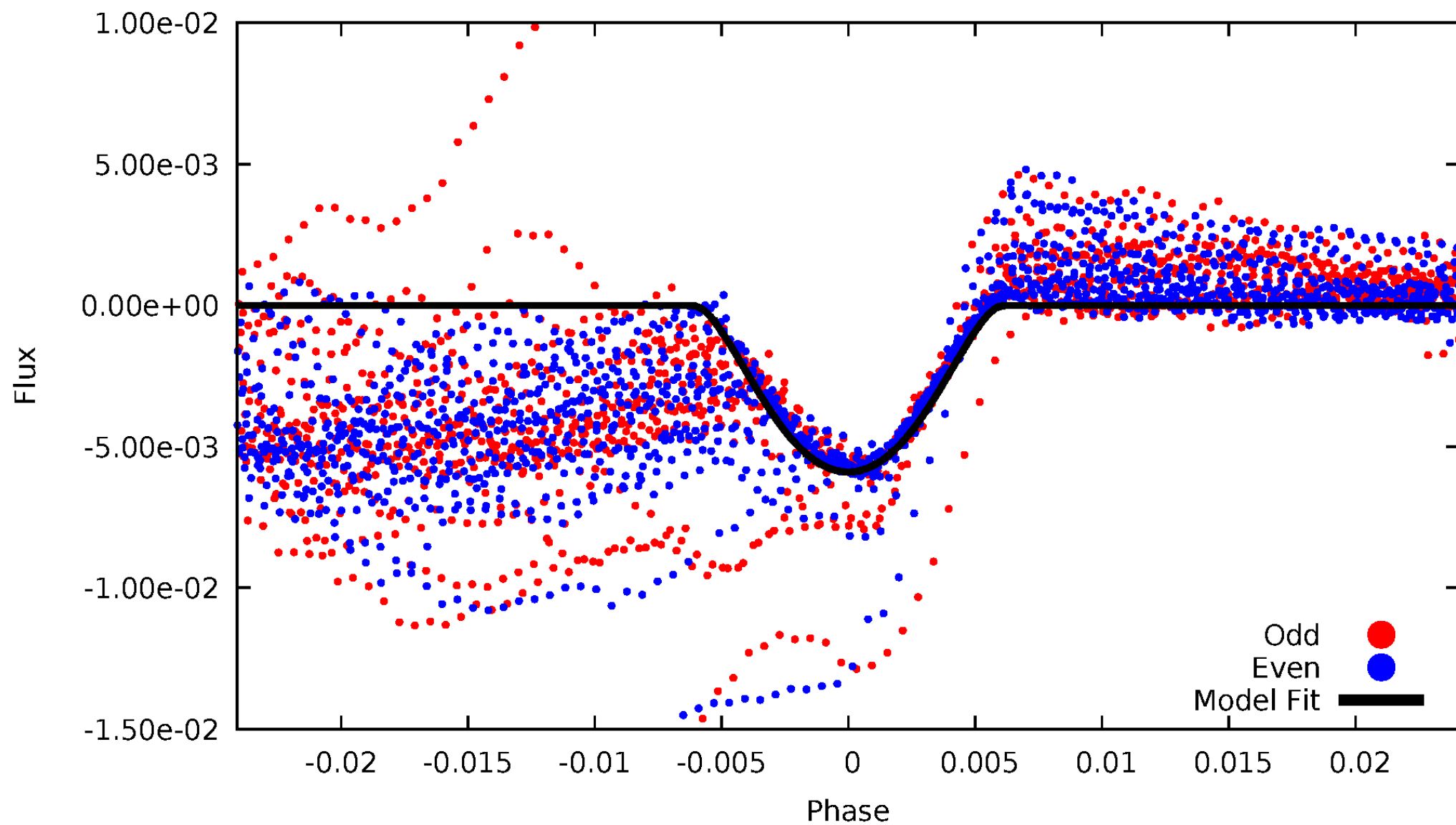


TCE 003955867-03



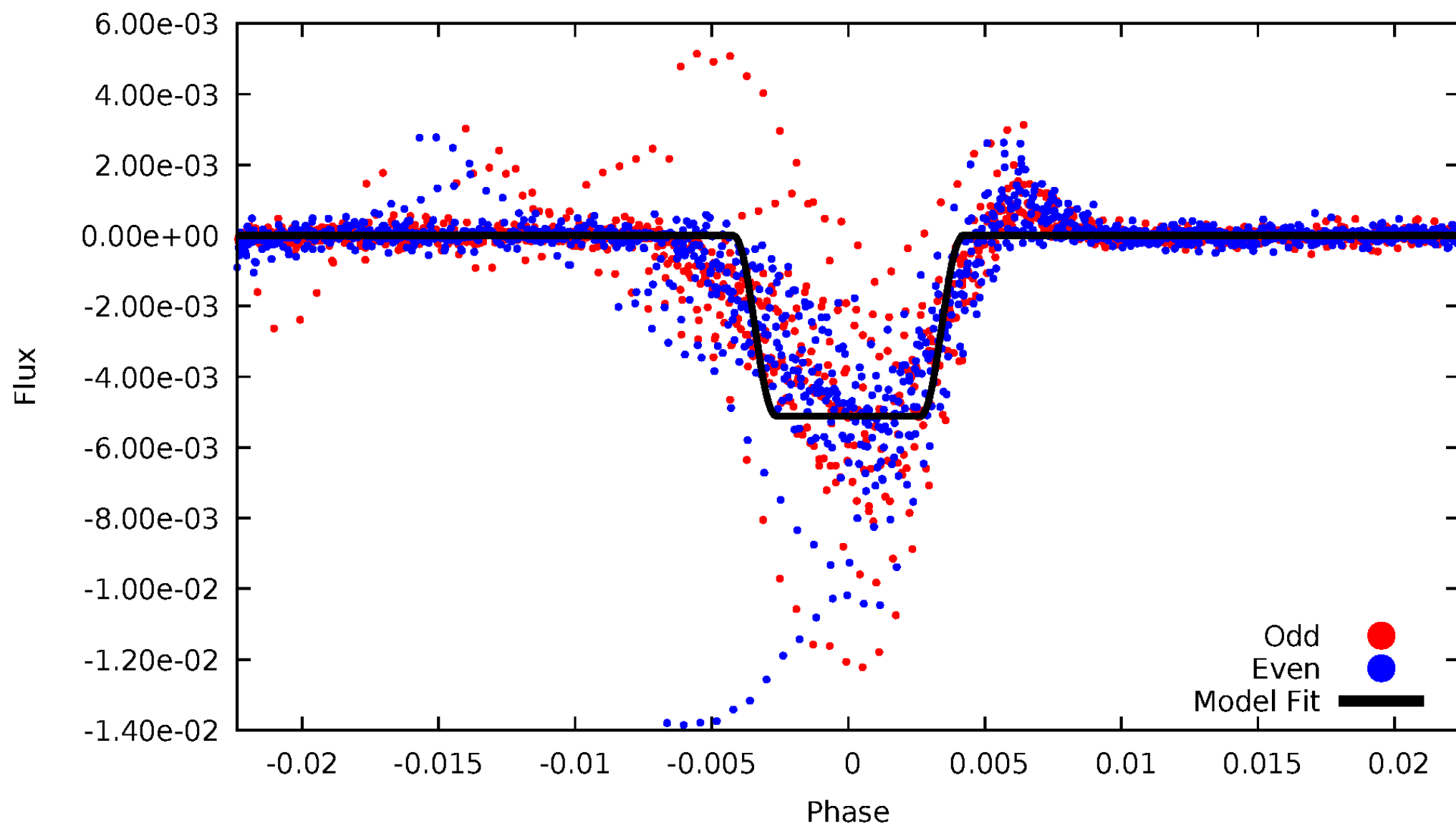
DV Odd/Even

TCE 003955867-03



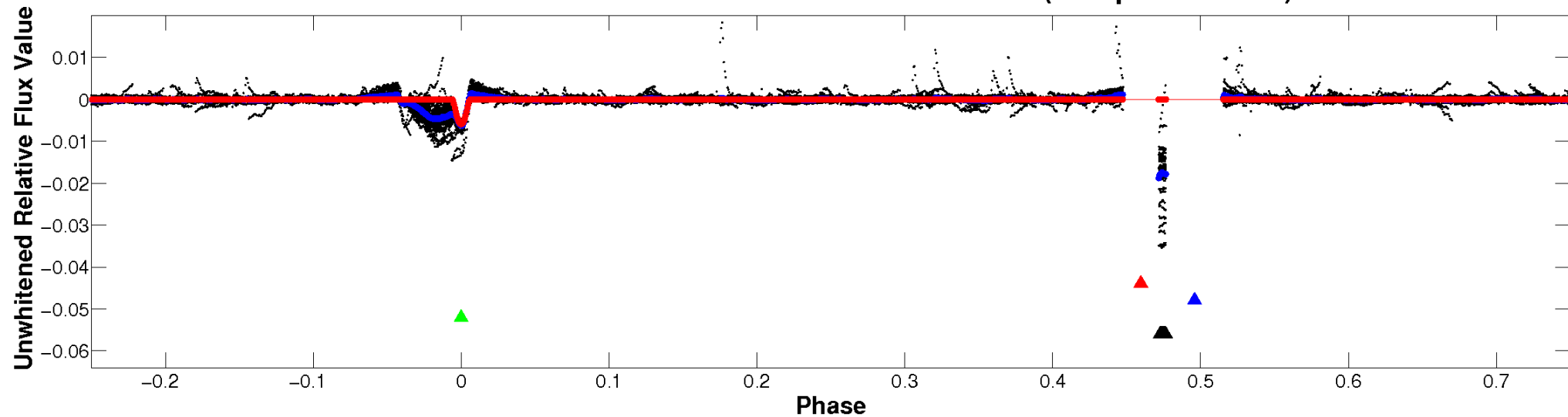
ALT Odd/Even

TCE 003955867-03

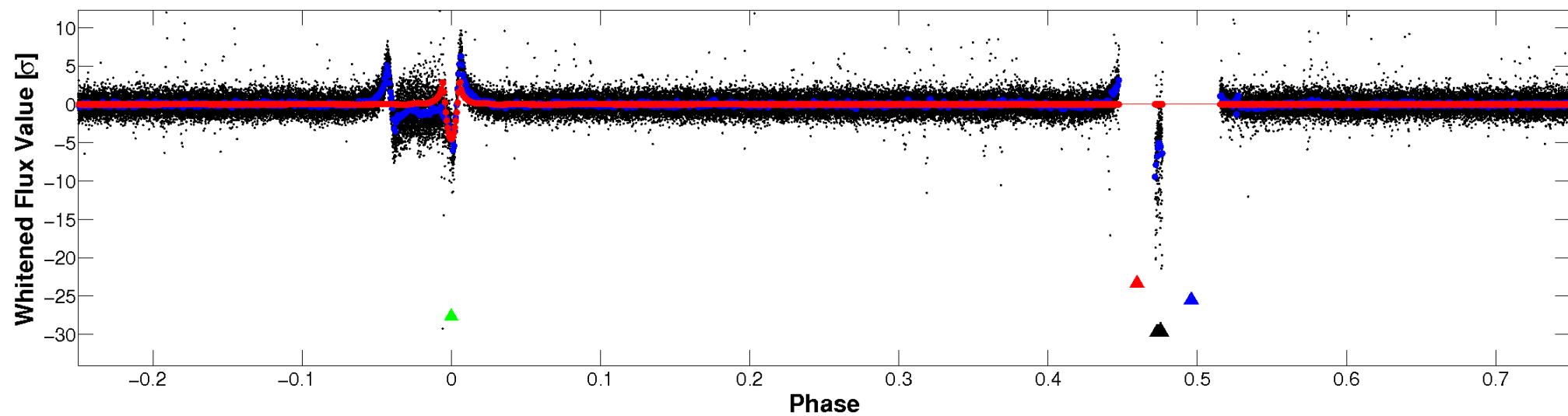


Non-Whitened Vs. Whitened Light Curve

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

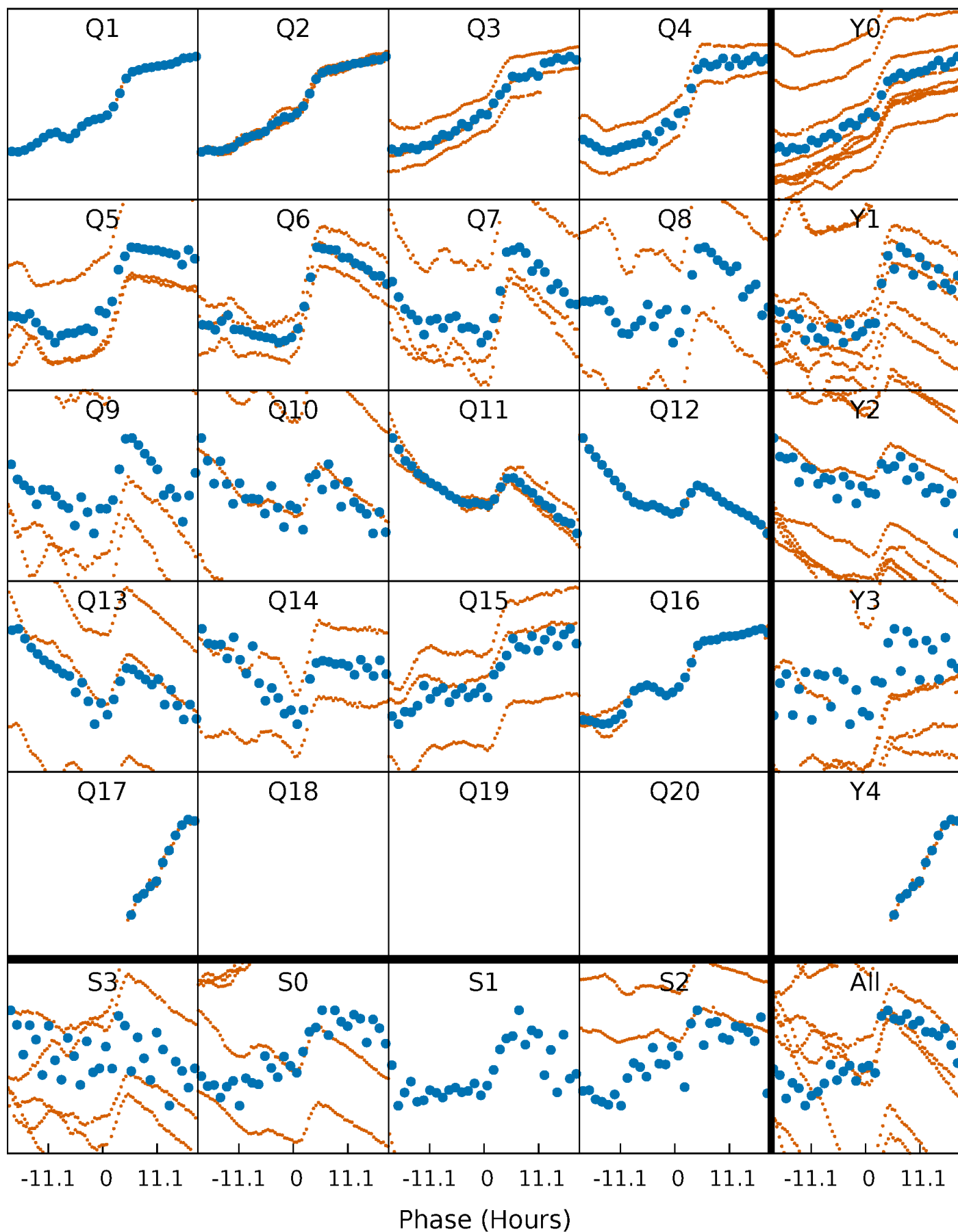


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



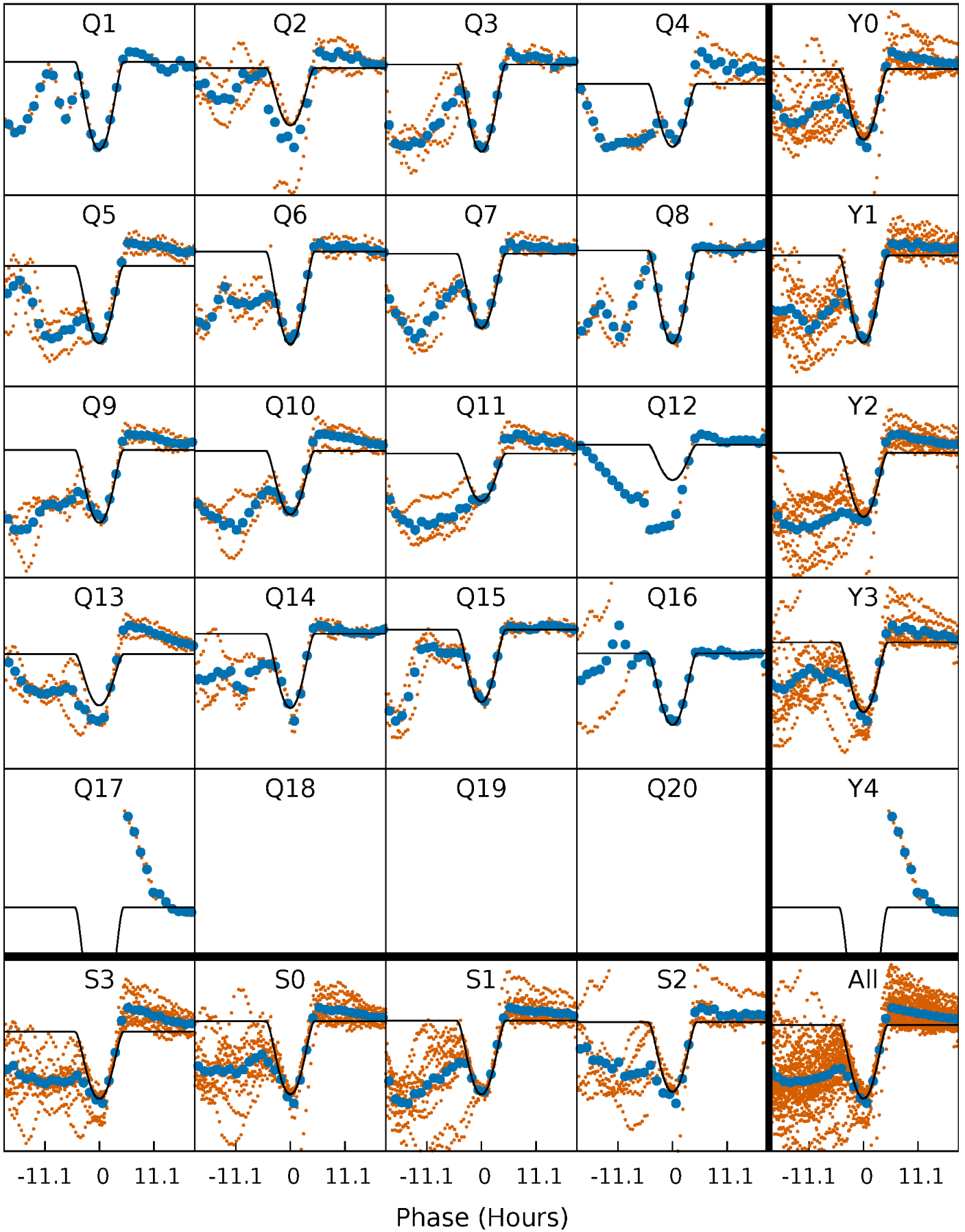
PDC Quarter-Phased Transit Curves

TCE 003955867-03 P= 33.657161 Days $T_0=145.430028$ (BKJD)



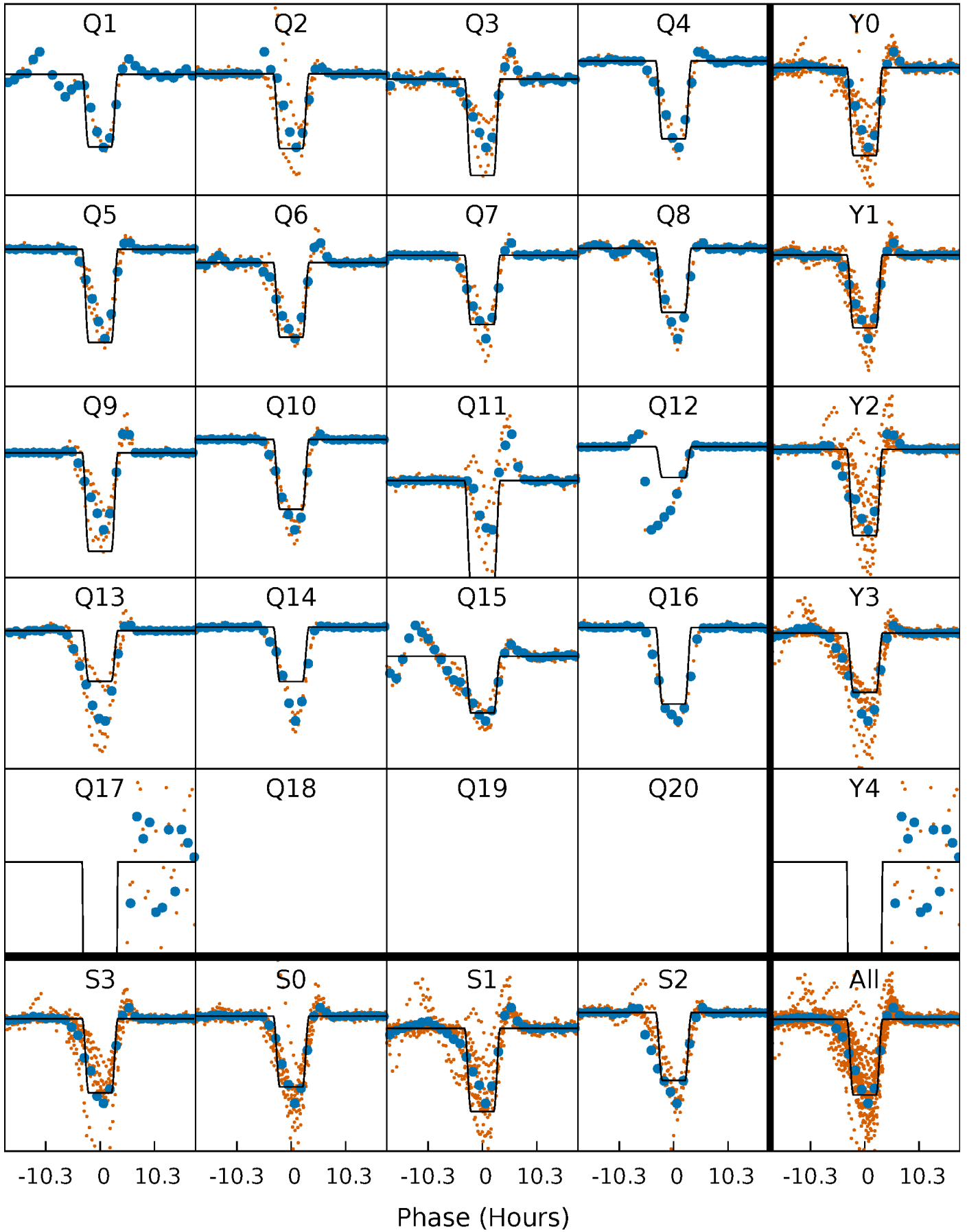
DV Quarter-Phased Transit Curves

TCE 003955867-03 P= 33.657161 Days $T_0=145.430028$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

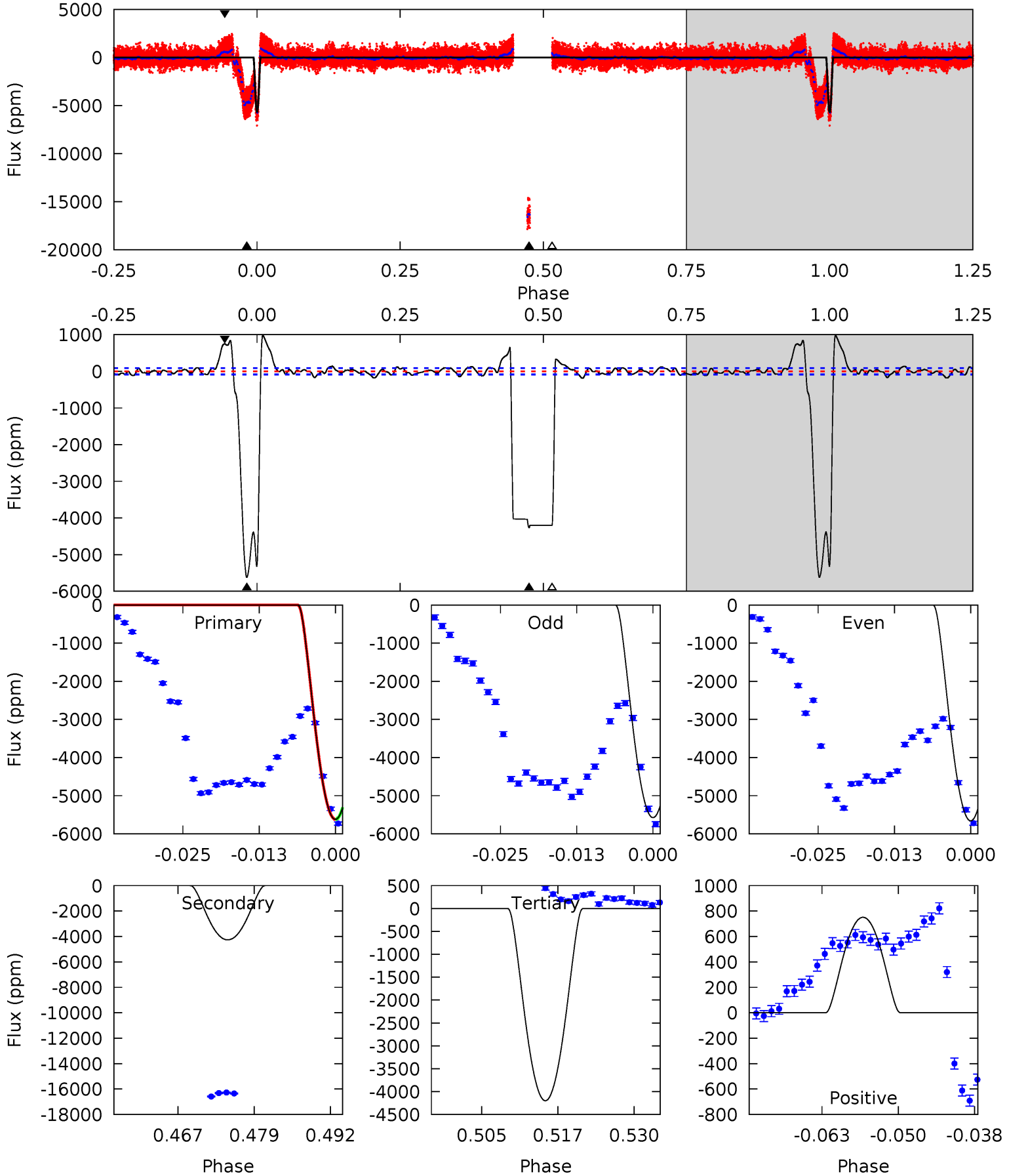
TCE 003955867-03 $P = 33.656823$ Days $T_0 = 145.444503$ (BKJD)



DV Model-Shift Uniqueness Test

003955867-03, P = 33.657161 Days, E = 111.772867 Days

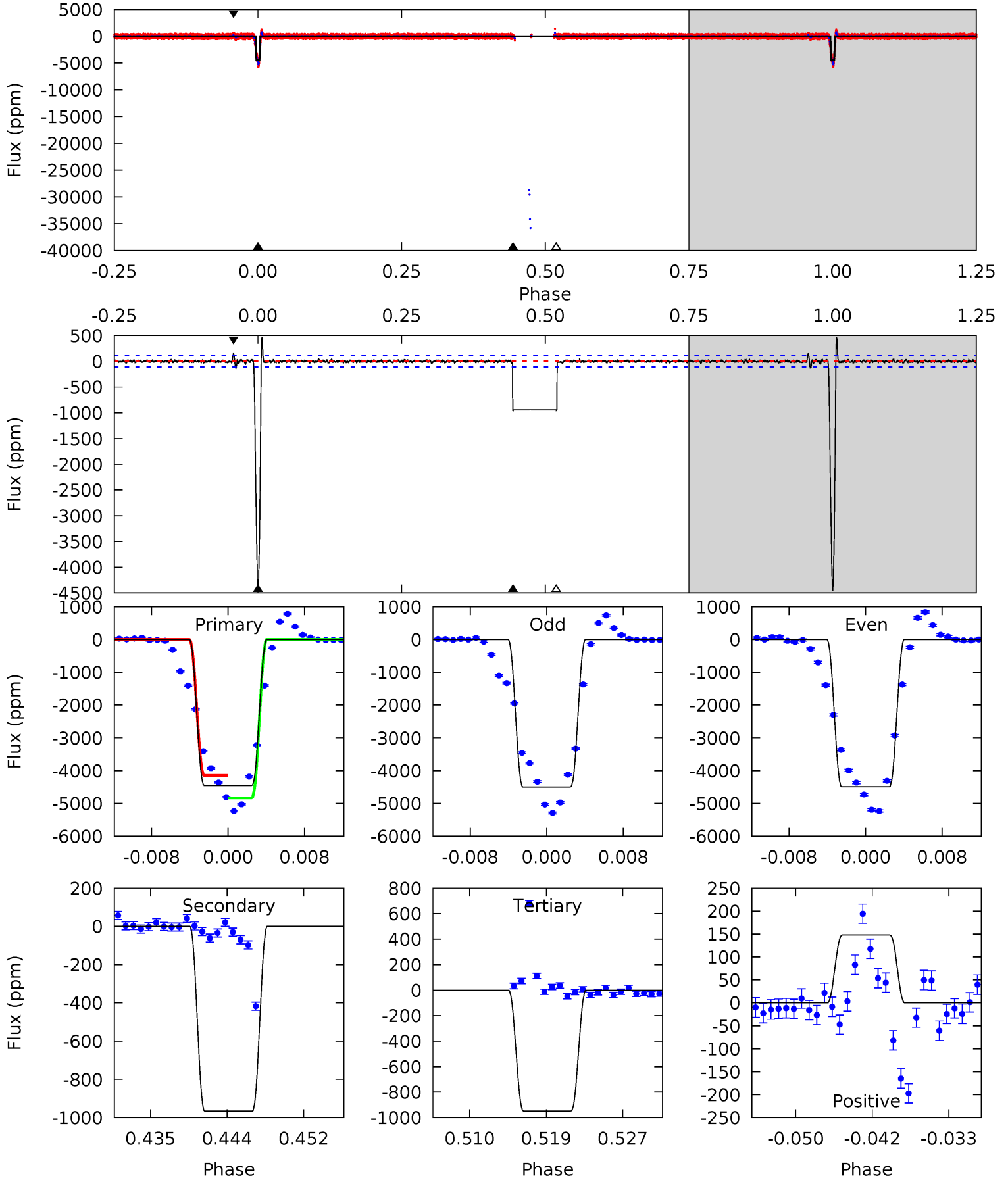
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
320.5	243.3	239.4	42.8	4.98	2.49	30.6	81.1	277.6	3.88	200.5	1.76	1.12	0.15	0.16



Alt Model-Shift Uniqueness Test

003955867-03, P = 33.656823 Days, E = 111.787680 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
196.3	42.6	41.8	6.51	5.06	2.64	1.62	154.5	189.8	0.81	36.1	0.07	1.06	0.09	0



Stellar Parameters For KIC 003955867

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4774^{+71}_{-62}	$2.759^{+0.128}_{-0.176}$	$-0.320^{+0.150}_{-0.100}$	$6.447^{+1.781}_{-0.822}$	$0.871^{+0.151}_{-0.016}$	$0.005^{+0.003}_{-0.002}$
	+1%/-1%	+5%/-6%	+47%/-31%	+28%/-13%	+17%/-2%	+55%/-48%
Source	SPE74	SPE74	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 003955867-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-4267 ± 18	$73.28^{+11.80}_{-10.47}$	1695^{+125}_{-76}	4040^{+154}_{-145}	17^{+6}_{-4}
Alt.	-966 ± 23	$51.16^{+10.60}_{-8.54}$	1691^{+117}_{-75}	3520^{+198}_{-167}	$7.872^{+3.573}_{-2.304}$

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

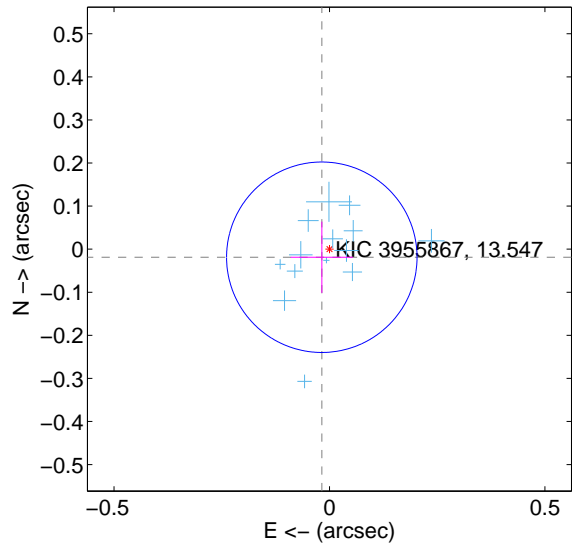
Supplemental centroid analysis for 003955867-03. Kepler magnitude: 13.55. Transit SNR 85.00

There are 15 quarters with good PRF difference image offsets

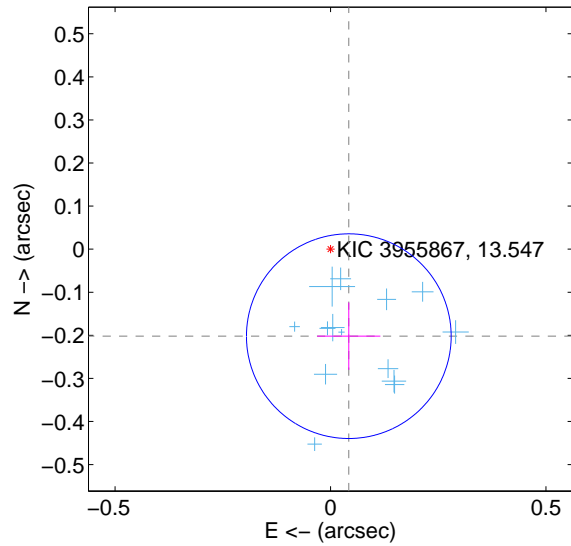
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.026 ± 0.074	0.35	0.018 ± 0.072	-0.019 ± 0.083
PRF-fit source offset from KIC position	0.206 ± 0.079	2.61	-0.042 ± 0.073	-0.202 ± 0.078
photometric centroid source offset	0.35 ± 0.04	8.69	-0.04 ± 0.02	-0.35 ± 0.04

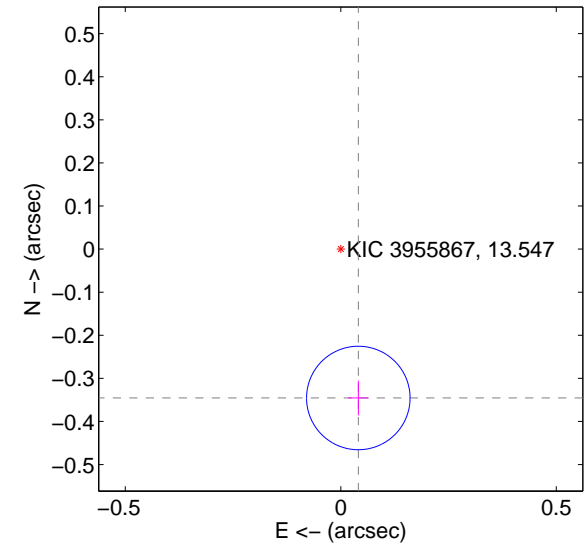
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

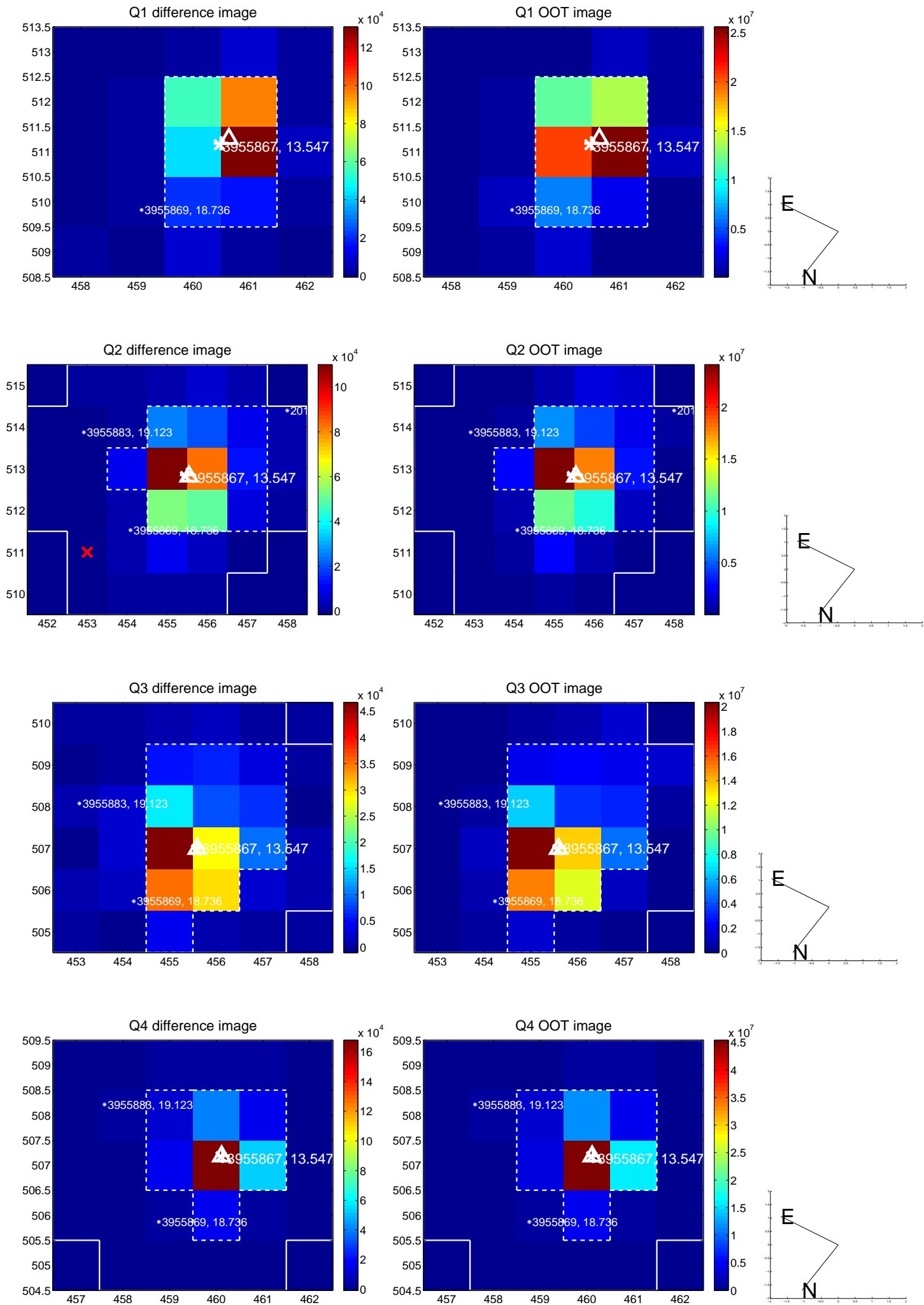


offset from photometric centroids

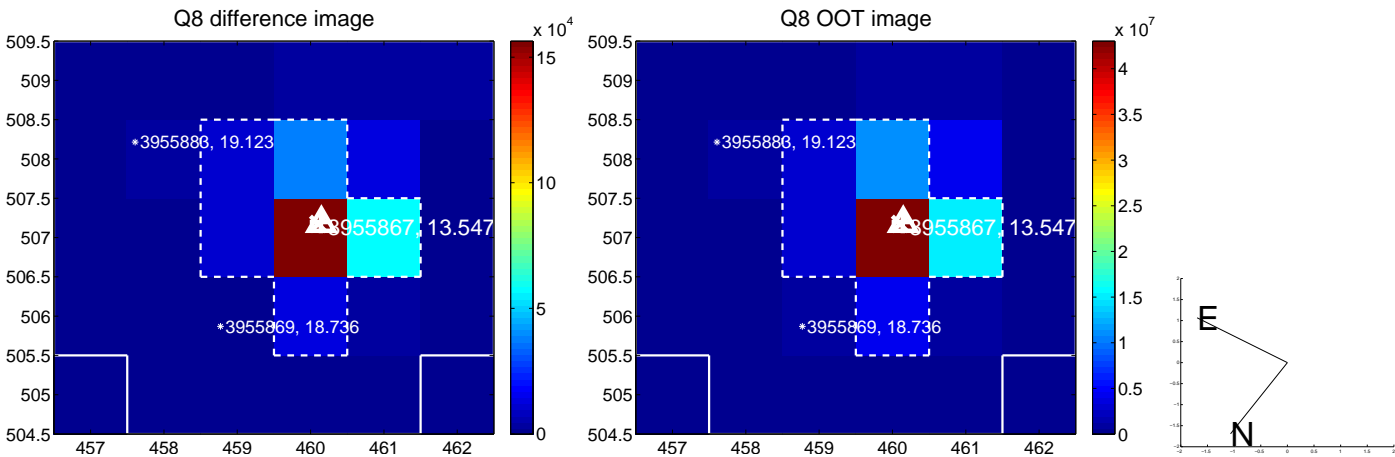
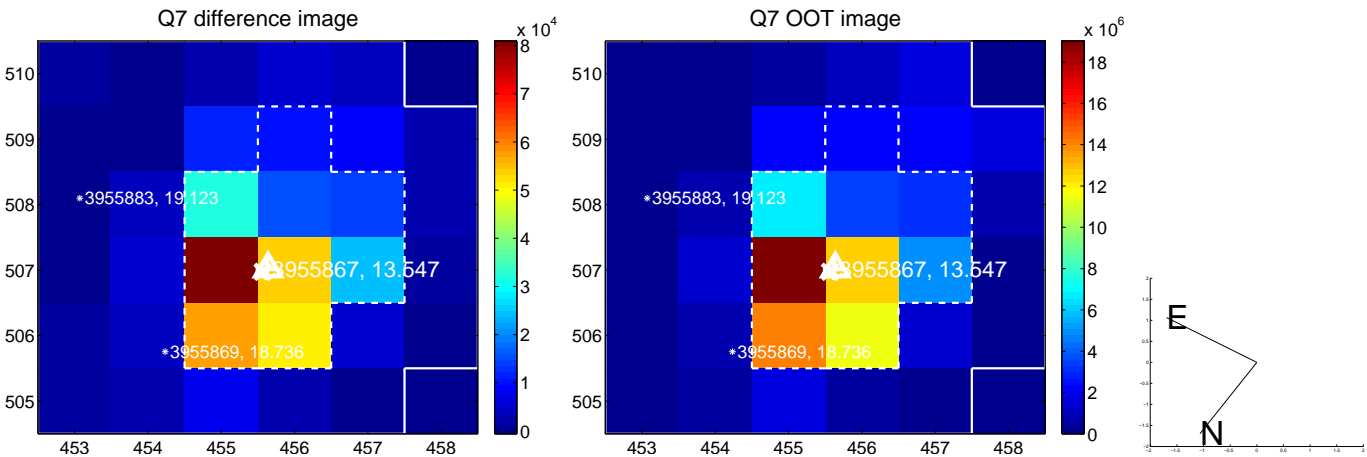
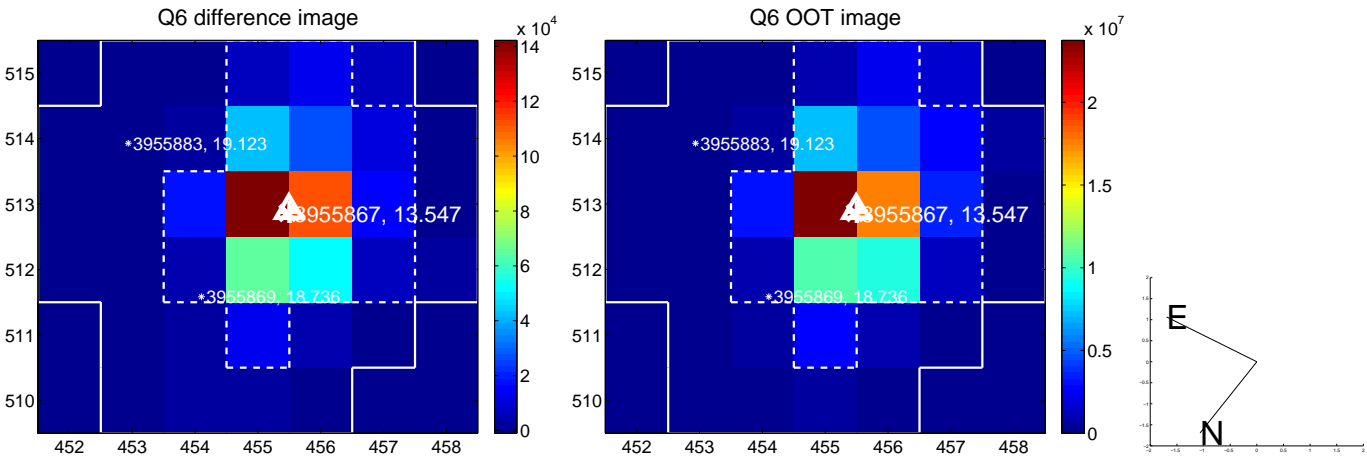
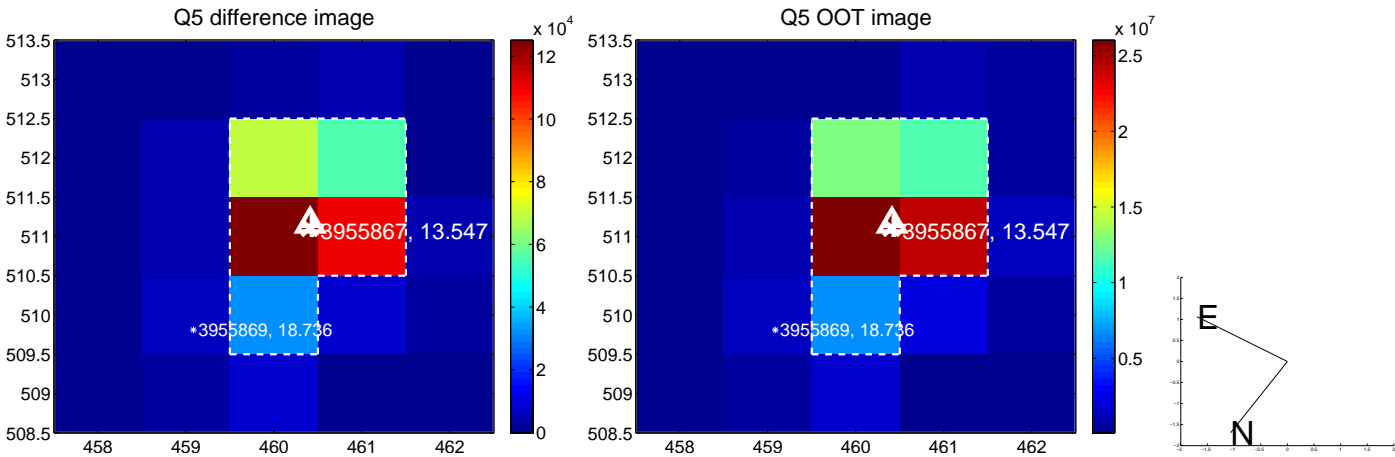


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

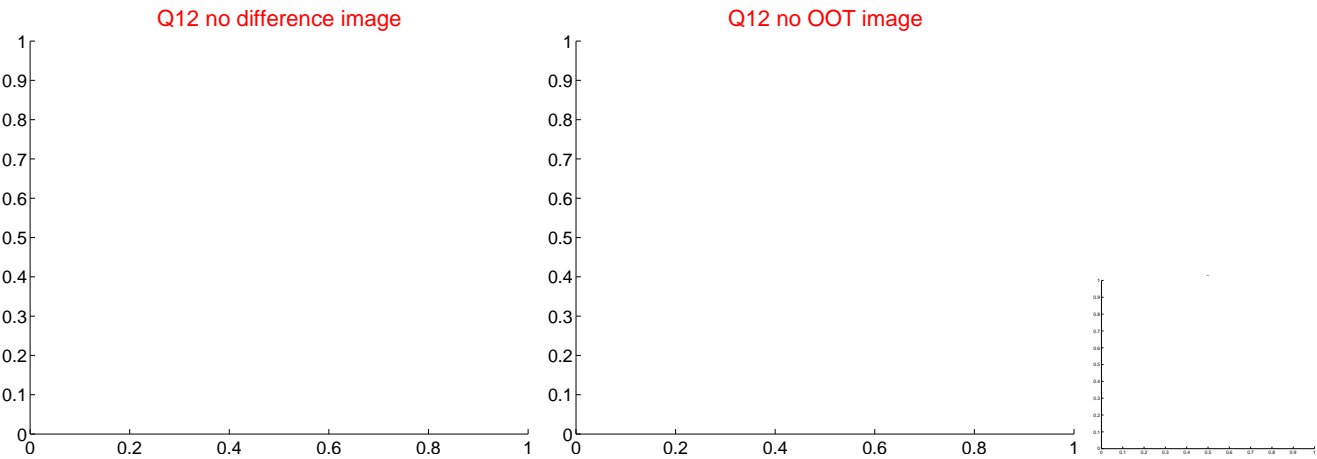
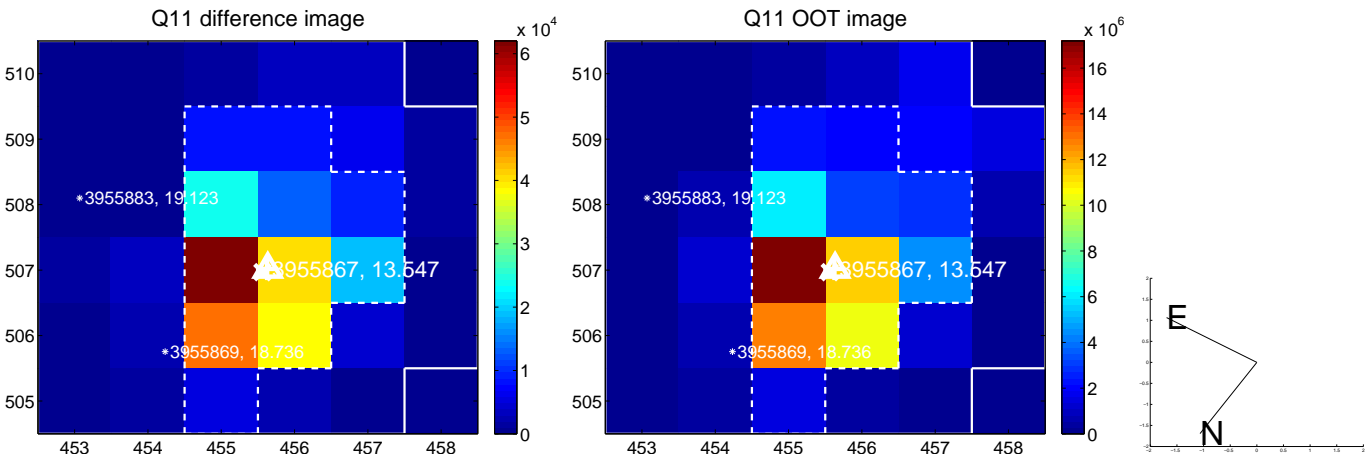
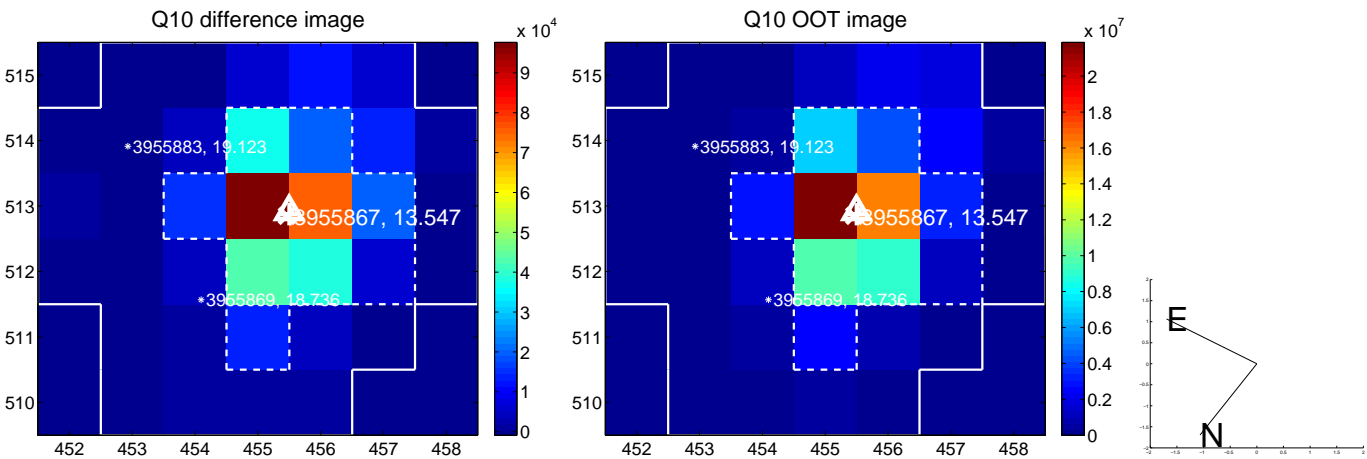
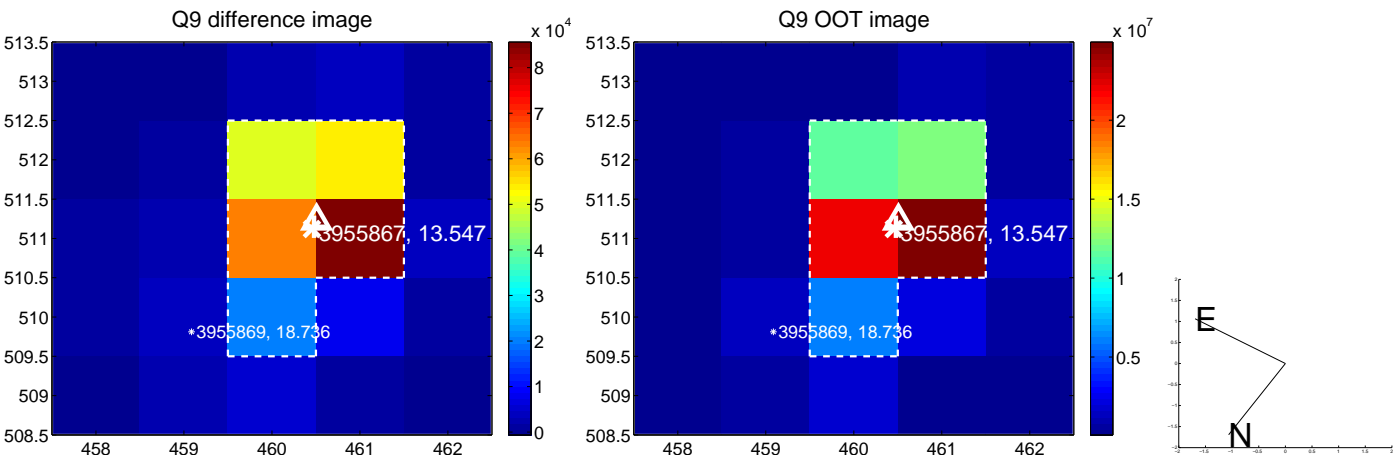
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



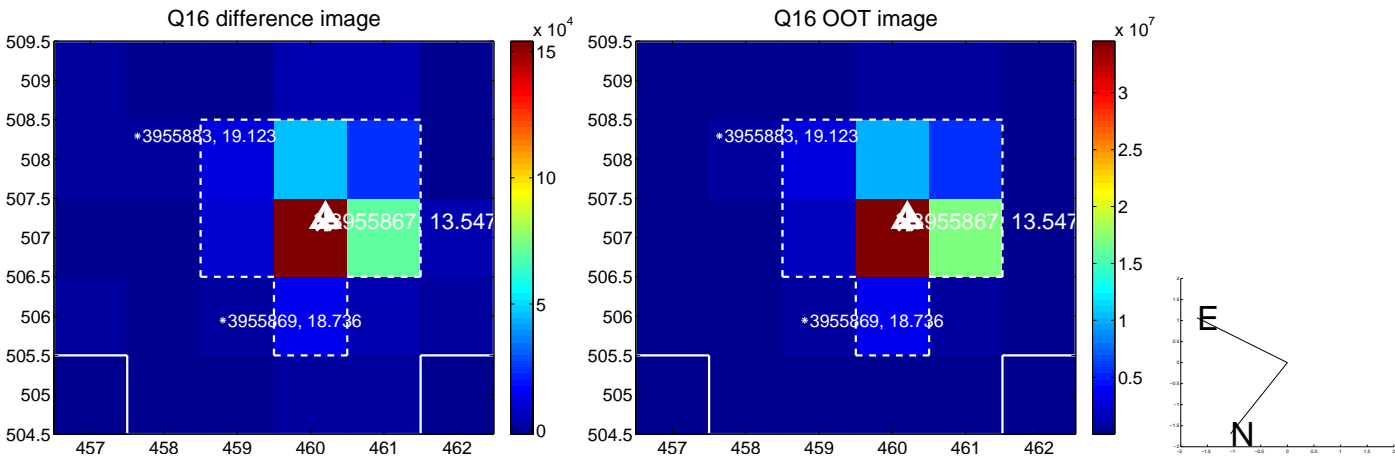
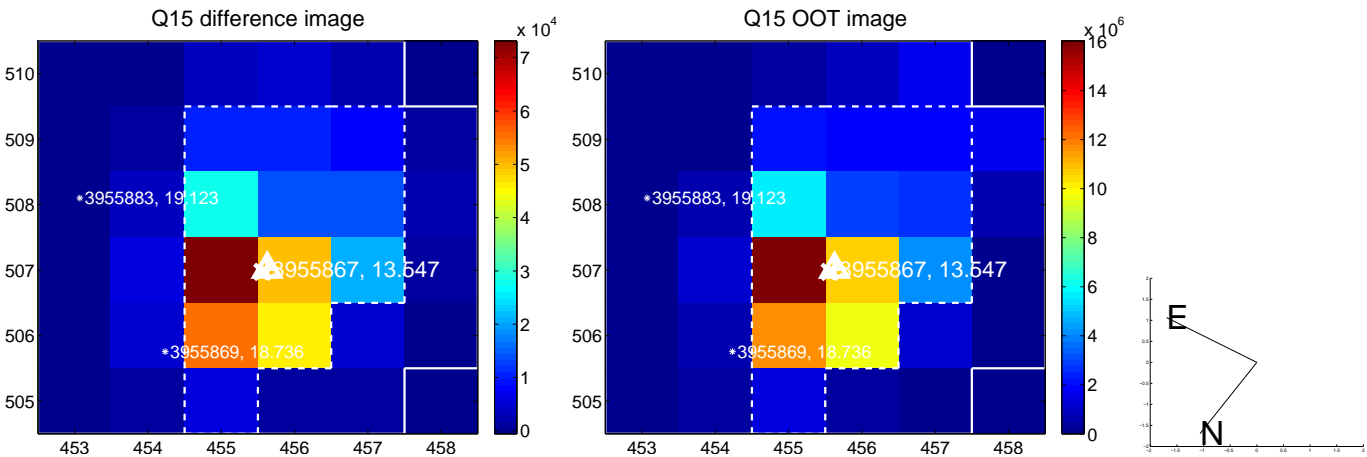
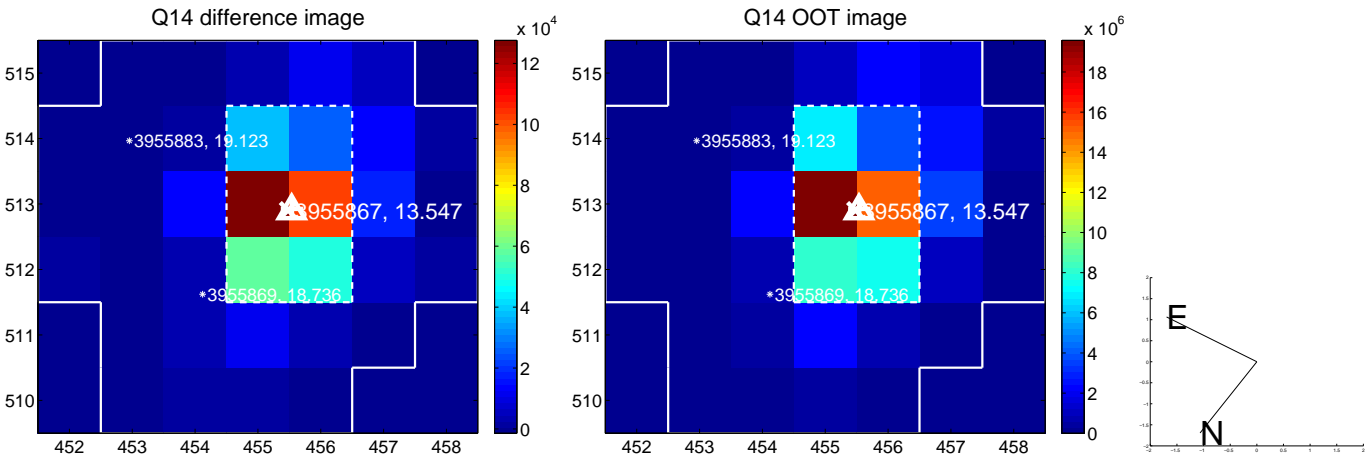
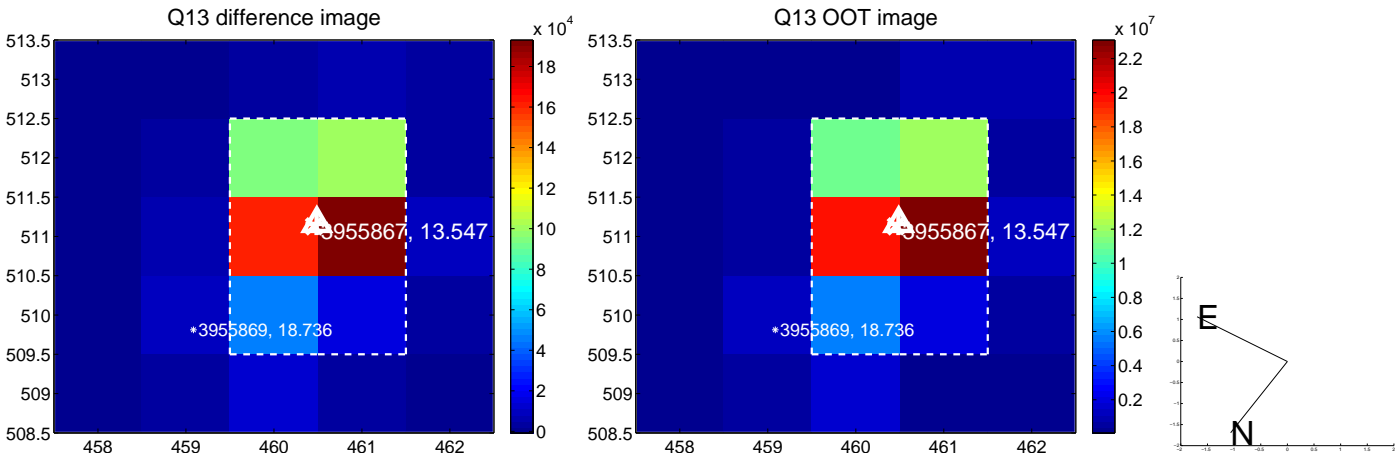
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



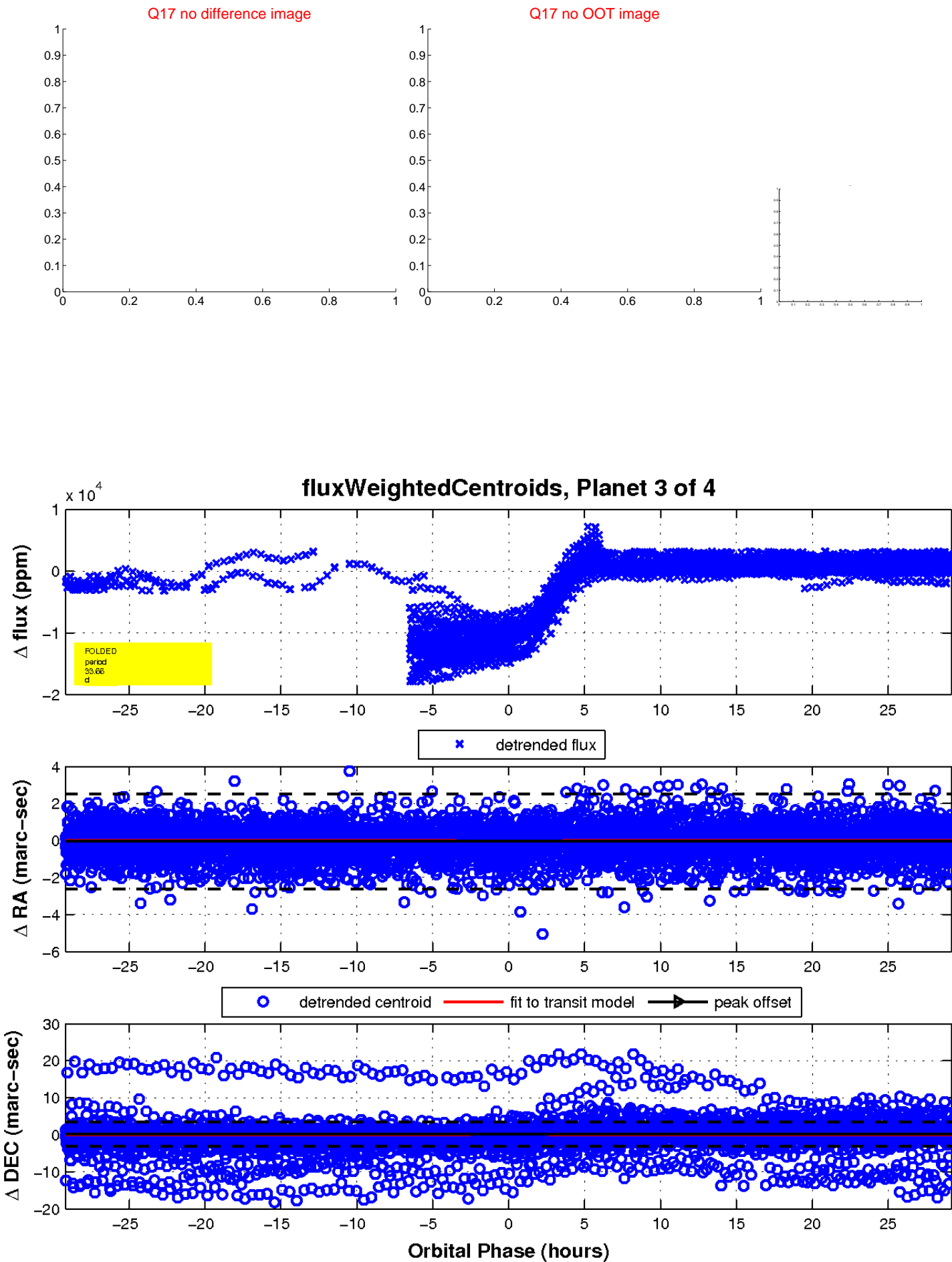
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

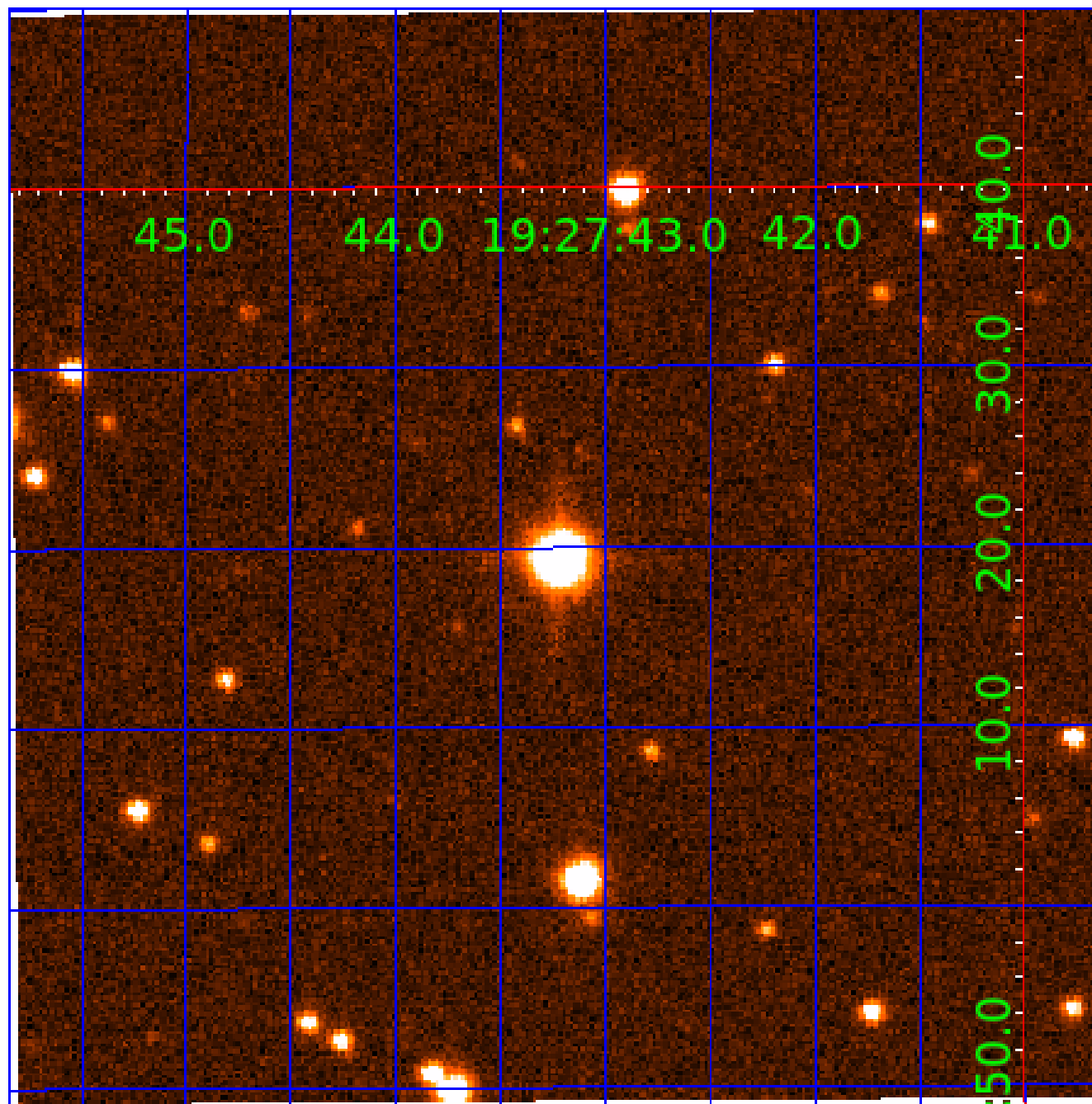


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003955867

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})
003955867-01	OBS	7545.01	33.656698	160.910312	16872.9	6.428	205.6	252.0	6.45	4774	152.94	509.61
003955867-02	OBS	No	33.656749	162.132368	13738.2	10.304	190.6	182.0	6.45	4774	82.90	509.60
003955867-03	OBS	No	33.657161	145.430028	5895.6	9.730	72.4	85.0	6.45	4774	71.06	509.60
003955867-04	OBS	No	33.660229	161.337180	1200.6	15.000	68.9	-1.0	6.45	4774	21.57	509.53

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003955867-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED—HAS_SEC_TCE
003955867-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
003955867-03	OBS	FP	0.00	1	0	0	0	LPP_DV—SAME_NTL_PERIOD
003955867-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—NO_FITS—RESIDUAL_TCE—CENT_NOFITS

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.

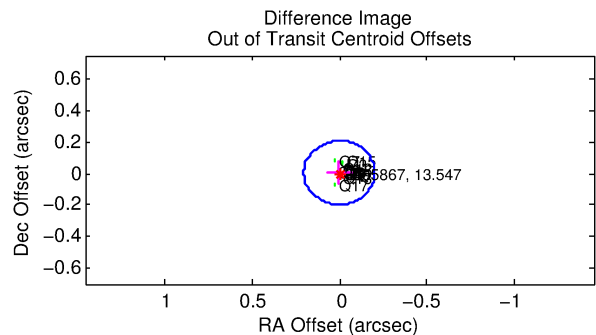
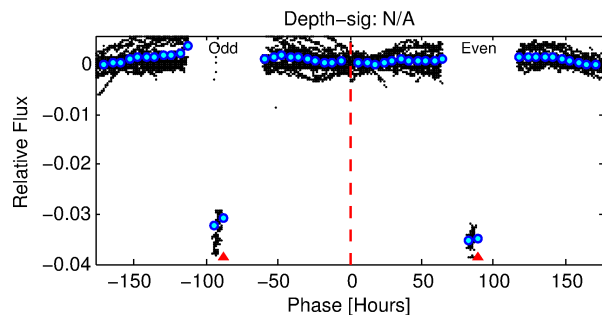
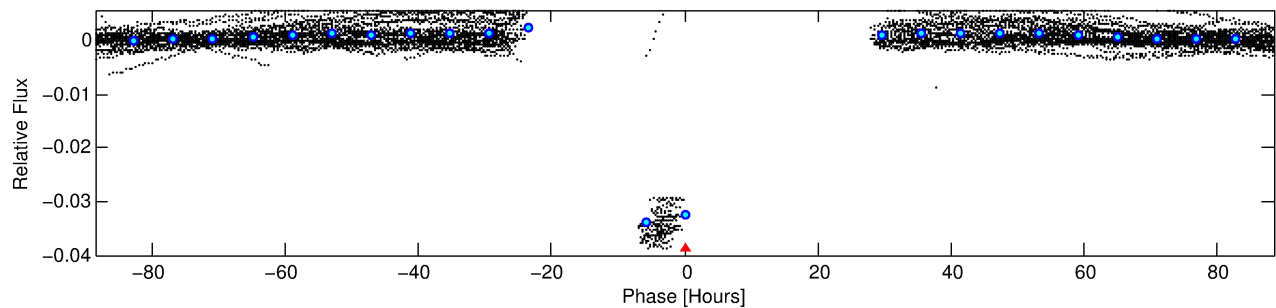
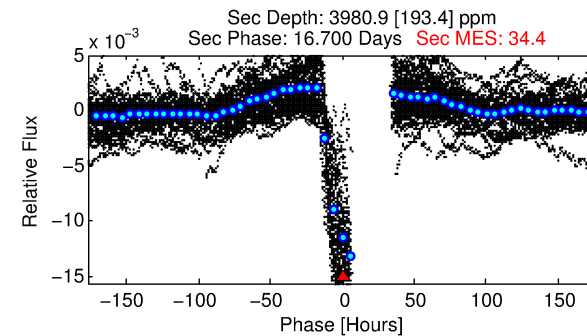
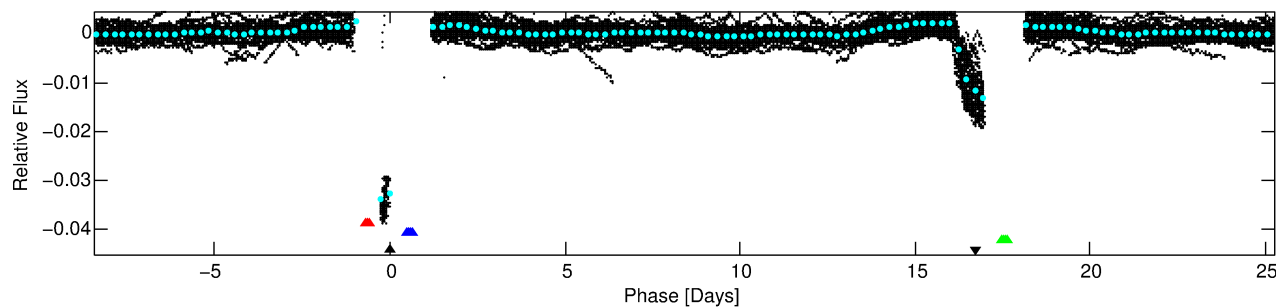
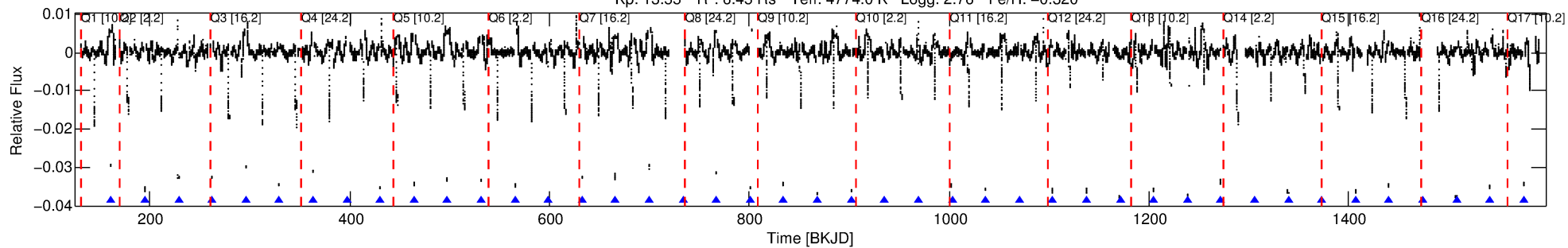
Ephemeris Match Information For 003955867-04

No Significant Match Found

DV One-Page Summary

KIC: 3955867 Candidate: 4 of 4 Period: 33.660 d
KOI: K07545 Corr: No Ephemeris Match

Kp: 13.55 R*: 6.45 Rs Teff: 4774.0 K Logg: 2.76 Fe/H: -0.320



TPS TCE Results:

Period = 33.66023 d
Epoch = 161.3372 BKJD

DV fit results are unavailable

DV Diagnostic Results:

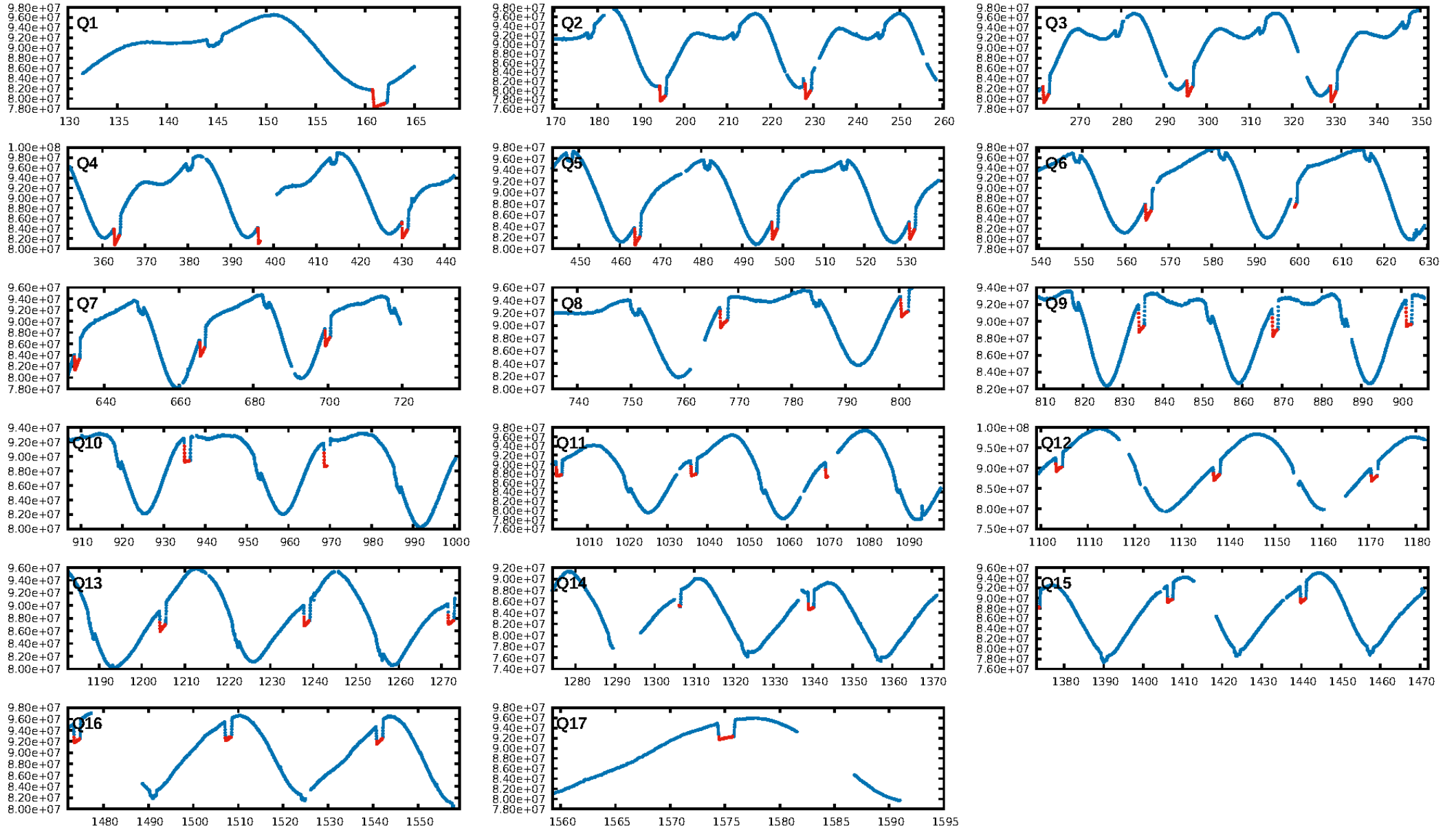
ShortPeriod-sig: 0.3% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [34/34]
GhostDiagnostic-chr: 1.281

Centroid-sig: 0.0%
Centroid-so: 0.315 arcsec [71.89σ]
OotOffset-rm: 0.006 arcsec [0.10σ]
KicOffset-rm: 0.173 arcsec [2.57σ]
OotOffset-st: 1/3/4/5 [13]
KicOffset-st: 1/3/4/5 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 0.00 [0/13]

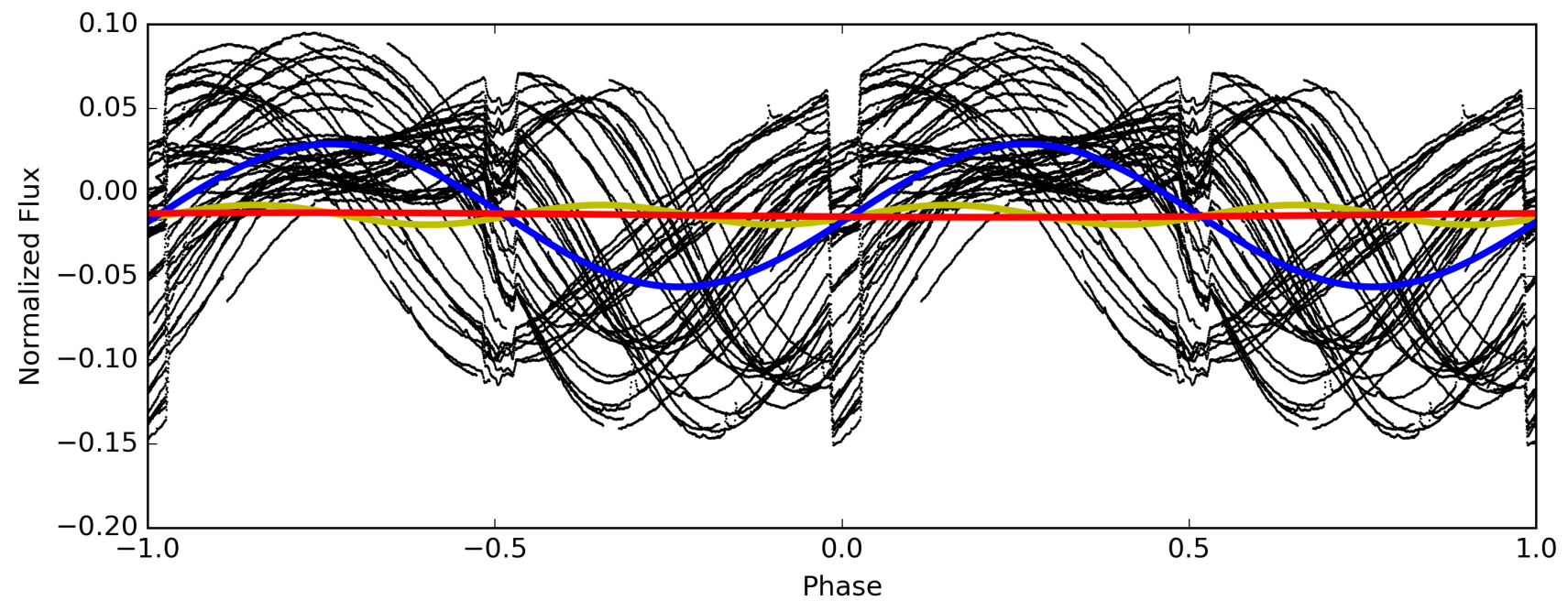
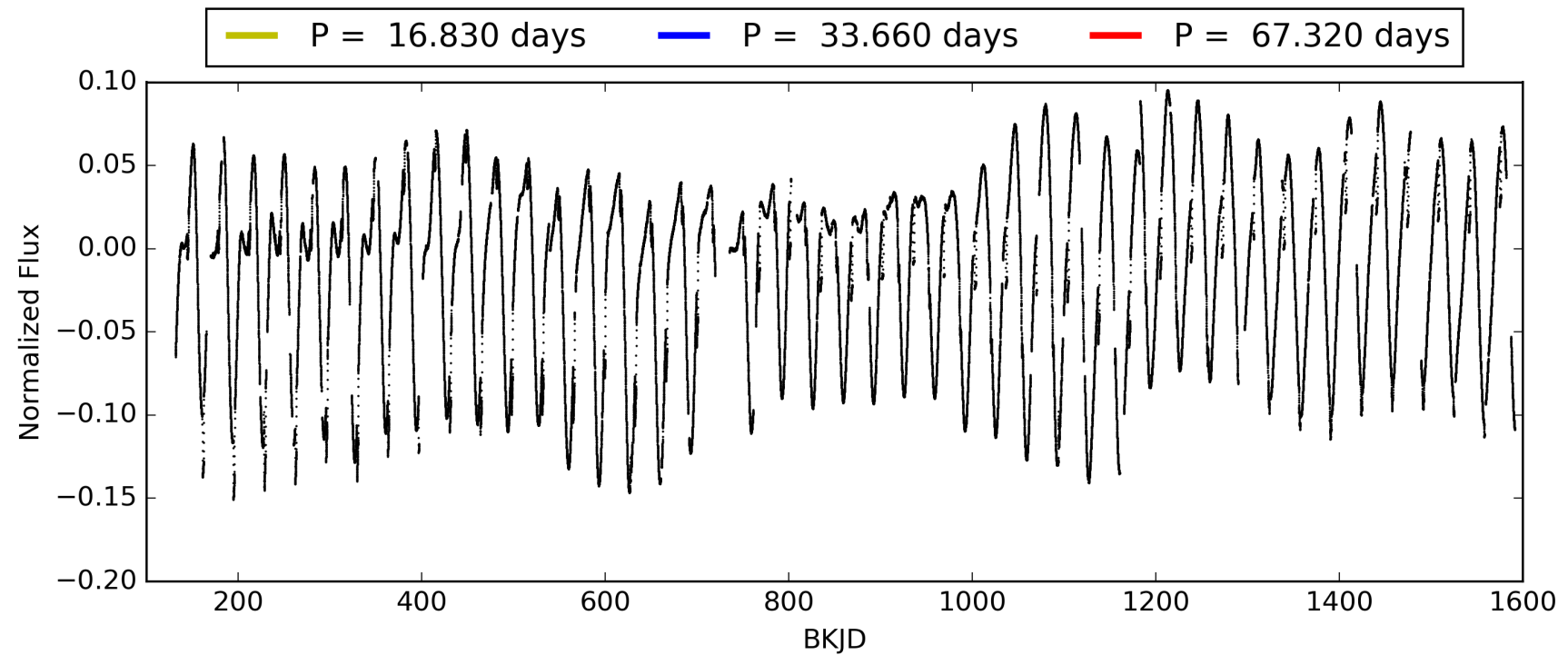
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 05:56:52 Z

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

TCE 003955867-04, PDC Light Curves

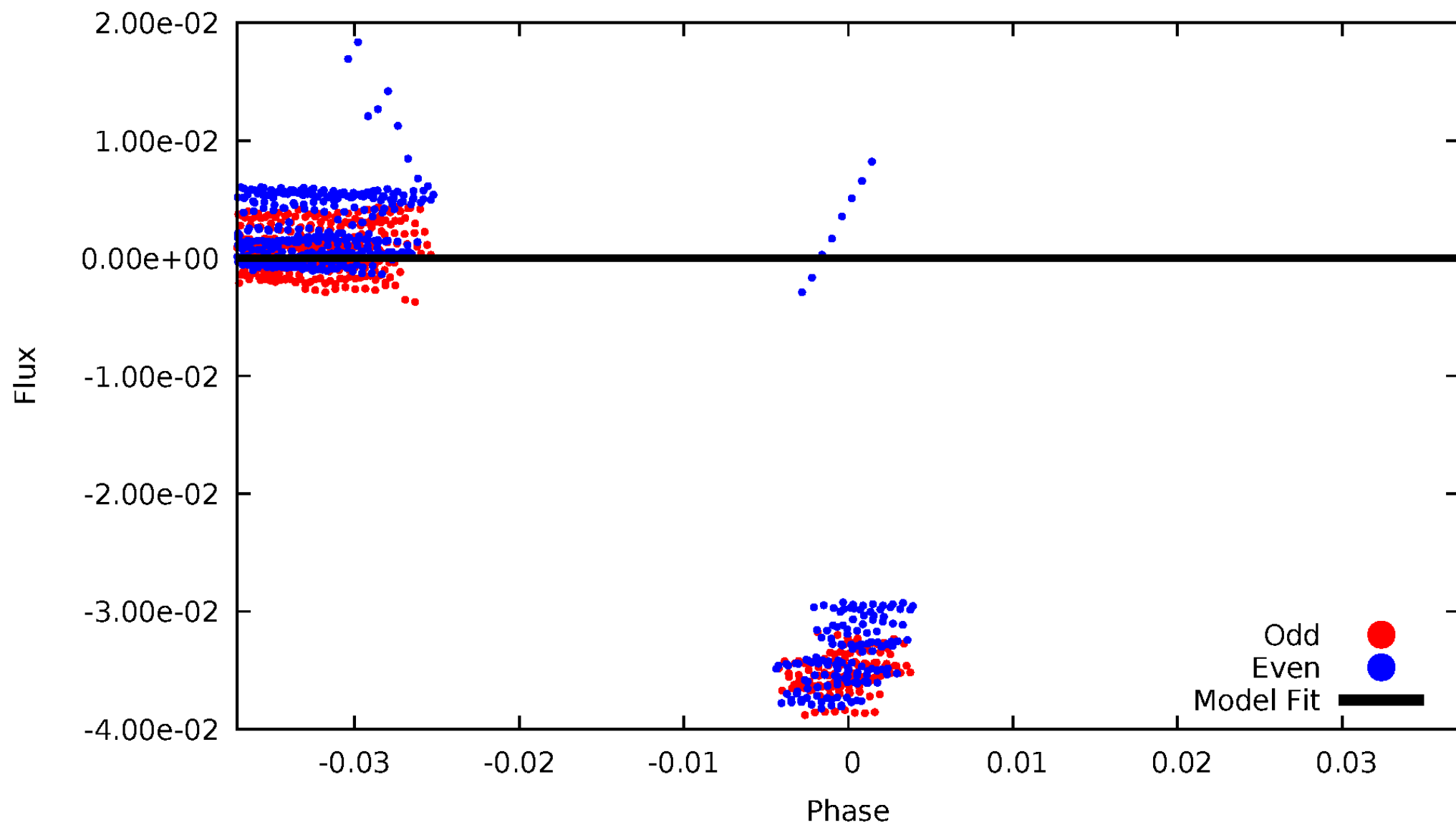


TCE 003955867-04



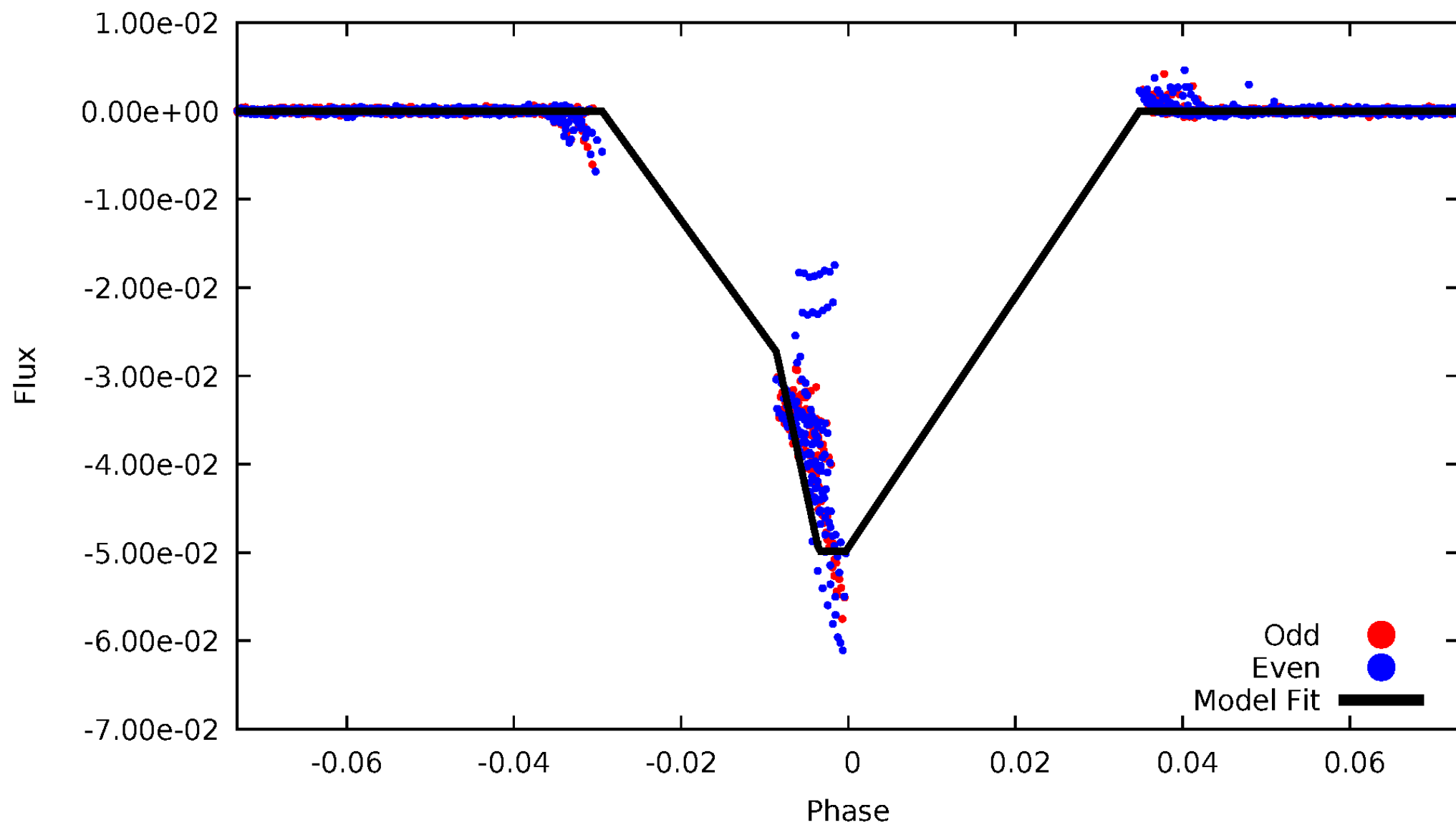
DV Odd/Even

TCE 003955867-04



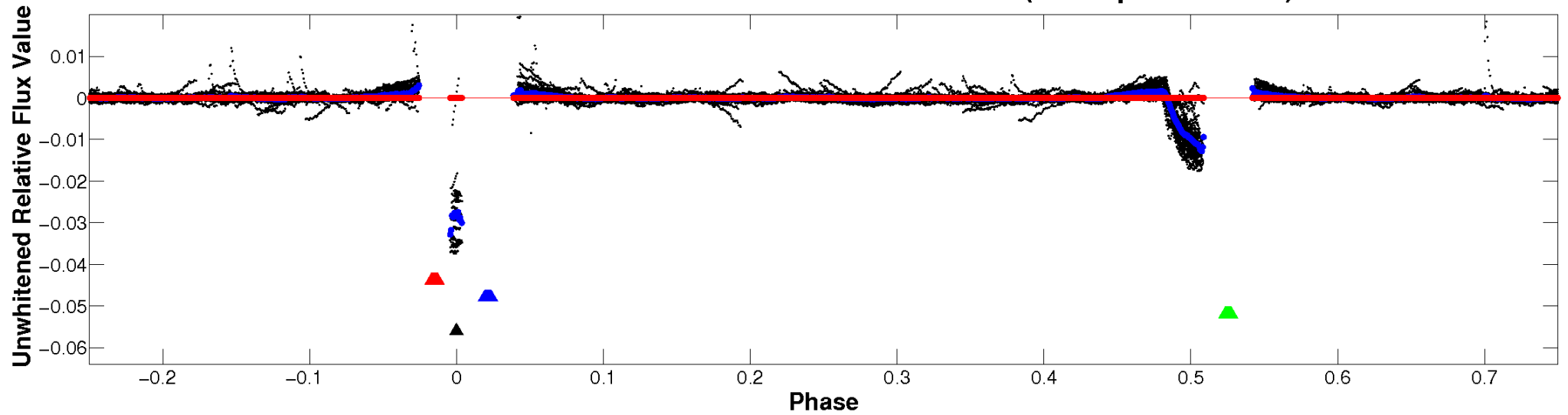
ALT Odd/Even

TCE 003955867-04

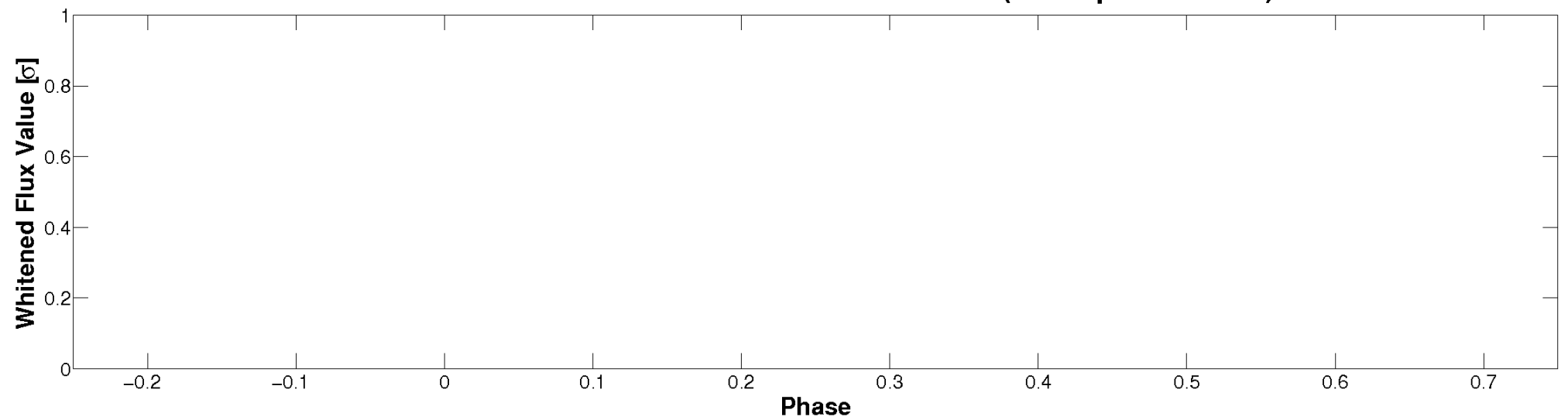


Non-Whitened Vs. Whitened Light Curve

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

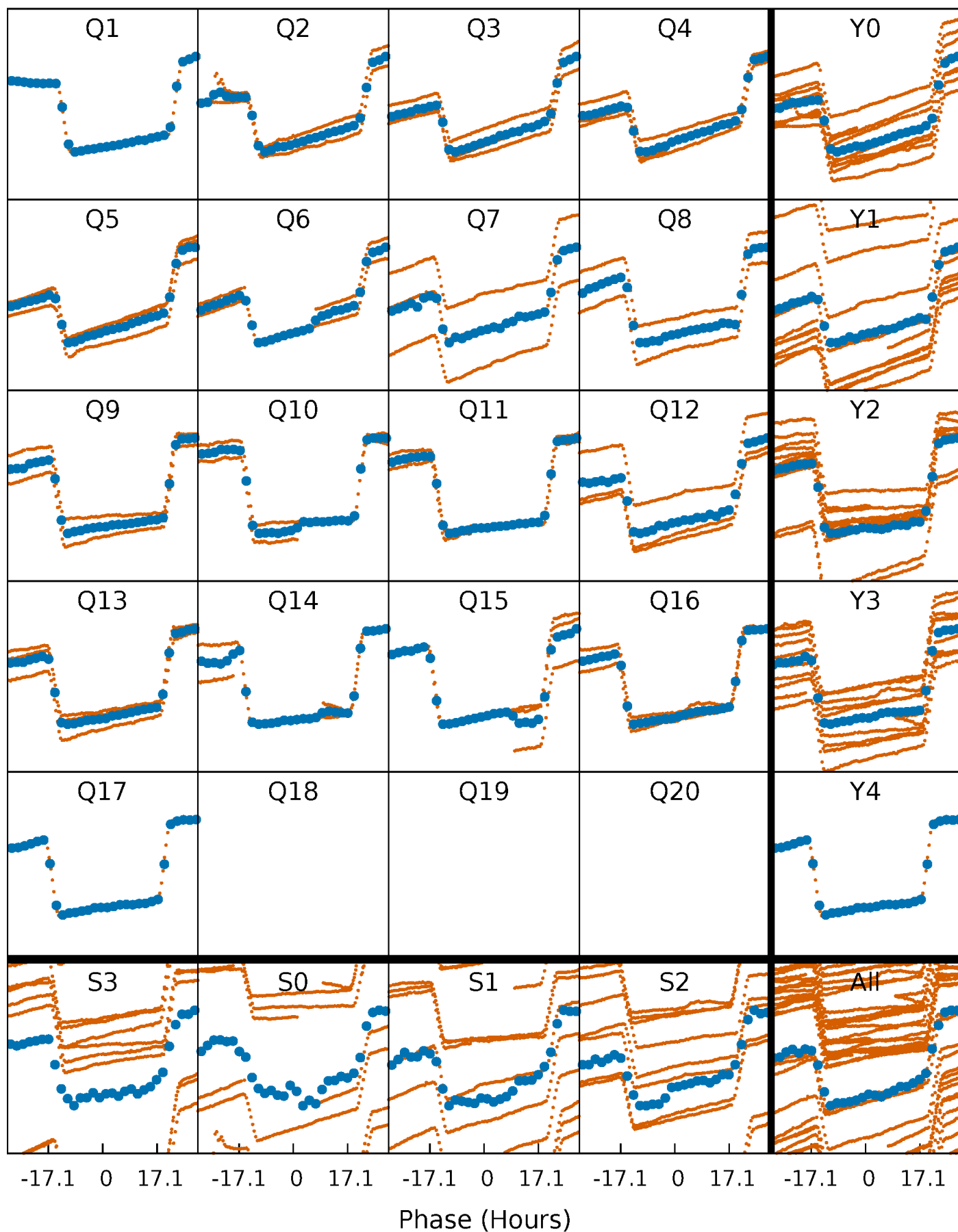


Planet 4 : Phased Whitened Flux Time Series (TPS Epoch/Period)



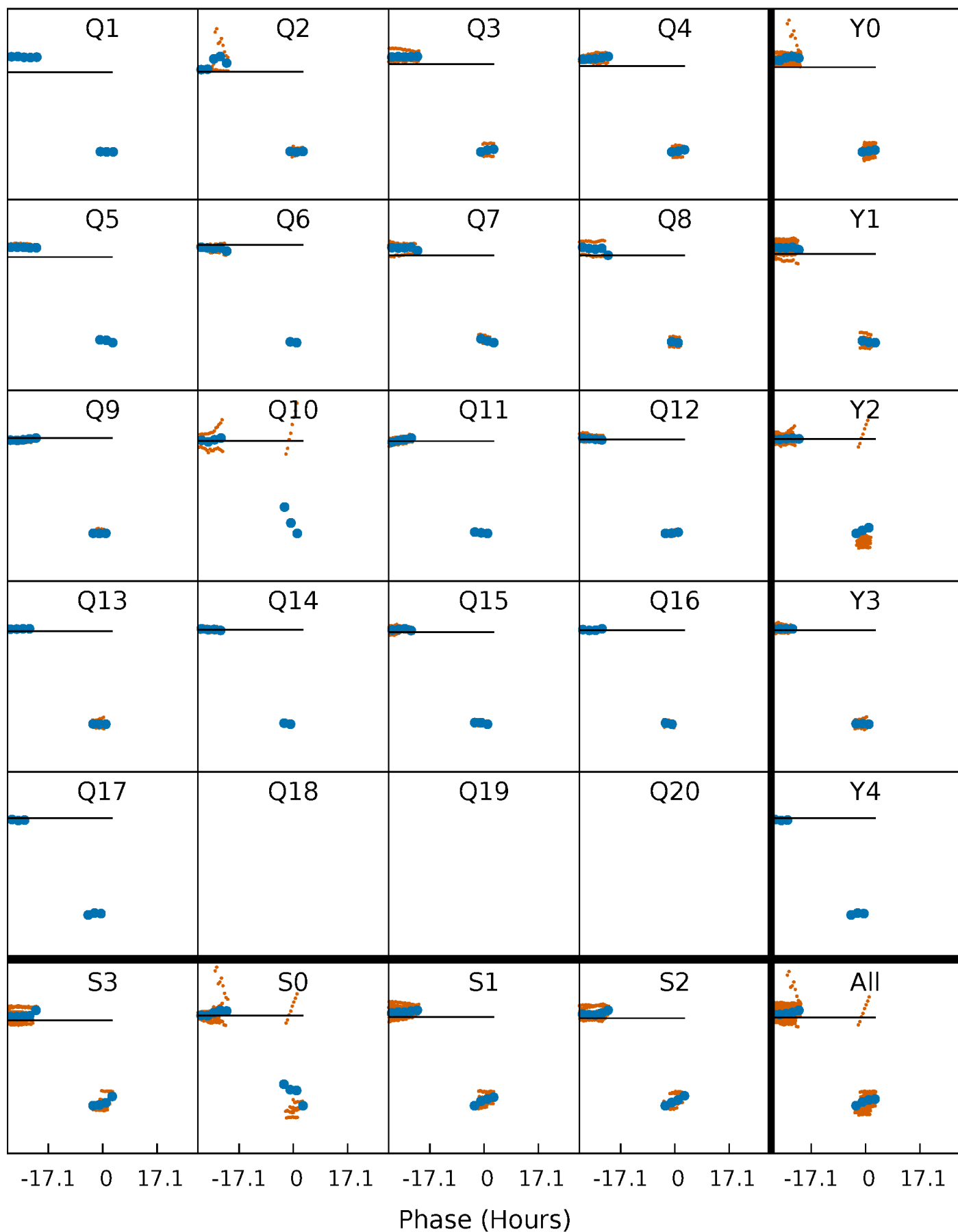
PDC Quarter-Phased Transit Curves

TCE 003955867-04 P= 33.660229 Days $T_0=161.337180$ (BKJD)



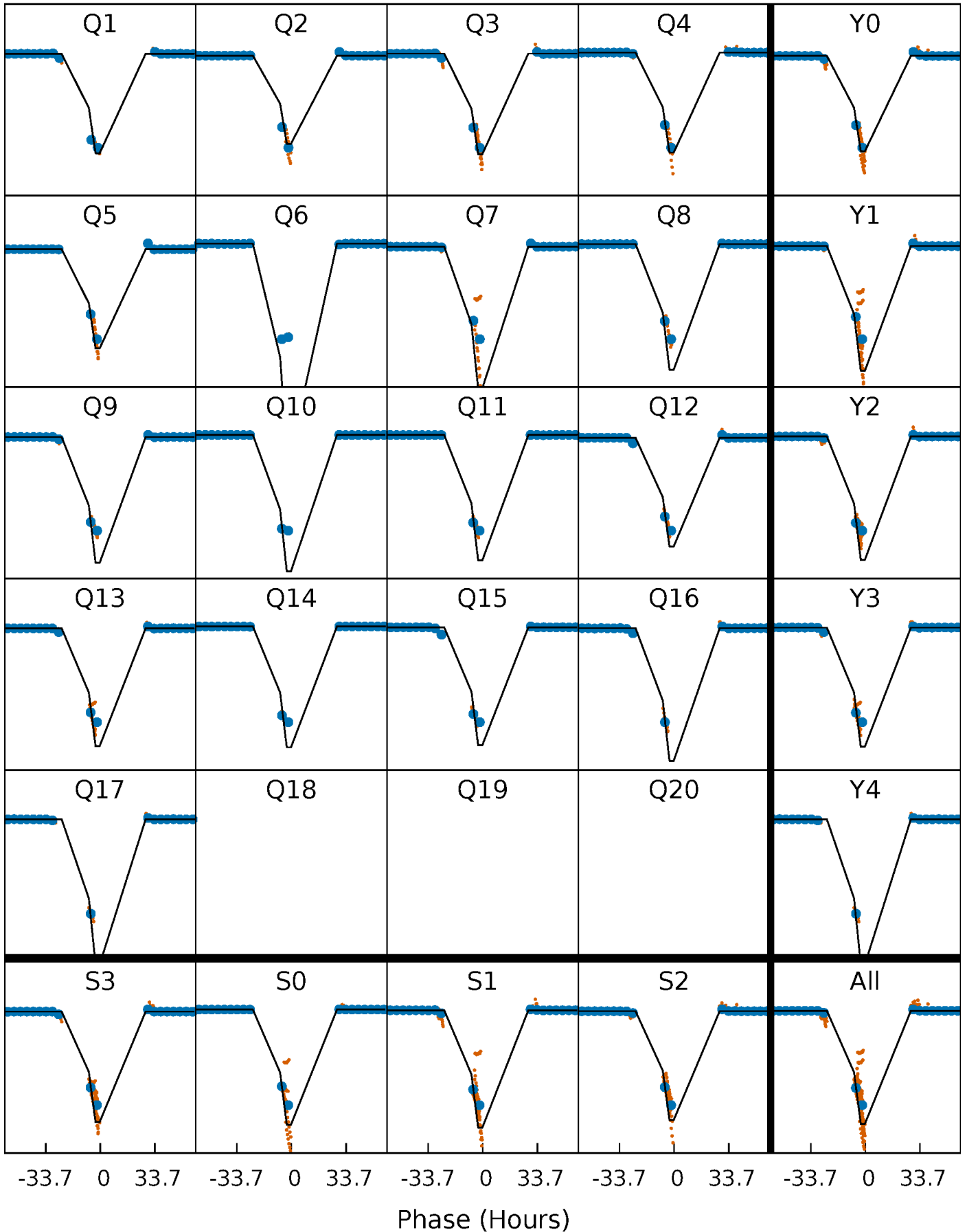
DV Quarter-Phased Transit Curves

TCE 003955867-04 $P = 33.660229$ Days $T_0 = 161.337180$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

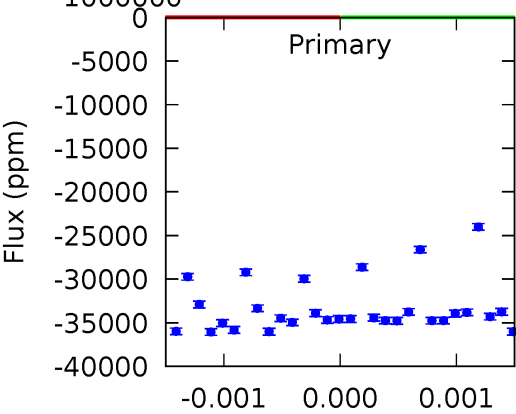
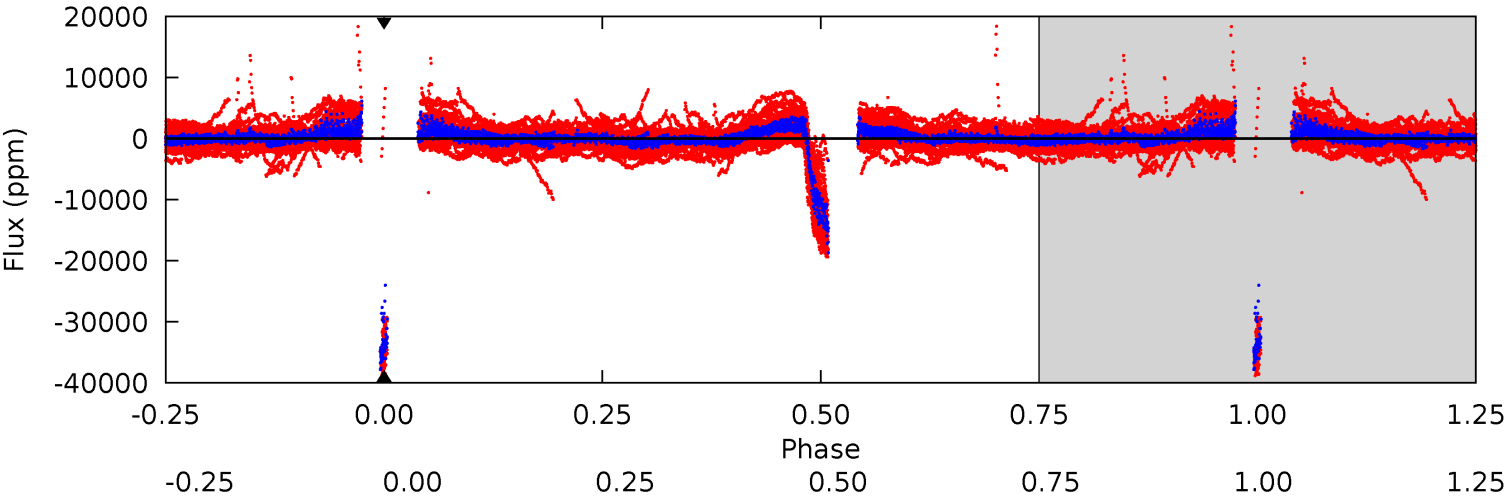
TCE 003955867-04 $P = 33.660229$ Days $T_0 = 161.479791$ (BKJD)



DV Model-Shift Uniqueness Test

003955867-04, P = 33.660229 Days, E = 127.676951 Days

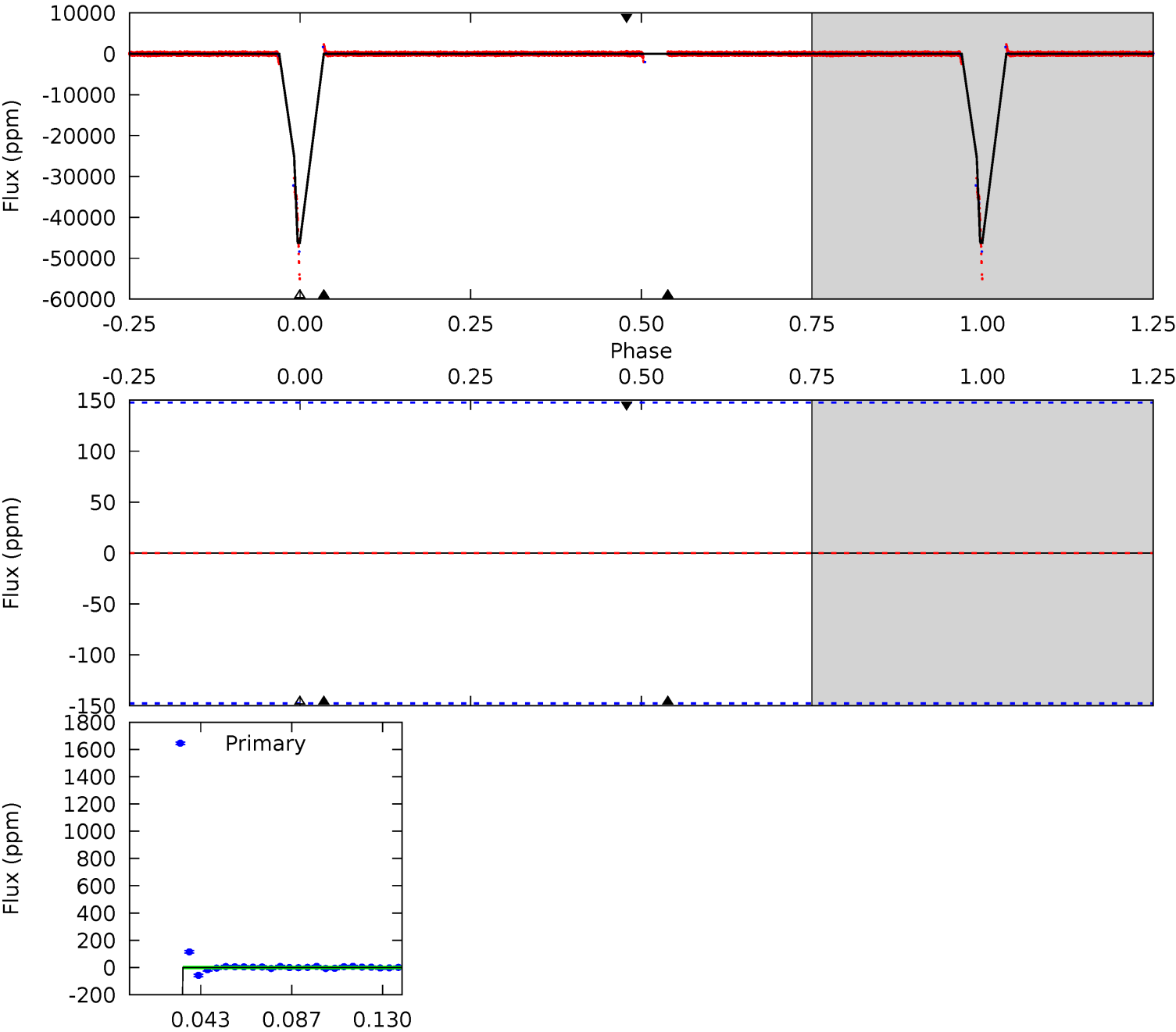
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

003955867-04, P = 33.660229 Days, E = 127.819562 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	4.74	2.02	0	0	0	0	0	0	0	0	0



Stellar Parameters For KIC 003955867

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4774^{+71}_{-62}	$2.759^{+0.128}_{-0.176}$	$-0.320^{+0.150}_{-0.100}$	$6.447^{+1.781}_{-0.822}$	$0.871^{+0.151}_{-0.016}$	$0.005^{+0.003}_{-0.002}$
	+1%/-1%	+5%/-6%	+47%/-31%	+28%/-13%	+17%/-2%	+55%/-48%
Source	SPE74	SPE74	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 003955867-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$59.65^{+62.61}_{-41.68}$	1701^{+110}_{-79}	-3560^{+17955}_{-8231}	$-5.076^{+1410.456}_{-891.500}$
Alt.	-0 ± 31	$163.22^{+78.29}_{-66.14}$	1694^{+116}_{-71}	-2284^{+64}_{-76}	$-0.000^{+0.028}_{-0.030}$

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 $A_{obs} \gg 1.0$

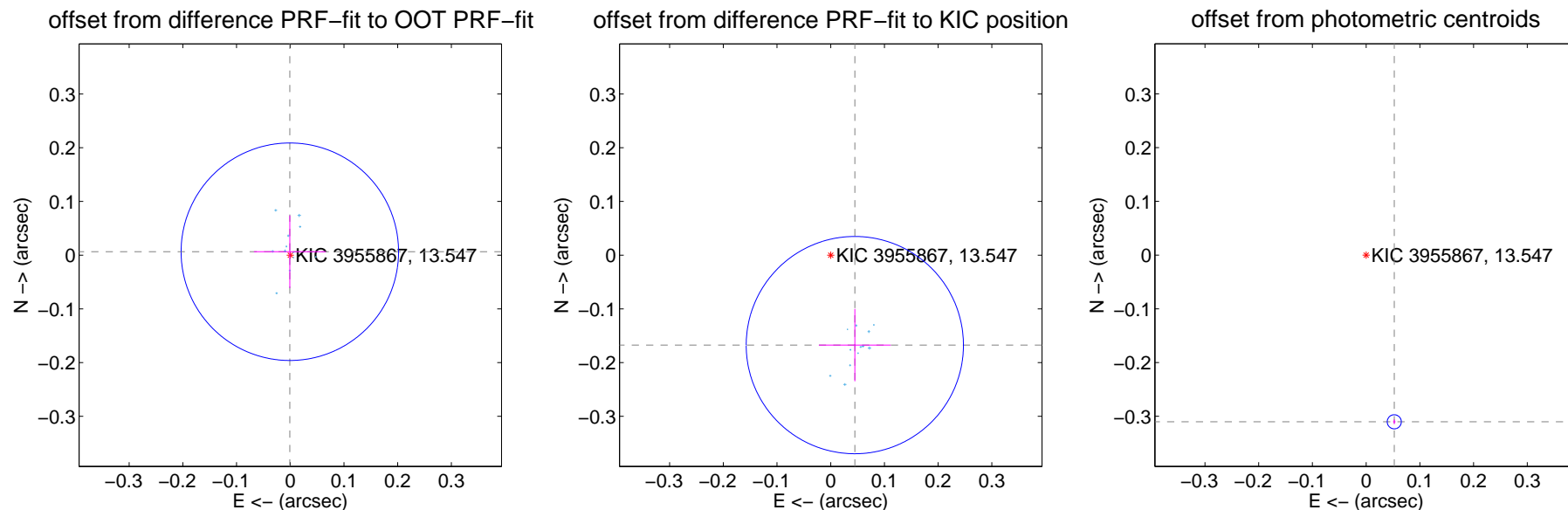
DV Centroid Data

Supplemental centroid analysis for 003955867-04. Kepler magnitude: 13.55. Transit SNR -1.00

There are 13 quarters with good PRF difference image offsets

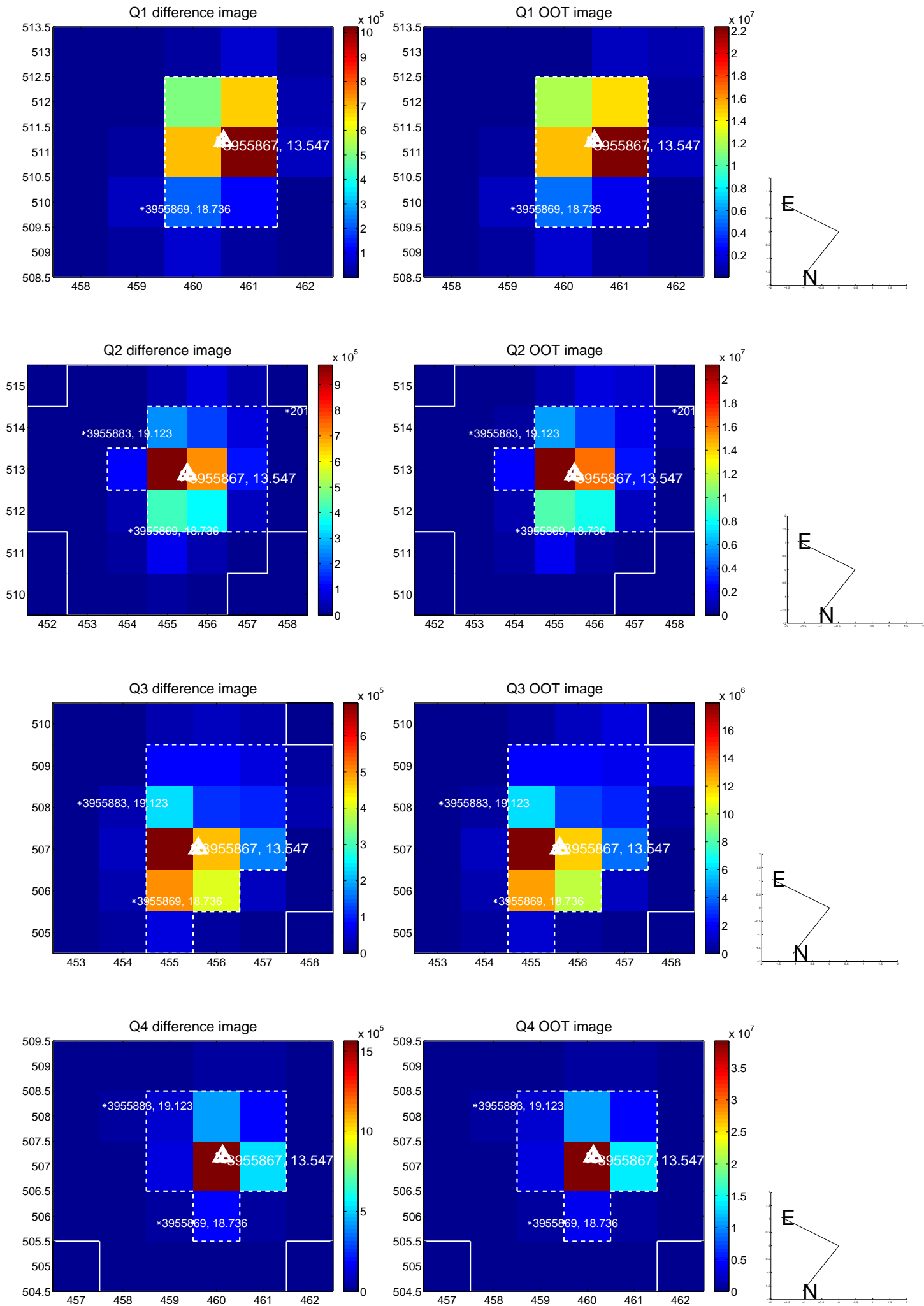
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.006 ± 0.067	0.10	0.001 ± 0.067	0.006 ± 0.068
PRF-fit source offset from KIC position	0.173 ± 0.067	2.57	-0.045 ± 0.067	-0.167 ± 0.067
photometric centroid source offset	0.31 ± 0.00	71.89	-0.05 ± 0.00	-0.31 ± 0.00

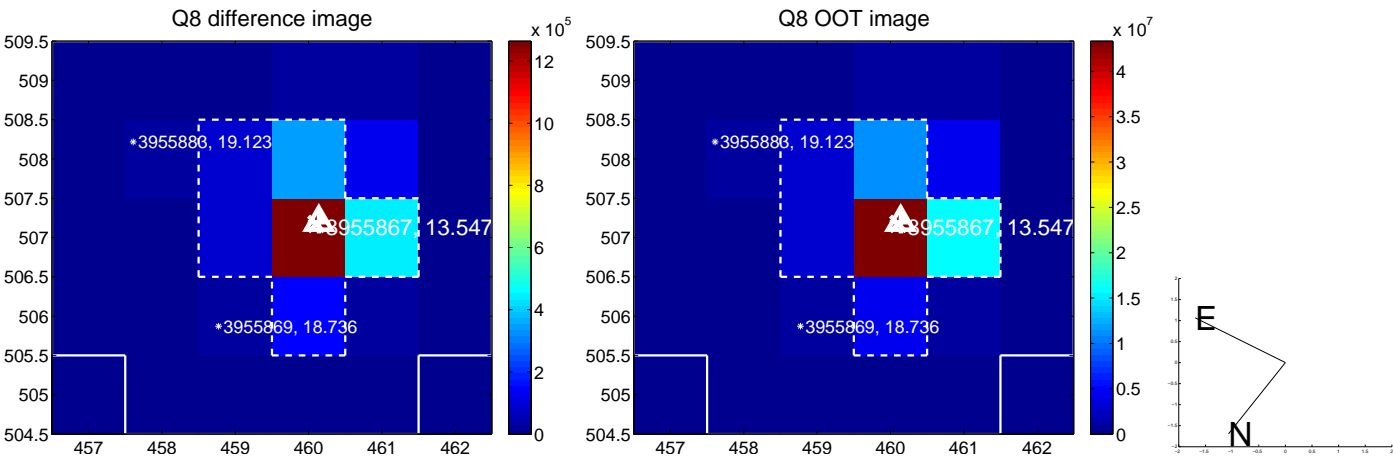
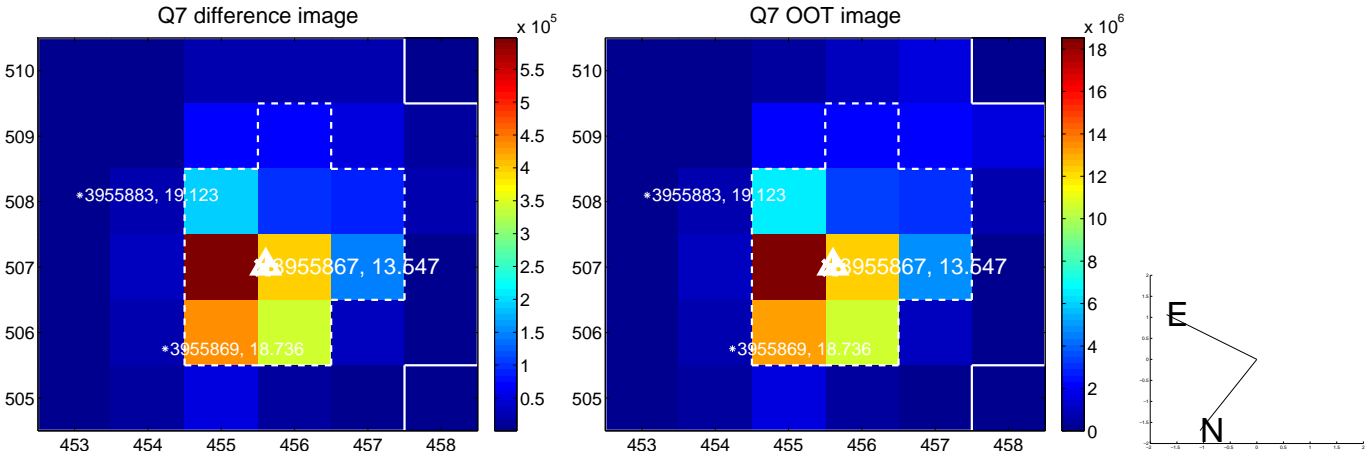
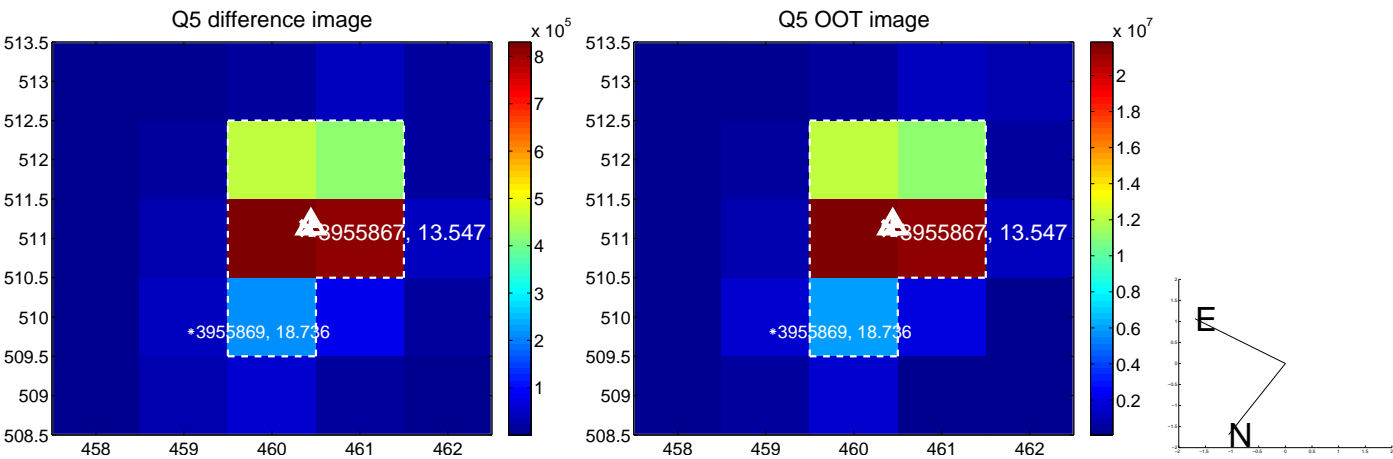


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

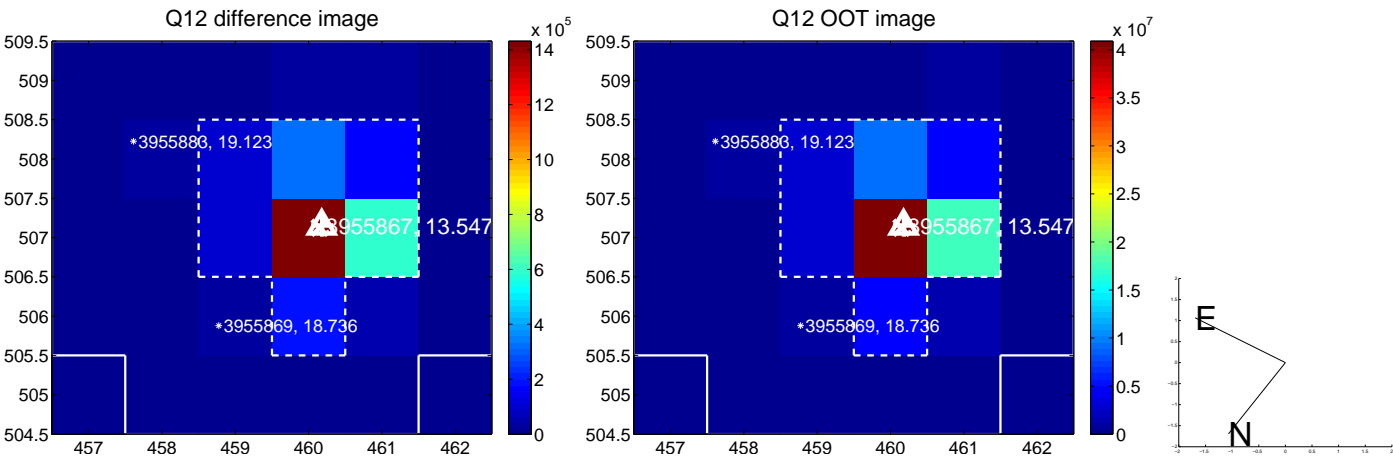
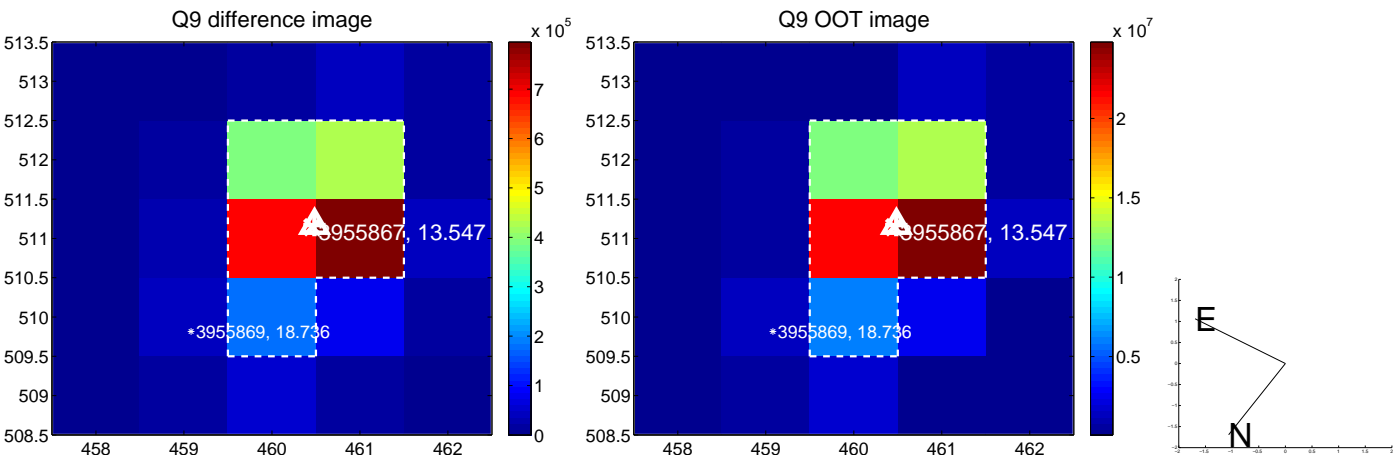
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



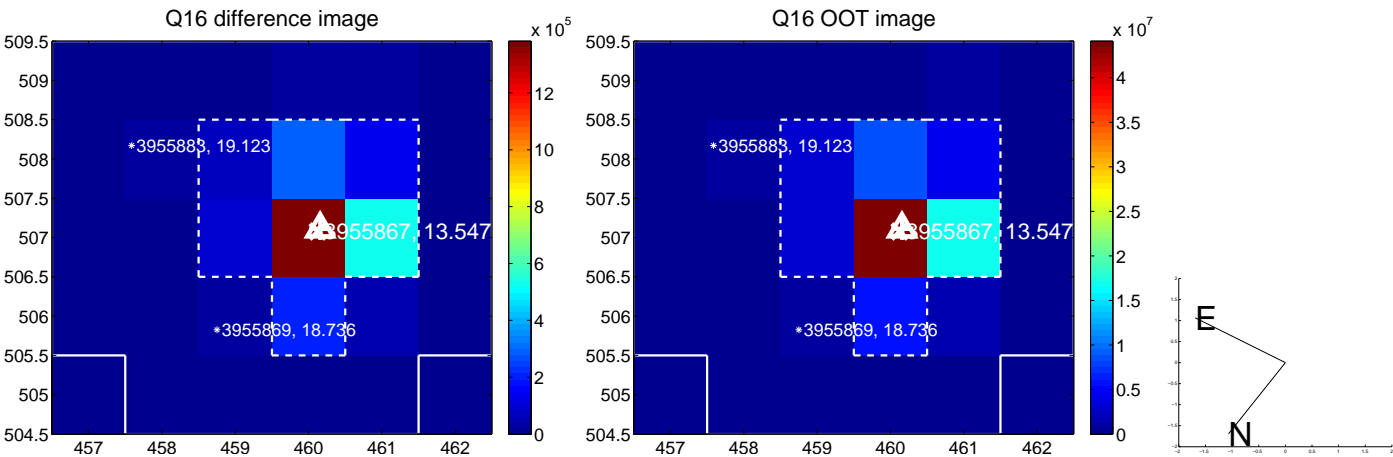
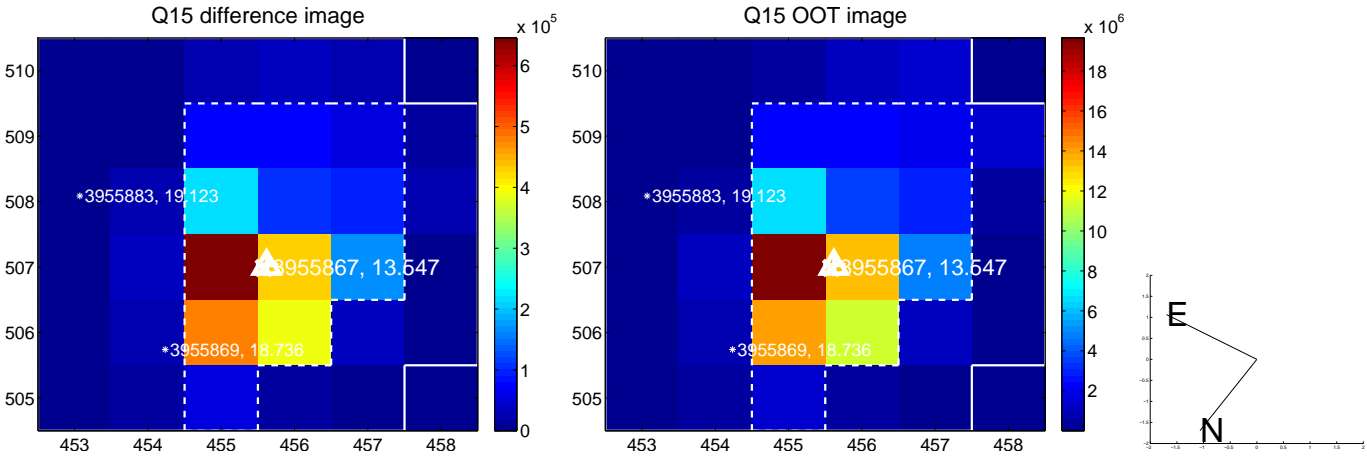
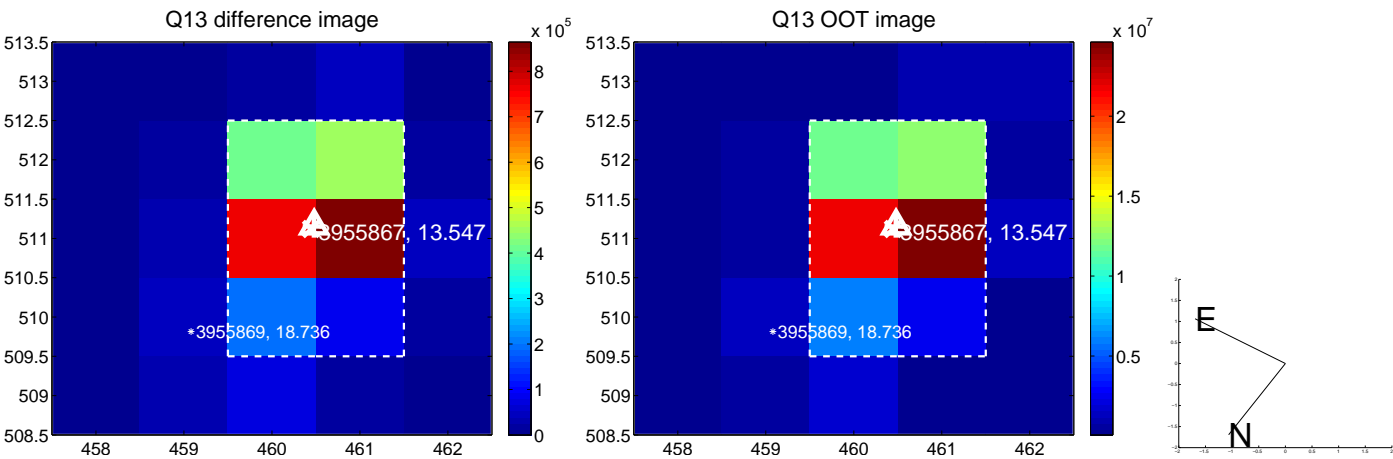
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



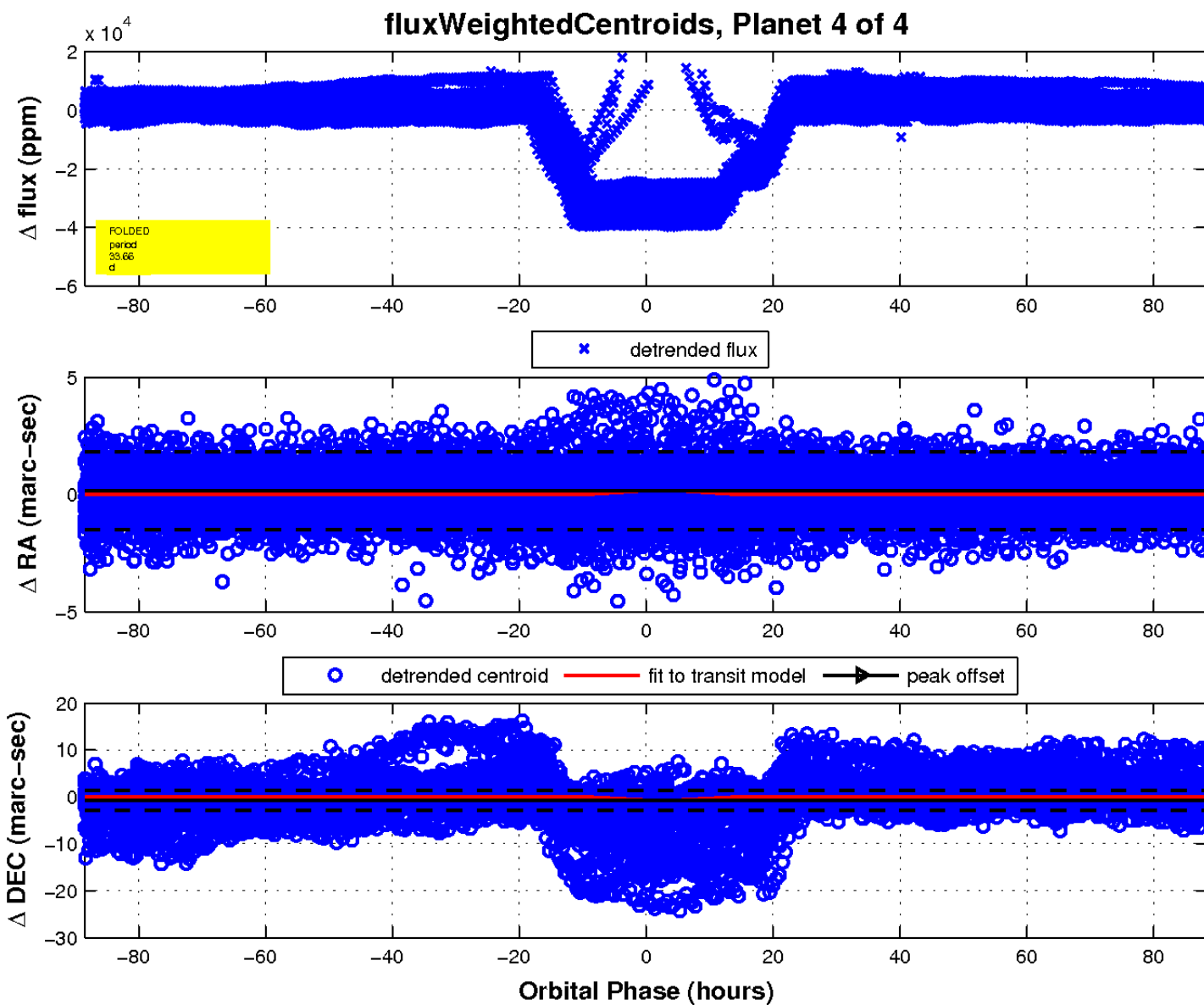
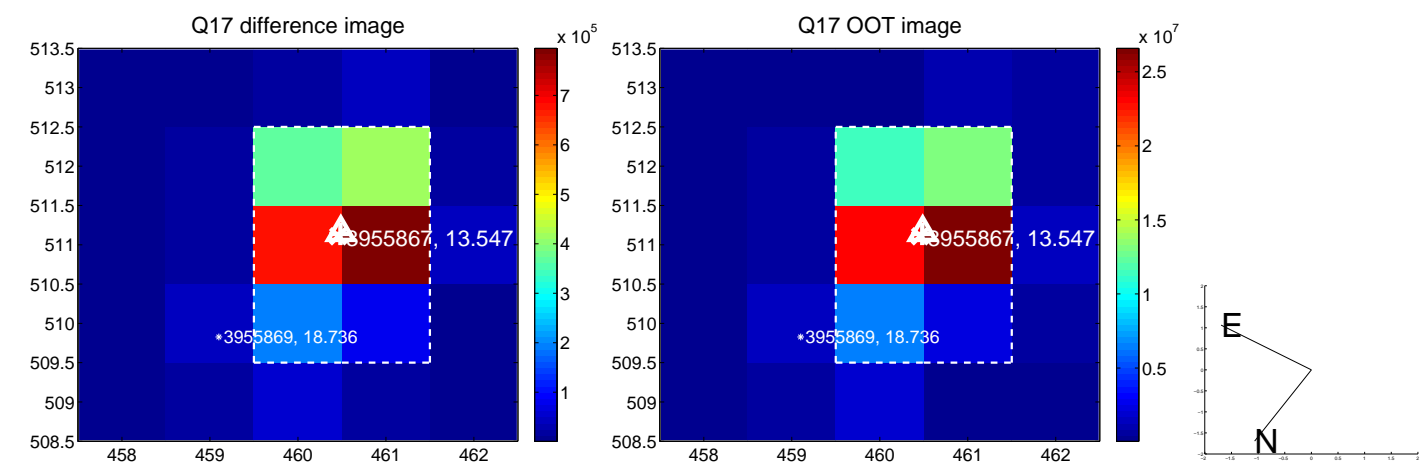
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

